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FMX60

FINISH MOWER

MANUAL



WELCOME TO THE WORLD OF SUMMIT TRACTORS

Thank you for purchasing your Summit Tractors attachment.

Read and become familiar with the operation manual to learn how to operate and maintain your attachment safely. The operation manual will help you avoid personal injury and other accidents during operation and servicing of the attachment.

By following the instructions contained in the manual, you will be able to operate the attachment so that it will provide long years of reliable service. Note that the images shown in this manual may differ from the actual attachment you have purchased.

The operation manual is organized with sections arranged in a particular order so that the operator can better understand the safety messages and the controls on the attachment. The operation manual also contains information about operation and service dates to support long years of reliability and use.

It is the customer's responsibility to ensure the implement is properly prepared and ready for use upon delivery.

Before operating the implement, carefully inspect it to confirm all components are correctly installed and functioning as intended.

When using any attachment together with a tractor, carefully study the operation manual of the tractor so that the attachment may be used safely and correctly.

All information, descriptions, specifications, drawings, illustrations, and pictures in this manual are based on the latest information available at the time this manual was published. Summit Tractors reserves the right to make changes at any time without prior notice.

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CUSTOMER INFORMATION

Name _____

Purchased From _____

Date Purchased _____

Model _____

Serial # _____

PREPARATION CHECKLIST

Verify the following before operating your Finish Mower

- | | |
|--|---|
| ☐ 1. Finish Mower is completely assembled. | ☐ 6. All decals in place and readable (See page 7-8). |
| ☐ 2. Overall condition good (i.e. paint, welds). | ☐ 7. Ensure the V-belt is properly installed (See page 17). |
| ☐ 3. All shields in place and in good condition. | ☐ 8. Gearbox filled with oil and checked for possible leaks (See page 20). |
| ☐ 4. Check front of input gearbox shaft and make sure that snap ring is properly installed. | ☐ 9. All fittings lubricated (See page 20). |
| ☐ 5. Check PTO driveline. Make sure it is the correct length to operate finish mower with intended tractor. | ☐ 10. All fasteners torqued to specifications in Torque Chart (See page 27). |

SAFETY

Safety is a primary concern in the design and manufacturing of our products. Unfortunately, our efforts to provide safe equipment can be eliminated 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, judgment, 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.

Throughout this manual, the term **IMPORTANT** is used to indicate that failure to observe procedures 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!**



DANGER

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



WARNING

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.



CAUTION

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.

For more information about
Proposition 65, please visit;
<https://www.p65warnings.ca.gov>

TRAINING

Safety instructions are important! Read all attachments and power unit manuals; follow all safety rules and safety decal information. (Replacement manuals and safety decals are available from your Summit Tractors 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, please contact your Summit Tractors dealer.

Know your controls and how to stop the engine and implement 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 getting caught in moving parts. Wear sturdy, rough-soled work shoes and protective equipment for eyes, hair, hands, ears, and head; wear respirator or filter mask where appropriate.

Make sure implement is properly secured, adjusted, and in good operating condition.

Make sure collar slides freely and is seated firmly in tractor PTO spline groove.

Before servicing equipment, check and adjust driveline length as instructed in Operator's Manual. Driveline must not bottom out or pull apart throughout the full range of the tractor hitch. Do not operate until driveline length is correct. Make sure driveline shield safety chain is attached as shown in this manual. Replace if damaged or broken. Check that driveline guards rotate freely on driveline before servicing equipment.

Before starting power unit, check all equipment driveline guards for damage. Replace any damaged guards.

Make sure all guards rotate freely on all drivelines. If guards do not rotate freely on drivelines, repair and replace bearings before servicing equipment.

Inspect chain or rubber guards before each use. Replace if damaged.

Remove accumulated debris from this equipment, power unit, and engine to avoid fire hazard.

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

A minimum of 20% of tractor and equipment weight must be on the tractor's front wheels when implements are 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.

Make sure all safety decals are installed. Replace if damaged. (See Safety and Instruction Decals section on pg. 7-8.)

Make sure shields and guards are properly installed and in good condition. Replace if damaged.

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

STARTING AND STOPPING

Check the tractor master shield over the PTO (power take off) stub shaft. Make sure it is in good condition and fastened securely to the tractor. Purchase a new shield if old shield is damaged or missing.

All tractors that are not equipped with a "live" power takeoff (PTO) must be equipped with an over-running

(Safety continued on next page)

SAFETY

PTO clutch. These are available through most farm equipment stores.

NOTE: The addition of an over-running PTO clutch may change the length of the PTO driveline required. Be sure to refer to the instructions on the PTO driveline installation. Be sure that the driveline system guarding is adequate.

Implement operating power is supplied from the tractor PTO. Refer to the tractor manual for PTO engagement and disengagement instructions.

Understand how to stop tractor and implement quickly in case of an emergency.

When engaging the PTO, the engine RPM should always be at idle speed. Once engaged and ready to start, raise PTO speed to 540-RPM and maintain throughout operation.

TRANSPORTATION

Power unit must be equipped with ROPS or ROPS cab and seat belt. Keep seat belt securely fastened. Falling off power unit can result in death from being run over or crushed. Keep foldable ROPS system in “locked up” position at all times.

A minimum of 20% of tractor and equipment weight must be on the tractor’s front wheels when implements are 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. Always comply with all state and local lighting and marking requirements.

Never allow riders on power unit or implement.

Do not operate PTO during transport.

Watch for hidden hazards on the terrain.

Do not operate or transport on steep slopes.

Do not operate or transport equipment while under the influence of alcohol or drugs.

When encountering rough terrain during transport, reduce tractor speed to minimize the horizontal movement of implement.

Stabilizer bars should be used during transport to reduce lateral movement of implement.

OPERATION

Do not allow bystanders in the area when operating, attaching, removing, assembling, or servicing equipment.

Never discharge directly toward people, animals, or property.

This implement is intended for agricultural applications only. Do not operate within 300 feet of bystanders or public roads or highways.

Do not operate or transport equipment while under the influence of alcohol or drugs.

Keep hands, feet, hair, and clothing away from equipment while engine is running. Stay clear of all moving parts.

Operate only in daylight or satisfactory artificial light.

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

Never allow riders on power unit or implement.

Operate tractor PTO at 540 RPM. Do not exceed.

Power unit must be equipped with ROPS or ROPS cab and seat belt. Keep seat belt securely fastened.

Falling off power unit can result in death from being run over or crushed. Keep foldable ROPS system in “locked up” position at all times.

Always sit in power unit seat when operating controls or starting engine. Securely fasten seat belt, place transmission in neutral, engage brake, and ensure all other controls are disengaged before starting power unit engine.

Do not operate PTO during transport.

Look down and to the rear and make sure area is clear before operating in reverse (reverse operation is not recommended).

Do not operate or transport on steep slopes.

Do not stop, start, or change directions suddenly on slopes.

Use extreme care and reduce ground speed on slopes and rough terrain.

Watch for hidden hazards on the terrain during operation. Stop power unit and equipment immediately upon striking an obstruction. Turn off engine, remove key, inspect, and repair any damage before resuming operation.

Leak down or failure of mechanical or hydraulic system can cause equipment to lower.

MAINTENANCE

Before detaching power unit or performing any service or maintenance, follow these steps: disengage power to equipment, lower the 3-point hitch and all raised components to the ground, set parking brake, stop engine, remove key, and unfasten seat belt.

Before performing any service or maintenance, disconnect driveline from tractor PTO.

Before working underneath, carefully read Operator's Manual instructions, disconnect driveline, securely block up all corners, and check stability. Secure blocking prevents equipment from dropping due to hydraulic leak down, hydraulic system failures, or mechanical component failures.

Do not modify, alter, or permit anyone else to modify or alter the equipment or any of its components in any way.

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

Make sure implement is properly secured, adjusted, and in safe operating condition.

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

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 movable 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 procedures.

Make certain all movement of equipment components has stopped before approaching for service.

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

Do not handle blades/tines/shanks 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. Also, blade bolts must be changed when replacing blades.

Tighten all bolts, nuts, and screws to torque chart specifications. Check that all cotter pins are installed securely to ensure equipment is in a safe condition before putting unit into service.

Make sure all safety decals are installed. Replace if damaged. (See Safety Decals section for location.)

Make sure shields and deflectors are properly installed and in good condition. Replace if damaged.

(Safety continued on next page)

STORAGE

Block equipment securely for storage.

Keep children and bystanders away from storage area.

Follow manual instructions for storage.

Always use a tractor to position equipment for storage.

Never attempt to move equipment by hand.

EQUIPMENT SAFETY GUIDELINES

Safety of the operator and bystanders is one of the main concerns in design and development. However, accidents always occur which could have been avoided by a few seconds of thought and a more careful approach to handling equipment. You, the operator, can avoid many accidents by observing the following precautions and insist those working with you, follow them.

In order to provide a better view, certain photographs or illustrations in this manual may show an assembly with a safety shield removed. However, equipment should never be operated in this condition. Keep all shields in place. If shield removal becomes necessary for repairs, replace the shield prior to use.

Replace any safety sign that is illegible or missing. Location of such safety signs are indicated in this manual.

Never use alcoholic beverages or drugs that can hinder alertness or coordination while operating this equipment. Consult your doctor about operating this machine while taking prescription medications.

Under no circumstances should children under the age of 18 be allowed to operate this equipment. Do not allow persons to operate or assemble this unit until they have read this manual and have developed a thorough understanding of the safety precautions and how it works. Review the safety instructions with all users annually.

This equipment can be dangerous to children and persons unfamiliar with its operation. The operator should be a responsible, properly trained and physically able person familiar with farm machinery and trained in this equipment's operations.

Use a tractor equipped with a Roll Over Protective System and seat belts. (ROPS)

Never exceed the limits of a piece of machinery. If its ability to perform a job safely, is in question, DON'T TRY IT.

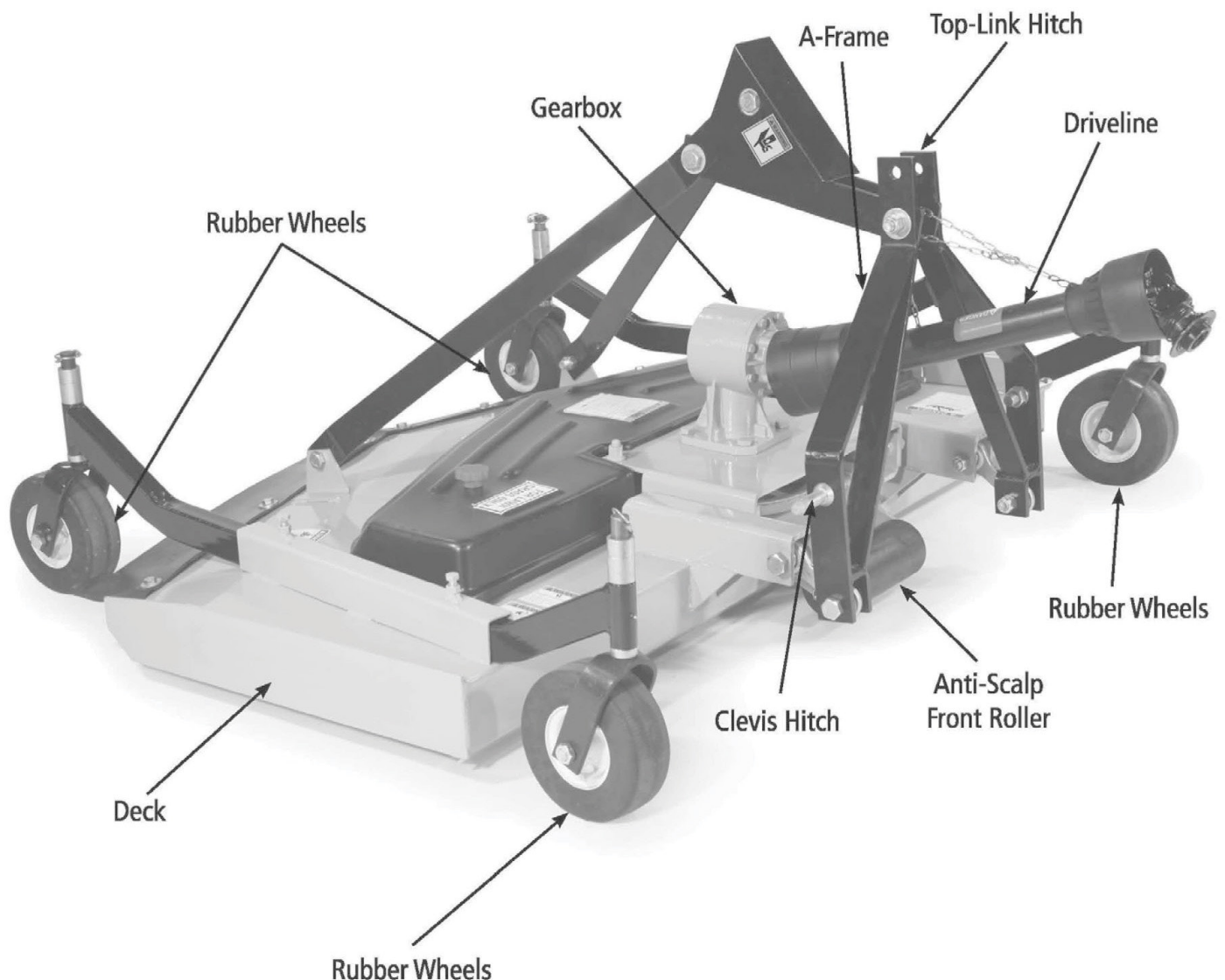
Do not modify the equipment in any way. Unauthorized modification could result in serious injury or death and may impair the function and life of the equipment.

In addition to the design and the confirmation of this implement, including safety signs and safety equipment, hazard control and accident prevention are dependent upon the awareness, concern, prudence, and proper training of personnel involved in the operation, transport, maintenance, and storage of the machine. Refer also to safety messages and operation instruction in each of the appropriate sections of the tractor and implement manuals. Heed the safety signs affixed to both the tractor and implement.

GENERAL DESCRIPTION

The FMX60 Finish Mower has been carefully designed for cutting grass. This manual is provided to give you the necessary operation and maintenance instructions for keeping your finish mower in excellent operating condition. Please read this manual thoroughly. Understand the purpose of the controls and how to use them. Observe all safety precautions on the machine and as noted throughout this manual.

Major Components



NOTICE

All information, illustrations, and specifications in this manual are based on the latest information available at the time of publication. Because we are always striving to improve our products, the images could differ slightly from actual equipment. Specifications are subject to change without notice. We also reserve the right to make changes at any time without notice.

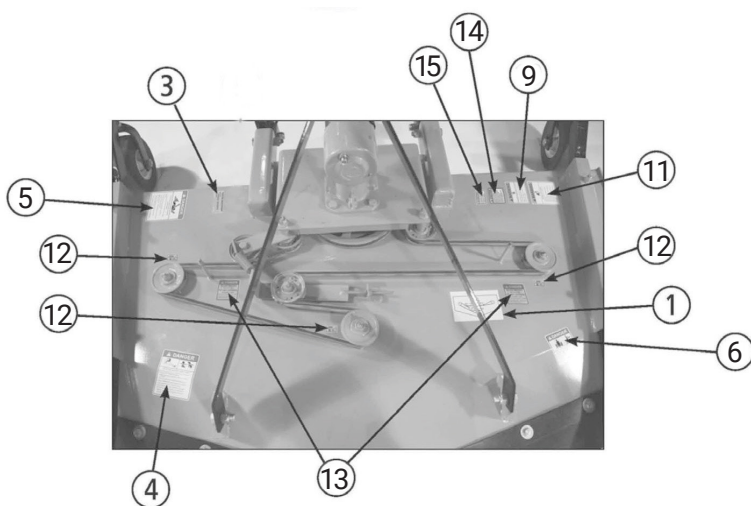
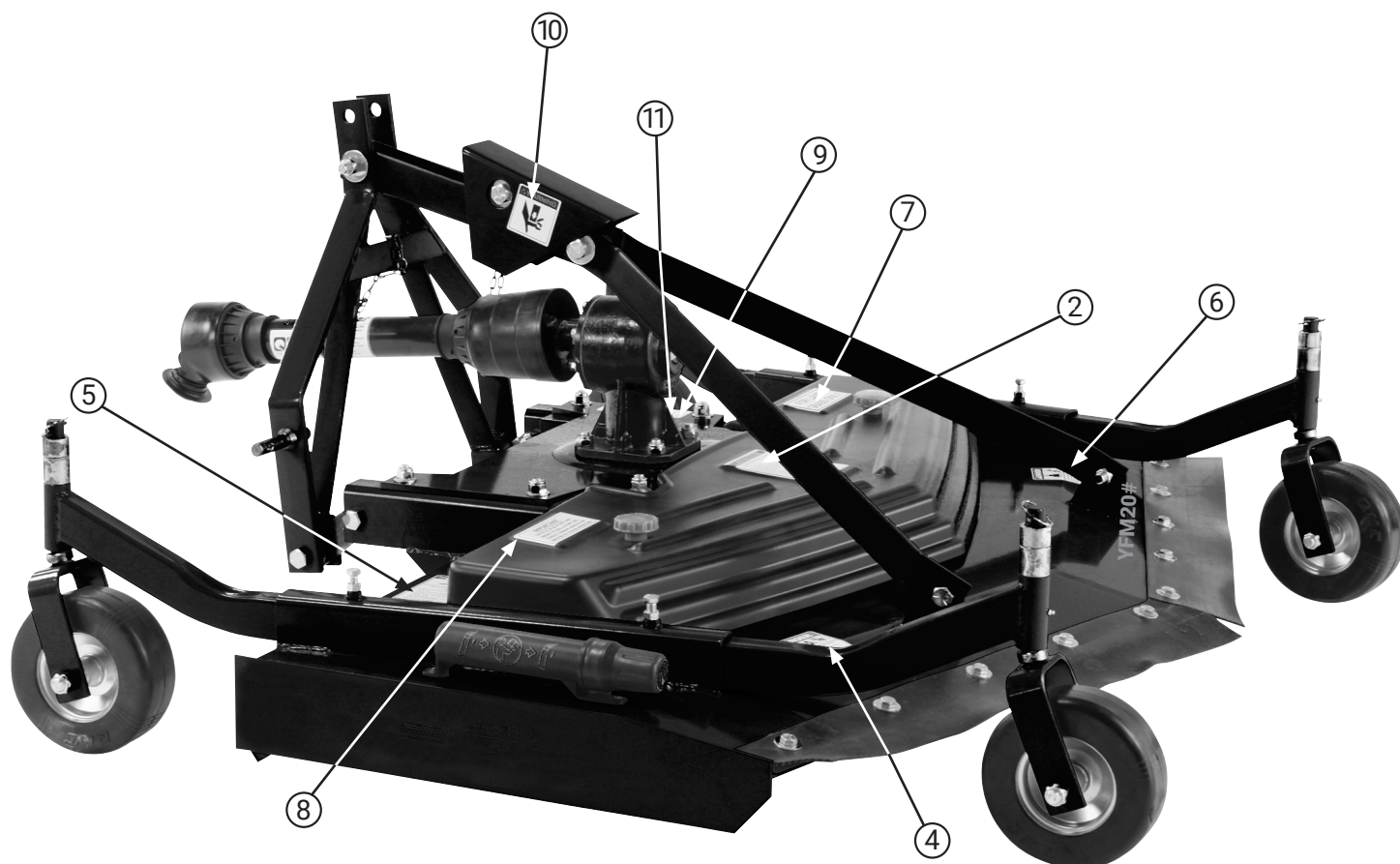
SAFETY AND INSTRUCTION DECALS



SAFETY and INSTRUCTIONAL DECALS
ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!



Replace Immediately if Damaged!



SAFETY AND INSTRUCTIONAL DECALS

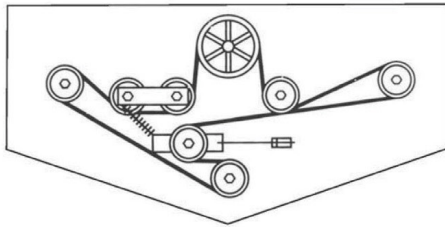


SAFETY and INSTRUCTIONAL DECALS

ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!



Replace Immediately if Damaged!



① DRIVE BELT



④ ROTATING BLADES



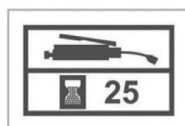
⑤ ROTATING DRIVELINE



⑨ CRUSH POINT



⑩ CRUSH POINT



⑫ GREASE POINTS



② PREVENT INJURY



⑥ THROWN OBJECT



⑪ MOVING PARTS



⑭ NEEDS OIL



③ SERIAL NUMBER



⑦ GRASS ONLY



⑧ NO GREASE



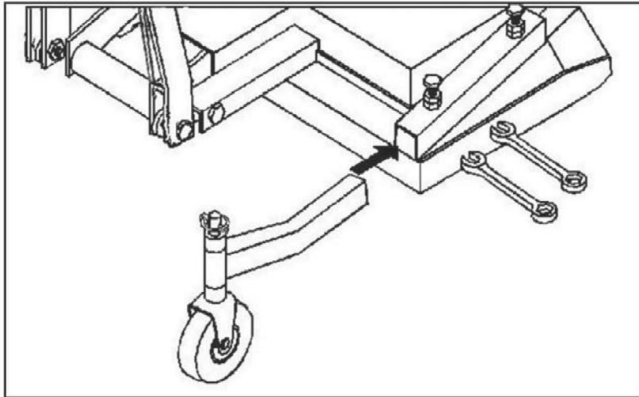
⑬ GUARD SAFETY



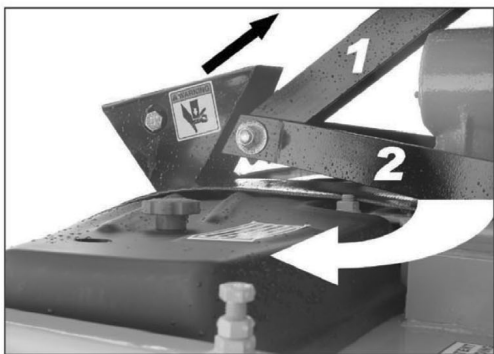
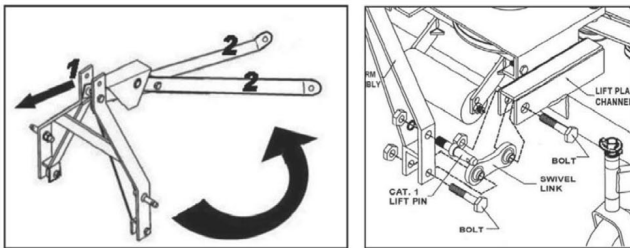
⑮ 540 RPM

ASSEMBLY AND SETUP

1. With finish mower still in crate, lay flat on a level surface. Remove the top and side sections of the crate, leaving the finish mower resting on the bottom section. Set aside PTO shaft.



2. Insert tailwheel arms as shown and tighten both the bolt and jam nut.



3. Raise A-Frame assembly (#1) forward and swivel brace arms (#2) around toward rear of the mower.



4. Hook the brace arms to the tabs (#3) on the back of the mower with the bolts provided.
5. Fully tighten all nuts and bolts.



6. Your mower is now set up. See next page for servicing the mower before using.

BEFORE PUTTING MOWER INTO SERVICE

IMPORTANT: This mower was shipped without oil in gearboxes and without grease in grease fittings. **UNIT MUST BE SERVICED BEFORE USING.**

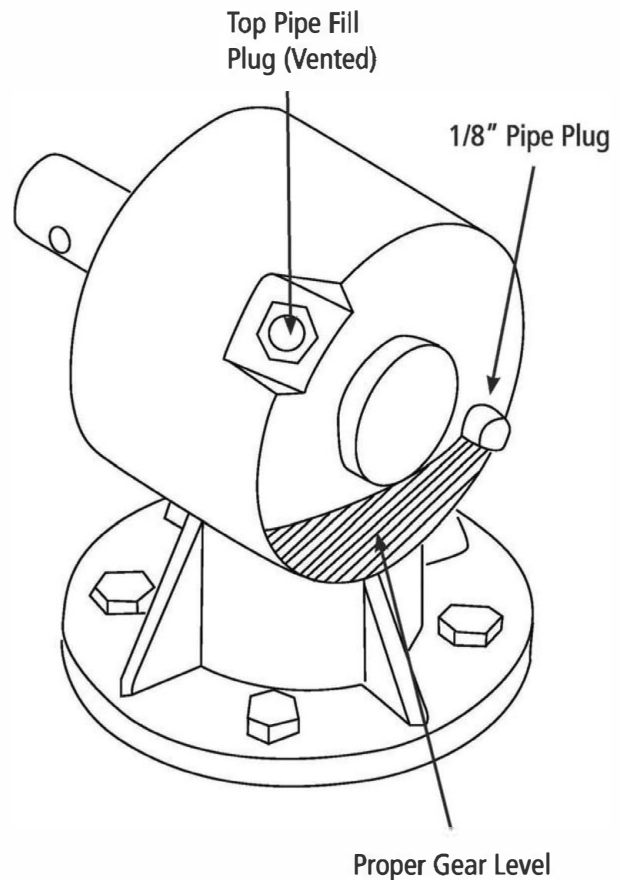
NOTE: Fill gearbox using gear oil (type GL5-85W 140 or Triple Zero Grease; which can be poured, and has "EP" i.e. "Extreme Pressure additives").

NOTE: For all grease fittings use TYPE/grade II tube grease.

1. Place finish mower so that the deck is secure and level.
2. Using 7/8" wrench, remove 1/2" vented pipe plug located at the top of gearbox.
3. Remove check plug located at the lower 1/3 of gearbox.
4. Fill gearbox using gear oil until oil begins to overflow from check plug hole in front of gearbox.

CAUTION  **DO NOT overfill gearbox. This could cause damage to oil seals and can cause permanent damage to the gearbox. This issue will not be covered under warranty.**

5. Replace and tighten the check plug.
6. Replace and tighten the 1/2" vented pipe plug and clean away excess oil.
7. Grease the fittings on all four tailwheel support bars.
8. Grease the two (2) grease fittings on the PTO universal joints.
9. Grease the two (2) grease fittings on the PTO safety shield.
10. Separate the PTO shaft and grease the inner surface.



PREPARATION

SELECTING TRACTOR PTO SPEED

IMPORTANT: Never operate a mower equipped for 540 rpm PTO drive with a tractor equipped for 1000 rpm PTO.

Always run tractor at rated PTO speed.

Overspeed will cause damage to drive system.

Refer to your tractor Operator's Manual to change PTO stub shaft, if necessary.

POSITIONING DRAWBAR

IMPORTANT: To prevent damage to the driveline, remove, shorten, or place drawbar to one side. If equipped with a clevis pin, remove it.

PREPARING THE MOWER

Perform the following procedures before operating the mower:

Gearbox

- ☑ Check oil level. (See Lubrication and Maintenance section.)
- ☑ Check hardware torque. (See Lubrication and Maintenance section.)
- ☑ Remove any material wound on gearbox shafts.
- ☑ Check oil seals for leakage.

Blades and Blade Holder

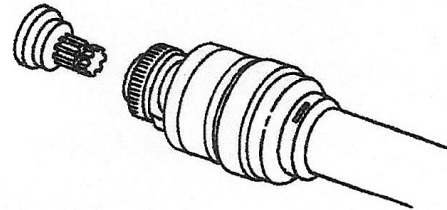
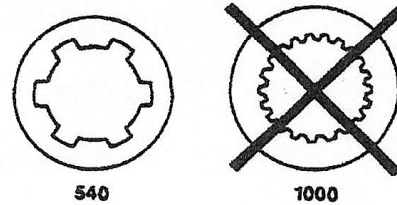
- ☑ Inspect blades for wear or damage. (See SERVICE MOWING BLADES in Operation section.)
- ☑ Check blade hardware torque. (See Lubrication and Maintenance section.)
- ☑ Check blade holder hardware torque. (See Lubrication and Maintenance section.)

Hitch Pins

- ☑ Ensure all bolts on mower are fastened securely.
- ☑ Hardware on lower clevises need to be snug, but do not over tighten because the clevises need to pivot as the mower hitch floats.

Lubricating the Mower

- ☑ Lubricate mower and driveline. (See Lubrication and Maintenance section.)



CHECKING DRIVELINE SHIELDS



DANGER

Entanglement in rotating driveline can cause serious injury or death. Disengage PTO, engage parking brake or place transmission in "PARK", shut off tractor, and remove key before working near driveline.

Check driveline shields by making sure they rotate freely.

Lubricate or repair if necessary.



A - Driveline Shield

Final Inspection and Adjustments

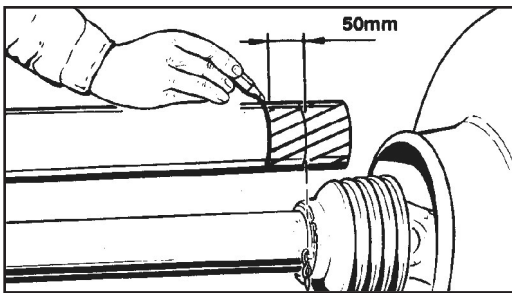
IMPORTANT: PTO driveline may be too long for some tractor models, causing tractor transaxle damage. Modify driveline if necessary.

Attach finish mower to tractor and check mower-to-tractor driveline telescoping length clearance. (See CHECKING DRIVELINE/MOWER CLEARANCE in Attaching section.)

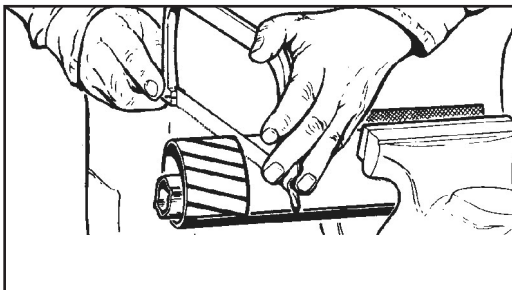
IMPORTANT: Blade hardware torque **MUST** be checked after the first hour and every eight (8) hours thereafter.

(See MAINTENANCE BEFORE EACH USE in Lubrication and Maintenance section.)

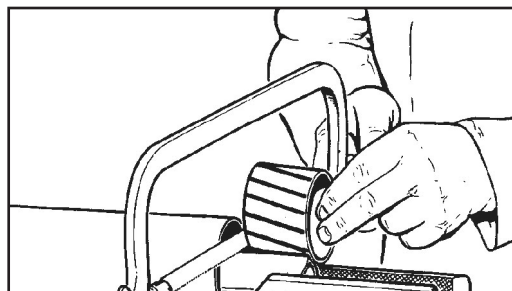
MODIFY PTO DRIVELINE IF NECESSARY



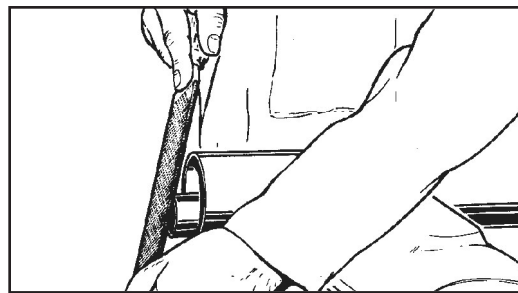
1. To adjust the length, hold the half-shafts next to each other in the shortest working position and mark them.



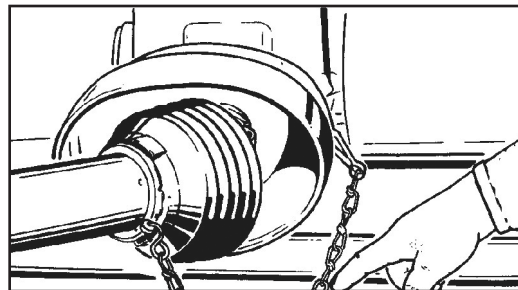
2. Shorten inner and outer guard tubes equally.



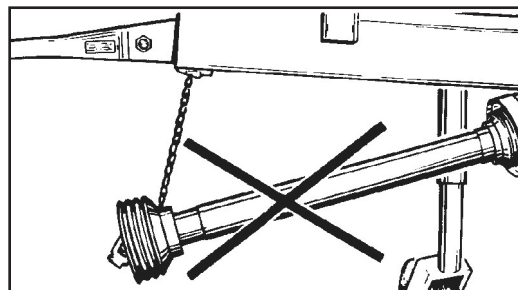
3. Shorten inner and outer sliding profiles by the same length as the guard tubes.



4. Round off all sharp edges and remove burrs. Grease sliding profiles. No other changes may be made to PTO drive shaft and guard.



5. Chains must be fitted so as to allow sufficient articulation of the shaft in all working positions.



6. The PTO drive shaft must not be suspended from the chains!

ATTACHING

ATTACHING MOWER TO TRACTOR WITH THREE-POINT HITCH



To avoid bodily injury or machine damage whenever implement is attached, put transmission in PARK position and check the full range of hitch for interference, binding, or PTO separation. Do not stand between tractor and implement.

1. Back up tractor to mower with hitch points approximately in alignment.
2. Engage tractor parking brake and/or place transmission in Park.
3. Shut off tractor engine and remove key.
4. Remove hitch pins from center link loop and lower hitch clevises.
5. Align tractor draft arms with lower hitch clevises and install pins
6. Align center link with upper hole in mower mast straps and install center link mounting hardware.



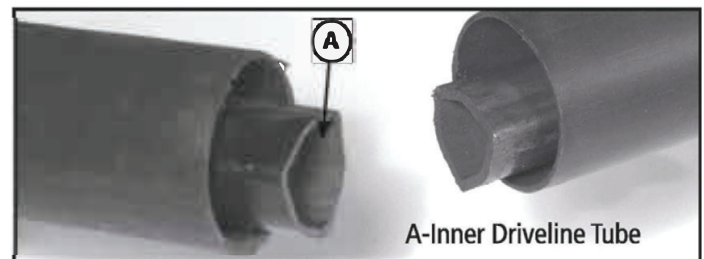
Shut off tractor engine before detaching PTO driveline. Entanglement in rotating driveline can cause serious injury or death.

IMPORTANT: Keep driveline and powershaft splines clean of paint, dirt and chaff. Apply grease to tractor PTO shaft before attaching PTO driveline.

7. Shut off tractor engine.
8. Raise tractor PTO shield, if equipped.

IMPORTANT: Do not use shielding bell on driveline to lift driveline into position. Damage to shielding can occur.

9. Support driveline, cradling it in your hand.
10. Press pin/slide collar and align splines by rotating mower driveline. Push driveline onto tractor PTO shaft until collar snaps into place.
11. Pull back on shield to make sure driveline is locked.
12. Do not pull back on pin this will release latch.
13. Lower tractor PTO shield, if equipped.



NOTE: If more clearance is desired to hookup PTO driveline or to create proper clearance from tractor tires, adjust the lower hitch. See below.

Adjust lower hitch by loosening bolts with a 15/16" wrench. Retighten hardware to a snug position but not tight as the lower hitch clevises need to be able to pivot as the hitch floats.

NOTE: Replace the flanged lock nuts if the bolts do not stay snug.

CHECKING DRIVELINE/MOWER CLEARANCE

IMPORTANT: Prevent driveline damage from contact with frame or machine damage from contact with tractor tires. Raise mower slowly and check for interference. If necessary, shorten center link or lengthen lift links to provide clearance to full lift height.

1. Raise mower slowly and check for clearance between driveline shield and mower deck.
2. Check clearance between tractor tires and foot guards or chain deflector.
3. Check to see if hitch height position will provide clearance desired.

NOTE: Final adjustments should be made before operating mower. See CUTTING HEIGHT ADJUSTMENT in OPERATION section. Center link should be installed in lowest hole at tractor end if there are multiple holes. Lift height may also be limited by installing stops on rockshaft control lever bracket.

4. Shorten center link or lengthen lift links to provide clearance. (See your tractor Operator's Manual.)

IMPORTANT: PTO driveline may be too long for some tractor models, causing tractor transaxle damage. Hold driveline sections parallel to each other and check for a minimum of 6 inches overlap.

5. Raise and lower mower slowly to check for binding or interference. Check mower-to-tractor driveline telescoping length to ensure that it does not bottom out. Modify driveline if necessary. (See MODIFYING PTO DRIVELINE in Assembly section.)

DETACHING MOWER FROM TRACTOR



CAUTION

To prevent personal injury caused by unexpected movement:

- a. Park machine on a level surface.
- b. Engage tractor parking brake and/or place transmission in Park.
- c. Disengage PTO.
- d. Shut off tractor engine and remove key.

1. Park mower on a level surface and block wheels so machine cannot roll after detaching from the tractor.
2. Slowly push hitch control lever to lower mower close to the ground.
3. Engage tractor parking brake and/or place transmission in Park.



DANGER

Shut off tractor engine before detaching PTO driveline. Entanglement in rotating driveline can cause serious injury or death.

4. Shut off tractor engine and remove key.
5. Raise tractor PTO shield, if equipped.



IMPORTANT: Do not use plastic shield on driveline to hold driveline in position. Damage to shielding can occur.



6. Push pin in and slide driveline off tractor shaft.
7. Support and collapse driveline completely and lower onto PTO holder or onto mower deck.
8. Lower tractor PTO shield, if equipped.
9. Block the mower wheels, remove hitch pins and drive away.

GENERAL SAFETY

Only qualified people should operate this machine. Wear close fitting clothing and safety equipment appropriate to the job. It is recommended that tractor be equipped with Rollover Protective Systems (ROPS) and that a seat belt be used. Before beginning operation, clear work area of objects that may be picked up and thrown. Check for ditches, stumps, holes or other obstacles that could upset tractor or damage finish mower. Always turn off tractor engine, set parking brake, and allow finish mower blades to come to a complete stop before dismounting tractor.

PREPARING MOWER FOR OPERATION



DANGER

To help prevent severe injury or death to you or someone else:

- a. Do not engage tractor PTO when mower is in fully raised position (transport position).
- b. Keep all persons away from machine when raising and lowering mower.

IMPORTANT: To avoid damaging the machine from impact on ground when lowering, adjust rate at which hitch will lower.

1. Adjust tractor rockshaft rate-of-drop. Allow at least two seconds for machine to lower from full lift height to the ground. (See your tractor Operator's Manual.)
2. If equipped, disengage tractor hitch/rockshaft control lever from transport lock position and lower mower to the ground. (See your tractor Operator's Manual.)
3. Adjust tractor lift links to level machine side-to-side. (See your tractor Operator's Manual.)
4. Adjust cutting height and angle. (See Adjusting Cutting Height Adjustment section.)

PREPARING MOWER FOR OPERATION

IMPORTANT: Tractor and mower should be on level ground.

1. Set lower hitches and upper floating hitch.
2. Start tractor and raise mower, watch that tractor draw bar (if not removed) does not interfere with mower.
3. Slowly lower the mower until gauge wheels touch the ground and lower mower 3-point hitch bars are parallel to the ground in floating position. Set tractor 3-point stop.
4. Set park brake and turn off tractor. Remove key from ignition.
5. Rotate blades parallel to direction of travel.
6. Measure the clearance from the cutting edge to the ground at front and rear of the blade. This measurement should be equal or have the blade at the front of the mower not more than 1/2" lower than the blade at the rear of the mower.

CUTTING HEIGHT ADJUSTMENT



Help prevent bodily injury or death caused by entanglement in rotating driveline or blades. Entanglement in rotating driveline or being struck by blades can cause serious injury or death. Before making any adjustments:



- Lower machine until rear wheel just touches or is slightly above ground.
 - Engage tractor parking brake and/or place transmission in PARK.
 - Disengage PTO.
 - Shut off tractor engine and remove key.
 - Wait until all moving parts have stopped.
 - Disconnect PTO driveline from tractor.
- Use tractor to raise finish mower off the ground and SECURELY BLOCK INTO POSITION.
 - Remove pin from top of wheel fork assembly. Lower wheel fork assembly from tail wheel arm.
 - Arrange spacers until desired cutting height is achieved. Cutting heights range approximately 2.0 - 6.0 inches in height.
 - Reinstall wheel fork assembly into tail wheel arm and install keeper pin.
 - Repeat adjustment process on remaining wheel for assemblies. NOTE: Make sure all are adjusted the same for an even cut.

BELT TENSION



Belt drive system under spring tension; use care to avoid bodily harm!

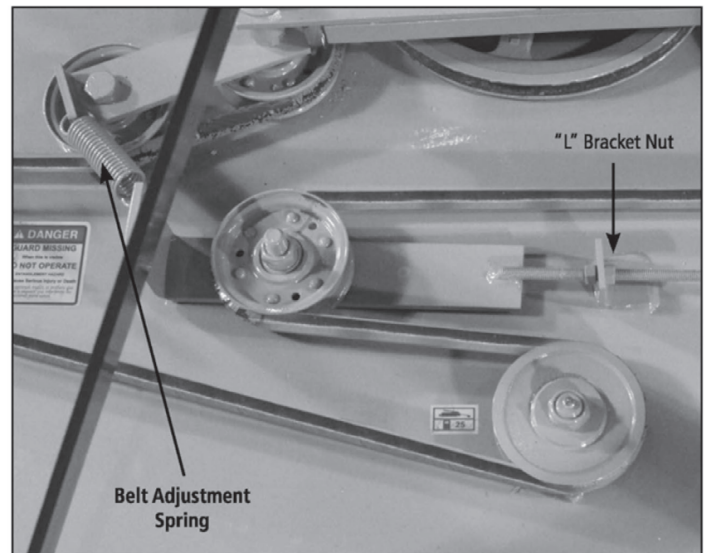
CAUTION

- Remove top cover.
- Release adjustment spring.
- Loosen nut on adjustment pulley to allow for movement.
- Loosen nut on left side of "L" bracket and nut on adjustment pulley.
- Turn nut on left side of "L" bracket in counterclockwise direction until belt is tight.
- Re-tighten nut on right side of "L" bracket and nut on adjustment pulley.
- Re-hook adjustment spring.



WARNING

Excessive tension on the belt may lead to premature failure of belt and drive components. Excessive tension on the belt may also lead to a safety hazard to the operator or bystander.



OPERATION

SERVICE MOWING BLADES

Blade inspection

Blade Wear: As blades wear and are sharpened, the blade performance will be reduced.

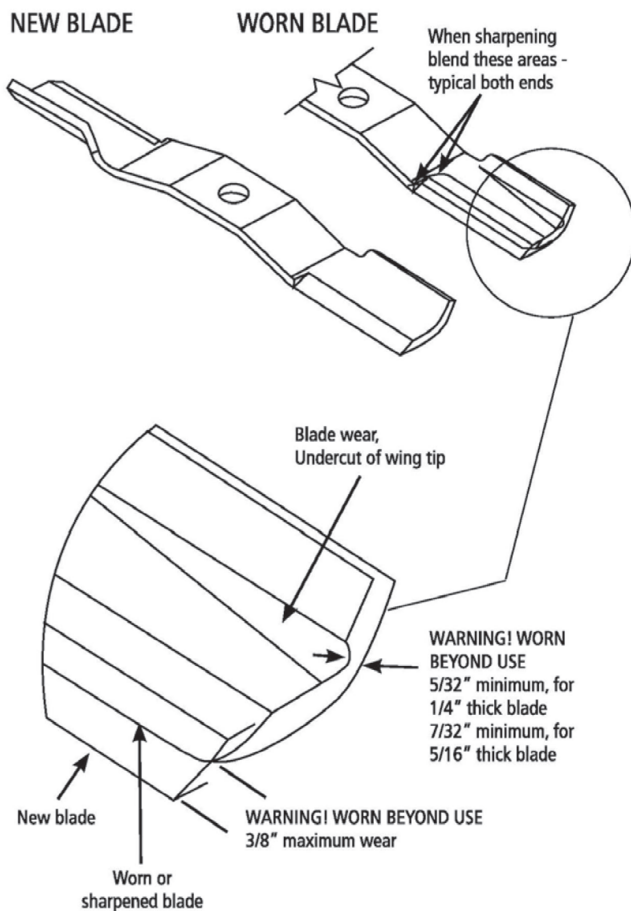
Bent, Deformed, or Split Blades: Should be removed from unit and discarded. DO NOT attempt to straighten for reuse.



DO NOT attempt to modify blade, such as hard surfacing, heat or cold treating and/or by any other method.



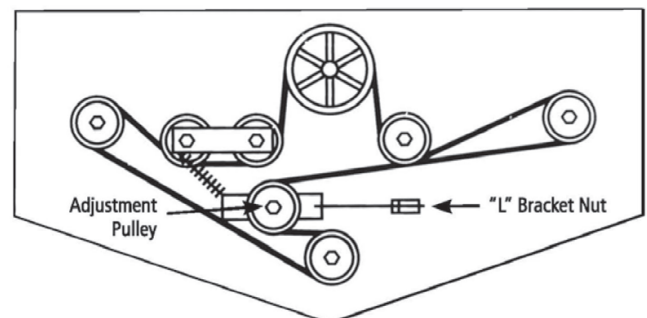
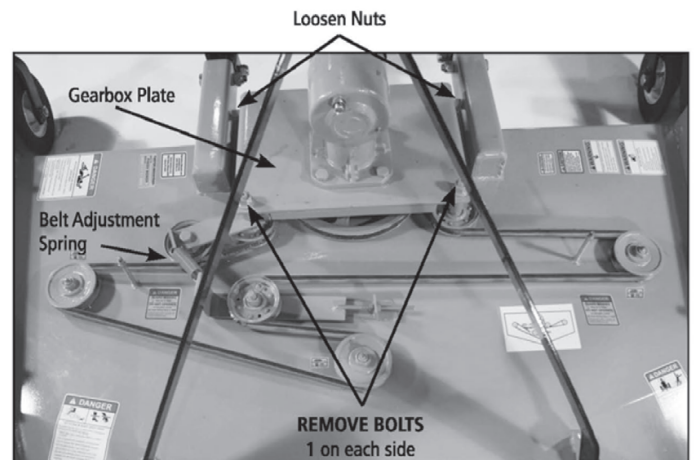
DO NOT try to straighten a blade that is bent. Never weld a broken or cracked blade. **ALWAYS** replace with a new blade to assure safety.



V-BELT INSTALLATION

These illustrations are also on the labels located on top of mower decks.

1. Remove top cover.
2. Release adjustment spring.
3. Loosen nut on adjustment pulley to allow for movement.
4. Loosen nut on right side of "L" bracket
5. Loosen belt by moving adjustment pulley in opposite direction you would tighten belt.
6. Remove nuts (2) from hinged gearbox plate from finishing mower deck.
7. Loosen nuts (2) from hinged bolt gearbox plate.
8. Raise gearbox assembly and slip out belt.
9. See below for belt replacement on pulleys.
10. Do step 5 thru 7 under Section: "BELT TENSION" to tighten.



IMPORTANT: Operating with blades that are not alike will cause vibration. Always replace worn or broken blades in pairs. Never replace a single blade. Check blades regularly for wear or breakage.

KEEP RIDERS OFF MACHINE

 **DANGER** Keep riders off. Riders are subject to injury or death such as being struck by foreign objects and being thrown off the machine. Riders may also fall off and be run over by machine. Riders also obstruct the operator's view resulting in the machine being operated in an unsafe manner.

FOLLOW SAFE OPERATING PROCEDURES

1. **BEFORE EACH USE**, perform maintenance as required in the Lubrication and Maintenance section.
2. Start tractor per tractor operator's manual.
3. Raise/lower 3-point hitch to place mower in working position.
4. Look to be sure no one is near mower.
5. With tractor at idle speed, slowly engage PTO drive.

 **DANGER** Stay clear of rotating driveline. Do not operate without driveline shields in place and all equipment in good condition. Failure to heed these warnings may result in personal injury or death.

6. Set tractor throttle for appropriate PTO speed (540RPM)

 **DANGER** Rotating mower blades. Stand clear until all motion has stopped. To avoid an accidental fall from tractor and possible injury by mower, it is recommended that tractor be equipped with rollover protective system (ROPS) and that a seatbelt be used by the operator for all mowing operations.

7. Place tractor in gear and proceed forward.

NOTE: Tractor forward speed should be controlled by gear selection, not engine speed. For maximum cutting efficiency, forward speed should allow mower to maintain a constant, maximum blade speed. If mower stalls or tractor engine bogs, disengage PTO. Before re-engaging PTO, position mower in a cut area and reduce tractor throttle to idle. If finish mower continuously stalls, select lower gear and/or increase cutting height.

 To help prevent severe injury or death to you or someone else:

DANGER Never operate mower when other people are in the vicinity. Debris can be thrown hundreds of feet. Keep all deflectors in place, including those on discharge opening at front and rear of deck. Before starting machine, lower to the ground. Engage tractor PTO and gradually increase the speed.

Operate tractor at rated PTO speed. If engine speed is too slow or too fast, machine may not perform properly.

Where conditions make it necessary to slow ground speed, shift to a lower gear rather than reducing engine speed. The engine will maintain rated speed and keep mower running at optimum cutting speed.

Operate machine from tractor seat only. Never adjust machine while in motion.

Slow down when turning or traveling over rough ground.

Avoid holes when operating on hillsides. Tractor roll-over could result.

Shut off tractor engine and engage tractor parking brake and/or place transmission in "Park" when leaving tractor. Remove key when leaving tractor unattended.

Components behind shields may rotate several minutes after power is shut off. Look and listen for evidence of rotation before removing shielding.

LUBRICATION AND MAINTENANCE

LUBRICATING AND MAINTAINING MACHINE SAFELY



DANGER

Help prevent bodily injury or death caused by entanglement in rotating driveline or blades. Entanglement in rotating driveline or being struck by blades can cause serious injury or death.

Components will be hot after operation. Let all components cool before servicing.

Replace all shields after lubricating or servicing.

MAINTENANCE CHECK LIST

Perform scheduled maintenance as outlined below. Lower machine to ground, turn off tractor and set parking brake before doing maintenance inspections or work. All bolts should be torqued as recommended in the Torque Specifications unless otherwise indicated.

MAINTENANCE BEFORE EACH USE



CAUTION

Do not clean, lubricate, or adjust machine while it is in motion.

1. Check tractor tire air pressure. Refer to tractor Operator's Manual.
2. Check blades and spindles to be sure that no foreign objects such as wire or steel strapping bands are wrapped around them.
3. Check blade bolts for tightness. Locate blade hardware under hole in deck behind gear box. (Tighten to 85 ft./lbs.)

IMPORTANT: Operating with loose blade hardware will damage the blade holder and blades.

4. Inspect blades for wear. (See SERVICING MOWING BLADES in operation section). Always replace both blades and bolts on blade holder at the same time.
5. Make certain driveline shields are in place and in good repair.

6. Inspect wheels for wear, damage, or foreign objects. (Repair or replace if necessary.)
7. Before each use refer to LUBRICATION BEFORE EACH USE in this section.
8. During operation, listen for abnormal sounds, which might indicate loose part, damaged bearings, or other damage.

MAINTENANCE AFTER EACH USE

1. Clean all debris from finish mower especially underside of deck. When cleaning underside of deck, securely block machine into position.

IMPORTANT: To help prevent structural damage caused by loose hardware, check all hardware after first eight (8) hours of use and tighten all hardware to specifications.

OBSERVE LUBRICATION SYMBOLS

Lubricate with multipurpose grease.



LUBRICATION BEFORE EACH USE

1. Driveline Universal Joints

- a. Apply multi-purpose grease with a grease gun.

2. Driveline Guard

- b. Apply 2-3 shots of multipurpose grease with grease gun to plastic fitting.

3. Driveline Profile

- c. Disconnect PTO Driveline.
- d. Pull two sections apart.
- e. Apply thin coat of multi-purpose grease to inside of female section.
- f. Re-assemble sections.

NOTE: Pull each section to be sure driveline and shields are securely connected. Make certain PTO shielding is in good condition. Do not grease outer or inner plastic shields.

4. Wheel Pivot Tube

- g. Apply multi-purpose grease with grease gun.

5. Wheel

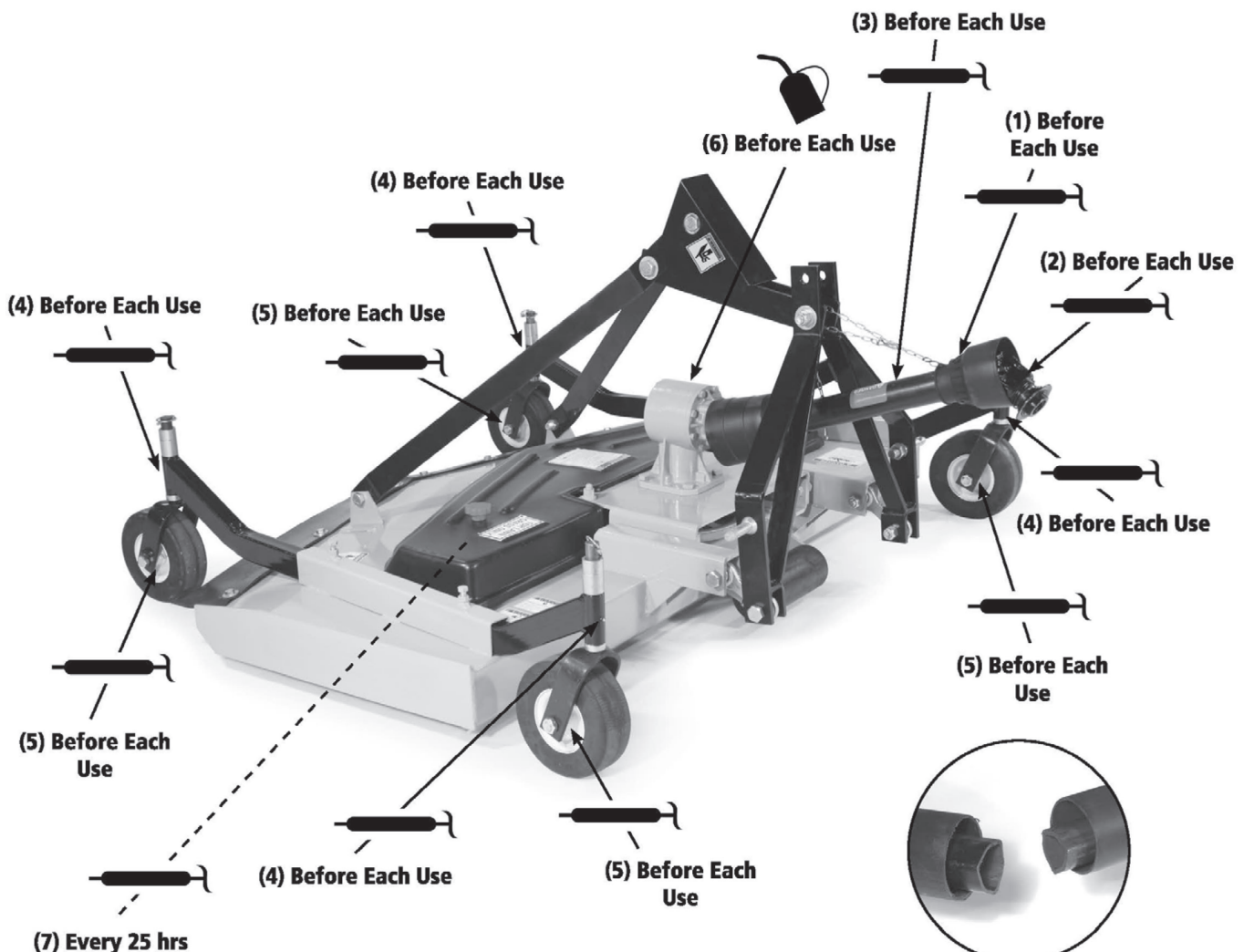
- h. Apply multi-purpose grease with grease gun.

6. Gearbox

- i. Check oil level by removing oil level check plug on side of gearbox.
- j. Add 90W gear oil if necessary to bring oil level to check plug hole.

7. Belt Drive

- k. Apply multi-purpose grease with grease gun.



3d. Pull two sections apart.

SERVICE

PRACTICE SAFE SERVICE PROCEDURES

⚠ To help prevent personal injury caused by unexpected movement, be sure to **CAUTION** service machine on a level surface.

Before servicing or adjusting machine connected to a tractor:

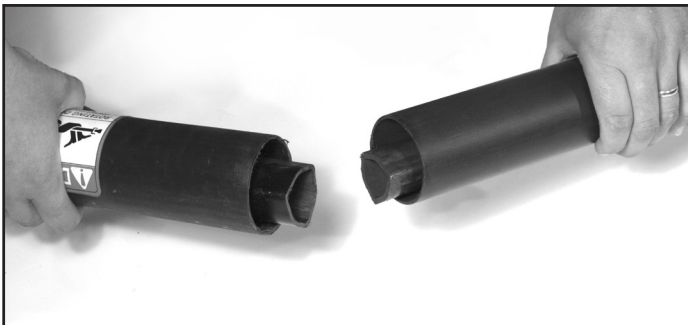
1. Lower machine to the ground.
2. Engage tractor parking brake and/or place transmission in "Park".
3. Disengage PTO.
4. Shut off tractor engine and remove key.
5. Wait until all moving parts have stopped.
6. Disconnect PTO driveline from tractor.

The blades and blade pan may rotate for several minutes after PTO is shut off. Look and listen for rotating driveline to stop before working on the mower.

When servicing blades or blade pan, it will be necessary to work underneath mower. Be sure to support mower frame at all four corner locations with safety shop stands to prevent accidental lowering. Do not position safety stands under wheel support because these components can rotate.

DISASSEMBLING DRIVELINE SHIELD

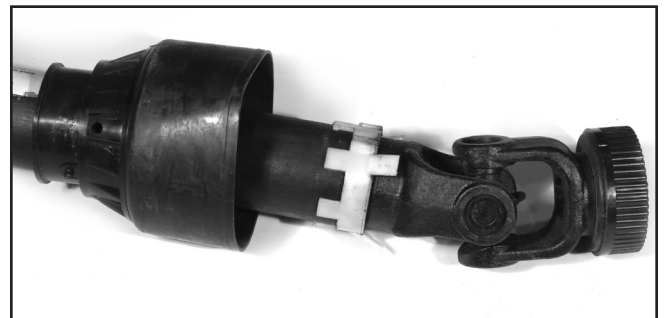
1. Unhook driveline safety chain from one end of driveline.



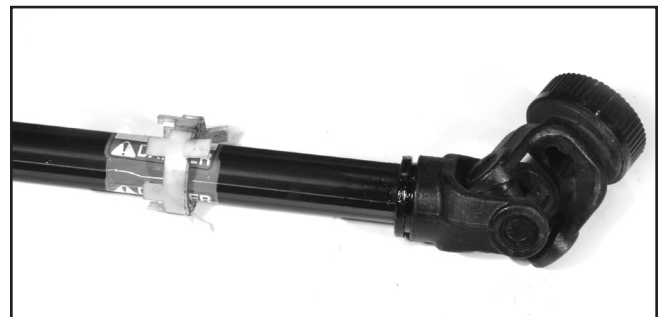
2. Separate driveline into two (2) pieces.



3. Using pliers, screwdriver or punch, depress white tabs (See photo 4 below) in each of the release holes around the driveline shield. Driveline tab should "snap" somewhat when firmly depressed.



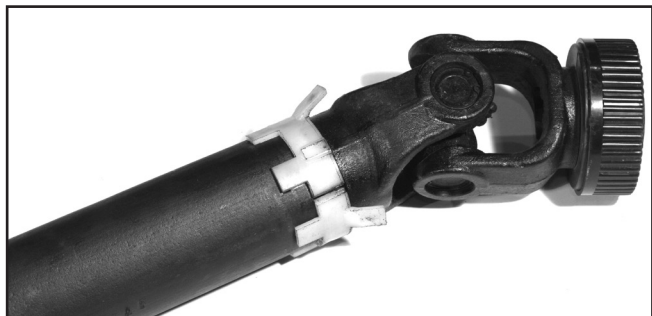
4. Slide shield collar back.



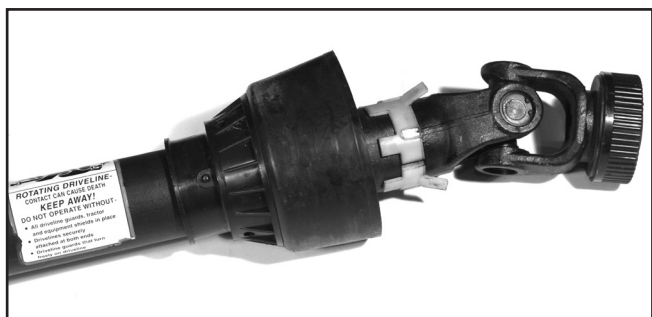
5. If needed, separate white tab collar and slide shield tube back.

⚠ **CAUTION** DO NOT operate PTO shaft without shielding installed.

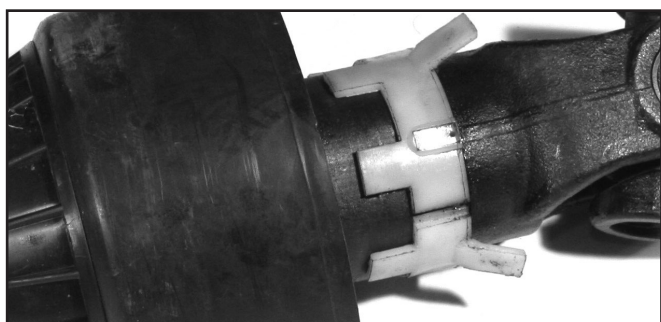
RE-ASSEMBLING DRIVELINE SHIELD



1. Replace white tabbed collar in groove of PTO shaft.



2. Slide driveline shield tube over white tab collar. Align slots/holes with holes in tube.



3. Slide universal joint cover up tube toward universal joint. Align grease fitting on shield with white square tabs on collars. This will properly align the position notch and all three (3) tabs.
4. Slide collar shield into place until locked.

AT THE END OF YOUR CUTTING SEASON

1. Drain and change the oil in the gearbox.
2. Check (and replace where necessary) blades, bolts, and nuts on the mower.
3. Clean mower and touch up any rust spots that may have appeared.
4. Replace any safety decals if damaged.
5. Store finish mower in a clean dry location.



CAUTION

Always use a tractor to position equipment for storage. Never attempt to move equipment by hand.

PRODUCT SPECIFICATIONS

FMX60

Capacity

Cutting Width (in.)	60
Cutting Height (in. - 5" increments)	.75-5.25

Tractor Compatibility

Tractor PTO HP Range	20-60
Tractor PTO	540

Hitch

Category	Cat. 1
Lower Hitch	Clevis w/Plated Pins
Top Link	Clevis
Quick Hitch Compatible	Yes

Dimensions

Overall Width (in.)	63
Overall Length (in.)	70.75
Overall Height (in.)	34.25
Approx. Weight (lbs)	628
Deck Thickness (gauge)	.1875

Driveline

PTO Shaft ASM.	Heavy-Duty w/quick coupler, ASAE Cat. 2
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Gearbox

HP Rating	30
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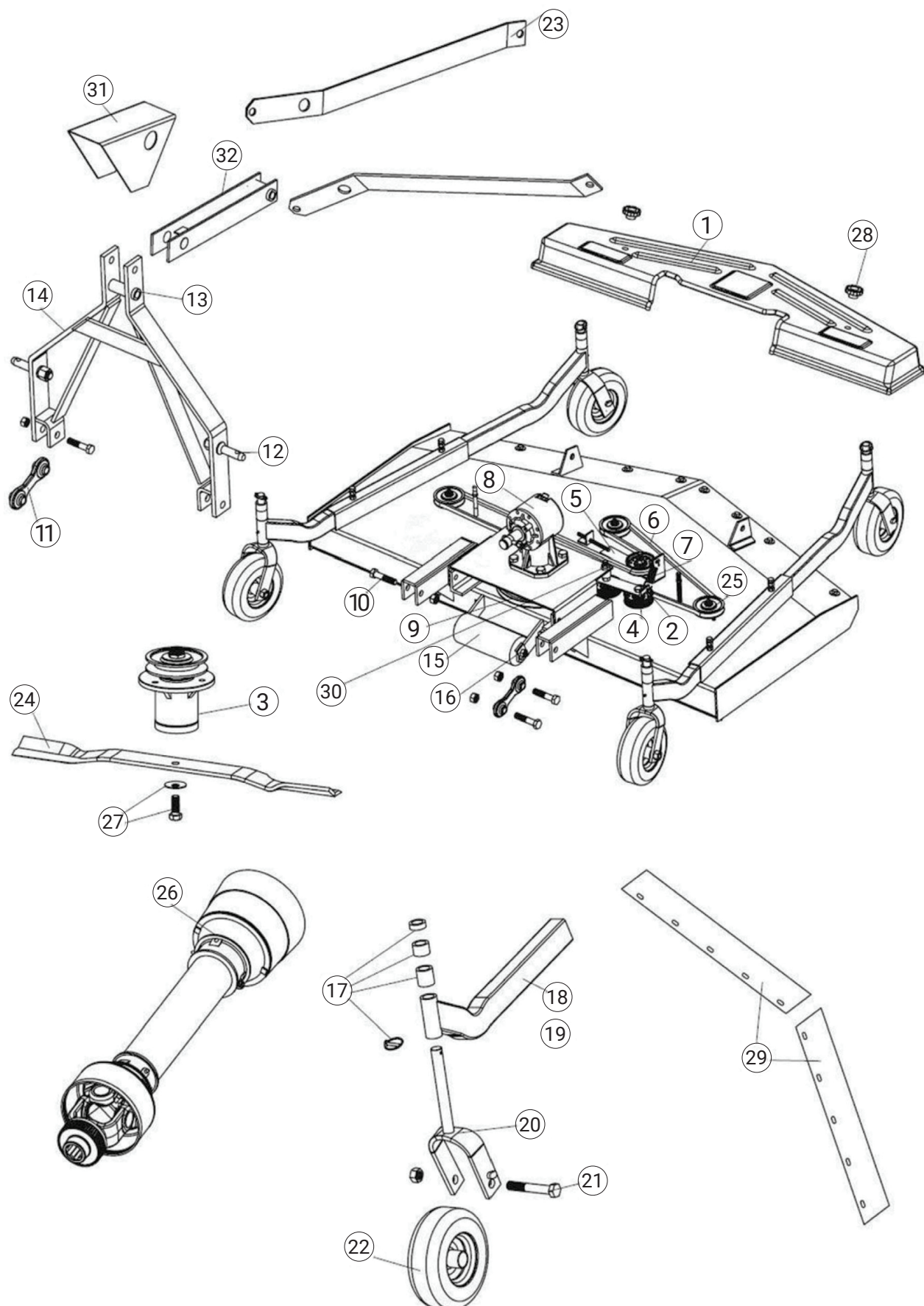
Blades

Thickness (in.)	.25
Width (in.)	2.5
Type	Heat Treated Alloy Steel
Blade Tip Speed (ft./min.)	18,237
Blade Options	Standard Blades: Medium Lift Optional Blades: High Lift
Blade Overlap (in.)	1.25
Blade Spindles (in.)	1.375 dia., Cast Iron Greaseable Hubs
Discharge	Rear

Wheels

Type	Castered Gauge
Diameter (in.)	10
Width (in.)	3.25
Caster Wheel Spindle (in.)	1 diameter with Nylon Bushing
Front Roller	Optional

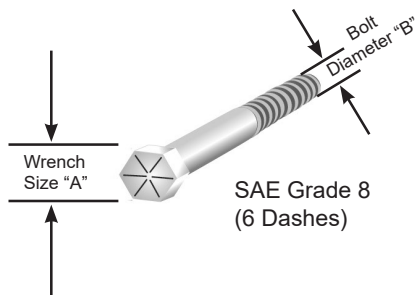
Problem	Possible Remedy
Rear discharge area plugged	1. Check installation of belt. 2. Wait until grass dries. 3. Raise cutting height of mower and cut grass twice. 4. Mow at full throttle (540 PTO rpm), check PTO speed and tractor engine. 5. Shift transmission into low gear.
Belt slipping	1. Unplug and clean mower deck. 2. Remove belt guard shields and clean sheaves. 3. Tighten spring take-up eyebolt. 4. Replace belt. 5. Shift transmission into low gear.
Excessive vibration	1. Replace blades. 2. Replace drive belt. 3. Replace pulleys or align. 4. Remove belt guard shields and clean debris from belt area and sheaves. 5. Shift transmission into low gear.
Gearbox noisy	1. Check lubricant level.
Blades scalping grass	1. Raise cutting height by adjusting wheels. 2. Change mowing pattern. 3. Reduce speed turns.
Uneven cut	1. Shift to a lower gear. 2. Level mower. 3. Sharpen blades and balance or replace.
Tractor loaded down by mower	1. Mow at full throttle (540 rpm). 2. Shift to a lower gear. 3. Clean mower.



Item Number	FMX60 Part Number	Description
1	124685	Top Cover
2	312647	Idler Pulley Bracket
3	502303	Single Spindle Unit
4	164090	Idler Pulley
5	403688	Belt Adjustment Assembly
6	167133	V-Belt
7	502027	Spring
8	184000	Gearbox
9	165114	Main Pulley Single
10	502011	Swivel Link Hardware
11	1024M	Swivel Link Set
12	C1L	Category 1 Lift Pin
13	9001216	Lift Arm Spacer w/Hardware (Black)
14	9001217	Lift Arm Assembly (Black)
15	502110	Center Roller w/Axle
16	403670	Roller Axle
17	502120	Height Adjuster Set
18	9001218	Front Wheel Arm (Black)
19	9001219	Rear Wheel Arm (Black)
20	9001220	Wheel Fork (Black)
21	ABWN	Axle Bolt w/Nut
22	TR	Tire & Rim
23	9001221	Brace Arm (Black)
24	502320	Blade Set w/Bolts
25	502313	Spindle Pulley Single
26	147022	22" PTO Shaft
27	502310	LH Blade Bolt Set w/Washer
28	502287	Plastic Knob
29	502401	Belt Guards
30	502197	Gearbox Plate Hardware Pack
31	9001223	Hitch Pivot Shield (Black)
32	9001224	Hitch Pivot Bar (Black)

TORQUE SPECIFICATIONS

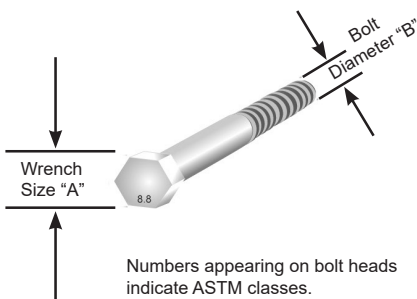
AMERICAN Bolt Head Markings



Proper torque for American fasteners used on manufactured implement.
Recommended Torque in Foot Pounds (Newton Meters).*

WRENCH SIZE(IN.)"A"	BOLT DIAMETER (IN.)"B" AND THREAD SIZE	SAE GRADE 2	SAE GRADE 5	SAE GRADE 8
7/16	1/4 - 20 UNC	6 (7)	8 (11)	12 (16)
7/16	1/4 - 24 UNF	6 (8)	10 (13)	14 (18)
1/2	5/16 - 18 UNC	11 (15)	17 (23)	25 (33)
1/2	5/16 - 24 UNF	13 (17)	19 (26)	27 (37)
9/16	3/8 - 16 UNC	20 (27)	31 (42)	44 (60)
9/16	3/8 - 24 UNF	23 (31)	35 (47)	49 (66)
5/8	7/16 - 14 UNC	32 (43)	49 (66)	70 (95)
5/8	7/16 - 20 UNF	36 (49)	55 (75)	78 (106)
3/4	1/2 - 13 UNC	49 (66)	76 (103)	106 (144)
3/4	1/2 - 20 UNF	55 (75)	85 (115)	120 (163)
7/8	9/16 - 12 UNC	70 (95)	109 (148)	153 (207)
7/8	9/16 - 18 UNF	79 (107)	122 (165)	172 (233)
15/16	5/8 - 11 UNC	97 (131)	150 (203)	212 (287)
15/16	5/8 - 18 UNF	110 (149)	170 (230)	240 (325)
1 1/8	3/4 - 10 UNC	144(195)	266 (360)	376 (509)
1 1/8	3/4 - 16 UNF	192 (260)	297 (406)	420 (569)
1 5/16	7/8 - 9 UNC	166 (225)	430 (583)	606 (821)
1 5/16	7/8 - 14 UNF	184 (249)	474 (642)	668 (905)
1 1/2	1 - 8 UNC	250 (339)	644 (873)	909 (1232)
1 1/2	1 - 12 UNF	274 (371)	705 (955)	995 (1348)
1 1/2	1 - 14 UNF	280 (379)	721 (977)	1019 (1381)
1 11/16	1 1/8 - 7 UNC	354 (480)	795 (1077)	1288 (1745)
1 11/16	1 1/8 - 12 UNF	397 (538)	890 (1206)	1444 (1957)
1 7/8	1 1/4 - 7 UNC	500 (678)	1120 (1518)	1817 (2462)
1 7/8	1 1/4 - 12 UNF	553 (749)	1241 (1682)	2013 (2728)
2 1/16	1 3/8 - 6 UNC	655 (887)	1470 (1992)	2382 (3228)
2 1/16	1 3/8 -12 UNF	746 (1011)	1672 (2266)	2712 (3675)
2 1/4	1 1/2 - 6 UNC	870 (1179)	1950 (2642)	3161 (4283)
2 1/4	1 1/2 - 12 UNF	979 (1327)	2194 (2973)	3557 (4820)

METRIC



Proper torque for metric fasteners used on manufacturer implement.
Recommended Torque in Foot Pounds (Newton Meters).*

WRENCH SIZE (mm) "A"	BOLT DIA. (mm) "B"	ASTM 4.6	ASTM 8.8	ASTM 9.8	ASTM 10.9
8	5	1.8 (2.4)		5.1 (6.9)	6.5 (8.8)
10	6	3 (4)		8.7 (12)	11.1 (15)
13	8	7.3 (10)		21.1 (29)	27 (37)
16	10	14.5 (20)		42 (57)	53 (72)
18	12	25 (34)	74 (100)	73 (99)	93 (126)
21	14	40 (54)	118 (160)	116 (157)	148 (201)
24	16	62 (84)	167 (226)	181 (245)	230 (312)
30	20	122 (165)	325 (440)		449 (608)
33	22		443 (600)		611 (828)
36	24	211 (286)	563 (763)		778 (1054)
31	27		821 (1112)		1138 (1542)
46	30	418 (566)	1119 (1516)		1547 (2096)

*Use 75% of the specified torque value for plated fasteners. Use 85% of the specified torque values for lubricated fasteners.



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WARRANTY

Manufacturer's Limited Warranty

Summit Tractors LLC, 3379 Peachtree Road NE Suite 555 Atlanta, Ga 30326, warrants to the original purchaser that the purchased product is free from defects in material and workmanship for a period of one (1) year commencing on the date of original purchase, as evidenced by the original receipt, and will, at its option, repair, replace, or issue credit for any product or part found to be defective.

This limited warranty shall only apply if this product has been operated and maintained in accordance with the Operator's Manual furnished with the product, and has not been subject to misuse, abuse, commercial or industrial use, neglect, improper maintenance, alteration or accident, or which has been used for a purpose for which the product was not designed. Damage resulting from the installation or use of any part, accessory, or attachment not approved by Summit Tractors LLC, for use with the product covered by the Operator's Manual, shall void the warranty as to any resulting damage.

This limited 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 in any manner.

Warranty Disclaimer

This limited warranty is in lieu of, and Summit Tractors LLC disclaims and excludes any express and implied warranties with respect to the product including, without limitation, merchantability and fitness for a particular purpose. No other express warranty, whether written or oral, given by any person or entity, including a retailer, with respect to any product, shall bind Summit Tractors LLC.

Summit Tractor LLC's exclusive liability for breach of the limited warranty, as set forth above, on the product shall be to repair or replace the product within the warranty period in accordance with the terms of this limited warranty. The choice of remedy shall belong solely to Summit Tractor LLC. In no event shall Summit Tractor LLC be liable for any loss or damages of any other kind, whether direct, incidental, consequential including lost profits, exemplary, special or otherwise, including without limitation, expenses incurred for substitute or replacement product or for rental expenses to temporarily replace a warranted product.

Under no circumstance shall recovery, of any kind, be greater than the amount of the purchase price of the product purchased. Customer assumes all risk and liability for loss, damage, or injury to customer or customer's property and/or the property of others arising out of the misuse or inability to use the product.

Legal Rights

This limited warranty gives you specific legal rights, and you may also have other rights which may vary from state to state. Some states do not allow any limitation on how long an implied warranty lasts or the exclusion or limitation of incidental or consequential damages, so the above limitations may not apply to you.

Additional Information

Contact your authorized dealer for complete warranty information and assistance with warranty claims. Retain original sales receipt, and record the model number, serial number, and the date of purchase in the spaces provided below. This information will be helpful to the dealer if parts or service are required.

Warranty Claim Information

Dealer Name

Dealer Address

Dealer Phone

Dealer Email

Purchase Date

Model Number

Serial Number/UPC





PART NO.
4000971

International Tractors
USA Corporation
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770-209-3390
support@summittractors.com

