McFARLANE MFG. CO. INC. Sauk City, Wisconsin

MANUFACTURERS OF QUALITY AGRICULTURAL EQUIPMENT SINCE 1936

OPERATOR'S MANUAL
AND
PARTS LISTING
FOR THE

Double & Single Rolling Basket Mounted Harrow

VERSION: 13516 (9-12)

TO THE OWNER AND OPERATORS

Before assembling or operating this unit, READ THIS MANUAL THOROUGHLY. To obtain the best performance of the unit, familiarize yourself with each component and adjustment. Store this manual where it can be readily available for future reference. In the event that the harrow or any part of the unit should be sold, be sure that the new owner receives a copy of this manual for their reference.

1330 DALLAS STREET, P.O. BOX 100
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TOLL FREE: (800) 627-8569 FAX: (608) 643-3976

TABLE OF CONTENTS

INTRODUCTION

Thank you for purchasing your new McFarlane rolling basket and mounted harrow. We know that you will get many years of dependable service from this modernly designed unit.

You may have had a particular application in mind when you purchased this unit. There are actually many uses for the McFarlane harrow including incorporation of herbicides and pesticides, leveling and smoothing tilled soil, and covering of broadcast seeds. Contact your dealer if you would like more information or have questions concerning these or other applications.

SAFETY

TAKE NOTE! THIS SAFETY ALERT SYMBOL FOUND THROUGHOUT THIS MANUAL IS USED TO CALL ATTENTION TO INSTRUCTIONS INVOLVING YOUR PERSONAL SAFETY AND THE SAFETY OF OTHERS. FAILURE TO FOLLOW THESE INSTRUCTIONS CAN RESULT IN INJURY OR DEATH.

THIS SYMBOL MEANS

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

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.

WARNING: Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury.

CAUTION: Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury.

CONTACT INFORMATION

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

McFarlane Mfg. Co., Inc.
1330 Dallas Street
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Sauk City, WI 53583

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TOLL FREE: (888) 627-8569
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SAFETY FIRST!

Equipment Safety Guidelines

Safety of the operator is one of the main concerns in designing and developing a new piece of equipment. Designers and manufacturers build in as many safety features as possible. However, every year many accidents occur which could have been avoided by a few seconds of thought and a more careful approach to handling equipment. You, the operator, can avoid many accidents by observing the following precautions. To avoid personal injury, study the following precautions and insist that those working with you, or for you, follow them.

Replace any CAUTION, WARNING, DANGER, or instruction safety decal that is not readable or missing.

Do not attempt to operate this equipment under the influence of drugs or alcohol.

Review the safety instructions with all users annually.

This equipment is dangerous to children and persons unfamiliar with its operation. The operator should be a responsible adult familiar with farm machinery and trained in this equipment's operations. **Do not allow persons to operate or assemble this unit until they have read this manual and have developed a thorough understanding of the safety precautions and of how it works.**

To prevent injury, use a tractor equipped with a Roll Over Protective System (ROPS). Do not paint over, remove, or deface any safety signs or warning decals on your equipment. Observe all safety signs and practice the instructions on them.

Never exceed the limits of the harrows. If their ability to do a job, or to do so safely, is in question **- DO NOT TRY IT**.

Safety Sign Care

- Keep safety signs clean and legible at all times.
- Replace safety signs that are missing or have become illegible.
- Replacement parts that display a safety sign should display the same sign.
- Safety signs are available from your Distributor, Dealer Parts Department, or the factory.

How to Install Safety Signs:

- Be sure that the installation area is clean and dry.
- Decide on the exact position before you remove the backing paper.

 **Remember**:

Your best assurance against accidents is a careful and responsible operator. If there is any portion of this manual or function you do not understand, contact your local authorized dealer or the manufacturer.

 **Before Operation:**

- Carefully study and understand this manual.
- Do not wear loose fitting clothing which may catch in moving parts.
- Always wear protective clothing and substantial shoes.
- It is recommended that suitable protective hearing and (eye protection) sight protectors be worn.
- Give the unit a visual inspection for any loose bolts, worn parts, or cracked welds, and make necessary repairs. Follow the maintenance safety instructions included in this manual.
- Be sure that there are no tools lying on the unit.
- Make sure that the area is clear of children, animals, and other obstacles before using.
- Don't hurry the learning process or take the unit for granted. Ease into it and become familiar with your new equipment. Practice operation of your new unit. Completely familiarize yourself and other operators with its operation before using.

 **During Operation:**

- **NO PASSENGERS ALLOWED** - Do not carry passengers anywhere on, or in, the tractor or equipment, except as required for operation.
- Keep hands and clothing clear of moving parts.
- Do not clean, lubricate, or adjust your equipment while it is moving.
- When altering operation, even periodically, set the tractor or towing vehicle brakes, shut off the engine, and **remove the ignition key.**
- Periodically clear the equipment of brush, twigs, or other materials to prevent buildup of dry combustible materials.
- Avoid overhead wires or other obstacles. Contact with overhead lines could cause serious injury or death.
- Keep all bystanders, pets, and livestock clear of the work area, particularly when raising or lowering harrow sections.
- As a precaution, always recheck the hardware on equipment periodically. Correct all problems. Follow the maintenance safety procedures.

Following Operation:

- Store the unit in an area away from human activity on a hard level surface.
- Do not park equipment where it will be exposed to livestock for long periods of time. Damage and livestock injury could result.
- Do not permit children to play on or around the stored unit.

Performing Maintenance:

- Good maintenance is your responsibility. Poor maintenance is an invitation to trouble.
- Before working on this machine, stop the tractor or towing vehicle, set the brakes, lower into field position, shut off the engine and **remove the ignition keys.**
- **Always** use safety support and block the wheels. When performing maintenance, never use a jack to support the machine. Assist the jack with blocks or other adequate support.
- Use extreme caution when making adjustments.
- After servicing, be sure all tools, parts, and service equipment are removed.
- Never replace hex bolts with less than grade five bolts unless otherwise specified.
- Where replacement parts are necessary for periodic maintenance and servicing, genuine factory replacement parts must be used to restore your equipment to original specifications. The manufacturer will not claim responsibility for damages as a result of the use of unapproved parts and/or accessories.
- If equipment has been altered in any way from original design, the manufacturer does not accept any liability for injury or warranty.

MAINTENANCE AND SERVICE SCHEDULE

- Prior to each use, check for loose bolts and replace lost or worn parts.
- Remove dirt and debris from the harrow sections before storage.
- Parts diagrams and listings for service and repair references may be found in appendix B.

OPERATING SUGGESTIONS

There are some important points to remember in order to obtain the best possible results from your McFarlane harrow.

- To maximize the harrow's performance, it should be towed at speeds ranging from six to nine (6 - 9) mph. This keeps the field debris moving through the harrow sections and avoids clogging. The best results will be obtained after the paint has been scoured from the teeth.
- Adjust the pull tube insert height so that when the harrows are being pulled in the field position the pull chains pull the sections at a slight upward angle.
- Adjust the lift chain length so that when the harrows are in the transport position the harrow teeth don't drag on the ground. (Approximately 2 to 3 links loose when in the field position.)

ASSEMBLY SUGGESTIONS

- You will find the machine is easier to assemble if the set-up instructions are followed in the order given in the manual.
- Whenever the terms "left" and "right" are used, it should be understood to mean when standing behind and facing the unit. This is also known as the "driver's left" and the "driver's right."
- The term "field position" refers to the position the harrows are in when the unit is being used in the field - that is, with the harrow sections down.
- The term "transport position" refers to the position the harrows would be in when the unit is being transported from place to place - that is, with the harrows up.
- When assembling this unit, make sure that the parts are securely held before proceeding to the next step.
- Bolt torque specifications are given in appendix A.
- Layout diagrams for each unit may be found in appendix C. Mark the page with the diagram that refers to your unit, it will be referred to periodically throughout the manual.

STEP - BY - STEP ASSEMBLY INSTRUCTIONS

Determine the Layout

Spend some time on this first step to make sure that you have it correct, it will save time later on.

Because there are so many makes and models of cultivators that the rolling basket harrow package can be attached to, the placement of the main arms cannot be explicitly predetermined. Therefore, it is necessary for you to determine where to mount them on the back of the cultivator.

If you are attaching the rolling baskets without the harrow sections, disregard all references to the Pull Arms and Harrow sections. It is only necessary to space the Main Arms as wide as possible and still be able to attach the basket assemblies.

Because of the placement of the Pull Arms, what you need to determine is the locations on the rear tool bar of the cultivator that the Main Arms cannot be attached. Look at the diagram in appendix C, each section of the cultivator will have either one, two or three harrow sections attached to it. Decide which harrow sections go where behind your cultivator and write in the dimensions and locations on the drawing.

Once you have spent a little time on the above and understand what is meant:

1. Determine which harrow sections go where behind the cultivator. Use appendix C for assistance in harrow information and identification.

2. Decide where each Main Arm should go on the rear tool bar of the cultivator. The exact spacing of the Main Arms is not important, but try to keep them within a few inches of evenly spaced across the chisel plow tool bar. (Remember Main Arms cannot go where the pull arms go.)

3. Use the dimensions in appendix C to determine where each Pull Arm should go on the Cross Tubes. Note: Pull Arm placement should originate at the Center Line of the cultivator (27 1/2” Interval = 13 3/4” each way from Center Line to first Pull Arm.)

4. The Hitch Spacing and Interval Spacing for the particular harrow sections needed for your application determines the Pull Arm locations. Again, refer to appendix C for this information.

Attach the Main Arms

Using the locations that you determined for the Main Arms in the previous section, attach the Main Arms to the rear tool bar of the cultivator. Use the 5/8" bolts, lock washers and hex nuts. Do Not tighten the bolts yet.

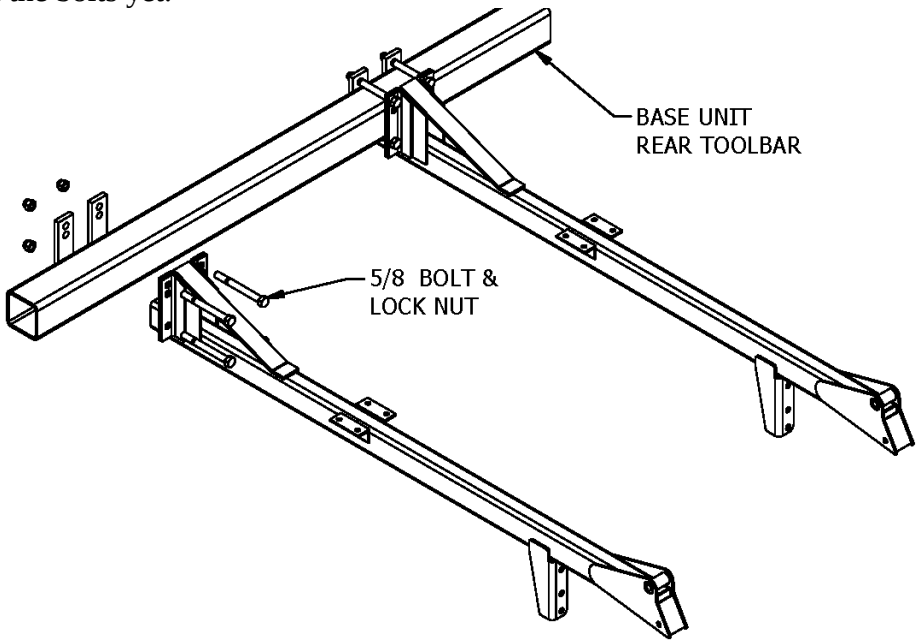


Figure 1

Attach the Cross Tubes & Pull Arms

1. Position the Cross Tubes in the across the bracket on the Main Arms and attach using the fasteners shown. Center the tube on the section.

2. Using the Hitch Spacing and 21" Interval dimensions in the diagram in appendix C, attach the Pull Arms to the Cross Tube at the desired locations.

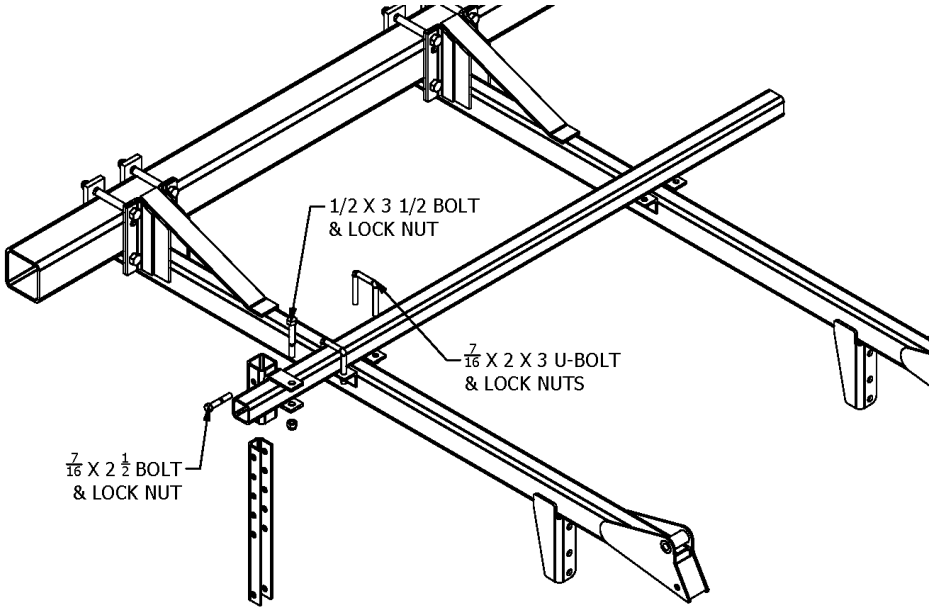


Figure 2

Harrow Identification

The number of teeth on one bar is the same as the first digit of the harrow identification number. The last number is the number of bars per section. For instance an FH-600-3 would have six teeth per bar and 3 bars. An FH-800-3 would have eight teeth per bar and 3 bars. An "H" at the end of the identification number indicates a heavy duty harrow section.

Attach the Harrow Sections

1. Attach the 4 link pull chains to the Pull Arms using the 1/2" x 2" bolt and lock nut.

2. Attach the harrow sections to the pull chains using the 1/2" x 1 1/2" bolts, flat washers and lock nuts.

3. Pull Arm height can be changed by moving the insert channel up or down.

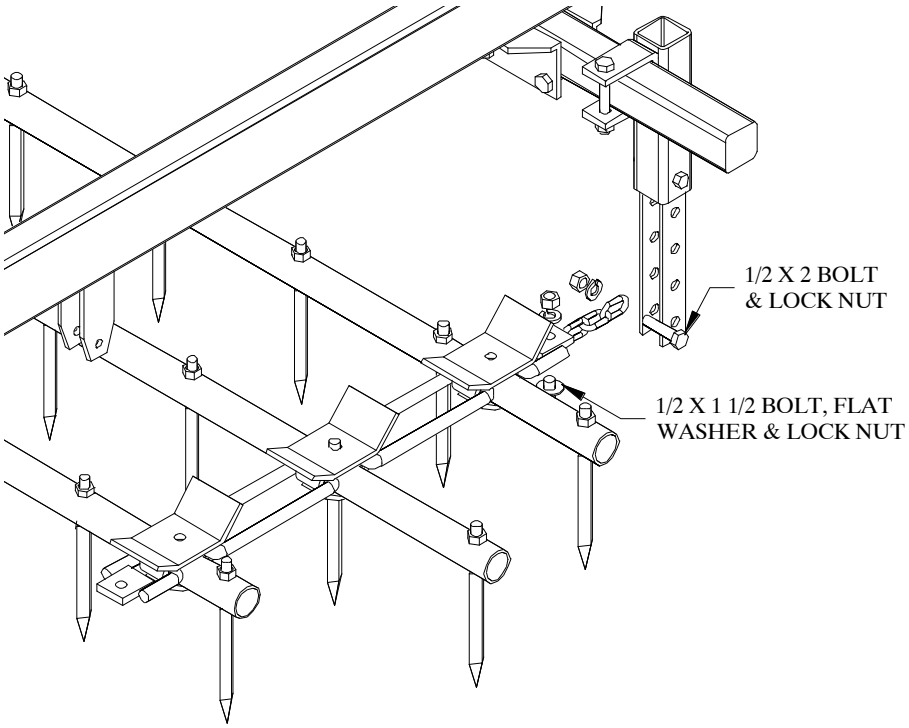


Figure 3

Attach the Lift Chains and Pivot Arms

1. Attach the Swing Arm to the Main arm using a 5/8 x 4 bolt and lock nut. Start with the top hole the Swing Arm. The bottom hole can be used if additional height clearance is needed.

2. Secure the ½ x 5 eye-bolt to the top hole on the Main Arm lift bracket by placing a ½" nut on either side of the bracket. Do not tighten yet.

3. Attach the Tension Spring to the eye-bolt on one end and a 4 link chain on the other end using the lock clips and 7/16 x 1 ¼ bolts and lock nuts. Connect the chain to the Swing Arm using a shackle. The length of the chain can be adjusted to obtain the optimum operating height of the rolling basket.

4. Attach the Lift Chain by first placing a square washer onto a 7/16 x 1 ½ bolt and then attaching the chain to the lift arm as shown. Secure with a 7/16 flat washer and lock nut.

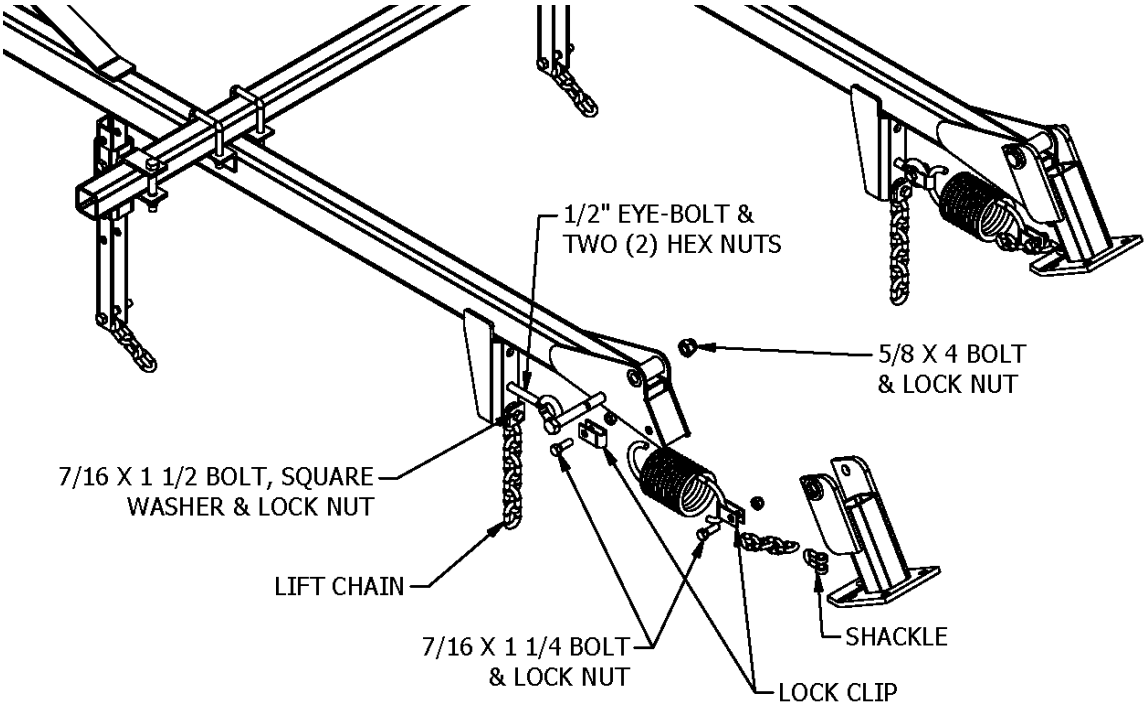


Figure 4a

Double Rolling Basket

Attach the Lift Chains and Pivot Arms

5. Attach the Swing Arm to the Main arm using a 5/8 x 4 bolt and lock nut.

6. Secure the 1/2 x 5 eye-bolt to the top hole on the Main Arm lift bracket by placing a 1/2" nut on either side of the bracket. Do not tighten yet.

7. Attach the Tension Spring to the eye-bolt on one end and a 4 link chain on the other end using the lock clips and 7/16 x 1 ¼ bolts. Connect the chain to the Swing Arm using a 7/16 x 2 bolt and lock nut. The length of the chain can be adjusted to obtain the optimum operating height of the rolling basket.

8. Attach the Lift Chain by first placing a square washer onto a 7/16 x 1 1/2 bolt and then attaching the chain to the lift arm as shown. Secure with a 7/16 flat washer and lock nut.

9. Attach the Pivot Bracket to the Swing Arm using the 5/8 x 5 bolts and lock nuts. Insert the 1/2 x 5 bolt through Pivot Bracket and through the angle on the Swing Arm. Secure with a lock nut. This prevents the rolling basket from rotating too far forward or backward.

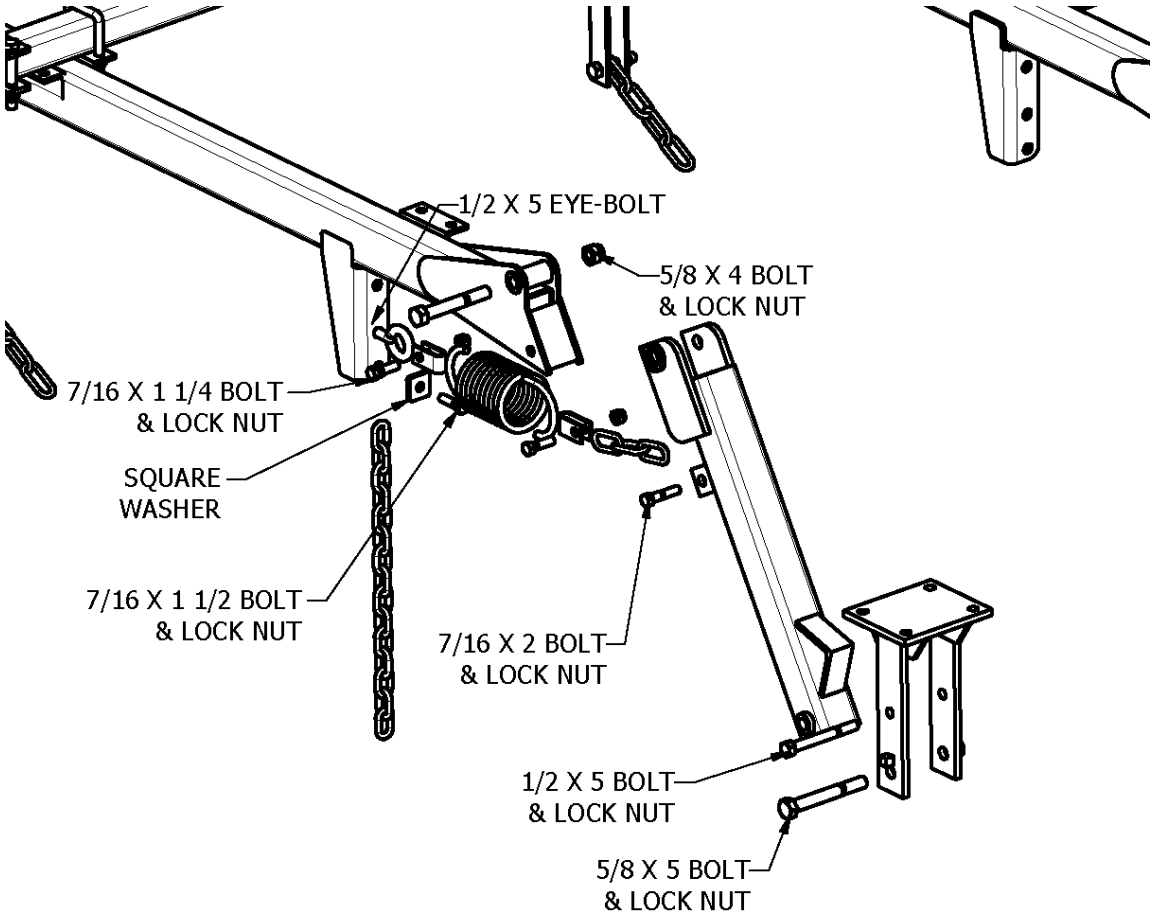


Figure 4b

Connect the Lift Chains to the Harrow Sections

Attach the end of the Lift Chain to the rear bar of the harrow section using the tube clamp and the 7/16" x 1 ½" bolt and locking nut.

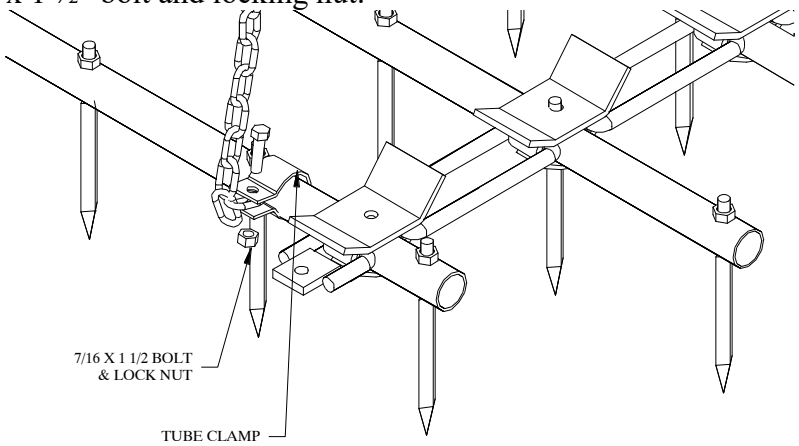


Figure 5

Single Rolling Basket

Attach the Single Rolling Baskets

1. Referring to the layout in appendix C, position the rolling baskets behind the harrow sections. The diagram shows which baskets go behind each of the different harrow sections. Be sure to work from the center of the unit outwards. Check to make sure that the Pivot Arms can be attached to the rolling basket assembly cross tube.
2. If the basket assembly can be attached to the Pivot Arms, tighten the Main Arms to the rear tool bar. If the basket assembly cannot be attached to the Pivot Arms, the Main Arms will need to be moved so that they can be attached.
3. Attach the Rolling Basket Assembly to the Pivot Arm using ½ x 3 x 4 u-bolts and lock nuts.

Note: All the Main Arms must be tightened to the rear tool bar before attaching the basket assemblies.

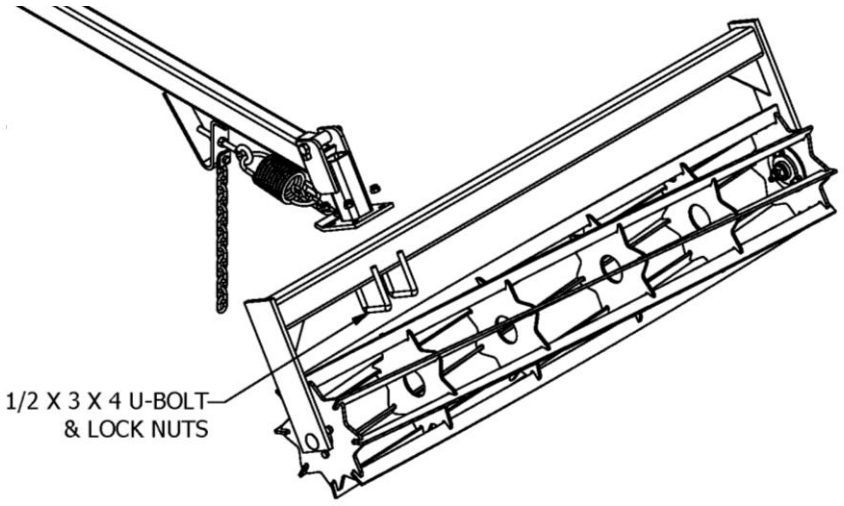


Figure 6

Double Rolling Basket

Attach the Double Rolling Baskets

1. Referring to the layout in appendix C, position the rolling baskets behind the harrow sections. The diagram shows which baskets go behind each of the different harrow sections. Be sure to work from the center of the unit outwards. Check to make sure that the Pivot Arms can be attached to the rolling basket assembly cross tube.
2. If the basket assembly can be attached to the Pivot Arms, tighten the Main Arms to the rear tool bar. If the basket assembly cannot be attached to the Pivot Arms, the Main Arms will need to be moved so that they can be attached.
3. Attach the Rolling Basket Assembly to the Pivot Arm using ½ x 3 x 4 u-bolts and lock nuts.

Note: All the Main Arms must be tightened to the rear tool bar before attaching the basket assemblies.

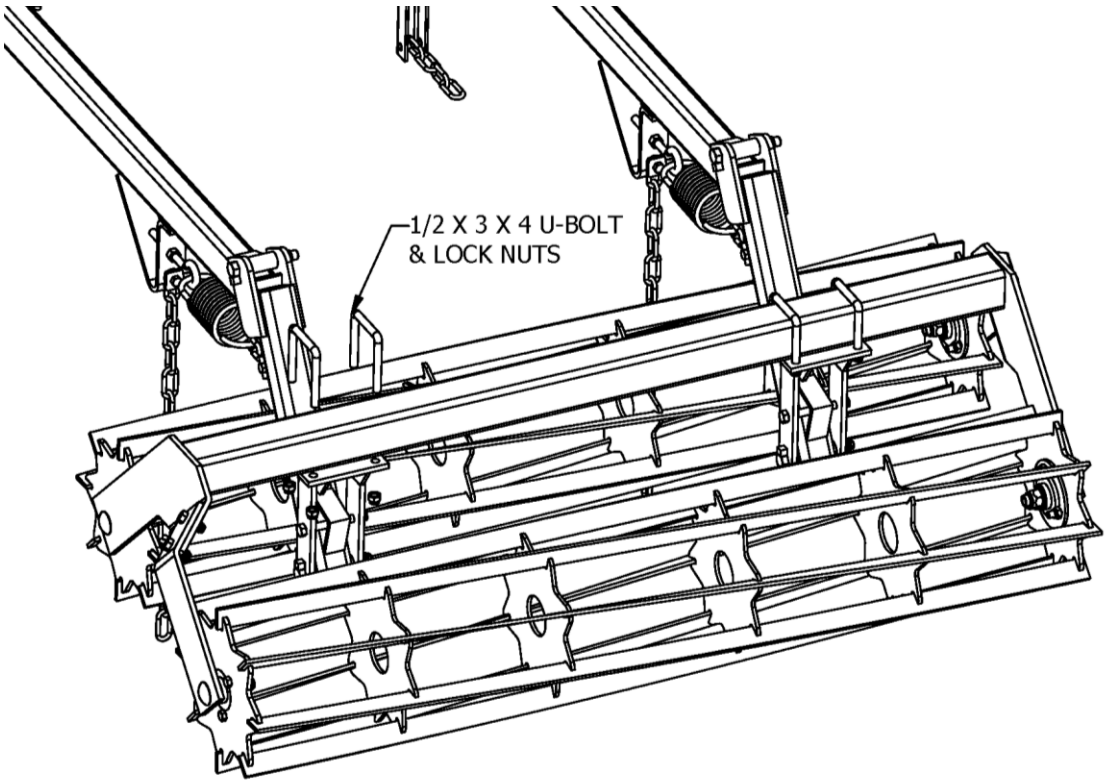


Figure 6

Final Adjustments

1. Lower the unit into the field position.
2. Pull the completed unit ahead a few feet to check that everything is properly assembled and that nothing is binding or misaligned.
3. Check to make sure that all bolts and fasteners are tight
4. Adjust the pull tube heights so that when the harrows are being pulled in the field position the pull chains pull the harrow sections at a slight upward angle.
5. Adjust the lift chains so that when the harrows are in the transport position the harrow teeth don't drag on the ground.
6. Adjust the basket tension spring eye-bolt to put the desired ground pressure on the basket.
7. After the first few hours of operation, check all fasteners and tighten if necessary.

This completes the assembly of your rolling basket and mounted harrow. Before using the unit, double check that all components have been assembled properly. If there are any questions regarding any of the assembly steps, contact your local dealer for an explanation. Do not operate this or any equipment unless you are sure that all components operate as they were designed to operate.

BOLT TORQUE SPECIFICTIONS

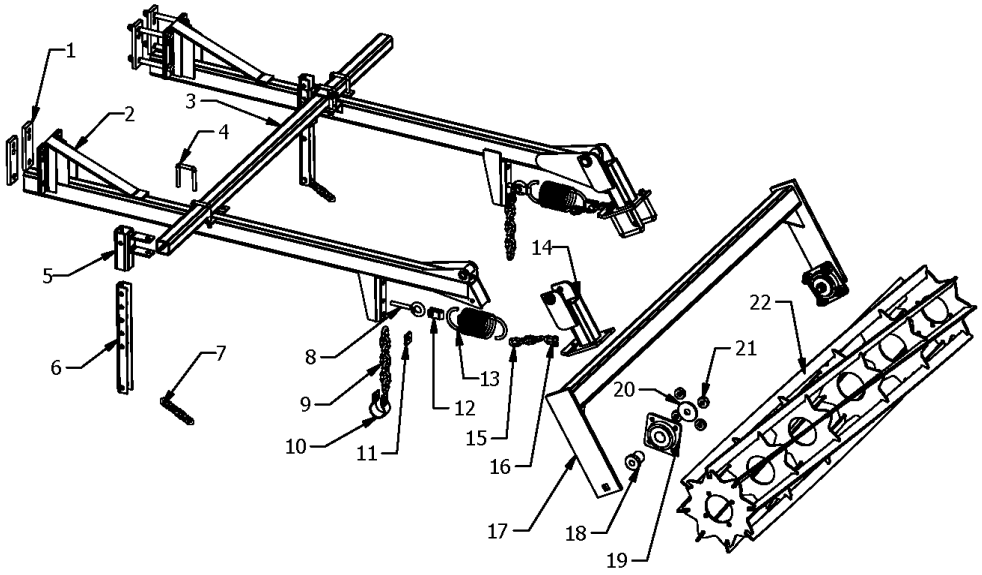
Coarse Thread Series		
Nut Size and Threads per Inch	Nut Tightening Torque (lb.ft.)	
Grade C Nuts		
	Max.	Min.
1/4 - 20	14.7	10
5/16 - 18	22.3	15.2
3/8 - 16	39	28
7/16 - 14	60	44
1/2 - 13	88	63

Fine Thread Series		
Nut Size and Threads per Inch	Nut Tightening Torque (lb.ft.)	
Grade C Nuts		
	Max.	Min.
1/4 - 28	14.7	10
5/16 - 24	23.4	18.4
3/8 - 24	41	30
7/16 - 20	60	44
1/2 - 20	98	70

9/16 - 12	134	98
5/8 - 11	172	127
3/4 - 10	295	218
7/8 - 9	440	317
1 - 8	651	506

9/16 - 18	134	98
5/8 - 18	176	127
3/4 - 16	295	218
7/8 - 14	440	317
1 - 14	703	610

SINGLE ROLLING BASKET
PARTS DIAGRAM & LIST

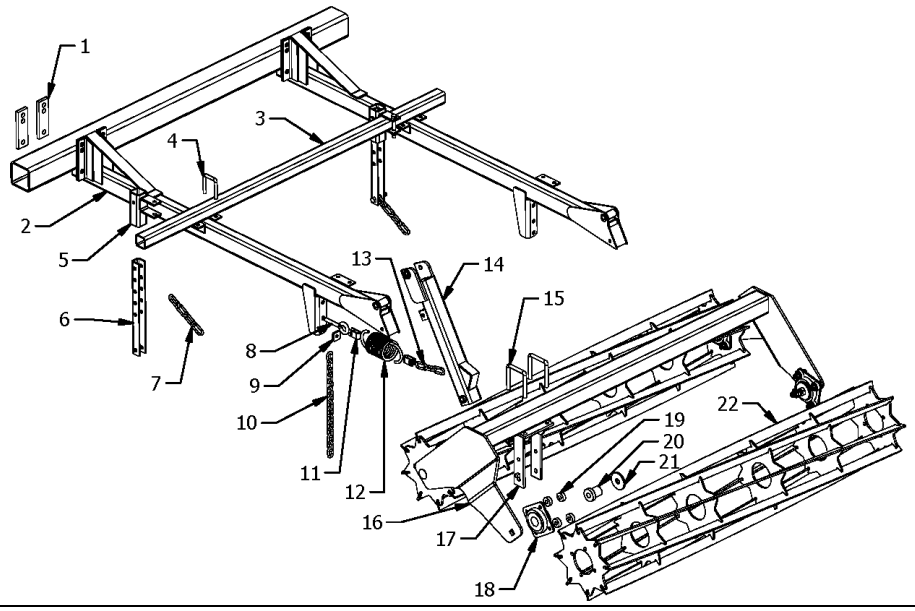


KEY	PART #	DESCRIPTION
1	STM-3001	MAIN ARM CLAMP PLATE
2	SRB-1306	MAIN ARM – 67”
3	***	CROSS TUBE
4	BU-7623	7/16 X 2 X 3 U-BOLT
5	DRB-3205	PULL ARM MOUNT TUBE
6	STM-2040	INSERT CHANNEL
7	CH-0704	4 LINK PULL CHAIN
8	EB-1205	½ X 5 EYE-BOLT
9	CH-1415	15 LINK LIFT CHAIN
10	N-018	LIFT CHAIN CLEVIS
11	SQ-0044	7/16” SQUARE WASHER
12	N-021	LOCK CLIP
13	RBH-0308	TENSION SPRING
14	RBH-216	BASKET PIVOT ARM, SINGLE
15	CH-0604	4 LINK SPRING CHAIN
16	AL-030	5/16” SHACKLE
17	***	BASKET MOUNT TUBE
18	SRB-1408	BASKET BEARING INSERT, 2.125”
19	DRB-3826	BASKET BEARING, RIVITED, 1-1/4 RND
20	SRB-1406	BASKET BEARING WASHER
21	DRB-3828	BASKET BEARING RUBBER WASHER
21	***	ROLLING BASKET

*** Please specify model number when ordering these parts.

McFarlane Manufacturing reserves the right to change specifications of design at any time without obligation to modify previous products.

DOUBLE ROLLING BASKET
PARTS DIAGRAM & LIST



KEY	PART #	DESCRIPTION
1	STM-3001	MAIN ARM CLAMP PLATE
2	SRB-1309	MAIN ARM – 72”
3	***	CROSS TUBE
4	BU-7623	7/16 X 2 X 3 U-BOLT
5	DRB-3205	PULL ARM MOUNT TUBE
6	STM-2040	INSERT CHANNEL
7	CH-0704	4 LINK PULL CHAIN
8	EB-1205	½ X 5 EYE-BOLT
9	SQ-0044	7/16” SQUARE WASHER
10	CH-1415	15 LINK LIFT CHAIN
11	N-021	LOCK CLIP
12	RBH-0308	TENSION SPRING
13	CH-0604	4 LINK SPRING CHAIN
14	RBH-217	BASKET PIVOT ARM, DOUBLE
15	BU-1234	½ X 3 X 4 U-BOLT
16	***	BASKET MOUNT TUBE
17	DRB-3505	PIVOT BRACKET
18	DRB-3826	BASKET BEARING, RIVITED 1-1/4 RND
19	DRB-3828	BASKET BEARING RUBBER WASHER
20	SRB-1408	BASKET BEARING INSERT, 2.125”
21	SRB-1406	BASKET BEARING WASHER
22	***	BASKET ASSEMBLY

** Items are not shown.

*** Please specify model number when ordering these parts.

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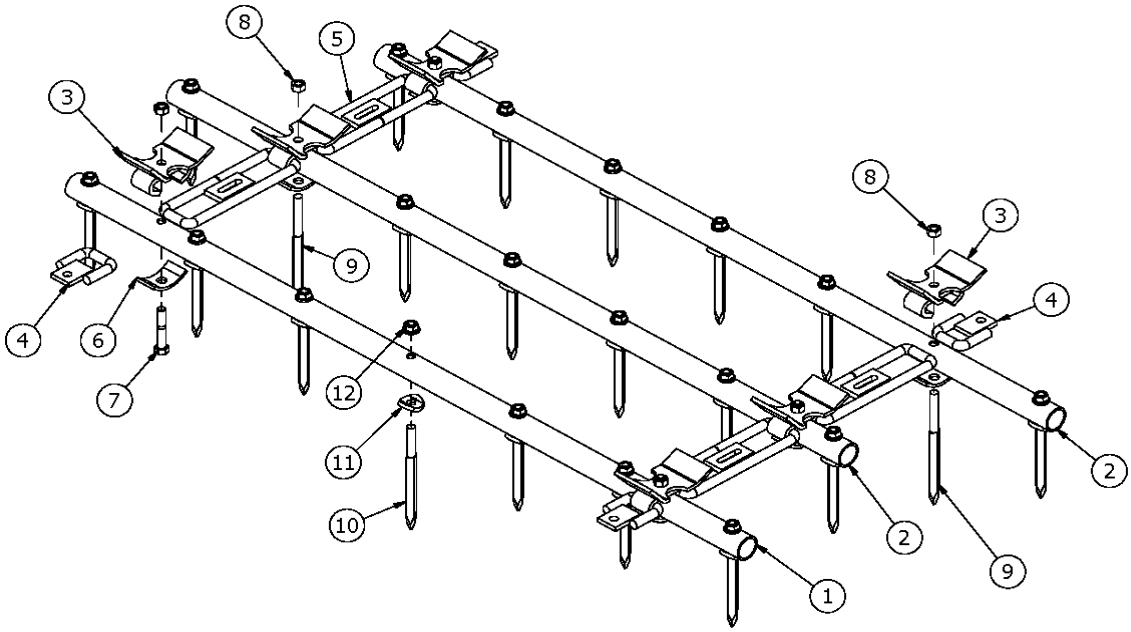
FH 3 BAR HARROW SECTIONS

Includes FH-500-3H, FH-600-3H, FH-700-3H, FH-800-3H and FH-900-3H



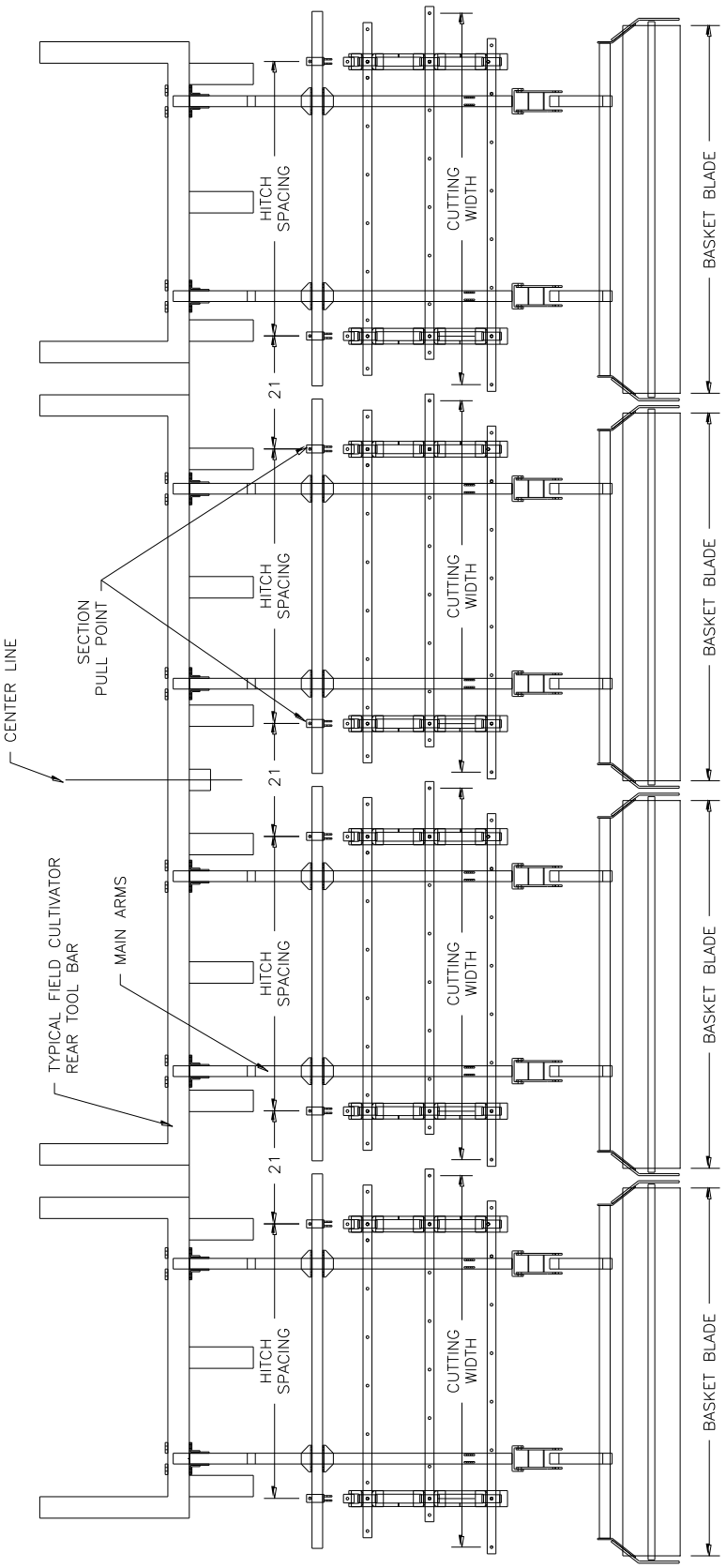
ITEM #	PART #	DESCRIPTION
1	FH-340	#1 HARROW BAR (FH-500-3H)
1	FH-342	#1 HARROW BAR (FH-600-3H)
1	FH-344	#1 HARROW BAR (FH-700-3H)
1	FH-346	#1 HARROW BAR (FH-800-3H)
1	FH-348	#1 HARROW BAR (FH-900-3H)
2	FH-341	#2 AND #3 HARROW BAR (FH-500-3H)
2	FH-343	#2 AND #3 HARROW BAR (FH-600-3H)
2	FH-345	#2 AND #3 HARROW BAR (FH-700-3H)
2	FH-347	#2 AND #3 HARROW BAR (FH-800-3H)
2	FH-349	#2 AND #3 HARROW BAR (FH-900-3H)
3	FH-133	LINK CAP AND HOOK, HEAVY DUTY
4	FH-122	PULL FLAT
5	FH-135	CONNECTOR LINK (STM)
6	FH-019	CAP CLIP
7	BHP-5030	1/2-13 X 3 HEX BOLT (PLAIN)
8	NL-5013	1/2-13 LOCK NUT
9	E-613	1/2 X 3 SHANK SPIKE TOOTH
10	E-622	1/2 X 2 1/2 SHANK SPIKE TOOTH
11	E-630	TOOTH WASHER
10-11	E-612	PART# E-622 AND E-630 COMBINED
12	NLF-5013	1/2” LOCK NUT

The #1 bar is the bar with an equal amount of tube to the right and left of the pull flats. The #3 bar is the bar that is staggered off to one side.

When pulling the harrow section from the #1 bar, the teeth will be in the least aggressive setting.

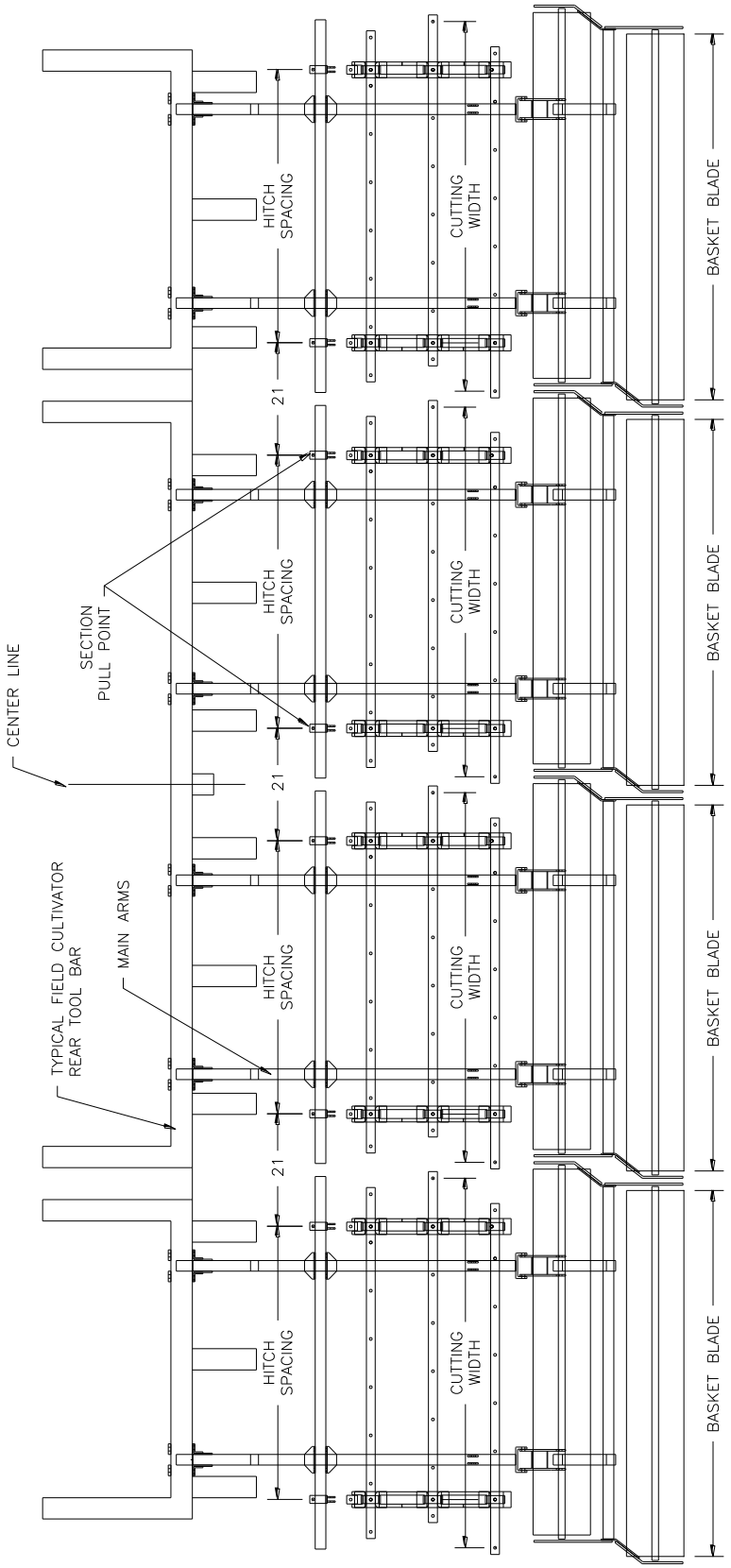
02/07/13

Single Rolling Basket Layout Diagram



HARROW SECTION	HITCH SPACING	CUTTING WIDTH	BASKET BLADES
FH-500-3	24 1/8"	42 1/4"	41 1/4"
FH-600-3	33 3/16"	51 5/16"	50 1/4"
FH-700-3	42 1/4"	60 3/8"	59 1/2"
FH-800-3	51 5/16"	69 7/16"	68 1/2"
FH-900-3	60 3/8"	78 1/2"	79 1/2"

Double Rolling Basket Layout Diagram



HARROW SECTION	HITCH SPACING	CUTTING WIDTH	BASKET BLADES
FH-500-3	24 1/8"	42 1/4"	41 5/8"
FH-600-3	33 3/16"	51 5/16"	50 11/16"
FH-700-3	42 1/4"	60 3/8"	59 3/4"
FH-800-3	51 5/16"	69 7/16"	68 15/16"
FH-900-3	60 3/8"	78 1/2"	77 7/8"