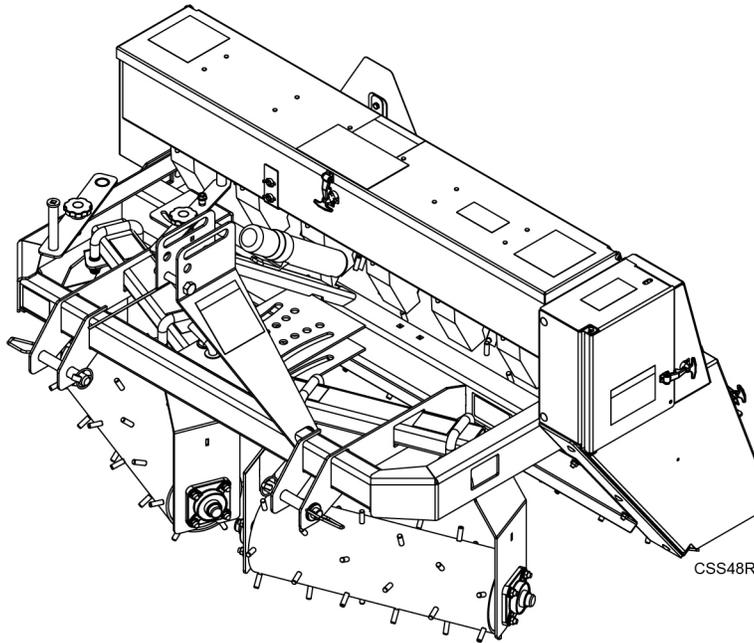
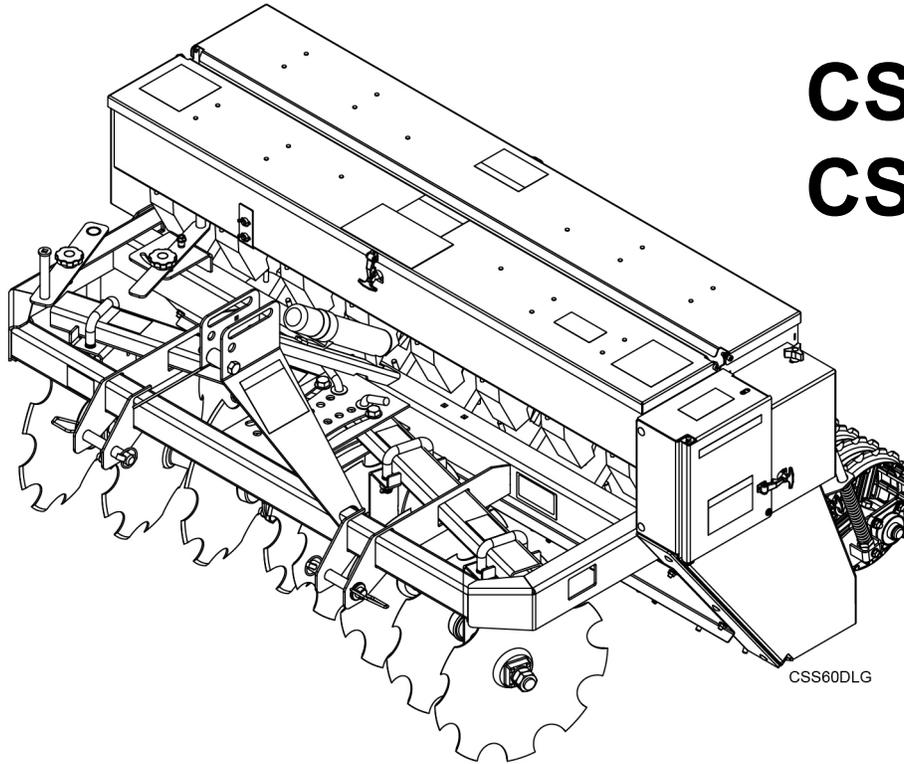


# COMPACT SUPER SEEDER

**CSS48**  
**CSS60**



**MAN1280**  
(Rev. 9/3/2021)

**WOODS®**

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. 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 physical injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.



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



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



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

**IMPORTANT  
or NOTICE**

Is used to address practices not related to physical injury.

**NOTE** Indicates helpful information.

**ALITEC™**

**CENTRAL FABRICATORS®**

**GANNON®**

**WAIN-ROY®**

**WOODS®**

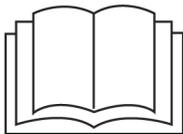
**WOODS®**

## 2 Introduction

Gen'l (Rev. 2/25/2016)

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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.



**¡LEA EL INSTRUCTIVO!**

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

# SPECIFICATIONS

	CSS48	CSS60
Working Width	48"	60"
Overall Width (Maximum Configuration)	56.75"	68.62"
Spike Roller Pins	3/8" x 1-1/4"	3/8" x 1-1/4"
No. of Roller Pins (Front and Rear)	144	174
Front roller Positions	0°, 6°, 14°, 21°	0°, 6°, 14°, 21°
Front Disc Angle	0°, 5°, 10°, 15°	0°, 5°, 10°, 15°
Roller Diameter (Front and Rear)	6.6"	6.6"
Disc Diameter (Number)	16" notched (6)	16" notched (8)
Disc Spacing	7.5"	7.5"
Hitch	Cat I, Limited 1 CAT	Cat I, Limited 1 CAT
Quick Hitch compatible	Y	Y
Tractor HP Requirement	15-35 hp	20-45 hp
Weight - Studded Roller, Cool Season Box	427 lbs.	524 lbs.
Weight - Disc, Cool Season Box, Legume Box, Nylon Cultipacker	602 lbs.	702 lbs.
Weight - Disc, Cool Season Box, Legume Box, Nylon Cultipacker, Full of Seed	713 lbs.	850 lbs.
Weight - Roller, Primary, Cool Season Box, Legume Box, Nylon Cultipacker	600 lbs.	690 lbs.
Cool Season Seedbox Capacity (bu)	1	1.25
Legume Seedbox Capacity (bu)	1	1.25
Seedcups/Picker wheels	6	8
Cultipacker Diameter (Number)	9.5" (20)	9.5" (25)
Calibration Tray	Standard	Standard
Seed Distribution Method	Broadcast drop with wind deflector tray	Broadcast drop with wind deflector tray

## GENERAL INFORMATION

### **WARNING**

- **Some illustrations in this manual show the equipment with safety shields removed to provide a better view. This equipment should never be operated with any necessary safety shielding removed.**

The purpose of this manual is to assist you in operating and maintaining your Compact Super Seeder. 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 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, prudence, 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.**
- **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, front tractor wheels could raise up resulting in loss of steering. The weight may be attained with front wheel weights, ballast in tires, front tractor weights or front loader. 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.**
- **Install Lighting Kit 611743 when this equipment obscures the tractor's tail lamps or stop lamps.**
- **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 traveling 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.

## TRANSPORTATION

- The maximum travel speed is the lesser of
    - The limit of the road conditions;
    - The maximum specified ground speed;
      - For towing operations as indicated in the operator's manual or SIS;
      - For the towed vehicle as indicated in its operator's manual, SIS, or information sign;
  - The maximum ground speed of the towed equipment combination shall be limited to the lowest specified ground speed of any of the towed machines. This speed is the ground speed limitation.
- EXAMPLE: If the tractor is capable of 40 km/h, the first implement has a SIS for 30 km/h, and the last implement's operator's manual states its specified ground speed is 25 km/h, the towed equipment combination ground speed limitation is 25 km/h.
- Use additional caution and reduce speed when under adverse surface conditions, turning, or on inclines.

- 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, front tractor weights or front loader. Weigh the tractor and equipment. Do not estimate.
- Do not operate or transport on steep slopes. Refer to tractor manual for proper ballasting and slope recommendations.
- Do not operate or transport equipment while under the influence of alcohol or drugs.
- Always comply with all state and local lighting and marking requirements. Turn on flashing warning lights whenever traveling on a public roadway.
- Never allow riders on power unit or attachment.

- Install Lighting Kit 611743 when this equipment obscures the tractor's tail lamps or stop lamps.
- Always raise unit and install transport lock before transporting. Leak down or failure of mechanical/electrical or hydraulic system can cause equipment to drop.
- Always attach safety chain to tractor drawbar when transporting unit.
- The maximum transport speed for this machine is 20 mph (30 km/h). Regardless of the maximum speed capability of the towing tractor, do not exceed the implement's maximum transport speed. Doing so could result in:

- Loss of control of the implement and tractor
- Reduced or no ability to stop during braking
- Implement tire failure
- Damage to the implement or its components.

## 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.

# SAFETY RULES



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



- 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!**

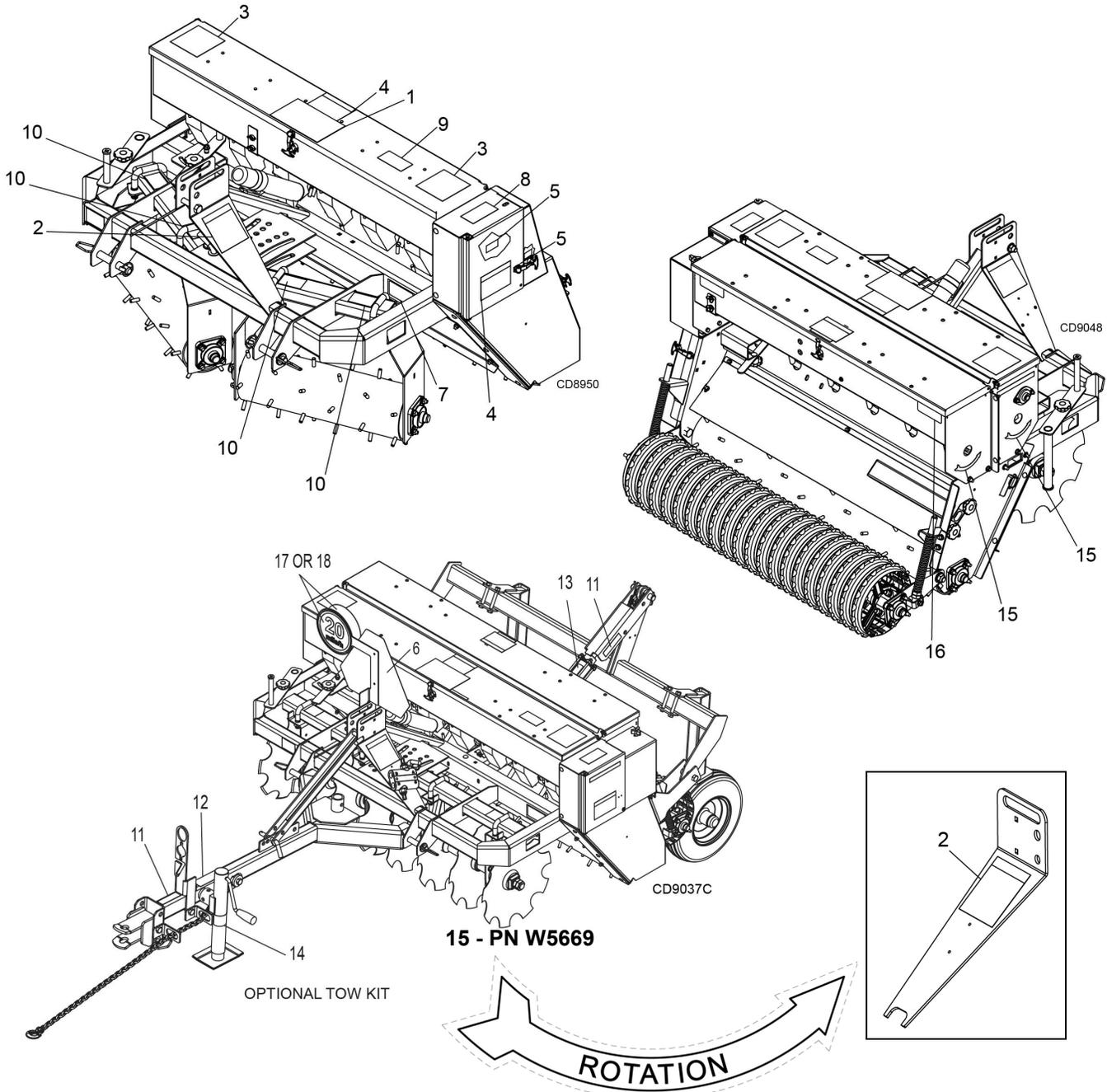


## BE CAREFUL!

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!

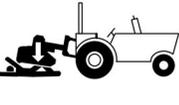
### Replace Immediately If Damaged!



(Safety Decals continued from previous page)

1 - PN 55121

**WARNING**

**FALLING OFF CAN RESULT IN BEING RUN OVER.**

- Tractor must be equipped with ROPS (or ROPS CAB) and seat belt. Keep foldable ROPS systems in "locked up" position at all times.
- Buckle Up! Keep seat belt securely fastened.
- Allow no riders.

**RAISED IMPLEMENT CAN DROP AND CRUSH.**

- 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.
- Service work does not require going underneath implement. Read manual instructions.

**FALLING OFF OR GOING UNDERNEATH IMPLEMENT CAN RESULT IN SERIOUS INJURY OR DEATH.**

55121-C

8 - PN 1034504

**SHIELD RETAINER KNOB STORAGE**

TO SERVICE COMPONENTS GUARDED BY SHIELDS:

- Remove knob.
- Lift shield for access to service components.
- Return knob to original location for storage during service.
- Reverse procedure before returning unit to operation.

1034504

6 - PN 24611

Slow Moving Vehicle

16 - PN 20106

Red 4.5 x 2" reflector

9 - PN 1041910

**NOTICE**

If required by state and local lighting and marking regulations, contact your dealer to obtain an accessory light kit.

1041910

7 - Serial Number Plate

Model #  
Serial #

(BAR CODE)



Woods Equipment Company  
 Oregon, Illinois 61061 USA

2 - PN 1003751

**WARNING**






CRUSHING AND PINCHING HAZARD

- 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.
- Operate tractor controls from tractor seat only.
- Do not stand between tractor and implement when tractor is in gear.
- Make sure parking brake is engaged before going between tractor and implement.
- Stand clear of machine while in operation or when it is being raised or lowered.

FAILURE TO FOLLOW THESE INSTRUCTIONS COULD RESULT IN SERIOUS INJURY OR DEATH.

1003751

4 - PN 15502

**WARNING**

ROTATING COMPONENTS

Do not operate without cover in place. Look and listen for rotation. Do not open cover until all components have stopped.

CONTACT WITH ROTATING PARTS CAN CAUSE SERIOUS INJURY.

15502-B

5 - PN 18868

**DANGER**

SHIELD MISSING

DO NOT OPERATE  
PUT SHIELD ON

18868-B

3 - PN 55122

**WARNING**

TO AVOID SERIOUS INJURY OR DEATH:

- 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.)
- Operate from tractor seat only.
- Lower equipment to ground, stop engine, remove key and set brake before dismounting tractor.
- Never allow children or untrained persons to operate equipment.
- Never allow riders.
- Keep bystanders away from equipment during operation.
- Keep all shields in place and in good condition.
- Do not transport towed or semi-mounted units over 20 mph.

FAILURE TO FOLLOW THESE INSTRUCTIONS CAN RESULT IN INJURY OR DEATH.

55122-D

10 - PN 1015373

**WARNING**



PINCH POINT HAZARD

Keep clear.

1015373

14 - Certified Jack Label

STATIC CAPACITY: 2000 LBS  
 DYNAMIC CAPACITY: 1200 LBS  
 SIDE TORQUE CLASS: CLASS II  
 MANUFACTURER ID: ITI  
 SERIAL #: XXXXX.XXX

17 - PN 5WP611520



18 - PN 5WP611521  
SIS 30 KM/H

13 - W19924

**WARNING**



HIGH-PRESSURE HYDRAULIC OIL LEAKS CAN PENETRATE SKIN RESULTING IN SERIOUS INJURY, GANGRENE OR DEATH.

- Check for leaks with cardboard; never use hand.
- Before loosening fittings: lower load, release pressure, and be sure oil is cool.
- Consult physician immediately if skin penetration occurs.

W19924

12 - 614738

**WARNING**



Do not exceed this implement's maximum transport speed of 32 km/h (20 mph). Exceeding this speed may result in loss of control during transport or braking and serious injury or death.

Transport only with a properly ballasted tractor and a properly attached tow chain. Do not transport with a motor vehicle. Reduce speed and use additional caution when on inclines, towing under adverse surface conditions, and turning.

614738

11 - 614737

**WARNING**

TO AVOID INJURY INSTALL CYLINDER LOCKUP(S) BEFORE TRANSPORTING OR SERVICING MACHINE

614737

# OPERATION

The operator is responsible for the safe operation of this seeder. 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 9.

Recommended tractor ground speed is from 2 to 5 mph.

## WARNING

■ Power unit must be equipped with Roll Over Protection System (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, set parking brake, 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.

## ATTACHING COMPACT SUPER SEEDER TO TRACTOR (3-POINT HITCH)

## 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, front tractor weights or front loader. Weigh the tractor and equipment. Do not estimate.**

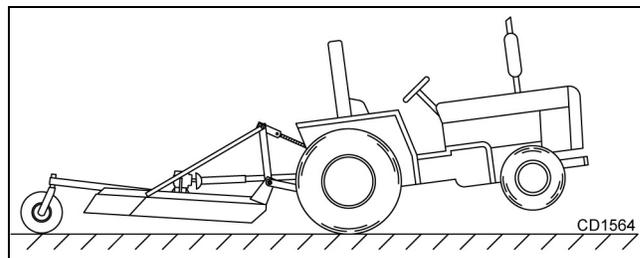


Figure 1. Tractor Stability

**NOTICE:** The Compact Super Seeder is designed for use on Category I, 3-point hitch tractors. See page 4 for specifications.

**NOTICE:** For Cat I fixed hitch usage, remove Quick Hitch 5/8" bolt, nut and sleeve to prevent damage to tractor's 3-point top link.

1. Attach the tractor's lower lift arms to the seeder and secure with mounting pins and klik pins. See Figure 2.
2. Attach the tractor's top link to the mast plates of the seeder. The seeder can be operated in a float or fixed 3-point hitch position.

For beginning usage, the float position is recommended. See Figure 2. To enable the seeder to follow the contours of uneven ground, install the tractor's top link in the long slot in the top of the mast plates. For proper float (up and down) the top link pin should be centered in the slot (recommended for beginners).

For controlled depth of tillage, use the fixed top link position in the mast plates. See Figure 2.

For quick hitch use, install the available quick hitch bushings. The seeder will not float with a quick hitch installed. An optional Quick Hitch Bushing Kit, P/N 1022043 is available.

3. Adjust the lower lift arm anti-sway device to prevent excessive side-to-side movement of the seeder.
4. Weigh tractor and seeder with seeder in transport position. If necessary, add weight to obtain a minimum of 20% of tractor and implement weight on tractor front wheels. Weight may be attained using front wheel weights, ballast on tires, front roller weight, or front loader.

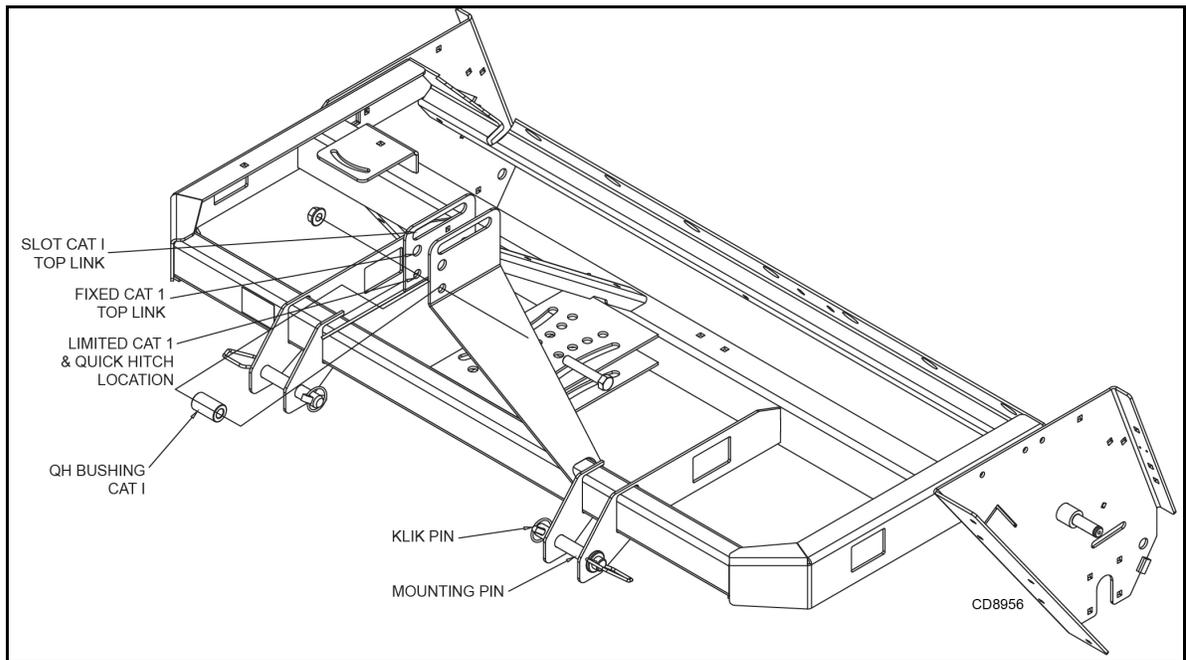


Figure 2. Seeder Hitch Positions

## **HITCHING COMPACT SUPER SEEDER WITH TOW KIT**

■ Make sure shields and guards are properly installed and in good condition. Replace if damaged.

■ Never use an intermediate support as the primary attaching point for safety chain.

■ Never operate seeder equipped with tow kit without safety chain properly attached to prime mover. Replace safety chain if any links or fittings are damaged or deformed.

1. Park seeder and prime mover on a level, hard surface.
2. Adjust clevis hitch bracket on tow kit tongue so it is level when attached to the prime mover.
3. Adjust the parking jack to match tow kit tongue height to the prime mover drawbar height.
4. Pin the tongue to the prime mover drawbar.

**NOTICE:** When attaching seeder to tractor drawbar, make sure the correct drawbar pin is used. A Category 1 drawbar pin is  $\varnothing 1$ ". Failure to use the correct pin size will result in premature wear of hitch and drawbar hole. If the hitch on the seeder doesn't match your tractor drawbar, contact your dealer to order the correct size hitch for your tractor. If seeder will be attached to tractor for a long period of time, secure hitch to drawbar using a bolt, locknut, and washers assembled tightly. This will reduce wear on drawbar and hitch.

5. Attach the safety chain to the prime mover with the maximum distance between hitch pin and intermediate support/primary attaching point. See Figure 3. Route safety chain through hose holder when not in use.

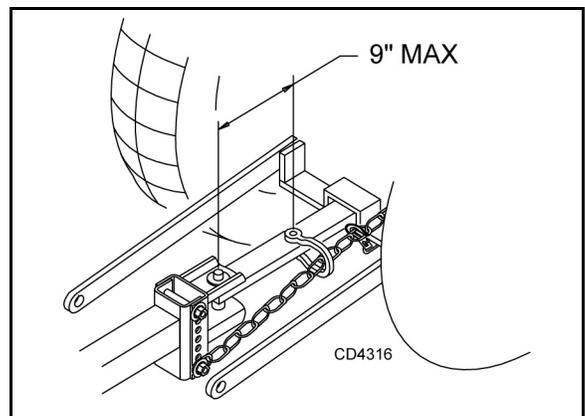


Figure 3. Safety Tow Chain Installation

**NOTICE:** Attach safety chain to prime mover with the minimum possible slack in the chain. Failure to reduce the slack could cause failure of hoses/wires and damage primary components of the implement and/or attached accessories.

6. Lower the parking jack until the tongue weight is fully supported by the drawbar and the jack foot is off the ground. Unpin the jack from the tongue.
7. Pin the jack to the operation location on top of the "Y" section on tongue. See Figure 4. This location prevents accidental contact with the rear tractor tires, which could result in damage to the jack.

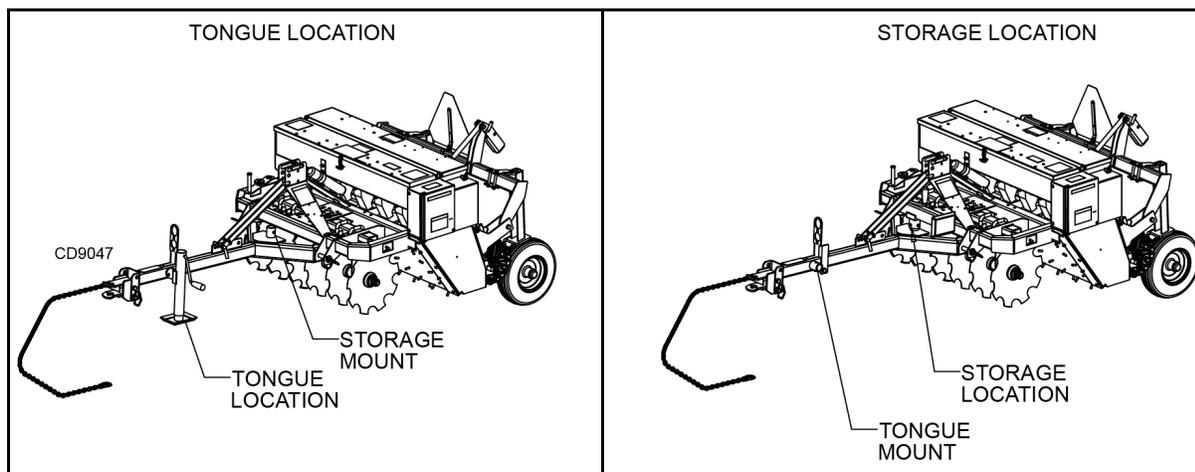


Figure 4. Jack Positions

## Attaching Electronic Harness

1. Attach wire harness from seeder to prime mover.
2. Route wire through the guide on the tow kit tongue and be sure the wire can slide freely in the guide. Do not allow wire slack to drag on the ground or become caught on prime mover protrusions.

## Attaching Hydraulic Hoses

1. Attach hydraulic hoses from the seeder to the prime mover.
2. Route the hoses through the hose guide on the tow kit tongue and be sure the hoses can slide freely in the guide. Do not allow hose slack to drag on the ground or become caught on prime mover protrusions.
3. From the operator position, start the prime mover, then raise and lower the seeder several times. This will purge the hydraulic cylinder and hoses of trapped air.

## Interference Check

1. Be sure that the tractor 3-point arms do not interfere with wire harness / hydraulic hoses or tow kit components.
2. Check for straight ahead operation and full turning angles. If there is any interference, remove the 3-point arms.

**IMPORTANT:** Contact between 3-point arms and seeder/tow kit can cause damage, especially when turning.

## COMPACT SUPER SEEDER ATTITUDE ADJUSTMENT

The Compact Super Seeder can be used as both a tillage tool and a seeding tool. When used strictly as a till-

age tool, a nose-down attitude will provide the most aggressive tillage. When used for tillage and seeding at the same time, a level attitude is preferable. If the Compact Super Seeder is being used to seed already-tilled soil, a slight nose-up attitude may be preferable for minimum soil disturbance. With the seeder connected to the tractor, attitude adjustments can be made by following these instructions:

## Nose - Down Attitude Adjustment

### 3-Point Mounted

1. Lower seeder to the ground.
2. Pin the tractor top link into the fixed top link hole.
3. Shorten the tractor top link length until the drive roller has been lifted off the ground a distance equivalent to the desired tillage depth. Fix the top link length by tightening the jam nut on the top link.
4. Resume operation and check performance. Repeat as necessary.

### Drawbar Mounted

1. Lower seeder to the ground.
2. With jack stand in the storage location and seeder engaging the ground, unpin the adjustment channel from tongue. Pinning farther from seeder will provide more aggressive tillage.
3. Use jack stand to align adjustment channel with appropriate hole on tongue. Pin in desired location.
4. Resume operation and check performance. Repeat as necessary.

## Nose - Up Attitude Adjustment

### 3-Point Mounted

1. Lower seeder to the ground.

2. Pin the tractor top link into the fixed top link hole.
3. Lengthen the tractor top link length until the front tool as been lifted off the ground a sufficient distance. Fix the top link length by tightening the jam nut on the top link.
4. Resume operation and check performance. Repeat as necessary.

#### Drawbar Mounted

1. Lower seeder to the ground.
2. With jack stand in the storage location and seeder engaging the ground, unpin adjustment channel from tongue. Pinning closer to seeder will provide less ground engagement.
3. Use jack stand to align adjustment channel with appropriate hole on tongue. Pin in desired location.
4. Resume operation and check performance. Repeat as necessary.

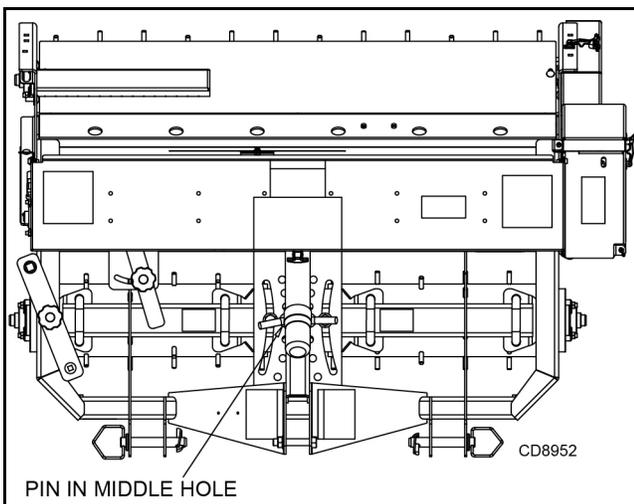
**NOTICE:** Excessive forward or rear attitude adjustment will lead to poor performance and may cause equipment damage or premature bearing failure.

### COMPACT SUPER SEEDER GROUND TOOL OPERATION

The Compact Super Seeder is an excellent turf reconditioning tool, primary seeder, food plot and conservation seeder. Its ground penetration promotes a healthy root system by allowing water, air, and sunlight to enter the roots.

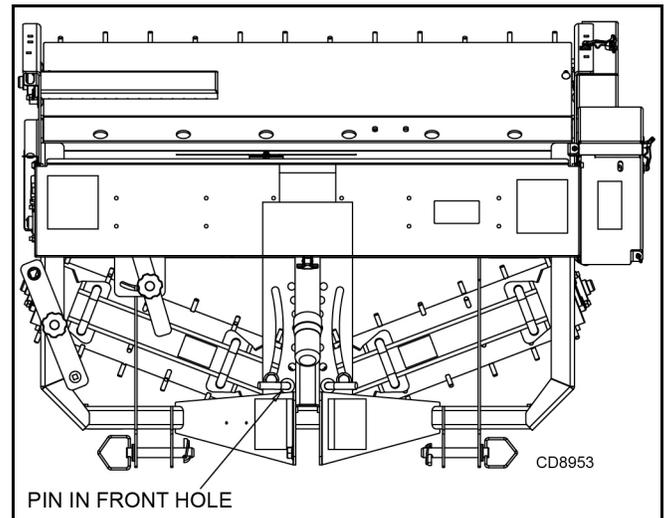
#### Front Rollers

When the front rollers are straight (Figure 5) and the seeder is pulled forward, the front roller pins will penetrate the soil in a straight pushing action, and little disturbance is caused to the turf.



**Figure 5.** Front Roller in Straight Position - Top View (48" Seeder Shown)

The front rollers can be angled to promote a more aggressive tearing action of the turf. The greater 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 6).



**Figure 6.** Maximum Front Roller Position - Top View (48" Seeder Shown)

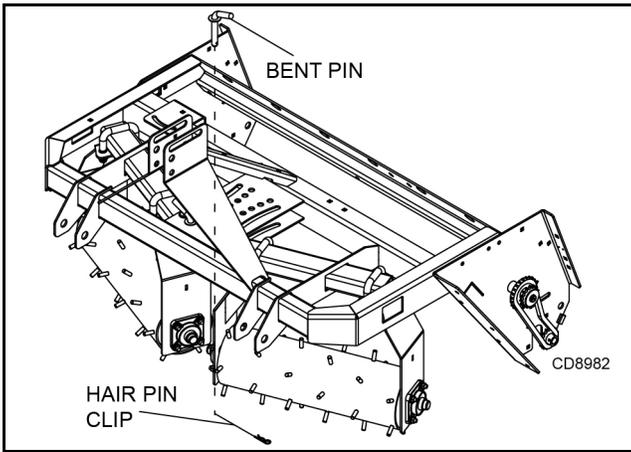
#### Adjusting Front Roller Angle

1. Position tractor and Overseeder on a level surface.
2. Place wooden blocks (minimum 4" thickness) on ground to align with each end of Overseeder drive roller. Raise seeder slightly off the ground, and position the Overseeder over wooden blocks by moving tractor. Do not allow wooden block to contact the front roller. See Figure 7.



**Figure 7.** Overseeder above Wooden Blocks

3. Lower Overseeder to resting position on wooden blocks for support during front roller adjustment. (Follow tractor safe parking procedure in tractor operator's manual.)
4. Remove bent pins and hair pin clips from seeder front tool adjustment. See Figure 9.

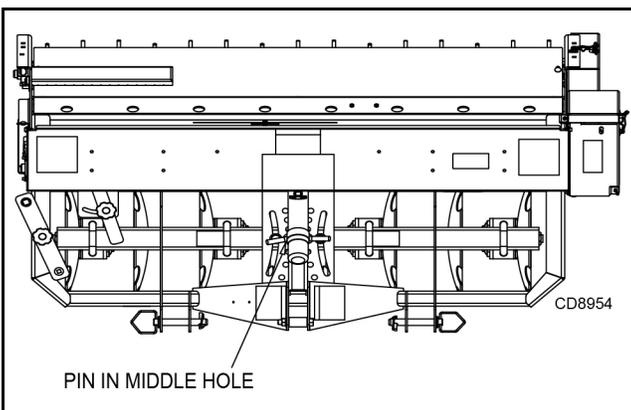


**Figure 8**

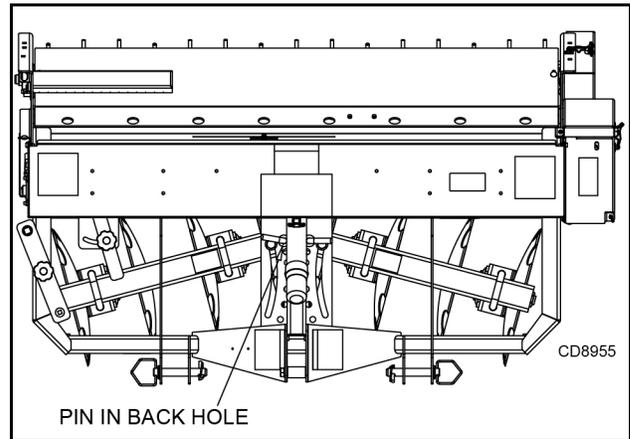
5. Adjust RH and LH front gang assemblies independently. Move tubes forward (see Figure 8) for spiked front rollers. Keep RH and LH adjustment angles the same for proper operation.
6. Reinstall bent pins to hold adjusted position.
7. Lift Overseeder and pull forward to clear wooden blocks. Lower Overseeder to rest position on the ground/level surface and install hair pin clips (see Figure 8).
8. Reverse this procedure to move front rollers back to straight position.

## Front Disc

The front disc tool can be used to prepare a seedbed without the need for a separate disc or tillage tool used ahead of time. When the discs are straight, the seeder has little soil disturbance. When the discs are angled fully backward, there is maximum soil disturbance and the seedbed can be prepared usually in one or two passes. The disc has three angled positions to provide an array of soil penetration depths and seedbed preparation.



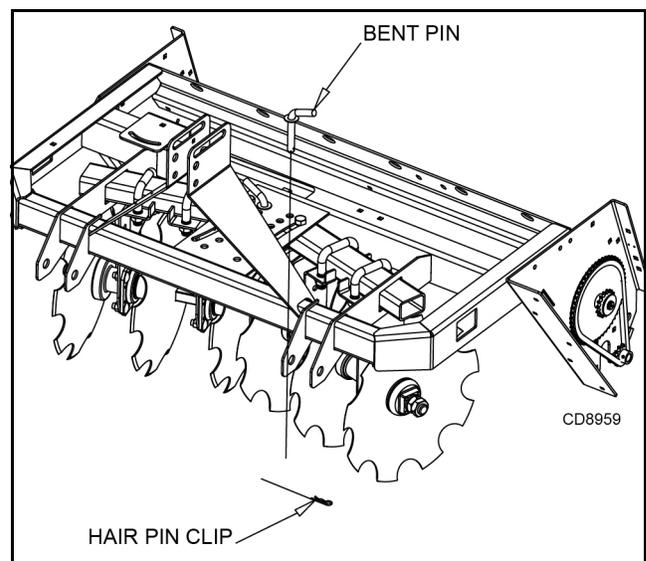
**Figure 9.** Disc in Straight Position (60" Seeder Shown)



**Figure 10.** Disc in Angled Position (60" Seeder Shown)

## Adjusting Front Disc Angle

1. Position tractor and Overseeder on a level surface.
2. Place wooden blocks (minimum 4" thickness) on ground to align with each end of Overseeder drive roller. Raise seeder slightly off the ground and position the Overseeder over wooden blocks by moving tractor. Do not allow wooden block to contact the front disc. (see Figure 7).
3. Lower Overseeder to resting position on wooden blocks for support during front disc adjustment. (Follow tractor safe parking procedure in tractor operator's manual).
4. Remove bent pins and hair pin clips from seeder front tool adjustment (see Figure 11).



**Figure 11**

5. Adjust RH and LH front gang assemblies independently. Move tubes rearward (see Figure 11) for concave disc blades. Keep RH and LH adjustment angles the same for proper operation.

6. Reinstall bent pins to hold adjusted position.
7. Lift Overseeder and pull forward to clear wooden blocks. Lower Overseeder to rest position on the ground/level surface, and install hair pin clips (see Figure 11).
8. Reverse this procedure to move front disc back into straight position.

### IMPORTANT

■ **Do not operate seeder in reverse. Operating seeder in reverse may result in damage to seed boxes and chain drive system.**

### Rear Roller

The rear roller firms and presses soil kicked up by the front tillage tool. This creates a uniform seedbed with the loose soil necessary for ensuring proper seed germination.

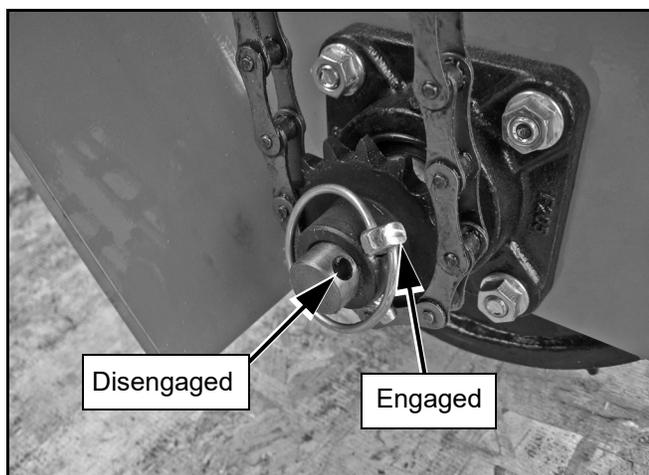
When the situation permits, make a second pass 90 degrees to the first for the roller pins to effectively penetrate areas of uneven soil conditions.

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

### Chain Drive Disconnect

The Compact Super Seeder seed boxes can be engaged or disengaged so that any one seed box or all seed boxes can be operative or inoperative. See Figure 12 and Figure 25 for disconnect locations. It is not recommended to run the plastic seed cup assemblies without seed being metered.

It may be necessary to make several passes with the ground engaging tools before planting seed. Disengaging the seed box chain drive will allow the soil bed to be prepared without planting seed or running the plastic seed cup assemblies in a dry state.



**Figure 12.** Main Chain Drive Disconnect

### Operation

The power for operating the seeder comes from contact between the seeder rear roller and the turf.



■ **Know how to stop the tractor and seeder quickly in an emergency.**

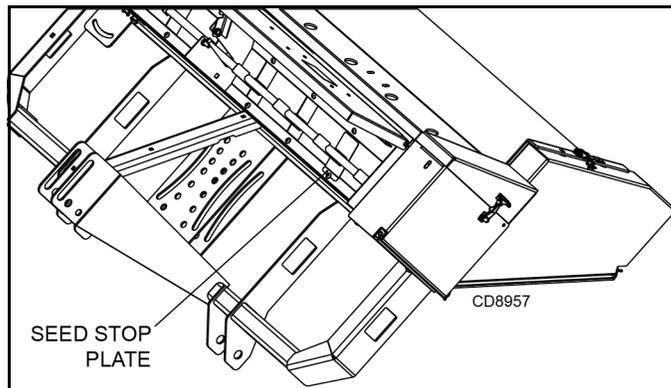
**NOTICE:** Survey the area to be worked and remove any obstructions that may affect the performance of the equipment.

### SEEDING OPERATION

The Compact Super Seeder is capable of planting a wide variety of seeds over a wide range of seeding rates. The Compact Super Seeder is available with up to two different seed boxes. To determine which seed box is best for seeding, consider the planting depth and size and shape of the seed.

The Cool Season seed box has a fluted roller seed cup with an adjustable concave. The seed cup is capable of planting large seeds including soybeans, grass seeds, as well as small legume seeds. The seed cup metering is adjustable with a common shaft and lever. As the seed shaft is moved axially more or less of the fluted seed roller is exposed changing the seed metering. See Figure 17. Additional rates can be achieved by changing the drive sprocket. The concave will need to be opened as the size of the seed increases. Opening the concave even further will also increase the seed rate. Seed from the Cool Season seed box is dropped on the divider and front seed tray. The roller then pushes the seed and soil down creating a firm seed bed with optimal seed to soil contact.

Seed stop plates, part number 1038658 shown in Figure 13, are available as accessories to increase row width/reduce seeding rate. Place the seed stop plate over the seed cup hole as shown. The shape of the plate creates a tight fit.



**Figure 13.** Seed Stop Plates

The Legume seed box has a small seed cup and adjustable fluted roller. The lever and shaft are similarly adjustable to the Cool Season seed box. See Figure 20. The Legume seed box is ideal for planting alfalfa, clover, forbes, rape and other small seeds. The seed meter tubes attached to the Legume box can divert seed to the primary transition tray for a deeper planting depth or in front of the optional cultipacker for shallower depths. See Figure 15.

## IMPORTANT

■ Do not operate seeder in reverse. Operating seeder in reverse may result in damage to seed boxes and chain drive system.

### Seed Box / Types of Seeds

<b>COOL SEASON</b>	Annual Rye Grass, Barley, Kentucky Blue Grass Blends, Fescue, Oats, Orchard Grass, Perennial Rye Grass, Snow Peas, Sorghum, Soybeans, Sunflower, Sudan, Wheat
<b>LEGUME</b>	Alfalfa, Bahai, Bermuda, Birdsfoot Tree Foil, Brassica, Buckwheat, Carpet Grass, Centipede Grass, Chicory, Clover, Fescue, Forb, Kentucky Blue Grass, Radishes, Rape, Sudan, Switch Grass, Timothy, Turnip

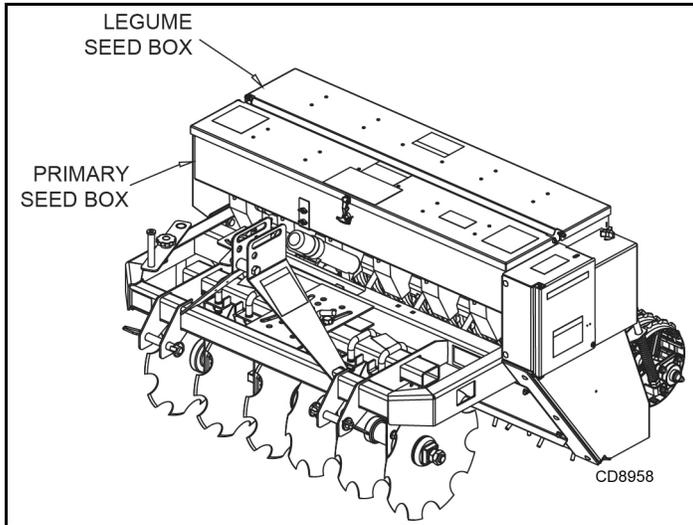


Figure 14. Seed Boxes

## SAMPLE SEED RATE CHARTS

**NOTICE:** For chain drives other than the standard drive, refer to the conversion charts for the multiplier to convert the application rate to the correct value.

### Cool Season Seed Rate Chart - Fast Chain Drive

FAST	Cool Season Seed Box Meter Opening (inches)																
	Recommended Seed Rate (lb/acre)		1/8"	1/4"	3/8"	1/2"	5/8"	3/4"	7/8"	1"	1-1/8"	1-1/4"	1-3/8"	1-1/2"	1-5/8"	1-3/4"	1-7/8"
	Row	Broadcast	Approximate Seed Rate (lb/acre) Based on Meter Opening														
Bahiagrass	218	435	39	88	137	186	236	285	334	383	432	481	531	580	629	678	727
Brassica Blend	8	15	65	98	132	165	199	232	266	299	333	367	400	434	467	501	534
Buffalograss	75	130	—	15	31	48	64	81	97	114	131	147	164	180	197	213	230
Cereal Grain Mixture	70	80	—	—	91	113	134	156	177	199	220	242	263	285	306	328	349
Chicory Blend	2	4	24	60	96	133	169	206	242	278	315	351	387	424	460	497	533
Clover, Red	4	6	85	125	164	204	243	283	323	362	402	441	481	521	560	600	639
Chufa	30	40	—	—	—	113	181	250	318	386	455	523	591	660	728	796	865
Corn (Round)	8	15	—	—	31	108	185	262	339	416	493	570	646	723	800	877	954
Corn (Flat)	8	15	—	—	109	167	225	283	341	399	457	514	572	630	688	746	804
Cowpeas	20	40	—	145	191	237	283	329	375	421	467	513	559	605	651	697	743
Fescue, Tall	220	435	13	30	47	64	81	98	115	133	150	167	184	201	218	235	252
Lablab Blend	20	30	—	—	93	144	195	246	297	348	399	449	500	551	602	653	704
Oats	65	95	—	—	101	135	169	204	238	272	307	341	376	410	444	479	513
Orchard Grass	10	20	8	33	58	83	108	133	158	183	208	232	257	282	307	332	357
Peas, Winter	60	85	—	73	136	199	262	325	387	450	513	576	639	702	765	828	891
Radish, Daikon	6	12	31	47	62	77	93	108	124	139	154	170	185	200	216	231	247
Rye Grass, Annual	90	320	—	37	63	88	113	138	164	189	214	239	264	290	315	340	365
Sorghum (Milo)	4	10	—	99	140	181	223	264	305	346	388	429	470	512	553	594	635
Soybeans	50	80	11	92	173	254	335	416	496	577	658	739	820	901	982	1063	1143
Sugar Beets	6	10	10	25	40	54	69	84	99	114	128	143	158	173	188	202	217
Sunflower Blend	2	10	—	—	—	69	94	118	143	168	192	217	242	266	291	315	340
Triticale	45	100	—	85	129	172	216	260	303	347	390	434	478	521	565	608	652
Wheat, Winter	75	75	—	72	124	176	228	280	332	384	436	488	540	592	644	696	748
Vetch, Hairy	30	40	—	84	140	196	252	308	364	420	476	531	587	643	699	755	811

Overseeding should be done at 50% of the recommended seed rate.  
Use seed cup blockoff plates for row spacings at multiples of 7.5". This will reduce your seed rates by the percent of cups blocked.

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## Cool Season Seed Rate Chart - Slow Drive

SLOW			Cool Season Seed Box Meter Opening (inches)														
Seed Type	Recommended Seed Rate (lb/acre)		1/8"	1/4"	3/8"	1/2"	5/8"	3/4"	7/8"	1"	1-1/8"	1-1/4"	1-3/8"	1-1/2"	1-5/8"	1-3/4"	1-7/8"
	Row	Broadcast	Approximate Seed Rate (lb/acre) Based on Meter Opening														
Bahiagrass	218	435	14	32	49	67	85	103	120	138	156	173	191	209	226	244	262
Brassica Blend	8	15	23	35	47	60	72	84	96	108	120	132	144	156	168	180	192
Buffalograss	75	130	0	5	11	17	23	29	35	41	47	53	59	65	71	77	83
Cereal Grain Mixture	70	80	0	0	33	41	48	56	64	72	79	87	95	103	110	118	126
Chicory Blend	2	4	8	22	35	48	61	74	87	100	113	126	139	153	166	179	192
Clover, Red	4	6	31	45	59	73	88	102	116	130	145	159	173	187	202	216	230
Chufa	30	40	0	0	0	41	65	90	114	139	164	188	213	237	262	287	311
Corn (Round)	8	15	0	0	11	39	67	94	122	150	177	205	233	260	288	316	343
Corn (Flat)	8	15	0	0	39	60	81	102	123	144	164	185	206	227	248	269	289
Cowpeas	20	40	0	52	69	85	102	118	135	152	168	185	201	218	234	251	268
Fescue, Tall	220	435	5	11	17	23	29	35	42	48	54	60	66	72	79	85	91
Lablab Blend	20	30	0	0	34	52	70	89	107	125	143	162	180	198	217	235	253
Oats	65	95	0	0	36	49	61	73	86	98	110	123	135	148	160	172	185
Orchard Grass	10	20	3	12	21	30	39	48	57	66	75	84	93	102	111	120	129
Peas, Winter	60	85	0	26	49	72	94	117	139	162	185	207	230	253	275	298	321
Radish, Daikon	6	12	11	17	22	28	33	39	44	50	56	61	67	72	78	83	89
Rye Grass, Annual	90	320	0	13	23	32	41	50	59	68	77	86	95	104	113	122	132
Sorghum (Milo)	4	10	0	36	50	65	80	95	110	125	140	154	169	184	199	214	229
Soybeans	50	80	4	33	62	91	120	150	179	208	237	266	295	324	353	383	412
Sugar Beets	6	10	4	9	14	20	25	30	36	41	46	52	57	62	68	73	78
Sunflower Blend	2	10	0	0	0	25	34	43	52	60	69	78	87	96	105	114	122
Triticale	45	100	0	31	46	62	78	93	109	125	141	156	172	188	203	219	235
Wheat, Winter	75	75	0	26	45	64	82	101	120	138	157	176	194	213	232	251	269
Vetch, Hairy	30	40	0	30	50	71	91	111	131	151	171	191	211	232	252	272	292

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Overseeding should be done at 50% of the recommended seed rate.  
Use seed cup blockoff plates for row spacings at multiples of 7.5". This will reduce your seed rates by the percent of cups blocked.

## Legume Seed Rate Chart - Fast Chain Drive

			Legume Seed Box Meter Opening (inches)									
Seed Type	Recommended Seed Rate (lb/acre)		1/8"	1/4"	3/8"	1/2"	5/8"	3/4"	7/8"	1"	1-1/8"	1-1/4"
	Row	Broadcast	Approximate Seed Rate (lb/acre) Based on Meter Opening									
Alfalfa	15	20	8	17	27	36	46	56	65	75	85	94
Bermudagrass	44	87	5	14	23	32	41	51	60	69	78	87
Birdsfoot Trefoil	5	10	7	21	35	50	64	78	92	107	121	135
Black-eyed Susan	1	2	0	6	12	18	25	31	38	44	50	57
Bluegrass, Kentucky	45	135	—	5	11	18	24	30	36	42	48	54
Brassicas	4	8	5	13	22	30	39	48	56	65	73	82
Cereal Grain Mixture	70	80	—	—	7	20	32	45	58	70	83	96
Chicory	3	5	9	19	29	39	49	60	70	80	90	100
Clover, Red	8	15	10	23	36	49	62	75	88	102	115	128
Fescue, Tall	220	435	—	2	8	14	21	27	33	39	45	51
Flaxseed	30	45	2	15	28	41	54	67	80	93	106	119
Kale, Siberian	7	12	7	18	30	42	53	65	77	88	100	112
Lespedeza	15	20	3	11	19	27	35	43	51	59	68	76
Millet, Brown Top	10	20	6	15	24	33	41	50	59	68	77	86
Radish, Daikon	6	12	5	16	27	39	50	62	73	84	96	107
Rapeseed	2	4	—	9	16	22	28	35	41	47	53	60
Ryegrass, Annual	90	320	—	8	13	18	23	27	32	37	42	47
Sorghum (Milo)	4	10	—	28	43	58	73	88	103	118	133	148
Sugar Beets	6	10	4	14	24	35	45	56	66	77	87	97
Switchgrass	6	12	8	20	32	43	55	67	79	91	102	114
Timothy	10	15	6	16	25	35	44	54	63	73	82	92
Vetch, Hairy	30	40	—	21	35	49	64	78	92	106	121	135

Overseeding should be done at 50% of the recommended seed rate.

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## Legume Seed Rate Chart - Slow Chain Drive

SLOW	Recommended Seed Rate (lb/acre)		Legume Seed Box Meter Opening (inches)									
			1/8"	1/4"	3/8"	1/2"	5/8"	3/4"	7/8"	1"	1-1/8"	1-1/4"
Seed Type	Row	Broadcast	Approximate Seed Rate (lb/acre) Based on Meter Opening									
Alfalfa	15	20	3	6	10	13	16	20	23	27	30	33
Bermudagrass	44	87	2	5	8	11	15	18	21	24	28	31
Birdsfoot Trefoil	5	10	2	7	13	18	23	28	33	38	43	48
Black-eyed Susan	1	2	0	2	4	7	9	11	13	16	18	20
Bluegrass, Kentucky	45	135	0	2	4	6	8	10	13	15	17	19
Brassicas	4	8	2	5	8	11	14	17	20	23	26	29
Cereal Grain Mixture	70	80	0	0	3	7	11	16	20	25	29	34
Chicory	3	5	3	7	10	14	17	21	25	28	32	35
Clover, Red	8	15	3	8	13	17	22	27	31	36	41	45
Fescue, Tall	220	435	0	1	3	5	7	9	12	14	16	18
Flaxseed	30	45	1	5	10	14	19	24	28	33	37	42
Kale, Siberian	7	12	2	6	11	15	19	23	27	31	35	40
Lespedeza	15	20	1	4	7	10	12	15	18	21	24	27
Millet, Brown Top	10	20	2	5	8	12	15	18	21	24	27	30
Radish, Daikon	6	12	2	6	10	14	18	22	26	30	34	38
Rapeseed	2	4	0	3	6	8	10	12	14	17	19	21
Ryegrass, Annual	90	320	0	3	5	6	8	10	11	13	15	17
Sorghum (Milo)	4	10	0	10	15	21	26	31	36	42	47	52
Sugar Beets	6	10	1	5	9	12	16	20	23	27	31	34
Switchgrass	6	12	3	7	11	15	20	24	28	32	36	40
Timothy	10	15	2	6	9	12	16	19	22	26	29	32
Vetch, Hairy	30	40	0	7	12	18	23	28	33	38	43	48

Overseeding should be done at 50% of the recommended seed rate.

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**NOTICE:** These charts should only be used as guides. For more accurate rates, refer to the calibration section on pages 22 and 23.

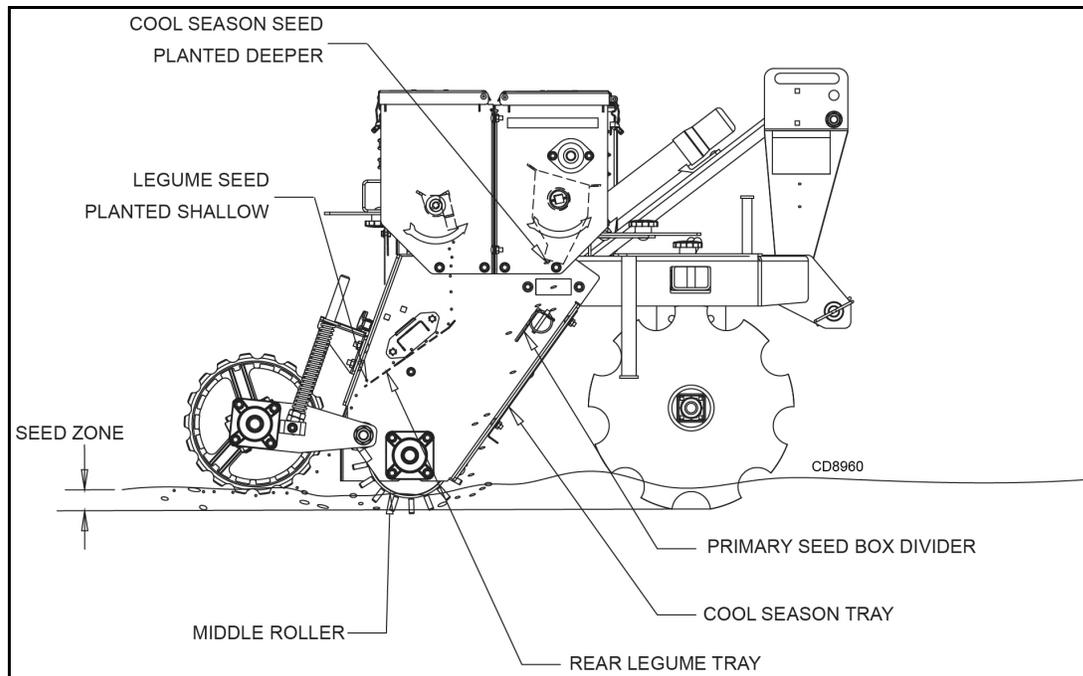


Figure 15. Transition Trays

## Filling the Seed Box

1. Calibrate seeder and set seed cup rate adjustment and concaves to the correct position. Start with the seed cup at a fully closed position and open the seed cup to the desired fluted roller opening.

**NOTICE:** The seed cup can be opened further with seed, but closing the seed cup or concave when full of seed could result in seed cup damage. If the seed cup must be restricted with seed in the seed box, place a piece of cardboard over the seed cup opening and remove seed in the seed cup by opening the concave or rotating the seed shaft and then closing the seed cup.

2. Open the seed box cover and rotate the brace to hold the cover up while filling the seed box. Place brace point in the covers spill guard notch. See Figure 16.
3. Place seed in the seed box.
4. Lift brace and rotate to storage position. Close seed cover and engage cover latch.

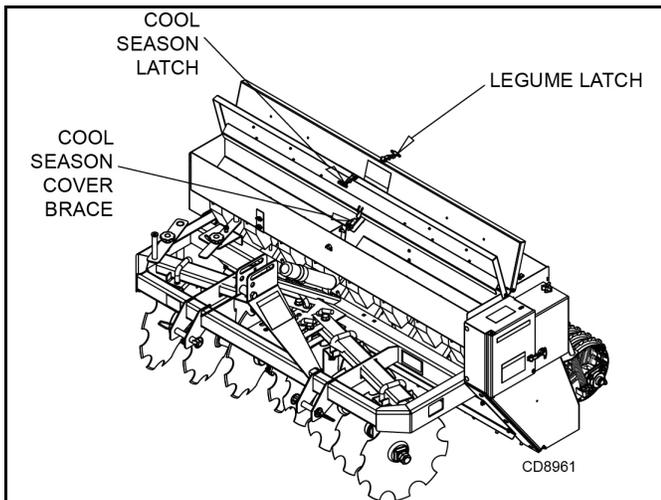


Figure 16. Seed Box Cover and Brace

## Seed Rate Adjustment

Tractor speed and seed flow settings are critical for proper seed population. Use the calibration tray to adjust the seed cups for the desired seeding rate. Tractor speed (normally 2-5 mph) should be established so that uniform seed incorporation occurs with the action of the rollers.

The slow chain drive, Figure 24 and Figure 25, comes with the disc gang accessory. The fast chain drive, Figure 23 and Figure 26, comes with the spiked roller accessory. If the other chain drive is desired for use with the front tool, they can be purchased separately.

## Seed Rate

Adjust the flow control lever (Figure 17 and Figure 20) as needed for the seed being used and the population desired. To adjust, loosen the plastic knob, move to desired position and re-tighten the knob.



Figure 17. Cool Season Seed Rate Adjustment Lever

For seed rate adjustments, zero (0) indicates a closed seed cup while 1-7/8 indicates a fully open Cool Season seed cup (Figure 18); 1-3/16 indicates a fully open Legume seed cup (Figure 21).

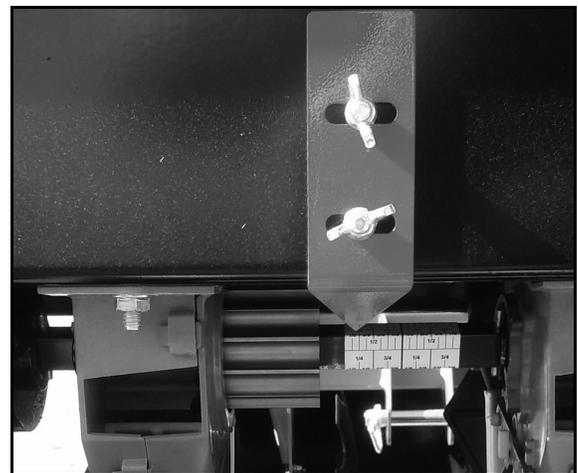


Figure 18. Pointer, Cool Season Box

Before seeding an area, adjust the top link so that it is in the middle of the slot with the seeder on level ground.

**NOTICE:** It is normal for the disc version to pitch forward at maximum front tool angle.

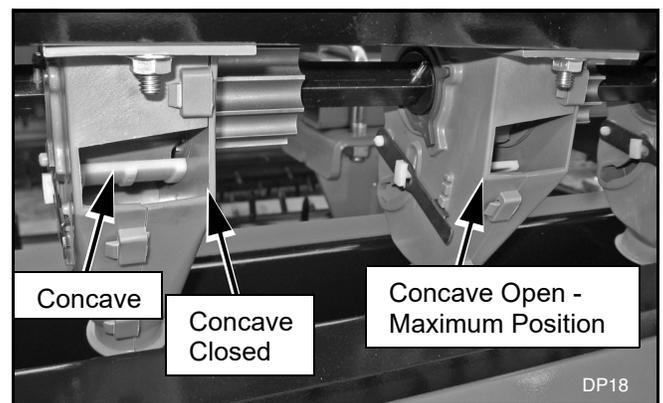


Figure 19. Cool Season Seed Cup Concave Adjustment

## Cool Season Seed Cup Concave Lever Adjustment

The Cool Season seed cup comes equipped with an adjustable concave to handle a wide variety of seed sizes. For small seeds, including grass seeds, the concave should be at the highest position. This position will prevent the loss of seed flowing through the seed cup. For larger seeds, including soybeans, the concave should be moved to a lower position. For minimum seed rates, the concave should only be opened to the size of the seed. This will prevent cracking of large seeds by the seed cup. Opening further will increase seed rates. See Figure 19.

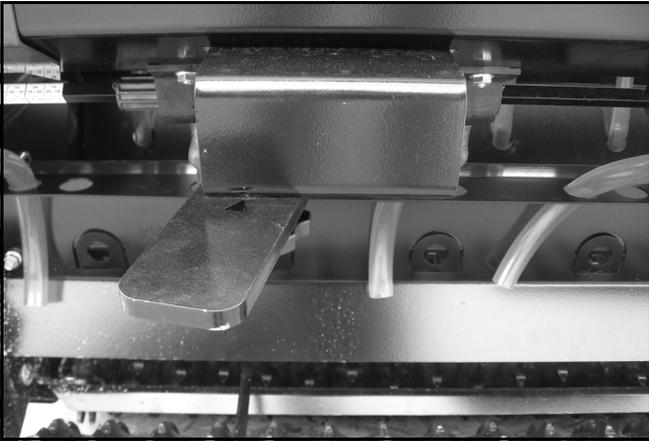


Figure 20. Legume Seed Rate Adjustment Lever

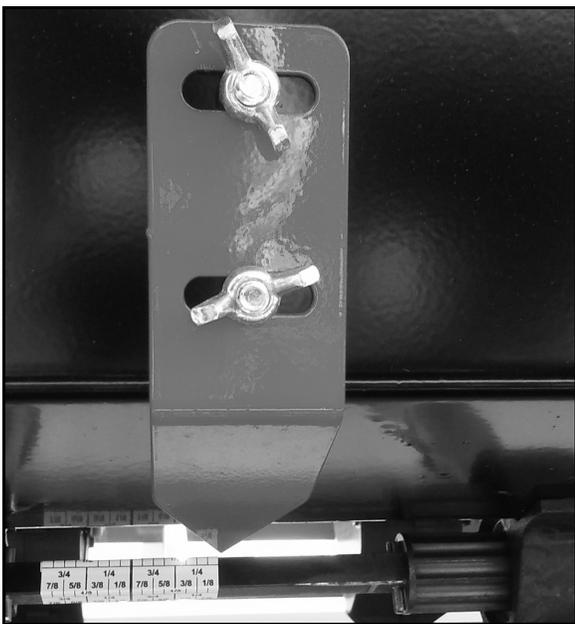


Figure 21. Pointer, Legume Box

## Legume Seed Cup

The Legume seed box is equipped with PVC tubes to place the legume seed in the transition tray for the Primary seed box, ahead of the middle roller. The PVC tubes can be repositioned in the Legume transition tray for seed to be dropped ahead of the cultipacker.

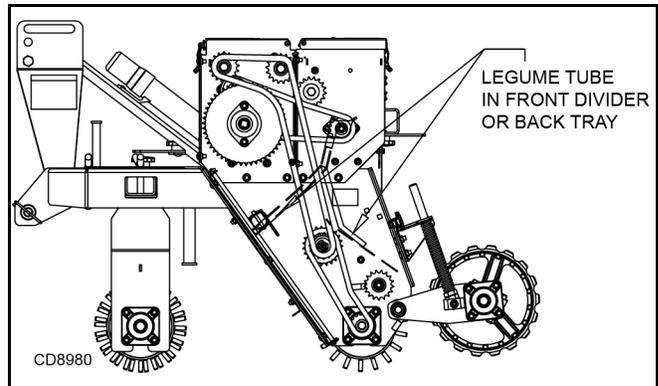


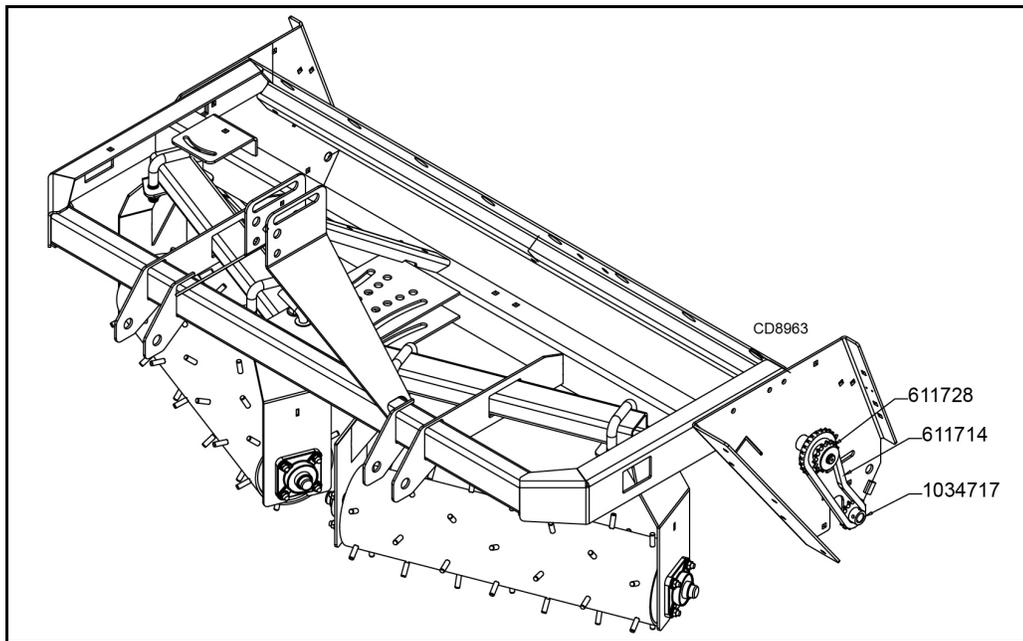
Figure 22. Legume PVC Tubes

## Operating Tips

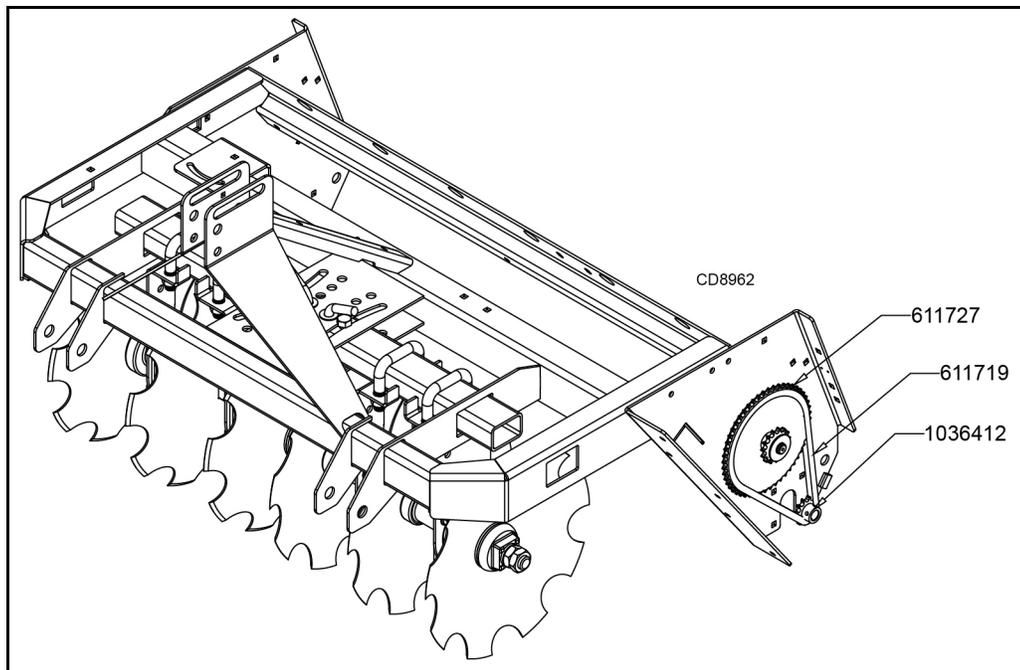
### IMPORTANT

- 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.
- 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.
- 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.
- For optimum tillage or seeding ground pressure with a tow kit accessory, do not lift wheels completely off the ground. Lifting wheels completely off the ground can generate negative tongue weight in some scenarios.

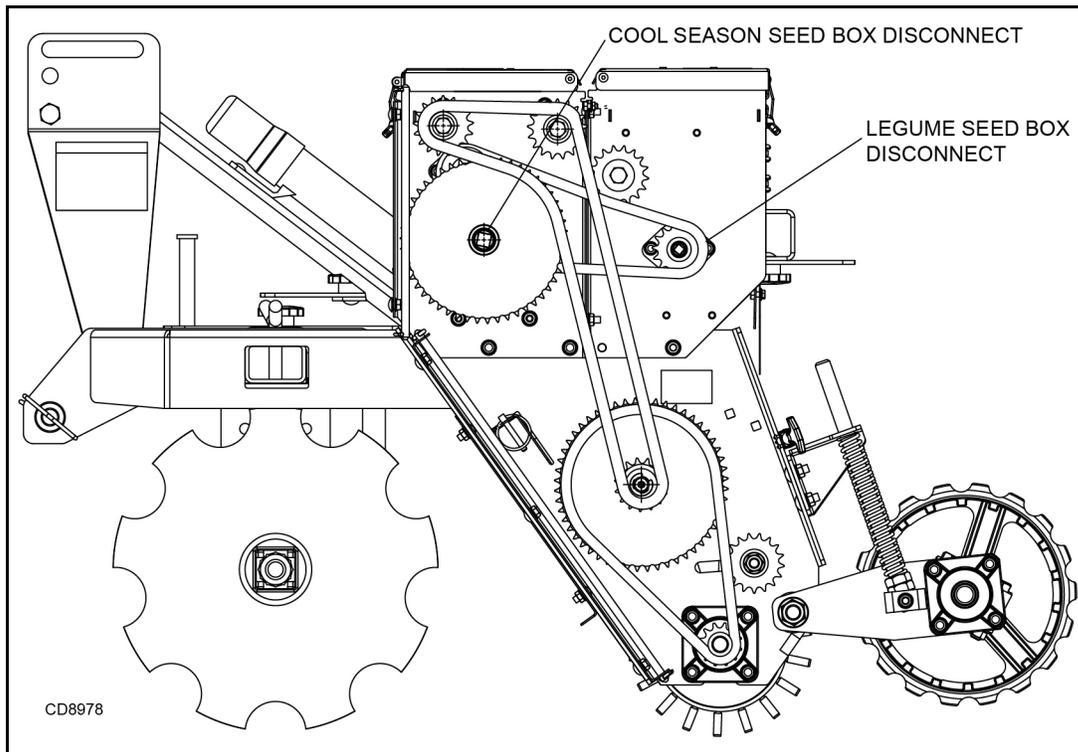
## Front Tool with Chain Drive Accessory



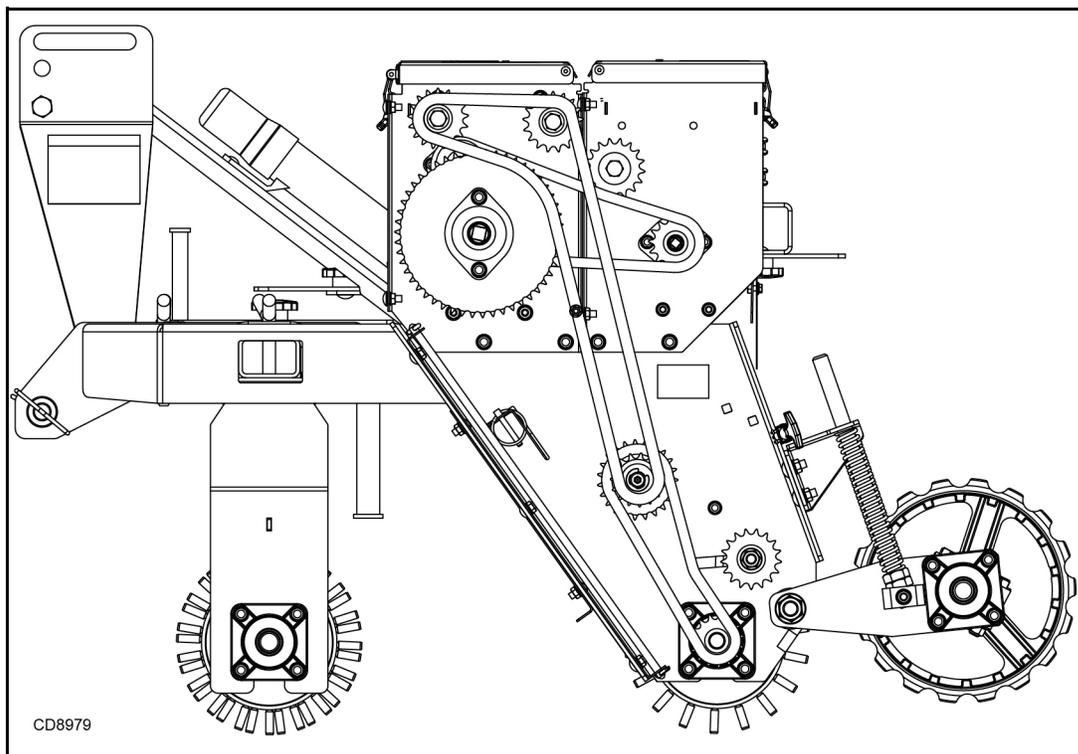
**Figure 23.** Fast Chain Drive



**Figure 24.** Slow Chain Drive



**Figure 25. Slow Chain Drive**



**Figure 26. Fast Chain Drive**

## Cultipacker

The optional cultipacker can be used to firm the seed bed for small seeds and increase seed-to-soil contact. The cultipacker is equipped to operate through an inclusive angle of 50°. The springs provide the down pressure needed for an optimized seedbed. When raising the seeder, the cultipacker will swing until it reaches its lower stop. Use a slow and steady motion to reduce the impact loading of the cultipacker on the frame stop.

## Calibration Tray

The Compact Super Seeder comes equipped with a calibration tray to assist in adjusting the seed cups for the desired seeding rate. The calibration tray can be used with the seeder in the stationary position or as it is pulled over a short distance of the seedbed. See Figure 27.

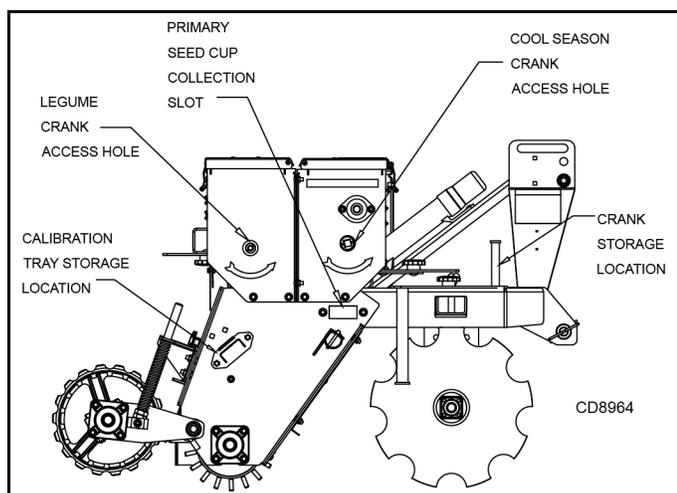


Figure 27. Calibration Tray

## Stationary Calibration Procedure - Legume and Cool Season Seed Boxes

### Equipment

1. One or two pounds of sample seed.
2. Calibration tray.
3. One scale capable of measuring ounces or hundredths of a pound.

### Procedure

1. Position tractor and seeder on a level surface.
2. Adjust seed meter to closed position if applicable.
3. Stop engine and set parking brake.
4. Disconnect seed box from seeder chain drive by removing pin from seed box driven sprocket (Cool Season or Legume).
5. Place seed over two seed meters closest to right end of seeder.
6. Remove calibration tray (34 cu. in. capacity) from storage location. Install tray in primary collection slot and tighten against frame with two plastic nuts.

For Legume seed box place PVC tubes inside small canister for seed collection.

7. Open seed cups to desired position (refer to chart for estimate) and lock into place. (Cool Season & Legume only)
8. Use crank or a 12-pt socket and turn Primary seed cup shaft or Legume seed cup shaft counter-clockwise. See stationary calibration chart for number of shaft turns. (12-pt  $-3/4$ " or 19 mm socket fits over Cool Season seed cup shaft. 12-pt 12 mm socket fits over Legume seed cup shaft)
9. Carefully remove calibration tray or canister to retrieve collected seed. Weigh seed and use formula to determine seed rate. See page 24. Remember to remove the weight of the container.
10. If seed rate is not correct, adjust seed cup openings and repeat steps 7 through 9.
11. Return calibration tray and crank to storage positions when finished.

## Mobile Calibration Procedure - Cool Season Seed Box

### Equipment

1. One or two pounds of sample seed.
2. Calibration tray.
3. One scale capable of measuring ounces or hundredths of a pound.

### Procedure

1. Position tractor and seeder on a level surface.
2. Adjust seed meter to closed position if applicable.
3. Place seed over two seed meters closest to right end of seeder.
4. Make sure the seed box being calibrated is connected to chain drive. Disconnect other seed boxes by removing pin from seed box driven sprocket.
5. Remove calibration tray (34 cu. in. capacity) from storage location. Install tray in designated collection slot and tighten against frame with two plastic nuts (check that calibration tray does not come into contact with ground roller).
6. Open seed cups to desired position (refer to chart for estimate) and lock into place. (Cool Season and Legume only)
7. Lower seeder to the ground and travel 100 feet.
8. Turn off engine and set parking brake.
9. Carefully remove calibration tray to retrieve collected seed. Weigh seed and use formula to determine seed rate.
10. If seed rate is not correct, adjust seed cup openings and repeat steps 6 through 9.
11. Return calibration tray to storage position when finished.

## Calibration Formula

### Stationary Calibration Chart

No. of Turns to simulate traveling 100 feet with 2 seed meters

	1 <sup>st</sup> Reduction (Sprocket Teeth)	2 <sup>nd</sup> Reduction (Sprocket Teeth)	Cool Season Seed Shaft Turns	Legume Seed Shaft Turns
<b>Fast Seed Drive</b>	15-23	15-50	11.3	11.3
<b>Slow Seed Drive</b>	12-52	15-50	4.0	4.0

Multiply calibration weight by 354.4.

**Example:** .15 lbs collected with 15/23 tooth standard sprocket and 11.3 turns of seed cup

.15 lbs x 354.4 = 56 lbs / acre

**Metric Example:** 68 grams collected with 15/23 tooth standard sprocket and 11.3 turns of seed cup

68 grams x 354.4 = 25.4 kg/acre or 62.8 kg / hectare

**NOTICE:** Overlapping and rough terrain/fast travel speeds will impact seed metering accuracy. The amount determined at calibration will increase by 10 to 30% in actual seeding depending on these factors.

#### Conversion For Grams To Pounds:

453.6 grams / 1 pound **OR**

.0022 pounds / 1 gram

#### Conversion For Ounces To Pounds:

16 ounces / 1 pound **OR**

.0625 pounds / 1 ounce

## TRANSPORTATION



■ Always raise unit and install transport lock before transporting. Leak down or failure of mechanical/electrical or hydraulic system can cause equipment to drop.

### Lock-Up

Always transport with the actuator/cylinder in the fully extended, locked position.

### Transport Lock Up

1. Fully extend actuator or cylinder.
2. Remove hair clip pin and bent pin from the storage position.
3. Place bent pin and hair clip pin in the transport lock position.
4. For hydraulic tow kits, flip transport lock over cylinder rod.

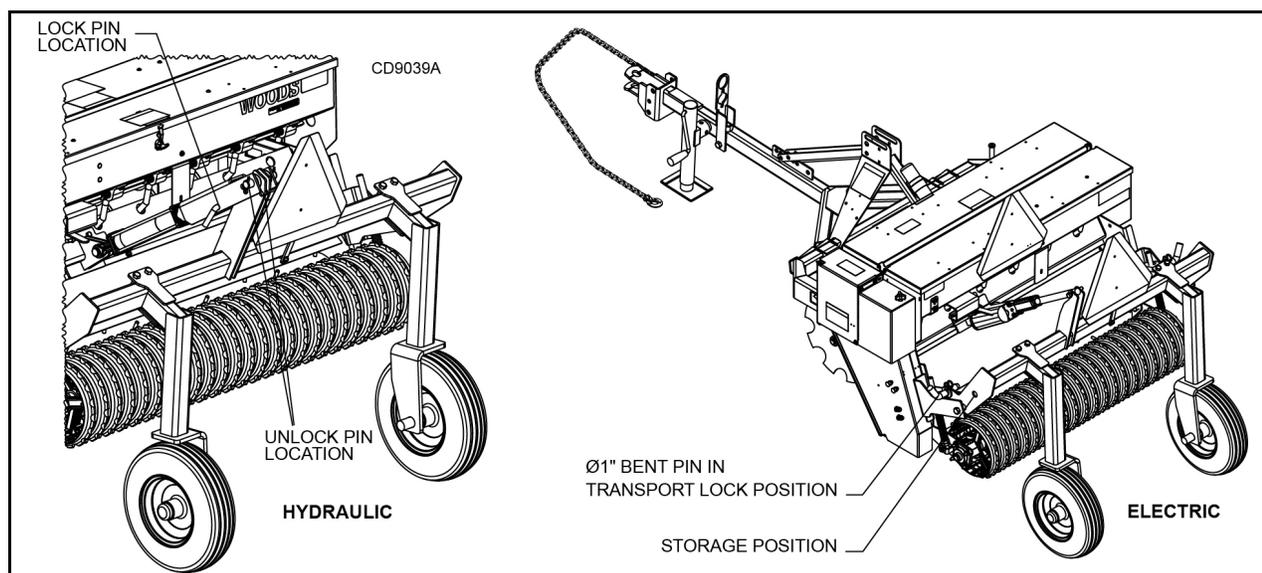


Figure 28. Transport Lock Positioning

## **PRE-OPERATION CHECK LIST**

### (OWNER'S RESPONSIBILITY)

- \_\_\_ Review and follow all safety rules and safety decal instructions on page 5 through page 9.
- \_\_\_ 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, Figure 29.
- \_\_\_ Make sure tractor ROPS or ROPS cab and seat belt are in good condition. Keep seat belt securely fastened during operation.



# 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 implement.
- 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 dismantling 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.**

### TIGHTENING CULTIPACKER WHEEL ASSEMBLY

1. Place cultipacker on level, dry surface, with the cultipacker wheels on the ground.
2. Loosen 1/2" flange nuts and bolts on cast iron end clamps.
3. Use a pry bar to tighten the wheels together.
4. Re-tighten the 1/2" flange nuts and bolts on the clamps.

### REMOVING CULTIPACKER SHAFT FROM FRAME

1. Place cultipacker on level, dry surface, with the cultipacker wheels on the ground.
2. Release spring load by loosening jam nuts.

## WARNING

■ **Loosen jam nuts on cultipacker spring rods until springs are unloaded before removing spring stops.**

3. Loosen bearing set screws with 1/4" Allen wrench.
4. Remove 1/2" flange lock nuts and bolts from bearing assembly. Repair or replace cultipacker assembly as needed or refer to tightening cultipacker wheel assembly if applicable.
5. Match holes in cultipacker frame with holes in bearings and assemble with 1/2" bolts and flange lock nuts.
6. Secure collar to shaft with set screws.

### LUBRICATION INFORMATION

Bearings with grease zerks	QTY	Sprockets with grease zerks	QTY
Front Roller	4	Cool Season Box	2
Rear Roller	2	Legume Box	1
Disc	0	Seeder Frame	1
Cultipacker	2	Idler Shaft	1
Seed Boxes	0		

1. Lubricate all bearing housings every 8 hours. Bearing housings are located on each end of rollers as indicated by grease fitting. See Figure 29. If equipped with tow kit, repack wheel bearings with grease every 8 hours.
2. Lubricate chains and sprockets (with grease zerks) every 50 hours or every season, whichever is shorter. The seed boxes are sealed with 3M 760 sealant. If a leak occurs in the seed box, apply a 3/16" bead of 3M 760 sealant to eliminate any leaks. The tack free time is 30 minutes with full cure in 24 hours.
3. Clean fittings prior to lubrication. Do not let excessive grease build up around lubrication points.

**NOTICE:** One pump of a good grade multi-purpose grease should be sufficient in most cases. Harsh or dry conditions may require more frequent lubrication. If tow kit is installed, lubrication service is best performed with seeder fully raised and transport locks in place.

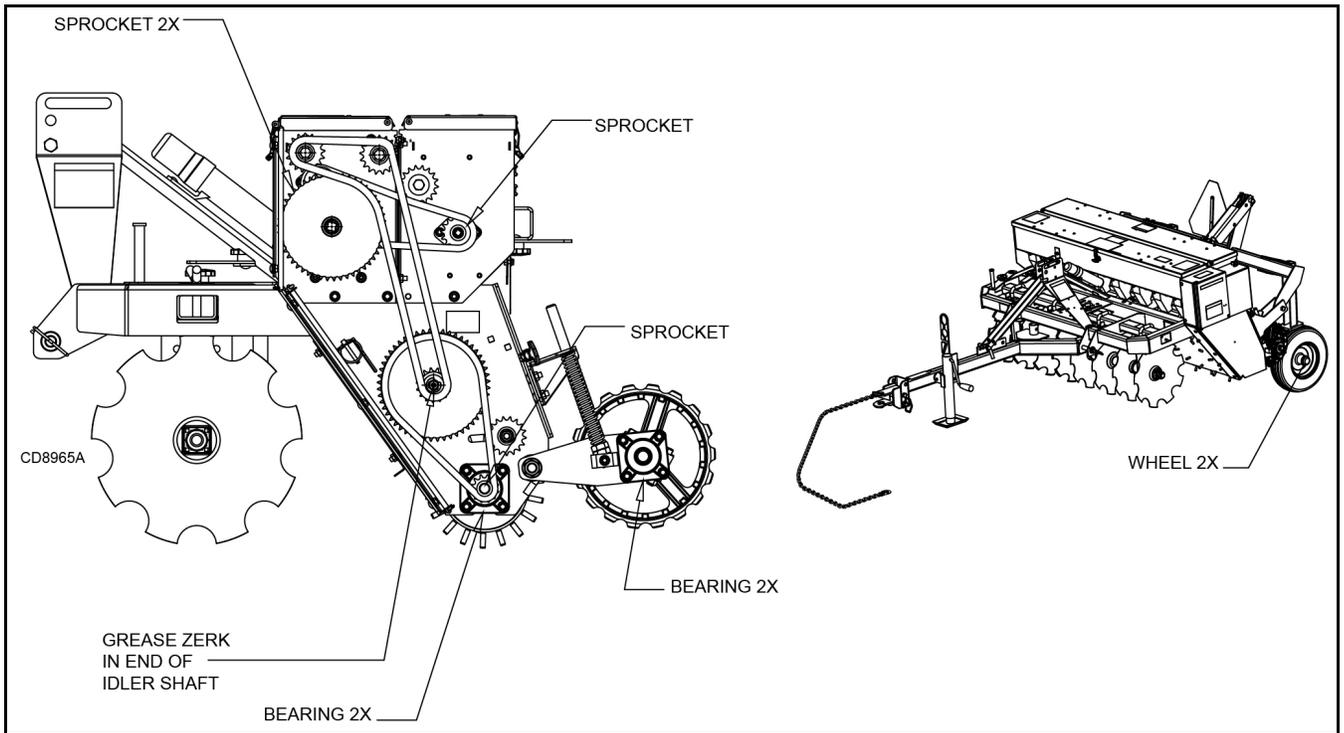


Figure 29. Lubrication Points

## **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 proper placement.



# DEALER SERVICE

## 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 Compact Super Seeder is shipped completely assembled from the factory. The Legume seed boxes, front disc roller, front studded roller, cultipacker, and tow kit are options that can be added to the Compact Super Seeder at a later time if desired.

## Optional Accessories

### Front Spike Roller (For illustration, see page 40)

1. Place seeder on level surface with jack stands under 2 x 3 front frame tube.
2. Stop engine and set parking brake.
3. Place hoist strap around disc gang axle.
4. Remove 3/4" U-bolts and nuts connecting 2 x 3 tube to disc gang.
5. Using hoist strap, carefully remove disc gangs from underneath seeder.



**CAUTION**

■ **Notched disc blades are sharp. Wear gloves and tight fitting clothing.**

6. If 48" seeder, remove 2 x 3 tube and replace with disc 2 x 3 tube. Install 5/8" bolt, nut 5/8" bent pin and hair pin clip. If 60" seeder, use existing 2 x 3 tube.
7. Carefully position front rollers under frame and attach to 2 x 3 tube using 3/4" U-bolts and nuts. Allow mounts to locate naturally to 2 x 3 tube when tightening hardware without allowing them to twist or cock. Position rollers with 1/2" gap between middle end shafts.

### Front Disc (for illustration, see page 41)

1. Place seeder on level surface.
2. Stop engine and set parking brake.
3. Place hoist strap around front roller.
4. Remove 3/4" U-bolts and nuts connecting 2 x 3 tube to roller.
5. Using hoist strap, carefully remove rollers from underneath seeder.
6. If 48" seeder, remove 2 x 3 tube and replace with roller 2 x 3 tube. Install 5/8" bolt, nut, 5/8" bent pin

and hair pin clip. If 60" seeder, use existing 2 x 3 tube.

7. Carefully position disc under frame and attach to 2 x 3 tube using 3/4" U-bolts and nuts. Allow mounts to locate naturally to 2 x 3 tube when tightening hardware without allowing them to twist or cock. Position disc gangs with 1-1/2" gap between middle axle shafts.



**CAUTION**

■ **Notched disc blades are sharp. Wear gloves and tight fitting clothing.**

### Legume Seed Box (for illustration, see page 38)

1. Place seeder on level surface.
2. Stop engine and set parking brake.
3. Open Cool Season seed box shield.
4. Remove SMV sign from Cool Season seed box saving 1/4" hardware.
5. Install Legume seed box on seeder frame and Primary box using 3/8" hardware and 5/16" hardware respectively.
6. Remove short agitator chain from Primary seed box.
7. Install Legume drive chain around Cool Season seed cup sprocket, around Cool Season seed box agitator sprocket, underneath Legume idler sprocket and around Legume seed cup sprocket.
8. Install SMV sign on Legume box with 1/4" hardware.
9. Install Legume shield to Cool Season box shield with 1/4" hardware.
10. Install seed cup PVC tubes on seed cups and insert into legume transition tray.

### Cultipacker (for illustration, see page 42)

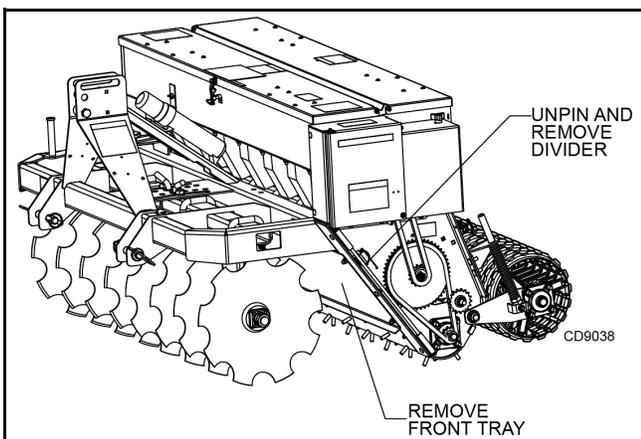
1. Place seeder on level surface.
2. Stop engine and set parking brake.
3. Match cultipacker mounts with holes in frame and install 3/4" x 1-1/2" bolt, 3/4" washers (48" CSS only) and 3/4" flanged lock nuts. Place washer between frame and cultipacker mounts.
4. Install spring stops on frame.
5. Install spring rods and springs on cultipacker arm and in holes of spring stops.
6. Adjust jam nuts on spring rods to tighten spring to desired setting.

## Electric Tow Kit (for illustration, see page 49 & page 50)

1. Place seeder on level surface.
2. Remove 7/8" lower hitch pins from seeder hitch lugs. Remove 5/8" bolt and sleeve from limited Cat 1 top link location.
3. Align tow kit tongue between lower hitch lugs and attach using 7/8" lower hitch pins and retain with klik pins.
4. Mount jack stand to tongue using pin provided with the jack.

**NOTICE:** There are two locations for the jack stand. Mount to tongue tube for storage and on "Y" section during operation.

5. Install tongue adjustment channel between mast plates with 5/8" bent pin and retain with hair pin clip. Use limited Cat 1 hole location. Attach adjustment channel to tongue using 5/8" bent pin and retain with hair pin clip.
6. Install hitch to tongue with 5/8" x 6" bolt, safety chain eyelet bracket, and 5/8" lock nut through the middle hole in the tongue channel. The 3/4" x 4-3/4" hitch pin should be installed in the lowest hole of the hitch and tongue channel during operation. Removal of pin can provide additional adjustment to attach to prime mover.
7. Install wire holder over tube with 5/8" x 3-3/4" bolt, safety chain eyelet bracket, and lock nut approximately 5-1/2" from the hitch. **DO NOT COVER DECALS.**
8. Remove Primary seed box divider and front tray, Figure 30. Ensure front tool is in a forward position to avoid interference during installation. Refer to page 14 for front tool adjustment.



**Figure 30.** Removal of Components to Install Frame Stiffener (lower shield not shown)

9. Secure 5/16" x 1" carriage bolt on frame stiffener with push-on washer; this will be used to secure wire harness. Install frame stiffener using 3/8" x 1" carriage bolts and lock nuts.

10. Align actuator mount with slots on z-plate at the rear of seeder. Mount using 3/8" x 1-1/4" bolts and lock nuts. This mount connects the seeder frame and frame stiffener (previously installed).
11. Open lower chain shield to install left mounting bracket. Left and right mounting brackets use four 3/8" x 1" carriage bolts and lock nuts.

**NOTICE:** If cultipacker option is installed, remove cultipacker stops. Mounting brackets contain cultipacker stops within design.

## **WARNING**

■ **Loosen jam nuts on cultipacker spring rods until springs are unloaded before removing spring stops.**

12. Align the pivot arm tubes with mounting brackets. Mount using 5/8" x 3-3/4" bolts and lock nuts, do not over-tighten.
13. Connect actuator to actuator mounting bracket and pivot arm using 1/2" x 2-3/4" bolts and lock nuts. Install 1" bent pin with hair pin clips in pivot arm storage location.
14. Mount wheel arms to pivot tube using 1/2" x 4" bolts and lock nuts.

**NOTICE:** Install wheel arms to an outside-most position. Instability during transport can occur if wheel arm spacing is narrow.

15. Install tires to wheel arms with 3/4" washer, castle nut, and cotter pin. Install hub caps.
16. Install SMV/SIS bracket to RH mast plate with 5/16" x 1" carriage bolts and lock nuts.

**NOTICE:** Bracket should be installed such that SIS decals is right of SMV sign when viewing from rear of seeder.

17. Route wire harness from actuator to hitch. Secure wire to frame stiffener and mast plate using P-clamp, 5/16" bolt and nut.
18. Reinstall Primary seedbox divider, front tray, and close lower chain shield.

## Hydraulic Tow Kit (for illustration, see page 51 & page 52)

1. Place seeder on level surface.
2. Remove 7/8" lower hitch pins from seeder hitch lugs. Remove 5/8" bolt and sleeve from limited Cat 1 top link location.
3. Align tow kit tongue between lower hitch lugs and attach using 7/8" lower hitch pins and retain with klik pins.

4. Mount jack stand to tongue using pin provided with the jack.

**NOTICE:** There are two locations for the jack stand. Mount to tongue tube for storage and on “Y” section during operations.

5. Install tongue adjustment channel between mast plates with 5/8” bent pin and retain with hair pin clip.
6. Install hitch to tongue with 5/8” x 6” bolt, safety chain eyelet bracket, and 5/8” lock nut. The 3/4” x 4-3/4” hitch pin should be installed during operation; removal of pin can provide additional adjustment to attach to prime mover.
7. Install hose holder over tube with 5/8” x 3-3/4” bolt, safety chain eyelet bracket, and lock nut approximately 5.5” from the hitch. **DO NOT COVER DECALS.**
8. Install safety chain rear chain link through both eyelet brackets. Insert 5/8 3 – 3/4” bolt through thick plated washer, safety chain rear chain link, hole in tongue and fasten with 5/8” lock nut.
9. Remove Cool Season seed box divider and front tray. See Figure 30. Ensure front tool is in a forward position to avoid interference during installation. Refer to page 13 for front tool adjustment.
10. Secure 5/16” x 1” carriage bolt on frame stiffener with push-on washer; this will be used to secure hydraulic hoses. Install frame stiffener using 3/8” x 1” carriage bolts and lock nuts.
11. Align hydraulic cylinder mount with slots on z-plate, at the rear of the seeder. Mount using 3/8” x 1-1/4” bolts and lock nuts. This mount connects the seeder frame and frame stiffener previously installed.
12. Open lower chain shield to install left mounting bracket. Left and right mounting brackets use four 3/8” x 1” carriage bolts and lock nuts.

**NOTICE:** If cultipacker option is installed, remove cultipacker stops. Mounting brackets contain cultipacker stops within design.

 **WARNING**

■ **Loosen jam nuts on cultipacker spring rods until springs are unloaded before removing spring stops.**

13. Align the pivot arm tubes with mounting brackets. Mount using 5/8” x 3-3/4” bolts and lock nuts. Do not over-tighten.
14. Connect hydraulic cylinder to cylinder mounting bracket and pivot arm using pin provided with

cylinder and 1” x 4” pin, respectively. Cylinder lock aligns with mounting location on pivot arm. Secure in unlocked position with 5/8” bent pin and hair pin clip.

15. Mount wheel arms to pivot tube using 1/2” x 4” bolts and lock nuts.

**NOTICE:** Install wheel arms to an outside most position. Instability during transport can occur if heel arm spacing is narrow.

16. Install tires to wheel arms with 3/4” washer, castle nut, and cotter pin. Install hub caps.
17. Install SMV/SIS bracket to RH mast plate with 5/16” x 1” carriage bolts and lock nuts.

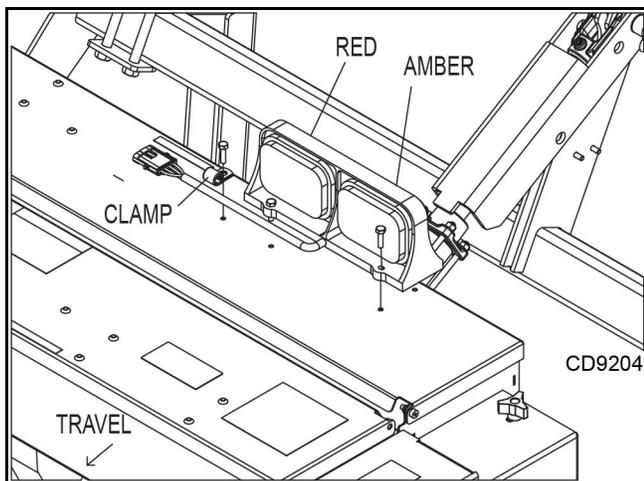
**NOTICE:** Bracket should be installed such that SIS decals is right of SMV sign when viewing from rear of seeder.

18. Install two 3/8” NPT to 9/16” JIC adapter to cylinder ports. Install four 9/16” JIC to 3/4” ORB adapters to relief valve ports. Mount valve to left side mast plate using 5/16” x 2-1/2” bolts and nuts.
19. Route 54” hoses from cylinder to valve. Mount to frame stiffener with butterfly clamp and secure with 5/16” nut.
20. Route 94” hoses from valve to hitch. Install 1/2” NPT to 9/16” JIC adapters and quick couplers to tractor side.
21. Reinstall Cool Season seedbox divider, front tray, and close lower chain shield.

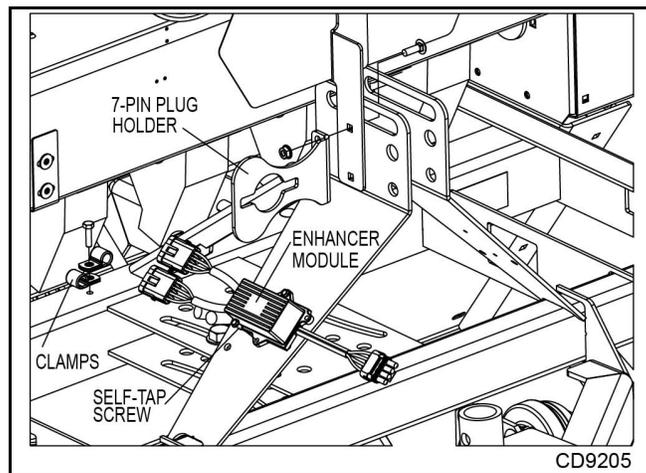
### **Seeder Light Kit (P/N 611743) Installation Instructions**

1. Remove plastic plugs from rearmost seed box cover.
2. Apply RTV sealant to all holes in the seed box lid.
3. Install two LED red and amber lamps on the seed box cover with 1/4” x 1” long hex head cap screws. The amber lenses should be oriented toward the outside edge of the cover, facing rearward. Install with the hex head of the bolt on top of the lamp going through the seed box holes and applying 1/4” whiz nuts underneath the seed box cover. See Figure 31.
4. Route the lead wire of the lamps through 1/2” cushioned clamps. Attach the 1/2” cushioned clamps in the holes inward of the lamps with a 1/4” x 1” long hex head cap screw and 1/4” whiz nut.
5. Connect the intermediate harnesses to the lamp harnesses. Route intermediate harnesses through second 1/2” cushioned clamp. Secure clamps to frame on seeder. See Figure 32.

6. If the seeder has a front native seed box, route intermediate harnesses between seed boxes and under native box before securing with clamps.
7. Install enhancer module on right-hand mast plate with #10 self-tapping screws.
8. Connect intermediate harnesses to enhancer module.
9. Install 7-pin plug holder to left-hand mast plate with 5/16" carriage bolts and lock nuts.
10. Connect lead with 7-pin plug to enhancer module and store in plug holder.



**Figure 31.** LED Red and Amber Lamp Installation



**Figure 32.** Intermediate Harnesses Connection

# DEALER CHECK LISTS

## PRE-DELIVERY CHECK LIST

(DEALER'S RESPONSIBILITY)

Inspect the equipment thoroughly after assembly to ensure it is set up properly before delivering it to the customer.

The following check lists are 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.
- \_\_\_ Check that shields and guards are properly installed and in good condition. Replace if damaged.
- \_\_\_ Check all bolts to be sure they are properly torqued.
- \_\_\_ Check that all cotter pins and safety pins are properly installed. Replace if damaged.
- \_\_\_ Check and grease all lubrication points as identified in lubrication information on page 27.

## DELIVERY CHECK LIST

(DEALER'S RESPONSIBILITY)

- \_\_\_ Show customer how to make adjustments and select proper ground speed.
- \_\_\_ Show customer the safe, proper procedures to be used when mounting, dismounting, and storing equipment.

- \_\_\_ Make customer aware of optional equipment available so that customer can make proper choices as required.
- \_\_\_ Instruct customer how to lubricate and explain importance of lubrication.
- \_\_\_ Point out the safety decals. Explain their meaning and the need to keep them in place and in good condition. Emphasize the increased safety hazards when instructions are not followed.
- \_\_\_ 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. Explain that blocking up prevents equipment dropping from hydraulic leak down, hydraulic system failures or mechanical component failures.
- \_\_\_ Point out all guards and shields. Explain their importance and the safety hazards that exist when not kept in place and in good condition.
- \_\_\_ Explain to customer that when transporting the unit on a public road to comply with all state and local lighting/marketing laws.

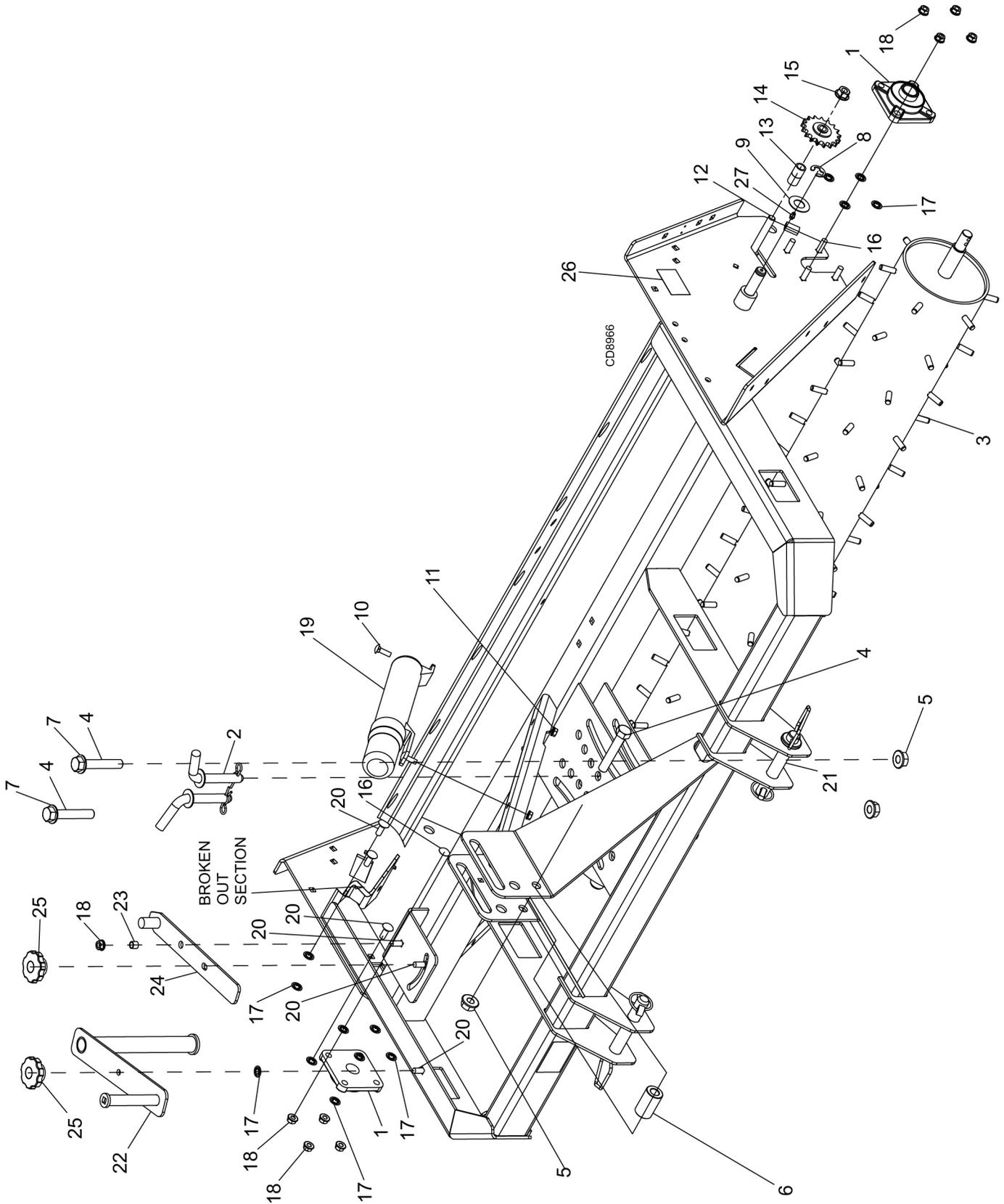


# **COMPACT SUPER SEEDER**

## **CSS48, CSS60**

FRAME & MIDDLE ROLLER ASSEMBLY . . . . .	34 - 35
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TOW KIT HOSE ROUTING . . . . .	52

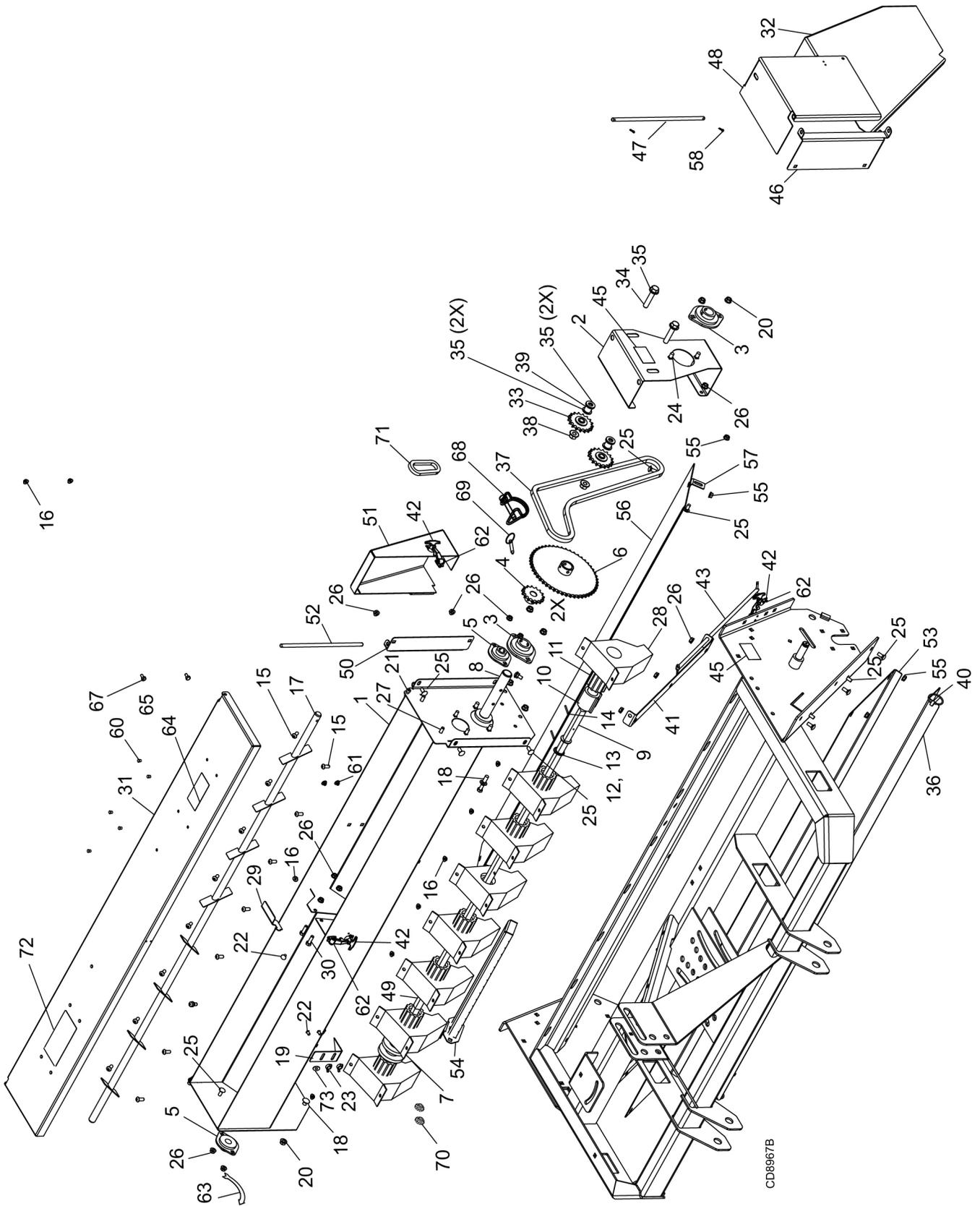
# CSS48, CSS60 FRAME & DRIVE ROLLER ASSEMBLY



## CSS48, CSS60 FRAME & DRIVE ROLLER ASSEMBLY PARTS LIST

REF	PART	DESCRIPTION	CSS48	CSS60
1	20A920	1" bearing w/ housing	2	2
2	1042106	Pin bent .62 x 3.0 w/ washer	2	2
3	61163748	WA, roller 46.5"	1	1
3	61163760	WA, roller 58.5"	-	1
4	23141	HHCS 5/8 NC x 3-1/2 HT	3	3
5	19025	Nut, HFN, 5/8 NC, Dri-Loc patch	3	3
6	611702	Slv, .688 x 1.25 x 2.06	1	1
7	3632	Washer 5/8 STD SAE flat	2	2
8	35139	Ring, ret .050 x .750 ext	1	1
9	11036	Washer 3/4 flat ZP	1	1
10	24409	Bolt crg 5/16 NC x 1 ZP	2	2
11	W73163	Nut whiz 5/16 NC flange yd	2	2
12	27635	Bolt crg 1/2 NC x 3-1/2	1	1
13	1035651	Sleeve, .56 x .75 x .75	2	2
14	1034753	Sprocket, IDL 40 17 1/2 bore w/ brg	1	1
15	11900	Nut lock 1/2 NC flange	1	1
16	20973	Bolt crg 3/8 NC x 1-1/2 GR5	8	8
17	1028375	Nut, 3/8 push-on bolt retainer	13	13
18	14350	Nut lock 3/8 NC flange	9	9
19	1026530	Manual tube	1	1
20	6697	Bolt crg 3/8 NC x 1 GR5 ZP	7	7
21	SU105	Cat 1 drawbar pin w/ lynch pin	2	2
22	611687	WA, crank seeder calibration	1	1
23	24516	Slv, 3/8 x 1/2 x 27/64	1	1
24	611630	WA, primary lever CSS	1	1
25	66840	Knob, 3 prong 3/8 NC	2	2
26	18868	Decal danger shield missing med	1	1
27	12296	1/4 28 strt G ftg 15/32L	1	1

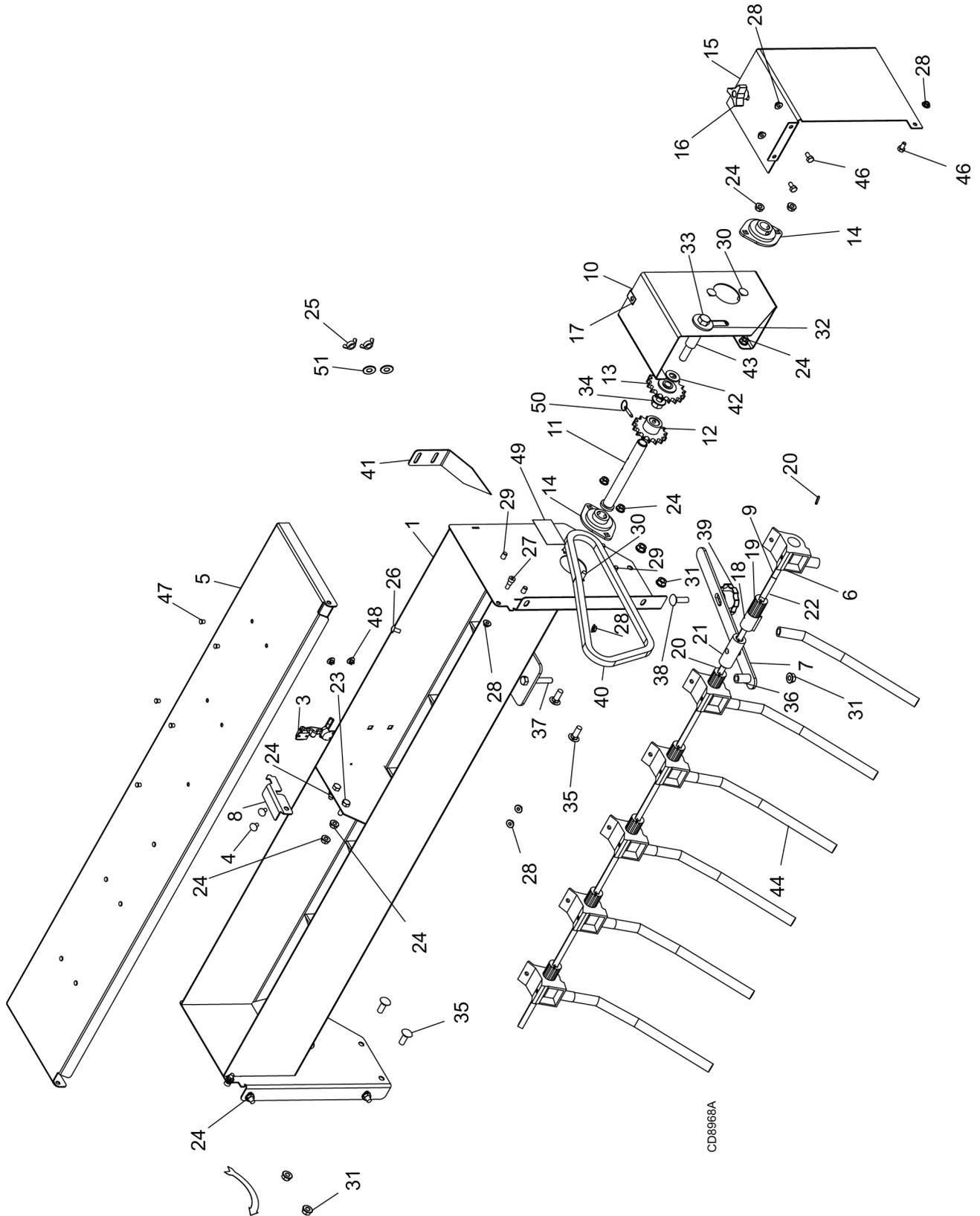
# CSS48, CSS60 COOL SEASON SEED BOX ASSEMBLY



## CSS48, CSS60 COOL SEASON SEED BOX PARTS LIST

REF	PART	DESCRIPTION	CSS48	CSS60
1	61159648	WA, Primary seed box CSS48	1	
1	61159660	WA, Primary seed box CSS60		1
2	611697	Mount, bearing, Primary CSS	1	1
3	1034694	Bearing, 1-1/8 flangette	2	2
4	1034717	Sprocket, RC40 15th 3/4 bore	1	1
5	1034693	Bearing, 3/4 flangette	2	2
6	611712	WA, sprocket RC40 15-50 1-1/8 bore	1	1
7	1034747	WA, spool shifter, Primary	1	1
8	1034739	WA, transmission tube Primary	1	1
9	61171048	Shaft, Primary seed cup CSS48	1	
9	61171060	Shaft, Primary seed cup CSS60		1
10	1034755	Gate, seed cup large	6	8
11	1034756	Feed roll, large	6	8
12	1034712	Washer, Primary seedcup	12	16
13	1034698	Spring	6	8
14	1035188	Pin, roll 1/8 x 1-1/4	14	16
15	78285	Screw, btn HD 5/16 NC x 3/4 ZP	14	16
16	W70065	Nut whiz 1/4 NC	16	20
17	61173948	WA, agitator shaft CSS48	1	
17	61173960	WA, agitator shaft CSS60		1
18	6697	Carriage bolt 3/8 NC x 1 GR5 ZP	4	4
19	611705	Pointer, Primary CSS	1	1
20	14350	Flange lock nut 3/8 NC	12	12
21	1035225	Bolt, shdr SC HD 1/4 NC x .75 x .31	2	2
22	64812	Carriage bolt 1/4 NC x 1/2	4	4
23	21941	Nut, 1/4 NC wing ZP	2	2
24	24597	Carriage bolt 3/8 NC x 3/4	4	4
25	16148	Carriage bolt 5/16 NC x 3/4 ZP	22	22
26	14139	Nut lock 5/16 NC flng HD ZP	14	14
27	6096	HHCS 5/16 NC x 3/4 GR5 ZP	4	4
28	1034754	Seed cup, large	6	8
29	1035695	Brace, Legume	1	1
30	14562	HHCS 5/16 NC x 1 GR5	2	2
31	61160148	WA, cover seed box CSS40	1	
31	61160160	WA, cover seed box CSS60		1
32	611734	WA, shield lower CSS	1	1
33	1034753	Sprocket, IDL 40 17 1/2 bore with bearing	2	2
34	639	HHCS 1/2 NC x 2-1/2 GR5 ZP	2	2
35	3598	Washer 1/2 SAE flat SAE Yd	8	8
36	61162948	Divider, frame CSS48	1	
36	61162960	Divider, frame CSS60		1
37	1035200	Chain, CSS	1	1
38	11900	Nut lock 1/2 NC flange	2	2
39	1035651	Sleeve, .56 x .75 x .75	2	2
40	62043	1/4 x 1-3/4 klik pin	2	2
41	611736	Mount, frame shield CSS	1	1
42	1001975	Flex draw latch	3	3
43	611738	Pin, .38 x 21.25 c-drill	1	1
45	18868	Decal, danger shield missing med	2	2
46	611733	Mount, shield Primary CSS front	1	1
47	10321	Pin, .38 x 12.56 c-drill	1	1
48	611732	WA, shield Primary front CSS	1	1
49	1038717	Decal, inst, Primary seed shaft	1	1
50	611735	Mount, shield, Primary box rear CSS	1	1
51	611731	WA, shield Primary rear CSS	1	1
52	611737	Pin, .38 x 11.19 c-drill	1	1
53	61162548	Tray, front CSS48	1	
53	61162560	Tray, front CSS60		1
54	1035236	WA, calibration tray	1	1
55	W73163	Whiz nut 5/16 NC flange YD	11	11
56	61162648	Tray, rear CSS48	1	
56	61162660	Tray, rear CSS60		1
57	611647	Mount, tray rear CSS	2	2
58	1326	1/8 x 1/2 cotter pin	6	6
59	1035669	Sealant, 3M 760 hybrid black (not shown)	100 mL	100 mL
60	1038744	Plug, 1/4 hole plastic black	10	10
61	602517	Plug, 3/8 hole plastic black	2	2
62	1001994	Blind rivet 1/8 No. 43	10	10
63	W5669	Decal, instr, CCW rotation	1	1
64	1041910	Decal, notice, light kit	1	1
65	611633	WA, SMV bracket primary CSS	1	1
66	24611	Sign (SMV) slow moving vehicle	1	1
67	5337	HHCS 1/4 NC x 1/2 GR5	2	2
68	1035676	Pin 1/4 x 1-3/4	1	1
69	1035244	Pin 1/4 x 1-1/5	1	1
70	66840	3/8 3-prong knob	1	1
71	611716	Chain, CSS Primary agitator	1	1
72	615521	Decal, instr, calibration	1	1
73	5336	1/4 flat zinc washer	2	2

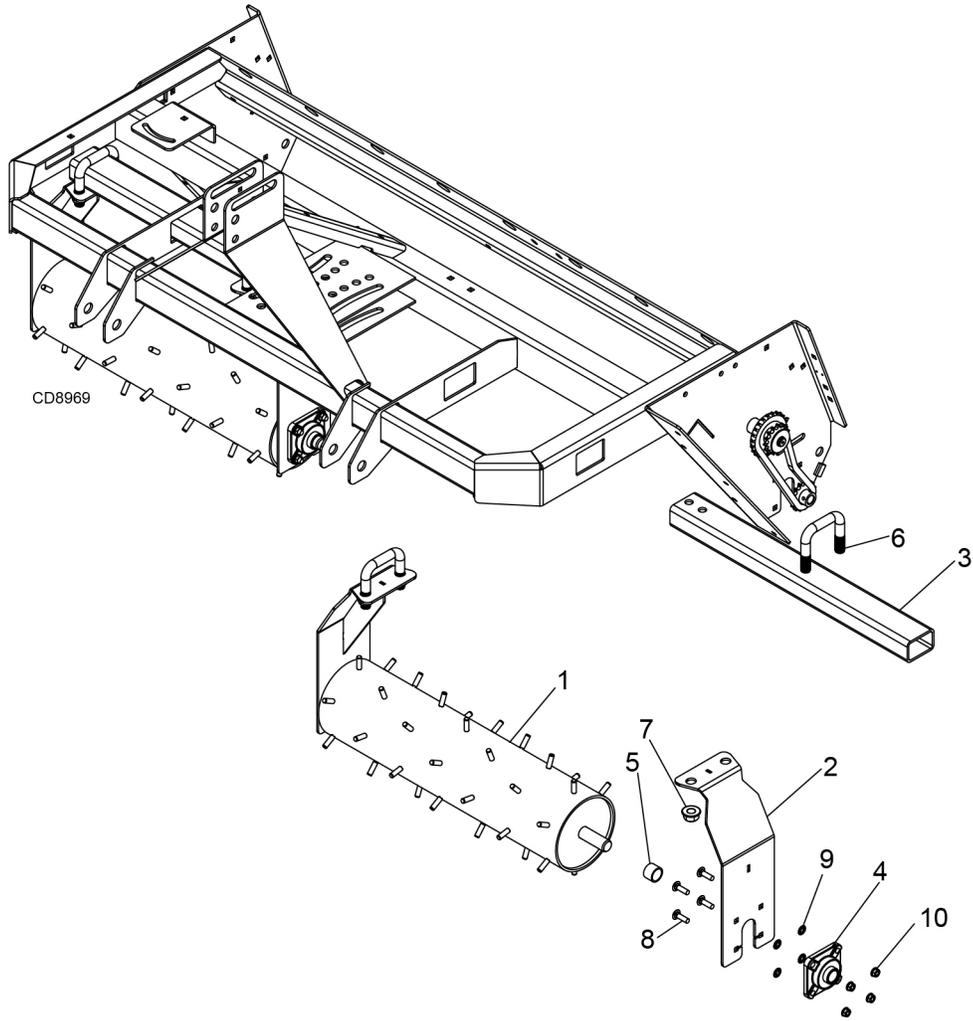
# CSS48, CSS60 LEGUME SEED BOX OPTION



## CSS48, CSS60 LEGUME SEED BOX PARTS LIST (P/N 61160448, 61160460)

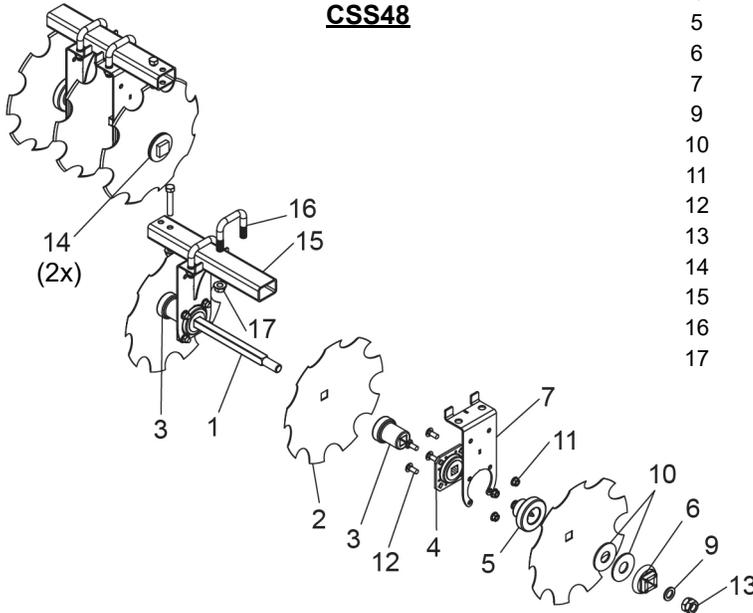
REF	PART	DESCRIPTION	CSS48	CSS60
1	61160448	WA, Legume seed box CSS48	1	
1	61160460	WA, Legume seed box CSS60		1
2	611649	Mount, SMV sign CSS	1	1
3	1001975	Flex draw latch	1	1
4	64812	Bolt crg 1/4 NC x 1/2	2	2
5	61160148	WA, cover Legume box 48	1	
5	61160160	WA, cover Legume box 60		1
6	1034695	Seed cup, mall	6	8
7	611651	Lever, Legume CSS	1	1
8	1035695	Brace, Legume	1	1
9	61171148	Shaft, Legume CSS48	1	
9	61171160	Shaft, Legume CSS60		1
10	611698	Mount, bearing Legume CSS	1	1
11	1034727	WA, transmission tube Legume	1	1
12	1034717	Sprocket, RC40 15th 3/4 bore	1	1
13	1034753	Sprocket, IDL 40 17 1/2 bore w/ brg	1	1
14	1034693	Bearing, 3/4 flangette	2	2
15	611646	Shield, Legume seed box CSS	1	1
16	1033294	Knob, 3 prong 3/8 NC x 1.00 LG	1	1
17	1033293	Nut, spring 3/8 - 16 U-tapped	1	1
18	1034696	Gate, small	6	8
19	1034697	Feed roll, small	6	8
20	1035187	Roll pin 1/8 x 7/8	14	18
21	1035625	WA, shifter spool	1	1
22	1038716	Decal, inst, Legume seed shaft	1	1
23	14562	HHCS 5/16 NC x 1 GR5	2	2
24	14139	Nut lock 5/16 NC flange HD ZP	13	13
25	21941	Nut, 1/4 NC wing ZP	2	2
26	W70067	Screw MC 1/4-20X 1/2 SL TRSS ZC	14	18
27	1035225	Bolt, shdr SC HD 1/4 NC x .75 x .31	2	2
28	W70065	Nut whiz 1/4 NC	15	19
29	5237	HHCS 5/16 NC x 1/2 GR5	4	4
30	16148	Bolt crg 5/16 NC x 3/4 ZP	6	6
31	14350	Nut lock 3/8 NC flange	5	5
32	33677	Washer 1/2 x 1-9/16 x 10 GA	1	1
33	W12024	HHCS 1/2 NC x 3-3/4 GR5	1	1
34	11900	Nut lock 1/2 NC flange	1	1
35	6697	Bolt crg 3/8 NC x 1 GR5 ZP	4	4
36	1035632	Sleeve, .39 x .63 x 1.06	1	1
37	W300157	HHCS 3/8 NC 2-1/4 GR5 ZP	1	1
38	20973	Bolt crg 3/8 NC x 1-1/4 GR5	1	1
39	66840	Knob, 3 prong 3/8 NC	1	1
40	611718	Chain, Legume 32 LNK	1	1
41	1038793	Pointer, Legume seedbox	1	1
42	3598	Washer 1/2 SAE flat SAE YD	1	1
43	1035667	Slv .56 x .75 x 2.00	1	1
44	611686	Tube, PVC 11/16 x 12-1/2	6	8
46	5337	HHCS 1/4 NC x 1/2 GR5	3	3
47	1038744	Plug, 1/4 hole plastic black	10	10
48	602517	Plug, 3/8 hole plastic black	2	2
49	18868	Decal, danger shield missing med	1	1
50	1035244	Pin 1/4 x 1-1/5	1	1
51	5336	Washer, 1/4 flat zinc	2	2

**CSS48, CSS60 FRONT SPIKE ROLLER OPTION (P/N 61166948, 61166960)**



REF	PART	DESCRIPTION	CSS48	CSS60
1	61166960	WA, roller front CSS60	-	2
1	61166948	WA, roller front CSS48	2	-
2	609308	WA, mount spiked roller CSS	4	4
3	61163960	Tube, hang CSS60	-	2
3	61163948	Tube, hang CSS48 spiked roller	2	-
4	20A920	1" bearing w/ housing	4	4
5	1035675	Siv, 1.03 x 1.25 x 0.88	4	4
6	1040620	U-bolt 3/4 x 3.81 x 3.31	4	4
7	W302207	Nut lock 3/4 NC - flange head	8	8
8	20973	Bolt crg 3/8 NC x 1-1/2 GR5	16	16
9	1028375	Nut, 3/8 push-on bolt retainer	16	16
10	14350	Nut lock 3/8 NC flange	16	16

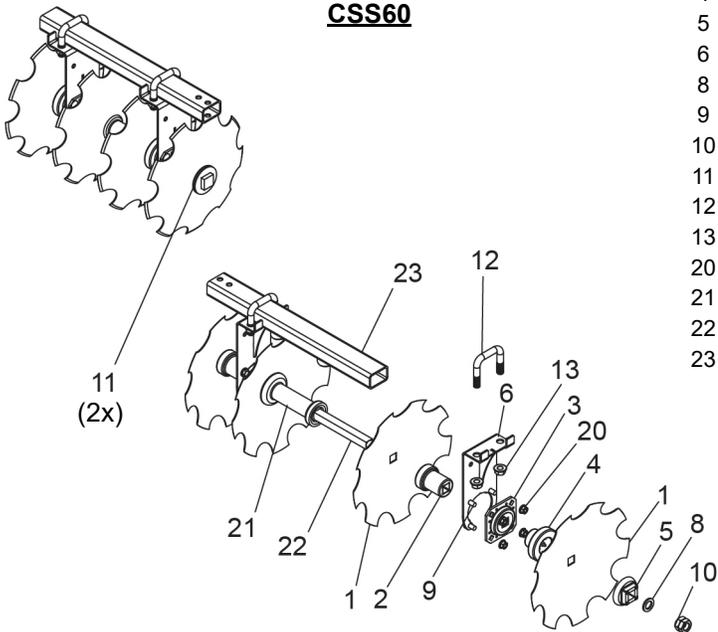
## CSS48, CSS60 FRONT DISC OPTION (P/N 61166848, 61166860)



**CSS48**

REF	PART	DESCRIPTION	QTY
1	1040602	Axle shaft 1.00 sq x 19.0	2
2	1038696	Disc blade 16 in. notched	6
3	1011323	Spool spacer, 3 - 5/8"	4
4	1022500	Bearing assembly, flange, 1 sq	4
5	1011324	Spool spacer, 2 - 3/8"	4
6	1022501	End cap washer, disc	2
7	611634	WA, mount disc CSS	4
9	611655	Washer, 1.03 x 1.63 x .188	2
10	611694	Washer, 1.41 x 3.50 x .188	4
11	11900	Nut lock 1/2 NC flange	16
12	W301109	Bolt crg 1/2 NC x 1-1/4 ZP	16
13	2250	Nut hex 1 NC jam plated	4
14	611656	Washer, bumper 1.00 sq	4
15	611725	Tube, gang CSS48 disc	2
16	1040620	U-bolt 3/4 x 3.81 x 3.31	4
17	W302207	Nut lock 3/4 NC- flange head	8

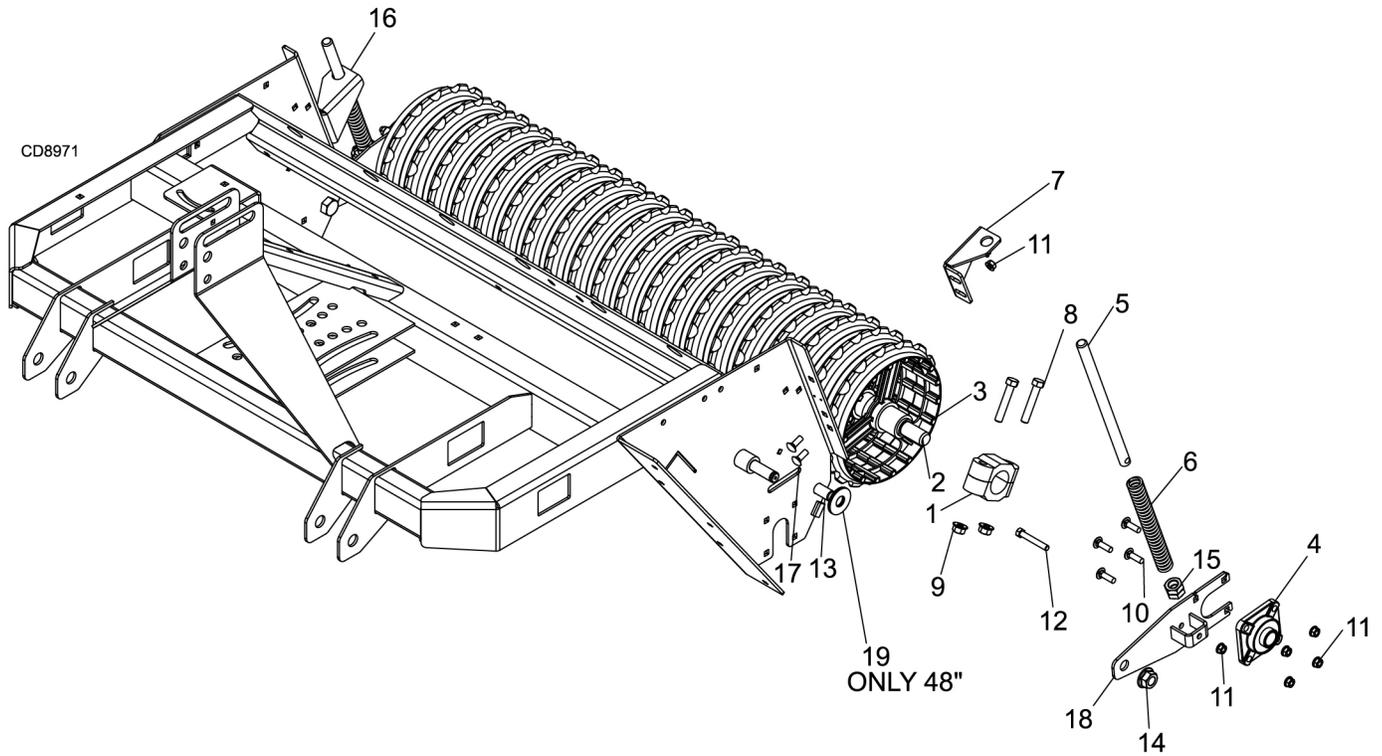
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**CSS60**

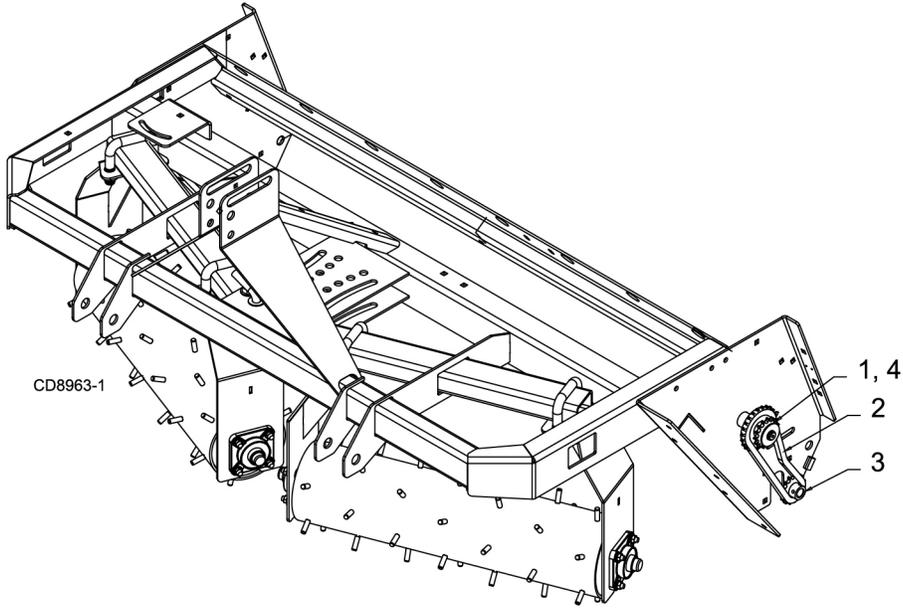
REF	PART	DESCRIPTION	QTY
1	1038696	Disc blade 16 in. notched	8
2	1011323	Spool spacer, 3 - 5/8"	4
3	1022500	Bearing assembly, flange, 1 sq	4
4	1011324	Spool spacer, 3 - 3/8"	4
5	1022501	End cap washer, disc	2
6	611634	WA, mount disc CSS	4
8	611655	Washer, 1.03 x 1.63 x .188	2
9	W301109	Bolt crg 1/2 NC x 1-1/4 ZP	16
10	2250	Nut hex 1 NC jam plated	4
11	611656	Washer, bumper 1.00 sq	4
12	1040620	U-bolt 3/4 x 3.81 x 3.31	4
13	W302207	Nut lock 3/4 NC flange head	8
20	11900	Nut lock 1/2 NC flange	16
21	1011349	Spool spacer, 7 - 3/8"	2
22	1011299	Axle, disc, 1" sq x 26"	2
23	61163960	Tube, gang CSS60	2

## CSS48, CSS60 NYLON CULTIPACKER OPTION (P/N 61166648, 61166660)



REF	PART	DESCRIPTION	CSS48	CSS60
1	1034676	Clamp, cultipacker 1-3/4	4	4
2	61166648	WA, cultipacker shaft CSS48	1	
2	61166660	WA, cultipacker shaft CSS60		1
3	1038781P	Wheel 11 - 1/2 in. cultipacker	20	25
4	20A920	1" bearing w/ housing	2	2
5	20A111	Stud, spring 13"	2	2
6	20A125	Spring, comp 1.13 x .16 x 9.0 42.64	2	2
7	611673	Stop, cultipacker spring CSS LH	1	1
8	5621	HHCS 1/2 NC x 2-3/4 GR5	4	4
9	11900	Nut lock 1/2 NC flange	4	4
10	20973	Bolt crg 3/8 NC x 1-1/4 GR5	8	8
11	14350	Nut lock 3/8 NC flange	14	14
12	2290	HHCS 3/8 NC x 2-1/2 GR5 ZP	2	2
13	4616	HHCS 3/4 NC x 1-1/2 GR5 ZP	2	2
14	W302207	Nut lock 3/4 NC - flange head	2	2
15	29485	Nut jam 3/4 NC ZP	4	4
16	611672	Stop, cultipacker spring CSS RH	1	1
17	6697	Bolt crg 3/8 NC x 1 GR5 ZP	4	4
18	611742	WA, arm cultipacker CSS	2	2
19	1257	Washer 3/4 flat ZP	4	-

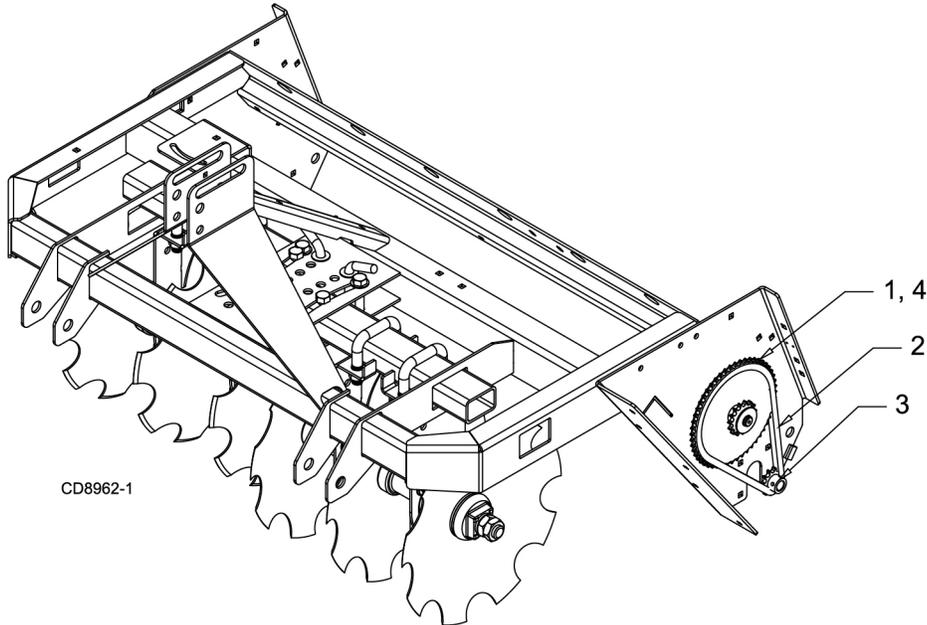
### FAST CHAIN DRIVE PARTS (P/N 611740\*)



REF	PART	DESCRIPTION	QTY
1	611728	WA, sprocket RC40 15-23	1
2	611714	Chain. A2040 28 link	1
3	1034717	Sprocket, RC40 15th	1
4	SU910	Bearing, needle .75 x 1.00" x .75	2

\* Standard on CSS w/ factory front spiked roller

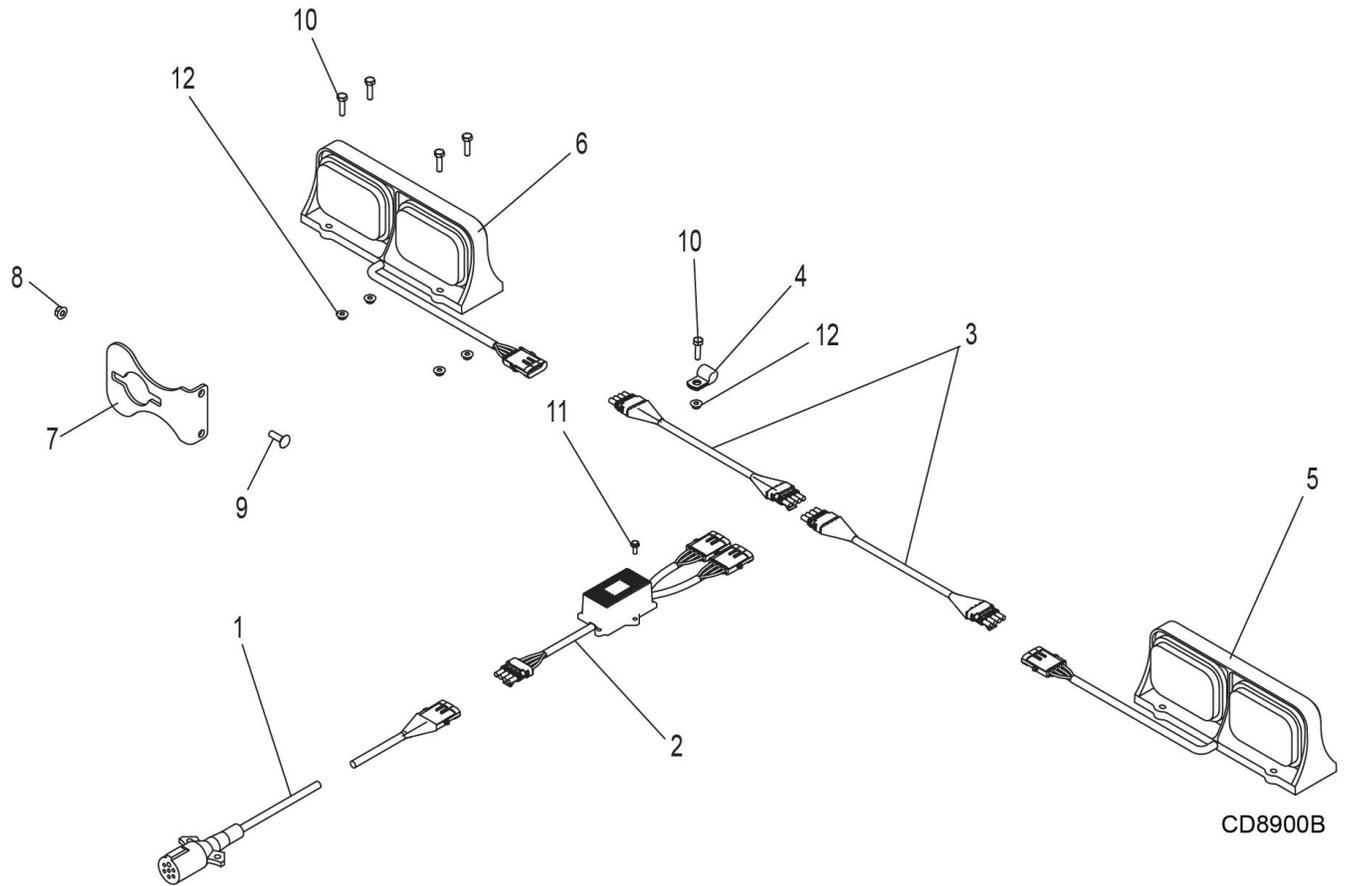
### SLOW CHAIN DRIVE PARTS (P/N 611741\*)



REF	PART	DESCRIPTION	QTY
1	611727	WA, sprocket RC40 15-52	1
2	611719	Chain. A2040 36 link	1
3	1036412	Sprocket, RC40 12th	1
4	SU910	Bearing, needle .75 x 1.00" x .75	2

\* Standard on CSS w/ factory front disc blades

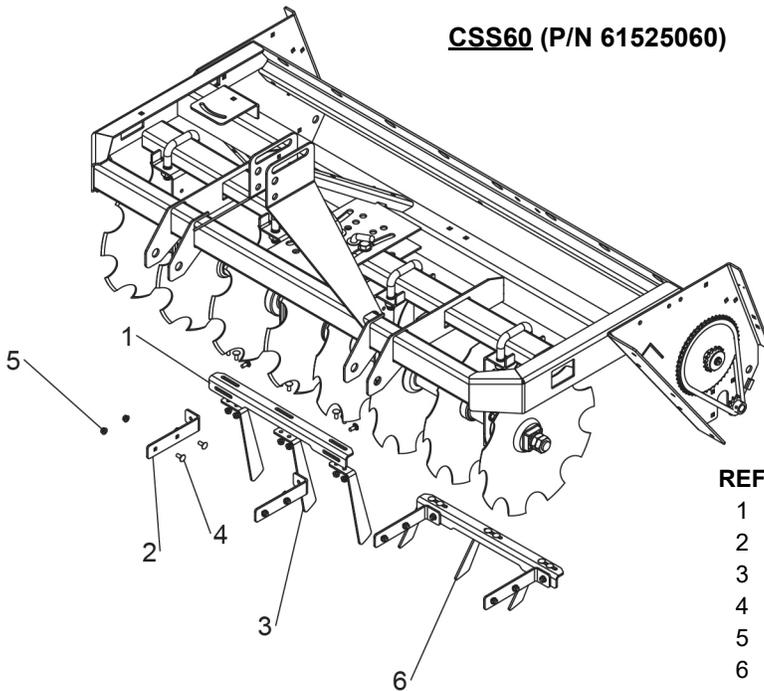
## LIGHT KIT OPTION (P/N 611743)



REF	PART	QTY	DESCRIPTION
1	599771	1	Main harness, 4 ft
2	1040277	1	AG enhancer module
3	611744	1	Rear harness, 31 in. (2 pcs).
4	35249	4	.50 dia p-clip
5	1040275	1	LED AG combo lamp LH
6	1040276	1	LED AG combo lamp RH
7	602513RP	1	Angle, plug holder, 7 pin
8	W73163	2	Nut lock 5/16 NC flange
9	24409	2	Bolt carriage 5/16 NC x 1 GR5 ZP
10	10378	11	1/4 NC x 1 HHCS, GR5
11	1041604	2	#10 NC x 1/2 self tap screw
12	W70065	11	1/4 NC whiz nut

## DISC MUD SCRAPERS OPTION

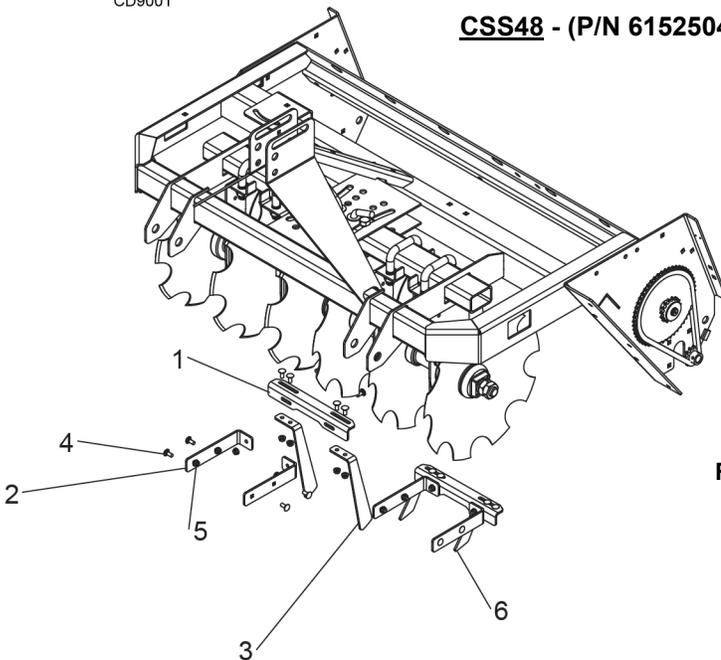
### CSS60 (P/N 61525060)



REF	PART	QTY	DESCRIPTION
1	615245	2	Bar, scraper disc CSS60
2	615244	4	Mount, scraper disc CSS
3	615198	3	Scraper, disc blade CSS RH
4	51248	24	Bolt, crg 5/16 x 3/4 GR ZP
5	14139	24	Nut lock 5/16 NC flng HD ZP
6	615197	3	Scraper, disc blade CSS LH

CD9001

### CSS48 - (P/N 61525048)

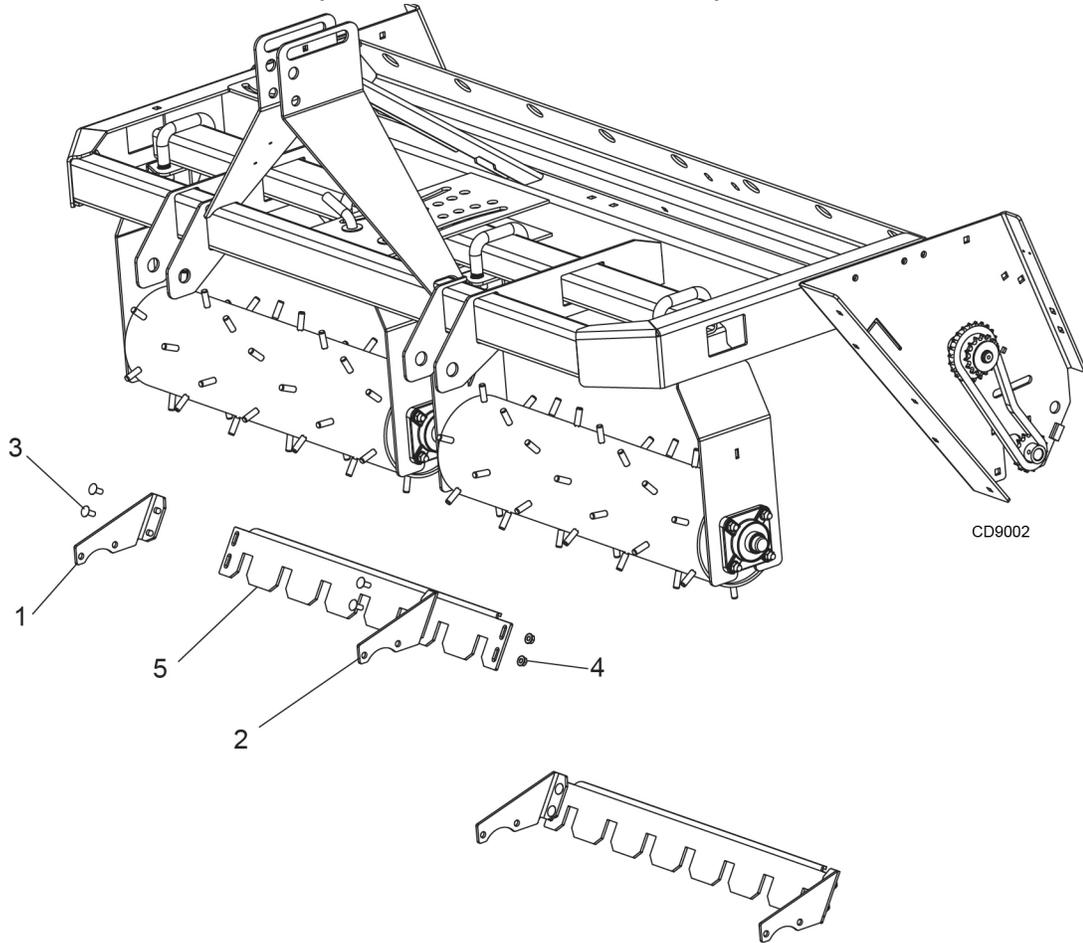


REF	PART	QTY	DESCRIPTION
1	611680	2	Bar, scraper disc CSS48
2	615244	4	Mount, scraper disc CSS
3	615198	2	Scraper, disc blade CSS RH
4	51248	20	Bolt crg 5/16 x 3/4 GR5 ZP
5	14139	20	Nut lock 5/16 NC flng HD ZP
6	615197	2	Scraper, disc blade CSS LH

**45 Parts**

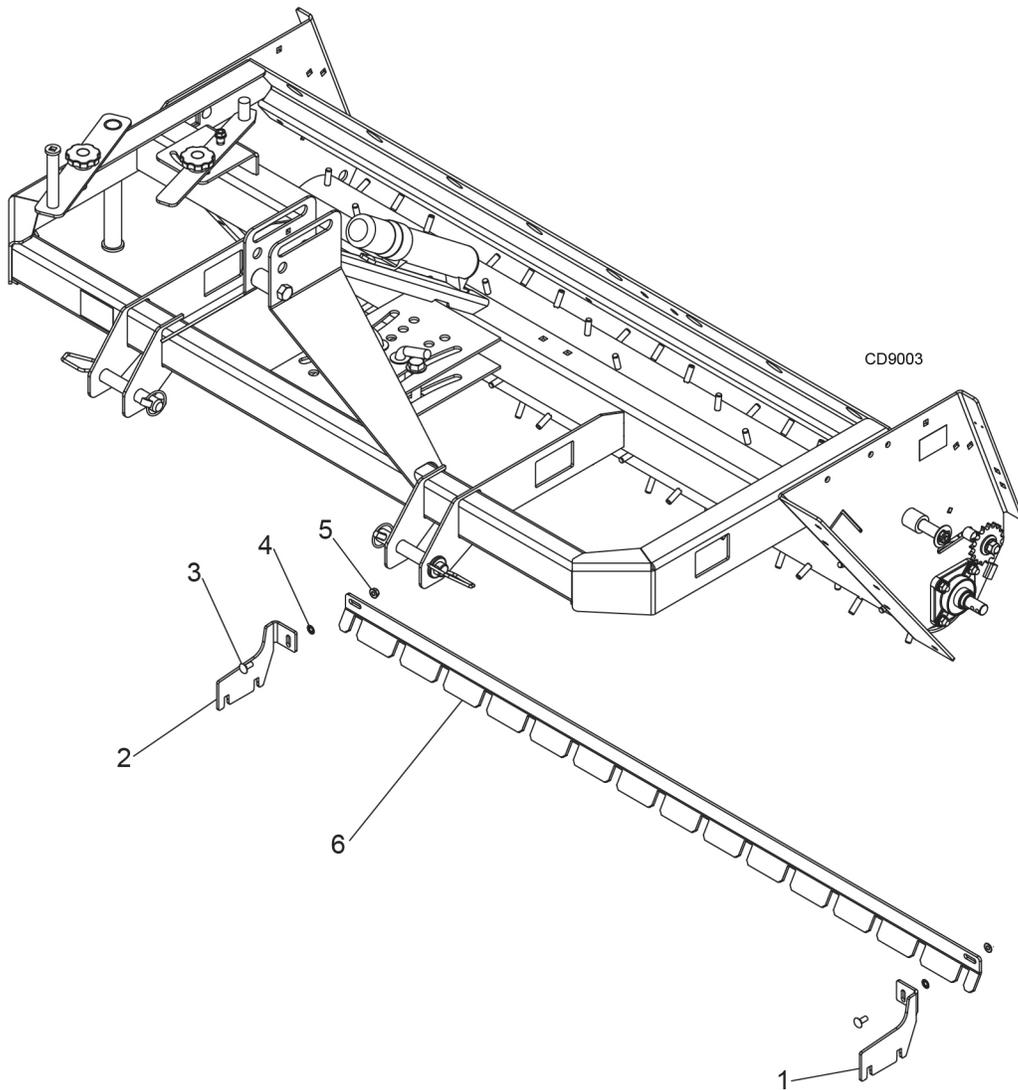
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**FRONT SPIKE ROLLER MUD SCRAPERS OPTION  
(P/N 61524348 FOR CSS48)  
(P/N 61524360 FOR CSS60)**



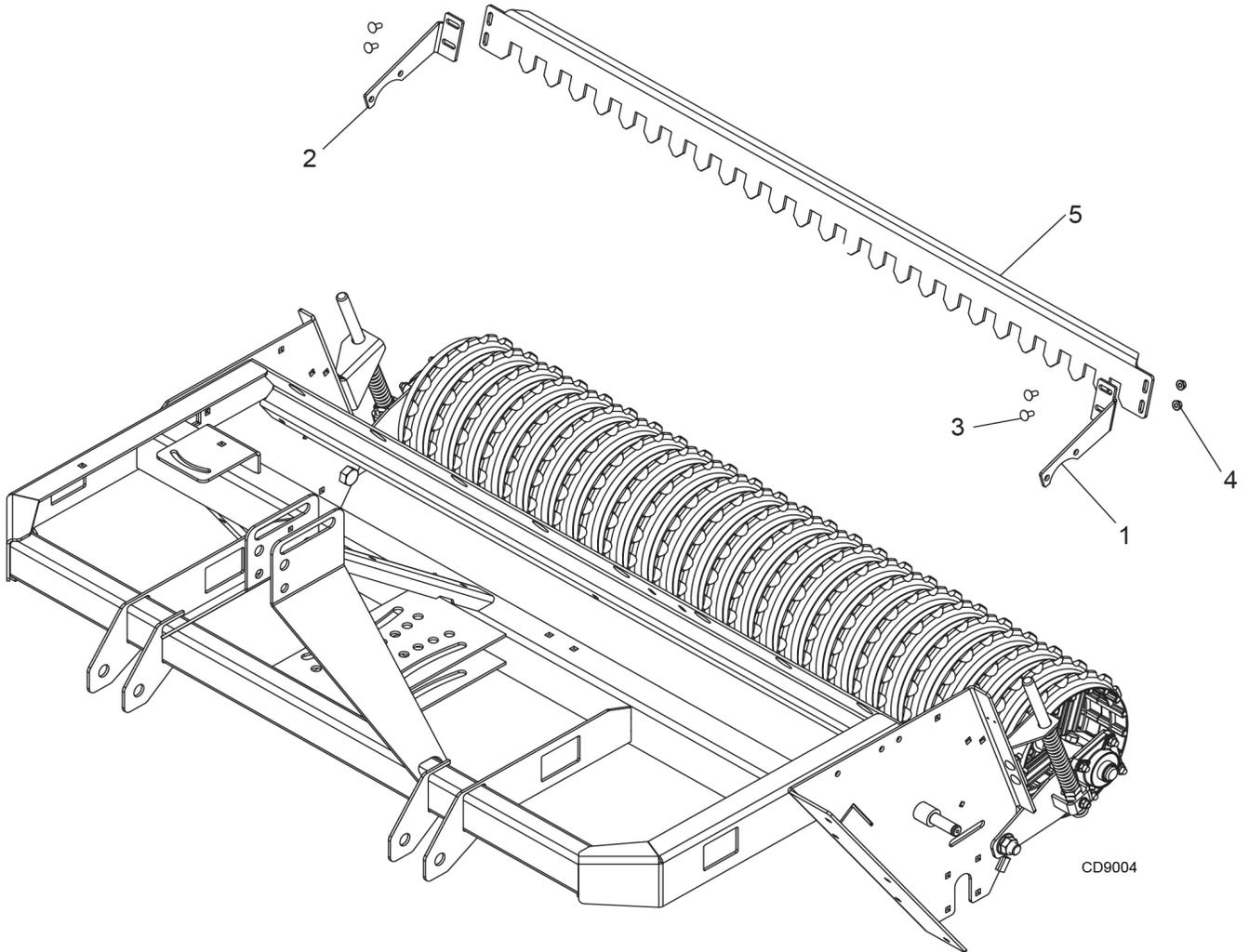
REF	PART	DESCRIPTION	QTY
1	615240	Mount, scraper front roller CSS RH	2
2	615241	Mount, scraper front roller CSS LH	2
3	51248	Bolt crg 5/16 x 3/4 GR5 ZP	8
4	14139	Nut lock 5/16 NC flng HD ZP	8
5	61524960	Scraper, front spiked roller CSS60	2
5	61524948	Scraper, front spiked roller CSS48	2

**SPIKE DRIVE ROLLER MUD SCRAPERS OPTION  
(P/N 61564548 FOR CSS48)  
(P/N 61564560 FOR CSS60)**



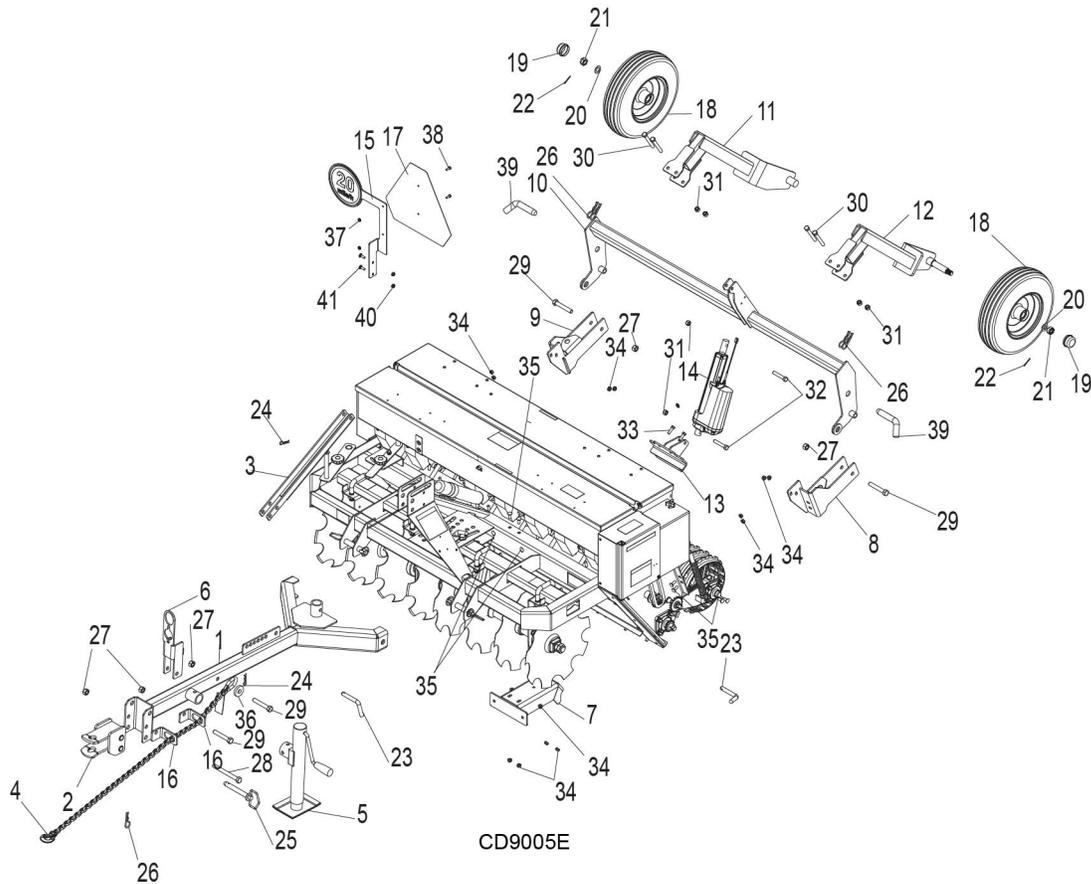
REF	PART	DESCRIPTION	QTY
1	615191	Mount, scraper, rear roller CSS LH	1
2	615192	Mount, scraper, rear roller CSS RH	1
3	51248	Bolt crg 5/16 x 3/4 GR5 ZP	2
4	1046048	Nut, 5/16 round push	2
5	14139	Nut lock 5/16 NC flng HD ZP	2
6	61519060	Scraper, rear roller CSS60	1
6	61519048	Scraper, rear roller CSS48	1

**NYLON CULTIPACKER MUD SCRAPERS OPTION  
(P/N 61524648 FOR CSS48)  
(P/N 61524660 FOR CSS60)**



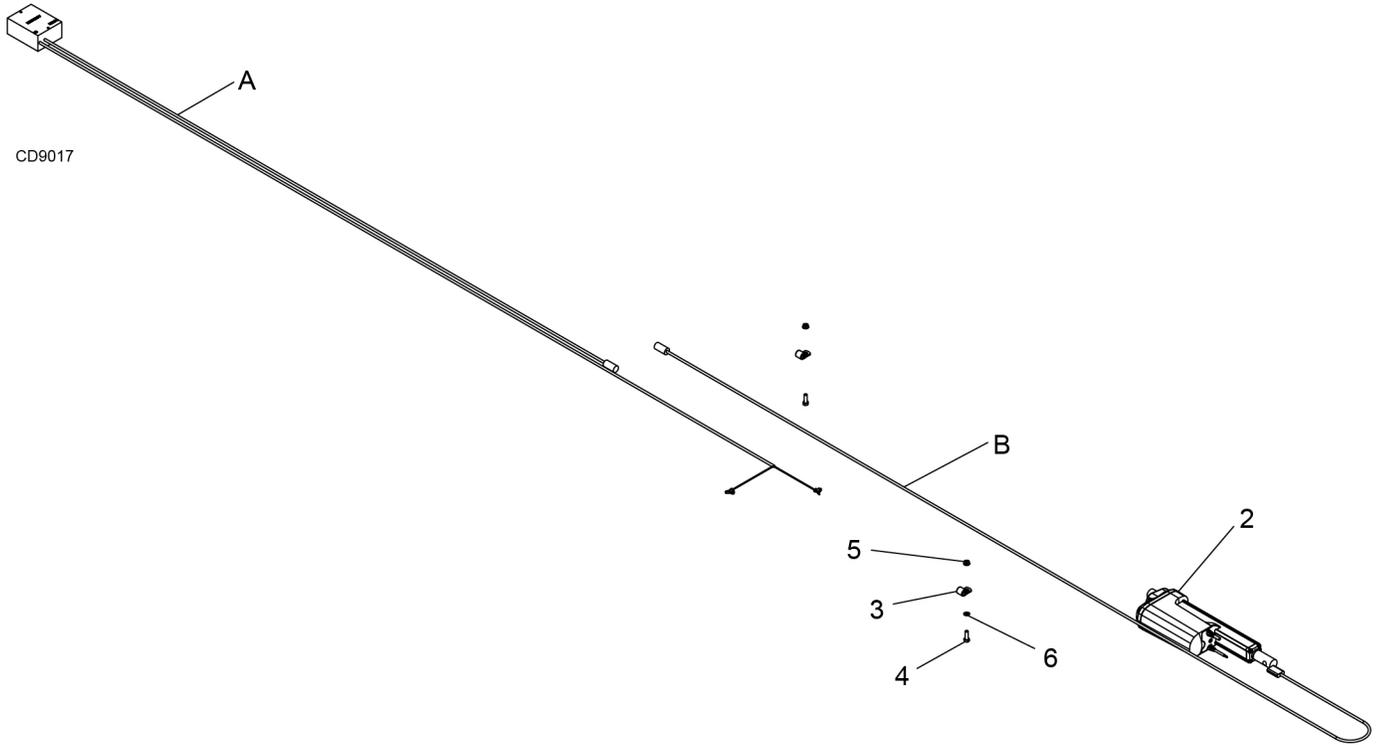
REF	PART	DESCRIPTION	QTY
1	615193	Mount, scraper cultipacker CSS LH	1
2	615194	Mount, scraper cultipacker CSS RH	1
3	51248	Bolt crg 5/16 x 3/4 GR5 ZP	4
4	14139	Nut lock 5/16 NC flng HD ZP	4
5	61519560	Scraper, cultipacker CSS60	1
5	61519548	Scraper, cultipacker CSS48	1

**ELECTRIC TOW KIT OPTION  
(P/N 60435348 FOR CSS48)  
(P/N 60435360 FOR CSS60)**



REF	PART	QTY	DESCRIPTION	REF	PART	QTY	DESCRIPTION
1	609679	1	WA, Tow Tongue CSS	22	5241 *	2	1/8 x 1-1/4 cotter pin
2	609708	1	WA, Tow Hitch PSS	23	1005338 *	2	Pin bent .62 x 3.0 w/clip
3	609686	1	Channel, adjustment	24	2688 *	2	Pin, cotter, hair, .059 WD x 1-1/8
4	19407	1	Asy, safety chain, 10,000 lb	25	1037593 *	1	Hitch pin 3/4 x 4-3/4
5	23790	1	Swivel parking jack	26	18270 *	5	3/16 safety pin
6	613733	1	Plate, hose holder electric	27	6239 *	5	Nut lock 5/8 NC
7	613715	1	WA, frame stiffener	28	12005 *	1	HHCS 5/8 x 6 GR5 ZP
8	609687	1	WA, mounting bracket left	29	W300457 *	4	HHCS 5/8 NC x 3-3/4 GR5 ZP
9	609690	1	WA, mounting bracket right	30	10380 *	4	HHCS 1/2 NC x 4 GR5 ZP
10	60969560	1	WA, pivot arm electric CSS40	31	765 *	6	Nut lock 1/2 NC ZP
	60969548	1	WA, pivot arm electric CSS48	32	5621 *	2	HHCS 1/2 NC x 2-3/4 GR5
11	609700	1	WA, wheel arm right	33	12169 *	2	HHCS 3/8 NC x 1-1/4 GR5 ZP
12	609699	1	WA, wheel arm left	34	14350 *	14	Nut lock 3/8 NC flng
13	609705	1	WA, actuator mount	35	6697 *	12	Bolt crg 3/8 NC x 1 GR5 ZP
14	75547	1	12V actuator 1500 harness cnsl	36	W8424	1	Washer 3/4 ID 2 OD 3/8 thick
15	611524RP	1	Bracket, SMV SIS	37	62521 *	2	Nut whiz 1/4 NC
16	611704	2	Lug, bent chain	38	2457 *	2	HHCS 1/4 NC x 3/4 GR5
17	24611	1	Sign (SMV) slow moving vehicle	39	611703	2	Pin, bent 1.00 x 4.04
18	S400312B0 *	2	Splitter part, tire w/cup, seal, bearing	40	W73163 *	2	Nut whiz 5/16 NC
19	S40033200	2	Splitter part, hub cap	41	24409 *	2	Bolt carriage 5/16 NC x 1
20	2864 *	2	Washer 3/4 SAE flat				HHCS Hex Head Cap Screw
21	5849 *	2	Nut hex 3/4 NF slotted				* Standard hardware, obtain locally

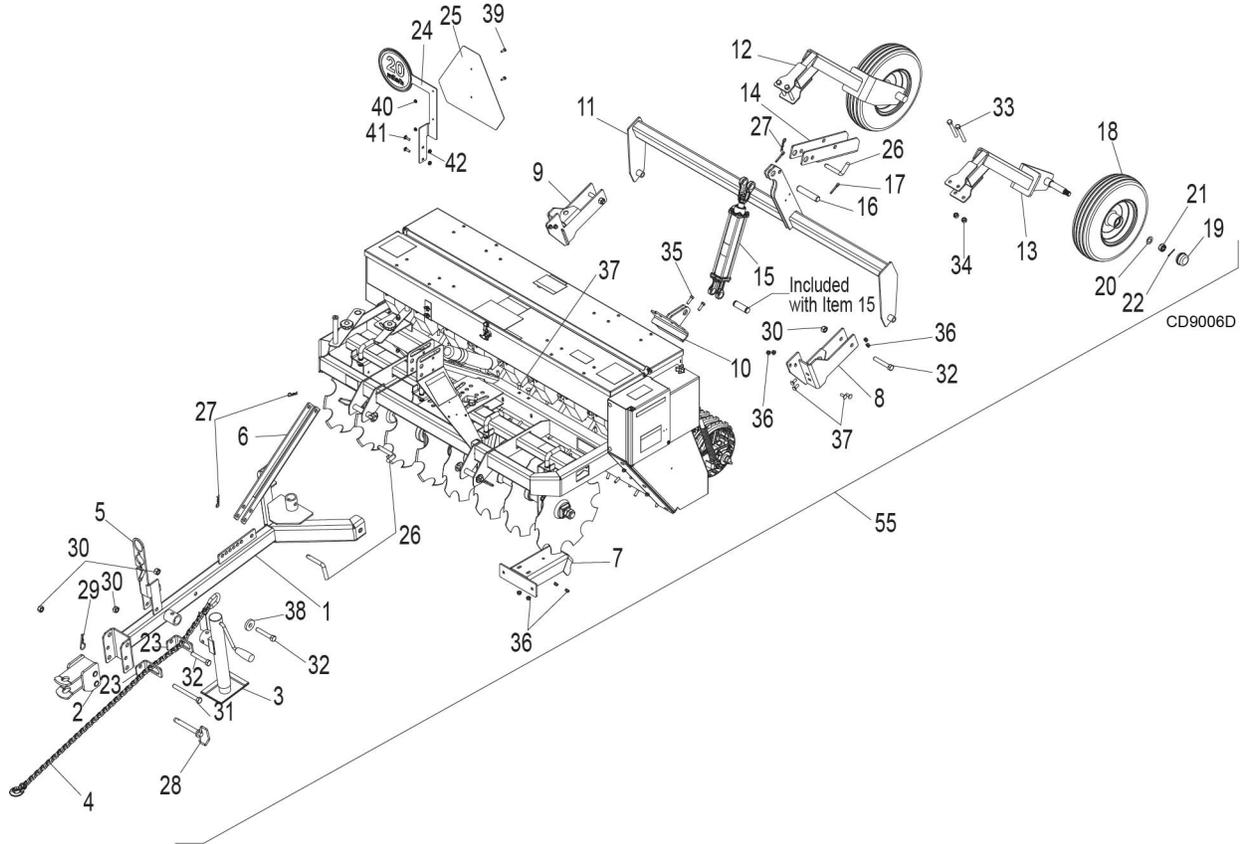
# ELECTRIC TOW KIT WIRE HARNESS



REF	PART	QTY	DESCRIPTION
	616060	1	Harness, CSS electric tow kit (includes A & B)
A	616062	1	Module, CSS electric tow kit
B	616063	1	Wire, CSS electric tow kit
2	75547	1	12V actuator 1500 harness cnsl
3	35249	2	Clamp .50 dia steel cushion
4	24409	1	Bolt carriage 5/16 NC x 1 ZP
5	14562	1	HHCS 5/16 NC x 1 ZP
6	W73163	2	Nut whiz 5/16 NC flange
7	1046048	1	Nut, 5/16 round push

HHCS Hex Head Cap Screw  
 \* Standard hardware, obtain locally

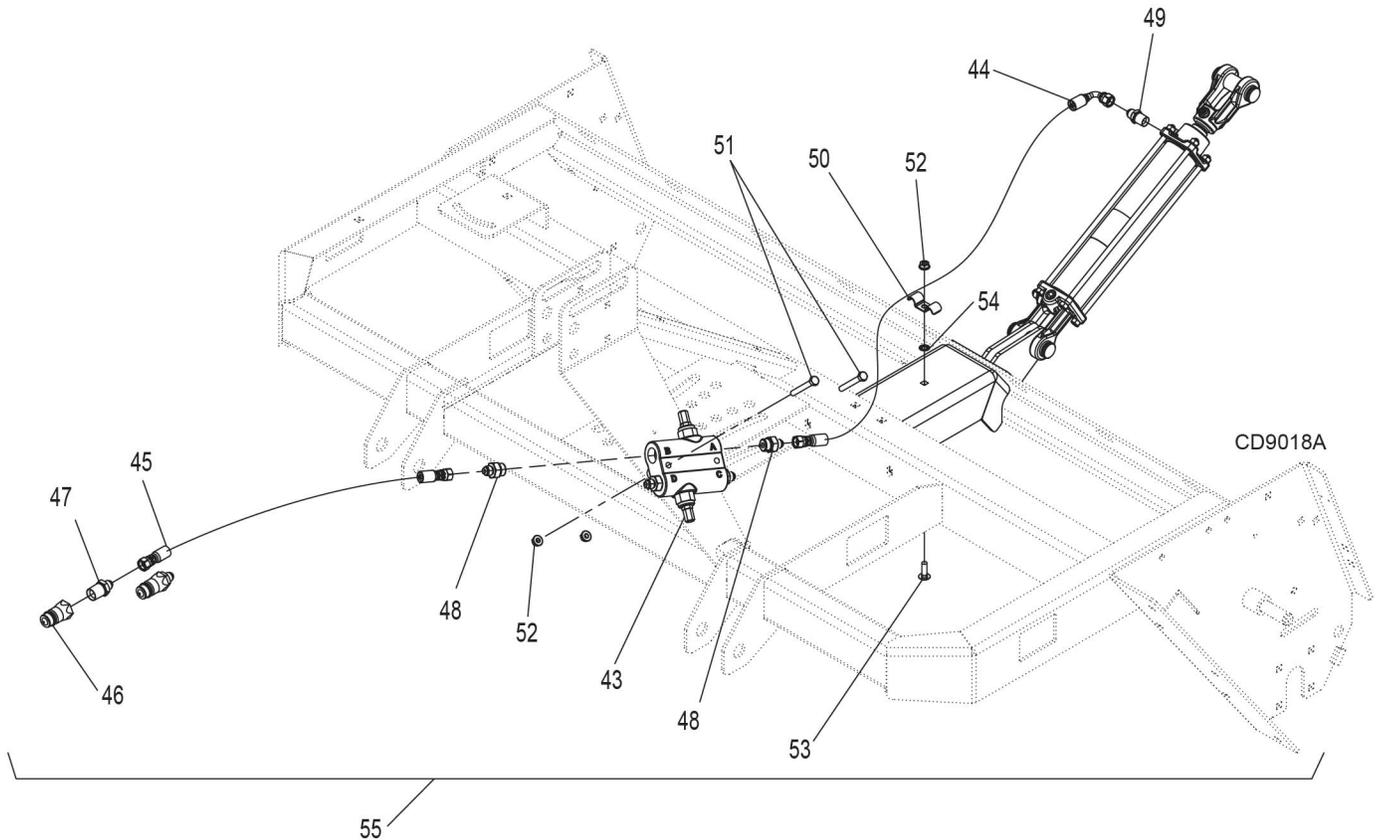
**HYDRAULIC TOW KIT OPTION (P/N 5/N 60435448, 60435460)**  
 (CONTINUED ON PAGE 52)



REF	PART	QTY	DESCRIPTION	REF	PART	QTY	DESCRIPTION
1	609679	1	Tow tongue	23	611704	2	Lug, bent chain
2	609708	1	Tow hitch	24	611524RP	1	Bracket, SMV SIS
3	23790	1	Swivel parking jack	25	24611	1	Sign (SMV) slow moving vehicle
4	19407	1	Safety chain, 10,000 LB	26	1005338	3	Pin bent .62 x 3.0 w/ clip
5	613730	1	Hose holder	27	2688 *	3	5/32 hair pin cotter
6	609686	1	Adjustment channel	28	1037593 *	1	Hitch pin 3/4 x 4-3/4
7	613715	1	Frame stiffener	29	18270 *	1	3/16 safety pin
8	609687	1	Mounting bracket left	30	6239 *	5	Lock nut 5/8 NC
9	609690	1	Mounting bracket right	31	12005 *	1	HHCS 5/8 NC x 6 GR5 ZP
10	613726	1	Hydraulic cylinder mount	32	W300457 *	4	HHCS 5/8 NC x 3-3/4 GR5 ZP
11	61372248	1	Pivot arm CSS48 HYD (CSS48 only)	33	10380 *	4	HHCS 1/2 NC x 4 GR5 ZP
	61372260	1	Pivot arm CSS60 HYD (CSS60 only)	34	765 *	4	Nut lock 1/2 NC ZP
12	613724	1	Wheel arm right HYD	35	12169 *	2	HHCS 3/8 NC x 1-1/4 GR5 ZP
13	613725	1	Wheel arm left HYD	36	14350 *	12	Nut lock 3/8 NC flange
14	613732	1	Cylinder lock	37	6697 *	10	Bolt carriage 3/8 NC x 1 GR5 ZP
15	1038881	1	Cylinder 2 x 10, 1.06 rod	38	W8424	1	Washer 3/4 ID 2 OD 3/8 thick ZP
16	8345	1	Pin headless 1.00 x 4.08	39	2457 *	2	HHCS 1/4 NC x 3/4 GR5
17	1285 *	2	1/4 x 1-1/2 cotter pin	40	62521 *	4	Nut lock 1/4 NC flange
18	S400312B0	2	Wheel & tire, 16 x 4.5	41	W73163 *	2	Nut whiz 5/16 NC
19	S40033200	2	Wheel hub cap	42	24409 *	2	Bolt carriage 5/16 NC x 1
20	2864 *	2	Washer 3/4 SAE flat				
21	5849	2	Castle nut 3/4 NF				
22	5241 *	2	1/8 x 1-1/4 cotter pin				

HHCS Hex Head Cap Screw  
 \* Standard hardware, obtain locally

## HYDRAULIC TOW KIT HOSE ROUTING (CONTINUED FROM PAGE 51)



REF	PART	QTY	DESCRIPTION
43	604341	1	Double relief valve 600 PSI
44	1014239	2	Hose 1/4 54 9/16 JICF 9/16 JICF
45	38673	2	Hose 1/4 x 94 9/16 JICF
46	66511	2	Coupler male ISO 1/2 NPT
47	54315	2	Adapter 1/2 NPTM 9/16 JICM
48	69	4	Adapter 9/16 JICM 3/4 ORBM
49	63480	2	Adapter 3/8 NPTM 9/16 JICM
50	258	1	Feedline clamp - 1/2
51	10509 *	2	HHCS 5/16 NC x 2-1/2 GR5
52	W73163 *	3	Nut whiz 5/16 NC flange yd
53	24409 *	1	HHCS 5/16 NC x 1 GR5 ZP
54	1046048	1	Nut, 5/16 round push
55	60435448	1	Tow kit, complete CSS48
	60435460	1	Tow kit, complete CSS60

HHCS Hex Head Cap Screw  
\* Standard hardware, obtain locally

# BOLT TORQUE CHART

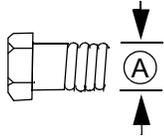
Always tighten hardware to these values unless a different torque value or tightening procedure is listed for a specific application.

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

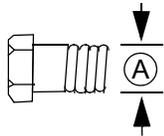


SAE Grade 5  
(3 Radial Dashes)



SAE Grade 8  
(6 Radial Dashes)

Ⓐ Diameter (Inches)	Wrench 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

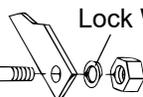


Metric  
Grade 10.9

Ⓐ Diameter & Thread Pitch (Millimeters)	Wrench Size	Coarse Thread				Fine Thread				Ⓐ Diameter & Thread Pitch (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

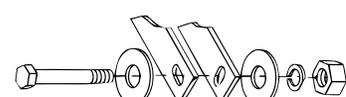
### Typical Washer Installations

Bolt



Lock Washer

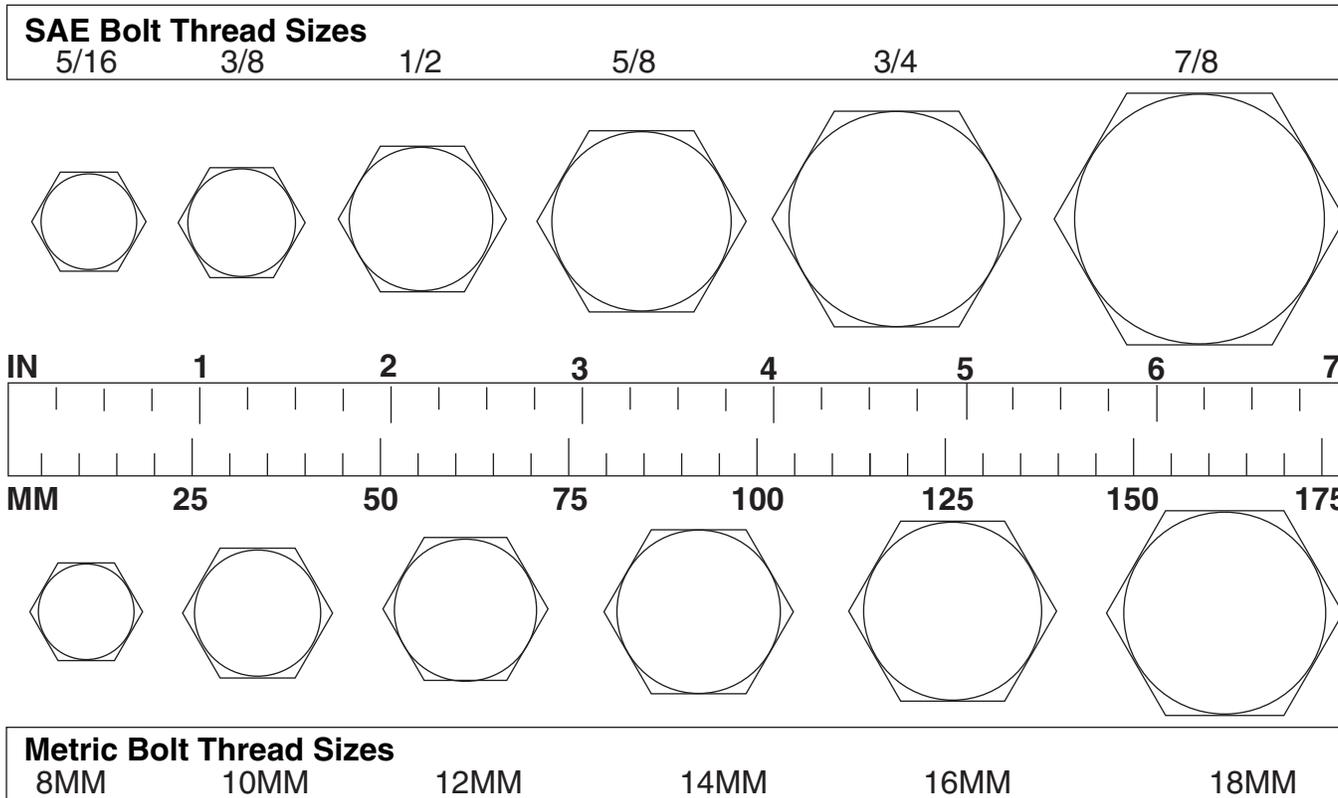
Flat Washer



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  
 ASABE ..... American Society of Agricultural & Biological Engineers (formerly ASAE)  
 ASAE..... American Society of Agricultural Engineers  
 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  
 FT..... Full Thread  
 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

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# WARRANTY

(Replacement Parts For All Models Except Zero-Turn Mowers)

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.

Answers to any questions regarding warranty service and locations may be obtained by contacting:

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

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Oregon, Illinois 61061 USA  
800-319-6637 tel  
800-399-6637 fax  
woodsequipment.com

# WARRANTY

All Models Except Zero-Turn Mowers

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 backhoes, loaders and mounts (except 3-pt. SAF-T-LOK® mounts) are warranted for two (2) years from the date of delivery to the original purchaser. The limited warranty covers any defects in the material and/or workmanship. Following the proper, recommended installation by an authorized Woods Dealer and normal use of a Woods mounting and backhoe or loader, if a tractor incurs damage resulting from the attachment, Woods will cover the existing tractor warranty in the event the manufacturer voids its tractor warranty because of the attachment. Warranty does not cover any misuse or abusive conditions that could cause premature wear or damage to attachment or tractor.

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)
	<b>All units invoiced after 4/30/2012</b>	
Gearbox components	BB48.30, BB60.30, BB72.30, BB84.40, BB60.50, BB72.50, BB60.60, BB72.60, BB84.60, BB84.50, DS8.30, DS10.40, DS8.50, DSO8.50, DS10.50, DSO10.50, DBH5.31, DBH6.31	6 years
	BW12, BW10.50, BW10.50Q, BW15.50, BW15.50Q, BW10.60, BW10.60Q, BW13.70, BW13.70Q, BW13.70QREV, BW15.60, BW15.60Q, BW10.70, BW10.70Q, BW15.70, BW15.70Q, BW20.50, BW20.50Q, BW20.60, BW20.60Q, BW20.70, BW20.70Q, BW20.51, BW20.51Q, BW20.61, BW20.61Q, BW20.71, BW20.71Q, BW13.71, BW13.71Q, BW13.71QREV	
	BW240X, BW240XHD, BW1620X, BW2400X	
	RD990X, PRD6000, PRD7200, PRD8400, S15CD, S20CD, S22CD, S25CD, S27CD, S30CD, TC/R74, TC/R68, TC/R60, TBW144, TBW180, TBW204, TSG50, S12ED, S15ED, S18ED, S20ED	
	FM60.20, FM72.20, TBW150C, RT/R42.30, RT/R48.30, RT/R60.40, RT/R72.40, RC3.5, RC4, RC5, RC6	3 years (1 year if used in rental or commercial applications)
Blade spindles	RD990X, PRD6000, PRD7200, PRD8400, TBW144, TBW180, TBW204	3 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.

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.**

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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.

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. Answers to any questions regarding warranty service and locations may be obtained by contacting:

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