

## J2 TECHNICAL ARTICLE

Number 264

August 30, 1986

From Octagon Heaven

### HEAD LIGHT SILVERING (RESILVERING)

The reflectors in the head lamps were originally silver coated for reflection. If your's are like mine, they need to be resilvered. For some time now I have been seeking a silver furrer or whatever and had no luck. A friend of mine just gave me his copy of Hemmings Motor News and so I looked under "services and low and behold I found some companies that do head lamp resilvering:

**RESILVER** those dull headlight and cowl light reflectors, quality work, \$5 per inch in diameter measurement, fluted reflectors and repairs extra. Steve's Auto Restorations, 5781 NE 185th Ave, Unit-C, Portland, OR 97228, PH: 503-257-0000. (AUG)

Then just after that I was talking to a old M.G. friend who is busy in restoration on a NA.

He told me about this new space age material and a company in oregon which can apply it.

He had his head lamps done and thinks that they are just great!

So I wrote to this company and got some information on this material which is supposed to be much more reflective then silver:

**UVIRA**

P.O. BOX 610

310 PLEASANT VALLEY ROAD

MERLIN, OREGON • 97532

(CONTINUED  
BACK SIDE)

Fellow Car Enthusiast:

Thank you for expressing an interest in our headlight coatings. The enclosed reprint explains our process of coating your headlight reflectors. For over 12 years UVIRA has been a name respected for quality laser mirrors, and our line of headlight reflector coatings guarantees the same satisfaction. We guarantee our Aluminized coatings for 5 years, but they should last a lifetime with proper care.

Ordering Information: Send us your reflectors in good condition. We do not remove dents or major defects. Ship by UPS or Parcel Post along with check or money order as follows: \$15.00 each for reflectors less than 4" diameter (tail and cowl lamps), \$25.00 each for reflectors larger than 4" but less than 9" diameter, and \$32.00 each for reflectors 9" diameter or larger. Add 10% to your order for return shipping. While the majority of reflectors are brass, a small percentage are made of steel. Steel reflectors require an additional process and may incur a slight additional cost (check yours with a magnet).

We are now able to quote on reflector repair (dents, cracks, etc), and we are also able to supply the recommended 50cp bulbs for most cars in either 6 or 12 volt at \$6.00 each postpaid.

Allow 2 to 3 weeks for our processing, exclusive of shipping time. Return shipping is via UPS, insured for \$100.00 per reflector.

William W. Atwood  
President

Prices effective May 1, 1985

**TRIPLE CHROME PLATING**

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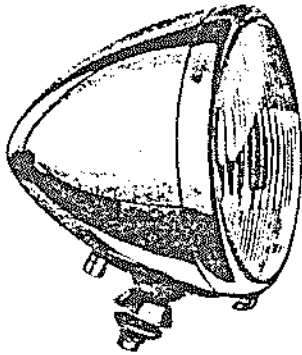
Copper - Nickel - Chrome - Brass - Silver

Call or write for estimate

**RON MONTE INC**

25 Roseland Ave, Caldwell, NJ 07006

201-226-6184



## SEALED BEAM EFFICIENCY WITH ORIGINAL HEADLIGHTS

BY WILLIAM W. ATWOOD  
UVIRA, INC.

For several years I have read with interest the ongoing comments about headlight reflectors. The discussions generally center around whether to plate old reflectors with silver, chrome, or nickel, all of which are far from perfect, or to change the whole system over to sealed beams for safe night driving. With all original equipment, you CAN meet sealed beam headlight standards. The most critical part of your headlight system is the reflector. Since my life's work has been the development and design of mirror surfaces for laser, aerospace, medical, and communication systems, it has been clear to me what materials and what process would yield the best reflectors for my cars without sacrificing authenticity. My reflectors would be vacuum deposited, protected aluminum.

Pre-1940 original equipment headlight reflectors were coated with silver. Freshly polished silver can reflect as much as 94% of the bulb's light immediately after polishing. Within hours, that reflectivity has dropped to 90% and continues to decline as it slowly tarnishes. To maintain silver at better than 80% reflectivity, the generally accepted minimum for night driving, you would need to repolish at least every other month or more often in some cities. Of course there are only a limited number of times you can repolish without replating.

Because of the problems with silver, many people have their car's reflectors plated with chrome. Chrome is certainly durable and never dulls. However, chrome does not look like silver because of its blue-black color. Chrome also leaves the car undriveable at night because the chrome reflects only about 65% of the light available from the bulb. This is not enough for night vision. Other people have the reflectors plated with nickel because it has a softer, more yellow color which appears like slightly tarnished silver. This nickel is even worse than chrome, reflecting only about 63% of the available light. The reflectivity values I have given here for all three metals are the best available under laboratory conditions; typical plating and polishing jobs are generally less reflective. For all of these reasons, many people replace their car's beautiful original equipment with sealed beam headlights for safe night driving.

In the late 1930's it became possible to coat moulded glass with highly reflecting surfaces of vacuum evaporated aluminum. These aluminum surfaces, however, are very soft. Aluminum also declines in reflectivity if not properly protected from oxidation. Hence, the development of the SEALED beam headlamp where the inside rear moulded glass surface is coated with an 85% reflecting aluminum film in a vacuum coating system, the filament is added, and the lens sealed on after filling the unit with an inert gas. This process neatly protects both the filament and the aluminum reflector from oxidizing.

Now, after developing the technology and producing high quality laser reflectors for over 12 years, UVIRA Laser Optics is able to vacuum deposit and seal aluminum directly onto the original equipment headlight reflector. The process begins with polishing the old tarnished reflector to remove the silver and underlying nickel layer. We then buff the brass to an almost perfect sheen. The reflectors then undergo a three step coating process performed in a vacuum system. The outcome is a microthin layer of pure silica glass placed over a flash-evaporated pure aluminum coating. Just enough glass is used to maintain the highest reflectivity of the aluminum — 92% — while obtaining good durability. More glass would lower the reflectivity of the aluminum surface and add color to it.

These overcoated aluminum coatings on your old reflectors yield reflectance equal to the best obtainable with silver, and a reflector that looks like authentic, freshly polished silver in every way. This is a reflector that will never tarnish and will maintain its reflectivity as long as it is not mishandled or rubbed with any polishing or abrasive cleaning materials. These reflectors are durable enough to be cleaned carefully with mild soap and water or rubbing alcohol and cotton to remove fingerprints or dust. UVIRA Laser Optics will recoat, at no charge, any reflector coated by them which fails to reflect at least 90% for five years. With these reflectors and the standard 32/32 cp bulbs, numbers 2330 or 2331, you will have headlights essentially equal to the six volt number 6006 sealed beam. If you should choose to use the optional 50/32 cp bulb number 2530, you will have headlights slightly better than the 6006 sealed beam unit. Even better lights can be had by replacing the headlight sockets and using quartz-halogen bulbs. We do not recommend using the quartz-halogen bulbs, however, because the lens of your system is not pyrex or quartz, and thus may not be able to withstand the additional heat from these extremely hot lamps.

When replacing any part of your headlamp system, we highly recommend that you read the excellent article "Tune-up Your Headlights" in the December 1980 *Skinned Knuckles*, Vol. 5 No. 5, pages 15-21.

*Ed. Note: For further information, write William W. Atwood, President, UVIRA, P.O. Box 610, 310 Pleasant Valley Road, Merlin, OR 97532. Telephone (503) 474-5050.*