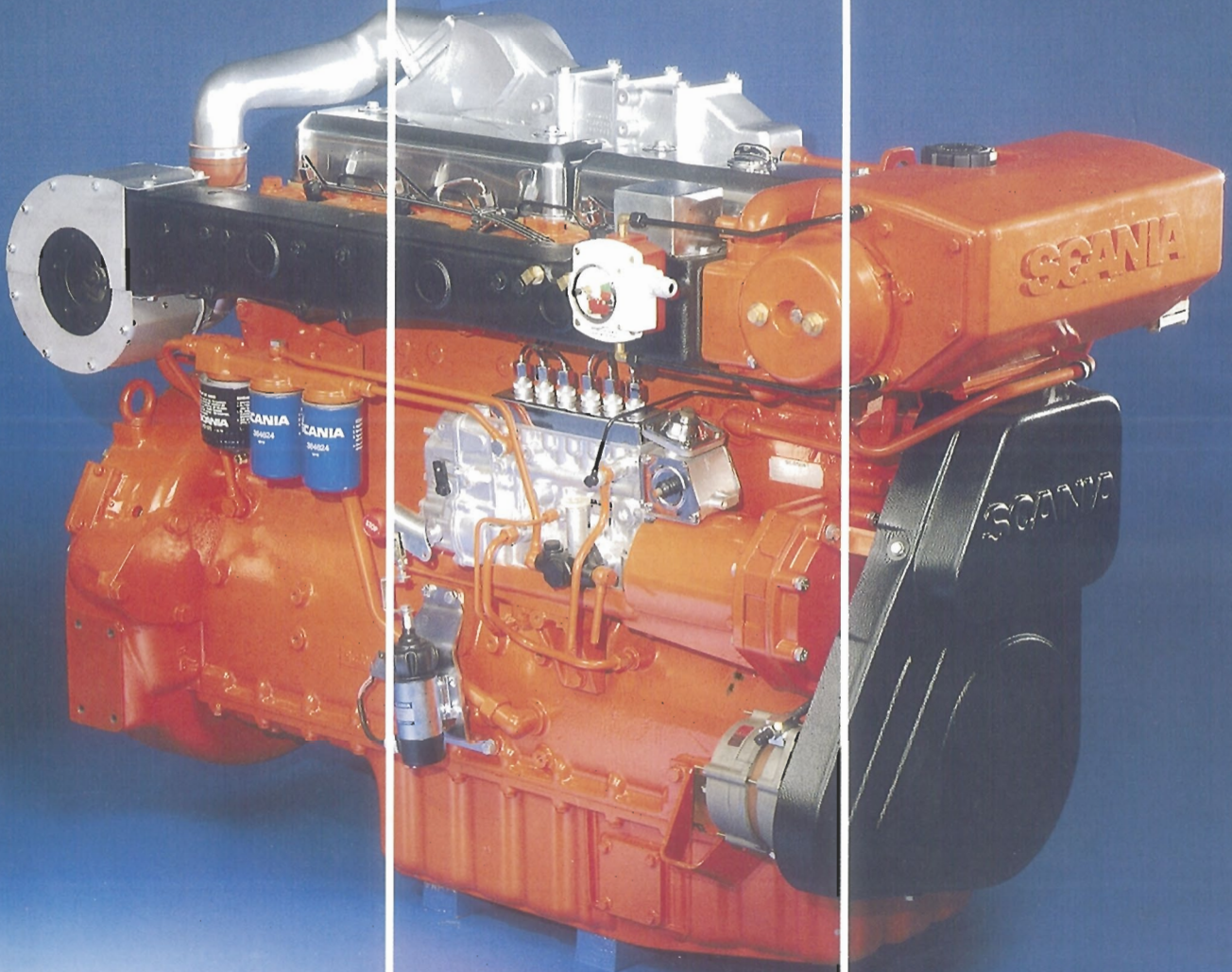




SCANIA



January 1995

MARINE DIESELS

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.



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

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

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.

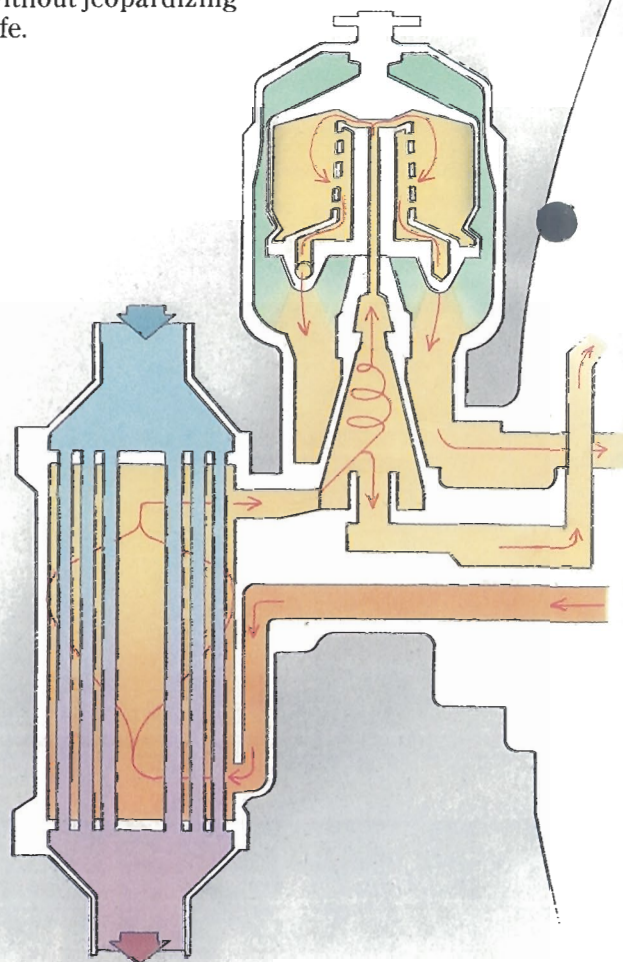
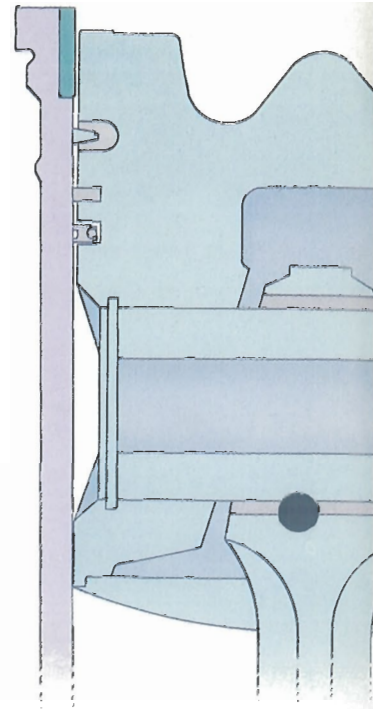
Many features interact to produce these results. Some are unique – like the *Saver*

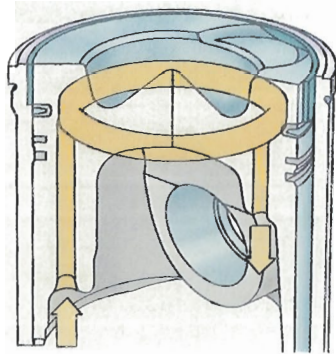
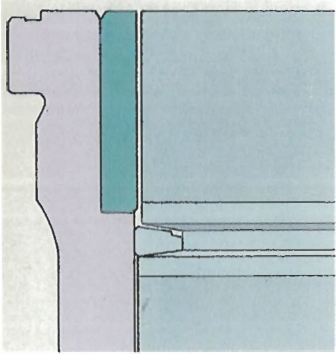
Ring fitted in all three engine families.

The saver ring concept

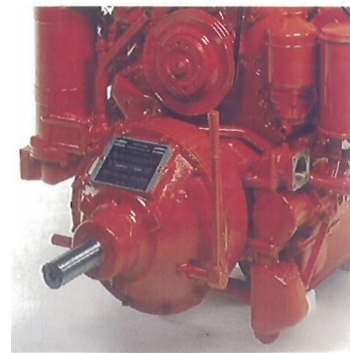
The *Saver Ring*, seated in a machined recess at the top of the cylinder liner, reduces piston top land clearance in the combustion phase and thereby inhibits combustion in the peripheral clearance cavity.

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 starting without jeopardizing engine life.





good breathers – both in and out... This ability has been further enhanced by the latest improvements in the turbocharged and inter-cooled models. In the inter-cooled 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



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.

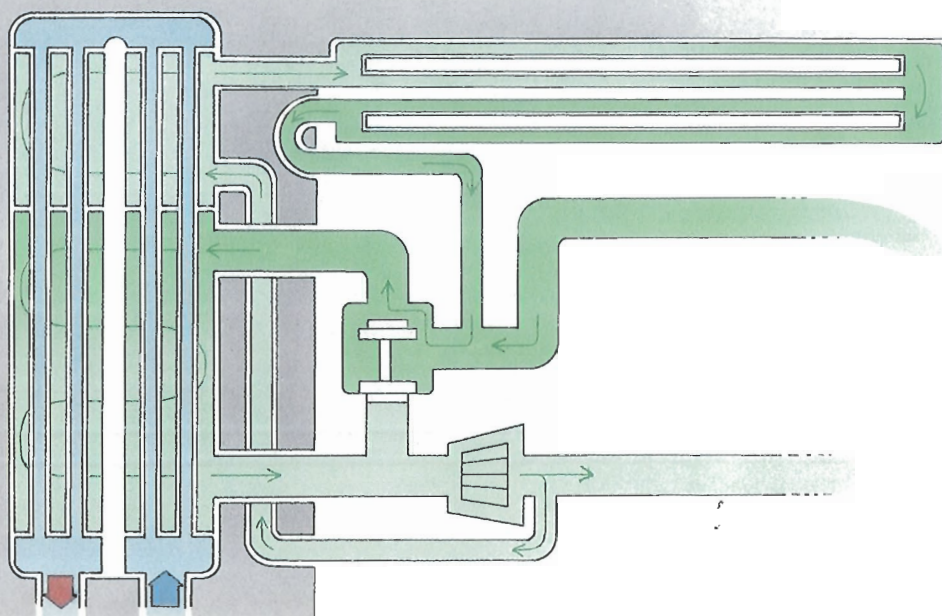
Working for a better environment

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.



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

ingenious arrangement the water, drawn from the engine coolant inlet, is further cooled in a dedicated section of the compact heat exchanger.

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!

Scania diesels for high-speed workboats, patrol and pleasure craft

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 surprisingly sharp nip!



POWER RANGE

Propulsion

| Heat Exchanger | Engine type | Turbo | Intercooler | Displ. (litre) | Config. | IFM* 2100 r/min (DS9 and DS19 2200 r/min) | | |
|----------------|-------------|-------|-------------|----------------|---------|---|--|--|
| | | | | | | Output kW (hp) ¹ | Patrol craft ² Output kW (hp) | Pleasure craft ³ Output kW (hp) |
| | DS9 | T | - | 8,5 | 6L | 195 (265) | - | - |
| | DS19 | T | I | 8,5 | 6L | 220 (300) | 258 (351) | - |
| | DS11 | T | - | 11,0 | 6L | 242 (329) | - | - |
| | DS11I | T | I | 11,0 | 6L | 288 (392) | 315 (428) | 368 (500) |
| | DS14 | T | I | 14,2 | V8 | 356 (484) | - | - |
| | DS14** | T | I | 14,2 | V8 | 414 (563) | 460 (625) | 497 (675) |
| Cool cooled | DS9 | T | - | 8,5 | 6L | 165 (224) | - | - |
| | DS9 | T | - | 8,5 | 6L | 195 (265) | - | - |
| | DS11 | T | - | 11,0 | 6L | 242 (329) | - | - |
| | DS11I | T | I | 11,0 | 6L | 288 (389) | - | - |
| | DS14 | T | I | 14,2 | V8 | 356 (484) | - | - |
| | DS14** | T | I | 14,2 | V8 | 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 (DS19 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 100 h/year.
 All specifications are subject to change without notice.



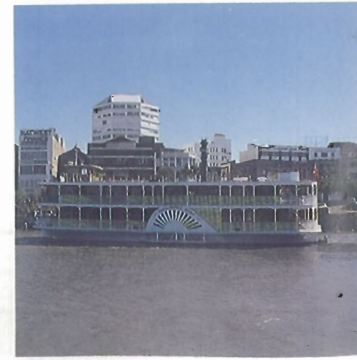
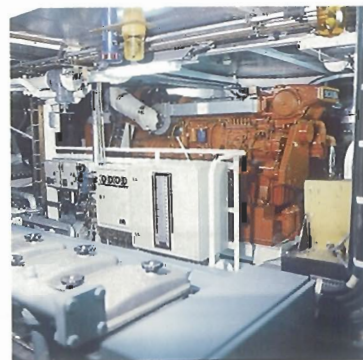
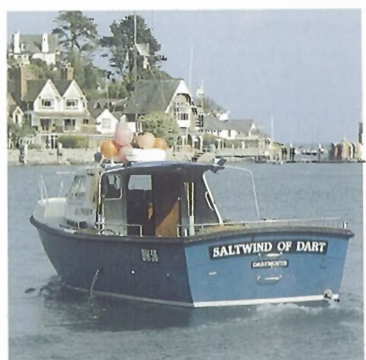
More work and longer hours? – it's a Scania life...



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.

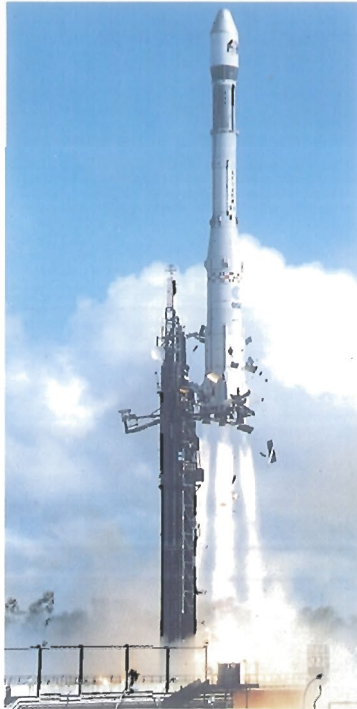
Now, more than ever, Scania marine diesels are the right choice. They offer more power for more time, with unbeaten economy. With Scania, boats work for a better living.



POWER RANGE

| Engine type ¹ | Turbo | Intercooler | Displ. (litre) | Config. | Propulsion | | Auxiliary | |
|--------------------------|-------|-------------|----------------|---------|-------------------|--|--------------------|--------------------|
| | | | | | Output kW (hp) | Specific fuel consumption at 1500 r/min g/kWh (g/hph) | 50 Hz ² | 60 Hz ² |
| | | | | | | | Output kW (hp) | Output kW (hp) |
| DS9 | T | - | 8,5 | 6L | 180 (245) | 208 (153) | 154 (209) | 177 (241) |
| DS19 | T | I | 8,5 | 6L | 210 (286) | 202 (149) | 176 (240) | 201 (273) |
| DS11 | T | - | 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) | - | - |
| 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) | - | - |

¹I = ISO standard (ISO 3046), C = Continuous, F = Fuel stop power, N = Net power.
²Compression 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.
 All specifications are subject to change without notice.



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 9000
This commitment

ΑΠΟΚΛΕΙΣΤΙΚΟΣ ΑΝΤΙΠΡΟΣΩΠΟΣ

ΠΕΤΡΟΣ ΠΕΤΡΟΠΟΥΛΟΣ
Από το 1922

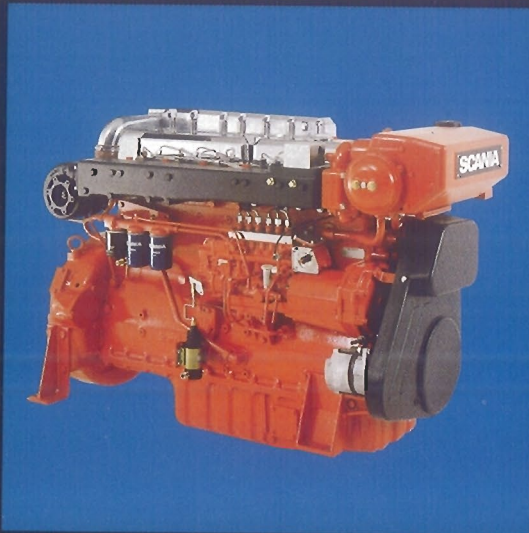
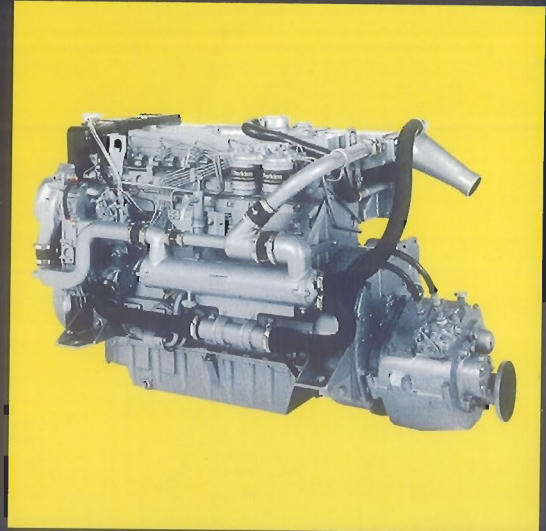
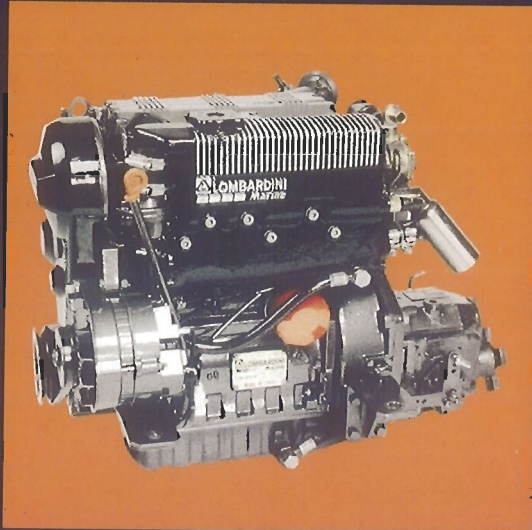
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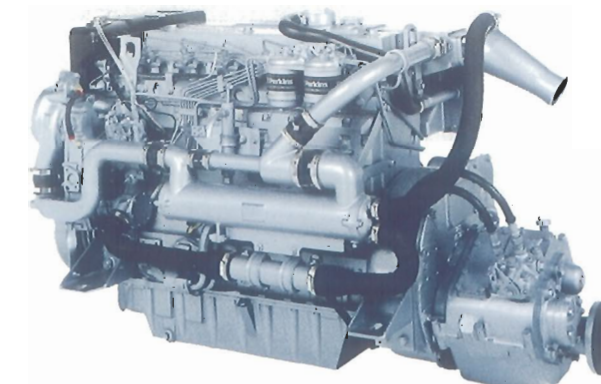
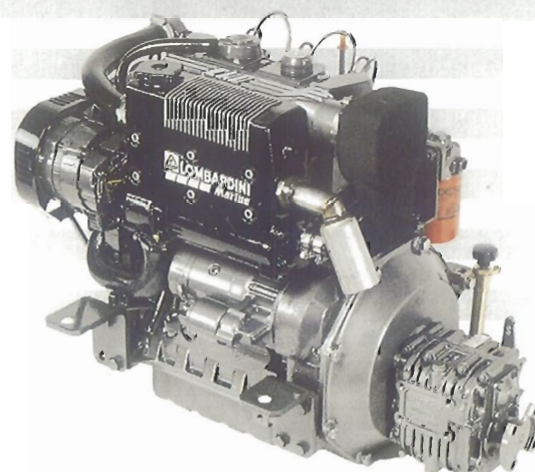
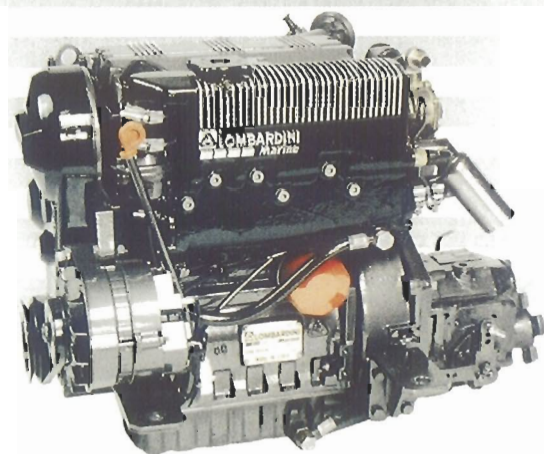
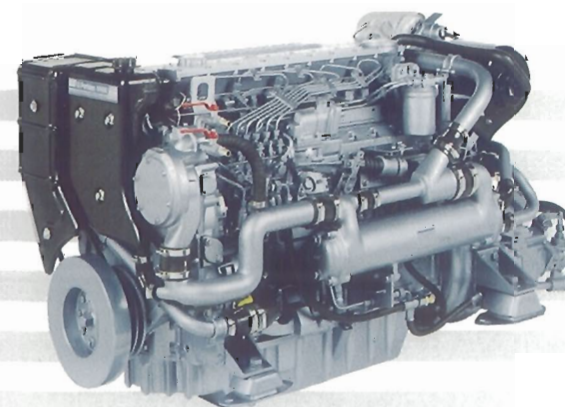
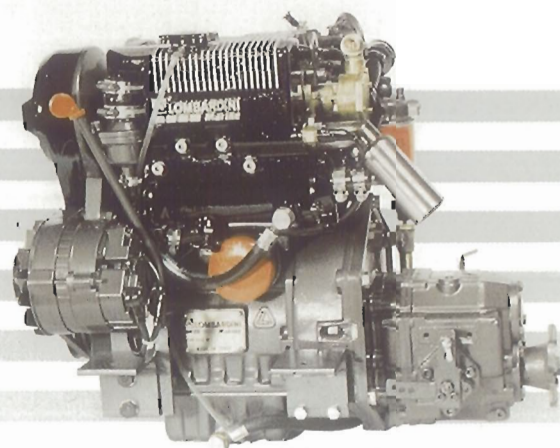
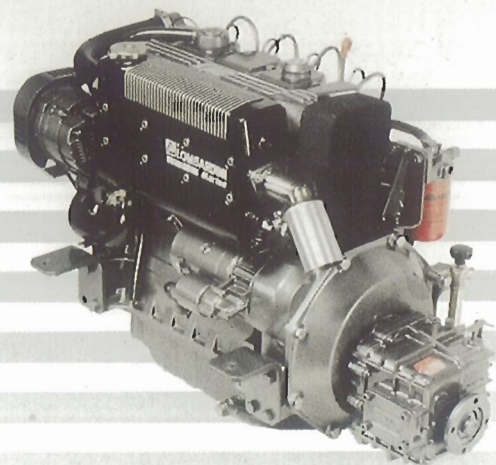
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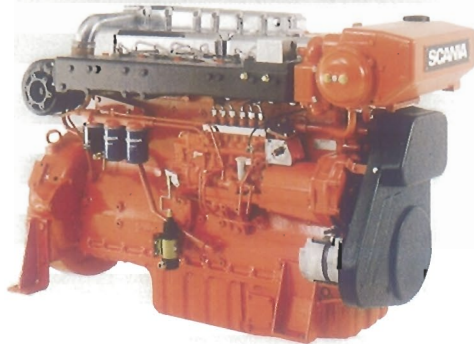
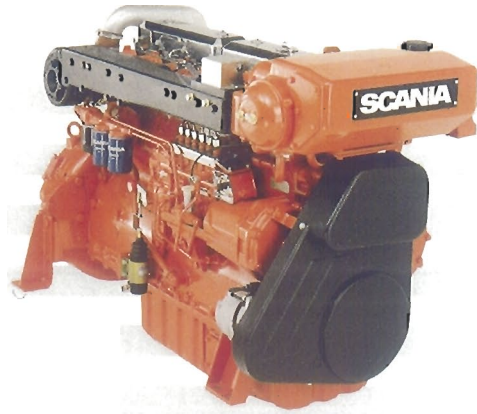
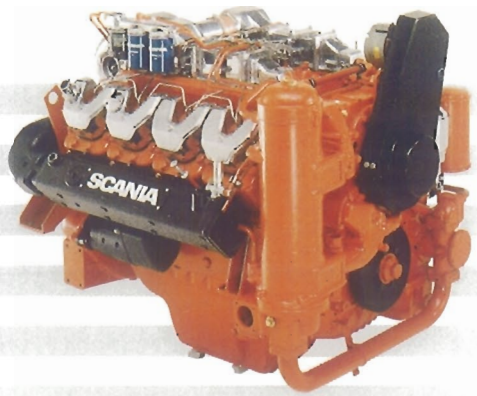
Ακλόνητη αξιοπιστία στη θάλασσα

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|-------------------|-------------|-----------|----------------------|-----------------|---------------------|
| LOMBARDINI | LDW 502M | 2 | 11/3600 | 75 | 505 |
| | LDW 602M | 2 | 17/3600 | 97 | 611 |
| | LDW 903M | 3 | 27/3600 | 110 | 916 |
| | LDW 1204M | 4 | 33/3600 | 135 | 1198 |
| | LDW 1503M | 3 | 37/3000 | 180 | 1551 |
| | LDW 2004M | 4 | 48,5/3000 | 230 | 2068 |
| | LDW 2004TBI | 4T | 82/3000 | 258 | 2068 |

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|----------------|-------------|-----------|----------------------|-----------------|---------------------|
| Perkins | SABRE M65 | 4 | 65/2600 | 307 | 2955 |
| | PETMAR M80 | 4 | 81/2600 | 540 | 4000 |
| | RANGE4-M90 | 4 | 90/2800 | 520 | 3860 |
| | SABRE-M130C | 6 | 130/2600 | 672 | 6000 |
| | SABRE-M135 | 6 | 135/2600 | 653 | 6000 |
| | PETMAR M170 | 6T | 167/2600 | 690 | 6000 |
| | SABRE-M215C | 6T | 215/2500 | 709 | 6000 |
| | SABRE-M225 | 6T | 225/2500 | 683 | 6000 |
| | SABRE-M265 | 6T | 265/2500 | 702 | 6000 |
| | SABRE-M300 | 6T | 300/2500 | 702 | 6000 |



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|-----------|-----------|----------------------|-----------------|---------------------|
| DS9-93M | 6T | 273/2200 | 1075 | 9000 |
| DSI9-40M | 6T | 329/2200 | 1080 | 9000 |
| DSI9-44M | 6T | 400/2200 | 1080 | 9000 |
| DSI9-47M | 6T | 450/2300 | 1080 | 9000 |
| DS11-98M | 6T | 330/2100 | 1320 | 11000 |
| DSI11-73M | 6T | 392/2100 | 1370 | 11000 |
| DSI11-74M | 6T | 500/2100 | 1335 | 11000 |
| DSI11-75M | 6T | 600/2200 | 1335 | 11000 |
| DSI14-73M | V8T | 461/1800 | 1925 | 14200 |
| DSI14-74M | V8T | 577/2100 | 2117 | 14200 |
| DSI14-75M | V8T | 652/2100 | 1625 | 14200 |
| DSI14-69M | V8T | 750/2200 | 1575 | 14200 |



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ΠΕΤΡΟΠΟΥΛΟΣ**

Από το 1922



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SPICA LTD.

**YOUR MAJOR
SUPPLIER OF
DIESEL ENGINE
SPARE PARTS
& MACHINERIES**

COMPANY'S PROFILE

SPICA LTD located in the center of Piraeus Greece, is a registered, private - Company founded in the 1983 by the marine chief engineer Dimitrios Tassoulas. The Company present Managing Director.

From the initial location SPICA LTD activities in the supply of marine spare parts and ship's equipments based on the excellent education and training of Mr. Dimitrios Tassoulas.

In the Greece and abroad we have many maritime customers operating Cargo ships, Container ships, Tanker, Vessels e.t.c. Presume the close contact to many manufacturers and suppliers.

That enables us to provide ordered goods correct and in time even reproduction as per samples or drawing can be shortly arranged.

SPICA LTD maintain in their own warehouse a large stock of new and reconditioned Diesel engines spare parts and Aux. Machineries which through out the years has been expanded continuously.

That enables us to effect deliveries of any kind of spare parts is required

on a seagoing Vessel quick and efficient at any port seven days a week, 24 hours daily.

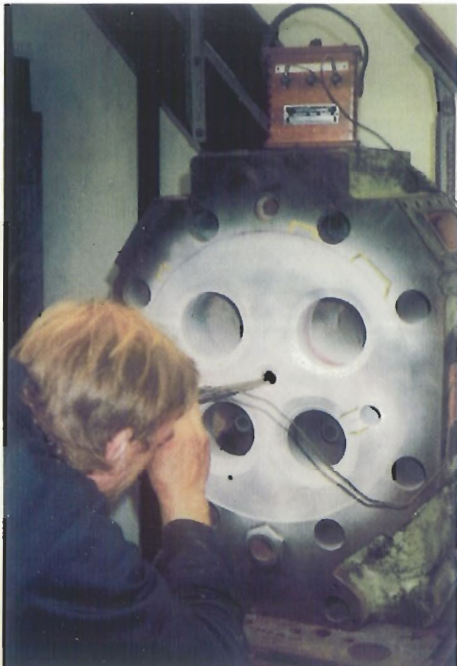
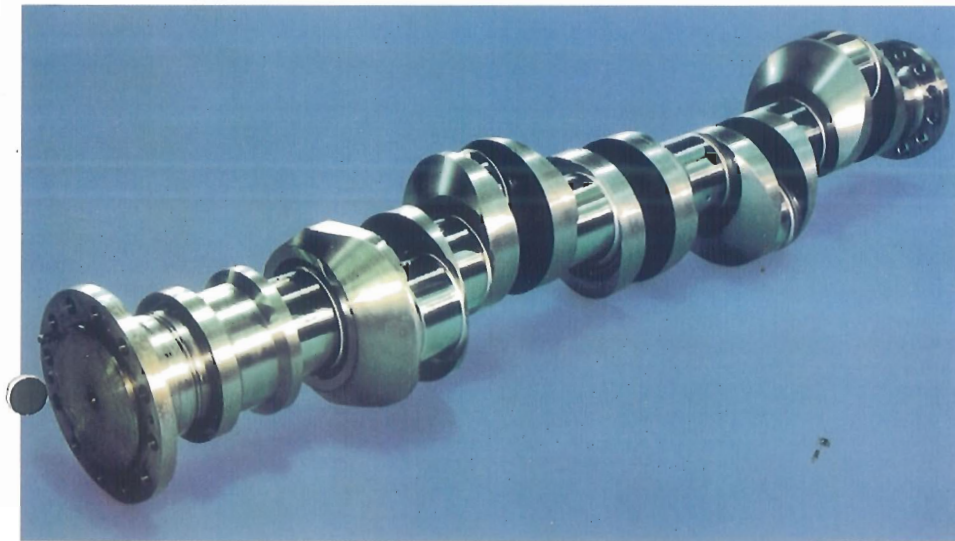
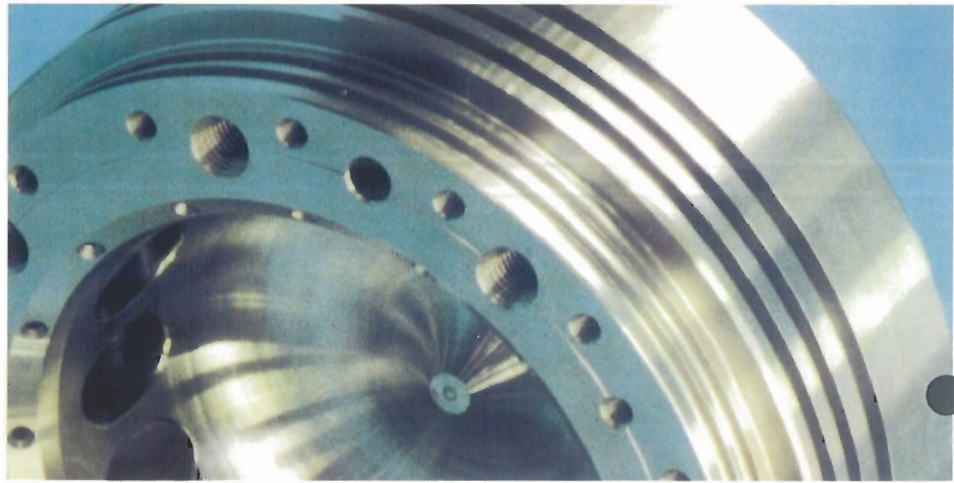
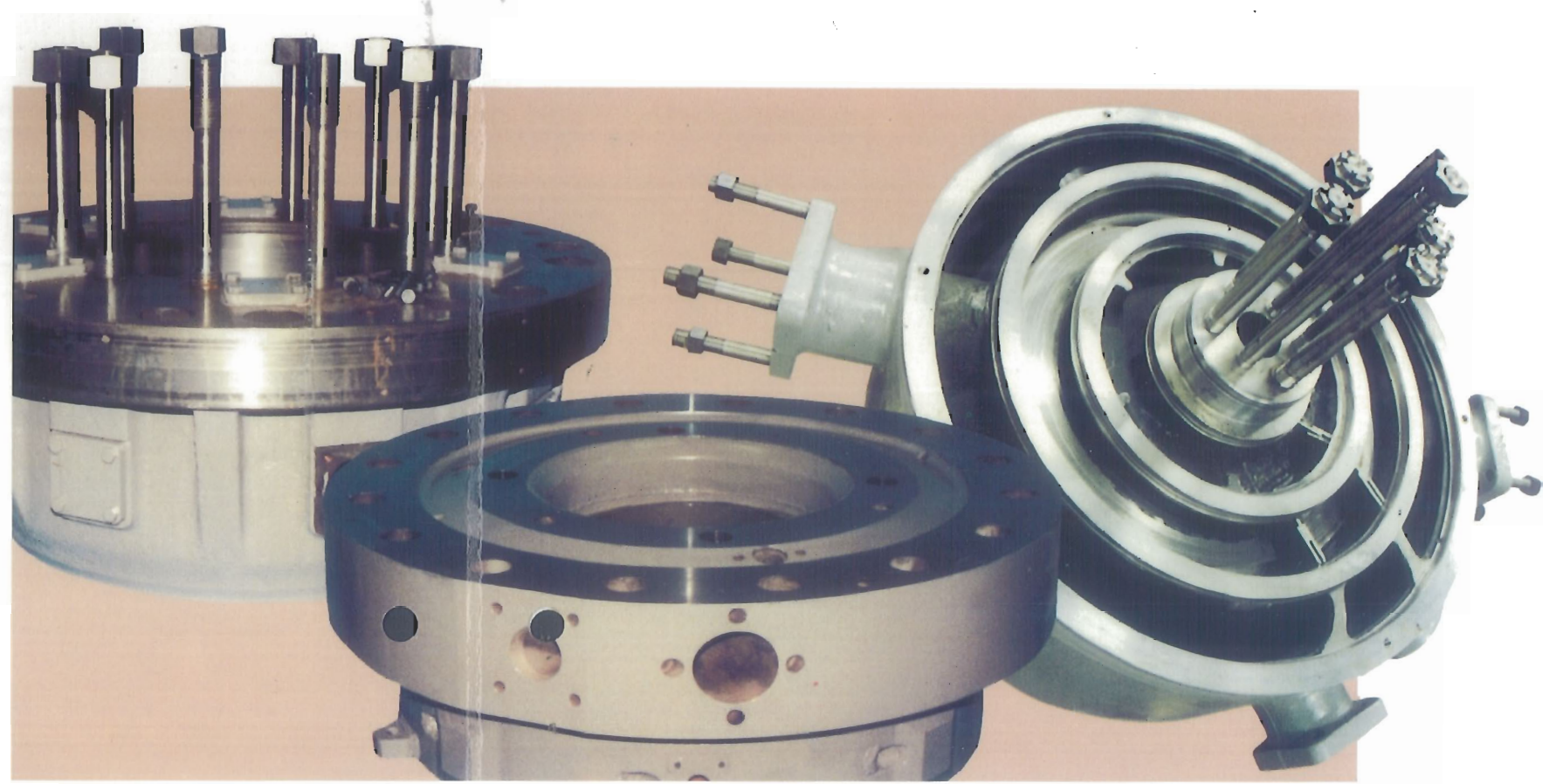
SPICA LTD has a modern office provided with an Up-To-Day Computer Network and communication facilities guarantee a quick and efficient handling of your orders to any port.

SPICA LTD not interested in One - Time - Supplies a good relation between a customer and his supplier should always be a long-term-cooperation with confidence on both sides.

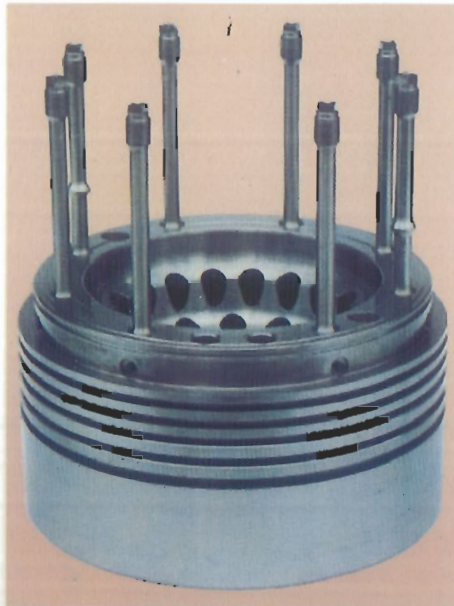
This included to trust the whole Company not only the Manager Director or two personally known employees of the Company.

Let us the before handle you spare parts.

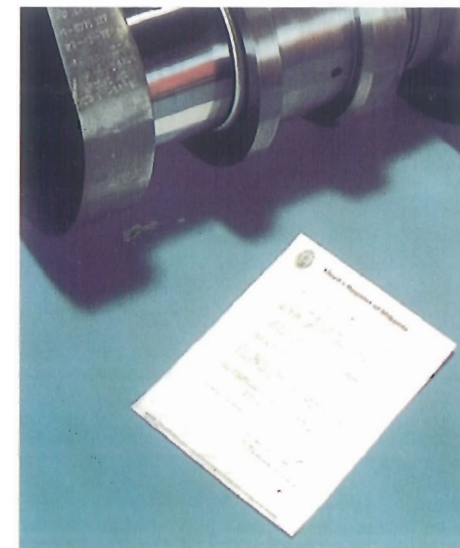
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MAIN ENGINE'S PISTON CROWNS NEW AND RECONDITIONED.

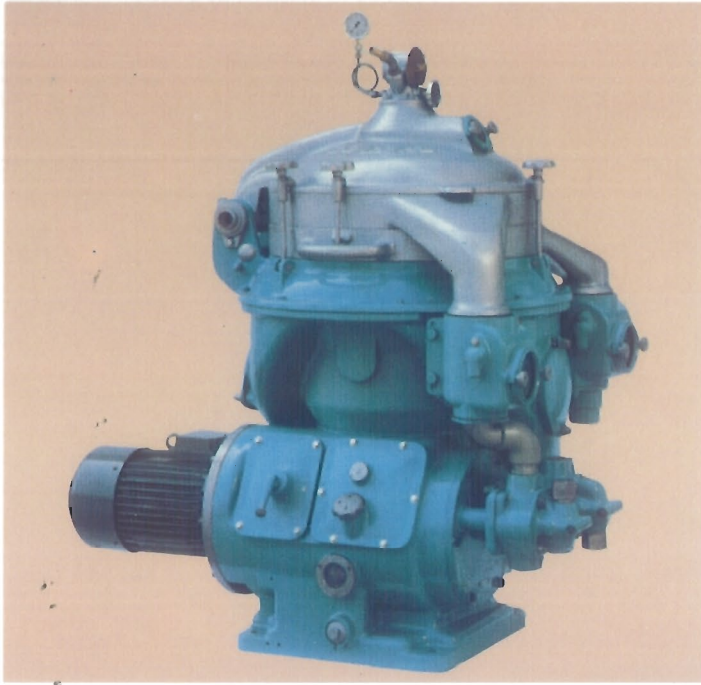


MAIN AND AUXILIARY ENGINE'S CRANK SHAFT NEW AND RECONDITIONED.

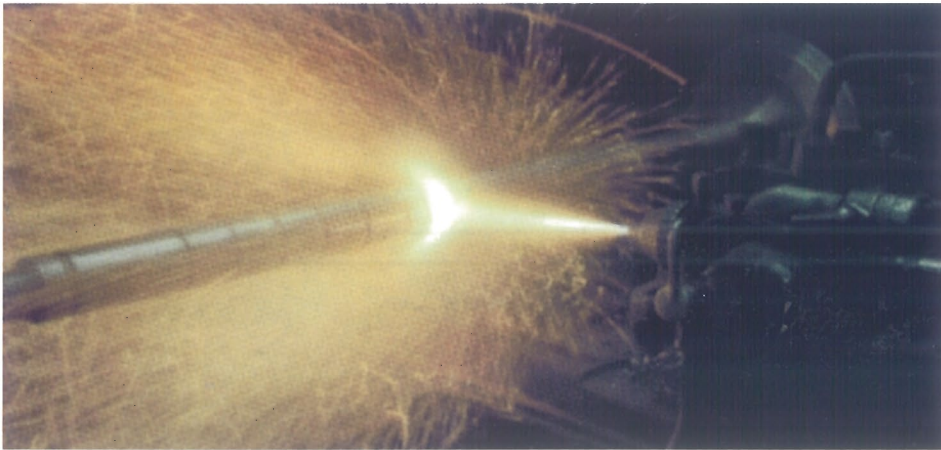
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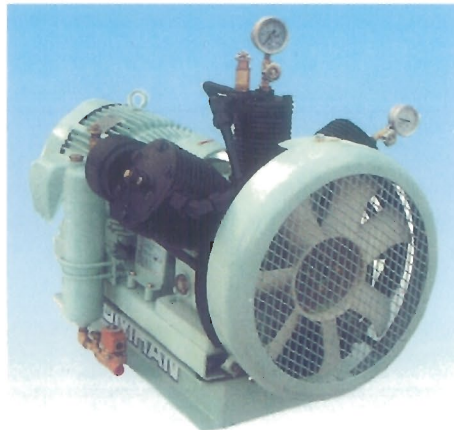
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CENTRIFUGAL PURIFIERS COMPLETED UNITS NEW OR RECONDITIONED SPARE-PARTS.

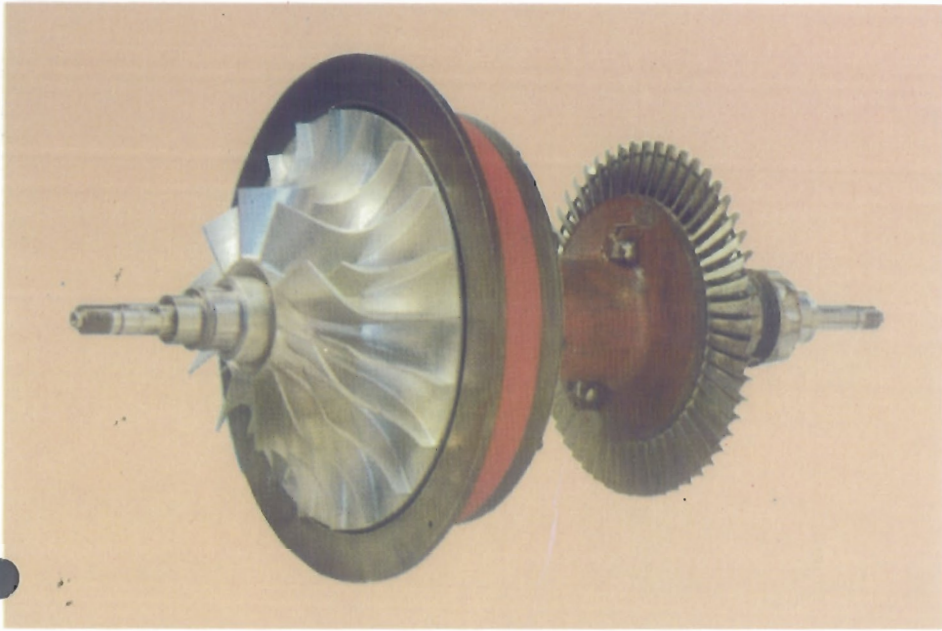


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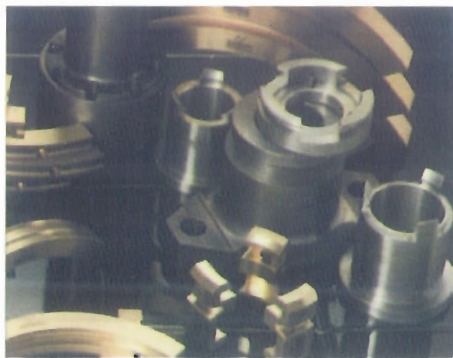
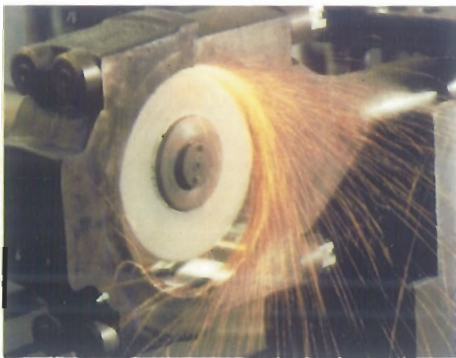


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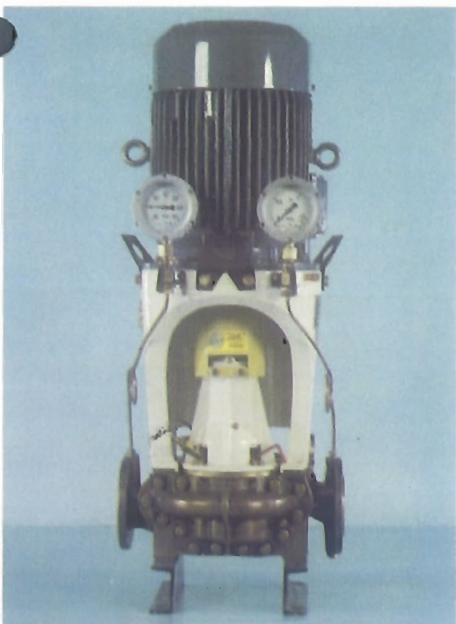
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TURBOCHARGE COMPLETE UNITS
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ROTOR-CASINGS-BEARING etc.



CONNECTING ROD NEW AND
RECONDITIONED.



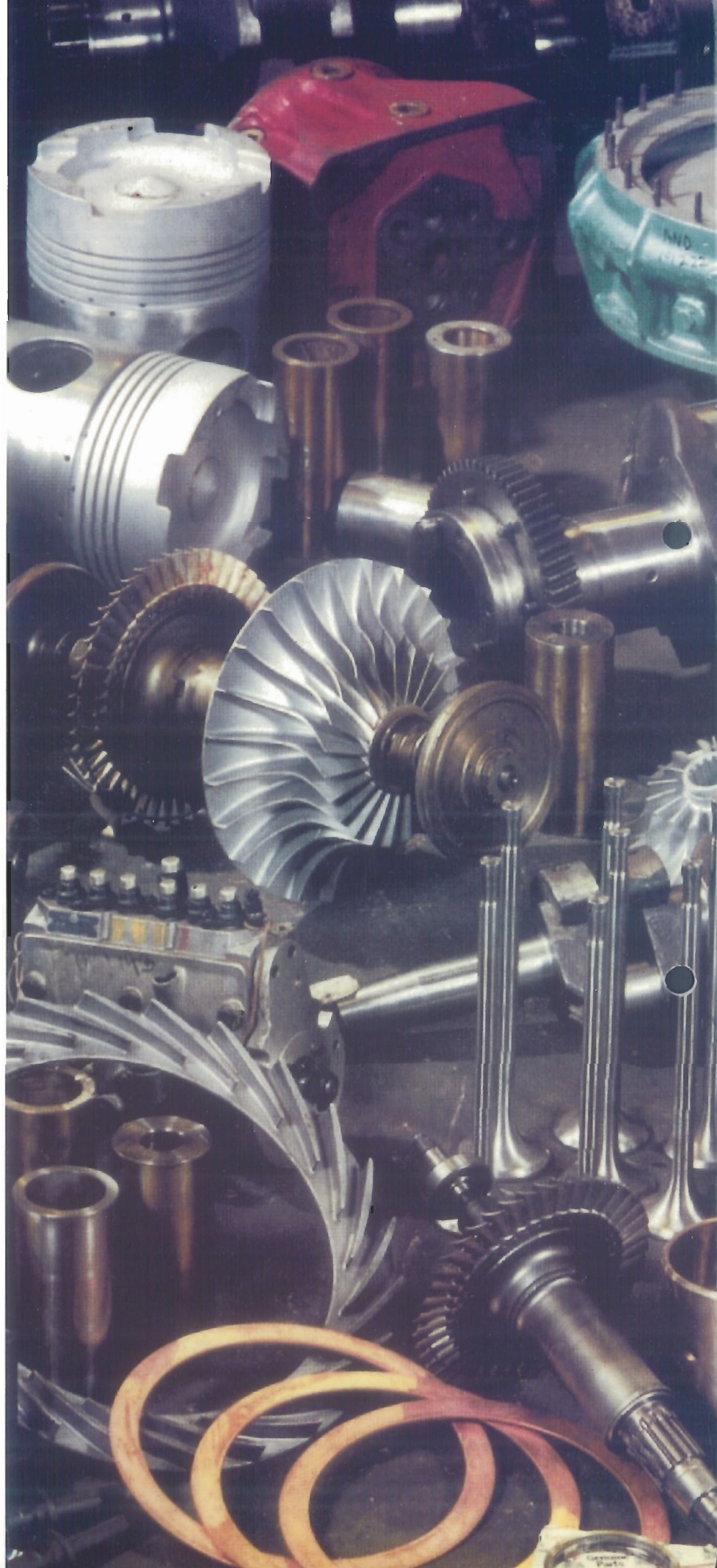
CENTRIFUGAL PUMP COMPLETE
UNITS NEW AND RECONDITIONED -
SPARE PARTS



One thing our customers appreciate, is that they can buy spare parts directly from our warehouse in Piraeus. We give you a stock list to help you save time and money.

SPICA LTD.

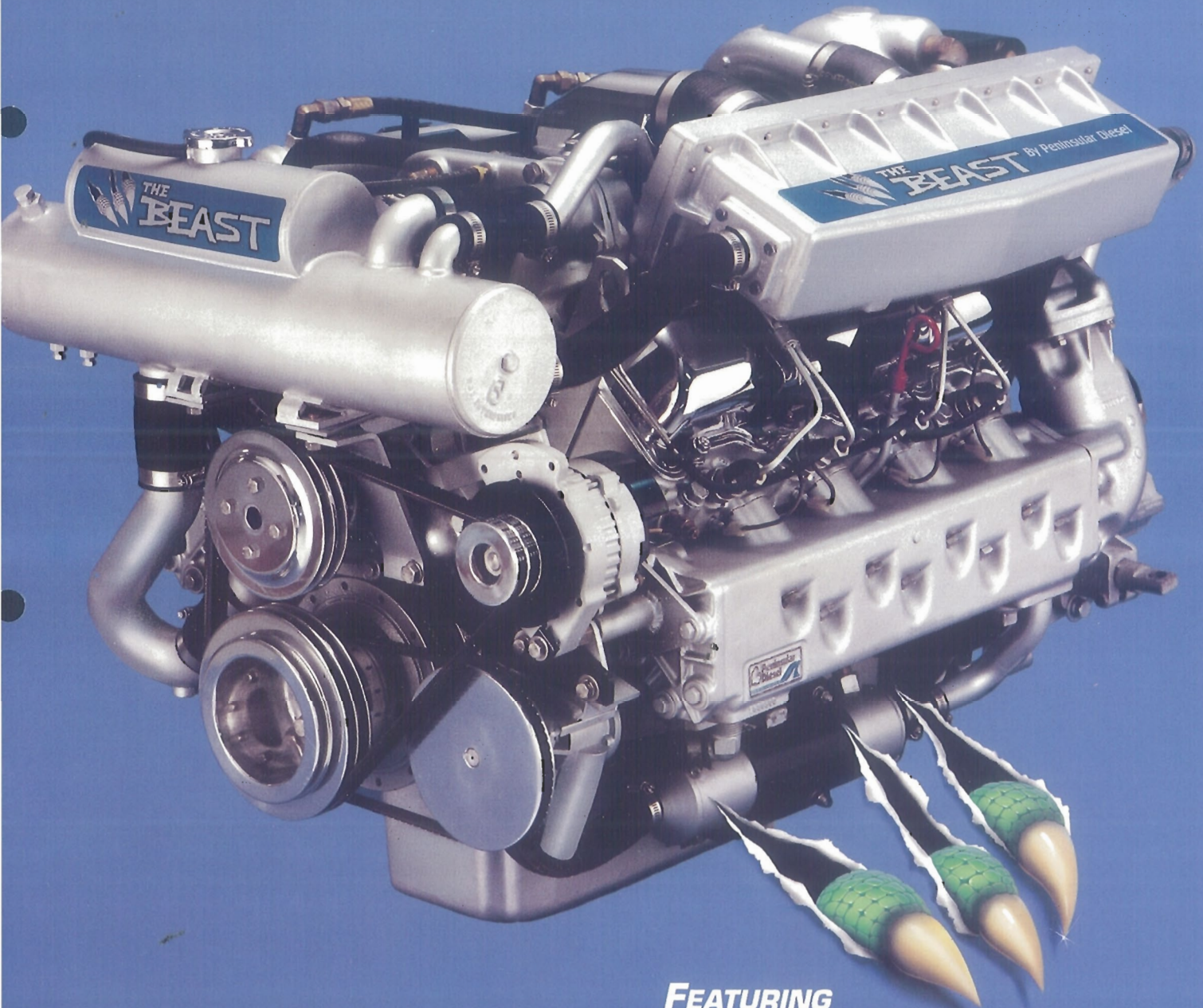
11 MAVROKORDATOU STR.
PIRAEUS 185 38 - GREECE
TEL.: (01) 4291 417 - 431 - 432
FAX: (01) 4291 362
TLX: 24-1137 SSC-GR
E-MAIL: spica@ath.forthnet.gr





Peninsular Diesel

**THE
NEW
WAVE**
IN MARINE POWER



FEATURING

**THE
BEAST**

GM POWERTRAIN

PENINSULAR DIESEL POWER

Simply The Finest V-8 Diesels Around

Peninsular marine engines, based on the durable General Motors 6.5 liter engine, offer the widest selection of lightweight, high performance V-8 diesels in the industry. From the economical 160 h.p. naturally aspirated Model 400-N, to the turbo-charged/aftercooled Beast-300, Peninsular boasts the industry's most impressive weight to horsepower ratio (the Beast-300, for example, turns an amazing 280 SHP at only 1000 pounds!).

Adaptable For Both Inboard And Sterndrive Applications

More than economy and brute force, Peninsular packages are built for both durability and adaptability. Imagine 250 SHP...diesel horsepower...in a sterndrive installation! That's

the original Beast. Engineered for longer engine life, greater reliability and increased performance. And every Peninsular Engine package feature pistons designed for a more efficient burn, a unique crankcase vent system for cleaner emissions (less diesel smoke), and a higher capacity sea water cooling system. All this in the same space normally provided for a 350 c.i.d. gas block.

Peninsular Diesel engines. Powerful, responsive performance. Smooth, quiet operation. Pure V-8 marine diesels.

Compare for yourself and you'll be convinced: they represent the most compact, low weight, durable and robust marine diesels around.

THE BEAST-300



GENERAL SPECIFICATIONS

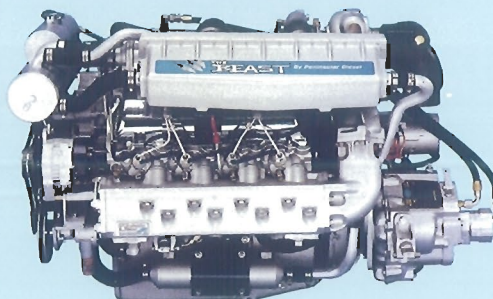
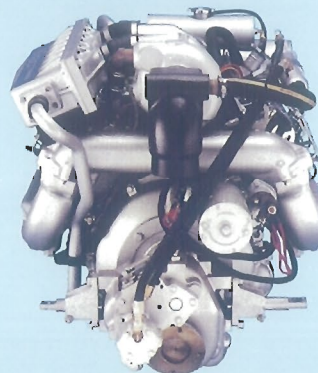
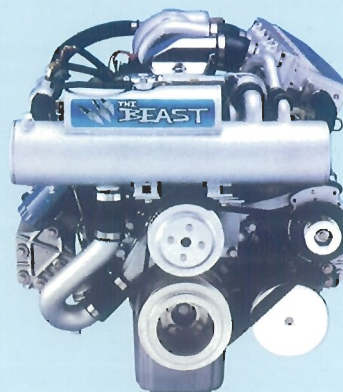
Model.....400TA-300
Engine Type.....Four Cycle
Number of Cylinders.....Eight
Bore & Stroke.....4.06 in. x 3.82 in.
(103 mm x 97 mm)
Displacement.....400 Cu. in. (6554 cc)
Fuel Pump.....Stanadyne-Mechanical Type
Shaft Horsepower.....280 SHP (209 Kw) @ 3600 rpm
Peak Torque.....450 ft.lb. (610 N/m) @ 2900 rpm
Compression Ratio.....18.0:1
Dimensions: (approx.)
Dressed Engine Length 46.69 in. (1187 mm)
with Borg Warner 72C Direct Drive
Width.....29.25 in. (743 mm)
Height.....30.62 in. (778 mm)
Weight (dry).....1000 lbs. (453.6 kg)
*Rating Conditions of 77 degrees F (25 degrees C) and 29.92 in. Hg (99 kPa) Barometer (dry)



THE BEAST-270

GENERAL SPECIFICATIONS

Model400TA-270
 Engine TypeFour Cycle
 Number of CylindersEight
 Bore & Stroke4.06 in. x 3.82 in.
 (103 mm x 97 mm)
 Displacement400 Cu. in. (6554 cc)
 Fuel PumpStanadyne-Mechanical Type
 Shaft Horsepower270 SHP (201 Kw) @ 3600 rpm
 Peak Torque430 ft.lb. (583 N/m) @ 2900 rpm
 Compression Ratio18.0:1
 Dimensions: (approx.)
 Dressed Engine Length 46.69 in. (1187 mm)
 with Borg Warner 72C Direct Drive
 Width29.25 in. (743 mm)
 Height30.62 in. (778 mm)
 Weight (dry)1000 lbs. (453.6 kg)
 *Rating Conditions of 77 degrees F (25 degrees C) and 29.92 in.
 Hg (99 kPa) Barometer (dry)

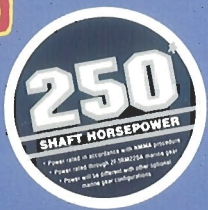


Photos shown with Twin Disc MG-5010 marine transmission.

THE BEAST-250

GENERAL SPECIFICATIONS

Model400TA-250
 Engine TypeFour Cycle
 Number of CylindersEight
 Bore & Stroke4.06 in. x 3.82 in.
 (103 mm x 97 mm)
 Displacement400 Cu. in. (6554 cc)
 Fuel PumpStanadyne-Mechanical Type
 Shaft Horsepower250 SHP (187 Kw) @ 3600 rpm
 Peak Torque400 ft.lb. (542 N/m) @ 2900 rpm
 Compression Ratio18.0:1
 Dimensions: (approx.)
 Dressed Engine Length46.69 in. (1187 mm) with
 Borg Warner 72C Direct Drive
 Width29.25 in. (743 mm)
 Height30.62 in. (778 mm)
 Weight (dry)1000 lbs. (453.6 kg)
 *Rating Conditions of 77 degrees F (25 degrees C) and 29.92 in.
 Hg (99 kPa) Barometer (dry)



400-T TURBO CHARGED MARINE DIESEL

GENERAL SPECIFICATIONS

Model400-T
 Engine TypeFour Cycle
 Number of CylindersEight
 Bore & Stroke4.06 in. x 3.82 in.
 (103 mm x 97 mm)
 Displacement400 Cu. in. (6554 cc)
 Fuel PumpStanadyne-Mechanical Type
 Shaft Horsepower205 SHP (153 Kw) @ 3600 rpm
 Peak Torque337 ft.lb. (457 N/m) @ 2600 rpm
 Compression Ratio18.0:1
 Dimensions: (approx.)
 Dressed Engine Length46.69 in. (1187 mm) with
 Borg Warner 72C Direct Drive
 Width29.25 in. (743 mm)
 Height30.62 in. (778 mm)
 Weight (dry)1000 lbs. (453.6 kg)
 *Rating Conditions of 77 degrees F (25 degrees C) and 29.92 in.
 Hg (99 kPa) Barometer (dry)



Also available as a naturally aspirated model (Model 400-N, 160 shaft horsepower). See your dealer for specifications.

OPTIONAL MARINE GEARS

- Borg Warner 5000, 8° down; 1.0, 1.25, 1.5, 2.0, 2.45, 2.8
- Borg Warner 5000V, V-Drive, 12° down; 1.25, 1.5, 2.0, 2.5
- Borg Warner 72C 1:1 ratio, direct drive
- Borg Warner 72C in-line reduction; 1.52, 1.88, 2.57, 2.91
- Z.F. IRM-220A, 10° down; 1.23, 1.53, 2.05, 2.45
- Z.F. IRM-225A, 5° down; 1.23, 1.53, 2.05, 2.45
- Twin Disc MG-502, 10° down; 1.54, 2.02
- Twin Disc MG-5010A, 10° down; 1.44, 1.90, 2.39
- Twin Disc MG-5010V, 15° down; 1.14, 1.54, 2.06, 2.46
- Hurth HSW 450D, 1:1 ratio, direct drive
- Hurth HSW 450A2, 8° down; 1.25, 1.5, 2.0
- Hurth HSW 630D, 1:1 ratio, direct drive
- Hurth HSW 630A1, 8° down; 1.2, 1.5, 2.0, 2.5
- Hurth HSW 630H, drop center, parallel shaft; 1.5, 2.0, 2.5, 2.8
- Hurth HSW 630V, V-Drive, 12° down; 1.3, 1.5, 2.0, 2.5
- Stern Power Outdrive Model 113, 1003

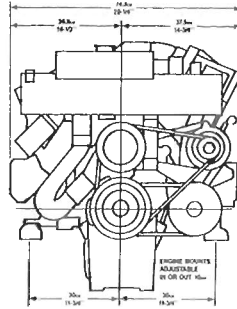
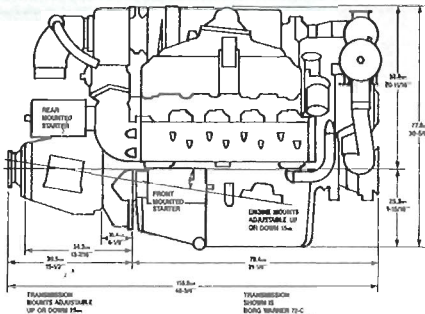
THE BEAST-300 / 270 / 250

- High Efficiency Cast Aluminum Pistons
- Forged Steel Connecting Rods & Caps
- Nodular Iron Crankshaft
- Cast Alloy Iron Block
- Long-Life, Cleaner Running Breathing Element
- High Efficiency Crankcase Venting System

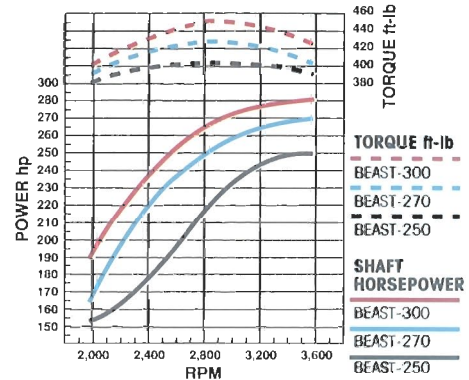
- State-Of-The-Art Turbo Design For Optimum Combustion
- High Capacity Sea Water Cooling System
- 4-Bolt Main Bearing Caps
- Induction Hardened Valve Seats With Silicone Steel Outer Valves

ENGINE FEATURES

- Free Breathing Cylinder Head With 5 Attaching Bolts Around Each Cylinder For Better Sealing
- High Performance Fuel Injection Pump
- Precision Ground Hardened Steel Camshaft
- Precombustion Chamber Design For Greater Fuel Efficiency



Specifications and drawings should not be used for engineering purposes. Specifications subject to change without notice.



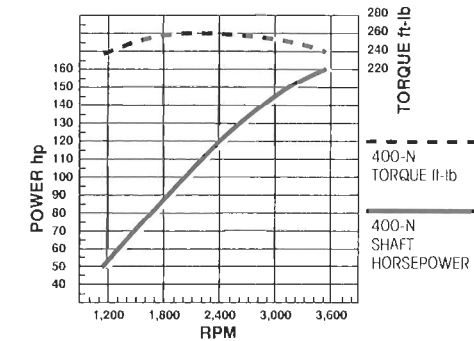
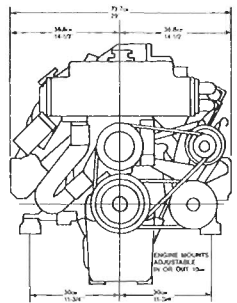
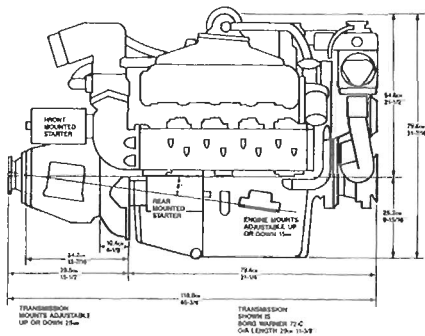
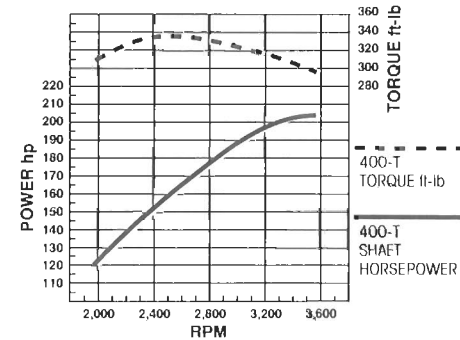
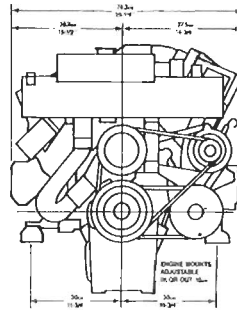
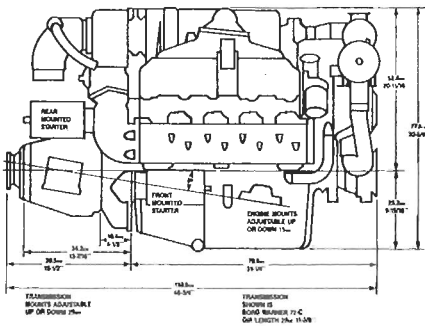
400-T TURBO CHARGED / 400-N NATURALLY ASPIRATED

ENGINE FEATURES

- Turbocharged and Aftercooled (400-T only)
- Cast Aluminum Pistons
- Forged Steel Connecting Rods & Caps
- Nodular Iron Crankshaft
- Cast Alloy Iron Block

- 4-Bolt Main Bearing Caps
- Induction Hardened Valve Seats with Silicone Steel Outer Valves
- Free Breathing Cylinder Head with 5 Attaching Bolts Around Each Cylinder for Better Sealing

- High Performance Fuel Injection Pump
- Precision Ground Hardened Steel Camshaft
- Precombustion Chamber Design For Greater Fuel Efficiency



Specifications subject to change without notice.

WATER SPORTS
 ΒΙΤΩΡΑΤΟΣ ΓΕΡΑΣΙΜΟΣ
 ΑΝΤΙΠΡΟΣΩΠΙΚΑ ΕΚΑΤΟΝ
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 ΑΘΗΝΑΣ & ΘΥΡΑΝΟΥ 2-4
 ΚΑΒΟΥΡΙ - ΒΟΥΛΙΑΓΜΕΝΗ
 ΤΗΛ. 8964 185 - FAX. 9657 110



Peninsular Engines, Inc.
 3175 Old Farm Lane
 Walled Lake, MI 48390
 (810) 960-5252 FAX: (810) 960-5934

Peninsular Engines, Inc.
 805A Taylor Street
 Jenison, MI 49428
 (616) 457-2121 FAX: (616) 457-4609

STAR POWER™



STARDEC 330



NEW GENERATION DIESEL!

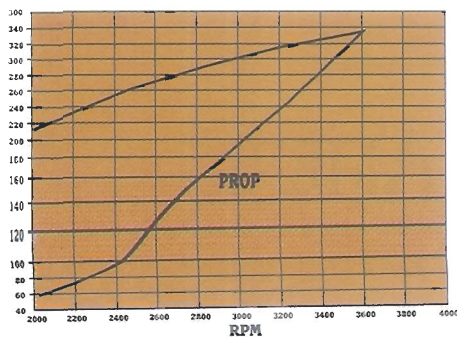
TECHNICAL DESCRIPTION:

- ◆ **CONFIGURATION:** 90° V-8, Four stroke, water-cooled, diesel
- ◆ **DISPLACEMENT:** 444 cubic inch (7.3 liter)
- ◆ **RATING-MAXIMUM POWER:** 330 h.p. (248kw) 3600 RPM
- ◆ **COMPRESSION RATIO:** 15:1
- ◆ **ASPIRATION:** Turbocharged (with wastegate) and aftercooled
- ◆ **COMBUSTION SYSTEM:** direct injection
- ◆ **MAIN BEARINGS:** Five, four-bolt mains
- ◆ **CRANKSHAFT:** Five main bearings, fillet rolled journals
- ◆ **BALANCER:** Gear driven second order balancer
- ◆ **ELECTRICAL SYSTEM:** 12-volt, negative ground, 65 amp alternator
- ◆ **STARTING SYSTEM:** 12-volt motor, 1.6 h.p. (1.2 kw)
- ◆ **FUEL SYSTEM:** Hydraulically actuated, electronically controlled, unit injectors featuring high pressure injection, precisely controlled
- ◆ **VALVE TRAIN:** Inconel Valves, hydraulic valve lifters, positive valve rotation
- ◆ **COOLING SYSTEM:** Fresh-water closed circuit, heat exchanger to sea water, thermostat control
- ◆ **FRESH WATER PUMP:** Engine-mounted centrifugal pump
- ◆ **SEA WATER PUMP:** Pulley driven, rubber impeller pump 35 g.p.m. (130 l.p.m.)
- ◆ **LUBRICATION SYSTEM:** 28 GPM (106 LPM) gerotor pump, 14-quart (13.2 liter) sump, lube oil thermostat
- ◆ **DIRECTION OF ROTATION:** Counterclockwise from rear
- ◆ **DRY WEIGHT:** 1200 lbs. (545 kg)

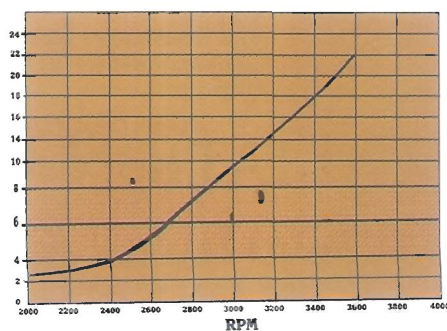
StarPOWER
444
CUBIC INCH (7.3 LITRE)
MARINE DIESEL ENGINE BY
MARINE CORPORATION
OF AMERICA

TECHNICAL SPECIFICATIONS:

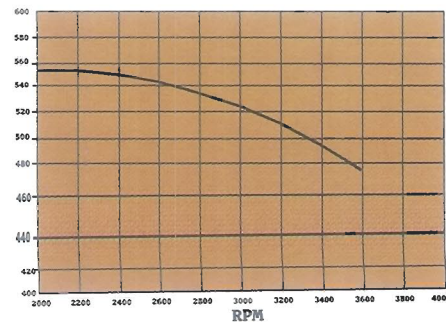
HORSEPOWER



FUEL CONSUMPTION

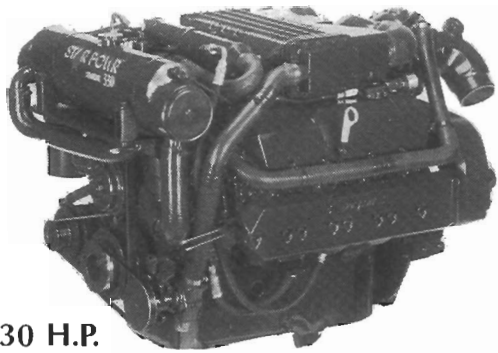


TORQUE, FT.#



STAR POWER™

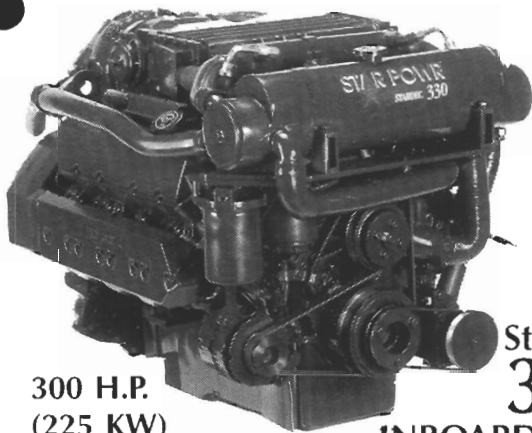
ELECTRONICALLY CONTROLLED DIESELS



330 H.P.
(248 KW)
3600 RPM

StarDEC
330

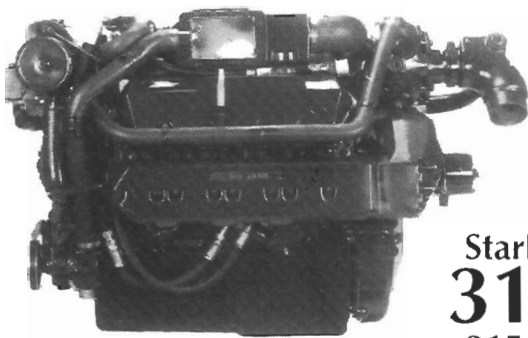
INBOARD APPLICATION ONLY



300 H.P.
(225 KW)
3600 RPM

StarDEC
300

INBOARD AND STERNDRIVE APPLICATION DEVELOPED FOR STERN POWR DRIVES



(235 KW) 2800 RPM. INBOARD APPLICATION ONLY

StarDEC
315
315 HP

Also available in 240hp @ 3100 RPM and 275hp @ 3400 RPM

MARINE CORPORA

980 HURRICANE ROAD
(317) 738-940

Marine Corporation Of America Inc.

This environmentally friendly, inboard, is based on the Navistar 444 cubic inch, 7.3 litre diesel and is built for three separate applications. For light pleasure craft, choose the 330 h.p. at 3600 RPM model. For light commercial the 300 h.p. version is the choice while heavier sportfish boats will like the 2800 RPM model developing 315 h.p. There is also an electronically controlled model at 275 h.p. at 3400 rpm and 240 h.p. at 3100 rpm.

The StarDEC 330 is one of the most technically advanced engines ever developed for marine application.

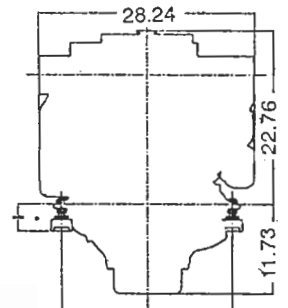
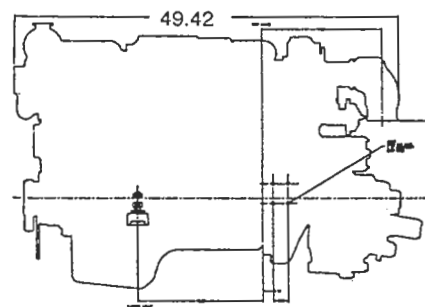
The unique design sports a direct-injection combustion system featuring hydraulically actuated, electronically controlled unit injectors. The electronic control module is a variant of the Ford Motor Company EEC-IV control module. To create sufficient voltage and current to the injectors, an electronic driver unit has been employed.

The combination of high pressure injection, precisely controlled, added to turbocharging with a wastegate makes the new generation StarDEC Diesel extremely environmentally friendly.

This new generation diesel also features freshwater cooling, a high pressure oil supply pump, and aftercooling that lowers the charge air temperature considerably resulting in lower average cycle temperatures and peak firing pressures.

You can also couple the 300 h.p. StarDEC model to the popular STERN POWR™ drive. This complete sterndrive propulsion package is designed for ease of installation and years of trouble free service. The 330 h.p. and 315 h.p. models are available as direct inboards only.

Star Power's™ StarDEC 330 truly offers increased reliability and durability while retaining tremendous advantages in terms of performance and low cost of ownership.



WATER SPORTS

GV ΒΙΤΩΡΑΤΟΣ ΓΕΡΑΣΙΜΟΣ
ΑΝΤΙΠΡΟΣΩΠΕΙΑΙ ΣΚΑΦΩΝ
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RICA

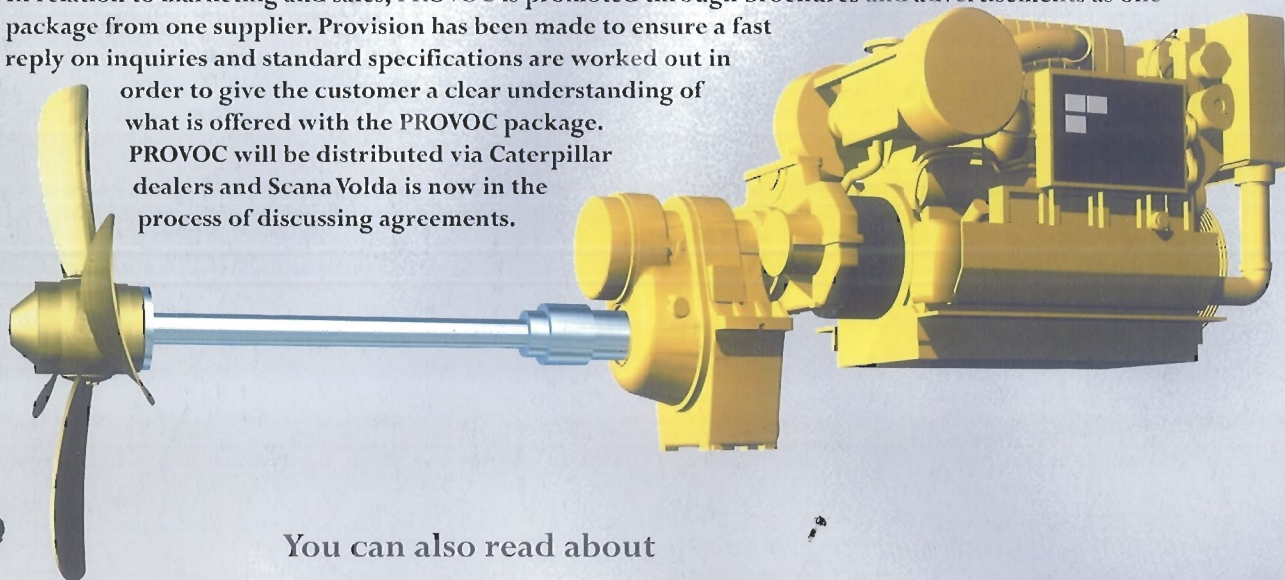
MARINE EQUIPMENT

ScanaVolda is launching THE PROVOC PROPULSION PACKAGE

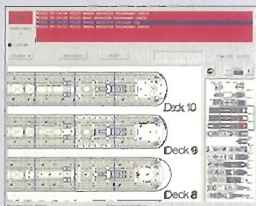
Much attention, world wide, has been paid to the propulsion package PROVOC, comprising propeller and gear from ScanaVolda and an engine from Caterpillar. PROVOC was first introduced during the international exhibition, "Nor-Fishing '98" in Trondheim, Norway.

The development of the propulsion package was a co-operation between the Norwegian dealer of Caterpillar engines, Pay & Brinck Motor and the propeller and reduction gear manufacturer ScanaVolda. The idea behind this propulsion package was to create a cost-efficient package emphasising space-saving design, flexibility, environmental friendliness and good service and support for customers. PROVOC is designed for high speed engines ranging from 1000 horse power to 2000 horse power. Suitable units from Caterpillar are the 3500-series engines.

In relation to marketing and sales, PROVOC is promoted through brochures and advertisements as one package from one supplier. Provision has been made to ensure a fast reply on inquiries and standard specifications are worked out in order to give the customer a clear understanding of what is offered with the PROVOC package. PROVOC will be distributed via Caterpillar dealers and ScanaVolda is now in the process of discussing agreements.



You can also read about



The ServoMaster
from Scana Servoteknikk
- increasing your safety,
page 4.



The new
Graphic Workstation,
from Scana Moland being the latest
feature in the MA100 Alarm,
Monitoring and Control System,
page 3.



**Keyboards
and Eexi
PC-terminals**
from Scana MarEl,
page 3.



The BallastMaster
from Scana Skarpenord,
Langesund - a competitive, high
quality level gauging system,
page 2.

Editorial Column



John M. Lunde

Sr. Vice President Marine Equipment

The marine market tends to focus on strategic suppliers, and in this context Scana Marine Equipment will focus on our target to be a preferred strategic supplier to customers world wide. To attain our goal Scana Marine Equipment have acquired companies with competence and products which together or as individual supplies can form a delivery to fulfil our customers' demand. This will at the same time give our customers a competitive advantage in their position. To show our ability we will display our competence and competitive product range at the SMM exhibition in Hamburg starting on 29th September and closing on the 3rd October this year. Further more in connection with this exhibition, we will arrange an agent seminar where we will share our targets and product advantages with our world wide agent network, enabling us to inform and help our customers. We will also enhance the fact that we are in all respects dependent on our customers' views on our ability and we have full focus on topics like delivery as agreed, quality in all aspects and an overall cost, which gives our customers a benefit in their business. At the end of this column we want to thank our customers and welcome them to our stand at SMM, hall 2, Norwegian pavilion, booth no. 060.

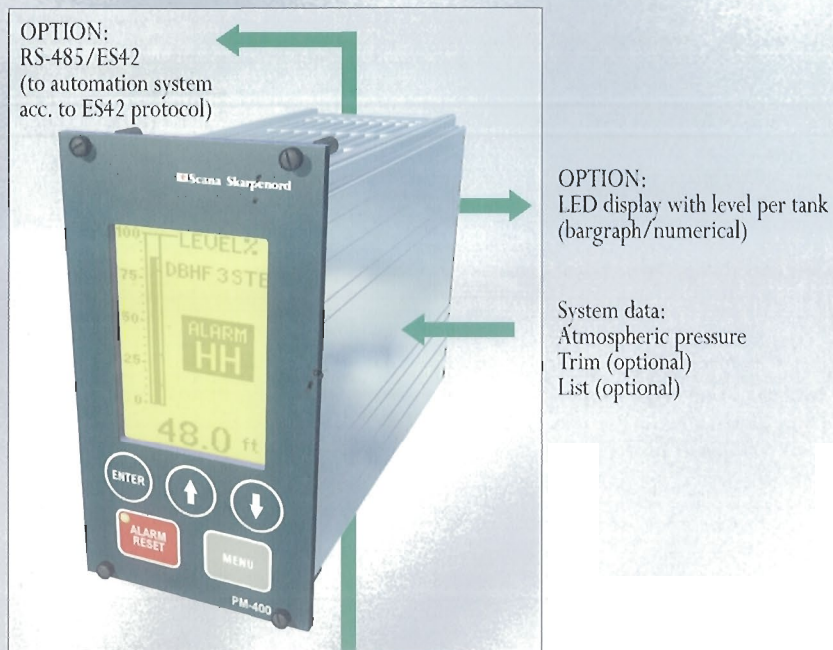
THE BALLASTMASTER - NEW PRODUCT LAUNCH FROM SCANA SKARPENORD IN LANGESUND

Scana Skarpenord has for more than 40 years delivered level gauging systems to the marine market. This has specially been developed for level measurement. This new ballast system, the BallastMaster, is developed for multi-type vessels, from small fishing vessels, stand-by vessels, offshore vessels (bulk, RO-RO, container, ferries, etc.), to rigs and all the way up to the most sophisticated cruise tankers.

Furthermore, the system complies with the SOLAS Regulation 59 requirements for vapour pressure measurement, either as a stand-alone vapour pressure system, or as part of a ballast level gauging system.

This system is modular, based on a 19" rack containing electronics for any required number of 4-20-A analogue input channels. A compact operator unit may be installed in the 19" rack, or as a separate unit in the ballast console. Options are available for automatic trim and list measurement and compensation, as well as serial line communication to ship's automation system. Additional operator instruments may be fitted as needed.

Scana Skarpenord's range of well-proven pressure sensors have been expanded with a special, high quality version of this system. In order to form a complete package, the system is capable of handling fuel, diesel, and other oil product tanks, as well as draft measurements. With the addition of this new system, Scana Skarpenord is offering competitive, high quality level gauging systems for virtually all types of ships and floating oil installations, from simple ballast to the most advanced chemical tankers.



The Exhibition Program of the Scana Marine Equipment Group in 1998

SMM, Hamburg, Sept. 29 - Oct. 03, 1998

Offshore Rio, Rio de Janeiro, Oct. 05 - 08, 1998

Sname, San Diego, Nov. 12 - 14, 1998

Sinaval, Bilbao, Oct. 27 - 31, 1998

Rotterdam Maritime, Rotterdam, Nov. 10 - 14, 1998

Expo Pesca, Santiago, Dec. 2 - 5, 1998

Work Boat Show, New Orleans, Dec. 2 - 4, 1998

KEYBOARDS AND EEXI PC-TERMINALS

Scana Mar-El offer a wide range of industrial Keyboards from Devlin Electronics (UK), one of Europe's largest manufacturers of customer designed Keyboard. The product is based on the most appropriate switching technology including full travel and tactile membrane switches. Integral trackerball, IP65 and Zone 2 environment are some of the features. Meeting nearly all common interfaces and protocols. In-house moulding of keytop and legending give full flexibility in design and visualisation of the keyboard.

Allstar Eexi PC-terminal from IBS Schillings (D) allows non-restricted PC-operation in Zone 1 area.

A modular system including 14" colour LCD screen (768x1024 pixels), mouse and keyboard. Panel mounted or field housing, sealed to IP65. Intrinsically safe certification EEx ib IIC T4 or Eex ib IIB T4.



SCANA MOLAND IS INTRODUCING THE NEW GRAPHIC WORKSTATION

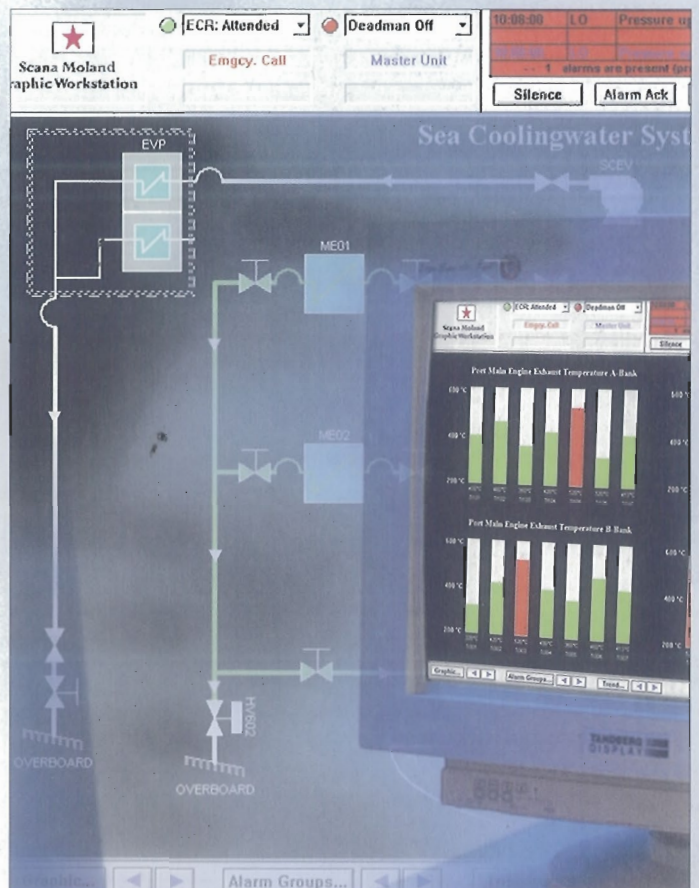
The all new Graphic Workstation by Scana Moland is the latest feature in the MA100 Alarm, Monitoring and Control System. The Graphic Workstation presents ship's operation on a high-resolution colour graphic screen. On the screen the graphics are presented in a user-friendly Windows-NT® environment.

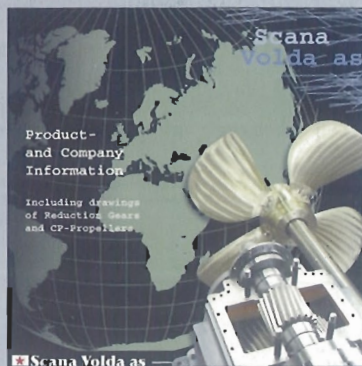
Keyboard and trackerball along with the high-resolution colour graphic screen provides an excellent man machine communication. Selecting graphic mimic pages is made easy in the Graphic Workstation simply by pointing and clicking.

Operation of automatic control functions, such as opening and closing of valves and starting and stopping pumps and fans, is fully integrated in the Graphic Workstation.

The Scana Moland Graphic Workstation is based on software from one of the market leaders of graphic user interface (GUI) applications for the Microsoft® Windows NT® operating systems. The system runs under Microsoft® Windows NT® operating system and is capable to run as an NT service.

The system includes, in addition to standard Windows graphics, powerful control functions, multiple alarm listings/reports and a real- and historical trend application.





NEW RELEASE OF THE SCANA VOLDA CD-ROM

Scana Volda is about to release an updated version of the CD-ROM containing dimension sketches, product- and company information. The first CD-ROM was presented one year ago and it was paid a lot of attention to the company for having the dimension sketches available to consultants and shipbuilders.

A preliminary version of the CD-ROM will be shown at the SMM exhibition in Hamburg.

SCANA KOREA HYDRAULICS

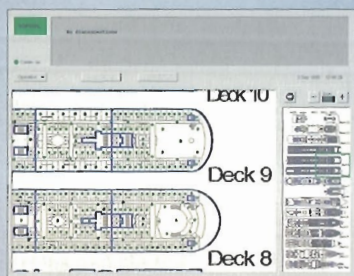
- New Joint Venture Company in Korea

During the last weeks of July, two hydraulic specialists from Korea attended a training course at Scana Skarpenord Rjukan. The two specialists are Mr. H.B. Noh and Mr. J.M. Park and are in charge of Scana's newly established joint venture company in Korea; SCANA KOREA HYDRAULICS.

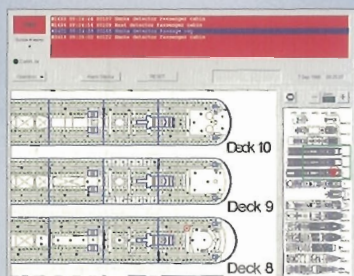
As the company name indicates, the intention with Scana Korea Hydraulics is to promote hydraulic valve remote control systems from Scana Skarpenord Rjukan for the Korean market. The company will not only be responsible for sales & marketing of Rjukan's valve remote systems to Korean clients, but will also be able to do the necessary engineering and assembly work of hydraulic power units, solenoid valve cabinets and control consoles. The hydraulic actuators will still be manufactured at Rjukan, but whenever it is convenient, mounting and testing of actuators on valves will be performed by Scana Korea Hydraulics.

It is Scana Skarpenord Rjukan's objective to increase its market shares in existing markets by developing local production facilities based on components supplied from Rjukan. So, establishing Scana Korea Hydraulics is a real boost for Scana Skarpenord Rjukan's activity in Korea and also further emphasises Scana Marine Equipment's presence in Asia. The northern part of Asia will continue to be the centre of shipbuilding activities, and we hope that Scana Korea Hydraulics will be only the first local establishment in this region.

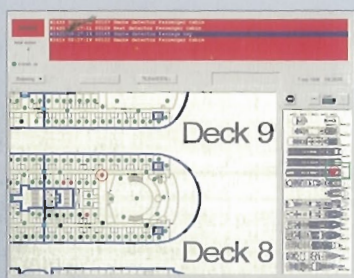
With technical support from the organisation in Rjukan as well as personal commitment and assistance from key persons in the Scana organisation, we have good reasons to be optimistic about the future.



- Normal condition



- Fire condition



- Automatic zooming of the alarming area

SERVOMASTER BMS-904 SERVOVIEW GP 904 NT

- Graphical User Interface for Fire Alarm Systems

ServoMaster BMS-904

- * Provides interactive remote controls and avoids outbreak of fire during critical seconds
- * Quick and safe operation and installation
 - * only 3 operation push buttons combined with an easy readable display
 - * installation can easily be performed by local companies
 - * loops can be tested by ServoMaster or an external test unit
 - * remote I/O connected directly in the loop, saves cable and installation costs
- * Up to 30% total weight reduction
 - * reduced cable installation gives weight reduction
 - * the most compact and smallest fire alarm panel in the market
- * Several levels of intelligence
 - * addressable
 - * conventional
 - * combination

ServoView GP904NT

- * Gives quick and exact information of the fire
- * Automatic zooming of the alarming area
- * Mouse- and/or touch-screen based
- * Based on Windows NT®
- * Two-way communication with the fire alarm panel
- * Quick and easy configuration, using general arrangement drawings
- * Quick and easy reconfiguration due to changes on the system

