

Appendix 1

GENERATOR, ROTAX, TYPE B3501

LEADING PARTICULARS

Generator, Type B3501	...	...	...	...	◀ Ref. No. 5UA/6930 ▶
Output	...	...	...	...	30 volts, d.c., 300 amp., 9 kW.
Rating (normal load)	...	...	...	...	Continuous
Rating (overload)	...	...	...	...	375 amp. for 10 min.
Rating (emergency overload)	...	...	...	...	450 amp. for 5 min.
Speed range	...	...	...	...	4,500 to 8,500 r.p.m.
Rotation (viewed from drive end)	...	...	...	...	Anti-clockwise
Brush grade	...	...	...	...	H.A.M. EG.11
Brush spring pressure	...	...	...	...	49—55 oz.
Cooling	...	...	...	...	Self cooled by internal fan
Ambient temperature range	...	...	...	...	—50 deg. C. to +70 deg. C.
Electrical connections—					
Positive output	}	375-24 UNF studs to take two lugs per terminal post. Either pren lugs (Ref. No. 5X/6531) or A-MP lugs size 2, Pt. No. 322055.			
Negative output					
Series drop	}	... No. 10-32 UNF studs			
Positive field					
Lubrication	...	...	...	...	Pre-lubricated (double-seal) ballrace
Mounting details	...	...	...	...	{ Manacle ring and spigot Mounting attitude unrestricted
Drive shaft	...	...	...	...	0.875 nominal dia. 20 serrations
Overall dimensions—					
Length	...	...	...	...	16.486 in.
Height	...	...	...	...	10.635 in.
Width	...	...	...	...	8.625 in.
Weight	...	...	...	...	54 lb. (estimated)

1. This generator is identical with that described and illustrated in the main chapter, being designed for manacle ring mounting.

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Appendix 2

GENERATOR, ROTAX, TYPE B3502

LEADING PARTICULARS

Generator, Type B3502	Ref. No. 5UA/
<i>Output</i>	...	...	...	...	30 volts, d.c., 300 amp., 9 kW.
<i>Rating (normal load)</i>	...	...	...	...	Continuous
<i>Rating (overload)</i>	...	...	...	...	375 amp. for 10 min.
<i>Rating (emergency overload)</i>	...	...	...	...	450 amp. for 5 min.
<i>Speed range</i>	...	...	...	...	4,500 to 8,500 r.p.m.
<i>Rotation (viewed from drive end)</i>	...	...	...	...	Anti-clockwise
<i>Brush grade</i>	...	...	...	...	H.A.M. E.G.11
<i>Brush spring pressure</i>	...	...	...	...	49—55 oz.
<i>Cooling</i>	...	...	...	...	Self cooled by internal fan
<i>Ambient temperature range</i>	...	...	...	...	—50 deg. C. to +70 deg. C.
<i>Electrical connections—</i>					
<i>Positive output</i>	}	.375-24 UNF studs to take two lugs per terminal post. Either pren lugs (Ref. No. 5X/6531) or A-MP lugs size 2, Pt. No. 322055			
<i>Negative output</i>					
<i>Series drop</i>					
<i>Positive field</i>	}	...	...	...	No. 10-32 UNF studs
<i>Lubrication</i>	...	...	...	...	Pre-lubricated (double-seal) ballrace
<i>Mounting details</i>	...	...	...	{ Manacle ring and spigot Mounting attitude unrestricted	
<i>Drive shaft</i>	...	...	...	...	0.875 nominal dia. 20 serrations
<i>Overall dimensions—</i>					
<i>Length</i>	...	...	...	...	16.486 in.
<i>Height</i>	...	...	...	...	10.635 in.
<i>Width</i>	...	...	...	...	8.625 in.
<i>Weight</i>	...	...	...	...	54 lb. (estimated)

1. This generator is identical with that described and illustrated in the main chapter, except for a redesigned D.E. frame, which contains an oil seal and housing assembly,

located on the armature shaft at the drive end. This seal must be adequately lubricated.

2. This generator is designed for manacle ring mounting.

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Appendix 3

GENERATOR, ROTAX, TYPE B3503

LEADING PARTICULARS

Generator, Type B3503	Ref. No. 5UA/6928
Rated output (continuous)	..	..	..	30 volts d.c., 300 amp., 9 kW. with air at 6 in. W.G.
Rated output (continuous)	..	..	..	30 volts d.c., 375 amp. with air at 10 in. W.G.
Rated output (emergency overload)	..	..	..	30 volts d.c., 400 amp. with air at 10 in. W.G. for 30 minutes
Speed range	..	..	..	4,500 to 8,500 r.p.m.
Rotation (viewed from drive end)	..	..	..	Anti-clockwise
Brush grade	..	..	..	H.100
Brush spring pressure	..	..	..	49-55 oz.
Cooling	..	..	..	Blast cooled
Ambient temperature range	..	..	..	-50 deg. C. to +50 deg. C.
Altitude	..	..	..	60,000 ft.
Lubrication	..	..	..	Pre-lubricated (double seal) ballrace
Mounting attitude	..	..	..	Flange mounting (unrestricted)
Drive shaft	..	..	..	16 teeth of involute form 20/30 pitch 30 deg. pressure angle 0.867 outside diameter
Electrical connections—				
Positive output	..	..	..	0.375—24 UNF studs
Negative output	..	..	..	lugs A-MP Part No. 322097
Series drop	}	..	..	No. 10-32 UNF studs
Positive field		..	..
Overall dimensions—				
Length	14.750 in.
Height	10.231 in.
Width	6.375 in.
Weight	54 lb. (estimated)

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1. The B3503 generator is similar to that described and illustrated in the main chapter, except that cooling is by blast air supply from the aircraft. The air enters at the drive end and leaves at the commutator end. Air ducts are not provided.

2. Installation differs to that described and illustrated in the main chapter, in that the B3503 is designed for flange and spigot mounting; for installation details see *fig. 1* of this appendix.

3. An involute type of spline has been introduced to a quill drive, that forms an integral part of the main armature drive shaft. The spline details will be found in the Leading Particulars as illustrated in *fig. 1*.

4. The electrical connections are identical to those shown in *fig. 2* of the main chapter, except for terminal markings; terminals 1, 4, 2 and 3 are now B+, A, E- and D respectively for the B3503 generator.

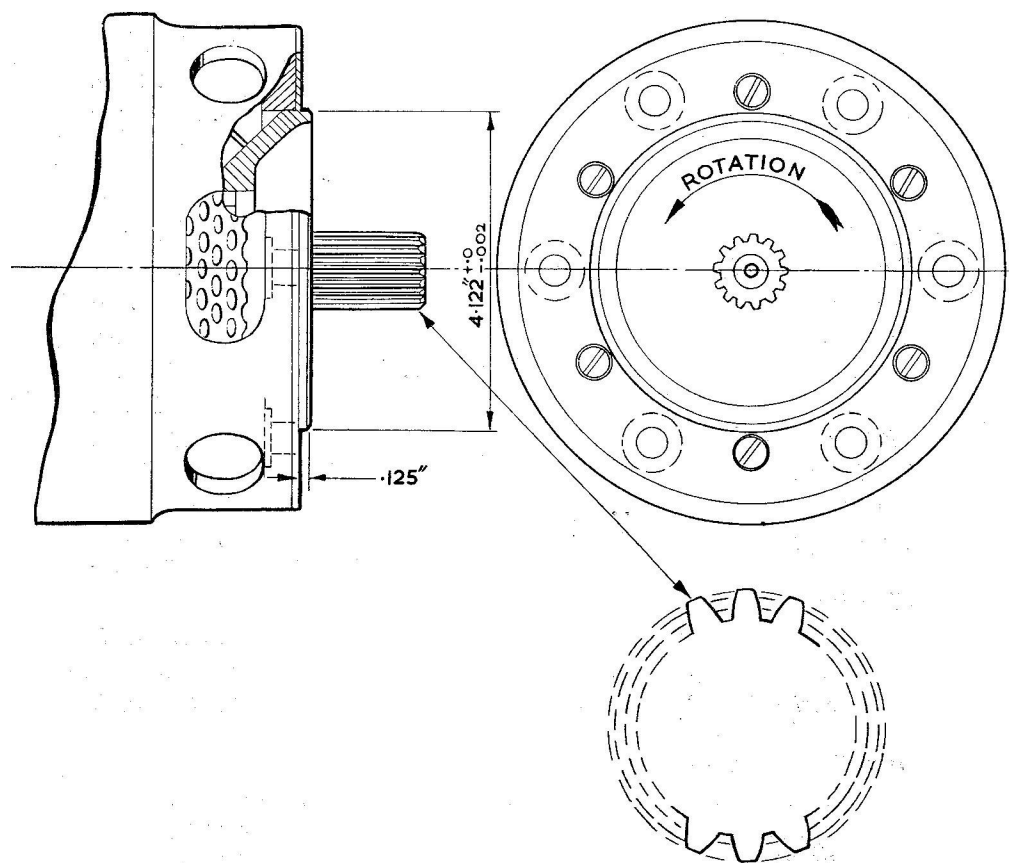


Fig. 1. Installation details of generator, Type B3503

Appendix 4

GENERATOR, ROTAX, TYPE B3505

LEADING PARTICULARS

Generator, Type B3505	...	...	...	...	Ref. No. 5UA/
Rated output (continuous)	...	...	30V d.c., 300 amp.	(air at 6 in. W.G.)	
Rated output (continuous)	...	...	30V d.c., 375 amp.	(air at 10 in. W.G.)	
Rated output (emergency overload)	...	...	30V d.c., 400 amp.	(air at 10 in. W.G.)	
				for 30 minutes	
Speed range	...	...	...	...	4,500–8,500 r.p.m.
Rotation (viewed from drive end)	...	...	...	...	Anti-clockwise
Brush length (new)	...	...	...	...	1·187 in.
Brush length (minimum permissible)	...	...	...	...	0·730 in. ▶
Commutator diameter (new)	...	...	...	...	2·875 in.
Commutator diameter (minimum permissible)	...	...	...	...	2·785 in.
Brush grade	...	...	...	...	H.A.M. EG.11
Brush spring pressure	...	...	...	...	49–55 oz.
Cooling	...	...	...	...	Blast cooled
Ambient temperature range	...	...	...	...	–50 deg. C to +50 deg. C.
Altitude	...	...	...	...	60,000 ft.
Lubrication	...	...	...	Pre-lubricated (double seal) ballrace	
				(Grease XG-277)	
Mounting attitude	...	...	...	Flange mounting (unrestricted)	
Drive shaft	...	...	...	16 teeth of involute form, 20/30 pitch,	
				30 deg. P.A., O/D 0·867 in.	
Electrical connections (fig. 2) —					
Internal —					
Positive output (B+) }	...	...	...	0·375 in. —24 U.N.F. studs	
Negative output (E–) }	...	...	...	Lugs A-MP. No. 322097	
Series drop terminal (D) }	...	...	...	No. 10–32 U.N.F. studs	
Positive field terminal (A) }	...	...	...	Lugs A-MP. No. 32544	
External connections for (B+) and (E–)					
(Conduit fitting and screened cable)					
Superflexit assembly SCF-2149–28S comprises—					
(1) Nipple	V797				
(2) Ferrule	V446/1				
(3) Nut	V3025				
(4) 'O' ring	V596				
P.T.F.E. screened conduit SC.001/1					
or					
P.V.C. screened conduit SC.011/1					
Generator is suppressed to BS.26100 when used in conjunction with capacitors					
ZA13402 (one in each output lead).					
Overall dimensions—					
Length	14·796 in.	
Height	9·563 in.	
Width	7·125 in.	
Weight	54 lb.	

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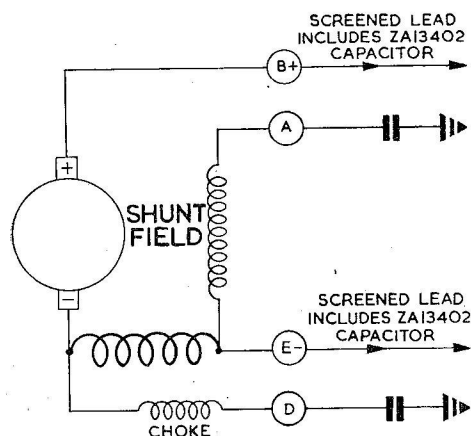


Fig. 1. Diagram of internal connections

1. The B3505 generator is similar to that described and illustrated in the main chapter, except that cooling is by blast air supply from the aircraft. The air enters at the commutator end and leaves at the drive end. Air ducts are not provided.

2. Installation differs to that described and illustrated in the main chapter, in that the

B3505 is designed for flange and spigot mounting. Installation details of generator, Type B3503 (fig. 1, Appendix 3) also apply to the B3505 generator of this appendix.

3. An involute type of spline has been introduced to a quill drive that forms an integral part of the main armature driveshaft. The spline details will be found in Leading Particulars, and illustrated in the installation details for the B3503 (Appendix 3, fig. 1).

4. The B3505 generator has a new terminal box, and additional suppression added, this being in the form of two capacitors and a choke coil fitted in the terminal box; two special capacitors (ZA13402) are incorporated in the Superflexit screened cable, which is fitted during installation in the aircraft (fig. 1 and 2).

Insulation resistance test

5. With suppression capacitors disconnected, the insulation resistance when measured with a 250-volt insulation resistance tester, between all live parts and the frame, should not be less than 0.5 megohm (for R.N.) or 0.05 megohm (for R.A.F.).

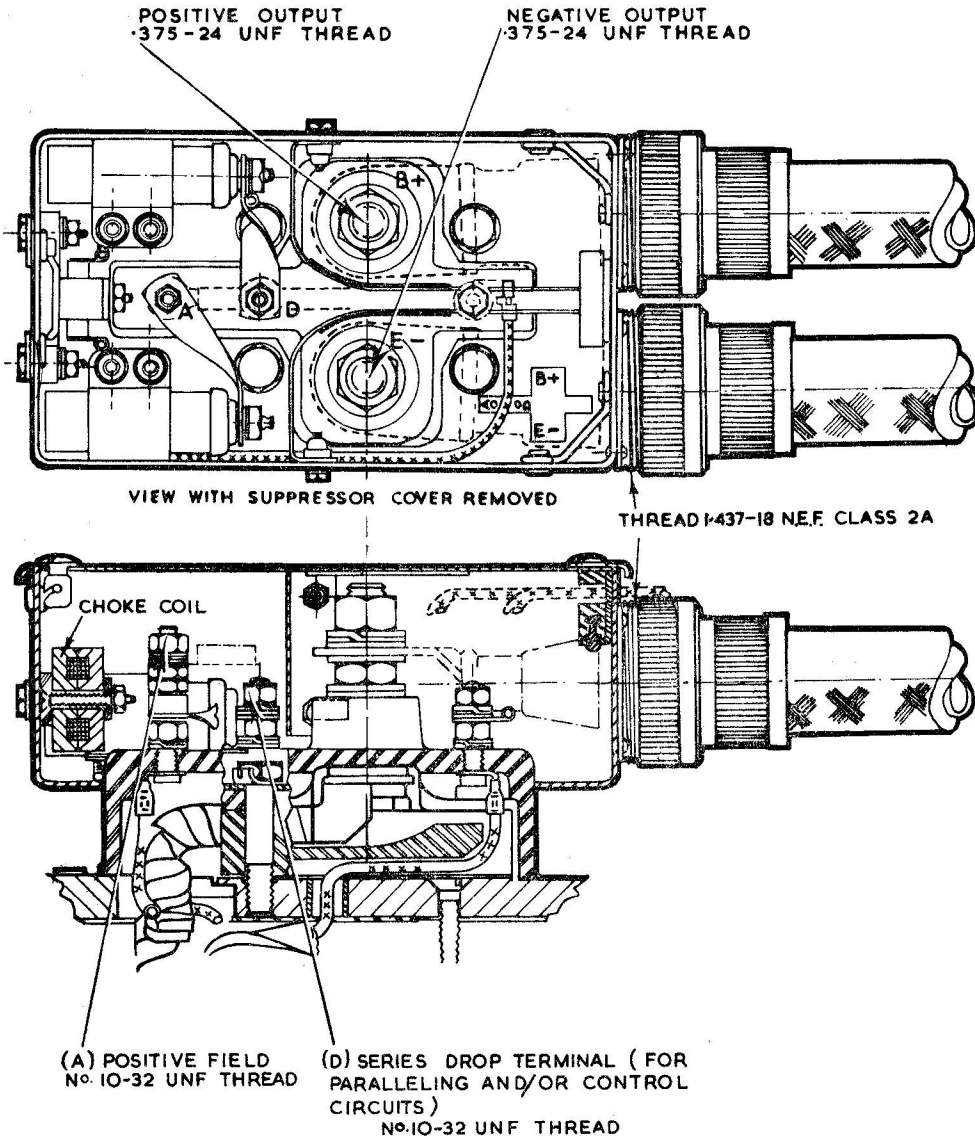
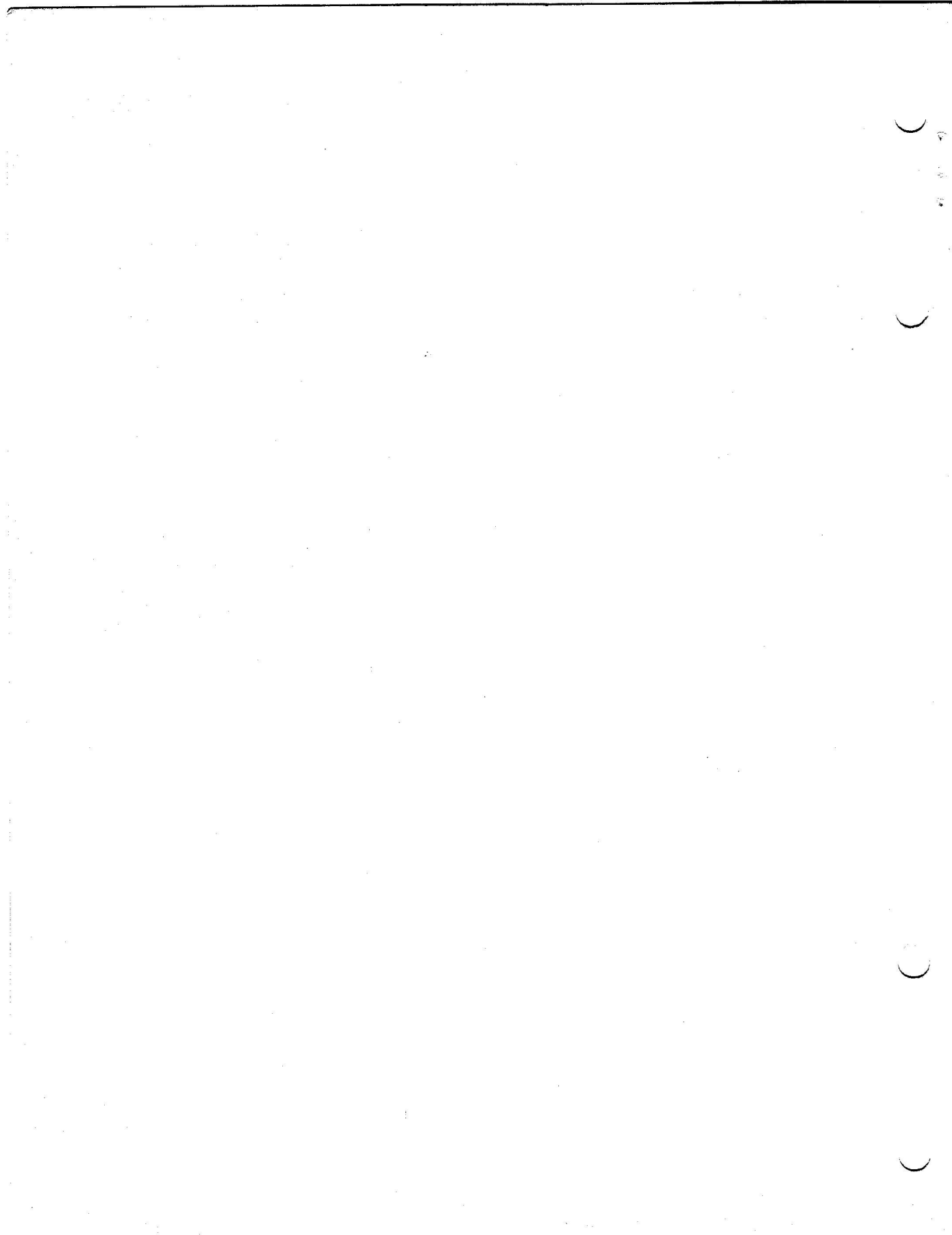


Fig. 2. Terminal box

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Appendix 5

GENERATOR, ROTAX, TYPE B3507

LEADING PARTICULARS

Generator, Type B3507	Ref. No. 5UA/
<i>Rated output (continuous)</i>	...	...	...	...	30V d.c., 300 amp., 9 kW	
<i>Speed range</i>	...	...	...	...	...	4,500-8,500 r.p.m.
<i>Rotation (viewed from drive end)</i>	...	...	...	...	...	Anti-clockwise
<i>Cooling</i>	...	...	...	...	...	Internal fan
◀ <i>Brush length (new) on short edge</i>	...	...	...	...	...	1·187 in.
<i>Brush length (minimum permissible)</i>	...	...	...	...	...	0·730 in. ▶
<i>Commutator diameter (new)</i>	...	...	...	...	...	2·875 in.
<i>Commutator diameter (minimum permissible)</i>	...	...	...	...	...	2·785 in.
<i>Brush grade</i>	...	...	...	...	...	H.A.M. EG.11
<i>Brush spring pressure</i>	...	...	...	...	...	49-55 oz.
<i>Ambient temperature range</i>	...	...	...	...	...	—50 deg. C to +50 deg. C.
<i>Altitude</i>	...	...	...	...	...	60,000 ft. (max.)
<i>Lubrication</i>	...	...	Pre-lubricated (double seal)	ballrace (grease XG-277)		
<i>Mounting details</i>	...	...	...	...	Manacle ring and spigot	
					Mounting attitude unrestricted	
<i>Drive shaft</i>	...	0·875 in. nominal dia.	20 serrations to BESA A19 coarse			
<i>Electrical connections—</i>						
<i>Terminal 1 (positive output)</i>	}	...	0·375 in.—24 U.N.F. studs (two)			
<i>Terminal 2 (negative output)</i>		Lugs A-MP Part No. 322055 (two) (Size 2)				
<i>Terminal 3 (series drop)</i>		...	...	No. 10-32 UNF studs (two)		
<i>Terminal 4 (positive field)</i>		Lugs A-MP Part No. 32544 (two) (size 12-10)				
<i>Overall dimensions—</i>						
<i>Length</i>	...	...	...	...	...	16·486 in.
<i>Height</i>	...	...	...	...	...	11·831 in.
<i>Width</i>	...	...	...	...	...	8·562 in.
<i>Weight</i>	...	...	...	...	...	53 lb. 5 oz.

1. The B3507 generator is similar to that described and illustrated in the main chapter, except that full internal suppression is incorporated within the terminal box located on top of the unit.

2. The main output and series drop terminals have 2 micro-farad capacitors connected between the terminals and the earthing frame; additional suppression is included by the introduction of special 3·5

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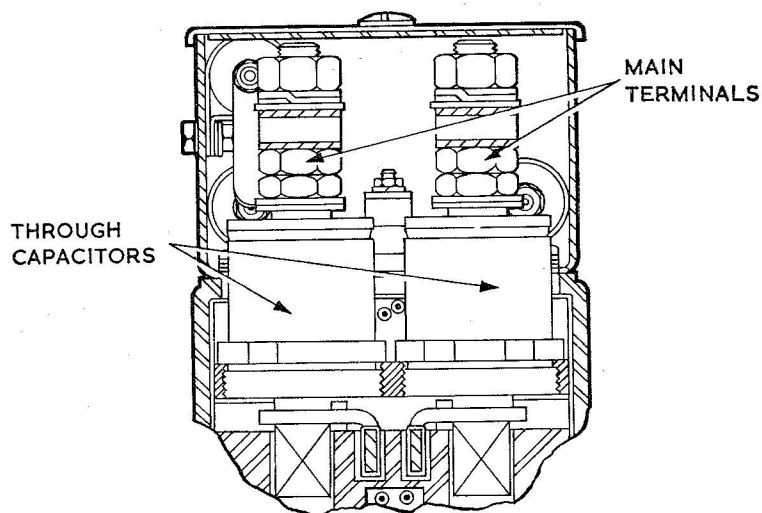


Fig. 1. Scrap view of main terminals

micro-farad through capacitors fitted over the positive and negative output terminal studs, the capacitors are securely screwed into

the earthing frame of the machine as shown in fig. 1. The internal connections are given in fig. 2.

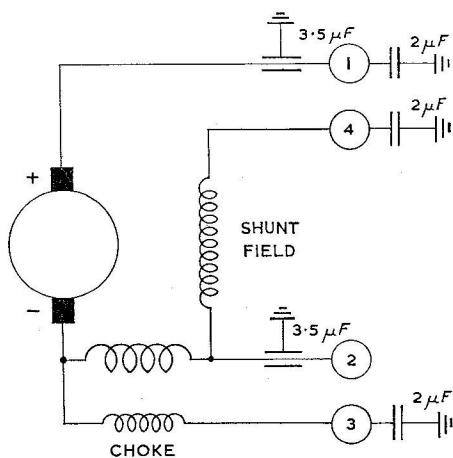


Fig. 2. Diagram of internal connections

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