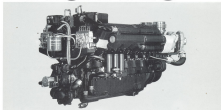


CRM ENGINES



THE 12 CYLINDER SERIES 12D/S 12D/SS

23 MAYIS 1995

Construction features

- V type configuration with 60° angle
- Pre-chamber fuel injection
- Closed-circuit fresh-water cooling
- Pressure-pulse supercharging
- Intercooling by sea water

Main features

- Compact construction
- Very high power/mass ratio
- Modular construction
- Optimized diameter for the highest mechanical and thermal coefficients

Performance Baseline Navy Approval	12 Dec	10 Sep 1975 (spec 1968)	10 Sep 1980 (spec 1968)	10 Sep 1990 (spec 1975)	10 Sep 1992 (spec 1975)
	12 Dec 90	10 Sep 1980 (spec 1968)	10 Sep 1975 (spec 1968)	10 Sep 1975 (spec 1975)	10 Sep 1975 (spec 1975)
NEMA approval	12 Dec	Continuous rating 1000 HP (spec 1975)		Class rating 1000 HP (spec 1975)	
	12 Dec 90	Continuous rating 1000 HP (spec 1975)		Class rating 1000 HP (spec 1975)	
				1000	1000
Engine design Baseline	As designed			0	0
	No. of cylinders			12	12
	Single cylinder/cylinder block			60°	60°
	Bore x stroke	in		5.0 x 4.75	5.13 x 4.75
	Overall piston displacement	m ³		1000.0	970.0
	Individual gross displacement	m ³		83.333	80.833
	Compression ratio			16.25	16
	Supercharging ratio			1.0	1.0
	Displacement efficiency			75% at 1000	73% at 1000
	Cooling system			fresh sea water	fresh seawater and glycolic coolant
	Supercharging system			pressure positive	pressure positive
	Scavenging system			direct or air type	direct or air type
	Rev. governor?			variable speed/mechanical type (electronic gov. as required)	
	Combi/glycolic water pump delivers	m ³ /h		50	50
	Coastal glycolic water pump delivers	m ³ /h		50	50
	Seawater water type air cooling seawater pump delivers	m ³ /h		-	50
	Coast type of pump delivers	m ³ /h		50	50
	Lubricating system			dry pump	dry pump
	Dry weight with standard accessories (100% and compressed air rating PLV)	kg kgdwt		1400 1400	1520 1520
Dimensions Baseline (unless noted V not below the crankshaft)	Standard construction	m T		10	10
	Special construction	m T		10	10
	Weld reinforcement	m T		1	1



(a) 1000 rpm

(b) 1500 rpm



(a) 1000 rpm

(b) 1500 rpm



My company has a lot of large quantities of engine torque information. I have a lot of information about the engine torque information. I have a lot of information about the engine torque information.

Operating features

Two different
engine performance

Maximum torque

Curve 1

Power available for long periods
from 1000 to 1500 rpm at
power not exceeding maximum
torque

Continuous rating

Curve 2

Power available for long periods,
two steps, as long as the engine is not
exceeding 1000 rpm, and operating
standard using high grade fuel and
oil

Operating

Curve 3

The curve shows the approximate
power obtained by the propeller

Operating features

Engine performance

Engine performance

Engine performance

Engine performance

Curve 4

Power available for long periods

Curve 5

Power available for long periods

Curve 6

Power available for long periods

Curve 7

Power available for long periods

Curve 8

Power available for long periods

Curve 9

Power available for long periods

Curve 10

Power available for long periods

Curve 11

Power available for long periods

Curve 12

Power available for long periods

Curve 13

Power available for long periods

Curve 14

Power available for long periods

Curve 15

Power available for long periods

Curve 16

Power available for long periods

Curve 17

Power available for long periods

Curve 18

Power available for long periods

Curve 19

Power available for long periods

Curve 20

Power available for long periods

Coupling options

- Head-on-line, adjust after pit depth completion, upper bushing, and upper seal/blade propeller by means of lock-down pins or wire pins
- Wire-pin by means of double retraction pins with shims

A/T type compressor
with oil-free bearing propeller



A/T type compressor
with upper seal/blade propeller



Axial-flow engine with
shock and multiple



Axial-flow engine with
Aeromax compressor (oil seal)
upper seal/blade propeller



Drives	Standard	Power take-up	kgf. 25
		Direct power-take-up gear	Engine type
		Reduction gear	1.5 to 1.75:1 kgf. 100
		Reduction gear	2.0 to 2.75:1 kgf. 100
		Reverse-reduction gear	kgf. up to 2.5
		Variable	1.75:1 kgf. 100
		Variable shock	Hydraulically driven multiple disk type
Other Request	The following coupling assemblies:		
	■ Engines - Reduction gear - Shaft line - Propeller		
	■ Engines - Shock - Multiple		
	Each assembly is individually designed and optimized for each hull, kg. or maximum total = 3		

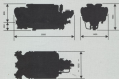
Reduction gearbox (standard) kg. 1.00
Reduction gearbox (1.5 to 1.75:1)
Reduction gearbox (2.0 to 2.75:1)

Variable gearbox (standard) kg. 1.00
Variable gearbox (1.5 to 1.75:1)

TABLE
1 (continued)

Sample	Sample 1		Sample 2	
	Length (mm)	Width (mm)	Length (mm)	Width (mm)
1	10.0	1.5	10.0	1.5
2	10.0	1.5	10.0	1.5
3	10.0	1.5	10.0	1.5
4	10.0	1.5	10.0	1.5
5	10.0	1.5	10.0	1.5
6	10.0	1.5	10.0	1.5
7	10.0	1.5	10.0	1.5
8	10.0	1.5	10.0	1.5
9	10.0	1.5	10.0	1.5
10	10.0	1.5	10.0	1.5
11	10.0	1.5	10.0	1.5
12	10.0	1.5	10.0	1.5
13	10.0	1.5	10.0	1.5
14	10.0	1.5	10.0	1.5
15	10.0	1.5	10.0	1.5
16	10.0	1.5	10.0	1.5
17	10.0	1.5	10.0	1.5
18	10.0	1.5	10.0	1.5
19	10.0	1.5	10.0	1.5
20	10.0	1.5	10.0	1.5
21	10.0	1.5	10.0	1.5
22	10.0	1.5	10.0	1.5
23	10.0	1.5	10.0	1.5
24	10.0	1.5	10.0	1.5
25	10.0	1.5	10.0	1.5
26	10.0	1.5	10.0	1.5
27	10.0	1.5	10.0	1.5
28	10.0	1.5	10.0	1.5
29	10.0	1.5	10.0	1.5
30	10.0	1.5	10.0	1.5
31	10.0	1.5	10.0	1.5
32	10.0	1.5	10.0	1.5
33	10.0	1.5	10.0	1.5
34	10.0	1.5	10.0	1.5
35	10.0	1.5	10.0	1.5
36	10.0	1.5	10.0	1.5
37	10.0	1.5	10.0	1.5
38	10.0	1.5	10.0	1.5
39	10.0	1.5	10.0	1.5
40	10.0	1.5	10.0	1.5
41	10.0	1.5	10.0	1.5
42	10.0	1.5	10.0	1.5
43	10.0	1.5	10.0	1.5
44	10.0	1.5	10.0	1.5
45	10.0	1.5	10.0	1.5
46	10.0	1.5	10.0	1.5
47	10.0	1.5	10.0	1.5
48	10.0	1.5	10.0	1.5
49	10.0	1.5	10.0	1.5
50	10.0	1.5	10.0	1.5
51	10.0	1.5	10.0	1.5
52	10.0	1.5	10.0	1.5
53	10.0	1.5	10.0	1.5
54	10.0	1.5	10.0	1.5
55	10.0	1.5	10.0	1.5
56	10.0	1.5	10.0	1.5
57	10.0	1.5	10.0	1.5
58	10.0	1.5	10.0	1.5
59	10.0	1.5	10.0	1.5
60	10.0	1.5	10.0	1.5
61	10.0	1.5	10.0	1.5
62	10.0	1.5	10.0	1.5
63	10.0	1.5	10.0	1.5
64	10.0	1.5	10.0	1.5
65	10.0	1.5	10.0	1.5
66	10.0	1.5	10.0	1.5
67	10.0	1.5	10.0	1.5
68	10.0	1.5	10.0	1.5
69	10.0	1.5	10.0	1.5
70	10.0	1.5	10.0	1.5
71	10.0	1.5	10.0	1.5
72	10.0	1.5	10.0	1.5
73	10.0	1.5	10.0	1.5
74	10.0	1.5	10.0	1.5
75	10.0	1.5	10.0	1.5
76	10.0	1.5	10.0	1.5
77	10.0	1.5	10.0	1.5
78	10.0	1.5	10.0	1.5
79	10.0	1.5	10.0	1.5
80	10.0	1.5	10.0	1.5
81	10.0	1.5	10.0	1.5
82	10.0	1.5	10.0	1.5
83	10.0	1.5	10.0	1.5
84	10.0	1.5	10.0	1.5
85	10.0	1.5	10.0	1.5
86	10.0	1.5	10.0	1.5
87	10.0	1.5	10.0	1.5
88	10.0	1.5	10.0	1.5
89	10.0	1.5	10.0	1.5
90	10.0	1.5	10.0	1.5
91	10.0	1.5	10.0	1.5
92	10.0	1.5	10.0	1.5
93	10.0	1.5	10.0	1.5
94	10.0	1.5	10.0	1.5
95	10.0	1.5	10.0	1.5
96	10.0	1.5	10.0	1.5
97	10.0	1.5	10.0	1.5
98	10.0	1.5	10.0	1.5
99	10.0	1.5	10.0	1.5
100	10.0	1.5	10.0	1.5

Figure 1





*No secondary light/dark specifications
 unless design's dimension.
 Approximate dimension shown.
 All weights dimensioned minimum
 only to facilitate drawing.



Consorzio Roma Roma

First office not open until 1 January 2014 - Via Roma 10
Phone: 06/4781.1111 - Fax: 06/4781.1111 - Web: 06/4781.1111