Simulation and Analysis of HP/LP EGR for Heavy-Duty Applications (P-11)

Advanced Controls Development

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HP/LP EGR Simulation

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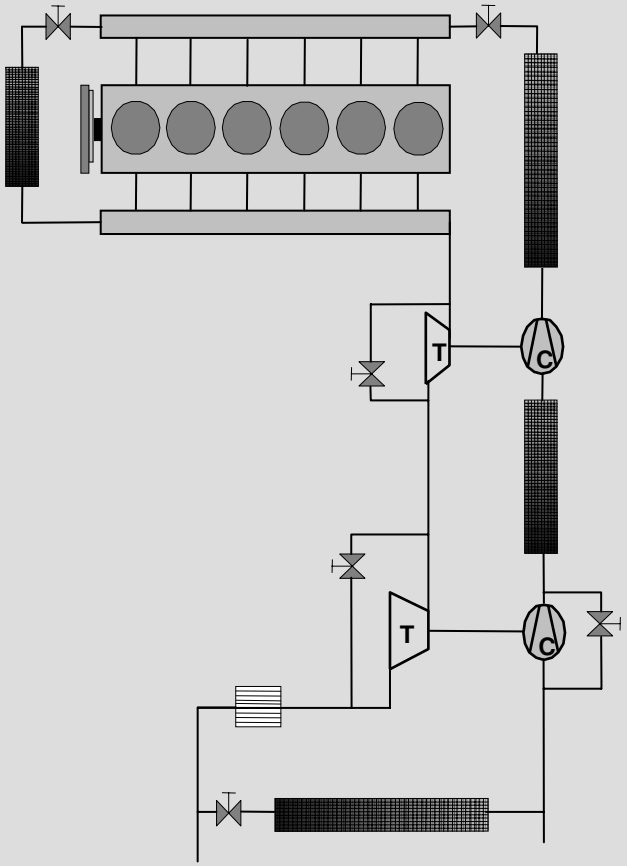

High and Low Pressure EGR can be combined for an advanced airpath control strategy

- Dynamic compensation can provide EGR during actuator saturation.
- Lower intake temperatures can be achieved with mixed fuel efficiency results.
- Suppression of NOx emissions can yield a lighter load on aftertreatment systems.

Results & Outlook

- EGR split can be used to lower intake manifold temperature
- Cooler and denser EGR charge allows for a higher EGR rate while meeting the same lambda and boost setpoints.
- EGR can be maintained during DPF regeneration