

Explore our Technologies

Variable Cam Timing

for Commercial Vehicles



Variable Cam Timing from BorgWarner

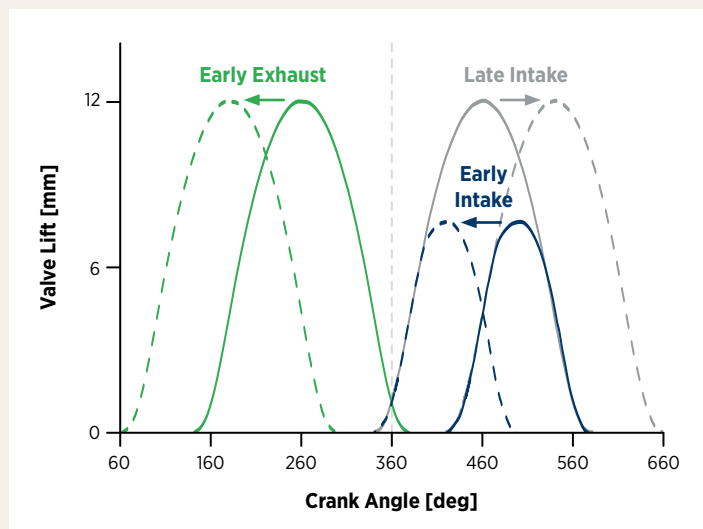
BorgWarner's Hydraulic cam phaser (hVCT)

developed for heavy duty commercial vehicle engines.

Technical Features

- VCT system comprised of hydraulic cam phaser with single oil feed center bolt and front mounted variable force solenoid (VFS)
- Easy engine modifications for cam phaser system integration
- Continuous phase adjustment up to 80 crank deg Range of Authority (ROA)
- High actuation speed
- Design specific for high engine displacement architecture and cam torque
- Materials and design validated for long lifetime requirements
- Multiple hVCT technologies available including:
 - Torsional Assist (TA) and Cam Torque Actuated (CTA & iCTA) that reduce oil needs and improve actuation speed based on application
 - Mid Position Lock (MPL) with passive failsafe

HD Diesel - Dual Independent VCT



System Benefits

- Enables Miller cycle, early exhaust opening, iEGR, scavenging and more
- Reduced fuel consumption
- Reduced emissions and aftertreatment thermal benefits:
 - Improvement in Soot/NOx trade-off
 - Light off and keep warm strategies
 - Internal EGR
- Improved performance & drivability
 - Lug torque increase
 - Linear engine braking control
 - Airflow control – new system calibration opportunities (Turbo, EGR, EATS)
- Alternative and dual fuel enabler (e. g., Hydrogen, Natural Gas)
 - Performance from valve overlap while avoiding slip emissions and backfire risks
 - Knock mitigation and NOx reduction
 - Variable effective compression ratio for dual fuel applications

HD Diesel - Exhaust Cam Phasing

