

BATWING[®] ROTARY CUTTER

BW20.51Q

BW20.51

BW20.61Q

BW20.61

BW20.71Q

BW20.71

BW13.71Q

BW13.71

BW13.71QREV



MAN1282
(Rev 01/22/2026)

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 Checklists 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 Checklist 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 obtain complete warranty details, visit WoodsEquipment.com/warranty. You may also request a hard copy by calling 1-800-319-6637 or mail your request to: Woods Equipment Company, Attn: Warranty Dept. 2606 South Illinois Route 2, Oregon, IL 61061. 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.

2 Introduction

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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.



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

	BW20.51 BW20.51Q	BW20.61 BW20.61Q	BW20.71 BW20.71Q	BW13.71	BW13.71QREV
Cutting Height (Varies with tire selection)	2" - 15"				
Cutting Width	240" (20')			162" (13.5')	
Overall Width	249"			171"	
Transport Width	123"			99"	
Tractor HP	70 - 200	70 - 300	70 - 300	70 - 300	70 - 300
Blade Spindle	3			2	
Blade Overlap	6"				
Number of Blades	6			4	
Blade Rotation	Left Spindle: CW; Right Spindle & Center: CCW			RT & CTR: CCW	RT: CCW, CTR: CW
Input Driveline	Cat 5 Heavy				
CV	Cat 6				
Side Frame Thickness	1/4"				
Weight (approximate lbs. with 8 large aircraft tires, single chain shielding, and CV drive)	6435	6354	7740	7860	7860
Wheel Size	15" Rims, 24" Aircraft, 29" Aircraft, 21" Solid				
Torsion Protection	Slip Clutch				
Blade Speed 540 / 1000	15,450 / 16,300				16,300

GENERAL INFORMATION

WARNING

- Some illustrations in this manual show the mower with safety shields removed to provide a better view. The mower should never be operated with any 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 (left wing) and counterclockwise (right wing and center section) as viewed from the top of the cutter.

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 de Reglas de seguridad de este manual y un juego de etiquetas de seguridad en español, por favor comuníquese con su concesionario local de Woods.

4 Introduction

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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.

INSTALLATION

- Hydraulics must be connected as instructed in this manual. Do not substitute parts, modify, or connect in any other way.

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.
- After connecting hoses, check that all control lever positions function as instructed in the Operator's Manual. Do not put into service until control lever and equipment movements are correct.
- Set tractor hydraulic relief valve at 2500 psi (170 bars) (17,000 kPa) to prevent injury and equipment damage due to hydraulic system failure.
- 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.
- 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.

SAFETY RULES



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- Make sure driveline guard tether chains 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.
- 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.
- Before starting power unit, check all equipment driveline guards for damage. Replace any damaged guards. Make sure all guards rotate freely on all drivelines. If guards do not rotate freely on drivelines, repair and replace bearings 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.
- 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.

TRANSPORTATION

- When transporting, pay special attention to overhead power lines and make sure the machine has sufficient clearance to pass.
- Power unit must be equipped with Roll Over Protection System (ROPS) or ROPS cab and seat belt. Keep seat belt securely fastened. Falling off power unit can result in death from being run over or crushed. Keep foldable ROPS system in “locked up” position at all times.
- Always raise unit and install transport locks before transporting. Leak down or failure of mechanical or hydraulic system can cause equipment to drop.
- Always attach safety chain to tractor drawbar when transporting unit.
- Always comply with all state and local lighting and marking requirements. Turn on flashing warning lights whenever traveling on a public roadway.
- Never allow riders on power unit or attachment.
- Do not operate PTO during transport.
- Do not operate or transport on steep slopes. Refer to tractor manual for proper ballasting and slope recommendations.
- Do not operate or transport equipment while under the influence of alcohol or drugs.
- The maximum transport speed for this machine is 20 mph (30 km/h). Regardless of the maximum speed capability of the towing tractor, do not exceed the implement’s maximum transport speed. Doing so could result in:
 - Loss of control of the implement and tractor
 - Reduced or no ability to stop during braking
 - Implement tire failure
 - Damage to the implement or its components.
- Use additional caution and reduce speed when under adverse surface conditions, turning, or on inclines.
- Never tow this implement with a motor vehicle.

SAFETY RULES



ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!



OPERATION

- Do not allow bystanders in the area when operating, attaching, removing, assembling, or servicing equipment.
- Stay away from the machinery during a thunderstorm. Do not operate machine during a thunderstorm. If lightning from a thunderstorm strikes during operation, remain in the tractor cab. Do not make contact with the ground or objects outside the machine. Do not leave the cab until the storm has passed.
- Never walk, stand, or place yourself or others under a raised wing or in the path of a lowering wing. Hydraulic system leak-down, hydraulic system failures, mechanical failures, or movement of control levers can cause wings to drop unexpectedly and cause severe injury or death.
- Full chain shielding must be installed at all times. Thrown objects could injure people or damage property.
 - If the machine is not equipped with full chain shielding, operation must be stopped.
 - 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 (92m).
- Never direct discharge toward people, animals, or property.
- Do not operate or transport equipment while under the influence of alcohol or drugs.
- Operate only in daylight or good artificial light.
- Keep hands, feet, hair, and clothing away from equipment while engine is running. Stay clear of all moving parts.
- Always comply with all state and local lighting and marking requirements.
- Never allow riders on power unit or attachment.
- Power unit must be equipped with ROPS or ROPS cab and seat belt. Keep seat belt securely fastened. Falling off power unit can result in death from being run over or crushed. Keep foldable ROPS system in “locked up” position at all times.
- Always sit in power unit seat when operating controls or starting engine. Securely fasten seat belt, place transmission in neutral, engage brake, and ensure all other controls are disengaged before starting power unit engine.
- Operate tractor PTO at 540 RPM (1000 RPM on Q Series cutters). Do not exceed.
- Raise or lower wings slowly to prevent personal injury or damage to cutter.
- 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.
- Watch for hidden hazards on the terrain during operation.
- Do not handle blades with bare hands. Careless or improper handling may result in serious injury.
- 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 an authorized dealer.
- Keep all persons away from operator control area while performing adjustments, service, or maintenance.
- Do not modify or alter or permit anyone else to modify or alter the equipment or any of its components in any way.
- To prevent contamination during maintenance and storage, clean and then cover hose ends, fittings, and hydraulic ports with tape.
- Do not allow bystanders in the area when operating, attaching, removing, assembling, or servicing equipment.
- Make certain all movement of equipment has stopped before approaching for service.
- 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.
- Continuous operation while the clutch is slipping could cause heat build-up resulting in fire. Adjust slip clutch pressure by tightening springs to the dimension shown in the “Owner Service” section. If clutch is set to minimum spring length, replace the friction disks as shown.

SAFETY RULES



ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!



MAINTENANCE

- Before cleaning, servicing, adjusting, repairing or unplugging, stop tractor engine, place all controls in neutral, set park brake, remove ignition key, and wait for all moving parts to stop.
- 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.
- 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.
- To prevent contamination during maintenance and storage, clean and then cover hose ends, fittings, and hydraulic ports with tape.
- 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 an authorized dealer.
- 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. Wear gloves. Careless or improper handling may result in 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.
- Never perform cleaning, service or maintenance with engine running.
- Do not disconnect hydraulic lines until machine is securely blocked or placed in lowest position and system pressure is released by operating valve levers.
- Service and maintenance work not covered in OWNER SERVICE must be done by a qualified dealership. Special skills, tools, and safety procedures may be required. Failure to follow these instructions can result in serious injury or death.
- Explosive separation of tire and rim parts can cause serious injury or death. Release all air pressure before loosening bolts on wheel.

STORAGE

- Before disconnecting and storing, follow these instructions:
 - Store on level, solid ground.
 - Disconnect driveline and secure up off the ground.
 - Lower wings to ground.
 - Raise cutter center section and pin transport bar in raised position.
 - Attach parking jack and raise tongue weight off tractor drawbar.
 - Place wedge blocks at front and rear of wheels on center section and each wing to prevent wheel rotation.
 - Securely block all four corners of center section and each wing with jackstands.
 - Remove hydraulic hoses after tractor is turned off and all system pressure is released by operating valve levers several times.
 - Remove safety tow chain.
 - Remove retainer pin and high strength drawbar pin.
- Keep children, bystanders, and animals away from equipment and the storage area.

SAFETY & INSTRUCTIONAL DECALS

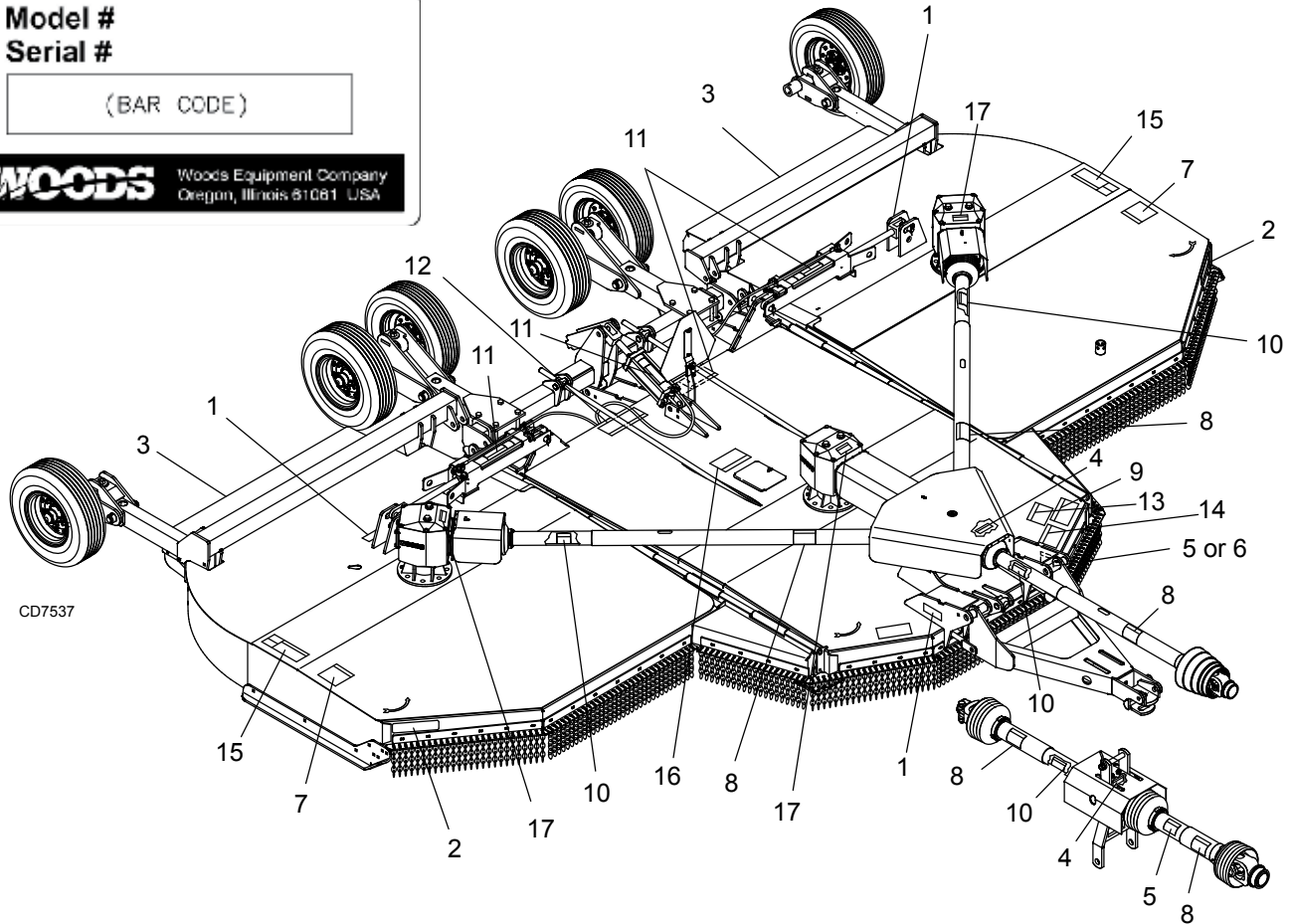


ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!



Replace Immediately If Damaged!

1 - Serial Number Plate



PN 1006348 - Located on Wheel Rims



BE CAREFUL!

Keep safety decals clean and visible.

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.

2 - FRONT AMBER REFLECTOR (PN 1002940)

3 - REAR RED REFLECTOR (PN 57123)

4 - PN 18869



17 - PN 1004114



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Safety 11

SAFETY & INSTRUCTIONAL DECALS



ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!



Replace Immediately If Damaged!

WARNING

DO NOT EXCEED PTO SPEED OF

1000

- PTO speeds higher than 1000 RPM can cause equipment failure and personal injury.
- Tractor PTO master shield, PTO drive shaft guarding and PIC guards are to be kept in place.

15922

5 - PN 15922

WARNING

DO NOT EXCEED PTO SPEED OF

540

- PTO speeds higher than 540 RPM can cause equipment failure and personal injury.
- Tractor PTO master shield, PTO drive shaft guarding and PIC guards are to be kept in place.

18866

6 - PN 18866

OR

7 - 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

8 - 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.
- Read the operator's manual.
- Do not use PTO adapters.

18864

9 - PN 18865

WARNING

FALLING OFF CAN RESULT IN BEING RUNOVER.

- Tractor must be equipped with ROPS (or ROPSCAB) 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 leakdown, hydraulic system failures or mechanical component failures.

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

18865

PN 611520

PN 611521



11 - PN W19924

WARNING

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



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

W19924

SAFETY & INSTRUCTIONAL DECALS


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

12 - PN 1004991

	<h2>⚠ WARNING</h2>	<p>TRANSPORT LOCK AND CYLINDER REQUIREMENTS</p> <p>SINGLE-ACTING FULL EXTENSION</p>  <p>TRANSPORT LOCK</p>
	<p>RAISED IMPLEMENT CAN DROP AND CRUSH</p> <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>FAILURE TO FOLLOW INSTRUCTIONS CAN RESULT IN SERIOUS INJURY OR DEATH.</p>	

10 - PN 33347

⚠ DANGER



GUARD MISSING.
DO NOT OPERATE.

⚠ DANGER



GUARD MISSING.
DO NOT OPERATE.

⚠ DANGER

13 - 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.

14 - 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 25 mph (40 km/h).

FAILURE TO OPERATE SAFELY CAN RESULT IN INJURY OR DEATH.

15 - PN 18964

⚠ DANGER




RAISED WING EXPOSES BLADE AND INCREASES THROWN OBJECT HAZARDS.

- Only raise for transport. Stop cutter and lock wing(s) up.

RAISED WING CAN FALL AND CRUSH.

- Keep away.
- Lock up with wing transport bars.
- Lower wing(s) after transport and for storage

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

16 - PN 15502

⚠ WARNING

ROTATING COMPONENTS

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

CONTACT WITH ROTATING PARTS CAN CAUSE SERIOUS INJURY.

OPERATION

The designed and tested safety of this machine depends on it being operated within the limitations as explained in this manual. Be familiar with and follow all safety rules in the manual, on the cutter and on the tractor.

The safe operation of this cutter is the responsibility of the operator, who must be properly trained. The operator should be familiar with the equipment and all safety practices before starting operation. Read the safety information on page 7 through page 13.

Recommended tractor ground speed for most conditions is from 1 to 6 mph.

Always operate tractor PTO at 540 RPM, or at 1,000 RPM for Q models.

! DANGER

- Look down and to the rear and make sure area is clear before operating in reverse.
- Full chain shielding must be installed at all times. Thrown objects could injure people or damage property.
 - If the machine is not equipped with full chain shielding, operation must be stopped.
 - 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 (92m).

! WARNING

- Never allow children or untrained persons to operate equipment.
- Do not allow bystanders in the area when operating, attaching, removing, assembling, or servicing equipment.
- Make sure spring-activated locking pin or collar slides freely and is seated firmly in tractor PTO spline groove.

! CAUTION

- Stop power unit and equipment immediately upon striking an obstruction. Turn off engine, remove key, inspect, and repair any damage before resuming operation.
- Stay away from the machinery during a thunderstorm. If lightning from a thunderstorm strikes during operation, remain in the tractor cab. Do not make contact with the ground or objects outside the machine. Do not leave the cab until the storm has passed

- 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.

CONNECTING CUTTER TO TRACTOR

NOTICE

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

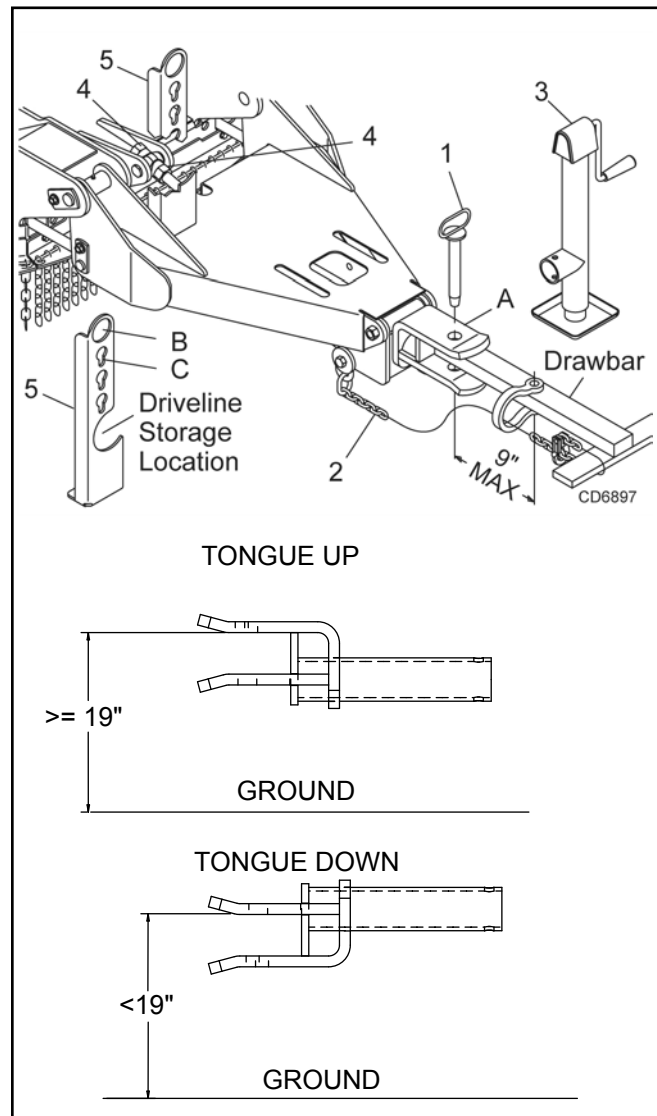


Figure 1. Cutter to Tractor Connection

1. Check tongue clevis to make sure it is adjusted to match your tractor PTO speed.
2. Position tongue clevis (A) up or down based on tractor drawbar height.
3. Attach cutter using a 1-1/8" clevis pin (1) and clip.
4. Attach safety tow chain (2) 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 (3) from the tongue and attach it to the storage post on the front of the left wing.
7. Adjust nuts (4) so tongue clevis (A) is parallel with the tractor drawbar.
8. Remove parking jack (3) from the tongue and attach it to the storage post on the front of the left wing.

NOTE: Place driveline in storage position on the hose holder (5) when not in use.

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. 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.
4. Attach the hydraulic hose to the tractor.
5. Raise unit with center lift cylinder and extend wing cylinders. Stop tractor and remove transport lock pins from wing stops and transport stop as shown in Figure 2 and Figure 3, page 18.
6. 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.**

1. To check for potential excessive turn angle, disconnect the driveline from tractor.
2. Start engine and turn as far right or left as possible.
3. Shut engine off and try to connect CV driveline to tractor. If it cannot be connected, the turn angle is too severe.
4. Restart engine and straighten angle slightly, shut off engine and try to connect CV driveline to tractor.
5. Repeat the process until the driveline can be connected. The point at which the driveline can be connected is the maximum turn that should be made.

Cutting Height Adjustment

NOTICE

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

Cutting height range is from 2" to 15". A hydraulic cylinder is used for cutting height adjustment.

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. The cutting height (blade edge) is approximately 1" above the bottom of the side skid.

Cutting Height (Normal Mowing) - Center Section

1. Position the cutter on a hard level surface and select an approximate cutting height, Example 6".
2. Raise wings and lock them in the UP position.
3. Use the hydraulic cylinder to raise or lower the center section to obtain a distance of 5" from bottom edge of skid shoe to the ground.
4. Place jackstands under the four corners of the center section. See illustration on page 21. Lower center section to relieve pressure on attitude rod nuts.
5. Loosen outer jam nut on the attitude rods.
6. Adjust inner nuts in or out until the rear of the cutter is approximately 1/2" higher than the front. See Figure 1A. It's used as a starting point for adjusting the attitude rod, based on different tongue height and wheel options.

- Raise cutter, remove jackstands and check deck height. Tighten jam nuts against sleeve.

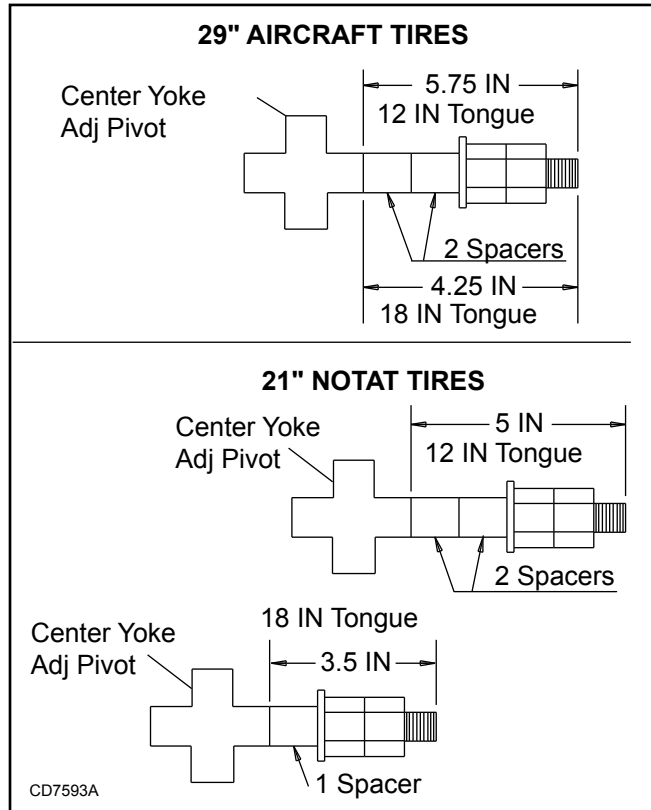


Figure 1A. Attitude Rod Adjustment

Cutting Height (Normal Mowing) - Wings

- Lower wings to normal mowing position.
- Loosen the jam nut on the adjustable link (turn buckle).
- Lengthening the link will raise the wing, shortening the link will lower the wing. The rear edge of the wing should be parallel to the ground.
- Make sure jam nuts are tightened once wing is leveled.

When using the cutter to shred, the rear of the cutter deck should be approximately 1/2" to 1" lower than the front.

TRACTOR OPERATION

⚠ WARNING

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

Use care when operating around tree limbs and other low objects. Avoid being knocked off tractor and being injured.

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 recommended PTO operating 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.

CUTTER OPERATION

⚠ 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.

When beginning operation of the cutter, make sure that all persons are in a safe location.

Power for operating the cutter is supplied by the tractor PTO. Operate PTO at 540 (1000 RPM for "Q" models).

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

To stop cutter when operating under normal conditions, reduce tractor RPM to idle and disengage PTO to reduce freewheeling on cutting elements.

Engage PTO at a low engine RPM to minimize stress on the drive system and gearbox.

With PTO engaged, raise PTO speed to 540 or 1000 RPM depending on model and maintain throughout cutting operation.

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

Move slowly into material. Adjust tractor ground speed to provide a clean cut without lugging the tractor engine.

Use a slow ground speed for better shredding.

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

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

Always operate tractor PTO at proper RPM (540 or 1000 depending on model) 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 or 1000 RPM. The lower ground speed will permit grass to rebound partially.

Mowing Tips

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.).

Shredding

The cutter may be used to shred various crops including green manure, straw, stubble, asparagus residue, corn stalks and similar crops in preparation for tilling. It may also be used to shred pruning in orchards, groves and vineyards.

Each shredding operation may require a different set-up. Start with front edge of cutter high. Adjust up or down as necessary with attitude rod. Experiment until you obtain the results you want.

When shredding attitude is set, check that the distance from the bottom rear edge of the wing to the ground matches the bottom edge of the rear center section to the ground.

TRANSPORTING

WARNING

- Always raise unit and install transport locks before transporting. Leak down or failure of mechanical or hydraulic system can cause equipment to drop.
- Always attach safety chain to tractor drawbar when transporting unit.
- Never exceed 20 mph (30 km/h) during transport.
- Never allow riders on power unit or attachment.
- Do not operate PTO during transport.
- Do not operate or transport on steep slopes. Refer to tractor manual for proper ballasting and slope recommendations.
- Do not operate or transport equipment while under the influence of alcohol or drugs.
- Watch for hidden hazards on the terrain during operation.
- Stop power unit and equipment immediately upon striking an obstruction. Turn off the engine, remove key, inspect, and repair any damage before resuming operation.
- Never allow children or untrained persons to operate equipment.
- Do not allow bystanders in the area when operating, attaching, removing, assembling, or servicing equipment.
- Make sure spring-activated locking pin or collar slides freely and is seated firmly in tractor PTO spline groove.
- 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. Wear a respirator or filter mask where appropriate.
- When transporting, pay special attention to overhead power lines and make sure the machine has sufficient clearance to pass.

CAUTION

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

Lock-Up

Always transport with wings and center frame in the raised, locked position.

Wing Lock-Up

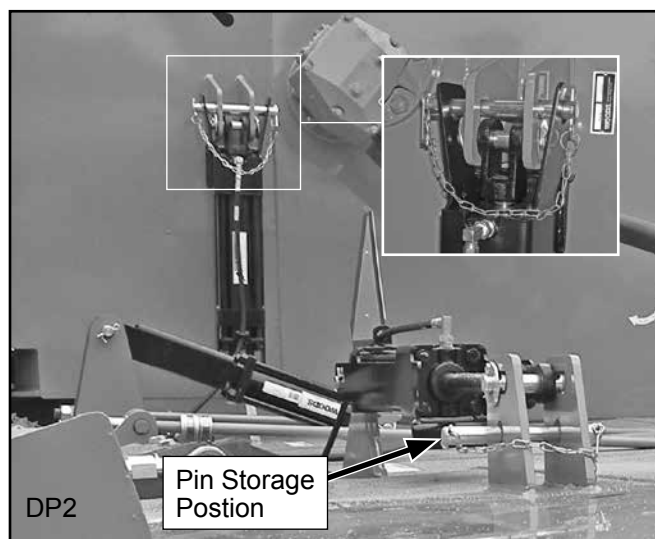


Figure 2. Transport Lock-Up
Wing and Center Section Shown

1. Remove safety pin and lock-up pin from storage position.
2. Raise wing and align wing transport lock with slotted holes in the cylinder lugs.
3. Insert lock-up pin above cylinder pin and secure with klik pin
4. Repeat steps 1 to 3 for opposite wing.
5. Relieve hydraulic pressure from wing cylinders and lower wing against wing transport lock.

Center Section Lock-Up



Figure 3. Transport Lock In Operation Position

1. Raise cutter with hydraulic cylinder to maximum height.
2. Rotate transport lock into position over cylinder rod (Figure 2).
3. Lower cutter against transport lock.
4. To lower cutter for operation, extend hydraulic cylinder to raise cutter. Rotate transport lock back away from cylinder rod (Figure 3).
5. Lower cutter to cutting height. Use cylinder stops (stroke control kit) to set desired cutting height.

STORAGE

Follow these steps when storing your cutter:

1. Clean cutter before storing. See page 26 for cleaning instructions. Store on level, solid ground.
2. Disconnect driveline and secure up off the ground.
3. Lower wings to ground.
4. Raise cutter center section and pin transport bar in raised position.
5. Attach parking jack and raise tongue weight off tractor drawbar.
6. Place wedge blocks at front and rear of wheels on center section and each wing to prevent wheel rotation.
7. Securely block all four corners of center section and each wing with jack stands.
8. Remove hydraulic hoses after tractor is turned off and all system pressure is released by operating valve levers several times.
9. Remove safety tow chain from tractor.
10. Remove retainer pin and high strength drawbar pin.
11. Keep children, bystanders, and animals away from equipment and the storage area.

PRE-OPERATION CHECKLIST

(OWNER'S RESPONSIBILITY)

- _____ Review and follow all safety rules and safety decal instructions on page 7 through page 13.
- _____ Check that all safety decals are installed and in good condition. Replace if damaged or illegible.
- _____ 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.
- _____ Check all lubrication points and grease as instructed in lubrication information. Make sure the PTO slip joint is lubricated and that the gearbox fluid levels are correct.
- _____ Set tractor PTO at correct RPM for your equipment.
- _____ 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.
- _____ Check that all hardware is properly installed and secured.
- _____ Check cutting height and attitude adjustment.
- _____ Raise and lower equipment to make sure air is purged from hydraulic cylinders and hoses.
- _____ Check that blades are sharp and secure and cutting edge is positioned to lead with correct rotation.
- _____ 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.
- _____ 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.
- _____ Inspect chain shielding and replace any damaged or missing links.
- _____ Make sure tractor 3-point lift links do not interfere with hydraulic hoses or driveline throughout full turning range.
- _____ Check the tire pressure for pneumatic tires. The maximum pressure allowed is 40 psi.

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.
- Before working underneath, disconnect driveline from tractor, lower wings to ground, raise cutter, and pin transport bar in raised position. Attach parking jack and lower to ground. Securely block all four corners of center section and each wing with jack stands. Blocking up prevents the cutter from dropping due to hydraulic leak down, hydraulic system failure, or mechanical component failure.
- Service and maintenance work not covered in OWNER SERVICE must be done by a qualified dealership. Special skills, tools, and safety procedures may be required. Failure to follow these instructions can result in serious injury or death.
- Before cleaning, servicing, adjusting, repairing or unplugging, stop tractor engine, place all controls in neutral, set park brake, remove ignition key, and wait for all moving parts to stop.
- Never perform cleaning, service or maintenance with engine running.

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

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

WARNING

- Before performing any service or maintenance, lower equipment to ground or block securely, turn off engine, remove key, and disconnect driveline from tractor PTO.
- 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.

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

1. Jackstands with a load rating of 1000 lbs. or more are the only approved blocking device for this cutter. Install jackstands (shown by Xs in Figure 4) under the cutter before working underneath unit.
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.

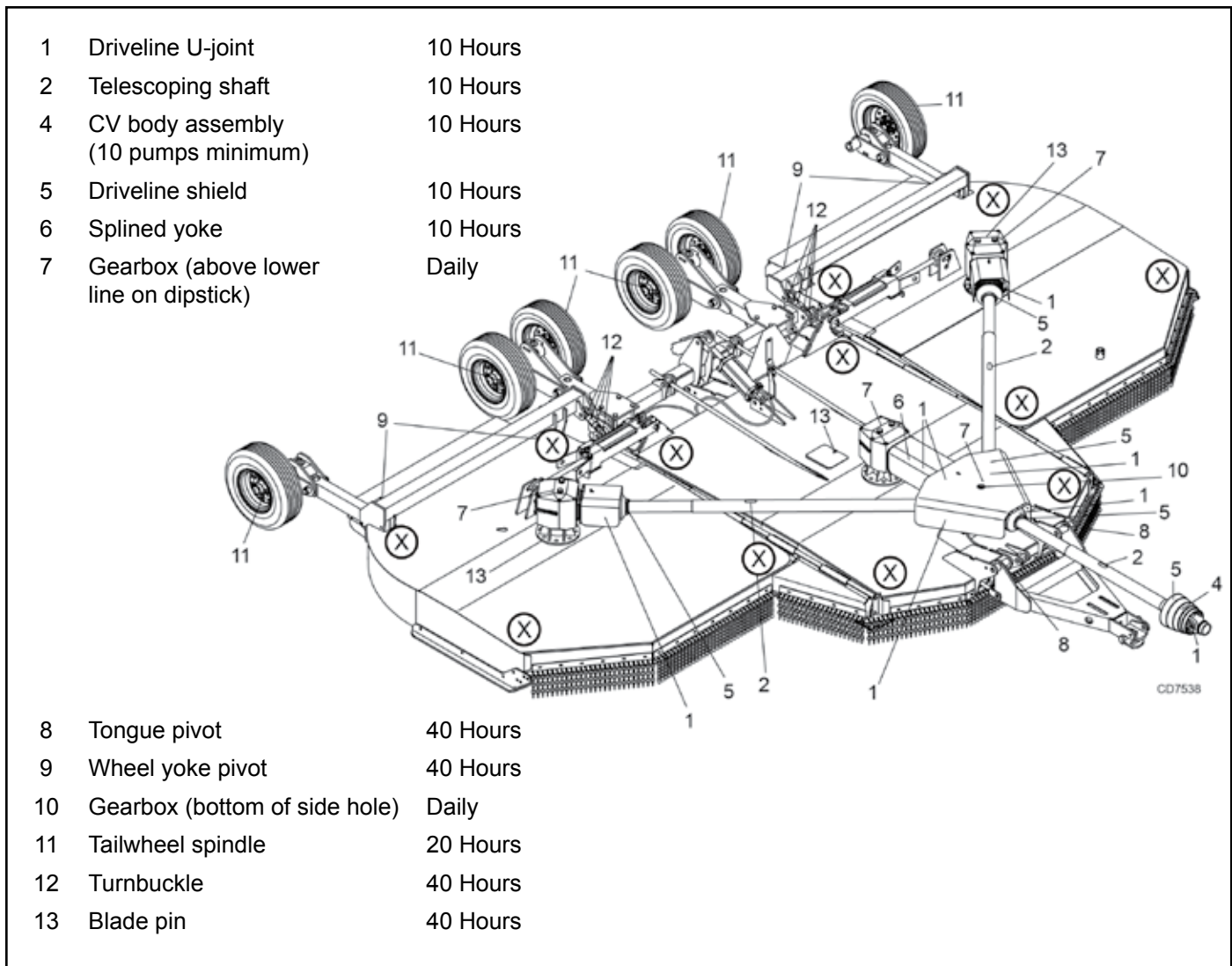


Figure 4. Jackstand Placement and Lubrication Points

LUBRICATION

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

See Figure 4 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

For gearbox, use a high quality gear oil with a viscosity index of 80W or 90W and an API service rating of GL-4 or -5 in gearboxes.

Splitter Gearbox: Fill gearbox until oil runs out the side plug on gearbox.

Wing Gearbox: Fill gearbox until oil is just above lower line on dipstick. Check gearbox daily for evidence of leakage, and contact your dealer if leakage occurs. Use sealant on vent plug threads during installation. Check vent plug periodically and clean if it does not relieve pressure.

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.

Seasonal Lubrication

In addition to the daily recommended lubrication, a more extensive application is recommended seasonally.

1. Fill CV double yokes with 20 pumps of grease with the joints in a straight line.
2. Articulate CV body to maximum angle several times to ensure full coverage of joints.
3. Place joints in the straight position and add 10 additional pumps of grease to both joints.
4. Wipe telescoping drive clean of all old grease and contaminants.
5. Add a thin layer of new grease over telescoping drive.

BLADES

⚠ WARNING

- Your dealer can supply genuine replacement blades. Substitute blades may not meet original equipment specifications and may be dangerous.
- Before working underneath, read manual instructions, securely block up, and check stability. Secure blocking prevents equipment from dropping due to hydraulic leak down, hydraulic system failure, or mechanical component failure.

Blade Removal

(Figure 5)

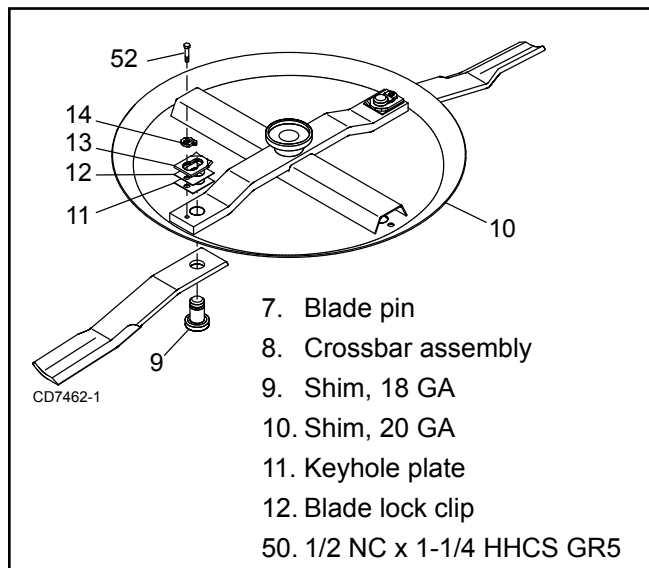


Figure 5. Blade Assembly

1. Disconnect driveline from tractor PTO.
2. Raise cutter and block securely (see Figure 4).
3. Align crossbar (8) with blade access hole in the cutter frame. Remove cap screw (50), blade pin lock clip (12), keyhole plate (11), and shims (9 & 10). Carefully drive blade pin (7) out of crossbar.
4. Rotate crossbar and repeat for opposite blade.

NOTICE

- If blade pin (7) is seized in crossbar and extreme force will be needed to remove it, support crossbar from below to prevent gearbox damage.

Blade Installation

(Figure 5)

⚠ WARNING

- Service and maintenance work not covered in OWNER SERVICE must be done by a qualified dealership. Special skills, tools, and safety procedures may be required. Failure to follow these instructions can result in serious injury or death.
- Before servicing, adjusting, repairing, or unplugging, stop tractor engine, place all controls in neutral, set park brake, remove ignition key, and wait for all moving parts to stop.
- Never perform cleaning, service, or maintenance with engine running.
- Keep all persons away from operator control area while performing adjustments, service, or maintenance.
- Before working underneath, disconnect driveline from tractor, lower wings to ground, raise cutter, and pin transport bar in raised position. Attach parking jack and lower to ground. Securely block all four corners of center section and each wing with jack stands. Blocking up prevents the cutter from dropping due to hydraulic leak down, hydraulic system failure, or mechanical component failure.
- 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. Wear a respirator or filter mask where appropriate.

NOTICE

Crossbar rotation has clockwise rotation on left gearbox and counterclockwise rotation on the right and center gearboxes 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 (7) for nicks or gouges, and if you find any, replace the blade pin.
2. Insert blade pin through the blade. Blade should swivel on blade pin; if it doesn't, determine the cause and correct.
3. Align crossbar (8) with blade access hole in cutter frame. Apply a liberal coating of Never-Seez® or equivalent to blade pin and crossbar hole. Make sure blade offset is down away from cutter.
4. Insert blade pin (7) through blade. Push blade pin through crossbar.
5. Install shims (9 & 10) over blade pin.

NOTE: Only use enough shims to allow keyhole plate (11) to slide into blade pin groove.

6. Install blade clip (12) over keyhole plate and into blade pin groove.
7. Secure into position with cap screw (50). Torque cap screw to 85 lbs-ft.
8. Repeat steps for opposite side.

NOTE: Blade should be snug but should swivel on pin without having to exert excessive force. Blade should not move more than a 1/4 inch up or down at the tip. Keep any spacers not used in the installation as replacements or for future installation.

Blade Sharpening

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.

NOTICE: When sharpening blades, grind the same amount on each side 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.

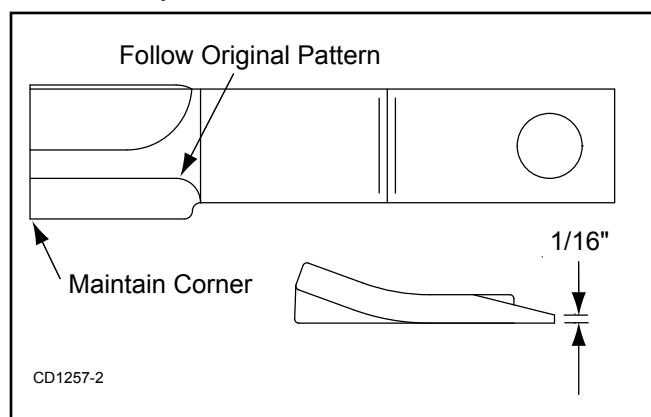


Figure 6. Blade Sharpening

2-PLATE SLIP CLUTCH ADJUSTMENT

(Figure 7)

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:

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.
7. 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 2 full revolutions. The gap between Belleville spring and thrust plate should be 1/8" as shown in Figure 7.
8. If a clutch continues to slip when the spring is compressed to 1/8" gap, 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".

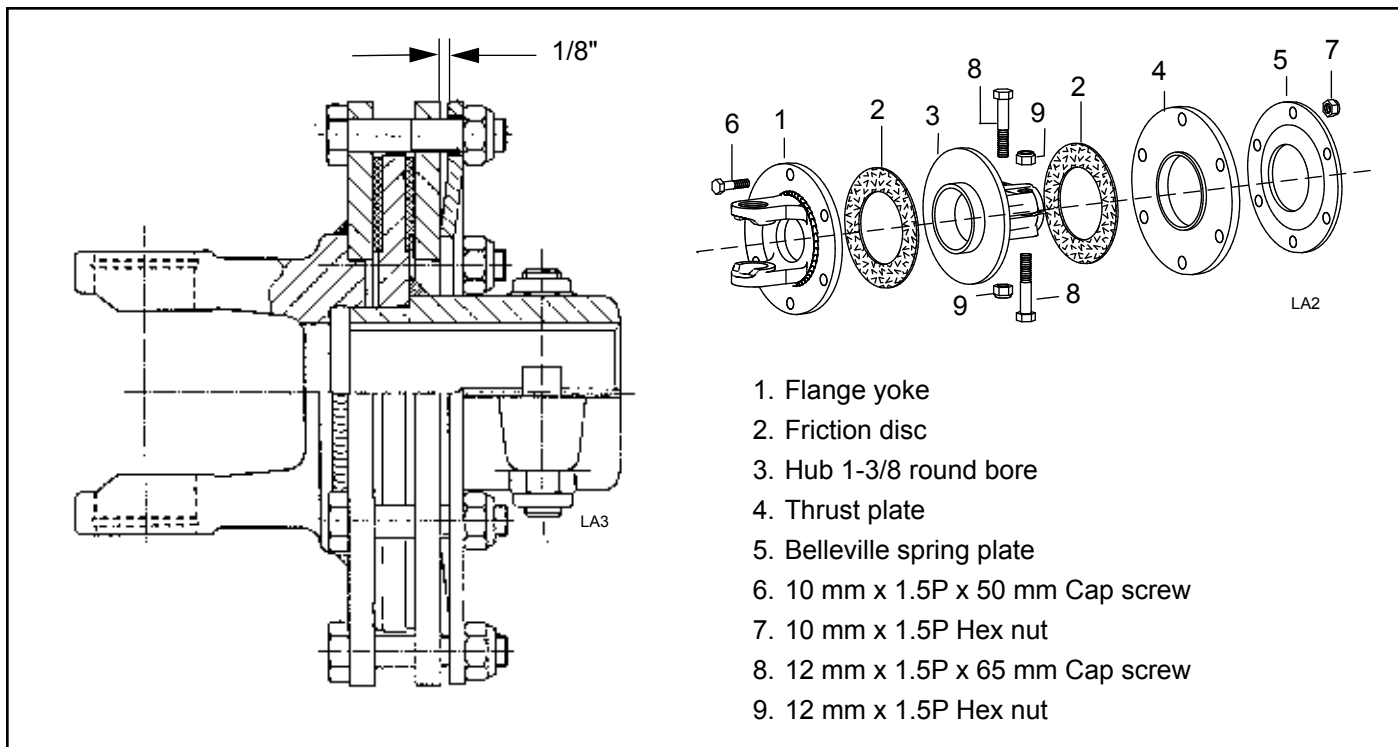


Figure 7. 2-Plate Slip Clutch Assembly

4-PLATE SLIP CLUTCH ADJUSTMENT

(Figure 8)

The slip clutch is designed to slip so that the gear-box 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 slip clutch will slip by performing the following operation:

1. Turn off tractor engine and remove key.
2. Tighten four nuts (12) to remove pressure from the clutch plates (2). Repeat for all three clutches.
3. Start tractor at low throttle and slowly engage PTO and allow clutches to slip for 5 seconds. Disengage PTO and turn off tractor engine.
4. If clutches slip freely, completely loosen nuts (12).
5. If clutch does not slip freely, disassemble and clean plates (4, 6, & 7), flange yoke (1), and clutch hub (3).
6. Reassemble clutch.
7. Tighten Belleville spring (5) with nuts (11) until it is against the thrust plate (4) of the clutch. Back off each of the four nuts (11) until gap between Belleville spring and thrust plate is .236" as shown in Figure 8.

8. If a clutch continues to slip when the spring is compressed to .236" gap, 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".

NOTE: When storing cutter for long periods of time, relieve the pressure on the clutch discs by tightening the four nuts (12) on each clutch. Completely loosen nuts (12) to return to service.

SHIELDING REPAIR

⚠ DANGER

- Full chain shielding must be installed at all times. Thrown objects could injure people or damage property.
 - If the machine is not equipped with full chain shielding, operation must be stopped.
 - 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 (92m).

Repairing Chain Shielding

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

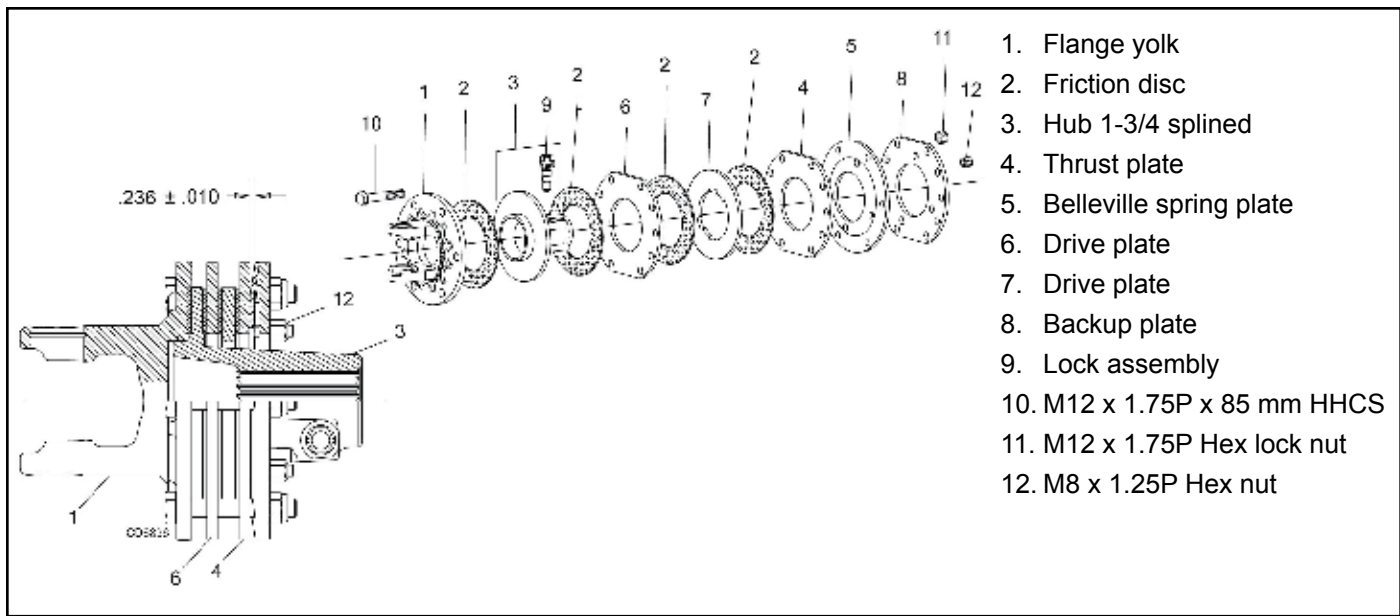
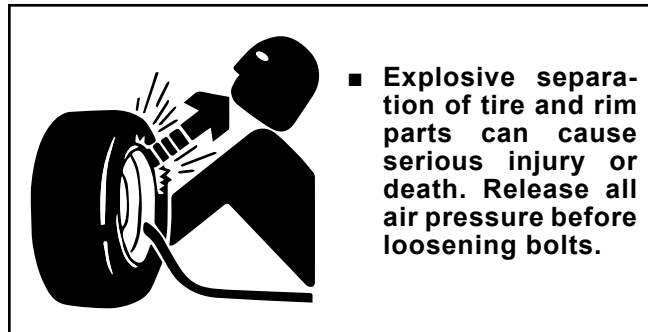


Figure 8. 4-Plate Slip Clutch Assembly

SERVICING TIRES SAFELY

⚠ WARNING



Used Aircraft Tires (Figure 9)

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.

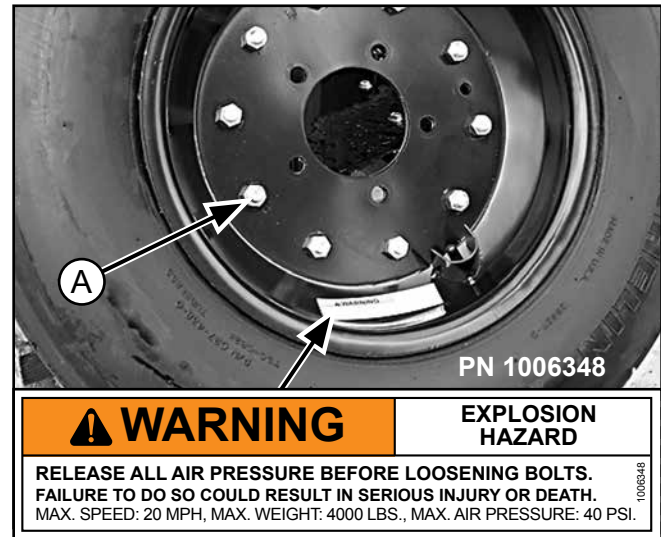


Figure 9. Split Rim Tire Servicing

CLEANING

⚠ WARNING

- Never perform cleaning, servicing, or maintenance with engine running.
- Before cleaning, servicing, adjusting, repairing, or unplugging: stop tractor engine, place all controls in neutral, set park brake, remove ignition key, and wait for all moving parts to stop.

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.
- Do not climb on machine or ladder to clean. Clean machine with wings in lowered position.

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 & Instructional Decals section for location drawing.

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.
Unit will not raise	Low oil	Add hydraulic oil.
Unit doesn't cut level	Wing section cuts lower than center Wing section cuts higher than center	Lengthen turnbuckle connecting center yoke to wing wheel yoke. Shorten turnbuckle connecting center yoke to wing wheel yoke.

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, read manual instructions, securely block up, and check stability. Secure blocking prevents equipment from dropping due to hydraulic leak down, hydraulic system failure, or mechanical component failure.
- 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. Proper oil level is between lowest ring and end of dipstick.

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.

NOTE: Bearing failure is indicated by excessive noise and side-to-side or end-play in gear shafts.

Seal Replacement

(Figure 10)

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.

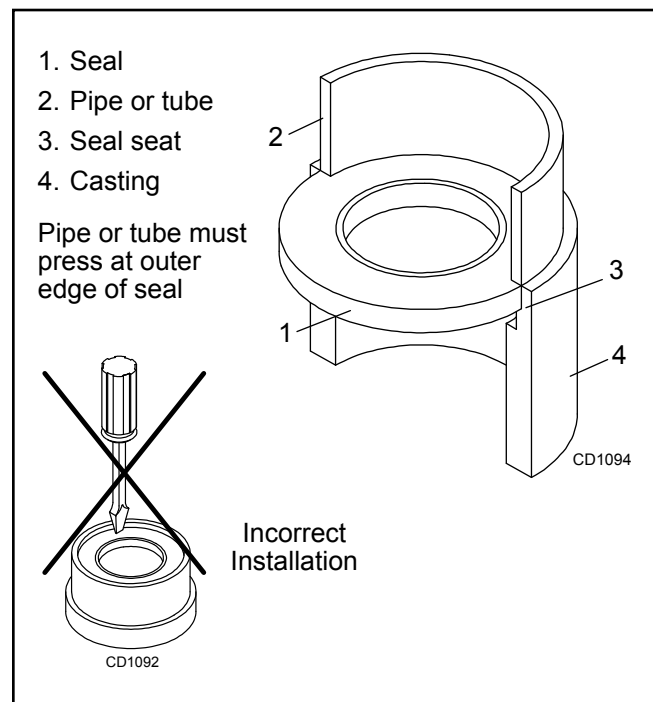


Figure 10. Seal Installation

Vertical Shaft Seal Replacement (Figure 11)

1. Disconnect and remove the rear driveline from the gearbox.
2. Remove vent plug (24) and siphon gear lube from housing through this opening.
3. Remove crossbar (see page 33).
4. Remove protective seal (8) and vertical shaft seal (18). Replace seal (18) with new seal.

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

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

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

Horizontal Shaft Seal Replacement (Figure 11)

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

GEARBOX REPAIR

Removal from Cutter (Figure 11)

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

1. Disconnect and remove the rear driveline from the gearbox.
2. Remove cotter pin and nut from vertical shaft and remove crossbar (see page 33).
3. Remove the six bolts that attach gearbox to cutter and remove gearbox.

Disassembly (Figure 11)

1. Remove top cover (22) from gearbox and pour out gear oil.
2. Remove oil cap (20) (to be replaced).

3. Remove snap ring (10) and shim (13) from input shaft (3).
4. Support gearbox in hand press and push on input shaft (3) to remove bearing (7).
5. Remove six cap screws (23) and top cover (22) from housing. Remove gear (1) from inside housing.
6. Remove oil seal (19) from front of housing (to be replaced).
7. Remove snap ring (10) and shim (13) from front of housing (2).
8. Remove input bearing (7) by using a punch and hammer from outside of housing.
9. Support housing in vise in a horizontal position.
10. The castle nut (15), cotter pin (25), and hub are already removed with the stump jumper/crossbar. Remove the protective seal (8), and oil seal (18).
11. Remove cotter pin (9), castle nut (14), and shim (17) from output shaft (4).
12. Remove output shaft (4) by using a punch and hammer and tap on top to drive down. Remove gear (5) and shim (16) from inside housing.
13. Remove bottom bearing (26) by using a punch and hammer from the top, outside the housing.
14. Support housing upside down (top cover surface) and remove bottom bearing (6) by using a punch and hammer from the bottom side of the housing.
15. Inspect gears for broken teeth and wear. Some wear is normal and will show on loaded side. Forged gear surfaces are rough when new. Check that wear pattern is smooth.
16. Inspect vertical and horizontal shafts for grooves, nicks, or bumps in the areas where the seals seat. Resurface any damage with emery cloth.
17. Inspect housing and caps for cracks or other damage.

Assembly (Figure 11)

1. Clean housing, paying specific attention to areas where gaskets will be installed.
2. Wash housing and all components thoroughly. Select a clean area for gearbox assembly. Replace all seals, bearings, and gaskets. All parts must be clean and lightly oiled before reassembling.
3. Insert both output bearings (6) in the housing, using a round tube of the correct diameter and a hand press.
4. Slide output shaft (4) through both bearings (6) until it rests against top bearing (6).
5. Slide shim (16) over output shaft (4).
6. Press gear (5) onto output shaft (4) and secure with shim (17), castle nut (14), and cotter pin (9).

7. Apply grease to lower seal lips (18) and press seal (18) over output shaft (4), using a tube of the correct diameter. Be sure not to damage the seal lip.
8. Press in housing so that seal is recessed. Press protective seal (8) until seated flush with housing. Verify that the seal (8) is seated correctly.
9. Press bearing (7) into the housing, using a round tube of the correct diameter and a hand press. Secure with shim (13) and snap ring (10).
10. Secure snap ring (11) on input shaft (3) if not already secure.
11. Place gear (1) through top of housing and align gear (1) and gear (5) so that gear teeth are a match.
12. While holding gear (1) in place, slide input shaft (3) through gear (1) and bearing (7). Align splines on shaft (3) and gear (1).
13. Slide shim (12) over input shaft (3) and press bearing (7) onto input shaft (3), using a round tube of the correct diameter and a hand press.
14. Slide shim (13) over input shaft (3) and secure with snap ring (10).
15. Check input shaft end float by moving the input shaft (3) by hand. If end float is higher than 0.012", insert shim between input shaft (3) 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.

16. Check that the gear backlash is between 0.006" and 0.016". You should not have to adjust the backlash.
17. Press in input oil seal (19), using tube of correct diameter. Be careful not to damage seal lip.
18. Press oil cap (20) on to cover the rear of housing, using a tube of the correct diameter.
19. Place top cover (22) on top of housing and secure with six cap screw (23).
20. 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.
21. Remove gearbox from water and dry off with compressed air. Add SAE 80W or 90W EP oil to proper level. Tighten all plugs.

Reinstallation

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 (Crossbar Installation, page 34).

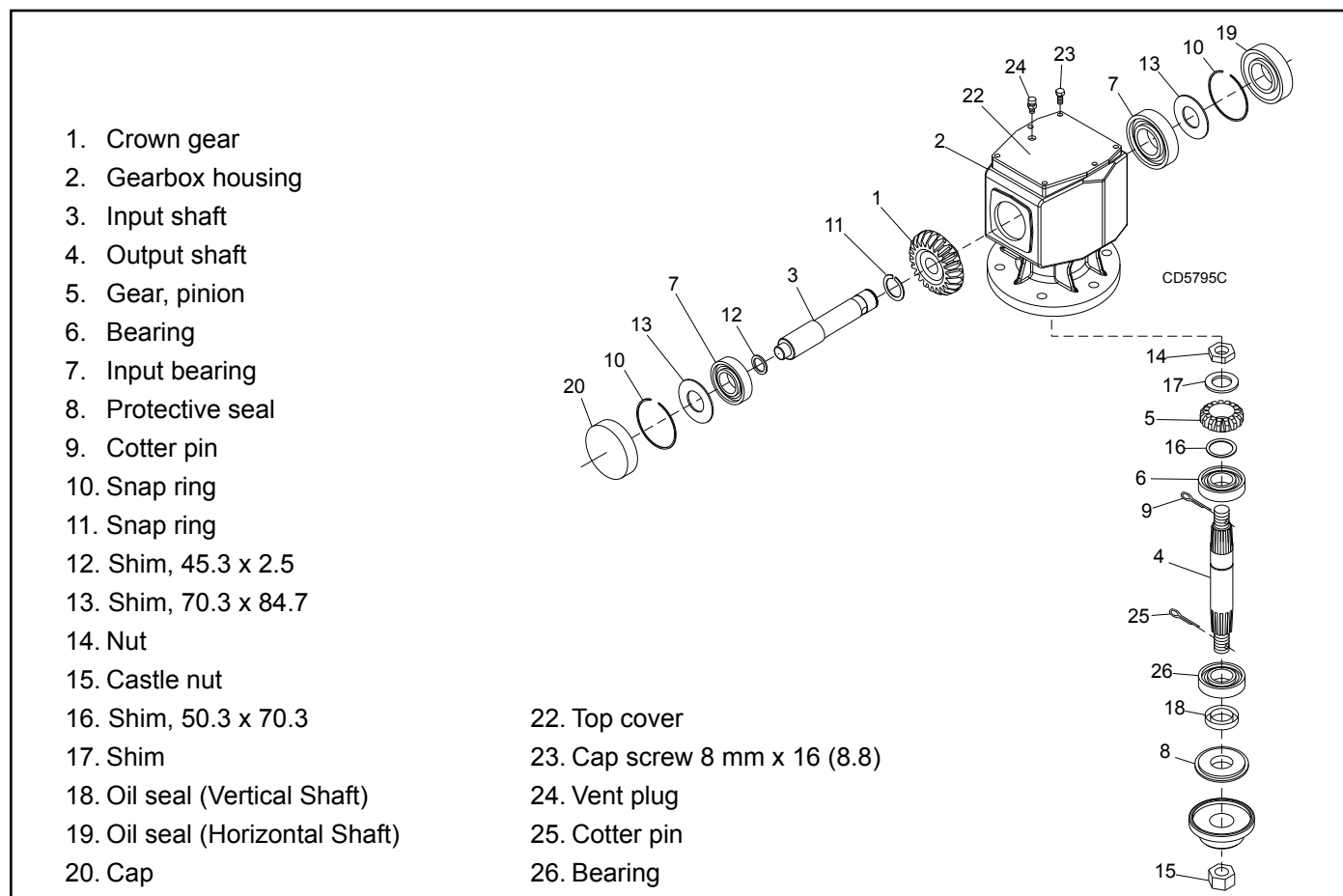


Figure 11. Gearbox

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SPLITTER GEARBOX REPAIR

(Figure 12)

Removal from Cutter

1. Disconnect and remove all drivelines from gearbox.
2. Remove the four cap screw and lock washers that secure gearbox to cutter, and remove gearbox.

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

Disassembly

Center Shaft

1. Remove plug from side of gearbox and pour out the gear oil.
2. Remove seal (6, to be replaced) from the front and rear of the center shaft (5).
3. Remove front cap (4) and gaskets (8, 9, 10) from the front and rear of the center shaft (5).
4. Support gearbox in a hand press and push on the rear of the center shaft.
5. Remove bearing cones (7), and gear (18) from center shaft (5).
6. Remove bearing cups (7) from housing and cap using a punch and hammer.

Side Shaft

7. Remove seal (12, to be replaced) from the output shaft (13).
8. Remove 8 cap screws (3) and side shaft assembly.
9. Remove cotter pin (21), bearing adjustment nut (20), and gear (19).
10. Support side shaft assembly in hand press. Press shaft (13) through the cap (11) from the threaded end of the shaft.
11. Repeat steps 10 through 12 for opposite side shaft.

Inspect Components

12. Inspect gears for broken teeth and wear. Some wear is normal and will show on the loaded side of the teeth. Forged gear surfaces are rough when new. Check that wear pattern is smooth.
13. Inspect shafts for grooves, nicks, or bumps in the areas where seals seat. Resurface any damage with emery cloth or replace shaft. from gearbox.
14. Inspect housing and caps for cracks or other damage.

Assembly

1. Clean housing, pay specific attention to areas where gaskets are installed.
2. Wash housing and all components thoroughly.
3. Select a clean work area to assemble gearbox.
4. Replace all seals, bearings, and gaskets.
5. All parts must be clean and lightly oiled before assembly.

Side Shaft

6. Insert bearing cups (7) in hub cap (11) using a round tube of the same size diameter and a hand press.
7. Press bearing cone (7) on to output shaft (13), slide output shaft (13) through hub cap (11) and press bearing cone (7) on to output shaft (13).
8. Slide gear (19) over output shaft (13) and secure with nut (20) and cotter pin (21).
9. Check end play of shaft by moving it in and out. If end play is more than 0.012", tighten nut (20). Repeat process until end play is less than 0.012".
10. Check rotational torque. Torque should be less than 2.2 lbs-inch gear.
11. Place seal (12) over shaft and press into housing using a tube of the same diameter. Seal should be flush with housing when properly installed.
12. Repeat steps 6 through 10 for opposite side shaft.

Center Shaft

13. Insert bearing cups (7) in housing and front cap (4) using a round tube of the same size diameter and a hand press.
14. Press spacer (14), gear (18), shims (15, 16, 17) and bearing cones (7) on to input shaft (5).
15. Slide input shaft (5) through housing and install gaskets (8, 9, 10) and cap (4).
16. Check end play of shaft by moving it in and out. If end play is more than 0.012", remove a gasket (8, 9, or 10). Repeat process until end play is less than 0.012".
17. Check rotational torque. Torque should be less than 2.2 lbs-inch gear.
18. Check gear backlash, backlash should be between 0.006" and 0.016". Adjust the backlash by adding or removing shims (15, 16, 17) from the input shaft (5).
19. Place seal (6) over shaft and press into housing using a tube of the same diameter. Seal should be flush with housing when properly installed. Repeat process for opposite end shaft.

Check Gearbox

1. Check gearbox for leaks by: plugging all holes except one, applying 4 psi of compressed air, and immersing gearbox in water. Verify gearbox does not leak.

NOTE: Excessive air pressure will damage seals.

2. Remove gearbox from water and dry off.
3. Remove upper plug on right side of housing. Add SAE 80W or 90W EP oil until it runs out side level hole. Replace plug.
4. Install breather (24) in top cover.

Gearbox Installation

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

1. Place gearbox on cutter and secure into position using four cap screws and lock washers.
2. Torque hardware to 300 lbs-ft.
3. Attach all drivelines to gearbox.
4. Install all shields.

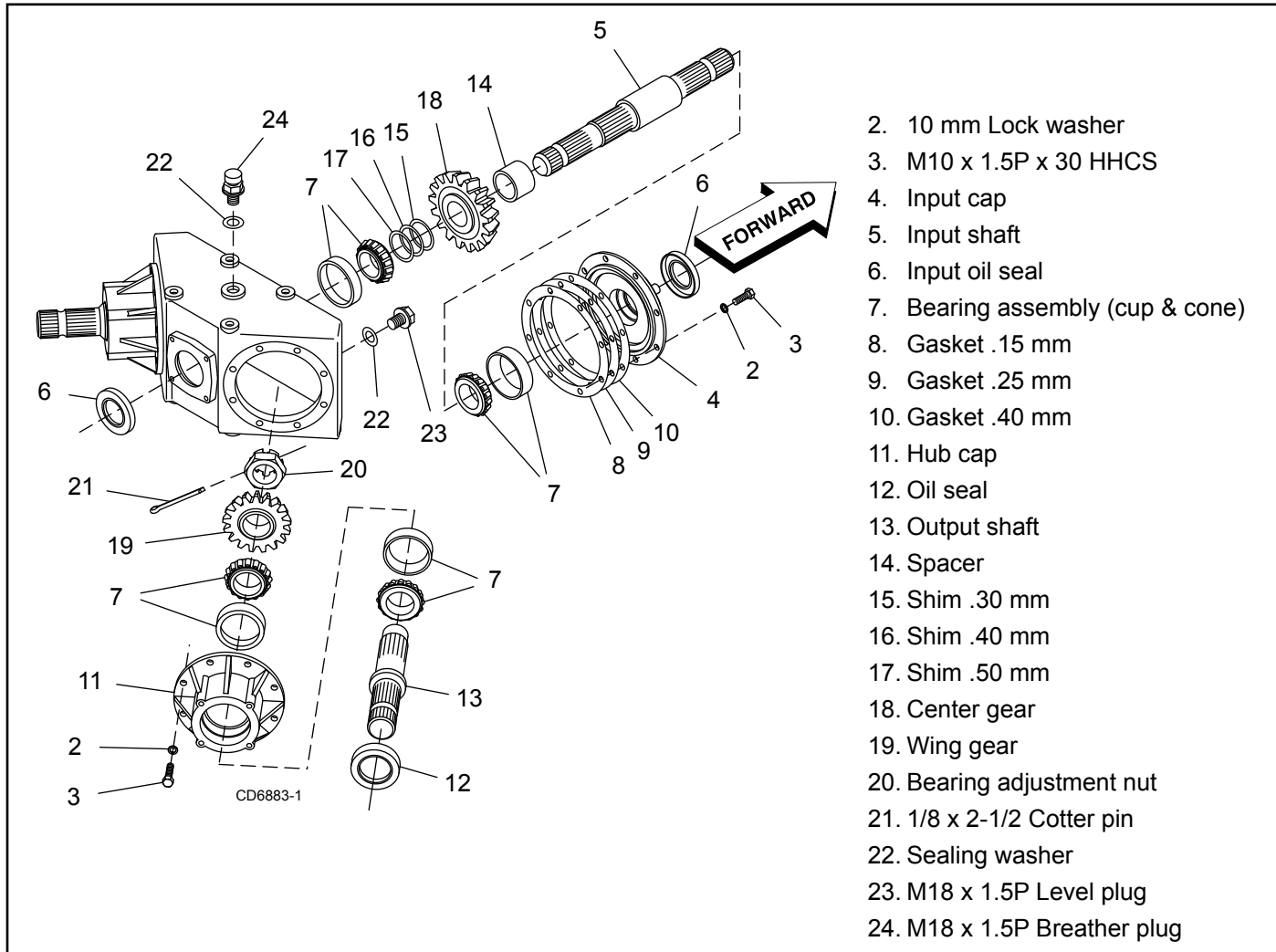


Figure 12. Splitter Gearbox Assembly

CROSSBAR REMOVAL

1. It is necessary to gain access to bottom side of cutter for crossbar removal. See Blocking Method page 20.

NOTE: You will need to use either the puller screw (Item 6, Figure 14) or a small hydraulic jack to remove the crossbar.

2. Remove blades from crossbar as shown in Figure 13.

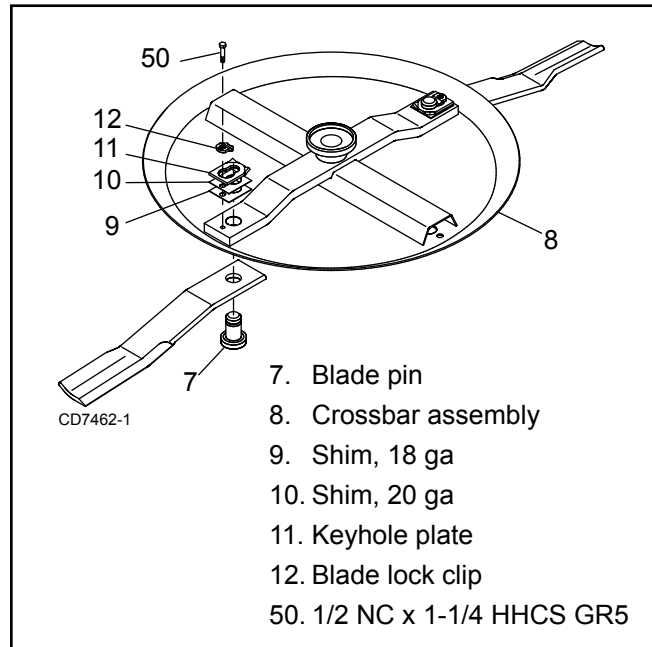


Figure 13. Blade Removal

3. Remove cotter pin from bottom of crossbar and remove nut and washer.
4. Refer to Figure 14. Attach a clevis (1) to each end of crossbar, using blade pins, spacers, keyhole plates, and blade pin clips.
5. Position tube assembly (5) with threaded nut (4) toward crossbar for puller screw removal or down for hydraulic jack removal.
6. For removal with puller screw, attach tube (5) to each clevis with bolts (2) and nuts (3). Place pad (4) in nut and thread puller screw (6) into nut from bottom. Tighten until pad is solid against gearbox shaft. For best results, strike head of puller screw with a hammer while tightening with a wrench.
7. For removal with a jack, attach tube to each clevis with puller links (7), bolts (2), and nuts (3). Place jack on tube with end of jack pressing against gearbox shaft. Slowly apply force with jack

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

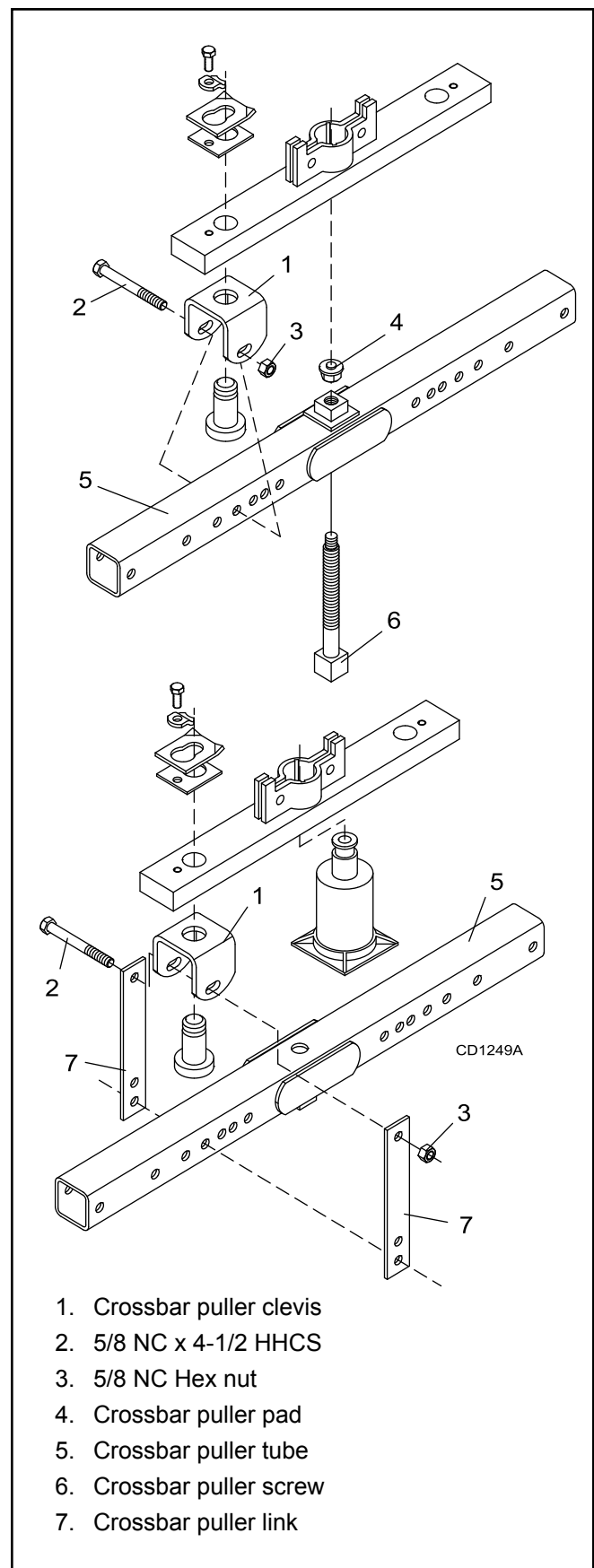


Figure 14. Crossbar Removal

CROSSBAR INSTALLATION

1. Using emery cloth (220 or finer), remove surface rust, Loctite® and foreign material from hub, splined gearbox vertical shaft, and crossbar assembly.
2. Slide crossbar assembly (8) onto splined shaft. Install nut (69) and align a slot with hole in splined shaft.

For .51 models, torque nut to 450 lbs-ft. For .61 and .71 models, torque nut to 800 lbs-ft.

3. Install cotter pin (70) through slot in nut and bend ends over.

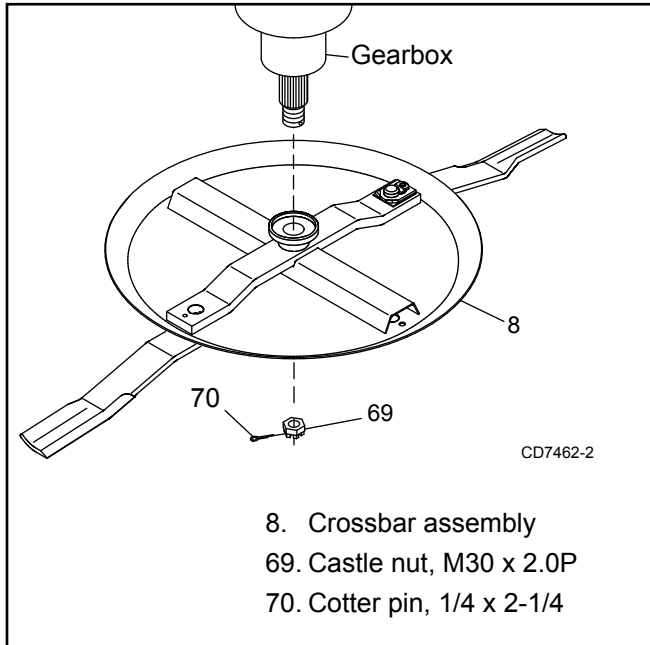


Figure 15. Crossbar Assembly Installation

UNIVERSAL JOINT REPAIR

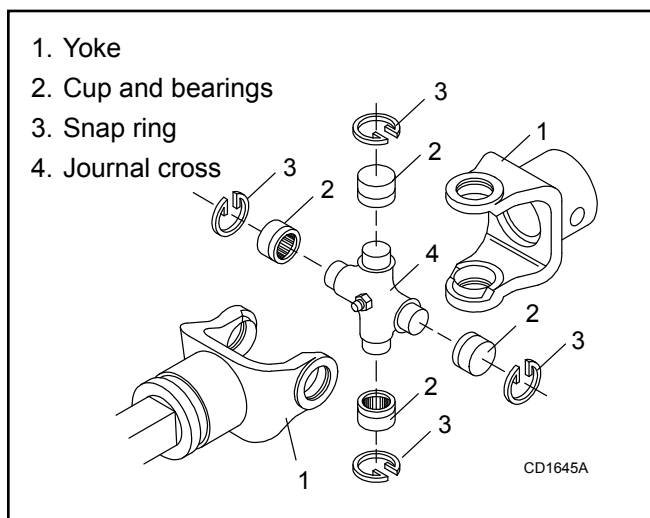


Figure 16. U-Joint Exploded View

U-Joint Disassembly

1. Remove external snap rings from yokes in four locations as shown in Figure 17.

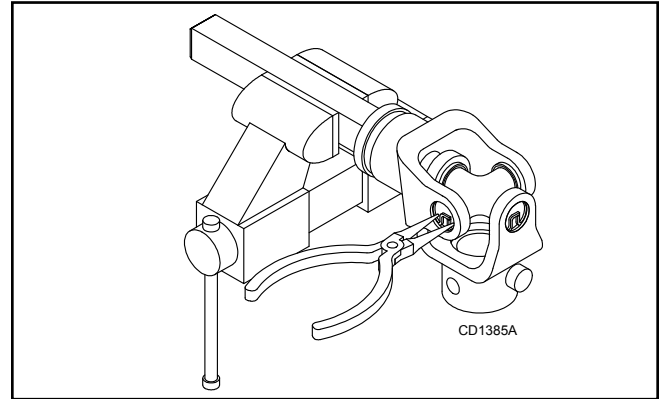


Figure 17.

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 18.

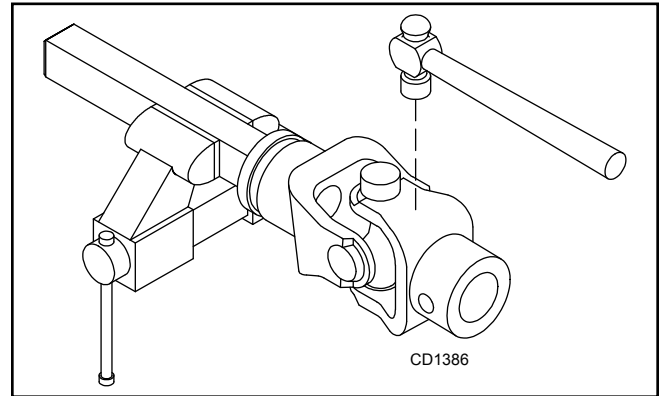


Figure 18.

3. Clamp cup in vise as shown in Figure 19 and tap on yoke to completely remove cup from yoke. Repeat Step 2 & Step 3 for opposite cup.

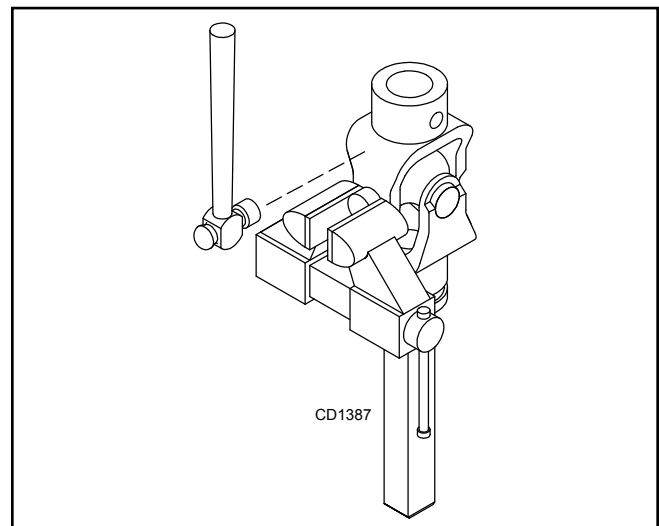


Figure 19.

- Place universal cross in vise as shown in Figure 20 and tap on yoke to remove cup. Repeat Step 3 for final removal. Drive remaining cup out with a drift and hammer.

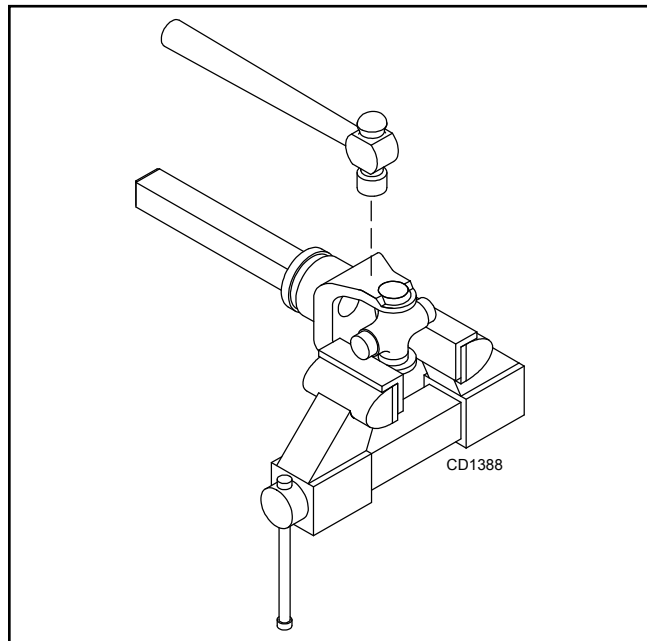


Figure 20.

U-Joint Assembly

- 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.
- 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.
- Seat cups by placing a drift or socket (slightly smaller than the cup) on cup and rap with a hammer. Install snap ring and repeat on opposite cup.
- Repeat Step 1 and Step 2 to install remaining cups in remaining yoke.
- 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.

SERVICING TIRES SAFELY

Used Aircraft Tires (Figure 21)

⚠ 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.

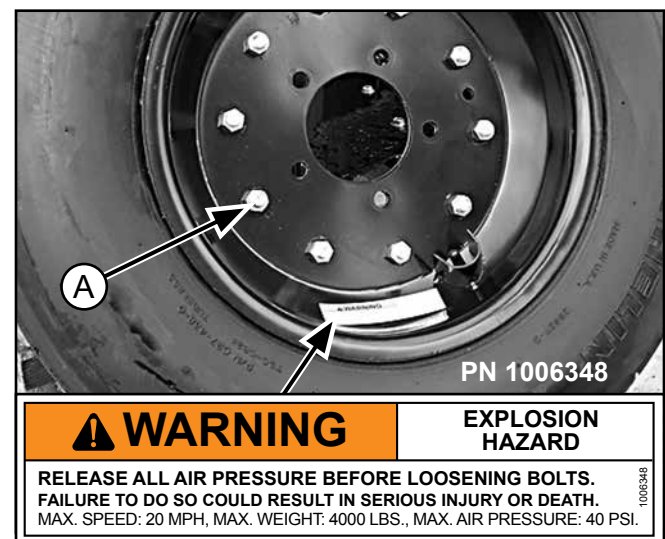


Figure 21. Split Rim Tire Servicing

ASSEMBLY

DEALER SET-UP INSTRUCTIONS

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 components are aligned and loosely assembled before tightening hardware. Recommended torque values for hardware are located on page 80.

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 the checklist on page 39 when assembly is complete and cutter is delivered to the customer.

⚠ WARNING

- Before working underneath, carefully read Operator's Manual instructions, disconnect driveline, raise mower, securely block up all corners with jackstands, and check stability. Secure blocking prevents equipment from dropping due to hydraulic leak down, hydraulic system failures, or mechanical component failures.
- Do not disconnect hydraulic lines until machine is securely blocked or placed in lowest position and system pressure is released by operating valve levers.

⚠ 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.

Install Wheel

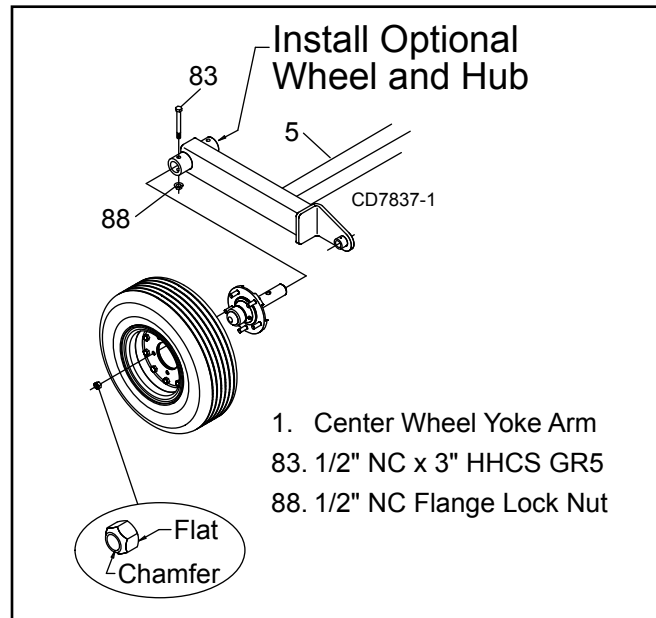


Figure 22. Center Section Wheel and Hub Installation

Winch Kit Installation

See Parts page 77 for parts list and diagram.

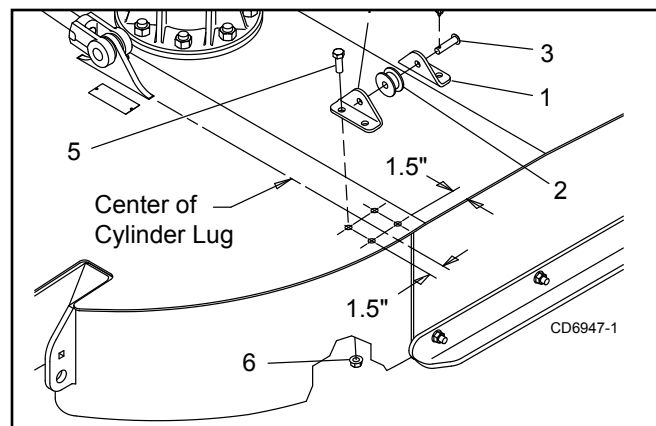


Figure 23. Roller Assembly Installation

1. Locate and drill one 9/16" hole in each wing using dimensions shown in Figure 23. Assemble items 1, 2, 3 and 4. Use assembly to locate and drill remaining holes.
2. Secure idler brackets (1) and rollers (2) to deck with bolts (5) and nuts (6).
3. Remove cylinder pin: Place channel (10) over cylinder and cylinder lug. Place wing lock-up bracket over channel and insert pin (8), washers (7), and cotter pins (9). NOTE: Washers (7) are used as spacers and are placed between lock-up bracket and channel (10) as needed.

- Repeat step to install second channel (10) on opposite wing.
- Attach winch assembly to channels (10) using bolts (5) and lock nuts (6).
- Move SMV sign and hardware to channel as shown in the winch kit instructions.
- Tighten all hardware.

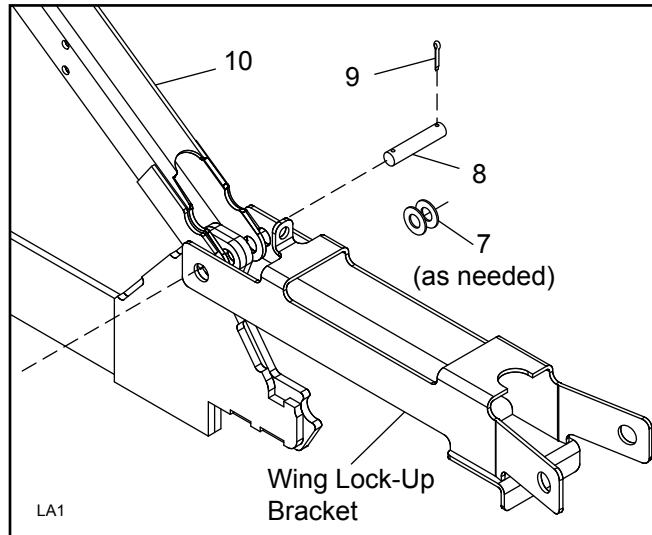


Figure 24. Winch Channel Installation

Winch Kit Operation

(Figure 25)

- Move cutter so that wing is on the upward slope of a ditch to aid in wing lift with the winch.
- Unwind cable and remove roller (2).
- Place cable around roller (2) and reinstall using pin (3) and klik pin (4).
- Attach cable hook into large hole in which assembly bracket and raise wing.
- Install transport lock pin before moving unit.

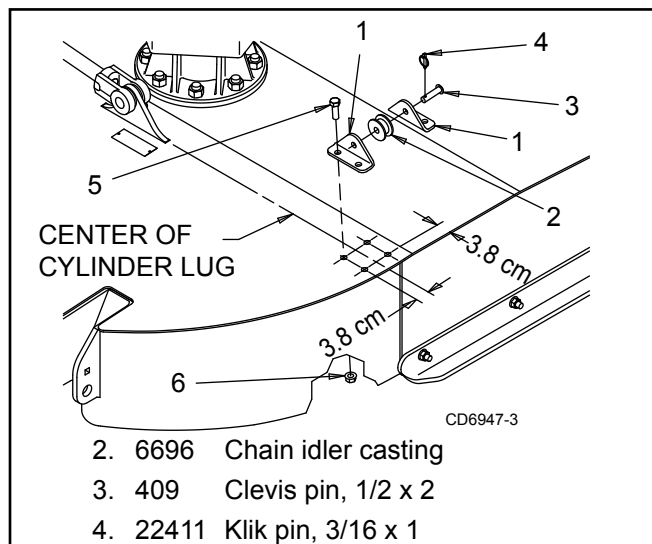


Figure 25. Winch Kit Operation

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Install Wing Wheel

(Figure 26)

- Insert wheel hub into wing wheel yoke arms (5) and align holes.
- Secure into position using cap screw (83) and flanged lock nut (88).
- Attach wheel to hub using five lug nuts. Install the chamfered side of the lug nut toward the inside for steel rim for pneumatic tires and rims. Tighten to 85 lbs-ft. Check that tire air pressure is a maximum of 40 psi.

NOTE: Install the flat side of the nut toward the inside for solid tires and aircraft tires (shown).

- Install optional dual wheel and hub to inside of wheel yoke arm.

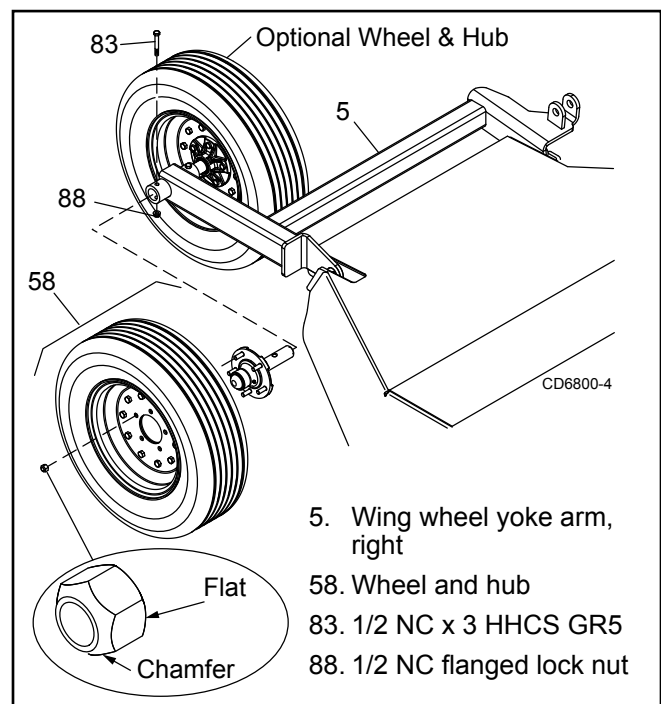


Figure 26. Wing Wheel - Right

Install Tandem Accessory (Optional)

See *Parts* page 75 for parts list and diagram.

- Raise unit and support with jack stands per diagram on page 21 to take pressure off of tires.
- Remove wheel assembly from right spring arm hub assembly from center frame.
- Remove axle hub from right spring arm.
- Install drive type grease fitting in four holes in spring arm.
- Install tandem arm 617144 as shown.
- Install tandem arm 617176 as shown, sliding both axles into receiving tubes. Fasten with screw 3489 and nuts 1045624 provided.

Assembly 37

7. Install axle/hub 1017050 and secure with screw 3489 and nut 1045624, reused or purchased separately as needed.
8. Install wheel assembly.
9. Repeat for left spring arm of center frame, using 617145 in place of 617144, installed from the center.
10. Repeat for wings if purchased, noting orientation of parts to locate wheels in the correct position. Outer wheel should be forward of inner wheel on both wings.

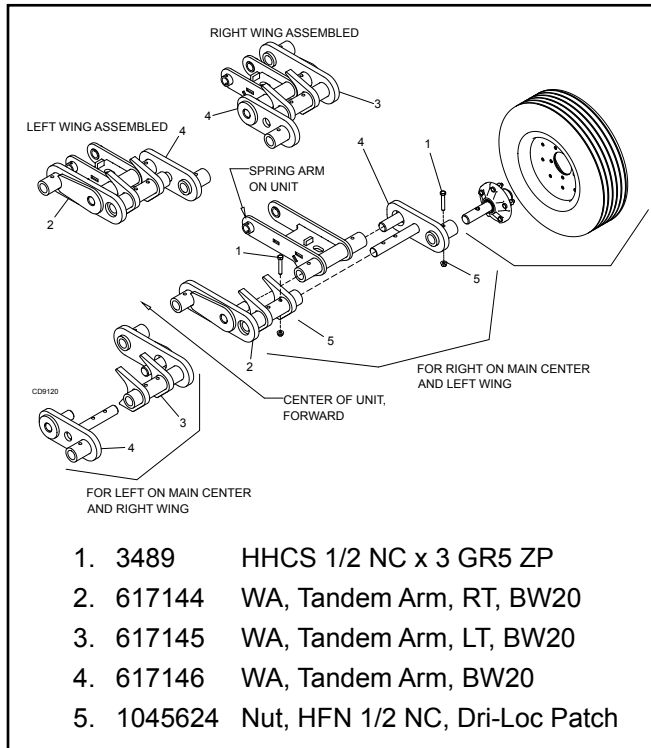


Figure 27. Tandem Axle Kit

Install Shred Kit (Optional - BW20.61, BW20.71)

See *Parts page 74* for parts list and diagram.

1. Install supplied shred kit blades as shown, using shims to obtain no more than .25" movement at blade tip. Stack shims as shown in Figure 28.
 - To return to brush cutting, remove one opposing set of blades and hardware from each crossbar.
 - To protect unused hole for following season: coat tab pin 1045820 with Never-Seez™, insert into hole, and secure with screw 1031225.
 - For lower horsepower shredding, order 3 sets of flat double edge blade kits 19162KT.

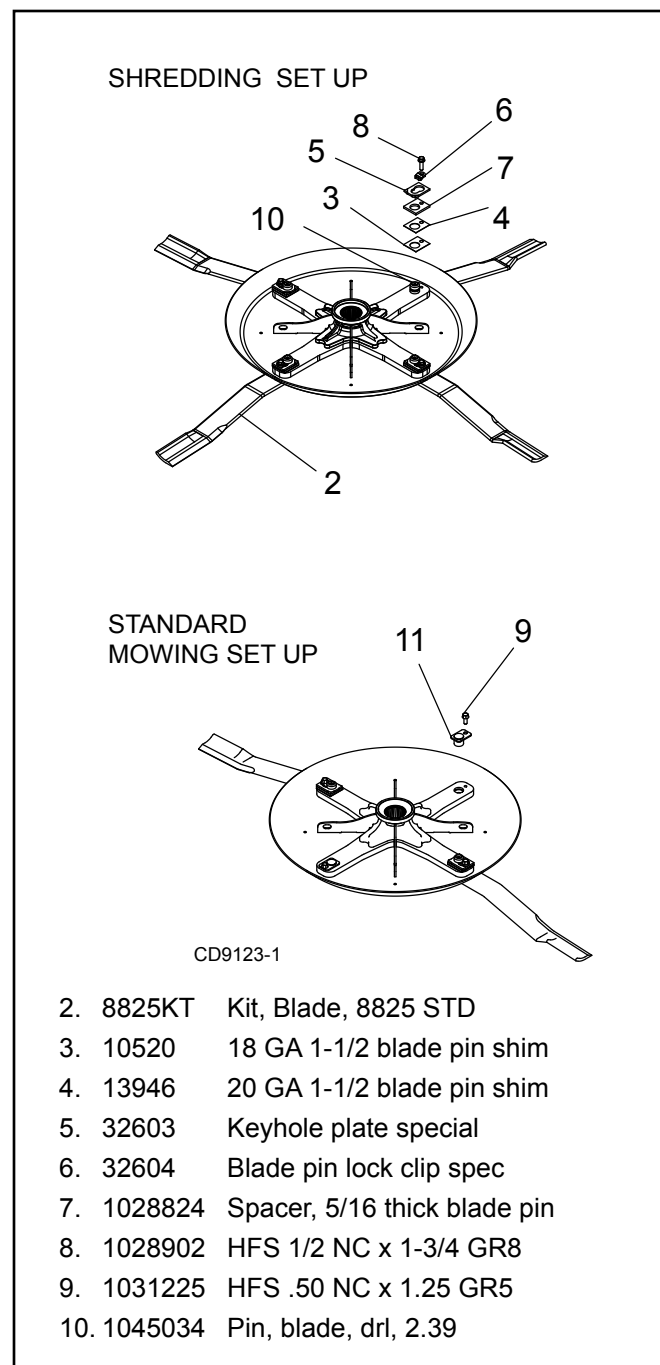


Figure 28. Shredding Kits

DEALER CHECKLISTS

DEALER PRE-DELIVERY CHECKLIST

(DEALER'S RESPONSIBILITY)

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

The following checklists are a reminder of points to inspect. Check off each item as it is found satisfactory or after proper adjustment is made.

NOTICE

- **Gearboxes are not filled at the factory. Prior to delivery, make sure each gearbox is filled between lowest ring and end of dipstick with 80 or 90W API GL-4 or GL-5 gear lube.**

- _____ Check that all safety decals are installed and in good condition. Replace if damaged.
- _____ Check that shields and guards are properly installed and in good condition. Replace if damaged.
- _____ Check all bolts to be sure they are properly torqued.
- _____ Check wheel bolts for proper torque.
- _____ Check that all cotter pins and safety pins are properly installed. Replace if damaged.
- _____ Check that blades have been properly installed.
- _____ Check and grease all lubrication points as identified in lubrication information on page 21.
- _____ Check the level of gearbox fluids before delivery. Service, if required, as specified in the lubrication information on page 21.

DELIVERY CHECKLIST

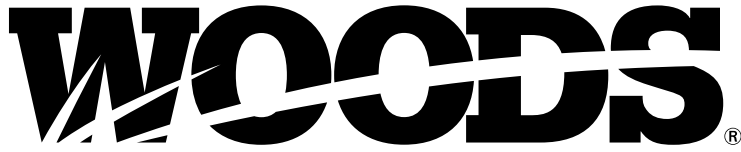
(DEALER'S RESPONSIBILITY)

- _____ Show customer how to make adjustments and select proper PTO speed.
- _____ Show customer how to make sure driveline is properly installed and that spring-activated locking pin or collar slides freely and is seated in groove on tractor PTO shaft.
- _____ Show customer how to determine the turning limits of the CV PTO driveline.
- _____ Show customer the safe, proper procedures to be used when mounting, dismounting, and storing equipment.
- _____ Make customer aware of optional equipment available so that customer can make proper choices as required.
- _____ Instruct customer how to lubricate and explain importance of lubrication.
- _____ Point out the safety decals. Explain their meaning and the need to keep them in place and in good condition. Emphasize the increased safety hazards when instructions are not followed.
- _____ Explain to customer that when transporting the cutter, the wing and center sections should be raised and their respective transport bars installed and pinned in place.
- _____ Present Operator's Manual and request that customer and all operators read it before operating equipment. Point out the manual safety rules, explain their meanings and emphasize the increased safety hazards that exist when safety rules are not followed.
- _____ Explain to customer the potential crushing hazards of going underneath raised equipment. Instruct that before going underneath to disconnect the driveline, securely block up all corners with jack stands and to follow all instructions in the BLOCKING METHOD, page 20 of the operator's manual. Explain that blocking up prevents equipment dropping from hydraulic leak down, hydraulic system failures or mechanical component failures.
- _____ Point out all guards and shields. Explain their importance and the safety hazards that exist when not kept in place and in good condition.
- _____ Explain to customer that when towing on a public road to comply with all state and local lighting/marketing laws and to use a safety tow chain.

NOTES

40 *Notes*

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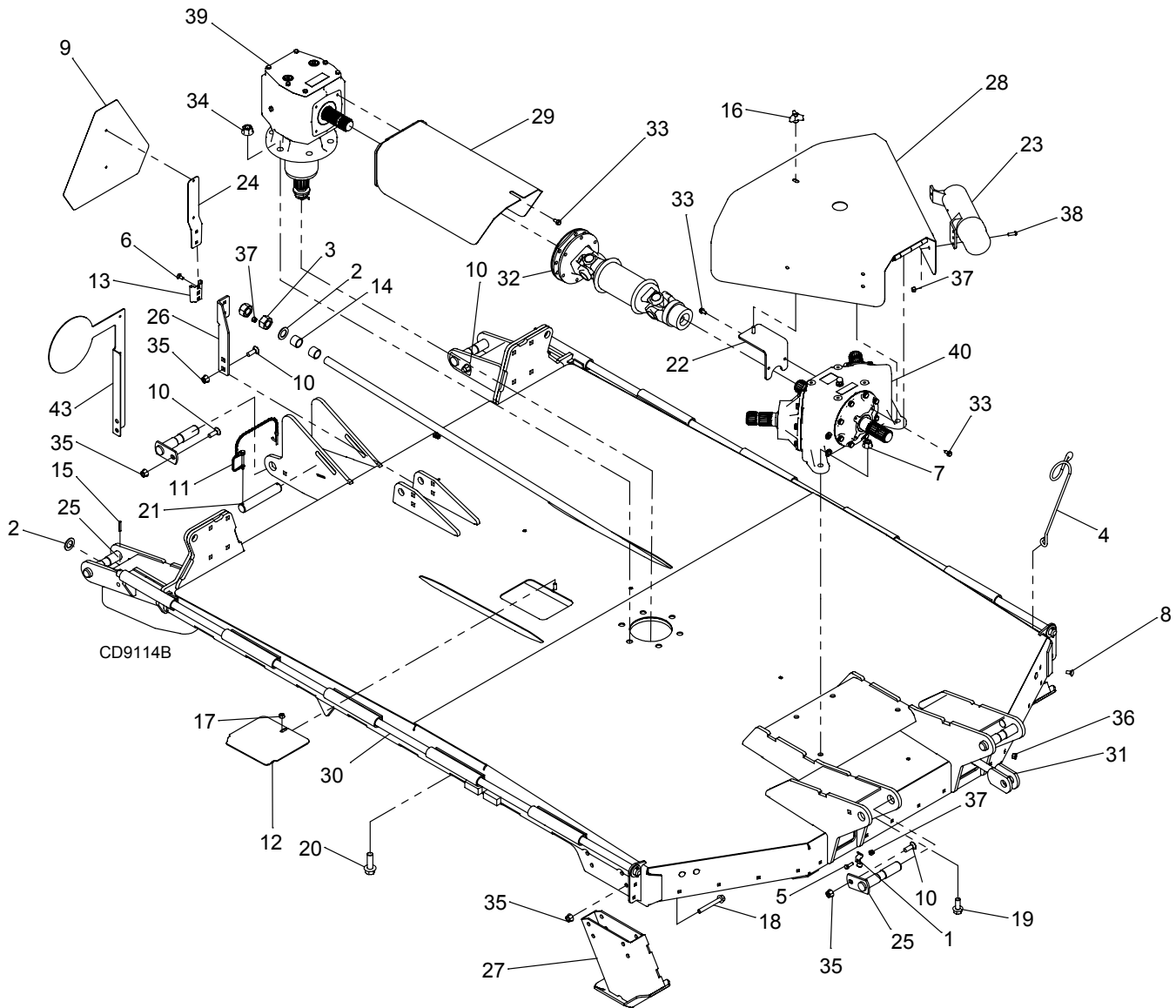


PARTS INDEX

BATWING® Rotary Cutter

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CENTER FRAME ASSEMBLY BW20.51 / BW20.51Q



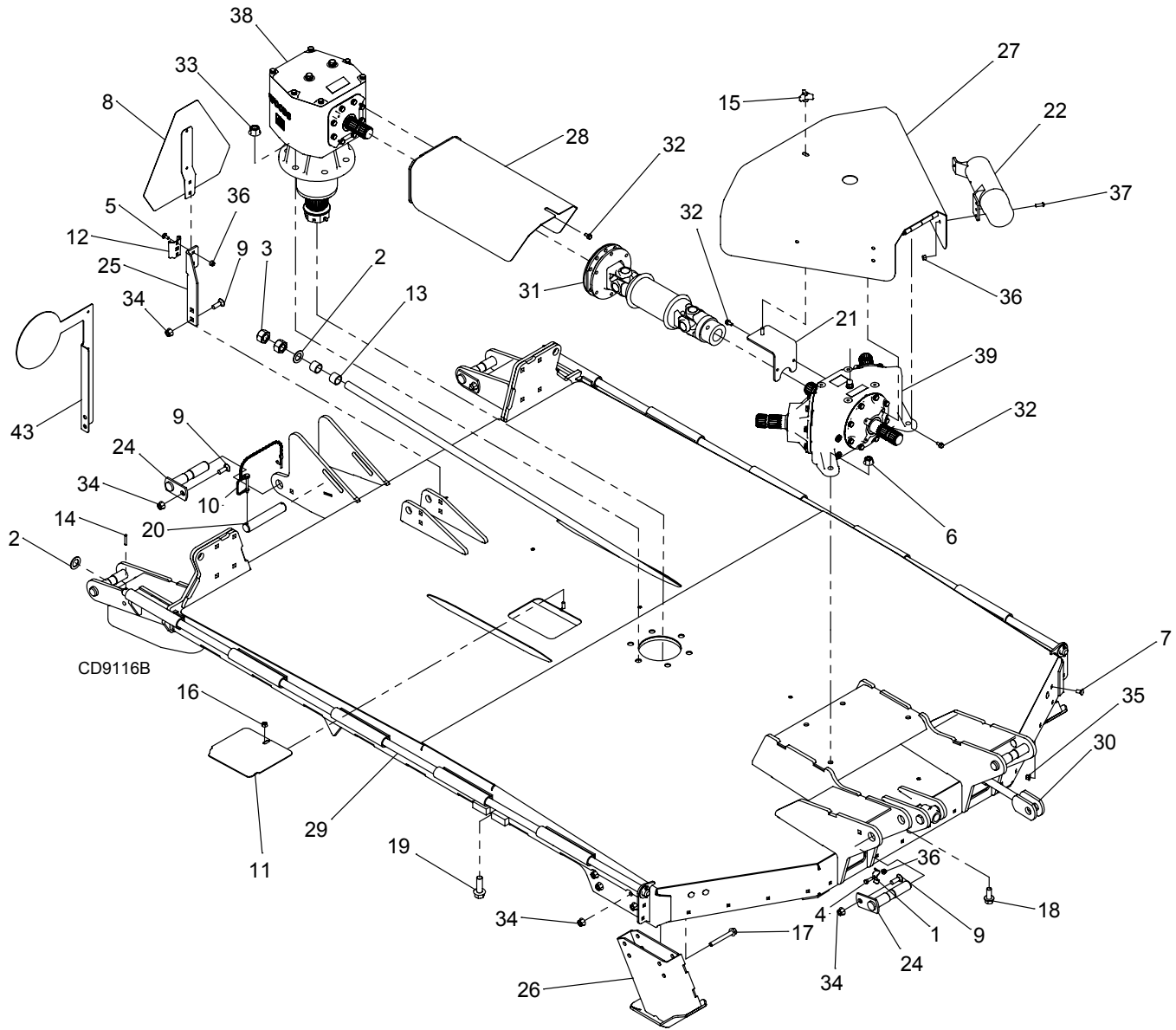
42 Parts

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CENTER FRAME ASSEMBLY BW20.51 / BW20.51Q

REF	PART	QTY	DESCRIPTION	REF	PART	QTY	DESCRIPTION
1	258	4	Feedline clamp - 1/2	23	1017055	5	Flag pin 1.25 x 6.5
2	1863	6	1 SAE flat washer	24	1017143RP	1	Lug bent .25 x 2.25 x 11.0
3	3132	4	Hex nut 1 NC ZP	25	1027035RP	2	WA, skid BW240
4	3443	1	Hydraulic hose holder	26	1027110RP	1	WA, splitter shield BW240
5	14562	4	HHCS 5/16 NC x 1 GR5	27	1027115RP	1	WA, center gearbox shield BW240
6	16148	2	Carriage bolt 5/16 NC x 3/4 ZP	28	1027123RP	2	Hinge pin 1.0 x 98.0
7	19025	4	HFN Nut 5/8 NC Dri-Loc patch	29	1027125RP	2	WA, attitude rod
8	24597	4	Carriage bolt 3/8 NC x 3/4	30	1027297	1	Drv 2JT FXD - 1340 1.75 - 20 12.6
9	24611	1	SMV slow moving vehicle sign	31	1041071	10	HFS screw M8 - 1.25 x 16 CL8.8 patch
10	29893	7	Carriage bolt 1/2 NC x 1-1/2 HT	32	1045611	6	HFN nut 3/4 NC Dri-Loc patch
11	57050RP	1	Bent link .14 x 9.00 x 7.84	33	1045624	15	HFN nut 1/2 NC Dri-Loc patch
12	62484	1	SMV emblem socket	34	1045628	4	HFN nut 3/8 NC Dri-Loc patch
13	65130	4	Pipe 1 sch 40 x 1.00	35	1045655	9	HFN nut 5/16 NC Dri-Loc patch
14	66016	4	Spirol pin 1/4 x 1-1/2	36	1046050	3	Screw BTN HD 5/16 NC x 1.0
15	66840	1	3-prong knob 3/8 NC	37	617167RP	1	Gearbox with decal 540 (see pages 56 and 57) -OR-
16	66885	1	Spiralock flange nut 3/8 NC	37	617168RP	1	Gearbox with decal 1000 (see pages 56 and 57)
17	578478	8	HFS screw 1/2 NC x 4.0 GR5	38	1034939	1	Splitter gearbox 540 (see pages 54 and 55) -OR-
18	603843	4	HFS screw 5/8 NC x 1.5 GR8	38	1034940	1	Splitter gearbox 1000 (see pages 54 and 55)
19	603845	6	HFS screw 3/4 NC x 2.25 GR5	43	632851RP	1	Bracket, w/ Decals SMV SIS BW20
20	617192RP	1	WA, shield support				
21	1003828	1	Manual tube				
22	1004251	1	SMV bracket		HHCS		Hex head cap screw

CENTER FRAME ASSEMBLY BW20.61 / BW20.61Q



44 Parts

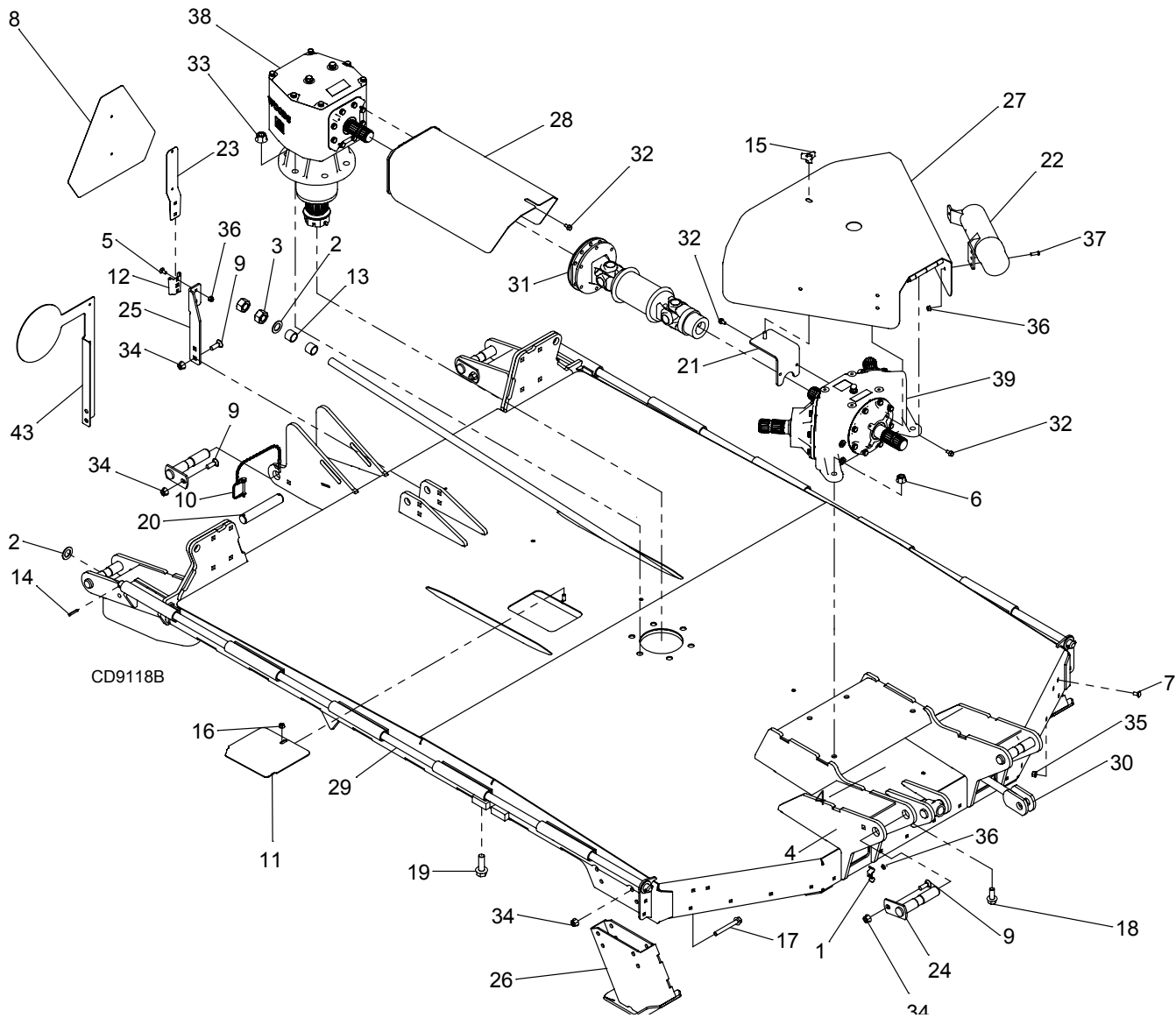
MAN1282
(01/22/2026)

CENTER FRAME ASSEMBLY BW20.61 / BW20.61Q

REF	PART	QTY	DESCRIPTION	REF	PART	QTY	DESCRIPTION
1	258	4	Feedline clamp - 1/2	23	1017143RP	1	Bent lug .25 x 2.25 x 11.0
2	1863	6	1 SAE flat washer	24	1027035RP	2	WA, skid BW240
3	3132	4	Hex nut 1 NC ZP	25	1027110RP	1	WA, splitter shield BW240
4	14562	4	HHCS 5/16 x 1 GR5	26	1027115RP	1	WA, center gearbox shield BW240
5	16148	2	Carriage bolt 5/16 NC x 3/4 ZP	27	1027123RP	2	Hinge pin 1.0 x 98.0
6	19025	4	HFN nut 5/8 NC Dri-Loc patch	28	1027125RP	2	WA, attitude rod
7	24597	4	Carriage bolt 3/8 NC x 3/4	29	1027297	1	Drv 2JT FXD - 1340 1.75 - 20 12.6
8	24611	1	SMV slow moving vehicle sign	30	1041071	10	HFS screw M8 - 1.25 x 16 CL8.8 Patch
9	29893	7	Carriage bolt 1/2 NC x 1-1/2 HT	31	1045611	6	HFN nut 3/4 NC Dri-Loc patch
10	57050RP	1	Bent link .14 x 9.00 x 7.84	32	1045624	15	HFN nut 1/2 NC Dri-Loc patch
11	62484	1	SMV emblem socket	33	1045628	4	HFN nut 3/8 NC Dri-Loc patch
12	65130	4	Pipe 1 sch 40 x 1.00	34	1045655	9	HFN nut 5/16 NC Dri-Loc patch
13	66016	4	1/4 x 1-1/2 spirol pin	35	1046050	3	Screw BTN HD 5/16 NC x 1.0
14	66840	1	3-prong knob 3/8 NC	36	603873RP	1	Gearbox with decal 540 (see pages 58 and 59) -OR-
15	66885	1	Spiralock flange nut 3/8 NC	36	603874RP	1	Gearbox with decal 1000 (see pages 58 and 59)
16	578478	8	HFS screw 1/2 NC x 4.0 GR5	37	1034939	1	Splitter gearbox 540 (see page 54 and 55) -OR-
17	603843	4	HFS screw 5/8 NC x 1.5 GR8	37	1034940	1	Splitter gearbox 1000 (see page 54 and 55)
18	603845	6	HFS screw 3/4 NC x 2.25 GR5	43	632851RP	1	Bracket, w/ Decals SMV SIS BW20
19	617192RP	1	WA, shield support				
20	1003828	1	Manual tube				
21	1004251	1	SMV bracket		HHCS		Hex head cap screw
22	1017055	5	Flag pin 1.25 x 6.5				

CENTER FRAME ASSEMBLY

BW20.71 / BW20.71Q / BW13.71 / BW13.71Q / BW13.71QREV



46 Parts

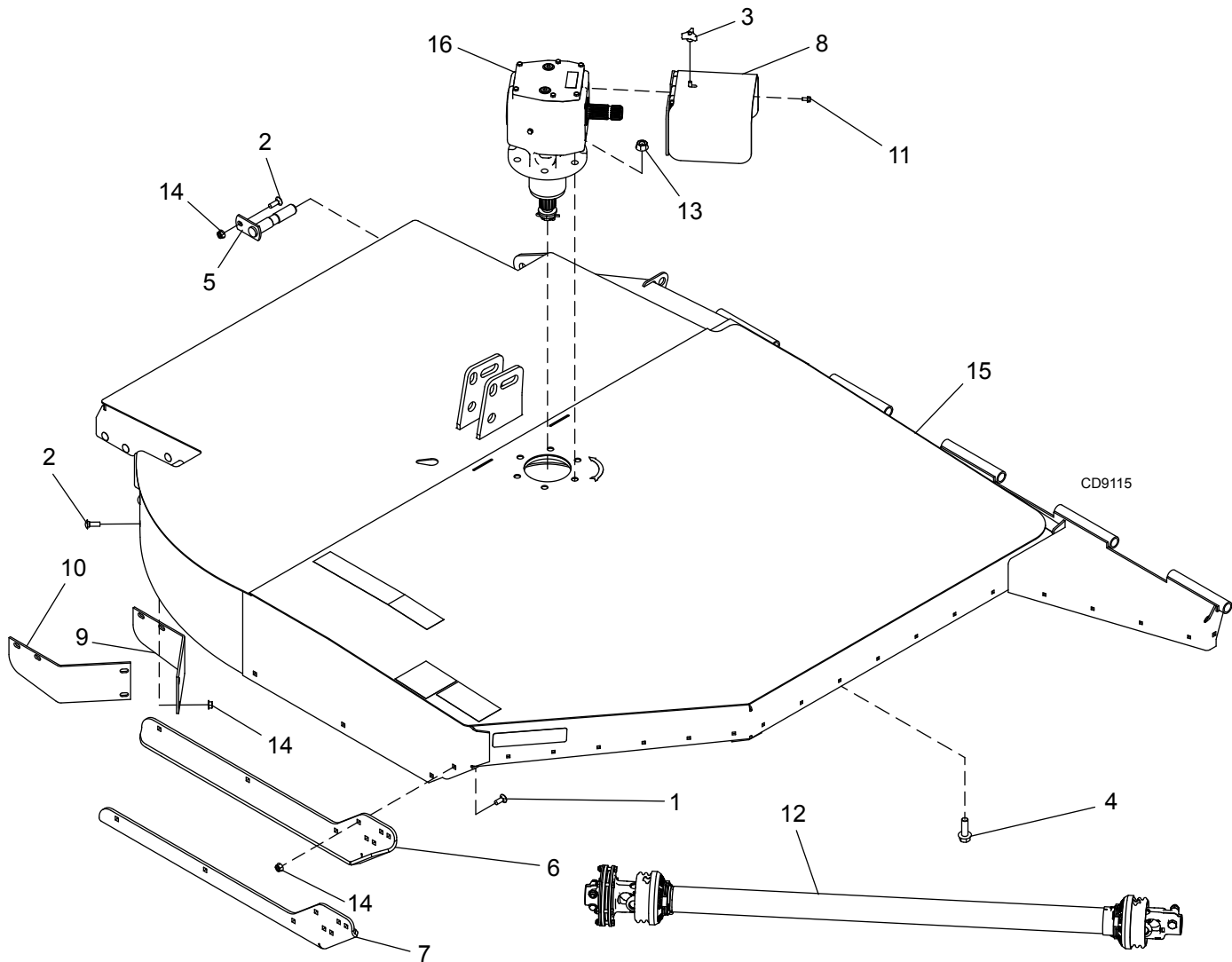
MAN1282
(01/22/2026)

CENTER FRAME ASSEMBLY

BW20.71 / BW20.71Q / BW13.71 / BW13.71Q / BW13.71QREV

REF	PART	QTY	DESCRIPTION	REF	PART	QTY	DESCRIPTION
1	258	4	Feedline clamp - 1/2	22	1017055	5	Flag pin 1.25 x 6.5
2	1863	6	1 SAE flat washer	23	1017143RP	1	Lug bent .25 x 2.25 x 11.0
3	3132	4	Hex nut 1 NC ZP	24	1027035RP	2	WA, skid BW240
4	14562	4	HHCS 5/16 NC x 1 GR5	25	1027110RP	1	WA, splitter shield BW240
5	16148	2	Carriage bolt 5/16 NC x 3/4 ZP	26	1027115RP	1	WA, center gearbox shield BW240
6	19025	4	HFN nut 5/8 NC Dri-Loc patch	27	1027123RP	2	Hinge pin 1.0 x 98.0
7	24597	4	Carriage bolt 3/8 NC x 3/4	28	1027125RP	2	WA, attitude rod
8	24611	1	SMV slow moving vehicle sign	29	1027299	1	Drv 2JT FXD-2400 1.75 - 20 10.6 (see page 68)
9	29893	7	Carriage bolt 1/2 NC x 1-1/2 HT	30	1041071	12	HFS screw M8 - 1.25 x 16 CL8.8 patch
10	57050RP	1	Bent link .14 x 9.00 x 7.84	31	1045611	6	HFN nut 3/4 NC Dri-Loc patch
11	62484	1	SMV emblem socket	32	1045624	15	HFN nut 1/2 NC Dri-Loc patch
12	65130	4	Pipe 1 sch 40 x 1.00	33	1045628	4	HFN nut 3/8 NC Dri-Loc patch
13	66016	4	1/4 x 1-1/2 spirol pin	34	1045655	9	HFN nut 5/16 NC Dri-Loc patch
14	66840	1	3-prong knob 3/8 NC	35	1046050	3	Screw BTN HD 5/16 NC x 1.0
15	66885	1	Spirallock flange nut 3/8 NC	36	603873RP	1	Gearbox with decal 540 (see pages 58 and 59) -OR-
16	578478	8	HFS screw 1/2 NC x 4.0 GR5	36	603874RP	1	Gearbox with decal 1000 (see pages 58 and 59) -OR-
17	603843	4	HFS screw 5/8 NC x 1.5 GR8	37	1034939	1	Splitter gearbox 540 (see pages 54 and 55) -OR-
18	603845	6	HFS screw 3/4 NC x 2.25 GR5	37	1034940	1	Splitter gearbox 1000 (see pages 54 and 55)
19	617192RP	1	WA, shield support	43	632851RP	1	Bracket, w/ Decals SMV SIS BW20
20	1003828	1	Manual tube				
21	1004251	1	SMV bracket				

WING FRAME ASSEMBLY BW20.51 / BW20.51Q

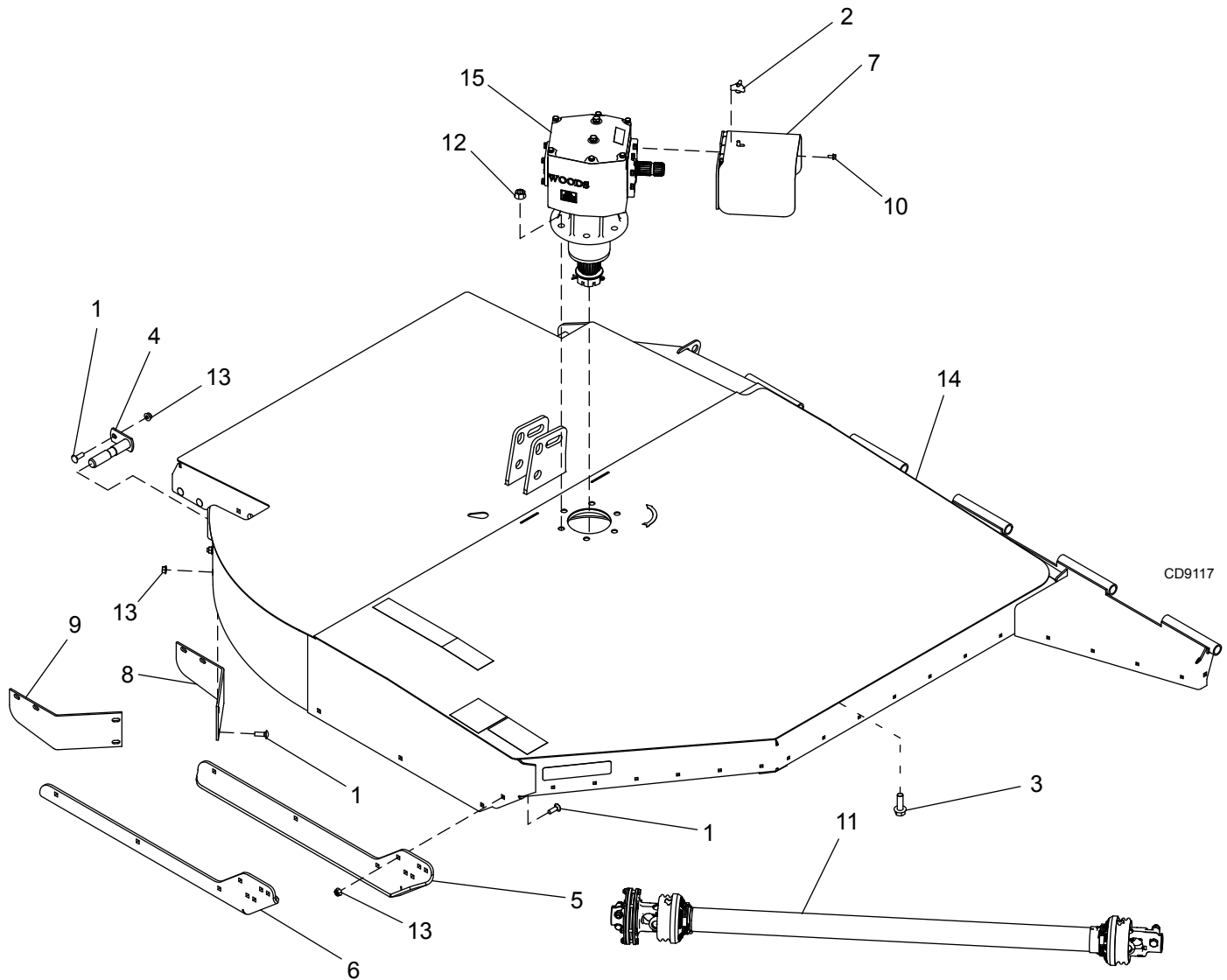


REF	PART	QTY	DESCRIPTION	REF	PART	QTY	DESCRIPTION
1	2615	4	Carriage bolt 1/2 NC x 1-1/4 GR5	11	1041071	4	HFS screw M8 - 1.25 x 16 CL8.8 patch
2	29893	6	Carriage bolt 1/2 NC x 1-1/2 HT	12	1045591	1	Complete drive assembly 2400, 61.4 x 84.3 CL (see page 70)
3	66840	1	3-prong knob 3/8 NC	13	1045611	6	HFN nut 3/4 NC Dri-Loc patch
4	603845	6	HFS screw 3/4 NC x 2.25 GR5	14	1045624	10	HFN nut 1/2 NC Dri-Loc patch
5	1017055	2	Flag pin 1.25 x 6.5	15	620926	1	BW20.51 right wing repair assembly with decals
6	1027098RP	1	Right wing skid BW240	15	620927	1	BW20.51 left wing repair assembly with decals
7	1027099RP	1	Left wing skid BW240	16	617169RP	1	Right wing gearbox with decal (see page 57)
8	1027120RP	1	WA, wing gearbox shield BW240	16	617170RP	1	Left wing gearbox with decal (see page 57)
9	1027246RP	1	Right wing angle				
10	1027247RP	1	Left wing angle				

48 Parts

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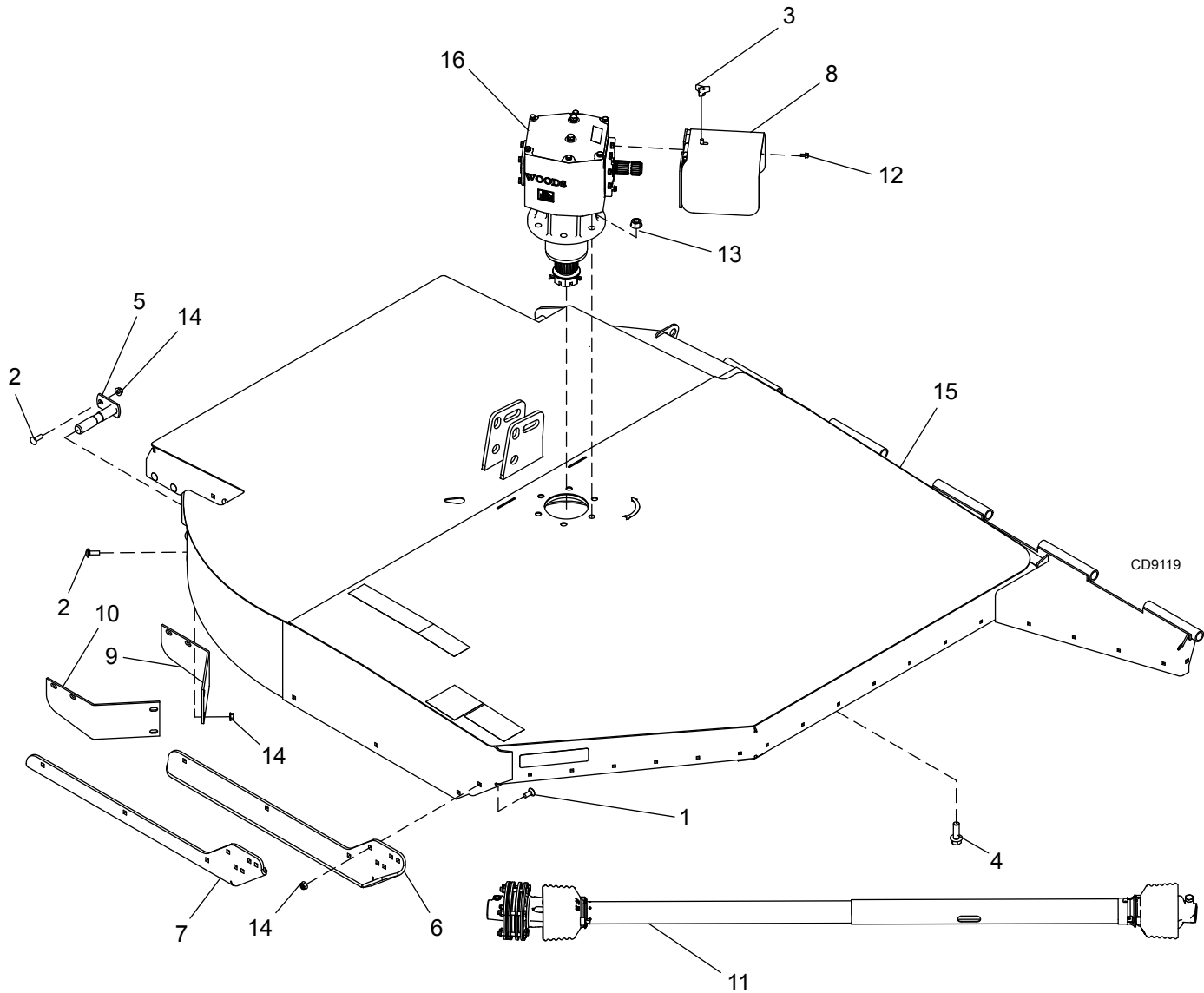
WING FRAME ASSEMBLY BW20.61 / BW20.61Q



REF	PART	QTY	DESCRIPTION	REF	PART	QTY	DESCRIPTION
1	29893	10	Carriage bolt 1/2 NC x 1-1/2 HT	11	1045591	1	Complete drive assembly - 2400 61.4 x 84.3 CL (see page 48)
2	66840	1	3-prong knob 3/8 NC	12	1045611	6	HFN nut 3/4 NC Dri-Loc patch
3	603845	6	HFS screw 3/4 NC x 2.25 GR5	13	1045624	10	HFN nut 1/2 NC, Dri-Loc patch
4	1017055	2	Flag pin 1.25 x 6.5	14	620928	1	Right wing assembly with decals, BW20.61
5	1027098RP	1	Right wing skid BW240	14	620929	1	Left wing assembly with decals, BW20.61
6	1027099RP	1	Left wing skid BW240	15	603876RP	1	Right wing gearbox with decal (see page 54)
7	1027120RP	1	WA, wing gearbox shield BW240	15	603875RP	1	Left wing gearbox with decal (see page 54)
8	1027246RP	1	Right wing angle				
9	1027247RP	1	Left wing angle				
10	1041071	4	Screw, HFS, M8 - 1.25 x 16 CL8.8 patch				

WING FRAME ASSEMBLY

BW20.71 / BW20.71Q / BW13.71 / BW13.71Q / BW13.71QREV

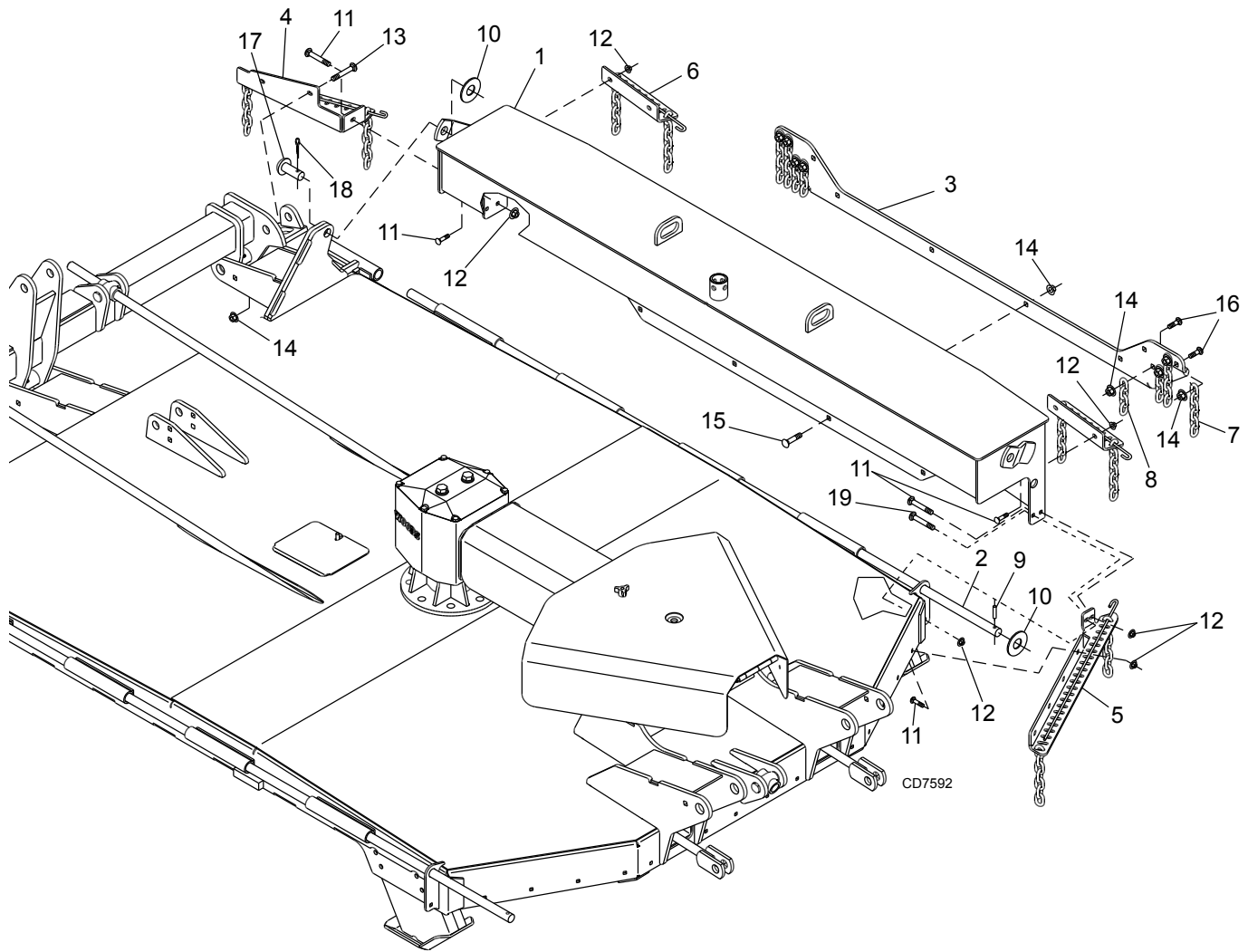


REF	PART	QTY	DESCRIPTION	REF	PART	QTY	DESCRIPTION
1	2615	4	Carriage bolt 1/2 NC x 1-1/4 GR5	12	1041071	4	HFS screw M8 - 1.25 x 16 CL8.8 patch
2	29893	6	Carriage bolt 1/2 NC x 1-1/2 HT	13	1045611	6	HFN nut 3/4 NC Dri-Loc patch
3	66840	1	3-prong knob 3/8 NC	14	1045624	10	HFN nut 1/2 NC Dri-Loc patch
4	603845	6	HFS screw 3/4 NC x 2.25 GR5	15	620930	1	Right wing assembly with decals, BW20.71
5	1017055	2	Flag pin 1.25 x 6.5	15	620931	1	Left wing assembly with decals, BW20.71
6	1027098RP	1	Right wing skid BW240	15	620932	1	Right wing assembly with decals, BW20.71R
7	1027099RP	1	Left wing skid BW240	15	620933	1	Left wing assembly with decals, BW20.71R
8	1027120RP	1	WA, wing gearbox shield BW240	16	603876RP	1	Right wing gearbox with decal (see page 54)
9	1027246RP	1	Right wing angle	16	603875RP	1	Left wing gearbox with decal (see page 54)
10	1027247RP	1	Left wing angle				
11	1027298	1	Complete drive assembly - 2500 59.5 x 8532 (see page 70)				

50 Parts

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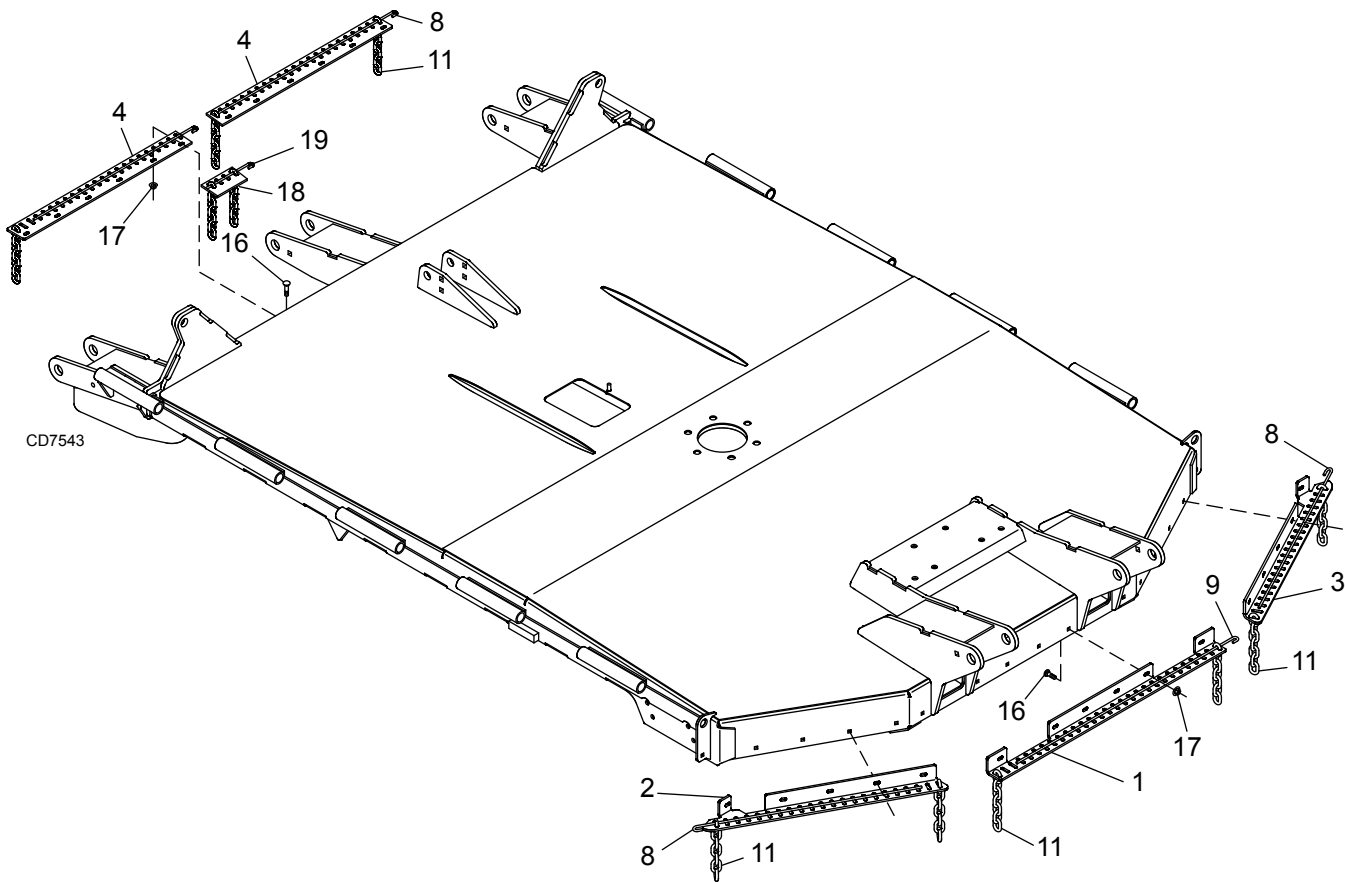
COUNTERWEIGHT BOX ASSEMBLY BW13.71 / BW13.71Q / BW13.71QREV



REF	PART	QTY	DESCRIPTION	REF	PART	QTY	DESCRIPTION
1	1027190	1	Weight box 1300 lbs	7	1016953	4	5/16 Chain - 11 link
2	1027123RP	1	Hinge pin, 1 x 98	8	4069	4	5/16 Chain - 4 link -OR-
3	1027198RP	1	Skid shoe, weight box	8	5496	4	5/16 Chain - 7 link
4	1027197	1	Rear chain shield bracket, left weight box (shown) -OR-	9	66016	2	Spring pin, 1/4 x 1-1/2
4	1027196	1	Rear chain shield bracket, right weight box -OR-	10	1863 *	2	1" flat washer
4	1029893RP	1	Rear double chain shield bracket, left weight box -OR-	11	6697 *	9	Carriage bolt, 3/8 NC x 1 GR5
4	1029892	1	Rear double chain shield bracket, right weight box	12	14350 *	10	3/8 NC flanged hex lock nut
5	1027203RP	1	Front chain shield bracket, left weight box -OR-	13	W301109	3	Carriage bolt, 1/2 NC x 1-1/4 GR5
5	1027204	1	Front chain shield bracket, right weight box -OR-	14	11900 *	17	1/2 NC flanged hex lock nut
5	1027064	1	Front double chain shield bracket, left weight box -OR-	15	29893 *	6	Carriage bolt, 1/2 NC x 1-1/2 GR5
5	1027065	1	Front double chain shield bracket, right weight box	16	10284 *	8	Carriage bolt, 1/2 NC x 2 GR5
6	1027135RP	2	Bracket, Chain weight box -OR-	17	46605	1	Clevis pin, 1 x 2.26
6	1029894RP	2	Bracket, double chain weight box	18	1285 *	1	Cotter pin, 1/4 x 1-1/2
7	5498	4	5/16 Chain - 6 link -OR-	19	W301104 *	1	Carriage bolt, 3/8 NC x 1-1/2 GR5

* Standard hardware, obtain locally

CHAIN SHIELDING - CENTER SECTION



SINGLE ROW

REF	PART	QTY	DESCRIPTION
1	1027131RP	1	Front center chain plate
2	1027132RP	1	Front right chain plate
3	1027133RP	1	Front left chain plate
4	1027141RP	2	Rear chain plate
8	1003644	4	Pin, 22 to 24 chains
9	1003646	1	Pin, 28 to 30 chains
11	5496	123	5/16 chain - 7 link
16	6697	*	3/8 NC x 1 carriage bolt GR5
17	14350	*	3/8 NC flanged lock nut
18	1027189RP	1	Rear chain plate, center short
19	1007852	1	Pin, 7 to 9 chains

DOUBLE ROW

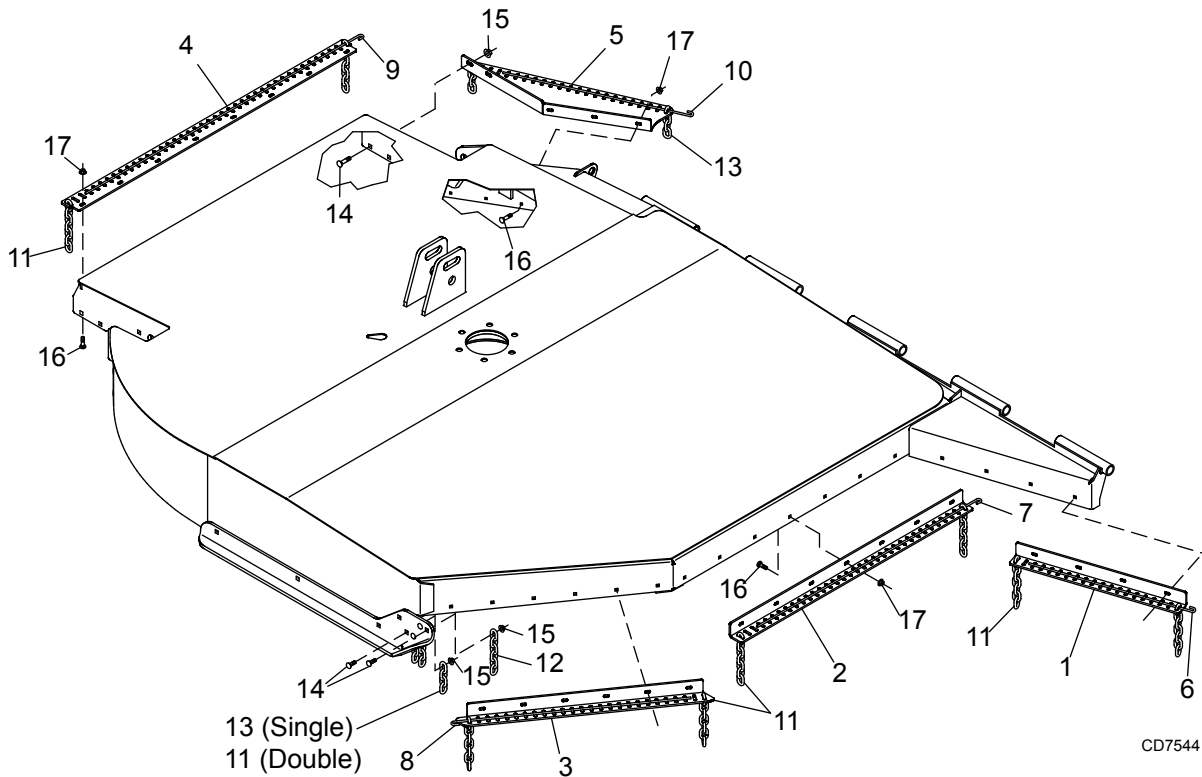
REF	PART	QTY	DESCRIPTION
1	1029881RP	1	Front center chain plate
2	1029882RP	1	Front right chain plate
3	1029883RP	1	Front left chain plate
4	1029888RP	2	Rear chain plate
8	1003644	8	Pin, 22 to 24 chains
9	1003646	2	Pin, 28 to 30 chains
11	5496	220	5/16 chain - 7 link
16	6697	*	3/8 NC x 1 carriage bolt GR5
17	14350	*	3/8 NC flanged lock nut
18	1027291RP	1	Rear chain plate, center short
19	1007852	2	Pin, 7 to 9 chains

- Standard hardware, obtain locally

52 Parts

MAN1282
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CHAIN SHIELDING - WING SECTION



SINGLE ROW

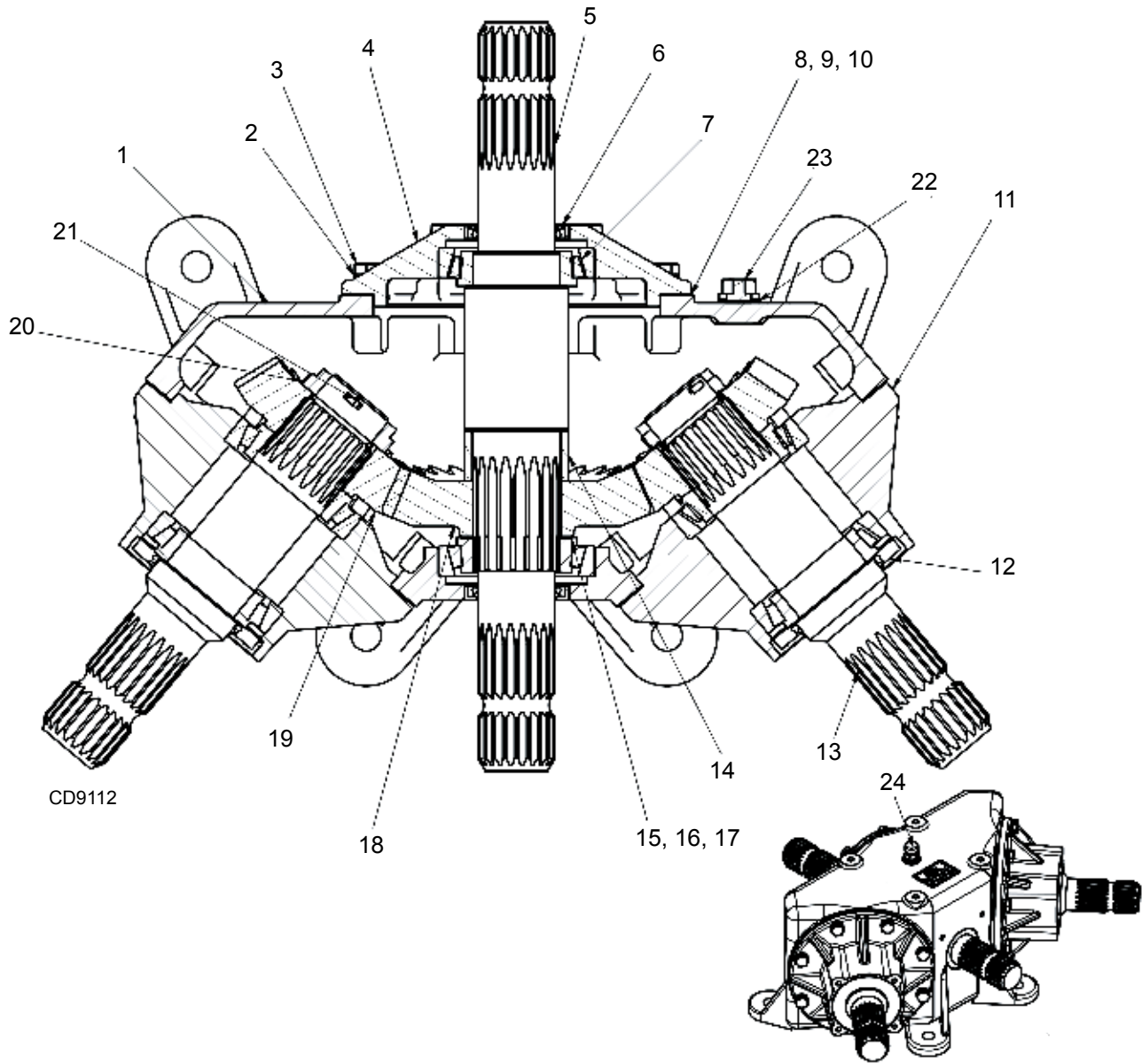
REF	PART	QTY	DESCRIPTION
1	1027134RP	1	Front wing chain plate, inner
2	1027140RP	1	Front wing chain plate, center
3	1027136RP	1	Front right wing chain plate, outer - OR -
3	1027137RP	1	Front left wing chain plate, outer
4	1027142RP	1	Rear wing chain plate
5	1027138RP	1	Rear right wing chain plate, inner - OR -
5	1027139RP	1	Rear left wing chain plate, inner
6	1003643	1	Pin, 19 to 21 chains
7	1007851	1	Pin, 34 to 36 chains
8	1003645	1	Pin, 25 to 27 chains
9	1007854	1	Pin, 40 to 42 chains
10	1003644	1	Pin, 22 to 24 chains
11	5496	124	5/16 chain - 7 link
12	5498	2	5/16 chain - 6 link
13	4069	25	5/16 chain - 4 link
14	29893	*	1/2 NC x 1-1/2 carriage bolt GR5
15	11900	*	1/2 NC flanged lock nut
16	6697	*	3/8 NC x 1 carriage bolt GR5
17	14350	*	3/8 NC flanged lock nut

DOUBLE ROW

REF	PART	QTY	DESCRIPTION
1	1029885RP	1	Front wing chain plate, inner
2	1029884RP	1	Front wing chain plate, center
3	1029886RP	1	Front right wing chain plate, outer - OR -
3	1029887RP	1	Front left wing chain plate, outer
4	1029889RP	1	Rear wing chain plate
5	1029890RP	1	Rear right wing chain plate, inner - OR -
5	1029891RP	1	Rear left wing chain plate, inner
6	1003643	2	Pin, 19 to 21 chains
7	1007851	2	Pin, 34 to 36 chains
8	1003645	2	Pin, 25 to 27 chains
9	1007854	2	Pin, 40 to 42 chains
10	1003644	2	Pin, 22 to 24 chains
11	5496	217	5/16 chain - 7 link
12	1016953	2	5/16 chain - 11 link
13	4069	38	5/16 chain - 4 link
14	29893	*	1/2 NC x 1-1/2 carriage bolt GR5
15	11900	*	1/2 NC flanged lock nut
16	6697	*	3/8 NC x 1 carriage bolt GR5
17	14350	*	3/8 NC flanged lock nut

* Standard hardware, obtain locally

SPLITTER GEARBOX ASSEMBLY



54 Parts

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(01/22/2026)

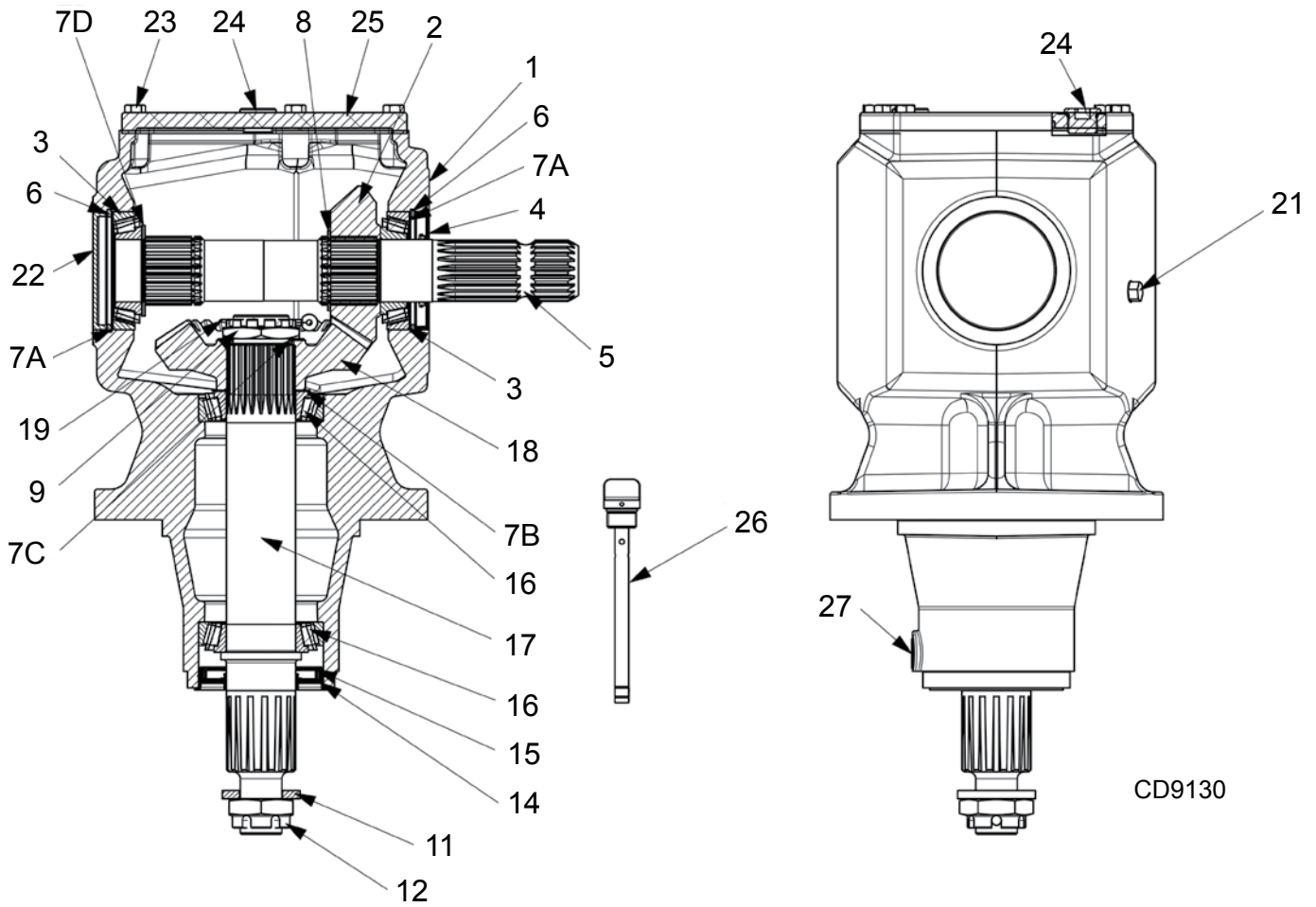
SPLITTER GEARBOX ASSEMBLY PARTS LIST

REF	PART	PART	QTY	DESCRIPTION
	540 RPM	1000 RPM		
1	1034939	1034940	-	Complete splitter gearbox
2	21542	21542	24	10 mm lock washer
3	W307201	W307201	24	M10 x 1.5P x 30 HHCS
4	1034937	1034937	1	Input cap
5	1034938	1034938	1	Input shaft
6	1019589	1019589	2	Input oil seal
7	1019587	1019587	6	Bearing assembly 50 x 90
8	1019592	1019592	AR	Gasket .15 mm
9	1019593	1019593	AR	Gasket .25 mm
10	1019594	1019594	AR	Gasket .45 mm
11	1019612	1019612	2	Hub cap
12	1019590	1019590	2	Oil seal
13	1019576	1019576	2	Output shaft
14	1019603	1019603	1	Spacer
15	1019609	1019609		Shim .30 mm
16	1019608	1019608		Shim .40 mm
17	1019610	1019610		Shim .50 mm
18	1027170	1027184	1	Gear
19	1027184	1027170	2	Gear
20	1019605	1019605	2	Bearing adjustment nut
21	NS	NS	2	1/8 x 2-1/2 cotter pin
22	1009081	1009081	2	Sealing washer
23	1019601	1019601	1	M18 x 1.5 level plug
24	1019600RP	1019600RP	1	M18 x 1.5 breather plug

AR As required

NS Not serviced

WING & CENTER GEARBOX ASSEMBLY BW20.51 / BW20.51Q



CD9130

56 Parts

MAN1282
(01/22/2026)

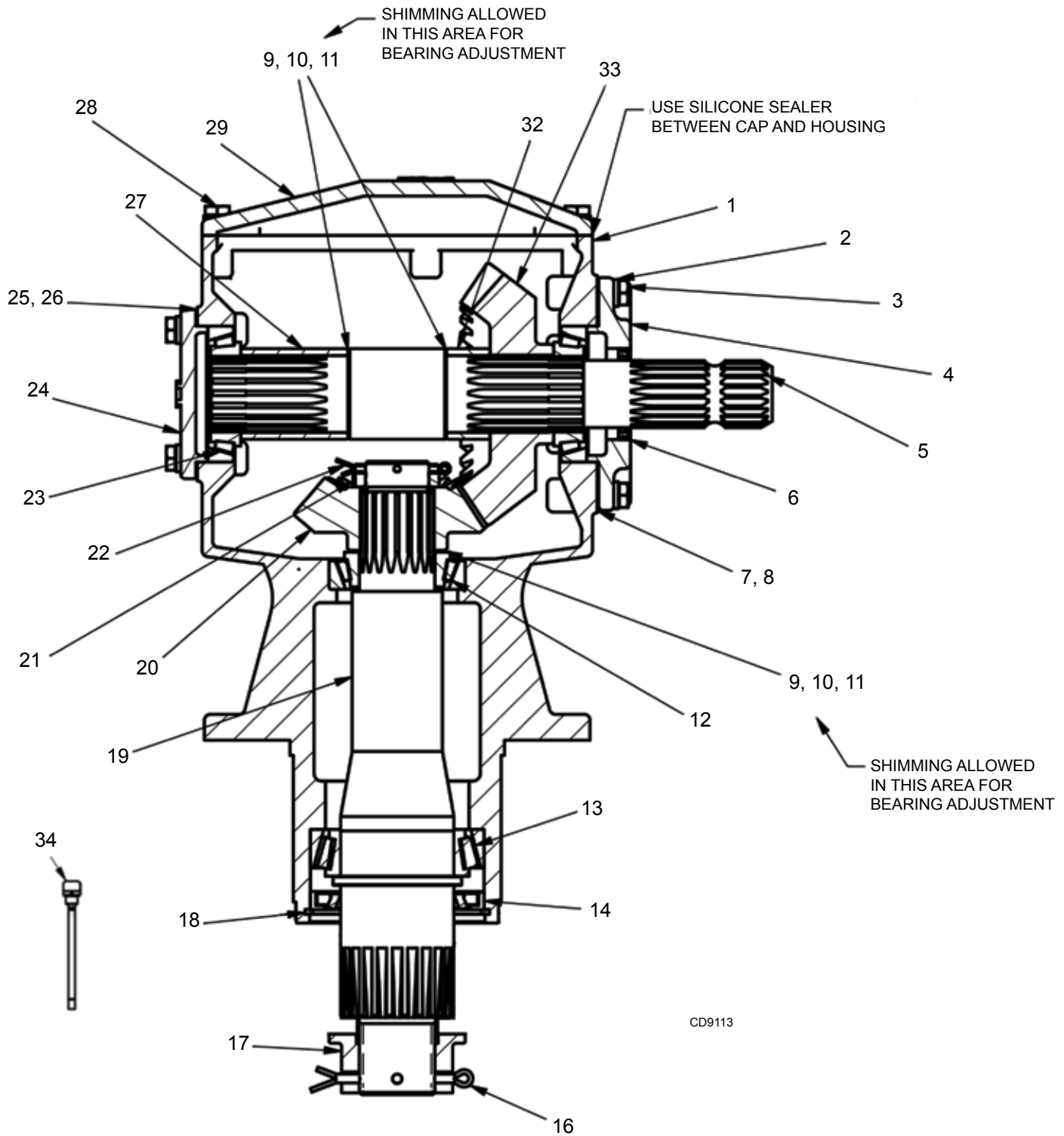
WING & CENTER GEARBOX ASSEMBLY BW20.51 / BW20.51Q

REF	QTY	LEFT WING	RIGHT WING	CENTER 540 ONLY	CENTER 1000 ONLY	DESCRIPTION
		617170RP	617169RP	617167RP	617168RP	Complete gearbox
1	1	NS	NS	NS	NS	Housing
2	1	603867	603867*	57358	57316	Gear, crown
3	2	39411	39411	39411	39411	Bearing
4	1	57318	57318	57318	57318	Oil seal 45 x 85 x 10
5	1	57319	57319	57319	57319	Input shaft
6	2	57320	57320	57320	57320	Snap ring 85 UNI7437
7	1	57471	57471	57471	57471	Shim kit (includes 7A - 7D)
7A						Shim 70.3 x 84.7
7B						Shim 50.3 x 70.3
7C						Shim 40.3 x 61.7 x 1
7D						Shim 45.3 x 65.3 x 2.5
8	1	57321	57321	57321	57321	Snap ring 50 UNI7435
9	1	57329	57329	57329	57329	Castle nut M40 x 1.5P
11	1	1024670	1024670	1024670	1024670	Washer, 1.22 x 2.205 x .236
12	1	W39323	W39323	W39323	W39323	Castle nut M30 x 2.0P
14	1	57338	57338	57338	57338	Protective seal
15	1	1045873	1045873	1045873	1045873	Oil seal 50 x 90 x 10
16	2	39263	39263	39263	39263	Bearing cup & cone
17	1	57356	57356	57356	57356	Output shaft
18	1	603867	603867	57316	57358	Gear pinion
19	1	NS	NS	NS	NS	Cotter pin 3/16 x 2
21	1	NS	NS	NS	NS	Plug
22	1	57371	57371	57371	57371	Cap
23	6	NS	NS	NS	NS	M8 x 16 GR8.8 HHCS
24	2	NS	NS	NS	NS	Plug
25	1	1045878	1045878	1045878	1045878	Top cover
26	1	1045872	1045872	1045872	1045872	Dipstick
27	1	1045877	1045877	1045877	1045877	Magnetic drain plug
28	1	1005512	1005512	1005512	1005512	Gearbox repair kit (contains items 3, 4, 6, 7, 8, 14, 15, 16, 20)

* Crown gear placed on opposite end of input shaft for right wing

NS Not Serviced

WING & CENTER GEARBOX ASSEMBLY BW20.61 / BW20.61Q & BW20.71 / BW20.71Q



58 Parts	MAN1282 (01/22/2026)
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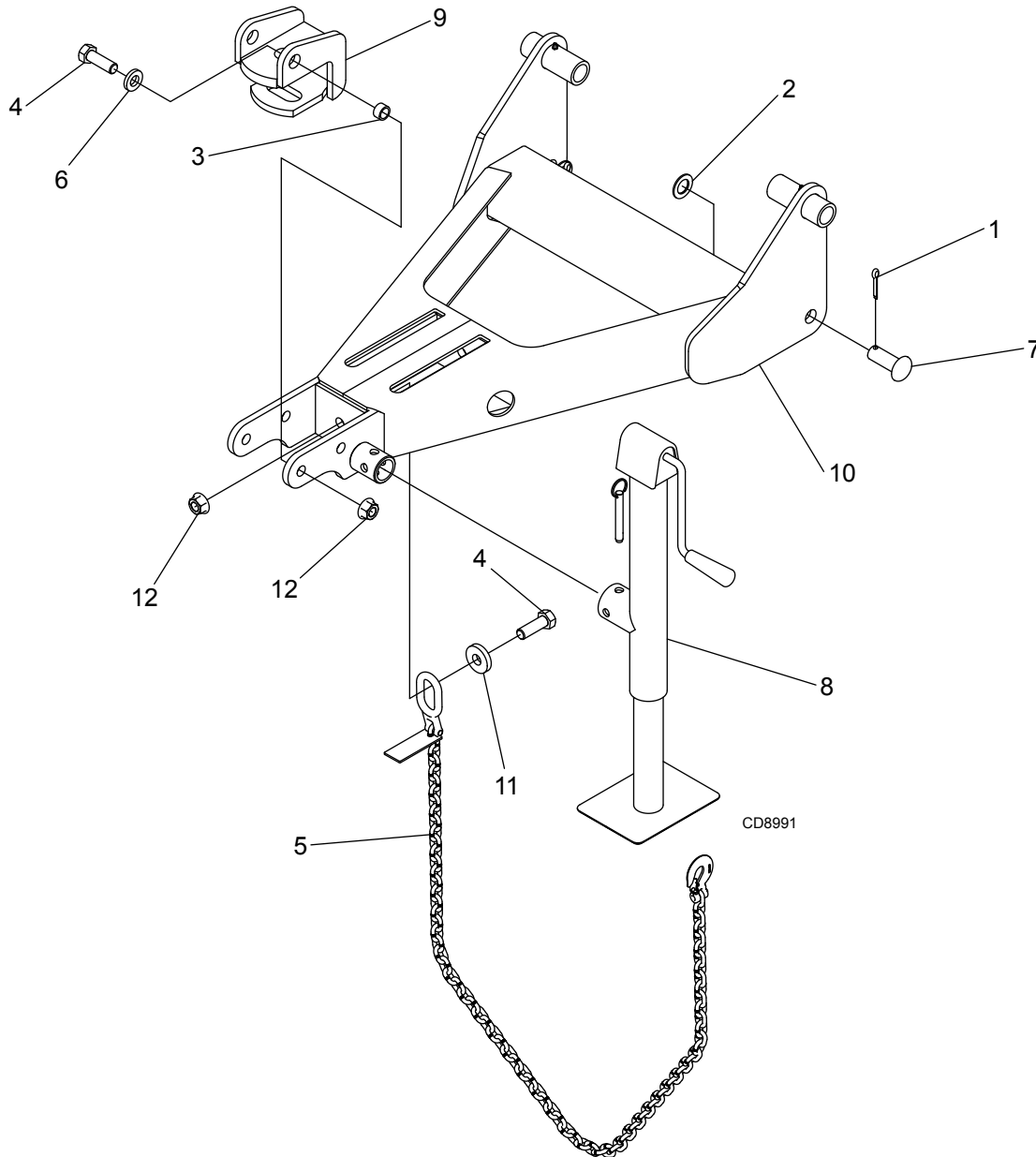
WING & CENTER GEARBOX ASSEMBLY BW20.61 / BW20.61Q / BW20.71 / BW20.71Q

REF	QTY	LEFT WING	RIGHT WING	CENTER 540 ONLY	CENTER 1000 ONLY	DESCRIPTION
		603875RP	603876RP	603873RP	603874RP	Complete gearbox
1	1	NS	NS	NS	NS	Housing
2	18	21542	21542	21542	21542	M10 lock washer
3	12	W307201	W307201	W307201	W307201	M10 x 1.5 x 30 cap screw
4	1	1019614	1019614	1019614	1019614	Input cap
5	1	1019577	1019577	1019577	1019577	Input shaft
6	1	1019589	1019589	1019589	1019589	Oil seal
7		1019595	1019595	1019595	1019595	Input cap gasket (0.20)
8		1019596	1019596	1019596	1019596	Input cap gasket (0.40)
9		1019609	1019609	1019609	1019609	Shim (0.30)
10		1019608	1019608	1019608	1019608	Shim (0.40)
11		1019610	1019610	1019610	1019610	Shim (0.50)
12	1	614303	614303	614303	614303	32210 bearing assembly
13	1	614294	614294	614294	614294	33015 bearing assembly
14	1	614295	614295	614295	614295	ø75 x ø115 x 12 metal insert oil seal
16	1	NS	NS	NS	NS	Cotter pin - 5 x 90
17	1	614298	614298	614298	614298	M50 x 4 - 6H slotted flange nut
18	1	614299	614299	614299	614299	ø115 bore retaining ring
19	1	614301	614301	614301	614301	Output shaft
20	1	1011758	1011758	1019585	1019586	Tooth pinion - output
21	1	1019605	1019605	1019605	1019605	Bearing adjust nut
22	1	NS	NS	NS	NS	Cotter pin M4 x 60
23	2	1019587	1019587	1019587	1019587	30210 bearing assembly
24	1	1019615	1019615	1019615	1019615	Blank adjusting cap
25		1019598	1019598	1019598	1019598	Black cap gasket (0.20)
26		1019599	1019599	1019599	1019599	Blank cap gasket (0.40)
27	1	1019604	1019604	1019604	1019604	Bearing spacer
28	6	NS	NS	NS	NS	M10 x 1.5 x 25 cap screw
29	1	1019616	1019616	1019616	1019616	Inspection cover
30	2	1019601	1019601	1019601	1019601	Level drain plug M18 x 1.5
31	2	1009081	1009081	1009081	1009081	Sealing washer
32	1	1019603	1019603	1019603	1019603	Input shaft spacer
33	1	1011758	1011758*	1019586	1019585	Tooth gear - input
34	1	614302	614302	614302	614302	M8 x 15 dip stick TS FF breather asy

* Crown gear placed on opposite end of input shaft for right wing

NS Not Serviced

TONGUE ASSEMBLY BW20.51 / BW20.51Q



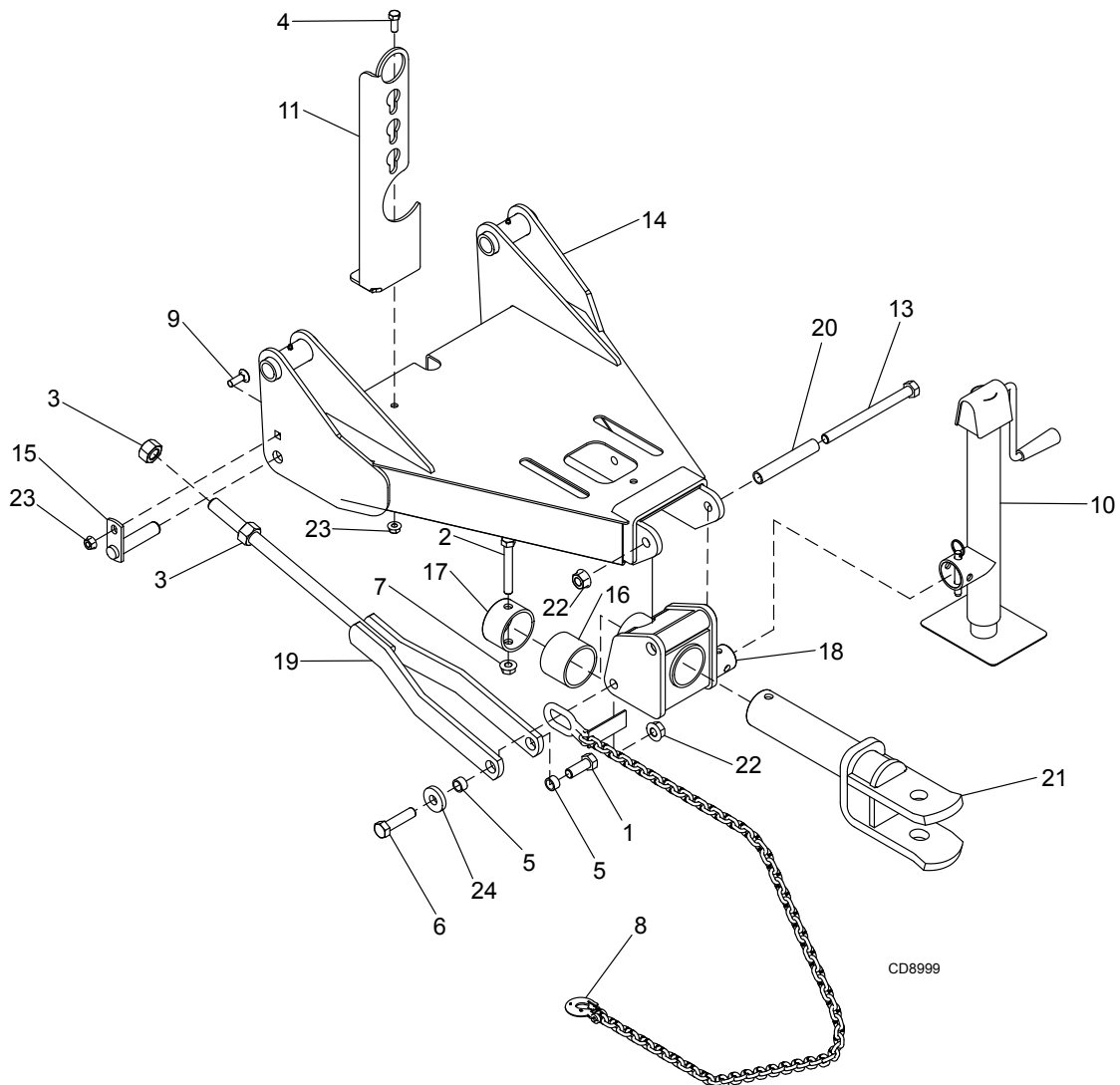
REF	PART	QTY	DESCRIPTION	REF	PART	QTY	DESCRIPTION
1	1285	2	1/4 x 1-1/2 cotter pin	7	46605	2	Pin CLV 1.00 x 2.26
2	1863	2	1 SAE flat washer	8	52232	1	Swivel parking jack
3	13087	2	Sleeve 3/4 x 1 x 9/16 HT	9	1005595RP	1	Hitch, BW180 CATG 2 clevis
4	13759	3	HHCS 3/4 NC x 2-1/4 GR5 ZP	10	1027100RP	1	WA, tongue, BW240
5	19407	1	Safety chain assembly, 10,000 lb.	11	W8424	1	3/4 ID 2 OD 3/8 thick washer
6	28873	2	3/4 ID 1-1/2 OD 1/4 thick washer	12	W302207	3	Flange head lock nut 3/4 NC

60 Parts

MAN1282
(01/22/2026)

TONGUE ASSEMBLY

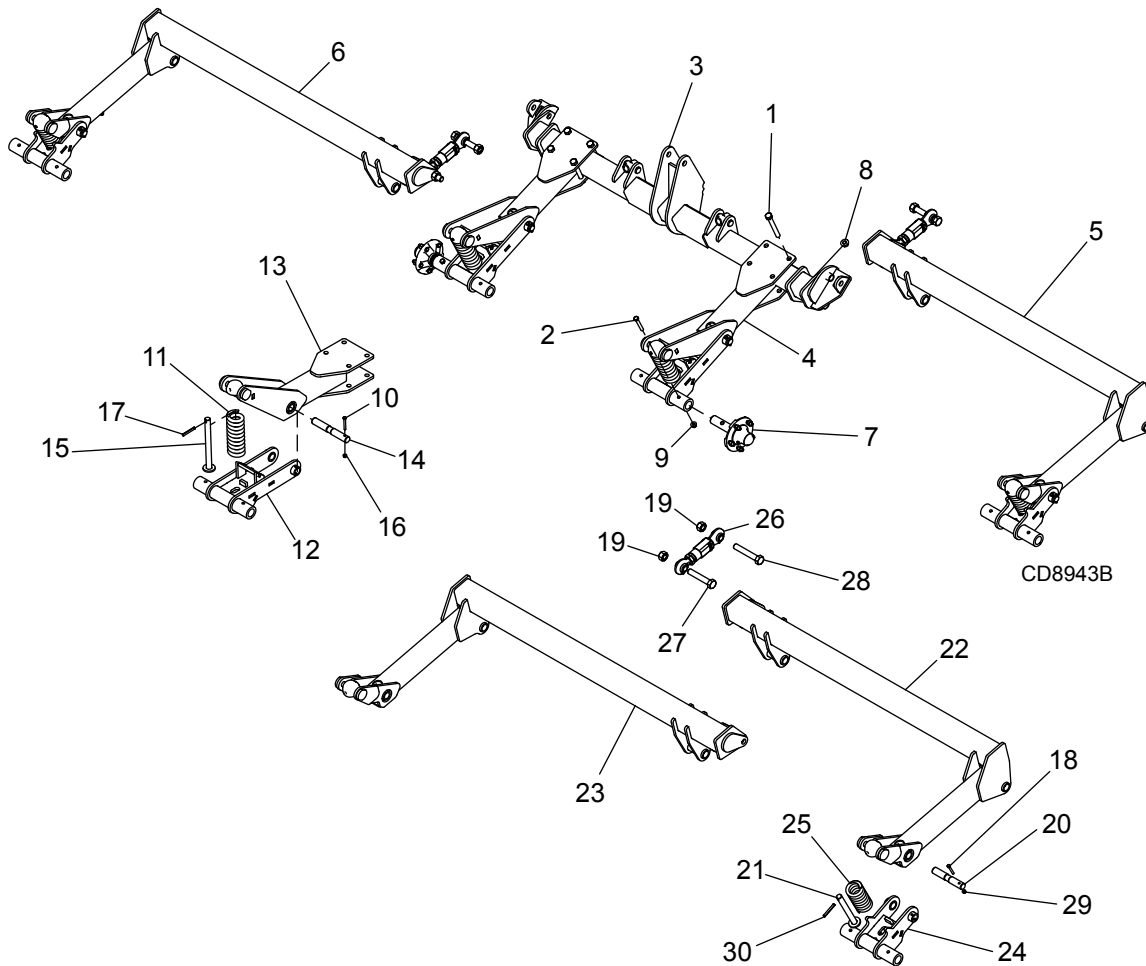
BW20.61 / BW20.61Q / BW20.71 / BW20.71Q / BW13.71 / BW13.71Q



CD8999

REF	PART	QTY	DESCRIPTION	REF	PART	QTY	DESCRIPTION
1	735	1	HHCS 3/4 NC x 2 GR5	13	W301014	1	Bolt mach 3/4 NC x 9
2	3097	1	HHCS 5/8 NC x 4 - 1/2 GR5 ZP	14	611434RP	1	WA, tongue BW20
3	3132	2	Hex nut 1 NC ZP	15	1017045	1	Flag pin 1.00 x 4.25
4	6100	2	HHCS 1/2 NC x 1 - 1/4 GR5 ZP	16	1017217RP	1	Sleeve 3.06 x 3.50 x 1.25
5	13087	2	Sleeve 3/4 x 1 x 9/16 HT	17	1017218RP	1	Sleeve, DR 3.06 x 3.50 x 2.00
6	14334	1	HHCS 3/4 NC x 3 GR5	18	1017220RP	1	WA, tongue level hitch
7	19025	1	HFN nut 5/8 NC, Dri-Loc patch	19	1017230RP	1	WA, tongue level link
8	19407	1	Safety chain assembly 10,000 lb.	20	1017232	1	Sleeve .760 x 1.00 x 6.06
9	29893	2	Carriage bolt 1/2 NC x 1-1/2 HT	21	1017240RP	1	WA, tongue clevis
10	52232	1	Swivel parking jack	22	1045611	3	HFN nut 3/4 NC, Dri-Loc patch
11	52442RP	1	Swivel parking jack	23	1045624	4	HFN nut 1/2 NC, Dri-Loc patch
12	65130	2	Pipe 1 SCH 40 x 1.00	24	W8424	1	3/4 ID 2 OD 3/8 thick washer

SPRING ARM ASSEMBLY



REF	PART	QTY	DESCRIPTION
1	2377	8	HHCS 3/4 NC 6 GR5
2	1637	4	HHCS 1/2 NC x 3-1/2 GR5 ZP
3	609567RP	1	WA, center yoke BW20
4	611427RP	2	Center spring arm assembly
5	611428RP	1	Right wing spring arm assembly
6	611429RP	1	Left wing spring arm assembly
7	1017050	5	5-bolt wheel hub
8	1029037	8	Spiralock flange HFN 3/4 NC
9	1045624	4	HFN nut 1/2 NC, Dri-Loc patch

ITEM 4 BREAKDOWN

REF	PART	QTY	DESCRIPTION
10	10509	1	HHCS 5/16 NC x 2-1/2 GR5
11	19710RP	1	SPR/CMP 3.25 .69 9.52200
12	610650RP	1	WA, lower spring arm, ctr
13	611403RP	1	WA, wheel yoke arm, spring
14	1017149	1	Bar DR 1.25 x 8.85
15	610634RP	1	WA, pin 1.00 x 10.88
16	1045655	1	HFN nut 5/16 NC, Dri-Loc patch
17	1046049	1	Spirol pin 3/8 x 3 hvy

ITEMS 5 & 6 BREAKDOWN

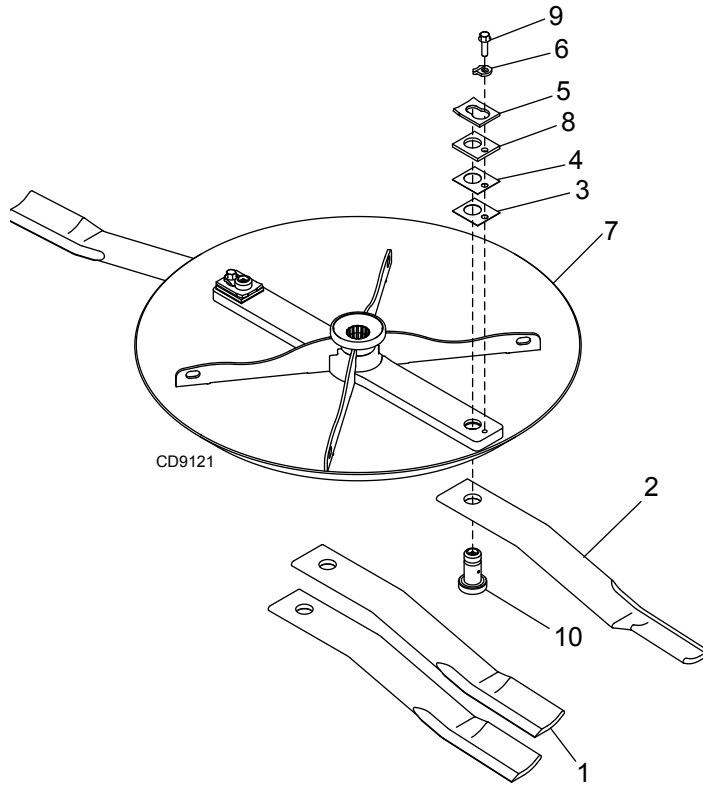
REF	PART	QTY	DESCRIPTION
18	10509	2	HHCS 5/16 NC x 2-1/2 GR5
19	34279	4	Lock nut 1 NC
20	52087	2	Bar DR 1.25 x 6.64 x 7.56
21	610635RP	2	WA, Pin 1.00 x 8.38
22	609568RP	1	WA, right yoke BW20
23	609569RP	1	WA, left yoke BW20
24	610665RP	2	WA, wing spring arm
25	1032100RP	2	Compression spring 3.25 x .56 x 7.25 x 1113
26	1039950	2	Trunnion adjustable link
27	1044811	2	HHCS 1 NC x 5.5 GR8 pltd
28	1044973	2	HHCS 1 NC x 6 GR8 pltd
29	1045655	2	HFN 5/16 nut NC, Dri-Loc patch
30	1046049	2	Spirol pin 3/8 x 3 hvy

HHCS Hex head cap screw

62 Parts

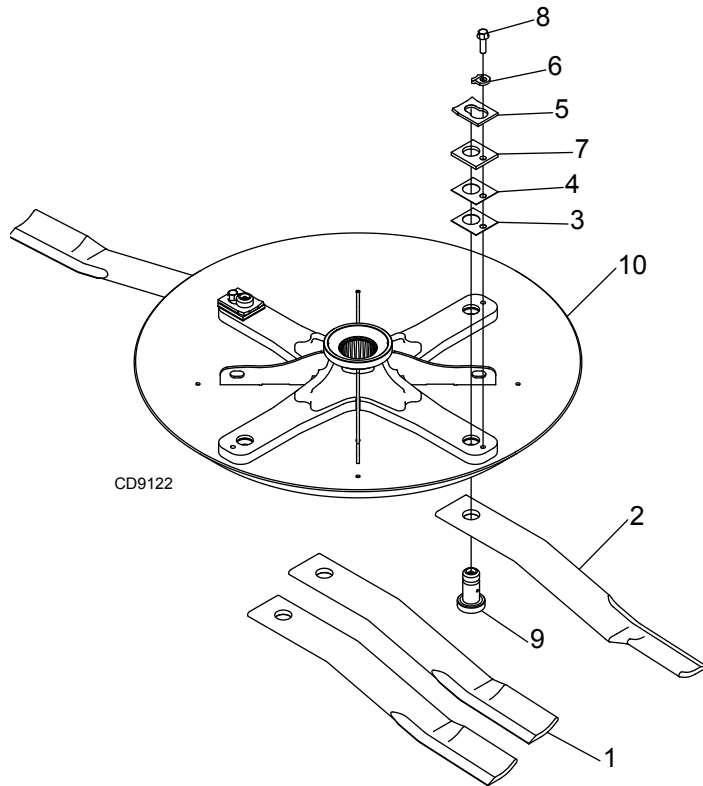
MAN1282
(01/22/2026)

CROSSBAR ASSEMBLY BW20.51 / BW20.51Q



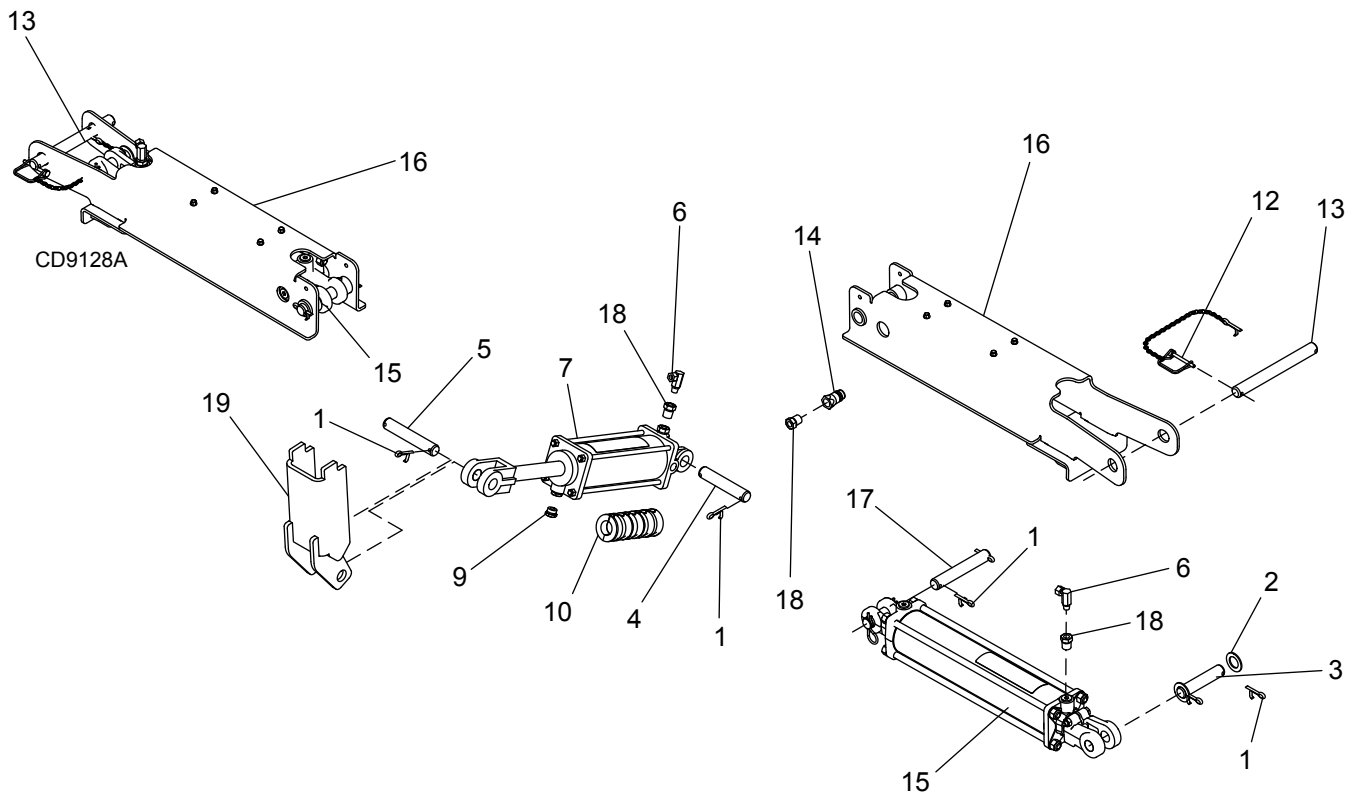
REF	PART	QTY	DESCRIPTION
1	8820KT	1	8820 STD left wing blade kit
2	8825KT	1	8825 STD center & right wing blade kit
3	10520RP	2	18 GA 1-1/2 blade pin shim
4	13946RP	2	20 GA 1-1/2 blade pin shim
5	32603	2	Keyhole plate special
6	32604RP	2	Blade pin lock clip spec
7	617159RP	1	WSA, crossbar BW12.51
8	1028824RP	2	Spacer, 5/16 thick blade pin
9	1028902	2	HFS 1/2 NC x 1-3/4 GR8
10	1045034RP	2	Blade pin drl 2.39

CROSSBAR ASSEMBLY BW20.61 / BW20.61Q / BW20.71 / BW20.71Q / BW13.71 / BW13.71Q



REF	PART	QTY	DESCRIPTION
1	8820KT	1	8820 STD left wing blade kit
2	8825KT	1	8825 STD center and right wing blade kit
3	10520RP	2	18 GA 1-1/2 blade pin shim
4	13946RP	2	20 GA 1-1/2 blade pin shim
5	32603	2	Keyhole plate special
6	32604RP	2	Blade pin lock clip spec
7	1028824RP	2	5/16 thick blade pin spacer
8	1028902	2	HFS 1/2 NC x 1-3/4 GR8
9	1045034RP	2	Blade pin drl 2.39
10	617130RP	1	WA, crossbar BW20.61/71

CYLINDER ASSEMBLY

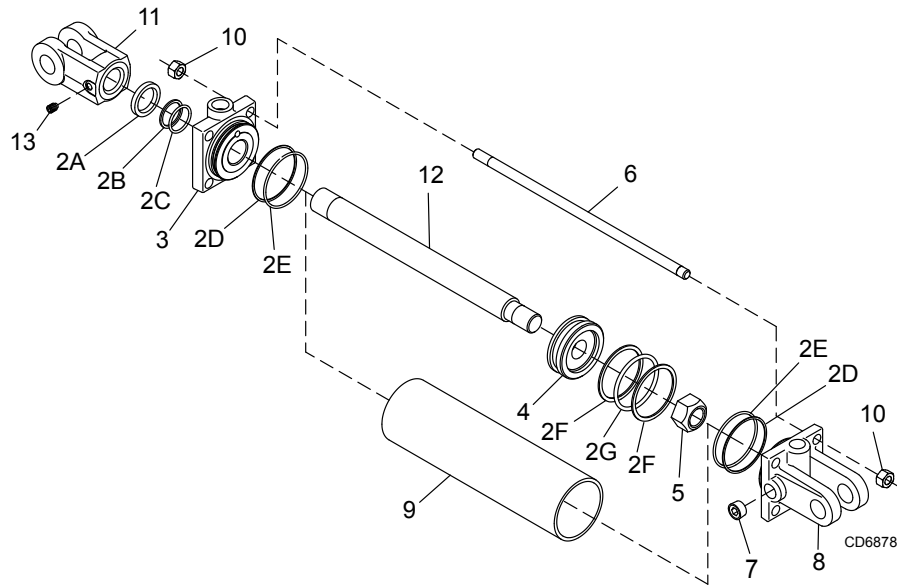


REF	PART	QTY	DESCRIPTION
1	1285	12	1/4 x 1-1/2 cotter pin
2	1863	4	1 SAE flat washer
3	8345	2	Headless pin 1.00 x 4.08
4	8346	1	Headless pin 1.00 x 4.58
5	8347	1	Headless pin 1.00 x 5.08
6	10290	3	1/4 x 1/4 90 elbow 1/16 restrictor
7	10475	1	3-1/2 x 8 hydraulic cylinder with breather - includes 11975 & W11893 (see page 65 for parts breakdown)
8	11817	1	Hose .25 ID x .25 NPT x 230
9	11975	1	1/2 NPT vent plug
10	24098A	1	1-1/4 cylinder stoke control set
11	52201	2	Hose .25 ID x .25 NPT x 264
12	52204	2	Chain & cotter lynch pin assembly
13	52329	2	Headless pin 1.00 x 8.41
14	66511	3	Male coupler ISO 1/2 NPT
15	52234	2	3.5 x 1.25 x 16.0 NPT 8 cylinder
16	617226RP	2	Wing cylinder lockup assembly
17	W8348	2	Headless pin 1.00 x 5.58
18	W11893	6	Adapter 1/4 NPTF 1/2 NPTM
19	1004814	1	Transport Lock-up

64 Parts

MAN1282
(01/22/2026)

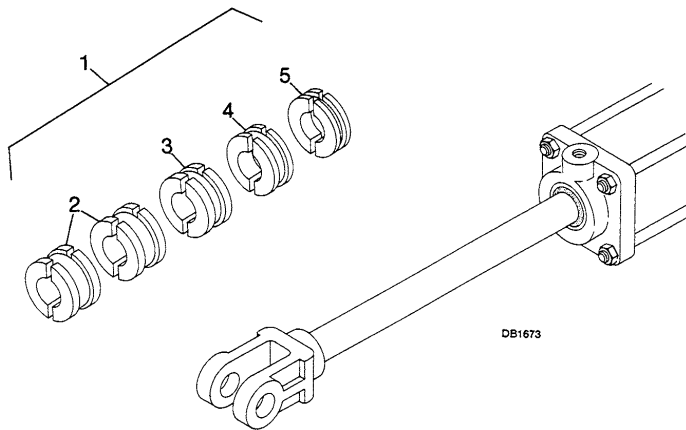
HYDRAULIC CYLINDER - CENTER LIFT



REF	3-1/2 x 8 PART	QTY	DESCRIPTION
1	10475		Complete cylinder
2	23540	1	Seal repair kit (includes items 2A - 2G)
2A	†	1	Wiper seal
2B	†	1	Rod seal
2C	†	1	Rod o-ring
2D	†	2	Cap seal
2E	†	2	Cap o-ring
2F	†	2	Piston seal
2G	†	1	Piston o-ring
3	N/S	1	Cylinder housing - rod end
4	N/S	1	Piston
5	N/S	1	Jam nut

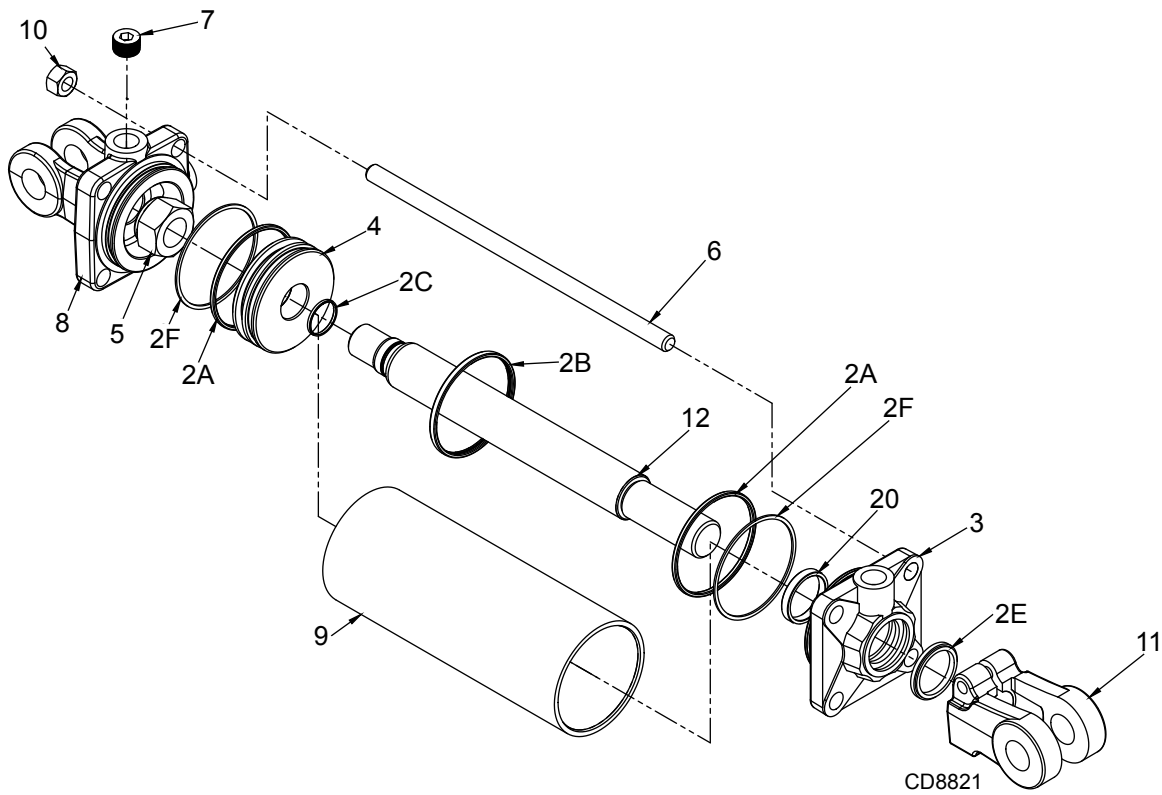
REF	3-1/2 x 8 PART	QTY	DESCRIPTION
6	N/S	4	Cylinder tie rod
7	*	3	1/2 Pipe plug
8	N/S	1	Cylinder housing - butt end
9	N/S	2	Cylinder barrel
10	N/S	8	Tie rod nut
11	N/S	1	Cylinder clevis
12	N/S	1	Cylinder rod
13	*	1	Dog point set screw 3/8 x 3/4
	†		Included in seal kit
	*		Standard hardware, obtain locally
	N/S		Not serviced

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

HYDRAULIC CYLINDERS - WING



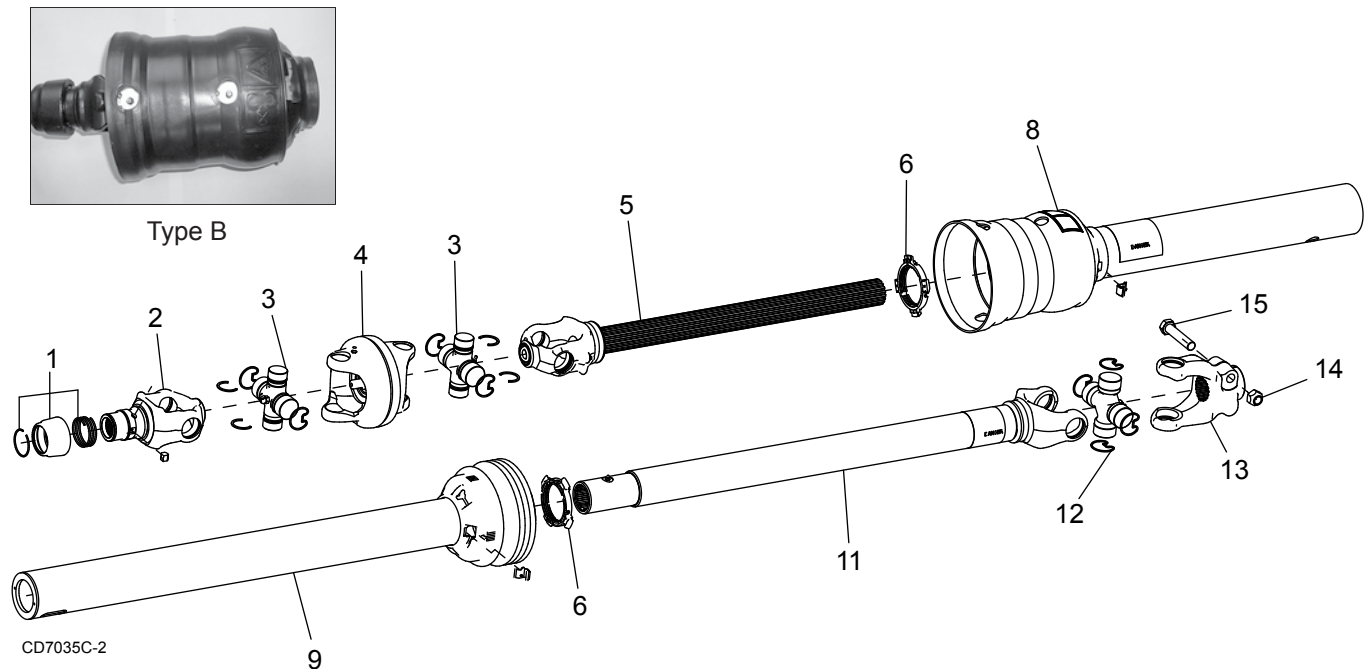
3.5X1.25Ø ROD

REF	PART	QTY	DESCRIPTION
1	52234		Complete cylinder
2	600250	1	Seal kit (includes items 2A-2F)
2A	†	2	Cap o-ring
2B	†	1	Piston seal
2C	†	1	Rod o-ring
2D	†	1	Cap seal
2E	†	1	Wiper seal
2F	†	2	Backup seal
3	N/S	1	Cylinder housing rod end
4	N/S	1	Piston
5	N/S	1	Jam nut
6	N/S	4	Cylinder tie rod
7	*	3	1/2 pipe plug
8	N/S	1	Cylinder housing butt end
9	N/S	1	Cylinder barrel
10	N/S	8	Tie rod nut
11	N/S	1	Cylinder clevis
12	N/S	1	Cylinder rod
	†		Included in seal kit
	*		Standard hardware; obtain locally
	N/S		Not Serviced

66 Parts

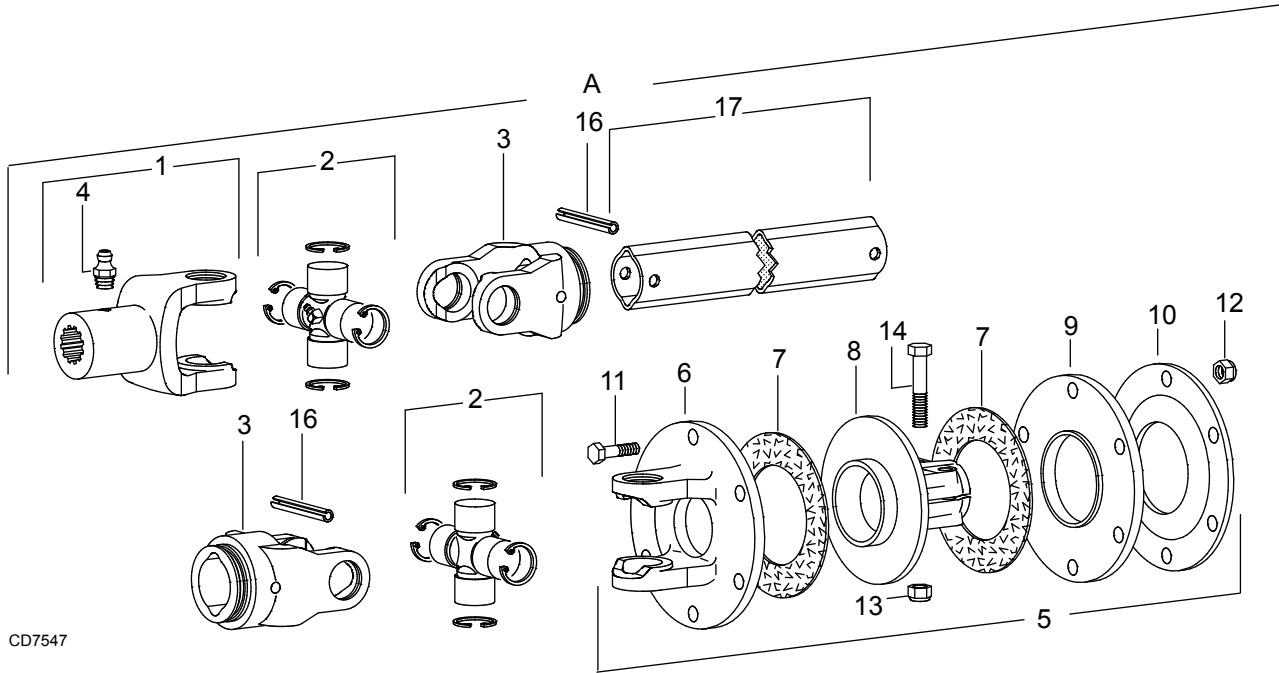
MAN1282
(01/22/2026)

540 RPM & 1000 RPM FRONT CV DRIVE



REF	PART	QTY	DESCRIPTION	REF	PART	QTY	DESCRIPTION
A	1021103RP	1	Complete CV drive (540 RPM)	9A	1021315	1	CV shield inner (540 RPM)
B	1021104RP	1	Complete CV drive (1000 RPM)	9B	1021319	1	CV shield inner (1000 RPM)
C	1021105RP	1	Complete CV drive (1000 RPM, 1-3/4")	9C	1023156	1	CV shield Inner (1000 RPM, 1-3/4")
1	19851	1	Slide lock repair kit	10	33347 †	1	Decal, danger guard missing (see page 13)
1C	19837	1	Slide lock repair kit (1000 RPM, 1-3/4")	11A	1021316	1	Yoke 55R x 36.4 x 1.69 - 20 (540 RPM)
2A	1033103	1	Yoke QD CV 1.375 - 6 (540 RPM)	11B	1021320	1	Yoke 55R x 38.4 x 1.69 - 20 (1000 RPM)
2B	1033104	1	Yoke QD CV 1.75 - 20 (1000 RPM)	11C	1023157	1	Yoke, tube & sleeve 55R x 39.8 x 1.69-20 (1000 RPM, 1-3/4")
2C	1033105	1	Yoke QD CV 1.75 - 20 (1000 RPM, 1-3/4")	12	58765	1	U-Joint cross and bearing kit
3	1033107	2	CV u-joint repair kit Cat 6 55E	13	1023058	1	Yoke, 55R x 5.06 x SP 1.75 - 20
4	1033106	1	CV body with fitting	14	6239 *	1	5/8 NC lock nut
5A	1033113	1	Yoke and shaft CV splined 25.9 (540 RPM)	15	34473 *	1	5/8 NC x 3 HHCS GR5
5B	1033111	1	Yoke and shaft - CV splined 26.6 (1000 RPM)				
5C	1033116	1	Yoke and shaft CVSP lines 30.9 (1000 RPM)		†		Not shown
6	1009065	2	Drive shield bearing kit		HHCS		Hex Head Cap Screw
7	18864 †	1	Decal, danger rotating driveline (see page 12)		*		Standard hardware; obtain locally
8A	1021314	1	CV shield outer (540 RPM)				
8B	1021318	1	CV shield outer (1000 RPM)				
8C	1023155	1	CV shield outer (1000 RPM, 1-3/4")				

CENTER DECK DRIVE ASSEMBLY BW20.51 / BW20.51Q / BW20.61 / BW20.61Q



CD7547

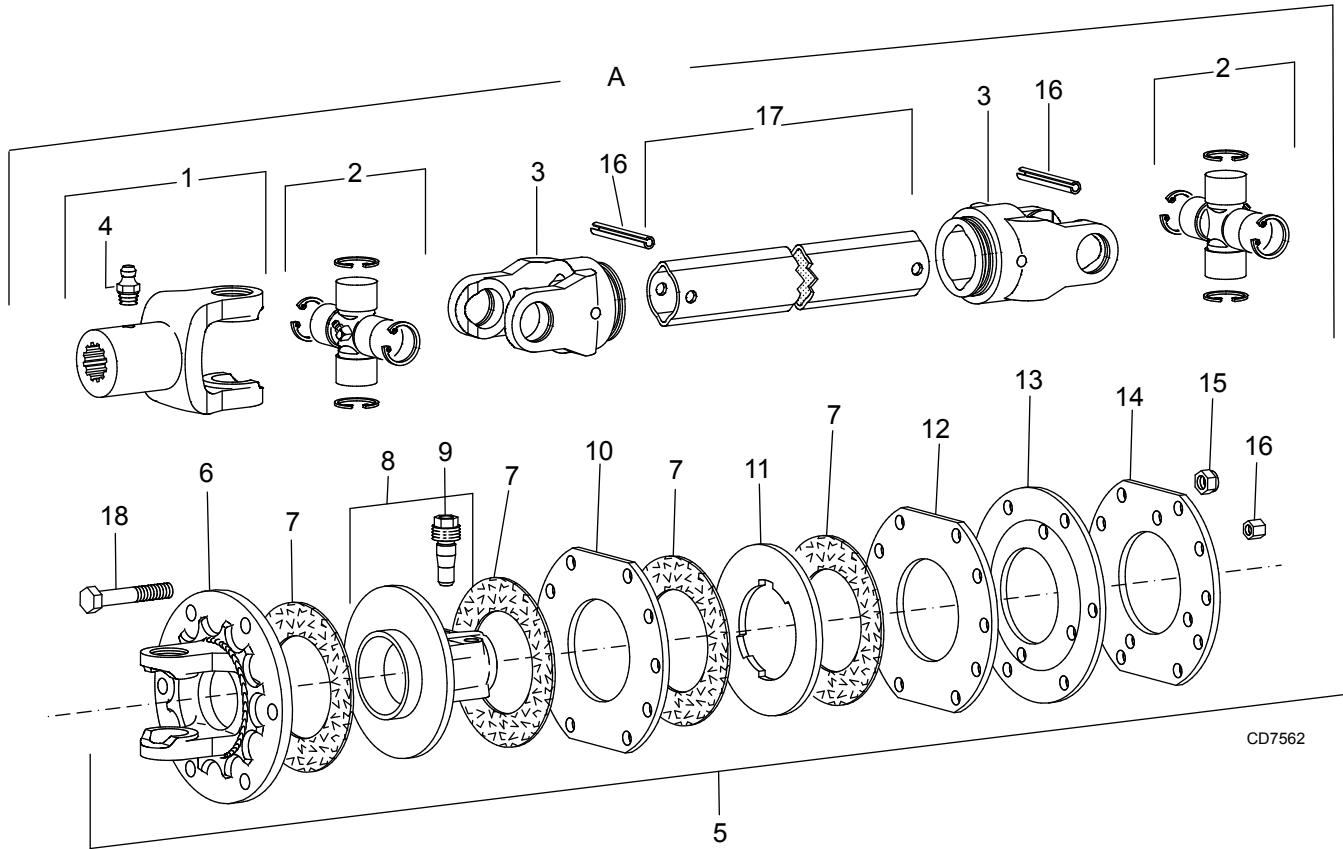
REF	PART	QTY	DESCRIPTION	REF	PART	QTY	DESCRIPTION
A	1027297	1	Complete center drive assembly	10	57439	1	Belleville spring plate
1	1004961	1	Yoke, 1-3/4, 20 spline	11	W57259	6	M10 x 1.5P x 55 mm HHCS 8.8
2	110	2	Cross & bearing kit	12	57260	6	M10 x 1.5P hex lock nut
3	40576	1	Inboard yoke	13	W57261	2	M12 x 1.75P hex lock nut
4	1005521	1	Grease fitting	14	57262	2	M12 x 1.75P x 65 mm cap screw 8.8
5	57416	1	Friction clutch 1340 1-3/4, 20 spline	15	1005508		Clutch repair kit
6	57438	1	Flange yoke	16	40764	2	Spring pin 10 x 60
7	57432	2	Friction disc	17	1019110	1	Outer profile
8	57440	1	Hub, 1-3/4, 20 spline				
9	57434	1	Thrust plate		HHCS		Hex Head Cap Screw

68 Parts

MAN1282
(01/22/2026)

CENTER DECK DRIVE ASSEMBLY

BW20.71 / BW20.71Q / BW13.71 / BW13.71Q / BW13.71QREV

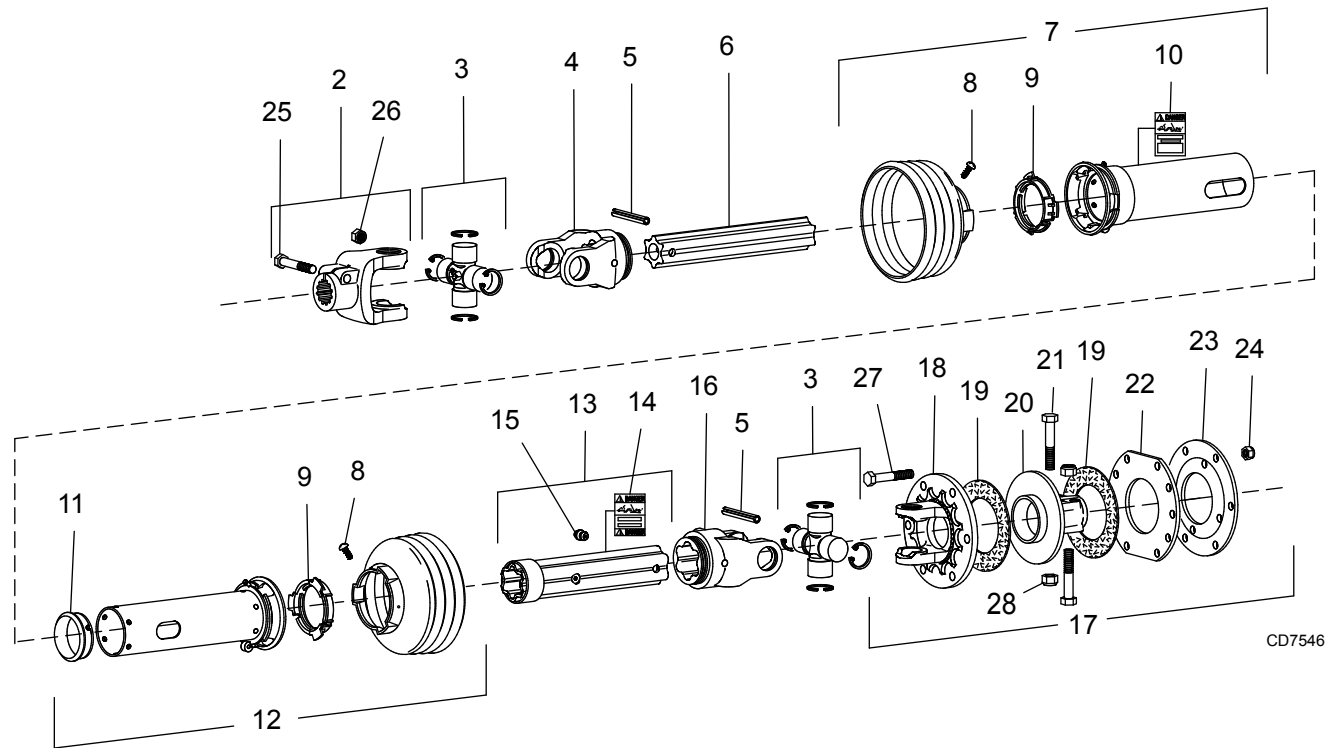


CD7562

REF	PART	QTY	DESCRIPTION	REF	PART	QTY	DESCRIPTION
A	1027299	1	Complete center drive assembly	11	1016491	1	Clutch drive plate
1	1019107	1	Yoke, 1-3/4, 20 spline	12	1016494	1	Thrust plate
2	W38352	2	Cross & bearing kit	13	1016492	1	Belleville spring
3	38353	1	Inboard yoke	14	1016493	1	Backup plate
4	1005521	1	Grease fitting	15	W57261	6	M12 x 1.75P hex lock nut w/ nylon insert
5	1016484	1	Friction clutch 2400 1-3/4, 20 spline	16	1016495	4	M8 x 1.25P hex nut GR10
6	1016489	1	Flange yoke	17	1019110	1	Outer profile
7	57432	4	Friction disc	18	1016496	6	M12 x 1.75P x 85 mm HHCS CL8.8
8	1016490	1	Hub, 1-3/4, 20 spline clutch				
9	1016498	1	Lock assembly		HHCS		Hex Head Cap Screw
10	57443	1	Drive plate				

WING DRIVE ASSEMBLY

BW20.51 / BW20.51Q / BW20.61 / BW20.61Q



CD7546

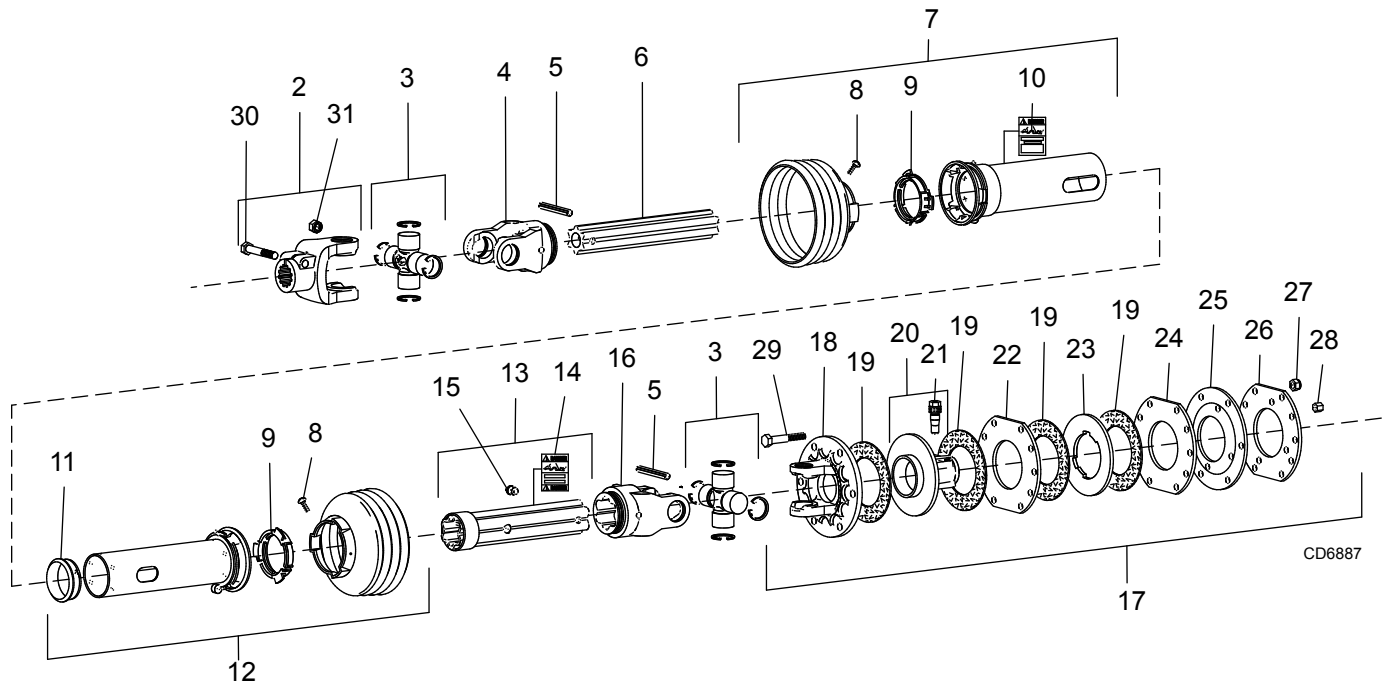
REF	PART	QTY	DESCRIPTION	REF	PART	QTY	DESCRIPTION
1	1045591		Complete wing drive assembly	16	44677	1	Inboard yoke S5
2	1019111	1	Yoke 1-3/4 20 special	17	1019114	1	Clutch (includes 18 thru 24, 27,28)
3	1045581	2	Cross and bearing kit 2400	18	1027217	1	Flange yoke
4	90317352	1	Inboard yoke S4	19	57432	2	Friction disc
5	40764	2	Spring pin 10 x 80	20	57440	1	Hub 1-3/4 20
6	1045594	1	Inner profile S4L	21	57262	2	M12 x 1.75P x 65 mm HHCS 8.8
7	1045592	1	Outer shield	22	57434	1	Thrust plate
8	40778	2	Screw (package of 10)	23	57439	1	Belleville spring plate
9	40766	1	Bearing ring	24	57260	6	M10 x 1.5P hex lock nut
10	18864	1	Decal, danger rotating driveline	25	W307309	2	M12 x 1.75P x 60 mm HHCS 8.8
11	1041679	1	Support bearing	26	58549	2	M12 x 1.75P hex lock nut
12	1045593	1	Inner shield	27	W57259	6	M10 x 1.5P x 55 mm HHCS 8.8
13	1045595	1	Profile and sleeve	28	W57261	2	M12 x 1.75P hex lock nut
14	33347	1	Decal, Danger Guard Missing				
15	40779	1	Grease fitting				
					HHCS		Hex Head Cap Screw

70 Parts

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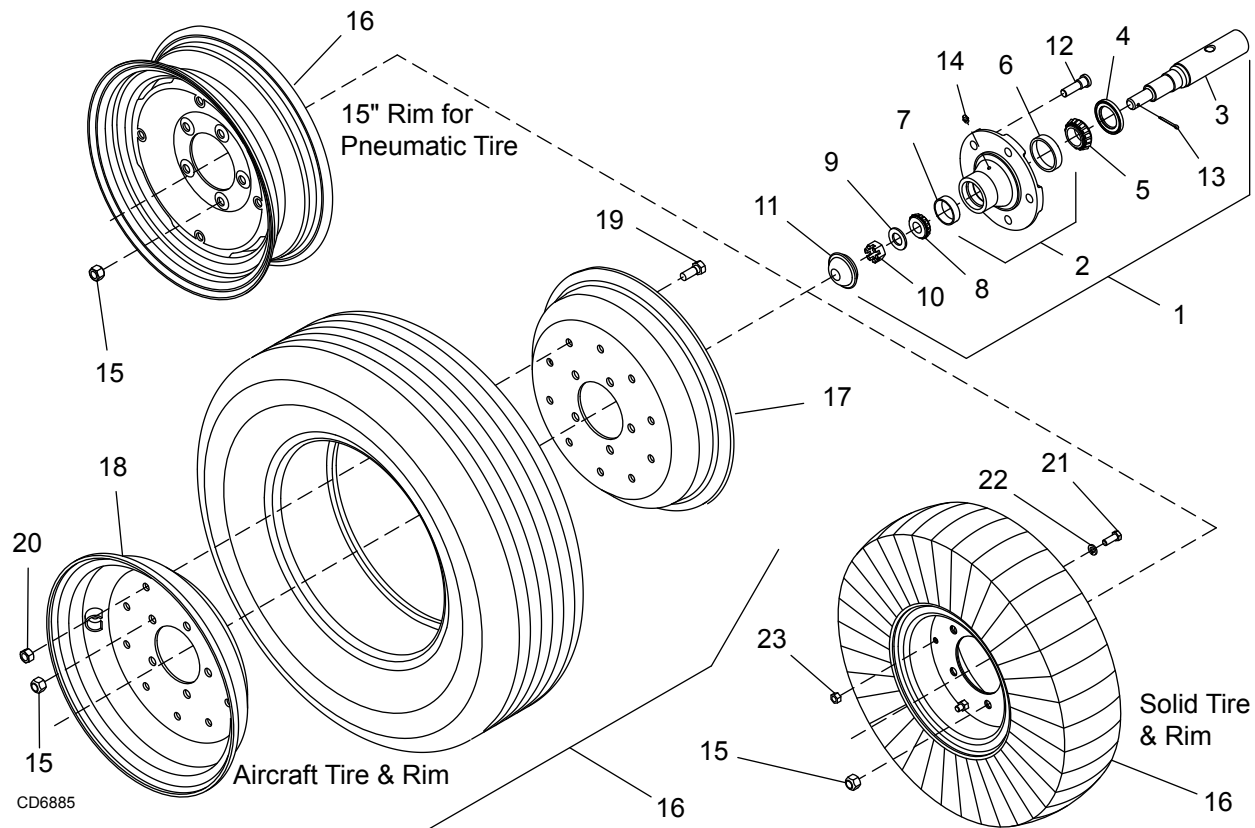
WING DRIVE ASSEMBLY

BW20.71 / BW20.71Q / BW13.71 / BW13.71Q / BW13.71QREV



REF	PART	QTY	DESCRIPTION	REF	PART	QTY	DESCRIPTION
1	1027298	--	Complete wing drive assembly	18	57441	1	Flange yoke
2	1004957	1	Yoke, 1-3/4, 20 spline (includes items 30, 31)	19	57432	4	Friction disc
3	W40566	2	Cross & bearing kit	20	1016490	1	Hub, 1-3/4, 20 spline (includes item 21)
4	40750	1	Inboard yoke	21	1016498	1	Lock assembly
5	40765	2	Spring pin 10 x 90	22	57443	1	Drive plate
6	1029842	1	Inner profile	23	1016491	1	Drive plate
7	1019117	1	Outer guard half (includes items 8, 9, 10)	24	1016494	1	Thrust plate
8	40778	2	Screw	25	1016492	1	Belleville spring
9	40766	2	Bearing ring SC25	26	1016493	1	Backup plate
10	18864	1	Decal, danger rotating driveline	27	W57261	6	M12 x 1.75 hex lock nut w/ nylon insert
11	40767	1	Support bearing	28	1016495	4	M8 x 1.25 hex nut GR10
12	1019118	1	Inner guard half (includes items 8, 9, 11)	29	1016496	6	M12 x 1.75 x 85 mm HHCS PC 8.8
13	1029843	1	Outer profile & sleeve	30	1001042	1	M16 x 2.0 x 90 mm HHCS PC 8.8
14	33347	1	Decal, danger guard missing	31	1005522	1	M16 x 2.0 hex lock nut
15	40779	1	Grease fitting				
16	40751	1	Inboard yoke		HHCS		Hex Head Cap Screw
17	1019109	1	Friction clutch 2500 1-3/4, 20 spline (includes items 18 through 29)				

5-BOLT WHEEL & TIRE ASSEMBLY

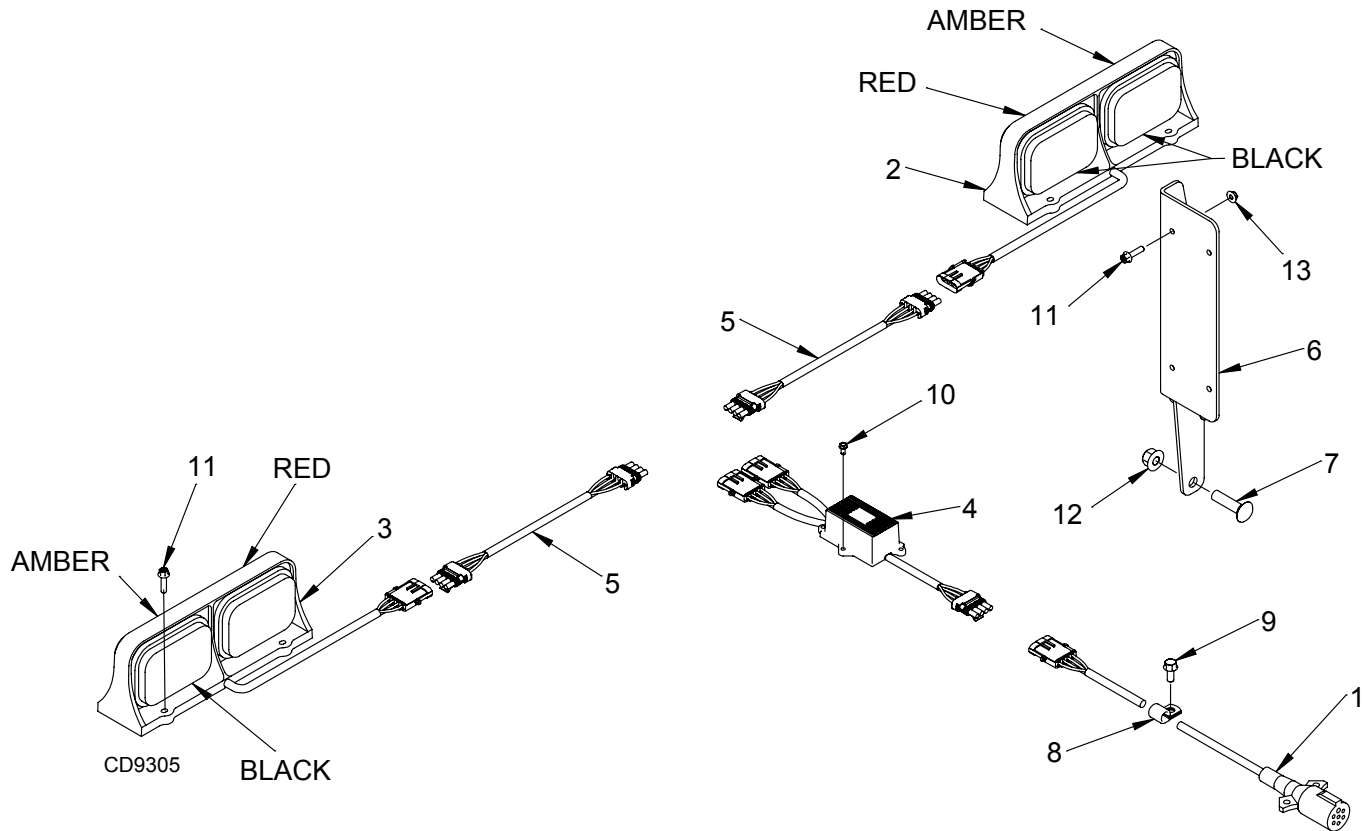


REF	PART	QTY	DESCRIPTION	REF	PART	QTY	DESCRIPTION
1	1017050	1	Heavy hub assembly (includes items 1 through 15)	16	1039976	1	25 x 8 - 14 severe duty ag tire, rim & hardware - 5 bolt -OR-
2	1017034	1	Heavy wheel hub with cups (includes items 6, 7, 14)	16	1039976F	1	25 x 8 - 14 severe duty ag tire, rim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

72 Parts

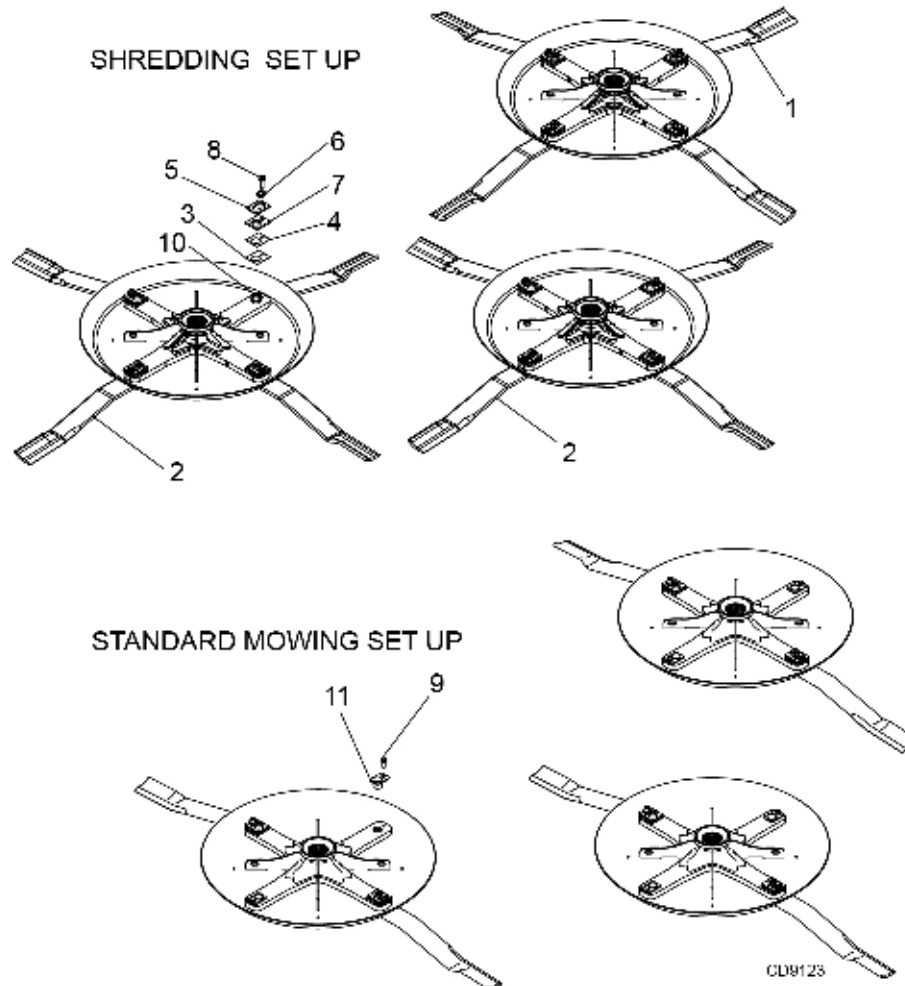
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LIGHT KIT ASSEMBLY



REF	PART	QTY	DESCRIPTION
1	1036887	1	WIRE HARNESS, 16 FT MAIN
2	1040275	1	LED AG COMBO LAMP LH
3	1040276	1	LED AG COMBO LAMP RH
4	1040277	1	AG ENHANCER MODULE
5	1045073	1	HARNESS, WIRE, 3 FT REAR, 2 PCS
6	632852	1	BRACKET, BW13 LIGHT
7	*	2	BOLT CRG 1/2 NC X 2
8	78059	5	CLAMP .50 DIA STEEL CUSHION
9	*	5	BOLT, HEX FLNG 5/16 NC X .75 GR5
10	*	2	SCREW #10NC SELF-TAPPING YD
11	*	8	SCREW, HFS-6 LOBE, 1/4 NCX1.0 GR5, PATCH
12	*	2	NUT, HFN 1/2 NC, CTR LOCK
13	*	4	NUT, HEX FLNG 1/4 NC SRTD
	*		Standard hardware, obtain locally
	HHCS		Hex Head Cap Screw

SHREDDER KIT (OPTIONAL) BW20.61 / BW20.61Q & BW20.71 / BW20.71Q ONLY



REF	PART	QTY	DESCRIPTION
1	8820KT	1	8820 STD blade kit
2	8825KT	2	8825 STD blade kit
3	10520RP	6	18 GA 1-1/2 blade pin shim
4	13946RP	6	20 GA 1-1/2 blade pin shim
5	32603	6	Keyhole plate special
6	32604RP	6	Blade pin lock clip spec
7	1028824RP	6	5/16 thick blade pin spacer
8	1028902	6	HFS 1/2 NC x 1-3/4 GR8
9	1031225	6	HFS .50 NC x 1.25 GR5
10	1045034RP	6	Blade pin drl 2.39
11	1045820	6	WA, pin 1.50 x 1.13

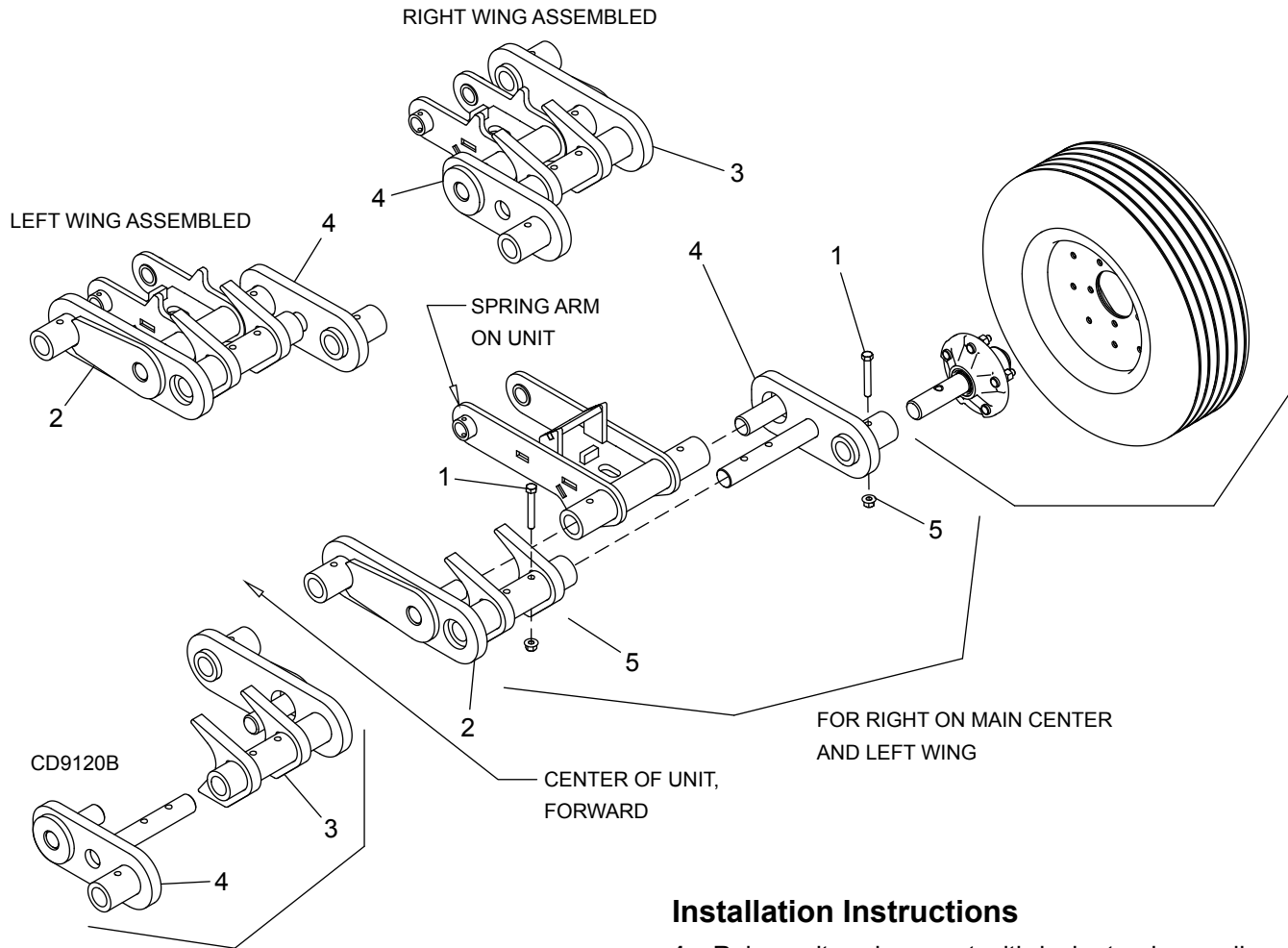
Installation Instructions

- Install supplied shred kit blades as shown, using shims to obtain no more than .25" movement at blade tip. Stack shims as shown on **page 22**.
- To return to brush cutting, remove one opposing set of blades and hardware from each crossbar.
- To protect unused hole for following season: coat tab pin 1045820 with Never-Seez™, insert into hole, and secure with screw 1031225.
- For lower horsepower shredding, order 3 sets of flat double edge blade kits 19162KT.

74 Parts

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TANDEM ACCESSORY (OPTIONAL)

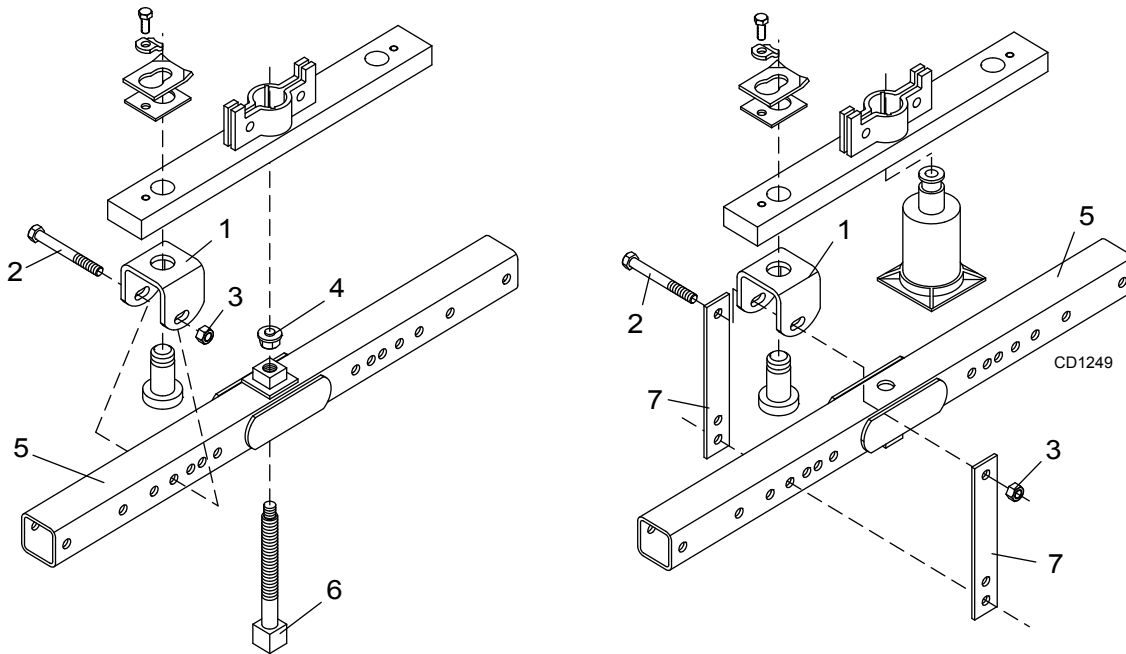


REF	PART	QTY	DESCRIPTION
1	1637	8	HHCS 1/2 NC x 3-1/2 GR5 ZP
2	617144RP	1	WA, right tandem arm, BW20
3	617145RP	1	WA, left tandem arm, BW20
4	617146RP	2	WA, tandem arm, BW20
5	1045624	8	HFN nut 1/2 NC, Dri-Loc patch
	HHCS		Hex head cap screw
	•		Standard hardware; obtain locally

Installation Instructions

1. Raise unit and support with jack stands per diagram on **page 21** to take pressure off of tires.
2. Remove wheel assembly from right spring arm hub assembly from center frame.
3. Remove axle hub from right spring arm.
4. Install drive type grease fitting in fitting in four holes in spring arm.
5. Install tandem arm 617144 as shown.
6. Install tandem arm 617146 as shown, sliding both axles into receiving tubes. Fasten with screw 1637 and nuts 1045624 provided.
7. Install axle/hub 1017050 and secure with screw 3489 and nut 1045624, reused or purchased separately as needed.
8. Install wheel assembly.
9. Repeat for left spring arm of center frame, using 617145 in place of 617144, installed from the center.
10. Repeat for wings if purchased, noting orientation of parts to locate wheels in the correct position. Outer wheel should be forward of inner wheel on both wings.

CROSSBAR PULLER (OPTIONAL)

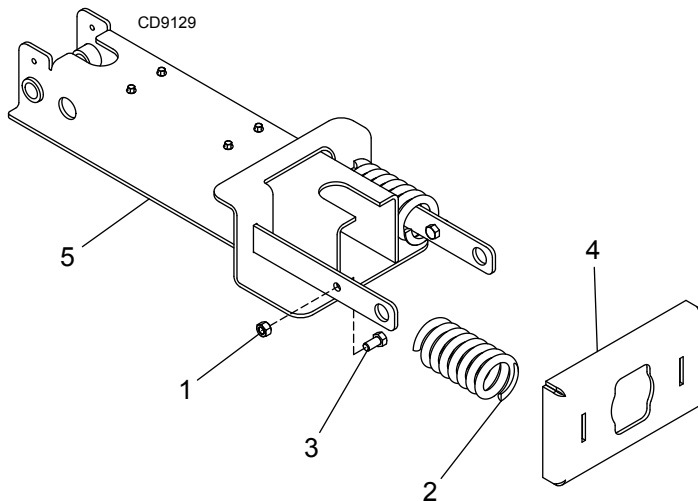


REF	PART	QTY	DESCRIPTION
A	8811	1	Crossbar puller, complete
1	19914RP	2	Crossbar puller clevis
2	3097 *	4	5/8 NC x 4-1/2 HHCS GR5
3	230 *	4	5/8 NC hex nut
4	24879RP	1	Crossbar puller pad assembly

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

* Standard hardware, obtain locally

WING PUSHOFF (OPTIONAL)



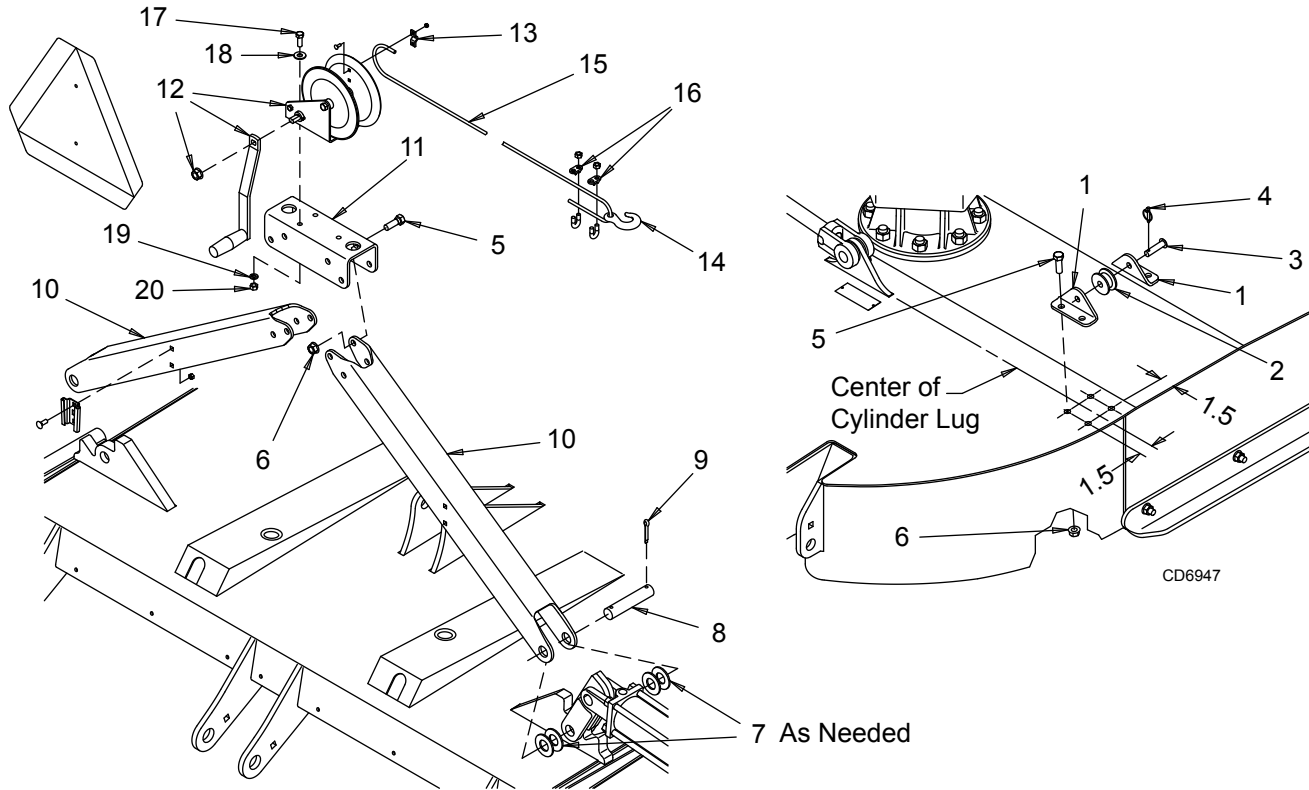
REF	PART	QTY	DESCRIPTION
1	765	2	Lock nut 1/2 NC ZP
2	13316	2	Compression spring 3.00 .50 6.2
3	25475	2	HHCS 1/2 NC x 1 GR5 ZP ful thd
4	609589RP	1	Wing push off lock channel
5	611459RP	1	Wing push off assembly

HHCS Hex head cap screw
* Standard hardware, obtain locally

76 Parts

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WINCH KIT (OPTIONAL)



REF	PART	QTY	DESCRIPTION
A	1019456	-	Winch kit, complete
1	52478	4	Idler bracket
2	6696	2	Chain idler casting
3	409	2	Clevis pin, 1/2 x 2
4	22411	2	Klik pin, 3/16 x 1
5	3379 *	-	HHCS, 1/2 NC x 1-1/2 GR5
6	11900 *	-	Lock nut, 1/2 NC flanged
7	1863 *	-	Washer, 1" SAE flat
8	1008325	2	Headless pin, 1 x 4 drilled
9	1266 *	-	Cotter pin, 3/16 x 1-1/2
10	1027150	2	Channel .25 x 2.56 x 2.75 x 38.48
11	1027199	1	Channel, 3.12 x 3.25 x 10.00
12	12612	1	Gear winch 5.1 to 1
13	12642	1	Winch cable clamp kit
14	11790	1	C-Hook, 1/4 cable
15	52479	1	Cable, 1/4" x 24-ft
16	11789	2	Clip, 1/4 cable
17	839 *	-	HHCS, 3/8 NC x 1 GR5
18	565 *	-	Washer, 3/8 flat
19	838 *	-	Washer, 3/8 lock
20	835 *	-	Hex nut, 3/8 NC plated

• Standard hardware; obtain locally

Winch Kit Operation

1. Move cutter so wing is on the upward slope of a ditch to aid wing lift with the winch.
2. Unwind cable and remove roller (2).
3. Place cable around roller (2) and reinstall using pin (3) and klik pin (4).
4. Attach cable hook into large hole in winch assembly bracket (11) and raise wing.
5. Install transport lock pin before moving unit.

NOTES

78 *Parts*

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BOLT TORQUE CHART

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

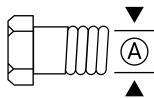
Fasteners must always be replaced with the same grade as specified in the manual parts list.

Always use the proper tool for tightening hardware: SAE for SAE hardware and Metric for metric hardware. Make sure fastener threads are clean and you start thread engagement properly.

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

SAE SERIES TORQUE CHART

SAE Bolt Head Identification



SAE Grade 2
(No Dashes)



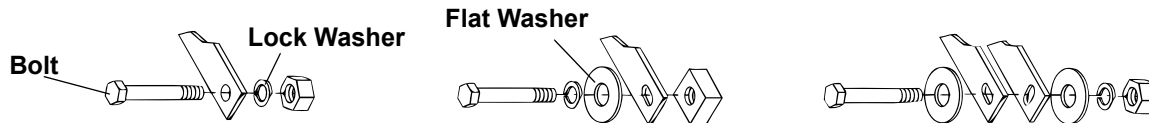
SAE Grade 5
(3 Radial Dashes)



SAE Grade 8
(6 Radial Dashes)

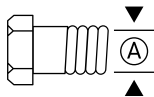
Ⓐ	Wrench Size	Marking on Head					
		SAE 2		SAE 5		SAE 8	
		lbs-ft	N-m	lbs-ft	N-m	lbs-ft	N-m
1/4"	7/16"	6	8	10	13	14	18
5/16"	1/2"	12	17	19	26	27	37
3/8"	9/16"	23	31	35	47	49	67
7/16"	5/8"	36	48	55	75	78	106
1/2"	3/4"	55	75	85	115	120	163
9/16"	13/16"	78	106	121	164	171	232
5/8"	15/16"	110	149	170	230	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

TYPICAL WASHER INSTALLATIONS



METRIC SERIES TORQUE CHART

Metric Bolt Head Identification



Metric
Grade 8.8



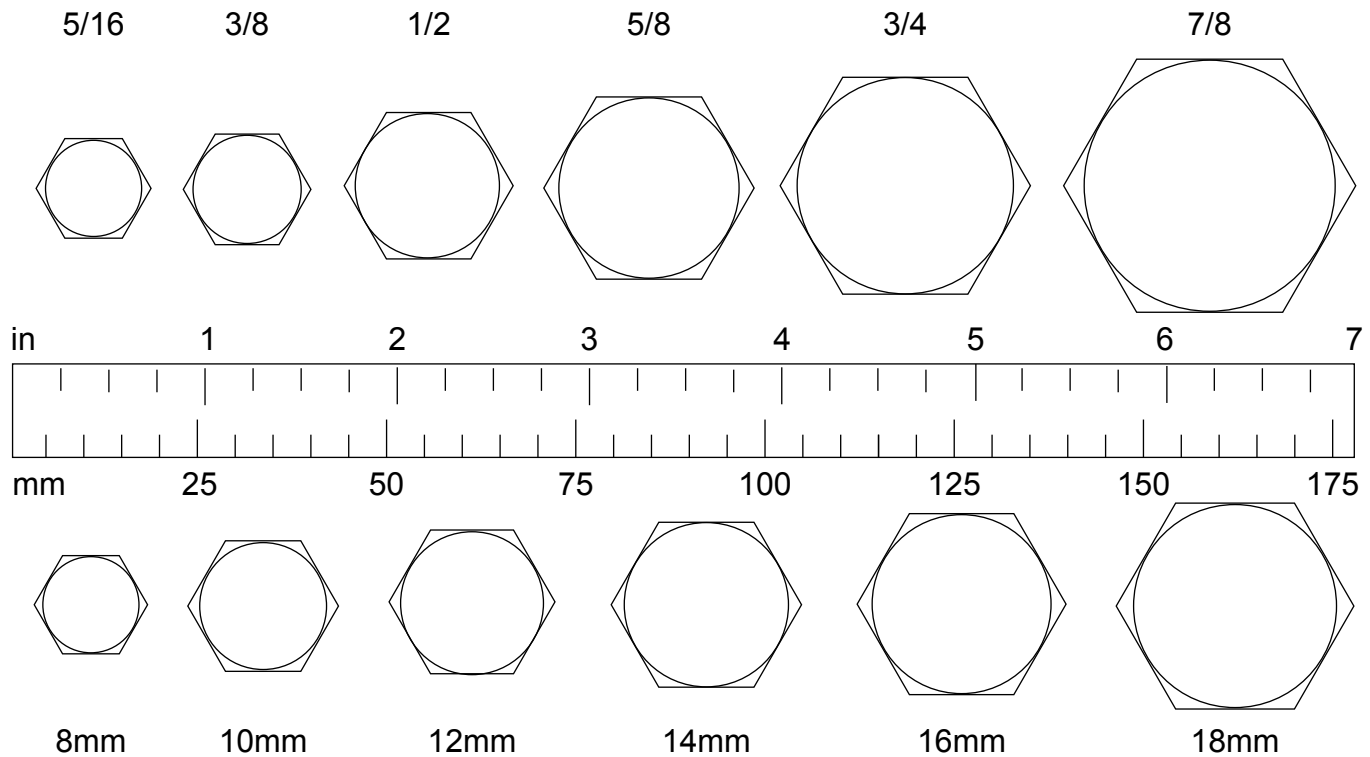
Metric
Grade 10.9

Ⓐ	Wrench Size	Marking on Head								Ⓐ
		Coarse Thread				Fine Thread				
		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

BOLT SIZE CHART

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

SAE BOLT THREAD SIZES



METRIC BOLT THREAD SIZES

ABBREVIATIONS

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

PART NO.
MAN1282

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