

# JOHN DEERE

DEERE & COMPANY  
400 North Vine  
Horicon, WI 53032

## CONDENSED SERVICE DATA

ENGINE MODEL	TA340A*	TB340A*	TA440A*	TA440B*	TC440A*
Bore—(mm).....	60	60	68	68	68
Inches .....	2.362	2.362	2.67	2.67	2.67
Stroke—(mm).....	60	60	60	60	60
Inches .....	2.362	2.362	2.362	2.362	2.362
No. of Cylinders .....	2	2	2	2	2
Displacement—(cc).....	339	339	436	436	436
Cubic Inches .....	20.6	20.6	26.6	26.6	26.6
Cooling Type.....	Axial Fan	Free Air	Axial Fan	Axial Fan	Liquid
Carburetor Model.....	VM	B	VM	VM	VM
Number Used .....	1	1	1	1	2
Ignition Type .....	CDI	CDI	CDI	CDI	CDI
Timing BTDC .....	22°	22°	22°	18°	16°
Measured at.....	6500 rpm	6500 rpm	6000 rpm	6500 rpm	6500 rpm
Spark Plug:					
Champion .....	QN-3	ON-3	QN-3	QN-2 or N-2	N-2
Electrode Gap—(mm).....	0.635	0.635	0.635	0.635	0.635
Inch .....	0.025	0.025	0.025	0.025	0.025
Fuel/Oil Ratio .....	50:1	50:1	50:1	50:1	50:1

\*Engines manufactured for John Deere by Kawasaki Heavy Industries, Japan.

### MAINTENANCE

**SPARK PLUG.** The recommended plug for normal service is given in **CONDENSED SERVICE DATA** table. A different heat range or type of plug may be needed for a particular application. Refer to **ENGINE SERVICE FUNDAMENTALS** section when selecting a spark plug for other than normal usage.

**CARBURETOR.** Mikuni type VM or B carburetors are used. Refer to the appropriate **CARBURETOR SERVICE** section for overhaul data. An external impulse line from engine crankcase is used to operate fuel pump. Be sure there are no vacuum or pressure leaks.

**IGNITION SYSTEM.** Timing specifications for individual engines are given in **CONDENSED SERVICE DATA** tables. All models are equipped with Capacitor Discharge Ignition System. Because timing is electronic, it should not change once properly adjusted. The first step in adjustment,

therefore, would be to check for loose flywheel nut, sheared flywheel key, or loose mounting screws on stator base plate. On Models TA340A, TA440A, TA440B and TC440A ignition timing is set by aligning mark on stator plate

(1—Fig. JD1) with top of crankcase ridge (2). For Model TB340A align longest mark (1—Fig. JD2) with top of crankcase ridge (2). To adjust remove recoil starter. On some models timing can be adjusted by reaching through inspection holes in flywheel. If these are not provided, then remove starter pulley

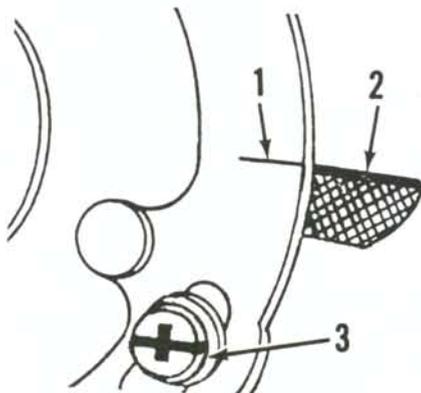


Fig. JD1—Set ignition timing by aligning mark on stator plate (1) with crankcase ridge (2) and adjust by loosening screw (3), then rotating stator plate for Models TA340A, TA440A, TA440B and TC440A.

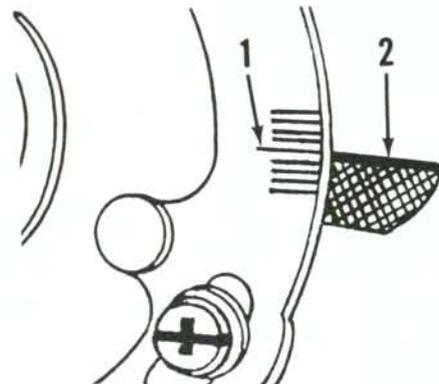


Fig. JD2—Align longest mark on stator plate (1) with top of crankcase ridge (2) to set timing on Model TB340A.

Illustrations for Fig. JD1 and Fig. JD2 reproduced by permission of Deere & Company. Copyright Deere & Company.

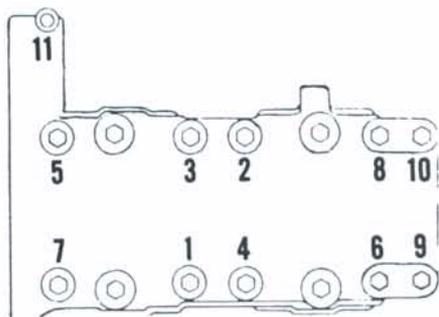


Fig. JD3—Crankcase cap screw tightening sequence for Models TA340A, TB340A and TA440A.

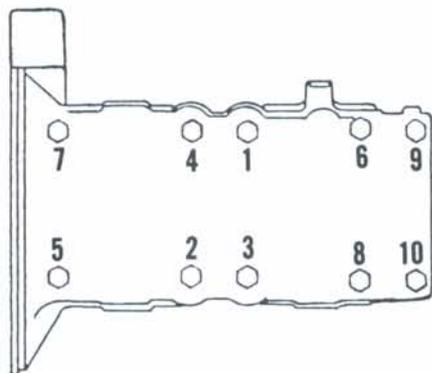


Fig. JD5—Crankcase cap screw tightening sequence for Model TA440B.

Flywheel nut . . . . . 60 ft.-lbs. (81 N·m)  
Spark plug . . . . . 20 ft.-lbs. (27 N·m)  
Recoil starter  
mounting bolts . . . . . 5 ft.-lbs. (7 N·m)

**DISASSEMBLY AND REASSEMBLY.** Remove carburetor, intake manifold, muffler, exhaust manifold, drive sheave and recoil starter. On models with axial fans, remove cooling shrouds, fan belt and fan assembly. On liquid cooled Model TC440A remove necessary coolant hoses and related parts. Remove starter cup and flywheel. Remove spark plug leads and ignition coil. Remove engine wiring as needed, mark location for reassembly. Remove stator plate retaining screws and withdraw plate with leads and grommet from mounting base. Remove and identify cylinder heads, cylinders and pistons, so that parts can be reinstalled in original positions. Remove crankcase securing capscrews and separate crankcase halves. Refer to appropriate section to service components.

To reassemble, reverse disassembly procedure. Refer to **TIGHTENING TORQUE** section for torque specifications. Refer to **IGNITION SYSTEM** section for setting ignition timing. Refer to Fig. JD3 for crankcase tightening se-

and flywheel retaining nut and lockwasher. Use a suitable puller and withdraw flywheel from crankshaft. Be sure not to lose key in crankshaft keyway. Adjust timing by loosening screws (3—Fig. JD1) and turning stator plate. Reassemble in reverse order of disassembly.

**LUBRICATION.** The engine is lubricated by mixing oil with fuel. Use John Deere 2-cycle oil or a suitable equivalent. Recommended fuel/oil ratio for all engines is 50:1. For models without oil injection pumps mix fuel and oil thoroughly in a separate container before pouring mixture into fuel tank. For cold weather blending, pre-mix the oil with a small amount of gasoline and shake thoroughly until mixture is liquid, then blend with remainder of fuel. Do not use kerosene or fuel oil for pre-mixing.

## REPAIRS

**TIGHTENING TORQUES.** Recommended tightening torques are as follows for all models:

Crankcase . . . . . 16 ft.-lbs. (22 N·m)  
Cylinder-to-  
crankcase . . . . . 16 ft.-lbs. (22 N·m)  
Cylinder head . . . . . 16 ft.-lbs. (22 N·m)

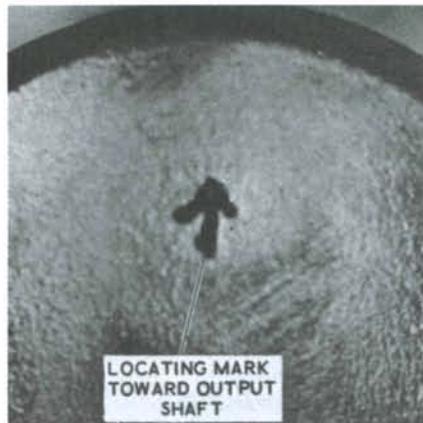


Fig. JD6—Install piston so that arrow on piston crown points towards exhaust port.

quence for Models TA340A, TA440A and TB340A, Fig. JD4 for Model TC440A and Fig. JD5 for Model TA440B.

## PISTON, RINGS & CYLINDER.

Piston crown is marked with an arrow as shown in Fig. JD6 to indicate piston position in cylinder. Arrow must point towards exhaust port. Cylinder assembly has a chrome-plated bore and must be renewed if out of specification or damaged. Small deposits of aluminum from piston on cylinder wall may be removed by very careful sanding. Cylinder should be inspected for cracking, flaking or any other deterioration of the chrome lining. Also check for appearance of underlying base metal through chrome which indicates excessive wear. Inspect piston for excessive wear or damage.

Piston pins are full floating with retaining rings on each end. Piston rings are pinned in place as shown in Fig. JD7. Widest part of ring gap must be facing up when ring is installed as shown in Fig. JD7. Piston ring end gap for Model TA340A should be 0.006-0.014 inch, 0.011-0.019 inch for Model TB340A and 0.008-0.016 inch for Models TA440A, TA440B and TC440A. Cylinder bore diameter should be no more than 2.3669 inches for Model TA340A, 2.3675 inches for Model TB340A, 2.6818 inches for Models TA440A and TA440B and 2.6811 inches for Model TC440A. If cylinder bore diameter exceeds specification, cylinder assembly must be renewed. Piston diameter measured at skirt should be no less than 2.3554 inches for Model TA340A, 2.3551 inches for Model TB340A, 2.6703 inches for Model TA440A, 2.6693 inches for Model TA440B and 2.6701 inches for Model TC440A. If piston diameter is less than specification, then piston will need to be renewed.

**CRANKSHAFT AND CONNECTING ROD ASSEMBLY.** The crankshaft and connecting rods are available only as an assembled unit and should not be disassembled. Crankshaft main bearings

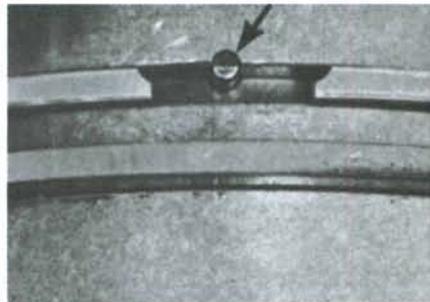


Fig. JD7—Piston rings are pinned as shown (arrow). Note that upper ring is installed so that notches in ring ends are up.

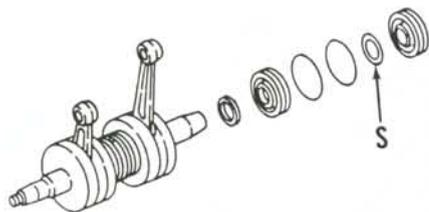


Fig. JD8—End play adjustment shim for Models TA340A, TB340A, TA440A and TA440B.

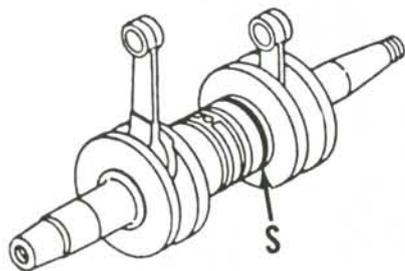


Fig. JD9—End play adjustment shim for Model TC440A.

are a press fit on crankshaft. Rotate all bearings and renew those that are rough or frozen. Outside bearings may be renewed, but inner bearings are available only with crankshaft assembly. Special tools must be used to remove and renew outside bearings in order to prevent damaging crankshaft and components. Be sure to identify shims and washers as they are removed, so as to reinstall in same position as removed.

If crankshaft, bearings or crankcase are renewed, crankshaft must be centered in crankcase by measuring end play. Crankshaft end play should not exceed 0.030-inch on Models TA340A,

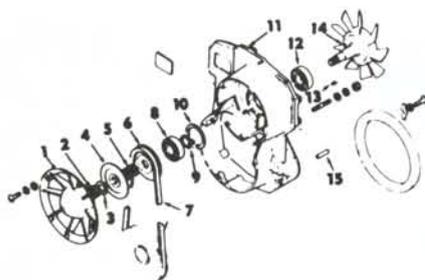


Fig. JD11—Exploded view of cooling fan and housing unit.

- |                |               |
|----------------|---------------|
| 1. Cover       | 8. Bearing    |
| 2. Nut         | 9. Shim       |
| 3. Lockwasher  | 10. Snap ring |
| 4. Pulley half | 11. Housing   |
| 5. Shims       | 12. Bearing   |
| 6. Pulley half | 13. Key       |
| 7. Belt        | 14. Fan       |

TB340A and TA440A, 0.040-inch on Model TA440B and 0.015-inch on Model TC440A. If end play is out of specification, then shim (S—Fig. JD8) will need to be changed for all models except TC440A. For Model TC440A shim (S—Fig. JD9) will need to be changed.

Check crankshaft runout with a dial indicator after reassembly in crankcase. Runout should not exceed 0.002 inch on all models. If runout exceeds specifications, replace crankshaft assembly.

**ELECTRICAL SYSTEM.** Refer to Fig. JD10 for view of a typical CDI unit. The Capacitor Discharge Ignition (CDI) system uses a permanent magnet flywheel (4) to induce voltage into exciter coil (3). The exciter coil then sends current to CDI unit (5) where a diode allows only DC current to flow into a capacitor. When gate control switch in CDI unit receives the small current signal from pulser coil (9), it closes and allows the capacitor to discharge its stored voltage into the ignition coil (6). The coil then “steps up” voltage enough to fire both spark plugs simultaneously.

If an engine problem is experienced check fuel system, electrical connec-

tions, wiring and spark plugs. To test CDI ignition system a special tester or ohmmeter must be used. **DO NOT** use a 12 volt test light as it may damage the CDI system.

**COOLING FAN AND BELT.** Belt tension should be adjusted to allow no more than 3/8-inch deflection midway between pulleys when depressed with finger. Belt can be adjusted by adding or removing shims (5—Fig. JD11) from between fan pulley halves. Removing shims will tighten belt by allowing pulley rims to move closer together. Turn pulley slowly when assembling to keep from pinching belt in pulley. Removed shims can be stored outside of outer pulley half for re-use when a new belt is installed.

To renew belt, remove recoil starter, fan protector cover and air intake duct. Remove fan pulley outer half, then withdraw belt and slip it off lower drive pulley. Install new belt and adjust as outlined in previous paragraph. Reinstall parts removed during disassembly.

**RECOIL STARTER.** Refer to exploded view of a typical starter in Fig. JD12. Caution should be taken when disassembling starter, parts are under spring pressure.

To disassemble starter, remove starter from engine. Remove nut (1), lockwasher (2) and flat washer (3), then withdraw retaining plate (4). Remove center spring (5), return spring (6), pawls (13) and pawl springs (12). Remove bushing (7), thrust washer (8) and plates (9 and 10) on so equipped models. Rotate reel (11) to release spring (14) and lift reel (11) out of cover assembly (17). Unknot rope (16) to remove from reel (11). **DO NOT** remove spring (14) unless replacement is needed, as spring will rewind during removal.

Inspect and renew all parts that are damaged. Reassemble starter in reverse order of disassembly. Be sure springs hook in notches during assembly to insure proper operation of starter.

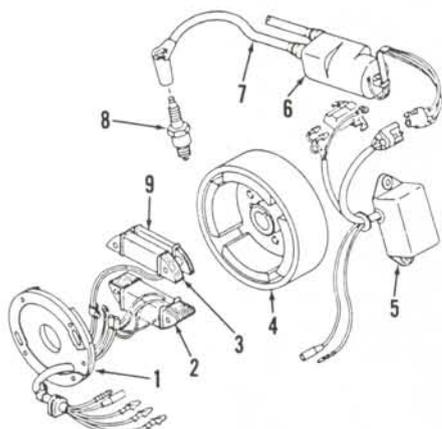
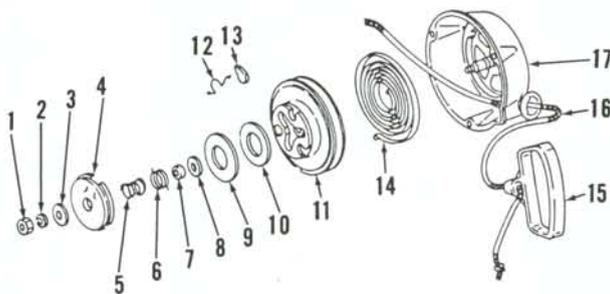


Fig. JD10—View of a typical Capacitor Discharge Ignition system.

- |                  |                    |
|------------------|--------------------|
| 1. Stator plate  | 6. Ignition coil   |
| 2. Lighting coil | 7. Spark plug wire |
| 3. Exciter coil  | 8. Spark plug      |
| 4. Flywheel      | 9. Pulser coil     |
| 5. CDI unit      |                    |

Fig. JD12—View of a typical recoil starter assembly.

- |                  |            |
|------------------|------------|
| 1. Nut           | 12. Spring |
| 2. Lockwasher    | 13. Pawl   |
| 3. Flat washer   | 14. Spring |
| 4. Plate         | 15. Handle |
| 5. Center spring | 16. Rope   |
| 6. Return spring | 17. Cover  |
| 7. Bushing       |            |
| 8. Thrust washer |            |
| 9. Plate         |            |
| 10. Plate        |            |
| 11. Reel         |            |



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