



OPERATOR AND PARTS MANUAL

100, 155 Series Rear Blade

10096, 100108, 15596, 155108, 155120,
155144 Models

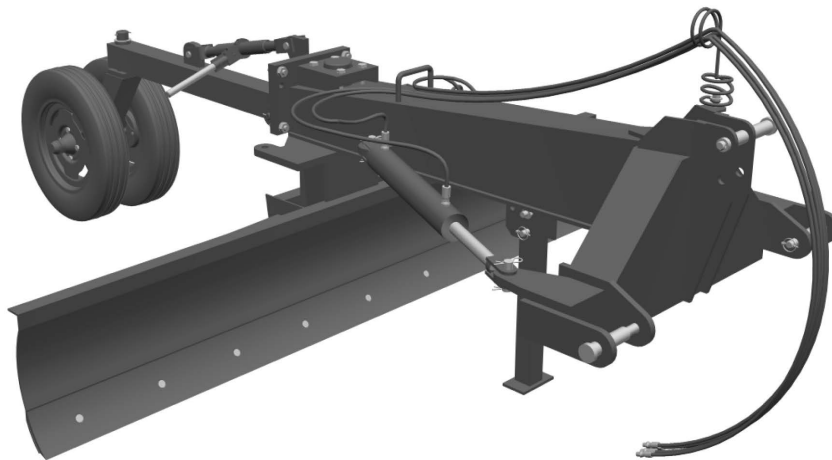


Table Of Contents

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.

WARRANTY REGISTRATION FORM.....	3
INTRODUCTION.....	5
Owner’s Information.....	7
Equipment Identification.....	8
SAFETY.....	9
Safety Instructions.....	11
Decal Identification.....	14
Safety Sign-Off Form.....	15
ASSEMBLY.....	17
Component Unloading And Identification.....	19
Blade.....	20
Arm.....	20
Linkages.....	21
Gauge Wheel (Optional).....	22
End Plates (Optional).....	23
OPERATION.....	25
General Information.....	27
Tractor Requirements.....	27
Entering And Leaving The Operator’s Position.....	28
Connecting To Tractor.....	28
Field Operation.....	30
Transporting.....	31
MAINTENANCE.....	33
Service Schedule Chart.....	35
Lubrication.....	37
Decal Identification.....	39
Cleaning.....	39
Storage And Return To Service.....	39
PARTS IDENTIFICATION.....	41
General Parts Information.....	42
Parts identification.....	42

SPECIFICATIONS AND SHIPPING KIT NUMBERS.....	49
Specifications.....	51
Hardware Torque Values.....	55
WARRANTY.....	57
Farm King Base Limited Warranty.....	59

WARRANTY REGISTRATION FORM

This form must be filled out by the dealer and signed by both the dealer and the customer at the time of delivery.

Customer Name:	
Customer Address:	
City:	Prov / State:
Postal / Zip Code:	Phone:

Dealer Name:	
Dealer Address:	
City:	Prov / State:
Postal / Zip Code:	Phone:

Equipment Model:	Serial Number:	Delivery Date:
------------------	----------------	----------------

I have thoroughly instructed the buyer on the above described equipment which review included the Operator and Parts Manual content, equipment care, adjustments, safe operation and applicable warranty policy.

Dealer Inspection Report

- Check tilt, angle, and offset linkages
- Check hitch and mounting pins
- Check hydraulic hoses (if available)
- Fasteners tightened
- Grease points lubricated
- Check wheel bolt torque and tire pressure (if available)

Safety

- Safety chain on hitch
- Decals installed
- Guards and shields installed
- Lights and reflectors installed
- Review operating and safety instructions

Date:	Dealer Rep. Signature:
-------	------------------------

The above equipment and Operator And Parts Manual have been received by me and I have been thoroughly instructed as to care, adjustments, safe operation and applicable warranty policy.

Date:	Customer / Owner Signature:
-------	-----------------------------

Remove this Warranty Registration Form from the Operator And Parts Manual. Make two copies of the form. Send original Warranty Registration Form to Farm King. Give one copy to the customer and the dealer will keep one copy.

ALLIED

by **FarmKing**



INTRODUCTION

This Operator And Parts Manual was written to give the owner / operator instructions on the safe operation, maintenance and part identification of the Farm King equipment. READ AND UNDERSTAND THIS OPERATOR AND PARTS MANUAL BEFORE OPERATING YOUR FARM KING EQUIPMENT. If you have any questions, see your Farm King dealer. This manual may illustrate options and accessories not installed on your Farm King equipment.

OWNER'S INFORMATION.....	7
Serial Number Location.....	7
Manual Storage.....	7
EQUIPMENT IDENTIFICATION.....	8

ALLIED

by **FarmKing**



OWNER'S INFORMATION

Thank you for your decision to purchase a Farm King Rear Blade. To ensure maximum performance of your equipment, it is mandatory that you thoroughly study the Operator And Parts Manual and follow the recommendations. Proper operation and maintenance are essential to maximize equipment life and prevent personal injury.

Operate and maintain this equipment in a safe manner and in accordance with all applicable local, state, and federal codes, regulations and / or laws. Follow all on-product labeling and instructions. Make sure that all personnel have read this Operator And Parts Manual and thoroughly understand safe and correct operating, installation and maintenance procedures.

Farm King is continually working to improve its products. Farm King reserves the right to make any improvements or changes as deemed practical and possible without incurring any responsibility or obligation to make any changes or additions to equipment sold previously.

Although great care has been taken to ensure the accuracy of this publication, Farm King makes no warranty or guarantee of any kind, written or expressed, implied or otherwise with regard to the information contained within this manual. Farm King assumes no responsibility for any errors that may appear in this manual and shall not be liable under any circumstances for incidental, consequential or punitive damages in connection with, or arising from the use of this manual.

Keep this manual available for frequent reference. All new operators or owners must review the manual before using the equipment and annually thereafter. Contact your Farm King Dealer if you need assistance, information, or additional copies of the manual.

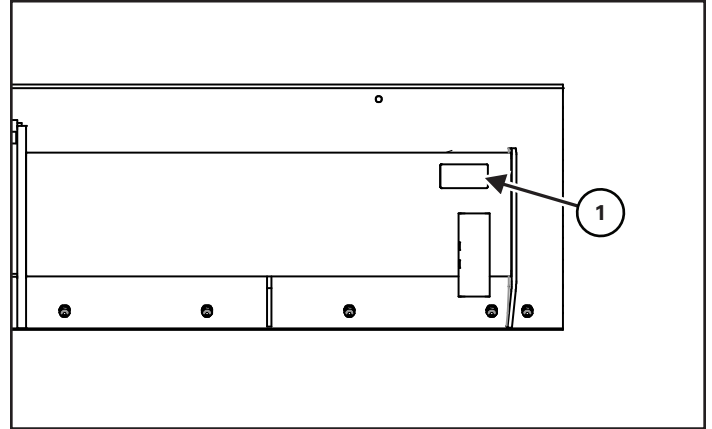
Visit our website at www.farm-king.com for a complete list of dealers in your area.

The directions left, right, front and rear, as mentioned throughout this manual, are viewed as the operator sitting in the tractor seat while towing the implement.

Serial Number Location

Please enter the model and serial number in the space provided for easy reference.

Figure 1



Model Number: _____

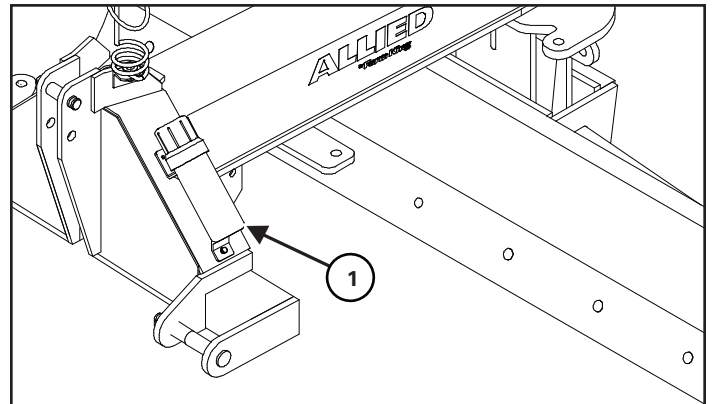
Serial Number: _____

The serial number plate (Item 1) is located on the RH side of the blade [Figure 1].

Always use your serial number when requesting information or when ordering parts.

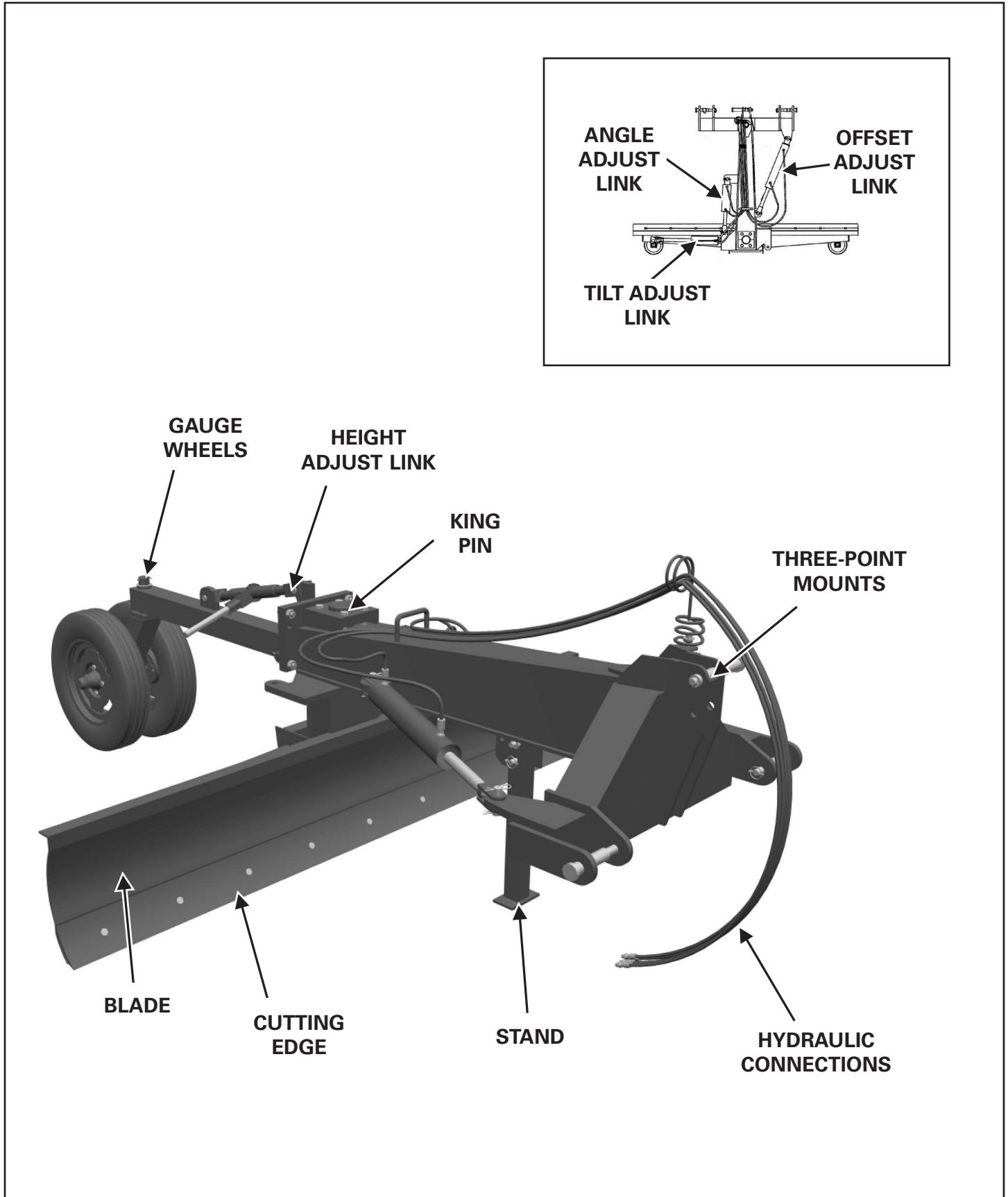
Manual Storage

Figure 2



The Operator And Parts Manual and other documents can be stored in the canister (Item 1) located on the hitch weldment [Figure 2].

EQUIPMENT IDENTIFICATION



SAFETY

SAFETY INSTRUCTIONS.....	11
Safety Rules.....	12
Transport Safety.....	12
Machine Requirements And Capabilities.....	13
DECAL IDENTIFICATION.....	14
SAFETY SIGN-OFF FORM.....	15

ALLIED

by **FarmKing**



SAFETY INSTRUCTIONS

	Safety Alert Symbol
<p>This symbol with a warning statement means: "Warning, be alert! Your safety is involved!" Carefully read the message that follows.</p>	


CAUTION

The signal word **CAUTION** on the machine and in the manuals indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.


DANGER

The signal word **DANGER** on the machine and in the manuals indicates a hazardous situation which, if not avoided, will result in death or serious injury.


WARNING

The signal word **WARNING** on the machine and in the manuals indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.


IMPORTANT

This notice identifies procedures which must be followed to avoid damage to the machine.


WARNING

Operators must have instructions before operating the machine. Untrained operators can cause injury or death.

For an operator to be qualified, he or she must not use drugs or alcohol which impair alertness or coordination while working. An operator who is taking prescription drugs must get medical advice to determine if he or she can safely operate a machine and the equipment.

A Qualified Operator Must Do The Following:

Understand the written instructions, rules and regulations:

- The written instructions from Farm King include the Warranty Registration, Dealer Inspection Report, Operator And Parts Manual and decals.
- Check the rules and regulations at your location. The rules may include an employer's work safety requirements. Regulations may apply to local driving requirements or use of a Slow Moving Vehicle (SMV) emblem. Regulations may identify a hazard such as a utility line.

Have training with actual operation:

- Operator training must consist of a demonstration and verbal instruction. This training is given by the machine owner prior to operation.
- The new operator must start in an area without bystanders and use all the controls until he or she can operate the machine safely under all conditions of the work area. Always fasten seat belt before operating.

Know the work conditions:

- Clear working area of all bystanders, especially small children and all obstacles that might be hooked or snagged, causing injury or damage.
- Know the location of any overhead or underground power lines. Call local utilities and have all underground power lines marked prior to operation.
- Wear tight fitting clothing. Always wear safety glasses when doing maintenance or service.

Safety Rules

- Read and follow instructions in this manual and the tractor's operators manual before operating.
- Under no circumstances should young children be allowed to work with this equipment.
- This equipment is dangerous to children and persons unfamiliar with its operation.
- If the elderly are assisting with work, their physical limitations need to be recognized and accommodated.
- Check for overhead and / or underground lines before operating equipment (if applicable).
- In addition to the design and configuration of equipment, hazard control and accident prevention are dependent upon the awareness, concern, prudence and proper training of personnel involved in the operation, transport, maintenance and storage of equipment.
- Check that the equipment is securely fastened to the tractor.
- Make sure all the machine controls are in the NEUTRAL position before starting the machine.
- Operate the equipment only from the operator's position.
- When learning to operate the equipment, do it at a slow rate in an area clear of bystanders, especially small children.
- DO NOT permit personnel to be in the work area when operating the equipment.
- The equipment must be used ONLY on approved tractors.
- DO NOT modify the equipment in any way. Unauthorized modification may impair the function and / or safety and could affect the life of the equipment.
- DO NOT make any adjustments or repairs on the equipment while the machine is running.
- Keep shields and guards in place. Replace if damaged.
- When operating on hillsides, use extreme care. The tractor may tip over if it strikes a hole, ditch or other irregularity.

Transport Safety

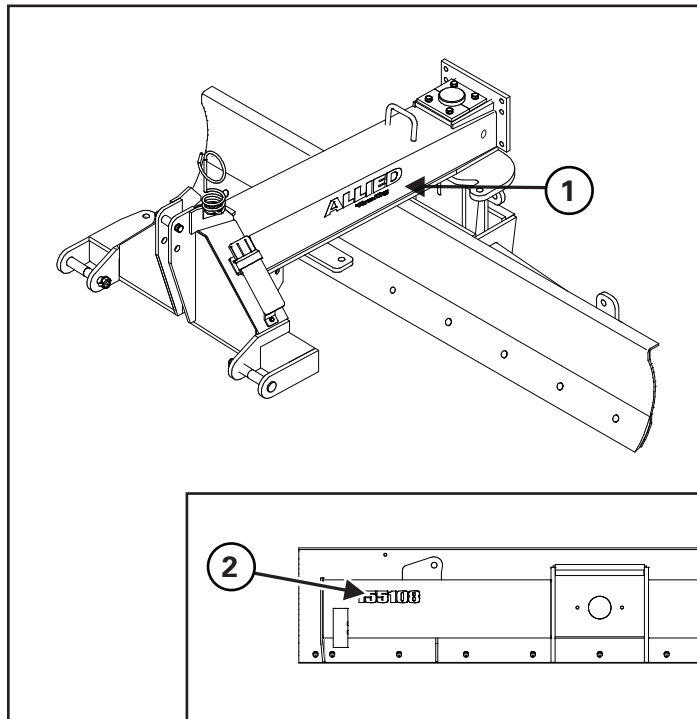
- Do not exceed 20 mph (32 kph). Reduce speed on rough roads and surfaces.
- Comply with state and local laws governing highway safety and movement of machinery on public roads.
- Use the SMV emblem and warning light. Local laws should be checked for all highway lighting and marking requirements.
- Check all reflectors for visibility and cleanliness before transport.
- Always attach a safety chain to the tractor drawbar and the equipment hitch before transport.
- Always yield to oncoming traffic in all situations and move to the side of the road so any following traffic may pass.
- Always enter curves or drive up or down hills at a low speed and at a gradual steering angle.
- Never allow riders on either tractor or equipment.
- Keep tractor in a lower gear at all times when traveling down steep grades.
- Maintain proper brake settings at all times (if equipped).

Machine Requirements And Capabilities

- Stop the machine and engage the parking brake. Install blocks in front of and behind the rear tires of the machine. Install blocks underneath and support the equipment securely before working under raised equipment.
- Keep bystanders clear of moving parts and the work area. Keep children away.
- Use increased caution on slopes and near banks and ditches to prevent overturn.
- Make certain that the Slow Moving Vehicle (SMV) emblem is installed so that it is visible and legible. When transporting the equipment, use the flashing warning lights (if equipped) and follow all local regulations.
- Operate this equipment with a machine equipped with an approved Roll-Over Protective Structure (ROPS). Always wear seat belt when the ROPS is up. Serious injury or death could result from falling off the machine.
- Before leaving the operator's position:
 1. Always park on a flat level surface.
 2. Place all controls in neutral.
 3. Engage the parking brake.
 4. Stop engine.
 5. Wait for all moving parts to stop.
- Carry passengers only in designated seating areas. Never allow riders on the machine or equipment. Falling off can result in serious injury or death.
- Start the equipment only when properly seated in the operator's seat.
- Operate the machine and equipment from the operator's position only.
- The parking brake must be engaged before leaving the operator's seat. Roll away can occur because the transmission may not prevent machine movement.

DECAL IDENTIFICATION

Figure 3



Identification [Figure 3]:

ALLIED 16.5" x 3.8" PN: 815035 (Item 1)



8 Ft. Model 10096 PN: 815019 (Item 2)



9 Ft. Model 100108 PN: 815021 (Item 2)



8 Ft. Model 15596 PN: 817405 (Item 2)



9 Ft. Model 155108 PN: 817406 (Item 2)



10 Ft. Model 155120 PN: 817407 (Item 2)



12 Ft. Model 155144 PN: 817408 (Item 2)



SAFETY SIGN-OFF FORM



WARNING

Instructions are necessary before operating or servicing equipment. Read and understand the Operator And Parts Manual and safety signs (decals) on equipment. Follow warnings and instructions in the manuals when making repairs, adjustments or servicing. Check for correct function after adjustments, repairs or service. Untrained operators and failure to follow instructions can cause injury or death.

Farm King follows the general Safety Standards specified by the American Society of Agricultural and Biological Engineers (ASABE) and the Occupational Safety and Health Administration (OSHA). Anyone who will be operating and / or maintaining the equipment must read and clearly understand ALL Safety, Operating and Maintenance information presented in this manual.

Annually review this information before the season start-up and make these periodic reviews of SAFETY and OPERATION a standard practice for all of your equipment. An untrained operator is unqualified to operate this machine.

The following sign-off sheet is provided for your record and to show that all personnel who will be working with the equipment have read and understand the information in this Operator And Parts Manual and have been instructed in the operation of the equipment.

SIGN-OFF SHEET		
Date	Employee's Signature	Employer's Signature

ALLIED

by **FarmKing**



ASSEMBLY

COMPONENT UNLOADING AND IDENTIFICATION.....	19
BLADE.....	20
ARM.....	20
LINKAGES.....	21
GAUGE WHEEL (OPTIONAL).....	22
END PLATES (OPTIONAL).....	23

ALLIED

by FarmKing



COMPONENT UNLOADING AND IDENTIFICATION



AVOID INJURY OR DEATH

Keep fingers and hands out of pinch points when assembling the equipment.



DO NOT permit bystanders to be in the work area when unloading and assembling components.

DO NOT work under suspended parts.

Keep away from moving parts.

Always use lifting devices / vehicles, chains or straps of adequate size and strength when unloading and assembling components.

Unload the crate(s) and components on a flat level area of adequate size to assemble the equipment.



Unload crate(s) and other components carefully to prevent damage to any of the components.

NOTE: If any components are damaged, missing or replacement parts are required, contact your Farm King Dealer.

Assemble the equipment in the following order on a flat and level surface:

1. Blade assembly
2. Arm assembly
3. Linkage assembly

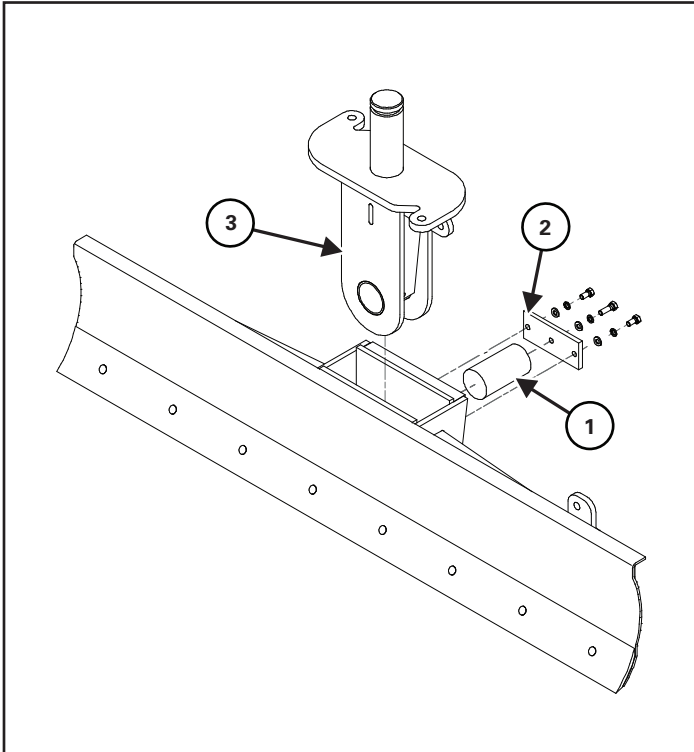
Using the packing list, locate and place all components and hardware in one area. Count the individual components and verify that you have received the correct number of components to fully assemble the equipment.



The directions front, left, right, and rear are viewed as the operator sitting in the operator's seat with the equipment hitched to the tractor.

BLADE

Figure 4

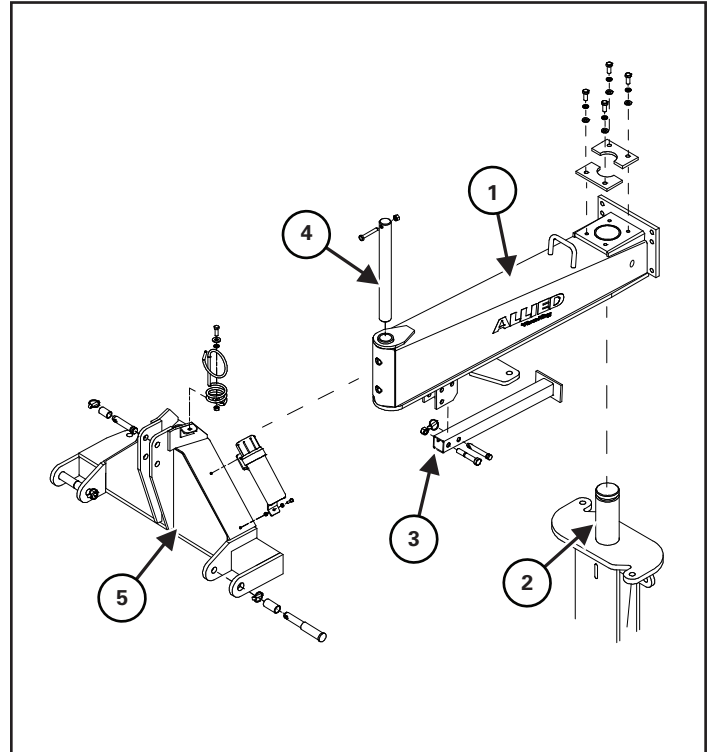


Remove the blade pin (Item 1) and the clamp plate (Item 2) from the blade assembly [Figure 4].

Insert the king pin weldment (Item 3) into the blade assembly and assemble the blade pin and clamp plate using the hardware supplied [Figure 4].

ARM

Figure 5



Slide the arm weldment (Item 1) onto the king pin assembly. Position the clamps around the groove on the king pin shaft (Item 2) and attach using supplied hardware. [Figure 5].

Bolt the stand (Item 3) to the arm weldment and connect one Cat. 1 link pin [Figure 5].

Remove the arm swivel pin (Item 4) from the hitch weldment (Item 5). Slide the hitch weldment on to the arm weldment and connect using the swivel pin. The pin is held in place with a hex bolt and lock nut [Figure 5].

Recheck and tighten all bolts. Grease the bushings at both ends of the arm weldment.

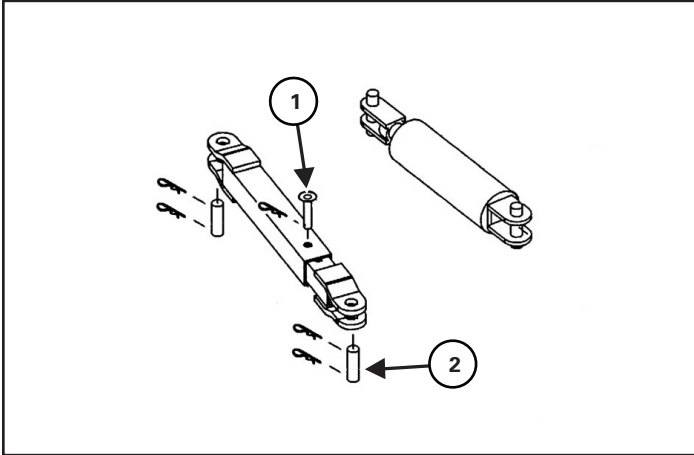
Install the manual canister to the hitch weldment.

Install the hitch mounting pins and bushings.

LINKAGES

Connect the mechanical links or optional hydraulic cylinders.

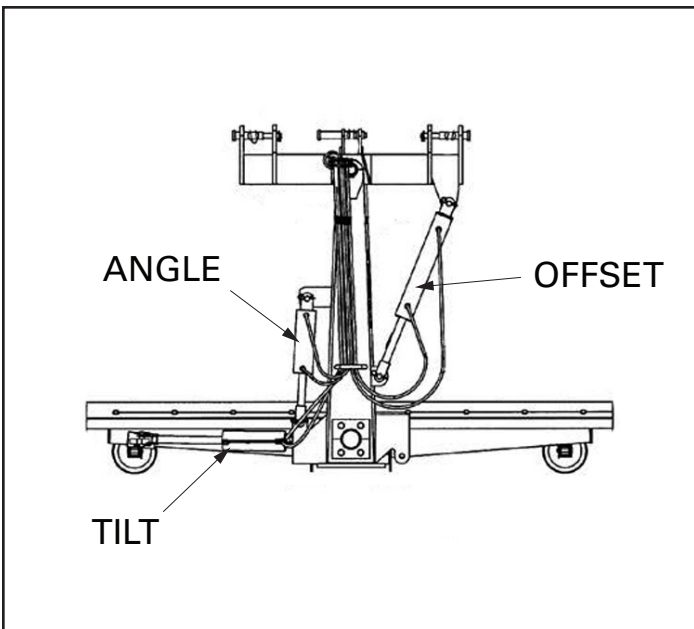
Figure 6



Assemble the inner and outer sleeves of the mechanical links. Connect with one clevis pin (Item 1) and retaining pin [Figure 6].

Attach the links or cylinders to each mount using one clevis pin (Item 2) and two retaining pins [Figure 6].

Figure 7



100 Series Rear Blade

Mechanical Linkages		
Links [Figure 7]	Inner Sleeve	Outer Sleeve
Angle	901582	901579
Tilt	901581	906037
Offset	901583	901580
Hydraulic Cylinders		
Links [Figure 7]	Cylinder	
Angle	3-1/2" x 12" - 24823M	
Tilt	3-1/2" x 8" - 24803M	
Offset	4" x 18" - 24824M	

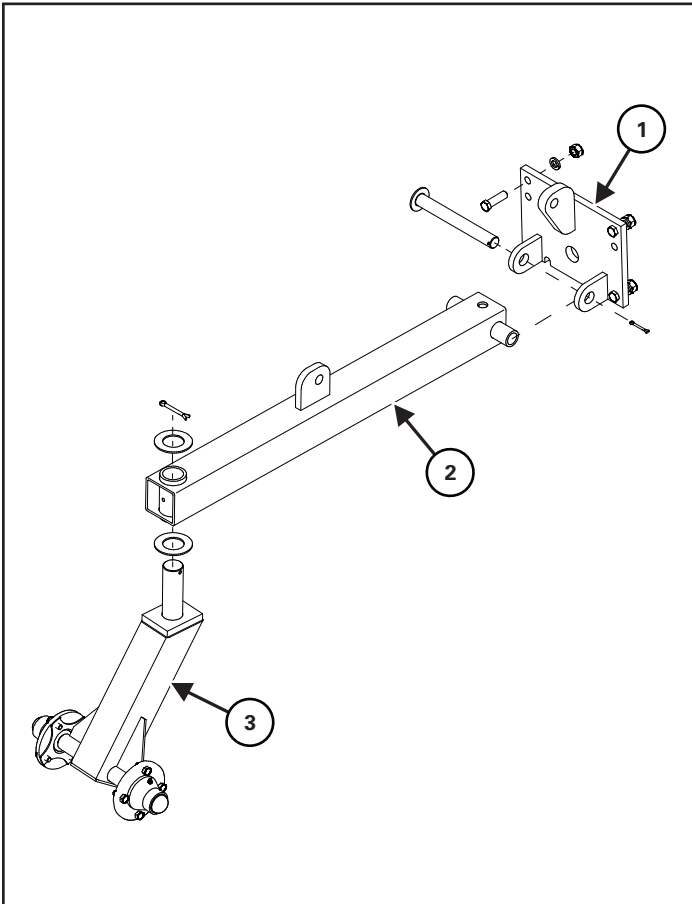
155 Series Rear Blade

Mechanical Linkages		
Links [Figure 7]	Inner Sleeve	Outer Sleeve
Angle	901583	901580
Tilt	901581	906037
Offset	901583	901580
Hydraulic Cylinders		
Links [Figure 7]	Cylinder	
Angle	4" x 18" - 24824M	
Tilt	3-1/2" x 8" - 24803M	
Offset	4" x 18" - 24824M	

If applicable, attach hydraulic hoses to the hydraulic cylinders. Install the hydraulic hose holder to the hitch weldment. Route hoses along the arm and through the holders.

GAUGE WHEEL (OPTIONAL)

Figure 8

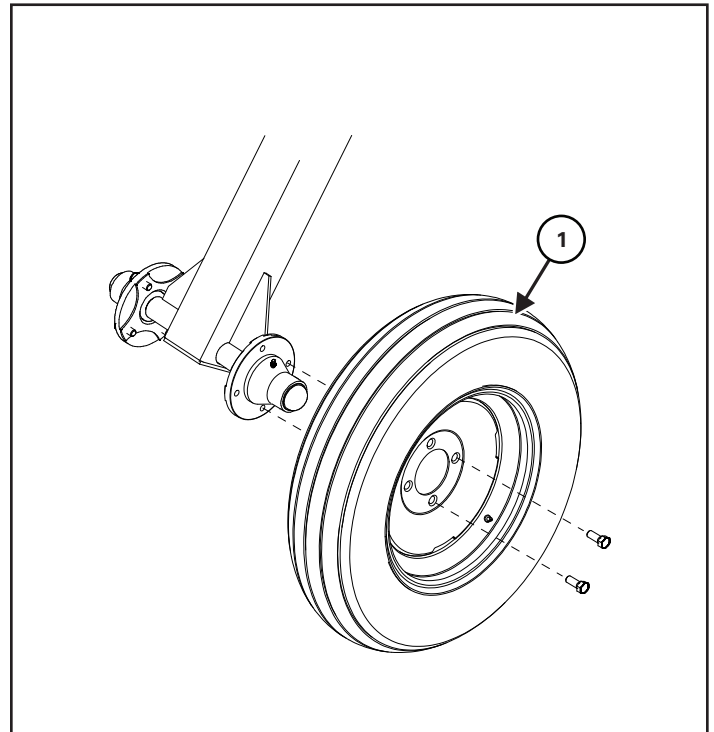


Bolt the gauge wheel bracket (Item 1) to the back of the blade arm using four 3/4" x 2-1/2" hex bolts, lock washers, and hex nuts **[Figure 8]**.

Connect the gauge wheel arm (Item 2) to the bracket using the swivel pin and retaining pin **[Figure 8]**.

Connect the gauge wheel axle (Item 3) to the arm. Attach through the bushing using two rim washers and one retaining pin **[Figure 8]**.

Figure 9



Mount the wheels (Item 1) to the hubs on the axle. Attach each wheel using four wheel bolts **[Figure 9]**.

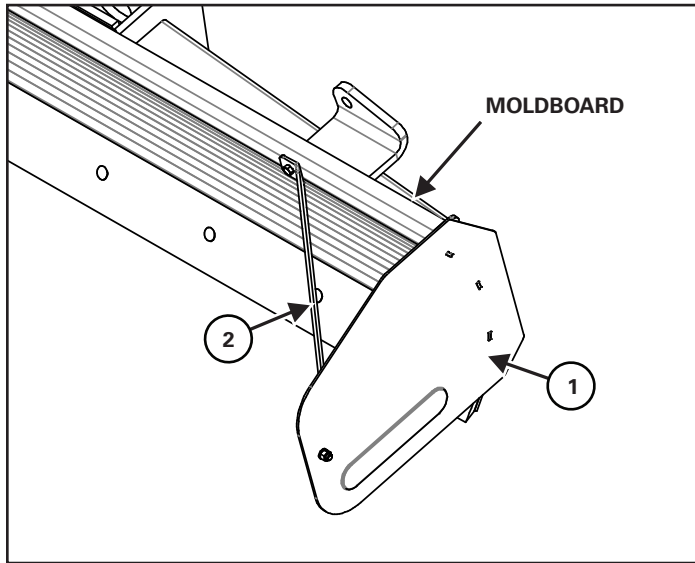
Grease the bushings at both ends of the arm and at the wheel hubs.

Attach the ratchet jack or cylinder to each mount using one 1" x 4" clevis pin and two retaining pins.

If applicable, attach hydraulic hoses to the hydraulic cylinder. Route hoses along the arm and through the holders.

END PLATES (OPTIONAL)

Figure 10



Align the end plates (Item 1) with the right-hand and left-hand ends of the moldboard **[Figure 10]**.

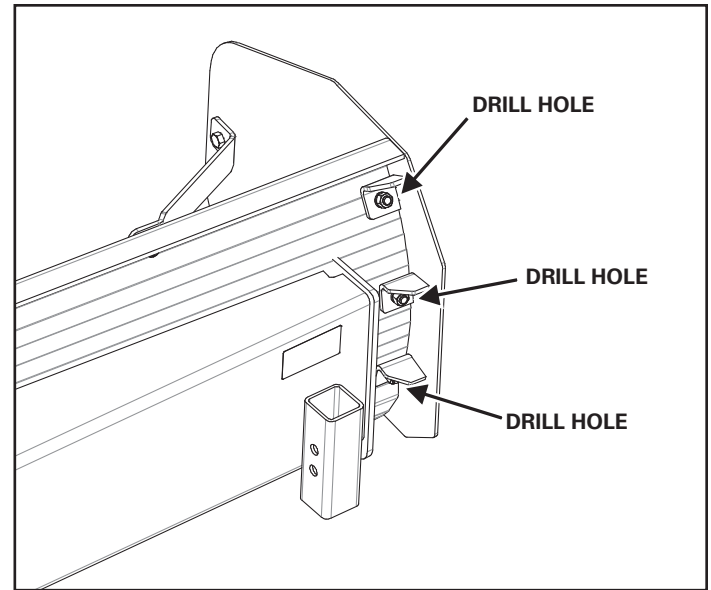
The angled brackets of the end plates must be tight against the back of the moldboard.

The top of the end plates must be flush with top of the moldboard.

Attach the braces (Item 2) to the end plates and moldboard using four 1/2" x 1-1/4" hex bolts, four 1/2" hex nuts, and four 1/2" lock washers **[Figure 10]**.

Make sure the end plates are square with the moldboard.

Figure 11



Drill six 17/32" holes through the holes of the angled brackets of the end plates, through the moldboard **[Figure 11]**.

Attach the end plates to the moldboard through the six drilled holes using six 1/2" x 1-1/4" hex bolts, six 1/2" hex nuts, and six 1/2" lock washers.

Make sure the end plates are square with the moldboard.

ALLIED

by FarmKing



OPERATION

GENERAL INFORMATION.....	27
Pre - Operation Checklist.....	27
TRACTOR REQUIREMENTS.....	27
ENTERING AND LEAVING THE OPERATOR'S POSITION.....	28
CONNECTING TO TRACTOR.....	28
Connecting Hydraulic Hoses.....	29
Disconnecting Hydraulic Hoses.....	29
FIELD OPERATION.....	30
TRANSPORTING.....	31

ALLIED

by FarmKing



GENERAL INFORMATION

Pre - Operation Checklist

Before operating the equipment for the first time and each time thereafter, check the following items:



WARNING

AVOID INJURY OR DEATH

Wear safety glasses to prevent eye injury when any of the following conditions exist:

- When fluids are under pressure.
- Flying debris or loose material is present.
- Engine is running.
- Tools are being used.

1. Lubricate the equipment per the schedule outline in the Maintenance Section.
2. Check the Rear Blade hitch for damaged, loose or missing parts. Repair as needed before operation.
3. Check condition of all hydraulic components for leaks. Repair as required.

NOTE: Do Not operate with leaks.



WARNING



HIGH PRESSURE FLUID HAZARD

Leaking fluids under pressure can enter the skin and cause serious injury or death. Immediate medical attention is required. Wear goggles. Use cardboard to check for leaks.

TRACTOR REQUIREMENTS

The following information will depend on tilling depth, soil type, field speed, etc.

The tractor must be equipped with a Cat. II / III three-point hitch.

The tractor must operate at the following horsepower:

Model	Tractor HP
10096 (8 FT.)	100 HP
100108 (9 FT.)	100 HP
15596 (8 FT.)	150 HP
155108 (9 FT.)	150 HP
155120 (10 FT.)	150 HP
155144 (12 FT.)	150 HP



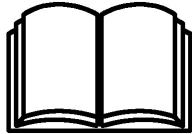
CAUTION

Using a tractor with greater HP than the recommended range may cause severe damage to frame or components of implement and thereby void warranty.

ENTERING AND LEAVING THE OPERATOR'S POSITION



IMPORTANT



Follow the instructions in your tractor's operation manual for the correct procedure.

Entering The Operator's Position

Move to the operator's position, start the engine and release the parking brake.

Leaving The Operator's Position



WARNING

AVOID INJURY OR DEATH

Before you leave the operator's position:

- Always park on a flat level surface.
- Place all controls in NEUTRAL.
- Engage the park brake.
- Stop the engine and remove the key.

Park the tractor / equipment on a flat level surface.

Place all controls in neutral, engage the park brake, stop the engine and wait for all moving parts to stop. Leave the operator's position.

CONNECTING TO TRACTOR

Always inspect the tractor's three point hitch and equipment three point mounts before connecting (see the tractor's owner's manual).

Move the tractor drawbar into the storage position or remove (if necessary) to prevent interference with operation (see the tractor's operator's manual for the correct procedure).

Remove the retaining pins from the equipment three point mounts.

Enter the operator's position.

Move the tractor into position in front of the equipment.



WARNING

AVOID INJURY OR DEATH

Before moving the tractor, look in all directions and make sure no bystanders, especially small children are in the work area. Do not allow anyone between the tractor and the equipment when backing up to the equipment for connecting.

Keep fingers and hands out of pinch points when connecting and disconnecting equipment.

Move the tractor backwards, aligning the tractor and equipment three point mounts.

Leave the operator's position.

Connect tractor and equipment three point mounts. Attach securely using retaining pins.



IMPORTANT

Always use implement mounting pins of adequate size and strength and a retaining pin with a locking device.

Connecting Hydraulic Hoses

The Rear Blade may be equipped with the following hydraulic options, if applicable.

1. Hydraulic offset adjustment
2. Hydraulic angle adjustment
3. Hydraulic tilt adjustment
4. Hydraulic gauge wheel height adjustment

Push male couplers into female couplers on the tractor until they are fully engaged and locked.



HIGH PRESSURE FLUID HAZARD

To prevent serious injury or death from high pressure fluid:

- Relieve pressure on system before repairing or adjusting.
- Wear proper hand and eye protection when searching for leaks. Use wood or cardboard instead of hands.
- Keep all components in good repair.



Contain and dispose of any oil leakage in an environmentally safe manner.

Thoroughly clean the quick couplers before making connections. Dirt can quickly damage the system.

NOTE: Make sure the quick couplers are fully engaged. If the quick couplers do not fully engage, check to see that the couplers are the same size and type.

Disconnecting Hydraulic Hoses

Release pressure and pull the male couplers out to disconnect.



AVOID BURNS

Hydraulic fluid, tubes, fittings and quick couplers can get hot when running equipment. Be careful when connecting and disconnecting quick couplers.

FIELD OPERATION

Move to the operator’s position, start the engine and release the parking brake.

Move the tractor / equipment to the starting point of the work area.

The rear blade may only be operated in the forward direction.

IMPORTANT

AVOID EQUIPMENT DAMAGE

- Do not make sharp turns with the implement in ground.
- Always lift the implement out of ground before making sharp turns.

WARNING

MACHINE TIPPING OR ROLL OVER CAN CAUSE SERIOUS INJURY OR DEATH

- Turn on level ground. Slow down when turning.
- Go up and down slopes, not across them.
- Check for adequate traction.

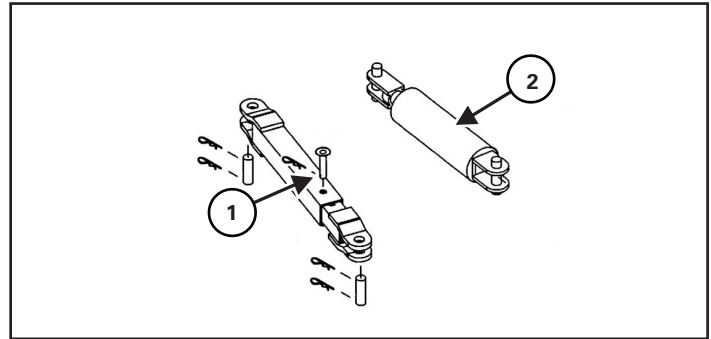
WARNING

AVOID INJURY OR DEATH

Check work area for underground lines such as electrical, gas, oil, water, etc.

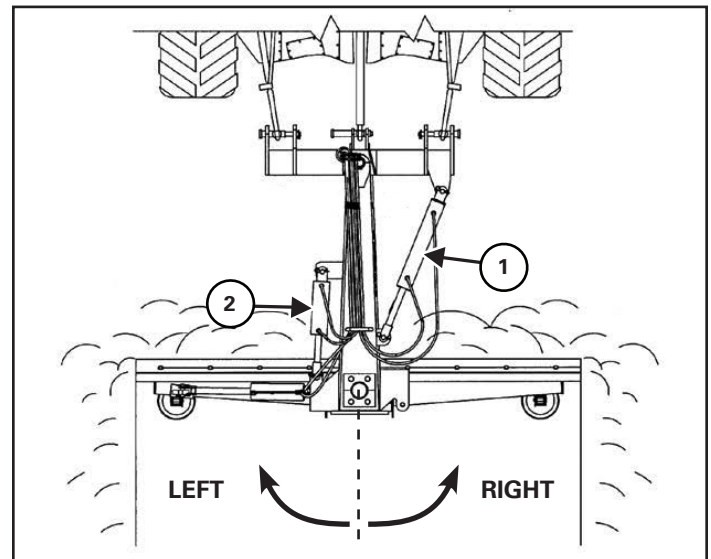
Consult local information before work. Extreme caution must be used in areas where utility lines are present.

Figure 12



Make adjustments to the rear blade by lengthening or shortening the linkages. Adjust mechanical links by moving the sleeves and securing with the clevis pin (Item 1). Adjust hydraulic cylinders (Item 2) by acting on the tractor controls [Figure 12].

Figure 13



Adjust the offset linkage (Item 1) to pivot the hitch left or right [Figure 13].

100 Series Rear Blade

Offset Linkage	Max. Left Angle	Max. Right Angle
Mechanical	21°	16°
Hydraulic	22°	27°

155 Series Rear Blade

Offset Linkage	Max. Left Angle	Max. Right Angle
Mechanical	23°	14°
Hydraulic	25°	25°

Adjust the angle linkage (Item 2) to pivot the blade left or right [Figure 13].

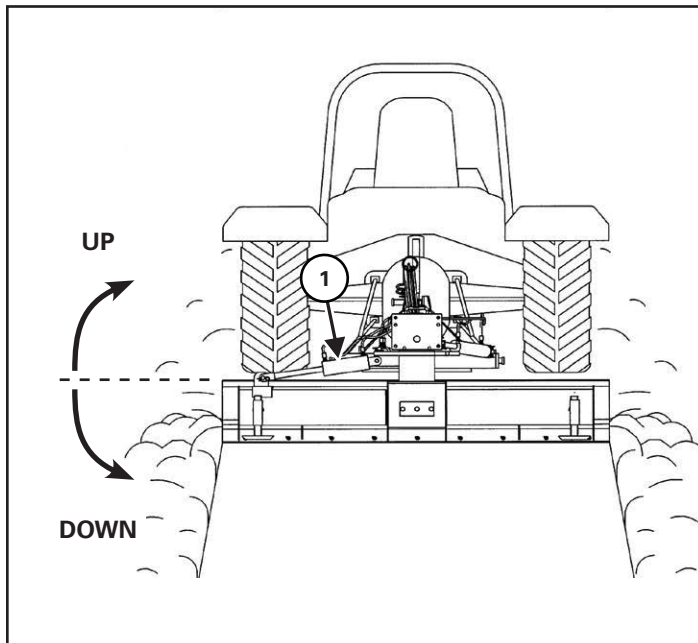
100 Series Rear Blade

Angle Linkage	Max. Left Angle	Max. Right Angle
Mechanical	20°	43°
Hydraulic	31°	36°

155 Series Rear Blade

Angle Linkage	Max. Left Angle	Max. Right Angle
Mechanical	33°	20°
Hydraulic	35°	35°

Figure 14



Adjust the tilt linkage (Item 1) to pivot the blade up or down [Figure 14].

100 Series Rear Blade

Tilt Linkage	Max. Up Angle	Max. Down Angle
Mechanical	16°	13°
Hydraulic	13°	15°

155 Series Rear Blade

Tilt Linkage	Max. Up Angle	Max. Down Angle
Mechanical	16°	12°
Hydraulic	14°	14°

TRANSPORTING

With the equipment connected to the tractor, enter the operator’s position.

Fully raise the equipment using the tractor’s three point hitch during transporting.

Comply with federal, state, local and provincial laws regarding the transport of farm equipment on public roadways.



AVOID SERIOUS INJURY OR DEATH

Use of an unapproved hitch or tractor can result in loss of control, leading to serious injury or death. Tractor and hitch must have the rated capacity to tow equipment.

Excess weight will greatly increase tractor stopping distance and may cause the operator to lose control of the tractor.

Verify that the tractor is approved for transporting the equipment and that the equipment is securely attached to the tractor.

Verify safety chain is installed and properly connected before transporting equipment. Verify that the SMV (Slow Moving Vehicle) emblem, all lights and reflectors are clean and visible.

The ratio of the tractor / tow vehicle weight to the loaded equipment weight plays an important role in defining acceptable travel speed.

TRAVEL SPEED - Acceptable travel speed.

WEIGHT RATIO - Weight of implement relative to weight of tractor / tow vehicle.

Travel Speed	Weight Ratio
Up to 20 mph (32 kph)	1 to 1 (or less)
Up to 10 mph (16 kph)	2 to 1 (or less)
DO NOT TOW	More than 2 to 1

ALLIED

by **FarmKing**



MAINTENANCE

SERVICE SCHEDULE CHART.....	35
LUBRICATION.....	37
Recommendations.....	37
Locations.....	37
DECAL IDENTIFICATION.....	39
Procedure.....	39
CLEANING.....	39
STORAGE AND RETURN TO SERVICE.....	39
Storage.....	39
Return To Service.....	39

ALLIED

by **FarmKing**



SERVICE SCHEDULE CHART



WARNING

Instructions are necessary before operating or servicing equipment. Read and understand the Operator And Parts Manual and safety signs (decals) on equipment. Follow warnings and instructions in the manuals when making repairs, adjustments or servicing. Check for correct function after adjustments, repairs or service. Untrained operators and failure to follow instructions can cause injury or death.

NOTE: If a problem is encountered that is difficult to solve, even after having read through this troubleshooting section, please call your local distributor, dealer or factory. Before you call, please have this Operator And Parts Manual and the serial number of your machine at hand.

Maintenance work must be done at regular intervals. Failure to do so will result in excessive wear and early failures. The service schedule is a guide for correct maintenance of the Rotary Rake.

#	DESCRIPTION	SERVICE PROCEDURES				
		CHECK	CLEAN	LUBE	CHANGE	COVER
Daily Maintenance (or every 8 hours of use)						
1	Hitch Pivot Bushing	✓		✓		
2	Blade Pivot Bushing	✓		✓		
3	Arm Pivot Bushing	✓		✓		
4	Gauge Wheel Arm (If Applicable)	✓		✓		
5	Wheel Hubs (If Applicable)	✓		✓		
6	Tire Pressure (If Applicable)	✓				
7	Wheel Bolts (If Applicable)	✓				
8	Hydraulic Cylinders / Hoses / Fittings (If Applicable)	✓				
Monthly (or every 50 hours of use)						
9	Entire Machine	✓	✓			

Troubleshooting Chart

Problem	Cause	SERVICE PROCEDURES
Ground clearing is uneven.	Exceeding recommended operating speed.	Slow down to recommended operating speed.
	Hard / compacted soil.	Reduce travel speed and make additional passes.
Machine buckles.	Blade cutting too deep.	Adjust depth.
Hydraulic functions not operating.	Hydraulic oil level low.	Check hydraulic oil level. Fill hydraulic oil as needed.
	Damaged hydraulic hose or loose connection.	Check all hoses and connections. Repair or replace as needed.
	Hydraulic pump damaged.	Check tractor's hydraulic system.
	Hydraulic oil filter plugged.	Clean or replace hydraulic oil filter.
Hydraulic functions operating intermittently.	Air in hydraulic system.	Remove air from hydraulic system.
Hydraulic cylinders not holding position.	Worn hydraulic seals in cylinders.	Replace seals.
Overheated hydraulic oil.	Hydraulic oil filter plugged.	Clean or replace hydraulic oil filter.
	Crushed hydraulic hose / line.	Repair or replace hydraulic hose / line.
	Oil level low.	Fill hydraulic oil as needed.
Losing hydraulic oil.	Damaged hydraulic hose or loose connection.	Check all hoses and connections. Repair or replace as needed.
	Worn hydraulic seals in cylinders.	Replace seals.

LUBRICATION

Recommendations

Always use a good quality multi-purpose / lithium base grease when lubricating the equipment.

- Always use a hand-held grease gun.
- Clean fitting before greasing, to avoid injecting dirt and grit.
- Replace and repair broken fittings immediately.
- If fittings will not take grease, remove and clean thoroughly. Replace fitting if necessary.



WARNING

AVOID INJURY OR DEATH

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:

- 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.

Check hydraulics regularly for leaks. Use cardboard to look for leaks, and use hand and eye protection.

Relieve pressure on hydraulic system before repairing or adjusting.

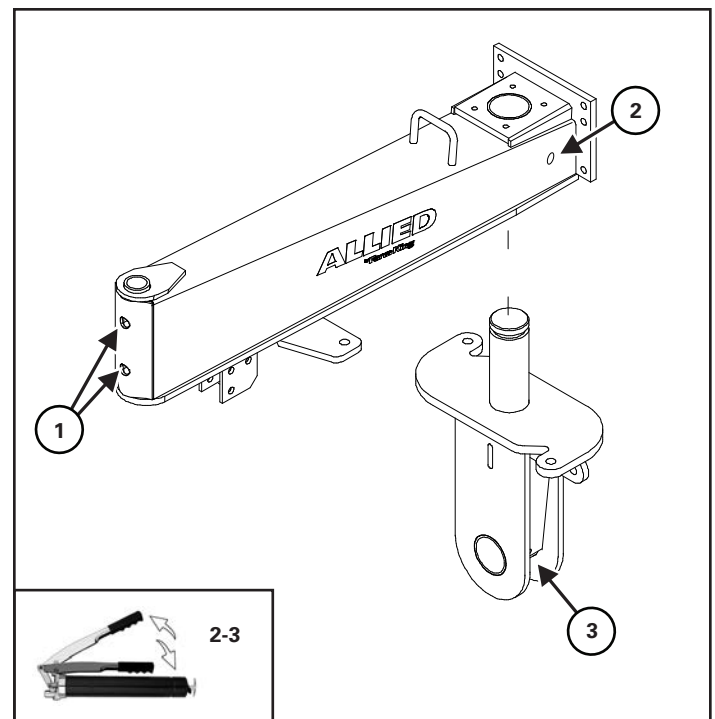
Locations



IMPORTANT

Fluid such as engine oil, hydraulic fluid, coolants, grease, etc. must be disposed of in an environmentally safe manner. Some regulations require that certain spills and leaks on the ground must be cleaned in a specific manner. See local, state and federal regulations for the correct disposal.

Figure 15

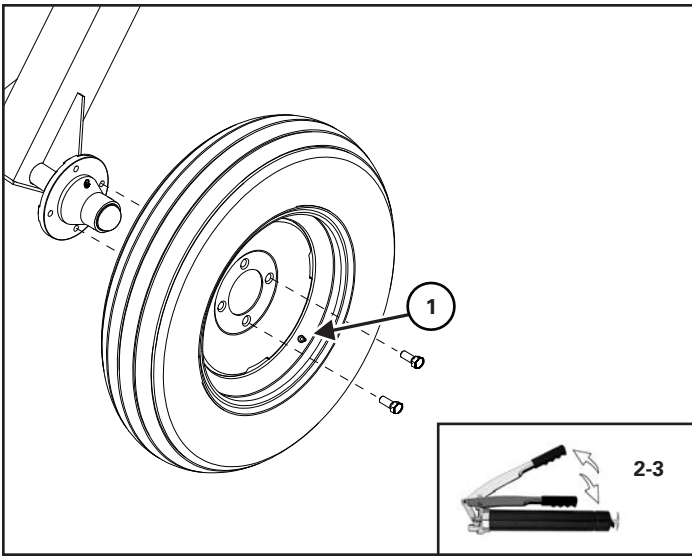


Apply two to three pumps of grease to the following locations [Figure 11]:

- Hitch bushing (Item 1)
- Arm bushing (Item 2)
- Blade bushing (Item 3)

Grease daily (or every 8 hours of use).

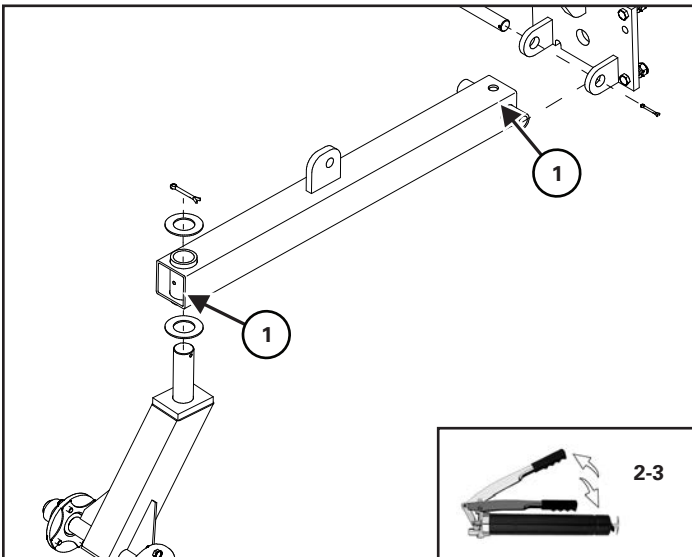
Figure 16



Apply two to three pumps of grease to the gauge wheel hubs (Item 1) [Figure 16].

Grease daily (or every 8 hours of use).

Figure 17



Apply two to three pumps of grease to the gauge wheel arm bushings (Item 1) [Figure 17].

Grease daily (or every 8 hours of use).

DECAL IDENTIFICATION

Procedure

Remove all portions of the damaged safety sign (decal).

Thoroughly clean the area with glass cleaner.

Removing all adhesive residue.

Allow the area to dry completely before installing the new safety sign (decal).

Position the safety sign (decal) in the correct location.

Remove a small portion of the backing paper on the safety sign (decal).

Press on the safety sign (decal) where the backing paper has been removed.

Slowly remove the remaining backing paper, pressing on the safety sign (decal) as the backing paper is removed.

Using the backing paper, pressing firmly, move the backing paper over the entire safety sign (decal) area.

NOTE: Small air pockets can be pierced with a pin and smoothed out using the piece of the backing paper.



IMPORTANT

When replacing safety signs (decals), the temperature must be above 10° C (50° F).

CLEANING

Keep equipment free of any debris. Remove buildup from blade.

Clean monthly (or every 50 hours of use).

STORAGE AND RETURN TO SERVICE

Storage

Sometimes it may be necessary to store the equipment for an extended period of time. Below is a list of items to perform before storage.

Thoroughly clean the equipment.

Lubricate the equipment.

Inspect the hitch and all welds on the equipment for wear and damage.

Check for loose hardware, missing guards, or damaged parts. Check for damaged or missing safety signs (decals). Replace if necessary. Replace worn or damaged parts.

Touch up all paint nicks and scratches to prevent rusting.

Place the equipment in a dry protected shelter.

NOTE: If a dry protected shelter is not available, cover with a waterproof tarp and tie down securely.

Place the equipment flat on the ground. Place planks under support stand if required.

Return To Service

After the equipment has been in storage, it is necessary to follow a list of items to return the equipment to service.

Be sure all shields and guards are in place.

Lubricate the equipment.

Connect to a tractor and operate equipment, verify all functions operate correctly.

Check for leaks. Repair as needed.



IMPORTANT

DO NOT permit children to play on or around the stored machine.

ALLIED

by **FarmKing**



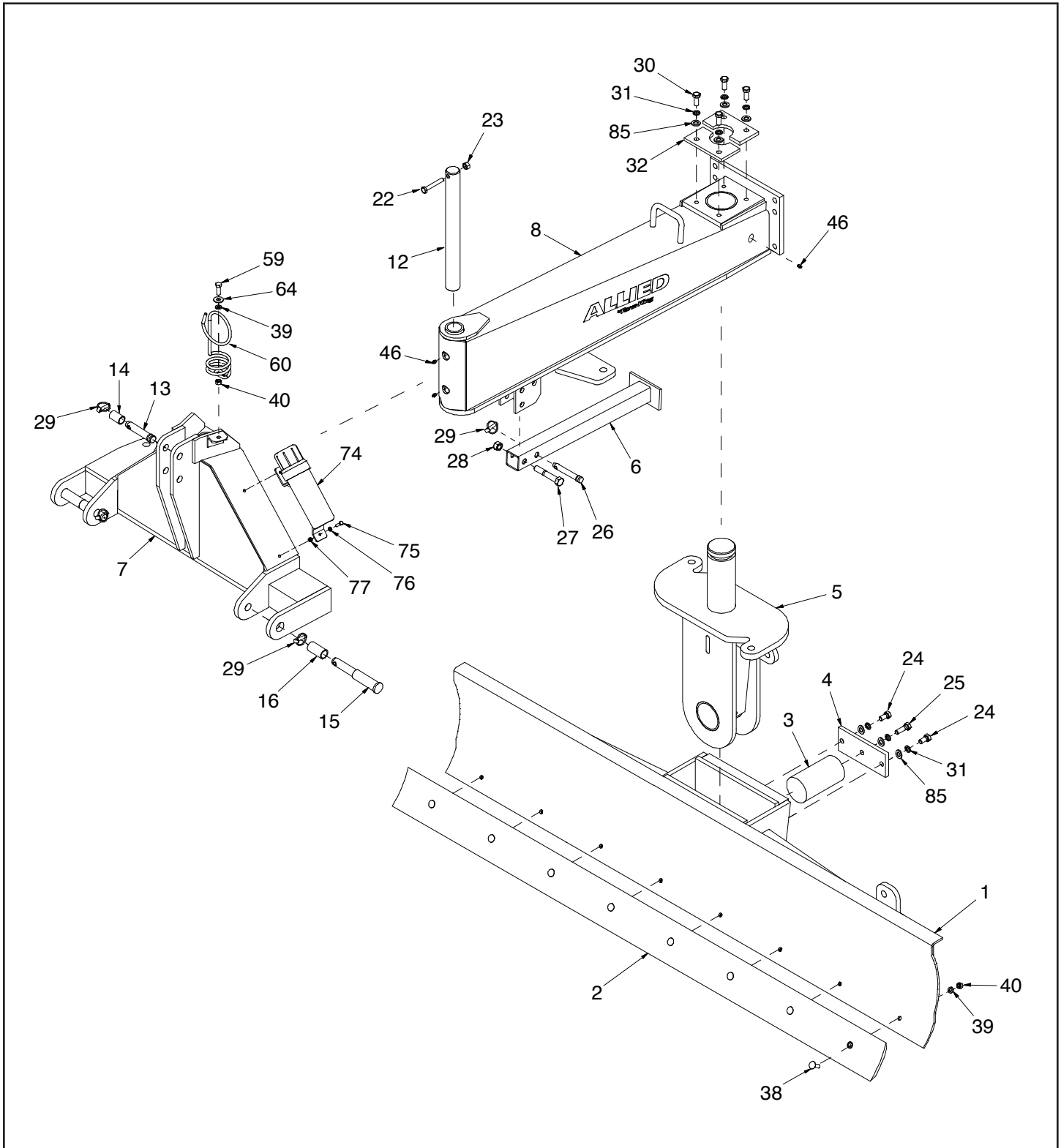
PARTS IDENTIFICATION

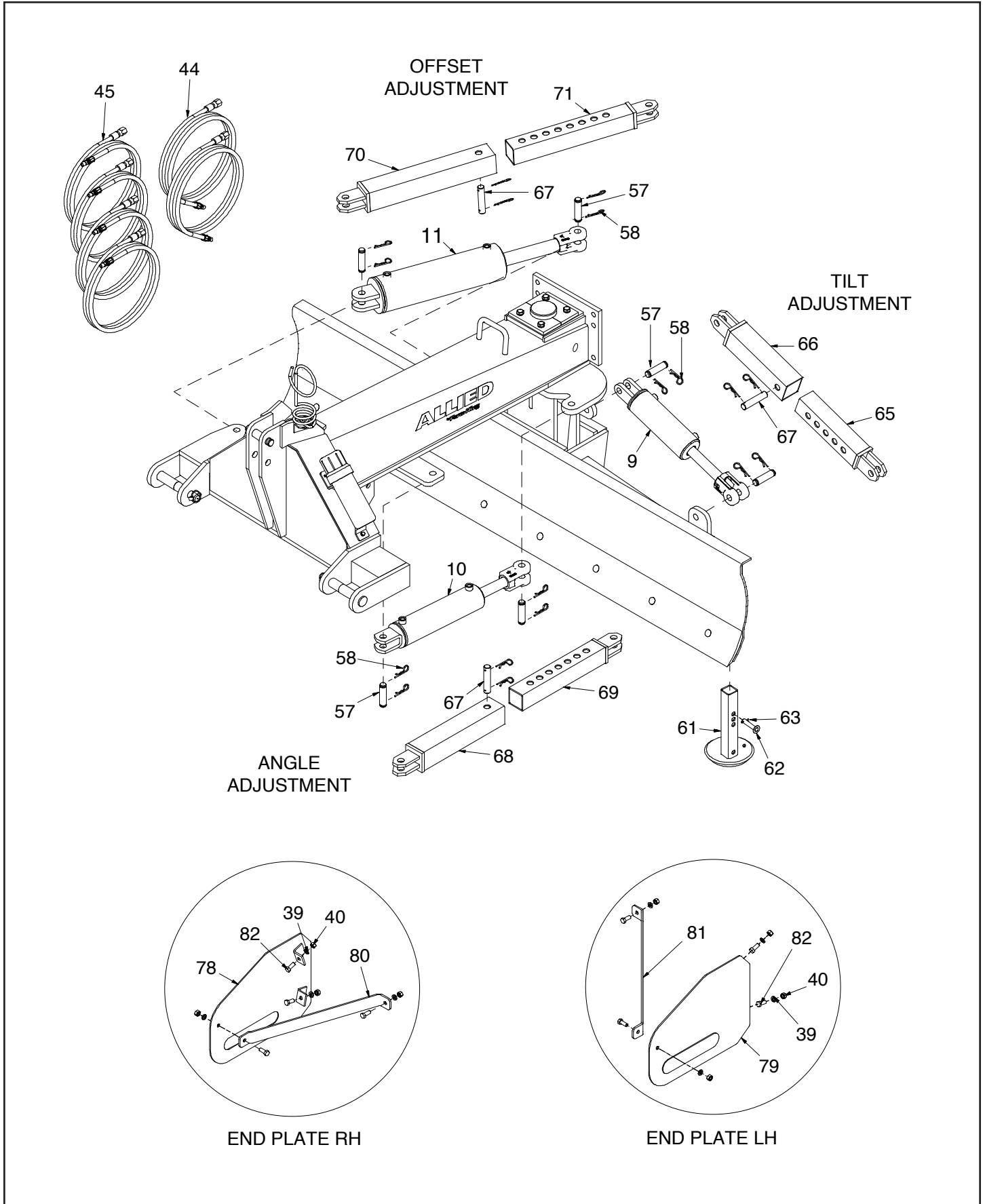
GENERAL PARTS INFORMATION.....	42
PARTS IDENTIFICATION.....	42

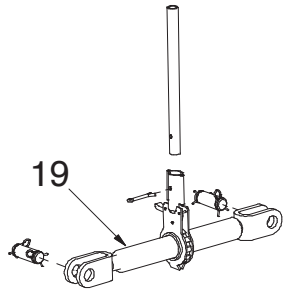
GENERAL PARTS INFORMATION

The parts identification section list descriptions, part numbers and quantities for all North American Base Model 100, 155 Series Rear Blades. Contact your Farm King dealer for additional parts information.

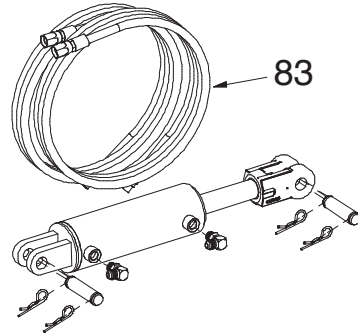
PARTS IDENTIFICATION



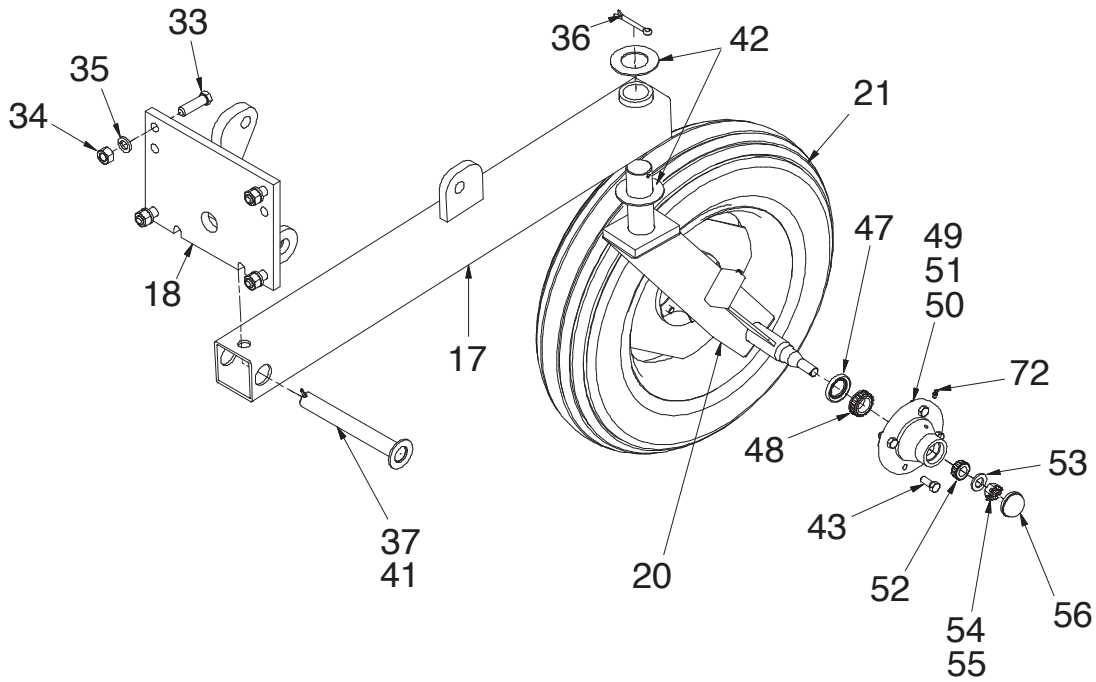




RATCHET JACK
(INCLUDED WITH F1654)



HYDRAULIC KIT
(INCLUDED WITH F1655)



GAUGE WHEEL KIT
C9151

ITEM	PART NUMBER	DESCRIPTION	QTY.
1*	820413	8' BLADE ASSEMBLY - MODEL 10096	1
	820414	9' BLADE ASSEMBLY - MODEL 100108	1
	817380	8' BLADE ASSEMBLY - MODEL 15596	1
	817379	9' BLADE ASSEMBLY - MODEL 155108	1
	817378	10' BLADE ASSEMBLY - MODEL 155120	1
	817377	12' BLADE ASSEMBLY - MODEL 155144	1
2	967523	8' CUTTING EDGE - 100, 155 SERIES	1
	900457	9' CUTTING EDGE - 100, 155 SERIES	1
	900458	10' CUTTING EDGE - 155 SERIES	1
	816810	12' CUTTING EDGE - 155 SERIES	1
3	900454	BLADE PIN - 100 SERIES	1
	900455	BLADE PIN - 155 SERIES	1
4	900453	CLAMP PLATE	1
5	820410	KING PIN W/ GREASE ZERK - 100 SERIES	1
	817398	KING PIN W/ GREASE ZERK - 155 SERIES	1
6	900417	STAND - 100 SERIES	1
	900415	STAND - 155 SERIES	1
7	900388	HITCH - 100 SERIES	1
	900389	HITCH - 155 SERIES	1
8	906727	ARM - 100 SERIES	1
	817387	ARM - 155 SERIES	1
9	24803M	TILT CYLINDER OR WHEEL KIT CYLINDER 3-1/2" X 8" - 100, 155 SERIES	1
	X3906	SEAL KIT - 24803M	AR
10	24823M	ANGLE CYLINDER 3-1/2" X 12" - 100 SERIES	1
	X3906	SEAL KIT - 24823M	AR
	24824M	ANGLE CYLINDER 4" X 18" - 155 SERIES	1
	X3911	SEAL KIT - 24824M	AR
11	24824M	OFFSET CYLINDER 4" X 18" - 100, 155 SERIES	1
	x3911	SEAL KIT - 24824M	AR
12	900412	ARM SWIVEL PIN	1
13	965910	TOP LINK PIN CATEGORY 2	1
14	965266	LINK PIN BUSHING CATEGORY 2-3	1
15	967461	LIFT PIN CATEGORY 2-3	2
16	965267	LIFT PIN BUSHING	2
17	906733	WHEEL KIT ARM	1
18	906729	WHEEL KIT BRACKET	1
19	967499	RATCHET JACK	1
20	906740	AXLE	1
21	F1154	TIRE ASSEMBLY (RIM & TIRE)	2
	F7110	WHEEL 15" X 4.5" X 4 BOLT (RIM)	2

*INCLUDES ITEM 2, 38, 39, 40

ITEM	PART NUMBER	DESCRIPTION	QTY.
22	81629	1/2" X 3-1/2" HEX BOLT (PL)	1
23	812364	1/2" LOCK NUT (PL)	1
24	811702	5/8" X 1-1/4" HEX BOLT (PL)	2
25	84299	5/8" X 2" HEX BOLT (PL)	1
26	965807	PIN TOP LINK CATEGORY 1	1
27	811790	3/4" X 4-1/2" HEX BOLT GR5 (PL)	1
28	812365	3/4" LOCK NUT (STEEL) NC GRB (PL)	1
29	965911	7/16" LINCH PIN	4
30	84268	5/8" X 1-1/2" HEX BOLT (PL)	4
31	81677	5/8" LOCKWASHER (PL)	7
32	900431	KING PIN CLAMP - 100 SERIES	2
	900432	KING PIN CLAMP - 155 SERIES	2
33	84346	3/4" X 2-1/2" HEX BOLTS (PL)	4
34	81700	3/4" HEX NUT (PL)	4
35	81701	3/4" LOCKWASHER (PL)	4
36	820415	5/16" X 3" COTTER PIN (PL)	1
37	906735	SWIVEL PIN	1
38	967524	1/2" X 1-1/2" PLOW BOLTS (PL)	AR
39	81637	1/2" LOCKWASHER (PL)	AR
40	81636	1/2" HEX NUT (PL)	AR
41	81210	1/4" X 2" COTTER PIN (PL)	1
42	967153	2" X 10GA NARROW RIM WASHER (PL)	2
43	968404	1/2" X 1-1/4" WHEEL BOLT (PL)	8
44	114905	144" HYDRAULIC HOSE	AR
45	114906	120" HYDRAULIC HOSE	AR
46	84583	GREASE NIPPLE	AR
47	961891	OIL SEAL CTD (SE11)	2
48	967712	OUTER BEARING CONE (LM67048)	2
49	968405	BEARING CUP (LM11910)	2
50	105173	4 BOLT HUB (411) W/ CUPS CTD	2
51	967711	OUTER BEARING CUP (LM67010)	2
52	968406	OUTER BEARING CONE (LM11949)	2
53	9812416	3/4" WASHER SAE (BR)	2
54	81834	3/4" SLOTTED HEX NUT (BR)	2
55	981309	1/8" X 1-1/4" COTTER PIN (BR)	1
56	968409	DUST CAP (DC12)	1

ITEM	PART NUMBER	DESCRIPTION	QTY.
57	103753	1" X 4" CYLINDER CLEVIS PIN	6
	816816	1" X 5" HD CYLINDER CLEVIS PIN	6
58	12779	#9 HAIR PIN CLIP	12
59	84277	1/2" X 1-1/2" HEX BOLT GR5 (PL)	1
60	966314	HYD HOSE HOLDER (10-3/4")	1
61	902407	SKID PLATE WELDMENT - OPTION	2
62	902486	SKID PIN 5/8" X 3-1/8"	2
63	9812430	COTTER PIN 1/8" X 1" (PL)	2
64	81638	1/2" FLAT WASHER (PL)	1
65	901578	MANUAL TILT SLEEVE OUTERTUBE 12-3/4" - 100, 155 SERIES	1
66	901581	MANUAL TILT SLEEVE INNERTUBE 13" - 100, 155 SERIES	1
67	901584	SLEEVE PIN 1" X 4-3/4"	3
68	901579	MANUAL ANGLE SLEEVE OUTERTUBE 17-1/4" - 100 SERIES	1
	901580	MANUAL ANGLE SLEEVE OUTERTUBE 21" - 155 SERIES	1
69	901582	MANUAL ANGLE SLEEVE INNERTUBE 17-3/4" - 100 SERIES	1
	901583	MANUAL ANGLE SLEEVE INNERTUBE 20" - 155 SERIES	1
70	901580	MANUAL OFFSET SLEEVE OUTERTUBE 21" - 100, 155 SERIES	1
71	901583	MANUAL OFFSET SLEEVE INNERTUBE 20" - 100, 155 SERIES	1
72	967900	1/4" GREASE FITTING	2
74	909277	MANUAL HOLDER	1
75	81552	5/16" X 1-1/4" HEX BOLT (PL)	2
76	81569	5/16" LOCK WASHER (PL)	2
77	81568	5/16" HEX NUT (PL)	2
78	816844	END PLATE - RH 100 SERIES	1
	817235	END PLATE - RH 155 SERIES	1
79	816845	END PLATE - LH 100 SERIES	1
	817234	END PLATE - LH 155 SERIES	1
80	816848	BRACE - RH 100 SERIES	1
	817707	BRACE - RH 155 SERIES	1
81	816849	BRACE - LH 100 SERIES	1
	817706	BRACE - LH 155 SERIES	1
82	81620	1/2" X 1.25" HEX BOLT (PL)	6
83	816843	156" HYDRAULIC HOSE	AR
85	812639	0.625 SAE FLAT WASHER (PL)	7

ALLIED

by FarmKing



SPECIFICATIONS AND SHIPPING KIT NUMBERS

SPECIFICATIONS.....	51
HARDWARE TORQUE VALUES.....	55
Metric Chart.....	55
Imperial Chart.....	56

ALLIED

by **FarmKing**



SPECIFICATIONS

100 Series Rear Blade

Model	10096	100108
Width	8 FT.	9 FT.
Maximum HP	100 HP	
3-Point Hitch	Cat. II, III	
Moldboard Thickness	5/16 IN. Boxed Reinforcement	
Moldboard Width	96 IN.	108 IN.
Moldboard Height	18 IN.	
Adjustment	Manual / Hyd.	
Angle Adjust	Mechanical: 20° Left to 43° Right, Hydraulic: 31° Left to 36° Right	
Tilt Adjust	Mechanical: 16° Left to 13° Right, Hydraulic: 13° Left to 15° Right	
Offset Adjust	Mechanical: 21° Left to 16° Right, Hydraulic: 22° Left to 27° Right	
King Pin	3-1/2 IN.	
Cutting Edge	High Carbon 1/2 x 6 IN. Reversible	
Weight	1287 LBS.	1352 LBS.

155 Series Rear Blade

Model	15596	155108	155120	155144
Width	8 FT.	9 FT.	10 FT.	12 FT.
Maximum HP	100 HP			
3-Point Hitch	Cat. II, III			
Moldboard Thickness	5/16 IN. Boxed Reinforcement			
Moldboard Width	96 IN.	108 IN.	120 IN.	144 IN.
Moldboard Height	21-1/4 IN.			
Adjustment	Manual / Hyd.			
Angle Adjust	Mechanical: 33° Left to 20° Right, Hydraulic: 35° Left to 35° Right			
Tilt Adjust	Mechanical: 16° Left to 12° Right, Hydraulic: 14° Left to 14° Right			
Offset Adjust	Mechanical: 23° Left to 14° Right, Hydraulic: 25° Left to 25° Right			
King Pin	4 IN.			
Cutting Edge	High Carbon 1/2 x 6 IN. Reversible			
Weight	1683 LBS.	1710 LBS.	1749 LBS.	1846 LBS.

SHIPPING KIT NUMBERS

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

100 Series Rear Blade

Qty.	Bundle	Description
Model 10096 - 8 Ft. Rear Blade - Less Mechanical / Hyd. Linkages		
1	C8102	Body Assembly
Model 100108 - 9 Ft. Rear Blade - Less Mechanical / Hyd. Linkages		
1	C9102	Body Assembly
Optional Mechanical / Hyd. Linkages		
1	F0113	Tilt Adjust - Mechanical Link
1	F6692	Tilt Adjust - Hyd. Cylinder C/W Hoses
1	F6583	Angle Adjust - Mechanical Link
1	F6693	Angle Adjust - Hyd. Cylinder C/W Hoses
1	F6584	Offset Adjust - Mechanical Link
1	F6694	Offset Adjust - Hyd. Cylinder C/W Hoses
Optional Gauge Wheel - Less Height Control		
1	C9151	Dual Gauge Wheel C/W 6.70 Tires
Optional Gauge Wheel Height Control		
1	F1654	Ratchet Jack
1	F1655	Hydraulic Cylinder C/W Hoses
Optional Equipment		
1	F6707	Skid Shoe Set
1	F1653	End Plates

155 Series Rear Blade

Qty.	Bundle	Description
Model 15596 - 8 Ft. Rear Blade - Less Mechanical / Hyd. Linkages		
1	C8155	Body Assembly
Model 155108 - 9 Ft. Rear Blade - Less Mechanical / Hyd. Linkages		
1	C9155	Body Assembly
Model 155120 - 10 Ft. Rear Blade - Less Mechanical / Hyd. Linkages		
1	C10155	Body Assembly
Model 155144 - 12 Ft. Rear Blade - Less Mechanical / Hyd. Linkages		
1	C12155	Body Assembly
Optional Mechanical / Hyd. Linkages		
1	F0113	Tilt Adjust - Mechanical Link
1	F6692	Tilt Adjust - Hyd. Cylinder C/W Hoses
1	F6584	Angle Adjust - Mechanical Link
1	F6694	Angle Adjust - Hyd. Cylinder C/W Hoses
1	F6584	Offset Adjust - Mechanical Link
1	F6694	Offset Adjust - Hyd. Cylinder C/W Hoses
Optional Gauge Wheel - Less Height Control		
1	C9151	Dual Gauge Wheel C/W 6.70 Tires
Optional Gauge Wheel Height Control		
1	F1654	Ratchet Jack
1	F1655	Hydraulic Cylinder C/W Hoses
Optional Equipment		
1	F6707	Skid Shoe Set
1	F1653	End Plates

HARDWARE TORQUE VALUES

Metric Chart

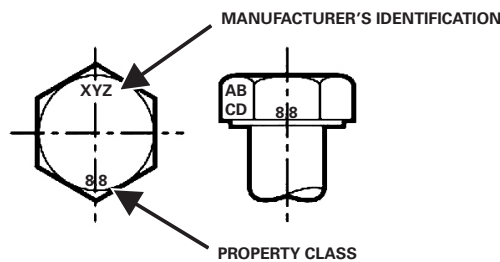
NOTE: Do not use the values listed in the charts if a different torque value or tightening procedure is specified in this manual for a specific application. Torque values listed are for general use only.

Use the following charts to determine the correct torque when checking, adjusting or replacing hardware. Torque values are listed in newton-meters (inch* or foot pounds) for normal assembly applications.

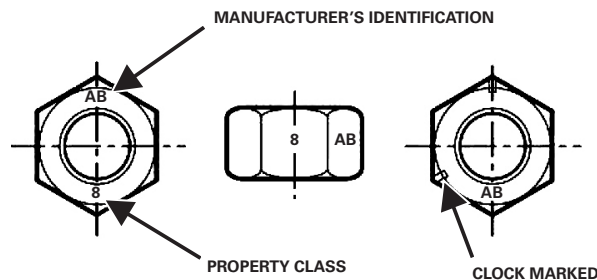
Nominal Size	Class 5.8		Class 8.8		Class 10.9		Lock nuts
	Unplated	Plated W / ZnCr	Unplated	Plated W / ZnCr	Unplated	Plated W / ZnCr	CL.8 W/ CL. 8.8 Bolt
M4	1.7 (15*)	2.2 (19*)	2.6 (23*)	3.4 (30*)	3.7 (33*)	4.8 (42*)	1.8 (16*)
M6	5.8 (51*)	7.6 (67*)	8.9 (79*)	12 (102*)	13 (115*)	17 (150*)	6.3 (56*)
M8	14 (124*)	18 (159*)	22 (195*)	28 (248*)	31 (274*)	40 (354*)	15 (133*)
M10	28 (21)	36 (27)	43 (32)	56 (41)	61 (45)	79 (58)	30 (22)
M12	49 (36)	63 (46)	75 (55)	97 (72)	107 (79)	138 (102)	53 (39)
M16	121 (89)	158 (117)	186 (137)	240 (177)	266 (196)	344 (254)	131 (97)
M20	237 (175)	307 (226)	375 (277)	485 (358)	519 (383)	671 (495)	265 (195)
M24	411 (303)	531 (392)	648 (478)	839 (619)	897 (662)	1160 (855)	458 (338)

NOTE: Torque values shown with * are inch pounds.

Identification of Hex Cap Screws and Carriage Bolts - Classes 5 and up



Identification of Hex Nuts and Lock Nuts - Classes 5 and up



HARDWARE TORQUE VALUES (CONT'D)

Imperial Chart

NOTE: Do not use the values listed in the charts if a different torque value or tightening procedure is specified in this manual for a specific application. Torque values listed are for general use only.

Use the following charts to determine the correct torque when checking, adjusting or replacing hardware. **Torque values are listed in newton-meters (inch* or foot pounds) for normal assembly applications.**

Nominal Size	SAE Grade 5		SAE Grade 8		LOCK NUTS			
	Unplated or Plated Silver	Plated W / ZnCr Gold"	Unplated or Plated Silver	Plated W / ZnCr Gold"	Unplated or Plated Silver	Plated W / ZnCr Gold"	Grade W / Gr. 5 Bolt	Grade W / Gr. 8 Bolt
1/4	6.2 (55*)	8.1 (72*)	9.7 (86*)	12.6 (112*)	13.6 (121*)	17.7 (157*)	6.9 (61*)	9.8 (86*)
5/16	13 (115*)	17 (149*)	20 (178*)	26 (229*)	28 (250*)	37 (324*)	14 (125*)	20 (176*)
3/8	23 (17)	30 (22)	35 (26)	46 (34)	50 (37)	65 (48)	26 (19)	35 (26)
7/16	37 (27)	47 (35)	57 (42)	73 (54)	80 (59)	104 (77)	41 (30)	57 (42)
1/2	57 (42)	73 (54)	87 (64)	113 (83)	123 (91)	159 (117)	61 (45)	88 (64)
9/16	81 (60)	104 (77)	125 (92)	163 (120)	176 (130)	229 (169)	88 (65)	125 (92)
5/8	112 (83)	145 (107)	174 (128)	224 (165)	244 (180)	316 (233)	122 (90)	172 (127)
3/4	198 (146)	256 (189)	306 (226)	397 (293)	432 (319)	560 (413)	217 (160)	306 (226)
7/8	193 (142)	248 (183)	495 (365)	641 (473)	698 (515)	904 (667)	350 (258)	494 (364)
1	289 (213)	373 (275)	742 (547)	960 (708)	1048 (773)	1356 (1000)	523 (386)	739 (545)

NOTE: Torque values shown with * are inch pounds.

Identification of Hex Cap Screws and Carriage Bolts



GRADE 2 SAE BOLT



GRADE 5 SAE BOLTS



GRADE 8 SAE BOLTS



GRADE 2 SAE NUTS

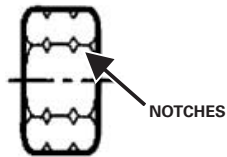


GRADE 5 SAE HEX NUTS

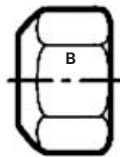


GRADE 8 SAE HEX NUTS

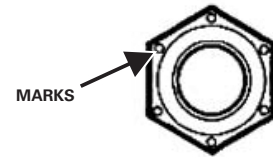
Identification of Hex Nuts and Lock Nuts



GRADE IDENTIFICATION
GRADE A: NO NOTCHES
GRADE B: ONE CIRCUMFERENTIAL NOTCH
GRADE C: TWO CIRCUMFERENTIAL NOTCHES



GRADE IDENTIFICATION
GRADE A: NO MARK
GRADE B: LETTER B
GRADE C: LETTER C



GRADE IDENTIFICATION
GRADE A: NO MARKS
GRADE B: THREE MARKS
GRADE C: SIX MARKS
MARKS NEED NOT BE LOCATED AT CORNERS

WARRANTY

FARM KING BASE LIMITED WARRANTY.....	59
Repair Parts Limited Warranty.....	59
What Is Not Covered.....	59
Authorized Dealer And Labor Costs.....	59
Warranty Requirements.....	60
EXCLUSIVE EFFECT OF WARRANTY AND LIMITATION OF LIABILITY.....	60

ALLIED

by **FarmKing**



FARM KING BASE LIMITED WARRANTY

Farm King provides this warranty only to original retail purchasers of its products. Farm King warrants to such purchasers that all Farm King 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 one (1) year. This limited warranty applies only to those parts and components manufactured by Farm King. Parts and components manufactured by others are subject to their manufacturer's warranties, if any.

Farm King 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 Farm King within thirty (30) days of the date that such defect or improper workmanship is, or should have been, discovered. Parts must be returned through the selling representative and the buyer must prepay transportation charges.

Farm King 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 Farm King. 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.

Repair Parts Limited Warranty

Farm King warrants genuine Farm King replacement parts purchased after the expiration of the Farm King 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. Farm King 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 Farm King 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 the Farm King factory 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 Farm King; 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 Farm King.

Authorized Dealer And Labor Costs

Repairs eligible for labor under this limited warranty must be made by Farm King or an authorized Farm King dealer. Farm King 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 Farm King 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. Farm King will not approve or pay invoices sent for repairs that Farm King has not previously approved. Warranty service does not extend the original term of this limited warranty.

Warranty Requirements

To be covered by warranty, each new product must be registered with Farm King 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, Farm King 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 to be covered by this limited warranty will be subject to the terms of the invoice and shall be paid for by the purchaser.

EXCLUSIVE EFFECT OF WARRANTY AND LIMITATION OF LIABILITY

TO THE EXTENT PERMITTED BY LAW, FARM KING 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, FARM KING 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 FARM KING'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 FARM KING'S PRODUCTS ARE THOSE SET FORTH HEREIN. IN NO EVENT SHALL FARM KING 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 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 state to state.

Farm King 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 Farm King to the purchaser, and Farm King 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 Farm King's ability to obtain materials or manufacturer 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.

www.farm-king.com

Farm King

1330 43rd Street North
Fargo, ND, 58102
E-mail: info@buhler.com
www.farm-king.com

Equipment shown is subject to change without notice.
©2019 Buhler Trading Inc. Printed in USA TSX: BUI