

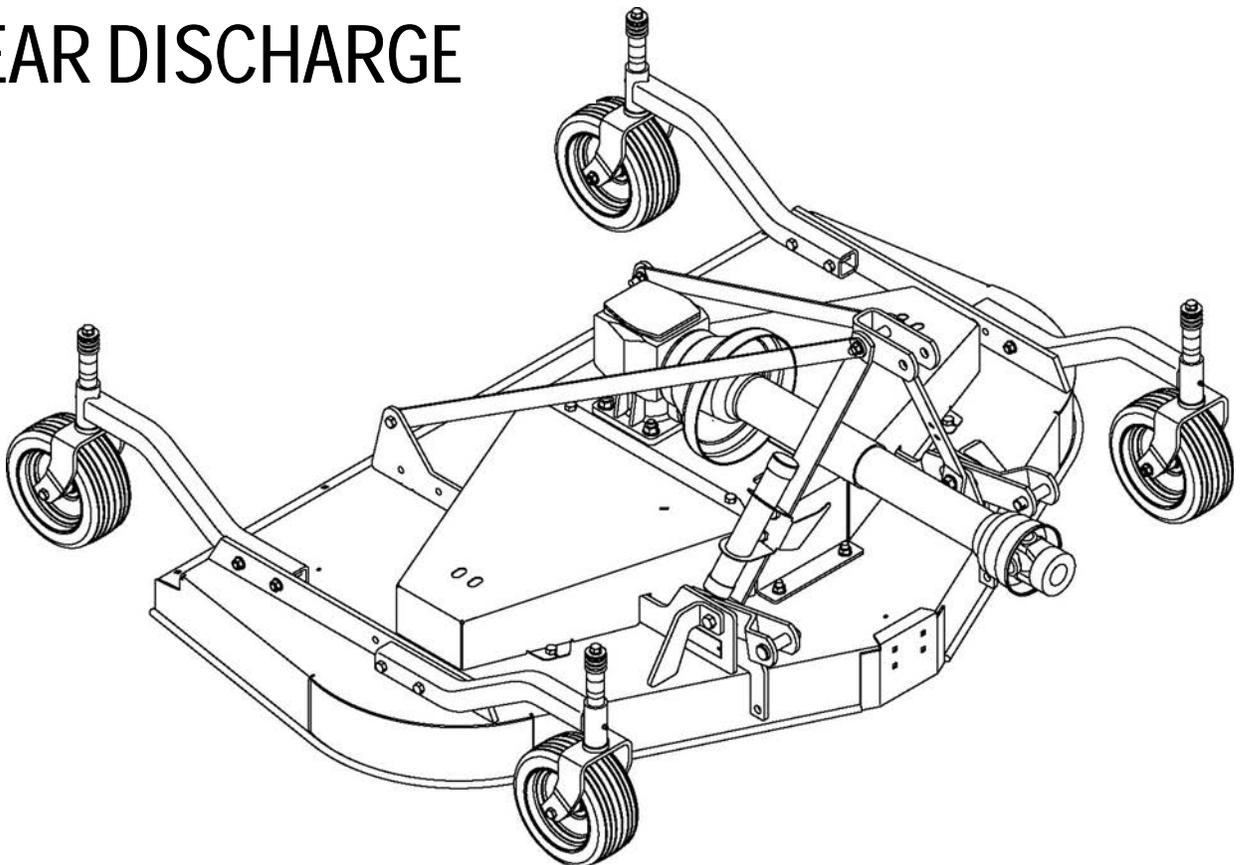
GROOMING MOWERS

GM1060

GM1072

GM1084

REAR DISCHARGE



FRONTIERTM

TO THE DEALER:

Assembly and proper installation of this product is the responsibility of the Frontier dealer. Read manual instructions and safety rules. Make sure all items on the Dealer's Pre-Delivery and Delivery Check Lists in the Operator's Manual are completed before releasing equipment to the owner.

TO THE OWNER:

Read this manual before operating your Frontier 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 the adjustment and operating procedures before attempting to operate. Replacement manuals can be obtained from your selling dealer.

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

Use only genuine Frontier 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**

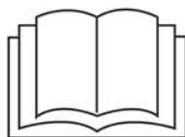
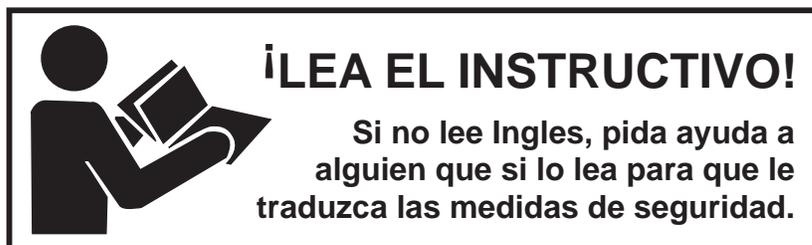
Is used to address practices not related to physical injury.

NOTE

Indicates helpful information.

TABLE OF CONTENTS

INTRODUCTION	2
SPECIFICATIONS	4
GENERAL INFORMATION	4
SAFETY RULES	5-7
SAFETY DECALS	8-9
OPERATION	10
OWNER SERVICE	16
TROUBLESHOOTING	20
DEALER SERVICE	22
ASSEMBLY	29
DEALER CHECK LISTS	33
PARTS INDEX	35
BOLT TORQUE CHART	44
BOLT SIZE CHART & ABBREVIATIONS	45
INDEX	46



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

	<u>GM1060</u>	<u>GM1072</u>	<u>GM1084</u>
3-Point Hitch	Category 1	Category 1	Category 1
Cutting Width	60"	72"	84"
Cutting Height Range	1" - 5-1/2"	1" - 5-1/2"	1" - 4-1/4"
Operating Weight with Chain Shielding	653 lbs	719 lbs	830 lbs
Blade Speed (feet per minute)	18,100	18,000	17,900
Blade Speed (RPM)	3,295	2,748	2,329
Blade Spindles	3	3	3
Number of Blades	3	3	3
Universal Drive Series	ASAE Cat. 3	ASAE Cat. 3	ASAE Cat. 3
Caster Wheels	3.25 x 10	3.25 x 10	4.00 x 10
Tractor PTO Speed RPM	540	540	540
Recommended Maximum Tractor Horsepower	60	60	60
Mower Frame Thickness	8 GA	8 GA	8 GA
Implement Code for Tractor Ballast	37	43	53

GENERAL INFORMATION

 **WARNING**

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

The purpose of this manual is to assist you in operating and maintaining your mower. 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. However, 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 tractor facing the direction of forward travel.

SAFETY RULES



ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!



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

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

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

TRAINING

- Safety instructions are important! Read all attachment and power unit manuals; follow all safety rules and safety decal information. (Replacement manuals and safety decals are available from your dealer.) Failure to follow instructions or safety rules can result in serious injury or death.
- Know your controls and how to stop engine and attachment quickly in an emergency.
- If you do not understand any part of this manual and need assistance, see your dealer.
- Operators must be instructed in and be capable of the safe operation of the equipment, its attachments, and all controls. Do not allow anyone to operate this equipment without proper instructions.
- Never allow children or untrained persons to operate equipment.

PREPARATION

- Check that all hardware is properly installed. Always tighten to torque chart specifications unless instructed otherwise in this manual.
- Always wear relatively tight and belted clothing to avoid getting caught in moving parts. Wear sturdy, rough-soled work shoes and protective equipment for eyes, hair, hands, hearing, and head; and respirator or filter mask where appropriate.
- Make sure attachment is properly secured, adjusted, and in good operating condition.
- Make sure spring-activated locking pin or collar slides freely and is seated firmly in tractor PTO spline groove.
- 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.

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

OPERATION

- Full chain shielding must be installed when operating in populated areas or other areas where thrown objects could injure people or damage property.
 - If this machine is not equipped with full chain shielding, operation must be stopped when anyone comes within 300 feet (92 m).
 - This shielding is designed to reduce the risk of thrown objects. The mower deck and protective devices cannot prevent all objects from escaping the blade enclosure in every mowing condition. It is possible for objects to ricochet and escape, traveling as much as 300 feet (92 m).
- Inspect and clear area of stones, branches, or other hard objects that might be thrown, causing injury or damage.

(Safety Rules continued on next page)



SAFETY RULES

ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!



(Safety Rules continued from previous page)

- Never direct discharge toward people, animals, or property.
- Keep bystanders away from equipment.
- Do not operate or transport equipment while under the influence of alcohol or drugs.
- Operate only in daylight or good artificial light.
- Keep hands, feet, hair, and clothing away from equipment while engine is running. Stay clear of all moving parts.
- Always comply with all state and local lighting and marking requirements.
- Never allow riders on power unit or attachment.
- Always sit in power unit seat when operating controls or starting engine. Securely fasten seat belt, place transmission in neutral, engage brake, and ensure all other controls are disengaged before starting power unit engine.
- Operate tractor PTO at 540 RPM. Do not exceed.
- Look down and to the rear and make sure area is clear before operating in reverse.
- Do not operate or transport on steep slopes.
- Do not stop, start, or change directions suddenly on slopes.
- Use extreme care and reduce ground speed on slopes and rough terrain.
- Watch for hidden hazards on the terrain during operation.
- Stop power unit and implement immediately upon striking an obstruction. Dismount power unit, using proper procedure. Inspect and repair any damage before resuming operation.

TRANSPORTATION

- Use additional caution and reduce speed when under adverse surface conditions, turning, or on inclines.
- Do not operate PTO during transport.
- A minimum 20% of tractor and equipment weight must be on the tractor front wheels when attachments are in transport position. Without this weight, front tractor wheels could raise up resulting in loss of steering. The weight may be attained with front wheel weights, ballast in tires or front tractor weights. Weigh the tractor and equipment. Do not estimate.

- Do not operate or transport on steep slopes.
- Do not operate or transport equipment while under the influence of alcohol or drugs.
- Always comply with all state and local lighting and marking requirements.
- Never allow riders on power unit or attachment.

MAINTENANCE

- Before 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 modify or alter or permit anyone else to modify or alter the equipment or any of its components in any way.
- Always wear relatively tight and belted clothing to avoid getting caught in moving parts. Wear sturdy, rough-soled work shoes and protective equipment for eyes, hair, hands, hearing, and head; and respirator or filter mask where appropriate.
- Make sure attachment is properly secured, adjusted, and in good operating condition.
- Keep all persons away from operator control area while performing adjustments, service, or maintenance.
- Make certain all movement of equipment components has stopped before approaching for service.
- 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.
- Frequently check blades. They should be sharp, free of nicks and cracks, and securely fastened.

(Safety Rules continued on next page)

SAFETY RULES



ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!



(Safety Rules continued from previous page)

- Do not handle blades with bare hands. Careless or improper handling may result in serious injury.
- Your dealer can supply genuine replacement blades. Substitute blades may not meet original equipment specifications and may be dangerous.
- Tighten all bolts, nuts, and screws to torque chart specifications. Check that all cotter pins are installed securely to ensure equipment is in a safe condition before putting unit into service.
- Make sure all safety decals are installed. Replace if damaged. (See Safety Decals section for location.)

- Make sure shields and guards are properly installed and in good condition. Replace if damaged.
- Wear gloves when installing belt. Be careful to prevent fingers from being caught between belt and pulley.
- Use care when installing or removing belt from spring-loaded idler. Springs store energy when extended and, if released suddenly, can cause personal injury.

STORAGE

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





SAFETY & INSTRUCTIONAL DECALS

ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!



Replace Immediately If Damaged!

! 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-C

1 - 5WP15503

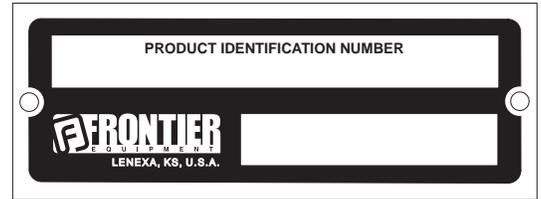
! DANGER

SHIELD MISSING

DO NOT OPERATE
PUT SHIELD ON

18867-B

2 - 5WP18867



3 - Serial Number Plate

4 - 5WP18866

! WARNING

DO NOT EXCEED PTO SPEED OF 540 RPM

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

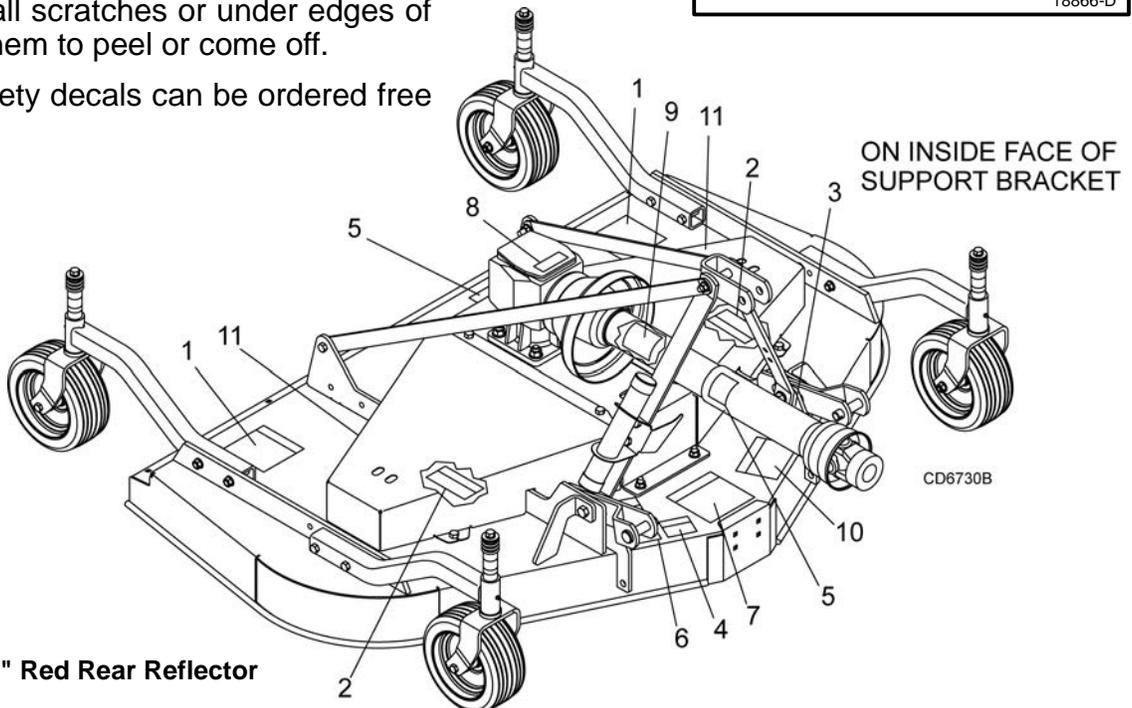
18866-D

BE CAREFUL!

Use a clean, damp cloth to clean safety decals.

Avoid spraying too close to decals when using a pressure washer; high-pressure water can enter through very small scratches or under edges of decals causing them to peel or come off.

Replacement safety decals can be ordered free from your dealer.



11 - 5WP57123 9" Red Rear Reflector

(Safety Decals continued on next page)



SAFETY & INSTRUCTIONAL DECALS

ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!

Replace Immediately If Damaged!



(Safety Decals continued from previous page)

! DANGER

**ROTATING DRIVELINE
CONTACT CAN CAUSE DEATH
KEEP AWAY!**

DO NOT OPERATE WITHOUT -

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

18864-C

5 - 5WP18864

! WARNING

CRUSHING AND PINCHING HAZARD

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

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

1003751-A

10 - 5WP1003751

! DANGER

**GUARD MISSING.
DO NOT OPERATE.**

! DANGER

**GUARD MISSING.
DO NOT OPERATE.**

33347E

! DANGER

9 - 5WP33347

! DANGER

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

1004114

8 - 5WP1004114

6 - 5WP1002423

! WARNING

TO AVOID SERIOUS INJURY OR DEATH:

- Read Operator's Manual before operating, servicing or repairing equipment. Follow all safety rules and instructions. (Manuals are available from your selling dealer.)
- Never allow riders.
- Keep bystanders away from equipment during operation.
- Operate from tractor seat only.
- Keep all shields in place and in good condition.
- Lower equipment to ground, stop engine, remove key and set brake before dismounting tractor.
- Never allow children or untrained persons to operate equipment.
- Do not transport towed or semi-mounted units over 20 MPH.

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

1002423-B

7 - 5WP18865

! WARNING

FALLING OFF CAN RESULT IN BEING RUN OVER.

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

RAISED EQUIPMENT CAN DROP AND CRUSH.

- Before working underneath, follow all instructions and safety rules in operator's manual and securely block up all corners of equipment with jack stands.
- Securely blocking prevents equipment dropping from hydraulic leak-down, hydraulic system failures or mechanical component failures.

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

18865-C

OPERATION

The operator is responsible for the safe operation of the mower. The operator must be properly trained. Operators should be familiar with the mower, the tractor, and all safety practices before starting operation. Read the safety rules and safety decals on page 5 to page 9.

This mower is designed for lawn and grass mowing. It is not designed for rough conditions or heavy weed mowing. It is equipped with suction type blades for best results in lawn mowing.

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

! DANGER

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

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

! WARNING

- Never allow children or untrained persons to operate equipment.
- Keep bystanders away from 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 implement immediately upon striking an obstruction. Dismount power unit, using proper procedure. Inspect and repair any damage before resuming operation.

! CAUTION

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

TRACTOR STABILITY

! WARNING

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

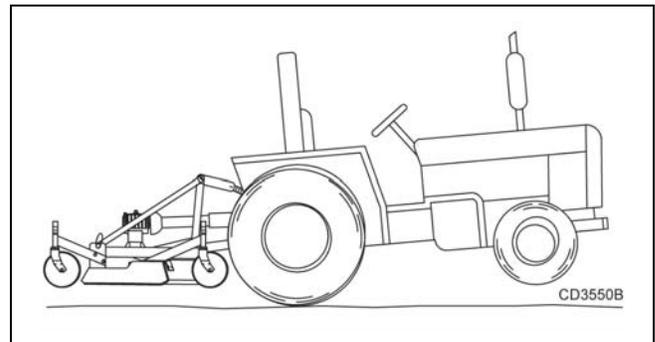


Figure 1. Tractor Stability

ATTACHING MOWER TO TRACTOR

! WARNING

■ Make sure spring-activated locking pin or collar slides freely and is seated firmly in tractor PTO spline groove.

The standard 1-3/8" 6B-spline driveline with a QD yoke is used to connect the mower to the tractor.

1. Attach the mower hitch pins to the lower tractor lift arms and secure.
2. Attach tractor top link (1), Figure 2, to mower top link bracket attachment point A. Connect the driveline to the tractor PTO shaft.

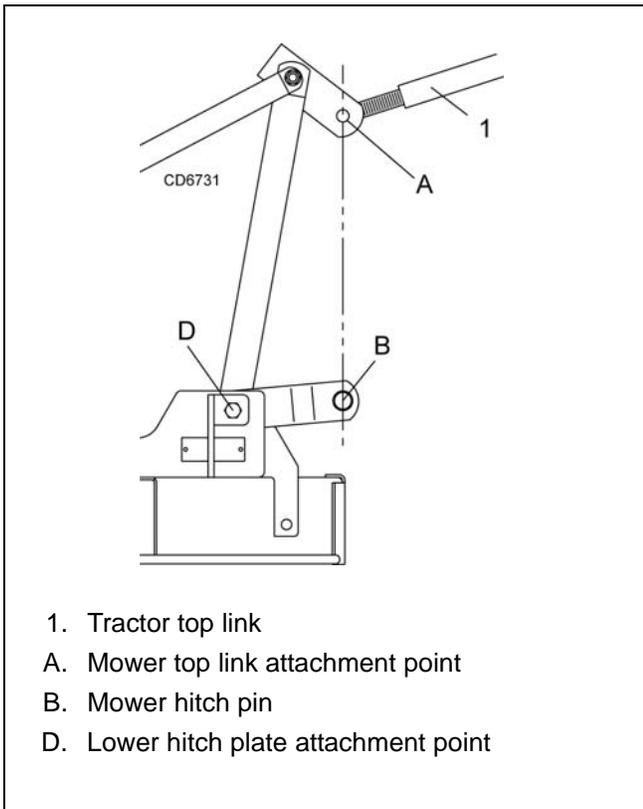


Figure 2. Attachment Points

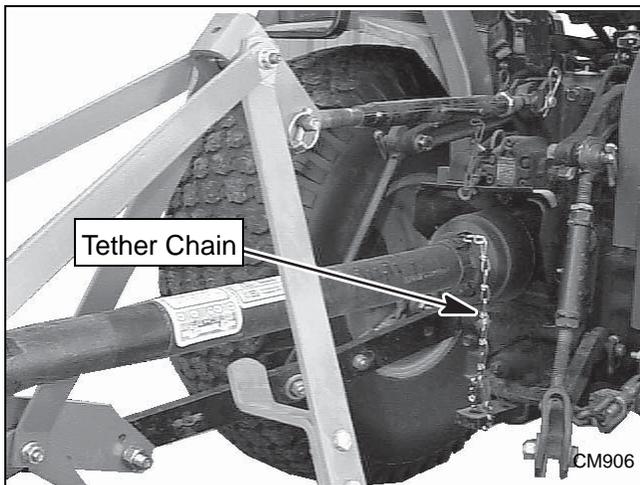


Figure 3. Attaching Mower to Tractor

3. Attach tether chain to tractor drawbar (Figure 3).
4. Adjust the tractor lower 3-point arm anti-sway devices to prevent mower from swinging side to side during transport.

CUTTING HEIGHT ADJUSTMENT

⚠ WARNING

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

NOTICE

■ Avoid low cutting heights. Striking the ground with blades produces one of the most damaging shock loads a mower can encounter. Allowing blades to contact ground repeatedly will cause damage to mower and drive.

1. Level mower from side to side. Check by measuring from mower frame to the ground at each deck rail.
2. Verify that the same amount of spacers are under all caster arms.
3. Loosen cap screws that attach caster arm assembly to deck.
4. Set mower on the ground.
5. Retighten cap screws. This equalizes the clearance in the bolt holes.
6. Adjust front of mower level with or slightly lower than the rear to obtain best mowing results.
7. Control cutting height by adjusting front and rear caster wheels.
8. To raise rear of mower, move caster adjustment spacers under rear caster arms. (See Figure 5.)
9. To raise front of mower, move spacers under front caster wheel arms. (See Figure 5.)

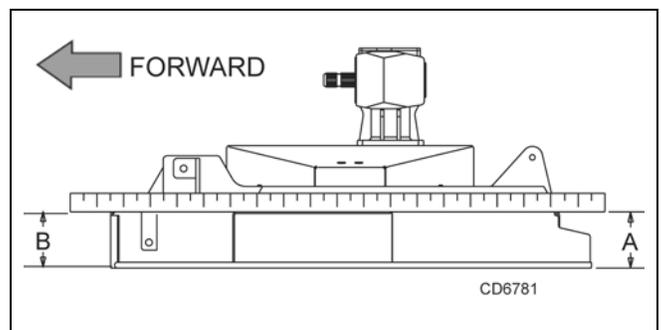


Figure 4. Cutting Height Adjustment

Remember, measurement at location A (Figure 4) should not be less than location B and should not be over 1/2" greater than location B.

SPACERS REQUIRED UNDER CASTER ARM PIVOT TUBE				
Cut Height	1/2" Spacer	3/4" Spacer	1" Spacer	1-1/4" *Spacer (Spring)
1"				
1-1/2"	1			
2"			1	
2-1/2"	1		1	
3"			2	
3-1/2"	1		2	
4"	*	1	1	1
4-1/4"	1	1	2	
4-1/2"	*	1	1	1
5"	*	1	2	1
5-1/2"	*	1	2	1

* GM1060 and GM1072 only

Adjust tractor top link so mower is level between caster wheel and ground (dimension C), Figure 7. This will allow the mower to follow ground contour.

The mower has three lower hitch plate attachment points (D), Figure 6. It may be necessary to change the mower hitch plate attachment point to obtain proper tire clearance and/or lift height.

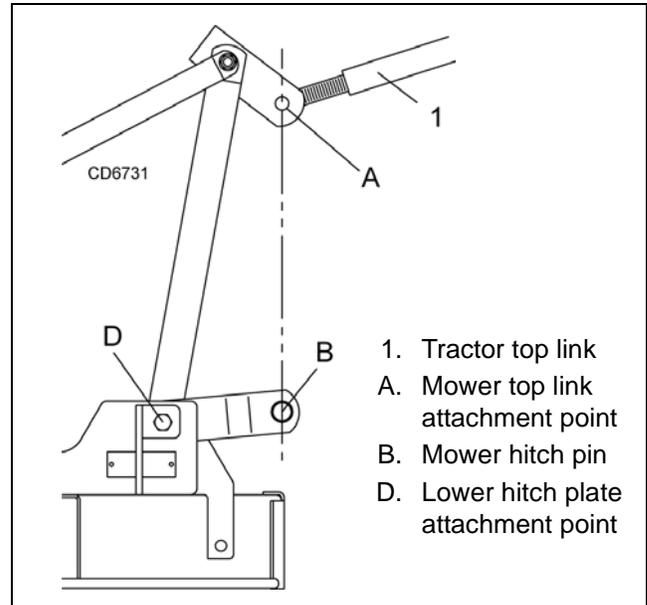


Figure 6. Top Link Adjustment

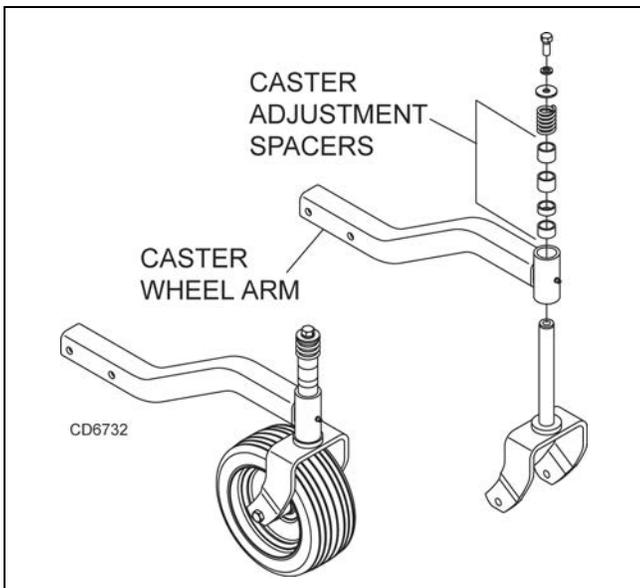


Figure 5. Height Adjustment with Caster Arm Spacers

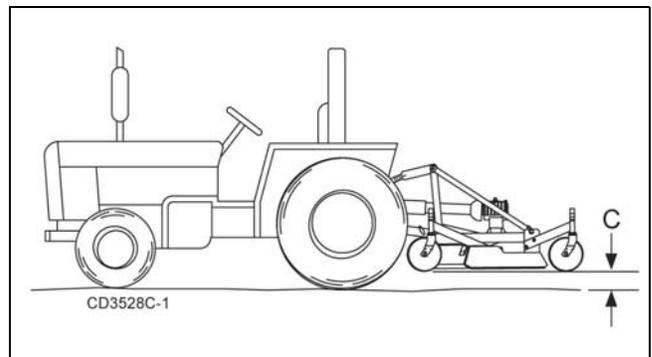


Figure 7. Caster Wheel Distance

FRONT CASTER ARM CONFIGURATION

For GM1060 & GM1072 only

The front casters can be set in two positions. Figure 8 shows the two possible configurations for the GM1060 and GM1072 front caster arms.

- The inner position allows the outside edge of the mower to be used for trimming under shrubs or fences.
- The outer position provides the most clearance for rear tractor tire interference.

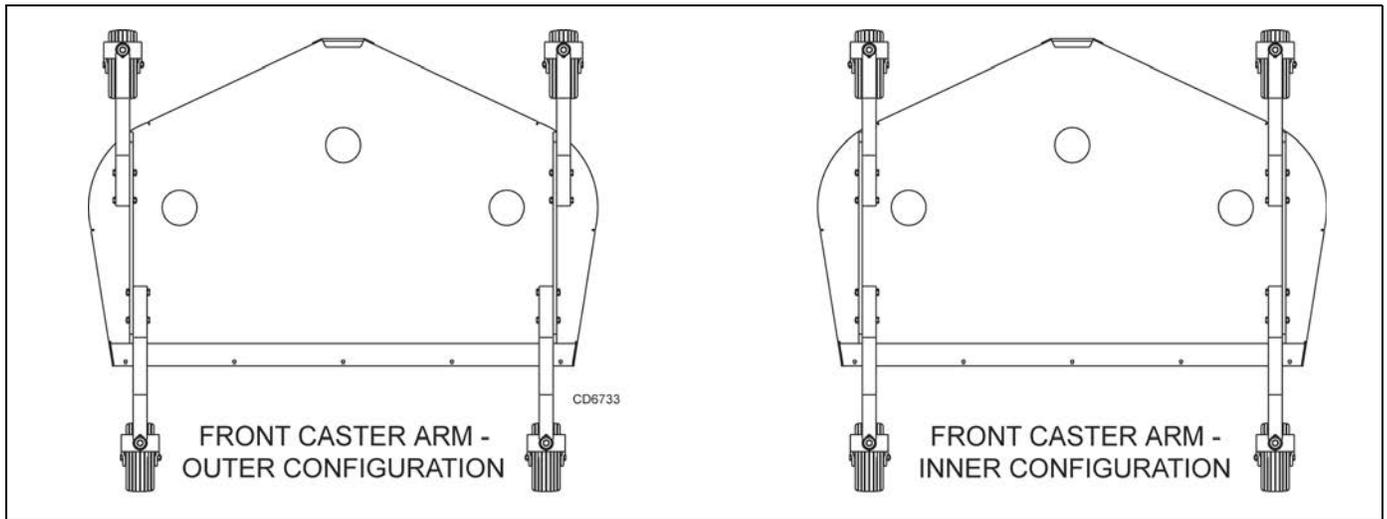


Figure 8. Front Caster Arm Configuration for GM1060 & GM1072 Only

To change configurations, remove the cap screws and nuts and move the arms from one side of the wheel rail to the other. Secure with same hardware.

The rear caster arms should be mounted as shown.

NOTE: The GM1084 front caster arms are fixed and cannot be changed.

FRONT CASTER WHEEL INTERFERENCE CHECK

NOTICE

■ Do not operate tractor and mower until this interference check has been performed. If you change tractors, you must perform the check for that mounting.

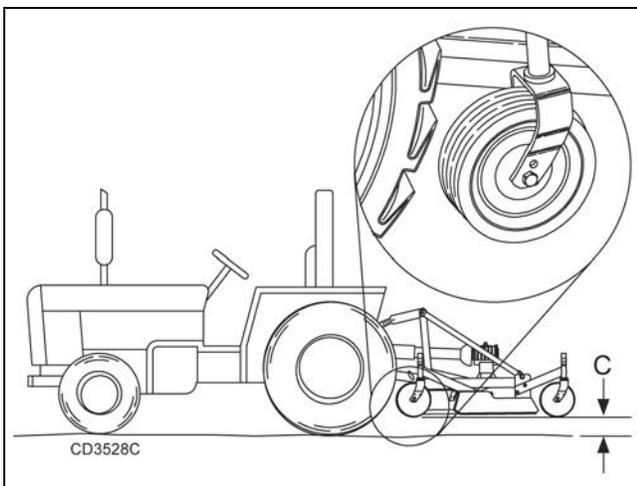


Figure 9. Front Caster Wheel Interference Check

Perform this check with all of the spacers and springs above the caster wheel arm. This will place the caster wheels in their highest position and provide the lowest cutting height for the mower.

1. Raise mower with tractor hydraulics to 16" at dimension C or maximum height of tractor lift, whichever is less.
2. Pivot both front caster wheels forward and check that there is clearance between caster wheels and tractor tires.
3. If there is interference on models GM1060 and GM1072, mount front casters in the outer position.

NOTE: On model GM1084, caster wheel width is not adjustable; see tractor operator's manual and adjust tractor wheels to narrower spacing.

FRONT ROLLER (OPTIONAL)

The caster wheels and side skids effectively reduce scalping in most cases. However, you may encounter areas where the caster wheels and/or side skids drop into depressions and allow center of the mower to contact ground and scalp. An optional front roller may be installed to minimize scalping. See page 31.

OPERATING TECHNIQUE

CAUTION

■ Stop power unit and implement immediately upon striking an obstruction. Dismount power unit, using proper procedure. Inspect and repair any damage before resuming operation.

Power for operating mower is supplied by tractor PTO. Operate PTO at 540 rpm. Know how to stop tractor and mower quickly in an emergency.

If mower becomes plugged causing belt to slip for over two seconds, follow these steps:

1. Maneuver equipment into a previously cut area and allow mower to clear accumulated material.

2. Continue running at least two minutes, allowing pulleys to cool. Stopping the mower in contact with a very hot pulley will bake and ruin belt.

Proper ground speed will depend upon the terrain, the height, and type and density of material to be cut.

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

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

Under certain conditions, tractor tires may roll some grass down and prevent it from being cut at the same height as the surrounding area. When this occurs, reduce your ground speed, but maintain PTO at 540 rpm. The lower ground speed will permit grass to partially rebound.

In general, lower cutting heights give a more even cut and leave less tire tracks. However, it is better to cut grass frequently rather than too short. Short grass deteriorates rapidly in hot weather and invites weed growth during growing seasons. Follow local recommendations for the suitable cutting height in your area.

Operating Tips

! WARNING

- **Inspect and clear area of stones, branches, or other hard objects that might be thrown, causing injury or damage.**

Extremely tall material should be cut twice. Set mower at a higher cutting height for the first pass. Then cut at desired height, 90 degrees to the first pass.

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

Analyze area to be cut to determine the best procedure. Consider height and type of grass and terrain type: hilly, level, or rough.

Plan your mowing pattern to travel straight forward whenever possible. Mow with uncut grass to the right. This will distribute the clippings over the cut area.

Uneven Terrain

! WARNING

- **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.**

Pass diagonally through sharp dips and avoid sharp drops to prevent hanging up tractor and mower.

Practice will improve your skills in maneuvering rough terrain.

MOWER REMOVAL & STORAGE

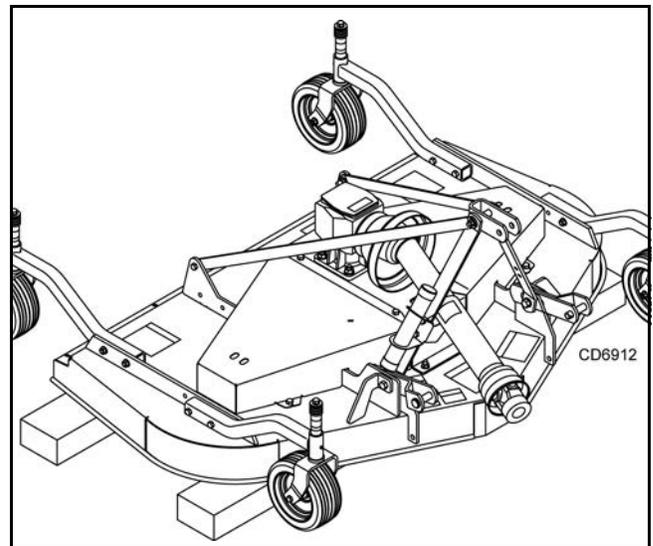


Figure 10. Mower Storage Position

1. Disengage tractor PTO and raise mower with the 3-point hitch.
2. Disconnect mower driveshaft from tractor PTO.
3. Collapse driveshaft as far as possible and store it in PTO hanger bracket to prevent ground contact.
4. Before extended storage, see page 19 for cleaning instructions.
5. Place blocks under mower side skids. Lower mower onto blocks, disconnect mower from tractor 3-point hitch, and carefully drive tractor away from mower.

OWNER PRE-OPERATION CHECK LIST

(OWNER'S RESPONSIBILITY)

- ___ Review and follow all safety rules and safety decal instructions on pages 5 to 9.
- ___ Check that all safety decals are installed and in good condition. Replace if damaged.
- ___ Check that all shields and guards are properly installed and in good condition. Replace if damaged.
- ___ Check that chain shielding is in good condition and replace any damaged chain links.
- ___ Check that all hardware and cotter pins are properly installed and secured.
- ___ Check to ensure blades are sharp, in good condition, and installed correctly. Replace if damaged.
- ___ Check that equipment is properly and securely attached to tractor.
- ___ Make sure driveline spring-activated locking pin or collar slides freely and is seated firmly in tractor PTO spline groove.
- ___ Make sure the driveline guards and tether chains are in good condition. Guards must rotate freely on driveline. Fasten tether chains to the tractor and the equipment as instructed.
- ___ Inspect area and remove stones, branches or other hard objects that might be thrown, causing injury or damage.
- ___ Do not allow riders.
- ___ Check all lubrication points and grease as instructed in "Lubrication Information" on page 16. Make sure the PTO slip joint is lubricated and that the gearbox fluid levels are correct.
- ___ Set tractor PTO at 540 rpm.
- ___ Make sure tractor ROPS or ROPS cab and seat belt are in good condition. Keep seat belt securely fastened during operation.
- ___ 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.



OWNER SERVICE

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

⚠ WARNING

- Never allow children or untrained persons to operate equipment.
- Keep bystanders away from equipment.
- 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.
- Keep all persons away from operator control area while performing adjustments, service, or maintenance.
- Operate tractor PTO at 540 RPM. Do not exceed.

⚠ 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.

BLOCKING METHOD

Do not work underneath mower unless it is properly attached to the tractor and blocked securely. When properly attached, the unit will be anchored to minimize front to rear movement.

Raise mower completely, set tractor brakes, turn engine off, remove key, block tractor wheels front and rear, and disconnect mower driveline from tractor.

The only approved blocking device for this mower is a jackstand with a load rating of 1000 pounds or more. One jackstand under each corner of the mower (four total) must be installed before working underneath.

When blocking, you must consider overall stability of the unit. Just blocking under the unit will not ensure your safety. The working surface must be level and solid to support the loaded weight of the jackstands. Test jackstand stability before working under any portion of the mower.

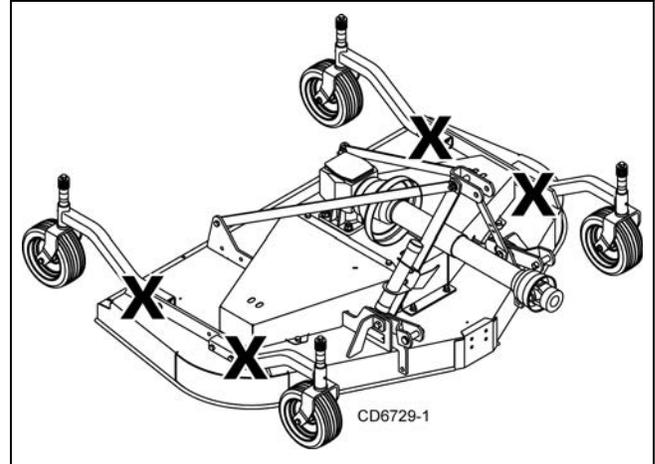


Figure 11. Blocking Method

LUBRICATION INFORMATION

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

Figure 12 shows the lubrication points. The accompanying chart gives the frequency of lubrication in operating hours, based on normal operating conditions.

Severe or unusual conditions may require more frequent lubrication. Some reference numbers have more than one location; be sure you lubricate all locations.

Use a lithium grease of #2 consistency with a MOLY (molybdenum disulfide) additive for all locations. Be sure to clean fittings thoroughly before attaching grease gun. When applied according to the lubrication chart, one good pump of most guns is sufficient.

Use SAE 80W or 90W gear lube in the gearbox. Fill to plug on side of gearbox.

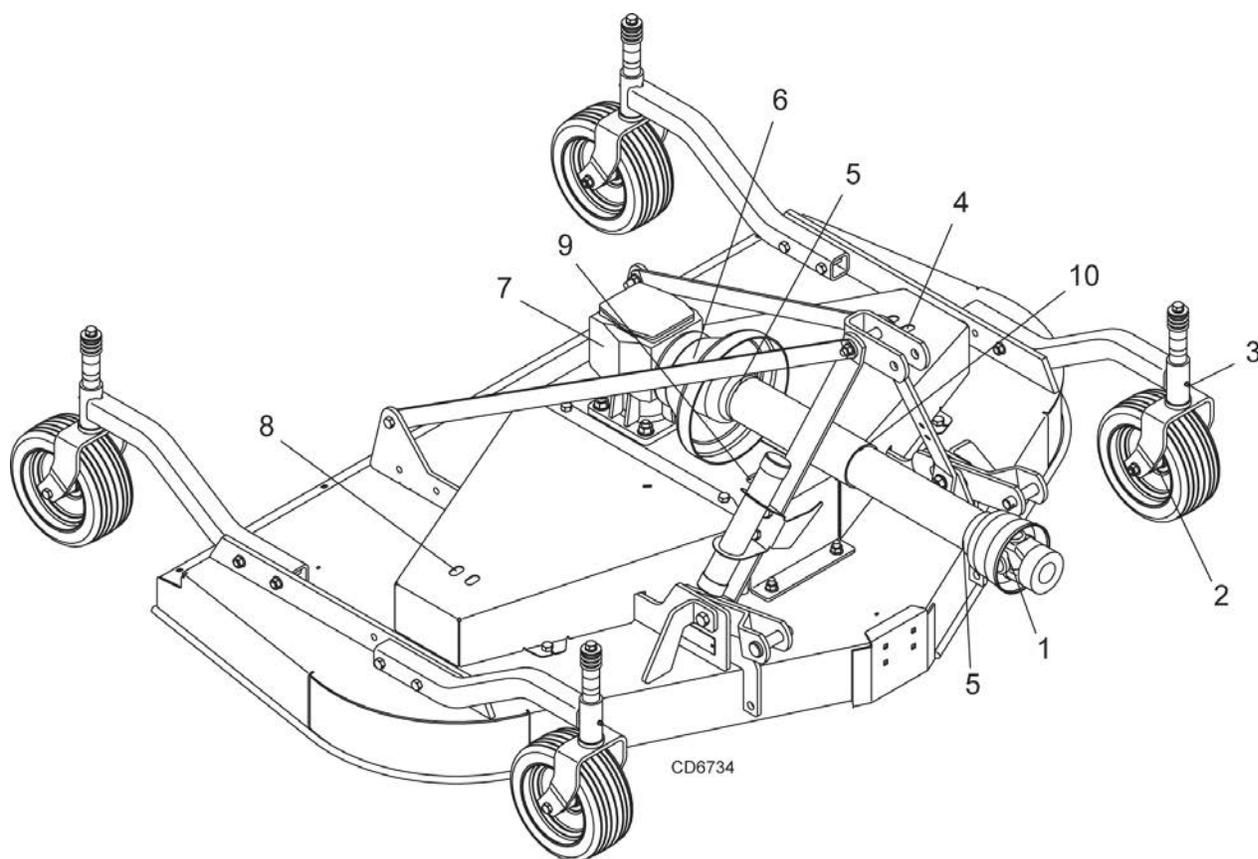
Check gearbox daily for evidence of leakage at both seals and the gasket between the housing and cover. If leakage is noted, repair immediately. There may be a small amount of lube emitted from the vent plug; this is not considered leakage.

Overfilling the gearbox will cause the excess gear lube to blow out vent plug and ruin the belt.

Driveshaft Lubrication

Lubricate the driveshaft slip joint every 8 operating hours. Failure to maintain proper lubrication could result in damage to U-joints, gearbox, and driveshaft.

1. Lower mower to ground.
2. Apply grease at three locations shown in Figure 12.
3. Raise and lower mower several times to distribute grease.



REF	DESCRIPTION	FREQUENCY
1	Front U-Joint	8 Hours
2	Caster Wheel (Four wheels)	8 Hours
3	Caster Pivot (Four wheels)	8 Hours
4	Left Spindle (Access through hole)	24 Hours
5	Shield Bearings	8 Hours
6	Rear U-Joint	8 Hours
7	Gearbox (Fill to center of horizontal shaft with SAE 80W or 90W gear lube)	Check Daily
8	Right Spindle (Access through hole)	24 Hours
9	Center Spindle (Access through hole)	24 Hours
10	Slip Joints	8 Hours

Figure 12. Lubrication Points & Chart

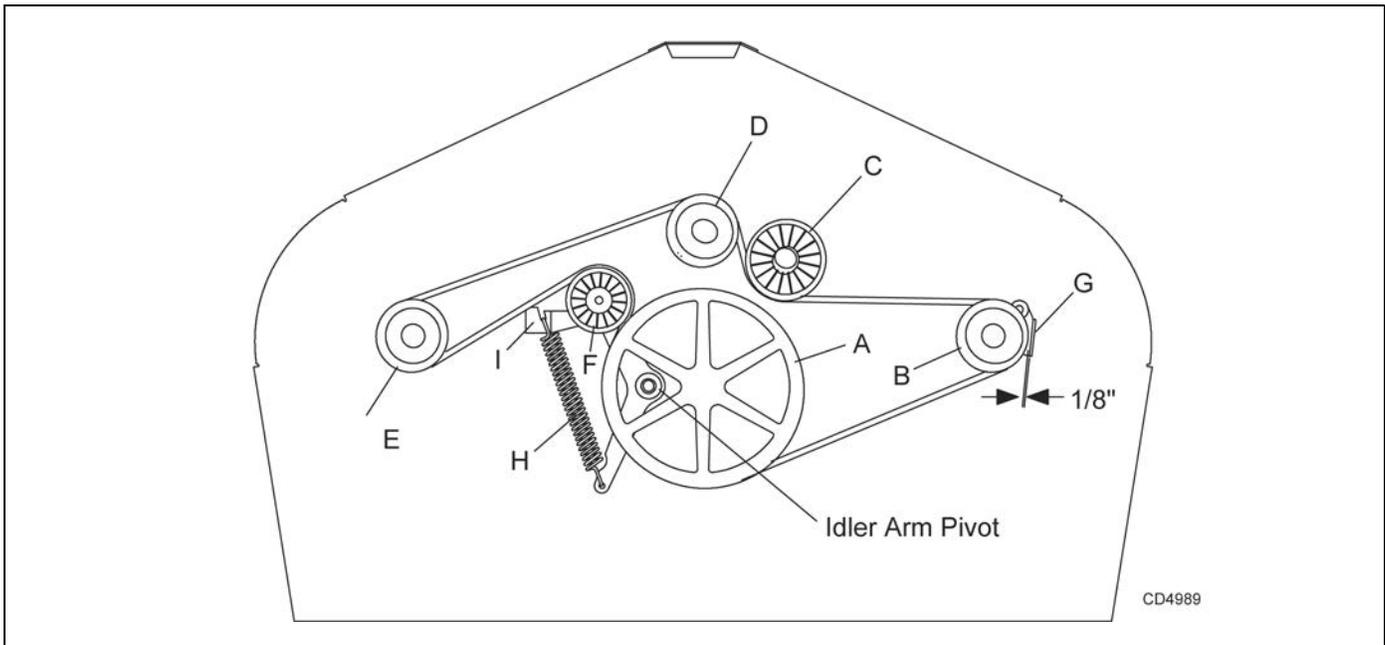


Figure 13. Belt Routing

BELT SERVICE

Belt Replacement

One of the major causes of belt failure is improper installation. Before installing a new belt, check the following:

1. Check pulley shafts and bearings for wear.
2. Check pulley grooves for cleanliness.
3. Make sure spindles turn freely and without wobble.

If grooves require cleaning, moisten a cloth with a non-flammable, non-toxic degreasing agent or commercial detergent and water.

Avoid excessive force during installation. Do not use tools to pry belt into pulley groove. Do not roll belt over pulleys to install. This can cause hidden damage and premature belt failure.

Belt Installation

1. Disconnect idler spring from deck lug I.
2. Slide belt under drive pulley A and over idler arm. Position belt around drive pulley A.
3. Loosen bolt holding belt guide G and swing it away from pulley B. Route belt around pulley B, idler C and pulley D as shown.
4. Make sure belt is on drive pulley A, route around idler F, and connect idler spring to lug I on deck.

5. Grasp belt between spindle pulley E, spring loaded idler F and spindle pulley D. Pull spring loaded idler with belt to obtain enough belt length to route it over pulley E. Make sure spring-loaded idler pivots freely with belt installed.

NOTICE

■ **Use care when installing or removing belt from spring-loaded idler at step 5. Springs store energy when extended and, if released suddenly, can cause personal injury.**

6. Adjust belt guide G to provide 1/16" to 1/8" clearance from belt. Tighten bolt to 85 lbs-ft.

BLADE SERVICE



■ **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.**

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

Blade Installation

CAUTION

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

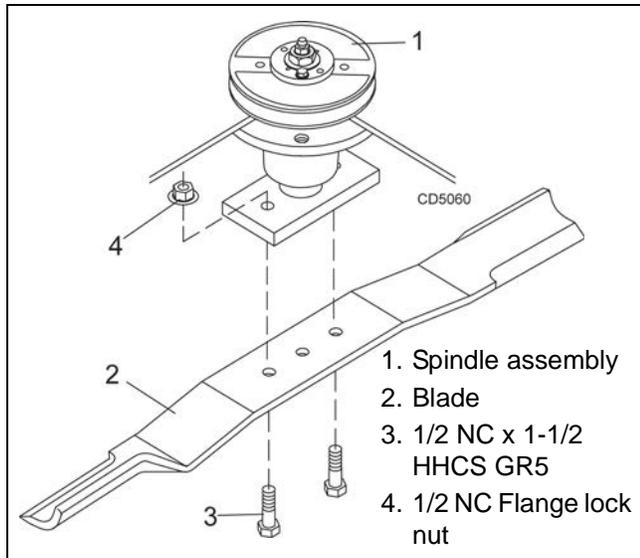


Figure 14. Blade Assembly

1. Place cap screws (3) through outer holes in blade and spindle shaft.
2. Make sure blade cutting edge is positioned to lead in a clockwise rotation, as viewed from top of mower.
3. Place lock nuts (4) on screws, torque to 84 lbs-ft.

Blade Sharpening

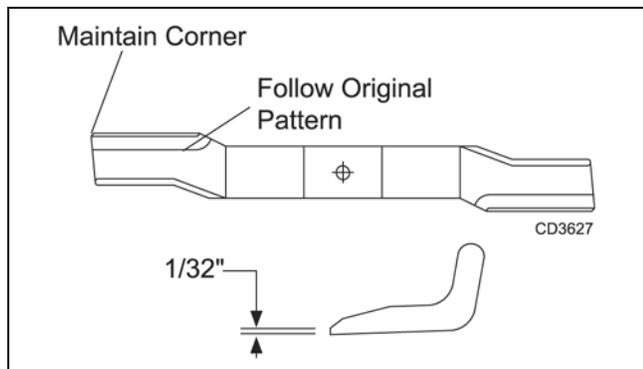


Figure 15. Blade Sharpening

NOTICE

■ When sharpening blades, be sure to balance them. Unbalanced blades will cause excessive vibration which can damage blade spindle bearings. Vibration may also cause structural cracks in mower components.

1. Remove blades.

2. Always sharpen both ends at the same time to maintain balance.
3. Follow original sharpening pattern.
4. Do not sharpen blade to a razor edge. Leave from 1/32" to 1/16" blunt edge.
5. Do not sharpen back side.

CHAIN SHIELDING

DANGER

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

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

Check that chain shielding is in good condition and replace any damaged chain links.

CLEANING

After Each Use

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

Periodically or Before Extended Storage

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

TROUBLESHOOTING

MOWING CONDITIONS

PROBLEM	POSSIBLE CAUSE	SOLUTION
Grass cut higher in center of swath than at edge	Height of mower higher at front than at rear	Adjust mower height and attitude so that mower rear and front are within 1/2 inch of same height. See instructions on page 11.
	Loose blade	Check blade hardware.
Grass cut lower in center of swath than at edge	Height of mower lower at front than at rear	Adjust mower height and attitude so that mower rear and front are within 1/2 inch of same height. See instructions on page 11.
	Loose blade	Check blade hardware.
Streaking conditions in swath	Conditions too wet for mowing	Allow grass to dry before mowing.
	Blades unable to cut that part of grass pressed down by path of tractor tires	Slow ground speed of tractor but keep engine running at full PTO rpm. Cutting lower will help. Adjust tractor tire spacing if possible.
	Dull blades	Sharpen or replace blades.
	Loose blade	Check blade hardware.
Material discharges from mower unevenly; bunches of material along swath	Material too high and too much material	Reduce ground speed but maintain 540 rpm at tractor PTO, or make two passes over material. Raise mower for the first pass and lower for the second and cut at 90 degrees to first pass. Raise rear of mower high enough to permit material to discharge, but not so high that conditions listed above occur.
	Grass wet	Allow grass to dry before mowing. Slow ground speed of tractor but keep engine running at full PTO rpm.

TROUBLESHOOTING

BELT CONDITIONS

PROBLEM	POSSIBLE CAUSE	SOLUTION
Belt slippage	Mower overloading; Material too tall or heavy	Reduce tractor ground speed but maintain full PTO rpm. Cut material twice, one high pass and then mow at desired height. Cut at 90 degrees to first pass.
	Oil on belt from over-lubrication	Be careful not to over-lubricate. Clean lubricant from belt and pulleys with clean rag. Replace oil-soaked belt.
	Belt hung up or rubbing	Check belt position in pulleys and idlers. Check belt for free travel in pulleys. Check under mower and around blade spindle shaft for wire, rags, or other foreign material. Clean all material from under mower.
Frayed edges on belt cover	Belt misaligned	Re-align belt. Be sure belt does not rub any other part while running.
	Pulley misaligned	Inspect to ensure belt is running in center of backside idler. Shim idler as necessary to align.
Belt rollover	Pulley misaligned	Re-align pulley.
	Damaged belt	Replace belt.*
	Foreign object in pulley groove	Inspect all pulley grooves for rust, paint, or weld spots and remove.
	Worn pulley groove	Replace pulley.
Damaged belt	Rollover, high shock loads or installation damaged	Replace belt.*
Belt breakage	High shock loads	Avoid abusive mowing. Avoid hitting the ground or large obstructions.
	Belt came off drive	Check pulleys for foreign material in grooves. Avoid hitting solid objects or ground.

* Check belt for damage by laying it flat on the floor. A belt that does not lie flat (has humps or twists, indicating broken or stretched cords) must be replaced.

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.

BLOCKING METHOD

See "Blocking Method" instructions on page 16.

BLADE SPINDLE SERVICE

Spindle repair requires special skills and tools. If your shop is not properly equipped or your mechanics are not trained in this type of repair, you may be time and money ahead to use a new spindle assembly.

For reference, the grease fitting is in the top of the spindle shaft.

Permatex® 3D Aviation Form-A-Gasket or equivalent is recommended as a sealant.

Spindle Removal

1. Remove blade from spindle.
2. Remove belt from pulleys.

3. Remove jam nut (1) and washer (3) from top of spindle shaft, Figure 16.
4. Disassemble split taper bushing (5) (located on top of pulley) by removing the two bolts (2) and washers (4).
5. Insert bolts (2) into the threaded holes of bushing flange.
6. Tighten bolts alternately to remove split taper bushing.
7. Remove pulley (6).
8. Remove bolts (19) that attach spindle to mower frame and remove spindle.
9. Remove grease fitting (21) from top of shaft.

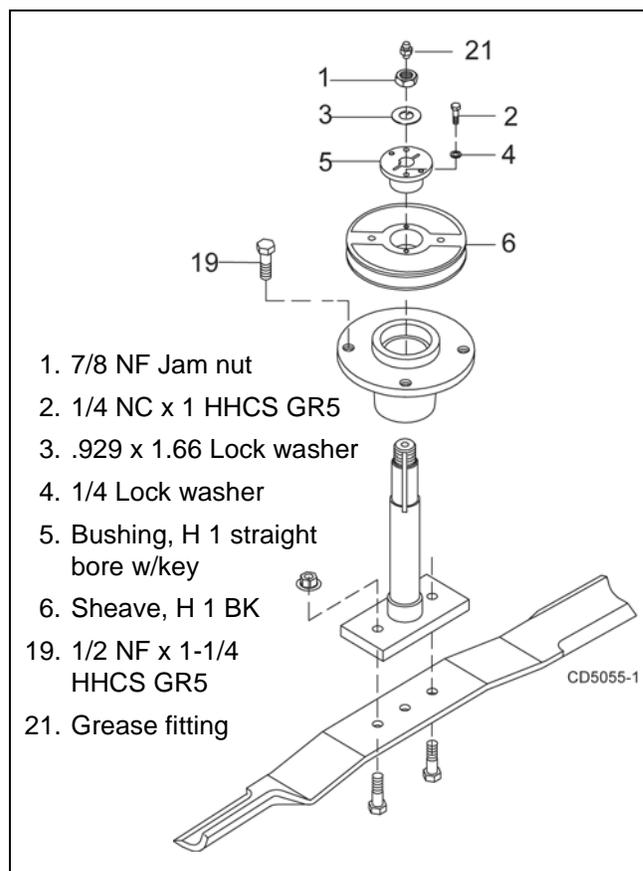


Figure 16. Sheave and Blade Assembly

Spindle Disassembly

1. Place spindle assembly in press and press shaft down through housing.
2. Remove seals from housing.

Spindle Assembly

Refer to Figure 17.

Bearing cones and cups are designed to work together. It is important to position them so bearing cone taper mates with cup taper.

1. Lubricate new cups with a light oil. Place them in spindle housing so they will mate with bearing cones. Cups and cones are a press fit to minimize wear.

Seat cups securely with a press or place a large drift in the flat lip and drive them into housing until cup seats against machined shoulder of housing.

Remove bearing cups from housing by placing a punch in the slots provided and driving them out. Alternate punch positions from side to side. Take care to prevent housing damage.

2. Place bottom bearing cone into spindle with taper positioned to mate with cup.

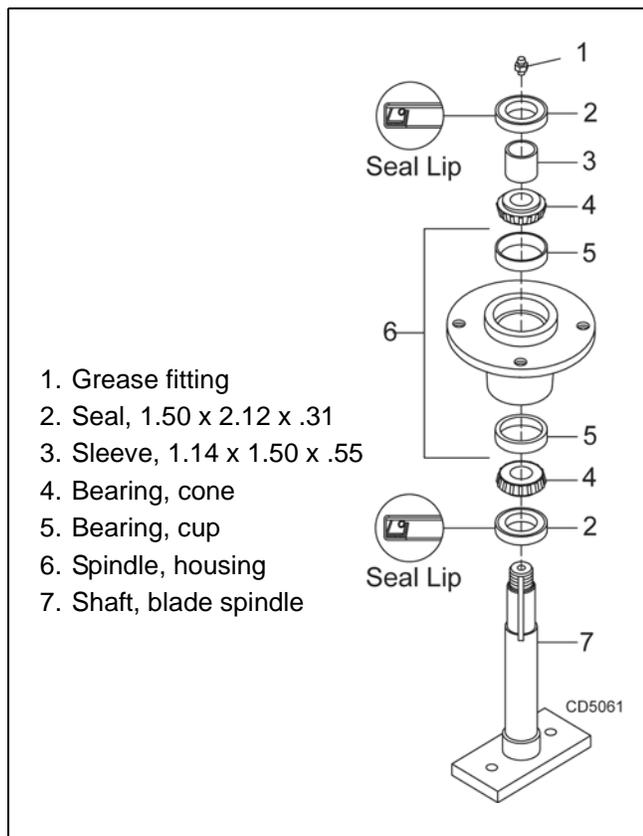


Figure 17. Spindle and Shaft Assembly

NOTICE

■ Improper positioning of seals can cause seal damage. An improperly installed seal will leak and could cause bearing failure.

3. Identify the open side of the seal containing the spring.

4. Apply a thin coat of Permatex to the area of housing where seals seat.
5. Install bottom seal with spring up toward center of housing.
6. Place seal squarely on housing and select a piece of pipe or tubing with an OD that will set on outside edge of seal. A tubing with an OD that is too small will bow seal cage.
7. Carefully press seal into housing, to prevent distortion to metal seal cage. Bottom seal should seat firmly and squarely against machined shoulder in housing.
8. Make sure seal lip did not roll under. Distortion to seal cage or damage to seal lip will cause seal to leak. Damaged seals must be replaced.
9. Insert shaft and bearing through bottom of housing.
10. Fill housing cavity with a medium grade grease.
11. Install top bearing on shaft to mate with top cone.
12. Apply a thin coat of Permatex to shaft area where sleeve will seat.
13. Install sleeve on shaft and press sleeve and bearing into housing until all free play is removed and there is a very light drag on bearings (similar to adjusting front wheel bearings on an automobile). Check by spinning spindle. It should turn freely.
14. Be careful not to overtighten bearings. Proper bearing adjustment is essential to good bearing life.
15. If you overtighten bearings, hold spindle housing and rap spindle shaft with a lead hammer.
16. Carefully press top seal in with spring up. Top seal should be flush with, or to within 1/16" above, the housing.
17. Rotate housing on spindle shaft, checking for free movement.
18. Install grease fitting in spindle shaft.

Spindle Installation

NOTICE

■ Pulley installation sequence is very important for bearing life. Follow the sequence exactly.

1. Install spindle through bottom of mower and secure with four mounting bolts.
2. Install pulley and split taper bushing with integral key on spindle shaft. Make sure bushing is in contact with sleeve on spindle shaft.
3. Alternately tighten split taper bushing cap screws to 12 lbs-ft.
4. Install toothed lock washer and nut on spindle shaft. Tighten nut until snug. Bend up edge of lock washer against a flat side on nut.

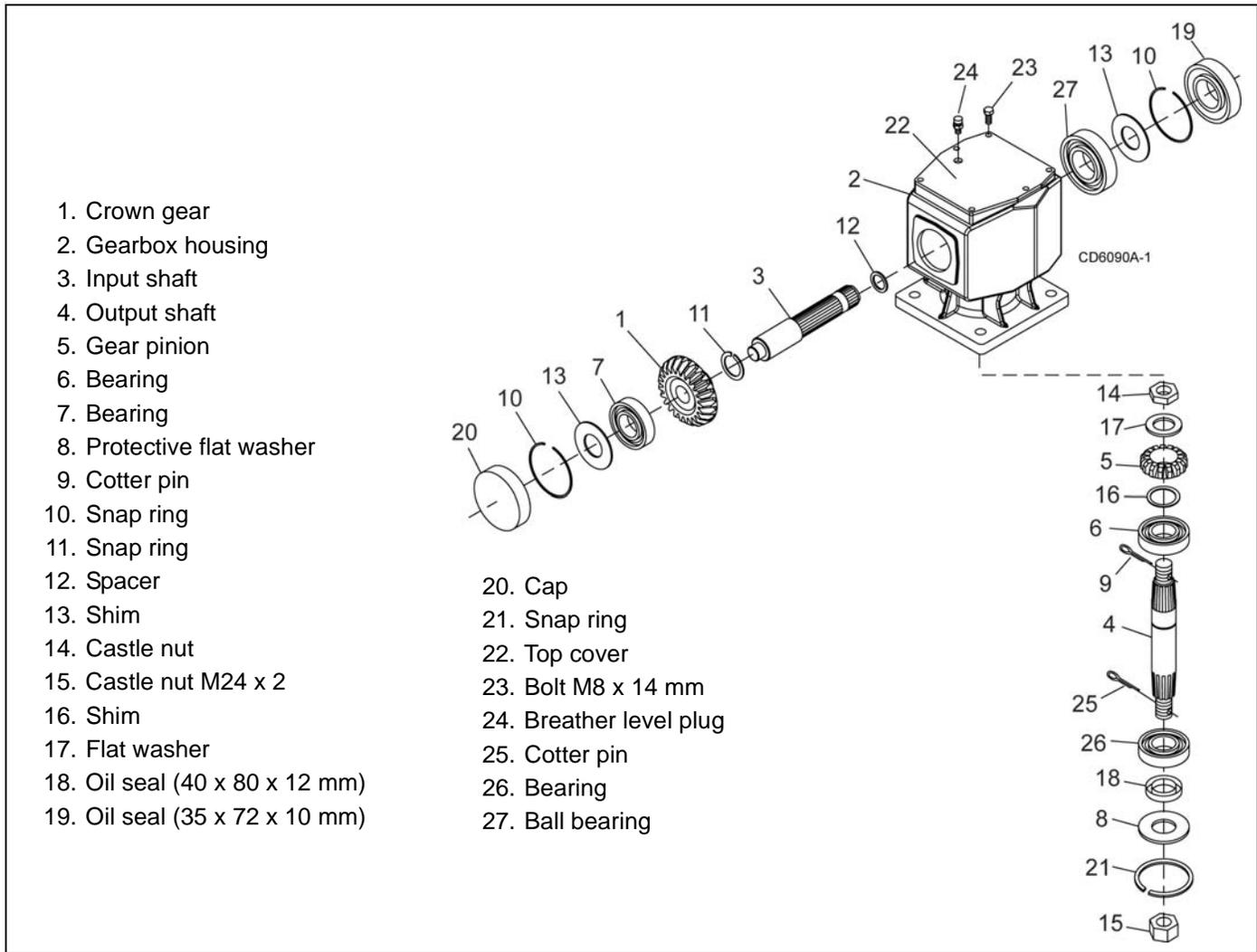


Figure 18. Gearbox Assembly

GEARBOX REPAIR

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

Repair to this gearbox is limited to replacing bearings, seals, and gaskets. Replacing gears, shafts, and a housing is not cost effective. It is more economical to purchase a complete gearbox if repair to anything other than replacement of bearings, seals or gaskets is required.

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

Inspect gearbox for leakage and bad bearings.

Leakage is a very serious problem and must be corrected immediately.

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

Seal Replacement

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

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

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

Seal Installation

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

1. Clean area in housing where seal outer diameter (OD) seats. Apply a thin coat of Permatex.
2. Inspect area of shaft where seal seats. Remove any burrs or nicks with an emery cloth.
3. Lubricate gear shaft and seal lips.
4. Place seal squarely on housing, spring-loaded lip toward housing. Select a piece of pipe or tubing with an OD that will sit on the outside edge of the

seal but will clear the housing. Tubing with an OD that is too small will bow seal cage and ruin seal.

- Carefully press seal into housing, avoiding distortion to the metal seal cage.

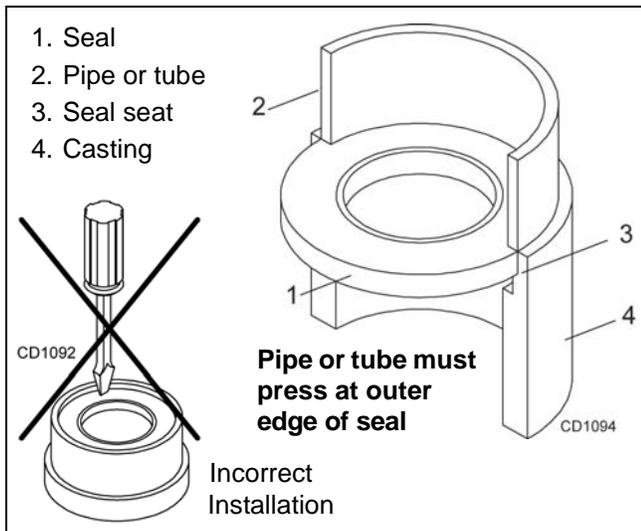


Figure 19. Seal Installation

Vertical Shaft Seal Replacement

- Disconnect and remove the driveline from the gearbox.
- Remove vent plug (24). Figure 18, and siphon gear lube from housing through this opening.
- Remove gearbox stand from mower deck.
- Remove gearbox and pulley from gearbox stand.
- Remove vertical shaft seal (18). Replace with new seal (see Seal Replacement, page 24).

Vertical seal should be recessed in housing.

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

- Fill gearbox with SAE 80W or 90W gear lube until it runs out the level plug.
- Assemble gearbox and pulley to gearbox stand. Attach gearbox stand to mower deck.

Horizontal Shaft Seal Replacement

- Disconnect and remove the driveline from the gearbox.
- Remove vent plug (24), Figure 18, and siphon gear lube from housing through this opening.
- If the leak occurred at either end of horizontal shaft, remove oil cap (20) and/or oil seal (19). Replace with new one (see Seal Replacement, page 24).

Horizontal seal should be pressed flush with outside of housing.

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

Gearbox Removal from Mower (Figure 20)

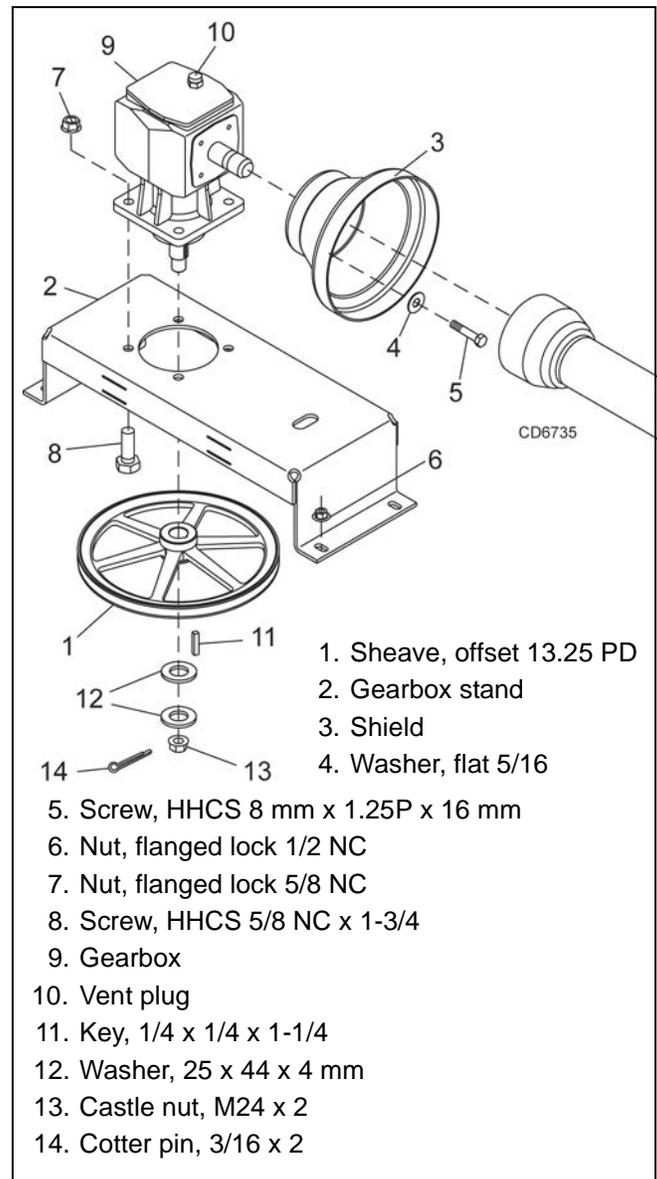


Figure 20. Gearbox Stand Assembly

- Disconnect and remove the rear driveline from the gearbox (9).
- Remove vent plug (10) and siphon gear lube from housing through this opening.
- Remove gearbox stand (2) from mower deck by removing four flanged lock nuts (6).
- Remove four cap screws (5) and washers (4) and remove shield (3) from gearbox.
- Remove castle nut (13) and hardware from output shaft of gearbox.
- Remove sheave (1) from gearbox.
- Remove four bolts (8) that attach gearbox to gearbox stand and remove gearbox.

Gearbox Disassembly

Refer to Figure 18.

1. Remove top cover (22) from housing. Turn gearbox upside down and pour out remaining gear oil from gearbox.
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 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) and cotter pin (25) are already removed with the drive sheave. Remove snap ring (21), washer (8), and seal (18).
11. Remove cotter pin (9), castle nut (14), and washer (17) from output shaft (4).
12. Remove output shaft (4) by using a punch and hammer and tap on top to drive down.
13. Remove gear (5) and shim (16) from inside housing.
14. Remove bearing (26) by using a punch and hammer from the top, outside the housing.
15. Support housing upside down (top cover surface) and remove bearing (6) by using a punch and hammer from the bottom side of the housing.
16. Inspect gears for broken teeth and wear. Some wear is normal and will show on loaded side. Forged gear surfaces are rough when new. Check that wear pattern is smooth.
17. Inspect vertical and horizontal shafts for grooves, nicks, or bumps in the areas where the seals seat. Resurface any damage with emery cloth.
18. Inspect housing and caps for cracks or other damage.

Gearbox Reassembly

Refer to Figure 18.

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.

1. Clean housing, paying specific attention to areas where gaskets will be installed.
2. Wash housing and all components thoroughly. Select a clean area for gearbox assembly. Replace all seals, bearings, and gaskets. All parts must be clean and lightly oiled before reassembling.
3. Insert output bearings (6 & 26) in the housing, using a round tube of the correct diameter and a hand press.
4. Slide output shaft (4) through both bearings (6 & 26) until it rests against bearing (6).
5. Slide shim (16) over output shaft (4).
6. Press gear (5) onto output shaft (4) and secure with washer (17), castle nut (14), and cotter pin (9).
7. Apply grease to lower seal lips (18) and press seal over output shaft (4), using a tube of the correct diameter. Be sure not to damage the seal lip. Press in housing so that seal is recessed.
8. Insert protective washer (8) by hand. Install snap ring (21) and position it together with dual lip seal (18) by pressing it into position. Verify that snap ring 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 spacer (12) over input shaft (3) and press bearing 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. 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.

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

Gearbox Installation

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

1. Set gearbox on gearbox stand and fasten with bolts and nuts. Torque bolts to 175 lbs-ft.
2. Attach drive sheave to output shaft. Secure using castle nut and hardware previously removed.
3. Attach gearbox stand to mower using four flanged 1/2" lock nuts.

Drive Sheave Installation

Refer to Figure 21.

1. When gear stand is installed on mower, dimension A (from the top of the mower deck to the center line of the drive pulley) must be 2-7/16" ($\pm 1/32$ "). This is a critical dimension and must be carefully adjusted for proper belt life. Add or subtract shim washers under idler pulley (3) to align with drive pulley (4).
2. Tighten gear stand hardware.
3. Fill gearbox half full with SAE 80W or 90W gear lube.
4. Check level after waiting five minutes to permit lube to work through bearings. Add lube, if necessary, until gearbox is half full.
5. Replace driveline shield. Attach driveline to gearbox.

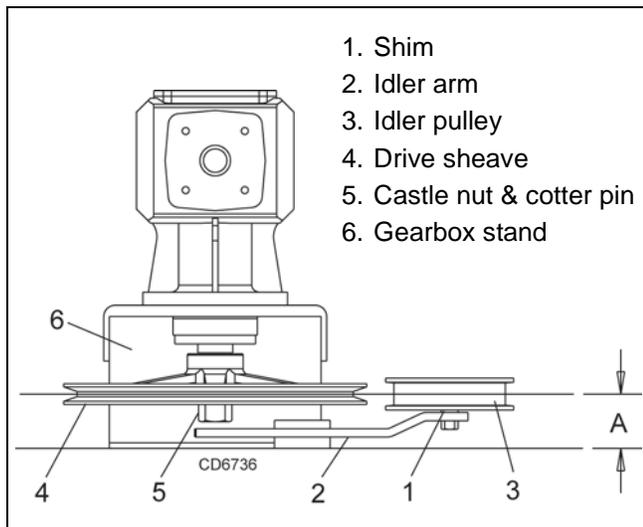


Figure 21. Drive Sheave Installation

UNIVERSAL JOINT REPAIR

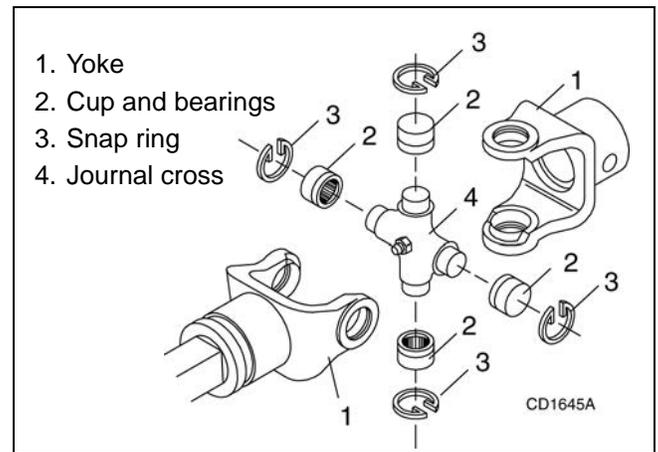


Figure 22. U-Joint Exploded View

U-Joint Disassembly

1. Remove external snap rings from yokes in four locations as shown in Figure 23.

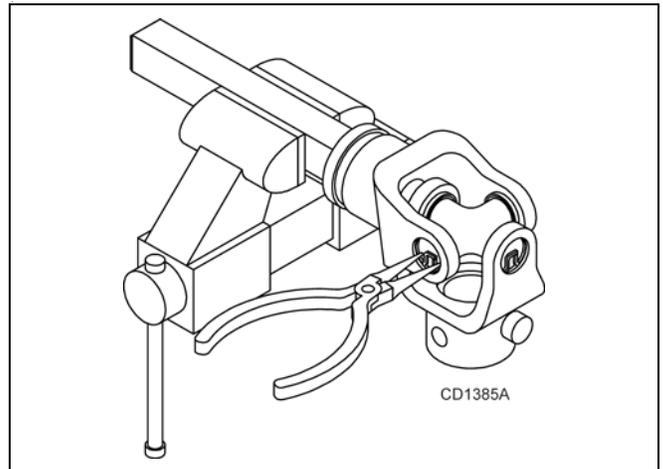


Figure 23

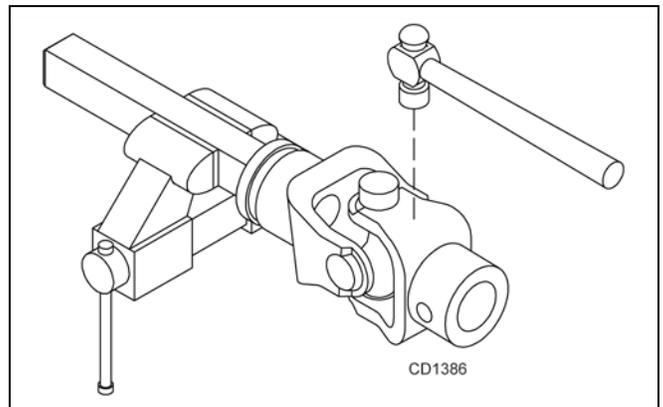


Figure 24

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

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

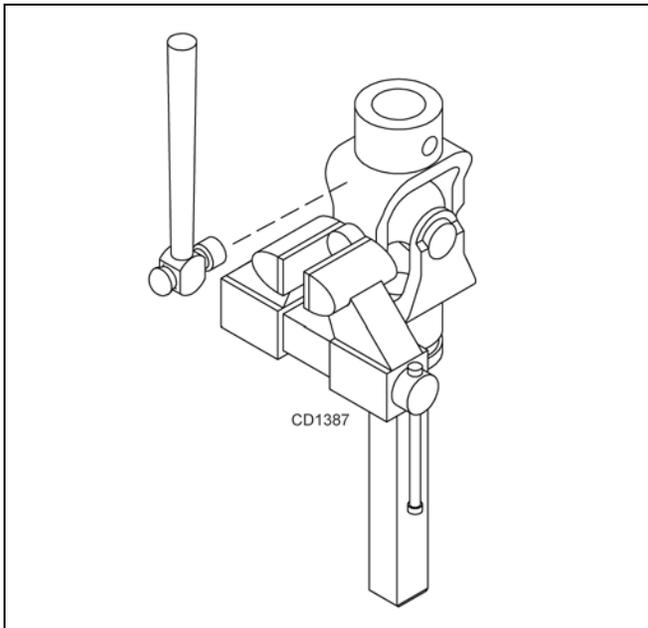


Figure 25

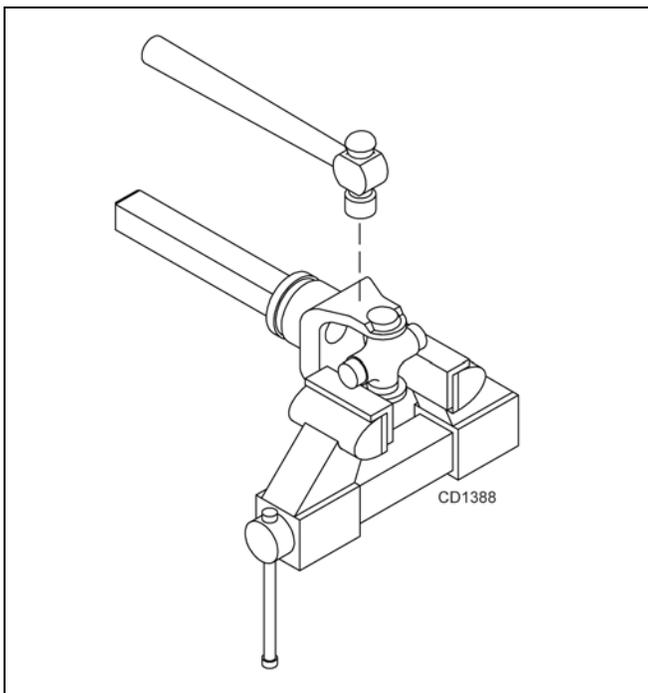


Figure 26

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

U-Joint Assembly

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

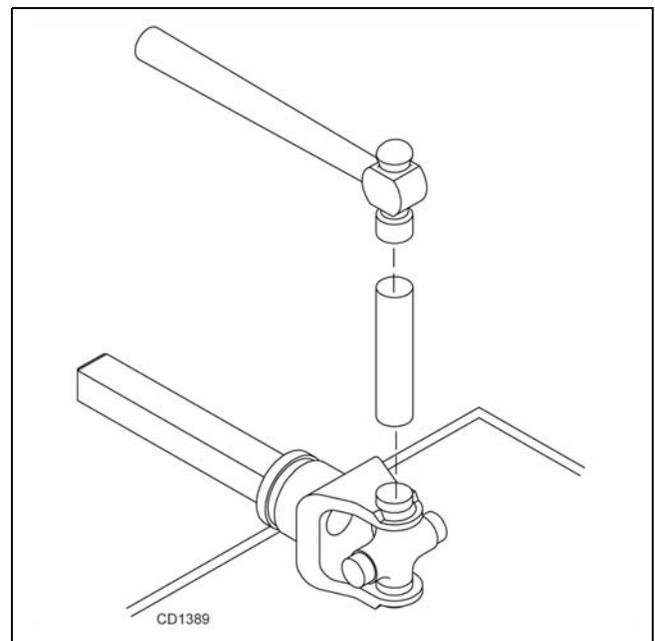


Figure 27

- assembly instructions

DEALER SET-UP INSTRUCTIONS

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

Complete Dealer Check Lists on page 33 when you have completed the assembly.

The mower 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 44.

Select a suitable working area. Open parts boxes and lay out parts and hardware to make location easy. Refer to illustrations, accompanying text, parts lists and exploded view drawings.

! 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.

! 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.

Uncrate Mower

1. Remove sides and top of mower shipping crate.
2. Remove lag screws and brackets that secure mower to crate base.
3. Remove driveshaft wired to mower deck.

Install Front Offset Links

1. Loosen lock nuts at lower hitch point and rotate offset link up off of gearbox as shown.
2. Tighten nut securely.
3. Repeat for opposite side.

NOTE: Front link with the PTO storage bracket should be installed on right side of mower as shown in Figure 28.

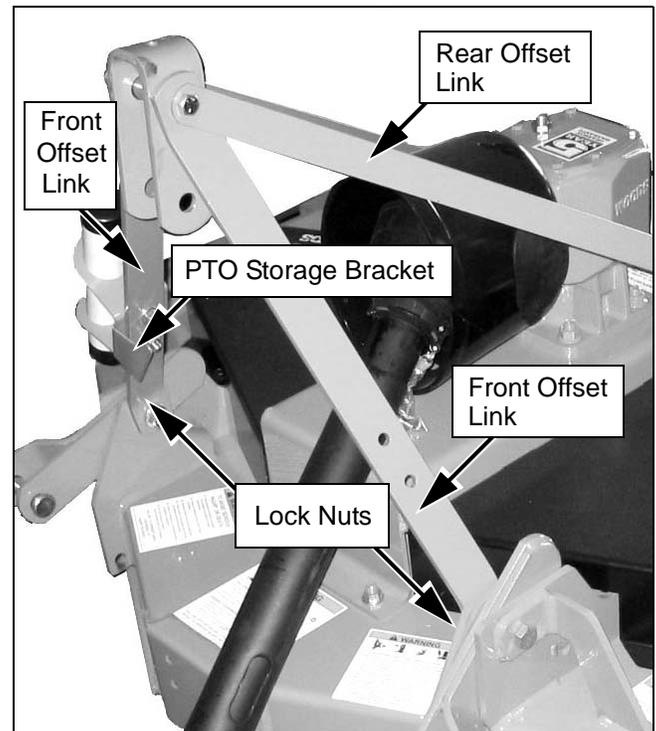
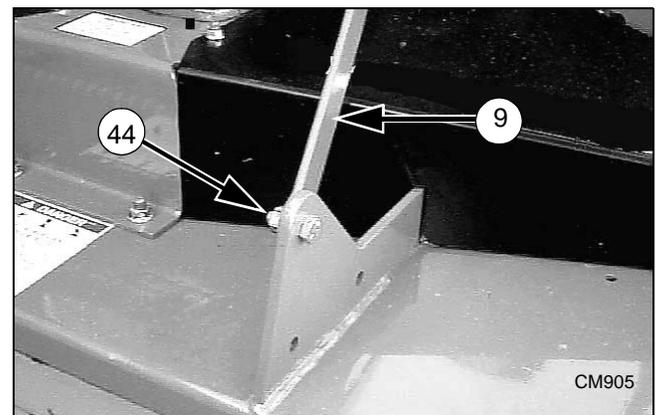


Figure 28. Front Offset Links Installed

Install Rear Offset Links

1. Loosen nut (44) at rear frame lug and rotate offset link (9) up as shown in Figure 29.
2. Repeat for opposite side.
3. Do not tighten at this time.



9. Link, rear offset
44. Nut, flanged lock 1/2 NC

Figure 29. Right Rear Offset Link Installed

Install Top Link

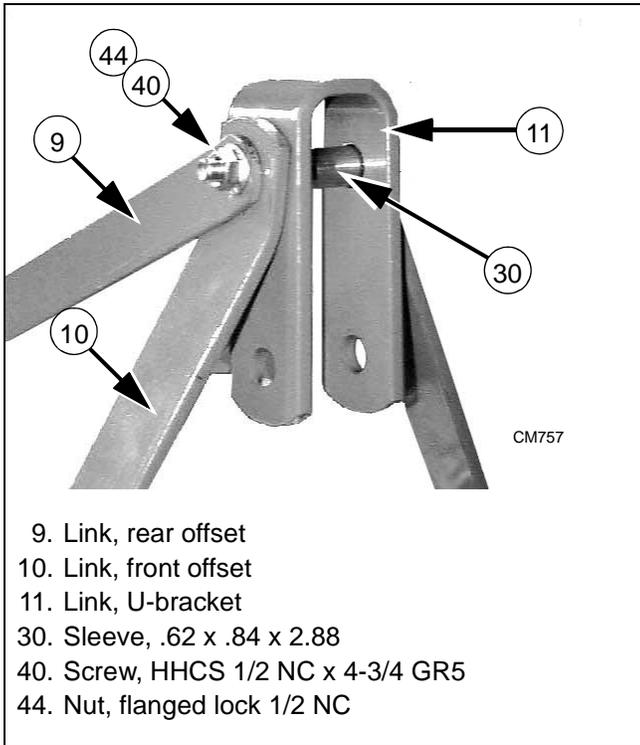


Figure 30. Top Link Assembled

1. Insert cap screw (40) through rear offset links (9), pipe (30), U-bracket (11) and front offset links (10) as shown and tighten securely with nut (44).
2. Tighten hardware on rear frame lug and offset link.

Install Rear Caster Arm

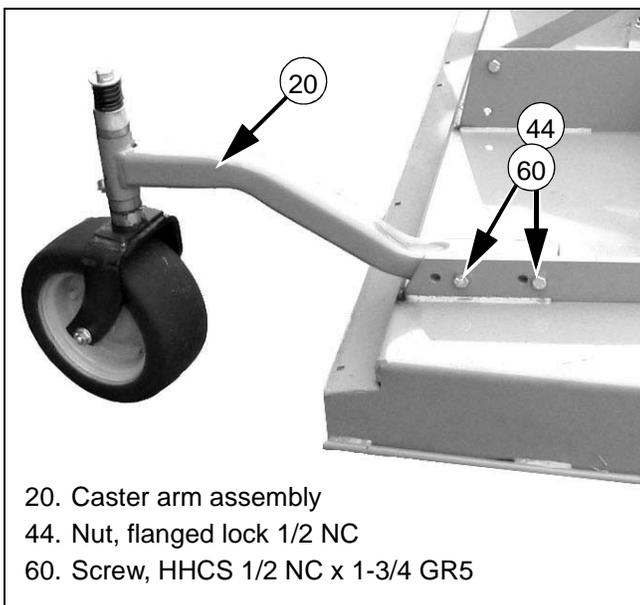


Figure 31. Rear Caster Arm Installed

1. Remove rear caster wheel assembly (20) from shipping position and install as shown in Figure 31 using the same bolts (60) and nuts (44).
2. Repeat for opposite side.
3. Tighten bolts so that caster arm is snug against deck bracket, but not fully torqued.

NOTE: Refer to Front Caster Wheel Interference Check, page 13 for possible front caster arm positions.
4. Attach front caster arm in desired position and tighten snug against deck bracket.

Torque Caster Arm Hardware

1. Lift mower off shipping pallet and set on a hard level surface. This allows clearance in the caster wheel assemblies to be equalized.
2. Tighten all cap screws and nuts on all four caster wheel arms.
3. Torque all cap screws and nuts to 85 lbs-ft.

Install Driveline Shield

Attach shield (2), Figure 32, to gearbox (1) with cap screws (5) and flat washers (4).

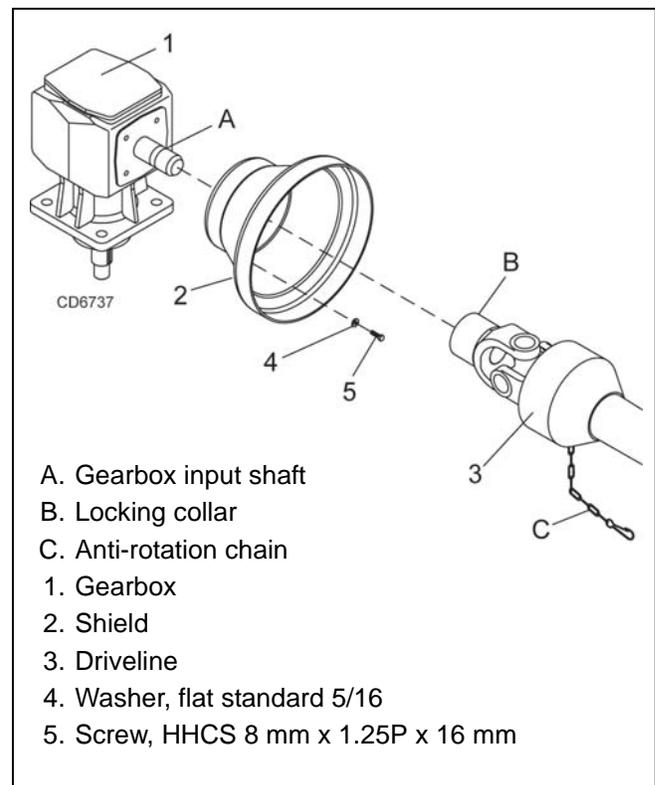


Figure 32. Rear Driveshaft Installation

Install Driveshaft

1. Pull locking collar (B) back and, at the same time, push driveline onto tractor gearbox shaft until locking device engages.
2. Attach shield anti-rotation chain (C) to drive shield (2) as shown.

Fill Gearbox

NOTICE

■ Gearbox is not filled at the factory. Prior to delivery, make sure each gearbox is filled half-full with 80W or 90W API GL-4 or GL-5 gear lube.

1. Make sure vent plug hole is clear. Fill gearbox half-full with high quality gear oil that has a viscosity index of 80W or 90W and an API service rating of GL-4 or GL-5.
2. Fill gearbox until oil runs out the side plug on gearbox.
3. Pour in one pint of gear lube, wait five minutes and add additional gear lube until it just comes out of side hole.
4. Allow an additional five minutes for the lube to flow through bearings, then check to make sure oil level is at bottom of side hole. Replace side plug. Install vent plug.

Install Chain Shielding (Optional)

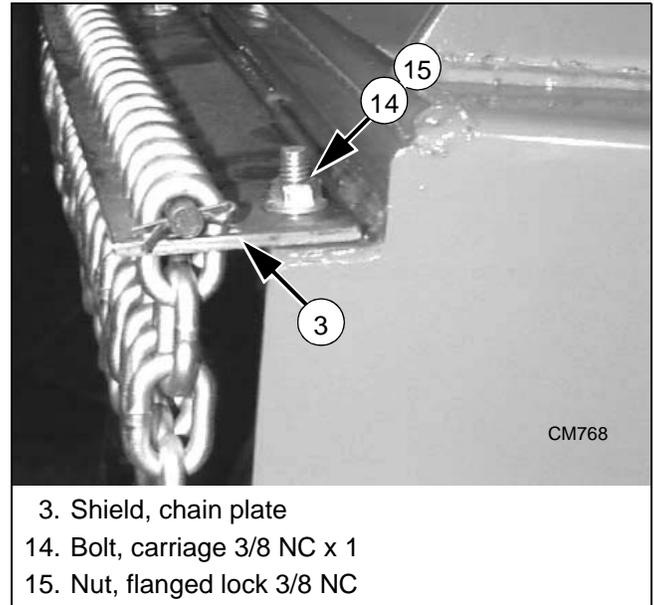
DANGER

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

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

1. Install chain shielding plate (3) to rear mower frame as shown.
2. Secure with carriage bolts (14) and flanged lock nuts (15).

Insert carriage bolts from bottom upward as shown.

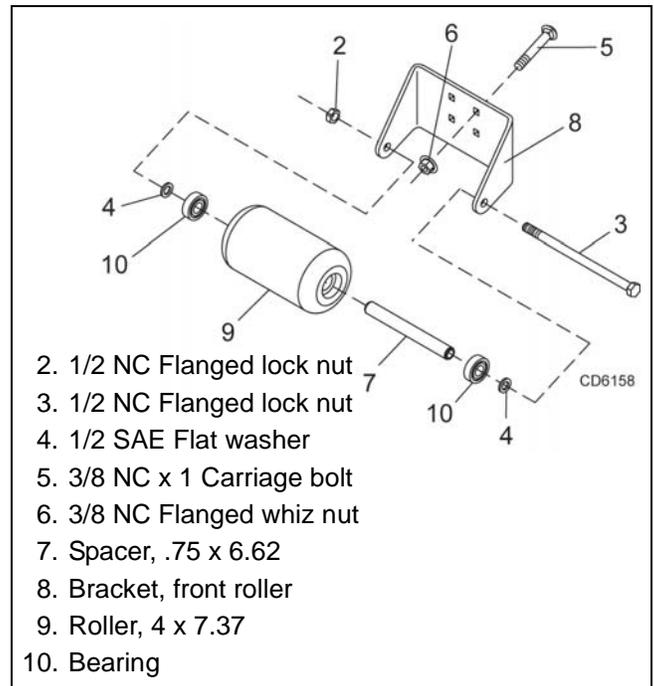


3. Shield, chain plate
14. Bolt, carriage 3/8 NC x 1
15. Nut, flanged lock 3/8 NC

Figure 33. Chain Shield Installed

Install Front Roller (Optional)

1. Insert four carriage bolts (5) through the front mower frame from inside out.
2. Place roller bracket (8) over bolts; then install flange whiz nuts (6) on bolts and tighten.
3. Place front roller (9), two bearings (10), spacer (7) and two SAE flat washers (4) between roller bracket as shown in Figure 34.
4. Insert cap screw (3) through bracket and roller.
5. Secure with flanged lock nut (2). Do not overtighten, roller must spin freely.



2. 1/2 NC Flanged lock nut
3. 1/2 NC Flanged lock nut
4. 1/2 SAE Flat washer
5. 3/8 NC x 1 Carriage bolt
6. 3/8 NC Flanged whiz nut
7. Spacer, .75 x 6.62
8. Bracket, front roller
9. Roller, 4 x 7.37
10. Bearing

Figure 34. Front Roller Installation

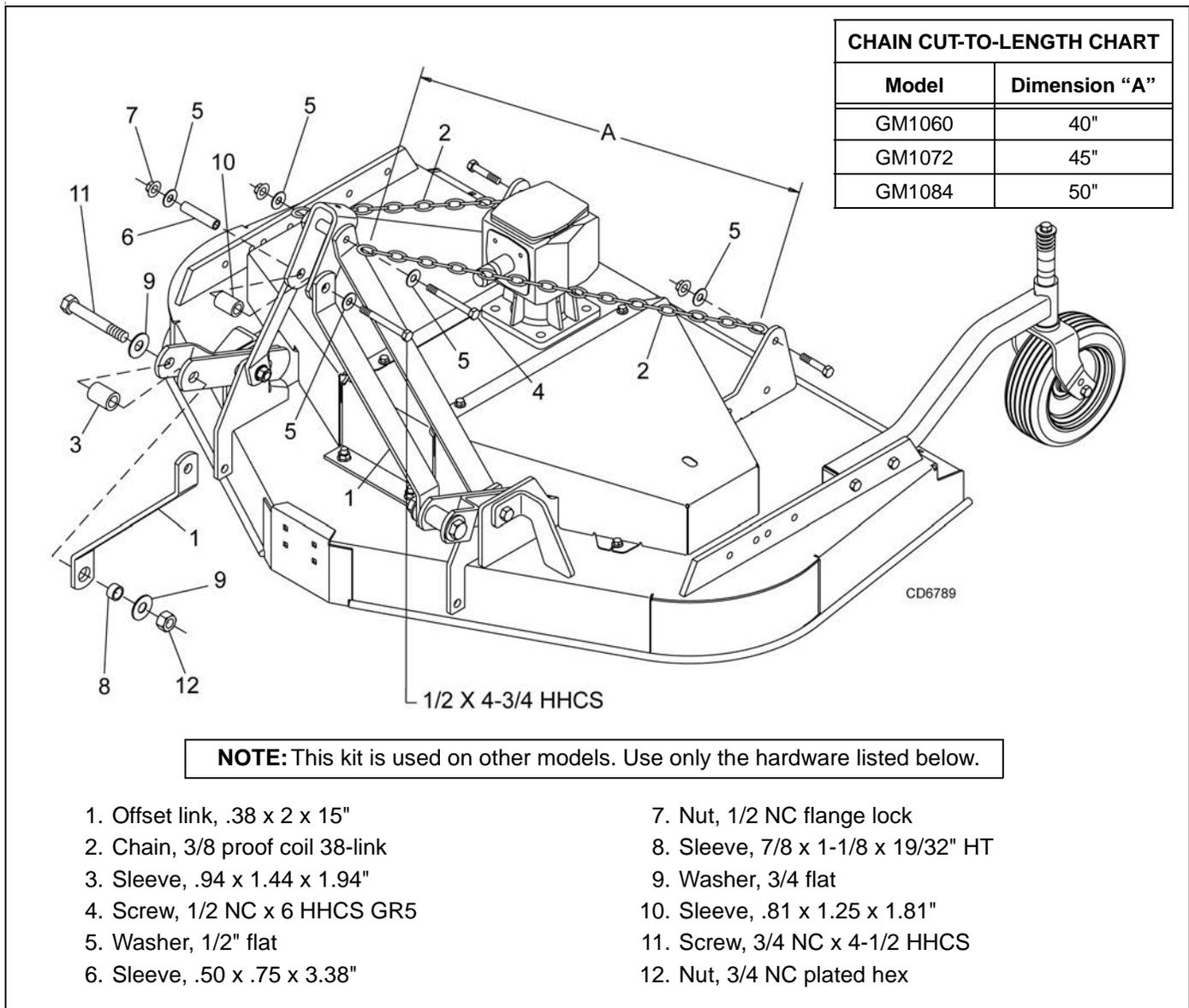


Figure 35. Quick Hitch Kit Installation (Optional)

Install Quick Hitch Kit 5WD1005400 (Optional)

NOTE: This kit allows mower to fit only Category 1 standard quick hitch.

- Make sure that you are using one of the front two attachment points (D) in the lower hitch plates. See Figure 6, page 12, for adjustment.
- Remove clevis pins from lower hitch arms. The pins will not be used for the Quick Hitch.
- Attach offset link (1) to lower hitch clevis using sleeves (3 & 8), two flat washers (9), cap screw (11), and hex nut (12) as shown in Figure 35. Do not tighten hardware. Repeat for opposite side.
- Attach upper end of offset links (1) to each side of U-bracket link, using two flat washers (5), sleeves (6 & 10), flange lock nut (7), and 1/2 x 4-3/4 cap screw.
- Remove rear offset links. They will be replaced with chains (2).
- Attach chains to top of A-frame on both sides as shown, using cap screw (4), two flat washers (5), and nut.
- Attach opposite ends of chains (2) to rear mower frame as shown. Cut chains to length (see chart above). Vary length slightly as desired. Twist chain to make finite adjustments in length until unit lifts level.
- Tighten all hardware.

DEALER CHECK LISTS

PRE-DELIVERY CHECK LIST

(DEALER'S RESPONSIBILITY)

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

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

- Check that all safety decals are installed and in good condition. Replace if damaged.
- Check that shields and guards are properly installed and in good condition. Replace if damaged.
- Check all bolts to be sure they are properly torqued.
- Check that all cotter pins and safety pins are properly installed. Replace if damaged.
- Check and grease all lubrication points as identified in "Lubrication Information" on page 16.
- Gearboxes are not filled at the factory. Prior to delivery, fill as specified in the "Owner Service, Lubrication Information" on page 16 and check to see that there are no leaking seals.
- Check that blades have been properly installed.

DELIVERY CHECK LIST

(DEALER'S RESPONSIBILITY)

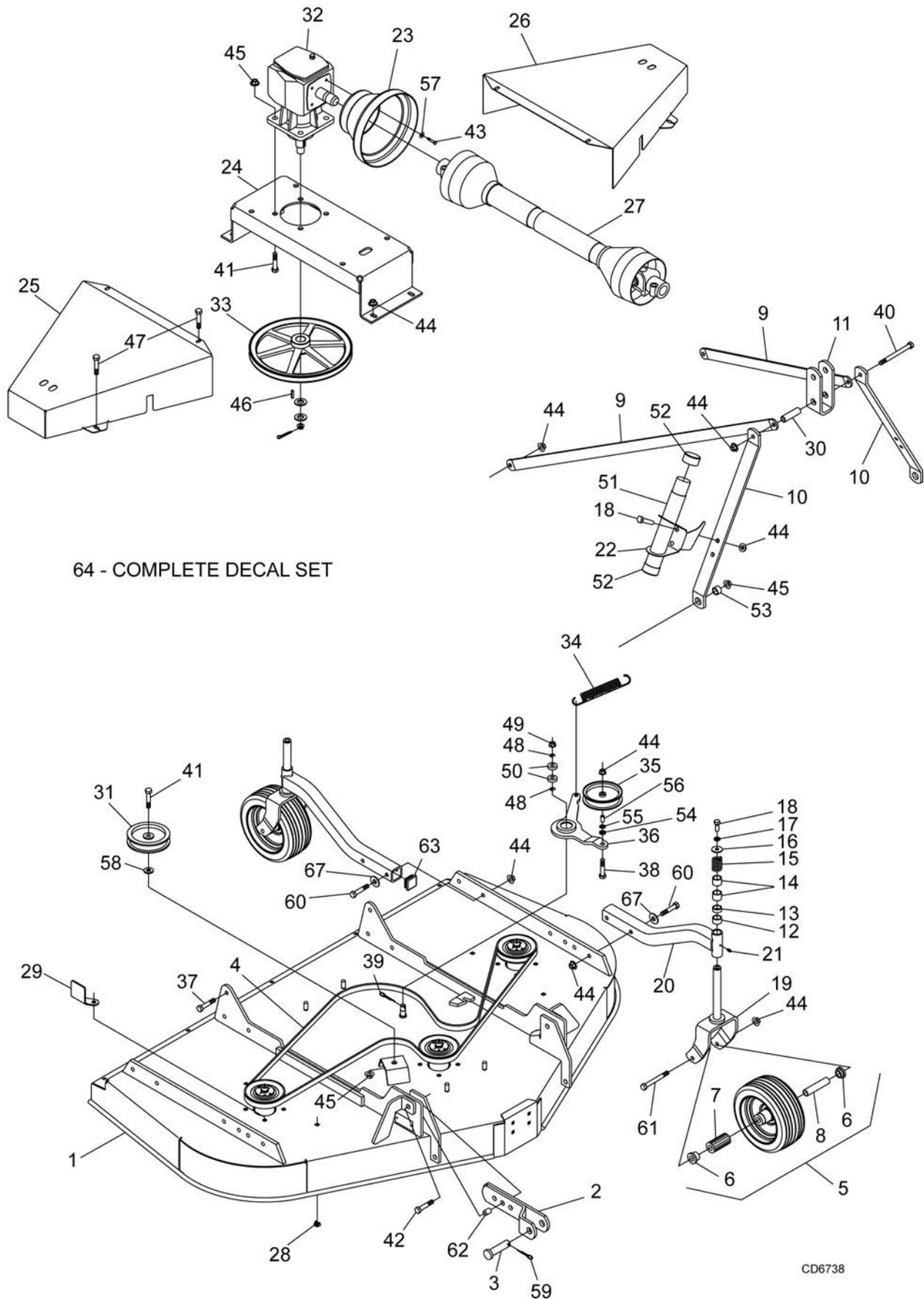
- Show customer how to make adjustments and select proper PTO speed.
- Instruct customer how to lubricate and explain importance of lubrication.
- Point out the safety decals. Explain their meaning and the need to keep them in place and in good condition. Emphasize the increased safety hazards when instructions are not followed.
- Present Operator's Manual and request that customer and all operators read it before operating equipment. Point out the manual safety rules, explain their meanings and emphasize the increased safety hazards that exist when safety rules are not followed.
- 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 the safe, proper procedures to be used when mounting, dismounting, and storing equipment.
- 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 jackstands and to follow all instructions in the "Owner Service, Blocking Methods" section of the Operator's Manual. Explain that blocking up prevents equipment dropping from hydraulic leak down, hydraulic system failures or mechanical component failures.
- For mounted units, add wheel weights, ballast in front tires, and/or front tractor weight to enhance front end stability. A minimum 20% of tractor and equipment gross weight must be on front tractor wheels. When adding weight to attain 20% of tractor and equipment weight on front tractor wheels, you must not exceed the ROPS weight certification. Weigh the tractor and equipment. Do not estimate!
- Make customer aware of optional equipment available so that customer can make proper choices as required.
- Point out all guards and shields. Explain their importance and the safety hazards that exist when not kept in place and in good condition.

NOTES

**Rear Discharge
Grooming Mowers:
GM1060
GM1072
GM1084**

MAIN FRAME ASSEMBLY	36 - 37
GEARBOX ASSEMBLY.....	38
DRIVESHAFT ASSEMBLY (WALTERSCHEID TWO-LOBE)	39
DRIVESHAFT ASSEMBLY (COMER).....	40
BLADE & SPINDLE ASSEMBLY.....	41
REAR CHAIN SHIELDING ASSEMBLY	42
FRONT ROLLER ASSEMBLY (OPTIONAL).....	42
QUICK HITCH KIT (OPTIONAL).....	43

GM1060, GM1072 & GM1084 MAIN FRAME ASSEMBLY



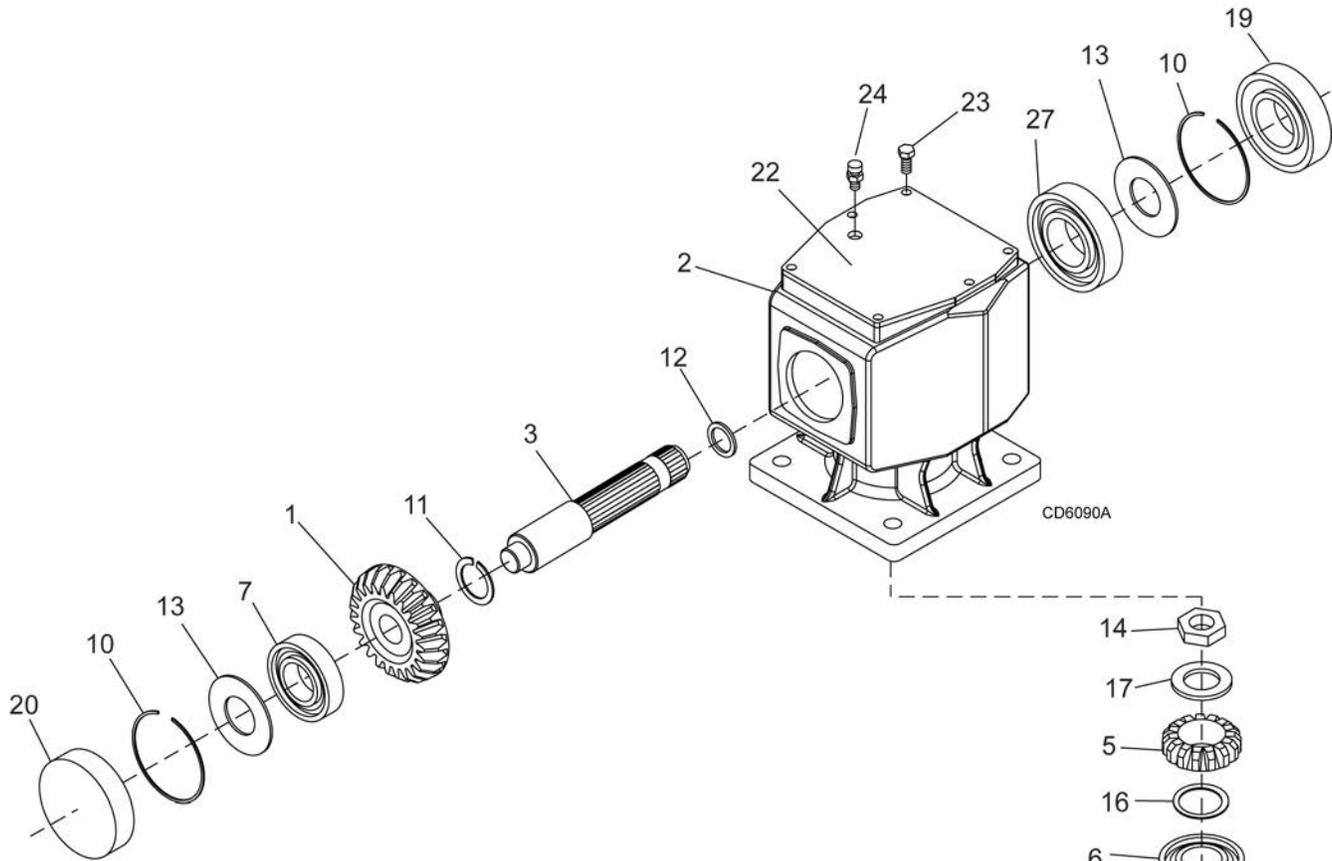
36 Parts

5WPMAN0511 (Rev. 7/18/2008)

GM1060, GM1072 & GM1084 MAIN FRAME ASSEMBLY

REF	PART	QTY	DESCRIPTION	REF	PART	QTY	DESCRIPTION
1	----	1	Main Frame (not sold separately)	27	5WP40551	1	Drive, Cmpl Walterscheid, see pg 39
2	5WP1016501	2	Hitch	27	5WP1009508	1	Drive, Compl Comer, see pg 40
3	5WP20409	2	Clevis Pin, 7/8 x 3	28	5WP1008011	4	Nut, 3/8 NC Square w/Retainer
4	5WP1001244	1	V-Belt W99 (GM1060) -or-	29	5WP53567	1	Guide, Belt 8 GA Formed
4	5WP18879	1	V-Belt W112 (GM1072) -or-	30	5WP64814	1	Sleeve, .62 x .84 x 2.88
4	5WP53418	1	V-Belt W157 (GM1084)	31	5WP64555	1	Idler, Flat 5.5 PD
5	5WP1016511	4	Wheel, 4 x 10" w/Bearing & Sleeve	32	5WP1002499	1	Gearbox 1:1.92 (see page 38)
5	5WP19754	4	Wheel, 4 x 10" w/Bearing & Sleeve (pneumatic tires only)	33	5WP1014410	1	Sheave, Offset 13.25 PD
6	5WP65577	8	Bearing, Flanged Wheel .75 x 1.415	34	5WP67131	1	Spring, Ext .177 x 1.22 x 9.88
7	5WP19756	4	Bearing, Roller .75 x 1.38 x 2.5	35	5WP53595	1	Idler, Flat 5.0 PD (GM1060 & GM1072) -or-
8	5WP19749	4	Sleeve, .525 x .75 x 4.13	35	5WP64555	1	Idler, Flat 5.5 PD (GM1084)
9	5WP55331	2	Rear Offset Link Arm (GM1060) or	36	5WP58989	1	Idler Arm
9	5WP19578		Rear Offset Link Arm (GM1072) or	37		* 2	Screw, 1/2 NC x 1-3/4 HHCS GR5
9	5WP52873	2	Rear Offset Link Arm (GM1084)	38		* 1	Screw, 1/2 NC x 2-1/4 HHCS GR5
10	5WP19579	2	A-Frame Arm	39		* 1	Cotter Pin, 3/16 x 1-1/2
11	5WP19605	1	Top Link U-Bracket	40		* 1	Screw, 1/2 NC x 4-3/4 HHCS GR5
12	5WP33647	4	Sleeve 1.05 x 1.31 x .75 (GM1060 & GM1072) -or-	41	5WP19024	5	Screw, 5/8 NC x 1-3/4 Flange HHCS
12	5WP52854	4	Sleeve 1.28 x 1.66 x .75 (GM1084)	42		* 2	Screw, 5/8 NC x 3 HHCS GR5
13	5WP65129	4	Sleeve 1.05 x 1.31 x .50 (GM1060 & GM1072) -or-	43	5WP39254	4	Screw, M8 x 1.25P x 16 mm HHCS CL8.8
13	5WP52853	4	Sleeve 1.28 x 1.66 x .50 (GM1084)	44	5WP11900	22	Nut, 1/2 NC Flanged Lock
14	5WP65130	8	Sleeve 1.05 x 1.31 x 1.00 (GM1060 & GM1072) -or-	45	5WP19025	7	Nut, 5/8 NC Flanged Lock
14	5WP52855	8	Sleeve 1.28 x 1.66 x 1.0 (GM1084)	46		* 1	Key, 1/4 x 1/4 x 1-1/4 HT
15	5WP67407	4	Spring, Comp 1.40 x .19 x 2.1, 257	47	5WP62153	8	Screw, 3/8 NC x 1 HHCS Flng Ser.
16	5WP33677	4	Washer, Flat .50 x 1.56 x 10 GA	48	5WP35141	2	Retaining Ring
17		* 4	Washer, Lock 1/2	49	5WP302178	1	Nut, 5/8 NF Castle
18		* 6	Screw, 1/2 NC x 1-1/4 HHCS GR5	50	5WP35193	2	Bearing
19	5WP67318	4	Caster Yoke & Shaft Asy (GM1060 & GM1072) -or-	51	5WP1004656	1	Manual Tube - PVC
19	5WP19747	4	Caster Yoke & Shaft Asy (pneumatic GM1060/GM1072) -or-	52	5WP1004657	2	Caplug, 2.0 ID x 1.0
19	5WP52859	4	Caster Yoke & Shaft Asy (GM1084 & GM1084 pneumatic)	53	5WP484	2	Sleeve, 5/8 x 1 x 7/16
20	5WP1014401	4	Caster Arm (GM1060/GM1072)	54	5WP24537	1	Washer, Flat .50 x 1.38 x .38
20	5WP1014403	4	Caster Arm (GM1084 only)	55	5WP31983	1	Washer, Shim .50 x .88 x 18 GA
21		* 4	Grease Fitting 1/4-28 Str, 15/32	56	5WP52877	1	Sleeve, .504 x .625 x .64 (GM1084)
22	5WP1014416	1	Manual Tube Holder / PTO Hanger	57		* 4	Washer, Flat Standard 5/16
23	5WP51849	1	Shield, Counter-Cone	58	5WP1517	1	Washer, Flat .625 x 1.38 x 7 GA
24	5WP53534	1	Gearbox Stand	59		* 2	Pin, Safety 3/16
25	5WP1014417	1	Belt Shield, Right (GM1060) -or-	60		* 8	Screw, 1/2 NC x 3-1/2 HHCS GR5
25	5WP1014418	1	Belt Shield, Right (GM1072) -or-	61		* 4	Screw, 1/2 NC x 5 HHCS GR5 (GM1060 & GM1072) -or-
25	5WP52874	1	Belt Shield, Right (GM1084)	61		* 4	Screw, 1/2 NC x 5-1/2 HHCS GR5 (GM1084 & pneumatic tires)
26	5WP1014417	1	Belt Shield, Left (GM1060) -or-	62	5WP12313	2	Sleeve, 5/8 x 1 x 13/16 HT
26	5WP1014418	1	Belt Shield, Left (GM1072) -or-	63	5WP1016512	4	Caplug, Square 1.75 x .44
26	5WP52875	1	Belt Shield, Left (GM1084)	64	5WP55344	1	Decal Set, Complete
				67		* 8	Washer, 1/2 SAE Flat
							* Obtain Locally

GM1060, GM1072 & GM1084 GEARBOX ASSEMBLY

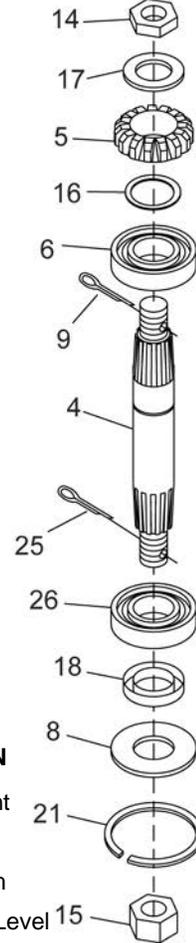


REF	PART	QTY	DESCRIPTION
A	5WP1002499	1	Gearbox Asy, Complete
1	5WP57458	1	Gear, Crown 25T M5.3
2	NSS	1	Gearbox Housing
3	5WP1005320	1	Shaft, Input 1-3/8 -6
4	5WP1005321	1	Shaft, Output 1-1/4
5	5WP57491	1	Pinion Gear 13T M5.3
6	5WP57476	1	Bearing Cup & Cone
7	5WP57462	1	Bearing Cup & Cone
8	5WP20888	1	Washer, 1.58 x 3.13 x .04 Protective Flat
9	*	1	Pin, Cotter B4 x 50
10	5WP57466	2	Snap Ring
11	5WP20895	1	Snap Ring, 45 mm
12	5WP57373	1	Spacer, 35.3 x 48 x 2.5
13	5WP57328	2	Kit, Shim 60.3 x 71.6
14	5WP57468	1	Nut, Castle
15	5WP51946	1	Nut, Castle M24 x 2
16	5WP57328	1	Kit, Shim 30.3 x 44
17	5WP57473	1	Washer, 21 x 37 x 3 mm Flat
18	5WP20900	1	Seal, Oil 40 x 80 x 12 mm
19	5WP57463	1	Seal, Oil 35 x 72 x 10 mm
20	5WP57374	1	Oil Cap

REF	PART	QTY	DESCRIPTION
21	5WP20897	1	Snap Ring SB 81 Int
22	5WP57375	1	Cover, Top
23	*	6	Bolt, 8 mm x 14 mm
24	5WP57076	1	Plug, 1/2 Breather Level
25	*	1	Pin, Cotter 5 x 50
26	5WP57478	1	Bearing Cup & Cone
27	5WP20890	1	Ball Bearing

NSS Not Sold Separately

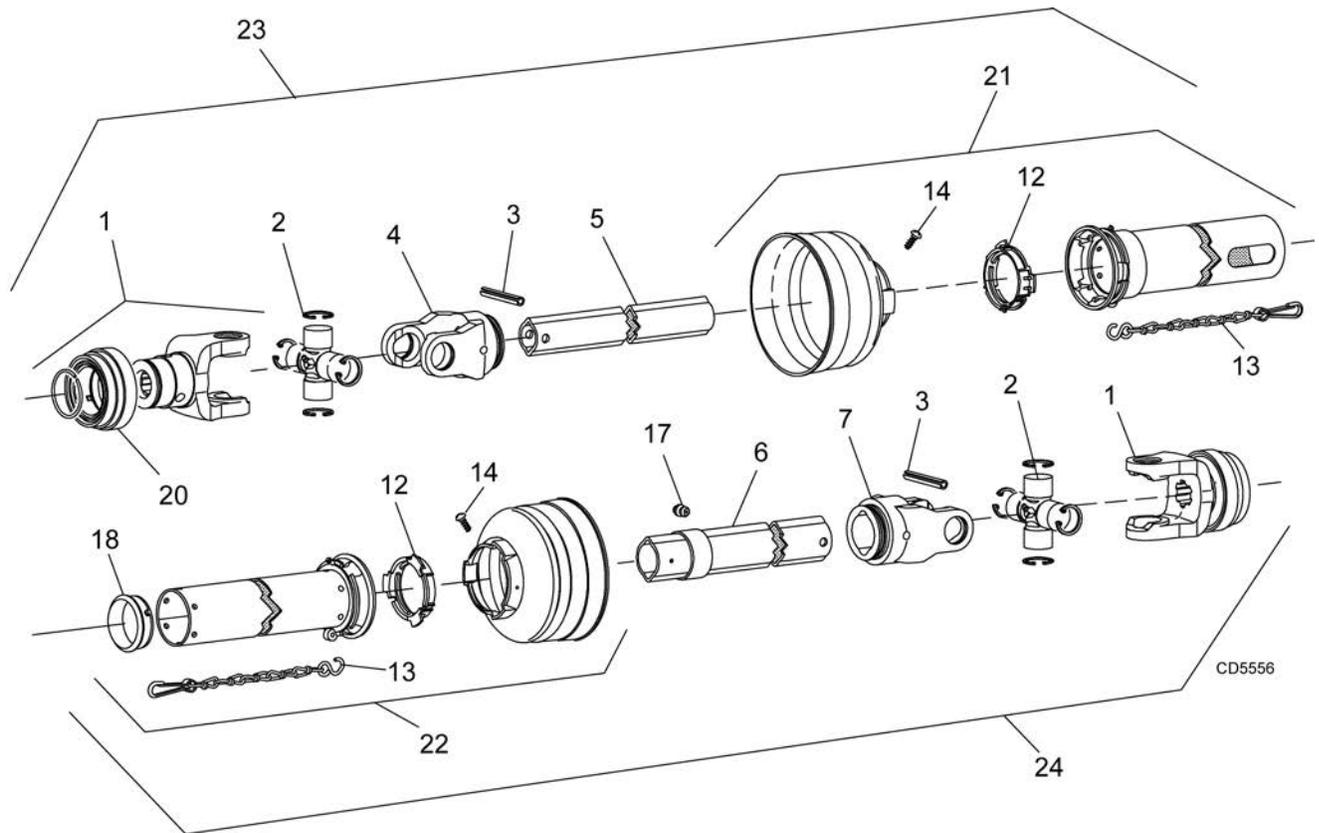
* Obtain Locally



38 Parts

5WPMAN0511 (Rev. 7/18/2008)

GM1060, GM1072 & GM1084 DRIVESHAFT WALTERSCHEID (TWO-LOBE SHAFT)



CD5556

NOTE: EXAMINE THE DRIVELINE PROFILE TO DETERMINE THE CORRECT REPAIR PARTS FOR THE UNIT

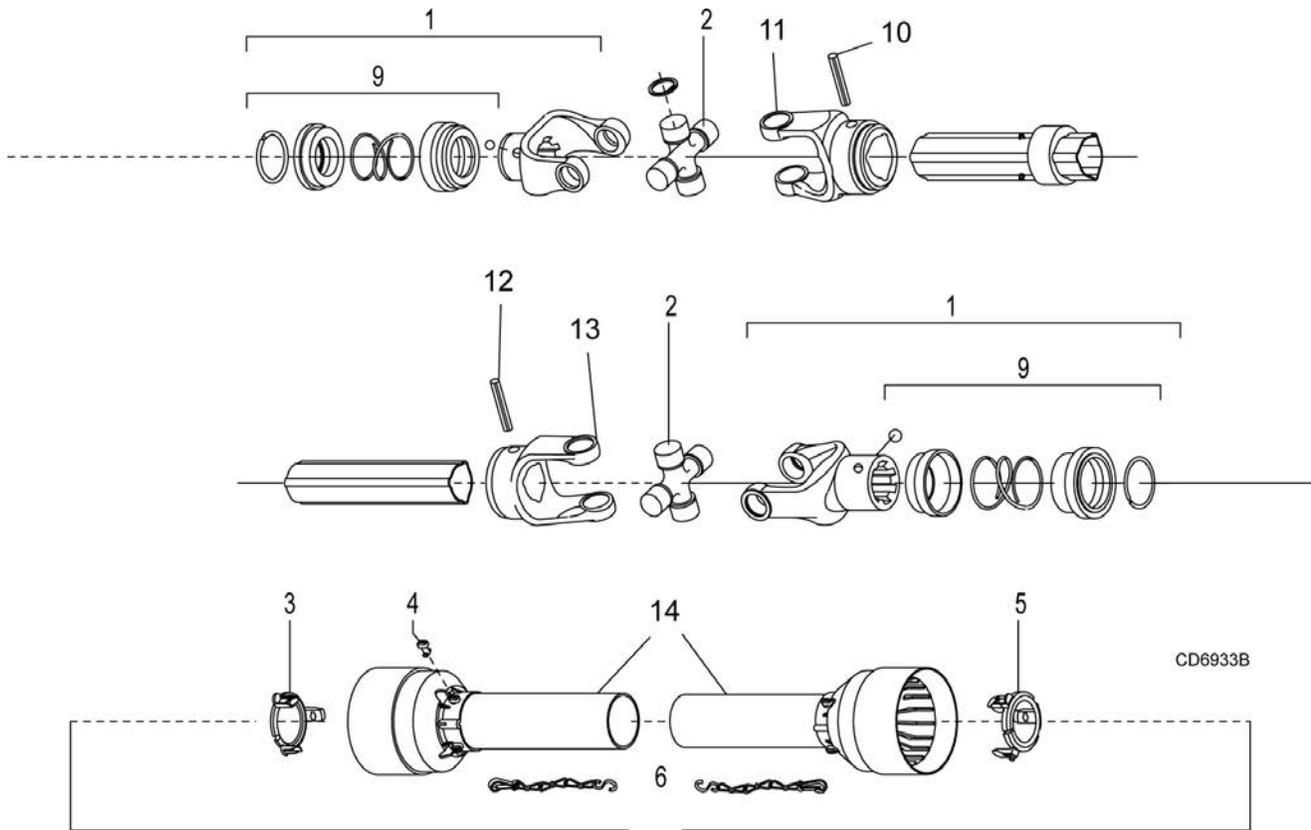
WALTERSCHEID
PROFILE

COMER
PROFILE



REF	PART	QTY	DESCRIPTION	REF	PART	QTY	DESCRIPTION
A	5WP40551	1	Complete Drive Shaft	14	5WP40778	1	Screw, Guard Retainer (Pkg of 10)
1	5WP40571	2	Yoke, 1-3/8 6-Spline QD	17	5WP40779	1	Grease Zerk, Drive Line (Pkg of 10)
2	5WP154	2	U-Joint Repair Kit L14R	18	5WP40780	1	Bearing, Guard Support
3	5WP40775	1	Pin, Spring 10 mm x 65 mm (Pkg of 10)	20	5WP40589	2	Slide Lock Collar Repair Kit (without yoke)
4	5WP40572	1	Yoke, Inner Profile	21	5WP40585	1	Shield, Outer Half Non-Rotating (also includes items 12, 13 & 14)
5	5WP40583	1	Drive Tube, Inner Profile	22	5WP40586	1	Shield, Inner Half Non-Rotating (also includes items 12-14 & 18)
6	5WP40584	1	Drive Tube, Outer Profile	23	5WP40581	1	Drive, Inner Half Complete
7	5WP40573	1	Yoke, Outer Profile	24	5WP40582	1	Drive, Outer Half Complete
12	5WP40776	1	Bearing Ring Kit (set of 2)				
13	5WP40777	2	Chain, Guard Anti-Rotation				

GM1060, GM1072 & GM1084 DRIVESHAFT COMER



NOTE: EXAMINE THE DRIVELINE PROFILE TO DETERMINE THE CORRECT REPAIR PARTS FOR THE UNIT

WALTERSCHEID
PROFILE

COMER
PROFILE



REF	PART	QTY	DESCRIPTION	REF	PART	QTY	DESCRIPTION
A	5WP1009508	1	Complete driveline asy	6	5WP30917	2	Chain-shield tether
1	5WP1001300	2	Complete collar yoke C12 1-3/8 - 6	9	5WP1001340	1	Lock collar repair kit
2	5WP38478	2	Cross and bearing kit	10	5WP1001302	1	Flexible pin
3	5WP1019442	1	Outer cone fix ring	11	5WP1001301	1	Outer yoke tube
4	5WP30922	6	Protection fixing screw	12	5WP1001305	1	Flexible pin
5	5WP1019444	1	Inner cone fix ring	13	5WP1001306	1	Inner tube yoke
				14	5WP1021323	1	Complete shield

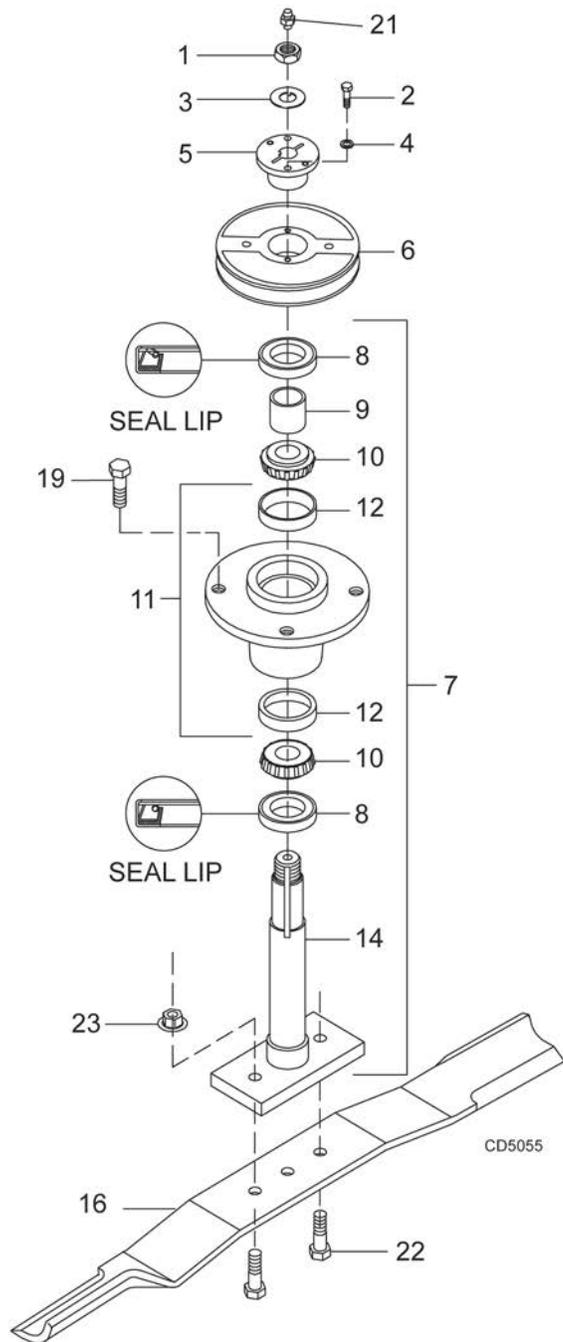
40 Parts

5WPMAN0511 (Rev. 7/18/2008)

GM1060, GM1072 & GM1084 BLADE & SPINDLE ASSEMBLY

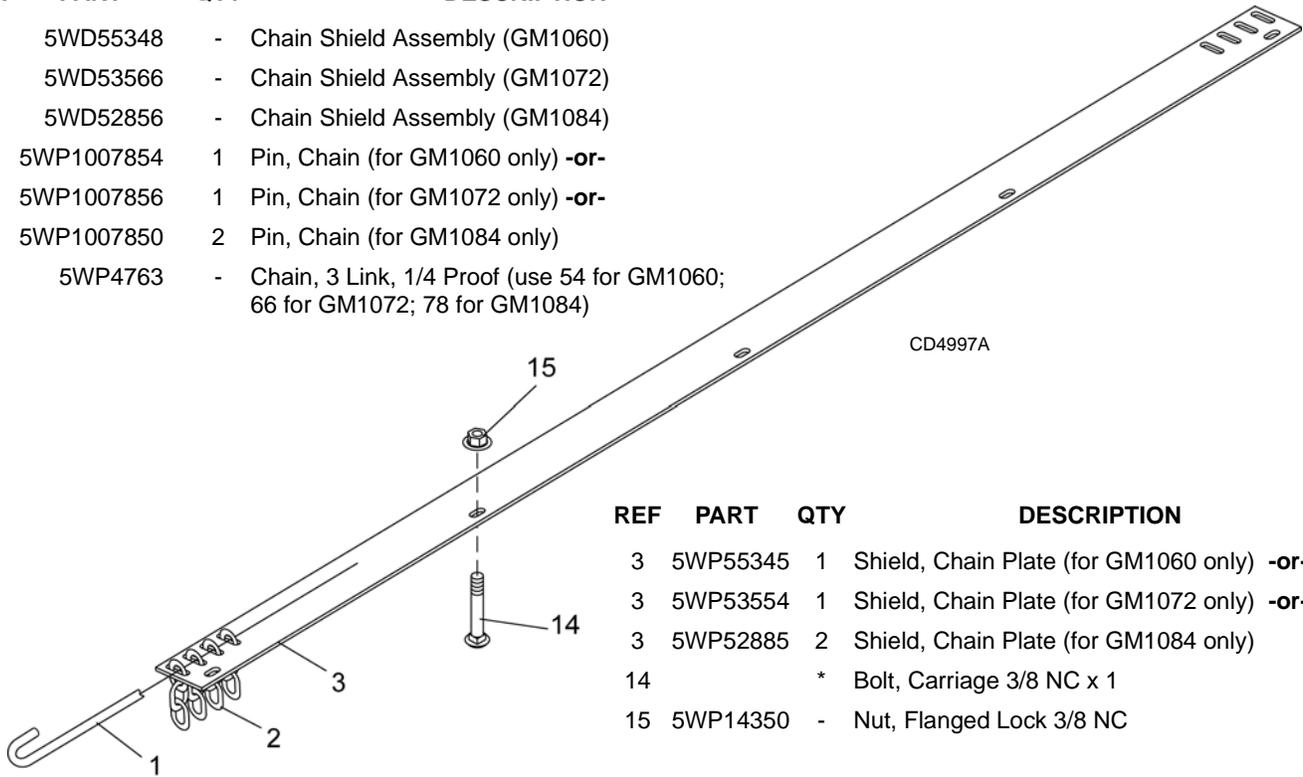
REF	PART	DESCRIPTION
1	5WP37009	Nut, Jam 7/8 NF
2		* Screw, HHCS 1/4 NC x 1 GR5
3	5WP52898	Washer, Lock .929 x 1.66
4		* Washer, Lock 1/4
5	5WP34440	Bushing, H 1 Straight bore w/key
6	5WP66694	Sheave, H 1 BK 4.17 PD (GM1060) -or-
6	5WP12622	Sheave, H 1 BK 5.0 PD (GM1072) -or-
6	5WP53419	Sheave, H 1 BK 5.9 PD (GM1084)
7	5WP52881	Spindle Assembly, Complete
8	5WP52949	Seal, 1.50 x 2.12 x .31
9	5WP52872	Sleeve, 1.14 x 1.50 x .55
10	5WP29899	Bearing Cone
11	5WP52882	Blade Spindle Housing with Cups
12	5WP29898	Bearing Cup
14	5WP52852	Shaft, Blade Spindle
16	5WP1001513KT	Blade Kit, High Suction 21 In (set of 3) (GM1060)
16	5WP1008199KT	Blade Kit, High Suction 25 In (set of 3) (GM1072)
16	5WP53417KT	Blade Kit, High Suction 29.33 In (set of 3) (GM1084)
16	5WP1001510KT	Blade Kit, Low Suction 21 In (set of 3) (GM1060)
16	5WP1001511KT	Blade Kit, Low Suction 25 In (set of 3) (GM1072)
16	5WP1001512KT	Blade Kit, Low Suction 29.33 In (set of 3) (GM1084)
19	5WP4358	Screw, HHCS 1/2 NF x 1-1/4 GR5
21		* Grease Fitting, 1/4-28 Tapered Thread
22	5WP3379	Screw, HHCS 1/2 NC x 1-1/2 GR5
23	5WP11900	Nut, Flanged Lock 1/2 NC

* Standard Hardware - Obtain Locally



GM1060, GM1072 & GM1084 REAR CHAIN SHIELDING ASSEMBLY (OPTIONAL)

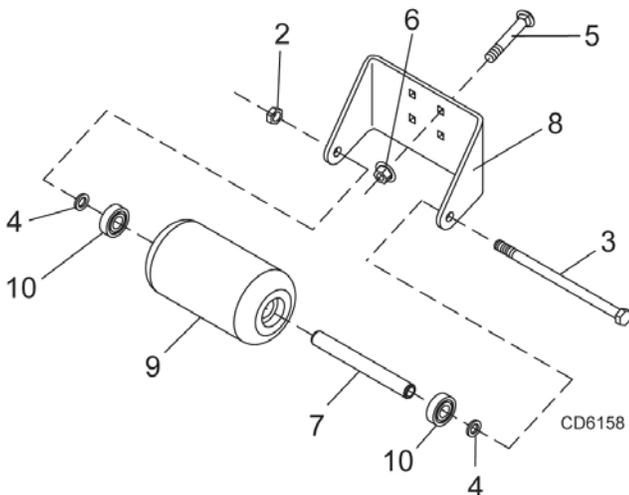
REF	PART	QTY	DESCRIPTION
A	5WD55348	-	Chain Shield Assembly (GM1060)
B	5WD53566	-	Chain Shield Assembly (GM1072)
C	5WD52856	-	Chain Shield Assembly (GM1084)
1	5WP1007854	1	Pin, Chain (for GM1060 only) -or-
1	5WP1007856	1	Pin, Chain (for GM1072 only) -or-
1	5WP1007850	2	Pin, Chain (for GM1084 only)
2	5WP4763	-	Chain, 3 Link, 1/4 Proof (use 54 for GM1060; 66 for GM1072; 78 for GM1084)



REF	PART	QTY	DESCRIPTION
3	5WP55345	1	Shield, Chain Plate (for GM1060 only) -or-
3	5WP53554	1	Shield, Chain Plate (for GM1072 only) -or-
3	5WP52885	2	Shield, Chain Plate (for GM1084 only)
14		*	Bolt, Carriage 3/8 NC x 1
15	5WP14350	-	Nut, Flanged Lock 3/8 NC

* Standard Hardware, Obtain Locally

GM1060, GM1072 & GM1084 FRONT ROLLER ASSEMBLY (OPTIONAL)



REF	PART	QTY	DESCRIPTION
A	5WD1006417	1	Kit, Front Bearing, Roller & Bracket
2	5WP11900	1	1/2 NC Flanged Lock Nut
3	5WP38107	1	1/2 NC x 9 Cap Screw GR5
4		*	2 1/2 Flat Washer SAE
5		*	4 3/8 NC x 1 Carriage Bolt GR5
6	5WP70069	4	3/8 NC Flanged Whiz Nut
7	5WP1006420	1	Spacer, .75 x 7.27
8	5WP1006419	1	Bracket, Front Roller
9	5WP1006418	1	Roller, 4 x 7.38
10	5WP35193	2	Bearing

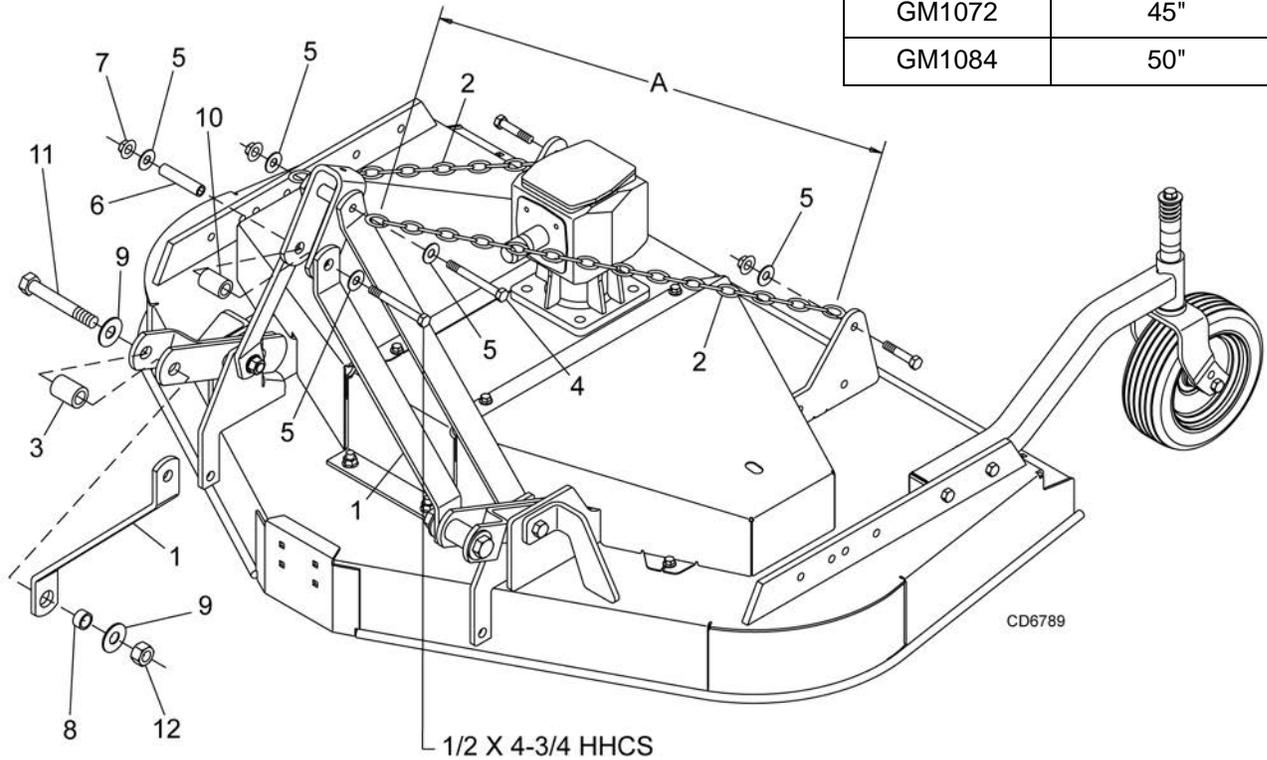
* Standard Hardware, Obtain Locally

42 Parts

(Rev. 10/18/2012)
5WPMAN0511 (Rev. 7/18/2008)

QUICK HITCH KIT (OPTIONAL)

CHAIN CUT-TO-LENGTH CHART	
Model	Dimension "A"
GM1060	40"
GM1072	45"
GM1084	50"



NOTE: This kit is used on other models. Use only the hardware listed below.

REF	PART	QTY	DESCRIPTION
A	5WD1005400	-	Quick Hitch Kit, Complete
1	5WP1003692	2	Link, Offset .38 x 2.0 x 15
2	5WP1005401	2	Chain, 3/8 Proof Coil 38-Link
3	5WP1016517	2	Sleeve, .94 x 1.44 x 1.94"
4	5WP13563	1	Screw, 1/2 NC x 6 HHCS GR5
5		* 6	Washer, 1/2" Flat
6	5WP29368	1	Sleeve, .50 x .75 x 3.38"
7	5WP11900	1	Nut, 1/2 NC Flange Lock
8	5WP29281	2	Sleeve, 7/8 x 1-1/8 x 19/32" HT
9		* 4	Washer, 3/4 Flat
10	5WP1003614	1	Sleeve, .81 x 1.25 x 1.81
11		* 2	Screw, 3/4 NC x 4-1/2 HHCS
12		* 2	Nut, 3/4 NC Plated Hex
			* Standard Hardware, Obtain Locally

BOLT TORQUE CHART

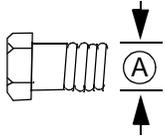
Always tighten hardware to these values unless a different torque value or tightening procedure is listed for a specific application.

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

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

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

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



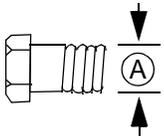
SAE SERIES TORQUE CHART



SAE Bolt Head Identification



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



METRIC SERIES TORQUE CHART

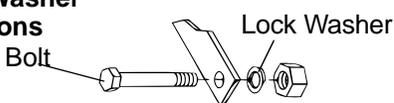


Metric Bolt Head Identification

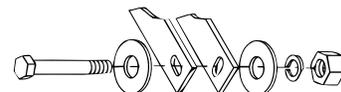
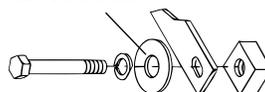


Ⓐ Diameter & Thread Pitch (Millimeters)	Wrench Size	Coarse Thread				Fine Thread				Ⓐ Diameter & Thread Pitch (Millimeters)
		Marking on Head				Marking on Head				
		Metric 8.8		Metric 10.9		Metric 8.8		Metric 10.9		
		N-m	lbs-ft	N-m	lbs-ft	N-m	lbs-ft	N-m	lbs-ft	
6 x 1.0	10 mm	8	6	11	8	8	6	11	8	6 x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

Typical Washer Installations



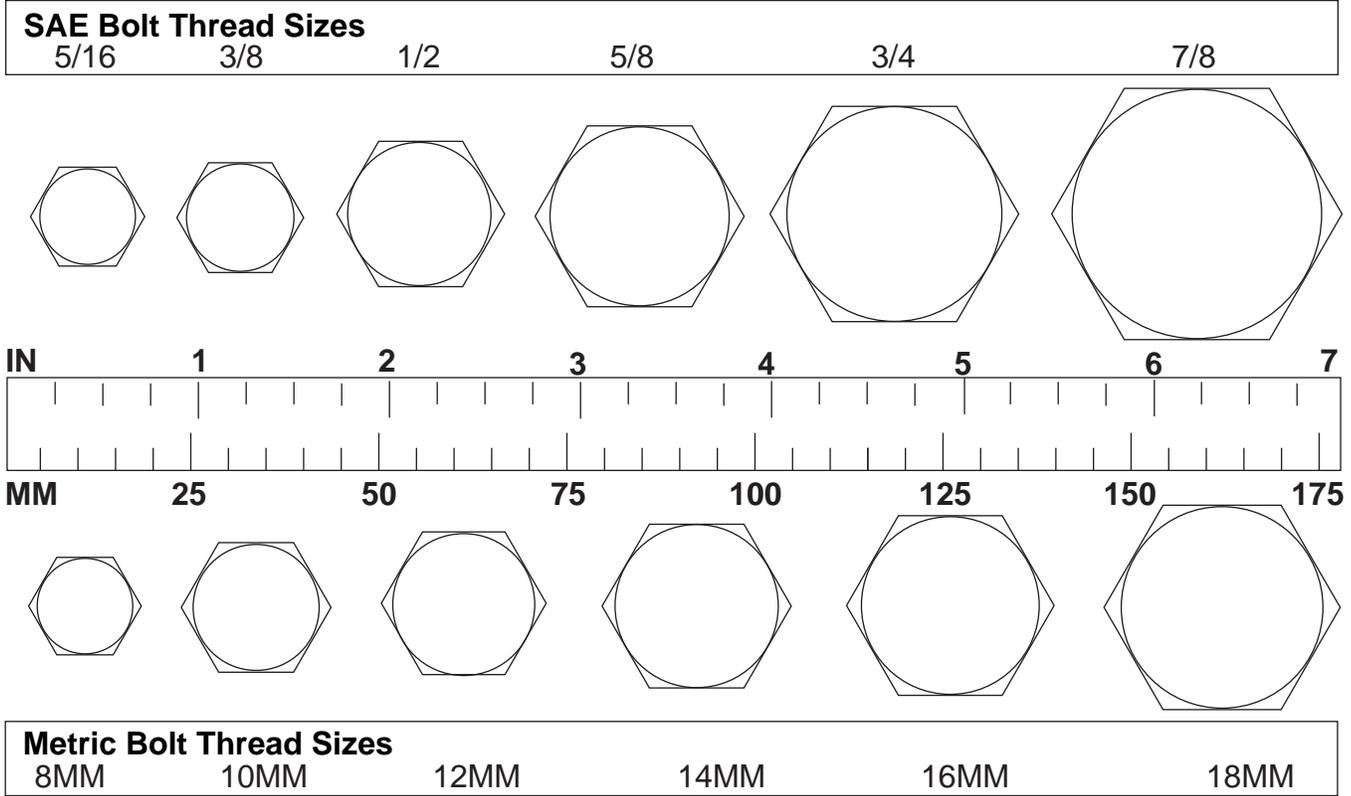
Flat Washer



8/9/00

BOLT SIZE CHART

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



ABBREVIATIONS

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

INDEX

ADJUSTMENTS

- Cutting Height 11
- Levelling Mower 11
- Tractor Top Link 12

ASSEMBLY

- Dealer Set-Up Instructions 29
- Initial Oil Fill 31
- Optional Equipment
 - Chain Shielding 31
 - Front Roller 31
 - Quick Hitch Kit 32

DEALER CHECK LISTS

- Delivery (Dealer's Responsibility) 33
- Pre-Delivery (Dealer's Responsibility) 33

DEALER SERVICE

- Blade Spindle
 - Assembly 23
 - Disassembly 22
 - Installation 23
 - Removal 22
 - Service 22
- Blocking Method 22
- Gearbox Repair 24
 - Disassembly 26
 - Drive Sheave Installation 27
 - Installation 27
 - Reassembly 26
 - Removal 25
- Seal
 - Horizontal Shaft Seal Replacement 25
 - Installation 24
 - Replacement 24
 - Vertical Shaft Seal Replacement 25
- Universal Joint
 - Assembly 28
 - Disassembly 27
 - Repair 27

GENERAL

- Abbreviations 45
- Bolt Size Chart 45
- Bolt Torque Chart 44
- General Information 4
- Introduction 2
- Specifications 4
- Table of Contents 3

OPERATION

- Attaching Mower to Tractor 10

- Cutting Height Adjustment 11
- Front Caster Arm Configuration 13
- Front Caster Wheel Interference Check 13
- Front Roller (Optional) 13
- Levelling Mower 11
- Mower Removal 14
- Mowing Speed Recommended 10
- Operating Technique 13
 - Tips 14
- Operating Techniques
 - Uneven Terrain 14
- Pre-Operation Check List (Owner's Responsibility) 15
- Recommended Uses 10
- Storage 14
- Tractor Stability 10
- Tractor Top Link Adjustment 12

OWNER SERVICE

- Belt
 - Installation 18
 - Replacement 18
 - Routing 18
 - Service 18
- Blade
 - Assembly 19
 - Installation 19
 - Service 18
 - Sharpening 19
- Blocking Method 16
- Chain Shielding 19
- Cleaning 19
- Lubrication
 - Driveshaft 16
 - Information 16
 - Lubrication Points & Chart 17

PARTS

- Index to Parts Lists 35

SAFETY

- Blocking Method 16
- Check Lists
 - Delivery (Dealer's Responsibility) 33
 - Pre-Delivery (Dealer's Responsibility) 33
 - Pre-Operation (Owner's Responsibility) 15
- Safety & Instructional Decals 8, 9
- Safety Rules 5, 6, 7

TROUBLE SHOOTING

- Belt Conditions 21
- Mowing Conditions 20

NOTES

PART NUMBER
5WPMAN0511