

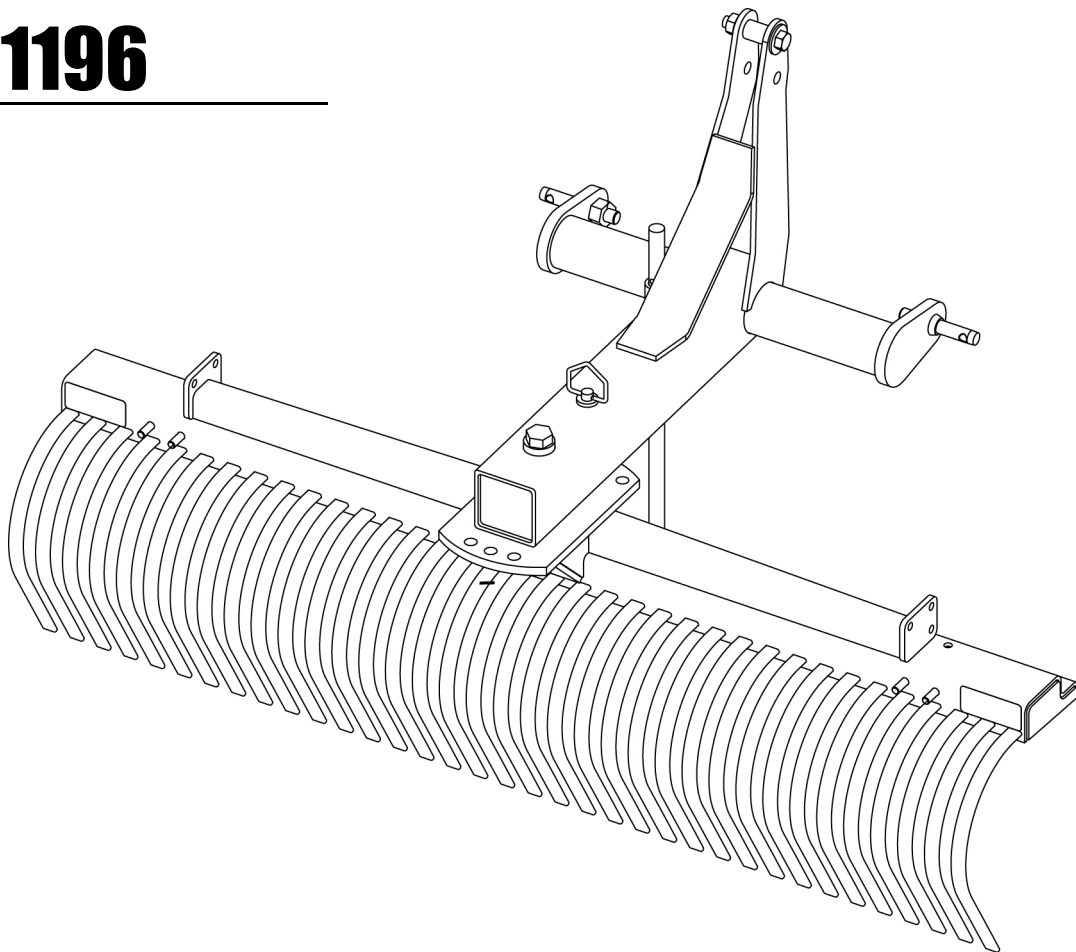
# LANDSCAPE RAKES

**LR1072**

**LR1172**

**LR1184**

**LR1196**



## TO THE DEALER:

Assembly and proper installation of this product is the responsibility of the Frontier dealer. Read manual instructions and safety rules. Make sure all items on the Dealer's Pre-Delivery and Delivery Check Lists in the Operator's Manual are completed before releasing equipment to the owner.

The dealer must complete the Product Registration form, located on the Frontier website. **Failure to complete and return the form does not diminish customer's warranty rights.**

## TO THE OWNER:

Read this manual before operating your Frontier equipment. The information presented will prepare you to do a better and safer job. Keep this manual handy for ready reference. Require all operators to read this manual carefully and become acquainted with all the adjustment and operating procedures before attempting to operate. Replacement manuals can be obtained from your selling dealer.

The equipment you have purchased has been carefully engineered and manufactured to provide dependable and satisfactory use. Like all mechanical products, it will require cleaning and upkeep. Lubricate the unit as specified. Observe all safety information in this manual and safety decals on the equipment.

For service, your authorized Frontier dealer has trained mechanics, genuine Frontier service parts, and the necessary tools and equipment to handle all your needs.

Use only genuine Frontier service parts. Substitute parts will void the warranty and may not meet standards required for safe and satisfactory operation. Record the model number and serial number of your equipment in the spaces provided:

**Model:** \_\_\_\_\_ **Date of Purchase:** \_\_\_\_\_

**Serial Number: (see Safety Decal section for location)** \_\_\_\_\_

Provide this information to your dealer to obtain correct repair parts.

Throughout this manual, the term **IMPORTANT** is used to indicate that failure to observe can cause damage to equipment. The terms **CAUTION**, **WARNING** and **DANGER** are used in conjunction with the Safety-Alert Symbol, (a triangle with an exclamation mark), to indicate the degree of hazard for items of personal safety.



This Safety-Alert Symbol indicates a hazard and means **ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!**



Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury.



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.



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

**IMPORTANT**

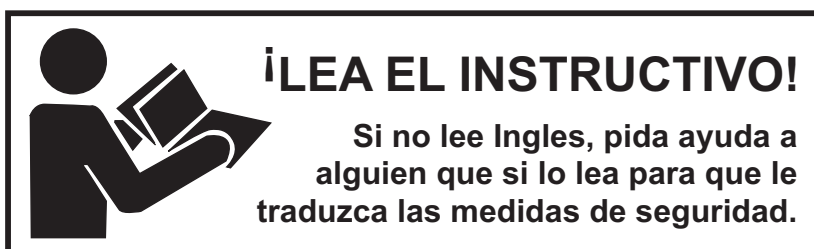
Indicates that failure to observe can cause damage to equipment.

**NOTE**

Indicates helpful information.

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This Operator's Manual should be regarded as part of the machine. Suppliers of both new and second-hand machines must make sure that this manual is provided with the machine.

# SPECIFICATIONS

|                           | LR1072  | LR1172                      | LR1184                       | LR1196                       |
|---------------------------|---|-----------------------------|------------------------------|------------------------------|
| <b>Width</b>              | 72" (183 cm)  | 72" (183 cm)                | 84" (213 cm)                 | 96" (244 cm)                 |
| <b>Weight (Mass)</b>      | 270 lbs. (122 Kg)   | 305 lbs. (138 Kg)           | 324 lbs. (147 Kg)            | 359 lbs. (163 Kg)            |
| <b>Tractor Size</b>       | 12 to 40 HP<br>(9 to 30 kW)   | 12 to 40 HP<br>(9 to 30 kW) | 20 to 40 HP<br>(15 to 30 kW) | 20 to 40 HP<br>(15 to 30 kW) |
| <b>Position</b> . . . . . | Angle 360° . . . . . Locks at 0°, 15°, 30° forward right or left;<br>and 0°, 15° rearward right or left |                             |                              |                              |
|                           | Pitch adjustment. . . . . Adjust top link of tractor 3-point hitch                                      |                             |                              |                              |
| <b>Teeth</b> . . . . .    | 5/16 x 1" (7.9 x 25.4 mm) Spring steel, heat-treated  |                             |                              |                              |

## GENERAL INFORMATION

The purpose of this manual is to assist you in operating and maintaining your equipment. Read it carefully. It furnishes information and instructions that will help you achieve years of dependable performance. These instructions have been compiled from extensive field experience and engineering data. Some information may be general in nature due to unknown and varying operating conditions. However, through experience and these instructions, you should be able to develop procedures suitable to your particular situation.

The illustrations and data used in this manual were current at the time of printing but, due to possible inline production changes, your machine may vary slightly in detail. We reserve the right to redesign and change the machines as may be necessary without notification.

Throughout this manual, references are made to right and left directions. These are determined by standing behind the equipment facing the direction of forward travel.



# SAFETY RULES

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



Safety is a primary concern in the design and manufacture of our products. Unfortunately, our efforts to provide safe equipment can be wiped out by an operator's single careless act.

In addition to the design and configuration of equipment, hazard control and accident prevention are dependent upon the awareness, concern, judgement, and proper training of personnel involved in the operation, transport, maintenance, and storage of equipment.

It has been said, "The best safety device is an informed, careful operator." We ask you to be that kind of operator.

## **TRAINING**

■ Safety instructions are important! Read all attachment and power unit manuals; follow all safety rules and safety decal information. (Replacement manuals and safety decals are available from your dealer.) Failure to follow instructions or safety rules can result in serious injury or death.

■ If you do not understand any part of this manual and need assistance, see your dealer.

■ Operators must be instructed in and be capable of the safe operation of the equipment, its attachments, and all controls. Do not allow anyone to operate this equipment without proper instructions.

■ Never allow children or untrained persons to operate equipment.

## **PREPARATION**

■ Always wear relatively tight and belted clothing to avoid getting caught in moving parts. Wear sturdy, rough-soled work shoes and protective equipment for eyes, hair, hands, hearing, and head; and respirator or filter mask where appropriate.

■ Make sure attachment is properly secured, adjusted, and in good operating condition.

■ Power unit must be equipped with ROPS or ROPS cab and seat belt. Keep seat belt securely fastened. Falling off power unit can result in death from being run over or crushed. Keep foldable ROPS system in "locked up" position at all times.

■ A minimum 20% of tractor and equipment weight must be on the tractor front wheels when attachments are in transport position. Without this weight, tractor could tip over, causing personal

injury or death. The weight may be attained with a loader, front wheel weights, ballast in tires or front tractor weights. Weigh the tractor and equipment. Do not estimate.

## **TRANSPORTATION**

■ Always comply with all state and local lighting and marking requirements.

■ Never allow riders on power unit or attachment.

■ Do not operate or transport on steep slopes.

■ Use extreme care and reduce ground speed on slopes and rough terrain.

■ Do not operate or transport equipment while under the influence of alcohol or drugs.

■ Before transporting, pivot the unit so red reflectors face the rear.

## **OPERATION**

■ Always comply with all state and local lighting and marking requirements.

■ Operate only in daylight or good artificial light.

■ Keep bystanders away from equipment.

■ Keep hands, feet, hair, and clothing away from equipment while engine is running. Stay clear of all moving parts.

■ Power unit must be equipped with ROPS or ROPS cab and seat belt. Keep seat belt securely fastened. Falling off power unit can result in death from being run over or crushed. Keep foldable ROPS system in "locked up" position at all times.

■ Never allow riders on power unit or attachment.

■ Always sit in power unit seat when operating controls or starting engine. Securely fasten seat belt, place transmission in neutral, engage brake, and ensure all other controls are disengaged before starting power unit engine.

■ Look down and to the rear and make sure area is clear before operating in reverse.

■ Use extreme care when working close to fences, ditches, other obstructions, or on hillsides.

■ Do not operate or transport on steep slopes.

*(Safety Rules continued on next page)*



## SAFETY RULES

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



*(Safety Rules continued from previous page)*

- Do not stop, start, or change directions suddenly on slopes.
- Use extreme care and reduce ground speed on slopes and rough terrain.
- Stop power unit and equipment immediately upon striking an obstruction. Turn off engine, remove key, inspect, and repair any damage before resuming operation.
- Watch for hidden hazards on the terrain during operation.

### **MAINTENANCE**

- Before dismounting tractor or performing any service or maintenance, lower attachment to ground, turn off engine, set parking brake, operate valve levers to release any hydraulic pressure, and remove key.
- Always wear relatively tight and belted clothing to avoid getting caught in moving parts. Wear sturdy, rough-soled work shoes and protective equipment for eyes, hair, hands, hearing, and head; and respirator or filter mask where appropriate.
- Never go underneath equipment (lowered to the ground or raised) unless it is properly blocked and secured. Never place any part of the body underneath equipment or between moveable parts even

when the engine has been turned off. Hydraulic system leak down, hydraulic system failures, mechanical failures, or movement of control levers can cause equipment to drop or rotate unexpectedly and cause severe injury or death.

- Make sure attachment is properly secured, adjusted, and in good operating condition.
- Never perform service or maintenance with engine running.
- Keep all persons away from operator control area while performing adjustments, service, or maintenance.
- Tighten all bolts, nuts, and screws to torque chart specifications. Check that all cotter pins are installed securely to ensure equipment is in a safe condition before putting unit into service.

### **STORAGE**

- To help prevent injury caused by a falling implement, always detach on a hard level surface.
- Block equipment securely for storage.
- Keep children and bystanders away from storage area.
- Follow manual instructions for storage.



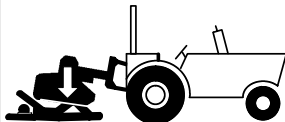




# SAFETY & INSTRUCTIONAL DECALS



**ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!**  
**Replace Immediately If Damaged!**

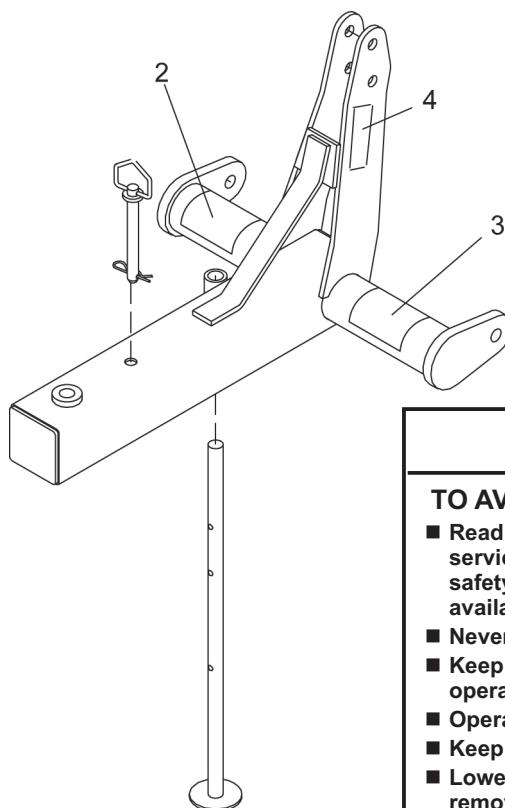


|  <b>WARNING</b> |   |
|--|---|
|                 | <p><b>FALLING OFF CAN RESULT IN BEING RUN OVER.</b></p> <ul style="list-style-type: none"> <li>■ Tractor must be equipped with ROPS (or ROPS CAB) and seat belt. Keep foldable ROPS systems in "locked up" position at all times.</li> <li>■ Buckle Up! Keep seat belt securely fastened.</li> <li>■ Allow no riders.</li> </ul>  |
|                 | <p><b>RAISED IMPLEMENT CAN DROP AND CRUSH.</b></p> <ul style="list-style-type: none"> <li>■ Never go underneath raised implement which can drop from equipment or tractor 3-point hitch hydraulic leak down, hydraulic system failures, movement of control levers or mechanical linkage failures.</li> <li>■ Service work does not require going underneath implement. Read manual instructions.</li> </ul> <p><b>FALLING OFF OR GOING UNDERNEATH IMPLEMENT CAN RESULT IN SERIOUS INJURY OR DEATH.</b></p> <p style="text-align: right;">55121-C</p> |

2 - WP55121

4 - WP1002941

|  <b>WARNING</b>  |  |
|---|--|
|    |  |
| <b>CRUSHING AND PINCHING HAZARD</b>   |  |
| <ul style="list-style-type: none"> <li>■ Be extremely careful handling various parts of the machine. They are heavy and hands, fingers, feet, and other body parts could be crushed or pinched between tractor and implement.</li> <li>■ Operate tractor controls from tractor seat only.</li> <li>■ Do not stand between tractor and implement when tractor is in gear.</li> <li>■ Make sure parking brake is engaged before going between tractor and implement.</li> <li>■ Stand clear of machine while in operation or when it is being raised or lowered.</li> </ul> <p><b>FAILURE TO FOLLOW THESE INSTRUCTIONS COULD RESULT IN SERIOUS INJURY OR DEATH.</b></p> <p style="text-align: right;">1002941-A</p> |  |



3 - WP1002423

|  <b>WARNING</b>  |  |
|---|--|
| <b>TO AVOID SERIOUS INJURY OR DEATH:</b>  |  |
| <ul style="list-style-type: none"> <li>■ Read Operator's Manual before operating, servicing or repairing equipment. Follow all safety rules and instructions. (Manuals are available from your selling dealer.)</li> <li>■ Never allow riders.</li> <li>■ Keep bystanders away from equipment during operation.</li> <li>■ Operate from tractor seat only.</li> <li>■ Keep all shields in place and in good condition.</li> <li>■ Lower equipment to ground, stop engine, remove key and set brake before dismounting tractor.</li> <li>■ Never allow children or untrained persons to operate equipment.</li> <li>■ Do not transport towed or semi-mounted units over 20 MPH.</li> </ul> <p><b>FAILURE TO FOLLOW THESE INSTRUCTIONS CAN RESULT IN INJURY OR DEATH.</b></p> <p style="text-align: right;">1002423-B</p> |  |

(Safety Decals continued on next page)

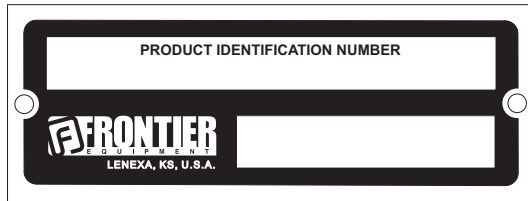


# SAFETY & INSTRUCTIONAL DECALS

**ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!**  
**Replace Immediately If Damaged!**



*(Safety Decals continued from previous page)*

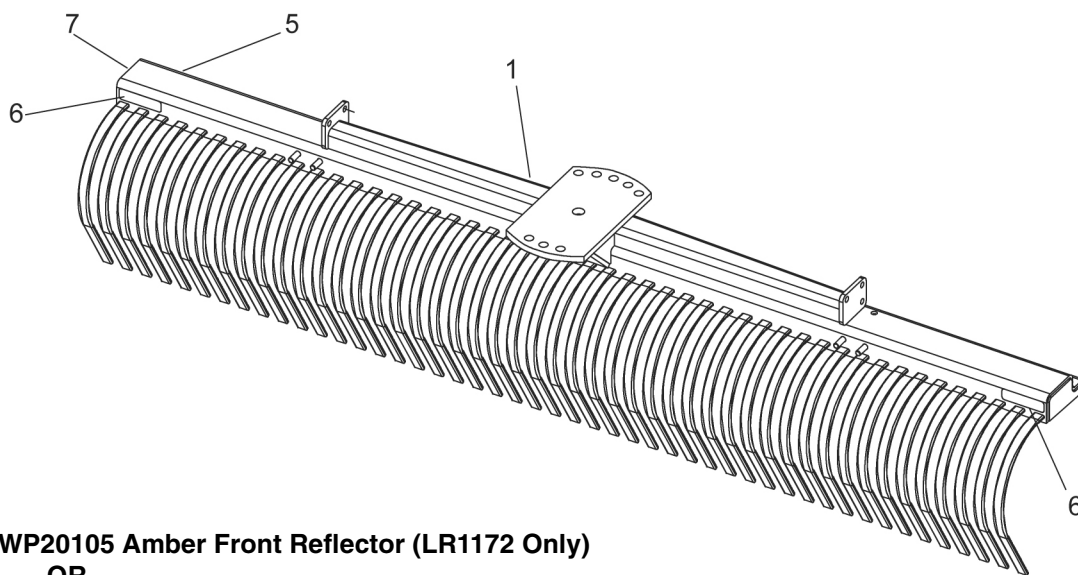


**1 - Serial Number Plate**

**Located on the back side of back of tine beam.**



**7 - WP1003193 (LR1196 Only)**



**5 - WP20105 Amber Front Reflector (LR1172 Only)**

**- OR -**

**5 - WP1002940 Amber Front Reflector 2" x 9" (LR1184 & LR1196 Only)**

**6 - WP20106 Red Rear Reflector (LR1172 Only)**

**- OR -**

**6 - WP57123 Red Rear Reflector 2" x 9" (LR1184 & LR1196 Only)**

## **BE CAREFUL!**

Use a clean, damp cloth to clean safety decals.

Avoid spraying too close to decals when using a pressure washer; high-pressure water can enter through very small scratches or under edges of decals causing them to peel or come off.

Replacement safety decals can be ordered free from your dealer.



# OPERATION

The operator is responsible for the safe operation of this equipment. The operator must be properly trained. Operator's should be familiar with the equipment, the tractor, and all safety practices before starting operation. Read the safety rules and safety decals on pages 3 through 6.

This equipment is designed for a wide range of applications. The blade may be used for scraping, leveling, grading and backfilling. The rake may be used for loosening, leveling and clearing soil of debris.

The blade or rake may be angled to windrow debris to the side for removal.

## WARNING

- Keep bystanders away from equipment.
- Never allow riders on power unit or attachment.
- Keep all persons away from operator control area while performing adjustments, service, or maintenance.
- Never allow children or untrained persons to operate equipment.
- A minimum 20% of tractor and equipment weight must be on the tractor front wheels when attachments are in transport position. Without this weight, tractor could tip over, causing personal injury or death. The weight may be attained with a loader, front wheel weights, ballast in tires or front tractor weights. Weigh the tractor and equipment. Do not estimate.

## CAUTION

- Always wear relatively tight and belted clothing to avoid getting caught in moving parts. Wear sturdy, rough-soled work shoes and protective equipment for eyes, hair, hands, hearing, and head; and respirator or filter mask where appropriate.

### CONNECT RAKE TO TRACTOR

This rake should be mounted on tractors with a maximum drawbar rating of 40 HP.

Adjust or remove tractor drawbar to eliminate interference with rake.

Place tractor 3-point lower lift arms over mounting pins (6). Secure with Klik pins (5), Figure 1.

Use Bushing Kit WP26227 (available from dealer) when using a quick coupler.

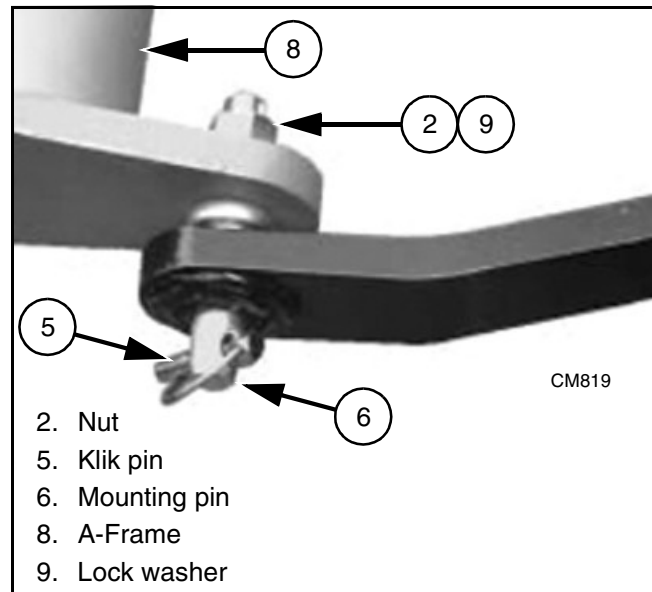


Figure 1. Lower Lift Arm Attachment

### ATTACH TOP LINK

Connect tractor top link to A-frame (8) by inserting tractor clevis pin (13) into top hitch point on A-frame and secure, Figure 2.

### **IMPORTANT**

- The 3/4" bolt and sleeve in the lower hole provide the attachment point for a Category I quick coupler. Do not remove bolt and sleeve when operating this equipment.
- Make sure the rake is at least 6" from tractor tires throughout complete range of 3-point hitch operation.

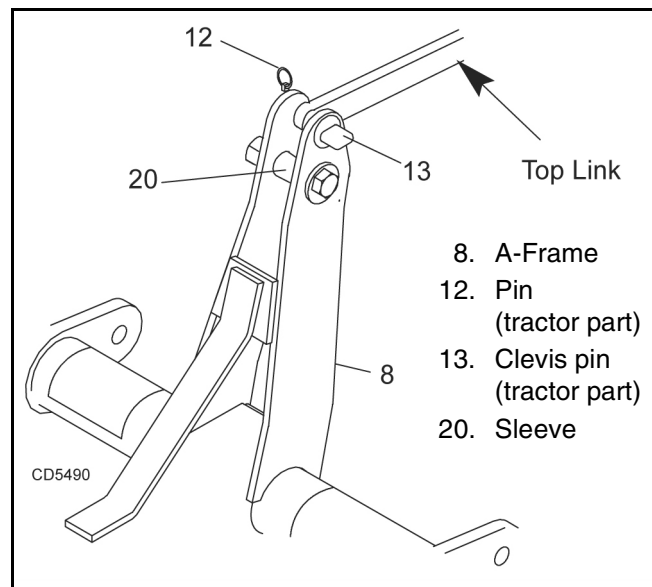


Figure 2. Top Link Attachment

Level the A-frame and boom with 3-point connecting links and top link. Adjusting the top link length will change the fore and aft pitch of the rake.

Lengthening the top link will cause the tool to contact the ground with a sharper pitch and feed itself into the ground more readily.

You may need to adjust the optional gauge wheels after adjusting pitch to maintain the desired working depth.

Position 3-point lift arm sway blocks or tighten sway chains to eliminate side sway. Install side braces if necessary.

## **REVERSING** **(ALL RAKES)**

**Refer to illustration on page 13.**

For most tractors, the rake may be rotated 360° without unhooking from the tractor. To rotate without unhooking, remove safety pin (44) and pull pin assembly (11). Rotate to desired position, replace pin assembly (11) and secure with safety pin (44).

## **ANGLING** **(ALL RAKES)**

**Refer to illustration on page 13.**

Remove safety pin (44) and pin assembly (11).

The rake may be set 15° or 30° to the left or right for forward grading.

For backfilling the rake can only be set 15° to the left or right.

## **PRE-OPERATION CHECK LIST** **(OWNER'S RESPONSIBILITY)**

- \_\_\_ Review and follow all safety rules and safety decal instructions on pages 3 through 6.
- \_\_\_ Check that all hardware is properly installed and secured.
- \_\_\_ Check that blade cutting edge is in good condition.
- \_\_\_ Check that equipment is properly and securely attached to tractor.
- \_\_\_ Consult local utilities before digging. Know location of and avoid contacting all underground cables, pipelines, overhead wires and other hazards in digging area.
- \_\_\_ Do not allow riders.
- \_\_\_ Make sure tractor ROPS or ROPS cab and seat belt are in good condition. Keep seat belt securely fastened during operation.



# MAINTENANCE



## WARNING

■ Before dismounting power unit or performing any service or maintenance, follow these steps: disengage power to equipment, lower the 3-point hitch and all raised components to the ground, operate valve levers to release any hydraulic pressure, set parking brake, stop engine, remove key, and unfasten seat belt.

■ **NEVER GO UNDERNEATH EQUIPMENT.** Never place any part of the body underneath equipment or between moveable parts even when the engine has been turned off. Hydraulic system leak-down, hydraulic system failures, mechanical failures, or movement of control levers can cause equipment to drop or rotate unexpectedly and cause severe injury or death.

- Service work does not require going underneath.
- Read Operator's Manual for service instructions or have service performed by a qualified dealer.

■ Keep all persons away from operator control area while performing adjustments, service, or maintenance.



## CAUTION

■ Always wear relatively tight and belted clothing to avoid getting caught in moving parts. Wear sturdy, rough-soled work shoes and protective equipment for eyes, hair, hands, hearing, and head; and respirator or filter mask where appropriate.

The information in this section is written for operators who possess basic mechanical skills. Should you need help, your dealer has trained service technicians available. For your protection, read and follow all safety information in this manual.

## LUBRICATION

Use a good multi-purpose grease for pivot tube and caster wheel every 8 hours of operation.

## TIRE PRESSURE

Maintain caster wheel tire pressure at 35 psi (240 KPa) for best performance and durability.

Overinflation will increase shock loading to equipment and could cause wheels to shimmy.

Underinflation will decrease tire life.

## RAKE TINE REPLACEMENT

### LR1072

Refer to page 13 for parts list.

Tines should be replaced when they cannot be reformed to their original configuration.

When removing tines, loosen lock nuts (27) and bolts (26). Locate tine under tine beam and align holes. Align tine with existing tines on the beam and reinstall bolts (26) and lock nuts (27). Torque to 35 lbs-ft (47 N-m).

### LR1172, LR1184, LR1196

Refer to page 14 for parts list.

Tines should be replaced when they cannot be reformed to their original configuration.

Remove bolt (25) and lock nut (26) from tine. Pull out old tine and inset new tine, hole end first, into tine beam and align holes. Reinstall and torque bolt (25) and lock nut (26).

## GAUGE WHEEL ADJUSTMENT

### LR1072 (Optional)

Refer to page 13 for parts list.

Raise rake until gauge wheel (33) clears ground. Loosen set screws on lock collars and raise or lower wheel to desired height. Tighten set screws on lock collars. Repeat for other side; make sure height is the same on both wheels. Tighten set screws.

### LR1172, LR1184, LR1196 (Optional)

Refer to page 14 for parts list.

Raise rake until gauge wheels (8) clear the ground. To raise gauge wheels, remove klik pin (23) and washer (38). Allow wheel yoke and shaft to slide down into gauge wheel arm (do not remove shaft completely from wheel arm). Rotate height adjustment spacer (12), align slot with groove at bottom of shaft, and remove spacer. Slide yoke and shaft back into position; place removed spacer(s) over top of shaft. Install klik pin and washer. To lower gauge wheels, reverse the procedure.

## **CLEANING**

### **After Each Use**

- Remove large debris such as clumps of dirt, grass, crop residue, etc. from machine.
- Inspect machine and replace worn or damaged parts.
- Replace any safety decals that are missing or not readable.

### **Periodically or Before Extended Storage**

- Clean large debris such as clumps of dirt, grass, crop residue, etc. from machine.
- Remove the remainder using a low-pressure water spray.

1. Be careful when spraying near scratched or torn safety decals or near edges of decals as water spray can peel decal off surface.
2. Be careful when spraying near chipped or scratched paint as water spray can lift paint.
3. If a pressure washer is used, follow the advice of the pressure washer manufacturer.

- Inspect machine and replace worn or damaged parts.
- Sand down scratches and the edges of areas of missing paint and coat with spray paint of matching color (purchase from your dealer).
- Replace any safety decals that are missing or not readable (supplied free by your dealer). See Safety Decals section for location drawing.



# ASSEMBLY INSTRUCTIONS

## **WARNING**

■ Before dismounting power unit or performing any service or maintenance, follow these steps: disengage power to equipment, lower the 3-point hitch and all raised components to the ground, operate valve levers to release any hydraulic pressure, set parking brake, stop engine, remove key, and unfasten seat belt.

■ **NEVER GO UNDERNEATH EQUIPMENT.** Never place any part of the body underneath equipment or between moveable parts even when the engine has been turned off. Hydraulic system leak-down, hydraulic system failures, mechanical failures, or movement of control levers can cause equipment to drop or rotate unexpectedly and cause severe injury or death.

- Service work does not require going underneath.
- Read Operator's Manual for service instructions or have service performed by a qualified dealer.

■ Keep all persons away from operator control area while performing adjustments, service, or maintenance.

## **CAUTION**

■ Always wear relatively tight and belted clothing to avoid getting caught in moving parts. Wear sturdy, rough-soled work shoes and protective equipment for eyes, hair, hands, hearing, and head; and respirator or filter mask where appropriate.

Assembly of the landscape rake is the responsibility of the selling dealer. It should be delivered to the owner completely assembled, lubricated, and adjusted for normal conditions. Complete check lists on page 12 when assembly is complete.

### **RAKE ASSEMBLY** **(ALL RAKES)**

Refer to page 13 for parts list.

Place A-frame (8) over angle assembly (24). Attach A-frame (8) to angle assembly (24) using bolt (10) and washer (1).

### **LR1072 ONLY:**

#### **GAUGE WHEEL ASSEMBLY WP1002797**

Attach wheel mount assembly (30) to angle assembly (24) using bolts (28) and secure with lock nuts (29). Adjust wheel height (refer to Gauge Wheel Adjustment, page 9).

Repeat for opposite side.

### **LR1172, LR1184, LR1196 ONLY:**

Refer to page 14 for parts list.

#### **GAUGE WHEEL KIT WP1002798**

Gauge wheels may be mounted ahead or behind rake tines. Mount gauge wheel arms (13) as desired with cap screws (29) and lock nuts (33). Adjust wheel height (refer to Gauge Wheel Adjustment, page 9).

### **GRADER BLADE**

Remove tine below each stud. Position rear of grader blade bracket (3) over studs.

Insert bolt (31) through tine beam (5) and grader blade bracket (3). Secure with lock nuts (33). Install lock nuts (33) on tine beam studs. Reinstall tines.

Attach grader blade to brackets with cap screw (34) and lock nut (35). Raise grader blade to storage position and secure with safety pins (21).

#### **GRADER BLADE END BOOTS**

Attach end boots (1) to each end of grader blade (2) with bolts (27) and lock nuts (28).

### **QUICK COUPLER BUSHING KIT WP26227** **CAT 1 ONLY (OPTIONAL)**

Secure quick coupler sleeves over the implement Category I mounting pins and secure with spirol pins.

# DEALER CHECK LISTS

## **PRE-DELIVERY CHECK LIST** (DEALER'S RESPONSIBILITY)

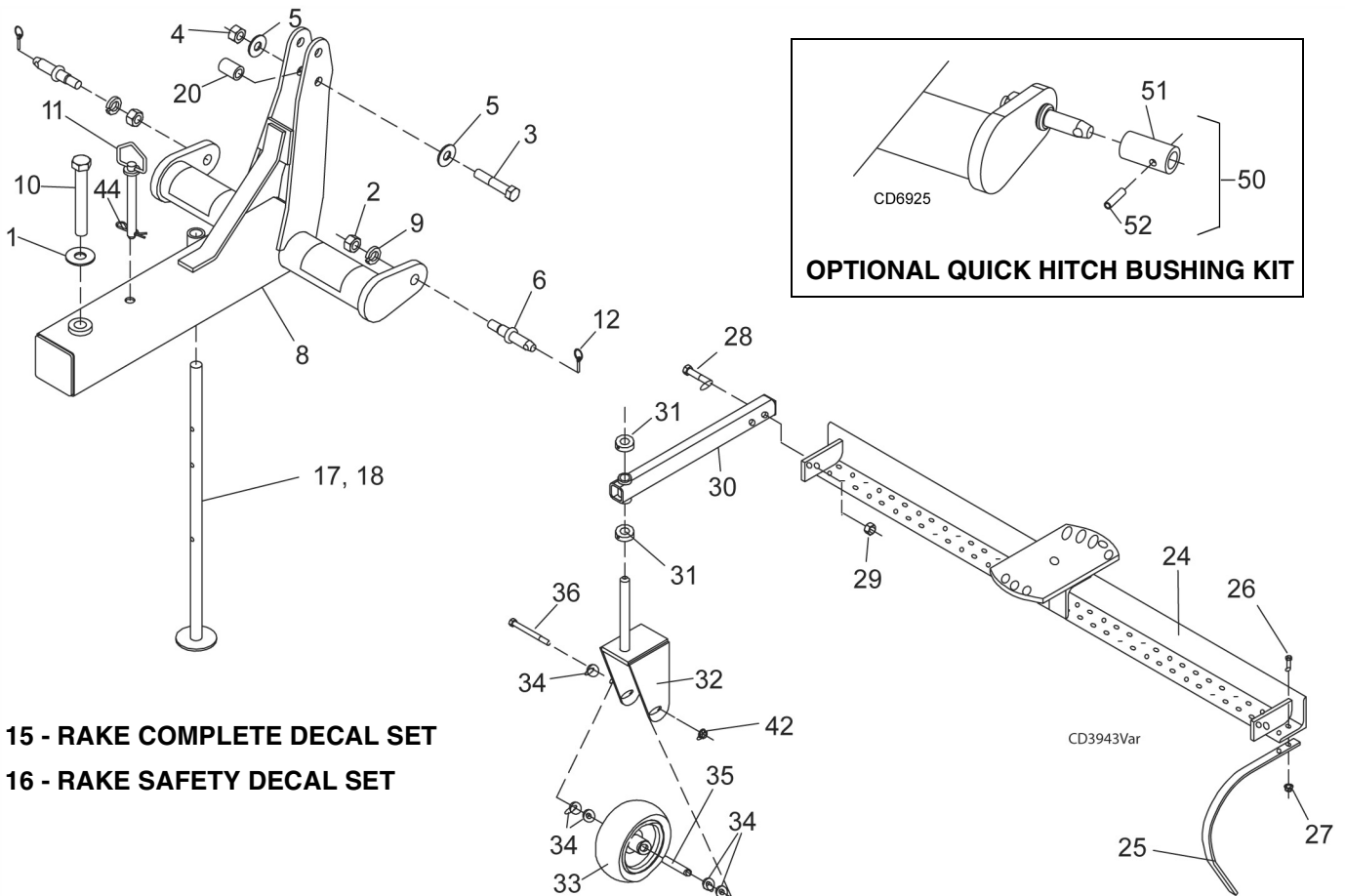
Inspect implement thoroughly after assembly to be certain it is set up properly before delivering it to the customer. The following check list is a reminder of points to inspect. Check off each item as it is found satisfactory or after proper adjustment is made.

- \_\_\_ Check that all safety decals are installed and in good condition. Replace if damaged.
- \_\_\_ Properly attach implement to tractor and make all necessary adjustments.
- \_\_\_ Check all bolts to be sure they are correctly torqued.
- \_\_\_ Check that all cotter pins and safety pins are properly installed. Replace if damaged.
- \_\_\_ Check and grease all lubrication points as identified in "Maintenance, Lubrication page 10."

## **DELIVERY CHECK LIST** (DEALER'S RESPONSIBILITY)

- \_\_\_ Show customer how to make adjustments.
- \_\_\_ Explain importance of lubrication to customer and point out lubrication points on tractor and attachments.
- \_\_\_ Point out safety features and explain the importance of safety decals and shielding. Explain the need to keep them properly installed and in good condition.
- \_\_\_ Present Operator's Manual and request that customer and all operators read it before operating equipment. Point out the manual safety rules, explain their meanings and emphasize the increased safety hazards that exist when safety rules are not followed.
- \_\_\_ Explain to customer the potential crushing hazards of going underneath raised equipment. Instruct customer that service work does not require going underneath unit and never to do so.
- \_\_\_ Show customer the safe, proper procedures to be used when mounting, dismounting, and storing equipment.
- \_\_\_ For mounted units, add wheel weights, ballast in front tires, and/or front tractor weight to enhance front end stability. A minimum 20% of tractor and equipment gross weight must be on front tractor wheels. When adding weight to attain 20% of tractor and equipment weight on front tractor wheels, you must not exceed the ROPS weight certification. Weigh the tractor and equipment. Do not estimate!
- \_\_\_ Make customer aware of optional equipment available so that customer can make proper choices as required.

## A-FRAME HITCH & LR1072 RAKE PARTS LIST

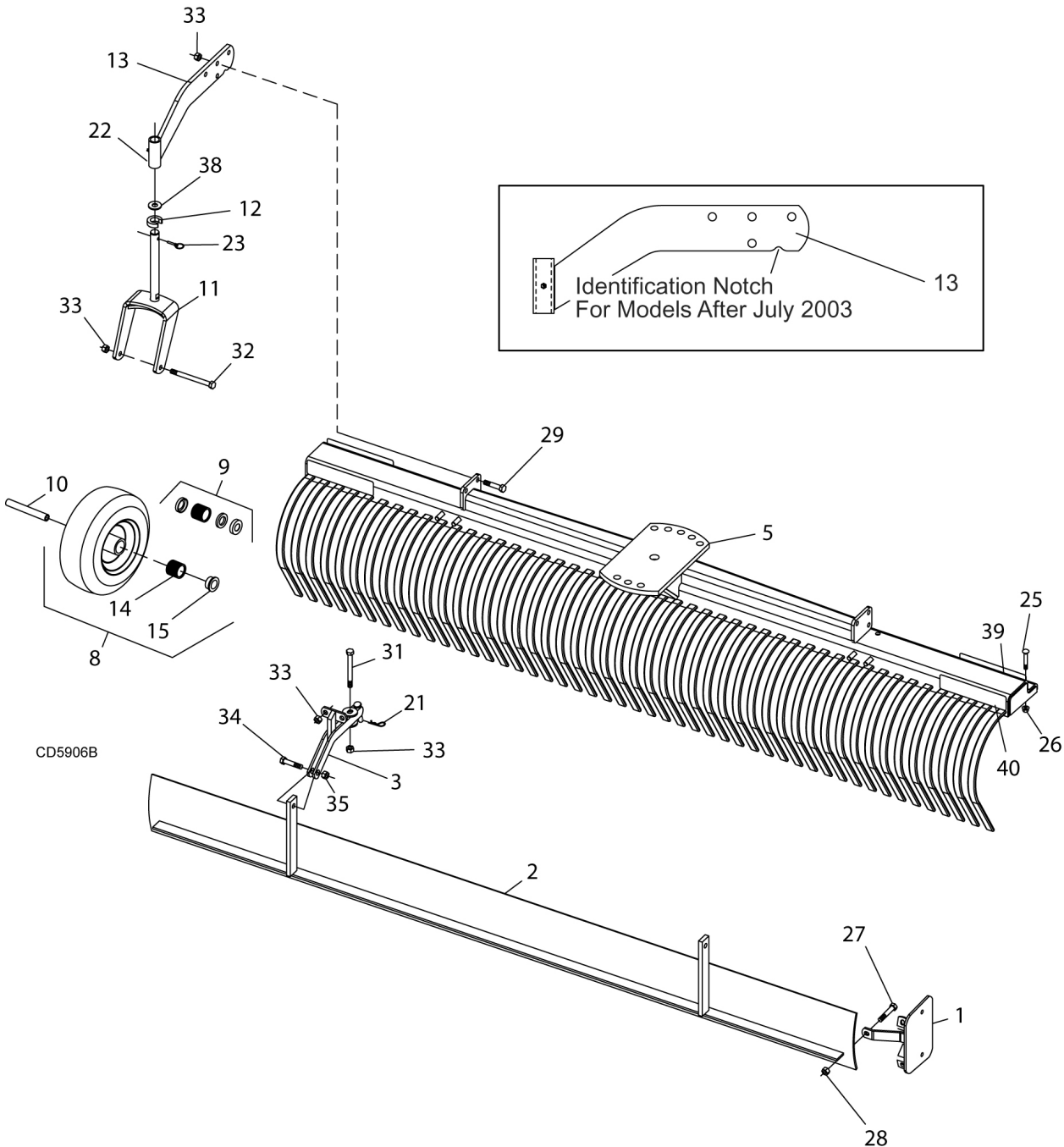


**15 - RAKE COMPLETE DECAL SET**

**16 - RAKE SAFETY DECAL SET**

|     |           |     |   | Hardware |           |     |                                   |
|-----|-----------|-----|---|----------|-----------|-----|-----------------------------------|
| REF | PART      | QTY | DESCRIPTION   | REF      | PART      | QTY | DESCRIPTION                       |
| 6   | WP33661   | 2   | Pin, Mounting Cat I w/Nut & Lock washer (includes items 2 & 9)  | 1        | *         |     | Washer, Flat 1 In Standard        |
| 8   | WP55084   | 1   | A-Frame (LR1072, LR1172, LR1184, LR1196) (includes items 1, 2, 3, 4, 5, 6, 9, 10, 11, 12, 16, 17, 20, 44) | 2        | *         |     | Nut, Hex 7/8 NF                   |
| 15  | WP1004335 | 1   | Decal Set, Complete Rake  | 3        | *         |     | Screw, HHCS 3/4 NC x 4 GR5        |
| 16  | WP1004338 | 1   | Decal Set, Safety Rake  | 4        | *         |     | Nut, Lock 3/4 NC                  |
| 17  | WP55011   | 1   | Rake Stand Assembly   | 5        | *         |     | Washer, Flat 3/4 Standard         |
| 18  | WP33000   | 1   | Pin, Lynch 3/8 x 2-1/4  | 9        | *         |     | Washer, Lock 7/8                  |
| 20  | WP59176   | 1   | Sleeve, Top Hitch   | 10       | WP21624-1 |     | Bolt, HH 1 NC x 7 GR8             |
| 24  | WP53718   | 1   | Angle Assembly  | 11       | WP55318   |     | Pin                               |
| 25  | WPLR5     | 36  | Tine, Rake  | 12       | WP27542   |     | Pin, Klik 7/16 x 2                |
| 30  | WP55096   | 2   | Wheel Mount Assembly  | 26       | *         |     | Bolt, Carriage 3/8 NC x 1-1/4 GR5 |
| 31  | WP55099   | 4   | Collar, Lock  | 27       | WP14350   |     | Nut, Flanged Lock 3/8 NC          |
| 32  | WP55097   | 2   | Wheel Yoke Assembly   | 28       | *         |     | Screw, HHCS 5/8 NC x 3-1/4 GR5    |
| 33  | WP65952G  | 2   | Wheel, 9 x 3.5 - 4, Gray  | 29       | *         |     | Nut, Lock 5/8 NC                  |
| 50  | WP26227   | 1   | Quick hitch bushing kit - Optional (includes items 51 & 52)   | 34       | *         |     | Washer, Flat 1/2 SAE              |
| 51  | WP26228   | 2   | Sleeve, 29/32 x 1-7/16 x 2-3/4  | 35       | WP65953   |     | Sleeve, .50 x .75 x 3.56          |
| 52  | WP11606   | 2   | Spirol pin, 3/8 x 1-1/2   | 36       | *         |     | Screw, HHCS 1/2 NC x 5 GR5        |
|     |           |     |   | 42       | *         |     | Nut, 1/2 NC Flange Lock           |
|     |           |     |   | 44       | *         |     | Pin, Safety 3/16                  |
|     |           |     |   |          | *         |     | Standard Hardware, Obtain Locally |

## LR1172, LR1184 & LR1196 MAIN FRAME



## 14 Parts

WPMAN0144 (Rev. 4/25/2005)



## LR1172, LR1184 & LR1196 MAIN FRAME PARTS LIST

|     |             |             |   | Hardware |         |     |                                   |
|-----|-------------|-------------|---|----------|---------|-----|-----------------------------------|
| REF | PART        | QTY         | DESCRIPTION   | REF      | PART    | QTY | DESCRIPTION                       |
| 1   | WP20504     | 2           | End Boot, Grader Blade (Optional)   | 21       |         | *   | Pin, Safety 3/16                  |
| 2   | WP20496     | 1           | Grader Blade, 72 In (Optional)  | 22       |         | *   | Grease Fitting, 1/4-28            |
|     | <b>-or-</b> | <b>-or-</b> |   | 23       | WP62043 |     | Pin, Klik 1/4 x 1-3/4             |
| 2   | WP18806     | 1           | Grader Blade, 84 In (Optional)  | 25       |         | *   | Bolt, Carriage 3/8 NC x 1-1/4 GR5 |
|     | <b>-or-</b> | <b>-or-</b> |   | 26       | WP14350 |     | Nut, Flanged Lock 3/8 NC          |
| 2   | WP20497     | 1           | Grader Blade, 96 In (Optional)  | 27       |         | *   | Screw, HHCS 7/16 NC x 1-1/4 GR5   |
| 3   | WP20492     | 2           | Bracket, Grader Blade   | 28       |         | *   | Nut, Lock 7/16 NC                 |
| 4   | WP10562     | -           | Tine, Rake 5/16 x 1 (36 used on LR1172; 42 used on LR1184; 48 used on LR1196) | 29       |         | *   | Screw, HHCS 1/2 NC x 1-1/2 GR5    |
| 5   | WP1002622   | 1           | Tine Beam, 5/16 x 72 In   | 31       |         | *   | Screw, HHCS 1/2 NC x 5 GR5        |
|     | <b>-or-</b> | <b>-or-</b> |   | 32       |         | *   | Screw, HHCS 1/2 NC x 6-1/2 GR5    |
| 5   | WP1002618   | 1           | Tine Beam, 5/16 x 84 In   | 33       | WP11900 | *   | Nut, Flanged Lock 1/2 NC          |
|     | <b>-or-</b> | <b>-or-</b> |   | 34       |         | *   | Screw, HHCS 5/8 NC x 1-3/4 GR5    |
| 5   | WP1002725   | 1           | Tine Beam, 5/16 x 96 In   | 35       |         | *   | Nut, Lock 5/8 NC                  |
| 8   | WP20503G    | 2           | Wheel, 11 x 4.00-5 Gray (Optional)  | 38       | WP31303 |     | Washer, Flat 1.06 x 1.56 x 10 Ga  |
| 9   |             | 2           | Wheel Repair Kit (Tubeless Tire) (Obsolete)                                   |          |         | *   | Standard Hardware, Obtain Locally |
| 10  | WP24383     | 2           | Sleeve, HT .50 x .75 x 5.09   |          |         |     |                                   |
| 11  | WP66189     | 2           | Wheel Yoke Assembly   |          |         |     |                                   |
| 12  | WP66207     | 18          | Spacer, Height Adjustment   |          |         |     |                                   |
| 13  | WP20461     | 2           | Gauge Wheel Arm (Prior to July 2003)  |          |         |     |                                   |
|     | <b>-or-</b> | <b>-or-</b> |   |          |         |     |                                   |
| 13  | WP1007378   | 2           | Gauge Wheel Arm (Identified by Notch)   |          |         |     |                                   |
| 14  | WP1009071   | 4           | Bearing, Roller .75 x 1.0 Long (Used on later models) (Tubed tire)            |          |         |     |                                   |
| 15  | WP1009072   | 4           | Bearing, Retainer .75 x .25 (Used on later models) (Tubed tire)               |          |         |     |                                   |
| 16  | WP1004335   | 1           | Decal Set, Complete Rake  |          |         |     |                                   |
| 17  | WP1004338   | 1           | Decal Set, Safety Rake  |          |         |     |                                   |
| 39  | WP20105     | 2           | Decal, Amber Reflector Front (LR1172 only)                                    |          |         |     |                                   |
|     | <b>-or-</b> | <b>-or-</b> |   |          |         |     |                                   |
| 39  | WP1002940   | 2           | Decal, Amber Reflector Front 2 x 9" (LR1184 & LR1196 only)                    |          |         |     |                                   |
| 40  | WP20106     | 2           | Decal, Red Reflector Rear (LR1172 only)                                       |          |         |     |                                   |
|     | <b>-or-</b> | <b>-or-</b> |   |          |         |     |                                   |
| 40  | WP57123     | 2           | Decal, Red Reflector Rear (LR1184 & LR1196 only)                              |          |         |     |                                   |

# BOLT TORQUE CHART

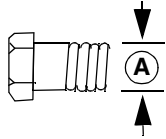
Always tighten hardware to these values unless a different torque value or tightening procedure is listed for a specific application.

Fasteners must always be replaced with the same grade as specified in the manual parts list.

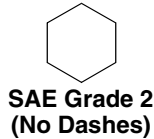
Always use the proper tool for tightening hardware: SAE for SAE hardware and Metric for metric hardware.

Make sure fastener threads are clean and you start thread engagement properly.

All torque values are given to specifications used on hardware defined by SAE J1701 MAR99 & J1701M JUL96.



## SAE SERIES TORQUE CHART



SAE Bolt Head  
Identification

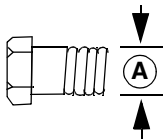


SAE Grade 5  
(3 Radial Dashes)

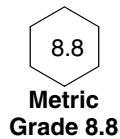


SAE Grade 8  
(6 Radial Dashes)

| A<br>Diameter<br>(Inches) | Wrench<br>Size | MARKING ON HEAD |     |        |     |        |      |
|---------------------------|----------------|-----------------|-----|--------|-----|--------|------|
|                           |                | SAE 2           |     | SAE 5  |     | SAE 8  |      |
|                           |                | lbs-ft          | N-m | lbs-ft | N-m | lbs-ft | N-m  |
| 1/4"                      | 7/16"          | 6               | 8   | 10     | 13  | 14     | 18   |
| 5/16"                     | 1/2"           | 12              | 17  | 19     | 26  | 27     | 37   |
| 3/8"                      | 9/16"          | 23              | 31  | 35     | 47  | 49     | 67   |
| 7/16"                     | 5/8"           | 36              | 48  | 55     | 75  | 78     | 106  |
| 1/2"                      | 3/4"           | 55              | 75  | 85     | 115 | 120    | 163  |
| 9/16"                     | 13/16"         | 78              | 106 | 121    | 164 | 171    | 232  |
| 5/8"                      | 15/16"         | 110             | 149 | 170    | 230 | 240    | 325  |
| 3/4"                      | 1-1/8"         | 192             | 261 | 297    | 403 | 420    | 569  |
| 7/8"                      | 1-5/16"        | 306             | 416 | 474    | 642 | 669    | 907  |
| 1"                        | 1-1/2"         | 467             | 634 | 722    | 979 | 1020   | 1383 |



## METRIC SERIES TORQUE CHART



Metric  
Grade 8.8

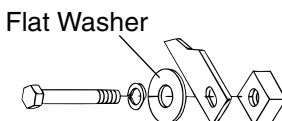
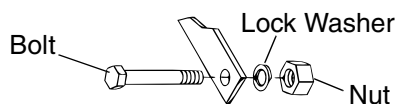
Metric Bolt Head  
Identification



Metric  
Grade 10.9

| <div>Ⓐ</div> <div>Diameter &amp;<br/>Thread Pitch<br/>(Millimeters)</div> | Wrench<br>Size | COARSE THREAD   |        |             |        | FINE THREAD     |        |             |        | <div>Ⓐ</div> <div>Diameter &amp;<br/>Thread Pitch<br/>(Millimeters)</div> |
|---|----------------|-----------------|--------|-------------|--------|-----------------|--------|-------------|--------|---|
|   |                | MARKING ON HEAD |        |             |        | MARKING ON HEAD |        |             |        |   |
|   |                | Metric 8.8      |        | Metric 10.9 |        | Metric 8.8      |        | Metric 10.9 |        |   |
|   |                | N-m             | lbs-ft | N-m         | lbs-ft | N-m             | lbs-ft | N-m         | lbs-ft |   |
| 6 x 1.0   | 10 mm          | 8               | 6      | 11          | 8      | 8               | 6      | 11          | 8      | 6 x 1.0   |
| 8 x 1.25  | 13 mm          | 20              | 15     | 27          | 20     | 21              | 16     | 29          | 22     | 8 x 1.0   |
| 10 x 1.5  | 16 mm          | 39              | 29     | 54          | 40     | 41              | 30     | 57          | 42     | 10 x 1.25   |
| 12 x 1.75   | 18 mm          | 68              | 50     | 94          | 70     | 75              | 55     | 103         | 76     | 12 x 1.25   |
| 14 x 2.0  | 21 mm          | 109             | 80     | 151         | 111    | 118             | 87     | 163         | 120    | 14 x 1.5  |
| 16 x 2.0  | 24 mm          | 169             | 125    | 234         | 173    | 181             | 133    | 250         | 184    | 16 x 1.5  |
| 18 x 2.5  | 27 mm          | 234             | 172    | 323         | 239    | 263             | 194    | 363         | 268    | 18 x 1.5  |
| 20 x 2.5  | 30 mm          | 330             | 244    | 457         | 337    | 367             | 270    | 507         | 374    | 20 x 1.5  |
| 22 x 2.5  | 34 mm          | 451             | 332    | 623         | 460    | 495             | 365    | 684         | 505    | 22 x 1.5  |
| 24 x 3.0  | 36 mm          | 571             | 421    | 790         | 583    | 623             | 459    | 861         | 635    | 24 x 2.0  |
| 30 x 3.0  | 46 mm          | 1175            | 867    | 1626        | 1199   | 1258            | 928    | 1740        | 1283   | 30 x 2.0  |

### Typical Washer Installations



8/9/00

# BOLT SIZE CHART

**NOTE:** Chart shows bolt thread sizes and corresponding head (wrench) sizes for standard SAE and metric bolts.

## SAE Bolt Thread Sizes

5/16

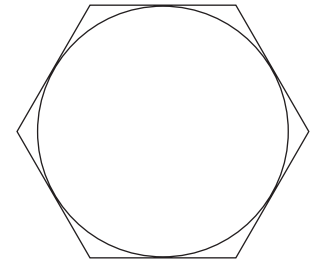
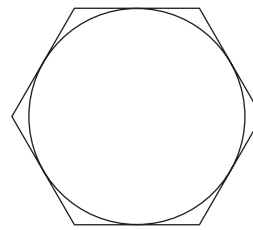
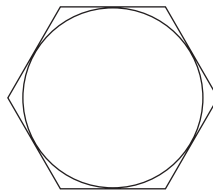
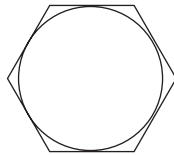
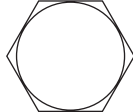
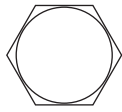
3/8

1/2

5/8

3/4

7/8



IN

1

2

3

4

5

6

7



MM

25

50

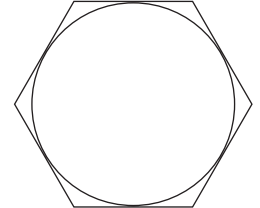
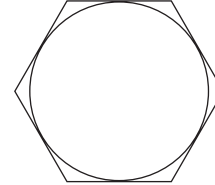
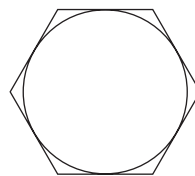
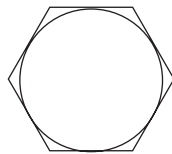
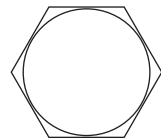
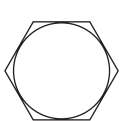
75

100

125

150

175



## Metric Bolt Thread Sizes

8MM

10MM

12MM

14MM

16MM

18MM

## ABBREVIATIONS

AG ..... Agriculture  
 ATF ..... Automatic Transmission Fluid  
 BSPP ..... British Standard Pipe Parallel  
 BSPTM ..... British Standard Pipe Tapered Male  
 CV ..... Constant Velocity  
 CCW ..... Counter-Clockwise  
 CW ..... Clockwise  
 F ..... Female  
 GA ..... Gauge  
 GR (5, etc.) ..... Grade (5, etc.)  
 HHCS ..... Hex Head Cap Screw  
 HT ..... Heat-Treated  
 JIC ..... Joint Industry Council 37° Degree Flare  
 LH ..... Left Hand  
 LT ..... Left  
 m ..... Meter  
 mm ..... Millimeter  
 M ..... Male  
 MPa ..... Mega Pascal  
 N ..... Newton

NC ..... National Coarse  
 NF ..... National Fine  
 NPSM ..... National Pipe Straight Mechanical  
 NPT ..... National Pipe Tapered  
 NPT SWF ..... National Pipe Tapered Swivel Female  
 ORBM ..... O-Ring Boss - Male  
 P ..... Pitch  
 PBY ..... Power-Beyond  
 psi ..... Pounds per Square Inch  
 PTO ..... Power Take Off  
 QD ..... Quick Disconnect  
 RH ..... Right Hand  
 ROPS ..... Roll-Over Protective Structure  
 RPM ..... Revolutions Per Minute  
 RT ..... Right  
 SAE ..... Society of Automotive Engineers  
 UNC ..... Unified Coarse  
 UNF ..... Unified Fine  
 UNS ..... Unified Special



## WARRANTY

Please enter information below and save for future reference.

Date Purchased: \_\_\_\_\_

From (Dealer): \_\_\_\_\_

Model Number: \_\_\_\_\_

Serial Number: \_\_\_\_\_

Woods Equipment Company ("WOODS") warrants this product to be free from defect in material and workmanship. Except as otherwise set forth below, the duration of this Warranty shall be for TWELVE (12) MONTHS COMMENCING ON THE DATE OF DELIVERY OF THE PRODUCT TO THE ORIGINAL PURCHASER.

The warranty periods for certain gearboxes are listed below:

| Model No.   | Part Warranted     | Duration   |
|---|--------------------|--|
| GM1060R, GM1072R, GM1084R,<br>GM1060S, GM1072S, FM1012R, FM1015R,<br>FM1017R, and GM1190R | Gearbox components | 5 years from the date of delivery to the original purchaser  |
|   | Blade spindles     | 3 years from the date of delivery to the original purchaser. |

Under no circumstances will this Warranty apply in the event that the product, in the good faith opinion of WOODS, has been subjected to improper operation, improper maintenance, misuse, or an accident. This Warranty does not apply in the event that the product has been materially modified or repaired by someone other than WOODS, a WOODS authorized dealer or distributor, and/or a WOODS authorized service center. This Warranty does not cover normal wear or tear, or normal maintenance items. This Warranty also does not cover repairs made with parts other than those obtainable through WOODS.

This Warranty is extended solely to the original purchaser of the product. Should the original purchaser sell or otherwise transfer this product to a third party, this Warranty does not transfer to the third party purchaser in any way. There are no third party beneficiaries of this Warranty.

WOODS makes no warranty, express or implied, with respect to engines, batteries, tires or other parts or accessories not manufactured by WOODS. Warranties for these items, if any, are provided separately by their respective manufacturers.

WOODS' obligation under this Warranty is limited to, at WOODS' option, the repair or replacement, free of charge, of the product if WOODS, in its sole discretion, deems it to be defective or in noncompliance with this Warranty. **The product must be returned to WOODS with proof of purchase within thirty (30) days after such defect or noncompliance is discovered or should have been discovered, routed through the dealer and distributor from whom the purchase was made, transportation charges prepaid.** WOODS shall complete such repair or replacement within a reasonable time after WOODS receives the product. THERE ARE NO OTHER REMEDIES UNDER THIS WARRANTY. THE REMEDY OF REPAIR OR REPLACEMENT IS THE SOLE AND EXCLUSIVE REMEDY UNDER THIS WARRANTY.

THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE OF THIS WARRANTY. WOODS MAKES NO OTHER WARRANTY, EXPRESS OR IMPLIED, AND WOODS SPECIFICALLY DISCLAIMS ANY IMPLIED WARRANTY OF MERCHANTABILITY AND/OR ANY IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.

**WOODS shall not be liable for any incidental or consequential losses, damages or expenses, arising directly or indirectly from the product, whether such claim is based upon breach of contract, breach of warranty, negligence, strict liability in tort or any other legal theory.** Without limiting the generality of the foregoing, Woods specifically disclaims any damages relating to (i) lost profits, business, revenues or goodwill; (ii) loss of crops; (iii) loss because of delay in harvesting; (iv) any expense or loss incurred for labor, supplies, substitute machinery or rental; or (v) any other type of damage to property or economic loss.

This Warranty is subject to any existing conditions of supply which may directly affect WOODS' ability to obtain materials or manufacture replacement parts.

No agent, representative, dealer, distributor, serviceperson, salesperson, or employee of any company, including without limitation, WOODS, its authorized dealers, distributors, and service centers, is authorized to alter, modify, or enlarge this Warranty.

For warranty services contact your selling dealer.

**WOODS®**



## WARRANTY for Replacement Parts

Woods Equipment Company ("WOODS") warrants this product to be free from defect in material and workmanship for a period of ninety (90) days from the date of delivery of the product to the original purchaser with the exception of V-belts, which will be free of defect in material and workmanship for a period of 12 months.

Under no circumstances will this Warranty apply in the event that the product, in the good faith opinion of WOODS, has been subjected to improper operation, improper maintenance, misuse, or an accident. This Warranty does not cover normal wear or tear, or normal maintenance items.

This Warranty is extended solely to the original purchaser of the product. Should the original purchaser sell or otherwise transfer this product to a third party, this Warranty does not transfer to the third party purchaser in any way. There are no third party beneficiaries of this Warranty.

WOODS' obligation under this Warranty is limited to, at WOODS' option, the repair or replacement, free of charge, of the product if WOODS, in its sole discretion, deems it to be defective or in noncompliance with this Warranty. **The product must be returned to WOODS with proof of purchase within thirty (30) days after such defect or noncompliance is discovered or should have been discovered, routed through the dealer and distributor from whom the purchase was made, transportation charges prepaid.** WOODS shall complete such repair or replacement within a reasonable time after WOODS receives the product. THERE ARE NO OTHER REMEDIES UNDER THIS WARRANTY. THE REMEDY OF REPAIR OR REPLACEMENT IS THE SOLE AND EXCLUSIVE REMEDY UNDER THIS WARRANTY.

THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE OF THIS WARRANTY. WOODS MAKES NO OTHER WARRANTY, EXPRESS OR IMPLIED, AND WOODS SPECIFICALLY DISCLAIMS ANY IMPLIED WARRANTY OF MERCHANTABILITY AND/OR ANY IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.

**WOODS shall not be liable for any incidental or consequential losses, damages or expenses, arising directly or indirectly from the product, whether such claim is based upon breach of contract, breach of warranty, negligence, strict liability in tort or any other legal theory.** Without limiting the generality of the foregoing, Woods specifically disclaims any damages relating to (i) lost profits, business, revenues or goodwill; (ii) loss of crops; (iii) loss because of delay in harvesting; (iv) any expense or loss incurred for labor, supplies, substitute machinery or rental; or (v) any other type of damage to property or economic loss.

This Warranty is subject to any existing conditions of supply which may directly affect WOODS' ability to obtain materials or manufacture replacement parts.

No agent, representative, dealer, distributor, service person, salesperson, or employee of any company, including without limitation, WOODS, its authorized dealers, distributors, and service centers, is authorized to alter, modify, or enlarge this Warranty.

For warranty services contact your selling dealer.

**WOODS®**

**PART NUMBER**  
**WPMAN0144**