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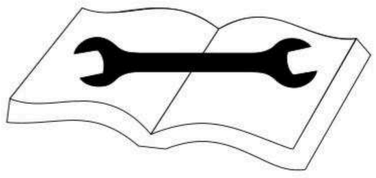
Service and Maintenance Manual

Model

601S

P/N - 3120866

November 22, 2016



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SECTION 1. SPECIFICATIONS

1.1 CAPACITIES

Fuel Tank

98.4 Liters (26 gal.)

Hydraulic Oil Tank

Approx. 121 liters (32 U.S. Gallons), 98.4 L (26 gal.) to the full mark on sight gauge.

Hydraulic System (Including Tank)

Gasoline/Diesel Power - 140.8 liters (37.2 gal.)

Torque Hub, Drive

0.50 liters (17 ounces).

NOTE: *Torque hubs should be one half full of lubricant.*

Engine Crankcase

Ford LRG-425 Gas w/Filter - 4.25 liters (4.5 quarts).

Deutz F3M1011F Diesel w/Filter - 6 liters (6.3 quarts).

1.2 COMPONENT DATA

Engine - Gas. (Water-Cooled)

Manufacturer/Model - Ford LRG-425.

Oil Capacity.

4.25 liters (4.5 Quarts) w/Filter.

Idle RPM - 1000.

Low RPM - 1800.

High RPM - 2800.

Alternator - 40 Amp, Belt Drive.

Battery - 85 Amphour, 550 Cold Cranking Amps, 12 VDC.

Fuel Consumption.

Low RPM - 13.06 lph (3.45 GPH).

High RPM - 17.41 lph (4.60 GPH).

Horsepower - 54 @ 2400 RPM, full load.

Cooling System - 15 liters (16 Quarts).

Engine - Diesel (Liquid-Cooled)

Manufacturer/Model- Deutz F3M1011F.

Oil Capacity.

4.5 liters (5 Quarts) Cooling System.

6 liters (6.3 Quarts) w/Filter.

10.7 liters (11.3 Quarts) Total Capacity.

Low RPM - 1800.

High RPM - 2800.

Alternator - 60 Amp, belt drive.

Battery - 1000 Cold Cranking Amps, 210 Minutes Reserve Capacity, 12 VDC.

Horsepower - 48 @ 3000 RPM, full load.

Drive System

Tires - 14 x 17.5, G 14 ply rating, directional tread, pneumatic, tire pressure - 6 Bar (90 PSI).

Drive Motor Displacement.

Standard - 46 cm[3] max. 18 cm[3] min.

(2.8 cu. in. max. 1.1 cu. in. min.)

Drive Hub Ratio.

Standard - 43:1 (4WD).

Drive Brake - Automatic spring applied, hydraulically released disc brakes.

Steer System

Tires - 14 x 17.5, G 14 ply rating, directional tread, pneumatic, tire pressure - 6 Bar (90 PSI)

Tires - 14 x 17.5, G 14 ply rating, directional tread, foam filled.

Toe-in, adjust for 6.35 mm overall.

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Table 6-3. Help Fault Codes, Displayed Faults, and Descriptions - S/N 66939 to Present

Fault Flash Code	Communicated (Displayed on Analyzer) Fault	Description	Priority
	BASKET UP SHORT TO GROUND		
	BASKET UP OPEN CIRCUIT		
	BASKET UP SHORT TO BATTERY OR OPEN CIRCUIT	Only occurs on machines with electronic basket leveling	
	BASKET DOWN SHORT TO BATTERY		
	BASKET DOWN SHORT TO GROUND		
	bASKET DOWN OPEN CIRCUIT		
	BASKET DOWN SHORT TO BATTERY OR OPEN CIRCUIT	Only occurs on machines with electronic basket leveling.	
	BASKET LEFT SHORT TO BATTERY		
	BASKER LEFT SHORT TO GROUND		
	BASKET LEFT OPEN CIRCUIT		
	BASKET RIGHT SHORT TO BATTERY		
	BASKET RIGHT SHORT TO GROUND		
	BASKET RIGHT OPEN CIRCUIT		
	JIB UP SHORT TO BATTERY		
	JIB UP SHORT TO GROUND		
	JIB UP OPEN CIRCUIT		
	JIB DOWN SHORT TO BATTERY		
	JIB DOWN SHORT TO GROUND		
	JIB DOWN OPEN CIRCUIT		
	JIB LEFT SHORT TO BATTERY		
	JIB LEFT SHORT TO GROUND		
	JIB LEFT OPEN CIRCUIT		
	JIB RIGHT SHORT TO BATTERY		
	JIB RIGHT SHORT TO GROUND		
	JIB RIGHT OPEN CIRCUIT		
	PLATFORM CONTROL VALVE SHORT TO BATTERY	Only occurs on machines with electronic basket leveling	
	PLATFORM CONTROL VALVE SHORT TO GROUND	Only occurs on machines with electronic basket leveling	
	PLATFORM CONTROL VALVE OPEN CIRCUIT	Only occurs on machines with electronic basket leveling	
3/5		**Flash code 3/5 indicates a brake pressure problem. NOT REQUIRED**	
4/2		**Flash code 4/2 indicates that the engine is over temperature. NOT REQUIRED**	

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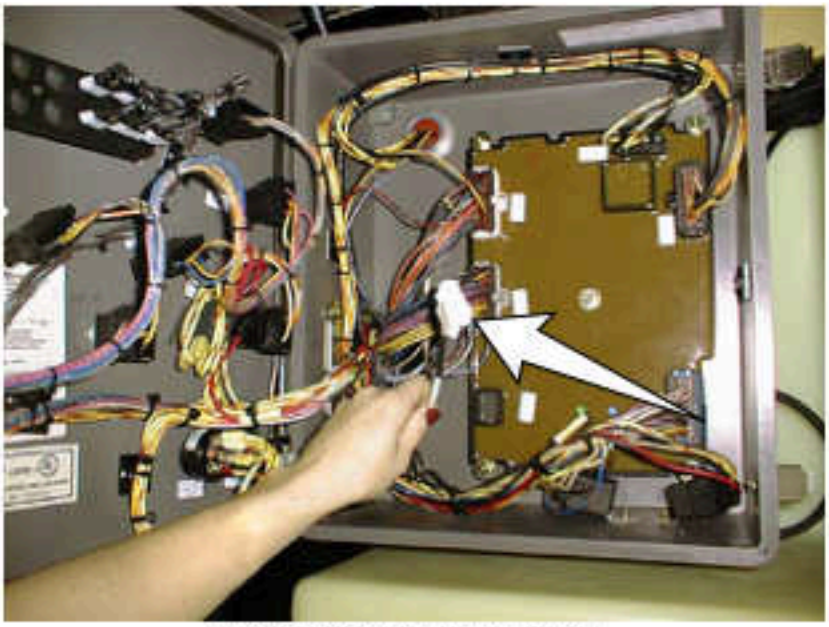
Table 6-5. Fault Code Listing

HELP MESSAGE	FAULT		FAULT REMOVAL
FORD FAULT CODE 31	4	3	CLEARS WHEN FAULT IS REMOVED
FORD FAULT CODE 32	4	3	CLEARS WHEN FAULT IS REMOVED
FORD FAULT CODE 33	4	3	CLEARS WHEN FAULT IS REMOVED
FORD FAULT CODE 34	4	3	CLEARS WHEN FAULT IS REMOVED
FORD FAULT CODE 35	4	3	CLEARS WHEN FAULT IS REMOVED
FORD FAULT CODE 36	4	3	CLEARS WHEN FAULT IS REMOVED
FORD FAULT CODE 41	4	3	CLEARS WHEN FAULT IS REMOVED
FORD FAULT CODE 42	4	3	CLEARS WHEN FAULT IS REMOVED
FORD FAULT CODE 43	4	3	CLEARS WHEN FAULT IS REMOVED
FORD FAULT CODE 44	4	3	CLEARS WHEN FAULT IS REMOVED
FORD FAULT CODE 45	4	3	CLEARS WHEN FAULT IS REMOVED
FORD FAULT CODE 46	4	3	CLEARS WHEN FAULT IS REMOVED
FORD FAULT CODE 51	4	3	CLEARS WHEN FAULT IS REMOVED
FORD FAULT CODE 52	4	3	CLEARS WHEN FAULT IS REMOVED
FORD FAULT CODE 53	4	3	CLEARS WHEN FAULT IS REMOVED
FORD FAULT CODE 54	4	3	CLEARS WHEN FAULT IS REMOVED
FORD FAULT CODE 55	4	3	CLEARS WHEN FAULT IS REMOVED
FORD FAULT CODE 56	4	3	CLEARS WHEN FAULT IS REMOVED
FORD FAULT CODE 57	4	3	CLEARS WHEN FAULT IS REMOVED
FORD FAULT CODE 61	4	3	CLEARS WHEN FAULT IS REMOVED
FORD FAULT CODE 62	4	3	CLEARS WHEN FAULT IS REMOVED
FORD FAULT CODE 63	4	3	CLEARS WHEN FAULT IS REMOVED
FORD FAULT CODE 64	4	3	CLEARS WHEN FAULT IS REMOVED
FORD FAULT CODE UNKNOWN	4	3	CLEARS WHEN FAULT IS REMOVED
RETURN FILTER BYPASSED	2	8	CLEARS WHEN FAULT IS REMOVED
CHARGE PUMP FILTER BYPASSED	2	8	CLEARS WHEN FAULT IS REMOVED
BATTERY LOW	4	4	CLEARS WHEN FAULT IS REMOVED
BATTERY TOO HIGH - SYSTEM SHUT DOWN	4	4	REQUIRES EMS TO BE RECYCLED TO CLEAR FAULT
BATTERY TOO LOW - SYSTEM SHUT DOWN	4	4	CLEARS WHEN FAULT IS REMOVED
SPEED SENSOR READING INVALID SPEED	5	5	CLEARS WHEN FAULT IS REMOVED
SPEED INPUT LOST	5	5	CLEARS WHEN FAULT IS REMOVED
ENGINE TEMP HIGH	4	3	CLEARS WHEN FAULT IS REMOVED
AIR FILTER BYPASSED	4	3	CLEARS WHEN FAULT IS REMOVED

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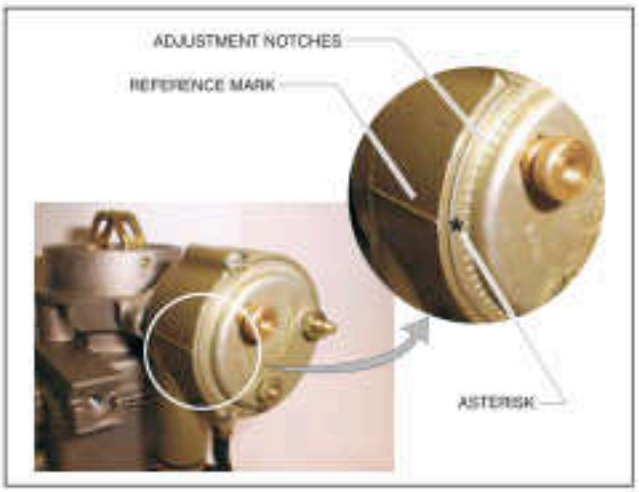
PLATFORM CONNECTION



GROUND CONTROL CONNECTION

Figure 6-2. Analyzer Connecting Points

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1. Check the choke for ambient temperature setting. The default ambient temperature setting is 70° F (21° C), which aligns the asterisk (*) on the choke face with the reference mark on the side of the choke housing. The choke should be set at one notch "clockwise" past the (*) asterisk for every 5 degrees below 70° F (one notch "clockwise" past the (*) asterisk for every 2.8 degrees below 21° C). This adjustment will "richen" the fuel mixture.
2. Check if the choke "butterfly" is stuck by manually opening and closing by hand.
3. Check the choke pull-off (butterfly stop) screw for proper adjustment as follows:



   a. Loosen jam nut
   b. Screw the adjustment screw all the way in, then back out 1/2 turn.
   c. Tighten jam nut.

Try to start the engine.

NOTE: *If EMS switch is pulled on for an extended period of time, i.e. 1 to 2 minutes, without attempting to start the engine, the choke will start to open due to electrical heating.*

Checking the Ignition

If the engine tries to start but spits and sputters:

1. Check the Oil Pressure Switch:
   a. Check for voltage from N.C. (normally closed) terminal to common ground while cranking the engine. (what should the voltage be?)
   b. Jump all three posts at the oil pressure switch, then see if the engine will start.
   c. If the engine starts after jumping the posts, replace oil pressure switch (JLG p/n: 4360405)
2. Check the Spark Plugs for presence of spark. If there is no spark at the plugs during cranking:
   a. Overspeed relay not activating.
   b. Check the ignition module red/green wire for 12 volts.
   c. Check the white/black wire coming from the 8-pin connector (pin-H) that runs to the overspeed relay on terminal 85 for proper ground.
3. Ignition module may have failed.
   a. Ignition module series: AA, AB and FA prior to date code-1889 may need replaced. (refer to: Ford Technical Bulletin # FF-91-99)
   b. Check the vacuum advance tube attached to the ignition module for secure connection.

Try to start the engine.

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