Ten-Point Hop-Up Plan for Go-Kart Engines

Due to the changes made at the factory to the E-65 engine to improve performance, many of the engines in the field are lower in power than our current production units. The following plan will enable the owner of even the earliest models to bring an engine up to the latest performance ability:

1. The venturi size of the carburetor can be increased up to 5/8 inch. To take advantage of the increased available gas flow, the induction bracket, reed plate assembly, and gaskets should be changed. Recommended production parts are:

   a. Carburetor #403691
   b. Induction bracket #403790
   c. Screw air cleaner #5457-A
   d. Reed plate assembly #403791
   e. Cover air cleaner #2127
   f. Gasket #403792
   g. Air cleaner plate #403584
   h. Elbow #5052
   i. Air cleaner #31442
   j. Impulse tube #402479

   This is now available in a kit. Order #403794 kit to convert E-65 to Type F.

2. Sketch No. 1 shows the improvements that can be made to the reed plate assembly for increased performance. Scribe around the reeds and then file out the holes in the reed plate to within 1/64" of the scribe lines. Radius edges as shown. Filler block can be added to the reed plate as sketch shows. Add a cone to the carburetor side of the reed plate to improve air flow.

3. The crankcase volumn should be reduced as much as possible by the use of plastic metal. Sketch No. 2 shows the location of fillers within the crankcase. It is also possible to shorten the crankcase and thus further decrease its volumn. When the crankcase is shortened, it is necessary to fit a flat head screw to the reed assembly to prevent interference with the connecting rod.

4. Sketch No. 3 shows changes to the transfer passage from the crankcase to the intake ports, which will allow improved gas flow. Remove metal as shown and file a good chamfer on leading edge.

5. The intake ports themselves should be radiused at the edges and polished as shown in sketch No. 3.

6. Plastic metal filler can also be used to advantage on the bearing plate as seen in sketch No. 5. Blend metal in smoothly and polish after hardening.

7. Piston head can be reshaped, slightly, as shown in sketch No. 6, and polished all over.

   This completes the recommended hand work required on the engine.

8. For racing purposes, the standard spark plug should be changed to a cooler grade. The Champion H03 for example, has proved to be a very suitable plug.

9. The next biggest improvement can come from the use of correctly blended racing fuel. Below is a list of recommended fuel blends for use with the Clinton two-cycle go-kart engines.

a. 4oz. castor oil, 10 oz. ether, 1 gal. regular gas

b. 4 oz. castor oil, 12 oz. nitromethane, 1 gal. regular gas

c. 4 oz. castor oil, 12 oz. nitropropane, 1 gal. regular gas

d. 8 oz. castor oil, 15 oz. nitromethan, 1 gal. methanol

Remember, racing fuels can be dangerous. Keep them in a cool place. Mix fresh each day.

10. Before racing a new engine, run a break in. An engine performs best after 4 hours of running. Never run wide-open-throttle without a load. Warm up an engine well before running. W. O. T.

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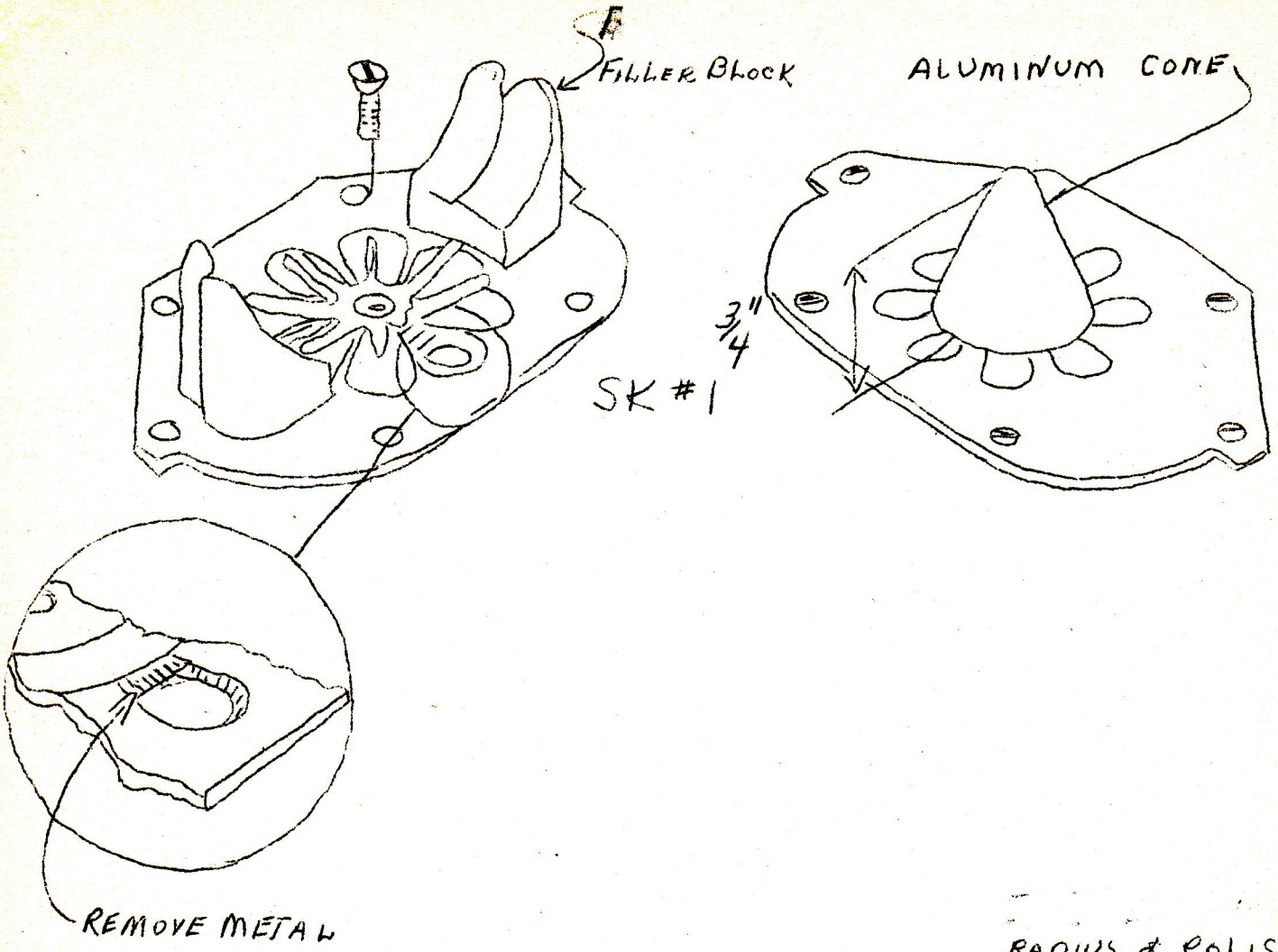
There are also a number of "dos" and "don'ts", which will help to insure the kart owner of good performance from his Clinton engine.

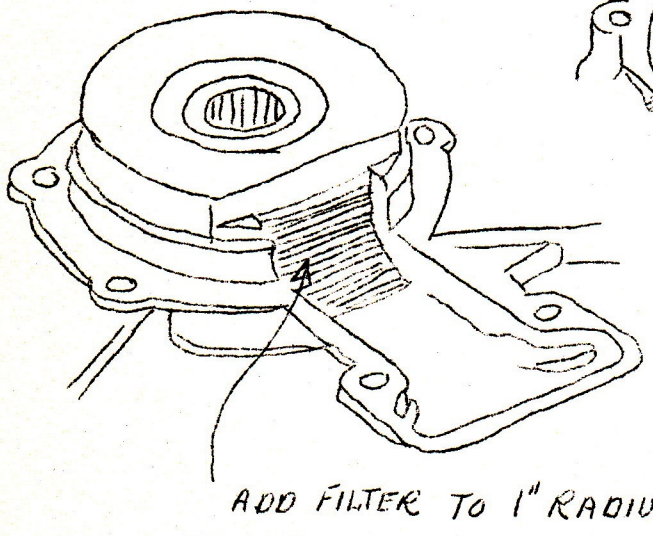
Do change the air filter, piston rings, and spark plugs at reasonably frequent intervals. Change air filter and piston rings after approximately ten hours of racing. Keep spark plug clean and well gapped at all times.

Do not change the port shapes or positions, the ignition timing or the ignition point gap. Remember, good performance from an engine comes as a result of good maintenance.

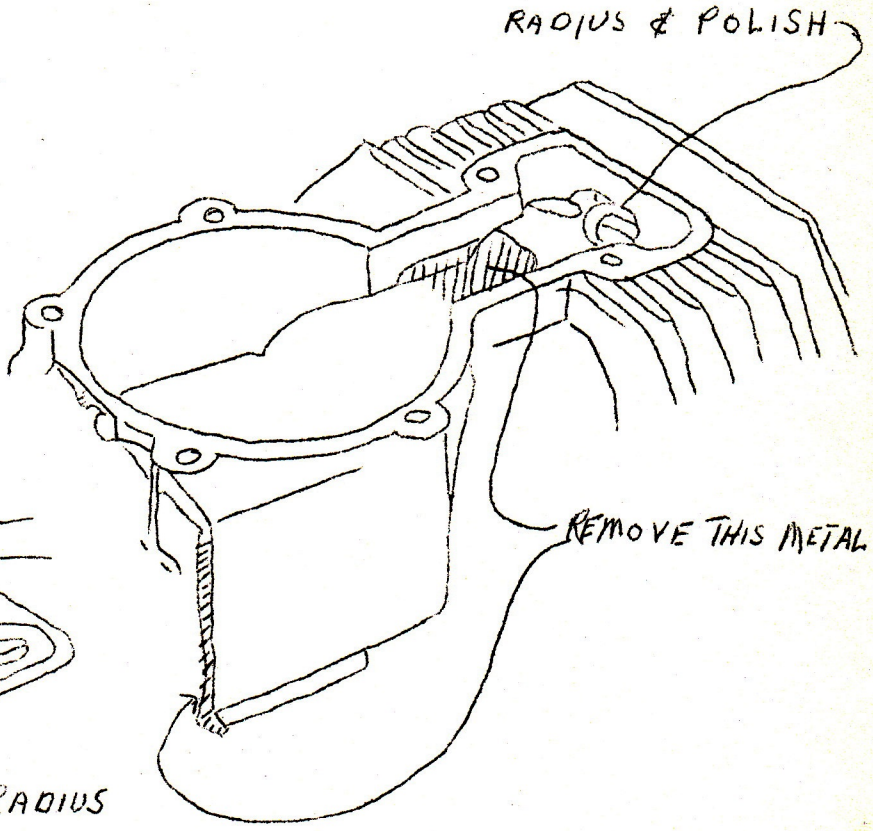
CAUTION: Do not use racing fuel blends with diaphragm types of carburetors. The racing carburetor listed above has been developed especially for use with racing fuels.


FILLER BLOCK
ALUMINUM CONE
3/4"
REMOVE METAL

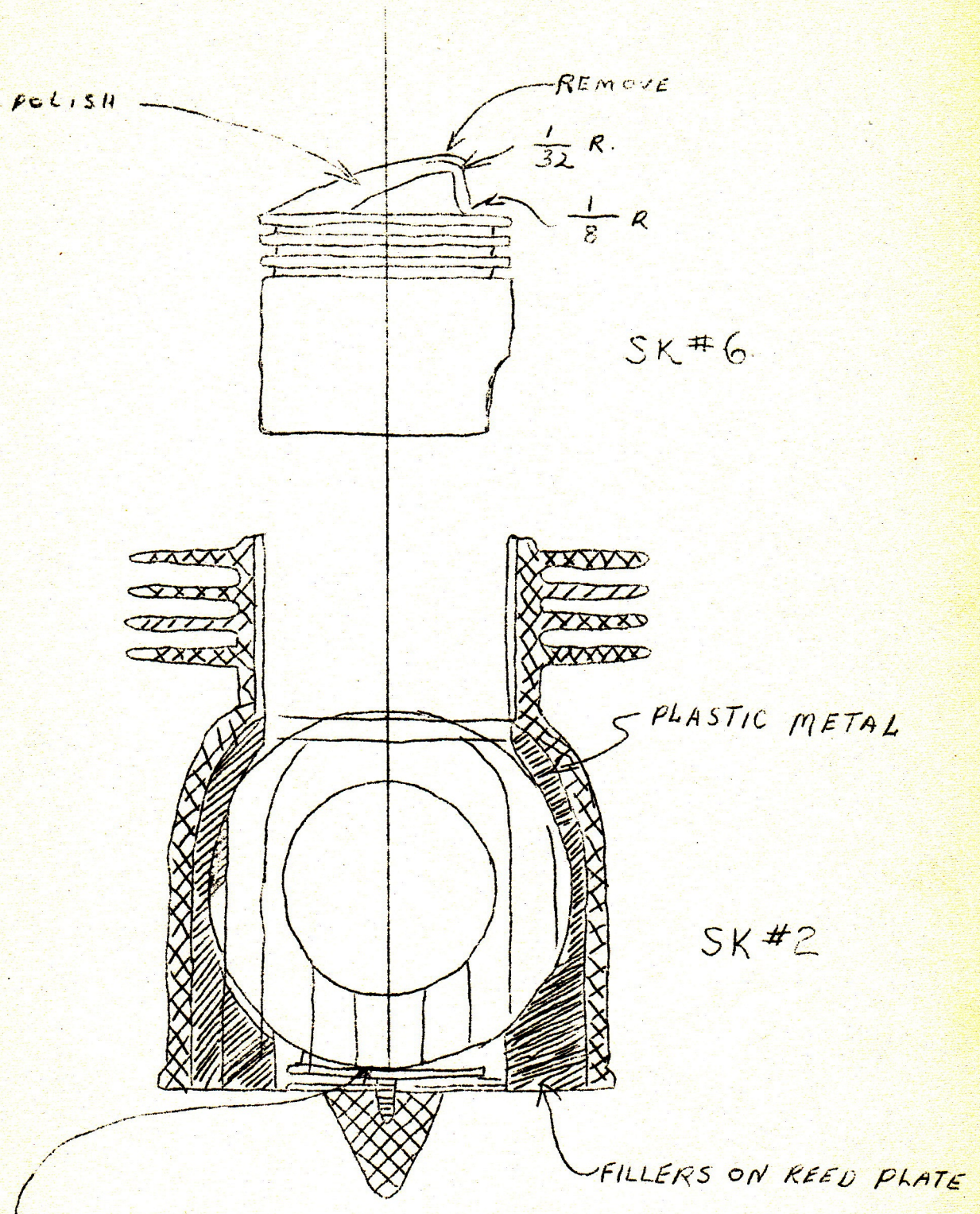
SK #1


ADD FILTER TO 1" RADIUS

SK #5


RADIUS & POLISH
REMOVE THIS METAL

SK #3


POLISH
REMOVE
1/32 R.
1/8 R
SK #6
PLASTIC METAL
SK #2
FILLERS ON REED PLATE
CRANK CASE SHORTENED FOR MIN. ROD CLEARANCE.