CONGRATULATIONS ON THE PURCHASE OF YOUR NEW RAVEN MPV (MULTI-PURPOSE VEHICLE)!

This advanced new product is unlike anything you've ever used, so please read this instruction manual carefully before first use. The MPV is designed to help you accomplish a variety of tasks, from mowing and power generation to towing and personal transportation. However, it is not designed for aggressive ATV style off-road use, such as climbing rocks or navigating through mud or water.

To maximize the longevity and appearance of your MPV, it is best to keep the unit stored in a covered, well-ventilated area. Clean and wax the painted metal parts periodically, using a high quality non-abrasive automotive wax.

When cleaning the MPV with a hose, please first ensure that the outlet covers on the generator panel are snapped tightly closed. Never use a pressure washer to clean the MPV and never allow water to enter the generator receptacles.

Please read this manual in its entirety for more detailed safety and storage information.

The MPV is not an ATV. Avoid driving through water.

Never interact with the generator if it is wet.

Store the MPV in a covered, well-ventilated area at all times.
The Raven Multi-Purpose Vehicle (MPV) was carefully designed and assembled in the USA to provide the best performance when properly operated and maintained. This advanced new product is designed to help you accomplish a variety of tasks, from mowing and power generation to towing and personal transportation. However, it is not designed for aggressive ATV style off-road use, such as climbing rocks or navigating through mud or water. Please read these instructions carefully before first use.

This manual provides information regarding the operation and maintenance of this product. Denver Global Products (DGP) has made every effort to ensure the accuracy of the information presented here. Please read the entire manual prior to operating your MPV and retain it for further reference. It instructs you how to safely and easily set up, operate and maintain your unit. Failure to carefully follow recommended safety and operating practices could result in serious injury or death.

Should you experience any problems or have any questions regarding your MPV, please contact Denver Global Products directly via the contact information listed below. DGP customer support is committed to ensuring your complete satisfaction at all times.

Please visit:
http://www.ravenamerica.com/
Or call: 1-888-321-5700
Or write to:
Denver Global Products
1000 E. Powell Drive
Lincolnton, NC  28092

Customer Responsibilities

- Read and observe the safety rules in this manual and exercise caution when operating your MPV.
- Follow a regular schedule in maintaining and servicing your machine to ensure proper care and correct use is exercised when in operation.
- These vehicles are designed and manufactured for off-road use. They DO NOT conform to US Federal Motor Vehicle Safety Standards and are not equipped for operation on public streets. Some communities may permit similar vehicles to be operated on a limited basis in accordance with local ordinances. Abide by and adhere to local laws for safe operation.
- READ AND UNDERSTAND ALL INSTRUCTION, WARNING, AND DANGER LABELS.

Register Your MPV

To receive important product updates and other important information register your MPV with Denver Global Products by filling out the registration card in the Manual packet or going on-line to www.ravenamerica.com.
A safety message alerts you to potential hazards. Each safety message is preceded by one of these words: DANGER, WARNING, CAUTION or IMPORTANT.

**DANGER!**
**DEATH OR SERIOUS INJURY WILL OCCUR IF INSTRUCTIONS ARE NOT FOLLOWED.**

**WARNING!**
**SERIOUS INJURY OR EVEN DEATH CAN OCCUR IF INSTRUCTIONS ARE NOT FOLLOWED.**

**IMPORTANT**
**DAMAGE to the MPV or other property could result if instructions are not followed.**

### Other Safety Considerations
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.

- Keep children out of the operating area and in the watchful care of a responsible adult other than the operator.
- Be alert and immediately turn machine off if a child enters the area.
- Before and while backing, look behind and down for small children.

**IMPORTANT**
This unit is equipped with an operator presence detection system. You must be sitting firmly in the seat for the unit to function properly. Always sit with your weight in the back of the seat. Avoid sliding the seat further forward than needed. NEVER TAMPER WITH THE OPERATOR PRESENCE DETECTION SYSTEM. If you suspect your system is not operating correctly, immediately contact Denver Global Products at: 1-888-321-5700.

- Never carry children, even with the blades shut off. They may fall off and be seriously injured or interfere with safe machine operation.
- Never let children younger than age 16 operate the machine.
- Warn children of potential dangers associated with outdoor power equipment like the MPV.
- Use extreme care when approaching blind corners, shrubs, doorways, trees, or other objects that may block your view.
- Remove & store key when machine is not in operation or unattended to prevent unauthorized operation.

Only operate the MPV at top speed on flat and safe terrain. Always travel at a safe speed for the conditions. The MPV is capable of reaching speeds up to 17 miles per hour under optimal conditions. Many factors can impact the top speed of the MPV such as, but not limited to, terrain, tire pressure, wheel alignment, and temperature, weight of the operator, deck attachment, other attachments, wind resistance, fuel quality, battery voltage, battery age, and gear selection. For help troubleshooting visit www.ravenamerica.com for helpful videos or call 1-888-321-5700.

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*Sitting forward may prevent the unit from operating.*

*Sit as far back in the seat as possible for best performance.*
**Install the Steering Wheel**

a. Locate the steering wheel and steering wheel hardware packet.
b. Ensure that the front wheels are pointing forward and slide steering wheel onto the steering spindle, making sure that the steering wheel spoke between the hub connectors is centered and pointing towards the operator.
c. Slide the 21mm lock washer onto the steering spindle.
d. Install the 21mm nut to secure the steering wheel.

**Install the Seat**

a. Place the seat on the unit and line up the holes on the seat hinge with those on the unit.
b. Install the two M8 x 25mm flanged shoulder bolts and lock-nuts in the seat hardware pack and hand tighten.
c. Lift the seat. Do not remove the black foam inside the seat springs. Tighten with a 12mm wrench for the nuts and a 13mm wrench for the bolts.
d. Connect the safety switch harness to the bottom of the seat.
e. Lower the seat into place.
Install the 30 A Fuse

- Locate the green 30 A fuses in the bag containing the MPV keys inside the instruction manual bag.
- Lift the seat.
- Locate the fuse connections under the black plate.
- Open the fuse holder.
- Insert the fuses.
- Close the fuse holder.
- Lower the seat back into place.

Install the Tow Bar

- Line the holes on the tow bar up with the unit frame.
- Use the M8 x 40mm flange bolts and nuts to secure.
Check the Oil
DO NOT OPERATE WITHOUT ENGINE OIL! Check the oil level before each use of the MPV and add 10W-30 when necessary. The MPV MUST be on level ground when checking the oil level.

a. Remove the dipstick and wipe with a cloth.
b. Insert and press the dipstick all the way into the tube.
c. Remove the dipstick and visually check the oil level on the dipstick gauge.
d. Keep the oil level between the HI and LO levels on the dipstick.
e. Firmly press the dipstick into the tube when finished.
f. If oil is needed pour slowly through oil fill dipstick tube. DO NOT OVERFILL. (Maximum oil capacity is 1 quart)

Check Tire Pressure
Ensure that the front tires are inflated to 12 psi and that the rear tires are inflated to 15 psi.

Fill with Gasoline and Provided STA-BIL® Fuel Treatment
1. Open the hood and unscrew the fuel cap.
2. Fill with unleaded E10 or less gasoline. See Warnings below.
3. Add both packs of STA-BIL® fuel treatment to the fuel tank. Stabilizer may be added at every fill-up.
4. Wipe any spills and replace the gas cap by turning it clicks and close the hood (See pages 14 & 16).

Safe Handling of Gasoline
To avoid personal injury or property damage, use extreme care in handling gasoline.

WARNING!
DO NOT USE GASOLINE WITH GREATER THAN 10% ETHANOL CONTENT. USING GASOLINE WITH HIGH ETHANOL CONTENT WILL DAMAGE THE ENGINE AND IS PROHIBITED BY FEDERAL LAW. Visit www.lookbeforeyoutump.com.

GASOLINE IS EXTREMELY FLAMMABLE AND THE VAPORS ARE EXPLOSIVE. IF GASOLINE IS SPILLED ON YOU OR YOUR CLOTHES, WASH YOUR SKIN AND CHANGE CLOTHES IMMEDIATELY. IF SPILLED ON THE UNIT OR ON THE GROUND, WIPE UP AND WASH IMMEDIATELY.

- EXTINGUISH ALL CIGARETTES, CIGARS, PIPES AND OTHER SOURCES OF IGNITION.
- USE ONLY APPROVED GASOLINE CONTAINERS.
- NEVER REMOVE GAS CAP OR ADD FUEL WHILE THE ENGINE IS RUNNING. ALLOW ENGINE TO COOL AT LEAST TWO MINUTES BEFORE REFUELING TANK.
- 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. IF THIS IS NOT POSSIBLE, THEN REFUEL SUCH EQUIPMENT WITH A PORTABLE CONTAINER. NEVER FUELindoORS.
- NEVER STORE THE MACHINE OR FUEL CONTAINER WHERE THERE IS AN OPEN FLAME, SPARK OR PILOT LIGHT.
- KEEP THE NOZZLE IN CONTACT WITH THE RIM OF THE FUEL TANK OR CONTAINER OPENING AT ALL TIMES UNTIL FUELING IS COMPLETE.
- IF GASOLINE IS SPILLED, WIPE IT OFF THE ENGINE AND EQUIPMENT. MOVE THE MACHINE TO A DIFFERENT AREA AND WAIT BEFORE RESTARTING THE ENGINE.
- FUEL AND ITS VAPORS ARE EXTREMELY FLAMMABLE. ALLOW ENGINE TO COOL AT LEAST TWO (2) MINUTES BEFORE REFUELING.
FEATURES, CONTROLS AND USAGE

1 Drive Mode Switch
2 Cruise Control Switch
3 Ignition
4 Reverse Mow Override Switch
5 Blade Engage Switch
6 Steering Wheel
7 Hood
8 Fuel Tank with STA-BIL® pouches (under Hood)
9 Headlights
10 Bumper
11 Service Hatch Release Latches
12 Service Hatch Handles
13 Service Hatch
14 Tailgate
15 Transaxle Gear Shifter
16 Tow Bar
17 Seat
18 Deck Lift Lever
19 Seat Adjustment Lever
20 Generator Panel
21 Deck
22 Fuel Gauge
23 LED Light Cluster
24 Parking Brake
25 Brake Pedal
26 Throttle
27 Hood Latch
28 Headlight Switch

WWW.RAVENAMERICA.COM
**Ignition Switch Operation**

- **a. Stop** - Disables all functions of the MPV. Must be in this position to avoid battery drainage when not in use. Battery will be depleted if left in Electric Mode position.
- **b. Electric Mode** - Drive in forward and reverse.
- **c. Hybrid Mode** - (Gas and Electric) - Mow, tow and drive.
- **d. Start** - Momentary engine starting position

**Throttle (Accelerator) and Brake Pedals**

The Throttle controls the acceleration of the MPV in gas and electric modes. Use the brake pedal to slow down and stop accordingly in gas and electric drive modes.

**Parking Brake**

The parking brake must be set before the operator leaves the seat. If the operator leaves the seat with the engine running and does not set the parking brake, the engine will automatically shut off. The parking brake is a pull handle that is partially hidden by the dashboard.

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**WARNING!**

ENGINE EXHAUST, SOME OF ITS CONSTITUENTS AND CERTAIN VEHICLE COMPONENTS CONTAIN OR EMIT CHEMICALS KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER AND BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM.

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**Parking Brake Operation**

A sticker on the dashboard indicates where the parking brake is located.
Cruise Control Operation

Use Cruise Control for a smooth riding experience and to regulate your speed while in transport and while mowing.

Disengaging the Cruise Control

a. Push the brake pedal or push the cruise control button.
b. Cruise control will no longer be activated.

Setting the Cruise Control

a. Push the throttle down until you accelerate to the desired speed.
b. Hold the throttle at that speed and push the cruise switch.
c. Release your foot from the pedal to engage cruise control.

Drive Mode Switch and Function

The drive mode switch sets the direction of travel between Forward, Neutral and Reverse.

Drive Mode Switch

Forward

1. The drive mode switch must be set to Neutral (N) when starting and parking the MPV.
2. Start the engine, then release the parking brake by stepping on the brake pedal.
3. Set the drive mode switch to Forward (FWD).
4. Release the brake pedal and slowly step on the throttle until the desired speed is achieved.

Reverse

1. If moving, push the brake pedal all the way down to stop the MPV.
2. If stationary, ensure the drive mode switch in neutral (N), then check that the area behind and around the MPV is clear.
3. While holding the brake pedal down, change the drive mode switch to Reverse (REV).
4. Slowly press down on the throttle pedal until the desired speed is achieved.
Features

Steering Column Adjustment

If adjustment to the steering wheel position is necessary, make adjustments prior to using the MPV.

a. Loosen the bolt using a 13 mm wrench.
b. Move the column to the desired position.
c. Tighten the bolt to 20 ft/lbs of torque to secure the steering column in place.

Hood

a. Pull back on the latch under the hood to unlock.
b. Pull the hood forward for access to the gas tank.
c. Hold the latch, close the hood and push down until a click is heard.
d. Release the latch and pull on the hood to ensure it is secure.

Dashboard Controls

NOTE: The engine must be started or set to Electric Mode for the dashboard controls to function.

Gauges, Lights and Switches

Fuel Gauge

The fuel gauge indicates the current level of fuel in the gas tank.

Low Battery Light

Indicates low battery (in low gear, electric mode only), power on, and the parking brake status.

Power Light

Headlight Switch

Press the headlight symbol on the switch to turn the headlights on.
Cutting Deck Features

WARNING!
USE EXTREME CAUTION WHEN OPERATING THE CUTTING DECK:
• ALWAYS DISCONNECT THE POWER PLUG BEFORE CLEANING OR SERVICING DECK.
• ALWAYS DISCONNECT THE POWER PLUG BEFORE DETACHING THE DECK FROM THE VEHICLE.
• NEVER OPERATE THE DECK WHEN IT IS DETACHED FROM THE VEHICLE.
• NEVER REACH BENEATH THE DECK WITH POWER CORD ATTACHED.

Deck Power Connector
Ensure that the deck is properly attached to the vehicle before attempting to plug in the power cord. Plug the deck’s power cord into the red deck power connector to supply power to the cutting deck. ALWAYS remove the key from the unit FIRST when attaching or detaching the deck from the MPV or connecting the power cord.

Reverse Mow Override (RMO)
The Reverse Mow Override allows for the MPV to operate with the mower blades running while traveling in reverse. Use extreme caution when mowing in reverse.

As a safety precaution, the MPV will prevent the operator from mowing in reverse unless manually overridden. Do not mow in reverse unless absolutely necessary.

Blade Engage Switch
The blade engage switch turns the cutting deck on and off. The blade engage switch will not engage the blades if the MPV is in high gear. Conversely if RMO is not engaged, the blades will disengage when the drive mode is switched from forward to reverse.

Deck Lift Lever
The deck lift lever controls the cutting height of the deck.

Deck Height Operation
Pull back to raise the deck. Push forward to lower the deck.

Reverse Mow Override (RMO)
Service Controls and Features

Service Access

Access to the engine, oil fill and choke is located under the service hatch.

NOTE: This is not a dump cart. The service hatch hinges back for maintenance access only.

WARNING!

DO NOT ALLOW ANYONE TO RIDE ON THE SERVICE HATCH.

Service Hatch weight limit is 75 lbs (34 kg).

Service Hatch

Pull back on the service latches, then rotate the hatch down to open.

Hood

Open the hood for access to the fuel tank. Hold the latch, close the hood and push down until a click is heard to close.

Opening the Hood

Squeeze the latch and lift the hood to open. Squeeze and hold the latch, then press down on the hood to close.

Tailgate Function

The MPV comes with a removable tailgate, which also lowers for easy access.

Using the Tailgate

a. Grasp the center of the tailgate and pull upwards.
b. When the tailgate slides up, pull backwards and rotate down.
c. Reverse the process to close.
Removing the Tailgate

a. Lower the tailgate all the way down.
b. Press down on the tailgate at the hinge points to remove.
c. Reverse these steps for reassembly.

Gear Selection

a. Low gear is towards you, high gear is away.
b. Pull down and move the gear selection arm into the desired gear slot.
c. If the lever appears to be stuck, roll the rear tire slightly with your hand while adjusting lever.

Seat Adjustment Lever

The MPV seat is adjustable to provide a more comfortable ride while using the MPV.

MPV Speed Management

The MPV is equipped with a high and low gear. The gear selector is located on the right side of the MPV to the left of the discharge chute. High gear should be used mainly for transport and is capable of reaching speeds up to 17 miles per hour. Low gear focuses on power and torque and should be used for activities requiring more power and for mowing. The MPV is capable of reaching a speed of up to 6 miles per hour in low gear.

NOTE: The MPV must be in low gear to operate the mowing deck attachment.

WARNING!

Use caution when operating at high speed.

While seated, pull up on the seat adjustment lever and slide the seat forward or backward to adjust the position.
**The Safety Interlock System**

The Safety Interlock System is a system of sensors that will stop your MPV and/or disengage your blades if the operator leaves the seat or other hazardous situations arise. This system includes the operator presence switch, the parking brake pedal and the blade switch.

The Safety Interlock:
- Prevents the engine from starting unless the drive switch is in Neutral
- Prevents the engine from starting unless the parking brake is set or the operator is in the seat.
- Automatically shuts off the engine if the operator leaves the seat without engaging the parking brake.
- The unit will not start in forward or reverse or with the blades engaged.

Damaged or broken wiring may cause your MPV to operate incorrectly, run poorly or prevent it from starting. Periodically check wiring for wear or damage. If service is needed, please contact DGP immediately.

**WARNING!**

**DO NOT OPERATE THE MPV IF THE SAFETY INTERLOCK SYSTEM APPEARS TO BE MALFUNCTIONING. NEVER TAMPER WITH SAFETY INTERLOCKS.**

**CAUTION!**

**ALWAYS make sure drive is in neutral before turning the key.**

**Generator Controls**

The Generator features:
- Five 120 Volt outlets with circuit breakers
- One 12 Volt outlet which can be used as a charging receptacle
- One 30A twist-lock AC receptacle
- 48V charging terminal
- Hour-meter
- Generator mode switch

The Generator mode switch controls generator operation. This switch must be turned to “ON” (with the engine running) for the generator to provide power to devices plugged in to the outlets. The generator can power small tools and various other devices. See the generate mode section on page 24 for further information on how to determine generator load capacity.

**NOTE:** The MPV will not operate in drive mode if the generator is switched on. See page 45 to troubleshoot the generator.

**OPERATION**

**Pre-Use Checklist**

To make certain that you receive the best performance and satisfaction from your new MPV, PLEASE REVIEW THE FOLLOWING CHECKLIST BEFORE OPERATING:

- ✔ The operator’s manual has been read and understood.
- ✔ All assembly instructions have been completed.
- ✔ There are no remaining loose parts in the package.
- ✔ Fuses are properly installed.
- ✔ Seat and steering wheel are adjusted to a comfortable setting and secured in the locked position.
- ✔ Mower deck is properly leveled side to side and front to rear. See page 32.
- ✔ All tires are properly inflated. Rear tires 15 psi, front tires 12 psi

**IMPORTANT**

For optimal performance and ride comfort, keep tires properly inflated.
Before Each Use

Check the MPV

- Test safety interlocks. See page 18.
- Check tire pressure.
- Check fuel level.
- Check engine oil level.
- Remove grass and debris from engine compartment and muffler area and on top of mower deck, before and after operation.
- Check area below machine for leaks.

![WARNING!]

- CLEAR THE AREA OF BYSTANDERS BEFORE OPERATING. IMMEDIATELY STOP MACHINE IF ANYONE ENTERS THE AREA.
- NEVER LEAVE A RUNNING MACHINE UNATTENDED. ALWAYS SET THE PARKING BRAKE, STOP THE ENGINE, AND REMOVE THE KEY TO PREVENT UNAUTHORIZED USE.

Check the Area around the MPV

For your safety and the safety of others, always check the area around the MPV before operating. Before driving the MPV, check for children, pets and inanimate obstacles in your driving path.

Before mowing with the MPV, check for anything that might be picked up and thrown by the cutting blades. Check for sticks, stones and other debris and remove them from the cutting area. Check the deck cutting height, and ensure the MPV is in low gear before cutting.

Understanding Basic Operation

Before turning on or operating the MPV you must always:

1. Be seated in the operator’s chair.
2. Put the Drive selector in Neutral.
3. Press the brake or engage the parking brake.

If ANY of these three conditions are not met, the MPV may not start or operate properly.

Driving

**NOTE:** The MPV has a switch to alternate between generate mode and drive mode. If the switch (located on the power panel) is in generate mode, the MPV will NOT move.

**NOTE:** Electric only mode will drain the batteries. The batteries can either be recharged by operating in Hybrid Mode or with the optional manual battery charger available as an accessory sold separately.

a. Select high or Low gear. (See page 17).
b. Set the drive mode switch to Neutral.
c. Turn the key in the ignition switch to the position labeled with the battery icon until it clicks one time.
d. Step on the brake pedal to release the parking brake.

The MPV will now operate on electricity only. Set drive mode and use the brake and throttle to travel as normal. (Neither the mowing deck, nor the generator will function in this mode.)
Towing and Using MPV Attachments

Towing Safety

Your MPV has a towing capacity of 550 lbs. Tow only trailers or attachments with a standard towing hitch. Do not attach equipment except at the hitch point.

**IMPORTANT**

Towing should only be attempted in low gear.

**WARNING!**

USE EXTREME CAUTION WHEN HAULING OR TOWING LOADS. BALANCE, HANDLING AND CONTROL OF THE MPV MAY BE AFFECTED.

- ALWAYS FOLLOW PROPER PRECAUTIONS WHEN TOWING. TRAVEL SLOWLY AND CAUTIOUSLY, ALLOWING GREATER DISTANCE FOR BRAKING.
- THE WEIGHT OF THE TOWED EQUIPMENT MAY CAUSE LOSS OF TRACTION AND LOSS OF CONTROL ON SLOPES.
- DO NOT TOW ON ANY SLOPE GREATER THAN 15 DEGREES.
- OVERLOADING YOUR MPV OR CARRYING OR TOWING CARGO IMPROPERLY CAN ALTER VEHICLE HANDLING AND MAY CAUSE LOSS OF CONTROL THAT CAN RESULT IN SERIOUS INJURY OR DEATH. ALWAYS FOLLOW PROPER PRECAUTIONS WHEN TOWING.
- ALWAYS CONSIDER THE WEIGHT THE TRAILER TONGUE PLACES ON THE TOWING HITCH (TONGUE WEIGHT) BEFORE TOWING A LOAD.
- DO NOT TOW MORE THAN 550 POUNDS.
- NEVER ALLOW CHILDREN OR OTHERS IN OR ON TOWED EQUIPMENT.

Mowing

**DANGER!**

THIS MACHINE WAS BUILT TO BE OPERATED ACCORDING TO THE SAFE OPERATION PRACTICES IN THIS MANUAL. FAILURE TO OBSERVE THE FOLLOWING SAFETY INSTRUCTIONS, CARELESSNESS OR ERROR ON THE PART OF THE OPERATOR COULD RESULT IN SERIOUS INJURY OR DEATH. THIS CUTTING MACHINE IS CAPABLE OF AMPUTATING HANDS AND FEET AND THROWING OBJECTS.
Mowing Tips

The following suggestions will produce the best cut quality and lawn appearance:

NOTE: The MPV must be in low gear in order to engage the blades.

- The cutting deck should be properly leveled for best mowing performance. (See Leveling the Deck on page 32.)
- Keep blades sharp.
- Do not mow grass when wet.
- Adjust travel speed to match conditions. Travel at slower speeds when mowing thick or tall grass and higher speeds when mowing thin grass.
- Operate the MPV so that discharged clippings exit towards the area that has been cut. Mow with the cut area to the right of the MPV for more even distribution of clippings and uniform cutting.
- Suggested finished grass height range is between 2 ½ – 3 ½ in.

Deck Lift System

The MPV is equipped with a manual deck lift system. The average lawn should be cut to approximately 2 ½” during the cool season and to over 3 ½” during hotter months. During transport, the deck lift lever should remain in the highest position.

Adjusting the Cutting Height

a. Pull the deck lift lever towards you out of the height slot.
b. The numbers indicated on the lever are for reference only (1 - low, 5 - high).
c. Push the lever forward to lower the deck.
d. Pull back to raise the deck.
e. Push the lever into the height slot to lock the deck into position.

Engaging & Stopping the Blades

a. Be sure the area is clear of bystanders and objects before engaging the blades.
b. Once the mower cutting height is selected, pull the blade engage switch on the driver’s console.
c. Proceed forward with caution once blades begin to turn.
d. Push the blade switch down on the driver’s console to stop the blades. The blades will come to a complete stop within 5 seconds.
**Operation**

**Reverse Mow Override (RMO)**

As a safety precaution, the MPV will prevent the operator from mowing in reverse unless manually overridden. Do not mow in reverse unless absolutely necessary.

The Reverse Mow Override mode allows for the MPV to operate with the mower blades running while traveling in reverse. Use extreme caution when mowing in reverse.

**NOTE:** The Reverse Mow Override is reset any time the drive switch is taken out of reverse mode.

**Engaging Reverse Mow Override (RMO):**

1. Start the engine, then check the area behind and below your MPV to make sure it is clear of adults, children, pets or other objects.
2. Engage the blades, then press the RMO switch.
3. Put the drive mode switch into the reverse position.
4. Once activated, the MPV can be driven in reverse with the mower blades engaged. Proceed with caution.

**Operating on Slopes**

Follow the rules below when attempting to operate the MPV on a hill or slope:

- Choose the slowest speed.
- Mow up and down slopes; avoid mowing across slopes.
- Avoid stopping and/or changing speed on hills. If it is necessary to stop while driving up a slope, start up slowly and smoothly.
- Exercise extreme caution when making turns on a slope and avoid it if possible. If a turn must be made, turn down the slope.
- Avoid mowing on wet grass as tires may lose traction.
- Use the brakes to keep the MPV from traveling too fast downhill, never coast downhill in Neutral.
- The MPV will coast down hill even with cruise control engaged. Always use the brakes to avoid traveling too fast downhill.
- Use extreme caution when operating on slopes with a bagger or other attachments which can affect the stability of the MPV.
- Never attempt to stabilize the MPV by placing a foot on the ground during operation at any time.
- Do not operate on steep slopes. See the guide for sighting slopes on page 23.
Align this edge by sight with a true vertical structure.

Fold on this dotted line to represent a 15° slope.

15°
Generate Mode

Safety Information

Exhaust contains high levels of carbon monoxide (CO), a poisonous gas you cannot see or smell. If you can smell the generator exhaust, you are breathing CO. But even if you cannot smell the exhaust, you could be breathing CO.

Even when you use the MPV generator correctly, CO may leak into the home. ALWAYS use a battery-powered or battery-backup CO detector in the home. If you start to feel sick, dizzy, or weak after the generator has been running, move to fresh air RIGHT AWAY. See a doctor. You could have carbon monoxide poisoning.

During and after the use of the generator, inspect the generator as well as extension cords and power supply cords connected to it for damage resulting from vibration. Have damaged items repaired or replaced as necessary. Do not use plugs or cords that show signs of damage such as broken or cracked insulation. The unit operates best in temperatures between 23°F and 104°F with a relative humidity of 90% or less.

⚠️ DANGER!

• CARBON MONOXIDE IS PRESENT IN MPV EXHAUST. USING A GENERATOR INDOORS CAN KILL YOU IN MINUTES.

• NATIONAL ELECTRIC CODE REQUIRES GENERATOR TO BE GROUNDED TO AN APPROVED EARTH GROUND. BEFORE USING THE GROUND TERMINAL, CONSULT A QUALIFIED ELECTRICIAN, ELECTRICAL INSPECTOR, OR LOCAL AGENCY HAVING JURISDICTION FOR LOCAL CODES OR ORDINANCES THAT APPLY TO THE INTENDED USE OF THE GENERATOR.

⚠️ WARNING!

• READ AND UNDERSTAND ALL INSTRUCTIONS. FAILURE TO FOLLOW ALL INSTRUCTIONS LISTED BELOW COULD RESULT IN ELECTROCUTION, FIRE, AND/OR CARBON MONOXIDE POISONING, WHICH CAN CAUSE DEATH OR SERIOUS INJURY.

• NEVER OPERATE INDOORS OR IN A POORLY VENTILATED AREA. DEADLY LEVELS OF CARBON MONOXIDE CAN BUILD UP IN THESE AREAS. USING A FAN OR OPENING WINDOWS AND DOORS DOES NOT SUPPLY ENOUGH FRESH AIR.
CAUTION!

• For outdoor use only. ONLY use the MPV generator outdoors and far away from open windows, doors, and vents. These openings can pull in generator exhaust.
• Do not allow children or untrained individuals to use this unit.
• Keep all bystanders, children, and pets at least 10 feet away.
• Wear sturdy and dry shoes or boots. Do not operate while barefoot.
• Do not touch bare wire or receptacles.
• Always close the receptacle covers when not in use.
• Do not use the MPV generator with electrical cords which are worn, frayed, bare, or otherwise damaged.
• Allow engine to cool for five minutes before refueling.
• To reduce the risk of fire and burn injury, handle fuel with care. It is highly flammable.
• Loosen fuel cap slowly to release pressure and to keep fuel from escaping around the cap.
• Tighten the fuel cap securely after refueling.
• Wipe spilled fuel from the unit.
• Do not remove the oil dipstick or the fuel tank cap when the engine is running.
• Do not smoke while handling fuel. Store fuel in a container approved for gasoline.
• Keep the MPV generator a minimum of 3 feet away from all types of combustible material.
• Keep all parts of your body away from any moving parts and all hot surfaces of the unit.
• Do not operate the MPV generator near hazardous material.
• Do not operate the MPV generator at a gas or natural gas filling station.
• Never attempt to burn off spilled fuel under any circumstances.

IMPORTANT

• Save these instructions. Refer to them frequently and use them to instruct others who may use this product. If you loan someone this product, loan them these instructions also.
• Position the MPV on level ground for best generator performance.
• Operating voltage and frequency requirement of all electronic equipment should be checked prior to plugging them into this generator. Damage may result if the equipment is not designed to operate within a +/- 10% voltage variation, and +/- 3 Hz frequency variation from the generator name plate ratings. To avoid damage, always have an additional load plugged into the generator if solid state equipment (such as a television set) is used. A power line conditioner is recommended for some solid state applications.
• For power outages, permanently installed stationary generators are better suited for providing backup power to a home. Even a properly connected portable generator can become overloaded. This may result in overheating or stressing of the generator components, possibly leading to a generator failure. (UL2201 Sec.51.1.1.10.h).
• Do not connect the MPV to a building’s electrical system unless the MPV generator and transfer switch have been properly installed and the electrical output has been verified by a qualified electrician. The connection must isolate the generator power from utility power and must comply with all applicable laws and electrical codes.
• Maintain the unit per maintenance instructions in this Operator’s Manual.
• Inspect the unit before each use for loose fasteners, fuel leaks, etc. Replace damaged parts.
• Operate in a well-lit area isolated from working areas to avoid noise interference.
• Before storing, allow the engine to cool and drain fuel from the unit.
• Store the MPV in a well-ventilated area with the fuel tank empty. Fuel should not be stored near the MPV.
• Do not operate or store the MPV in rain, snow, or wet weather.

USING THE GENERATOR

CAUTION!

The MPV must be in neutral with the parking brake set before switching between drive and generate modes.

Pre-Operation Check

✓ Check the oil level before each use of the MPV and add 10W-30 when necessary. See page 10.
✓ Check the fuel level and add fuel if necessary. See page 10.
The MPV has a switch to alternate between generate mode and drive mode. If the switch (located on the power panel) is in generate mode, the MPV will NOT move. Likewise, if the switch on the power panel is in drive mode, the panel will NOT produce electricity.

Electrical devices running on AC current must be connected according to their wattage requirements. The rated (running) and surge wattage for the MPV generator is 6,500 and 7,100, respectively.

**NOTE:** The rated (running) wattage corresponds to the maximum wattage a generator can output on a continuous basis.

The surge wattage corresponds to the maximum amount of power the generator can output for a short time.

If too much power is being used it may trip the breaker. To reset the breaker, press the reset switch above the outlet in use.

Motorized devices typically require more than their rated wattage for startup. The surge wattage ability of a generator allows for this extra power requirement. **This generator can run at its surge wattage capacity for only a short time.** Connect electrical devices requiring a rated (running) wattage equal to or lesser than the rated wattage of this generator.

Always start the engine without devices connected to it to provide power through the generator. When the generator is used to power multiple loads or electric appliances, start by connecting the appliance with the highest starting power requirements (surge watts), followed by the second highest and ending with the lowest.

**IMPORTANT**

Plugging in a faulty device will activate an internal feature of the generator where the Automatic Voltage Regulator (AVR) will cut power supply to ALL devices until the faulty device is removed. If, when the generator is supplying power to your devices, power fails when plugging in another device and no breakers have tripped, try unplugging the device to see if power returns to the other devices. If so, there is a problem with that device and it cannot be used with the MPV.

Outlets are NOT GFCI protected.

Overload operation will greatly shorten generator service life. Never connect devices requiring a rated wattage equal to the surge wattage of a generator. Do NOT overload the generator’s capacity. Exceeding the generator’s wattage/amperage can damage the generator and/or electrical devices connected to it.

---

**Plugging a Device in to the AC Receptacles**

a. Engage the parking brake and start the MPV without devices connected.
b. Allow the engine to run for several minutes after it has been started.
c. Confirm that the electrical device is switched off, then plug it into the unit.
d. Switch the generator mode switch to the “On” position.
e. Turn on the connected electrical devices in order of the highest to lowest rated wattage requirement.

---

**GENERATE MODE**

OFF

ON

Plug in Device

Turn On Generator
Load Connection Method

The load must be connected to DC terminals with the proper polarity (load's positive to positive DC terminal and load's negative to negative DC terminal).

DC Usage

This Generator is equipped with a cigarette lighter style 12V DC receptacle. The maximum draw for the DC outlet is 8.3 Amps. The 12V DC receptacle is not intended for use to charge automotive batteries. The cigarette lighter style receptacle permits the use of any electrical device designed for use in a 12V DC cigarette style outlet similar to ones found in automobiles. The electrical device has a power cord with a metal pin on the bottom and two leaf springs on the sides. Some common automotive type electrical devices are inflators, vacuum cleaners, cell phones, and chargers of various types.

**Current in Amperes** | **Load in Watts** | **Maximum Allowable Cord length**
---|---|---
| 2.5 | 120V | #8 Wire | #10 Wire | #12 Wire | #14 Wire | #16 Wire |
| 2.5 | 300 | 1000 ft | 750 ft | 600 ft | 375 ft | 250 ft |
| 5 | 600 | 500 ft | 400 ft | 300 ft | 200 ft | 125 ft |
| 7.5 | 900 | 350 ft | 250 ft | 200 ft | 125 ft | 100 ft |
| 10 | 1200 | 250 ft | 150 ft | 100 ft | 50 ft |
| 15 | 1800 | 150 ft | 100 ft | 65 ft |
| 20 | 2400 | 175 ft | 125 ft | 75 ft |
| 25 | 3000 | 150 ft | 100 ft |
| 30 | 3600 | 125 ft | 65 ft |
| 40 | 4800 | 90 ft |

**Generator Capacity**

The MPV generator is not rated for providing power to an HVAC system.

The generator can provide 7100 surge watts of power and 6500 watts of running power. Make sure the generator can supply enough continuous (running) and surge (starting) watts for the items you will power at the same time. Follow these simple steps.

**To check total Start-up watts:**
1. Add up the running watts for all items you would like to use at any given time.
2. Make sure that this total is under the total rated wattage of the generator.
3. Find the single highest starting watts for the selected items and add to the total.
4. Plug in and turn on products from lowest to highest wattage.

**Example:**

- Total Running Watts = 2700
- Highest Starting Watts = 2350
- Total Starting Watts Needed = 5050

**Extension Cord Cable Size**

Refer to the table below to ensure the cable size of the extension cords you use are capable of carrying the required load. Inadequately sized cables can cause a voltage drop, which can burn out the appliance and over-heat the cord.

**Tool or Appliance** | **Estimating Running Watts** | **Estimated Additional Starting Watts**
---|---|---
Incandescent Lights (4 Quantity x 75 Watts) | 300 | 0
TV (Tube Type) | 300 | 0
Refrigerator or Freezer | 700 | 2200
Furnace (1/2 Horsepower) | 800 | 2350
Well Pump (1/3 hp) | 400 | 600
Radio | 200 | 0

Running Watts = 2700 Total
Starting Watts = 2350 Highest

---

Plugging a Device to the DC Receptacle

Plug the electrical device power cord into the 12V DC outlet and ensure the power cord is securely in place.

Use the device as instructed. Remove after use by pulling the power cord out of the receptacle.
**Operation**

*Electric Motor Loads*

It is characteristic of common electric motors in normal operation to draw up to six times their running current while starting. This table may be used to estimate the watts required to start electric motors; however, if an electric motor fails to start or reach running speed, turn off the appliance or tool immediately to avoid equipment damage. Always check the requirements of the tool or appliance being used compared to the rated output of the generator.

<table>
<thead>
<tr>
<th>Motor Size (HP)</th>
<th>Running Watts</th>
<th>Watts Required to Start Motor</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/8</td>
<td>275</td>
<td>Universal: N/A, Capacitor: 850, Split Phase: 1200</td>
</tr>
<tr>
<td>1/6</td>
<td>275</td>
<td>Universal: 600, Capacitor: 850, Split Phase: 2050</td>
</tr>
<tr>
<td>1/4</td>
<td>400</td>
<td>Universal: 800, Capacitor: 1050, Split Phase: 2400</td>
</tr>
<tr>
<td>1/3</td>
<td>450</td>
<td>Universal: 950, Capacitor: 1350, Split Phase: 2700</td>
</tr>
<tr>
<td>1/2</td>
<td>600</td>
<td>Universal: 1000, Capacitor: 1800, Split Phase: 3600</td>
</tr>
<tr>
<td>3/4</td>
<td>850</td>
<td>Universal: 1200, Capacitor: 2600, Split Phase: ---</td>
</tr>
<tr>
<td>1</td>
<td>1100</td>
<td>Universal: N/A, Capacitor: 3300, Split Phase: ---</td>
</tr>
</tbody>
</table>

**Power Management**

To prolong the life of the MPV generator and attached devices, it is important to take care when adding electrical loads to the generator. There should be nothing connected to the generator outlets before starting the MPV engine. The correct and safe way to manage generator power is to sequentially add loads as follows:

a. Start the engine with nothing connected to the generator.
b. Plug in the first device, preferably the largest load you have.
c. Turn on the device.
d. Permit the generator output to stabilize. Listen for the engine running smoothly and check that the attached device operates properly.
e. Plug in and turn on the next device.
f. Again, permit the generator to stabilize.
g. Repeat steps b - d for each additional load.
## IMPORTANT

Never add more loads than the generator capacity. Take special care to consider surge loads in generator capacity as previously described. Exceeding the generator’s wattage/amperage capacity can damage the generator and/or electrical devices connected to it.

<table>
<thead>
<tr>
<th>Item</th>
<th>Rating</th>
<th>Tolerance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage</td>
<td>120 (rated)</td>
<td>-5%</td>
</tr>
<tr>
<td>Frequency</td>
<td>60Hz (rated)</td>
<td>-5%</td>
</tr>
<tr>
<td>Phases</td>
<td>Single phase</td>
<td></td>
</tr>
<tr>
<td>Amperes</td>
<td>54A</td>
<td>-10%</td>
</tr>
<tr>
<td>Volt-amperes</td>
<td>6500VA</td>
<td>-10%</td>
</tr>
<tr>
<td>Watts</td>
<td>6500W</td>
<td>-10%</td>
</tr>
<tr>
<td>Power factor</td>
<td>1.0</td>
<td>-10%</td>
</tr>
<tr>
<td>Watts and Volt-amperes</td>
<td>6.5kW/6500VA</td>
<td></td>
</tr>
<tr>
<td>RPM</td>
<td>3420-3600 rpm (rated)</td>
<td></td>
</tr>
<tr>
<td>Insulated System Class</td>
<td>H</td>
<td></td>
</tr>
<tr>
<td>Time Rating</td>
<td>4.5 hours</td>
<td></td>
</tr>
</tbody>
</table>

**SERVICE & MAINTENANCE**

Several tools are required to perform general maintenance repairs on the MPV. Ensure you read instructions or watch the available on-line videos to determine which tools are needed before attempting to service your MPV.

*NOTE*: Videos of all procedures in the manual are available to view at www.ravenamerica.com/videos.

## WARNING!

NEVER MAKE ADJUSTMENTS WHILE IN OPERATION.

## CAUTION!

*Before adjusting or servicing, remove the 20 and 30 amp fuses beneath the operator seat to prevent unintentional engine starts.*

Avoid injury. Before adjusting or servicing MPV:
- Disconnect the 20 and 30 A fuses located beneath the operator seat to prevent engine from starting accidentally.
- Always wear gloves when handling mower blades or working near blades or other sharp or hot parts of the MPV.

## IMPORTANT

The warranty on the MPV does not cover situations in which parts have been subjected to operator abuse or negligence. To receive full value from the warranty and optimal performance and life of your MPV, maintain the machine according to operating and maintenance recommendations in this manual.

The maintenance schedule provided in this manual is based on manufacturer recommendations for adjustments and care regarding your MPV. Failure to acknowledge and follow these recommendations may result in poor operation or damage to your MPV.
**Deck Maintenance**

The cutting deck must be removed when changing the blades. Removing the deck will not change the deck height settings. The deck is pre-set at the factory for grass requiring higher cut lengths. You may choose to set the deck height to a lower cutting height if necessary.

**Removing the Cutting Deck**

1. Ensure the MPV is turned off with the key removed.
2. Lower the cutting deck completely to the ground using the deck lift lever.
3. Disconnect the deck power plug.
4. Disconnect the front pin, then disconnect the two rear pins.
5. Raise the deck lever to the highest position.
6. Slide the deck out from beneath the MPV.
Attaching the Cutting Deck

a. Ensure the MPV is turned off with the key removed.
b. Check that the Deck lift lever is in the lowest position, then slide the deck under the MPV.
c. Place the deck lift lever into the lowest setting.
d. Align and connect the front and rear pins.
e. Connect the deck power plug.
f. Raise and lower deck as needed.
Service & Maintenance

Leveling the Deck

Before leveling the deck, ensure the MPV is parked on a level surface. Check the tires to ensure the rear tires are inflated to 15 psi and that the front tires are inflated 12 psi. If the tires are not properly inflated, the appearance of your lawn and cutting height may be affected.

Side to Side Adjustment

a. Ensure the MPV is turned off with the key removed, and that the deck is unplugged (see page 30 step C).
b. Raise the cutting deck to the highest position.
c. Measure the distance from the outside edges of the deck to the ground. If they are equal, the deck is level.
d. If not, loosen the locknut with a 16mm wrench.
e. Disconnect the drop link clevis from the lift arm and turn the clevis left to lower or right to raise.
f. Reinstall the clevis to lift rod and measure again. Re-adjust the clevis as necessary to level the deck.
g. Once level re-tighten the locknut with the wrench.
h. Raise or lower the cutting deck as needed.

RAVEN MPV-7100/7100S OWNER’S MANUAL
Front to Rear (Lock Nut) Adjustment

a. Ensure the MPV is turned off with the key removed, and that the deck is unplugged (see page 30 step C).
b. Remove the pin from the deck front link rod.
c. Loosen the lock nut using a 16mm wrench.
d. Tighten or loosen the rod end to adjust.
e. Measure and adjust again as required.
f. Once level, tighten the lock nut.
g. Replace the pin.
**Blade Care**

Blades must be kept sharp for best results. Replace blades that are dull, damaged or bent.

---

**WARNING!**

WRAP BLADES IN HEAVY CLOTH WHEN WORKING WITH OR NEAR THEM. YOU MAY ALSO BLOCK THE MOWER BLADE WITH A PIECE OF WOOD TO PREVENT ACCIDENTAL SPINNING. ALWAYS WEAR GLOVES WHEN HANDLING MOWER BLADES OR WORKING NEAR HOT PARTS OF THE MPV.

**CAUTION!**

Never re-use the blade adapter or domed washer. Before removing the blades, ensure that you have the appropriate blade replacement kit that includes new replacement blades and hardware. ALWAYS use new blade adapter hardware when replacing your cutting blades.

---

**Removing the Blades**

1. **C.** Ensure the MPV is turned off with the key removed, and that the deck is unplugged (see page 30 step C).
2. **b.** Remove the cutting deck. See Remove the Cutting Deck section on page 30.
3. **c.** Turn the deck over, this requires two people.
4. **d.** Use a 17mm socket wrench to remove the lock nut and discard, then remove the old blades and blade adapter hardware and discard.
5. **e.** Place the new blade adapter onto the blade motor spindle.
6. **f.** Place the new blades onto the blade adapter with the blade text showing.
7. **g.** Place the new domed washer onto the blades with the curved side up.
8. **h.** Thread the new lock nut onto the stud and use a torque wrench and tighten to 40 ft/lbs.
Oil Maintenance

To keep the engine running and operating properly, follow the oil change intervals in the Maintenance Schedule on page 43. DO NOT OPERATE WITHOUT ENGINE OIL! Check the oil level before each use of the MPV and add 10W-30 when necessary. The MPV MUST be on level ground when checking the oil level.

Changing the Oil

a. Start the engine and allow it to run briefly to warm the oil in the MPV, then turn the engine off, remove the key and engage the parking brake.

b. Pull back on the service hatch latches and rotate the service hatch down to open.

c. Place an appropriate oil collection container under the oil drain tube, then remove the oil drain plug from the oil drain tube and empty the oil into the collection container.

d. Replace the drain valve after the oil has completely drained.

e. Refill the engine oil through oil fill dipstick tube. Use 10W-30 oil. Pour slowly and do not overfill. Maximum oil capacity is 1 quart.

f. Keep the oil level BETWEEN the HI and LO marks on the dipstick for best engine performance.

HI

LO

To ensure optimal performance of your MPV, keep the oil levels BETWEEN the Hi and Lo fill levels on the Dipstick. Too much or too little oil in the engine can adversely affect performance and longevity.

WWW.RAVENAMERICA.COM
Check the Oil

a. Turn the engine off and allow the engine to cool.
b. Open the service hatch.
c. Remove the dipstick from the tube and wipe off any oil, then insert and press the dipstick all the way into the oil fill tube.
d. Remove the dipstick and visually check the oil level on the dipstick gauge.
e. Keep the oil level between the HI and LO levels on dipstick.
f. Press the cap securely into the oil fill tube when finished.

To ensure optimal performance of your MPV, keep the oil levels BETWEEN the Hi and Lo fill levels on the Dipstick. Too much or too little oil in the engine can adversely affect performance and longevity.
Engine Cooling System

The engine will overheat if its external surfaces are not kept clean. To prevent overheating and engine damage, make sure the grass screen, cooling fins, and any other engine surfaces are cleared off to allow for optimal cooling.

Spark Plug Maintenance

Replace spark plugs at the beginning of each mowing season or after every 100 hours of use, whichever comes first. The appropriate spark plug type is listed in the table on page 47.

Changing the Spark Plug

a. Ensure the engine is cool before changing the spark plug.

b. Open the service hatch.

c. Remove spark plug cap to reveal the spark plug.

d. Remove the spark plug using a 13/16” spark plug torque wrench (not Included).

e. Place the new spark plug into the socket and rotate until hand tight. Always replace and tighten the spark plug by hand to prevent damaging the spark plug threads.

f. Once tight, use the spark plug torque wrench to tighten to 18-22 ft/lbs of torque.

g. Place the spark plug cap over the spark plug and press down until it clicks into place.
**Spark Arrestor**

The MPV is fitted with a spark arrestor which complies with USDA - Forest service standard S100-1C. The spark arrestor (fitted to the exhaust outlet of the muffler) should be cleaned with a soft wire brush after every 50 hours or every 6 months of use. Replace with a new spark arrestor after every 100 hours of operation.

**Air Filter**

The engine will not run correctly when operating with a dirty air filter. Change the air filter more frequently in dusty environments.

---

**Changing the Air Filter**

1. **a.** Turn the engine off and allow it to cool.
2. **b.** Open the service hatch.
3. **c.** Release the latches on the black air filter cover, then remove the metal filter cover.
4. **d.** Replace the air filter, positioning the flat side toward the engine and ensure the plastic filter cover is on top of the filter.
5. **e.** Replace the metal filter cover and secure the latches.

---

**Fuel Filter**

The fuel filter should be replaced every 100 hours or once each season especially when operated in dusty environments. If the fuel filter becomes clogged, it will hinder fuel flow to the carburetor. The filter is located at the front of the machine, below the fuel tank and above the steering rack. The fuel filter must be changed when there is very little gas in the fuel tank.
Brake Adjustment

If the MPV does not come to a complete stop when the brake pedal is pressed or if the rear wheels are able to roll while the parking brake is engaged, the brakes are not functioning properly and need adjustment. Follow the steps below for minor adjustments. If you suspect there is damage to the brake system, immediately contact support at 1-888-321-5700.

Front to Rear Adjustment

a. The brake adjustment is located on top of the rear axle on the inboard side of each wheel.
b. Tighten or loosen each adjuster equally by adjusting one and then the other to ensure even wear. Use a 14mm wrench to turn clockwise to tighten, and counterclockwise to loosen.
c. Turn each adjuster only ½ turn at a time and check the brakes to see if further adjustment is required.
d. Check the brakes by driving at a low speed and pressing the brakes to come to a complete stop. Brakes are properly adjusted when wheels are able to spin freely AND the MPV comes to a complete stop when the brake pedal is pushed.

Batteries

Your MPV is equipped with one 12 volt starter battery and one 48 volt battery pack. The 48 volt battery pack is sufficient for normal use and requires no maintenance. Do not attempt to open or remove the covers. The battery may require charging when it is activated for the first time or after the MPV has not been used for a long period of time. Do not let the unit sit idle for more than 3 months. After 3 months, the batteries will slowly discharge. This discharge cycle reduces the lifespan of the batteries.

⚠️ DANGER! ⚠️

DO NOT SHORT THE BATTERY TERMINALS BY ALLOWING ANY METAL OBJECTS TO CONTACT BOTH TERMINALS AT ONCE. REMOVE ALL METAL JEWELRY BEFORE CONNECTING THE BATTERY. THE POSITIVE TERMINAL MUST BE CONNECTED FIRST TO PREVENT SPARKING FROM ACCIDENTAL GROUNDING.

⚠️ WARNING! ⚠️

BATTERY POSTS, TERMINALS AND RELATED ACCESSORIES CONTAIN LEAD AND LEAD COMPOUNDS, CHEMICALS KNOWN TO CAUSE CANCER AND BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM. WASH HANDS AFTER HANDLING. USE A WRENCH WRAPPED IN INSULATING TAPE TO AVOID ACCIDENTAL SHORTING BETWEEN THE NEGATIVE AND POSITIVE BATTERY TERMINALS.
Removing the battery and Cleaning the 12 Volt Battery Terminals

- a. Remove the 5 bolts from the right side panel using an 8mm wrench, then remove the panel.
- b. Use an 8mm wrench (not included) to remove the two bolts securing metal bracket around the battery, then remove the bracket.
- c. Use an insulated 10mm wrench (not included) to loosen the bolt on the negative (Black) battery terminal.
- d. Remove the wires and repeat for the positive (Red) terminal.
- e. Remove the battery from the MPV.
- f. Clean the terminals and the battery cable ends with a wire brush or replace the battery if necessary. Only use a 12V – 9AH replacement battery.
- g. Fit the battery into position and connect the positive (red) wires to the positive (+) terminal and tighten the bolt.
- h. Reconnect the negative (black and green) wires to the negative (-) terminal and tighten the bolt.
- i. Reassemble the battery retainer and vehicle side cover.
Starting the Engine with a Weak Battery

The 12 Volt battery must be charged in order to start the engine. During normal operation, it is not necessary to charge the battery because the generator will charge the battery while the engine is running through the 12 volt regulator. The battery may require charging when it is activated for the first time or after the MPV has not been used for a long period of time.

**CAUTION!**

*SLOW CHARGE (DO NOT FAST CHARGE) the battery after it has been in operation, at a maximum bench rate of 1.4 amperes for a period of 14-16 hours. DO NOT CHARGE LONGER THAN 24 HOURS.*

Charging the 12 Volt Battery

a. Use the 12 volt charger included with your MPV to charge the 12 volt battery.

b. Connect the 12 volt charger to the 12 volt receptacle on the generator panel.

c. Connect the charger to a power source.

d. Allow the unit to charge for 14–16 hours.
Replacing a Fuse

Fuses

The MPV requires one yellow 20 amp fuse for the ignition circuit, and one green 30 amp fuse for the charging circuit. The fuse connection is located under the operator seat and has a convenient slot for storage of the provided spare fuse. A spare is provided for both the 20 and 30 A fuses. If both provided fuses are blown during use, these fuses should be replaced with automotive-type plug-in fuses available at any automotive repair shop.

**NOTE:** If either fuse is blown, the 12 volt system will not operate correctly. If newly replaced fuses also fail, contact DGP for diagnosis. See the Troubleshooting section on page 44 for more information.

Replacing a Fuse

- Lift the seat
- Locate the fuse connections under the black plate.
- Open the fuse holder cover of the fuse needing replacement.
- Replace the blown fuse.
- Close the fuse holder cover.
- Lower the seat back into place.
Cleaning

To maximize the longevity and appearance of your MPV, it is best to keep the unit stored in a covered, well ventilated area if possible. Clean and wax the painted metal parts periodically, using a high quality non-abrasive automotive wax. This is especially important if you are unable to always store it indoors in a covered area or in a protected backyard shed.

When cleaning the MPV with a hose, please first ensure that the outlet covers on the generator panel are snapped tightly closed. Never allow water to enter the generator receptacles. The use of a pressure washer is NOT recommended.

When cleaning the MPV:

- Keep the MPV free of grass clippings, leaves and other build-up which can touch hot exhaust/engine parts.
- Use a leaf blower to quickly rid the MPV of dirt and debris.
- Clean excess dirt and debris from the engine, battery, seat and exterior of the MPV.
- Be sure the area around the drive and brake pedals is clean to prevent accidental acceleration or abrupt stops.
- Keep the exterior free of gasoline and oil spills. If spillage occurs, wipe up immediately.
- Always allow time for the MPV to completely dry before attempting to operate.

Transporting

Use extra care when unloading or loading the machine into a trailer or truck and while transporting.

Watermark

CAUTION!

Raise the cutting deck to the highest setting or remove it before loading the MPV for transport.

Storage

It is important to prepare the MPV to keep it in proper working order before storage. Select a covered area that is well ventilated and dry for storing the MPV if possible. Ensure the MPV is stored away from any appliance that operates with a flame such as a gas water heater, clothes dryer or furnace. Allow the MPV to cool before covering with any type of vehicle cover.

Fuel

Before storing the MPV, add a fuel stabilizer to any fuel remaining in the tank to aid with starting the engine after storage. A sample of Sta-Bil has been provided for your convenience.

Oil

Change the engine oil before storing the MPV. Follow the steps on page 35 to change the oil.

Removing from Storage

Refer to the list on page 19 (Before Each Use) to prepare your MPV for use after storage. If the MPV has been in storage for longer than 3 months, refer to the instructions on page 41 for charging the 12 volt battery.

Operation in High Elevation

At high altitude, the standard carburetor air-fuel mixture is too concentrated and will cause performance to decrease and fuel consumption to increase. An over concentrated mixture will also foul the spark plug and cause difficulty when starting. Operation at an altitude that differs from that at which the engine was certified, for extended periods of time, may increase emissions. The fuel system on the MPV may be influenced by operation at higher altitudes.

Maintenance Schedule

<table>
<thead>
<tr>
<th>Maintenance Task</th>
<th>Before Each Use</th>
<th>Every 10 Hours</th>
<th>Every 25 Hours</th>
<th>Every 50 Hours</th>
<th>Every 100 Hours</th>
<th>Prior to Storage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Check Brake Operation</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Check Tire Pressure</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Check RMO Switch</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Check for Loose Fasteners</td>
<td>✓</td>
<td></td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Replace Mower Blades</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Lubrication</td>
<td>✓</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clear Debris</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Check Level</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Check Engine Oil Level</td>
<td>✓</td>
<td></td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change Engine Oil</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clean Engine Air Filter</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inspect Muffler/Spark Arrestor</td>
<td>✓</td>
<td></td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inspect/Clean Battery Terminals</td>
<td>✓</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clean Engine Cooling Fins</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clean Engine Cooling Fins</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Replace Spark Plug</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Replace Air Filter Element</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oil Separator</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fuel Filter</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
<td></td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>PROBLEM</th>
<th>CAUSE</th>
<th>SOLUTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engine runs erratically</td>
<td>Fuel line blocked.</td>
<td>Clean fuel line/filter.</td>
</tr>
<tr>
<td></td>
<td>Dirty or old fuel.</td>
<td>Drain tank. Refill with fresh, clean gasoline.</td>
</tr>
<tr>
<td></td>
<td>Dirty air filter.</td>
<td>Clean/replace air filter.</td>
</tr>
<tr>
<td></td>
<td>Spark plug wire loose.</td>
<td>Check and connect wire.</td>
</tr>
<tr>
<td>Engine overheats</td>
<td>Air intake screen plugged.</td>
<td>Clean any debris from around cooling fins and blower housing.</td>
</tr>
<tr>
<td></td>
<td>Oil level low.</td>
<td>Check oil, fill with proper amount.</td>
</tr>
<tr>
<td></td>
<td>Excessive ethanol in fuel</td>
<td>Drain tank. Refill with fresh gasoline containing less than 10% ethanol.</td>
</tr>
<tr>
<td>Engine clicks but will not start</td>
<td>Weak or dead battery.</td>
<td>Recharge battery.</td>
</tr>
<tr>
<td></td>
<td>Damaged wiring.</td>
<td>Check all wiring and replace as necessary.</td>
</tr>
<tr>
<td></td>
<td>Corroded battery terminals.</td>
<td>Clean battery terminals.</td>
</tr>
<tr>
<td></td>
<td>Faulty starter.</td>
<td>Call for Service</td>
</tr>
<tr>
<td>Excessive Vibration</td>
<td>Worn or bent blade(s).</td>
<td>Replace blade(s).</td>
</tr>
<tr>
<td></td>
<td>Loose Blade(s).</td>
<td>Tighten blade or replace blade adapter set.</td>
</tr>
<tr>
<td></td>
<td>Damaged tires.</td>
<td>Call for Service</td>
</tr>
<tr>
<td>Jerky operation on hills or rough terrain</td>
<td>Terrain causes operator to bounce on throttle.</td>
<td>Use Cruise Control for smooth operation.</td>
</tr>
<tr>
<td>Uneven cut</td>
<td>Cutting deck not level.</td>
<td>Level mower deck from side to side and front to rear.</td>
</tr>
<tr>
<td></td>
<td>Dull blade(s).</td>
<td>Replace blade(s)</td>
</tr>
<tr>
<td></td>
<td>Uneven tire pressure.</td>
<td>Check tire pressure, adjust accordingly to 15 psi rear, 12 psi front.</td>
</tr>
<tr>
<td></td>
<td>Buildup of debris under mower.</td>
<td>Clean underside of mower.</td>
</tr>
<tr>
<td>Poor grass discharge</td>
<td>Discharge chute plugged.</td>
<td>Unplug chute.</td>
</tr>
<tr>
<td></td>
<td>Wet grass.</td>
<td>Allow grass to dry before cutting.</td>
</tr>
<tr>
<td></td>
<td>Cutting deck not leveled properly.</td>
<td>Level mower deck from side to side and front to rear.</td>
</tr>
<tr>
<td></td>
<td>Uneven tire pressure.</td>
<td>Check tire pressure, adjust accordingly to 15 psi rear, 12 psi front.</td>
</tr>
<tr>
<td></td>
<td>Build up of debris under mower</td>
<td>Clean underside of mower.</td>
</tr>
<tr>
<td>12V Battery will not charge</td>
<td>Blown 30 A fuse.</td>
<td>Replace green 30 A fuse.</td>
</tr>
<tr>
<td></td>
<td>Bad/dead battery cell(s).</td>
<td>Replace battery.</td>
</tr>
<tr>
<td></td>
<td>Battery terminals dirty.</td>
<td>Clean as necessary.</td>
</tr>
<tr>
<td>headlights not working</td>
<td>Headlight switch is off.</td>
<td>Turn switch on.</td>
</tr>
<tr>
<td></td>
<td>Blown 20A (yellow) fuse.</td>
<td>Replace 20A (yellow) fuse.</td>
</tr>
<tr>
<td>Engine dies when switching into reverse</td>
<td>Reverse Mow Override is not “on” while mower or other attachment is engaged.</td>
<td>Be sure to engage Reverse Mow Override correctly. (See page 22).</td>
</tr>
<tr>
<td>Patches of grass left uncut</td>
<td>Speed too fast while mowing.</td>
<td>Travel slower.</td>
</tr>
<tr>
<td></td>
<td>Cutting deck needs cleaning.</td>
<td>Clean cutting deck.</td>
</tr>
<tr>
<td>PROBLEM</td>
<td>CAUSE</td>
<td>SOLUTION</td>
</tr>
<tr>
<td>-------------------------</td>
<td>--------------------------------------------</td>
<td>---------------------------------------</td>
</tr>
<tr>
<td>MPV will not move</td>
<td>Generate mode is set to on.</td>
<td>Set generate mode to off.</td>
</tr>
<tr>
<td></td>
<td>Parking brake engaged.</td>
<td>Disengage parking brake.</td>
</tr>
</tbody>
</table>

**IMPORTANT INFORMATION ABOUT THE GENERATOR**

**NOTE:** The generator is equipped with five (5) circuit breakers. One each for the 20A, 30A, 12V DC receptacles, plus a main breaker. An overload of the 120V AC circuits will trip the 30 and 20A breakers. Press the tripped breaker to reset.

![Generator Diagram]

<table>
<thead>
<tr>
<th>PROBLEM</th>
<th>CAUSE</th>
<th>SOLUTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generator will not power other devices</td>
<td>Tripped Breaker.</td>
<td>Reset breaker.</td>
</tr>
<tr>
<td></td>
<td>Generator switch is not set to “ON”.</td>
<td>Turn switch on.</td>
</tr>
<tr>
<td></td>
<td>Drive was not set to “NEUTRAL” before starting engine.</td>
<td>Set drive to neutral.</td>
</tr>
<tr>
<td></td>
<td>Parking brake is not set.</td>
<td>Set parking brake.</td>
</tr>
</tbody>
</table>
### IMPORTANT INFORMATION ABOUT SYSTEM FUSES

**WARNING!**

This system is equipped with several fuses that protect the electrical system and components from severe damage in the event of a system failure. Please note that if any of the following occur do not attempt to service or replace the fuses yourself. Immediately call DGP for assistance to avoid personal injury or further damage to your MPV!

The fuses are located as indicated in the diagram below.

Note the appearance of good 20 and 30A fuses in the image below.

#### PROBLEM  |  CAUSE  |  SOLUTION
--- | --- | ---
All function normal but deck will not turn on | Blown 100A deck fuse | Call DGP immediately. Do NOT attempt to service as this can result in an unsafe condition.

All function normal but unit will not drive forward | Blown 100A drive fuse | Call DGP immediately. Do NOT attempt to service as this can result in an unsafe condition.

All function normal but unit does not function in battery mode | Blown 75A 48V battery fuse | Call DGP immediately. Do NOT attempt to service as this can result in an unsafe condition.

12V DC outlet on Generator panel provides no power | Tripped 10A circuit breaker | Push to reset breaker on the generator panel above the 12V DC outlet.

### 20 & 30A FUSES

**NOTE:** If the 20A fuse is blown, the unit will appear totally "dead". Attempt to start the engine. If nothing happens, turn the key to electric only mode and attempt to drive the MPV, again if nothing happens the 20A fuse may have blown and should be replaced. See page 42.

Unit does not function at all (dead silence) | Blown 20A (Yellow) fuse | Replace the 20A Yellow fuse. (See page 42).

**NOTE:** The 30 A fuse protects the system in case the 12V battery shorts or if there is a failure in the voltage regulator. If the 30A fuse is blown, the unit will not recharge during normal use and plugging in the provided charger will be ineffective as the 12V DC outlet on the generator panel will not function.

Starter battery does not recharge and 12V DC outlet provides no power | Blown 30 A (Green) fuse | Replace the 30A Green fuse. (See page 42).

**IF YOUR PROBLEM IS NOT ON THIS LIST, VISIT WWW.RAVENAMERICA.COM OR CALL 1-888-321-5700.**
### TECHNICAL INFORMATION

<table>
<thead>
<tr>
<th>Model Number:</th>
<th>MPV-7100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engine Displacement</td>
<td>420cc</td>
</tr>
<tr>
<td>Engine Manufacturer</td>
<td>RATO</td>
</tr>
<tr>
<td>Engine Type</td>
<td>OHV Extended Life</td>
</tr>
<tr>
<td>Gasoline Capacity:</td>
<td>5 gal/19 ltr</td>
</tr>
<tr>
<td>Gasoline Type:</td>
<td>Unleaded &lt;10% Ethanol</td>
</tr>
<tr>
<td>Front Tires:</td>
<td>18 x 8.5-8 4-ply</td>
</tr>
<tr>
<td>Rear Tires:</td>
<td>20 x 8-10 4-ply</td>
</tr>
<tr>
<td>Oil Capacity:</td>
<td>1 ltr/1 qt</td>
</tr>
<tr>
<td>Cutting Width (In.):</td>
<td>46</td>
</tr>
<tr>
<td>Speed (MPH/KPH):</td>
<td>Forward: from 0 up to 17 mph/27* kph</td>
</tr>
<tr>
<td></td>
<td>Reverse: from 0 up to 8 mph/13 kph</td>
</tr>
<tr>
<td>*The MPV is capable of reaching speeds up to 17 miles per hour under optimal conditions. Many factors can impact the top speed of the MPV such as, but not limited to, terrain, tire pressure, wheel alignment, and temperature, weight of the operator, deck attachment, other attachments, fuel quality, battery voltage, battery age, and gear selection.</td>
<td></td>
</tr>
<tr>
<td>Height (In.):</td>
<td>50</td>
</tr>
<tr>
<td>Overall Width including discharge chute (in.):</td>
<td>55&quot; with Deck (including the discharge chute)</td>
</tr>
<tr>
<td></td>
<td>43&quot; without Deck</td>
</tr>
<tr>
<td>Length (in.):</td>
<td>85&quot; (including hitch)</td>
</tr>
<tr>
<td>Vehicle Weight (lb.):</td>
<td>875</td>
</tr>
<tr>
<td>Towing Capacity (lb.):</td>
<td>550</td>
</tr>
<tr>
<td>Turning Radius (in.):</td>
<td>Left (trim Side)-13&quot; , Right-18&quot;</td>
</tr>
<tr>
<td>Battery Only Operation:</td>
<td>Approximately 45 – 70 minutes</td>
</tr>
<tr>
<td>Charge Time</td>
<td>24 hours max using the plug-in charger.</td>
</tr>
<tr>
<td>Starter Battery</td>
<td>12V – 9AH</td>
</tr>
<tr>
<td>Auxiliary Battery Pack</td>
<td>20 AH</td>
</tr>
<tr>
<td>Motor:</td>
<td>Ground Drive Motor and Deck Drive Motor.</td>
</tr>
<tr>
<td>Headlight Bulbs</td>
<td>LED</td>
</tr>
<tr>
<td>Power-plant:</td>
<td>Electrical Access:</td>
</tr>
<tr>
<td>6500 Watt AC Generator</td>
<td>5 - 120 volt AC, 1 - 12 volt DC</td>
</tr>
<tr>
<td>Mower Drive system:</td>
<td>Electric Direct Drive</td>
</tr>
<tr>
<td>Blades:</td>
<td>2 @ 23in</td>
</tr>
<tr>
<td>Part #: BL46</td>
<td></td>
</tr>
<tr>
<td>Spark Plug:</td>
<td>F7TC</td>
</tr>
<tr>
<td>Replacement: Champion, NGK or other similar brand.</td>
<td></td>
</tr>
<tr>
<td>Steering Wheel Diameter (In.):</td>
<td>13.25</td>
</tr>
<tr>
<td>Blade Torque (Retaining Nut)</td>
<td>40 ft/lbs</td>
</tr>
</tbody>
</table>
PARTS AND ACCESSORIES/SERVICE ITEMS

<table>
<thead>
<tr>
<th>Part Name</th>
<th>Component Description</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>MPV Blade Set</td>
<td>MPV Replacement Blades – Qty 2</td>
<td>BL46</td>
</tr>
<tr>
<td>MPV Blade Bolt &amp; Adapter Kit</td>
<td>Blade Adapter, Bolt, Flat Washer &amp; Lock Washer</td>
<td>BL46A</td>
</tr>
<tr>
<td>Universal Gauge Wheel Set</td>
<td>Wheel, Bolt, &amp; Nut</td>
<td>GA46</td>
</tr>
<tr>
<td>MPV Fuel Filter</td>
<td>Fuel Filter</td>
<td>FF420</td>
</tr>
<tr>
<td>MPV Air Filter Set</td>
<td>Air Filter</td>
<td>AF420</td>
</tr>
<tr>
<td>Universal Deck Pin Set</td>
<td>Deck Pin</td>
<td>QRP46</td>
</tr>
<tr>
<td>LED Headlight Set</td>
<td>Headlight Assembly, Mounting Bracket Left and Right, Mounting Bolt, &amp; Mounting Nut</td>
<td>HL46</td>
</tr>
<tr>
<td>Universal Cover</td>
<td>MPV Cover</td>
<td>COV710</td>
</tr>
<tr>
<td>Ignition Key Set</td>
<td>Ignition Key – Qty 2</td>
<td>K710</td>
</tr>
<tr>
<td>48V Battery Charger</td>
<td>48V Battery Charger</td>
<td>BC48</td>
</tr>
<tr>
<td>12V Battery Charger</td>
<td>12V Battery Charger</td>
<td>BC12</td>
</tr>
<tr>
<td>48V Battery Pack</td>
<td>Replacement 48V Battery</td>
<td>BP48</td>
</tr>
<tr>
<td>12V Battery Pack</td>
<td>Replacement 12V Battery</td>
<td>BP12</td>
</tr>
<tr>
<td>Tire &amp; Wheel Assembly – Front</td>
<td>Front Tire &amp; Wheel</td>
<td>FW188</td>
</tr>
<tr>
<td>Tire &amp; Wheel Assembly – Rear</td>
<td>Rear Tire &amp; Wheel</td>
<td>RW2010</td>
</tr>
</tbody>
</table>

PRODUCT WARRANTY AND REGISTRATION

Fill out the registration card in the owner’s manual packet or go on-line to www.ravenamerica.com to register. Registered owners will receive a complimentary cover for your MPV and receive important product updates and other important information from Denver Global Products.

**Warranty**

The Manufacturer warrants to the original consumer purchaser that this product as manufactured is free from defects in materials and workmanship. For a period of three (3) years from date of purchase by the original consumer purchaser, we will repair or replace, at our option, without charge for parts or labor incurred in replacing parts, any part which we find to be defective due to materials or workmanship. This Warranty is subject to the following limitations and exclusions:

1. This Warranty does not apply to the battery (except as noted below) or components parts thereof. Please refer to the applicable manufacturer’s Warranty on these items.
2. Transportation charges for the movement of any power equipment unit or attachment are the responsibility of the purchaser. Transportation charges for any parts submitted for replacement under this Warranty must be paid by the purchaser unless such return is requested by the manufacturer.
3. Engine Warranty: The engine is warranted free from material defect for the period of two (2) years from the date of purchase. Routine service must be maintained as instructed in the owner’s manual.
4. Battery Warranty: On products equipped with a battery, we will replace, without charge to you, any battery which we find to be defective in manufacture, during the first one (1) year of ownership.
5. This Warranty applies only to products which have been properly assembled, adjusted, operated, and maintained in accordance with the instructions furnished. This Warranty does not apply to any product which has been subjected to alteration, misuse, abuse, improper assembly or installation, delivery damage, or to normal wear of the product.
6 Exclusions: This warranty does not cover: normal wear; contaminants in the fuel or oil; damage as a result of use in a manner for which the product was not designed; damage caused by modification or use of unsuitable attachments or accessories, or other misuse and neglect; damage caused by failure to follow the prescribed warnings, operating practices, maintenance, and storage procedures; parts affected or damaged by accident and/or collision; damage due to transporting, handling, storage or any other causes other than defects in material or workmanship of the product.

7 In the event you have a claim under this Warranty, you must work with an authorized service location. Should you have any unanswered questions concerning this Warranty, please contact 1-888-321-5700 with the model number, serial number and date of purchase of your product.

THIS WARRANTY DOES NOT APPLY TO INCIDENTAL OR CONSEQUENTIAL DAMAGES AND ANY IMPLIED WARRANTIES ARE LIMITED TO THE SAME TIME PERIODS STATED HEREIN FOR OUR EXPRESSED WARRANTIES. Some areas do not allow the limitation of consequential damages or limitations of how long an implied Warranty may last, so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights, and you may have other rights which vary from locale to locale.

Product Registration

Thank you for your Purchase. To ensure you receive up to the minute information regarding your MPV in the event of product updates, please register your MPV within 30 days of purchase.

Your information will be held in confidence and not sold to third parties for any reason. While registration provides benefits of current and future product knowledge, it does not void or diminish your warranty rights.

Please complete the included registration card, or register on-line at www.ravenamerica.com.

Please visit:
http://www.ravenamerica.com/

Or call: 1-888-321-5700

Or write to:
Denver Global Products
1000 E. Powell Drive
Lincolnton, NC 28092
The MPV is not an ATV. Avoid driving through water.

Store the MPV in a covered, well-ventilated area at all times.

Never interact with the generator if it is wet.