

PACCAR Australia



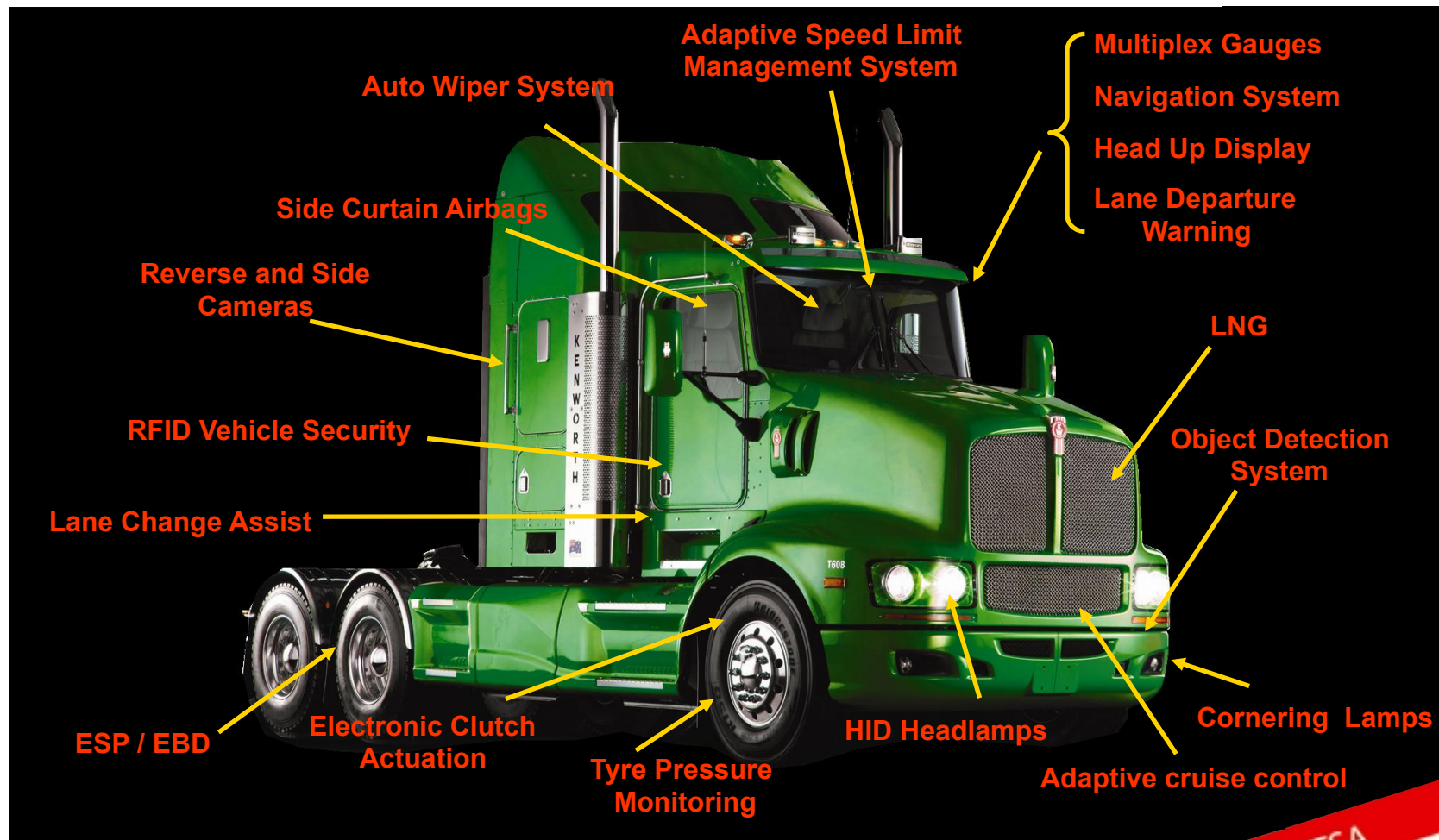
Technology Developments

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Product Development Manager



KENWORTH Innovation Truck



Safety



Productivity



Environment



Costs

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KENWORTH E.S.S.

ALL NEW

KENWORTH E.S.S.

Electronic Safety Systems



For your reference we have defined the benefits of the Kenworth E.S.S. (Electronic Safety Systems) available on the full range of Kenworth heavy duty trucks.

Kenworth trucks are also application engineered for their specific tasks and duties which improves operational safety and handling.

New safety features are being developed all the time, and become available after extensive testing in Australian conditions to ensure they meet Kenworth's high standards of reliability and durability.

MODEL	ABS	DTC	EBD	ATC	ESP	TRM	ACB
T360	✓	✓	✓	✓	✓	*	*
T368	✓	✓	✓	✓	✓	*	*
T402	✓	✓	✓	✓	✓	*	*
T408	✓	✓	✓	✓	✓	*	*
T408AH	✓	✓	✓	✓	✓	*	*
T608	✓	✓	✓	✓	✓	*	*
T608	✓	✓	✓	✓	✓	*	*
T908	✓	✓	✓	✓	✓	*	*
K108	✓	✓	✓	✓	✓	*	*
C5	✓	✓	✓	✓	✓	*	*

* Available in late 2009, subject to final testing

ABS ANTILOCK BRAKING SYSTEM
Prevents wheel lock-up when the vehicle is over braked, often reducing stopping distances. Vehicles can retain directional stability and steerability, even under emergency braking on slippery road surfaces. ABS also reduces the danger of jackknifing in the case of vehicle combinations.

DTC DRAG TORQUE CONTROL
Prevents the drive wheels from compression locking on a slippery surface by reducing engine power to assist with vehicle stability.

EBD ELECTRONIC BRAKE-FORCE DISTRIBUTION
EBD helps maintain appropriate brake force to the braking wheels, reducing the differential wheel speed between all wheels, which optimises the brake force on the appropriate wheels. If the EBD function is activated, conventional ABS will take over to prevent wheel lock-up.

ATC AUTOMATIC TRACTION CONTROL
Prevents wheel spin under acceleration as the drive torque exceeds the drive tyres to road surface adhesion. The ATC system communicates with the engine ECU to reduce engine power or will apply the brake to the drive wheels depending on the low traction event.

ESP ELECTRONIC STABILITY PROGRAM
Helps to restore vehicle stability through the use of ABS, ATC, steering direction and vehicle directional stability information. Steering angle, yaw, suspension pressure and brake application pressure sensors monitor the intended vehicle directional control versus actual vehicle movement. ESP intervenes by applying individual wheel brakes, or reduced engine torque when required to enhance vehicle stability. The system is compatible with most trailer combinations.

TRM TRAILER RESPONSE MANAGEMENT
Enhances trailer brake actuation by EBD compatible trailers using for improved trailer braking response to assist with reduced stopping distances.

ACB ACTIVE CRUISE WITH BRAKES
Helps assist with accident avoidance, by using on board computers and radar to engage the engine and wheel braking systems if other vehicles on the road enter unsafe distances from the truck.



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KENWORTH E.S.S.

- ABS – Antilock Braking System
- ATC – Automatic Traction Control
- DTC – Drag Torque Control
- EBD – Electronic Brake-Force Distribution



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(EBD) Electronic Brake Force Distribution

- Monitors Wheel Speed under Braking
- Optimises brake force by reducing differential wheel speed between all wheels.



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KENWORTH E.S.S.

- ABS – Antilock Braking System
- ATC – Automatic Traction Control
- DTC – Drag Torque Control
- EBD – Electronic Brake-Force Distribution
- ESP – Electronic Stability Program



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(ESP) Electronic Stability Program

- Helps to restore vehicle stability through the use of ABS, ATC, EBD.
- Monitors intended vehicle directional control versus actual vehicle movement.
 - Applies individual wheel brakes, or reduces engine torque
- Compatible with multi-trailer combinations.



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**WITHOUT
Bendix
Stability**



**WITH
Bendix
Stability**

KENWORTH E.S.S.

- ABS – Antilock Braking System
- ATC – Automatic Traction Control
- DTC – Drag Torque Control
- EBD – Electronic Brake-Force Distribution
- ESP – Electronic Stability Program
- TRM – Trailer Response Management



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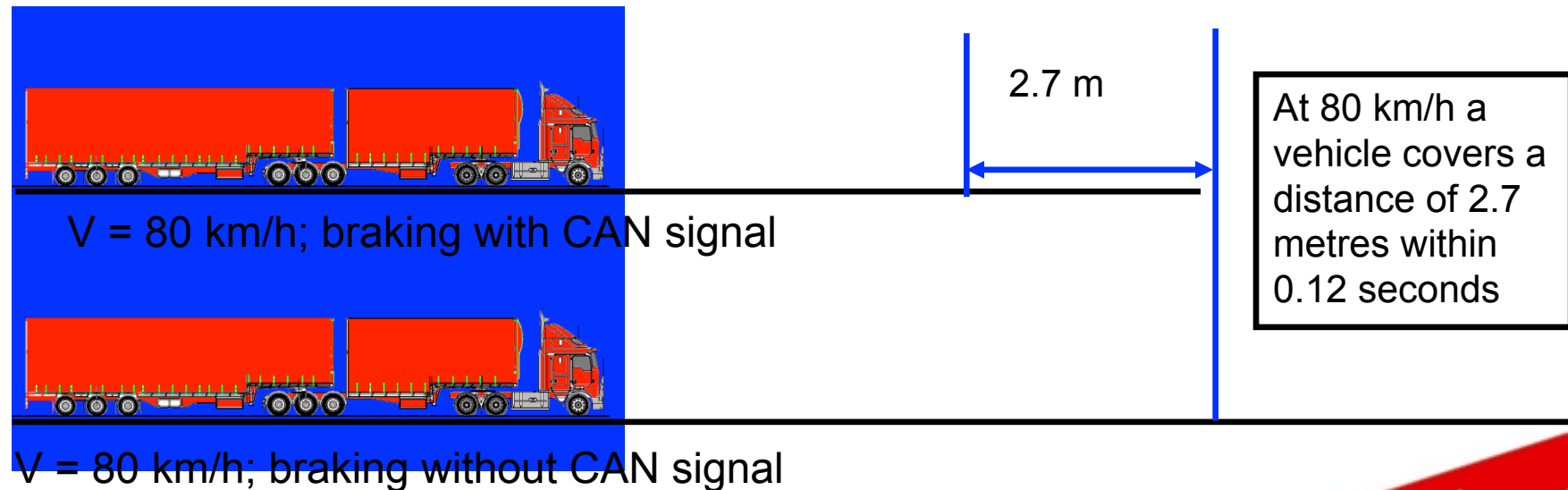


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(TRM) Trailer Response Management

- Translates pneumatic signal from the brake valve into electronic signal for trailer EBS system.



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KENWORTH E.S.S.

- ABS – Antilock Braking System
- ATC – Automatic Traction Control
- DTC – Drag Torque Control
- EBD – Electronic Brake-Force Distribution
- ESP – Electronic Stability Program
- TRM – Trailer Response Management
- ACB – Active Cruise with Braking



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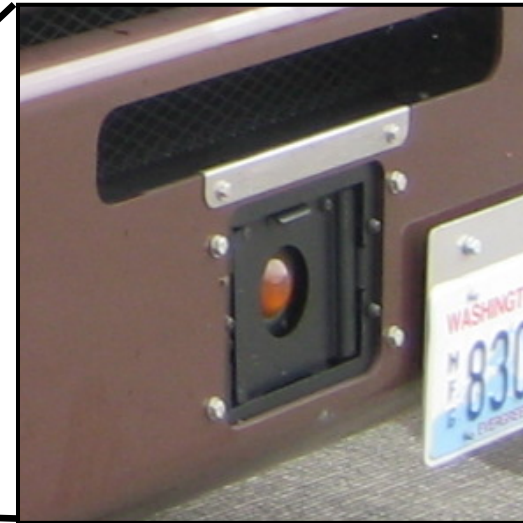


Costs



(ACB) Active Cruise with Braking

- Assists with accident avoidance with Cruise Control by maintaining a safe distance to lane traffic.



✓ Safety

✓ Productivity

✓ Environment

✓ Costs

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Roll Over Curtain Airbag System



✓ Safety

✓ Productivity

✓ Environment

✓ Costs

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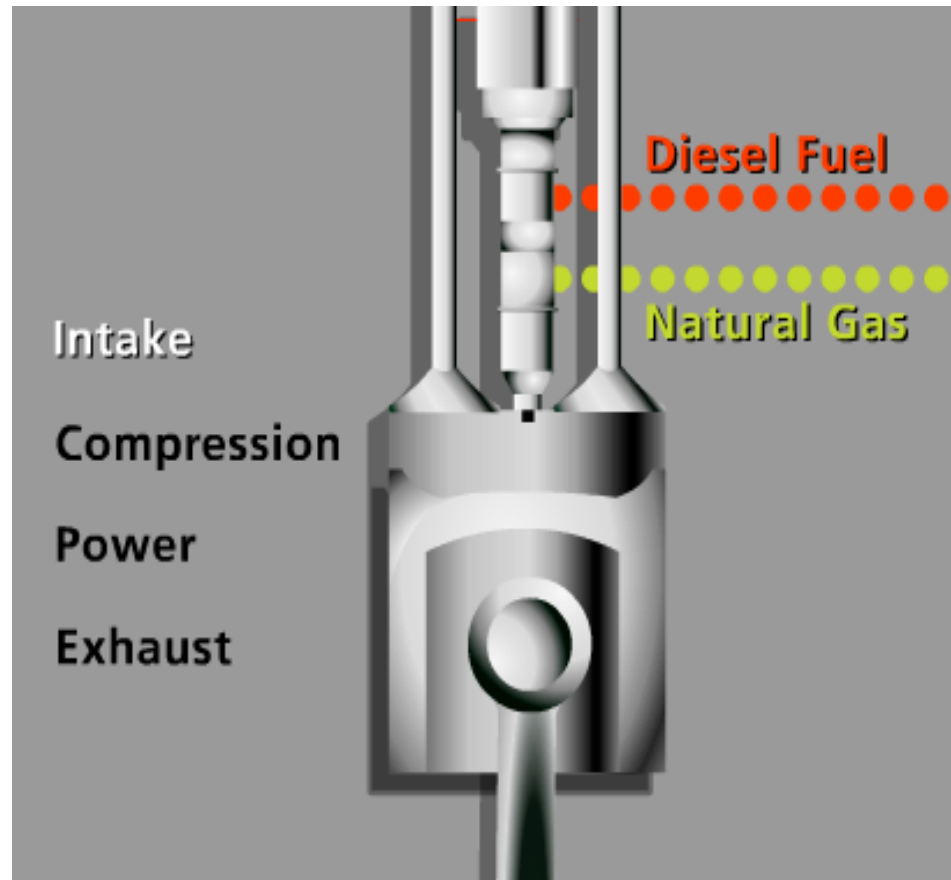
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Alternative Fuels

- LNG
 - Westport HPDI



HPDI Technology



✓ Safety

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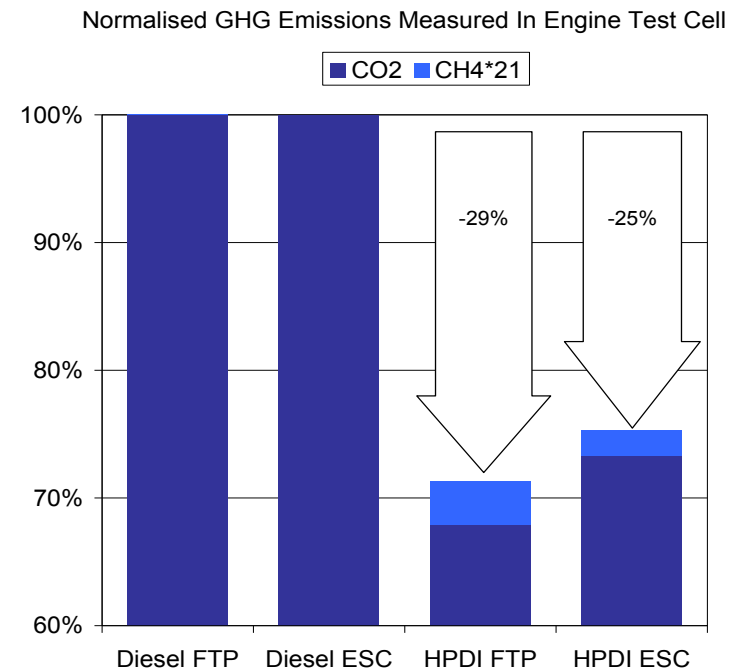
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HPDI Emissions

- 25% GHG reduction on ESC test and 29% reduction on FTP
- PM at 50% of base diesel engine



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Alternative Fuels

- LNG
 - Westport HPDI
- Hybrid
 - Eaton



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Hybrid Technology



Hybrid Technology

H ydraulic
L aunch
A ssist



✓ Safety

✓ Productivity

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✓ Costs

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