

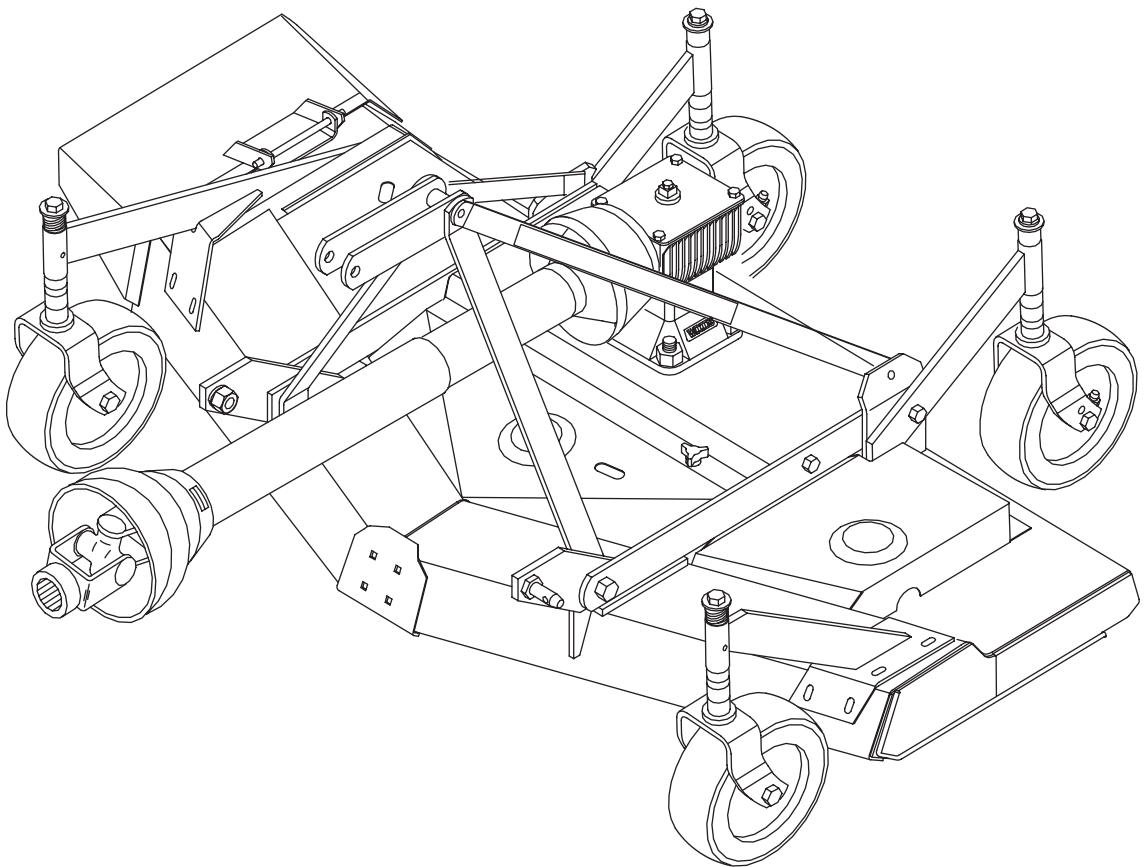
O P E R A T O R ' S M A N U A L

GROOMING MOWERS

GM1060S

GM1072S

Serial Numbers up to 23700



FRONTIER
EQUIPMENT™

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.

The dealer must complete the Warranty Registration, located on the Frontier website. **Warranty claims will be denied if the Warranty Registration has not been completed.**

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 **IMPORTANT** 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 Safety-Alert Symbol indicates a hazard and means **ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!**



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



Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury, and includes hazards that are exposed when guards are removed



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

IMPORTANT

Indicates that failure to observe can cause damage to equipment.

NOTE

Indicates helpful information.

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SPECIFICATIONS

	<u>GM1060S</u>	<u>GM1072S</u>
3-Point Hitch	Cat 1	Cat 1
Cutting Width	60"	72"
Cutting Height Range	1.5" - 6"	1.5" - 6"
Operating Weight	495 lbs.	565 lbs.
Blade Speed (feet per minute)	15,080	16,480
Blade Speed (RPM)	2,776	2,554
Blades Spindles	3	3
Number of Blades	3	3
Universal Drive Series	Cat 3	Cat 3
Caster Wheels	3.5 x 10.25	3.5 x 10.25
Tractor PTO Speed RPM	540	540
Recommended Maximum Tractor Horsepower	40	40
Mower Frame Thickness	8 GA	8 GA

GENERAL INFORMATION

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, but due to possible inline production changes, your machine may vary

slightly in detail. We reserve the right to redesign and change the machines as may be necessary without notification.

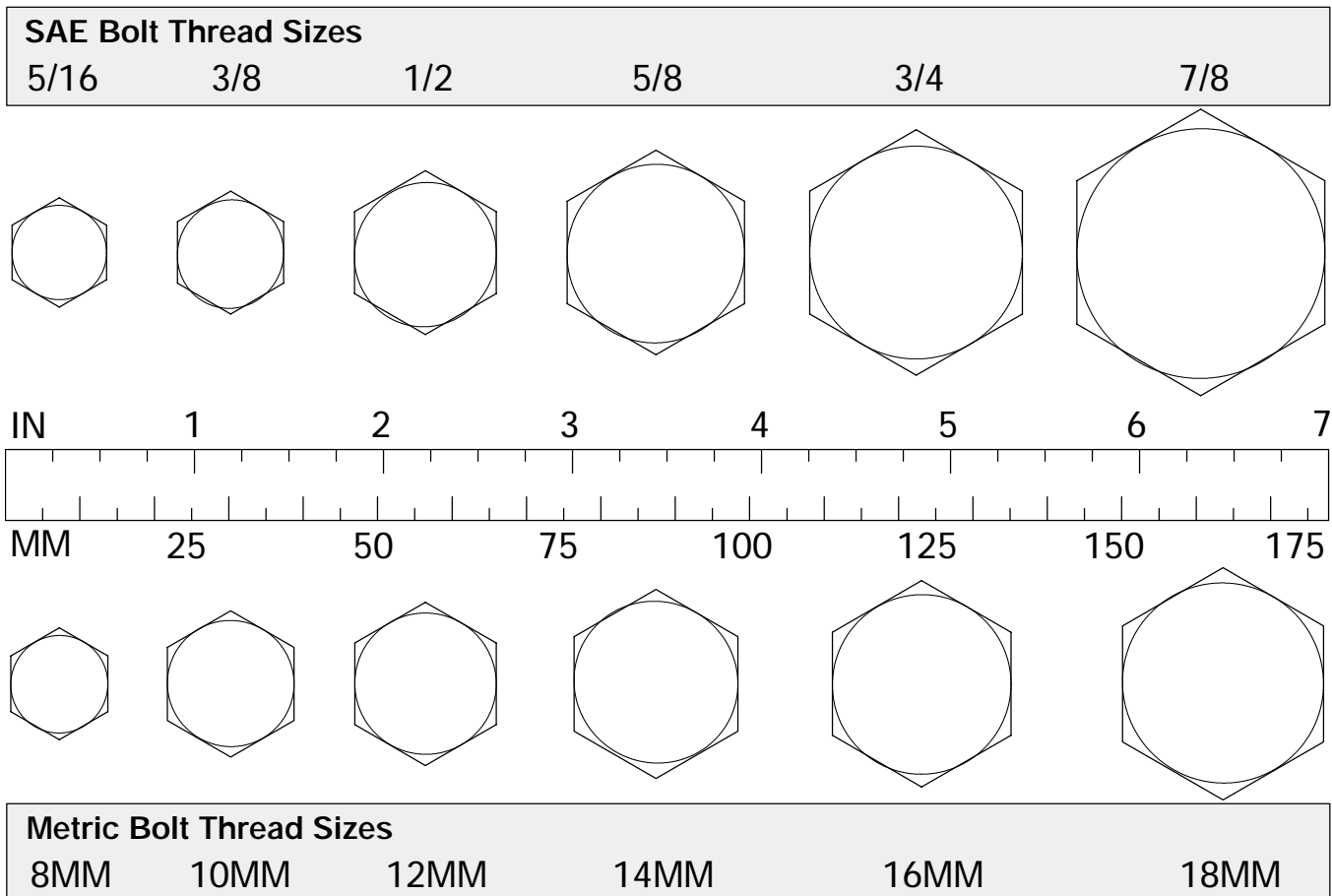
WARNING

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

Throughout this manual, references are made to right and left direction. These are determined by standing behind the equipment facing the direction of forward travel. Blade rotation is clockwise as viewed from the top of the mower.

BOLT SIZE CHART

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



BOLT TORQUE CHART

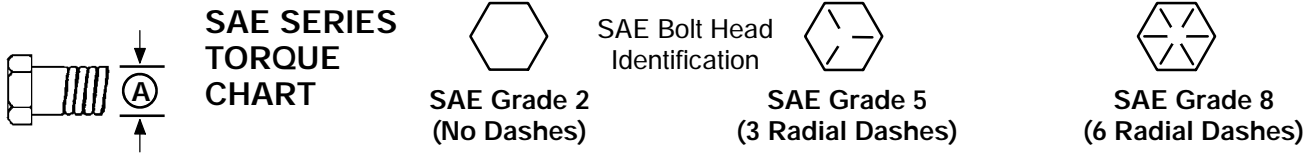
Always tighten hardware to these values unless a different torque value or tightening procedure is listed for a specific application.

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

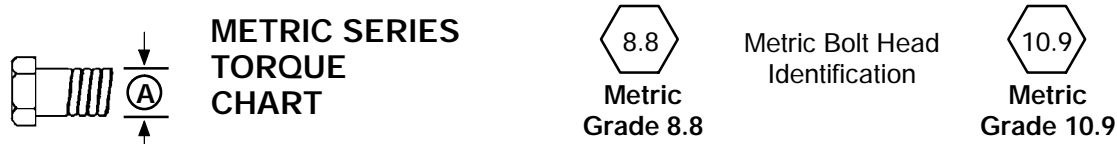
Always use the proper tool for tightening hardware: SAE for SAE hardware and Metric for metric hardware.

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

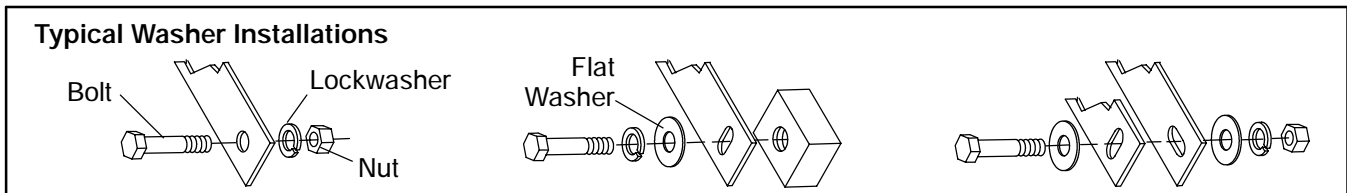
All torque values are given to specifications used on hardware defined by SAE J1701 & J1701M JUL96.



Diameter (Inches) ^(A)	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



Diameter & Thread Pitch (Millimeters) ^(A)	Wrench Size	COARSE THREAD				FINE THREAD				Diameter & Thread Pitch (Millimeters) ^(A)
		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



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

PREPARATION

- Check that all hardware is properly installed. Always tighten to torque chart specifications unless instructed otherwise in this manual.
- Always wear relatively tight and belted clothing to avoid entanglement in moving parts. Wear sturdy, rough-soled work shoes and protective equipment for eyes, hair, hands, hearing and head.
- Make sure implement is properly attached, 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.

- 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 systems in "locked up" position at all times.
- Remove accumulated debris from this equipment, tractor 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 tractor front wheels with attachments in transport position. Without this weight, tractor could tip over causing personal injury or death. The weight may be attained with a loader, front wheel weights, ballast in tires or front tractor weights. Weigh the tractor and equipment. Do not estimate.
- Inspect and clear area of stones, branches or other hard objects that might be thrown, causing injury or damage.

OPERATIONAL SAFETY

- Do not operate mower unless discharge chute is installed and in good condition. Replace if damaged.
- Keep bystanders away from equipment.
- Never go underneath equipment lowered to the ground or raised, unless it is properly blocked and secured. Never place any part of the body underneath equipment or between moveable parts even when the engine has been turned off. Hydraulic system leak down, hydraulic system failures, mechanical failures or movement of control levers can cause equipment to drop or rotate unexpectedly and cause severe injury or death. Follow Operator's Manual instructions for working underneath and blocking requirements, or have work done by a qualified dealer.
- Never direct discharge toward people, animals or property.
- Do not operate 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.

SAFETY RULES



ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!



- Never allow riders on power unit or attachment.
- Power unit must be equipped with ROPS or ROPS CAB and seat belt. Keep seat belt securely fastened. Falling off power unit can result in death from being run over or crushed. Keep foldable ROPS systems in "locked up" position at all times.
- Always sit in tractor 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 tractor engine.
- Operate tractor PTO at RPM speed stated in "Specifications" section.
- Do not operate tractor PTO during transport.
- Do not operate auxiliary hydraulics during transport.
- Look down and to the rear and make sure area is clear before operating in reverse.
- Do not operate 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 tractor and implement immediately upon striking an obstruction. Turn off engine, remove key, inspect and repair any damage before resuming operation.
- Before dismounting tractor or performing any service or maintenance, disengage power to implement, 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.

MAINTENANCE SAFETY

- Before dismounting tractor or performing any service or maintenance, disengage power to implement, lower the 3-point hitch and all raised components to the ground, operate valve levers to release any hydraulic pressure, set parking brake, stop engine, remove key, and unfasten seat belt.
- Do not modify or alter or permit anyone else to modify or alter the equipment or any of its components in any way.
- Always wear relatively tight and belted clothing to avoid entanglement in moving parts. Wear

sturdy, rough-soled work shoes and protective equipment for eyes, hair, hands, hearing and head.

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

- Make sure implement is properly attached, 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 implement components has stopped before approaching for service.

- Frequently check blades. They should be sharp, free of nicks and cracks and securely fastened.

- Use a new Nylok blade bolt and cup washers when you replace the blade. Do not substitute any bolt for the special blade bolt. It is self-locking, meeting the non-loosening requirements for this application.

- 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 operating.

- 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.

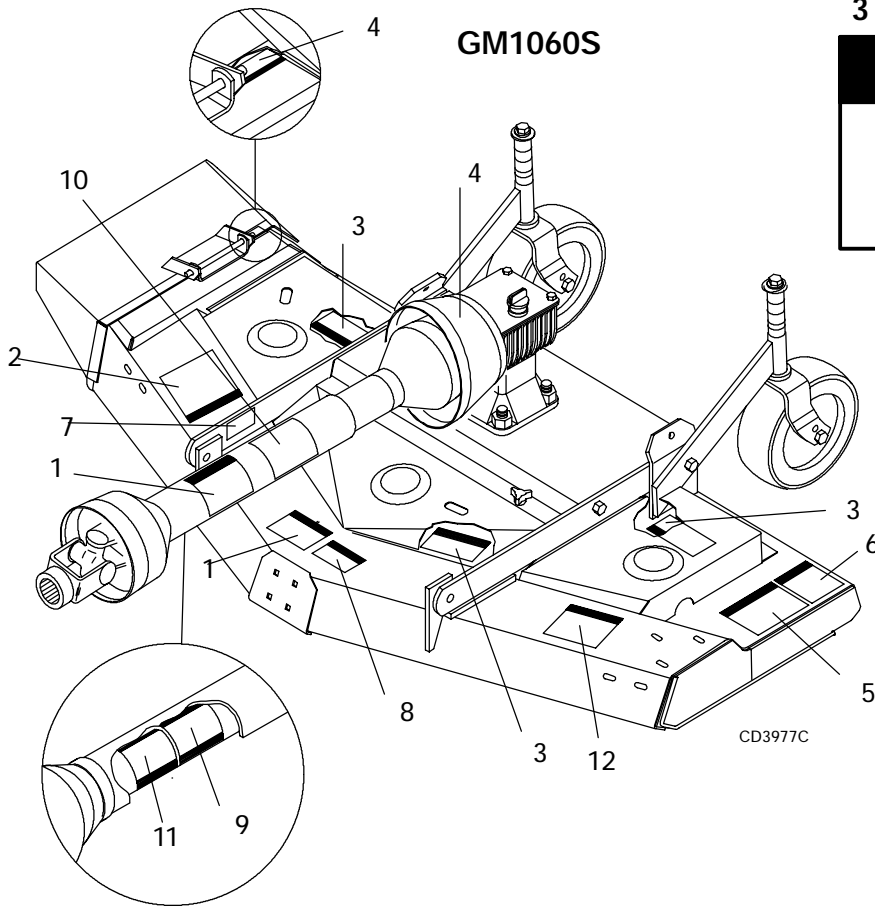
STORAGE

- Block equipment securely for storage.

- Keep children and bystanders away from storage area.

SAFETY & INSTRUCTIONAL DECALS

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



3 - WP18867

! DANGER
SHIELD MISSING
 Do not operate.
 Put shield on. 18867-A

4 - WP18869

! DANGER
SHIELD MISSING
DO NOT OPERATE - PUT SHIELD ON 18869-B

1 - WP18864

! 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

2 - WP53425

! 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 discharge chute and guards in place and in good condition.

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

53425-B

(Safety Decals continued on next page)

SAFETY & INSTRUCTIONAL DECALS



ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!



Replace Immediately If Damaged!

(Safety Decals continued from previous page)

5 - WP18865

 <h1 style="margin: 0;">WARNING</h1>	
	
<p>FALLING OFF CAN RESULT IN BEING RUN OVER.</p> <ul style="list-style-type: none"> ■ Tractor must be equipped with ROPS (or ROPS CAB) and seat belt. Keep foldable ROPS systems in "locked up" position at all times. ■ Buckle Up! Keep seat belt securely fastened. ■ Allow no riders. <p>RAISED EQUIPMENT CAN DROP AND CRUSH.</p> <ul style="list-style-type: none"> ■ Before working underneath, follow all instructions and safety rules in operator's manual and securely block up all corners of equipment with jack stands. ■ Securely blocking prevents equipment dropping from hydraulic leak-down, hydraulic system failures or mechanical component failures. <p>FALLING OFF OR FAILING TO BLOCK SECURELY CAN RESULT IN SERIOUS INJURY OR DEATH.</p> <p style="text-align: right; font-size: small;">18865-C</p>	


6 - WP1002423

 <h1 style="margin: 0;">WARNING</h1>
<p>TO AVOID SERIOUS INJURY OR DEATH:</p> <ul style="list-style-type: none"> ■ 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. <p>FAILURE TO FOLLOW THESE INSTRUCTIONS CAN RESULT IN INJURY OR DEATH.</p> <p style="text-align: right; font-size: small;">1002423-A</p>

7 - Serial Number Plate



8 - WP18866

 <h1 style="margin: 0;">WARNING</h1>
<p>PTO speeds higher than 540 RPM can cause equipment failure and personal injury.</p> <p style="text-align: center; font-size: large;">OPERATE PTO AT 540 RPM.</p> <p style="text-align: right; font-size: small;">18866-C</p>

9 - WP33347

 <h1 style="margin: 0;">DANGER</h1>

<p>GUARD MISSING. DO NOT OPERATE.</p>
 <h1 style="margin: 0;">DANGER</h1>

<p>GUARD MISSING. DO NOT OPERATE.</p> <p style="text-align: right; font-size: x-small;">33347E</p>
 <h1 style="margin: 0;">DANGER</h1>

(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)

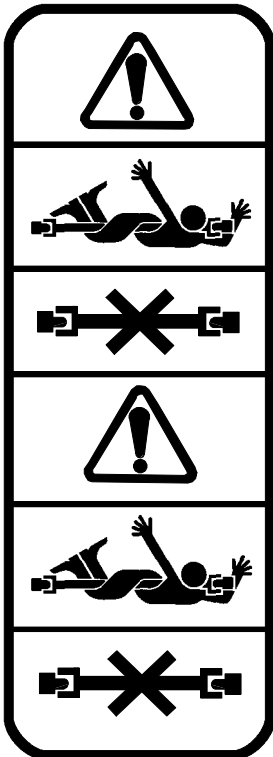
10 - WP53597



12 - WP1003751

⚠ WARNING			
<p>CRUSHING AND PINCHING HAZARD</p> <ul style="list-style-type: none"> ■ Be extremely careful handling various parts of the hitching mechanism. They are heavy and hands, fingers, feet, and other body parts could be crushed or pinched between tractor and implement. ■ Operate tractor controls from tractor seat only. ■ Do not stand between tractor and implement when tractor is in gear. ■ Make sure parking brake is engaged before going between tractor and implement. ■ Stand clear of machine while in operation or when it is being raised or lowered. <p>FAILURE TO FOLLOW THESE INSTRUCTIONS COULD RESULT IN SERIOUS INJURY OR DEATH.</p> <p style="text-align: right;"><small>1003751</small></p>			

11 - WP53596



OPERATION

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.

The operator is responsible for the safe operation of this mower. The operator must be properly trained. Operators should be familiar with the mower and tractor and all safety practices before starting operation. Read the safety information on pages 4 through 8.

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. Optional blades with less suction are available for use in sandy areas.

Recommended mowing speed for most conditions is from two to five mph.

WARNING

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

WARNING

- Keep all persons away from operator control area while performing adjustments, service or maintenance.
- Make sure spring-activated locking pin or collar slides freely and is seated firmly in tractor PTO spline groove.
- Operate tractor PTO at RPM speed stated in "Specifications" section.

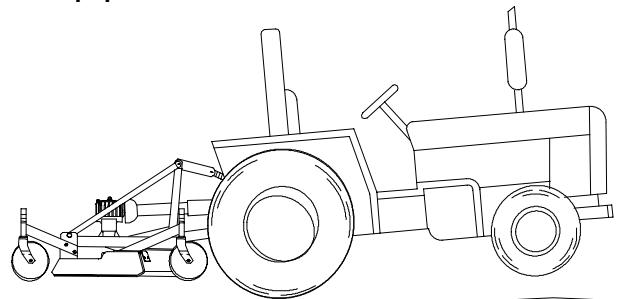
CAUTION

- Stop tractor and implement immediately upon striking an obstruction. Turn off engine, remove key, inspect and repair any damage before resuming operation.
- Always wear relatively tight and belted clothing to avoid entanglement in moving parts. Wear sturdy, rough-soled work shoes and protective equipment for eyes, hair, hands, hearing and head.

Tractor Stability (Figure 1)

WARNING

- A minimum 20% of tractor and equipment weight must be on tractor front wheels with attachments in transport position. Without this weight, tractor could tip over causing personal injury or death. The weight may be attained with a loader, front wheel weights, ballast in tires or front tractor weights. Weigh the tractor and equipment. Do not estimate.



CD3550B

Figure 1. Tractor Stability

Top Link Adjustment (Figure 2)

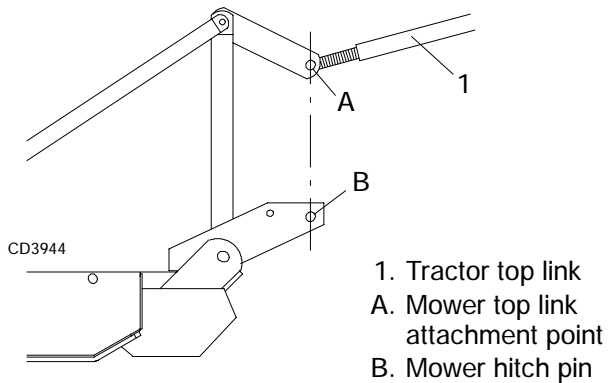


Figure 2. Top Link Adjustment

When the cutting height is adjusted, adjust tractor top link until mower top link attachment point A is aligned vertically with mower hitch pin B.

Attaching Mower to Tractor (Figure 3)

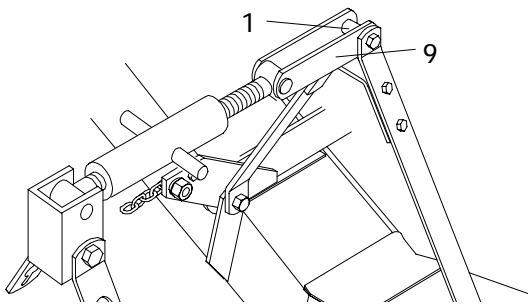


Figure 3. Check Chain & Top Link Adjustment

NOTE: Mower cannot be used with a quick hitch.

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

Attach the mower hitch pins to lower tractor lift arms and secure.

Attach tractor top link (1) to offset links (9). Connect the driveline to the tractor PTO shaft.

! WARNING

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

Adjust the tractor lower 3-point arm anti-sway devices to prevent mower from swinging side to side during transport.

Cutting Height Adjustment (Figure 4)

IMPORTANT

- 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.

! WARNING

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

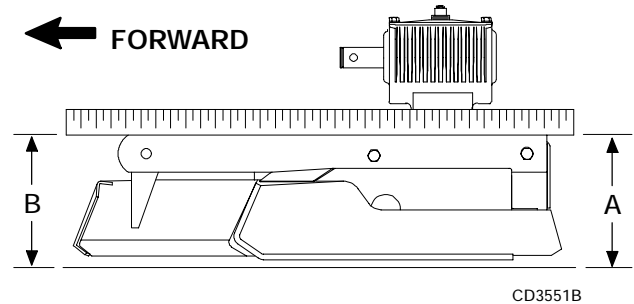


Figure 4. Cutting Height Adjustment

Level mower from side to side. Check by measuring from mower frame to the ground at each deck rail. Adjust, using tractor 3-point arm leveling device.

Best mowing results will be obtained with front of mower level with or slightly lower than the rear.

Cutting height is controlled with tractor 3-point arms and front and rear caster wheel adjustment. Optional check chains are available.

! WARNING

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

To raise rear of mower, move caster adjustment spacers under caster arms. Hex opening of blade wrench fits bolts on top of caster shaft.

To raise front of mower, raise tractor 3-point arms, shorten optional check chains or move spacers under front caster wheel arms.

The cutting height is the distance between the blade and the ground. The blades are 7-3/4" below the top of the deck rail on the GM1060S (8-3/4" below the top of the deck rail on the GM1072S). To check cutting height, place a straight edge along top edge of deck rail as shown in Figure 4.

Measure from bottom of straight edge to the ground at locations A and B. Subtract 7-3/4" on GM1060S (8-3/4" on GM1072S) from measurement B to determine cutting height.

Cutting Height	Spacers Required Under Caster Arm Pivot Tube			
	1/2" Spacer	3/4" Spacer	1" Spacer	1-1/4" Spring
1-1/2"				
2"	1			
2-1/2"			1	
3"	1		1	
3-1/2"			2	
4"	1		2	
4-1/2"		1	1	1
5"	1	1	1	1
5-1/2"		1	2	1
6"	1	1	2	1

CUTTING HEIGHT CHART

Remember, measurement at location "A" should not be less than location "B" and should not be over 1/2" greater than location "B"

Tractor Top Link Adjustment (Figure 3 & Figure 5)

Adjust tractor top link so mower is level at 16" between caster wheel and ground (dimension C, Figure 5). This will allow the mower to follow ground contour.

Front Caster Wheel Interference Check (Figure 5)

IMPORTANT

■ 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.

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.

Raise mower with tractor hydraulics to 16" at dimension C or maximum height of tractor lift, whichever is less.

Pivot both front caster wheels forward and check that there is clearance between caster wheels and tractor tires. If there is interference, you must not use front caster wheels on the mower with this tractor.

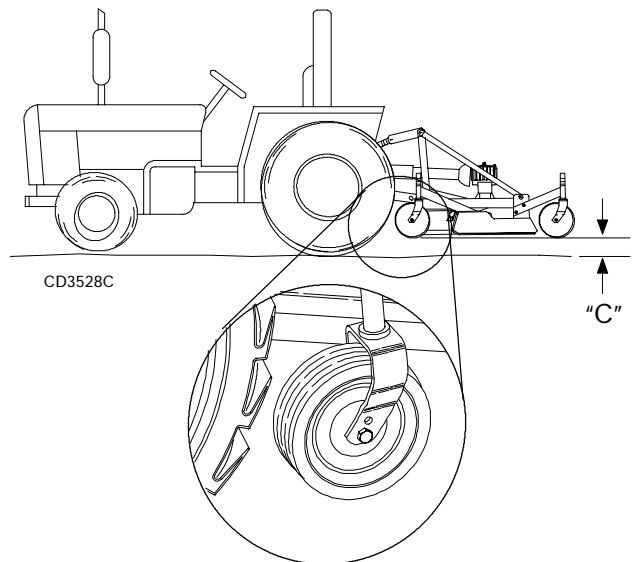


Figure 5. Front Gauge Wheel Interference Check

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 mower to contact ground and scalp. An optional front roller may be installed to minimize scalping.

Pre-Operation Check List

(OWNER RESPONSIBILITY)

- Review and follow safety rules and decals on pages 4 through 8.
- Check that mower is properly and securely attached to tractor.
- Make sure driveline spring-activated locking pin slides freely and is seated firmly in tractor PTO spline groove.
- Operate tractor PTO at 540 rpm.
- Lubricate all grease fitting locations. Make sure PTO shaft slip joint is lubricated.
- Check to be sure gearbox is half-full of SAE 90W gear lube.
- Check that all hardware is properly installed and secured.
- Check to ensure blades are sharp and secure and cutting edge is positioned to lead in a clockwise rotation.
- Check that all shields and guards are properly installed and in good condition.
- Check cutting height and attitude adjustment.
- Place tractor PTO and transmission in neutral before starting engine.
- Inspect area to be cut and remove stones, branches or other hard objects that might be thrown, causing injury or damage.

IMPORTANT

- Mower vibration tends to loosen bolts during operation. All hardware should be checked regularly to maintain proper torque. It is a good practice to check mower before each operation to ensure all hardware is secure.

Operating Technique

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

Should mower become plugged, causing belt to slip for over two seconds, maneuver equipment into a previously cut area and allow mower to clear accumulated material. 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.



CAUTION

- Stop tractor and implement immediately upon striking an obstruction. Turn off engine, remove key, inspect and repair any damage before resuming operation.

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

Normally, ground speed will range from two to five 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. This is necessary 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 at least partially rebound.

In general, lower cutting heights give a more even cut with less tendency to leave 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.

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 at 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 left. This will distribute the clippings over the cut area. Discharging clippings over uncut grass will cause a buildup and may prevent uniform cutting.

Uneven Terrain

WARNING

- Do not operate 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.

Removing Mower from Tractor (Figure 6)

Disengage tractor PTO, raise mower with 3-point hitch and remove check chains (if installed) from brackets attached to tractor top link brackets.

Disconnect mower driveshaft from tractor PTO.

Collapse driveshaft as far as possible and store it in PTO hanger bracket to prevent ground contact. Place blocks under mower side skids. Lower mower onto blocks, disconnect mower from tractor 3-point hitch, and carefully drive tractor away from mower.

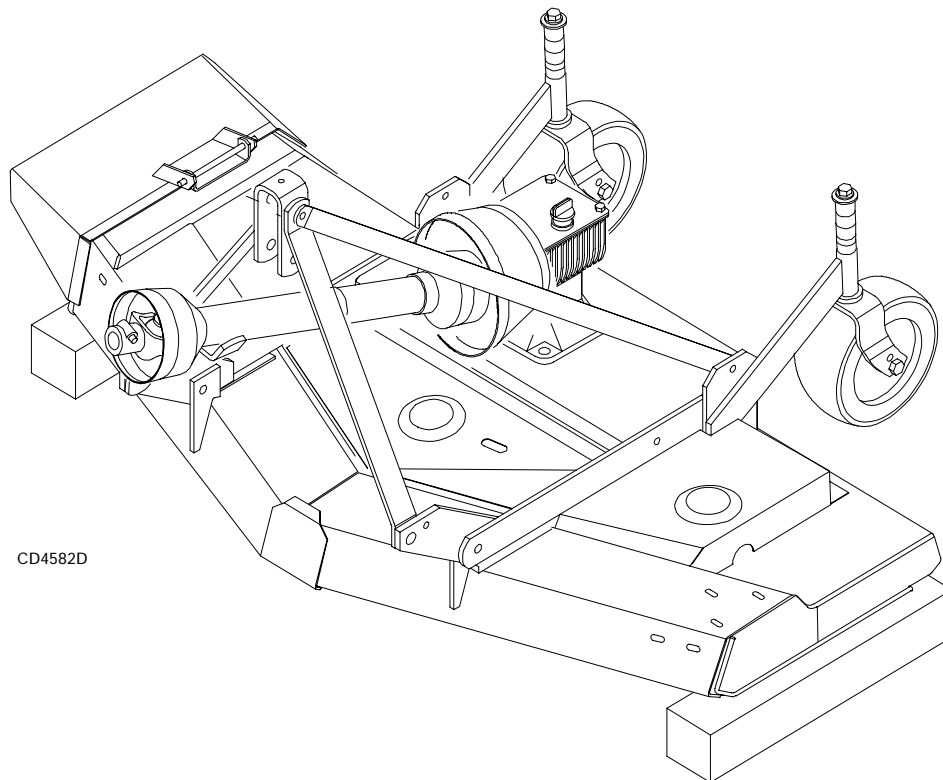


Figure 6. Mower Storage Position

OWNER SERVICE

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

NOTE: Clean off mower deck before servicing.

WARNING

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

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

CAUTION

■ **Always wear relatively tight and belted clothing to avoid entanglement in moving parts. Wear sturdy, rough-soled work shoes and protective equipment for eyes, hair, hands, hearing and head.**

BLOCKING METHODS

Jackstands, with a load rating of 1,000 pounds or more, are the only approved blocking device for this mower. A minimum of four jackstands, located under the mower as shown in Figure 7, must be installed before working underneath this unit. Do not position jackstands under wheels, axles, or wheel supports because these components can rotate.

Do not work underneath unless it is properly attached to tractor (see Operation section), the brakes set, key removed, and the mower blocked securely. The mounted unit will be anchored to minimize side to side and front to rear movement.

For the mounted unit, tighten tractor lower 3-point arm anti-sway mechanisms to prevent side to side movement.

When blocking, you must consider overall stability of the unit. Just placing jackstands under the unit will not ensure your safety. The working surface must be level

and solid to support the weight on the jack stands. Ensure jackstands are stable both top and bottom, and mower is approximately level. With full mower weight lowered on jackstands, test blocking stability before working underneath mower.

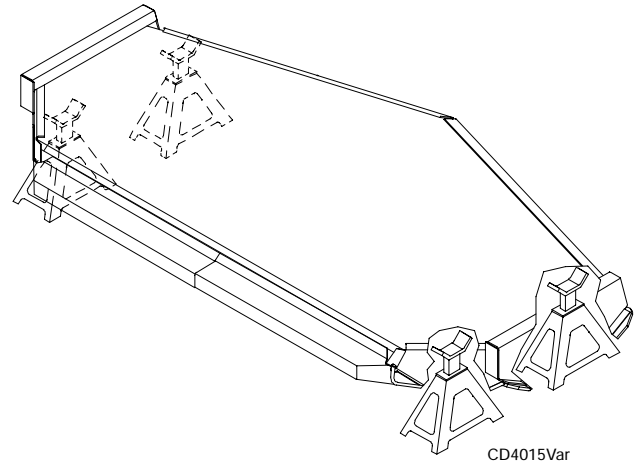


Figure 7. Jackstand Placement
(Tractor and connection not shown)

LUBRICATION INFORMATION (Figure 8)

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

Figure 8 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 90W gear lube in the gearbox. Check gearbox using dipstick. Oil level is to be up to the ring but not over. See Figure 8.

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. The gear lube could then ruin the belt.

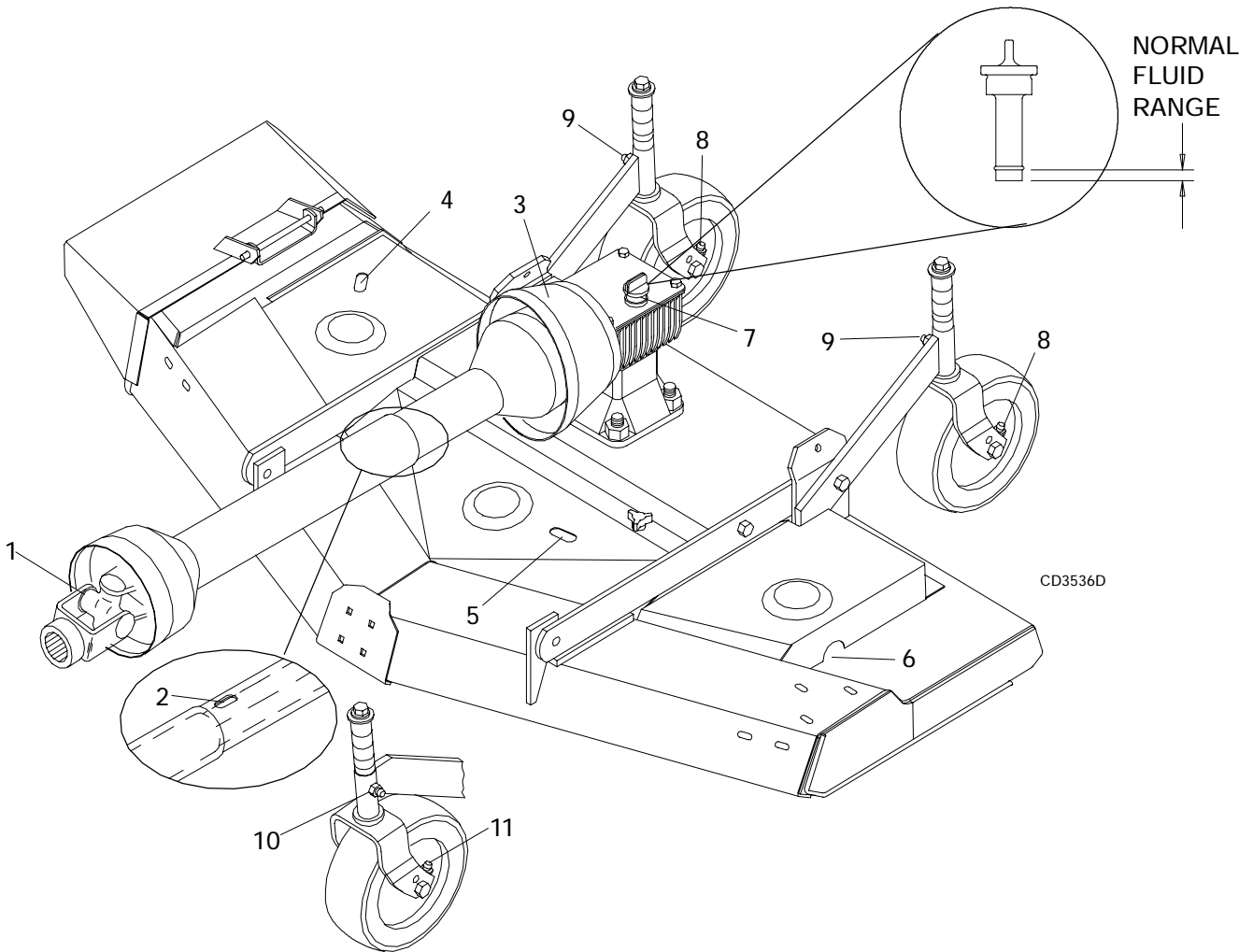
Driveshaft Lubrication

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

Lower mower to ground.

Apply grease at location as shown in Figure 8.

Raise and lower mower several times to distribute grease.



<u>Ref No</u>	<u>Description</u>	<u>Frequency</u>
1	Front U-Joint	8 hours
2	Slip Joint (1 location on shaft, access through slot)	8 hours
3	Rear U-Joint	8 hours
4	Right Spindle (Access through slot)	24 hours
5	Center Spindle (Access through slot)	24 hours
6	Left Spindle (Access through end of shield)	24 hours
7	Gearbox (Fill to center of horizontal shaft with SAE 90W gear lube)	Check Daily
8	Caster Wheel (Right and Left)	8 hours
9	Caster Pivot (Right and Left)	8 hours
10	Front Caster Wheel Pivot (Right and Left)	8 hours
11	Front Caster Wheel (Right and Left)	8 hours

Figure 8. Lubrication Points

BELT REPLACEMENT (Figure 9)

One of the major causes of belt failure is improper installation. Before a new belt is installed, check pulley shafts and bearings for wear. Check pulley grooves for cleanliness. 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.

IMPORTANT

- 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.

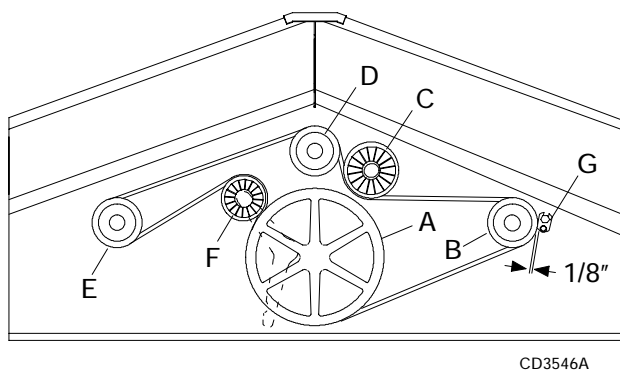


Figure 9. Belt Routing

1. Disconnect idler spring from deck lug.
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 on deck.
5. Grasp belt between spindle pulley E, springloaded 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.
6. Adjust belt guide G to provide 1/16" to 1/8" clearance from belt. Tighten bolt to 85 lbs.-ft.

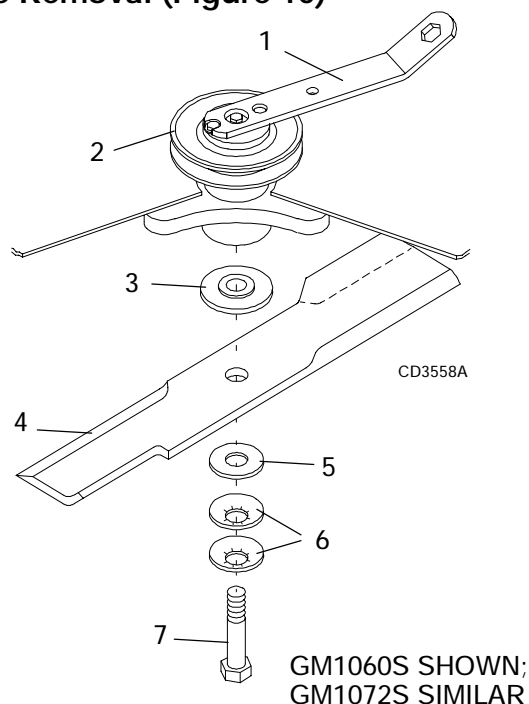
BLADE SERVICING

Inspect blades for condition and proper installation each time before operation. Replace any blade that is bent, excessively nicked, worn or has any other damage. Small nicks can be ground out when sharpening.

⚠ WARNING

- Before performing any service or maintenance, disconnect driveline from tractor PTO.
- Keep all persons away from operator control area while performing adjustments, service or maintenance.

Blade Removal (Figure 10)



1. Spindle lock wrench
2. Pulley
3. Shoulder washer
4. Blade
5. 5/8 Standard flat washer
6. 5/8 x 1-3/4 x 14 GA Cup washers
7. 5/8 NC x 2 Hex head cap screw GR5 Nylok

Figure 10. Blade Installation

Remove belt shields.

Install spindle lock wrench (1) onto spindle pulley as shown. Remove cap screw (7) which has RIGHT HAND THREADS. Remove cup washers (6), washer (5) and blade (4).

Shoulder washer (3) will not normally come off unless intentionally removed.

Blade Installation (Figure 10)

CAUTION

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

Install spindle lock wrench (1) onto spindle pulley as shown. Install shoulder washer (3) (if removed), small end up. Make sure blade cutting edge is positioned to lead in clockwise rotation, as viewed from top of mower.

Excessive blade slipping can cause cup washers to burn and lose their clamping force. Inspect cup washers to determine if they are burned or have lost their clamping force. Replace as necessary.

IMPORTANT

- We recommend you install a new Nylok blade bolt when you replace the blade.

Install two cup washers (6), washer (5) and blade (4) on cap screw. Install cap screw and blade assembly into spindle. Torque cap screw to 170 lbs.-ft. Remove blade wrench from pulley. Replace belt shields.

IMPORTANT

- Do not substitute any bolt for the special blade bolt. It is self-locking, meeting the non-loosening requirements for this application.

Blade Sharpening (Figure 11)

Remove blades.

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

IMPORTANT

- 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.

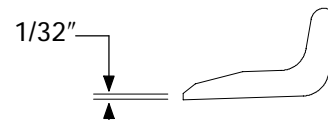
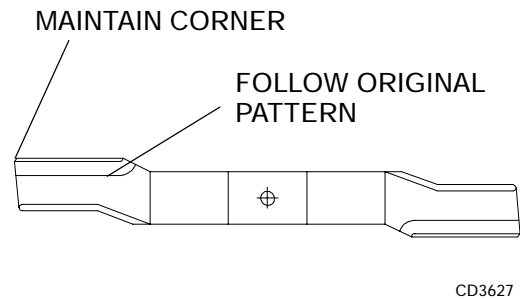


Figure 11. Blade Sharpening

NOTES

DEALER SERVICE

The information in this section is written for dealer service personnel. The repair described herein 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.

NOTE: Clean off mower deck before servicing.



WARNING

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

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



CAUTION

■ Always wear relatively tight and belted clothing to avoid entanglement in moving parts. Wear sturdy, rough-soled work shoes and protective equipment for eyes, hair, hands, hearing and head.

BLOCKING METHOD

Refer to instructions on page 14.

SPINDLE REPAIR

Blade Spindle Removal (Figure 12)

Remove belt shield.

Remove blade from spindle. (See Blade Removal on page 16 in Owner Service section.)

Remove belt from pulleys.

Remove cap screw and flat washer from top of spindle shaft.

Disassemble split taper bushing (located on top of pulley) by removing the two cap screws and inserting them into the threaded holes in bushing flange. Tighten cap screws alternately to remove split taper bushing.

Remove pulley.

Remove grease fitting extension.

Remove the cap screws attaching spindle to mower frame and remove spindle.

Spindle Repair Tips

As a reference point, the top of spindle housing is the short portion.

To minimize wear, bearing cups, cones and sleeves are press fit to shaft and will require a press or similar device for removal.

When disassembling, support housing casting to prevent damage.

Remove bearing cups by placing a punch in housing slots and drive cup out. Alternate punch positions from side to side. Use care to prevent housing damage.

Bore-tite[®] sealant is used on the outer diameter of the seals. Substitute seals may not meet original equipment specifications and could cause leakage.

Blade Spindle Disassembly (Figure 12)

Support spindle in a press and push shaft (7) down through housing (5).

Remove seals from housing.

Remove bearing cups from housing as described in Spindle Repair Tips section.

Remove bearing cone (4) from shaft (7).

Blade Spindle Assembly (Figure 12)

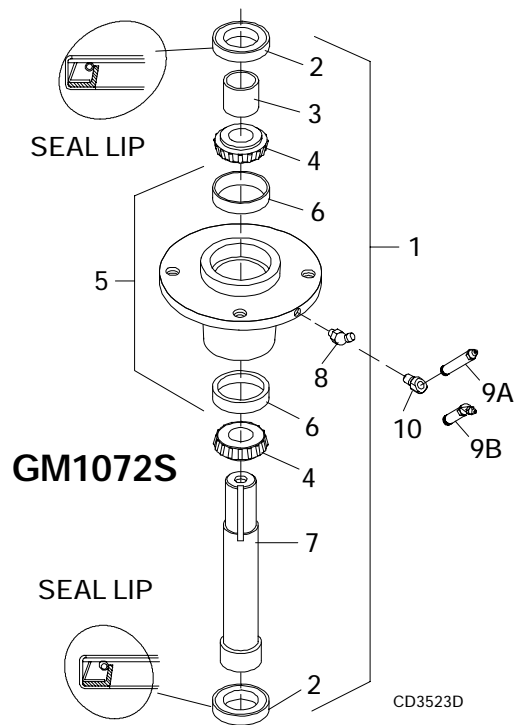
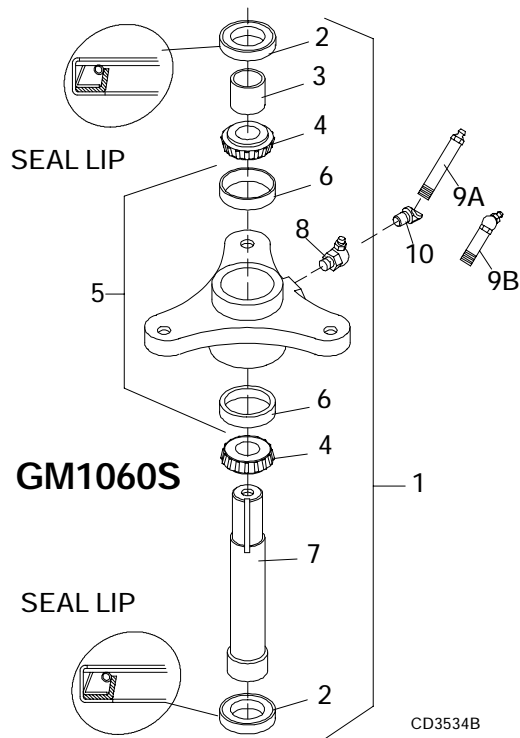
Bearing cups and cones are designed to work together. It is important to position them so bearing cone taper mates with bearing cup taper.

Lubricate new cups (6) with a light oil. Place them in spindle housing (5) so they will mate with cones (4). Seat cups (6) against machined shoulder of housing with a press or by placing a large drift on the flat lip and driving them into housing.

Place bottom bearing cone (4) onto spindle shaft (7) with taper up. Seat on bottom shoulder of shaft with a press.

Insert shaft and bearing cone assembly through bottom of housing (5). Fill housing cavity with a lithium grease of #2 consistency with a MOLY (molybdenum disulfide) additive. Place top bearing cone (4) on shaft (7) to mate with top bearing cup.

Bore-tite is a registered trademark of Chicago Rawhide Industries.



- 1. Spindle assembly
- 2. Seal
- 3. Sleeve
- 4. Bearing cone
- 5. Housing & cups
- 6. Cup
- 7. Shaft
- 8. 1/8 PTF 45° Grease fitting
- 9A. Grease fitting for right and center spindles
- 9B. 30° Grease fitting for left spindle
- 10. 1/8F x 1/8M PTF 45° Grease fitting

- 1. Spindle assembly
- 2. Seal
- 3. Sleeve
- 4. Bearing cone
- 5. Housing & cups
- 6. Cup
- 7. Spindle shaft
- 8. 45° Grease fitting
- 9A. Grease fitting for center spindle
- 9B. 30° Grease fitting for right and left spindles
- 10. 45° Grease fitting

Figure 12. Spindle Repair

IMPORTANT

■ **Bearing adjustment is set by pressing sleeve against bearing cone until proper adjustment is attained.**

Install sleeve (3) on shaft and press sleeve and bearing cone onto shaft until all bearing free play is removed and there is a slight drag (similar to adjusting the front wheel bearings on an automobile). Check by spinning spindle. It should turn freely.

Be careful not to overtighten bearings. Proper bearing adjustment is essential to good bearing life.

If you overtighten bearings, hold spindle housing and rap spindle shaft with a lead hammer to loosen bearings. Readjust bearings until proper setting is obtained.

IMPORTANT

■ **Improper positioning of seals can cause seal failure.**

Proper seal installation is important. An improperly installed seal will leak and could cause bearing failure.

Pull the rubber portion of seal back and locate spring.

Apply a thin coat of lubricant to bottom seal (2) and install with spring up toward center of housing.

Place bottom seal squarely on housing. Select a piece of pipe or tubing with an OD that will set on outside edge of seal. A tube that is too small will bow seal cage.

Carefully press seal into housing, preventing distortion to metal seal cage. Seal should seat firmly and squarely against machined shoulder in housing.

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.

Apply a thin coat of lubricant to top seal (2) and install with spring up away from center of housing. Top seal should be flush with top of housing.

Lubricate spindle with a lithium grease of #2 consistency with a MOLY (molybdenum disulfide) additive. Vent top seal with blunt edged tool, such as a letter opener, while filling with grease. Rotate housing on spindle shaft, checking for free movement.

Blade Spindle Installation

Insert spindle through bottom of mower deck and secure with cap screws and lockwashers previously removed. Be sure to position grease fittings toward lubrication access areas. Reinstall grease fitting extension after spindle is secured in place. Refer to lubrication chart, page 15.

IMPORTANT

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

Install pulley and split taper bushing with integral key on spindle shaft. Install cap screw and flat washer in top of spindle shaft. Torque this cap screw to 12 lbs.-ft., then alternately tighten split taper bushing cap screws to 12 lbs.-ft.

GEARBOX MAINTENANCE

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

Check gearbox for leakage and shaft side and end play. If excessive shaft play is found, disassemble box and inspect bearings and shafts.

Leakage can occur at top cover and at shaft seals. Leakage problems should be corrected immediately to prevent damage to drive belt from gearbox oil.

Always clean any spilled lubricant with a cloth moistened with a non-flammable, non-toxic degreasing agent or commercial detergent and water. Be sure to clean pulley grooves.

The sealants recommended for gearbox repair are Permatex Aviation 3D Form-A-Gasket® or Loctite® 515 Gasket Eliminator.

Leakage Repair

To repair top cover leakage, clean top cover and housing sides, then remove cover. Remove old sealant from cover and housing.

Apply sealant to top cover and replace. Reinstall cap screws in top cover and torque to 38 lbs.-ft.

Horizontal seal leakage should be repaired by replacing the seal. The gearbox should be removed from the mower to accomplish this. Remove old seal with care to prevent damage to seal bore and shaft. Sealant should be applied to the seal bore before installing the new seal. The new seal should be seated squarely in the bore against snap ring. Press seal into place with a piece of pipe or tubing that sets against the outside edge of the seal. Tubing with an outside diameter which is too small will bow seal cage and ruin the seal.

Removing Gearbox from Mower

Remove belt and driveline shields.

Permatex Aviation 3D Form-A-Gasket is a registered trademark of the Permatex Corporation.
Loctite is a registered trademark of the Loctite Corporation.

Remove rear driveline shield retainers and pull shield ahead to gain access to front of gearbox. Remove snap ring from gearbox shaft. Remove shear bolt from end yoke and remove driveline.

Remove drive belt from drive sheave.

Remove gear stand from mower.

Remove drive sheave from mower by removing cap screws from split taper bushing and turning them into threaded holes on bushing flange. Tighten evenly, forcing the bushing and drive sheave apart.

Remove gearbox from gear stand.

Gearbox Disassembly (Figure 13)

A five ton press will be required for vertical gear shaft removal.

Puller Kit (WP19077) is required to remove the horizontal shaft from the gearbox.

Remove top cover (14) and drain all gear lube.

Clamp gearbox upside-down in a large vise. Place driveline on the horizontal shaft to prevent shaft rotation. Remove stake nut (23). If nut is too tight to remove with a spanner wrench, loosen with punch and hammer.

Carefully remove vertical shaft seal (21) to prevent damage to shaft threads and seal bore.

Remove PTO driveline and remove gearbox from vise. Use care when removing horizontal shaft seal (1) and retaining ring (2) to prevent damage to shaft seal surface and housing bore.

Secure input gear (8) against housing with a "C" clamp. Place puller plate (30) over horizontal shaft (6). Assemble puller halves together as shown in Figure 13 using bolt (28) and nut (29). Puller flanges must engage locking groove in horizontal shaft. Tighten puller bolts evenly to remove shaft from housing.

Place housing upside-down in a press and remove vertical shaft (15) by pressing through top of housing. Remove bearing cone (16) from vertical shaft (15) with a spreader. Remove all cups from housing with a puller or by carefully driving them out with a punch.

Inspect gears for excessive wear. Gears are forged and surfaces will appear rough, even when new. Some wear is normal. Gears will show more wear on the loaded side and the pattern should be smooth.

Inspect both gear shafts and stake nut for grooves, nicks, or bumps where the seals seat. Replace if damage cannot be repaired by resurfacing with emery cloth.

Clean gearbox housing and inspect for damage. Replace if cracks are found.

Gearbox Assembly (Figure 13)

Press cups (10, 17 & 19) into housing until they seat tightly against machined shoulders. Press bearing cone (16) onto vertical gear shaft (15) and seat it against gear.

Insert vertical gear shaft into housing. Invert housing in a press and place supports under gear to hold bearing cone (16) against cup (17). Press bearing cone (20) onto shaft until all free play is removed and there is a slight drag when rotating the housing on the shaft (similar to setting automobile front wheel bearings).

If the bearings are too tight, loosen by holding housing, protecting end of vertical gear shaft with a wood block, and rapping with a hammer.

Install O-ring (22) into groove on vertical gear shaft (15) next to bearing cone (20). Place a small bead of gasket sealer on top of O-ring.

Use the proper size tubing to press against the outside edge of seal to prevent seal damage. Apply gasket sealant to seal bore and press output shaft seal (21) into housing until it seats against housing shoulder. Coat inner portion of seal with grease.

Thread stake nut (23) onto shaft (15) in through seal (21). Tighten until nut is snug against bearing cone (20). Use a punch to stake the lip of stake nut (23) into shaft (15) keyway.

Press bearing (5) onto horizontal gear shaft (6).

Lay housing down in a press. Place bearing (9) in cup (10) and set horizontal gear (8) on top of it.

Place woodruff key (7) into horizontal gear shaft (6). Insert shaft through horizontal shaft hole in housing, align key with keyway in gear (8). Press horizontal shaft into bearing (9). Do not use excessive force to seat bearing.

Place bearing cup (4) over horizontal shaft (6) and press into housing until there is a slight drag on bearings when shaft is rotated (similar to setting automobile front wheel bearings). When you have bearings adjusted, select shims from shim kit (3) and place on top of bearing cup (4) until they are flush with bottom of snap ring groove in horizontal shaft (6), then reinstall snap ring (2).

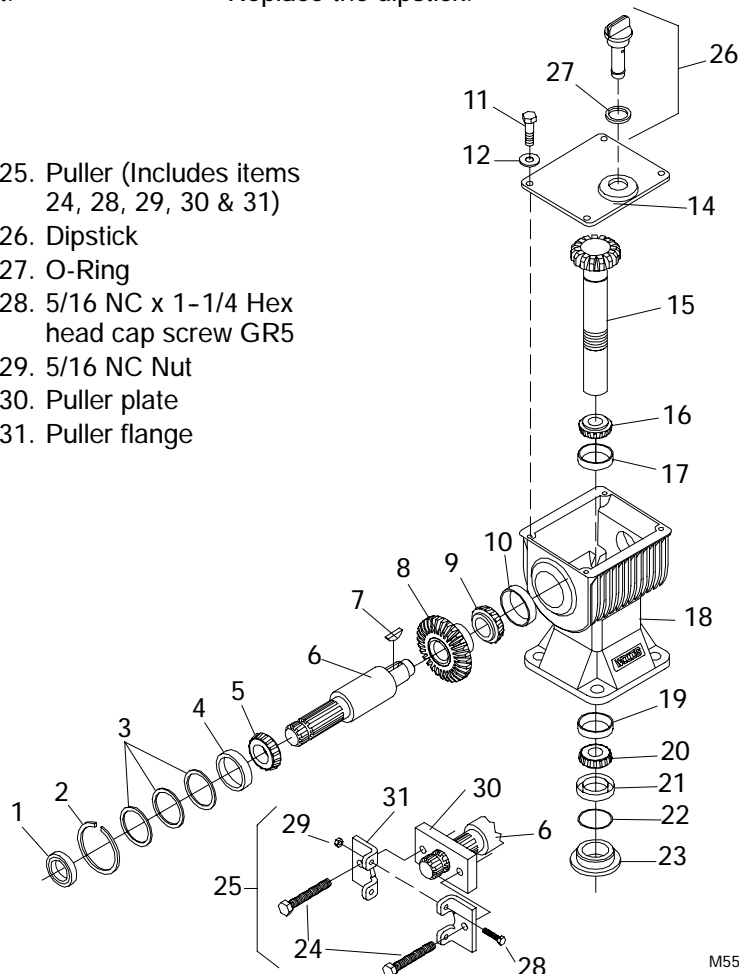
Apply gasket sealant to housing seal bore and press seal (1) into housing until it seats against snap ring or is flush with housing.

Apply gasket sealant to top of housing flange and replace top cover and secure with cap screws (11) and washers (12).

Attach gearbox to gearbox stand and torque mounting bolts.

Remove the dipstick and pour in one quart of SAE 90W gear lube, wait five minutes and add an additional pint. Allow an additional five minutes for the lube to flow through the bearings, then check to make sure half of the horizontal gear shaft is covered. Replace the dipstick.

- | | |
|---|---|
| 1. Horizontal shaft seal | 25. Puller (Includes items 24, 28, 29, 30 & 31) |
| 2. Retaining ring | 26. Dipstick |
| 3. Shim washer kit | 27. O-Ring |
| 4. Bearing cup | 28. 5/16 NC x 1-1/4 Hex head cap screw GR5 |
| 5. Bearing cone | 29. 5/16 NC Nut |
| 6. Horizontal shaft | 30. Puller plate |
| 7. Woodruff key | 31. Puller flange |
| 8. Input gear, Horizontal | |
| 9. Bearing cone | |
| 10. Bearing cup | |
| 11. 3/8 NC x 3/4 Hex head cap screw GR5 | |
| 12. Washer | |
| 14. Top cover | |
| 15. Vertical shaft | |
| 16. Bearing cone | |
| 17. Bearing cup | |
| 18. Gearbox housing | |
| 19. Bearing cup | |
| 20. Bearing cone | |
| 21. Vertical shaft seal | |
| 22. O-Ring | |
| 23. Stake nut | |
| 24. Puller bolts | |



M5518

Figure 13. Gearbox Exploded View

1. Shim gaskets
2. Idler arm
3. Idler pulley
4. Drive pulley
5. Taper lock bushing
6. Gearbox stand

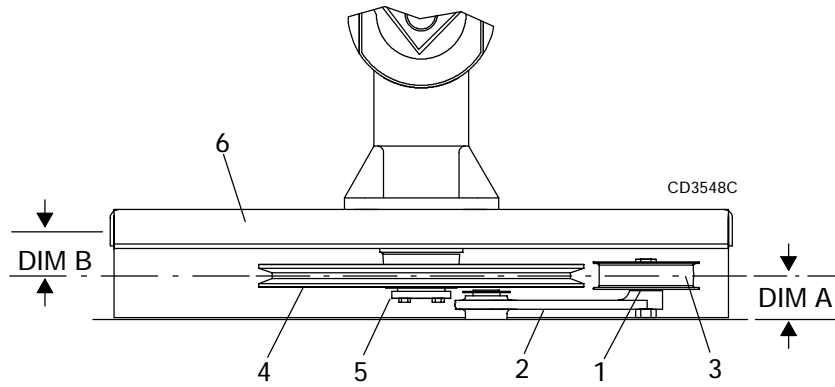


Figure 14. Pulley Alignment

Drive Pulley Installation (Figure 14)

Invert gear stand. Install drive pulley and split taper bushing on vertical gearshaft. Make sure key and keyways are aligned.

Tighten split taper bushing so dimension "B" (from the centerline of the drive pulley to the center of the gearbox stand mounting hole) is 1-15/16". This is a reference dimension and may require adjustment.

When gear stand is installed on mower, dimension "A" (from the top of the mower deck to the centerline of the drive pulley) must be 1-27/32" (plus or minus 1/32"). This is a critical dimension and must be held. Remove gear stand and adjust drive pulley as needed. Add or subtract shim washers under idler pulley to align with drive pulley. Tighten gear stand hardware.

Fill gearbox half full of SAE 90W gear lube. Check level after waiting five minutes to permit lube to work through bearings and add lube, if necessary, until it is half full.

Attach driveline to gearbox with shear bolt. Replace snap ring. Replace driveline shielding and secure with shield retainers.

U-Joint Disassembly

1. Remove snap rings from inside of yokes in four locations as shown in Figure 16.

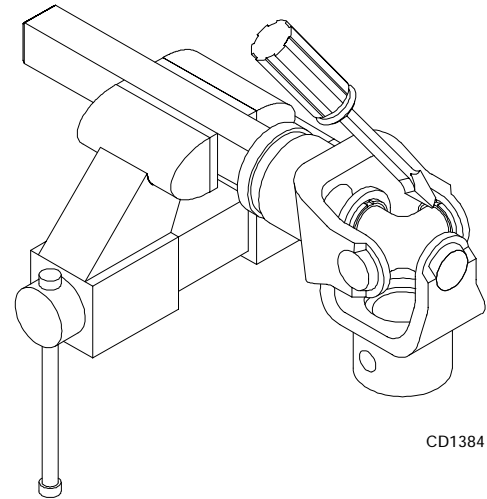


Figure 16

UNIVERSAL JOINT REPAIR

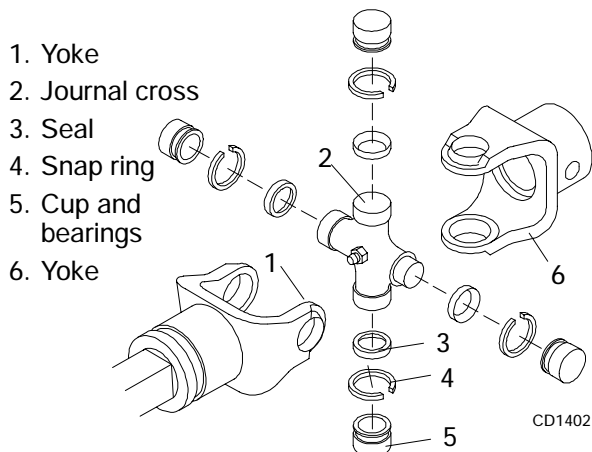


Figure 15. U-Joint Exploded View

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 17.

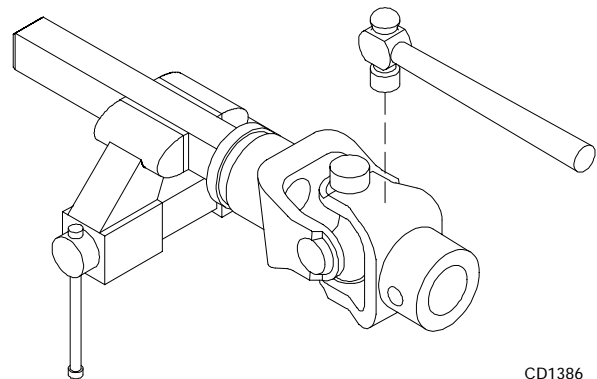
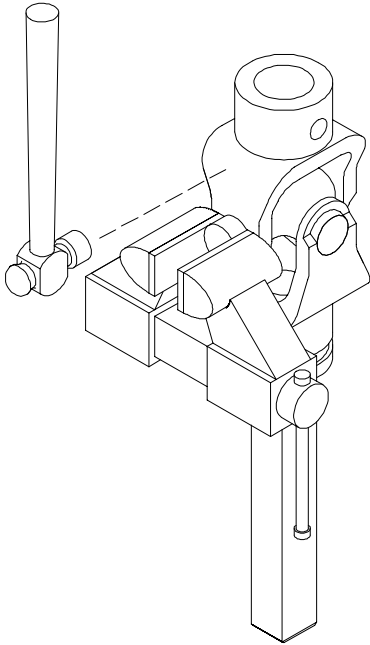


Figure 17

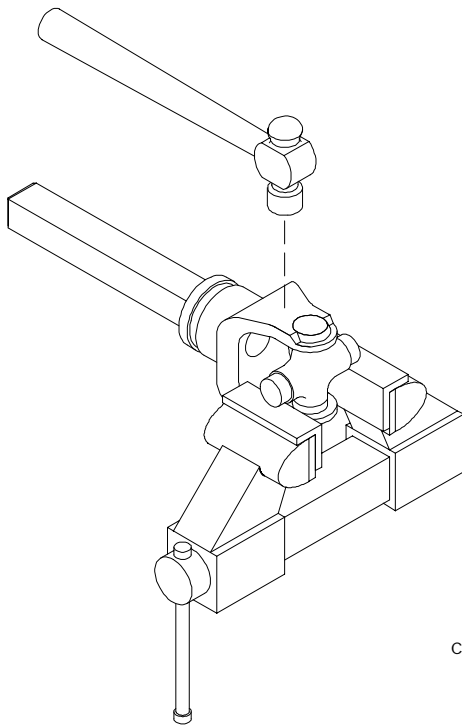
3. Clamp cup in vise as shown in Figure 18 and tap on yoke to completely remove cup from yoke. Repeat steps two and three for opposite cup.



CD1387

Figure 18

4. Place universal cross in vise as shown in Figure 19 and tap on yoke to remove cup. Repeat step three for final removal. Drive remaining cup out with drift and hammer.



CD1388

Figure 19

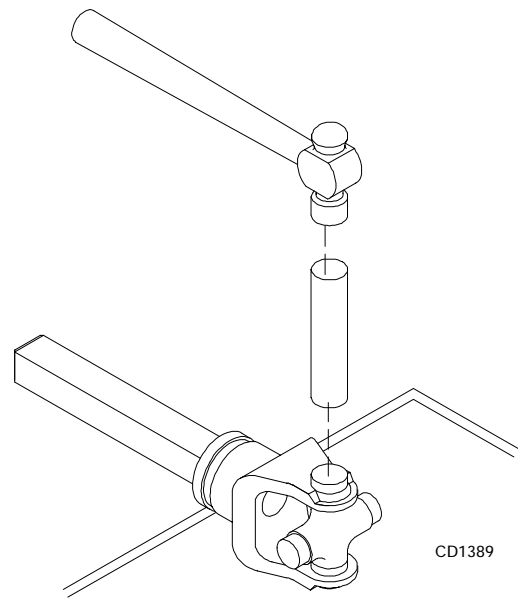
U-Joint Assembly

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.

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. Tap yoke to aid in process.

2. Seat cups by placing a drift or socket (slightly smaller than the cup) on cup and rapping with hammer. See Figure 20. Install snap ring and repeat on opposite cup.
3. Repeat steps one and two to install remaining cups in remaining yoke.

Move both yokes in all directions to check for free movement. Should movement be restricted, rap on yokes sharply with hammer to relieve any tension. Repeat until both yokes move in all directions without restriction.



CD1389

Figure 20

TROUBLE SHOOTING

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" of same height. See instructions.
	Loose blade	Check clamping cup washers. Replace if flat or not holding.
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" of same height. See instructions.
	Loose blade	Check clamping cup washers. Replace if flat or not holding.
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 clamping cup washers. Replace if flat or not holding.
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 to desired height 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.
	Rear of mower too low, trapping material under mower	Adjust mower height and attitude. (See instructions.)

TROUBLE SHOOTING

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 a partial swath.
	Oil on belt from overlubrication	Be careful not to overlubricate. 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 shafts 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 misalignment	Inspect to ensure belt is running in center of backside idler. Shim idler as necessary to align.
Belt rollover	Pulley misalignment	Re-align.
	Damaged belt	Replace belt.*
	Foreign object in pulley grooves	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 damage	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.

ASSEMBLY INSTRUCTIONS

CAUTION

■ Always wear relatively tight and belted clothing to avoid entanglement in moving parts. Wear sturdy, rough-soled work shoes and protective equipment for eyes, hair, hands, hearing and head.

WARNING

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

Assembly of the mower is the responsibility of the selling dealer. It should be delivered to the owner completely assembled, lubricated and adjusted for normal conditions. Complete check lists on page 29 when assembly is complete.

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 3. All bolts are grade 5 unless specified otherwise.

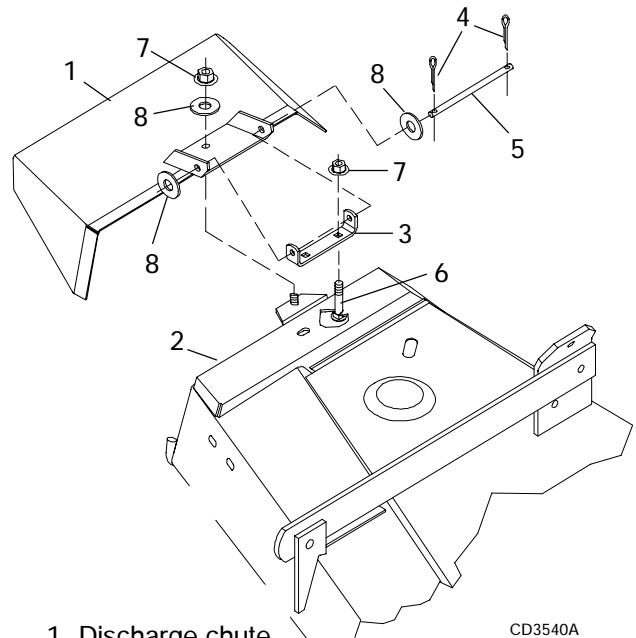
Select a suitable working area. Open parts boxes and lay out parts and hardware to make location easy. Refer to illustrations, accompanying text, parts lists and exploded view drawings.

ASSEMBLY PROCEDURE

Remove bolt from gearbox clip to pivot link. Remove clip from gearbox and reinstall bolt to cover. Remove bolt securing left side of deck to shipping pallet. Remove lag screws and clips from skid under discharge opening. Remove lag screw from crate side to set offset links.

Discharge Chute Installation (Figure 21)

Secure chute with hold-down locknut (1) and washer (8).



1. Discharge chute
2. Mower frame
3. Deck bracket
4. 3/16 x 1" Cotter pin
5. 3/8 x 7-1/4" Pin
6. 3/8 NC x 3/4" Carriage bolt
7. 3/8 NC Flange locknut
8. 3/8" Flat washer

Figure 21. Discharge Chute Installation

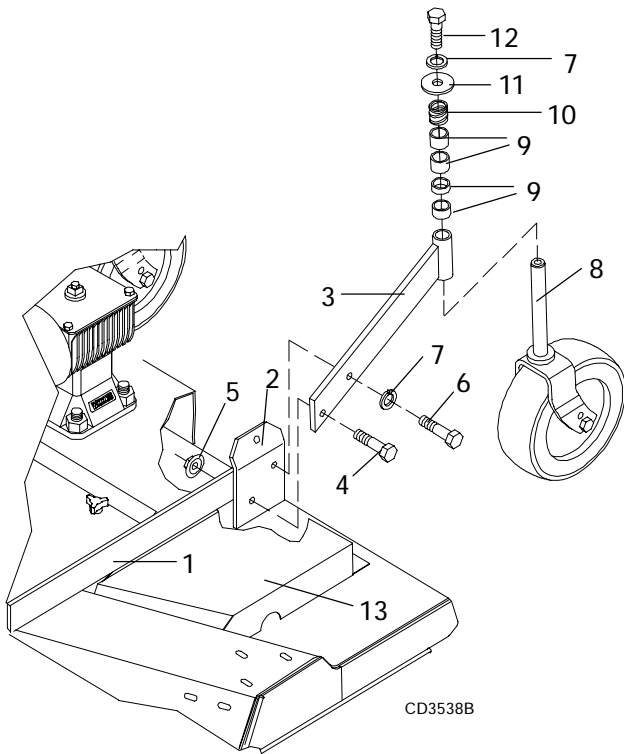
Rear Caster Installation (Figure 22)

Remove cap screw (12) from caster yoke and wheel (8) then remove all spacers, washers and spring. Insert caster yoke and wheel (8) into tube of caster arm (3). Install all spacers, washers and spring as shown and tighten cap screw (12). Repeat for remaining caster assembly.

Remove right and left belt shields (13). Install caster assemblies one at a time. Remove cap screw (6) and lockwasher (7) from the mower frame lug (2).

Place caster arm assembly outside frame lug as shown. Place lockwasher (7) on cap screw (6) and install in rear hole. Install cap screw (4) in front hole and start flange locknut (5) on it. Tighten hardware. Repeat for opposite side.

Install belt shields, being sure to place blade wrench (not shown) under left belt shield knob.



1. Frame rail
2. Frame lug
3. Caster arm
4. 1/2 NC x 1-3/4 Hex head cap screw GR5
5. 1/2 NC Flanged hex locknut
6. 1/2 NC x 2-1/4 Hex head cap screw GR5
7. 1/2" Lockwasher
8. Caster yoke and wheel
9. Height adjustment spacers
10. Spring
11. 1/2" 10 GA Flat washer
12. 1/2 NC x 1-1/4 Hex head cap screw GR5
13. Left belt shield

Figure 22. Rear Caster Assembly

Quick Hitch Kit Installation (Optional) (Figure 23)

Note: This kit allows mower to fit only Cat. 1 standard ASAE quick hitch.

Attach offset link (1) to mounting pins, using 7/8 sleeve (8) and flat washer (9). Attach upper end of offset link to pivot link, using 1/2 flat washer (5), sleeve (6), flange lock nut (7), and 1/2 x 4-3/4 cap screw.

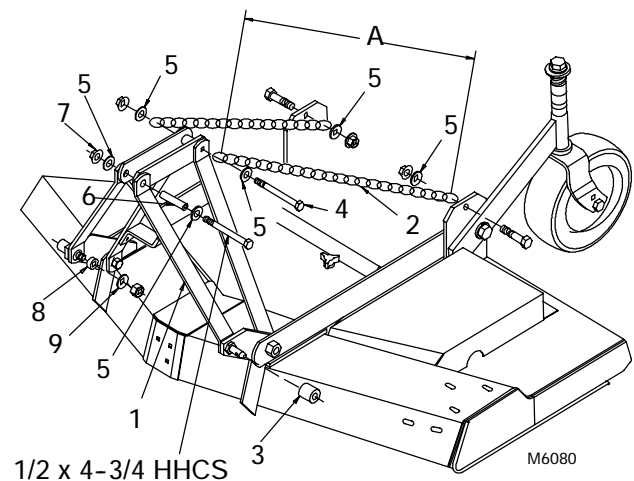
Remove rear offset links and replace with chains (2). Cut to required length. Attach chain to top of A-frame as shown, using 1/2 x 6 cap screw (4), 1/2 flat washer (5), and nut.

Attach opposite end of chain (2) to rear mower frame as shown. Cut chain to 37.5" in length. Vary length slightly as desired. Twist chain to make finite adjustments in length until unit lifts level. Not do bottom out the drive on front of deck.

IMPORTANT

■ Failure to follow instructions may result in damage.

Install sleeve (3) on mounting pins and retain with Klik pin.



1. Offset Link
2. 38-Link Chain
3. 29/32" x 1-7/16" x 1-1/4" Sleeve
4. 1/2" x 6 Cap Screw
5. 1/2" Flat Washer
6. 1/2" x 3/4" x 3-3/8" Sleeve
7. 1/2" Flange Lock Nut
8. 7/8" Sleeve
9. 7/8" Flat Washer

Figure 23. Quick Hitch Kit Assembly

Optional Front Roller Installation

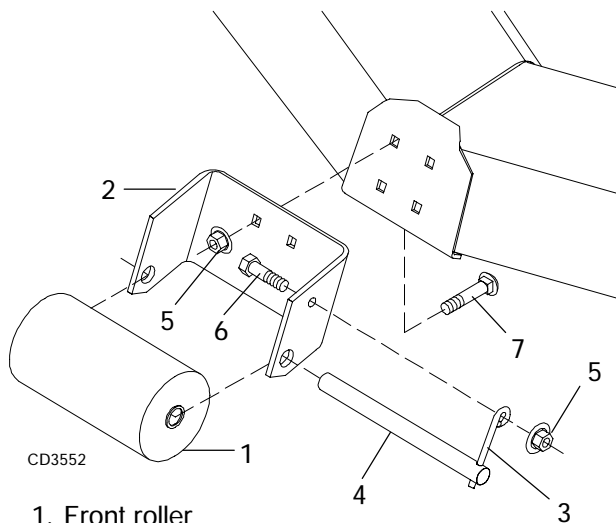
(Figure 24)

Insert four carriage bolts (7) through the front mower frame from inside out as shown.

Put roller bracket (2) over bolts then install flange locknuts (5) on bolts and tighten.

Put front roller (1) in roller bracket and insert roller pin (4) through bracket and roller.

Install retainer pin (3) in roller pin. Put cap screw (6) through bracket and retainer pin, install flange locknut (5) and tighten.

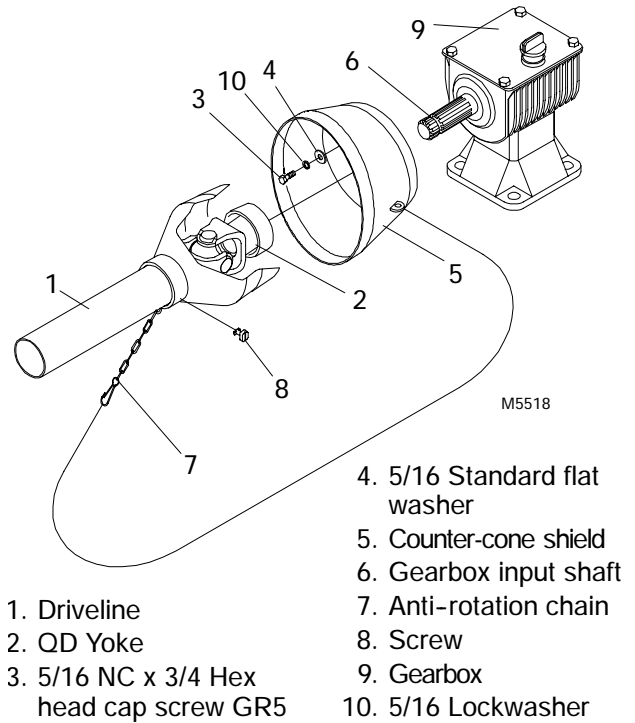


1. Front roller
2. Roller bracket
3. Retainer pin
4. Roller pin
5. 3/8 NC Flange locknut
6. 3/8 NC x 1" Hex head cap screw GR5
7. 3/8 NC x 1" Carriage bolt

Figure 24. Optional Front Roller Installation

Driveline Installation (Figure 25)

Slide QD yoke (2) of driveshaft assembly onto gearbox shaft (6). Make sure QD yoke is seated securely in groove of gearbox shaft. Attach shield anti-rotation chain (7) to drive shield as shown.



1. Driveline
2. QD Yoke
3. 5/16 NC x 3/4 Hex head cap screw GR5
4. 5/16 Standard flat washer
5. Counter-cone shield
6. Gearbox input shaft
7. Anti-rotation chain
8. Screw
9. Gearbox
10. 5/16 Lockwasher

Figure 25. Driveline Installation

Front Caster Wheel Installation (Figure 26)

Remove lock down nut and move discharge chute up to mount right front arm. Put arm (12) on deck, insert cap screws (11) through arm and deck, and install locknuts (13).

Insert carriage bolts (3) through deck and caster arm, install locknuts (2) and tighten. Tighten locknuts (13) on cap screws (11).

Move discharge chute to the down position, place washer on stud and tighten locknut.

Put left front arm (4) on left front end of deck as shown. Insert five carriage bolts (3) through the frame and arm and start locknuts (2) on all of them. Tighten locknuts.

Remove cap screw (14) from caster wheel and yoke (1) then remove all spacers, washers and spring. Insert caster wheel and yoke (1) into tube of arms (4 & 12). Install all spacers, washers and spring as shown and tighten cap screw (14). Repeat for opposite side.

IMPORTANT

■ Do not operate tractor and mower until the caster wheel interference check, page 11, has been performed. If you change tractors, you must perform the check for that mounting.

1. Front gauge wheel and yoke assembly
2. 3/8 NC Locknut
3. 3/8 NC x 1" Carriage bolt
4. Left front arm assembly
5. 1 x 1/2" Pipe spacer
6. 1 x 3/4" Pipe spacer
7. 1 x 1" Pipe spacer
8. Compression spring
9. 1/2 x 1-9/16" x 10 GA Washer
10. 1/2" Lockwasher
11. 1/2 NC x 1-1/2" Hex head cap screw GR5
12. Right front arm assembly
13. 1/2 NC Flange locknut
14. 1/2 NC x 1-1/4" Hex head cap screw GR5

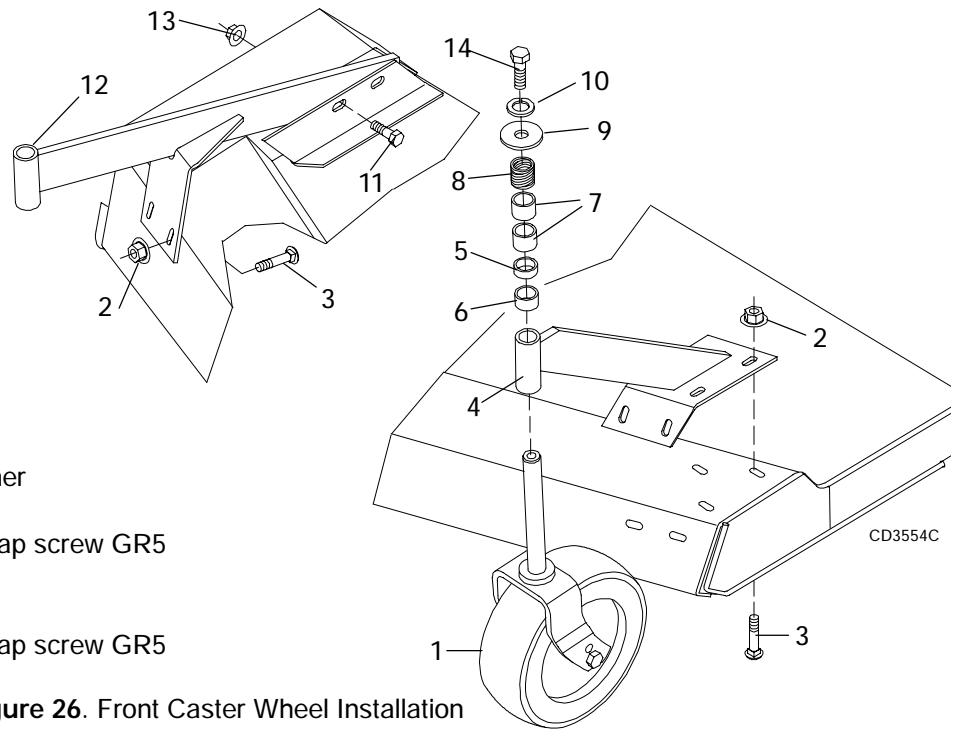


Figure 26. Front Caster Wheel Installation

Initial Filling of Gearbox

IMPORTANT

■ Gearbox was not filled with oil at factory. It must be serviced before operating. Failure to service will result in damage to gearbox.

The gearbox was not filled at the factory. The initial fill will take three pints of SAE 90W gear lube. Remove the fill plug and pour in one quart of gear lube, wait five minutes and add an additional pint. Allow an additional five minutes for the lube to flow through the bearings, then check to make sure half of the horizontal gear shaft is covered. Replace the fill plug.

Pre-Delivery Check List

(DEALER RESPONSIBILITY)

Inspect the mower thoroughly after assembly to be certain it is set up properly before delivering it to the customer. The following check list is a reminder of points to inspect. Check off each item as it is found satisfactory or after proper adjustment is made.

- Check all bolts to be sure they are tight.
- Check that all cotter pins are properly installed.
- Check that all lubrication points with grease fittings, driveline and spindles have been lubricated.
- Check that blades have been properly installed.
- Check mower attitude and belt alignment.

- Check that gearbox is properly serviced and seals are not leaking.

Delivery Check List

(DEALER RESPONSIBILITY)

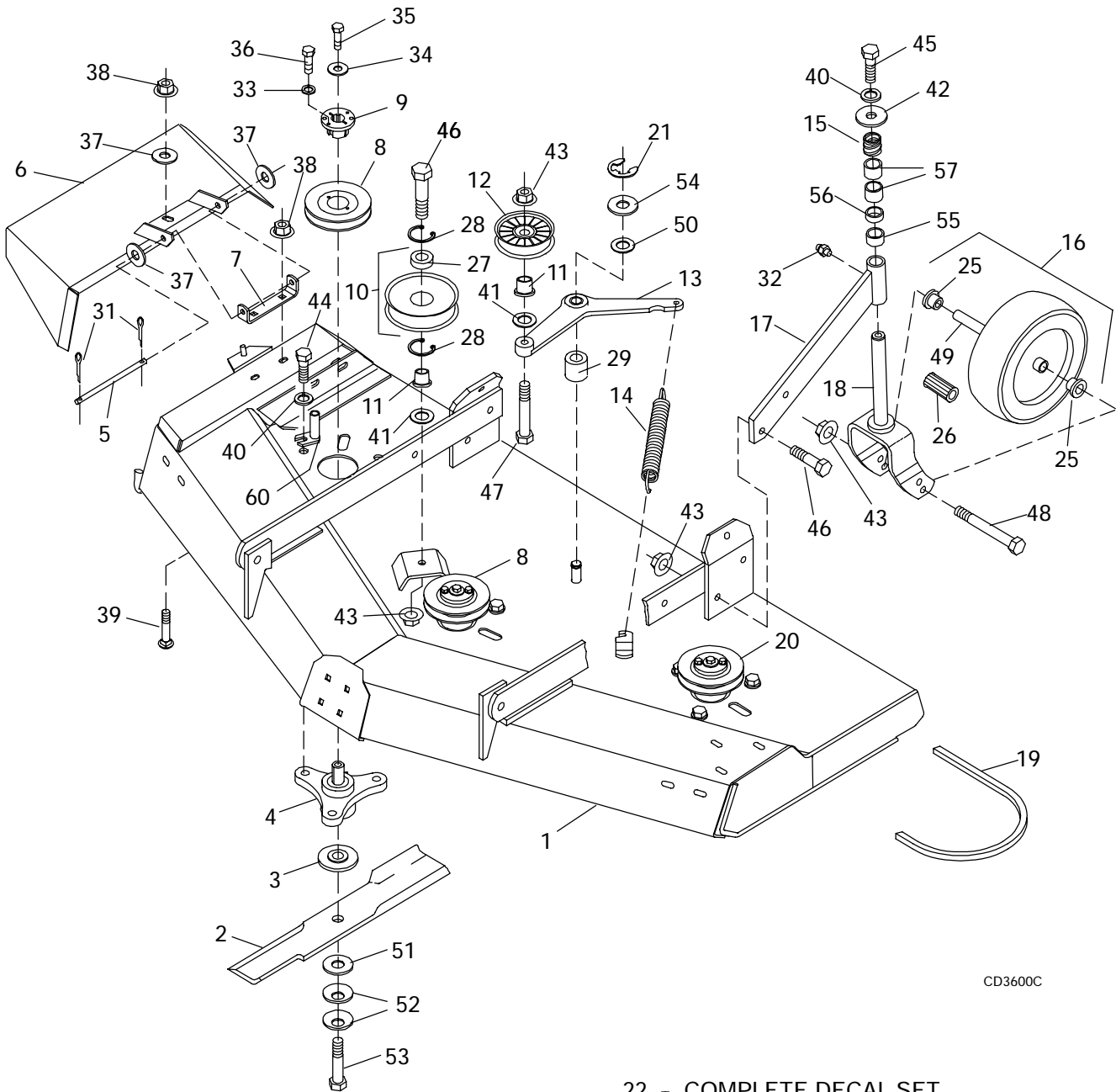
- Show customer how to make adjustments.
- Explain importance of lubrication to customer and point out lubrication points on mower.
- Point out safety features and options.
- Present Operator's Manual and ask customer to become familiar with all sections.
- Explain to customer that when mower is transported on a road or highway, safety devices should be used for adequate warning to operators of other vehicles.

NOTES

GM1060S & GM1072S INDEX TO PARTS LISTS

MAIN FRAME ASSEMBLY	
GM1060S	32-33
GM1072S	34-35
MOUNTING ASSEMBLY	
GM1060S	36-37
GM1072S	38
GEARBOX ASSEMBLY	39
DRIVESHAFT ASSEMBLY	40
BLADE SPINDLE ASSEMBLIES	41
FRONT GAUGE WHEEL ASSEMBLY	42
<u>OPTIONAL EQUIPMENT</u>	
FRONT ROLLER ASSEMBLY	37
QUICK HITCH	42

GM1060S MAIN FRAME ASSEMBLY



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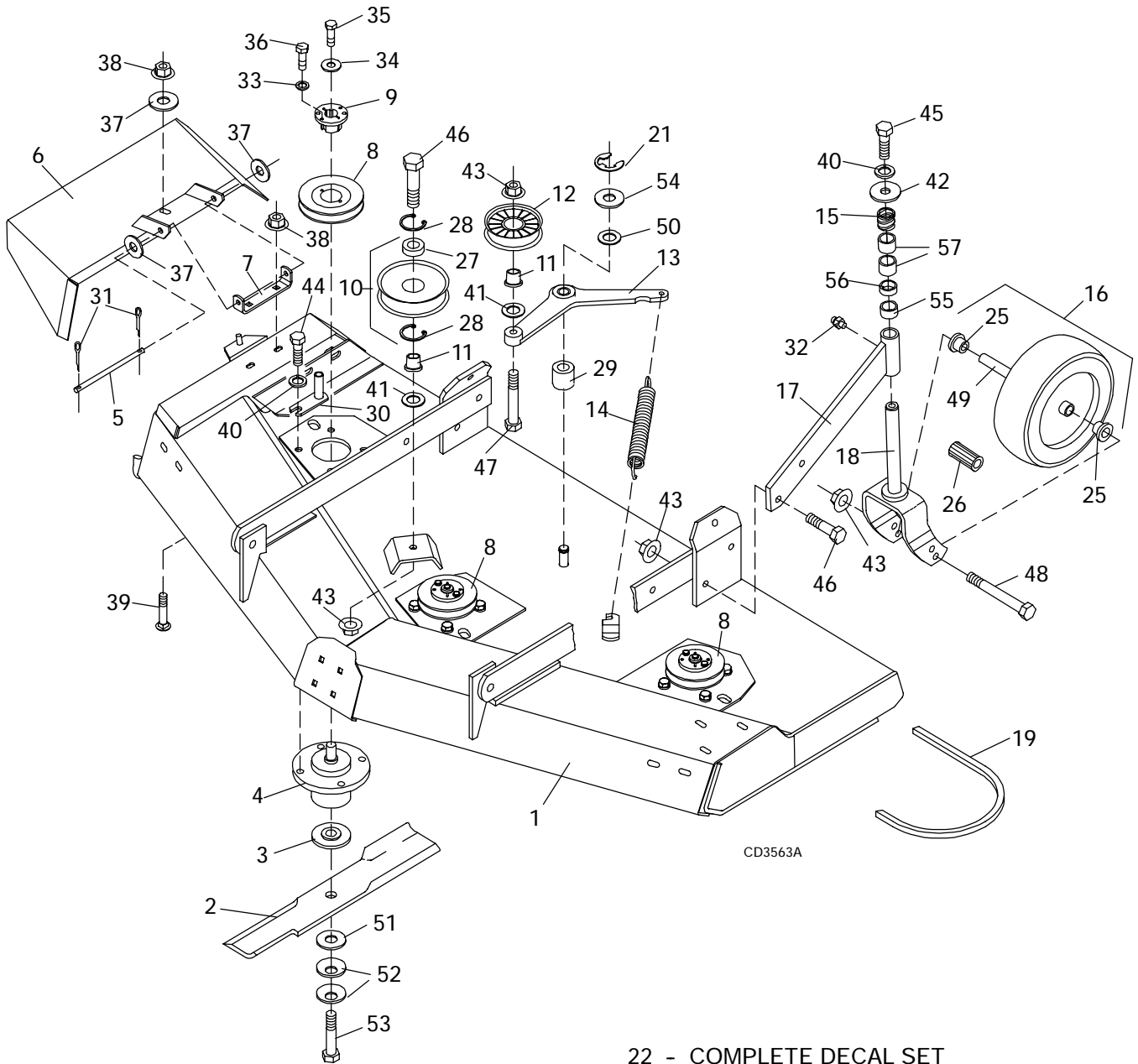
GM1060S MAIN FRAME ASSEMBLY

Ref No	Part No	No Used	Description
1	-----	1	MainFrame (not sold separately)
2	WP34615KT	3	Blade Kit, High Suction 20.75" Standard
	-or-	-or-	
2	WP18881KT	3	Blade Kit, Medium Suction 20.75" Optional
3	WP33736	3	Washer, Shoulder .63 x 3.00 x .44
4	WP67285	3	Spindle, Assembly Complete (see page 41 for breakdown)
5	WP11760	1	Pin, Headless .38 x 7.25
6	WP66866	1	Discharge Chute
7	WP66865	1	Bracket, Discharge Chute
8	WP33705	2	Sheave, H 1 BK 4.6 PD
9	WP34756	3	Bushing, H 3/4 In Strt Bore w/Key (includes items 33 & 36)
10	WP18862	1	Idler, Flat 5.5 Dia.
11	WP67284	2	Sleeve, Shoulder .5 x .9 x .76
12	WP67282	1	Idler, Flat 4.5 Dia.
13	WP67288	1	Idler Arm w/Bushing (item 29)
14	WP67131	1	Spring, Ext .177 x 1.22 x 9.88
15	WP67407	2	Spring, Comp 1.40 x .19 x 2.1, 257
16	WP18989	2	Wheel, 10 in. HD w/Brg & Slv Gray (includes items #25, 26 & 49)
17	WP67300	2	Caster Arm Asy (includes item #32)
18	WP67318	2	Caster Shaft & Yoke Asy
19	WP20644	1	V-Belt W96
20	WP66694	1	Sheave, H 1 BK 4.17 PD
21	WP35139	1	Ring Retaining Ext. 0.50 x .75
22	WP20657	1	Complete Decal Set
25	WP65577	4	Bearing, Flngd Whl .75 x 1.415
26	WP34466	2	Bearing, Roller .75 x 1.38 x 1.5
27	WP35193	1	Bearing, Ball
28	WP35141	2	Ring, Retaining Int .062 x 1.56
29	WP35145	1	Bushing, Oilite .75 x 1.00 x 1.00

HARDWARE		
Ref No	Part No	Description
31	*	Pin, Cotter 3/16 x 1
32	*	Grease Fitting, 1/4-28 x 15/32" long
33	*	Washer, Lock 1/4
34	WP32806	Washer, Flat .25 x .88 x 7 Ga
35	*	Screw, HHCS 1/4 NC x 3/4 GR5
36	*	Screw, HHCS, 1/4 NC x 1 GR5
37	*	Washer, Flat Standard 3/8
38	WP14350	Nut, Flanged Lock 3/8 NC
39	*	Bolt, Carriage 3/8 NC x 3/4 GR2
40	*	Washer, Lock 1/2
41	WP31983	Washer, Shim .50 x .88 x 18 Ga
42	WP33677	Washer, Flat .50 x 1.56 x 10 Ga
43	WP11900	Nut, Flanged Lock 1/2 NC
44	WP4119	Screw, HHCS 1/2 NF x 1 GR5
45	*	Screw, HHCS 1/2 NC x 1-1/4 GR5
46	*	Screw, HHCS 1/2 NC x 1-3/4 GR5
47	*	Screw, HHCS 1/2 NC x 2-1/4 GR5
48	*	Screw, HHCS 1/2 NC x 5 GR5
49	WP29368	Sleeve, .50 x .75 x 3.38
50	WP22060	Seal, Felt .63 x 1.00 x .25
51	*	Washer, Flat Standard 5/8
52	WP10635	Washer, Cup .63 x 1.75 x 14 Ga
53	WP34582	Screw, HHCS Nylock 5/8 NC x 2 GR5
54	WP24741	Washer, Flat .75 x 2.00 x 16 Ga
55	WP65129	Sleeve, 1.05 x 1.31 x .50
56	WP33647	Sleeve, 1.05 x 1.31 x .75
57	WP65130	Sleeve, 1.05 x 1.31 x 1.00
60	WP15855	Guide, Belt .91 x 2.3

* Obtain Locally

GM1072S MAIN FRAME ASSEMBLY



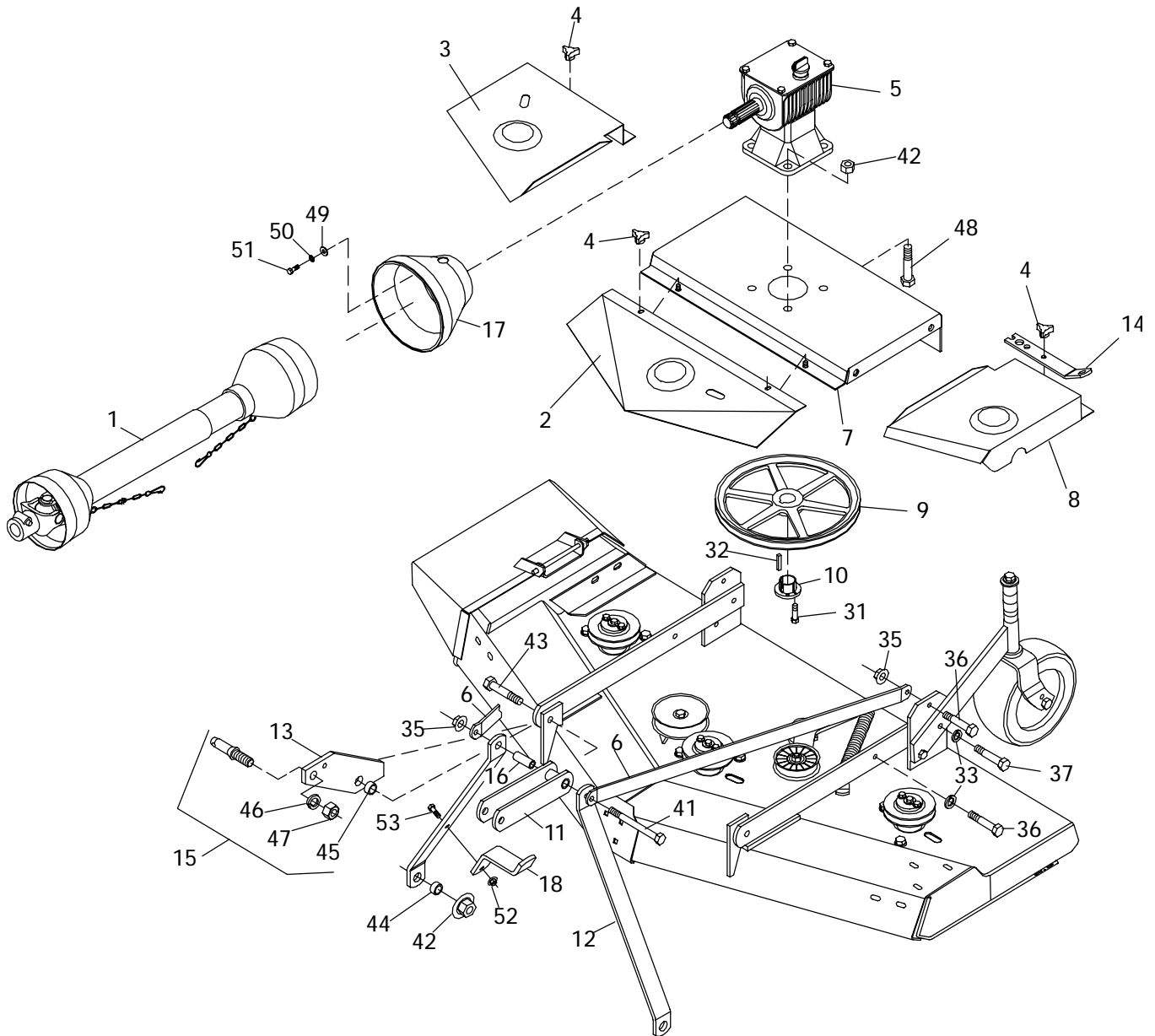
GM1072S MAIN FRAME ASSEMBLY

<u>Ref No</u>	<u>Part No</u>	<u>No Used</u>	<u>Description</u>
1	-----	1	Main Frame (not sold separately)
2	WP15127KT	3	Blade Kit, High Suction 24.66" Standard
	-or-	-or-	
2	WP18884KT	3	Blade Kit, Medium Suction 24.66" Optional
3	WP33736	3	Washer, shoulder .63 x 3.00 x .44
4	WP18844	3	Spindle, Assembly Complete (see page 41 for breakdown)
5	WP11760	1	Pin, Headless .38 x 7.25
6	WP18857	1	Discharge Chute
7	WP66865	1	Bracket, discharge Chute
8	WP12622	3	Sheave, H 1 BK 5.0 PD
9	WP34756	3	Bushing, H 3/4 in Strt Bore w/Key (includes items #33 & 36)
10	WP18862	1	Idler, Flat 5.5 Dia
11	WP67284	2	Sleeve, Shoulder .5 x .9 x .76
12	WP67283	1	Idler, Flat 5.5 Dia
13	WP67288	1	Idler Arm w/Bushing (item 29)
14	WP67131	1	Spring, Ext. .177 x 1.22 x 9.88
15	WP67407	2	Spring, Comp 1.40 x .19 x 2.1, 257
16	WP18989	2	Wheel, 10 In HD w/Brg & Slv, Gray (includes items #25, 26 & 49)
17	WP18826	2	Caster Arm Asy (includes item #32)
18	WP67318	2	Caster Yoke & Shaft Asy
19	WP18879	1	V-Belt W112
21	WP35139	1	Ring, Retaining Ext. .050 x .75
22	WP20657	1	Complete Decal Set
25	WP65577	4	Bearing, Flngd Whl .75 x 1.415
26	WP34466	2	Bearing, Roller .75 x 1.38 x 1.5
27	WP35193	1	Bearing, Ball
28	WP35141	2	Ring, Retaining Int .062 x 1.56
29	WP35145	1	Bushing, Oilite .75 x 1.00 x 1.00
30	WP53567	1	Guide, Belt 8 Ga Formed

HARDWARE		
<u>Ref No</u>	<u>Part No</u>	<u>Description</u>
31	*	Pin, Cotter 3/16 x 1
32	*	Grease Fitting 1/4-28, 15/32" Long
33	*	Washer, Lock 1/4
34	WP32806	Washer, Flat .25 x .88 x 7 Ga
35	*	Screw, HHCS 1/4 NC x 3/4 GR5
36	*	Screw, HHCS 1/4 NC x 1 GR5
37	*	Washer, Flat 3/8 Standard
38	WP14350	Nut, Flanged Lock 3/8 NC
39	*	Bolt, Carriage 3/8 NC x 3/4 GR2
40	*	Washer, Lock 1/2
41	WP31983	Washer, Shim .50 x .88 x 18 Ga
42	WP33677	Washer, Flat .50 x 1.56 x 10 Ga
43	WP11900	Nut, Flanged Lock 1/2 NC
44	WP4358	Screw, HHCS 1/2 NF x 1-1/4 GR5
45	*	Screw, HHCS 1/2 NC x 1-1/4 GR5
46	*	Screw, HHCS 1/2 NC x 1-3/4 GR5
47	*	Screw, HHCS 1/2 NC x 2-1/4 GR5
48	*	Screw, HHCS 1/2 NC x 5 GR5
49	WP29368	Sleeve, .50 x .75 x 3.38
50	WP22060	Seal, Felt .63 x 1.00 x .25
51	*	Washer, Flat 5/8 Standard
52	WP10635	Washer, Cup .63 x 1.75 x 14 Ga
53	WP34582	Screw, HHCS Nylok 5/8 NC x 2 GR5
54	WP24741	Washer, Flat .75 x 2.00 x 16 Ga
55	WP65129	Sleeve, 1.05 x 1.31 x .50
56	WP33647	Sleeve, 1.05 x 1.31 x .75
57	WP65130	Sleeve, 1.05 x 1.31 x 1.00

* Obtain Locally

GM1060S MOUNTING ASSEMBLY



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GM1060S MOUNTING ASSEMBLY

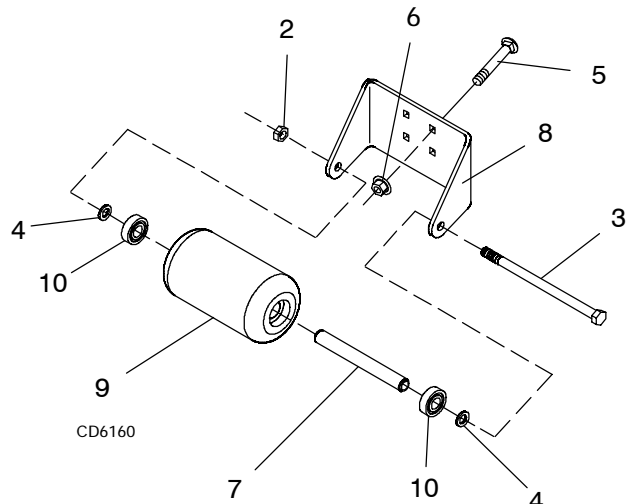
Ref No	Part No	No Used	Description
1	-----	1	Front and Rear Drives (see page 40 for breakdown)
2	WP20633	1	Shield, Front Belt
3	WP20634	1	Shield, Right Belt
4	WP66840	4	Knob, 3-prong 3/8 NC
5	WP55189	1	Gearbox, 1.76:1 (see page 39)
6	WP19056	2	Link, Rear Offset
7	WP18985	1	Gearbox Stand
8	WP20635	1	Shield, Left Belt
9	WP29224	1	Sheave, H 1 BK 13.4 PD
10	WP28943	1	Bushing, H 1-3/8 In Strt Bore
11	WP19605	1	Link, U-bracket
12	WP19579	1	Link, Front Offset
13	WP67310	2	Bracket, Hitch Pin
14	WP20669	1	Wrench, Blade Spindle
15	WP33661	2	Pin, Mounting Category 1 w/Nut & Lock Washer
16	WP64814	1	Sleeve, .62 x .84 x 2.75
17	WP51849	1	Shield, Counter Cone
18	WP52893	1	Bracket, PTO Hanger

HARDWARE		
Ref No	Part No	Description
31	*	Screw, HHCS 1/4 NC x 1 GR5
32	WP28713	Key, 3/8 x 3/8 x 1
33	*	Washer, Lock 1/2
35	WP11900	Nut, Flngd Lock 1/2 NC
36	*	Screw, HHCS 1/2 NC x 1-3/4 GR5
37	*	Screw, HHCS 1/2 NC x 2-1/4 GR5
41	*	Screw, HHCS 1/2 NC x 4-3/4 GR5
42	WP19025	Nut, Flanged Lock 5/8 NC
43	*	Screw, HHCS 5/8 NC x 3 GR5
44	WP484	Sleeve, HT .63 x 1.00 x .44
45	WP1791	Sleeve, HT .63 x 1.00 x .56
46	*	Washer, Lock 7/8
47	*	Nut, Hex 7/8 NF
48	WP19024	Screw, Flanged Hex Head 5/8 NC x 1-3/4
49	*	Washer, Flat 5/16 Standard
50	*	Washer, Lock 5/16
51	*	Screw, HHCS 5/16 NC x 3/4 GR5
52	WP14350	Nut, Flngd Lock 3/8 NC
53	*	Screw, HHCS 3/8 NC x 1-1/4 GR5

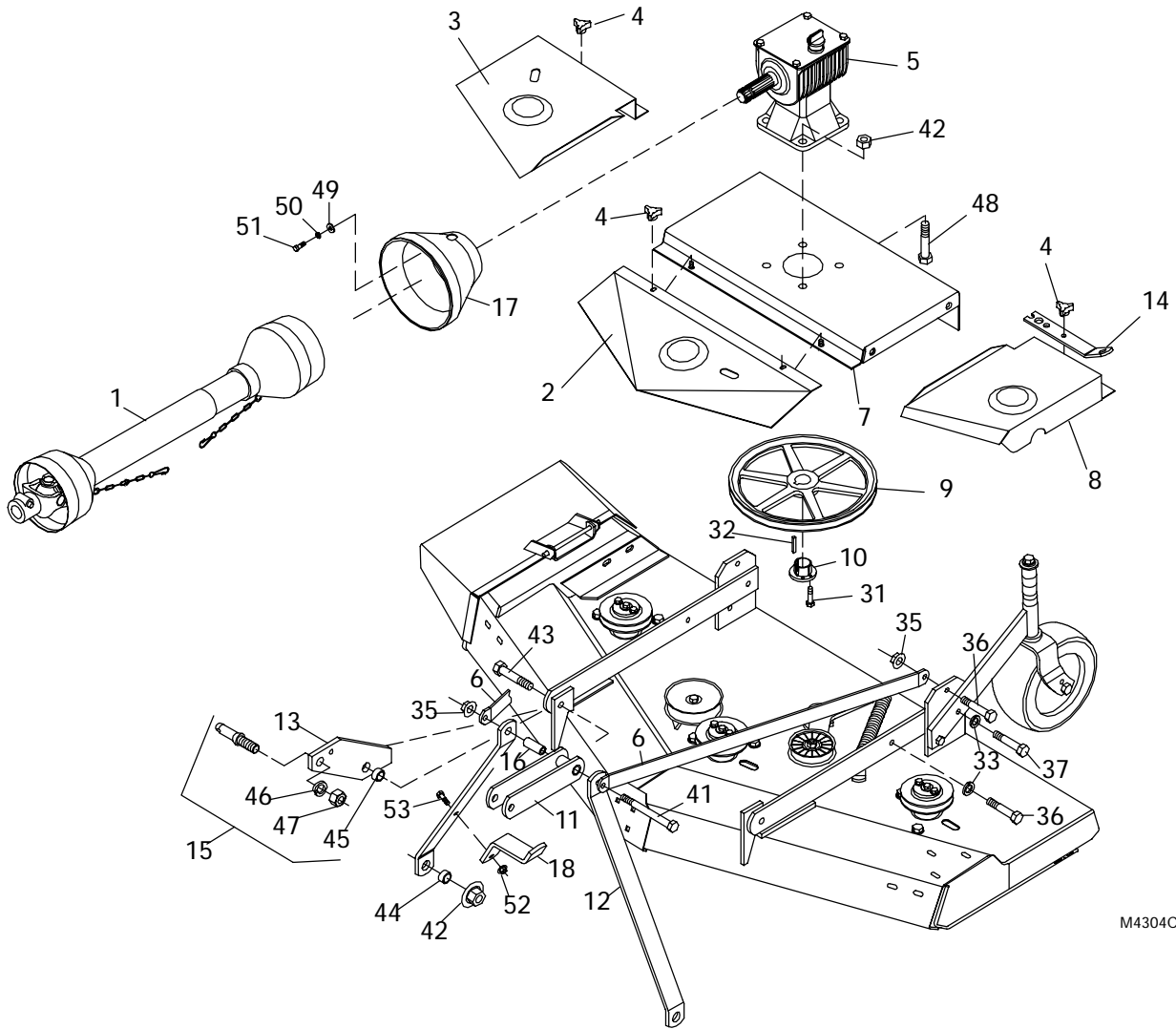
* Obtain Locally

GM1060S & GM1072S FRONT ROLLER ASSEMBLY (OPTIONAL)

Ref No	Part No	No Used	Description
-	WP1006425	1	Roller Kit, Front Complete
2	WP11900	1	Nut, Flanged Lock 1/2 NC
3	WP38107	1	Screw, HHCS 1/2 NC x 9 GR5
4	*	2	Washer, Flat 1/2 SAE
5	*	4	Bolt, Carriage 3/8 NC x 1
6	WP70069	4	Nut, Flanged Whiz 3/8 NC
7	WP1006420	1	Spacer, .75 x 6.62
8	WP1006424	1	Bracket, Front Roller
9	WP1006418	2	Roller 4 x 7.37
10	WP35193	2	Bearing, Ball
	*		Obtain Locally



GM1072S MOUNTING ASSEMBLY



<u>Ref No</u>	<u>Part No</u>	<u>No Used</u>	<u>Description</u>
1	-----	1	Front and Rear Drives (see page 40)
2	WP18851	1	Shield, Front Belt
3	WP18852	1	Shield, Right Belt
4	WP66840	6	Knob, 3-prong 3/8 NC
5	WP55189	1	Gearbox, 1.76:1 (see page 39)
6	WP19056	2	Link, Rear Offset
7	WP18985	1	Gearbox Stand
8	WP18853	1	Shield, Left Belt
9	WP29224	1	Sheave, H 1 BK 13.4 PD
10	WP28943	1	Bushing, H 1-3/8 in Strt Bore
11	WP19605	1	Link, U-bracket
12	WP19579	2	Link, Front Offset
13	WP18824	2	Bracket, Hitch Pin
14	WP20669	1	Wrench, Blade Spindle
15	WP33661	2	Pin, Mntng Cat 1 w/Nut & Lkwsshr
16	WP64814	1	Sleeve, .62 x .84 x 2.75
17	WP51849	1	Shield, Counter Cone
18	WP52893	1	Bracket, PTO Hanger

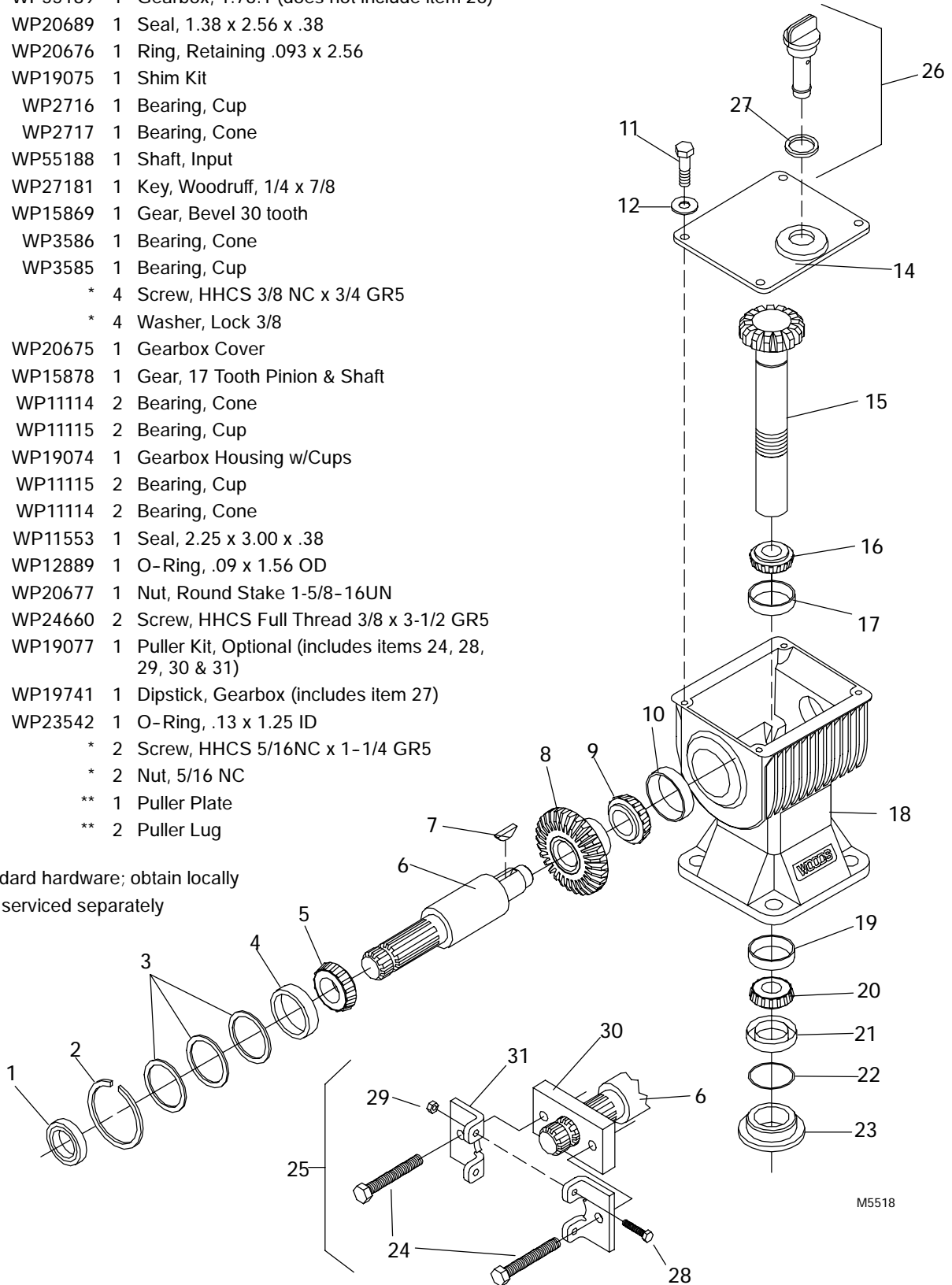
HARDWARE		
<u>Ref No</u>	<u>Part No</u>	<u>Description</u>
31	*	Screw, HHCS 1/4 NC x 1 GR5
32	WP28713	Key, 3/8 x 3/8 x 1
33	*	Washer, Lock 1/2
35	WP11900	Nut, Flngd Lock 1/2 NC
36	*	Screw, HHCS 1/2 NC x 1-3/4 GR5
37	*	Screw, HHCS 1/2 NC x 2-1/4 GR5
41	*	Screw, HHCS 1/2 NC x 4-3/4 GR5
42	WP19025	Nut, Flanged Lock 5/8 NC
43	*	Screw, HHCS 5/8 NC x 3 GR5
44	WP484	Sleeve, HT .63 x 1.00 x .44
45	WP1791	Sleeve, HT .63 x 1.00 x .56
46	*	Washer, Lock 7/8
47	*	Nut, Hex 7/8 NF
48	WP19024	Screw, Flngd Hex Head 5/8 NC x 1-3/4
49	*	Washer, Flat 5/16 Standard
50	*	Washer, Lock 5/16
51	*	Screw, HHCS 5/16 NC x 3/4 GR5
52	WP14350	Nut, Flngd Hex Lock 3/8 NC
53	*	Screw, HHCS 3/8 NC x 1-1/4 GR5

*Obtain Locally

GM1060S & GM1072S GEARBOX ASSEMBLY

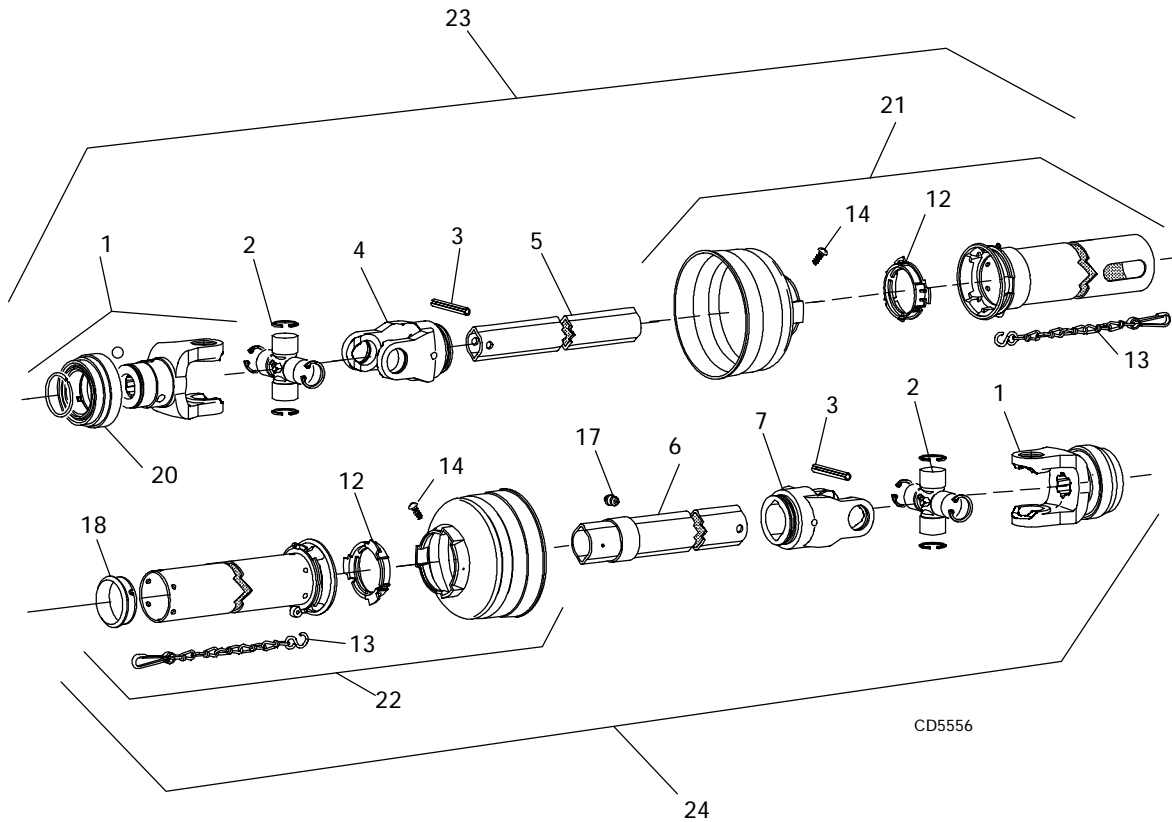
Ref No	Part No	No Used	Description
-	WP55189	1	Gearbox, 1.76:1 (does not include item 26)
1	WP20689	1	Seal, 1.38 x 2.56 x .38
2	WP20676	1	Ring, Retaining .093 x 2.56
3	WP19075	1	Shim Kit
4	WP2716	1	Bearing, Cup
5	WP2717	1	Bearing, Cone
6	WP55188	1	Shaft, Input
7	WP27181	1	Key, Woodruff, 1/4 x 7/8
8	WP15869	1	Gear, Bevel 30 tooth
9	WP3586	1	Bearing, Cone
10	WP3585	1	Bearing, Cup
11	*	4	Screw, HHCS 3/8 NC x 3/4 GR5
12	*	4	Washer, Lock 3/8
14	WP20675	1	Gearbox Cover
15	WP15878	1	Gear, 17 Tooth Pinion & Shaft
16	WP11114	2	Bearing, Cone
17	WP11115	2	Bearing, Cup
18	WP19074	1	Gearbox Housing w/Cups
19	WP11115	2	Bearing, Cup
20	WP11114	2	Bearing, Cone
21	WP11553	1	Seal, 2.25 x 3.00 x .38
22	WP12889	1	O-Ring, .09 x 1.56 OD
23	WP20677	1	Nut, Round Stake 1-5/8-16UN
24	WP24660	2	Screw, HHCS Full Thread 3/8 x 3-1/2 GR5
25	WP19077	1	Puller Kit, Optional (includes items 24, 28, 29, 30 & 31)
26	WP19741	1	Dipstick, Gearbox (includes item 27)
27	WP23542	1	O-Ring, .13 x 1.25 ID
28	*	2	Screw, HHCS 5/16NC x 1-1/4 GR5
29	*	2	Nut, 5/16 NC
30	**	1	Puller Plate
31	**	2	Puller Lug

* Standard hardware; obtain locally
 ** Not serviced separately



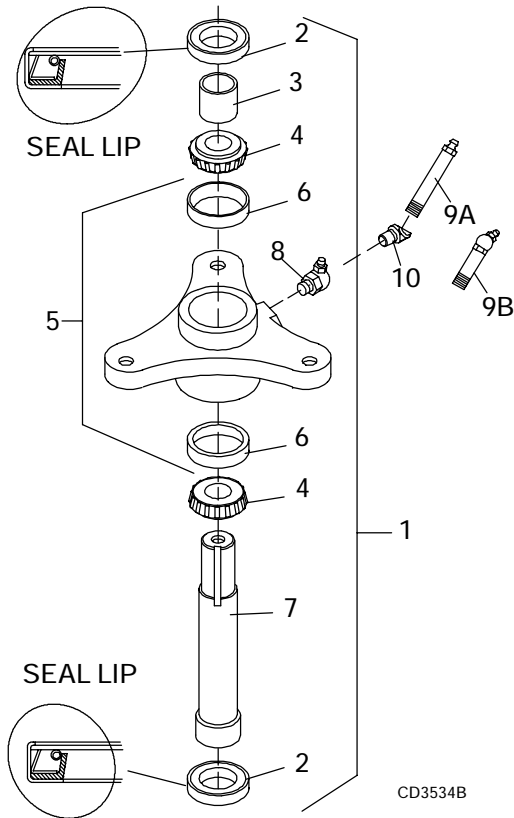
M5518

GM1060S - GM1072S DRIVE SHAFT



<u>Ref No</u>	<u>Part No</u>	<u>No Used</u>	<u>Description</u>
1	WP40571	2	Yoke, 1-3/8-6 Spline QD (complete with lock collar)
2	WP154	2	Cross and Bearing Kit
3	WP40775	2	Pin, Spring 10 mm x 65 mm
4	WP40572	1	Yoke, Inner Profile
5	WP40583	1	Drive Tube, Inner Profile
6	WP40584	1	Drive Tube, Outer Profile
7	WP40573	1	Yoke, Outer Profile
12	WP40776	2	Bearing Ring, Guard
13	WP40777	2	Chain, Guard Anti-rotation
14	WP40778	2	Screw, Guard Retainer
17	WP40779	1	Grease Zerk, Drive Line
18	WP40780	1	Bearing, Guard Support
20	WP40589	2	Slide Lock Collar Repair Kit (without yoke)
21	WP40585	1	Guard, Outer Half (also includes items 12, 13, and 14)
22	WP40586	1	Guard, Inner Half (also includes items 12, 13, 14, and 18)
23	WP40581	1	Drive, Inner Half Complete
24	WP40582	1	Drive, Outer Half Complete

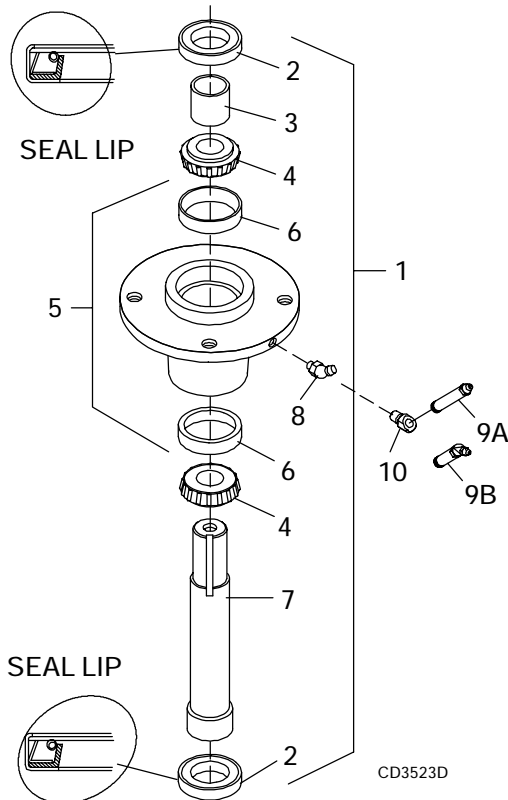
GM1060S BLADE SPINDLE ASSEMBLY



Ref No	Part No	No Used	Description
1	WP67285	--	Spindle Assembly Complete (includes items 2-8)
2	WP66755	2	Seal, 1.06 x 2.00 x .25
3	WP67287	1	Sleeve, .84 x 1.06 x 1.125
4	WP4107	2	Bearing, Cone
5	WP66843	1	Spindle, Housing w/Cups
6	WP4106	2	Bearing, Cup
7	WP67286	1	Shaft, Blade Spindle
8	*	1	Grease Fitting, 1/8 Pipe thread 45°
9A	WP18960	1	Grease Fitting, 1/8M PTF x 2.63
9B	WP64440	1	Grease Fitting, 1/8 M PTF x 2.09 30°
10	WP18959	1	Grease Fitting, 1/8 F x 1/8 M PTF 45°

* Obtain Locally

GM1072S BLADE SPINDLE ASSEMBLY

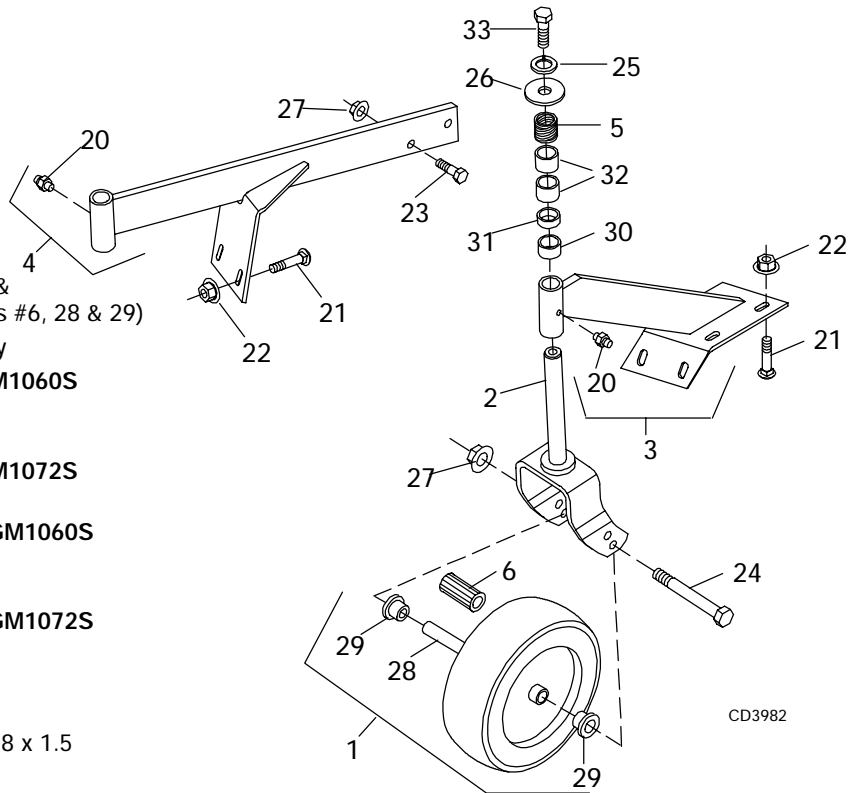


Ref No	Part No	No Used	Description
1	WP18844	--	Spindle, Assembly Complete (includes items 2-8)
2	WP66755	2	Seal, 1.06 x 2.00 x .25
3	WP18822	1	Sleeve, .84 x 1.06 x .812
4	WP4107	2	Bearing, Cone
5	WP18875	1	Spindle, Housing w/Cups (includes items 6 & 8)
6	WP4106	2	Bearing, Cup
7	WP67451	1	Shaft, Blade Spindle
8	*	1	Grease Fitting, 1/4 Tapered Thread 45°
9A	WP18962	1	Grease Fitting, 1/8 M PTF x 1.75
9B	WP64440	1	Grease Fitting, 1/8 M PTF x 2.09 30°
10	WP18961	1	Grease Fitting, 1/8 F x 1/4-28 M 45°

* Obtain locally

GM1060S & GM1072S FRONT GAUGE WHEEL

<u>Ref No</u>	<u>Part No</u>	<u>No Used</u>	<u>Description</u>
1	WP18989	2	Wheel, 10 In HD w/Brg & Slv, Gray (includes items #6, 28 & 29)
2	WP67318	2	Caster Yoke & Shaft Asy
3	WP67291	1	Caster Arm Asy, Left GM1060S (includes item #20)
	-or-	-or-	
3	WP18828	1	Caster Arm Asy, Left GM1072S (includes item #20)
4	WP67290	1	Caster Arm Asy, Right GM1060S (includes item #20)
	-or-	-or-	
4	WP18832	1	Caster Arm Asy, Right GM1072S (includes item #20)
5	WP67407	2	Spring, Compression 1.40 x .19 x 2.1,257
6	WP34466	2	Bearing, Roller .75 x 1.38 x 1.5



CD3982

HARDWARE

<u>Ref No</u>	<u>Part No</u>	<u>Description</u>
20	*	Grease Fitting, 1/4-28, 15/32" long
21	*	Bolt, Carriage 3/8 NC x 1 GR5
22	WP14350	Nut, Flanged Lock 3/8 NC
23	*	Screw, HHCS 1/2 NC x 1-1/2 GR5
24	*	Screw, HHCS 1/2 NC x 5 GR5
25	*	Washer, Lock 1/2
26	WP33677	Washer, Flat .50 x 1.56 x 10 Ga

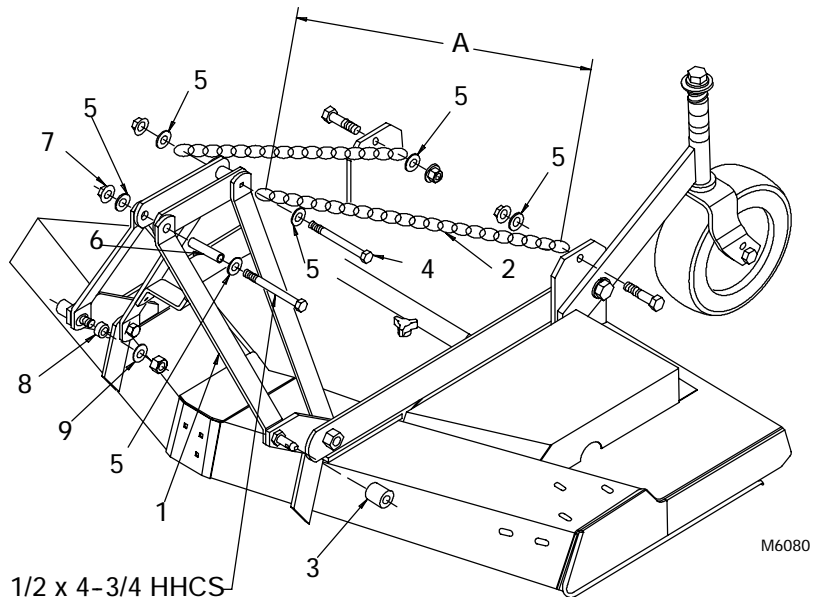
<u>Ref No</u>	<u>Part No</u>	<u>Description</u>
27	WP11900	Nut, Flanged Lock 1/2 NC
28	WP29368	Sleeve, .50 x .75 x 3.38
29	WP65577	Bearing, Flngd Whl .75 x 1.415
30	WP65129	Sleeve, 1.05 x 1.31 x .50
31	WP33647	Sleeve, 1.05 x 1.31 x .75
32	WP65130	Sleeve, 1.05 x 1.31 x 1.00
33	*	Screw, HHCS 1/2 NC x 1-1/4 GR5

* Obtain Locally

QUICK HITCH (OPTIONAL)

<u>Ref No</u>	<u>Part No</u>	<u>No Used</u>	<u>Description</u>
1	WP1003692	2	Link, Offset .38 x 2.0 x 15
2	WP1005401	2	Chain 3/8 Prf Coil 38 Link
3	WP38214	2	Sleeve, .91 x 1.44 x 1.25
4	WP13563	1	Screw, HHCS 1/2 NC x 6 GR5
5	*	6	Washer, Flat 1/2 ZP
6	WP29368	1	Sleeve, .50 x .75 x 3.38
7	WP11900	1	Nut, Flange Lock 1/2 NC
8	WP29281	2	Sleeve, 7/8 x 1-1/8 x 19/32 HT
9	*	2	Washer, Flat 7/8

* Obtain locally



M6080

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WARRANTY

Please enter information below and save for future reference.

Date Purchased: _____ From (Dealer): _____

Model Number: _____ Serial Number: _____

Woods Equipment Company ("WOODS") warrants this product to be free from defect in material and workmanship. Except as otherwise set forth below, the duration of this Warranty shall be for TWELVE (12) MONTHS COMMENCING ON THE DATE OF DELIVERY OF THE PRODUCT TO THE ORIGINAL PURCHASER.

The warranty periods for certain gearboxes are listed below:

Model No.	Part Warranted	Duration
GM1060R, GM1072R, GM1084R, GM1060S, GM1072S, FM1012R, FM1015R, FM1017R, and GM1190R	Gearbox components	5 years from the date of delivery to the original purchaser

Under no circumstances will this Warranty apply in the event that the product, in the good faith opinion of WOODS, has been subjected to improper operation, improper maintenance, misuse, or an accident. This Warranty does not apply in the event that the product has been materially modified or repaired by someone other than WOODS, a WOODS authorized dealer or distributor, and/or a WOODS authorized service center. This Warranty does not cover normal wear or tear, or normal maintenance items. This Warranty also does not cover repairs made with parts other than those obtainable through WOODS.

This Warranty is extended solely to the original purchaser of the product. Should the original purchaser sell or otherwise transfer this product to a third party, this Warranty does not transfer to the third party purchaser in any way. There are no third party beneficiaries of this Warranty.

WOODS makes no warranty, express or implied, with respect to engines, batteries, tires or other parts or accessories not manufactured by WOODS. Warranties for these items, if any, are provided separately by their respective manufacturers.

WOODS' obligation under this Warranty is limited to, at WOODS' option, the repair or replacement, free of charge, of the product if WOODS, in its sole discretion, deems it to be defective or in noncompliance with this Warranty. **The product must be returned to WOODS with proof of purchase within thirty (30) days after such defect or noncompliance is discovered or should have been discovered, routed through the dealer and distributor from whom the purchase was made, transportation charges prepaid.** WOODS shall complete such repair or replacement within a reasonable time after WOODS receives the product. THERE ARE NO OTHER REMEDIES UNDER THIS WARRANTY. THE REMEDY OF REPAIR OR REPLACEMENT IS THE SOLE AND EXCLUSIVE REMEDY UNDER THIS WARRANTY.

THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE OF THIS WARRANTY. WOODS MAKES NO OTHER WARRANTY, EXPRESS OR IMPLIED, AND WOODS SPECIFICALLY DISCLAIMS ANY IMPLIED WARRANTY OF MERCHANTABILITY AND/OR ANY IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.

WOODS shall not be liable for any incidental or consequential losses, damages or expenses, arising directly or indirectly from the product, whether such claim is based upon breach of contract, breach of warranty, negligence, strict liability in tort or any other legal theory. Without limiting the generality of the foregoing, Woods specifically disclaims any damages relating to (i) lost profits, business, revenues or goodwill; (ii) loss of crops; (iii) loss because of delay in harvesting; (iv) any expense or loss incurred for labor, supplies, substitute machinery or rental; or (v) any other type of damage to property or economic loss.

This Warranty is subject to any existing conditions of supply which may directly affect WOODS' ability to obtain materials or manufacture replacement parts.

No agent, representative, dealer, distributor, serviceperson, salesperson, or employee of any company, including without limitation, WOODS, its authorized dealers, distributors, and service centers, is authorized to alter, modify, or enlarge this Warranty.

For warranty services contact your selling dealer.





WARRANTY for Replacement Parts

Woods Equipment Company (“WOODS”) warrants this product to be free from defect in material and workmanship for a period of ninety (90) days from the date of delivery of the product to the original purchaser with the exception of V-belts, which will be free of defect in material and workmanship for a period of 12 months.

Under no circumstances will this Warranty apply in the event that the product, in the good faith opinion of WOODS, has been subjected to improper operation, improper maintenance, misuse, or an accident. This Warranty does not cover normal wear or tear, or normal maintenance items.

This Warranty is extended solely to the original purchaser of the product. Should the original purchaser sell or otherwise transfer this product to a third party, this Warranty does not transfer to the third party purchaser in any way. There are no third party beneficiaries of this Warranty.

WOODS’ obligation under this Warranty is limited to, at WOODS’ option, the repair or replacement, free of charge, of the product if WOODS, in its sole discretion, deems it to be defective or in noncompliance with this Warranty. **The product must be returned to WOODS with proof of purchase within thirty (30) days after such defect or noncompliance is discovered or should have been discovered, routed through the dealer and distributor from whom the purchase was made, transportation charges prepaid.** WOODS shall complete such repair or replacement within a reasonable time after WOODS receives the product. THERE ARE NO OTHER REMEDIES UNDER THIS WARRANTY. THE REMEDY OF REPAIR OR REPLACEMENT IS THE SOLE AND EXCLUSIVE REMEDY UNDER THIS WARRANTY.

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This Warranty is subject to any existing conditions of supply which may directly affect WOODS’ ability to obtain materials or manufacture replacement parts.

No agent, representative, dealer, distributor, service person, salesperson, or employee of any company, including without limitation, WOODS, its authorized dealers, distributors, and service centers, is authorized to alter, modify, or enlarge this Warranty.

For warranty services contact your selling dealer.

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