

A hand is shown adjusting a circular dial labeled 'CO2'. The dial is set against a scale with 'MAX' at the top and 'MIN' at the bottom. The dial has a blue glow and a textured surface. The background is black, and the left side of the image is a solid teal color.

BSVI
April 2020

BS – VI will come into effect from April 2020

Mechanics of BS-VI

▶ Bharat Stage VI (BS-VI) norms will take effect in India from **1 April 2020**

▶ BS-VI is the **most advanced emission standard** for automobiles and is equivalent to Euro-VI norms

▶ In order to **reduce vehicular pollution**, the government decided to leapfrog from BS-IV to BS-VI

▶ The new norms make on-board diagnostics (**OBD**) **mandatory** for all vehicles



▶ The OBD unit can identify likely **areas of malfunction** by means of default codes stored on a computer

▶ For two-wheelers, manufacturers will introduce a **fuel injection system**—a first in India

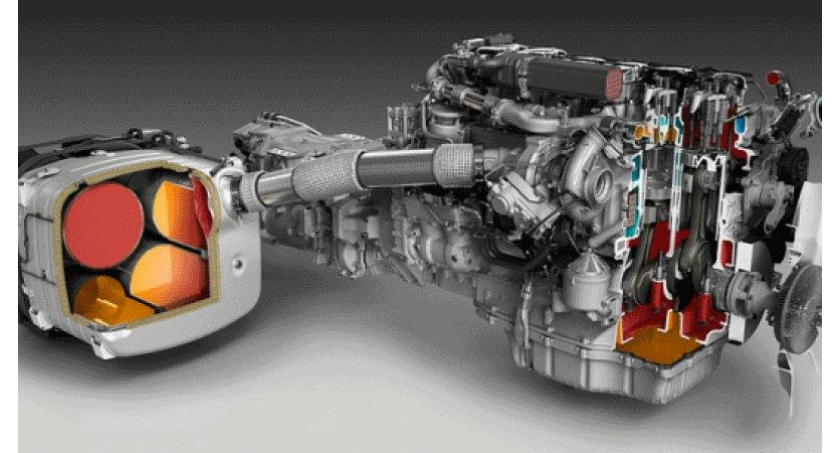
What will change : Powertrain

Technology: BS - IV



- Simple CRDI Engine

Technology: BS - VI



- CRDI Engine + VGT
- Highly Complicated engines with advance Variable Geometry Turbocharger and Sensors
- EGR + SCR both
- NOX Control: SCR System (Closed Loop)
- PM Control: DOC + DPFs
- Ammonia slip catalyst
- Three way Catalyst

What will change: Price & maintenance



Price: BS - IV

Vehicle Price: Rs 20 Lacs
EMI: Lesser EMI

Maintenance: BS - IV

Lesser Maintenance



© Can Stock Photo - csp18663693

Price: BS - VI

Vehicle Price: Approx. Rs 25 Lacs
EMI: Increase by 15K-18K per month

Maintenance: BS - VI

Uncertain: Only can be maintained at
High-end Company Workshops

Lot of sensor, Electronic engines, multiple
filters etc.

What will change : Driving Skills required

Driver Skill: BS - IV



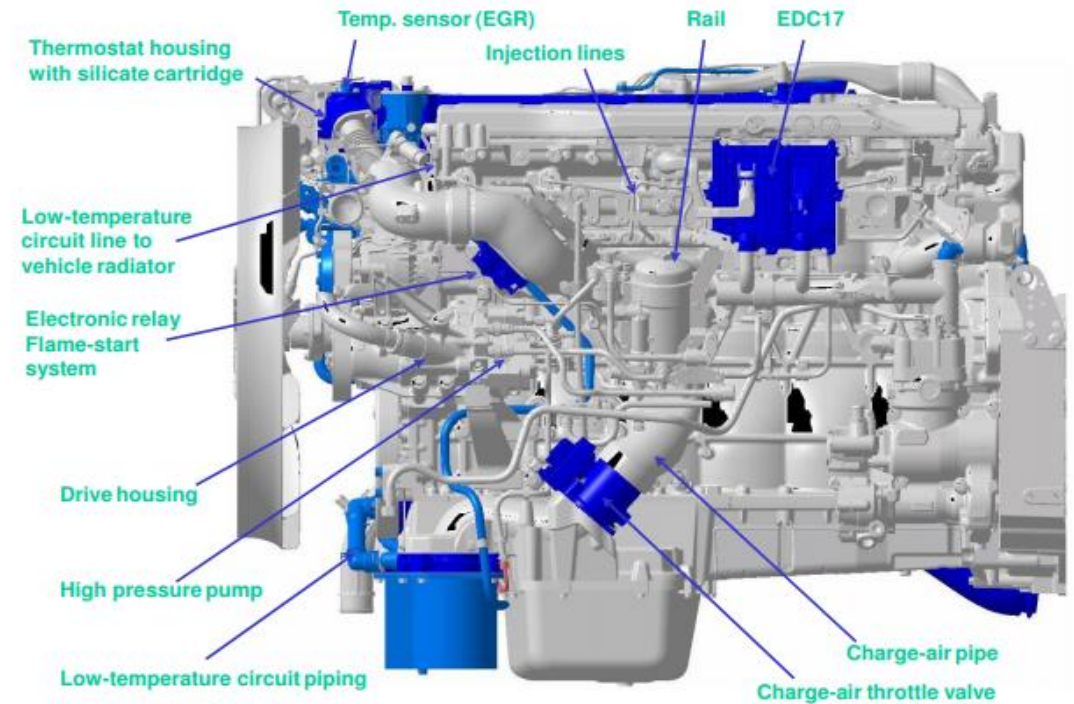
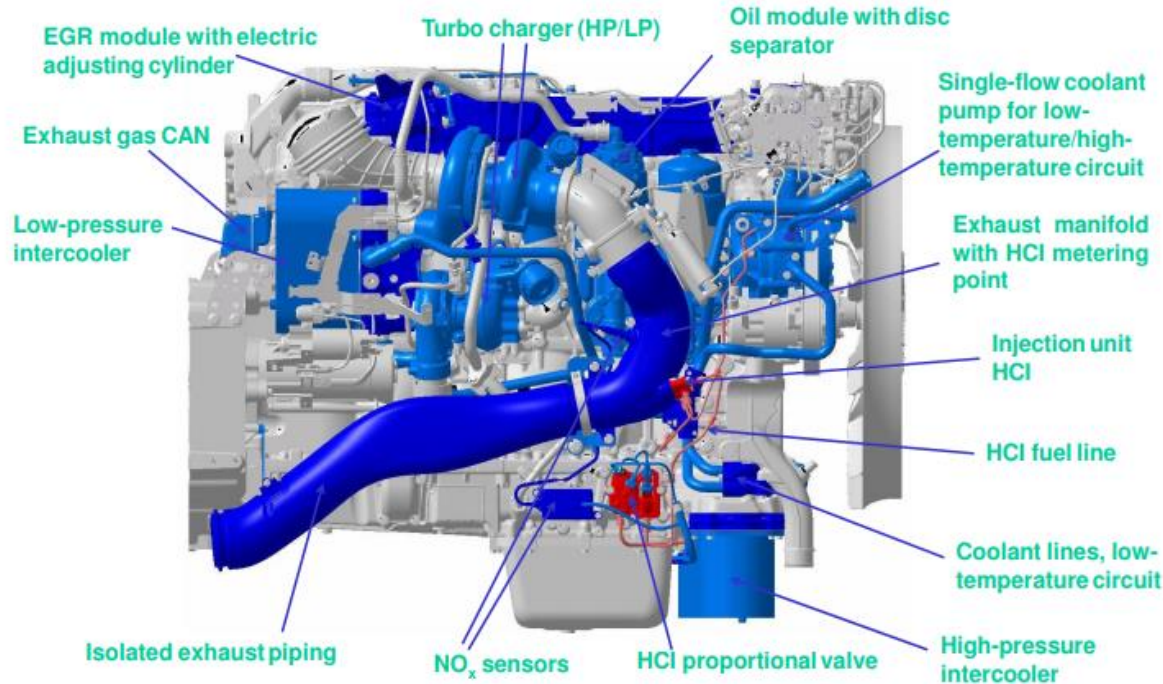
- Drivers need not possess high skill as handling the BS - IV technology is easier

Driver Skill: BS - VI



- **BS - VI would be electronic and tech heavy, drivers would be requiring skills to handle the technology**
- **Need to be familiar with OBD Systems**

BS - VI Engines: More Parts , More Complications



Selective Catalytic Reduction (SCR)

1. Diesel oxidation catalyst (DOC)
 - Formation of NO₂ for CRT effect in the DPF
 - Catalytic combustion of hydrocarbons for regeneration
2. Diesel particulate filter (DPF/ CRT):
 - Separation of soot and ash
3. Hydrolysis catalytic converter (mixing tube):
 - Evaporation of the AdBlue®
 - Mixing with exhaust gas
 - Conversion of AdBlue® into ammonia NH₃ and CO₂
4. SCR catalytic converter:
 - Conversion of nitrogen oxides into nitrogen and water
5. AMOX (ammonia oxidation catalyst):
 - Catalyst coating on SCR catalytic converter to avoid NH₃ slip
 - Excessive NH₃ will be trapped and converted to N₂ + H₂O

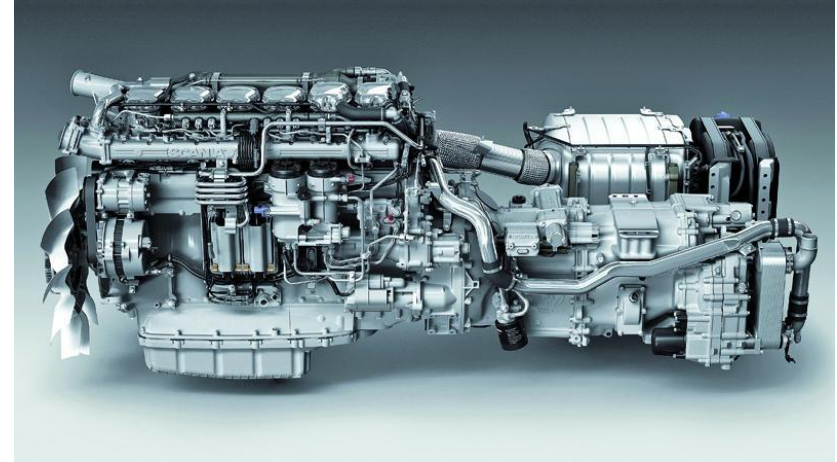
- Minimum Additional 20 sensors will get added in Engine Function
- Mandatory SCR Engine with Combustion Modification (DPF)
- AdBlue/ DEF usage mandatory
- On Board Diagnostics will be upgraded with more sensors
- Variable Geometry Turbocharger will get added

BS - VI Engines: More Parts , More Complications

Control unit side



Turbo charger side



Belt drive side



Flywheel side

