Performance engine preparation

Effective compression ratio

- Calculation based on the volume at IVC

- $\frac{\text{Piston displacement @ IVC + clearance volume}}{\text{Clearance volume}}$

- Limited to about 7:1 with pump gasoline & 100% VE
- Can be higher with VE lower than 100%
- Can be higher with Aluminum heads

Performance engine preparation

Effective compression ratio (cont.)

- Why high compression pistons?

  To keep intake valves open longer

  Maintain the same effective compression ratio

  Volumetric efficiency improves

Performance engine preparation

Effective compression ratio with cam specs

- Use cam specs to determine IVC point
- Determine rod ratio => Rod length / stroke length
- Determine percent of total cylinder volume at IVC
- Multiply percent by total cylinder volume
- Calculate effective compression ratio

- Show examples from EA Pro