

ONROAD

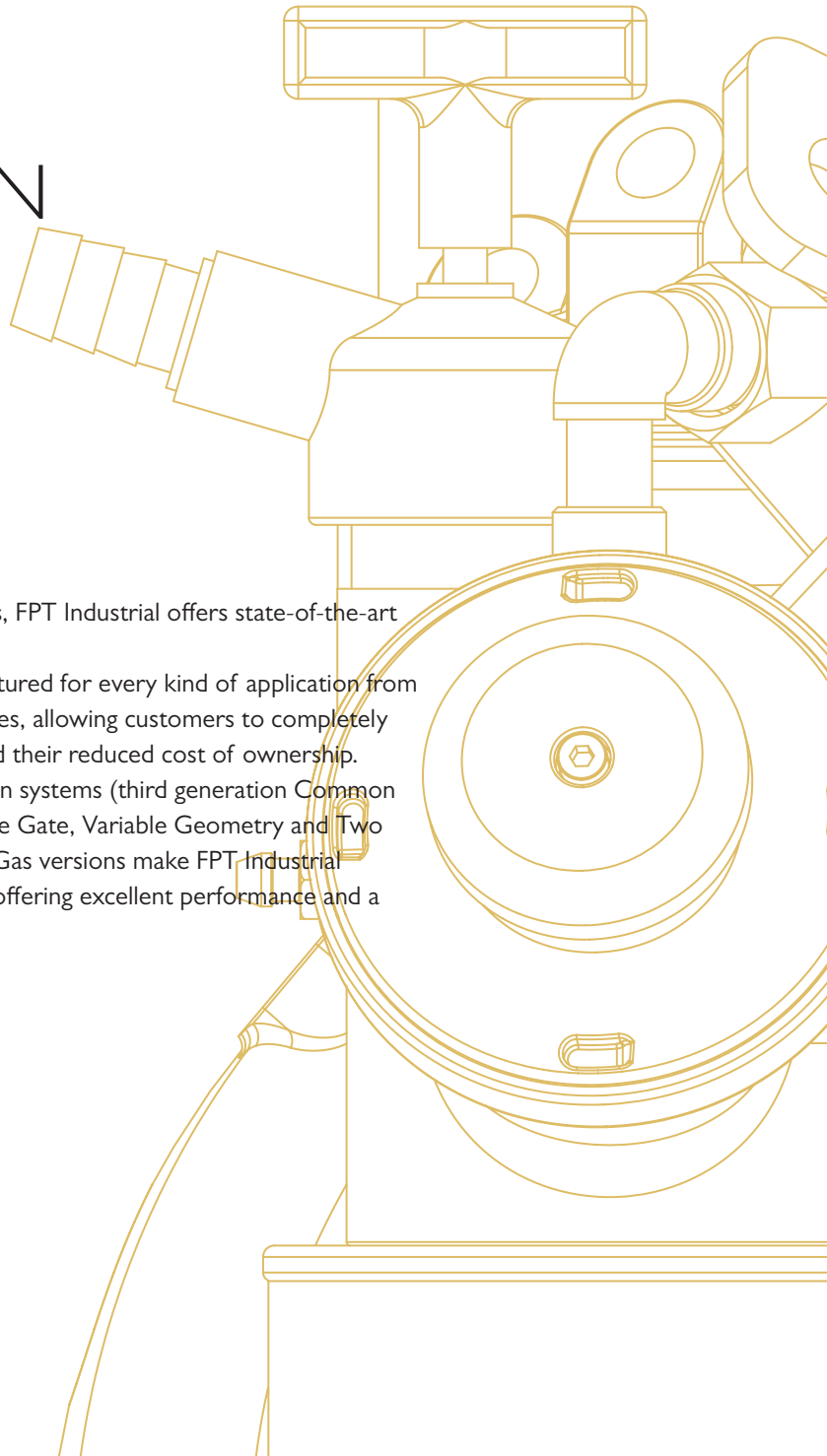


THE ROAD TO INNOVATION

Whatever you should move, either people or goods, FPT Industrial offers state-of-the-art powertrain solutions for On Road applications.

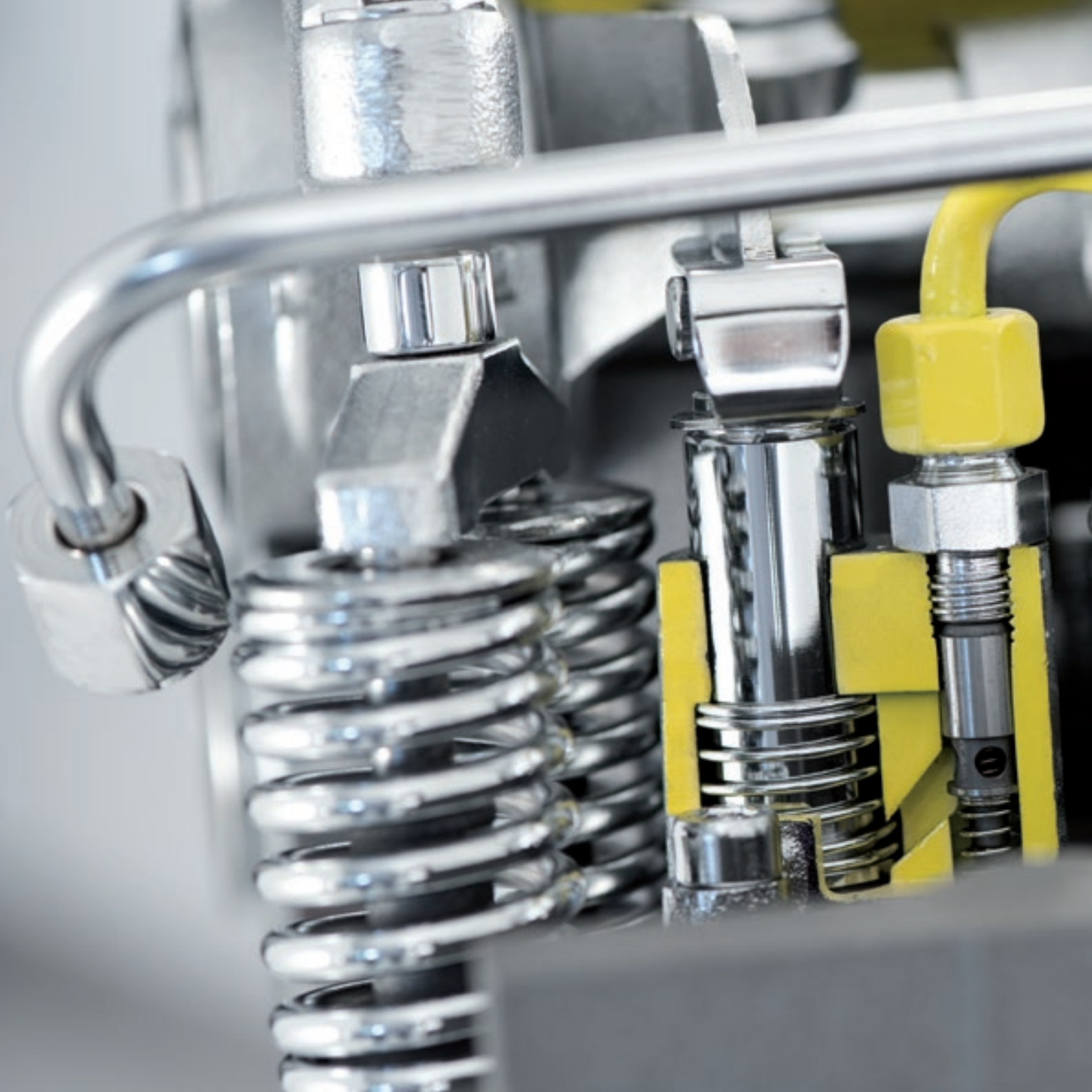
FPT Industrial engines are designed and manufactured for every kind of application from light, medium and heavy commercial vehicles to buses, allowing customers to completely rely on their cutting-edge technological contents and their reduced cost of ownership.

The presence of sophisticated electronic injection systems (third generation Common Rail), the choice of many air handling devices (Waste Gate, Variable Geometry and Two Stage Turbocharger) and the availability of Natural Gas versions make FPT Industrial engines for On Road applications the best solution offering excellent performance and a true respect for environment.



FPT Industrial offers superior technology and outstanding advantages





THE SOLUTION FOR THE FUTURE, TODAY

SCR ONLY TECHNOLOGY FOR Euro VI step C

Technological excellence and product innovation for FPT Industrial represent the truly determining factor and part of its primary strategic mission. The company is focusing its research and development activities in order to become the innovation leader in the industrial powertrain field and a reference provider of the most cost-efficient powertrain solutions for Euro VI step C.

FPT Industrial aims to comply with the new emission limits ensuring a minimal impact on the vehicle architecture and the lowest possible increase in cost, an objective that will be achieved through HI-eSCR technology. The breakthrough patented technology, based on an experience of more than 25 years and 650.000 engines produced, allows our engines to meet Euro VI step C standards without resorting to EGR (Exhaust Gas Recirculation), guaranteeing a very high NO_x conversion efficiency (over 95% versus 80-85% of best competitors).





STRALIS XP
TCO₂ CHAMPION

IVECO

STRALIS

Scenario

During the combustion process, inside a Diesel engine, the chemical energy is transformed into a mechanical one. Because of the chemistry of combustion, several toxic substances are produced, of which the most harmful are Nitrogen Oxides (NO_x) and Particulate Matter (PM).

The new Heavy Duty Euro VI step C exhaust emission regulations, which applied to all new heavy duty commercial vehicles and buses registered from 1st January 2017, introduce significant reductions in the On Board Diagnostic Threshold limits of these harmful pollutants:

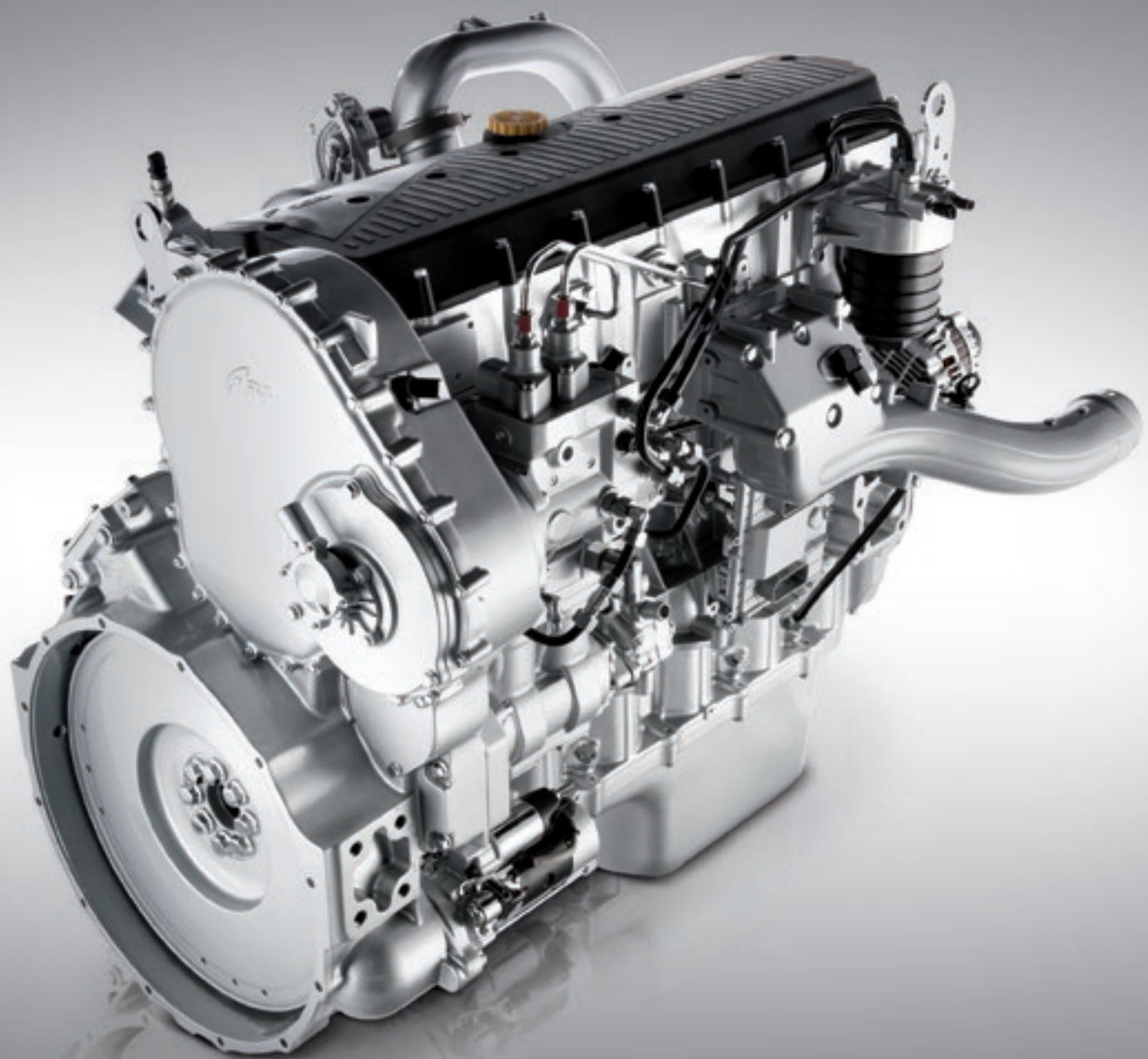
More severe OBD Thresholds Limits (OTL) for Particulate Matter down to 25 mg/kWh that has to be demonstrated in field (instead of functional monitoring, allowed during step A)

Lower OBD Thresholds Limits (OTL) for NO_x down to 1200 mg/kWh

Reagent consumption deviation: detection of 20% (Pending amendment back to 50%)

Urea quality must be detected against emission limits before the Emission Limit are exceeded; introduced to avoid tampering of the Reagent (incorrect quality or filling reagent tank with other liquids)

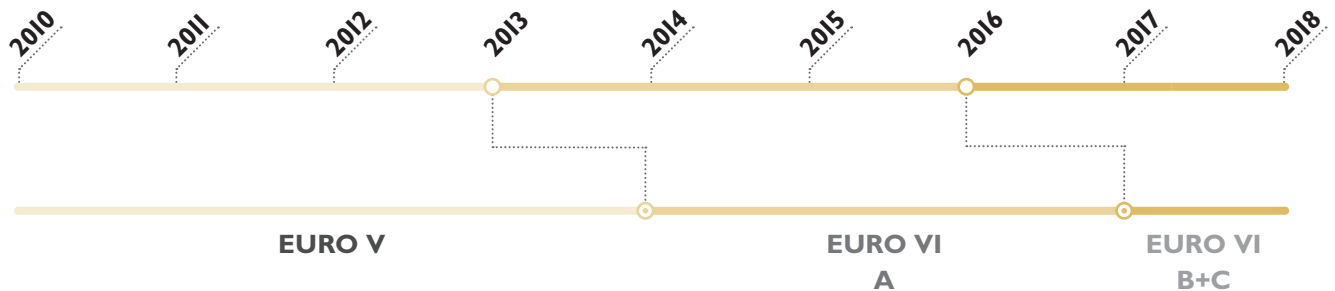




Euro VI Step C

Legal requirements and deadlines

Published on 13/06/2014 Postponement
of Phase B for Diesel engines
(integrated on Phase C)



Euro VI Step	NOx Limit (mg/kWh)	PM Limit (mg/kWh)	NOx OTL (*) (mg/kWh)	PM OTL (*) (mg/kWh)	EU Reagent quality (mg/kWh NOx) and Consumption Deviation (%)
A	460	10	1500	NA (**)	Reagent Quality NOx 900 CD 50%
B + C	460	10	1200	25	Reagent Quality NOx 460 = emission limit CD 20% (pending ECE approval back to 50%)

LEGEND

 New requirements of Step C vs. EuroVI A

(*) OTL = OBD Threshold Limit

(**) Monitoring of DPF allowed instead of the demonstration of OTL limit 25 mg/kWh

 New Homologations

 New Registrations

Euro VI step C engines

Based on an already state of the art engine range, Euro VI step C maintains the same base engines hardware of Euro VI step A, allowing our customers to retain their class leading features, such as minimized Total Cost of Ownership. Key to the optimization of combustion efficiency is high mean effective cylinder pressure and high injector nozzle pressures.

To achieve these aims, important changes to the crankcase and cylinder head design have already been made in Euro VI step A, resulting in an increase in structural rigidity and in swept volume. The engines fitted with the latest generation of multiple events Common Rail fuel injection equipment with peak nozzle pressures of up to 2200 bar. A Electronic Control Unit manage both engine parameters and accurate control of the after-treatment system. The Control Unit has been designed to optimize packaging and to fully integrate all engine, SCR and DPF (Diesel Particulate Filter) functions. For Cursor engines using the Variable Geometry Turbocharger, electronic control is used to optimize load response

at low engine speeds and to increase the effectiveness of the engine brake. In addition, all engines make use of the flap type engine brake valve in order to support the aftertreatment thermal management and to guarantee engine brake performance up to 518 kW @ 2600 rpm.

For the very best in environmental performance, the engines were equipped with closed circuit engine breathing systems even at Euro IV/V level and this feature is retained for Euro VI. By means of the optimized combustion regime, engine-out particulate emissions are very low, meaning that forced/parked regeneration of the DPF is not required, an important aspect in terms of fuel consumption and periodic servicing. In addition, since the engine only breathes clean filtered air, rather than re-circulated exhaust gases, engine wear is maintained very low and oil change intervals are maintained high, with service intervals of up to 150.000 km without increased oil sump.

This too brings advantages in terms of operating costs and reduced down time for scheduled maintenance.

Advantages



- ✓ Low operating costs thanks to fluids economy leadership
 - ✓ Best in class vehicle uptime due to low engine wear and long maintenance intervals (up to 150.000km, depending on mission)
 - ✓ Best in class on specific power and torque
 - ✓ Engine and Hi-eSCR aftertreatment system compact and lean design assuring low total weight and easy installation
-

HI-eSCR system

Due to the opposite reaction to combustion temperature, the reduction of either of the combustion products (NO_x or PM) necessarily implies the increase of the other one. In order to further reduce NO_x , as required by Euro VI step C, it is necessary to work on different combustion management and exhaust gas treatment system.

This means that Euro VI step C emission limits can be reached only through the use of SCR (Selective Catalytic Reduction), either with or without EGR. The use of an EGR system reduces the NO_x emissions in the combustion chamber, through exhaust gas recirculation with a consequential increase in the production of particulate matter (PM) and a reduction in combustion efficiency. Furthermore, with high engine-out particulate emissions, a forced regeneration of the DPF is required.

FPT Industrial has chosen instead to increase the engine combustion efficiency to reduce the PM without using re-circulated exhaust gasses for medium and heavy duty engines. While the remaining PM is reduced in the passive DPF, the NO_x is reduced in the SCR system, while improving fuel consumption, performance and reliability. FPT Industrial's HI-eSCR is able to reduce the NO_x levels more than 95%.

The "SCR Only" technology sees the introduction of a new integrated approach that is the result of extensive research by FPT Industrial, research that has led to the creation of numerous significant patents.

Patents



“Closed” loop control to allow precise dosing of NO_x and ammonia sensors to provide accurate info on the composition of exhaust gases and reduce the use of AdBlue



Adaptive AdBlue dosing system in order to cut the level of NO_x emissions entering the SCR catalyst



Thermally insulated high turbulence mixing, to allow homogeneous hydrolysis of urea, creating correct distribution in exhaust gas flow



Improved exhaust gas temperature control to speed up SCR light-off in the cold part of emission cycle

All the components of the exhaust after-treatment system are contained in a compact and fully enclosed structure thereby not impeding body building or chassis equipment mounting activities and minimizing the weight impact.

Main Components

HI-eSCR main components are:

- ✓ *The Diesel Oxidation Catalyst (DOC)*
- ✓ *The Passive Diesel Particulate Filter (DPF)*
- ✓ *The AdBlue dosing module*
- ✓ *The AdBlue mixer*
- ✓ *The Selective Catalytic Reduction (SCR)*
- ✓ *The Clean Up Catalyst (CUC)*

The whole system is fitted with a network of integrated sensors to control the NO_x and any excess of NH₃ (ammonia) emitted.

Exhaust gas flow coming from the engine enters the DOC, where NO is oxidised in NO₂, which helps to reduce the PM in the subsequent passive DPF. The filter is automatically regenerated at lower temperatures compared to the active DPF used by our competitors. The ECU (Engine Control Unit), the brain behind the

HI-eSCR system, checks, through integrated sensors' network, the amount of Water-Urea (AdBlue) solution to be injected in the exhaust pipe. To increase the durability of the injector, Dosing Module is cooled by the engine coolant.

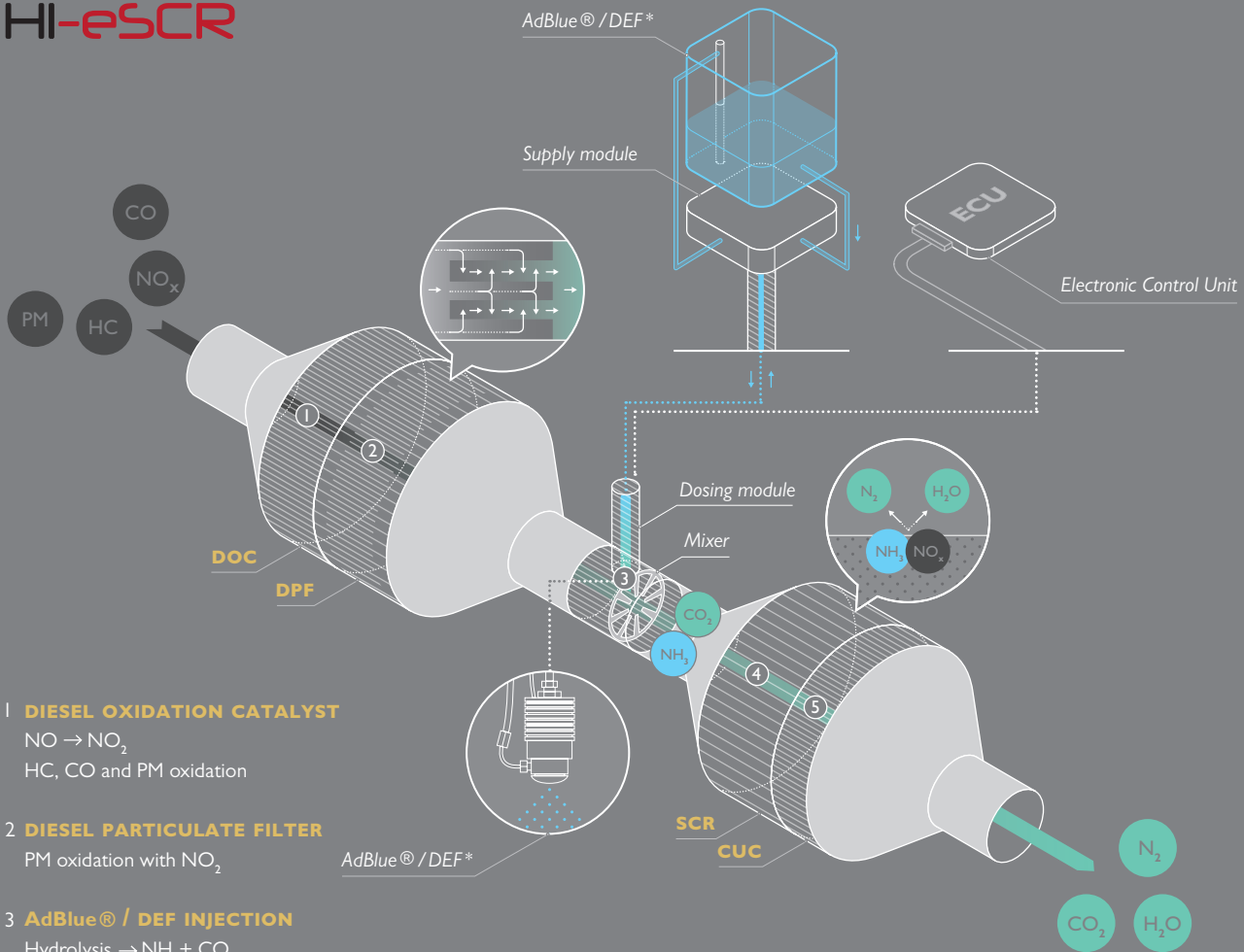
The HI-eSCR after-treatment system adopts a catalyst converting NO_x into Nitrogen (N₂) and Water (H₂O) thanks to the chemical reaction with a Water-Urea solution. In the end, the integrated CUC eliminates the remaining ammonia (NH₃). The result is a reduction of NO_x superior to 95%.

Additional Euro VI step C new contents are:

- Particulate Matter sensor and new diagnostic SW to check the new OBD PM limits;
 - High accuracy DPF Delta Pressure sensor to improve DPF efficiency monitoring;
 - DOC with new coating specs and SCR volume increase to guarantee new OBD NO_x limits without EGR;
 - New Temperature sensor at DPF inlet improving DOC/DPF management;
 - New Urea quality sensor in order to assure high reagent quality.
-



HI-eSCR



1 DIESEL OXIDATION CATALYST

NO → NO₂
 HC, CO and PM oxidation

2 DIESEL PARTICULATE FILTER

PM oxidation with NO₂

3 AdBlue® / DEF INJECTION

Hydrolysis → NH₃ + CO₂

4 SELECTIVE CATALYTIC REDUCTION

NO and NO₂ reduction by NH₃ to N₂ and H₂O

5 CLEAN-UP CATALYST

Residual NH₃ oxidation

*AdBlue® / DEF = CO(NH₂)₂ + H₂O

LEGEND

PM Particulate Matter
 HC unburnt Hydrocarbons
 NO_x Nitrogen Oxides
 CO Carbon Monoxide
 N₂ Nitrogen
 CO₂ Carbon Dioxide
 H₂O Water

Six reasons to choose HI-eSCR

1 SCR HERITAGE

FPT Industrial's heritage in SCR technology is well-established. From the introduction of the Euro IV emission regulations in 2005 we have equipped more than 650.000 vehicles with this technology.

2 OUTSTANDING PERFORMANCE

Our engines are developed to maximize torque and power density with the shortest load response time, without compromising the impact on the environment, due to the use of the HI-eSCR system.

3 FUEL CONSUMPTION

The efficiency of the combustion process optimizes fuel consumption reducing customer running costs.

4 DPF PASSIVE REGENERATION

The absence of EGR improves engine efficiency and drastically reduces the outflow of particulate matter. This allows for the use of a passive DPF, where forced/parked filter regeneration will not be necessary. DPF filter replacement/cleaning for heavy duty applications is up to 600.000 km depending on the mission.

5 COMPACT PACKAGING

Compared to competitor's engines the thermodynamic efficiency of the FPT Industrial solutions allows to downsize displacement, not needing any additional cooling power, optimizing packaging space and minimizing weight.

6 MAINTENANCE INTERVALS

The optimized combustion process preserves oil physical properties reducing maintenance activities and related downtime. The engines maintain their best in class oil maintenance intervals of up to 150.000 km depending on the mission, without an increased oil sump.

The F1 Series

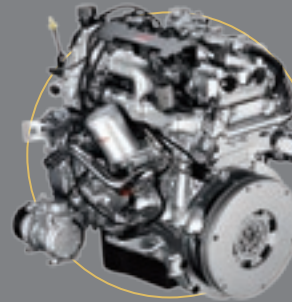
The F1 Series is the result of more than 35 years of experience in the field of light commercial vehicles. To deliver optimum efficiency and minimum oil consumption together with long service intervals, F1 engines feature the last generation Common Rail, four valves per cylinder, maintenance-free hydraulic valve and advanced air handling systems.

For this series, EGR (Exhaust Gas Recirculation) and SCR (Selective Catalytic Reduction) technology have been recognized as the best solution to make engines compliant with Euro VI standards.

For Euro 6 standard, there are 2 different solutions: Low Pressure EGR + NSC (NOx Storage Catalyst) to differentiate vs. price sensitive customers; High Pressure EGR + SCR to stay in the mainstream of the Total Cost of Ownership addicted customers.

The engines are available for both transversal and longitudinal installation in diesel and CNG/LNG versions.

S23 ENT



S30 ENT

S30 ENTG



APPLICATION	MODEL	CYLINDER ARRANGEMENT	AIR INTAKE	TURBOCHARGING	INJECTION SYSTEM	DISPLACEMENT LITERS	POWER			TORQUE			EMISSION STANDARD	EXHAUST SYSTEM
							KW	HP	RPM	NM	KGM	RPM		
○	S23 ENT	L4 / TAA	WG	ECR	2,3	93	126	3600	320	33	1800	Euro 4	ec-EGR + DOC	
○	S23 ENT	L4 / TAA	WG	ECR	2,3	71	97	3900	240	24	1800	Euro 4	ec-EGR + DOC	
○	S23 ENT	L4 / TAA	WG	ECR	2,3	78	106	3500	270	28	1500	Euro 5 / Euro 5+	ec-EGR + DOC + DPF	
○	S23 ENT	L4 / TAA	WG	ECR	2,3	93	126	3600	320	33	1800	Euro 5 / Euro 5+	ec-EGR + DOC + DPF	
○	S23 ENT	L4 / TAA	VGT	ECR	2,3	107	146	3600	350	36	1500	Euro 5 / Euro 5+	ec-EGR + DOC + DPF	
○	S23 ENT	L4 / TAA	WG	ECR	2,3	85	116	3500	320	33	1500	Euro 6	LPEGR + DOC + DPF + NSC	
○	S23 ENT	L4 / TAA	WG	ECR	2,3	93	126	3500	320	33	1500	Euro 6	LPEGR + DOC + DPF + NSC / ec-EGR + DOC + DPF + SCR	
○	S23 ENT	L4 / TAA	VGT	ECR	2,3	100	136	3600	350	36	1500	Euro 6	LPEGR + DOC + DPF + NSC	
○	S23 ENT	L4 / TAA	VGT	ECR	2,3	107	146	3600	380	39	1500	Euro 6	LPEGR + DOC + DPF + NSC / ec-EGR + DOC + DPF + SCR	
○	S23 ENT	L4 / TAA	VGT	ECR	2,3	115	156	3600	380	39	1500	Euro 6	LPEGR + DOC + DPF + NSC	
○	S23 ENT	L4 / TAA	VGT	ECR	2,3	127	173	3600	400	41	1500	Euro 6	LPEGR + DOC + DPF + NSC	
○	S30 ENT	L4 / TAA	WG	ECR	3,0	107	146	3500	350	36	1400	Euro 4	ec-EGR + DOC	
○	S30 ENT	L4 / TAA	WG	ECR	3,0	107	146	3500	350	36	1500	Euro 5 / Euro 5+	ec-EGR + DOC + DPF	
○	S30 ENT	L4 / TAA	VGT	ECR	3,0	125	170	3500	400	41	1250	Euro 5	ec-EGR + DOC + DPF	
○	S30 ENT	L4 / TAA	VGT	ECR	3,0	125	170	3500	430	44	1250	Euro 5+	ec-EGR + DOC + DPF	
○	S30 ENT	L4 / TAA	VGT	ECR	3,0	130	177	3500	400	41	1250	Euro 5 / Euro 5+	ec-EGR + DOC + DPF	
○	S30 ENT	L4 / TAA	2stT	ECR	3,0	150	204	3500	470	48	1400	Euro 5 / Euro 5+	ec-EGR + DOC + DPF	
○	S30 ENT	L4 / TAA	WG	ECR	3,0	107	146	3500	350	36	1500	Euro 6	ec-EGR + DOC + DPF + SCR + CUC	
○	S30 ENT	L4 / TAA	VGT	ECR	3,0	132	180	3500	430	44	1500	Euro 6	ec-EGR + DOC + DPF + SCR + CUC	
○	S30 ENT	L4 / TAA	2stT	ECR	3,0	150	204	3500	470	48	1500	Euro 6	ec-EGR + DOC + DPF + SCR + CUC	
○	S30 ENT	L4 / TAA	WG	ECR	3,0	107	146	3500	350	36	1400	Euro III	—	
○	S30 ENT	L4 / TAA	VGT	ECR	3,0	81	110	3500	260	27	1200	EEV	ec-EGR + DOC + DPF	
○	S30 ENT	L4 / TAA	VGT	ECR	3,0	96	131	3500	300	31	1300	EEV	ec-EGR + DOC + DPF	
○	S30 ENT	L4 / TAA	VGT	ECR	3,0	107	146	3500	370	38	1300	EEV	ec-EGR + DOC + DPF	
○	S30 ENT	L4 / TAA	VGT	ECR	3,0	110	150	3500	370	38	1320	EEV	ec-EGR + DOC + DPF	
○	S30 ENT	L4 / TAA	2stT	ECR	3,0	125	170	3500	400	41	1250	EEV	ec-EGR + DOC + DPF	
○	S30 ENT	L4 / TAA	VGT	ECR	3,0	129	175	3500	430	44	1600	EEV	ec-EGR + DOC + DPF + SCR + CUC	
○	S30 ENT	L4 / TAA	VGT	ECR	3,0	81	110	3500	260	27	1200	Euro VI A / C	ec-EGR + DOC + DPF + SCR + CUC	
○	S30 ENT	L4 / TAA	VGT	ECR	3,0	96	131	3500	300	31	1300	Euro VI A / C	ec-EGR + DOC + DPF + SCR + CUC	
○	S30 ENT	L4 / TAA	WG	ECR	3,0	107	146	3500	350	36	1500	Euro VI A / C	ec-EGR + DOC + DPF + SCR + CUC	
○	S30 ENT	L4 / TAA	VGT	ECR	3,0	110	150	3500	370	38	1320	Euro VI A / C	ec-EGR + DOC + DPF + SCR + CUC	
○	S30 ENT	L4 / TAA	VGT	ECR	3,0	125	170	3500	400	41	1500	Euro VI A	ec-EGR + DOC + DPF + SCR + CUC	
○	S30 ENT	L4 / TAA	VGT	ECR	3,0	132	180	3500	430	44	1500	Euro VI C	ec-EGR + DOC + DPF + SCR + CUC	
○	S30 ENT	L4 / TAA	VGT	ECR	3,0	129	175	3500	430	44	1600	Euro VI A/C	ec-EGR + DOC + DPF + SCR + CUC	
○	S30 ENTG	L4 / TAA	WG	MPI	3,0	100	136	3500	350	36	1500	EEV / Euro VI A/C	3 WAY CATALYST	

LEGEND

APPLICATION

- Light
- Truck
- ⊙ Bus

ARRANGEMENT

- L In line

AIR INTAKE

- TAA Turbocharged aftercooler

TURBOCHARGING

- WG Wastegate
- VGT Variable Geometry Turbo
- EVGT Electronic Variable Geometry Turbocharger
- 2stT Two Stage Turbocharger

INJECTION SYSTEM

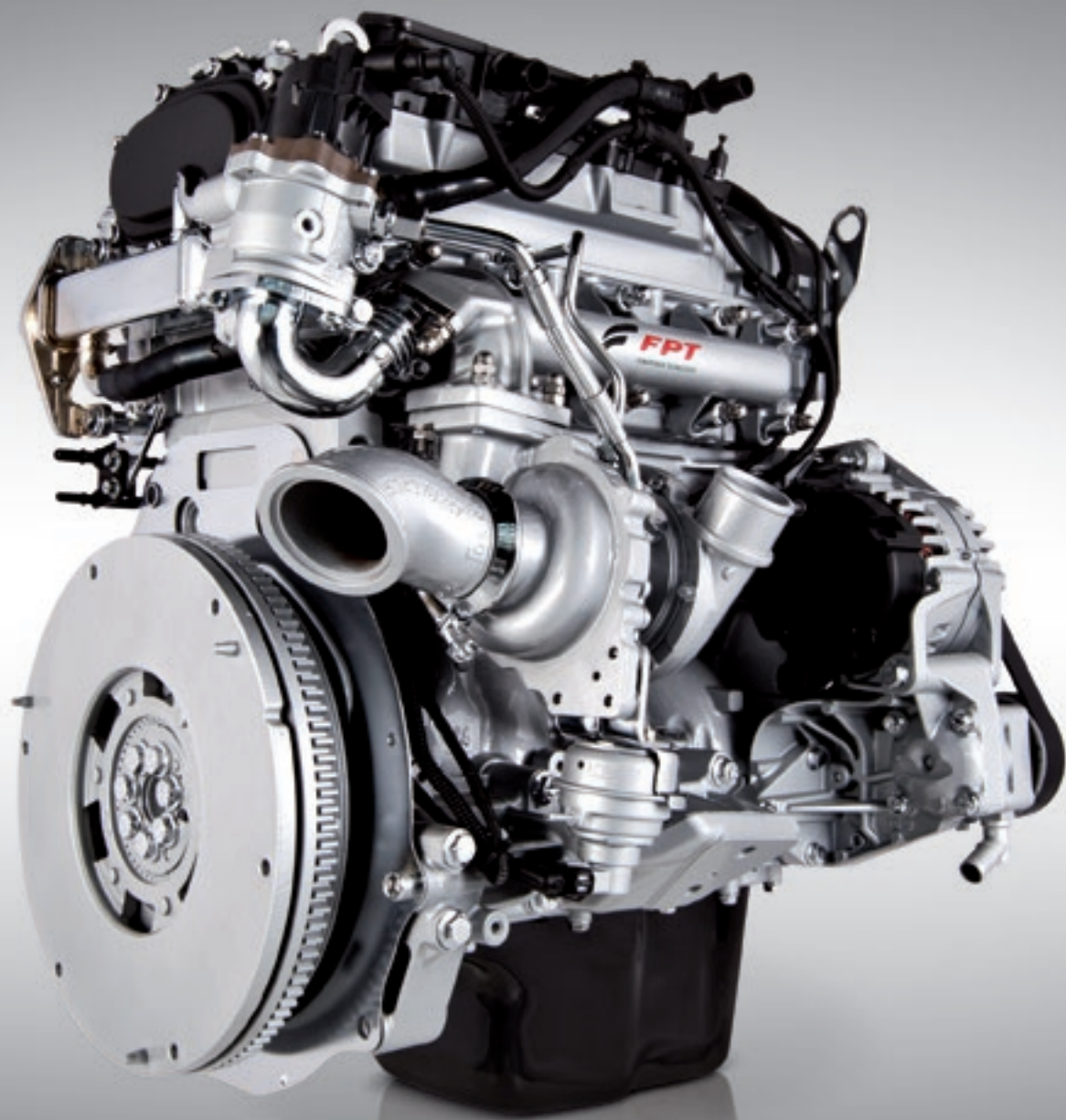
- ECR Electronic Common Rail
- EUI Electronic Unit Injector
- MPI Multi Point Injection

EMISSION STANDARD

- EEV Enhanced Environmentally friendly Vehicle

EXHAUST SYSTEM

- CUC Clean Up Catalyst
- DOC Diesel Oxidation Catalyst
- DPF Diesel Particulate Filter
- ec-EGR External Cooled Exhaust Gas Recirculation
- SCR Selective Catalytic Reduction
- LPEGR Low Pressure Exhaust Gas Recirculation





IVECO

DAILY

Features

UP TO 50.000 KM OIL CHANGE INTERVALS

Functional engine design in terms of mechanical clearances, piston rings and engine oil system calculation.

SPECIFIC FEATURES

F1 Series specifically developed for commercial vehicles; starting temperature with glow plugs down to -25°C . Performance achieved with external cooled EGR, FGT with Wastegate valve, VGT or Two Stage Turbocharger.

ELECTRONIC INJECTION SYSTEM

Injection system based on Common Rail; state-of-the-art technology for accurate fuel delivering. A 3rd generation Common Rail System up to 2.000 bar for S30 to comply with Euro VI step C.

AIR HANDLING

Two Stage Turbocharger (S30), VGT with air-to-air charge cooler air unit or FGT with Wastegate valve. 4 valves per cylinder to increase engine efficiency through the optimization of thermodynamic performance.

ENGINE DESIGN

Dual mass flywheel, hydraulic tappets with roller finger followers, multiple fuel injection, suspended oil pan, bed-plate in addition to engine block, timing system driven by toothed belt for S23.

COMPONENTS INTEGRATION

Integration of components such as patented CCV (Closed Crankcase Ventilation), oil cooler, oil, water and steering pumps.

SERVICEABILITY & MAINTAINABILITY

Worldwide service network. Engine ECU (Electronic Control Unit) with CAN-BUS control and monitoring interfaces for advanced real time diagnosis.

AFTERTREATMENT SYSTEM

External cooled EGR combined with SCR as the best solution for Euro VI step C on light duty engine's applications, where vehicle dimensions are a constraint and drivers' attitude towards fuel saving is not so relevant as in the heavy sector.

OPTION LIST

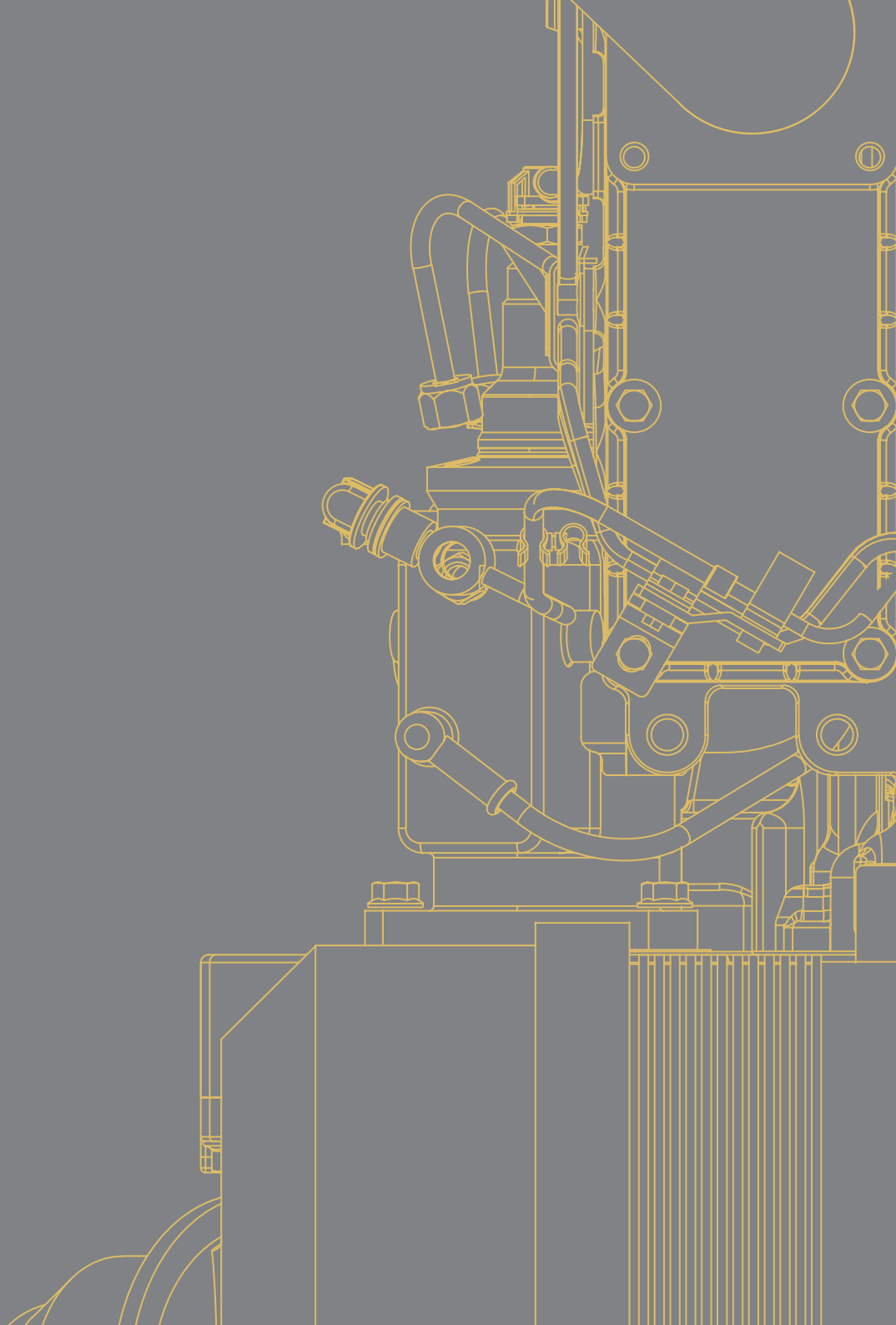
Options for radiators, air filters, mufflers, air compressor, air conditioning compressor arrangement; both trasversal and longitudinal versions available; both Diesel and natural gas versions available.

Benefits

- ✓ **REDUCED MAINTENANCE NEEDS AND OPERATING COSTS**
- ✓ **HIGH PERFORMANCE GUARANTEED IN ALL CONDITIONS**
- ✓ **TOP PERFORMANCE (LOAD RESPONSE, TORQUE, POWER) WITH THE MINIMUM FUEL CONSUMPTION**
- ✓ **HIGH POWER WITH THE SHORTEST TIME TO TORQUE AND LOW FUEL CONSUMPTION**
- ✓ **HIGH DURABILITY AND LOW NOISE & VIBRATION**
- ✓ **COMPACTNESS**
- ✓ **QUICK AND ACCURATE SERVICE SUPPORT AND REDUCED VEHICLE DOWNTIME**
- ✓ **HIGH RELIABILITY AND LOW RUNNING COSTS (FUEL CONSUMPTION, VEHICLE DOWNTIME)**
- ✓ **CUSTOMER ORIENTATION**



THE NEF SERIES



The NEF Series

Developed to satisfy the most demanding customers' requirements, the NEF Series is the evidence of FPT Industrial technological excellence. Compliant with Euro VI step C emissions standards, it is the compact, cost-effective and efficient engine solution in the 6 to 18 tons buses/coaches and trucks.

Available in 4 and 6 cylinders, with Diesel Common Rail or CNG/LNG multi-point injection system, the NEF Series stands out for its great reliability; furthermore, reduced fuel consumption and remarkable performance make these engines the reference of their category.

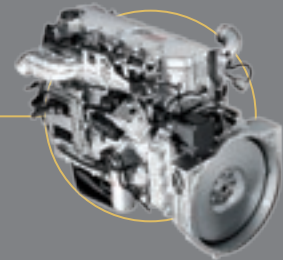
N40 ENT



N45 ENT



N60 ENT



N60 ENTG



N67 ENT



APPLICATION	MODEL	CYLINDER ARRANGEMENT	AIR INTAKE	TURBOCHARGING	INJECTION SYSTEM	DISPLACEMENT LITERS	POWER			TORQUE			EMISSION STANDARD	EXHAUST SYSTEM
							KW	HP	RPM	NM	KGM	RPM		
●	N40 ENT	L4 / TAA	WG	ECR	3,9	103	140	2700	460	47	1200-2100	EEV	SCR	
⊙	N40 ENT	L4 / TAA	WG	ECR	3,9	110	140	2700	600	61	1300	EEV	—	
●	N40 ENT	L4 / TAA	WG	ECR	3,9	118	160	2700	530	54	1200-2100	EEV	SCR	
●	N40 ENT	L4 / TAA	WG	ECR	3,9	130	177	2700	570	58	1250-2100	EEV	SCR	
⊙	N40 ENT	L4 / TAA	WG	ECR	3,9	130	177	2500	600	61	1250	EEV	SCR	
●	N40 ENT	L4 / TAA	WG	ECR	3,9	134	182	2700	570	58	1200-2100	Euro III	—	
●	N40 ENT	L4 / TAA	WG	ECR	3,9	134	182	2700	610	62	1300-2100	EEV	SCR	
●	N45 ENT	L4 / TAA	WG	ECR	4,5	118	160	2500	580	59	1250-1940	Euro VI A / C	DOC + DPF + SCR + CUC	
●	N45 ENT	L4 / TAA	WG	ECR	4,5	137	186	2500	680	69	1250-1900	Euro VI A / C	DOC + DPF + SCR + CUC	
⊙	N45 ENT	L4 / TAA	WG	ECR	4,5	137	186	2500	750	76	1400	Euro VI A / C	DOC + DPF + SCR + CUC	
●	N45 ENT	L4 / TAA	WG	ECR	4,5	152	207	2500	750	76	1400-1800	Euro VI A / C	DOC + DPF + SCR + CUC	
●	N60 ENT	L4 / TAA	WG	ECR	5,9	135	184	2700	650	66	1200-1800	EEV	SCR	
● ⊙	N60 ENT	L4 / TAA	WG	ECR	5,9	160	218	2700	680	69	1200-2230	Euro III	—	
● ⊙	N60 ENT	L6 / TAA	WG	ECR	5,9	160	218	2700	680	69	1200-2100	EEV	SCR	
● ⊙	N60 ENT	L4 / TAA	WG	ECR	5,9	176	239	2700	810	83	1250	Euro III	—	
●	N60 ENT	L6 / TAA	WG	ECR	5,9	185	252	2700	850	87	1250-2100	EEV	SCR	
⊙	N60 ENT	L6 / TAA	WG	ECR	5,9	185	252	2500	850	87	1250	EEV	SCR	
⊙	N60 ENT	L6 / TAA	WG	ECR	5,9	192	261	2500	1050	107	1250	EEV	SCR	
⊙	N60 ENT	L6 / TAA	WG	ECR	5,9	194	264	2500	1000	102	1250	EEV	SCR	
●	N60 ENT	L6 / TAA	WG	ECR	5,9	202	275	2500	930	95	1250	Euro III	—	
●	N60 ENT	L6 / TAA	WG	ECR	5,9	205	279	2500	950	97	1250-2100	EEV	SCR	
● ⊙	N60 ENT	L6 / TAA	WG	ECR	5,9	220	299	2500	1050	107	1250-1850	EEV	SCR	
● ⊙	N60 ENTG	L6 / TAA	WG	MPI	5,9	150	204	2700	750	76	1250	Euro VI C	3 WAY CATALYST	
●	N67 ENT	L6 / TAA	WG	ECR	6,7	162	220	2500	800	82	1250-1930	Euro VI A / C	DOC + DPF + SCR + CUC	
⊙	N67 ENT	L6 / TAA	WG	ECR	6,7	184	250	2500	950	97	1400-1500	Euro VI A / C	DOC + DPF + SCR + CUC	
●	N67 ENT	L6 / TAA	WG	ECR	6,7	185	252	2500	850	87	1250-2070	Euro VI A / C	DOC + DPF + SCR + CUC	
●	N67 ENT	L6 / TAA	WG	ECR	6,7	206	280	2500	1000	102	1250-1970	Euro VI A / C	DOC + DPF + SCR + CUC	
⊙	N67 ENT	L6 / TAA	WG	ECR	6,7	210	286	2500	1000	102	1250-1600	Euro VI A / C	DOC + DPF + SCR + CUC	
● ⊙	N67 ENT	L6 / TAA	WG	ECR	6,7	235	320	2500	1100	112	1250-1890	Euro VI A / C	DOC + DPF + SCR + CUC	

LEGEND

APPLICATION

- Light
- Truck
- ⊙ Bus

ARRANGEMENT

- L In line

AIR INTAKE

- TAA Turbocharged aftercooler

TURBOCHARGING

- WG Wastegate
- VGt Variable Geometry Turbo
- EVGT Electronic Variable Geometry Turbocharger
- 2stT Two Stage Turbocharger

INJECTION SYSTEM

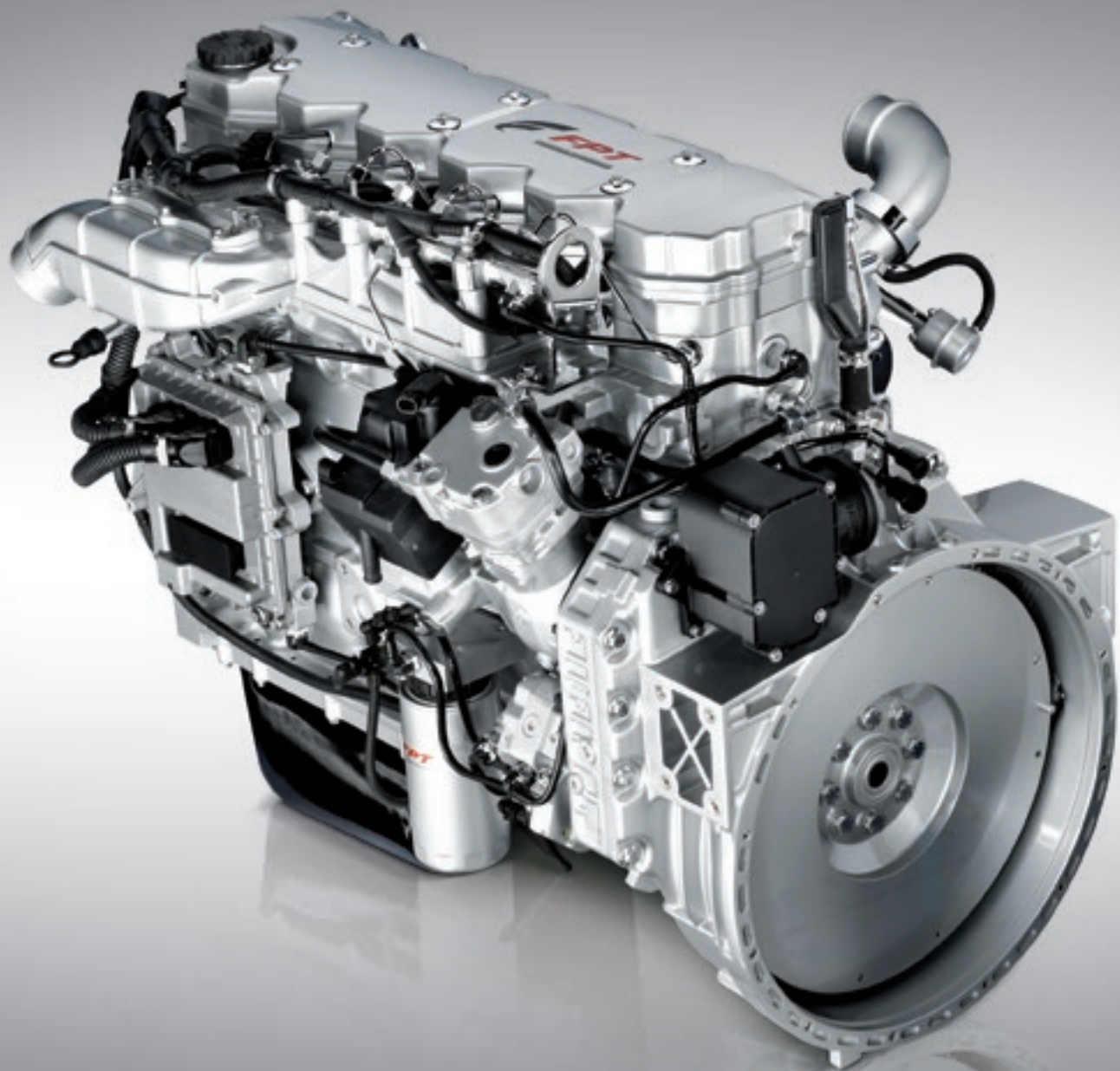
- ECR Electronic Common Rail
- EUI Electronic Unit Injector
- MPI Multi Point Injection

EMISSION STANDARD

- EEV Enhanced Environmentally friendly Vehicle

EXHAUST SYSTEM

- CUC Clean Up Catalyst
- DOC Diesel Oxidation Catalyst
- DPF Diesel Particulate Filter
- ec-EGR External Cooled Exhaust Gas Recirculation
- SCR Selective Catalytic Reduction





Features

UP TO 80.000 KM OIL CHANGE INTERVALS

Long oil change intervals; functional engine design in terms of mechanical clearances, piston rings, engine oil system calculation.

SPECIFIC FEATURES

Lean lay-out; starting temperature with standard equipment auxiliaries down to -25°C (with optional water heater down to -30°C); 25° engine continuous inclination in all directions; high performance achieved without either EGR or VGT.

Integration of exhaust flap for thermal management, increased brake performance and introduction of improved high-efficiency blow-by on Euro VI A/C engines.

ELECTRONIC INJECTION SYSTEM

Very compact 2nd generation HD Common Rail System for accurate fuel delivery; state-of-the-art system to optimize thermodynamic performance and achieve flat torque curve.

AIR HANDLING

Turbocharged with air-to-air aftercooler unit for the optimization of thermodynamic performance, without using Variable Geometry Turbocharger for Euro V & VI A/C emission limits achievement.

ENGINE DESIGN

Cast iron cylinder head, rear geartrain lay-out, camshaft in crankcase, suspended oil pan, bed-plate in addition to engine block.

COMPONENTS INTEGRATION

High components integration such as patented CCV (Closed Crankcase Ventilation), oil cooler, oil and water pumps.

SERVICEABILITY & MAINTAINABILITY

Worldwide service network. Engine ECU (Electronic Control Unit) with CAN-BUS control and monitoring interfaces for advanced real time diagnosis.

AFTERTREATMENT SYSTEM

Hi-eSCR system is recognized as the best ATS solution for medium and heavy duty automotive engines to reach Euro VI A/C emission standards; it reduces NO_x outside the engine, regardless the combustion process, enhancing engine performance and reliability, reducing at the same time fuel consumption and heat rejection.

OPTION LIST

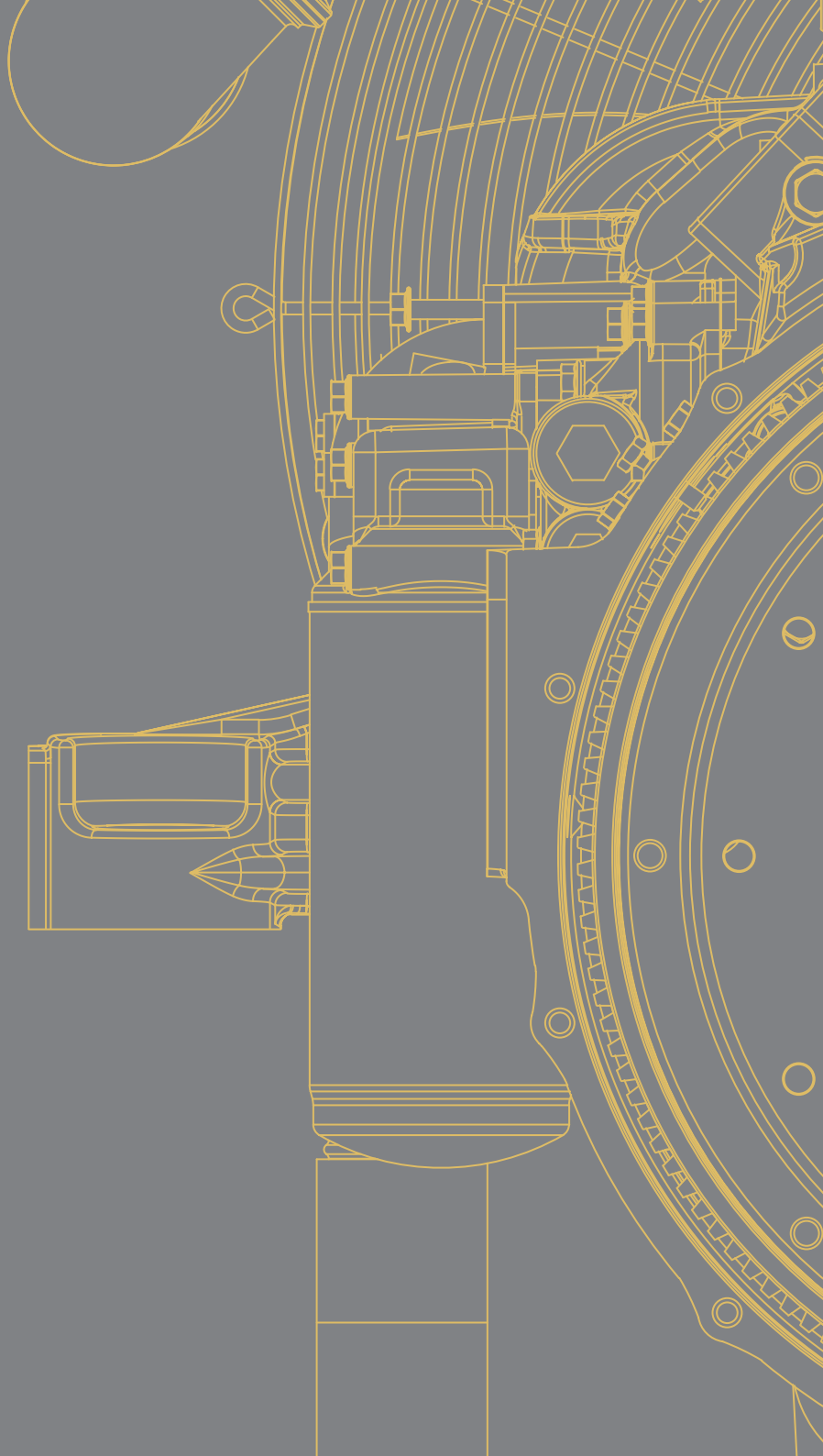
Options for transmissions, radiators, air filters, mufflers; standard transmission interface SAE; air compressor, air conditioning compressor and steering pump arrangement; oil sump available for both truck and bus applications; available on both Diesel and natural gas versions.

Benefits

- ✓ **REDUCED OPERATING COSTS**
- ✓ **TOP PERFORMANCE GUARANTEED IN ALL CONDITIONS**
- ✓ **HIGH PERFORMANCE (POWER, TORQUE, LOAD RESPONSE) WITH THE MINIMUM FUEL CONSUMPTION**
- ✓ **HIGH POWER WITH EXCELLENT LOAD RESPONSE AND LOW FUEL CONSUMPTION**
- ✓ **VIBRATIONS & NOISE REDUCTION**
- ✓ **COMPACTNESS**
- ✓ **QUICK AND ACCURATE SERVICE SUPPORT AND REDUCED VEHICLE DOWNTIME**
- ✓ **ENVIRONMENTAL CARE, HIGH RELIABILITY AND LOW RUNNING COSTS (FUEL CONSUMPTION, VEHICLE DOWNTIME)**
- ✓ **ENGINE VERSATILITY, CUSTOMER ORIENTATION**



THE CURSOR SERIES

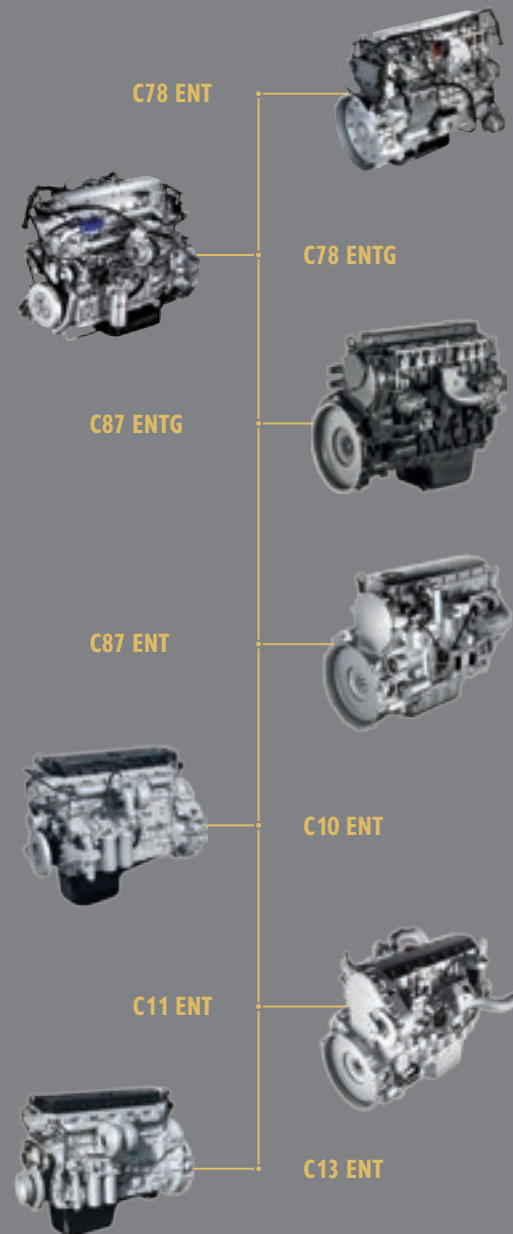


The Cursor Series

The Cursor Series engines are available in both Diesel and CNG/LNG versions, in a range from 180 to 420 kW and are compliant with Euro VI step C standard.

Thanks to their Electronic controlled Variable Geometry Turbocharger (EVTG), a high maximum torque is developed at low rpm and available over a wide rpm range. Cursor Series stands out for superb performance combined with an extremely low fuel consumption. Best in class intervals for oil changes (up to 150.000 km), DPF cleaning/replacement (up to 600.000 km) and oil consumption provide significant advantages in maintenance costs and vehicle down-time.

Thanks to the new Cursor 9 CNG/LNG introduction, FPT boosts the most powerful and silent CNG/LNG engine on the market and the broadest engine range, extending offer for long haul and distribution/municipality trucks and city/intercity buses, all based on common technology and proprietary engine control strategies





DE ROOY

PETRONAS

PETRONAS
Urania

IVECO

IVECO
SCHOUTEN

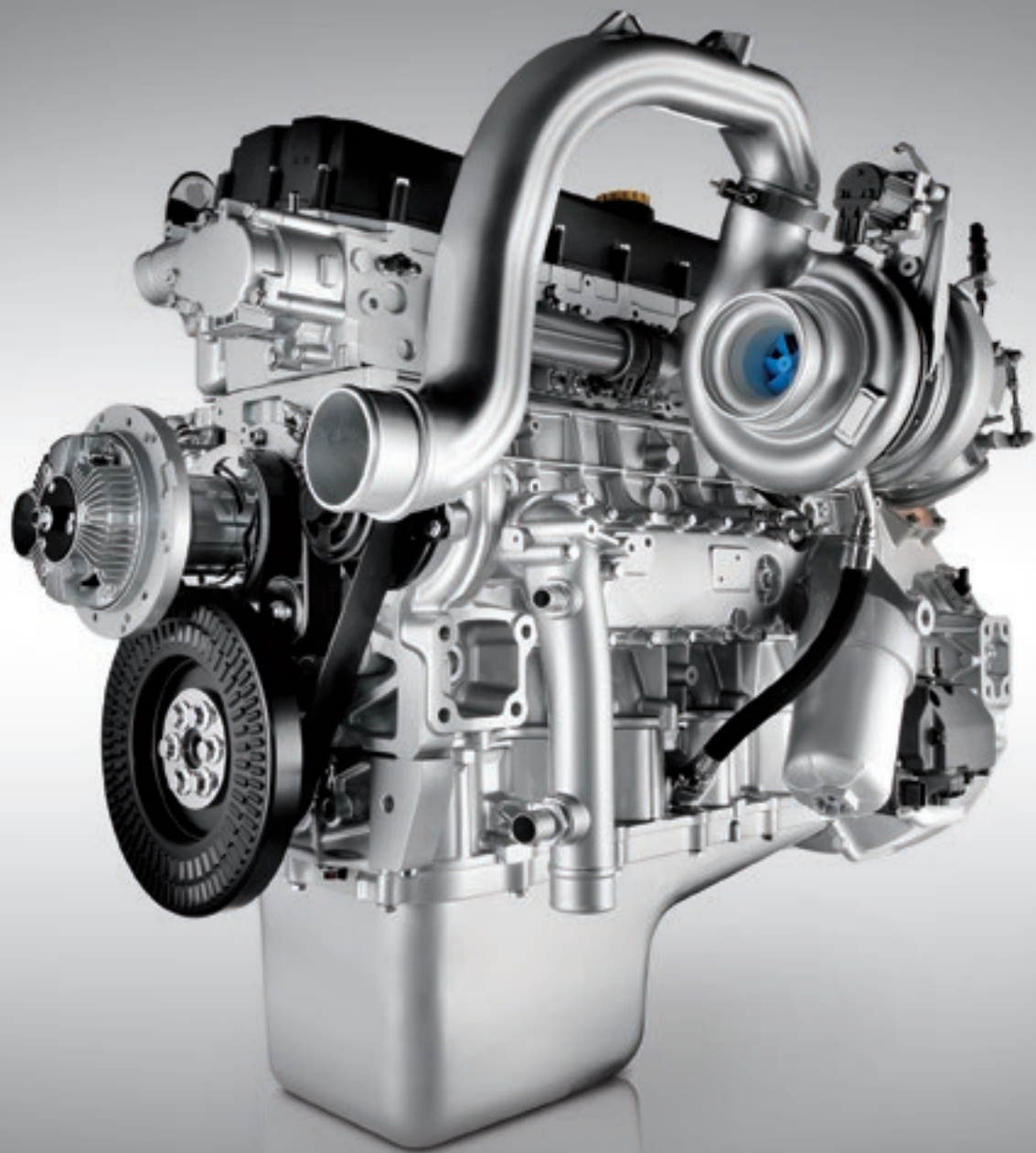
TOTAL
SMA
SpeedGo
ECC

LP
DV

Sporco

SpeedGo
501

IVECO



APPLICATION	MODEL	CYLINDER ARRANGEMENT AIR INTAKE	TURBOCHARGING	INJECTION SYSTEM	DISPLACEMENT LITERS	POWER			TORQUE			EMISSION STANDARD	EXHAUST SYSTEM
						KW	HP	RPM	NM	KGM	RPM		
⊙	C78 ENT	L6 / TAA	VGT	EUI	7,8	180	245	1850	1100	112	1040-1560	EEV	SCR
⊙	C78 ENT	L6 / TAA	VGT	EUI	7,8	213	290	2050	1100	112	1040-1850	EEV	SCR
●	C78 ENT	L6 / TAA	WG	EUI	7,8	228	310	2400	1300	133	1200-1675	Euro V / EEV	SCR
●	C78 ENT	L6 / TAA	VGT	EUI	7,8	243	330	2400	1400	143	1080-1655	Euro V / EEV	SCR
⊙	C78 ENT	L6 / TAA	VGT	EUI	7,8	243	330	2050	1500	153	1125-1600	EEV	SCR
●	C78 ENT	L6 / TAA	VGT	EUI	7,8	259	352	2400	1500	153	1200-1685	Euro III	None
●	C78 ENT	L6 / TAA	VGT	EUI	7,8	265	360	2400	1500	153	1200-1685	Euro V / EEV	SCR
⊙	C78 ENT	L6 / TAA	VGT	EUI	7,8	280	381	2050	1500	153	1125-1780	EEV	SCR
● ⊙	C78 ENTG	L6 / TAA	WG	MPI	7,8	180	245	1850	1000	102	1050	EEV / Euro VI A / C	3 WAY CATALYST
● ⊙	C78 ENTG	L6 / TAA	WG	MPI	7,8	200	272	2000	1100	112	1100	EEV / Euro VI A / C	3 WAY CATALYST
● ⊙	C78 ENTG	L6 / TAA	WG	MPI	7,8	213	290	2000	1100	112	1100	EEV / Euro VI A / C	3 WAY CATALYST
● ⊙	C78 ENTG	L6 / TAA	WG	MPI	7,8	221	301	2000	1200	122	1200	EEV / Euro VI A / C	3 WAY CATALYST
● ⊙	C78 ENTG	L6 / TAA	WG	MPI	7,8	243	330	2000	1300	133	1200	EEV / Euro VI A / C	3 WAY CATALYST
● ⊙	C87 ENT	L6 / TAA	WG	ECR	8,7	228	310	2200	1300	133	1200	Euro VI A / C	DOC + DPF + SCR + CUC
● ⊙	C87 ENT	L6 / TAA	WG	ECR	8,7	243	330	2200	1400	143	1200	Euro VI A / C	DOC + DPF + SCR + CUC
● ⊙	C87 ENT	L6 / TAA	WG	ECR	8,7	265	360	2200	1650	168	1200	Euro VI A / C	DOC + DPF + SCR + CUC
● ⊙	C87 ENT	L6 / TAA	EVGT	ECR	8,7	294	400	2200	1700	173	1200	Euro VI A / C	DOC + DPF + SCR + CUC
●	C87 ENTG	L6 / TAA	WG	MPI	8,7	221	301	2000	1300	133	1000-1620	Euro VI A / C	3 WAY CATALYST
●	C87 ENTG	L6 / TAA	WG	MPI	8,7	250	340	2000	1500	153	1100-1591	Euro VI A / C	3 WAY CATALYST
⊙	C87 ENTG	L6 / TAA	WG	MPI	8,7	264	359	2000	1640	167	1100-1540	Euro VI A / C	3 WAY CATALYST
●	C87 ENTG	L6 / TAA	WG	MPI	8,7	280	381	2000	1700	173	1200-1575	Euro VI A / C	3 WAY CATALYST
●	C87 ENTG	L6 / TAA	WG	MPI	8,7	294	400	2000	1700	173	1200-1575	Euro VI A / C	3 WAY CATALYST
⊙	C10 ENT	L6 / TAA	VGT	EUI	10,3	280	381	2100	1600	163	1000-1660	EEV	SCR
●	C10 ENT	L6 / TAA	VGT	EUI	10,3	294	400	2100	1900	194	1050-1550	Euro III	None
●	C10 ENT	L6 / TAA	VGT	EUI	10,3	310	422	2100	1900	194	1050-1550	Euro V / EEV	SCR

LEGEND

APPLICATION

- Light
- Truck
- ⊙ Bus

ARRANGEMENT

- L In line

AIR INTAKE

- TAA Turbocharged aftercooler

TURBOCHARGING

- WG Wastegate
- VGT Variable Geometry Turbo
- EVGT Electronic Variable Geometry Turbocharger
- 2stT Two Stage Turbocharger

INJECTION SYSTEM

- ECR Electronic Common Rail
- EUI Electronic Unit Injector
- MPI Multi Point Injection

EMISSION STANDARD

- EEV Enhanced Environmentally friendly Vehicle

EXHAUST SYSTEM

- CUC Clean Up Catalyst
- DOC Diesel Oxidation Catalyst
- DPF Diesel Particulate Filter
- ec-EGR External Cooled Exhaust Gas Recirculation
- SCR Selective Catalytic Reduction

APPLICATION	MODEL	CYLINDER ARRANGEMENT AIR INTAKE	TURBOCHARGING	INJECTION SYSTEM	DISPLACEMENT LITERS	POWER			TORQUE			EMISSION STANDARD	EXHAUST SYSTEM
						KW	HP	RPM	NM	KGM	RPM		
●	C10 ENT	L6 / TAA	VGT	EUI	10,3	316	430	2100	1900	194	1000-1590	Euro III	None
●	C10 ENT	L6 / TAA	VGT	EUI	10,3	331	450	2100	2100	214	1050-1550	Euro V / EEV	SCR
⊙	C10 ENT	L6 / TAA	VGT	EUI	10,3	331	450	2100	2100	214	1050-1500	EEV	SCR
●	C10 ENT	L6 / TAA	VGT	EUI	10,3	338	460	2100	2100	214	1050-1550	Euro V / EEV	SCR
● ⊙	C11 ENT	L6 / TAA	EVGT	ECR	11,1	309	420	1900	1900	194	1050	Euro VI A / C	DOC + DPF + SCR + CUC
●	C11 ENT	L6 / TAA	EVGT	ECR	11,1	338	460	1900	2150	219	1050	Euro VI A / C	DOC + DPF + SCR + CUC
●	C11 ENT	L6 / TAA	EVGT	ECR	11,1	353	480	1900	2250	229	1050	Euro VI A	DOC + DPF + SCR + CUC
●	C11 ENT	L6 / TAA	EVGT	ECR	11,1	353	480	1900	2300	235	950	Euro VI C	DOC + DPF + SCR + CUC
●	C13 ENT	L6 / TAA	WG	EUI	12,9	280	381	1900	1900	194	1000-1515	Euro III	None
●	C13 ENT	L6 / TAA	WG	EUI	12,9	301	409	1900	1900	194	1000-1515	Euro V	SCR
●	C13 ENT	L6 / TAA	WG	EUI	12,9	309	420	1900	1900	194	1000-1515	Euro III	None
●	C13 ENT	L6 / TAA	VGT	EUI	12,9	324	441	1900	2200	224	1000-1400	Euro III	None
●	C13 ENT	L6 / TAA	VGT	EUI	12,9	324	441	1900	2200	224	1000-1400	Euro V	SCR
●	C13 ENT	L6 / TAA	VGT	EUI	12,9	331	450	1900	2200	224	1000-1440	Euro V	SCR
●	C13 ENT	L6 / TAA	VGT	EUI	12,9	382	520	1900	2300	235	1000-1600	Euro V	SCR
●	C13 ENT	L6 / TAA	WG	EUI	12,9	353	480	1900	2200	224	1000-1540	Euro III	None
●	C13 ENT	L6 / TAA	WG	EUI	12,9	353	480	1900	2200	224	1000-1540	Euro V / EEV	SCR
●	C13 ENT	L6 / TAA	VGT	EUI	12,9	368	500	1900	2300	235	1000-1525	Euro V / EEV	SCR
●	C13 ENT	L6 / TAA	VGT	EUI	12,9	397	540	1900	2300	235	1000-1525	Euro III	None
●	C13 ENT	L6 / TAA	VGT	EUI	12,9	412	560	1900	2500	255	1000-1575	Euro V / EEV	SCR
●	C13 ENT	L6 / TAA	WG	ECR	12,9	302	411	1900	2100	214	1000	Euro VI A / C	DOC + DPF + SCR + CUC
●	C13 ENT	L6 / TAA	WG	ECR	12,9	331	450	1900	2200	224	1000	Euro VI A / C	DOC + DPF + SCR + CUC
●	C13 ENT	L6 / TAA	EVGT	ECR	12,9	368	500	1900	2300	235	1000	Euro VI A	DOC + DPF + SCR + CUC
●	C13 ENT	L6 / TAA	EVGT	ECR	12,9	412	560	1900	2500	255	1000	Euro VI A	DOC + DPF + SCR + CUC
●	C13 ENT	L6 / TAA	EVGT	ECR	12,9	375	510	1900	2300	235	1000	Euro VI C	DOC + DPF + SCR + CUC
●	C13 ENT	L6 / TAA	EVGT	ECR	12,9	420	571	1900	2500	255	1000	Euro VI C	DOC + DPF + SCR + CUC

LEGEND

APPLICATION

- Light
- Truck
- ⊙ Bus

ARRANGEMENT

- L In line

AIR INTAKE

- TAA Turbocharged aftercooler

TURBOCHARGING

- WG Wastegate
- VGT Variable Geometry Turbo
- EVGT Electronic Variable Geometry Turbocharger
- 2stT Two Stage Turbocharger

INJECTION SYSTEM

- ECR Electronic Common Rail
- EUI Electronic Unit Injector
- MPI Multi Point Injection

EMISSION STANDARD

- EEV Enhanced Environmentally friendly Vehicle

EXHAUST SYSTEM

- CUC Clean Up Catalyst
- DOC Diesel Oxidation Catalyst
- DPF Diesel Particulate Filter
- ec-EGR External Cooled Exhaust Gas Recirculation
- SCR Selective Catalytic Reduction



IVECO

NP

STRALIS

Features

UP TO 150.000 KM OIL CHANGE INTERVALS

Best in class for oil change intervals; functional engine design in terms of mechanical clearances, piston rings, green oil filters, low viscosity oils, engine oil system calculation.

SPECIFIC FEATURES

Lean lay-out; starting temperature down to -25°C ; performance achieved thanks to the Electronic Unit Injector and VGT without cooled EGR (neither internal nor external). Introduction of centrifugal blow-by on Euro VI A/C engines and electronic governed exhaust flap for increased engines brake power up to 30 %.

ELECTRONIC INJECTION SYSTEM

Cursor Series feature 3rd generation common rail on Euro VI A/C engines and electronic controlled unit injectors on Euro IV/V engines. Designed to optimized fuel delivery they assure top power and torque.

AIR HANDLING

VGT with air-to-air charge cooled air system with 4 valves per cylinder to increase engine efficiency through the optimization of thermodynamic performance.

ENGINE BRAKE SYSTEM

The ECU controlled engine brake system reduces brake pad wear and consequent operation costs. Further introduction of an electronic governed exhaust flap on Euro VI A/C increases the engine brake power up to 30 %. Auto-engaging function increases driveability.

ENGINE DESIGN

Super-finished helicoidal timing gears, high flexibility of injection system, bed-plate in addition to engine block, rear geartrain lay-out, suspended oil pan. Integrated Common Rail in cylinder head for Euro VI A/C (-1 dBA vs. Euro V electronic controlled unit injectors).

COMPONENTS INTEGRATION

High components integration such as patented CCV (Closed Crankcase Ventilation), oil cooler, oil and water pumps.

SERVICEABILITY & MAINTAINABILITY

Worldwide service network. Enhanced engine serviceability and diagnosis by mounting the Electronic Control Unit on the engine with CAN-BUS control and monitoring systems interface.

AFTERTREATMENT SYSTEM

Hi-eSCR system is recognized as the best ATS solution for medium and heavy duty automotive engines to reach Euro VI A/C emission standards: it reduces NO_x outside the engine, regardless the combustion process, enhancing engine performance and reliability, reducing at the same time fuel consumption and heat rejection.

OPTION LIST

Oil sump available for both truck and bus applications; available on both Diesel and natural gas versions.

Benefits

- ✓ **REDUCED OPERATING COSTS**
- ✓ **HIGH PERFORMANCE GUARANTEED IN ALL CONDITIONS**
- ✓ **BEST IN CLASS**
- ✓ **HIGH ENGINE POWER DENSITY AND FAST LOAD RESPONSE TIME WITH THE LOWEST FUEL CONSUMPTION**
- ✓ **DRIVING COMFORT**
- ✓ **VIBRATIONS & NOISE REDUCTION**
- ✓ **COMPACTNESS**
- ✓ **QUICK AND ACCURATE SERVICE SUPPORT AND REDUCED VEHICLE DOWNTIME**
- ✓ **ENVIRONMENTAL CARE, HIGH RELIABILITY AND LOW RUNNING COSTS (FUEL CONSUMPTION, VEHICLE DOWNTIME)**
- ✓ **ENGINE VERSATILITY , CUSTOMER ORIENTATION**



CNG/LNG engines – Features

F1, NEF and CURSOR: the widest Natural Gas engine range on the market

UP TO 70.000 KM OIL CHANGE INTERVALS

Functional engine design in terms of mechanical clearances, piston rings, chrome ceramic oil sealing and engine oil system calculation.

INJECTION SYSTEM

Multipoint sequential injection is an indirect injection system that ensures an accurate fuel delivering process and very stable combustion avoiding backfire troubles resulting in competitive fuel economy and engine performance.
Thanks to specific pistons, combustion is optimized and CNG/LNG burns readily and completely. Gas chemical composition quality doesn't affect combustion processes.

COMBUSTION TECHNOLOGY

Stoichiometric combustion (air-fuel mixture in equal quantity), developed by FPT in 1995, continuously improved over the last 20 years and the only solution to comply with Euro VI step C emission levels, assures best in class fuel consumption and lower noise than Diesel engine.

ENGINE DESIGN

Cast iron crankshaft with counterweights (F1), rear distribution (NEF & CURSOR) for better driving comfort.

COMPRESSED NATURAL GAS FUEL

CNG/LNG is one of the cheapest fuel types. Strong economic advantages for the customer along the vehicle useful life.

SERVICEABILITY & MAINTAINABILITY

Worldwide service network. Engine ECU (Electronic Control Unit) with CAN-BUS control and monitoring interfaces for advanced real time diagnosis and efficient engine management.

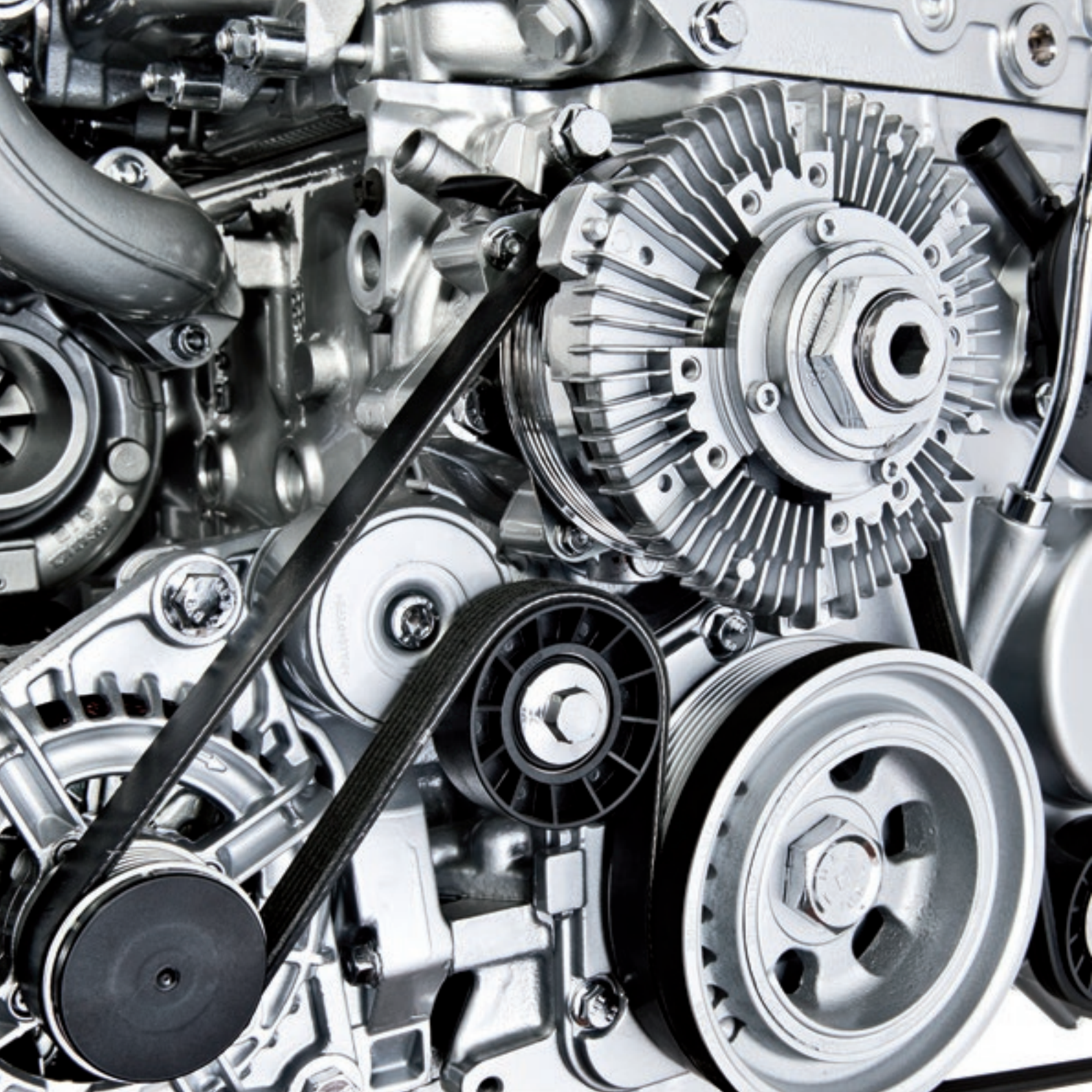
AFTER-TREATMENT SYSTEM

Thanks to lambda closed loop control and the use of a simple three way catalyst without EGR adoption, FPT natural gas engines are able to reduce the amount of pollutants (NO_x, HC, CO) by 95%, complying Euro VI A/C emission requirements.

Benefits

- ✓ **REDUCED MAINTENANCE NEEDS AND OPERATING COSTS**
- ✓ **BEST IN CLASS FUEL CONSUMPTION AND PERFORMANCE LEADERSHIP**
- ✓ **BEST IN CLASS FUEL CONSUMPTION AND REDUCED NOISE**
- ✓ **VIBRATIONS & NOISE REDUCTION**
- ✓ **REDUCED OPERATING COSTS**
- ✓ **QUICK AND ACCURATE SERVICE SUPPORT
REDUCED VEHICLE DOWNTIME**
- ✓ **SIMPLE ATS ARCHITECTURE TO REACH
EMISSION LIMITS**





Diesel engines for On Road applications



LEGEND

APPLICATION

- Light
- Truck
- ⊙ Bus

ARRANGEMENT

- L In line

AIR INTAKE

- TAA Turbocharged aftercooler

TURBOCHARGING

- WG Wastegate
- VGT Variable Geometry Turbo
- EVGT Electronic Variable Geometry Turbocharger

INJECTION SYSTEM

- ECR Electronic Common Rail
- EUI Electronic Unit Injector
- MPI Multi Point Injection

EMISSION STANDARD

- EEV Enhanced Environmentally friendly Vehicle

EXHAUST SYSTEM

- CUC Clean Up Catalyst
- DOC Diesel Oxidation Catalyst
- DPF Diesel Particulate Filter
- ec-EGR External Cooled Exhaust Gas Recirculation
- SCR Selective Catalytic Reduction
- LPEGR Low Pressure Exhaust Gas Recirculation

APPLICATION	MODEL	CYLINDER ARRANGEMENT AIR INTAKE	TURBOCHARGING	INJECTION SYSTEM	DISPLACEMENT LITERS
○	S23 ENT	L4 / TAA	WG	ECR	2,3
○	S23 ENT	L4 / TAA	WG	ECR	2,3
○	S23 ENT	L4 / TAA	WG	ECR	2,3
○	S23 ENT	L4 / TAA	WG	ECR	2,3
○	S23 ENT	L4 / TAA	VGT	ECR	2,3
○	S23 ENT	L4 / TAA	WG	ECR	2,3
○	S23 ENT	L4 / TAA	WG	ECR	2,3
○	S23 ENT	L4 / TAA	WG	ECR	2,3
○	S23 ENT	L4 / TAA	VGT	ECR	2,3
○	S23 ENT	L4 / TAA	VGT	ECR	2,3
○	S23 ENT	L4 / TAA	VGT	ECR	2,3
○	S23 ENT	L4 / TAA	VGT	ECR	2,3
○	S23 ENT	L4 / TAA	VGT	ECR	2,3
○	S23 ENT	L4 / TAA	VGT	ECR	2,3
○	S30 ENT	L4 / TAA	WG	ECR	3,0
○	S30 ENT	L4 / TAA	WG	ECR	3,0
○	S30 ENT	L4 / TAA	VGT	ECR	3,0
○	S30 ENT	L4 / TAA	VGT	ECR	3,0
○	S30 ENT	L4 / TAA	VGT	ECR	3,0
○	S30 ENT	L4 / TAA	VGT	ECR	3,0
○	S30 ENT	L4 / TAA	2stT	ECR	3,0
○	S30 ENT	L4 / TAA	WG	ECR	3,0
○	S30 ENT	L4 / TAA	VGT	ECR	3,0
○	S30 ENT	L4 / TAA	VGT	ECR	3,0
○	S30 ENT	L4 / TAA	VGT	ECR	3,0
○	S30 ENT	L4 / TAA	VGT	ECR	3,0
○	S30 ENT	L4 / TAA	VGT	ECR	3,0
○	S30 ENT	L4 / TAA	VGT	ECR	3,0
○	S30 ENT	L4 / TAA	VGT	ECR	3,0
○	S30 ENT	L4 / TAA	VGT	ECR	3,0
○	S30 ENT	L4 / TAA	VGT	ECR	3,0
○	S30 ENT	L4 / TAA	VGT	ECR	3,0
○	S30 ENT	L4 / TAA	VGT	ECR	3,0
○	S30 ENT	L4 / TAA	VGT	ECR	3,0
○	S30 ENT	L4 / TAA	VGT	ECR	3,0
○	S30 ENT	L4 / TAA	VGT	ECR	3,0
○	S30 ENT	L4 / TAA	VGT	ECR	3,0
○	S30 ENT	L4 / TAA	VGT	ECR	3,0
○	S30 ENT	L4 / TAA	VGT	ECR	3,0
○	S30 ENT	L4 / TAA	VGT	ECR	3,0
○	S30 ENT	L4 / TAA	VGT	ECR	3,0
○	S30 ENT	L4 / TAA	VGT	ECR	3,0
○	S30 ENT	L4 / TAA	VGT	ECR	3,0
○	S30 ENT	L4 / TAA	VGT	ECR	3,0
○	S30 ENT	L4 / TAA	VGT	ECR	3,0
○	S30 ENT	L4 / TAA	WG	MPI	3,0
●	N40 ENT	L4 / TAA	WG	ECR	3,9
⊙	N40 ENT	L4 / TAA	WG	ECR	3,9
●	N40 ENT	L4 / TAA	WG	ECR	3,9

POWER			TORQUE			EMISSION STANDARD	EXHAUST SYSTEM
KW	HP	RPM	NM	KGM	RPM		
93	126	3600	320	33	1800	Euro 4	ec-EGR + DOC
71	97	3900	240	24	1800	Euro 4	ec-EGR + DOC
78	106	3500	270	28	1500	Euro 5 / Euro 5 +	ec-EGR + DOC + DPF
93	126	3600	320	33	1800	Euro 5 / Euro 5 +	ec-EGR + DOC + DPF
107	146	3600	350	36	1500	Euro 5 / Euro 5 +	ec-EGR + DOC + DPF
85	116	3500	320	33	1500	Euro 6	LPEGR + DOC + DPF + NSC
93	126	3500	320	33	1500	Euro 6	LPEGR + DOC + DPF + NSC / ec-EGR + DOC + DPF + SCR
100	136	3600	350	36	1500	Euro 6	LPEGR + DOC + DPF + NSC
107	146	3600	380	39	1500	Euro 6	LPEGR + DOC + DPF + NSC / ec-EGR + DOC + DPF + SCR
115	156	3600	380	39	1500	Euro 6	LPEGR + DOC + DPF + NSC
127	173	3600	400	41	1500	Euro 6	LPEGR + DOC + DPF + NSC
107	146	3500	350	36	1400	Euro 4	ec-EGR + DOC
107	146	3500	350	36	1500	Euro 5 / Euro 5 +	ec-EGR + DOC + DPF
125	170	3500	400	41	1250	Euro 5	ec-EGR + DOC + DPF
125	170	3500	430	44	1250	Euro 5 +	ec-EGR + DOC + DPF
130	177	3500	400	41	1250	Euro 5 / Euro 5 +	ec-EGR + DOC + DPF
150	204	3500	470	48	1400	Euro 5 / Euro 5 +	ec-EGR + DOC + DPF
107	146	3500	350	36	1500	Euro 6	ec-EGR + DOC + DPF + SCR + CUC
132	180	3500	430	44	1500	Euro 6	ec-EGR + DOC + DPF + SCR + CUC
150	204	3500	470	48	1500	Euro 6	ec-EGR + DOC + DPF + SCR + CUC
107	146	3500	350	36	1400	Euro III	None
81	110	3500	260	27	1200	EEV	ec-EGR + DOC + DPF
96	131	3500	300	31	1300	EEV	ec-EGR + DOC + DPF
107	146	3500	370	38	1300	EEV	ec-EGR + DOC + DPF
110	150	3500	370	38	1320	EEV	ec-EGR + DOC + DPF
125	170	3500	400	41	1250	EEV	ec-EGR + DOC + DPF
129	175	3500	430	44	1600	EEV	ec-EGR + DOC + DPF + SCR + CUC
81	110	3500	260	27	1200	Euro VI A / C	ec-EGR + DOC + DPF + SCR + CUC
96	131	3500	300	31	1300	Euro VI A / C	ec-EGR + DOC + DPF + SCR + CUC
107	146	3500	350	36	1500	Euro VI A / C	ec-EGR + DOC + DPF + SCR + CUC
110	150	3500	370	38	1320	Euro VI A / C	ec-EGR + DOC + DPF + SCR + CUC
125	170	3500	400	41	1500	Euro VI A	ec-EGR + DOC + DPF + SCR + CUC
132	180	3500	430	44	1500	Euro VI C	ec-EGR + DOC + DPF + SCR + CUC
129	175	3500	430	44	1600	Euro VI A/C	ec-EGR + DOC + DPF + SCR + CUC
100	136	3500	350	36	1500	EEV / Euro VI A/C	3 WAY CATALYST
103	140	2700	460	47	1200-2100	EEV	SCR
110	140	2700	600	61	1300	EEV	None
118	160	2700	530	54	1200-2100	EEV	SCR

LEGEND

APPLICATION

- Light
- Truck
- ⊙ Bus

ARRANGEMENT

- L In line

AIR INTAKE

- TAA Turbocharged aftercooler

TURBOCHARGING

- WG Wastegate
- VGT Variable Geometry Turbo
- EVGT Electronic Variable Geometry Turbocharger

INJECTION SYSTEM

- ECR Electronic Common Rail
- EUI Electronic Unit Injector
- MPI Multi Point Injection

EMISSION STANDARD

- EEV Enhanced Environmentally friendly Vehicle

EXHAUST SYSTEM

- CUC Clean Up Catalyst
- DOC Diesel Oxidation Catalyst
- DPF Diesel Particulate Filter
- ec-EGR External Cooled Exhaust Gas Recirculation
- SCR Selective Catalytic Reduction

APPLICATION	MODEL	CYLINDER ARRANGEMENT AIR INTAKE	TURBOCHARGING	INJECTION SYSTEM	DISPLACEMENT LITERS
●	N40 ENT	L4 / TAA	WG	ECR	3,9
⊙	N40 ENT	L4 / TAA	WG	ECR	3,9
●	N40 ENT	L4 / TAA	WG	ECR	3,9
●	N40 ENT	L4 / TAA	WG	ECR	3,9
●	N45 ENT	L4 / TAA	WG	ECR	4,5
●	N45 ENT	L4 / TAA	WG	ECR	4,5
⊙	N45 ENT	L4 / TAA	WG	ECR	4,5
●	N45 ENT	L4 / TAA	WG	ECR	4,5
●	N60 ENT	L4 / TAA	WG	ECR	5,9
● ⊙	N60 ENT	L4 / TAA	WG	ECR	5,9
● ⊙	N60 ENT	L6 / TAA	WG	ECR	5,9
● ⊙	N60 ENT	L4 / TAA	WG	ECR	5,9
●	N60 ENT	L6 / TAA	WG	ECR	5,9
⊙	N60 ENT	L6 / TAA	WG	ECR	5,9
⊙	N60 ENT	L6 / TAA	WG	ECR	5,9
⊙	N60 ENT	L6 / TAA	WG	ECR	5,9
●	N60 ENT	L6 / TAA	WG	ECR	5,9
●	N60 ENT	L6 / TAA	WG	ECR	5,9
● ⊙	N60 ENT	L6 / TAA	WG	ECR	5,9
● ⊙	N60 ENTG	L6 / TAA	WG	MPI	5,9
●	N67 ENT	L6 / TAA	WG	ECR	6,7
⊙	N67 ENT	L6 / TAA	WG	ECR	6,7
●	N67 ENT	L6 / TAA	WG	ECR	6,7
●	N67 ENT	L6 / TAA	WG	ECR	6,7
⊙	N67 ENT	L6 / TAA	WG	ECR	6,7
● ⊙	N67 ENT	L6 / TAA	WG	ECR	6,7
⊙	C78 ENT	L6 / TAA	VGT	EUI	7,8
⊙	C78 ENT	L6 / TAA	VGT	EUI	7,8
●	C78 ENT	L6 / TAA	WG	EUI	7,8
●	C78 ENT	L6 / TAA	VGT	EUI	7,8
⊙	C78 ENT	L6 / TAA	VGT	EUI	7,8
●	C78 ENT	L6 / TAA	VGT	EUI	7,8
●	C78 ENT	L6 / TAA	VGT	EUI	7,8
⊙	C78 ENT	L6 / TAA	VGT	EUI	7,8
● ⊙	C78 ENTG	L6 / TAA	WG	MPI	7,8
● ⊙	C78 ENTG	L6 / TAA	WG	MPI	7,8
● ⊙	C78 ENTG	L6 / TAA	WG	MPI	7,8
● ⊙	C78 ENTG	L6 / TAA	WG	MPI	7,8

POWER			TORQUE			EMISSION STANDARD	EXHAUST SYSTEM
KW	HP	RPM	NM	KGM	RPM		
130	177	2700	570	58	1250-2100	EEV	SCR
130	177	2500	600	61	1250	EEV	SCR
134	182	2700	570	58	1200-2100	Euro III	None
134	182	2700	610	62	1300-2100	EEV	SCR
118	160	2500	580	59	1250-1940	Euro VI A / C	DOC + DPF + SCR + CUC
137	186	2500	680	69	1250-1900	Euro VI A / C	DOC + DPF + SCR + CUC
137	186	2500	750	76	1400	Euro VI A / C	DOC + DPF + SCR + CUC
152	207	2500	750	76	1400-1800	Euro VI A / C	DOC + DPF + SCR + CUC
135	184	2700	650	66	1200-1800	EEV	SCR
160	218	2700	680	69	1200-2230	Euro III	None
160	218	2700	680	69	1200-2100	EEV	SCR
176	239	2700	810	83	1250	Euro III	None
185	252	2700	850	87	1250-2100	EEV	SCR
185	252	2500	850	87	1250	EEV	SCR
192	261	2500	1050	107	1250	EEV	SCR
194	264	2500	1000	102	1250	EEV	SCR
202	275	2500	930	95	1250	Euro III	None
205	279	2500	950	97	1250-2100	EEV	SCR
220	299	2500	1050	107	1250-1850	EEV	SCR
150	204	2700	750	76	1250	Euro VI C	3 WAY CATALYST
162	220	2500	800	82	1250-1930	Euro VI A / C	DOC + DPF + SCR + CUC
184	250	2500	950	97	1400-1500	Euro VI A / C	DOC + DPF + SCR + CUC
185	252	2500	850	87	1250-2070	Euro VI A / C	DOC + DPF + SCR + CUC
206	280	2500	1000	102	1250-1970	Euro VI A / C	DOC + DPF + SCR + CUC
210	286	2500	1000	102	1250-1600	Euro VI A / C	DOC + DPF + SCR + CUC
235	320	2500	1100	112	1250-1890	Euro VI A / C	DOC + DPF + SCR + CUC
180	245	1850	1100	112	1040-1560	EEV	SCR
213	290	2050	1100	112	1040-1850	EEV	SCR
228	310	2400	1300	133	1200-1675	Euro V / EEV	SCR
243	330	2400	1400	143	1080-1655	Euro V / EEV	SCR
243	330	2050	1500	153	1125-1600	EEV	SCR
259	352	2400	1500	153	1200-1685	Euro III	None
265	360	2400	1500	153	1200-1685	Euro V / EEV	SCR
280	381	2050	1500	153	1125-1780	EEV	SCR
180	245	1850	1000	102	1050	EEV / Euro VI A / C	3 WAY CATALYST
200	272	2000	1100	112	1100	EEV / Euro VI A / C	3 WAY CATALYST
213	290	2000	1100	112	1100	EEV / Euro VI A / C	3 WAY CATALYST
221	301	2000	1200	122	1200	EEV / Euro VI A / C	3 WAY CATALYST

POWER			TORQUE			EMISSION STANDARD	EXHAUST SYSTEM
KW	HP	RPM	NM	KGM	RPM		
243	330	2000	1300	133	1200	EEV / Euro VI A / C	3 WAY CATALYST
228	310	2200	1300	133	1200	Euro VI A / C	DOC + DPF + SCR + CUC
243	330	2200	1400	143	1200	Euro VI A / C	DOC + DPF + SCR + CUC
265	360	2200	1650	168	1200	Euro VI A / C	DOC + DPF + SCR + CUC
294	400	2200	1700	173	1200	Euro VI A / C	DOC + DPF + SCR + CUC
221	301	2000	1300	133	1000-1620	Euro VI A / C	3 WAY CATALYST
250	340	2000	1500	153	1100-1591	Euro VI A / C	3 WAY CATALYST
264	359	2000	1640	167	1100-1540	Euro VI A / C	3 WAY CATALYST
280	381	2000	1700	173	1200-1575	Euro VI A / C	3 WAY CATALYST
294	400	2000	1700	173	1200-1575	Euro VI A / C	3 WAY CATALYST
280	381	2100	1600	163	1000-1660	EEV	SCR
294	400	2100	1900	194	1050-1550	Euro III	None
310	422	2100	1900	194	1050-1550	Euro V / EEV	SCR
316	430	2100	1900	194	1000-1590	Euro III	None
331	450	2100	2100	214	1050-1550	Euro V / EEV	SCR
331	450	2100	2100	214	1050-1500	EEV	SCR
338	460	2100	2100	214	1050-1550	Euro V / EEV	SCR
309	420	1900	1900	194	1050	Euro VI A / C	DOC + DPF + SCR + CUC
338	460	1900	2150	219	1050	Euro VI A / C	DOC + DPF + SCR + CUC
353	480	1900	2250	229	1050	Euro VI A	DOC + DPF + SCR + CUC
353	480	1900	2300	235	950	Euro VI C	DOC + DPF + SCR + CUC
280	381	1900	1900	194	1000-1515	Euro III	None
301	409	1900	1900	194	1000-1515	Euro V	SCR
309	420	1900	1900	194	1000-1515	Euro III	None
324	441	1900	2200	224	1000-1400	Euro III	None
324	441	1900	2200	224	1000-1400	Euro V	SCR
331	450	1900	2200	224	1000-1440	Euro V	SCR
382	520	1900	2300	235	1000-1600	Euro V	SCR
353	480	1900	2200	224	1000-1540	Euro III	None
353	480	1900	2200	224	1000-1540	Euro V / EEV	SCR
368	500	1900	2300	235	1000-1525	Euro V / EEV	SCR
397	540	1900	2300	235	1000-1525	Euro III	None
412	560	1900	2500	255	1000-1575	Euro V / EEV	SCR
302	411	1900	2100	214	1000	Euro VI A / C	DOC + DPF + SCR + CUC
331	450	1900	2200	224	1000	Euro VI A / C	DOC + DPF + SCR + CUC
368	500	1900	2300	235	1000	Euro VI A	DOC + DPF + SCR + CUC
412	560	1900	2500	255	1000	Euro VI A	DOC + DPF + SCR + CUC
375	510	1900	2300	235	1000	Euro VI C	DOC + DPF + SCR + CUC
420	571	1900	2500	255	1000	Euro VI C	DOC + DPF + SCR + CUC

All the pictures, drawings illustrations and descriptions contained in this brochure are based on product information available to FPT Industrial at the time of printing (31/07/2016).

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