

FORD



Service Manual

NEW HOLLAND

Lawn and Garden Tractors
100, 120, 125, 145, 165, 195



40010060

Reprinted



SAFETY PRECAUTION



Appropriate service methods and proper repair procedures are essential for the safe, reliable operation of all tractors and equipment as well as the personal safety of the individual doing the work. This Shop Manual provides general directions for accomplishing service and repair work with tested, effective techniques. Following them will help assure reliability.

There are numerous variations in procedures, techniques, tools, and parts for servicing vehicles, as well as in the skill of the individual doing the work. This Manual cannot possibly anticipate all such variations and provide advice or cautions as to each. Accordingly, anyone who departs from the instruction provided in this Manual must first establish that he compromises neither his personal safety nor the vehicle integrity by his choice of methods, tools or parts.

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Section

1

INTRODUCTION

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SECTION I INTRODUCTION

GENERAL

This manual contains service and maintenance for the Ford 10, 12, 14, 16 and 19.5 H.P. tractors.

MODELS INCLUDED

1. LGT 100 TRACTOR 10 H.P. Gear
2. LGT 120 TRACTOR 12 H.P. Gear
3. LGT 125 TRACTOR 12 H.P. Hydro
4. LGT 145 TRACTOR 14 H.P. Hydro
5. LGT 165 TRACTOR 16 H.P. Hydro
6. LGT 195 TRACTOR 19.5 H.P. Hydro

This manual is divided into sections. Some sections are divided into subsections. The subsections pertain to a certain component or operating system relative to the section title.

All sections of this manual should be carefully studied by the serviceman prior to beginning work on the tractor. In addition to this manual, the operator's manual should also be studied to insure familiarity with all operating procedures and controls.

SAFETY



This notation, followed by the word **WARNING**, signifies important precautionary measures which, if not properly followed, could result in personal injury or death.

Read these safety rules and follow them closely. Failure to obey these rules could result in loss of control of machine, severe personal injury or death to yourself or bystanders.



WARNING

Always store gasoline or flammable solvents used for cleaning in a proper container. Always dispose of used flammable solvent in a proper manner. NEVER discard flammable solvents in a barrel or bin used for ordinary scrap material.



WARNING

Do not start or run the engine in an enclosed area. Exhaust fumes can kill.



WARNING

Be certain that engine and exhaust assemblies are not hot before cleaning ANY part of the tractor using a flammable solvent.



WARNING

Never let shop rags, used for cleaning, lay around to become fire hazards.



WARNING

Always keep work area clean and free of oil, grease, and water. Some of these may be spilled on the floor during normal disassembly procedures. Clean this up as soon as possible to prevent accidents.



WARNING

Always disconnect spark plug wire before servicing to prevent accidental starting.



WARNING

Always wear safety glasses when working in the shop area. Do not confuse ordinary prescription glasses (even with tempered lenses) or sunglasses with shop safety glasses.

 **WARNING**

Be certain that any part being removed is properly supported or held to prevent injury or damage.

 **WARNING**

Be certain that the work bench or support being used is strong enough. The weight of the part plus the force applied to it during assembly or disassembly may put a great strain on the bench or support.

 **WARNING**

If test running is required, read the operator's manual carefully. Be thoroughly familiar with the controls and proper use of the equipment. Know how to stop the unit.

 **WARNING**

Use jack stands or blocks to hold up the unit in any potentially dangerous positions required for access. Do not rely only on a jack for support.

 **WARNING**

Be sure all tools and cleaning materials are removed before starting unit.

 **WARNING**

Be sure all parts are securely fastened before starting the machine.

 **WARNING**

Never operate without guards, plates, or other safety protective devices in place.

 **WARNING**

If the unit should start to vibrate abnormally, stop the engine and check immediately for the cause.

 **WARNING**

Stop engine and disengage PTO whenever you leave the operating platform to make any repairs, adjustments, or inspections.

 **WARNING**

Take all possible precautions when leaving the vehicle unattended. Shift into neutral; set parking brake and stop the engine.

 **WARNING**

When cleaning, repairing, or inspecting, make certain tractor and all moving parts have stopped.

 **WARNING**

Never operate machine at high transport speeds on slippery surfaces. Use care when backing.

 **WARNING**

Disengage PTO when transporting or not in use.

 **WARNING**

Never operate without good visibility or light.

 **WARNING**

Do not put hands or feet near rotating parts.

 **WARNING**

Never store machine with fuel in the fuel tank inside a building where open flame or sparks are present. Allow engine to cool before storing in any enclosure.

CAUTION

This symbol identifies procedures or practices that if not followed, could result in mechanical damage leading to personal injury.

CAUTION

Always refer to operator's manual for important details if tractor is to be stored for an extended period.

Always be certain that internal components are kept clean and free of chemicals and contaminants.

Always use the proper tool for the work being done. Where a specific tool is specified in the manual, always use THAT tool.

Do not overload machine capacity.

Use only attachments and accessories approved by manufacturers.

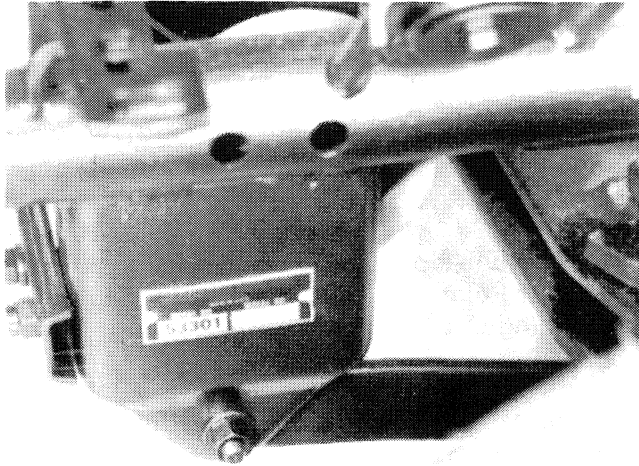
NOTE

Metric equivalents are included throughout the manual. They are found adjacent to the English measure, eg. 7 gallons (26.5L).

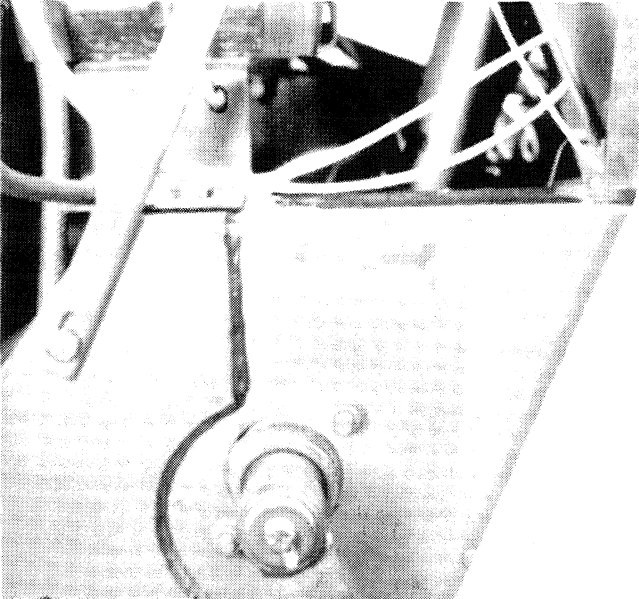
Throughout this manual, reference will be made to, "right hand of tractor, left hand of tractor, etc." This is determined by sitting in the operator's seat facing forward.

TRACTOR IDENTIFICATION

TRACTOR SERIAL NUMBER. The tractor serial number is located on the tractor frame, *figure 1*, 10, 12, 14, 16 H.P., *figure 2*, 19.5 H.P.



**Figure 1 (10, 12, 14 & 16 H.P.)
Location of Tractor Serial Number**



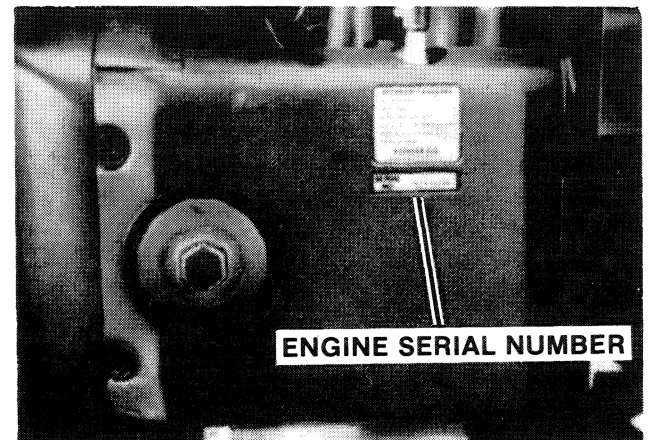
**Figure 2 (19.5 H.P.)
Location of Tractor Serial Number**

ENGINE SERIAL NUMBER. The engine serial number is located on the engine shroud, *figure 3*, 10, 12, 14, 16 H.P. *figure 4*, 19.5 H.P.

ENGINE SERIAL NUMBER. The engine serial number is located on the engine shroud, *figure 2*.

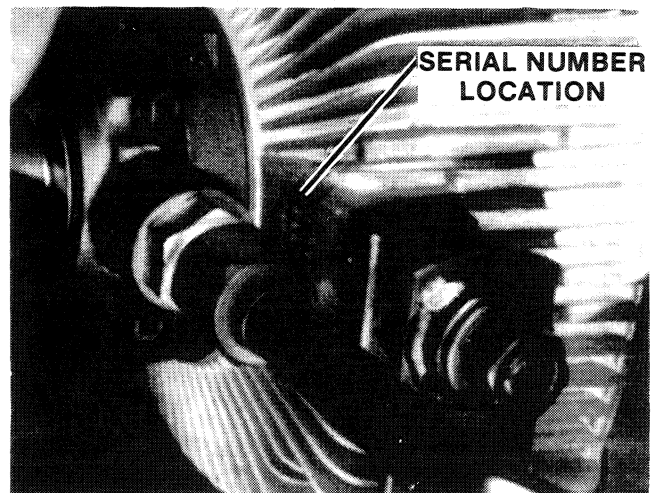


**Figure 3 (10, 12, 14 & 16 H.P.)
Location of Engine Serial Number**



**Figure 4 (19.5 H.P. Tractor)
Location of Engine Serial Number**

TRANSMISSION SERIAL NUMBER. The transmission serial number is located on the transmission cover, *figure 5*.



**Figure 5 (Typical)
Location of Transmission Serial Number**

TRACTOR SPECIFICATIONS (CON'T)

12 H.P. TRACTOR (Hydro)

Engine

Manufacturer Kohler
Model Number K301AQS Spec. no. 47606-D
Cylinder 1
Type 4-cycle — air cooled
Bore 3 3/8" (85.7mm)
Stroke 3 1/4" (82.5mm)
Displacement.....29.07 cu. in. (475 cc)
Horsepower (at 3600 rpm) 12.0 (8.9 kw)

Power Train

Transaxle 2500 Peerless
Hydrostatic Unit Model 11 Eaton
Brakes Rear wheel — drum & band

Electrical System

Battery 12 volt (22 amp) (BC1)
Ignition Battery coil
Spark Plug Champion H-10
Champion RH-10 (resistor)
Spark Plug Gap025" (0.635 mm)
Breaker Point Gap020" (0.508 mm)
Charging Capacity.....15 amps

Capacities

Fuel Tank 3 gal. (11.36 l)
Crankcase 1 1/2 qts. (1.42 l)
Hydrostatic Transmission —
Transaxle (Common Sump) 4 qts. (3.8 l)

Ground Speeds (at 3200 engine rpm with standard tires)

Low Range 0-4.5 mph
High Range 0-6.5 mph
Reverse 0-3.2 mph

Tires

Standard

Front 16x6.50x8
Rear 23x8.50x12

Optional

Rear Bar Type 23x8.50x12

Tire Pressure

Front 8 psi (0.562 kg/sq. cm)
Rear 8 psi (0.562 kg/sq. cm)

PTO

Front std. Engine speed
Front opt. 540 rpm
Rear opt. Engine speed

Hitch, Rear

Std. — Fixed Drawbar — Uses 3/4" Hitch Pin
Opt. — Sleeve
Opt. — Category: "O" 3 pt. Hitch

14 H.P. TRACTOR (Hydro)

Engine

Manufacturer Kohler
Model Number K321AQS Spec. no. 60244-D
Cylinder 1
Type 4-cycle — air cooled
Bore 3 1/2" (88.9 mm)
Stroke 3 1/4" (82.5 mm)
Displacement.....31.27 cu. in. (512 cc)
Horsepower (at 3600 rpm) 14.0 (10.4 kw)

Power Train

Transaxle 2500 Peerless
Hydrostatic Unit Model 11 Eaton
Brakes Rear wheel — drum & band

Electrical System

Battery 12 volt (22 amp) (BC1)
Ignition Battery coil
Spark Plug Champion H-10
Champion RH-10 (resistor)
Spark Plug Gap025" (0.635 mm)
Breaker Point Gap020" (0.508 mm)
Charging Capacity.....15 amps

Capacities

Fuel Tank 3 gal. (11.36 l)
Crankcase 1 1/2 qts. (1.42 l)
Hydrostatic Transmission —
Transaxle (Common Sump) 4 qts. (3.8 l)

Ground Speeds (at 3200 engine rpm with standard tires)

Low Range 0-4.4 mph
High Range 0-6.5 mph
Reverse 0-3.2 mph

Tires

Standard

Front 16x6.50x8
Rear 23x10.50x12

Optional

Rear Bar Type 23x8.50x12

Tire Pressure

Front 8 psi (0.562 kg/sq. cm)
Rear 8 psi (0.562 kg/sq. cm)

PTO

Front std. Engine speed
Front opt. 540 rpm
Rear opt. Engine speed

Hitch, Rear

Std. — Fixed Drawbar, Use 3/4" Hitch Pin
Opt. — Sleeve
Opt. — Category "O" 3 pt. Hitch

TORQUE CHART

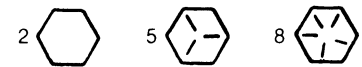
Tolerance $\pm 10\%$

SIZE	SAE GRADE #2	SAE GRADE #5	SAE GRADE #8
8-32	19 In./Lbs.	30 In./Lbs.	41 In./Lbs.
8-36	20 In./Lbs.	31 In./Lbs.	43 In./Lbs.
10-24	27 In./Lbs.	43 In./Lbs.	60 In./Lbs.
10-32	31 In./Lbs.	49 In./Lbs.	68 In./Lbs.
1/4-20	66 In./Lbs.	8 Ft./Lbs.	12 Ft./Lbs.
1/4-28	76 In./Lbs.	10 Ft./Lbs.	14 Ft./Lbs.
5/16-18	11 Ft./Lbs.	17 Ft./Lbs.	25 Ft./Lbs.
5/16-24	12 Ft./Lbs.	19 Ft./Lbs.	25 Ft./Lbs.
3/8-16	20 Ft./Lbs.	30 Ft./Lbs.	45 Ft./Lbs.
3/8-24	23 Ft./Lbs.	35 Ft./Lbs.	50 Ft./Lbs.
7/16-14	30 Ft./Lbs.	50 Ft./Lbs.	70 Ft./Lbs.
7/16-20	35 Ft./Lbs.	55 Ft./Lbs.	80 Ft./Lbs.
1/2-13	50 Ft./Lbs.	75 Ft./Lbs.	110 Ft./Lbs.
1/2-20	55 Ft./Lbs.	90 Ft./Lbs.	120 Ft./Lbs.
9/16-18	65 Ft./Lbs.	110 Ft./Lbs.	150 Ft./Lbs.
9/16-20	75 Ft./Lbs.	120 Ft./Lbs.	170 Ft./Lbs.
5/8-11	90 Ft./Lbs.	150 Ft./Lbs.	220 Ft./Lbs.
5/8-18	100 Ft./Lbs.	180 Ft./Lbs.	240 Ft./Lbs.
3/4-10	160 Ft./Lbs.	260 Ft./Lbs.	386 Ft./Lbs.
3/4-16	180 Ft./Lbs.	300 Ft./Lbs.	420 Ft./Lbs.
7/8-9	140 Ft./Lbs.	400 Ft./Lbs.	600 Ft./Lbs.
7/8-14	155 Ft./Lbs.	440 Ft./Lbs.	660 Ft./Lbs.
1-8	220 Ft./Lbs.	580 Ft./Lbs.	900 Ft./Lbs.
1-12	240 Ft./Lbs.	640 Ft./Lbs.	1,000 Ft./Lbs.

- NOTES:
1. These torque values are to be for all tractor hardware excluding: locknuts, self-tapping screws, thread forming screws, and sheet metal screws.
 2. Unless otherwise noted, all torque values must meet this specification.

BOLT HEAD MARKING

S.A.E. GRADE:



Standard Tires

20 x 8.00-10 front tires

6 psi (0.422 kg/sq cm)	400 lbs. (181.4 kg)
8 psi (0.562 kg/sq cm)	470 lbs. (213.2 kg)
10 psi (0.703 kg/sq cm)	535 lbs. (242.7 kg)
12 psi (0.843 kg/sq cm)	595 lbs. (270.0 kg)

29 x 12.00-15 rear tires

5 psi (0.351 kg/sq cm)	790 lbs. (358.3 kg)
10 psi (0.703 kg/sq cm)	1185 lbs. (537.5 kg)
15 psi (1.054 kg/sq cm)	1505 lbs. (682.6 kg)

Optional Tires

18 x 8.50 - 8 front tires

6 psi (0.422 kg/sq cm)	380 lbs. (172.4 kg)
8 psi (0.562 kg/sq cm)	450 lbs. (204.1 kg)
10 psi (0.703 kg/sq cm)	515 lbs. (233.6 kg)
12 psi (0.843 kg/sq cm)	570 lbs. (258.5 kg)

26 x 12.00 - 12 rear tires

6 psi (0.422 kg/sq cm)	880 lbs. (399.1 kg)
8 psi (0.562 kg/sq cm)	1040 lbs. (471.7 kg)
10 psi (0.703 kg/sq cm)	1185 lbs. (537.5 kg)
12 psi (0.843 kg/sq cm)	1320 lbs. (598.7 kg)

Maximum load includes weight of tractor, operator, attachments, wheel weights, tire fluid, etc.

Section

2

LUBRICATION AND MAINTENANCE

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SECTION 2

LUBRICATION AND MAINTENANCE

FUEL AND LUBRICANT

FUEL. The engines perform best when the following recommendations are followed:

CAUTION

Handle gasoline with care - it is highly flammable. Do not fill fuel tank with engine running or if engine is hot. Do not smoke while filling fuel tank.

Prior to filling fuel tank wipe dirt from around filler neck and fuel tank cap. Dirt allowed to enter the tank may cause hard starting and poor performance. Fill the fuel tank with fresh clean 85 octane (minimum) regular grade gasoline. Leaded or unleaded may be used.

CAUTION

DO NOT MIX OIL WITH GASOLINE.

LUBRICANTS. Proper use of approved lubricants is the best way of ensuring proper service from the tractor. Use only lubricants specified in this manual and within the intervals specified.

ENGINE LUBRICATING OIL. Oils meeting the requirements of the American Petroleum Institute's (API) Service Classification SC, CC, SD, or SE are to be used. Oil viscosity (weight) is selected according to the anticipated ambient temperature. The temperature (viscosity) recommendations are:

Temperature	Oil Viscosity
40° F (44. C) & up	SAE 30
0° F (-17, 8 C) to 40° F (4.4 C)	SAE 10W - 30
0° F (-17, 8 C) & below	*SAE 5W - 20

*Increased oil consumption may be experienced when SAE 5W - 20 oil is used. Check oil more frequently.

TRANSAXLE - Non-hydro gear model, SAE 90 oil
HYDROSTATIC TRANSMISSION AND TRANS-AXLE. The following fluids are approved by the manufacturer and are used as factory fills.

1. Texaco Transhydral #2209
2. Ford Motor Co. #M-2C41-A

The following fluids in descending order of preference, are also acceptable.

1. International Harvester Hy Tran
2. Automotive Automatic Transmission fluid type "B".
3. 10W detergent engine oil, no service grade is specified.
4. 20W detergent engine oil, no service grade is specified.

CAUTION

Do not mix fluids. Do not use Type "A" Automatic Transmission Fluid. The use of Type "A" and/or intermixing of fluids may cause severe damage to the hydrostatic unit and WILL void the warranty.

LUBE FITTINGS. Use a good quality chassis grease.

ENGINE LUBRICATION

Crankcase (oil change) 10, 12, 14, 16 HP Tractors

Break-in	5 hrs.
Normal Conditions	*30 hrs.

Crankcase (oil change) 19.5 HP Tractor

Break-in	5 hrs.
Normal Conditions	*50 hrs.

Engine Oil Filter 19.5 HP Tractor

Break-in	5 hrs.
Normal Conditions	*100 hrs. (every other oil change)

*Extreme dusty and dirty conditions require more frequent changes.

CHECKING ENGINE OIL

Check the oil level using the dipstick located at the side of the engine. For accurate readings, the oil level should be checked approximately 15 minutes after the engine is shut off. Maintain the oil level as near the FULL mark as possible at all times.

To check the oil level of the engine, proceed as follows:



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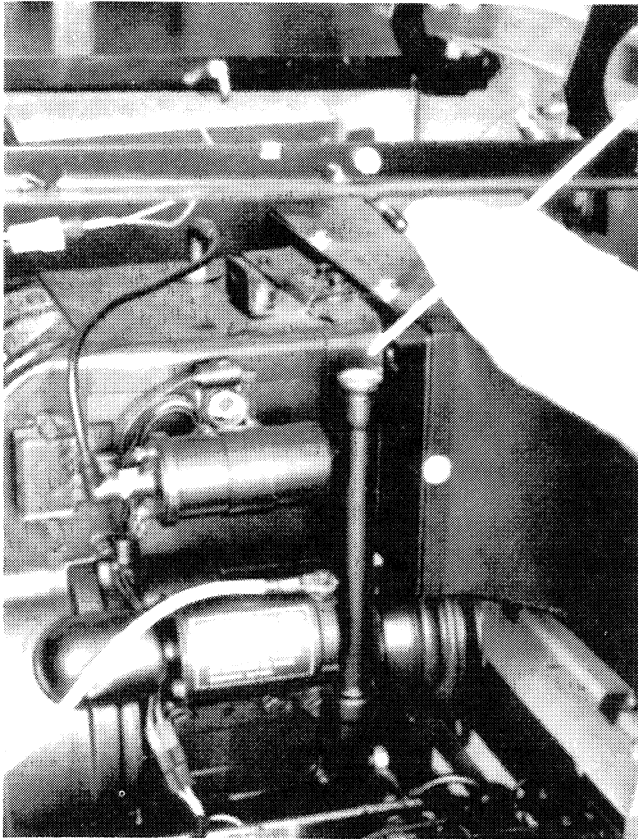
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**Figure 1 (10, 12, 14 & 16 H.P.)
Checking Engine Oil Level**

Install dipstick fully prior to taking reading. An inaccurate reading may lead to overfilling and possible engine seal damage.

2. Wipe dust and dirt from around dipstick. Oil must be between marks on dipstick.

CHANGING ENGINE OIL

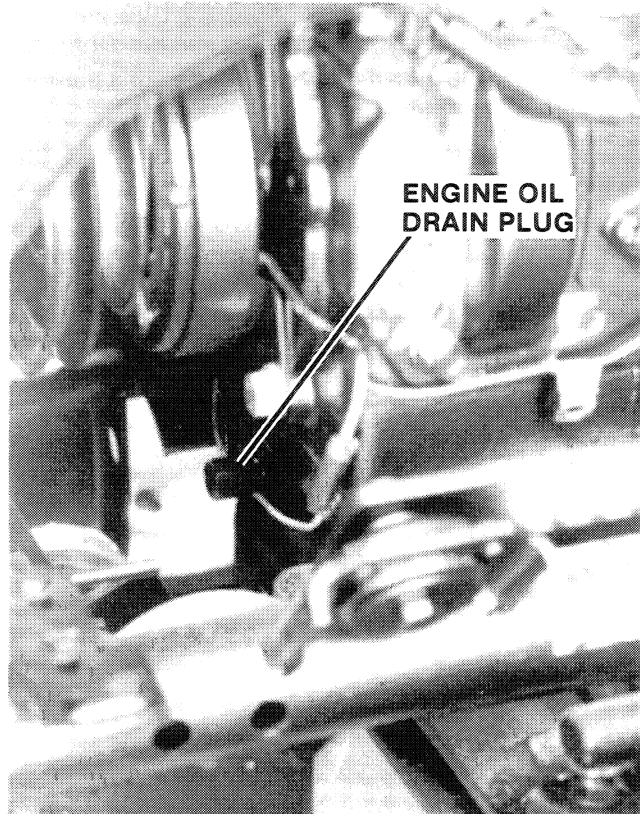
Engine should be at operating temperature (after engine has run 5 minutes or more) when oil is drained. When hot, the oil will drain faster removing dirt and other foreign material held in suspension.

To change engine oil, proceed as follows:

1. Park tractor on a level surface, set parking brake, stop engine and raise hood.
2. Remove dipstick, *figure 1* 10, 12, 14 & 16 H.P., *figure 2* 19.5 H.P..
3. Remove side panel.
4. Remove drain plug located at front of engine, *figure 3* 10, 12, 14 & 16 H.P., *figure 4* 19.5 H.P.
5. Drain oil into a suitable container. Replace plug after all oil is drained out.



**Figure 2 (19.5 H.P.)
Checking Engine Oil Level**



**Figure 3 (10, 12, 14 & 16 H.P.)
Engine Oil Drain Plug Location**

1. Park tractor on a level surface, set parking brake, stop engine and raise hood.

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