

Tractor cranks but does not start

DOCUMENT #
SOP 21

AUTHOR
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REVISION
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APPLIES TO
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DATE
Jul 11, 2026

JOB CODES:

ELC-001 — Battery replacement ELC-002 — Battery terminal cleaning and service ELC-008 — Safety switch replacement (seat/PTO/neutral)

Total: 1.50 hrs

▲ FAILURE MODE / WHEN TO USE THIS SOP

Tractor try to turn (Starter moves) but tractor does not start

✂ TOOLS REQUIRED

- Multimeter
- 10 mm wrench
- Flat screw driver

EST. REPAIR TIME

1 hr
hours

Intermediate

⚙ PARTS REQUIRED

Part #	Description	Assembly	SKU	Price
10055128AA	MAINTENANCE FREE BATTERY 12V,	ELECTRICALS	10055128AA	\$431.82
10053458AC	GLOW CONTROL UNIT	ELECTRICALS	10053458AC	\$91.93
10096602AA	SAFETY CONTROLLER FOR ENGINE	ELECTRICALS	10096602AA	\$82.50
10029943BC	STARTER SWITCH	ELECTRICALS	10029943BC	\$21.11
10067785AA	NEUTRAL SAFETY SWITCH	ELECTRICALS	10067785AA	\$19.50
10017954AA	MAIN RELAY-CRDI-75	ELECTRICALS	10017954AA	\$11.11

☰ PROCEDURE

1 Step 1



Figure 1

Check battery condition and its terminals. Weak battery may turn the starter but may not be able to start it. It may die down after some cranks. Voltage 12 V should be good.

2 Step 2

Is it cold outside? If yes, Please check if fuel is not gelled in the fuel line. Add fuel additives to fuel (We recommend using Howes diesel additive). Follow recommendation mentioned on Howe's label. Replace fuel filter if the engine is emitting white smoke which indicates fuel starvation during cold start.

starvation during cold start.

3 Step 3

Check fuel level in the tank. Try bleeding the fuel lines (There is a bleeding screw on top of fuel filter). Loosen it out and Keep the ignition ON. The electric feed pump will pull fuel out. You may hear a continuous tic tic noise which indicates the feed pump is working. Please try bleeding the fuel line at injectors as well if tractor has run dry.

4 Step 4

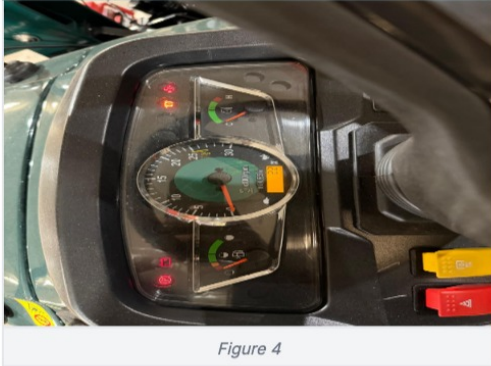


Figure 4

If Cold outside, cycle the tractor atleast 3 times -> Look for coil sign to go off and turn the key off. Again turn the key ON untill the coil sign on dash stays ON. The Coil sign is on top right side of dash.

5 Step 5

During cold, check the inout voltage on glow plugs, it should be 12 V there. There is a glow plug plate that run thru all 3 glow plugs. At end of it, check voltage.

6 Step 6

If glow plugs are good and fuel is reaching to injectors, we may need to check the crank position sensor as last check before approaching a dealer or Summit Tractors.

7 Step 7



Figure 7

Locate the electronic governor on right hand side of tractor after popping out the hood. Remove the connector by pressing the coupler on both side and slide it out.

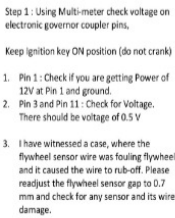
8 Step 8

Phenomenon 2 : Tractor cranks but does not start

5. PIN OUT LIST OF ELECTRONIC GOVERNOR DEVICE FOR VARIABLE SPEED

Pin #	Description	Comment
1	+12V Wt Input Power	Supply Power
2		No Use
3	MP2 / ALK	Ground for ALK inputs (For gun up and atmospheric sensor)
4		No Use
5	Input Power Ground	Ground for the 12 V input power
6		No Use
7	5V Out*	Power for atmospheric sensor (Total 20 mA max)
8	Aux Input 1 **	Input for accelerometer position sensor output (0.5 ~ 4.5 V)
9		No Use
10	Aux Input 2	Input for atmospheric sensor "full" terminal output
11	MP2 +	Safety (lock up) speed signal input
12		No Use

Figure 8



9 Step 9



Figure 9

Remove plastic dash under the steering wheel using flat screw driver. Look for Green and white wires coming out from a sensor on right hand side of tractor under the plastic dash.

10 Step 10

Disconnect its coupler from harness. Remove the crank sensor by turning it anti-clockwise. Check its tip for any damage. Clean it good and insert it back on.

11 Step 11

Tight the crank sensor by hand all the way in untill it hit the flywheel and can go no further. now turn 1 complete thread back and lock the lock nut there. The thread pitch is 0.75mm and we need clearance of 0.7 mm between flywheel and crank sensor.

12 Step 12

After adjusting the sensor, try starting the tractor.

13 Step 13



Another way of checking is if the tractor can be started manually (Bypassing the crank sensor) . Need 2 person to perform this task. Take out the Fuel injection pump inspection window using 10 mm wrench.

14 Step 14

You can see the fuel pump control rack. Ask someone to crank the tractor and push this fuel pump rack forward by hand. If tractor starts, shut it off immediately. It means the electronic governor is not getting signal from Crank sensor or the governor itself is faulty.

15 Step 15

If after adjustment of crank sensor, tractor cranks but does not start - Pls contact Summit Tractors.



NEED ASSISTANCE?

Contact **Summit Tractor Service** at (770) 209-3390, Option 2 or email service@summittractors.com