

CHAPTER 1. DESCRIPTION/OPERATION

SECTION 1. DESCRIPTION

1. General

This manual covers two series of diesel-powered generator sets (Fig. 1) manufactured by Hobart Brothers Company, Power Systems Division, Troy, OH 45373. Series 5359C generator sets are 90-kVA units, and Series 5384C generator sets are 60-kVA units. These two series are almost identical, except for engine size and power rating. Units within a series have the same engine and basic electrical components, but may differ in regard to mounting (trailer, truck, tractor, or stationary) and may have special or extra components, according to customer requirements. See identification charts, Figures 4 and 4A.

Information and instructions throughout the manual apply to all models. Information which applies only to a certain model will be qualified and identified as such.

The purpose of one of these generator sets is to produce and deliver regulated 400-Hz, 115/200-V AC power to a parked aircraft for operation of the aircraft's electrical equipment when the on-board generators are not running. The generator set is also capable of supplying 28.5-V DC, 35-V DC, or 112-V DC power when equipped with special optional T-R (transformer-rectifier) packages.

See Fig. 2 for specifications and capabilities.

2. Orientation

For purpose of orientation and to familiarize operators and maintenance personnel with the location of components, the radiator is considered to be at the FRONT of the unit. The generator and controls are at the REAR. RIGHT and LEFT are determined by standing at the rear end facing the machine. Thus, the generator control box, output receptacle connector, and engine control panel are mounted on the LEFT side at the REAR of the unit.

3. Special Features

The generator set has many special features which are described more fully under the assemblies in which they appear. Some of the main features are mentioned here and described briefly.

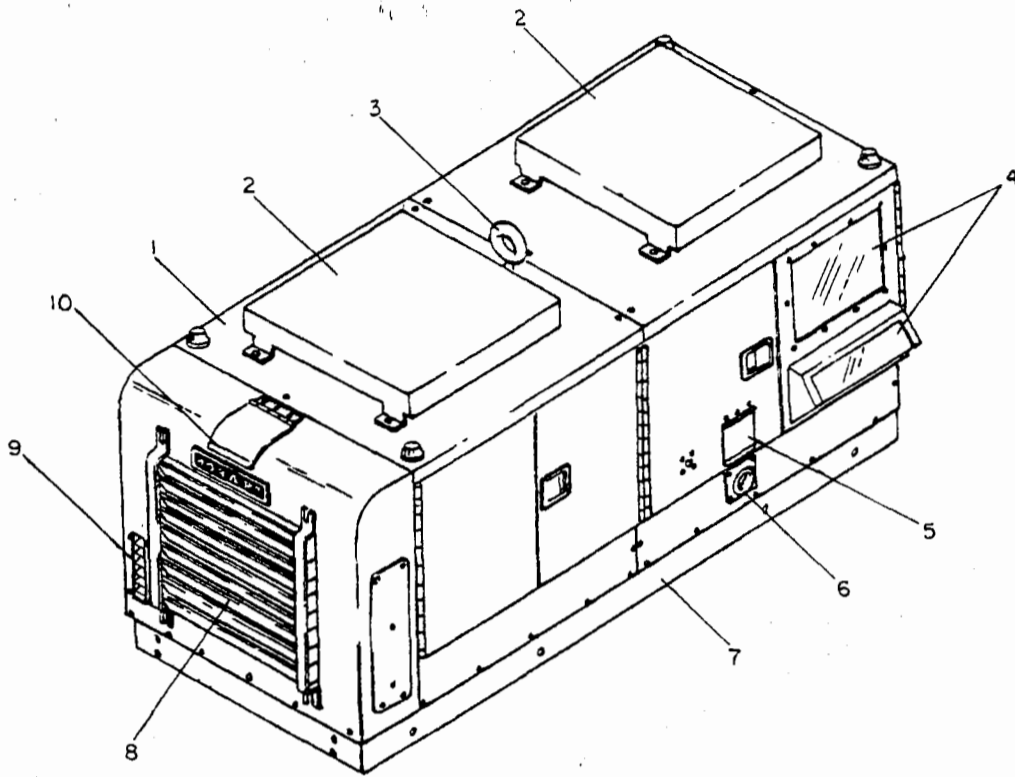
	T MODEL FOR TRACTOR MTD.	F MODEL FOR SELF CONTAINED	T MODEL FOR TRUCK MTD.	P MODEL FOR TRAILER MTD.
PHYSICAL				
Length (approx.)	82 inches (2083 mm)	91 inches (2311 mm)	221 inches (5614 mm)	99 inches (2515 mm)
Width (approx.)	36 inches (914 mm)	40 inches (1016 mm)	88 inches (2236 mm)	78 inches (1981 mm)
Height (approx.)	43 inches (1092 mm)	51 inches (1295 mm)	80 inches (2032 mm)	73 inches (1854 mm)
Weight (90 kVA approx.)	4360 lbs. (1979 kg.)	4940 lbs. (2242.3 kg.)	9500 lbs. (4312 kg.)	5740 lbs. (2605.4 kg.)
Weight (60 kVA approx.)	4070 lbs. (1847.4 kg)	4740 lbs. (2151.5 kg)	9200 lbs. (4175.9 kg)	5530 lbs. (2510 kg)
GENERATOR CAPABILITIES		S-5359C (90 kVA)		S-5384C (60 kVA)
Output power rating		90 kVA		60 kVA
Output voltage		115/200 V AC		SAME
Rated load capacity		260 A		173 A
Frequency (cycles-per-second)		400 Hz		SAME
Output kilowatts		72 KW		48 KW
Power factor		0.8 PF		SAME
Duty cycle		100%		SAME
Operating speed		2000 RPM		SAME
Overload capacity (125% rated load)		325 A		216 A
Output cable size		2/0		SAME
GENERATOR PROTECTIVE SYSTEM				
Overvoltage relay		Trips 130 V to 134 V; resets 125 V		
Undervoltage relay		Trips 93 V to 102 V; resets 110 V		
Overfrequency relay		Trips 415 Hz to 425 Hz; resets 410 Hz		
Underfrequency relay		Trips 375 Hz to 385 Hz; resets 385 Hz		
Undervoltage time delay		4 to 12 seconds depending upon adjustment		
Overload relay		Trips at 125% rated load in less than 5 minutes		
ENGINE				
Manufacturer		Detroit Diesel Allison Division, General Motors Corporation		
Model (modified)		1043-5000 (4-71N)	1033-5000 (3-71N)	

Specifications and Capabilities (Sheet 1 of 2)

Figure 2

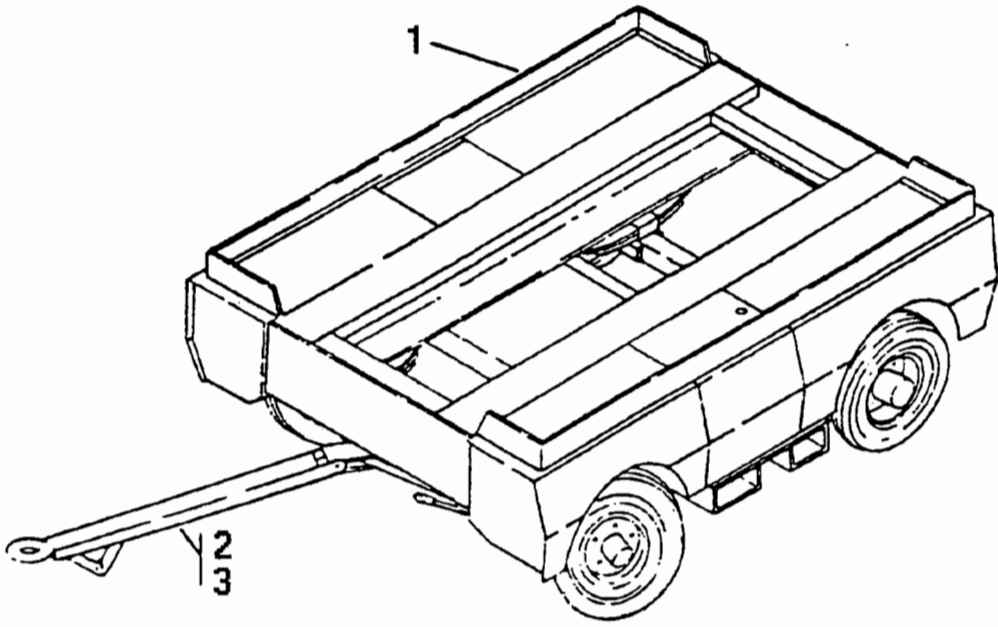
	S5359C (90 kVA)	S5834C (60 kVA)
ENGINE (Continued)		
Type	Diesel (4-71N)	Diesel (3-71N)
Number of cylinders	4	3
Bore	4.25 in. (108 mm)	SAME SAME
Stroke	5.00 in. (127.0 mm)	SAME SAME
Displacement	284 cu. in. (4653.9 cc)	213 cu. in. (3491.1 cc)
Compression ratio (nominal)	18.71 to 1	17 to 1
Firing order (R. H. rotation)	1-3-4-2	1-3-2
Number of main bearings	5	4
Horsepower (at 2000 RPM)	148 HP	106 HP
Governed speed	2000 RPM	SAME
Idle speed	900 + 25 RPM	SAME
Electrical system	12-V DC	SAME
Ground	NEGATIVE	SAME
Oil capacity (w/filter)	17 quarts (16.1 liters)	15 quarts (14.2 liters)
Oil capacity (w/o filter)	15 quarts (14.2 liters)	13 quarts (12.3 liters)
Coolant capacity (approx.)	9-1/2 gallons (35.97 liters)	8-1/2 gallons (32.18 liters)
STATIONARY UNIT		
Same as above except		
Battery	Two, 6 volt	SAME
Fuel tank capacity (approx.)	50 gallons (47.5 liters)	SAME
TRAILER (See Manual in Chapter 5 when applicable)		

Specifications and Capabilities (Sheet 2 of 2)
Figure 2



1. Canopy
2. Access - vent covers
3. Lifting eye
4. Windows
5. Output receptacle cover
(Two used on some units)
6. Output cable horn
(Two used on some units)
7. Roll-out tracks (for
tractor-mounted units only)
8. Engine fan exhaust
deflectors
9. Engine exhaust pipe
10. Radiator cap access cover

Generator Set
Figure 1



Trailer Group
Figure 10