

Operator's Manual & Parts List

TDR-X

Serial No. 20111003 and up



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The Better Built Choice.™

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DANGER!

Si usted No Lee Ingles, Pida Ayuda a Alguien Que Se Lo Lea
Para Que le Traduzca Las Medidas de Seguridad

INTRODUCTION

Thank you for purchasing a TDR-X mower. This product is designed and manufactured to allow safe and productive mowing of contoured areas. A well-maintained machine will provide years of reliable service.

FOREWORD

Keep this manual with the mower at all times. This manual is intended as a guide to the safe use and maintenance of the machine, so before you operate this machine, study this manual carefully.

Replace this manual immediately if it becomes lost.

This manual is not considered all-inclusive, so for further information on specific components, e.g. PTO shafts etc refer to the respective documents included with the manual set for this machine.

The TDR-X mower is a contour roller turf grass finishing mower with a 10.5 foot cutting width, and is designed to be pulled by a 35-40 PTO horsepower utility tractor. These versatile mowers have the ability to mow both contoured and flat terrain that requires a high quality, finished after cut appearance. High blade tip speed leaves a second-to-none after cut appearance. 6-way floating decks, and an Adaptive Swivel Hitch isolates the tractor from the mower allowing truer contour tracking.

Features:

- Three independent floating decks
- Cut height can be set on each deck between 3/8 inch and 3 3/8 inches
- 10.5 foot cutting width
- Adaptive Swivel Hitch
- Pro Lift-N-Turn™ allows three decks to be temporarily raised slightly off the ground with the PTO still engaged
- Automatic mechanical deck locks for transport

Applications:

- Golf course roughs, fairways and bunker surrounds
- Corporate and industrial campuses
- Park lands and recreational areas & sports venues
- Landscaped venues

TDR Series Mower Application Guide	
Model	TDR-X
Soil Type	All (firm ↔ sandy)
Turf Condition	All conditions
Comments	For use in areas where ride-on reel-type mowers cannot be used.

OSHA Training Requirements (USA)

The following training requirements have been taken from Title 29, Code of Federal Regulations Part 1928.57 (a)(6). www.osha.gov

Operator Instructions: At the time of initial assignment and at least annually thereafter, the employer shall instruct every employee in the safe operation and servicing of all covered equipment with which he is or will be involved, including at least the following safe operating practices.

In other jurisdictions:

It is good practice, following the initial instruction and at least annually thereafter, that the employer instruct every employee in the safe operation and servicing of all covered equipment with which he is or will be involved, including at least the following safe operating practices.

ITEMS INCLUDED WITH TDR-X MOWER

TDR-X Operator's Manual & Parts List

Service instructions for PTO drive shafts

Blade balancer tool – *One piece blades only, not used for swing blades

SERIAL NUMBER LOCATION

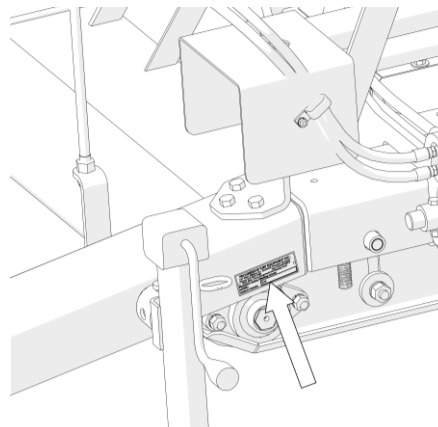
The serial number plate for the machine is located on the left-hand front frame.

For quick reference, record the following information:

Model: _____ TDR-X _____

Serial Number: _____

Date purchased: _____



NOTE: The last digit in each TDR-X serial number is a letter. This letter denotes the geographic destination of the mower.

D EU Regulatory Region

B Non- EU Regulatory Region



There are differences in the parts required to service your mower based on this geographic code as are referred to throughout the parts lists. Always state this information when contacting your selling dealer and when ordering spare parts.

REPLACEMENT PARTS INFORMATION

Use only Genuine Original Equipment Manufacturers (O.E.M.) replacement parts. The use of "will fit" parts may reduce machine performance, void machine warranty and present a safety hazard. Use only Genuine OEM replacement parts.



Under our policy of continuous improvement, we reserve the right to change specifications and designs without prior notice. The illustrations shown do not necessarily represent the standard version of product offered by Progressive Turf Equipment Inc.

UNAUTHORIZED MODIFICATION

Modifications to the original design of the TDR-X mower, including the use of unauthorized accessories or non-genuine OEM parts, may affect the reliability of the machine or make it unstable or unsafe to operate and perform as originally designed and intended. Persons or organizations that make unapproved modifications (including operation without provided guards and shields) assume all liability arising from or related to the modification including any adverse affect on the machine.

No modification can be made to the original design or assembly of the TDR-X mower (including any and all attachments, safety or control devices) without the prior written consent of the Progressive Turf Equipment Inc.'s Engineering Manager (see contact information below). Progressive Turf Equipment Inc. retains the right to reject all claims which arise from or are related to unauthorized modifications.

Modifications are officially approved if at least one of the following conditions is met:

- i. The attachment, accessory or part is distributed by Progressive Turf Equipment Inc. and is intended for a TDR-X mower application and installed in an approved manner as described in Progressive Turf Equipment Inc.'s provided instructions; or
- ii. The modification has been approved in writing by the Progressive Turf Equipment Inc.'s Engineering Manager.

No other entity is authorized by Progressive Turf Equipment Inc. to provide such approval.

MISUSE OF EQUIPMENT

It is incumbent upon the user, owner and selling dealer of this equipment along with their respective employees to warn and discourage users about the misuse of the equipment whenever knowledge of misuse becomes known, whether the act has, is or could occur. Such acts include, but not limited to: riding upon, use of non-OEM parts, operation on unstable or dangerous terrain, operating in explosive or fire-hazard areas, modifications that alter the original machine specifications or use other than originally intended, etc.

NOTIFICATION OF UNAUTHORIZED MODIFICATION OR MISUSE

If any person, employee, agent, dealer or distributor becomes aware of any Unauthorized Modification or Misuse of a TDR-X mower, either past or intended, it is the responsibility of that person to ensure that Progressive Turf Equipment Inc.'s Engineering Manager is notified of the occurrence promptly. That person shall provide; the facts of the occurrence, location, machine serial number, name and contact information of the persons involved.

Send correspondence regarding Unauthorized Modification or Misuse to:

Progressive Turf Equipment Inc.
Box 940, 137 West William St.
Seaforth, Ontario, N0K 1W0
Canada
Attn: Engineering Manager

PRODUCT DESIGN

The TDR-X mower has been designed and produced using generally acceptable manufacturing processes as is standard in the industry for the type of equipment that is similar to the machine. As such, the useful life of the machine is ten (10) years from the date of manufacture.

The official language of the manufacturer is English.

No responsibility is assumed for translations in other languages, which do not correspond to the original meaning.

SPECIFICATIONS

Tractor Requirement

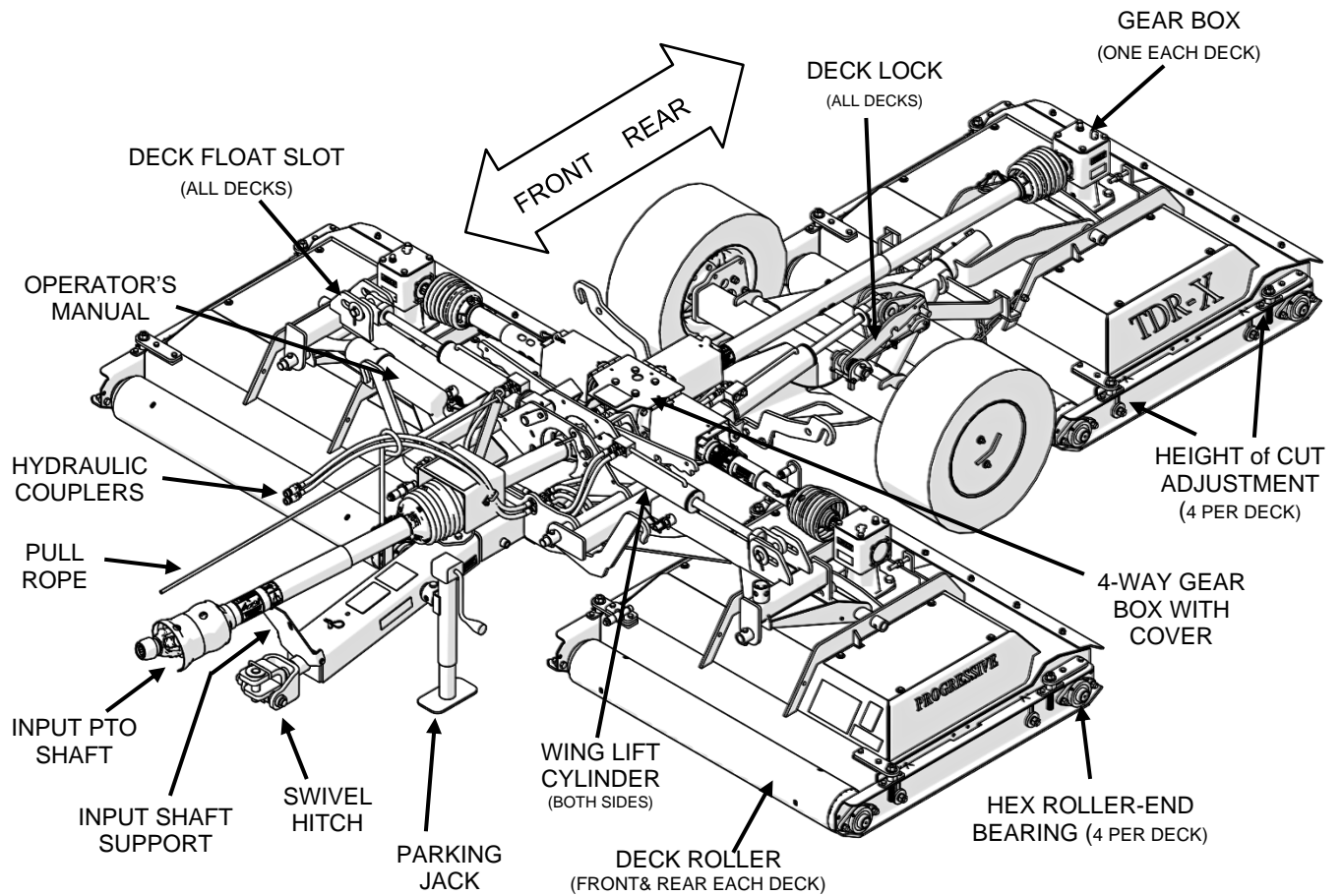
PTO Horsepower.....	35-40 hp
PTO Input Speed.....	540 rpm
Maximum Hydraulic Pressure	3000 psi
Maximum Implement Hydraulic Flow	17 US gpm

Machine Specifications

Cutting Width 10.5 ft.
Turning Radius	Zero-Turn Capability.
Cutting Height	Minimum.....3/8 in. Maximum.....3 3/8 in
Flexibility	
Mower Decks	Fore & Aft Rotation..... +/- 10° Left & Right Rotation..... +/- 10° Vertical Movement +/-8 in
Hitch	Rotation 6-way movement
Mower Decks	
Configuration	3 deck independent staggered
Floatation	6-way
Construction	Welded Steel – 3/16 in. (7 ga) thickness
Spindles	30mm spindles are each carried in 2 maintenance free ball bearings, which are housed, in a precision machined hub
Blades	High lift, heat treated, alloy steel blades 5/16" x 2 1/2" x 16 3/4" (3) per deck or Pro EZII replaceable blade tips
Blade Mounting	Two bolts/nuts per blade (No internal threads)
Rollers	Full width, heavy wall reinforced ends, with HEX drive, supported by (2) 1.25 hex bearings in ductile iron housing.
Power Transmission	
Input Shaft	1 3/8 dia – 6 Spline 80° Constant Velocity /w auto locking collar
Gearbox	Cast Iron Housing /w Helical gears
Deck Drive	Fiber reinforced V-Belts, 2 per deck
Belt Tensioning	Positive Draw bolt tensioner (1 per deck)
Transport Tires	(2) Heavy Duty 23 X 9.5-12, 5 bolt.
Productivity*	4 mph5.0 acres / hr. 6 mph7.6 acres / hr. *Assumes no overlap or turning
Transport Dimensions	Width6ft. 6in. (Max) Height.....6 ft Length 11ft 6in.
Weight	Machine.....3250 lbs

Under our policy of continuous improvement, we reserve the right to change specifications and designs without prior notice. The illustrations shown do not necessarily represent the standard version of product offered by Progressive Turf Equipment Inc.

COMPONENT IDENTIFICATION



NOTES

- 1) Throughout this manual, references are made to right and left directions. These are determined by standing at the rear of the equipment and facing the direction of forward travel.
- 2) Blade rotation is identical on all three decks, all locations. The blades are expressed as "Left Hand" (LH) and rotate counter-clockwise as viewed from the top of the mower.

SAFETY RULES

All rotary mowers are potentially dangerous machines; this mower has been designed to minimize the safety risks to the operator, bystanders and property. This section of the Operator's Manual details a number of safety rules pertaining to the operation and maintenance of Progressive Turf Equipment mowers. In order to minimize risks and promote safety at all times, these rules must always be followed and obeyed.

Further safety rules and warning texts are given within the respective sections of this manual.

IMPORTANT! - When it comes to safety, nothing will ever replace a careful operator.

It is imperative that the operator and safety personnel read and understand the safety information in this manual before proceeding. Failure to follow the instructions or heed the warnings could result in injury or death.

Proper care is your responsibility.

The manufacturer cannot anticipate every possible circumstance that might involve a hazard. The hazard alerts in this publication and on the product, are therefore not all inclusive. If a tool, procedure, work method, or operating technique not specifically recommended by the manufacturer is used, it is your responsibility to ensure that it is safe for you and others. You should also ensure the machine will not be damaged or made unsafe by the operation, maintenance, or repair procedures you choose. Modifications or adaptations to the machine are not allowed.

Various jurisdictions have specific requirements for work zone safety. Know and adhere to your local requirements. Treat the instructions in this manual as minimum requirements for safe operation.

SAFETY ALERT SYMBOL

This symbol appears at various points in the manual together with a signal word and warning text. It means – Be alert! Your safety is involved. This symbol is used throughout the manual to call attention to areas in which carelessness or failure to follow specific procedures may result in personal injury or component damage / malfunction or both.

HAZARD SERIOUSNESS LEVEL

The following signal words are found throughout the manual together with the safety alert symbol to indicate the seriousness level of identified hazards. Their selection is based on the consequence of human interaction with a hazard.

DANGER! – Hazards or unsafe practices which WILL result in severe personal injury or death.

WARNING! – Hazards or unsafe practices that COULD result in severe personal injury or death.

CAUTION! – Hazards or unsafe practices that COULD result in minor personal injury or product or property damage



DANGER!



WARNING!

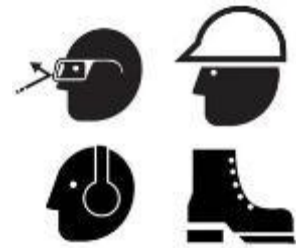


CAUTION!

GENERAL SAFETY PRECAUTIONS

WARNING!

- The operator of this machine must have sufficient knowledge and instructions in the care and operation of this mower and the power unit being used before he / she uses the machine. Do not allow unauthorized persons or children to operate the machine. Do not allow riders on the machine.
- It is the obligation of the operator to make sure that all guards and shields are in place on the machine. Safety decals must be in place and be readable – accidents may otherwise occur. Contact your dealer or the manufacturer for replacement manuals or decals.
- Never use a machine that does not have an operator's manual available. Learn and understand the safety signs and symbols on the machine and the operator instructions before you begin to use the machine.
- Wear personal protective equipment. Know and use the protective equipment that is to be worn when operating or servicing the machine. Hard hats, protective glasses and face shields, protective shoes, gloves, reflector type vests, and ear protection are types of equipment that may be required. Prolonged exposure to loud noise can cause hearing damage.
- Never operate a mower while under the influence of drugs or alcohol. These make reflexes slow and put you and others in grave danger. Always make sure you have full concentration while mowing.
- Adhere strictly to all regulations at the worksite pertaining to the operation of this equipment.
- Always disengage power takeoff (PTO) when transporting or traveling between work sites.
- Be prepared for emergencies. Have a first aid kit, fire extinguisher and emergency contact information available at the work site.



POWER UNIT SAFETY

WARNING!

- The operator must have sufficient knowledge in the care and operation of the power unit (tractor) before connecting power unit to mower. Read and understand power unit operator's manual before connecting mower.
- Power unit must be equipped with ROPS and seat belt. Foldable ROPS must be secured in the upright position. Follow recommendations of power unit manufacturer. Seat belt must be worn at all times.
- Power unit must be equipped with a 1-3/8" 6 spline 540 RPM PTO connection. Never use PTO adapters to connect implements. Never connect mower driveline to 1000 RPM PTO.

OPERATING EQUIPMENT SAFELY

WARNING!

- Never allow persons to stand between power unit and mower while backing power unit up to hitch the mower.
- Before hitching mower to power unit, place transmission in neutral, set park brake, and turn engine off. Remove the ignition key.
- Make sure locking collar on PTO shaft is properly locked. If the PTO shaft comes off during operation, personal injury or equipment damage could result.
- Tall grass can hide obstacles. Carefully walk the entire area to be mowed beforehand. Look for debris, rocks, tree limbs etc. that will damage or be thrown by the mower blades. Identify objects that cannot be removed. Set mower cutting height to avoid contact.
- Ensure that no bystanders are within 10 ft of mower when wing transport locks are released.
- Keep all bystanders well away from the machine when it is operating. Always maintain a safe operating distance from personnel, other equipment, or vehicles.
- Never operate the mower with deflectors or guards removed. Mower blades can cause small objects and debris to be thrown from under the mower deck at high speeds, up to 300 ft away. Objects ejected by the mower blades can cause severe injury.
- Never tamper with safety devices or operate the mower with them removed. Check proper operation regularly.
- Always disengage PTO, place all controls in neutral, turn power unit off, set parking brake, and remove key before dismounting, for any reason.
- Never place hands or feet under mower deck when the mower is operating, or power unit engine is running.
- Disengage the PTO when crossing gravel areas or roadways.
- Disengage the PTO and turn power unit off upon striking any object. Inspect mower and repair any damage before continuing.
- If the equipment should start to vibrate abnormally during operation, stop the mower, shut down power unit, and immediately check for the cause. Excess vibration is generally an indication of a problem. Replace bent or damaged parts, do not attempt to straighten a bent blade.
- Use extreme care when operating on uneven terrain.
- Reduce speed when operating on slopes during wet conditions, especially when making sharp turns.
- Do not use the mower in limited visibility (e.g. at dusk, in fog, heavy rain etc.). Mow only in daylight or good artificial light.
- Disengage PTO and ensure blades are completely stopped before raising wings.
- Ensure wing and deck safety locks are securely engaged before transporting mower with wings in raised position.
- **Mower is not intended for transport on public roadways.**



- Before disconnecting from power unit, always lower equipment to the ground, place controls in neutral, set park brake, turn engine off, and wait for all moving parts to stop. Relieve hydraulic pressure per power unit manufacturer's instructions.
- Ensure mower tongue jack is securely fastened to mower frame with supplied pin before removing hitch draw pin.

MAINTENANCE SAFETY PRECAUTIONS

WARNING!

- Never make adjustments or repairs with the engine running. Always disengage PTO, engage parking brake, turn engine off, lower wings to cutting position and relieve hydraulic pressure before performing any maintenance.
- Observe and perform proper lock-out procedures for power unit if attached to mower during service.
- Keep nuts and bolts tight and properly at the proper torque, especially blade attachment bolts. Check that all cotter pins are properly installed. Keep equipment in good condition.
- Keep mower free of grass, leaves, or other debris build-up.
- Never work on raised mower decks without safety locks in place.
- Periodically check condition of safety devices, guards, and deflectors. Replace only with manufacturer's recommended parts.
- Inspect and replace damaged blades. Use only original OEM parts. Blades can fail from poor maintenance practices.
- Handle mower blades carefully. They are sharp and can cut unprotected skin. Use caution and wear gloves when handling them.
- Check to make sure hydraulic hoses are not worn or damaged and are routed to avoid chafing.
- Immediately replace any hydraulic hose that shows signs of swelling, wear, leaks, or damage so it does not burst.
- Do not use your hand to check for hydraulic oil leaks. Use a piece of cardboard instead. Hydraulic fluid escaping under pressure can penetrate the skin causing serious injury. If skin penetration occurs, seek medical attention immediately. Relieve all pressure before disconnecting hoses.
- Do not bend or strike hydraulic lines, tubes, or hoses, or reinstall them in a bent or damaged condition.
- Inspect tires daily for wear or damage. Check tire pressures weekly with an accurate pressure gauge. Do not inflate tires beyond 20 psi.
- Mounting and dismounting tires from rims can be dangerous and should be performed by trained personnel using correct tools, equipment, and procedures.



- Do not support the machine on cinder blocks, hollow tiles or other members that may fail under continuous load.
- Never perform service on a machine that is supported solely by a jack. Always ensure proper blocking is placed to support load during service.



WELDING / GRINDING WORK PRECAUTIONS

IMPORTANT! A fire extinguisher should be easily accessible during all welding work.

Welding repairs are to be performed by a trained welder with proper service instructions. Know the material to be welded and select the correct welding procedure and materials (electrodes, rods, wire) that will provide a weld metal strength equivalent to the parent material.

Move the machine to a clean, safe area before welding, grinding or using a cutting torch on it. This type of work should only be done in a clean area and not in places that contain combustible liquids, such as fuel tanks, hydraulic pipes or similar.

Connect arc welder ground as close as possible to work area.

Work with extra care when welding, grinding or torch cutting near flammable objects.

WORKING ON PAINTED SURFACES

Heated paint gives off poisonous gases. Therefore, paint must be removed from an area with a radius of at least 4 in (10 cm) before carrying out welding, grinding, or gas cutting. In addition to the health hazard, the weld will be of inferior quality and strength if the paint is not removed.

Methods and precautionary measures when removing paint:

Blasting – use respiratory protective equipment and protective goggles.

Paint remover or other chemicals – use a portable air extractor, respiratory protective equipment, and protective gloves.

Grinding – use a portable air extractor, respiratory protective equipment, and protective gloves and goggles.



WORKING ON GALVANIZED / PLATED SURFACES

Only qualified welders should attempt a weld repair on galvanized or plated components. Proper pre-welding surface preparation is required.

Always ensure proper ventilation, wear proper respiratory protective equipment and avoid direct contact with smoke emitted from the welding process.

HYDRAULIC SYSTEM SERVICE PRECAUTIONS



WARNING!

Risk of personal injury! Wear safety glasses and use protective gloves.

Relieve all trapped pressure before performing any service to the hydraulic system. Pressure can be maintained in the hydraulic circuits long after the power source and pump have been shut down.

When servicing any hydraulic component of the mower ensure that all decks and wings are in their lowered position and all hydraulic pressure is relieved.

Tighten all connections before applying pressure.

It is important that each person who comes in contact with the machine be alert to any faults.

Follow these basic precautions:

- Never adjust a pressure relief valve or other pressure-limiting device to a higher pressure than specified.
- Check to make sure hydraulic hoses are not worn or damaged and are routed to avoid chafing.
- When connecting mower to tractor ensure hydraulic hoses have sufficient slack for negotiating turns and uneven terrain.
- Immediately replace any hydraulic hose that shows signs of swelling, wear, leaks or damage so it does not burst.
- Do not use your hand to check for hydraulic oil leaks. Use a piece of cardboard instead. Hydraulic fluid escaping under pressure can penetrate the skin causing serious injury. If skin penetration occurs, seek medical attention immediately. Relieve all pressure before disconnecting hoses.
- Do not bend or strike high-pressure lines, tubes, or hoses, or reinstall them in a bent or damaged condition.

HYDRAULIC OIL HANDLING PRECAUTIONS

Oils can irritate and damage the eyes, throat, and sensitive skin. Avoid contact.

Petroleum based oils are hazardous to the environment. Take special care not to spill or discharge these fluids. Use approved containers and methods to handle and dispose of them.

Use an authorized disposal and recycling company.



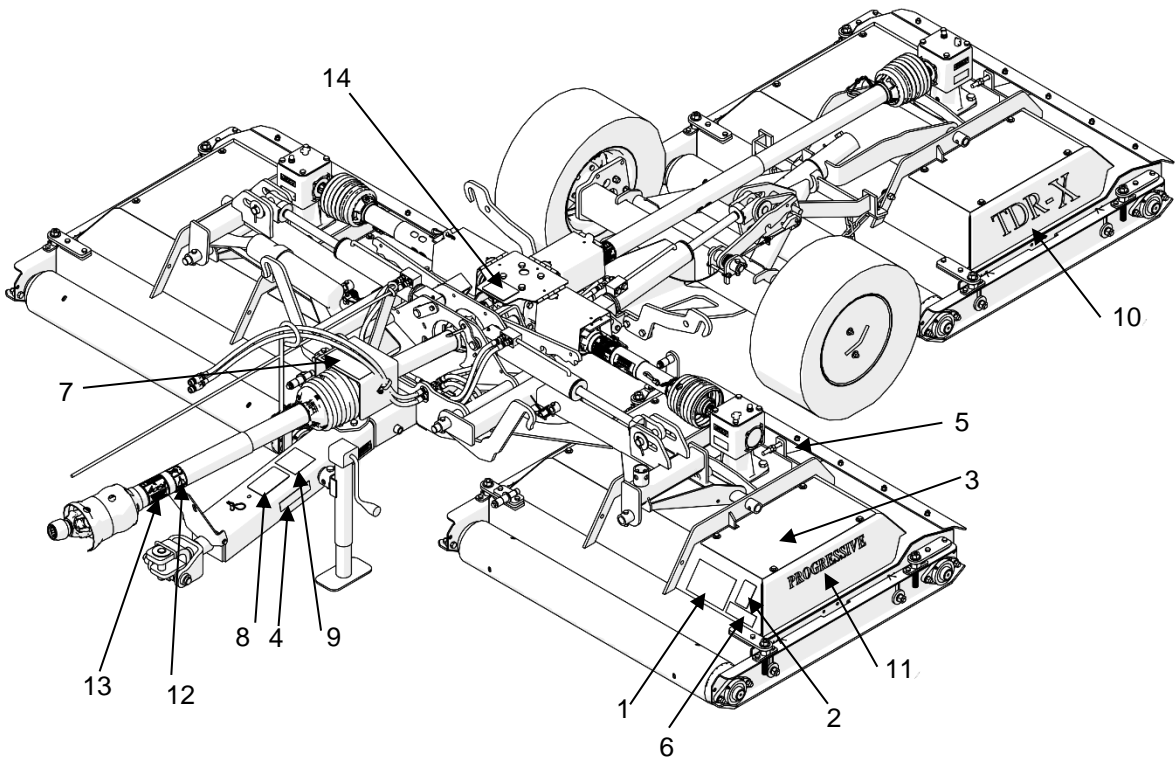
SAFETY DECALS



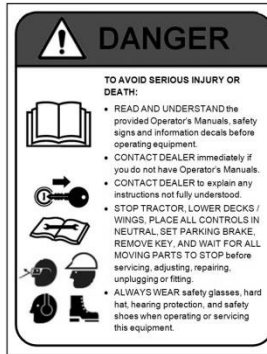
If decals become faded, damaged, or lost, replace immediately. Order Decal Kit, Part # 541503.

ITEM NO.	DESCRIPTION	QTY
1	DANGER – READ MANUAL	1
2	WARNING-BLADE HARDWARE	1
3	CAUTION – REPLACE SHIELDS	8
4	COMPANY NAME	1
5	DANGER - BLADE HAZARD	7
6	WARNING – OEM PARTS	1
7	CAUTION –DISENGAGE PTO	1
8	PTO GREASING	
9	NOTICE – HITCH SETUP	1
10	MOWER MODEL	2

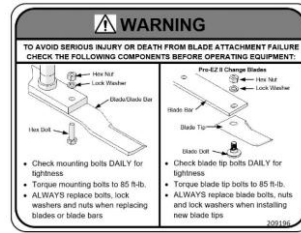
ITEM NO.	DESCRIPTION	QTY
11	PROGRESSIVE	2
12	PTO – READ MANUAL	1
13	SAFETY SIGN - OUTER GUARD	4
14	PTO ALIGNMENT	1



DECAL LISTING



No. 1 - 209172



No. 2 - 209196



No. 3 - 209113



No. 4 - 521817



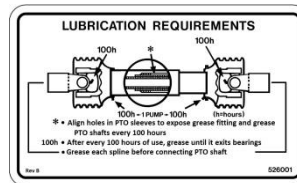
No. 5 - 209173



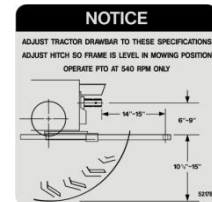
No. 6 - 209115



No. 7 - 209174



No. 8 - 526001



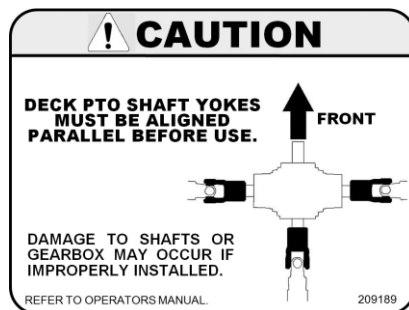
No. 9 - 521784

TDR-X

No. 10 - 209203

PROGRESSIVE

No. 11 - 209103



No. 14 - 209189



No. 15 - 521014



No. 12 - 210238



No. 13 - 210237

ASSEMBLY INSTRUCTIONS

CAUTION!

Mower assembly must be completed by a qualified technician using safe work practices and proper tools.

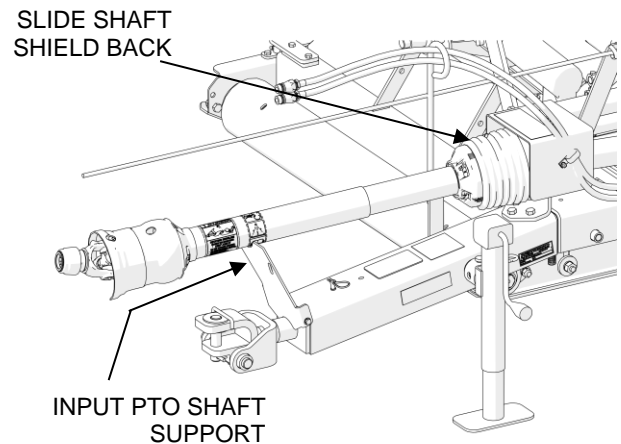
INPUT SHAFT – shipped strapped to wing deck swivel

1. Remove ½" UNC retaining bolt/nut from input shaft.
2. Remove notification tag from intermediate shaft hanger bearing.

CAUTION!

IMPORTANT - Ensure gold colour spacer ring is present against bearing inner race.

3. Disconnect input shaft shield at clamp yoke end and slide shield exposing the clamp yoke (see input shaft service instructions in mower manual storage tube).
4. Place the Input shaft on the provided support.
5. Install input shaft clamp yoke on intermediate shaft, ensuring gold coloured spacer ring is in place between the input shaft yoke and hanger bearing race.
6. Reinstall ½" UNF retaining bolt in input shaft yoke, torque to 85 ft-lb.
7. Reinstall input shaft shield per input shaft service instructions.
8. Fasten input shaft guard retaining chain to mower main frame.

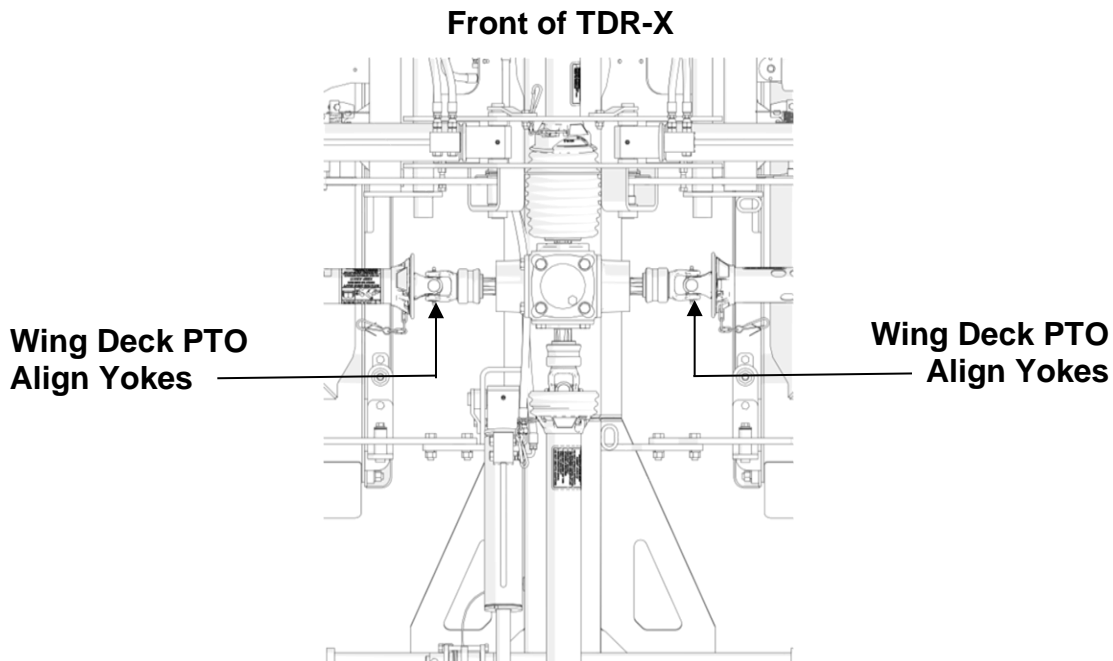


If the PTO shaft comes off during operation, it may cause personal injury and damage to the PTO shaft and tractor PTO. When checking, make sure the locking collar is locked, and that the shaft is not just jammed against the end of the tractor PTO shaft.

INSTALLING DECK PTO SHAFTS:

The three deck PTO shafts are used to drive the mower decks. Each PTO shaft will have one end designated a tractor end. This end should be hooked up to the main gearbox.

The PTO shafts from the two wing decks must be timed / aligned when mounted to the gearbox. See illustration below. Mount the one side first with the yoke laying flat. The opposite side must be mounted with the yoke laying as flat as possible. ie. Timed. Note it may not be possible to engage the second PTO perfectly aligned to the first, due to positioning of the internal gearing. Position as close as possible.



CAUTION!

All PTO shafts have a short chain attached on both ends. Find a location to wrap or hook on short chain. Be sure that when decks are brought into transport position, the safety chain will not bind or pull PTO shield.

The Intermediate shaft is installed with the large bell end onto the main gear box. The PTO mount bracket is then installed by sliding the PTO end through the flange bearing, leaving the mounting bolts loose. See section on "Hitching to the Tractor"

TRANSPORT TIRES

Check air pressure in the tires and adjust according to specifications

Transport Tires – 20 PSI

The mower is now ready for pre-delivery inspection and lubrication prior to first use.

MOWER SETUP FOR OPERATION

WARNING!

Always refer to tractor operator's manual for specific detailed information regarding operation of equipment.

Always ensure the tractor controls are in the park position, the engine is turned off, the parking brake is engaged and hydraulic pressure to the tractor remote connectors has been relieved when working around tractor during setup procedures.

DRAWBAR ADJUSTMENT

Before hitching the mower to the tractor, ensure tractor drawbar is set properly. Having the proper hitching dimensions for the tractor drawbar and the PTO, will ensure long and trouble free hours of operation. **Incorrect setup may lead to contact between the mower and PTO shaft, causing damage to the Input PTO shaft.**

The decal shown in Figure 1 is mounted to the machine and indicates these important hitch dimensions.

- 1) The drawbar length must be adjusted so it is 14" to 15" from the end of the PTO shaft to the center of the draw pin
- 2) To ensure sufficient clearance, the top of the drawbar must be 6" to 9" from the center of the PTO shaft to the top of the drawbar.

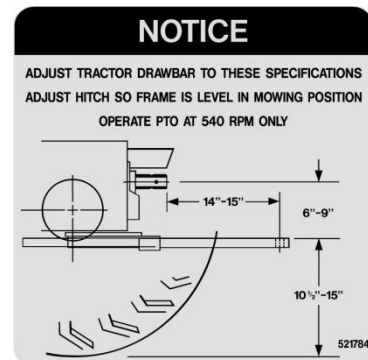
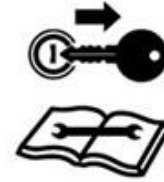


Figure 1

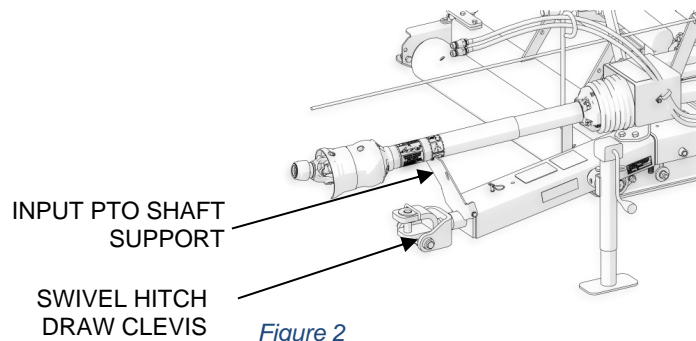


Figure 2

- 3) To assist in connecting the TDR-X to the tractor, the provided hitch pin can be temporarily placed in the hitch swivel to hold it level while aligning the hitch, as shown in Figure 3. Do not operate mower with the hitch pin in the hitch swivel.

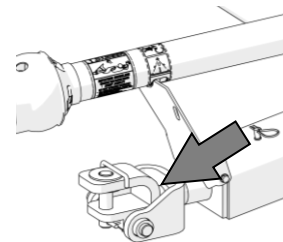


Figure 3

HITCHING THE MOWER TO THE TRACTOR

WARNING!

Crushing Hazard between tractor and mower. Never allow anyone to stand between tractor and mower while backing-up to the mower

- 1) With the draw pin placed in the hitch clevis (Figure 3 page 19), back the tractor to the hitch clevis.
- 2) When the draw pin holes are aligned, place the tractor controls in the park position, shut the engine off and engage the parking brake.
- 3) Remove draw pin from the hitch clevis and place in the draw pin hole connecting the mower to the tractor.
- 4) Note always use the provided hitch pin. The flat top design provides additional clearance to the underside of the input PTO. **Never use hitch pins with D ring type handle.**
- 5) Raise parking jack fully and place in storage position (Figure 4).

STOWING THE JACK

The jack cannot be stowed in the parked position while mowing. A second storage position is provided on the Left-hand deck to avoid damage to the jack while mowing (Figure 4).

CONNECTING THE PTO TO THE TRACTOR

- 1) Ensure that the tractor engine is shut off, the parking brake is engaged, and the mower is securely hitched to the tractor.
- 2) Lift input PTO shaft from PTO support, ensuring that PTO support swings down and rests on frame tube.
- 3) Slide the mower input shaft locking collar backwards, opening the locking mechanism. Locking collar should remain in an open position
- 4) When it is safe to do so, hold the PTO against the end of the tractor PTO shaft, rotate the PTO by hand until the shaft slides on slightly.
- 5) Slide the yoke onto the tractor's PTO.
- 6) The locking collar should automatically engage when the yoke is properly engaged with the tractor PTO.
- 7) Attempt to move the shaft forward and backwards to ensure that it is securely locked in place.
- 8) Attach the PTO cover safety chain to the tractor. Ensure cover is properly retained by the chain on the mower end.
- 9) The TDR-X is equipped with a PTO support to aid in connecting the mower to the tractor. Once the PTO shaft is connected to the tractor, fold the PTO shaft support down onto the frame and secure it with the supplied cotter pin before operating – DO NOT LEAVE SUPPORT IN UPRIGHT POSITION. See Figure 2 page 19

WARNING!

If the PTO shaft comes off during operation, it may cause personal injury and damage to the PTO shaft and tractor PTO. When checking, make sure the locking collar is locked, and that the shaft is not just jammed against the end of the tractor PTO shaft.

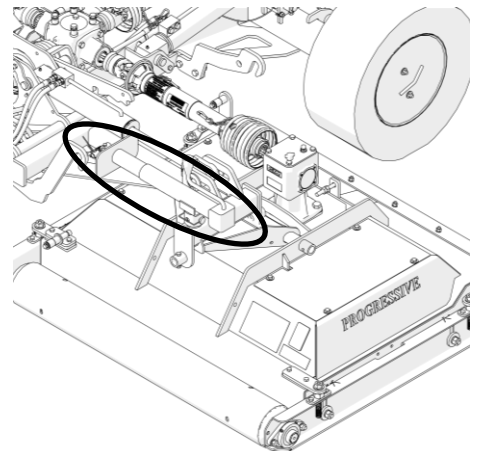
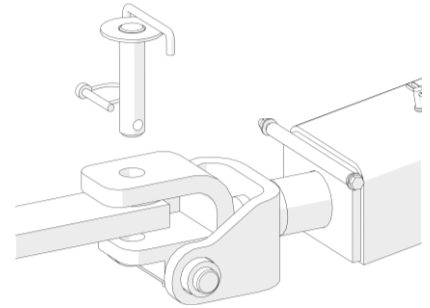


Figure 4

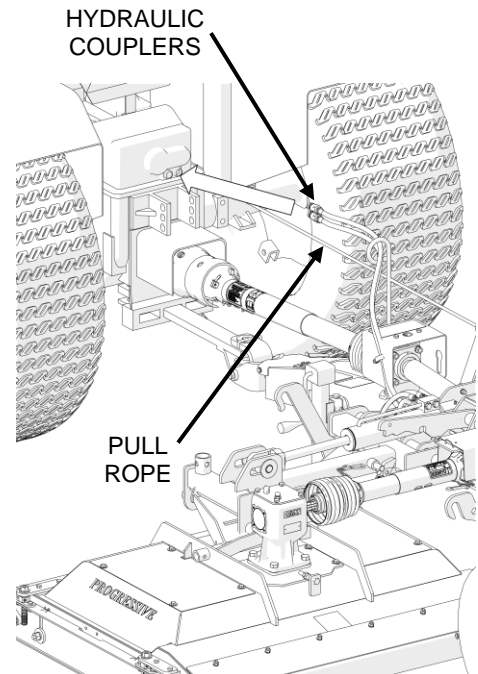
WARNING!

Hydraulic fluid escaping under pressure can penetrate the skin causing serious injury. If skin penetration occurs, seek medical attention immediately.



CONNECTING THE HYDRAULICS

- 1) Ensure the tractor controls are in the park position, the engine is turned off, the parking brake is engaged and hydraulic pressure to the tractor remote connectors has been relieved per the tractor operator's manual instructions.
- 2) When connecting the hydraulic couplers to the tractor, be sure that both ends are clean. Dirt in the hydraulic system can block the orifice in the cylinder and cause premature wear of hydraulic components on the mower and tractor.
- 3) Connect the hose to the A / B ports of the same remote. Hydraulic float function is not required for TDR-X operation.
- 4) Ensure the hoses are free to move, between the tractor and mower and will not become entangled. During operation of the mower the distance between the tractor and mower will change while going up and down hills or during turns.



CONNECTING THE PULL ROPE

The TDR-X mower is equipped with a nylon pull rope that is connected to the deck release mechanism that is used for locking decks into transport position.

Connect it to the tractor in a position that is easily accessible to the operator and will release easily if the mower should ever become disconnected. Ensure there is sufficient slack between the tractor and mower to allow for proper maneuvering of machine without rope becoming entangled.

MOWER SAFETY LOCKS

Safety locks are provided for each deck to prevent unexpected lowering from the transport position in the event of a failure in the hydraulic system.

DECK LOCK SYSTEM

The deck lock system on the TDR-X mower is a multi-function system controlled by the pull rope and operated by sealed cables.

To unlock the decks from the transport position: PTO not engaged

1. **FIRST**, all decks must be fully raised. This removes pressure from the deck locks so they can release – **this is most important for the rear deck**
2. Operate the hydraulic lever to fully raise the decks removing pressure from the locks.
3. When it is safe to do so, pull and hold the release rope,
4. Lower the three decks

- 4.1. If one deck does not move, STOP, release the pull rope and fully raise the decks again. Repeat step 1.
5. If all decks lower, continue lowering the decks to the ground.
6. Once the decks touch the ground, hold the lever and ensure all three cylinders are fully extended

As with any mechanical system, the lock system needs to be used and maintained properly. With only a few moving parts, this is a simple task.

In a safe level location, fully lower the decks to the ground, shut the tractor engine off, and set the parking brake.

With the lock rope released, all three lock arms should lay flat, resting against the 3/8" bolts. This is critical for proper function of the Pro Lift-N-Turn™ system.(Figure 5)

Check each of the three lock arms and release cams making sure they do not bind when the lock release rope is pulled or released.

Ensure that the lock arms, release cams, cables and springs are in good condition and move freely.

Check to see if the lock release pull arm is free to rotate without binding and returns to a neutral position so that the deck lock arms can lay flat against the wing frame.

If any binding or damage is found, repair the issue before proceeding to use the mower

TRANSPORT LOCK

When the decks are in the fully raised position and the pull rope released (slack), the lock arms engage with each wing and the rear lift to ensure they do not lower when hydraulic pressure is relieved. (Figure 6)

Pro Lift-N-Turn™ Position

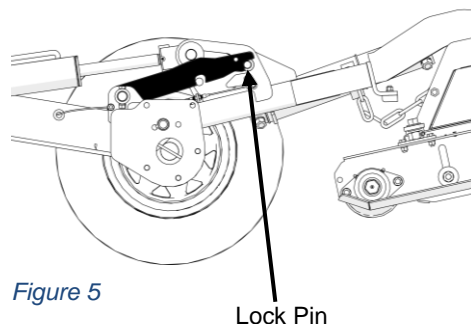


Figure 5

Locked Transport Position

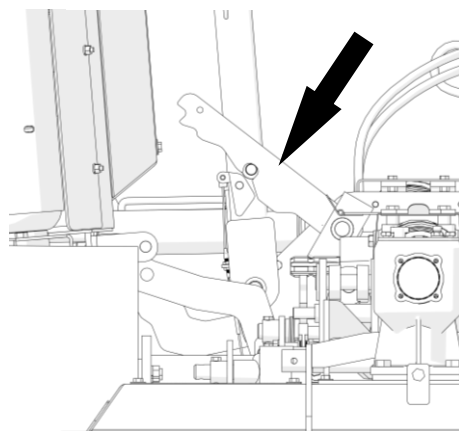


Figure 6

WARNING!

Never stand beneath the mower decks when placed in the transport position.

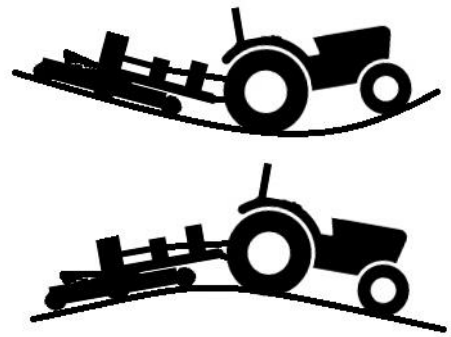


CHECK PTO LENGTH - TURNING AND ON HILLS

The TDR-X mower is designed for mowing of uneven, contoured landscape. When negotiating turns, the input PTO shaft will change in length. During mowing of steep contoured conditions, when the tractor starts up a hill the PTO shaft will collapse (shorten) and when cresting the hill, it will extend. It is important to make sure that the PTO shaft does not fully collapse, fully extend or contact the frame or hose support rod during turns or when travelling over hills.

To ensure proper setup check the following conditions:

- 1) With the tractor in the lowest gear and travelling very slowly, make a sharp turn to the right – do not let the CV joint exceed 80 degrees – see Figure 7 page 24.
- 2) Watch the PTO shielding to make sure the PTO shaft does not totally collapse. There should be a minimum of 5 ½" of the inner black PTO shielding exposed at maximum turn.



NOTE: This is not the worst condition. Making turns while the tractor is angling up a hill will cause the PTO shaft to collapse even more. Likewise, traveling straight up or down a hill will either extend or collapse the PTO shaft. The operator should avoid making sharp turns on uneven terrain.

WARNING!

If the PTO over extends, it will come apart and can cause injury to the operator or damage to the mower or tractor.

CAUTION!

If the input PTO shaft collapses fully, it will force the shaft back against the hanger bearing. This will cause damage and premature failure of the bearing.

CV JOINT INPUT SHAFT

Progressive has equipped the TDR-X with an input shaft that contains a CV joint. This design allows the TDR-X to be more agile and maneuverable, while minimizing drive line vibration.

Never allow the CV Joint to exceed an angle of more than 80 degrees or damage will result. See Figure 7.

Damage can occur more easily when turning as you reverse the tractor

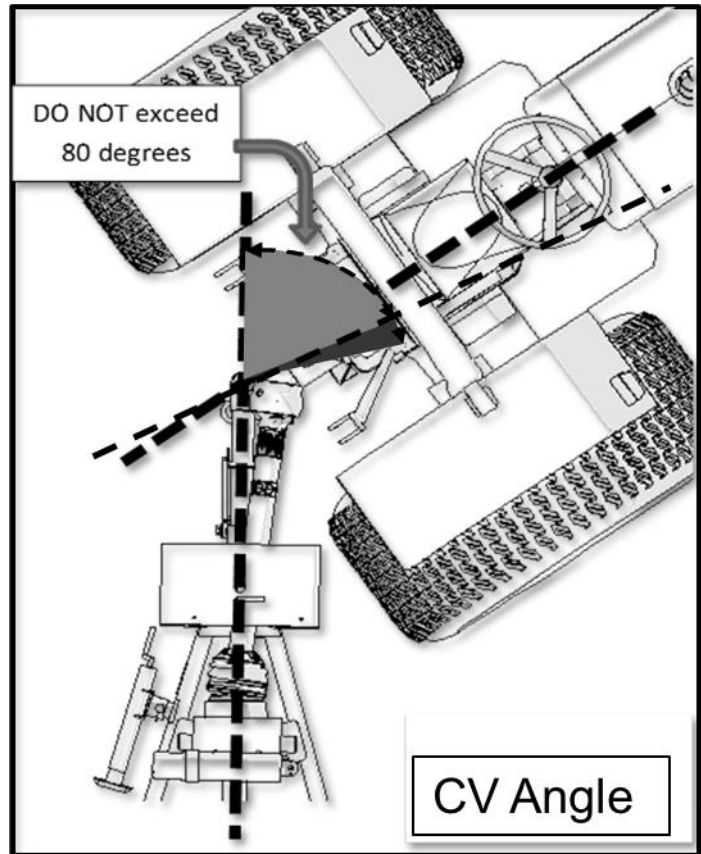


Figure 7

DISCONNECTING THE MOWER

The mower can be stored with the decks in the raised or lowered position. If the wings or decks are in the raised position, ensure the deck locks are securely engaged before disconnecting the mower from the tractor.

- 1) Place mower on a level surface for storage.
- 2) Ensure that the tractor engine is shut off and the parking brake is engaged.
- 3) Inspect deck safety locks to ensure they are properly engaged (if in the raised position). (Figure 8)

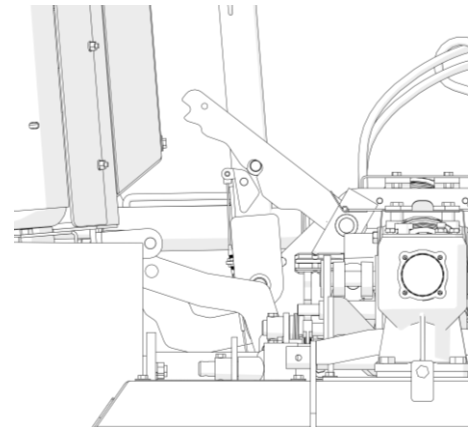


Figure 8

- 4) Do Not pull on the lock release rope; relieve pressure in the hydraulic hoses per tractor manufacturer's instructions (normally cycling the tractor control valve in both directions is sufficient).
- 5) Chock mower transport tires to ensure mower does not roll unexpectedly when hitch pin is removed.
- 6) Disconnect pull rope from rear of tractor and hook on hose support rod.
- 7) Disconnect hydraulic couplers from tractor & stow in supplied locations in the sides of the intermediate shield (Figure 9).
- 8) Disconnect input shaft guard chain from tractor.
- 9) Slide the mower input shaft locking collar backwards, opening the locking mechanism. Locking collar should remain in an open position.
- 10) Remove input shaft from tractor (collapsing sliding shaft) and stow on supplied support bracket (Figure 10).
- 11) Remove the tongue jack from the storage location on the left wing and place in the parking position. Raise the jack sufficiently to remove all mower weight from the tractor drawbar. Ensure mower tongue jack is securely fastened to mower frame with supplied pin before removing hitch draw pin
- 12) Remove supplied draw pin from hitch and stow in the hitch swivel.

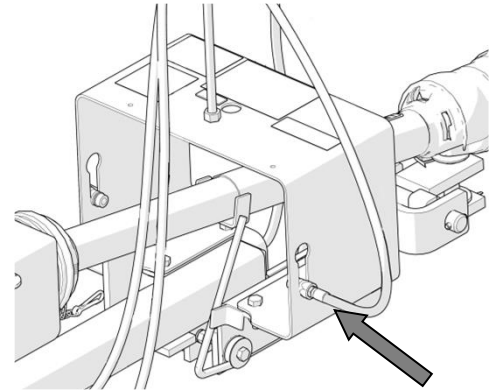


Figure 9

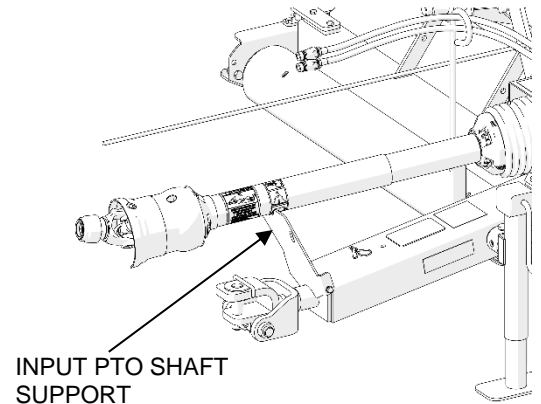


Figure 10

ADJUSTING THE MOWER FOR CUTTING

WARNING!

Ensure safety locks are properly engaged before attempting to service mower. Make all adjustments with the tractor turned off, key removed and parking brake set. Mower must be on level ground before making adjustments.

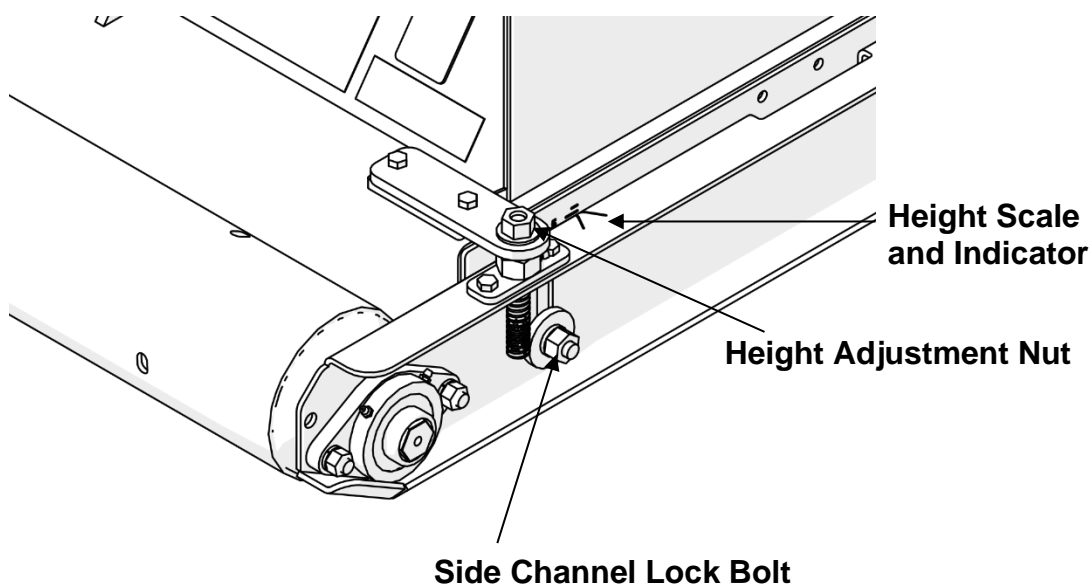


SETTING HEIGHT OF CUT

There are four height adjusters per mowing deck. Each adjuster (located in each corner of the deck) must be adjusted to the same height to ensure a smooth even cut. In addition, each deck must be adjusted the same so that a level cut is obtained across the whole cutting width of the mower. Mower cutting height adjustment is made by turning a 5/8" nut on top of an acme threaded rod which makes up the height adjuster. A pointer on the side channel indicates the height against the scale. There are an infinite number of adjustments available from 3/8" to 3 3/8". Moving the adjuster up and down moves a side channel that mounts the front and rear rollers. Before attempting to make height adjustments, the locking bolts on the side channels must be loosened. When the desired adjustment is made, be sure to tighten the locking bolts to maintain the adjusted height. The height scales at the back of the deck are set so that the back actually cuts slightly higher, this will provide a better cut, prolong the life of the blades, and reduce horsepower requirement. This will also make the side channel look uneven, but this is correct.

TDR-X HEIGHT ADJUSTER

1. On flat level ground, place the decks on the ground and fully extend the deck cylinders until they are in the center of the float slot.
2. Shut off the tractor and engage the parking brake. Work on one side of a single deck at a time
3. Using a 15/16" wrench, loosen both side channel lock bolts, do not remove
4. Using a 15/16" wrench adjust Height Adjustment Nut to desired height of cut according to the adjacent scale and indicator.
5. Repeat for the other adjuster on the same side channel – setting it to the same height indication.
6. Securely tighten the two side channels lock bolts to retain the cut height
7. Repeat steps 3 to 6 for the other side of the same deck.
8. Repeat above procedure for the remaining decks



OPERATING THE MOWER

DAILY CHECK LIST

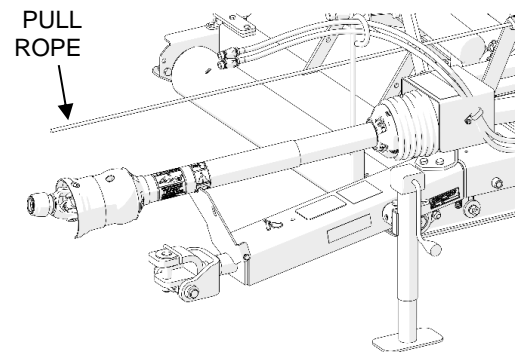
1. Always wear relatively tight and belted clothing to avoid entanglement in moving parts. Wear sturdy, rough-soled work shoes. Never operate tractor or implements in bare feet, sandals or sneakers. Ensure other required PPE is in good condition.
2. Ensure all safety shielding is properly installed and check that all nuts and bolts are secure and pins are properly fastened.
3. Inspect all safety decals and ensure they are clean and in legible condition.
4. Inspect deck locks and ensure all pivot points and pull mechanisms have free movement and are in good order.
5. Check condition of blades and security of attachment.
6. Ensure mower is properly connected to the tractor, adjusted and in good operating condition.
7. Be sure deck release pull rope and hydraulic hoses are properly secured and will not become entangled in PTO shaft.
8. Tall grass can hide obstacles. Carefully walk the entire area to be mowed beforehand. Look for debris, rocks, tree limbs etc. that will damage or be thrown by the mower blades. Identify objects that cannot be removed. Set mower cutting height to avoid contact.
9. Never permit any person other than the operator to ride or board the tractor at any time.
10. Check that all lubrication points with grease fittings have been lubricated as per schedule (Figure 13, page 31).
11. Check the gearbox for possible oil leaks.

RAISING / LOWERING THE WINGS & DECKS

The mower decks are raised into and from the transport position by hydraulic cylinders activated by the tractor's hydraulic circuit.

To lower the wings from the transport position:

1. Ensure the deck transport locks are engaged (Figure 8 page 24).
2. With the tractor running and when it is safe to do so, place the tractor hydraulic control in the raise position **and raise the decks fully**. This removes any tension from the lock arms.
3. Pull the rope and hold in this position (until the decks are fully lowered).
4. Place the tractor hydraulic control in the lower position and lower the wings (while pulling the rope).
5. Lower decks to the ground. Release rope when fully lowered.
6. Hold the hydraulic lever briefly and ensure all three deck cylinders are FULLY EXTENDED (pin mid-way along the float slot). This allows for proper floatation of the decks during mowing. Release the hydraulic lever. Hydraulic float function is not required for proper operation.



To raise the wings for transport:

1. When it is safe to do so, pull the rope and hold in this position until the wings are fully raised.
2. Place the tractor hydraulic control in the raise position and raise the mower decks fully
3. Release the rope to engage the wing locks for transport (when fully raised).
4. Release the hydraulic lever and make sure the locks are engaged(Figure 8 page 24).

ENGAGING THE PTO

When engaging the mower PTO , it is important to follow this procedure:

- 1) When it is safe to do so, lower mower decks gently to the ground.
- 2) Ensure all deck cylinders are FULLY EXTENDED (pin mid-way along the float slot). This allows for proper floatation of the decks during mowing.
- 3) Release the pull rope.
- 4) Set the tractor engine speed just above idle so the engine will not stall after starting the PTO
- 5) Ensure that everyone is clear of the mower and it is safe to engage the tractor's PTO.
- 6) Engage the tractor PTO.
- 7) Select the proper ground speed gear and slowly engage forward motion.
- 8) Once the mower has come up to speed, slowly increase the tractor throttle to required rpm to achieve 540 PTO RPM speed.

MOWING

The TDR-X mower is a very versatile cutting machine that allows the operator to maintain turf on undulating terrain in a productive manner. Drive safely, cut safely. Be sure to idle the tractor back before engaging or disengaging the PTO, and shut the tractor off before leaving the tractor.

NOTE: Under normal cutting conditions, it may be desirable to operate the tractor at less than 540 rpm PTO speed, reducing fuel consumption and noise levels. Select a suitable ground speed gear to maintain proper cut quality.

Pro Lift-N-Turn™ SYSTEM

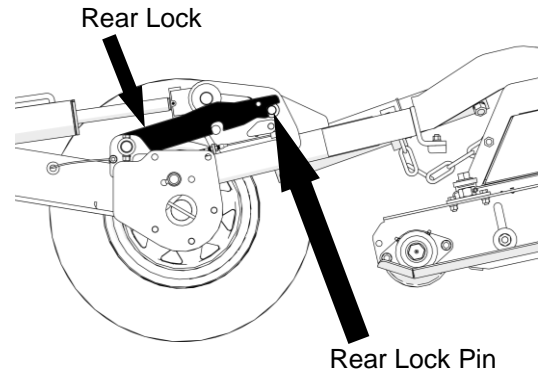
The TDR-X is equipped with the Pro Lift-N-Turn™ system. This feature allows the operator to temporarily lift all cutting decks just off the turf without shutting down the PTO. Utilizing the Pro Lift-N-Turn™ system when mowing near cart paths or other roadways, allows the operator to move from section to section without needing to disengage the PTO and raise the decks to the full transport position. Pro Lift-N-Turn™ can also be used to start the mower in tall grass. Engaging the blades with the decks raised will reduce start-up loading on the mower drivetrain.

The Pro Lift-N-Turn™ system is activated automatically when the wings are lowered and the pull rope released. The operator can temporarily lift the mower decks during operation using the tractor hydraulics. Once the mower is again in position to mow, the operator can lower the decks and continue mowing. It is possible to perform this without disengaging the PTO.

NOTES :

- 1) Always fully extend the Hydraulic cylinders after using Pro Lift-N-Turn™ before mowing for proper float operation.
- 2) Always make sure the locks and lock release cams pivot freely and are in good condition before using this function.

Pro Lift-N-Turn™ engaged on rear deck



DANGER!

The mower blades remain at cutting speed while using the Pro Lift-N-Turn™ system. Do not proceed into areas that may have loose debris that may be thrown by the mower blades.

NOTE: The Pro Lift-N-Turn™ system is designed to be engaged for short durations only. If travelling over long distances with the decks in the raised position, disengage PTO before proceeding.

MOWING WHILE REVERSING TRACTOR

The unique design of the hitch and deck mounting allows the mower to operate equally well in the reverse direction. This is excellent for cutting in confined areas and cleaning up leaves in the fall.

OPERATING ON HILLY TERRAIN

When operating on hilly terrain, proceed with caution and drive carefully. If the tractor has four wheel drive, make sure it is engaged. On two wheel drive tractors equipped with a differential lock, apply while driving straight on the hills; disengage to allow for normal turning.

WARNING!

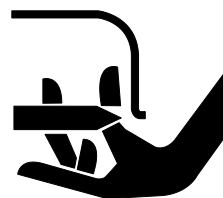
Use care while turning on hillsides in wet conditions. The weight of the mower behind the tractor may push the tractor unexpectedly. Drive slowly around sand traps, river banks, etc.

WARNING!

NEVER attempt to clear blockages with tractor engine running! Always ensure the engine is OFF and the tractor parking brake is set before clearing blockages.

STOPPING THE MACHINE IN AN EMERGENCY

All function of the TDR-X mower is controlled through the tractor. In the event of an emergency, follow the measures specified by tractor manufacturer as outlined in the tractor operator's manual.



TRANSPORTING THE MOWER

WARNING!

The TDR-X mower is **NOT** designed for use on public roadways. Use an appropriate transportation method such as a trailer or float to move mower from site to site if required.

When transporting the TDR-X from site to site, ensure the decks are in the raised position and deck safety locks are engaged.

WARNING!

Use an appropriate sized vehicle to tow the TDR-X mower. The tongue weight is 756 lbs, and the total weight is 3250lbs. Make sure that the tow vehicle exceeds these tow ratings.

TIE DOWN LOCATIONS

(3) Tie-Down provisions are located on the mower per the diagrams below:

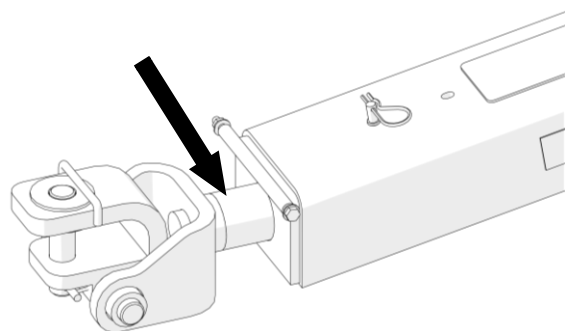


Figure 12 Tie Down Location Front

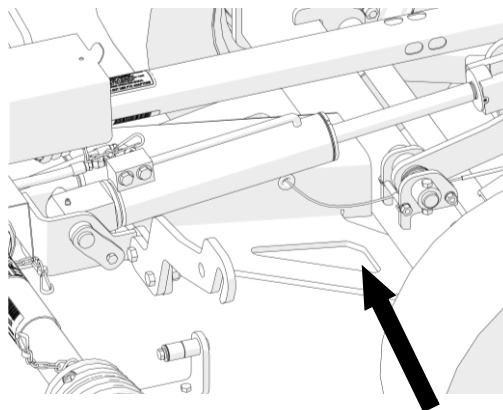


Figure 11 Tie Down Location Rear

MAINTENANCE

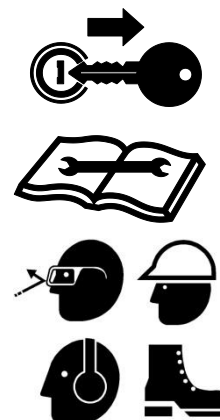
WARNING!

Ensure the tractor controls are in the park position, the engine is turned off, the parking brake is engaged and hydraulic pressure has been relieved before performing service or maintenance.

Perform all maintenance with the wings and mower decks in the lowered position and the machine on a flat and level surface.

Always use personal protection devices such as protective glasses and face shields, protective shoes, gloves, hard hats, and ear protection when performing service or maintenance functions.

When completing a maintenance or service function, make sure all safety shields are installed before placing mower in service.



		Maintenance Intervals					
	Service	Initial Run / 50h	Daily	Weekly or 50h	100h / Monthly	600h / Yearly	Removal from Storage
Grease	Intermediate Hanger Bearing	-	-	X	-	-	X
	Locks, Lock Release, Lock Cams	-	-	-	-	-	X
	Deck Pivots, Deck Swivels, Wings	-	-	-	-	-	X
	HEX Roller End Bearing	-	-	X	-	-	X
	Transport Wheels	-	-	-	X	-	X
	Input PTO Shaft (10 locn's)	-	-	-	X	-	X
	Intermediate PTO Shaft (3 locn's)	-	-	-	X	-	X
	Deck PTO Shaft (7 locn's)	-	-	-	X	-	X
Oil	Inspect Gearbox - All	-	X	-	-	-	X
	Check Gearbox Oil - All	-	-	-	X	-	X
	Change Gearbox Oil - All	X	-	-	-	X	-

Figure 13

Notes:

- 1) Always grease the PTO safety shield collars when greasing the shaft

LUBRICATION

A properly maintained lubrication schedule will provide a smooth running machine for many years. The following information shows and describes where lubrication points are located and what types of lubricant are required.

GREASE SPECIFICATIONS

All greases are not compatible. Grease incompatibility will decrease the lubrication ability of the grease, and can cause premature part failure.

Grease can have mineral or synthetic base oils and thickening agents such as lithium, calcium, barium, sodium, or aluminum

What We Use:

- Progressive uses Shell Gadus S2 V220 2
- This grease has:
 - A mineral oil base
 - A lithium-12 hydroxy thickener ("lithium" thickener)
 - Extreme Pressure additives (EP)
 - An NLGI Grade 2

Recommended Grease Properties

The grease you use for this machine must have these properties:

- NLGI grade 2
- Lithium thickener (NOT LITHIUM COMPLEX)¹
- Kinematic Viscosity at 40°C is no greater than 220 cSt
- Dropping Point Less than 400° F
- General Purpose Grease, Not Heavy Duty
- **No MOLY (molybdenum disulphide) additives in the grease²**
- **No synthetic grease³**
- **No High Temperature Grease⁴**

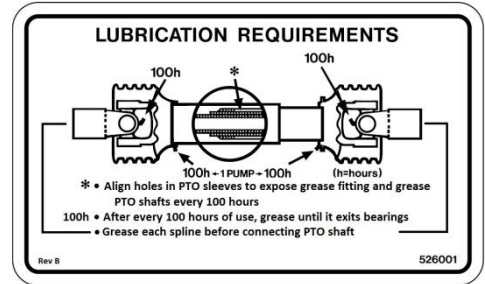
Notes on grease compatibility:

- 1) If a thickener other than lithium is used (including lithium complex), the existing grease will be contaminated and the lubrication properties may be lost leading to component damage.
- 2) Molybdenum Disulfide (Moly) is an additive used in slow moving, extreme load applications. The particles in the "Moly" will actually increase bearing wear in a high speed mower application. Generally speaking Moly based greases will be grey in colour.
- 3) If synthetic base oil is used rather than mineral base oil, the grease will be contaminated; the lubrication properties may be lost leading to component damage.
- 4) We do not recommend the use of "High Temperature" greases, mower component temperature should never reach temperatures above the level at which general purpose greases can operate. "High Temperature" greases may contain thickeners that are not compatible with Lithium-12 Hydroxy based thickeners.

Grease with these features is considered to be a "General Purpose Grease". Use on all grease point locations on your Progressive Mower. Check the properties of the grease you wish to use with your supplier prior to use.

DRIVELINE GREASING

All PTO shafts on the TDR-X mower feature 100h greasing intervals. The following decal is located on the mower as a reminder.

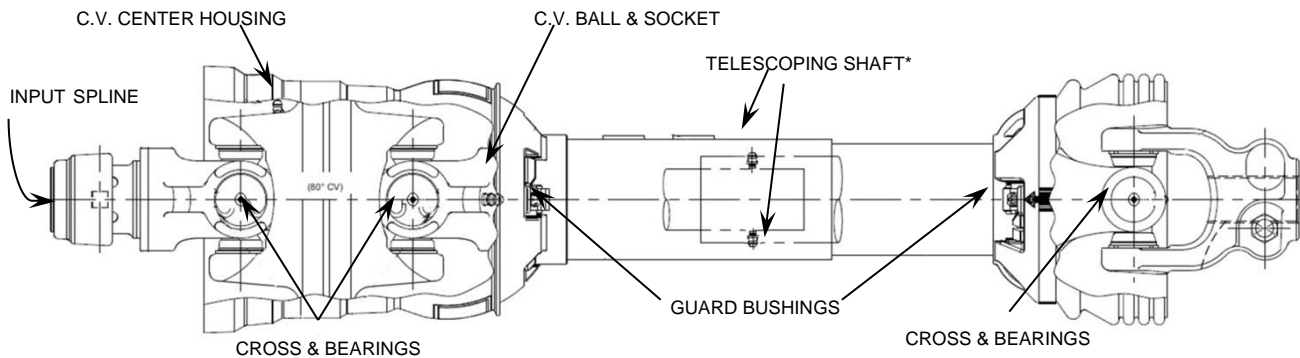


! CAUTION!

Failure to properly lubricate the telescoping shaft sections will lead to binding of the shaft and damage to the mower or tractor driveline.

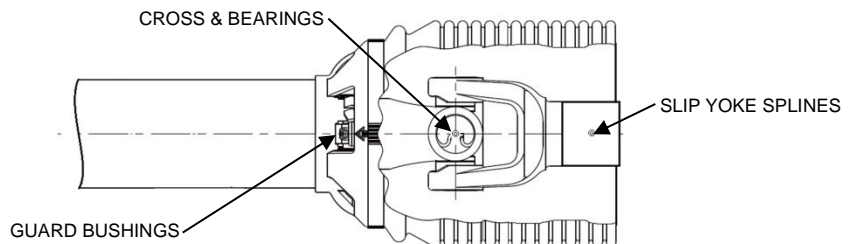
INPUT SHAFT – 100h / Monthly (10 Locations)

Shaft must be disconnected from tractor and collapsed fully for greasing

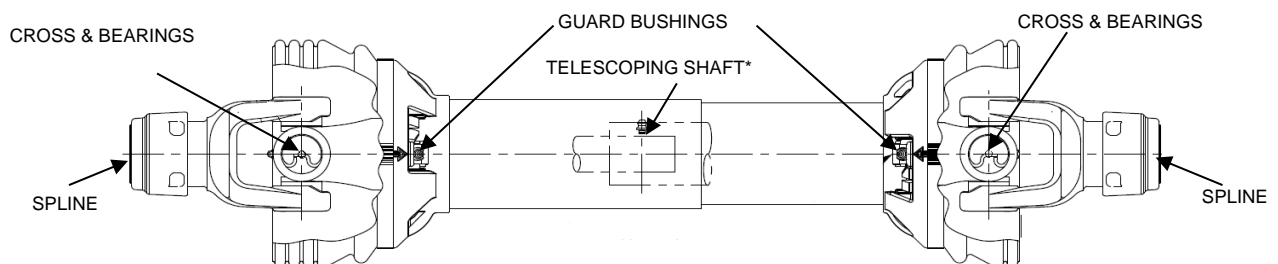


* Inner & outer guards must be rotated to align holes for accessing the two telescoping shaft grease fittings.

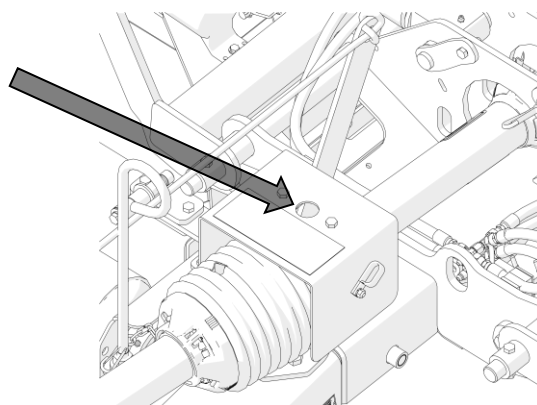
INTERMEDIATE SHAFT – 100h / Monthly (3 Locations)



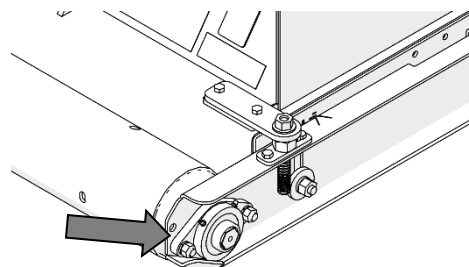
DECK SHAFTS – 100h / Monthly (7 Locations - 3 Shafts)



INTERMEDIATE BEARING – 50h / Weekly (1 Location)

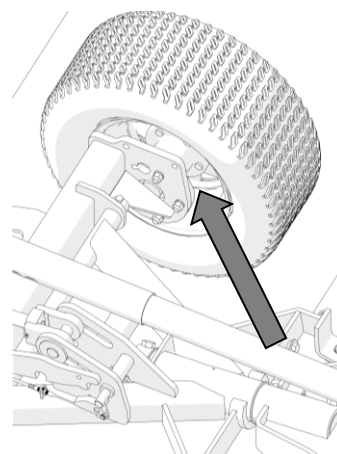


ROLLER-END BEARING 50H / Weekly (12 Locations)



TRANSPORT HUBS: 100h / Monthly

The transport wheel hubs have greaseable tapered roller bearings. They should be inspected frequently and lubricated as required.

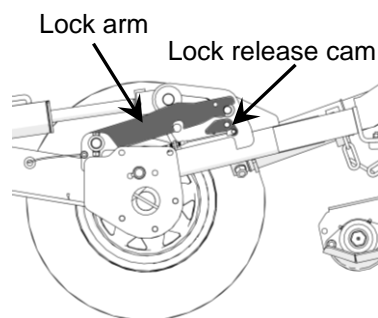


CHECK OPERATION OF LOCK SYSTEM

In a safe level location, fully lower the decks to the ground, shut the tractor engine off, and set the parking brake.

1. With the lock rope released, all three lock arms should lay flat, resting against the 3/8" bolts. This is critical for proper function of the Pro Lift-N-Turn™ and wing lock system (For more information see page 29)
2. Have a helper pull and release the pull rope/lock release arm and verify that lock release cams move freely. If they do not, disassemble, clean, inspect and grease, replace bushings if necessary
3. Ensure that the lock arms move freely. If they do not move freely, disassemble, clean, inspect and grease. Replace bushings if necessary.
4. Lock release springs (under main frame) should be replaced every 2 seasons to ensure trouble free operation of the lock system. Kit part number 214022.

If any binding or damage is found, repair the issue before proceeding to use the mower



GEARBOX OIL:

Recommended Oil: SAE 90 EP or SAE 80W90 EP

Factory Fill: Shell Spirax HD SAE 80W90



MOWER MUST BE LEVEL when checking oil level

DO NOT OVERFILL! Gearbox may over-heat causing premature component damage.

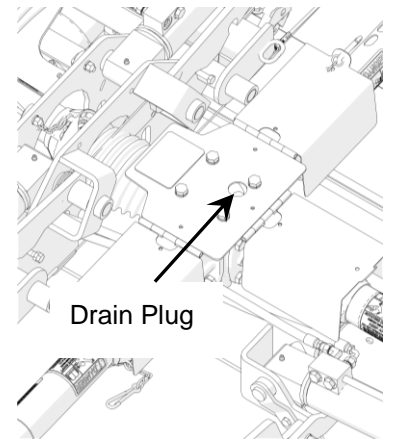
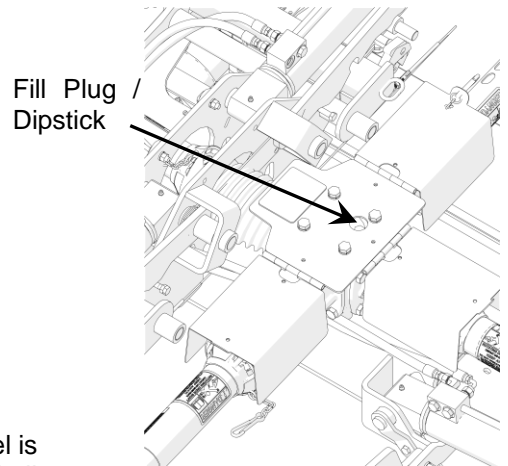
4-WAY GEAR BOX**Checking Level – 100h / Monthly**

A screw-in dipstick is provided on the top of the gear box. Proper oil level is set when oil is between the marks on the dipstick. If the level is low, add oil through top plug until correct level is attained. Replace and tighten plug.

Changing Oil - 600h / Yearly

The gearbox oil should be changed after the first 50 hours of operation and every 600 hours or yearly afterwards.

Oil change quantity – 1.48 Qt (1.4 Litres)

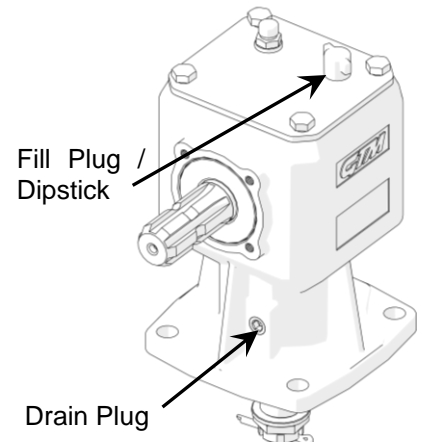
**DECK GEAR BOX (all 3 decks)****Checking Level – 100h / Monthly**

The three deck gear boxes have a combination filler plug and dipstick. Remove the plug, dry off the dipstick and replace to check oil level. It must touch the oil in the gear box. Replace oil. Use 80W90 gear oil or equivalent. Reinsert the dipstick and screw in fully. Do not over tighten.

Changing Oil - 600h / Yearly

The gearbox oil should be changed after the first 50 hours of operation and every 600 hours or yearly afterwards.

Oil change quantity – 0.85 Qt (0.8 Litres)



"V" BELT DRIVE

"V" BELT TENSION:

Proper belt tensioning is a fundamental factor in the successful V-belt operation. Lack of tension will cause slippage, and too much tension will cause excessive belt stretch as well as damage to the drive components, such as bearings and shafts. Therefore, to ensure proper belt tension, the following procedure is recommended.

"V" BELT ADJUSTMENT

All deck drive belts utilize a threaded adjuster connected through the deck gear box mount. Tension of both drive belts per deck is set with one adjustment.

In the event that belt adjustment must be made, follow these steps:

- 1) Loosen the jam nut on the adjusting screw.
- 2) Loosen the (4) bolts fastening the gear box slide plate to the mower deck.
- 3) Set desired belt tension by turning the adjusting screw:
 Clock Wise to tighten belts
 Counter Clock Wise to loosen belts
- 4) Tighten the (4) bolts fastening the gear box slide plate to the mower deck.
- 5) Tighten jam nut on the adjusting screw.
- 6) Verify proper tension is achieved per "V" Belt Tension section above.

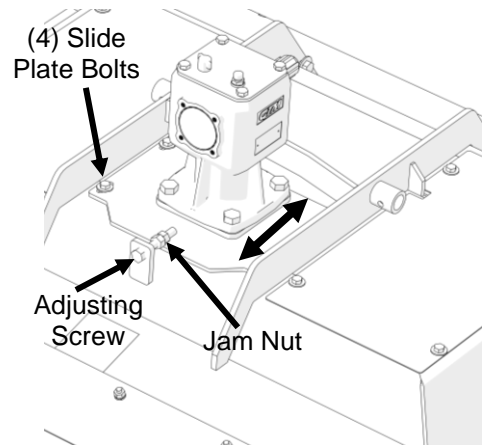
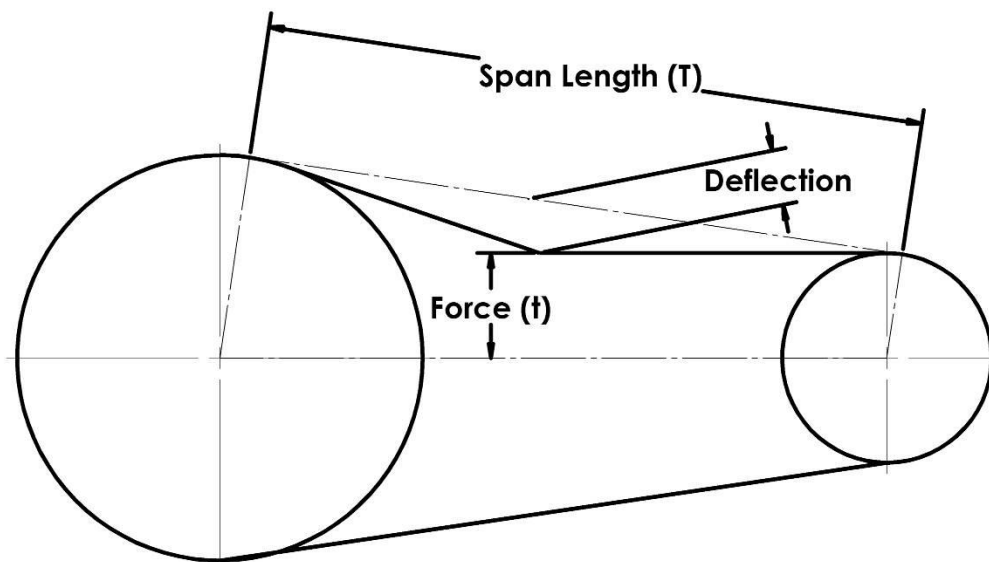


Figure 14



CHECKING BELT TENSION

At the mid-point of the span, apply a deflection force with a spring scale in the direction perpendicular to the span until the belt is deflected the 3/8".

The recommended force to deflect the belt is a minimum of 4.9 lbs. to a maximum of 7.3 lbs.

The first 24 to 48 hours of operation is the belt "run in" period. To ensure satisfactory belt performance, belt tension should be checked during this time period.

FASTENER INSTALLATION TORQUE

The chart below lists the proper installation torque for fasteners on Progressive Turf Equipment mowers. When bolts are to be tightened or replaced, refer to this chart to determine the proper torque (unless otherwise specified in this manual).

SAE Grade 5 (Imperial) and Class 8.8 (Metric) fasteners are to be used in the assembly of this machine, unless otherwise specified in this manual.

Bolt Grade / Class Identification



SAE Grade 2
(No Dashes)



SAE Grade 5
(3 Dashes)



SAE Grade 8
(6 Dashes)



Class 8.8
(Metric)

Bolt Diameter	Grade 5 Recommended Torque in Foot Pounds (Newton-Meters)
5/16 UNC	17 (23)
3/8 UNC	31 (42)
7/16 UNC	49 (66)
1/2 UNC	75 (101)
9/16 UNC	109 (148)
5/8 UNC	150 (203)
3/4 UNC	266 (260)
7/8 UNC	429 (581)
1 UNC	644 (873)
1-14 LH Spindle Nut	60 (82)
M12x1.5 (Note)	65 (89)
Pro-EZ Change Bolt	85 (150)

NOTE: 4-Way gearbox mounting bolts are M12

BLADE SERVICING

WARNING!

Always observe proper lock-out procedures when performing any maintenance work including changing or servicing the blades. Always remove and retain the ignition switch key, ensure parking brake is engaged, and block and or support machine using equipment designed for the task.

Be sure deck and wing safety locks are engaged when working on decks in the raised position.

Use gloves when handling mower blades. Blades can be very sharp.

Inspect blades before each use to determine that they are mounted tightly and are in good condition. Replace any blade that is bent, excessively nicked, worn or has any other damage. Small nicks can be ground out when sharpening.



WARNING!

Use only original equipment blades when replacing worn out mower blades. They are made of special steel alloys and subjected to rigid heat-treat and inspection requirements. Substitute blades may not meet these specifications and **MAY BE DANGEROUS**.

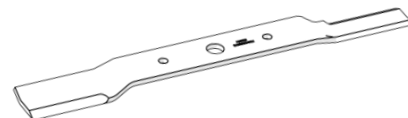


BLADE SELECTION

We offer different blade styles for use with this mower:

Fixed high lift

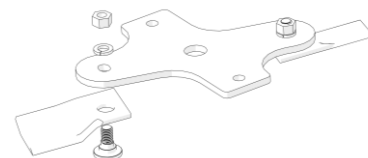
Combined with Progressive's high tip speed, the fixed High-Lift blade 'stands' grass blades up for a clean cut, even in damp conditions or at high mowing speeds.



Pro-EZII Change System (Available in high or low lift)

Developed with turf professionals in mind:

- Economical as only the tips are changed
- Flat profile fastener extends life, reduces cost
- Standard hand-tools are used for reduced cost and easy change out
- Lower start-up torque requirement reduces stress on the complete drive train
- Thinner profile than a standard blade means the tips retain their sharpness after the equivalent number of mowing hours



Pro-EzII Blade System installs on the same blade support bar as a fixed blade. This allows users to easily swap blade types as growing conditions or mowing requirements change.