

OS69 Installation

The OS69 ignition module is an electrical equivalent to the discontinued Wisconsin YJ69 ignition module. It will pass all factory tests, and may be diagnosed in the same fashion.

Attached you will find documents originally provided by Wisconsin relative to the components of the ignition system associated with engine model TRA-12D and S-14D. This does a good job explaining the theory of operation of the system, the transition from a single-unit system to a two-unit system, and a few useful tips for diagnosing your system.

Originally the ignition system turned the engine on and off using the same key switch used to start the tractor. As the key switch aged, it often became faulty in that it would send a 12V pulse to the ignition module, which would ultimately destroy it.

To avoid buying another replacement module, it is highly recommended that a separate switch be employed. Reference the wiring diagram, figure 1, and you will notice that the new switch should be connected between the white lead of the stator or yellow lead of the module and any convenient ground.

If the white/yellow lead is brought to ground, the engine will die. If the white/yellow connection is open, the engine will be allowed to run. Installing a separate switch in this fashion will ensure that the module will not be subjected to stray voltage from the battery.

The OS69 replacement module has been built such that the color-coded wiring matches the stator output leads. If you have the old style green connector, simply solder the male contacts provided to the stator output leads, and then snap them into the nylon terminal housing also provided. For this application, you should also add a white lead to connect with the ignition switch described above at the same time you address the yellow lead connection.

For late model applications, the stator output connector on the engine should interface with the module directly. It is still very important that a new, separate, ignition switch be employed to avoid the potential for stray voltage from the battery.

Overnight Solutions

P.O. Box 3004

Merton, WI 53056 – 3004

Dale Colvert 262 – 391 – 6670

dale_colvert@yahoo.com

<http://overnight-solutions.com>

WISCONSIN

INSTRUCTION SHEET LIT20204



WISCONSIN

EYC 112
EYC 113

Solid State Breakerless Ignition

WITH EXTERNALLY MOUNTED IGNITION MODULE

EYC 112 For Engine Model TRA-12D

EYC 113 For Engine Models S-12D, S-14D

DESCRIPTION

Solid state *breakerless* ignition was designed to eliminate ignition maintenance and improve starting by electronically controlling the spark. A *magnet ring*, *ignition coil*, *stator* and *ignition module* are the basic parts of the solid state ignition system.

No timing adjustment or breaker point setting is necessary. The only mechanically moving part is the magnet ring, a component part of the flywheel.

OPERATION

Alternating current is generated as the flywheel magnet ring passes over the coil poles on stator plate. The current is then directed through a diode rectifier, an electronic device that allows the current to flow in only one direction, thus changing the alternating current to direct current. The direct current then continues on to a capacitor where it is stored momentarily. As the flywheel continues to turn, the permanent magnet in the ring passes over a trigger coil which generates a small amount of current to the solid state switch (Silicon Controlled Rectifier). The SCR is triggered by this current and releases the stored up energy in the capacitor to the primary windings of the ignition coil where a high voltage is induced into the secondary windings and on into the spark plug.

The spark timing is permanently established by the position of the trigger coil in the stator plate, relative to the flywheel keyway. See illustration, Page 2.

SERVICE REPLACEMENT

Beginning with engine serial No. 5,626,521 for model TRA-12D, and serial No. 5,635,132 for models S-12D, S-14D, the Single unit Stator Assembly is replaced by a Two Unit system consisting of a stator and separate ignition module. The Ignition Module contains the rectifier, capacitor and SCR switch, and is externally mounted to the shroud for service convenience.

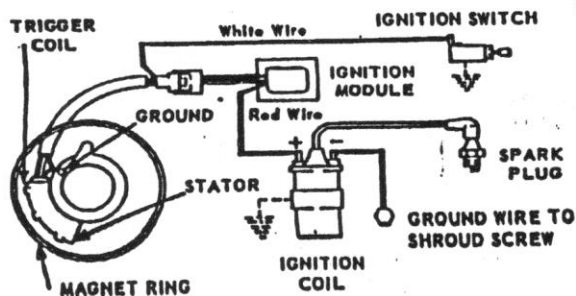


Fig. 1 Wiring Diagram

The Two Unit system is completely interchangeable with the Single Unit system and is mounted and wired per Fig. 1, Fig. 2 and Service Parts Illustration Page 2.

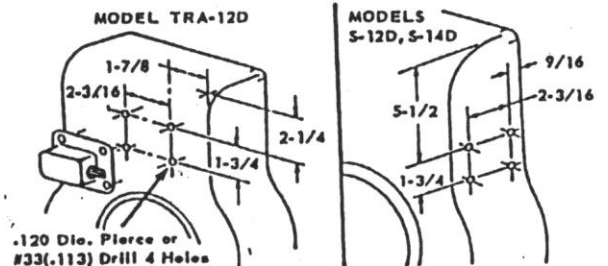


Fig. 2 Ignition Module Mounting

IGNITION TIMING - SPARK ADVANCE

The accuracy of the spark advance timing can be checked with a neon timing lamp and 12 volt battery. Timing, however, cannot be changed, since it is electronically controlled by the trigger coil on the stator plate. Connect lamp leads to positive terminal of battery, spark plug terminal and ground.

The spark is retarded 10 to 12° before top dead center for starting, and automatically advances as engine speed increases. The running spark advance (2500 R.P.M. and over) is 20°.

Model TRA-12D: The flywheel is marked with a groove to indicate the 20° running spark advance. With the engine operating at 2500 R.P.M. or over, the timing mark (groove) on rim of flywheel will appear in line with timing pointer, left view, Fig. 3.

Models S-12D and S-14D: The timing groove on the rim of flywheel, Fig. 3 (right), is marked for the 18° magneto and battery ignition advance, and timing can be checked to this mark for solid state ignition while the engine is running at 1000 R.P.M. When checking the 20° running spark advance, at 2500 R.P.M. or over, the timing mark (groove) will appear about 1/8 inch above the timing pointer.

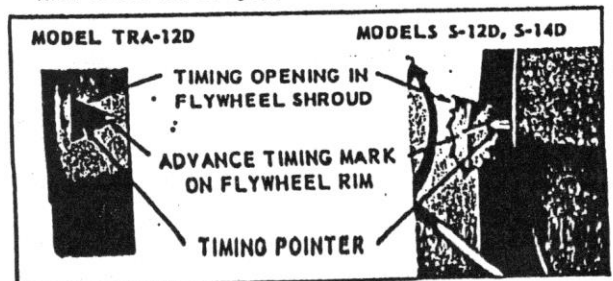


Fig. 3 Ignition Timing

July 1996

WIS-CON

HEADQUARTERS
3409 Democrat Road
P.O. Box 181160
Memphis, Tennessee 38181-1160

EUROPEAN OFFICE
Rue Joseph Delfandre, 13
B-4053 Chaudfontaine (Liege)
Belgium

IGNITION FAILURE

In the event of malfunction of the ignition system, check the following:


Broken, frayed, loose or disconnected ignition wires.

Faulty spark plug – wet, dirty, insulator broken or incorrect plug gap.

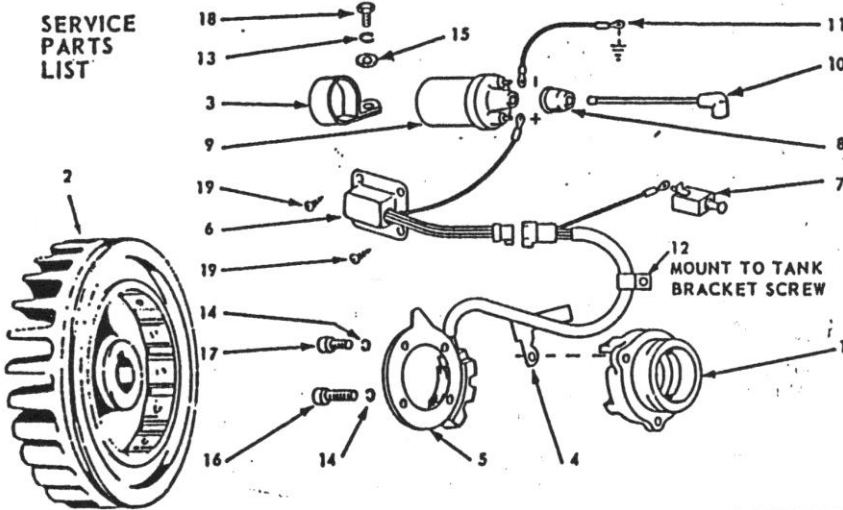
Check for spark – remove ignition cable from spark plug and wedge a piece of stiff bare wire into the terminal boot and leave one end of the bare wire extended. With the extended wire held about 1/8 inch from cylinder head shroud, turn engine over by means of the starter sheave or starting motor and observe the spark discharge which should occur during the cranking cycle. A weak spark or no spark at all will indicate a defective stator or ignition module.

First, plug a new ignition module into the circuit, if this does not correct the malfunction, then replace the stator.

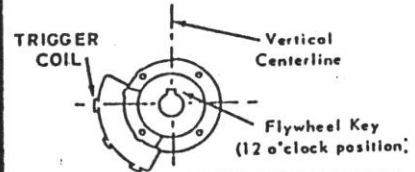
It is unlikely that the ignition coil or ignition switch would become defective, however these parts can be checked with an ohmmeter. The ignition switch should indicate 0 ohms in the closed position and ∞ in the open position. The ignition coil primary winding resistance is so low that it is inadvisable to try to measure it. The secondary winding, measured from the coil output to the coil case or ground, will indicate between 4000 and 6000 ohms. These static ohmmeter readings should be made with no external connections to the ignition switch or coil.

Stator must be mounted with the coils in a position relative to the vertical centerline of engine. 

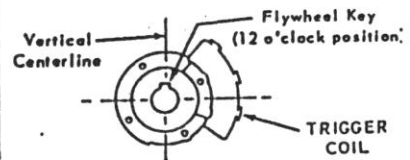
SERVICE PARTS LIST



STATOR MOUNTING (facing flywheel end of engine) Model TRA-12D



Models S-12D, S-14D



Ref. No.	PART NUMBER		Description	No. Req.	Ref. No.	PART NUMBER		Description	No. Req.
	Model TRA12D	Models S12D, S14D				Model TRA12D	Models S12D, S14D		
1	BG351S1	BG350AS1	BEARING PLATE ASSEMBLY, flywheel end (rep'l. std.)	1	12	PC830-1		CLIP, stator harness support to tank bracket screw	1
2	N106	N105-4	FLYWHEEL with magnet ring (rep'l. std.)	1	STANDARD HARDWARE				
		N105-3	FLYWHEEL with magnet ring and GH48 ring gear	1					
3	PG556	PG556-2	STRAP for ignition coil	1	13	PE4 (5/16")	PE5 (3/8")	LOCKWASHER, spring lock, for mounting coil	1
4	PG1144A	PG1144A	CLIP for stator wire	1	14	PE113	PE113	LOCKWASHER, No. 10 internal tooth for mounting stator plate	4
5	YB83A replaces YB83	YB83A replaces YB83	STATOR ASSEMBLY YB80 Previous to Serial No. 5628521- Replaced by YB83S1 Stator and Module KL. YB83S1- Replaced by YB83AS2	1	15	PH2098 (5/16")	PH513 (3/8")	PLAIN WASHER, for mounting coil	1
6	YJ69A replaces YJ69	YJ69A replaces YJ69	IGNITION MODULE	1	16	XB113	XB113	SCREW, 10-32 x 3/4" long, stator plate - wide flange section	1
7	YC9F81	YC9F81	IGNITION SWITCH ASSEMBLY	1	17	XB115	XB115	SCREW, 10-32 x 1/2" long (socket head), stator plate mounting	3
8	YD20A	YD20A	RUBBER NIPPLE for ignition coil cable	1	18	XD162 (5/16" - 18 X 2 - 1/2)	PC588 (std. stud)	SCREW, hexagon head, for mounting coil	1
9	YF37	YF37	IGNITION COIL	1	19	XA73	XA73	SCREW, No. 7 x 3/8 long self-tap for ignition module mounting	4
10	YL339-6	YL339-6	IGNITION CABLE, coil to spark plug	1					
11	YL355-5	YL355-5	WIRE ASSEMBLY, coil to ground (top shroud screw)	1					