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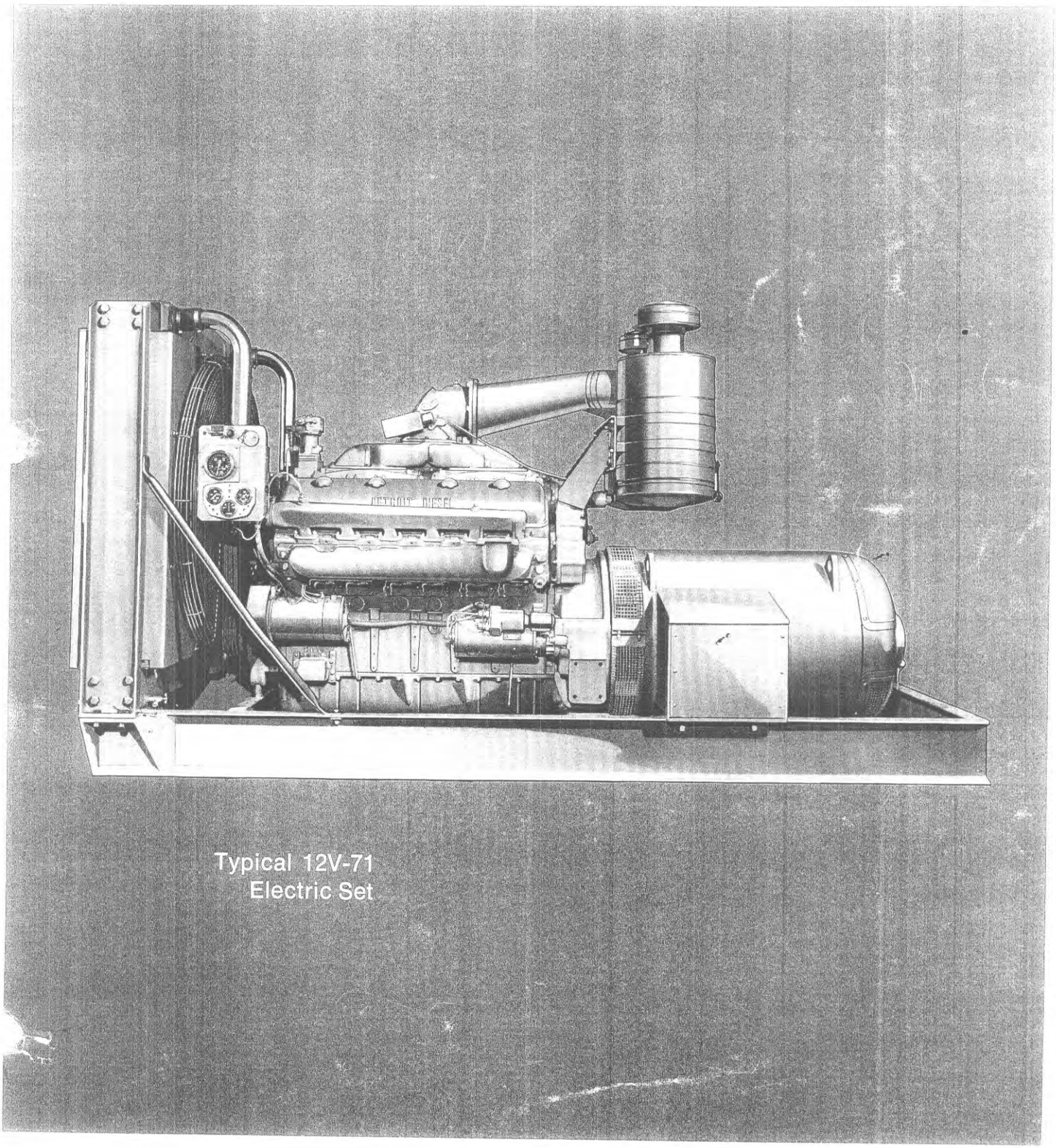
Detroit Diesel Engines

12V-71
300 kW

12V-71T
440 kW



Typical 12V-71
Electric Set

Basic Engine

	12V-71				12V-71T			
Basic engine model	7123-7005				7123-7305			
Engine type	Two Cycle				Two Cycle			
No. of cylinders	12				12			
Bore & stroke—in (mm)	4.25 x 5 (108 x 127)				4.25 x 5 (108 x 127)			
Displacement—cu in (litres)	852 (13.97)				852 (13.97)			
Application	Standby				Standby			
Frequency @ rpm	60 Hz @ 1800		50 Hz @ 1500		60 Hz @ 1800		50 Hz @ 1500	
Rated Power, less fan—BHP (kW)*	430	(321)	360	(269)	630	(470)	532	(397)
kW Rating max. @ P.F. 1.0**	300		250		440		370	
Generator efficiency (assumed)—%	94		94		94		94	
Compression ratio	18.7 to 1		18.7 to 1		17 to 1		17 to 1	
Piston speed—ft/min (m/sec)	1500	(7.62)	1250	(6.35)	1500	(7.62)	1250	(6.35)
No. of main bearings	7		7		7		7	
Approx. net weight dry—lbs (kg)***	8500	(3856)	8500	(3856)	8650	(3924)	8650	(3924)
Air and exhaust system:								
Combustion air requirements—cfm (m^3/min)	1128	(32)	946	(27)	1900	(54)	1510	(43)
Max. air intake restriction—in H_2O (kPa)	25.0	(6.22)	18.0	(4.48)	14.5	(3.61)	10.5	(2.61)
Exhaust gas temp. @ Rated BHP—°F (°C)								
Engine manifold dry	970	(521.1)	955	(512.8)	880	(471.1)	915	(490.6)
Engine manifold wet	920	(493.3)	910	(487.8)				
Exhaust gas flow @ Rated BHP—cfm (m^3/min)								
Engine manifold dry	2960	(84)	2456	(70)	4670	(132)	3810	(108)
Engine manifold wet	2856	(81)	2378	(67)				
Max. exhaust back press. allowable—in Hg (kPa)	3.3	(11.17)	2.3	(7.79)	2.0	(6.77)	1.4	(4.74)
Exhaust outlet I.D.—in (mm)								
Engine manifold dry	3.5	(88.9)	3.5	(88.9)				
Engine manfold wet	4.0	(101.60)	4.0	(101.60)				
Recommended stack single outlet minimum	6	(152.40)	6	(152.40)	8	(203.20)	8	(203.20)
Cooling system:								
Basic engine water capacity—gal (litres)	13.75	(52.05)	13.75	(52.05)	13.75	(52.05)	13.75	(52.05)
Jacket water flow—gpm (litres/min)	173	(654.87)	143	(541.31)	217	(821.43)	183	(692.73)
Jacket water temp., normal operation—°F (°C)	170-185	(76.7-85.0)	170-185	(76.7-85.0)	170-185	(76.7-85.0)	170-185	(76.7-85.0)
Heat rejection to jacket water @ Rated BHP—Btu/min (W)								
Exhaust manifold dry	12900	(226837)	10800	(189910)	20790	(365577)	17555	(308692)
Exhaust manifold wet	14620	(257082)	12240	(215231)				
Engine heat radiated @ Rated BHP—Btu/min (W)								
Engine manifold dry	3310	(58209)	2866	(50392)	2529	(44471)	2518	(44277)
Engine manifold wet	2814	(49477)	2436	(42833)				
Max. static head @ water pump inlet—ft H_2O (kPa)	30	(89.58)	30	(89.58)	30	(89.58)	30	(89.58)
Max. heat exchanger raw water press.—psi (kPa)	65	(448.18)	65	(448.18)	65	(448.18)	65	(448.18)
Generator heat radiated to room @ Rated BHP—Btu/min (W)†	1092	(19202)	910	(16002)	1601	(28152)	1346	(23668)
Air required to radiator—cfm (m^3/min.)††	20000	(566)	17000	(481)	24000	(680)	19000	(538)
Static pressure for air flow—in H_2O (kPa)	1.4	(.35)	.90	(.22)	1.6	(.40)	1.1	(.27)
Fuel system:								
Fuel pump max. suction, clean system—in Hg (kPa)	6	(20.32)	6	(20.32)	6	(20.32)	6	(20.32)
Fuel quantity pumped—gph (litres/hr)	120	(454.25)	120	(454.25)	120	(454.24)	120	(454.24)
Lubrication system:								
Oil pan capacity—qts (litres)†††	33	(31.23)	33	(31.23)	33	(31.23)	33	(31.23)
Starting system:								
Electric motors—quantity	1		1		1		1	1
Voltage††††	24		24		24		24	24
Battery recommended capacity—amp/hr	205 [2]		205 [2]		205 [2]		205 [2]	
Engine rolling current @ 32°F (0.0°C)—amps	820		820		820		820	

*Nominal basic engine horsepower rating at 85°F (29.4°C) and 29.00 in Hg (98.19 kPa) Barometer-Dry.
**Maximum kW rating at assumed generator efficiency.
***Radiator-cooled set.
†Generator heat radiated to room @ P.F. 1.0 and assumed generator efficiency.
††Engine standard option fan. †††Engine standard option oil pan. ††††Engine standard option starting motor.