PRESS RELEASE

7 December 2017

Scania introduces a 7-litre family for improved efficiency and reduced weight

- **Scania introduces a family of 7-litre engines intended mainly for urban applications; fuel savings of up to 10 percent can be achieved**
- **Three power levels – 220, 250 and 280 hp – from inline sixes all share low noise levels, low weight and low consumption**
- **The Scania DC07 provides just the type of performance and driveability that customers in challenging city environments are demanding for their applications**
- **The engine's compact format also opens for P-cabs with a low engine tunnel**
- **Scania now has four different engine families in production for Euro 6 and the new generation, ranging from 220 to 730 hp, with a number of alternative fuels.**

** Read more about Scania's alternative fuel offering in a special press release.*

Fifteen different Euro 6 engines have so far been introduced into Scania's new truck generation, with power outputs of 280 to 730 horsepower, based on three different engine families (9, 13 and 16 litres). Scania is now following up with the introduction of a fourth family. The new 7-litre engines are the smallest truck engines Scania has offered in decades, in terms of both displacement and external dimensions, and they are predicted to be in demand among both existing and new customers for applications such as distribution and waste collection.

"With our new engine family we are significantly broadening our offering for the growing number of customers that have the city as their main arena," says Henrik Eng, Product Director, Urban, Scania Trucks. "Characteristics such as a 360-kilogramme reduction in weight and a significant reduction in fuel consumption meet the needs for sustainable transport solutions typical of growing cities. But despite the format, this doesn't mean we've made any concessions when it comes to typical Scania characteristics such as performance, robustness and uptime."

The new inline six has been developed together with Cummins, a long-term partner of Scania in engine and component development. It has good low-rev characteristics and a fixed geometry turbocharger, and it uses only selective catalytic reduction (SCR) for the exhaust gas after-treatment for Euro 6.

Scania
Corporate Relations
SE-151 87 Södertälje
Sweden

Scania's family of inline six-cylinder 7-litre engines are in their natural environment in urban applications. This new engine is expected to attract new customers.

The technology and ideas behind Scania's new 7-litre engines

"The Scania DC07 is based on a well-known and robust six-cylinder engine," says Anna Wingren, Assistant Chief Engineer, Scania R&D. "With that as the starting point we've added Scania's accumulated knowledge about advanced diesel engines, including our own technology. We've developed a Scania platform offering unparalleled characteristics for applications where a torque beyond the 1,200 Nm this engine provides is not required by hauliers."

The customers are expected to be the likes of hauliers with urban distribution operations and transport buyers whose trucks make modern cities work by handling waste, dealing with maintenance and ensuring in other ways that the wheels keep turning. Weight is often a challenge in these types of applications and is also usually the main reason why they forego more powerful 9- or 13-litre engines.

Scania's control systems

The existing basic engine has been comprehensively developed. All of its monitoring and control systems are developed by Scania. In addition, it has been provided with a completely new turbocharger installation, and the new version uses Scania's in-house-developed, unique exhaust gas after-treatment system with SCR only to reduce NOx emissions.

"We had an extremely good starting point, which we have now transformed into a real Scania engine in all respects," Wingren says. "It's silent, it has Scania's 'low rev/high torque' philosophy and it's fuel efficient – in fact, we've even managed to exceed the targets set."

Wingren explains that the major watershed in the project was when the team decided to use Scania's own control units to obtain just the right characteristics and ensure perfect integration with Scania Opticruise and the diagnostics program SDP3.

"That choice also allowed us to get rid of the EGR system and choosing a robust, fixed-geometry turbocharger, just like the majority of our other Scania engines," Wingren says. "There are around a hundred new parts in all, with some, such as the new flywheel housing, mainly involved in meeting the interfaces that Scania's modular system interacts with."

In typical Scania style the new engines offer their best torque from revs as low as 1,050 r/min, a torque that is then available up to the region of 1,600 r/min. This provides very good driveability and, because of the low revs, the potential to save fuel. And just like its larger siblings it works on thin low-friction oil, which contributes to the admirably low fuel consumption.

Low weight

Compared with Scania's well-known five-cylinder DC09 family – the natural first choice of many customers in the applications and type of operation that the DC07 is geared to – the weight reduction is significant. This amounts to 360 kilogrammes, which can be converted to payload, all things being equal. But according to Scania's way of viewing things and optimising vehicles, there is nothing to prevent you from driving 26-tonne vehicles with the new 7-litre engine.

"Comparisons with the DC09 are relevant, but if you often need to load a three-axle vehicle to its maximum, the larger engine and the characteristics it offers are probably the right choice," says Eng. "You should more likely think of a distribution vehicle that might start the day with a gross laden weight of 18 tonnes but will soon be down to 10 to 12 tonnes, after having made a few deliveries. Then it's wise not to have an engine with an unnecessarily high performance, particularly since this can bring a fuel saving of up to 10 percent according to Scania's own measurements. Our offering always includes designing the right solution in a dialogue with the customer based on their actual needs."

Customising the offering both in terms of the services and the design of the vehicle solution itself based on needs is Scania's real driving passion. However, it does, require a broad product range to be credible. The fact that just over a year after the introduction of the new generation Scania already has 19 Euro 6 engines to offer the customer is clear proof that it practises what it preaches.

"Our goal is always to support customers in being profitable, but this in turn requires there to be a large number of cab and engine variants to start from," says Eng. "It's thanks to Scania's modular system that we can offer so many engines and ensure that we always give customers the best total operating economy."

Scania's new family of 7-litre engines is based on a basic engine, of which more than 500,000 have been sold. Scania has added all its engine expertise and unique Scania characteristics to this.

Technical perfection

The DC07 is based on a well-known engine that is already used in hundreds of thousands of different vehicles. It therefore has the advantage of being completely modern, while also being tried-and-tested and well respected. The design could be described as conventional, but that is not how Wingren would view it.

“Pushrods and four-valve technology work extremely well for the rev-ranges in question,” Wingren says. “Complex technology should never be an end in itself, but for Scania it’s a matter of creating customer value in the form of low consumption, robustness and reliability. That’s where this engine delivers 100 percent.”

As a commercial director for Scania, Eng is working along the same lines. “With the engine range we already have and with the addition in the form of the DC07 we can offer fully customised urban solutions for even more applications, regardless of a customer’s specific needs,” he says. “In the interfaces between the different engine families there is even the option to choose whether your 280 horsepower should be accompanied by 1,200 or 1,400 Nm, depending on whether you’re weight-sensitive, for example, and therefore opt for the DC07.”

Low engine tunnel in the P series

The introduction of the DC07 also means that you can now order the P cab with a low engine tunnel, something that has become possible because the new engine needs less space. The difference – an engine tunnel that is 95 millimetres lower – means that the cab clearly becomes more airy and the potential for moving sideways is improved. The lower tunnel also means that the P-cabs have the same storage compartments as in the G-cabs and there are new options for layouts with rear storage and bunks.

“The difference is greater than you first think,” Eng says. “We are convinced that many customers who drive solely or partly in city environments will appreciate this option. There are both purely practical advantages and a feeling of space and airiness, which are desirable in these types of applications.”

Anyone who chooses Scania’s new 7-litre engine combined with a P-cab can then also choose to have a 95-millimetre-lower engine tunnel. This provides greater space and makes it easier to move around inside the cab.

The low engine tunnel for P-cabs requires you to opt for the new 7-litre engine and can be selected for all P-cabs, regardless of length or roof height.

Scania's current engine range in Euro 6 for the new truck generation:

Technical data DC07

	DC07 111 220 hp	**DC07 112 250 hp**	**DC07 113 280 hp**
Type	Inline		
Displacement	6.7 litres		
Firing order	1-5-3-6-2-4		
Cylinders	6		
Valves per cylinder	4		
Bore x stroke	107x124 mm		
Cam type	Normal		
Compression	17.1:1		
Fuel injection	Bosch		
Emission control	Scania SCR		
Exhaust brake	88 kW at 2500 rpm		
Oil capacity	24.5 litres		
Max. output	220 hp (162 kW) at 1900 rpm	250 hp (184 kW) at 1900 rpm	280 hp (206 kW) at 1900 rpm
Max. torque	1000 Nm at 1050-1500 rpm	1100 Nm at 1050-1550 rpm	1200 Nm at 1050-1600 rpm

Technical data DC09

	DC09 130 280 hp	**DC09 126** 320 hp**	**DC09 127** 360 hp**
Type	Inline		
Displacement	9.3 litres		
Firing order	1-2-4-5-3		
Cylinders	5		
Valves per cylinder	4		
Bore x stroke	130 x 140 mm		
Cam type	Normal		
Compression	19.0:1		
Fuel injection	Scania XPI		
Emission control	Scania SCR		
Exhaust brake	190 kW at 2400 rpm		
Oil capacity	31 litres		
Max. output	280 hp (206 kW) at 1900 rpm	320 hp (235 kW) at 1900 rpm	360 hp (265 kW) at 1900 rpm
Max. torque	1400 Nm at 1000-1350 rpm	1600 Nm at 1050-1350 rpm	1700 Nm at 1050-1350 rpm

** Also available in a version using up to 100 percent biodiesel such as FAME

Technical data DC13

	DC13 149 370 hp	DC13 141 410 hp	DC13 148 450 hp	DC13 155 500 hp
Type	Inline			
Displacement	12.7 litres			
Firing order	1-5-3-6-2-4			
Cylinders	6			
Valves per cylinder	4			
Bore x stroke	130 x 160 mm			
Cam type	Miller	Normal		
Compression	20.9:1	19.4:1		
Fuel injection	Scania XPI			
Emission control	Scania SCR			
Exhaust brake	256 kW at 2400 rpm			
Oil capacity	43 litres			
Max. output	370 hp (272 kW) at 1900 rpm	410 hp (302 kW) at 1900 rpm	450 hp (331 kW) at 1900 rpm	500 hp (368 kW) at 1900 rpm
Max. torque	1900 Nm at 1000-1300 rpm	2150 Nm at 1000-1300 rpm	2350 Nm at 1000-1300 rpm	2550 Nm at 1000-1300 rpm

Technical data DC16

	DC16 116 520 hp	DC16 117 580 hp	DC16 118 650 hp	DC16 108 730 hp
Type	V8			
Displacement	16.3 litres			16.4 litres
Firing order	1-5-4-2-6-3-7-8			
Cylinders	90° V8			
Cylinder heads	8			
Valves per cylinder	4			
Bore x stroke	130 x 154 mm			
Cam type	Miller	Normal		
Compression	22.2:1	20.3:1		17.4:1
Fuel injection	Scania XPI			
Emission control	Scania SCR			Scania EGR/SCR
Exhaust brake	297 kW at 2400 rpm			320 kW at 2400 rpm
Oil capacity	43 litres			
Max. output	520 hp (382 kW) at 1900 rpm	580 hp (427 kW) at 1900 rpm	650 hp (479 kW) at 1900 rpm	730 hp (537 kW) at 1900 rpm
Max. torque	2700 Nm at 1000-1300 rpm	3000 Nm at 950-1350 rpm	3300 Nm at 950-1350 rpm	3500 Nm at 1000-1400 rpm

All Scania's Euro 5 and Euro 6 engines can run on a mixture of up to 100 percent hydrotreated vegetable oil (HVO) and any proportion of diesel and HVO, regardless of engine family.

For further information, please contact:

Henrik Eng, Product Director, Urban, Scania Trucks
Phone: + 46 70 658 98 29, email: henrik.eng@scania.com

Örjan Åslund, Head of Product Affairs, Scania Trucks
Phone: +46 70 289 83 78, email: orjan.aslund@scania.com

Scania is a world-leading provider of transport solutions. Together with our partners and customers we are driving the shift towards a sustainable transport system. In 2016, we delivered 73,100 trucks, 8,300 buses as well as 7,800 industrial and marine engines to our customers. Net sales totalled nearly SEK 104 billion, of which about 20 percent were services-related. Founded in 1891, Scania now operates in more than 100 countries and employs some 46,000 people. Research and development are concentrated in Sweden, with branches in Brazil and India. Production takes place in Europe, Latin America and Asia, with regional production centres in Africa, Asia and Eurasia. Scania is part of Volkswagen Truck & Bus GmbH. For more information visit www.scania.com.