Fuel Injection Systems

Advantages

- Even fuel/air mixture distribution
- More power
- Less fuel
- Less problems with carburetor ice

Differences from float carburetors

- Fuel Injection: Deposits a continuous flow of fuel into the induction system near the intake valve just outside of the cylinder.

- Carburetor: The correct amount of fuel is metered into the airflow.

Fuel Metering Force

- Pressure drop across the orifice in the fuel injector nozzles.
- Position of the ball valve in its seat.

Idle System

- Constant head spring pushes against the air diaphragm and forces the ball valve off its seat. (at low air flow)

- As air flow increases the air diaphragm moves over.

Idle RPM/Mixture Control

- Limit the amount of air allowed to pass the throttle valve.
- Limit the amount of fuel to flow to the discharge nozzles.

Flow Divider

- At idle a spring holds the flow divider valve closed to oppose fuel flow until fuel pressure off-seats valve.
- Creating down stream pressure for the fuel control.
- Provides cut off of fuel at idle cut off.

Mixture control

- Manual mixture control valve
- Variable selector
- Fuel is bypassed back to the tank.

Throttle control

- Controls air valve and fuel valve.
- Fuel valve is variable orifice

Fuel Manifold Valve

- “Spider”
- Similar to the flow divider of Bendix
- Distributes fuel evenly
- Provides positive shut off at idle cut-off position.

Starting (Continental)

- Fuel on
- Crack throttle 1/8 inch
- Mixture full rich
- Boost pump on high
- Fuel flow indicated engage starter
- Bust pump off

Starting HOT Engine

- Mixture idle cut-off
- Throttle open wide
- Boost pump on high
- Allow fuel to circulate 15-20 siconds
- Boost pump off
- Mixture full rich
- Throttle 1/8
- Engage starter
- Continue normal start.