

# shankle automotive engineering

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SHANKLETTER I

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## GENERAL

### What Is This ?

This is the first in what will be a continuing series of newsletters which we will publish. The purpose of these is to update the information in our Formula Ford catalog and keep you, our customers, informed. Basically we feel that this will go a long way in dispelling the "superstition and ignorance" that we talk about in the beginning of the catalog. Also we will from time to time be offering special net prices on some often-replaced parts.

### Keep Us Up To Date

If you feel that this will be a valuable asset to your racing programs, we urge you to help us keep our mailing list accurate and up-to-date. So please notify us of any discrepancies or address changes. The newsletter is our main line of communication with you, and we aim to keep it open. While on the subject of addresses, be aware that zip codes are actually rather important to ensure the most speedy shipment and receipt of your parts. Most major and all the better shipping companies require zip codes to more effectively expedite their shipments.

### Minimum Orders

We have not been very strict about our minimum order requirements as stated on the price sheet. Most all of you have been adhering to it. The only reason it exists is very simple. If we spend the time to write an invoice, do the bookkeeping, prepare the shipping paperwork and package any order for less than ten dollars, we've lost money. Please remember this and understand why there must be a \$2.50 service charge on all mail/phone orders of less than ten dollars.

### Placing Orders

Also when phoning or writing an order be sure that you have all important information readily at your disposal. This will save time on the phone and time filling your order if mailed in. If you use the order numbers in the catalog, everything moves a lot more smoothly.

Revised Price Sheet

We have enclosed a revised price sheet with this mailing. Please discard the price sheet dated March 25.

TECH NOTESHelp Us Help You

Please let us hear from you with your comments and experiences with our products. We need to be able to pin-point problem areas so that we may make improvements. We cannot do that if we don't know you are having a problem.

Electric Water Pumps-Are They Worth It ?

Recently we have heard that some competitors have installed battery-operated electric water pumps and eliminated the mechanical unit normally used. On paper this increases the useable power output of the engine by the amount of power required to drive the mechanical water pump. We performed a simple test to determine the power required to drive the mechanical pump. We hooked up a one horsepower electric motor with suitable pulleys to drive the water pump in place on the engine up to 6900 RPM ( maximum water pump speed with our water pump drive unit is about 5600 RPM ). The one horsepower motor was more than adequate to drive the water pump at water flow rates up to 23% greater than normal. In addition, theoretical calculations indicate that the power required to drive the water pump is on the order of a tenth of a horsepower. Our conclusion is that the power to be gained by substituting an electric pump is a fraction of a horsepower and is not worth the loss in reliability and the extra trouble with charging and changing batteries etc. According to the GCR, it would appear that the use of an electric pump is legal.

Tail Pipe Length

Dynamometer tests on our current exhaust system have indicated that a slight power improvement at high RPM without loss of low-end torque may be achieved on the Uprated engine by shortening the 2" diameter tailpipe to 20".

Cam Timing

When we published our catalog we were still under the 1973 GCR. In 1974, the cam timing specifications were dropped from the GCR. It is still necessary to use the stock cam without any modification, but the cam can be advanced or retarded without restriction. We recommend a retard of four to five degrees for the Cortina and three to four degrees for the Uprated engine for the optimum power curve. Using the intake cam lobe center (maximum lift point) as a reference point, retard the cam from the stock setting of 109 degrees ATDC to 113-114 degrees for the Cortina, and 112-113 degrees for the Uprated engines.

Uprated Carburetor

We have spent considerable energy this year on the preparation of the Uprated carburetor to achieve optimum fuel mixture distribution and better performance under cornering and braking conditions. We have performed numerous dynamometer tests, while Chuck Pittenger and Klaus Holthaus of the Cuddy Race Team have done the track testing. We feel our current carburetor modifications have pretty well resolved all the problems with this carburetor. Our preparation includes: installation of an anti-surge tube in conjunction with the power enrichment circuit on the secondary side of the carburetor, removal of the economizer valve, rejetting of the secondary idle circuit, and float level adjustment. This is a combination of many ideas, some our own and some from U.S. and English competitors. Jetting is considerably different than previously reported by us in our catalog. For an air density of 94% it is:

<u>Carb Side</u>	<u>Emulsion Tube</u>	<u>Fuel Jet</u>	<u>Air Corr. Jet</u>
Primary	F-6	1.45	1.65
Secondary	F-6	1.60	1.60

Cylinder Bore Damage

We have noted numerous cases of cylinder bore corrosion on engines in for overhaul due to inadequate precautions when cleaning the car and/or engine with steam or hot water. In these cases, water has found its way into the engine through the carburetor, exhaust, or possibly by condensation. Moisture in the cylinder bores causes corrosion where the piston rings contact the cylinder wall. The resulting ring of corrosion is too deep to hone out and the cylinder bore or bores effected must be bored out and sleeved - an expensive proposition. If you steam clean or wash your car or engine, we suggest that you run the engine immediately afterward, bringing it up to operating temperature. This will "dry out" the engine sufficiently to eliminate the chance of bore corrosion.