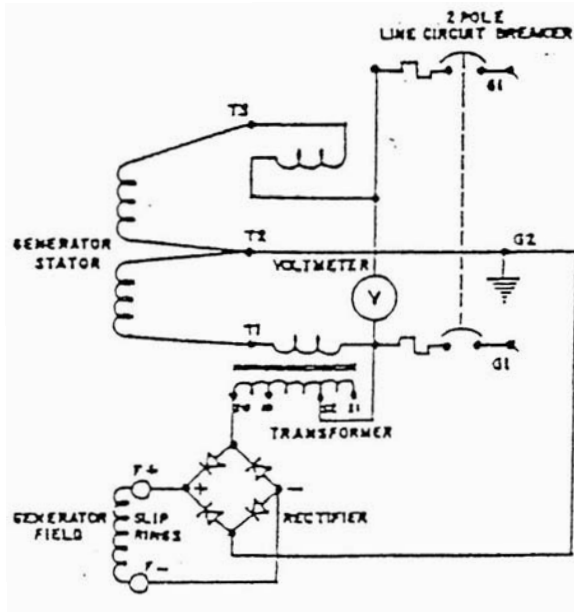
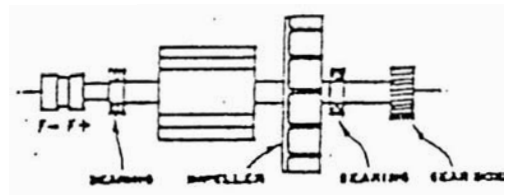


WIRING DIAGRAMS

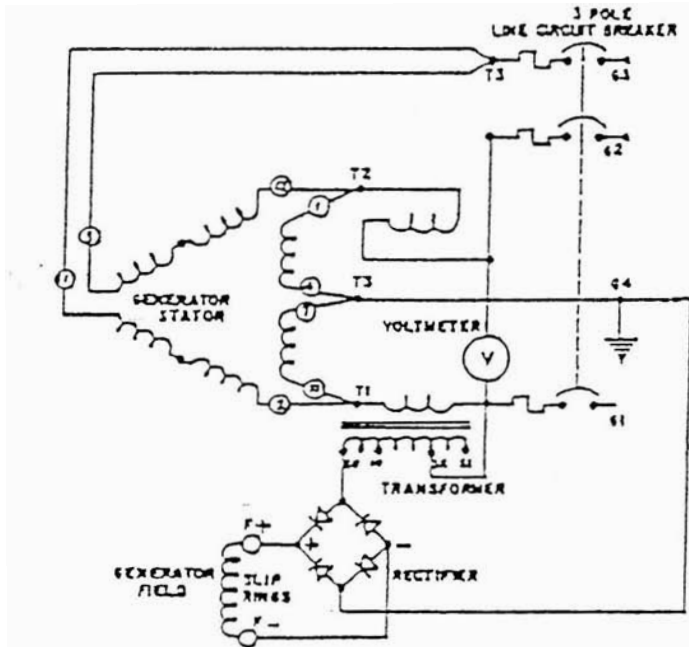


-3 1 PHASE

-3	
VOLTAGE CONNECTIONS	
A + C	- 240V 1 Ø
A + N	- 120V 1 Ø
C + N	-



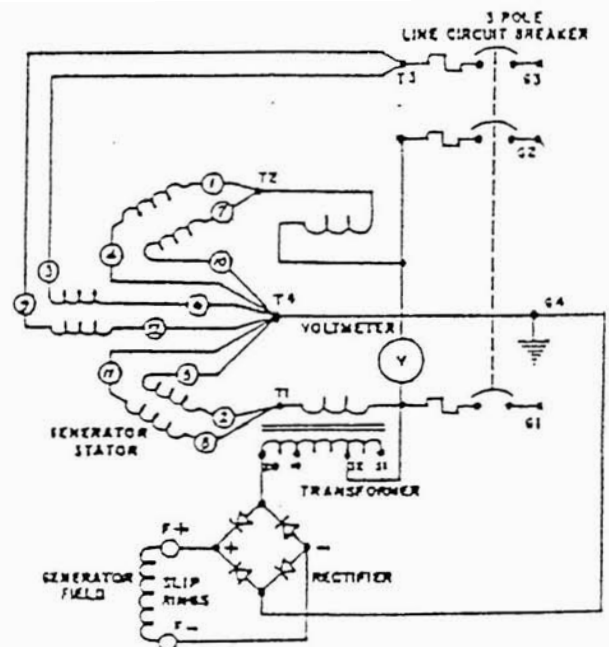
GENERAL SLIP RING IDENTIFICATION-ALL MODELS



-17 3 PHASE Δ

-17	
VOLTAGE CONNECTIONS	
A + B + C	- 240V 3 Ø
A + B	- 240V 1 Ø
A + C	-
B + C	-
A + N	- 120V 1 Ø
C + N	-
B + N	-

18 WELD LEE



-4 3 PHASE Y

-4	
VOLTAGE CONNECTIONS	
A + B + C	- 208V 3 Ø
A + B	- 208V 1 Ø
A + C	-
B + C	-
A + N	- 120V 1 Ø
C + N	-
B + N	-

35PSB4G-3/A, 40PSB4G-4/A, 45PSB4G-17/A, 75PSB4G-4/A, 75PSB4G-17/A, 27PSB4G-53/A

SEQ REF #	DESCRIPTION	PART #	35		40		45		75		27		SEQ
			-3/A	-4/A	-17/A	-4/A	-17/A	-53/A	-53/A				
1 001	LOCKWASHER 5/16	480-000	3	3	3	3	3	3	3	3	3	1	
2 002	CAPSCREW 5/16-18 X 2	441-000	3	3	3	3	3	3	3	3	3	2	
3 003	SCREW 8-32 X 5/16	40746-000	8	8	8	8	8	8	8	8	8	3	
4												4	
5 004	LOCKWASHER	6376-000	4	4	4	4	4	4	4	4	4	5	
6 005	SCREW 8-32 X 1-1/2	10846-000	4	4	4	4	4	4	4	4	4	6	
7 006	LOCKWASHER	90570-000	6	6	6	6	6	6	6	6	6	7	
8												8	
9 007	CAPSCREW	91256-000	6	6	6	6	6	6	6	6	6	9	
10 008	SET SCREW	91347-000	1	1	1	1	1	1	1	1	1	10	
11 009	NUT	447-000	1	1	1	1	1	1	1	1	1	11	
12 010	EYE BOLT	91137-000	1	1	1	1	1	1	1	1	1	12	
13												13	
14 145	SPACER	91172-000	4	4	4	4	4	4	4	4	4	14	
15 146	BRACKET	91170-000	1	1	1	1	1	1	1	1	1	15	
16 147	SHIELD	91171-000	1	1	1	1	1	1	1	1	1	16	
17												17	
18 201	LOUVERED COVER PANEL	98969-000	1	1	1	1	1	1	1	1	1	18	
19 212	CONTROL BOX	98832-000	1	1	1	1	1	1	1	1	1	19	
20												20	
21 244A	TRANSFORMER - 35kw	91187-000	1	---	---	---	---	---	---	---	---	21	
22 244B	TRANSFORMER - 40/45kw	91187-001	---	1	1	---	---	---	---	1	---	22	
23 244C	TRANSFORMER - 75kw	91397-000	---	---	---	1	1	---	---	---	---	23	
24 244D	TRANSFORMER - 27kw-50Hz	91187-001	---	1	1	---	---	---	---	1	---	24	
25												25	
26 268	RETAINER PLATE	91350-000	1	1	1	1	1	1	1	1	1	26	
27												27	
28 512	COVER (IMPELLER)	91337-000	1	1	1	1	1	1	1	1	1	28	
29												29	
30 514A	STATOR ASSY -35kw-1PH	91148-000	1	---	---	---	---	---	---	---	---	30	
31 514B	STATOR ASSY -40kw/208V	91148-002	---	1	---	---	---	---	---	---	---	31	
32 514C	STATOR ASSY -45kw/240V	91148-001	---	---	1	---	---	---	---	---	---	32	
33 514D	STATOR ASSY -55kw-1PH	91293-000	---	---	---	1	---	---	---	---	---	33	
34 514E	STATOR ASSY -75kw/208V	91293-002	---	---	---	---	---	---	---	---	---	34	
35 514F	STATOR ASSY -75kw/240V	91293-001	---	---	---	---	---	1	---	---	---	35	
36 514G	STATOR ASSY -27kw-50HZ	91148-010	---	---	---	---	---	---	---	1	---	36	
37												37	
38 515	END BRACKET	91212-000	1	1	1	1	1	1	1	1	1	38	
39 516	RETAINER	91211-001	1	1	1	1	1	1	1	1	1	39	
40 517	SPACER	21264-000	3	3	3	3	3	3	3	3	3	40	
41												41	
42 530A	ROTOR ASSEMBLY/ 27-45kw	91237-001	1	1	1	---	---	---	---	1	---	42	
43 530B	ROTOR ASSEMBLY/ 55-75kw	91304-000	---	---	---	1	1	---	---	---	---	43	
44												44	
45 532	BEARING	91111-000	1	1	1	1	1	1	1	1	1	45	
46 533	IMPELLER	91101-000	1	1	1	1	1	1	1	1	1	46	
47												47	
48 534	BEARING (DRIVE END)	93174-000	1	1	1	1	1	1	1	1	1	48	

27-75 PSB 4G

35PSB4G-3/A, 40PSB4G-4/A, 45PSB4G-17/A, 75PSB4G-4/A, 75PSB4G-17/A, 27PSB4G-53/A

SEQ REF #	DESCRIPTION	PART #	35	40	45	75	75	27	SEQ
			-3/A QTY	-4/A QTY	-17/A QTY	-4/A QTY	-17/A QTY	-53/A QTY	
49 536	RETAINER	91196-000	1	1	1	1	1	1	49
50 570	EXCITATION ASSY.	91451-000	1	1	1	1	1	1	50
51									51
52 571	RECTIFIER	91452-000	1	1	1	1	1	1	52
53 572	RING (BRUSH HOLDER)	91211-002	1	1	1	1	1	1	53
54 573	SPACER (FIBER)	23532-000	2	2	2	2	2	2	54
55									55
56 574	BRUSH (1/4 x 3/8)	23607-000	4	4	4	4	4	4	56
57 575	BRUSH HOLDER	59690-000	4	4	4	4	4	4	57
58 ***	BARRIER SPACER ****	59688-000	4	4	4	4	4	4	58

*** NOT ILLUSTRATED

UNIT MODEL SERIES	35PSB4G-3/A	40PSB4G-4/A	45PSB4G-17/
COMPLETE UNIT ASSY.	64535-001	64535-003	64535-002
AC RESIDUAL VOLTS	7.0 VAC L-L	7.0 VAC L-L	7.0 VAC L-L
FIELD RESISTANCE	3.51 OHMS	3.51 OHMS	3.51 OHMS
SCHEMATIC DIAGRAM	B-91322	B-91323	B-64521
WINDING SPEC. (SS#)	1298	1307	1299
ARM. CONNECTION (AC#)	315	317	316

UNIT MODEL SERIES	75PSB4G-4/A	75PSB4G-17/A	27PSB4G-53/
COMPLETE UNIT ASSY.	64544-003	64544-002	64535-004
AC RESIDUAL VOLTS	7.0 VAC L-L	7.0 VAC L-L	7.0 VAC L-L
FIELD RESISTANCE	5.36 OHMS	5.36 OHMS	3.51 OHMS
SCHEMATIC DIAGRAM	B-91323	B-64521	B-91322
WINDING SPEC. (SS#)	1307	1299	1388
ARM. CONNECTION (AC#)	317	316	315

C. Electrical testing:

1. Testing generator rotating field for opens and grounds

- a. Disconnect field slip rings from rectifier.
- b. Set multi-meter to read resistance (ohms), and connect the meter leads to the slip rings. See technical data on the repair parts list for correct resistance for the unit.
If field is defective in an open condition, the meter will read infinite resistance. Repair slip ring connection or field jumper connection if possible. If not, replace entire rotor.
- c. Connect one meter lead to the stator shell and the other lead still connected to one of the field slip rings.
If meter indicates continuity (any resistance reading), the field is grounded and should be replaced.

2. Testing Stator for opens and grounds.

- a. Disconnect stator leads (Hot and Neutral)
- b. Ground test
Set multi-meter to read resistance, holding one meter lead against a clean spot on the stator shell, touch the other lead to any of the power conductors (G1, G2 or G3).
If meter indicates continuity (any resistance reading), the stator winding is grounded. Faults causing the grounded condition, even if visually detected, are generally not repairable. Replace the stator if it is grounded.
- c. Testing for opens
(meter still set to read resistance - Rx1).
Holding one meter lead on G1 lead, touch other meter lead to G3, (and G2 if applicable). Record the readings. The meter should indicate continuity (very low resistance). If not (i.e. if meter indicates infinite resistance) part of stator winding is open and the entire stator must be replaced.
Check for open between all stator leads in same manner. Again, record your results for reference.

3. Testing rectifiers

The field excitation rectifier is a full-wave bridge rectifier. This type of rectifier has four terminals, two AC, a DC+ (positive), and a DC- (negative). The rectifier test Procedure follows:

Connect one ohmmeter lead to the positive DC+ terminal, and the other lead to each of the AC terminals in turn. A high or low resistance reading will be obtained. Reverse the meter leads, and an opposite reading should be observed. Now check from the negative terminal to each of the AC terminals, using the same procedures. Check each terminal both ways to the case. No resistance reading should be observed. Check between the two AC terminals. There should never be any reading either direction between the AC terminals. A rectifier that does not pass any of these tests is defective and must be replaced.

If a battery-powered test light is used, follow the procedures described above. If the rectifier is good, the light will come on in one direction only between a DC and AC terminal, but never between the terminals and the case or between the two AC terminals.

If the rectifier fails any of the above tests, it should be considered defective and replaced.

4. Transformer testing

The transformer is mounted on the end of the generator above the brush rack and slip rings. There are four secondary wires that provide alternative connection patterns for increased or decreased voltage boost depending upon the application and connected load. Consult factory if changes appear necessary. The boost transformer provides extra current boost for the field to start large electric motors and to compensate for normal voltage droop under load. To determine whether a transformer is defective, stop and disable the engine, disconnect all the power lead wires from the transformer and the secondary leads from the rectifier. Measure the windings for continuity and grounds as described for the stator and rotor above. Grounded transformers or transformers with internal primary to secondary shorts must be replaced.

Safety, control circuits - generator protection

In addition to a main line circuit breaker to protect the generator stator and load wiring, an over-speed relay or circuit should be supplied by the vehicle manufacturer that is factory pre-set to operate at 67 hertz, (approximately 2000 rpm on the generator shaft). DO NOT EXCEED 2000 RPM ON THE GENERATOR SHAFT FOR ANY REASON - CENTRIFUGAL FAILURE OF THE ROTOR IS PROBABLE AND NOT WARRANTABLE.

D. Operating Speed:

If operating speed is out of tolerance, consult the vehicle manufacturer for instructions. Under a full load condition of 80 to 100% capacity, the drive system should maintain a 59 to 60 hz reading.

****** Caution ******

Under full load, do not adjust the Hz above 60. If a higher hz reading is used, as the load is decreased and the governor is not maintaining proper regulation, the Hz may go beyond the upper design limits (61.5 to 62 hz).

TROUBLESHOOTING TABLE

SYMPTOM	CAUSE(S)	CORRECTIVE ACTION
No output or low output voltage.	Open or shorted stator.	Replace stator.
	Open or shorted field winding.	Replace rotating field.
	Generator operating too slow.	Generator must be operated at 1800 rpm +/- 45 rpm for proper output voltage. (1500 rpm for 50 Hz)
	Generator overloaded.	Reduce load to generator nameplate.
	short circuit in the load.	Disconnect the load. Check voltage at output receptacles. Check motors, lights and load leads for short circuits. Repair short.
	Loose (or broken) wires or connections in the control box.	Remove panel cover and check all wiring and connections. Tighten and/or repair where necessary.
No output or low output voltage.	Defective rectifier.	Test rectifier. Replace if defective.
	Dirty slip rings.	Clean and polish. Use 00 sandpaper and crocus cloth, never emery paper.
	Brushes binding in holders.	Check brushes for swelling: replace defective brushes: clean brush holders
	Loss of residual magnetism.	Check output voltage with sensitive meter. If very low (eg 1/2 volt), flash or separately excite field with 12 vdc battery.
Output voltage too high	Drive input speed too high. Transformer incorrectly tapped.	See rescue equipment manual (governor adj.). Consult generator manufacturer.
Generator overheating	Generator overloaded.	Reduce load.
	Field rubbing on stator.	Check bearing condition. Check bearing bracket alignment.
	Poor ventilation.	Clear inlet and outlet air vents of debris. Insure at least 6 inches clearance
on all sides	Short circuit in field.	and inlet and outlet vents are unobstructed. Repair or replace - shorted or grounded field must be replaced.
	Shorted turns in stator.	Replace stator.
Sparkling at the brushes	Generator overloaded.	Reduce load.
	Brushes not seated properly. Slip rings rough or eccentric. Brushes sticking in brush rack.	Contour brushes (see maintenance). Redress slip rings (see maintenance) Remove brushes and inspect and correct problem.
	Brushes worn down shorter than 3/8 inch.	Replace brush - Note: Always replace brushes in full sets - don't partial.