WSM

WORKSHOP MANUAL

ZERO TURN MOWER

ZD21N-EC,ZD21-EC,ZD28-EC

Kubota

KiSC issued 09, 2006 A

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GENERAL

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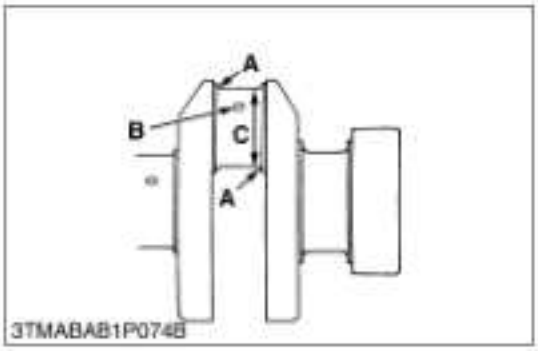
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1. TROUBLESHOOTING

Symptom	Probable Cause	Solution	Reference Page
Engine Does Not Start	• No fuel	Replenish fuel	–
	• Air in the fuel system	Bleed fuel system	–
	• Water in the fuel system	Change fuel and replace fuel system	–
	• Fuel pipe clogged	Clean fuel pipe	–
	• Fuel filter clogged	Replace fuel filter	G-33
	• Excessively high viscosity of fuel or engine oil at low temperature	Use specified fuel or engine oil	G-7
	• Fuel with low cetane number	Use specified fuel	G-7
	• Fuel leak due to loose injection pipe retaining nut	Tighten retaining nut	1-S28
	• Incorrect injection timing	Adjust injection timing	1-S71
	• Fuel camshaft worn	Replace fuel camshaft	1-S33, S35
	• Injection nozzle clogged	Clean injection nozzle	1-S74
	• Injection pump malfunctioning	Repair or replace injection pump	1-S31, S35
	• Seizure of crankshaft, camshaft, piston, cylinder or bearing	Replace crankshaft, camshaft, piston, cylinder or bearing	1-S39, S40
	• Compression leak from cylinder	Replace head gasket, tighten cylinder head screw, glow plug and nozzle holder	1-S30 1-S32, S36
	• Improper valve timing	Correct valve timing	1-S39, S65
	• Piston ring and cylinder worn	Replace piston ring and bore oversize cylinder	1-S27
	• Excessive valve clearance	Adjust valve clearance	G-27
(Starter Does Not Run)	• Battery discharged	Charge battery	5-S12
	• Starter malfunctioning	Repair or replace starter	G-37
	• Slow blow fuse blown	Replace slow blow fuse	5-S8
	• Main switch malfunctioning	Repair or replace main switch	5-S10
	• PTO switch defective	Replace PTO switch	5-S10
	• Parking brake switch defective	Replace brake switch	5-S10
	• Motion control lever switch defective	Replace reverse switch or adjust reverse switch gap	5-S10
	• Seat switch defective	Replace seat switch	–
	• Wiring harness disconnected	Connect wiring harness	

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Oil Clearance between Crankpin and Crankpin Bearing (Continued)

(Reference)

- Undersize crankpin bearing

[D782]

Undersize	Bearing	Code Number	Marking
0.2 mm 0.008 in.	Crankpin bearing 02	15861-22970	020 US
0.4 mm 0.016 in.	Crankpin bearing 04	15861-22980	040 US

[D1105]

Undersize	Bearing	Code Number	Marking
0.2 mm 0.008 in.	Crankpin bearing 02	16241-22970	020 US
0.4 mm 0.016 in.	Crankpin bearing 04	16241-22980	040 US

- Undersize dimensions of crankpin

[D782]

Undersize / Dimension	0.2 mm 0.008 in.	0.4 mm 0.016 in.
A	2.3 to 2.7 mm radius 0.091 to 0.106 in. radius	2.3 to 2.7 mm radius 0.091 to 0.106 in. radius
B	4 mm dia. 0.16 in. dia.	4 mm dia. 0.16 in. dia.
C	33.759 to 33.775 mm dia. 1.32910 to 1.32973 in. dia.	33.559 to 33.575 mm dia. 1.32122 to 1.32185 in. dia.
(0.8-S) The crankpin must be fine-finished to higher than VVVV.		

[D1105]

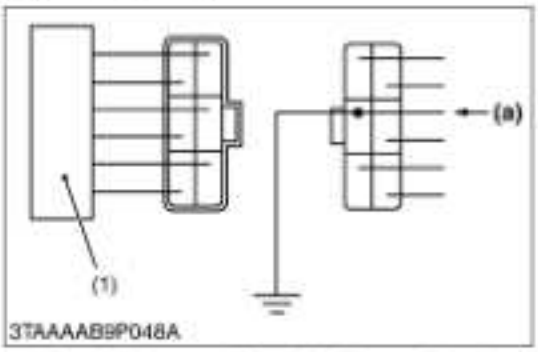
Undersize / Dimension	0.2 mm 0.008 in.	0.4 mm 0.016 in.
A	2.8 to 3.2 mm radius 0.1102 to 0.1260 in. radius	2.8 to 3.2 mm radius 0.1102 to 0.1260 in. radius
B	1.0 to 1.5 mm dia. 0.0394 to 0.0591 in. dia.	1.0 to 1.5 mm dia. 0.0394 to 0.0591 in. dia.
C	39.759 to 39.775 mm dia. 1.56531 to 1.56594 in. dia.	39.559 to 39.575 mm dia. 1.55744 to 1.55807 in. dia
(0.8-S) The crankpin must be fine-finished to higher than VVVV.		

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[4] LIGHTING SYSTEM

(1) Checking



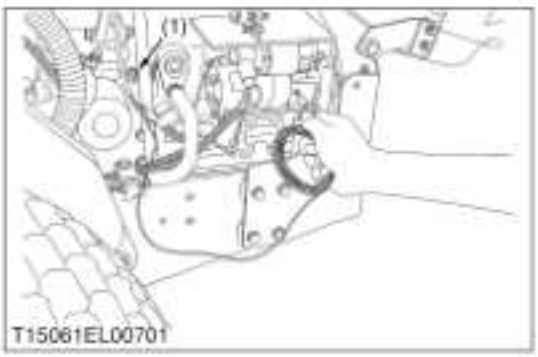
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Charge Lamp (Charging Circuit)

1. Remove the under panel.
2. Disconnect the **6P** connector from the regulator after turning the main switch **OFF**.
3. Turn the main switch **ON** and connect a jumper lead from the wiring harness connector terminal (Black) to the chassis.
4. If the charge lamp does not light, the wiring harness or fuse is faulty.

(1) Regulator **(a) From Charge Lamp**

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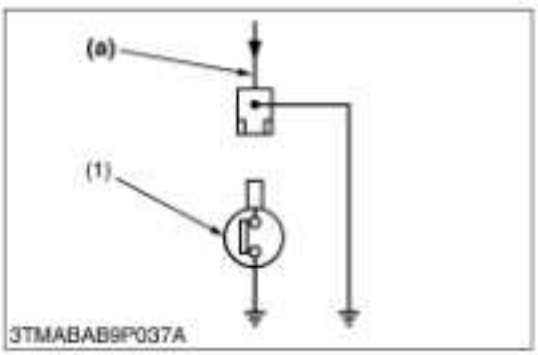
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Engine Oil Pressure Lamp

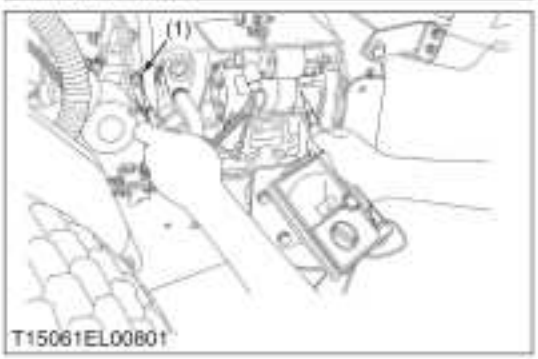
1. Disconnect the lead from the engine oil pressure switch after turning the main switch **OFF**.
2. Turn the main switch **ON** and connect a jumper lead from the lead to the chassis.
3. If the engine oil pressure indicator lamp does not light, the wiring harness is faulty.

(1) Engine Oil Pressure Switch **(a) From Oil Pressure Lamp**

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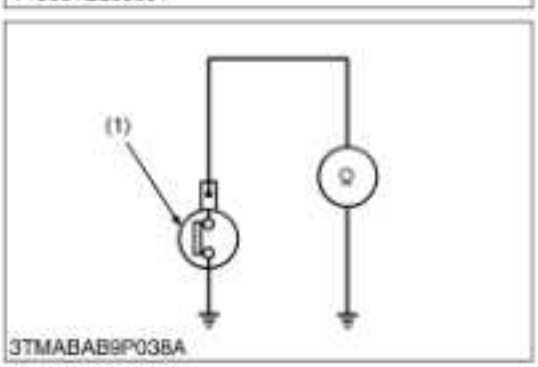
Engine Oil Pressure Switch Continuity

1. Measure the resistance with an ohmmeter across the switch terminal and the chassis.
2. If 0 ohm is not indicated in the normal state, the switch is faulty.
3. If infinity is not indicated at pressure over 4.9 kPa (0.5 kgf/cm^2, 7 psi), the switch is faulty.

Resistance (Switch terminal - Chassis)	In normal state	0 Ω
	At pressure over approx. 4.9 kPa (0.5 kgf/cm^2, 7 psi)	Infinity

(1) Engine Oil Pressure Switch

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