

Pro-Turn™ EV

Operator's Manual
Manuel de l'utilisateur



GRAVELLY

Models

997005 – Pro-Turn EV 48
Side Discharge
(SN 000101 +)

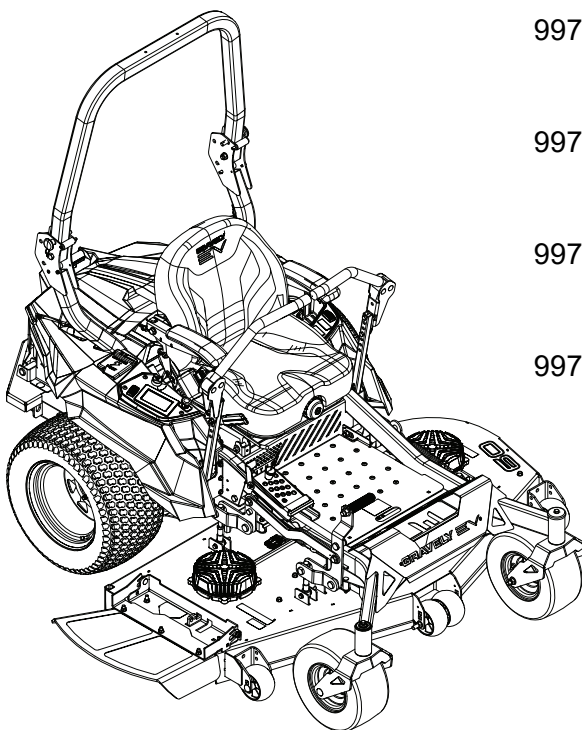
997006 – Pro-Turn EV 52
Side Discharge
(SN 000101 +)

997007 – Pro-Turn EV 60
Side Discharge
(SN 000101 +)

997008 – Pro-Turn EV 48
Rear Discharge
(SN 000101 +)

997009 – Pro-Turn EV 52
Rear Discharge
(SN 000101 +)

997010 – Pro-Turn EV 60
Rear Discharge
(SN 000101 +)



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WELCOME

Congratulations on your purchase and welcome to the Gravelly family! Every machine in the Gravelly lineup is designed for long-lasting and unsurpassed performance. We are confident your machine will be part of your family for many years to come.

Have Questions or Need Assistance?

www.gravelly.com

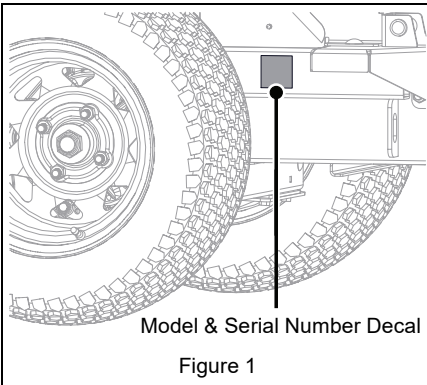
A parts manual for your unit is available for free download
or purchase at www.gravelly.com.

Manual del operador español está disponible para su descarga gratuita o
compra en www.gravelly.com.

REGISTER YOUR PRODUCT!

It is extremely important to register your product at time of purchase. Product registration activates the warranty and establishes a communication link from AriensCo.

Locate the model and serial number decal on your unit and register those numbers online at www.gravelly.com. See Figure 1 for decal location. Be aware that the original selling dealer may have already completed product registration on behalf of the original purchaser.



Record model number here.

Record serial number here.

MANUALS

Before operating or servicing the unit, carefully and completely read the manuals provided with the unit. They contain safety instructions and important information about unit controls.

Your dealer must review important information in this manual with you before or upon delivery of the unit. It is your responsibility to read and understand all safety precautions and instructions in the manuals. If you do not understand or have difficulty following the instructions, contact an authorized Gravelly EV dealer for assistance. To locate your nearest Gravelly EV dealer, go to www.gravelly.com.

DISCLAIMER

Gravelly reserves the right to discontinue, make changes to, and add improvements upon its products at any time without public notice or obligation. The descriptions and specifications contained in this manual were in effect at printing. Equipment described in this manual may be optional. Some illustrations may not be applicable to your unit.

SAFETY

Read these safety rules and follow them closely. Failure to follow these rules could lead to loss of control of unit, severe personal injury or death to you or bystanders, or result in damage to property or the unit.

PRACTICES & LAWS

Practice usual and customary safe working precautions. Learn applicable rules and laws in your area. **ALWAYS** follow the practices set forth in this manual.

REQUIRED OPERATOR TRAINING



Read and understand the Operator's Manual and decals on the unit. This information is for your safety and the proper use of your equipment.

Failure to follow these

instructions and warnings may cause death or serious injury. If you have purchased this product from an authorized Gravelly EV dealer, the dealer can provide you with training.

Familiarize yourself and any other operators with all controls and the safe use of the features of this unit. If you loan, rent or sell this product to others, provide them with all manuals.

If you have any questions, please call our customer support line at 920-756-4688 or contact us at www.gravelly.com. Do not use this equipment if, after reading the Operator's Manual and the on-board decals, you have any questions about the safe use of this product.



WARNING: AVOID INJURY.

This cutting machine is capable of amputating body parts and throwing objects. Failure to observe the safety instructions in the manuals and on decals could result in serious injury or death.

ALWAYS disengage blades, stop unit, remove key, set parking brake and allow moving parts to stop before leaving operator's position.

SAFETY ALERT SYMBOL



This is the safety alert symbol. It means:

- **ATTENTION!**
- **YOUR SAFETY IS INVOLVED!**

When you see this symbol:

- **BECOME ALERT!**
- **OBEY THE MESSAGE!**

SIGNAL WORDS

The safety alert symbol above and signal words below are used on decals and in this manual. Read and understand all safety messages.

1. Danger



DANGER: Indicates an **IMMINENTLY HAZARDOUS SITUATION!** If not avoided, **WILL RESULT** in death or serious injury.

2. Warning



WARNING: Indicates a **POTENTIALLY HAZARDOUS SITUATION!** If not avoided, **COULD RESULT** in death or serious injury.

3. Caution



CAUTION: Indicates a **POTENTIALLY HAZARDOUS SITUATION!** If not avoided, **MAY RESULT** in minor or moderate injury. It may also be used to alert against unsafe practices.

4. Notice

NOTICE: Indicates information or procedures that are considered important but not hazard related. If not followed, property damage could result.

5. Important

IMPORTANT: Indicates general reference information worthy of special attention.

SAFETY DECALS

The safety decals on your unit are visual reminders of the important safety information in this manual. All messages on your unit must be fully understood and carefully followed. Safety decals on the unit are explained below.

Safety Decal Locations

ALWAYS replace missing or damaged safety decals. Replacement decal information is in the parts manual for your unit. Decals can be ordered from your dealer.

See Figure 2 for safety decal locations.

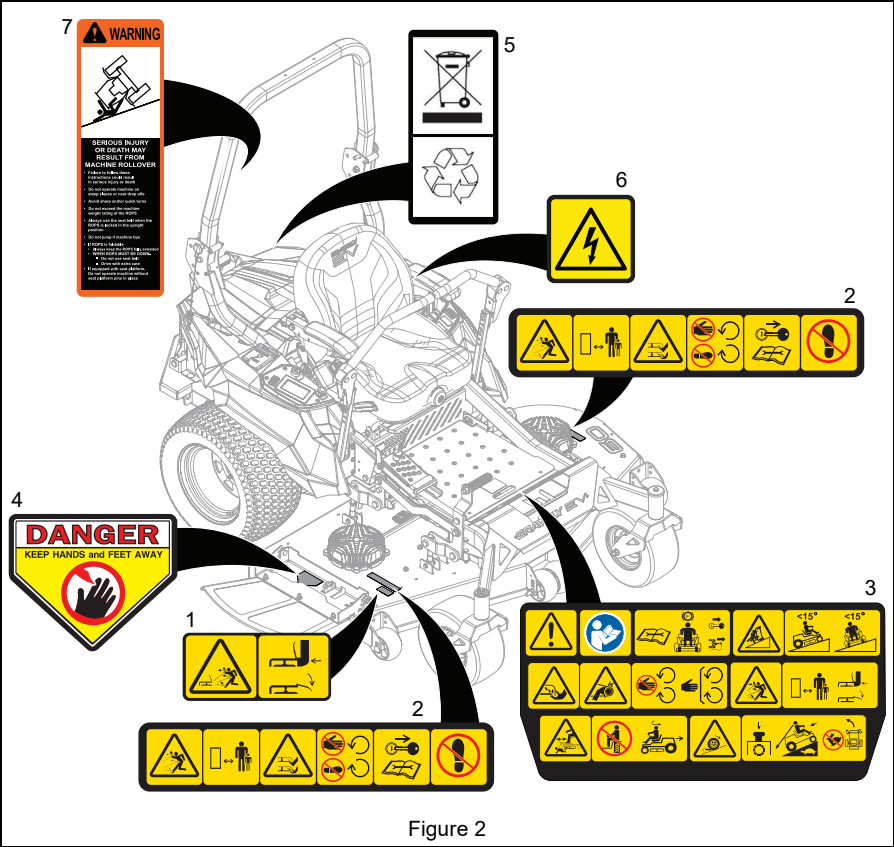


Figure 2

Safety Decal Descriptions

1. DANGER!



Discharge Hazard – NEVER operate unit without discharge chute in operating position. Thrown objects can cause injury or damage.

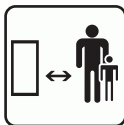


DO NOT operate mower unless all guards are in operating position or bagger is attached.

2. DANGER!



Discharge Hazard – NEVER direct discharge toward people, pets or property. Thrown objects can cause injury or damage.



Keep children and others away from unit while unit is in operation.



Amputation Hazard – NEVER stick hands or feet under deck or shielded areas.



Keep hands and feet away from all rotating or moving parts.



Remove batteries and read manual before servicing or making adjustments to unit.



DO NOT step or stand in this area.

3. DANGER!



DANGER!



Read Operator's Manual.

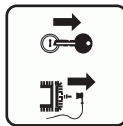
3. Service Hazard



Read Operator's Manual before servicing or making adjustments to unit.

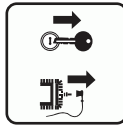


Set parking brake.



Does not apply to this unit.

3. Tipping Hazard



Avoid tipping hazard.



DO NOT operate on slopes over 15°.



DO NOT operate on slopes over 15°.



To avoid amputation hazard, DO NOT put hands near rotating blades.



Does not apply to this unit.



Keep hands away from all rotating or moving parts.

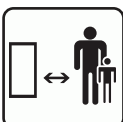


Keep all guards and shields in place.

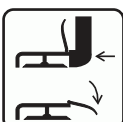
3. Discharge Hazard



NEVER direct discharge toward people, pets or property. Thrown objects can cause injury or damage.



Keep children and others away from unit while unit is in operation.



DO NOT operate mower unless all guards are in operating position or bagger is attached.

3. Bystander Hazard



DO NOT operate the unit in the presence of bystanders.



DO NOT carry passengers.

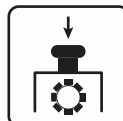


Look behind when operating the unit in reverse.

3. Loss of Traction Hazard



If loss of traction is experienced do the following:



Disengage PTO.



Look before backing. Proceed off slope slowly.



DO NOT try to turn or speed up.

4. DANGER!



Keep hands and feet away from all rotating or moving parts.

5. DISPOSAL / RECYCLING



Batteries are recyclable. DO NOT dispose of batteries in household or commercial waste bin.



Reuse of recycled material decreases pollution in the environment. Contact an authorized Gravely EV dealer to recycle battery.

6. WARNING!



Electric Shock Hazard. Move key to OFF position and remove batteries before rotating seat forward.

7. WARNING!



SERIOUS INJURY OR DEATH may result from machine rollover.

- Failure to follow these instructions could result in serious injury or death.
- **DO NOT** operate machine on steep slopes or near drop offs.
- Avoid sharp and/or quick turns.
- **DO NOT** exceed the machine weight rating of the ROPS.
- **ALWAYS** use the seat belt when the ROPS is locked in the upright position.
- **DO NOT** jump if machine tips.
- If ROPS is foldable:
 - **ALWAYS** keep the ROPS fully extended.
 - **WHEN ROPS MUST BE DOWN:**
 - **DO NOT** use seat belt.
 - Drive with extra care.
- If equipped with seat platform:
 - **DO NOT** operate machine without seat platform pins in place or locks engaged.

ROLLOVER PROTECTIVE STRUCTURE

To maintain operator protection and roll bar certification:

- Replace a damaged roll bar, **DO NOT** attempt to repair or modify.
- Any alteration of the roll bar must be approved by the manufacturer.
- **DO NOT** exceed the machine weight rating of the roll bar.

SAFETY RULES

The following safety instructions are based on the present state of knowledge and current legislation (B71.4 specifications of the American National Standards Institute and ISO 5395).

This safety information provides guidance on health, safety and environmental aspects of the product and should not be construed as any guarantee of technical performance or suitability for particular applications.

Training

Read, understand and follow all instructions on the machine and in the manual(s) before operating this unit.

Keep the area of operation clear of all persons, particularly small children. Be alert and shut off unit if children enter area.

Complete a walk-around inspection of the unit to understand the unit, your work area and all safety decals.

Understand:

- How to operate all controls
- The functions of all controls
- How to **STOP** in an emergency
- Braking and steering characteristics
- Turning radius and clearances

If the operator or the mechanic cannot read the manual, it is the owner's responsibility to explain it to them.

Only allow responsible adults, who are familiar with the instructions, to operate this machine.

ALWAYS train any inexperienced operators and require them to read and understand all manuals and decals.

Only the user can prevent and is responsible for accidents or injuries occurring to themselves, other people or property.

Operator Age

DO NOT allow children under the age of 18 to operate outdoor power equipment.

Local regulations may restrict the age of the operator.

Data indicates operators above age 60 are involved in a large percentage of riding mower-related injuries.

These operators should evaluate their ability to operate the riding mower safely enough to protect themselves and others from serious injury.

Children	Check parking brake operation frequently. Adjust and service as required.
Tragic accidents can occur if the operator is not alert to the presence of children. Children are often attracted to the machine and the mowing activity. NEVER assume that children will remain where you last saw them.	Inspect unit before each use for missing or damaged decals and shields, correctly operating safety interlock system, and deterioration of grass catchers. Replace or repair as needed.
Be alert and turn machine off if a child enters the area.	Ensure Safety Interlock System is functioning properly. DO NOT operate unit if safety interlock is damaged or disabled.
Before and while backing, look behind and down for small children.	NEVER tamper with safety devices. Check their proper operation regularly.
NEVER carry children, even with the blade(s) shut off. They may fall off and be seriously injured or interfere with safe machine operation. Children who have been given rides in the past may suddenly appear in the mowing area for another ride and be run over or backed over by the machine.	DO NOT clean unit with water. To avoid damage to electrical components and motors, clean unit with compressed air or a dry cloth.
NEVER allow children to operate the machine.	Keep machine free of grass, leaves, or other debris build-up.
Use extreme care when approaching blind corners, shrubs, trees, or other objects that may block your view of a child.	To prevent fire hazards, clean the following before each use: • Underside of mower deck • Battery busbar • Controller bay
Keep children out of the mowing area and in the watchful care of a responsible adult other than the operator.	Operation
Keep batteries out of reach of children.	Be sure the area is clear of bystanders before operating. Stop machine if anyone enters the area.
Children should be supervised to ensure that they do not play with the unit.	ALWAYS maintain unit in safe operating condition.
Personal Protection	DO NOT operate machine while feeling tired, ill or under the influence of alcohol or other drugs.
DO NOT wear loose clothing or jewelry and tie back hair that may get caught in rotating parts.	DO NOT put hands or feet near rotating parts or under the machine. Keep clear of the discharge opening at all times.
Wear adequate outer garments.	DO NOT touch parts which are hot. Allow parts to cool.
NEVER wear open sandals or canvas shoes during operation. Wear adequate safety gear, protective gloves and footwear.	DO NOT operate machine without the entire grass catcher, discharge guard, or other safety devices in place and working.
Wear proper footwear to improve footing on slippery surfaces.	ALWAYS keep hands and feet away from all pinch points.
ALWAYS wear eye and ear protection when operating machine.	Avoid slippery surfaces. ALWAYS be sure of your footing.
ALWAYS wear safety glasses and protective gear near batteries. Use insulated tools.	NEVER carry passengers.
Before Operation	NEVER direct discharged material toward anyone. Avoid discharging material against a wall or obstruction. Material may ricochet back toward the operator. Stop the blade(s) when crossing gravel surfaces.
Keep all nuts and bolts tight to be sure the equipment is in safe working condition.	
Maintain the machine to be in compliance with the maintenance schedule.	

NEVER engage PTO when attachment, including mower blades, is not in use. ALWAYS turn off power to attachment when not in active use such as traveling or crossing driveways.
NEVER engage PTO while raising the attachment, including mower blades, or when attachment is in the raised position.
Keep safety devices or guards in place and functioning properly. NEVER modify or remove safety devices.
DO NOT mow in reverse unless absolutely necessary. ALWAYS look down and behind before and while backing.
Slow down before turning.
If you strike a foreign object, stop and inspect the machine. Repair, if necessary, before restarting.
This unit is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the unit by a person responsible for their safety.

Operation Conditions
Lightning can cause severe injury or death. If lightning is seen or thunder is heard in the area, do not operate the machine; seek shelter.
Avoid dangerous environments. DO NOT operate the mower in rain. To reduce the risk of electrical component damage, do not expose to water.
ALWAYS check overhead and side clearances carefully before operation.
Watch for traffic when operating near or crossing roadways.
Clear the area of objects such as rocks, wire, toys, etc., which could be thrown by the blades.
Check for weak spots on docks, ramps or floors. Avoid uneven work areas and rough terrain. Stay alert for hidden hazards or traffic.
Use care when approaching blind corners, shrubs, trees or other objects that may obscure vision.
Dust, smoke, fog, etc. can reduce vision and cause an accident.
Operate machine only in daylight or good artificial light.

Slope Operation
Slopes are a major factor related to loss of control and tip-over accidents, which can result in severe injury or death. Operation on all slopes requires extra caution. If you cannot back up the slope or if you feel uneasy on it, DO NOT mow it.
DO NOT operate on slopes of more than 15°.
Mow up and down slopes, not across.
Watch for holes, ruts, bumps, rocks, or other hidden objects. Uneven terrain could overturn the machine. Tall grass can hide obstacles.
Tires may lose traction causing a loss of control mowing on moist or wet grass
Use extra care while operating machine with grass catchers or other attachments; they can affect the stability of the machine. DO NOT use on steep slopes.
Keep all movements on the slope <i>slow</i> and <i>gradual</i> . DO NOT make sudden changes in speed or direction, which could cause the machine to roll over.
Avoid starting, stopping, or turning on a slope. If the tires lose traction, disengage the blade(s) and proceed slowly straight down the slope.
Operation on slopes may lead to loss of steering control. When operating on slopes be prepared to react to an emergency situation: - Return steering levers to neutral position. - Immediately set parking brake.
DO NOT try to stabilize the machine by putting your foot on the ground.
DO NOT park on slopes unless necessary. When parking on slope, ALWAYS chock or block wheels. ALWAYS set parking brake.
Choose a low ground speed so you will not have to stop or shift while on a slope.
DO NOT operate near drop-offs, ditches, or embankments. Unit can suddenly turn over if a wheel is over the edge of a cliff or ditch, or if an edge caves in.
DO NOT override electric brake to free wheel when on a slope.

Towing / Transporting
Follow the manufacturer's recommendations for weight limits for towed equipment and towing on slopes.
NEVER allow children or others in or on towed equipment.
Tow only with a machine that has a hitch designed for towing. DO NOT attach towed equipment except at the hitch point.
On slopes, the weight of the towed equipment may cause loss of control.
Travel slowly and allow extra distance to stop.
Towing the unit is not recommended.

Accessories
Use only attachments recommended by AriensCo that are appropriate to your use and can be used safely in your application.
Follow the manufacturer's recommendation for wheel weights or counterweights
Check grass catcher components and the discharge guard frequently and replace with the manufacturer's recommended parts, when necessary.
WARNING: Only use accessories provided with or offered for this unit.

Rollover Protection System (ROPS)
Frequently inspect ROPS and seat belt for damage or loose hardware.
Use extreme care when working close to fences, ditches, or on hills.
Check overhead clearance carefully before driving under any objects.
ALWAYS wear seat belt while operating the unit with the ROPS in the upright position.
Only lower ROPS for transport.
DO NOT wear a seat belt while operating the unit with the center bar in the lowered position.
DO NOT weld, cut, drill or modify ROPS in any manner unless instructed by the manufacturer.

Service
The use of non-genuine replacement parts or accessories could adversely affect machine operation and safety.
Maintain or replace safety and instruction labels, as necessary.
ALWAYS remove all batteries before performing any service or maintenance.
Keep unit free of debris.
ALWAYS block wheels and know all jack stands are strong and secure and will hold weight of unit during maintenance.
Release any pneumatic pressure from components slowly.
Lower cutting deck unless a positive mechanical lock is used.
NEVER weld or straighten mower blades.
Mower blades are sharp. Wrap the blade or wear gloves, and use extra caution when servicing them.
Electrical service is to be done by trained professionals only.

Transporting Unit
Use extra care when loading or unloading the machine into a trailer.
Secure unit chassis to transport vehicle. NEVER secure from rods or linkages that could be damaged.

Battery Handling and Use
Batteries when abused may pose fire, explosion and severe burn hazard. Handle with caution.
DO NOT touch any live connections.
Avoid transportation or mechanical impact that may physically damage batteries.
DO NOT expose batteries to temperatures lower than -20° C (-4° F) or above 55° C (130° F) as it will impact the battery life cycle.
Battery terminals should only be cleaned with compressed air or a dry cloth prior to insertion into the machine.
DO NOT use batteries which are not designed for use with the equipment.
DO NOT use modified or damaged batteries.

Battery Storage
Avoid storage in direct sunlight.
Store batteries in a clean, dry location.
DO NOT charge batteries to 100% state of charge (SOC) when storing for a long duration. Charge to less than 80% SOC.
If unit is to be stored unused for a long period, batteries should be removed.

Battery Disposal
Contact an authorized Gravelly EV dealer to recycle battery. DO NOT dispose in household or commercial waste bin.
Discharge within the temperature limits of the battery. See <i>Battery Handling and Use</i> on page 9.

CONTROLS AND FEATURES

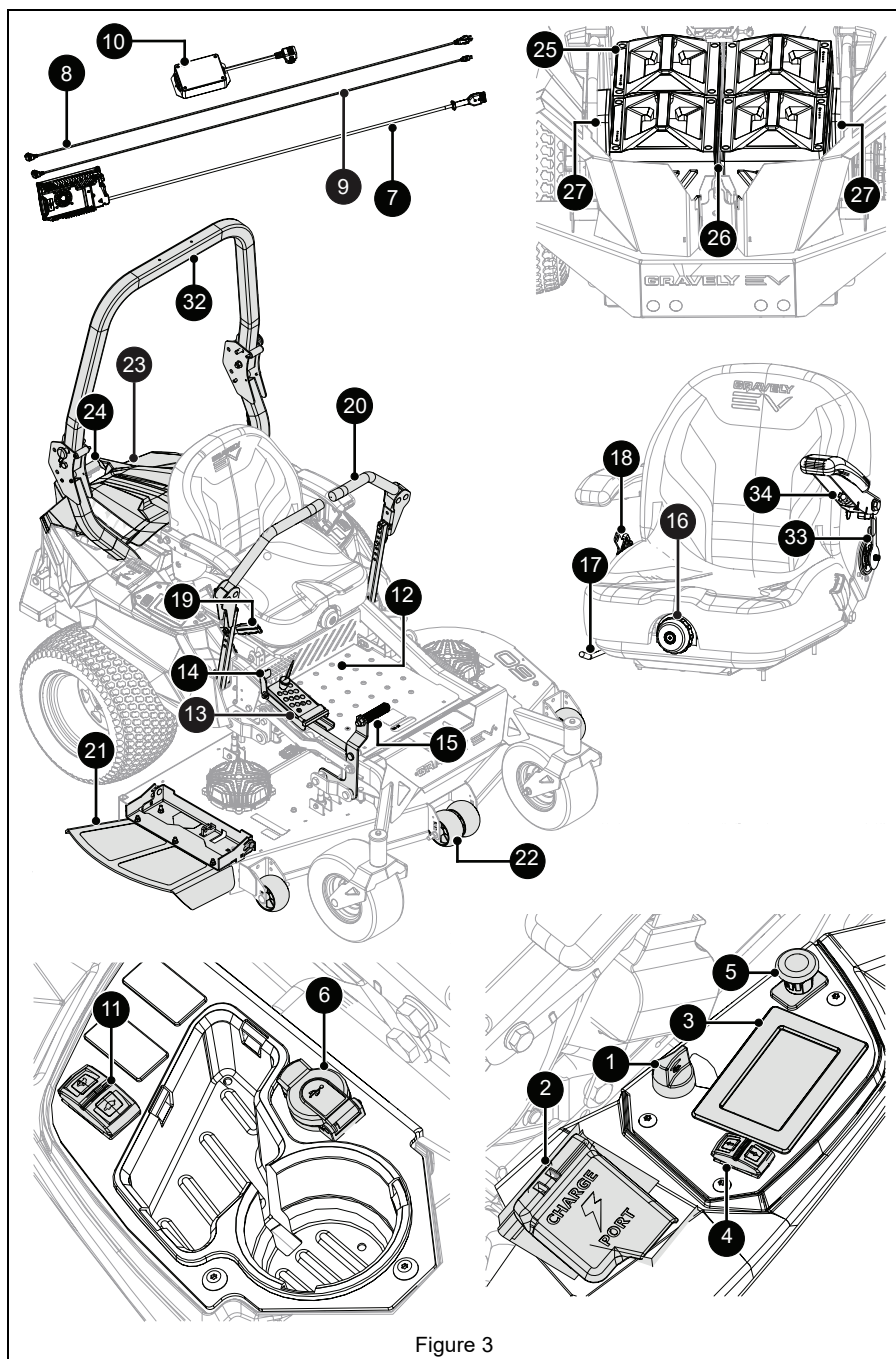
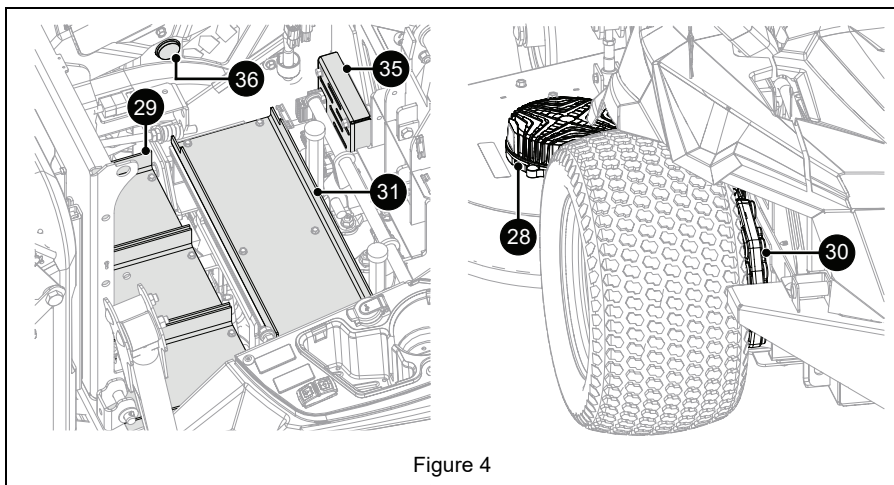


Figure 3



- | | |
|-------------------------------------|--|
| 1. Key Switch | 20. Steering Lever (2) |
| 2. Charge Port | 21. Discharge Chute |
| 3. Digital Display | 22. Anti-Scalp Wheel (6) |
| 4. Display Navigation Switch | 23. Hood Assembly |
| 5. Power Take-off (PTO) Knob | 24. Hood Latch |
| 6. USB Port | 25. Battery (4) |
| 7. Battery Charger | 26. Battery Busbar (Below Batteries) |
| 8. 110V Power Cord | 27. Busbar Cover (2) |
| 9. 220V Power Cord | 28. Deck Motor (3) |
| 10. EMI Filter | 29. Deck Controller (3) (Below Heat Plate) |
| 11. High / Low Speed Switch | 30. Traction Drive Motor (2) |
| 12. Bypass Handle (Below Footplate) | 31. Traction Drive Controller (2) (Below Heat Plate) |
| 13. Height-of-Cut Adjustment System | 32. Rollover Protection Structure (ROPS) |
| 14. Transport Lock Release Lever | 33. Backrest Adjustment Lever |
| 15. Deck Lift Pedal | 34. Armrest Angle Adjustment Knob (2) |
| 16. Ride Adjustment Knob | 35. Vehicle Control Module (VCM) |
| 17. Seat Adjustment Lever | 36. Audible Alarm |
| 18. Seatbelt | |
| 19. Parking Brake Lever | |



WARNING: AVOID INJURY.
Read and understand the entire *Safety* section before proceeding.

See Figure 3 for all controls and features locations.

KEY SWITCH

See Figure 5.

Controls power to the system. The key cannot be removed when in the on position.

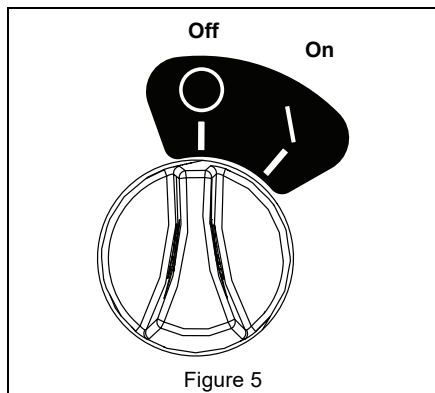


Figure 5

CHARGE PORT

See Figure 6.

Provides a connection point from the charger to the battery pack.

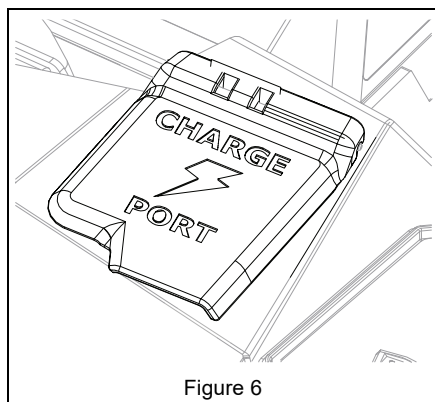


Figure 6

DIGITAL DISPLAY

See Figure 7.

Provides electrical system information to the operator. Digital display is accessible when key switch is turned to the on position and hood assembly is closed. Display will also turn to the on position when charger is plugged in or batteries are in balance mode.

DISPLAY NAVIGATION SWITCH

See Figure 7.

Navigates digital display functions.

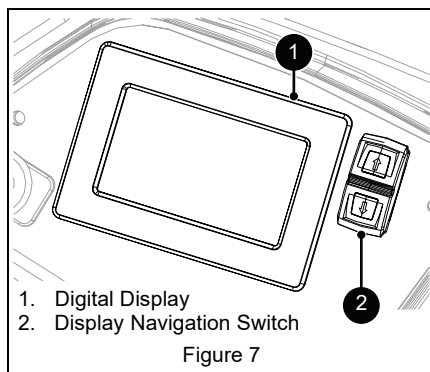


Figure 7

POWER-TAKE-OFF (PTO) KNOB

See Figure 8.

Controls power to mower blades. Pull knob up to engage and push knob down to disengage the blades.



WARNING: AVOID INJURY.
Blades will not *immediately* stop after pushing PTO knob down to off position.

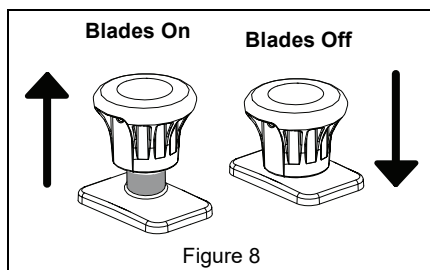


Figure 8

USB PORT

See Figure 9.

NOTICE: DO NOT attempt to charge accessories rated more than 4 amps as it could damage the USB port or mower.

IMPORTANT: Ensure hearing protection and audio devices do not interfere with ability to hear the audible alarm.

Provides 5V of power to USB powered accessories.

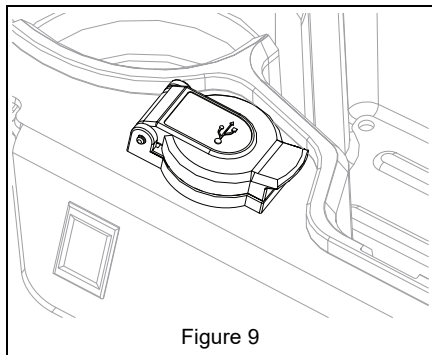


Figure 9

BATTERY CHARGER

See Figure 10.

Provides power to the battery pack when plugged into the charge port.

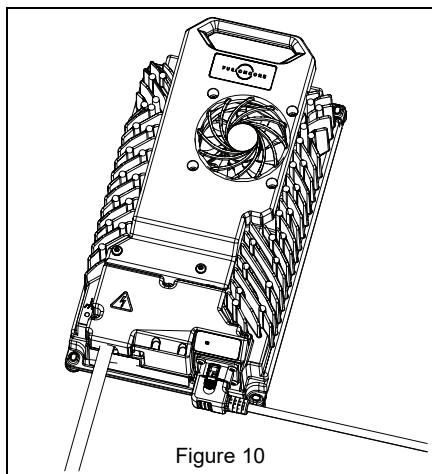


Figure 10

VEHICLE CONTROL MODULE

See Figure 11.

Controls electrical components of the machine.

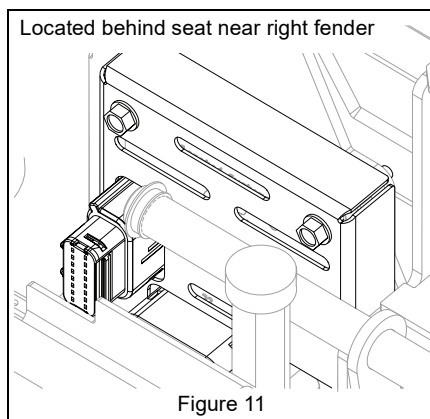


Figure 11

HEIGHT-OF-CUT ADJUSTMENT SYSTEM

Sets the height of cut.

HIGH / LOW SPEED SWITCH



WARNING: AVOID INJURY.
Keep setting at low speed until you learn how to operate the unit.

See Figure 12.

Controls maximum drive speed:

- High speed position: 17.7 kph (11 mph) drive speed.
- Low speed position: 12.9 kph (8 mph) drive speed.

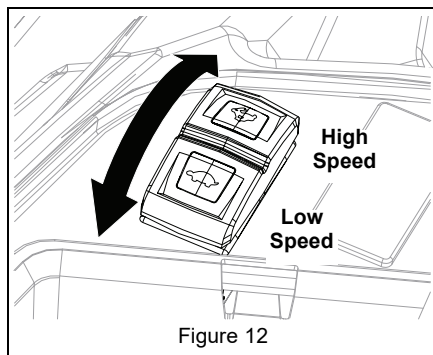


Figure 12

BATTERY BUSBAR

See Figure 13.

NOTICE: AVOID DAMAGE! Batteries must be carefully inserted vertically into busbar with battery connection pins facing the center of the machine. DO NOT drag batteries across busbar fins to position.

Connects batteries to electrical system.

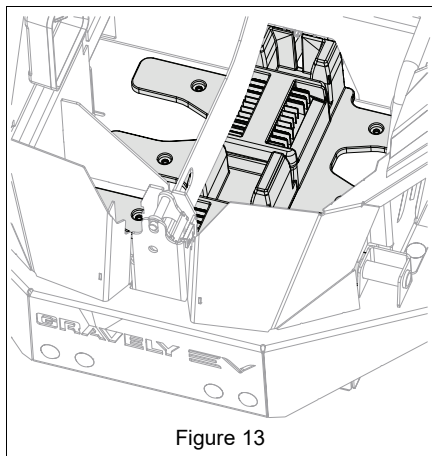


Figure 13

TRANSPORT LOCK RELEASE LEVER

See Figure 14.

Releases deck from transport lock position.

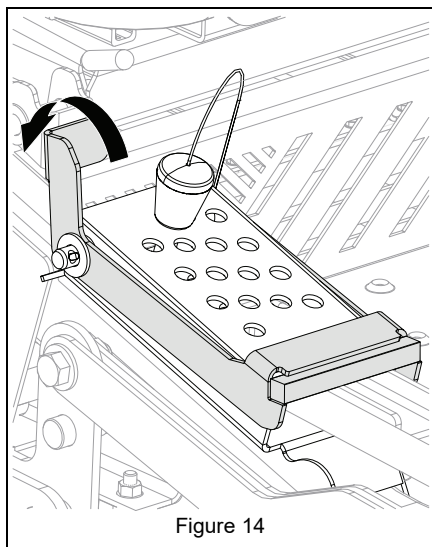


Figure 14

EMI FILTER

See Figure 15.

Reduces electromagnetic noise that may cause interference with electrical devices.

IMPORTANT: EMI filters must be used with all chargers.

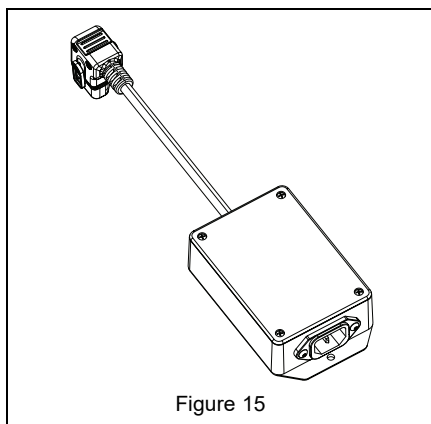


Figure 15

POWER CORDS

See Figure 16.

110V Power Cord

Provides 110V of power to main electrical supply.

220V Power Cord

Provides 220V of power to main electrical supply.

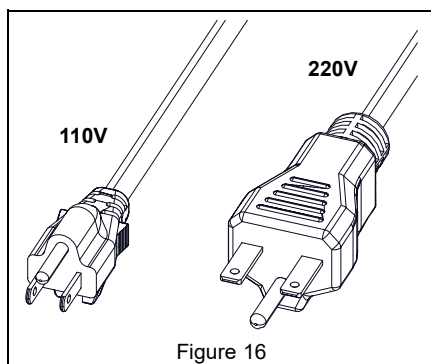


Figure 16

DECK LIFT PEDAL

Raises mower deck to change height-of-cut setting.

SEAT ADJUSTMENT LEVER

Unlocks seat to allow operator to move seat forward or backward and then lock in desired position.

ROLLOVER PROTECTION STRUCTURE (ROPS)

Helps protect operator that is wearing their seatbelt in the event of a rollover. **DO NOT** wear seatbelt when operating with ROPS in the lowered position.

SAFETY INTERLOCK SYSTEM

Monitors the interaction of various unit features for operator safety.

STEERING LEVERS

Control the direction and speed of unit. To stop unit, return both steering levers to neutral position.

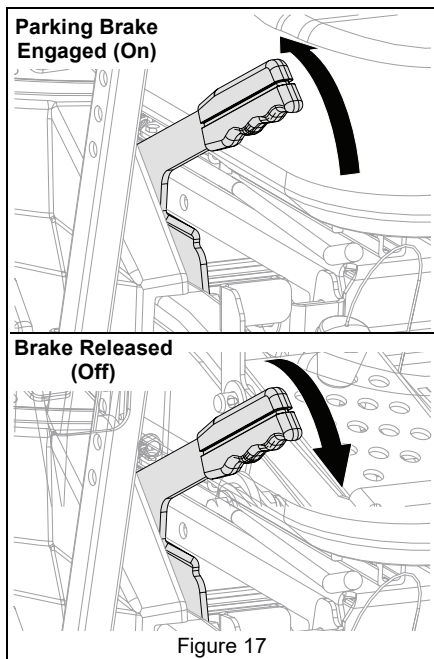
ANTI-SCALP WHEELS

Help prevent the deck from contacting the ground and scalping the lawn when passing over a high spot.

PARKING BRAKE LEVER

See Figure 17.

Controls the parking brake.



BYPASS HANDLE

Releases brake on wheel motors so unit may be moved with the system off.

RIDE ADJUSTMENT KNOB

Adjusts seat for operator comfort.

BACKREST ADJUSTMENT LEVER

Controls backrest angle for operator comfort.

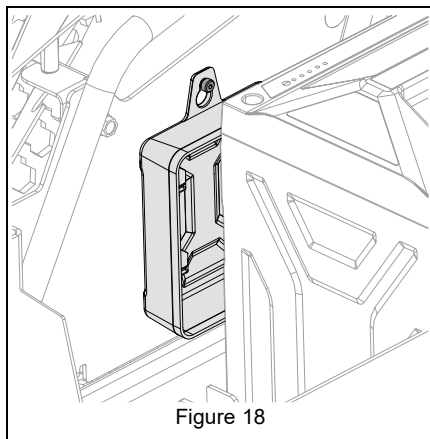
ARMREST ANGLE ADJUSTMENT KNOBS

Set armrest angle for operator comfort.

BUSBAR COVER

Prevents grass, debris and moisture build-up on busbar terminals. See Figure 18.

NOTICE: AVOID DAMAGE. Always install busbar cover when two batteries are installed in the machine.



DECK MOTORS

Rotates blades and monitors blade speed and motor temperature.

DECK CONTROLLERS

Control deck motors.

TRACTION DRIVE MOTORS

Rotates wheels and monitors wheel speed and motor temperature.

TRACTION DRIVE CONTROLLERS

Control traction drive motors and driveability of vehicle.

AUDIBLE ALARM

See Figure 19.

Notifies operator of certain operating conditions and helps prevent accidental movement of the machine.

The audible alarm beeps under the following conditions:

- When key switch is turned to the run position (1 beep).

IMPORTANT: Reference *Digital Display* on page 18 for display function details.

- When Live-to-Drive feature is activated (2 beeps).
- When Live-to-Drive feature is deactivated (1 beep).
- When a vehicle fault occurs (1 beep).

The audible alarm beeps when the following conditions exist for 5 seconds:

- When key switch is turned to the on position and operator is not seated (continues to beep every 5 seconds until conditions no longer exist).
- When Live-to-Drive feature is activated, parking brake is off, vehicle is not moving, and steering arms are in neutral (continues to beep every 5 seconds until conditions no longer exist).

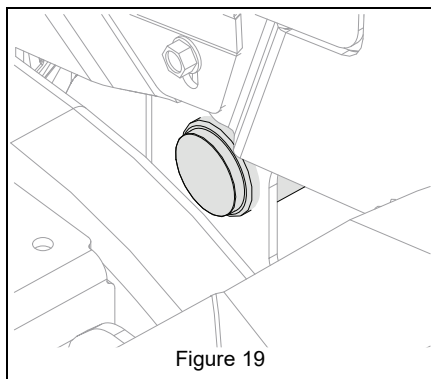


Figure 19

DIGITAL DISPLAY

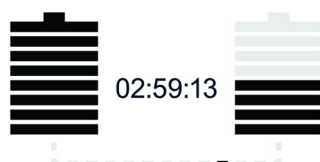
Side Bar Navigation

See *Side Bar Navigation* on page 19.



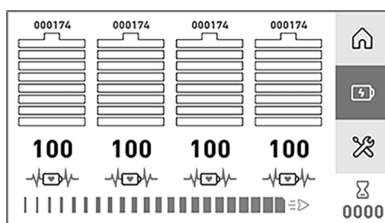
Home Screen

See *Home Screen* on page 19.



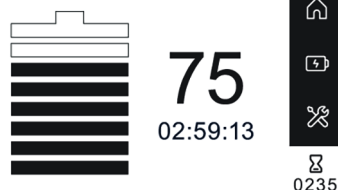
Balance Screen

See *Balance Screen* on page 22.



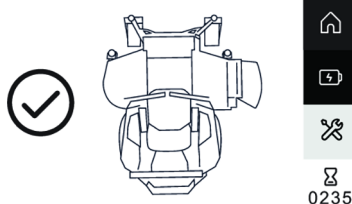
Power Screen

See *Power Screen* on page 20.



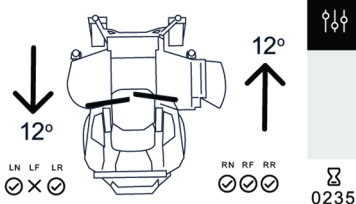
Charge Screen

See *Charge Screen* on page 21.



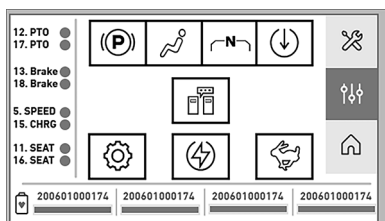
Maintenance Screen

See *Maintenance Screen* on page 21.



Steering Sensor Calibration Screen

See *Steering Sensor Calibration Screen* on page 22.



Diagnostic Screen

See *Diagnostic Screen* on page 23.

Figure 20

SIDE BAR NAVIGATION

Displays when key switch is turned to the on position.

Icon	Meaning	Description	Color Code(s)
	Home Screen	See <i>Home Screen</i> on page 19.	<i>Blue</i> : Default color when operator navigates to home screen.
	Power Screen	See <i>Power Screen</i> on page 20.	<i>Blue</i> : Default color when operator navigates to home screen.
	Maintenance Screen	See <i>Maintenance Screen</i> on page 21.	<i>Red</i> : Maintenance or repair required and / or fault is present. <i>Blue</i> : Default color when operator navigates to maintenance screen and unit is clear of faults.
	Hour Meter	Measures and displays unit runtime when Live-to-Drive feature is activated.	N/A

HOME SCREEN

Displays when key switch is turned to the on position.

Icon	Meaning	Description	Color Code(s)
	State of Charge (SOC)	Battery SOC – 12.5% increments.	<i>Light Green / Blue</i> : 100% – 38% <i>Yellow / Orange</i> : 37% – 13% <i>Red</i> : 12% – 0%
100	Percentage Digital Readout	Average SOC of active batteries – 1% increments.	N/A
	Battery Recognition	Number of batteries properly mounted in machine.	<i>Black</i> : Batteries are discharging. <i>White with Black Outline</i> : Batteries are properly installed but not active. <i>White with Grey Outline</i> : Batteries are not installed. <i>White with Red Outline</i> : Battery recognition fault.
	Live-to-Drive	Notifies operator when machine is ready to drive. The following conditions must exist for Live-to-Drive feature to be activated: • Key switch in the on position. • Parking brake engaged. • Operator presence control (OPC) switch engaged (operator seated). • Steering levers in neutral position. • Hood assembly closed and securely latched.	<i>White</i> : Live-to-Drive feature not activated. <i>Blue</i> : Live-to-Drive feature activated (ready to drive). <i>Red</i> : Live-to-Drive fault.

Icon	Meaning	Description	Color Code(s)
  	Blades	PTO switch status.	<i>White:</i> PTO switch disengaged (blades off). <i>Blue:</i> PTO switch engaged (blades on). <i>Yellow:</i> PTO switch is engaged when machine is turned on. Cycle PTO switch to engage deck. <i>Red:</i> Blade status fault.
	Parking Brake	Parking brake switch status.	<i>White:</i> Parking brake engaged. <i>Blue:</i> Parking brake disengaged. <i>Red:</i> Parking brake fault.
	Low Battery	Battery SOC status.	<i>White:</i> SOC above 12%. <i>Red:</i> SOC below 12%.

POWER SCREEN

Displays when key switch is turned to the on position and operator navigates to the power screen.

IMPORTANT: See *Check SOC* on page 33 to check battery SOC. For battery charging details, see *Charge Batteries* on page 33.

Icon	Meaning	Description	Color Code(s)
	State of Charge (SOC)	Battery SOC – 12.5% increments.	<i>Light Green / Blue:</i> 100% – 38% <i>Yellow / Orange:</i> 37% – 13% <i>Red:</i> 12% – 0%
100	Percentage Digital Readout	Average SOC of active batteries – 1% increments.	N/A
	Power Bar Status	Available power – 25% increments.	N/A
	Battery State of Health	Battery state of health is less than 66%. See <i>Warnings</i> on page 41.	N/A

MAINTENANCE SCREEN

Displays when key switch is turned to the on position and operator navigates to the maintenance screen.

IMPORTANT: See *Warnings* on page 41 for digital readout warning codes. For fault codes, contact an authorized Gravely EV dealer.

Icon	Meaning	Description	Color Code(s)
	Fault Icon & Temporary Warning Icon	Notifies operator of fault / warning location. See <i>Check Faults / Warnings</i> on page 31.	<i>Red:</i> Fault notification. <i>Yellow:</i> Warning notification.
54004	Fault / Warning Digital Readout	Five digit number indicating the fault / warning that occurred.	N/A
	No Faults or Warnings	Machine is clear of faults / warnings.	N/A
	Temperature Icon	Motors and / or controllers are overheating. See <i>Troubleshooting</i> on page 46.	N/A

CHARGE SCREEN

Displays when operator connects battery charger to charge port.

IMPORTANT: See *Check SOC* on page 33 to check battery SOC. For battery charging details, see *Charge Batteries* on page 33.

Icon	Meaning	Description	Color Code(s)
	State of Charge (SOC)	Battery SOC – 12.5% increments.	<i>Light Green / Blue:</i> 100% – 38% <i>Yellow / Orange:</i> 37% – 13% <i>Red:</i> 12% – 0%
100	Percentage Digital Readout	Average SOC of active batteries – 1% increments.	N/A
02:59:13	Charge Time	Time remaining until batteries are fully charged.	N/A

BALANCE SCREEN

Displays when:

- Key switch is in the off position.
- Hood assembly is closed.
- Two or more batteries have at least a 12% difference in SOC.

IMPORTANT: To check battery balance, see *Check Battery Balance* on page 33. For battery balancing details, see *Auto-Balance Feature* on page 33.

Icon	Meaning	Description	Color Code(s)
	State of Charge (SOC)	Battery SOC – 12.5% increments.	<i>Light Green / Blue:</i> 100% – 38% <i>Yellow / Orange:</i> 37% – 13% <i>Red:</i> 12% – 0%
02:59:13	Balance Time	Time remaining until machine is fully operational with two balanced batteries.	N/A

STEERING SENSOR CALIBRATION SCREEN

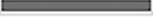
Displays when operator holds display switch down for 7 seconds while on the maintenance screen.

IMPORTANT: See *Steering Sensor Calibration Sequence* on page 38 for steering sensor calibration sequence.

Icon	Meaning	Description	Color Code(s) / Additional Icons
	Complete	Step is complete.	Example: LN LF LR RN RF RR      
	Left / Right Arrow	Instructs operator of proper steering sensor direction / position during calibration sequence.	N/A
	Not Complete	Step is not complete.	Example: LN LF LR RN RF RR      
	Loading	Entering sensor calibration sequence and save calibration step.	N/A
	Neutral Calibration	Neutral position is being calibrated.	N/A
	Save Calibration	Allows user to save parameters in each steering sensor when calibration is complete.	N/A
	Cancel Calibration	Allows user to cancel calibration.	N/A

DIAGNOSTIC SCREEN

Displays when operator holds display switch up for 7 seconds while on the maintenance screen.

Icon	Meaning	Description	Color Code(s)
	Parking Brake	Parking brake switch status.	<i>White:</i> Parking brake engaged. <i>Blue:</i> Parking brake disengaged. <i>Red:</i> Parking brake fault.
	OPC Seat Switch	OPC seat switch status.	<i>White:</i> OPC seat switch disengaged (operator not seated). <i>Blue:</i> OPC seat switch engaged (operator seated).
	Neutral Position	Steering lever position status.	<i>White:</i> Steering levers out of neutral. <i>Blue:</i> Steering levers in neutral and / or Live-to-Drive is activated.
	Live-to-Drive	Notifies operator when machine is ready to drive. The following conditions must exist for Live-to-Drive feature to be activated: • Key switch in the on position. • Parking brake engaged. • OPC switch engaged (operator seated). • Steering levers in neutral position. • Hood assembly closed and securely latched.	<i>White:</i> Live-to-Drive feature not activated. <i>Blue:</i> Live-to-Drive feature activated.
	Communication Icon	Monitors component communication. See <i>Troubleshooting</i> on page 46.	<i>White:</i> Electrical system components are not communicating. <i>Blue:</i> Electrical system components are communicating.
	PTO Input	PTO switch status.	<i>White:</i> PTO switch disengaged. <i>Blue:</i> PTO switch engaged.
	Charge Input	Charger status.	<i>White:</i> Charger not plugged in. <i>Blue:</i> Charger plugged in.
	Speed Input	Drive speed status.	<i>White:</i> Slow speed. <i>Blue:</i> Fast speed.
Battery Serial and State of Health Status Bar  200601000174 		Battery serial number and state of health. Consider replacing batteries when status bar turns yellow (see <i>Accessories</i> on page 49).	<i>Blue:</i> 100% - 65% <i>Yellow:</i> 64% - 0%

Icon	Meaning	Description	Color Code(s)
VCM Inputs			
12. PTO  Blue On 17. PTO  Black Off		PTO switch status.	PTO switch engaged.
12. PTO  Black Off 17. PTO  Blue On		PTO switch status.	PTO switch disengaged.
13. Brake  Blue On 18. Brake  Black Off		Parking brake switch status.	Parking brake engaged.
13. Brake  Black Off 18. Brake  Blue On		Parking brake switch status.	Parking brake disengaged.
5. SPEED 		Drive speed status.	<i>Blue:</i> Fast speed. <i>Black:</i> Slow speed.
15. CHRG 		Charger status.	<i>Blue:</i> Charger plugged in. <i>Black:</i> Charger not plugged in.
11. SEAT  16. SEAT 		OPC switch status.	<i>Both Blue:</i> OPC seat switch engaged (operator seated). <i>Both Black:</i> OPC seat switch disengaged (operator not seated).

OPERATION



WARNING: AVOID INJURY.
Read and understand the
Safety section before
proceeding.

IMPORTANT: All references to left, right, front or rear are given from the perspective of operator in operator's position, facing the direction of forward travel.

EMERGENCY STOPPING

1. Move steering levers to neutral position.
2. Engage parking brake.
3. Push PTO knob down to off position.
4. Turn key switch to off position and remove key.

BEFORE OPERATING UNIT

IMPORTANT: Register your product! See *Register Your Product!* on page 1.

1. Check function of the Safety Interlock System by performing the tests in *Check Safety Interlock System* on page 30. Contact an authorized Gravely EV dealer for repair if any of the tests fail.
2. Check battery SOC and charge batteries if necessary. See *Check SOC* on page 33.
3. Ensure seat is in the operating position.
4. Ensure batteries are properly installed in the machine. See *Install Batteries* on page 35.
5. Ensure hood assembly is closed and handle is securely latched. See Figure 21.

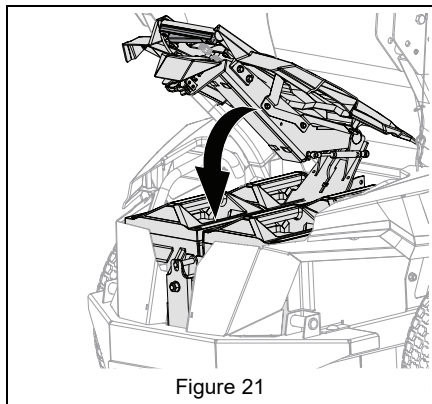


Figure 21

6. Check battery balance. See *Check Battery Balance* on page 33.
7. Set cutting height. See Figure 22.
 - a. Push mower lift pedal forward until transport lock engages.
 - b. Insert height adjustment pin through desired setting in height-of-cut adjustment system.
 - c. Push mower lift pedal slightly forward, release transport lock and slowly release pedal until it contacts adjustment pin and stops.

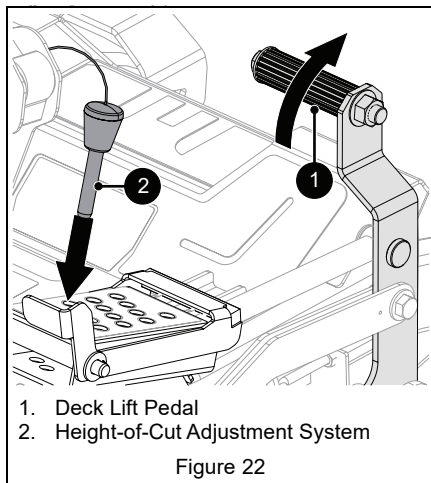


Figure 22

POSITION ROPS

IMPORTANT: Inspect ROPS and seatbelt for damage and loose or missing hardware.

Raise Center Bar

See Figure 23.

1. Remove hairpins from lock pins and remove lock pins from hinge plate.
2. Raise center bar and secure with lock pins and hairpins.



WARNING: AVOID INJURY.
Seatbelt **MUST** be worn when
operating with center bar
raised.

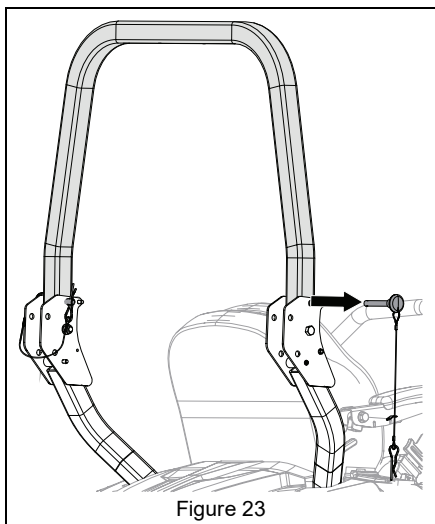


Figure 23

Lower Center Bar

See Figure 24.



WARNING: AVOID INJURY. Lower the center bar only when needed to drive under an object. There is no rollover protection with the center bar in the lowered position. DO NOT wear seatbelt when ROPS is in lowered position.

1. Remove hairpins from lock pins and remove lock pins from hinge plate.
2. Lower center bar and secure with lock pins and hairpins.

IMPORTANT: Return center bar to the raised position when clear of obstacles.

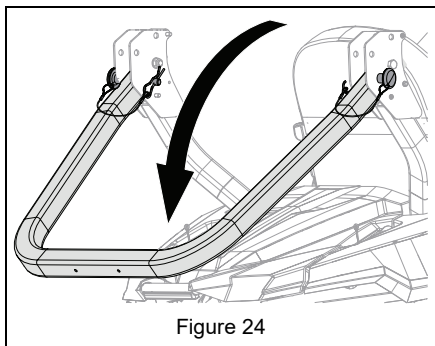


Figure 24

START THE SYSTEM

1. Push PTO knob down to off position.
2. Move steering levers to neutral position.
3. Engage parking brake.
4. Insert key switch and turn to the on position.

OPERATE UNIT

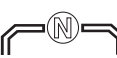
1. Activate Live-to-Drive feature. See *Home Screen* on page 19.
2. Release parking brake.
3. Pull PTO knob up to on position.

NOTICE: Never engage the PTO if the mower is plugged with grass or other material. This may cause damage to the motors.



WARNING: AVOID INJURY. Move the steering levers slowly and keep the mower at slow speed until you learn how to operate the unit.

4. Move steering levers to begin mowing.

Direction of Travel	Lever Position
Forward	Push both levers forward from neutral position. 
Reverse	Pull both levers backward from neutral position. 
Right Turn	Push left lever farther forward than the right lever. 
Left Turn	Push right lever farther forward than the left lever. 
Stop	Return both levers to neutral position. 

NOTICE: Aggressive turning can scuff or damage lawns. Always keep both wheels rotating when making sharp turns. **DO NOT** make turns with inside wheel completely stopped. For minimum turning radius, slowly reverse inside wheel while moving outside wheel slowly forward.

For Best Mowing Results

- Cut grass when it is dry.
- Keep mower blades sharp.
- Keep mower deck properly leveled.
- Do not set height of cut too low. For very tall grass, mow twice.
- Do not travel too fast.
- When mulching, only remove 1/3 of grass length per cutting. Do not cut more than 2.5 cm (1") at any one time.
- Discharge clippings into areas already cut.
- Vary cutting pattern with each mowing.
- Do not allow grass or debris to collect inside of mower deck. Clean after each use.

STOP THE UNIT



WARNING: AVOID INJURY.
Wait for all moving parts to stop before leaving operator's position.

1. Move steering levers to neutral position.
2. Engage parking brake.
3. Push PTO knob down to off position.
4. Turn key switch to off position and remove key.

MOVE UNIT MANUALLY

Bypass electric brakes to move unit with system off.

1. Remove key and wait for moving parts to stop and for hot parts to cool.
2. Rotate footplate rearward until it locks into place. See Figure 25.

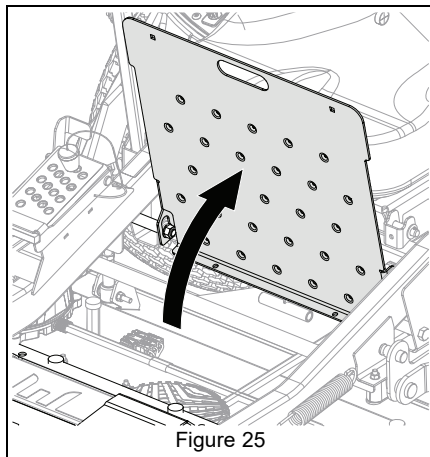


Figure 25

3. Pull bypass handle and secure notch to footplate ledge. See Figure 26.
4. Push unit to desired location.
5. To return footplate to operating position, lift up on footplate and lower to close (or) remove handle from footplate to close.

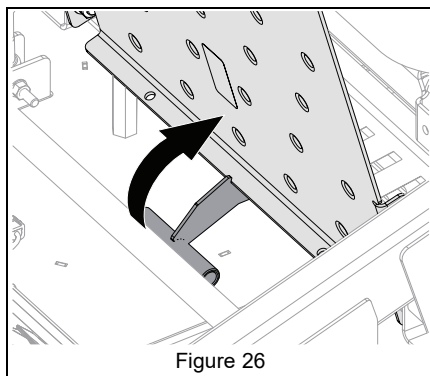


Figure 26

TRANSPORT UNIT

1. Push deck lift pedal completely forward to engage transport lock. Release pedal.
2. Move unit to transport vehicle.
3. Engage parking brake and remove key.
4. Secure mower frame to transport vehicle.

NOTICE: NEVER secure unit to vehicle from rods or linkages that could be damaged.

RELEASE TRANSPORT LOCK

1. Push deck lift pedal forward and lift transport lock release lever.
2. Slowly return mower lift pedal to resting position.

MAINTENANCE



WARNING: AVOID INJURY.
Read and understand the
Safety section before
proceeding.

An authorized Gravely EV dealer can provide service and adjustments to keep your unit operating at peak efficiency.

MAINTENANCE SCHEDULE

NOTICE: DO NOT clean unit with water. To avoid damage to electrical components and motors, clean unit with compressed air or a dry cloth.

Service Performed	Each Use	Every 25 hrs.	Every 50 hrs.	Every 100 hrs.	Every 250 hrs.	Every 500 hrs.
Clean Grass and Debris from Top and Underside of Deck	•					
Clean Debris from Under Fenders	•					
Clean Charge Port and USB Port	•					
Clean Seat Mount Area (Both Sides)	•					
Clean Battery Busbar	•					
Clean Battery Terminals	•					
Inspect Wiring, and Wire Harnesses	•					
Inspect Batteries and Busbar Interfaces for Damage	•					
Clean Traction Drive Motor Bay	•					
Change Gearcase Oil *					•	•
Check Safety Interlock System	•					
Check Parking Brake			•			
Check Tire Pressure	•					
Check Mower Blades		•				
Clean Charge Port	•					
Clean Caster Fork Bearings						•

Lubricate Caster Wheel Bearings						•
Check Battery SOC	•					
Check Fasteners				•		
Lubricate Unit			•			
* Change gearcase oil after first 250 hours of operation and every 500 hours thereafter. Contact an authorized Gravely EV dealer.						

SERVICE PARTS

Contact an authorized Gravely EV dealer to purchase service parts for your unit.

Description	Qty.	Part No.
110V Power Cord	1	09199600
220V Power Cord	1	09199800
10 Amp Mini Fuse	1	21200002
7.5 Amp Mini Fuse	1	21200003
Hood Release Cable	1	06900730
80W-140 Synthetic Gear Oil	1	00981400
Left / Center Mower Blade (Model 997008)	2	09440000
Left / Center Mower Blade (Model 997009)	2	09439700
Left / Center Mower Blade (Model 997010)	2	09182100
Right Mower Blade (Model 997008)	1	09466700
Right Mower Blade (Model 997009)	1	09466600
Right Mower Blade (Model 997010)	1	09196400
Mower Blade (Model 997005)	3	09440000
Mower Blade (Model 997006)	3	09439700
Mower Blade (Model 997007)	3	09182100

CHECK MOWER BLADES

Check blades for wear. Replace or sharpen as needed.



CAUTION: AVOID INJURY. Use sturdy gloves or padding to protect hands when working with mower blades. Rotation of one blade rotates the other blades.

Remove Blades

1. Remove key and wait for moving parts to stop and for hot parts to cool.
2. Remove all batteries from mower.
3. Chock wheel. Strap and clamp unit onto lift, if used.

IMPORTANT: Right blade on rear-discharge decks is retained with a left-hand thread bolt.

An impact wrench is required to remove blade bolts.

See Figure 27.

4. Remove blade assembly:

- *Models 997005, 997006, 997007 only (side-discharge):* Turn hex bolts counter-clockwise to loosen. Remove hardware, blades, and lower spindle guard. Sharpen or discard blades and retain hardware and lower spindle guard.
- *Models 997008, 997009, 997010 only (rear-discharge):* To loosen, turn hex bolts counter-clockwise for left and center blades and clockwise for right blade. Remove hardware, blades, and lower spindle guard. Sharpen or discard blades and retain hardware and lower spindle guard.

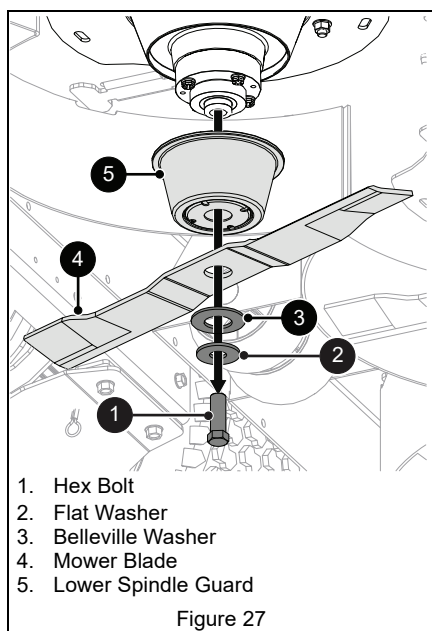


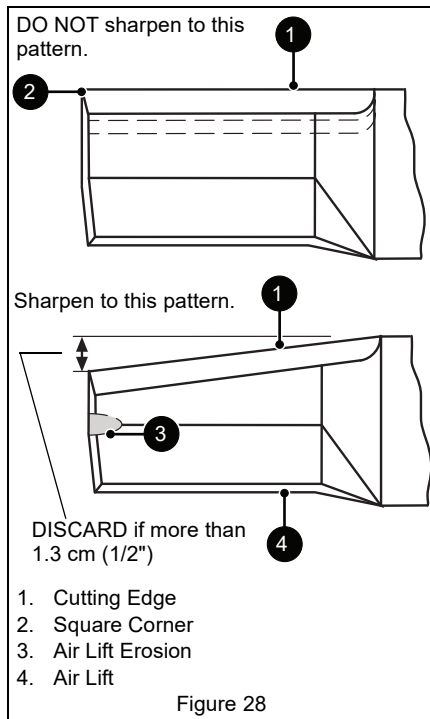
Figure 27

Sharpen Blades



CAUTION: DO NOT sharpen blades while attached to unit.

1. Remove blades. Discard blades if:
 - More than 1.3 cm (1/2") of metal is removed.
 - Air lifts are eroded.
 - Blades are bent or broken.
2. File or grind an equal amount of metal from each cutting edge of the blade until sharp. DO NOT change angle of cutting edge or round the corner of the blade. See Figure 28.



CAUTION: Unbalanced blades cause excessive vibration and eventual damage to unit. Balance blades before reinstalling on unit. NEVER weld or straighten blades.

3. Check blade balance by sliding an unthreaded bolt through center hole. Hold the bolt level. If blade does not remain horizontal, sharpen the heavy end until blade is balanced.

Install Blades

See Figure 27.



CAUTION: Mating surfaces between spindle, lower spindle guard, blade and washer **MUST** be free of debris to ensure correct tightness and alignment.

1. Secure lower spindle guards and blades to spindles using hardware removed earlier.
 - *Models 997005, 997006, 997007 only:* Turn hex bolts clockwise to tighten.
 - *Models 997008, 997009, 997010 only:* To tighten, turn hex bolts clockwise for left and center blades and counter-clockwise for right blade.
2. Hand tighten assembly to verify all components are centered.
3. Torque bolts to 156 N•m – 217 N•m (115 lb-ft – 160 lb-ft).

CHECK SAFETY INTERLOCK SYSTEM

Check function of the Safety Interlock System by performing the tests below. Contact an authorized Gravelly EV dealer for repair if any of the tests fail.

The unit should not start when the following conditions exist:

- Key switch is turned to the on position and hood assembly is open.

The Live-to-Drive feature should activate (see *Home Screen* on page 19) when all of the following conditions exist:

IMPORTANT: Charger must be disconnected.

- Parking brake is engaged.
- OPC switch is engaged (operator in seat).
- Steering levers are in neutral position.
- Hood assembly is closed.

CHANGE GEARCASE OIL



CAUTION: Use of alternate gear oils could result in premature wear of gearcase components and will void the gearcase warranty.

1. Operate unit for a few minutes to warm gearcase oil.
2. Remove key and wait for all moving parts to stop and for hot parts to cool.
3. Chock front wheels and support unit so both drive wheels are off the ground.
4. Position supports such as blocks or jack stands under the frame.
5. Remove drive wheel. See Figure 29.

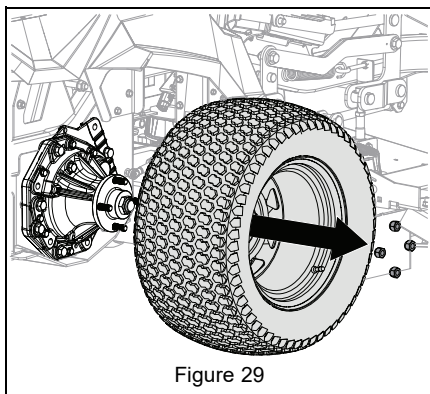
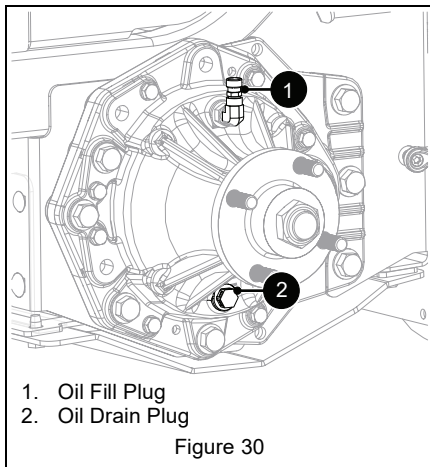


Figure 29

6. Position container under drain plug to catch used oil.
- See Figure 30.
7. Remove drain plug from gearcase and allow oil to drain. Retain drain plug for reinstallation.
 8. Wipe drain plug and mounting surface clean.
 9. Remove oil fill plug for proper ventilation.



1. Oil Fill Plug
2. Oil Drain Plug

Figure 30

10. Reinstall oil drain plug. Torque to 16.2 N•m – 19.8 N•m (143 in-lbs – 175 in-lbs).
11. Fill gearcase with 200 mL of 80W-140 synthetic gear oil (Gravely p/n 00981400).
12. Reinstall oil fill plug. Torque to 16.2 N•m – 19.8 N•m (143 in-lbs – 175 in-lbs).
13. Repeat steps 6 – 12 for other transaxle.
14. Reinstall wheel assemblies. Torque wheel lug nuts to 81.3 N•m – 122.0 N•m (60 lb-ft – 90 lb-ft).
15. Remove unit from jack stands and remove wheel chocks.

CHECK FAULTS / WARNINGS

To determine if a fault / warning is present:

1. Activate Live-to-Drive feature. See *Home Screen* on page 19.
2. Navigate to the maintenance screen on the digital display (see *Maintenance Screen* on page 21). If a fault or warning code is present, see *Fault / Warning Code Index* on page 40.

Fault / Warning Locations

Location of issue causing fault / warning notification (see Figure 31):

- VCM = Center
- Battery = Rear
- Deck Controller = Left / Right / Center Deck
- Deck Motor = Left / Right / Center Deck
- Traction Controller = Left / Right Wheel
- Traction Motor = Left / Right Wheel
- Steering Sensors = Center

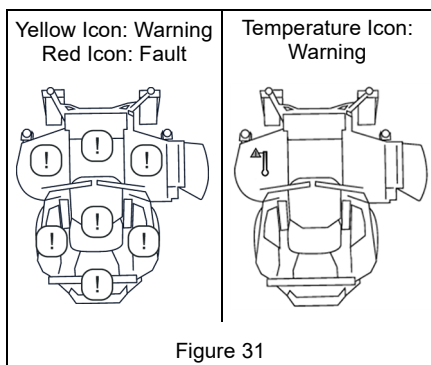


Figure 31

BATTERY ACCESS

1. Remove key and wait for moving parts to stop and for hot parts to cool.
2. Open hood assembly. See Figure 32.

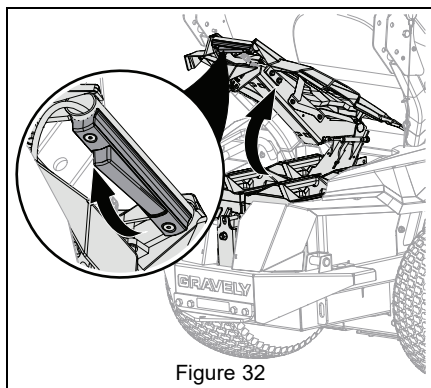


Figure 32

CHECK PARKING BRAKE

1. Engage parking brake lever.
2. Remove key and wait for moving parts to stop and for hot parts to cool.
3. Push unit forward.
 - If unit does not move forward, no further action is needed.
 - If unit easily moves forward, contact an authorized Gravely EV dealer.

CHECK TIRE PRESSURE

See *Specifications* on page 50 for recommended tire pressure.



WARNING: AVOID INJURY. Explosive separation of tire and rim parts is possible.

- DO NOT inflate tires above the recommended pressure.
- DO NOT inflate tires with a compressor; use a hand pump.
- DO NOT stand in front of tire assembly when inflating. Use a clip-on chuck and extension hose long enough to allow you to stand to one side.

CHECK FASTENERS

Check for loose or missing hardware.

LUBRICATE UNIT

Lubricate Seat

See Figure 33.

1. Remove key and wait for moving parts to stop and for hot parts to cool.
2. Move steering levers outward.
3. Remove batteries.
4. Using a suitable tool, rotate seat latch to unlock seat plate.
5. Rotate seat forward.

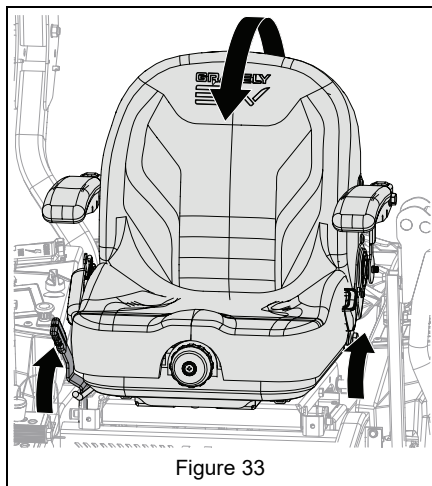


Figure 33

6. Apply grease to seat tracks through slots under seat plate. See Figure 34.

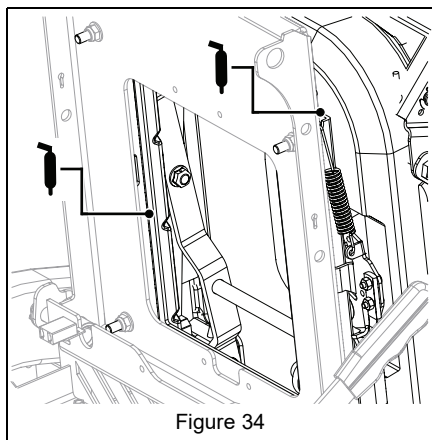


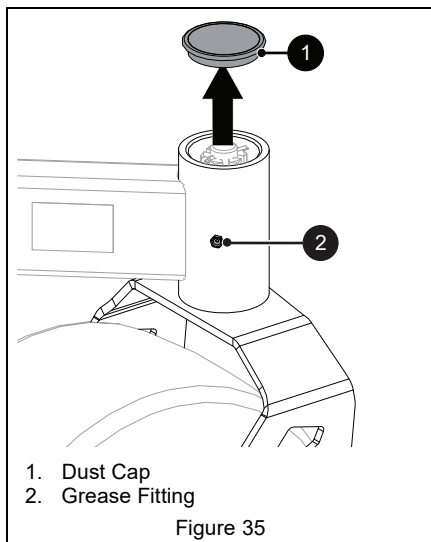
Figure 34

7. Return seat to operating position and slide seat back and forth to spread grease along tracks.

Lubricate Caster Fork Bearings

See Figure 35.

1. Place steering levers in neutral position and engage parking brake.
2. Remove key and wait for all moving parts to stop and for hot parts to cool.
3. Remove dust cap.
4. Pump grease into fitting until grease appears at the top of the upper bearing.



1. Dust Cap
2. Grease Fitting

Figure 35

5. Reinstall dust cap.
6. Repeat process on opposite side of unit.

CHECK MOWER BLADES

Check blades for wear and damage. Replace or sharpen as needed.



CAUTION: AVOID INJURY. Use sturdy gloves or padding to protect hands when working with mower blades.



CAUTION: Unbalanced blades cause excessive vibration and eventual damage to unit. Balance blades before reinstalling on unit. NEVER weld or straighten blades.

CHECK BATTERY BALANCE

IMPORTANT: If multiple batteries are installed in the machine, they must be within 12% SOC to operate together.

1. Remove key and wait for moving parts to stop and for hot parts to cool.
2. Ensure batteries are installed in the machine. See *Install Batteries* on page 35.

IMPORTANT: If battery balancing is required, see *Auto-Balance Feature* on page 33.

AUTO-BALANCE FEATURE

Auto-balance feature occurs under the following conditions:

- Key switch is in the off position.
- Hood assembly is closed.
- Two or more batteries have at least a 12% difference in SOC.

IMPORTANT: If battery charge levels vary significantly, connect a battery charger. The charger will always charge low SOC batteries first. See *Charge Batteries* on page 33.

Fast Balance Feature

The fast balance feature balances two batteries at a time that are within 30% SOC. Slow balancing will occur after fast balancing is complete. Refer to the digital display for remaining balance time.

Slow Balance Feature

The slow balance feature operates on all batteries in the system. Batteries must have at least a 12% difference in SOC for slow balancing to occur.

CHECK SOC

To check battery SOC, refer to the digital display with key switch turned on or check battery LED lights. See *Check Battery LED Lights* and *Charging Status* on page 33.

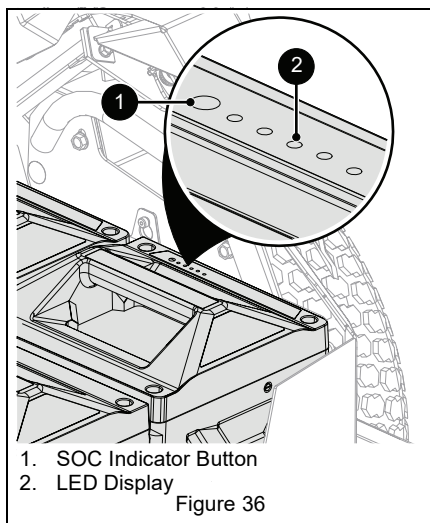
Check Battery LED Lights

See Figure 36.

IMPORTANT: Battery LED lights indicate battery SOC in 20% increments and automatically turn on when batteries are charging.

1. Open hood assembly. See *Battery Access* on page 31.
2. Press and hold SOC indicator button until LED lights display. See *Charging Status* on page 33 to determine if batteries require charging.

NOTICE: If battery fault exists, battery fault indicator will replace charge status with fault code. Open hood, remove batteries, and reinstall batteries. If fault persists, contact an authorized Gravely EV dealer. Charge status will return when fault is cleared. See *Fault / Warning Code Index* on page 40.



Charging Status

LED display should blink and then transition to a solid color within SOC range indicated below. Once charger is removed, LED display will turn off.

Charging Status	SOC
1 LED Light	0% – 20%
2 LED Lights	20% – 40%
3 LED Lights	40% – 60%
4 LED Lights	60% – 80%
5 LED Lights	80% – 99%
5 LED Lights *	100%
* Displays for one minute after charge completion and then shuts off.	

CHARGE BATTERIES

IMPORTANT: AriensCo recommends changing all four batteries at the same time and replacing all batteries with batteries at the same state of charge. Failure to change batteries at the same state of charge may require batteries to auto balance in the machine.

IMPORTANT: Follow the recommended battery charging temperatures. DO NOT charge batteries in temperatures lower than 3° C (37° F) or above 40° C (104° F).

NOTICE: ALWAYS disconnect charger before trailering unit.

1. Engage parking brake and place steering levers in neutral position.
2. Ensure hood and seat are in the operating position.
3. Remove key and wait for moving parts to stop and for hot parts to cool.
4. Lift charge port cover and move charge port cap to the side.
5. Connect charger connector to charging port on the machine. See Figure 37.

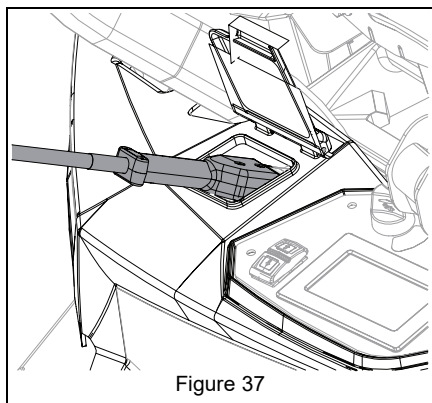


Figure 37

See Figure 38.

6. Connect EMI filter to charger.
7. Connect 110V or 220V power cord to EMI filter.
8. Connect power cord to 110V or 220V wall outlet.

IMPORTANT: Avoid using electrical extension cords. If an extension cord must be used, use one that is UL listed or CSA certified, rated for a minimum of 13 amps, grounded and labeled as suitable for outdoor use.

9. Verify that charger is functioning by observing the flashing green light on the charger (battery synchronization may take up to 30 seconds).
10. Continue to charge batteries until light on charger is no longer flashing. Refer to digital display for remaining charge time and charging exit options.

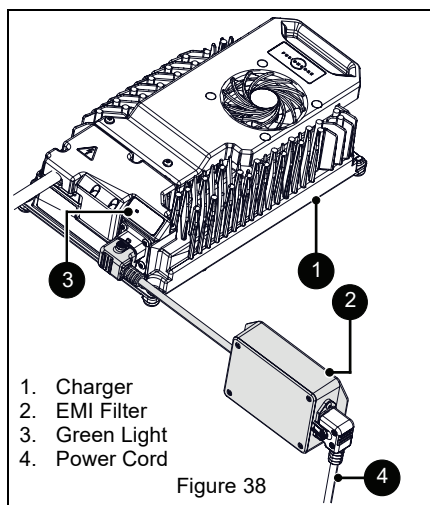


Figure 38

11. Disconnect battery charger from wall outlet.
12. Disconnect battery charger from charge port.
13. Position charge port cap over connector and close lid.

Sleep Mode

Batteries will not charge if batteries have entered sleep mode. Batteries enter sleep mode after extended periods of time (approximately 20 minutes) if:

- Key switch is in the on position
- Charger is plugged into the machine but power from outlet is not present.

To wake batteries from sleep mode, perform one of the following steps:

- Open and close hood assembly.
- Press SOC indicator button (see Figure 36).
- Power cycle unit (turn ignition key to the off position and then return it to the on position).

Limp Mode



WARNING: When cycling PTO switch, unit will continue to use remaining 5% of battery SOC until batteries are depleted.

Unit enters limp mode (blades no longer operate) when PTO switch is engaged and battery SOC reaches 5% or lower (see Blade Status under *Home Screen* on page 20). This feature allows operator sufficient time to return unit to a charger after resetting blades. To reset blades, cycle PTO switch (push PTO switch down to the off position and then return it to the on position). See *Charge Batteries* on page 33 for battery charging details.

ADJUSTMENTS



WARNING: AVOID INJURY. Read and understand the *Safety* section before proceeding.

REMOVE BATTERIES

1. Open hood assembly. See *Battery Access* on page 31.
2. Starting with the two rearmost batteries, vertically lift batteries from busbar using the supports on either side of battery tray.

INSTALL BATTERIES

1. Open hood assembly. See *Battery Access* on page 31.

See Figure 40.

2. Using two hands, carefully guide batteries into busbar until fully seated, starting with the two forward-most batteries. If properly installed, LED lights will illuminate, confirming recognition of software.

NOTICE: AVOID DAMAGE! Batteries must be carefully inserted vertically into busbar with battery connection pins facing the center of the machine. DO NOT drag batteries across busbar fins to position.

Refer to the following battery installation instructions before installing batteries:

- If two batteries are installed in the machine, install busbar cover. See *Install Busbar Cover* on page 35.

- Install two to four batteries in the machine whenever possible. Using one or three batteries will expose busbar terminals to grass, debris and moisture.
- Install at least two batteries to drive and mow. Installing one battery allows for drive-only operation. For drive-only operation, a warning will be present on the digital display (see *Warnings* on page 41).

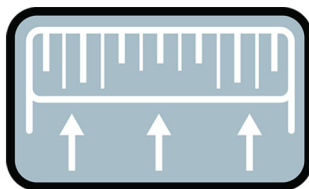


Figure 39

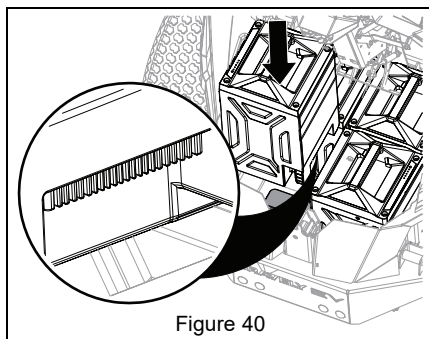


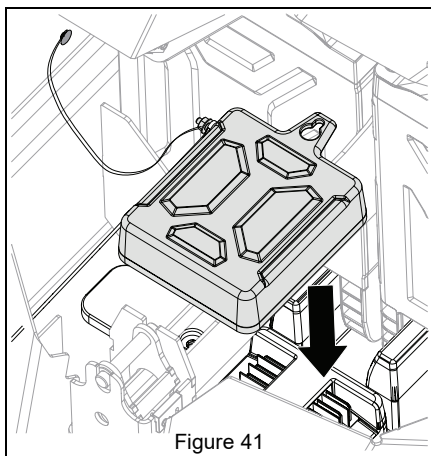
Figure 40

IMPORTANT: After installing batteries, press SOC indicator to ensure batteries wake and balance. See *Check SOC* on page 33.

INSTALL BUSBAR COVER

NOTICE: To prevent grass, debris and moisture build-up on busbar terminals, use busbar cover when two batteries are in the machine.

1. Remove busbar cover from rear fender on either side of unit.
2. Clear any accumulated debris from inside cover.
3. Position cover over exposed battery busbar pins. See Figure 41.
4. Close hood assembly and ensure handle is securely latched.



ADJUST SEAT



WARNING: AVOID INJURY.
Make all seat adjustments
with the unit stopped, parking
brake engaged and key switch
in the off position.

See Figure 42.

Ride Adjustment Knob

NOTICE: To avoid damage, DO NOT set ride adjustment knob outside of the maximum range.

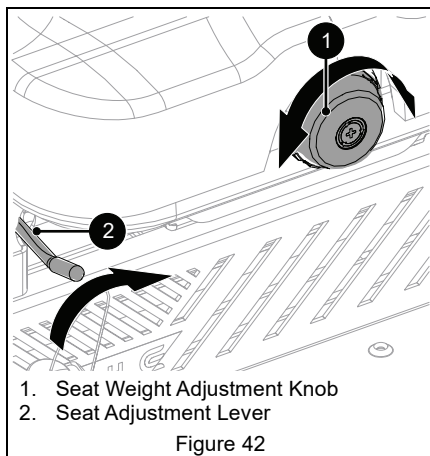
1. Set ride adjustment knob to the weight of the operator.

For further adjustment:

- Turn ride adjustment knob clockwise for a firmer ride.
- Turn ride adjustment knob counterclockwise for a softer ride.

Set Seat Position

1. While seated, pull seat adjustment lever inward and slide seat forward or backward to desired position.
2. Release lever and slide seat slightly forward or backward to lock position.



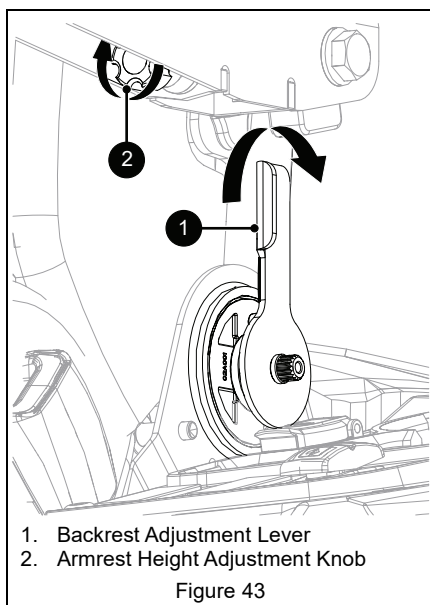
See Figure 43.

Set Backrest Angle

Pull lever on left side of seat to adjust backrest angle.

Set Armrest Angle

Turn height adjustment knob clockwise to raise the front of armrest or counterclockwise to lower front of armrest.



ADJUST STEERING LEVERS

Adjust Height

The steering lever height may be adjusted for operator comfort.

See Figure 44.

1. Remove key and wait for moving parts to stop and for hot parts to cool.
2. Remove steering lever hardware and remove steering lever from lower control arm.
3. Position steering lever at desired height and align with lower control arm. Secure with original hardware.

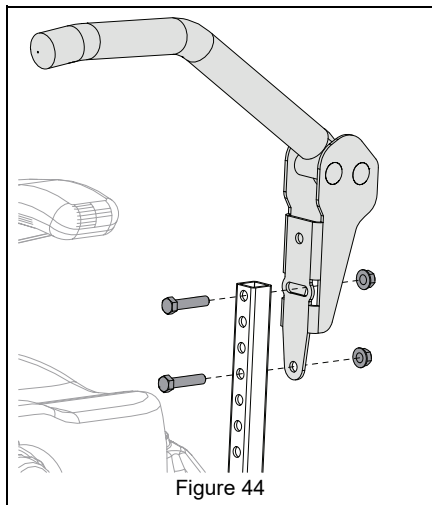


Figure 44

4. Adjust steering lever position.
5. Turn eccentric spacer so levers are at the same height and have a 1.3 cm – 2.5 cm (1/2" – 1") gap between lever ends. See Figure 45.

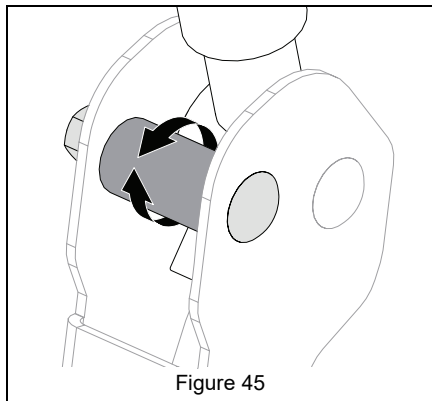


Figure 45

If there is more than 3.2 mm (1/8") between the horizontal alignment of the steering levers, align the levers.

6. Remove key and wait for moving parts to stop and for hot parts to cool.
7. Engage parking brake.
8. Loosen mounting hardware, align levers and tighten hardware. See Figure 46.

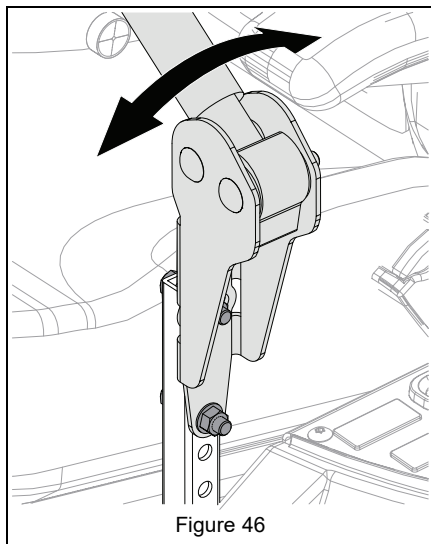


Figure 46

Adjust Forward Position

The steering lever forward position may be adjusted for operator comfort.

1. Remove key and wait for moving parts to stop and for hot parts to cool.
2. Loosen mounting hardware on steering lever assemblies.
3. Place steering levers in desired position:
 - Gently push levers forward for greater distance from operator.
 - Gently pull levers back for closer distance to operator.
4. Tighten hardware.

ADJUST UNIT TO DRIVE STRAIGHT

Adjust Tire Pressure

1. Remove key and wait for moving parts to stop and for hot parts to cool.
2. Check tire pressures. If needed, adjust to recommended pressures. See *Specifications* on page 50.
3. Check tracking.
 - If unit does not track straight, increase tire pressure to the drive wheel of the side it moves toward.

IMPORTANT: DO NOT exceed maximum tire pressure listed on tire sidewall.

- If increasing tire pressure does not correct tracking, adjust the limiter bolts as directed below.

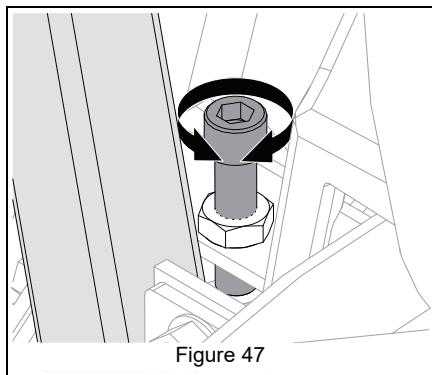
Adjust Limiter Bolts

See Figure 47.

IMPORTANT: Unit ships with limiter bolts set to maximum drive speed.

Limiter bolts can be adjusted to increase or decrease drive wheel speeds. To adjust:

1. Loosen jam nut.
 - Turn limiter bolt counterclockwise to increase maximum drive wheel speed on that side.
 - Turn limiter bolt clockwise to reduce maximum drive wheel speed on that side.
2. Tighten jam nut.



3. Align steering levers. See *Adjust Steering Levers* on page 37.

CALIBRATE STEERING SENSORS

In the event of a steering sensor, electrical, or mechanical fault, steering sensor calibration may be required.

Steering Sensor Positions

The digital display will prompt the following steering positions during the steering sensor calibration sequence:

- LN / RN: Left Neutral / Right Neutral
- LF / RF: Left Forward / Right Forward
- LR / RR: Left Reverse / Right Reverse

Steering Sensor Calibration Sequence

NOTICE: If calibration does not properly set neutral, forward, or reverse, contact an authorized Gravely EV dealer.

1. Navigate to the maintenance screen on the digital display See *Maintenance Screen* on page 21.
2. Hold display switch down (approximately 7 seconds) until steering sensor calibration screen appears. See *Steering Sensor Calibration Screen* on page 22.

Follow the calibration sequence prompted on the digital display:

IMPORTANT: Refer to the digital display for to determine if levers are properly positioned and step is complete.

3. Hold steering levers in neutral.
4. Position left steering lever in the forward-most position.
5. Position left steering lever in the rear-most position.
6. Position right steering lever in the forward-most position.
7. Position right steering lever in the rear-most position.
8. Position steering levers in neutral.
9. Use the navigation switch to save or cancel the steering sensor parameters.
10. Wait until loading screen and splash screen are complete.
11. Power cycle unit to clear calibration faults (turn ignition key to the off position and then return it to the on position).

ADJUST HOOD LATCH MAGNETIC SWITCH

See Figure 48.

Mower may lose Live-to-Drive due to a communication received from the battery to the VCM caused by an incorrect hood latch magnetic switch adjustment.

To adjust:

1. Loosen tapping screws on slotted magnet.
2. Adjust magnet switch to achieve 9.5 mm (3/8") gap.

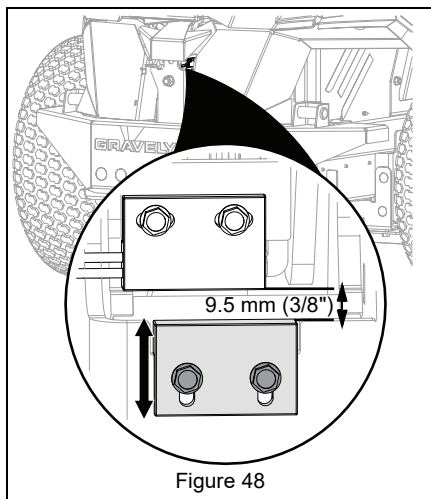


Figure 48

3. Tighten tapping screws.

FAULT / WARNING CODE INDEX

See *Warnings* on page 41 for warning code troubleshooting.

First Digit: Location	0 = Other 1 = Left 2 = Center 3 = Right
Second Digit: Component	1 = VCM 2 = Battery 3 = Deck Motor 4 = Deck Controller 5 = Drive Motor 6 = Drive Controller 7 = Steering Sensor
Last Three Digits: Fault / Warning Identification Number	The last three digits are used to identify the fault / warning cause. If fault exists, report five digit code to an authorized Gravely EV dealer. If warning code exists but is not listed, report five digit code to an authorized Gravely EV dealer, as service may be needed.

WARNINGS

IMPORTANT: Warning codes do not require service or troubleshooting. Warning codes display when unit is not within standard operating conditions. See *Fault / Warning Code Index* on page 40 for fault and warning code details.

Location 0 = Other 1 = Left 2 = Center 3 = Right	Component 1 = VCM 2 = Battery 3 = Deck Motor 4 = Deck Controller 5 = Drive Motor 6 = Drive Controller 7 = Steering Sensor	Dealer Description	Dealer Troubleshooting
01065		VCM reported charge input.	Note: Input from charging is high on VCM. If charging, warning will be removed. Step 1: If attempting to charge, plug charger into machine and into water resistant outlet. Step 2: Check charge diode and verify a short has not occurred. Step 3: Use schematic and check for shorts or opens in the charge circuit. Pin 15 on VCM.
01066		VCM reported battery loss of Live-to-Drive.	Note: Machine lost Live-to-Drive due to a battery communication to the VCM. Step1: Check mechanics of hood latch and verify magnetic switch-to-magnet length is within 9.5 mm (3/8"). See <i>Adjust Hood Latch Magnetic Switch</i> on page 39. Step 2: Contact an authorized Gravely EV dealer.
01067		VCM reported ignition loss of Live-to-Drive.	Note: Machine lost Live-to-Drive due to ignition input into the VCM. Step 1: Verify ignition switch is in the on position. Step 2: Contact an authorized Gravely EV dealer.
01068		VCM reports loss of Live-to-Drive.	Note: Machine lost Live-to-Drive due to operator getting off the seat. Step 1: Check switch functionality for normally open. Step 2: Check diagnostic page for seat switch functionality into the VCM. Step 3: Check seat switch circuit for opens or shorts.
02129		Battery warning 29.	Step 1: Power cycle vehicle. Step 2: Contact dealer.
02130		Battery warning 30.	Step 1: Power cycle vehicle. Step 2: Contact dealer.

WARNINGS

IMPORTANT: Warning codes do not require service or troubleshooting. Warning codes display when unit is not within standard operating conditions. See *Fault / Warning Code Index* on page 40 for fault and warning code details.

Location 0 = Other 1 = Left 2 = Center 3 = Right	Component 1 = VCM 2 = Battery 3 = Deck Motor 4 = Deck Controller 5 = Drive Motor 6 = Drive Controller 7 = Steering Sensor	Dealer Description	Dealer Troubleshooting
02131		Battery reported one battery discharge mode.	Step 1: Add another battery to the system if operator wants to engage deck.
02132		Battery reported end of life warning.	Step 1: Battery is close to end of life.
02133		Battery reported end of life.	Step 1: Battery is at end of life.
02149		Battery reported end of life warning.	Step 1: Battery is close to end of life.
02150		Battery reported end of life.	Step 1: Battery is at end of life.
02165		Battery reported end of life warning.	Step 1: Battery is close to end of life.
02166		Battery reported end of life.	Step 1: Battery is at end of life.
02180		Battery reported one battery discharge mode.	Step 1: Add another battery to the system if operator wants to engage deck.
02181		Battery reported end of life warning.	Step 1: Battery is close to end of life.
02182		Battery reported end of life.	Step 1: Battery is at end of life.
11065		VCM reported left deck stall.	Note: Deck motor has stalled. Cycle PTO to resume cutting. Step 1: Confirm phase wiring is connected properly from motor to controller. Step 2: Reduce cutting load by reducing vehicle speed or cut height. Step 3: Verify machine is powered down, check blade for obstruction or material buildup on spindle or blade.
13062		Left deck motor overheating warning.	Step 1: Check motor and controller phase wire connections for open circuit. Step 2: Check to ensure blade rotates freely. Step 3: Reduce cutting load. Step 4: Clean debris around motor and controller.

WARNINGS

IMPORTANT: Warning codes do not require service or troubleshooting. Warning codes display when unit is not within standard operating conditions. See *Fault / Warning Code Index* on page 40 for fault and warning code details.

Location 0 = Other 1 = Left 2 = Center 3 = Right	Component 1 = VCM 2 = Battery 3 = Deck Motor 4 = Deck Controller 5 = Drive Motor 6 = Drive Controller 7 = Steering Sensor	Dealer Description	Dealer Troubleshooting
14063		Left deck controller overheating warning.	Step 1: Check motor and controller phase wire connections for open circuit. Step 2: Reduce cutting load. Step 3: Clean debris around motor and controller.
15062		Left traction motor overheating warning.	Step 1: Check motor and controller phase wire connections for open circuit. Step 2: Check to ensure wheel rotates freely. Check brake functionality by turning machine off and use mechanical override to freely move wheel. Step 3: Reduce load. Step 4: Clean debris around motor and controller.
16063		Left traction controller overheating warning.	Step 1: Check motor and controller phase wire connections for open circuit. Step 2: Reduce load. Step 3: Clean debris around motor and controller.
21066		VCM reported center deck stall.	Note: Appears when a deck motor has stalled. Cycle PTO to resume cutting. Step 1: Confirm phase wiring is connected properly from motor to controller. Step 2: Reduce cutting load by reducing vehicle speed or cut height. Step 3: Verify machine is powered down, check blade for obstruction or material buildup on spindle or blade.
23062		Center deck motor overheating warning.	Step 1: Check motor and controller phase wire connections for open circuit. Step 2: Check to ensure blade rotates freely. Step 3: Reduce cutting load. Step 4: Clean debris around motor and controller.

WARNINGS

IMPORTANT: Warning codes do not require service or troubleshooting. Warning codes display when unit is not within standard operating conditions. See *Fault / Warning Code Index* on page 40 for fault and warning code details.

Location 0 = Other 1 = Left 2 = Center 3 = Right	Component 1 = VCM 2 = Battery 3 = Deck Motor 4 = Deck Controller 5 = Drive Motor 6 = Drive Controller 7 = Steering Sensor	Dealer Description	Dealer Troubleshooting
24063		Center deck controller overheating warning.	Step 1: Check motor and controller phase wire connections for open circuit. Step 2: Reduce cutting load. Step 3: Clean debris around motor and controller.
31067		VCM reported right deck stall.	Note: Appears when a deck motor has stalled. Cycle PTO to resume cutting. Step 1: Confirm phase wiring is connected properly from motor to controller. Step 2: Reduce cutting load by reducing vehicle speed or cut height. Step 3: Verify machine is powered down, check blade for obstruction or material buildup on spindle or blade.
33062		Right deck motor overheating warning.	Step 1: Check motor and controller phase wire connections for open circuit. Step 2: Check to ensure blade rotates freely. Step 3: Reduce cutting load. Step 4: Clean debris around motor and controller.
34063		Right deck controller overheating warning.	Step 1: Check motor and controller phase wire connections for open circuit. Step 2: Reduce cutting load. Step 3: Clean debris around motor and controller.
35062		Right traction motor overheating warning.	Step 1: Check motor and controller phase wire connections for open circuit. Step 2: Check to ensure wheel rotates freely. Check brake functionality by turning machine off and use mechanical override to freely move wheel. Step 3: Reduce load. Step 4: Clean debris around motor and controller.

WARNINGS

IMPORTANT: Warning codes do not require service or troubleshooting. Warning codes display when unit is not within standard operating conditions. See *Fault / Warning Code Index* on page 40 for fault and warning code details.

Location	Component	Dealer Description	Dealer Troubleshooting
0 = Other 1 = Left 2 = Center 3 = Right	1 = VCM 2 = Battery 3 = Deck Motor 4 = Deck Controller 5 = Drive Motor 6 = Drive Controller 7 = Steering Sensor		
36063		Right traction controller overheating warning.	Step 1: Check motor and controller phase wire connections for open circuit. Step 2: Reduce load. Step 3: Clean debris around motor and controller.

TROUBLESHOOTING

Problem	Probable Cause	Correction
System does not start.	Safety Interlock System is not engaged or is faulty.	Check Safety Interlock System. See <i>Safety Interlock System</i> on page 16.
	Batteries are not charged.	Charge batteries. See <i>Charge Batteries</i> on page 33.
	Electrical system is faulty.	Contact an authorized Gravelly EV dealer.
Unit does not drive.	Live-to-Drive feature is not activated before parking brake is released.	Ensure Live-to-Drive feature is activated before releasing parking brake. See <i>Safety Interlock System</i> on page 16 and / or <i>Diagnostic Screen</i> on page 23.
	10A fuse is blown.	Replace fuse. Contact an authorized Gravelly EV dealer if fuse fails again.
	Fault code is present.	Contact an authorized Gravelly EV dealer.
	Brake wiring is faulty.	Contact an authorized Gravelly EV dealer.
	Parking brake is faulty.	Contact an authorized Gravelly EV dealer.
	Electrical system components are not communicating.	Contact an authorized Gravelly EV dealer.
Unit does not operate at full speed.	High / low speed switch is set to slow speed.	Set switch to high speed drive. See <i>High / Low Speed Switch</i> on page 14.
PTO malfunctions.	OPC switch is not engaged.	Activate switch by sitting on operator seat. See <i>Diagnostic Screen</i> on page 23.
	OPC switch is faulty.	Contact an authorized Gravelly EV dealer.
	PTO switch, wiring, or connectors are faulty.	Contact an authorized Gravelly EV dealer.
	Build-up of debris under mower deck.	Clean underside of mower deck.
	Blades are locked.	Disengage PTO switch and restart the system.
Unit moves with parking brake engaged.	Brake bypass is engaged.	Release parking brake bypass lever.
	Parking brake is faulty.	Contact an authorized Gravelly EV dealer.
Unit does not drive straight.	Tire pressure is incorrect.	Check tire pressure. See <i>Specifications</i> on page 50.
	Steering levers need adjustment.	See <i>Adjust Unit to Drive Straight</i> on page 38.
	Steering levers need to be recalibrated.	See <i>Calibrate Steering Sensors</i> on page 38.

TROUBLESHOOTING

Problem	Probable Cause	Correction
Poor cutting quality.	Mower blades not level or mower deck pitch is incorrect.	Level and adjust pitch of mower deck. See <i>Check Mower Blades</i> on page 28.
	Mower blades are dull or faulty.	Sharpen or replace mower blades. Refer to your unit's Service Manual.
	Mowing speed is too fast.	Drive slower when cutting grass.
	Cutting height is too low.	Do not set height of cut too low. For very tall grass, mow twice.
Temperature warning is displayed on maintenance screen.	Motors and / or controllers are overheating.	Stop the unit and wait for hot parts to cool. See <i>Stop The Unit</i> on page 27. If fault persists, contact an authorized Gravely EV dealer.

STORAGE

Follow the recommended battery storage temperatures for short-term and long-term storage. See *Battery Storage Temperatures* on page 48.

SHORT-TERM STORAGE

Up to 3 Months

NOTICE: DO NOT clean unit with water. To avoid damage to electrical components and motors, clean unit with compressed air or a dry cloth.

NOTICE: DO NOT store batteries in a container where they may short-circuit each other or be short-circuited by other metal objects.

1. Allow unit to cool and clean with compressed air or a dry cloth.
2. Tighten all hardware to correct specifications.
3. Inspect unit for visible signs of wear or damage. Repair as needed.
4. Turn key switch to off position and remove key.
5. Store unit in a cool, dry, protected area. DO NOT store unit outdoors.

To ensure maximum battery life:

- Charge or discharge batteries 50% – 80%.
- Batteries may remain in the mower.
- Check battery state of charge every three months and recharge to 50% – 80% if necessary.

LONG-TERM STORAGE

3 – 12 Months or Longer

1. Perform short-term storage procedures.
2. Lubricate as directed in *Maintenance Schedule* on page 28.
3. Touch-up all scratched painted surfaces.

To ensure maximum battery life:

- Charge or discharge batteries 30% – 80%.
- Remove batteries from mower.
- If batteries are stored in mower, open battery compartment hood or disconnect hood switch. DO NOT store batteries in mower with hood closed or without disconnecting hood switch.
- Check battery state of charge every twelve months and recharge to 30% – 80% if necessary.

NOTICE: After extended periods of storage, it may be necessary to charge and discharge batteries at least three times to obtain maximum performance.

BATTERY STORAGE TEMPERATURES

Follow the recommended battery storage temperatures:

- **3 Months:** DO NOT store batteries in temperatures lower than -20° C (-4° F) or above 45° C (113° F).
- **12 Months:** DO NOT store batteries in temperatures lower than -20° C (-4° F) or above 20° C (68° F).

ACCESSORIES

See your Gravely EV dealer for a complete list of compatible accessories and attachments for your unit.

IMPORTANT: Some accessories may cause battery packs to discharge more rapidly.

Description	Part No.
13" Semi-Pneumatic Tire Kit	79105200
Hitch Kit	79108500
Sunshade Kit	79218000
OCDB Kit (Models 997005, 997006, 997007)	79221600
Striping Kit	79221800
Second Offboard Charger Kit – 110V / 220V	79700100
LED Light Kit	79700400
Beacon Light Kit	79700500
Fast Charger with Y Harness Kit	79701200
48" Side-discharge Mulch Kit	79701800
52" Side-discharge Mulch Kit	79701900
60" Side-discharge Mulch Kit	79702000
48" Side-discharge High-Lift Blade Kit	79702100
52" Side-discharge High-Lift Blade Kit	79702200
60" Side-discharge High-Lift Blade Kit	79701400
52" Rear-discharge High-Lift Blade Kit	79702600
60" Rear-discharge High-Lift Blade Kit	79702500
Suspension Fork Kit	79702800
22" Rear Tweel Kit	79702900
EV Battery (1 Pack) Kit	89700100
Offboard Charger Kit – 110V / 220V	89700200

BATTERY DISPOSAL

When a battery no longer takes a charge, the battery will need to be recycled. Contact an authorized Gravely EV dealer to recycle battery.

SPECIFICATIONS

Model Number	997005	997006	997007
Description	Pro-Turn EV 48 Side Discharge	Pro-Turn EV 52 Side Discharge	Pro-Turn EV 60 Side Discharge
Batteries	Fusion Core Lithium Ion		
Wheel Drive Motors – kW	5 per motor		
Spindle Motors – kW	3.5 per motor		
Transmission			
Type	Electric Transaxles		
Gearcase Oil	80W-140 Synthetic Gear Oil (Gravely p/n 00981400)		
Drive			
Forward Maximum – km/h (mph)	17.7 (11.0)		
Reverse Maximum – km/h (mph)	8.8 (5.5)		
Turning Radius	Zero		
Service Brake	Regenerative Braking		
Parking Brake	Electromagnetic Brake		
Size and Weight			
Length – cm (in)	210.8 (83.0)		
Width – cm (in) • With Discharge Chute Up • With Discharge Chute Down	127.0 (50) 157.5 (62)	142.2 (56) 170.2 (67)	160.0 (63) 190.5 (75)
Height – cm (in) • With ROPS extended • With ROPS folded	182.9 (72) 124.5 (49)		
Weight – kg (lbs) • With 4 Batteries	571.9 (1261)	582.4 (1284)	595.1 (1312)
Tires			
Front Tire Size – in	13 x 6.5-6 (Pneumatic)		
Rear Tire Size – in	22 x 10-12	22 x 10.5-12	22 x 12-12
Recommended Front Tire Pressure – kPa (psi)	110.3 – 137.9 (16 – 20)		
Recommended Rear Tire Pressure – kPa (psi)	82.7 – 103.4 (12– 15)		
Mower Deck			
Cutting Height – cm (in)	3.8 – 12.7 (1.5 – 5.0)		
Cutting Height Increments	0.635 (0.25)		
Cutting Width – cm (in)	121.9 (48)	132.1 (52)	152.4 (60)
Mower Deck Lift	Mechanical Pin Lock		

SPECIFICATIONS

Model Number	997008	997009	997010
Description	Pro-Turn EV 48 Rear Discharge	Pro-Turn EV 52 Rear Discharge	Pro-Turn EV 60 Rear Discharge
Batteries	Fusion Core Lithium Ion		
Wheel Drive Motors – kW	5 per motor		
Spindle Motors – kW	3.5 per motor		
Transmission			
Type	Electric Transaxles		
Gearcase Oil	80W-140 Synthetic Gear Oil (Gravely p/n 00981400)		
Drive			
Forward Maximum – km/h (mph)	17.7 (11.0)		
Reverse Maximum – km/h (mph)	8.8 (5.5)		
Turning Radius	Zero		
Service Brake	Regenerative Braking		
Parking Brake	Electromagnetic Brake		
Size and Weight			
Length – cm (in)	210.8 (83.0)		
Width – cm (in)	127.0 (50)	137.2 (54)	157.5 (62)
Height – cm (in) • With ROPS extended • With ROPS folded	182.9 (72.0) 124.5 (49.0)		
Weight – kg (lbs) • With 4 Batteries	583.3 (1286)	590.1 (1301)	601.5 (1326)
Tires			
Front Tire Size – in	13 x 6.5-6 (Pneumatic)		
Rear Tire Size – in	22 x 10-12	22 x 10.5-12	22 x 12-12
Recommended Front Tire Pressure – kPa (psi)	110.3 – 137.9 (16 – 20)		
Recommended Rear Tire Pressure – kPa (psi)	82.7 – 103.4 (12– 15)		
Mower Deck			
Cutting Height – cm (in)	3.8 – 12.7 (1.5 – 5.0)		
Cutting Height Increments	0.635 (0.25)		
Cutting Width – cm (in)	121.9 (48)	132.1 (52)	152.4 (60)
Mower Deck Lift	Mechanical Pin Lock		



GRAVELY

Electric Outdoor Power Equipment Limited Warranty

AriensCo warrants to the original purchaser that Gravely brand products purchased on or after 1/1/2021 will be free from defects in material and workmanship for the time period noted in the chart below.

If any product is rented or leased, then the duration of these warranties shall be 90 days after the date of purchase.

An authorized Gravely EV dealer will repair any defect in material or workmanship, and repair or replace any defective part, subject to the conditions, limitations and exclusions set forth herein. Such repair or replacement will be free of charge (labor and parts) to the original purchaser; except as noted below. Pick-up and delivery are at the owner's expense.

The warranty code is found on the model and serial number identification label on the mower, off-board battery charger or serialized battery.

Warranty Code	Product Group	Warranty Period
AC	Batteries	3 Years.
AD	Off-Board Battery Chargers	5 Years.
EA	Pro-Turn EV Mowers	5 Years or 1500 Hours, Whichever Comes First. No Hour Limit for First 2 Years.

Special Limitations

The charts below detail special **limitations** to this warranty.

Warranty Term Limitations	Warranty Period
Cloth, plastic and rubber components, mower blades and tires.	Components are covered for manufacturer's defect only, not wear.
Digital display panel and electric failsafe parking brake.	2 Years.
Traction drive gear oil.	Oil is covered for warranty repairs only, not maintenance.

Exclusions – Items Not Covered by This Warranty

- Parts that are not genuine Gravely service parts are not covered by this warranty and may void the warranty if the parts result in premature wear or damage to the product.
- Damages resulting from the installation or use of any part, accessory, or attachment which is not approved by the AriensCo for use with product(s) identified herein are not covered by this warranty.
- Any misuse, alteration, improper assembly, improper adjustment, neglect, or accident which requires repair is not covered by this warranty.
- **Any tampering with the hour meter voids any and all warranties.**
- Products are designed to the specifications in the area that the product was originally distributed. Different areas may have significantly different legal and design requirements. This warranty is limited to the requirements in the area in which the unit was originally distributed. AriensCo does not warrant this product to the requirements of any other area. Warranty service is limited to service within the area originally distributed.
- In countries other than the United States and Canada, contact the AriensCo dealer for warranty policies that govern within your country. Rights may vary from country to country and within any one country.

Parts and Accessories

Service replacement parts and non-serialized accessories are warranted for 90 days from date of purchase. Labor is not included.

Customer Responsibilities

Register the product immediately at the time of sale. If the dealer does not register the product, the customer must register the unit on-line at www.gravely.com.

To obtain warranty service, the **original purchaser** must:

- Ensure that the maintenance and adjustments explained in the Operator's Manual are routinely completed.
- Promptly notify AriensCo or an authorized Gravely EV dealer of the need for warranty service.
- Transport the product to and from the place of warranty service at owner's expense.
- Have the warranty service performed by an authorized Gravely EV dealer.

To find an authorized dealer use the dealer locator on our websites, or contact us by mail or phone.

Globally except Australia or New Zealand:	Australia:	New Zealand:
AriensCo 655 W. Ryan Street Brillion, WI 54110 Phone: (920) 756 - 4688 www.gravely.com	Masport Australia Pty Ltd 27 Commercial Drive Dandenong South Victoria 3175 Australia Phone: 1300 366 225 www.masport.com.au	Masport Ltd 320 Ti Rakau Drive East Tamaki Auckland 2013 New Zealand Phone: 0800 627 7678 www.masport.co.nz

Disclaimer

AriensCo may from time to time change the design of its products. Nothing contained in this warranty shall be construed as obligating the AriensCo to incorporate such design changes into previously manufactured products, nor shall such changes be construed as an admission that previous designs were defective.

Limitation of Remedy and Damages

AriensCo liability under this warranty, and under any implied warranty that may exist, is limited to repair of any defect in workmanship, and repair or replacement of any defective part. AriensCo shall not be liable for incidental, special, or consequential damages (including lost profits). Some states do not allow the exclusion of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

AriensCo shall not be held liable for damages, including premature wear and tear, or injuries caused by installation of unauthorized parts and accessories or for parts and accessories not installed by an authorized Gravely dealer.

Australian Consumer Law

The following applies solely to warranties subject to Subsection 102(1) of the Australian Consumer Law: Our goods come with guarantees that cannot be excluded by the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and failure does not amount to a major failure.

Disclaimer of Further Warranty

AriensCo makes no warranty, express or implied, other than what is expressly made in this warranty. If the law of your state provides that an implied warranty of merchantability, or an implied warranty of fitness for particular purpose, or any other implied warranty, applies to AriensCo then any such implied warranty is limited to the duration of this warranty. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights which vary from region to region.



655 West Ryan Street
Brillion, WI 54110

www.gravelly.com



WARNING: Cancer
and Reproductive Harm -
www.P65Warnings.ca.gov

ARIENS|CO

