Pro-Walk™

Operator's Manual
Manuel de l'utilisateur

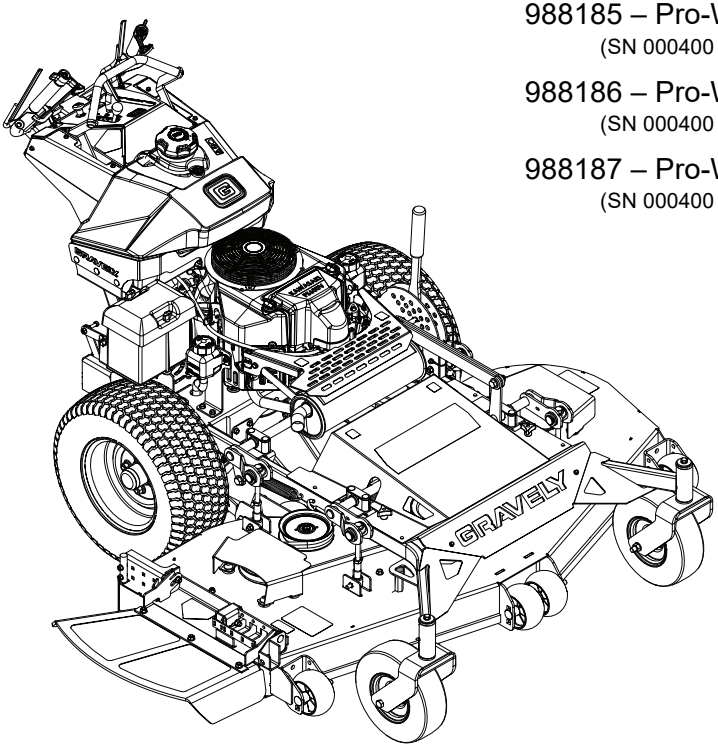
Models

988184 – Pro-Walk 36
(SN 000400 +)

988185 – Pro-Walk 48
(SN 000400 +)

988186 – Pro-Walk 52
(SN 000400 +)

988187 – Pro-Walk 60
(SN 000400 +)



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WELCOME

Congratulations on your purchase and welcome to the Gravely family! Every machine in the Gravely 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?

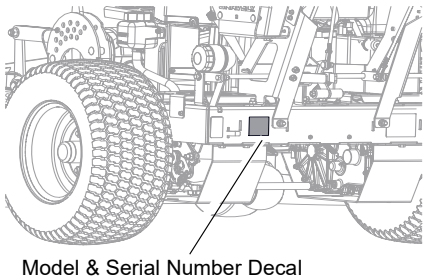
www.gravely.com

A parts manual for your unit is available for free download or purchase at www.gravely.com.
Manual del operador español está disponible para su descarga gratuita o compra en www.gravely.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.gravely.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.



Model & Serial Number Decal

Figure 1

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.

The engine on this unit is covered by a separate manual. Refer to the engine manual for engine service recommendations. Contact the engine manufacturer for a replacement manual if necessary.

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 your Gravely dealer for assistance. To locate your nearest Gravely dealer, go to www.gravely.com.

DISCLAIMER

Gravely 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.

EMISSION CONTROL SYSTEM

This equipment and/or its engine may include exhaust and evaporative emissions control system components required to meet U.S. Environmental Protection Agency (EPA) and/or California Air Resources Board (CARB) regulations. Tampering with emission controls and components by unauthorized personnel may result in severe fines or penalties. Emission controls and components can only be adjusted by an Gravely dealer or an authorized engine manufacturer's service center. Contact your Gravely Equipment Retailer concerning emission controls and component questions.

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 Gravely 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.gravely.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 and engine, 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



WARNING: 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



WARNING: 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 Locations

ALWAYS replace missing or damaged Safety Decals. See Figure 2 for safety decal locations.

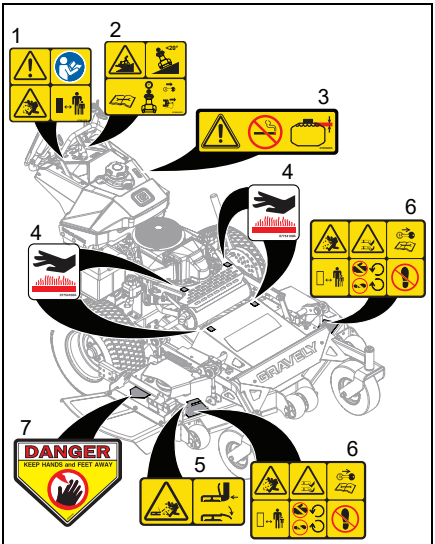


Figure 2

1. DANGER!



DANGER!



Read Operator's Manual.



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



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

2. DANGER!



Avoid tipping hazard.

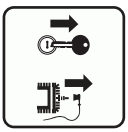


DO NOT operate on slopes.





Stop engine, engage parking brake and remove key before servicing unit.



3. WARNING!



Overfilling may cause severe damage to evaporative system.

NEVER fill fuel tank when engine is running, hot, or unit is indoors.

Reinstall fuel cap securely and clean up spilled fuel.



No smoking.



Fill fuel tank to bottom of filler neck – MAXIMUM.

4. HOT SURFACES!



DO NOT touch parts which are hot from operation. ALWAYS allow parts to cool.

5. 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.

6. DANGER!



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



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



Stop engine, remove key, and read manual before servicing or making adjustments to unit.



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



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



DO NOT step or stand in this area.

7. DANGER!



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

SAFETY RULES

The following safety instructions are based on the B71.4 specifications of the American National Standards Institute and ISO 5395 in effect at the time of production.

Training

Read, understand, and follow all instructions on the machine and in the manuals before starting.

Become familiar with the safe operation of the equipment, operator controls, and safety signs.

Be sure the area is clear of bystanders and pets before operating. Stop machine if anyone enters the area.

Improper use of power equipment can cause serious permanent injury or death to the operator or a bystander.

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

Read the Operator's Manual and other training material. If the operator(s) or mechanic(s) cannot read English, it is the owner's responsibility to explain this material to them.

All operators and mechanics should be trained. The owner is responsible for training the users.

NEVER let children or untrained people operate or service the equipment. Local regulations may restrict the age of the operator.

The owner/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 or service any outdoor power equipment.

Local regulations may restrict the age of the operator.

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

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

Children

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.

Be alert and turn machine off if a child enters the area.

Before and while backing, look behind and down for small children.

NEVER carry children, even with the blade(s) shut off. Children 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.

NEVER allow children to operate or service the machine.

Use extreme care when approaching blind corners, shrubs, trees, or other objects that may block your view of a child.

Keep children out of the mowing area and in the watchful care of a responsible adult other than the operator.

Personal Protection

ALWAYS wear appropriate clothing including hard hat, protective gloves, safety glasses and hearing protection. Long hair, loose clothing or jewelry may get tangled in moving parts.

DO NOT wear loose clothing or jewelry and tie back hair during operation.

Wear proper footwear to improve footing on slippery surfaces. NEVER wear open sandals or canvas shoes during operation.

Before Operating

Evaluate the terrain to determine what accessories and attachments are needed to properly and safely perform the job. Only use accessories and attachments approved by the manufacturer.

Inspect the area where the equipment is to be used and remove all objects such as rocks, toys and wire which can be thrown by the machine.

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.

Clean grass and debris from unit, especially from around muffler and engine, to help prevent fires.

Check parking brake operation frequently. Adjust and service as required.

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.

Check that operator's presence controls, safety switches and shields are attached and functioning properly. DO NOT operate unless they are functioning properly.

Ensure safety interlock system is functioning properly. DO NOT operate unit if safety interlock is damaged or disabled.

Be sure all drives are in neutral, parking brake is engaged and PTO is disengaged before starting engine. Only start engine from the operator's position.

Operate unit only when standing in operator zone.

Be sure the area is clear of bystanders and pets before operating.

NEVER tamper with safety devices. Check their proper operation regularly.

Keep machine free of grass, leaves, or other debris build-up. Clean up oil or fuel spillage and remove any fuel-soaked debris.

Operation

NEVER operate machine in a closed or poorly ventilated area. NEVER run an engine in an enclosed area.

ALWAYS maintain unit in safe operating condition. Damaged or worn out muffler can cause fire or explosion.

This product is equipped with an internal combustion-type engine. DO NOT use unit on or near any unimproved, forest-covered or brush-covered land unless exhaust system is equipped with a spark arrester meeting applicable local, state or federal laws. A spark arrester, if it is used, must be maintained in effective working order by operator.

DO NOT operate machine while feeling tired, ill or under the influence of alcohol or other drugs.

DO NOT change the engine governor setting or overspeed the engine.

Keep hands and feet away from the cutting units. Do not put hands or feet near rotating parts or under the machine. Keep clear of the discharge opening at all times.

DO NOT touch parts which are hot. Allow parts to cool.

NEVER operate with the discharge deflector raised, removed or altered, unless using a grass catcher. Make sure other safety devices are in place and working.

ALWAYS keep hands and feet away from all pinch points.

Avoid slippery surfaces. Be sure of your footing while using pedestrian-controlled equipment, especially when operating in reverse. Walk, don't run. Use extreme caution if operating on wet grass; reduced footing could cause slipping.

NEVER carry passengers and keep pets and bystanders away. Stop machine if anyone enters the area.

Be aware of the mower discharge direction and DO NOT point it at anyone. 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.

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.

Slow down and use caution when making turns and crossing roads and sidewalks. Stop blades if not mowing.

Stop on level ground, lower implements, disengage drives, engage parking brake (if provided), disengage PTO, shut off engine and allow moving parts to stop before leaving the operator's position for any reason including emptying the catchers or unclogging the chute.

NEVER engage PTO while raising the attachment, including mower blades.

NEVER raise deck with the blades running.

NEVER operate with the PTO shield, or other guards not securely in place. Be sure all interlocks are attached, adjusted properly, and functioning properly. NEVER modify or remove safety devices.

DO NOT mow in reverse unless absolutely necessary. ALWAYS look behind and down before operating in reverse to be sure of a clear path.

Stop equipment and inspect blades after striking objects or if an abnormal vibration occurs. Make necessary repairs before resuming operations.

NEVER leave a running machine unattended. ALWAYS turn off blade(s), engage parking brake, stop engine and remove key before leaving operator's position.

Disengage blade(s) when not mowing. Shut off engine and wait for all parts to come to a complete stop before cleaning the machine, removing the grass catcher, or unclogging the discharge guard.

Know the weight of loads. Limit loads to those you can safely control and the unit can safely handle.

Use care when loading or unloading the machine into a trailer or truck.

Operating 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.

ALWAYS check overhead and side clearances carefully before operation.

Watch for traffic when operating near or crossing roadways.

Prior to operation, ensure the area is cleared 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.

Only operate in good light, keeping away from holes and hidden hazards.

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 20°. This maximum degree of operation is without attachments.

Do not operate on slopes of more than 10° with attachments such as grass catchers installed.

Mow across slopes, not up and down.

DO NOT operate the mower on slopes at all when the grass is wet.

DO NOT operate on slopes steeper than you can feel secure about the traction of the tires and the stability of the mower.

Watch for holes, ruts, bumps, rocks, or other hidden objects. Uneven terrain could overturn the machine. Tall grass can hide obstacles.

Do not mow on moist or wet grass. Tires may lose traction causing a loss of control.

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.

Slow down and use caution when making turns and when changing directions on slopes. Keep all movements on the slope *slow* and *gradual*. Sudden changes in speed or direction 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 drive control grip to neutral position.
- Immediately engage parking brake.
- Turn off PTO and engine.

DO NOT park on slopes unless necessary. When parking on slope ALWAYS chock or block wheels. ALWAYS engage parking brake.

Choose a slow ground speed so you will not have to stop or shift while on a slope.

Slow down and use extra care on hillsides. Be sure to travel in the recommended direction on hillsides. Turf conditions can affect the machine's stability. Use caution while operating near drop-offs.

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 bypass transmission or allow transmission to free-wheel when on a slope.

Fuel

To avoid personal injury or property damage, use extreme care in handling gasoline. Gasoline is extremely flammable and the vapors are explosive.

Ethanol blends must not exceed E10. Higher ethanol content may cause your machine to run hotter and damage your engine.

Secure fuel cap and clean up spilled fuel before starting engine.

Extinguish all cigarettes, cigars, pipes, and other sources of ignition.

Use only an approved fuel container.

NEVER store the machine or fuel container where there is an open flame, spark, or pilot light such as on a water or space heater or other appliances.

NEVER fill containers inside a vehicle or on a truck or trailer bed with a plastic liner. ALWAYS place containers on the ground away from your vehicle before filling.

NEVER refuel the machine indoors.

NEVER remove fuel cap or add fuel with the engine running. Allow engine to cool before refueling.

Fuel is highly flammable and its vapors are explosive. Handle with care. Use only an approved gasoline container with an appropriately sized dispensing spout.

NO smoking, NO sparks, NO flames.

Remove equipment from the truck or trailer and refuel it on the ground. If this is not possible, then refuel such equipment with a portable container, rather than from a gasoline dispenser nozzle.

Keep the nozzle in contact with the rim of the fuel tank or container opening at all times until the fueling is complete. DO NOT use a nozzle lock-open device.

NEVER overfill fuel tank. Reinstall fuel cap and tighten securely.

If fuel is spilled on clothing, change clothing immediately.

DO NOT OVERFILL! This equipment and/or its engine may include evaporative emissions control system components, required to meet EPA and/or CARB regulations, that will only function properly when the fuel tank has been filled to the recommended level. Overfilling may cause permanent damage to evaporative emissions control system components. Filling to the recommended level ensures a vapor gap required to allow for fuel expansion. Pay close attention while filling the fuel tank to ensure that the recommended fuel level inside the tank is not exceeded. Use a portable gasoline container with an appropriately sized dispensing spout when filling the tank. DO NOT use a funnel or other device that obstructs the view of the tank filling process.

Towing

DO NOT attach towed equipment or accessories, other than a sulky.This vehicle is not designed to tow anything other than sulkies.

Accessories

Attachments reduce the maximum operating slope angle. DO NOT operate on slopes over 10° when operating with attachments.

Check grass catcher components and the discharge guard frequently and replace with the manufacturer's recommended parts, when necessary.

Use only attachments recommended by AriensCo that are appropriate to your use and can be used safely in your application.

Batteries
Avoid Electric Shock. Objects contacting both battery terminals at the same time may result in injury and unit damage. DO NOT reverse battery connections.
Reverse connections may result in sparks which can cause serious injury. ALWAYS connect positive (+) lead of charger to positive (+) terminal, and negative (-) lead to negative (-) terminal.
ALWAYS disconnect negative (-) cable FIRST and positive (+) cable SECOND. ALWAYS connect positive (+) cable FIRST, and negative (-) cable SECOND.
Explosive gases from battery can cause death or serious injury. Poisonous battery fluid contains sulfuric acid and its contact with skin, eyes or clothing can cause severe chemical burns.
No flames, no sparks, no smoking near battery.
Charge batteries in an open, well-ventilated area, away from spark and flames. Unplug charger before connecting or disconnecting from battery. ALWAYS wear protective clothing and safety glasses near battery and use insulated tools.
ALWAYS keep batteries out of reach of children.
Battery posts, terminals and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and reproductive harm. Wash hands after handling.

Service
The use of non-genuine replacement parts or accessories could adversely affect machine operation and safety.
DO NOT change engine governor setting or overspeed the engine.
Park machine on level ground. NEVER allow untrained personnel to service machine.
Disconnect battery or remove spark plug wire before making any repairs. Disconnect the negative terminal first and the positive last. Reconnect positive first and negative last.
Keep all parts in good working condition and all hardware tightened. Replace all worn or damaged decals.
Keep unit free of debris. Clean up oil or fuel spillage.

ALWAYS block wheels and know all jack stands are strong and secure and will hold weight of unit during maintenance. Use jack stands to support components when required.
Carefully and slowly release any pneumatic or hydraulic pressure from components with stored energy.
ALWAYS keep body and hands away from pin holes or nozzles which eject hydraulic fluid under pressure.
NEVER attempt to make any adjustments or repairs to unit while engine is running (except where specifically recommended). Disengage drives, lower implement, engage parking brake, stop engine and remove key or disconnect spark plug wire. Wait for all moving parts to stop and for hot surfaces to cool before adjusting, cleaning or repairing unit.
Keep hands and feet away from moving parts. If possible, DO NOT make adjustments with the engine running.
Lower cutting deck unless a positive mechanical lock is used.
Allow engine to cool before servicing.
Moving parts can cut or amputate fingers or a hand. On multiblade mowers, rotation of one blade will cause all blades to rotate.
Use care when checking blades. Wrap the blade(s) or wear gloves and use caution when servicing them. Replace damaged blades. NEVER straighten or weld blades.

Transporting Unit
Use care when loading or unloading the machine into a trailer or truck.
Use full-width ramps for loading machine into trailer or truck.
Secure unit chassis to transport vehicle. NEVER secure from rods or linkages that could be damaged. Tie the machine down securely using straps, chains, cable, or ropes. Both front and rear straps should be directed down and outward from the machine.
DO NOT transport machine while engine is running.
ALWAYS turn off power to attachment and shut off fuel valve (if equipped) when transporting unit.

Storage
NEVER store unit with fuel in fuel tank inside a building where any ignition sources are present.
Clean grass and debris from cutting units, drives, mufflers, and engine to help prevent fires. Clean up oil or fuel spillage. Let engine cool before storing and DO NOT store near flame.
Shut off fuel valve (if equipped) while storing or transporting. DO NOT store fuel near flames or natural gas appliances and DO NOT drain fuel indoors.
For extended storage, shut off fuel valve (if equipped) and clean unit thoroughly. See engine manual for proper storage.

ASSEMBLY

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

1. Remove packaging materials from unit.
2. Remove unit from shipping container. See *Move Unit Manually* on page 18.
3. Cut packaging ties and discard.
4. Lift discharge chute up slightly and rotate to operating position. See Figure 3.

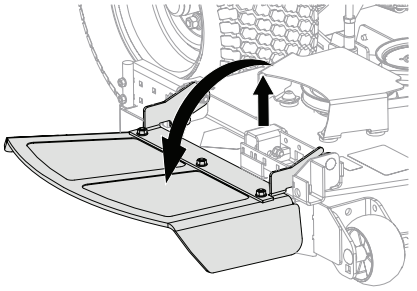


Figure 3

5. Check tire pressures (see *Check Tire Pressure* on page 22) and inflate to recommended pressures (see *Specifications* on page 40).
6. Remove battery from unit and charge. See *Charge Battery* on page 24.
7. Check engine oil level and add oil if needed. Refer to engine manual.
8. Check hydraulic oil level. See *Check Hydraulic System* on page 21.
9. Make sure deck is level. See *Level and Pitch Mower Deck* on page 33.
10. Ensure all hardware is tight.
11. Reinstall battery. See *Install Battery* on page 24.

CONTROLS & FEATURES

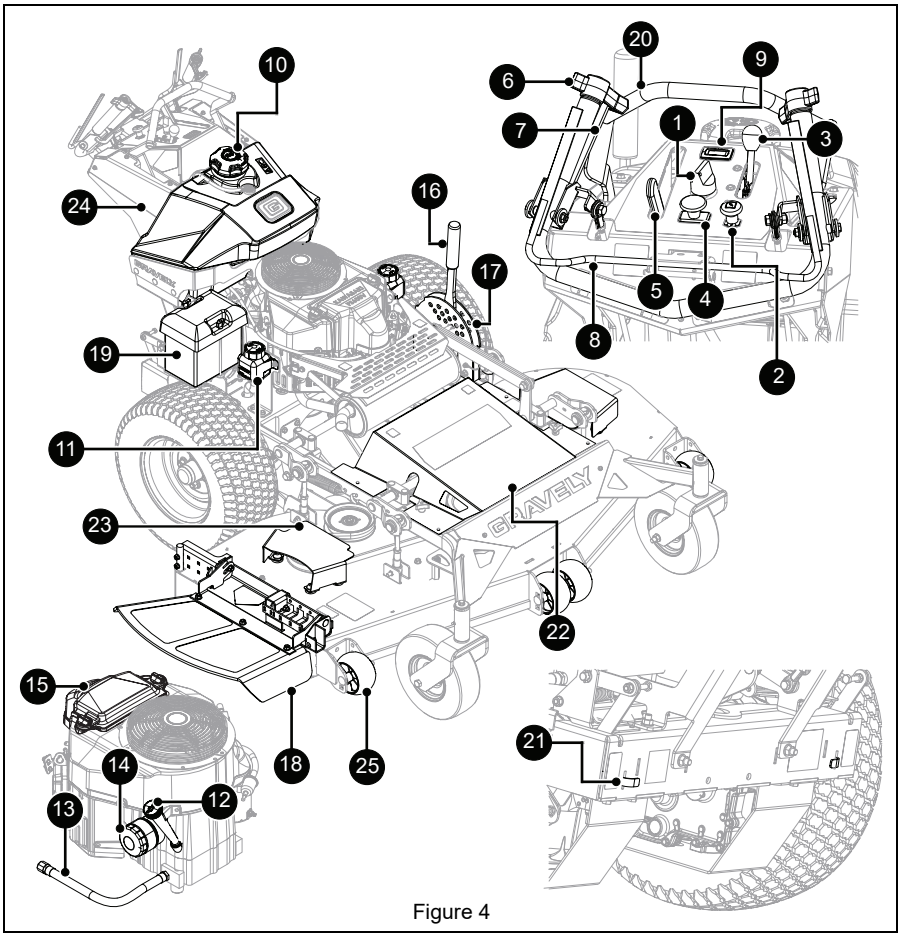


Figure 4

1. Ignition Key
2. Choke Control Knob
3. Engine Throttle Control Lever
4. Power Take-off (PTO) Switch
5. Forward Ground Speed Control Lever
6. Neutral Lock (2)
7. Drive Control Handle (2)
8. Operator Presence Lever
9. Hour Meter
10. Fuel Tank and Cap
11. Hydraulic Oil Expansion Tank (2)
12. Oil Fill / Dipstick
13. Oil Drain
14. Engine Oil Filter
15. Air Filter
16. Deck Lift Lever
17. Height-of-Cut Adjustment System
18. Flip-up Discharge Chute
19. Battery
20. Parking Brake Lever
21. Transaxle Bypass Lever (2)
22. Tool-less Access Cover
23. Tool-less Belt Cover (2)
24. Fuse Block (Under Control Panel)
25. Anti-Scalp Wheel (6) (Models 988185, 988186, 988187)

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

See Figure 4 for all controls and features locations.

IGNITION KEY

See Figure 5.

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

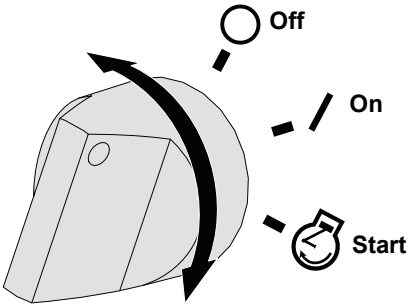


Figure 5

CHOKE CONTROL KNOB

See Figure 6.

Controls air intake to the engine.

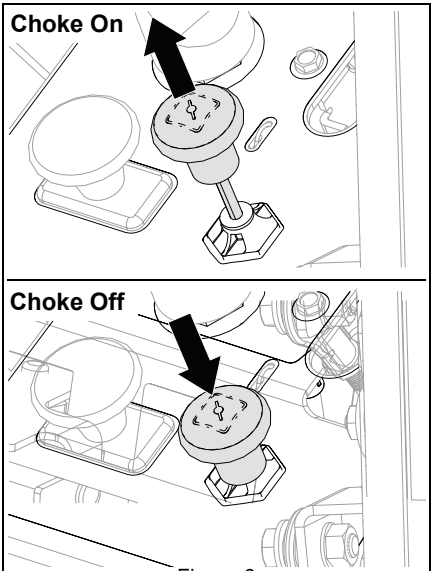


Figure 6

ENGINE THROTTLE CONTROL LEVER

See Figure 7.

Controls engine speed.

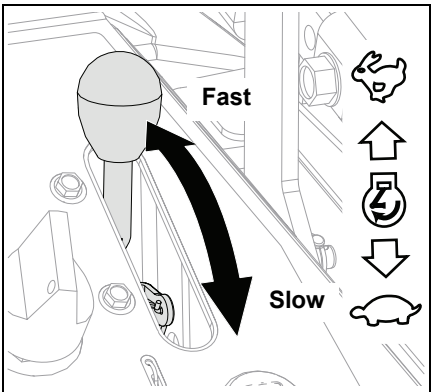


Figure 7

POWER TAKE-OFF (PTO) SWITCH

See Figure 8.

Controls power to mower blades. The engine will not start with the PTO switch in the on position.

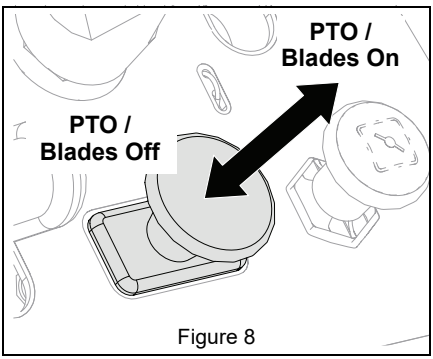


Figure 8

OPERATOR PRESENCE LEVER

See Figure 9.

Operator presence lever MUST be engaged to operate speed control lever or PTO. Engine will stop if operator presence lever is not engaged when parking brake is released.

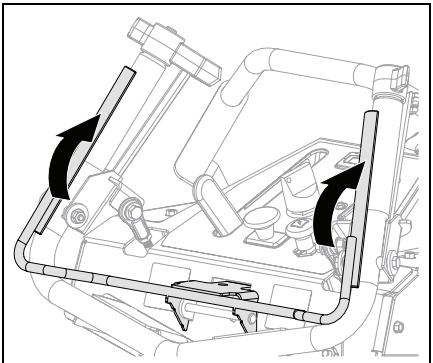


Figure 9

NEUTRAL LOCKS

See Figure 10.

Holds the drive control handles in the neutral position.

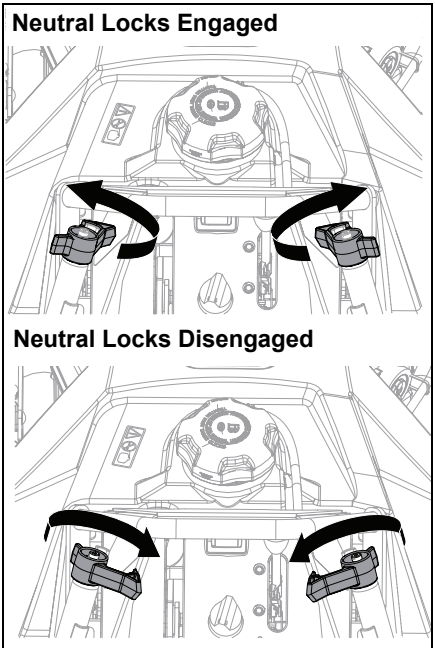


Figure 10

DRIVE CONTROL HANDLES

See Figure 11.

Controls forward and reverse movement. To stop unit, return levers to the neutral position.

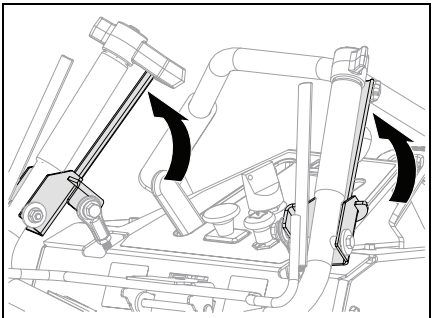


Figure 11

FORWARD GROUND SPEED CONTROL LEVER

See Figure 12.

Controls forward wheel speed of the unit.

NOTICE: When moving the lever forward, the drive control handles pivot further away from the handlebar.

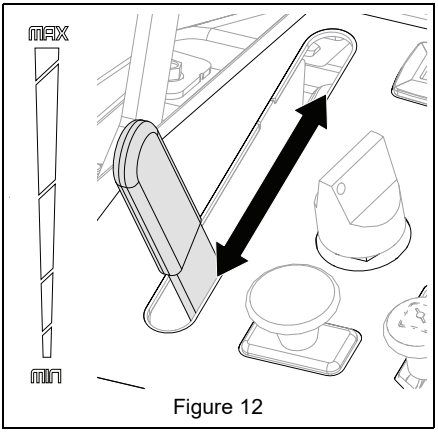


Figure 12

DECK LIFT LEVER

See Figure 13.

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

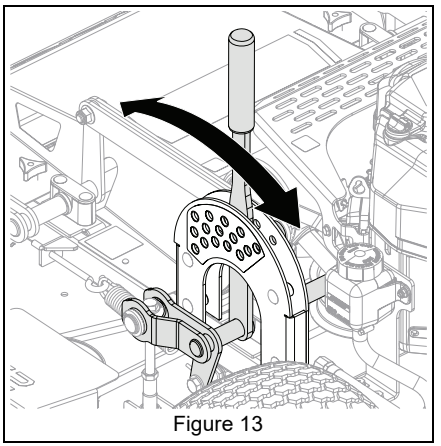


Figure 13

HEIGHT-OF-CUT ADJUSTMENT SYSTEM

See Figure 14.

Sets the height of cut.

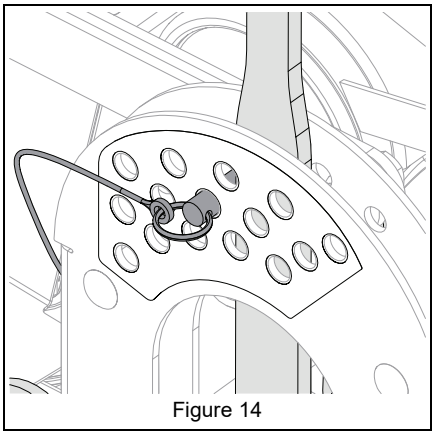


Figure 14

PARKING BRAKE LEVER

See Figure 15.

Controls the parking brake. The engine will not start when parking brake lever is released.

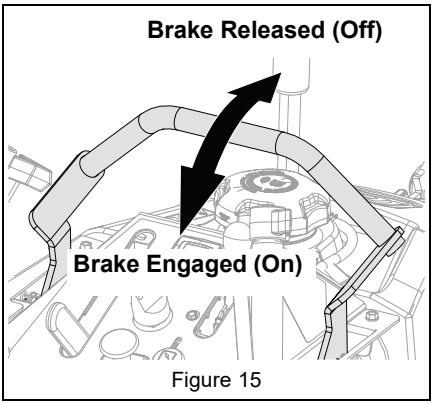


Figure 15

HOUR METER

See Figure 16.

Timer measures engine runtime and cannot be reset.

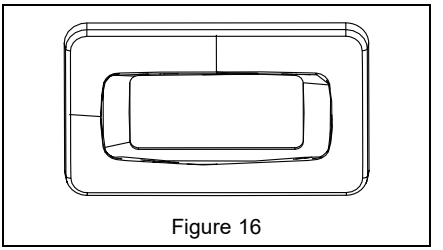


Figure 16

TRANSAXLE BYPASS LEVERS

Engage and disengage transaxles so unit can be moved with the engine off.

ANTI-SCALP WHEELS

Models 988185, 988186, 988187

Help prevent the deck from contacting the ground and scalping the lawn when mowing over high spots.

SAFETY INTERLOCK SYSTEM

Monitors the interaction of various unit features for operator safety. See *Test Safety Interlock System* on page 16.

BEFORE OPERATION

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

1. Know how to stop in an emergency. See *Emergency Stopping* on page 17.
2. Check fuel level and add fuel if needed.

IMPORTANT: Use fresh unleaded fuel with an octane rating of at least 87. DO NOT use E85 blended fuels; the engine is not E20 / E30 / E85 compatible. The maximum recommended ethanol content is E10. Gravely recommends using a quality fuel stabilizer in all fuel. See *Short-Term Storage* on page 39.

3. Check engine oil level and add oil if needed. Refer to engine manual.
4. Check hydraulic oil level. See *Check Hydraulic System* on page 21.
5. Check air filter. Refer to engine manual.
6. Check function of all controls.
7. Check function of the Safety Interlock System by performing the tests below. Contact your Gravely dealer for repair if any of the tests fail.

TEST SAFETY INTERLOCK SYSTEM

WARNING: AVOID INJURY. Failure of Safety Interlock System together with improper operation can result in severe personal injury.

Starting

See *Start The Engine* on page 17.

- Engine will not start with parking brake released.
- Engine will not start with PTO on.
- Engine will not start with the speed control lever set outside the rearmost position.

Operation

See *Operate Unit* on page 17.

- Engine will stop if PTO is engaged while operator presence lever is disengaged.
- Engine will stop if speed control lever is set outside the rearmost position while parking brake is engaged.
- Engine will stop if parking brake is released while operator presence lever is disengaged.

SET CUTTING HEIGHT

See Figure 17.

WARNING: AVOID INJURY. Stop the engine, engage parking brake, and remove key before changing height-of-cut. Unit MUST be parked on a flat, level surface.

1. Pull deck lift lever completely backward.
2. Remove adjustment pin from height-of-cut adjustment bracket.
3. Insert adjustment pin through desired setting in height-of-cut bracket.
4. Slowly release deck lift lever until lever contacts adjustment pin.

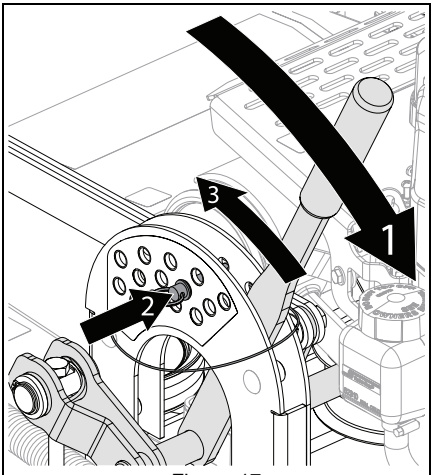


Figure 17

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

WARNING: AVOID INJURY. Operating on slopes may lead to loss of steering control. Be prepared to react.

1. Release operator presence control lever.
2. Engage parking brake.
3. Push PTO switch down to off position
4. Turn ignition key to off position and remove key.

START THE ENGINE

1. Set speed control lever to the rearmost position.
2. Engage parking brake.
3. Engage neutral locks.
4. Push PTO switch down to off position.
5. If engine is cold, pull choke knob up to the on position. DO NOT use choke on a warm engine.
6. Move throttle control lever to 3/4 fast position.
7. Insert ignition key and turn to the start position. Release key when engine starts.

NOTICE: Do not operate the starter for more than 10 seconds per starting attempt. If the engine does not start, allow a 60-second cool down period between starting attempts.

8. Gradually move choke control knob to the off position after engine starts.

OPERATE UNIT

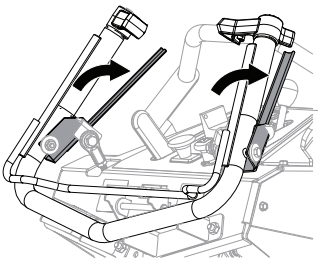
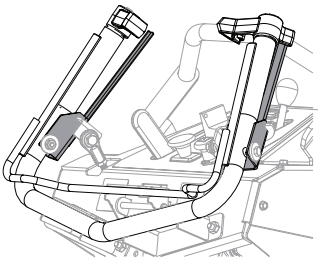
1. Start the engine. See *Start The Engine* on page 17.
2. Engage operator presence lever.
3. Release parking brake.
4. Set throttle control lever to fast position.
5. Release neutral locks.
6. Set speed control lever to the desired speed setting.

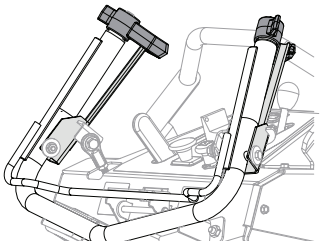
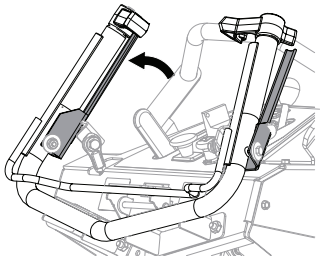
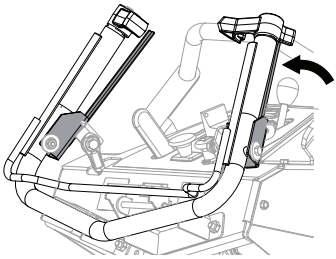
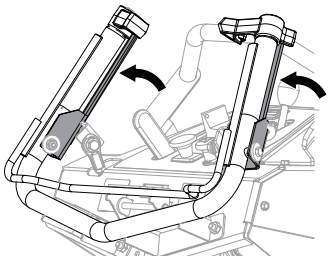
IMPORTANT: Engaging the PTO knob with the throttle lever set lower than fast position can cause excessive belt wear. ALWAYS use fast position when engaging the PTO.

7. 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 electric clutch.

WARNING: AVOID INJURY. Move the speed control lever slowly and keep the throttle at slow speed until you learn how to operate the unit.

Direction of Travel Lever Position
To move straight forward, release both drive control handles to the outward position.

To stop unit in neutral, return levers to the neutral position.


Direction of Travel Lever Position
To lock unit in neutral, engage neutral locks.

To turn left, engage left-hand lever.

To turn right, engage right-hand lever.

To reverse, engage both drive control handles.


NOTICE: Aggressive turning can scuff or damage lawns.

For Best Mowing Results

- Cut grass when it is dry.
- Keep mower blades sharp.
- Keep mower deck properly leveled.
- *Models 988185, 988186, 988187 Only:* Adjust anti-scalp wheels to prevent scalping.
- Do not set height of cut too low. For very tall grass, mow twice.
- Do not travel too fast.
- Mow with engine at full throttle.
- When mulching, only remove 1/3 of grass length per cutting. Do not cut more than 2.5 cm (1") at a time.
- Discharge clippings into areas already cut.
- Change cutting pattern with each mowing.
- Do not allow grass or debris to collect inside mower deck. Clean after each use.

STOP THE ENGINE

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

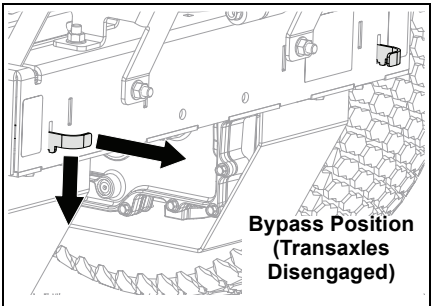
1. Push PTO switch down to off position.
2. Reduce engine throttle to idle.
3. Set forward speed control lever to the rearmost position to stop forward travel.
4. Engage neutral locks.
5. Engage parking brake.
6. Turn key to off position and remove from ignition.

MOVE UNIT MANUALLY

See Figure 18.

Bypass the transaxles to move the unit with the engine off.

1. Park unit on a flat, level surface and engage parking brake.
2. Stop engine, remove key and wait for moving parts to stop and for hot parts to cool.
3. Pull both transaxle bypass levers into bypass position. Move levers down slightly to secure position.
4. Release parking brake and push unit to desired location.
5. Engage parking brake.
6. Lift bypass levers up slightly and push into operating position.



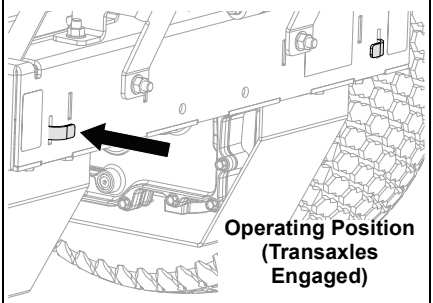


Figure 18

TRANSPORT UNIT

1. Raise deck to highest cutting height. See *Set Cutting Height* on page 16.
2. Move unit to transport vehicle.
3. Engage parking brake.
4. Stop engine and remove key.
5. Secure mower frame to transport vehicle.

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

MAINTENANCE

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

Proper maintenance can prolong the life of unit. The *Maintenance Schedule* on Page 20 shows the recommended service schedule.

Your Gravely dealer can provide service and adjustments to keep your unit operating at peak efficiency. Contact an authorized engine manufacturer's service center for engine service.

More frequent service may be required due to working conditions (heavy loads, high ambient temperatures, dusty conditions, or airborne debris).

See the maintenance instructions in the Engine Manual for additional information.

SERVICE POSITION

See Figure 19.

1. Move unit to a flat, level surface.
2. Engage neutral locks.
3. Engage parking brake.
4. Set speed control lever to the rearmost position.
5. Stop engine and remove key.
6. Wait for all moving parts to stop and for hot parts to cool.
7. Disconnect negative battery cable from battery.
8. Chock wheels. Strap and clamp unit onto lift, if used.

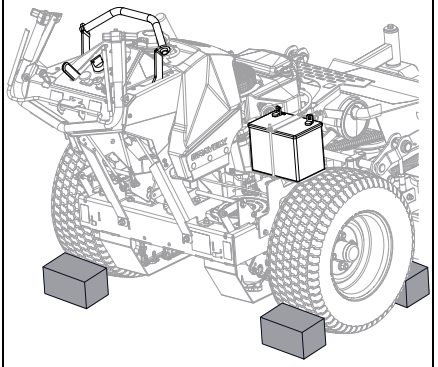


Figure 19

MAINTENANCE SCHEDULE

Service Performed	Each Use	Every 25 hrs.	Every 50 hrs.	Every 100 hrs.	Every 400 hrs.	Every 500 hrs.
Clean Engine of any Grass and Debris	•					
Clean Grass and Debris from Deck	•					
Inspect Belt Cover Grommets for Damage	•					
Check Safety Interlock System	•					
Check Hydraulic System	•					
Check Engine Oil *	•					
Change Engine Oil *						
Check Tire Pressure	•					
Check Mower Blades		•				
Check Air Filter *			•			
Check Carbon Canister Filter			•			
Lubricate Unit			•			
Check Parking Brake			•			
Clean Battery				•		
Clean Engine Cooling System *				•		
Check Fasteners				•		
Check Belts				•		
Change Hydraulic Oil and Filter **					•	
Lubricate Caster Fork Bearings			•			
Lubricate Caster Wheel Bearings		•				
Adjust Clutch‡						•

* Refer to engine manual for instructions.

** Change after first 75 hours of operation.

‡ Adjust clutch every 500 hours or once per season if used less than 500 hours.

SERVICE PARTS

See your Gravely dealer to purchase service parts for your unit.

Description	Qty.	Part No.
Air Filter	1	21548000
Engine Oil Filter	1	21548100
Fuel Filter	1	21548101
Spark Plug	1	21547800
PTO Belt – 36"	1	07200820
PTO Belt – 48"	1	07200819
PTO Belt – 52"	1	07200808
PTO Belt – 60"	1	07200818
Mower Blade – 36"	2	00450300
Mulching Blade – 36"	2	00273100
Mower Blade – 48"	3	00450200
Mulching Blade – 48"	3	00273000
Mower Blade – 52"	3	00450300
Mulching Blade – 52"	3	04887600
Mower Blade – 60"	3	09081200
Mulching Blade – 60"	3	04887700
Transaxle Drive Belt (988184)	1	07200610
Transaxle Drive Belt (Models 988185, 988186, 988187)	1	07241400
Hydraulic Oil Filter	2	21548300
Hydraulic Oil and Filter Kit	1	59222800
Relay	A/R	04438400
Fuse, 10A Mini ATC	1	04438100
Fuse, 20A Mini ATC	1	04438300
Fuse, 20A Blade, Main Power	1	00191262
Clutch and Operator Presence Diode	1	09293501
Fuel Stabilizer – 118 ml (4 oz)	A/R	04730400

CHECK SAFETY INTERLOCK SYSTEM

See *Test Safety Interlock System* on page 16. If system does not operate correctly, see your dealer for repair. DO NOT operate until repairs are made.

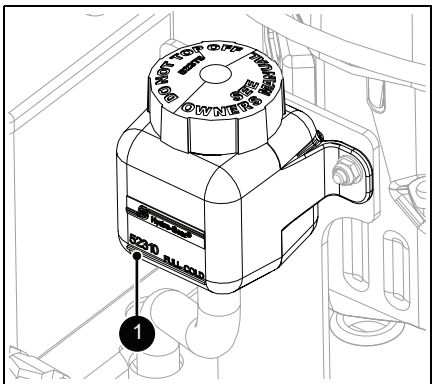
CHECK HYDRAULIC SYSTEM

Check Hydraulic Oil Level

See Figure 20.

1. Place unit in service position. See *Service Position* on page 19.
2. Check oil level in expansion tanks. Oil should reach the cold fill indicator line.

IMPORTANT: Engine should be cold when checking initial oil level.



1. Cold Fill Indicator Line

Figure 20

3. Operate engine for 1 minute and recheck oil levels.
4. Add hydraulic oil, if needed. See *Add Hydraulic Oil* on page 21.

Add Hydraulic Oil

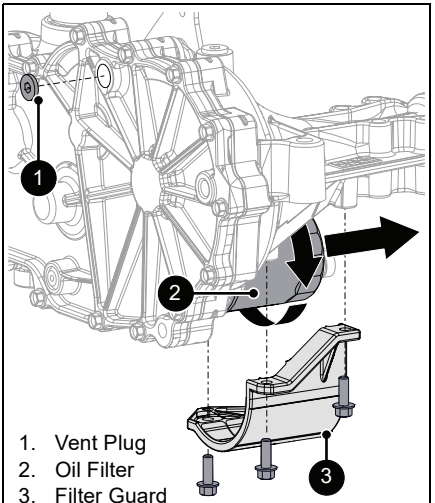
1. Place unit in service position. See *Service Position* on page 19.
2. Remove hydraulic oil expansion tank caps.
3. Fill expansion tanks with 15W-50 synthetic motor oil (Gravely p/n 00057100) or equivalent until oil reaches the cold fill indicator mark. See Figure 20.
4. Reinstall expansion tank caps.

Change Hydraulic Oil and Filter

1. Operate unit for a few minutes to warm hydraulic oil.
2. Place unit in service position. See *Service Position* on page 19.
3. Position container under oil filter to catch used oil.

See Figure 21.

4. Remove filter guard and oil filter from transaxle.
5. Remove the vent plug from the inlet port and allow the transaxle to drain completely.



1. Vent Plug
2. Oil Filter
3. Filter Guard

Figure 21

6. Wipe filter-mounting surface clean.
7. Lubricate rubber gasket on new oil filter with clean hydraulic oil.
8. Spin filter onto filter housing until it makes contact, and then turn filter 3/4 turn to tighten.
9. Reinstall filter guard and torque to 7.3 N•m (65 lb-in). DO NOT overtighten.
10. Add 15W-50 synthetic motor oil (Gravely p/n 00057100) or equivalent until oil appears at the bottom of the vent port (approximately 1893 mL (64 fl. ounces) per transaxle).
11. Reinstall the vent plug and tighten to 20.3 N•m (180 lb-in).
12. Add hydraulic oil to expansion tank until oil reaches cold fill indicator line. See Figure 20.
13. Repeat steps 3 – 12 for other transaxle.
14. Purge hydraulic system. See *Purge Hydraulic System* on page 22.

Purge Hydraulic System

Purge air from hydraulic system after draining oil or changing the filter.

WARNING: AVOID INJURY. This adjustment requires operating the engine. Use extreme care to avoid contact with moving parts and hot surfaces. Be sure rear of unit is well supported and secure before starting engine.

1. Park unit facing a wall or chock wheels.
2. Release parking brake.
3. Support unit so drive wheels are off the ground.
4. Bypass transaxles. See *Move Unit Manually* on page 18.
5. Start the engine. See *Start The Engine* on page 17.
6. Engage operator presence lever.
7. Release parking brake.
8. Disengage neutral locks.
9. Move speed control lever fully forward and backward 5 or 6 times.
10. Stop the engine. See *Stop the Engine* on page 18.
11. Return transaxle bypass levers to operating position. See *Move Unit Manually* on page 18.
12. Start the engine. See *Start The Engine* on page 17.
13. Engage operator presence lever.
14. Release parking brake.
15. Disengage neutral locks.
16. Move speed control lever fully forward and backward 5 or 6 times.
17. Stop engine, lower unit to ground and check oil level. Add oil if needed.
18. Repeat steps 1 – 17 until transaxles operate smoothly in forward and reverse at normal speed without excessive noise.

CHECK TIRE PRESSURE

Check tire pressures and inflate to recommendation. See *Specifications* on page 40.

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

- DO NOT inflate tires above maximum pressure on tire sidewalls.
- 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.
- DO NOT mount a tire without proper equipment and experience.

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.

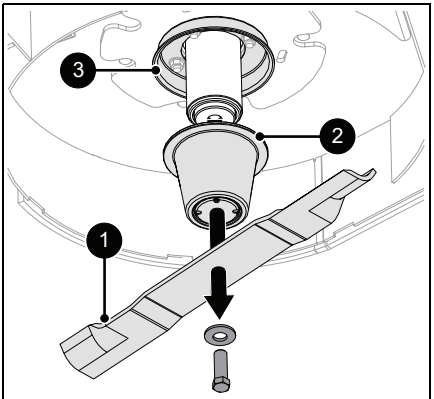
Rotation of one blade rotates the other blades.

Remove Blades

1. Place unit in service position. See *Service Position* on page 19.
2. Disconnect spark plug wires.

See Figure 22.

3. Remove hardware retaining blades and lower spindle guards to spindle and remove parts.
4. Clean all grass, dirt and debris from upper and lower spindle guards.



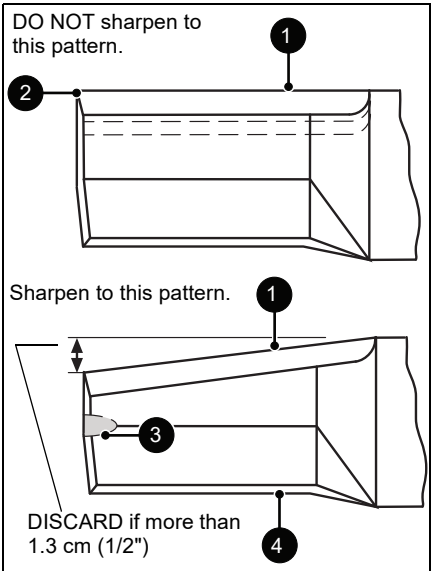
1. Mower Blade
2. Lower Spindle Guard
3. Upper Spindle Guard

Figure 22

Sharpen Blades

CAUTION: DO NOT sharpen blades while attached to unit.

1. Remove blades from unit. 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 23.



1. Cutting Edge
2. Square Corner
3. Air Lift Erosion
4. Air Lift

Figure 23

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 22.

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 with one bevel washer and hex bolt. Torque to 156 N•m – 217 N•m (115 lb-ft – 160 lb-ft).
2. Reconnect spark plug wires.

CHECK PARKING BRAKE

IMPORTANT: Check parking brake on both sides of unit.

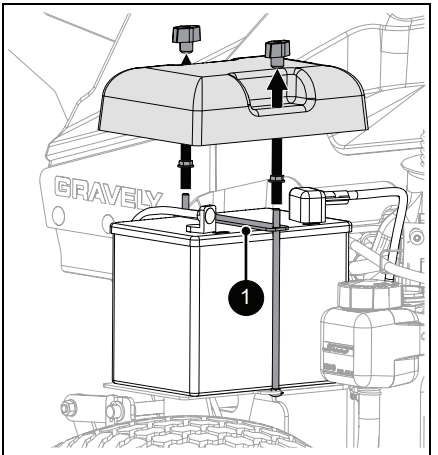
1. Place unit in service position. See *Service Position* on page 19.
2. Bypass transaxles. See *Move Unit Manually* on page 18.
3. Release parking brake.
4. Push unit forward.
   - If both sides of unit remain in place when pushed, no further adjustment is needed. Advance to step 5.
   - If either side of unit moves forward easily, see *Adjust Parking Brake* on page 27.
5. Return transaxle bypass levers to operating position. See *Move Unit Manually* on page 18.

CLEAN BATTERY

WARNING: AVOID INJURY. Battery posts, terminals and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and reproductive harm. Wash hands after handling.

Remove Battery

1. Place unit in service position. See *Service Position* on page 19.
2. Remove wing knobs retaining battery cover and remove cover. Retain for reinstallation.
3. Disconnect the negative cable and then the positive cable from battery.
4. Remove hardware retaining hold-down bracket and remove bracket. Retain for reinstallation.
5. Remove battery.



1. Hold-Down Bracket

Figure 24

Clean Battery

1. Clean terminals and battery cable ends with a wire brush.
2. Coat terminals with dielectric grease or petroleum jelly.

Install Battery

1. Reinstall battery.
2. Reconnect positive cable and then the negative cable.
3. Place boot over positive terminal.
4. Reinstall battery bracket and battery cover and secure with two wing knobs.

CHARGE BATTERY

Check battery with a voltmeter. If battery is less than 11 volts, charge battery.

NOTICE: DO NOT fast charge. Charging at a higher rate damages or destroys battery. ONLY use an automatic charger designed for use with your battery.

NOTICE: Always follow information provided on battery by battery manufacturer. Contact battery manufacturer for details regarding charging.

1. Remove battery from unit. See *Remove Battery* on page 24.
2. Place battery on bench in a well-ventilated area.
3. Connect positive lead of charger to positive terminal.
4. Connect negative lead of charger to negative terminal.
5. Charge battery following battery manufacturer's instructions.

6. Reinstall battery. See *Install Battery* on page 24.

Jump Starting

Gravely does not recommend jump starting your unit. Jump-starting can damage engine and system components. Refer to engine manual for details.

CHECK FASTENERS

Check for loose hardware and tighten if necessary.

LUBRICATE UNIT

1. Apply oil to all pivot points and pin connections.
2. Pump grease into grease fittings.

LUBRICATE CASTER HUBS

See Figure 25.

1. Place unit in service position. See *Service Position* on page 19.
2. Pump grease into grease zerks until grease appears at the top of caster hubs.

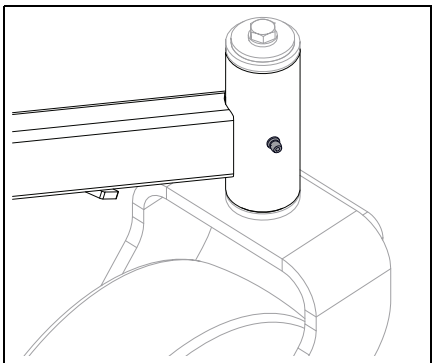


Figure 25

LUBRICATE CASTER WHEEL BEARINGS

See Figure 26.

1. Place unit in service position. See *Service Position* on page 19.
2. Support unit so front wheels are off the ground.
3. Remove wheel from fork.
4. Pump grease into grease zerk until grease passes through the seal in the wheel hub.
5. Wipe away excess grease.
6. Reinstall wheel into fork and lower unit to ground.

IMPORTANT: After tightening bolt, tire should not have any side-to-side play. Tighten bolt until there is a slight amount of drag on the wheel bearing. The wheel should not spin freely.

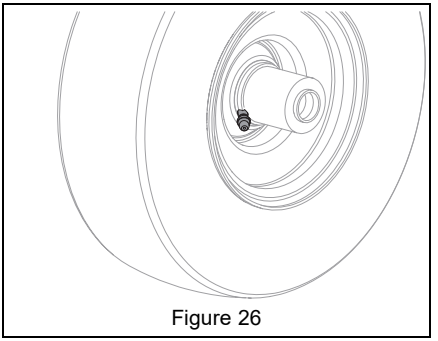


Figure 26

SERVICE & ADJUSTMENTS

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

ELECTRICAL SERVICE

Replace Fuse

A 20A main power fuse is located near the remote solenoid by the right side of the engine in a sealed fuse holder. A sealed fuse and relay distribution box is located under the tower dash.

NOTICE: To avoid damaging the circuit, replace fuses with fuses of the same amperage rating. Determine the cause of electrical failure and repair before replacing failed electrical components.

1. Remove defective fuse.
2. Determine cause of fuse failure and repair condition.
3. Install new fuse.

Replace Relay

NOTICE: Relays are interchangeable. Use only quality replacement parts. See *Service Parts* on page 20.

1. Remove defective relay.
2. Determine cause of relay failure and repair condition.
3. Install new relay.

ADJUST UNIT TO DRIVE STRAIGHT

Adjust Tire Pressure

1. Park unit on a flat, level surface.
2. Check tire pressures. If needed, adjust to recommended pressures. See *Specifications* on page 40.

IMPORTANT: DO NOT inflate tires outside recommended range.

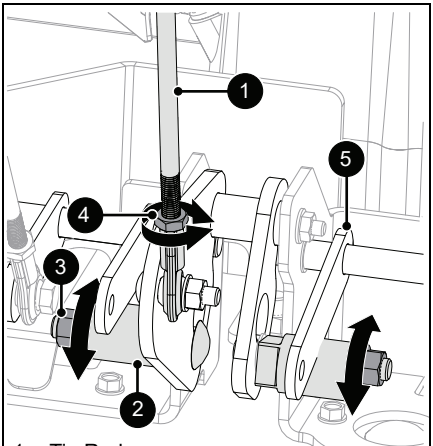
3. Check tracking. If unit does not drive in a straight line, adjust speed control eccentrics. See *Adjust Speed Control Trim* on page 26.

Adjust Speed Control Trim

See Figure 27.

1. Stop engine, remove key and wait for all moving parts to stop and for hot parts to cool.
2. Set speed control lever in the rearmost position.
3. Loosen the eccentric spacer nut.
4. Rotate eccentric spacer around hex bolt to raise or lower steering arm.
5. Tighten eccentric spacer nut once the desired setting is achieved.
6. Check tracking and readjust eccentrics as needed.

NOTICE: If additional adjustment is needed, loosen jam nuts, turn tie rod and tighten jam nuts once the desired setting is achieved.



1. Tie Rod
2. Eccentric Spacer
3. Eccentric Spacer Nut
4. Jam Nut
5. Steering Arm

Figure 27

ADJUST DRIVE CONTROL HANDLES

1. Stop engine, remove key and wait for all moving parts to stop and for hot parts to cool.
2. Loosen the jam nuts located on the tie rod.
3. Turn the control rod until the drive control handle makes contact with the neutral lock.
4. Repeat step 5 on other side.
5. Tighten jam nuts.
6. Check setting and adjust as needed.

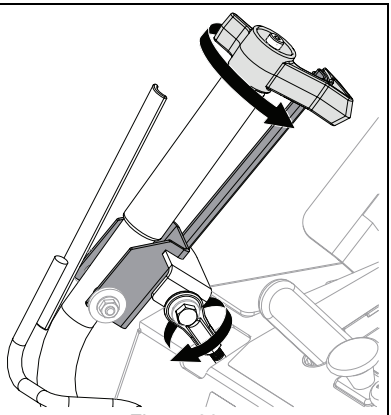


Figure 28

ADJUST PARKING BRAKE

If parking brake lever does not engage parking brake shaft, brake cable may need adjustment.

1. Remove five tapping screws from each dashboard side panel and remove panels. Retain all parts for reinstallation. See Figure 29.

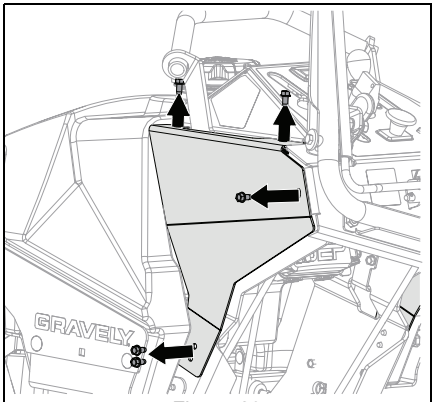
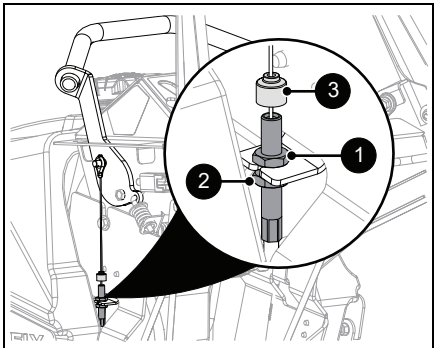


Figure 29

2. Disengage parking brake.

See Figure 30.

3. Loosen upper jam nut and tighten the lower jam nut until tight against cable bracket.
4. Reposition rubber boot against adjustment barrel.
5. Check cable adjustment and readjust as necessary.



1. Upper Jam Nut
2. Lower Jam Nut
3. Rubber Boot

Figure 30

6. Reinstall side panels using original hardware.

REPLACE PTO BELT

CAUTION: Damaged or worn belts may result in injury and / or damage to the unit. Check belts for excessive wear or cracks often.

Remove PTO Belt

See Figure 31.

1. Place unit in service position. See *Service Position* on page 19.
2. Position mower deck at lowest cutting height. See *Set Cutting Height* on page 16.
3. Lift belt covers to remove from mower deck.
4. Remove wing knobs retaining belt access cover and remove cover.

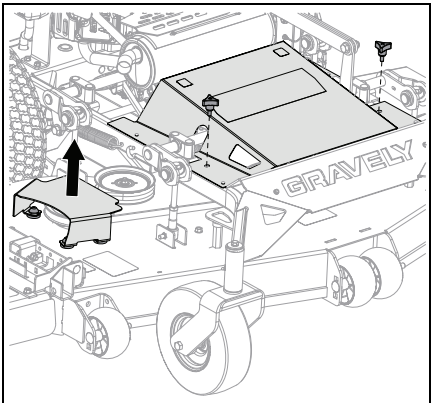


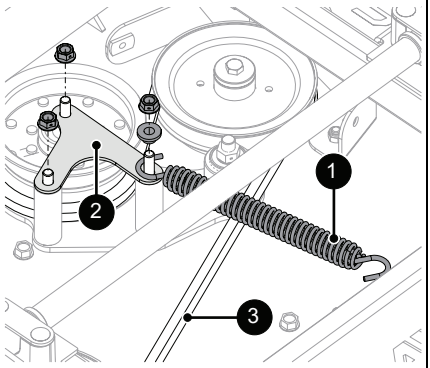
Figure 31

CAUTION: Use care when releasing idler spring tension. Keep body parts away from idlers when performing this operation.

See Figures 32 and 33.

5. Slowly remove spring hook from anchor bolt to release belt idler tension.
6. Remove hardware retaining support bracket to idler and remove bracket.

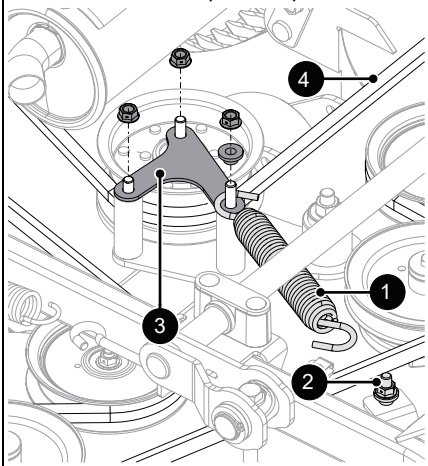
Model 988184



1. Spring
2. Support Bracket
3. PTO Belt

Figure 32

Models 988185, 988186, 988187



1. Spring
2. Anchor Bolt
3. Support Bracket
4. PTO Belt

Figure 33

7. Remove PTO belt.

Install PTO Belt

1. Install PTO belt around clutch sheave at rear of unit.

See Figures 34 and 35.

2. Route PTO belt around spindle pulleys.
3. Align belt with idler pulleys.

Model 988184

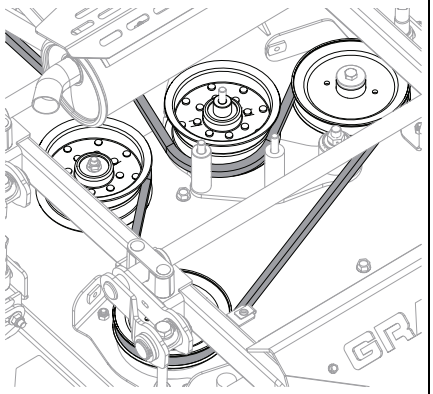


Figure 34

Models 988185, 988186, 988187

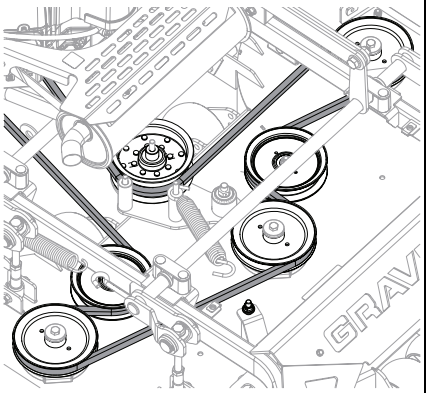


Figure 35

See Figures 36 and 37.

4. Reinstall support bracket and stepped spacer onto PTO idler.
5. Secure support bracket to PTO idler with original hardware.

IMPORTANT: Make sure belts are correctly aligned in pulleys.

6. Reinstall spring hook onto anchor bolt.

Model 988184

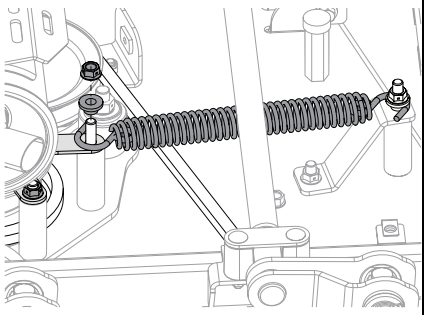


Figure 36

Models 988185, 988186, 988187

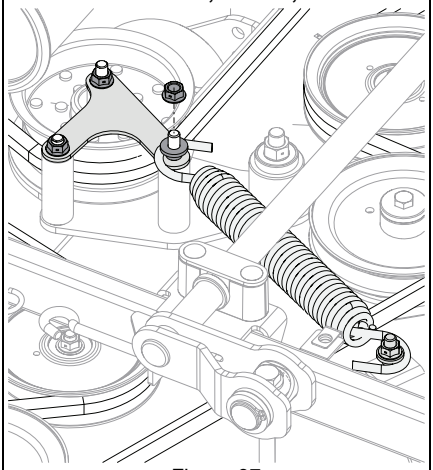


Figure 37

7. Reinstall belt covers.
8. Reinstall belt access cover and secure with wing knobs.

REPLACE TRANSAXLE DRIVE BELT

Remove Transaxle Drive Belt

1. Remove wing knobs retaining access cover and remove cover. See Figure 31.
2. Remove PTO belt from clutch. See *Remove PTO Belt* on page 27.

CAUTION: Use care when releasing idler spring tension. Keep body parts away from idlers when performing this operation.

3. Remove hardware retaining clutch stop bracket and J-clamp and remove bracket. See Figure 38.

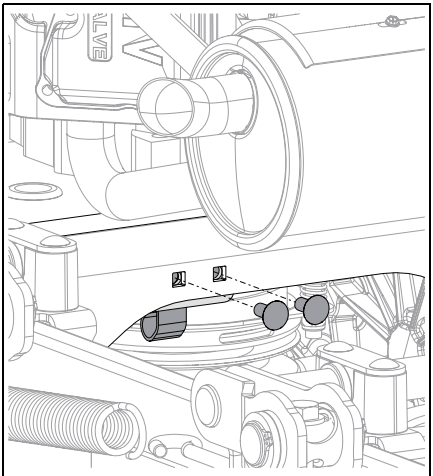
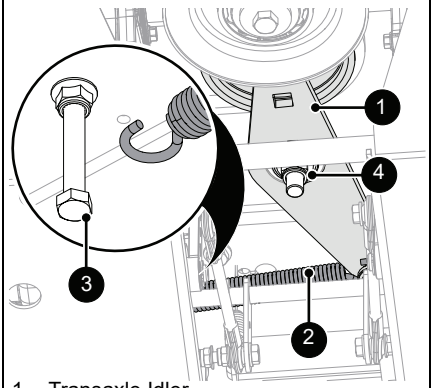


Figure 38

4. Under unit, slowly remove spring hook from anchor bolt to release transaxle idler belt tension. See Figures 39 and 40.
5. *Model 988184 Only:* Loosen belt ground tensioning idler arm nut and lower the tensioning arm to allow clearance. See Figure 39.

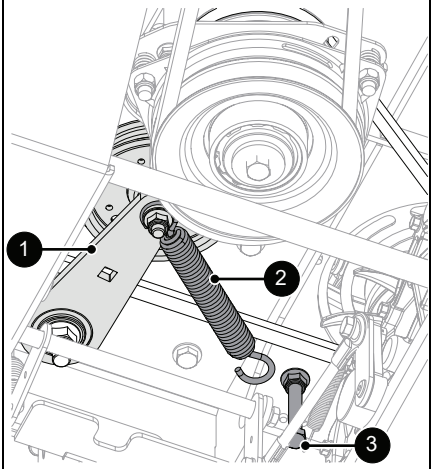
Model 988184



1. Transaxle Idler
2. Spring
3. Anchor Bolt
4. Idler Arm Nut

Figure 39

Models 988185, 988186, 988187



1. Transaxle Idler
2. Spring
3. Anchor

Figure 40

6. Remove hardware retaining transaxle covers and remove covers. Retain for reinstallation. See Figures 41 and 42.

Model 988184

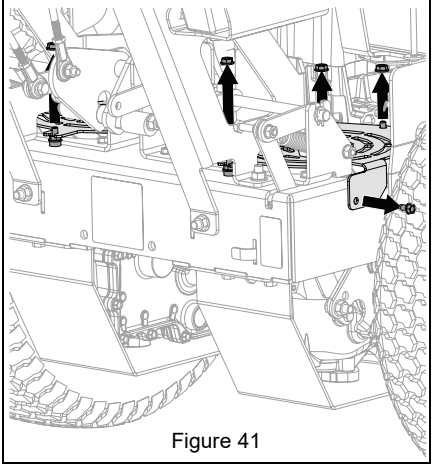


Figure 41

Models 988185, 988186, 988187

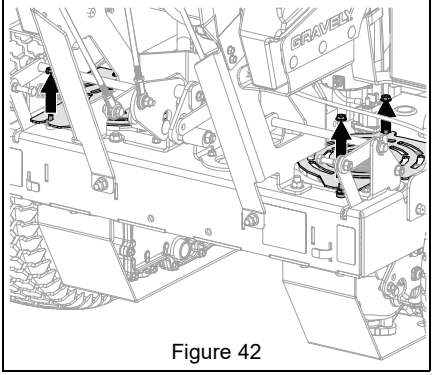


Figure 42

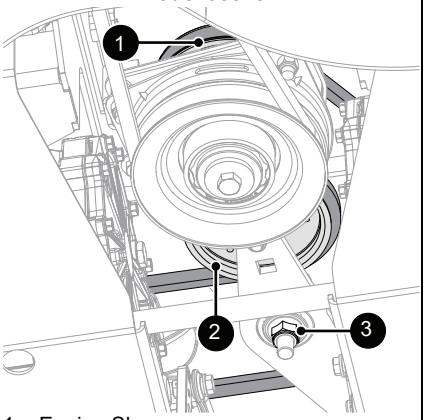
7. Remove transaxle drive belt.

Install Transaxle Drive Belt

See Figures 43 and 44.

1. Install transaxle drive belt around engine sheave and transaxle sheaves.
2. Align belt with transaxle drive idler.

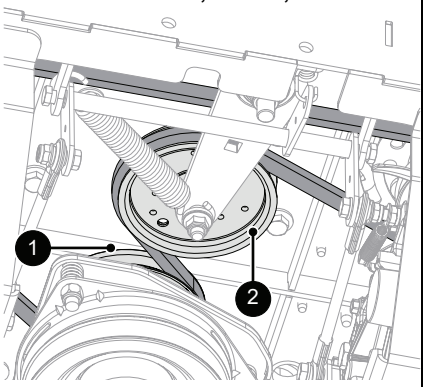
Model 988184



1. Engine Sheave
2. Transaxle Drive Idler
3. Idler Arm Nut

Figure 43

Models 988185, 988186, 988187



1. Engine Sheave
2. Transaxle Drive Idler

Figure 44

3. *Model 988184 Only:* Tighten tensioning idler arm nut. See Figure 43.
4. Reinstall clutch stop bracket and J-clamp and secure with original hardware. See Figure 38.
5. Reinstall transaxle covers and secure with original hardware.
6. Reinstall PTO belt onto clutch. See *Install PTO Belt* on page 28.

ADJUST ANTI-SCALP WHEELS

Models 988185, 988186, 988187

See Figure 45.

The anti-scalp wheels are set at the factory for typical mowing height, but can be adjusted for high or low cutting conditions. Make sure all wheels are set to the same height.

1. Place unit in service position. See *Service Position* on page 19.
2. Remove hardware securing anti-scalp wheels to deck and remove wheels.
3. Position wheels as necessary:
   - For a very high cutting height, set the anti-scalp wheels in the lowest position on the bracket.
   - For a very low cutting height, set the anti-scalp wheels in the highest position on the bracket.
4. Secure with original hardware.

IMPORTANT: All anti-scalp wheels MUST be set to the same height.

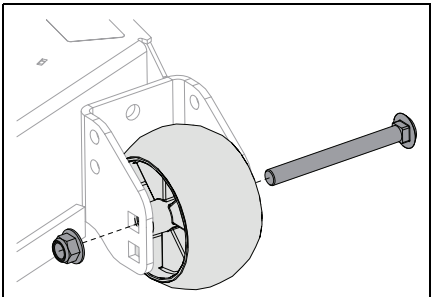


Figure 45

REMOVE / INSTALL MOWER DECK

Remove Deck

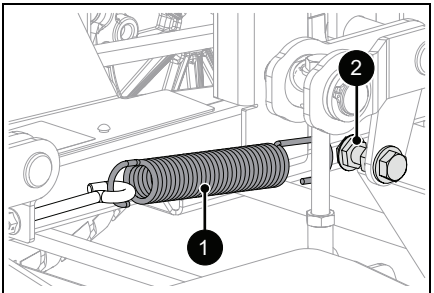
1. Place unit in service position. See *Service Position* on page 19.

WARNING: AVOID INJURY. Springs store energy. Keep body parts away from pinch points when removing the deck.

2. Remove PTO belt from clutch. See *Remove PTO Belt* on page 27.

WARNING: AVOID INJURY. Deck lift arms and lift lever could cause severe injury if the lift-assist springs are not disconnected before the lift links.

3. Raise deck to highest cutting height.
4. Position supports such as blocks or jack stands under each side of the deck.
5. Remove adjustment pin from height-of-cut adjustment system and slowly release deck lift lever until deck rests on supports.
6. *Models 988185, 988186, 988187 Only:* Slowly disconnect lift-assist springs from spring anchor on each side of deck. See Figure 46.



1. Lift-Assist Spring
2. Spring Anchor

Figure 46

7. Remove hardware retaining deck lift links to deck. See Figures 47 and 48.

Model 988184

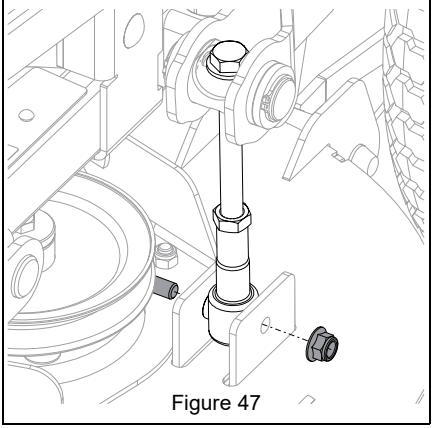


Figure 47

Models 988185, 988186, 988187

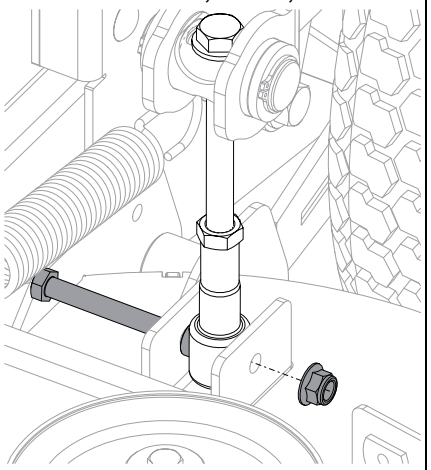
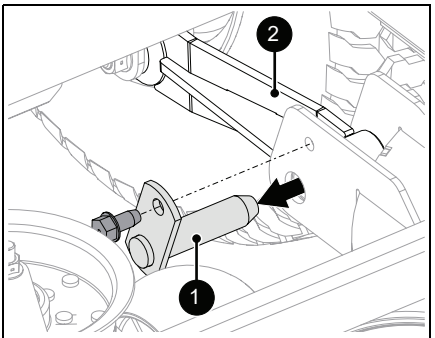


Figure 48

8. Remove hardware retaining deck mounting pins and remove pins. See Figure 49.



1. Mounting Pin
2. Mounting Arm

Figure 49

9. Remove deck.

Install Deck

See Figure 50.

1. Position deck under unit.
2. Align mounting arms with deck and reinstall mounting pins. Secure each mounting pin with one tapping screw.
3. Secure deck lift links to deck with original hardware.
4. Raise deck to highest cutting height.
5. *Models 988185, 988186, 988187 Only:* Reconnect lift-assist springs to spring anchors.

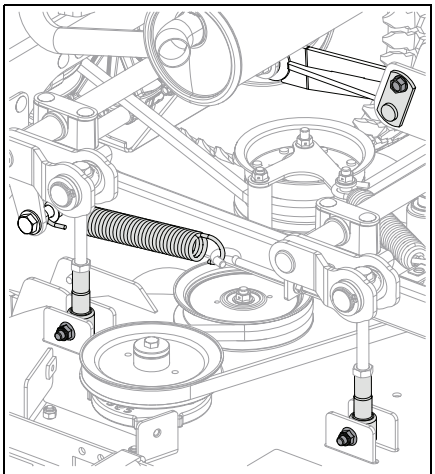


Figure 50

6. Reinstall PTO belt onto clutch. See *Install PTO Belt* on page 28.
7. Level the deck. See *Level and Pitch Mower Deck* on page 33.

LEVEL AND PITCH MOWER DECK

Models 988185, 988186, 988187

IMPORTANT: Make sure unit is on a flat, level surface and that tires are inflated to the recommended pressures.

Check Blade Level and Pitch

1. Place unit in service position. See *Service Position* on page 19.
2. Raise deck to 8.3 cm (3 1/4") cutting height.

See Figure 51.

3. Position mower blades so ends point left to right across the width of the deck.
4. Measure the distance between the ground and the cutting edge of the left and right blades. If the measurements are not within 4.7 mm (3/16") of each other, level the deck. See *Level Mower Deck* on page 34.

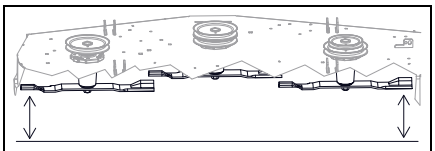


Figure 51

See Figure 52.

5. Position mower blades so ends point front to back and measure the following:
   - At the front of the deck, measure the distance between the ground and the cutting edge of the middle blade.
   - At the rear of the deck, measure the distance between the ground and the cutting edge of the left and the right blades.

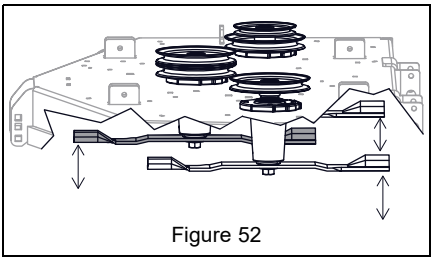


Figure 52

If the front measurement is not 3.2 mm (1/8") lower than the rear measurements, adjust the blade pitch. See *Adjust Blade Pitch* on page 34.

LEVEL AND PITCH MOWER DECK

Model 988184

IMPORTANT: Make sure unit is on a flat, level surface and that tires are inflated to the recommended pressures.

Check Blade Level and Pitch

1. Place unit in service position. See *Service Position* on page 19.
2. Raise deck to 7.6 cm (3.0") cutting height.

See Figure 53.

3. Position mower blades so ends point left to right across the width of the deck.
4. Measure the distance between the ground and the cutting edge of the left and right blades. If the measurements are not within 4.7 mm (3/16") of each other, level the deck. See *Level Mower Deck* on page 34.

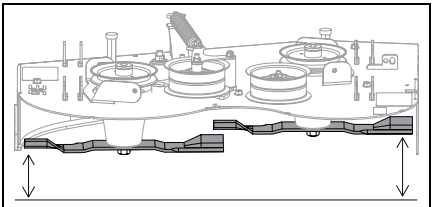


Figure 53

See Figure 54.

5. Position mower blades so ends point front to back and measure the following:
   - At the front of the deck, measure the distance between the ground and the cutting edge of the right blade.
   - At the rear of the deck, measure the distance between the ground and the cutting edge of the left blade.

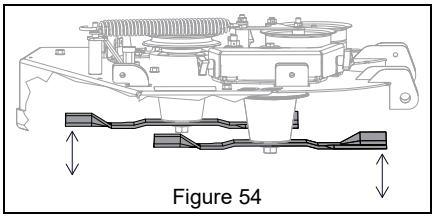


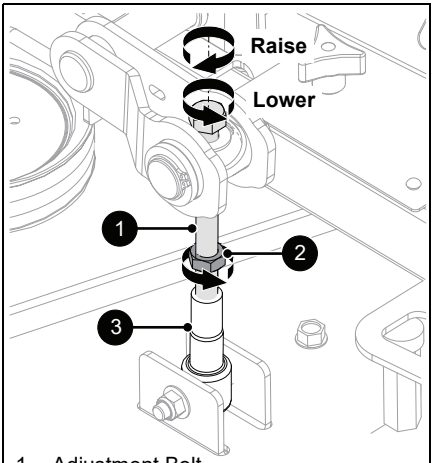
Figure 54

If the front measurement is not 3.2 mm (1/8") lower than the rear measurements, adjust the blade pitch. See *Adjust Blade Pitch* on page 34.

Level Mower Deck

See Figure 55.

1. Lower the high side of deck:
   a. Loosen jam nut against deck-leveling links.
   b. Turn adjustment bolts counterclockwise.
   c. Measure distance between the ground and cutting edges of left and right blades. Continue adjustment if necessary.
   d. Tighten jam nut against deck-leveling links.
2. Raise the low side of deck:
   a. Loosen jam nut against deck-leveling links.
   b. Turn adjustment bolts clockwise.
   c. Measure distance between the ground and cutting edges of left and right blades. Continue adjustment if necessary.
   d. Tighten jam nut against deck-leveling links.



1. Adjustment Bolt
2. Jam Nut
3. Deck-Lift Link

Figure 55

Adjust Blade Pitch

IMPORTANT: Side-to-side deck heights MUST remain even after completing pitch adjustment.

IMPORTANT: Pitching the front of the blades lower than the rear provides a balance between cut quality and the power needed to cut grass. Certain cutting conditions require the deck rear to be pitched lower than the front. Positioning the deck this way requires more engine power but can provide better cut quality.

1. Increase forward pitch:
   a. Loosen jam nuts against all deck-leveling links.
   b. Turn front adjustment bolts counterclockwise to lower deck front.
   c. Turn rear adjustment bolts clockwise to raise deck rear.
   d. Check adjustment. See *Check Blade Level and Pitch* on page 33.
   e. Tighten jam nuts against deck-leveling links.
2. Decrease forward pitch:
   a. Loosen jam nuts against all deck-leveling links.
   b. Turn front adjustment bolts clockwise to raise deck front.
   c. Turn rear adjustment bolts counterclockwise to lower deck rear.
   d. Check adjustment. See *Check Blade Level and Pitch* on page 33.

e. Tighten jam nuts against deck-leveling links.

ADJUST DECK LIFT

Models 988185, 988186, 988187

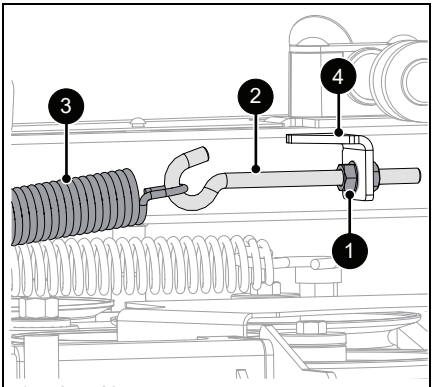
See Figure 56.

The deck-lift assist tension may be adjusted to modify deck lift assist and deck stability. Increased spring tension leads to easier deck lifting, but also decreases deck stability.

1. Loosen jam nuts on anchor bolt.
2. Adjust the spring anchor to the desired setting.
   - Turn spring anchor counterclockwise to decrease lift assist and increase deck stability.
   - Turn spring anchor clockwise to increase lift assist and decrease deck stability.

NOTICE: Excessive spring tension increases the potential for deck to lift and bounce over rough terrain and affect quality.

3. Measure spring length between threaded end of eye-bolt to eye-bolt mounting bracket at 8.26 cm (3.25") HOC position. Readjust spring tension if necessary. See Figure 57 for spring length range for each deck size.
4. Tighten jam nuts against spring anchor.



1. Jam Nut
2. Adjustable Spring Anchor
3. Spring
4. Mounting Bracket

Figure 56

48": 3.81 cm – 4.45 cm (1.50" – 1.75")
52": 4.45 cm – 5.08 cm (1.75" – 2.00")
60": 6.35 cm – 6.99 cm (2.50" – 2.75")

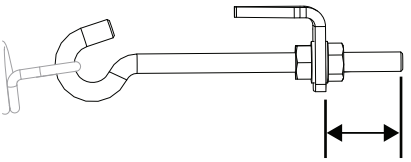


Figure 57

ADJUST CLUTCH

See Figure 58.

NOTICE: Adjust clutch every 500 hours or once per season if used less than 500 hours.

If clutch operates incorrectly or sounds abnormal, check the gap at the three inspection slots.

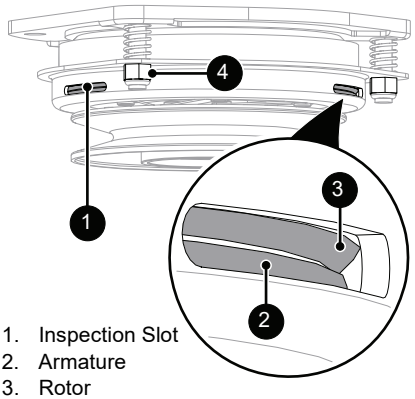
Check Clutch

1. Place unit in service position. See *Service Position* on page 19.
2. Measure gap between the armature and rotor:
   - A 0.4 mm – 0.5 mm (0.016" – 0.020") feeler gauge should fit between the armature and rotor and make slight contact with each.
3. Repeat measurement for remaining inspection slots.
4. If gap is within range, no adjustment is needed.

Adjust Clutch

1. Place unit in service position. See *Service Position* on page 19.
2. Loosen adjustment nut until a 0.5 mm (0.020") feeler gauge fits between armature and rotor.
3. Tighten adjustment nut until armature and rotor make slight contact with feeler gauge.
4. Repeat at remaining inspection slots.

NOTICE: Air gap MUST be even at all inspection slots.



1. Inspection Slot
2. Armature
3. Rotor
4. Gap Adjustment Nut

Figure 58

TROUBLESHOOTING

Problem	Probable Cause	Correction
Engine does not start.	PTO switch is in the on position.	Push PTO switch down to off position.
	Parking brake is released.	Engage parking brake.
	Speed control lever is not in the rearmost position.	Set speed control lever to the rearmost position.
	Engine is cold.	Pull choke knob out to the on position. See *Start The Engine* on page 17.
	Fuel tank is empty.	Fill fuel tank. See *Before Operation* on page 16.
	Fuel supply is contaminated.	Replace with clean fuel.
	Battery is not charged.	Charge battery. See *Charge Battery* on page 24.
	Battery cables are loose or corroded.	Clean and tighten cables. See *Clean Battery* on page 24.
	Spark plug wire(s) are loose or spark plug(s) are faulty.	Connect spark plug wire(s) or replace spark plug(s). Refer to engine manual.
	Safety interlock system is not engaged or is faulty.	Check safety interlock system. See *Test Safety Interlock System* on page 16.
	Electrical system is faulty.	Contact your Gravely dealer.
	Engine is faulty.	Contact your Gravely dealer.
Engine runs rough.	Choke control knob is in on position.	Move knob to off position.
	Fuel tank is empty.	Fill fuel tank. See *Before Operation* on page 16.
	Spark plug is faulty.	Replace spark plug. Refer to engine manual.
	Fuel filter is dirty.	Clean or replace filter. Refer to engine manual.
	Air filter cartridge is plugged.	Clean or replace air filter cartridge. Refer to engine manual.
	Engine is faulty.	Contact your Gravely dealer.
Engine overheats.	Engine oil level is low.	Add engine oil. Refer to engine manual.
	Cooling fins are plugged.	Clean engine. Refer to engine manual.
	Engine is faulty.	Contact your Gravely dealer.
Engine runs when ignition key is in the off position.	Ignition ground wire is disconnected.	Connect ground wire to clean, metal surface.
	Ignition switch is faulty.	See your Gravely dealer.

TROUBLESHOOTING

Problem	Probable Cause	Correction
Unit does not drive.	Parking brake is engaged.	Release parking brake.
	Transaxles are bypassed.	Return transaxle bypass levers to operating position. See *Move Unit Manually* on page 18.
	Transaxle drive belt is faulty.	Replace transaxle drive belt. See *Replace Transaxle Drive Belt* on page 29.
	Transaxles are faulty.	Contact your Gravely dealer.
	Transaxle drive system is faulty.	Contact your Gravely dealer.
	Hydraulic oil level is low.	Add hydraulic oil. See *Check Hydraulic System* on page 21.
PTO does not work.	PTO belt is faulty.	Replace PTO belt. See *Replace PTO Belt* on page 27.
	PTO switch, wiring, connectors or clutch are faulty.	Contact your Gravely dealer.
Unit moves with engine off and parking brake engaged.	Parking brake needs adjustment.	Adjust parking brake lever. See *Adjust Parking Brake* on page 27.
	Parking brake is faulty.	Contact your Gravely dealer.
Unit does not drive straight	Tire pressures are outside recommended ranges.	Check tire pressures and inflate to recommendation. See *Specifications* on page 40.
	Speed control levers need adjustment.	See *Adjust Speed Control Trim* on page 26.
Unit creeps when drive control handles are in the neutral position.	Neutral locks and/or speed control levers need adjustment.	See *Adjust Drive Control Handles* on page 26. See *Adjust Speed Control Trim* on page 26.
Unit has poor cutting quality.	Mower blades not level or mower deck pitch is incorrect.	Level and adjust pitch of mower deck. See *Level and Pitch Mower Deck* on page 33.
	Mower blades are dull or faulty.	Sharpen or replace mower blades. See *Sharpen Blades* on page 23.
	Mowing speed is too fast.	Drive slower when cutting grass.
	Belt tension or condition is poor.	Replace PTO belt. See *Replace PTO Belt* on page 27.
	Cutting height is too low.	Do not set height of cut too low. For very tall grass, mow twice.

STORAGE



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

SHORT-TERM STORAGE

IMPORTANT: NEVER wash unit with high-pressure water or store outdoors.

1. Allow unit to cool and clean with mild soap and water.
2. Tighten all hardware to correct specifications.
3. Inspect unit for visible signs of wear or damage. Repair as needed.
4. Prepare fuel system for storage.

NOTICE: Gravely recommends using a quality fuel stabilizer in all fuel. Gasoline left in the fuel system without a stabilizer, even for short periods of time, deteriorates and leaves gummy deposits in the system that may cause damage. For the best effectiveness, add stabilizer to all fuel containers whenever purchasing fuel. Add the stabilizer to the container before adding fuel.

   a. Add Gravely fuel stabilizer (see *Service Parts* on page 20) or equivalent according to manufacturer's instructions to the fuel tank and any fuel containers with remaining fuel.
   b. Operate engine outdoors for at least 5 minutes to allow stabilizer to reach the carburetor.

5. Stop engine and remove key from ignition. See *Stop the Engine* on page 18.
6. Store unit in a cool, dry, protected area. DO NOT store unit outdoors.

LONG-TERM STORAGE

1. Perform short-term storage procedures.
2. Lubricate as directed in *Maintenance* on page 19.
3. Touch-up all scratched painted surfaces.
4. Remove and charge battery as directed in *Charge Battery* on page 24. Store battery in a cool, dry, protected area.
5. Store unit in a cool, dry, protected area. DO NOT store unit outdoors.

START-OF-SEASON PREPARATION

1. Before adding fuel for the first time after long-term storage, add fresh, stabilizer-treated fuel to fuel tank and any fuel containers with remaining fuel.
2. Charge and install the battery.

ACCESSORIES

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

Description	Part No.
Operator-Controlled Discharge Chute Kit – 36, 48 & 52" Decks	78807400
Operator-Controlled Discharge Chute Kit – 60" Decks	78807500
Mulch Kit – 36" Decks	78807200
Mulch Kit – 48" Decks	79105700
Mulch Kit – 52" Decks	79105800
Mulch Kit – 60" Decks	79105900
Grass Catcher Kit	78804300
Headlight Kit	78807300
Single-Wheel Sulky	78806700
Two-Wheel Sulky	78806800

SPECIFICATIONS

Model Number	988184	988185	988186	988187
Description	Pro-Walk 36	Pro-Walk 48	Pro-Walk 52	Pro-Walk 60
Engine	Kawasaki FS481V	Kawasaki FS600V		Kawasaki FS691V
Displacement – cm^3 (in^3)	603 (36.8)			726 (44.3)
Maximum RPM – No Load	3600			
Oil Capacity	Refer to engine manual.			
Liquid or Air Cooled	Air			
Electrical				
Starter	Electric			
Battery	12-Volt U1, Maintenance-Free, 270 CCA			
PTO (Power Take-off)	Electric PTO Clutch / Brake			
Fuel				
Tank Capacity – liter (gal)	20.8 (5.5)			
Type	Refer to engine manual.			
Transmission				
Type	Hydrostatic Drive			
Oil	Use 15W-50 synthetic motor oil (Gravely p/n 00057100) or equivalent			
Hydraulic Oil Filter	Yes			
Drive Speed				
Forward Maximum – km/h (mph)	12.9 (8.0)			
Reverse Maximum – km/h (mph)	4.8 (3.0)			
Turning Radius	Zero			
Brakes	Internal Parking			
Mower Deck				
Cutting Height – cm (in)	3.8 – 11.4 (1.5 – 4.5)	3.8 – 12.7 (1.5 – 5.0)		
Cutting Height Increments – cm (in)	0.635 (0.25)			
Cutting Width – cm (in)	91.4 (36)	121.9 (48)	132.1 (52.0)	152.4 (60.0)
Deck Lift	Mechanical Pin Lock			
Size and Weight				
Length – cm (in)	204.5 (80.5)	191.8 (75.5)	196.9 (77.5)	198.9 (78.3)
Width – cm (in) • Discharge Chute Down • Discharge Chute Up	 122.7 (48.3) 93.5 (36.8)	 158.0 (62.2) 127.3 (50.1)	 171.7 (67.6) 141.0 (55.5)	 190.8 (75.1) 160.0 (63.0)
Height – cm (in)	114.3 (45.0)			
Weight – kg (lb)	318.2 (701.5)	335.7 (740.0)	349.3 (770.0)	360.6 (795.0)
Tires				
Front Tire Size – in	11 x 4-5 (Semi-pneumatic)			
Rear Tire Size – in	21 x 7-10	20 x 8-10		
Recommended Rear Tire Pressure – kPa (psi)	103.4 – 137.9 (15 – 20)			

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 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 unit.

Warranty Code	Product Group	Warranty Period
AA	Serialized Attachments	1 Year.
AB	Serialized Attachments	2 Years.
CH	Pro-Turn Z and Pro-Turn ZX Mowers	4 Years or 750 Hours.*
CJ	Pro-QXT	4 Years or 500 Hours.*
CK	Compact-Pro and Pro-Walk Hydro Mowers	4 Years or 750 Hours.* No Hour Limit for First 2 Years.
CL	Pro-Turn 100 and Pro-Stance Mowers	5 Years or 1000 Hours.* No Hour Limit for First 2 Years.
CM	Pro-Turn 200 Mowers	5 Years or 1250 Hours.* No Hour Limit for First 2 Years.
CN	Pro-Turn 400 and 600 Mowers	5 Years or 1500 Hours.* No Hour Limit for First 2 Years.
CO	Pro-Walk Gear Mowers	2 Years.
HF	ZT-X Mowers	3 Years or 300 Hours.*
HG	ZT-XL Mowers	4 Years or 400 Hours.*
HH	ZT-HD Mowers	4 Years or 500 Hours.*
UG	Atlas JSV	1 Year.

* Whichever comes first.

Special Extensions

The chart below details special **extensions** to warranty terms. Warranty terms are total time periods covered. If any product is rented or leased, there are no extensions to the 90-day warranty.

Warranty Code	Warranty Term Extension	Warranty Period	Detail
CL, CM, CN, CO	Mower Deck Shell and Main Frame	Lifetime Limited.	Warranty is for parts only after the initial warranty period. Components are covered for manufacturer's defect only, not wear.

Exclusions and Limitations

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

Warranty Term Exclusions	Warranty Period
Air filters, brake arms, brake linings, brake shoes, brushes, cutters, fuel filters, halogen headlights, knives, halogen light bulbs, lubricants, mower blades, oil, oil filters, spark plugs, scraper blades, shear bolts, skid shoes and spoon tines.	Components are not covered under warranty.

Hydro-Gear Transaxle Limitation
See Hydro-Gear warranty. The warranty is administrated by AriensCo. Refer to www.gravely.com for warranty statement.

Warranty Term Limitations	Warranty Period
Cloth, Plastic and Rubber Components. Mufflers, Tires and Belts.	Components are covered for manufacturer's defect only, not wear.

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.
- Repairs or adjustments required due to failure to use fresh fuel or failure to properly prepare the unit for periods of non-use.
- **Use of gasoline blends exceeding 10% ethanol voids any and all warranties.**
- **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.

Evaporative Emissions Control Warranty Exception

As required by the California Air Resources Board (CARB) and the US Environmental Protection Agency (EPA) the evaporative emissions control system is warranted to the ultimate purchaser, and any subsequent owner, for two years.

The CARB and EPA evaporative emissions control system warranty is described in a separate evaporative emission control warranty statement.

Special Exclusions for Job-site Vehicles

The following uses void the warranty terms on Atlas JSV (Warranty Code UG) vehicles:

- Renting or leasing the vehicle.
- Using the vehicle to tow or carry loads in excess of the limits specified in the operator's manual.
- Modifying the vehicle with parts and accessories that are not genuine or authorized Gravely parts or accessories.
- Modifying the vehicle without express written authorization from Gravely.
- Operating the vehicle when it has not been completely and properly assembled and pre-delivered by an authorized Gravely dealer.

Battery Warranty

Battery warranty is one year. Units used for rental or lease have no exceptions to the 90-day warranty. Total battery claim reimbursement will not exceed 45.00 USD.

Engines

The chart below details engine warranty information. Engine warranty terms may vary from the specific terms of this warranty. If inconsistent, the terms of the engine warranty shall apply to the engine and its component parts.

Engine Manufacturer	**Detail**	
Gravely V-Twin	Serial Number 0000400 and lower	4 Years or 500 Hours, whichever comes first. Refer to www.gravely.com for warranty statement.
	Serial Number 0000401 and higher	4 Years or 750 Hours, whichever comes first. Refer to www.gravely.com for warranty statement.
Yamaha	Yamaha-branded engines are warranted by the manufacturer and the warranty is administrated by AriensCo. Refer to www.gravely.com for warranty statement.	
Briggs & Stratton, Kawasaki, Kohler	Covered by the engine manufacturer's warranty. Refer to the engine manufacturer's warranty statements.	

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 service representative 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 service representative.

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.

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www.gravely.com

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

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