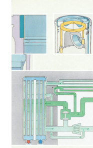
May 1993

MARINE DIESELS



good breathers – both in and out... This ability has been further enhanced by the latest improvements in the turbocharged and intercooled models. In the intercooled 11 and 14-litre engines the high-efficiency charge-air cooler has been matched to the unique two-compartment heat exchanger. The plate-type air cooler, with a documented efficiency of 83–85%, uses fresh water as coolant. By an ingenious arrangement the water, drawn from the engine coolant inlet, is further cooled in a dedicated section of the compact heat exchanger.

Do you need more than propulsion from your engine? A variety of power take-off options are available with Scania diesels. An example is this front mounted p.t.o. arrangement with a solid housing incorporating an elastic internal coupling and built-in flywheel.... with flange to SAE3 and the flywheel prepared for an industrial clutch and with grooves for standard vee belts.

Low lube oil consumption

The *Saver Ring* gives a 40% reduction of the already very low lube oil consumption, now as low as 0.3 g/kWh. This means not only savings in operating expenses. It is also an important contribution to a cleaner environment, reducing hydrocarbon and particulate emissions throughout the engine's life.

Further features on the latest models such as more powerful injection equipment, turbochargers optimised to match the specific speed ranges and a new type of heat-exchanger, interact to produce even higher performance with greater economy. A special feature of Scania 14-litre engines and the high-out-put versions of the DSI11 engine is the effective cooling of the piston crown, in which a circular oil duct is arranged to achieve a beneficial shaker effect.

High efficiency charge cooling

Lusty engines need lots of air! As top long-distance runners, Scania engines are

Clean lube oil

Long service life is a part of Scania's value and clean lube oil is an important factor in preserving that asset. Scania's two-stage cyclone/centrifugal oil cleaner is justly renowned, not only for unsurpassed efficiency but also for service-friendliness.

It's features like these that count!

Working for a better environment

Scania is one of the leading companies in environmental awareness, continuously striving to reduce exhaust emissions from the diesel engine range. Truck and bus engines, for example, are designed to meet the latest Euro 1 and Euro 2 emission standards. Much of the technology and knowledge is shared with Scania industrial and marine engines.

We offer engines complying with all existing and future emission standards published to date, such as the TA Luft in Germany and the USA Federal Inclusive California. We believe legislation should extend even further. Scania fully supports the development and introduction of international emission standards, like ISO 8178.

ISO 9001

Scania has received formal recognition of its quality assurance throughout its Swedish factories with ISO 9001 accreditation. This certification is a further commitment to guarantee high quality.

More power with economy

Inshore and "blue water" alike, users have long agreed… Scania marine diesels are rugged, reliable, easy to maintain and outstandingly economical.

And with the latest ratings, Scania marine diesels now offer *more power* – up to 497 kW (675 hp) – and *further improved economy*.

Scania marine diesels are met in many guises.

The compact profile and rational arrangement of Scania engines simplify installation and service access.

Their steady throb is an insurance in boats like tugs and trawlers, slogging away for long hours with a train of loaded barges or a heavy trawl… just as their quick starting and nimble response to frequent load changes are appreciated in sturdy workboats of every kind.

But you'll find them, too, in fast semi-displacement and high-speed planing craft… carrying passengers on express routes, getting day fishermen quickly back to market, or performing patrol and interception duties.

Whatever the role, Scania marine diesels run smoothly, economically and with tireless flexibility under all conditions.

Features that count

Why do Scania marine diesels represent such lasting value? Because they are optimised to give reliable performance with economical operation and long service life. Scania has a very long experience of marine engines: the first was produced in 1902.

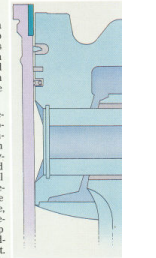
Experience confirms that Scania diesels consistently show lower consumption of both fuel and lubricating oil than practically any other make. In many cases, the difference is remarkable.

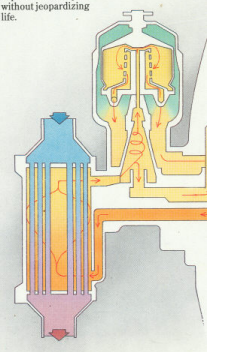
Many features interact to produce these results. Some are unique – like the *Saver Ring* fitted in all three engine families.

The saver ring concept

The *Saver Ring*, seated in a machined recess at the top of the cylinder liner, reduces piston top land clearance in the combustion phase and thereby inhibits combustion in the peripheral clearance cavity.

The *Saver Ring* complements the Keystone-type upper piston ring in the prevention of "coking". Combustion pressure causes the Keystone ring to make a good seal against the cylinder wall at the same time as this design keeps the ring groove clean. On the upward stroke, the *Saver Ring* removes deposits from the piston top land, preventing coke build-up and bore-polishing effect. This is particularly valuable when running at high loads. These characteristics also enable Scania engines to develop full power instantly on staring without jeopardizing engine life.





Dash with dependability and economy… essential qualities when the need to move fast is part and parcel of a hardworking life at sea. At all seasons, in all weathers.

Scania high-performance diesels give a spirited response that you can rely upon: to get pilots speedily on and off waiting ships in exposed roads… to turn loiter into spurt when an urgent call crackles on a gruelling offshore patrol… to get the catch back quick and fresh when the pothauling's done…

These compact engines are ruggedly built, with a suprisingly sharp nip!

POWER RANGE

Propulsion

IFN[1] 2100 r/min (DS9 and DSI9 2200 r/min)

	Engine type	Turbo	Intercooler	Direct (Indirect) injection	Cylinders	Litres	Petrol craft with longer yearly running, certain ferries and work boats[2] Output kW (hp)	Petrol craft[3] Output kW (hp)	Pleasure craft[3] Output kW (hp)
Heat Exchanger	DS9	T	–		6	8,5	195 (265)		
	DSI9	T	I		6	8,5	220 (300)	258 (351)	–
	DS11	T	–		6	11,0	242 (329)	–	–
	DSI11	T	I		6	11,0	288 (392)	315 (428)	368 (500)
	DSI14	T	I		V8	14,2	356 (484)	–	–
	DSI14**	T	I		V8	14,2	414 (563)	460 (625)	497 (675)
Keel cooled	DS9	T	–		6	8,5	165 (224)	–	–
	DS9	T	–		6	8,5	195 (265)	–	–
	DS11	T	–		6	11,0	242 (329)	–	–
	DSI11	T	I		6	11,0	286 (389)	–	–
	DSI14	T	I		V8	14,2	356 (484)	–	–
	DSI14**	T	I		V8	14,2	414 (563)	–	–

*I = ISO standard (ISO 3046), **F** = Fuel stop power, **N** = Net power.
**Compression ratio 13,5:1.
Output and fuel values: +/– 3%.

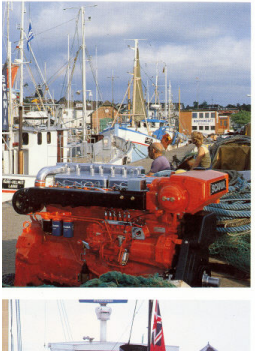
[1] Full power 1 h/6 h, no limit on annual service time or full power 1 h/2 h and 1500 h/year service time.

[2] Applicable to planing vessels with a propulsion system laid out for 2100 r/min (DSI9 2200 r/min). Rated power is available 1 h/6 h and 1500 h/year service time out of which fully continuous power is available up to 250 h/year.

[3] Applicable to planing vessels with a propulsion system laid out for 2100 r/min. Rated power is available 1 h/6 h and 500 h/year service time out of which fully continuous power is available up to 150 h/year.

All specifications are subject to change without notice.

More work and longer hours?
– it's a Scania life...



Define a workboat as "a boat that works for a living" and you include not only sturdy toilers like tugs and tenders and tank barges, not to mention the many types of fishing vessel, but also – why not? – smart passenger craft and charter cruisers.

These kinds of boat share more than a name: their operators all need consistent, reliable engine power, economical running and easy maintenance. Their bottom line depends on it.

Now, more than ever, Scania marine diesels are the right choice. They offer more power for more time, with unbeaten economy.
With Scania, boats work
for a better living.

POWER RANGE

	Engine type	Turbo	Charge cooler	Displ. (litres)	Config.	Propulsion: ICFN* 1800 r/min. (DS9 and DS9 1900 r/min). Fishing and certain work boats[1] — Output kW (hp)	Propulsion: Specific fuel consumption at 1500 r/min g/kWh (g/hph)	Auxiliary: 50 Hz[2] — Output kW (hp)	Auxiliary: 60 Hz[2] — Output kW (hp)
Heat Exchanger	DS9	T	I	8,5	6L	180 (245)	208 (153)	154 (209)	177 (241)
	DS9	T	I	8,5	6L	210 (286)	202 (149)	176 (240)	201 (273)
	DS11	T	I	11,0	6L	229 (311)	210 (154)	203 (277)	230 (313)
	DS11	T	I	11,0	6L	270 (367)	206 (152)	264 (359)	292 (397)
	DS14	T	I	14,2	V8	331 (450)	207 (152)	320 (435)	352 (479)
	DS14**	T	I	14,2	V8	391 (532)	206 (152)	–	–
Keel cooled	DS9	T	–	8,5	6L	153 (208)	207 (152)	134 (182)	153 (208)
	DS9	T	–	8,5	6L	180 (245)	208 (153)	154 (209)	177 (241)
	DS11	T	–	11,0	6L	229 (311)	210 (154)	203 (277)	230 (313)
	DS11	T	I	11,0	6L	264 (359)	212 (156)	260 (354)	288 (392)
	DS14	T	I	14,2	V8	331 (450)	207 (152)	320 (435)	352 (479)
	DS14**	T	I	14,2	V8	391 (532)	206 (152)	–	–

*I = ISO standard (ISO 3046), C = Continuous, F = Fuel stop power, N = Net power.
**Compression ratio 13.5:1. Output and fuel values: +/– 3%.

[1] Continuous power 3000 h/year service time (DS9 153 (208) 2000 h/year).
[2] For continuous operation under varying load factors and with 10% overload capacity 1 h/12 h.

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Leaders in applied technology

Scania marine engines are a product of Saab-Scania, a leading international enterprise in the automotive, aerospace and data processing industries. Access to the vast resources the Saab-Scania Group ensures the ongoing progress of Scania diesel engineering.

While technologically advanced, Scania marine engines are based on long experience, thoroughly proven engineering solutions and extensive research with operating economy and long service life as key objectives.

ISO 9001 accredited
This certification is a further commitment to guarantee high quality.

SCANIA