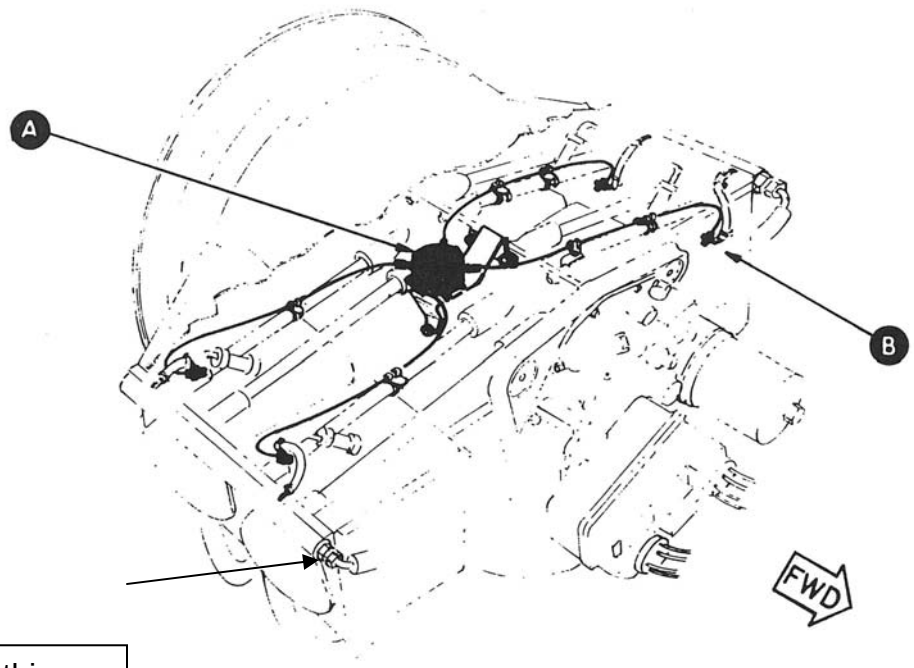
ENSTROM HELICOPTER CORPORATION

Plugged Fuel Injector Nozzels



Disconnect this line on both sides

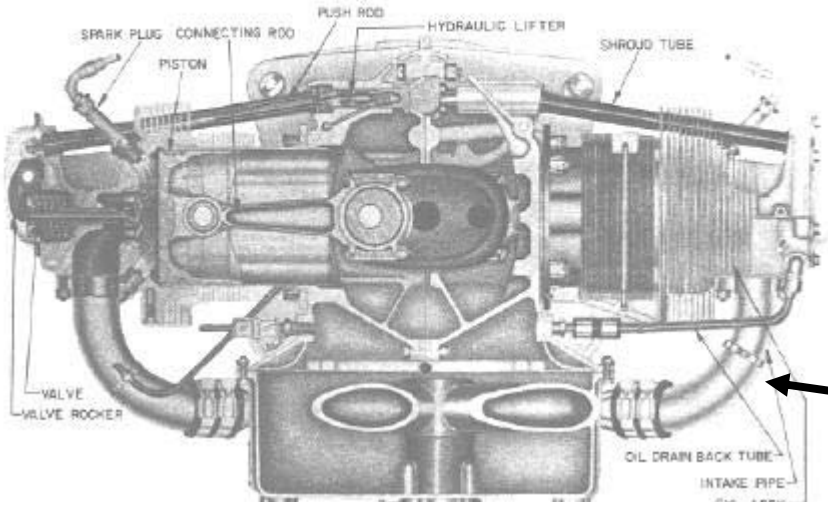
One of the common symptoms of a plugged fuel injection nozzle is that the engine runs OK for a few minutes during the first run of the day and then begins to run poorly, with high fuel flows and rough running on either magneto during a mag check.

Sometimes when a fuel injection nozzle is plugged, the fuel will back up through the static hose into the upper deck static pressure system.

Eventually, the fuel will enter the intake system of the engine through the static line connection just below the turbocharger, and will drown the engine causing rough running and black smoke. This situation is actually quite easy to diagnose.

- Run or hover the helicopter until it starts to run poorly. Shut down and quickly remove the static lines from the manifolds at the valve covers.
- If fuel runs out of one of the lines, one of the nozzles on that side of the engine is plugged.

FRONT VIEW OF A FOUR CYLINDER
TEXTRON LYCOMING POWER PLANT.



Intake pipe

It is possible to determine which nozzle is actually causing the problem.

- Remove the intake pipes from the cylinder. If you already know which side of the engine the plugged nozzle is on, you can remove just those two intake pipes, otherwise remove all 4.
- Place metal containers under the intake ports to catch the fuel and run the boost pump with the fuel valve on, the mixture rich, and the throttle wide open.

CAUTION
Perform this operation outside, with appropriate fire prevention apparatus available. Take care to ground the aircraft. Working with open fuel containers is a hazardous operation.

- Using a mirror and a flash light inspect the fuel flow from the nozzles by looking up into the intake port of the cylinder.
- The spray pattern must be perfectly formed, needle thin, clear and must shoot all the way across the port and hit the other side. If the stream is not perfectly shaped or spits air, the nozzle must be cleaned or changed.
- Do not clean and re-use the old one piece nozzles. Replace them with new nozzles.