Alternator-Starter Tester

Model AST-1

Instructions

Set-up — This Tester consists of TWO PARTS, the DRIVE UNIT and the METER UNIT. UnPack both units carefully and look for any sign of shiPPing damage. This must be reported to the carrier who delivered your Tester. Place the DRIVE UNIT on a sturdy surface (bench or counter toP) at least 20 inches wide and 24 inches deeP. The Tester is shiPPed with the Belt Tension Arm removed. Remove black socket head caP screw from the Alternator Holding Fixture. Place bolt through hole in end of Tension Arm (lever with rubber handle), then throush the flat washer and thread it into the Holding Fixture. Tighten screw until snug (arm Pivots smoothly) and install hex nut on exPosed end of caP screw. Tighten hex nut securely.

Be sure that the DRIVE UNIT Power Switch (which is also a circuit breaker) is in the OFF (down) Position. Plug DRIVE UNIT into a 115 V.A.C., single Phase, grounded (3 Prong) recePtacle with a 20 amP slow-blow fuse or circuit breaker. Place METER UNIT on toP of DRIVE UNIT or any other convenient location. Plug METER UNIT into a similar 20 amP, 115 volt recePtacle.

Mount Alternator - With Pulley to right side, slide alternator onto rod as far as it will go. Place belt over Pulley (use inside groove on double groove Pulleys). Pull firmly on Tension Arm to tighten belt. Tighten Locking Knob. Now rotate alternator by hand to be sure that there is no interference.

SAFETY! - Be sure that alternator is mounted securely.

CAUTION! - Belt, Pulley and fan rotate at high speed and are dangerous! KEEP FINGERS AWAY!

Also, on used (and even new or rebuilt) alternators, Particles of dirt, rust grease, solder, etc. will come flying out at high speed when alternator runs. ALWAYS WEAR SAFETY GLASSES!

Testing Alternators — Locate Alternator Test Cord. This is the black cable closest to you on the left side of the METER UNIT. This cable has two clips - the large red clip goes to the alternator outPut (Batt) Post. The smaller red clip goes to the alternator field inPut terminal. On double field Chrysler alternators, the second field terminal must be grounded to the alternator frame with a short jumPer. Set Meter Switch (directly under Meter) to LEFT (Alternator) Position and Field Power Switch to "LO". Large Black (ground) Test Clip must be connected to either Starter or Alternator Holding Fixture.

NON-REGULATED alternators - After mounting is checked and safety precautions are followed, START the MOTOR by raising the black switch located to the left of the DRIVE UNIT. Set Alternator Test Selector Switch on METER UNIT to (AMPS). DePress Test Switch on METER UNIT. Meter will read outPut in AmPs on uPPer Part of scale. Limit AmPs test to 10 seconds.

Now set Selector Switch to (VOLTS). Depress Test Switch. With a non-regulated alternator, Meter should read between 12 and 25 volts on lower part of scale. This is a representative test voltage to be compared with known good alternators of the same type.

On DELCO EXTERNALLY REGULATED alternators, use the grey field plug provided and proceed as above.

On DELCO INTERNALLY REGULATED alternators (such as 10SI), use the white field plug provided. Test for AmPs in the usual manner. On the Volts Test, voltage should go to 14-15 volts (if the regulator is O.K.) and stay there after Test Switch is released (if the trio is O.K.). Watch meter carefully and depress Test Switch again. If meter goes up even slightly, trio is bad.

DELCO INTERNALLY REGULATED (CS Type) - Testing a modern alternator at full voltage and output requires a 3 to 5 h.p. motor. This tester gets by with a 3/4 h.p. motor by testing for (AmPs) and (Volts) separately. In the Delco CS type alternators, this is not possible as the OutPut and Field terminals cannot be separated. "CS" alternators can, however, be checked for "Volts" as follows. Connect the CS plug to the alternator and Place the ring terminal over the OutPut stud. Now connect the large red Test Clip AND the small red Test Clip to the outPut stud. Set Field Power Switch (located to right of the Selector Switch) to "HI". With alternator spinning, depress Test Switch. When voltage rises to 14-15 volts, release Test Switch. Alternator should continue generating at its regulated voltage. Testing for AmPs outPut is not Possible.

FORD INTERNALLY REGULATED alternators are tested the same as DELCO CS types. Use the FORD dual plug Provided and connect BOTH large red and small red clips to the bare ring terminal on the FORD plug. This is the outPut. Proceed as with the DELCO CS. Begin with Field Power Switch set to "LO". If alternator doesn't "turn on", switch to "HI" and try again.

TESTING STARTERS

Starter Holding Fixture is located to your left. Place starter to be tested in cradle with Pinion gear opening down and away from you and with Pin on Left Swing Arm through the hole in the starter mounting ear. Rotate starter body clockwise by hand to be sure it is settled securely in cradle (channel). Gear reduction starters (such as Chrysler) use the Right Swing Arm.

Connect small red Solenoid Test Cable (second from front of METER UNIT) to solenoid terminal (if any) on starter. If starter has no solenoid or if solenoid has self-energizing strap installed, leave the Solenoid Test Cable disconnected.
Connect the large red Test Clip (third from front) to starter Battery post.
Connect the large black Test Clip to Starter Holding Fixture. Set Meter Switch to RIGHT (Starter) Position.

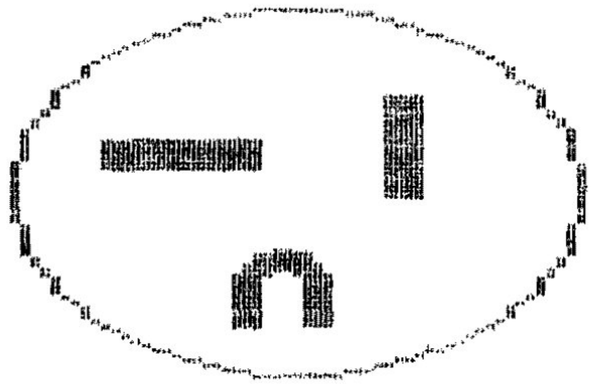
On starters with solenoids, depress "main" test switch located second from right on METER UNIT. Nothing should happen. Keeping this switch depressed, now depress "solenoid" test switch. Starter should run. Check AmPs on Meter and compare with known good specs. Release "solenoid" test switch first while keeping "main" switch down. Starter

Alternator Test Bench
Drive Unit
Instructions

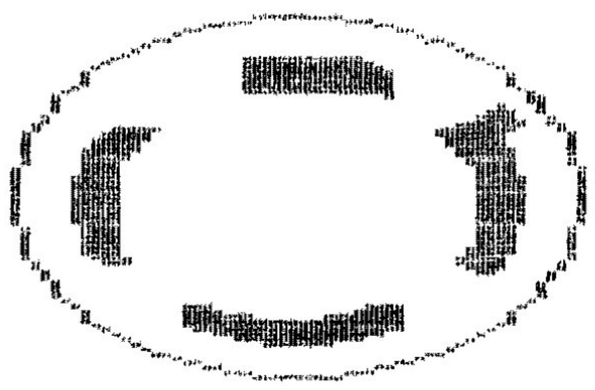
Your new Alternator Test Bench Drive Unit must have correct electrical power to do its job properly. Power requirements for the four models of drive unit are listed below.

Model	H.P.	Volts	Phase	Amps
ATD-31	3	220	1	20
ATD-51	5	220	1	25
ATD-33	3	220	3	10
ATD-53	5	220	3	15

Shown below are the Power Plug configurations for both single Phase and three Phase Drive Units.



Single Phase Plug
(looking at Plug)



Three Phase Plug
(looking at Plug)

If Drive Unit is to be mounted on our Model ATD-FS Floor Stand, follow assembly instructions supplied with the Stand. Installation on your own bench requires a sturdy bench at least 24 inches wide and 36 inches deep. The most comfortable working height will be attained from a bench 30-34 inches high. Leave at least 6 inches clearance (from walls, etc.) at rear and sides of Drive Unit to allow proper cooling air circulation. Leave 10 inches clearance to right of Drive Unit to allow belt guard to swing freely open.

After Drive Unit is in Place, un-Pack and install Belt Guard using the 4 screws Provided. Be sure motor controller is set to its center (off) Position befor Plugging Drive Unit in.

Vee Belt supplied with Drive Unit is kept in Place on the drive Pulley by an aluminum keeper bar located at the rear of the large drive Pulley. To remove belt, Press keeper slightly to the rear of the machine and slip belt off of Pulley. Running the motor without an alternator mounted on the machine might cause belt to jam.

Mount alternator (Pulley to right) by sliding heavy (pivoting) boss of alternator over mounting rod on bench fixture. Select Proper mounting rod diameter by loosening thumb screw at right of fixture and

rotating turret until proper rod is up. Re-tighten thumb screw.

Test Console is usually mounted directly on top of Drive Unit but it can be mounted anywhere that's convenient as long as the test cables can reach the alternator. If Console is placed atop Drive Unit, be sure that all four Console rubber feet are equally spaced from the edges of the Drive Unit cabinet. When properly placed, Console will project slightly forward from the Drive Unit cabinet.

Lead Console Test leads to the LEFT (over motor controller) and tie test lead bundle to nylon clip on motor cabinet.

It is good practice to spin every alternator by hand (by pulling the belt) to be sure that there is no mechanical interference before starting motor. Once alternator is mounted and turns freely, raise the belt guard into position. Belt guard locking foot will keep it there. Swing locking foot up to release belt guard.

Now refer to Console Instructions to begin testing alternators.