

Farm King

OPERATOR AND PARTS MANUAL

Mounted Following Harrow

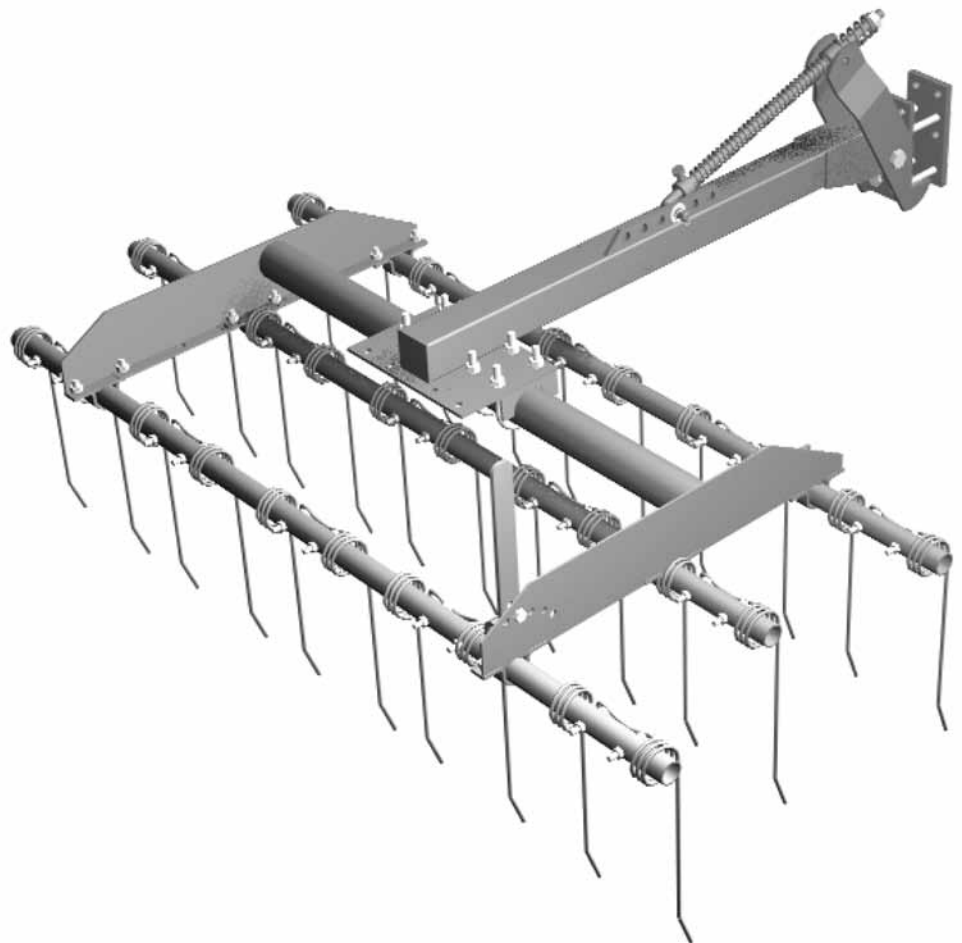


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Manufacturer’s statement: for technical reasons Buhler Industries Inc. reserves the right to modify machinery design and specifications provided herein without any preliminary notice. Information provided herein is of descriptive nature. Performance quality may depend on soil fertility, applied agricultural techniques, weather conditions and other factors.

Introduction

The Farm King Harrows mount to tillage tools with a single, heavy 3" square tube carrier arm. The 3/8" x 16" coil spring lay back teeth can be quickly lever-adjusted to five positions to give you the desired penetration and vibration action for superb weeding / seedbed preparation / residue incorporation and trash clearing. Tines ride over rocks to reduce wear and breakage.

Keep this manual handy for frequent reference. All new operators or owners must review the manual before using the equipment and at least annually thereafter. Contact your Farm King Dealer if you need assistance, information, or additional copies of the manual. Visit our website at www.farm-king.com for a complete list of dealers in your area.

The directions left, right, front and rear, as mentioned throughout this manual, are as seen facing in the direction of travel of the implement.

Safety

Safety Instructions

Remember, YOU are the key to safety. Good safety practices not only protect you, but also the people around you. Make these practices a working part of your safety program. Be certain that everyone operating this equipment is familiar with the recommended operating and maintenance procedures and follows all the safety precautions. Most accidents can be prevented. Do not risk injury or death by ignoring good safety practices.

The alert symbol is used throughout this manual. It indicates attention is required and identifies hazards. Follow the recommended precautions.



The safety alert symbol means...
ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!



CAUTION

The caution symbol 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.



WARNING

The Warning Symbol 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.



DANGER

The Danger Symbol 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 that, for functional purposes, cannot be guarded.

General Safety Instructions

- Have a first-aid kit available for use and know how to use it.
- Have a fire extinguisher available, stored in a highly visible location, and know how to use it.
- Wear appropriate protective gear. This list may include but is not limited to:
 - hard hat
 - protective shoes with slip resistant soles
 - protective glasses or goggles
 - heavy gloves
 - wet weather gear
 - hearing protection
 - respirator or filter mask
- Read and understand the Operator's Manual and all safety signs before operating, servicing, adjusting, repairing, or unplugging the equipment.
- Do not attempt any unauthorized modifications to your Farm King product as this could affect function or safety, and could affect the life of the equipment.
- Never start or operate the mower except from the operator's station on the power unit.
- Inspect and clean the working area before operating.
- Keep hands, feet, clothing, and hair away from moving parts.
- Ensure bystanders are clear of the area before operating.

Start-up Safety

- Do not let inexperienced operators or children run this equipment.
- Place all tractor and machine controls in neutral before starting.
- Operate only with ROPS and seatbelt equipped tractors.
- Do not operate inside a building unless there is adequate ventilation.
- Ensure all shields are in place and in good condition before operating.
- Stay clear of PTO shaft and machine when engaging PTO.

Operation Safety

- Do not permit riders.
- Do not wear loose fitting clothing during operation.
- Never operate over 540 PTO rpm speed.
- Never operate the equipment in the raised position.

Transport Safety

- Review Transport Safety instructions in tractor manual before moving.
- Check with local authorities regarding transport on public roads. Obey all applicable laws and regulations.
- Make sure the SMV (Slow Moving Vehicle) emblem and all the lights and reflectors that are required by the local highway and transport authorities are in place, are clean, and can be seen clearly by all overtaking and oncoming traffic.
- Never have the equipment in operation during transport.
- Always travel at a safe speed.

Service and Maintenance Safety

- Stop engine, set brake, remove ignition key, and wait for all moving parts to stop before servicing, adjusting, repairing, or unplugging.
- Support the equipment with blocks or safety stands before working beneath it.
- Follow good shop practices including:
 - keep service area clean and dry
 - be sure electrical outlets and tools are properly grounded
 - use adequate light for the job.
- Use only tools, jacks, and hoists of sufficient capacity for the job.
- Replace and secure all shields removed during servicing before operating.
- Use heavy leather gloves to handle sharp objects.

Storage Safety

- Store the unit in an area away from human activity.
- Do not permit children to play on or around the stored machine.
- Support the frame on stands and blocks to provide a secure base.

Safety Signs

- Keep all safety signs clean and legible and replace any that are damaged or missing.
- When original parts are replaced, any safety signs affixed to those parts should be replaced as well. Replacement safety signs are available from your local dealer.

Installation

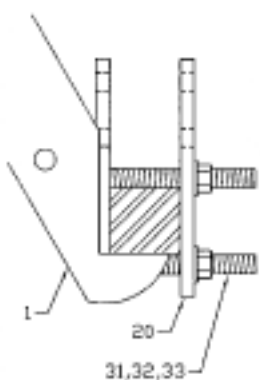
- To install safety signs, ensure the installation area is clean and dry. Decide on the exact position before you remove the backing paper. Remove the smallest portion of the split backing paper and align over the specified area. Carefully press in place.
- Slowly peel back the remaining paper and smooth the remaining portion in place. Small air pockets can be pierced with a pin and smoothed out.

Assembly Instructions

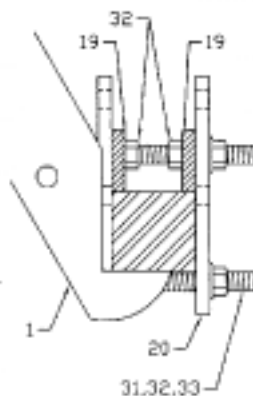
Harrow Mounting Instructions

Mount according to frame size.

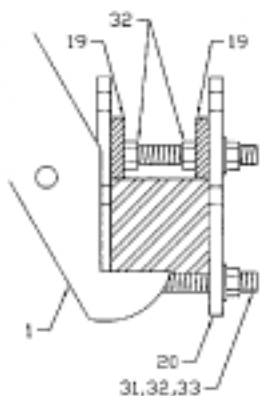
2 1/2" FRAME
NO SPACERS REQ'D



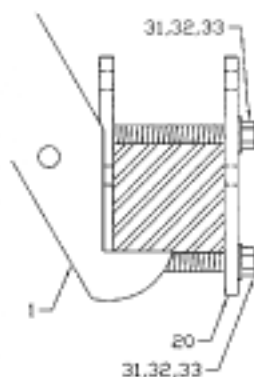
3" FRAME



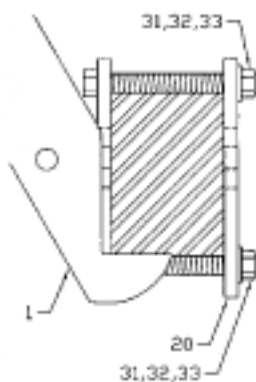
3 1/2" FRAME



4" FRAME
NO SPACERS REQ'D



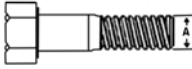



4" X 6" FRAME
NO SPACERS REQ'D



Bolt Torque

Checking Bolt Torque

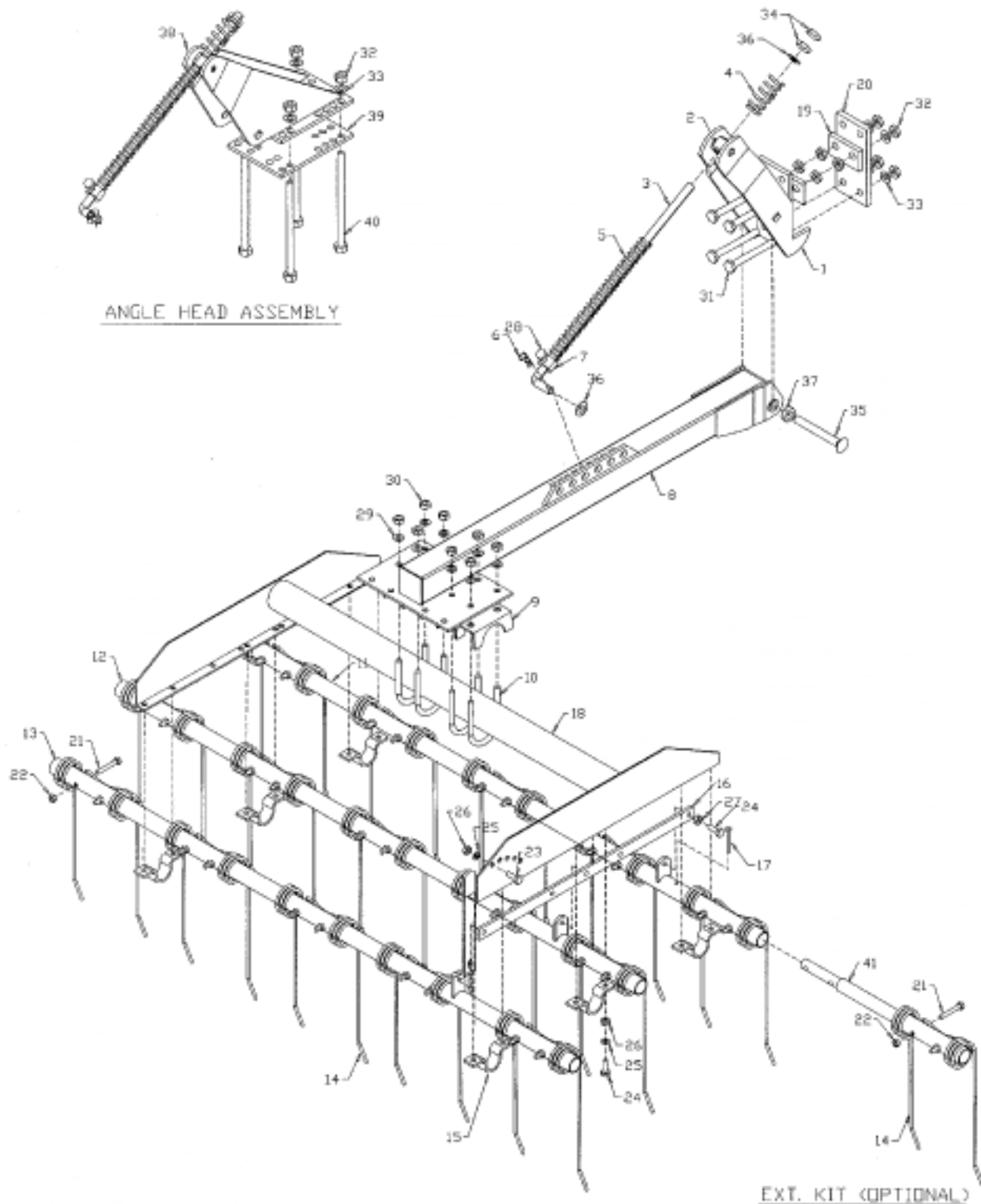
The tables shown below give correct torque values for various bolts and hex bolts. Tighten all bolts to the torques specified in chart unless otherwise noted. Check tightness of bolts periodically, using bolt torque chart as a guide. Replace hardware with the same strength bolt.

Bolt Torque*						
						
Bolt Diameter	Grade 2 Bolts		Grade 5 Bolts		Grade 8 Bolts	
(inches)	SAE 2		SAE 5		SAE 8	
"A"	(lb-ft)	(N.m)	(lb-ft)	(N.m)	(lb-ft)	(N.m)
0.25 (1/4)	6	8	9	12	12	17
0.313 (5/16)	10	13	19	25	27	36
0.375 (3/8)	20	27	33	45	45	63
0.438 (7/16)	30	42	53	72	75	100
0.5 (1/2)	45	61	80	110	115	155
0.563 (9/16)	70	95	115	155	165	220
0.625 (5/8)	95	128	160	215	220	305
.75 (3/4)	165	225	290	390	400	540
0.875 (7/8)	170	230	420	570	650	880
1	225	345	630	850	970	1320

Torque figures indicated above are valid for non-greased or non-oiled threads and heads unless otherwise specified. Therefore, do not grease or oil bolts or hex bolts unless otherwise specified in this manual. When using locking elements, increase torque values by 5%.

* Torque value for bolts and hex bolts are identified by their head markings.

3 Bar Assembly Drawing



MH-01

When Ordering Parts

Always give your dealer the Model, Color and Serial Number of your machine to assist him in ordering and obtaining the correct parts. Use the exploded view and tabular listing of the area of interest to exactly identify the required part.

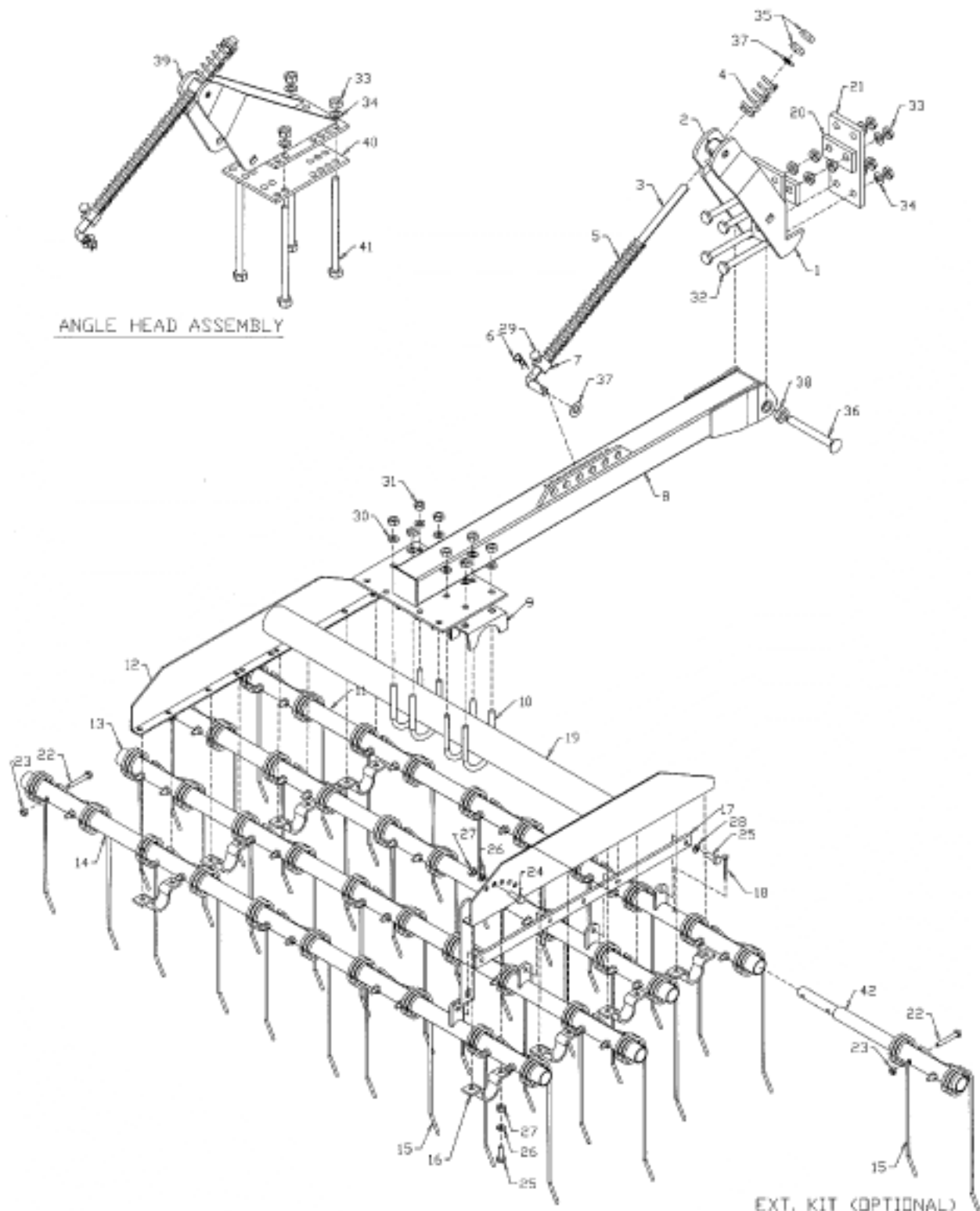
Item	Part Number	Description
1	972101	Mount Weldment
2	988646	Trunion
3	972102	Pressure Rod 3/4" x 26-13/32" Long
4	972104	Short Spring
5	972105	Long Spring
6	12779	#9 Hair Pin Clip (pl)
7	972103	Collar 1/2" Dia. x 1" Long
8	972100	Carrier Arm Weldment
9	972107	Mounting Clamp 3/16" x 5" x 6"
10	972110	3" Rod U-Bolt (pl)
11	972118	5' Front Spring Tube Weldment
	972119	6' Front Spring Tube Weldment
	972120	7' Front Spring Tube Weldment
12	972115	5' Center Spring Tube Weldment
	972116	6' Center Spring Tube Weldment
	972117	7' Center Spring Tube Weldment
13	972112	5' Rear Spring Tube Weldment
	972113	6' Rear Spring Tube Weldment
	972114	7' Rear Spring Tube Weldment
14	972130	16" Spring Tooth with Kink
	972151	16" Spring Tooth Straight
	972126	14" Spring Tooth with Kink
15	972125	Spring Tube Clamp 1/4" x 1-1/4" x 7"
16	972206	Tube Link 5/16" x 1-1/4" x 28-1/4"
17	9812436	1/4" x 2-1/2" Cotter Pin (pl)
18	972142	5' Mounting Frame Weldment
	972143	6' Mounting Frame Weldment
	972144	7' Mounting Frame Weldment
19	972109	Spacer 1/2" x 2-1/4" x 4"
20	972108	Mounting Plate 5/8" x 4" x 8-3/4"
21	972127	3/8" x 2-1/2" Shoulder Bolt (br)
22	812363	3/8" Lock Nut (pl)
23	967146	7/16" x 1-1/4" Carr Bolt Grade 5 (pl)
24	81598	7/16" x 1-1/4" Hex Bolt (pl)
25	81615	7/16" Lock Washer (pl)
26	81614	7/16" Hex Nut (pl)

Item	Part Number	Description
27	86273	7/16" Lock Nut (pl)
28	984110	1/2" x 3/4" Square Head Set Screw (pl)
29	81637	1/2" Lock Washer (pl)
30	81636	1/2" Hex Nut (pl)
31	972111	5/8" x 6" Hex Bolt (pl) (Full Thread)
32	81676	5/8" Hex Nut (pl)
33	81677	5/8" Lock Washer (pl)
34	86111	3/4" Jam Hex Nut (pl)
35	972106	3/4" x 6" Carriage Bolt (pl)
36	84050	3/4" S.A.E. Flat Washer (pl)
37	812365	3/4" Lock Nut (pl)

Angle Head Assembly		
38	900543	Mount Weldment
39	972133	Angle Mounting Plate
40	900545	Clamp Bolt Weldment

Extension Kit (Optional)		
41	900516	Extension Tube Weldment

4 Bar Assembly Drawing



MH-02

Item	Part Number	Description
1	972101	Mount Weldment
2	988646	Trunion
3	972102	Pressure Rod 3/4" x 26-13/32" Long
4	972104	Short Spring
5	972105	Long Spring
6	12779	#9 Hair Pin Clip (pl)
7	972103	Collar 1/2" Dia. x 1" Long
8	972100	Arm Weldment
9	972107	Mounting Clamp 3/16" x 5" x 6"
10	972110	3" Rod U-Bolt (pl)
11	972118	#1 - 5' Spring Tube Weldment
	972119	#1 - 6' Spring Tube Weldment
	972120	#1 - 7' Spring Tube Weldment
12	972115	#2 - 5' Spring Tube Weldment
	972116	#2 - 6' Spring Tube Weldment
	972117	#2 - 7' Spring Tube Weldment
13	972136	#3 - 5' Spring Tube Weldment
	972137	#3 - 6' Spring Tube Weldment
	972138	#3 - 7' Spring Tube Weldment
14	972139	#4 - 5' Spring Tube Weldment
	972140	#4 - 6' Spring Tube Weldment
	972141	#4 - 7' Spring Tube Weldment
15	972130	16" Spring Tooth with Kink
	972151	16" Spring Tooth Straight
	972126	14" Spring Tooth with Kink
16	972125	Spring Tube Clamp 1/4" x 1-1/4" x 7"
17	972206	Tube Link 5/16" x 1-1/4" x 28-1/4"
18	9812436	1/4" x 2-1/2" Cotter Pin (pl)
19	972142	5' Mounting Frame Weldment
	972143	6' Mounting Frame Weldment
	972144	7' Mounting Frame Weldment
20	972109	Spacer 1/2" x 2-1/4" x 4"
21	972108	Mounting Plate 5/8" x 4" x 8-3/4"
22	972127	3/8" x 2-1/2" Shoulder Bolt (br)
23	812363	3/8" Lock Nut (pl)
24	967146	7/16" x 1-1/4" Carriage Bolt Grade 5 (pl)
25	81598	7/16" x 1-1/4" Hex Bolt (pl)
26	81615	7/16" Lock Washer (pl)
27	81614	7/16" Hex Nut (pl)
28	86273	7/16" Lock Nut (pl)
29	984110	1/2" x 3/4" Square Head Set Screw (pl)

Item	Part Number	Description
30	81637	1/2" Lock Washer (pl)
31	81636	1/2" Hex Nut (pl)
32	972111	5/8" x 6" Hex Bolt (pl) (Full Thread)
33	81676	5/8" Hex Nut (pl)
34	81677	5/8" Lock Washer (pl)
35	86111	3/4" Jam Hex Nut (pl)
36	972106	3/4" x 6" Carriage Bolt (pl)
37	84050	3/4" S.A.E. Flat Washer (pl)
38	812365	3/4" Lock Nut (pl)

Angle Head Assembly		
39	900543	Mount Weldment
40	972133	Angle Mounting Plate
41	900545	Clamp Bolt Weldment

Extension Kit (Optional)		
42	900516	Extension Tube Weldment

Shipping Kit and Bundle Numbers

The following is a list of Kit Numbers for this product and the Bundle Numbers, Descriptions, and Quantities for each Kit.

Quantity	Bundle Number	Description
Y72M4 - 6'0" - 4 Bar Section (KinkedTines)		
1	F3809	6'0" - Section (KNK)
1	F3811	Carrier Arm Assembly
Y72mS4 - 6'0" - 4 Bar Section (StraightTines)		
1	F3809S	6'0" - Section (STR)
1	F3811	Carrier Arm Assembly
Y87M4 - 7'3" - 4 Bar Section (KinkedTines)		
1	F3810S	7'3" - Section (KNK)
2	F3811	Carrier Arm Assembly
Y87MS4 - 7'3" - 4 Bar Section (StraightTines)		
1	F3810S	7'3" Section (STR)
2	F3811	Carrier Arm Assembly

Optional Bundle Numbers

The following is a list of options available for the Kits listed above.

1	F3811	Carrier Arm (if extras are required)
1	F3819	Carrier Arm c/w Angle Kit
1	Y383	Extension Kit 3-Bar (16" tooth)
1	Y384	Extension Kit 4-Bar (16" tooth)
1	Y386	15" Extension Kit 3-Bar Straight (16" tooth)
1	Y387	15" Extension Kit 4-Bar Straight (16" tooth)
1	F3816	Extension Pipe c/w 16" Tooth
1	F3822	Extension Pipe c/w 16" Straight Tooth
1	F3818	Angle Mount Head Assembly
1	F3820	Standard Head Assembly

Farm King Limited Warranty

This document limits your warranty rights.

Base Limited Warranty

Buhler Industries Inc. provides this warranty only to original retail purchasers of its product. Buhler Industries Inc. warrants to such purchasers that all Buhler Industries Inc. manufactured parts and components used and serviced as provided for in the Operator's Manual shall be free from defects in materials and workmanship for a period following delivery to the original retail purchaser of 12 months (80 days for commercial applications). This limited warranty applies only to those parts and components manufactured by Buhler Industries Inc. Parts and components manufactured by others are subject to their manufacturer's warranties, if any.

Buhler Industries Inc. will fulfill this limited warranty by, at its option, repairing or replacing any covered part that is defective or is the result of improper workmanship, provided that the part is returned to Buhler Industries Inc. within thirty (30) days of the date that such defect or improper workmanship is, or should have been, discovered. Buhler Industries Inc. reserves the right to either inspect the product at the buyer's location or have it returned to the factory for inspection. Parts must be returned through the selling representative and the buyer must prepay transportation charges.

Buhler Industries Inc. will not be responsible for repairs or replacements that are necessitated, in whole or part, by the use of parts not manufactured by or obtained from Buhler Industries Inc. Under no circumstances are component parts warranted against normal wear and tear. There is no warranty on product pump seals, product pump bearings, rubber product hoses, pressure gauges, or other components that require replacement as part of normal maintenance. Also: Buckets and Bucket Tines carry no warranty, Bent Spears carry no warranty, Snowblower Fan Shafts carry no warranty, Mower Blades carry no warranty, Portable Auger Parts Have Two (2) Year Warranty, Loader Parts Have Two (2) Year Warranty. The purchaser is solely responsible for determining suitability of goods sold. This warranty is expressly in lieu of all other warranties expressed or implied. Buhler Industries Inc. will in no event be liable for any incidental or consequential damages whatsoever. Nor for any sum in excess of the price received for the goods for which liability is claimed.

Repair Parts Limited Warranty

Buhler Industries Inc. warrants Farm King replacement parts purchased after the expiration of the Buhler Industries Inc. Limited Warranty, and used and serviced as provided for in the Operator's Manual, to be free from defects in materials or workmanship for a period of thirty (30) days from the invoice date for the parts. Buhler Industries Inc. will fulfill this limited warranty by, at its option, repairing or replacing any covered part that is defective or is the result of improper workmanship, provided that the part is returned to Buhler Industries Inc. within thirty (30) days of the date that such defect or improper workmanship is, or should have been, discovered. Such parts must be shipped to Buhler Industries Inc. at the purchaser's expense.

What is Not Covered

Under no circumstances does this limited warranty cover any components or parts that have been subject to the following: negligence; alteration or modification not approved by Buhler Industries Inc.; misuse; improper storage; lack of reasonable and proper maintenance, service, or repair; normal wear; damage from failure to follow operating instructions; accident; and/or repairs that have been made with parts other than those manufactured, supplied, and or authorized by Buhler Industries Inc.

Authorized Dealer and Labor Costs

Repairs eligible for labor under this limited warranty must be made by Buhler Industries Inc. or an authorized Farm King dealer. Buhler Industries Inc. retains the exclusive discretion to determine whether it will pay labor costs for warranty repairs or replacements, and the amount of such costs that it will pay and the time in which the repairs will be made. If Buhler Industries Inc. determines that it will pay labor costs for warranty work, it will do so by issuing a credit to the dealer's or distributor's account. Buhler Industries Inc. will not approve or pay invoices sent for repairs that Buhler Industries Inc. has not previously approved. Warranty service does not extend the original term of this limited warranty.

Warranty Requirements

To be covered by warranty, each Farm King new product must be registered with Buhler Industries Inc. within thirty (30) days of delivery to original retail purchaser. If the customer decides to purchase replacement components before the warranty disposition of such components is determined, Buhler Industries Inc. will bill the customer for such components and then credit the replacement invoice for those components later determined to be covered by this limited warranty. Any such replacement components that are determined not be covered by this limited warranty will be subject to the terms of the invoice and shall be paid for by the purchaser.

Warranty Claims:

Warranty requests must be prepared on Buhler Industries Inc. Warranty Claim Forms with all requested information properly completed. Warranty Claims must be submitted within a thirty (30) day period from date of failure repair.

Warranty Labor:

Any labor subject to warranty must be authorized by Buhler Industries Inc. The labor rate for replacing defective parts, where applicable, will be credited at 100% of the dealer's posted shop rate.

Exclusive Effect of Warranty and Limitation of Liability

TO THE EXTENT PERMITTED BY LAW, BUHLER INDUSTRIES INC. DISCLAIMS ANY WARRANTIES, REPRESENTATIONS, OR PROMISES, EXPRESS OR IMPLIED, AS TO THE QUALITY, PERFORMANCE, OR FREEDOM FROM DEFECT OF THE COMPONENTS AND PARTS COVERED BY THIS WARRANTY AND NOT SPECIFICALLY PROVIDED FOR HEREIN.

TO THE EXTENT PERMITTED BY LAW, BUHLER INDUSTRIES INC. DISCLAIMS ANY IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ON ITS PRODUCTS COVERED HEREIN, AND DISCLAIMS ANY RELIANCE BY THE PURCHASER ON BUHLER INDUSTRIES INC.'S SKILL OR JUDGMENT TO SELECT OR FURNISH GOODS FOR ANY PARTICULAR PURPOSE. THE PURCHASER'S ONLY AND EXCLUSIVE REMEDIES IN CONNECTION WITH THE BREACH OR PERFORMANCE OF ANY WARRANTY ON PRODUCTS MANUFACTURED BY BUHLER INDUSTRIES INC. ARE THOSE SET FORTH HEREIN. IN NO EVENT SHALL BUHLER INDUSTRIES INC. BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES (INCLUDING, BY WAY OF EXAMPLE ONLY AND NOT LIMITATION, LOSS OF CROPS, LOSS OF PROFITS OR REVENUE, OTHER COMMERCIAL LOSSES, INCONVENIENCE, OR COST OF REPLACEMENT OF RENTAL EQUIPMENT). IN NO EVENT SHALL FARM KING'S CONTRACT OR WARRANTY LIABILITY EXCEED THE PURCHASE PRICE OF THE PRODUCT.

(Note that some provinces or states do not allow limitations on how long an implied warranty lasts or the exclusion or limitation of incidental or consequential damages, so the above limitations and exclusion may not apply to you.) This warranty gives you specific legal rights and you may also have other rights, which vary from province to province or state to state.

Buhler Industries Inc. neither assumes nor authorizes any person or entity, including its selling representatives, to assume any other obligations or liability in connections with the sale of covered equipment, or to make any other warranties, representations, or promises, express or implied, as to the quality, performance, or freedom from defect of the components and parts covered herein. No one is authorized to alter, modify, or enlarge this limited warranty, or its exclusions, limitations and reservations.

Corrections of defects and improper workmanship in the manner, and for the applicable time periods, provided for herein shall constitute fulfillment of all responsibilities of Buhler Industries Inc. to the purchaser, and Buhler Industries Inc. shall not be liable in negligence, contract, or on any other basis with respect to the subject equipment.

This limited warranty is subject to any existing conditions of supply which may directly affect Buhler Industries Inc.'s ability to obtain materials or manufacture replacement parts.

Buhler Industries Inc. reserves the right to make improvements in design or changes in specifications to its products at anytime, without incurring any obligation to owners of units previously sold.

Government Legislation:

Warranty terms and conditions are subject to provincial or state legislation.

Important Note: This warranty does not apply to rentals.

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Farm King

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