

PLEASE READ

AUTRONIC EYE

1. Turn on lights.
2. Wait one minute and momentarily depress Autronic Eye control switch (located above standard headlamp dimmer switch) if high beams come on, Autronic Eye is in automatic position.
3. If hi-beam does not come on, depress standard headlamp dimmer switch to put eye in automatic position.
4. Once eye is in automatic position, it is not necessary to use standard dimmer switch again.

Eye can be left in automatic position at all times. It will keep lights in lo-beam position for city driving and will switch to hi-beam whenever it is dark enough for hi-beam to be necessary.

The Autronic Eye control switch is a momentary contact switch that can be used for signaling. Lights will switch to hi-beam whenever switch is depressed and will return to lo-beam when foot is removed when car is in lighted area.

Lights can be kept in lo-beam position at all times by switching the standard dimmer switch to lo-beam position.

Jose Gomez CLC #23082

Re: Headlights

« Reply #3 on: Yesterday at 11:00:38 »

Dave,

The Foot Dimmer Switch has two positions, Low-beam and Automatic. When the Foot Dimmer switch is set to "Low-beam" the Autronic-Eye is disconnected from the headlamp (however it is not turn-off). The Auxilliary Foot switch functions only when the Foot Dimmer is set to Automatic.

The clicking noise you descried is from the power relay being trigger by the Autronic-Eye. The flip-flop between high and low beams could be cause by several factors the amplifier and/or phototube are too sensitive and/or out of adjustment.

One quick test set the foot dimmer switch in Automatic mode and then place a light source in front of the phototube, this should trigger the low-beam. If the clicking persist additional testing would be required.

BTW The fog lamps are wired on a separate switch that is mounted in front of the headlamp switch.

Good luck..!

Jose Gomez CLC #23082

Glen CLC #727 (life member)

Re: Headlights

« Reply #4 on: Today at 00:55:41 »

The "flip flop" Jose mentioned could be normal when in the garage. The reflection of the head lights from the garage wall could cause the lights to dim. The dim lights are to weak to keep the Autronic-Eye in dim so it returns to high beam where the cycle repeats.

To check that, put a piece of cardboard in front of the eye to block the light and see if it then stays on high beam.

Glen

My autronic eye did the same thing except that the regulator failed and it blew both of my \$99 headlights (twice-because I had to learn the lesson of "disconnect it" over again after some adjustments). If it is clicking and switching, the eye may be too sensitive (a complex adjustment) or there is a short or failure in the power-switching unit. Much as I like the accessory, I disconnected mine for now. I had it overhauled once before, and that may be it for the time being.

The autronic eye only switches the high beams to low and back again. The hood shouldn't have anything to do with it. In daylight it shouldn't be operating/interfering. It is connected to the foot pedal and to the eye on the dashboard and then to the power/switching unit on your left fender. If your lights aren't coming on or the foglights aren't, disconnect the main power to the autronic power switch next to the main power box and try that. If the lights still don't come on there is a short or a power problem with your lights too.

Edited by jaxops (Yesterday at 08:16 AM)

Jaxops

70 Buick Electra Convertible
56 Cadillac Series 75 Limousine
89 Ford Crown Victoria SW
90 Mercury Grand Marquis

First, there should be a switch, probably with the headlight switch. This switch will turn the Autronic eye system on or off. You should get headlights, regardless of day or night. The "eye" system does not turn lights off at all.

On the Autronic eye system, the foot control switch does not carry headlight current. It operates on a small relay in the black box under the hood, and somewhere in the car, there is a "power relay", which turns the lights to high or low beams. I seem to remember that the power relay is on the interior side of the firewall, near the foot switch.

The Autronic eye works thusly: Headlights on, no oncoming lights. Your lights on High beam. Eye head on dash suddenly sees lights coming, and causes the power relay to kick your lights into low beam. If the approaching dude doesn't lower his lights, a gentle touch on your foot switch, and you override the eyeball, and give him your highs.

I haven't fooled with one of these things in a long time, but I seem to recall that, if you turn the Autronic system off, your foot control just operates your hi-lo beams as conventional. The sensor head on the dash has a photomultiplier in it, which is the light pickup. The box under the hood has a high voltage power supply in it to supply the phototube, and the vacuum tubes in its circuitry. The photomultipliers should be easy to get, if yours goes bad. There is quite a little book about servicing the Autronic Eye-ball system, published by Guide Lamp Division, GMC.

Those gadgets work pretty nicely when they're working properly. The only heartburn I have with them, is that they don't dim lights soon enough to make me happy. I installed one on the first '56 Cadillac I had, and I now have another system to put on the '56 Cadillac I now have. Once I get it working properly, I'll probably never use it.

One amusing thing about them: There is an amber filter in the pickup head. Thus, the phototube is most sensitive to yellow light. If the system is on and working, and you are approaching a flashing amber traffic light, your lights will go up-down, up-down, as the light flashes.

I think you have a few issues. Let's start with the eye. The eye only controls the high beam side of the headlights. This means that the floor switch must be in the high beam position for the eye to override the headlamps. So if your eye is turning the lights off that means the floor switch is in the hi position. Return it to lo-beam and see if you have lights. From what you described you probably will not.

The lights, if you have no headlights, check your connections at the bulb. Start by bench testing the bulbs to make sure they work. If your connections check out. It will be time to check the headlight switch.

Fog lamps, same as above. Check the bulbs, connections and headlight switch.

Headlight switch, usually what happens is the contacts on the switch get corroded or a film build blocks the connections. Some folks have been able to get the switch working by simply turning the switch on and off repetitively. If that doesn't work, you will need to remove the switch for a thorough cleaning.

The good news is, I think your works properly:)

Here's the best advise you will get. Buy a shop manual for your car, it's the best money you will spend on that beauty:D

HTH,

Lou

Title: DEVELOPMENT OF THE GUIDE 'AUTRONIC EYE'

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Abstract: A MULTIPLIER PHOTOTUBE IS THE SENSOR USED IN THE AUTOMATIC HEADLAMP-CONTROL DEVICE CALLED AUTRONIC EYE. POSSIBILITIES FOR SOLVING THE HEADLIGHT GLARE PROBLEM INDICATED THE FOLLOWING DESIRABLE CHARACTERISTICS OF AN AUTOMATIC HEADLAMP CONTROL DEVICE: (1) SWITCH TO THE LOWER BEAM PROMPTLY WHEN SUBJECTED TO SUFFICIENT LIGHT AND SWITCH BACK TO THE UPPER BEAM PROMPTLY WHEN LIGHT IS REMOVED, (2) RETAIN THE LOWER BEAM WHEN THE APPROACHING DRIVER DIMS, (3) DIM FOR CARS ON CURVES AND NOT DIM EXCESSIVELY FOR EXTRANEIOUS LIGHT AT THE ROADSIDE, (4) NOT BE AFFECTED BY VARIATIONS IN THE REFLECTIVITY OF ROAD SURFACES, (5) FUNCTION UNDER CONDITIONS OF ADVERSE WEATHER, SUCH AS RAIN, SNOW, AND FOG, (6) PROVIDE THE DRIVER WITH A MEANS OF OBTAINING A LOWER BEAM FOR USE IN THE CITY AND WHEN FOLLOWING ANOTHER CAR, WHEN THERE IS INSUFFICIENT LIGHT TO RETAIN THE LOWER BEAM AUTOMATICALLY, (7) PROVIDE THE DRIVER WITH A MEANS OF OBTAINING AN UPPER BEAM FOR SIGNALING AND AT DUSK, (8) FUNCTION WITH NORMAL VARIATIONS OF CAR LOADING, (9) PROVIDE THE LOWER BEAM DURING WARM-UP, (10) NOT BE IMPAIRED WHEN OPERATED IN THE DAYTIME, (11) BE INSENSITIVE TO CHANGES IN BATTERY BOLTAGE, (12) USE A MINIMUM OF CURRENT TO AVOID EXCEEDING THE GENERATOR CAPACITY, (13) WITHSTAND THE ABUSES OF AUTOMOTIVE SERVICE WHICH INCLUDES HEAT, COLD, VIBRATION, AND MOISTURE, AND (14) BE EASILY ADJUSTABLE IN THE FIELD. THE AUTRONIC EYE COMPLIES WITH ALL OF THESE REQUIREMENTS AND EXPERIENCE DURING THE FIRST YEAR OF PRODUCTION DEMONSTRATES THAT IT OFFERS REAL POSSIBILITIES FOR IMPROVING THE GLARE PROBLEM.

www.exampleproblems.com/wiki/index.php/Headlight

ARTICLE ON AUTRONIC EYES

This was written by John Oldenburg, an autronic eye and guide-matic restorer. For those wishing to add this option, the article tells how to correctly identify the phototubes (dash units) - each year and make had a different foot that only fit the dash it was designed for. This can make sorting through the ebay listings easier:

Identifying Autronic Eye And Guide-matic Systems

by John Oldenburg

I've been trying to be involved with the automotive enthusiast most of my life and when possible the salvation of the old cars through restoration and in many cases fabrication of the part required. And I always try to encourage the car owner to try to do as much of the "hands on" work as possible for the restoration of his/ her car, not only for financial reasons but also for the pride and enjoyment. There are many items that can be restored, or just improved with a little time, elbow grease, and common sense.

I remember the first time I saw a phototube, or as many people call the "eye" It was perched on the dash of a 1962 Oldsmobile StarFire, it looked like something from outer space, I let my curiosity get the best of me, I knew I wouldn't be satisfied until I knew everything about this option. Over the years I have restored and repaired hundreds of Autronic eye and Guide-matic systems for all divisions of General Motors, and Ford Lincoln.

The first of automatic headlight dimming systems were called Autronic eyes. They were first offered in 1952 for Oldsmobile and Cadillac. All other divisions started 1953. They kept his name until 1959. 1960, and up the name was changed Guide-matic but it served the same purpose, to automatically switch the head lamps between upper and lower beams in response to light from an approaching car. Lincoln started purchasing Autronic eye's in 1957, Ford and Mercury and 1964, before this they had a high failure rate until they started purchasing units from Delco. The typical system consistent of four individual units, the photo, amplifier, power relay, and a special foot dimmer switch, or a auxiliary override footswitch.

In 1955 Oldsmobile offered the first on/off switch integrated into the headlight light switch, this was the only division to offer this until 1962 when Cadillac and Buick had a off switch built into the phototube. Many people asked me how to identify a Guide-matic system or an Autronic eye for there car, I think we have all been to swap meets and seen parts or complete units that a vender is trying to sell. But was not sure what it was off of, if you ask the vender, he may ask what car you have first, before he tells you the car you have, or we have all heard "they are all the same in those years" this is not true! Some of the first clues are the shape of the phototube lens. The square clear lens was used in 1952-54 (mid year) but Chevy retained the square lens until mid 1955. But this was only to use up old inventory. Chevy only, used 6-volt autronic eye systems on 12-volt cars with a special 12 to 6volt reducing resister. This was a poor idea, as it was a larger load on the charging system. But it was cheap!

The round clear lens was first used in 1954 and lasted through 1958 on Cadillac and Oldsmobile. Buick, Chevy Pontiac retained the round lens through 1959. The 1959 Cadillac and Oldsmobile unit was a one-year only unit, and a breakthrough in technology as this was the first of the low voltage units. The phototube was supplied with just 2.25 volts. This phototube was still large but the lens was oval and clear and there was a knob on the back to adjust the sensitively while driving. There was one exception a 1959 dealer installed unit that was a high voltage DC unit. The amplifier was mounted behind the kick panel (all amp's were here in 1959 through 1962 in Cadillac, all others 1958 through 1962) this phototube had a knob on the back of the eye as well and a clear round lens.

There was a large (black box) or the amplifier under the hood of the car,. If it had one adjustment knob under it, it was used for 1954 and earlier, 1955 and earlier for Chevy. This was a high voltage DC unit. If it had two knobs, this was a high voltage AC unit and was used in 1955-58. This means the phototube was supplied with up to 1000 volts to operate the system. 1958 was the last of the large amplifier under the hood for Cadillac and Oldsmobile.

In 1955-58 Oldsmobile used a rubber isolation system on the amplifier to reduce shock or harmonic vibration. This had 2 separate metal legs and 4 large rubber isolators.

The 1960 phototube was another breakthrough, This was the first year of the small phototube. it had a amber color lens to make the system less sensitive to fog or snow. The earlier ones had this as well but was inside the phototube housing.

In the Cadillac division only, the phototube was removed from the dash in 1964 (unless it was a dealer installed unit or a professional car) and installed behind the fender or grill. These units are unserviceable and should be replaced if not working.

The first and only year to sport a "safety salute" was 1960, this was a two-step relay. When the headlamps were switched to low beams the upper beams would remain on at a reduced candle power for one to two seconds to indicate the car was equipped with a Guide-matic system. This was a great idea, but poor design and thus had a very high failure rate. There was several attempts to salvage this part of the system by the GM tech dept. but by February of this year GM sent notification to all dealers to disconnect this parts of the Guide-matic system if there were problems.

The phototube mounting changed almost every year with the new contours of each dash. You have to make sure you have the correct one for your car. On a Cadillac it is easy to make sure you are mounting the phototube in the correct location, as the holes are there for you, in the steel dash anyway. Just take a awl and poke a hole through from the under side. For other divisions you must have a template, mark and drill a hole from the top.

The next clue to check the serial number printed on a paper sticker on the amplifier. If the amplifier was mounted under the hood of the car for a long time the tag maybe deteriorated and fell off. The phototube had a metal tag in the years 1952 through 59 and a paper tag between the phototube and mounting in 1960 through 66. The serial number consists of nine digits. The first digit indicated the division this unit was sent to. The second and third digits indicated what year the unit when into. The remaining 6 digits indicated the serial number starting with number one. If you run across a very high number starting with the 100,000 range, this means there may have been a minor mid year production change.

Here is a breakdown of the model and serial numbers as they apply to the various car lines;

156 000001 Chevrolet

256 000001 Pontiac

356 000001 Oldsmobile

456 000001 Buick

556 000001 Cadillac

857 000001 Lincoln. An "A" will follow the serial number 1964 and up

864 000001-B Mercury

864 000001-C Ford

756 000001 Warrant Replacement. The number 6 was GMC truck division and no automatic headlight dimming system were ever used in trucks *There is a exception to this coding, in 1952 this system of numbers was not used yet, but it still had a serial number with all 9 digits.

After properly identifying and making sure the autronic eye is complete, It is time to start restoring the unit, The bad wiring should be replaced with new. Next make sure all connectors are clean and free of corrosion (all electrical connectors on the car should be cleaned, at these were made of brass and on a 40 plus year old car they will tarnish making poor connection).

The amplifier housing cover 1952-1958 should be glass blasted, primed then painted gloss black, the phototube and mounting should be disassembled, and glass blasted, primed and painted the color of your dash. If this unit was originally purchased over the counter at the dealer the phototube was painted Cumulus gray or dark gray, 1960 units and later, the housing was sent in primer, either red or dark gray.

All vacuum tubes should be replaced or tested to make sure they are in top working condition. The vibrator in the amplifier (1952-1958) should be replaced with a solid-state replacement vibrator, which will last for many, many years.

Today driving standards have changed considerable from yesteryear. In 1956 it was dark out there! Today we have halogen headlights, reflective signs, and reflective paint on the highways, so, if we would use the factory sensitivity adjustments, your upper headlamps would seldom turn on. Though many hours of testing of my own cars, I've re calibrated most of my factory testers, most all dealers had one or more of these. Once the unit is running I have always let it run for several hours, if not days, to see if it is going to fail. In my option if the unit is going to fail it will do so in the first 24 hrs of operation.

Another option that was available on Cadillac and Buick was the "twilight sentinel" this was first used in 1960. I am often asked if this option was part of the guide-matic system, It is not. It is a completely separate unit from the Guide-matic. This is a electronic device which automatically turn the headlights on and off. The operation of the lights is determined by the amount of daylight available for safe driving. The twilight sentinel used the same numbering system as the autronic eyes, but the number always started with the letter "L"

	5	55	1	2	3	4	5	6
GM	Yr	Serial #						
Div.								