

Owner's Manual

Manual Part #: Man-100EZT

LASTEC 7865 N County Road 100E Lizton, Indiana 46149

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Lastec, Inc. 7865 N. County Road 100E Lizton, IN 46149

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SECTION 1 TO THE OWNER

1.1 Read This Manual BEFORE Operating The Articulator



Do not allow anyone to operate the Articulator without first reading and understanding this operator's manual in its entirety. Never allow children to operate the Articulator. Never operate the Articulator when children are present.

The information presented herein will prepare you to operate the Articulator in a safe and knowledgeable manner. Proper operation of the Articulator will provide a safer working environment, promote higher quality, and provide more efficient results.

Keep this manual on hand at all times for ready reference. The designed and tested safety of the Articulator is dependent upon its operation within the guidelines and limitations outlined in this manual. Always adhere to all the safety rules presented in this manual.

1.2 Product Registration

Immediately record the model and serial numbers of your Articulator in the spaces provided below.

Model Number:	
Serial Number:	

These numbers can be found on the serial number plate which is permanently affixed to the mower.

You should now fill out the warranty registration form online at **www.lastec.com** or located in the back of this section. This form must be completed and returned to the factory within fifteen (15) days of purchase in order to validate the warranty. Please do not hesitate!

1.3 If You Need To Order Parts

To order parts, contact your distributor. Be sure to have your model and serial number available as a reference. This will assist them in supplying you the correct and most current parts available for your Articulator.



CAUTION!

Always use only genuine Lastec parts when servicing your Articulator! Use of substitute parts may cause unsafe operation, unsatisfactory performance, and void the warranty of your Articulator!

1.4 Lastec Product Warranty

LASTEC LIMITED GOLF & TURF WARRANTY

Lastec ("warrantor"), with its place of business at 7865 N. County Road 100E, Lizton, IN 46149 warrants as stated herein to the original purchaser ("purchaser") for two (2) years or 2000 hours* of equipment use, whichever comes first, on parts and one (1) year of labor for equipment use from the date of purchase from Lastec ("warrantor"), that the equipment manufactured by warrantor and any optional equipment or accessories purchased at the same time, subject to the exclusions herein, will be free from defects in material and workmanship attributable to warrantor so long as it is operated and maintained in accordance with the instructions provided by warrantor and purchaser has completed the registration form or warrantor may choose to not honor any warranty claims. All urethane bushing hardware will be warranted for five (5) years from the date of purchase from Lastec.

* Applies to units with hour meters

90 Day Limited Warranty

Warrantor agrees to replace any defective wear components including but not limited to seals, bearings, idlers with bearings, wheels/tires, bushings and blades for ninety (90) days from date of purchase. After ninety (90) days, all wear components are no longer covered under further warranty from warrantor. Component failure as a result of improper maintenance of wear items may not be covered under warranty at the warrantor's discretion. After ninety (90) days, component failure as a result of loose hardware is no longer covered under further warranty from warrantor.

Warrantor agrees to warrant for a period of ninety (90) days from date of purchase to any original purchaser who is a rental yard, lease-based business or temporary use facility that the equipment manufactured by warrantor and any optional equipment or accessories purchased at the same time will be free from defects in material and workmanship attributable to warrantor so long as it is operated and maintained in accordance with instructions provided by warrantor. After ninety (90) days, no further warranty will exist for rental yard, lease-based or temporary use businesses or facilities.

Freight Allowance

Freight allowance for warranty – Next Day Air freight covered by warrantor in "mower down" situations for first year of warranty not to include wear items as listed above in the (90) day limited warranty. After the first year freight for warranty items would be limited to regular ground shipment at the discretion of the warrantor.

Warrantor's Obligations as to Defects

Warrantor's only responsibility shall be to replace any covered defects or repairs without cost to purchaser. Warrantor may request that such part or unit be returned to Warrantor's place of business. Purchaser will be responsible for transportation or shipping of part or unit to the distributor and such part must be returned to distributor within fifteen (15) days after requested. Warrantor shall have a reasonable time within which to replace or repair defective part or unit. If warrantor

determines that the part or unit is not defective under the terms of this warranty, then purchaser shall be responsible for expenses incurred by warrantor in returning part or unit to original purchaser. Warrantor gives no allowance for labor, travel time, mileage or incidental or consequential damages. Purchaser must submit warranty claims to a distributorship authorized by Warrantor. Warrantor's authorized distributors are responsible for all repairs and the processing of all warranty claims.

Warranty Parts Return

Lastec reserves the right to have parts returned that have been submitted for warranty. The service department will issue an RMA number. The part must be returned within 30 days of the requested return date. Parts not returned within 30 days of the RMA issue date will result in rejection of claim.

Limitations and Disclaimers of Other Warranties

EXCEPT FOR THE EXPRESS WARRANTY PROVISIONS STATED ABOVE, WARRANTOR DISCLAIMS ALL WARRANTIES, EXPRESS AND/OR IMPLIED, INCLUDING WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

No representation or other affirmation of fact by representatives of warrantor, whether verbal or in writing, including photographs, brochures, samples, models, or other sales aids, shall constitute a warranty or other basis for any legal action against warrantor. THE ORIGINAL PURCHASER, ANY PERSONS TO WHOM THIS EQUIPMENT IS TRANFERRED AND ANY INTENDED USER OR BENEFICIARY OF THIS EQUIPMENT SHALL NOT BE ENTITLED TO RECOVER ANY CONSEQUENTIAL OR INCIDENTAL DAMAGES FROM WARRANTOR FOR ANY REASON WHATSOEVER, INCLUDING WARRANTY OR DEFECT IN THE PRODUCT. Warrantor does not warrant that its equipment meets or complies with the requirements of a particular safety code or governmental requirements.

Design Changes

Warrantor reserves the right to change the design of its products from time to time without notice and without obligation to make corresponding changes in its products previously manufactured.

Rights of Purchasers

The validity and effect of this limited warranty as well as its interpretation, operation and effect, shall be determined exclusively by the principles of law and equity of the State of Indiana. This limited warranty gives purchaser specific legal rights. Purchaser may also have other rights, which may vary from State to State. Some States may not allow limitations as to duration of warranties so the above may not apply.

This contract supersedes all prior written and oral agreements related to the purchase and is intended to be an integration of the entire agreement between the parties. All of the promises, warranties, guarantees and representations made by warrantor or its representatives that are not specifically contained herein are not included in this warranty.

1.5 Component Manufacturers' Warranties

Some of the component parts of your Articulator are warranted by their respective manufacturers. These parts include:

Comer Gearbox

The complete manufacturers' warranty information for these components is available upon request. Contact your Lastec dealer if you have questions concerning warranties on these component parts.

1.6 Servicing The Articulator



CAUTION!

Always use only genuine Lastec parts when servicing the Articulator! Use of substitute parts may cause unsafe operation, unsatisfactory performance, and void the warranty of the Articulator!

The Articulator is carefully engineered and manufactured to provide safe, dependable, and satisfactory service. As with all other mechanical equipment, the Articulator requires routine inspection, cleaning and maintenance.

When servicing the Articulator, be sure to use only genuine Lastec parts. Utilization of substitute parts will not only void the warranty, but may also cause unsafe or unsatisfactory operation of the Articulator due to their substandard quality or incorrect application.

In order to handle all of your service needs, your authorized Lastec dealer stocks genuine Lastec parts, and has trained mechanics on hand.

Be sure to complete the following Lastec Warranty Registration Form and return to Lastec within 15 days of the purchase of the Articulator. This will aid you, Lastec, and Lastec distributor in warranting and servicing of your Articulator.

Warranty registration can also be done online through the Lastec website at **www.las-tec.com**.

1.7 Warranty Registration

La	stec Warrar	ity Reg	istration Fo	rm
IMPORTANT! To	-	istration form must n (15) days of purc	be completed in full and return	ned to Lastec wit
Compan		, , ,		
Company	Contact			
Mailing A	Address			
Shipping A	Address			
	Phone			
	Fax			
Authorized Co Representative Sig			I have read and understand and maintenance section manual for the machine o	s of the operator
	Mower Model:			
Distributor/Dealer	Serial Number:			
Distributor/Dealer	Date Purchased:			
	Purchase Price:			
	Custome	r Profile Int	formation	
			describes your business:	
Golf Course	Sod Farm Government	Schools College	Sports Complex Landscaping Company	Light Agricult Other
	Total Acreage Cut: Average Operating Hours:			nthly Annually
How	Did You Hear About	Us?	Your Laste	ec Mower
Please help us to be	tter serve you by completing to information:	he following survey	Please list the features and helped you to choose	
Do you own a Lasted	Mower, and if so what model	?		
How did you hear at	out Lastec?			
Who referred you to	Lastec?			
Who was the salesm	an that assisted you?			
Plaasa chack the hov	to your left if you would not allow Lastec to use yo	uir comnany's name for market	ing nurnoses	

SECTION 2 SAFETY INFORMATION

2.1 Warning Symbols

Following is a legend describing the warning symbols utilized throughout this manual, and the potential types of hazards which they indicate:



DANGER!

■ This symbol indicates a potential serious or fatal injury hazard. Failing to properly adhere to the instructions, rules, or procedures may result in serious injury or death.



WARNING!

■ This symbol indicates a potential personal injury hazard. *Failing to properly adhere to the instructions, rules, or procedures may result in personal injury.*



CAUTION!

■ This symbol indicates a potential equipment hazard. Failing to properly adhere to the instructions, rules, or procedures may result in personal equipment malfunction, damage, or destruction.

The above illustrated symbols are displayed throughout this manual in order to indicate important safety information. When one of these symbols appears in this manual, be aware of a potential hazard being discussed in the accompanying paragraphs. Hazards such as damage to equipment, serious personal injury, or even fatal injury are possible, perhaps even likely, if the accompanying instructions or procedures are not heeded.

2.2 Safety Decals and Symbols

The following safety symbols are used on the deck. Operators should become familiar with these symbols and heed the warnings where they appear on the deck.



Attention!



Pinching/Crushing Danger!



Caution! Rotating Blades!



Keep Hands and Feet Away from Blades!





Keep Covers Locked Down



Pinch Point!



Read the Manual!



Remove the Key!



Rotating Parts!



Rotating Shaft!



Stay Away!



Thrown Objects!

2.3 About This Manual



DANGER!

 Safety instructions are important! Read all safety rules in this manual as well as all safety rules in any related equipment manuals!



The purpose of this manual is to assist you in properly and safely operating and maintaining the deck. **Read and understand this entire manual** before attempting to set-up, operate, adjust, perform any maintenance on, or store the deck. This manual provides essential information and instructions which will help you enjoy years of dependable performance from the deck.

The designed and tested safety of the deck is dependent upon its operation within the parameters and limitations explained in this manual. Be familiar with and follow all safety rules in this manual as well as all safety rules for any related equipment.

Although these instructions have been compiled through extensive field experience and engineering data, some information presented herein may be general in nature due to unknown and/or varying operating conditions. However, these instructions, combined with your increasing experience with the deck, will enable you to develop procedures suitable to your particular cutting application.

The illustrations and data used in this manual were current at the time of printing, but the deck may vary slightly due to ongoing engineering changes. Lastec reserves the right to implement engineering and design changes to the deck as may be necessary without prior notification.

Throughout this manual, we make references to right and left directions. We determine right and left while sitting in the operator seat and facing in the direction of forward travel. Blade rotation is clockwise as viewed from the top of the deck.

2.4 Safety Guards And Covers

DANGER!



- NEVER operate the deck with any safety covers removed!
- Work safely! Follow all safety rules! A careful operator is the best insurance against accidents!

Some illustrations in this manual show the deck with safety covers removed in order to provide improved viewing of the particular components being discussed. *This is for informational purposes only -- never operate the deck without all covers, shields, safety devices, and grass chute or mulching plate installed and secure!*

Safety is a primary concern in the design and manufacture of all Lastec products. Unfortunately, our extensive efforts to provide safe equipment can be negated by a single careless act of an operator. In addition to the design and configuration of the deck, hazard control and accident prevention are also dependent upon the awareness, concern, prudence and proper training of all personnel involved in the operation, transportation, maintenance, and storage of the deck.

The best safety device is an informed, careful operator!

We ask you to be that kind of operator.

2.5 Pre-operational Safety Rules

DANGER!



- NEVER allow children to operate the deck!
- NEVER allow children on or near the deck!
- NEVER operate the deck when children are present.
- ALWAYS clear area of all personnel before operating the deck!

WARNING!



- NEVER allow anyone to operate the deck without proper instruction! Any and all operators must be instructed in and capable of the safe operation of the deck, its attachments, and controls!
- KNOW the controls and how to stop the deck quickly in an emergency!
- READ this entire manual before attempting to operate the deck! Only allow persons who have read and understand the entire operator's manual to operate the deck!
- Always wear relatively tight and belted clothing to avoid entanglement in moving parts. Wear sturdy rough-soled work shoes, as well as protective equipment for the eyes, hands, hearing and head. Never operate the deck or related equipment in bare feet, sandals, or sneakers.
- Clear the cut area of stones, branches, balls or other debris that may be thrown and cause injury or damage.
- Verify that all safety decals are properly installed, visible, and legible.
- Always remove accumulated debris, fuel, or excess grease and oil from the drive unit engine area to avoid a fire hazard.
- Verify that the deck is properly mounted, set up, adjusted, and in good operating condition.
- Always perform the pre-operation equipment inspection and the appropriate maintenance schedule (Section 5) before operating the deck.
- Do not change the engine governor settings or over-speed the engine.

2.6 Operational Safety Rules



DANGER!

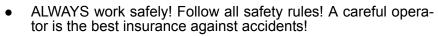
- NEVER allow children to operate the deck!
- NEVER allow children on or near the deck!
- NEVER operate the deck when children are present.
- ALWAYS clear area of all personnel before operating the deck!

DANGER!



- NEVER operate the deck without all safety covers properly installed and in good condition!
- ALWAYS stay well clear of all moving parts!
- ALWAYS stay clear of blades during operation!

WARNING!





- ALWAYS clear area of all personnel before operating the deck!
- Only allow persons who have read and understand the entire operator's manual to operate the deck!
- Be sure that the parking brake is set before attempting to start the engine.
- Operate only in daylight or good artificial light (min. 200 Lux).
- Operate the Articulator only from the operator seat.
- Always wear ear protection when operating the Articulator.
- Never cut more than 1/3 of the grass length at one time since this Articulator is a finish mower.
- Be sure that all auxiliary equipment switches (blades, lights, etc.) are in the OFF position before attempting to start the engine.
- Be sure your drive unit is equipped with a ROPS (Roll Over Protection System), and be sure to wear your seat belt.

- Never operate the deck without the grass chute or mulching plate installed and secure.
- Never operate the deck unless all covers, shields, and safety devices are installed and secure.
- Never permit any person other than the operator to ride or board the drive unit or deck at any time. Never allow riders!
- Never allow anyone near the drive unit or deck while operating. Be sure that the area behind you is clear before operating in reverse!
- Never allow anyone near or in the path of discharge.
- Never discharge in the direction of bystanders, vehicles, or buildings.
- Do not stop or start suddenly when going up or down a hill. Avoid operating on steep slopes.
- Do not mow in reverse unless absolutely necessary and then only after careful and constant observation of entire area behind the drive unit and deck.
- Use extreme care and maintain minimum ground speed when transporting on a hillside or over rough ground, and when operating close to ditches, fences, or water.
- Reduce speed on slopes and in sharp turns to minimize potential tipping or loss of control. Use caution when changing directions on slopes.
- Be alert for holes in the terrain as well as any other hidden hazard. Always drive slowly over rough ground.
- Disengage the blades, stop the engine, set the parking brake, and remove the key before dismounting the drive unit or making any adjustments to the deck.
- Stop the drive unit immediately upon striking any obstruction. Disengage the blades, turn off the engine, set the parking brake, remove the key, and inspect the drive unit and deck for any damage. Always repair any damage before resuming operation of the deck.
- Never adjust the mower deck height or lift the deck into transport position while the blades are engaged.
- Never engage the blades with the mower decks raised into transport position.
- Never place your hands or feet under the deck while the engine is running.

- Stay well clear of any and all moving parts.
- Keep hands and feet away from the blades at all times during operation.
- Take all possible precautions when leaving the drive unit and deck unattended: disengage the blades, turn off the engine, set the parking brake, and remove the key anytime you leave the drive unit and deck unattended.
- If your drive unit is equipped with headlights and hazard lights, always activate them whenever crossing or accessing any roadways, driveways, or parking lots. Watch for oncoming traffic.
- Handle fuel with caution it is explosive! Always use approved fuel containers; never handle fuel near an open flame; never use fuel as a solvent; never fuel the drive unit while the engine is running or hot; never fuel the deck indoors; never fuel while on drive unit; always clean up any spilled fuel; never smoke around fuel or while fueling.
- Do not allow extended running of drive unit engine indoors exhaust fumes are deadly.

2.7 Maintenance Safety Rules

Danger

DANGER!

- ALWAYS disengage the blades, turn off the engine, set the parking brake, and remove the key before performing any service to, maintenance on, or adjustments to the deck!
- NEVER allow children on or around the deck!
- Never perform maintenance on the deck when children are present.
- Always perform the appropriate maintenance schedule(s) in a timely fashion.
- Never allow anyone near any operator controls while performing adjustments, service or maintenance to the drive unit or deck.
- Always use personal protection equipment such as eye, hand, head, and ear protection when performing any service or maintenance to the drive unit or deck.
- Keep the drive unit engine area free of accumulated debris, fuel, or excess grease and oil to reduce fire hazard.
- Keep the deck in good operating condition with all safety devices in place.
- Check the blades frequently. Verify that they are sharp, free of nicks and cracks, and securely fastened.
- Periodically tighten all bolts, nuts and screws. Verify that all fasteners are properly installed to ensure the drive unit and deck are in safe operating condition.
- Upon completing any maintenance or service function, verify that all safety guards and devices are properly installed before operating the drive unit or deck.
- Verify that all warning labels and decals are properly installed, visible, and legible.
- Always remove debris from the top and bottom of the deck after each use.

2.8 Storage Safety Rules



DANGER!

- NEVER allow the extended running of any engine indoors! Exhaust gasses contain carbon monoxide, an odorless and deadly poison!
- NEVER allow children on or around the deck!
- Never store the deck in any area accessible by children.
- Never allow extended running of any engine indoors. Exhaust fumes are deadly.
- Never store drive unit with fuel in the tank inside a building where fumes could reach an open flame or spark.
- Allow the drive unit engine to cool before storing in an enclosed area.
- Remove all accumulated debris from the drive unit, and both the top and bottom of the deck before storing.
- Sand chipped or scratched areas and re-paint them to prevent rust during storage.
- Lubricate all moving parts of the drive unit and deck to prevent rust during storage.
- Always remove the PTO shaft for storage.
- Always lock the safety pins on the raised decks.

2.9 Hazard Identified Chart

Hazard Identified	Risk Source	Control Measure
Operator injury	Inexperience	Complete Owner's Manual supplied covering all aspects of operating the unit. Various warning decals strategically placed on the unit.
Danger of entanglement	Moving parts, especially if using a PTO. Guards are not in place.	Warning decals stating guards must be in place. Physical guards around belts, pulleys and shafts. Clear warning in manual.
Danger of dismemberment	Cutting blades	Warning decals. Clear warning in manual. Physical guards around blades. Clear prohibitions outlined in manual.
Danger of projectile strike	Ejected debris from cutting blades	Warning decals. Clear warning in manual. Physical guards around blades.
Finger pinch points	Moving parts	Warning decals stating hazardous locations. Physical guards around such points. Clear warning in manual.

2-12 Lastec//020515 Safety Information

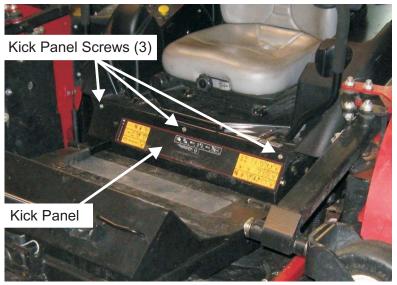
SECTION 3 INITIAL SET-UP

3.1 Assembly Instructions

The Lastec Deck Kit 100ETZ is shipped on a separate pallet from the Toro 30381 drive unit. Unpack the Toro 30381 drive unit and lift the unit from the pallet using an overhead hoist. Unpack the Lastec deck kit and remove the drive unit wheels from the pallet. Install the wheels to the drive unit. Use the lug nuts from the 7210 drive unit to secure the wheels in place. Torque the lug nuts to 75-100 ft/lbs. Inflate the tires to 15 psi. Lower the drive unit to the floor. Allow the drive unit to carefully tip and rest on the rear bumper. Install the roll bar and lock it into the folded position.

Mower Deck Installation

Remove the three kick panel screws and remove the kick panel from the drive unit. Keep all the parts for re-installation.



TR1023

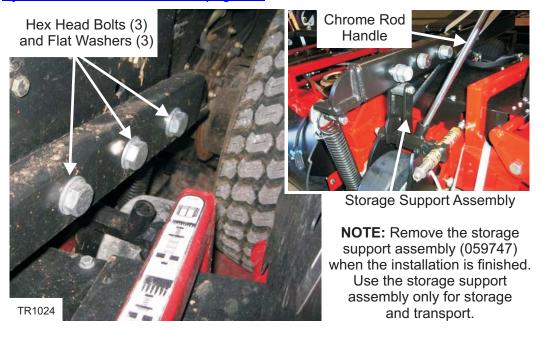
Remove the deck from the pallet and position it in front of the drive unit. Secure the two wing decks before clipping the nylon straps.



DECKS ARE NOT LOCKED FOR SHIPPING. THEY WILL COME DOWN WHEN SHIPPING STRAPS ARE CUT.

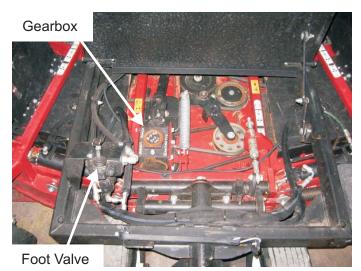
Use two people to hold the wing decks in the raised position. Cut the straps and carefully lower wing decks to the ground.

Align the deck and drive unit so the mounting bolt holes line up on both sides. Use the shipping stands, if necessary, when aligning the deck with the drive unit. Also, use the chrome rod handle located at the front of the deck to raise or lower the deck frame in relation to the drive unit as shown below. **IMPORTANT:** It can be easier to remove the hydraulic hose attached to the inner side of the foot valve (supplied by Lastec) and install it to the drive unit hydraulic pump before installing the mower deck to the drive unit. <u>See Hydraulic Hoses Installation on page 3-4</u> for details.



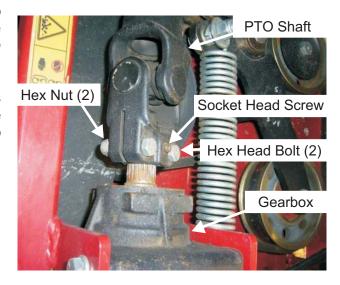
Install the provided hex head bolts and flat washers from the outside of the frame. The nylon lock nuts must be installed on the inside of the frame. Install all the provided hex head bolts, flat washers and nylon lock nuts before tightening. Torque all the hex head bolts and nuts to 265 ft/lbs.

Lift the deck foot pan to access the foot valve and the gearbox located on the middle deck.



TR1025

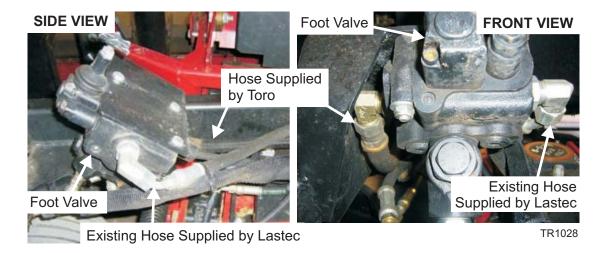
Attach the PTO shaft to the gearbox and drive unit. Secure the PTO shaft to the gearbox with the provided socket head screw, two hex head bolts and hex nuts. Torque the two hex head bolts to 15-19 ft/lbs.



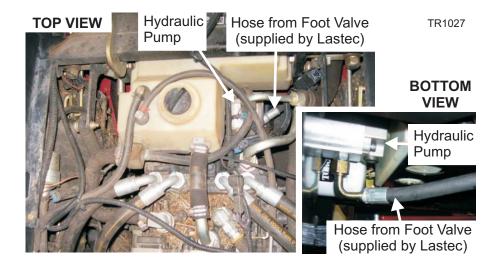
TR1026

Hydraulic Hoses Installation

Route the hose supplied with the Toro drive unit to the foot valve. Connect the hose to the fitting on the outer side of the foot valve as shown below.



Route the hose attached to the inner side of the foot valve (supplied by Lastec) to the hydraulic pump located on the drive unit. Connect the hose to the bottom of the hydraulic pump. (Remove any existing hoses or fittings that may be installed there.)



IMPORTANT! Use the hose clips on the side of the frame to secure the hoses in place. If necessary, some clips may need to be removed or repositioned. Make sure all the hoses have adequate clearance to moving components.

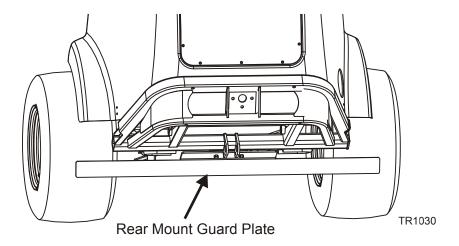
Deflector Installation

Install the grass discharge rubber guard located on the middle deck to the underside of the drive unit. Use the provided rubber clamp plate and fasteners to secure the rubber guard to the frame.



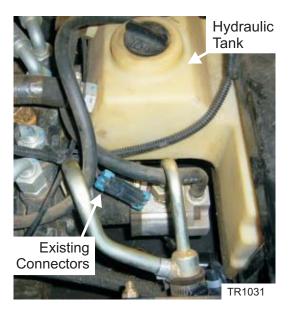
TR1029

Install the provided rear mount guard plate to the drive unit as shown below. Use the provided fastener to secure the guard plate in place.

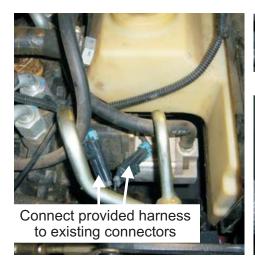


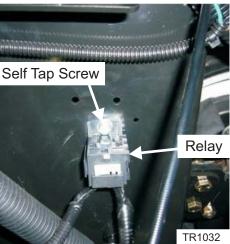
Electrical Installation

Lift the operator seat to access the hydraulic valve compartment. Locate the existing connectors next to the hydraulic tank. Disconnect the connectors.



Connect the two connectors from the provided harness (063236) to the connectors located next to the hydraulic tank. Install the harness relay to the side of the hydraulic valve compartment. Use the provided self tap screw and one of the existing holes in the side panel to secure the relay in place. Use the provided wire ties to secure the harness to the existing harnesses inside the hydraulic valve compartment.





Lower the operator seat and deck foot pan. Reinstall the kick panel to the drive unit.

When the deck installation procedure is complete, raise and lower the wing decks to purge air from the hydraulic system. Check the wing deck locks for ease of operation.

3.2 Transporting the Mounted Deck

Engaging the drive unit hydraulics on the foot pan to move the deck upward will raise the wing decks to the transport position. Wing decks should be locked upright for long haul transport, but it is not necessary for routine travel.

3.3 Gearbox

Check the oil level and condition in the gearbox. Use the dipstick on the gearbox. Add oil if low. If the oil appears excessively contaminated, change the gearbox oil -- 12 oz. of SAE EP90 (80W-90).

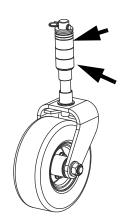
Inspect the entire area around and under the gearbox for any oil leakage. If a leak is discovered, repair it and refill the gearbox before operating the deck.

3.4 Mower Deck Height Adjustment

The Articulator can be set to various heights ranging from 1" to 4-3/4".

Change the mower deck height at all the front wheel yoke locations by moving the wheel spacers from above to below each wheel yoke collar on each wheel yoke shaft. When there are no wheel spacers located below the collar, the deck is set at 1". There are two types of wheel spacers, 1" thick and 1/4" thick. Placing any combination of wheel spacers below the wheel shaft collar will raise the deck by the corresponding thickness of the spacer(s) used.

Example: (1) 1" spacer and (2) 1/4" spacers placed below the wheel yoke collars will set the mower deck to 2-1/2".



3.5 Mower Deck Leveling Adjustment

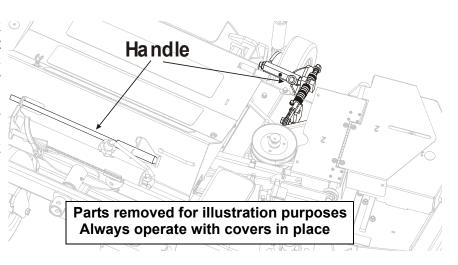
DANGER!



- Always stop the drive unit and disengage the PTO before attempting to set or adjust the mower deck height!
- Never adjust the mower deck height with the drive unit running or the PTO engaged.

The 100ETZ comes pre-leveled from the factory. Should re-leveling become necessary, follow the following procedures.

The mower deck wheel lock height adjustment rod has one (1) permanently fixed spacer, and twelve (13) adjustable spacers, each equal to 1/4" of deck height adjustment.



Using the handle from the front of the deck fitted into the wheel weldment allows you to manually release tension on the adjustment rod and reposition the spacers as desired. Each adjustable spacer in front of the lock bracket raises the deck height by 1/4", up to 4". The spacers which mark the 2", 3", and 4" deck height positions are knurled for quick identification.

- 1. Set the deck height adjustment wheel lock spacers on both wheels (left and right of drive unit) with the locks positioned for 2".
- 2. Measure the front of each deck from the tip of the blade to the floor. They should all measure 2", +/- 1/8".
- 3. If any deck does not fall within this range, place 2" blocks underneath the front and back of each deck. Jam Nut Make sure that the 2" blocks are positioned on a flat surface. The 2" blocks need to be positioned at the closest point to each wheel.
- 4. Starting with the center deck first, check the spacers on the **front wheel** yoke assembly at correct spacing for the yoke and for the deck setting. The leveling on the front yokes was preset at the factory, and should not need adjustment. In case of accident or equipment damage, additional or replacement spacers may be obtained from your Lastec dealer, if necessary.
- **5.** Adjust the rear wheel lock spacers to remove any excess slack by loosening the jam nut, adjusting the rod on wheel lock arm until any slack in the rod is taken up, and then tightening the jam nut.
- 6. Continue with the other decks until all decks have been adjusted.
- 7. Remove the 2" blocks from under the blades.
- **8.** Re-measure the fronts of all decks. They should all measure 2", +/- 1/8", from the tip of the blade to the floor. If any deck does not fall within this range, repeat the steps above.

3.6 Deck Belts and Alignment

WARNING!



- NEVER inspect, adjust, or change the deck drive belts while the drive unit is running.
- Always clean the entire deck (including under the belt covers) of all grease, oil, fuel, grass or debris to prevent fire or projectile hazards.

Caution

CAUTION!

When cutting with new belts, do not over-power the deck within the first few hours of operation. Listen for excessive belt slippage. Check belt tension after 2 hours of operation. Check all belt tension adjustment hardware after the first 8 hours of operation.

Again, the overall life of the deck drive and deck belts is more greatly affected by the attention given them within their initial 8 hours of use than at any other time. Properly adjusted, the belts can perform over 1000 hours of service. Improperly adjusted, they can fail within a few hours. Be aware that over 50% of the total belt stretch will occur within the first few hours of use.

To access each belt, remove the belt cover hardware, and lift the belt cover from the mower deck. The mower deck belts are located under the belt covers on each deck. To access each belt, remove the nuts and washers and lift the belt cover from the mower deck. The spring idler belt tensioning system automatically tensions the belts on the mower decks, thus eliminating the need for manual belt tension adjustment.

Check the belts for visible wear or damage. If any belt appears excessively worn, damaged, cracked, weathered, or otherwise appears to pose an unsuitable or unsafe operating condition, replace the belt.

Check the belts for proper tension. If an idler tensioner pivots to its maximum stroke without adequately tightening the belt, you need to replace the belt. If the belt you are checking is new, and the idler tensioner pivots to its maximum stroke without adequately tightening the belt, it is likely you have installed the wrong size belt. Contact your dealer for the proper belt lengths for your deck.

If you are unable to install a new belt with the idler system at its minimum stroke, it is likely you are installing the wrong size belt. Contact your Lastec dealer for proper belt lengths for your deck.

Be sure that each idler pulley tensioning spring is properly installed and in good condition.

If for some reason this spring becomes loose, detached, or fatigued, the idler will not properly tension the belt.

Clean each entire deck (including under the belt covers) of all excess grease, oil, fuel, grass, or debris before operating the deck. This will help prevent damage to the equipment, fire hazard, and projectile hazards.

Be sure to replace all belt covers and hardware.

3.7 Blades

DANGER!



- NEVER inspect, adjust, change, or perform any other maintenance to the blades while the engine is running!
- ALWAYS turn off the blades, turn off the engine, remove the key, and set the parking brake before attempting to inspect, adjust, change, or perform any other maintenance to the blades!
- Keep all personnel clear of all controls while inspecting, adjusting, changing, or performing maintenance to the blades!

The Model 100ETZ deck utilizes five individual 21" blades, located under each articulated mower deck.

NEVER go near, or expose yourself or others in any way to the blades while the engine is running!

ALWAYS disengage the blades, turn off the drive unit, remove the key, and set the parking brake before attempting to inspect, adjust, change or perform any other maintenance to the blades!

Keep all personnel clear of all controls while inspecting, adjusting, changing, or performing maintenance to the blades!

Inspect all blades for proper installation, orientation, tightness, sharpness, and overall condition. Be sure the lift fins are oriented to the top of the blades. Verify that the mount bolts are secure, the blades are sharp, and free of any nicks, cracks, or bends. Always replace any damaged, dull, or missing blades before operating the deck. The recommended torque value for the blade bolts is **75 ft/lbs**.

Contact your distributor for further information about optional blades available.

3.8 Deck Wheels

Verify proper function of all mower deck wheels. The wheels should turn freely without excessive side-to-side motion, and be free of debris. Clean, adjust, or replace as necessary.

Check that each yoke wheel swivels freely in the shaft pivot collar, and the bushings are in good condition. If any wheel does not swivel freely, clean and grease the shaft collar assembly. Replace the bushings if necessary.

Grease each wheel after 8 hours of use and replace any worn or damaged tires.

Always replace damaged wheels with the identical part. Mixing various brands, styles and/or sizes of wheels will degrade leveling and cutting performance.

3.9 General

Verify that all warning decals are in place, visible and legible.

Verify that all covers and safety devices are properly installed and fastened.

Check that the discharge chutes are clear of debris, properly mounted, and in good condition.

Inspect entire deck for loose or entangled parts, debris, obstructions, neglected tools, or any other possible safety hazards, equipment hazards or projectile hazards.

3.10 Pre-Operation Equipment Inspection Checklist

Perform the following equipment inspection prior to each operation.

- □ With the drive unit and deck parked on level ground, verify that the deck is properly mounted to the drive unit and secure.
- Verify that the PTO shaft is properly mounted and secure.
- Check the oil level in the gearbox.
- Inspect area around and under the gearbox for any oil leakage.
- □ Set the deck height to the desired level. If necessary, calibrate the deck height.
- □ Check the deck drive belt and idler tension spring for proper installation, tension and condition.
- □ Check all deck belts for proper tension.
- □ Clean each entire deck area (including under the belt covers) of all grease, oil, fuel, grass, or debris. Be sure to replace all covers, shields, and guards.
- Inspect all blades for proper installation, orientation, tightness, sharpness, and overall condition.
- Verify proper function of all wheels.
- □ Verify that all warning decals are in place, visible and legible.
- Verify that all covers and safety devices are properly installed and secure.
- Check that the discharge chutes are clear of debris, properly mounted, and in good condition.
- Inspect entire deck for loose or entangled parts, debris, obstructions, or neglected tools.
- Perform all safety, set-up, and pre-operation procedures listed in your drive unit manual.
- Complete the appropriate maintenance checklist (section 5).

SECTION 4 OPERATING PROCEDURES

4.1 Transporting The Deck



DANGER!

- Never engage the PTO when the deck is in the transport position!
- Never raise the deck into the transport position while the PTO is enganged.

Complete the Initial Set-Up section of this manual BEFORE attempting to operate the deck.

The Model 100ETZ deck uses hydraulics fold up the two outside decks, allowing easy transportation. This feature has many other benefits, including remote operation, access across narrow bridges, through gates, or doorways, and reduction of required storage space. For long term storage or long distance transportation, use the locks on the outer decks to keep the decks in the upright position. Locks are not necessary for routine operation.

4.2 Hydraulic Lift Operation

When properly operated, the hydraulic lift unit enables remote folding and safe transportation of the deck. As with all industrial equipment, improper operation of the hydraulic lift unit may result in damage to equipment, serious personal injury, or fatal injury. Follow the instructions carefully when operating the lift unit.

DANGER!



- Never engage the PTO with the decks raised!
- Never raise the decks with the PTO engaged!
- Never operate the hydraulics with the PTO engaged!
- Damage to equipment, serious personal injury, or fatal injury can result!

The 100ETZ deck mowing decks come leveled from the factory. Should deck leveling be necessary during maintenance, see the section on Mower Deck Leveling Adjustment in the Set-up section of this manual.

- **1.** Disengage the PTO. Wait for all motion to stop.
- 2. Slowly engage the hydraulics.

- **3.** As the decks begin to rise, watch carefully to be sure there is no obstruction or binding in the deck.
- **4.** Activate the hydraulics until the decks raise. Both outside decks fold completely.
- **5.** The deck is now ready for transport.
- **6.** Upon arriving at the work area, activate the hydraulics, lowering the deck. Lower the decks until the hydraulic cylinders are fully extended on the wing decks

4.3 Preparation For Cutting

DANGER!



- Always follow all safety rules stated in this manual and in your drive unit manual. A
 well-informed, safety-conscience operator is the best safeguard against accidents
 or injuries.
- Never allow extended running of any engine indoors! Exhaust gasses contain carbon-monoxide, and can be fatal.

Warning

WARNING!

■ Never attempt to operate the deck until you have read and understood this manual and your drive unit manual in their entirety!

CAUTION!



- Always perform the preoperation equipment inspection before attempting to operate the deck.
- Always perform the appropriate maintenance schedule(s) before attempting to operate the deck.

The deck is designed specifically for finish mowing applications. One of the unique benefits of the deck's cutting system is its ability to float over contours that are impossible for other wide-area mowers to cut accurately. The deck offers a high level of maneuverability.

Although the deck is an industrial-quality mower, do not attempt to use it to cut extremely long grass or areas heavy with brush or debris.

Before operating the deck, you must read and completely understand this manual as well as the drive unit manual. In addition, you must also complete the appropriate maintenance schedules and perform a complete pre-operating checklist.

- Complete the Initial Set-Up section of this manual BEFORE attempting to operate the deck.
- After transporting to the work area, lower the deck into cutting position.
- Be sure the deck is not positioned over any debris or loose objects.
- Be sure there are no people near the deck, especially in the path of discharge.
- Start the drive unit. Keep the drive unit on a low RPM setting. DO NOT ENGAGE THE PTO WITH THE DRIVE UNIT AT HIGH IDLE.
- Engage the PTO.
- If there is any belt squeal, excessive vibration, or any indication of obstructions or debris in the blades, disengage the PTO at once.
- If the deck appears to be operating correctly, slowly increase the drive unit engine speed until the PTO shaft is operating at the drive unit manufacturer's recommended operating RPM. DO NOT EXCEED THIS RPM DURING OPERATION OF THE DECK.
- Release the parking brake and carefully begin cutting.

4.4 Recommended Blades

Ultra Low Blade (Part No. 063265 for 21" Blade and 063266 for 25" Blade)

Use Ultra Low Lift Blade when the conditions are dry and in sandy soil areas. When conditions like this are evident, lift created by the cutter blades can be reduced, decreasing the abrasion wear to the cutter blades and deck caused by sand. The Low Lift Blade will also help reduce cutter deck blowout during the conditions stated above.

Low-Lift Blade (Part No. P246 for 21" Blade and P849 for 25" Blade)

Low-Lift Blade is recommended for 1"-2" cutting height. Use a Low Lift Blade when the conditions are dry, the region is experiencing a drought, in sandy soil areas or when performing seasonal scalping. When conditions like this are evident, lift created by the cutter blades can be reduced, decreasing the abrasion wear to the cutter blades and deck caused by sand. The Low Lift Blade will also help reduce cutter deck blowout during the conditions stated above.

High-Lift Blade (Part No. P128 for 21" Blade and P701 for 25" Blade)

High-Lift Blade is recommended for cool season grasses and cut heights of 2" and above, unless in sandy conditions. These blades are shipped standard on all mowers.

Use a High Lift Blade when the conditions are extremely wet or heavy. The High Lift Blades will create greater lift that may be needed in difficult cutting conditions. Additional deck cleaning may be required when using High Lift Blades.

Gator Mulching Blade (Part No. P322 for 21" Blade and P848 for 25" Blade)

Mulching blades are designed for use with a mulching (discharge block-off) plate or with a complete mulching system. These blades feature a high lift, "double-cut" edge for quick, thorough shredding of grass clippings, leaves and debris.

4.5 Ground Speed



CAUTION!

- Excessive ground speed over rough terrain can cause structural damage to the deck.
- Always drive cautiously and reduce ground speed when driving over rough terraine.

Recommended ground speed range for the deck is 3 to 5 MPH. Your speed may vary within this range as your cutting conditions vary. Excessive ground speed while traveling over rough terrain can cause the deck to bounce excessively, which in turn increases the stress on its structure and the likelihood of damage to the machine. Thus, while a higher ground speed is acceptable for wide, open, flat areas, a slower ground speed is required for rough or contoured areas.

Always adhere to the drive unit manufacturer's recommended ground speed range when operating the deck.

4.6 Cutting In Reverse



WARNING!

Always ensure the area behind the drive unit is clear of people or obstacles before backing the deck and drive unit.

Be sure entire area around the drive unit and deck are clear of people or obstructions before traveling in reverse.

If you are not familiar with backing techniques, practice in an open area to develop the required skills before operating the deck.

When backing up with the deck, with the blades on or off, you must carefully watch the area around the deck for obstacles, people, pets and anything that the machine could come into contact with.

4.7 Cutting Extreme Contours



WARNING!

- Always use a drive unit equipped with ROPS.
- Always wear your seat belt.

The deck cuts contoured areas well, producing a quality of cut which rivals that of a single push mower.

The basic rule of thumb to use when judging the ability of the deck to handle a contoured area is to cut the area with a 21" push mower set at the same height as the deck. If the mower cuts without scalping, the deck will be able to handle the area.

When cutting extreme contours, always use a drive unit equipped with a ROPS, and always wear your seat belt.

Following are important guidelines to follow when cutting extreme contours or side hills:

- Never exceed the drive unit manufacturer's maximum side slope ratings.
- Always use a drive unit equipped with a ROPS.
- Always wear your seatbelt.
- Do not operate the deck in areas which are so extremely contoured that it causes the PTO shaft chatter or vibrate.

4.8 Cutting Wet Grass

Operation of the deck is not adversely affected by wet cutting conditions. However, a slower ground speed is recommended for improved grass discharge and reduced turf tear.

If, when cutting excessively wet or tall grass at reduced ground speed, you still do not get adequate grass discharge, consider making two passes over the area.



SECTION 5 MAINTENANCE

CAUTION!





 Failure to perform the appropriate maintenance checklists at the proper time interval will cause damage to the deck, unsafe operating conditions and substandard performance.

Along with completing the Pre-Operation Equipment Inspection Checklist *each time* you operate the deck, complete the following Maintenance Checklists at the indicated time intervals.

5.1 Every 8 Operating Hours

- Complete the Pre-Operation Equipment Inspection Checklist.
- Grease all grease zerks.
- Verify all hardware is functional, securely fastened and in good condition.
- Grease all wheel hubs.
- Grease the PTO shaft collar and both cross bearings.
- Inspect all belts for cracks, wear, or damage; replace as needed.
- Inspect the spindle bearing grease seals (under each deck) for grease leakage or improper seating.
- Inspect gearbox and seals for leaks.
- Verify that the split-tapered bushing bolts mounted in the drive pulley under the gearbox are tight. (Torque to 96-120 in.lbs.)
- Lubricate all joints and moving parts which are not equipped with grease fittings. (Recommend the use a nickel-based anti-seize for these areas).
- Inspect entire deck for loose or entangled parts, debris, obstructions, misplaced tools, or any other possible safety hazards, equipment hazards or projectile hazards. Clean off decks of any dirt, grease or oil.
- Perform the appropriate maintenance procedures listed in your drive unit manual.
- Verify proper installation, operation and flow of grass chutes.

5.2 First 8 Hours

- Check deck alignment and belt tension.
- Lubricate the PTO quick-disconnect pin or twist sleeve. (*Recommend the use a nickel-based anti-seize for these areas*).

5.3 First 50 Hours

■ Change the gearbox oil -- 12 oz. of SAE EP90 (80W-90).

5.4 Every 50 Operating Hours

- Check deck alignment and belt tension.
- Check deck drive belt alignment.
- Grease all blade spindle bearing housings. Fill until grease purges from the weep hole in the side of the bearing housing.
- Inspect all bushings for wear. Replace as needed.
- Check and clean, if necessary, any debris that may have accumulated during operation.
- Check gearbox lube level and condition.

5.5 Every 200 Operating Hours

■ Change the gearbox oil -- 12 oz. of SAE EP90 (80W-90).

5.6 Every 500 Operating Hours

- Inspect all blade spindle bearings for wear or damage. Replace if needed.
- Inspect and re-pack all wheel bearings. Replace if needed.
- Inspect all component parts and wear points. Repair or replace any worn, damaged, or missing parts.



5.7 Annual

- Replace gearbox shaft seals.
- Change the gearbox oil (12 oz. of SAE EP90 (80W-90)).
- Inspect deck pivot bolts and bushings. Replace if needed.

5.8 Model 100ETZ Deck Specifications

Mower Deck	Cutting Width	100"	
Mower Deck Configuration		(5) 21" Articulating Mower Decks	
Blades		(5) 21" High Lift	P128
		(5) 21" Low Lift	P246
		(5) 21" Mulching Blades	P322
		(5) 21" Low-Lift Ultra	063265
	Blade Tip Speed	Max 16,600 FPM	
	Paint	Toro Red	
		Black, 12 oz. Spray Can	L07467
	Mower Deck Height Range	1" to 4"	
	Operating Environment	Outdoor Use Only	
	Mower Deck Gauge Wheels	9" x 3" solid, white rim	061826
	Mower Drive Deck Belt	(1) Belt, B165 Main Drive	059707
	Mower Deck Belt	(2) Belt, Insta-Power 85830 (Outer decks)	041630
	Gearbox	Comer Industries	059294
	Gearbox Oil	12 oz. of SAE EP90 (80W-90)	

5.9 Model 100ETZ Deck Maintenance Chart

	Every 8 Hrs	Every 50 Hrs	Every 200 Hrs	Every 500 Hrs	Annual
Complete the Pre-Operation Equipment Inspection Checklist	•	•	•	*	•
Grease All Grease Zerks	•	•	•	•	•
Grease All Wheel Hubs	•	•	•	•	•
Grease PTO Shaft Collar & Both Cross Bearings	•	•	•	•	•
Inspect All Blade Spindle Bearings Grease Seals for Grease Leakage or Improper Seating	•	•	•	•	•
Verify that all hardware is is properly installed and functioning	•	•	•	•	•
Lubricate All Joints & Moving Parts Not Equipped With Grease Zerks	•	•	•	•	•
Inspect Articulator for Loose or Entangled Parts, Debris, Obstructions, Neglected Tools or Other Hazards	•	•	•	•	•
Perform the Appropriate Maintenance Procedures Listed In Your Tractor Manual	•	•	•	•	•
Verify grass chutes cleared	•	•	•	•	•
Clean, lube, retighten all guide wheels	*	•	•	•	•
Lubricate the PTO Quick-Disconnect Pin or Twist Sleeve		•	•	•	•
Check deck alignment and belt tension		•	•	•	•
Check drive belt alignment		•	•	•	•
Inspect gearbox pivot stops, wearpads, and bushings		•	•	•	•
Clean off any debris that has accumulated		•	•	•	•
Check bolts holding urethane bushings		•	•	•	•
Inspect gearbox and seals fopr leaks			•	•	•
Grease All Blade Spindle Bearing Housings			•	•	•
Inspect All Bushings			•	•	•
Check gearbox condition and lube/fill as needed			•	•	•
Change the Gearbox Oil with 75W90		**		•	•
Inspect All Blade Spindle Bearings for Wear, Damage, Debris, & Proper Installation				•	•
Re-pack All Wheel Bearings				•	•
Inspect All Component Parts And Wear Points				•	•
Replace gearbox shaft seals * First 8 hours, then every 50 after that ** First 50 hours, then every 200 after that					•

^{*} First 8 hours, then every 50 after that.

Maintenance Lastec Mowers/091812 5-5

^{**} First 50 hours, then every 200 afer that.

5.10 Torque Values

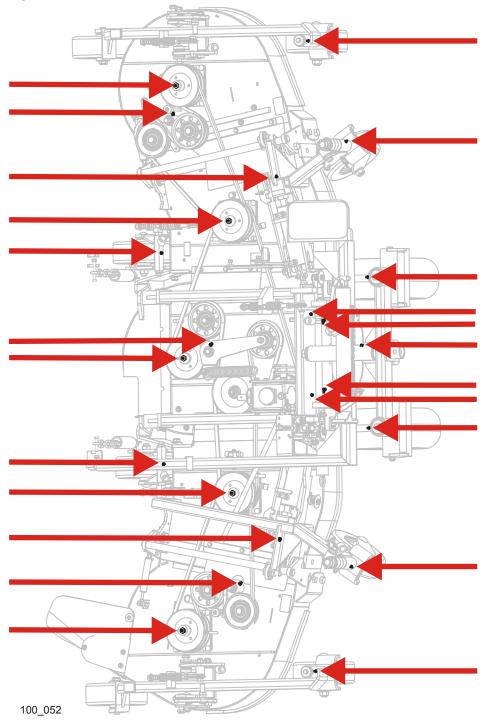
Below is a table of suggested torque values for this unit. Please use these torque values on this unit unless otherwise specified.

Grade		Units	SAE 5	SAE 8
Tensile			105000	150000
Strength			PSI	PSI
Grade Mark				
Bolt Dia.	Threads. Per In.	Units	SAE 5	SAE 8
6	32	in-lbs (Nm) ft-lbs (Nm)	20 (2.3)	30 (3.4)
8	32		24 (2.7)	45 (5.1)
10	24		35 (4.0)	50 (5.7)
10	32		40 (4.5)	65 (7.3)
12	24		50 (5.7)	125 (14.1)
1/4	20		95 (10.7)	150 (17.0)
1/4	28		17 (22.6)	23 (31.2)
5/16	18		20 (27.1)	25 (33.8)
5/16	24		30 (40.7)	40 (54.2)
3/8	16		35 (47.5)	45 (61.0)
3/8	24		50 (67.8)	65 (88.1)
7/16	14		55 (74.6)	70 (94.9)
7/16	20		75 (101.7)	100 (135.6)
1/2	13		85 (115.3)	110 (149.2)
1/2	20		105 (142.4)	135 (183.1)
9/16	12		115 (155.9)	150 (203.4)
9/16	18		150 (203.4)	195 (264.4)
5/8	11		160 (217.0)	210 (284.8)
3/4	10	ft-lbs (Nm)	170 (230.5)	220 (298.3)
3/4	16	ft-lbs (Nm)	175 (237.3)	225 (305.1)
7/8	9	ft-lbs (Nm)	302 (409.5)	473 (640.9)
7/8	14	ft-lbs (Nm)	300 (406.8)	400 (542.4)
1	8	ft-lbs (Nm)	466 (631.8)	714 (967.4)



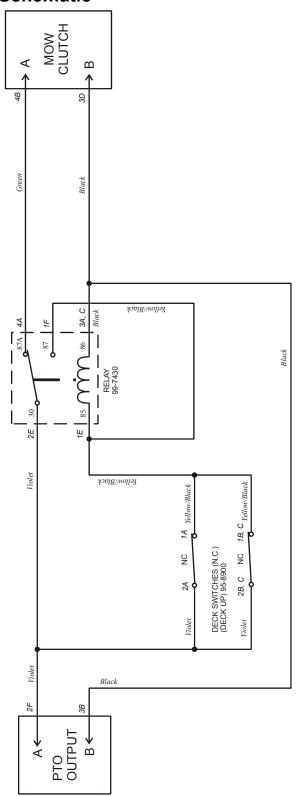
5.11 Lubrication Points

See Figure 5-1. The Articulator lubrication points are shown below.



IMPORTANT! Each wheel also has a fitting to be greased every 8 hours of operation.

5.12 Electrical Schematic



Toro 100EZT, Supplimental Harness Schematic P/N 063236 Rev. A.01

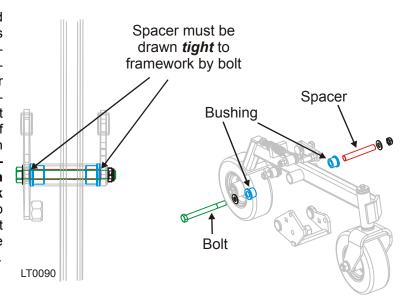
5.13 Urethane Bushings

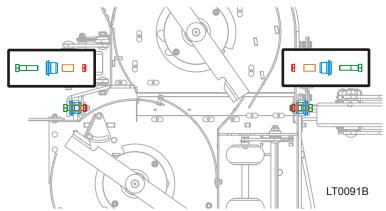


CAUTION!

Bolts holding urethane bushings must remain tight.

Urethane bushings are used throughout all Lastec mowers in various applications, including (but not limited to) articulating deck hinges and rocker arms. In all cases, the bushings ride on spacers that fit between the rotating pieces of framework, held tightly in place with bolts. It is important that the spacers remain tight between the framework at all times. Failure to keep these spacers tight will result in premature wear on the bolts, and equipment damage.





Ensure that ALL bolts associated with urethane bushings are tight at all times.

In some cases, urethane bushing applications are associated with grease points. The grease, in these cases, is used to protect the moving parts from corrosion due to water or other contaminants, and is not used for friction reduction. Ensure grease fills the cavity to prevent infiltration.