



JOHN DEERE

Product Services Information

INSTALLATION INSTRUCTIONS



JOHN DEERE

AUTONOMOUS MOWER INSTALLATION

Autonomous Mower 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 mowing area of objects that might be thrown or damaged. Keep people and pets out of mowing area.
- Study mowing area. Do not mow after heavy rains, or other yard condition changing events.



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

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 recommended.

Handling Waste Products 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.

Installation Checklist

- 1) Charge battery
- 2) Evaluate site for best layout of mowing area.
- 3) Prepare mowing area layout.
- 4) Prepare mowing area.
- 5) Temporarily install charging station.
- 6) Install boundary wire and guide loop.
- 7) Test boundary wire and guide loop.
- 8) Install charging station.
- 9) Test charging station operation.
- 10) Program mower.
- 11) Test mower operation.
- 12) Do not use water on the mower. To clean, use a soft cloth.

Components in Carton

- Assembled Mower
- Charge Station with installed Pad
- Power Supply
- Low-Voltage Power Supply Cable
- Wire - 150 m (492 ft)
- Wire Stakes - 150
- Bag with loose parts:
 - Charge Station Pad Stakes - 8
 - Solderless Connectors - 4
 - Operator Manual

Installation Tools

Having necessary tools available will help to make the installation process faster and easier. A cable laying trencher will make the installation of the boundary wire and guide loop much easier than installation by hand.

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Accurate measurement of distances and slopes in the mowing area are necessary for efficient layout of the mowing area and for best mower performance.

Certain system programming and diagnostic functions require the use of a laptop computer with product specific software and connector cable.

- Laptop computer (Windows 7 or XP operating system) with MowADVISOR software installed.
- Connector cable JDG11355
- Mowing area layout sheets
- Distance measuring wheel
- Tape measure
- Inclinometer
- Multi- meter
- Cable laying trencher
- Marker flags or paint
- Shovel
- Rake
- Pliers
- Screwdriver
- Hammer
- Loppers, shears, or pruning saw
- Cushioning material

Mowing Area Requirements

Mowing area size and grades within the mowing area must be held within mowing area requirements.

- Maximum boundary wire length (including boundary wire extensions to Keep Out areas) is 300 m (983 ft).
- Maximum mowing area size is 1800 sq m (19,375 sq ft).
- Maximum incline within the mowing area is 36 percent (20 degrees).
- Maximum incline near the boundary wire is 10 percent (6 degrees).
- Maximum incline near the charge station or guide loop is 3 percent (2 degrees) in any direction.

Machine Preparation

The machine battery is not fully charged at delivery. Charge the battery before proceeding with system installation. The battery must be at least 60% charged before starting mower software update.

1. Remove machine from box.



MX48948

2. Check to see that main power switch (A) is in OFF position (O).
3. Remove charge station, power supply, and power supply extension cable from box.
4. Charge battery. The battery must be charged to at least 60% in order to update mower software.
 - a. Connect power supply to charge station with connecting cable.
 - b. Plug power supply cord into power outlet.
 - c. Place machine in charging position at charge station.
 - d. Turn machine main power switch to ON position (I)
 - e. If the user interface is blank, hold the rear handle and spin a rear wheel. When the machine user interface begins to blink, quickly place the machine in the charging position.

NOTE: Battery charging will take approximately 1.5 hours.

5. With main switch in ON position and battery charged, open main menu and enter PIN code (Default pin code is 1234.). See Using PIN Code in Operator's Manual.
6. Connect mower to network connected computer with MowADVISOR installed for diagnostic and software updates. See "MowADVISOR diagnostic". For additional information on updating software for mower or charge station, see "Programming Mower Through MowADVISOR".

Mowing Area Preparation

Best mowing performance will be obtained with a mowing area that is well laid out, and is smooth and free of obstacles.

NOTE: For difficult installations, it is recommended to surface install and stake the boundary wire for testing. A proven layout can then be buried, if desired.

- Measure and plot mowing area(s) to determine best boundary wire and charge station locations.

- Use installation pad to record installation details.
- Guard any open water from mowing areas with a physical barrier.
- Level ridges and fill small dips to create a mowing surface as flat as reasonably possible.
- Check for presence of buried metal objects, such as sprinkler system piping, that may affect mower navigation.
- Check angle of slopes, if present, to determine if sloped area can be included in mowing area. See “Mowing Area Requirements”.
- Remove small rocks and other obstacles under 10 cm (4 in.) in height.

NOTE: Obstacles over the mowing area that the mower can drive under may contact the stop button, halting the mower.

- Trim vegetation or move obstacles overhanging the mowing area for a minimum clearance height of 30 cm (12 in.) above the ground.
- Apply cushioning material where practical to hard obstacles within the mowing area such as swing set supports or garden ornaments to protect mower and obstacle.
- Cut the mowing area to desired maintenance height with a conventional mower.

Mowing Area Layout

Mowing areas may be simple to complex. Generally, mowing areas may be divided into main, remote, and separate areas. A keep out area may be arranged in any mowing area. See mowing area layout examples in this instruction.

The Main Area is the mowing area directly accessible from the charge station location. The main area is accessible by the mower with minimal boundary wire guidance or mower navigation programming.

A Remote Area is a mowing area separated from the charge station and main area by a corridor. A corridor is a mowed passage between larger mowing areas. The remote area and connecting corridor are defined by the boundary wire. The mower is able to travel to a remote area and return to the charge station automatically.

A Separate Area is a mowing area that is enclosed by the boundary wire, but which is not accessible by the mower from the main area. The mower cannot return to the charge station automatically, so it must be carried to and from the separate area. The boundary wire surrounding a separate area is an extension of the main area boundary wire. The boundary wire extension wires must be installed as close to each other as possible without twisting or crossing.

A Keep Out area may be arranged within a mowing area to exclude obstacles that may halt the mower, or damage the

obstacle or the mower. Obstacles may include such things as planting beds, tree roots, rocks, or wet areas. A Keep Out area is established by an extension of the boundary wire.

NOTE: Vegetation or other obstacles over the mowing area that the mower can drive under may contact the stop button, halting the mower.

- Trim vegetation overhanging the mowing area for a minimum clearance height of 30 cm (12 in.) above the ground.
- Relocate moveable obstacles.
- Install cushioning material where practical to obstacles needing protection or to protect mower.
- Create Keep Out areas for immovable obstacles that may affect mower operation.
- Create a physical barrier between mowing area and any open water.

Complex Mowing Areas

Complex mowing areas require additional consideration for layout. See mowing area layout example in this instruction. Corridors connecting remote areas to the main area should be laid out so as to provide easy access by the mower. Provide a radius or taper to entrance corners where possible.

- Passage entrances should have a radius of 30 cm (12 in.) or more, with a larger radius being preferable.
- A corridor must be wider than 1 m (3.3 ft). Boundary wires defining the corridor should be 70 cm (27.5 in.) or more apart so that the mower does not follow the same track when mowing the corridor.
- Mowing areas with narrow or irregular shapes may benefit from programming the mower to begin mowing at designated launch points for best coverage.

Launch Points

Launch points allow the user to define the point along the boundary where the mower is to begin mowing. See mowing area layout examples in this instruction. Multiple launch points may be desired for larger, more complex mowing areas.

Launch point parameters are set from the launch points section of the main menu. Five launch points are available, with adjustable frequency and duration for each.

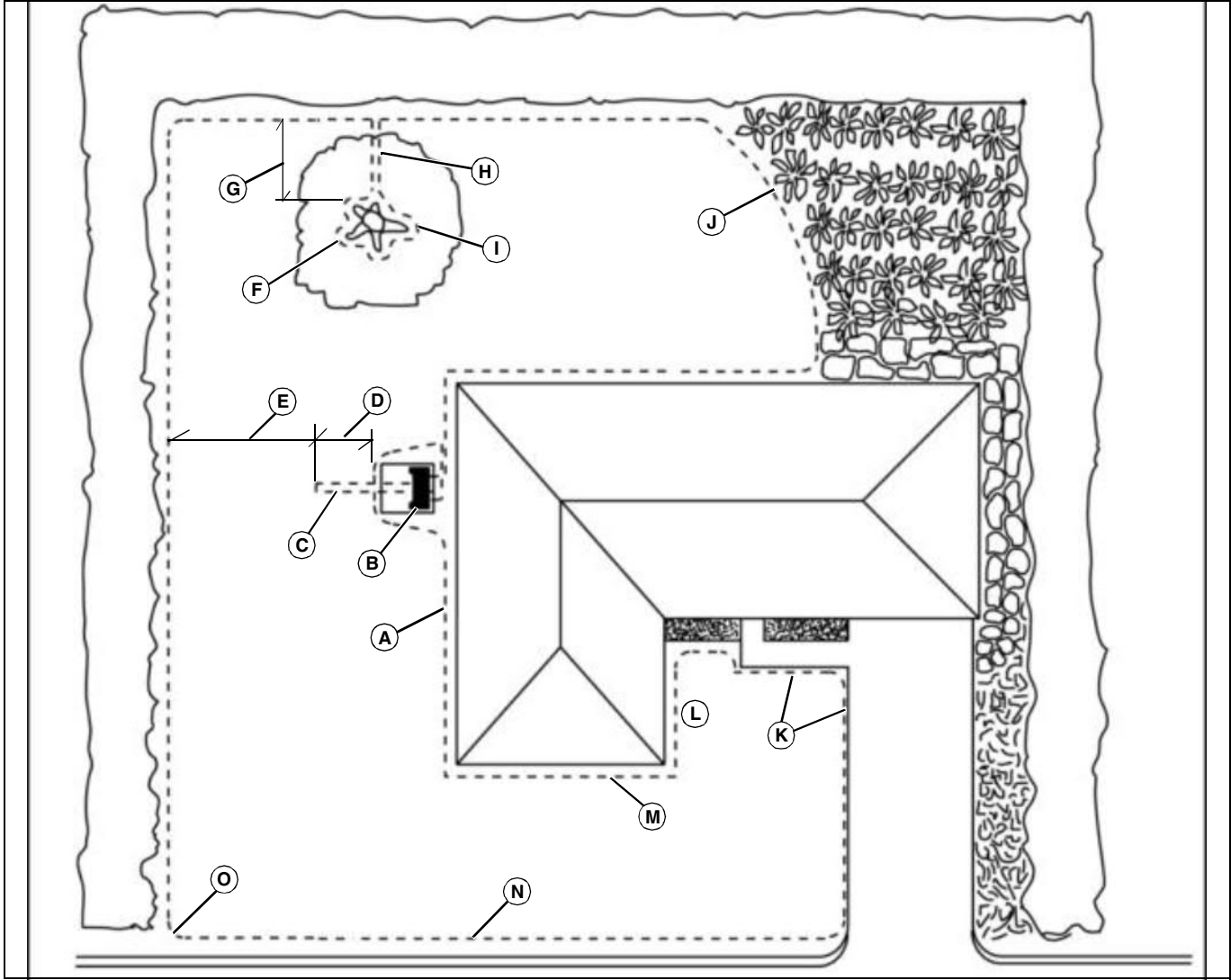
After leaving the charge station at the beginning of a mowing session, the mower follows the boundary wire until it has traveled a specified distance to a launch point, when it begins mowing.

At the end of the duration-specified mowing session at each launch point, the mower will return to the charge station. If the scheduled end of the auto mow period is reached before the set duration from a launch point, the mower will return to the charge station at that time.

Establishment of a launch point within a remote mowing area is useful when navigation through a corridor to reach that area is required. Adjust mowing frequency and duration values as needed for remote areas. Set higher frequency and duration values for larger areas. If the remote area is small, reduce the duration at that launch point to prevent over-mowing. Too-frequent mowing of an area may result in decreased turf health.

Estimate frequency and duration of mowing time for the mowing area at the launch point(s) based on turf condition, sunlight and other growth factors, and mowing area size.

Simple Boundary Wire Installation Example



MX50461

Picture Note: Representation of an approximately 930 sq m (10,000 sq ft) yard, with approximately 110 sq m (1200 sq ft) structure with driveway, walkway, and garden. Boundary wire length of approximately 120 m (393 ft) encloses small mowing area of approximately 195 sq m (233 sq yd). Low complexity - main mowing area only with one Keep Out area and one launch point.

- A - Boundary Wire
- B - Charge Station

- C - Guide Loop
- D - Extend Guide loop 1m (39.5 in.) or more from boundary wire crossing.
- E - Extend guide loop 1m (39.5 in.) or more from end of guide loop.
- F - Install boundary wire 36 cm (14 in.) from roots or other obstacles to create Keep Out Area.
- G - Keep Out area must be separated from boundary wire by at least 1.5 m (4.9 ft) for through mowing.
- H - Install boundary wires together for boundary