FINCANTIERI
Cantieri Navali Italiani S.p.A.

GMT

Isotta Fraschini
IF

THE ENGINES FOR ALL APPLICATIONS

DIESEL ENGINES DIVISION

The Company

FINCANTIERI - Cantieri Navali Italiani S.p.A., the largest and most diversified shipbuilding organisation in the Mediterranean and one of biggest in Europe, is the company of the IRI Group (the Institute for Industrial Reconstruction) which unifies the capacities and facilities of the oldest and most important Italian enterprises in the sector.

The company operates through three Divisions: Merchant Shipbuilding, Naval Shipbuilding and Diesel Engines.

FINCANTIERI designs, commercialises and builds all types of merchant and naval ships, off-shore equipment, marine and industrial diesel engines and operates in the field of ship repairing and ship conversion.

The Diesel Engine Division

The Diesel Engine Division, with its headquarters at Trieste, carries out the functions of a typical industrial enterprise for the production and sale of diesel, gas and dual-fuel engines in the marine, industrial and rail traction sectors.

Following the merging of ISOTTA FRASCHINI MOTORI S.p.A., the Diesel Engine Division of FINCANTIERI – with the two trademarks GMT and IF – can avail itself of a range of engines covering power outputs from 400 to 22,000 kW per unit.

In addition, SULZER slow-speed engines are prod for the Italian market and a cross-licencing agree exists with SULZER for medium speed engines o A 320 and ZA40 S types.

Production

The Division has two production plants, one situat Trieste and one at Bari.

The Trieste factory extends, in the industrial zor Trieste, over a site of 530,000 m² of which 150,00 presently occupied by the offices and workshops. The Bari factory extends on the total area of 200,0(of which 24,000 m² are covered.

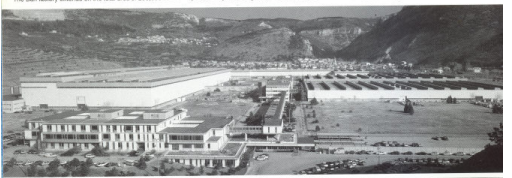
The Division production capability results from a part

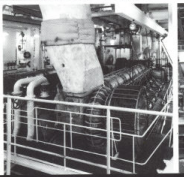
The Trieste factory extends on the total area of 530,000 m²

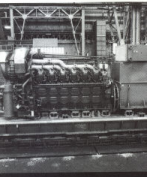
The Bari factory extends on the total area of 200,000 m²

Marine propulsion plant with two 4 - stroke medium - speed 6 - cylinder engines of 550 mm bore

One on the two main propulsion diesel gene of the SACLANT research vessels driven by B230.12 engines.







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nbination of skill, experience and advanced techno-
ry. The highest standards of excellence are maintai-
d by modern quality control, test facilities and preci-
n machining and fabrication.
vide variety of training programs continously upgra-
s the already skilled workforce.

chnical service

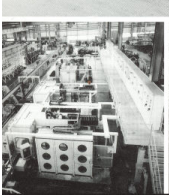
io located at Trieste plant is the Management of the
er Sales Service Department (GMT and IF engines)
well as the administration of the external service
pes.
The context of Service for the user, the Division
organized to provide, in addition to the stipulated
contractual guarantees, the variety of services that
become necessary before, during and after a sale. It is
thus able to furnish clients with al the assistance they
may require, in the widest sense, as an integral part
and a necessary condition to the supply – above all in
the market for electrical generating plant – first in the
plant selection phase and subsequently in the stages
of fulfilment of the contract and plant operation. In pa-
ticular, for carrying out after-sales service, the Division
currently has in place a world-wide network of service
centres integrated by flying-squads capable of being
readily deployed wherever necessary, both at land-
based plants for energy generation and on board
ships, even during navigation.
Also available are supervisory specialists who syste
matically, or following specific requests from users
superinted for agreed on periods of time the functio
ning of the engines in operation.
From this activity, furthermore, essential informatior
is fed back directly to Diesel Engine Division to be
utilized, within the framework of close coordinatior
between the commercial activities and those of desig
and production, for the continuous improvement o
GMT and IF products and services.

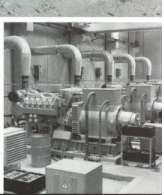
ə 74 MW power plant of Guelb el Rhein Mauritania,
equipped with four 18 - cylinder GMT "550" series,
ning on heavy fuel.

ə new "flexible line" at the Trieste plant.

Marine generating-set with GMT A320.6 engine

Power plant with IF "ID 36" engines.





DIESEL ENGINES DIVISION

GMT medium-speed four-stroke engines

ENGINE TYPE	DATA	Version	Cyls no	Output bhp	Output kW	Weight tons	Length m/m	Widht m/m	Height m/m
BL 550									
Output	1650 bhp/cyl	BL 550.6	6L	9900	7280	124	7395	3375	5680
	1213 kW/cyl	BL 550.8	8L	13200	9705	161	9155	3400	5680
Bore	550 mm	BL 550.9	9L	14850	10920	178	10035	3400	5680
Stroke	630 mm	BL 550.12	12V	19800	14560	217	8360	4540	5220
Speed	450 rpm	BL 550.14	14V	23100	16985	254	9415	4800	5520
M.e.p.	21,6 bar	BL 550.16	16V	26400	19410	284	10470	4800	5520
M.p.s.	9,5 m/sec.	BL 550.18	18V	29700	21840	310	11525	4800	5520

Performances, weights and dimension refer to marine propulsion engines fitted with turbochargers and aircoolers

Lenght: at crankshaft - Width: overall - Height: overall, from underside of feet

BL 550 DF									
Output	1210 bhp/cyl								
	890 kW/cyl	BL 550.8	DF 6L	7260	5340	124	7395	3475	5680
Bore	550 mm	BL 550.8	DF 8L	9680	7120	161	9155	3475	5680
Stroke	630 mm	BL 550.9	DF 9L	10890	8010	178	10035	3475	5680
Speed	430 rpm	BL 550.12	DF 12V	14520	10680	202	8360	5250	5050
M.e.p.	16,7 bar	BL 550.14	DF 14V	16940	12460	232	9415	5250	5050
M.p.s.	9,0 m/sec.	BL 550.16	DF 16V	19360	14240	261	10470	5250	5050
		BL 550.18	DF 18V	21780	16020	288	11525	5250	5050

The weights of the «V» engines are without turbochargers and aircoolers

Lenght: at crankshaft - Width: overall - Height: from underside of feet

Outputs referred to gas fuels having Methane Number MN = 100

A 55									
Output	1700 bhp/cyl	6L A55	6L	10200	7500	128	7395	3455	5650
	1250 kW/cyl	8L A55	8L	13600	10000	162	9155	3455	5765
Bore	550 mm	9L A55	9L	15300	11250	179	10035	3455	5765
Stroke	680 mm	12V A55	12V	20400	15000	226	8360	4800	5670
Speed *	425 rpm	14V A55	14V	23800	17500	257	9415	4800	5670
M.e.p.	21,8 bar	16V A55	16V	27200	20000	288	10470	4800	5670
M.p.s.	9,6 m/sec.	18V A55	18V	30600	22500	314	11525	4800	5670

* 428 rpm for 50 Hz generating sets

Performances, weights and dimensions refer to marine propulsion engines fitted with turbochargers and air coolers

Lenght: at crankshaft - Width: overall - Height: overall from underside of feet

main features

Available in unidirectional version, and in reversible version for propulsion. High rigidity structure with maximized doors on both sides to give excellent accessibility to running gear.

Cylinder liners and four-valve cylinder heads in high strength cast iron, effectively water cooled for optimal thermal stresses.

Composite pistons with aluminium skirts and steel crowns with cocktail-shaker oil cooling to minimize thermal stresses and lower piston ring temperatures.

Direct lubrication of cylinder liners and anti-wear rings coatings for extended service life; single grade lube oil for cylinder and general lubrication and piston cooling.

Fuel injectors cooled by independent water circuit.

Easily extractable exhaust valve cages with water cooled valve seats; in combination with valve rotating devices, ensure long valve life with heavy residual fuels.

Camshafts, dismountable sideways, housed in compartment separated from crankcase.

Connecting rod with detachable large-end bearing; rod withdrawable through cylinder without disturbing bearing which has robust scantlings; same rods used in V-engine where they are side-by-side. Turbo-charger gas inlet system varied on basis of number of cylinders to give maximum energy utilization.

Air and exhaust manifold in centre of «Vee» to keep sides of V-engines clear for maintenance access.

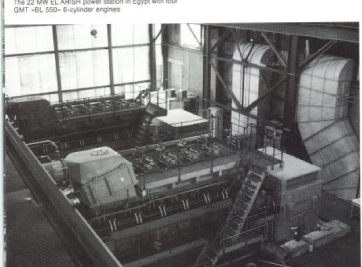
High level of crankshaft counterweighting to minimize bearing loads.

Designed to operate on heavy residual fuel up to CIMAC 55 at very high efficiency through appropriate design of the combustion chamber, fuel pumps, intake and exhaust system and the adoption of high efficiency turbochargers.

In order to improve the heavy fuel operation these engines are provided with a computerized load dependent control of jacket water and charging air temperature, speed of cooler heat exchanger and two stage fuel pressurization.

In the series BL 550, and having the same cylinder bore and stroke, a dual fuel version designated BL 550 DF has been developed for operation on natural gas with 5 per cent pilot fuel for ignition.

The 22 MW EL ARISH power station in Egypt with four GMT «BL 550» 6-cylinder engines



Cross section through the L A55 engine.

One of the six GMT «BL 550» 16-cylinder engines in the XI CUN diesel power station in Guang Zhou - Chin

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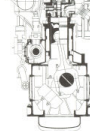
e BL 550 DF features the same sturdy structure
d some main components as the diesel version,
pether with special components and devices con-
ved for operation on gas, as follows:
fuel pumps and fuel valves able to meter the small
amounts of pilot fuel as well as the fuel needed for
diesel operation;
special intake and exhaust valve timing;
mechanically driven gas valves for gas admission
in the cylinder heads upstream of the intake valves;
piston crowns and combustion chambers appro-
priately designed to avoid misfiring and detonation
during combustion;
ese engines are particularly suitable for application
Total Energy plants for effective fuel energy uti-
ation up to a total efficiency of 90 per cent.

55

w improved version of the existing GMT 550 mm
re engines with higher stroke-bore ratio for high
ermodinamic efficiency.
the engine structure es the BL 550 engines.
w crank mechanism with high crankshaft counter-
ighting.
option of the rotating piston to achieve low lubrica-
g oil consumption assuring at the same time good
ification of the cylinder liners and high reliability.
tions of composite type with bore-cooled steel
wn and cast iron skirt.
w injection equipments with short fuel pipes and
mpact fuel valves.
discharging according th the single Pipe Exhaust
stem or the constant pressure for «V» stationary
gines.



GMT medium-speed four-stroke engines

ENGINE TYPE	DATA	Version	Cyls no	Output bhp	Output kW	Weight tons	Length mm	Widht mm	Height mm
A 32									
Output	600 bhp/cyl	6L A 32	6L	3600	2640	30	4525	1840	3125
	440 kW/cyl	8L A 32	8L	4800	3520	37	5605	2030	3125
Bore	320 mm	9L A 32	9L	5400	3960	40	6145	1930	3300
Stroke	390 mm	12V A 32	12V	7200	5280	46,5	4855	2600	3150
Speed *	750 rpm	14V A 32	14V	8400	6160	53,5	5450	2600	3215
M.e.p.	22,5 bar	16V A 32	16V	9600	7040	60	6045	2600	3215
M.p.S.	9,75 m/sec.								

* 720 rpm for 60 Hz generators

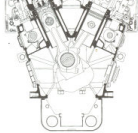
Weight: with driven pumps -

Length: at crankshaft - Width: overall - Height: from underside of feet

main features

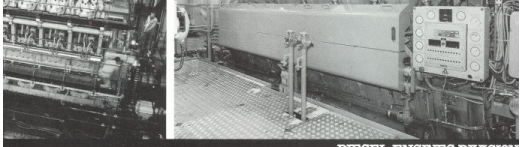
Conceived in undirectional version this new series of engines has been developed to burn the same residual fuel as the larger and slower medium speeds and to attain low specific fuel consumption and high reliability.
Ratings and dimensions make them suitable for ship propulsion and electric power generation in stationary plants or as auxiliary units on board.
The structure for in-line and «V» engines is a mono-bloc casting made of high strength cast iron with undersiung crankshaft.
The connecting rods drop-forged in two pieces are withdrawable from the top together with the piston.
The cylinder heads clamped by four stud bolts for easy disassembly have a thick bore-cooled bottom plate granting low thermal load and high stiffness.
The inserted thin-walled exhaust valve seat rings are directly cooled by water circulation to allow low valve seat temperature and high T.B.O.s on heavy fuel operation.
The cylinder liners made of high strength cast iron have a thick collar bore-cooled for low mechanical and thermal stresses.
The pistons are of composite type with aluminium skirts and thin forged steel crowns.
The whole series is provided with mechanically-driven pumps for service fluid circulation.
Designed for heavy-duty operation using heavy fuel oils up to CIMAC H55.

In order to improve the heavy fuel operation these engines are provided with a computerized load dependent control of jacket water and charging air temperature, special air cooler/heater exchanger and two-stage fuel pressurization.



Cross section through the V A 32 engine

Marine propulsion plant with GMT 320 mm bore engine



GMT high-speed four-stroke diesel engines

ENGINE TYPE	DATA	Version	Cyls no	Output bhp	Output kW	Weight tons	Length mm	Width mm	Height mm
B 230									
Output	285 bhp/cyl	B 230.4	4L	1140	840	5.7	2755	1200	1960
	210 kW/cyl	B 230.6	6L	1710	1260	7.6	3440	1200	1960
Bore	230 mm	B 230.8	8V	2280	1680	10.3	3264	1720	2170
Stroke	270 mm	B 230.12	12V	3420	2520	14.5	4260	1720	2200
Speed	1200 rpm	B 230.16	16V	4560	3360	18.3	4692	1720	2250
M.e.p.	18,7 bar	B 230.18	18V	5130	3780	21.0	5052	1720	2250
M.p.S.	10,8 m/sec.	B 230.20	20V	5700	4200	24.0	5583	1720	2380
BL 230									
Output	302,5 bhp/cyl	BL 230.4	4L	1210	890	5.8	2710	1200	1982
	222,5 kW/cyl	BL 230.6	6L	1815	1335	7.9	3335	1200	1982
		BL 230.8	8L	2420	1780	9.0	4182	1200	2195
Bore	250 mm	BL 230.9	9L	2720	2000	11.5	4595	1740	2250
Stroke	310 mm	BL 230.12	12V	3630	2670	14.6	4260	1740	2200
Speed *	1050 rpm	BL 230.16	16V	4840	3560	18.5	4536	1740	2250
M.e.p.	19,7 bar	BL 230.18	18V	5445	4005	21.2	5052	1740	2250
M.p.s.	10,8 m/sec.	BL 230.20	20V	6050	4450	24.3	5536	1740	2380
* 900 rpm for 60 Hz generating set; 1000 rpm for 50 Hz generating set; 720 and 750 rpm on request									
BL 230 DVM									
Output	385 bhp/cyl	BL 230.20 DV	20V	7700	5660	28.3	5940	1970	2700
	283 kW/cyl								
Speed	1050 rpm								
M.e.p.	25,1 bar								
M.p.s.	10,8 m/sec.								

Developed with two stage turbo charging and variable compression ratio for applications such as naval ship propulsion

Length: overall, from flange - Width: overall - Height: from underside of feet

BL 230 DVM									
Output	258,5 bhp/cyl	BL 230.4	P	4L	1035	760	5.8	2710	1200	1982
	190 kW/cyl	BL 230.6	P	6L	1550	1140	7.9	3335	1200	1982
		BL 230.8	P	8L	2070	1520	9.0	4182	1570	2150
Bore	230 mm	BL 230.9	P	9L	2325	1710	11.5	4595	1740	2200
Stroke	310 mm	BL 230.12	P	12V	3100	2280	14.6	4260	1740	2200
Speed *	1000 rpm	BL 230.16	P	16V	4135	3040	18.5	4536	1740	2250
M.e.p.	17,7 bar	BL 230.18	P	18V	4655	3420	21.2	5052	1740	2250
M.p.s.	10,3 m/sec.	BL 230.20	P	20V	5170	3800	24.3	5536	1740	2380

* 900 rpm for 60 Hz generating set; 720 and 750 rpm on request

Length: overall, from flange - Width: overall - Height: overall, from underside of feet

A 210									
Output	230 bhp/cyl	A 210.6	6V	1380	1020	5.9	1985	1820	1990
	170 kW/cyl	A 210.8	8V	1840	1360	7.0	2305	1820	1990
Bore	210 mm	A 210.12	12V	2760	2040	9.9	2960	1820	2020
Stroke	230 mm	A 210.16	16V	3680	2720	12.1	4200	1820	1975
Speed	1500 rpm	A 210.20	20V	4600	3400	15.0	4450	1825	2075
M.e.p.	16,2 bar								
M.p.s.	11,5 m/sec.								

Length at crankshaft - Width: overall - Height: from underside of feet

main features

High-rigidity cast iron main structure including water, oil and air manifolds. External pipes are practically eliminated and very compact structure is obtained.

Individual fuel injection pumps.

Camshafts, oil cooler, oil, water and fuel pumps, oil and fuel filters, fuel nozzles, etc. arranged for optimum accessibility.

Pistons and connecting rods withdrawable from the top.

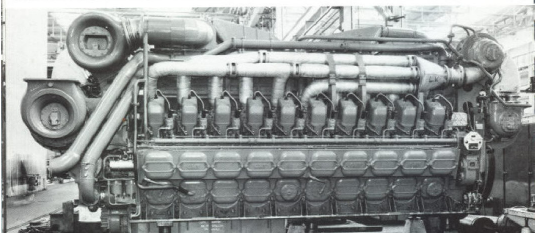
Overall dimensions meet international gauge requirements for rail traction use, for which duty they have received U.I.C. approval after O.R.E. tests. Almost all the parts subject to wear are interchangeable in the engines in each range, in both the in-line and -Vee- versions.

Designed to operate on gas oil and alternative fuels, variants of the «BL 230» type engines have been subjected to endurance test runs on crude oil and on ethanol-gasoil mixtures up to 50/50, whilst developing the full rated output of the gasoil fueled engine.

The "P" version has been developed for operation on heavy fuel up to IFO 500, with a maximum rotation speed of 1000 rpm. The power ratings are slightly reduced with respect tot he gas oil version, depending on the quality of fuel used.

This version incorporates special features such as compound pistons with forged steel crowns and pressed cast irons rings in first groove for wear resistance. Nimonic A exhaust valves; valve rotators; cooled fuel injection valves, oversized fuel injection pumps for good fuel atomization and improved combustion.

All version of the 210 and the 230 engines are suitable for application in "Total Energy" systems, with effective heat recovery and high total efficiency.



The BL 230.20 DVM engine for Italian Navy fregate

GMT high-speed four-stroke gas engines

ENGINE TYPE	DATA	Version	Cyls no	Output bhp	Output kW	Weight tons	Length mm	Widht mm	Height mm
BL 230 G (Natural Gas)									
Output	224,5 bhp/cyl	BL 230.4 G	4L	898	660	5.8	2760	1260	2195
	165 kW/cyl	BL 230.6 G	6L	1347	990	7.9	3430	1260	2195
Bore	230 mm	BL 230.8 G	8V	1796	1320	10.4	2850	1720	2200
Stroke	310 mm	BL 230.12 G	12V	2694	1980	14.6	3670	1720	2200
Speed *	1000 rpm	BL 230.16 G	16V	3592	2640	18.5	4492	1720	2250
B.m.e.p.	15,4 bar	BL 230.18 G	18V	4041	2970	21.2	4900	1720	2250
M.p.S.	10,3 m/sec.	BL 230.20 G	20V	4490	3300	24.3	5312	1720	2250
Outputs referred to gas fuels having Methane Number NM = 100									
1000 rpm for 50 Hz generating set; 900 rpm for 60 Hz generating set;									
BL 230 G (LPG)									
Output	165 bhp/cyl	BL 230.4 G	4L	660	484	5.8	2760	1260	2195
	121 kW/cyl	BL 230.6 G	6L	990	726	7.9	3430	1260	2195
Bore	230 mm	BL 230.8 G	8V	1320	968	10.4	2850	1720	2200
Stroke	310 mm	BL 230.12 G	12V	1980	1452	14.6	3670	1720	2200
Speed *	1000 rpm	BL 230.16 G	16V	2640	1936	18.5	4492	1720	2250
B.m.e.p.	11,3 bar	BL 230.18 G	18V	2970	2178	21.2	4900	1720	2250
M.p.s.	10,3 m/sec.	BL 230.20 G	20V	3300	2420	24.3	5312	1720	2250
Output referred to L.P.G having 70% minimum propane content									
1000 rpm for 50 Hz generating set; 900 rpm for 60 Hz generating set									

Length: overall, from flange - Width: overall - Height: overall, from underside of feet

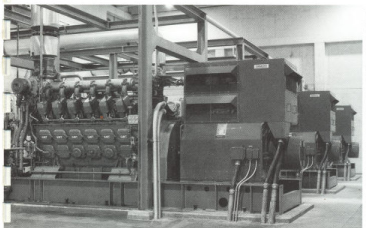
main features

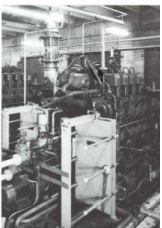
The gas engine "BL 230 G" retains the same basic features as the diesel version, but is designed to operate on natural gas or biological gas, while a special version has been developed, with different intake valve timing, for operation on liquified petroleum gas (LPG).
Both types are fitted with a carburettor adjusted to obtain optimum air fuel ratio for high efficiency and low thermal load and are spark ignited through an electronic magneto and spark plugs.
A dual-fuel version is also available which, although having a carburettor for air/gas mixture formation, is ignited by means of diesel pilot fuel.

27 EKIM 1993

The total energy power station installed at Verona, Italy, for waste water treatment, is equipped with two 4-cylinder GMT "BL 230" engines using both natural methane and the biogas available from sewage.

...e effluent treatment plant at Pontecagnano - Salerno, Italy with three GMT BL 230.12 biological gas engines





IF marine engines

Version	No. Cyl.	Bore × stroke mm	Displacem. cm³	RPM	Max output bhp	kW	Lenght mm	Width mm	Height mm	Weight kg
light duty										
ID 36 SS 6V	6	170×170	23152	2000	980	720	1400	1200	1467	2150
ID 36 SS 8V	8	170×170	30870	2000	1300	955	1605	1200	1478	2750
ID 36 SS 12V	12	170×170	46304	2000	2040	1500	2285	1200	1529	3900
ID 36 SS 16V	16	170×170	61740	2000	2720	2000	3090	1380	1695	6200
"V200" series										
ID 36 SS 12V-200 (*)	12	170×170	46304	2100	2400	1760	2285	1200	1529	4300
ID 36 SS 16V-200	16	170×170	61740	2100	3200	2350	2940	1380	1695	6370

(*) Under development

heavy duty											
Version	No. Cyl.	Bore × stroke mm	Displacem. cm³	Max output kg	kW @ RPM	bhp	kW @ RPM	Lenght mm	Width mm	Height mm	Weight kg
ID 36 SS 6V	6	170×170	23152	660	500 @ 1800	750	590 @ 1800	1400	1200	1467	1850
ID 36 SS 8V	8	170×170	30870	910	670 @ 1800	990	730 @ 1800	1605	1200	1478	2450
ID 36 SS 12V	12	170×170	46304	1500	1070 @ 1800	1590	1170 @ 1800	2285	1200	1529	3450
ID 36 SS 16V	16	170×170	61740	1940	1430 @ 1800	2120	1560 @ 1800	3090	1380	1695	5800

IF industrial engines

Version	No. Cyl.	Bore × stroke mm	Displacem. cm³	RPM	Max power kW	Lenght mm	Width mm	Height mm	Weight kg
ID 36 SS 6V	6	170×170	23152	2000	690	1400	1200	1467	1850
ID 36 SS 8V	8	170×170	30870	2000	920	1605	1200	1478	2450
ID 36 SS 12V	12	170×170	46304	2000	1375	2285	1200	1529	3450
ID 36 SS 16V	16	170×170	61740	2000	1930	3090	1380	1695	5800

IF engines for generating sets

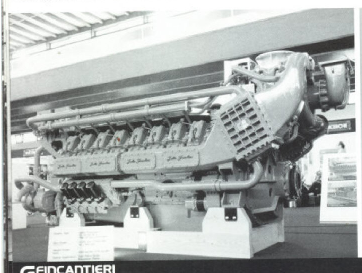
Version	Prime Power		Stand-by	
	50 Hz	60 Hz	50 Hz	60 Hz
	kW @ RPM	kW @ RPM	kW @ RPM	kW @ RPM
ID 36 SS 6v	520 @ 1500	625 @ 1800	570 @ 1500	685 @ 1800
ID 36 SS 8V	690 @ 1500	830 @ 1800	760 @ 1500	915 @ 1800
ID 36 SS 12V	1035 @ 1500	1245 @ 1800	1135 @ 1500	1365 @ 1800
ID 36 SS 16V	1445 @ 1500	1735 @ 1800	1590 @ 1500	1910 @ 1800

– "Prime Power": continuous output with 10% admissible overload for 2 hours every 12 hours.
– "Stand-by": continuous output for emergency service, without overload.

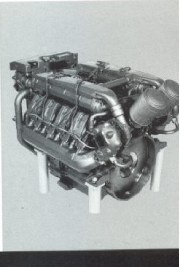
Isotta Fraschini ID 36

The ID 36 family comprises 6 to 16 cylinder models
90° Vee arranged on a high-tensile alloy iron cran
case.
These engines feature a direct injection system an
four valves per cylinder.
This engine family is built on a modular concept bas
Many components are common to all units, regardles
of number of cylinders, and are thus interchangeabl
From this series, Isotta Fraschini derived a specia
"Amagnetic" version for use in Mine Warfare Vessel
The ID 36 industrial engines find application in railw
traction system and power generation units.
A wide range of power units could be supplied f
ground power stations, marine auxiliaries and nc
break or automatic emergency generating sets.
Special attention has been given to the engineeri
of parallel units, cogeneration systems and comple
power packages supplied "ready to run".

Marine engine ID 36 SS 16V - 2350 kW @ 2100 rpm



Marine engine V 1308 12 - 500kW @ 2700 rpm



ɔotta Fraschini 1300

e new IF 1300 engine family for pleasure boat re-
esent advanced step in the re-launching process of
, prestigious trademark. As for high performances,
d sophisticated technical solutions, the features of
new products are the most advanced ones avail-
e today. The 1300 family is comprised of a six-cylin-
in line unit and eight- and 12-cylinder 90° Vee mo-
s. The main features a 130 mm bore, and a stroke
142 mm on the in-line unit. The stroke is reduced to
3 mm for the Vee models. The in-line engine has
tary displacement of 1885 cm³, while the Vee units
e unitary displacement of 1672 cm³. The 1300 en-
es have an impressive weight to power ratio, a
hly standardized, and extremely reliable engine of
dular type. Introduced as marine engines, these
sets will also serve the power generation and indu-
al market segments.

IF marine engines

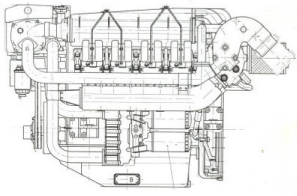
Version	No. Cyl.	Bore × stroke mm	Displacem. cm³	RPM	Max output bhp	Max output kW	Lenght mm	Width mm	Height mm	Weight kg
L 1306 T2	6	130×142	11309	2400	500	370	1401	850	1037	850
V 1308 T2	8	130×126	13379	2700	680	500	1168	1006	1010	950
V 1312 T2	12	130×126	20069	2800	1060	780	1488	1080	1061	1350

IF engines for generating sets

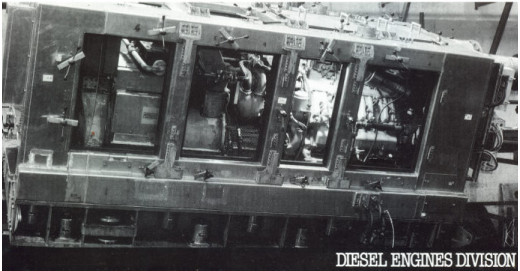
Version	Prime Power 50 Hz	Prime Power 60 Hz	Stand-by 50 Hz	Stand-by 60 Hz
	kW @ RPM	kW @ RPM	kW @ RPM	kW @ RPM
L 1306 T3	220 @ 1500	250 @ 1800	242 @ 1500	275 @ 1800
V 1308 T3	300 @ 1500	340 @ 1800	330 @ 1500	380 @ 1800
V 1312 T3	450 @ 1500	510 @ 1800	495 @ 1500	570 @ 1800

– "Prime Power": continuous output with 10% admissible overload for 2 hours every 12 hours.
– "Stand-by": continuous output for emergency service, without overload.

Marine engine V 1308 T2 - 500kW @ 2700 rpm



ow-magnetic-signature ID 36 engine under test



THE AFTERSALES SERVICE ORGANIZATION OF FINCANTIERI DIESEL ENGINE DIVISION

Around-the-clock service is provided by the aftersales section (Assistenza Post Vendium - APV) of the Diesel Engine Division, which is composed of 630 employees, the largest portion of which are field engineers working in the 16 regional offices in Italy. In addition, 79 service shops throughout the world are working in close contact with the Trieste headquarters. APV activity deals not only with commissioning engines, providing assistance and maintenance during the guarantee period, and the delivery of spare parts, but also with the maintenance work a customer may require at any time during the life of the engine.
The first contact with the product starts when the engine is still on the test bed, as the testing technical office is the responsibility of APV. At this stage, everything must be done to avoid field trouble that could create delays in commissioning, additional costs and loss of image.

After erection, an APV field engineer will remain at the plant site to supervise the first service period and to instruct customer's personnel.
The Diesel Engine Division is one of the few engine manufacturers accepting complete maintenance contracts comprehensive of manpower and spare parts. This formula is valid for both marine and stationary engines. These contracts have become increasingly complete and universal, with prompt service provided in any region of the world, thanks to the existing service shop organization.
The service available also covers all of the auxiliaries of the engine room, such as pumps, compressors, heat exchangers, etc.
And in some cases, these contracts may also take care of customs formalities, and the shipping and handling of spares, so as to resemble a turnkey contract.

There are three outstanding points of the contracts:

1. They guarantee the highest efficiency t any type of service the plant may wit stand, event "temporary" service, with co siderable fuel and lubricant savings.
2. They allow maintenance operations to l planned during plant stops for commerci or other reasons, without penalizing t availability factor of the plant or sh Maintenance planning is carried out w computerized systems, using modern dia nostic methods that are based on statis cal data integrated with the main data c lected at the individual plant. This allo the program to be personalized accordi to the type of plant and the service pe formed during that period.
3. They maintain the investment value of t engine and auxiliary equipment.

(Above) Typical screen readout of a maintenance program.

(Below) Computerized planning of maintenance requirements.

th poor and improper maintenance, engine
oms or power plants can often suffer de-
loration much higher than that entailed by
ir actual age. In order to re-establish plant
iciency, the customer is then obliged to sus-
n a cost higher than several years of
intenance would have been. The increas-
number of contracts 150 presently, com-
red to the 62 of 1982, demonstrate the ap-
eciation of this formula from the technical
d economical point of view.
e Diesel Engine Divisidn is also called to
rform spot maintenance service without a
ntract, but in competition with local service
ops operating in various parts of the world.
these cases, APV, in spite of its higher cost
r hour compared to the one charged by
any local workshops, is often capable of of-
ring a lower overall price, thanks to the high
gree of specialization of its engineers, the
availability of specialized maintenance equip-
ment and its efficient organization.
Another way APV can work with the customer
is to provide an engineer to supervise the
work carried out by independent crews hired
by the customer. In this case, the Diesel En-
gine Division is not responsible for the quality
of the work carried out by the crew, but only of
the advice given by the field engineer acting
as a consultant. An important activity of APV
regards spare parts supply, which is managed
by a dedicated department with a sales office.
An engineering office is used to determine the
stock volume of the warehouse, as well as
support the sales office and the customers to
supply the spare parts according to the type of
plant and service performed. Spares are fur-
nished by the central warehouse or by one of
the regional warehouses, which are con-
nected to the central one via video terminal.

All spare parts activity is managed by com-
puter, from stocking and parts distribution, to
invoicing.

APV is also in charge of the training activity
which usually is carried out at the Trieste
headquarters, but sometimes is done on site.
It may concern service shop or customer per-
sonnel.

This activity includes theoretical and practical
portions carried out as much as possible on a
defined product and with the use of video
aids.

The Diesel Engine Division has always given
great importance to the activity of the APV be-
cause, as well as producing a considerable
business volume – it serves to maintain a con-
tinuous relationship with the customers, and in
this way gathers field data that are processed
to develop new products.

(Below) Spare parts warehouse at the Trieste plant.

(Above) Spare parts computerized management.

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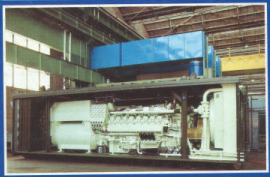

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