INSTRUCTION MANUAL

for

GENERATING ..SETS

FIG. 2785 / 2786

1.5 K.W. 32 OR 50 VOLT

Battery Charging or Direct Lighting

694A|500
7|52 McD&R.

SOUTHERN CROSS

Fig. 2785—Tank Cooled Fig. 2786—Radiator Cooled

1·5 K.W. 32 or 50 Volt

Battery Charging and Direct Lighting

Generating Sets

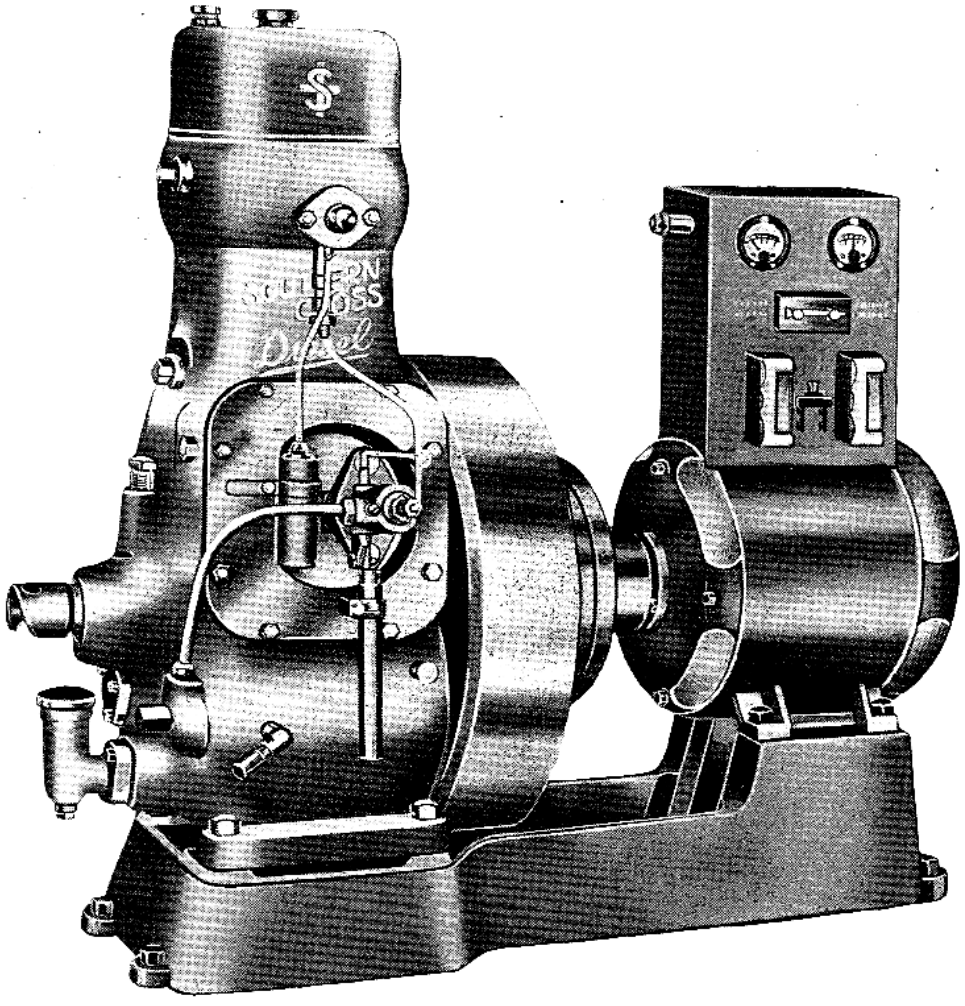
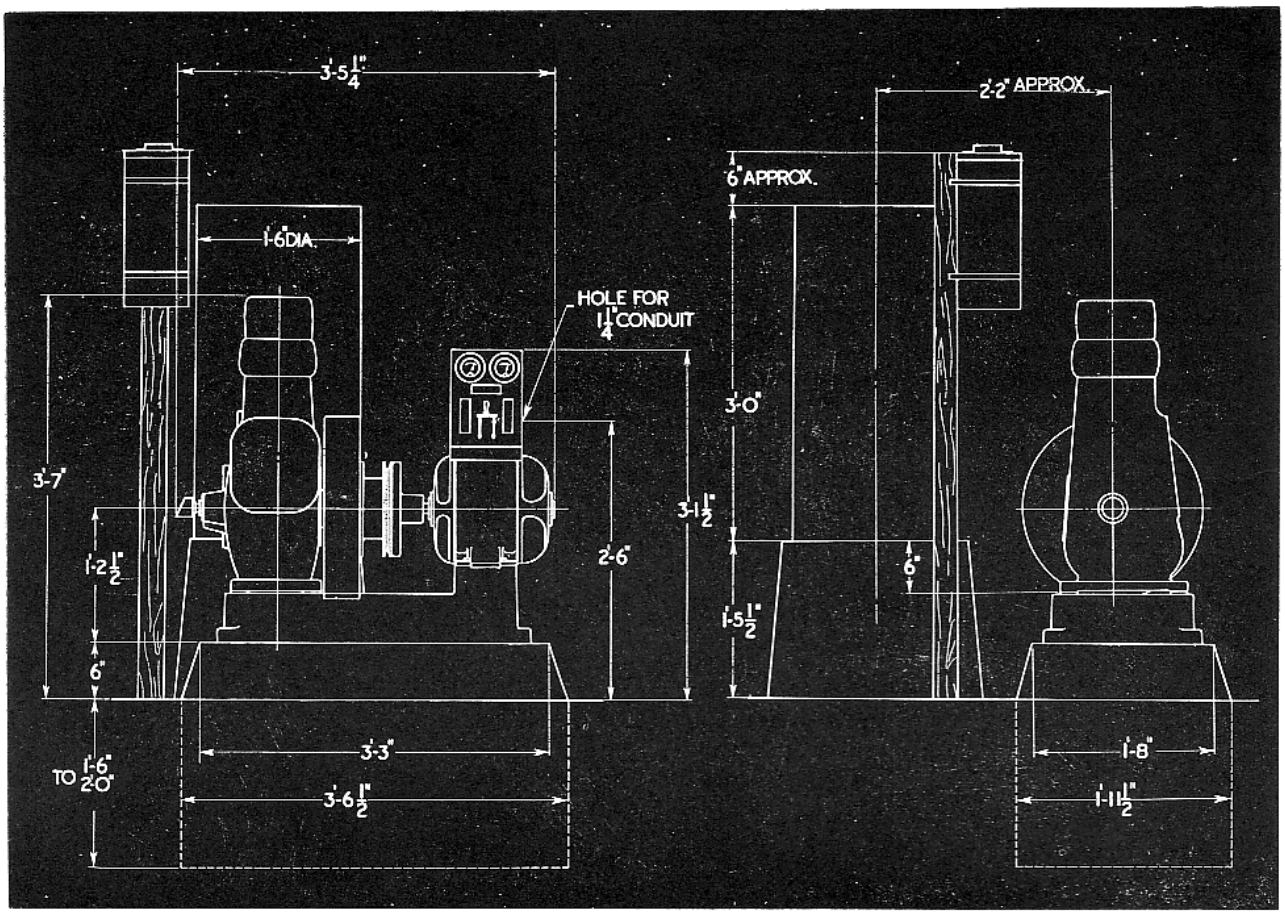
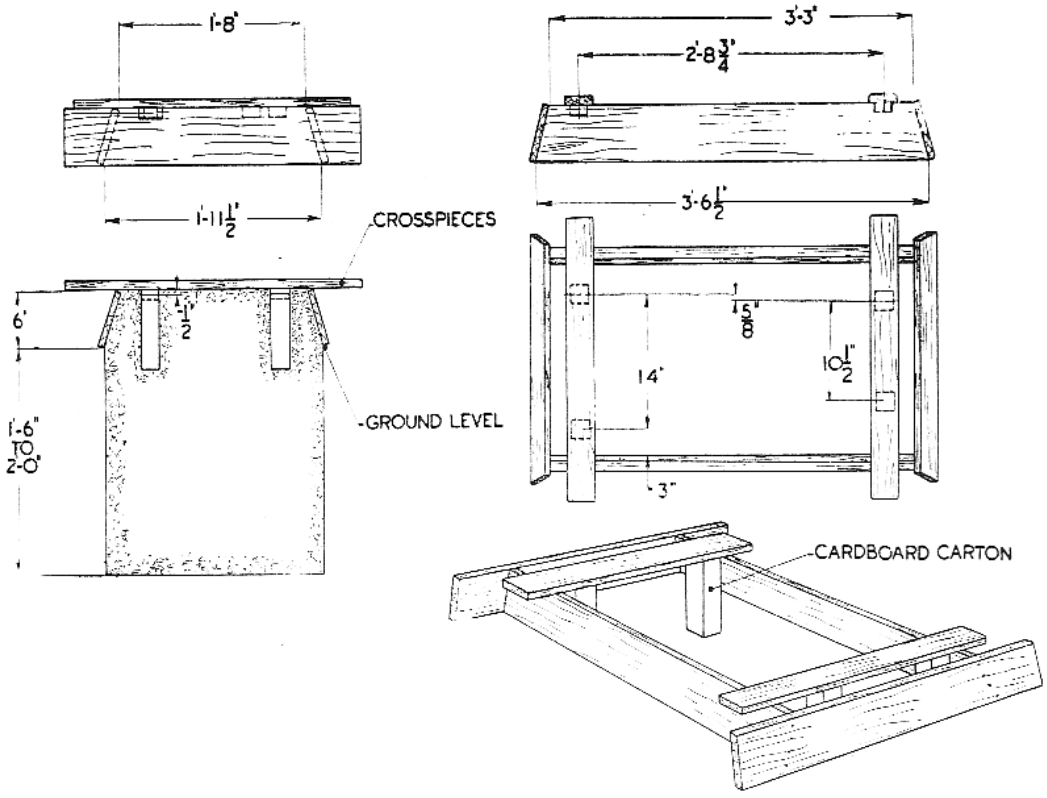


Fig. 2785/2786—1.5 K.W. 32 or 50 Volt Battery Charging and Direct Lighting Generating Set.



General Arrangement of Fig. 2785 1.5 K.W. Generating Set



Details of Mould for Making Concrete Base

INSTALLATION

FOUNDATION

In order to obtain the best results from this unit it must be set up on an absolutely firm foundation. The most satisfactory foundation is a good block of concrete. The size of the base and shape of the mould are shown on Page 2.

TO MAKE CONCRETE BASE.

1. Construct a wooden mould for the concrete base. The size of the base and shape of the mould are shown on page 2.
2. Having decided where the unit is to be installed, sink a hole in the ground 1ft. 6in. to 2ft. deep, and the same size as the inside of the base of the mould. Light soils require a larger base than heavy, well-packed soils, but always make the block larger for preference.
3. Place the mould over the hole in the ground.
4. Take the two special crosspieces with the square wooden blocks nailed on them, and open out the cardboard cartons and tack the cartons to the square blocks. These cartons make square holes in the concrete to permit grouting in the foundation bolts. Stuff the cartons with paper to stop them collapsing when the concrete is poured.
5. Set the crosspieces on the mould in the positions shown in the mould details (page 2), and see that the cartons are in line and the boards are level in both directions.
6. Mix a batch of concrete, using 4 parts sharp stone or rubble, 2 parts sand, and one part cement. See that the sand and stone are sharp and clean and do not contain any clay or dirt. If they do, wash carefully before mixing. A block 2 feet deep will require approximately ½ yard of metal, 1/3rd yard of sand and 5 bags of cement.
7. Fill the hole to the top of the mould and at the same time, place some old bolts or iron pipe in to act as reinforcement.
8. Allow the concrete to set for a day. With tank cooled units this time could be spent preparing the base for the cooling tank. For instructions regarding cooling tanks, refer to the Engine Instruction Manual.
9. Next day remove the crosspieces which hold the cartons in position and dig the cartons out.
10. Place the foundation bolts with nuts removed and with washers on their heads in the holes in the block. Four large square washers are supplied with the engine.

LINING UP THE UNIT

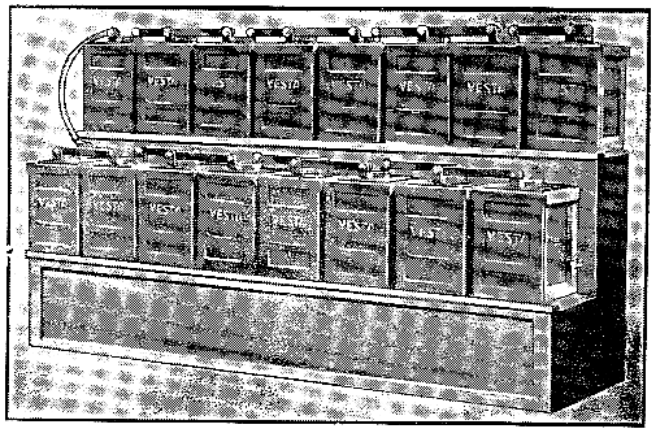
1. Lift the cast iron base on to the block, guiding the foundation bolts into the holes in the base as it is lowered on. When the base is resting on the block, screw the nuts on a full nut.
2. Using wooden wedges under the edges, true up the base so that a spirit level, tried across the machined bosses on the top, gives a level reading.
3. Using a mixture of two parts sand and one of cement, grout in the foundation bolts. When the holes are filled, work the grouting under the edges of the base so that it will set on a firm level foundation.
4. Next day remove the wedges, tighten the foundation bolts, and with a mixture of two parts sand and one of cement, clean up and surface the block.
5. Clean the face of the engine flywheel and bolt the engine half to the flexible coupling in position tightly with the three setscrews provided.
6. Lift the engine on to the base and bolt it down.
7. Push valve lift in on the engine and spin engine to see that the engine half of the coupling runs true. If it doesn't run true, unbolt the coupling half and clean the faces of the flywheel and coupling again. Fit the Coupling Disc on to the drive pins on the engine half of the coupling.
8. Slide the other half of the coupling along the shaft of the generator so that the drive pins will clear the coupling disc when the generator is put in position.
9. Place the driving key in position in the shaft, and then lift the generator on to the base and bolt it down.
10. The two halves of the coupling are the same diameter, so that if the diameters coincide the machines must be in line.
11. By checking with a straight edge on top, underneath, and on either side of the coupling halves, line up the coupling. The generator can be raised as required, using the packing shims supplied. Take particular care with the lining-up, as accuracy is important.
12. Shift the driven half of the coupling along the shaft so that there is 1/64th inch clearance either side, between the coupling disc and the coupling halves, i.e., the coupling disc has a total clearance of 1/32 inch. Lock the driven half of the coupling in this position.
13. The engine can now be started.

SETTING UP THE BATTERY

Make a battery stand similar to the one illustrated, allowing a spacing of 1½ inches between the cells.

Connect the cells together, making sure they are connected correctly; that is, positive terminal to negative terminal. Use the flexible connection on the end cells of the two rows.

Tack the battery instruction chart on the wall behind the battery. Also drive two nails into the wall to support the bulb of the hydrometer and allow it to hang free without any risk of breaking.



Battery Stand

Battery

NEW BATTERY.

A new battery (number of 2 volt cells) is fully charged when supplied by the manufacturers, but may lose some of its charge during the time it is standing before it is installed. Therefore, a new battery should be put on charge as soon as it is installed.

When a home lighting battery is fully charged the specific gravity of each cell is approximately 1.250. The correct fully charged specific gravity is given on the chart supplied with the battery.

As the battery discharges the specific gravity is reduced. If allowed to discharge to 1.150 the battery is fully discharged. **Do not allow the battery to discharge below ¼ charge (about 1.175 specific gravity).**

CHARGING RATES.

When a battery is in a discharged condition it is capable of taking a greater charge than when it is almost fully charged.

When a discharged battery is put on charge, there will be a large instantaneous charge which may be as high as 50 Amperes. However, after one or two minutes this should settle down to about 30 Amperes for the 32 volt set or 20 Amperes for the 50 volt set.

As the battery becomes charged the charging rate will decrease so that for a battery of about 1.200 specific gravity the charging rate will decrease to about 25 Amperes and 16 Amperes, respectively.

When the specific gravity has risen to about 1.250 (i.e., fully charged battery) the charging rate will drop to about 10 or 12 Amperes.

Should the fully charged battery above be allowed to stand for a day or so without being used and the plant then started again the charge to the battery will be about 20 Amperes, dropping within 10 or 20 minutes to about 10 Amperes.

This variation in charge is accomplished automatically without the need for any adjustments, and is within the battery manufacturers ratings for home lighting batteries.

The following table gives approximate battery conditions and typical charging rates:—

Charging Conditions—32 Volt Set.

Battery Condition.	Specific Gravity.	Charge in Amperes.	Charging Voltage Approx.
¼ Charged	1.175	30	34
½ Charged	1.200	25	36
¾ Charged	1.225	16 - 20	38 - 40
Full Charged	1.250	10 - 12	40 - 44

Charging Conditions—50 Volt Set.

Battery Condition.	Specific Gravity.	Charge in Amperes.	Charging Voltage Approx.
¼ Charged	1.175	20	52
½ Charged	1.200	16	56
¾ Charged	1.225	12 - 14	60 - 63
Full Charged	1.250	10 - 12	63 - 66

NOTE.—These figures apply to a Generating Set in which the only load is the Battery.

WARNING.—Do NOT use the three ball type of hydrometer with a Home Lighting Battery. Use only the type of hydrometer supplied by the Battery Manufacturers with the Home Lighting Battery.

Switchboard.

CHANGEOVER LINK.

A changeover link is fitted to the front panel of the switchboard. This link has two positions, "Battery Charging" or "Direct Lighting." When the Generating Set is used as a Battery Charging Set the link is left in the "Battery Charging" position; i.e., with arrow pointing to the words "Battery Charging."

To change the link from one position to the other, unscrew the two lock nuts, lift off the link, reverse it and replace the link and the lock-nuts.

The changeover link should only be moved so that the arrow points to "Direct Lighting" when the set is being used for Direct Lighting; i.e., when the battery is not installed or when the battery is out of action for any reason.

VOLTMETER.

When the battery is put on charge a voltage greater than the battery voltage is required to push the current through the battery and to charge it. For this reason the voltmeter which indicates the generator voltage will show a higher reading in the "Battery Charging" position than in the "Direct Lighting" position.

With the changeover link in the Battery Charging position the voltage on the 32 Volt Generating Set will vary between approximately 34 and 36 Volts with a discharged battery, and between 40 and 44 Volts with a fully charged battery.

On Direct Lighting the voltage should be between 31 and 33 Volts.

With the 50 Volt Generating Set the Voltage on Battery Charging will vary between approximately 52 and 56 Volts with a discharged battery, and between 63 and 66 Volts with a fully charged battery.

On Direct Lighting the voltage should be between 49 and 52 Volts.

AMMETER.

A Charge and Discharge Ammeter is fitted to the switchboard, and indicates the charge to the battery or the discharge from the battery under all conditions, when the changeover link is in the "Battery Charging" position.

For example, when the engine is stopped and the battery is supplying power, the Ammeter indicates on the discharge side the number of amperes being taken by the load, or, in other words, the rate at which the battery is being discharged.

When the engine is running and the ammeter indicates on the charge side, then the amperes indicated is the charge to the battery, irrespective of the amperes being absorbed by the load.

When the changeover link is in the "Direct Lighting" position there is no indication on the ammeter.

KNIFE SWITCH

The knife switch is arranged to open both the line lead and the battery lead. Therefore, if the knife switch is open, the battery cannot be used to start the plant, and if the engine is started by hand, with the changeover links in the battery charging position, the battery will not be charged until the switch is closed.

Electrical Connections.

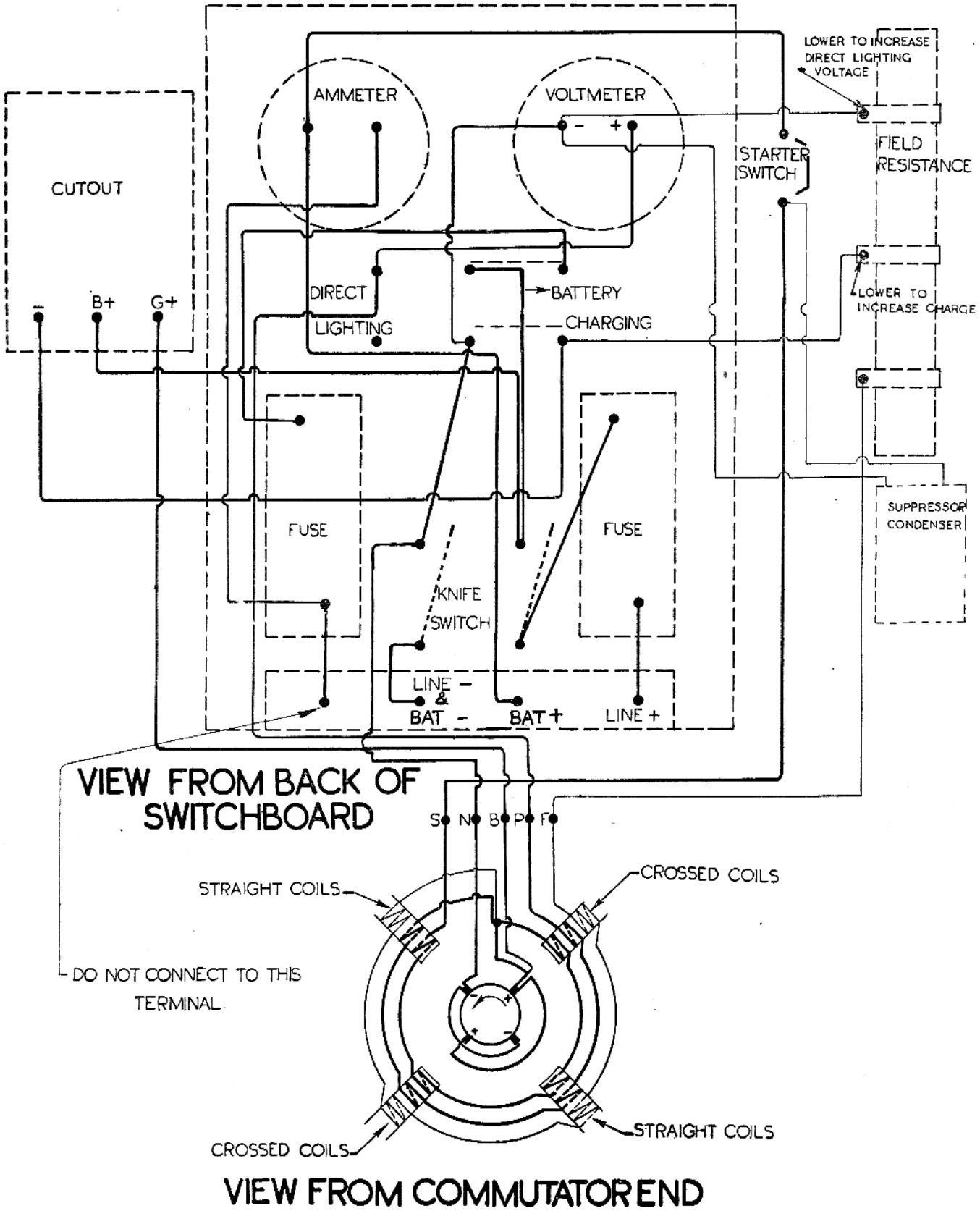
BATTERY

The battery should be arranged on a wooden rack in a convenient position in the room. The rack should be painted with acid proof paint. Connect the cells together with the intercell connections supplied. Cells must be connected positive to negative throughout.

GENERATING SET.

The only connections which are to be made to the set are those to the line and to the battery.

Remove the back of the switchboard to expose the terminal strip. Connect the line leads and battery leads as marked; 1¼in. holes are provided in the switchboard for conduit connections.



Wiring Diagram—Figs. 2785/2786 1.5 K.W. Direct Coupled Generating Set.

RUNNING INSTRUCTIONS

TO START PLANT.

The following procedure applies to sets equipped with a battery.

Prepare Engine for first run as detailed in the Engine Instruction Manual, page 7.

1. See that fuel cock is on.
2. CLOSE THE KNIFE SWITCH.
3. Lift control rod stop to allow the fuel pump control rod to move into the fully open position.
   If this is not done the engine will be difficult to start, as it will not receive sufficient fuel.
4. Push in Valve Lift while rotating the engine by hand. It will slide in and release the compression.
5. Pour sufficient lubricating oil in the oil starter plug to nearly fill it, then put into head and screw up.

   DO NOT POUR OIL IN WHILE ENGINE IS RUNNING.

6. Push Starter Button and allow the Generator to crank the engine. After about five or six revolutions release the valve lift, holding the push button closed until the engine commences to fire.
   If the engine does not commence firing then the instructions on page 7 of the Engine Instruction Manual have not been followed.

   NOTE: 1. Do not hold the push button closed for more than about thirty seconds at a time.
   2. After each attempt to start allow the battery to stand idle for at least one minute while the engine is checked over to see why it did not start.
   3. Always release the compression before attempting to start the engine.

7. As the engine gains speed the voltmeter needle will rise, and the charge to the battery will be indicated on the ammeter.

When a battery is not installed, the engine must be cranked by hand, as detailed in the Engine Instruction Manual.

TO STOP GENERATING SET.

Stop engine as detailed on page 8 of the Engine Instruction Manual.

BATTERY—CHARGE AND DISCHARGE.

The battery should not be discharged at a rate greater than 12½ Amperes or than that recommended by the battery manufacturer. The discharge is read on the Ammeter. For loads greater than this the engine should be run, and, under these conditions, the generator carries the load and also supplies a charge to the battery or, in the case of very heavy loads, the Generator and Battery assist each other to carry the load.

The battery should be fully charged at least once a month, or as soon as the Specific Gravity of the battery has dropped to 1.175, whichever is the sooner.

ADJUSTMENTS.

There should be no need to make any adjustments or alterations to the plant, as it has been tested and adjusted correctly at the factory.

However, should it not be possible to raise the battery to the fully charged condition, the only adjustment necessary is made as follows:—

1. Charge the battery until the specific gravity of the electrolyte and the charging rate have remained constant for two hours.
2. Should the final charging rate be less than that recommended by the battery manufacturers for the particular battery installed, move the middle clip of the field resistance closer to the bottom clip (about ⅛in. at a time), and charge the battery again, until the charging rate and specific gravity have remained constant for about an hour.
   Continue these adjustments until the final charging rate approaches, but does not exceed, that recommended by the battery manufacturer.
3. Should the final charging rate exceed that recommended, the middle clip should be moved away from the bottom clip, and the plant operated again until the final charging rate approaches, but does not exceed, that recommended by the battery manufacturer.

CARE OF GENERATOR

In order to ensure trouble-free operation of the Generator it is necessary to observe a certain maintenance routine.

CLEANING.

Keep all parts of the generator clean. It is most important that the commutator be kept free from dust and dirt. The commutator, brushes, brush holders and spindles, windings and terminals should be periodically wiped down with a clean, dry rag.

BEARINGS.

When the Generator leaves the works the bearings are packed with grease and do not require further attention before the plant is put into operation.

However, it is advisable to remove the end caps from the bearings at least once a year to examine them. The balls and races should be clean and show no signs of rusting. There need only be a smear of grease on the bearing. If necessary, grease should be added to the bearing. Only fill the bearing cage, don't fill the cap with grease, or the bearing will overheat and grease will be forced from the bearing over the windings of the Generator.

The faults from over lubrication of ball bearings are far greater than those occurring from under lubrication. Under no condition must oil or grease containing graphite be used.

Recommended Greases are:—

Shell Nerita or equivalent.

COMMUTATOR.

Keep the Commutator clean and bright. Do not allow copper or carbon dust to collect on the insulation between the bars, nor about the junction of the armature windings with the bars.

BRUSHES.

Keep the Brushes free in their holders and all even in pressure. When worn down to less than §in. long they should be replaced with new Brushes of the size and grade stamped on the name plate.

TO FIT NEW BRUSHES.

1. Remove the covers from the Commutator End Endshield.
2. Remove the brushes from the holders. Loosen nuts which hold the brush leads to the brush holders and remove them.
3. Try new brushes of the size and grade stamped on the name plate in the brush holder.
4. They should slide freely without sticking. If they are tight ease them down carefully by rubbing the tight side lightly on a flat sheet of fine sand paper until they will just slide in the holder.
5. Put the brushes in the holder and connect the brush leads to the brush holders.
6. Place a piece of sand paper, sand side out, around the commutator and allow the brushes to seat on the sand paper.
7. Carefully draw the paper backwards and forwards until the brushes assume the correct curvature, taking care to keep it round the commutator so that a flat is not formed in the brush. When the process is nearly completed, fine glass paper should be used to obtain a very smooth finish.
8. After bedding carefully, clean away every trace of dust from the Commutator, Brushes, and Holders. Make sure no specks of abrasive materials are embedded in the face of the brush.
9. Replace the covers on the endshield and the generator may be started. It is advisable to run it on light load for a few hours before putting on full load to enable the brushes to settle down properly.

TROUBLES AND THEIR REMEDIES

SPARKING AT THE BRUSHES

The commutator should be examined occasionally while the plant is running. It should be practically sparkless at all times. If sparking does occur, steps should be taken to cure it or serious trouble may arise in a short time.

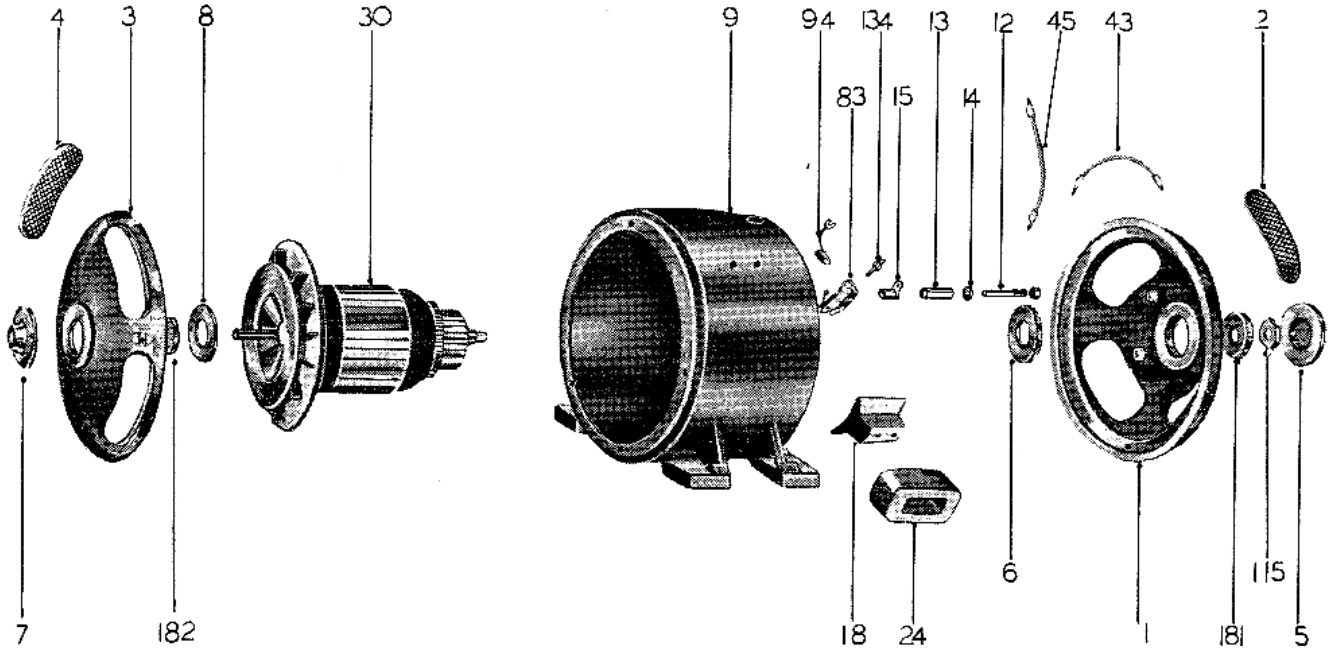
Sparking may be due to several causes:—

1. Overload of Generator.
   Reduce load and observe whether sparking reduces.
2. Jumping of Brushes due to vibration or incorrect pressure of the brush tension arm.
   When the Generator is supplied the tension on the brush is correct with the spring in the lowest notch of the tension arm, and as the brush wears it is necessary to place it in a notch further back.
3. Brushes not sliding freely in the Brush Holder.
   If the Generator is used in dusty conditions the brushes may become jammed in the holders with dust. Remove and clean both holders and brushes.
4. Wrong grade of brushes being used.
   Use only the grade of Brush which is stamped on the name plate.
5. Brush Holders assembled wrong way around on spindle.
   Brushes should run directly opposite the centre of the field pole.

GENERATOR WILL NOT CHARGE

If the Generator will not charge or Electric Start the engine, check the following in order:—

1. Make sure there are no loose or dirty connections in the switchboard or between the cells.
2. Check the brushes and make sure they slide freely in their holders. If one brush is not making good contact the efficiency of the Generator is decreased considerably.
3. The right hand fuse looking at the front of the switchboard is connected in series in the charging circuit of the generator. If at any time the cutout should be accidentally closed while the generator is stationary, the fuse will blow, thus protecting the generator. If this fuse is blown, the generator will not charge.
4. If the knife switch is open, the generator will not electrically start the engine or charge the battery.
5. If generator will electrically start the engine but will not charge, then the cut-out may be at fault.



DL Pattern Generator—Exploded View.

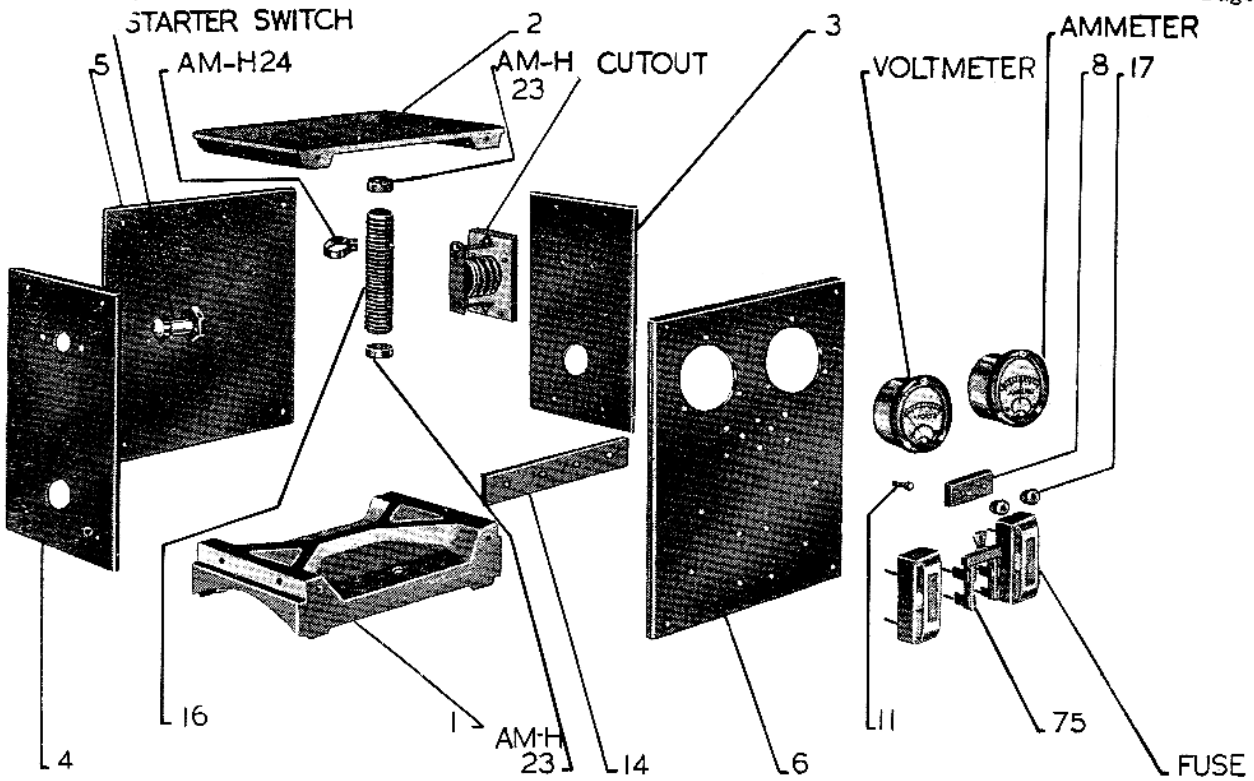
PARTS LIST

Mark DL-G
1.5 K.W. 32 Volt Generator.

No. Off.	Sym. No.		Name.
1	DL-G	1	Commutator End Endshield.
4		2	Commutator End Endshield Cover.
1		3	Drive End Endshield.
4		4	Drive End Endshield Cover.
1		5	Commutator End Outside Bearing Cap.
1		6	Commutator End Inside Bearing Cap.
1		7	Drive End Outside Bearing Cap.
1		8	Drive End Inside Bearing Cap.
1		9	Body.
4		12	Brush Holder Stud.
4		13	Brush Holder Insulating Sleeve.
4		14,	Brush Holder Insulating Washer.
4		15	Brush Holder Connection.
4		18	Main Pole.
4		24	Field Coil.
1		30	Armature.
2		43	Brush Inter Connection.
1		45	Negative Brush to Terminal Connection.
4	AO-N	83	Brush Holder.
4	DL-G	94	Brush.
1	AW-D115		Bearing Locking Nut.
4	AO-B134		Brush Holder Clamp Screw.
1		181	Commutator End Bearing.
1	DL-G182		Drive End Bearing.

Mark DL-H
1.5 K.W. 50 Volt Generator.

No. Off.	Sym. No.		Name.
1	DL-G	1	Commutator End Endshield.
4		2	Commutator End Endshield Cover.
1		3	Drive End Endshield.
4		4	Drive End Endshield Cover.
1		5	Commutator End Outside Bearing Cap.
1		6	Commutator End Inside Bearing Cap.
1		7	Drive End Outside Bearing Cap.
1		8	Drive End Inside Bearing Cap.
1		9	Body.
4		12	Brush Holder Stud.
4		13	Brush Holder Insulating Sleeve.
4		14	Brush Holder Insulating Washer.
4		15	Brush Holder Connection.
4		18	Main Pole.
4	DL-H	24	Field Coil.
1		30	Armature.
2	DL-G	43	Brush Inter Connection.
1		45	Negative Brush to Terminal Connection.
4	AO-N	83	Brush Holder.
4	DL-G	94	Brush.
1	AW-D115		Bearing Locking Nut.
4	AO-B134		Brush Holder Clamp Screw.
1		181	Commutator End Bearing.
1	DL-G182		Drive End Bearing.



CQ Pattern Switchboard—Exploded View.

PARTS LIST

Mark CQ-G Switchboard

(FOR 32 VOLT GENERATING SETS.)

No. Off.	Sym.	No.	Name.
1	CQ-G	1	Switchboard Base.
1		2	Switchboard Top.
1		3	Switchboard Side—L.H.
1		4	Switchboard Side—R.H.
1		5	Switchboard Backplate.
1		6	Switchboard Panel.
1		8	Changeover Link.
6		11	Changeover Stud.
1		14	Terminal Strip.
1		15	Terminal Strip Cover.
1		16	Field Resistance.
2		17	Changeover Strip Locking Nut.
1		21	Ammeter to Changeover Stud Connections.
1	KN	22	Suppressor Condenser.
1	CQ-G	22	Ammeter to Battery Terminal Connection.
2	AM-H	23	Field Resistance End Cap.
3		24	Field Resistance Terminal Clip.
2	CQ-G	24	Cutout to Knife Switch Connection.
1		25	Knife Switch Positive Changeover Stud Connection.
1		26	Knife Switch Negative to Changeover Stud Connection.
2		27	Knife Switch to Fuse Connection.
1		28	Knife Switch to Battery Terminal Connection.
1		29	Ammeter to Starter Switch Connection.
2		30	Voltmeter to Changeover Stud Connection.
1		31	Changeover Stud to Field Resistance Clip Connection.
1		32	Voltmeter to Field Resistance Clip Connection.
1	CQ-G	34	Positive Brush to Cutout Wire.
1	KC	72	Ammeter.
1		73	Voltmeter.
2		74B	Fuse.
1		75	Knife Switch.
1		76	Starter Button.

Mark CQ-H Switchboard

(FOR 50 VOLT GENERATING SETS.)

No. Off.	Sym.	No.	Name.
1	CQ-G	1	Switchboard Base.
1		2	Switchboard Top.
1		3	Switchboard Side—L.H.
1		4	Switchboard Side—R.H.
1		5	Switchboard Backplate.
1		6	Switchboard Panel.
1		8	Changeover Link.
6		11	Changeover Stud.
1		14	Terminal Strip.
1		15	Terminal Strip Cover.
1	CQ-H	16	Field Resistance.
2	CQ-G	17	Changeover Strip Locking Nut.
1		21	Ammeter to Changeover Stud Connections.
1	KN	22	Suppressor Condenser.
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1		29	Ammeter to Starter Switch Connection.
2		30	Voltmeter to Changeover Stud Connection.
1		31	Changeover Stud to Field Resistance Clip Connection.
1		32	Voltmeter to Field Resistance Clip Connection.
1	CQ-G	34	Positive Brush to Cutout Wire.
1	KC	72	Ammeter.
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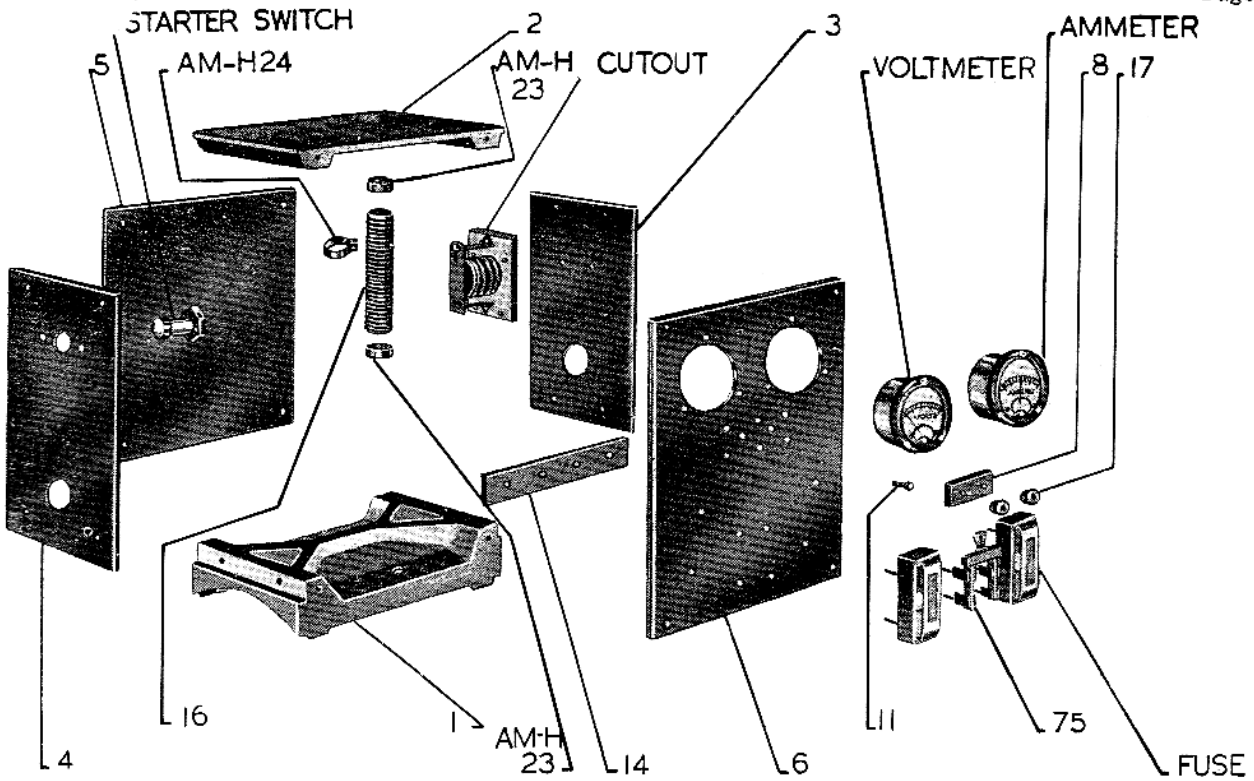
2		74B	Fuse.
1		75	Knife Switch.
1		76	Starter Button.



CQ Pattern Switchboard—Exploded View.

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1		6	Switchboard Panel.
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Mark CQ-H Switchboard

(FOR 50 VOLT GENERATING SETS.)

No. Off.	Sym.	No.	Name.
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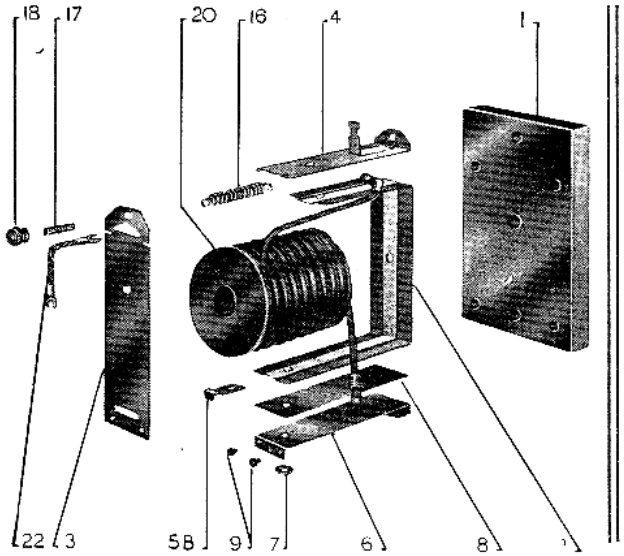
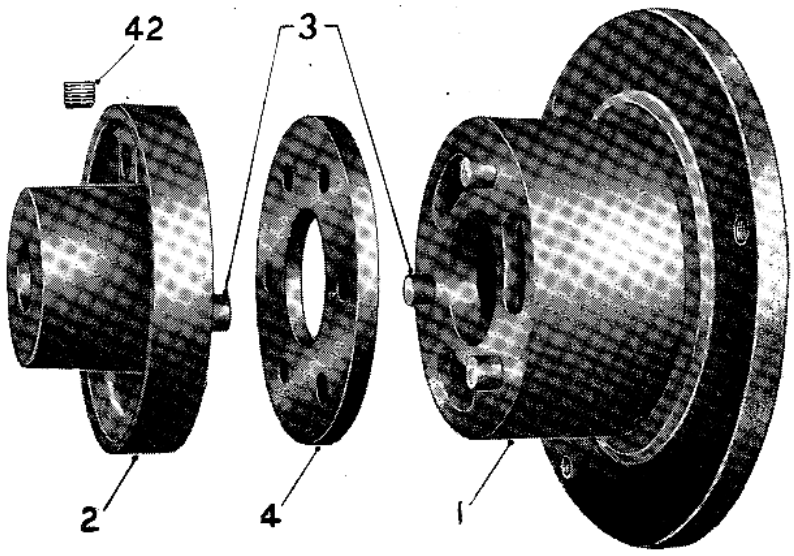
1		3	Switchboard Side—L.H.
1		4	Switchboard Side—R.H.
1		5	Switchboard Backplate.
1		6	Switchboard Panel.
1		8	Changeover Link.
6		11	Changeover Stud.
1		14	Terminal Strip.
1		15	Terminal Strip Cover.
1	CQ-H	16	Field Resistance.
2	CQ-G	17	Changeover Strip Locking Nut.
1		21	Ammeter to Changeover Stud Connections.
1	KN	22	Suppressor Condenser.
1	CQ-G	22	Ammeter to Battery Terminal Connection.
2	AM-H	23	Field Resistance End Cap.
3		24	Field Resistance Terminal Clip.
2	CQ-G	24	Cutout to Knife Switch Connection.
1		25	Knife Switch Positive Changeover Stud Connection.
1		26	Knife Switch Negative to Changeover Stud Connection.
2		27	Knife Switch to Fuse Connection.
1		28	Knife Switch to Battery Terminal Connection.
1		29	Ammeter to Starter Switch Connection.
2		30	Voltmeter to Changeover Stud Connection.
1		31	Changeover Stud to Field Resistance Clip Connection.
1		32	Voltmeter to Field Resistance Clip Connection.
1	CQ-G	34	Positive Brush to Cutout Wire.
1	KC	72	Ammeter.
1		73	Voltmeter.
2		74B	Fuse.
1		75	Knife Switch.
1		76	Starter Button.



Mark AY-B and Mark AY-C Cutout—Exploded View.



Mark EK-D Flexible Coupling—Exploded View.

PARTS LIST

Mark AY-B Cutout.

(FOR 32 VOLT GENERATING SETS)

No. Off.	Sym. No.	Name.
1	AY-B 1	Base.
1	2	Frame.
1	3	Armature.
1	4	Armature Fulcrum.
1	5B	Armature Stop.
1	6	Fixed Contact Stop Plate.
1	7	Fixed Contact Insulating Washer.
1	8	Frame to Fixed Contact Plate Insulator.
4	9	Points.
1	16	Tension Spring.
1	17	Tension Spring Screw.
1	18	Tension Spring Screw Nut.
1	20	Bobbin.
1	22	Armature to Fulcrum Connection.

Mark AY-C Cutout.

(FOR 50 VOLT GENERATING SETS)

No. Off.	Sym. No.	Name.
1	AY-B 1	Base.
1	2	Frame.
1	3	Armature.
1	4	Armature Fulcrum.
1	5B	Armature Stop.
1	6	Fixed Contact Stop Plate.
1	7	Fixed Contact Insulating Washer.
1	8	Frame to Fixed Contact Plate Insulator.
4	9	Points.
1	16	Tension Spring.
1	17	Tension Spring Screw.
1	18	Tension Spring Screw Nut.
1	AY-C 20	Bobbin.
1	AY-B 22	Armature to Fulcrum Connection.
1	KC116	Cutout Resistor.

Mark BO-G Base and Fittings.

(NOT ILLUSTRATED).

No. Off.	Sym. No.	Name.
1	BO-G 1	Base.
	BO-G 3	Generator Feet Shim.

Mark EK-D Flexible Coupling.

No. Off.	Sym. No.	Name.
1	EK-A 1	Coupling Driving Half.
1	EK-D 2	Coupling Driven Half.
6	EK-A 3	Coupling Drive Pin.
1	EK-A 4	Coupling Disc.
1	DL-G 42	Coupling Locking Screw.
1	CO-C261	Locking Screw Spanner.
3	YC506	Driving Half Setscrew.

Radio Interference

D.C. Generators and motors, when running, cause radio interference, and if this interference is allowed to get into the radio set it may result in so much noise that radio stations become inaudible behind the interference.

Radio interference may be suppressed, but it is almost impossible to completely eliminate it. The greater the degree of suppression required — the more expensive it becomes.

However, interference can be minimized by careful installation. When buying your radio set, get your radio man to suggest the best installation for your particular case.

The following items should be carefully studied before installing your radio, to make sure that interference is minimized.

1. Locate the receiving aerial as far away as possible from the generating plant, and run it at right angles (not parallel) to the power lines from the engine shed to the house, keeping the aerial as high as possible. Use shielded wire from the lead-in to the house right to the set, or use the aerial filters and twin lead-in wires which are available from your radio store. Consult your radio man on this point and use the type of lead-in he recommends.
2. Keep the commutator and brush gear clean. Ensure that brushes are free in their holders and that there is no excessive sparking. Brushes sticking in the holders will spark badly, and will burn away and cause interference.
3. Where a petrol or kerosene engine is used, it will probably be necessary to fit an automobile type of ignition suppressor in the spark plug lead.
4. In new installations, it will be found that the noise will lessen over the first few weeks' runnings as the brushes bed down and acquire the normal smooth surfaces.
5. Where convenient placement of the aerial is not possible and the noise level is still objectionable, after ensuring that the above conditions are met with, it may prove necessary to fit an alternative suppression device, such as a larger suppressor condensor or a line filter. Consult your radio technician.