



AMERICAN MOTORS CORPORATION

HON AUTOMOBILES
NASH AUTOMOBILES
SPECIAL PRODUCTS

14250 PLYMOUTH ROAD
DETROIT 32 MICHIGAN

KELVINATOR
AND LEONARD
APPLIANCES

June 5, 1958

Mr. Roy D. Stetina
Holiday Lakes RR #1
Garrett, Indiana

$$\frac{271}{6(x-1)} = 6[6x-6]$$

$$36x - 36 = 271$$

$$x = \frac{271 + 36}{36}$$

$$x = \frac{307}{36} = 9$$

Dear Mr. Stetina:

This reply is submitted in response to your letter of May 28.

The compression ratio of 8:1 has proven to be very satisfactory for all purposes on regular grade gas of about 90 octane. At the owner's option, the compression can be run up to 8.5:1 to 9.0:1 but the use of premium gas having an octane number of 95 or more is a must. A slight gain throughout the RPM range can be had by increasing compression, however, this modification is expensive and has its limitations.

If you wish to obtain an 8.5:1 compression ratio, the following computations will explain the amount required to be milled from the head.

$$CV = \text{Chamber Volume} = \frac{\text{Volume of one cyl.}}{\text{Compt. Ratio} - 1} = \frac{252.55 \text{ cu. in.}}{6 \text{ cyl.} \times 8.0 - 1} = 6.01 \text{ cu. in.}$$

$$\text{If } 8.5:1 \text{ is wanted: } CV = \frac{252.55}{6 \times 8.5 - 1} = 5.61 \text{ cu. in.}$$

$$CV \text{ difference} = 6.01 - 5.61 = .40 \text{ cu. in.}$$

$$\text{Amount milled off head} = \frac{CV}{\text{Piston area}} = \frac{.40 \text{ cu. in.}}{9.621 \text{ sq. in.}} = .0416 \text{ cu. in.}$$

Then, .0416 inches is the amount to be milled from the head, subject to a revision in the piston area figure of 9.621 sq. in., if the piston chamber outline deviates greatly from the true cylinder bore of 3.5".

Remove all sharp corners and it is good practice to "CC" all chambers to insure equal head volumes. To do this, set up the head upside down and level, with all valves, springs and spark plugs in place. Use a burette tube, some light oil and strive for an accuracy of - 2 cubic centimeters by polishing the chambers as required. Real accuracy also calls for a correction factor to compensate the fact that the pistons seldom come with .010" of the same position at T.D.C.

3133743

3136381 opt. cam

8.5:1 with 180.5 base