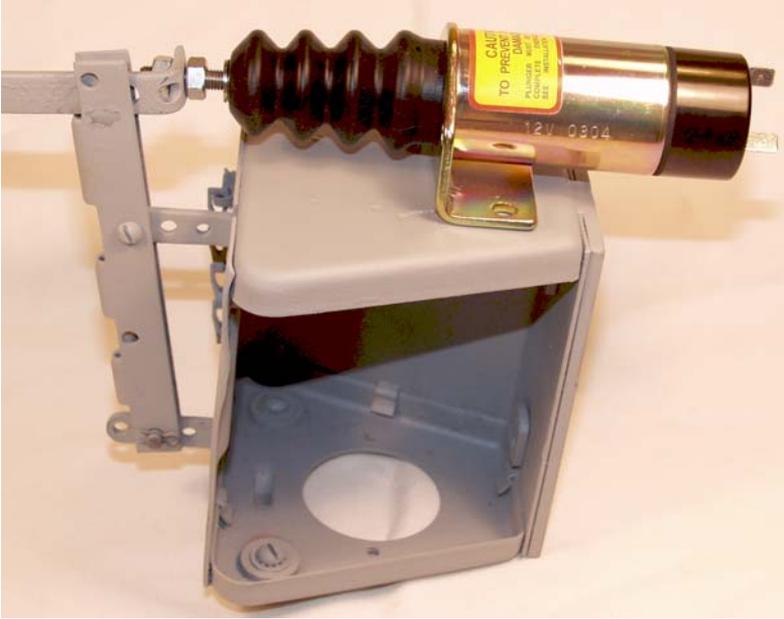


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Instructions for the installation of the Weldtron-57 R-57 idler control upgrade kit

The Weldtron-57 upgrade kit is designed to use all of the original throttle and governor linkage found on machines that have the R-57 vacuum idler system as original equipment.

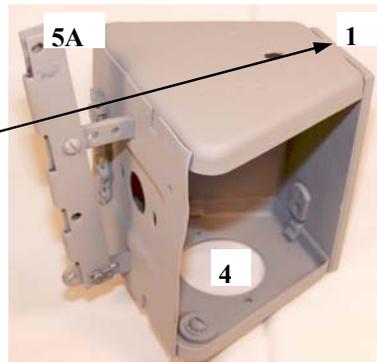
It is a very simple installation and no adjustments are needed to the throttle adjustment or governor adjustments.

This kit may be used for the older style “K” idlers with slight modification of the mount and throttle linkage.

(NUMBERS ON PICTURES REFER TO THE STEP NUMBER)

Please follow the instructions exactly as laid out in this booklet. In the event of questions please reference the step number described.

1. The R-57 box will have to be removed from the machine. Before doing so, mark the “L” bracket holding the R-57 box so that you can cut it so that it will be level and flush with the back of the R-57 box. Use a pen or marker to simply draw a line on the bracket for cutting reference.



2. Remove all wiring to the R-57 box and terminate the wiring. Tape them up...they will not be used again.

3. Remove the R-57 box from the “L” bracket and then remove the “L” bracket from the machine generator frame. Leave the throttle linkage alone at this time.

4. Cut the “L” bracket where you marked it.

5. Remove all of the internal components from the R-57 Box. This is the vacuum diaphragm, original solenoid housing and all-thread adjustment rod. These parts will not be used again. Leave the external components to the R-57 alone. The movable arm (5A) that attaches to the throttle linkage will be used in the modification along with it's pins.

6. Cut the vacuum line coming from the machine's intake manifold just about 2 inches from where it mounts to the manifold. Bend it over and crimp it shut. It will not be used again.

7. Remount the R-57 Box to the “L” bracket and remount both to the machine in their original locations.

- Remove the throttle linkage that connected the R-57 idler to the carburetor throttle linkage.
- Lay the linkage down as shown.



Make a 90 degree bend as shown (9A). Make the bend exactly at the 2nd. hole from the end of the rod.

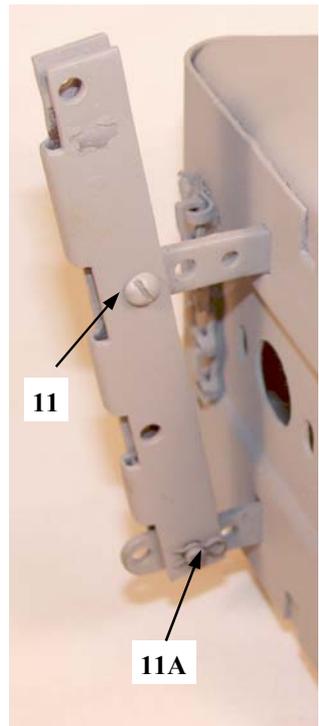
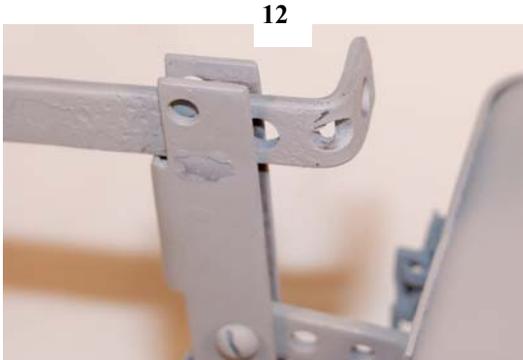


- Drill the last hole out with a 17/64 bit (.256 inch).

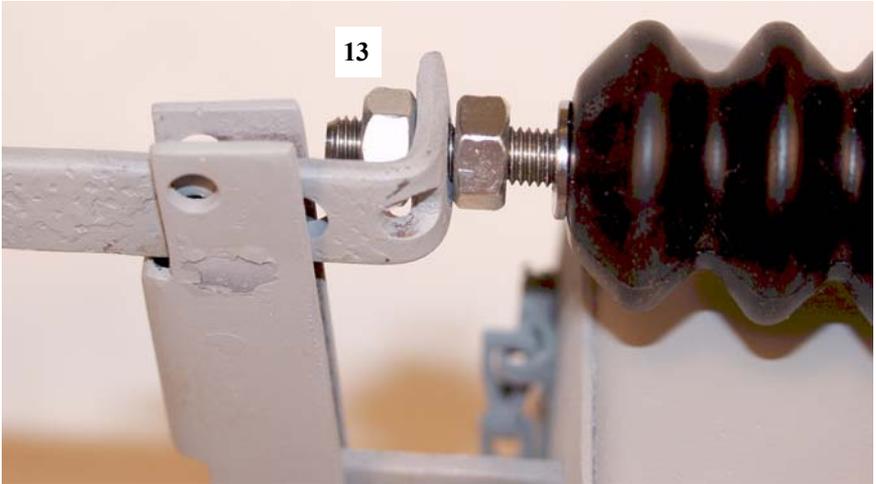
11. Place a screw or bolt into the original “pinning hole on the arm assembly so it will be extended in the full (or run) position. Tighten the nut or screw so that the arm will not move. Place the bottom pin in the middle hole (11A) and make it permanent.

12. Reinstall the linkage bar to the carburetor and lay the linkage in the slot in the idler arm on the R-57 Box. Make sure that the throttle arm can slide easily without binding in the groove. **The original long spring on the throttle arm is no longer used.** Discard it.

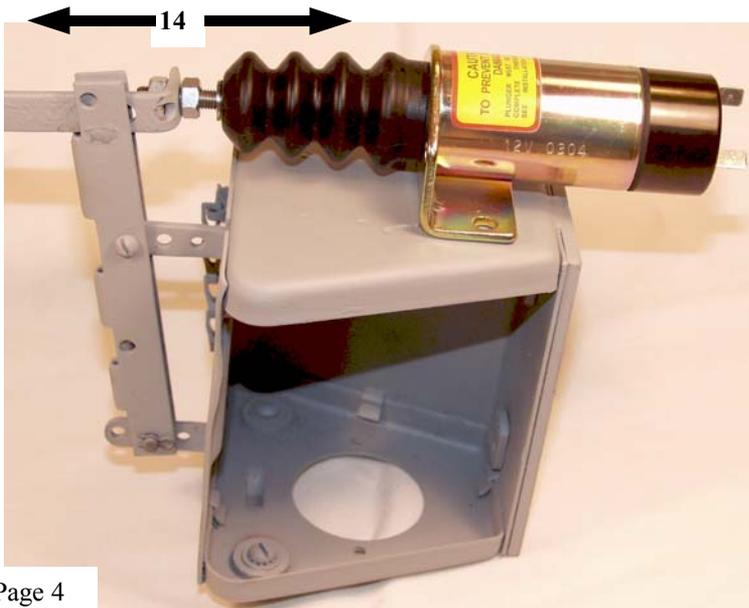
NOTE: This is the stop that will prevent the arm from moving too far forward when the solenoid releases.



13. Place the solenoid on the top of the R-57 Box and mount the throttle linkage as shown. Do not mount the solenoid to the case at this time. Adjustments to the linkage will be made in the next steps. Tighten the nuts and lock washer about 1/2 way along the length of the threaded solenoid shaft.



14. Insure that the throttle linkage is correctly installed to the carburetor and start the engine. Move the linkage in the slot **fully forward**. The engine should be running at normal welding speed. Pull the linkage back through the slot and the engine should slow to idle speed. **(Do not mount the solenoid at this time)** Turn the engine off after the test.



15. Install the control circuit board at this time. Install it behind the front panel of the machine in a protected area so that it is safe from water, snow and mud. Lay the circuit board on a piece of paper and trace the mounting holes. Poke “pinholes” through the centers of the mounting hole traces. To mark on the rear of the front panel, simply mark through the holes on the template. To mark holes on the front of the machine’s panel, turn the template over and mark through the holes.



16. Mount the nylon standoffs on the panel by using the screws supplied. Once the standoffs are in place, simply push the circuit board over the standoffs until it pops in. Next, wire the electrical system for the control circuit board.

ELECTRICAL INSTALLATION

We strongly suggest that the board be mounted where you can easily see and replace the fuse if for some reason it blows.

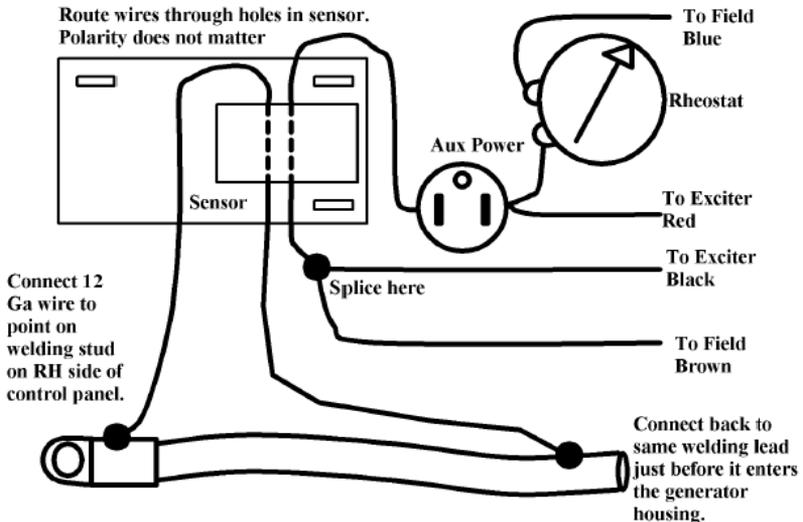
Connect the system to the machine’s battery positive by way of an ignition switch (not supplied) or an oil pressure switch (not supplied) so that the battery will not discharge while the machine is not being used.

If an oil pressure switch is used, use the type that closes when pressure is present. All newer Lincoln SA-200 machines have the type of pressure switch required.

USE 12 GAUGE STRANDED WIRE FOR ALL CONNECTIONS!

Refer to the terminals and numbers on the drawing for reference.

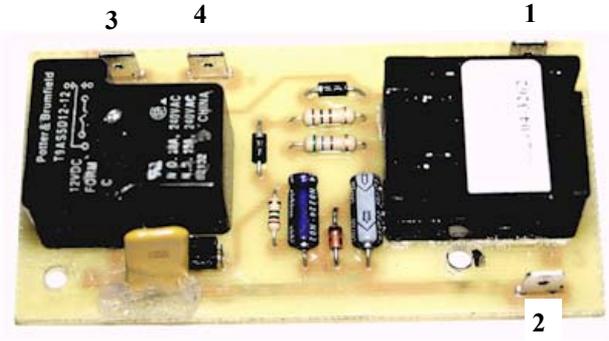
1. Connect terminal #1 to the battery positive through the oil pressure switch or ignition switch.
2. Connect terminal #2 to ground (negative). Insure the machine has a **NEGATIVE** ground...some older machines still have positive grounds.
3. Terminal #3 is not used in this application. It is a “pull on trigger” function used on other types of machines.
4. Attach a wire from terminal #4 to any one of the tabs on the solenoid.
5. Attach a wire from the other terminal of the solenoid to any tab on the switch.
6. Connect a wire from the other side of the switch to the oil pressure switch or ignition switch the same as in step #1. Note: you may “piggy-back” the wire in this step to the same connector on terminal #1.
7. Wire the auxiliary power and welding sensing wiring as show below. The sensing wires simply route through the hole on the board sensor.



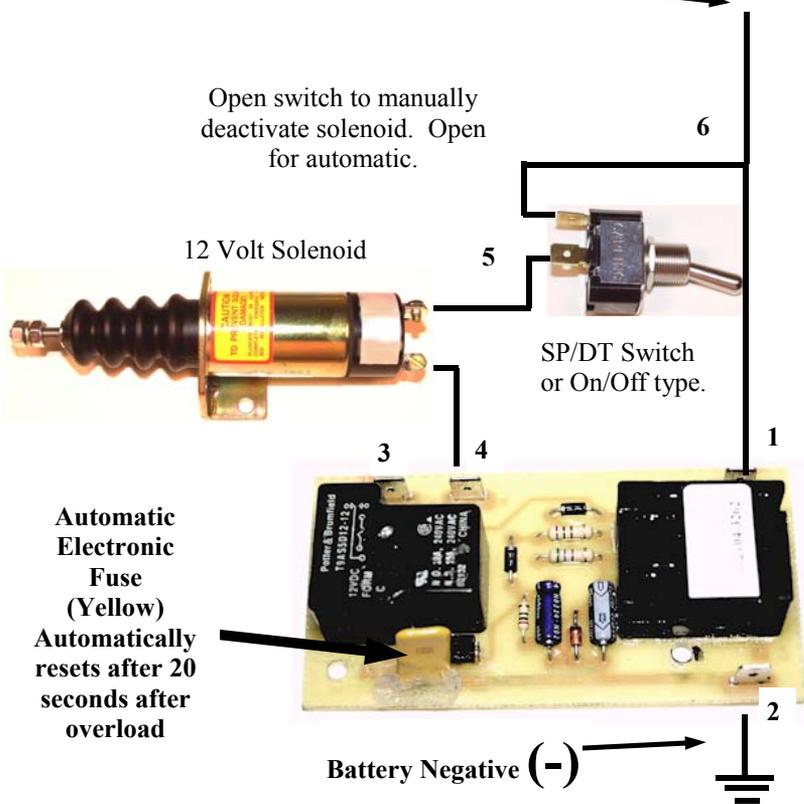
Current sensing is performed by simply looping wiring through the hole in the sensor. Polarity does not matter and it can be AC or DC.

To sense auxiliary power remove the wiring from one of the terminals of the auxiliary outlet as shown. Splice the wires you removed with another new wire and route the **NEW WIRE** through the hole in the sensor **BACK TO the point on the receptacle where the originals wires were removed**. If this step is not done, the sensor will not allow the idler to operate correctly because it will sense the field current and trigger the solenoid circuit.

Installation of the Weldtron UI idle control module.



Battery $+$ through ignition switch or oil pressure switch (normally open style...Closes on pressure.)



FINAL INSTALLATION AND ADJUSTMENTS

WARNING!

NEVER operate the solenoid by placing one of it's terminals directly to ground (negative.)

Use terminals #3 and #4 on the circuit board to ground the solenoid. Both terminals are electronically fused and protect the solenoid from damage from overheating if it does not fully seat when activated.

1. **Test the circuit board for operation.** Remove the wire from terminal #4 on the circuit board (the wire that goes to the solenoid.) Place a jumper across the oil pressure switch (or turn the ignition on) so that 12 volts will be applied to the circuit. **DO NOT START THE ENGINE FOR THESE INITIAL TESTS!**
2. Place the solenoid where it can't jump around. Wait about 30 seconds after power is applied to the circuit and then **touch** the wire taken off #4 back to terminal #4. The solenoid should snap in. Take the wire off and the solenoid will snap out. If it does not, the wiring is incorrect and must be corrected.
3. If step #2 operated correctly proceed to the solenoid



mounting and adjustment procedure. If not, correct the wiring problem.

4. **Solenoid mounting and adjustment procedure.** Prior to mounting the solenoid, the alignment to the throttle idler arm must be true and straight with no binding. The throttle linkage arm should have at least 1/8 inch clearance at point #16 below while the solenoid is placed flat on top of the R-57 box lid. If the solenoid will not mount flat and is binding at point #16, grind the R-57 arm slot down so that the solenoid will mount flat and a 1/8 inch of clearance is obtained between the arm and linkage.
5. **While the power is still applied to the circuit**, place the solenoid on top of the R-57 box, take the wire that went to terminal #4 and place it back to terminal #4 (this time install it back to terminal #4.) The solenoid should snap in and stay that way.
6. While the solenoid is energized, adjust the nuts so that the throttle control rod positions in the middle as shown in the picture at point #16. Once the adjustment is made, pull the solenoid back (while energized) until the idle adjustment screw on the carburetor bottoms out on it's stop. Mark the centers of the mounting holes on the solenoid to the top of the R-57 box where the solenoid makes the idle stop screw bottom out on the carburetor. Drill holes in the R-57 top and mount the solenoid.
7. With the solenoid mounted, adjust the nuts on the solenoid shaft so that there is a clearance of no less than .50 between the idler set adjustment and it's stop on the carburetor body.
8. Exercise the solenoid a few times by removing the wire from terminal #4 and touching it back to terminal #4 several times. If the solenoid operates smoothly and the throttle linkage is



set correctly, **remove the jumper** from the oil pressure switch.

Note: If any binding occurs when the solenoid pulls back, you may have to shim the front of the solenoid frame upwards until the bind stops.

FINAL ADJUSTMENTS.

1. Tighten all connections, nuts and mounting screws or bolts.
2. Insure all wiring terminals are connected to the circuit board.
3. Start the engine and wait until it idles down in about 20 seconds.
4. When the engine idles down, insure that a gap of at least .50 is between the idle stop screw and stop lug. If not, adjust solenoid nuts until you do.
5. Exercise the machine a few times by using the grinder and striking an arc. If it operates satisfactorily, back the idle stop adjustment screw CCW (out) about one full turn. Then adjust the nuts on the solenoid shaft to set your idle speed instead of using the carburetor idle speed adjustment screw.

If the electronic circuit breaker trips, a mechanical problem is causing the solenoid not to bottom out, consequently preventing it from switching from the 30 amp winding to the .8 amp winding.

The electronic circuit breaker (Yellow thing on the circuit board) will reset automatically after about 10-20 seconds after power has been removed from the solenoid. You may remove power from the solenoid circuit by flipping the manual/automatic idle switch to manual.

Troubleshooting

- Q. The electronic overload keeps resetting.
- A. The solenoid is not bottoming out. It is not seating fully into it's case and the switch that switches from the 30 amp pull coil to the .8 amp hold coil is not being activated. Make the throttle stop clearance connections called out in the mechanical installation instructions. Another problem may be that the linkage is binding.
- Q. The idler will activate on the use of auxiliary power but will not work when I strike an arc.
- A. Two things will cause this. One is that the machine is idling too slowly and the other is that the sensing lead for the welding lead is too small a gauge wire or has poor connections. To increase the sensitivity of the welding feature simply loop the wire one time through the hole in the sensor. Each loop of the wire doubles the sensitivity.
- Q. The machine never idles down.
- A. Several reasons for this problem exist. One is that the sensing wiring through the hole in the sensor are not correctly connected and the circuit board is sensing the machines field current going into the shunt coils. The other reason is a blown fuse or loss of power to the circuit board.

WARNING!

NEVER DRIVE THE SOLENOID DIRECTLY WITHOUT USING THE ELECTRONIC OVERLOAD SYSTEM ON THE CIRCUIT BOARD.

If overloads continue to trip, a mechanical problem must be corrected.

No warranty applies to obvious circumvention of the fusing system. Melted relays or burned up solenoid are the indication of circumvention.

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Warranty.

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