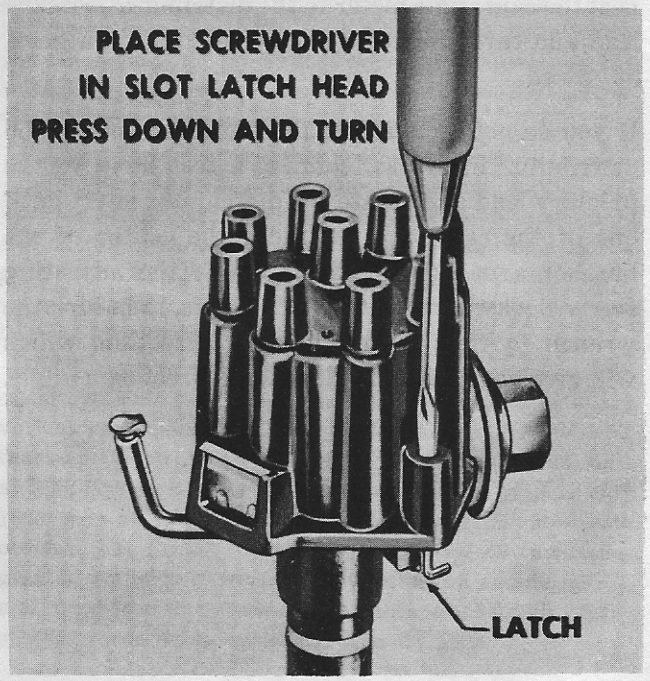
SERVICE BULLETIN No. 86-55

EXTERNAL ADJUSTMENT TYPE DISTRIBUTOR on 1956 Cadillac and Oldsmobile

The distributor has a very large distributor head, with a metal slide that can be moved up or down. This slide is used in adjusting the breaker points, used in this distributor. The distributor is known as the "External Adjustment Type", for the simple reason that the breaker points have to be adjusted from the outside of the distributor, as will be explained below.

Let us now examine this distributor step by step. To remove the distributor head, which is held by two spring-loaded latches with slotted heads, a screw driver is alternately placed in the slot of each latch, pressed down against the spring and turned ¼ turn in either direction. The head can now be removed. It may be installed in the same way, but by turning the latches so that they catch the underside of the distributor cup.

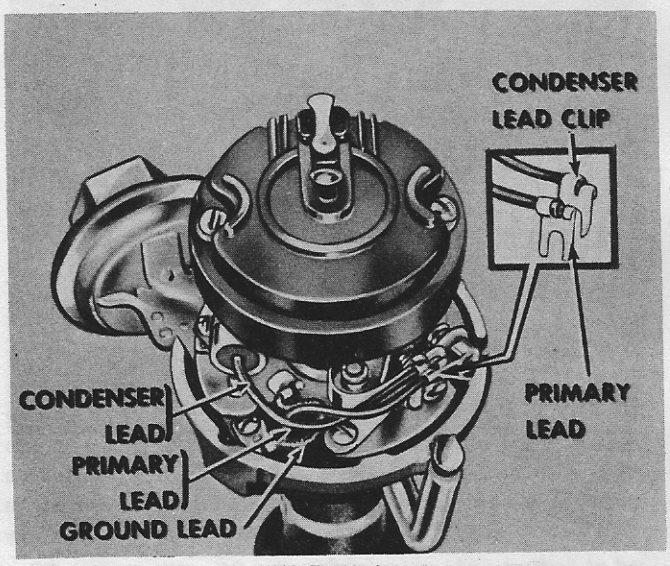


With the distributor head off, you will find a very large round rotor which is attached to a plate by means of two screws. Right under the rotor you will see the centrifugal advance mechanism, which is usually found way down in the distributor cup in conventional distributors. Under the advance mechanism is located the breaker plate.

The breaker points are permanently fastened to a metal plate and this plate, together with the breaker points is handled as one assembly and fastened to the breaker plate by two screws.

To change breaker points proceed as follows:

1. Remove the two screws from the breaker point base plate.
2. Loosen the screw which fastens the primary and condenser leads to the nylon insulating connection on the breaker points and remove the leads.
3. The point set is now free.



To replace the point set reverse the above procedure, making sure that the primary and condenser leads are attached exactly as in the illustration and that the leads are completely free of all moving parts in the distributor.

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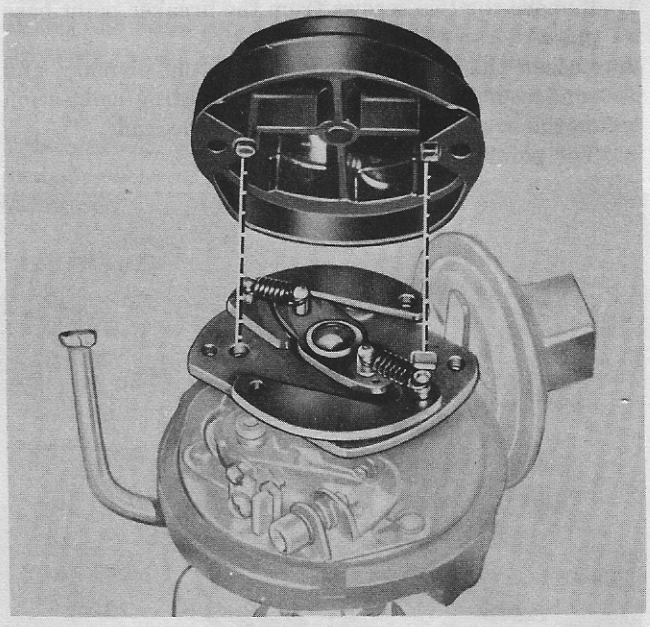
EXTERNAL ADJUSTMENT TYPE DISTRIBUTOR

In changing the rotor certain precautions must be taken to prevent breakage. As mentioned before, the rotor is fastened by two screws, and their removal releases the rotor. Before the rotor is replaced, note its underside: There are two projections on it, one round and one square, which enter corresponding holes in the rotor support plate. ***You must make sure that the round and square projections on the rotor exactly match the round and square holes in the plate — any attempt to screw down the rotor to the plate without this exact match will result in a broken rotor.***



To adjust the points with the distributor ON the car.

Run the engine at idling speed, raise the slide on the distributor head, insert an Allen ⅛" hex wrench into the head of the breaker point adjustment screw. Turn the adjustment screw until the cam angle meter shows 30°.

If you have no cam angle meter, turn the adjustment screw clockwise until the engine begins to misfire, then turn the wrench one-half turn in the opposite direction. This will give you the approximate cam angle required.

To adjust the points with the distributor OFF the car.

Mount the distributor in a distributor tester, connect the cam angle meter to the distributor primary lead and turn the adjusting screw until you get a 30° dwell.

If you do not have a distributor tester, mount the distributor in a vise, connect a test lamp to the primary lead and rotate the distributor shaft until one of the cam lobes is under the center of the breaker arm rubbing block. Turn the adjusting screw clockwise until the lamp lights, then turn the wrench ½ turn in the opposite direction, which will give you the approximately correct cam angle.

SERVICE BULLETIN No. 87-56

THE FOUR TWELVE VOLT IGNITION SYSTEMS AND HOW TO PROPERLY SERVICE THEM

To the mechanic servicing the ignition system, the extended use of 12 volts on passenger cars has brought to the fore, with increasing importance, some problems that do not exist on 6 volt equipped cars. In view of the fact that in 1956, 12 volts has become universal, the mechanic will be called upon to service more and more 12 volt equipped vehicles.

To service the 12 volt equipped car the mechanic must know a great deal more about the wiring circuit and must exercise precautions not needed on the 6 volt vehicles, otherwise trouble will most surely follow.

In servicing the 12 volt equipped vehicles the mechanic has to determine first of all which of *four* different systems is being used and service it accordingly. The four 12 volt systems differ mainly in the type of ignition coil that is used and the manner in which it is used. ***Due to the differences in the circuits the 12 volt coils are not interchangeable, and the use of the proper coil for each system is an absolute must.***

Some of the troubles that may arise by using the wrong coil, range all the way from the can bursting open, burning out the coil, burning up the contact points, shortening the life of the points or non-operation of the coil itself.

To avoid using the wrong coil in the 12 volt system you are servicing, first consult the chart on the back of this bulletin to determine the correct one. Be sure to read the explanation and look at the wiring diagrams to help you detect the significant differences between these systems.

Don't ever be tempted to substitute the wrong type of coil in any of the 12 volt systems no matter what the circumstances may be, as any such substitution will inevitably result in customers' complaints and expense to you. The physical condition of a coil wrongly used in a 12 volt system immediately tells its own story and with evidence as obvious as that the guarantee is void in all such cases—which means money out of your pocket.

(See chart on reverse side)

SUMMARY OF TROUBLES IF THE WRONG COILS ARE USED IN 12 VOLT SYSTEM

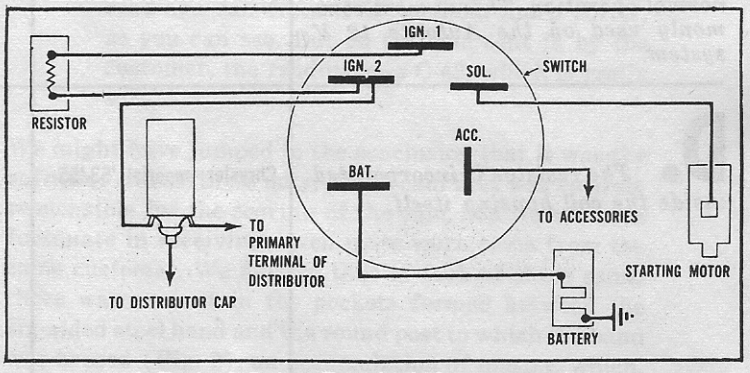
1. *If a 6 volt coil is used in the A and D systems, the coil will burn out and very often the can will burst open. If the coil is in a seamed can, the seam may be violently forced open; in the seamless type, the coil top may be forced out of the can together with some portion of the windings. Also the breaker points will burn up. The coil will be irreparably damaged and the guarantee voided.*
2. *If an A type coil is used in B and C systems, the coil will not operate properly or at all. (Very hard or no starting).*
3. *If a B or C type coil is used in A and D circuits, the points will burn and the coil housing may burst open as in paragraph 1.*
4. *If a 6 volt coil is used in any of the four 12 volt systems, the breaker points will be subject to burning and short life. The coil will be damaged beyond repair.*
5. *If an open resistor is left in circuits B and C, there will be no ignition.*
6. *If a shorted resistor is left in circuits B or C—the coil may burst open or the coil winding will burn out rendering the coil non-operative.*

CHECKS ON RESISTORS

Don't ever replace an "exploded" coil with a new one before checking the external resistor. The check is quick and easy. Simply connect one terminal of a voltmeter to the battery side of the resistor, and the other voltmeter terminal to a good ground. Turn on the ignition but don't start the engine. The voltmeter should give you a reading very close to the battery voltage. Now, leave one voltmeter terminal connected to ground and shift the other voltmeter lead to the coil side of the resistor. The voltmeter should now read several volts lower than before. If you get no reading now, the resistor is open. If you get the same or almost the same reading as before—the resistor is shorted. Whether you find the resistor open or shorted, it will be useless and a waste of time to do any further work without changing the resistor.

CAUTION 1. The resistors used in Delco, Ford, and Autolite equipment must not be used interchangeably. Incorrect combinations of coils and resistors in these systems can result in burned points, overheated coils, misfiring, lower coil outputs or poorer operation. The reason for this is that the correct resistors and coils in each system have been designed as matching units for correct or best operation. Make absolutely sure to use the correct resistor required for the system.

CAUTION 2. Extreme caution must be exercised in replacing Delco type Ignition Switches, because the terminal arrangement may not be the same on all Delco type ignition starter switches. When replacing a defective switch, it is imperative that the wires from the defective switch be attached to each correspondingly marked terminal on the new switch regardless of the physical position of the terminals on the new switch.



A Typical Delco Terminal Arrangement for Ignition Starter Switch

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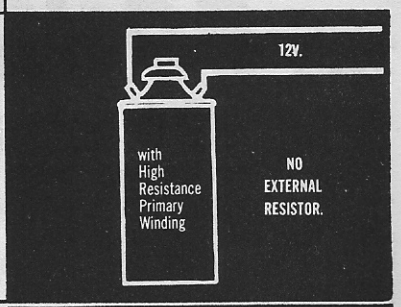
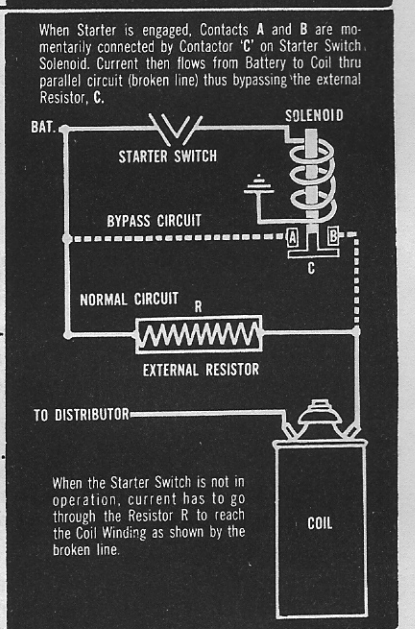
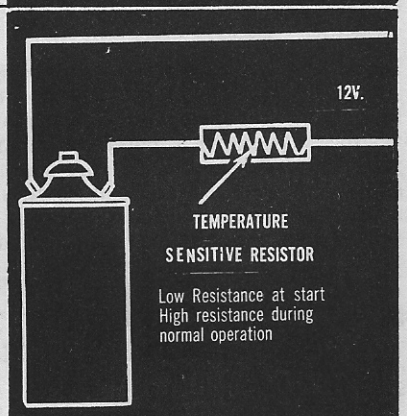
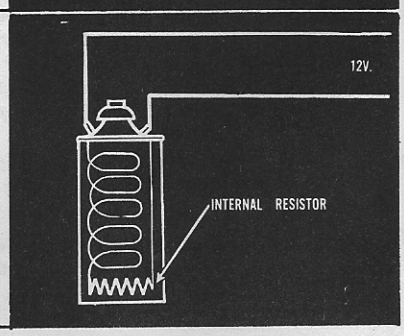
(Continued) THE FOUR TWELVE VOLT IGNITION SYSTEMS

DESCRIPTION OF 12 VOLT SYSTEM	APPLICATIONS	ORIG. NOS.	BLUE STREAK & STANDARD COIL	WIRING DIAGRAMS
A. *A straight 12 V. coil is used without any external or internal resistor in the primary circuit.*	Many Truck, Bus, Tractor, Marine, Industrial and Special Equipment.	Various	**ACC-560-12 UM-12**	
	Dodge (6) '56 Hudson (6) '56 Nash Amb. (6) '56 Plymouth (6) '56 Stude. (6) '56	CAF-4002,3,4	**UC-350-12 UC-500-12**	
B. *An external resistor of a constant value which does not change with temperature is incorporated into the system. The primary winding of the coil is similar to the winding of a 6 volt coil, although of a higher primary winding resistance value. Also, the ignition circuit is wired so that the external resistor is shorted out while the starter switch is in operation (See BLUE STREAK Service Bulletin #73-53). This is the most common Delco type 12 V. system. The 1956 Ford system is similar to the above, but no provision is made for shorting out the resistor during starting.*	Buick #50-70 '53 All '54-'56 Cadillac All '53-'56 Chevrolet (6) '55-'56 Hudson Wasp (8) '56 (D.R.) Nash Rambler (6) '56 (D.R.) Statesman (6 & 8) '56 Olds '53-'56 Packard '55-'56 (D.R.) Pontiac '55-'56 Stude. (8) '56 (D.R.)	1115081 1115082 1115083 1115084 1115085 1115086 1115087	**DR-2 or DR-2X Resistance Unit RU-2 Fits all '54-'56 applications exc. '55 Packard**	
	Chev. (8) '55-'56 Pontiac (Can.) (8) '56	1115087 coil with 1929496 bracket	**DR-3 or DR-3X Resistance Unit RU-2**	
	Ford All '56 Lincoln All '56 Mercury All '56	FAC-12029-A, B6A-12029 & B	**FD-471 or FD-471X Resistance Unit RU-1**	
C. *An external resistor, whose resistance value does change with temperature, is incorporated into this system. Therefore, when the car is being started, the cold resistor with lower resistance value permits a higher current through the coil primary resulting in easier starting. As the resistor warms up, its resistance increases to cut down the primary current through the coil for normal operation. This is most commonly used on the Autolite 12 V system.*	Chrys. '56 DeSoto (8) '56 Dodge (8) '56 Hudson Hornet (8) '56 (A.L.) Nash Amb. (8) '56 (A.L.) Packard (8) '55-'56 (A.L.) Plymouth (8) '56 Studebaker (8) '56 (A.L.)	CAD-4001,2,3,4	**AL-4K or AL-4KX Resistance Unit RU-3**	
D. *The resistor is incorporated inside the coil housing itself.*	Chrysler Imperial '53-'55		**None**	

SERVICE BULLETIN No. 88-56

Testing "STANDARD" and "BLUE STREAK" coils on the Allen E-309 Coil Tester, BATTERY OPERATED TYPE

About a year ago we issued a BLUE STREAK Service Bulletin #82-55 which provided specifications for testing our coils on the Allen #1403 Coil and Condenser Tester. Allen is now also marketing a #309 Coil Tester, which tests coils only and not condensers. Like the #1403 Tester, the E-309 is a reliable instrument but only if used strictly according to the manufacturer's instructions. The Tester can only be used when the proper specifications and settings are known, as each make and type of coil requires a different setting. *Like the #1403 Tester, this Tester cannot be used for comparative tests, i.e. coils cannot be tested on it for comparative quality against other makes and types of coils. The numerical values of the test specifications do not indicate the quality of the coil under test.* So, if one coil specification reads 60 to 80, it does not mean that it is better or worse than another make of coil which may specify a reading of 40 to 60, provided both coils read according to the individual manufacturer's specifications for the particular coil.

Please remember that you are just testing a particular coil to determine whether it is O.K. or defective and not whether it is better or worse than another make of coil. Just check coils according to specified readings and settings and you can't go wrong, but don't try to judge the comparative quality of coils by their high or low specified numerical values. If the specifications for a certain coil state that the reading should be 58 to 78, that's what the coil under test should read, if it reads lower than 58 or higher than 78 it is defective.

It should be understood, of course, that all coil tests must be made exactly as instructed in the Allen instruction manual for this tester. The battery used for tests must be well charged, and all connections must be exactly correct especially the battery leads, which must be connected to the proper battery posts, as correct polarity is absolutely necessary. It must also be remembered that all instruments in which meters are used must be handled carefully, as physical shocks will invariably cause a change in the meter calibration, which will result in incorrect coil readings.

Should the tester be accidentally jarred, it is best to immediately communicate with the tester manufacturer, so that the meter may be re-calibrated, otherwise you may condemn good coils or pass defective ones.

Specifications for Testing "STANDARD" and "BLUE STREAK" Ignition Coils on #E-309 Allen Tester.

Note: These specifications apply to all metal can coils with 4¾" long cans, bus coils and bakelite coils. They do NOT apply to our obsolete 5¾" long can.

Coil Part Number	Secondary Continuity Test	Coil Type Setting	Set Position	Test Position	Good Range
ACC-560	40-60	C	50	2	39-59
ACC-560-12	40-60	B	50	1	35-55
AL-3J	46-66	C	56	2	43-63
AL-4K	40-60	B	50	1	55-75
AL-4KX	40-60	B	50	1	62-82
AL-11S	46-66	B	56	2	22-42
AL-11H	46-66	A	56	1	34-54
AL-11HX	47-67	B	57	1	49-69
AL-11SX	47-67	B	57	1	49-69
AL-21	46-66	B	56	2	22-42
AL-21X	47-67	B	57	1	49-69
AL-23	46-66	B	56	2	22-42
AL-23X	47-67	B	57	1	49-69
DR-1R	45-65	A	55	1	36-56
DR-2 (12V)	40-60	B	50	1	50-70
DR-2X (12V)	38-58	B	48	1	48-68
DR-3 (12V)	40-60	B	50	1	50-70
DR-3X (12V)	38-58	B	48	1	48-68
DR-25	45-65	B	55	1	61-81
DR-28	45-65	A	55	1	36-56
DR-29	45-65	A	55	1	36-56
DR-30	45-65	C	55	2	43-63
DR-25X	48-68	A	58	1	24-34
DR-28X	48-68	B	58	1	46-66
DR-29X	48-68	B	58	1	46-66
DR-30X	48-68	C	58	2	34-54
FD-375	56-76	B	66	2	48-68
FD-460	50-70	B	60	2	49-69
FD-465	49-69	A	59	1	72-92
FD-470	45-65	A	55	1	40-60
FD-470X	42-62	A	52	1	38-58
FD-471	36-56	B	46	1	66-86
FD-471X	36-56	A	46	1	45-65
FD-475	40-60	A	50	1	56-76
UC-350	46-66	A	56	1	35-55
UC-350-12	46-66	D	56	2	42-62
UC-500R	42-62	B	52	1	60-80
UC-500-12	42-62	C	52	2	40-60
UM-6	40-60	C	50	2	39-59
UM-12	40-60	B	50	1	35-45