

**MAN0101**

Rev. 3/09/2010

**GILL<sup>®</sup>**  
**Super Turf Renovator  
& Seedbox**

**STR48S-2**

**STR60S-2**

**STR72S-2**

**WOODS<sup>®</sup>**

Tested. Proven. Unbeatable.

**OPERATOR'S MANUAL**

## TO THE DEALER:

Assembly and proper installation of this product is the responsibility of the Woods® 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 online Product Registration form at the Woods Dealer Website** which certifies that all Dealer Check List items have been completed. Please contact your dealer to complete this form. Dealers can register all Woods product at dealer.WoodsEquipment.com under Product Registration.

**Failure to register the product does not diminish customer's warranty rights.**

## TO THE OWNER:

Read this manual before operating your Woods 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 adjustment and operating procedures before attempting to operate. Replacement manuals can be obtained from your dealer. To locate your nearest dealer, check the Dealer Locator at [www.WoodsEquipment.com](http://www.WoodsEquipment.com), or in the United States and Canada call 1-800-319-6637.

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

Use only genuine Woods 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 **NOTICE** 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 is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.



Indicates a hazardous situation which, if not avoided, will result in death or serious injury.



Indicates a hazardous situation which, if not avoided, could result in death or serious injury.



Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

**IMPORTANT  
or NOTICE**

Is used to address practices not related to personal injury.

**NOTE**

Indicates helpful information.

**WOODS®**


**ALITEC™**  
**BMP®**  
**CENTRAL FABRICATORS®**  
**GANNON®**  
**GILL®**  
**WAIN-ROY®**  
**WOODS®**

## 2 Introduction

Gen'l (Rev. 3/5/2010)


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**¡LEA EL INSTRUCTIVO!**

Si no lee Ingles, pida ayuda a alguien que si lo lea para que le traduzca las medidas de seguridad.



**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

| Super Turf Renovator          | STR48S           | STR60S                                  | STR72S            |
|-------------------------------|------------------|---|-------------------|
| Working Width                 | 47"              | 59"                                     | 71"               |
| Overall Width                 | 58"              | 70"                                     | 82"               |
| Roller Pins                   | 1/2" x 1-3/4"    | 1/2" x 1-3/4"                           | 1/2" x 1-3/4"     |
| Bearing (Self-Aligning)       | Six 1"           | Six 1"                                  | Six 1"            |
| Front Roller Positions        |                  | Adjustable for Increased Agitation      |                   |
| Roller Diameter: Front & Rear | 8"               | 8"                                      | 8"                |
| Hitch                         | Cat. I           | Cat. I                                  | Cat. I            |
| Tractor HP Requirement        | 65 HP Max.       | 65 HP Max.                              | 65 HP Max.        |
| Weight                        | STR48: 565 lbs.  | STR60: 710 lbs.                         | STR72: 855 lbs.   |
| Weight w/Seedbox              | STR48S: 820 lbs. | STR60S: 920 lbs.                        | STR72S: 1050 lbs. |
| Seedbox Capacity              | 3 Bushel         | 4 Bushel                                | 5 Bushel          |
| Seed Distribution Method      |                  | Metered gear with flow adjustment lever |                   |

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## GENERAL INFORMATION

The purpose of this manual is to assist you in operating and maintaining your Super Turf Renovator. 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.

 **WARNING**

■ **Super Turf Renovator should never be operated with any safety shielding removed.**

Throughout this manual, references are made to right and left direction. 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. To locate your nearest dealer, check the Dealer Locator at [www.WoodsEquipment.com](http://www.WoodsEquipment.com), or in the United States and Canada call 1-800-319-6637.) 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.
- Know your controls and how to stop engine and attachment quickly in an emergency.
- 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

- Check that all hardware is properly installed. Always tighten to torque chart specifications unless instructed otherwise in this manual.
- 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.

- Make sure all safety decals are installed. Replace if damaged. (See Safety Decals section for location.)
- 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.

## OPERATION

- Keep bystanders away from equipment.
- Do not operate or transport equipment while under the influence of alcohol or drugs.
- Operate only in daylight or good artificial light.
- Keep hands, feet, hair, and clothing away from equipment while engine is running. Stay clear of all moving parts.
- Always comply with all state and local lighting and marking requirements.
- Never allow riders on power unit or attachment.
- 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.
- 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.
- Do not stop, start, or change directions suddenly on slopes.
- Use extreme care and reduce ground speed on slopes and rough terrain.

*(Safety Rules continued on next page)*

# SAFETY RULES



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



*(Safety Rules continued from previous page)*

- Watch for hidden hazards on the terrain during operation.
- Stop power unit and equipment immediately upon striking an obstruction. Turn off engine, remove key, inspect, and repair any damage before resuming operation.

## **MAINTENANCE**

■ 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.

■ 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.

■ 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.

■ Make sure all safety decals are installed. Replace if damaged. (See Safety Decals section for location.)

## **STORAGE**

■ Block equipment securely for storage.

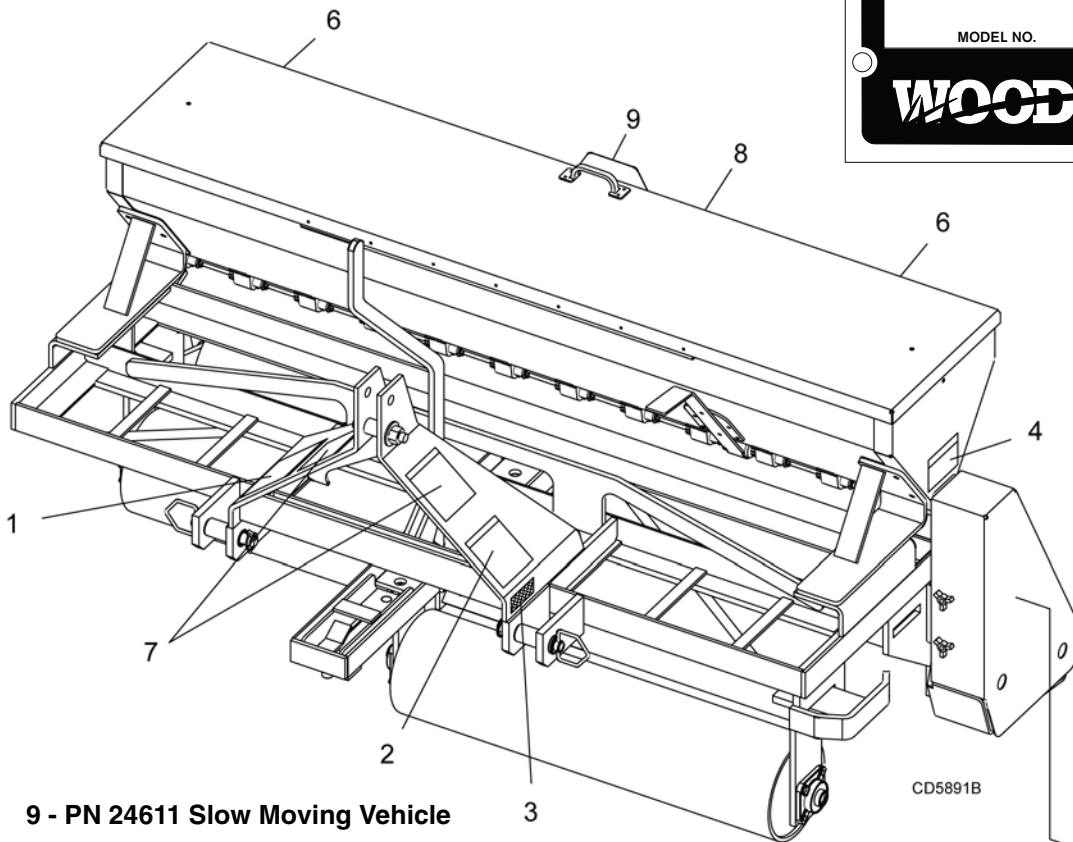
■ Keep children and bystanders away from storage area.





# SAFETY & INSTRUCTIONAL DECALS

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



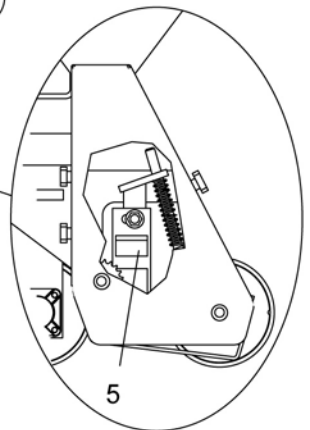
9 - PN 24611 Slow Moving Vehicle

|   |
|---|
| <b>WARNING</b>  |
| <b>ROTATING COMPONENTS</b><br>Do not operate without cover in place. Look and listen for rotation. Do not open cover until all components have stopped.<br><br><b>CONTACT WITH ROTATING PARTS CAN CAUSE SERIOUS INJURY.</b> |
| 15502-B   |

4 - PN 15502

5 - PN 18868

|  |
|--|
| <b>DANGER</b>  |
| <b>SHIELD MISSING</b><br>Do not operate.<br>Put shield on. |
| 18868-B  |



## 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 Woods dealer. To locate your nearest dealer, check the Dealer Locator at [www.WoodsEquipment.com](http://www.WoodsEquipment.com), or in the United States and Canada call 1-800-319-6637.

*(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)

|  |  |
|--|--|
| <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; font-size: small;">55121-C</p> |  |

1 - PN 55121

2 - PN 55122

|   |
|---|
| <b>WARNING</b>  |
| <p><b>TO AVOID SERIOUS INJURY OR DEATH:</b></p> <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 dealer or call 1-800-319-6637.)</li> <li>■ Operate from tractor seat only.</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>■ Never allow riders.</li> <li>■ Keep bystanders away from equipment during operation.</li> <li>■ Keep all shields in place and in good condition.</li> <li>■ Do not transport towed or semi-mounted units over 20 mph.</li> </ul> <p style="text-align: center;"><b>FAILURE TO FOLLOW THESE INSTRUCTIONS CAN RESULT IN INJURY OR DEATH.</b></p> <p style="text-align: right; font-size: small;">55122-D</p> |

7 - PN 1003751

|  |
|--|
| <b>WARNING</b>   |
|  |
| <p><b>CRUSHING AND PINCHING HAZARD</b></p> <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 style="text-align: center;"><b>FAILURE TO FOLLOW THESE INSTRUCTIONS COULD RESULT IN SERIOUS INJURY OR DEATH.</b></p> <p style="text-align: right; font-size: small;">1003751-A</p> |

8 - PN 1003750

|  |
|--|
| <b>WARNING</b>   |
| <p><b>ENTANGLEMENT AND FALLING HAZARD</b></p> <p>Do not stand on rollers while machine is in operation or parked.</p> <p>Failure to follow these instructions could result in serious injury or death.</p> <p style="text-align: right; font-size: small;">1003750</p> |



# OPERATION

The operator is responsible for the safe operation of this renovator. The operator must be properly trained. Operators should be familiar with the equipment, the tractor, and all safety practices before starting operation. Read the safety rules and safety decals on page 5 through page 8.

Recommended tractor ground speed is from 2 to 5 mph.

## WARNING

- 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 children or untrained persons to operate equipment.
- Keep bystanders away from equipment.
- Keep hands, feet, hair, and clothing away from equipment while engine is running. Stay clear of all moving parts.

## CAUTION

- Stop power unit and equipment immediately upon striking an obstruction. Turn off engine, remove key, inspect, and repair any damage before resuming operation.
- 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.

### Super Turf Renovator Roller Operation

The Super Turf Renovator is an excellent turf reconditioning tool. Its ground penetration promotes a healthy root system by allowing water, air, and sunlight to enter the roots.

For best results, adjust the renovator level front to back so that the front and rear rollers work together. Control forward and backward pitch by adjusting the tractor's top link length.

#### Front Rollers

When the front rollers are straight (Figure 1) and the renovator is pulled forward, the large front pins will penetrate the soil in a straight pushing action, and little disturbance is caused to the turf.



Figure 1. Front Roller in Straight Position

The front rollers can be angled to promote a more aggressive tearing action of the turf. The more the angle, the more tearing action is applied by the front roller pins. For severe turf conditions, the maximum angle position may be desired (Figure 2).



Figure 2. Maximum Front Roller Position

#### Rear Rollers

The rear roller firms and presses soil kicked up by the front roller. This creates a uniform seedbed with the loose soil necessary for ensuring proper seed germination. The spring tension on the rear roller can be

adjusted to deliver the desired down pressure and roller action and achieve the desired seedbed appearance.

When the situation permits, making a second pass 90-degrees to the first is an effective way for the roller pins to penetrate areas where uneven soil conditions exist.

In extremely compacted soil conditions, add extra weight to the renovator to help the roller pins penetrate the turf and soil sufficiently.

## Operation

The power for operating the renovator comes from contact between the renovator rollers and the turf.

Know how to stop the tractor and renovator quickly in an emergency.

Survey the area to be worked and remove any obstructions that may affect the performance of the equipment.

## Tractor Stability

### **WARNING**

■ A minimum 20% of tractor and equipment weight must be on the tractor front wheels when attachments are in transport position. Without this weight, front tractor wheels could raise up resulting in loss of steering. The weight may be attained with front wheel weights, ballast in tires or front tractor weights. Weigh the tractor and equipment. Do not estimate.

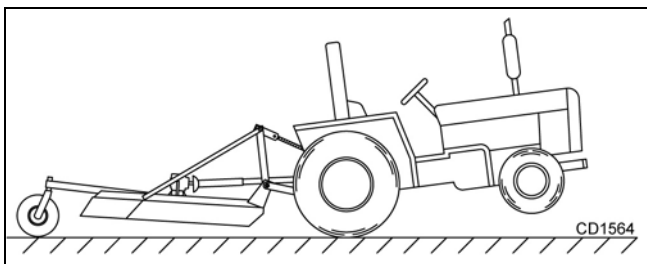


Figure 3. Tractor Stability

## Attach Super Turf Renovator to Tractor

**NOTE:** Super Turf Renovator is designed for use on Category I, 3-point tractors. See page 4 for specifications.

1. Attach the tractor's lower lift arms to the renovator and secure with mounting pins (11) and klik pins. See Figure 4.

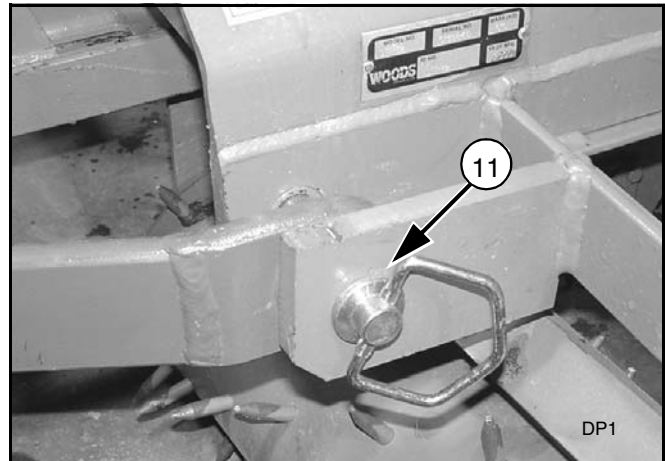


Figure 4. Lift Arms Attached to Renovator

2. Attach the tractor's top link to the upper mast of the renovator. Secure with high-strength top link pin and retaining pin provided with the tractor. See Figure 5.

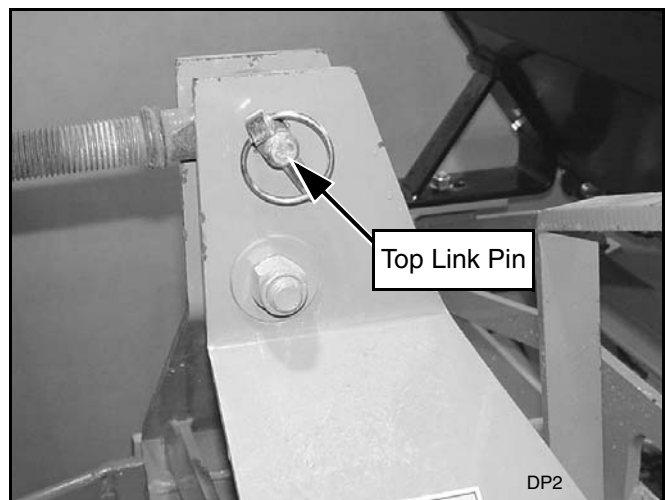


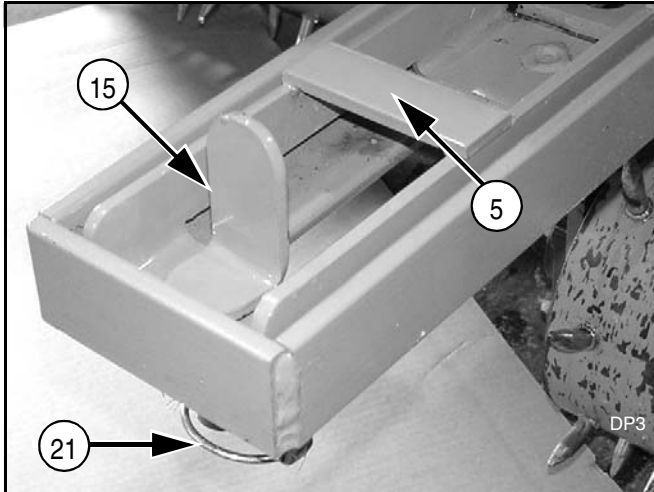
Figure 5. Top Link Attached to Renovator

3. Adjust top link as needed to level the renovator forward and backwards.
4. Adjust the lower lift arm anti-sway device to prevent the renovator from excessive side-to-side movement.

**NOTE:** An optional Quick Hitch Mounting Kit is available.

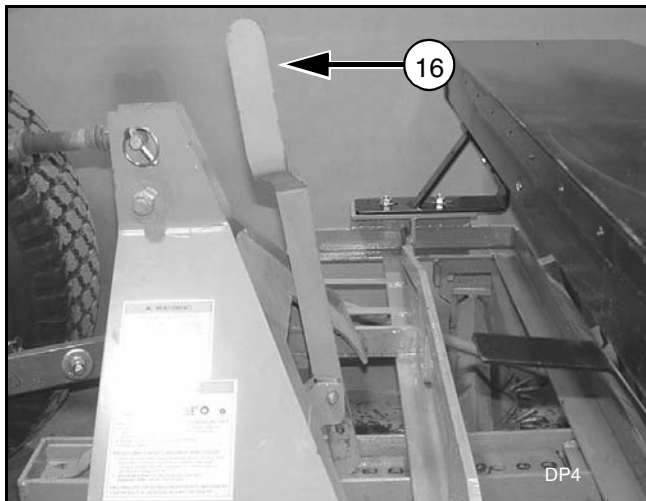
## Adjust Front Roller Angle

1. Position tractor and renovator on a level surface.
2. Raise renovator slightly off the ground.
3. Stop engine and set parking brake.
4. Remove klik pin (21), lock pin (15), and lock assembly (5) from front of renovator. See Figure 6.



**Figure 6.** Lock Pin and Lock Assembly

5. Raise the adjustment handle (16) and pivot it to the next adjustment hole. Move handle rearward, front roller will start to angle. Continue this process until front roller has the desired angle.



**Figure 7.** Adjustment Handle

6. Install lock assembly (5), lock pin (15), and klik pin (21) to secure front roller into position.
7. Reverse this procedure to move front roller back into normal position.

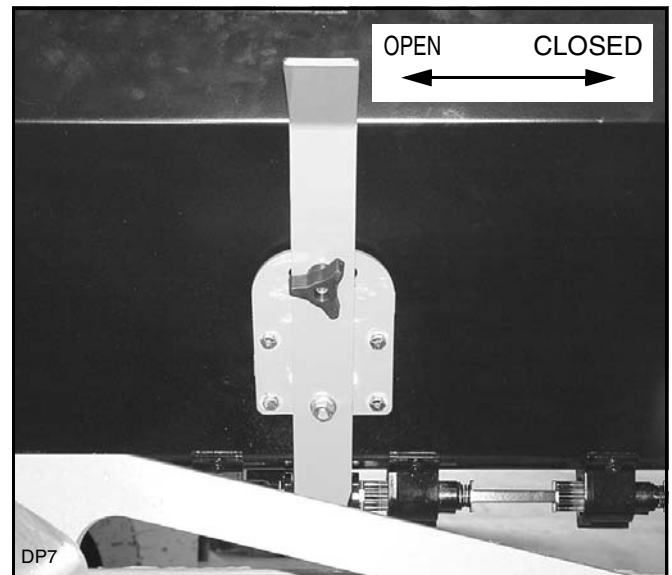
## Seeding Operation

Tractor speed and seed flow settings are critical for proper seed population. Check the seed control chart, on the inside of the seedbox lid (see page 11). Adjust the flow control handle (Figure 8) as needed for the seed being used and the population desired.

Tractor speed (normally 2-5 mph) should be established so that uniform seed incorporation occurs with the action of the rollers. The seed chart is based on a standard sprocket configuration. Any adjustments to this ratio will result in a change to the flow rate, as described in the chart.

**NOTE:** The **seed control chart** should be used as a general guide only.

Before seeding an area, check the attitude of the seeder and adjust the top link so that the front and rear rollers are level. Adjust the 3-point lower lift stop so that the roller spikes penetrate the ground at 3/4" or enough to remove the tracks left by the tractor tires.



**Figure 8.** Flow Control Handle

## Operating Tips

### IMPORTANT

■ Before closing down the cup (reducing rates), the operator should make certain that the cups are not full of seed. If cups are full of seed (especially small, round, hard seed), it may be necessary to cover the meter holes and run seeder a short distance to reduce level of seeds in meter. Failure to do so could result in damage to seed cup.

1. Do not allow dirt to build up on the roller sprockets. Clean sprockets and chain as needed. Excessive buildup of material can cause damage to the roller and idler shafts.
2. Always run the drive chain with some slack in the chain. An extremely tight chain can damage the roller shaft, the roller bearings, and the idler shaft and bearing.
3. When properly torqued, the hex lock nut (1) drives the seedbox roller chain. Disengage the seedbox chain, when not in use, by backing off a 1/4 turn on the lock nut.

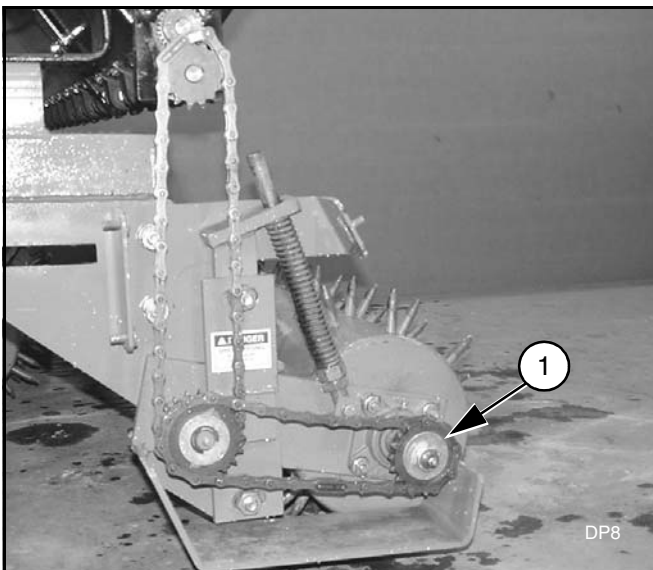


Figure 9. Drive Chains

## Pre-Operation Check List

(OWNER'S RESPONSIBILITY)

- \_\_\_ Review and follow all safety rules and safety decal instructions on page 5 through page 8.
- \_\_\_ Check that equipment is properly and securely attached to tractor.
- \_\_\_ Check that all safety decals are installed and in good condition. Replace if damaged.
- \_\_\_ Do not allow riders.
- \_\_\_ Check that all hardware is properly installed and secured.
- \_\_\_ Check that shields and guards are properly installed and in good condition. Replace if damaged.
- \_\_\_ Check all lubrication points and grease as instructed in Lubrication Information, page 12.
- \_\_\_ Make sure tractor ROPS or ROPS cab and seat belt are in good condition. Keep seat belt securely fastened during operation.



## SEEDING RATE CHART

| Setting   | Alfalfa (uncoated) |              | Bermuda (hulled)   |              | Blue Grass (Kentucky) |              | Clover (sweet, red) |              | Fescue (creeping red) |              | Italian Rye        |              | Timothy            |                    |              |
|-----------|--------------------|--------------|--------------------|--------------|-----------------------|--------------|---------------------|--------------|-----------------------|--------------|--------------------|--------------|--------------------|--------------------|--------------|
|           | Lbs per 1000 Sq Ft | Lbs per Acre | Lbs per 1000 Sq Ft | Lbs per Acre | Lbs per 1000 Sq Ft    | Lbs per Acre | Lbs per 1000 Sq Ft  | Lbs per Acre | Lbs per 1000 Sq Ft    | Lbs per Acre | Lbs per 1000 Sq Ft | Lbs per Acre | Lbs per 1000 Sq Ft | Lbs per 1000 Sq Ft | Lbs per Acre |
| 1/4 Open* | 1-1/4              | 52           | 1-1/4              | 52           | 1/2                   | 22           | 1-1/2               | 67           | 1/2                   | 18           | 1-1/4              | 50           | 1                  | 45                 |              |
| 1/2 Open  | 3-1/4              | 142          | 3-1/2              | 149          | 1-1/4                 | 52           | 3-1/4               | 142          | 1-1/4                 | 50           | 2                  | 83           | 2-3/4              | 119                |              |
| 3/4 Open  | 5                  | 216          | 5-1/4              | 224          | 2                     | 82           | 5-1/4               | 224          | 1-3/4                 | 74           | 2-3/4              | 116          | 4-1/2              | 194                |              |
| Full Open | 6-3/4              | 291          | 7                  | 298          | 2-1/2                 | 104          | 6-1/2               | 298          | 2-1/4                 | 99           | 3-3/4              | 165          | 6-1/4              | 268                |              |

Rates are intended as a guide only. Variation in seed size and cleanliness will affect rates.

Check acreage and pounds of seed used and calibrate seeding rate per manual instructions for best results.

\*Seed cups will crack some seeds at this setting. Not recommended: Lentils, Sorghum, Sudan Grass

1001998

### Calibrating the STR for unlisted seed or seed blends

#### Equipment

You will need the following equipment to calibrate your seeder.

- Two jack stands.
- One to two pound sample of seed.
- One tarp or canvas approximately 48" x 84".
- One scale capable of measuring ounces or tenths of a pound.

#### Procedure

- Evenly distribute seed in the bottom of seed box.
- Raise STR just enough to lift rear roller spikes off the ground and securely block the rear corners of the frame with jack stands. Blocking up prevents hydraulic leak down or mechanical component failure.
- Place a canvas or tarp under STR to collect seed.
- Open seed cups half way and lock into position.
- Turn rear roller in the direction of travel the number of revolutions as indicated in the Formula section.

6. Weigh the collected seed and calibrate.

7. If seed rate is not correct, repeat steps 1 through 6, after adjusting the seed cup opening.

#### Formula

Revolutions per 1000 sq. ft.

STR48 - 87

STR60 - 69

STR72 - 58

Weight of collected seed

( \_\_\_ oz. x .0625 = \_\_\_ lbs.)

Seed per acre

( \_\_\_ lbs. x 43.56 = \_\_\_ lbs. per acre)

#### Example

STR48 rear roller was rotated 87 complete revolutions in the direction of travel as specified above. Collected seed weighed 10 ounces or .63 pounds (10 oz. x .0625 = .63 lbs). Seed rate was calibrated at .63 lbs. x 43.56 = 27.4 lbs. of seed per acre.

# OWNER SERVICE

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

## **⚠ WARNING**

■ **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.**

■ **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.**

## **⚠ 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.**

### Lubrication Information

1. Lubricate all six bearings housings every 8 hours. Bearing housings are located on each end of rollers as indicated by grease fitting (A). See Figure 10.
2. Lubricate grease fittings (B) & (C) every 8 hours.
3. Clean fittings prior to lubrication. Do not let excessive grease build up around lubrication points.

**NOTE:** One pump of a good grade multi-purpose grease should be sufficient in most cases. Harsh or dry conditions may require more frequent lubrication.

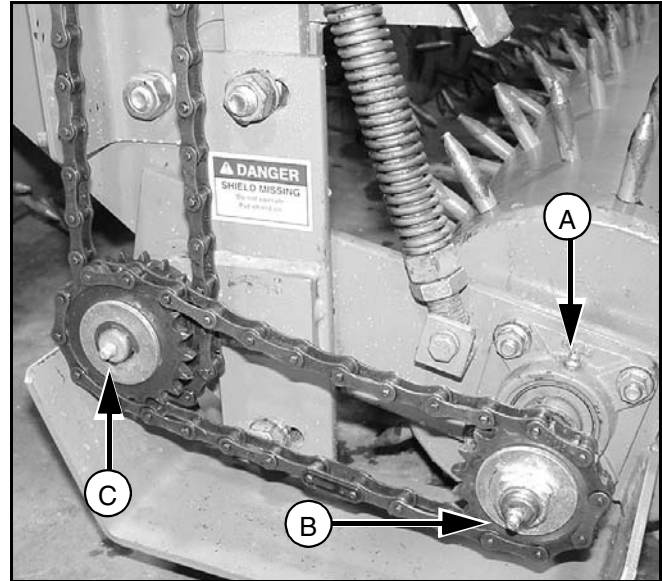


Figure 10. Lubrication Points

### 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 Woods spray paint of matching color (purchase from your Woods dealer).
- Replace any safety decals that are missing or not readable (supplied free by your Woods dealer). See Safety Decals section for location drawing.

# ASSEMBLY

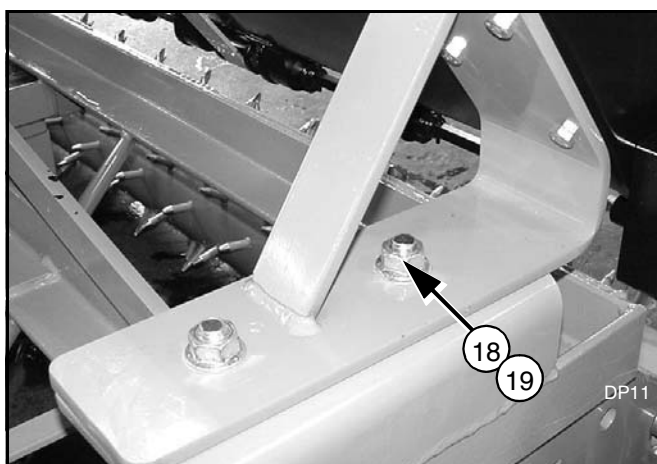
## DEALER SET-UP INSTRUCTIONS

Assembly of this equipment is the responsibility of the Woods dealer. It should be delivered to the owner completely assembled, lubricated, and adjusted for normal operating conditions.

In most cases the Super Turf Renovator is shipped completely assembled from the factory. The seed box is an option that can be added to the Super Turf Renovator at a later time if desired.

### Install Seedbox

1. Place seedbox on top of renovator mounting saddles.
2. Install four carriage bolts (18) from underneath saddles and secure with flanged lock nuts (19). See Figure 11.
3. Do not tighten until all adjustments are completed.



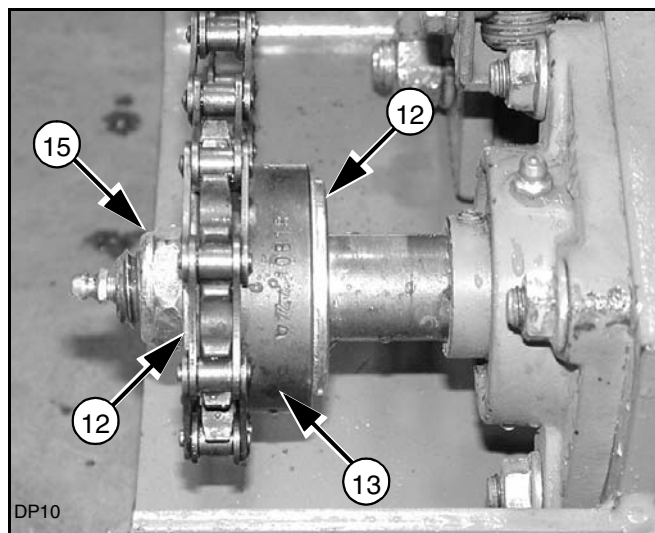
18. 5/8 NC x 1-1/2 Carriage bolt GR5  
19. 5/8 NC Flange lock nut

Figure 11. Seedbox Hardware Installed

### Install Drive Sprocket

1. Place washers (12), sprocket (13), and lock nut (15) on the left side of rear roller drive axle (Figure 12).
2. Do not tighten nut at this time.

**NOTE:** When properly torqued, the hex lock nut drives the seedbox roller chain. Disengage the seedbox chain when not in use by backing off a 1/4 turn on the lock nut.

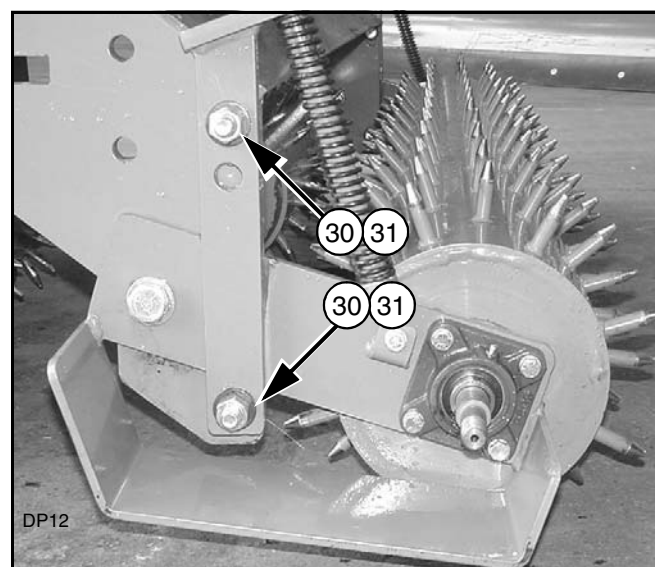


12. 3/4 Flat washer  
13. Drive sprocket, 18T w/bearing  
15. 3/4 NC Nylok Jam nut

Figure 12. Drive Sprocket Installed

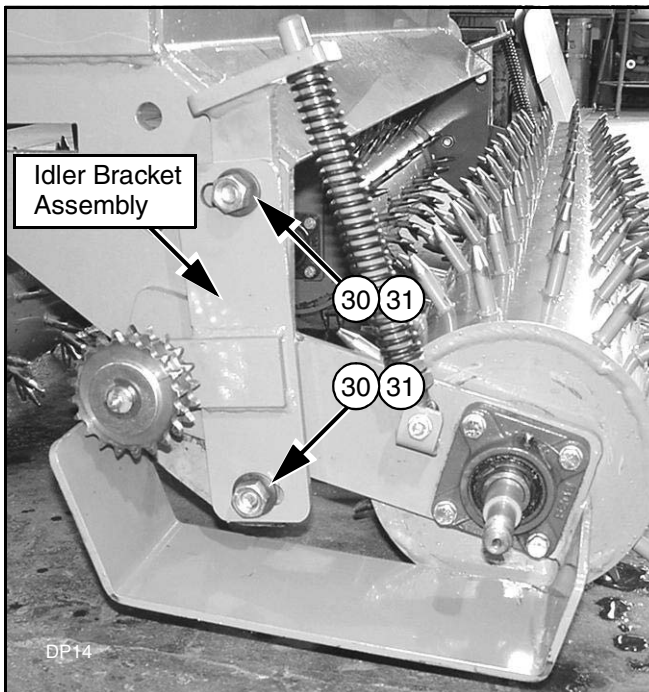
### Install Idler Bracket

1. Remove hex nuts (31) and hardened flat washers (30) from cap screws securing the spring bracket to the renovator. See Figure 13.
2. Place idler bracket assembly over cap screws and install washers (30) and hex nuts (31) previously removed. See Figure 14.



30. 5/8 Hardened flat washer  
31. 5/8 NC Hex nut

Figure 13. Spring Bracket and Hardware



**Figure 14.** Idler Bracket Assembly Installed

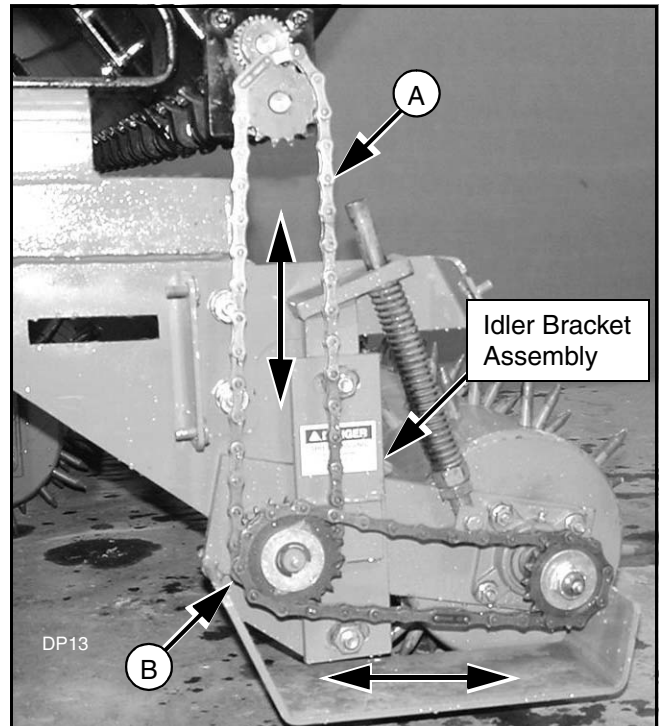
### Install Roller Chains

1. Place roller chain (A - 35 link) around the seed box sprocket and the large inner sprocket on the idler bracket assembly. Secure chain using master link.
2. Install roller chain (B - 28 link) around the rear drive sprocket and smaller outer sprocket on the idler bracket assembly. Secure chain using master link.
3. Align the seed box sprocket and large inner sprocket on the idler bracket by adjusting seed box side to side.
4. Tighten hardware securing seed box to renovator frame.

5. Slide idler bracket assembly forward to apply tension to the horizontal drive chain.
6. Slide idler and spring bracket down to apply tension to the vertical drive chain.

**NOTE:** Do not over tighten. Allow some slack in chain.

7. Adjust opposite side of roller to level.



- A. Roller chain 35-LK w/adjustable links  
 B. Roller chain 28-LK w/adjustable links

**Figure 15.** Sprockets and Chains Installed



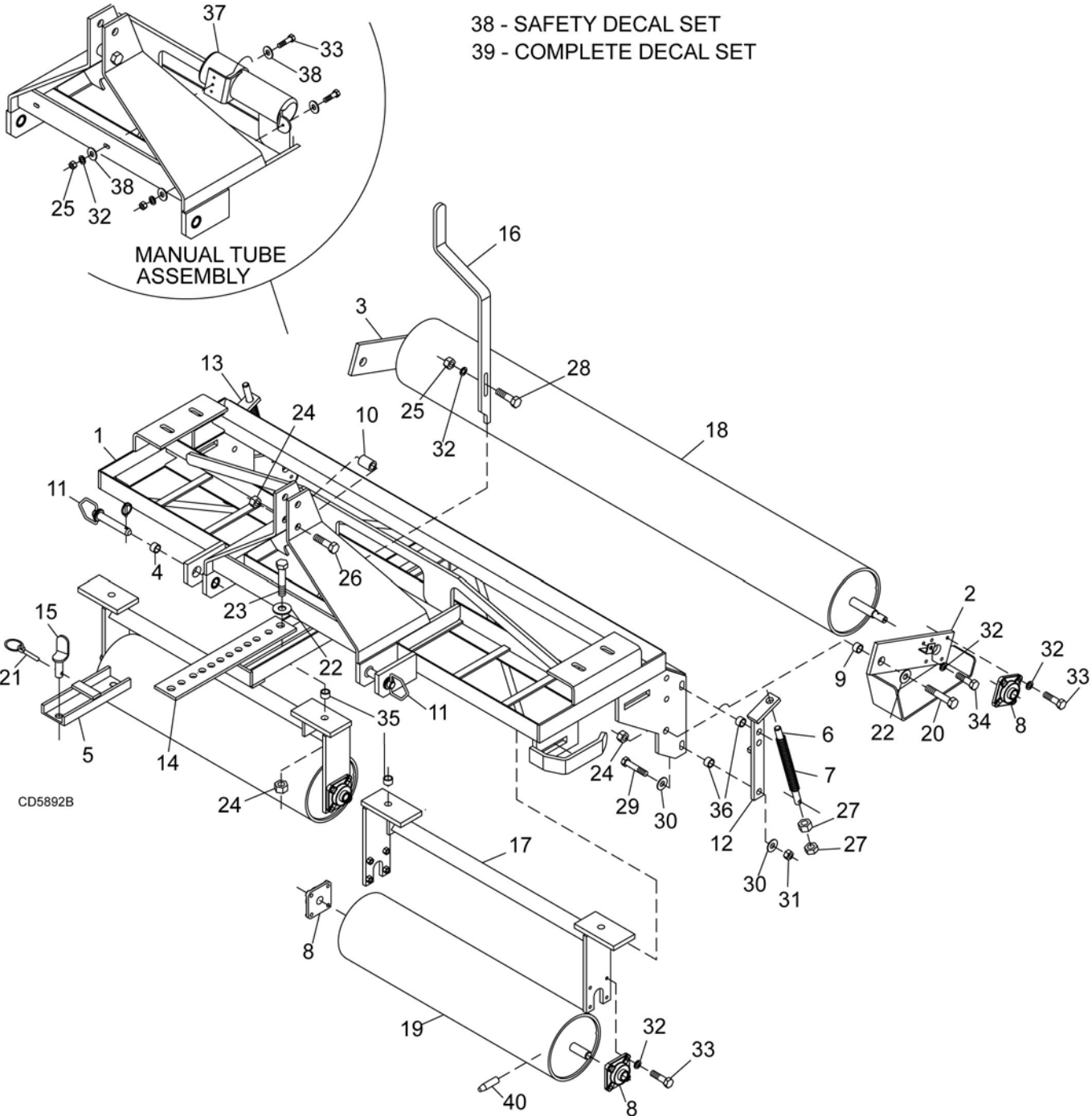
**PARTS INDEX**

**GILL®**  
**Super Turf Renovator**  
**& Seedbox Kit**

**STR48S-2**  
**STR60S-2**  
**STR72S-2**

|                            |         |
|----------------------------|---------|
| Main Assembly . . . . .    | 18 - 19 |
| Seedbox Assembly . . . . . | 20 - 21 |
| Drive Assembly . . . . .   | 22      |
| Quick Hitch Kit . . . . .  | 23      |

**STR48S-2, STR60S-2 & STR72S-2 MAIN ASSEMBLY**



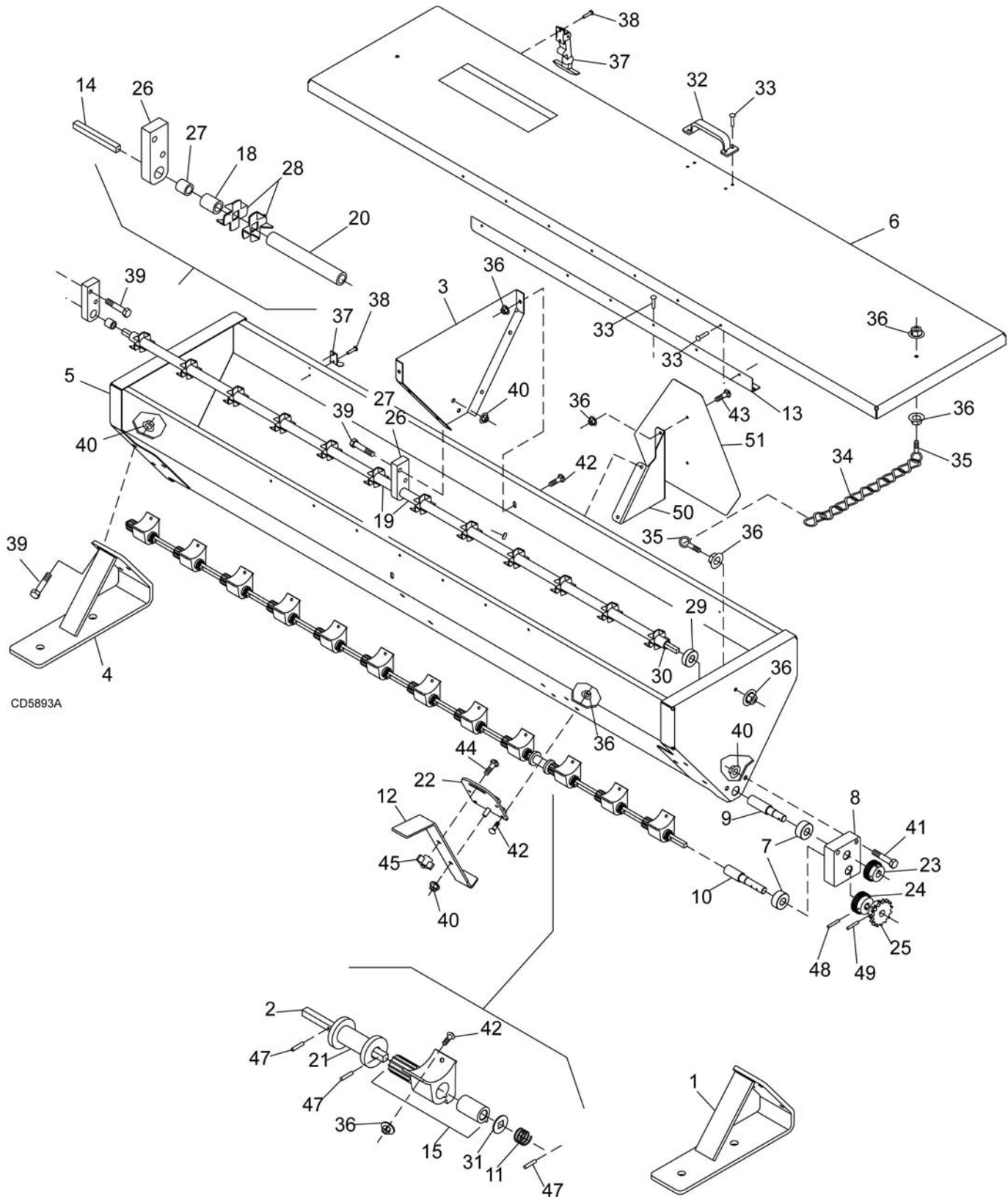
CD5892B

## STR48S-2, STR60S-2 & STR72S-2 MAIN ASSEMBLY PARTS LIST

| REF | STR 48-2  | STR 60-2  | STR72-2   | QTY | DESCRIPTION                        |
|-----|-----------|-----------|-----------|-----|------------------------------------|
| 1   | .....     | .....     | .....     | 1   | STR Frame                          |
| 2   | 1000778   | 1000778   | 1000778   | 1   | Rear roller arm, right             |
| 3   | 1000779   | 1000779   | 1000779   | 1   | Rear roller arm, left              |
| 4   | D2213     | D2213     | D2213     | 4   | Bushing, 0.88 ID                   |
| 5   | 1002912   | 1001716   | 1001716   | 1   | Lock assembly                      |
| 6   | 1001984   | 1001984   | 1001984   | 2   | Spring pin, .75 x 11.8             |
| 7   | 20A125    | 20A125    | 20A125    | 2   | Compression spring                 |
| 8   | 20A920    | 20A920    | 20A920    | 6   | Bearing w/housing                  |
| 9   | 46483     | 46483     | 46483     | 2   | Sleeve, .82 x 1.05 x .66           |
| 10  | 1002018   | 1002018   | 1002018   | 1   | Sleeve, .81 x 1.25 x 2.06          |
| 11  | SU105     | SU105     | SU105     | 2   | Category 1 drawbar pin w/lynch pin |
| 12  | SU106     | SU106     | SU106     | 1   | Spring bracket, left               |
| 13  | SU107     | SU107     | SU107     | 1   | Spring bracket, right              |
| 14  | .....     | .....     | .....     | 1   | Slide plate                        |
| 15  | 1002914   | 1002914   | 1002914   | 1   | Lock pin                           |
| 16  | SU905     | SU905     | SU905     | 1   | STR Handle                         |
| 17  | 100292548 | 100292560 | 100292572 | 2   | Roller retainer assembly           |
| 18  | 100290848 | 100290860 | 100290872 | 1   | Rear roller assembly               |
| 19  | 100290948 | 100290960 | 100290972 | 2   | Front roller assembly              |
| 20  | 13759*    | 13759*    | 13759*    | 2   | 3/4 NC x 2-1/4 Cap screw GR5       |
| 21  | 27542*    | 27542*    | 27542*    | 1   | 7/16 x 11/32 Klik pin HT           |
| 22  | 2864*     | 2864*     | 2864*     | 4   | 3/4 SAE Flat washer                |
| 23  | 14334*    | 14334*    | 14334*    | 2   | 3/4 NC x 3 Cap screw GR5           |
| 24  | FA446     | FA446     | FA446     | 5   | 3/4 NC Nylok nut                   |
| 25  | 835*      | 835*      | 835*      | 3   | 3/8 NC Hex nut                     |
| 26  | 31207*    | 31207*    | 31207*    | 1   | 3/4 NC x 4 Cap screw GR5           |
| 27  | 29485*    | 29485*    | 29485*    | 4   | 3/4 Hex jam nut                    |
| 28  | 3231*     | 3231*     | 3231*     | 1   | 3/8 NC x 2 Cap screw GR5           |
| 29  | 34473*    | 34473*    | 34473*    | 4   | 5/8 NC x 3 Cap screw GR5           |
| 30  | 57817     | 57817     | 57817     | 8   | 5/8 Hardened flat washer           |
| 31  | 230*      | 230*      | 230*      | 4   | 5/8 NC Hex nut                     |
| 32  | 838*      | 838*      | 838*      | 29  | 3/8 Lock washer                    |
| 33  | 976*      | 976*      | 976*      | 26  | 3/8 NC x 1-1/2 Cap screw GR5       |
| 34  | 300157*   | 300157*   | 300157*   | 2   | 3/8 NC x 2-1/4 Cap screw GR5       |
| 35  | 1002943   | 1002943   | 1002943   | 2   | .82 x 1.06 x .407 Sleeve           |
| 36  | 1002942   | 1002942   | 1002942   | 4   | .68 x 1.02 x .66 Sleeve            |
| 37  | 1003828   | 1003828   | 1003828   | 1   | Manual tube                        |
| 38  | 1002934   | 1002934   | 1002934   | —   | Safety decal set                   |
| 39  | 1002935   | 1002935   | 1002935   | —   | Complete decal set                 |
| 40  | 1002938   | 1002938   | 1002938   | —   | Replacement pins (25-pin set)      |

\* Obtain Locally

# STR48-2, STR60S-2 & STR72S-2 SEEDBOX ASSEMBLY



CD5893A

**20 Parts**

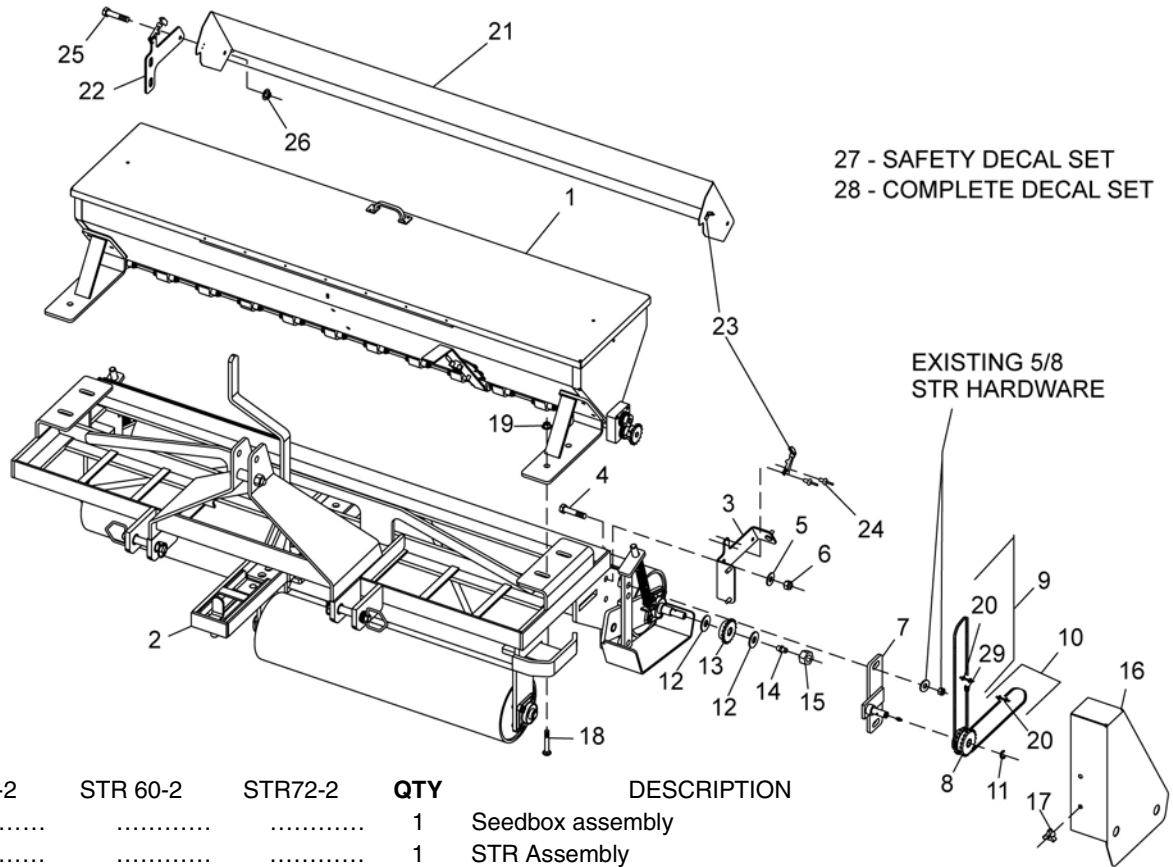
MAN0101 (Rev. 9/15/2006)

## STR48-2, STR60S-2 & STR72S-2 SEEDBOX PARTS LIST

| REF | STR 48-2      | STR 60-2      | STR72-2       | QTY | DESCRIPTION                                    |
|-----|---------------|---------------|---------------|-----|--|
| 1   | 1000001       | 1000001       | 1000001       | 1   | Seedbox support bracket, left                  |
| 2   | 100001348     | 100001360     | 100001372     | 1   | Shaft, .38 square w/holes                      |
| 3   | .....         | .....         | .....         | 1   | Center stiffener                               |
| 4   | 1000766       | 1000766       | 1000766       | 1   | Seedbox support bracket, right                 |
| 5   | 100293248     | 100293260     | 100293272     | 1   | Seedbox assembly complete<br>(3 & Decals)      |
| 6   | 100293348     | 100293360     | 100293372     | 1   | Lid assembly complete<br>(13, 32, 37, & decal) |
| 7   | 1000782       | 1000782       | 1000782       | 2   | Bearing double row, 17 x 40 x .5 mm            |
| 8   | 1000783       | 1000783       | 1000783       | 1   | Bearing block                                  |
| 9   | 1000784       | 1000784       | 1000784       | 1   | Agitator shaft assembly                        |
| 10  | 1000787       | 1000787       | 1000787       | 1   | Seedcup shaft assembly                         |
| 11  | 1000790 (8)   | 1000790 (10)  | 1000790 (12)  |     | Compression spring                             |
| 12  | 1001705       | 1001705       | 1001705       | 1   | Control lever                                  |
| 13  | 1001721       | 1001721       | 1001721       | 1   | Seedbox hinge, 36"                             |
| 14  | 100172248     | 100172260     | 100172272     | 1   | Shaft, .38 square                              |
| 15  | 46490 (8)     | 46490 (10)    | 46490 (12)    |     | Seedcup kit                                    |
| 18  | 1001986       | 1001986       | 1001986       | 1   | Spacer, 1.22                                   |
| 19  | 1001987       | 1001987       | 1001987       | 2   | Spacer, 2.56                                   |
| 20  | 1001988 (6)   | 1001988 (8)   | 1001988 (10)  |     | Spacer, 5.88                                   |
| 21  | 1001993       | 1001993       | 1001993       | 1   | Spool assembly                                 |
| 22  | 1001992       | 1001992       | 1001992       | 1   | Control plate                                  |
| 23  | 20A653        | 20A653        | 20A653        | 1   | Spur gear agitator (28T)                       |
| 24  | 20A654        | 20A654        | 20A654        | 1   | Spur gear feed (30T)                           |
| 25  | 20A656        | 20A656        | 20A656        | 1   | Sprocket (15T)                                 |
| 26  | 1001997       | 1001997       | 1001997       | 2   | Agitator bracket                               |
| 27  | 20A663        | 20A663        | 20A663        | 2   | Bushing, .5 x .75 x .75                        |
| 28  | 20A664 (16)   | 20A664 (20)   | 20A664 (24)   |     | Agitator washer                                |
| 29  | 20A687        | 20A687        | 20A687        | 1   | Collar   |
| 30  | 20A765        | 20A765        | 20A765        | 1   | Spacer, .75                                    |
| 31  | 1001714 (8)   | 1001714 (10)  | 1001714 (12)  |     | Washer, .44 square hole                        |
| 32  | 20A635        | 20A635        | 20A635        | 1   | Lid handle                                     |
| 33  | 1001978*      | 1001978*      | 1001978*      | 18  | Blind rivet 3/16, #.63                         |
| 34  | 1002016*      | 1002016*      | 1002016*      | 2   | Chain, #2 double loop 9 link                   |
| 35  | FA159*        | FA159*        | FA159*        | 4   | Eye bolt, 1/4 - 20 x 1                         |
| 36  | 70065 (36)    | 70065 (40)    | 70065 (44)    |     | 1/4 NC Whiz nut                                |
| 37  | 1001975       | 1001975       | 1001975       | 2   | Flex draw latch                                |
| 38  | 1001994*      | 1001994*      | 1001994*      | 6   | Blind rivet 1/8, #.43                          |
| 39  | 12169*        | 12169*        | 12169*        | 10  | 3/8 NC x 1-1/4 Cap screw GR5                   |
| 40  | 14350*        | 14350*        | 14350*        | 11  | 3/8 NC Flange lock nut                         |
| 41  | 3231*         | 3231*         | 3231*         | 2   | 3/8 NC x 2 Cap screw GR5                       |
| 42  | 70067 (22)    | 70067 (26)    | 70067 (30)    |     | 1/4-20 x 1/2 Whiz bolt                         |
| 43  | 70068         | 70068         | 70068         | 6   | 1/4-20 x 3/4 Whiz bolt                         |
| 44  | 6697*         | 6697*         | 6697*         | 1   | 3/8 NC x 1 Carriage bolt                       |
| 45  | 66840         | 66840         | 66840         | 1   | 3 Prong knob, 3/8 NC                           |
| 47  | 1001995 (16)* | 1001995 (20)* | 1001995 (24)* |     | 1/8 x 1 Roll pin                               |
| 48  | FA404*        | FA404*        | FA404*        | 2   | 1/8 x 1-1/2 Roll pin                           |
| 49  | FA405*        | FA405*        | FA405*        | 1   | 1/8 x 1-3/4 Roll pin                           |
| 50  | 1006607       | 1006607       | 1006607       | 1   | SMV Bracket                                    |
| 51  | 24611         | 24611         | 24611         | 1   | Sign, (SMV) slow moving vehicle                |

\* Obtain Locally

## STR48-2, STR60S-2 & STR72S-2 DRIVE ASSEMBLY



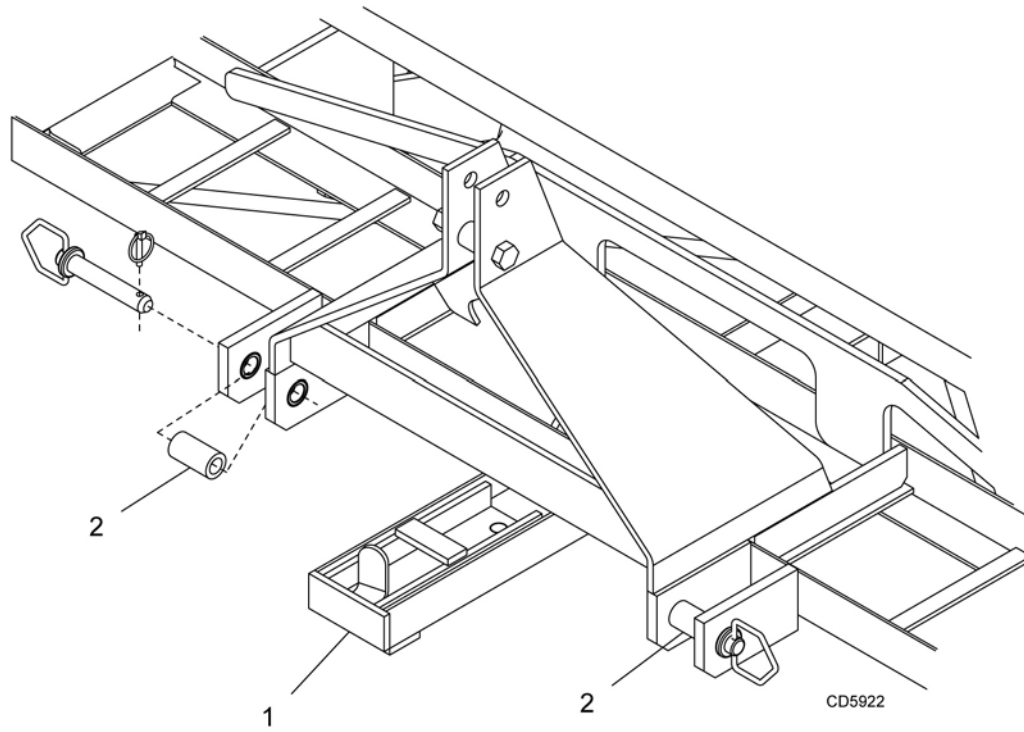
| REF | STR 48-2  | STR 60-2  | STR72-2   | QTY | DESCRIPTION                              |
|-----|-----------|-----------|-----------|-----|--|
| 1   | .....     | .....     | .....     | 1   | Seedbox assembly                         |
| 2   | .....     | .....     | .....     | 1   | STR Assembly                             |
| 3   | 1001710   | 1001710   | 1001710   | 1   | Chain guard bracket                      |
| 4   | 7832*     | 7832*     | 7832*     | 2   | 5/8 NC x 1-1/2 Cap screw GR5             |
| 5   | 57817*    | 57817*    | 57817*    | 2   | 5/8 Heavy lock washer                    |
| 6   | 230       | 230       | 230       | 2   | 5/8 NC Hex nut                           |
| 7   | 1000791   | 1000791   | 1000791   | 1   | Idler bracket                            |
| 8   | 1001983   | 1001983   | 1001983   | 1   | Idler sprocket w/bearing                 |
| 9   | 1002930   | 1002930   | 1002930   | 1   | Roller chain 35-LK with adjustment links |
| 10  | 1002931   | 1002931   | 1002931   | 1   | Roller chain 28-LK with adjustment links |
| 11  | 35139*    | 35139*    | 35139*    | 1   | Retainer ring, .05 x .75                 |
| 12  | 1257*     | 1257*     | 1257*     | 2   | 3/4 Flat washer                          |
| 13  | SU613     | SU613     | SU613     | 1   | Drive sprocket w/bearing                 |
| 14  | 12296*    | 12296*    | 12296*    | 1   | 1/4-28 x 15/32 Grease fitting            |
| 15  | 56722     | 56722     | 56722     | 1   | 3/4 NC Nylok jam nut                     |
| 16  | 1001709   | 1001709   | 1001709   | 1   | Chain guard                              |
| 17  | 66840     | 66840     | 66840     | 3   | 3 Prong knob, 3/8 NC                     |
| 18  | 5607*     | 5607*     | 5607*     | 4   | 5/8 NC x 1-1/2 Carriage bolt GR5         |
| 19  | 19025*    | 19025*    | 19025*    | 4   | 5/8 NC Flanged lock nut                  |
| 20  | FA419     | FA419     | FA419     | 2   | Connector link                           |
| 21  | 100293648 | 100293660 | 100293672 | 1   | Deflector assembly, (includes item #23)  |
| 22  | 1002939   | 1002939   | 1002939   | 1   | End support                              |
| 23  | 1001975   | 1001975   | 1001975   | 2   | Flex draw latch                          |
| 24  | 1001994*  | 1001994*  | 1001994*  | 4   | Blind rivet                              |
| 25  | 12169*    | 12169*    | 12169*    | 2   | 3/8 NC X 1-1/4 Hex head cap screw GR5 ZP |
| 26  | 14350*    | 14350*    | 14350*    | 2   | 3/8 NC Flange lock nut                   |
| 27  | 1002934   | 1002934   | 1002934   | —   | Safety decal set                         |
| 28  | 1002935   | 1002935   | 1002935   | —   | Complete decal set                       |
| 29  | 1002959   | 1002959   | 1002959   | 1   | #40 SGL Pitch offset link                |

\* Obtain Locally

# 22 Parts

MAN0101 (Rev. 9/15/2006)

## STR48-2, STR60S-2 & STR72S-2 QUICK HITCH KIT



| REF | PART    | QTY | DESCRIPTION        |
|-----|---------|-----|--------------------|
| 1   | .....   | 1   | STR Frame          |
| 2   | 1001702 | 2   | Quick hitch sleeve |

# BOLT TORQUE CHART

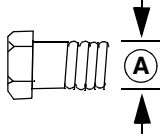
Always tighten hardware to these values unless a different torque value or tightening procedure is listed for a specific application.

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 MAR 99 & J1701M JUL 96.



## SAE SERIES TORQUE CHART



SAE Grade 2  
(No Dashes)

SAE Bolt Head  
Identification

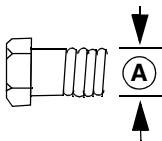


SAE Grade 5  
(3 Radial Dashes)



SAE Grade 8  
(6 Radial Dashes)

| Ⓐ<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

| Ⓐ<br>Diameter &<br>Thread Pitch<br>(Millimeters) | Wrench<br>Size | COARSE THREAD   |        |             |        | FINE THREAD     |        |             |        | Ⓐ<br>Diameter &<br>Thread Pitch<br>(Millimeters) |
|--|----------------|-----------------|--------|-------------|--------|-----------------|--------|-------------|--------|--|
|  |                | 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   |

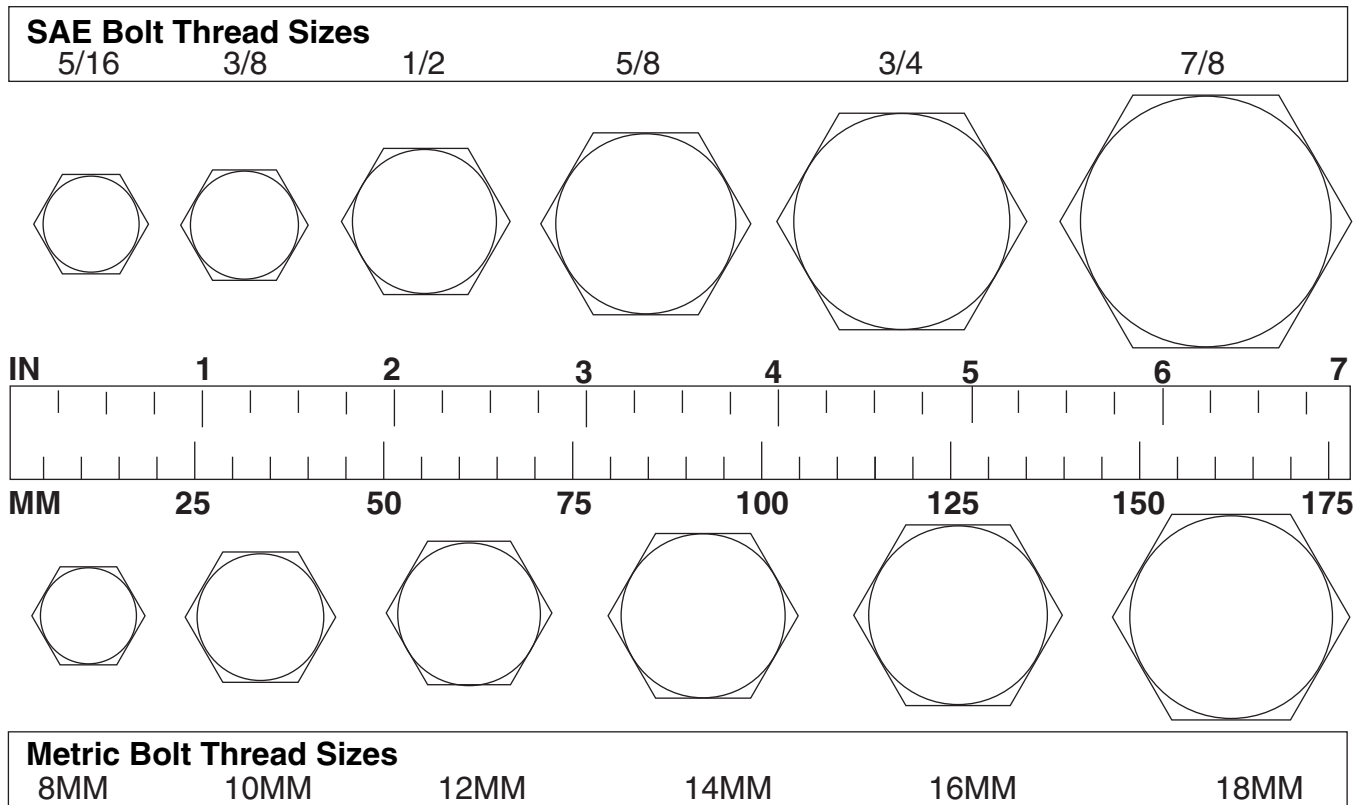
**Typical Washer Installations**

8/9/00



# BOLT SIZE CHART

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



## ABBREVIATIONS

|                    |   |               |                                     |
|--------------------|---|---------------|-------------------------------------|
| AG .....           | Agriculture                             | NC .....      | National Coarse                     |
| ATF .....          | Automatic Transmission Fluid            | NF .....      | National Fine                       |
| BSPP .....         | British Standard Pipe Parallel          | NPSM .....    | National Pipe Straight Mechanical   |
| BSPTM.....         | British Standard Pipe Tapered Male      | NPT .....     | National Pipe Tapered               |
| CV .....           | Constant Velocity                       | NPT SWF ..... | National Pipe Tapered Swivel Female |
| CCW .....          | Counter-Clockwise                       | ORBM.....     | O-Ring Boss - Male                  |
| CW .....           | Clockwise                               | P .....       | Pitch                               |
| F.....             | Female                                  | PBY .....     | Power-Beyond                        |
| GA.....            | Gauge                                   | psi .....     | Pounds per Square Inch              |
| GR (5, etc.) ..... | Grade (5, etc.)                         | PTO .....     | Power Take Off                      |
| HHCS.....          | Hex Head Cap Screw                      | QD .....      | Quick Disconnect                    |
| HT .....           | Heat-Treated                            | RH .....      | Right Hand                          |
| JIC.....           | Joint Industry Council 37° Degree Flare | ROPS.....     | Roll-Over Protective Structure      |
| LH .....           | Left Hand                               | RPM.....      | Revolutions Per Minute              |
| LT .....           | Left                                    | RT .....      | Right                               |
| m .....            | Meter                                   | SAE .....     | Society of Automotive Engineers     |
| mm .....           | Millimeter                              | UNC.....      | Unified Coarse                      |
| M.....             | Male                                    | UNF .....     | Unified Fine                        |
| MPa.....           | Mega Pascal                             | UNS .....     | Unified Special                     |
| N .....            | Newton                                  |               |                                     |



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(Replacement Parts For All Models Except Mow'n Machine™  
Zero-Turn Mowers and Woods Boundary™ Utility Vehicles)

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# WARRANTY

(All Models Except Mow'n Machine™ Zero-Turn Mowers and Woods Boundary™ Utility Vehicles)

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.

All current model loaders and backhoes are warranted for two (2) years from the date of delivery to the original purchaser.

The warranty periods for specific parts or conditions are listed below:

| Part or Condition Warranted | Model Number   | Duration (from date of delivery to the original purchaser)    |
|-----------------------------|--|---|
| Gearbox components          | BW1260, BW1620, BW1800, BW2400   | 8 years   |
|                             | BW240HD, BW180HD, BW180HB, BW126HB   | 7 years   |
|                             | BB48X, BB60X, BB72X, BB84X, BB600X, BB720X, BB840X, BB6000X, BB7200X, BB8400X, DS1260, DSO1260, DS1440, TS1680, BW126-3, BW180-3, BW240  | 6 years   |
|                             | PHD25, PHD35, PHD65, PHD95, 2162, 3240, DS96, DS120, RCC42, RM550-2, RM660-2, RM990-3, PRD6000, PRD7200, PRD8400, 7144RD-2, 9180RD-2, 9204RD-2, S15CD, S20CD, S22CD, S25CD, S27CD, BW180LH | 5 years   |
|                             | RDC54, RD60, RD72, TBW150C   | 3 years (1 year if used in rental or commercial applications) |
| Blade spindles              | RM550-2, RM660-2, RM990-3, PRD6000, PRD7200, PRD8400, 7144RD-2, 9180RD-2, 9204RD-2   | 3 years   |
| Rust-through                | BB600, BB720, BB840, BB6000, BB7200, BB8400, BW126-3, BW126HB, BW180-3, BW180HB, BW180HD, BW1260, BW1800, BW240, BW240HD, 2162, 3240, DS1260, DSO1260, DS1440, TS1680                      | 10 years  |

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.

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

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