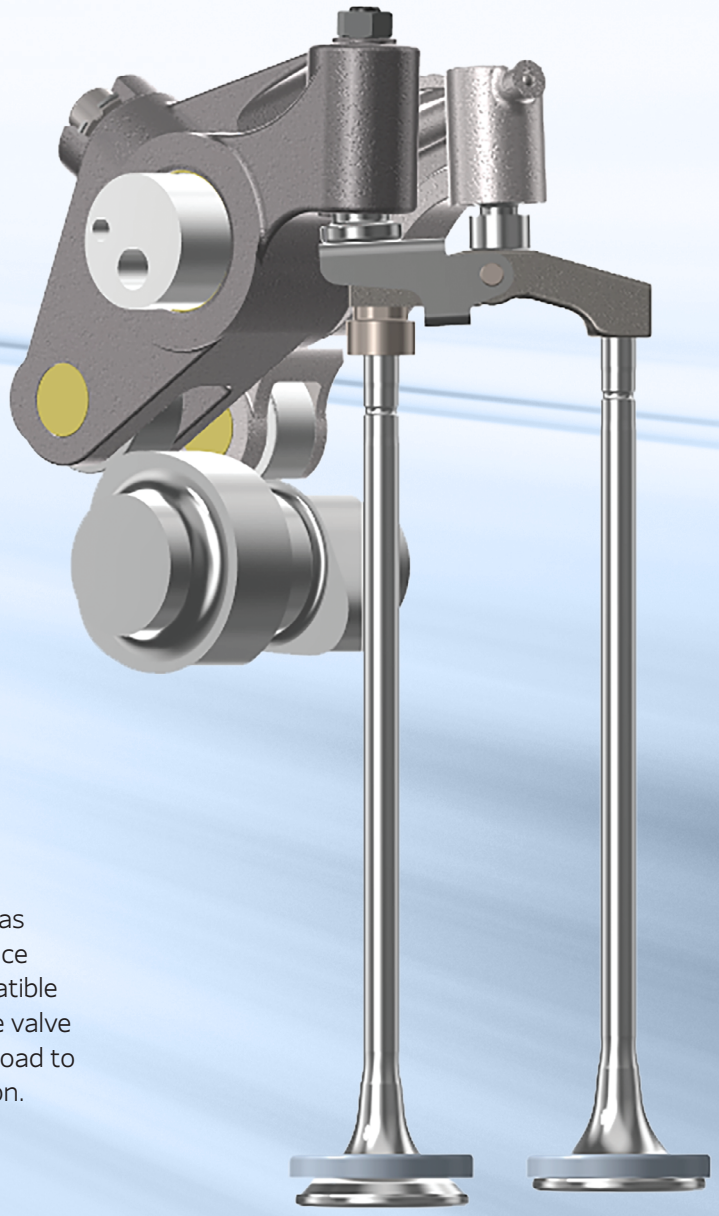
Lashless valvetrains with engine braking



Fulcrum Bridge and Spring Bridge

Hydraulic Lash Adjuster (HLA) technology has been used on heavy-duty engines to eliminate the need to set and adjust lash, as well as to optimize the cam design, to enhance engine performance and efficiency. Conventional engine brakes and HLAs are incompatible because the HLA will over-extend during braking causing possible valve to piston contact. Jacobs® lashless technologies apply a reactive load to the HLA during the engine braking event to prevent over extension.

BENEFITS

- Improves fuel economy and emissions
- Enables the use of hydraulic lash adjusters and a Jacobs Engine Brake® providing a simple, cost effective solution without compromise
- Eliminates the need to adjust valve lash, which is particularly important for natural gas and hydrogen applications
- Suite of solutions available for any valvetrain
- Cuts production time and cost at the manufacturer by eliminating the need to set lash on the assembly line, a common bottleneck for engine production

Jacobs®

LEARN MORE

BENEFITS

IMPROVED PERFORMANCE AND EFFICIENCY FROM OPTIMIZATION OF HYDRAULIC CAM DESIGN

A hydraulic cam design allows for optimization in the seating ramp areas which can lead to improvements in fuel economy and emissions. HLAs with lashless technologies also allow for more consistent valve motions throughout all engine operating conditions.

INCREASED VEHICLE UPTIME WITH REDUCED MAINTENANCE TIME AND OPERATOR COSTS

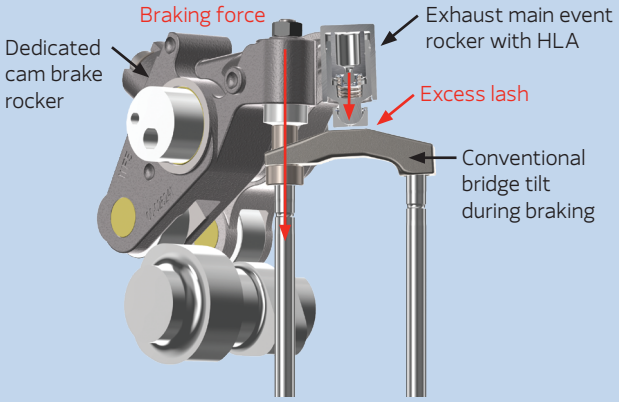
Eliminating the need for setting lash in service improves vehicle uptime and reduces maintenance time, thereby improving total cost of ownership for the operator. This is especially important for applications where valvetrain access is challenging, such as off-highway applications in dirty environments.

REDUCED NOISE, VIBRATION AND HARSHNESS (NVH) WITH IMPROVED VALVE SEATING

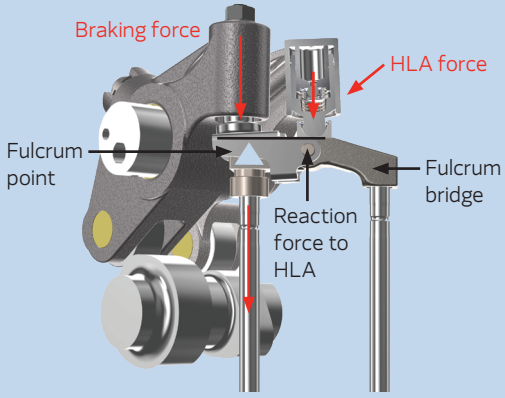
HLAs allow for better control of the valve seating event, thereby reducing the NVH associated with the valvetrain.

COMPRESSION RELEASE BRAKING EVENT

CONVENTIONAL BRAKING WITH HLA

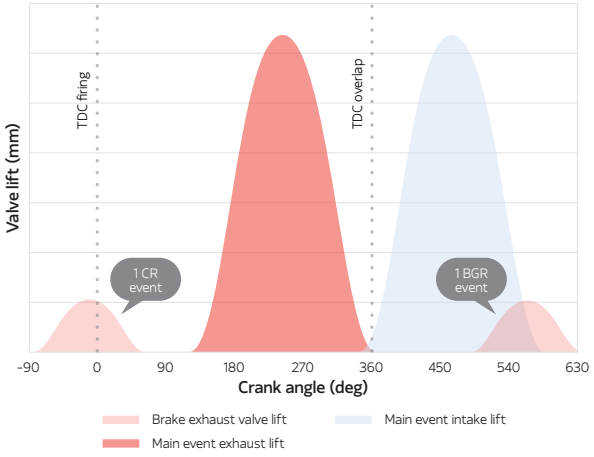


BRAKING WITH FULCRUM BRIDGE AND HLA

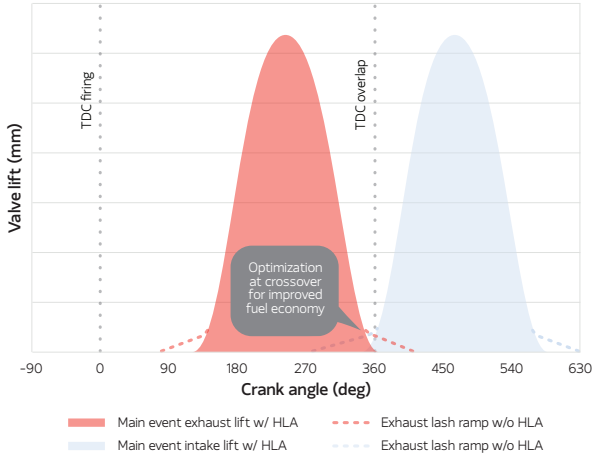


HOW IT WORKS

COMPRESSION RELEASE BRAKE VALVE MOTIONS



VALVE LIFTS WITH & WITHOUT HLA



cummins.com

Bulletin 6482471 Produced in U.S.A. Rev. 10/24