

## **OPERATING SMALL DIESEL ENGINES**

**(Typical MPJet 0.60)**

**by Tony Gray**

- Handy mod is to drill a small hole 1.0mm dia in the top of the tank. This allows air to escape when filling with fuel otherwise excess fuel is forced into the intake tube causing flooding.
- If your engine has a tight compression screw then discard the locking lever as it won't be required and can cause a problem as it interferes with the needle valve.
- Typical Fuel Mixture: 30% castor oil – 35% Ether – 35% Kerosene

Very Important: Use only castor oil (Typical Castrol M) and not synthetic oil in all diesel engines.

### **Running the Engine**

- The MPJ's usually have a tight fitting piston and require at least 20 minutes bench running before using in a model. Small diesels can sometimes take a little effort to start and run the first time, however after a little bedding in they are very easy to operate. For initial running use a heavy prop, a 9 x 4 propellor cut down to 8 x 4 is a good choice as this gives the inertia required to keep the engine spinning over. Once the engine has been run then you can use a standard 8 x 4 nylon for the run in period. For general operation in a model sizes 7 x 4 or 8 x 4 are all you need. Best to use flexible nylon props either Kavan yellow or Graupner grey nylon – they perform well and are very easy on the engine in case of landing tip over.

### **Starting from cold**

- Compression as set previous run session
- Open needle 1 to 1 1/4 turns
- Finger over the intake and choke a couple of turns, prime exhaust with fuel bottle with exhaust closed and it should start within 6 flicks. If no start prime exhaust again with exhaust closed.
- Once running the engine will misfire as it warms up from cold. Let it warm up then screw in the needle valve to lean the mixture and the misfire should disappear. The compression setting should be OK as per previous run, however if the engine starts to slow when hot back off the compression. Conversely if misfiring when hot just screw the compression in a "tad"
- When the engine is hot only a couple of turns with finger over the intake is all that should be required to start.
- For best operation in a Tomboy competition, start and warm the engine with a couple of runs during the 2 minute pre start period, ensuring the engine is nice and warm. With engine running say 25 sec before launch wait till last practical moment to top up tank before release.

For performance reference, two standard MPJ 0.6cc engines both achieved the identical figure of 8000 rpm using a Kavan 8 x 4 nylon propeller.