

JOHN DEERE
AG & TURF DIVISION

Autonomous Mower
Tango E5

OMSAU13401 B3

OPERATOR'S MANUAL



JOHN DEERE

Export Version
Printed in U.S.A.

Introduction

Thank You for Purchasing This Product

We appreciate having you as a customer and wish you many years of safe and satisfied use of your machine.

Using Your Operator's Manual

This manual is an important part of your machine and should remain with the machine when you sell it.

Reading your operator's manual will help you and others avoid personal injury or damage to the machine. Information given in this manual will provide the operator with the safest and most effective use of the machine. Knowing how to operate this machine safely and correctly will allow you to train others who may operate this machine.

This manual and safety signs on your machine may also be available in other languages (see your authorized dealer to order).

Sections in your operator's manual are placed in a specific order to help you understand all the safety messages and learn the controls so you can operate this machine safely. You can also use this manual to answer any specific operating or servicing questions. A convenient index located at the end of this book will help you to find needed information quickly.

The machine shown in this manual may differ slightly from your machine, but will be similar enough to help you understand our instructions.

RIGHT-HAND and LEFT-HAND sides are determined by facing in the direction the machine will travel when going forward. When you see a broken line (-----), the item referred to is hidden from view.

Before delivering this machine, your dealer performed a predelivery inspection to ensure best performance.

Machine Use

This machine is designed solely for use in customary lawn mowing and light grounds care operations. Use in any other way is considered as contrary to the intended use.

The manufacturer accepts no liability for damage or injury resulting from this misuse, and these risks must be borne solely by the user. Compliance with and strict adherence to the conditions of operation, service and repair as specified by the manufacturer also constitute essential elements for the intended use.

This machine should be operated, serviced and repaired only by persons familiar with all its particular characteristics and acquainted with the relevant safety rules (accident prevention). The accident prevention regulations, all other

generally recognized regulations on safety and occupational medicine and the road traffic regulations must be observed at all times.

Any arbitrary modifications carried out on this machine will relieve the manufacturer of all liability for any resulting damage or injury and invalidates the CE conformity.

Special Messages

Your manual contains special messages to bring attention to potential safety concerns, machine damage as well as helpful operating and servicing information. Please read all the information carefully to avoid injury and machine damage.



CAUTION: Avoid injury! This symbol and text highlight potential hazards or death to the operator or bystanders that may occur if the hazards or procedures are ignored.

IMPORTANT: Avoid damage! This text is used to tell the operator of actions or conditions that might result in damage to the machine.

NOTE: General information is given throughout the manual that may help the operator in the operation or service of the machine.

Product Identification

Record Identification Numbers

If you need to contact an Authorized Service Center for information on servicing, always provide the product model and identification numbers.

You will need to locate the identification numbers for the product. Record the information in the spaces provided below.



MX46973

DATE OF PURCHASE:

DEALER NAME:

DEALER PHONE:

PRODUCT IDENTIFICATION NUMBER (A):

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Hello dear friend!

Thank you very much for reading.

Enter the link into your browser.

The full manual is available for immediate download.

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Original Instruction

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John Deere Ag & Turf Division

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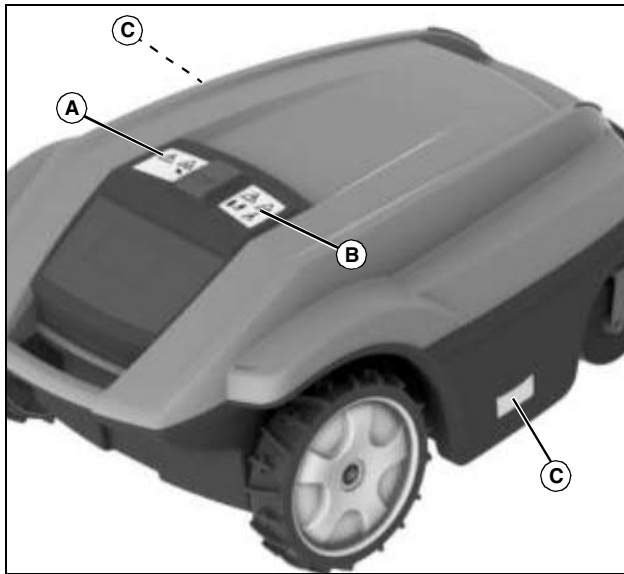
Previous Editions

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OMSAU13401 B3 -

Safety Labels

Safety Label Locations



MX28306

Picture Note: Use label number to locate complete text of safety label message following this illustration.

A - WARNING SAU11722

B - WARNING SAU12032

C - WARNING SAU12007

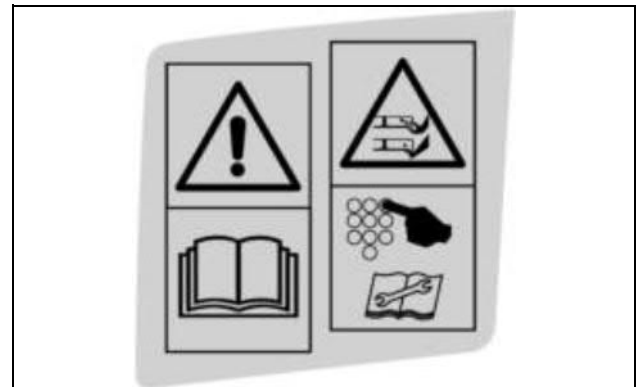


Pictorial Safety Signs

At several important places on this machine safety signs are affixed intended to signify potential danger. The hazard is identified by a pictorial in a warning triangle. An adjacent pictorial provides information how to avoid personal injury. These safety signs, their placement on the machine and a brief explanatory text are shown in this Safety section.

There can be additional safety information contained on parts and components sourced from suppliers that is not reproduced in this operator's manual.

WARNING SAU11722



SAU11722

- Read user instructions before operating the machine.
- Press down on Stop button and push main switch to OFF position before working on or lifting the machine.

WARNING SAU12032

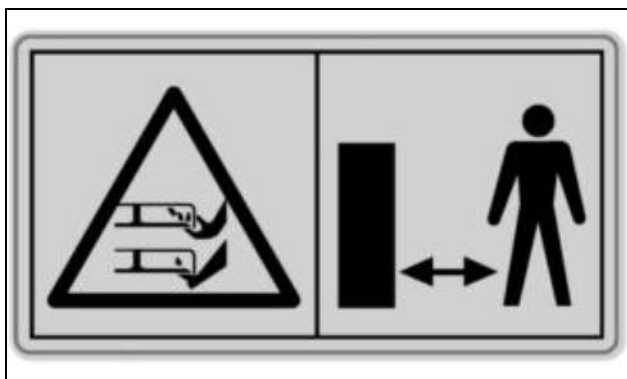


SAU12032

- Keep a safe distance from the machine when operating.
- Do not ride on the machine.

Safety Labels

WARNING SAU12007



SAU12007

- Keep a safe distance from the machine when operating.

Safety

Training

- Read the instructions carefully. Be familiar with the controls and the proper use of the equipment.
- Never allow children or people unfamiliar with these instructions to use the mower. Local regulations can restrict the age of the operator.
- Never mow while people, especially children, or pets are nearby without supervision.
- Keep in mind that the operator or user is responsible for accidents or hazards occurring to other people or their property.

Operation

- This mower is designed for mowing lawns. Any other use is not permitted. Using it for any other purposes may be dangerous or damage the machine, and will invalidate the warranty.
- Keep a safe distance from the machine when it is operating.
- Never allow children or animals to attempt to ride on the mower. Do not place objects on top of the mower during operation.
- Do not mow on excessively steep slopes.
- Do not operate sprinkler systems at the same time the mower is operating.
- Start mower operation according to instructions and with feet well away from the blades.
- Do not put hands or feet near or under rotating parts.
- Always check to be sure the main switch is in the OFF position before you transport the mower.
- Push down on the Stop button and push the main switch to the OFF position:
 - before checking, cleaning, or working on the mower;
 - after striking a foreign object. Inspect the mower for damage and make repairs before restarting and operating the equipment;
 - if the mower starts to vibrate abnormally (check immediately).
- Read, understand and follow all instructions in the manual and on the mower before starting.
- Inspect mower before you operate. Repair or replace damaged, badly worn, or missing parts. Make any necessary adjustments before you operate.
- Do not operate the mower if the safety systems are not working. Contact your dealer for service.

- Do not allow children in the mowing area without supervision.
- Be aware of scheduled mow times. Check the system date and time on your mower regularly. Adjust the time for changes in local time.
- Use only accessories approved by the manufacturer of the mower.
- Do not use the machine in explosion protected areas.

Maintenance and Storage

- Do not attempt to remove mower battery or blades. Contact your dealer for service and replacement.
- Check to be sure the main switch is in the OFF position before transporting the mower. Lift the mower by the handle and turn the machine so the mower blades are facing away from your body.
- Allow the mower to cool before storing in any enclosure.
- Replace worn or damaged parts for safety.
- Never allow untrained personnel to service mower. Understand service procedure before doing work.
- Use care when checking blades. Wrap the blades or wear gloves, and use caution when servicing them. Contact your dealer for blade replacement.
- Keep hands, feet, clothing, jewelry and long hair away from moving parts.
- Keep all parts in good working condition and all hardware tightened. Replace all worn or damaged decals.

Checking Mowing Area

- Clear the mowing area of objects that might be thrown or damaged. Check to be certain no ropes or wires are loose in the mowing area. If mower boundary wire is installed above ground it must be flat on the ground so it will not be picked up by the mower running blade. Ropes or wires in the mower running blade could injure legs or feet.
- Keep people and pets out of the mowing area.
- Study the mowing area. Do not mow after heavy rains, or other yard condition changing events.

Stopping Safely

1. If mower is operating, approach from behind. Mower may change its direction as you approach. Be aware of any obstacles mower may contact and change its direction as you approach.

Safety

2. Push down on Stop button on top of mower.
3. Push the main switch to the OFF position.

recommended.

Rotating Blades are Dangerous - Protect Children and Prevent Accidents

- Children are often attracted to lawn-mowing machines and mowing activity. Keep children away from the mower when it is operating.
- Schedule mowing times for when children are least likely to be in the area.
- Use Go Home Mode to send the mower home until the next scheduled day if children will be in the area.
- Never allow a child or an untrained person to operate the mower.
- Do not touch blades while power switch is ON position.
- Do not touch rotating blades.

Wear Appropriate Clothing

- Always wear eye protection when working with the mower.
- Wear close fitting clothing and safety equipment appropriate for the job.
- While working with the mower, always wear substantial footwear and long trousers. Stay clear of the mower when barefoot or wearing open sandals.

Electrical Hazards

- If the mower stops in water contact your dealer. The dealer must disconnect the mower battery before moving the machine.
- Avoid further damage by contacting your dealer before attempting to move the mower if it becomes damaged by impact, entering water or other accidents.
- Install the charging station power supply in an indoor location.
- Only use the charging station and charging station power supply which comes with your mower to charge the mower.
- Check the charging station power supply regularly for wear or damage. Contact your dealer for replacement.
- Do not attempt to remove the mower battery.
- Connect the charging station power supply to a power source which conforms with local standards and regulations. Consult an electrician. Dealer installation of charging station and initial mower setup is strongly

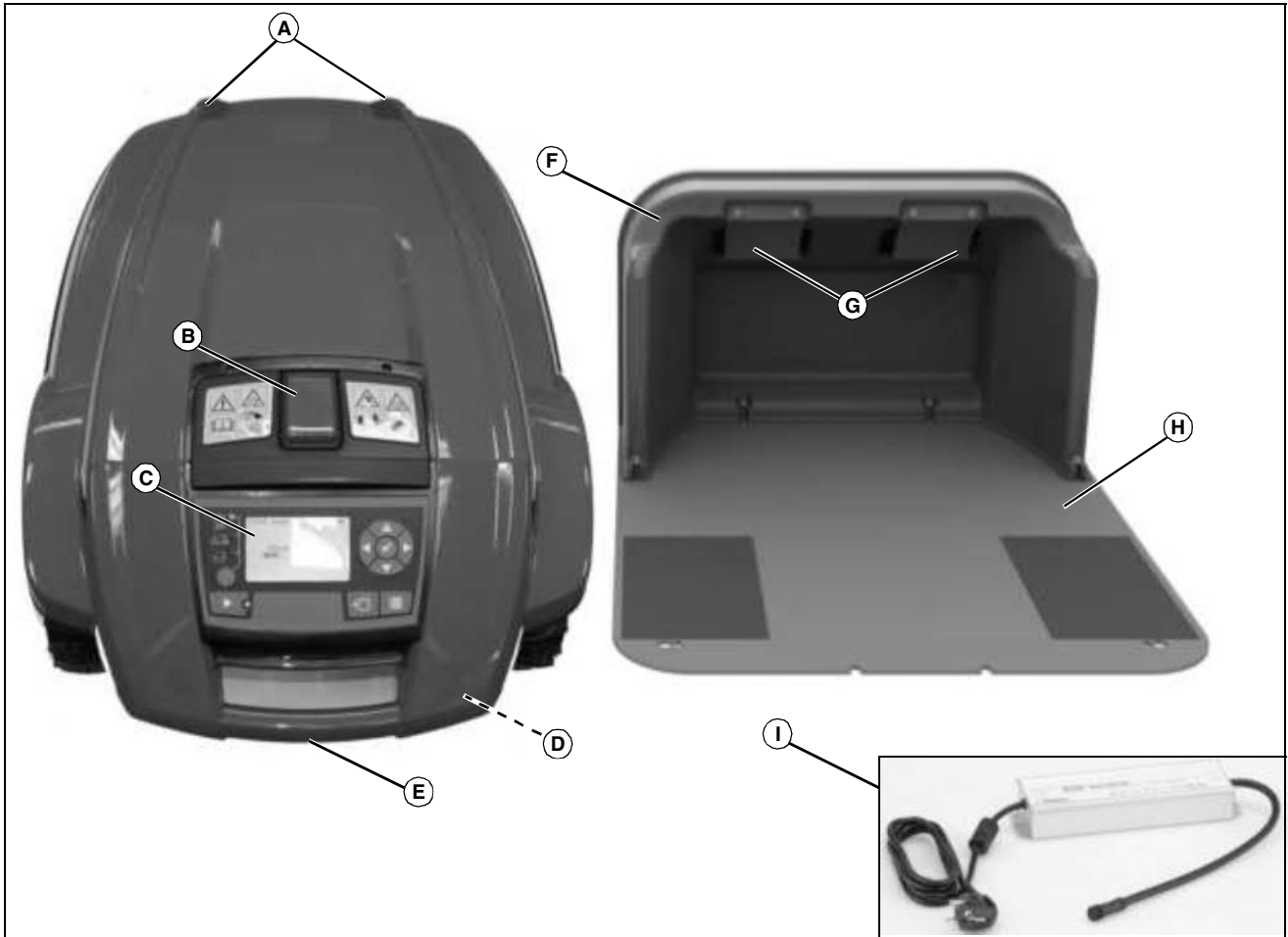
Handling Waste Product and Chemicals

Waste products, such as batteries, can harm the environment and people:

- See your local Recycling Center or authorized dealer to learn how to recycle or get rid of waste products.
- See your local Recycling Center or authorized dealer to learn how to put your mower out of service at the end of the mower's service life.

Operating Controls

Controls and Features



MX28409

- A - Charging Contacts
- B - Stop Button
- C - User Interface
- D - Main Switch
- E - Handle
- F - Charging Station
- G - Charging Contacts
- H - Charging Pad
- I - Charging Station Power Supply

Operating

Operating Checklist

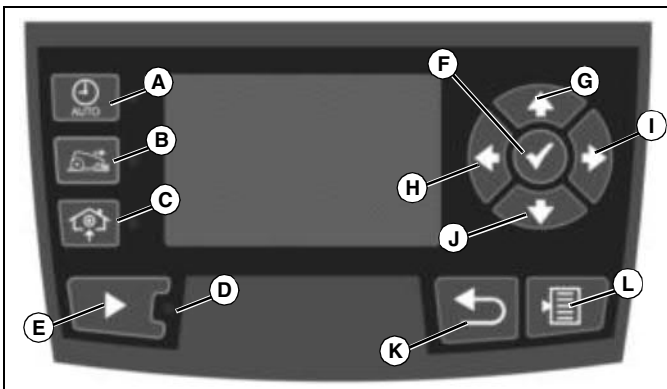
Before First Use

- Use a conventional lawn mower to cut grass to normal maintenance height.
- Test safety systems.
- Check mowing area within boundary wire for any objects which the mower could pass over and strike with the blade. Remove objects.

Monthly

- Test safety systems.
- Check mowing area within boundary wire for any objects which the mower could pass over and strike with the blade as conditions require. Remove objects.
- Check wire boundaries for breaks. If wire is installed below ground, check boundary for digging or trenching.
- Inspect the charging contacts on the mower and the charging station and wipe clean if needed.
- Check machine and blades for any damage.

Using the Control Panel



MX28447

A - Mow on Schedule (AUTO) Button

This light will be solid green when the mower is in Mow on Schedule Operating Mode.

B - Mow Now Button

This light will be solid green when the mower is in Mow Now Operating Mode.

C - Go Home Button

This light will be solid green when the mower is in Go Home Operating Mode.

D - Run LED

This light will be solid green when:

- The mower is actively mowing with the blades turning.
- The mower is seeking the charging station and the blades are not turning.
- The mower is in the charging station and is not charging because it is waiting on the schedule.

This light will be flashing green when the Stop button is pressed and the mower has paused mowing.

This light will be flashing red when the mower has detected a condition and stopped itself.

E - Start Button

Push this button to start mower operation in the selected mode.

F - Enter Button

Push this button to save or confirm selections.

G - Up Arrow Button

Push this button to navigate up or increase a value.

H - Left Arrow Button

Push this button to navigate left.

I - Right Arrow Button

Push this button to navigate right.

J - Down Arrow Button

Push this button to navigate down or decrease a value.

K - Back Button

Push this button to go back or undo an entry.

L - Menu Button

Push this button to access the user interface menu.

User Interface Display Information



MX28448

Operating

A - Time

Mower displays current time.

B - Boundary Sensor Location Indicator

Indicates whether all four boundary sensors are in (i), out (o) or unknown (u).

C - Battery Charge Icon

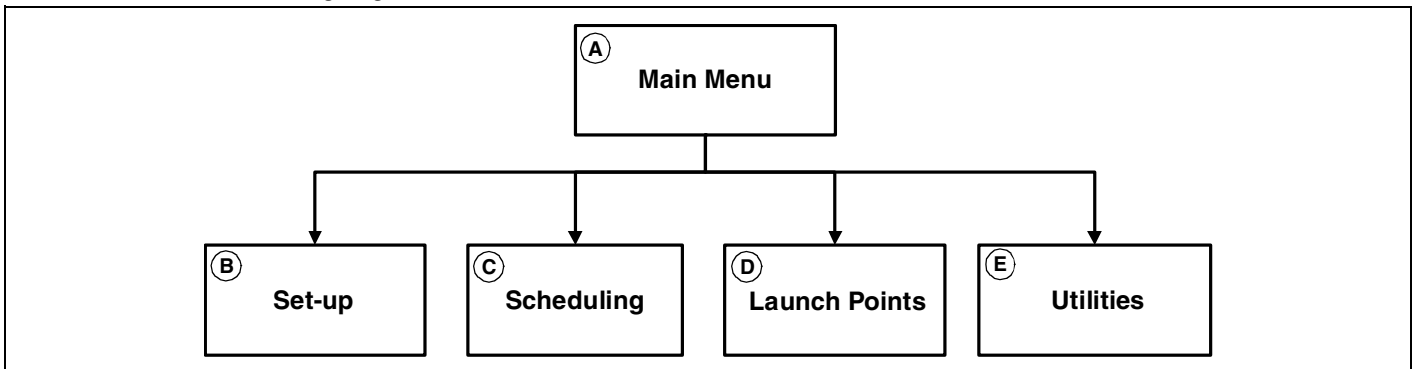
Graphic representation of battery charge remaining.

User Interface Menus

Machine Sounds

The mower will make sounds as operator feedback:

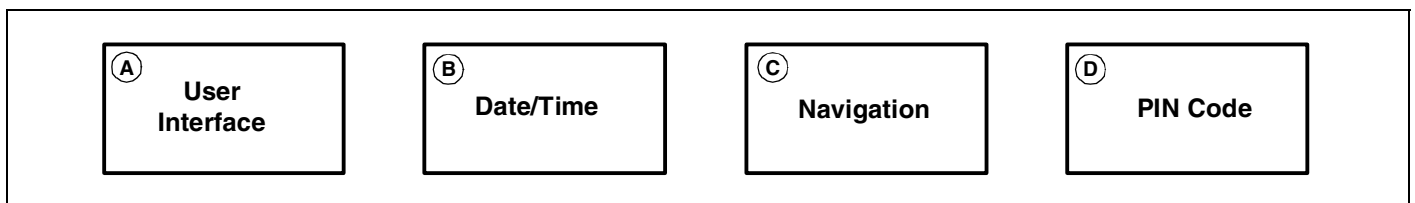
- When mower is turned ON or OFF.
- When programming is complete.
- When mower is faulted.
- Every time a user interface button is pushed.
- When the mower starts to move.
- When the mower blade is going to turn on.



MX28415

Main Menu

- | | |
|---------------------|------------------------|
| A Main Menu | D Launch Points |
| B Set-up | E Utilities |
| C Scheduling | |



MX28446

Set-up Menu

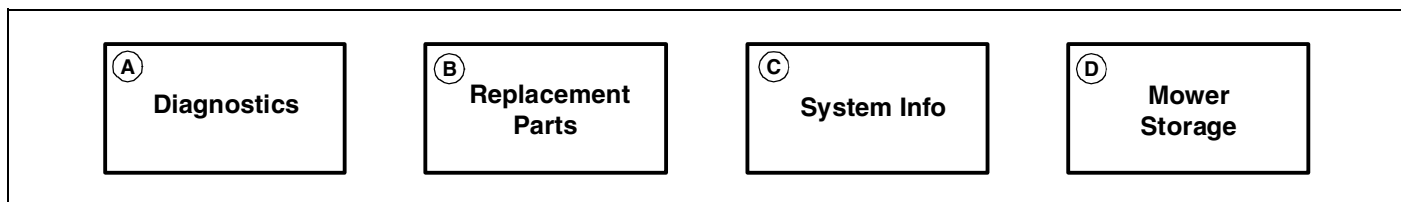
- | | |
|-------------------------|---------------------|
| A User Interface | C Navigation |
|-------------------------|---------------------|

Operating

Set-up Menu

B Date/Time

D PIN Code



MX28446

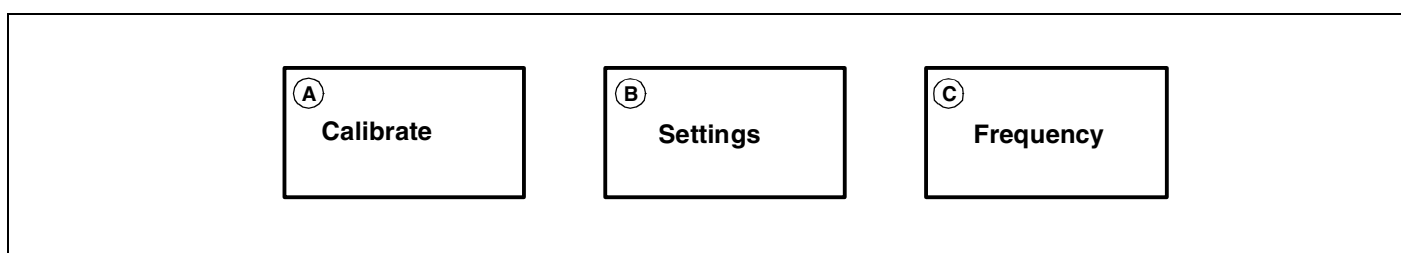
Utilities Menu

A Diagnostics

C System Info

B Replacement Parts

D Mower Storage



MX28446

Launch Points Menu

A Calibrate

C Frequency

B Settings

Testing Safety Systems

The safety systems installed on your machine should be checked monthly, after servicing, or when a fault occurs. Be sure you have read the machine operator manual and are completely familiar with the operation of the machine before performing these safety system checks.

Use the following checkout procedures to check for normal operation of machine.

If there is a malfunction during one of these procedures, do not operate machine. **See your authorized dealer for service.**

Perform these tests in a clear open area. Keep bystanders away.

Testing Stop Button Function

1. Push main switch to OFF position.
2. Position mower within boundary wire area.
3. Push main switch to ON position.
4. Start mower operation in Mow Now Mode.

5. When the mower starts moving, push down on the Stop button.

Result: The mower and the blades will stop. The Run LED light will be flashing green.

If the mower or the blades continue to run, see your dealer.

Testing Handle Presence Function

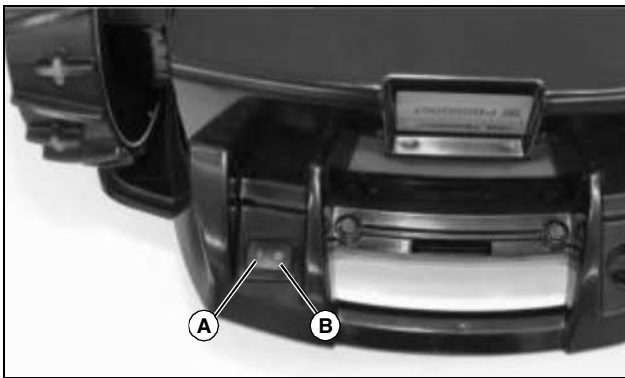
1. Push main switch to OFF position.
2. Position mower within boundary wire area.
3. Push main switch to ON position.
4. Start mower operation in Mow Now Mode.
5. After the mower is moving and the blade starts, grasp the mower handle for at least five seconds.

Result: The mower and the blades will stop. The user interface display will show fault code information.

If the mower or the blades continue to run, see your dealer.

Operating

Starting and Stopping the Mower



MX28309

Picture Note: Mower shown upside down.

Starting Mower

1. Push the main switch to the ON (A) position.

Stopping Mower

1. Push down on the Stop button.
2. Push the main switch to the OFF (B) position.

Emergency Stopping



MX28305

Push down on the Stop button (A):

- Mower will stop.
- Blades will stop.
- Run LED light will be flashing green.

Using PIN Code

The default PIN code (0 0 0 0) can be used.

PIN code entry is required after the main switch is moved to ON position.

Entering PIN Code

1. Position mower within boundary wire area.
2. Push main switch to ON position.
3. Mower will Initialize.
 - User interface display will read Mower Initializing.
 - The Run LED light will flash red.
4. User interface display will read Enter Current PIN Code.
 - a. Push Left and Right Arrow buttons to move blinking cursor through PIN code fields.
 - b. Push Up and Down Arrow buttons to scroll through and select a value in each field.
 - c. Set PIN code to 0 0 0 0.
5. Push Enter to Save PIN code.

Valid PIN Code:

- a. User interface display will read PIN Code Valid.
- b. User interface display will read MOWER PAUSED.
- c. The Run LED light will flash green.

Invalid PIN Code:

- a. User interface display will read PIN Code Invalid.
- b. Enter PIN code and push Enter button.
- c. After three attempts, the system will time out for 10 minutes before you can enter PIN code again.
- d. Contact your dealer if you are unable to enter valid PIN code.

Operating the Mower

The autonomous mower is programmed to mow grass within a boundary wire area. The autonomous mower moves into and out of a charging station which powers the autonomous mower battery.

The autonomous mower is contained by a boundary wire that surrounds the perimeter of the mowing area and may be used to keep the autonomous mower out of areas within the mowing area. The autonomous mower will bounce off the boundary wire and obstacles within the boundary area. A second wire, a guide loop, directs the autonomous mower to the charging station.

Dealer installation of boundary wires and charging station, and initial autonomous mower setup is recommended.

The autonomous mower is designed to mow on an optimized schedule within an area to keep the grass at a desired height. Grass should be mowed to the desired height using a conventional mower before installation of the autonomous mower to maintain that height.

Operating

The autonomous mower can operate during rain. Boundary wire should be installed to keep the autonomous mower out of any areas prone to flooding or swampiness if the autonomous mower might be operating during or soon after rain.

Mowing schedules are programmed using the user interface. There are three operating modes: Mow on Schedule (AUTO), Mow Now and Go Home.

Schedule Mowing

Schedule mowing when children and pets will not be around the area.

The mower should not run when irrigation is running. This is to protect sprinkler heads, eliminate pressured water on the mower, and increase traction while mowing. Allow time for grass to dry after irrigation before mowing.

For lawn health and longer machine life, schedule the mower to run no longer than required. Dealer installation will provide optimal schedule.

If the mower is scheduled for two blocks of time, it will mow both times.

1. Position mower within boundary wire area.
2. Push main switch to ON position.
3. Mower will Initialize.
 - User interface display will read Mower Initializing.
 - The Run LED light will flash green.
4. User interface display will read Enter Current PIN Code.
5. Enter PIN code and push Enter to Save PIN code.
 - User interface will display informational message.

NOTE: The mower will default to the last Mow on Schedule (AUTO) Mode program used. Push Start to begin operating with the default.

6. Push button next to desired mode to select Mow on Schedule (AUTO), Mow Now or Go Home.
7. Push Enter to choose selected option. Selected options will have bold text as you scroll through them.

Mow on Schedule (AUTO) Mode

Up to three schedules can be programmed into Mow on Schedule (AUTO) Mode (See Programming Mow on Schedule Mode).

1. Push button next to Schedule (AUTO) mode.
2. Push Start and mower will begin operating or go home if mowing is not scheduled. If mower is in charging station, it will stay there if mowing is not scheduled for that time.

Mow Now Mode

In Mow Now Mode, the mower will operate for up to 60 minutes or less if charging is required. Use this mode to mow inside separate boundary areas which do not have charging stations.

1. Push Go Mow Now mode button to select an option:
 - Charge Station Area if mower can access a charging station.
 - No Charge Station if mower cannot access a charging station because station is in a separate area.
2. Push Start and mower will begin operating.

Go Home Mode

Use Go Home Mode to send the mower to the charging station to resume mowing on the next scheduled day.

Use Go Home Mode to send the mower to the charging station if children, pets or persons unfamiliar with the mower will be in the operating area.

1. Push Start to send mower to charging station.

Programming Mow On Schedule Mode

1. Push Menu.
 - a. User interface display will read Main Menu, with Setup, Scheduling, Launch Points and Utilities options.
2. Push Up and Down Arrows to select Scheduling and push Enter.
 - a. User interface display will read Schedule 1, Schedule 2 and Schedule 3.
3. Push Up and Down Arrows to select the Schedule you want to program and push Enter.
 - a. User interface display will read Schedule_ followed by three lines to activate days of the week and schedule two mow times per day.
4. Push Left and Right Arrows to move blinking cursor to first day of week you want to schedule a mow time for, and push Enter to activate that day.
 - The letter for an activated day will be bold.

For easier programming use the ALL and ALT settings:

- ALL Scheduling is for all days of the week.
 - ALT Scheduling is for alternate days of the week (Monday, Wednesday, Friday and Saturday).
5. Push Enter to move down to second line (T1) and set the time to mow on the activated day.
 - a. Push Up and Down Arrows to scroll through the hours. The schedule is a 24 hour clock.



Suggest:

If the above button click is invalid.

Please download this document

first, and then click the above link

to download the complete manual.

Thank you so much for reading

Operating

- b. Push Right Arrow to move blinking cursor to minutes position, and push Up and Down Arrows to scroll through 15 minute increments and select the time.
 - c. Set mowing start time and end time.
6. Push Enter to move down to third line (T2) and repeat to set a second time to mow on that day.
- If you do not want to set a second time, leave or return the third line default to None.
7. Push Enter to move back to the first line to activate additional days of the week and schedule mow times for those days.
8. Push Back to Save mow times and repeat from beginning to program two additional Schedules if needed.

Using Setup Menu on User Interface

Your dealer will program most functions during mower installation. Some programming can only be done by your dealer.

NOTE: Launch Point and Boundary Clean-up Pass settings will be programmed by your dealer during installation. These are advanced settings. The mower must be on "mow on schedule" for the launch points and boundary clean-up pass to operate.

1. Push Menu.
 - a. User interface display will read Main Menu, with Setup, Scheduling, Launch Points and Utilities.
2. Push Up and Down Arrows to select Setup and push Enter.
 - a. User interface display will read Setup, with User interface, Date/Time, Navigation and PIN Code options.
3. Push Up and Down Arrows to select option and push Enter.
4. Push Back to return to Main Menu.

User Interface Menu

Use this menu to program languages and sounds.

1. Push Up and Down Arrows to select Language or Sounds and push Enter.
- Language:
 - a. Push Up and Down Arrows to select desired Language and push Enter.
 - b. User interface display will read Language Selection Saved.
 - c. Push Back to return to user interface menu.
 - Sounds:

- a. Push Up and Down Arrows to select Operation or Button Press function and push Enter.
- b. User interface display will read Volume, with a sound level display ranging from 0 to 5.
- c. Push Left and Right Arrows to set volume level and push Enter to save volume setting. The volume adjustment will not affect mower blade or mower movement start sounds.
- d. User interface display will read Volume Saved.
- e. Push Up and Down Arrows to select another sound function, or push Back to return to user interface menu.

Push back to return to Setup menu.

Date/Time Menu

Use this menu to program the system date and time.

1. Push Up and Down Arrows to select Set Date or Set Time and push Enter.

- Set Date:
 - a. Push Left and Right Arrows to navigate through month, day and year fields.
 - b. Push Up and Down Arrows to scroll through and select a value in each field.
 - c. Push Enter to Save settings.
 - d. User interface display will read Date Saved.
 - e. Push Up and Down Arrows to select another Date/Time menu function, or push Back to return to Setup menu.
- Set Time:
 - a. Push Left and Right Arrows to navigate through hour, minute and am/pm fields.
 - b. Push Up and Down Arrows to scroll through and select a value in each field.
 - c. Push Enter to Save settings.
 - d. User interface display will read Time Saved.
 - e. Push Up and Down Arrows to select another Date/Time function, or push Back to return to Setup menu.

Navigation Menu

Use this menu to select boundary, clean-up pass and keep out settings.

Boundary Following

The Boundary Following Options setting determines how closely the mower can approach the boundary wire during homing, which affects the minimum width corridor the mower will enter.

1. Push Up and Down Arrows to select Boundary Following

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