ARCTIC CAT®

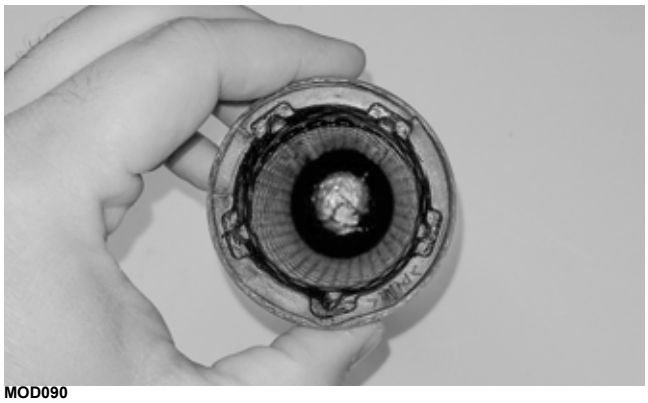
SERVICE MANUAL

p/n: 2262-945
10/20

Prowler Pro Crew

MOD089

7. Remove and inspect the safety filter.

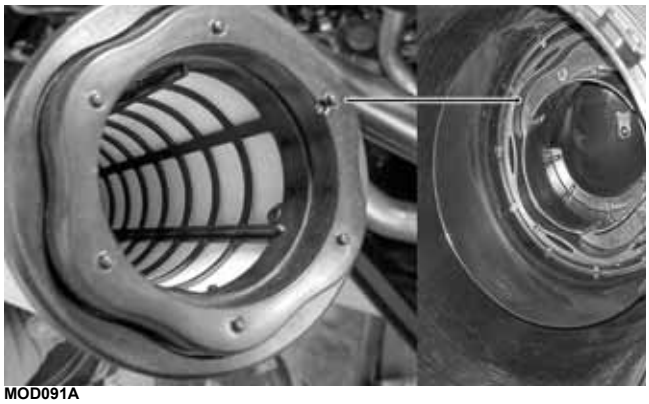


MOD090

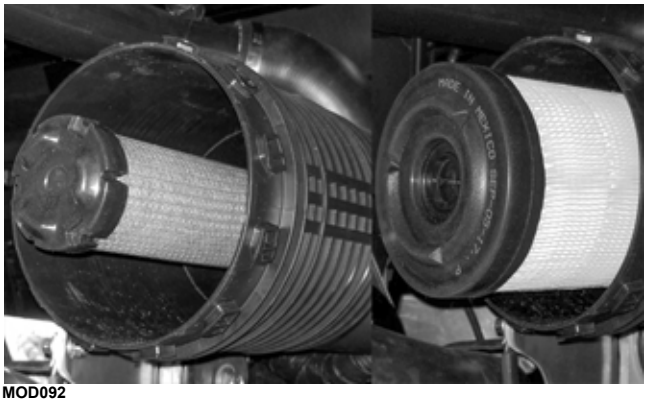
INSTALLING

1. Install safety filter; then install the primary filter.

■NOTE: The flower shape of the primary filter element must line up with the same-shaped void in the air filter housing for the air filter housing cover to fit properly.



MOD091A



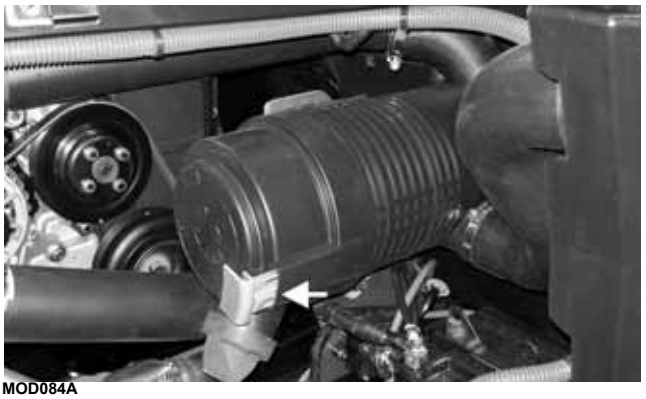
MOD092

2. Install the air filter housing cover with the clean-out valve at the 5 o'clock position; then turn the air filter housing cover clockwise until it seats.

■NOTE: The clean-out valve should be near the 6 o'clock position when the cover is seated.

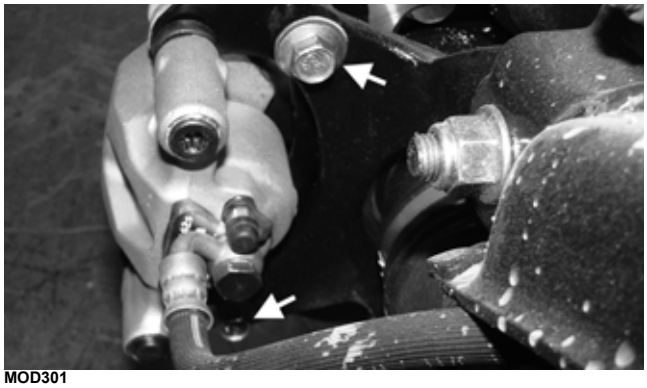
3. Lock the air filter housing cover.

MOD084C



MOD084A

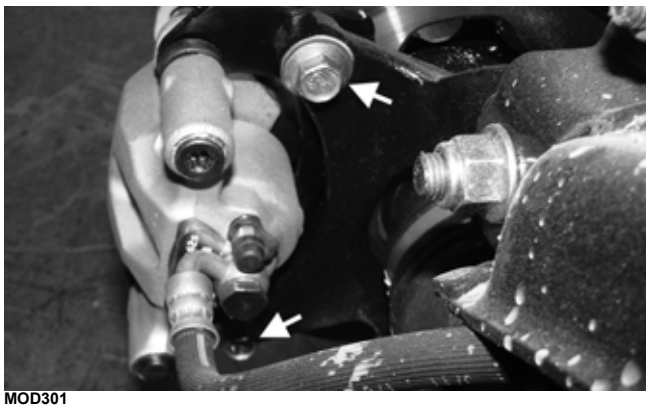
4. Connect the snorkel to the housing; then tighten the clamp securely.


MOD301

B. Remove the pads from the caliper; then install the new brake pads.


MOD302

C. Secure the caliper holder to the knuckle with new "patch-lock" cap screws. Tighten to 45 ft-lb (61.2 N-m); then install the Torx head plug to the caliper.


MOD301


MOD512

5. Install the wheels and using a crisscross pattern, tighten the wheel nuts in 20 ft-lb (27.2 N-m) increments to a final torque of 100 ft-lb (136 N-m).

6. Burnish the brake pads.

BRAKE DISC

Using a micrometer, measure the thickness of the brake disc in the contact surface. If thickness is 0.125 in. (3 mm) or less, the disc must be replaced. To replace the brake disc, see Drive System – Hub/Brake Disc.

Burnishing Brake Pads

Brake pads must be burnished to achieve full braking effectiveness. Braking distance will be extended until brake pads are properly burnished.

⚠ WARNING

Do not attempt sudden stops or put yourself into a situation where a sudden stop will be required until the brake pads are properly burnished.

1. Choose an area large enough and level enough to safely accelerate the vehicle to 30 mph (48 km/h) and to decelerate to 5 mph (8 km/h).

2. Accelerate to 30 mph (48 km/h); then release the accelerator pedal and lightly depress the brake pedal to decelerate to 5 mph (8 km/h).

■NOTE: It should take about 5 seconds to decelerate to 5 mph (8 km/h) with light braking.

3. Allow brakes to cool between cycles by cruising at 10 mph (16 km/h) for 1 minute.

4. Repeat procedure 10 times.

■NOTE: Avoid coming to a complete stop during the procedure, or uneven distribution of brake pad material on the rotors may occur, resulting in uneven braking performance. If a complete stop is necessary, rather than locking the brakes while stopping, slow down the vehicle enough that the vehicle rolls to a complete stop without applying the brakes.

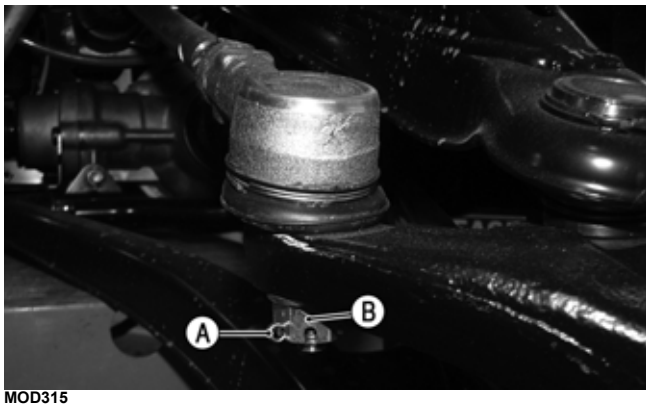
⚠ WARNING

Using the Operator's Manual as a guide, instruct the operator on the proper use, care, burnishing procedure (when brake pads are new), and maintenance of the hydraulic brake system.

3. Place the outer tie rod ends into the knuckles and secure with the castle nuts (B) (coated with red Loctite #271). Tighten to 32 ft-lb (43.5 N-m); then install new cotter pins (A) and spread the cotter pins.

■NOTE: If the slots in the castle nut (B) are not aligned with the hole in the outer tie rod end, tighten until the cotter pin can be installed.

MOD316



MOD315

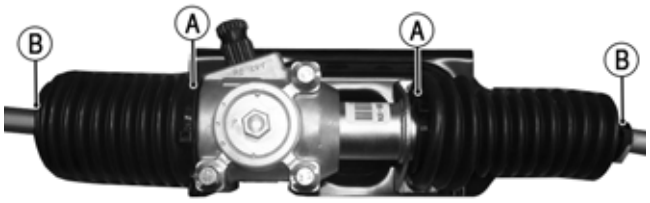
4. Install the wheels and using a crisscross pattern, tighten the wheel nuts in 20 ft-lb (27.2 N-m) increments to a final torque of 100 ft-lb (136 N-m); then lower the vehicle and remove the suitable lift and stands; then adjust the wheel alignment

REMOVING INNER TIE RODS

1. Remove the rack and pinion from the vehicle.

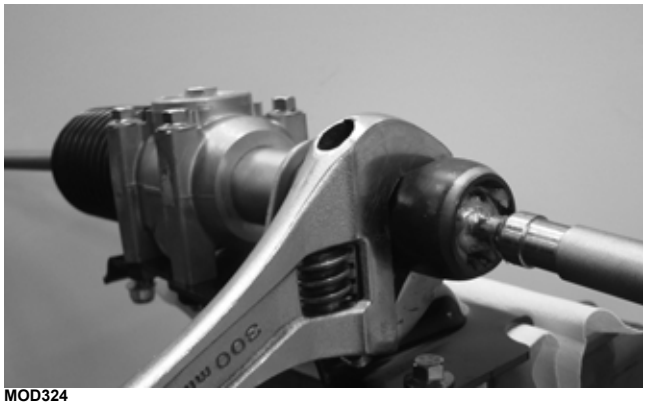
MOD322

2. Remove the inner boot clamp (A) and outer boot clamp (B) of the side being removed; then slide the boot toward the outer tie rod of the side being removed.



MOD322A

3. Securely mount the rack and pinion to a vise or other holding fixture; then heat the inner tie rod; then with the inner tie rod still hot loosen and remove with an appropriate tool.

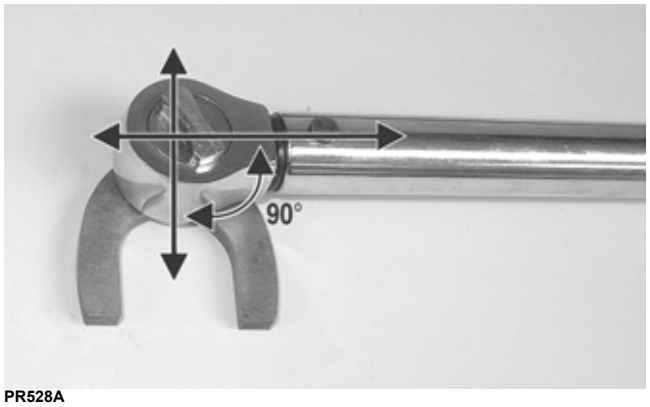


MOD324

INSTALLING INNER TIE RODS

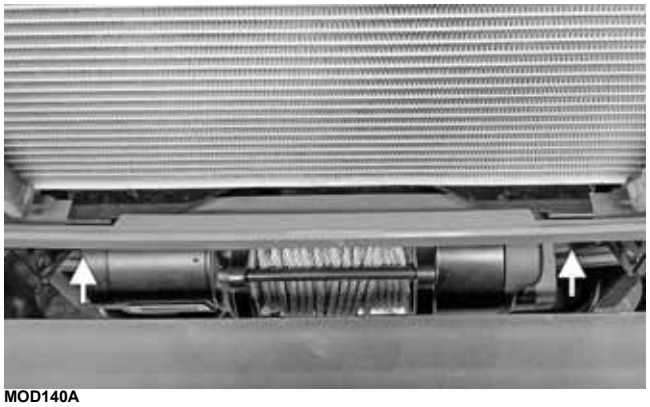
1. With the threads coated with red Loctite #271, thread the inner tie rod end onto the rack and tighten securely.

■NOTE: Always attach the crowfoot to the torque wrench with the open end 90° to the torque wrench handle to ensure accurate torque application.



PR528A

2. Install the boot onto the rack and secure with the inner (A) and outer (B) boot clamps.

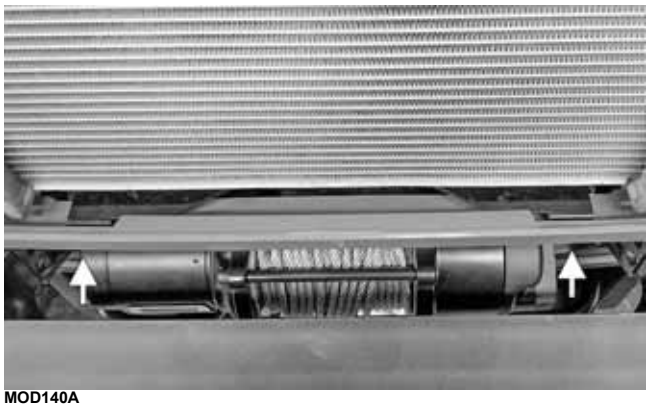


MOD140A

MOD136

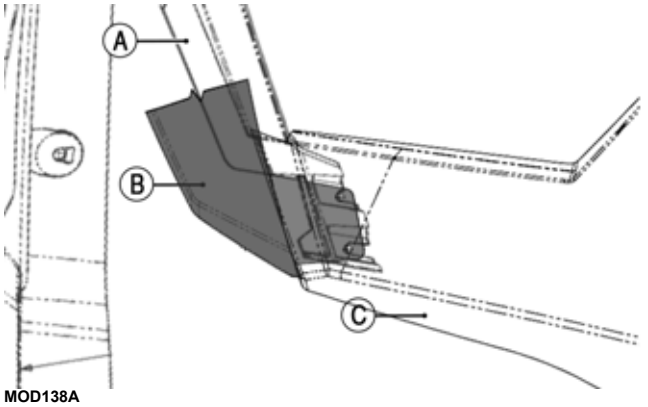
INSTALLING

1. Place the front fascia into position and secure the two T30 shouldered cap screws.

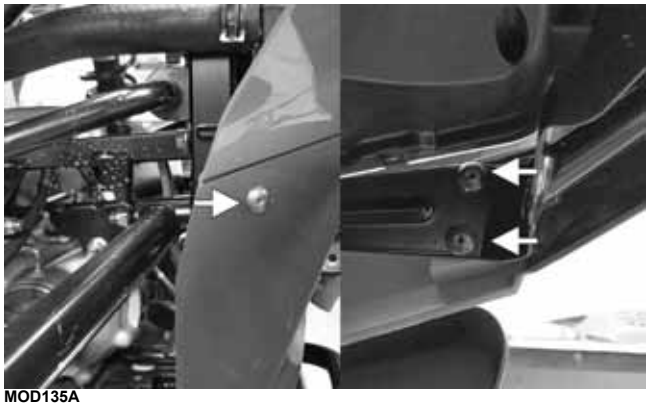


MOD140A

2. .Install the two T20 cap screws through the (A) fender, (B) fender flare, and headlight bracket (not identified) into (C) front fascia/grille; then install the remaining T20 cap screw securing the front fascia to the lower grille. Repeat for opposite side.



MOD138A



MOD135A

5. Install the upper grille and tighten the two T30 cap screws; then install the hood and secure the 1/4-turn locks.

MOD044C

MOD008A

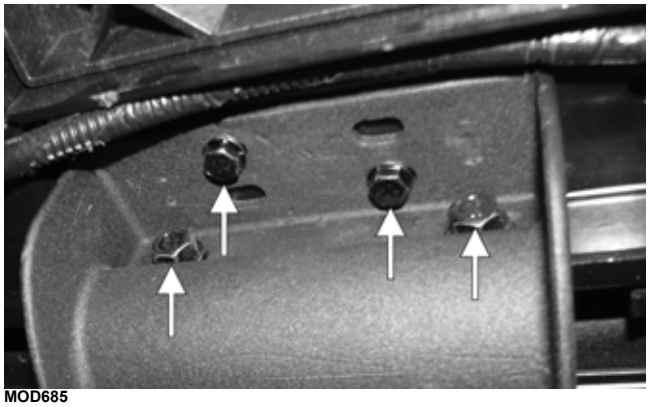
Rear Bumper (Optional)

REMOVING/INSTALLING

1. Remove the four cap screws and lock nuts; then remove bumper. Discard lock nuts. Inspect cap screws and replace if damaged.

MOD684

2. Remove the four cap screws and two lock nuts per bumper bracket; then discard lock nuts; then remove bumper brackets.



MOD685

3. Install the four cap screws and two new lock nuts per bumper bracket. Finger tighten only at this time.
4. Position the bumper into place; then install the four cap screws and new lock nuts; then tighten all hardware securely.

Floor

The floor consists of three different sections (front, center and rear). The center and rear sections can be removed independently. To remove the front section, first remove the center section.

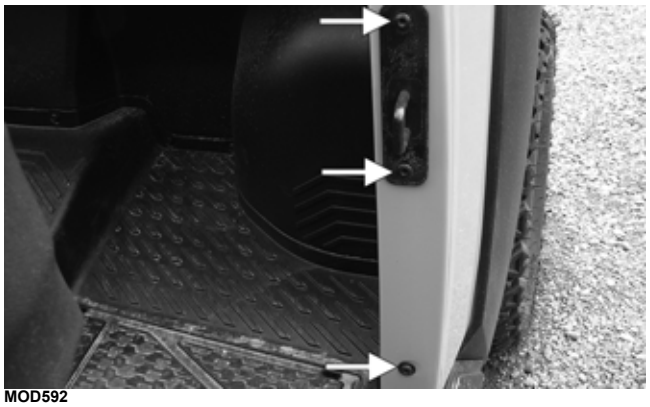
■NOTE: For efficiency, it is preferable to remove and disassemble only those components which need to be addressed and to service only those components. The technician should use discretion and sound judgment.

■NOTE: For removal of the gas tank, only the rear section is required to be removed. For removal of the hanger bearing, only the center section is required to be removed.

FRONT

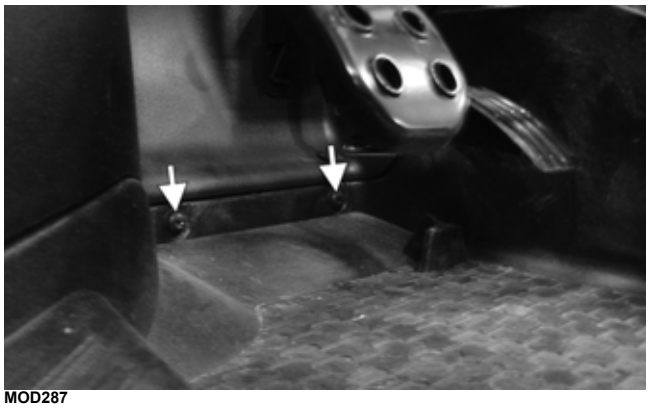
REMOVING

1. Remove the front seats, front side panels, and center floor.
2. Remove the three fasteners securing the splash panel on each side.

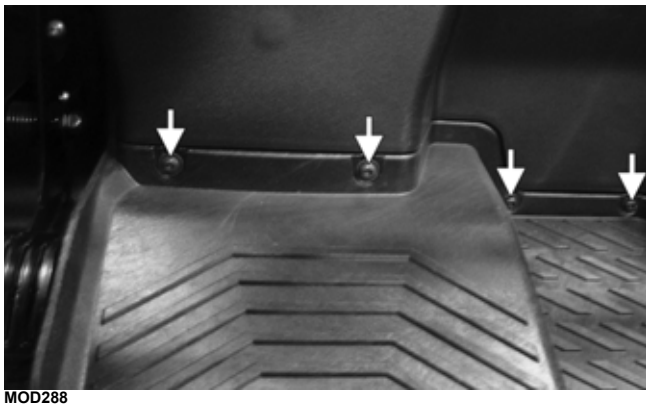


MOD592

3. Remove the six fasteners on the occupant side securing the splash panel to the floor.



MOD287



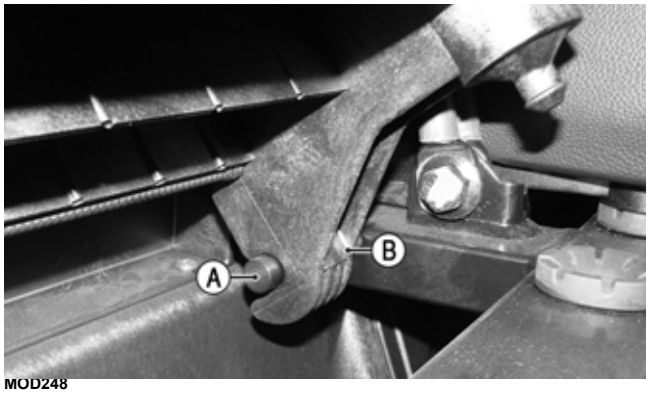
MOD288

4. Remove the two cap screws located near the front tires securing the splash panel to the floor on each side.

Seats

REMOVING/INSTALLING PASSENGER SEAT BOTTOMS

1. To remove a passenger seat bottom, raise the front of the seat and unhook both of the “C” channels of the seat bottom (B) out of the mounting pegs (A).



MOD248

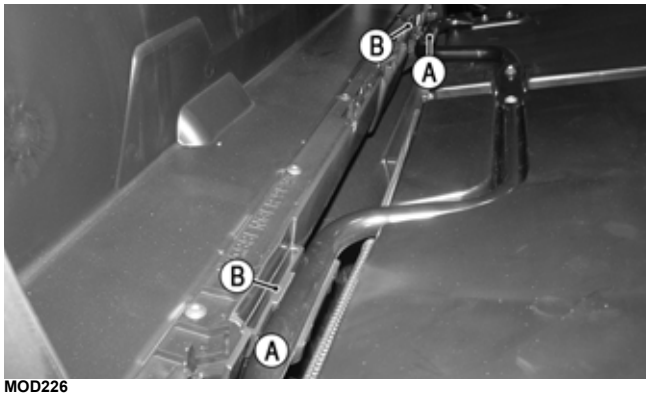
2. Install the seat bottom by hooking both of the “C” channels of the seat bottom into the mounting pegs (A).

PASSENGER SEAT BACKREST

REMOVING

1. Unlatch the passenger seat backrest; then fold down. Unhook both of the tubes of the seat backrest (A) out of the “C” channels (B).

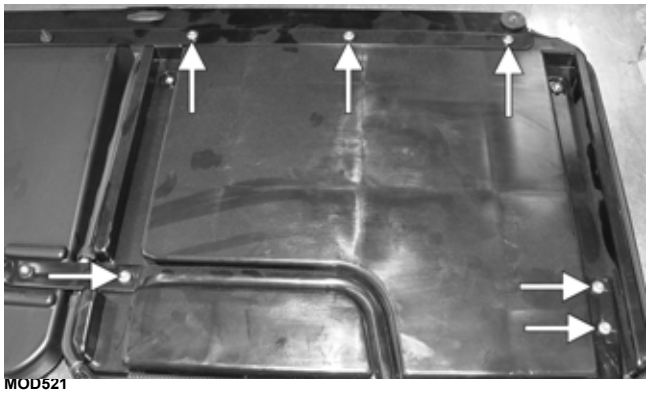

MOD121A



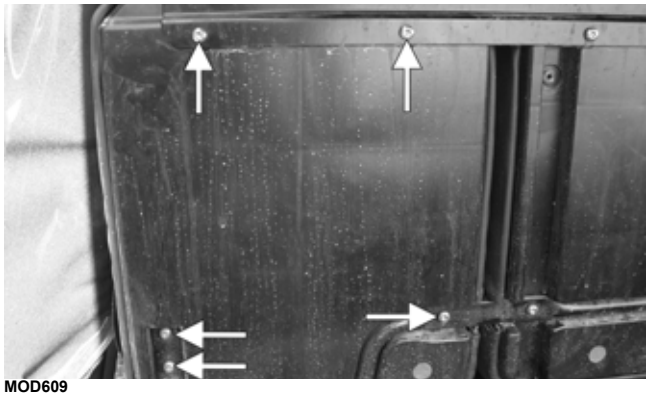
MOD226

DISASSEMBLING

1. Remove the six cap screws securing the passenger seat backrest to the passenger seat backrest frame; then remove the passenger seat backrest from the passenger seat backrest frame.

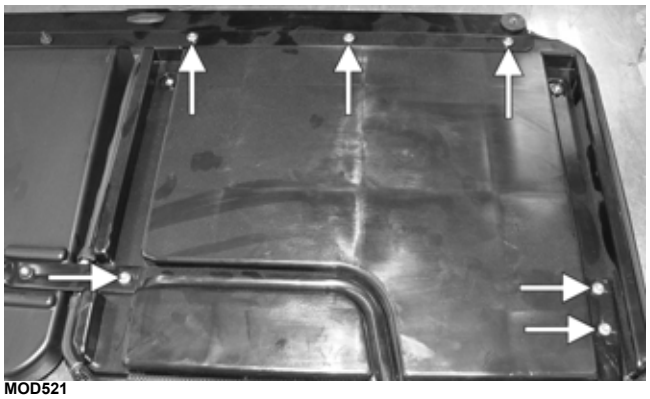

MOD521

2. Remove the five flange nuts securing the passenger seat backrest to the passenger seat backrest frame; then remove the passenger seat backrest from the passenger seat backrest frame.


MOD609

ASSEMBLING

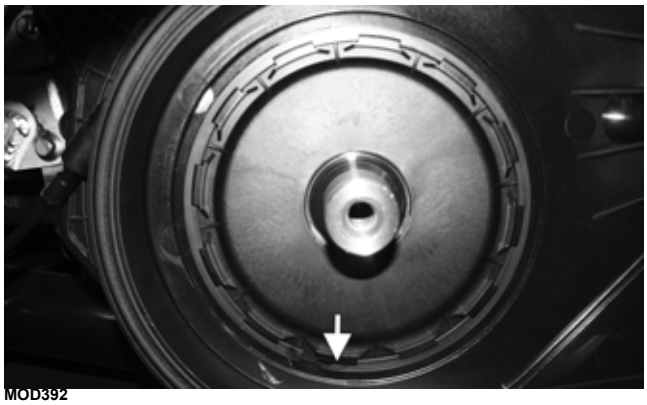
1. Position the passenger seat backrest to the passenger seat backrest frame; then install the six cap screws securing the passenger seat backrest to the passenger seat backrest frame. Tighten to 2 ft-lb (2.7 N-m).


MOD521

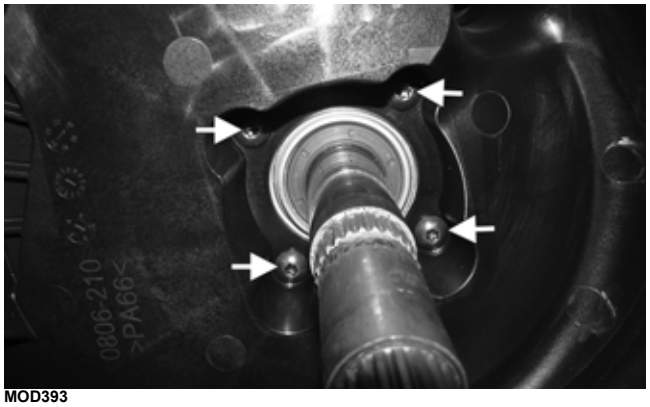
2. Position the center passenger seat back to the passenger seat backrest frame; then install the five flange nuts securing the center passenger seat back to the passenger seat backrest frame. Tighten to 4 ft-lb (5.4 N-m).

MOD391

3. Near the engine PTO, remove the retaining ring securing the inner clutch cover to the engine; then near the transaxle input shaft remove the four cap screws securing the inner clutch cover to the transaxle; then remove the inner clutch cover.

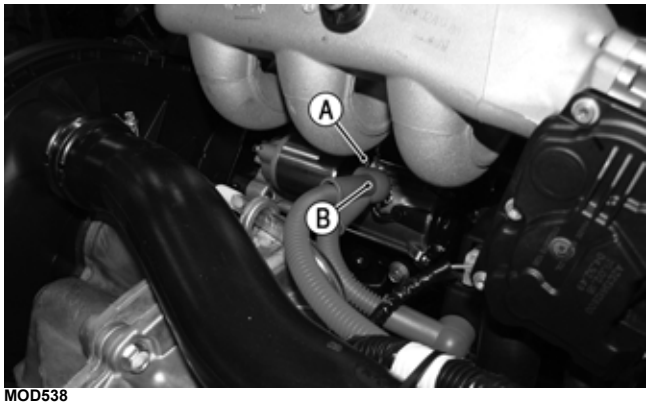


MOD392



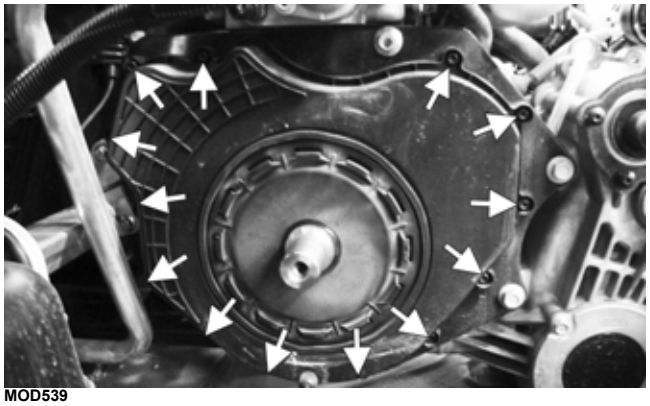
MOD393

4. Disconnect the battery connections; then disconnect the starter wire (A) and start relay wire (B).

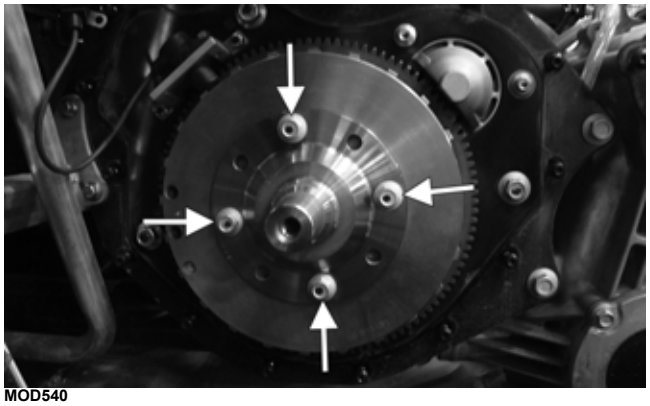


MOD538

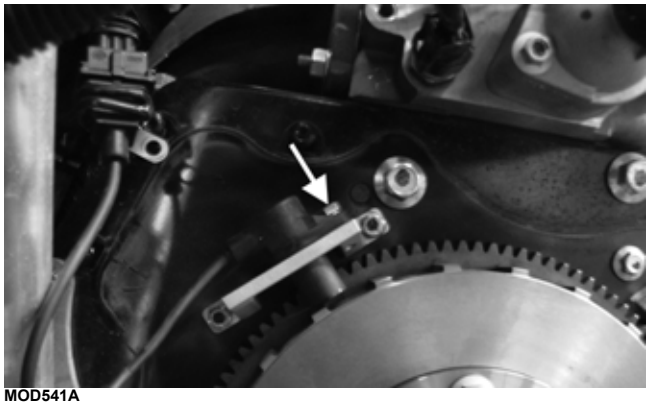
5. Remove the flywheel cover; then remove the PTO stub shaft; then remove the crank position sensor from the crank position sensor bracket.



MOD539

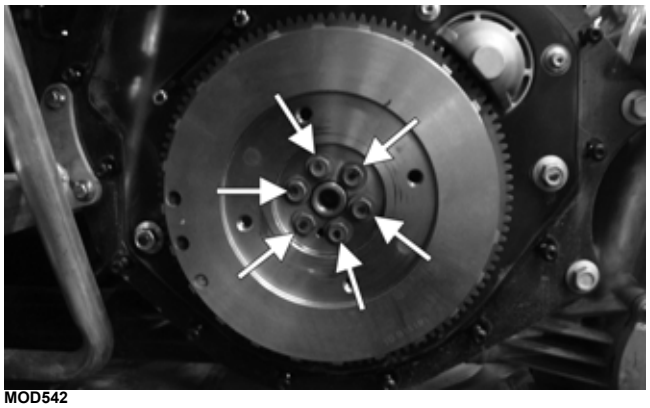


MOD540



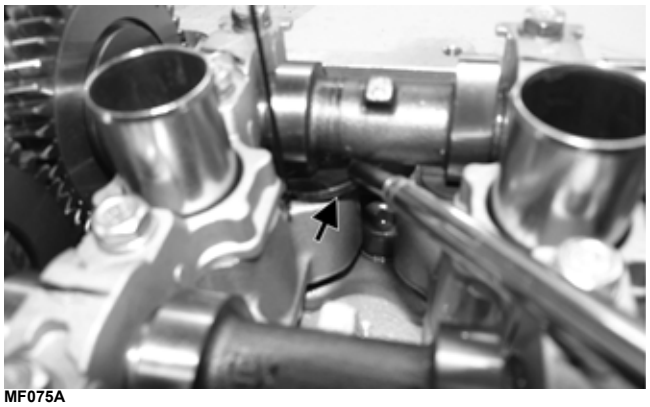
MOD541A

6. Remove the flywheel; then with a suitable lift put a slight upward tension on the engine; then with a suitable strap or lift put a slight upward tension on the transaxle.



MOD542

3. Firmly holding the bucket retainer and rotate the crankshaft so as to position the camshaft lobe high point away from the valve bucket; then, using a small screwdriver and magnet, tip the valve adjustment shim up and out of the valve bucket.



MF075A

4. Read the number on the valve side of the adjustment shim placing a decimal point after the first number.

MF076

5. Verify the printed number by checking the thickness with a micrometer or accurate calipers.

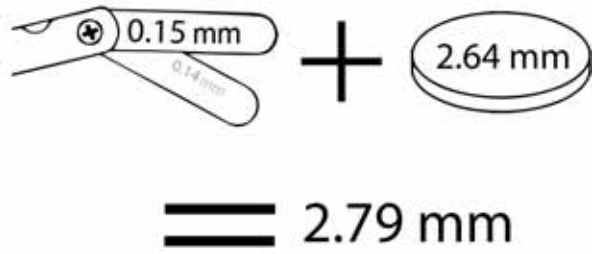
■**NOTE: To increase valve clearance, decrease the shim thickness. To decrease valve clearance, increase the shim thickness.**

Calculating Shim to Install

To calculate the desired shim to install, proceed as follows:

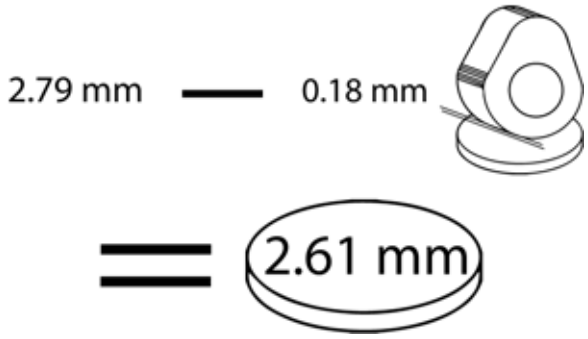
1. Add the thickness of the removed shim to the measured valve clearance; then subtract the desired valve clearance to find the shim value required.

2. Example: Measured valve clearance on an intake valve was 0.15 mm and the removed shim was 2.64 mm. Adding 0.15 mm to 2.64 mm, we get a value of 2.79 mm.



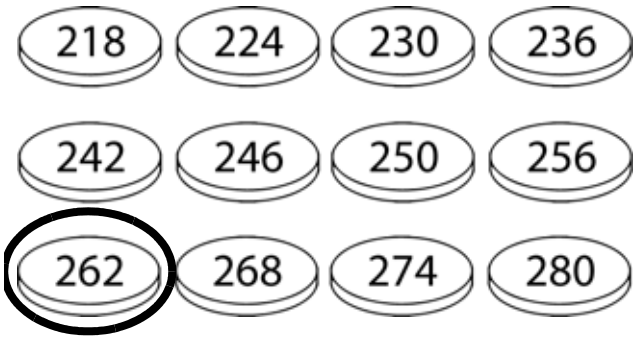
MF076B

3. Subtracting the desired intake valve clearance of 0.18 mm from 2.79 mm, will result in a shim value of 2.61 mm.



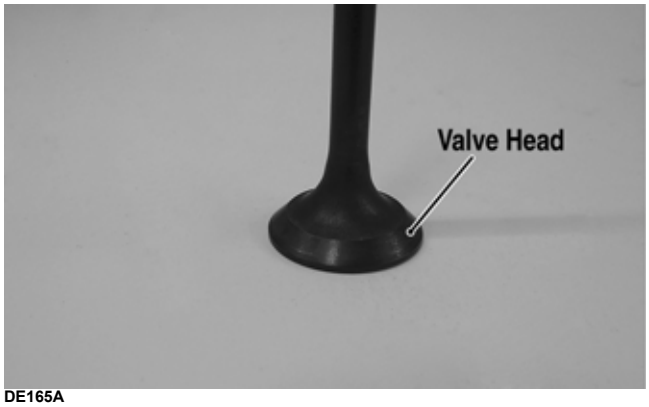
MF076C

4. Choose the shim size closest to the calculated shim value — in this case, 2.62 mm (262).



MF076D

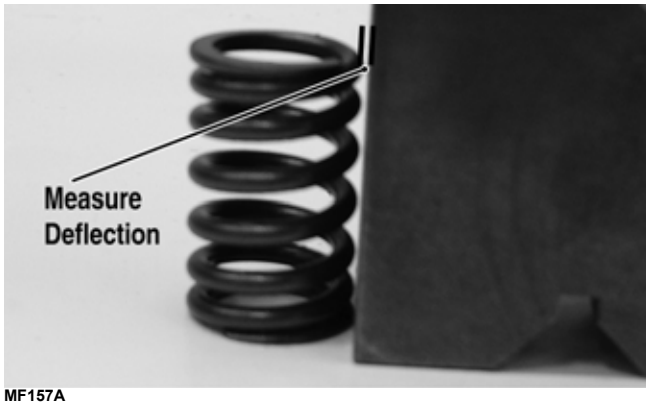
5. Install the new shim with the number side down, making sure it is properly seated in the valve bucket: then rotate the crankshaft until the high point is directed downward toward the valve.



DE165A

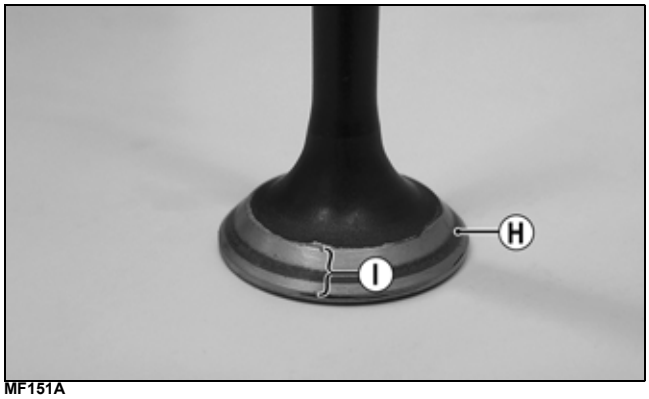
7. Inspect valve springs and check for correct valve spring length, spring inclination, or breakage.

MF156



MF157A

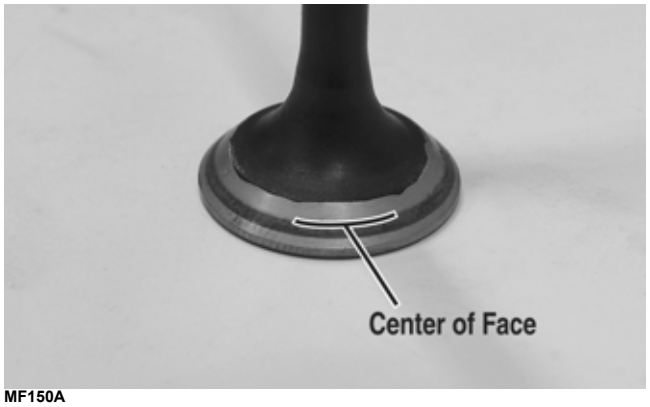
8. Apply a small amount of lapping compound to the face of the valve (G) and using an appropriate lapping tool, lap the valve until a uniform ring (H) appears around the surface of the valve face (I).



MF151A

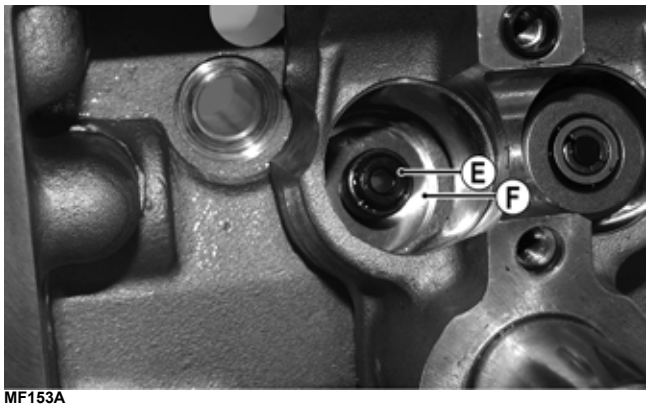
9. Wash all parts in cleaning solvent to remove lapping compound and dry with compressed air.

10. Note the position of the lap ring on the face of the valve. The lap ring (H) should be at or very near the center of the valve face (I). If not within suitable tolerance, valves and seats must be replaced.



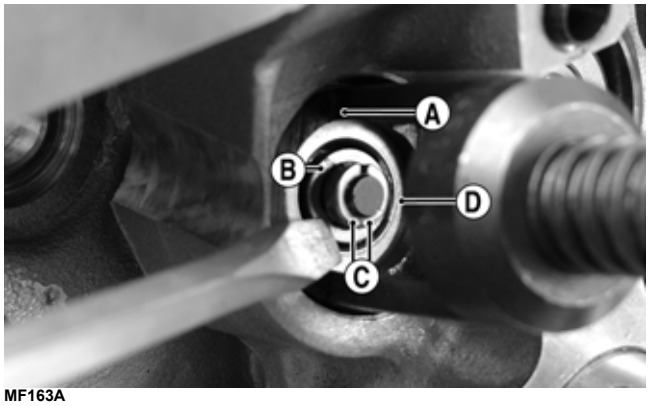
MF150A

11. Place the valve spring seat washer (F) in place and using a suitable installation tool, install a new valve stem seal (E) on the valve guide; then apply a coat of light assembly oil on the valve stems and install valve into the cylinder head.

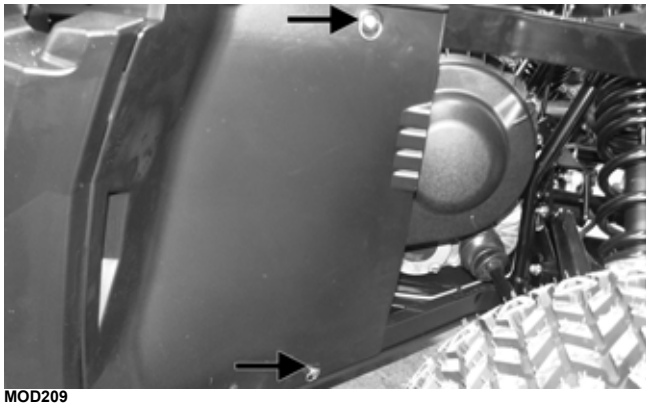


MF153A

12. Place the valve spring (A), valve spring retainer (D), and sleeve (B) into position and compress the assembly sufficiently to install the collets (C); then release the valve spring compressor tool, making sure the collets are fully seated in the sleeve.



MF163A


MOD209

FLYWHEEL

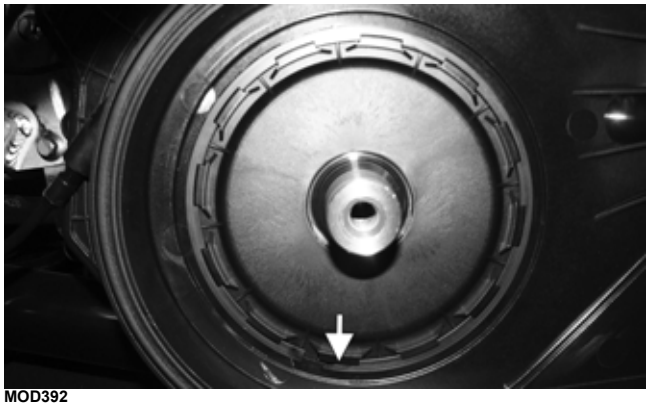
■NOTE: For efficiency, it is preferable to remove and disassemble only those components which need to be addressed and to service only those components. The technician should use discretion and sound judgment.

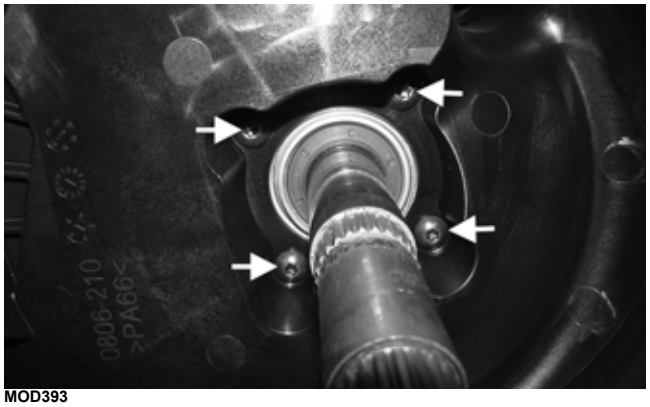
■NOTE: The engine does not have to be removed from the frame for this procedure.

■NOTE: The ring gear is not individually serviceable and must be replaced as an assembly with the flywheel.

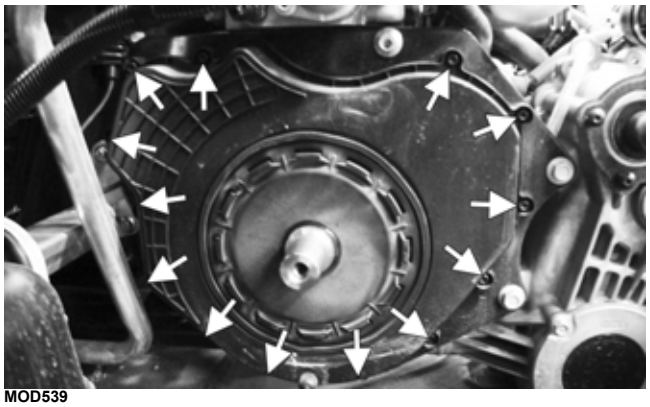
Removing

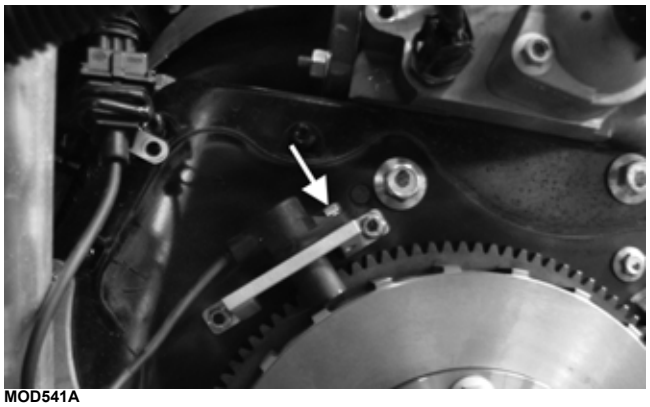
1. Tilt the cargo box up and remove the driver-side rear inner fender; then remove the clutch cover, drive belt, drive clutch, and driven clutch.
2. Near the engine PTO, remove the retaining ring securing the inner clutch cover to the engine; then near the transaxle input shaft, remove the four cap screws securing the inner clutch cover to the transaxle; then remove the inner clutch cover.


MOD392


MOD393

3. Remove the cap screws securing the flywheel cover; then remove the flywheel cover; then remove the two cap screws securing the crankshaft position sensor bracket; then remove the crankshaft position sensor from the crankshaft position sensor bracket.


MOD539


MOD541A

4. Using a suitable tool to hold the PTO/flywheel in place, remove the four cap screws securing the PTO stub shaft to the flywheel; then remove the six cap screws securing the flywheel to the crankshaft.

Fuel/Lubrication/ Cooling

■**NOTE: Some photographs and illustrations used in this section are used for clarity purposes only and are not designed to depict actual conditions.**

TROUBLESHOOTING

1. Verify that the electric fuel pump is operating by listening for a "whirring" sound for several seconds after the key switch is turned to the ON position. If no sound can be heard, see FUEL PUMP/FUEL LEVEL SENSOR in Electrical System.
2. Check for a flashing Engine Management Malfunction icon on the LCD. If this is flashing, see Gauge Diagnostic Menu in Electrical System.
3. Make sure there is sufficient, clean gas in the gas tank.

Throttle Body

■**NOTE: The throttle body is only serviceable as an assembly (see the Electrical System section).**

Gas Tank

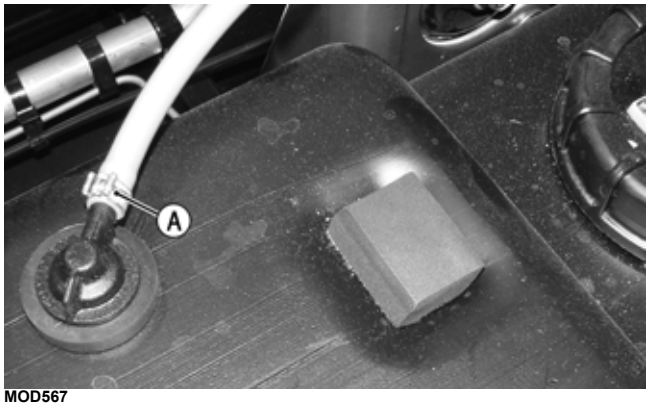
⚠ WARNING

Whenever any maintenance or inspection is made on the fuel system during which there may be fuel leakage, there should be no welding, smoking, open flames, etc., in the area.

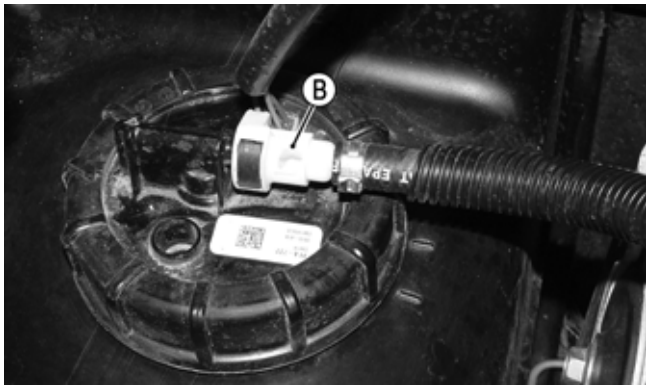
REMOVING

■**NOTE: Gas tank removal should only be necessary if the tank is leaking fuel or has been contaminated with water or dirt, or inadvertently filled with diesel fuel.**

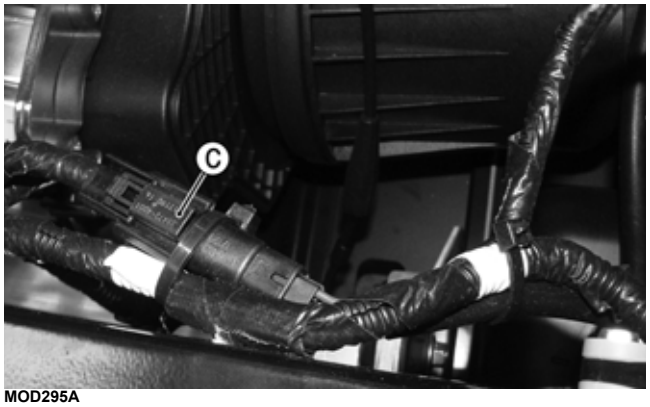
1. Remove the seats, seat backs, seat base, behind-the-seat storage box panel, and side panels; then remove the floor.
2. Disconnect the vent hose (A), fuel hose (B), and fuel pump/gas level sensor connector (C); then cap the vent fitting and gas hose fitting; then remove the fuel tank.



MOD567



MOD566



MOD295A

CLEANING AND INSPECTING

■**NOTE: Whenever a part is worn excessively, cracked, or damaged in any way, replacement is necessary.**

1. Clean the gas level sensor and gas pick-up screen.
2. Completely drain all contaminated gas from the gas tank; then thoroughly wash the tank out with hot, soapy water.
3. Dry the tank interior with compressed air.

■**NOTE: Repeat steps 2 and 3 until all contaminants are removed.**

4. Flush the fuel screen with hot, soapy water and dry with compressed air.

■**NOTE: If any pinholes are noted in the gas screen, replace the gas level sensor assembly.**

5. Inspect the tank cap and filler neck for chipped or broken threads.

TROUBLESHOOTING

■NOTE: The EPS assembly is not serviceable and must not be disassembled or EPS warranty will be voided.

1. Check 30-amp EPS fuse.

■NOTE: There are three black terminals and three orange/black terminals that are connected to their respective colors.

2. With the ignition off, disconnect 10-pin connector on the EPS assembly and connect a voltmeter set to DC voltage to the harness (black meter lead to BLK and red meter lead to ORG/BRN). With the ignition switch in the ON position, the meter should read battery voltage (if correct voltage is not present, check connections and wiring harness).

CAUTION

Do not attempt to check resistance of the EPS motor. There are internal capacitors holding a charge that can cause internal damage to an ohmmeter.

3. With ignition switch off, disconnect the 10-pin connector on the EPS assembly and connect a voltmeter set to DC voltage to the harness (red meter lead to the ORG wire and black meter lead to battery ground.) With the ignition switch in the ON position, the meter should read battery voltage (if correct voltage is not present, check for loose fittings or connections in the wiring harness).

CAUTION

If the Dealer Diagnostic Service has confirmed an active DTC relating to the CAN communication wires, use extreme caution when testing the wires. Do not probe the ECM connector with meter leads; instead use a small T-pin or other suitable testing component to make light and proper contact.

CAUTION

Never disconnect the ECM connector with the battery cables installed onto the battery.

■NOTE: If the preceding tests and possible solutions produce normal results, and an EPS issue persists with active DTCs confirmed by the Dealer Diagnostic Service, the EPS assembly must be replaced (see Steering/Body/Controls).

Ignition Switch

The ignition switch, dash switches, front accessory connectors, and front switched accessory connector can be accessed from under the dash or by pulling out the LCD gauge.

VOLTAGE

■NOTE: Perform this test on the harness connector.

1. Set the meter selector to the DC Voltage position.
2. Connect the red meter lead to the red wire; then connect the black meter lead to battery ground.
3. Meter must show battery voltage.

■NOTE: If the meter shows no battery voltage, troubleshoot the main 30-amp fuse, the battery, or the main wiring harness.

4. Connect the red meter lead to the brown/black wire; then with the black lead grounded, turn the ignition switch to the ON position. The meter must show battery voltage.
5. Connect the red meter lead to the yellow/green wire; then with the black lead grounded, turn the ignition switch to the START position. The starter should engage and the meter must show battery voltage.

■NOTE: When the starter is engaged, battery voltage will be approximately 10.5 DC volts.

Ignition Coils

The ignition coils are located on the driver-side of the cylinder head above the thermostat housing.

VOLTAGE

Primary Coils

1. Set the meter selector to the DC Voltage position.
2. Connect the red tester lead to the orange wire and the black tester lead to ground.
3. Turn the ignition switch to the ON position. The meter must show battery voltage.

Secondary Coils

CAUTION

Disconnect the injector connectors before performing the following procedure.

1. Connect the primary ignition coil connector. Remove the spark plug cap from the spark plug.
2. Connect the spark plug cap to an ignition test plug or other suitable tool; then ground the tool away from the spark plug hole. While turning the engine over, check for sufficient spark.

RESISTANCE

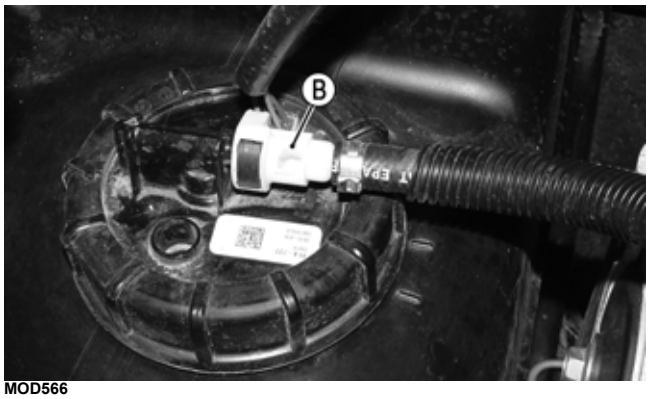
CAUTION

Always disconnect the battery when performing resistance tests to avoid damaging the multimeter.

Primary Winding

1. Remove the connector from the ignition coil; then set the meter selector to the OHMS position.
2. Connect the red tester lead to one terminal; then connect the black tester lead to the other terminal.

MOD295B



MOD566

4. Mark the fuel pump mounting and gas tank for installing purposes; then using a suitable tool, remove the fuel tank nut securing the fuel pump to the gas tank and remove the fuel pump.

CAUTION

Take care not to damage the float or float arm or replacement of the entire assembly will be necessary.

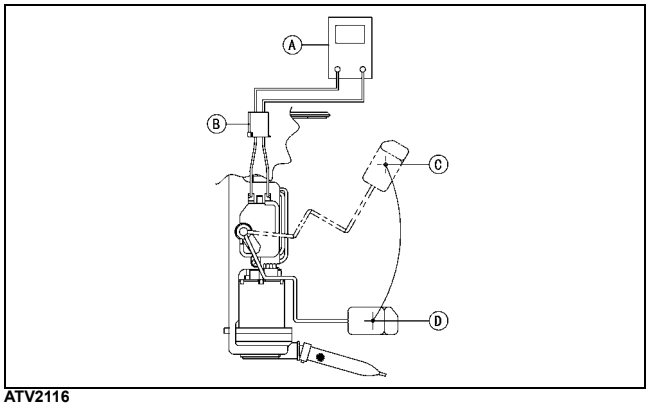
5. Using duct tape or other suitable means, cover the fuel pump opening.

Inspecting

☞ AT THIS POINT

If the pump has failed earlier test and must be replaced, proceed to INSTALLING.

1. Inspect the fuel screen and blow clean with low pressure compressed air.
2. Move the float lever and check for free movement. The float assembly should return to the lower position without force.
3. Test the fuel level sensor by connecting a multimeter (A) to the fuel level sensor leads (B); then select OHMS. The multimeter should show 5 ohms at full fuel position (C) and 95 ohms at empty fuel position (D).



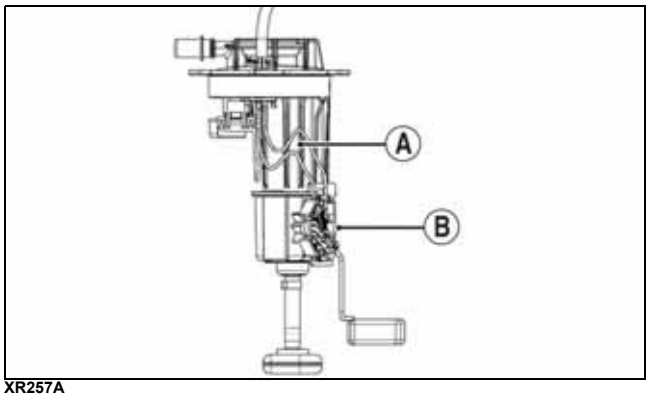
ATV2116

■NOTE: If readings are erratic, clean the resistor wiper and resistor with clean alcohol and retest. If still not correct, replace the fuel pump assembly.

Replacing Fuel Level Sensor

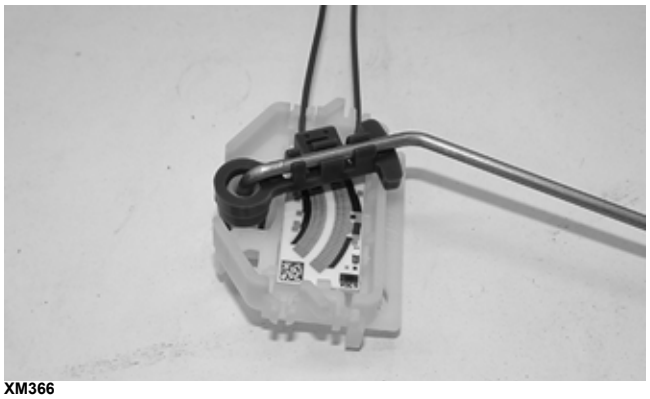
To replace the fuel level sensor, use the following procedure:

1. Cut the two blue wires (A) in the location shown.
2. Slide the existing sensor assembly (B) up and off the fuel pump assembly housing.



XR257A

3. Keeping the float attached to the float arm, remove the float arm from the existing fuel level sensor. Press the float arm into the new fuel level sensor assembly. Ensure it locks into place.


XM366

■NOTE: Inspect the float for any damage or leaking by submerging in water and looking for any air bubbles. Replace if damaged.

4. Install the fuel level sensor assembly onto the fuel pump assembly housing. Once inserted, press down to make sure it locks into place.

Display	Fault Description	Possible Cause	Fault Recovery Method
P0202	Cylinder #2 Fuel Injector Circuit Open	Injector #2 has been disconnected or its interconnect harness is open.	Correct condition**
P0203	Cylinder #3 Fuel Injector Circuit Open	Injector #3 has been disconnected or its interconnect harness is open.	Correct condition**
P0217	Engine Coolant Over Temperature Detected	There may be a malfunction of the cooling system.	Correct condition*
P0219	Engine Over-Speed Condition	The engine speed (RPM) has exceeded the ECM over-speed setpoint/limit.	Reduce engine speed
P0222	Throttle Position Sensor #2 Circuit Low/SG/Open	The throttle position sensor or its interconnect harness is open or shorted to chassis ground.	Correct condition*
P0223	Throttle Position Sensor #2 Circuit High	The throttle position sensor or its interconnect harness is shorted to battery power.	Correct condition*
P0261	Cylinder #1 Fuel Injector Circuit Low/SG	Injector #1 or its interconnect harness is shorted to chassis ground.	Correct condition**
P0262	Cylinder #1 Fuel Injector Circuit High	Injector #1 or its interconnect harness is shorted to battery power.	Correct condition**
P0264	Cylinder #2 Fuel Injector Circuit Low/SG	Injector #2 or its interconnect harness is shorted to chassis ground.	Correct condition**
P0265	Cylinder #2 Fuel Injector Circuit High	Injector #2 or its interconnect harness is shorted to battery power.	Correct condition**
P0267	Cylinder #3 Fuel Injector Circuit Low/SG	Injector #3 or its interconnect harness is shorted to chassis ground.	Correct condition**
P0268	Cylinder #3 Fuel Injector Circuit High	Injector #3 or its interconnect harness is shorted to battery power.	Correct condition**
P0325	Knock Sensor Range/Performance	The knock sensor or its interconnect harness is shorted to battery power, chassis ground, or open.	Correct condition*
P0326	Knock Sensor Intermittent/Erratic	The knock sensor or its interconnect harness is shorted to battery power, chassis ground, or open.	Correct condition*
P0363	Misfire Detected — Fueling Disabled (cannot be tripped at idle)	There could be a fouled spark plug or poor fuel quality. The ignition coil or fuel injector or their interconnect harnesses could also be malfunctioning.	Correct condition*
P0370	Loss of Crankshaft Position Sensor Synchronization/Gap Position	The crankshaft position sensor is not recognizing teeth as expected.	Correct condition*
P0371	Crankshaft Position Sensor Additional Teeth Detected	The crankshaft position sensor is not recognizing teeth as expected.	Correct condition*
P0372	Crankshaft Position Sensor Missing Tooth	The crankshaft position sensor is not recognizing teeth as expected.	Correct condition*
P0373	Crankshaft Position Sensor Spike Detected	The crankshaft position sensor is not recognizing teeth as expected.	Correct condition*
P0374	Crankshaft Position Sensor Signal Not Detected	The crankshaft position sensor or its interconnect harness is open or shorted to ground.	Correct condition*
P0444	EVAP System Purge Control Valve Circuit Open	The EVAP system purge control valve is disconnected or its interconnect harness is open.	Correct condition*
P0458	EVAP System Purge Control Valve Circuit Low/SG	The EVAP system purge control valve or its interconnect harness is shorted to chassis ground.	Correct condition*
P0459	EVAP System Purge Control Valve Circuit High/SP	The EVAP system purge control valve or its interconnect harness is shorted to battery power.	Correct condition*
P0480	Fan-Primary Relay Control Circuit Open	The primary fan relay or its interconnect harness is open.	Correct condition*
P0481	Fan-Secondary Relay Control Circuit Open	The secondary fan relay or its interconnect harness is open.	Correct condition*
P0500	Vehicle Speed-Sensor	The vehicle speed sensor circuit signal is intermittent or missing.	Correct condition**
P0503	Vehicle Speed Sensor Circuit Intermittent/ Erratic/High	The vehicle speed sensor circuit or its interconnect harness is open or shorted to battery power.	Correct condition**
P0504	Brake Switch Priority	Brake pressure switch #1 or its interconnect is open or shorted to chassis ground.	Correct condition*
P0562	System Voltage Low	The battery charge condition is low or the regulator/rectifier output is low.	Correct condition*
P0563	System Voltage High	The battery cable connections are loose or the regulator/rectifier output is high.	Correct condition*
P0600	Serial Communication Link	The ECM detected an internal condition.	Correct condition*
P0606	Internal Monitoring Error	The ECM detected an internal condition.	Correct condition*
P060C	Internal Monitoring 3 Error	The ECM detected an internal condition.	Correct condition*
P0615	Starter Relay Circuit	The start switch/button, starter relay, gearswitch or its interconnect harness is erratic or intermittent.	Correct condition*
P0616	Starter Relay Circuit Low	The start switch/button, starter relay or its interconnect harness is intermittent or shorted to chassis ground.	Correct condition*
P0617	Starter Relay Circuit High	The start switch/button, starter relay, or its interconnect harness is intermittent or shorted to battery power.	Correct condition*
P061A	Internal Monitoring of Torque Error	The ECM detected an internal condition.	Correct condition*
P061F	Electronic Throttle Control Driver Temperature Warning	The ECM detected an internal condition.	Correct condition*
P0627	Fuel Pump Control Circuit Open	The fuel pump control circuit or its interconnect harness is open.	Correct condition*
P0628	Fuel Pump Control Circuit Low/SG	The fuel pump control circuit or its interconnect harness is shorted to chassis ground.	Correct condition*
P0629	Fuel Pump Control Circuit High/SP	The fuel pump control circuit or its interconnect harness is shorted to battery power.	Correct condition*
P0630	VIN Not Programmed or Incompatible	Verify that the LCD gauge and ECM part numbers are correct for the vehicle model number and VIN.	Correct condition*
P0641	Sensor Reference Voltage #1 Circuit Low/Open	5-volt sensor power circuit #1 has been shorted to chassis ground.	Correct condition*

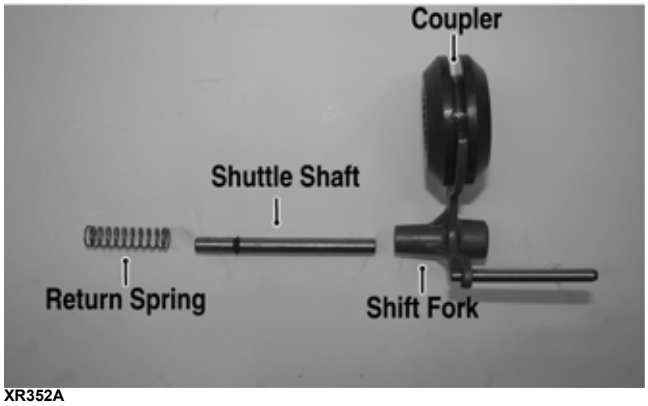
GC014

3. Lubricate the input shaft with High-Performance #2 Molybdenum Disulfide Grease packing the splines; then assemble allowing excess grease to freely escape. Grease the pinion housing seal; then install the input shaft into the pinion housing and secure with a new snap ring.

■NOTE: Any time drive splines are separated, clean all splines with parts-cleaning solvent and dry with compressed air; then lubricate with recommended grease.

GC009A

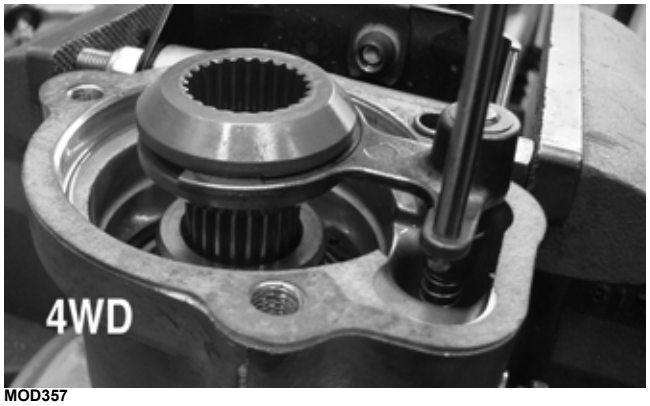
4. With the return spring over the shuttle shaft, place the shuttle shaft with O-ring into the differential housing.



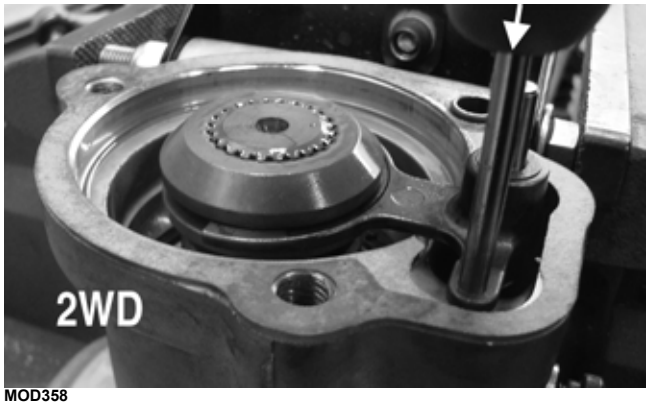
XR352A

XR354

5. Place the dowel pin into the differential housing; then install a new gasket. Place the coupler onto the shift fork; then simultaneously engage the shift fork to the shuttle shaft and the internal splines of the coupler to the splines of the pinion gear shaft; then verify the shift fork moves freely from 4WD to 2WD to 4WD by pushing down on the shift fork shaft and then releasing.



MOD357



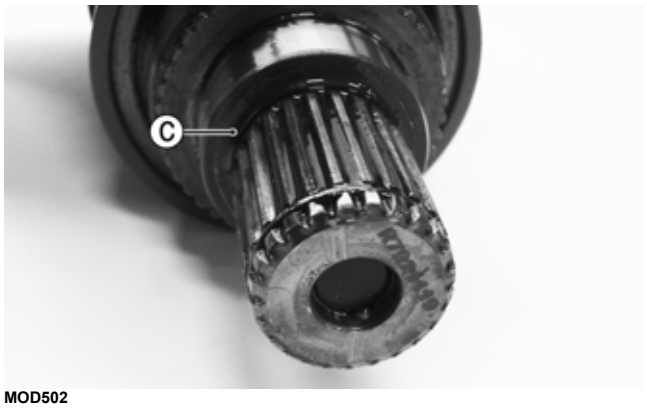
MOD358

6. Align the splines of the output shaft to the internal splines of the coupler; then place the pinion housing onto the differential housing; then place the drive actuator bracket (A) into position; then secure the assembly with three cap screws and tighten to 22 ft-lb (29.9 N-m) (existing) or 28 ft-lb (38.1 N-m) (new differential housing).

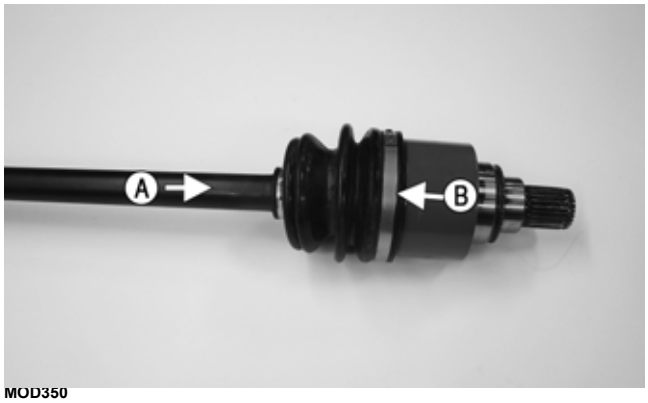
INSTALLING FRONT DRIVE AXLE

1. Verify the location of the O-rings (C) for the axles; then install the front axles by pushing the axle shaft (A) toward the inner CV joint housing (B) to release the "plunge" coupler; then while the axle shaft and the inner CV joint housing are pushed together install the axle to the differential; then position the drive axle in the gear case and steering knuckle.

■NOTE: To ensure proper axle seating, give it a light pull; the axle should remain "clipped" in place.



MOD502



MOD350

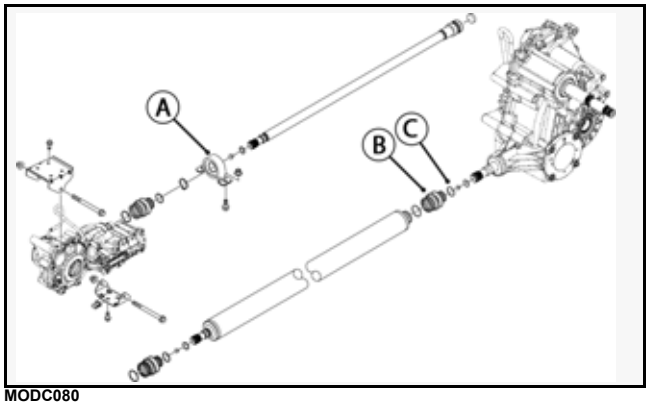
2. Insert the ball joints into the steering knuckles and secure with new cap screws and new lock nuts tightened to 45 ft-lb (61.2 N-m); then install the tie rods to the steering knuckles and tighten to 32 ft-lb (43.5 N-m); then secure the lower shock eyelet to the A-arm with a cap screw and a new lock nut. Tighten to 45 ft-lb (61.2 N-m).
3. Install the hubs (see Hub/Brake Disc in this section).
4. Install the wheels and using a crisscross pattern, tighten the wheel nuts in 20 ft-lb (27.2 N-m) increments to a final torque of 100 ft-lb (136 N-m). Repeat steps 1-4 for opposite side.
5. Remove the vehicle from the support stand.
6. Check the front differential lubricant level and add lubricant as necessary.

MOD073A

Driveshaft

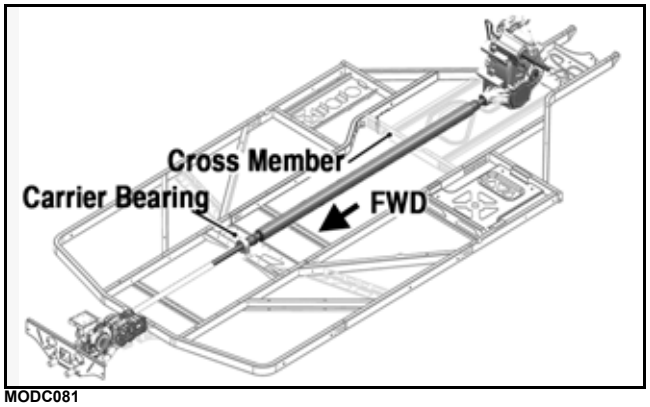
REMOVING

1. Remove one of the two rear skid plate sections as described in the Skid Plate section.
2. Remove the carrier bearing (A) as described in the Carrier Bearing section.
3. Uncouple the driveshaft boot (B) from the transaxle front output. Account for the O-rings (C) for the driveshaft-to-transaxle coupler.



MODC080

4. Slide the driveshaft forward so the rear end of the shaft clears the cross member support.



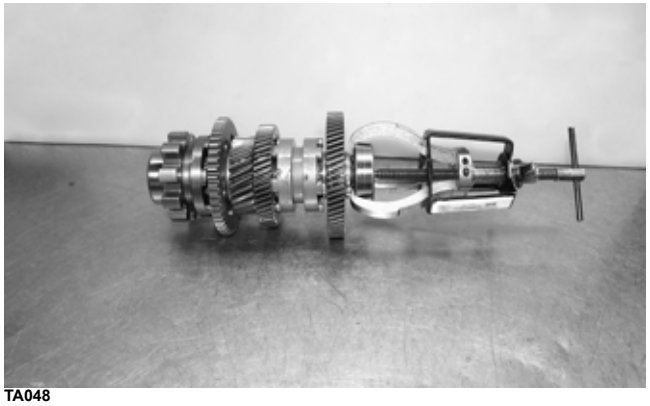
MODC081

5. Tilt the rear end of the driveshaft downward and slide the driveshaft backward and out of the chassis.

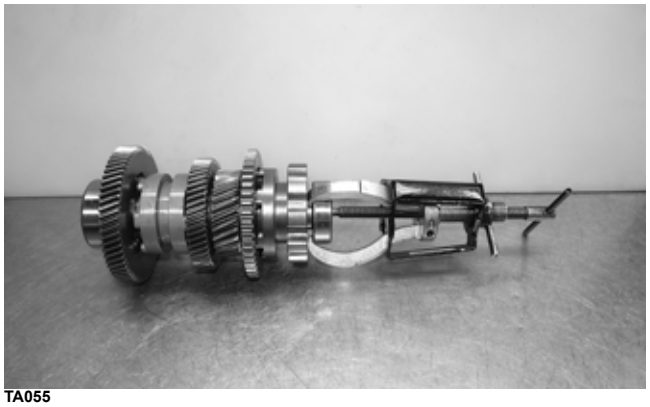
8. Install the snap ring.

G. Reverse Shaft

1. Inspect the bearings for free and smooth turning. If either bearing does not turn freely, it must be replaced.



TA048

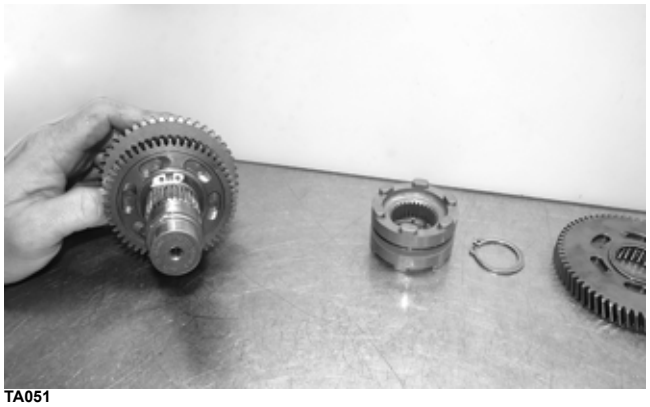


TA055

2. Inspect the gear teeth for nicks, cracks, chips, or signs of wear. If any are present, the gear must be replaced.

TA049

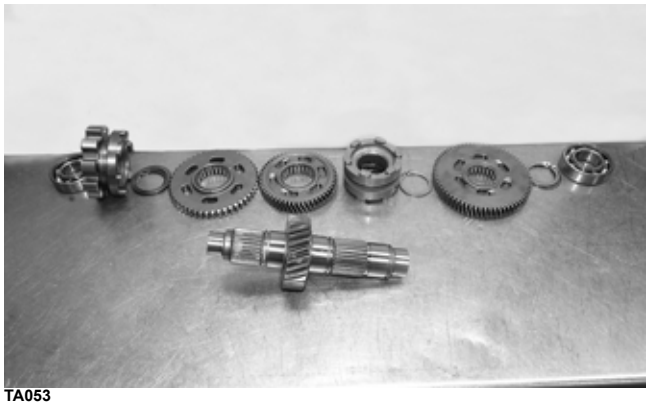
TA050



TA051

3. Inspect the shaft gear teeth for nicks, cracks, chips, or signs of wear. If any are present, the shaft must be replaced.

TA052

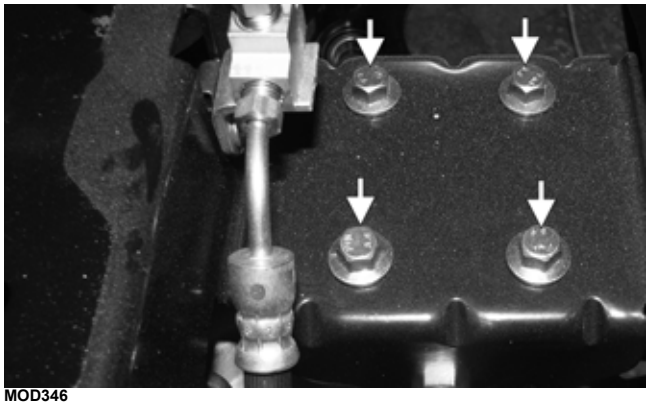


TA053

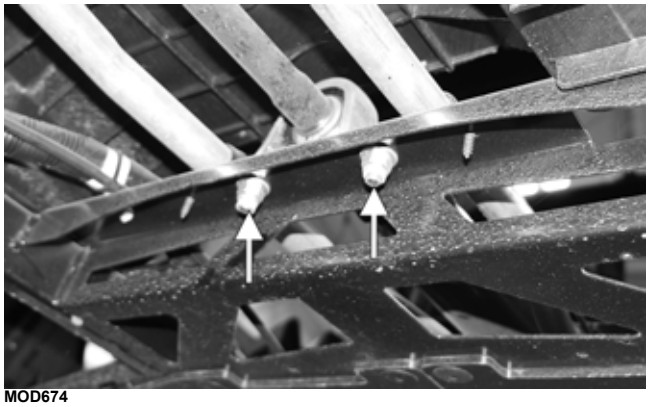
4. Inspect the dogs for nicks, cracks, chips, or signs of wear. If any are present, the dog must be replaced.

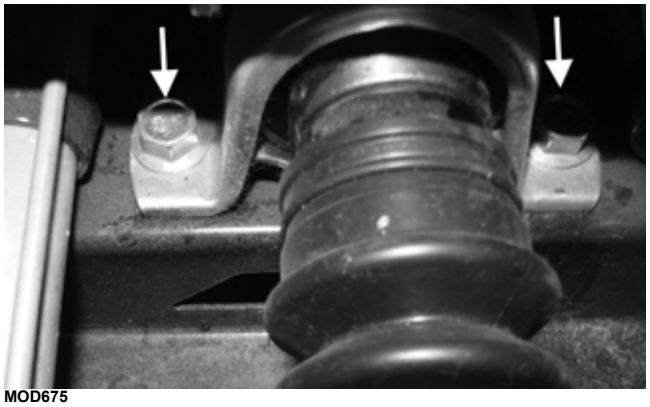
3. Remove the upper mount cap screw and lock nut for the front differential; then remove the four cap screws securing the upper differential mount; then remove the upper differential mount.


MOD345


MOD346

4. Remove the two cap screws and lock nuts securing the carrier bearing to the frame.


MOD674

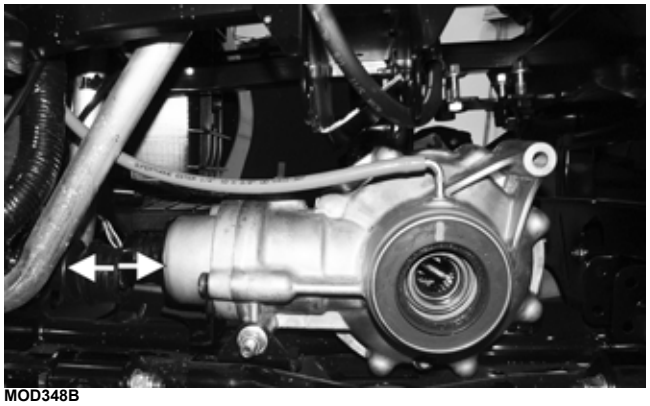

MOD675

5. Gently pull the front driveshaft away from the rear driveshaft and account for the rubber bumper.


MOD676


MOD677

6. Gently pull the front driveshaft away from the front differential and account for the rubber bumper; then remove the front driveshaft from the vehicle.


MOD348B


MOD362A

Suspension

The following suspension system components should be inspected periodically to ensure proper operation:

A. Shock absorber rods bent, pitted, or damaged.

B. Rubber damper cracked, broken, or missing.

C. Shock absorber body damaged, punctured, or leaking.

D. Shock absorber eyelets broken, bent, or cracked.

E. Shock absorber eyelet bushings worn, deteriorated, cracked, or missing.

F. Shock absorber spring broken or sagging.

G. Sway bar mountings tight and bushings secure.

SPECIAL TOOL

A special tool must be available to the technician when performing service procedures in this section. Refer to the current Special Tools Catalog for the appropriate tool description.

■NOTE: When indicated for use, each special tool will be identified by its specific name, as shown in the chart below, and capitalized.

Description	p/n
Shock Spring Spanner Wrench	3441-139

■NOTE: Special tools are available from the Service Department.

Shock Absorbers

Each shock absorber should be visibly checked weekly for excessive fluid leakage (some seal leakage may be observed but it does not indicate the shock is in need of replacement), cracks or breaks in the lower case, or a bent shock rod. If any one of these conditions is detected, replacement is necessary.

■NOTE: When the vehicle is operated in extremely cold weather (-23° C/-10° F or colder), a small amount of leakage may be present. Unless the leakage is excessive, replacement is not necessary.

This vehicle is equipped with adjustable shock assemblies in the front and rear to allow for different driving and loading conditions.

The front shock absorbers have an adjustment sleeve with five preload adjustment positions that can be turned with the spanner wrench to increase or decrease coil spring tension.

■NOTE: The softest setting is shown below:

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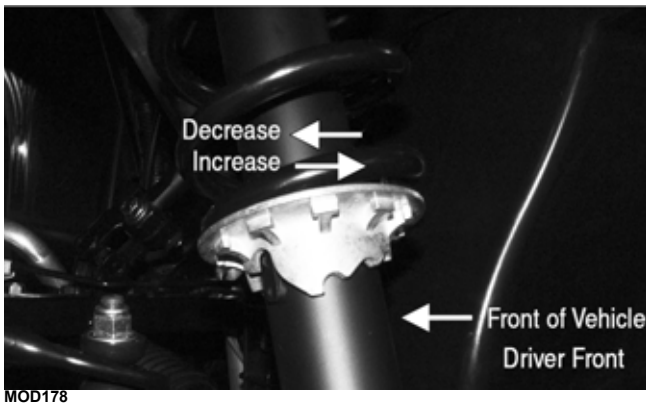
■NOTE: Before attempting to adjust suspension, clean dirt and debris from the sleeve and remove load from the suspension; then use the spanner wrench to adjust the sleeve to the desired position.

To adjust the spring force on these shock absorbers, rotate the preload adjustment sleeve with a suitable spanner wrench until desired spring tension is achieved.

Position	Spring Force	Setting	Load
1	↓	Soft	Light
2		↕	↕
3			
4			
5	Stronger	Stiff	Heavy



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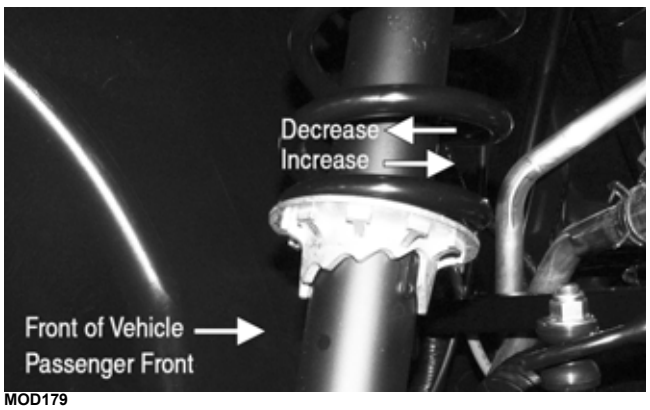

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