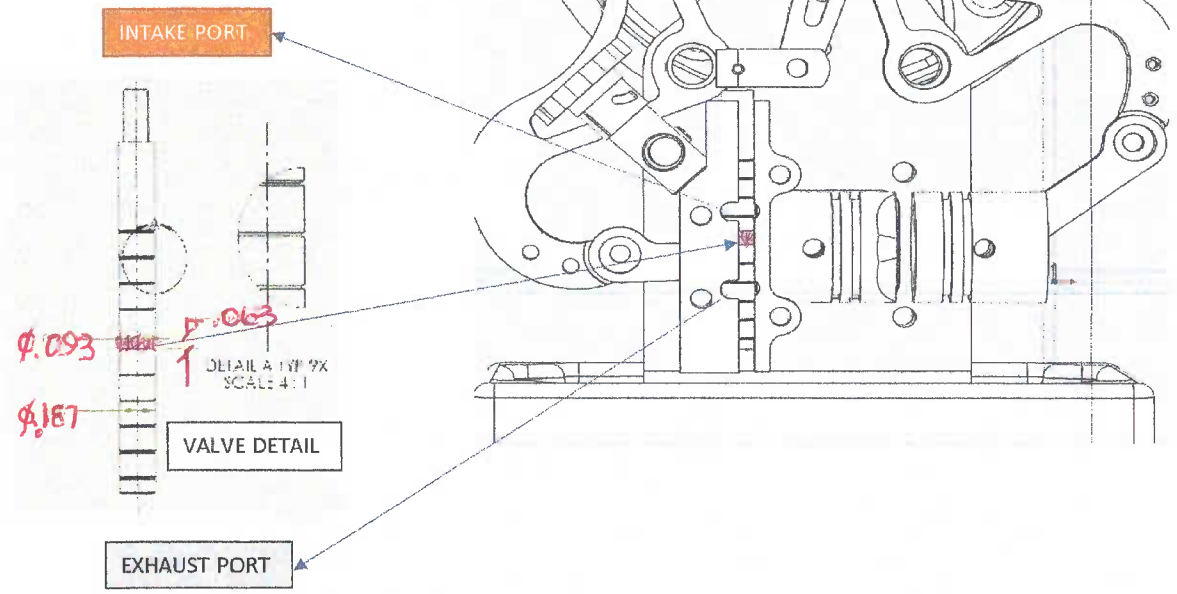
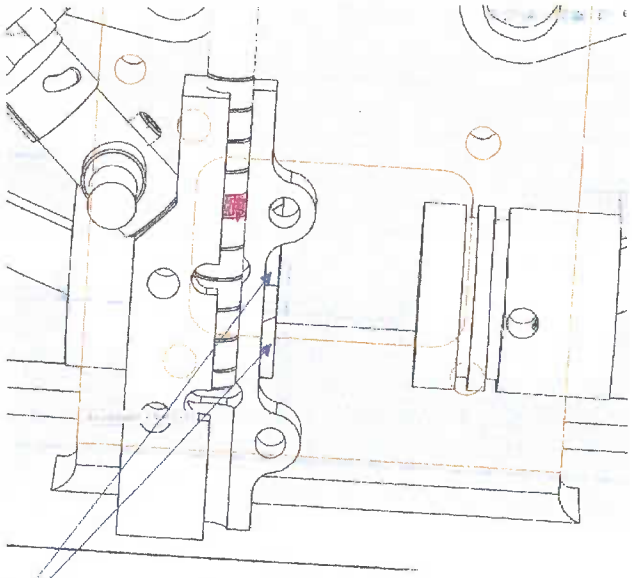
Atkinson Differential Operation description

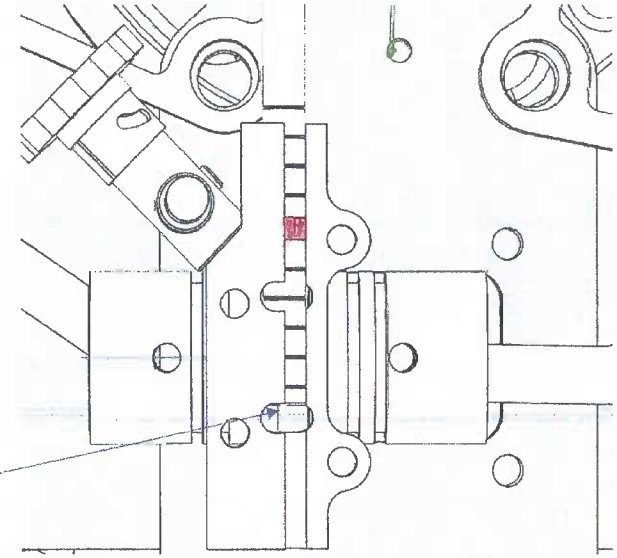
This shows the pistons at their closest, AKA, TDC.
Rings are all past the ports, valve is open to the atmosphere at bottom 'EXHAUST' Port





At 98 Deg. Rotation the LH edge of the POWER piston Chamfers begin to open to the INTAKE/EXHAUST Ports, the Valve opening is above the INTAKE port, sealing the INTAKE port, Full exhausting can begin.

Shown in approximate degrees of Flywheel Rotation



At 173 Deg. Rotation the POWER & PUMP pistons are at their closest point & on LH side, the EXHAUST port is still open.
The Power piston is still drifting slowly to the LH, as is the PUMP piston.
At 198 Deg. Rotation the PUMP is moving faster to the RH side than the POWER piston. The Exhaust port is still open to atmosphere.
At 218-221 Deg. Rotation the Valve closes the EXHAUST port and a vacuum begins to be created. INTAKE port is sealed off by the end of the Valve. (*Will vary dependent on Valve end Chamfer/Radius*) Both Pistons are moving to the RH, Power piston slowly, Pump piston quickly.

At 233 Deg. Rotation the valve begins to open to the INTAKE port.
At 269 Deg. the Chamfer seals off the Intake port.
At 277 Deg. the top Ring seals off the intake port, and full compression begins.
From this point on the rings are sealing off the ports, and compression of fuel is occurring.