



GREAT DANE

Chariot

Owner/Operator Manual

Manuel Du Propriétaire/Utilisateur

Models

992609 – Chariot GCHKW1948S

992610 – Chariot GCHKW2352S

992611 – Chariot GCHKW2561S



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INTRODUCTION

NON-ENGLISH MANUALS



Manuals in languages other than English may be obtained from your Dealer. Visit your dealer or www.greatdanemower.com for a list of languages available for your equipment.



Manuals printed in languages other than English are also available as a free download on our web site:

<http://www.greatdanemower.com>

MANUALES EN IDIOMAS DIFERENTES DEL INGLES



Puede obtener manuales en idiomas diferentes del inglés en su distribuidor. Visite a su distribuidor o vaya a www.greatdanemower.com para obtener una lista de idiomas disponibles para su equipo.



También puede imprimir manuales en idiomas diferentes del inglés descargándolos

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Manuels non anglais



Des manuels dans différentes langues sont disponibles chez votre revendeur. Rendez-vous chez votre revendeur ou allez sur le site



www.greatdanemower.com pour consulter la liste des langues disponibles pour votre équipement.

Les manuels imprimés dans des langues différentes de l'anglais sont également disponibles en

téléchargement gratuit sur notre site Web :

<http://www.greatdanemower.com>

THE MANUAL

Before operation of unit, carefully and completely read your manuals. The contents will provide you with an understanding of safety instructions and controls during normal operation and maintenance.

All reference to left, right, front, or rear are given from operator sitting in operation position and facing the direction of forward travel.

MODEL AND SERIAL NUMBERS

When ordering replacement parts or making service inquiries, know the Model and Serial numbers of your unit and engine.

Numbers are located on the product registration form in the unit literature package. They are printed on a serial number label, located on the frame of your unit.



Serial Number Label
Figure 1

- Record Unit Model and Serial numbers here.

- Record Engine Model and Serial numbers here.

UNAUTHORIZED REPLACEMENT PARTS

Use only Great Dane replacement parts. The replacement of any part on this vehicle with anything other than a Great Dane authorized replacement part may adversely affect performance, durability, or safety of this unit. Great Dane disclaims liability for any claims or damages, whether warranty, property damage, personal injury or death arising out of the use of unauthorized replacement parts.

DISCLAIMER

Great Dane 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 within this manual may be optional. Some illustrations may not be applicable to your unit.

PRODUCT REGISTRATION

The Great Dane dealer must register the product at the time of purchase. Registering the product will help the company process warranty claims or contact you with the latest service information. All claims meeting requirements during the limited warranty period will be honored, whether or not the product registration card is returned. Keep a proof of purchase if you do not register your unit.

Customer Note: If the dealer does not register your product, please fill out, sign, and return the product registration card to Great Dane.

DELIVERY

Customer Note: If you have purchased this product without complete assembly and instruction by your retailer, it is your responsibility to:

1. Read and understand all assembly instructions in this manual. If you do not understand or have difficulty following the instructions, contact your nearest Great Dane Dealer for assistance. Make sure all assembly has been properly completed and safety interlock system works properly.

NOTE: To locate your nearest Great Dane dealer, go to www.greatdanemower.com on the Internet.



WARNING: Improper assembly or adjustments can cause serious injury.

1. Understand all Safety Precautions provided in the manuals.

2. Review control functions and operation of the unit. Do not operate unit unless all controls function as described in this manual.
3. Review recommended lubrication, maintenance, and adjustments.
4. Fill out Product Registration Card and return the card to Great Dane or go to www.greatdanemower.com.

SAFETY



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

Slopes are a major factor related to loss-of-control and tip-over accidents. Operation on all slopes requires extra caution.

Tragic accidents can occur if the operator is not alert to the presence of children. Never assume that children will remain where you last saw them.

Gasoline is extremely flammable and the vapors are explosive, handle with care.

Disengage attachment, stop unit and engine, remove key, engage parking brake, and allow moving parts to stop before leaving operator's position.



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



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

NOTATIONS

NOTE: General reference information for proper operation and maintenance practices.

IMPORTANT: Specific procedures or information required to prevent damage to unit or attachment.

PRACTICES AND LAWS

Practice usual and customary safe working precautions, for the benefit of yourself and others. Understand and follow all safety messages. Be alert to unsafe conditions and the possibility of minor, moderate, or serious injury or death. Learn applicable rules and laws in your area, including those that may restrict the age of the operator.

REQUIRED OPERATOR TRAINING

Original purchaser of this unit was instructed by the seller on safe and proper operation. If unit is to be used by someone other than original purchaser (loaned, rented or sold), **ALWAYS** provide this manual and any needed safety training before operation.

SAFETY DECALS AND LOCATIONS

ALWAYS replace missing or damaged safety decals. Refer to figure 2 for Safety Decal locations.



OL1253



OL3900

SAFETY ALERT SYSTEM

These are safety alert symbols. They mean:

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

When you see this symbol:

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

SIGNAL WORDS

The safety alert symbols above and signal words below are used on decals and in this manual.

Read and understand all safety messages.



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

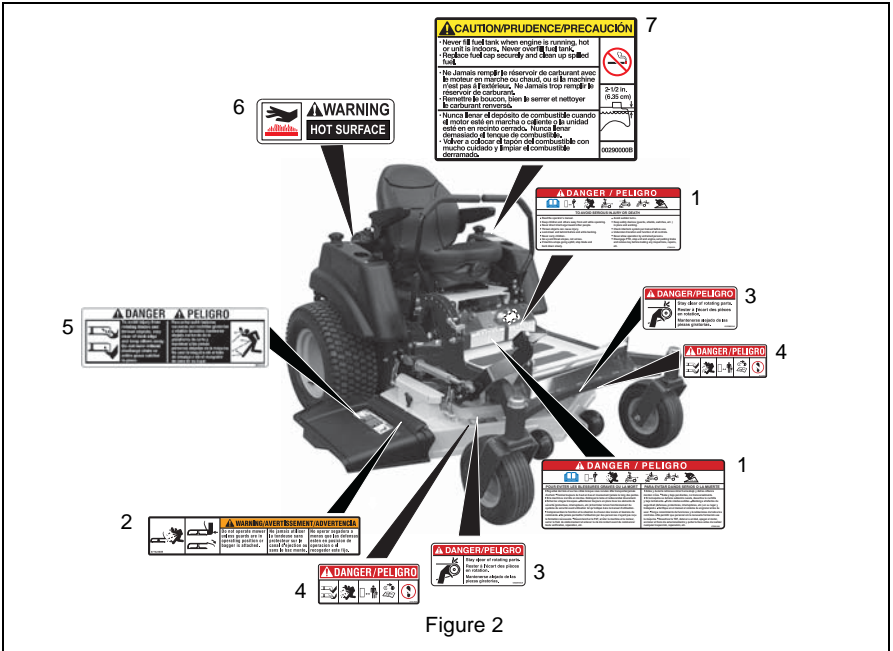


Figure 2

1. DANGER! TO AVOID SERIOUS INJURY OR DEATH



OL1801

Read Operator's Manual.



OL4370

Keep children and others away from unit while operating.



Never direct discharge toward other people. Thrown objects can cause injury.



OL4460

Look down and behind before and while backing.



OL4470

Keep children out of work area and under watchful care of a responsible adult.



OL4480

NEVER CARRY CHILDREN.



OL4450

Go up and down slopes, not across. DO NOT operate on slopes over 17°.

- If machine stops going uphill, stop blade and back down slowly.
- Avoid sudden turns.
- Keep safety devices (guards, shields, switches, etc.) in place and working.

- Check interlock system per manual before use.
- Understand location and function of all controls.
- Never allow operation by untrained persons.



NO STEP! Always keep feet away from rotating parts.

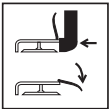
OL1813

2. WARNING!



OL4430

Always stand clear of discharge area.



OL3320

Do not operate mower unless guards are in operating position or bagger is attached.

3. DANGER!



OL4730

AVOID INJURY. Stay clear of rotating parts.

4. DANGER!



OL1809

Always keep feet and hands away from rotating parts.



OL1810

Always stand clear of discharge area. Do not direct discharge toward other people.



OL1811

Keep people away from unit while operating.



OL1812

Remove key, disconnect batteries and read manual before you adjust or repair unit.

5. DANGER!



OL1809

Stay clear of deck edge and keep others away.



OL1810

Do not mow without discharge chute or entire grass catcher in place.

6. HOT SURFACES!



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

7. WARNING!



OL0480

No smoking, No sparks, No flames.

MAX. FILL
Max. Remplir
Max. Riene



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

Replace fuel cap securely and clean up spilled fuel.

Emission Control System Certification Label

NOTE: 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 EPA and/or CARB authorized service centers. Contact your Great Dane Dealer concerning emission controls and component questions.

SAFETY RULES

Read, understand, and follow all safety practices in Owner/Operator Manual before beginning assembly. Failure to follow instructions could result in personal injury and/or damage to unit.

ALWAYS remove key and/or wire from spark plug before assembly. Unintentional engine start up can cause death or serious injury. Complete a walk around inspection of unit and work area to understand:

• Work area • Your unit • All safety decals
Determine which attachments are needed and can be used safely.

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.

ALWAYS check overhead and side clearances carefully before operation.

ALWAYS be aware of traffic when operating along streets or curbs.

Keep children and people away.

Keep children out of work area and under watchful care of a responsible adult.

Keep area of operation clear of all toys, pets, and debris. Thrown objects can cause injury.

Check for weak spots on docks, ramps or floors. Avoid uneven work areas and rough terrain. Stay alert for hidden hazards or traffic.

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.

Data indicates that operators, age 60 and above, are involved in a larger percentage of riding mower related injuries. These operators should evaluate their ability to operate the riding mower safely enough to protect themselves and others from serious injury.

Read the entire Owner/Operator manual and other training material. If the operator or the mechanic cannot read the manual, it is the owner's responsibility to explain it to them.

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

Only trained adults may operate or service unit. Training includes actual operation.

Local regulations may restrict the age of the operator.

NEVER allow children to operate or play on or near unit. Be alert and shut off unit if children enter area.

NEVER operate unit after or during the use of medication, drugs or alcohol. Safe operation requires your complete and unimpaired attention at all times.

DO NOT wear loose clothing or jewelry and tie back hair that may get caught in rotating parts.

Wear adequate outer garments.

NEVER wear open sandals or canvas shoes during operation. Wear adequate safety gear, protective gloves and footwear.

Wear proper footwear to improve footing on slippery surfaces.

Always wear safety goggles or safety glasses with side shields when operating mower.

Moving parts can cut or amputate fingers or a hand. Wrap blade(s) or wear gloves to service. On multiblade mowers, rotation of one blade will cause all blades to rotate.

NEVER place your hands or any part of your body or clothing inside or near any moving part while unit is running.

ALWAYS keep hands and feet away from all rotating parts during operation. Rotating parts can cut off body parts.

ALWAYS keep body and hands away from pin holes or nozzles which eject hydraulic fluid under pressure.

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

ALWAYS keep hands and feet away from all pinch points.

Fumes from the engine exhaust can cause death or serious injury. DO NOT run engine in an enclosed area. Always provide good ventilation.

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

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

Keep safety devices or guards in place and functioning properly. NEVER modify or remove safety devices.

Do not operate without either entire grass catcher or the discharge guard in place.

Stop engine before removing grass catcher or unclogging chute.

Ensure Safety Interlock System is functioning properly. DO NOT operate unit if safety interlock is damaged or disabled.

Before starting engine: disengage PTO, place steering levers in neutral lock position, lower attachment and set parking brake.

Start and operate unit only when seated in operator's position. Steering levers must be in neutral lock, PTO disengaged and parking brake set when starting engine.

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. Mow only in daylight or good artificial light.

Avoid slippery surfaces. Always be sure of your footing.

DO NOT mow on wet grass. Reduced traction could cause sliding and effect the machine's stability.

Watch for traffic when operating near or crossing roadways.

Never carry passengers.

DO NOT try to stabilize the machine by putting your foot on the ground. Never direct discharge towards persons or property that may be injured or damaged by thrown objects. Use extreme caution on gravel surfaces.

Always stand clear of the discharge area.

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

Never engage PTO while raising attachment or when attachment is in raised position.

DO NOT operate at too fast a rate. DO NOT change engine governor settings or over-speed engine. Slow down before turning.

DO NOT operate in reverse unless absolutely necessary. ALWAYS look down and behind before and while backing.

Stop and inspect equipment if you strike an object or if there is an unusual vibration.

Repair, if necessary, before restarting. Never make adjustments or repairs with the engine running.

Mower blades are sharp and can cut you.

Wrap the blade(s) or wear gloves, and use extra caution when servicing them. NEVER weld or straighten mower blades.

Rotation of one blade may cause rotation of the other blades.

Take all possible precautions when leaving unit unattended. Shut off engine. Remove wire from spark plug and secure it away from spark plug.

ALWAYS remove key to prevent unauthorized use.

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

Disengage PTO when attachment is not in use. ALWAYS turn off power to attachment when travelling, crossing driveways, etc.

Mow up and down slopes, not across them.

DO NOT operate on slopes of more than 17 degrees.

Use of a Rollover Protection System (ROPS) is recommended for slope operation. See Attachments and Accessories.

Always wear a seat belt when operating unit using a Rollover Protection System (ROPS). Keep all movements on the slope *slow* and *gradual*. Do not make sudden changes in speed or direction.

Avoid starting or stopping on the slope. If tires lose traction, disengage the blades and proceed slowly *straight* down the slope.

If you cannot back up a slope or you feel uneasy on it, do not mow it.

DO NOT park on slopes unless necessary.

When parking on slope always chock or block wheels. Always set parking brake.

Use a slow speed. Tires may lose traction on slopes even though the brakes are functioning properly.

Do not bypass transmission when on a slope.

Top only with a machine that has a hitch designed for towing. Do not attach towed equipment except at the hitch point.

Follow the manufacturer's recommendations for weight limits for towed equipment and towing on slopes.

NEVER allow children or others in or on towed equipment.

On slopes, the weight of the towed equipment may cause loss of control.

Travel slowly and allow extra distance to stop.

Use extra care when loading or unloading unit onto trailer or truck.

Secure unit chassis to transport vehicle.

NEVER secure from rods or linkages that could be damaged.

DO NOT transport machine while engine is running.

ALWAYS turn off power to attachment when transporting unit.

Keep unit free of debris. Clean up oil or fuel spills.

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.

Fuel is highly flammable and its vapors are explosive. Handle with care. Use an approved fuel container.

NO smoking, NO sparks, NO flames.

ALWAYS allow engine to cool before servicing.

NEVER fill fuel tank when engine is running or hot from operation.

NEVER fill or drain fuel tank indoors.

Replace fuel cap securely and clean up spilled fuel.

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.

When practical, remove gas-powered equipment from the truck or trailer and refuel it on the ground. If this is not possible, then refuel such equipment on a trailer 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 fueling is complete. Do not use a nozzle lock-open device.

If fuel is spilled on clothing, change clothing immediately.

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.

ALWAYS wear safety glasses and protective gear near battery. Use insulated tools.

Do not tip battery beyond a 45° angle in any direction.

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.

ALWAYS block wheels and know all jack stands are strong and secure and will hold weight of unit during maintenance.

Release pressure slowly from components with stored energy.

NEVER attempt to make any adjustments to unit while engine is running (except where specifically recommended). Stop engine, remove key or spark plug wire and wait for all moving parts to stop before servicing or cleaning.

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

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

Maintain or replace safety and instruction labels, as necessary.

NEVER store unit with fuel in fuel tank, inside a building where any ignition sources are present.

Allow engine to cool completely before storing in closed area or covering unit.

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

For extended storage, clean unit thoroughly. See engine manual for proper storage.

Lower cutting deck unless a positive mechanical lock is used.

Use only attachments or accessories designed for your unit.

Check all hardware at regular intervals, especially blade attachment bolts. Keep all hardware properly tightened.

Check attachment components frequently. If worn or damaged, replace with manufacturer's recommended parts.

ASSEMBLY



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

Unpack Unit

1. Cut side banding from shipping container and discard. Remove top.
2. Remove protective bag from unit.
3. Cut plastic tie straps attaching the front and rear of the unit to the shipping container.
4. Cut the plastic tie strap retaining the suspension seat.
5. Remove two M10 hex bolts retaining rear of seat plate and rotate seat forward. Retain hardware.
6. Remove battery attaching hardware from the literature pack and attach the battery cables to the battery (see *Battery Removal and Installation* on page 24).
7. Return seat to operating position and reattach with hardware removed earlier.
8. Fill unit with fuel (see *Filling Fuel Tanks* on page 15).
9. Lift deck to transport (highest) position.
10. Start unit and drive off of shipping container (see *Starting and Shut Off* on page 15).
11. After driving unit off shipping container cut plastic tie strap holding discharge chute up.

PRE-DELIVERY SETUP

Check Tire Pressure



- CAUTION:** Avoid injury! Explosive separation of tire and rim parts is possible when they are serviced incorrectly:
- Do not attempt to mount a tire without the proper equipment and experience to perform the job.
 - Do not inflate the tires above the recommended pressure.
 - Do not weld or heat a wheel and tire assembly. Heat can cause an increase in air pressure resulting in an explosion. Welding can structurally weaken or deform the wheel.
 - Do not stand in front or over the tire assembly when inflating. Use a clip-on chuck and extension hose long enough to allow you to stand to one side.

1. Start the engine and allow the unit to warm for 2 – 3 minutes. Disengage the parking brake. The unit should remain stationary with no creep. See *Checking Neutral Creep* on page 22.
2. Drive unit and note tracking. The unit should travel in a straight line with both steering levers in the full forward position (see *Adjusting Maximum Speed Drift* on page 23).

Check Deck Adjustments

1. Check height-of-cut deck adjustments. The deck should have the ability to be adjusted to all heights of cut. See *Mower Lift Pedal* on page 14.
2. Check side-to-side and front-to-rear deck level. The front of the deck should be 1/8 – 1/4 in. lower than the rear. See *Checking Blade Level and Pitch* on page 25.
3. Adjust deck to position 3 on the height of cut indicator. Verify 3" cut height with cut height gauge.

See *SPECIFICATIONS* on page 37.

Check Engine Oil

Refer to Engine Manual.

Check Hydraulic Oil

See *Checking Hydraulic Fluid Level* on page 21.

Lubricate Unit

Ensure that all grease fittings are lubricated. See *Lubrication Points* on page 19.

Check Safety Interlock System



WARNING: Safety interlock system failure and improper operation of unit can result in death or serious injury. Test this system each time unit is operated. If this system does not function as described, do not operate until repairs are made.

See *Safety Interlock System* on page 12.

Check Function of All Controls

Ensure unit runs and performs properly.

CONTROLS AND FEATURES

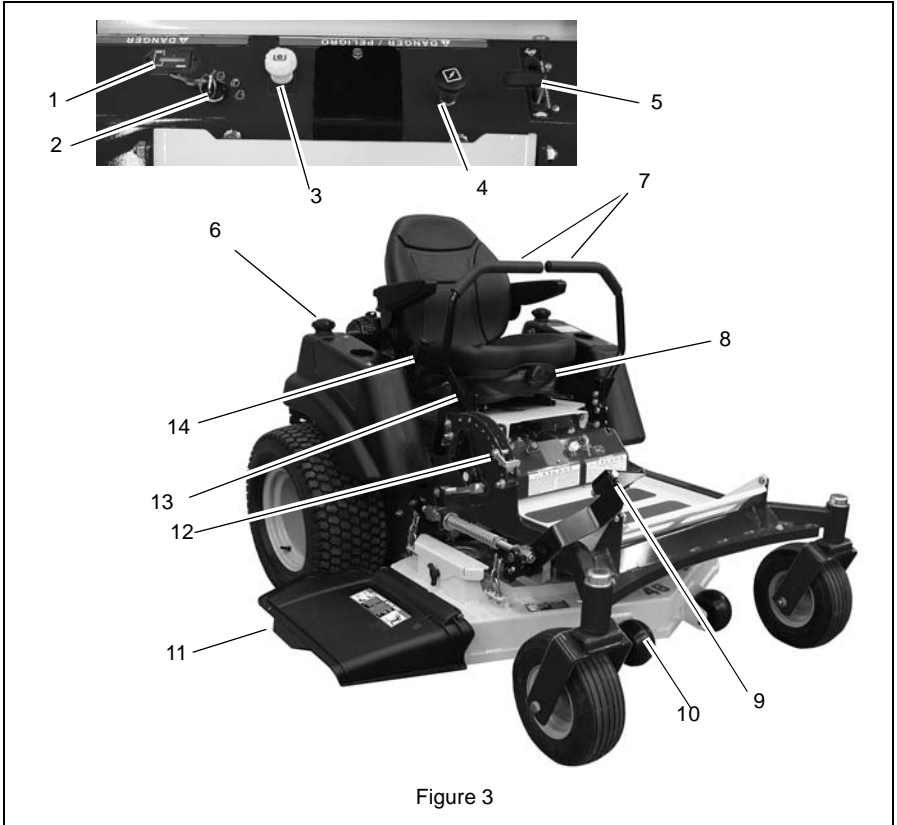


Figure 3

1. Hour Meter
2. Key Switch
3. Power Take-Off (PTO) Switch
4. Choke Control Knob
5. Throttle Control Lever
6. Fuel Tank and Cap
7. Steering Levers
8. Seat Adjusting Knob
9. Deck Height Adjustment Pedal
10. Anti-Scalp Wheels
11. Discharge Chute
12. Deck Height Lock Pin
13. Deck Lock Lever
14. Parking Brake

OPERATION



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

DAILY OPERATING CHECKLIST

- Make sure all necessary guards and shields are safely and securely attached. Check for loose, missing, or damaged parts.
- Remove mower deck belt shields. Clean grass and debris from belt area.
- Remove grass and debris from machine and mower deck.
- Test parking brake.
- Test safety systems.
- Inspect battery terminals and hold-downs.
- Inspect for oil leaks.
- Check engine and hydraulic oil levels.
- Inspect all belts for damage or cracking.
- Inspect engine air filter.
- Inspect mower level. Adjust cutting height if necessary.
- Inspect wheel bolt torque. Tighten if necessary.
- Check tire air pressure. Check tires for damage or cracking.
- Inspect front caster spindles/wheels.

Avoid damage to plastic and painted surfaces:

- Do not wipe plastic parts unless rinsed first.
- Insect repellent spray may damage plastic and painted surfaces. Do not spray insect repellent near machine.
- Be careful not to spill fuel on machine. Fuel may damage surface. Wipe up spilled fuel immediately.

CONTROLS AND FEATURES

See figure 3 for Controls and Features locations.

Safety Interlock System



WARNING: Safety interlock system failure and improper operation of unit can result in death or serious injury. Test this system each time the unit is operated. If this system does not function as described, do not operate until repairs are made.

Perform the following tests to ensure the safety interlock system is working properly. If the unit does not perform as stated, contact your Great Dane dealer for repairs.

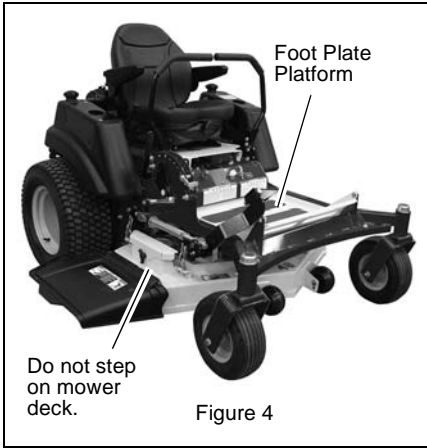
IMPORTANT: With the parking brake disengaged, the engine must not start and the engine must shut off if the operator leaves the seat.

Safety Interlock System Tests

All tests performed with operator in operator's seat.

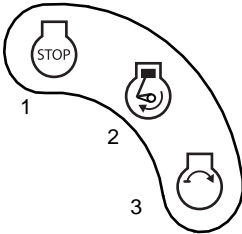
Test	Left Steering Lever Position	Right Steering Lever Position	PTO	Parking Brake	Engine
STARTING INTERLOCK					
1	Neutral Lock	Neutral Lock	Off	Engaged	Starts
2	Neutral Lock	Neutral	Off	Engaged	Doesn't Start
3	Neutral	Neutral Lock	Off	Engaged	Doesn't Start
4	Neutral Lock	Neutral Lock	On	Engaged	Doesn't Start
5	Neutral Lock	Neutral Lock	Off	Disengaged	Doesn't Start
OPERATING INTERLOCK (ENGINE ON)					
6	Neutral	Neutral Lock	Off	Engaged	Shuts Off
7	Neutral Lock	Neutral	Off	Engaged	Shuts Off
8*	Neutral Lock	Neutral Lock	On	Engaged	Shuts Off
9*	Neutral Lock	Neutral Lock	Off	Disengaged	Shuts Off
10*	Neutral Lock	Neutral Lock	Off	Engaged	Runs
* Operator lifts off seat					

Mounting and Dismounting Machine



Do not step on the mower deck when mounting and dismounting the machine. Mount the machine from the front using the foot plate platform. Keep the foot plate platform clean.

Ignition Switch



Operate the ignition switch with the removable key. The switch has three positions: STOP (1), Run (2) and Start (3). See *Starting and Shut Off* on page 15 for

detailed instructions on how to start engine.

IMPORTANT: Avoid damage. Starter may be damaged if starter is operated for more than 20 seconds at a time. Wait two minutes before trying again if engine does not start.

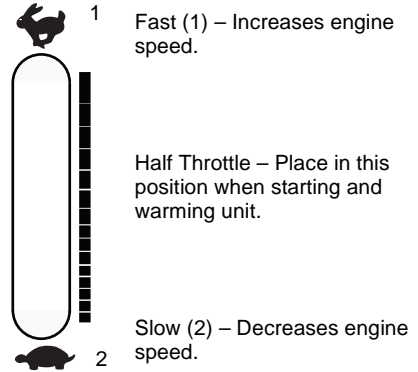
Choke Control Knob



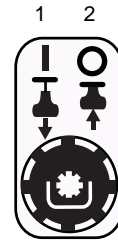
Pull the choke knob out to start a cold engine. Push the choke knob in when the engine gets warm.

Throttle Lever

Changes the speed of engine.



Power Take Off (PTO) Switch

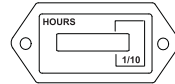


Engages (1) and disengages (2) mower blades.

Pull PTO switch out to engage mower blades.

Push PTO switch in to stop mower blades.

Hour Meter



Indicates the number of hours that the unit has run.

NOTE: Hour meter will continue to run with the

ignition switch in the run position. Always ensure that key is OFF when unit is not operating.

See *MAINTENANCE SCHEDULE* on page 17 or refer to Engine Manual for maintenance intervals.

Steering Levers

Forward and rearward motion of the steering levers is prevented when the steering levers are in the neutral lock position.

NOTE: Both levers must be in the neutral lock position to start the engine.

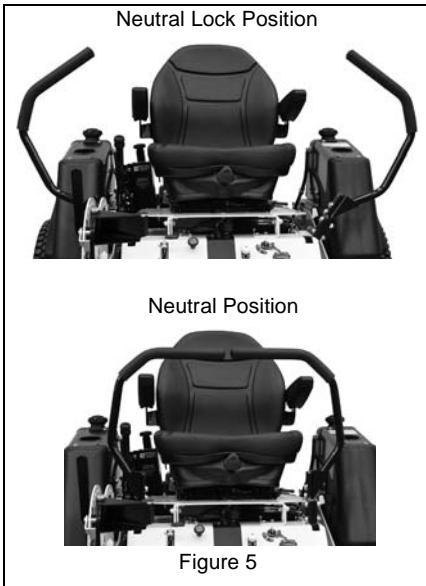


Figure 5

The steering levers control speed, directional control, and stopping unit. The farther forward or backward that the levers are moved, the faster the unit will travel (see figure 6).

- Reverse (1) – Pull both steering levers backward.
- Forward (2) – Push both steering levers forward.
- Left (3) – Pull left steering lever back or push right steering lever forward or a combination of both.
- Right (4) – Pull right steering lever back or push left steering lever forward or a combination of both.

To stop, return both steering levers to neutral.

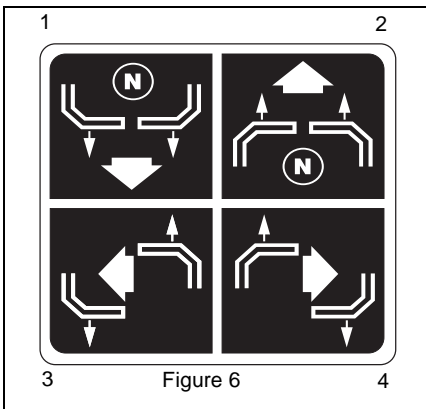
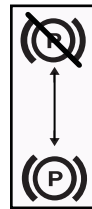


Figure 6

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

Parking Brake Lever



- Engages (2) and disengages (1) parking brake.
- Push lever forward to disengage (1) parking brake.
- Pull lever backward to engage (2) parking brake.

Mower Lift Pedal

Raises and lowers mower deck to allow deck height adjustment pin to be positioned.

NOTE: Adjust seat position so that operator can reach and fully depress deck lift pedal (see *SEAT ADJUSTMENT* on page 31).

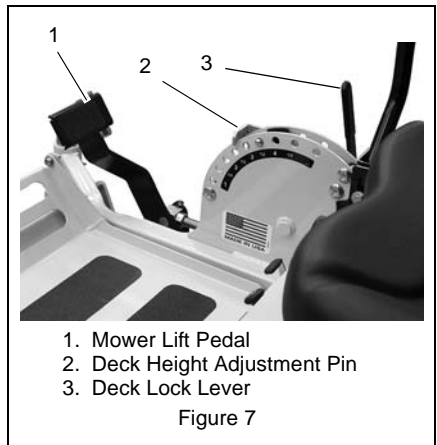


Figure 7

To raise and lower deck press forward on mower lift pedal (1) until deck height adjustment pin (2) can be repositioned. Place deck height pin at desired cut height and release pressure from mower lift pedal. If deck is in transport position (fully raised) press deck lock lever (3) forward while releasing pressure from mower lift pedal. Use mower lift pedal to raise deck to clear obstacles such as high spots by pressing and holding pedal until obstacle is cleared. Release pedal to return to previous mowing height.

FILLING FUEL TANKS



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

Fuel level will drop equally in both tanks as fuel is consumed. Add fuel to both tanks as needed. See your Engine Manual for correct type and grade of fuel.

NOTE: For best performance add fuel to both tanks when refueling. Do not operate unit with only one tank containing fuel.

To add fuel to the fuel tanks:

1. Place unit in an open or well-ventilated open area.
2. Stop the engine and allow it to cool.
3. Clean the fuel caps and the area around the fuel caps to prevent dirt from entering the fuel tanks. Remove the cap from each fuel tank.
4. Fill each fuel tank to within 1 in. (25 mm) of bottom of filler neck.
5. Replace fuel caps and tighten.
6. Clean up any spilled fuel.

PRE-START



CAUTION: Make sure all hardware is tight, all safety devices are in place and all adjustments are made correctly.

1. Check Safety Interlock System

If this system does not function as described do not operate until repairs are made.

2. Check Air Cleaner

Check air filter for dirt. Clean as required. Follow Engine Manual Maintenance Schedule.

3. Check Crankcase Oil

Check that engine crankcase oil is full. Follow Engine Manual Maintenance Schedule.

4. Check Tire Pressure

See *SPECIFICATIONS* on page 37 for correct tire pressure.

5. Check Hydraulic Fluid Level

See *Checking Hydraulic Fluid Level* on page 21.

6. Adjust Seat

Be sure all controls can be reached safely from operator's position.

7. Set Cutting Height

Make sure the deck is set to the correct cutting height.

STOPPING IN AN EMERGENCY

The unit can be stopped immediately at any time by releasing the steering levers and turning the ignition key to the "Off" position.

STARTING AND SHUT OFF



CAUTION: Read entire Owner/Operator Manual, Clutch Manual, and Engine Manual first. DO NOT attempt to start engine at this time.

To start the engine:

1. Make sure the steering levers are in neutral lock position.
2. Put the PTO switch in the "Off" position.
3. Engage parking brake.
4. If the engine is cold, pull the choke control out. If the engine is warm or hot, do not use choke.
5. Move the throttle to 1/2 position.
6. Insert the ignition key in the switch and turn it to the "Start" position for a maximum of five seconds.
7. As soon as the engine starts, release the key.
8. Push the choke control in to the "Off" position. Wait until the engine is running smoothly before operation.

To stop the engine:

1. Bring the steering levers to neutral. Disengage the PTO and engage the parking brake.
2. Move the throttle lever to the "Slow" position.
3. Turn the ignition key to the "Off" position.

TO MOW WITH UNIT

Operate the unit only when seated in the operator's position.

1. Start the engine. Let the engine warm until it is running smoothly.
2. Release parking brake.



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

3. Move the steering levers from neutral lock position to neutral.
4. Slow the engine down to about 3/4 speed.

5. Turn ON the PTO switch to engage the mower.

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

6. Move throttle control to fast.
7. Move the steering levers forward to obtain a slow ground speed.
8. To disengage the mower, move the PTO switch to the "Off" position.
9. When you know how to operate the unit, select a speed appropriate to your mowing conditions.

FOR BEST PERFORMANCE

- Mow with throttle in full fast position.
- Cut grass when it is dry.
- Keep mower deck and discharge chute clean.
- Mow with sharp blades.
- Properly level mower deck for a smooth cut.
- Mow grass high and often.
- Mow tall grass twice. Cut at half desired height then cut at desired height.
- Travel slower when cutting tall or thick grass.
- Avoid damaging grass with drive wheels. Practice smooth lever control.
- When performing sharp turns do not allow inside wheel to stop and pivot on grass.

PARKING

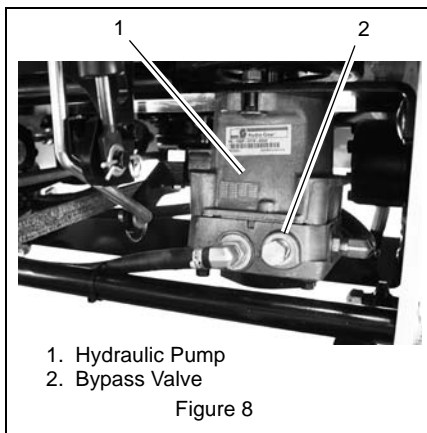
To park the unit:

1. Bring the steering levers to neutral. Turn off PTO.
2. Move the throttle lever to the "Slow" position.
3. Engage the parking brake.
4. Lower the attachment.
5. Move the steering levers to the neutral lock position.
6. Turn the ignition key to the "Off" position and remove the key.

MOVING THE UNIT WITH THE ENGINE OFF

IMPORTANT: Never tow unit.

1. Shut off engine.
2. Move the steering levers to the neutral lock position.
3. Locate the bypass valves on the left and right hydraulic pumps.
4. Loosen the bypass valve on each pump approximately one turn (see figure 8).



WARNING: Do not bypass transmission when on a slope.

5. Disengage parking brake.
6. Push unit to desired location.
7. Engage parking brake.
8. Close (tighten) the bypass valve on each hydraulic pump. Do not overtighten valves.

TRANSPORTING THE MOWER



WARNING: When transporting the mower, make sure the steering levers are in the neutral lock position, the parking brake is engaged, the wheels have been blocked, the machine has been securely fastened by cables, chains or ropes, and the trailer has been secured to the towing vehicle with safety chains.

Use a heavy duty trailer or truck to transport the mower. Make sure the trailer or truck has all of the necessary lighting and markings as required by law.

MAINTENANCE SCHEDULE



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

Proper maintenance can prolong the life of unit. The following chart shows the recommended service schedule. 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.

Interval	Task	Action
Each Use	Check Safety Interlock System	<p>WARNING: Safety interlock system failure and improper operation of unit can result in death or serious injury. Test this system each time the unit is operated. If this system does not function as described, do not operate until repairs are made. See <i>Safety Interlock System</i> on page 12.</p>
	Check Parking Brake	Engage parking brake. Push unit. If unit rolls adjust parking brake (see <i>Adjusting Parking Brake</i> on page 31).
	Check Hydraulic Oil Level	See <i>Checking Hydraulic Fluid Level</i> on page 21.
	Check Tires	<p>CAUTION: Avoid injury! Explosive separation of tire and rim parts is possible when they are serviced incorrectly:</p> <ul style="list-style-type: none"> • Do not attempt to mount a tire without the proper equipment and experience to perform the job. • Do not inflate the tires above the recommended pressure. • Do not weld or heat a wheel and tire assembly. Heat can cause an increase in air pressure resulting in an explosion. Welding can structurally weaken or deform the wheel. • Do not stand in front or over the tire assembly when inflating. Use a clip-on chuck and extension hose long enough to allow you to stand to one side. <p>See <i>SPECIFICATIONS</i> on page 37 for correct tire pressure.</p>
	Clean Unit	Clean engine, battery, seat, mower deck, etc. of dirt and debris. Do not use solvents, hard cleaners, or abrasives. NOTE: Protect painted surfaces with automotive type wax.
	Follow Engine Maintenance Schedule	Perform scheduled engine maintenance. Refer to Engine Manual for detailed instructions.

Interval	Task	Action
Every 25 Hours or Weekly	Check Mower Blades	Ensure mower blade hardware is tightened to 120 lbf-ft. (163 N•m). Check mower blades for wear. Sharpen or replace mower blades as needed (see <i>SHARPENING MOWER BLADE</i> on page 29).
	Lubricate Unit	Grease mower deck thrust arms (2 places), hydro drive belt tension arm, PTO idler tension arm, front caster wheel spindles.
Every 50 Hours or Weekly	Lubricate Unit	Grease mower deck thrust arms (2 places), hydro drive belt tension arm, PTO idler tension arm, front caster wheel spindles.
	Inspect Drive Belts	Ensure belts are in good condition.
Every 160 Hours or Monthly	Clean Battery	Keep battery and battery terminals clean (see <i>Cleaning the Battery</i> on page 24).
	Check Fasteners	Check mower blade mounting hardware and all other fasteners. Replace missing or damaged fasteners. Tighten all nuts and bolts to their correct torque value.
	Check All Belts	Replace worn or deteriorated belts. <ul style="list-style-type: none"> • Check mower drive belt. See <i>Replacing Power Take-Off (PTO) Belt</i> on page 28 for belt location. • Check hydro drive belt. See <i>Replacing Hydro Pump Drive Belt</i> on page 28 for belt location.
Every 500 Hours	Change Hydraulic Oil and Filter	See <i>Changing Hydraulic Fluid and Filter</i> on page 21.

SERVICE AND ADJUSTMENTS

Great Dane Dealers will provide any service which may be required to keep your unit operating at peak efficiency. Should engine service be required, it can be obtained from your Great Dane Dealer or the engine manufacturer's authorized service center.

3. Move both steering levers to the neutral lock position.
4. Pivot deck lift foot pedal to the right.
5. Place finger in access hole in foot plate and rotate toward the front of the unit (see figure 21).



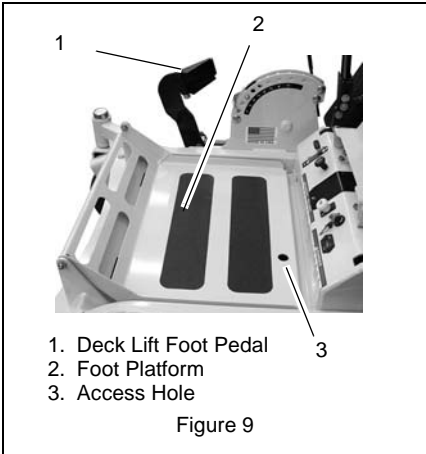
WARNING: AVOID INJURY. Read and understand entire *Safety* section before proceeding.



CAUTION: HOT SURFACES may result in injury. DO NOT touch engine or drive parts which are hot from operation. Allow parts to cool before servicing.

Raise Foot Platform

1. Stop engine and allow hot parts to cool.
2. Engage the parking brake.



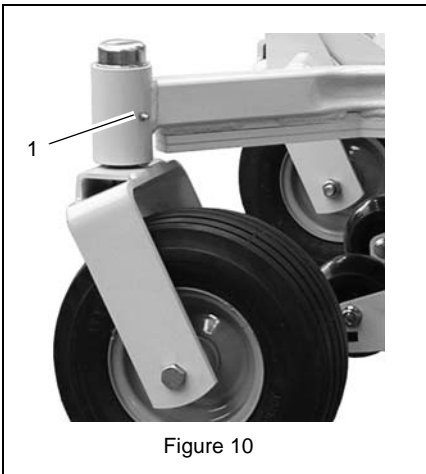
6. To close, place finger in access hole and rotate foot platform closed. Pivot deck lift foot pedal into operating position.

CAUTION: AVOID INJURY. Do not position hand on edge of footplate when closing.

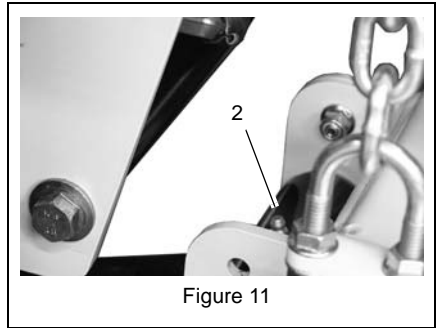
LUBRICATION

Lubrication Points

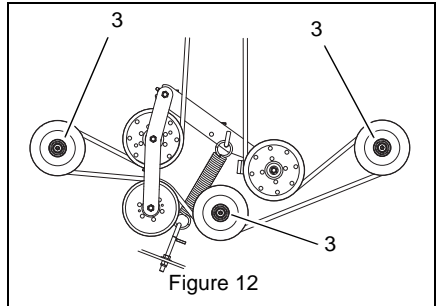
Apply grease to two caster wheel spindle bearings (1) (figure 10).



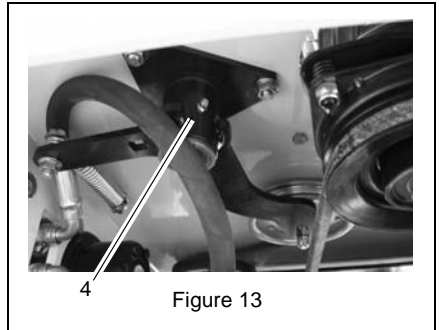
Grease two mower deck thrust arms (2) located at the rear of the mower deck (figure 11).



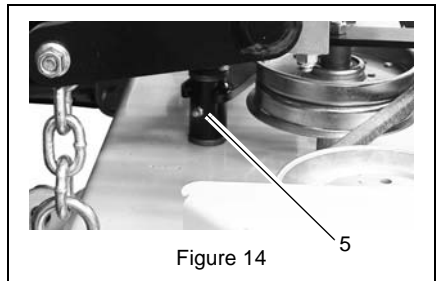
Apply grease to three mower spindle bearings (3) (figure 12).



Grease pivot on hydro drive belt tension arm (4) (figure 13).



Grease pivot on PTO drive belt tension arm (5) (figure 14).



Lubricate seat platform hinges (6), throttle cable (7) and choke cable (8) (figure 15).

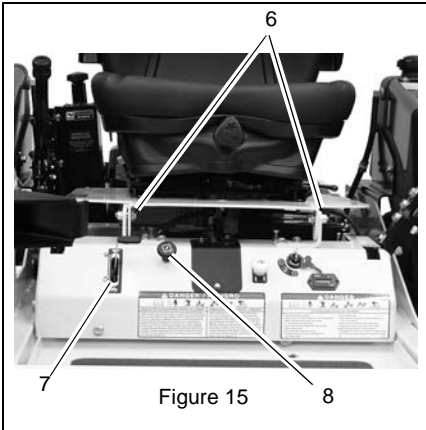


Figure 15

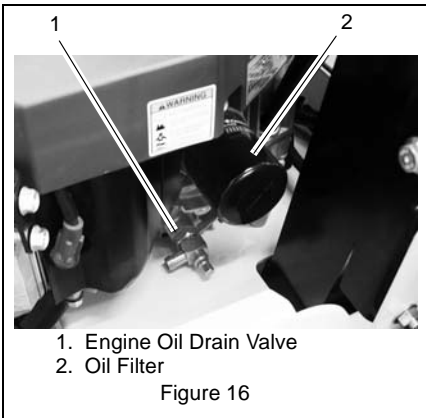
Changing Engine Oil And Filter

(Figure 16)

NOTE: Refer to engine manual for recommended oil and filter changed intervals based on operating conditions.

To change oil and filter:

1. Run engine until warm.
2. Engage the parking brake.
3. Move both steering levers to the neutral lock position.
4. Install a suitable drain tube on the engine oil drain valve (1).
5. Place a suitable container under the drain tube.

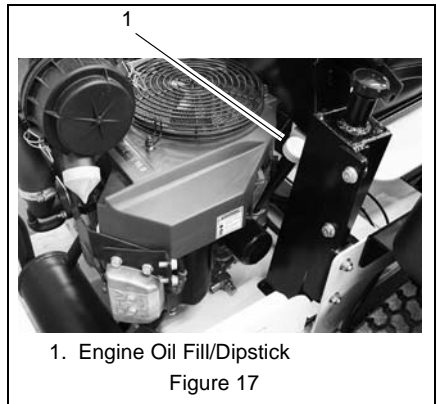


1. Engine Oil Drain Valve
2. Oil Filter

Figure 16

6. Open the drain valve and allow oil to drain.
7. Remove oil filter (2) by turning counterclockwise.
8. Apply a thin coat of fresh engine oil to the gasket on the new filter.

9. Install filter and turn until gasket makes contact with mounting surface. Tighten an additional 1/2 to 3/4 turn.
10. Close drain valve and remove drain tube.
11. Remove engine oil fill/dipstick from engine. See figure 16.



1. Engine Oil Fill/Dipstick

Figure 17

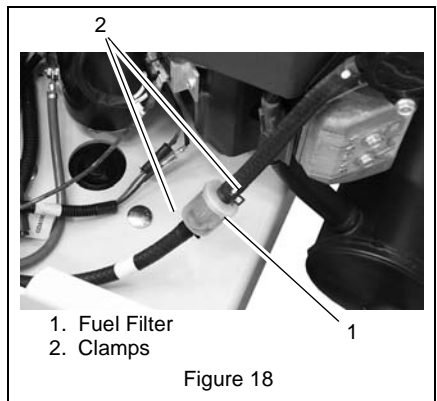
12. Add engine oil per engine manufacturer's recommendations.
13. Replace dipstick. Run engine and check for leaks.

Replacing Fuel Filter

(Figure 18)

To change oil and filter:

1. Shut off engine and allow to cool completely.
2. Engage the parking brake.
3. Move both steering levers to the neutral lock position.
4. Place a suitable container under the fuel filter.
5. Remove clamps retaining fuel filter and remove filter.



1. Fuel Filter
2. Clamps

Figure 18

6. Install new fuel filter ensuring that arrow on filter housing points in the direction of the fuel flow.
7. Ensure that clamps are installed correctly and that there is no leaking of fuel.

HYDRAULIC FLUID



WARNING: HYDRAULIC FLUID can result in severe burns. Fluid in hydraulic system can penetrate skin and result in serious injury or death.

Be sure to stop the engine before doing any work on hydraulic parts.

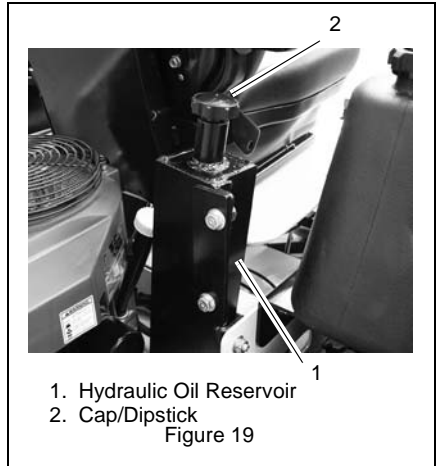
Keep body and hands away from pin holes or nozzles which expel hydraulic fluid when under pressure. Use paper or cardboard, not hands, to search for leaks.

Ensure all hydraulic fluid connections are tight and all hydraulic hoses and lines are in good condition before applying pressure to system.

FOREIGN FLUID INJECTED INTO BODY can result in gangrene. Fluid must be surgically removed within a few hours by a doctor familiar with this form of injury.

Checking Hydraulic Fluid Level

1. Remove the hydraulic reservoir cap/dipstick from the hydraulic oil reservoir.
2. Wipe the cap/dipstick with a clean cloth.
3. Install the cap/dipstick and allow the cap to rest on the end of the lip. Do not tighten.
4. Remove cap/dipstick and check oil level. Oil should be at top mark on dipstick.
5. If necessary add oil at the filler reservoir neck. Install cap/dipstick.



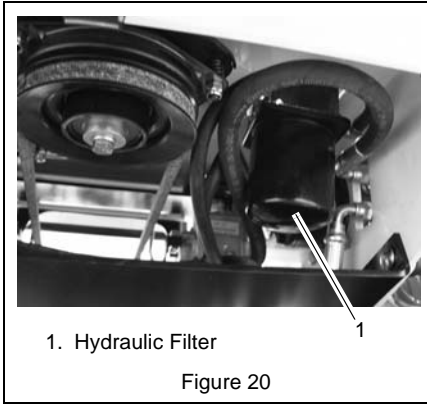
1. Hydraulic Oil Reservoir
 2. Cap/Dipstick
- Figure 19

Changing Hydraulic Fluid and Filter

(Figure 20)

NOTE: Change hydraulic fluid and filter after the first 75 hours of operation and then every 500 hours. Use 15W-50 or 15W-50 all-synthetic oil.

1. Stop engine and allow hot parts to cool.
 2. Engage the parking brake.
 3. Move both steering levers to the neutral lock position.
 4. Loosen hydraulic reservoir cap/dipstick.
 5. Place container with minimum capacity of 1 gallon (3.8 L) under oil filter to catch oil.
 6. Remove the oil filter.
 7. Allow oil to drain completely.
 8. Clean the filter mounting surface and then lubricate rubber gasket on new oil filter with clean hydraulic oil.
 9. Spin new oil filter onto filter housing until it makes contact. Tighten oil filter another 1/2 – 3/4 turn.
 10. Fill reservoir with approximately 2 qt. (1.9L) hydraulic oil.
- NOTE:** Reservoir capacity is approximately 2.0 qt. (1.9L). Total system capacity is approximately 3.75 qt. (3.5 L).
11. Install hydraulic reservoir cap/dipstick.
 12. Run unit in an area with good ventilation and check for leaks.
 13. Recheck hydraulic oil level and refill as necessary.



1. Hydraulic Filter

Figure 20

STEERING LEVERS

Adjusting Steering Levers

(Figure 21)

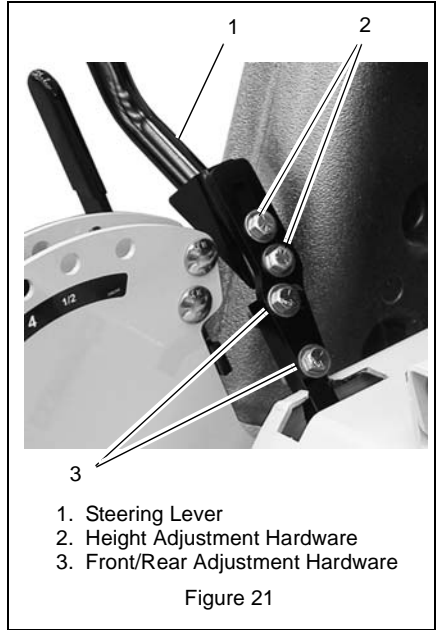
The steering levers (1) can be adjusted for height and forward and rearward position.

To adjust height:

1. Loosen two upper hex bolts and nuts (2) on steering lever enough to allow lever to move in bracket.
2. Move lever up or down to desired height.
3. Tighten hardware.
4. Repeat on other side.



CAUTION: Ensure that left- and right-side steering levers are adjusted to the same height.



1. Steering Lever
2. Height Adjustment Hardware
3. Front/Rear Adjustment Hardware

Figure 21

To adjust levers forward and rearward:

1. Loosen two lower bolts and nuts (3) on steering lever enough to allow lever to move in bracket.
2. Move lever forward or rearward to desired distance from operator.
3. Tighten hardware.
4. Repeat on other side.



CAUTION: Ensure that left- and right-side steering levers are adjusted to the same distance from the operator.

Checking Neutral Creep



WARNING: AVOID INJURY. Fumes from the engine exhaust can cause death or serious injury. DO NOT run engine in an enclosed area. Always provide good ventilation.

1. Park unit on a hard level surface
2. Start engine.
3. Release parking brake.
4. Move steering levers to the neutral position and release.
5. If the unit creeps either forward or rearward with no input from the steering levers adjustment is required.

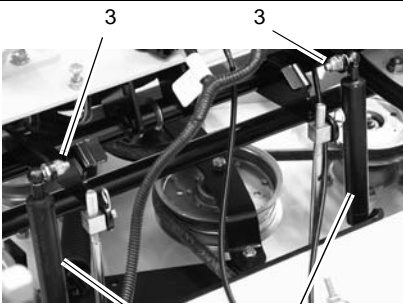
Adjusting Neutral Creep

1. Stop engine and allow hot parts to cool.
2. Engage the parking brake.
3. Move both steering levers to the neutral lock position.
4. Raise the rear wheels off the ground and securely support the rear of the machine.



WARNING: AVOID INJURY. ALWAYS block wheels and know all jack stands are strong and secure and will hold weight of unit during maintenance.

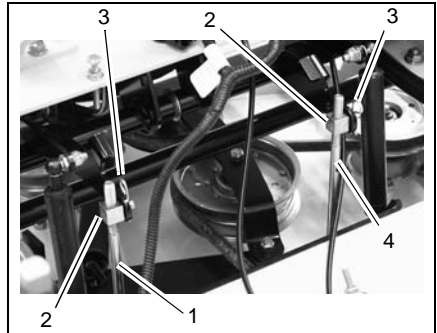
5. Remove two M10 hex bolts retaining rear of seat plate and rotate seat forward. Retain hardware.
6. Loosen steering dampener lock nut (3). To stop forward creep move top of steering dampener rearward in adjusting slot. To stop rearward creep move top of steering dampener forward in adjusting slot. See figure 22.



1. Left Steering Dampener
2. Right Steering Dampener
3. M8 Lock Nut

Figure 22

7. Tighten steering dampener lock nut.
8. Recheck for neutral creep. If unit still creeps proceed to next step.
9. Remove pin (3) and disconnect swivel from left and right traction control rods (1 and 4). See figure 23.
10. To stop forward creep rotate each swivel (2) counterclockwise one rotation. To stop rearward creep rotate each swivel (2) clockwise one rotation.



1. Left Traction Control Rod
2. Swivel
3. Hair Pin
4. Right Traction Control Rod

Figure 23

11. Connect swivels to traction control rods and secure with hair pins.
12. Repeat as necessary to stop neutral creep.
13. Secure seat and return unit to operating position.
14. Check for maximum speed drift.

Checking for Maximum Speed Drift

1. Check for neutral creep and adjust as needed (see *Checking Neutral Creep* on page 22).
2. Sit in operator's seat and start engine.
3. Run unit to bring hydraulic oil to operating temperature.
4. Move the unit to a level, wide-open area such as an empty parking lot.
5. Position throttle at full speed.
6. Move and hold both steering levers at full-forward position and observe unit tracking. If unit does not track in a straight line adjustment is required. Note the direction of drift.

Adjusting Maximum Speed Drift

1. Stop engine and allow hot parts to cool.
2. Engage the parking brake.
3. Move both steering levers to the neutral lock position.
4. Remove two M10 hex bolts retaining rear of seat plate and rotate seat forward. Retain hardware.
5. Locate the appropriate speed drift adjuster and loosen the jam nut. See figure 24.

NOTE: If unit drifts to the left, choose the right speed drift adjuster. If the unit drifts to the right choose the left speed drift adjuster,

Adjust right bolt if unit drifts to the left.



Adjust left bolt if unit drifts to the right.

Figure 24

6. Turn the bolt in (clockwise) one full turn.
7. Tighten the jam nut.
8. Repeat the maximum speed test and adjust as necessary.
9. Lower seat and secure with hex bolts.

SERVICING THE BATTERY



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



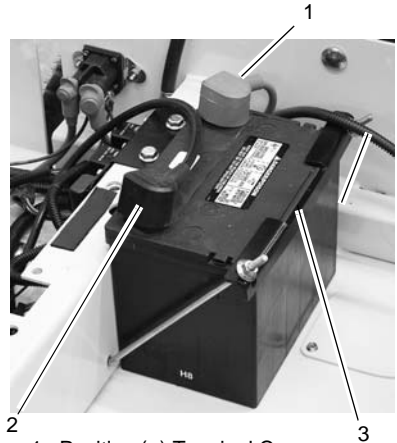
WARNING: Battery posts, terminals and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and reproductive harm. Wash hands after handling.

NOTE: Unit comes equipped with a maintenance-free battery that requires no regular maintenance except cleaning the terminals.

Battery Removal and Installation

Removal (Figure 25)

1. Stop engine and allow hot parts to cool.
2. Engage the parking brake.
3. Move both steering levers to the neutral lock position.
4. Remove two M10 hex bolts retaining rear of seat plate and rotate seat forward. Retain hardware.
5. Slide protective terminal covers away from battery terminals.
6. Disconnect negative (-) cable first, then positive (+) cable.
7. Loosen battery hold-down bracket and remove battery from unit.



1. Positive (+) Terminal Cover
2. Negative (-) Terminal Cover
3. Battery Hold-Down Bracket

Figure 25

Installation (Figure 25)

1. Install battery on unit with battery hold-down bracket.
2. Connect positive (+) cable first, then negative (-) cable.
3. Coat terminals with dielectric grease or petroleum jelly.
4. Return seat plate to operating position and attach with hardware removed earlier.

Cleaning the Battery

1. Disconnect negative (-) cable first, then positive (+) cable.
2. Clean battery cable ends and terminals with wire brush. Rinse with a weak baking soda solution.
3. Connect positive (+) cable first, then negative (-) cable.
4. Coat terminals with dielectric grease or petroleum jelly.

Charging the Battery



WARNING: FROZEN BATTERIES CAN EXPLODE and result in death or serious injury. DO NOT charge a frozen battery. Let battery thaw before charging.

Follow First Aid directions for contact with battery fluid.

- **External Contact:** Flush with water.

- **Eyes:** Flush with water for at least 15 minutes and get medical attention immediately!
- **Internal Contact:** Drink large quantities of water. Follow with Milk of Magnesia, beaten egg or vegetable oil. Get medical attention immediately!
- In case of internal contact, **DO NOT** induce vomiting!

IMPORTANT: DO NOT fast charge. Charging at a higher rate will damage or destroy battery. ALWAYS follow information provided on battery and battery charger. Contact battery manufacturer and battery charger manufacturer for detailed instructions.

1. Remove battery from unit (see *Battery Removal and Installation* on page 24).
2. Place battery on bench or other well-ventilated area.
3. Connect positive (+) lead of charger to positive (+) terminal, and negative (-) lead to negative (-) terminal.
4. Charge battery according to the instructions from battery charger manufacturer and battery manufacturer.
5. Install battery on unit (see *Battery Removal and Installation* on page 24).

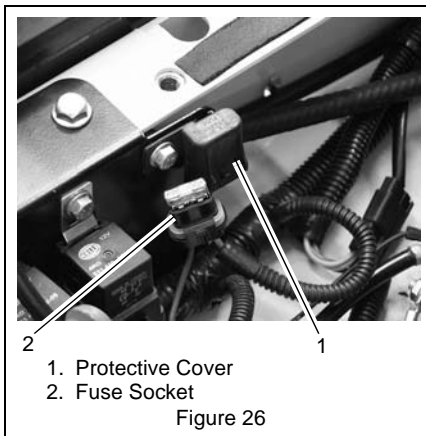
Jump-Starting

Great Dane does not recommend jump-starting your unit. Jump-starting can damage engine and electrical system components. See your Engine Manual for more detailed information.

Replacing Fuse

(Figure 26)

1. Stop engine and allow hot parts to cool.
2. Engage the parking brake.
3. Move both steering levers to the neutral lock position.
4. Access fuse by spreading clips on fuse socket and pulling socket down from protective cover.
5. Remove defective fuse from socket and replace with known good fuse.
6. Press fuse socket back into protective cover until it snaps in place.



1. Protective Cover
2. Fuse Socket

Figure 26

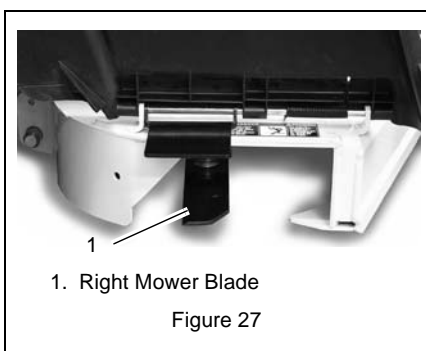
MOWER DECK

Checking Blade Level and Pitch



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

1. Move unit to an area with a level surface.
2. Stop engine and allow hot parts to cool.
3. Engage the parking brake.
4. Ensure that tire pressures are correct.
5. Raise mower deck to 3-in. cut height position. Ensure that none of the anti-scalp wheels contact the ground.
6. Turn the blades so the blade ends point left to right across the width of the deck. See figure 27.

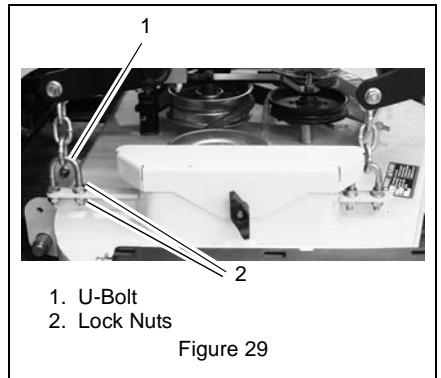
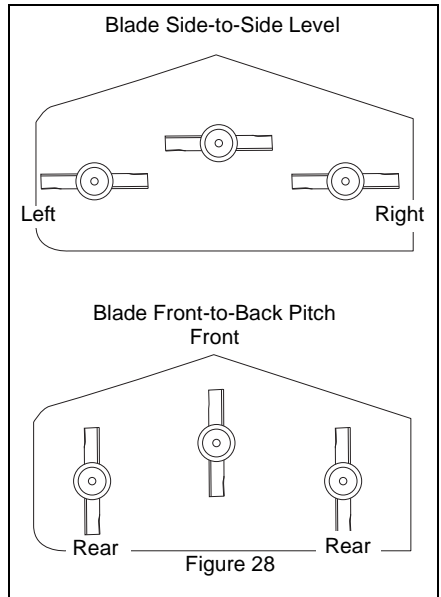


1. Right Mower Blade

Figure 27

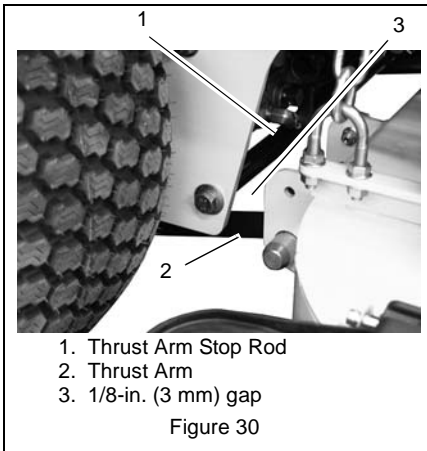
7. Measure the distance between the ground and cutting edge of the blade on the left blade (Left position in Figure 28) and on the right blade (Right position in Figure 28). Distances should be within 1/8 in. (3 mm). If they are not, raise the low side of the deck using the lock nuts on the U-bolts on the deck (see Figure 29).
8. After deck is level side to side, check the deck front-to-back pitch.
9. Turn the blades so the blade ends point front to back as shown in Figure 28.
10. Measure the distance between the ground and the cutting edge of the middle blade at the front of the deck (Front position in Figure 28) and between the ground the cutting edge of the left and right blades at the rear of the deck (Rear position in Figure 28).
11. The cutting edge at the front of the deck (Front position in Figure 28) should be 1/8 – 1/4 in. (3.2 – 6 mm) lower than the cutting edges at the rear of the deck (Rear position in Figure 28).
12. If measurements are out of range, raise the low side of the deck using the lock nuts on the U-bolts on the deck (see Figure 29). Be sure to raise the deck evenly to keep the deck level side to side.

NOTE: 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 to be pitched with the rear of the blades lower than the front. Heeling the deck this way requires more engine power but can provide better cut quality.



Checking Thrust Arm-To-Stop Rod Clearance

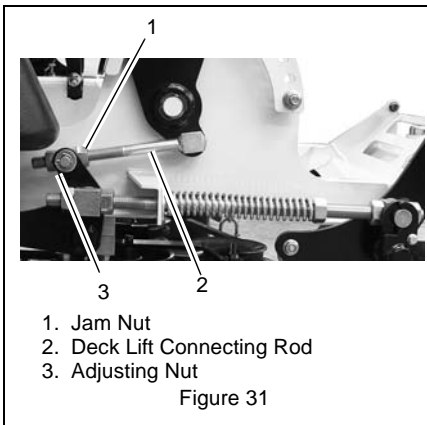
1. Stop engine and allow hot parts to cool.
2. Engage the parking brake.
3. Move both steering levers to the neutral lock position.
4. Set mower deck height to transport (fully raised) position.
5. Check the clearance between the top of the thrust arms (2) to the bottom of the thrust arm stop rod (1). (See figure 30).



6. Clearance (3) should be 1/8-in. (3 mm).
7. Adjust if out of specification.

Adjusting Thrust Arm-to-Stop Rod Clearance

1. Stop engine and allow hot parts to cool.
2. Engage the parking brake.
3. Move both steering levers to the neutral lock position.
4. Set mower deck height to transport (fully raised) position.
5. Loosen jam nut (1) on deck lift connecting rod (2). See figure 30.



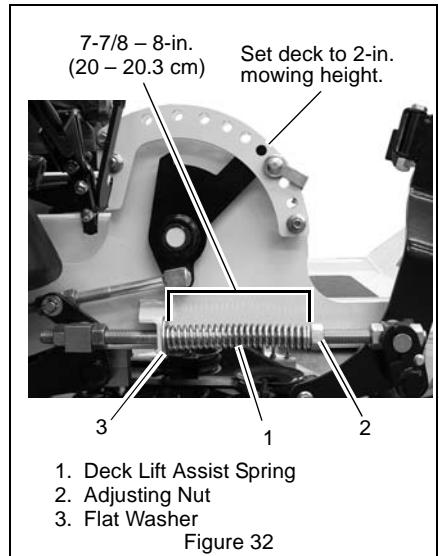
6. Turn adjusting nut (3) counterclockwise to lower deck (viewed from rear).
7. Turn adjusting nut (3) clockwise to raise deck (viewed from rear).
8. Remeasure thrust arm-to-stop rod clearance.
9. When proper clearance is achieved tighten lock nut.

NOTE: If correct adjustment cannot be obtained by adjusting the deck lift connecting rod, further movement can be obtained by adjusting the deck lift u-bolts.

Adjust all four deck lift bolts equally. All four chains should be tight. Tighten the U-bolt of the loose chain to correct.

Adjusting Deck Lift Assist Spring Tension

1. Stop engine and allow hot parts to cool.
2. Engage the parking brake.
3. Move both steering levers to the neutral lock position.
4. Set mower deck to 2" mowing height.
5. Measure the length of the deck lift assist spring (1) between the flat washer (3) and adjusting nut (2). See figure 32.

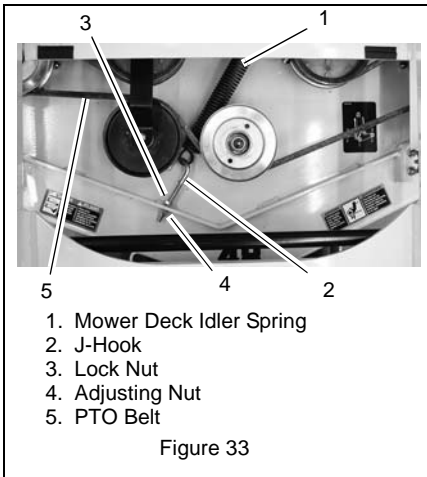


6. Spring length should be 7-7/8 – 8 in. (20 – 20.3 cm). Tighten adjusting nut (2) to decrease spring length and loosen adjusting nut to increase spring length.

Checking and Adjusting Mower Deck Idler Spring Tension

1. Stop engine and allow hot parts to cool.
2. Engage the parking brake.
3. Move both steering levers to the neutral lock position.
4. Raise the foot platform (see *Raise Foot Platform* on page 18).
5. Measure PTO idler spring overall length (see figure 33). Spring length should be:
 - 992609: 11-13/16 in. (30 cm)
 - 992610: 11-13/16 in. (30 cm)
 - 992611: 10-5/8 in. (27 cm)

- If spring is not at correct length loosen J-hook lock nut (3) and loosen or tighten adjusting nut (4) until proper spring length is achieved.
- Tighten lock nut.



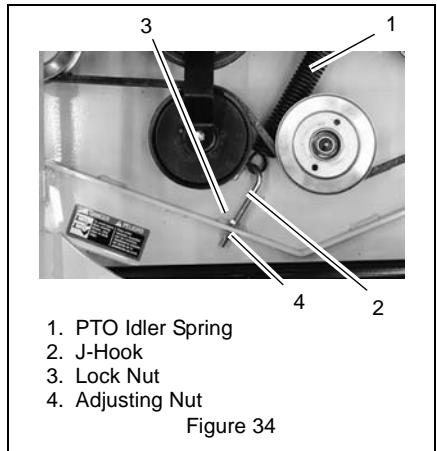
Replacing Power Take-Off (PTO) Belt

- Stop engine and allow hot parts to cool.
- Engage the parking brake.
- Move both steering levers to the neutral lock position.
- Raise the foot platform (see *Raise Foot Platform* on page 18).
- Remove left and right mower deck drive belt covers. Retain hardware.
- Release PTO belt tension by removing the adjusting nut from the J-hook (see figure 34).

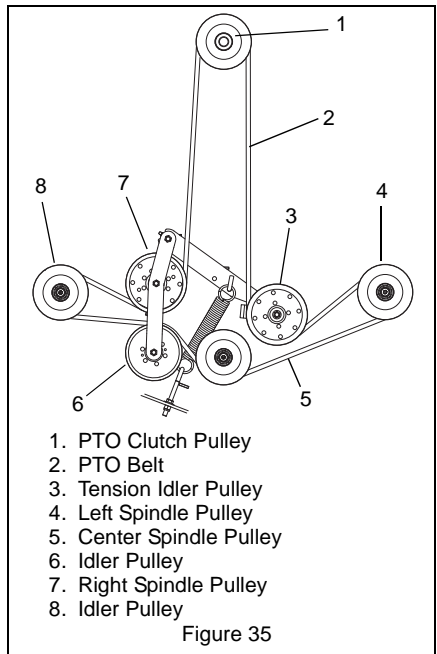


CAUTION: AVOID INJURY!

Fingers and hands can be pinched or crushed. Keep hands clear of pulleys and belt pinch points when servicing belt.



- Remove PTO belt (5).
- Install replacement PTO belt. See figure 35 for belt routing.

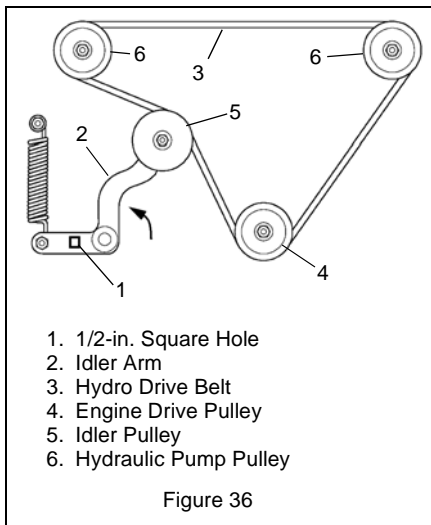


- Adjust belt tension (see *Checking and Adjusting Mower Deck Idler Spring Tension* on page 27)
- Replace left and right mower deck drive belt covers.
- Lower foot platform.

Replacing Hydro Pump Drive Belt

- Stop engine and allow hot parts to cool.
- Engage the parking brake.

3. Move both steering levers to the neutral lock position.
4. Remove PTO belt (see *Replacing Power Take-Off (PTO) Belt* on page 28).
5. Using a 1/2-in. drive breaker bar and extension, insert end of extension into 1/2-in. square hole in idler arm. Carefully move the idler arm counter-clockwise to release belt tension.
6. Remove hydro pump drive belt.
7. Install replacement hydro pump drive belt. See figure 36 for belt routing.



8. Release tension on idler arm.
9. Reinstall PTO belt (see *Replacing Power Take-Off (PTO) Belt* on page 28)

MOWER BLADE REMOVAL

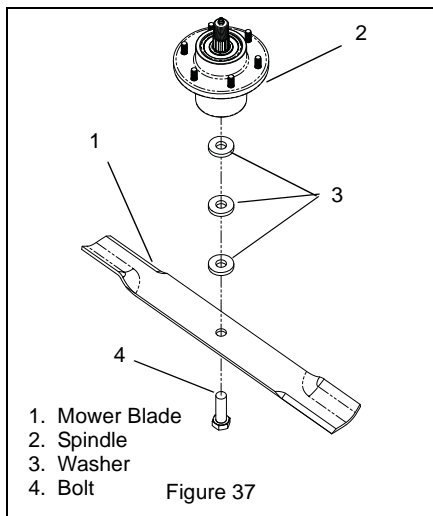
NOTE: If mower is used under sandy soil conditions, replace mower blades when air lifts become eroded through at ends (figure 38).

Removal (Figure 37)



CAUTION: Mower blades are sharp and can cut you. Wrap mower blades or wear gloves, and use extra caution when servicing.

1. Block mower blades to prevent rotation.



2. Remove bolts, washers, and mower blades from spindles.

Installation (Figure 37)

1. Install mower blades, washers, and bolts on spindles.
2. Tighten bolts to 120 lbf-ft (163 N•m).

SHARPENING MOWER BLADE

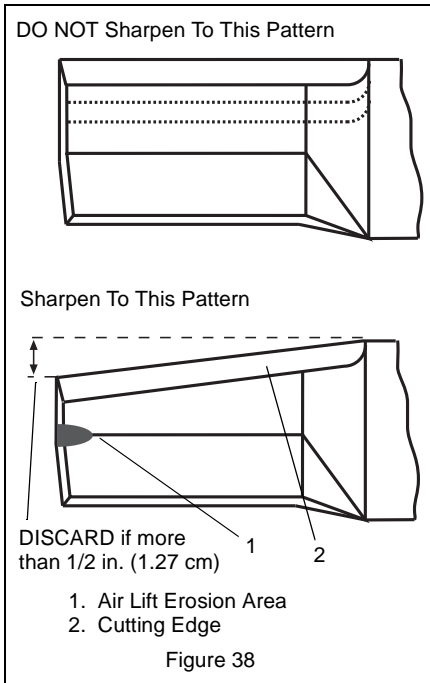
NOTE: If mower is used under sandy soil conditions, replace mower blades when air lifts become eroded through at ends (figure 38).



CAUTION: DO NOT sharpen mower blades while on unit. An unbalanced mower blade will cause excessive vibration and eventual damage to unit. Check mower blade balance before reinstalling blades.

NEVER weld or straighten bent blades.

1. Remove mower blade from unit. Discard mower blade if (figure 38):
 - More than 1/2 in. (1.27 cm) of metal is removed.
 - Air lifts become eroded.
 - Blade is bent or broken.



2. Sharpen mower blade by removing an equal amount of material from each end of mower blade. DO NOT change angle of cutting edge or round the corner of mower blade.
3. Check mower blade balance. Slide mower blade on an unthreaded bolt. A balanced blade should remain in a horizontal position. If either end of mower blade moves downward, sharpen the heavy end until blade is balanced.
4. Install mower blade on unit.

Adjusting Anti-Scalp Wheels

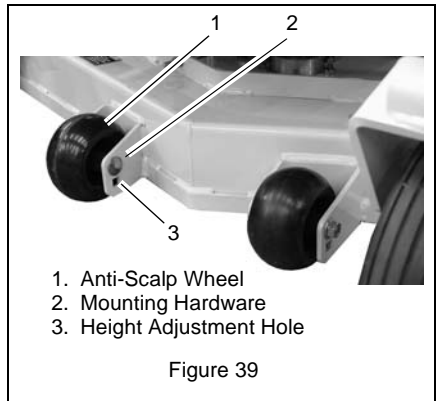
(Figure 39)

NOTE: The anti-scalp wheels are located on the outside leading edge of the front of the deck and inside the deck housing in the rear. Anti-scalp wheels can be mounted in one of two positions and should be adjusted so that they are 1/4 – 1/2-in. (6 – 13 mm) above the mowing surface.

To adjust:

1. Remove hardware attaching anti-scalp wheel to deck.
2. Position wheel in desired height hole.
3. Install hardware.

IMPORTANT: All anti-scalp wheels must be installed at the same height.

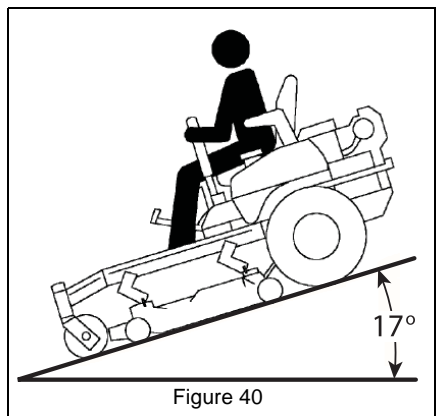


Testing Parking Brake

(Figure 40)

NOTE: Parking brake should be checked after the first 25 hours of use and regularly thereafter.

1. Stop unit on a 17° (30% grade) slope.
2. Stop engine, place steering levers in neutral lock position.
3. Engage parking brake



4. Unit should not move more than 24" (61 cm) in one hour.
5. If unit moves excessively parking brake must be adjusted.

Adjusting Parking Brake



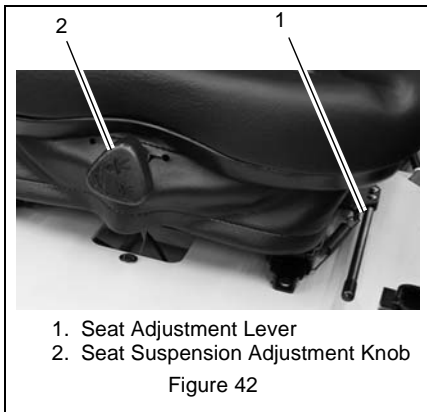
1. Stop unit and allow hot parts to cool.
2. Block wheels.
3. Release parking brake lever (1).
4. Loosen set screw (2) on brake lever knob.
5. Turn adjusting knob clockwise one or two rotations. Make sure that set screw aligns with slot in back of lever.
6. Tighten set screw.

SEAT ADJUSTMENT

Adjusting Seat Position

(Figure 42)

Pull lever (1) out and slide seat to desired position. Release lever to lock seat into position.



Adjusting Seat Suspension

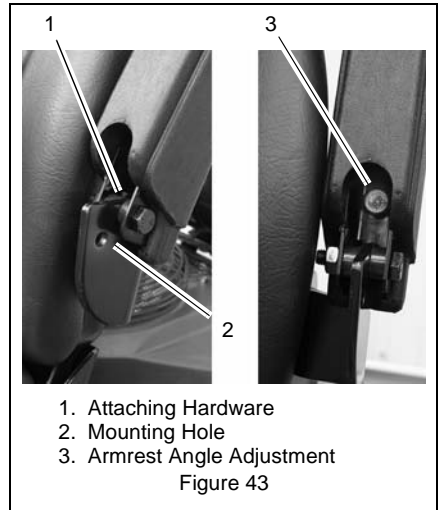
To make seat more firm turn knob (2) clockwise. To make seat less firm turn knob counterclockwise.

Adjusting Arm Rest

(Figure 43)

Armrest has two holes to allow for height adjustment. To change height remove attaching hardware (1) and armrest and remount in other hole (2) in armrest bracket.

To adjust armrest angle turn angle adjusting bolt in or out until desired angle is achieved.



STORAGE



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

SHORT TERM

NEVER spray unit with high-pressure water or store unit outdoors.

Inspect unit for visible signs of wear, breakage or damage.

Keep all nuts, bolts and screws properly tightened and know unit is in safe working condition.

Store unit in a cool, dry protected area.

LONG TERM

Clean unit thoroughly with mild soap and low pressure water and lubricate (see *Lubrication Points* on page 19). Touch up all scratched painted surfaces.

Remove weight from wheels by putting blocks under frame or axle.

Clean and charge the battery. Charge battery every three to four weeks when storing unit.

Fuel System

Gasoline left in the fuel system for extended periods without a stabilizer will deteriorate, resulting in gum deposits in the system.

These deposits can damage the carburetor and the fuel hoses, filter and tanks. Prevent deposits from forming in the fuel system during storage by adding a quality fuel stabilizer to the fuel. Follow the recommended mix ratio found on the fuel stabilizer container.

To treat the fuel system for storage:

1. Add fuel stabilizer (Great Dane part number 00592900) according to manufacturers' instructions.
2. Run engine for at least 10 minutes after adding stabilizer to allow it to reach the carburetor.

NEVER store the engine with fuel in the fuel tanks inside of a building with potential sources of ignition.

To Take the Unit Out of Storage

Refer to the engine service manual to prepare the engine for service.

Put fresh, clean fuel in the fuel tanks.

Begin the maintenance schedule.

Charge and install the battery.

TROUBLESHOOTING

Using Troubleshooting Chart

If you are experiencing a problem that is not listed in this chart, see your authorized Great Dane Dealer for service.

When you have checked all the possible causes listed and you are still experiencing the problem, see your authorized Great Dane Dealer.

TROUBLESHOOTING

If	Check
Engine	
Engine Will Not Start or Is Hard to Start	Steering levers not in the neutral lock position. Parking brake lever unlocked. Key switch not in proper position. PTO engaged. Loose or corroded starter cable connections. Stale or improper fuel or fuel level. Plugged fuel filter. Plugged air intake filter. Spark plug wire is loose or disconnected. Spark plug not gapped correctly. Blown 20-amp fuse (main power circuit). Blown fusible link (charging circuit). Electrical problem – dead battery. Choke adjusted incorrectly. See your Great Dane Dealer.
Engine Will Not Slow Idle	Bent or kinked throttle cable. Bent governor control. Incorrect governor idle control. Carburetion problems. See your Great Dane Dealer.
Engine Runs Rough or Stalls	Plugged fuel filter. Plugged air intake system. Fuel cap vent dirty. Stale or improper fuel/fuel level. Spark plug not gapped correctly. Replace spark plug. Choke adjusted incorrectly. See your Great Dane Dealer.
Engine Knocks	Engine oil level low. Reduce load. (Slower ground speed.) Fuel is bad. Fill tank with fresh fuel, correct octane. Idle speed too slow.
Engine Overheats	Clean cooling fins. Low oil level. Do not operate at slow idle. Operate at full-throttle setting. Plugged air intake filter. Operating at too fast ground speed for conditions.

TROUBLESHOOTING

If	Check
Engine Lacks Power	Plugged air intake system. Plugged fuel filter. Improper type of fuel. Drain tank and fill with correct fuel. Clean cooling fins to help prevent overheating. Replace spark plug.
Engine Uses Too Much Oil	Find and correct oil leaks. Incorrect engine oil. Plugged oil filter. Plugged air intake filter.
Engine Backfires Through Muffler	Throttle should be at low idle for several seconds before turning off unit. Leaking/damaged exhaust manifold gasket.
High Fuel Consumption	Improper type of fuel. Plugged air intake system. Operating at too fast ground speed for conditions. Improper valve clearance. See your Great Dane Dealer. Restricted air intake system.
Electrical System	
Starter Will Not Work	Dead battery. Blown 20-amp fuse (main power circuit). Blown fusible link (charging circuit). Loose or corroded battery or ground connections. Loose or corroded starter cable connections. Neutral start switches faulty or not adjusted properly. See your Great Dane Dealer. Key switch or starter faulty. See your Great Dane Dealer. PTO engaged. Steering levers and parking brake lever not in proper position.
Battery Will Not Charge	Loose or corroded battery or ground connections. Blown fusible link (charging circuit). Battery cables and terminals are dirty. Dead cell in battery.
PTO Clutch Does Not Engage	Blown 20-amp fuse (main power circuit). Faulty PTO switch. Faulty PTO clutch. Loose PTO clutch connections.
Starter Turns Slowly	Loose or corroded battery or ground connections. Low battery power - charge battery. Engine oil viscosity too heavy. Hydraulic pump linkages failed and are engaged.
Mower Unit	
Excessive Machine Vibration	Engine speed too slow.

TROUBLESHOOTING

If	Check
Machine Will Not Move With Engine Running	<p>Park brake locked.</p> <p>Transmission hydraulic oil level low.</p> <p>Transmission oil cold – allow engine to warm.</p> <p>Traction drive belt slipping.</p> <p>Hydraulic pump bypass valves open.</p> <p>Traction drive belt damaged or worn.</p> <p>Hydrostatic pump and/or wheel motor problems. See your Great Dane Dealer.</p>
Unit Creeps With Engine Running and Steering Levers in a Neutral Position	Needs shift control linkage adjustment.
Parking Brake	
Parking Brake Not Working Correctly	<p>Brakes out of adjustment – adjust linkage.</p> <p>Brake drums wet.</p> <p>Worn brake shoes.</p> <p>Brake cable damaged.</p>
Parking Brake Not Working Correctly	<p>Brakes out of adjustment – adjust linkage.</p> <p>Brake drums wet.</p> <p>Worn brake shoes.</p> <p>Brake cable damaged.</p>
Steering	
Steering Not Working	<p>Parking brake locked.</p> <p>Hydraulic pump bypass valves partially open.</p> <p>Improper tire Inflation.</p> <p>Hydrostatic transmission oil low.</p> <p>Traction drive belt slipping.</p> <p>Traction drive belt damaged or worn.</p>
Machine Will Not Follow a Straight Path	Steering tracking out of adjustment.
Machine Moves to the Left or Right With Engine Running and Transmission in Neutral	Pump linkage (neutral position) out of adjustment.
Mower Deck	
Discharge Chute Plugged	<p>Grass is wet – mow grass only when dry.</p> <p>Raise cutting height.</p> <p>Mow at full throttle.</p> <p>Ground speed too fast for conditions.</p> <p>Correct installation of deck drive belt.</p>

TROUBLESHOOTING

If	Check
Mower Deck Vibrates	<p>Run engine at full throttle.</p> <p>Loose hardware.</p> <p>Check/replace mower deck drive belt.</p> <p>Blades bolts are loose.</p> <p>Blades are bent or worn.</p> <p>Sharpen and balance blades.</p> <p>Remove belt shields and check for debris on pulleys.</p> <p>Check pulleys for proper alignment or damage. See your Great Dane Dealer.</p>
Mower Blades Do Not Engage	<p>Mower deck drive belt slipping or broken.</p> <p>Mower deck belt tension spring not installed or broken.</p> <p>PTO switch failure.</p> <p>20-amp fuse is blown (main power circuit).</p> <p>Loose electrical connections.</p> <p>Faulty PTO clutch.</p>
Mower Mows Unevenly	<p>Mower deck not properly leveled.</p> <p>Ground speed too fast for conditions.</p> <p>Run engine at full throttle.</p> <p>Reduce ground speed when making turns.</p> <p>Blades are bent or worn.</p> <p>Sharpen or replace blades.</p> <p>Change mowing pattern.</p> <p>Check tire pressure.</p>

ACCESSORIES

Part No.	Description
79260600	Center-Steer Lever Kit
89260000	ROPS Kit
00592900	Fuel Stabilizer 4 oz.

SERVICE PARTS

Part No.	Qty	Description
00186800	2	Spark Plug (992609)
21538500	2	Spark Plug (992610)
21536100	2	Spark Plug (992611)
00186700	2	Air Cleaner (992609)
00181071	1	Air Cleaner – Outer (992610, 611)
00181072	1	Air Cleaner – Inner (992610, 611)
00181073	1	Engine Oil Filter
21538400	1	Fuel Filter
GDA10137	1	Hydraulic Filter
GDU10230	3	Mower Blade (992609)
GDU10231	3	Mower Blade (992610)
GDU10232	3	Mower Blade (992611)

SPECIFICATIONS

Model Number	992609	992610	992611
Model	Chariot GCHKW1948S	Chariot GCHKW2352S	Chariot GCHKW2561S
Engine			
Engine	Kawasaki		
Engine Model Number	FH580V	FH680V	FH721V
Oil Capacity – Qt. (L) w/Filter	1.9 (1.8)	2.0 (1.9)	2.0 (1.9)
Speed			
Forward Maximum – mph (km/h)	9 (14)		
Reverse Maximum – mph (km/h)	5 (8)		
Turning Radius	Zero		
Brakes	Hydro/Dynamic Drum – Parking		
Electrical			
Starter	Electric		
Battery	U1, 400CCA 12-V Maintenance Free		
Power Take-Off	Electric PTO Clutch/Brake		
Fuel			
Fuel Type	See Engine Manual		
Fuel Tank Capacity – gal. (L)	9 (34.1)		
Transmission			
Type	Hydrostatic Drive		
Transmission Oil	5W-50 or 15W-50 All-Synthetic		
Hydraulic System Capacity – qt (L)	3.75 (3.54)		
Hydraulic Oil Filter	Yes		
Size and Weight			
Length – in. (cm)	77.75 (197)		
Width – in. (cm) With Discharge Chute	59 (150)	67 (170)	74.5 (190)
Height – in. (cm)	42.75 (109)		
Weight – lbs (kg)	1161 (526.6)	1185 (537.5)	1210 (548.9)
Tires			
Front Tire Size – in.	13 x 5.0-6		
Rear Tire Size – in.	23 x 9.50-12		
Front Tire Pressure – psi (kPa)	16 – 20 (110 – 138)		
Rear Tire Pressure – psi (kPa)	10 – 14 (69 – 97)		
Mower Deck			
Mower Deck Lift	Mechanical Foot Pedal		
Cutting Width – in. (cm)	48 (121.9)	52 (132.1)	61 (154.9)
Cutting Height – in. (cm)	1 – 4.5 (25 – 11.4)		
Cutting Height Increments – in. (cm)	1/2 (1.2)		



Two-Year Limited Great Dane[®] Commercial Warranty

Ariens Company (Ariens) warrants to the **original purchaser** that Great Dane[®] brand products manufactured by Ariens, designated or labeled commercial products by Ariens, and sold after December 31, 2007 will be free from defects in material and workmanship for a period of two years after the date of purchase or 1000 hours of use, whichever comes first. An authorized Great Dane 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 to the original purchaser (labor and parts), except as noted below.

Limited Lifetime Warranty on Mower Deck Shell

The deck shell is warranted to the **original purchaser** against any defect in material or workmanship for as long as the original purchaser owns the product. Any defect in material or workmanship of the deck shell will be repaired free of charge (parts and labor) to the original purchaser for two years or 1000 hours of use, whichever comes first. After two years or 1000 hours of use, the parts required to repair a defect in material or workmanship of the deck shell, not the labor, will be provided free of charge for as long as the original purchaser owns the product.

Limited Lifetime Warranty on Main Frame

The main frame is warranted to the **original purchaser** against any defect in material or workmanship for as long as the original purchaser owns the product. Any defect in material or workmanship of the main frame will be repaired free of charge (parts and labor) to the original purchaser for two years or 1000 hours of use, whichever comes first. After two years or 1000 hours of use, the parts required to repair a defect in material or workmanship of the main frame, not the labor, will be provided free of charge for as long as the original purchaser owns the product.

Three-Year Limited Warranty on Deck Spindles

Mower deck spindles are warranted to the **original purchaser** for three years from the date of purchase. Any defect in material or workmanship of the mower deck spindles will be repaired free of charge (parts and labor) to the original purchaser for two years after the date of purchase. After two years, the parts required to repair a defect in material or workmanship of the deck spindles, not the labor, will be provided free of charge.

One-Year Limited Warranty on 21-inch Walk-Behind Lawn Mowers

21-inch walk-behind lawn mowers labeled or designated by Ariens as a Professional/Commercial product put to any business use, agricultural, commercial, or industrial, are warranted to the **original purchaser** to be free from defects in material and workmanship for a period of one year after the date of purchase.

90-Day Limited Warranty on Service Parts and Accessories

Genuine Great Dane brand service parts and accessories are warranted to be free from defects in material and workmanship for a period of 90 days after the date of purchase. An authorized Great Dane dealer will repair or replace any such part or accessory free of charge, except for labor, during that period.

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

Exceptions, Limitations, Exclusions

Customer Responsibilities

Register the product immediately at the time of sale. If the dealer does not register the product, the customer must complete the product registration card in the literature package and return it to the Ariens Company, or register the unit online at www.ariens.com.

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

- Perform the maintenance and minor adjustments explained in the owner's manual.
- Promptly notify Ariens or an authorized Great Dane service representative of the need for warranty service.
- Transport the product to and from the place of warranty service.
- Have the warranty service performed by an authorized Great Dane service representative.

To find a Great Dane authorized service representative, contact Ariens at:

655 W. Ryan Street
Brillion, WI 54110
(920) 756 - 2141
www.greatdanemower.com

Limitations

- Batteries are warranted only for a period of 12 months after date of purchase, on a prorated basis. For the first 90 days of the warranty period, a defective battery will be replaced free of charge. If the applicable warranty period is more than 90 days, Ariens will cover the prorated cost of any defective battery, for up to 12 months after the date of purchase.

Exclusions – Items Not Covered by This Warranty

- Engines and engine accessories are covered only by the engine manufacturer's warranty and are not covered by this warranty.
- Parts that are not genuine Great Dane service parts are not covered by this warranty.
- The following maintenance, service and replacement items are not covered by this warranty unless they are noted in the Limitations section above: lubricants, spark plugs, oil, oil filters, air filters, fuel filters, brake linings, brake arms, shoes, runners, scraper blades, shear bolts, mower blades, mower vanes, headlights, light bulbs, knives, cutters.
- Mufflers, belts and tires on Great Dane commercial lawn and garden products 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.
- This warranty applies only to products purchased in the United States (including Puerto Rico) and Canada. In all other countries, contact place of purchase for warranty information.

Disclaimer

Ariens may from time to time change the design of its products. Nothing contained in this warranty shall be construed as obligating Ariens 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

Ariens Company's 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. Ariens 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.

DISCLAIMER OF FURTHER WARRANTY

Ariens Company 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 Ariens Company, 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 state to state.



GREAT DANE

Ariens Company - Auburn Operations
655 West Ryan Street
Brillion, WI 54110-1072
920-756-2141
Fax 920-756-2407
www.ariens.com

⚠ WARNING ⚠

The engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.