VENSEL
ENTERPRISES

RICHARD & BARBARA
VENSEL

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3710 RIVERSIDE DRIVE
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AUTO ELECTRIC
EQUIPMENT SUPPLIER



- Tests for shorts, grounds, poor connections, and bad contacts on Delco, Chrysler, etc. solenoids.
- Left meter indicates current draw for both "pull-in" and "hold-in" coils.
- Right meter indicates solenoid contact condition.
- Both meters are large (4½") and easy to read.
- Also checks "R" terminal operation on Delco solenoids.
- "Production-line" rugged. Built-in circuit breaker protects against overloads.
- Built in power supply. No extra converter or battery required.
- Dimensions 15½" wide x 20½" deep x 9½" high. 24 lbs.
- 115 V.A.C. 8 Amps. 60 Hz.
- Full one year guarantee.

Model SL 12 12 Volt
Model SL-12/24 12 & 24 Volt

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Solenoid Tester
Model SL-24
OPERATING INSTRUCTIONS

This Tester will check any 12 or 24 volt automotive solenoid including foreign and heavy-duty. Tester will operate only from a 110-130 volt (A.C.), 50-60 Hertz, 3-prong (grounded) outlet.

Solenoid Types...

FORD TYPE solenoids have a single electro-magnetic coil connected between the small ("switch") terminal post and ground (solenoid frame). When this coil is energized with 12 volt D.C. power, the coil actuates a plunger which drives a copper disk into contact with the two large copper terminal posts of the solenoid. This action connects the car battery to the starter causing the engine to crank. The Ford type solenoid may also have a secondary or "Auxiliary Contact" connected to a second small terminal post. The purpose of this "auxiliary " contact is to provide a "hotter" spark vehicle cranking to promote easy starts.

DELCO TYPE solenoids (including most foreign types) usually have a second winding (the "Pull-In Coil") in addition to the "Hold-In Coil". The current draw of these two coils must be checked separately. Delco type solenoids may also have an "Auxiliary Contact" terminal post (marked "R"). The energizing or "switch" terminal post is marked "S".

Tester Features...

* Coil Selector Switch ... located on the lower right hand panel sets Tester to check either "PULL-IN" winding (switch set to right) or "HOLD-IN" winding (switch set to left).

* Voltage Selector Switch ... is located just to the left of the HOLD-IN PULL-IN Switch. UP is 24 volts - DOWN is 12 volts.

* Test Switch 1 ... is located on the lower panel far left.
This switch supplies power to the CONTACT TESTING circuit in the Tester.

* Test Switch 2 ... is located just to the right of Test Switch 1 provides power to the COIL TESTING circuit.

* Meter ... has a range of 0-50 amps (D.C.) and reads current drawn by winding being tested.

* Left Hand (Red) Indicator Light ... glows during test when there is BAD (or no) CONTACT in the MAIN CONTACT circuit between the heavy terminal posts of the solenoid (Heavy Red and Heavy Black Test Clips).

* Center (Green) Indicator Light ... glows during test when there is GOOD CONTACT in the MAIN CONTACT circuit.

* Right Hand (Green) Indicator Light ... glows during test when there is GOOD CONTACT in the AUXILIARY CONTACT circuit.

* Circuit Breaker ... located in the center of the lower panel will "pop out" if coil energizing circuit is overloaded or "shorted". Breaker may be re-set (by pushing pin in) after short has been removed.

Testing Ford Types Solenoids -

Place solenoid to be tested on aluminum test plate. Mounting feet of solenoid should be towards you just like in the picture. Hold solenoid firmly against test plate. This ensures good contact with the plate for proper operation. Connect Test Leads as follows ....

Large Red to large copper input post on right (Batt.).

Large Black to large copper output post on left (Starter).

Small Red to to small silver terminal post on right (Key Switch).

Green to small silver terminal post on the left (Aux. Contact) if present.

TESTING - Set selector Switch to its left (hold-in) position.

STEP 1 - Depress Test Switch 1. Red Contact Condition light should come ON. Any other light indicates sticking contacts and, therefore, a defective solenoid.

STEP 2 - Keeping Test Switch 1 down, press down Switch 2.

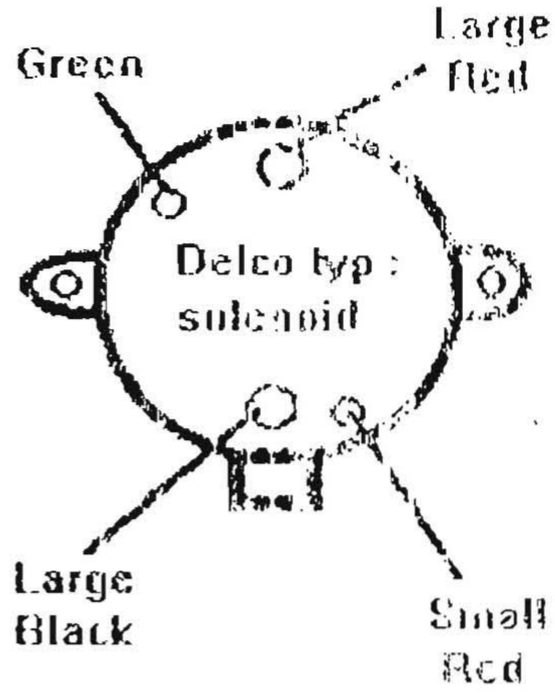
Left Hand (Red) Indicator Light should go OUT

Center (Green) Indicator- Light should come ON indicating good "Main Contact"

Right Hand (Green) Indicator Light should come ON indicating good "Auxiliary Contact" (if solenoid has an "Aux" terminal).

Meter should read between 3 and 5 amps.

Testing Delco Type Solenoids -



Place plunger into solenoid.

Place solenoid on aluminum test plate with cap facing up (see diagram on Tester).

Connect Test Leads as follows (see diagram to right) ...

Large Red Test Lead to large rear copper input ("Batt.") terminal post.

Large Black Test Lead to large front copper ("Motor") terminal post. Note - The "Motor" post is usually very short so the Test Clip holds best when mounted VERTICALLY on the post.

Small Red Test Clip to silver terminal screw ("S") on right.

Green Test Clip to silver terminal screw ("R") on left.

TESTING PULL-IN WINDING

Set Coil Selector Switch to its right hand (Pull-In) position.

STEP 1. Depress Test Switch 1. Red Contact Condition Light should come on. No other lights should be on.

STEP 2. While holding Switch 1 down, press down Switch 2.

Plunger should be pulled into solenoid.

Left Hand (Red) Indicator Light should go OFF.

Center (Green) Indicator Light should come ON indicating good "Main Contact".

Right Hand (Green) Indicator Light should come ON indicating good "Auxiliary Contact".

Meter should read between 20 and 27 amps.
NOTE - Limit test to 5 seconds to avoid damage to solenoid.

TESTING HOLD-IN WINDING

Set Coil Selector Switch to its left hand (Hold-In) position. Hold solenoid firmly against test plate. Repeat tests as with "Pull-In" winding. All Indicator Lights should read the same as in the "Pull-In" test, but the Meter should read between 13 and 17 amps.

Heavy Duty Solenoids -

Heavy Duty solenoids are tested just like passenger car solenoids with a few exceptions. On some HD units, the "Hold-In" Coil is not grounded to the solenoid case internally but is connected to a small screw terminal usually marked "G". This terminal must be grounded using the Small Black Test Clip attached to the aluminum test plate.

Test as with any "Delco Type" solenoid. Refer to Delco test lead connections. Use same plunger but turn it end for end. Green Test Lead ("Auxiliary Contact") is not used on HD solenoids. Pull-In Amps should be 35-42. Hold-In Amps should be 14-18.

24 VOLT SOLENOIDS - can also be checked on this tester. Simply set Voltage Selector switch to its UP (24V) position and test as with 12 volt solenoids. Coil amp readings will generally be one half those of a similar 12 volt solenoid.

Questions ? ... Problems?... Call or write

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Test Equipment for the Rebuilder since 1976

Solenoid Tester - Model SL-24
Trouble Shooting

The SL-24 Solenoid Tester circuit can be divided into two sections. **Section 1** is the **Contact Checking** circuit. **Section 2** is the **Coil Checking** circuit.

Section 1 - Contact Checking circuit is activated by **Switch #1** located on the lower left front panel. Just to the right of switch #1 is Switch #2 which activates the Coil Checking circuit. Switch #2 has no power unless Switch #1 is also depressed.

To test the Contact Checking circuit, proceed as follows....

1. Depress Switch #1 only. Red light over meter should come on. If not, find the adjustment potentiometer located on the circuit board attached to the rear of the meter. If you are standing in front of the tester, this adjustment will be to your *right*. Move the adjusting wheel slightly CW and then CCW in ever increasing arcs until you locate the point at which the red light just comes on to full brightness.

2. Holding Switch #1 down, touch Large Red and Large Black Test Leads together Red light should go out and center green light should come on. If not, locate small adjustment pot in *center* of circuit board. Using the same technique as in step #1, locate the "crossover point" where the red light goes out and the center green light comes on (with test leads touching). NOTE - these two adjustments are inter-related which means that adjusting one can affect the setting of the other. You may have to go through this sequence twice to make sure that both adjustments are set correctly.

3 . Separate test leads. Center green light should go out and red light should come back on.

4. With Switch #1 depressed, touch Green Test Lead to Large Black Test Lead. Right hand green light should come on. IS READ SUPOIT TO STAY ON

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