

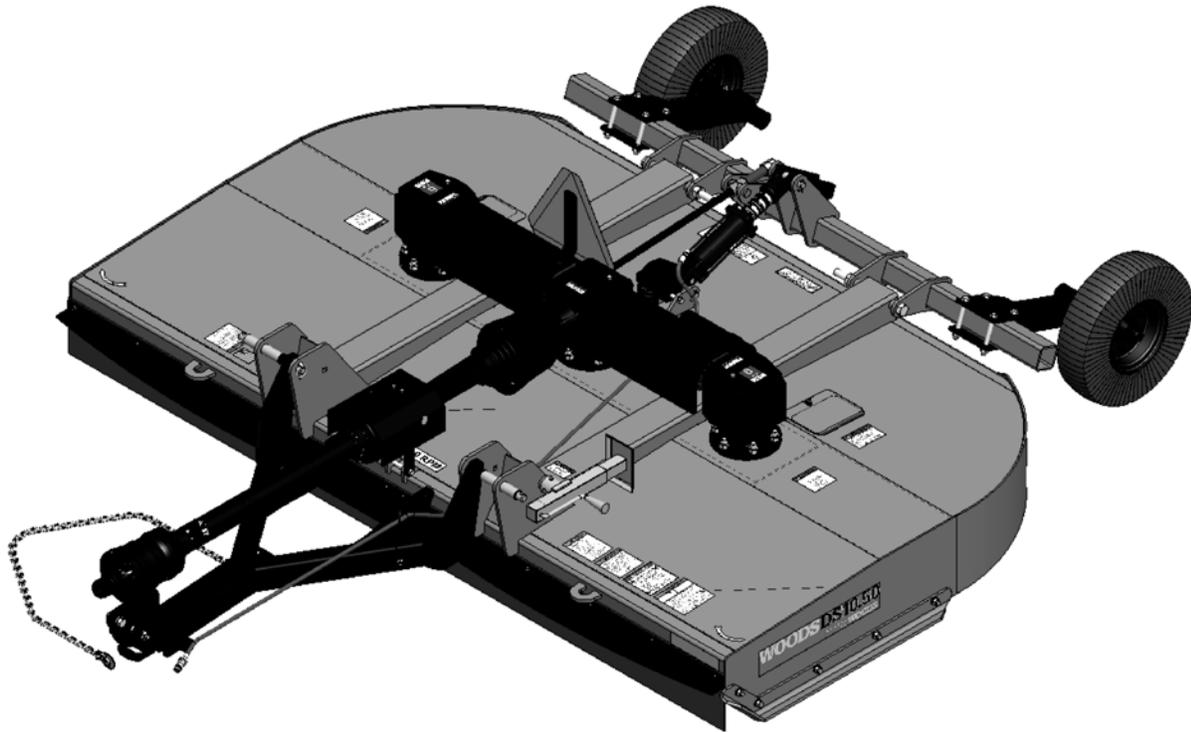
ROTARY CUTTER

DS8.50/DS8.50Q

DS10.50/DS10.50Q

DSO8.50/DSO8.50Q

DSO10.50/DSO10.50Q



MAN1168

(Rev. 8/13/2018)

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, 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®
Woods Equipment Company

2 Introduction

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

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¡LEA EL INSTRUCTIVO!

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

NOTICE:

If you would like to receive a free Spanish language translation of the Safety Rules section of this manual, plus a set of Spanish language safety decals, please contact your local Woods dealer.

AVISO:

Si desea recibir una traducción al español gratuita de la sección Reglas de seguridad de este manual y un juego de etiquetas de seguridad en español, por favor comuníquese con su concesionario local de Woods.



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

SPECIFICATIONS

	DS8.50 DS8.50Q	DSO8.50 DSO8.50Q	DS10.50 DS10.50Q	DSO10.50 DSO10.50Q
Cutting Height	2" - 12"			
Cutting Width	96"		120"	
Overall Width	103"		127"	
Overall Length: Pull Type (25" Tires)	150"	--	162"	--
Overall Length: Mounted	99"	122"	111"	128"
Minimum Tractor HP: Pull-Type	40 HP	--	50 HP	--
Minimum Tractor HP: Mounted	55 HP	40 HP	65 HP	50 HP
Tractor PTO RPM (Q = 1000)	540 or 1000			
Number of Blade Spindles	2			
Blade Overlap	4"			
Number of Blades	4			
Driveline w/Slip Clutch: Pull-Type	Cat 6 CV	--	Cat 6 CV	--
Driveline w/Slip Clutch: Mounted	Cat 5	Cat 5	Cat 5	Cat 5
Side Frame Thickness	1/4"	1/4"	1/4"	1/4"
Weight (W/Belting): Pull-Type	2,205 lbs	--	2,400 lbs	--
Weight (w/Belting): Mounted	2,055 lbs	2,335 lbs	2,255 lbs	2,510 lbs
Blade Speed (Feet per Minute) 540/1000	14,886/15,126		15,974/16,232	
Blade Rotation	Left Spindle: CCW; Right Spindle: CW			
Wheel Size: Pull-Type	15" Rims 21" Laminated 25" Severe Duty 29" Airplane	--	15" Rims 21" Laminated 25" Severe Duty 29" Airplane	--
Wheel Size: Mounted	16" Laminated	21" Laminated	16" Laminated	21" Laminated
Torsion Protection	Slip Clutch and Flex Couplers			

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 cutter. 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. Blade rotation is clockwise (right) and counter-clockwise (left) as viewed from the top of the cutter.

BE SAFE!

BE ALERT!

BE ALIVE!

BE TRAINED

Before Operating Mowers!



ASSOCIATION OF
EQUIPMENT
MANUFACTURERS

*Safety Training
Does Make a Difference.*

Watch a Mower Safety Video Online

The AEM (Association of Equipment Manufacturers) offers a safety training video, *Industrial and Agricultural Mower Safety Practices*. The 22-minute video can be viewed online for free at TheAEMStore, <https://youtu.be/uEWXsDqhDq0>

It reinforces the proper procedures to follow while operating your mowing equipment. The video does not replace the information contained in the Operator's Manual, so please review this manual thoroughly before operating your new mowing equipment.

Also, available from the Association of Equipment Manufacturers:

A large variety of training materials (ideal for groups) are available for a nominal charge from AEM. Following is a partial list:

- **Training Package for Rotary Mowers/Cutters-English**

Contains: DVD & VHS (English)

Guidebook for Rotary Mowers/Cutters (English)

AEM Industrial/Agricultural Mower Safety Manual (English)

AEM Agricultural Tractor Safety Manual (English)

- **Training Package for Rotary Mowers/Cutters-English/Spanish**

Contains: DVD & VHS (English/Spanish)

Guidebook for Rotary Mowers/Cutters (English/Spanish)

AEM Industrial/Agricultural Mower Safety Manual (English/Spanish)

AEM Agricultural Tractor Safety Manual (English/Spanish)

AEM training packages are available through:

AEM at: www.aem.org

or

Universal Lithographers, Inc.

Email: aem@ulilitho.com

800-369-2310 tel

866-541-1668 fax

SAFETY RULES



ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!



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

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

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

TRAINING

- **Safety instructions are important! Read all attachment and power unit manuals; follow all safety rules and safety decal information. (Replacement manuals and safety decals are available from your dealer. To locate your nearest dealer, check the Dealer Locator at www.WoodsEquipment.com, 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.**
- **Keep hands and body away from pressurized lines. Use paper or cardboard, not hands or other body parts to check for leaks. Wear safety goggles. Hydraulic fluid under pressure can easily penetrate skin and will cause serious injury or death.**
- **Make sure that all operating and service personnel know that if hydraulic fluid penetrates skin, it must be surgically removed as soon as possible by a doctor familiar with this form of injury or gangrene, serious injury, or death will result. CONTACT A PHYSICIAN IMMEDIATELY IF FLUID ENTERS SKIN OR EYES. DO NOT DELAY.**
- **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.**
- **Air in hydraulic systems can cause erratic operation and allows loads or equipment components to drop unexpectedly. When connecting equipment or hoses or performing any hydraulic maintenance, purge any air in hydraulic system by operating all hydraulic functions several times. Do this before putting into service or allowing anyone to approach the equipment.**
- **Make sure all hydraulic hoses, fittings, and valves are in good condition and not leaking before starting power unit or using equipment. Check and route hoses carefully to prevent damage. Hoses must not be twisted, bent sharply, kinked, frayed, pinched, or come into contact with any moving parts. Operate moveable components through full operational range to check clearances. Replace any damaged hoses immediately.**
- **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 spring-activated locking pin or collar slides freely and is seated firmly in tractor PTO spline groove.**
- **If equipped with driveline guard tether chains, make sure they are attached to the tractor and equipment as shown in the pamphlet that accompanies the driveline. Replace if damaged or broken. Check that driveline guards rotate freely on driveline before putting equipment into service.**
- **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.**
- **Inspect chain or rubber belt shielding before each use. Replace if damaged.**

(Safety Rules continued on next page)

SAFETY RULES



ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!



(Safety Rules continued from previous page)

- Remove accumulated debris from this equipment, power unit, and engine to avoid fire hazard.
- Make sure all safety decals are installed. Replace if damaged. (See Safety Decals section for location.)
- Make sure shields and guards are properly installed and in good condition. Replace if damaged.
- Do not put this equipment into service unless all side skids are properly installed and in good condition. Replace if damaged.
- 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.
- Inspect and clear area of stones, branches, or other hard objects that might be thrown, causing injury or damage.
- Connect PTO driveline directly to power unit PTO shaft. Never use adapter sleeves or adapter shafts. Adapters can cause driveline failures due to incorrect spline or incorrect operating length and can result in personal injury or death.

OPERATION

- Full chain or rubber shielding must be installed when operating in populated areas or other areas where thrown objects could injure people or damage property.
 - If this machine is not equipped with full chain or rubber shielding, operation must be stopped when anyone comes within 300 feet (92 m).
 - This shielding is designed to reduce the risk of thrown objects. The mower deck and protective devices cannot prevent all objects from escaping the blade enclosure in every mowing condition. It is possible for objects to ricochet and escape, traveling as much as 300 feet (92 m).
- Do not allow bystanders in the area when operating, attaching, removing, assembling, or servicing equipment.
- Never direct discharge toward people, animals, or property.

- Do not operate or transport equipment while under the influence of alcohol or drugs.
- Operate only in daylight or good artificial light.
- Keep hands, feet, hair, and clothing away from equipment while engine is running. Stay clear of all moving parts.
- Always comply with all state and local lighting and marking requirements.
- Never allow riders on power unit or attachment.
- Power unit must be equipped with ROPS or ROPS cab and seat belt. Keep seat belt securely fastened. Falling off power unit can result in death from being run over or crushed. Keep foldable ROPS system in “locked up” position at all times.
- Always sit in power unit seat when operating controls or starting engine. Securely fasten seat belt, place transmission in neutral, engage brake, and ensure all other controls are disengaged before starting power unit engine.
- Operate tractor PTO at 540 RPM (1000 RPM on Q Series cutters). Do not exceed.
- Look down and to the rear and make sure area is clear before operating in reverse.
- 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.
- 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.
- Leak down or failure of mechanical or hydraulic system can cause equipment to drop.

(Safety Rules continued on next page)



SAFETY RULES

ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!



(Safety Rules continued from previous page)

TRANSPORTATION

- The maximum transport speed for towed and semi-mounted machines is 20 mph (32 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.
- Use additional caution and reduce speed when under adverse surface conditions, turning, or on inclines.
- Never tow this implement with a motor vehicle.
- Do not operate PTO during transport.
- Do not operate PTO during transport.
- 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.
- Never allow riders on power unit or attachment.

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.
- Before performing any service or maintenance, disconnect driveline from tractor PTO.
- Before working underneath, raise mower, install transport lock, and block mower securely. Hydraulic system leak down and failure of mechanical or hydraulic system can cause equipment to drop.
- Do not modify or alter or permit anyone else to modify or alter the equipment or any of its components in any way.
- Your dealer can supply original equipment hydraulic accessories and repair parts. Substitute parts may not meet original equipment specifications and may be dangerous.
- 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.

- Do not allow bystanders in the area when operating, attaching, removing, assembling, or servicing equipment.
- Never go underneath equipment (lowered to the ground or raised) unless it is properly blocked and secured. Never place any part of the body underneath equipment or between moveable parts even when the engine has been turned off. Hydraulic system leak down, hydraulic system failures, mechanical failures, or movement of control levers can cause equipment to drop or rotate unexpectedly and cause severe injury or death. Follow Operator's Manual instructions for working underneath and blocking requirements or have work done by a qualified dealer.
- 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.
- Make certain all movement of equipment components has stopped before approaching for service.
- Frequently check blades. They should be sharp, free of nicks and cracks, and securely fastened.
- Do not handle blades with bare hands. Careless or improper handling may result in serious injury.
- Your dealer can supply genuine replacement blades. Substitute blades may not meet original equipment specifications and may be dangerous.
- 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.)
- Make sure shields and guards are properly installed and in good condition. Replace if damaged.

(Safety Rules continued on next page)



SAFETY RULES

ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!



(Safety Rules continued from previous page)

- **Do not disconnect hydraulic lines until machine is securely blocked or placed in lowest position and system pressure is released by operating valve levers.**
- **Leak down or failure of mechanical or hydraulic system can cause equipment to drop.**

STORAGE

- **Keep children and bystanders away from storage area.**
- **Follow manual instructions for storage.**

ON MOUNTED AND SEMI-MOUNTED CUTTERS:

- **Disconnect cutter driveshaft and secure up off ground. Raise cutter with 3-point hitch. Place blocks under cutter side skids. Lower cutter onto blocks. Disconnect hydraulic lines to optional cylinder. Disconnect cutter from tractor 3-point hitch and carefully drive tractor away from cutter.**

ON PULL-TYPE CUTTERS:

- **Raise cutter and block securely. Block wheels and raise tongue with jack. Disconnect hydraulic lines to optional cylinder. Disconnect driveline and secure up off the ground.**

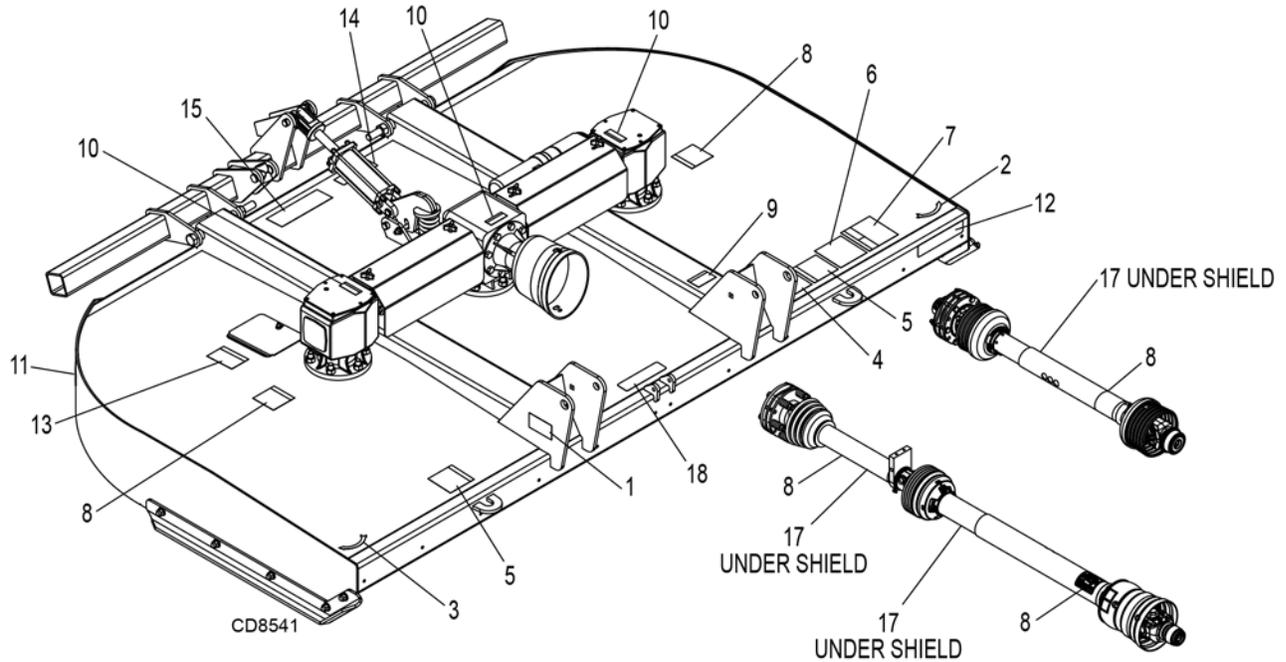
SAFETY & INSTRUCTIONAL DECALS



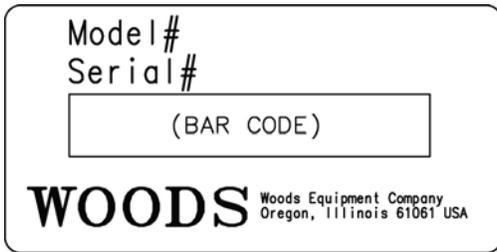
ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!



Replace Immediately If Damaged!



1 - SERIAL NUMBER PLATE



2 - PN 5669



3 - PN 12777

4 - PN 18877

⚠ WARNING

TO AVOID SERIOUS INJURY OR DEATH:

- Read Operator's Manual (available from dealer) and follow all safety precautions.
- Keep all shields in place and in good condition.
- Operate mower from tractor seat only.
- Lower mower, stop engine and remove key before dismounting tractor.
- Allow no children or untrained persons to operate equipment.
- Do not transport towed or semi-mounted units over 20 mph.

FAILURE TO OPERATE SAFELY CAN RESULT IN INJURY OR DEATH.

18877

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, 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)

5 - PN 1003751

⚠ WARNING			
<p>CRUSHING AND PINCHING HAZARD</p> <ul style="list-style-type: none"> 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. <p>FAILURE TO FOLLOW THESE INSTRUCTIONS COULD RESULT IN SERIOUS INJURY OR DEATH.</p> <p style="text-align: right;">1003751</p>			

6 - PN 15503

⚠ DANGER			
<p>ROTATING BLADES AND THROWN OBJECTS</p> <ul style="list-style-type: none"> Do not put hands or feet under or into mower when engine is running. Before mowing, clear area of objects that may be thrown by blade. Keep bystanders away. Keep guards in place and in good condition. <p>BLADE CONTACT OR THROWN OBJECTS CAN CAUSE SERIOUS INJURY OR DEATH.</p> <p style="text-align: right;">15503</p>			

7 - PN 18865

⚠ WARNING	
<p>FALLING OFF CAN RESULT IN BEING RUN OVER.</p> <ul style="list-style-type: none"> 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. Never allow riders on mower or tractor. <p>RAISED EQUIPMENT CAN DROP AND CRUSH.</p> <ul style="list-style-type: none"> Before working underneath, follow all instructions and safety rules in operator's manual and securely block up all corners of equipment with jack stands. Securely blocking prevents equipment dropping from hydraulic leak-down, hydraulic system failures or mechanical component failures. <p>FALLING OFF OR FAILING TO BLOCK SECURELY CAN RESULT IN SERIOUS INJURY OR DEATH.</p> <p style="text-align: right;">18865</p>	

8 - PN 18864

⚠ DANGER
<p>ROTATING DRIVELINE CONTACT CAN CAUSE DEATH</p> <p>KEEP AWAY!</p> <p>DO NOT OPERATE WITHOUT -</p> <ul style="list-style-type: none"> All driveline guards, tractor and equipment shields in place. Drivelines securely attached at both ends. Driveline guards that turn freely on driveline. <p style="text-align: right;">18864-C</p>

⚠ WARNING
<p>DO NOT EXCEED PTO SPEED OF</p> <p>540 RPM</p> <p>PTO speeds higher than 540 RPM can cause equipment failure and personal injury.</p> <p style="text-align: right;">18866</p>

9a - PN 18866
540 RPM

-OR-

9b - PN 15922
1000 RPM

⚠ WARNING
<p>DO NOT EXCEED PTO SPEED OF</p> <p>1000 RPM</p> <p>PTO speeds higher than 1000 RPM can cause equipment failure and personal injury.</p> <p style="text-align: right;">15922</p>

10 - PN 1004114

⚠ DANGER
<p>If shaft connection is visible, shield is missing. Replace shield before operating equipment.</p> <p style="text-align: right;">1004114</p>

11 - PN 57123 RED REAR REFLECTOR 9"

12 - PN 1002940 AMBER FRONT REFLECTOR 9"

SAFETY & INSTRUCTIONAL DECALS

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

13 - 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

14 - PN 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

15 - PN 1004991



1004991

! WARNING

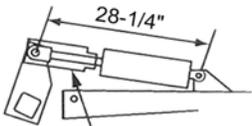
RAISED IMPLEMENT CAN DROP AND CRUSH

- Implement must be equipped with transport lock.
- Before working underneath, transport lock must be in the raised position. All corners of implement must be securely blocked with jackstands.
- All transport components must be functional, kept in good condition, and stored on equipment.
- Blocking up prevents implement dropping from hydraulic leak down, hydraulic system failures, or mechanical component failures.

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

**TRANSPORT LOCK
AND CYLINDER
REQUIREMENTS**

SINGLE-ACTING
FULL EXTENSION



28-1/4"

TRANSPORT
LOCK

16 - PN 1006348 (LOCATED ON WHEEL RIMS)

! WARNING	EXPLOSION HAZARD
RELEASE ALL AIR PRESSURE BEFORE LOOSENING BOLTS. FAILURE TO DO SO COULD RESULT IN SERIOUS INJURY OR DEATH. MAX. SPEED: 20 MPH, MAX. WEIGHT: 4000 LBS., MAX. AIR PRESSURE: 40 PSI.	

1006348

540 RPM

57840

18a - PN 57840
540 RPM

1000 RPM

57841

-OR-

18b - PN 57841
1000 RPM

17 - PN 33347

! DANGER



**GUARD MISSING.
DO NOT OPERATE.**

! DANGER



**GUARD MISSING.
DO NOT OPERATE.**

! DANGER

33347

OPERATION

The operator is responsible for the safe operation of the cutter. The operator must be properly trained. Operators should be familiar with the cutter, the tractor, and all safety practices before starting operation. Read the safety rules and safety decals on pages 7 to 13.

This heavy-duty cutter is designed for grass and weed mowing and shredding.

Recommended mowing speed for most conditions is from 2 to 5 mph.

⚠ DANGER

■ Full chain or rubber shielding must be installed when operating in populated areas or other areas where thrown objects could injure people or damage property.

- If this machine is not equipped with full chain or rubber shielding, operation must be stopped when anyone comes within 300 feet (92 m).
- This shielding is designed to reduce the risk of thrown objects. The mower deck and protective devices cannot prevent all objects from escaping the blade enclosure in every mowing condition. It is possible for objects to ricochet and escape, traveling as much as 300 feet (92 m).

⚠ WARNING

- Never allow riders on power unit or attachment.
- Make sure spring-activated locking pin or collar slides freely and is seated firmly in tractor PTO spline groove.
- Operate tractor PTO at 540 RPM (1000 RPM on Q Series cutters). Do not exceed.
- Do not allow bystanders in the area when operating, attaching, removing, assembling, or servicing equipment.
- 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.

⚠ 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.

- Safety tow chain must be hooked-up to both the implement and tractor during operation or transport. A loose, dragging chain could be struck by the blades causing serious injury.

TRACTOR STABILITY

⚠ WARNING

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

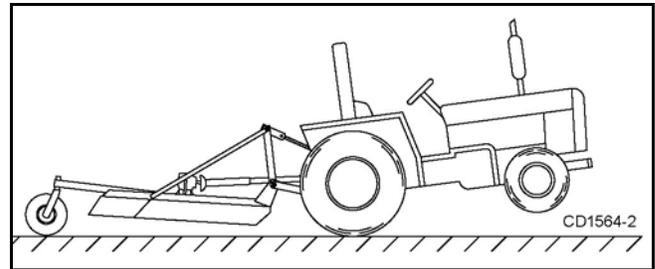


Figure 1. Tractor Stability

CONNECT CUTTER TO TRACTOR (PULL-TYPE)

NOTICE

- For tractors with a 1-3/8" diameter PTO shaft, the horizontal distance from end of tractor PTO shaft to center of drawbar pin should be 14" for the 540 rpm cutter and 16" for the 1000 rpm cutter. Tractors with a 1-3/4" 20-spline PTO shaft should be set to 20". This will minimize joint knock and damage to drive components.

1. Adjust tractor drawbar to obtain the desired drawbar-to-hitch-point distance.

NOTE: On some tractors, a drawbar kit must be used to obtain the required dimension. Check with your tractor dealer for assistance.

2. Attach parking jack to cutter tongue. Raise tongue to tractor drawbar height.
3. Attach cutter to tractor using a 1-1/8" clevis pin and clip.

4. Loop safety tow chain around tractor drawbar support. Secure the hook to a chain link that allows enough slack for proper hitch articulation.
5. Connect cutter driveline to tractor PTO shaft, making sure the spring-activated lock pin slides freely and is seated in tractor PTO splined groove.
6. Remove parking jack from the tongue and attach it to the storage post on the front of the cutter.

Hydraulic Connection

1. Inspect hydraulic hoses to ensure they are in good condition.
2. Clean the fittings before connecting them to the tractor hydraulic ports.
3. Attach the hydraulic hose from the cutter to the tractor.
4. Route the hose through the hose holder at the hitch and be sure the hose can slide freely in the holder. Do not allow hose slack to drag on the ground or become caught on tractor protrusions.
5. From the operator position, start tractor and raise and lower deck several times to purge trapped air from the hydraulic cylinder.

Interference Check

1. Be sure that tractor 3-point lift links do not interfere with hydraulic hoses, cutter driveline, or cutter frame.
2. Check for straight-ahead operation and at full-turning angles. If there is any interference, remove the lower lift links.
3. Contact between tractor lift links and cutter parts can cause damage, especially when turning.

CV Driveline Turning Limits

NOTICE

You must not exceed a turning angle of 80 degrees at the head of the Constant Velocity driveline or damage will occur.

To check for potential excessive turn angle:

1. Disconnect driveline from tractor, start engine and turn as far right or left as possible.
2. Shut engine off, set parking brake, remove key, and try to connect CV driveline to tractor. If it cannot be connected, the angle is too severe.
3. Restart engine and straighten angle slightly. Repeat step 2 until driveline can be connected. The point at which the driveline can be connected is the maximum turn that should be made.

CONNECT CUTTER TO TRACTOR (MOUNTED DS8.50 & DS10.50 & SEMI-MOUNTED DSO8.50 & DSO10.50)

Tractor Adjustments

Before attaching tractor to cutter, install sway blocks or sway chains, or adjust stabilizer bars. Refer to the tractor operator's manual for instructions.

Install tractor front end weights as recommended by the tractor manufacturer to provide 20% of weight on front wheels.

⚠ 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.**

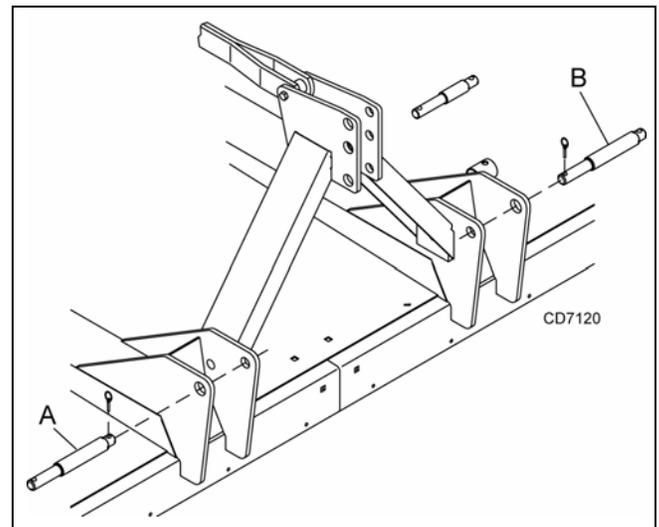


Figure 2. 3-Point Mounting Positions

Category 2 Standard Hitch

1. Position tractor lower lift arms between hitch mast plates.
2. Insert lower hitch pins to Position B, Figure 2, through mast plates and tractor lower lift arms.
3. Secure with lynch pins.
4. Attach top link for mounted units in the middle hole of upper mast using top link pin.

Category 3 Standard Hitch

1. Position tractor lower lift arms between hitch mast plates.
2. Insert lower hitch pins to Position A, Figure 2, through mast plates and tractor lower lift arms.
3. Secure with lynch pins.
4. Attach top link for mounted units in the top hole of upper mast using top link pin.

Category 2 & 3 Quick Hitches

1. Position lower hitch pins to Position A, Figure 2.
2. Use the upper hole that matches upper quick hitch point location. This is usually the lower hole for Category 2 and the middle hole for Category 3.
3. Secure with lynch pins.
4. Attach tractor to cutter and secure hitch according to hitch manufacturer's instructions.

NOTE: For DSO8.50 & DSO10.50, place 1.63 x 2.25 x 3.75 spacer sleeve between tractor lower 3-point arm and plate on hitch assembly to prevent 3-point arm motion during side shift.

DRIVELINE ADJUSTMENT **(MOUNTED DS8.50 & DS10.50 & SEMI-MOUNTED DSO8.50 & DSO10.50)**

Attach the cutter to the tractor 3-point hitch (or quick hitch if available). Do not attach driveline at this time.

NOTICE

■ **If attaching cutter using a Quick Hitch the distance between the tractor PTO and the gearbox input shaft will increase. Follow steps as you would for the 3-point hitch to insure proper engagement.**

Raise and lower cutter and measure the maximum and minimum distance between the tractor PTO shaft and the gearbox input shaft. Separate the driveline into two halves and lay them side-by-side with U-joints at opposite ends.

Set the two u-joints at the maximum distance measures (this is the cutters lowest point of operation) and check the amount of overlap between the two drive halves. There must be at least 4 inches of overlap. If the driveline is too short (less than 4" overlap) contact your Woods dealer for a longer drive.

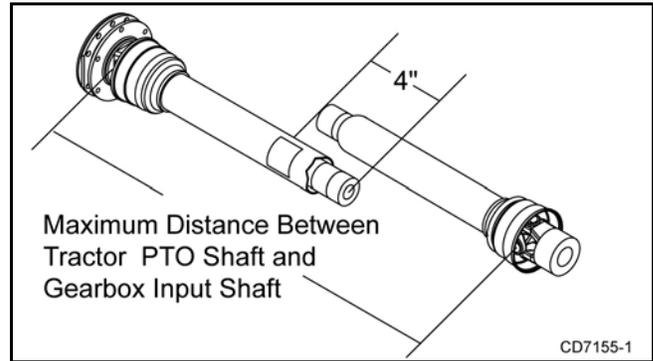


Figure 3. 4 Inch Minimum Overlap

Set the two U-joints to the minimum distance measured (this is the cutters highest point) and check to see if the driveline bottoms out. If driveline is too long follow the instructions to shortening the drive.

Shorten Driveline

1. Separate driveline into two halves and connect them to the tractor PTO and gearbox input shaft.
2. Place the two halves parallel to one another to determine how much the driveline must be shortened. See Figure 4 for example.



Figure 4. Drive Halves Placed Parallel

3. Measure from the end of the upper shield to the base of the bell on the lower shield (A). Add 1-9/16" to dimension (A). See Figure 5.

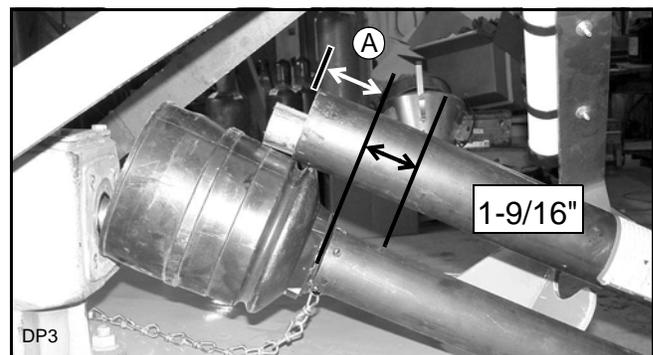


Figure 5. Determine Shield Length

- Cut the shield to the overall dimension (Figure 6).

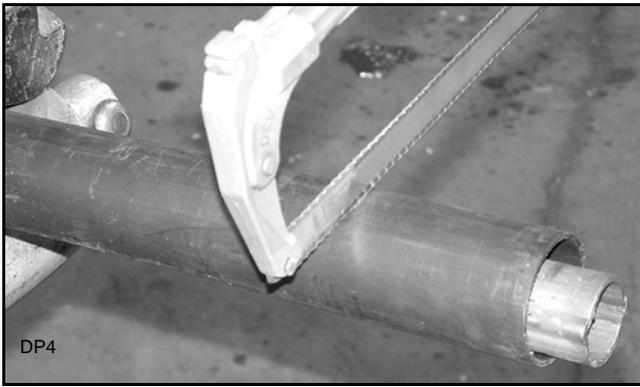


Figure 6. Cut Shield

- Place the cutoff portion of the shield against the end of the shaft and use it as a guide. Mark and cut the shaft. See Figure 7.
- Repeat step 5 for other half of drive.
- File and clean ends of both drive halves.



Figure 7. Cut Shaft to Length

Driveline Interference Check

- Check for clearance between driveline and cutter deck.
- Slowly lift cutter and observe driveline. If clearance between driveline and cutter deck is less than 1 inch, shorten top link or limit upper travel of lower hitch arms. Refer to tractor operator's manual for instructions.

CUTTING HEIGHT ADJUSTMENT

NOTICE

- **Avoid ground contact with blades. Striking ground with blades produces one of the most damaging shock loads a cutter can encounter. If this occurs repeatedly, the cutter, driveline, and gear-boxes will be damaged.**

Cutting height range is from 2" to 12".

When selecting a cutting height, you should consider the area of operation. If the ground is rolling and has mounds the blades could contact, set the cutting height accordingly.

Pull-Type Units

To adjust cutter for normal mowing, select a cutting height (example: 4 inches). Blades are approximately 1-3/4" above bottom of cutter. Dimension A plus 1-3/4" equals the cutting height.

Using any of the optional cutting height mechanisms, raise or lower the tailwheel and set position A to 2-1/4" to achieve a 4" cutting height.

Loosen the jam nut on the attitude rod that runs from the tongue to the tailwheel. Adjust rod in or out until position B is approximately 1/2 inch more than position A. Refer to Figure 8.

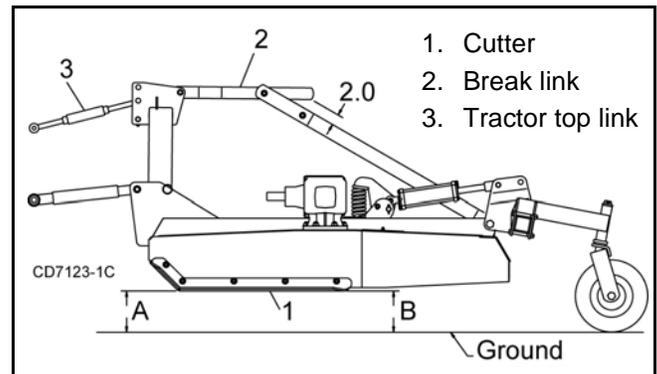


Figure 8. Cutting Height Adjustment

Mounted & Semi-Mounted Units

To adjust cutter for normal mowing, select a cutting height (example: 4 inches). Blades are approximately 1-3/4" above bottom of cutter. Dimension A plus 1-3/4" equals the cutting height.

Adjust the tractor 3-point hitch to a distance of 2-1/4" at position A to obtain a 4" cutting height. See Figure 8.

Using any of the optional height adjustment devices, raise or lower the tailwheel to obtain 2-1/2 to 2-3/4 inches at position B.

Adjust top link to provide 2 inches of clearance between the break link (2) and the rear of the lift links. See Figure 8. This clearance will allow the cutter to float over uneven terrain.

ATTITUDE ADJUSTMENT (PULL-TYPE)

Normal Mowing

For the most economical power use and best cutting results, the cutter should be from 1/2" to 3/4" higher at the rear than at the front.

For grass and weed mowing, adjust cutter to run level or with the front slightly lower.

Shredding

For shredding, it is better to set rear of cutter slightly lower than the front. How much lower depends on the material to be shredded. Determine the best setting for your situation by experimenting. Use a slow ground speed for better shredding.

WHEEL SPACING

Wheels may be adjusted to any position for row crop shredding.

BLADE SELECTION

There are two blade options: standard suction blades and flat double-edge blades.

The standard suction blade is a general use, multi-purpose blade.

The double-edge blade requires less power because it does not mulch or recut material. It is designed for use in areas where blade wear is a problem. Sandy soils are extremely hard on blades.

Blade rotation, viewed from top of cutter, is clockwise for the right crossbar, and counter-clockwise for the left crossbar.

When one cutting surface of a double-edge blade is worn, the opposite one may be used by placing the blade on a crossbar of the opposite rotation. Blades from the right may be used on the left. Blades from the left may be used on the right.

Blades must be moved in pairs. Never use one new blade and one used blade on a crossbar.

TRACTOR OPERATION

Use care when operating around tree limbs and other low objects.

Use care and reduce ground speed on rough terrain. Always watch for hidden hazards.

Being knocked off or falling off tractor can result in serious injury or death.

Only use a tractor with a Roll Over Protective Structure (ROPS) and seat belt. Securely fasten seat belt before starting tractor.

The cutter is operated with tractor controls. Engage the PTO at a low rpm to prevent excessive loads on the cutter drive system. Increase throttle to proper PTO speed (540 rpm or 1000 rpm).

Be sure operator is familiar with all controls and can stop tractor and cutter quickly in an emergency. The operator should give complete, undivided attention to operating tractor and cutter.

OPERATING TECHNIQUE

Power for operating the cutter is supplied by the tractor PTO. Operate PTO at 540 rpm (1000 rpm on "Q" models). Know how to stop the tractor and cutter quickly in an emergency.

Engage PTO at a low engine rpm to minimize stress on the drive system and gearbox. With PTO engaged, raise PTO speed to 540 rpm (1000 rpm on "Q" models) and maintain throughout cutting operation.

Gearbox protection is provided by a slip clutch with replacement fiber disc. The slip clutch is designed to slip when excessive torsional loads occur.

Move slowly into material. Adjust tractor ground speed to provide a clean cut without lugging the tractor engine. Use a slow ground speed for better shredding.

Proper ground speed will depend on the terrain and the material's height, type, and density.

Normally, ground speed will range from 2 to 5 mph. Tall, dense material should be cut at a low speed; thin, medium-height material can be cut at a faster ground speed.

Always operate tractor PTO at proper rpm (540 or 1000) to maintain blade speed and to produce a clean cut.

Under certain conditions tractor tires may roll down some grass and prevent cutting at the same height as the surrounding area. When this occurs, reduce your ground speed but maintain PTO at 540 rpm (1000 rpm on "Q" models). The lower ground speed will permit grass to rebound partially.

Cutter Operation

When beginning operation of the cutter, make sure that all persons are in a safe location. Slowly move into the material with the tractor PTO set at 540 rpm (1000 rpm on "Q" models).

Mowing Tips

WARNING

- **Look down and to the rear and make sure area is clear before operating in reverse.**
- **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.**
- **Watch for hidden hazards on the terrain during operation.**

CAUTION

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

Maximum recommended ground speed for cutting or shredding is 5 miles per hour. Adjust tractor ground speed by using higher or lower gears to provide a clean cut without lugging tractor engine.

Tall material should be cut twice. Cut material higher the first pass. Cut at desired height at 90 degrees the second pass.

Remember, sharp blades produce cleaner cuts and use less power.

Before entering an area, analyze it to determine the best procedure. Consider the height and type of material to be cut and the terrain type (hilly, level or rough, etc.).

TRANSPORTING

WARNING

- **The maximum transport speed for towed and semi-mounted machines is 20 mph (32 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.**

■ **Use additional caution and reduce speed when under adverse surface conditions, turning, or on inclines.**

■ **Never tow this implement with a motor vehicle.**

1. Always transport with cutter in raised, locked position.
2. Raise cutter with hydraulic cylinder.
3. Rotate transport lock over cylinder rod.
4. Lower cylinder against transport lock.
5. To lower cutter for operation, extend hydraulic cylinder. Rotate transport lock back away from cylinder rod. Lower to desired cutting height.

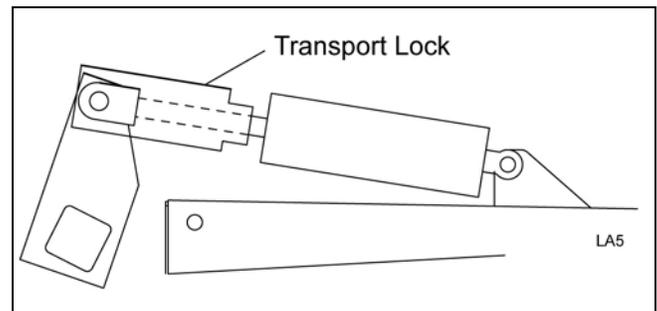


Figure 9. Transport Lock Operation

STORAGE

WARNING

- **Keep children and bystanders away from storage area.**

ON MOUNTED CUTTERS:

- **Disconnect cutter driveshaft and secure up off ground. Raise cutter with 3-point hitch. Place blocks under cutter side skids. Lower cutter onto blocks. Disconnect hydraulic lines to optional cylinder. Disconnect cutter from tractor 3-point hitch and carefully drive tractor away from cutter.**

ON PULL-TYPE CUTTERS:

- **Raise cutter and block securely. Block wheels and raise tongue with jack. Disconnect hydraulic lines to optional cylinder. Disconnect driveline and secure up off the ground.**

PRE-OPERATION CHECK LIST

(OWNER'S RESPONSIBILITY)

- ___ Review and follow all safety rules and safety decal instructions on pages 7 through 13.
- ___ Check that all safety decals are installed and in good condition. Replace if damaged.
- ___ Check that equipment is properly and securely attached to tractor.
- ___ Make sure driveline spring-activated locking pin or collar slides freely and is seated firmly in tractor PTO spline groove.
- ___ Set tractor PTO at correct rpm for your equipment.
- ___ Lubricate all grease fitting locations. Make sure PTO shaft slip joint is lubricated.
- ___ Check that all hydraulic hoses and fittings are in good condition and not leaking before starting tractor. Check that hoses are not twisted, bent sharply, kinked, frayed, or pulled tight. Replace any damaged hoses immediately.
- ___ Raise and lower equipment to make sure air is purged from hydraulic cylinders and hoses.
- ___ Check that all hardware is properly installed and secured.
- ___ Check to ensure blades are sharp, in good condition, and installed correctly. Replace if damaged.
- ___ Make sure tractor ROPS or ROPS cab and seat belt are in good condition. Keep seat belt securely fastened during operation.
- ___ Check that shields and guards are properly installed and in good condition. Replace if damaged.
- ___ Check cutting height, front-to-rear attitude, and top link adjustment.
- ___ Before starting engine, operator must be in tractor seat with seat belt fastened. Place transmission in neutral or park, engage brake and disengage tractor PTO.
- ___ Inspect area to be cut and remove stones, branches, or other hard objects that might be thrown and cause injury or damage.
- ___ Check that belt or chain shielding is in good condition and replace any damaged parts.
- ___ Make sure tractor 3-point lift links do not interfere with hydraulic hoses or driveline throughout full turning range.



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

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

CAUTION

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

■ **Always wear relatively tight and belted clothing to avoid entanglement 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.**

BLOCKING METHOD

WARNING

■ **Never go underneath equipment (lowered to the ground or raised) unless it is properly blocked and secured. Never place any part of the body underneath equipment or between moveable parts even when the engine has been turned off. Hydraulic system leak down, hydraulic system failures, mechanical failures, or movement of control levers can cause equipment to drop or rotate unexpectedly and cause severe injury or death. Follow Operator's Manual instructions for working underneath and blocking requirements or have work done by a qualified dealer.**

To minimize the potential hazards of working underneath the cutter, follow these procedures.

1. Jackstands with a load rating of 1000 lbs or more are the only approved blocking device for this cutter. Install a minimum of four jackstands (shown by Xs in Figure 10) under the cutter before working underneath unit.

Do not position jackstands under wheels, axles, or wheel supports. Components can rotate and cause cutter to fall.

2. Consider the overall stability of the blocked unit. Just placing jackstands underneath will not ensure your safety.

The working surface must be level and solid to support the weight on the jackstands. Make sure jackstands are stable, both top and bottom. Make sure cutter is approximately level.

3. With full cutter weight lowered onto jackstands, test blocking stability before working underneath.
4. If cutter is attached to tractor when blocking, set the brakes, remove key, and block cutter before working underneath.
5. Securely block rear tractor wheels, in front and behind. Tighten tractor lower 3-point arm anti-sway mechanism to prevent side-to-side movement.

LUBRICATION

Do not let excess grease collect on or around parts, particularly when operating in sandy areas.

See Figure 10 for lubrication points and frequency or lubrication based on normal operating conditions. Severe or unusual conditions may require more frequent lubrication.

Use a lithium grease of #2 consistency with a MOLY (molybdenum disulfide) additive for all locations unless otherwise noted. Be sure to clean fittings thoroughly before attaching grease gun. One good pump of most guns is sufficient when the lubrication schedule is followed.

Gearbox Lubrication

1. For gearbox, use a high quality gear oil with a viscosity index of 80W or 90W and an API service rating of GL-4 or -5 in gearboxes.
2. Fill gearbox until oil runs out the side plug on gearbox. Check gearbox daily for evidence of leakage, and contact your dealer if leakage occurs.

Driveline Lubrication

1. Lubricate the driveline slip joint every ten operating hours. Failure to maintain proper lubrication could result in damage to U-joints, gearbox, and driveline.
2. Lower cutter to ground, disconnect driveline from tractor PTO shaft, and slide halves apart but do not disconnect from each other.
3. Apply a bead of grease completely around male half where it meets female half. Slide drive halves over each other several times to distribute grease.

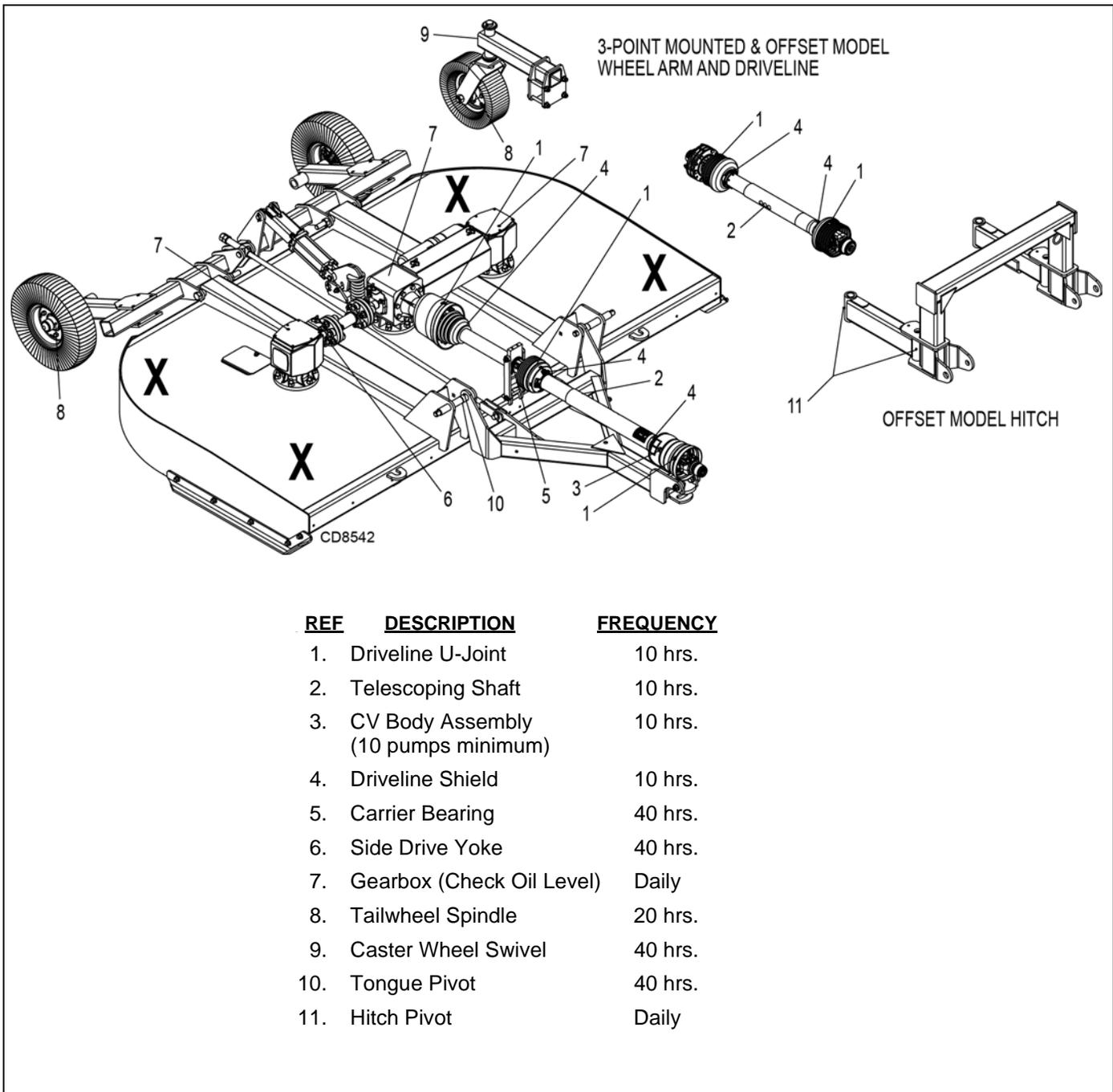


Figure 10. Jackstand Placement and Lubrication Points

BLADE SERVICING

Removing Blades (Figure 11)

NOTICE

■ If blade pin (12) is seized in crossbar and extreme force will be needed to remove it, support crossbar from below to prevent gearbox damage.

1. Disconnect driveline from tractor PTO.
2. Open blade access cover and align crossbar (8) with blade access hole in the cutter frame. Remove cap screw (32), blade pin lock clip (16), keyhole plate (15), and shims (13 & 14). Carefully drive blade pin (12) out of crossbar.
3. Rotate crossbar (8) and repeat for opposite blade.

Installing Blades

CAUTION

■ Your dealer can supply genuine replacement blades. Substitute blades may not meet original equipment specifications and may be dangerous.

NOTICE

■ Crossbar rotation has counterclockwise rotation on left gearbox and clockwise rotation on the right gearbox when looking down on cutter. Be sure to install blade cutting edge to lead in correct rotation.

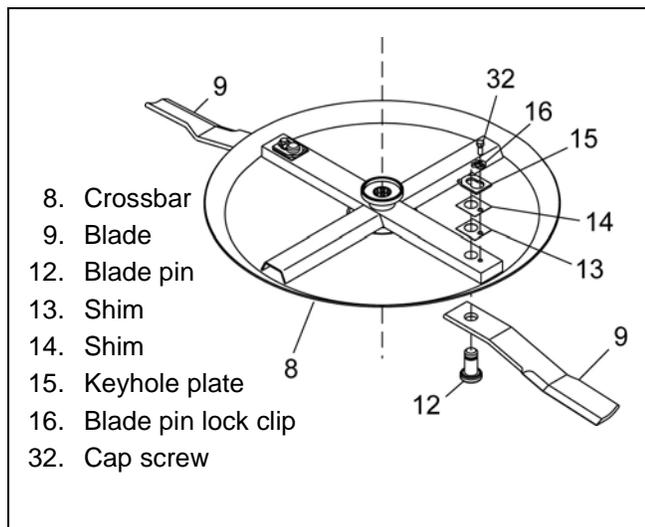


Figure 11. Blade Assembly

NOTE: Always replace or sharpen both blades at the same time.

1. Inspect blade pin (12) for nicks or gouges, and if you find any, replace the blade pin.

2. Insert blade pin through the blade (9). Blade should swivel on blade pin; if it doesn't, determine the cause and correct.
3. Align crossbar (8) with blade access hole in cutter frame. Apply a liberal coating of Never Seez[®] or equivalent to blade pin and crossbar hole. Make sure blade offset is away from cutter. Push blade pin through crossbar. Pin should rotate freely prior to installing blade clip (16).

4. Install shims (13 & 14) over blade pin.

NOTE: Only use enough shims to allow keyhole plate (15) to slide into blade pin groove.

5. Install blade clip (16) over keyhole plate and into blade pin groove.
6. Secure into position with cap screw (32). Torque cap screw to 85 lbs ft.
7. Repeat steps for opposite side.

NOTE: Blade should be snug but should swivel on pin without having to exert excessive force. Keep any spacers not used in the installation as replacements or for future installation.

Sharpening Blades

NOTICE

■ When sharpening blades, grind the same amount on each blade to maintain balance. Replace blades in pairs. Unbalanced blades will cause excessive vibration, which can damage gearbox bearings. Vibration may also cause structural cracks to cutter.

1. Sharpen both blades at the same time to maintain balance. Follow original sharpening pattern.
2. Do not sharpen blade to a razor edge—leave at least a 1/16" blunt edge.
3. Do not sharpen back side of blade.

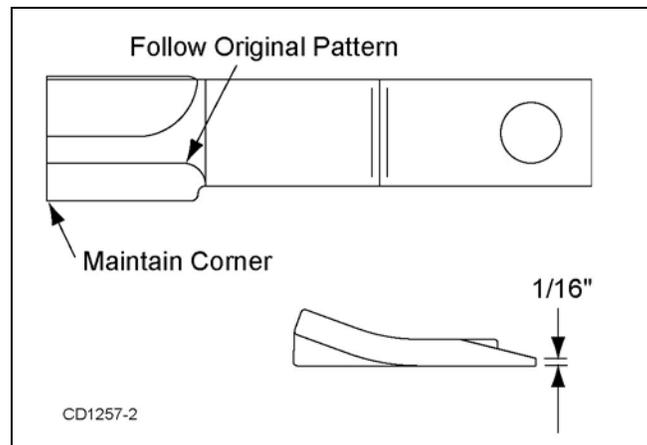


Figure 12. Sharpen Blade Cutting Edge

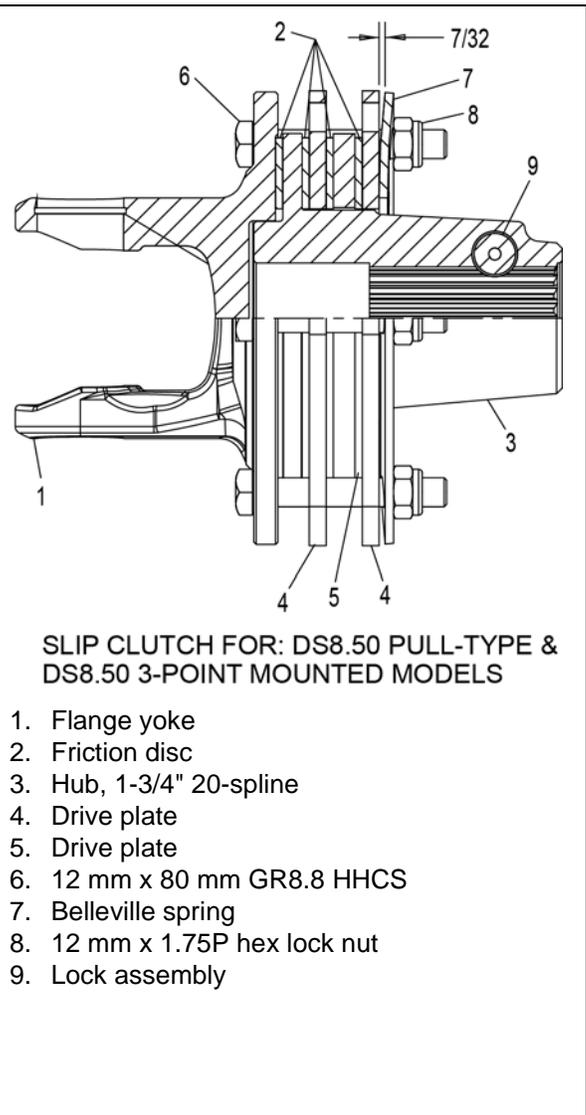
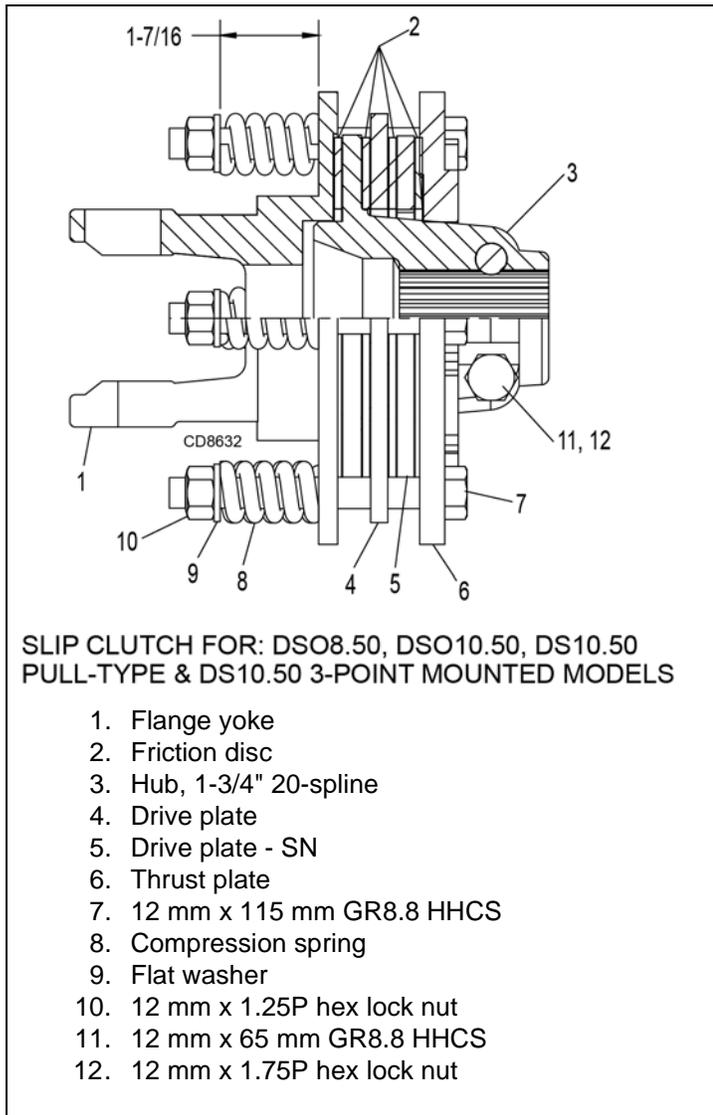


Figure 13. Slip Clutch Assembly

SLIP CLUTCH ADJUSTMENT

The slip clutch is designed to slip so that the gearbox and drive are protected if the cutter strikes an obstruction.

A new slip clutch or one that has been in storage over the winter may seize. Before operating the cutter, make sure it will slip by performing the following operation:

Compression Spring Clutch (DSO8.50, DSO10.50 & DS10.50 Pull-Type & DS10.50 3-Point Mounted Models)

1. Turn off tractor engine and remove key.
2. Remove driveline from tractor PTO.
3. Loosen six 12 mm cap screws (7) to remove all tension from compression spring (8).

4. Hold clutch hub (3) solid and turn shaft to make sure clutch slips.
5. If clutch does not slip freely, disassemble and clean the flange yoke (1), clutch hub (3), drive plate (5), and thrust plate faces (6).
6. Reassemble clutch.
7. Compress each of the six compression springs (8) by tightening the six cap screws (7) and lock nuts (10). The compression springs should be compressed to a height of 1-7/16", not including washer (9). The minimum spring height is 1.36". See Figure 13.
8. If a clutch continues to slip when the springs are compressed to 1.36", check friction discs (2) for excessive wear. Discs are 1/8" when new. Replace discs after 1/16" wear. Minimum disc thickness is 1/16".

Belleville Spring Clutch (DS8.50 Pull-Type and DS8.50 3-Point Mounted Models)

1. Turn off tractor engine and remove key.
2. Remove driveline from tractor PTO.
3. Loosen six 12 mm cap screws (6) to remove all tension from Belleville spring plate (7).
4. Hold clutch hub (3) solid and turn shaft to make sure clutch slips.
5. If clutch does not slip freely, disassemble and clean the thrust plate faces (4), flange yoke (1), and clutch hub (3).
6. Reassemble clutch.
7. Tighten Belleville spring (7) until the gap between the spring and the thrust plate (4) is 7/32". Do not set the gap smaller than 3/16".
8. If a clutch continues to slip when the spring is compressed to a 3/16" gap, check friction discs (2) for excessive wear. Discs are 1/8" when new. Replace disc after 1/16" wear. Minimum disc thickness is 1/16".

SHIELDING REPAIR

⚠ DANGER

■ Full chain or rubber shielding is required for all non-agricultural mowing. Full shielding is also recommended for all agricultural use to further reduce the risk of thrown objects.

Rear Band

Inspect rear band each day of operation and replace if bent, cracked or broken.

Repairing Rubber Shielding

Inspect rubber shielding each day of operation and replace if cracked, broken or excessively worn.

Repairing Optional Chain Shielding

Inspect chain shielding each day of operation and replace any broken or missing chains as required.

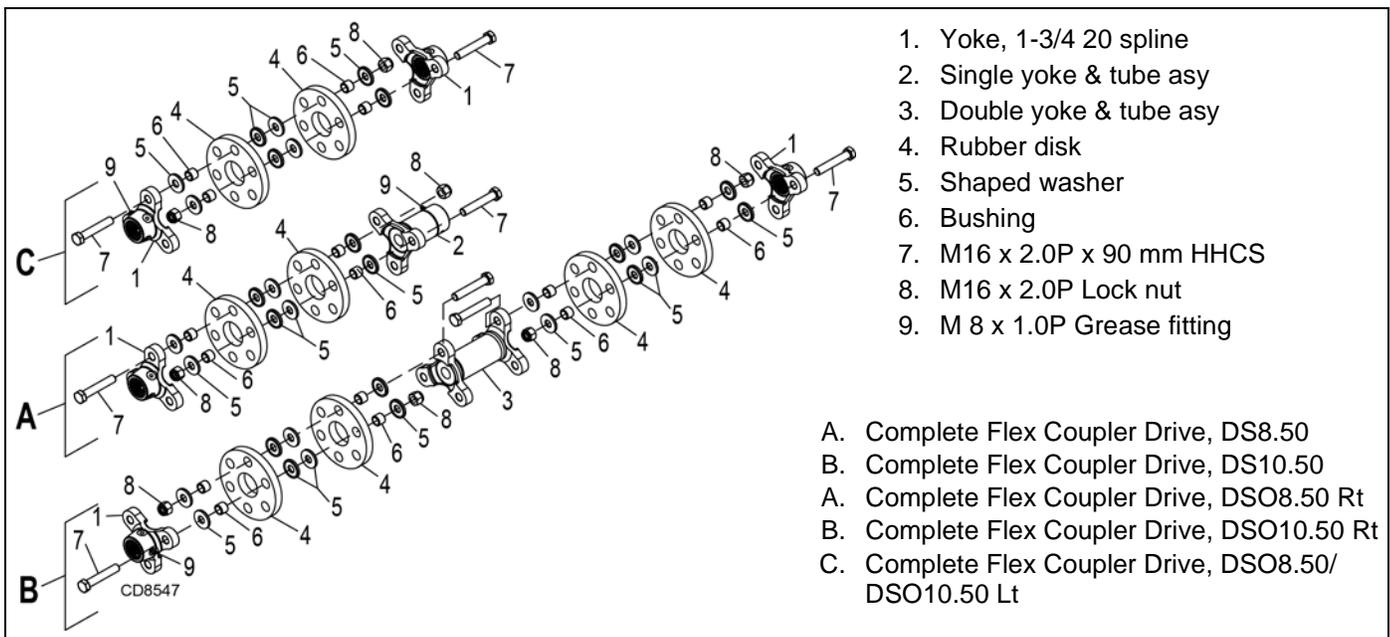


Figure 14. Flexible Couplers

FLEXIBLE COUPLER RUBBER DISK REPLACEMENT

The flexible coupler side drive is designed to flex when striking heavy objects or during start-up to protect gear-boxes. The rubber disks will wear out over time and require replacement much like slip clutch disks. To maximize rubber disk life, lower tractor engine speed to an idle when engaging the PTO and avoid striking the ground with cutter blades.

Periodically inspect the disks for signs of cracking. A disk may run for some time after a crack starts but this is the first sign that disk replacement is required in the future.

To replace the disks, remove hardware items 5, 6, 7, and 8. Remove sleeves (6) from old disk and install in new disk. Reassemble and torque bolts to 85 lbs-ft. See Figure 14. Take special care not to rotate gearbox shaft and throw blades out of time. If rubber disks have failed and blades are hitting, you will need to re-time the blades per instructions on page 36.

SERVICING TIRES SAFELY

Used Aircraft Tires (Figure 15)

! WARNING



■ Explosive separation of tire and rim parts can cause serious injury or death. Release all air pressure before loosening bolts.

Do not attempt to mount a tire unless you have the proper equipment and experience to perform the job.

Always maintain the correct tire pressure. Do not inflate tires above the recommended pressure. Never weld or heat a wheel and tire assembly. The heat can cause an increase in air pressure and result in a tire explosion. Welding can structurally weaken or deform the wheel.

When inflating tires, use a clip-on chuck and an extension hose long enough to allow you to stand to the side — not in front of or over the tire assembly. Use a safety cage if available.

Check wheels for low pressure, cuts, bubbles, damaged rims, or missing lug bolts and nuts.

Never remove split rim assembly hardware (A) with the tire inflated.



Figure 15. Split Rim Tire Servicing

CLEANING

After Each Use

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

Periodically or Before Extended Storage

- Clean large debris such as clumps of dirt, grass, crop residue, etc. from machine.
 - Remove the remainder using a low-pressure water spray.
1. Be careful when spraying near scratched or torn safety decals or near edges of decals as water spray can peel decal off surface.
 2. Be careful when spraying near chipped or scratched paint as water spray can lift paint.
 3. If a pressure washer is used, follow the advice of the pressure washer manufacturer.
- Inspect machine and replace worn or damaged parts.
 - Sand down scratches and the edges of areas of missing paint and coat with Woods spray paint of matching color (purchase from your Woods dealer).
 - Replace any safety decals that are missing or not readable (supplied free by your Woods dealer). See Safety Decals section for location drawing.

TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
Does not cut	<ul style="list-style-type: none"> Dull blades Worn or broken blades Incorrect PTO speed Ground speed too fast Drive not functioning (blades do not turn when PTO is running) Gearbox malfunction Excessive clutch slippage Incorrect blade direction 	<ul style="list-style-type: none"> Sharpen blades. Replace blades. (Replace in pairs only.) Set at rated PTO speed. Reduce ground speed. Check drive shaft connection. Check gearbox. Repair gearbox. Adjust clutch. Check to be sure blade edge is correct for direction of rotation.
Streaks or ragged cut	<ul style="list-style-type: none"> Broken or worn blades Attitude incorrect Ground speed too fast Excessive cutting height Excessive lush and tall vegetation 	<ul style="list-style-type: none"> Replace or sharpen blades. Level machine. Reduce ground speed. Lower cutting height. (Note: Set height so blades do not frequently hit ground.) Recut at 90° to first pass.
Excessive side skid wear	<ul style="list-style-type: none"> Running with skids continuously on ground 	<ul style="list-style-type: none"> Raise cutting height or adjust.
Excessive clutch slippage	<ul style="list-style-type: none"> Clutch out of adjustment Clutch discs worn; wear stops contacting opposite plate Blades hitting ground 	<ul style="list-style-type: none"> Adjust clutch. Replace discs. Raise cutting height.
Vibration	<ul style="list-style-type: none"> Broken blade Bearing failure Hitch length incorrect Universal drive Flexible coupler is binding 	<ul style="list-style-type: none"> Replace blades in pairs. Check gearbox shafts for side play. Reset hitch length. Adjust pedestal bearing height to be parallel to ground. Lubricate grease fitting on spline yoke.
Blades hitting deck	<ul style="list-style-type: none"> Bent blades or crossbar 	<ul style="list-style-type: none"> Replace bent blades or crossbar.
Blades hitting each other	<ul style="list-style-type: none"> Side drive failure 	<ul style="list-style-type: none"> Retime blades, or replace rubber coupler disks. See page 36.
Unit will not raise	<ul style="list-style-type: none"> Low oil 	<ul style="list-style-type: none"> Add hydraulic oil.

NOTES

DEALER SERVICE

The information in this section is written for dealer service personnel. The repair described here requires special skills and tools. If your shop is not properly equipped or your mechanics are not properly trained in this type of repair, you may be time and money ahead to replace complete assemblies.

⚠ WARNING

- **Before working underneath, disconnect drive-line, raise cutter, lock in transport position, and block cutter securely. Hydraulic system leak down and failure of mechanical or hydraulic system can cause equipment to drop.**
- **Keep all persons away from operator control area while performing adjustments, service, or maintenance.**

⚠ CAUTION

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

GEARBOX MAINTENANCE

NOTE: Read this entire section before starting any repair. Many steps are dependent on each other.

1. Fill gearbox with SAE 80W or 90W gear lube until it runs out the side level plug.

NOTE: Repair to this gearbox is limited to replacing bearings, seals, and gaskets. Replacing gears, shafts, and a housing is not cost effective. Purchasing a complete gearbox is more economical.

2. Inspect gearbox for leakage and bad bearings. Leakage is a very serious problem and must be corrected immediately. Bearing failure is indicated by excessive noise and side-to-side or end-play in gear shafts.

Seal Replacement

Recommended sealant for gearbox repair is Permatex® Aviation 3D Form-A-Gasket or equivalent.

Leakage can occur at the vertical or horizontal gaskets and shaft seals.

Leakage at the horizontal gasket or seal can be repaired without removing the gearbox from the cutter.

Seal Installation

NOTE: Proper seal installation is important. An improperly installed seal will leak.

1. Clean area in housing where seal outer diameter (OD) seats. Apply a thin coat of Permatex.
2. Inspect area of shaft where seal seats. Remove any burrs or nicks with an emery cloth.
3. Lubricate gear shaft and seal lips.
4. Place seal squarely on housing, spring-loaded lip toward housing. Select a piece of pipe or tubing with an OD that will sit on the outside edge of the seal but will clear the housing. Tubing with an OD that is too small will bow seal cage and ruin seal.
5. Carefully press seal into housing, avoiding distortion to the metal seal cage.

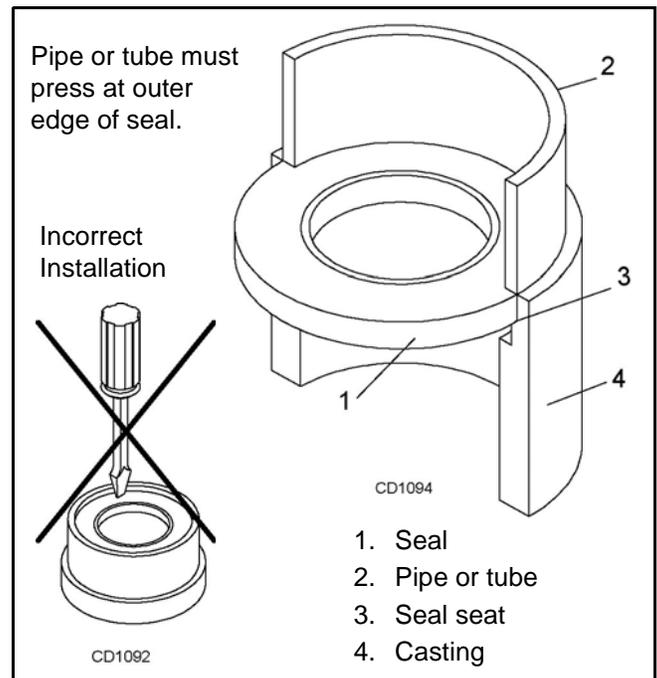


Figure 13. Seal Installation

Vertical Shaft Seal Repair (Spindle Gearbox)

Refer to Figure 14.

1. Disconnect and remove the rear driveline from the gearbox.
2. Remove vent plug (24) and siphon gear lube from housing through this opening.
3. Remove crossbar (see Remove cotter pin (34) and castle nut (33) from bottom of crossbar., page 34).

4. Remove protective seal (8) and vertical shaft seal (18). Replace seal (18) with new seal (see Seal Replacement page 29).

Vertical seal should be recessed in housing. Horizontal seal (19) should be pressed flush with outside of housing.

NOTE: Distortion to seal cage or damage to seal lip will cause seal to leak.

5. Fill gearbox with SAE 80W or 90W gear lube until it runs out the level plug.
6. Remove and replace any seal damaged in installation.

Horizontal Shaft Seal Repair (Figure 14)

1. Disconnect and remove the rear driveline from the gearbox.
2. Remove vent plug (24) and siphon gear lube from housing through this opening.
3. If the leak occurred at either end of horizontal shaft, remove oil cap (20) and/or oil seal (19). Replace with new one (refer to Seal Installation, page 29).
4. Fill gearbox with SAE 80W or 90W gear lube until it runs out the level plug.

SPINDLE GEARBOX REPAIR (Figure 14)

NOTE: Replacing gears, shafts, bearings, and seals may not be cost effective. Purchasing a complete gearbox may be more economical.

Remove Gearbox From Cutter

1. Disconnect and remove flex side driveline from the gearbox.
2. Remove cotter pin and nut from vertical shaft and remove crossbar (see Remove cotter pin (34) and castle nut (33) from bottom of crossbar., page 34).
3. Remove breather level plug (24) and siphon gear lube from housing through this opening.
4. Remove the six bolts that attach gearbox to cutter and remove gear.

Disassemble Gearbox

1. Remove plug from side of gearbox and pour out gear oil.
2. Remove oil cap (20) (to be replaced).
3. Remove snap ring (10) and shim (13) from input shaft (3).
4. Support gearbox in hand press and push on input shaft (3) to remove bearing (7).
5. Remove six cap screws (23) and top cover (22) from housing. Remove gear (1) from inside housing.

6. Remove oil seal (19) from front of housing (to be replaced).
7. Remove snap ring (10) and shim (13) from front of housing (2).
8. Remove input bearing (7) by using a punch and hammer from outside of housing.
9. Support housing in vise in a horizontal position.
10. The castle nut (15), cotter pin (25), and hub are already removed with the stump jumper/crossbar. Remove the protective seal (8), and oil seal (18).
11. Remove cotter pin (9), castle nut (14), and washer (17) from output shaft (4).
12. Remove output shaft (4) by using a punch and hammer and tap on top to drive down. Remove gear (5) and shim (16) from inside housing.
13. Remove bottom bearing (6) by using a punch and hammer from the top, outside the housing.
14. Support housing upside down (top cover surface) and remove bottom bearing (6) by using a punch and hammer from the bottom side of the housing.
15. Inspect gears for broken teeth and wear. Some wear is normal and will show on loaded side. Forged gear surfaces are rough when new. Check that wear pattern is smooth.
16. Inspect vertical and horizontal shafts for grooves, nicks, or bumps in the areas where the seals seat. Resurface any damage with emery cloth.
17. Inspect housing and caps for cracks or other damage.

Assemble Gearbox

1. Clean housing, paying specific attention to areas where gaskets will be installed.
2. Wash housing and all components thoroughly. Select a clean area for gearbox assembly. Replace all seals, bearings, and gaskets. All parts must be clean and lightly oiled before reassembling.
3. Insert both output bearings (6) in the housing, using a round tube of the correct diameter and a hand press.
4. Slide output shaft (4) through both bearings (6) until it rests against top bearing (6).
5. Slide shim (16) over output shaft (4).
6. Press gear (5) onto output shaft (4) and secure with washer (17), castle nut (14), and cotter pin (9).
7. Apply grease to lower seal lips (18) and press seal (18) over output shaft (4), using a tube of the correct diameter. Be sure not to damage seal lip.
8. Press in housing so that seal is recessed. Press protective seal (8) until seated flush with housing. Verify that the seal (8) is seated correctly.

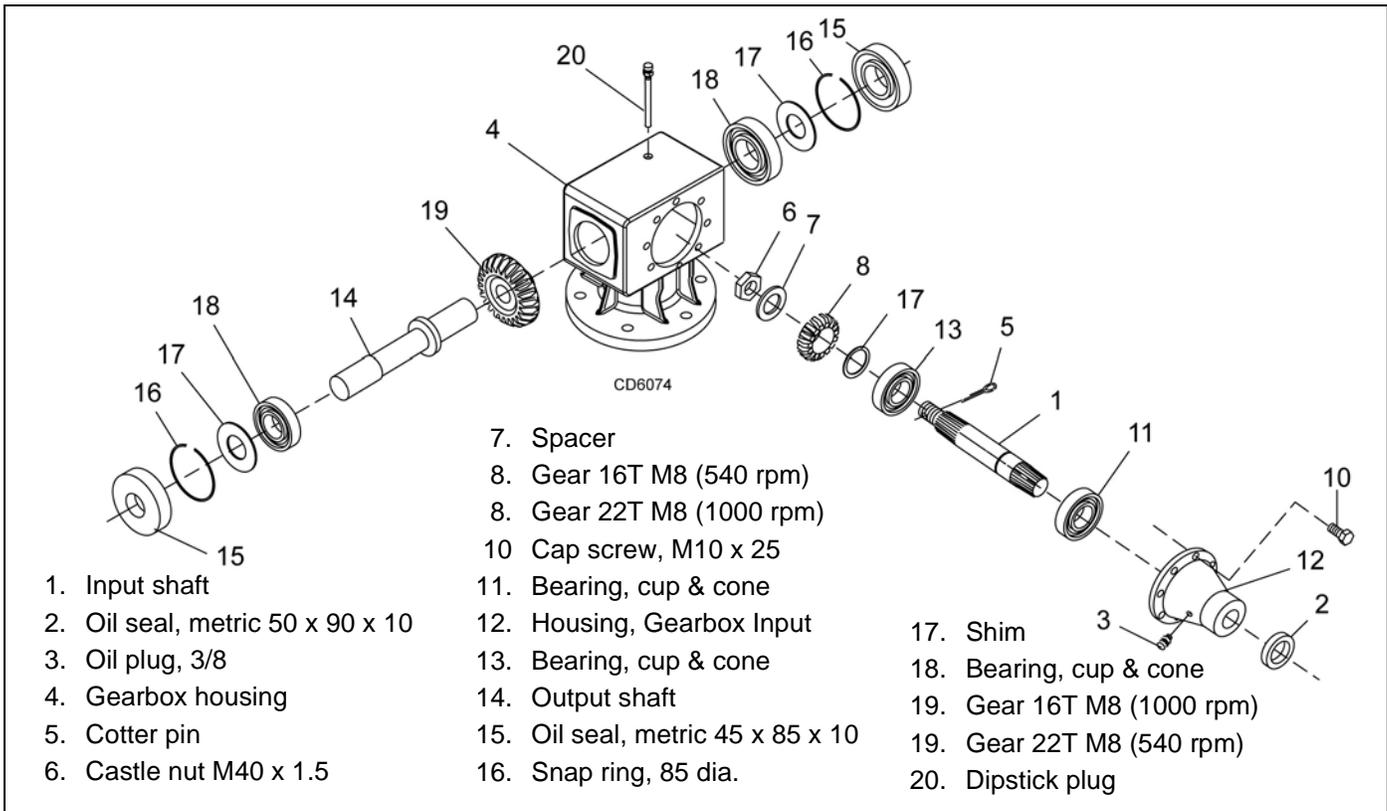


Figure 15. Splitter Gearbox Assembly

SPLITTER GEARBOX REPAIR (Figure 15)

NOTE: Replacing gears, shafts, bearings, and seals may not be cost effective. Purchasing a complete gearbox may be more economical.

Remove Gearbox from Cutter

1. Disconnect driveline from the tractor PTO and remove it from center gearbox.
2. Remove dipstick plug (20) and siphon gear lube from housing through this opening.

NOTE: Flex coupler driveline can not be removed when center and side gearboxes are bolted in place.

3. Disconnect and remove flex coupler driveline from side of gearbox by:
 - a. Removing six 3/4 x 2-1/2 cap screws and 3/4 hex nuts from around center gearbox
 - b. Removing tapered cap screw and hex nut from flex coupler yoke
 - c. Rotating gearbox and slide flex coupler from gearbox shaft.

Disassemble Gearbox (Figure 15)

1. Remove breather plug from top of gearbox.
2. Remove plug (3) from side of input housing (12) and pour out gear oil.

3. Remove eight 10 mm cap screws (10) from around input housing (12). Remove input shaft assembly and housing.
4. Remove oil seals (15) (to be replaced) from both sides of output shaft (14).
5. Remove snap rings (16) and shims (17) from both sides of output shaft (14).
6. Support gearbox in a handpress and push on left side of output shaft (14) to remove right bearing (18) and gear (19) from housing.
7. Support housing in vise in a horizontal position.
8. Remove left bearing (18) by using a punch and hammer from right side of housing. Drive bearing out of housing.
9. Remove cotter pin (5), castle nut (6), shim (7), gear (8) and shim (17) from input shaft (1).
10. Remove seal (2) (to be replaced) from input housing (12).
11. Support input housing in a vise and remove bearing (11) by using a punch and hammer. Drive bearing out of housing.
12. Inspect gears for broken teeth and wear. Some wear is normal and will show on loaded side. Forged gear surfaces are rough when new. Check that wear pattern is smooth.

13. Inspect vertical and horizontal shafts for grooves, nicks, or bumps in the areas where the seals seat. Resurface any damage with emery cloth.
14. Inspect housing and caps for cracks or other damage.

Assemble Gearbox (Figure 15)

1. Clean housing, paying specific attention to areas where gaskets will be installed.
2. Wash housing and all components thoroughly. Select a clean area for gearbox assembly. Replace all seals, bearings, and gaskets. All parts must be clean and lightly oiled before reassembling.
3. Press bearing (18) in left side of gearbox housing using a round tube of the same diameter and a handpress.
4. Place gear (19) inside of gearbox housing.
5. Insert output shaft (14) through opening in right side of gearbox, gear (19), and bearing (18) on left side of housing.
6. Place second bearing (18) over output shaft on right side and press into housing, using a round tube of the same diameter and a handpress.
7. Install shim (17) and snap ring (16) to right side of housing to secure output shaft in housing.
8. Place seal (15) over output shaft on right side and press into housing, using a round tube of the same diameter and a handpress.
9. Install shim (17) and snap ring to left side of housing.
10. Place seal (15) over output shaft on left side and press into housing, using a round tube of the same diameter and a handpress.

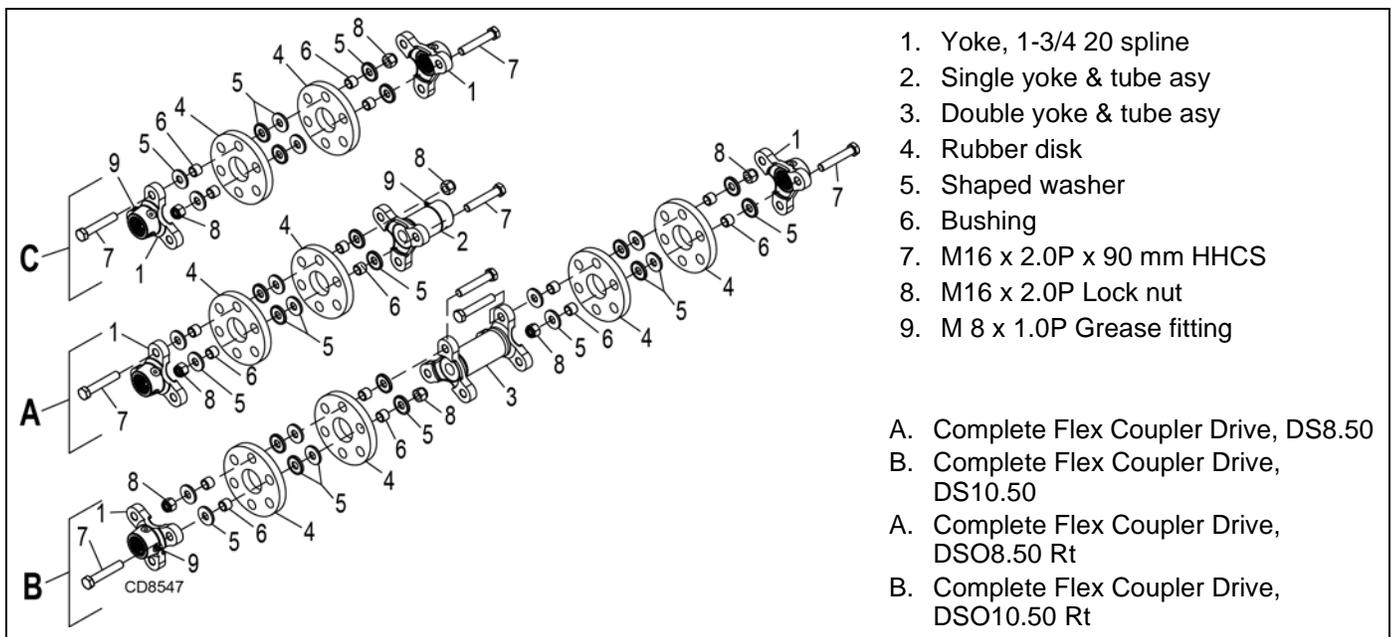
11. Press bearings (11) into input housing (12), using a round tube of the same diameter and a handpress.
12. Assemble bearing (13), shim (17), gear (8), shim (7), and castle nut (6) to input shaft (1).
13. Align groove in castle nut (6) and hole in end of shaft and insert cotter pin (5).
14. Insert input shaft assembly into gearbox housing and align teeth of the two gears.
15. Place input housing (12) over input shaft (1) and secure into position using cap screws (10).
16. Place seal (2) over input shaft on cover and press into housing, using a round tube of the same diameter and a handpress.
17. Check gearbox housing for leaks by plugging all holes except one. Apply 4 psi compressed air and immerse the gearbox in water to verify that there are no leaks.
18. Remove gearbox from water and dry off with compressed air. Add SAE 80W or 90W EP oil until it runs out of level hole in front cover. Tighten all plugs.

Reinstall Gearbox

NOTE: Gearbox is heavy: do not attempt to move without mechanical assistance.

1. Install flex coupler driveline between side gearboxes and center gearbox.
2. Set gearbox on cutter and fasten with bolts and nuts. Torque bolts to 300 lbs-ft.

SIDE DRIVE SERVICE



1. Yoke, 1-3/4 20 spline
2. Single yoke & tube asy
3. Double yoke & tube asy
4. Rubber disk
5. Shaped washer
6. Bushing
7. M16 x 2.0P x 90 mm HHCS
8. M16 x 2.0P Lock nut
9. M 8 x 1.0P Grease fitting

- A. Complete Flex Coupler Drive, DS8.50
 B. Complete Flex Coupler Drive, DS10.50
 A. Complete Flex Coupler Drive, DSO8.50 Rt
 B. Complete Flex Coupler Drive, DSO10.50 Rt

Figure 16. Side Drive Assembly

The drives between the center and side gearboxes contain rubber shock-absorbing discs. To service or remove the side drives or remove a gearbox, the flexible coupling must be disassembled. See page 25 for rubber disk replacement.

Remove end yokes by removing nuts (8) and sliding bolt (7) inward to clear yoke. Do not remove bolt unless rubber disks (4) are to be serviced. Remove complete center section by lifting straight up on center shaft (3). The outer yoke can be slid off gearbox shaft. The inner yoke is held by two set screws.

Reassemble shaft as shown in Figure 16. Use the special formed washer (5) and bushings (6) between the rubber disks (4) and under bolt head or nut near rubber disc. Tighten nuts (8) and bolts (7) to 85 lbs-ft. Tighten set screw.

NOTE: Crossbar must be re-timed anytime a crossbar or a side drive is disconnected. (See page 36.)

CROSSBAR

Crossbar Removal

1. Access bottom side of cutter for crossbar removal. See BLOCKING METHOD, page 21.

NOTE: You will need to use either the puller screw (Item 6, Figure 18) or a small hydraulic jack to remove the crossbar.

2. Remove blades as shown in Figure 17.

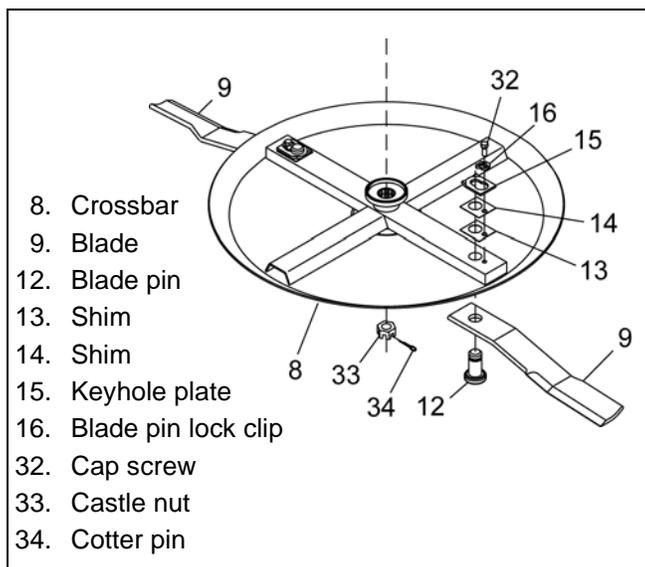


Figure 17. Blade Removal

3. Remove cotter pin (34) and castle nut (33) from bottom of crossbar.
4. **Refer to Figure 18.** Attach a clevis (1) to each end of crossbar, using blade pins, spacers, keyhole plates, and blade pin clips.
5. Position tube assembly (5) with threaded nut toward crossbar for puller screw removal or down for hydraulic jack removal.
6. For removal with puller screw, attach tube (5) to each clevis with bolts (2) and nuts (3). Place pad (4) in nut and thread puller screw (6) into nut from bottom. Tighten until pad is solid against gearbox shaft. For best results, strike head of puller screw with a hammer while tightening with a wrench.
7. For removal with a jack, attach tube to each clevis with puller links (7), bolts (2), and nuts (3). Place jack on tube with end of jack pressing against gearbox shaft. Slowly apply force with jack.

NOTE: Hydraulic jack will not operate if tipped more than 90-degrees. Use care to prevent bending crossbar during removal.

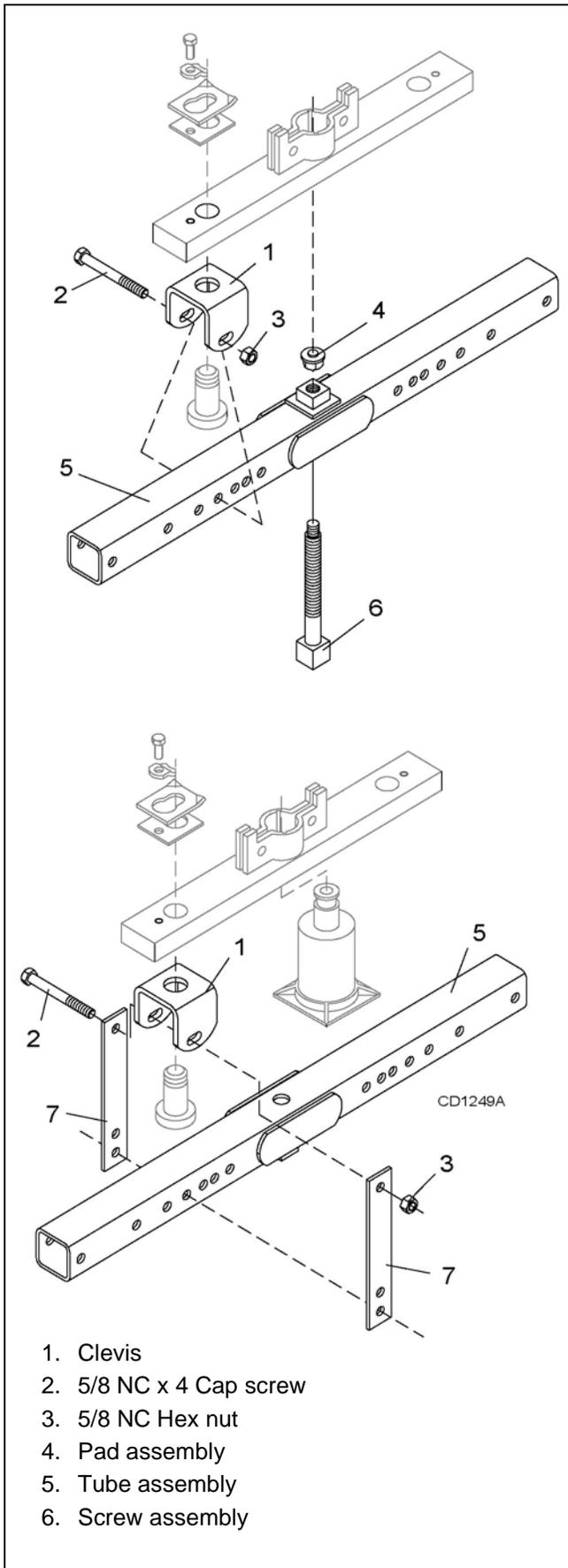


Figure 18. Crossbar Removal

Crossbar Installation

1. Using emery cloth (220 or finer), remove surface rust, and foreign material from hub, splined gearbox vertical shaft, and crossbar. See Figure 19.

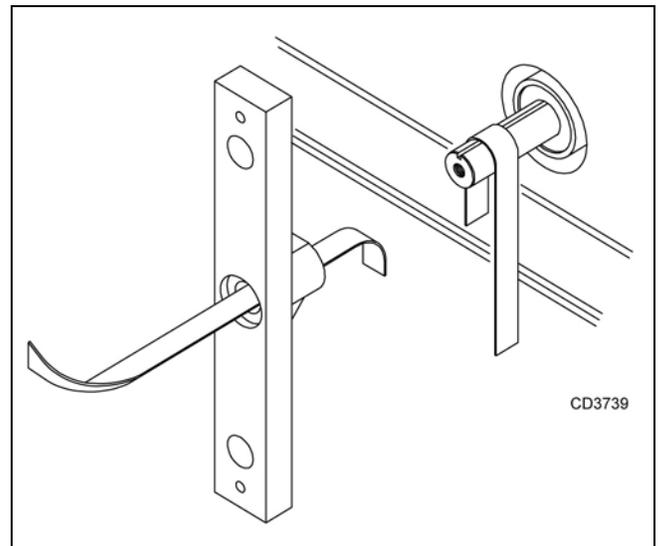


Figure 19. Typical Crossbar and Gearbox Shaft

2. Install crossbar (2) on splined shaft. See Figure 20. Install nut (3). Torque nut to 450 lbs-ft. Install cotter pin.

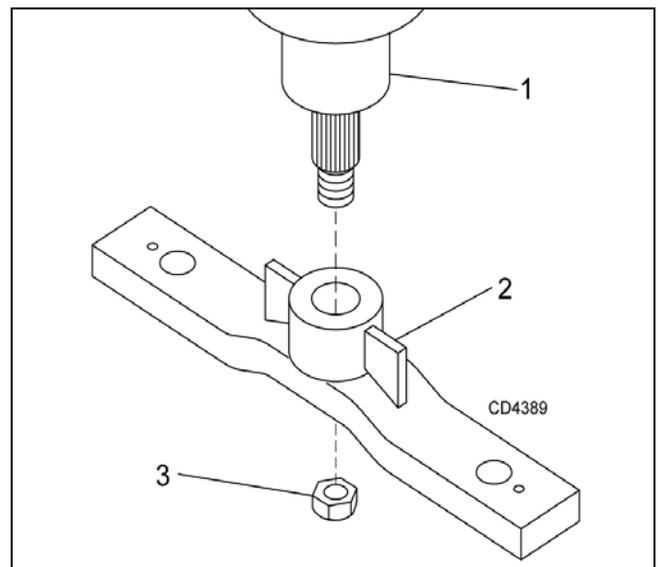


Figure 20. Crossbar Installation

Crossbar Timing

Crossbar must be re-timed anytime a crossbar or a side drive is disconnected.

1. To re-time crossbars, position bars as shown in Figure 21.
2. The right crossbar will be at right angles to the front of the cutter.
3. Measure from the front of the cutter to the blade pin on left crossbar.
4. Hold crossbars in position while connecting the side drivelines.

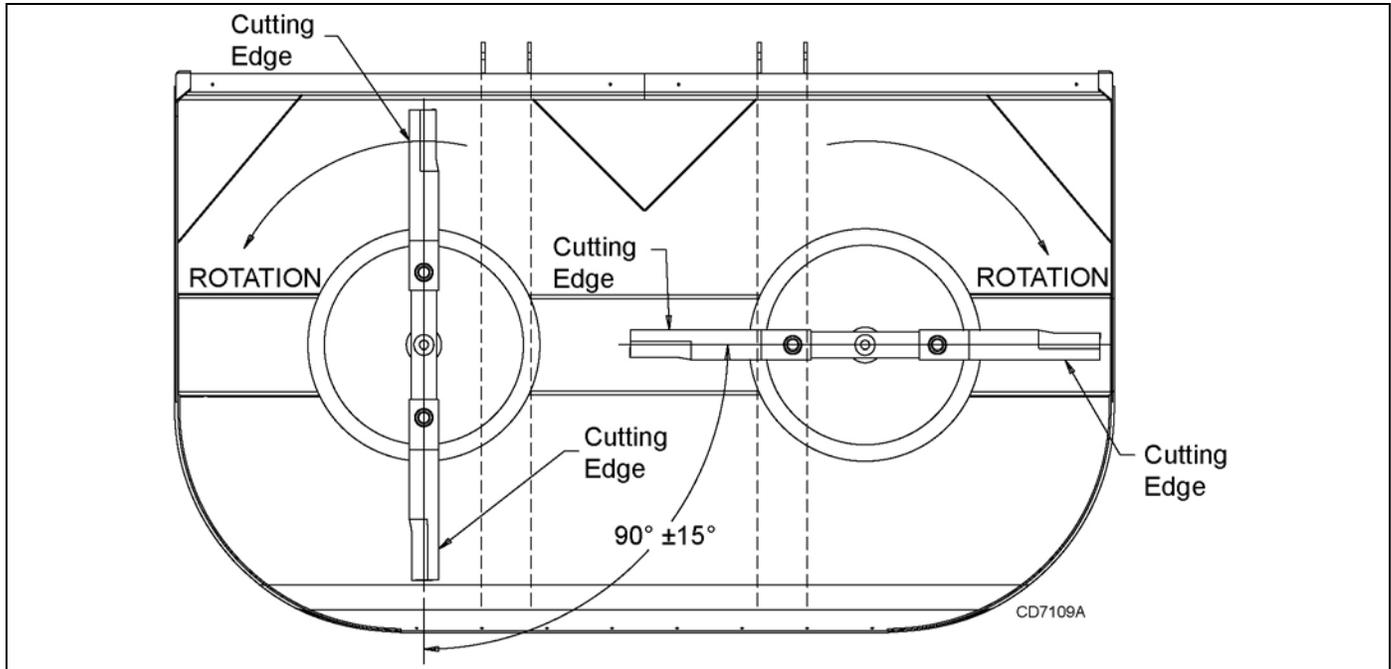


Figure 21. Crossbar Timing - Bottom View

UNIVERSAL JOINT REPAIR

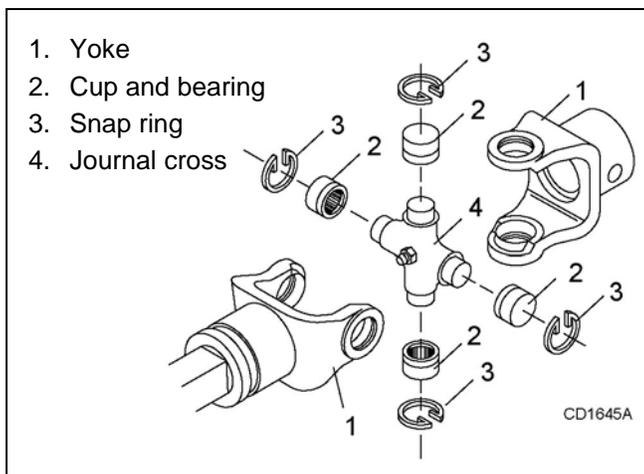


Figure 22. Universal Joint Exploded View

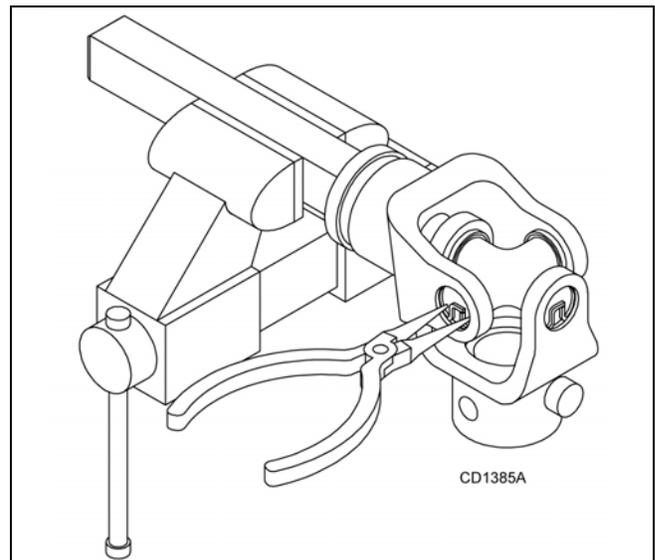


Figure 23. Remove Snap Ring

U-Joint Disassembly

1. Remove external snap rings from yokes in four locations as shown in Figure 22.

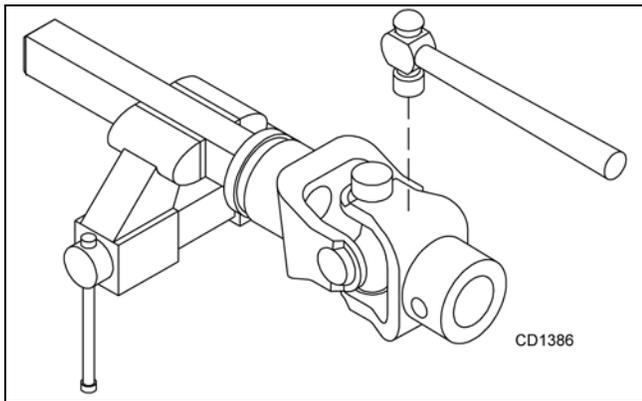


Figure 24. Remove Cups

2. With snap rings removed, support drive in vise, hold yoke in hand and tap on yoke to drive cup up out of yoke. See Figure 24.

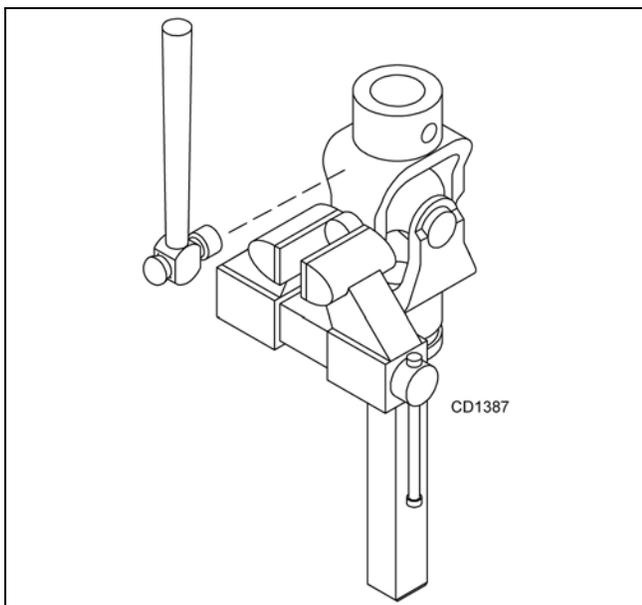


Figure 25. Remove Cups

3. Clamp cup in vise as shown in Figure 25 and tap on yoke to completely remove cup from yoke. Repeat Step 2 and Step 3 for opposite cup.

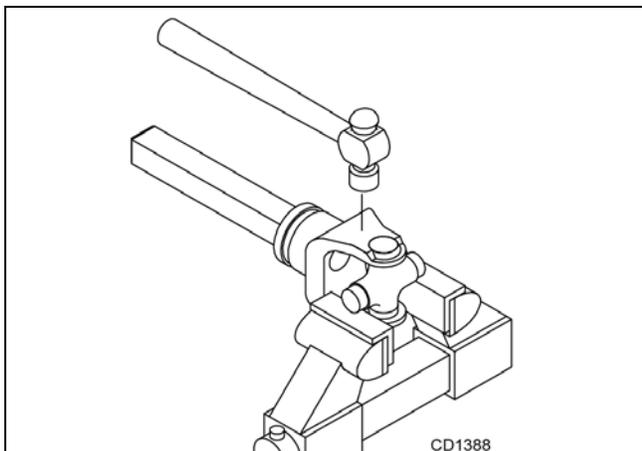


Figure 26. Remove Cups

4. Place universal cross in vise as shown in Figure 26 and tap on yoke to remove cup. Repeat Step 3 for final removal. Drive remaining cup out with a drift and hammer.

U-Joint Assembly

1. Place seals securely on bearing cups. Insert cup into yoke from outside and press in with hand pressure as far as possible. Insert journal cross into bearing cup with grease fitting away from shaft. Be careful not to disturb needle bearings. Insert another bearing cup directly across from first cup and press in as far as possible with hand pressure.
2. Trap cups in vise and apply pressure. Be sure journal cross is started into bearings and continue pressure with vise, squeezing in as far as possible. Tapping the yoke will help.
3. Seat cups by placing a drift or socket (slightly smaller than the cup) on cup and rap with a hammer. See Figure 27. Install snap ring and repeat on opposite cup
4. Repeat Step 1 and Step 2 to install remaining cups in remaining yoke.
5. Move both yokes in all directions to check for free movement. If movement is restricted, rap on yokes sharply with a hammer to relieve any tension. Repeat until both yokes move in all directions without restriction.

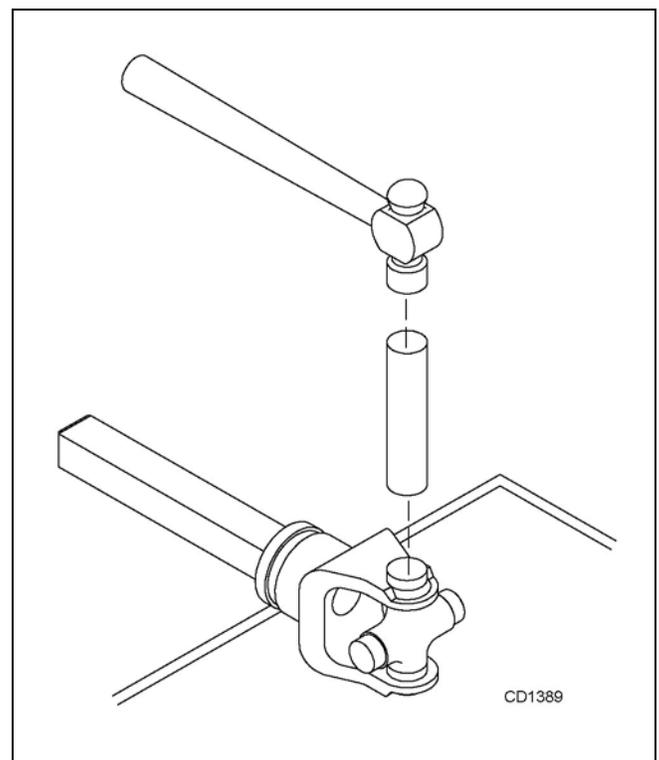


Figure 27. Install Cups

ASSEMBLY INSTRUCTIONS

DEALER SET-UP INSTRUCTIONS

These instructions are for the assembly of the DS8.50 and DS10.50 mounted and pull-type cutters as well as the DSO8.50 and DSO10.50 semi-mounted cutters. Many of the procedures apply to all units. When an instruction applies to a specific unit, the section heading will indicate which unit. Assembly of options may not apply to all units.

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

The cutter is shipped partially assembled. Assembly will be easier if aligned and loosely assembled before tightening hardware. Recommended torque values for hardware are located in the Bolt Torque Chart, page 69.

Select a suitable working area. A smooth hard surface, such as concrete, will make assembly much quicker. Open parts boxes and lay out parts and hardware to make location easy. Refer to illustrations, accompanying text, parts lists and exploded view drawings.

Complete check lists on page 46 when you have completed the assembly.

DS8.50 & DS10.50 PULL-TYPE CUTTER

(Figure 28)

Place jackstands under cutter to raise it off the ground to provide clearance when assembling cutter. See "BLOCKING METHOD" on page 21 for jackstand placement.

Install Rear Tailwheel

1. Attach tailwheel arms (5) to the tailwheel yoke using eight (four per arm) cap screws (18) and lock nuts (19).

NOTE: Position tailwheel arms on yoke to desired location (usually on row crop centers).

2. Attach wheel hubs to tailwheel arms (5) using cap screws (20) and lock nuts (22). Wheel hubs should be positioned to the outside of the cutter.
3. Attach tires to wheel hubs using five lug nuts (supplied with hub). Install the flat side of the nut toward the rim for laminated, severe duty Ag, and airplane tires. Torque to 75 lbs-ft.

NOTE: Install the chamfered side of the nut toward the inside for steel rims for pneumatic tires.

Install Tongue

1. Remove lower hitch pins (2) and klik pins (3) from mast plates.
2. Align tongue assembly (1) between mast plates and reinstall lower hitch pins (2). Secure with klik pins.

Install Attitude Rod

1. Slide attitude rod (4) under right spindle coupler and through pivot block on tailwheel.
2. Loosely install sleeve (30), washer (28) and two hex nuts (31) to rear of attitude rod.
3. Attach front of attitude rod to the lug on the tongue using clevis pin (27), washer (28) and cotter pin (29).
4. Raise front of cutter and install parking jack (13) vertically to the tongue.

Install H-Frame and CV Driveline

1. Attach H-frame (7) to lugs on front of deck using cap screw (21) and flanged lock nut (22).
2. Lightly coat splitter gearbox input shaft with grease.
3. Remove cap screws and lock nuts from yoke on slip clutch end of driveline (9). Attach driveline to input shaft of gearbox. Reinstall cap screws and lock nuts through driveline and groove on input shaft.
4. Align driveline bearing carrier between H-frame (7) and secure with cap screw (21) and flanged lock nut (22).
5. Remove cap screw and lock nut from rear yoke of CV driveline (10).
6. Slide rear yoke of CV driveline (10) over shaft of driveline (9). Reinstall cap screw and lock nut through yoke and groove in rear driveline shaft.
7. Attach drive shield (8) to carrier bearing using two lock washers (23) and cap screws (24).

Install SMV Emblem

1. Align holes of SMV bracket (11) to rear of right spindle coupler shield. Secure with cap screws (25) and flanged lock nuts (26).

Hydraulic Hose Routing

1. Unwind hydraulic hose (14) from cylinder.
2. Route hose on top of deck, under left spindle coupler, and through hose holder on tongue.
3. Install stroke control kit (not pictured) to cylinder rod. Stroke control kit is used to set cut height.

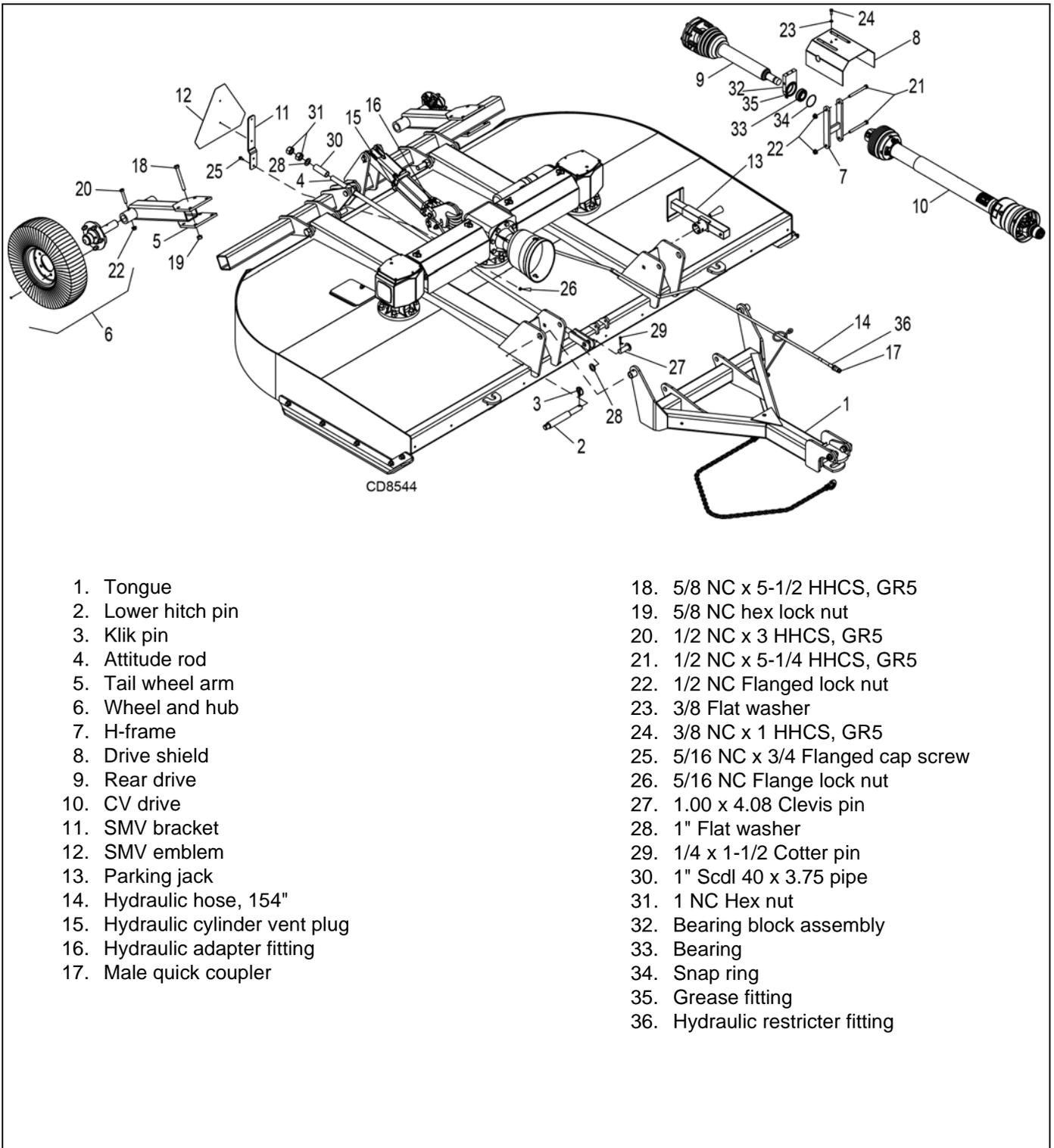


Figure 28. DS8.50 & DS10.50 Pull-Type Cutter Assembly

DS8.50 & DS10.50 3-POINT MOUNTED CUTTER

(See Figure 29)

Place jackstands under cutter to raise it off the ground to provide clearance when assembling cutter. See

"BLOCKING METHOD" on page 21 for jackstand placement.

Install Rear Tailwheel

1. Attach tailwheel arms (11) to the tailwheel yoke using eight (four per arm) cap screws and lock nuts (supplied with arms).

NOTE: Position tailwheel arms on yoke to desired location (usually on row crop centers).

Install A-Frame

1. Attach A-Frame assembly (1) to the square holes of the cutter mast plates. Secure using carriage bolts (18), bushing sleeves (7), washers (17) and flanged lock nuts (20).
2. Install washer (24), lift arms (3), second washer (24) and lock nut (23) onto the end of the bolts holding the tailwheel yoke to the cutter frame.

NOTE: Do not remove existing lock nut from bolt.

3. Attach the two lift arms (3) together at the top rear hole using cap screw (19), spacer sleeve (6) and flanged lock nut (20).
4. Place both break links (2) together and position between front holes of lift arms. secure with cap screw (19), spacer sleeve (6) and flanged lock nut (20).

NOTE: Break links must rest on top of rear spacer sleeve (6).

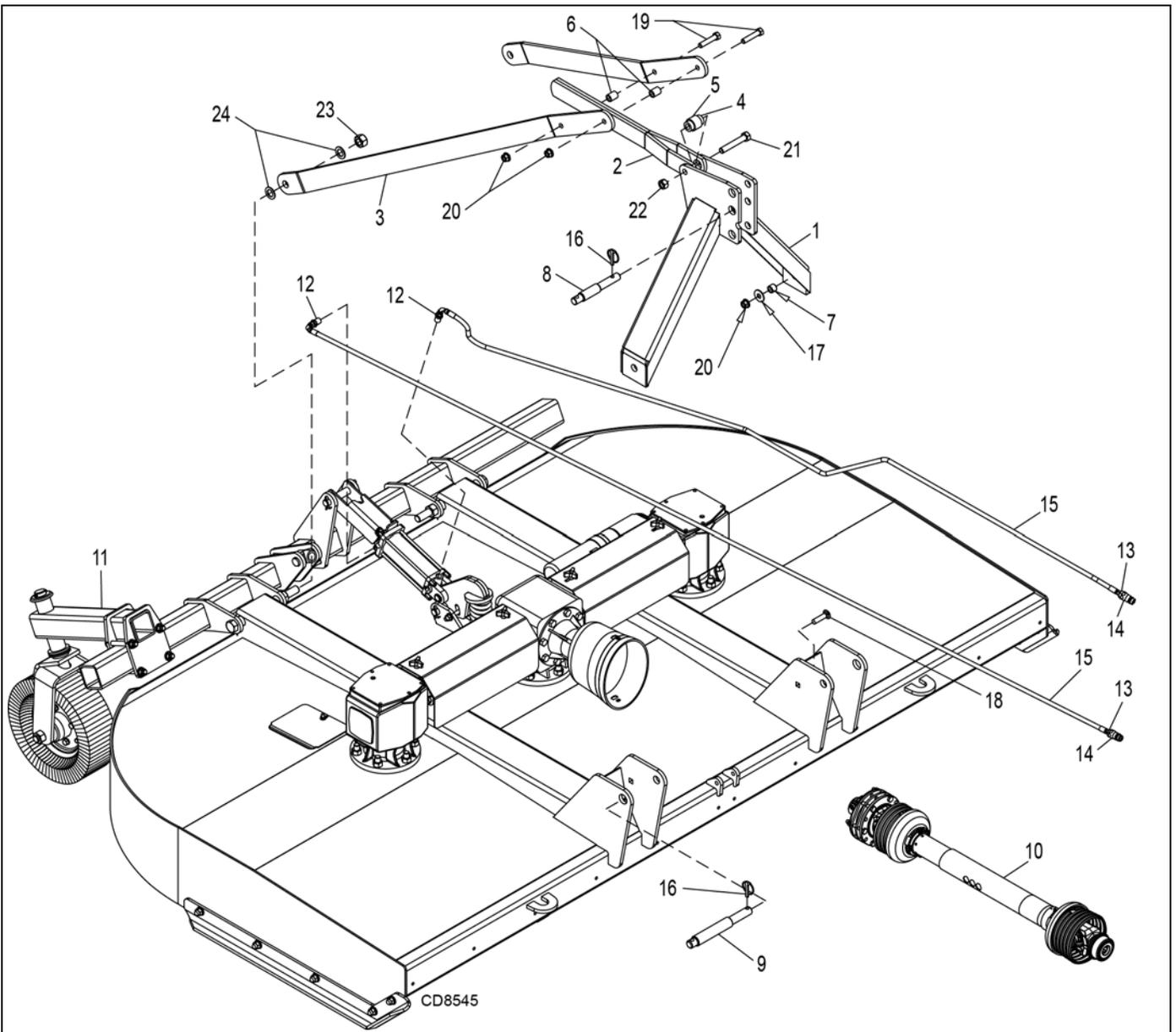
5. Place sleeve (5) between front holes of break links. Align with rear holes of A-Frame assembly (1) and secure together with cap screw (21), sleeve (4) and lock nut (22).

Install Hoses

1. Unwind hydraulic hose (15) from hydraulic cylinder.
2. Remove plug from rear side of hydraulic cylinder.
3. Install adapter (12) in port of cylinder. Position with elbow pointing toward front of cutter.
4. Install hydraulic hose (15) to adapter.
5. Attach reducer (13) and coupler (14) to end of hose.
6. Route both hoses on top of deck, under left spindle coupler and through hose ring on side of A-Frame assembly.
7. Install stroke control kit (not pictured) to cylinder rod. Stroke control kit is used to set cut height.

Install Driveline

1. Lightly coat splitter gearbox input shaft with grease.
2. Remove cap screws and lock nuts from yoke on slip clutch end of driveline (10). Attach driveline to input shaft of gearbox. Reinstall cap screws and lock nut through driveline and groove on input shaft.



- | | |
|----------------------------------|---------------------------------------|
| 1. A-Frame assembly | 13. Hydraulic restrictor fitting |
| 2. Break link | 14. Male quick coupler |
| 3. Lift arm | 15. Hydraulic hose, 154" |
| 4. Sleeve, .781 x 1.38 x 2.40 | 16. Klik pin |
| 5. Sleeve, 1-3/8 x 1-3/4 x 1-1/4 | 17. 5/8 Flat washer |
| 6. Sleeve 5/8 x 1 x 1-1/4 | 18. 5/8 NC x 2-1/2 Carriage bolt, GR5 |
| 7. Sleeve, 5/8 x 1 x 13/16 | 19. 5/8 NC x 3 HHCS, GR5 |
| 8. Top link pin | 20. 5/8 NC Flanged lock nut |
| 9. Lower hitch pin | 21. 3/4 NC x 4-1/2 HHCS, GR5 |
| 10. Driveline | 22. 3/4 NC Hex lock nut |
| 11. Tailwheel assembly | 23. 1 NC Hex lock nut |
| 12. Hydraulic adapter fitting | 24. 1 Flat washer |

Figure 29. DS8.50 & DS10.50 3-Point Mounted Cutter Assembly

DSO8.50 & DSO10.50 3-POINT MOUNTED CUTTER

(Figure 30)

Place jackstands under cutter to raise it off the ground to provide clearance when assembling cutter. See "BLOCKING METHOD" on page 21 for jackstand placement.

Install Rear Tailwheel

1. Attach tailwheel arms (9) to the tailwheel yoke using eight (four per arm) cap screws and lock nuts (supplied with arms).

NOTE: Position tailwheel arms on yoke to desired location (usually on row crop centers).

Install Hitch Mechanism

1. Align left hitch arm (2), right hitch arm (3) and washers (29) to deck as shown.

NOTE: Left hitch arm should be oriented with cylinder lug on bottom side protruding towards the left of cutter.

2. Secure hitch arms to cutter using flag pins (4), washers (27) and cap screws (28).
3. Align front ends of hitch arms, washers (29) and hitch assembly (1) as shown.
4. Secure hitch arms to hitch assembly with flag pins (4), washers (27) and cap screws (28).
5. Attach hydraulic cylinder (7) to left hitch arm (2) and lug on left side of cutter using pins (21) and cotter pins (24).

6. Install reducer busing (17) and restricter swivel (18) in ports at each end of cylinder. Position elbow to point toward front of cutter.
7. Connect hoses (14) to elbows.
8. Attach reducer (17) and coupler (20) to end of each hose.

Install SMV Emblem

1. Align holes of SMV bracket (5) to rear of left spindle coupler shield. Secure with cap screws (25) and flanged lock nuts (26).

Install Driveline

1. Lightly coat splitter gearbox input shaft with grease.
2. Remove cap screws and lock nuts from yoke on slip clutch end of driveline (10). Attach driveline to input shaft of gearbox. Reinstall cap screws and lock nut through driveline and groove on input shaft.

Hydraulic Hose Routing

1. Unwind hydraulic hose (13) from cylinder.
2. Route hose on top of deck, under left spindle coupler.
3. Route all hoses through hose ring on hitch assembly.
4. Install stroke control kit (not pictured) to rear cylinder rod. Stroke control kit is used to set cut height.

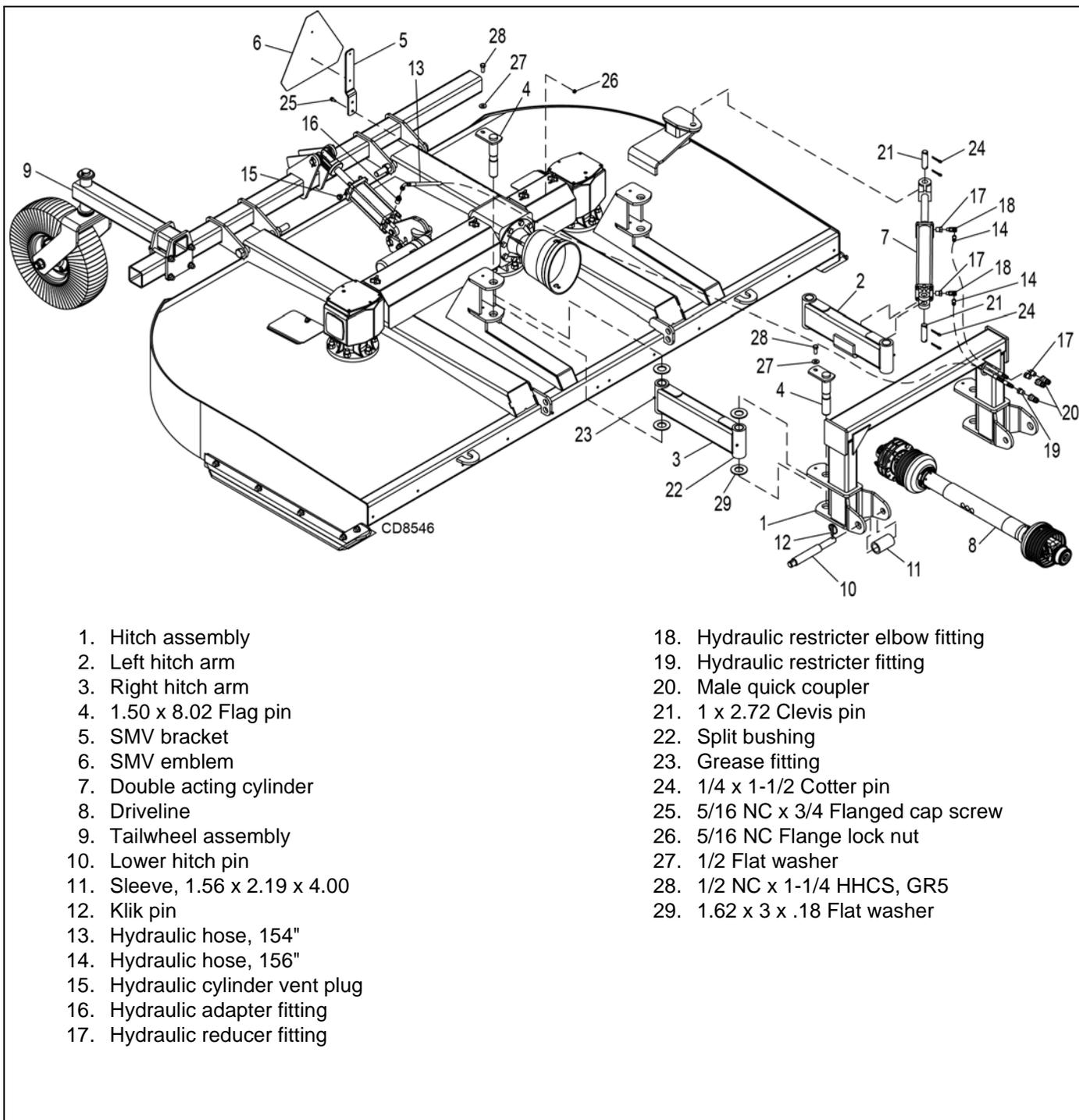


Figure 30. DSO8.50 & DSO10.50 3-Point Mounted Cutter Assembly

ALL MODELS

FILL GEARBOXES

NOTICE

■ Gearbox is not filled at the factory. Prior to delivery to customer, make sure gearbox is filled only half-full with 80W or 90W API GL-4 or GL-5 gear lube. Use side plug to remove any excess oil.

1. Make sure vent plug hole is clear (installed by dealer).
2. Remove plug on side of gearbox.
3. Fill gearbox until oil runs out the side plug on gearbox. Use a high quality gear oil with a viscosity index of 80W or 90W and an API service rating of GL-4 or GL-5.
4. Install side plug and vent plug.

INSTALL CHAIN OR RUBBER SHIELDING

⚠ DANGER

■ Full chain or rubber shielding must be installed when operating in populated areas or other areas where thrown objects could injure people or damage property.

- If this machine is not equipped with full chain or rubber shielding, operation must be stopped when anyone comes within 300 feet (92 m).
- This shielding is designed to reduce the risk of thrown objects. The mower deck and protective devices cannot prevent all objects from escaping the blade enclosure in every mowing condition. It is possible for objects to ricochet and escape, traveling as much as 300 feet (92 m).

Rubber Shielding

(See Figure 31)

1. Attach rubber belting and deflector brackets to the front of the frame using cap screws (4), and lock nuts (6).
2. Attach rear band to the rear of the frame using carriage bolts (5), and lock nuts (6).

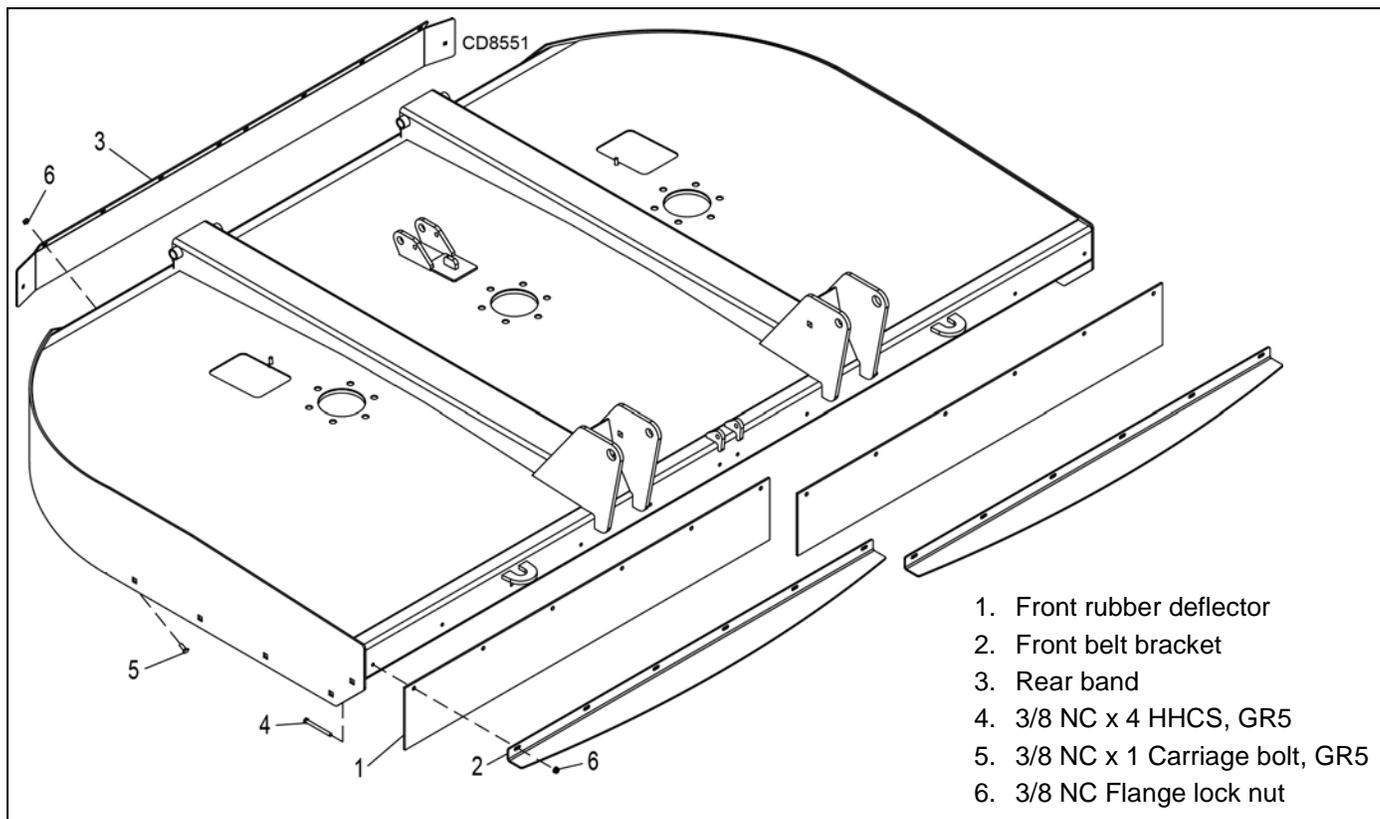


Figure 31. Rubber Belt Shielding Installation

Optional Chain Shielding

(See Figure 32)

The optional chain shielding assemblies are ready for installation when you receive them.

1. Install front chain shielding to the front of the frame using cap screws (6) and lock nuts (8).
2. Attach rear chain shielding to the rear of the frame using carriage bolts (7) and lock nuts (8).

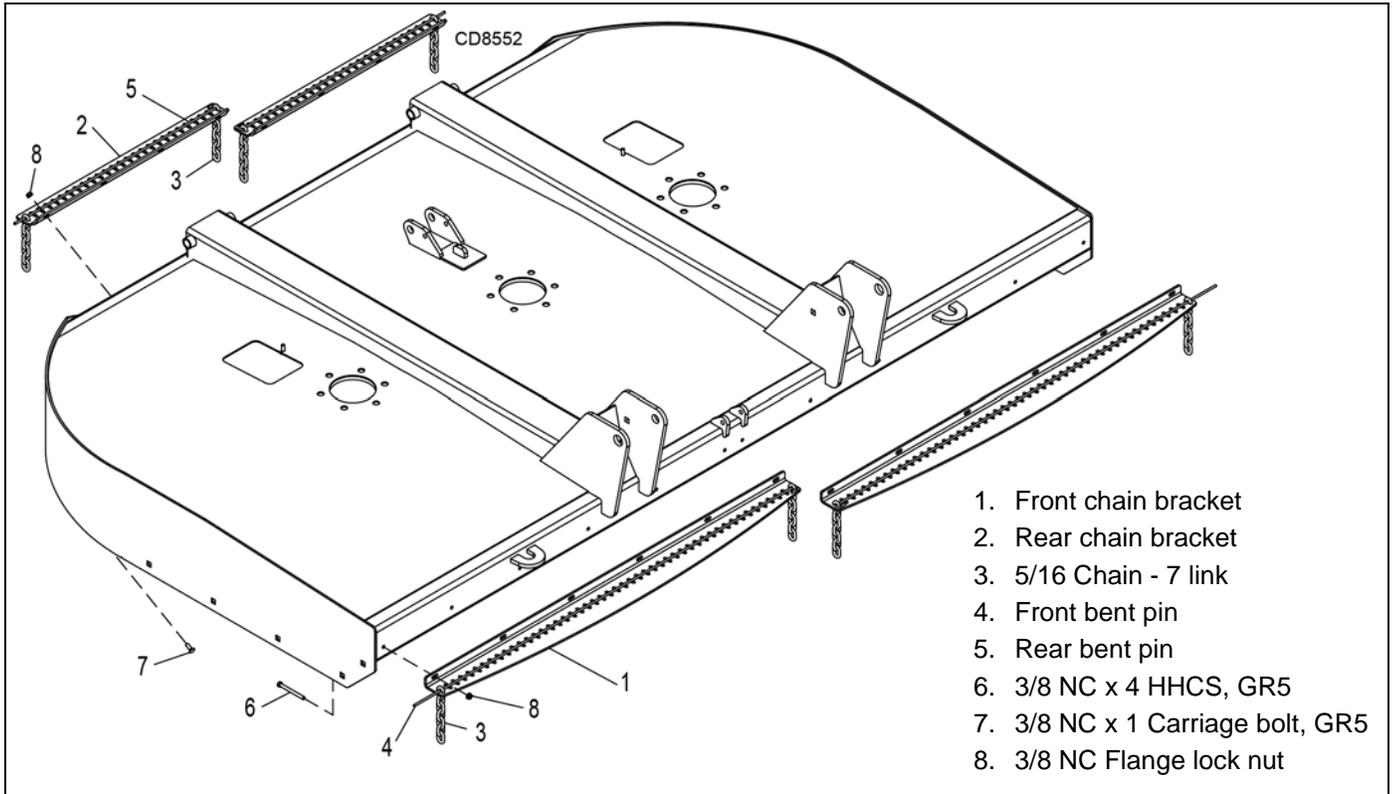


Figure 32. Optional Chain Shielding Installation

DEALER CHECK LISTS

PRE-DELIVERY CHECK LIST

(DEALER'S RESPONSIBILITY)

Inspect cutter thoroughly after assembly to make sure it is set up properly before delivering it to the customer. The following check list is a reminder of points to inspect. Check off each item as it is found satisfactory, corrections are made, or services are performed.

IMPORTANT

■ **Gearbox was not filled at the factory. It must be serviced before operating cutter. (See LUBRICATION, page 21). Failure to service will result in damage to gearbox.**

- ___ Check that gearbox is properly serviced and seals are not leaking.
- ___ Check and grease all lubrication points as identified in **Owner Service**, LUBRICATION, page 21.
- ___ Check that blades have been properly installed
- ___ Check all bolts to be sure they are properly torqued.
- ___ Check that all cotter pins are properly installed and secured.
- ___ Check that PTO shaft is properly installed.

DELIVERY CHECK LIST

(DEALER'S RESPONSIBILITY)

- ___ Show customer how to make adjustments. Describe the options available for this cutter and explain their purpose.
- ___ Explain importance of lubrication to customer and point out lubrication points on cutter.
- ___ Point out all guards and shielding. Explain their importance and the safety hazards that exist when not kept in place and in good condition.
- ___ For mounted units, add wheel weights, ballast in front tires, and/or front tractor weight to enhance front end stability. A minimum 20% of tractor and equipment gross weight must be on front tractor wheels. When adding weight to attain 20% of tractor and equipment weight on front tractor wheels, you must not exceed the ROPS weight certification. Weigh the tractor and equipment. Do not estimate!
- ___ 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 that when equipment is transported on a road or highway, safety devices should be used to give adequate warning to operators of other vehicles.

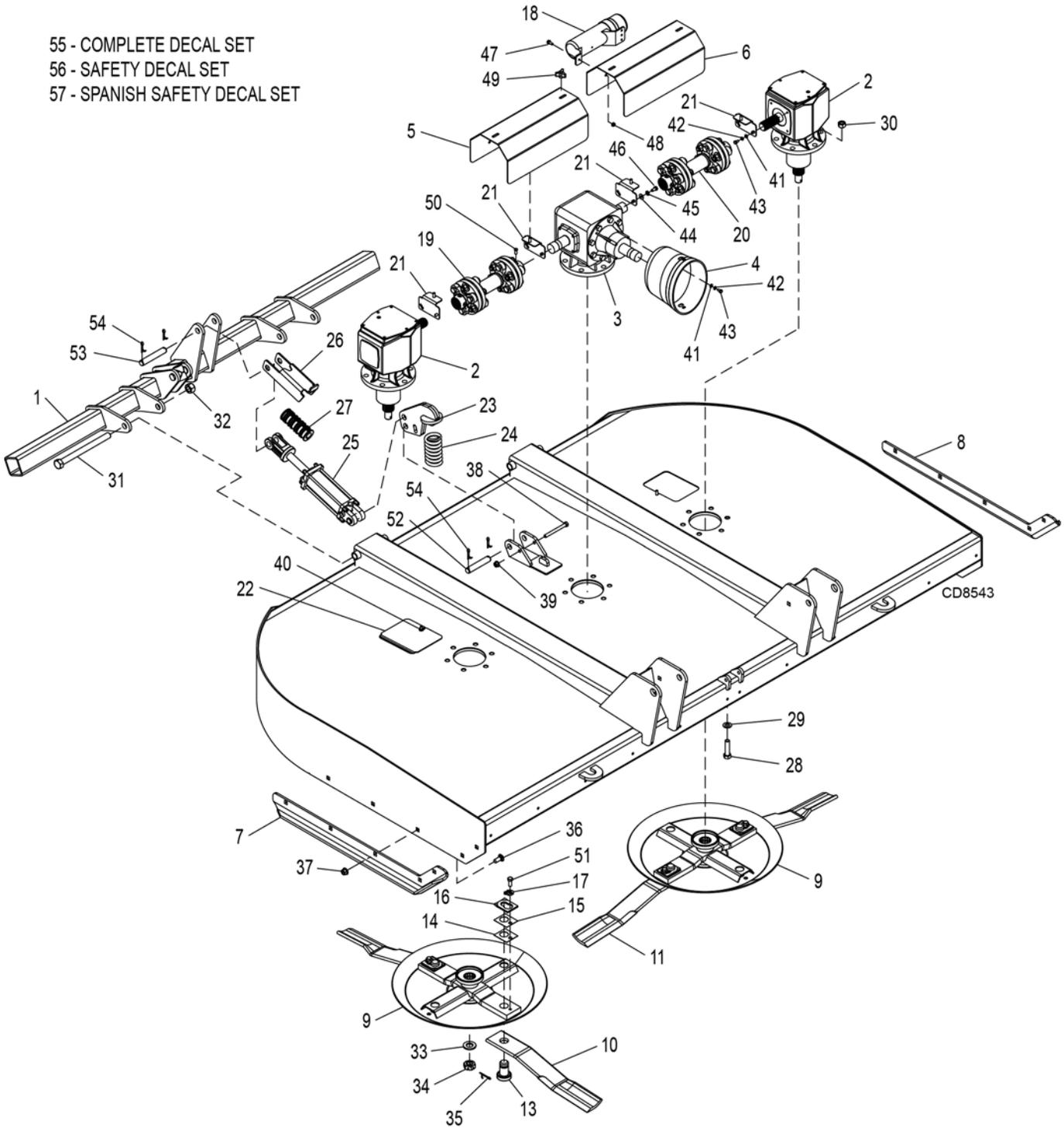


Rotary Cutters DS8.50, DSO8.50, DS10.50 & DSO10.50

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MAIN FRAME ASSEMBLY

- 55 - COMPLETE DECAL SET
- 56 - SAFETY DECAL SET
- 57 - SPANISH SAFETY DECAL SET



48 Parts

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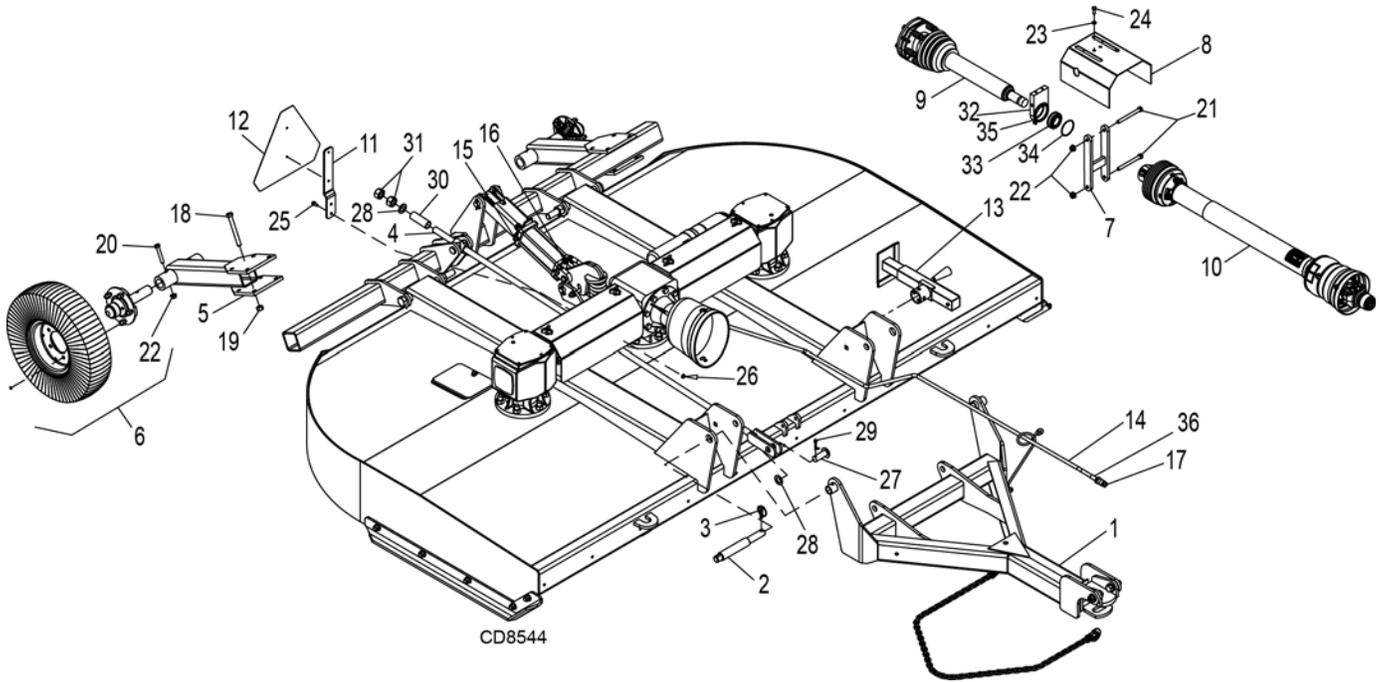
MAIN FRAME ASSEMBLY

REF	PART	QTY	DESCRIPTION	REF	PART	QTY	DESCRIPTION
1	1043000	1	Wheel yoke (DS8.50) -or-	21	1021371RP	4	Shield hold down
1	1043001	1	Wheel yoke (DSO8.50) -or-	22	57050RP	2	Blade access cover
1	1043002	1	Wheel yoke (DS10.50) -or-	23	1009245RP	1	Spring arm
1	1043003	1	Wheel yoke (DSO10.50)	24	13316RP	1	Spring
2	58805	2	Spindle gearbox (DS8.50, DSO8.50) (See page 54)	25	1035089	1	3 x 6 Hydraulic cylinder
2	58806	2	Spindle gearbox (DS10.50, DSO10.50) (See page 54)	25A	1038883	1	Seal kit for 1035089
3	1002495	1	Splitter gearbox, 540 RPM (See page 53)	26	1038065RP	1	Transport lock-up
3	1002496	1	Splitter gearbox, 1000 RPM (See page 53)	27	24098	1	1-1/4 Stroke control kit
4	1002048RP	1	Clutch shield	28	14334 *		3/4 NC x 3 HHCS, GR5
5	1043004	1	Right shield (DS8.50) -or-	29	57798RP		3/4 Hardened flat washer
5	1043006	1	Right shield (DSO8.50) -or-	30	2371RP *		3/4 NC Hex lock nut
5	1043005	1	Right shield (DS10.50) -or-	31	39141		1 NC x 12 HHCS, GR5
5	1043008	1	Right shield (DSO10.50)	32	34279RP		1 NC Hex lock nut
6	1043004	1	Left shield (DS8.50) -or-	33	1024670		1.22 x 2.205 x .236 Washer
6	1043007	1	Left shield (DSO8.50, DSO10.50) -or-	34	39323		M30 x 2.0P Castle nut
6	1043005	1	Left shield (DS10.50)	35	64803RP *		3/16 x 2 Cotter pin
7	1043010	1	Right skid (DS8.50, DSO8.50) -or-	36	5607RP *		5/8 NC x 1-1/2 Carriage bolt, GR5
7	57118RP	1	Right skid (DS10.50, DSO10.50)	37	19025RP *		5/8 NC Flanged lock nut
8	1043011	1	Left skid (DS8.50, DSO8.50) -or-	38	23479RP *		1/2 NC x 5 HHCS, GR5
8	57119	1	Left skid (DS10.50, DSO10.50)	39	11900RP *		1/2 NC Flanged lock nut
9	1043009	2	Crossbar	40	14350RP *		3/8 NC Flanged lock nut
10	1003490KT	1	Right blade, CW (DS8.50, DSO8.50) -or-	41	35155RP *		5/16 Flat washer
10	19161KT	1	Right blade, CW (DS10.50, DSO10.50)	42	2472RP *		5/16 Lock washer
11	57099KT	1	Left blade, CCW (DS8.50, DSO8.50) -or-	43	39254		M8-1.25P x 16 mm HHCS, CL8.8
11	19160KTRP	1	Left blade, CCW (DS10.50, DSO10.50)	44	565RP *		3/8 Flat washer
12	1003675KT	2	Double edge blade, (DS8.50, DSO8.50) -or-	45	5664 *		3/8 Lock washer
12	19162KT	2	Double edge blade, (DS10.50, DSO10.50)	46	63716 *		M10-1.50P x 20 mm HHCS, CL8.8
13	1009199RP	4	Blade pin	47	71851 *		5/16 NC x 3/4 Flanged cap screw
14	10520RP	4	Shim, 18 ga	48	73163 *		5/16 NC Flanged whiz nut
15	13946RP	4	Shim, 20 ga	49	66840RP		3/8 NC Knob
16	32603RP	4	Keyhole plate	50	90016031 *		3/8 NC x 3/4 Square head set screw
17	32604RP	4	Blade pin lock clip	51	6100RP *		1/2 NC x 1-1/4 HHCS, GR5
18	1003828RP	1	Manual tube	52	8346	1	1 x 4-1/2 Headless pin
19	1040672	1	Right flex coupler (DS8.50) -or-	53	8347	1	1 x 5 Headless pin
19	1042960	1	Right flex coupler (DSO8.50) -or-	54	1285RP *		1/4 x 1-1/2 Cotter pin
19	1040673	1	Right flex coupler (DS10.50) -or-	55	1042780	1	Complete decal set
19	1042962	1	Right flex coupler (DSO10.50)	56	1042781	1	Safety decal set
20	1040672	1	Left flex coupler (DS8.50) -or-	57	1042782	1	Spanish safety decal set
20	1042961	1	Left flex coupler (DSO8.50, DSO10.50) -or-				
20	1040673	1	Left flex coupler (DS10.50)				

* Standard Hardware, Obtain Locally

HHCS Hex Head Cap Screw

DS8.50 / DS10.50 PULL-TYPE ASSEMBLY



REF	PART	QTY	DESCRIPTION	REF	PART	QTY	DESCRIPTION
1	1042250	1	Tongue assembly (See page 62)	19	6239RP *	1	5/8 NC Hex lock nut
2	39064	2	Lower hitch pin	20	3489 *	1	1/2 NC x 3 HHCS, GR5
3	27542RP *	2	7/16 x 11/32 Klik pin	21	65575 *	1	1/2 NC x 5-1/4 HHCS, GR5
4	1013388	1	Attitude rod (DS8.50) -or-	22	11900RP *	1	1/2 NC Flanged lock nut
4	39385	1	Attitude rod (DS10.50)	23	838RP *	1	3/8 Standard lock washer
5	1042240RP	2	Tailwheel arm	24	839 *	1	3/8 NC x 1 HHCS, GR5
6	-----	2	Tire & hub (See page 63)	25	71851 *	1	5/16 NC x 3/4 Flanged cap screw
7	1042234RP	1	H-frame	26	73163 *	1	5/16 NC Flanged lock nut
8	1011761RP	1	Shield	27	46605RP	1	1.00 x 4.08 Pin
9	1042288	1	Stub shaft (DS8.50) (See page 58) -or-	28	1863RP *	1	1" Standard flat washer
9	1022221	1	Stub shaft (DS10.50) (See page 59)	29	1285RP *	1	1/4 x 1-1/2 Cotter pin
10	1024175	1	CV Drive 540 RPM (See page 56) -or-	30	27267	1	Pipe, 1" Scdl 40 x 3.75
10	1021102RP	1	CV Drive 1000 RPM, 21 spline (See page 57) -or-	31	3132RP *	1	1" NC Hex nut
10	1021101	1	CV Drive 1000 RPM, 20 spline (See page 57)	32	32347	1	Bearing block (Includes items 33, 34 & 35)
11	1043012	1	SMV Bracket	33	13133	1	Bearing
12	24611	1	SMV Emblem	34	12128	1	Snap ring
13	23790	1	Parking jack	35	2985 *	1	1/4-28 x 90° Grease fitting
14	1038123	1	Hose 154" x 1/4 NPT x 9/16 JICF 90°	36	1038891	1	1/4 NPTF x 1/2 NPTM Adapter restrictr .06
15	11975	1	1/2 NPT Vent plug				
16	54315	1	1/2 NPTM x 9/16 JICM Adapter				
17	66511RP	1	1/2 NPT Male coupler				
18	990 *		5/8 NC x 5-1/2 HHCS, GR5				

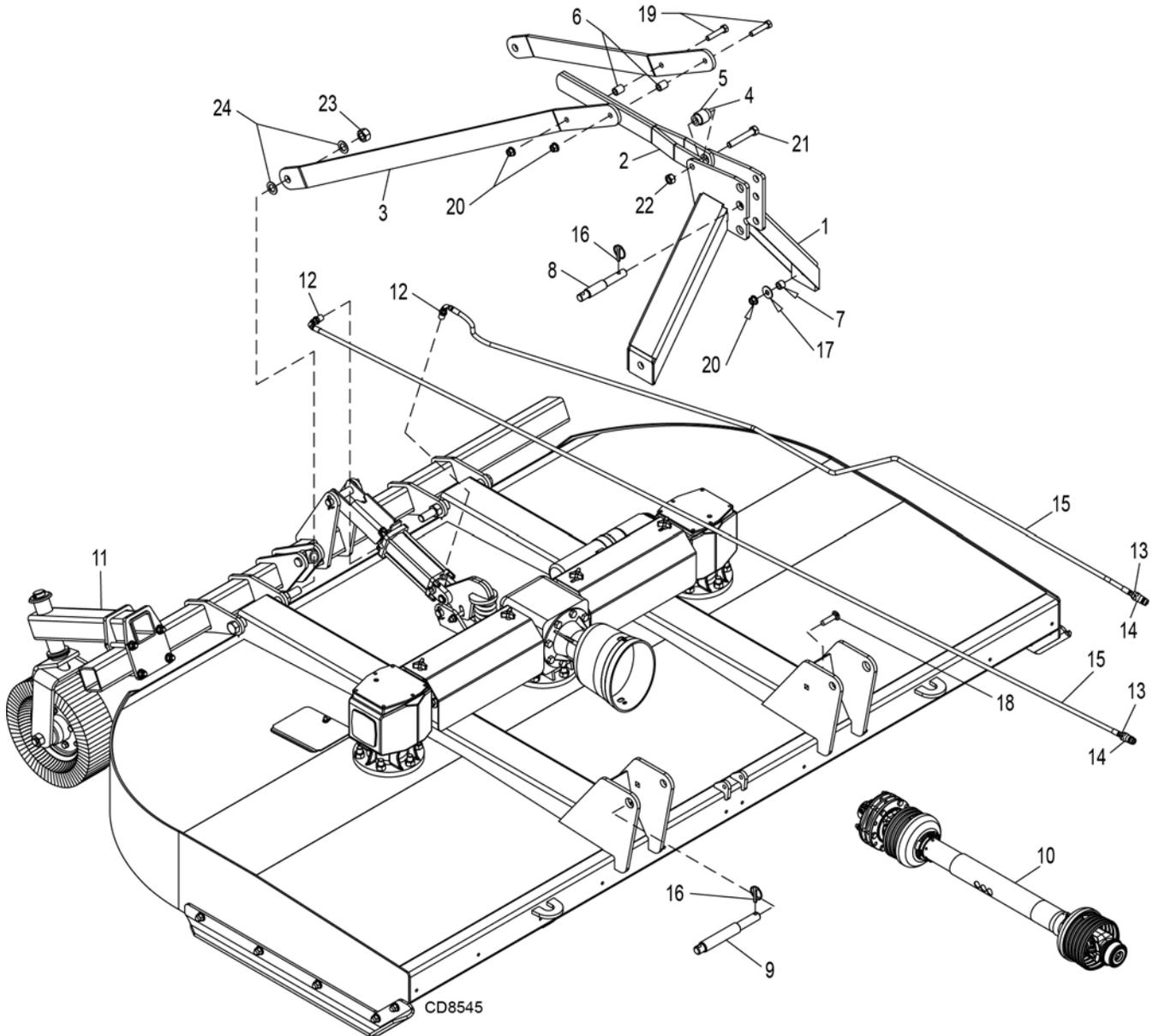
* Standard hardware, obtain locally

HHCS Hex head cap screw

50 Parts

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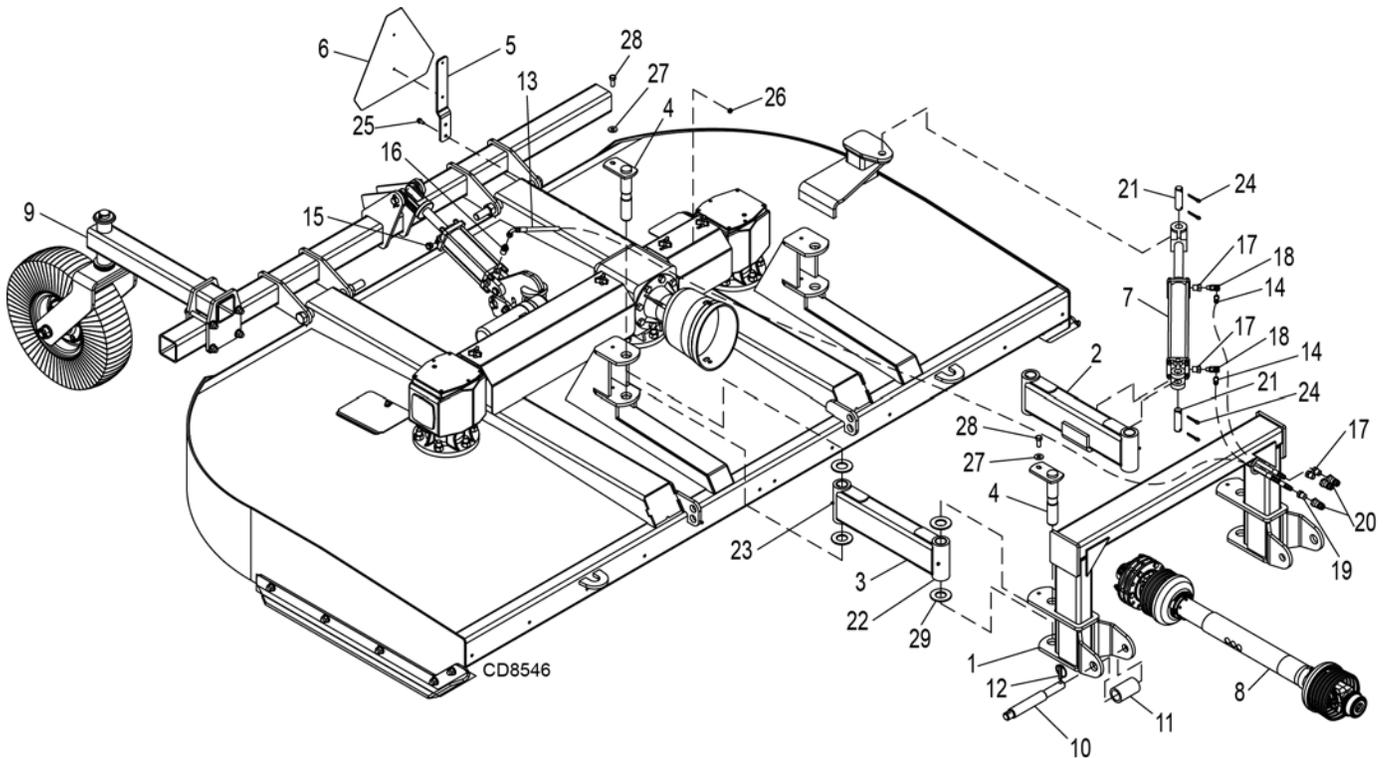
DS8.50 / DS10.50 MOUNTED CUTTER ASSEMBLY



REF	PART	QTY	DESCRIPTION	REF	PART	QTY	DESCRIPTION
1	1021350	1	A-Frame assembly	13	1038891	2	1/4 NPTF x 1/2 NPTM Adapter rstr .06
2	1042244RP	2	Break link	14	66511RP	2	1/2 NPT Male coupler
3	1042287	2	Lift arm (DS8.50) -or-	15	1038123	2	Hose, 154" x 1/4 NPT x 9/16 JICF 90°
3	1042243	2	Lift arm (DS10.50)	16	27542RP *	3	7/16 x 11/32 Klik pin
4	39071	1	Sleeve, .781 x 1.38 x 2.40	17	692RP *		5/8 Flat washer
5	7176	1	Sleeve, 1-3/8 x 1-3/4 x 1-1/4	18	5836 *		5/8 NC x 2-1/2 Carriage bolt, GR5
6	66661RP	2	Sleeve, 5/8 x 1 x 1-1/4	19	34473 *		5/8 NC x 3 HHCS, GR5
7	12313	2	Sleeve, 5/8 x 1 x 13/16	20	19025RP *		5/8 NC Flanged lock nut
8	39065	1	Top link pin	21	12558 *		3/4 NC x 4-1/2 HHCS, GR5
9	39064	2	Lower hitch pin	22	2371RP *		3/4 NC Hex lock nut
10	1042761	1	540 RPM Drive (DS8.50) (See page 60)	23	34279RP		1" NC Hex lock nut
10	1042762	1	1000 RPM Drive (DS8.50Q) (See page 60)	24	1863RP *		1" Standard flat washer
10	57419	1	540 RPM Drive (DS10.50) (See page 61)				
10	57290	1	1000 RPM Drive (DS10.50Q) (See page 61)				
11	-----	1	Tailwheel assembly (See page 64)				
12	54315	2	1/2 NPTM x 9/16 JICM Adapter				

HHCS Hex Head Cap Screw
 * Standard hardware, obtain locally

DSO8.50 / DSO10.50 ASSEMBLY

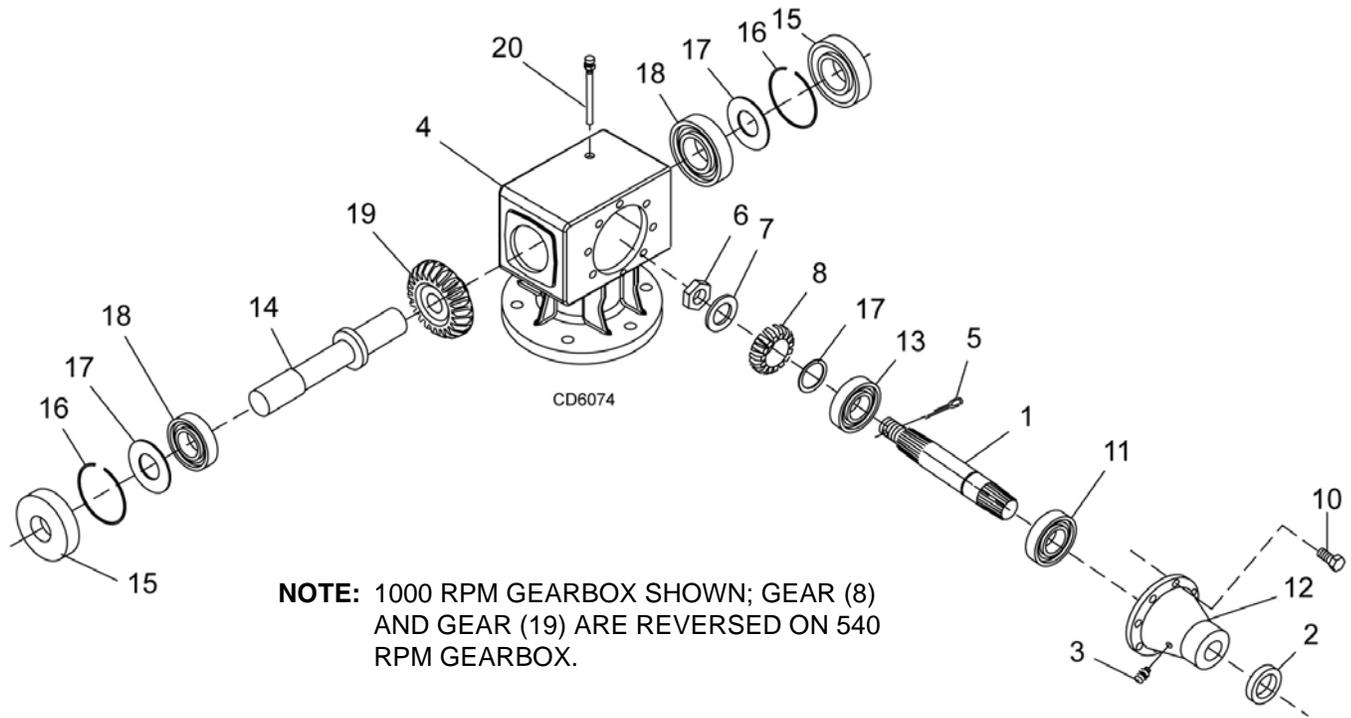


REF	PART	QTY	DESCRIPTION	REF	PART	QTY	DESCRIPTION
1	1021775	1	Hitch assembly	15	11975	1	1/2 NPT Vent plug
2	1042991	1	Left hitch arm (DSO8.50) -or-	16	54315	1	1/2 NPTM x 9/16 JICM Adapter
2	1021783RP	1	Left hitch arm (DSO10.50)	17	11893	4	1/2 to 1/4 Reducer fitting
3	1021784RP	1	Right hitch arm	18	10290	2	1/4 x 1/4 90° Elbow w/1/16 restricter
4	1021398	4	1.50 x 8.02 Flag pin	19	1038891	1	1/4 NPTF x 1/2 NPTM Adapter restctr .06
5	1043012	1	SMV Bracket	20	66511RP	3	1/2 NPT Male coupler
6	24611	1	SMV Emblem	21	1631	2	1 x 2.72 Headless pin
7	597273	1	Cylinder, 3.5 x 1.25 x 8.0 NPT 8 AG	22	1012615	8	Split bushing
7	1022208	1	2-1/2 x 16 Double acting cylinder (DSO10.50)	23	12296 *		1/4-28 Straight grease fitting
7A	23540		Seal Kit for 3-1/2 x 8 Cylinder w/ 1/2" tie rod nuts (3/4" across flat)	24	1285RP *		1/4 x 1-1/2 Cotter pin
7B	600251		Seal Kit for 3-1/2 x 8 Cylinder w/ 14mm tie rod nuts (21mm across flat)	25	71851 *		5/16 NC x 3/4 Flanged cap screw
7C	N/A		Seal Kit for 2-1/2 x 16 Cylinder w' 10mm tie rod nuts (15 mm across flat)	26	73163 *		5/16 NC Flanged lock nut
8	57422	1	540 RPM Drive (See page 61) -or-	27	854RP *		1/2 Flat washer
8	57425	1	1000 RPM Drive (See page 61)	28	6100RP *		1/2 NC x 1-1/4 HHCS, GR5
9	-----	1	Tailwheel assembly (See page 65)	29	2370 *		1.62 x 3 x .18 Washer
10	39064	2	Lower hitch pin				
11	1022238RP	2	Sleeve, 1.56 x 2.19 x 4.00				
12	27542RP *	2	7/16 x 11/32 Klik pin				
13	1038123	1	Hose, 154" x 1/4 NPT x 9/16 JICF 90°				
14	8669	2	Hose, 156" x 1/4 NPTM x 1/4 NPTM				

* Standard hardware, obtain locally

HHCS Hex head cap screw

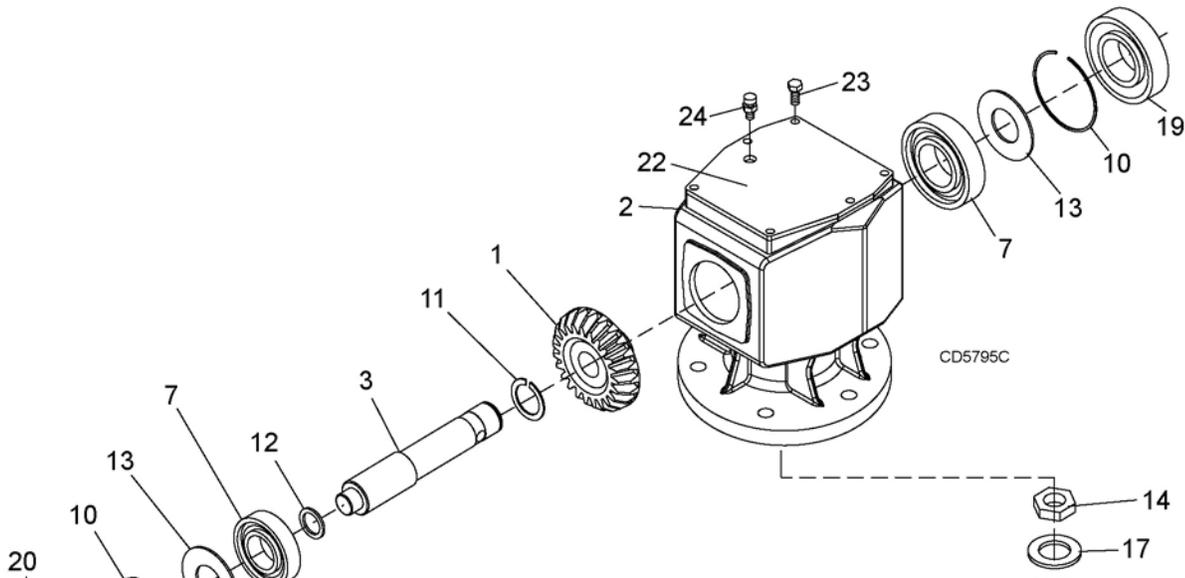
DS8.50 / DS10.50 / DSO8.50 / DSO10.50 SPLITTER GEARBOX ASSEMBLY



NOTE: 1000 RPM GEARBOX SHOWN; GEAR (8) AND GEAR (19) ARE REVERSED ON 540 RPM GEARBOX.

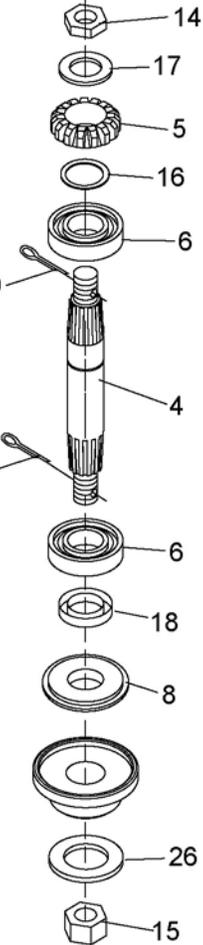
REF	PART	QTY	DESCRIPTION	REF	PART	QTY	DESCRIPTION
A	1002495		Complete 540 rpm Gearbox assembly DS8.50, DSO8.50, DS10.50, DSO10.50 -or-	11	1002493	1	Bearing, cup & cone
A	1002496		Complete 1000 rpm Gearbox assembly DS8.50Q, DSO8.50Q, DS10.50Q, DSO10.50Q	12	1002490	1	Housing, Gearbox input
1	1002489	1	Input shaft	13	39263	1	Bearing, cup & cone
2	39289RP	1	Oil seal, metric 50 x 90 x 10	14	1002491	1	Output shaft
3	NSS	1	Oil plug, 3/8	15	57318RP	2	Oil seal 45 x 85 x 10
4	NSS	1	Gearbox housing	16	1002494	2	Snap ring 85 dia.
5	----	*	Cotter pin B 4 x 60	17	57471	2	Shim kit (as required)
6	57329	1	Castle nut M40 x 1.5	18	39411	2	Bearing, cup and cone
7	1002492	1	Spacer	19	57447	1	Gear 16T M8 (1000 rpm) -or-
8	57446	1	Gear 22T M8 (540 rpm)	19	57446	1	Gear 22T M8 (540 rpm)
8	57447	1	Gear 16T M8 (1000 rpm)	20	57057RP	1	Dipstick / Plug
10	----	*	M10 x 25 Hex head cap screw		NSS		Not Serviced Separately
					*		Standard hardware, obtain locally

DS8.50 / DS10.50 / DSO8.50 / DSO10.50 SPINDLE GEARBOX ASSEMBLY

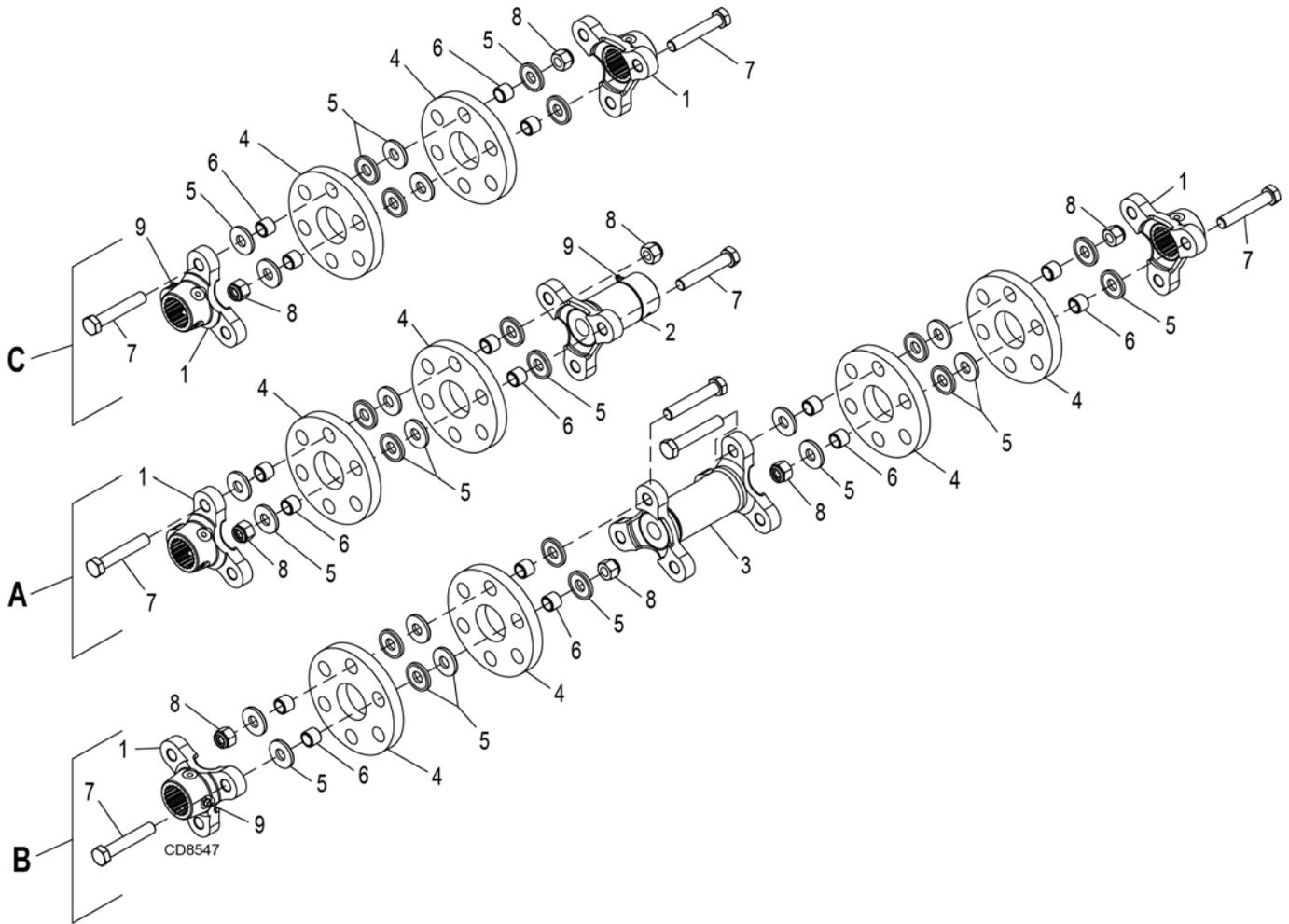


REF	PART	QTY	DESCRIPTION
A	58805		Gearbox, Repair asy DS8.50/DSO8.50 -or-
A	58806		Gearbox, Repair asy DS10.50/DSO10.50
1	57315	1	Gear crown 25T M6.5 DS8.50/DSO8.50 -or-
1	57316	1	Gear crown 23T M6.7 DS10.50/DSO10.50
2	NSS	1	Gearbox housing
3	57319	1	Input shaft 1-3/4 - 20
4	57356	1	Output shaft
5	57359	1	Gear pinion 18T M7 DS8.50/DSO8.50 -or-
5	57358	1	Gear pinion 17T M6.7 DS10.50/DSO10.50
6	39263	2	Bearing, cup & cone
7	39411	2	Bearing, cup & cone
8	57338	1	Protective seal
9	----- *	1	Cotter pin B 4 x 50
10	57320	2	Snap ring 85 UNI7437
11	57321	1	Snap ring 50 UNI7435
12	57471	1	Shim 45.3 x 2.5 (57471 Kit)
13	57471	2	Shim 70.3 x 84.7 (57471 Kit)
14	57329	1	Castle nut M40 x 1.5
15	39323	1	Castle nut M30 x 2
16	57471	1	Shim 50.3 x 70.3 (57471 Kit)
17	57471	1	Shim 40.3 x 61.7 x 1 (57471 Kit)
18	39289RP	1	Oil seal 50 x 90 x 10
19	57318RP	1	Oil seal 45 x 85 x 10
20	57371	1	Cap
22	57372	1	Top cover
23	----- *	6	M8 x 16 GR8.8 HHCS
24	57057RP	1	Dipstick 1/2 x 6.18
25	64803RP *	1	3/16 x 2 Cotter pin
26	1024670	1	1.22 x 2.21 x .236 Washer

NSS Not Serviced Separately
 HHCS Hex head cap screw
 * Standard hardware, obtain locally



DS8.50 / DS10.50 / DSO8.50 / DSO10.50 FLEXIBLE COUPLER

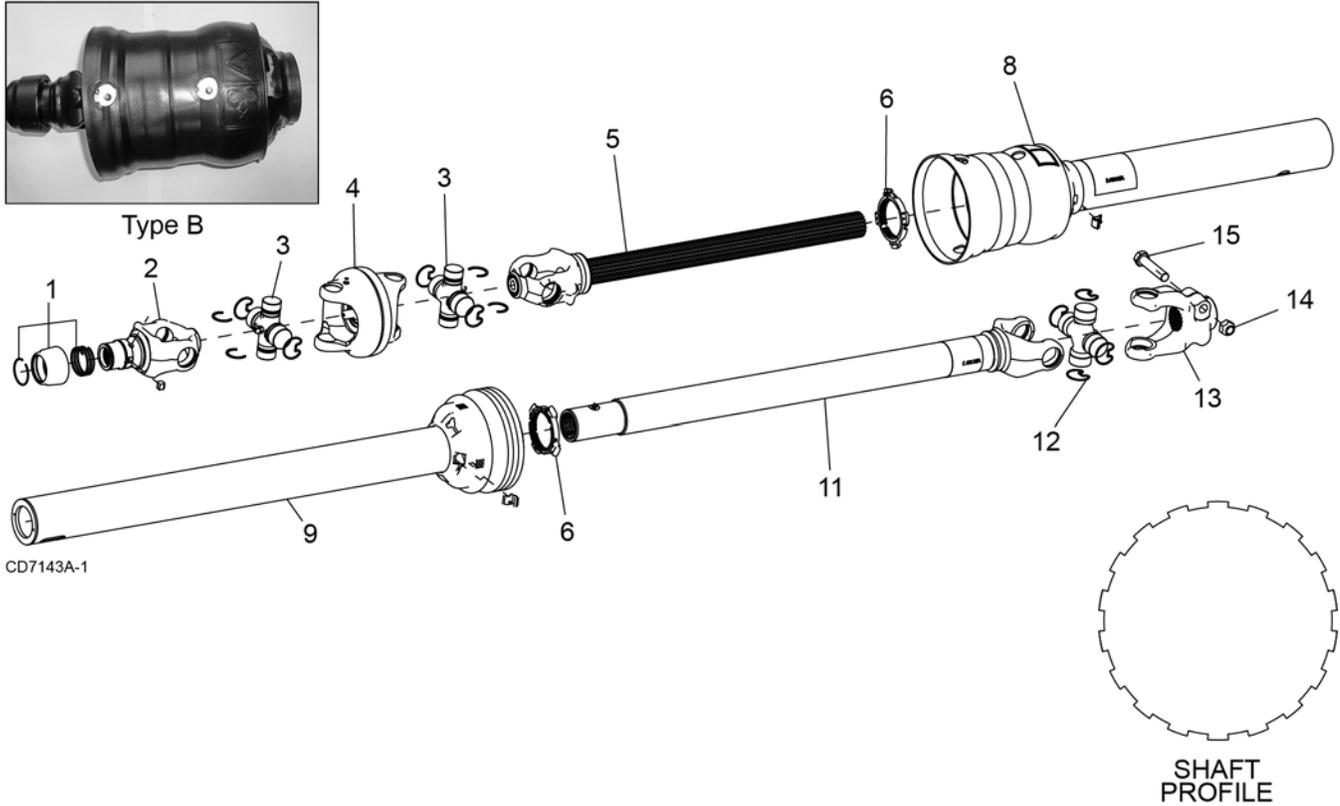


REF	PART	QTY	QTY	DS8.50	DS10.50	DSO8.50	DSO10.50	DSO8.50/DSO10.50	DESCRIPTION
						Right	Right	Left	
						QTY	QTY	QTY	
A	1040672	2	-----	-----	-----	-----	-----	-----	Complete flex coupler drive (DS8.50)
B	1040673	-----	2	-----	-----	-----	-----	-----	Complete flex coupler drive (DS10.50)
A	1042960	-----	-----	1	-----	-----	-----	-----	Complete flex coupler drive (DSO8.50) (Right)
B	1042962	-----	-----	-----	-----	-----	1	-----	Complete flex coupler drive (DSO10.50) (Right)
C	1042961	-----	-----	-----	-----	-----	-----	1	Complete flex coupler drive (DSO8.50/ DSO10.50) (Left)
1	1008147	1	2	1	2	-----	-----	-----	Yoke, 1-3/4 20-spline
2	NSS	1	-----	1	-----	-----	-----	-----	Single yoke & tube assembly
3	NSS	-----	1	-----	1	-----	-----	-----	Double yoke & tube assembly
4	1008140	2	4	2	4	2	4	2	Rubber disc
5	1008141	24	48	24	48	24	48	24	Shaped washer
6	1008142	12	24	12	24	12	24	12	Bushing
7	1001042	6	12	6	12	6	12	6	M16 x 2.0P x 90 mm HHCS
8	1008146	6	12	6	12	6	12	6	M16 x 2.0P Lock nut
9	---*	1	1	1	1	2	1	2	M8 x 1.0P Grease fitting

NSS Not Serviced Separately

* Standard Hardware, Obtain locally

540 RPM FRONT CV DRIVE ASSEMBLY

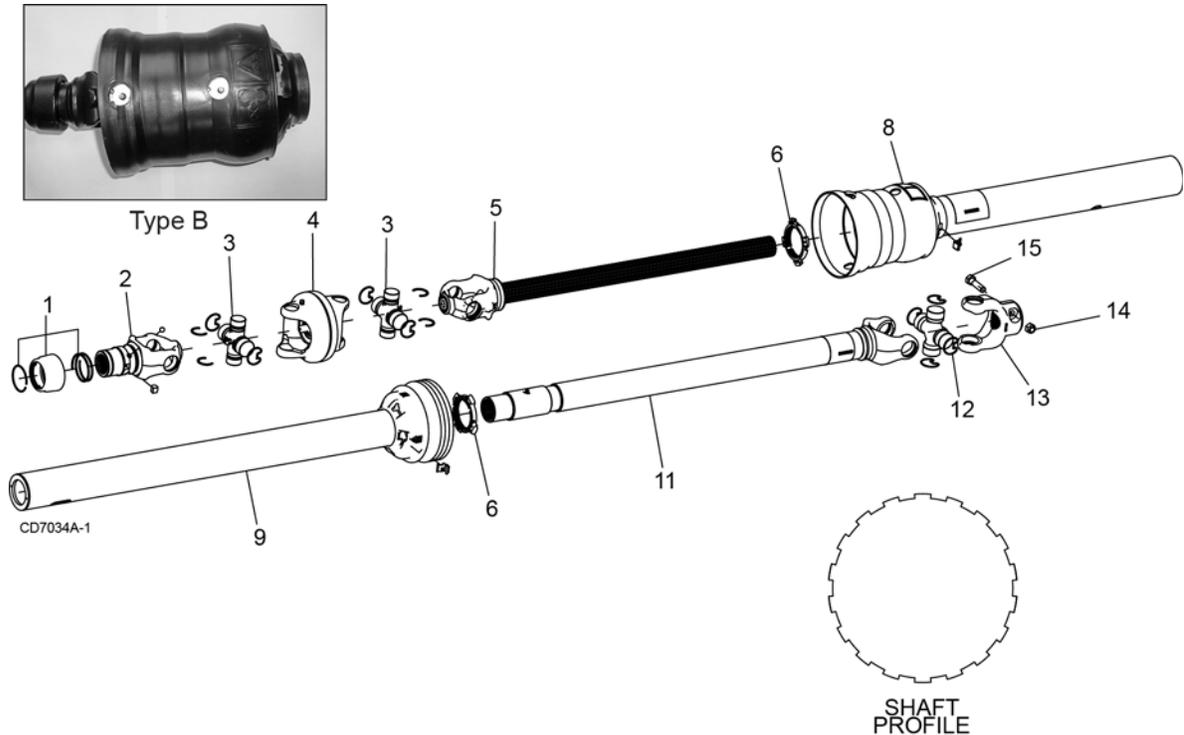


CD7143A-1

REF	PART	QTY	DESCRIPTION
A	1024175	1	Complete 540 RPM front CV drive
1	19851	1	Slide lock repair kit, 1.38 ID
2	1033103	1	Yoke, QD CV 1.375-6
3	1033107	2	U-Joint repair kit, Cat 6 CV 55E
4	1033106	1	CV Body with fitting
5	1033114	1	Yoke & shaft - CV splined 30.4
6	1009065	2	Drive shield bearing kit
7	18864RP	1	Danger decal - rotating driveline (N/S)
8	1019641	1	Outer shield, CV
9	1021315	1	Inner shield, CV
10	33347RP	1	Danger decal - shield missing (NS)
11	1021316	1	Yoke, tube & sleeve, 55R x 36.4 x 1.69-20
12	58765RP	1	U-Joint cross & bearing kit 55E
13	1007869	1	Yoke, 55R x 4.50 x SP 1.5-23
14	765	1	1/2 NC Lock nut
15	3699	1	1/2 NC x 2 HHCS GR5

N/S Not Shown
 HHCS Hex head cap screw

1000 RPM FRONT CV DRIVE ASSEMBLY



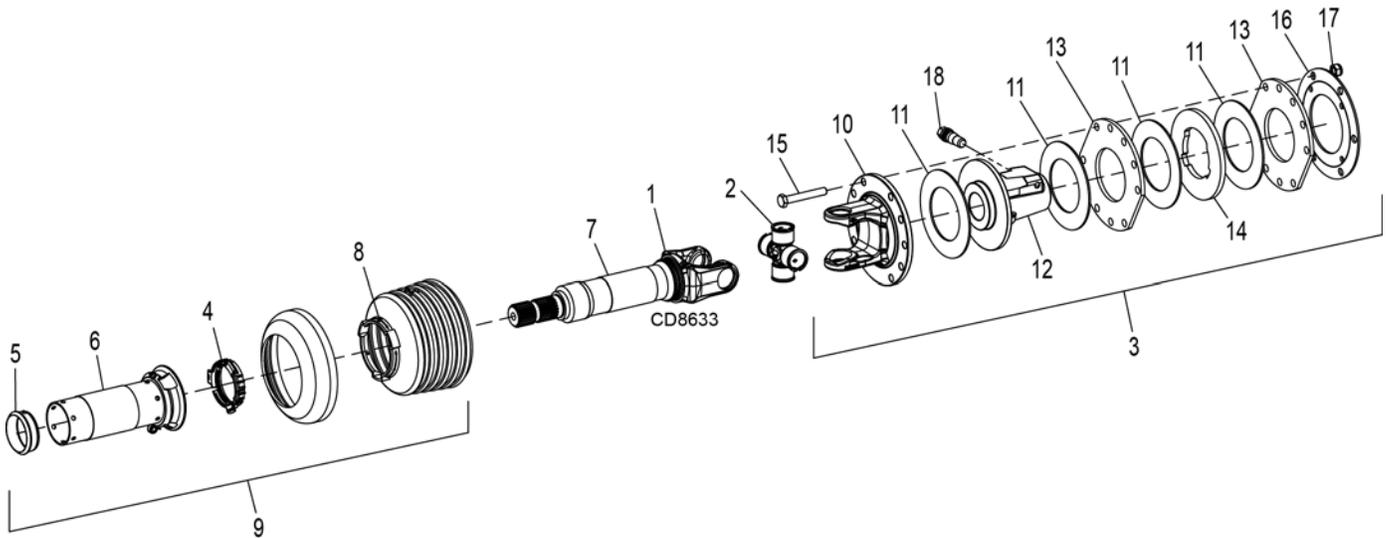
1000 RPM 1-3/8 21-SPLINED

REF	PART	QTY	DESCRIPTION
A	1021102RP	1	1000 RPM CV drive assembly complete, 21-spline
1	19851	1	Slide lock repair kit, 1.38 ID
2	1033104RP	1	Yoke, QD CV 1.375-21
3	1033107	2	U-Joint repair kit, 55E Cat 6 CV
4	1033106	1	CV Body with fitting
5	1033110	1	Yoke & shaft, CV splined 32.3
6	1009065	2	Drive shield bearing kit
7	18864RP	1	Danger decal - Rotating driveline (N/S)
8	1021306	1	CV Outer shield
9	1021319	1	CV Inner shield
10	33347RP	1	Danger decal - Shield missing (N/S)
11	1021320	1	Yoke, tube & sleeve, 55R x 38.4 x 1.69-20
12	58765RP	1	U-Joint cross & bearing kit 55E
13	1007869	1	Yoke, 55R x 1.50 x SP 1.5-23
14	765	1	1/2 NC Lock nut
15	3699	1	1/2 NC x 2 Hex head cap screw GR5
	N/S		Not Shown

1000 RPM 1-3/4 20-SPLINE

REF	PART	QTY	DESCRIPTION
A	1021101	1	1000 RPM CV drive assembly complete, 20-spline
1	19837RP	1	Slide lock repair kit, 1.75 ID
2	1033105	1	Yoke, QD CV 1.75-20
3	1033107	2	U-Joint repair kit, 55E Cat 6 CV
4	1033106	1	CV Body with fitting
5	1033110RP	1	Yoke & shaft, CV splined 32.3
6	1009065	2	Drive shield bearing kit
7	18864RP	1	Danger decal - Rotating driveline (N/S)
8	1021306	1	CV Outer shield
9	1021307	1	CV Inner shield
10	33347RP	1	Danger decal - Shield missing (N/S)
11	1021308	1	Yoke, tube & sleeve, 55R x 42.5 x 1.69-20
12	58765RP	1	U-Joint cross & bearing kit 55E
13	1007869	1	Yoke, 55R x 1.50 x SP 1.5-23
14	765	1	1/2 NC Lock nut
15	3699	1	1/2 NC x 2 Hex head cap screw GR5
	N/S		Not Shown

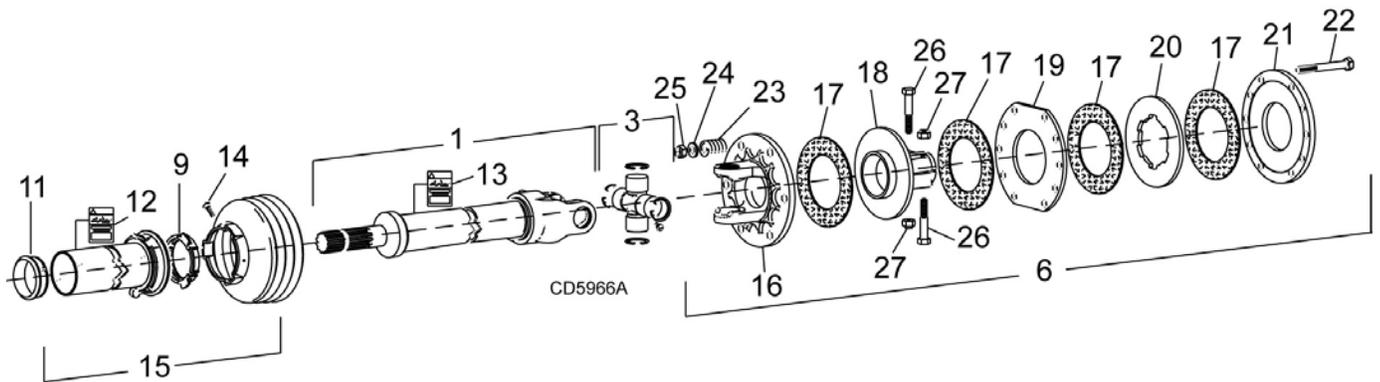
DS8.50 REAR FIXED-LENGTH DRIVE



REF	PART	QTY	DESCRIPTION
A	1042288	1	Drive assembly complete (DS8.50)
1	1041693	1	Drive without shield
2	40566	1	Cross & bearing kit
3	1041678	1	Friction clutch
4	40766	1	Bearing ring
5	40767	1	Support bearing
6	18864RP	1	Decal, Danger, rotating driveline
7	33347RP	1	Decal, Danger, guard missing
8	40778	1	Screw
9	1041694	1	Shield asy, complete
10	1041695	1	Flange yoke
11	57432RP	4	Friction disc
12	1016490	1	Hub, 1-3/4 - 20-spline
13	57443	2	Drive plate
14	1016491	1	Clutch drive plate
15	-----	6	M12 x 1.75P x 80 mm HHCS
16	1016492	1	Belleville spring
17	57261	6	M12 x 1.75P Hex lock nut
18	1016498	1	Clamp cone lock asy

HHCS Hex head cap screw

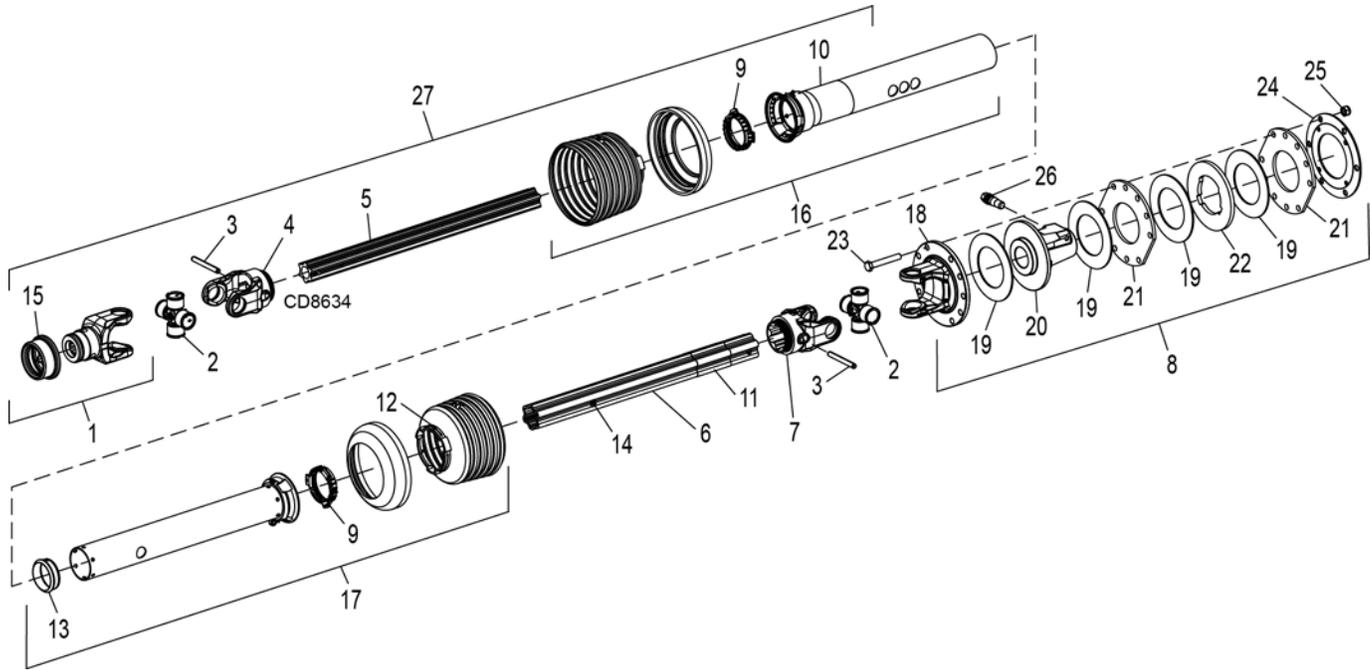
DS10.50 REAR FIXED-LENGTH DRIVE



REF	PART	QTY	DESCRIPTION
A	1022221	1	Drive assembly complete (DS10.50)
1	1024775	1	Drive without shield
3	40566	1	Cross & bearing kit
6	57421	1	Friction clutch
9	40766	1	Bearing ring
11	40767	1	Support bearing
12	18864RP	1	Danger decal - Rotating driveline
13	33347RP	1	Danger decal - Shield missing
14	40778	1	Screw
15	1024776	1	Shield
16	57441	1	Flange yoke
17	57432	4	Friction disc
18	57442	1	Hub, 1-3/4 - 20 I.C. - SN
19	57443	1	Drive plate
20	57256	1	Drive plate - SN
21	57257	1	Thrust plate
22	57263	6	M12 x 1.25P x 115 mm HHCS, CL8.8
23	57258	6	Spring, compression
24	57265	6	Flat washer, 24 x 13 x 2.5 mm
25	57264	6	M12 x 1.25P Hex lock nut
26	57262	2	M12 x 1.75P x 65 mm HHCS, CL8.8
27	57261	2	M12 x 1.75P Hex lock nut

HHCS Hex head cap screw

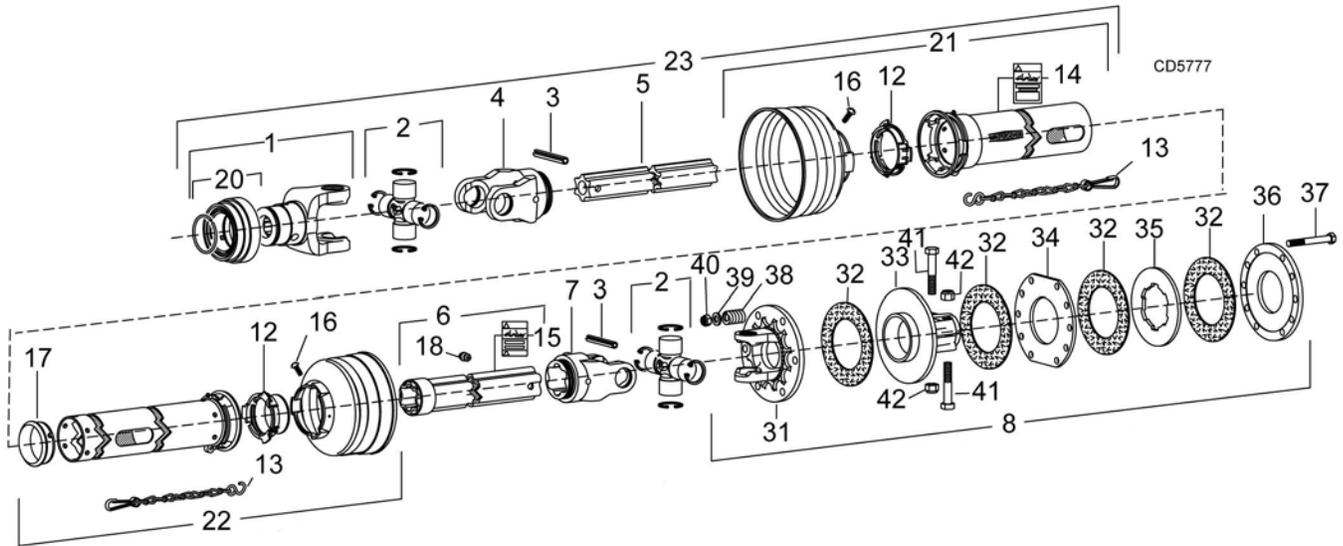
**DS8.50 & DS8.50Q
SLIP CLUTCH DRIVE ASSEMBLY - MOUNTED**



REF	PART	QTY	DESCRIPTION	REF	PART	QTY	DESCRIPTION
A	1042761	1	Complete 540 RPM drive assembly - DS8.50 -or-	16	1041680	1	Outer guard half, complete
A	1042762	1	Complete 1-3/8, 1000 RPM drive assembly - DS8.50Q	17	1041681	1	Inner guard half, complete
1	40563	1	Yoke, 1-3/8 - 6 Spline ASG, DS8.50 -or-	18	1041695	1	Flange yoke
1	40757RP	1	Yoke, 1-3/8 - 21 Spline ASG, DS8.50Q	19	57432RP	4	Friction disc
2	40566	2	Cross and bearing	20	1016490	1	Hub, 1-3/4 - 20-spline
3	40765	2	Spring pin, 10 x 90	21	57443	2	Drive plate
4	40750RP	1	Inboard yoke, S4	22	1016491	1	Clutch drive plate
5	40752RP	1	Inner profile, S4	23	-----	6	M12 x 1.75P x 80 mm HHCS
6	44676	1	Outer profile & sleeve, S5	24	1016492	1	Belleville spring
7	40751RP	1	Inboard yoke, S5	25	57261	6	M12 x 1.75P Hex lock nut
8	1041678	1	Friction clutch, 1-3/4, 20-spline	26	1016498	1	Clamp cone lock asy
9	40766	2	Bearing ring, SC25				
10	18864RP	1	Decal, Danger, rotating driveline				
11	33347RP	1	Decal, Danger, guard missing				
12	40778	2	Screw				
13	1041679	1	Support bearing				
14	40779	1	Grease fitting				
15	40758	1	Slide lock collar repair kit, 1-3/8				

HHCS Hex Head Cap Screw

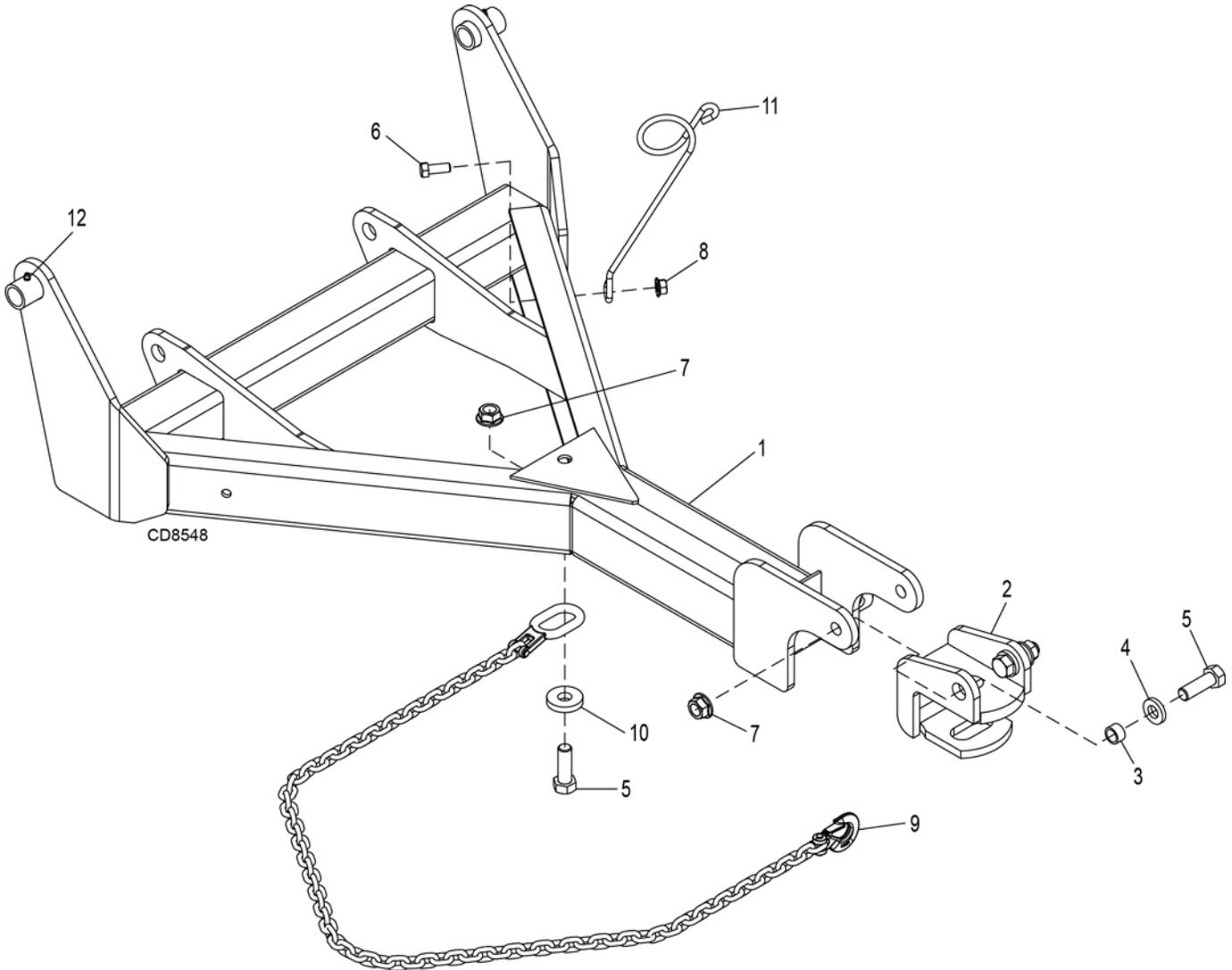
**DS10.50 (Q) / DSO8.50 (Q) / DSO10.50
SLIP CLUTCH DRIVE ASSEMBLY - MOUNTED**



REF	PART	QTY	DESCRIPTION	REF	PART	QTY	DESCRIPTION
A	57419	1	Complete 540 RPM drive assembly - DS10.50 -or-	20	40758	1	Slide lock collar repair kit, 1-3/8 -or-
A	57290	1	Complete 1-3/8, 1000 RPM drive assembly - DS10.50Q -or-	20	1003465	1	Slide lock collar repair kit, 1-3/4
A	57422	1	Complete 540 RPM drive assembly - DSO8.50, DSO10.50 -or-	21	40727	1	Outer guard half
A	57425	1	Complete 1-3/8, 1000 RPM drive assembly - DSO8.50Q, DSO10.50Q	22	57273	1	Inner guard half - DS10.50 (Q)
A	1032109	1	Complete 1-3/4, 1000 RPM drive assembly	22	57271	1	Inner guard half - DSO8.50 (Q), DSO10.50 (Q)
1	40563	1	Yoke, 1-3/8 - 6 Spline ASG -or-	23	40754	1	Male drive half, Complete (540 rpm) - DS10.50 -or-
1	40757RP	1	Yoke, 1-3/8 - 21 Spline ASG -or-	23	1003455	1	Male drive half, Complete (1000 rpm) - DS10.50Q -or-
1	1001525RP	1	Yoke, 1-3/4 - 20 Spline ASG	23	57423	1	Male drive half, Complete (540 rpm) - DSO8.50, DSO10.50 -or-
2	40566	2	Cross and bearing	23	57426	1	Male drive half, Complete (1000 rpm) - DSO8.50Q, DSO10.50Q
3	40765	2	Spring pin 10 X 90	31	57441	1	Flange yoke
4	40750RP	1	Inboard yoke S4	32	57432RP	4	Friction disc
5	40752RP	1	Inner profile S4	33	57442	1	Hub 1-3/4 - 20 I.C. -SN
6	44676	1	Outer profile & sleeve S5	34	57443	1	Drive plate
7	40751RP	1	Inboard yoke S5	35	57256	1	Drive plate - SN
8	57421	1	Friction clutch, 1-3/4, 20-spline	36	57257	1	Thrust plate
12	40766	2	Bearing ring SC25	37	57263	6	M12 x 1.25P 115 mm HHCS, CL8.8
13	40777	2	Anti-rotation chain	38	57258	6	Spring, compression
14	18864RP	1	Decal, Danger Rotating driveline	39	57265	6	Flat washer, 24 x 13 x 2.5 mm
15	33347RP	1	Decal, Danger guard missing	40	57264	6	M12 x 1.25P Hex lock nut
16	40778	2	Screw	41	57262	2	M12 x 1.75P x 65 mm HHCS, CL8.8
17	40767	1	Support bearing	42	57261	2	M12 x 1.75P Hex lock nut
18	40779	1	Grease fitting				

HHCS Hex Head Cap Screw

DS8.50 / DS10.50 TONGUE ASSEMBLY

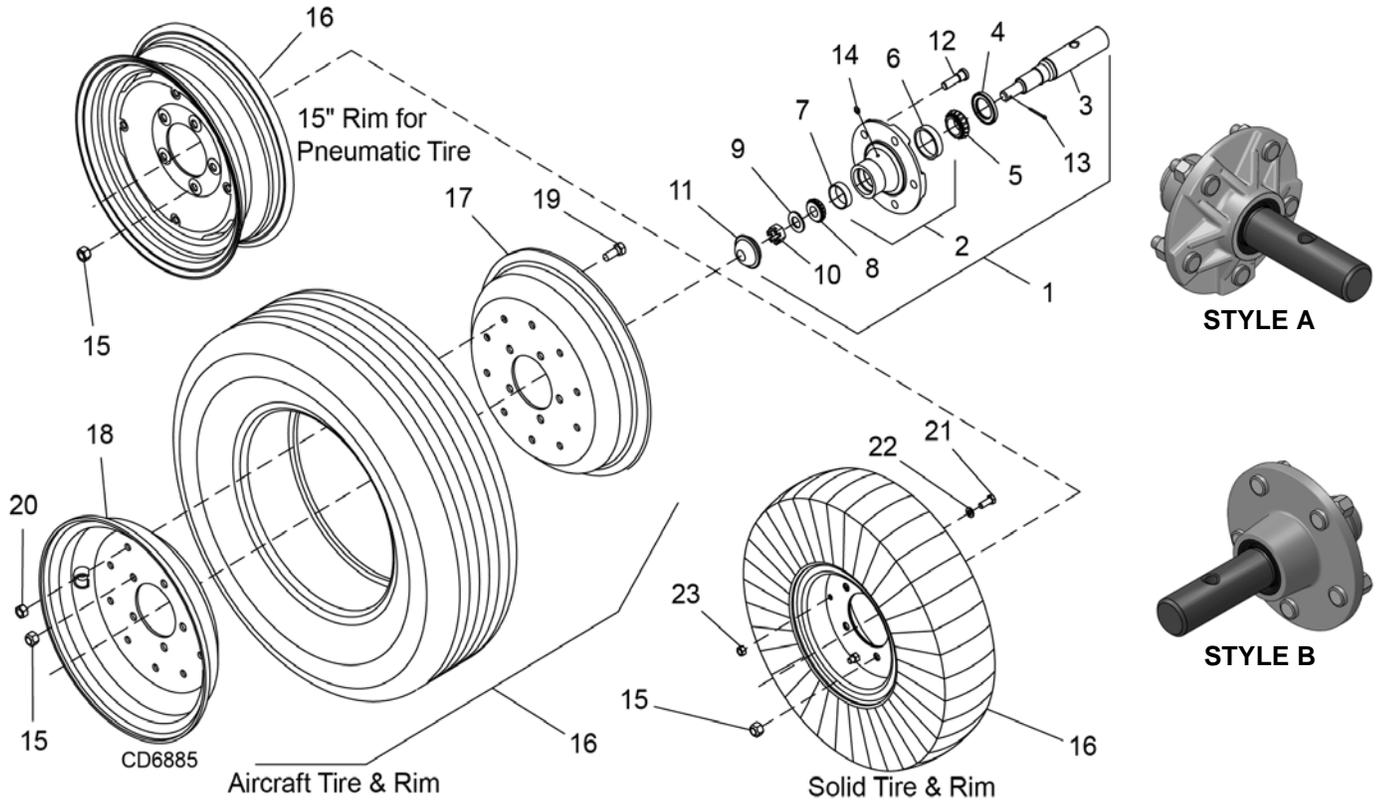


REF	PART	QTY	DESCRIPTION	REF	PART	QTY	DESCRIPTION
A	1042250	1	Tongue assembly, complete	9	19407	1	Safety chain, 6400 lb.
1	1042251RP	1	Tongue weld asy	10	8424	1	3/4 x 2 x 3/8 Washer
2	1005595RP	1	Hitch, category 2 clevis	11	3443	1	Hydraulic hose holder
3	13087	2	3/4 x 1 x 9/16 Sleeve, HT	12	12296 *		1/4-28 Straight grease fitting
4	28873	2	3/4 x 1-1/2 x 1/4 Washer				
5	13759 *		3/4 NC x 2-1/4 HHCS, GR5				* Standard hardware, obtain locally
6	6100RP *		1/2 NC x 1-1/4 HHCS, GR5				HHCS Hex head cap screw
7	302207 *		3/4 NC Flanged lock nut				
8	11900RP *		1/2 NC Flanged lock nut				

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MAN1168 (5/27/2016)

WHEEL & TIRE ASSEMBLY



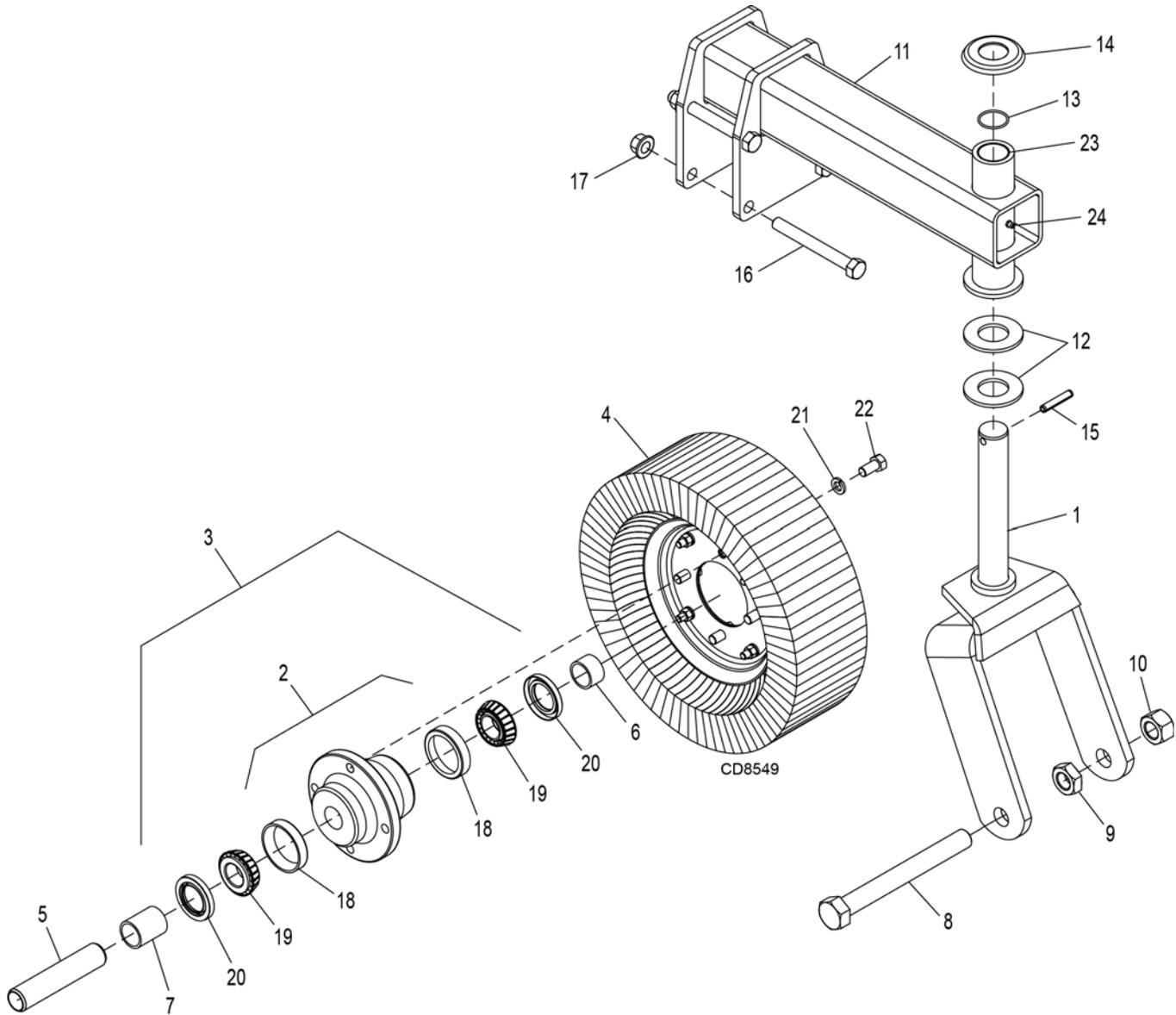
REF	PART	QTY	DESCRIPTION	REF	PART	QTY	DESCRIPTION
1A	1017050RP	1	Heavy hub assembly - Style A (includes items 2 - 15)	16	1039976F	1	25 x 8 - 14 Severe duty ag tire, rim & hardware, foam filled - 5 bolt -or-
1B	603798	1	Hub assembly - Style A (includes items 2 - 15)	16	1017030	1	29 x 9 x 15 Aircraft tire, rim & hardware - 5 bolt
2	1017034RP	1	Heavy wheel hub with cups - Style A (includes items 6, 7, 14)	17	1017026	1	15.0 x 6.0 Rim half (for 29" aircraft wheel only)
3A	1017033RP	1	Axle (for use with Style A)	18	1017025	1	15.0 x 6.0 Rim half w/ valve hole (for 29" aircraft wheel only)
3B	603799	1	Axle (for use with Style B)	19	6100RP *		1/2 NC x 1-1/4 HHCS GR5
4	1017027RP	1	Seal	20	765 *		1/2 NC Locknut
5	1017028RP	1	Bearing cone	21	19887 *		3/8 NC x 1 HHCS GR8
6	1017036RP	1	Bearing cup	22	838RP *		3/8 Standard lock washer
7	1017037RP	1	Bearing cup	23	835 *		3/8 NC Hex nut
8	1017029RP	1	Bearing cone	-	1015833	1	29 x 9 x 15 Inner tube (for 29" aircraft wheel only)
9	1017031RP	1	Washer	-	1017042	2	Rim half for 6 x 9 solid tire
10	1017032RP	1	Castle nut (for use with Style A)				HHCS Hex head cap screw
11	1017035RP	1	Hub cap				* Standard hardware, obtain locally
12	1017038	5	Stud				
13	1017069	1	Cotter pin				
14	1017067	1	Grease fitting				
15	35317	5	Nut, lug 1/2 NF				
16	1017088	1	15" Rim for pneumatic tire - 5 bolt -or-				
16	1017040	1	6.00 x 9 Solid tire, rim & hardware - 5 bolt -or-				
16	1039976	1	25 x 8 -14 Severe duty ag tire, rim & hardware - 5 bolt -or-				

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DS8.50 / DS10.50 MOUNTED TAILWHEEL ASSEMBLY



REF	PART	QTY	DESCRIPTION
1	15580RP	1	Caster yoke
2	15591	1	Hub w/cups (Includes item 18)
3	15277RP	1	Hub assembly (Includes items 18 - 20)
4	12577RP	1	4 x 8 Rim & laminated tire
5	15573RP	1	Sleeve, 1.00 x 1.25 x 5.81
6	15574RP	1	Sleeve, 1.25 x 1.50 x .903
7	15575RP	1	Sleeve, 1.25 x 1.50 x 1.86
8	15087RP	1	1 NC x 9 HHCS, GR5
9	1386RP	1	1 NC Hex jam nut
10	34279RP	1	1 NC Hex lock nut
11	1042245RP	1	Caster arm (Includes items 23 & 24)
12	2370	2	Washer, 1.62 x 3 x .18
13	12889RP	1	O-Ring, 3/32 x 1-9/16 OD
14	12881	1	Cap washer

REF	PART	QTY	DESCRIPTION
15	4674	1	3/8 x 2 Spirol pin
16	990	*	5/8 NC x 5-1/2 HHCS, GR5
17	19025RP	*	5/8 NC Flange lock nut
18	309	2	Bearing cup
19	310	2	Bearing cone
20	314	2	Seal
21	855RP	*	1/2 Standard lock washer
22	4119RP	*	1/2 NF x 1 HHCS, GR5
23	11011	2	1-1/2 x 1-5/8 x 1-1/2 Bronze bushing
24	12296	*	1/4-28 Straight grease fitting

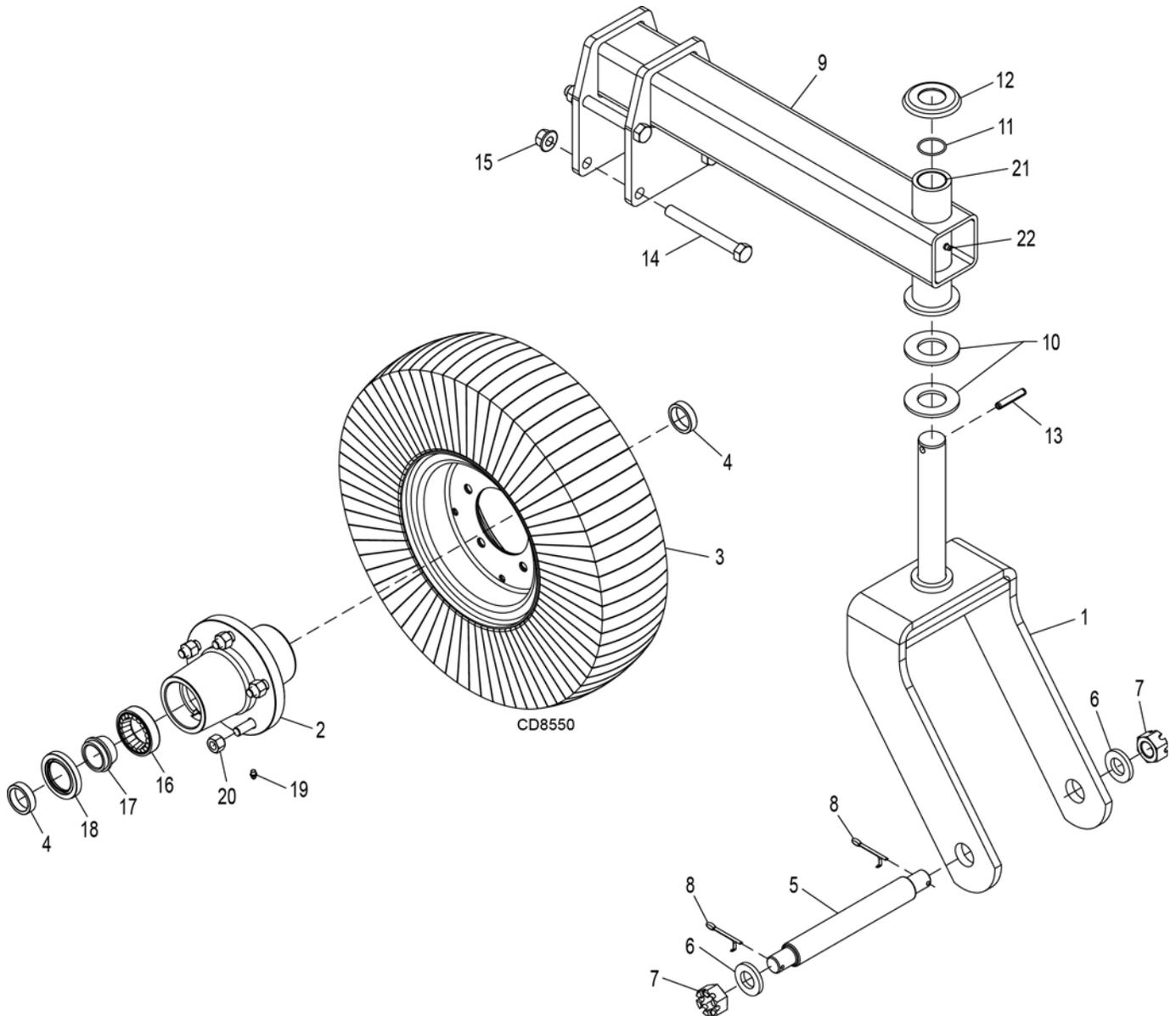
HHCS Hex Head Cap Screw

* Standard Hardware, Obtain Locally

64 Parts

MAN1168 (5/27/2016)

DSO8.50 / DSO10.50 TAILWHEEL ASSEMBLY



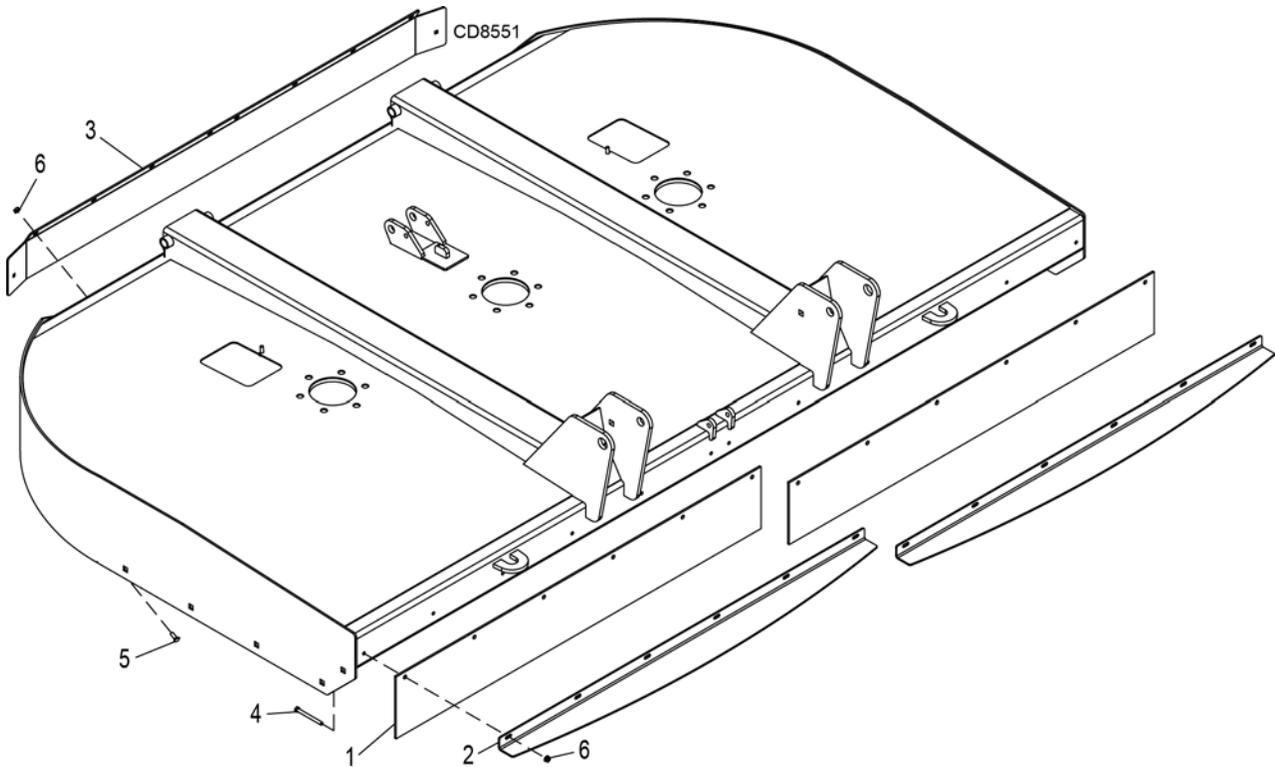
REF	PART	QTY	DESCRIPTION
1	1043014	1	Caster yoke
2	1041000RP	1	Hub (Includes items 16 - 20)
3	1017040	1	6.00 x 9 Solid tire, rim & hardware (See page 63)
4	1042979	2	Spacer
5	1042980	1	Axle
6	11920RP	2	Washer, 1 x 1-7/8 x 1/4
7	1006861RP	2	1"-8 UNC Hex slotted nut
8	64803RP	*	3/16 x 2 Cotter pin
9	1043015	1	Caster arm (Includes items 21 & 22)

REF	PART	QTY	DESCRIPTION
14	990	*	5/8 NC x 5-1/2 HHCS, GR5
15	19025RP	*	5/8 NC Flange lock nut
16	7069RP	2	Bearing cup
17	1041042RP	2	Bearing cone
18	1041043RP	2	Seal
19	1972RP	*	1/4-28 Tapered thread grease fitting
20	35317	5	1/2 NF Wheel nut
21	11011	2	1-1/2 x 1-5/8 x 1-1/2 Bronze bushing
22	12296	*	1/4-28 Straight grease fitting

HHCS Hex Head Cap Screw

* Standard Hardware, Obtain Locally

DS8.50 / DSO8.50 / DS10.50 / DSO10.50 BELT SHIELDING (STANDARD)



DS8.50 / DSO8.50

REF	PART	QTY	DESCRIPTION
1	1042751	2	Front rubber deflector
2	1043016	2	Front belt bracket
3	1043017	1	Rear band
4	14478 *		3/8 NC x 4 HHCS, GR5
5	6697RP *		3/8 NC x 1 Carriage bolt, GR5
6	14350RP *		3/8 NC Flange lock nut

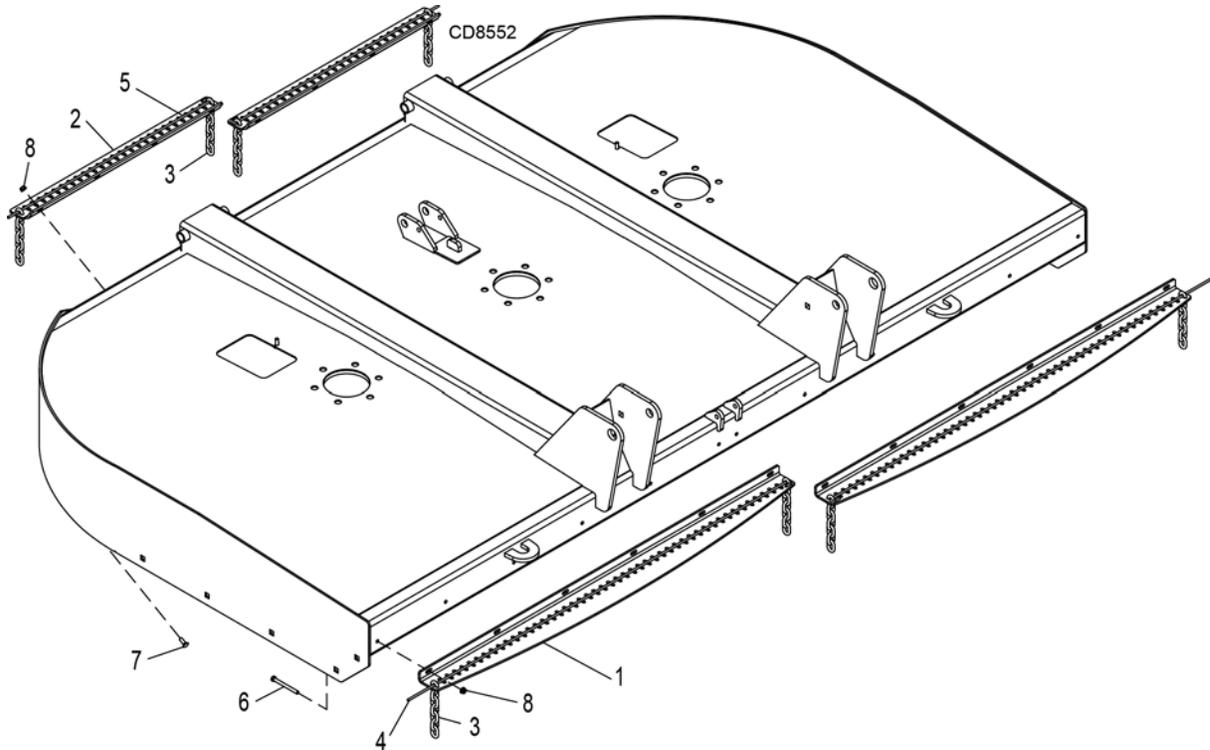
HHCS Hex Head Cap Screw
 * Standard Hardware, Obtain Locally

DS10.50 / DSO10.50

REF	PART	QTY	DESCRIPTION
1	1042264	2	Front rubber deflector
2	1043018	2	Front belt bracket
3	1043019	1	Rear band
4	14478 *		3/8 NC x 4 HHCS, GR5
5	6697RP *		3/8 NC x 1 Carriage bolt, GR5
6	14350RP *		3/8 NC Flange lock nut

HHCS Hex Head Cap Screw
 * Standard Hardware, Obtain Locally

DS8.50 / DSO8.50 / DS10.50 / DSO10.50 CHAIN SHIELDING (OPTIONAL)



DS8.50 / DSO8.50

REF	PART	QTY	DESCRIPTION
1	1043020	2	Front chain bracket
2	1043021	2	Rear chain bracket
3	5496	A/R	5/16 - 7 Link chain
4	1007853	2	Pin, bent, .243 Dia x 37 to 39 chains
5	1007854	2	Pin, bent, .243 Dia x 40 to 42 chains
6	14478 *		3/8 NC x 4 HHCS, GR5
7	6697RP *		3/8 NC x 1 Carriage bolt, GR5
8	14350RP *		3/8 NC Flange lock nut

A/R As Required

HHCS Hex Head Cap Screw

* Standard Hardware, Obtain Locally

DS10.50 / DSO10.50

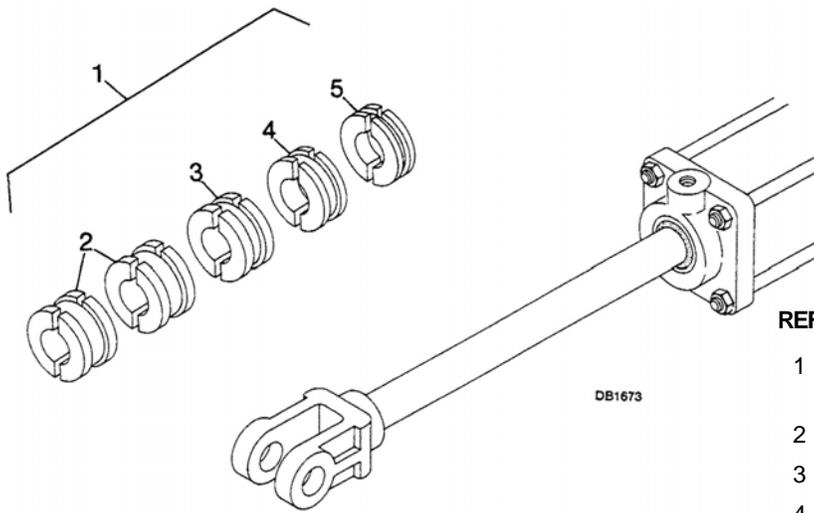
REF	PART	QTY	DESCRIPTION
1	1043022	2	Front chain bracket
2	1043023	2	Rear chain bracket
3	5496	A/R	5/16 - 7 Link chain
4	1007855	2	Pin, bent, .243 Dia x 49 to 51 chains
5	1003645	2	Pin, bent, .243 Dia x 25 to 27 chains
6	14478 *		3/8 NC x 4 HHCS, GR5
7	6697RP *		3/8 NC x 1-1/4 Carriage bolt, GR5
8	14350RP *		3/8 NC Flange lock nut

A/R As Required

HHCS Hex Head Cap Screw

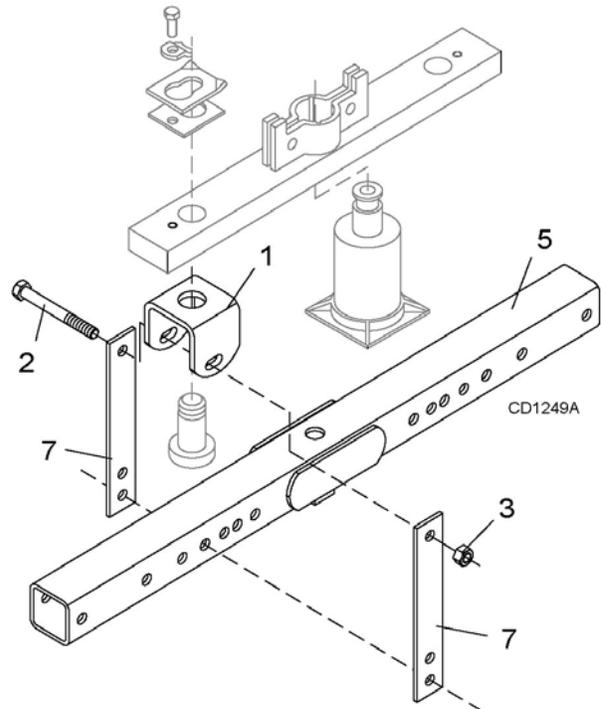
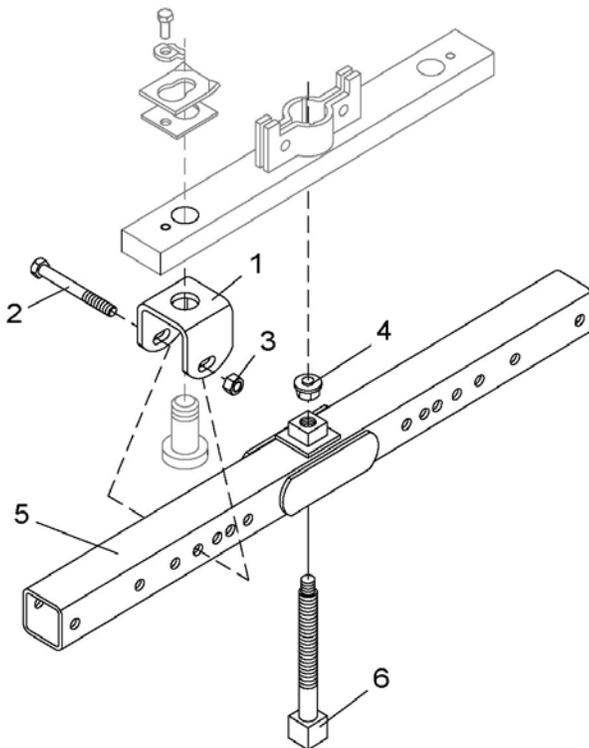
* Standard Hardware, Obtain Locally

HYDRAULIC CYLINDER STROKE CONTROL KIT



REF	PART	QTY	DESCRIPTION
1	24098	1	Stroke control set for 1-1/4" cylinder rod (contains items 2 - 5)
2	----	2	1-1/2" Segment
3	----	1	1-1/4" Segment
4	----	1	1" Segment
5	----	1	3/4" Segment

CROSSBAR PULLER (OPTIONAL)



REF	PART	QTY	DESCRIPTION
A	8811	1	Crossbar puller, complete
1	19914RP	2	Crossbar puller clevis
2	3097 *	4	5/8 NC x 4-1/2 HHCS GR5
3	230RP *	4	5/8 NC Hex nut
4	24879RP	1	Crossbar puller pad assembly

REF	PART	QTY	DESCRIPTION
5	24876	1	Crossbar puller tube assembly
6	24881	1	Crossbar puller screw assembly
7	24885	4	Crossbar puller link

* Standard hardware, obtain locally
 HHCS Hex head cap screw

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MAN1168 (5/27/2016)

BOLT TORQUE CHART

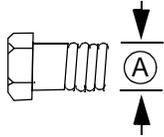
Always tighten hardware to these values unless a different torque value or tightening procedure is listed for a specific application.

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

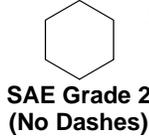
Always use the proper tool for tightening hardware: SAE for SAE hardware and Metric for metric hardware.

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 Bolt Head Identification

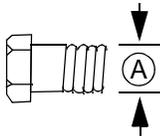


SAE Grade 5
(3 Radial Dashes)



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

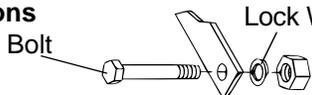


Metric Bolt Head Identification



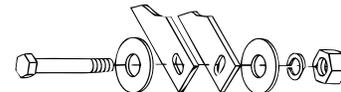
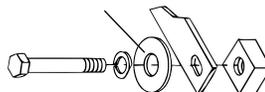
Ⓐ Diameter & Thread Pitch (Millimeters)	Wrench Size	Coarse Thread				Fine Thread				Ⓐ Diameter & Thread Pitch (Millimeters)
		Marking on Head				Marking on Head				
		Metric 8.8		Metric 10.9		Metric 8.8		Metric 10.9		
		N-m	lbs-ft	N-m	lbs-ft	N-m	lbs-ft	N-m	lbs-ft	
6 x 1.0	10 mm	8	6	11	8	8	6	11	8	6 x 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



Lock Washer

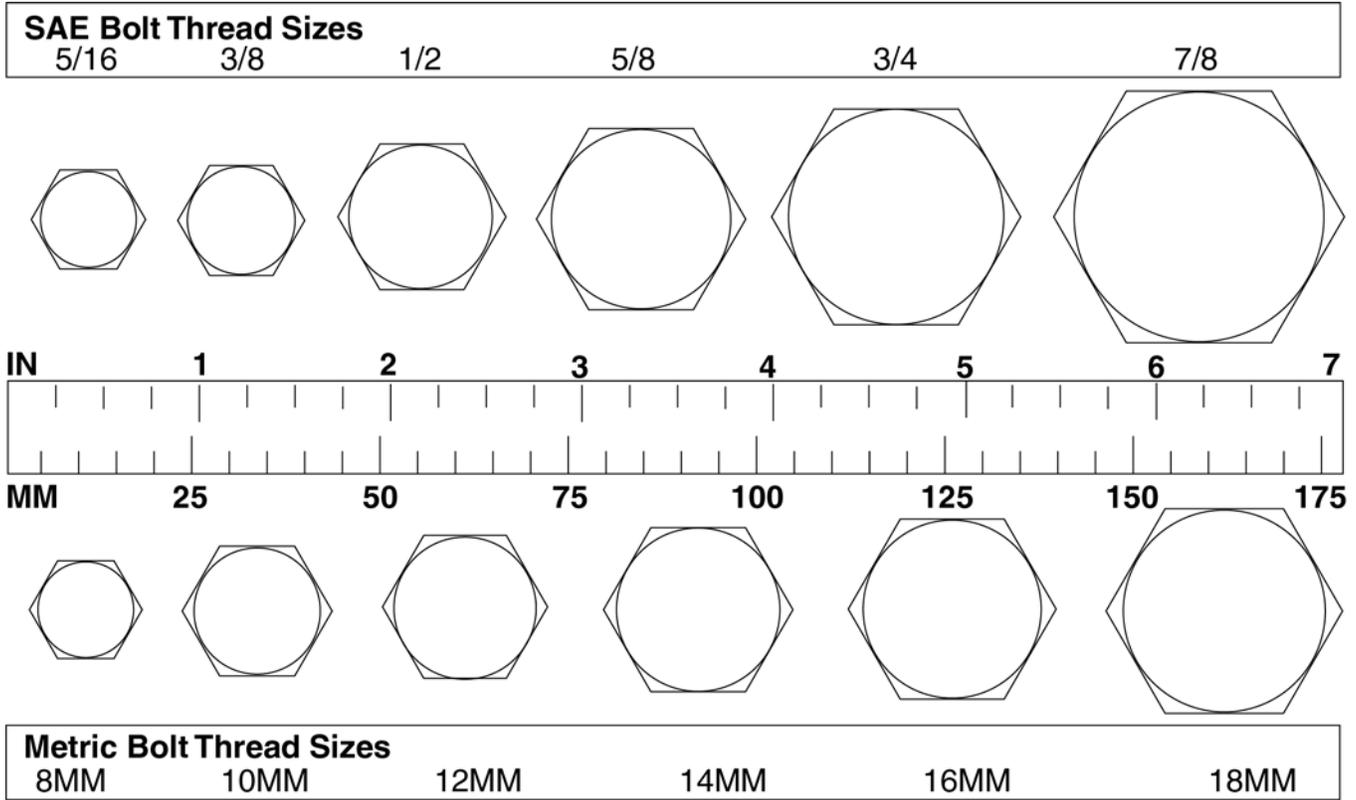
Flat Washer



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

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WARRANTY

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

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®
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WAIN-ROY®
WOODS®

WOODS®

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Post Office Box 1000
Oregon, Illinois 61061 USA
800-319-6637 tel
800-399-6637 fax
woodsequipment.com

WARRANTY

All Models Except Mow'n Machine™ 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)
All units invoiced after 4/30/2012		
Gearbox components	BB48X, BB60X, BB72X, BB84X, BB600X, BB720X, BB840X, BB6000X, BB7200X, BB8400X, DS12.50, TS14.60, DS1440, TS1680, DS8.30, DS10.40, DS8.50, DSO8.50, DS10.50, DSO10.50, DBH5.30, DBH6.30	6 years
	BW12, BW15, BW126X, BW180X, BW126XHD, BW180XHD, BW1260X, BW1800X, BW10.50, BW10.50Q, BW15.50, BW15.50Q, BW10.60, BW10.60Q, BW15.60, BW15.60Q, BW10.70, BW10.70Q, BW15.70, BW15.70Q	
	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, TPD25, TPD35, TPD65, TPD95	
	RDC54, RD60, RD72, TBW150C, TS/R60, TS/R52, TS/R44, 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.

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