

**OPERATION AND MAINTENANCE MANUAL
FOR
DUAL FUEL GENERATING UNIT
38TDD8-1/8
PACIFIC BELL
61-206688
VOLUME I**

PROPRIETARY

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Colt Industries



Fairbanks Morse
Engine Division

ENGINE DESCRIPTION AND DATA

FAIRBANKS MORSE
OPPOSED PISTON ENGINES



E1102-11
Aug. 1979

GENERAL DATA — (cont.) — Turbocharged Diesel and Dual Fuel Engines Applicable to Continuous Ratings

GENERAL DATA

Number of Cylinders	6	9	12
Bore and stroke — inches	8-1/8x10	8-1/8x10	8-1/8x10
Compression Ratio (Total swept volume)	13.8	13.8	13.8
Hot Engine Compression at Rated Speed — max. variation between cylinders — psi	50	50	50
Firing Pressure (approx.) — maximum psi	1340	1340	1340
Total Piston Displacement — cu. in.	6221	9332	12443
Piston Speed — fpm			
At 720 rpm	1200	1200	1200
At 760 rpm	1260	1250	1250
At 800 rpm	1600	1500	1500

Firing Order

Note: For complete firing order data, with engine diagram,
refer to page E1222-1.

BLOWER

Stationary Engines:

Air Delivery (Turbocharger) — approx. cfm

At 720 rpm	5900	8960	11930
At 800 rpm	6930	10400	13880

Marine Engines:

Air Delivery (Turbocharger) — approx. cfm

At 760 rpm	6210	8320	12430
At 800 rpm	6530	9800	13070

Scavenging Pressure — approx. psi

At 720 rpm	17	17	17
At 760 rpm	18	18	18
At 800 rpm	23	23	23

BEARINGS

Number of Main Bearings (upper and lower crankshaft) ea.

7	10	13
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Main Bearing Size (upper and lower crankshaft) — in.

8x3	8x3	8x3
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Number of Thrust Bearings

(upper and lower crankshaft) ea.

1	1	1
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Thrust Bearing Size (upper and lower) — in.

8x4	8x4	8x4
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Crankpin Bearing Size — in.

6-3/4x3-3/4	6-3/4x3-3/4	8-3/4x3-3/4
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Piston Pin Bearing Size — in.

3x3-3/16	3x3-3/16	3x3-3/16
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EXHAUST

Exhaust Temperature at Individual Cylinder

Exhaust Ports at Full Load — Max. °F	1000	1000	1000
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Stationary Engines: Exhaust Gas at Full Load — lbs. per hr.

At 720 rpm	27390	41080	54780
At 800 rpm	31810	47740	63620

Marine Engines: Exhaust Gas at Full Load — lbs. per hr.

At 760 rpm	28500	42780	67060
At 800 rpm	29970	44980	60000

STARTING AIR

(Air Cylinder Start)

Stationary — Diesel & Dual Fuel

Cu. Ft. of free air per start

30	36	45
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Starting Air to 1/2 the cylinders on 6 & 12 cyl.
engines and to 5 cylinders on the 9 cyl. engine.

Marine —

Cu. Ft. of free air per start

40	45	55
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Starting air to all cylinders.

For Tank Sizing See: Marine — Page E3740
Stationary — Page E3440

45 = 340 G