

Product: New Holland MZ19H Tractor Service Repair Manual  
Full Download: <https://www.aresairmanual.com/downloads/new-holland-mz19h-tractor-service-repair-manual/>

# NEW HOLLAND MZ19H

# REPAIR MANUAL



Sample of manual. Download All 116 pages at:  
<https://www.aresairmanual.com/downloads/new-holland-mz19h-tractor-service-repair-manual/>

**SECTION 1 - GENERAL INFORMATION**

**SECTION 2 - MODEL/SERIAL NUMBER LOCATION**

**SECTION 3 - GREASING AND LUBRICATION**

**SECTION 4 - ENGINE**

**SECTION 5 - TRANSAXLE**

**SECTION 6 - CHASSIS**

**SECTION 7 - MOWER DECKS**

**SECTION 8 - ELECTRICAL SYSTEM**

The sections used through out all New Holland product Repair manuals may not be used for each product. Each Repair manual will be made up of one or several books. Each book will be labeled as to which sections are in the overall Repair manual and which sections are in the each book.

The sections listed above are the sections utilized for the MZ19H series tractors.

**SECTION 1 - GENERAL INFORMATION**

**CONTENTS**

<b>Section</b>	<b>Description</b>	<b>Page</b>
	General Information.....	1-2
	Think Safety First.....	1-2
	Engine Specifications - (MZ19H).....	1-3
	Bolt Torques.....	1-7
	Maintenance Schedule - (MZ19H).....	1-8



This symbol means WARNING or PERSONAL SAFETY INSTRUCTION - read the instruction because it has to do with your safety. Failure to comply with the instruction may result in personal injury or even death.

This manual is intended as a service and repair manual only. The safety instructions provided herein are for troubleshooting, service, and repair of the MZ19H zero radius tractor. The MZ19H zero radius tractor and attachment operator's manuals contain safety information and operating tips for safe operating practices. Operator's manuals are available through your New Holland dealer.

---

## **THINK SAFETY FIRST**

### **AVOID UNEXPECTED STARTING OF ENGINE...**

Always turn off the engine and disconnect the spark plug wire(s) before cleaning, adjusting, or repair.

### **AVOID LACERATIONS AND AMPUTATIONS...**

Stay clear of all moving parts whenever the engine is running. Treat all normally moving parts as if they were moving whenever the engine is running or has the potential to start.

### **AVOID BURNS...**

Do not touch the engine, muffler, or other components which may increase in temperature during operation, while the unit is running or shortly after it has been running.

### **AVOID FIRES AND EXPLOSIONS...**

Avoid spilling fuel and never smoke while working with any type of fuel or lubricant. Wipe up any spilled fuel or oil immediately. Never remove the fuel cap or add fuel when the engine is running. Always use approved, labeled containers for storing or transporting fuel and lubricants.

### **AVOID ASPHYXIATION...**

Never operate an engine in a confined area without proper ventilation.

### **AVOID INJURY FROM BATTERIES...**

Battery acid is poisonous and can cause burns. Avoid contact with skin, eyes, and clothing. Battery gases can explode. Keep cigarettes, sparks, and flames away from the battery.

### **AVOID INJURY DUE TO INFERIOR PARTS...**

Use only original equipment parts to ensure that important safety criteria are met.

### **AVOID INJURY TO BYSTANDERS...**

Always clear the area of bystanders before starting or testing powered equipment.

### **AVOID INJURY DUE TO PROJECTILES...**

Always clear the area of sticks, rocks, or any other debris that could be picked up and thrown by the powered equipment.

### **AVOID MODIFICATIONS...**

Never alter or modify any part unless it is a factory approved procedure.

### **AVOID UNSAFE OPERATION...**

Always test the safety interlock system after making adjustments or repairs on the machine. Refer to the Electrical section in this manual for more information.

## SECTION 1 - GENERAL INFORMATION

---

### SPECIFICATIONS

#### MZ19H

##### ENGINE

Type.....	Kawasaki
Model.....	FH580V
Horsepower.....	14.2 kw (19)@3600 RPM
Cylinders.....	V-Twin
Displacement.....	585CC (35.7 cu. in.)
Low Idle Speed.....	1400 RPM
Maximum Speed:	
High Idle .....	3400 RPM
Oil Capacity .....	1.9 qt. (1.8L)
Spec Number.....	AS13
Fuel Unleaded Gasoline.....	87 octane min.
Vertical Shaft .....	1 in. (2.54 cm) Dia
Charge coil .....	12v - 13 amp
Other.....	Air cooled, Dual element air cleaner, Fuel pump, Overhead valve, Four cycle, Electronic ignition, Full pressure lubricated with oil filter

##### CONSTRUCTION

Front Frame.....	Welded 1 x 2 x .120 structural steel tube
Rear Frame .....	Welded, 7 and 10 ga. high strength steel
Frame Assembly.....	Front and rear frames bolted together

##### FUEL SYSTEM

Capacity.....	5 Gallon (18.9 L)
Type.....	Single fuel tank fender mounting on left side
Other.....	Fuel tank shut-off, Fuel filter (replaceable in-line type), Large diameter vented fuel cap, Tank includes molded beverage holder

##### TRACTION SYSTEM

Transaxles .....	Twin Hydro-Gear Hydrostatic Transaxles
Transaxle Drive .....	Belt drive with self-tensioning system
Ground speed.....	Infinite, 0 to 7-MPH (10.5-km/hr) forward, 0 to 3.4-MPH (5.5-km/hr) reverse
Transport Rods.....	Allow unit to be moved without engine running

##### ATTACHMENT DRIVE

Clutch .....	Electric Clutch
Type.....	Vertical drive with single deep B-groove Pulley

## SECTION 1 - GENERAL INFORMATION

---

### MZ19H

#### TIRES

Rear Drive Tires .....	18 x 10.5-10 4 ply with "Multitrac CS" tread
Front Castor Tires.....	410/350 x 4 with "sawtooth" tread
Tire Pressure .....	13 psi (90 kPa), rear, 35 psi (241 kPa) front

#### OPERATORS SEAT

Type.....	High back foam padded with arm rests
Mounting.....	Hinged mounting for easy access to battery and controls; spring suspension
Adjustment.....	Fore and aft 3 in. (76 mm) by loosening 2 knobs and sliding seat

#### STEERING

Levers.....	Dual wrap-around levers control hydraulic pumps
Dampening .....	Dual hydraulic dampers
Turning Radius .....	Zero radius turn (ZRT)

#### CONTROLS

Steering Lever .....	Dual wrap-around with cushioned grips
Parking Brake.....	Left hand operated lever with cushioned grip
Attachment Lift.....	Right hand operated lever with cushioned grip
Cutting Height.....	Rightside incorporated with attachment lift
Engine Throttle .....	Rightside console mounted lever
Ignition Switch .....	Rightside console mounted electric with key
Power Take Off.....	Rightside console mounted electric

#### INTERLOCKS

Seat .....	Operator presence switch
Control Lever.....	Dual neutral sensing switch
Power Take Off.....	Position switch
Brake .....	Position switch

#### ELECTRICAL SYSTEM

Battery Voltage .....	12 volt negative ground
Battery Type .....	BCI Group U1
Fused.....	(1) 30 amp blade type, main (1) 25 amp blade type, charge system (1) 10 amp (blade type) included with optional light kit

## SECTION 1 - GENERAL INFORMATION

---

### MZ19H

#### LUBRICATION FITTINGS

Front Castor Pivots.....	2 Fittings
Front Castor Wheels.....	2 Fittings
Lift Assembly .....	3 Fittings
Deck Idler Pivot .....	1 Fitting
Transaxle Idler Pivot.....	1 Fitting
Control Linkage Pivot .....	2 Fittings

#### DIMENSIONS

Wheel Base .....	52.1 in. (132.3 cm) center of castor to center of drive tires
Width .....	47.6 in. (120.9 cm) outside rear tires
Overall Width.....	65 in. (165.1 cm) with deck deflector down 58 in. (147.3 cm) Gate width with deck deflector up.
Overall Length .....	77.5 in. (196.9 cm)
Overall Height.....	41 in. (104.1 cm)
Track Width .....	37.5 in. (95.3 cm) center to center of rear tires 30.4 in. (77.2 cm) center to center of castor tires
Deck Width .....	65 in. (165.1 cm) w/deflector down

#### WEIGHT

Net Weight	680 lbs. (309 kg) (estimated)
------------	-------------------------------

#### DECK

Right side discharge. 52 in. (132 cm) cut, three blade mid-mounted rotary. Drawn 12 gauge steel deck with welded mounting brackets and gauge wheel brackets. Frame supported.

#### DECK BELT COVERS

Removable 16 gauge formed sheet metal, fastened to deck with thread forming screws. Access holes in top for greasing spindles.

#### DEFLECTOR

12 gauge formed, held down by torsion springs at pivot bracket.

#### ANTI-SCALP ROLLERS

One front mounted

#### DECK OFFSET

None. Deck centerline on machine centerline.

## SECTION 1 - GENERAL INFORMATION

---

### MZ19H

<b>GAUGE WHEELS</b>	One on each front corner, one on each rear corner to reduce scalping. Gauge wheels have four height position adjustments.
<b>HEIGHT OF CUT</b>	Adjusts from 1.5" to 4.5" (38 to 114 mm) (7 positions)
<b>UNCUT CIRCLE</b>	0" uncut circle
<b>ENGINE TO DECK DRIVE</b>	HB-section Kevlar cord "V" belt from engine clutch sheave to deck spindle sheaves. Spring loaded idler for belt tension and take-up
<b>SPINDLE ASSEMBLIES</b>	Three 17-mm diameter spindles turning in permanently lubed ball bearings. Die cast aluminum spindle housings.
<b>BLADES</b>	Three 18" x 2.5" x .187" heat treated steel blades
<b>TIP SPEED</b>	17,500 ft/min (5334 m/min) @ 3400 RPM nominal 18,070 ft/min (5507 m/min) @ 3500 RPM max
<b>DECK MOUNTING</b>	Deck suspended from front frame by four trunnion rods and attached to lift mechanism by two multi-position links ("pork chops").
<b>OPTIONAL EQUIPMENT</b>	
Recycler Kit	
Light Kit	
Snow Plow Attachment	
Tire Chains	
Smooth Castor Wheel Kit	
Striping Kit	
Decal Kit - Canada	
<b>CERTIFICATION</b>	Conforms to California CARB and EPA Certification. Conforms to ANSI B71.1-2001

**SECTION 1 - GENERAL INFORMATION**

---

**BOLT TORQUES**

DESCRIPTION	TORQUE
Blade to Spindle	80 - 100 ft lb (109 - 136 N·m)
Caster Bolts	77 - 95 ft lb (105 - 130 N·m)
Clutch Bolt	50 - 60 ft lb (68 - 82 N·m)
Engine Mounting Bolts	120 - 180 ft lb (164 - 246 N·m)
Spindle Pulley Nuts	80 - 100 ft lb (109 - 136 N·m)
Wheel Lug Nuts	70 - 90 ft lb (95.5 - 123 N·m)

**SECTION 1 - GENERAL INFORMATION**

---

**MAINTENANCE SECHUDLE (MZ19H)**

MAINTENANCE PROCEDURE	SERVICE INTERVAL
Check the engine oil	After first use
Check the engine oil level	Each use
Check the safety system	
Clean the air intake screen	
Clean the mower housing	
Check the cutting blades	
Grease all lubrication points <sup>1</sup>	Every 5 hours
Oil the linkage bushings <sup>1</sup>	
Service the foam air cleaner <sup>1</sup>	
Check the belts for wear/cracks	
Check the battery electrolyte	
Check the tire pressure	
Service the paper air cleaner <sup>1</sup>	Every 25 hours
Change the engine oil	Every 50 hours
Check the spark plug(s)	
Change the oil filter <sup>1</sup>	
Replace the fuel filter	Every 100 hours
Replace the paper air cleaner <sup>1</sup>	
Clean the engine shrouds and cooling fins <sup>1</sup>	Every 200 hours
Before Storage: <ul style="list-style-type: none"> <li>• Perform all maintenance procedures listed above.</li> <li>• Drain the fuel tank.</li> <li>• Charge the battery and disconnect the battery cables.</li> <li>• Paint any chipped surfaces.</li> </ul>	Every 300 hours

<sup>1</sup>More often in dusty, dirty conditions

**IMPORTANT:** Refer to your engine operator's manual for additional maintenance procedures.


**CAUTION**


If you leave the key in the ignition switch, someone could accidentally start the engine and seriously injure you or other bystanders.

Remove the key from the ignition and disconnect the wire from the spark plug(s) before you do any maintenance. Set the wire aside so that it does not accidentally contact the spark plug.

---

**SECTION 2 - MODEL/SERIAL NUMBER LOCATION**

**CONTENTS**

<b>Section</b>	<b>Description</b>	<b>Page</b>
	Model/Serial Number Location .....	2-2

## SECTION 2 - MODEL/SERIAL NUMBER LOCATION

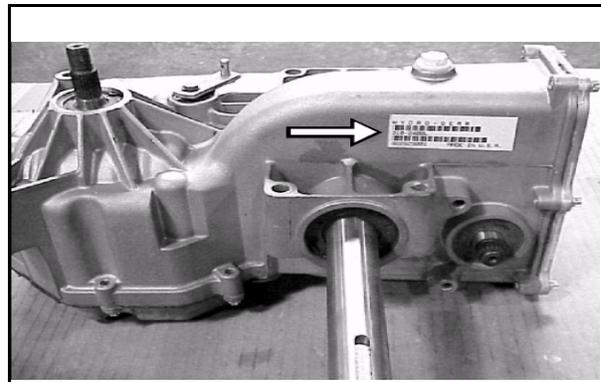
### MODEL/SERIAL NUMBER LOCATION

The unit model and serial number plates is on the frame under the seat as shown in the illustration.

The engine has its own model and serial number identification. Consult the appropriate engine manufacture's service literature for the location and translation of the engine model and serial number information.



Transaxles also have their own model/serial number.



**SECTION 3 - GREASING AND LUBRICATION**

**CONTENTS**

<b>Section</b>	<b>Description</b>	<b>Page</b>
	Service Interval/Specification .....	3-2
	Lubrication Points .....	3-3

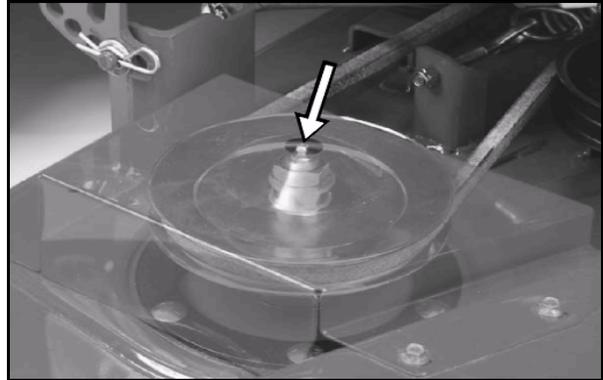


## SECTION 3 - GREASING AND LUBRICATION

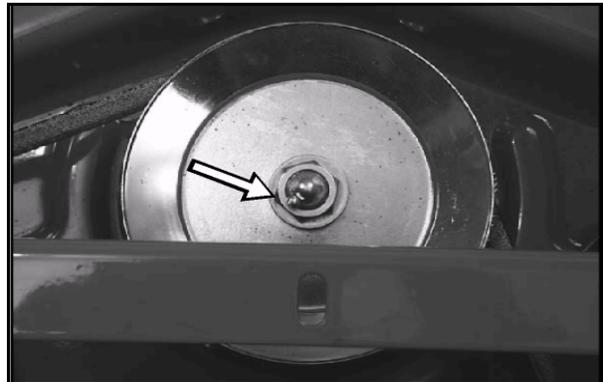
---

### LUBRICATION POINTS

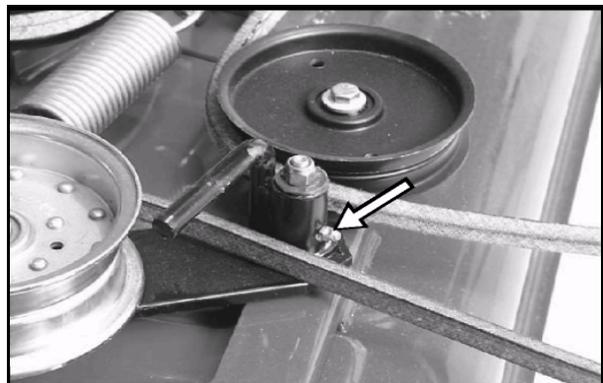
There is a grease fitting on the mower for right and left outer spindle.



The grease zerk for the center mower spindle.



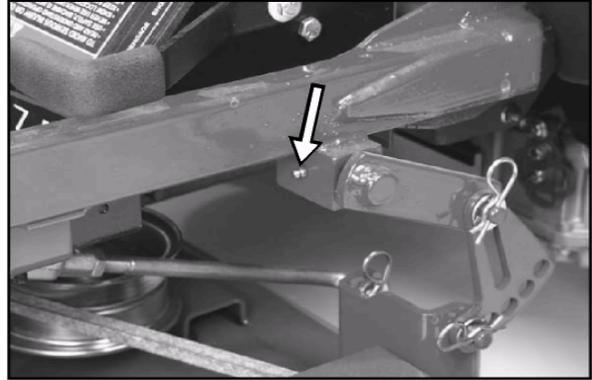
There is a grease fitting for the deck idler arm bushing.



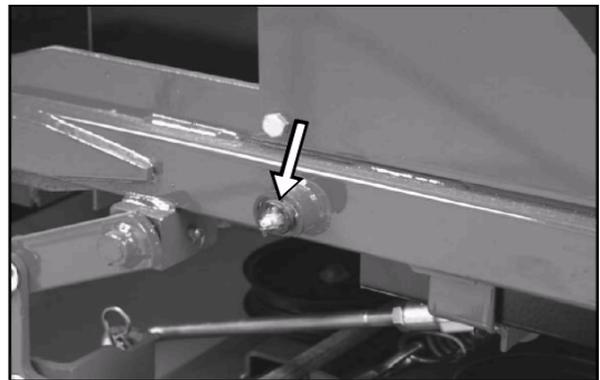
## SECTION 3 - GREASING AND LUBRICATION

---

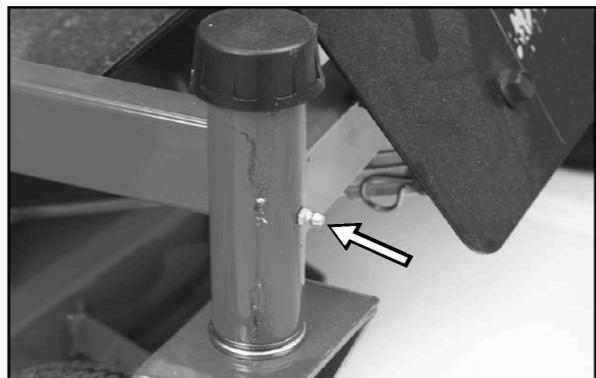
There are two grease fittings for the deck raising pivot bushings - one on each side of the unit.



The grease zerk for the deck height adjustment lever is on the right side of the machine.



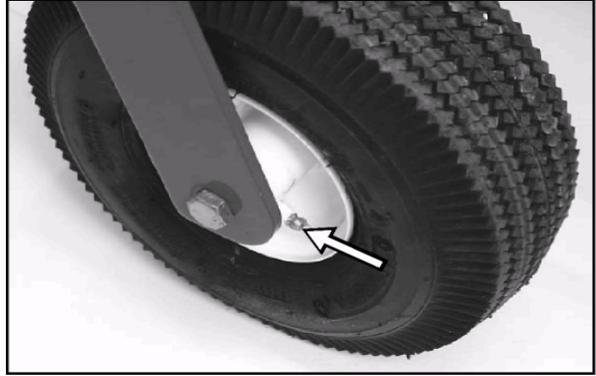
There are grease fittings for each front castor bushing,



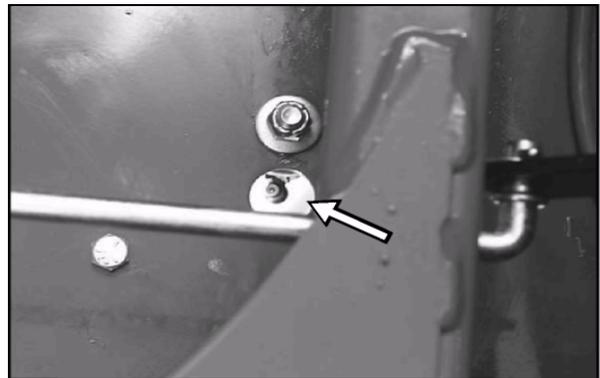
## SECTION 3 - GREASING AND LUBRICATION

---

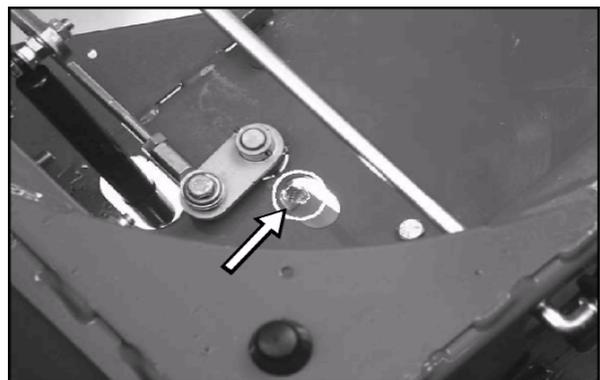
as well as the castor wheel bearings.



The zerk fitting for the traction belt idler bushing is located under the seat.



Also under the seat are the fittings for the motion control lever pivot bushings - one for each lever.



*SECTION 3 - GREASING AND LUBRICATION*

---

**SECTION 4 - ENGINE**

**CONTENTS**

<b>Section</b>	<b>Description</b>	<b>Page</b>
	Kawasaki Engine .....	4-2
	Kawasaki Air Cleaner .....	4-2
	Spark Plug .....	4-3
	Engine Remove and Replace .....	4-4

## SECTION 4 - ENGINE

### KAWASAKI ENGINE

Oil Type: New Holland Ambra Super Gold detergent oil (API service SC, SD, SE, SF, SG, or SH).

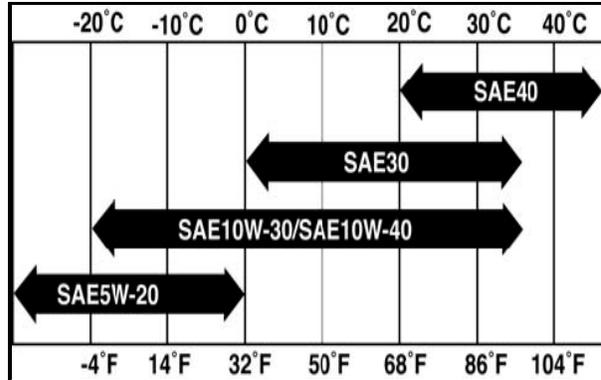
Crankcase Capacity (with filter): 1.6 qt. (1.5 l).

Viscosity: See table.

Change Oil:

- After the first use.
- Every 100 hours.

Change oil filter every 200 hours.

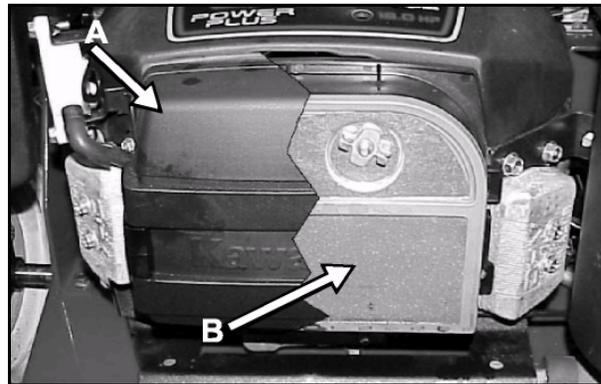


### KAWASAKI AIR CLEANER

The air cleaner assembly consists of a paper filter element and a foam precleaner.

To clean the paper element, tap lightly on a flat surface to remove dust and dirt. Inspect the element for tears, oil contamination, and damage to the rubber seal.

**NOTE:** Never clean the paper element with compressed air or solvents. If the element is dirty or damaged, replace it immediately.



(A) COVER

(B) AIR FILTER

## SECTION 4 - ENGINE

Every 25 hours (more often in dusty, dirty conditions), wash the foam element in liquid soap and warm water. When the element is clean, rinse it thoroughly.

Dry the element by squeezing it in a clean cloth (do not wring). Allow the element to air dry.

Follow engine manufacturer's recommendation for treatment of precleaner prior to installation.



### SPARK PLUG

On Kawasaki engines, replace the spark plug(s) every 100 operating hours.

If the insulator on the spark plug(s) is light brown or gray, the engine is running properly. A black coating on the insulator indicates the air cleaner may be dirty.

**IMPORTANT:** *Never clean the spark plug(s). Always replace the spark plug(s) when it has a black coating, worn electrodes, an oily film, or cracks.*

Gap: .030" (0.76 mm)

Type: Champion RCJ86 (or equivalent)



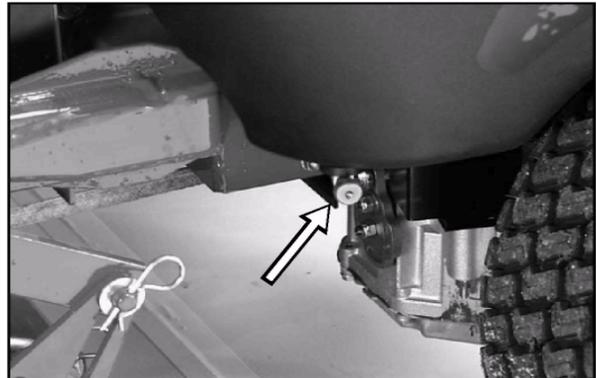
## SECTION 4 - ENGINE

### ENGINE REMOVE AND REPLACE

Disconnect the negative battery cable.



Close the fuel shut-off.



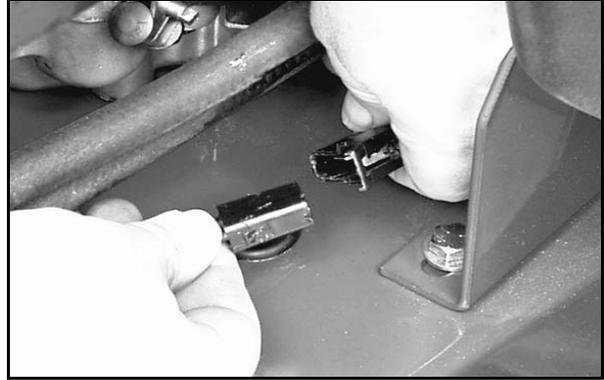
Remove the fuel line from the fuel filter.



## SECTION 4 - ENGINE

---

Disconnect the clutch PTO wiring.



Disconnect the engine wiring harness plug.



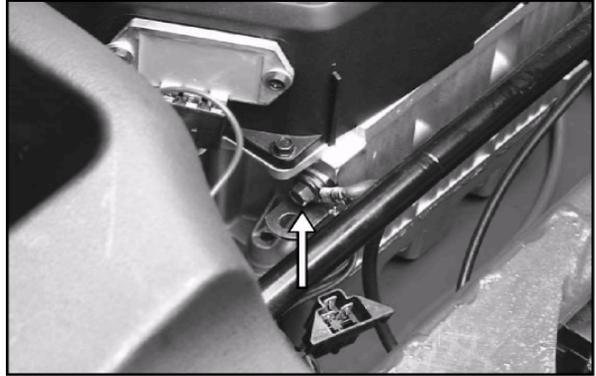
Loosen the throttle/choke clamp and remove the cable from the governor linkage.



## SECTION 4 - ENGINE

---

Remove the ground cable from the engine block.



Remove the starter cable.

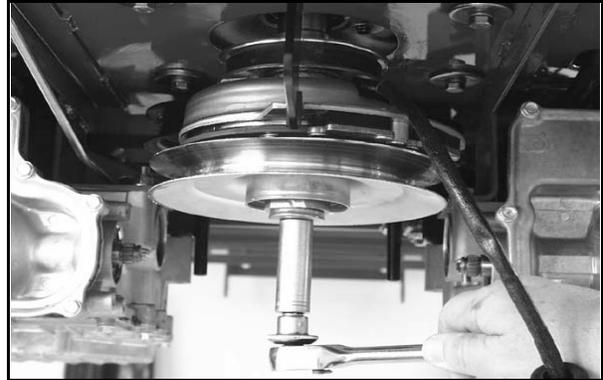


Remove mower drive belt. See complete procedure in Section 7, Mower Decks.



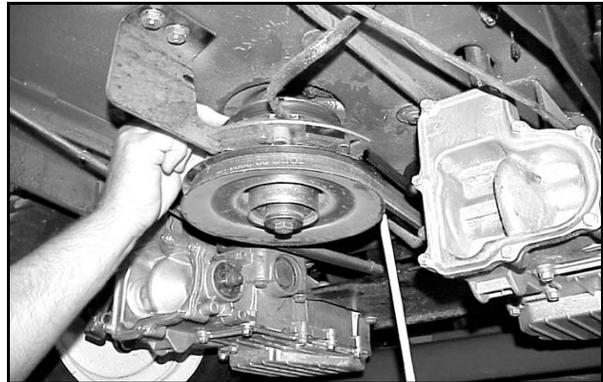
## SECTION 4 - ENGINE

Remove the clutch bolt and lower the clutch assembly.

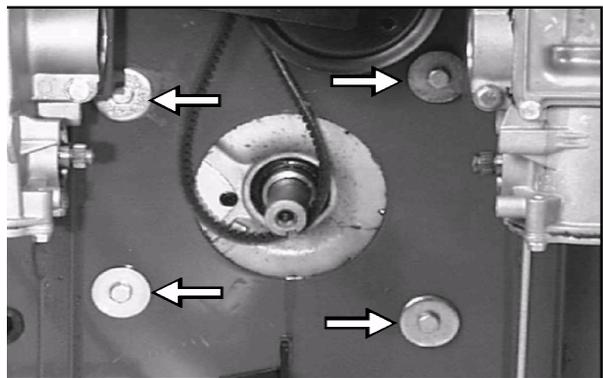


Remove traction drive belt.

Move the idler pulley to lessen the tension on the traction drive belt and slip the belt up off the engine drive pulley. Then remove the clutch and drive pulley from the crankshaft.



Remove the 4 engine mounting bolts.

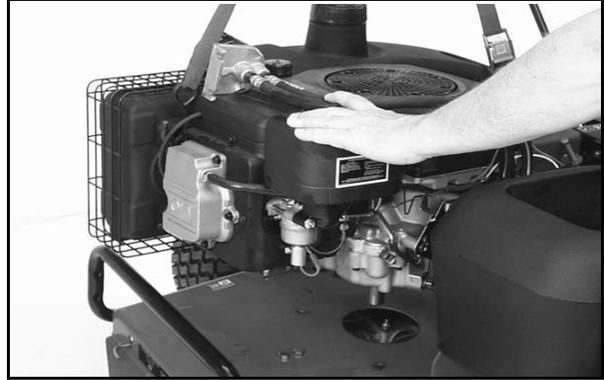


## SECTION 4 - ENGINE

---

Lift the engine from the chassis.

Reverse the above steps to replace.



## SECTION 5 - TRANSAXLE

### CONTENTS

Section	Description	Page
	Description and Operation .....	5-2
	General Description .....	5-2
	Hydraulic Schematic .....	5-3
	Technical Specifications .....	5-6
	Product Identification .....	5-6
	Troubleshooting Checklist .....	5-7
	Fluids .....	5-9
	Fluid Change .....	5-9
	Control Handle-Return To Neutral Adjustment .....	5-10
	Purging the System .....	5-12
	Neutral Adjustment .....	5-14
	Tracking Adjustment .....	5-18
	Control Handle Adjustment .....	5-20
	Remove and Replace Transaxle .....	5-21
	Reassembly .....	5-26
	Repair .....	5-30
	General Instructions .....	5-30
	Limited Disassembly .....	5-30
	Back Cover .....	5-32
	Brakes .....	5-33
	Brake Shaft and Bevel Gear .....	5-34
	Axle Shaft and Spur Gear .....	5-35
	Lower Housing and Filter .....	5-37
	Motor Shaft and Bevel Gear .....	5-38
	Center Section, Cylinder Blocks and Bypass .....	5-39
	Input Shaft and Trunnion Arm .....	5-41
	Sealant Application .....	5-43

## SECTION 5 - TRANSAXLE

### DESCRIPTION AND OPERATION

This manual includes the transaxle general description, hydraulic schematic, technical specifications, servicing and troubleshooting procedures.

The transaxle normally will not require servicing during the life of the vehicle in which it is installed. Should other servicing be required, the exterior of the transaxle will need to be thoroughly cleaned before beginning most procedures.

### GENERAL DESCRIPTION

The transaxle is a self contained unit designed for the transfer and control of power. It provides an infinitely variable speed range between zero and maximum in both forward and reverse modes of operation.

This transaxle uses a variable displacement pump with a maximum displacement of 10cc per revolution, and motor with a fixed displacement of 21cc per revolution. The variable displacement pump features a cradle mounted swashplate with a direct-proportional displacement control. Reversing the direction of the swashplate reverses the flow of oil from the pump and thus reverses the direction of the motor output rotation. The pump and motor are

of the axial piston design and utilize spherical nosed pistons which are held against a thrust race by internal compression springs.

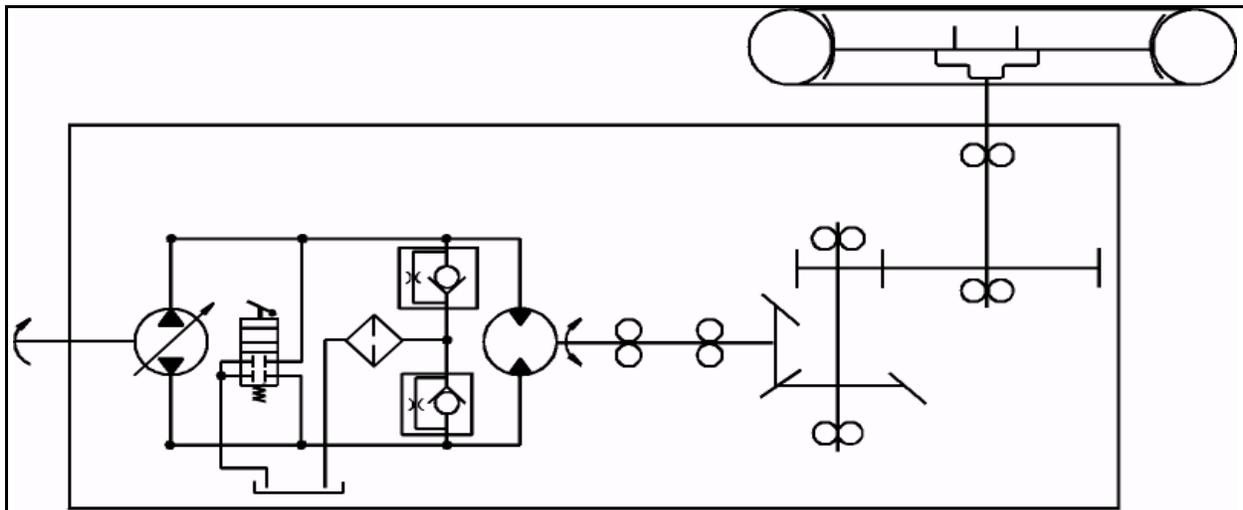
The transaxle has a self contained fluid supply and an internal filter. The fluid is forced through the filter by a positive "head" on the fluid in the housing/expansion tank with an assist by the negative pressure created in the pump pistons as they operate.

The check valves in the center section are used to control the makeup flow of the fluid to the low pressure side of the loop.

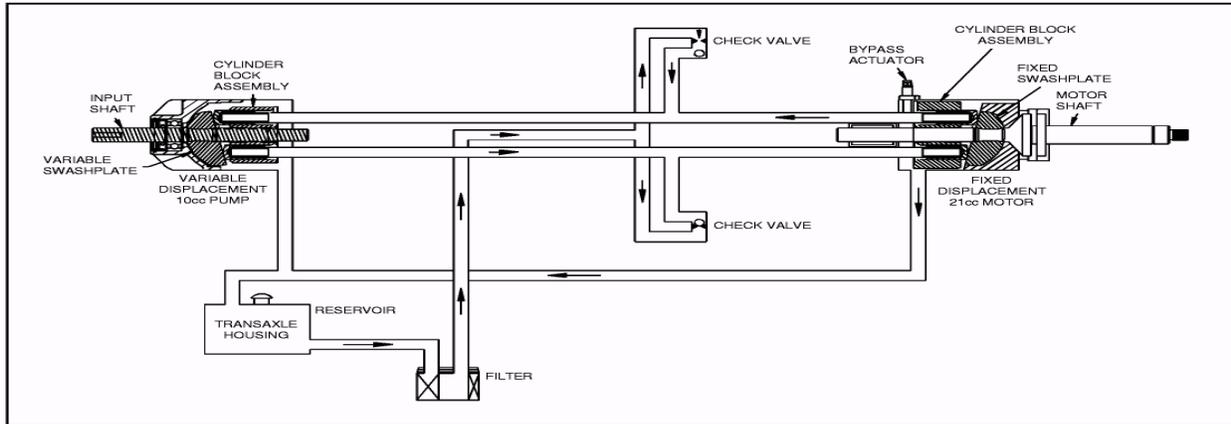
A bypass is utilized in this unit to permit moving the vehicle for a short distance at a maximum of 2 m.p.h. (3.2 Km/h) without starting the engine.



**Actuating the bypass will result in the loss of hydrostatic braking capacity. The machine must be stationary on a level surface and in neutral when actuating the bypass.**



## SECTION 5 - TRANSAXLE



### HYDRAULIC SCHEMATIC

The illustration above provides a flow diagram of the hydraulic oil circuit. The oil supply for the hydraulic system of the transaxle is also utilized for lubricating the components of the final drive assembly.

The input shaft and pump cylinder block are turned in one direction only by the engine/drive belt/pulley combination. Output of the oil flow is controlled by the direction and amount that the variable swashplate is angled. As the pump pistons compress they force the oil to flow through one of two passageways (forward or reverse) in the center section to the motor cylinder block and motor shaft. Since the motor has fixed displacement angle it is forced to turn with the flow of oil. As the angle of the pump swashplate is increased the amount of oil being pumped will increase and cause a higher speed output of the motor. Reversing the angle of the swashplate will reverse the direction of oil flow.

During the operation of the transaxle, fluid is "lost" from the hydraulic loop through leak paths designed into the product for lubrication purposes (around pistons, under the rotating cylinder blocks, etc.). This "lost" fluid returns to the transaxle housing, then is pulled back into one of the check valves depending upon the direction of vehicle operation. All of this oil must pass through an internal filter.

The motor cylinder block mounts onto a splined motor shaft which drives the gear train.

The bypass feature in the transaxle has a mechanical lever which lifts the motor block off of the center section running surface, allowing any oil flowing from the pump block to be discharged into the housing without turning the motor.

SECTION 5 - TRANSAXLE

