JOHN DEERE
WORLDWIDE COMMERCIAL & CONSUMER EQUIPMENT DIVISION

Compact Utility Tractors
4510, 4610 and 4710

TM1986 NOVEMBER 2002

TECHNICAL MANUAL

JOHN DEERE

North American Version
Litho in U.S.A.

Manual Description

This technical manual is written for an experienced technician and contains sections that are specifically for this product. It is a part of a total product support program.

The manual is organized so that all the information on a particular system is kept together. The order of grouping is as follows:

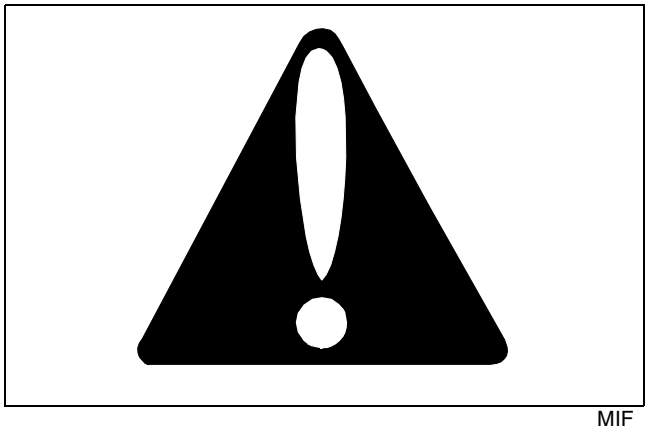
- Table of Contents
- Specifications and Information
- Identification Numbers
- Tools and Materials
- Component Location
- Schematics and Harnesses
- Theory of Operation
- Operation and Diagnostics
- Diagnostics
- Tests and Adjustments
- Repair
- Other

NOTE: Depending on the particular section or system being covered, not all of the above groups may be used.

The bleed tabs for the pages of each section will align with the sections listed on this page. Page numbering is consecutive from the beginning of the Safety section through the last section.

We appreciate your input on this manual. If you find any errors or want to comment on the layout of the manual please contact us.

Recognize Safety Information



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This is the safety-alert symbol. When you see this symbol on your machine or in this manual, be alert to the potential for personal injury.

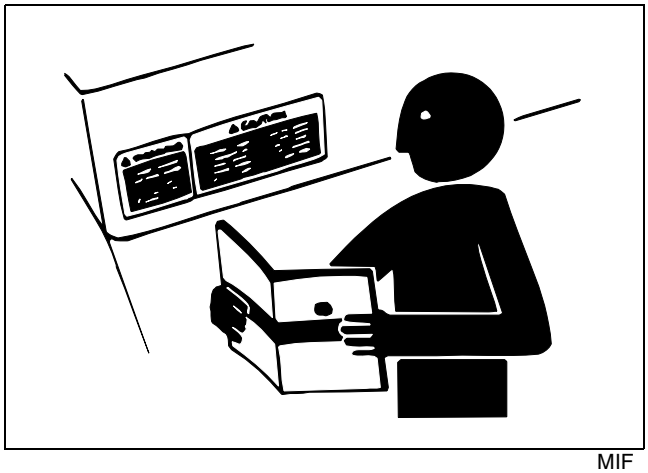
Follow recommended precautions and safe servicing practices.

Understand Signal Words

A signal word - DANGER, WARNING, or CAUTION - is used with the safety-alert symbol. DANGER identifies the most serious hazards.

DANGER or WARNING safety signs are located near specific hazards. General precautions are listed on CAUTION safety signs. CAUTION also calls attention to safety messages in this manual.

Replace Safety Signs



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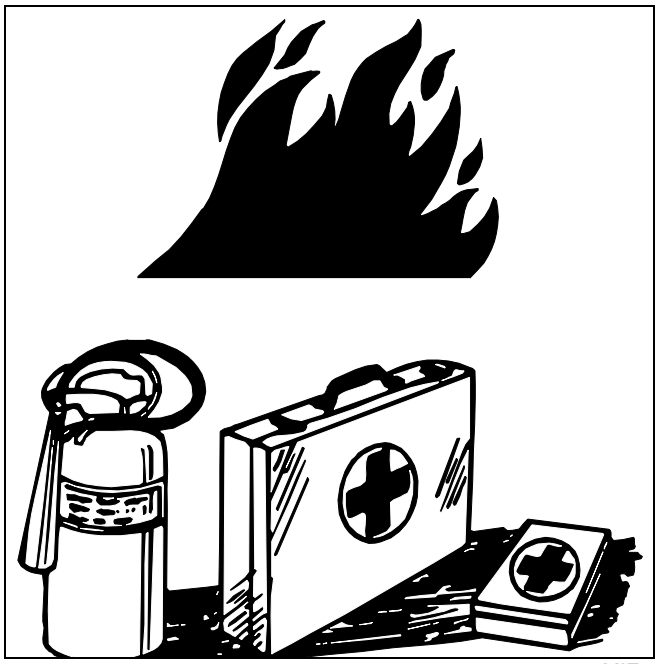
Replace missing or damaged safety signs. See the machine operator's manual for correct safety sign placement.

Handle Fluids Safely - Avoid Fires

Be Prepared For Emergencies



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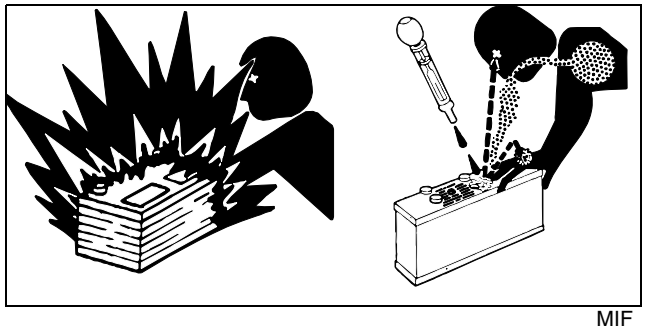
- When you work around fuel, do not smoke or work near heaters or other fire hazards.
- Store flammable fluids away from fire hazards. Do not incinerate or puncture pressurized containers.
- Make sure machine is clean of trash, grease, and debris.
- Do not store oily rags; they can ignite and burn spontaneously.
- Be prepared if a fire starts.
- Keep a first aid kit and fire extinguisher handy.
- Keep emergency numbers for doctors, ambulance service, hospital, and fire department near your telephone.

Use Care In Handling And Servicing Batteries



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Prevent Battery Explosions

- Keep sparks, lighted matches, and open flame away from the top of battery. Battery gas can explode.
- Never check battery charge by placing a metal object across the posts. Use a volt-meter or hydrometer.
- Do not charge a frozen battery; it may explode. Warm battery to 16°C (60°F).

Prevent Acid Burns

- Sulfuric acid in battery electrolyte is poisonous. It is strong enough to burn skin, eat holes in clothing, and cause blindness if splashed into eyes.

Avoid acid burns by:

1. Filling batteries in a well-ventilated area.
2. Wearing eye protection and rubber gloves.
3. Avoiding breathing fumes when electrolyte is added.
4. Avoiding spilling or dripping electrolyte.
5. Use proper jump start procedure.

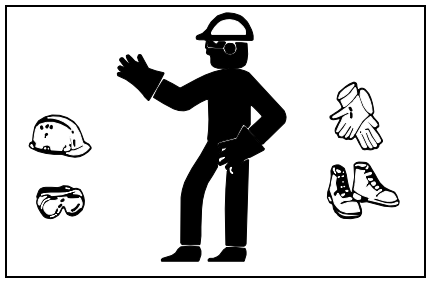
If you spill acid on yourself:

1. Flush your skin with water.
2. Apply baking soda or lime to help neutralize the acid.
3. Flush your eyes with water for 10 - 15 minutes.
4. Get medical attention immediately.

If acid is swallowed:

1. Drink large amounts of water or milk.
2. Then drink milk of magnesia, beaten eggs, or vegetable oil.
3. Get medical attention immediately.

Wear Protective Clothing



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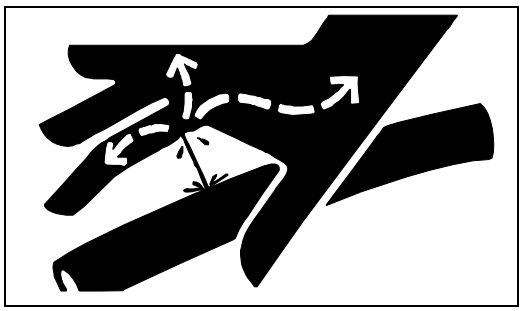
Wear close fitting clothing and safety equipment appropriate to the job.

Prolonged exposure to loud noise can cause impairment or loss of hearing. Wear a suitable hearing protective device such as earmuffs or earplugs to protect against objectionable or uncomfortable loud noises.

Operating equipment safely requires the full attention of the operator. Do not wear radio or music headphones while operating machine.

Use Care Around High-pressure Fluid Lines

Avoid High-Pressure Fluids



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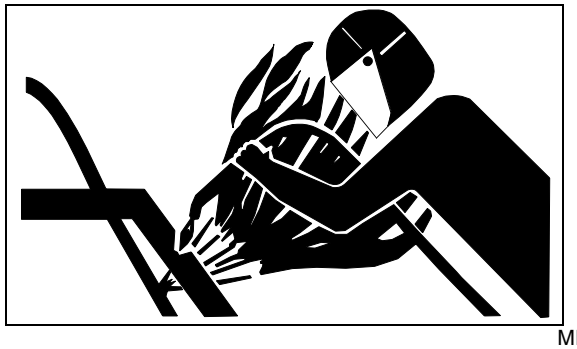
Escaping fluid under pressure can penetrate the skin causing serious injury.

Avoid injury from escaping fluid under pressure by stopping the engine and relieving pressure in the system before disconnecting or connecting hydraulic or other lines. Tighten all connections before applying pressure.

Search for leaks with a piece of cardboard. Protect hands and body from high pressure fluids.

If an accident occurs, see a doctor immediately. Any fluid injected into the skin must be surgically removed within a few hours or gangrene may result. Doctors unfamiliar with this type of injury should reference a knowledgeable medical source. Such information is available from Deere & Company Medical Department in Moline, Illinois, U.S.A.

Avoid Heating Near Pressurized Fluid Lines



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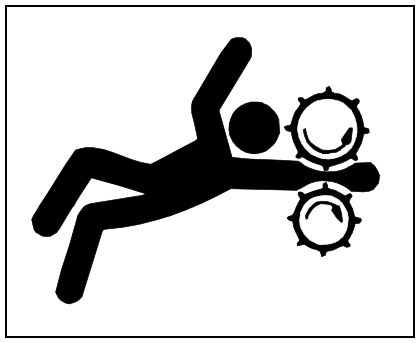
Flammable spray can be generated by heating near pressurized fluid lines, resulting in severe burns to yourself and bystanders. Do not heat by welding, soldering, or using a torch near pressurized fluid lines or other flammable materials. Pressurized lines can be accidentally cut when heat goes beyond the immediate flame area.

Service Machines Safely



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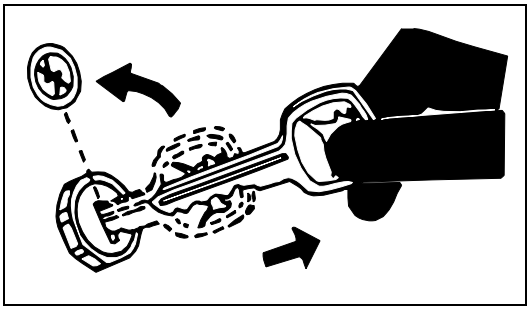
Tie long hair behind your head. Do not wear a necktie, scarf, loose clothing, or necklace when you work near machine tools or moving parts. If these items were to get caught, severe injury could result.

Remove rings and other jewelry to prevent electrical shorts and entanglement in moving parts.

Use Proper Tools

Use tools appropriate to the work. Makeshift tools and procedures can create safety hazards. Use power tools only to loosen threaded parts and fasteners. For loosening and tightening hardware, use the correct size tools. **DO NOT** use U.S. measurement tools on metric fasteners. Avoid bodily injury caused by slipping wrenches. Use only service parts meeting John Deere specifications.

Park Machine Safely



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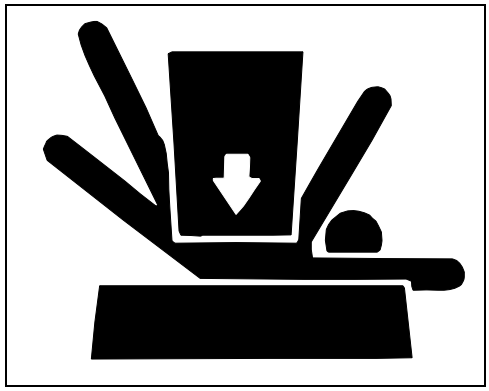
Before working on the machine:

1. Lower all equipment to the ground.
2. Stop the engine and remove the key.
3. Disconnect the battery ground strap.
4. Hang a “DO NOT OPERATE” tag in operator station.

Support Machine Properly And Use Proper Lifting Equipment



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If you must work on a lifted machine or attachment, securely support the machine or attachment.

Do not support the machine on cinder blocks, hollow tiles, or props that may crumble under continuous load. Do not work under a machine that is supported solely by a jack. Follow recommended procedures in this manual.

Lifting heavy components incorrectly can cause severe injury or machine damage. Follow recommended procedure for removal and installation of components in the manual.

Work In Clean Area

Before starting a job:

1. Clean work area and machine.
2. Make sure you have all necessary tools to do your job.
3. Have the right parts on hand.
4. Read all instructions thoroughly; do not attempt shortcuts.

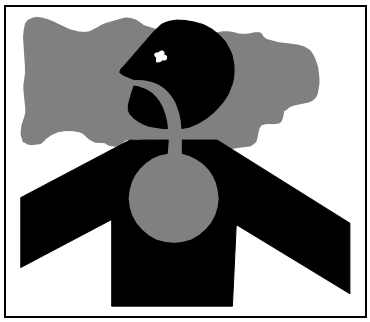
Using High Pressure Washers

Directing pressurized water at electronic/electrical components or connectors, bearings, hydraulic seals, fuel injection pumps or other sensitive parts and components may cause product malfunctions. Reduce pressure and spray at a 45 to 90 degree angle.

Illuminate Work Area Safely

Illuminate your work area adequately but safely. Use a portable safety light for working inside or under the machine. Make sure the bulb is enclosed by a wire cage. The hot filament of an accidentally broken bulb can ignite spilled fuel or oil.

Work In Ventilated Area



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Engine exhaust fumes can cause sickness or death. If it is necessary to run an engine in an enclosed area, remove the exhaust fumes from the area with an exhaust pipe extension.

If you do not have an exhaust pipe extension, open the doors and get outside air into the area.

Warning: California Proposition 65 Warning

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

Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects, and other reproductive harm.

Remove Paint Before Welding Or Heating

Avoid potentially toxic fumes and dust. Hazardous fumes can be generated when paint is heated by welding, soldering, or using a torch. Do all work outside or in a well ventilated area. Dispose of paint and solvent properly. Remove paint before welding or heating: If you sand or grind paint, avoid breathing the dust. Wear an approved respirator. If you use solvent or paint stripper, remove stripper with soap and water before welding. Remove solvent or paint stripper containers and other flammable material from area. Allow fumes to disperse at least 15 minutes before welding or heating.

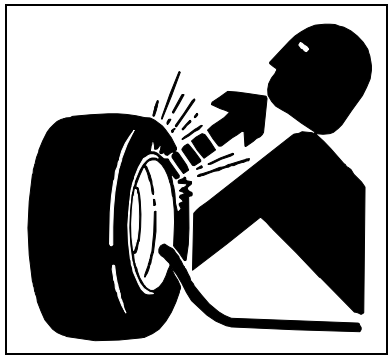
Avoid Harmful Asbestos Dust

Avoid breathing dust that may be generated when handling components containing asbestos fibers. Inhaled asbestos fibers may cause lung cancer.

Components in products that may contain asbestos fibers are brake pads, brake band and lining assemblies, clutch plates, and some gaskets. The asbestos used in these components is usually found in a resin or sealed in some way. Normal handling is not hazardous as long as airborne dust containing asbestos is not generated.

Avoid creating dust. Never use compressed air for cleaning. Avoid brushing or grinding material containing asbestos. When servicing, wear an approved respirator. A special vacuum cleaner is recommended to clean asbestos. If not available, apply a mist of oil or water on the material containing asbestos. Keep bystanders away from the area.

Service Tires Safely



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Explosive separation of a tire and rim parts can cause serious injury or death.

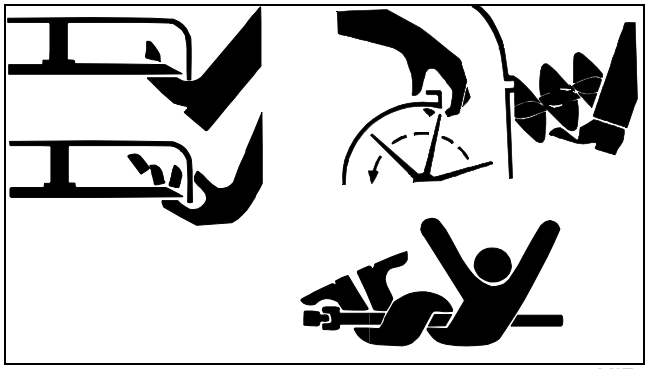
Do not attempt to mount a tire unless you have the proper equipment and experience to perform the job.

Always maintain the correct tire pressure. Do not inflate the tires above the recommended pressure. Never weld or heat a wheel and tire assembly. The heat can cause an increase in air pressure resulting in a tire explosion. Welding can structurally weaken or deform the wheel.

When inflating tires, use a clip-on chuck and extension hose long enough to allow you to stand to one side and NOT in front of or over the tire assembly. Use a safety cage if available.

Check wheels for low pressure, cuts, bubbles, damaged rims or missing lug bolts and nuts.

Avoid Injury From Rotating Blades, Augers And Pto Shafts



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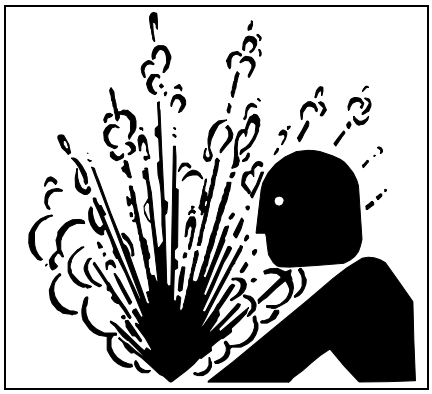
Keep hands and feet away while machine is running. Shut off power to service, lubricate or remove mower blades, augers or PTO shafts.

Service Cooling System Safely



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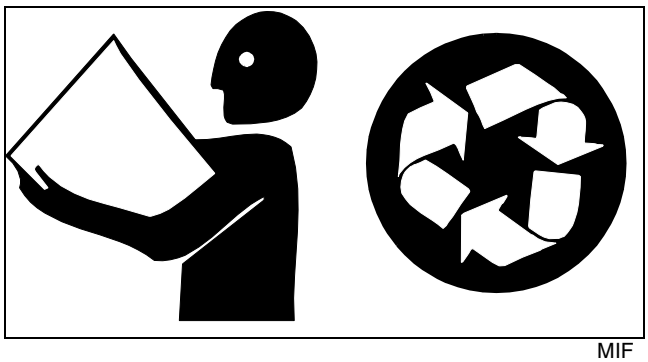
Explosive release of fluids from pressurized cooling system can cause serious burns.

Shut off machine. Only remove filler cap when cool enough to touch with bare hands. Slowly loosen cap to first stop to relieve pressure before removing completely.

Handle Chemical Products Safely



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Direct exposure to hazardous chemicals can cause serious injury. Potentially hazardous chemicals used with John Deere equipment include such items as lubricants, coolants, paints, and adhesives.

A Material Safety Data Sheet (MSDS) provides specific details on chemical products: physical and health hazards, safety procedures, and emergency response techniques. Check the MSDS before you start any job using a hazardous chemical. That way you will know exactly what the risks are and how to do the job safely. Then follow procedures and recommended equipment.

Dispose Of Waste Properly

Improperly disposing of waste can threaten the environment and ecology. Potentially harmful waste used with John Deere equipment include such items as oil, fuel, coolant, brake fluid, filters, and batteries. Use leakproof containers when draining fluids. Do not use food or beverage containers that may mislead someone into drinking from them. Do not pour waste onto the ground, down a drain, or into any water source. Inquire on the proper way to recycle or dispose of waste from your local environmental or recycling center, or from your John Deere dealer.

Live With Safety

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Before returning machine to customer, make sure machine is functioning properly, especially the safety systems. Install all guards and shields.

General Information

Diesel Fuel Specifications

CAUTION: Avoid injury! California Proposition 65 Warning: Diesel engine exhaust and some of its elements from this product are known to the State of California to cause cancer, birth defects, or other reproductive harm.

In general, diesel fuels are blended to satisfy the low air temperature requirements of the geographical area in which they are sold.

In North America, diesel fuel is usually specified to **ASTM D975** and sold as either **Grade 1** for cold air temperatures or **Grade 2** for warm air temperatures.

If diesel fuels being supplied in your area DO NOT meet any of the above specifications, use diesel fuels with the following equivalent properties:

- **Cetane Number 40 (minimum)**

A cetane number **greater than 50 is preferred**, especially for air temperatures below - 20°C (- 4°F) or elevations above 1500 m (5000 ft).

- **Cold Filter Plugging Point (CFPP)**

The air temperature at which diesel fuel **begins to cloud or jell** - at least 5°C (9°F) below the expected low air temperature range.

- **Sulfur Content of 0.05% (maximum)**

Diesel fuels for highway use in the United States now require sulfur content to be **less than 0.05%.**

If diesel fuel being used has a sulfur content **greater than 0.05%, reduce the service interval for engine oil and filter by 50%.**

Consult your local diesel fuel distributor for properties of the diesel fuel available in your area.

Diesel Fuel Lubricity

Diesel fuel must have adequate lubricity to ensure proper operation and durability of fuel injection system components. Fuel lubricity should pass a **minimum of 3300 gram load level** as measured by the **BOCLE** scuffing test.

Diesel Fuel Storage

IMPORTANT: Avoid damage! DO NOT USE GALVANIZED CONTAINERS - diesel fuel stored in galvanized containers reacts with zinc coating in the container to form zinc flakes. If fuel contains water, a zinc gel will also form. The gel and flakes will quickly plug fuel filters and damage fuel injectors and fuel pumps.

It is recommended that diesel fuel be stored **ONLY** in a clean, approved **POLYETHYLENE PLASTIC** container **WITHOUT** any metal screen or filter. This will help prevent any accidental sparks from occurring. Store fuel in an area that is well ventilated to prevent possible igniting of fumes by an open flame or spark, this includes any appliance with a pilot light.

IMPORTANT: Avoid damage! Keep all dirt, scale, water or other foreign material out of fuel.

Keep fuel in a safe, protected area and in a clean, properly marked **("DIESEL FUEL")** container. **DO NOT** use de-icers to attempt to remove water from fuel. **DO NOT** depend on fuel filters to remove water from fuel. It is recommended that a water separator be installed in the storage tank outlet. **BE SURE** to properly discard unstable or contaminated diesel fuel and/or their containers when necessary.

Engine Oil

Use the appropriate oil viscosity based on the expected air temperature range during the period between recommended oil changes. Operating outside of these recommended oil air temperature ranges may cause premature engine failure.

The following John Deere oil is PREFERRED:

- TORQ - GARD SUPREME® - SAE 5W-30;
- PLUS - 50® - SAE 15W-40;

Other oils may be used if above John Deere oils are not available, provided they meet one of the following specifications:

- SAE 15W-40 - API Service Classification CH-4 or higher;
- SAE 10W-30 - API Service Classification CG-4 (4-cycle) or higher;

John Deere Dealers: You may want to cross-reference the following publications to recommend the proper oil for your customers:

- Module DX,ENOIL2 in JDS - G135;
- Section 530, Lubricants & Hydraulics, of the John Deere

Theory of Operation

Clutch Engagement

Function:

To transfer power from the engine flywheel to the main drive shaft.

Theory of Operation:

The drive clutch assembly (A) is splined to the main drive shaft (B). When the clutch pedal is depressed the clutch shaft yoke (C) rotates forward and pushes the clutch release yoke and bearing (D) forward. The clutch release bearing presses the center of the pressure plate diaphragm (E) forward. The pressure plate diaphragm pivots and the outside edges of the diaphragm moves rearward releasing pressure on the pressure plate (F).

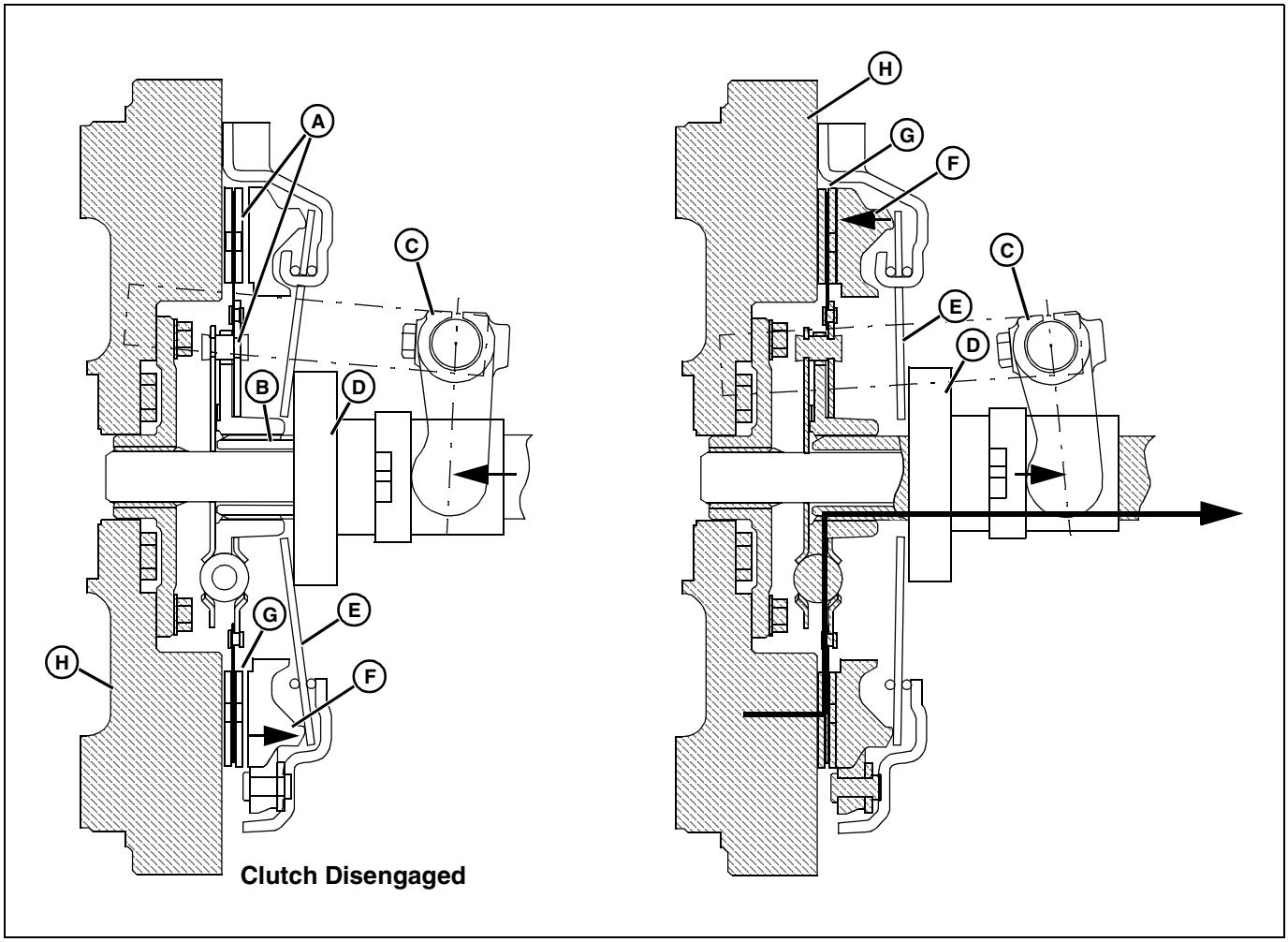
Releasing the pressure on the pressure plate keeps the clutch disk (G) from being pressed against the flywheel (H).

When the clutch pedal is released, the clutch shaft yoke (C) is rotated rearward. Diaphragm compression forces the clutch release bearing (D) to the rear.

When the clutch release bearing is forced rearward, the inside edges of the pressure plate diaphragm (E) are allowed to move rearward. The outside edges of the pressure plate diaphragm press the pressure plate (F) forward. The pressure plate forces the clutch disk (G) against the flywheel engaging the clutch disk.

When the clutch disk is engaged against the flywheel, power is transferred from the flywheel, through the clutch disk to the main drive shaft. Power is transferred from the main drive shaft to the rear axles through the gear collar shift transmission. See “Gear Synchromesh Shift” on page 428.

The PTO drive shaft runs through the center of the main drive shaft and is splined directly to the engine flywheel. See “PTO Theory of Operation” on page 623 in the Final Drive Power Train section.



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Gear Synchromesh Shift

Function:

To transfer power from the engine clutch to the rear axles.

Theory of Operation:

When the clutch is engaged, there is rotation of the drive shaft (A) which has four gears splined to it.

There are four corresponding gears on the driven shaft (B). Three are directly meshed to the gears on the drive shaft. The three gears on the driven shaft are mounted on roller bearings (C) and turn independently from the driven shaft. Two shift collars (D) are splined to the driven shaft (B) and are shifted forward or backward to engage the drive shaft gears to the driven shaft gears.

Power flow is shown below with the collar shifted into first gear.

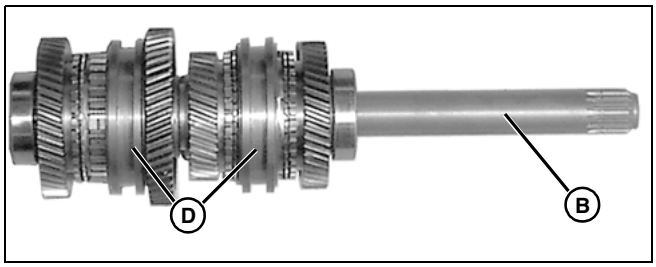
The driven shaft is splined directly to the reduction shaft, and transfers power to the reduction shaft of the range gears. See “Range Transmission” on page 587 in the Final Drive Power Train section.

The diagram below shows the front shifter in the rearmost (1st gear) position. Power flow is shown with the solid arrow. Power flow for 2nd and 3rd gear are shown with dashed arrows.

There are four positions for the shifters (from rear to front):

- Rearmost - 2nd
- Next forward - 3rd
- Next forward - 1st
- Most forward - Reverse

The reverse gear is driven through a reverse idler shaft and gear. See “Reverse Synchromesh Shift” on page 429.



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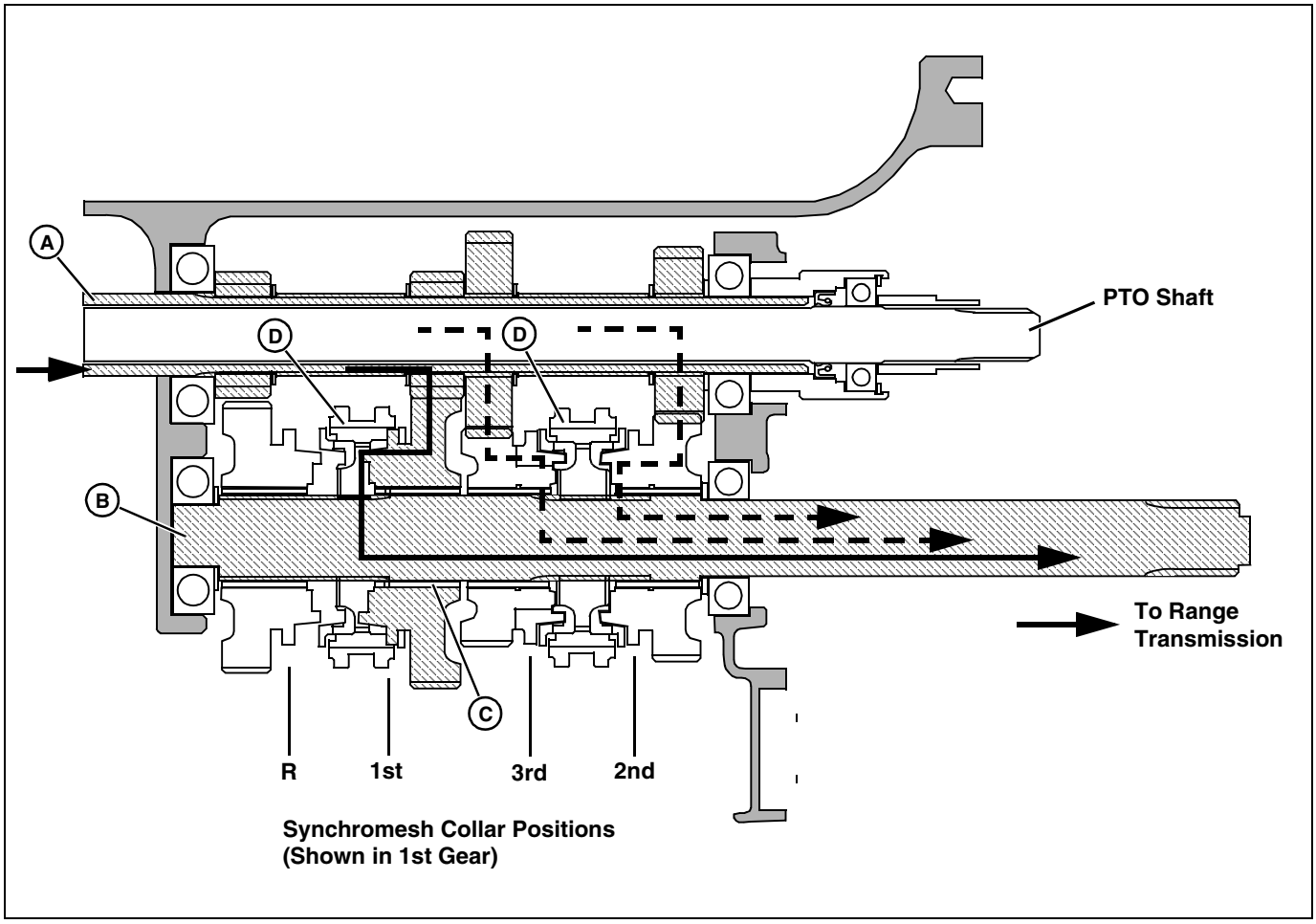

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Reverse Synchromesh Shift

Function:

To transfer power from the engine clutch to the rear axles.

Theory of Operation:

When the clutch is engaged, there is rotation of the drive shaft (A) which has four gears splined to it, the front one being the reverse gear.

The reverse gear is constantly meshed with a reverse idler gear (B) on the reverse idler shaft (C). The reverse idler shaft is offset to the left of the drive shaft and driven shaft.

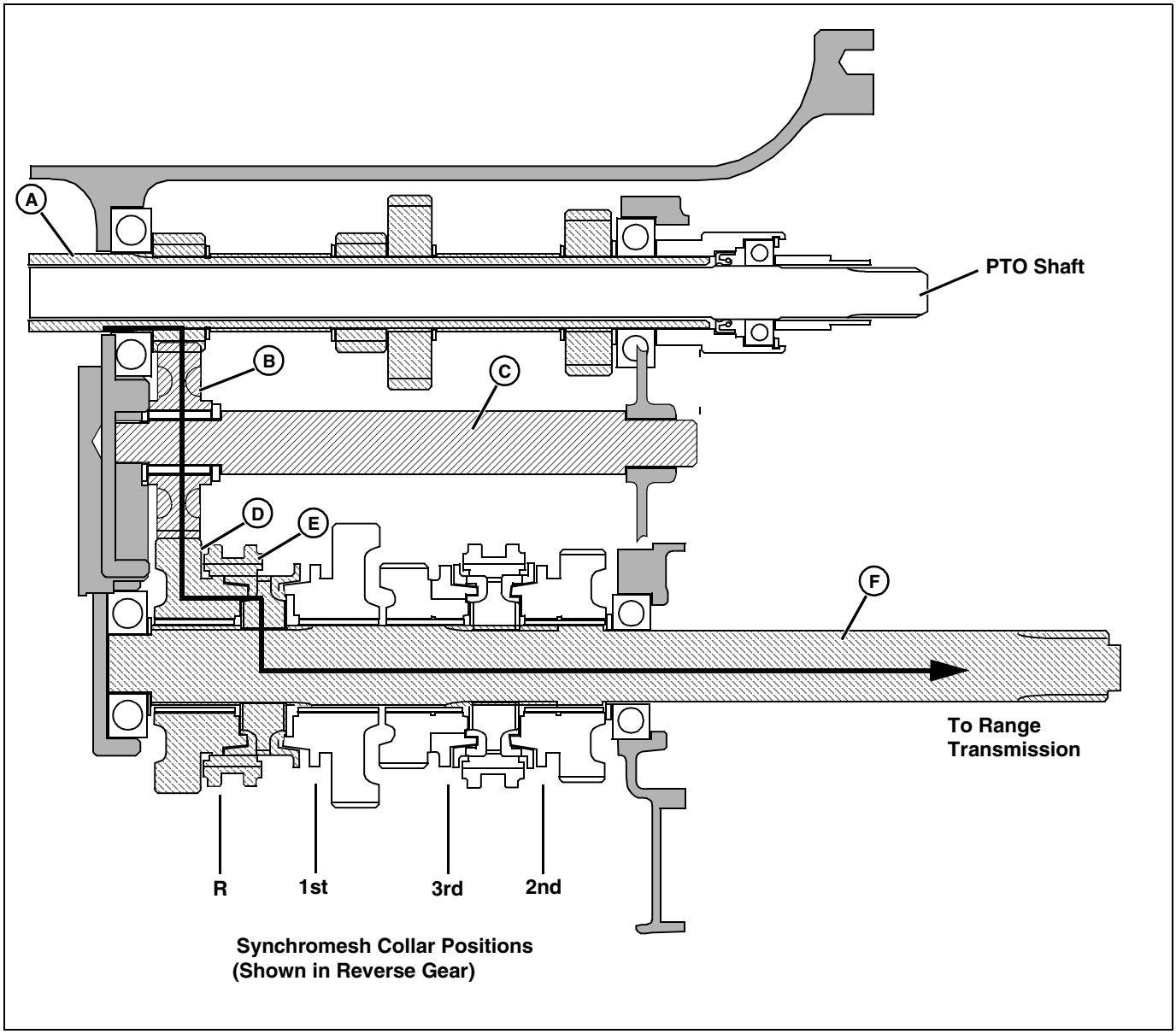
The reverse idler gear is constantly meshed with the reverse gear (D) on the driven shaft. The reverse idler gear and reverse gear on the driven shaft rotate freely on roller bearings.

When the shift lever is placed in REVERSE, linkage and a shift fork move the shift collar (E) forward where it engages the reverse gear and transfers power to the driven shaft (F).

Power flow is shown below with the collar shifted into reverse gear.

The driven shaft is splined directly to the reduction shaft, and transfers power to the reduction shaft of the range transmission.

NOTE: The drive shaft/PTO shaft and the driven shaft are shown farther apart than they are to allow visual representation of the offset reverse idler shaft and gear.



Synchromesh Collar Positions (Shown in Reverse Gear)

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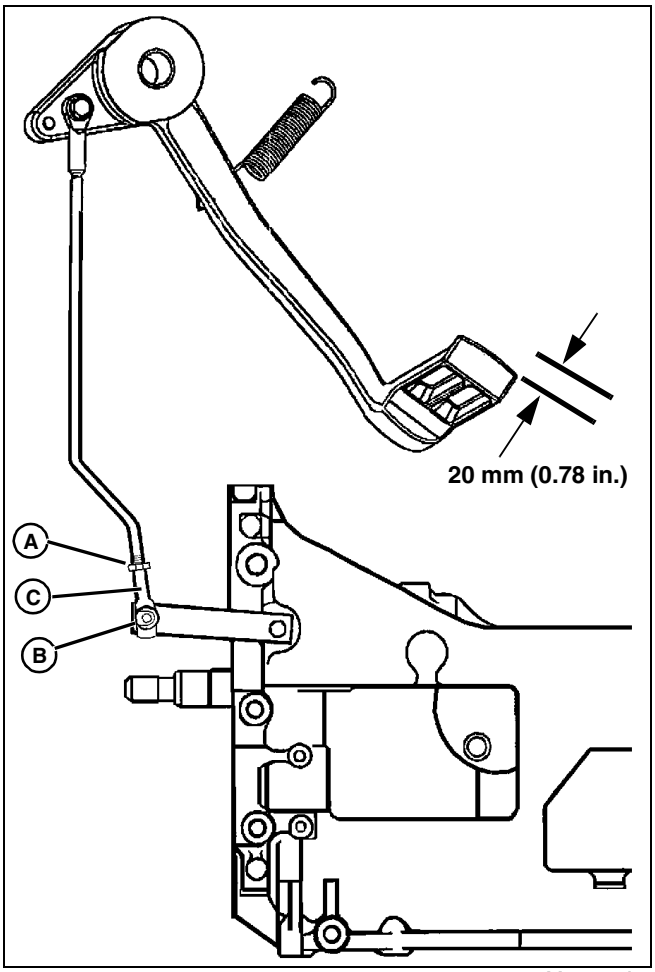
Tests and Adjustments

Clutch Adjustment

Procedure:



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1. Make sure clutch return spring is correctly installed.

2. Depress the clutch pedal and make sure the pedal stem does not contact the head of the brake pivot cap screw.

3. Loosen jam nut (A) on yoke (C), and remove pin and clip (B) from assembly.

4. Adjust yoke until clutch pedal has **20 mm (0.780 in.)** free travel measured at center of clutch pedal face.

5. When free travel is correct install clip and pin. Hold yoke and tighten jam nut.

Repair

Machine Splitting (Front)

Prepare the Machine:

1. Park machine on a level surface. Engage park brake, shut off engine.

2. Disconnect battery negative terminal.

3. Remove side panels.

4. Remove hood. See “Hood Removal and Installation” on page 772 in Miscellaneous Section.

5. Remove steering wheel.

6. Remove control panel. See “Control Panel Removal and Installation” on page 770 in Miscellaneous Section.

7. Remove left side and right side cowl panels. See “Cowl Panel Removal and Installation” on page 771 in Miscellaneous Section.

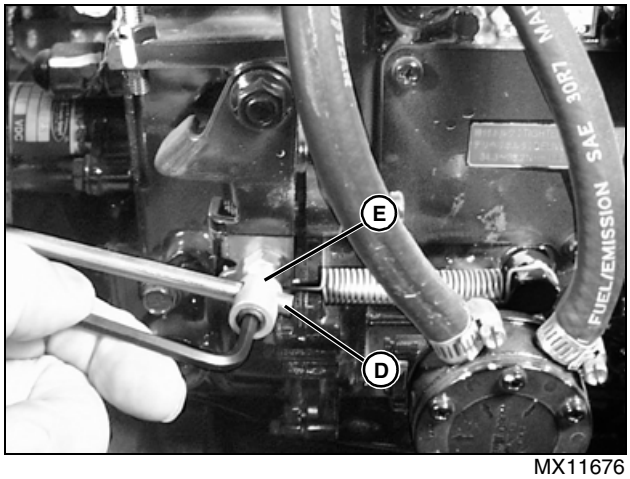
8. Remove fuse panel cover. See “Fuse Panel Cover Removal and Installation” on page 770 in Miscellaneous Section.

9. Remove floor mat and operator’s platform. See “Operator’s Platform Removal and Installation” on page 769 in Miscellaneous Section.

10.Remove key switch panel. See “Key Switch Panel Removal and Installation” on page 771 in Miscellaneous Section.

11.Remove fuel tank. See “Fuel Tank Removal and Installation” on page 772 in Miscellaneous Section.

12.Locate and disconnect all electrical connectors attaching wiring harness to switches and lights on rear half of machine. Unfasten wiring harness from cable clips and move harness away from rear half of machine.



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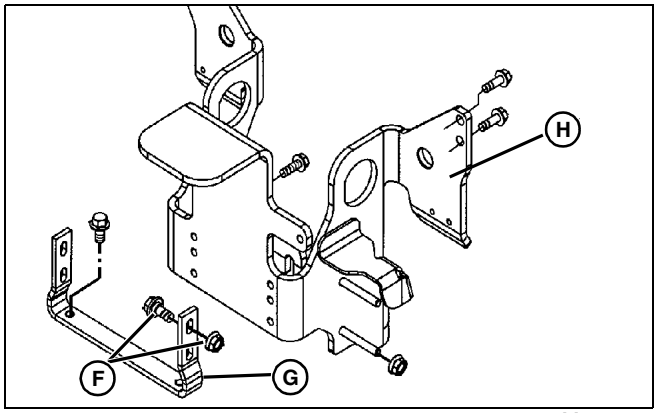
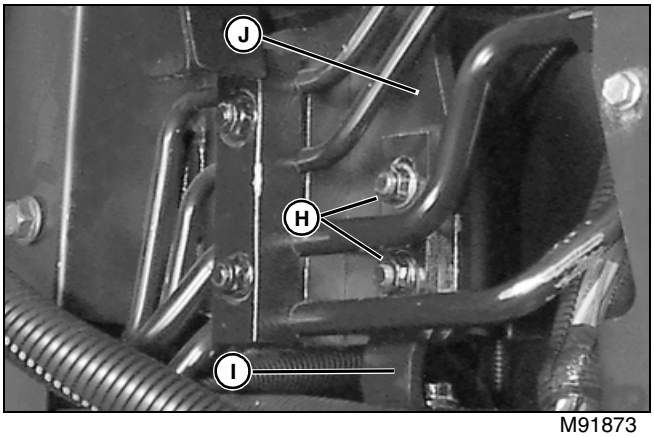
13.If not already done, disconnect throttle linkage (D) from throttle lever (E) on fuel injection pump.

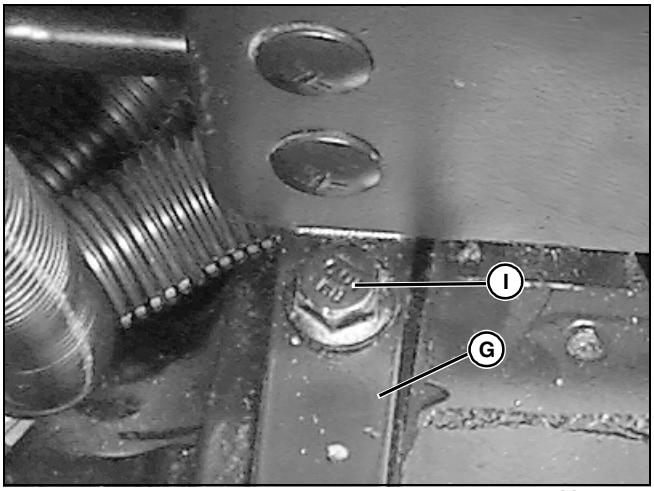


M91871



M91873

14.Loosen four nuts and carriage bolts (F) attaching U-shaped bracket (G) to pedal support frame (H).

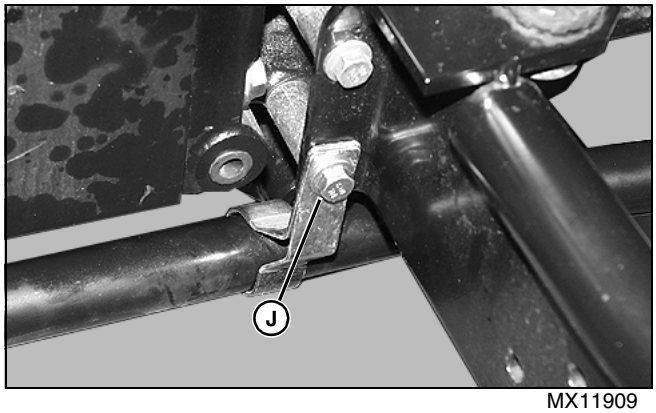


M91876

15.Remove two cap screws (I) attaching U-shaped bracket (G) to transmission tunnel.

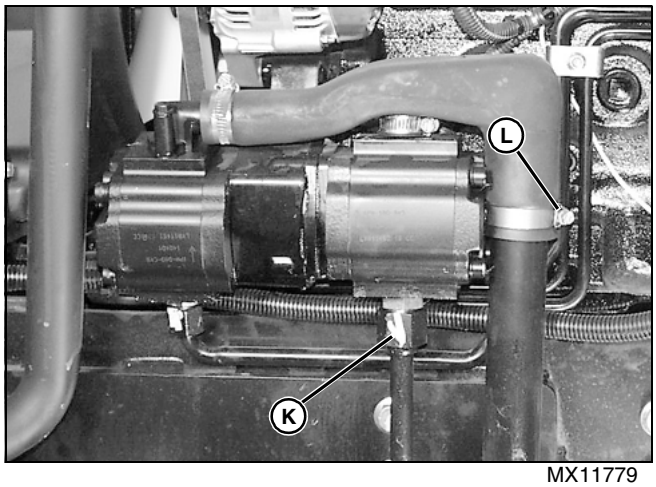
NOTE: Capacity of the hydraulic reservoir is 37 liters (9.8 gal) (39.1 qt).

16.Drain hydraulic oil from transaxle.



MX11909

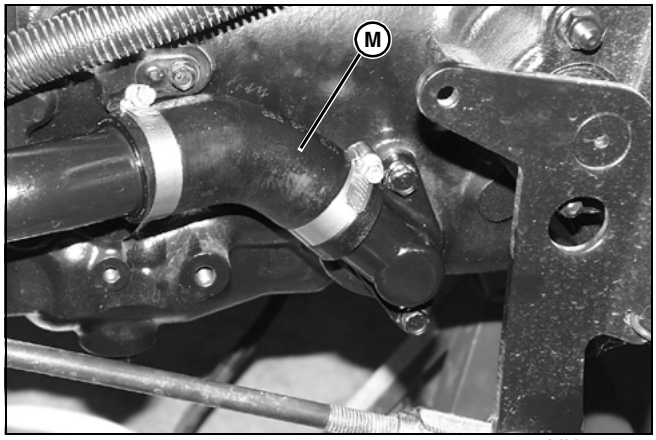
17.Remove cap screw and clamp (J) attaching suction tube to tunnel section.



MX11779

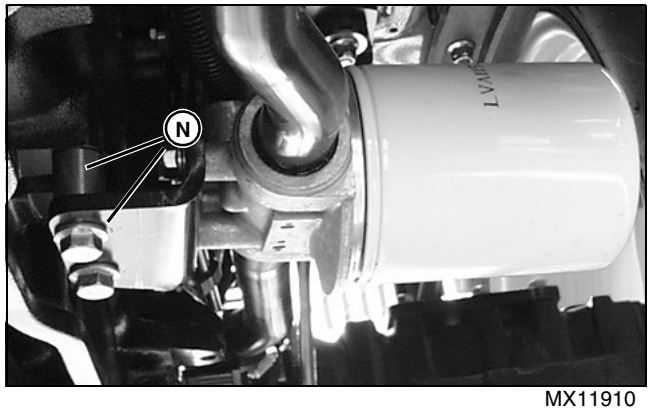
18.Disconnect PTO pressure tube (K) from rear hydraulic pump.

19.Loosen clamp (L) on suction tube manifold.



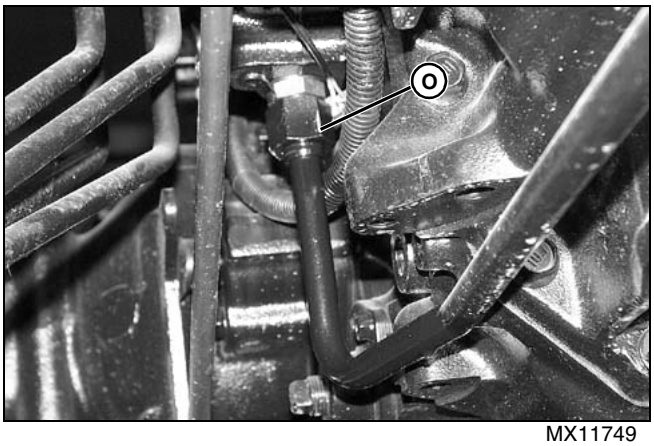
MX11913

20.Disconnect suction tube (M) from elbow from transaxle.



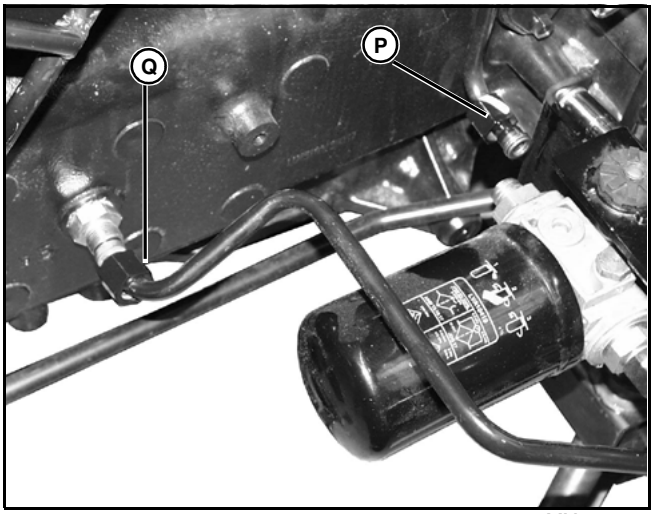
MX11910

21.Remove two bolts and spacers (N). Remove suction tubes and filter as an assembly.



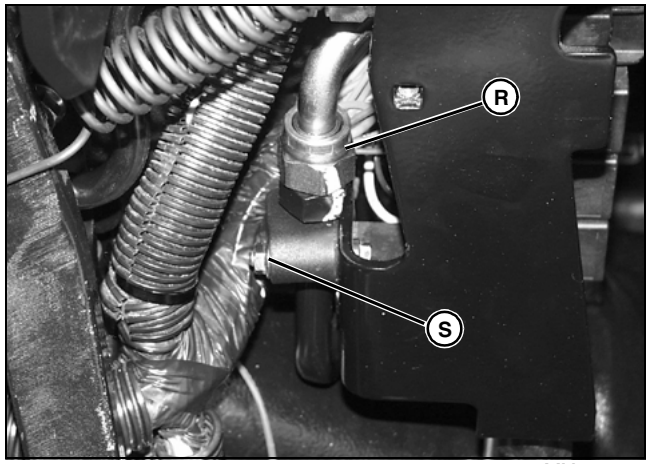
MX11749

22.Disconnect PTO pressure tube (O) from bottom of PTO valve. Remove tube.



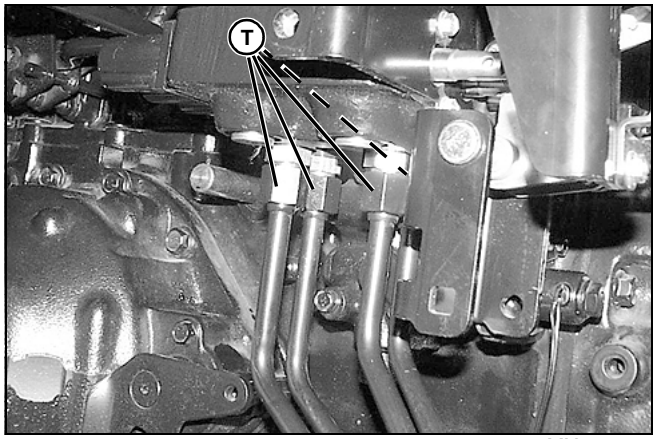
MX11805

23.Disconnect tubes (P) and (Q) from hydraulic oil filter.



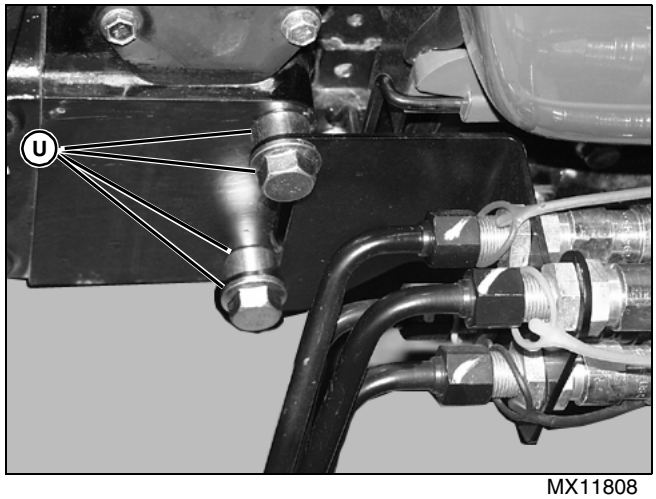
MX11914

24.Disconnect other end of tube from steering return hose (R). Remove tube clamp cap screw and nut (S) and remove tube.



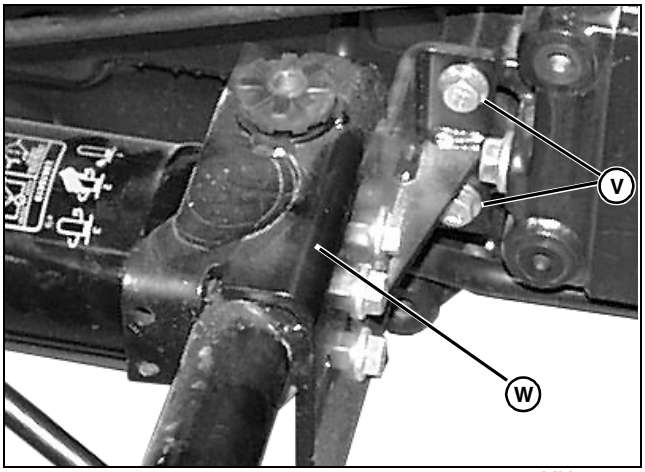
MX11740

25.If equipped, disconnect four work port tubes (T) from SCV.



MX11808

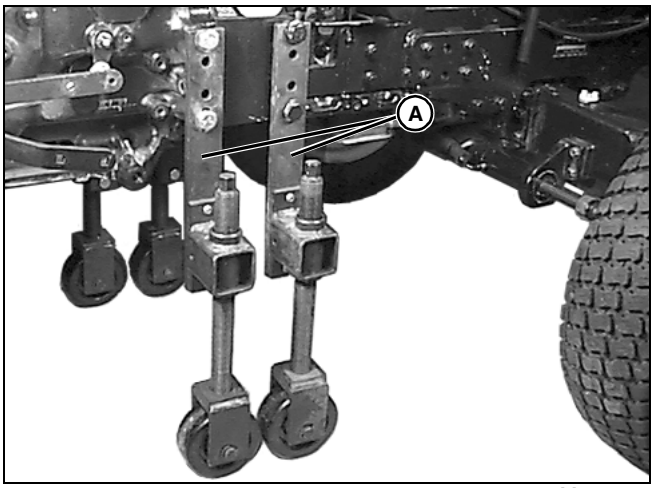
26.Remove cap screws and spacers (U) that attach tube support bracket to frame. Remove tube support bracket and tubes as an assembly.



MX11919

27.Remove two cap screws (V) and right side operator's platform support (W).

Split the Machine:



M91866

1. Using cap screws supplied with the splitting stands, secure JTO 7335 splitting stands (A) to the tunnel sections.

2. Adjust splitting stands so that wheels contact the floor, and are parallel to the machine wheels.

3. Remove nine cap screws and lock washers attaching tunnel section to engine section of machine. Note length and locations of cap screws when removing.

4. Release park brake and place gear shift in NEUTRAL.

IMPORTANT: Avoid damage! Check for, and disconnect any additional accessory wires or hydraulic tubes connecting rear half to front half before splitting machine.

5. If necessary, use a pry bar to separate the two machine sections. Lift the steering support slightly to clear the front flange of the tunnel. Split the machine by rolling the two sections apart.

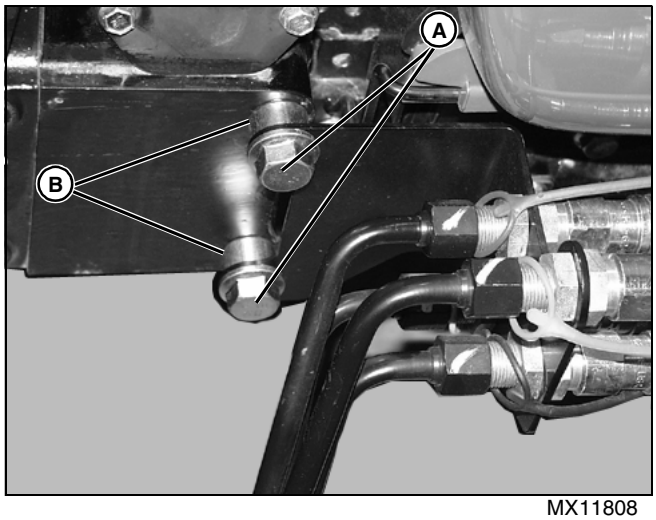
Assemble Machine Sections:

NOTE: Splines on all drive shafts and couplers must be aligned before machine sections are bolted together.

1. Align splines on drive shafts and engine flywheel.

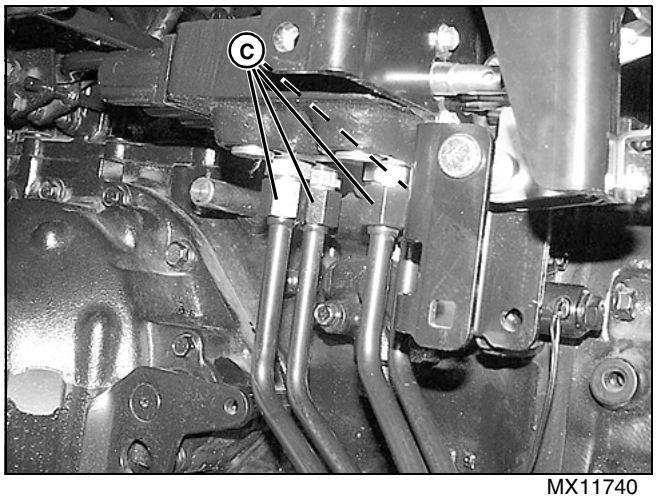
2. Move machine sections together and retain with 9 cap screws. Tighten cap screws to **126 - 154 N•m (95 - 115 lb-ft)**.

3. Remove splitting stands.



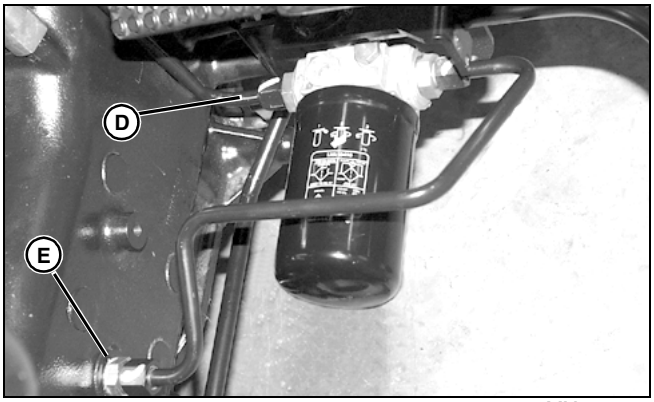
MX11808

4. If equipped, install SCV tube support bracket and tubes as an assembly. Install 2 cap screws (A) and 2 spacers (B) to attach tube support bracket to frame.



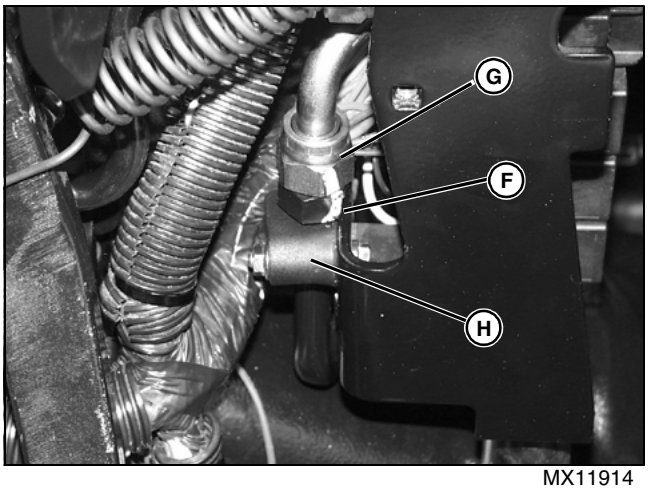
MX11740

5. Connect four work port tubes (C) to SCV. Tighten to **40 - 57 N•m (30 - 43 lb ft)**.



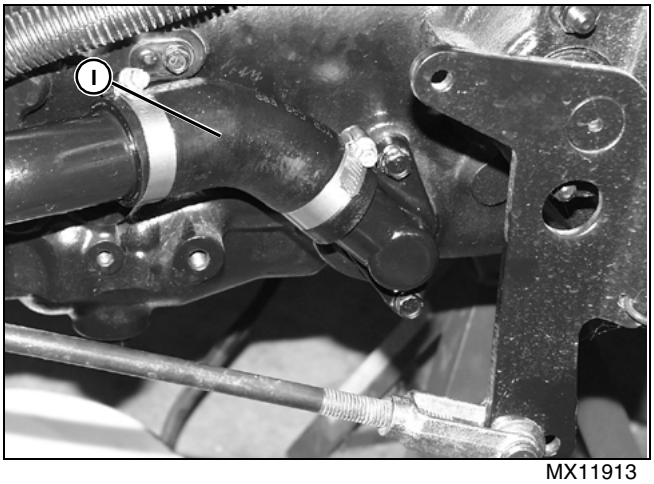
MX11923

6. Connect hydraulic oil tube (D) to left side port of hydraulic oil filter. Connect tube from right side of filter to fitting (E)on tunnel Tighten to **40 - 57 N•m (30 - 43 lb ft)**.



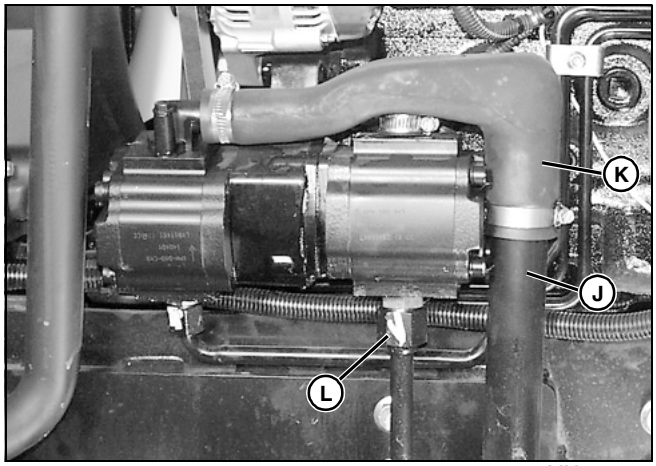
MX11914

7. Connect tube (F) to steering return hose (I). Tighten to **40 - 57 N•m (30 - 43 lb ft)**. Install line clamp (H) and secure with cap screw.



MX11913

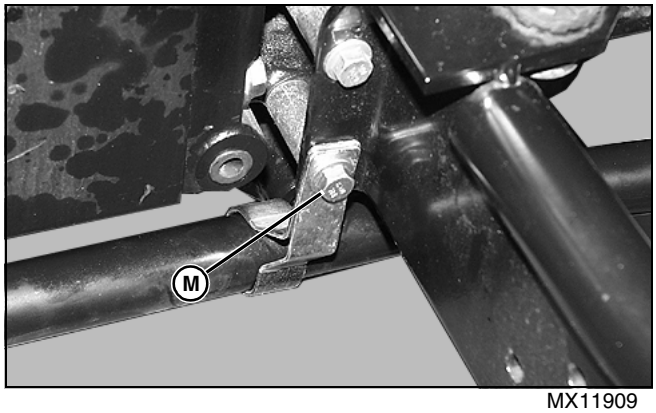
8. Reconnect suction tube (I).



MX11779

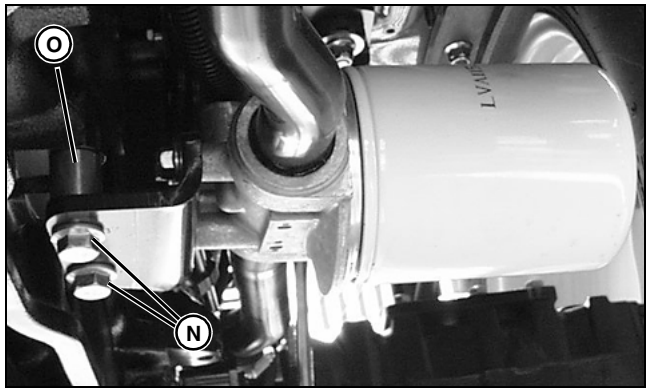
9. Connect suction tube (J) to suction manifold (K) and retain with hose clamp.

10.Connect PTO pressure tube (L) to rear hydraulic pump. Tighten fitting to **40 - 57 N•m (30 - 43 lb ft)**.



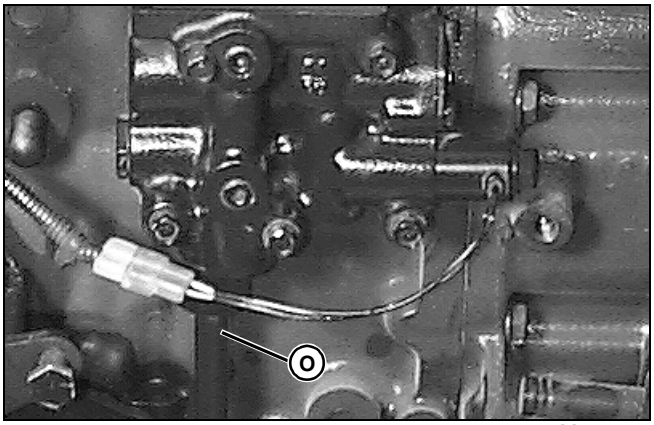
MX11909

11.Secure suction tube clamp (M) to tunnel section.



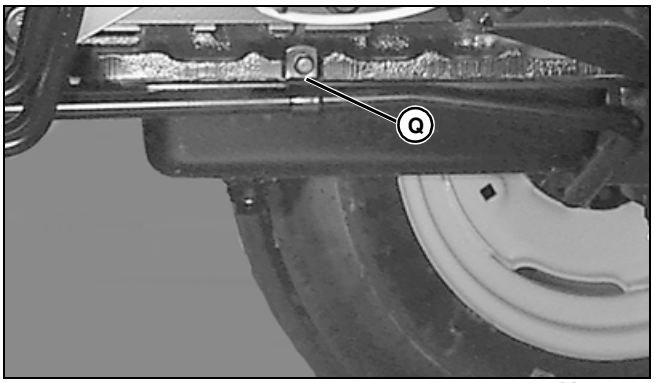
MX11910

12.Install cap screws (N) and spacers (O) securing filter bracket to machine.



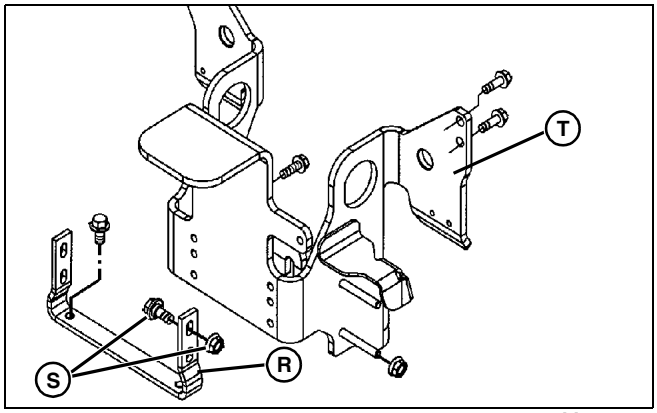
M91389

13.Connect PTO pressure tube (O) to bottom of PTO valve. Tighten nut to **40 - 57 N•m (30 - 43 lb ft)**.

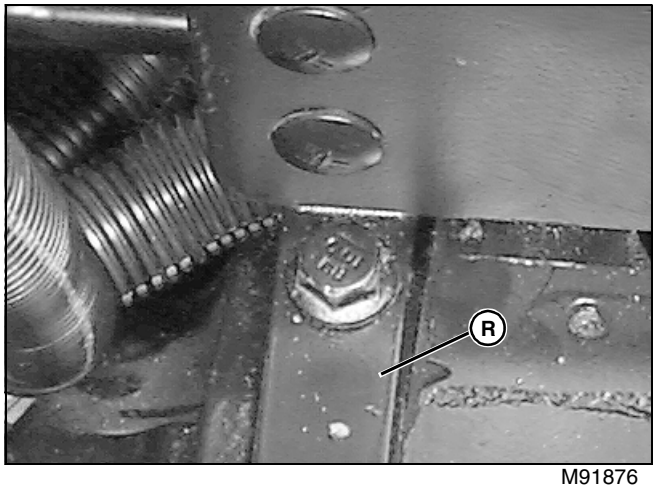


M91882

14.On right side of machine, Secure tube clamp (Q) attaching PTO pressure tube to frame.

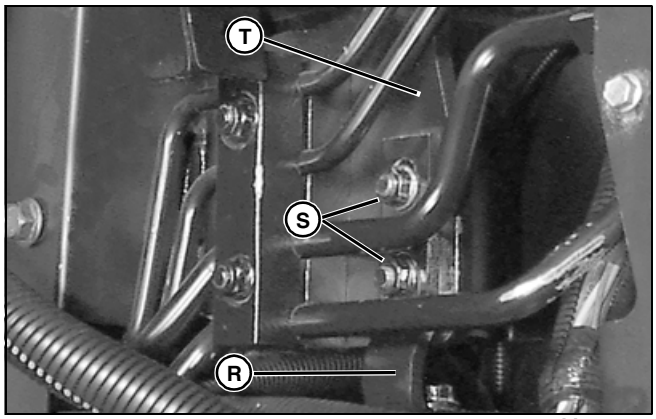


M91871



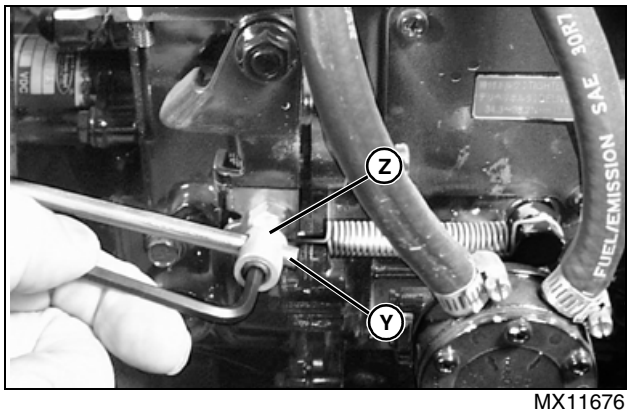
M91876

15.Install U-shaped bracket (R) to transmission tunnel, retain with two cap screws. Tighten cap screws.



M91873

16.Install four carriage bolts (S) and nuts attaching U-shaped bracket (R) to pedal support frame (T) and tighten.



MX11676

17.Connect throttle linkage (Y) to throttle lever (Z) on fuel injection pump.

18.Route electrical harness on rear half of machine. Connect all electrical connectors attaching wiring harness to switches and lights on rear half of machine. Fasten wiring harness to cable clips. Replace any plastic tie bands removed during disassembly.

19.Install fuel tank. See “Fuel Tank Removal and Installation” on page 772 in Miscellaneous Section.

20.Install operator’s platform. See “Operator’s Platform Removal and Installation” on page 769 in Miscellaneous Section.

21.Install floor mat.

22.Install key switch panel. See “Key Switch Panel Removal and Installation” on page 771 in Miscellaneous Section.

23.Install fuse panel cover. See “Fuse Panel Cover Removal and Installation” on page 770 in Miscellaneous Section.

24.Install left side and right side cowl panels. See “Cowl Panel Removal and Installation” on page 771 in Miscellaneous Section.

25.Install control panel. See “Control Panel Removal and Installation” on page 770 in Miscellaneous Section.

26.Install steering wheel. See “Steering Wheel Removal and Installation” on page 736 in Miscellaneous Section.

27.Install hood. See “Hood Removal and Installation” on page 772 in Miscellaneous Section.

28.Install side panels.

29.Connect battery negative terminal.

Machine Splitting (Rear)

Prepare the Machine:

1. Park machine on a level surface. Engage park brake, shut off engine.

2. Disconnect battery negative terminal.

3. Remove fuse panel cover. See “Fuse Panel Cover Removal and Installation” on page 770 in Miscellaneous Section.

4. Remove floor mat.

5. Remove seat and seat support. See “Seat And Seat Support Removal and Installation” on page 766 in Miscellaneous Section.

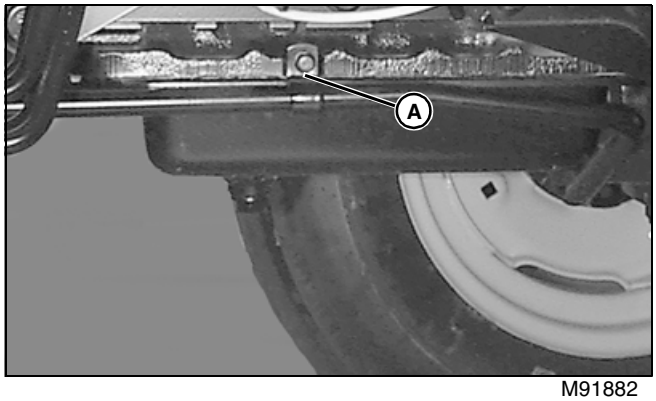
6. Remove seat platform.

7. Remove closeout panel.

8. Remove operator’s platform. See “Operator’s Platform Removal and Installation” on page 769 in Miscellaneous Section.

9. Remove fenders. See “Rear Fenders Removal and Installation” on page 767 in Miscellaneous Section.

10.Locate and disconnect all electrical connectors attaching wiring harness to switches and lights on rear half of machine. Unfasten wiring harness from cable clips and move harness away from rear half of machine.

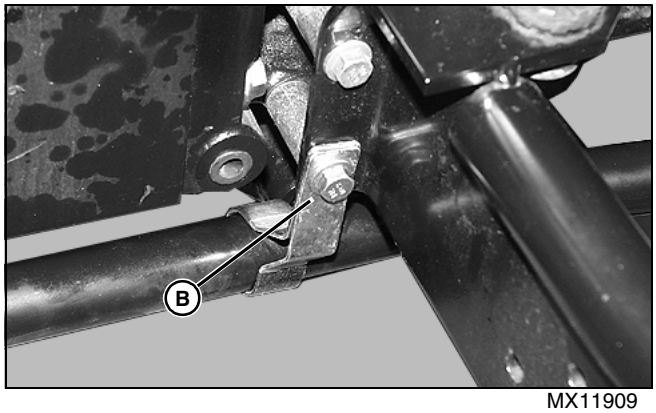


M91882

11.On right side of machine, remove cap screw and tube clamp (A) attaching PTO pressure tube to frame.

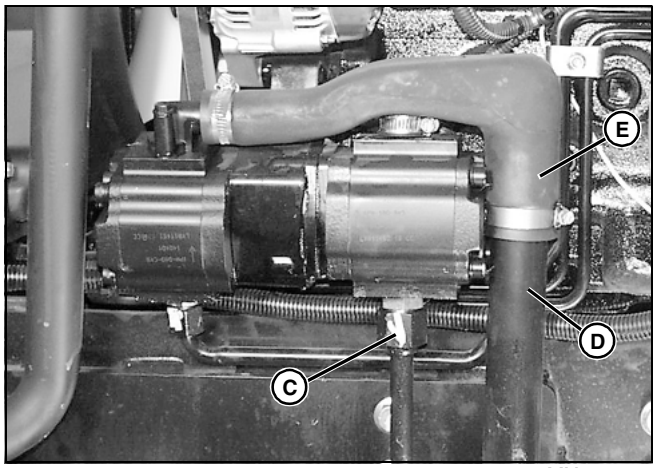
NOTE: Capacity of the hydraulic reservoir is 37 liters (9.8 gal) (39.1 qt).

12.Drain hydraulic oil from reservoir.



MX11909

13.Remove cap screw and clamp (B) attaching suction tube to tunnel section.



MX11779

14.Disconnect PTO pressure tube from rear hydraulic pump.