Doosan Infracore
Portable Power

Service Letter

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SL: **30005**
Date: **21 July 2011 Revised (10-12)**
Product: **Generators**
Subject: **Analog Controller Speed Source Change**

MODEL	SERIAL NUMBER
G20	G0200164 and Above
G30	G0300152 and Above
G40	G0400127 and Above
G60	G0600208 and Above

Until now, the controllers of the models listed in this letter, received the engine speed information from the engine charging alternator frequency.

Due to some variations in the alternators specifications as well as some interference, some of these generators suffered engine overspeed shutdowns while the real engine speed was within the specifications.

To overcome this possible issue, these generators are now receiving the engine speed information from the main AC alternator. This solution provides a much more reliable and stable speed information.

NOTE: For generators with S/N below the ones listed above, there is a procedure to overcome repetitive engine overspeed shutdowns while the real engine speed is correct. This can be done by changing the parameter FLYWHEEL TOOTH COUNT (1'S DIGIT).

Procedure To Modify The Controller Programming

Figure 1

S40438

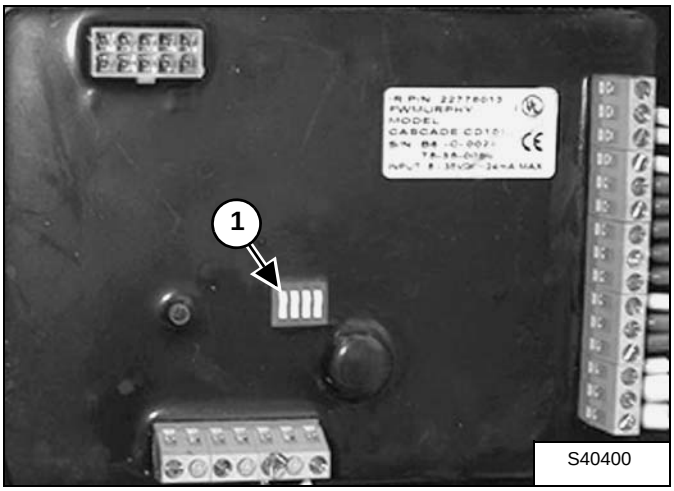
Eleven LEDs separated into two banks (Item 1 and 2) **[Figure 1]** are provided on the faceplate.

The LEDs bank 1 (Item 1) includes six LEDs and bank 2 (Item 2) **[Figure 1]** includes five LEDs.

In SETUP MODE, these banks form a binary code to indicate either the controller setup configuration or error status, which is indicated by the last eight (red) LEDs.

To enter the SETUP MODE, first cut off the DC power to the controller (battery switch) and wait until the controller is completely switched off. Use the start and stop buttons to check if the controller still reacts, and also to speed-up the discharge of its internal capacitor.

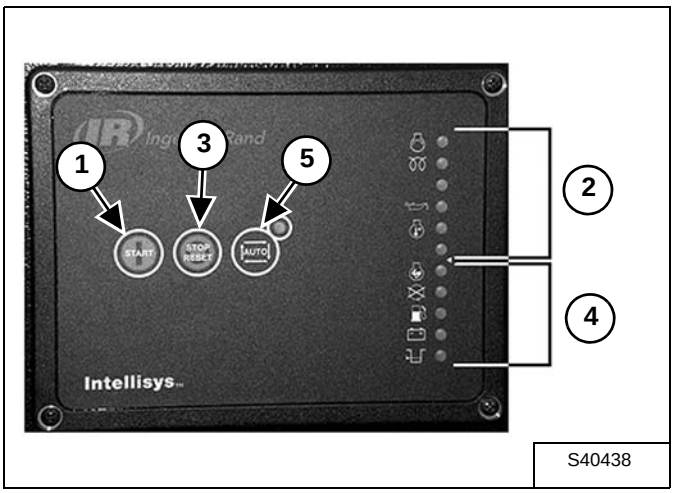
Figure 2



On the back of the controller are four DIP switches. Set switch (Item 1) **[Figure 2]** to ON by pressing the top of the switch. Restore the DC power.

The AUTO MODE LED will blink to indicate that the controller is in the SETUP MODE.

Figure 3



When in SETUP MODE, pressing the START button (Item 1), steps up through the entire list of parameters. The pattern of the LEDs bank 1 (Item 2) **[Figure 3]** is used to indicated which parameter is selected.

The pattern will change once each time the START button is pressed.

Pressing the STOP button (Item 3) steps through all the available values for each parameter. The pattern of the LEDs bank 2 (Item 4) **[Figure 3]** is used to indicate which value is selected.

The pattern will change once each time the STOP button is pressed.

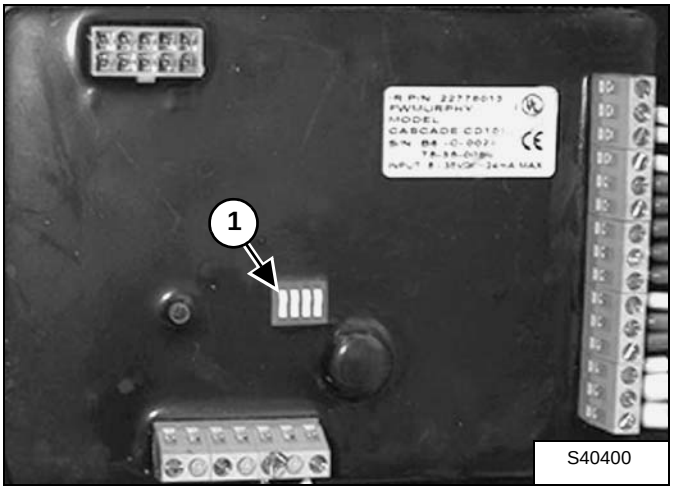
Pressing the AUTO button (Item 5) **[Figure 3]** stores the displayed value.

If any value is changed, it will blink until it is stored, except a value of zero. If any value is changed but not stored, when moving to the next parameter, the change will be lost.

If you accidentally go past a desired parameter or value, you can step back by pressing the down arrow button (hidden button right below the STOP button (Item 3) **[Figure 3]**.

The parameter / value list and corresponding LED indication can be found at the end of this letter (See “Paramater / Value List” on page 4).

Figure 4



When finished with the setup, set back the switch (Item 1) **[Figure 4]** in the normal operating position (OPEN) by pressing the bottom of the switch.

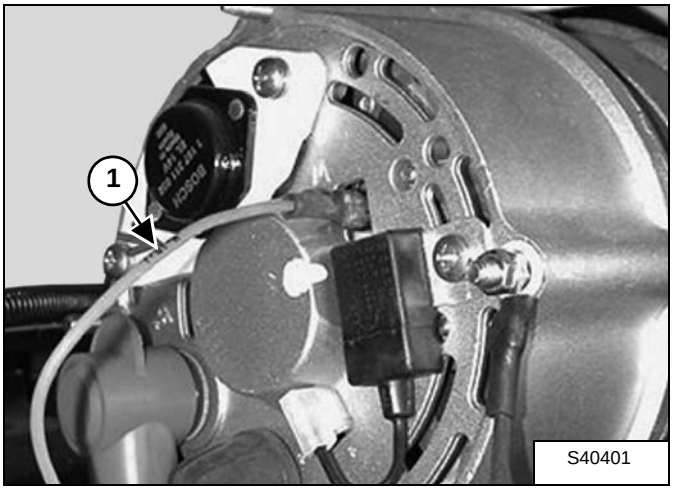
Cut off the DC power until the controller is completely shut down. Restore the DC power.

Required Flywheel Tooth Count Values For G20, G30, G40 And G60

Having repetitive engine overspeed shutdowns while the engine speed is within the correct range on these models is most of the time caused by a tooth count value which is not ideal.

To set up the right value, proceed as follows:

Figure 5



Measure the frequency at the charging alternator speed pick-up (orange wire) (Item 1) **[Figure 5]**. Multiply this value by 60 to have the frequency per minute.

Divide the result by 1500 to know the number of teeth which should be programmed.

NOTE: Round up to the upper value, whatever the decimal is.

Example for measured frequency 430 Hz:

430 Hz x 60 = 25800 / 1500 = 17,2 => 18 teeth.

See the corrected setting on the parameter / value list at the end of this letter (See “Paramater / Value List” on page 4).

Paramater / Value List

	CONFIGURATION PARAMETER	LED BANK 1	VALUE	LED BANK 2
1	ENGINE SPEED SOURCE	○○○○○●	MAGNETIC PICKUP*	○○○○○
2	CRANK ATTEMPTS	○○○○●○	3*	○○○○○
3	CRANK TIMER	○○○○●●	10 SEC	○○○○●
4	CRANK REST TIMER	○○○●○○	15 SEC*	○○○●○
5	START DELAY TIMER (AUTO MODE ONLY)	○○○●○●	10 SEC	○○○●○
6	STOP DELAY TIMER (AUTO MODE ONLY)	○○○●●○	0 SEC*	○○○○○
7	PREHEAT TIMER	○○○●●●	10 SEC	○○○●○
8	EXTENDED PREHEAT DURING CRANK	○○●○○○	0 SEC*	○○○○○
9	WARMUP TIMER	○○●○○●	0 MIN*	○○○○○
10	COOLDOWN TIMER	○○●○●○	0 MIN*	○○○○○
11	BYPASS TIMER	○○●○●●	10 SEC*	○○○●○
12	ENERGIZE TO STOP TIMER	○○●●○○	10 SEC	○○○●●
13	AUXILIARY INPUT BYPASS TIMER	○○●●○●	30 SEC*	○○○○○
14	STARTER MOTOR ABUTMENT PROTECTION DELAY	○○●●●○	DISABLED*	○○○○○
15	REMOTE START SIGNAL TYPE	○○●●●●	MAINTAINED*	○○○○○
16	DIGITAL INPUT 1	○●○○○○	LOW OIL PRESSURE (OPEN ON FAULT	○○○○○
17	DIGITAL INPUT 2	○●○○○●	HIGH ENGINE TEMP (OPEN ON FAULT)	○○○○○
18	DIG INP 3 (AUX IN 1) LOW FUEL	○●○○●○	DELAYED SHUTDOWN	○○●○●
19	DIG INP 4 (AUX IN 2) HIGH CONT	○●○○●●	DELAYED WARNING	○○○●●
20	(RESERVED FOR FUTURE USE)	○●○●○○	(RESERVED FOR FUTURE USE)	
21	(RESERVED FOR FUTURE USE)	○●○●○●	(RESERVED FOR FUTURE USE)	
22	FUEL RELAY CONTROL (NON ECU ENG)	○●○●●○	ENERGIZED TO RUN*	○○○○○
23	AUX OUT 1 FUEL SOL PULL-IN	○●○●●●	SOLENOID ENERGIZE	●○●○○
24	AUXILIARY OUTPUT 2 PRECRANK ALARM	○●●○○○	START DELAY	●○○●●
25	AUX OUT 3	○●●○○●	ENGINE RUNNING	○○●○●
26	AUXILIARY OUTPUT 4	○●●○●○	PREHEAT	○○●○○
27	(RESERVED FOR FUTURE USE)	○●●○●●	(RESERVED FOR FUTURE USE)	
28	INITIAL POWER-UP MODE	○●●●○○	POWER UP IN MANUAL MODE*	○○○○○
29	OIL PRESS CRANK DISCONNECT DELAY	○●●●○●	NOT USED*	○○○○○
30**	NOMINAL GENERATOR FREQUENCY	○●●●●○	50HZ	○○○○○
31	CRANK DISCONNECT FREQUENCY (10'S DIGIT)	○●●●●●	1	○○○○●
32	CRANK DISCONNECT FREQUENCY (1'S DIGIT)	●○○○○○	6	○○●●○
33	CRANK DISCONNECT RPM (1000'S DIGIT)	●○○○○●	0*	○○○○○
34	CRANK DISCONNECT RPM (100'S DIGIT)	●○○○●○	5*	○○●○●
35	CRANK DISCONNECT RPM (10'S DIGIT)	●○○○●●	4*	○○●○○
36	CRANK DISCONNECT RPM (1'S DIGIT)	●○○●○○	0*	○○○○○
37	OVERSPEED SETPOINT (% ABOVE RUN SPEED)	●○○●○●	10%*	○○○○●
38	UNDERSPEED SETPOINT (% BELOW RUN SPEED)	●○○●●○	20%*	○○○●●
39	UNDERSPEED RESPONSE	●○○●●●	NONE	○○○○○
40	LOW OIL PRESSURE SHUTDOWN SETPOINT	●○●○○○	10 PSI	○○○●●
41	HIGH ENGINE TEMP SHUTDOWN SETPOINT	●○●○○●	230 DEG F*	○●○○●
42	LOW BATTERY VOLTAGE SETPOINT	●○●○●○	10.5 V*	○○●○●
43	HIGH BATTERY VOLTAGE SETPOINT	●○●○●●	15.0 V*	○○●●○
44	WEAK BATTERY VOLTAGE SETPOINT	●○●●○○	WARNING DISABLED	○○○○○
45	SOLENOID ENERGIZE TIMER	●○●●○●	1.0 S	○○●●●
46	LED PROFILE SELECT	●○●●●○	IR	○○○○●
47	MANUAL LAMP TEST	●○●●●●	IN USE	○○○○●
48	FLYWHEEL TOOTH COUNT (100'S DIGIT)	●●○○○○	0	○○○○○
49	FLYWHEEL TOOTH COUNT (10'S DIGIT)	●●○○○●	1	○○○○●
50	FLYWHEEL TOOTH COUNT (1'S DIGIT)	●●○○●○	8*	○●○○○
51	RUN SPEED (1000'S DIGIT)	●●○○●●	1*	○○○○●
52**	RUN SPEED (100'S DIGIT)	●●○●○○	5	○○●○●
53	RUN SPEED (10'S DIGIT)	●●○●○●	0*	○○○○○
54	RUN SPEED (1'S DIGIT)	●●○●●○	0*	○○○○○
55	ALTERNATOR EXCITE DURING CRANK	●●○●●●	ENABLED	○○○○●
56	(RESERVED FOR FUTURE USE)	●●●○○○	(RESERVED FOR FUTURE USE)	
57	(RESERVED FOR FUTURE USE)	●●●○○●	(RESERVED FOR FUTURE USE)	
58	(RESERVED FOR FUTURE USE)	●●●○●○	(RESERVED FOR FUTURE USE)	
59	FAULT CODE SPN CONVERSION METHOD	●●●○●●	VERSIONS 1 AND 4 SUPPORTED*	○○○○○

If any other value needs to be used, please select the units value from the table below

50 Flywheel Tooth Count (MPU speed source only) (1's digit)	●●○○●○	0 1 2 3 4 5 6 7 8* 9	○○○○○ ○○○○● ○○○●○ ○○○●● ○○●○○ ○○●○● ○○●●○ ○○●●● ○●○○○ ○●○○●