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NEW HOLLAND Rustler™ 115

SERVICE MANUAL



CLC103700630

Edition Code 1109B0110A

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FOREWORD

These vehicles are designed and built to provide the ultimate in performance efficiency; however, proper maintenance and repair are essential for achieving maximum service life and continued safe and reliable operation.

This manual provides detailed information for the maintenance and repair of New Holland Rustler™ 115 vehicles, and should be thoroughly reviewed prior to servicing the vehicle. The procedures provided must be properly implemented, and the DANGER, WARNING, and CAUTION statements must be heeded.

This manual was written for the trained technician who already possesses knowledge and skills in electrical and mechanical repair. *If the technician does not have such knowledge and skills, attempted service or repairs to the vehicle may render the vehicle unsafe.* For this reason, the manufacturer advises that all repairs and/or service be performed by an authorized distributor/dealer representative or by a factory-trained technician.

It is the policy of CNH America LLC to assist its dealers in continually updating their service knowledge and facilities so they can provide prompt and efficient service for vehicle owners. Regional technical representatives, vehicle service seminars, periodic service bulletins, maintenance and service manuals, and other service publications also represent continuing commitment to customer support.

A full line of training and continuing education classes are offered for technicians who want to learn more about our products. For more information, contact your local dealer or CNH America LLC for a list of upcoming classes.

This manual covers all aspects of typical vehicle service; however, unique situations sometimes occur when servicing a vehicle. If it appears that a service question is not answered in this manual, please contact your nearest authorized dealer for assistance. You may also write to us at: CNH America LLC; 700 State Street; Racine, WI 53402 USA.

⚠ WARNING

- **Read Section 1 — Safety before attempting any service on the vehicle.**
- **Before servicing vehicle, read complete section(s) and any referenced information that may be relevant to the service or repair to be performed.**

NOTE: *This manual represents the most current information at the time of publication. The manufacturer is continually working to further improve its vehicles and other products. These improvements may affect servicing procedures. Any modification and/or significant change in specifications or procedures will be forwarded to all dealers and will, when applicable, appear in future editions of this manual.*

The manufacturer reserves the right to change specifications and designs at any time without notice and without the obligation of making changes to units previously sold.

There are no warranties expressed or implied in this manual. See the limited warranty found in the vehicle operator's manual or write to CNH America LLC; 700 State Street; Racine, WI 53402 USA, Attention: Warranty Department.

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SECTION i — INDEX

SAFETY DETAILS

To ensure the safety of those servicing these vehicles, and to protect the vehicles from possible damage resulting from improper service or maintenance, the procedures in this manual must be followed.

It is important to note that throughout this manual there are statements labeled DANGER, WARNING, or CAUTION. These special statements relate to specific safety issues, and must be read, understood, and heeded before proceeding with procedures. There are statements labeled NOTE, which provide other essential service or maintenance information.

PERSONAL SAFETY

⚠ DANGER

- A DANGER indicates an immediate hazard that will result in severe personal injury or death. The color associated with Danger is RED.

⚠ WARNING

- A WARNING indicates an immediate hazard that could result in severe personal injury or death. The color associated with Warning is ORANGE.

⚠ CAUTION

- A CAUTION with the safety alert symbol indicates a hazard or unsafe practice that could result in minor personal injury. The color associated with Caution is YELLOW.

MACHINE SAFETY

CAUTION

- A CAUTION without the safety alert symbol indicates a potentially hazardous situation that could result in property damage.

A CAUTION, without the safety alert symbol, is intended for machine and property safety. It is used throughout this manual followed by specific instructions to prevent machine or property damage. Failure to follow these CAUTION messages could result in machine or property damage.

INFORMATION

NOTE: Instructions that clarify steps, procedures, or other information in this manual.

GENERAL WARNING

The following safety statements must be heeded whenever the vehicle is being operated, repaired, or serviced. Service technicians should become familiar with these general safety statements. Also, other specific safety statements appear throughout this manual and on the vehicle.

⚠ DANGER

- **Battery – Explosive gases!** Do not smoke. Keep sparks and flames away from the vehicle and service area. Ventilate when charging or operating vehicle in an enclosed area. Wear a full face shield and rubber gloves when working on or near batteries.
- **Battery – Poison!** Contains acid! Causes severe burns. Avoid contact with skin, eyes, or clothing. **Antidotes:**
 - External: Flush with water. Call a physician immediately.
 - Internal: Drink large quantities of milk or water. Follow with milk of magnesia or vegetable oil. Call a physician immediately.
 - Eyes: Flush with water for 15 minutes. Call a physician immediately.
- **Gasoline – Flammable! Explosive!** Do not smoke. Keep sparks and flames away from the vehicle and service area. Service only in a well-ventilated area.
- Do not operate engine in an enclosed area without proper ventilation. The engine produces carbon monoxide, which is an odorless, deadly poison that can quickly accumulate in an enclosed cab. Do not run the engine in a parked vehicle without proper cab ventilation. Move to fresh air if you feel nausea, headache, dizziness, drowsiness or weakness.
- The vehicle will not provide protection from lightning, flying objects, or other storm-related hazards. If caught in a storm while driving this vehicle, exit the vehicle and seek shelter in accordance with applicable safety guidelines for your location.
- Do not weld to a wheel or rim until the tire is completely removed. Inflated tires can generate a gas mixture with the air that can be ignited by high temperatures from welding procedures performed on the wheel or rim. Removing the air or loosening the tire on the rim (breaking the bead) will NOT eliminate the hazard. This condition can exist whether tires are inflated or deflated. The tire **MUST** be completely removed from the wheel or rim prior to welding the wheel or rim. Failure to comply will result in death or serious injury.

⚠ WARNING

- The engine produces carbon monoxide, which is a deadly, odorless, colorless gas that can quickly accumulate in an enclosed cab. Do not run the engine in a parked vehicle without proper cab ventilation. Move to fresh air if you feel nausea, headache, dizziness, drowsiness, or weakness.
- Follow the procedures exactly as stated in this manual, and heed all DANGER, WARNING, and CAUTION statements in this manual as well as those on the vehicle.
- This vehicle is not intended to be used where risk of falling objects exist. If your vehicle will be used in such an environment, contact your local dealer.

WARNING CONTINUED ON NEXT PAGE

⚠ WARNING

- Only trained technicians should service or repair the vehicle. Anyone doing even simple repairs or service should have knowledge and experience in electrical and mechanical repair. The appropriate instructions must be used when performing maintenance, service, or accessory installation.
- Prior to servicing the vehicle or leaving the vehicle unattended, turn the key switch OFF, remove the key, and place the Forward/Reverse handle in the NEUTRAL position. Chock the wheels when servicing the vehicle.
- To avoid unintentionally starting the vehicle disconnect battery and spark plug wires. See Disconnecting the Battery – Gasoline Vehicle on page 1-4.
- Frame ground – Do not allow tools or other metal objects to contact frame when disconnecting battery cables or other electrical wiring. Do not allow a positive wire to touch the vehicle frame, engine, or any other metal component.
- Wear safety glasses or approved eye protection when servicing the vehicle. Wear a full face shield and rubber gloves when working on or near batteries.
- Do not wear loose clothing or jewelry such as rings, watches, chains, etc., when servicing the vehicle.
- Moving parts! Do not attempt to service the vehicle while it is running.
- Ensure battery connections are clean and properly tightened. See Battery on page 12-11.
- Hot! Do not attempt to service hot engine or exhaust system. Failure to heed this warning could result in severe burns.
- Use insulated tools when working near batteries or electrical connections. Use extreme caution to avoid shorting of components or wiring.
- Check the vehicle owner's manual for proper location of all vehicle safety and operation decals and make sure they are in place and are easy to read.
- Any modification or change to the vehicle that affects the stability or handling of the vehicle, or increases maximum vehicle speed beyond factory specifications, could result in severe personal injury or death.
- The diameter of all tires on the vehicle must be equal; otherwise the all-wheel drive system will not operate as intended and could result in severe personal injury or death. Never install tires of different diameters on the vehicle.
- Lift only one end of the vehicle at a time. Use a suitable lifting device (chain hoist or hydraulic floor jack) with 1000 lb. (454 kg) minimum lifting capacity. Do not use lifting device to hold vehicle in raised position. Use approved jack stands of proper weight capacity to support the vehicle and chock the wheels that remain on the floor. When not performing a test or service procedure that requires movement of the wheels, lock the brakes.
- When servicing the vehicle with part of the vehicle on jack stands, do not operate the engine with the Forward/Reverse handle in either the FORWARD or REVERSE position. The four-wheel drive system may engage any wheel(s), front or rear, depending on the mode selected (Figure 1-2, Page 1-4).
- If wires are removed or replaced, make sure wiring and wire harness are properly routed and secured. Failure to properly route and secure wiring could result in vehicle malfunction, property damage, personal injury, or death.
- For vehicles with cargo beds, remove all cargo before raising the bed or servicing the vehicle. Ensure that the bed locking pin is securely engaged while bed is raised. Do not close bed until all persons are clear of cargo bed area. Keep hands clear of all crush areas. Do not drop cargo bed; lower gently and keep entire body clear. Failure to heed this warning could result in severe personal injury or death.

WARNING CONTINUED ON NEXT PAGE

⚠ WARNING

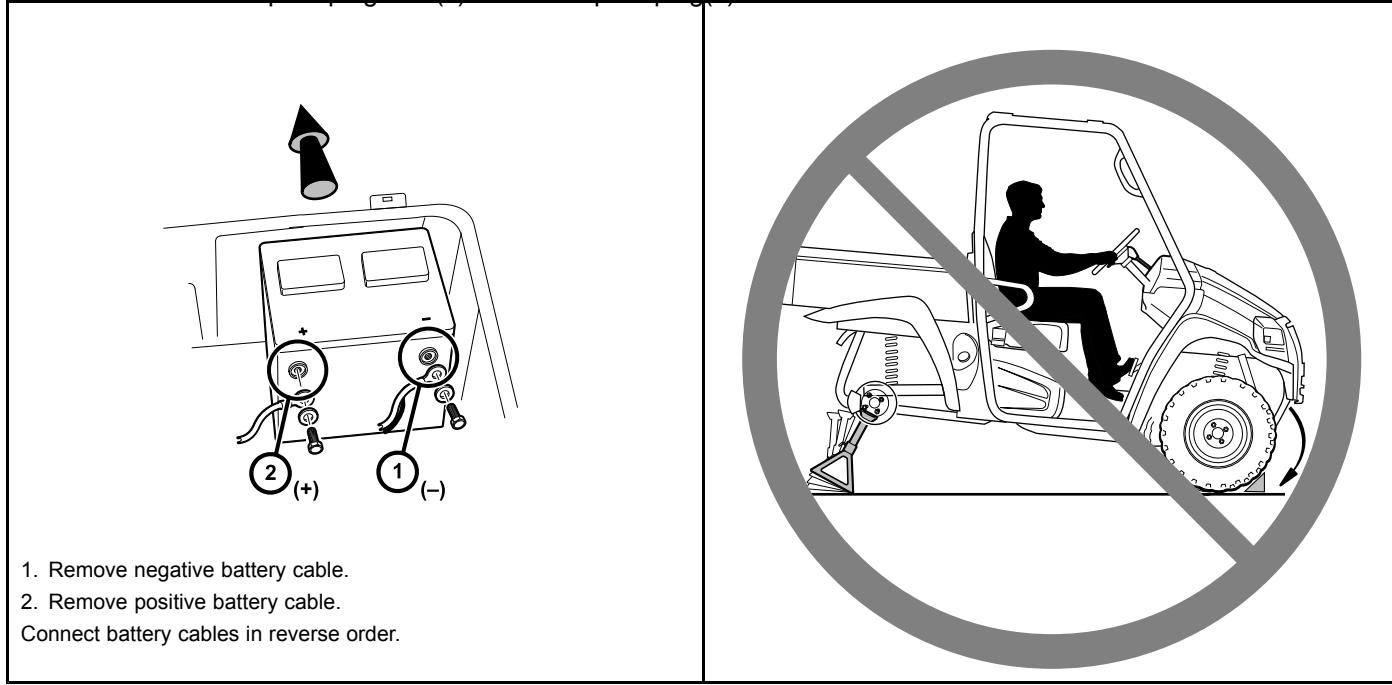
- Improper use of the vehicle or failure to properly maintain it could result in decreased vehicle performance, severe personal injury, or death.
- Do not leave children unattended on vehicle.

DISABLING THE VEHICLE

1. Set the park brake.
2. Turn the key switch OFF and remove the key.
3. Place the Forward/Reverse control in the NEUTRAL position.
4. In addition, chock the wheels if servicing or repairing the vehicle.

DISCONNECTING THE BATTERY – GASOLINE VEHICLES

1. Disable the vehicle. See **Disabling the Vehicle** on page 1-4.
2. Disconnect the battery cables, negative (–) cable first, as shown (Figure 1-1).
3. Disconnect the spark plug wire(s) from the spark plug(s).



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Figure 1-1 Battery Cable Removal

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Figure 1-2 4x4 Drive Warning

CONNECTING THE BATTERY – GASOLINE VEHICLES

1. Connect the battery cables, positive (+) cable first.
2. Tighten battery terminals to 80 in-lb (9 N·m).
3. Coat terminals with Battery Terminal Protector Spray (P/N CLC1014305) to minimize corrosion.
4. Connect the spark plug wire(s) to the spark plug(s).

SECTION 2 — VEHICLE SPECIFICATIONS

SPECIFICATIONS	4X2	4X4	4X4 WITH CAB
POWER SOURCE	GASO-LINE	GASO-LINE	GASOLINE
Engine: 4-cycle OHV, 480 cc, 14.0 maximum HP @3600 RPM (per SAE J 1940/1349), twin-cylinder, air-cooled, with pressure lubrication system	•	•	•
Fuel system: Down-draft carburetor with float bowl, fixed jets, fuel filters, and impulse fuel pump	•	•	•
Governor: Internal to engine, centrifugal	•	•	•
Ignition: Transistorized magneto	•	•	•
Transmission: Forward and reverse with neutral (18.19:1 forward, 34.37:1 reverse)	•	•	•
Electrical system: 12 volt starting battery: 525 cca at 0 °F (-17.8 °C). 80-minute reserve capacity (25-amp at 80 °F) 35 amp-hours	•	•	•
Torque converter: Automatic, variable-speed, dry type	•	•	•
STEERING/SUSPENSION/BRAKES			
Suspension:			
Front: MacPherson Strut	•	•	•
Rear: Independent with coil-over shock absorbers			
Steering: Self-adjusting rack and pinion, Ackerman	•	•	•
Brakes: Hydraulic brake system – brake pads and discs on each wheel with separate hand-operated park brake	•	•	•
BODY/CHASSIS			
Frame/Chassis: Box tube steel	•	•	•
Side and rear body: Polypropylene	•	•	•
Cargo bed: Powder-coated steel	•	•	•
Front body: TPO (ThermoPlastic Olefin)	•	•	•
Tires: All Terrain: 25 x 9 – 12 front and rear, tubeless, 4-ply rated load range	•		
Mud: 25 x 9 – 12 front and rear; tubeless, 4-ply rated load range			
Tires: All Terrain: 25 x 9 – 12 front, 25 x 11 – 12 rear, tubeless, 4-ply rated load range		•	•
Mud: 25 x 9 – 12 front, 25 x 11 – 12 rear; tubeless, 4-ply rated load range			
DIMENSIONS/WEIGHT			
Overall length:	105 in. (266.7 cm)		
Overall width:	55.0 in. (139.7 cm)		
Overall height (with ROPS): with all-terrain tires	73.0 in. (185.4 cm)		
Wheelbase	69.5 in. (176.5 cm)		
Ground clearance: under transaxle	9.0 in. (22.9 cm)		
Front wheel track width	44 in. (111.8 cm)		
Rear wheel track width	45 in. (114.3 cm)		
Weight: with all-terrain tires and without brush guard	1200 lb. (544.3 kg)	1210 lb. (548.8 kg)	1275 lb. (578.3 kg)

TABLE CONTINUED ON NEXT PAGE

SPECIFICATIONS	4X2	4X4	4X4 WITH CAB
POWER SOURCE	GASO-LINE	GASO-LINE	GASOLINE
Forward speed	25 mph (40 km/h)		
Governed RPM	3950		
Turning Radius	139 in. (354 cm)		
Load bed height	32 in. (81.3 cm)		
Load bed size (box bed inside dimensions)	34 x 47 x 10 in. (86.4 x 119.4 x 25.4 cm) (9.25 cubic feet)		
Maximum payload capacity (level surface only)	425 lb. (193 kg)		
Vehicle rated capacity (payload, driver, and passenger; level surface only)	925 lb. (420 kg)		
Maximum gross vehicle weight (fully loaded vehicle, including accessories)	2135 lb. (968 kg)		
Standard seating capacity	2		
LIQUID CAPACITIES			
Engine crankcase with filter: SAE 10W-30, API classification SJ	1.5 qt. (1.4 L)		
Front differential: 80W90 gear oil	5.5 oz. (170 mL)		
Rear transaxle: 10W-30 SF, SG, SH	1 gal. (3.79 L)		
Brake fluid: DOT 5 (silicone) brake fluid	8 oz. (240 ml)		
Fuel tank: unleaded gasoline	5.2 gallons (19.7 L)		
TIRE PRESSURE			
All-terrain tread and mud tires	14 - 18 psi (0.75 - 1.00 Bars)		

⚠ DANGER

- See General Warning on page 1-2.

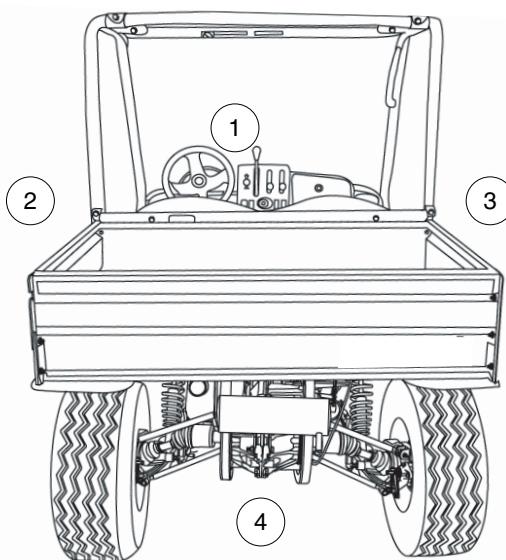
⚠ WARNING

- See General Warning on page 1-2.

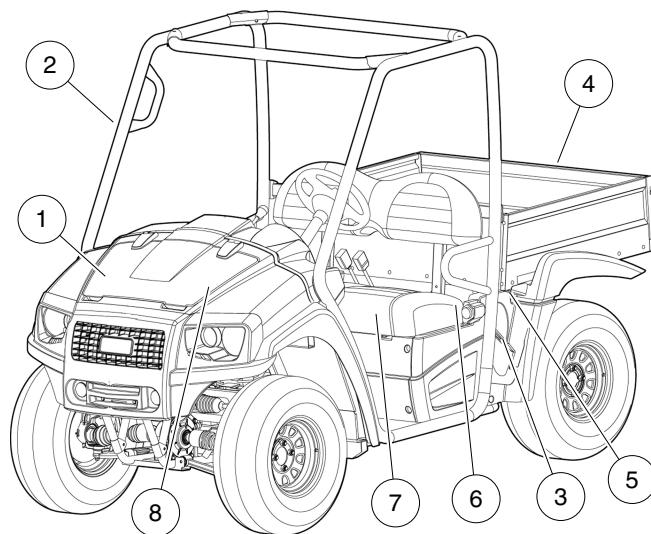
Throughout this manual, important features unique to each model are highlighted. The manufacturer recommends the owner/operator read and understand this manual and pay special attention to features specific to their vehicle(s).

Refer to the owner's manual provided with the vehicle for information on the following topics:

- Controls and Indicators
- Driving Instructions
- Bed Latch
- Bed Locking Pin
- Loading and Unloading
- Towing with the Vehicle
- Transporting on a Trailer
- Subsequent Owner Registration
- Warranties



The terms front (1), left-hand (2), right-hand (3) and rear (4) are used in this manual to indicate the sides as they are seen from the operator's seat.



1. Hood 2. ROPS 3. Fuel Fill Cap 4. Cargo Bed 5. Bed Lift Latch – vehicles with manual (standard) bed lift only 6. Engine Compartment, Battery, Fuel Tank (under seat and cargo bed) 7. Seat 8. Brake Fluid Reservoir (under hood)

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Figure 3-2 Vehicle Components

MODEL IDENTIFICATION

The serial number of each vehicle is printed on a decal mounted either below the passenger side cup holder or above the accelerator or brake pedal (**Figure 3-3**). **See following NOTE.**

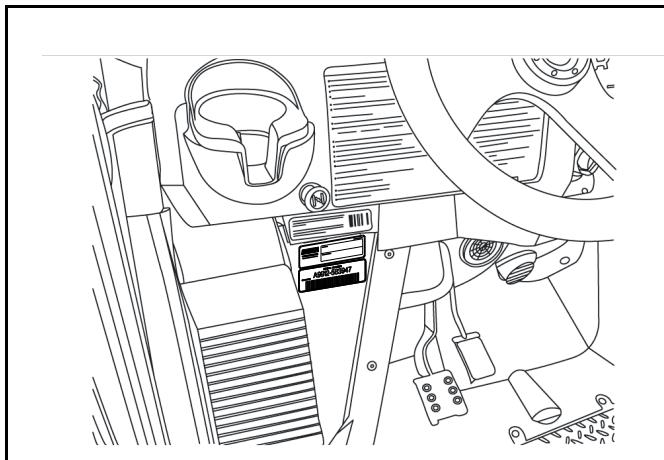
NOTE: *Have the vehicle serial number available when ordering parts or making inquiries.*

Build Code: The build code is a five-digit number that appears on the manufacturer's vehicle serial number decal (**Figure 3-3**). The build code exists to enable the user to identify the correct operator's manual for a vehicle. This operator's manual is valid for the build code range indicated on the back cover of this operator's manual.

IDENTIFICATION NUMBERS

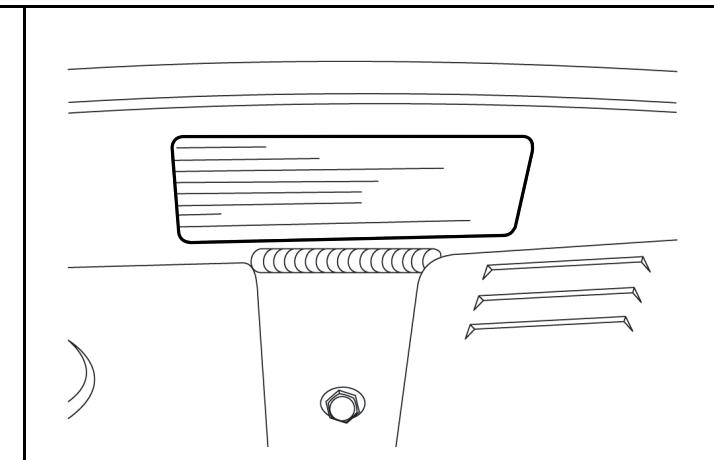
Write your vehicle model number, model serial number and engine serial number on the lines provided below. If needed, give these numbers to your dealer when you need parts or information for your vehicle. Make a record of the numbers. Keep the record and your Manufacturer's Statement of Origin in a safe place. If the vehicle is stolen, report the numbers to your local law enforcement agency.

Vehicle Model and Type (Figure 3-3)	
Vehicle Serial Number (Figure 3-3)	
Year of Build (Figure 3-3)	
ROPS Serial Number (Figure 3-4)	
Engine Serial Number (Figure 3-5)	
Transaxle Serial Number (Figure 3-6)	



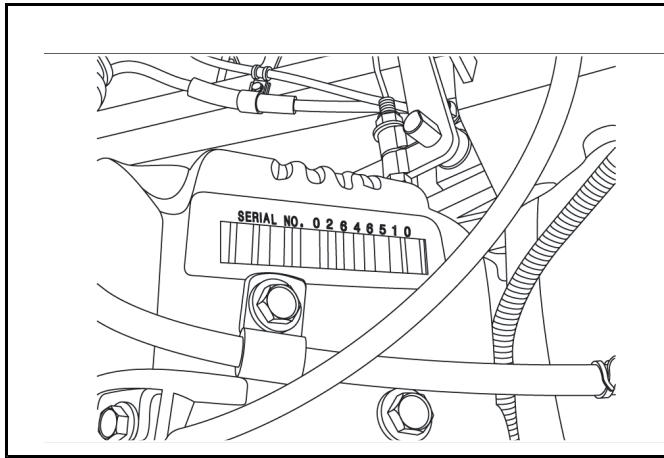
1636

Figure 3-3 Vehicle Serial Number Location



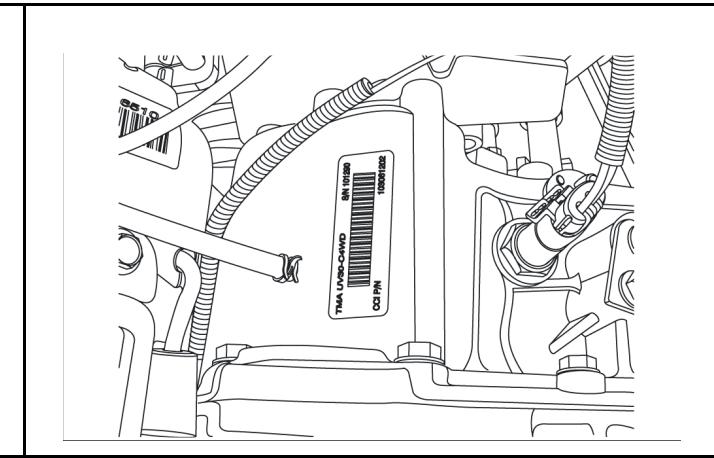
1637

Figure 3-4 ROPS Serial Number Location



1638

Figure 3-5 Gasoline Engine Serial Number Location



1639

Figure 3-6 Transaxle Serial Number Location

STORAGE

See General Warning on page 1-2.

DANGER

- Never attempt to drain gasoline when the engine is hot or while it is running.
- Be sure to clean up any spilled gasoline before operating the vehicle.
- Store fuel in an approved fuel container only. Store in a well-ventilated area away from sparks, open flames, heaters, or heat sources.
- Keep fuel out of the reach of children.
- Do not siphon fuel from the vehicle.

⚠ WARNING

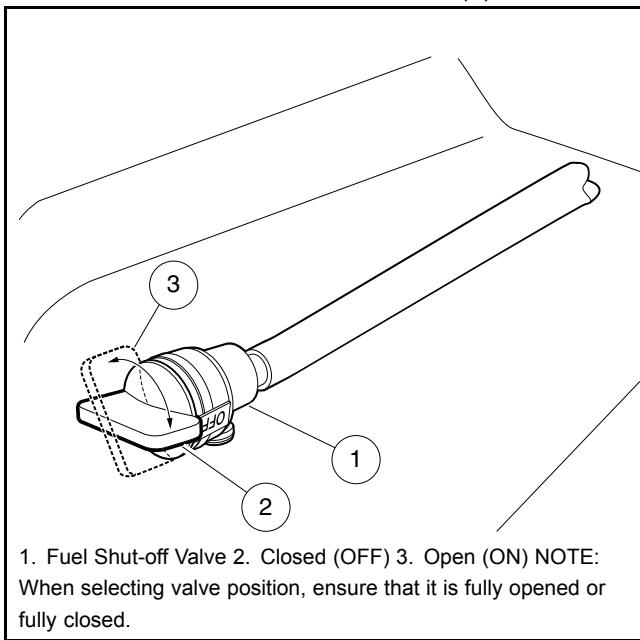
- Turn the key switch to the OFF position, remove the key, and leave the Forward/Reverse handle in the NEUTRAL position during storage. This is to prevent unintentionally starting the vehicle or a fire hazard.
- Turn the fuel shut-off valve (1) the closed (OFF) position (Figure 3-7, Page 3-4).
- Do not attempt to charge frozen batteries or batteries with bulged cases. Discard the battery. Frozen batteries can explode.

⚠ CAUTION

- Batteries in a low state of charge will freeze at low temperatures.

PREPARING THE VEHICLE FOR EXTENDED STORAGE

1. Unload the vehicle so that the tires are supporting only the weight of the vehicle.
2. Store the vehicle in a cool, dry place. This will minimize battery self-discharge. If the battery appears to be weak, have it charged by a trained technician. Use an automotive-type 12-volt battery charger rated at 10 amps or less. Check electrolyte level after charging and add distilled water if necessary.
3. Make sure the key switch is in the OFF position and the Forward/Reverse handle is in the NEUTRAL position. Chock the wheels.
4. Prepare the fuel tank.
 - 4.1. Fill the tank with fresh fuel.
 - 4.2. Following the manufacturer's directions, add a commercially available fuel stabilizer (such as Sta-Bil®). Run the engine in a well-ventilated area to allow treated fuel to replace untreated fuel in the carburetor.
 - 4.3. Turn the fuel shut-off valve (1) to the closed (OFF) position (Figure 3-7, Page 3-4).



- 4.4. Disconnect the fuel vent line from the fuel tank vent nipple.

- 4.5. Plug the fuel tank vent nipple so that it is air tight. The manufacturer recommends using a slip-on vinyl cap.
5. Remove both spark plugs, and pour 1/2 ounce (14.2 mL) of SAE 10 weight oil through each of the two spark plug holes. Rotate the engine crankshaft by hand several times, then install both spark plugs.
6. Change engine oil. **See Engine Oil and Filter Change on page 10-7.**
7. Disconnect the battery cables, negative (–) cable first. **See WARNING “To avoid unintentionally starting...” in General Warning on page 1-2.**
8. The battery should be clean and free of corrosion. Wash the battery top and terminals with a solution of baking soda and water (1 cup (237 mL) baking soda per 1 gallon (3.8 L) of water). Rinse the solution off the battery. Do not allow this solution to enter the battery. Be sure the terminals are tight. Let the terminals dry and then coat them with Battery Terminal Protector Spray (P/N CLC1014305).
9. Adjust the tires to the recommended tire pressure. Section 2 — Vehicle Specifications
10. Perform semiannual periodic lubrication. **See Periodic Maintenance on page 10-1.**
11. Thoroughly clean the front body, rear body, seats, cargo bed, engine compartment, and underside of vehicle.
12. Do not engage the park brake. Chock the wheels to prevent the vehicle from rolling.

RETURNING THE STORED VEHICLE TO SERVICE

1. Make sure the key switch is in the OFF position and the Forward/Reverse handle is in the NEUTRAL position. Chock the wheels.
2. Restore the fuel system to operation.
 - 2.1. Remove the plug from the fuel tank vent.
 - 2.2. Connect the vent tube to the fuel tank vent.
3. Connect the battery cables, positive (+) cable first, and tighten the terminals to 80 in-lb (9 N·m). Coat terminals with Battery Terminal Protector Spray (P/N CLC1014305).
4. Completely open the fuel shut-off valve (**Figure 3-7, Page 3-4**). Ensure the valve is fully open. A partially closed fuel shut-off valve combined with the use of the choke can result in a fouled spark plug and engine failure.
5. Place the Forward/Reverse handle in the NEUTRAL position. Crank the engine until fuel is pumped into the carburetor and the fuel lines and the engine starts. Turn the engine off. **See following NOTE.**

NOTE: Due to the oil added to the gasoline engine in preparation for storage, the engine may smoke excessively for a short time when it is run for the first time after storage.

6. Perform the Pre-Operation and Daily Safety Checklist and the Performance Inspection on page 10-2.

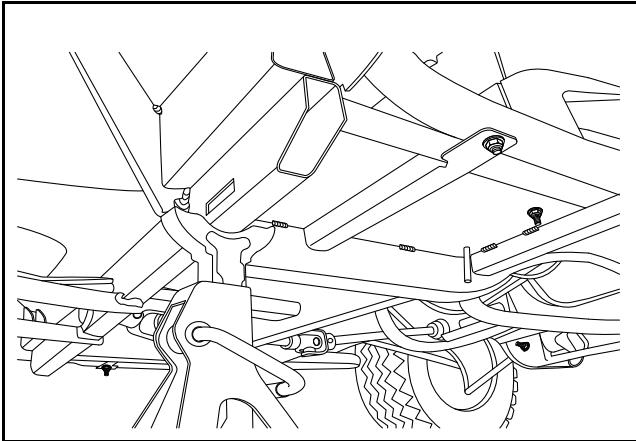
LIFTING THE VEHICLE

See General Warning on page 1-2.

LIFTING ONLY THE FRONT

1. Place vehicle on a level surface.
2. Turn the key switch OFF and remove the key. Place the Forward/Reverse handle in NEUTRAL and set the park brake. Chock the rear wheels.

3. Disconnect the battery cables and spark plug wires as instructed. **See WARNING “To avoid unintentionally starting...” in General Warning on page 1-2.**
4. If removing wheel, loosen the front wheel lug nuts.
5. Lift front of vehicle and support on jack stands (**Figure 3-8, Page 3-6**). **See WARNING “Lift only one end...” in General Warning on page 1-2.**
6. Remove the wheel.

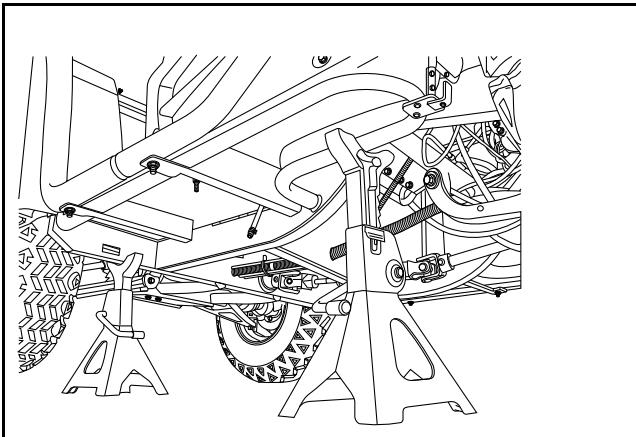


1026

Figure 3-8 Front Jack Stand Placement

LIFTING ONLY THE REAR

1. Place vehicle on a level surface.
2. Turn the key switch OFF and remove the key. Place the Forward/Reverse handle in NEUTRAL and set the park brake. Chock the front wheels.
3. Disconnect the battery cables and spark plug wires as instructed. **See WARNING “To avoid unintentionally starting...” in General Warning on page 1-2.**
4. If removing wheel, loosen the rear wheel lug nuts.
5. Lift rear of vehicle and support on jack stands (**Figure 3-9, Page 3-6**). **See WARNING “Lift only one end...” in General Warning on page 1-2.**
6. Remove the wheel.

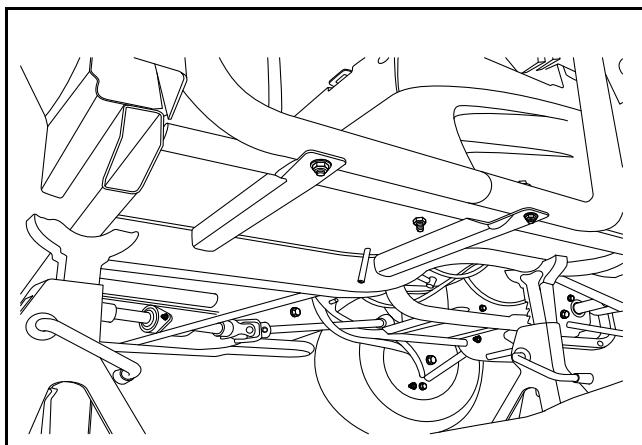


1024

Figure 3-9 Rear Jack Stand Placement

LIFTING THE ENTIRE VEHICLE

1. Place vehicle on a level surface.
2. Turn the key switch OFF and remove the key. Place the Forward/Reverse handle in NEUTRAL and set the park brake. Chock the wheels.
3. Disconnect the battery cables and spark plug wires as instructed. **See WARNING "To avoid unintentionally starting..." in General Warning on page 1-2.**
4. If removing wheels, loosen the lug nuts.
5. Lift one side of vehicle and support on jack stands (**Figure 3-10, Page 3-7**).
6. Lift other side of vehicle and support on jack stands.
7. Remove the wheels.



1025

Figure 3-10 Jack Stand Placement

USING A BOOSTER BATTERY (JUMP STARTING)

See General Warning on page 1-2.

⚠ WARNING

- Wear safety glasses or approved eye protection when servicing the vehicle. Wear a full face shield and rubber gloves when working on or near batteries.
- When jumping from a booster battery, make the final connection the negative (-) cable.
- Do not jump start or charge a frozen or damaged battery. Unplug charger before connecting or disconnecting cables to the battery. Never lean over battery while boosting, testing, or charging.

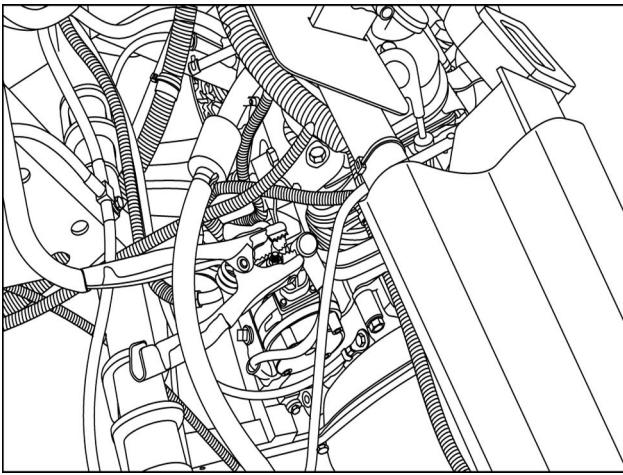
If it is necessary to use a booster battery to start the engine, BE CAREFUL!

1. Turn the key switch to the OFF position. Place the Forward/Reverse handle in the NEUTRAL position, engage the park brake and chock the wheels.
2. Ensure the booster battery is 12-volt. **See following NOTE.**

NOTE: A starting battery is recommended but a deep cycle battery can be used if necessary.

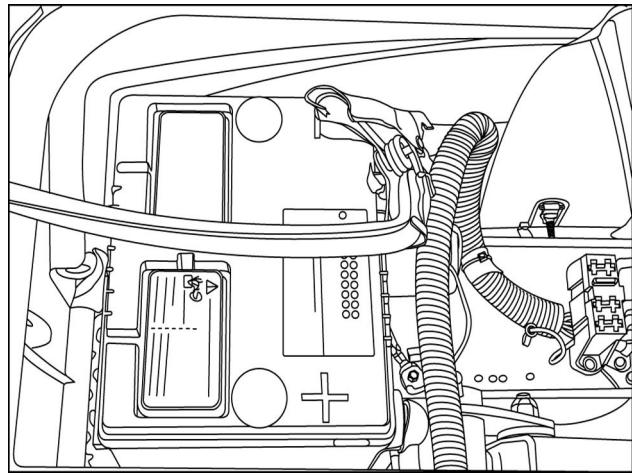
3. Access battery by removing the seat.
4. Locate the vehicle battery on the passenger side of the vehicle.

5. Connect the end of the first cable to the positive (+) terminal of the booster battery. Connect the other end of the same cable to the positive (+) terminal of the solenoid (Figure 3-11, Page 3-8).
6. Connect the end of the second cable to the negative (-) terminal of the booster battery. Connect the other end of the same cable to the negative (-) terminal of the disabled vehicle battery (Figure 3-12, Page 3-8).
7. Start the engine. After the engine has started, remove the cable from the negative (-) terminal of the disabled vehicle battery first. Next, remove the other end of the cable from the negative (-) terminal of the booster battery. Then, remove the cable from the positive (+) terminal of the solenoid followed by the other end of the cable from the positive (+) terminal of the booster battery.



1640

Figure 3-11 Positive (+) Cable to Battery Side of Solenoid



1641

Figure 3-12 Negative (-) Cable to Negative Terminal of Weak Battery

SECTION 4 — BODY AND TRIM

⚠ DANGER

- See General Warning on page 1-2.

⚠ WARNING

- See General Warning on page 1-2.

CLEANING THE VEHICLE

See General Warning on page 1-2.

CAUTION

- Do not use detergents or cleaning solvents that contain ammonia, aromatic solvents, or alkali materials on body panels or seats.
- Do not allow battery acid to drip on body panels. Battery acid will cause permanent damage. Wash spilled battery acid from body panels immediately.

Each vehicle is equipped with a TPO front body, a polypropylene rear body and a powder-coated steel cargo bed. Use a mild soap or detergent with a sponge or soft cloth for normal cleaning. Use non-abrasive wax products. Battery acid, fertilizers, tars, asphalt, creosote, paint, or chewing gum should be removed immediately to prevent possible stains. Because the finish on the front body is the same as the finish on today's automobiles, commercial automotive cleaning products should be used.

The manufacturer does not recommend any type of pressure washing or steam cleaning. Such a process will expose electrical components to moisture. Moisture entering electrical components can result in water damage and subsequent component failure.

The seats of the vehicle will last longer with proper cleaning. To preserve seat appearance, clean regularly with mild soap or detergent applied with a sponge or soft cloth. Use a soft bristle brush to clean areas that are especially soiled. Use the following guidelines:

Light Soiling — A solution of 10% liquid soap and warm water applied with a soft, damp cloth is recommended. A soft bristle brush may be used if necessary. Wipe off any residue with a water dampened cloth.

For Difficult Stains — Dampen a soft, white cloth with a solution of 10% household bleach (sodium hypochlorite) and 90% water. Rub gently to remove stain, then rinse with a water dampened cloth to remove bleach concentration.

For More Difficult Stains — Perform previous procedure using full-strength bleach; or allow bleach to puddle on affected area for approximately 30 minutes. Rinse with a water dampened cloth to remove any remaining bleach concentration.

CAUTION

- To prevent damage to the vehicle when removing difficult stains or heavy soiling, remove the seats from the vehicle first.

FRONT BODY REPAIR

See General Warning on page 1-2.

STRESS LINES OR STREAKS

Repeatedly flexing the front body may cause white stress lines or streaks in the finish. To remove them:

1. Hold a heat gun 12 inches (30 cm) away from the affected area, with the gun on its lowest heat setting.
2. Slowly wave the heat gun back and forth over the affected area until the streak fades.
3. It may be necessary to move the gun closer to the body to fade the streak, but under no circumstance should the gun be held closer than 6 inches (15 cm) to the body. **See following CAUTION.**

CAUTION

- Holding heat gun too close to body could melt body or damage finish.

MINOR IMPACT DAMAGE/DEFORMATIONS

Minor impact damage in the front body can be repaired using a procedure similar to the one used to remove stress lines. To remove deformations resulting from minor impact damage:

1. Hold a heat gun 12 inches (30 cm) away from the affected area, with the gun on its lowest heat setting.
2. Periodically remove the heat gun and bend the body, using a push block, in the opposite direction of the deformation.
3. Continue heating and bending the body until the original shape returns. Under no circumstance should the gun be held closer than 6 inches (15 cm) to the body. **See preceding CAUTION.**

MINOR SCRATCHES AND SURFACE BLEMISHES

For minor scratches or blemishes in the TPO body that do not penetrate the finish:

1. Thoroughly clean the affected area using a strong, non-abrasive detergent and hot water, then clean with Ultra-Kleen® Solvent Cleaner to remove any oil-based contaminants.
2. Apply a light coat of 210® Plastic Cleaner/Polish to the affected area. Lightly buff imperfection with a clean, soft cloth or buff pad. Do not use any kind of polishing compound on monocoat finished body assemblies.
3. Wax the entire body part to restore luster and weather protection.

SMALL SCRATCHES THAT CANNOT BE BUFFED OUT

1. Thoroughly clean the affected area and then dry.
2. Using 240 grit or finer sandpaper, lightly sand scratch to feather edges. Finish sand scratch with 320 grit or finer paper to remove gloss from surface. Sand as little body surface as possible beyond scratch. **See following CAUTION.**

CAUTION

- Be careful not to sand completely through the finish to the body material. If the finish is sanded through and the thermo plastic olefin (TPO) body material is exposed, refer to Gouges, Punctures, Tears, Large Scratches, and Abrasions on page 4-3.

3. Using the brush provided with the touch-up paint (available as a service part, see following color chart), apply paint to the scratch. Multiple layers of paint may be required to fill the scratch.
4. Allow paint to dry completely (approximately 10-20 minutes), then lightly buff the imperfection.
5. Apply wax to the entire body part to restore luster and weather protection.

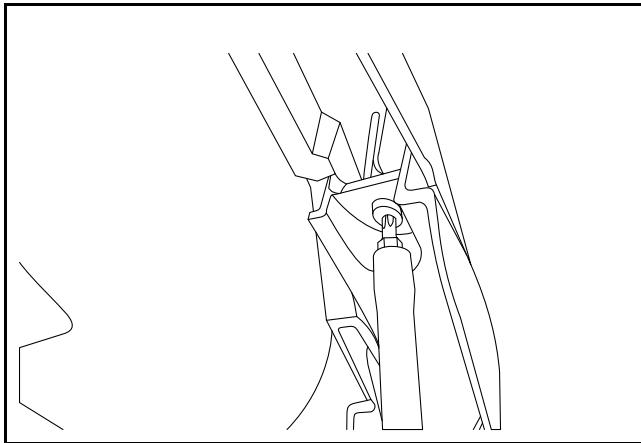
GOUGES, PUNCTURES, TEARS, LARGE SCRATCHES, AND ABRASIONS

Touch-up is not recommended. Replace the entire body part or have it repaired by a professional paint and body repair shop with experience repairing TPO bodies.

FRONT BODY

See General Warning on page 1-2.

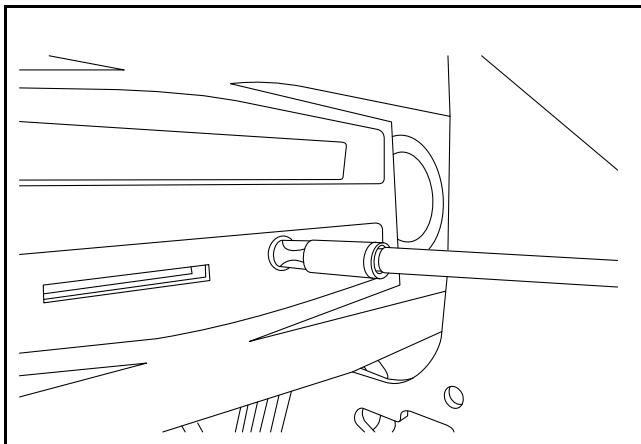
FRONT FASCIA REMOVAL



¹⁰⁶²

Figure 4-1 Front Fascia Removal – under side of outer ends of front fascia

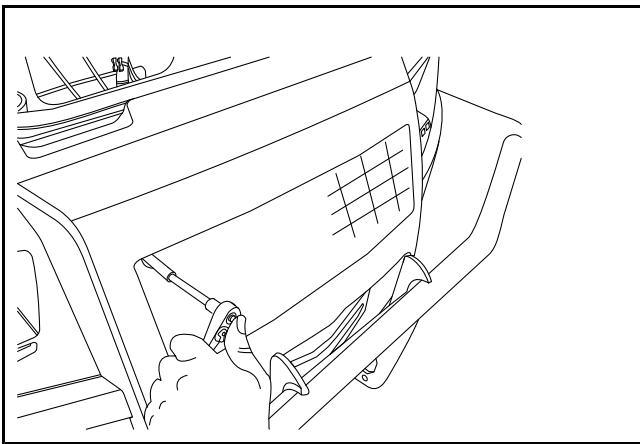
1. Remove the two torx-head screws that secure the front of the each fender to the under side outer ends of the fascia (Figure 4-1, Page 4-4).



¹⁰⁶³

Figure 4-2 Front Fascia Removal – lower front fascia

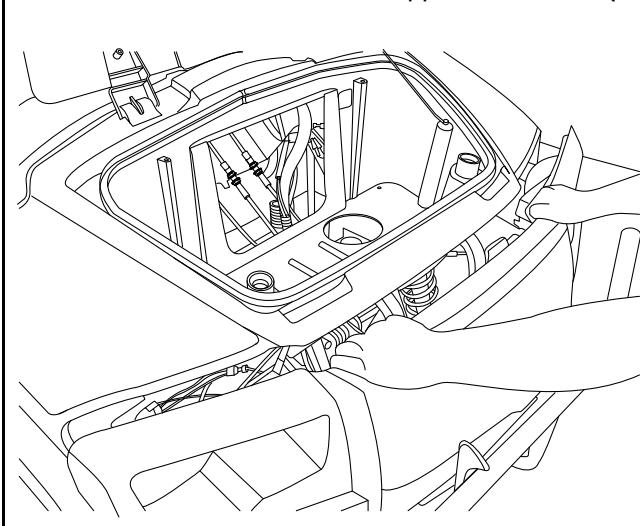
2. Remove the two bolts from lower front fascia (Figure 4-2, Page 4-4).



1065

Figure 4-3 Front Fascia Removal – upper front fascia

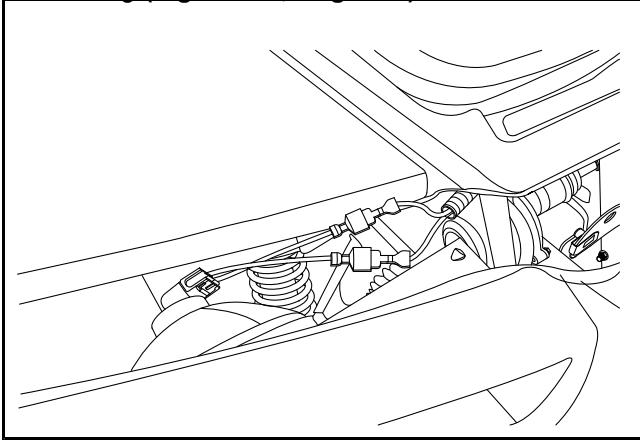
3. Remove the two bolts from upper front fascia (Figure 4-3, Page 4-5).



1054

Figure 4-4 Front Fascia Removal – pulling fascia forward

4. Grip fascia, lift slightly to disengage the front fascia hook and pull fascia forward slightly to expose the headlight wiring (Figure 4-4, Page 4-5).



1053

Figure 4-5 Front Fascia Removal – disconnect headlights

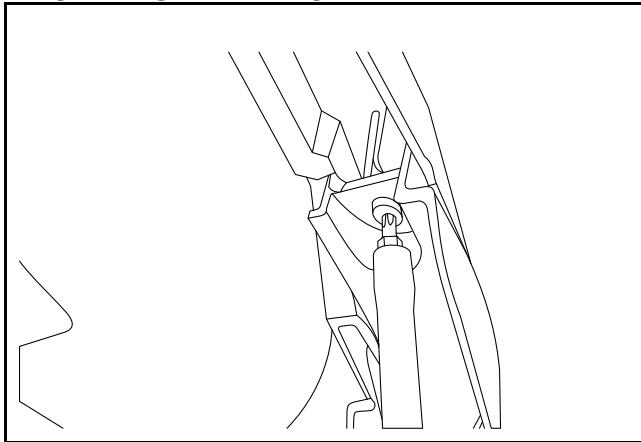
5. Disconnect headlight wiring at connectors (Figure 4-5, Page 4-5).

6. Carefully remove front fascia from vehicle.

FRONT FASCIA INSTALLATION

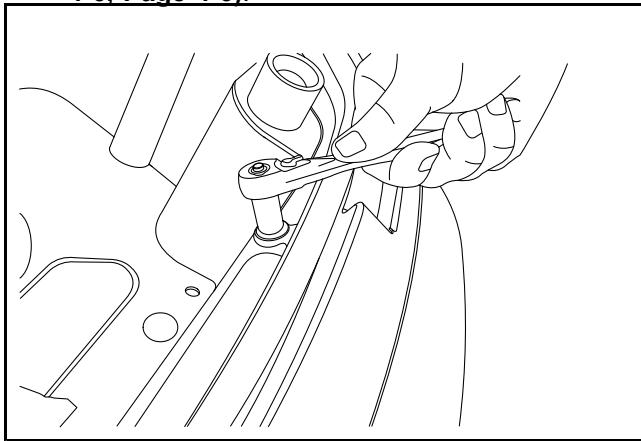
1. Move front fascia in place and connect headlight wiring (**Figure 4-5, Page 4-5**).
2. Carefully insert molded-in lower front fascia retaining hook into receiving slot in the fascia mounting frame.
3. Secure the fascia to the fascia mounting frame using four bolts. Tighten the hardware to 22 in-lb (2.5 N·m).
4. Secure the front of each fender to the lower corner of the fascia using two torx-head screws. Tighten screws to 22 in-lb (2.5 N·m).

FRONT COWL REMOVAL



1062
Figure 4-6 Front Cowl Removal – under side of outer ends of front fascia

1. Turn the key switch OFF and remove the key. Place the Forward/Reverse handle in NEUTRAL and set the park brake. Chock the wheels.
2. Disconnect the battery cables and spark plug wires as instructed. **See WARNING “To avoid unintentionally starting...” in General Warning on page 1-2.**
3. Remove the two torx-head screws that secure the front of each fender to the lower corner of the fascia (**Figure 4-6, Page 4-6**).



1135
Figure 4-7 Front Cowl Removal – removing under hood bolts

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<https://www.arepairmanual.com/downloads/new-holland-rustler-115-utility-vehicle-service-repair-manual/>