An Oshkosh Corporation Company

Service and Maintenance Manual

Models

400S
460SJ

P/N - 3120788

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ANSI

An Oshkosh Corporation Company

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SECTION 1. SPECIFICATIONS

1.1 CAPACITIES

Table 1-1. Capacities

Fuel Tank	26 gallons (98.4 liters)
Hydraulic Tank	40.0 gallons (152 liters)
Hydraulic System (Including Tank)	52 gallons (196.8 liters)
Drive Hub	17 ounces (0.5 liters)
Engine Oil Capacity	
Ford	4.5 Quarts (4.25 L) w/Filter
Deutz	6.3 qts. (6 L) w/Filter
Caterpillar	3.8 quarts (3.6 L) crankcase only
GM	4.5 qts. (4.25 L) w/Filter

1.2 ENGINE SPECIFICATIONS

NOTE: *RPM Tolerances are ± 100.*

Table 1-2. Ford LRG-425 (Gas or Dual Fuel)

Type	4 cylinder, 4 stroke, spark ignition
Fuel	Gasoline or Gasoline/LP Gas
Bore	3 in. (96 mm)
Stroke	3.4 in. (86.4 mm)
Displacement	153 cu. in. (2.5 L)
Firing Order	1-3-4-2
BHP at Max. RPM	82
Oil Capacity	4.5 quarts (4.26 L)
Low RPM	1000
Mid RPM	1800
High RPM	3000
Fuel Consumption: Gasoline	
Intermittent	6 gal./hr.
Continuous	5 gal./hr.
Fuel Consumption: LPG	
Intermittent	26 lbs./hr.
Continuous	23 lbs./hr.
Spark Plug	AWSF-52-C
Spark Plug Gap	0.044 in. (1.117 mm)

Table 1-3. Deutz F3M1011F/F3M2011F

Fuel	Diesel
No. of Cylinders	3
Bore	3.6 in. (91 mm)
Stroke	4.4 in. (112 mm)
Displacement	133 cu. in. (2184 cm³)
BHP at Max. RPM	48
Oil Capacity	
crankcase	6.3 quarts (6 L)
cooler	4.75 quarts (4.5 L)
total capacity	11 quarts (10.5 L)
Low RPM	1200
Mid RPM	1800
High RPM	2800

Table 1-4. Isuzu 4LE1

Fuel	Diesel
No. of Cylinders	4
BHP at Max. RPM	45
Low RPM	1000
Mid RPM	1500
High RPM	2800

Table 1-5. Caterpillar 3024/C2.2

Fuel	Diesel
No. of Cylinders	4
BHP	46.5 hp (34 kW)
Bore	3.307 in. (84 mm)
Stroke	3.9370 in. (112 mm)
Displacement	134.3 cu. in. (2.2L)
Oil Capacity w/filter	10 qt. (9.4 L)
Compression Ratio	19:1
Firing Order	1-3-4-2
Max. RPM	2800

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Fault group	Fault no. (in SERDIA)	Fault locality/ Fault description	SPN	FMI	Cause	Remarks	Help
Control unit hardware	80	Power supply (Actuator)	SID 254	2	Power supply for actuator not in the permissible range.	Fault message (disappears when power again in the normal range).	Switch ignition off and on again. Check again. If faulty inform DEUTZ Service.
	83	Reference voltage 1	SID 254	2			
	84	Reference voltage 2	SID 254	2	Reference voltage for actuator not in the permissible range.	Fault message (disappears when power again in the normal range). Auxiliary value 5 V	Check voltage supply. Switch ignition off and on again. Check again. If faulty inform DEUTZ Service.
	85	Reference voltage 4	SID 254	2			
	86	Internal temperature	171	12	Internal temperature for control unit not in permissible range.	Fault message (disappears when power again in the normal range).	Switch ignition off and on again. Check again. If faulty inform DEUTZ Service.
	87	Atmospheric pressure	108	12	Atmospheric pressure not in permissible range.	Fault message (disappears when power again in normal range). Atmospheric pressure monitoring function de-activated.	
Program logic	90	Parameter fault (EEPROM retrieval or checksum faulty).	SID 253	2	No data found or checksum of data is faulty (note: fault only occurs during setting of parameter / saving or reset.).	Engine cannot be started.	Check data for correct settings. Save parameters. Switch ignition off and on again. Check again. If faulty inform DEUTZ Service.
	93	Stack overflow	SID 240	2	Internal calculation fault (so-called "Stack overflow" fault).	Emergency switch-off. Engine cannot be started.	Note parameters (3697 and 3698). Switch ignition off and on again. Check again. If faulty inform DEUTZ Service.
	94	Internal fault	SID 254	2			

NOTE: SID is equal to 512. To get SPN #, add 512 + number. For example, SID 254 would be 512+254 or an SPN of 766.

Figure 3-64. EMR2 Fault Codes - Sheet 5 of 5

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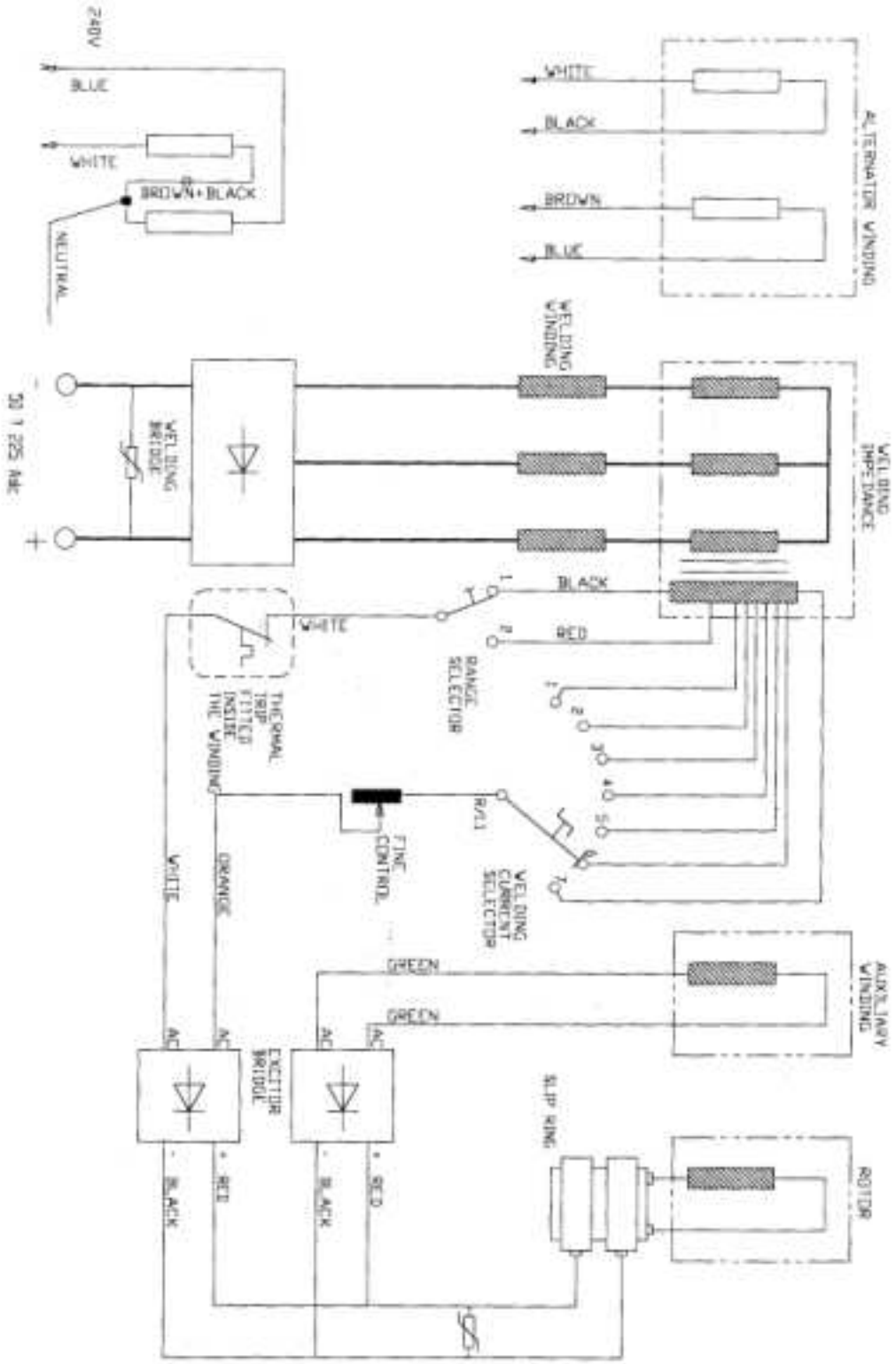


Figure 7-49. Electrical Schematic - Hydraulic Welder

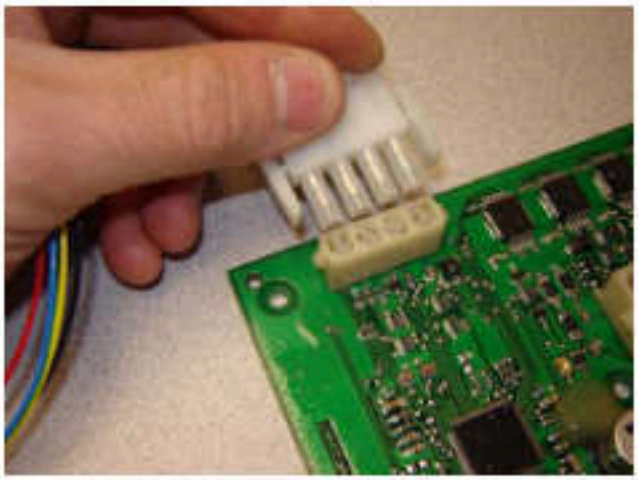
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Figure 7-6. Use of Seal Plugs

AMP Mate-N-Lok

Follow the installation instructions.



DIN Connectors

This connector is typically used on hydraulic valves. Follow the installation instructions.



Exclusions

A limited number of connectors do not benefit from dielectric grease, or may be permanently damaged by application. Dielectric grease may not be required in properly sealed enclosures.

BRAD HARRISON / PHOENIX CONTACT M12

The connector uses gold contact material to resist corrosion and an o-ring seal for moisture integrity. If dielectric grease is mistakenly applied to this connector system, the low-force contacts cannot displace the grease to achieve electrical contact. Once contaminated, there is no practical way to remove the dielectric grease (replacement of female contacts required). The JLG Load Sensing System and 1250AJP Rotary Angle Sensors are examples of components with the M12 connector system.

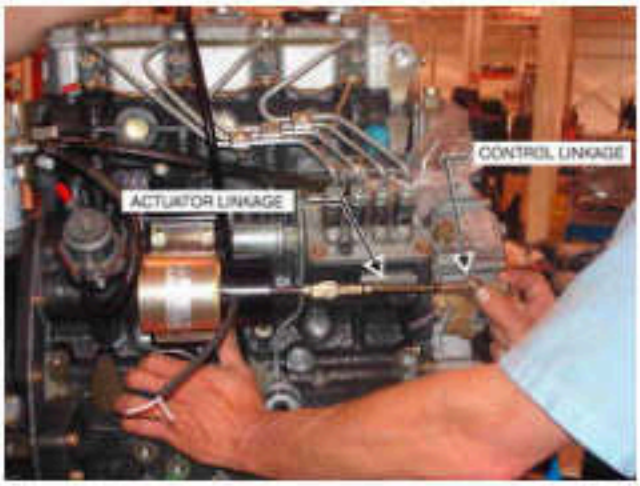




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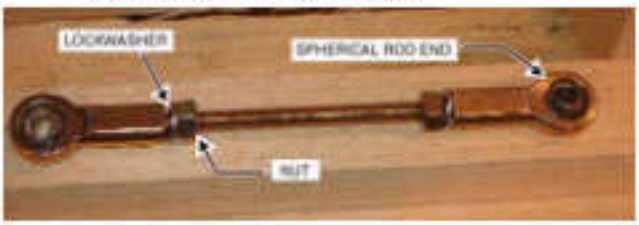
Setting the Actuator

1. Remove the bolt from the control linkage



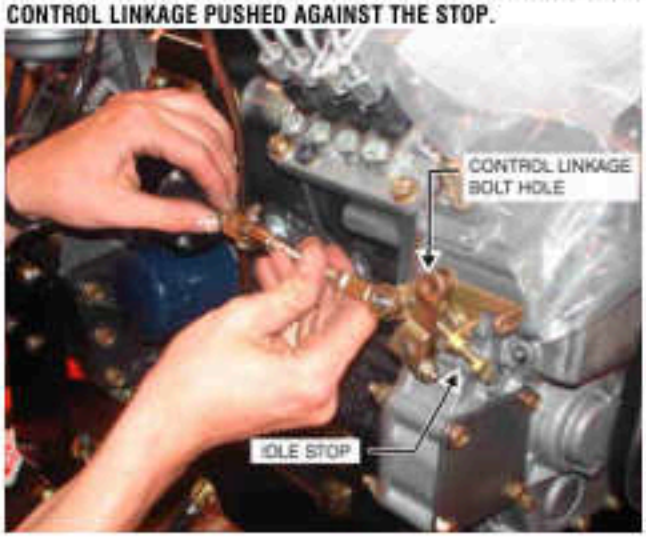


2. With the control linkage pushed against the idle stop, begin to make adjustments to the actuator linkage in order to align the bearing of the spherical rod end with the control linkage bolt hole. When making linkage adjustments, thread the spherical rod end and threaded rod evenly (for every turn of spherical rod end, turn the threaded rod.)

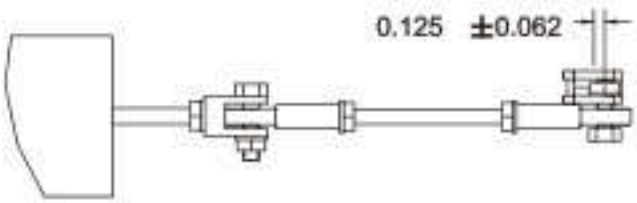


NOTICE

DURING THIS PROCEDURE IT'S VERY IMPORTANT TO KEEP THE CONTROL LINKAGE PUSHED AGAINST THE STOP.



3. Once the adjustments have been made to align the spherical rod end bearing with the control linkage bolt hole, lengthen the actuator linkage by continuing to turn the spherical rod end and threaded rod 2-2 ½ turns (1-1 ¼ turns of spherical rod end and 1-1 ¼ turns of threaded rod.) This will provide 1/8" (3 mm) preload.



Use a measuring device to ensure the preload is approximately 1/8" (3 mm), then secure the actuator linkage to the control linkage with original bolt and nut. Make sure the spherical ball is seated in the control linkage bolt hole.

Tighten the 2 nuts on the threaded rod of the actua-

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