



KELLEY
21-SERIES

DOUBLE FOLD FIELD CULTIVATOR

OPERATOR MANUAL

THIS MANUAL TO ACCOMPANY MACHINE

PART NO. 21-OM-02
PRINTING DATE MAY 2018

WARRANTY POLICY

KELLEY MANUFACTURING COMPANY (KMC) warrants that all goods sold to the original purchaser of any KMC product shall be free of any defects in material and workmanship if used under normal operating conditions. The warranty period begins on the date of purchase by the retail customer and ends twelve (12) months thereafter. KMC's sole responsibility is to repair and/or replace the defective part or parts at no cost to purchaser. This remedy is the **SOLE AND EXCLUSIVE REMEDY** of purchaser.

The purchaser must fill out and return the warranty registration form found in the front of the operator's manual. Failure to return the warranty registration form within 30 days shall result in the goods being sold "AS IS", and all warranties shall be excluded.

This warranty shall not apply to those items that are by nature worn in normal service, including but not limited to belts, springs, teeth, chains, etc. Items such as tires, tubes, and gearboxes and all other items warranted by the original manufacturer are warranted only to the extent of their individual manufacturer warranty, and KMC is not warranting any of said items. All warranty claims must be made through a KMC licensed dealer, and a warranty form request must be submitted to KMC within 30 days of failure or the warranty provision shall be unenforceable against KMC.

No agent or person has authority to change or add to this warranty as written.

THE ABOVE IS THE ONLY WARRANTY MADE BY KMC AND IS MADE EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. KMC MAKES NO WARRANTY OF MERCHANTABILITY AS TO ANY GOODS MANUFACTURED BY KMC AND FURTHER, KMC DOES NOT WARRANT ANY SUCH GOODS AS SUITABLE FOR ANY PARTICULAR PURPOSE TO THE RETAIL CUSTOMER. THE SUITABILITY OF GOODS FOR ANY PURPOSE PARTICULAR TO THE CUSTOMER IS FOR THE CUSTOMER, IN HIS SOLE JUDGEMENT, TO DETERMINE. KMC FURTHER MAKES NO WARRANTIES WITH RESPECT TO ITS MANUFACTURED GOODS THAT WOULD NORMALLY BE DISCLOSED BY AN EXAMINATION. THIS IS THE FULL AND FINAL EXPRESSION OF ALL WARRANTY LIABILITY OF KMC. NO OTHER WARRANTY, EITHER EXPRESSED OR IMPLIED, SHALL BE ENFORCEABLE AGAINST KMC.

Kelley Manufacturing Co.

80 Vernon Drive / Zip 31794

P.O. Drawer 1467 / Zip 31793

Tifton GA

2100 SERIES DOUBLE FOLD FIELD CULTIVATORS

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FORWARD

INTRODUCTION:

The KMC Double Fold Field Cultivator is a high speed (5 to 8 MPH) field operation device with up to 25% less horsepower requirements, and features a more efficient S-tine placement system for greater soil mixing activity and more uniform blending of chemicals in soil for improved herbicide performance. The dual rolling crumbler attachments do an extra fine job of leveling and smoothing the soil without leaving ridges.

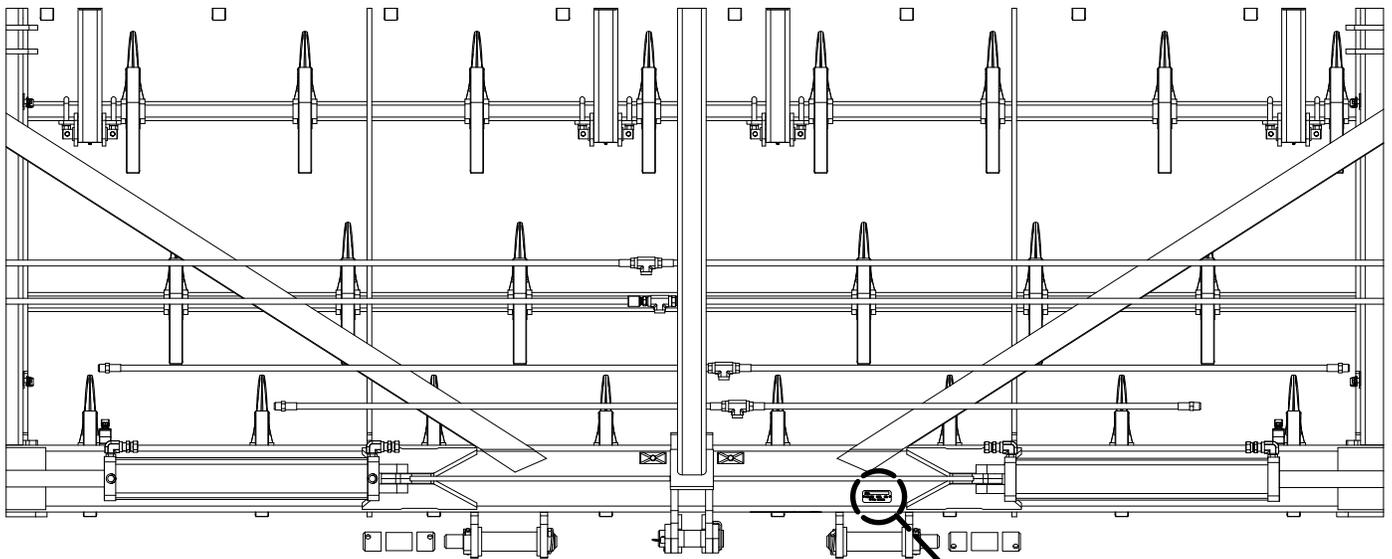
TO THE PURCHASER:

This KMC Double Fold Field Cultivator has been carefully designed and manufactured to give years of dependable service. In order to operate it efficiently and maintain it properly, please read the instructions within this manual thoroughly.

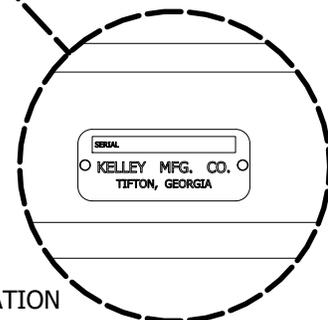
Some components of this machine are labeled left or right. The notations are determined by standing behind the implement and facing the direction of forward travel.

After reading this Operator's Manual, please keep it for reference each season.

To insure procurement of the proper repair parts, please record your machine's Serial Number and Purchase Date as shown below.



MODEL NO.	
SERIAL NO.	
PURCHASE DATE	



SERIAL NUMBER TAG LOCATION

PRE-OPERATIONAL CHECKLIST:

- All safety and operating procedures reviewed
- All hardware checked for tightness
- Field adjustment procedures reviewed
- Lubrication information reviewed
- Machine fully lubricated
- Hitch connection to implement information reviewed
- Warranty information reviewed

NOTES: _____

SAFETY

SYMBOL INFORMATION



This safety alert symbol is used throughout this manual to identify safety messages. When you see this symbol, read the message which follows as it will advise you of possible injury.

REMEMBER



THINK SAFETY!



DANGER

(RED)

This symbol indicates a hazardous situation that, if not avoided, will result in death or serious injury.



WARNING

(ORANGE)

This symbol indicates a hazardous situation that, if not avoided, could result in death or serious injury.



CAUTION

(YELLOW)

This symbol indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.

! IMPORTANT !

(GREEN OR BLACK)

This symbol is used for instruction on operating, adjusting, or servicing a machine.

BEING SAFETY CONSCIOUS IS GOOD BUSINESS!

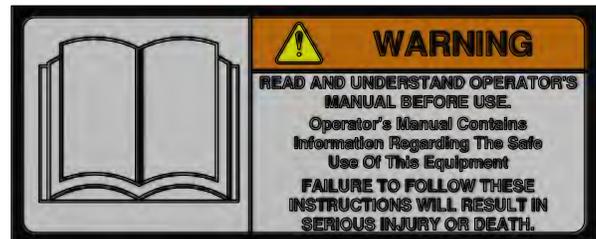
RETAIL CUSTOMERS RESPONSIBILITY UNDER THE KMC WARRANTY

The retail customer's responsibilities are:

1. To read the Operator's Manual and operate the KMC 2100 Double Fold Field Cultivator in accordance with the instructions given in this manual.
2. To inspect the KMC 2100 Double Fold Field Cultivator daily, lubricate as specified and repair or replace parts as needed, especially when continued use would cause damage or excessive wear to other parts.
3. To maintain and keep in place all safety shields and devices.
4. When warranty service is necessary, it is the customer's responsibility to deliver the machine to the KMC dealer from which it was purchased. Warranty repairs should be submitted to the dealer within thirty (30) days of failure.
5. Dealer travel to the machine or hauling the machine to his shop for the purpose of performing warranty service is not allowed under KMC warranty. It is a cost to be paid for by the retail customer. Any arrangement whereby the dealer agrees to absorb all or part of this cost is strictly between the dealer and the retail customer.

SAFETY PROCEDURES

Safety and performance are the primary objective of the designers of KMC equipment. Safety features have been incorporated into this machine where possible and warnings given in other areas. For your safety, PLEASE read and observe the following safety procedures.



1. All persons operating this piece of equipment should READ the Owner's Manual.
2. Do not permit anyone to ride on the machine at any time.
3. Before starting or operating the machine, make a walk-around inspection and check for obvious defects such as loose mounting bolts and damaged components. Correct any deficiencies before starting. (The equipment must be properly maintained and guarded and must be suitable to performing its task.)
4. Keep all persons a safe distance away from the rear and sides of the machines while it is in operation.
5. Do not allow children to operate the KMC 2100 Double Fold Field Cultivator. Only experienced tractor operators should operate the tractor when using the KMC 2100 Double Fold Field Cultivator.

SAFETY PROCEDURES (continued)

6. Stay clear of hydraulic lines, as they may be under extreme pressure or heat.
7. Drive safely during transport; excessive speed while turning or on rough ground could cause damage to the KMC 2100 Double Fold Field Cultivator and/or cause the tractor to tip over. (Maximum speed of implement should never exceed 20 MPH on highway and 10 MPH off-highway.)
8. Make sure hitch components are attached securely before operating or transporting.
9. Use flashing warning lights when on highways, except where prohibited by law.
10. Apply parking brake, and stop tractor engine before dismounting tractor. Allow mechanisms to stop completely before cleaning, working, or adjusting on machine. Even when the tractor is stationary, you should make sure it is properly secured and made safe by following the Safe Stop Procedure:
 1. handbrake/Footbrake on
 2. Controls in neutral/park
 3. Engine off
 4. Key out
11. Keep hands, feet and clothing away from moving parts.
12. Make sure everyone is clear of machine before starting tractor or operating machine.
13. Observe all safety decals located on machine. Replace them if they become damaged.

HIGH VOLTAGE SAFETY ACT

Georgia Law requires that anyone operating equipment within 10 feet of an overhead high voltage line of more than 750 volts, must contact the Utilities Protection Center (UPC) by telephone at least 72 hours before commencing the work.

For more information call (811), or toll free (1-800-282-7411), or visit on the web <http://gadistrictupc.com>.

Please contact your local power company about laws before operating near high voltage lines.

SPECIFICATIONS & OPTIONS

SPECIFICATIONS

Standard features include gauge wheels, heavy duty 14" diameter tandem crumblers for breaking clods & creating seedbeds. 1 1/4" high clearance S-Tines, 2 3/4" sweeps, and transport lights for safety.

- The main frame consists of a 7" X 7" center toolbar with welded hitches compatible with CAT III, CAT III Narrow, and CAT IV Narrow systems.
- Tines are mounted to 2" X 3" bars with 4 1/2" spacing spread out on 4 bars for better soil and residue flow.
- The double folding toolbar allows for a tighter transport profile. Wings can flex downward 3° at each joint for rolling terrain, but also include stop bolts to hold them level.
- Weight: 8,600-9,600 lbs. (Actual weight depends on model/options)
- Working depth range is 2"-6"(Depths greater than 4" require the optional HD 1 3/4" Tine)

Transport Dimensions:

Width: 17'10"

Height: 12' 6" - 13'(depends on tractor lift height)

Models:

37' for 12R-36" patterns (has 99 tines)

39' for 12R-38" patterns (has 105 tines)

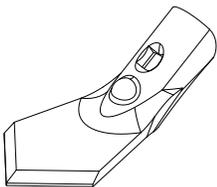
41' for 12R-40"/16R-30" patterns (has 109 tines)

The KMC Double Fold Field Cultivator should be operated at speeds of 5 to 6 MPH for maximum efficiency when incorporating chemicals.

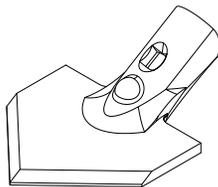
OPTIONS

Optional features

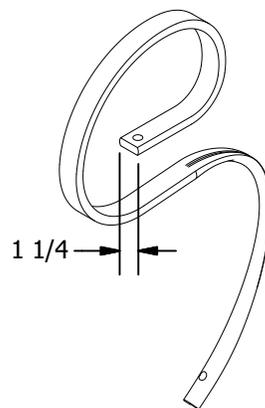
- 1 3/4" wide heavy duty high clearance tines
- 4" sweeps



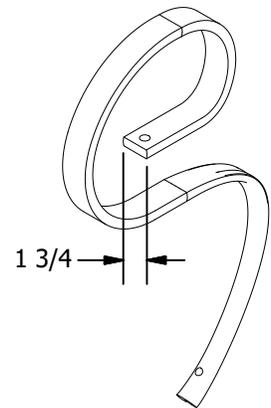
Standard
2 3/4" sweep



Optional
4" sweep
(Requires 1 3/4" S-Tine)



Standard
1 1/4" S-Tine
(For depths up to 4")

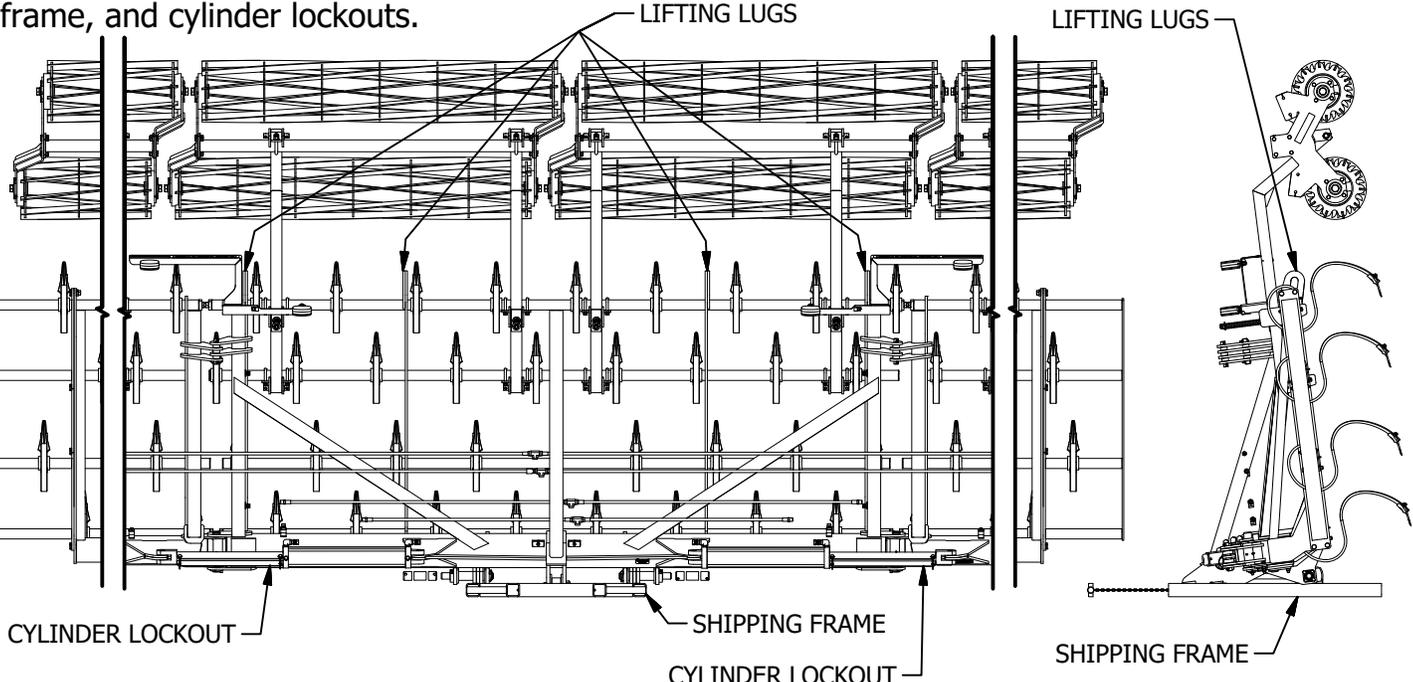


Optional
1 3/4" HD S-Tine
(Required for depths greater than 4")

DEALER UNPACKING & SET-UP

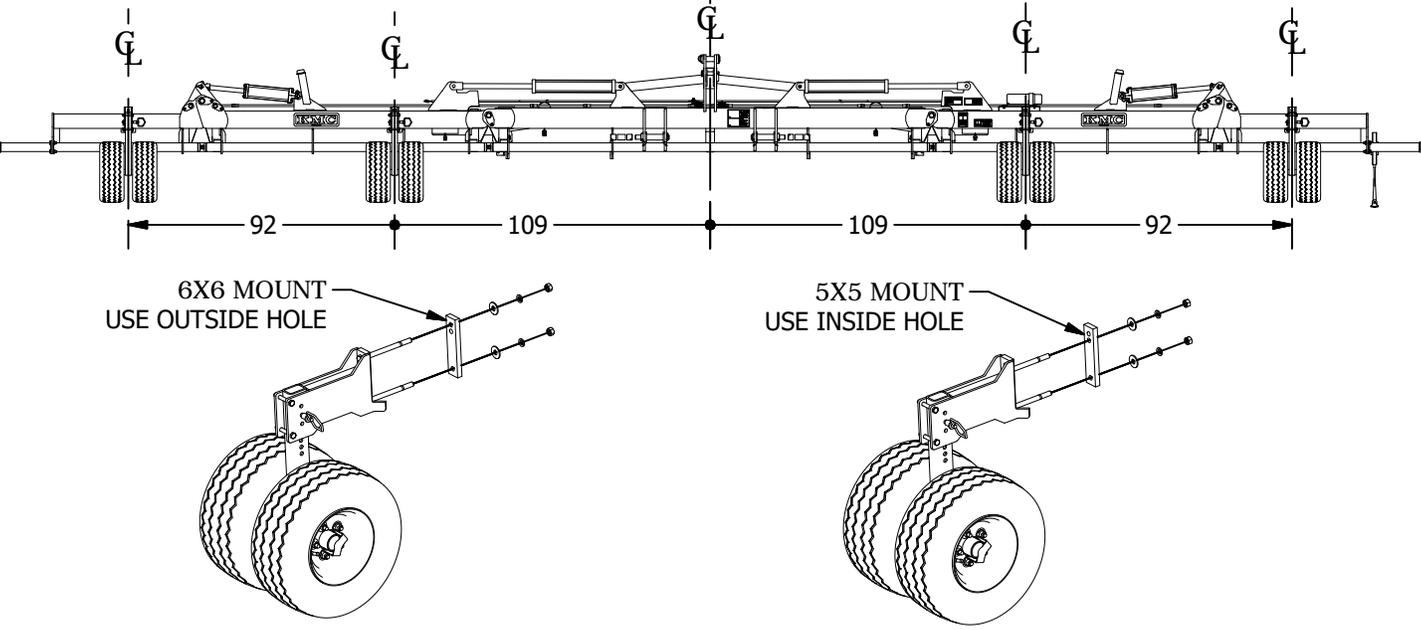
UNPACKING

The KMC 2100 Double Fold Field Cultivator is supplied with a shipping frame that holds the implement nose-down during transportation. It also has lifting lugs on the rear to assist with lifting the implement off of a trailer. The hydraulic cylinders have lockouts that will need to be removed. The diagram below identifies the location of the four (4) lifting lugs, shipping frame, and cylinder lockouts.



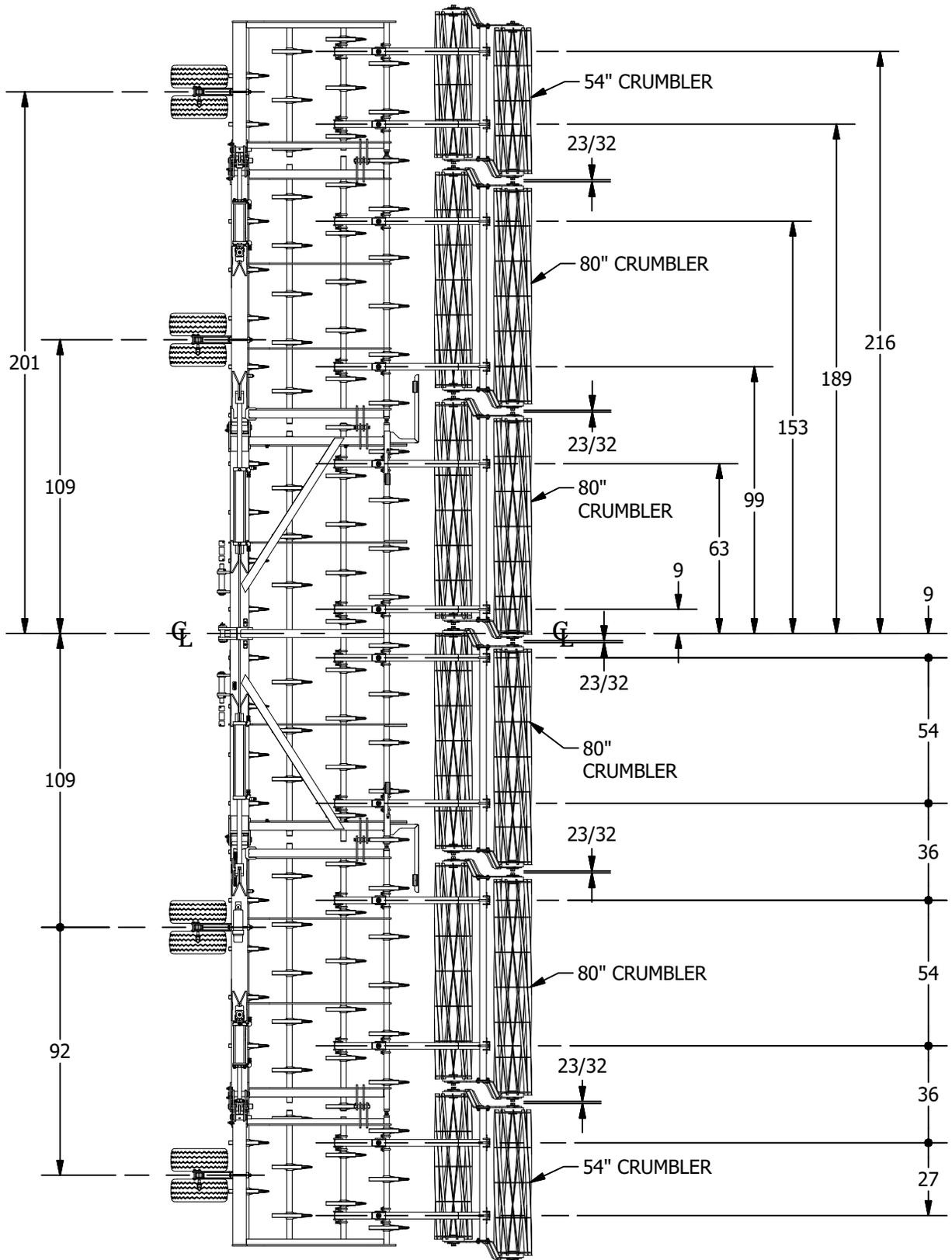
SET-UP

Once the KMC 2100 Double Fold Field Cultivator has been removed from its shipping frame the front gauge wheels will need to be attached. Use the diagram below to assist with installing the front gauge wheels.



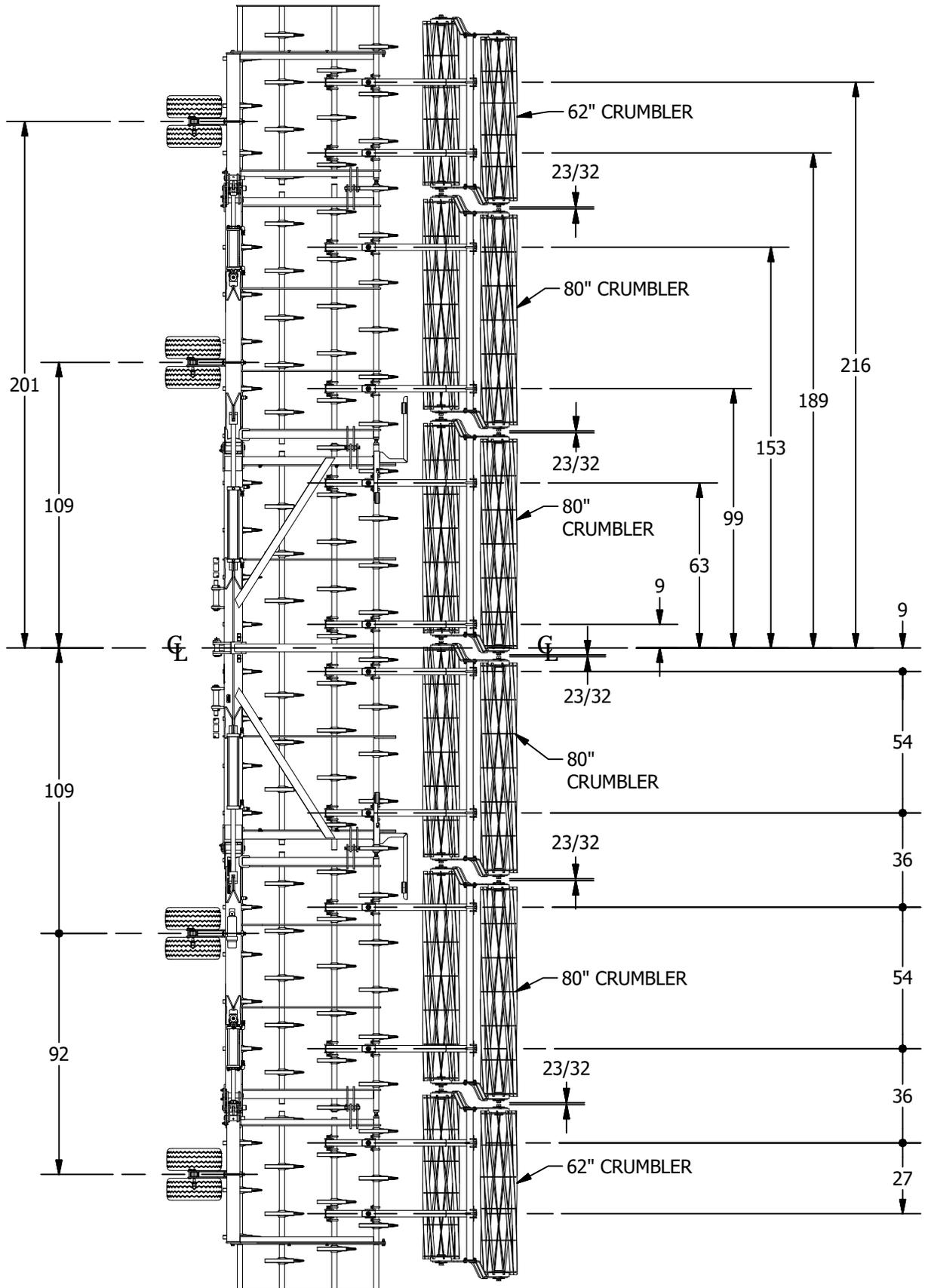
SETUP (continued)

37' DOUBLE FOLD FIELD CULTIVATOR



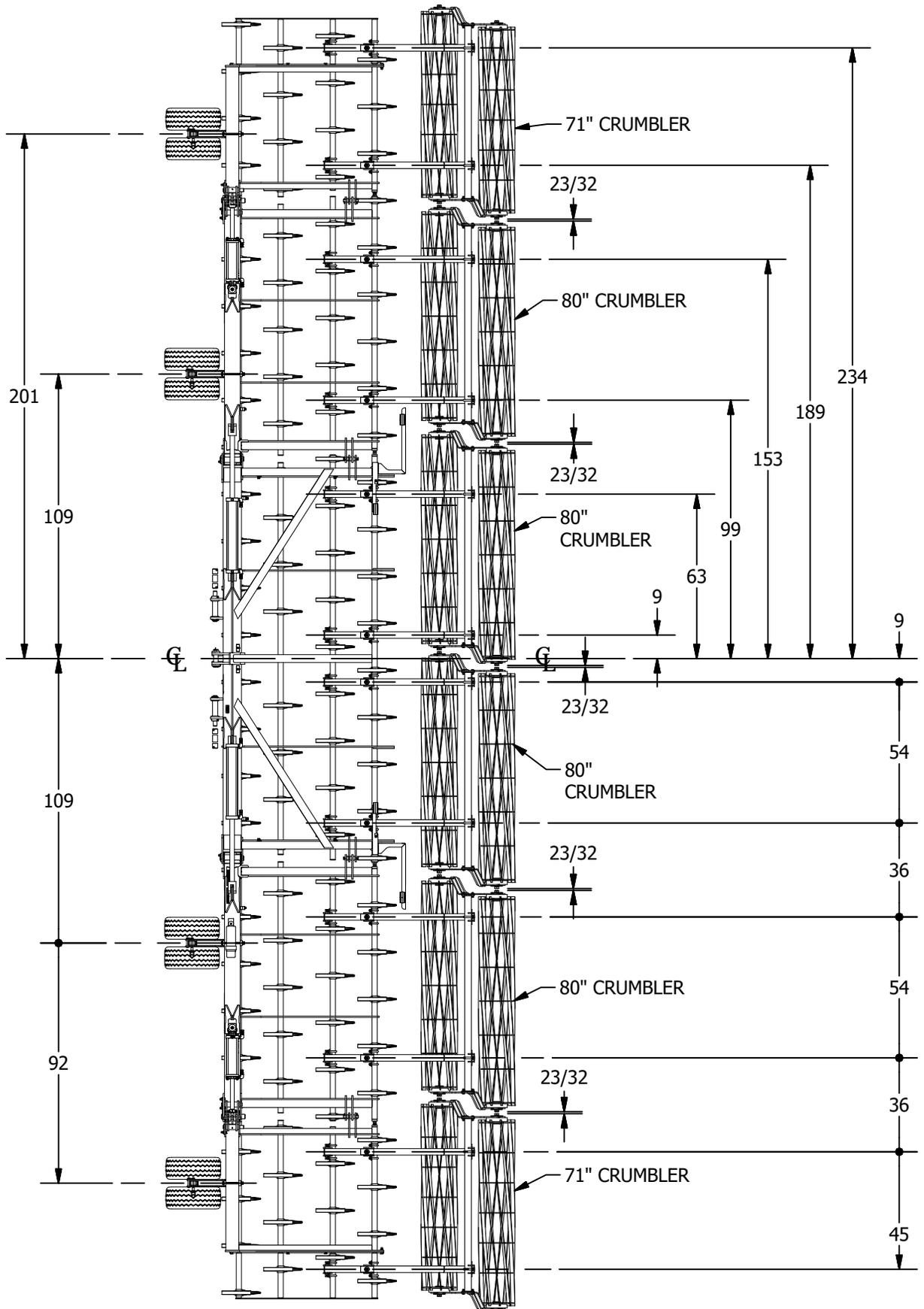
SETUP (continued)

39' DOUBLE FOLD FIELD CULTIVATOR



SETUP (continued)

41' DOUBLE FOLD FIELD CULTIVATOR



CUSTOMER OPERATION

TRACTOR PREPARATION:

Before operating implement, refer to Tractor Operator's Manual for information concerning safe methods of operation, hydraulics, hitch adjustment, tire inflation, wheel adjustments, and tractor weights.

Check tractor brakes and warning lights, make sure they are in proper working order. Check tractor hydraulics oil reservoir and add oil if needed.



WARNING

TRANSPORTING THE IMPLEMENT WILL ADD SIGNIFICANT WEIGHT TO YOUR TRACTOR. MAKE SURE THE TRACTOR IS PROPERLY BALLASTED!

DO NOT EXCEED THE TRACTOR'S LIFT CAPACITY OR BALLAST RECOMMENDATIONS!

FRONT END WEIGHTS:

Use front-end weights as needed to provide effective steering control and front-end stability.

See you tractor Operator's Manual for recommendations on ballasting procedures.

HORSE POWER REQUIREMENTS:

The power requirement for this unit is 1.5 - 3.5 HP per S-Tine, depending on the depth of penetration and ground conditions. Select a tractor with sufficient power to operate this machine.

SWAY BLOCKS:

Sway blocks should be used and adjusted to limit movement in operating position. Your implement should be permitted to sway very little while operating and should be held rigid while transporting.

See your Tractor Operator's Manual.

WHEEL SPACING:

Set tractor wheels so they are equally spaced from center of tractor. If using the tool to penetrate in fields for row crops, set tractor wheels so they are centered between the rows. See your Tractor Operator's Manual for correct tire inflation pressure.

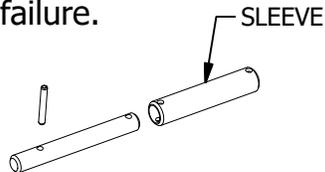
DRAWBAR POSITION:

Place the drawbar in the short, center position to provide maximum clearance between drawbar and tool.

HITCHING TO THE IMPLEMENT:

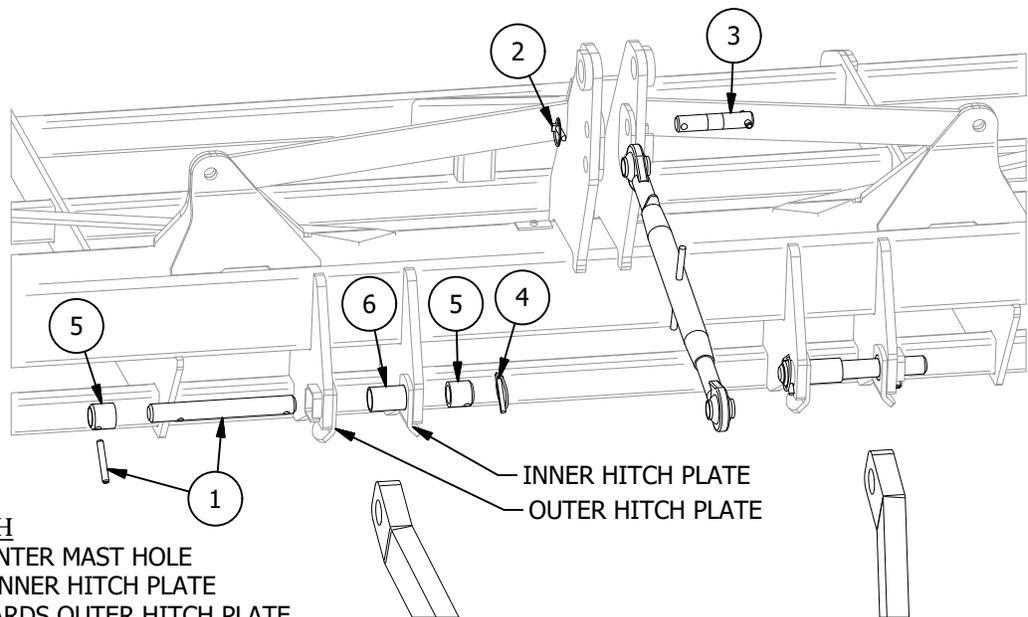
! IMPORTANT !

WARRANTY NOTE: Use of articulated four-wheel drive or track tractors with 3 point lift implements voids the warranty on the Cultivator main frame. Sudden turns or steering corrections made by these types of tractors, when the implement is in the ground, can exert extreme forces through the implement's frame and/or S-Tine components and cause unwarranted fatigue/failure.



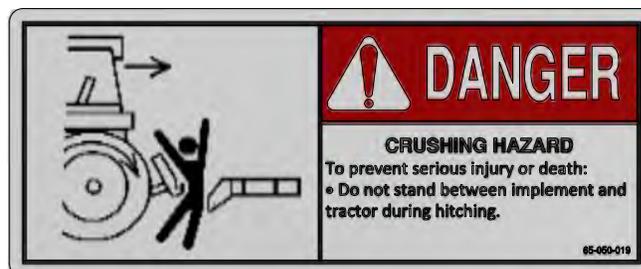
NOTE: ITEM 1(67-081-001) HAS A SLEEVE THAT WILL NEED TO BE REMOVED WHEN USING CAT III HITCHES

ITEM	DESCRIPTION	PART NUMBER	QTY
1	PIN ASSY, CAT IV HITCH	67-081-001	2
2	KLIK PIN, 7/16 X 2	03-050-094	1
3	PIN, MAST	06-081-018	1
4	KLIK PIN, 7/16 X 2-3/4	16-050-094	2
5	BUSHING, CAT III LOWER HITCH	16-024-259	4
6	SPACER, CAT III	05-024-010	2



CAT III 3-POINT HITCH

- TOP LINK PIN IN CENTER MAST HOLE
- SPACER TOWARDS INNER HITCH PLATE
- LOWER LINKS TOWARDS OUTER HITCH PLATE

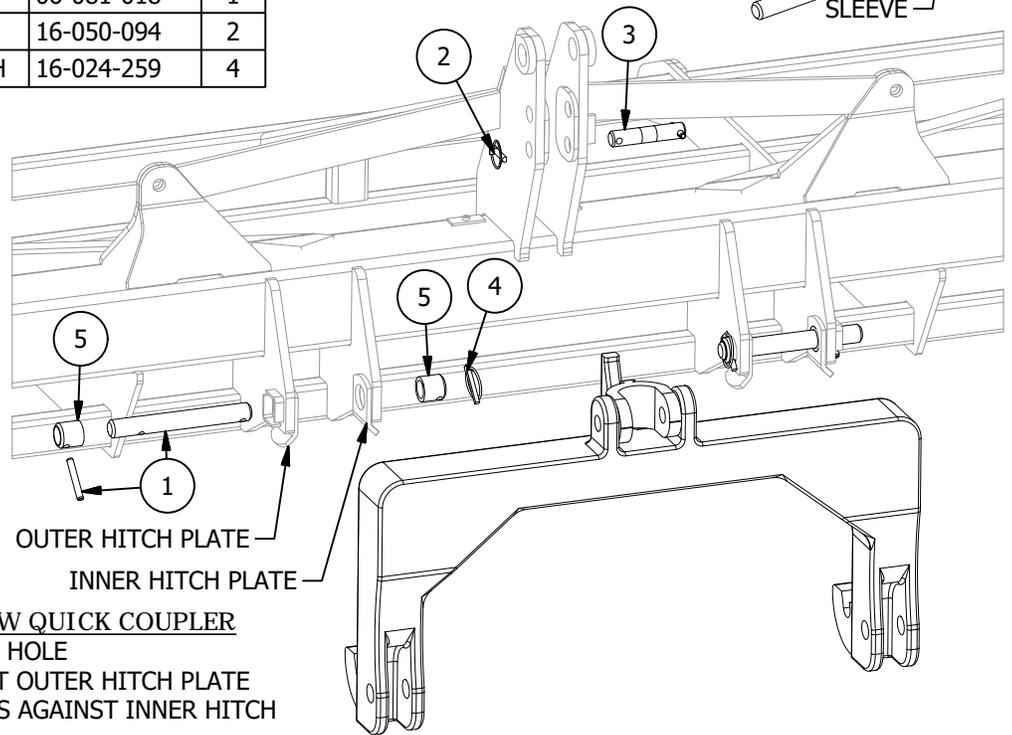


DANGER

DO NOT STAND BETWEEN TRACTOR AND IMPLEMENT DURING HITCHING.

ITEM	DESCRIPTION	PART NUMBER	QTY
1	PIN ASSY, CAT IV HITCH	67-081-001	2
2	KLIK PIN, 7/16 X 2	03-050-094	1
3	PIN, MAST	06-081-018	1
4	KLIK PIN, 7/16 X 2-3/4	16-050-094	2
5	BUSHING, CAT III LOWER HITCH	16-024-259	4

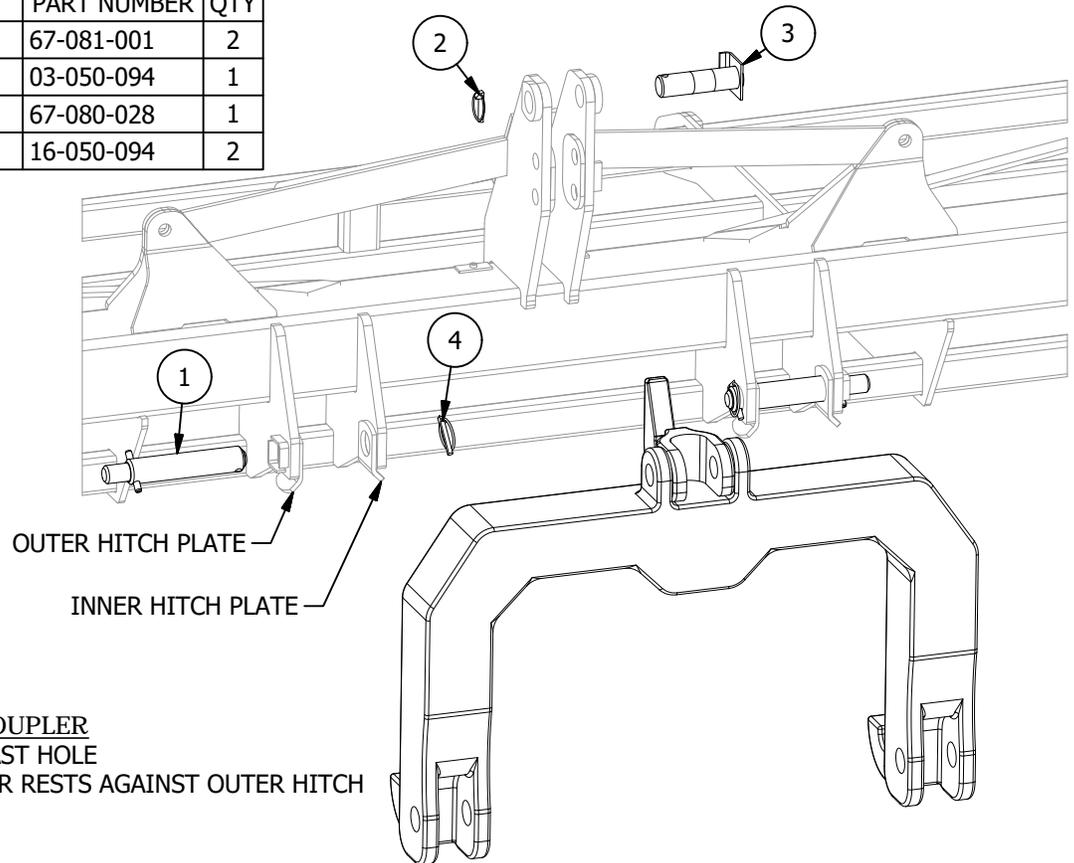
NOTE: ITEM 1(67-081-001) HAS A SLEEVE THAT WILL NEED TO BE REMOVED WHEN USING CAT III HITCHES



CAT III QUICK COUPLER/NARROW QUICK COUPLER

- TOP LINK PIN IN BOTTOM MAST HOLE
- QUICK COUPLER RESTS AGAINST OUTER HITCH PLATE
- NARROW QUICK COUPLER RESTS AGAINST INNER HITCH PLATE

ITEM	DESCRIPTION	PART NUMBER	QTY
1	PIN ASSY, CAT IV HITCH	67-081-001	2
2	KLIK PIN, 7/16 X 2	03-050-094	1
3	PIN, CAT IV MAST	67-080-028	1
4	KLIK PIN, 7/16 X 2-3/4	16-050-094	2



CAT IV NARROW QUICK COUPLER

- TOP LINK PIN IN TOP MAST HOLE
- NARROW QUICK COUPLER RESTS AGAINST OUTER HITCH PLATE



DANGER

DO NOT STAND BETWEEN TRACTOR AND IMPLEMENT DURING HITCHING.

IN THE FIELD

The KMC Double Fold Field Cultivator is an excellent seed bed preparation tool when used properly. It's recommended uses in clean and light residues are:

- Preparing a level uniform seed bed
- Drying out wet soils
- Mechanical control of early weeds
- Incorporation of herbicides, fertilizers, and other materials

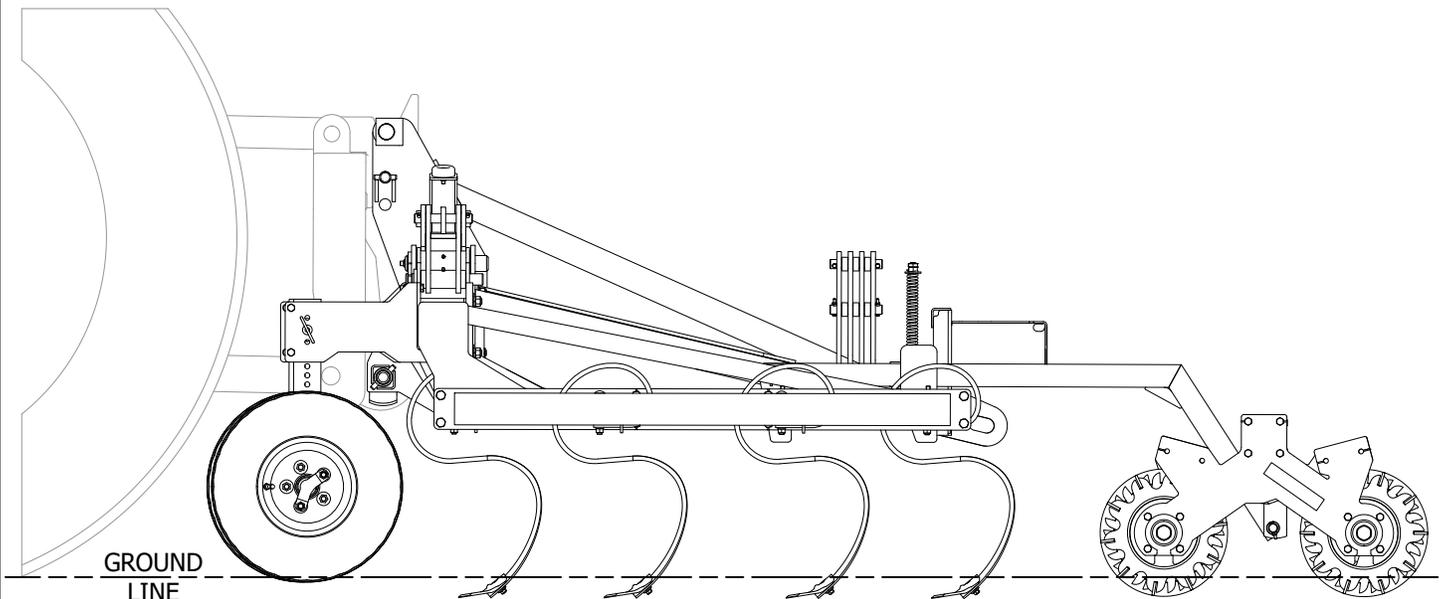
PREPARING THE CULTIVATOR FOR THE FIELD:

First, check the machine to be sure it is assembled properly (see assembly instructions for more details). Make sure all shanks have sweeps attached and that crumbler attachment linkages are secure and will allow crumbler to float properly.

Do not attempt to set cultivator working depth or pressure on the crumbler units until you reach the field and are ready to begin operation.

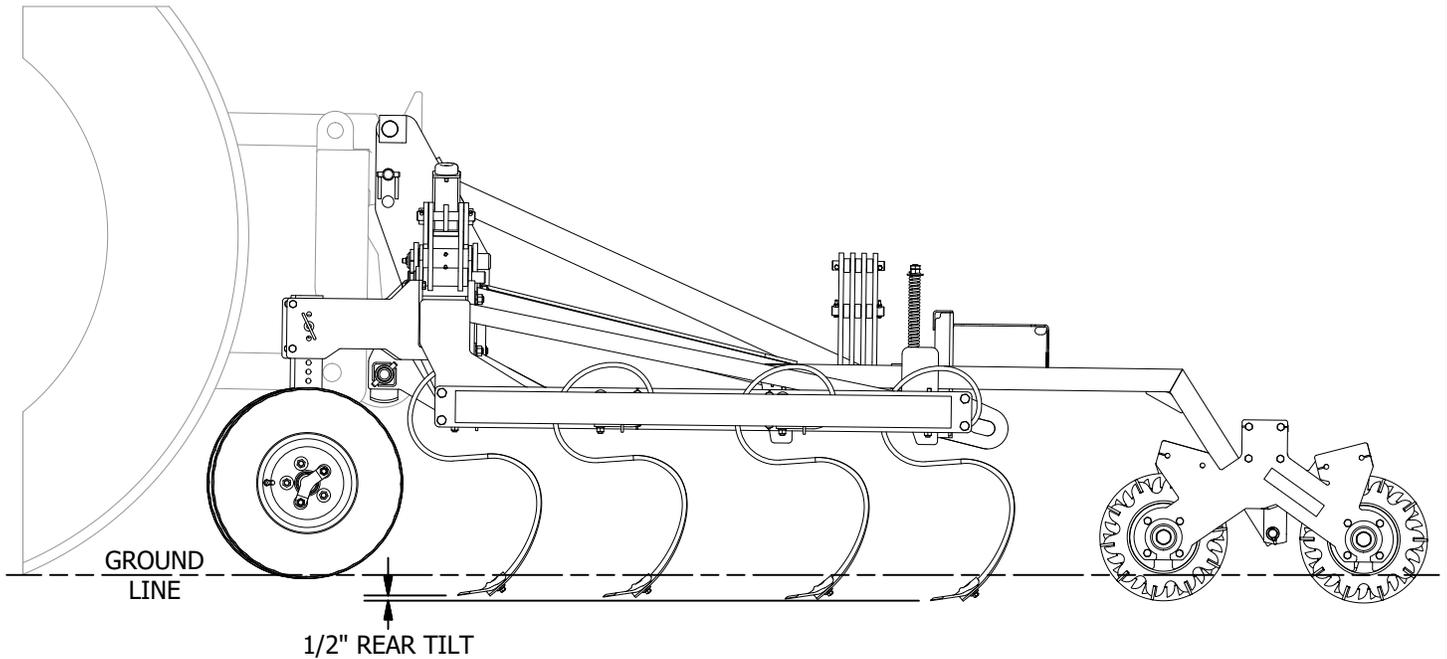
LEVELING:

Leveling the cultivator is the most important set-up operation of your cultivator, especially if you desire to incorporate chemicals while preparing your seed bed. The reasoning behind this is that you do not want rear tines running deeper than the front tines, which would plow up new soil and would have little opportunity for adequate mixing. Also, rear shanks running deep makes it more difficult for the crumblers to level the seed beds.



LEVELING (continued)

When operating the machine for uses other than incorporation of herbicides, the field cultivator frame may be adjusted with the front slightly higher than the rear. Running the front row of tines 1/4" to 1/2" shallower than the rear will result in lower draft or horsepower requirements.



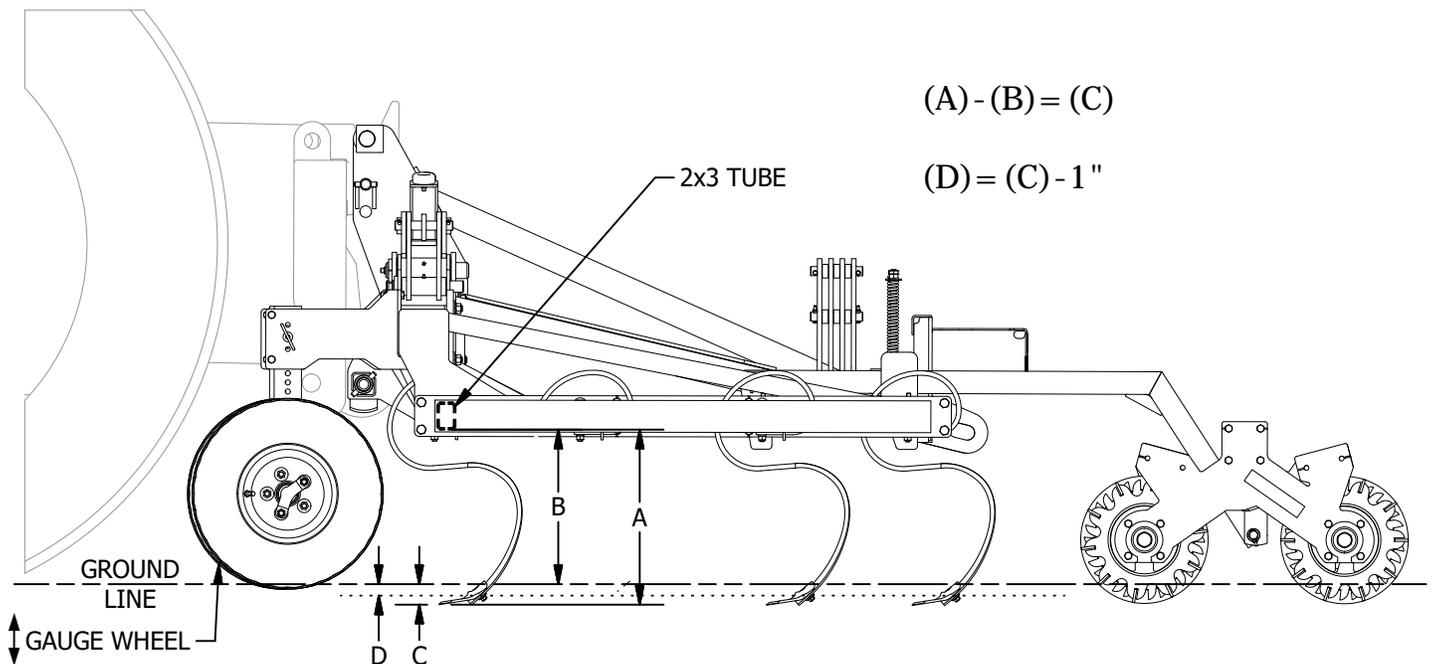
SETTING THE WORKING DEPTH

Setting the working depth(C) is a very important step, especially when chemical incorporation is to be performed by the cultivator.

To set the working depth, adjust the gauge wheel up or down to get the desired shank penetration into the soil. There are two ways to determine cultivation depth:

1. Remove soil from around a front shank after plowing a few feet, then measure the depth of the point of the shank to the undisturbed ground line.
2. Measure the distance from the top of the undisturbed ground to the bottom of the 2x3 tube the S-Tines are mounted to(B), then subtract this dimension from 19.5"(A). This value will be the working depth(C).

Incorporation depth(D) can be estimated at one inch less than the working depth(C).



The "S" Tine working depth(C) should be 2" to 6" deep in most normal soil conditions. (When running deeper than 4", the optional 1 3/4" HD tine is required.)

For drying out wet soils, working depth(C) should be 1-1/2" to 2-1/2" . More than one pass may be required in some wetter soils and the second pass may be slightly deeper than the first.

Recommended working depth(C) is no deeper than the seed is to be planted. Preparing a seedbed too deeply may cause excessive moisture loss and poor seed germination/growth, since the seed needs to be placed in firm moist soil. Running the machine excessively deep will also require more horsepower.

If chemical incorporation is to be used, working depth(C) should be no more than 1" deeper than incorporation depth(D).

CRUMBLER ADJUSTMENT

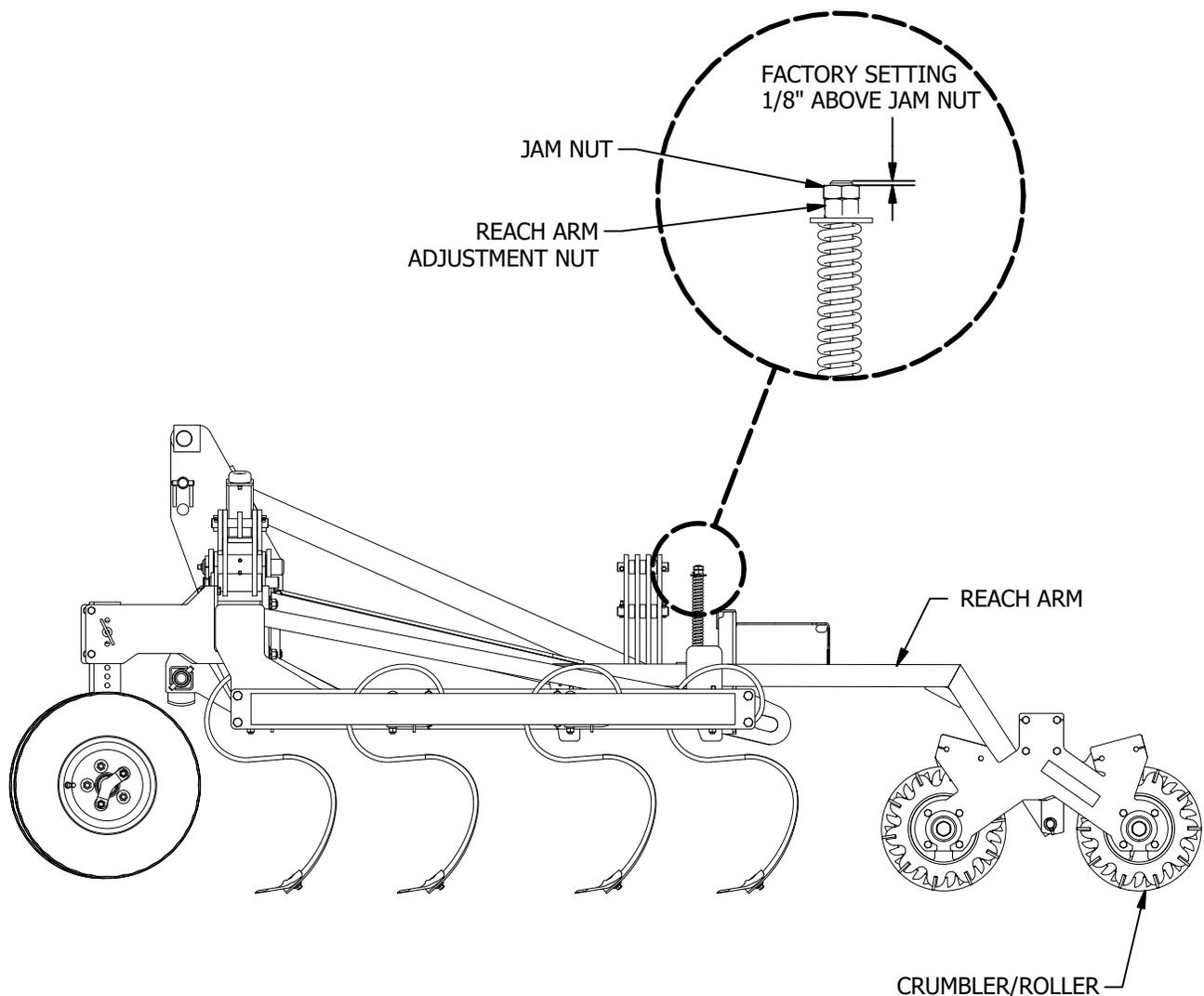
If the crumbler attachment is not leveling the soil properly:

1. Check levelness of machine.
2. Make sure S-Tines are free of grass/debris.
3. Check pressure on crumbler attachment and add pressure if necessary.

Adjustment of the crumbler pressure is made by tightening or loosening the reach arm adjustment nut.

1. Loosen jam nut.
2. Tighten or loosen reach arm adjustment nut.
3. Re-tighten jam nut.

Factory setting for reach arm adjustment nut is 1/8" threads showing above the jamnut.

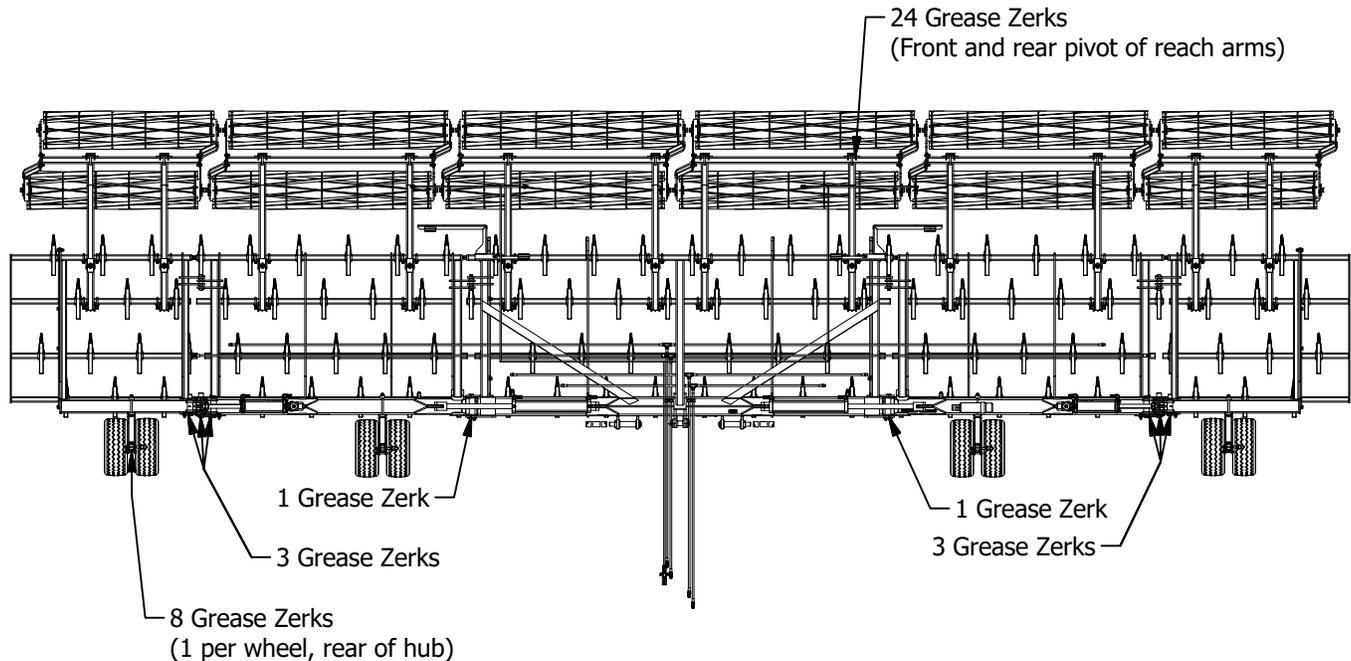


MAINTENANCE PROCEDURES

LUBRICATION

Grease all pivot joints every 8-10 hours of use, or every 125-130 acres, whichever comes first.

Annually: Check gauge wheel hubs for grease and pack if necessary.



STORAGE

Coat all exposed cylinder rods with grease. If cylinder rods are left extended and unprotected, rust may build up on rods & cause seal problems.

SPECIAL CONSIDERATIONS

- The machine should be lifted when making sharp turns.
- Do not backup with machine in the ground.
- After the first few hours of operation, check all bolts to make sure they are still tight.
- The optional 1 3/4" HD tine is required for depths greater than 4" or in severe conditions. Bending standard tines by operating them in severe conditions is not covered under warranty.

The following is a list of serial numbers issued to our machines at the beginning of each year. To determine when a unit was made, find the range within which the particular serial number falls. It would have been produced between January 1 to December 31 of that year.

YEAR

SERIAL NUMBERS

2016
2017
2018

89097-89924
89925-91270
91271-



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