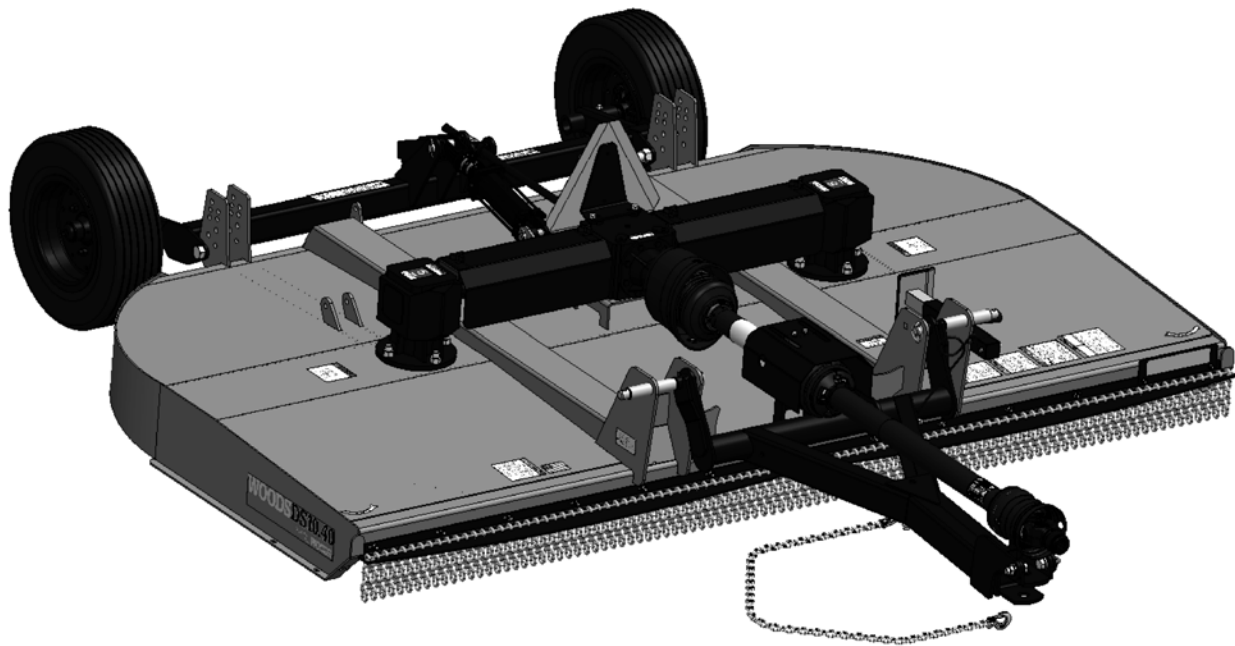


ROTARY CUTTER

DS8.30
DS10.40



MAN1167
(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®

2 Introduction

Gen'l (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

	DS8.30	DS10.40
Cutting Height	2" - 12"	
Cutting Width	96"	120"
Overall Width	100.5"	124.5"
Overall Length: Pull-Type (25" Tires)	142"	155"
Overall Length: Mounted	96"	106"
Minimum Tractor HP: Pull-Type	35 HP	40 HP
Minimum Tractor HP: Mounted	45 HP	60 HP
Tractor PTO RPM	540	
Number of Blade Spindles	2	
Blade overlap	4"	
Number of Blades	4	
Driveline w/Slip Clutch: Pull-Type	Cat 4 CV	Cat 4 CV
Driveline w/Slip Clutch: Mounted	Cat 4	Cat 5
Side Frame Thickness	7 Ga	7 Ga
Weight (w/Belting): Pull-Type	1,440 lbs	1,820 lbs
Weight (w/Belting): Mounted	1,215 lbs	1,575 lbs
Blade Speed (Feet per Minute)	15,200	16,700
Blade Rotation	Left spindle: CCW; Right Spindle: CW	
Wheel Size: Pull-Type	15" Rims 21" Laminated 25" Severe Duty	15" Rims 21" Laminated 25" Severe Duty
Wheel Size: Mounted	16" Laminated	16" 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 directions. 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.

4 Introduction

MAN1167 (7/1/2016)

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. 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 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 or transport on steep slopes.
- 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.
- Explosive separation of tire and rim parts can cause serious injury or death. Release all air pressure before loosening bolts on wheel.

STORAGE

- Keep children and bystanders away from storage area.

- Follow manual instructions for storage.

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 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 cylinder. Disconnect driveline and secure up off the ground.

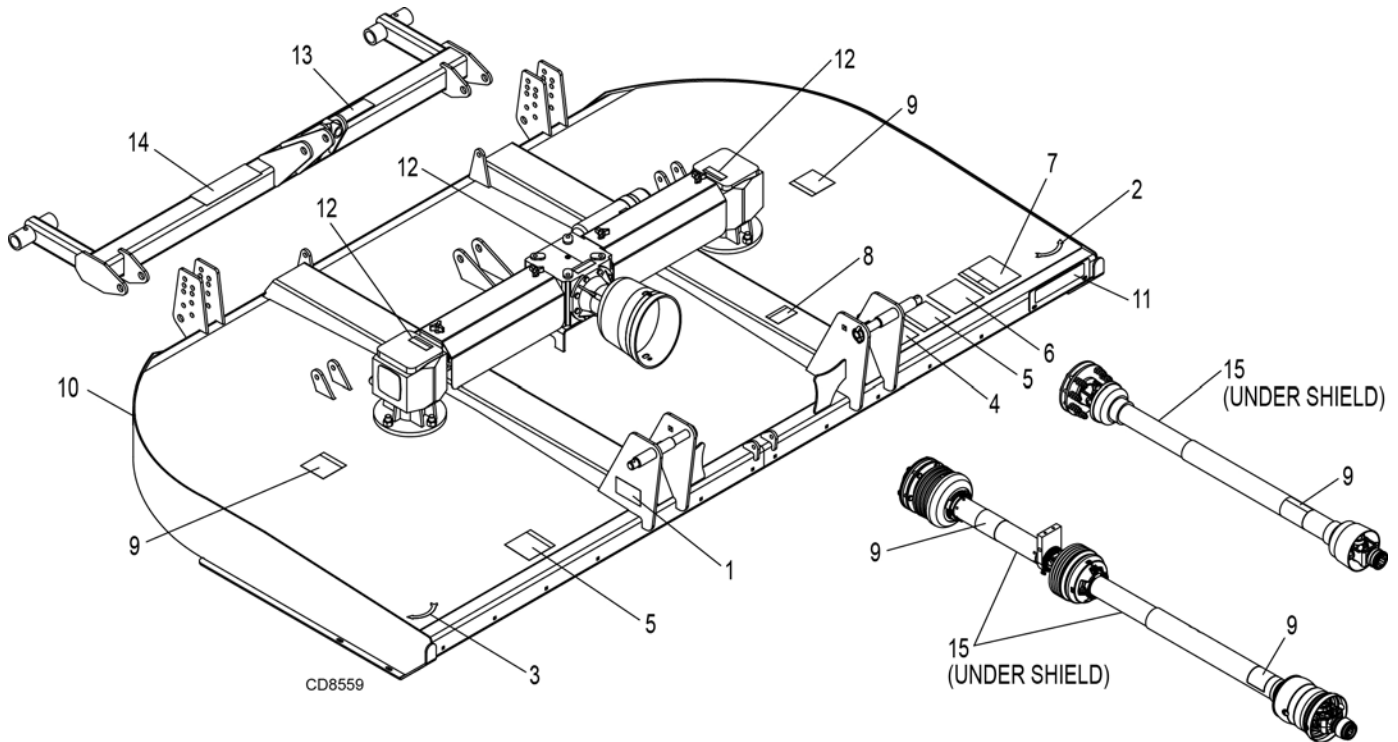
SAFETY & INSTRUCTIONAL DECALS



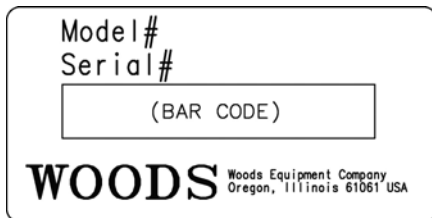
ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!



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

10 - PN 57123 RED REAR REFLECTOR 9"

11 - PN 1002940 AMBER FRONT REFLECTOR 9"

(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

CRUSHING AND PINCHING HAZARD

- Be extremely careful handling various parts of the machine. They are heavy and hands, fingers, feet, and other body parts could be crushed or pinched between tractor and implement.
- Operate tractor controls from tractor seat only.
- Do not stand between tractor and implement when tractor is in gear.
- Make sure parking brake is engaged before going between tractor and implement.
- Stand clear of machine while in operation or when it is being raised or lowered.

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

1003751

7 - PN 18865

WARNING

FALLING OFF CAN RESULT IN BEING RUN OVER.

- Tractor must be equipped with ROPS (or ROPS CAB) and seat belt. Keep foldable ROPS systems in "locked up" position at all times.
- Buckle Up! Keep seat belt securely fastened.
- Never allow riders on mower or tractor.

RAISED EQUIPMENT CAN DROP AND CRUSH.

- 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.

FALLING OFF OR FAILING TO BLOCK SECURELY CAN RESULT IN SERIOUS INJURY OR DEATH.

18865

6 - PN 15503

DANGER

ROTATING BLADES AND THROWN OBJECTS

- 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.

BLADE CONTACT OR THROWN OBJECTS CAN CAUSE SERIOUS INJURY OR DEATH.

15503

9 - PN 18864

DANGER

ROTATING DRIVELINE CONTACT CAN CAUSE DEATH

KEEP AWAY!

DO NOT OPERATE WITHOUT -

- All driveline guards, tractor and equipment shields in place.
- Drivelines securely attached at both ends.
- Driveline guards that turn freely on driveline.

18864-C

8 - PN 18866

WARNING

DO NOT EXCEED PTO SPEED OF

540 RPM

PTO speeds higher than 540 RPM can cause equipment failure and personal injury.

18866

12 - PN 1004114

DANGER


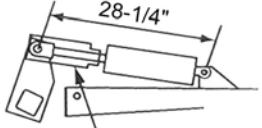
If shaft connection is visible, shield is missing. Replace shield before operating equipment.

1004114


(Safety Decals continued on next page)

SAFETY & INSTRUCTIONAL DECALS
⚠ ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED! ⚠
Replace Immediately If Damaged!

14 - PN 1004991

 <p>1004991</p>	<h2>⚠ WARNING</h2> <h3>RAISED IMPLEMENT CAN DROP AND CRUSH</h3> <ul style="list-style-type: none"> ■ 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. <p align="center">FAILURE TO FOLLOW INSTRUCTIONS CAN RESULT IN SERIOUS INJURY OR DEATH.</p>	<p>TRANSPORT LOCK AND CYLINDER REQUIREMENTS</p> <p>SINGLE-ACTING FULL EXTENSION</p>  <p>TRANSPORT LOCK</p>

13 - PN W19924

 <p>W19924</p>	<h2>⚠ WARNING</h2> <h3>HIGH-PRESSURE HYDRAULIC OIL LEAKS CAN PENETRATE SKIN RESULTING IN SERIOUS INJURY, GANGRENE OR DEATH.</h3> <ul style="list-style-type: none"> ■ 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.

15 - PN 33347

<h2>⚠ DANGER</h2>

<p>GUARD MISSING. DO NOT OPERATE.</p>
<h2>⚠ DANGER</h2>

<p>GUARD MISSING. DO NOT OPERATE.</p>
<p>33347</p>
<h2>⚠ DANGER</h2>

PN 1006348 (LOCATED ON WHEEL RIMS)

<h2>⚠ WARNING</h2>	<h3>EXPLOSION HAZARD</h3>
<p>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.</p>	
<p>1006348</p>	

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.

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 page 7 to page 13.

This medium-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. 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.

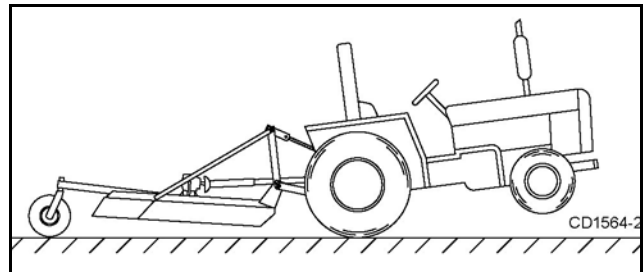


Figure 1. Tractor Stability

CONNECT CUTTER TO TRACTOR (PULL-TYPE)

NOTICE

■ The horizontal distance between the end of the tractor PTO shaft and the drawbar hitch point should be 14" for 540 RPM cutters. This distance must not vary more than plus or minus (1") or the drive may be damaged when turning.

1. Adjust tractor drawbar to obtain the desired drawbar 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. Secure cutter to tractor using a 3/4" clevis pin and clip for category 1, or 1-1/8" clevis pin and clip for category 2.
4. Attach safety tow chain to drawbar support. Leave enough slack for turning.

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 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)



■ **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.**

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.

DS8.30 Category 1 Standard Hitch

1. Position tractor lower lift arms between hitch mast plates.
2. Insert lower hitch pins (1) through mast plates and tractor lower lift arms. Use sleeves (2) to keep lift arms in position. Secure with 7/16" klik pins (4).
3. Connect the tractor top link to the cutter A-frame using the middle holes and 3/4" pin (5), cotter pin (6), and 1/4" klik pin (7). See Figure 2.

DS8.30 Category 2 Standard Hitch

1. Position tractor lower lift arms between hitch mast plates.
2. Insert lower hitch pins (1) and 1-1/8" OD sleeves (2) through mast plates and tractor lower lift arms. Use sleeves (3) to keep lift arms in position. Secure with 7/16" klik pin (4).
3. Connect the tractor top link to the cutter A-frame using the top holes and 1" pin supplied with tractor top link. See Figure 2.

DS8.30 Category 1 & 2 Quick Hitch

1. Insert lower hitch pins (1), 1-1/8" OD sleeves (2), and 1-7/16" OD sleeves (3) through mast plates. Secure with 7/16" klik pins (4). Note the sleeve orientation in Figure 2.
2. The upper hook on quick hitch will engage 1-1/4" sleeve (8) between break links (9).
3. Attach tractor to cutter and secure hitch according to hitch manufacturer's instructions.

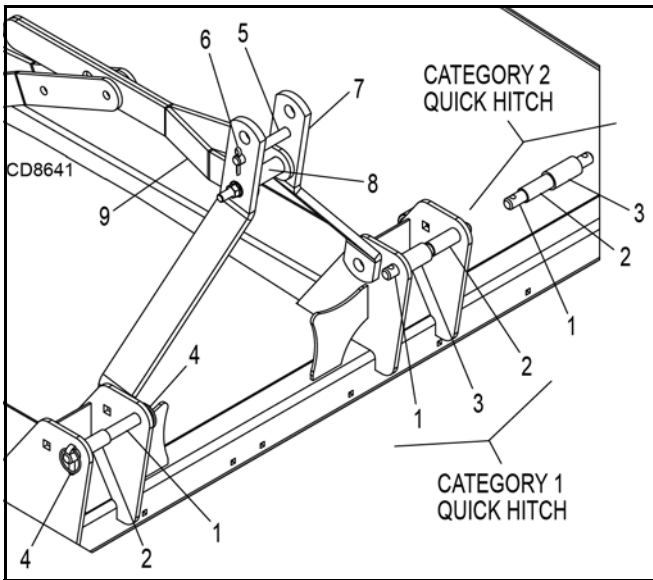


Figure 2. DS8.30 Standard and Quick Hitch Connection

DS10.40 Category 2 Standard Hitch

1. Position tractor lower lift arms between hitch mast plates.
2. Insert lower hitch pins (1) to Position B, Figure 3, through mast plates and tractor lower lift arms.
3. Secure with klik pins (2).
4. Connect the tractor top link to the cutter A-frame using the middle holes and 3/4" pin (3), 1" OD sleeve (4), cotter pin (5), and 1/4" klik pin (6).

DS10.40 Category 3 Standard Hitch

1. Position tractor lower lift arms between hitch mast plates.
2. Insert lower hitch pins (1) to Position A, Figure 3.
3. Secure with klik pins (2).
4. Connect the tractor top link to the cutter A-frame using top holes and 3/4" pin (3), 1-1/4" OD sleeve (not shown), cotter pin (5), and 1/4" klik pin (6).

DS10.40 Category 2 & 3 Quick Hitches

1. Position lower hitch pins (1) to Position A, Figure 3.
2. The upper hook on the quick hitch will engage the 1-1/4" sleeve (7) between break links (8) as shown for Category 2. Break links and sleeve will need to

be moved up to the middle hole of the A-frame for Category 3.

3. Attach tractor to cutter and secure hitch according to hitch manufacturer's instructions.

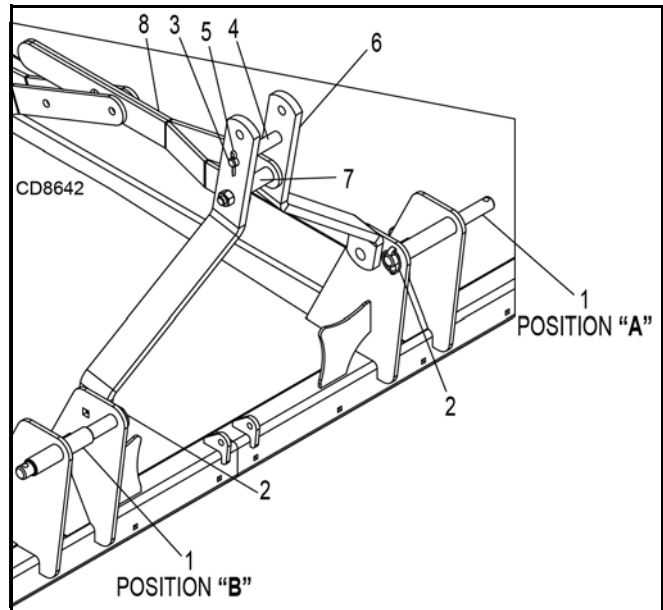


Figure 3. DS10.40 Standard and Quick Hitch Connection

DRIVELINE ATTACHMENT

(Mounted DS8.30 & DS10.40)

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.

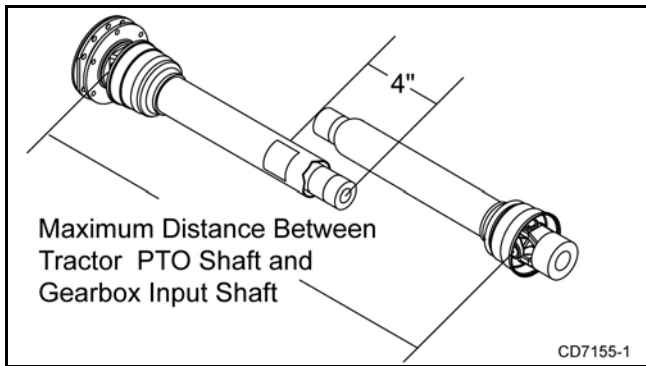


Figure 4. 4 Inch Minimum Overlap

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.
2. Place driveline halves parallel to one another to determine how much to shorten the driveline.



Figure 5. Drive Halves Placed Parallel

3. Measure from 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 6.

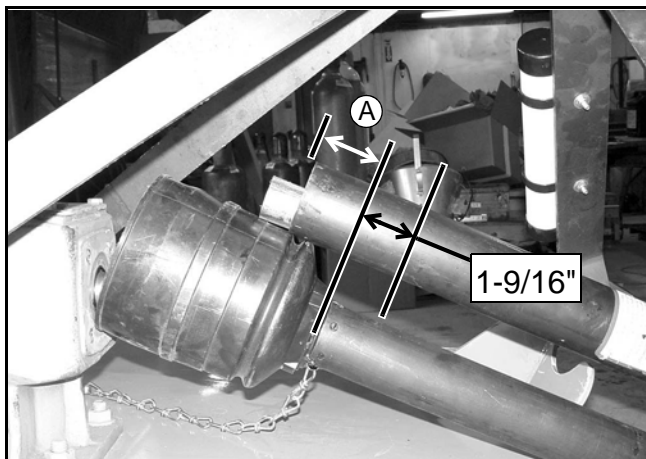


Figure 6. Determine Shield Length

4. Cut the shield to the overall dimension.

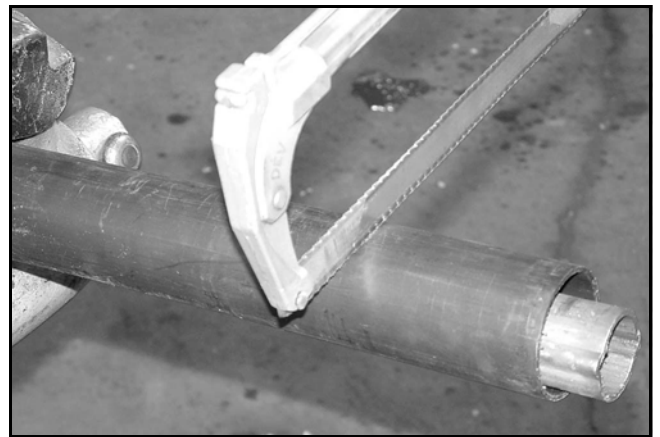


Figure 7. Cut Shield

5. Place the cutoff portion of the shield against the end of the shaft and use as a guide. Mark and cut the shaft.



Figure 8. Cut Shaft to Length

6. Repeat step 6 for the other half of the drive.
7. File and clean cut ends of both drive halves.

Driveline Interference Check

1. Check for clearance between driveline and cutter deck.
2. 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

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.

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 gearboxes will be damaged.

Pull-Type Units

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

Using hydraulic cylinder, raise or lower the tailwheel and set position A to 2-3/4 inches 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 1/4 to 1/2 inches more than position A. Refer to Figure 9.

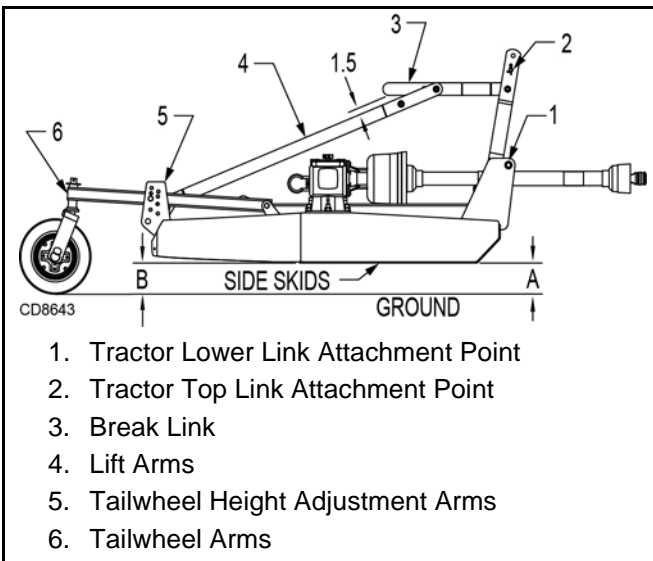


Figure 9. Cutting Height Adjustment

Mounted Units

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

Adjust tractor 3-point hitch to obtain a distance of 2-3/4 inches at position "A" to obtain a 4" cutting height. See Figure 9.

Adjust the position of the tailwheel arms between the tailwheel height adjustment brackets to obtain a distance greater than 2-3/4" at position "B"

Adjust top link to provide 1-1/2" of clearance between the break link (2) and the rear lift links. See Figure 9.

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.

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).

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. 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 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 540 rpm 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. 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.

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 6 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.**

WARNING

■ **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.

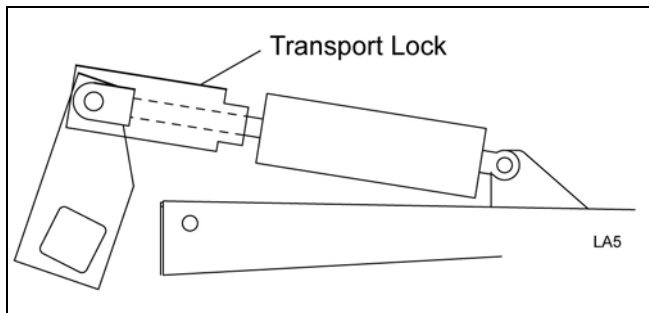


Figure 10. Transport Lock Operation

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 page 7 to page 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 chain shielding is in good condition and replace any damaged chain links.
- ___ 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 11) 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 11 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. 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 the lower hole on back side of center gearbox or side hole on spindle gearboxes. Check gearboxes daily for evidence of leakage, and contact your dealer if leakage occurs.

Driveline Lubrication

1. Lubricate the driveline slip joint every eight 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.
4. Grease side drive yoke where yoke attaches to side gearbox.

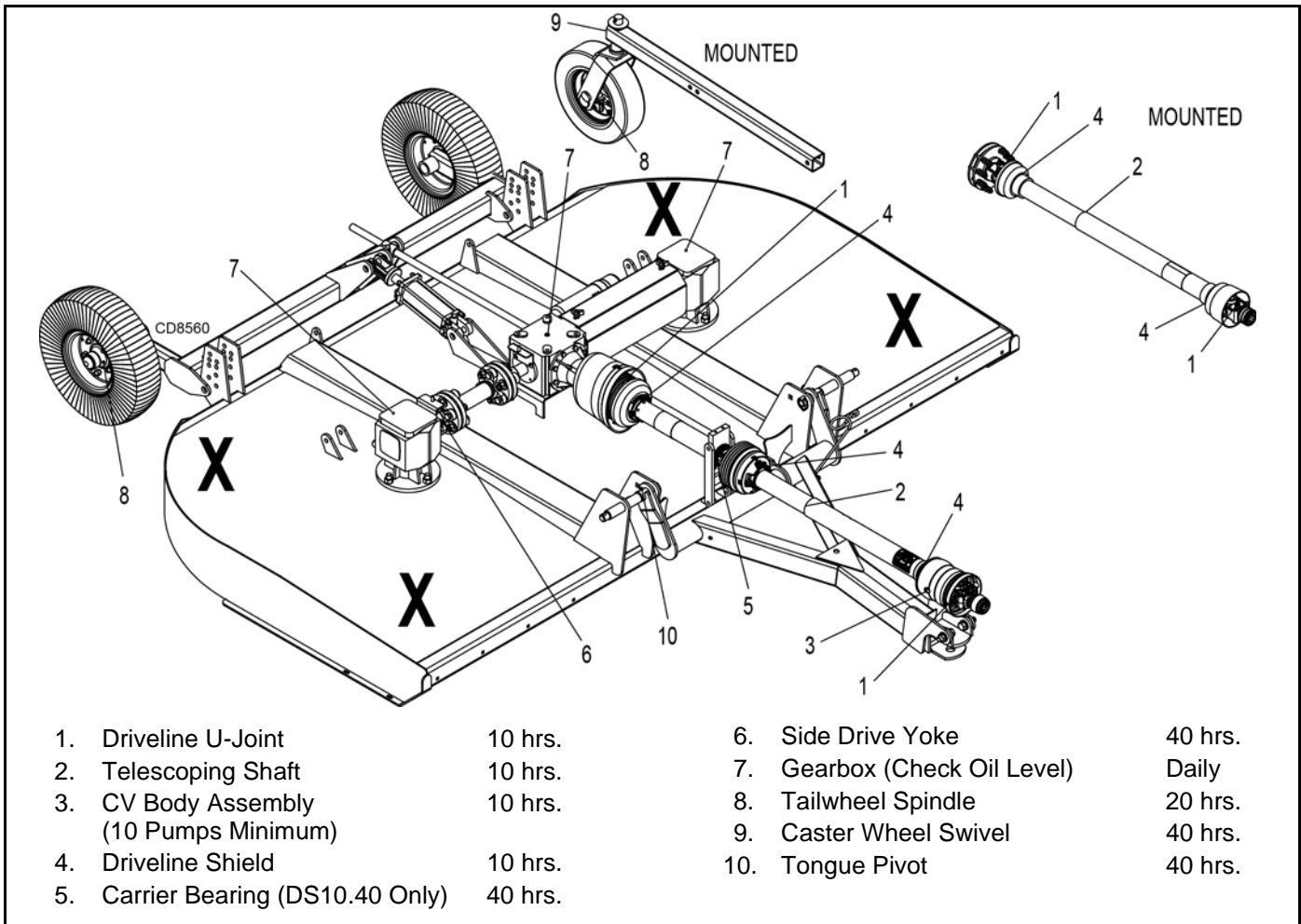


Figure 11. Jackstand Placement and Lubrication Points

SERVICING BLADES

Removing Blades (Figure 12)

NOTICE

■ If blade pin (9) is seized in crossbar and extreme force will be needed to remove it, support crossbar from below to prevent gearbox damage.

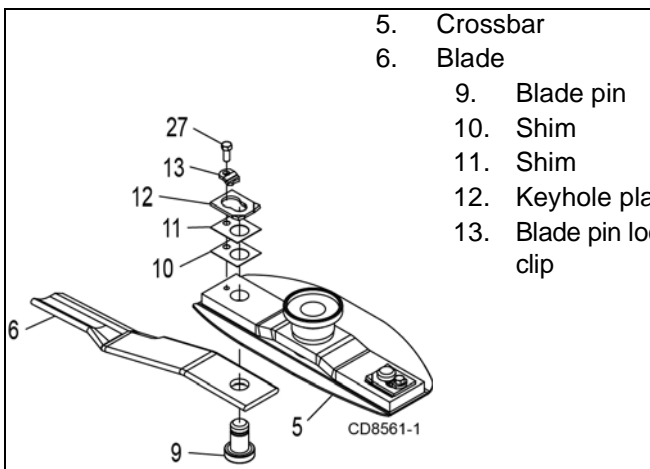


Figure 12. Blade Assembly

1. Disconnect driveline from tractor PTO.
2. Raise cutter and block securely. (See Figure 11).
3. Align crossbar (5) with blade access hole in the cutter frame. Remove cap screw (27), blade pin lock clip (13), keyhole plate (12), and shims (10 & 11). Carefully drive blade pin (9) out of crossbar.
4. Rotate crossbar (5) 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.

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

1. Inspect blade pin (9) for nicks or gouges, and if you find any, replace the blade pin.
2. Insert blade pin through the blade (6). Blade should swivel on blade pin; if it doesn't, determine the cause and correct.
3. Align crossbar (5) 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 (13).
4. Install shims (10 & 11) over blade pin.
NOTE: Only use enough shims to allow keyhole plate (12) to slide into blade pin groove.
5. Install blade clip (13) over keyhole plate and into blade pin groove.
6. Secure into position with cap screw (27). 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.

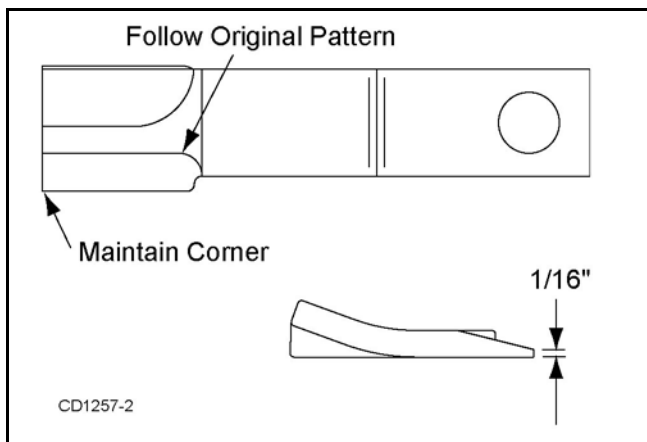


Figure 13. Sharpen Blade Cutting Edge

ADJUSTING SLIP CLUTCH

The slip clutch is designed to slip so that the gearbox and driveline 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:

DS8.30 - 3-Point Mounted

1. Turn off tractor engine and remove key.
2. Loosen nuts on springs until the springs can rotate freely, yet remain secure on the bolts.
3. Mark outer plates of slip-disc clutch as shown in Figure 14.
4. Securely attach implement to the tractor and start the tractor.
5. Engage PTO for several seconds then quickly disengage it.
6. Turn tractor off and remove key.
7. The friction lining plates should have "slipped". Check the marks placed on the outer plates of the slip-disc clutch in step 3 to make sure this is the case.
8. If clutch does not slip, check assembly for oil grease and debris. Clean if necessary.
9. Reassemble clutch and tighten bolts no more than 1/8 of a turn at a time until desired setting of 1.26" is achieved.
10. If excessive slippage continues, check lining plates for excessive wear. They are 1/8" thick when new and should be replaced after 1/32" of wear to ensure proper operation.

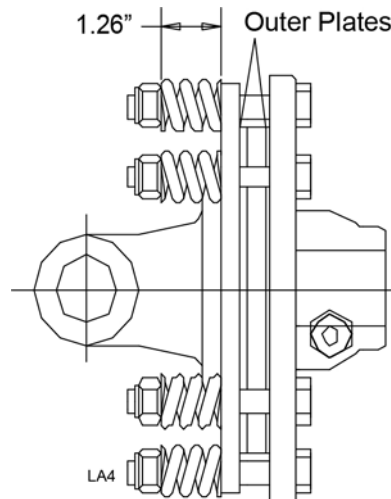
DS8.30 Pull-Type

DS10.40 Pull-Type

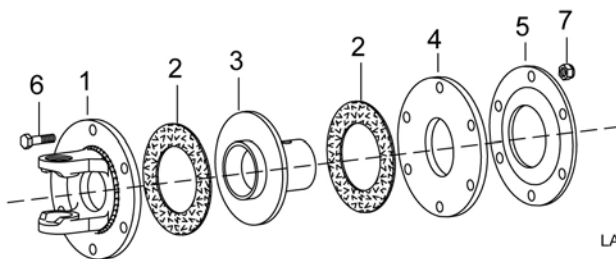
DS10.40 3-Point Mounted

1. Turn off tractor engine and remove key.
2. Remove driveline from tractor PTO.
3. Loosen six 10 mm cap screws (6) to remove all tension from Belleville spring plate (5).
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. Tighten Belleville spring (5) until it is against the thrust plate (4) of the clutch, and then back off each of the six nuts by two full revolutions. The gap between Belleville spring and thrust plate should be 1/8" as shown in Figure 14.
7. If a clutch continues to slip when the spring is compressed to 1/8", 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".

DS8.30 3-Point Mounted



DS8.30 Pull-Type DS10.40 Pull-Type DS10.40 3-Point Mounted



1. Flange yoke
2. Friction disc
3. Hub, 1-3/8" round bore
4. Thrust plate
5. Belleville spring plate
6. 10 mm x 1.5P x 55 mm Cap screw
7. 10 mm x 1.5P Hex nut

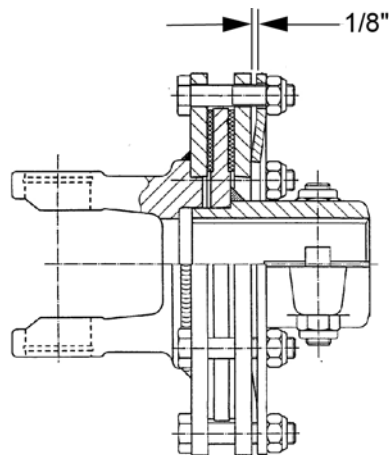


Figure 14. Slip Clutch Assembly

RUBBER DISK REPLACEMENT

The flexible coupler side drive is designed to flex when striking heavy objects or during start-up to protect gearboxes. 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 (6, 7, 8 or 9 and 10). Remove sleeves (7) from old disk and install in new disk. Reassemble and torque bolts to 85 lbs-ft. See Figure 15. 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 37.

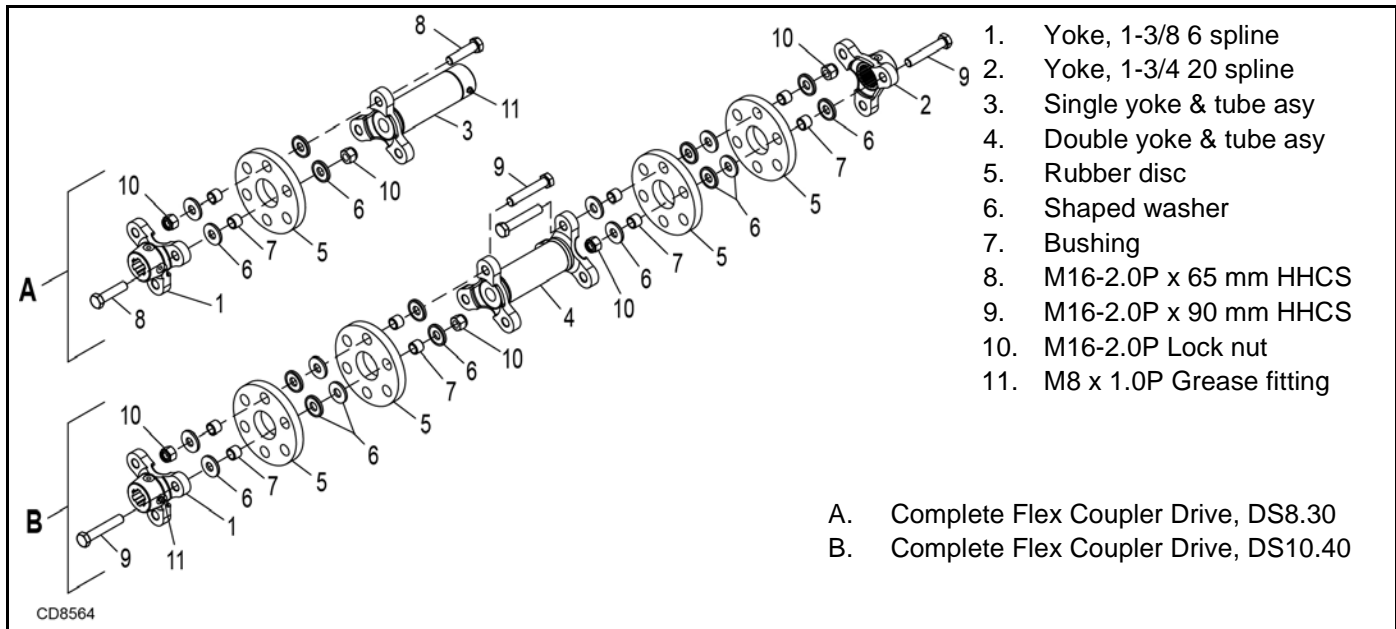


Figure 15. Flexible Coupler

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.

Repairing Rubber Shielding

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

Repairing Optional Chain Shielding

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

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.

SERVICING TIRES SAFELY

Used Aircraft Tires (Figure 16)

⚠ 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 16. Split Rim Tire Servicing

TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
Does not cut	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	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	Broken or worn blades Attitude incorrect Ground speed too fast Excessive cutting height Excessive lush and tall vegetation	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	Running with skids continuously on ground	Raise cutting height or adjust.
Excessive clutch slippage	Clutch out of adjustment Clutch discs worn; wear stops contacting opposite plate Blades hitting ground	Adjust clutch. Replace discs. Raise cutting height.
Vibration	Broken blade Bearing failure Hitch length incorrect Universal drive	Replace blades in pairs. Check gearbox shafts for side play. Reset hitch length. Adjust pedestal bearing height to be parallel to ground.
Blades hitting deck	Bent blades or crossbar	Replace bent blades or crossbar.
Blades hitting each other	Side drive failure	Retime blades, or replace rubber coupler disks. See page 38.
Unit will not raise	Low oil	Add hydraulic oil.

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.

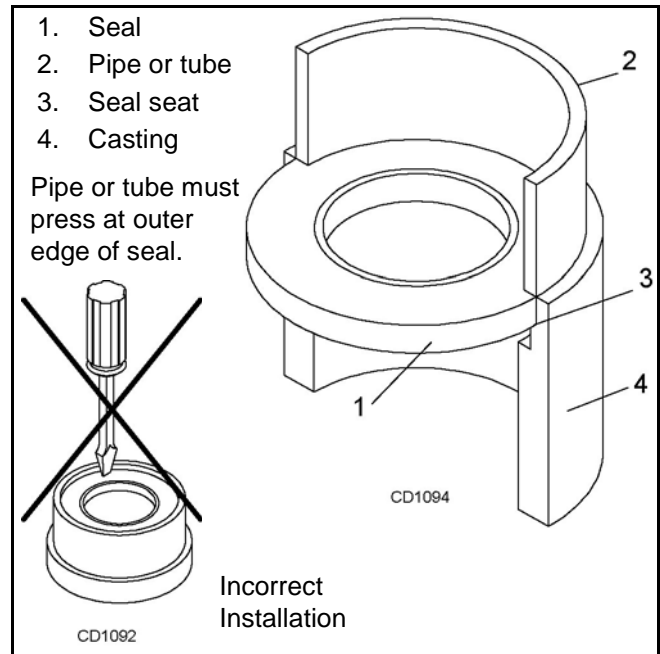


Figure 18. Seal Installation

GEARBOX REPAIR - DS8.30 **(Figure 19)**

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.

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

Remove Gearbox from Cutter

1. Disconnect and remove the rear driveline from the gearbox.
2. Remove vent plug (9) and siphon gear lube from housing through this opening.
3. Remove cotter pin or wire, washer, and nut from vertical shaft and remove crossbar (see **Crossbar Removal, page 37**).
4. Remove the four bolts that attach gearbox to cutter and remove gearbox.

Disassemble Gearbox

1. Remove plug from side of gearbox and pour out remaining gear oil.
2. Support housing in vise in a vertical position.
3. Remove input seal (4) (to be replaced).
4. Remove retaining rings (6) and (8).
5. Remove the six cap screws (24), washers (23) and top cover (2) from housing.
6. Remove retaining ring (6) behind gear (3).
7. Support gearbox in hand press and pull input shaft (5) through gear (3). Remove ball bearing (21).
8. Remove ball bearing (20) and gear spacer (7) from input shaft (5).
9. Support housing in vise in a horizontal position.
10. With the hub/stump jumper/crossbar, castle nut, cotter pin, wire and washer already removed, remove the four cap screws (13), lock washers (12) and output cap (17).
11. Remove output gaskets (11) and (10).
12. Push output shaft and pinion (19) down and remove ball bearing (20) or tapered roller bearings (25), output bearing spacer (18), and retaining ring (6). Remove output shaft and pinion (19).

NOTE: On gearboxes with tapered roller bearings, it will be necessary to use a punch to drive out bearing cups.

13. 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.

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

SEAL REPAIR - DS8.30 **(Figure 19)**

Vertical Shaft Seal Repair

1. Disconnect and remove the rear driveline from the gearbox.
2. Remove vent plug (9) and siphon gear lube from housing through this opening.
3. Remove crossbar (see **Crossbar Removal, page 36**).
4. Remove output cap (17) and output seal (16) by removing four cap screws (13) and washers (12). Replace with new seal (see **Seal Installation, page 28**).

Vertical seal should be recessed in output cap.

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

5. Secure output cap (17) on to bottom of gearbox using four cap screws (13) and lock washers (12).
- NOTE:** Make sure output gasket (10) and (11) are in place.
6. Fill gearbox with SAE 80W or 90W gear lube until it runs out the side level plug.
 7. Remove and replace any seal damaged in installation.

Horizontal Seal Leak Repair

1. Disconnect and remove the rear driveline from the gearbox.
2. Remove vent plug (9) and siphon gear lube from housing through this opening.
3. Remove input seal (4). Replace with new one (refer to **Seal Installation, page 28**).

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

Reassemble Gearbox - DS8.30

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 upper output bearing cups (25) in the housing and press using a round tube with the correct diameter.
4. Slide shims (26) over output shaft (16). Use the same thickness as removed as a starting point.
5. Push bearing cone (25) onto output shaft (16). Shims maybe required between cone (25) and retaining ring (6) to eliminate any space.

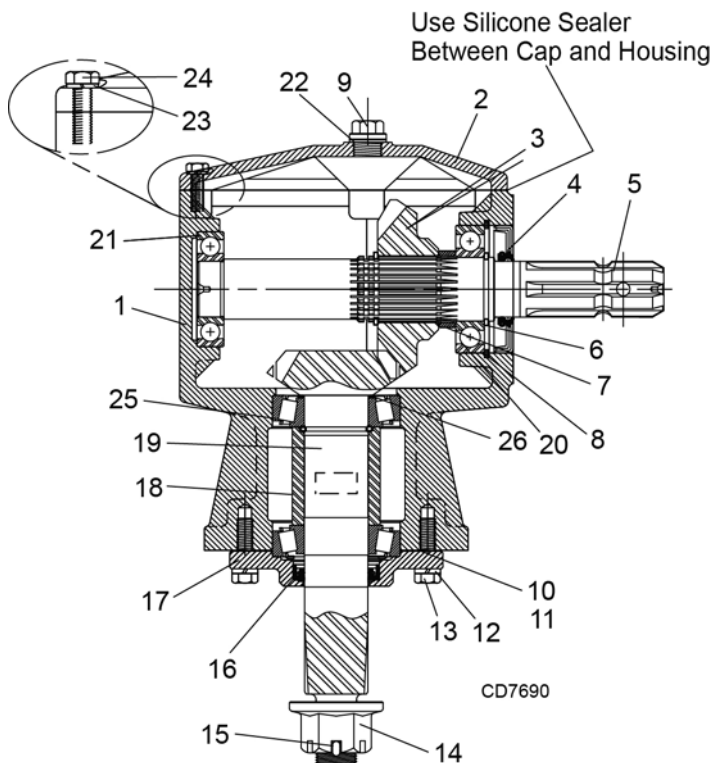
NOTE: Make sure there is no endplay or gaps in this assembly.

6. Insert output bearing spacer (18) and bearing cone (25) over output shaft until seats against upper bearing (25). Press lower bearing cup into position as shown.
7. Secure output cap (17) with new output seal (16) installed to bottom of gearbox housing using the four 10mm x 1.5 x 25 cap screws (13) and lock washers (12). Use shim gaskets (10) and (11) to adjust output bearings to a rolling torque of 9 to 12 In-lbs.

NOTE: Be sure output gaskets (10 and 11) are in place. Apply grease to output seal (16) lip for easy installation.

8. Place ball bearing (21) at back of housing and press in socket using a round tube of the correct diameter and a hand press until fully seated.
9. Insert input shaft (5) part way through housing and slide gear (3) and retaining ring (6) over input shaft (5). Keep gear (3) and retaining ring (6) loose.
10. Insert input shaft (5) into roller bearing (21) until seated against each other.
11. Slide gear (3) forward and attach retaining ring (6) in groove closest to front of input shaft (5). Slide gear (3) back against retaining ring (6).
12. Check that the gear backlash is between 0.006" and 0.016". You should not have to adjust the backlash.
13. Slide gear spacer (7) and ball bearing (20) on input shaft (5) and secure with retaining rings (6) and (8).
14. Slide input seal (4) onto input shaft (5) and press into housing flush with front using a tube of correct diameter. Be careful not to damage seal lip.
15. 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.

Remove gearbox from water and dry off with compressed air. Add SAE 80W or 90W EP oil until it runs out of side level hole. Tighten all plugs.



1. Housing
2. Inspection cover
3. 22 Tooth gear
4. Input seal
5. Input shaft
6. Retaining ring
7. Gear spacer
8. Retaining ring
9. Vent Plug and Washer
10. Output gasket (0.30)
11. Output gasket (0.13)
12. Lock washer
13. M10 x 1.5 x 25 Cap screw
14. 1" - 14 Slotted flange nut
15. Cotter pin
16. Output seal
17. Output cap
18. Output bearing spacer
19. Output shaft & pinion
20. Ball bearing
21. Ball bearing
22. Sealing washer
23. M8 Lock washer
24. M8 x 1.5 x 25 Cap screw
25. Bearing Cup and Cone
26. Shim Kit

Figure 19. DS8.30 Gearbox Assembly

SPINDLE GEARBOX REPAIR - DS10.40

Refer to Figure 20.

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 the driveline from the gearbox.
2. Remove vent plug (3) and siphon gear lube from housing through this opening.
3. Remove cotter pin, washer, and nut from vertical shaft and remove crossbar (see Hydraulic jack will not operate if tipped more than 90-degrees. Use care to prevent bending crossbar during removal., page 36).
4. Remove the four bolts that attach gearbox to cutter and remove gearbox. Gearbox is heavy; do not attempt to move without mechanical assistance.

Disassemble Gearbox

1. Remove 3/8" plug from side of gearbox and pour out gear oil.
2. Remove oil cap (24) (to be replaced).
3. Remove snap ring (9) and shim (5) from input shaft (11).
4. Support gearbox in hand press and push on input shaft (11) to remove bearing (23).
5. Remove top cover (4) from housing. Remove gear (6) from inside housing.
6. Remove oil seal (10) from front of housing (to be replaced).
7. Remove snap ring (9) and shim (5) from front of housing (1).
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 (21), cotter pin (8), and washer (20) are already removed with the stump jumper/crossbar. Remove the protective screen (17) and seal (16).
11. Remove cotter pin (18), castle nut (12), and washer (25) from output shaft (19).
12. Remove output shaft (19) by using a punch and hammer and tap on top to drive down.
13. Remove gear (5) and shim (15) from inside housing.
14. Remove bearing (15) by using a punch and hammer from the top, outside the housing.

15. Support housing upside down (top cover surface) and remove bearing (15) by using a punch and hammer from the bottom side of the housing.
16. 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.
17. Inspect vertical and horizontal shafts for grooves, nicks, or bumps in the areas where the seals seat. Resurface any damage with emery cloth.
18. Inspect housing and caps for cracks or other damage.

SEAL REPAIR - DS10.40

(Figure 20)

Vertical Shaft Seal Repair - DS10.40

1. Disconnect and remove the driveline from the gearbox.
2. Remove vent plug (3) and siphon gear lube from housing through this opening.
3. Remove crossbar (see Hydraulic jack will not operate if tipped more than 90-degrees. Use care to prevent bending crossbar during removal. on page 36).
4. Remove vertical shaft seal (16). Replace with new seal (see Seal Installation on page 28).

Vertical seal should be recessed in housing. Horizontal seal 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 - DS10.40

1. Disconnect and remove the driveline from the gearbox.
2. Remove vent plug (3) and siphon gear lube from housing through this opening.
3. If the leak occurred at either end of horizontal shaft (spindle gearbox), remove oil cap (24) and/or oil seal (10). For splitter gearbox (Figure 21) use oil seals (11) and (17). Replace with new one (refer to Seal Installation, page 28).
4. Fill gearbox with SAE 80W or 90W gear lube until it runs out the level plug.

Assemble Gearbox - DS10.40

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 output bearings (15) in the housing, using a round tube of the correct diameter and a hand press.
4. Slide output shaft (19) through both bearings (15) until it rests against bearing (6).
5. Slide shim (5) over output shaft (19).
6. Press gear (13) onto output shaft (19) and secure with washer (25), castle nut (12), and cotter pin (18).
7. Apply grease to lower seal lips (16) and press seal (16) over output shaft (19), using a tube of the correct diameter. Be sure not to damage the seal lip.

Press in housing so that seal is recessed. Install protective screen (17) and position it together with dual lip seal (16) by pressing it into position. Verify that snap ring is seated correctly.
8. Press bearing (7) into the housing, using a round tube of the correct diameter and a hand press. Secure with shim (5) and snap ring (9).
9. Secure snap ring (9) on input shaft (11) if not already secure.
10. Place gear (6) through top of housing and align gear (6) and gear (13) so that gear teeth are a match.
11. While holding gear (6) in place, slide input shaft (11) through gear (6) and bearing (7). Align splines on shaft (11) and gear (6).

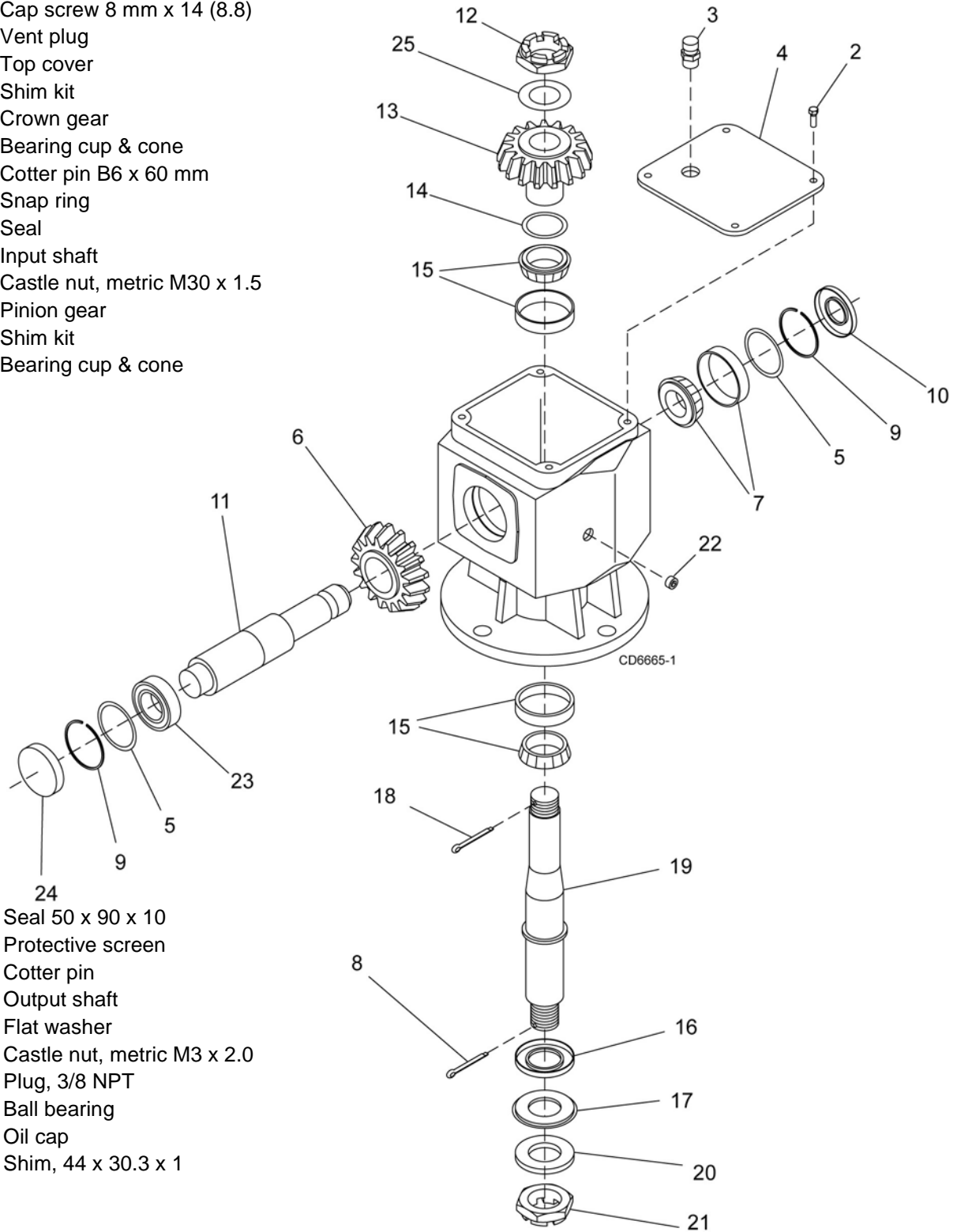
12. Slide spacer (7) over input shaft (11) and press bearing onto input shaft (11), using a round tube of the correct diameter and a hand press.
13. Slide shim (5) over input shaft (11) and secure with snap ring (9).
14. Check input shaft end float by moving the input shaft (11) by hand. If end float is higher than 0.012", insert shim between input shaft (11) and rear bearing (7). Repeat until end float is less than 0.012". Check rotational torque by hand. The torque should be less than 2.2 lbs-inch.
15. Check that the gear backlash is between 0.006" and 0.016". You should not have to adjust the backlash.
16. Press in input oil seal (10), using tube of correct diameter. Be careful not to damage seal lip.
17. Press oil cap (24) on to cover the rear of housing, using a tube of the correct diameter.
18. 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.
19. Remove gearbox from water and dry off with compressed air. Add SAE 80W or 90W EP oil until it runs out of side level hole. Tighten all plugs.

Reinstall Gearbox - DS10.40

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

1. Set gearbox on cutter and fasten with bolts and nuts. Torque bolts to 300 lbs-ft.
2. Attach crossbar (see Hydraulic jack will not operate if tipped more than 90-degrees. Use care to prevent bending crossbar during removal. on page 36).

1. Gearbox housing
2. Cap screw 8 mm x 14 (8.8)
3. Vent plug
4. Top cover
5. Shim kit
6. Crown gear
7. Bearing cup & cone
8. Cotter pin B6 x 60 mm
9. Snap ring
10. Seal
11. Input shaft
12. Castle nut, metric M30 x 1.5
13. Pinion gear
14. Shim kit
15. Bearing cup & cone



16. Seal 50 x 90 x 10
17. Protective screen
18. Cotter pin
19. Output shaft
20. Flat washer
21. Castle nut, metric M3 x 2.0
22. Plug, 3/8 NPT
23. Ball bearing
24. Oil cap
25. Shim, 44 x 30.3 x 1

Figure 20. DS10.40 Gearbox Assembly

SPLITTER GEARBOX REPAIR

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 vent plug (6) and siphon gear lube from housing through this opening.
3. Disconnect and remove flex coupler drivelines from side of gearbox by:
 - a. Removing cap screws and hex nuts from driveline.
 - b. Loosen set screws from flex coupler yoke.
 - c. Slide flex coupler yoke from gearbox shaft.
4. Remove the four bolts that attach gearbox to cutter and remove gearbox. Gearbox is heavy; do not attempt to move without mechanical assistance.

DISASSEMBLE SPLITTER GEARBOX

Refer to Figure 21.

1. Remove breather plug from top of gearbox.
2. Remove plug (19) from side of input housing (1) and pour out gear oil.
3. Remove eight cap screws (3) from around input housing (15). Remove input shaft assembly and housing.

4. Remove oil seals (11) (to be replaced) from both sides of cross shaft (4).
5. Remove eight cap screws (3) from around gearbox cover (12) and remove cross shaft (4) from gearbox.
6. Disassemble shims (5 & 18), spacer (20), bearings (16 & 13), and crown gear (7) from cross shaft.
7. Support housing in a vise and remove bearing cones (16) by using a punch and hammer to drive bearing cone out.
8. Support cover (12) in a vise and remove bearing cups (13) by using a punch and hammer to drive bearing cone out.
9. Remove lock nut (2) from end of input shaft (14).
10. Support input housing in a handpress and push input shaft (14) out of housing.
11. Support housing in a vise and remove bearing cups (13 & 16) by using a punch and hammer to drive bearing cones out.
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 input and cross 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 damage.

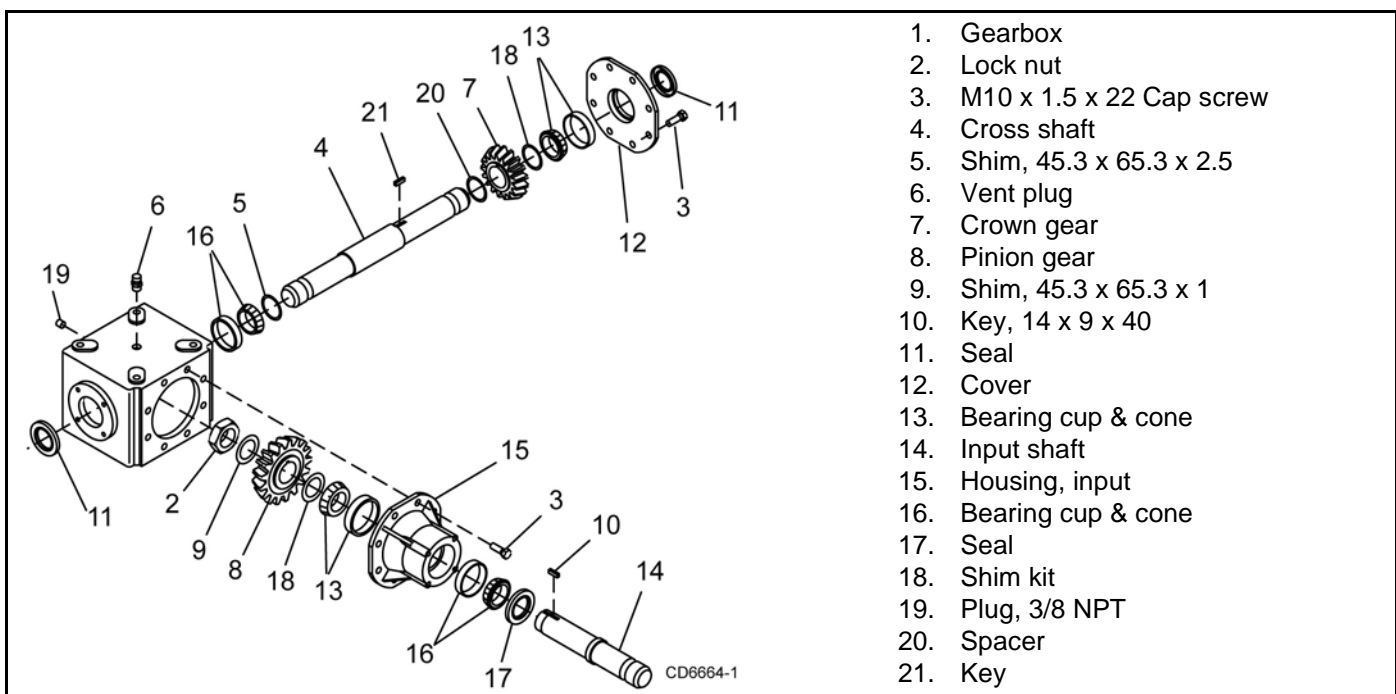


Figure 21. Center Gearbox Assembly

ASSEMBLE GEARBOX

Refer to Figure 21.

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. Install new bearing cup (16) in gearbox housing and bearing cup (13) in cover if these parts were previously removed.
4. Place bearing (16) and shim (5) on end of cross shaft (4), and insert shaft into housing.
5. Install spacer (20), key (21), crown gear (7), shim (18), and bearing (13) on opposite end of cross shaft.
6. Place cover (12) over bearings (13) and secure into position using eight cap screws (3). Torque cap screws to 29 lbs-ft.
7. Place seal (11) over cross shaft and press into housing. Use a round tube the same diameter of the seal and a handpress. Repeat process on opposite side of gearbox.
8. Install new bearing cup (16 & 13) into input housing if these parts were previously removed.
9. Place bearing (16) over end of input shaft (14) and insert shaft into front of input housing.
10. Place seal (17) over shaft and press into housing. Use a round tube the same diameter of the seal and a handpress.
11. Install bearing (13), shim (18), pinion gear (8), key (10), shim (9) over opposite end of input shaft (14).
12. Secure parts together using lock nut (2). Tighten lock nut (2) until shaft rolling torque is 3 to 9 lbs-inch.
13. Insert input housing assembly into front of gearbox housing and align teeth of the two gears. Secure with cap screws (3). Torque cap screws to 29 lbs-ft.
14. Check gear backlash; it should be .006" to .017" at outer tooth.

15. 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.

16. Remove gearbox from water and dry off with compressed air. Add SAE 80W or 90W EP oil until it runs out of the lower 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

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.

Remove end yokes by removing nuts (10) and sliding bolt (8 or 9) inward to clear yoke. Do not remove bolt unless rubber discs (5) are to be serviced. Remove complete center section by lifting straight up on center shaft (4). The outer yoke can be slid off gearbox shaft. The inner yoke is held by two set screws.

Reassemble shaft as shown in Figure 22. End yokes (1 & 2) do not bolt directly to center shaft (4). Use the special formed washer (6) and bushings (7) between the rubber discs (5) and under bolt head or nut near rubber disc. Tighten the nuts (10) evenly until the formed washers (6) are slightly embedded into the rubber discs. Rubber discs (5) will warp and twist if bolts are overtightened. Tighten set screws on center gearbox shaft only. Grease opposite end of side drive through grease fitting (11) located on end yoke.

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

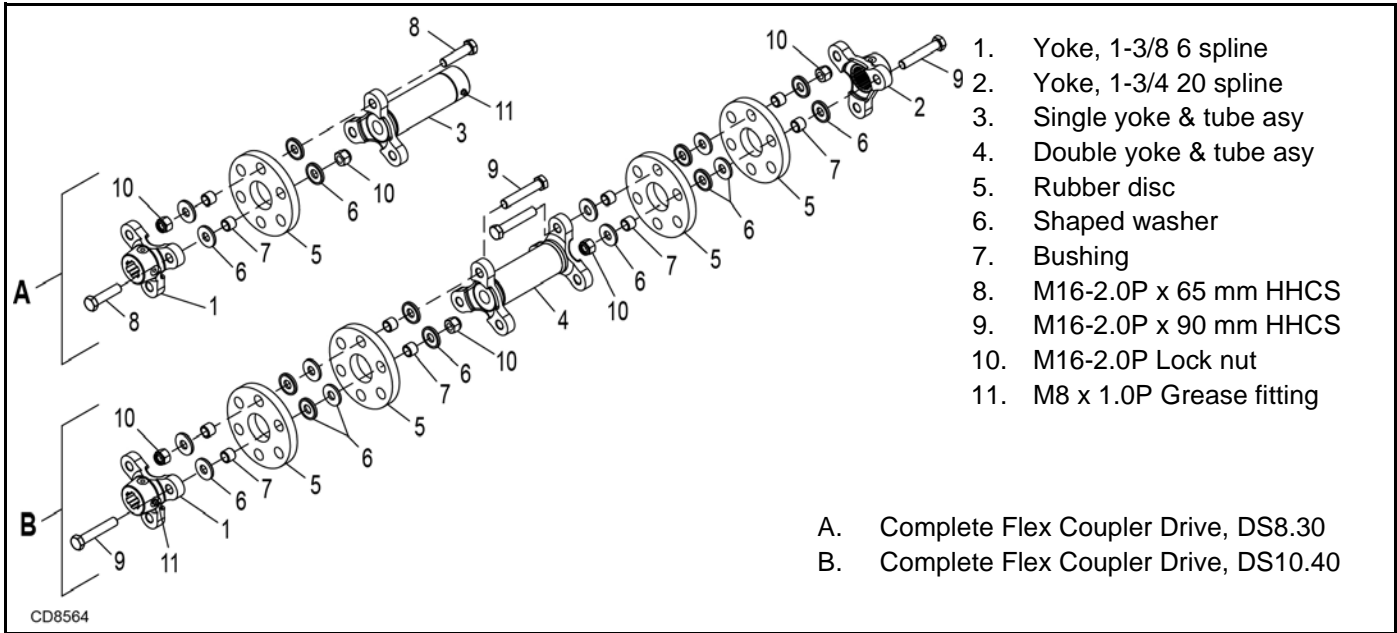


Figure 22. Side Drive Assembly

CROSSBAR REMOVAL

1. It is necessary to gain access to 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 23) or a small hydraulic jack to remove the crossbar.

2. To make crossbar removal easier, remove blades as shown in Figure 22.

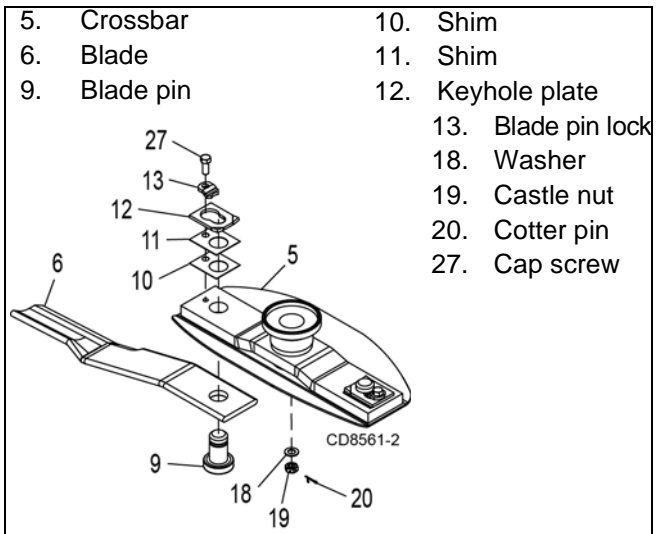


Figure 23. Blade Removal

- Remove cotter pin (20) and castle nut (19) from bottom of crossbar.
- Refer to Figure 24.** Attach a clevis (1) to each end of crossbar, using blade pins, spacers, keyhole plates, and blade pin clips.
- Position tube assembly (5) with threaded nut toward crossbar for puller screw removal or down for hydraulic jack removal.
- For removal with puller screw, attach tube (5) to each clevis with screws (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.
- For removal with a jack, attach tube to each clevis with puller links (7), screws (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.

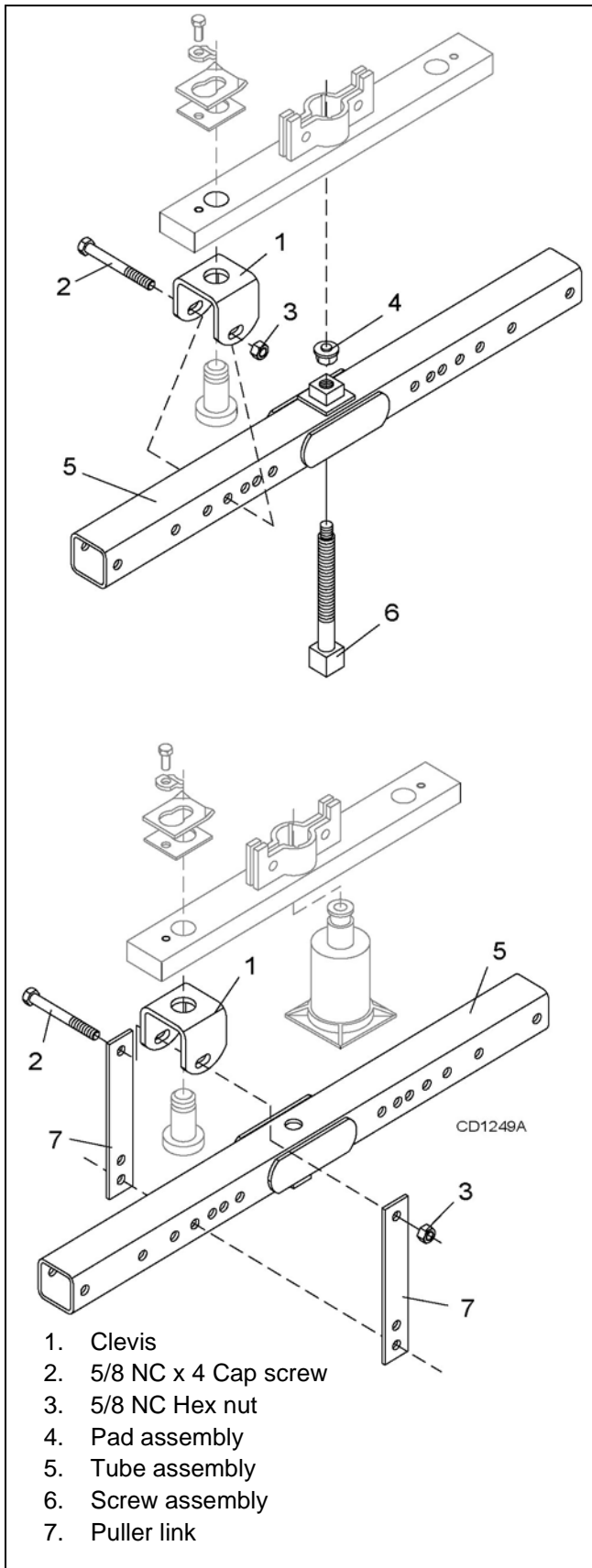


Figure 24. Crossbar Removal

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 25.

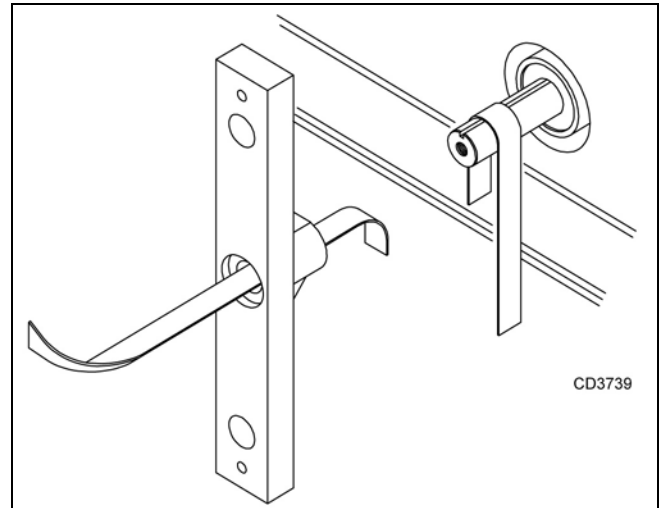


Figure 25. Example of Crossbar and Gearbox Shaft

2. Install crossbar (5), NOTE:, on splined shaft. Install washer (18), castle nut (19), and cotter pin (20). Torque nut to 450 lbs-ft.
3. Install blades, reinstall them using existing hardware. Torque cap screws to 85 lbs-ft.

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 26.
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 each side crossbar.
4. Hold crossbars in position while connecting the side drivelines.

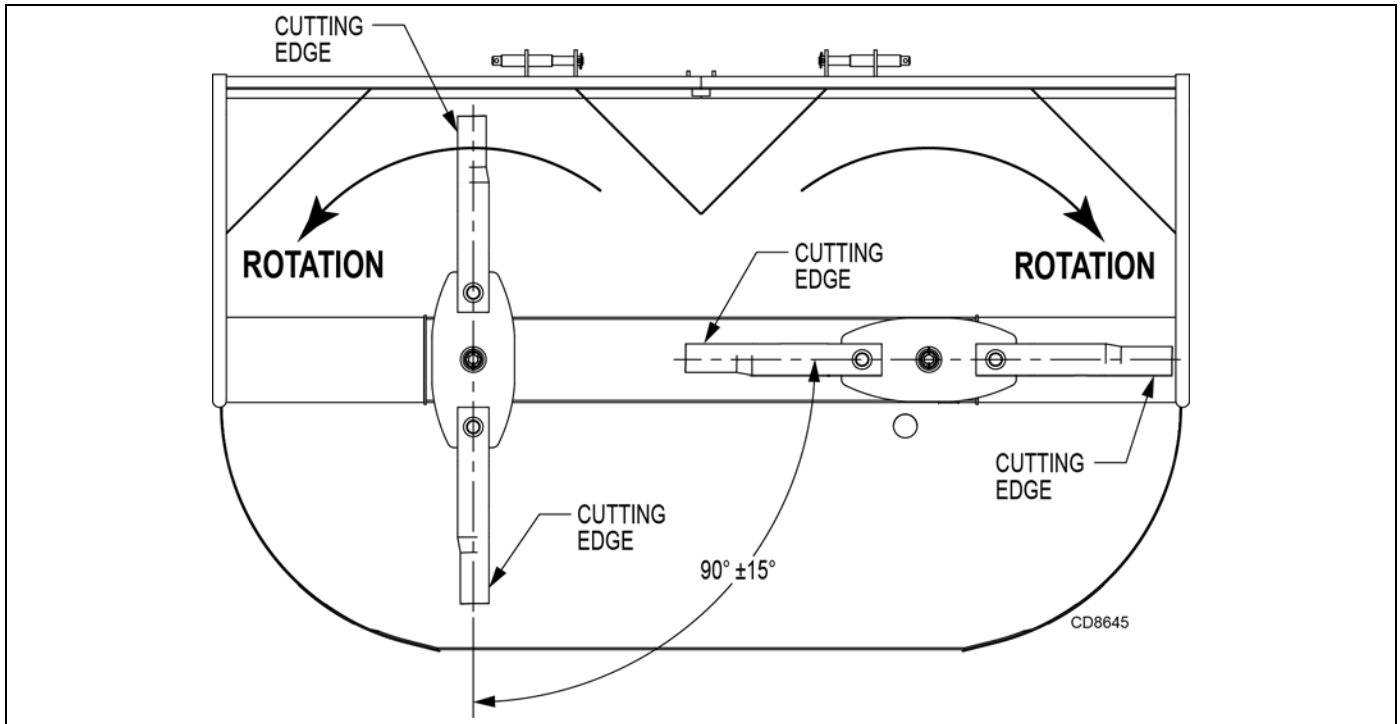


Figure 26. Crossbar Timing - Bottom View

UNIVERSAL JOINT REPAIR

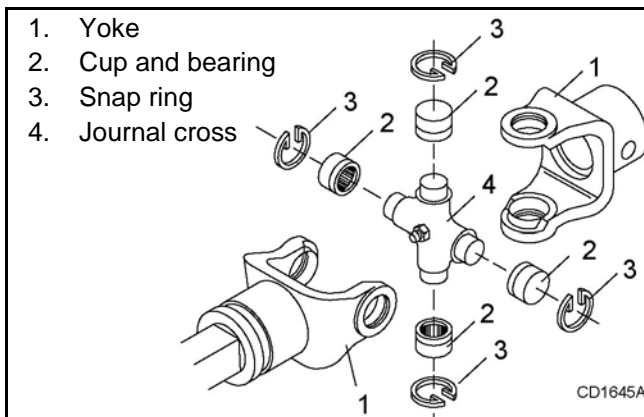


Figure 27. Universal Joint Parts Breakdown

U-JOINT DISASSEMBLY

1. Remove external snap rings from yokes in four locations as shown in Figure 28.

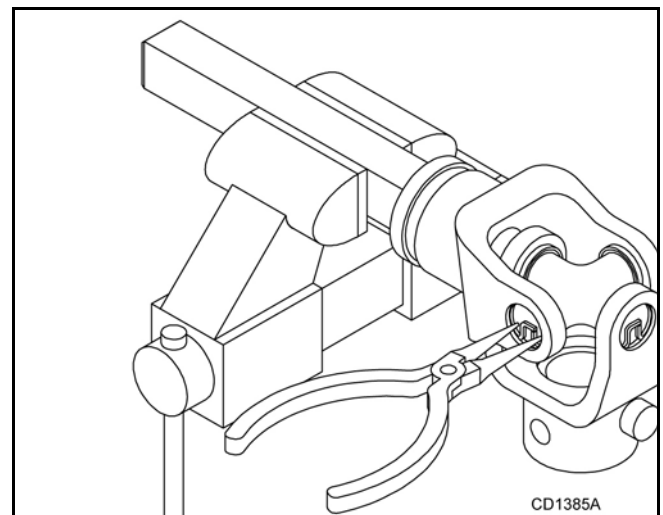


Figure 28. Remove Snap Ring

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 29.

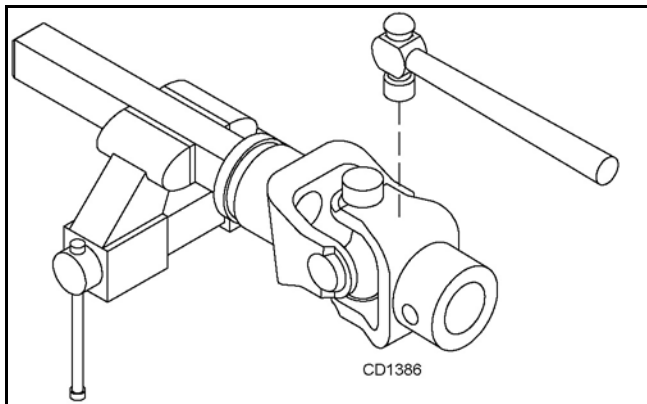


Figure 29. Remove Cups

3. Clamp cup in vise as shown in Figure 30 and tap on yoke to completely remove cup from yoke. Repeat Step 2 and Step 3 for opposite cup.

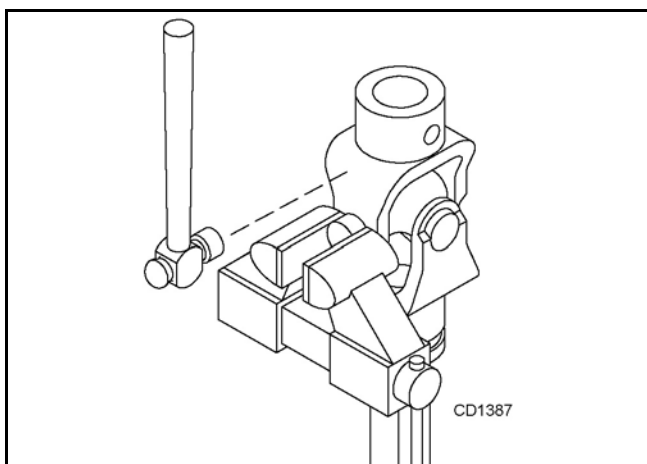


Figure 30. Remove Cups

4. Place universal cross in vise as shown in Figure 31 and tap on yoke to remove cup. Repeat Step 3 for final removal. Drive remaining cup out with a drift and hammer.

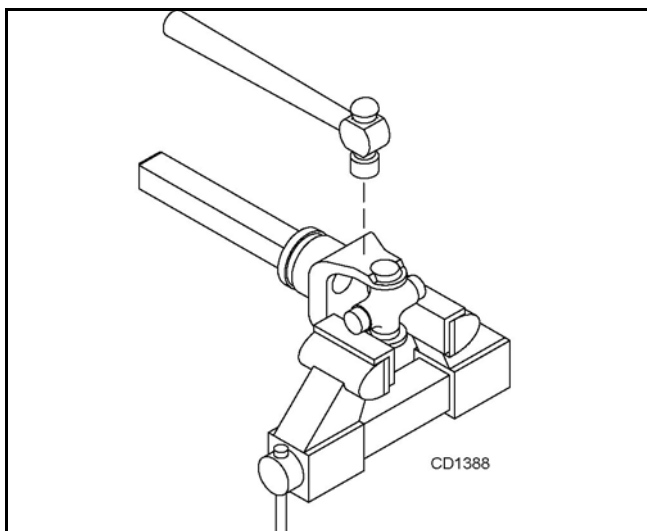


Figure 31. Remove Cups

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 32. 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.

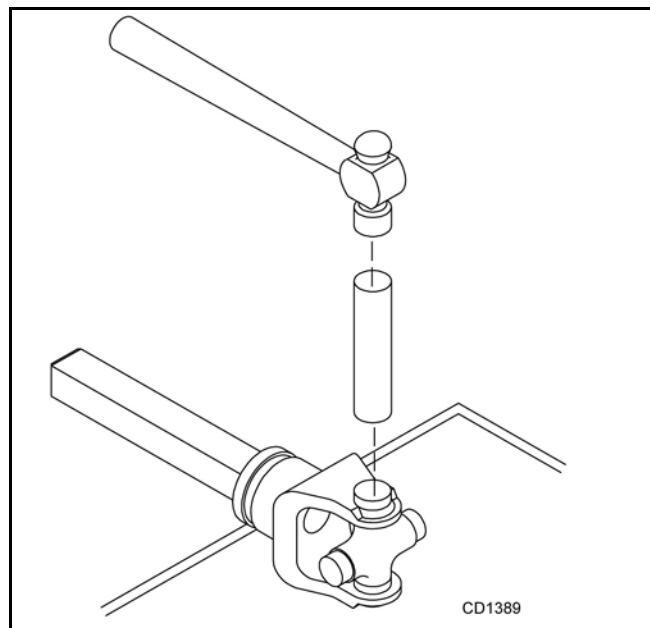


Figure 32. Install Cups

SERVICING TIRES SAFELY

Used Aircraft Tires (Figure 33)

⚠ 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 33. Split Rim Tire Servicing

ASSEMBLY INSTRUCTIONS

DEALER SET-UP INSTRUCTIONS

These instructions are for the assembly of the DS8.30 and DS10.40 mounted and pull-type 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 this 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 70.

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 47 when you have completed the assembly.

ASSEMBLE - DS8.30 & DS10.40 PULL-TYPE CUTTER

Refer to Figure 34.

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 (6) to the rear of the cutter using cap screws (34) and lock nuts (35).
2. Attach wheel hubs to tailwheel (6) using cap screws (27) and flanged lock nuts (29). 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 (4) from mast plates.
2. Align tongue assembly (1) between mast plates and reinstall lower hitch pins (2). Use sleeve (3) between tongue pivot and outer mast plate on DS8.30. Secure with klik pins (4).

Install Attitude Rod

1. Slide attitude rod (5) under left spindle coupler and through pivot block on the tailwheel.
2. Loosely install washer (32) and two hex nuts (33) to rear of attitude rod.
3. Attach front of attitude rod to the lug on the tongue using clevis pin (25), washer (32), and cotter pin (26).
4. Raise front of cutter and install parking jack (14) vertically to tongue.

Install Hydraulic Cylinder and Hose

1. Attach base end of hydraulic cylinder (15) to lugs on deck using pin (23) and cotter pins (26).
2. Extend cylinder rod, place transport lock bracket (16) over cylinder rod end and between lugs on tailwheel. Secure assembly using pin (24) and cotter pins (26).
3. Install vent plug (19) in port on the rod end of the cylinder.
4. Install adapter (20) and hose assembly (18) to port on base end of cylinder. Position elbow to point toward front of cutter.
5. Route hose on top of deck, under left spindle coupler, and through hose holder on tongue.
6. Install adapter restrictor (21) and hydraulic coupler (22) to end of hose (18).
7. Install stroke control kit (17) to cylinder rod. Stroke control kit is used to set cut height.

Install H-Frame and CV Driveline

DS8.30

1. Lightly coat splitter gearbox shaft with grease.
2. Attach clutch end off CV driveline (11) directly to input shaft of gearbox.

DS10.40

1. Attach H-frame (8) to lugs on front of deck using cap screw (28) and flanged lock nut (29).
2. Lightly coat splitter gearbox input shaft with grease.
3. Remove cap screws and lock nuts from yoke on slip clutch end of driveline (10). Attach driveline to input shaft of gearbox.
4. Align driveline bearing carrier between H-frame (8) and secure with cap screw (28) and flanged lock nut (29).

5. Remove cap screw and lock nut from rear yoke of CV driveline (11).
6. Slide rear yoke of CV driveline (11) over shaft of driveline (10). Reinstall cap screw and lock nut through yoke and groove in rear driveline shaft.
7. Attach drive shield (9) to bearing carrier using two lock washers (30) and cap screws (31).

Install SMV Emblem

1. Align holes of SMV bracket (12) with top of splitter gearbox. Secure with cap screws (36).

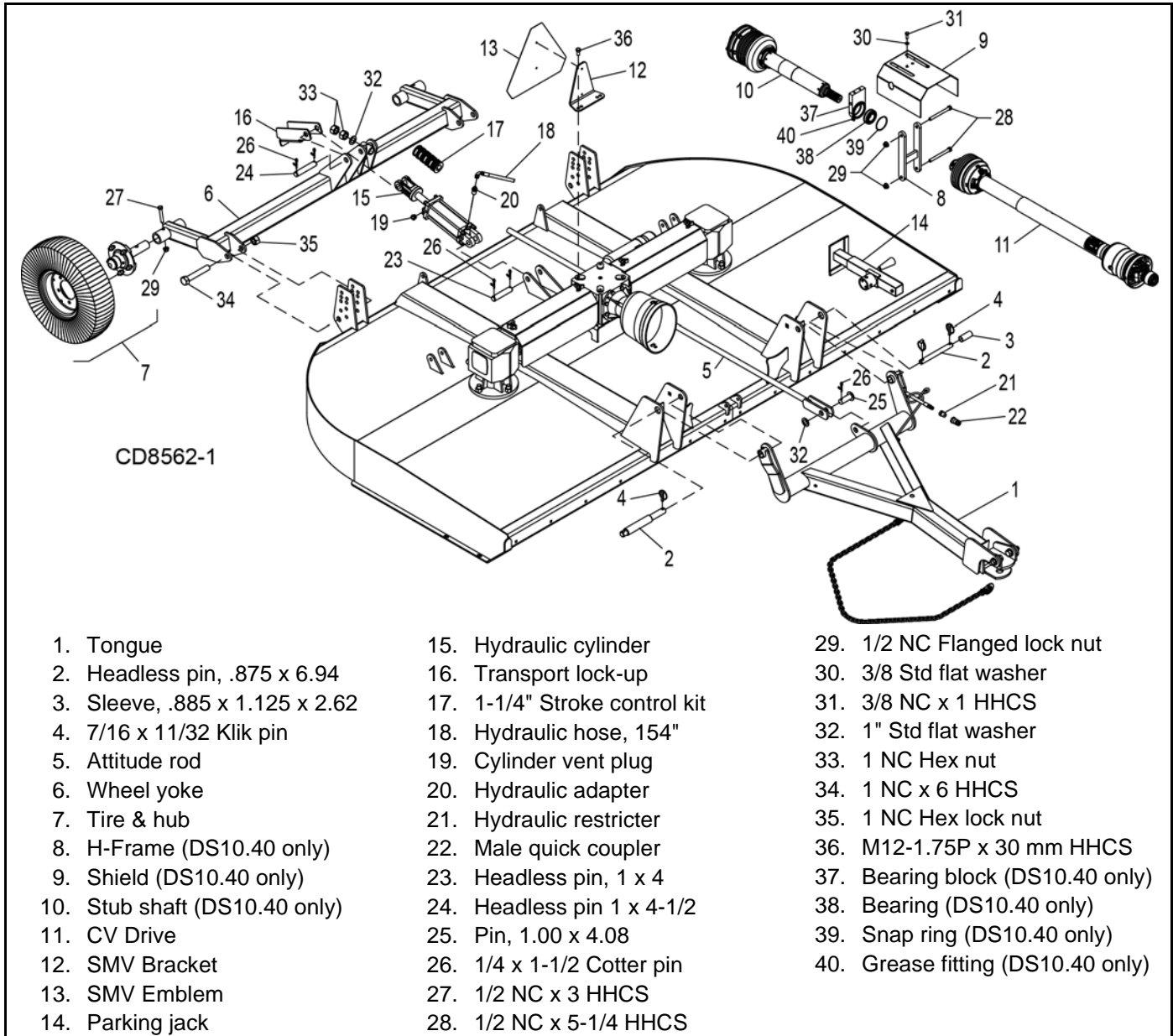


Figure 34. DS8.30 & DS10.40 Pull-Type Assembly

ASSEMBLE DS8.30 & DS10.40 3-POINT MOUNTED CUTTER

Refer to Figure 35.

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. Place assembled tailwheel arms (13 thru 25) between lugs on deck.
2. Attach end of tailwheel arm to deck using cap screw (29) and flanged lock nut (36).
3. Align holes in middle of tailwheel arm with holes in lugs on rear of deck. Secure with cap screw (29) and flanged lock nut (36).

NOTE: Hole positions in lugs determine cut height. Final adjustment will be necessary when cutter is mounted to tractor.

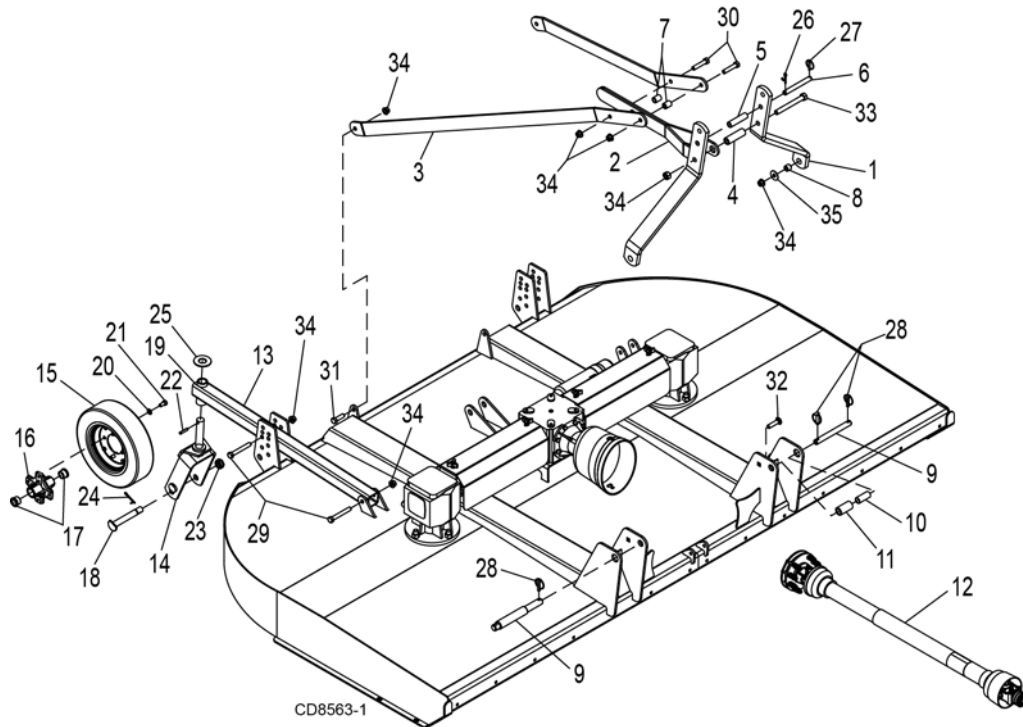
Install A-Frame

1. Attach front A-frame bars (1) to square holes on inner mast plates using carriage bolts (32), bushing sleeves (8), flat washers (35) and flanged lock nuts (36).

2. Install break links (2) and sleeve (4) between lower holes on A-frame bars. Secure with cap screw (33) and lock nut (34).
3. Attach lift arms (3) to lugs on rear of deck using cap screws (31) and flanged lock nuts (36).
4. Attach the two lift arms (3) together at the top rear hole using cap screw (30), spacer sleeve (7), and flanged lock nut (36).
5. Place both break links (2) together and position between front holes of lift arms. Secure with cap screw (30), spacer sleeve (7), and flanged lock nut (36).
NOTE: Break links must rest on top of rear spacer sleeve (7).
6. Install top link pin (6) and sleeve (5) into middle hole in top of A-frame arms. Secure with cotter pin (26) and klik pin (27). Refer to CONNECT CUTTER TO TRACTOR (MOUNTED) on page 15 for hitch pin configurations.

Install Driveline

1. Lightly coat splitter gearbox shaft with grease.
2. Remove cap screw and lock nut from yoke on slip clutch end of driveline (12). Attach driveline to input shaft of gearbox. Reinstall cap screw and lock nut through driveline yoke and groove on input shaft.



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- | | | |
|---|------------------------------------|---|
| 1. A-Frame bar | 14. Tailwheel clevis | 30. 5/8 NC x 3 HHCS |
| 2. Break link | 15. 4 x 8 Rim & laminated tire | 31. 5/8 NC x 2 HHCS |
| 3. Lift arm | 16. Hub, 4-bolt | 32. 5/8 NC x 2 Carriage bolt (DS8.30 only) |
| 4. Sleeve, .66 x 1.25 x 4.00 | 17. Bushing, .990 x 1.394 x .98 | 32. 5/8 NC x 2-1/2 Carriage bolt (DS10.40 only) |
| 5. Sleeve, 3/4 x 1 x 4 | 18. M24 x 2.0 Axle bolt | 33. 5/8 NC x 7 HHCS (DS8.30 only) |
| 6. Headless pin, .75 x 5.63 | 19. 1/4-28 Straight grease fitting | 33. 3/4 NC x 6-1/2 HHCS (DS10.40 only) |
| 7. Sleeve, 5/8 x 1 x 1-1/4 | 20. 1/2 Flat washer | 34. 5/8 NC Flanged lock nut (DS8.30 only) |
| 8. Sleeve, 5/8 x 1 x 11/16 (DS8.30 only) | 21. 1/2 NC x 1 HHCS | 34. 3/4 NC Lock nut (DS10.40 only) |
| 8. Sleeve, 5/8 x 1 x 13/16 (DS10.40 only) | 22. Spirol pin, 10 mm x65 mm | 35. 5/8 Std flat washer |
| 9. Headless pin 7/8 x 6-15/16 | 23. M24 x 2.0 Slotted nut | |
| 10. Sleeve, 7/8 x 1-1/8 x 2-5/8 | 24. Cotter pin | |
| 11. Sleeve, 15/16 x 1-7/16 x 2-3/4 | 25. 1-1/4 Std flat washer | |
| 12. Driveline | 26. 1/4 x 1-1/2 Cotter pin | |
| 13. Tailwheel arm | 27. 1/4 x 1-3/4 Klik pin | |
| | 28. 7/16 x 11/32 Klik pin | |
| | 29. 5/8 NC x 4-1/2 HHCS | |

Figure 35. DS8.30 & DS10.40 Mounted Assembly

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 RUBBER OR CHAIN 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

1. Attach rubber belting (1) and deflector brackets (2) to the front of the cutter frame using carriage bolts (5) and flanged lock nuts (7).
2. Attach front reflector bracket (4) over left front shield.
3. Attach rear band (3) to the rear of the cutter frame using carriage bolts (6) and flanged lock nuts (7).

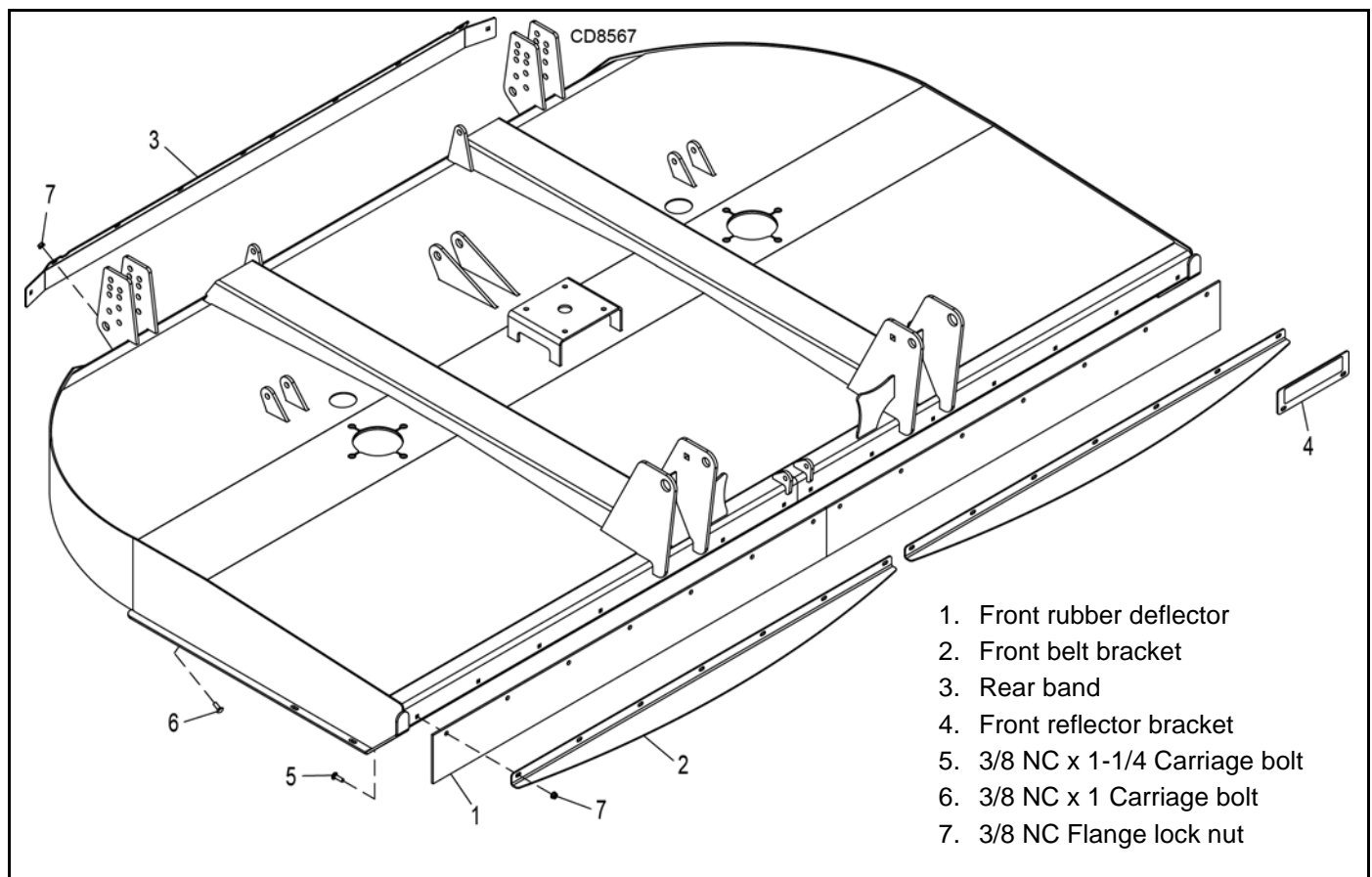


Figure 36. DS8.30 & DS10.40 Rubber Shield Installation

Optional Chain Shielding

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

1. Install front and rear chain shielding as shown using carriage bolts (8) and flanged lock nuts (9).
2. Attach front reflector bracket (3) over left front shield.

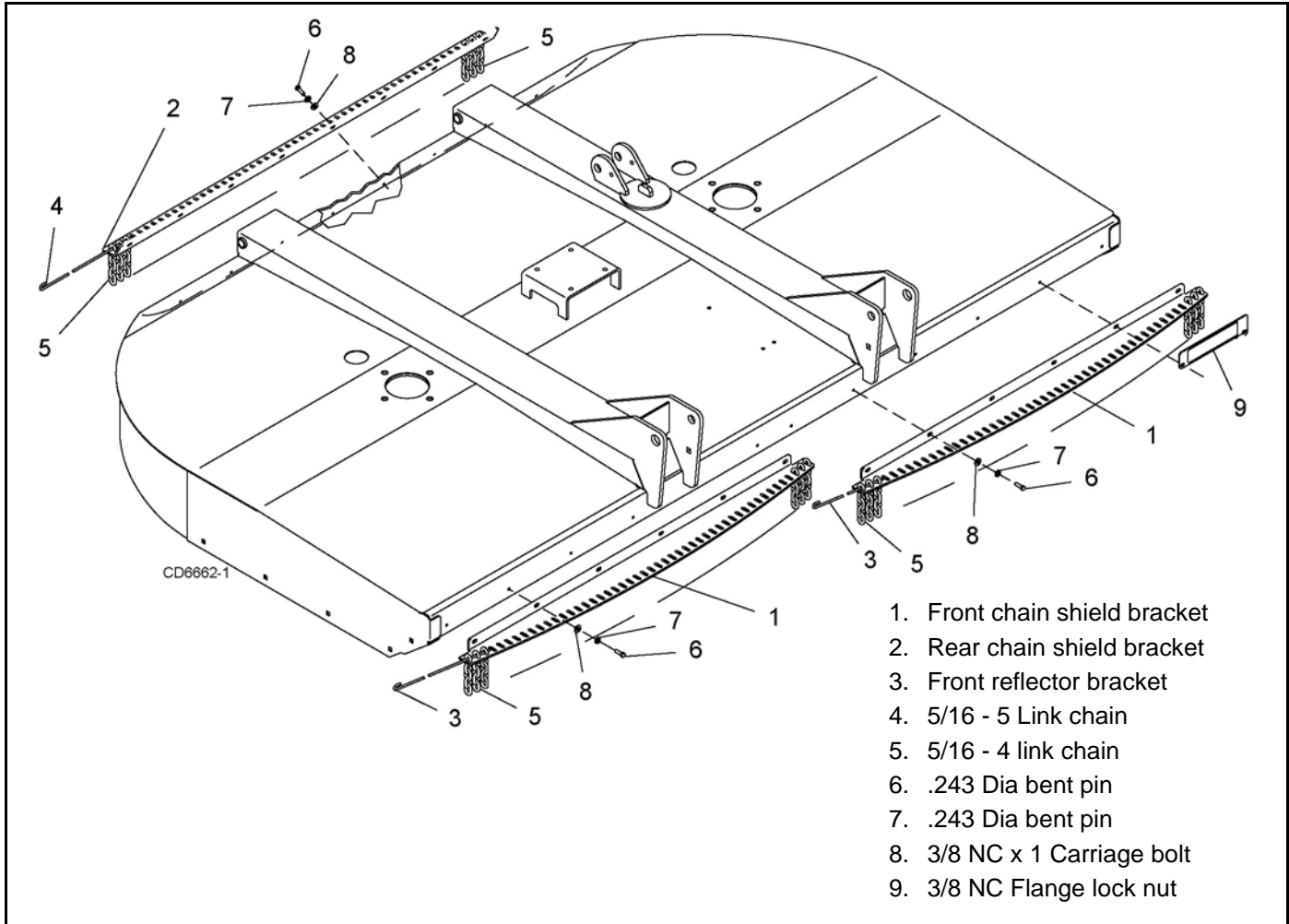


Figure 37. DS8.30 & DS10.40 Optional Chain Shielding Installation

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.

NOTICE

■ **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.

NOTES

Rotary Cutters DS8.30 & DS10.40

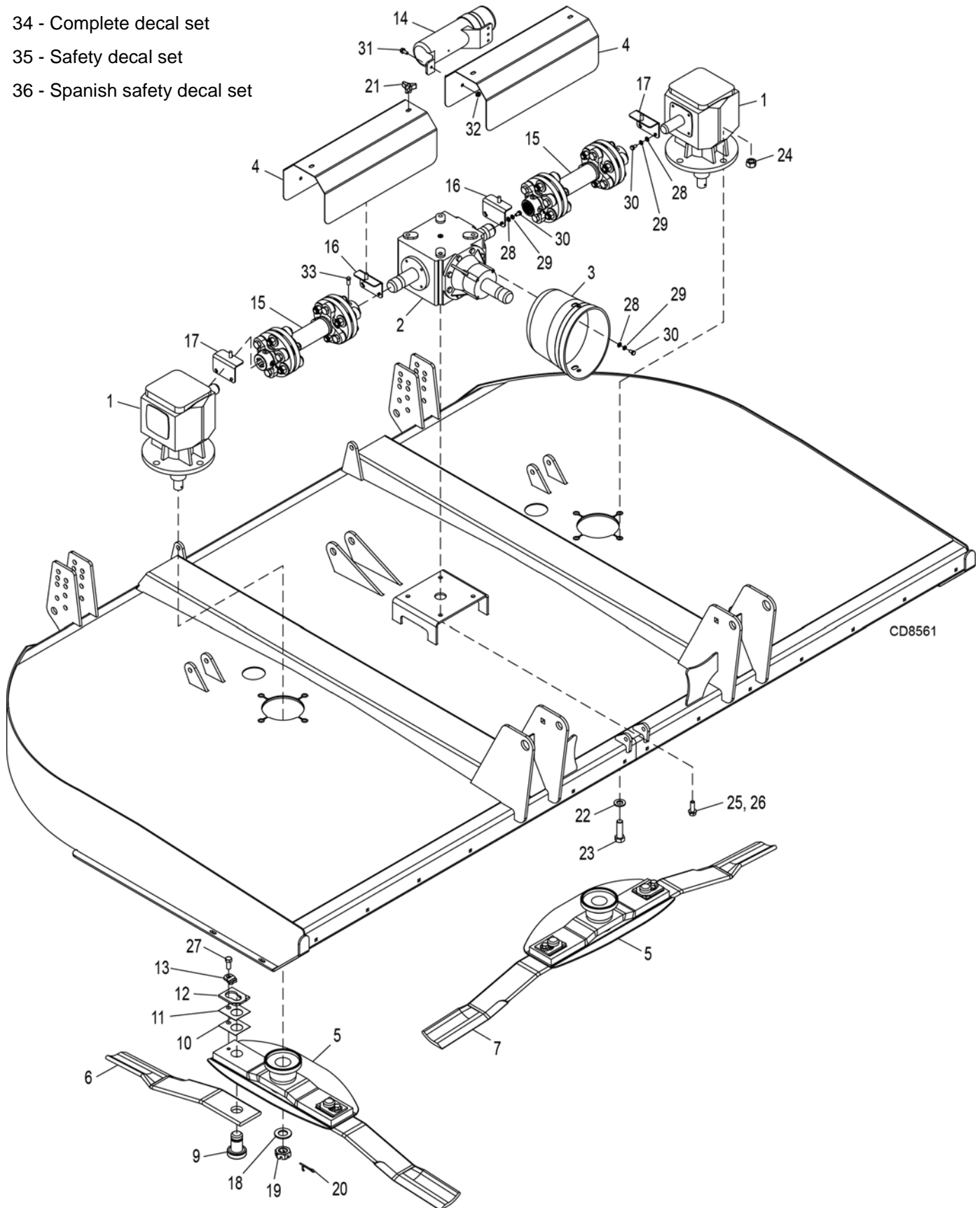
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DS8.30 / DS10.40 MAIN FRAME ASSEMBLY

34 - Complete decal set

35 - Safety decal set

36 - Spanish safety decal set



50 Parts

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DS8.30 / DS10.40 MAIN FRAME PARTS LIST

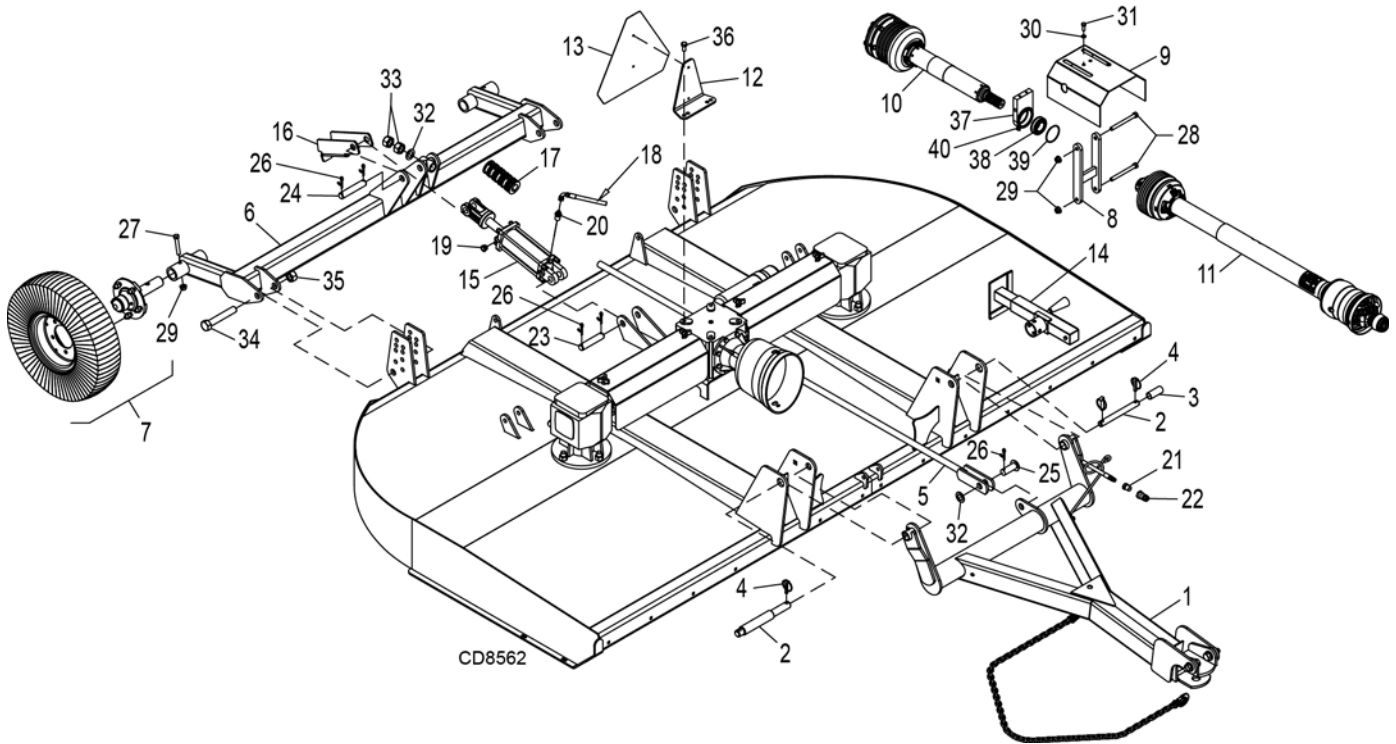
REF	PART	QTY	DESCRIPTION	REF	PART	QTY	DESCRIPTION
1	1032585	2	Spindle gearbox (DS8.30) (See page 56) -or-	21	66840		3/8 NC Knob
1	58803	2	Spindle gearbox (DS10.40) (See page 57)	22	57798		3/4 Hardened flat washer (DS10.40)
2	1043025	1	Splitter gearbox (DS8.30) (See page 54) -or-	23	1038890		5/8 NC x 2 FHCS, GR8 (DS8.30) -or-
2	1008192	1	Splitter gearbox (DS10.40) (See page 55)	23	30068 *		3/4 NC x 2-1/2 HHCS, GR5 (DS10.40)
3	1002048	1	Clutch shield	24	19025 *		5/8 NC Flanged lock nut (DS8.30) -or-
4	1013377	2	Coupler shield (DS8.30) -or-	24	2371 *		3/4 NC Lock nut (DS10.40)
4	1009202	2	Coupler shield (DS10.40)	25	57816		1/2 Hardened flat washer (DS8.30)
5	1043030	2	Crossbar (DS8.30) -or-	26	62542		M12-1.75P x 30 mm HHCS (DS8.30) -or-
5	1043031	2	Crossbar (DS10.40)	26	1039944		1/2 NC x 1-1/2 FHCS, GR8 (DS10.40)
6	57099KT	1	Right blade, CW (DS8.30) -or-	27	6100 *		1/2 NC x 1-1/4 HHCS, GR5
6	19161KT	1	Right blade, CW (DS10.40)	28	35155 *		5/16 SAE Flat washer
7	1003490KT	1	Left blade, CCW (DS8.30) -or-	29	2472 *		5/16 Lock washer
7	19160KT	1	Left blade, CCW (DS10.40)	30	24801		M8-1.25P x 20 mm HHCS (DS8.30) -or-
8	1003675KT	2	Double edge blade (DS8.30) -or-	30	39254		M8-1.25P x 16 mm HHCS (DS10.40)
8	19162KT	2	Double edge blade (DS10.40)	31	71851		5/16 NC x 3/4 FHCS
9	1009199	4	Blade pin	32	73163 *		5/16 NC Flanged whiz nut
10	10520	4	Shim, 18 ga	33	90016031 *		3/8 NC x 3/4 Square head set screw
11	13946	4	Shim, 20 ga	34	1042780	1	Complete decal set
12	32603	4	Keyhole plate	35	1042781	1	Safety decal set
13	32604	4	Blade pin lock clip	36	1042782	1	Spanish safety decal set
14	1003828	1	Manual tube				
15	1040670	2	Flex coupler (DS8.30) -or-				
15	1009207	2	Flex coupler (DS10.40)				
16	1043032	2	Shield hold down, inside (DS8.30) -or-				
16	1009203	2	Shield hold down, inside (DS10.40)				
17	1043032	2	Shield hold down, outside (DS8.30) -or-				
17	1009204	2	Shield hold down, outside (DS10.40)				
18	39322		Washer, 31 x 56 x 4 mm (DS10.40)				
19	20892		M24-2.0P Castle nut (DS8.30) -or-				
19	39323		M30-2.0P Castle nut (DS10.40)				
20	64803 *		3/16 x 2 Cotter pin				

* Standard Hardware - Obtain Locally

HHCS Hex Head Cap Screw

FHCS Flanged Head Cap Screw

DS8.30 / DS10.40 PULL-TYPE ASSEMBLY

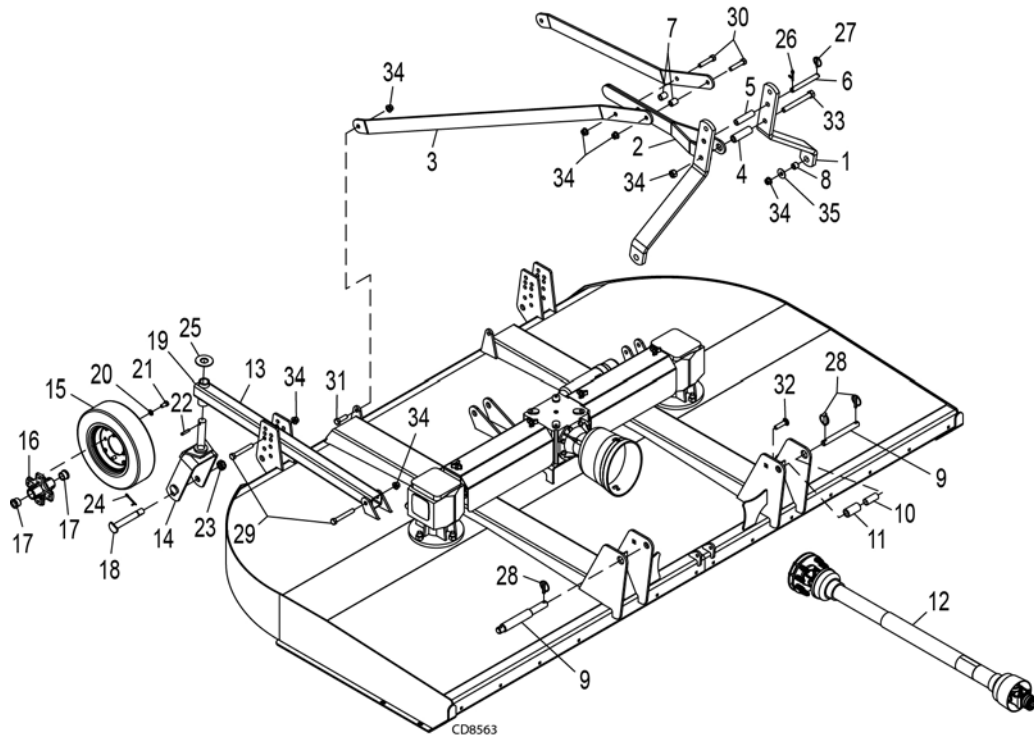


REF	PART	QTY	DESCRIPTION	REF	PART	QTY	DESCRIPTION
1	1040725	1	Tongue assembly (DS8.30) (See page 64) -or-	21	1038891	1	1/4 NPTF x 1/2 NPTM Adapter restricter .06
1	1040724	1	Tongue assembly (DS10.40)	22	66511	1	1/2 NPT Male coupler
2	HBL233	2	.875 x 6.94 Headless pin (DS8.30) -or-	23	8345	1	1 x 4 Headless pin
2	39064	2	Lower hitch pin (DS10.40)	24	8346	1	1 x 4-1/2 headless pin
3	56598	2	Sleeve, .885 x 1.125 x 2.62	25	46605	1	1.00 x 4.08 Pin
4	27542 *		7/16 x 11/32 Klik pin	26	1285 *		1/4 x 1-1/2 Cotter pin
5	1013388	1	Attitude rod (DS8.30) -or-	27	3489 *		1/2 NC x 3 HHCS, GR5
5	1042765	1	Attitude rod (DS10.40)	28	65575 *		1/2 NC x 5-1/4 HHCS, GR5
6	1040735	1	Wheel yoke (DS8.30) -or-	29	11900 *		1/2 NC Flanged lock nut
6	1040747	1	Wheel yoke (DS10.40)	30	838 *		3/8 Lock washer
7	-----	2	Tire & hub (See page 65)	31	839 *		3/8 NC x 1 HHCS, GR5
8	1042234	1	H-Frame (DS10.40)	32	1863 *		1" Standard flat washer
9	1011761	1	Shield (DS10.40)	33	3132 *		1 NC Hex nut
10	1041677	1	Stub shaft (DS10.40)	34	1003606		1 NC x 6 HHCS, GR5
11	1041676	1	CV Drive (DS8.30) (See page 59)	35	34279		1 NC Hex lock nut
11	1040720	1	CV Drive (DS10.40) (See page 60)	36	62542		M12-1.75P x 30 mm HHCS (DS8.30) -or-
12	1009234	1	SMV Bracket	36	25475 *		1/2 NC x 1 HHCS, GR5 (DS10.40)
13	24611	1	SMV Emblem	37	32347	1	Bearing block (includes 38, 39, 40) (DS10.40)
14	23790	1	Parking jack	38	13133	1	Bearing (DS10.40)
15	1035089	1	3 x 6 Hydraulic cylinder	39	12128	1	Snap ring (DS10.40)
15A	1038883	1	Seal kit for 1035089 cylinder	40	2985 *		1/4-28 x 90° Grease fitting
16	1038065	1	Transport lock-up				
17	24098	1	1-1/4 Stroke control kit				
18	1038123	1	Hose, 154" x 1/4NPT x 9/16JICF 90°				
19	11975	1	1/2 NPT Vent plug				
20	54315	1	1/2 NPTM x 9/16 JICM Adapter				

* Standard hardware, obtain locally

HHCS Hex head cap screw

DS8.30 & DS10.40 MOUNTED ASSEMBLY

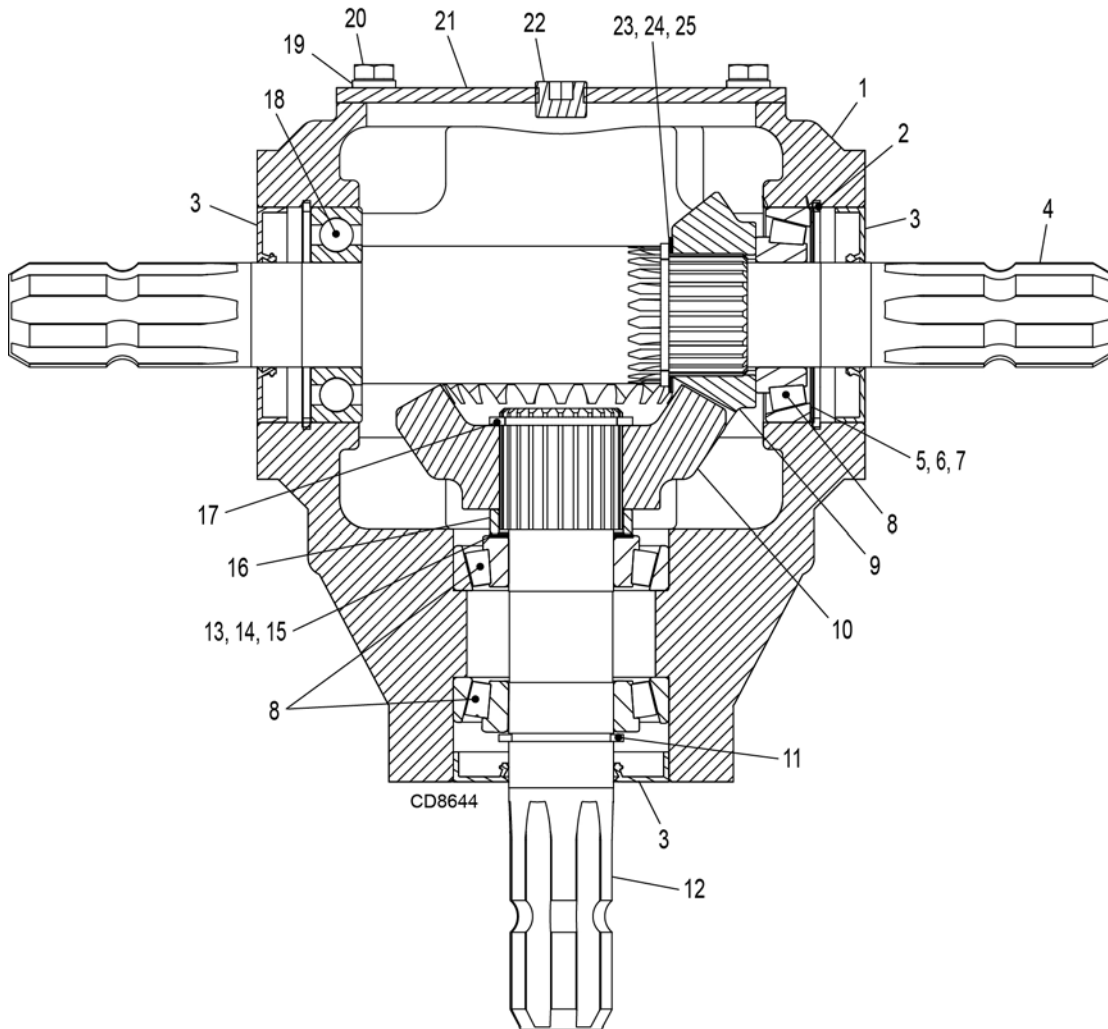


REF	PART	QTY	DESCRIPTION	REF	PART	QTY	DESCRIPTION
1	57134	2	A-Frame bar (DS8.30) -or-	20	----- *	1/2 Flat washer	
1	1040701	2	A-Frame bar (DS10.40)	21	300300 *	1/2 NC x 1 HHCS, GR5	
2	1040654	2	Break link	22	40775	2 Spirol pin, 10 mm x 65 mm	
3	1040655	2	Lift arm (DS8.30) -or-	23	1032105	2 M24-2.0P Slotted nut	
3	1040702	2	Lift arm (DS10.40)	24	----- *	Cotter pin	
4	1040653	1	Sleeve, .66 x 1.25 x 4.00 (DS8.30) -or-	25	7163 *	1-1/4 Std flat washer	
4	1040703	1	Sleeve, 3/4 x 1-1/4 x 4 (DS10.40)	26	1285 *	1/4 x 1-1/2 Cotter pin	
5	1000662	1	Sleeve, 3/4 x 1 x 4	27	62043 *	1/4 x 1-3/4 Klik pin	
6	1036152	1	.75 x 5.63 Headless pin	28	27542 *	7/16 x 11/32 Klik pin	
7	66661	2	Sleeve, 5/8 x 1 x 1-1/4	29	3097 *	5/8 NC x 4-1/2 HHCS, GR5	
8	67222	2	Sleeve, 5/8 x 1 x 11/16 (DS8.30) -or-	30	34473 *	5/8 NC x 3 HHCS, GR5	
8	12313	2	Sleeve, 5/8 x 1 x 13/16 (DS10.40)	31	902 *	5/8 NC x 2 HHCS, GR5	
9	HBL233	2	7/8 x 6-15/16 Headless pin (DS8.30) -or-	32	2855 *	5/8 NC x 2 Crg bolt, GR5 (DS8.30) -or-	
9	39064	2	Lower hitch pin (DS10.40)	32	5836 *	5/8 NC x 2-1/2 Crg bolt, GR5 (DS10.40)	
10	56598	2	Sleeve, 7/8 x 1-1/8 x 2-5/8 (DS8.30)	33	23638 *	5/8 NC x 7 HHCS, GR5 (DS8.30) -or-	
11	1002012	2	Sleeve, 15/16 x 1-7/16 x 2-3/4 (DS8.30)	33	29489	3/4 NC x 6-1/2 HHCS, GR5 (DS10.40)	
12	1040710	1	Driveline (DS8.30) (See page 62) -or-	34	19025 *	5/8 NC Flanged lock nut (DS8.30) -or-	
12	57413	1	Driveline (DS10.40) (See page 63)	34	2371 *	3/4 NC lock nut (DS10.40)	
13	1040650	2	Tailwheel arm	35	692 *	5/8 Std flat washer	
14	1036880	2	Tailwheel clevis				
15	1019636	2	4 X 8 Rim & laminated tire				
16	1030522	2	Hub, 4-bolt				
17	1030524	4	Bushing, flange .990 x 1.394 x .98				
18	1030523	2	M24-2.0P Axle bolt				
19	12296 *		1/4-28 Straight grease fitting				

* Standard Hardware, Obtain Locally

HHCS Hex Head Cap Screw

DS8.30 SPLITTER GEARBOX ASSEMBLY

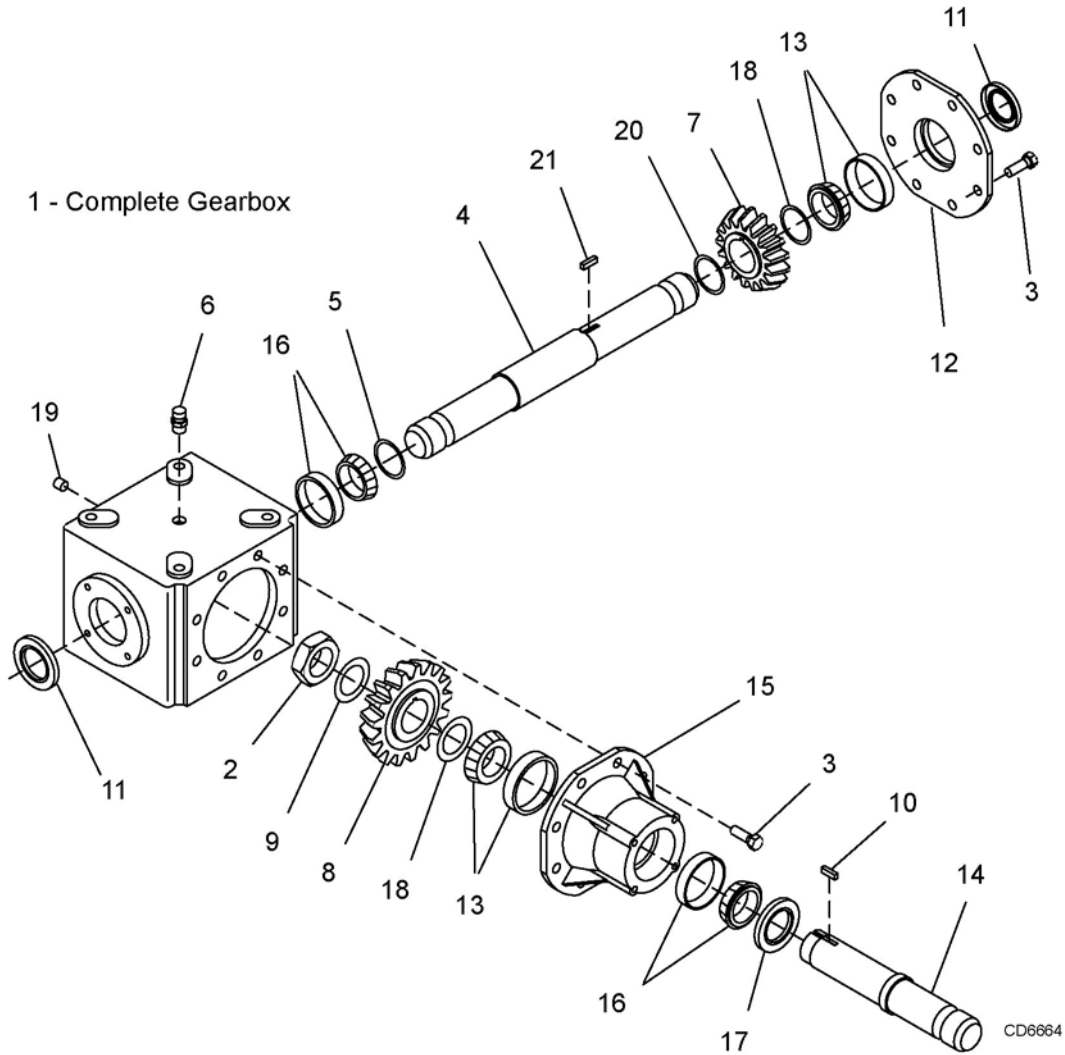


REF	PART	QTY	DESCRIPTION	REF	PART	QTY	DESCRIPTION
A	1043025	1	Complete gearbox	16	NSS	1	Spacer, 41.5 x 47.5 x 8.3
1	NSS	1	Gearbox housing	17	NSS	2	Snap ring, 40 x 2.5
2	NSS	2	Retaining ring	18	20890	1	Ball bearing, 6207
3	1032401	3	Seal, 35 x 72 x 10	19	NSS	4	M8 Lock washer
4	NSS	1	Through shaft	20	NSS	4	M8-1.25P x 16mm HHCS
5	NSS	A/R	Shim, 62 x 72 x .25	21	NSS	1	Cover
6	NSS	A/R	Shim, 62 x 72 x .5	22	27326	1	3/8 NPT Solid plug
7	NSS	A/R	Shim, 62 x 72 x 1.0	23	NSS	A/R	Shim, 42.25 x 51.75 x .25
8	1032448	3	Tapered roller bearing, 30207	24	NSS	A/R	Shim, 42.25 x 51.75 x .5
9	NSS	1	15T Gear	25	NSS	A/R	Shim, 42.25 x 51.75 x 1
10	NSS	1	22T Gear	26	39325	1	3/8 Vent plug (Not shown)
11	NSS	1	Snap ring, 35 x 2.5				
12	NSS	1	Input shaft		NSS		Not Serviced Separately
13	NSS	A/R	Shim, 35.25 x 48 x .25		A/R		As Required
14	NSS	A/R	Shim, 35.25 x 48 x .5		HHCS		Hex Head Cap Screw
15	NSS	A/R	Shim, 35.25 x 48 x 1.0				

54 Parts

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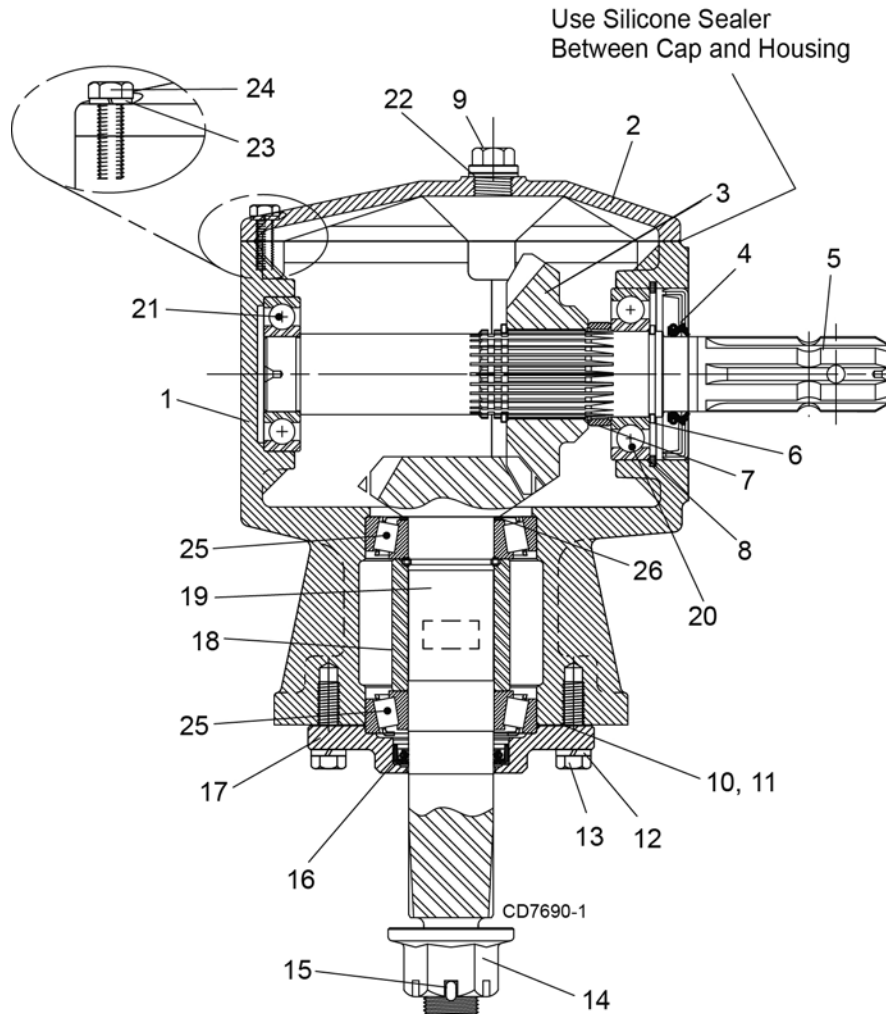
DS10.40 SPLITTER GEARBOX ASSEMBLY



REF	PART	QTY	DESCRIPTION	REF	PART	QTY	DESCRIPTION
1	1008192	--	Complete gearbox	12	1008136	1	Cover
2	1008130	1	Lock nut	13	1008148	2	Bearing cup and cone
3	39274 *	16	M10 x 1.5 x 22 mm Cap screw	14	1008149	1	Input shaft 1-3/4 20 spline
4	1008131	1	Through shaft 1-3/4 20 spline	15	1008151	1	Housing extension
5	57456	1	Shim 45.3 x 65.3 x 2.5	16	39408	2	Bearing cup and cone
6	39325	1	3/8 Vent plug	17	39412	1	Seal 52 x 85 x 10
7	1008132	1	Crown gear, 27 teeth	18	58751	3	Shim kit 45.3 x 65.3
8	1008133	1	Pinion gear, 18 teeth	19	27326 *	4	3/8 NPT Solid plug
9	1008134	1	Shim 45.3 x 65.3 x 1	20	1008154	1	Spacer 45.3 x 60.3 x 5
10	39402	1	Key, 14 x 9 x 40	21	1008155	1	Key, 14 x 9 x 35
11	1008135	2	Seal, 45 x 72 x 8				

* Standard hardware, obtain locally

DS8.30 SPINDLE GEARBOX ASSEMBLY

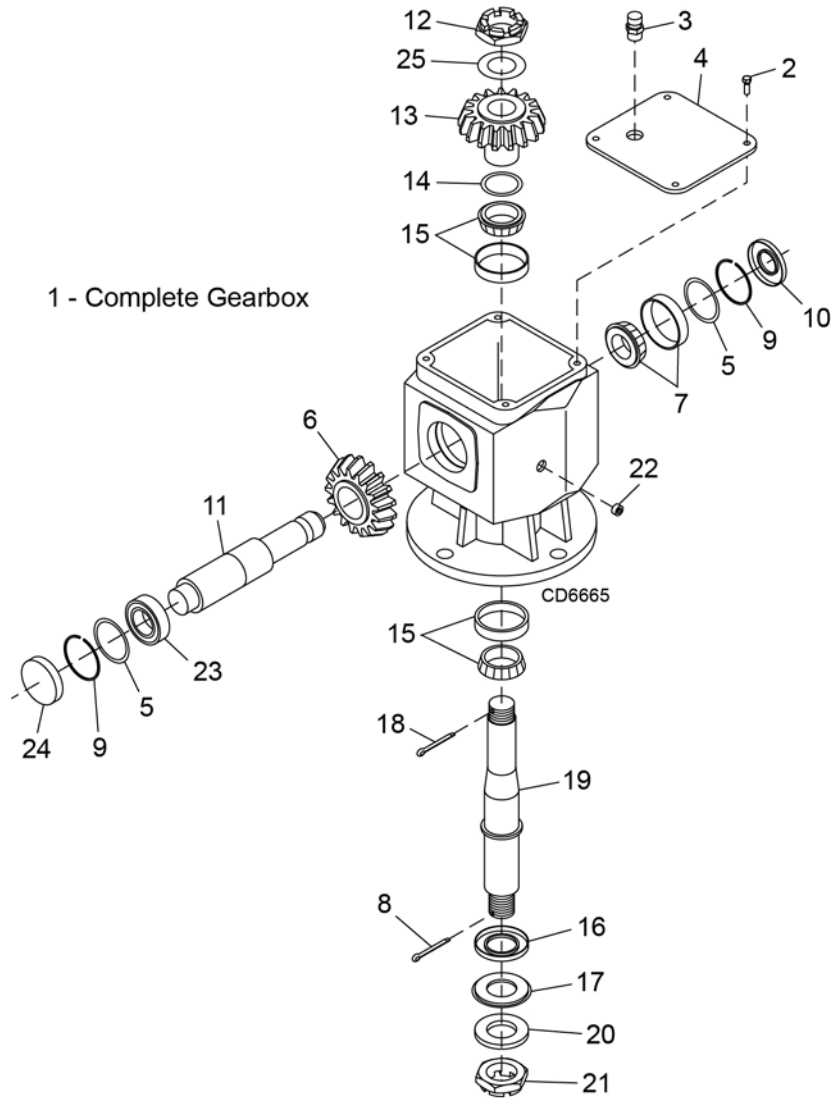


REF	PART	QTY	DESCRIPTION	REF	PART	QTY	DESCRIPTION
A	1032585	1	Gearbox repair assembly	16	1018328	1	Output seal
1	NSS	1	Housing	17	1038357	1	Output cap
2	1019632	1	Inspection cover	18	NSS	1	Output bearing spacer
3	NSS	1	22 Tooth gear	19	NSS	1	Output shaft and pinion
4	1018327	1	Input seal	20	1018326	1	Ball bearing
5	NSS	1	Input shaft	21	1018325	1	Ball bearing
6	NSS	1	Retaining ring	22	NSS	2	Sealing washer w/plug
7	NSS	1	Gear spacer	23	NSS	6	Lock washer
8	NSS	1	Retaining ring	24	NSS	6	M8-1.5P x 25 HHCS
9	1011780	1	Vent plug and washer	25	57478	2	Bearing cup and cone
10	1018329	A/R	Output gasket (0.30)	26	1032963	1	Shim Kit
11	1018330	A/R	Output gasket (0.13)				
12	NSS	4	Lock washer				NSS Not Serviced Separately
13	NSS	4	M10-1.5P x 25 HHCS				A/R As Required
14	1018331	1	1" - 14 Slotted flange nut				HHCS Hex Head Cap Screw
15	NSS	1	Cotter pin				

56 Parts

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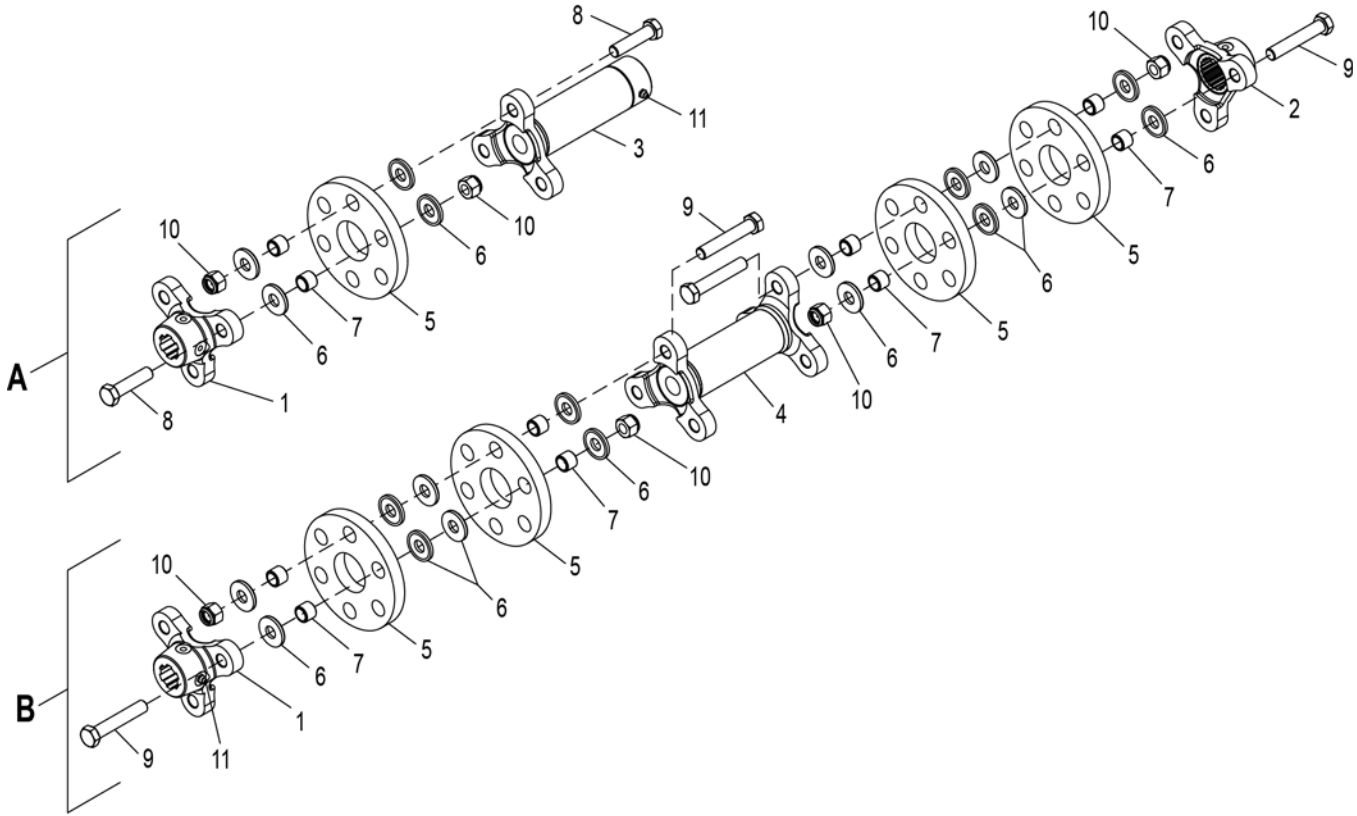
DS10.40 SPINDLE GEARBOX ASSEMBLY



REF	PART	QTY	DESCRIPTION	REF	PART	QTY	DESCRIPTION
1	58803	1	Complete gearbox	16	39289	1	Seal, 50 x 90 x 10
2	57150 *	6	M8-1.25P x 14 mm HHCS	17	57338	1	Screen protection
3	57076	1	1/2 Vent plug	18	NSS *	1	Cotter pin, B4 x 55 mm
4	57139	1	Cover	19	57191	1	Output shaft
5	57328	1	Shim kit, 60.3 x 71.7	20	39322	1	Flat washer, 31 x 56 x 4
6	39424	1	Crown gear	21	39323	1	M30-2.0P castle nut
7	57462	1	Bearing, cup & cone	22	27326	1	3/8 NPT Solid plug
8	NSS *	1	Cotter pin, B6 x 60 mm	23	20890	1	Ball bearing
9	57466	2	Snap ring	24	57374	1	Seal, 72 x 10
10	57463	1	Seal, 35 x 72 x 10	25	57094	1	Shim, 44 x 30.3 x 1
11	57147	1	Input shaft, 1-3/8 6 spline				
12	39261	1	M30-1.5P Castle nut				
13	39418	1	Pinion gear				
14	57471	1	Shim kit, 50.3 x 70.3				
15	39263	2	Bearing, cup & cone				

NSS Not Serviced Separately
HHCS Hex Head Cap Screw

DS8.30 / DS10.40 FLEXIBLE COUPLER ASSEMBLY



CD8564

REF	PART	DS8.30 QTY	DS10.40 QTY	DESCRIPTION
A	1040670	2	-----	Complete flex coupler drive (DS8.30)
B	1009207	-----	2	Complete flex coupler drive (DS10.40)
1	1008143	1	1	Yoke, 1-3/8 6-spline
2	1008147	-----	1	Yoke, 1-3/4 20 spline
3	NSS	1	-----	Single yoke & tube assembly
4	NSS	-----	1	Double yoke & tube assembly
5	1008140	1	4	Rubber disc
6	1008141	12	48	Shaped washer
7	1008142	6	24	Bushing
8	1042998	6	-----	M16 x 2.0P x 65 mm HHCS
9	1001042	-----	12	M16 x 2.0P x 90 mm HHCS
10	1008146	6	12	M16 x 2.0P Lock nut
11	---*	1	1	M8 x 1.0P Grease fitting

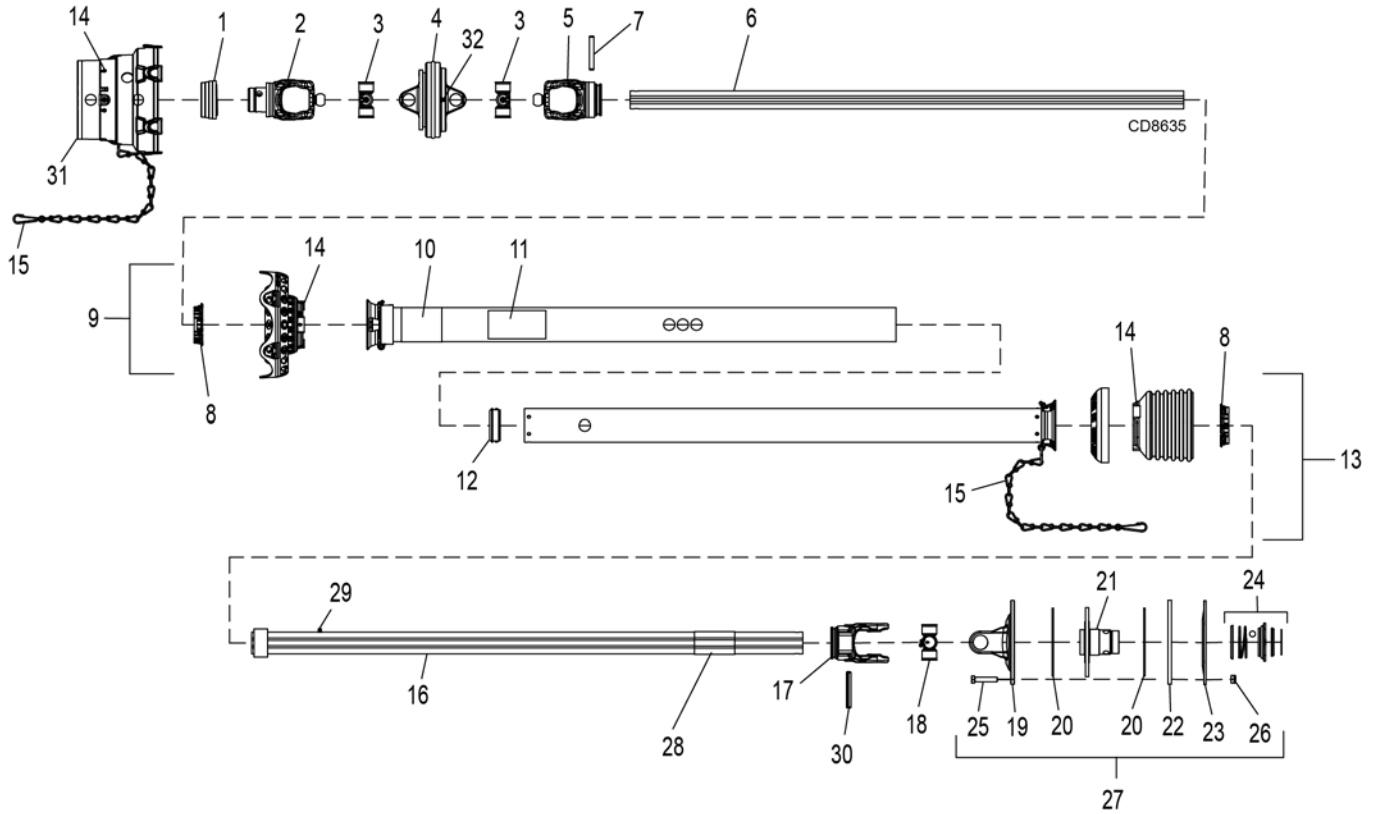
NSS Not Serviced Separately

* Standard Hardware, Obtain Locally

58 Parts

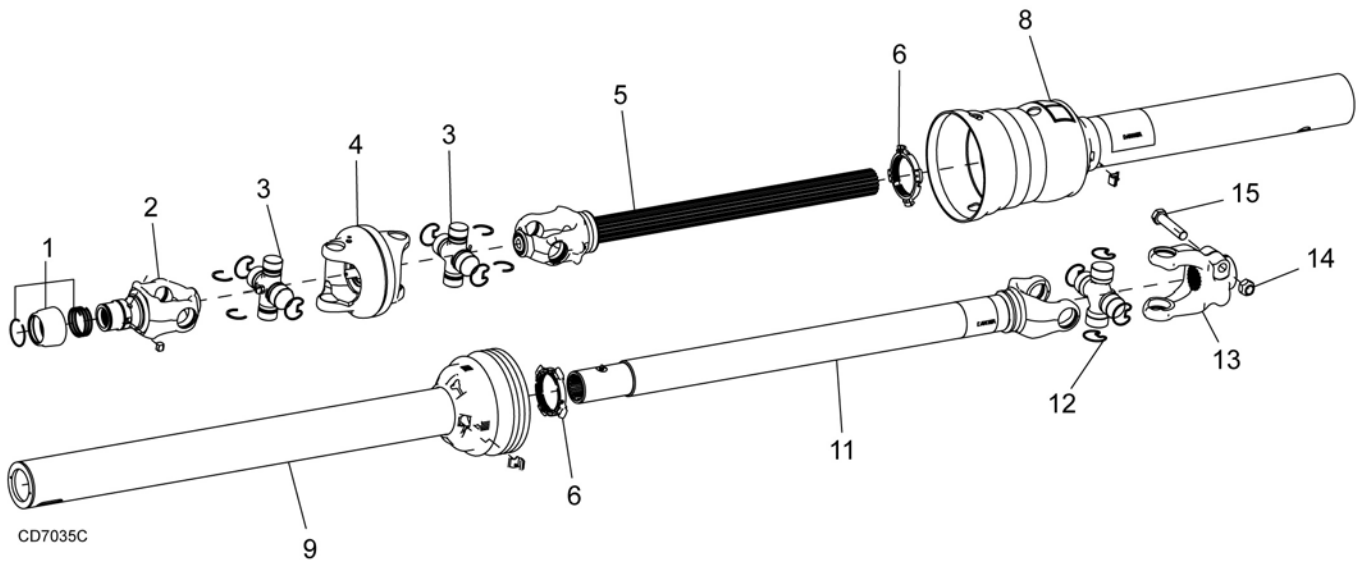
MAN1167 (7/1/2016)

DS8.30 CV DRIVE ASSEMBLY



REF	PART	QTY	DESCRIPTION	REF	PART	QTY	DESCRIPTION
A	1041676	1	Complete CV drive	18	38352	1	U-Joint repair kit
1	40589	1	Slide lock repair kit	19	1027217	1	Flange yoke
2	44671	1	Yoke, QD CV 1-3/8 - 6 spline	20	57432	2	Friction disc
3	1041684	2	CV U-Joint repair kit	21	1041696	1	Hub, 1-3/8 - 6 spline
4	44672	1	CV Body (includes fitting item 33)	22	57434	1	Thrust plate
5	1041685	1	Yoke, inner profile	23	57439	1	Belleville spring plate
6	1041686	1	Drive tube, inner profile	24	57437	1	QD Flange repair kit
7	415146	1	Spring pin, 10 x 75 (package of 10)	25	57259	6	M10-1.5P x 55 mm HHCS
8	40766	2	Drive shield bearing kit	26	57260	6	M10-1.5P Hex lock nut
9	1041691	1	Outer shield half	27	1041688	1	Friction clutch, 1-3/8 - 6 spline
10	18864	1	Decal, danger, rotating driveline	28	33347	1	Decal, danger, guard missing
11	1041690	1	Decal, lubrication	29	40779	1	Grease fitting (package of 10)
12	40767	1	Support bearing	30	40764	1	Spring pin, 10 x 80 (package of 10)
13	1041692	1	Inner shield half	31	1041689	1	CV Guard
14	40778	1	Screw, (package of 10)	32	1037779	1	M8-1.0P Straight grease fitting
15	40777	2	Anti-rotation chain				
16	1041687	1	Drive tube, outer profile				
17	38353	1	Yoke, outer profile				

DS10.40 CV DRIVE ASSEMBLY



REF	PART	QTY	DESCRIPTION
A	1040720	1	Complete CV drive
1	19851	1	Slide lock repair kit
2	1032289	1	Yoke QD CV 1-3/8 - 6
3	1032290	2	CV U-Joint repair kit Cat 4 35E
4	1032291	1	CV Body with fitting
5	1032292	1	Yoke and shaft CV 1.31-20 spline
6	1024636	2	Drive shield bearing kit
7	18864 †	1	Decal, danger rotating driveline
8	1032293	1	CV shield outer
9	1032294	1	CV shield inner

REF	PART	QTY	DESCRIPTION
10	33347 †	1	Decal, danger guard missing
11	1032295	1	Yoke, tube and slip sleeve
12	1032296	1	U-Joint cross and bearing kit
13	1043026	1	Yoke, 35R x 3.88 x SP 1.50 - 23
14	6239 *	1	5/8 NC Lock nut
15	34473 *	1	5/8 NC x 3 HHCS GR5

† Not shown

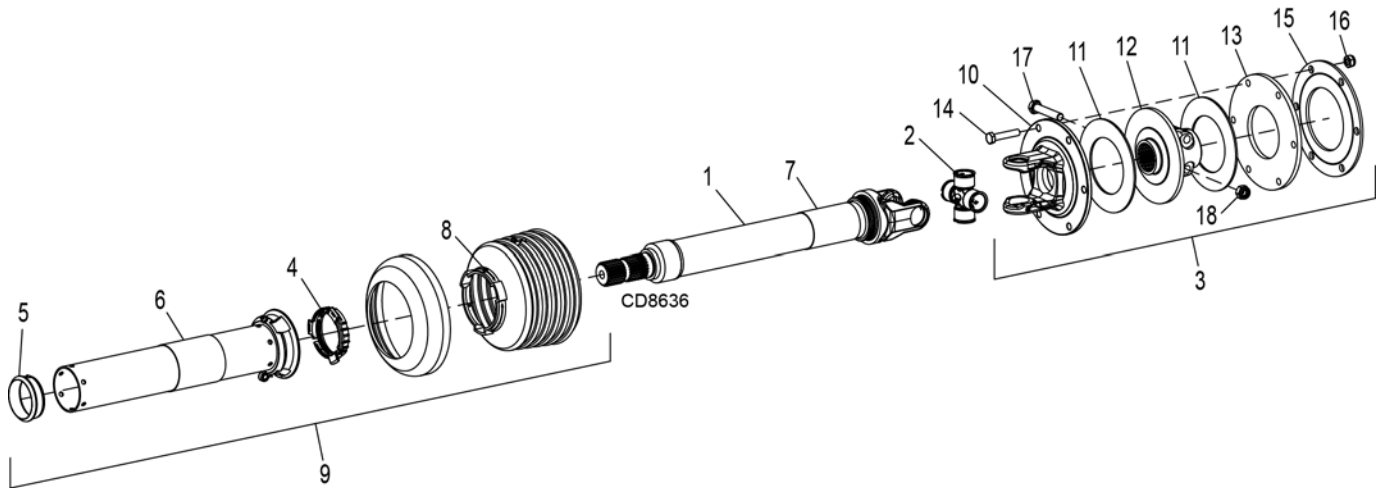
HHCS Hex Head Cap Screw

* Standard hardware, obtain locally

60 Parts

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MAN1167 (7/1/2016)

DS10.40 REAR FIXED LENGTH DRIVE ASSEMBLY

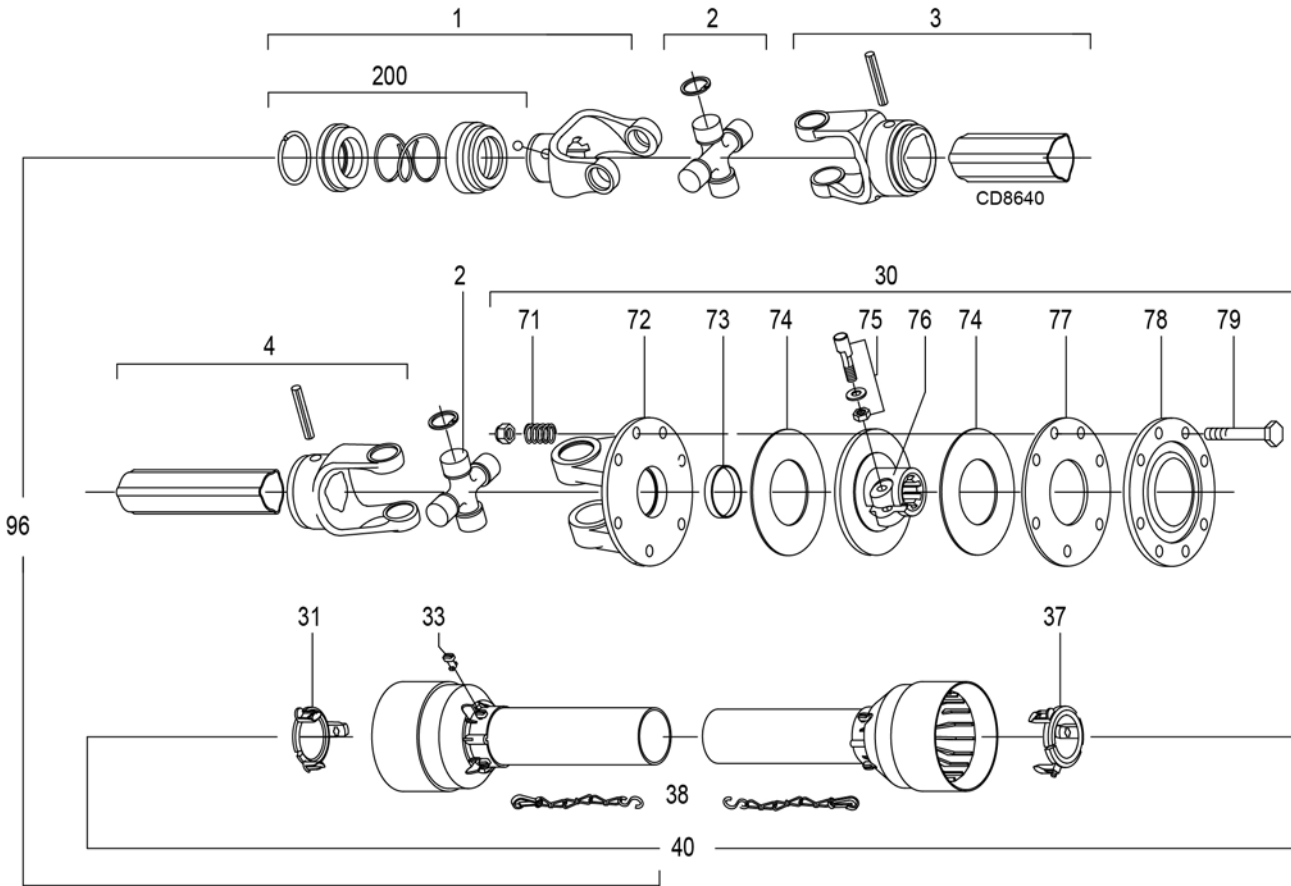


REF	PART	QTY	DESCRIPTION
A	1041677	1	Drive assembly complete
1	1041682	1	Drive without shield
2	38352	1	U-Joint cross & bearing kit
3	1019114	1	Friction clutch
4	40766	1	Bearing ring
5	40767	1	Support bearing
6	18864	1	Decal, danger, rotating driveline
7	33347	1	Decal, danger, guard missing
8	40778	1	Screw, (package of 10)
9	1041683	1	Shield assembly, complete
10	1027217	1	Flange yoke

REF	PART	QTY	DESCRIPTION
11	57432	2	Friction disc
12	57440	1	Hub, 1-3/4 - 20 spline
13	57434	1	Thrust plate
14	57529	6	M10-1.5P x 5 mm HHCS, CL8.8
15	57439	1	Belleville spring
16	57260	6	M10-1.5P Hex lock nut
17	57262	2	M12-1.75P x 65 mm HHCS, CL8.8
18	57261	2	M12-1.75P Hex lock nut

HHCS Hex Head Cap Screw

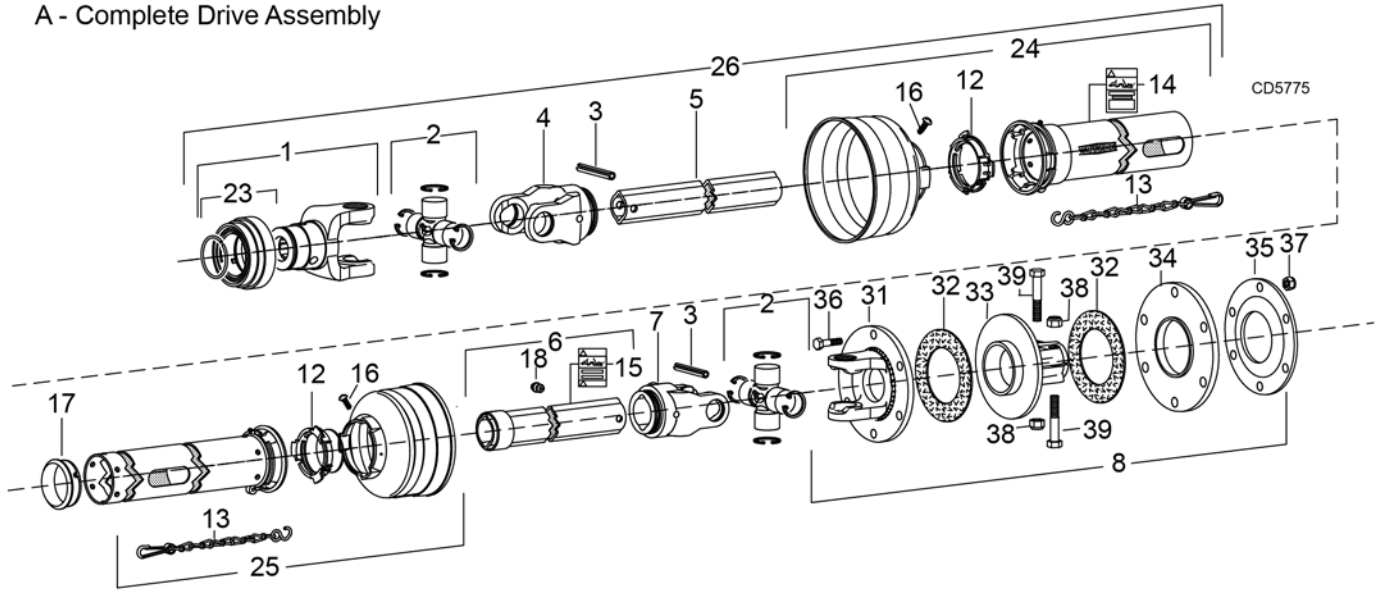
DS8.30 SLIP CLUTCH DRIVE ASSEMBLY



REF	PART	QTY	DESCRIPTION	REF	PART	QTY	DESCRIPTION
A	1040710	1	Complete drive assembly	72	1028779	1	Flanged yoke
1	1028775	1	Complete collar yoke, 1-3/8 - 6 spline	73	1028780	1	Bushing
2	36990	2	U-Joint cross & bearing kit	74	1028781	2	Clutch lining ring
3	53464	1	Yoke & profile tube, outer	75	1001274	1	Tapered pin set, 1-3/8
4	53466	1	Yoke & profile tube, inner	76	1043043	1	Clutch support
30	1043040	1	Complete slip clutch assembly	77	1028783	1	Inner clutch plate
31	1028776	1	Outer shield bearing kit	78	1028785	1	Pressure plate
33	30922	6	Shield retaining clip	79	1028786	8	Bolt & nut, M10 x 85 mm
37	1028777	1	Inner shield bearing kit	96	1043044	1	Half shaft asy, female, with shield
38	30917	2	Shield tether chain	200	1001340	1	Lock collar repair kit
40	1043041	1	Shield, complete, inner & outer				
71	1043042	8	Clutch spring				

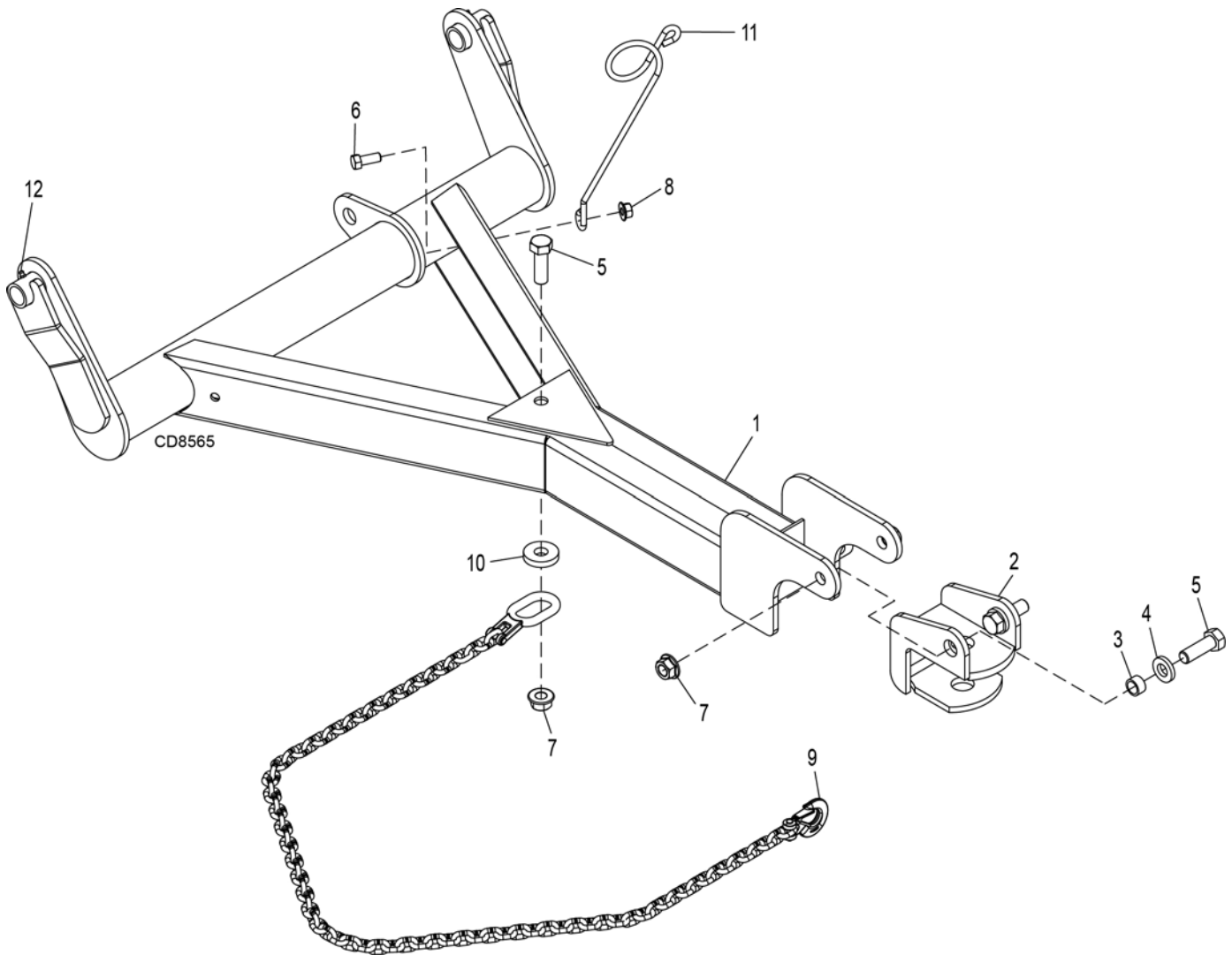
DS10.40 SLIP CLUTCH DRIVE ASSEMBLY

A - Complete Drive Assembly



REF	PART	QTY	DESCRIPTION	REF	PART	QTY	DESCRIPTION
A	57413	1	Complete drive assembly	23	40589	1	Slide lock collar repair kit
1	40574	1	Yoke, 1-3/8 - 6 spline	24	57268	1	Outer guard half, complete
2	110	2	U-joint cross & bearing kit	25	57269	1	Inner guard half, complete
3	40764	2	Spring pin, 10 x 80 (package of 10)	26	57414	1	Half shaft asy, male, with shield
4	40575	1	Inboard yoke, inner profile	31	57438	1	Flange yoke
5	40587	1	Inner profile tube	32	57432	2	Friction disc
6	40593	1	Outer profile tube & sleeve	33	57440	1	Hub, 1-3/4 - 20 spline
7	40576	1	Inboard yoke, outer profile	34	57434	1	Thrust plate
8	57416	1	Friction clutch, 1340, 1-3/4 - 20 spline	35	57439	1	Belleville spring
12	40766	2	Bearing ring, SC25	36	57259	6	M10-1.5P x 55 mm HHCS, CL8.8
13	40777	2	Anti-rotation chain	37	57260	6	M10-1.5P Lock nut w/nylon insert
14	18864	1	Decal, danger, rotating driveline	38	57261	2	M12-1.5P Lock nut w/nylon insert
15	33347	1	Decal, danger, guard missing	39	57262	2	M12-1.5P x 65 mm HHCS, CL8.8
16	40778	2	Screw, (package of 10)				
17	40767	1	Support bearing				HHCS Hex Head Cap Screw
18	40779	1	Grease fitting, (package of 10)				

DS8.30 / DS10.40 TONGUE ASSEMBLY

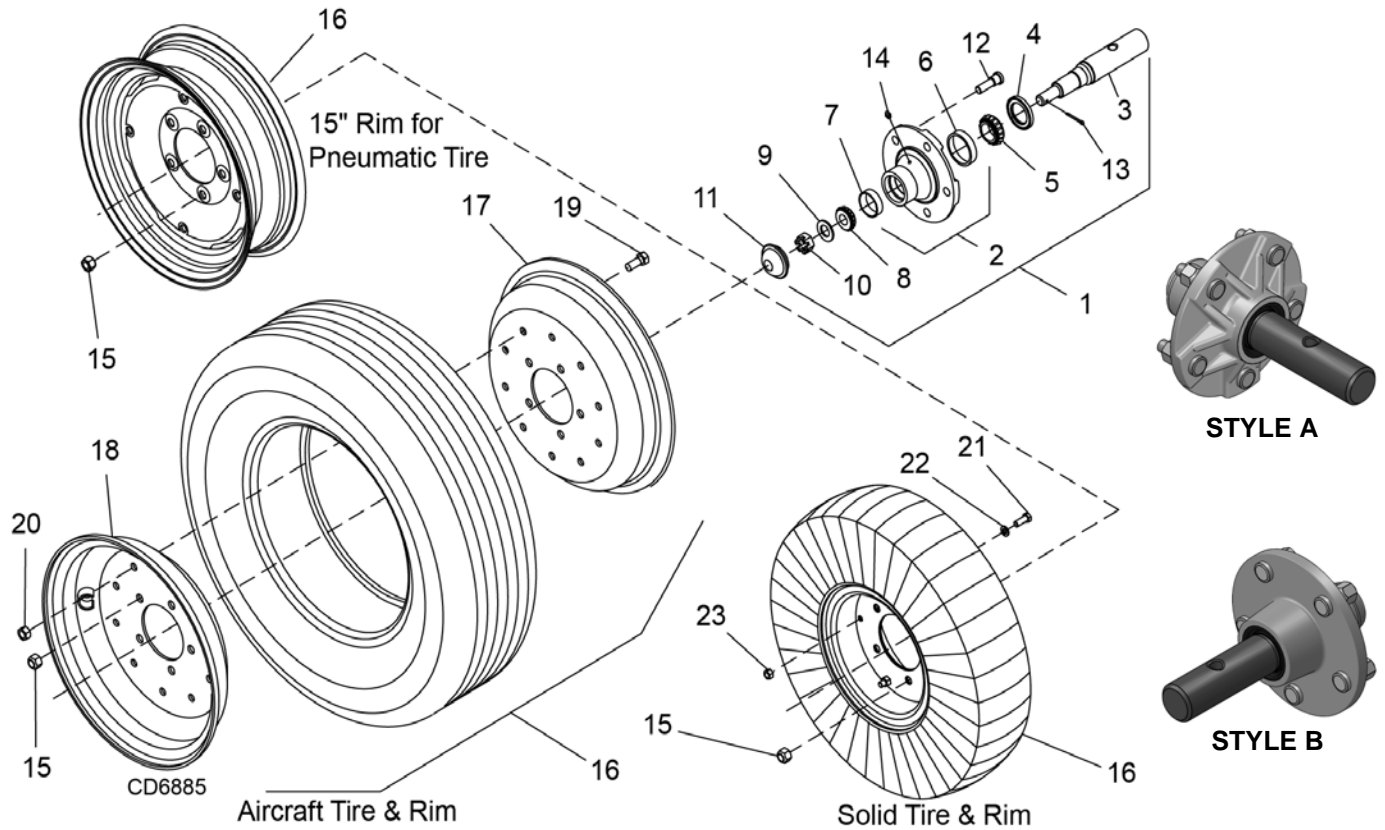


REF	PART	QTY	DESCRIPTION	REF	PART	QTY	DESCRIPTION
1	1040726	1	Tongue, WA (DS8.30) -or-	9	19407	1	Safety chain, 6400 lb
1	1040721	1	Tongue, WA (DS10.40)	10	8424	1	3/4 ID x 2 OSD x 3/8 Washer
2	1038933	1	Hitch, Cat 1 clevis (DS8.30) -or-	11	3443	1	Hydraulic hose holder
2	1038085	1	Hitch, Cat 2 clevis (DS10.40)	12	12296 *		1/4-28 Straight grease fitting
3	13087	2	Sleeve, HT 3/4 x 1 x 9/16				
4	28873	2	3/4 ID x 1-1/2 OD x 1/4 Washer				
5	13759 *		3/4 NC x 2-1/4 HHCS, GR5				HHCS Hex Head Cap Screw
6	6100 *		1/2 NC x 1-1/4 HHCS, GR5				* Standard Hardware, Obtain Locally
7	302207 *		3/4 NC Flanged lock nut				
8	11900 *		1/2 NC Flanged lock nut				

64 Parts

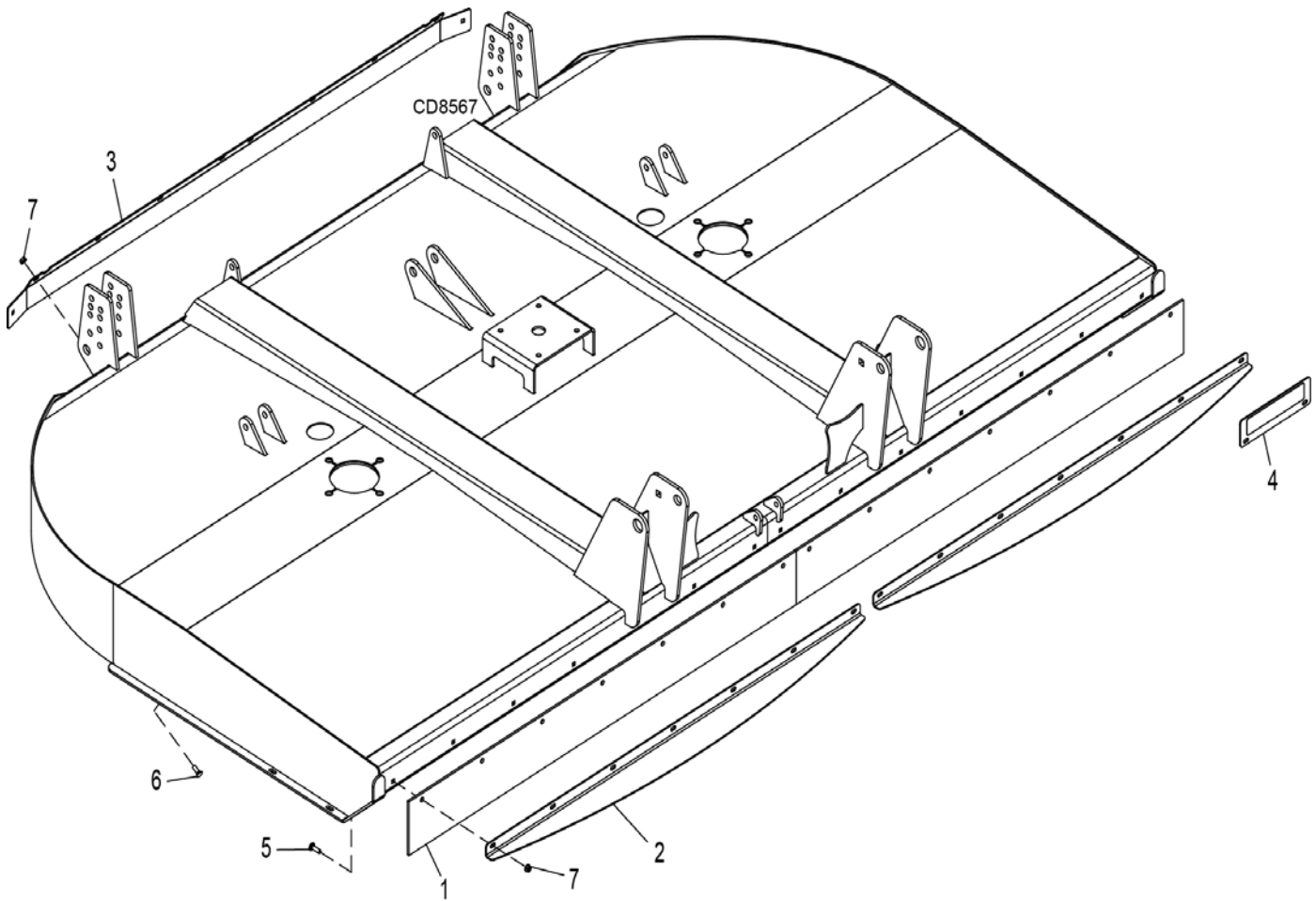
MAN1167 (7/1/2016)

WHEEL & TIRE ASSEMBLY



REF	PART	QTY	DESCRIPTION	REF	PART	QTY	DESCRIPTION
1A	1017050	1	Heavy hub assembly - Style A (includes items 2 - 15)	16	1017088	1	15" Rim for pneumatic tire - 5 bolt -or-
1B	603798	1	Hub assembly - Style B (includes items 2-15)	16	1017040	1	6.00 x 9 Solid tire, rim & hardware - 5 bolt -or-
2	1017034	1	Heavy wheel hub with cups - Style A (includes items 6, 7, 14)	16	1039976	1	25 x 8 - 14 Severe duty ag tire, rim & hardware - 5 bolt -or-
3A	1017033	1	Axle (for use with Style A)	16	1039976F	1	25 x 8 - 14 Severe duty ag tire, rim & hardware, foam filled - 5 bolt -or-
3B	603799	1	Axle (for use with Style B)	19	6100 *		1/2 NC x 1-1/4 HHCS GR5
4	1017027	1	Seal	20	765 *		1/2 NC Locknut
5	1017028	1	Bearing cone	21	19887 *		3/8 NC x 1 HHCS GR8
6	1017036	1	Bearing cup	22	838 *		3/8 Standard lock washer
7	1017037	1	Bearing cup	23	835 *		3/8 NC Hex nut
8	1017029	1	Bearing cone	-	1017042	2	Rim half for 6 x 9 solid tire
9	1017031	1	Washer				
10	1017032	1	Castle nut (for use with Style A)		HHCS		Hex head cap screw
11	1017035	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				

DS8.30 / DS10.40 BELT SHIELDING



DS8.30

REF	PART	QTY	DESCRIPTION
1	1040657	2	Front rubber deflector
2	1043035	2	Front belt bracket
3	1043036	1	Rear band
4	1043037	1	Front reflector bracket w/reflector
5	20973	*	3/8 NC x 1-1/4 Carriage bolt, GR5
6	6697	*	3/8 NC x 1 Carriage bolt, GR5
7	14350	*	3/8 NC Flange lock nut

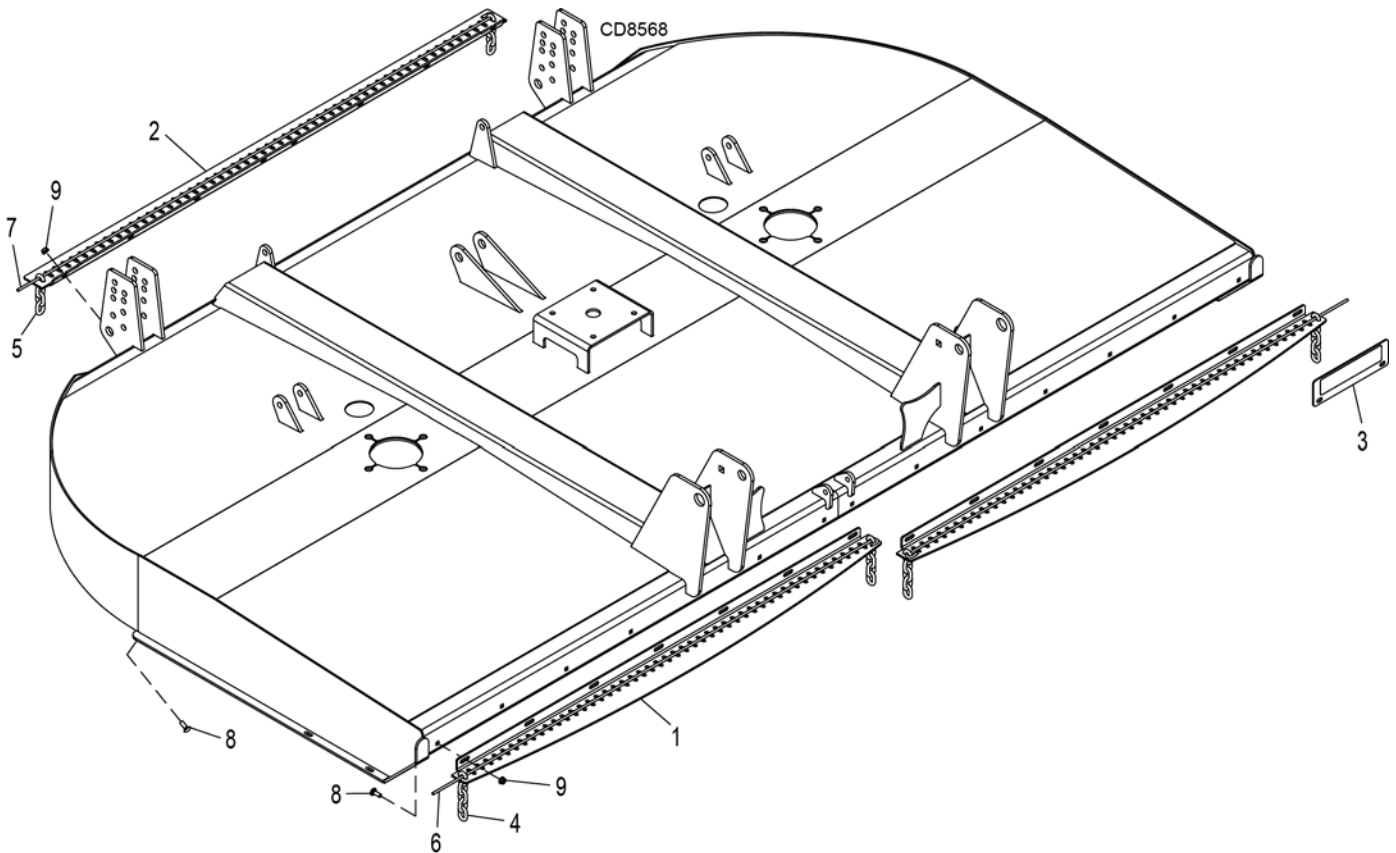
* Standard Hardware, Obtain Locally

DS10.40

REF	PART	QTY	DESCRIPTION
1	1040706	2	Front rubber deflector
2	1043045	2	Front belt bracket
3	1043046	1	Rear band
4	1043037	1	Front reflector bracket w/reflector
5	20973	*	3/8 NC x 1-1/4 Carriage bolt, GR5
6	6697	*	3/8 NC x 1 Carriage bolt, GR5
7	14350	*	3/8 NC Flange lock nut

* Standard Hardware, Obtain Locally

DS8.30 / DS10.40 CHAIN SHIELDING (OPTIONAL)



DS8.30

REF	PART	QTY	DESCRIPTION
1	1043038	2	Front chain bracket
2	1043039	1	Rear chain bracket
3	1043037	1	Front reflector bracket w/reflector
4	3994	A/R	5/16 - 5 Link chain
5	4069	A/R	5/16 - 4 Link chain
6	1007853	2	.243 Dia bent pin
7	1007854	1	.243 Dia bent pin
8	6697	*	3/8 NC x 1 Carriage bolt, GR5
9	14350	*	3/8 NC Flange lock nut

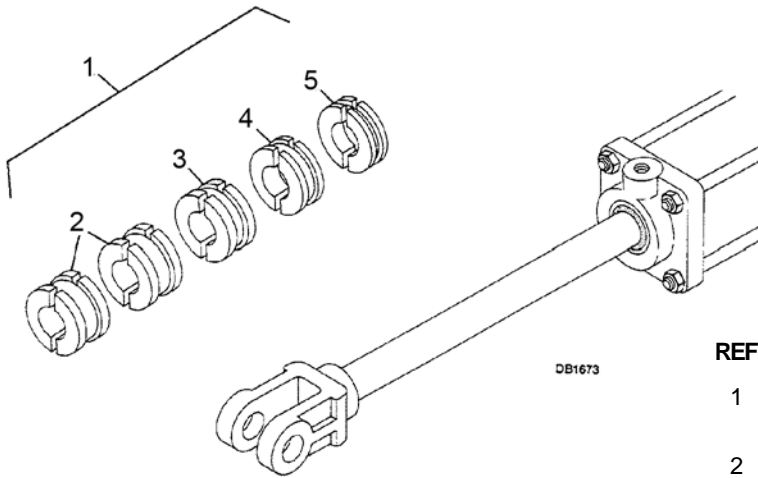
A/R As Required
 * Standard Hardware, Obtain Locally

DS10.40

REF	PART	QTY	DESCRIPTION
1	1043048	2	Front chain bracket
2	1043049	1	Rear chain bracket
3	1043037	1	Front reflector bracket w/reflector
4	3994	A/R	5/16 - 5 Link chain
5	4069	A/R	5/16 - 4 Link chain
6	1007855	2	.243 Dia bent pin
7	1007856	1	.243 Dia bent pin
8	6697	*	3/8 NC x 1 Carriage bolt, GR5
9	14350	*	3/8 NC Flange lock nut

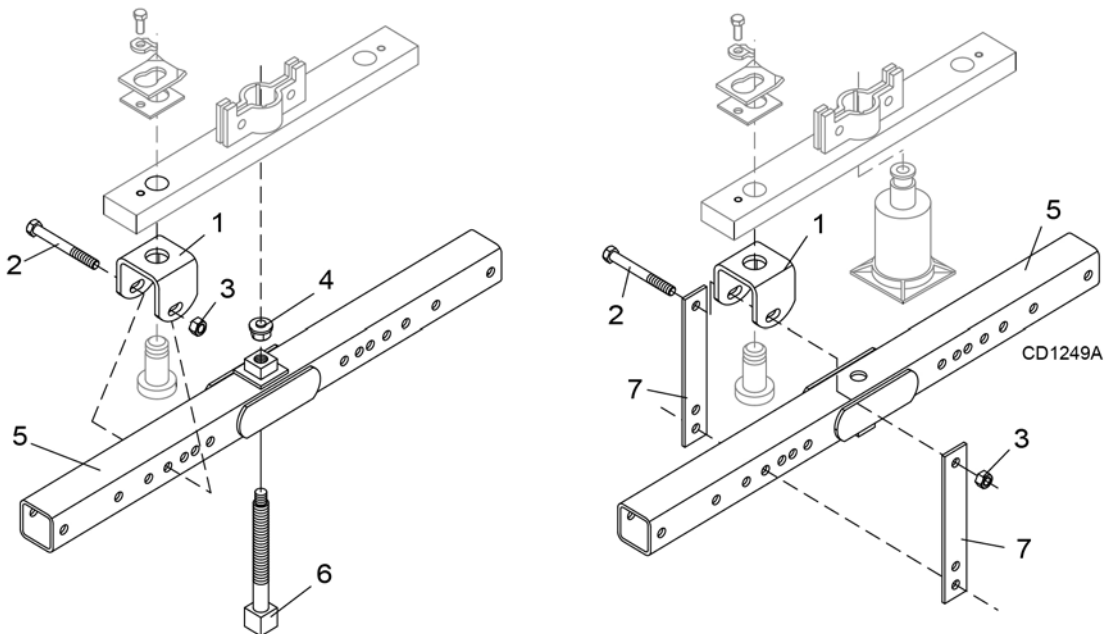
A/R As Required
 * Standard Hardware, Obtain Locally

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	19914	2	Crossbar puller clevis
2	3097 *	4	5/8 NC x 4-1/2 HHCS, GR5
3	230 *	4	5/8 NC Hex nut
4	24879	1	Crossbar puller pad assembly

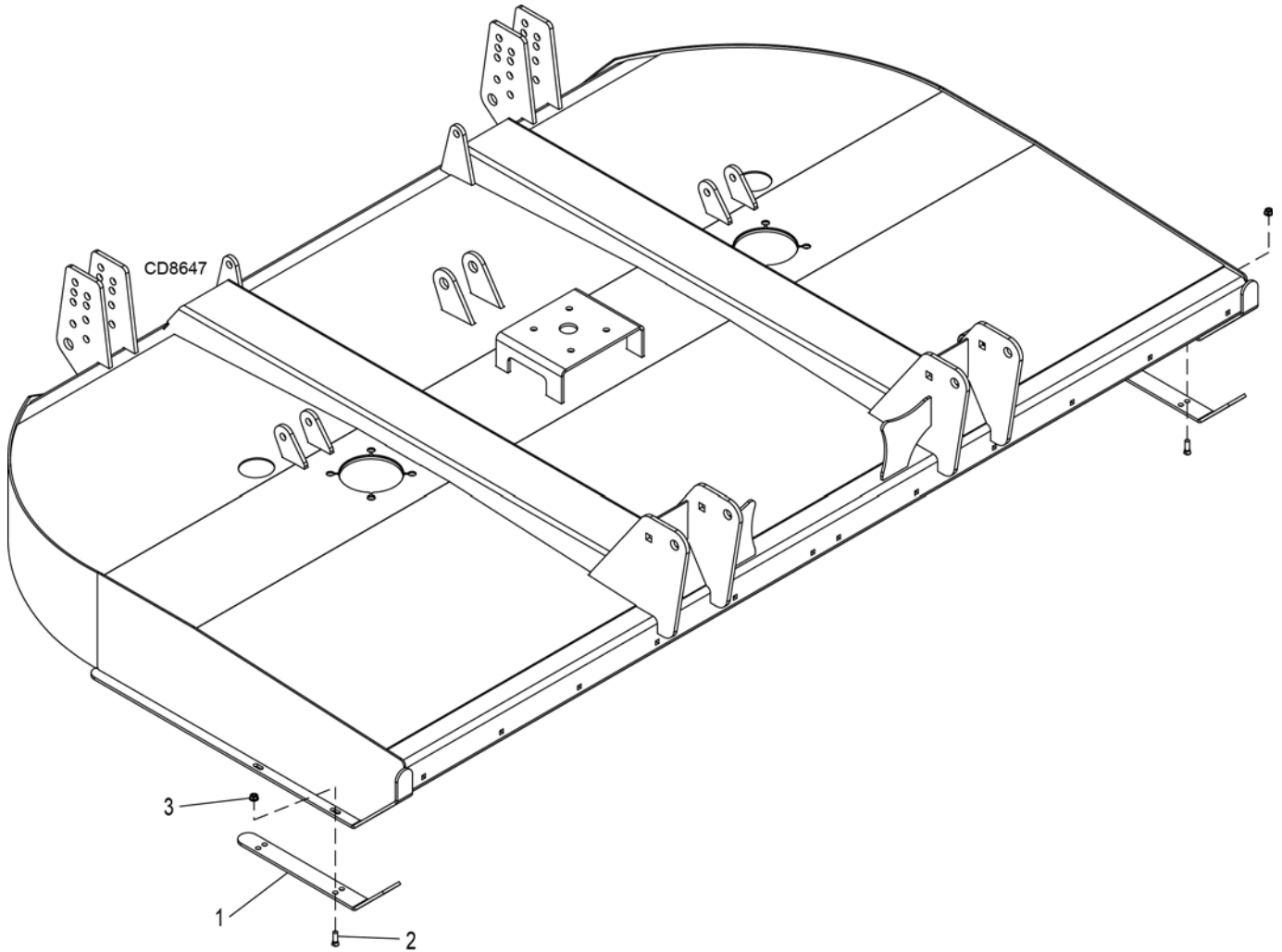
REF	PART	QTY	DESCRIPTION
5	24876	1	Crossbar puller tube assembly
6	24881	1	Crossbar puller screw assembly
7	24885	4	Crossbar puller link

* Standard hardware, Obtain Locally

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REPLACEABLE SKID SHOES (OPTIONAL)



REF	PART	QTY	DESCRIPTION
A	1042775	1	Kit, bolt-on skid shoes
1	1042776	2	Skid shoe
2	21636	6	3/8 NC x 1-1/4 Clipped head plow bolt
3	14350 *	6	3/8 NC Flanged lock nut

* Standard Hardware - Obtain Locally

BOLT TORQUE CHART

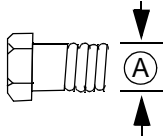
Always tighten hardware to these values unless a different torque value or tightening procedure is listed for a specific application.

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

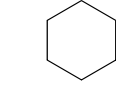
Always use the proper tool for tightening hardware: SAE for SAE hardware and Metric for metric hardware.

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

All torque values are given to specifications used on hardware defined by SAE J1701 MAR 99 & J1701M JUL 96.



SAE SERIES TORQUE CHART



SAE Grade 2
(No Dashes)

SAE Bolt Head Identification

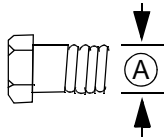


SAE Grade 5
(3 Radial Dashes)



SAE Grade 8
(6 Radial Dashes)

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



METRIC SERIES TORQUE CHART



Metric
Grade 8.8

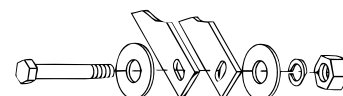
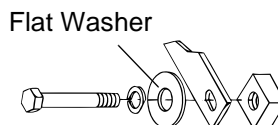
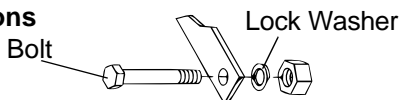
Metric Bolt Head Identification



Metric
Grade 10.9

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

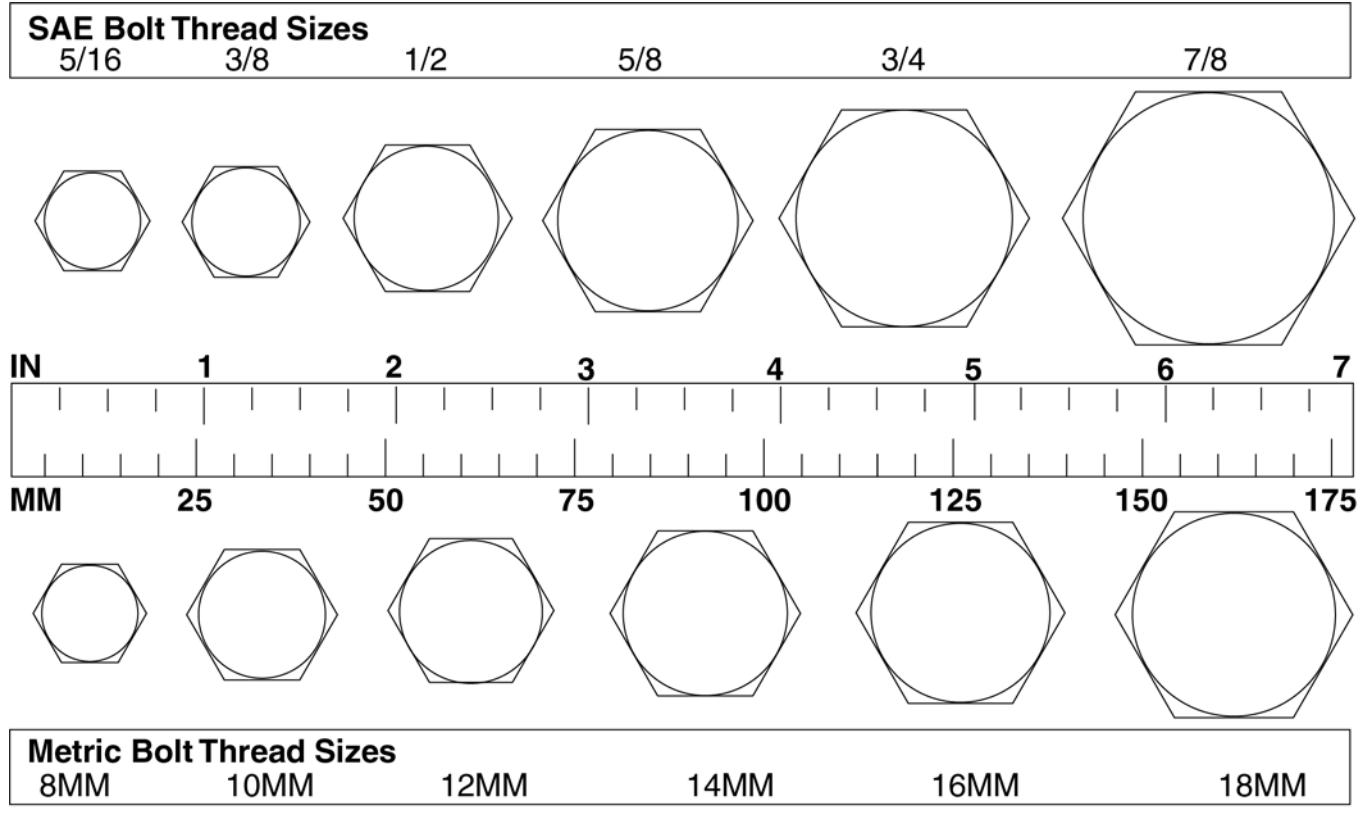
Typical Washer Installations



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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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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