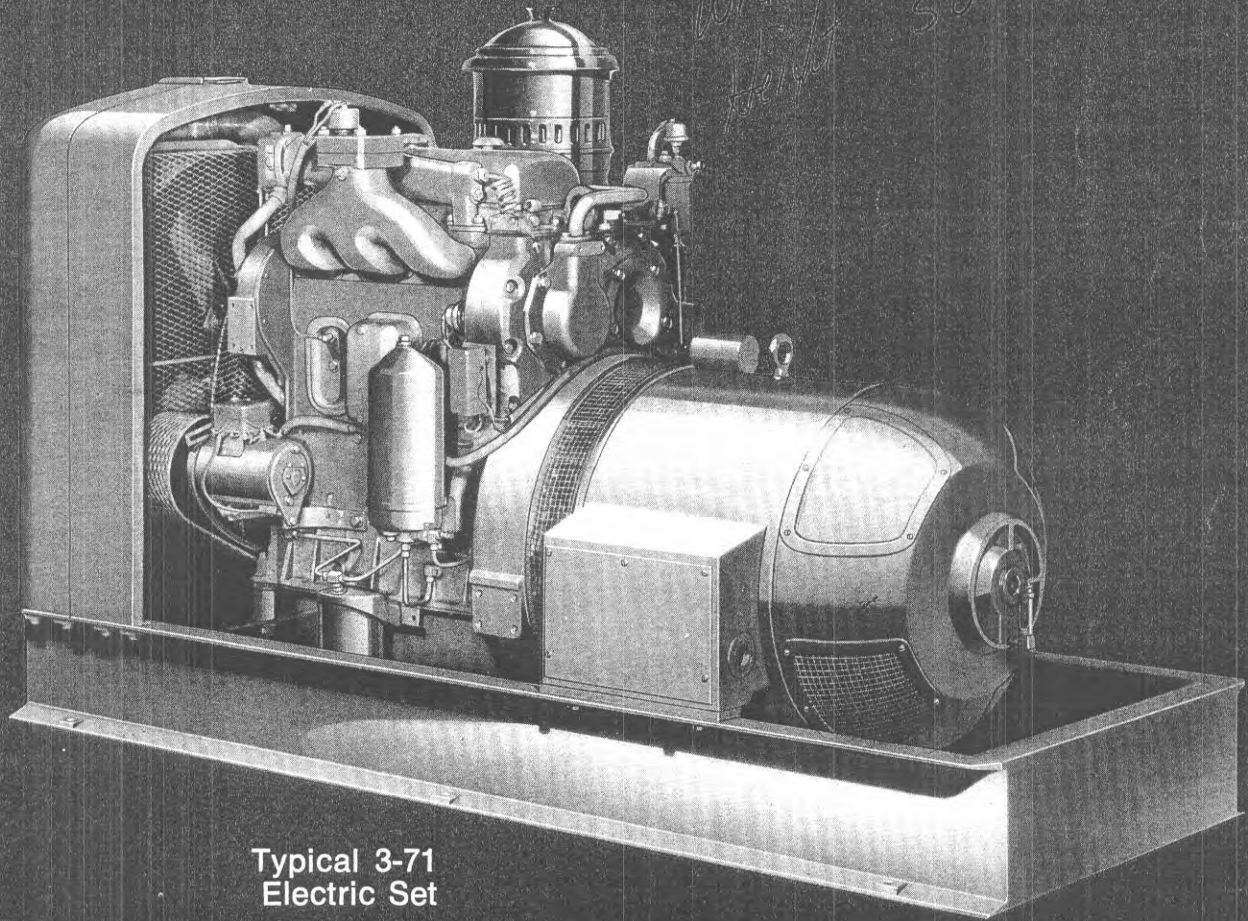


Detroit Diesel Engines

standby
electric set
models 2-71
40 kW

3-71
65 kW



Typical 3-71
Electric Set

Basic Engine

2-71

3-71

Basic engine model	1023-5108				1033-7005			
	Two Cycle				Two Cycle			
No. of cylinders	2				3			
Bore & stroke—in (mm)	4.25 x 5 (108 x 127)				4.25 x 5 (108 x 127)			
Displacement—cu in (litres)	142 (2.33)				213 (3.49)			
Application	Standby				Standby			
Frequency @ rpm	60 Hz @ 1800		50 Hz @ 1500		60 Hz @ 1800		50 Hz @ 1500	
Rated Power, less fan @ 85°F and 500 ft SAE—BHP (kW)*	65	(49)	55	(41)	102	(76)	85	(63)
kW Rating max. @ P.F. 1.0**	40		35		65		55	
Generator efficiency (assumed)—%	86		86		88		88	
Compression ratio	17 to 1		17 to 1		18.7 to 1		18.7 to 1	
Piston speed—ft/min (m/sec)	1500	(7.62)	1250	(6.35)	1500	(7.62)	1250	(6.35)
No. of main bearings	3		3		4		4	
Approx. net weight dry—lbs (kg)***	2110	(957)	2110	(957)	2965	(1345)	2965	(1345)
Air and exhaust system:								
Combustion air requirements—cfm (m³/min)	200	(6)	165	(5)	282	(8)	237	(7)
Max. air intake restriction—in H ₂ O (kPa)	25.0	(6.22)	18.0	(4.48)	25.0	(6.22)	18.0	(4.48)
Exhaust gas temp. @ Rated BHP—°F (°C)								
Engine manifold dry	1020	(548.9)	970	(521.1)	970	(521.1)	955	(512.8)
Engine manifold wet					920	(493.3)	910	(487.8)
Exhaust gas flow @ Rated BHP—cfm (m³/min)								
Engine manifold dry	543	(15)	433	(12)	740	(21)	615	(17)
Engine manifold wet					714	(20)	596	(17)
Max. exhaust back press. allowable—in Hg (kPa)	2.4	(8.13)	1.7	(5.8)	3.3	(11.17)	2.3	(7.79)
Exhaust outlet I.D.—in (mm)								
Engine manifold dry	2.5	(63.50)	2.5	(63.50)	3.12	(79.25)	3.12	(79.25)
Engine manifold wet					3	(76.20)	3	(76.20)
Recommended stack single outlet—minimum	2.5	(63.50)	2.5	(63.50)	3	(76.20)	3	(76.20)
Cooling system:								
Basic engine water capacity—gal (litres)	1.25	(4.73)	1.25	(4.73)	2.5	(9.46)	2.5	(9.46)
Jacket water flow—gpm (litres/min)	19	(71.92)	16.5	(62.46)	40	(151.42)	34	(128.70)
Jacket water temp., normal operation—°F (°C)	160-185	(71.1-85.0)	160-185	(71.1-85.0)	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	2145	(37718)	1815	(31915)	3366	(59189)	2805	(49324)
Exhaust manifold wet					3774	(66363)	3145	(55303)
Engine heat radiated @ Rated BHP—Btu/min (W)								
Engine manifold dry	606	(10660)	529	(9303)	828	(14568)	716	(12598)
Engine manifold wet					704	(12383)	609	(10708)
Max. static head @ water pump inlet—ft H ₂ O (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)†	371	(6524)	325	(5715)	505	(8880)	428	(7526)
Air required to radiator—cfm (m³/min)††					6500	(184)	5000	(142)
Static pressure for air flow—in H ₂ O (kPa)					1.2	(.30)	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)	40	(151.4)	35	(132.5)	100	(378.5)	80	(302.8)
Lubrication system:								
Oil pan capacity—qts (litres)†††	9	(8.5)	9	(8.5)	13	(12.3)	13	(12.3)
Starting system:								
Electric motors—quantity	1		1		1		1	
Voltage††††	12		12		12		12	
Battery recommended capacity—amp/hr	150 [1]		150 [1]		205 [1]		205 [1]	
Engine rolling current @ 32°F (0.0°C)—amps	760		760		860		860	

*Nominal basic engine horsepower rating.

**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.

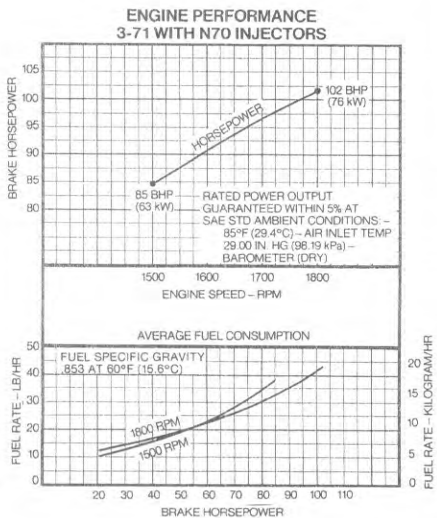
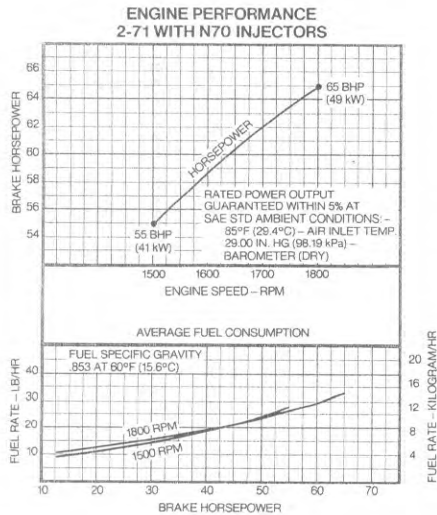
specifications

Rating Explanation

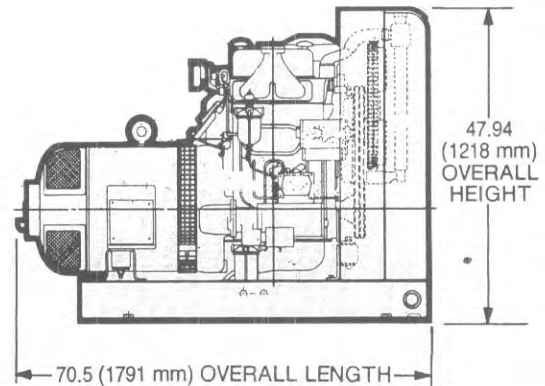
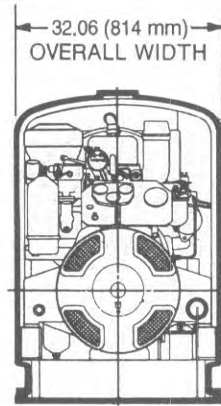
kW Ratings are based on a nominal engine at 85°F (29.4°C) and 29.00 in. Hg (98.19 kPa) engine operating conditions. Losses for fan and accessory equipment are not included. Appropriate generator efficiencies as shown have been assumed.

Ratings shown in specifications and on performance curves apply to engines used for standby electric set power systems which must deliver rated power continuously for the interval between interruption and restoration of the normal power source.

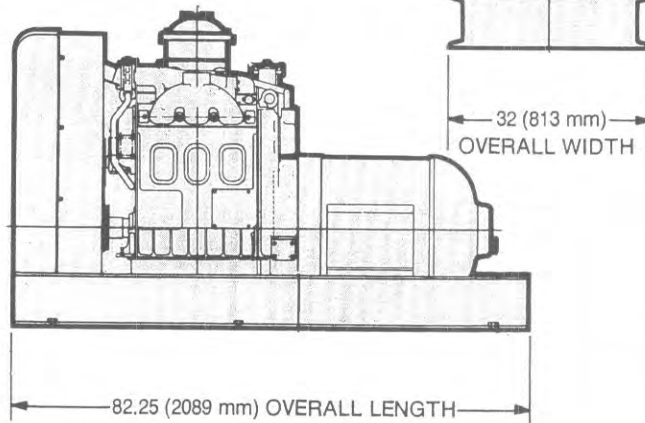
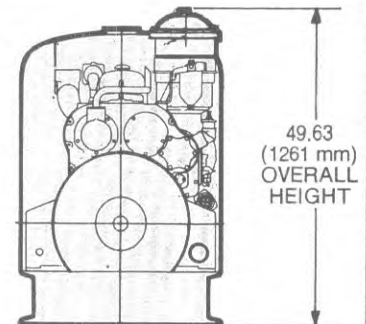
For complete specifications regarding your standby electric power requirements, contact your local authorized Detroit Diesel Allison Distributor.



principal dimensions



Typical 2-71 electric set



Typical 3-71 electric set

Consult Detroit Diesel Allison Distributor installation drawings for detailed dimensions.

standard equipment

Engine Protection—With positive fault protection air shut off due to low oil pressure or high coolant temperature

Fuel Filters—Replaceable primary and secondary filters

Fuel Transfer Pump—Positive displacement, gear driven pump

Governor—Mechanical constant speed governor, model 1023-5108. Hydraulic SGX governor, 3-5% frequency regulation, model 1033-7005

Lube Oil Filter—Full-flow replacement filter

Lube Oil Pump—Gear-driven

Power Generator—Brushless 208/240 volt, 3-phase, 4-wire with built-in static voltage regulator

Starting Equipment—12 volt starting motor with sprag over-running clutch

Water Pump—Gear driven

For a complete listing of standard and optional equipment, consult your authorized Detroit Diesel Allison Distributor.

generator features

Widespread Application—Delco generators are built to a "Broad Range" design. A standard generator can be applied in installations requiring any voltage within the listed output range. Stability over the entire range is assured by a "Broad Range" exciter.

Meet More Specs—All models meet or exceed ASA and NEMA specifications. "ABS" units meet or exceed AIEE and ABS specifications.

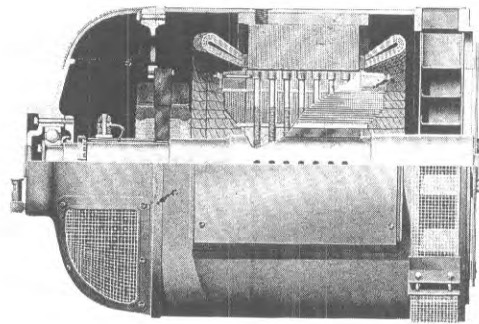
Good Wave Form—A low deviation factor is obtained by optimum pitch of stator windings, specifically tapered air gaps, and the use of ample skew of laminations. Deviation factors are from $\frac{1}{3}$ to $\frac{1}{2}$ of NEMA limits.

Compact Design—Good bearing operating conditions, minimum length and low weight are assured by the exciter being mounted inboard of the bearing and nesting under the stator coil.

Smooth Running—Torsional vibration is minimized by use of rugged shafts accurately coupled to prime mover through flexible discs.

Torsionally Compatible—A torsional analysis can be obtained for each engine/generator combination.

Balance—Delco rotors are dynamically balanced to limits which permit units to withstand 50% overspeed during laboratory tests.



Performance and Specification information for the Detroit Diesel Engine Electric Set models listed are based on the use of Delco generators. However, generators of many other manufacturers are compatible, and optional generators are offered and selected as determined by design criteria and customer preference.

Specifications subject to change without notice



Detroit Diesel Allison
Division of General Motors Corporation

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