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Scania V8 1969-2009 **The rumbling legend turns 40**



The power, the feeling and that unmistakeable sound – they are part of what makes Scania’s V8 engine a legend. Add excellent fuel economy in its output segment, the reputation of being almost unburstable and having an excellent trade-in value, and you have a combination that’s hard to beat. The strong reputation built by the original 14-litre engine is being carried to new heights with the 16-litre version launched in 2000.

Longer-term operating economy can justify a bigger initial investment! Added performance means faster trips. Extra durability and reliability add to uptime. Six years of ownership instead of four means less depreciation, especially with a second-hand value that is second to none.

These are aspects that many of Scania’s V8 customers factor into their calculation. Others find it hard to part from their working mates. In some cases, an overhaul after some 2 million kilometres has been sufficient to make the engine fit for another tough lease of life or two ... The ultimate service life remains to be known, but some Scania V8 trucks have been reported to remain in operation after 5 million kilometres or more.

Birth of a King

When Scania unveiled its 350 hp 14-litre V8 engine at the end of the 1960s, it was Europe’s most powerful truck engine, and it held that distinction for many years. The V8 made Scania the King of the Road.

Development started at a time when 250 hp was considered adequate. The engineers at Scania-Vabis realised that such outputs would not be sufficient in the long run, especially in timber haulage and heavy long-haulage, so why not try to be first on the market and take a groundbreaking step.

The go-ahead in 1962 coincided with the development of a new generation of forward-control trucks that would be unveiled in 1968. An inline eight-cylinder engine would not fit underneath a forward-control cab, nor would a larger inline six.

The engineers therefore went for a vee-configuration that would fit under the same cab as the 11-litre inline six, yet produce 100 hp more. The result was a powerful but very compact power unit that paved the way for a new level of truck performance.

'Driveability'

During the development process, working on the performance of the new engine, the engineers coined the concept of 'driveability'. Driveability characterises how an engine behaves, together with the rest of the powertrain, while driving. Peak power is generally of secondary importance, but the torque characteristics are critical in determining how well the engine performs.

Scania-Vabis' engineers defined good driveability as meaning that a truck should:

- Require few gearchanges throughout its speed range.
- Have good tractive power at low engine speeds.
- Have sufficient surplus output throughout its engine speed range.

The new Scania 14.2-litre V8 engine had no genuine forerunner in the diesel engine world. It was designed for turbocharging from the start, and it was dimensioned to ensure that the engine delivered the goods over a long service life. An optional naturally aspirated 260 hp version was also available for buses, turning tourist coaches into true gliders.

The Scania LB140 models quickly won acclaim. They combined high output with a torque curve that flattered the use of low engine speeds – a pleasant and effective combination in a heavy vehicle. Many customers also liked the V8 emblem and the typical, powerful rumbling of the engine. All this, combined with exceptional durability and service life, quickly helped make the 14-litre V8 engine a legend.

The hp/tonne requirement

By the mid-1970s, road safety authorities realised that it was necessary for trucks to keep up reasonably well with the general flow of traffic, instead of causing major delays and frustration. The recommendation in Germany was 8 hp per tonne gross weight, i.e. slightly more than 300 hp for the 38 tonnes permitted. The 375 hp Scania V8 at that time boasted close to 10 hp/tonne, a figure that did not become common in European long-haulage until some 25 years later (40 tonnes, 400 hp, in 2000).

Meanwhile, the Scania V8 also provided sufficient output for higher gross weights. Today, with frequent use of long 60-tonne combinations in Scandinavia, outputs of around 600 hp are desirable in operations that require 10 hp/tonne performance.

14-litre success

The output of the 14-litre engine was boosted in several steps up to 530 hp and 2,300 Nm for the final version manufactured between 1995 and 2001. Power was thus up by more than 50 percent and torque had been boosted by 85 percent.

Year	1969	1995
Configuration	90-degree V8	90-degree V8
Emission level	–	Euro 2
Swept volume	14.2 litres	14.2 litres
Bore x stroke	127 x 140 mm	127 x 140 mm
Top output	350 hp	530 hp
Torque	1,245 Nm	2,300 Nm

Around 170,000 14-litre V8 engines were delivered between 1969 and 2001, covering truck applications, industrial and marine engines, as well as some 900 coaches.

16-litre successor

The 16-litre V8 launched in 2000 was a completely new design, based on the modular cylinder concept that applies for all Scania engines, 9-, 12-, 13- and 16-litre. The 16-litre V8 has since graduated to Euro 4 and Euro 5. The top-output version now delivers 620 hp and 3,000 Nm of torque.

Year	2000	Currently
Configuration	90-degree V8	90-degree V8
Emission level	Euro 3	Euro 5
Swept volume	15.6 litres	15.6 litres
Bore x stroke	127 x 154 mm	127 x 154 mm
Top output	580 hp	620 hp
Torque	2,700 Nm	3,000 Nm

For many years, Scania has been the best-selling truck make above 500 hp. Scania's V8 engine took Italy by storm in the 1970s and has been a big seller in that market ever since.

The V8 is compact and has a very favourable power-to-weight ratio. This has made it popular in applications like off-road construction dumpers and other plant equipment, as well as in vehicles and boats for defence applications.

More than a quarter of a million Scania V8 engines have been delivered since 1969. Out of these, at least one hundred thousand are estimated to remain in operation.

Statistics and technical data below. For more information and images:

- Go to www.scania.com/media/v8/ for the special V8 media site.
- At <http://imagebank.scania.com/> you can search for V8-related images by entering "V8" in the "Quick search" field.
- An anniversary site of special interest to Scania fans and enthusiasts will be opened in May
- Contact: Per-Erik Nordström, Product Affairs, tel. +46 8 55385577, email per-erik.nordstrom@scania.com.

V8 sales development

<i>Engine</i>	<i>Product range</i>	<i>Years</i>	<i>Deliveries</i>
14-litre V8	LB140, LBS140, LBT140	1969-1976	9,963
	L140, LS140, LT145	1972-1976	2,197
	LB141, LBS141, LBT141	1976-1981	16,405
	LK141, LKS141, LKT141	1977-1981	2,522
	L141, LS141, LT146	1976-1980	1,780
	R142, T142	1981/1980-1988	36,931
	R143, T143	1988-1996	51,811
	R144, T144	1995-2001	34,450
	Industrial and marine	1969-2002	21,430
	Buses	1971-1977	894
		Total 14-litre	178,383
16-litre V8	R164, T164	2000-2004	22,267
	R-series Euro 3	Ongoing (-2008)	23,109
	R-series Euro 4	Ongoing (-2008)	11,139
	R-series Euro 5	Ongoing (-2008)	8,029
	Industrial and marine	Ongoing (-2008)	5,969
		Total 16-litre	70,513
		Total Scania V8	248,896

Top-10 V8 markets 1988-2008

<i>Pos.</i>	<i>Market</i>	<i>Total</i>	<i>14-litre V8 deliveries 1988-2001</i>	<i>16-litre V8 deliveries 2000-2008</i>
1	Italy 1974-1987	30,242 +11,000	17,081	13,161
2	Germany	16,850	9,787	7,063
3	Sweden	14,942	9,956	4,986
4	Spain	13,230	7,543	5,687
5	France	10,561	6,963	3,598
6	Norway	8,368	3,275	5,093
7	Great Britain	7,237	4,040	3,197
8	The Netherlands	6,709	3,647	3,062
9	Denmark	6,503	3,872	2,631
10	Austria	5,403	3,103	2,300

Performance development

<i>Year</i>	<i>Milestone</i>	<i>Output</i>	<i>Torque</i>
1969	New 14-litre V8-engine turbocharged	350 hp at 2,300 r/min	1,245 Nm at 1,500 r/min
1969	Industrial and marine engines	350 hp at 2,300 r/min	1,270 Nm at 1,450 r/min
1971	Naturally aspirated truck and bus engine	260 hp at 2,300 r/min	932 Nm at 1,200 r/min
1973	Charge-cooled marine engine	404 hp at 2,100 r/min	1,290 Nm at 1,300 r/min
1976	Naturally aspirated version discontinued	–	–
1976	Low-rev philosophy	375 hp at 2,000 r/min	1,480 Nm at 1,300 r/min
1981	Scania 2-series trucks	388 hp at 2,000 r/min	1,580 Nm at 1,300 r/min
1982	Charge-cooling optional	420 hp at 1,900 r/min	1,725 Nm at 1,250 r/min

<i>Year</i>	<i>Milestone</i>	<i>Output</i>	<i>Torque</i>
1985	Charge-cooling standard	430 hp at 1,900 r/min 400 hp at 1,900 r/min	1,725 Nm at 1,250 r/min 1,605 Nm at 1,300 r/min
1985	Marine engine	451 hp at 2,100 r/min	1,750 Nm at 1,200 r/min
1987	Scania 3-series trucks With EDC	404 hp at 1,900 r/min 450 hp at 1,900 r/min 470 hp at 2,100 r/min	1,663 Nm at 1,250 r/min 1,915 Nm at 1,150 r/min 1,940 Nm at 1,250 r/min
1991	Euro 1	453 hp at 1,900 r/min 500 hp at 1,900 r/min	2,030 Nm at 1,150 r/min 2,130 Nm at 1,000-1,500 r/min
1994	Euro 2	500 hp at 1,900 r/min	2,130 Nm at 1,000-1,500 r/min
1995	Scania 4-series trucks	460 hp at 1,900 r/min 530 hp at 1,900 r/min	2,030 Nm at 1,100-1,500 r/min 2,300 Nm at 1,100-1,500 r/min
1999	Marine engine	800 hp at 2,200 r/min	2,680 Nm at 2,000 r/min
2000	New 16-litre V8-engine	480 hp at 1,900 r/min 580 hp at 1,900 r/min	2,300 Nm at 1,100-1,300 r/min 2,700 Nm at 1,100-1,300 r/min
2002	Marine engine	900 hp at 2,300 r/min	3,000 Nm at 1,500 r/min
2004	Scania R-series	500 hp at 1,900 r/min 580 hp at 1,900 r/min	2,400 Nm at 1,100-1,300 r/min 2,700 Nm at 1,100-1,300 r/min
2005	Euro 4	500 hp at 1,900 r/min 560 hp at 1,900 r/min 620 hp at 1,900 r/min	2,400 Nm at 1,100-1,400 r/min 2,700 Nm at 1,100-1,400 r/min 3,000 Nm at 1,100-1,400 r/min
2007	Euro 5	500 hp at 1,900 r/min 560 hp at 1,900 r/min 620 hp at 1,900 r/min	2,500 Nm at 1,000-1,350 r/min 2,700 Nm at 1,000-1,400 r/min 3,000 Nm at 1,000-1,400 r/min