



OPERATING INSTRUCTIONS & PARTS MANUAL
STANDBY ENGINE-GENERATOR
MODELS 3W056B & 3W057B

FORM
5S1238
03653

DAYTON ELECTRIC MANUFACTURING CO. CHICAGO 60648

1282/459/1M

**READ INSTRUCTIONS CAREFULLY BEFORE ATTEMPTING TO INSTALL, OPERATE OR SERVICE THIS DAYTON GENERATOR. PROTECT YOURSELF AND OTHERS BY OBSERVING ALL SAFETY INFORMATION AND ADDITIONAL INSTRUCTIONS INCLUDED WITH THIS EQUIPMENT. FAILURE TO COMPLY WITH INSTRUCTIONS COULD RESULT IN PERSONAL INJURY AND/OR PROPERTY DAMAGE!
RETAIN INSTRUCTIONS FOR FUTURE REFERENCE.**

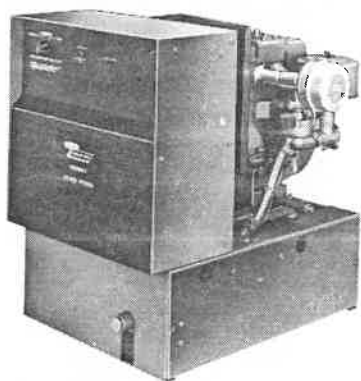


Figure 1

Testing Policy

Before any generator is shipped from the factory, it is fully checked for performance. The generator is loaded to its full capacity, and the voltage, current, and frequency are carefully checked. A test card with this data is filed by unit serial number for permanent record of performance.

Rated output of generators is based on factory tests of typical units, and is subject to, and limited by, the temperature, altitude, fuel, and other conditions specified by the manufacturer of the applicable engines.

Description

The package standby engine-generator set includes all items necessary for a completely automatic standby power system as standard equipment (except the 12 volt engine cranking battery, available through local battery supplier).

The components are mounted on one common skid base, connected and wired. The entire package is then tested to insure proper operation of all components and the total system's performance and reliability.

This package power system is designed to automatically provide standby power to unattended loads during electrical outages. Upon an interruption of normal electrical service this package power system's electrical control circuits will automatically start the engine.

The generator will produce electrical power and the automatic transfer switch (ATS) will automatically transfer the electrical loads to the engine-generator set. Upon restoration of normal electrical service the emergency transfer switch will sense return of the normal commercial power. The fuel supply will be shut off and the engine magneto grounded by the start/run con-

trol circuit. The engine will stop and the load control circuit will retransfer the load back to normal commercial power source.

The package power system consists of three major parts:

1. A 40 amp automatic transfer switch (ATS)
2. A 5,000/8,000 watt (5 KW or 8 KW) single bearing direct drive generator
3. A single cylinder, air cooled, LP/NG fuel engine (Model 3W056B, 5 KW) or A two cylinder, air cooled, LP/NG fuel engine (Model 3W057B, 8 KW)

The automatic transfer switch (ATS) is built into the junction box that is suspended over the chock mounted engine/generator assembly. The ATS consists of a four pole, double throw power contactor. Two poles are normally open (N.O.) and two poles are normally closed (N.C.). The contactor is electrically and mechanically interlocked. The ATS contains the power failure sensing circuitry, engine start/stop controls and load control/transfer equipment. An overcranking relay (O.C.R.) stops the start sequence if the engine fails to start in approximately one minute (to protect the battery and starter). A battery trickle charger is provided during normal electrical service. A separate 4-5 amp charging circuit recharges the battery when the generator is operating. A control selector switch has three positions:

1. Stop — used whenever the unit is to be serviced and for emergency shut down.
2. Automatic — normal position for emergency standby service.
3. Check — this position enables the owner/operator to exercise and/or check the engine-generator set without transferring the load.

NOTE: The unit will automatically transfer if a power outage occurs while running in an exercise mode.

Model 3W056B is a 5000 watt, 3600 rpm single bearing, direct drive, brush type, revolving armature generator. It is self excited (D.C. commutator) and inherently regulated to +/— (plus or minus) 7% — no load to rated load.

Model 3W057B has the same construction and features except the power output is rated for 8000 watts. Either unit can be operated under any load within its rating without being damaged. The frequency regulation is maintained by the engine governor within 3 cycles variation (61.5 Hz — 58.5 Hz) from no load to rated load.

Each generator is equipped with an exciter cranking system (series D.C. motor) which acts as a high speed starter. This D.C. winding is also used as a D.C.

Replacement Parts List for Model 3W056B

Ref. No.	Part No.	Description	Qty.	Ref. No.	Part No.	Description	Qty.
001	47136	Nut — 5/16-18	4	606		Not used on this model	
002	1720	Capscrew 5/16-18 × 2-1/2	4	610	61500	Base frame	1
100	59158	Engine — B & S Model 25241	1	611	20191	Shock mount	8
111	53244-015	Pipe extension — 3/8 NPT	1	811	42942	Fuel solenoid — 12 VDC	1
112	21857	Coupling — 3/8 NPT	1	812	55559	Fuel regulator — Model KN	1
201	61458	Cover	1	814	55560	Fuel load block	1
203	61457	Lower front panel	1	815	2239	Brass elbow	1
210	*	Rear panel	1	820	22626	Close nipple — 3/4 NPT	2
240	*	Front panel	1	821	81076	Elbow — 3/4 NPT	1
271A	61454	Panel support — left side	1	822	80941-003	Nipple — 3/4 NPT × 5	1
271B	61453	Panel support — right side	1	823	61465	Bracket assembly	1
400	58380-004	Generator assembly	1	824	23048-003	Fuel hose — 1/2" ID	1
605	57963	Subframe assembly	1	931	61310	Heat shield	1
				932		Not used on this model	

*See Figures 11 & 12 parts lists.

Replacement Parts List for Model 3W057B

Ref. No.	Part No.	Description	Qty.	Ref. No.	Part No.	Description	Qty.
001	47136	Nut — 5/16-18	4	606	91172-001	Spacer	1
002	1720	Capscrew 5/16-18 × 2-1/2	4	610	61502	Base frame	1
100	61700	Engine — B & S Model 422431	1	611	20191	Shock mount	8
111	53244-015	Pipe extension — 3/8 NPT	1	811	42942	Fuel solenoid — 12 VDC	1
112	21857	Coupling — 3/8 NPT	1	812	55559	Fuel regulator — Model KN	1
201	61458	Cover	1	814	55560	Fuel load block	1
203	61457	Lower front panel	1	815	2239	Brass elbow	1
210	*	Rear panel	1	820	22626	Close nipple — 3/4 NPT	2
240	*	Front panel	1	821	81076	Elbow — 3/4 NPT	1
271A	61454	Panel support — left side	1	822	80941-03	Nipple — 3/4 NPT × 5	1
271B	61453	Panel support — right side	1	823	61465	Bracket assembly	1
400	61697	Generator assembly	1	824	23048-002	Fuel hose — 1/2" ID	1
605	61475	Subframe	1	931	61648	Upper heat shield	1
				932	61649	Lower heat shield	1

*See Figures 11 & 12 parts lists.

**ORDER REPLACEMENT PARTS
THROUGH DEALER FROM WHOM
PRODUCT WAS PURCHASED**

Please provide following information:

- Model Number
- Serial Number (if any)
- Part Description and Number as shown in parts list.

If dealer cannot supply, order from:

Dayton Electric Mfg. Co.
Parts Department
5959 W. Howard St.
Chicago, Illinois 60648

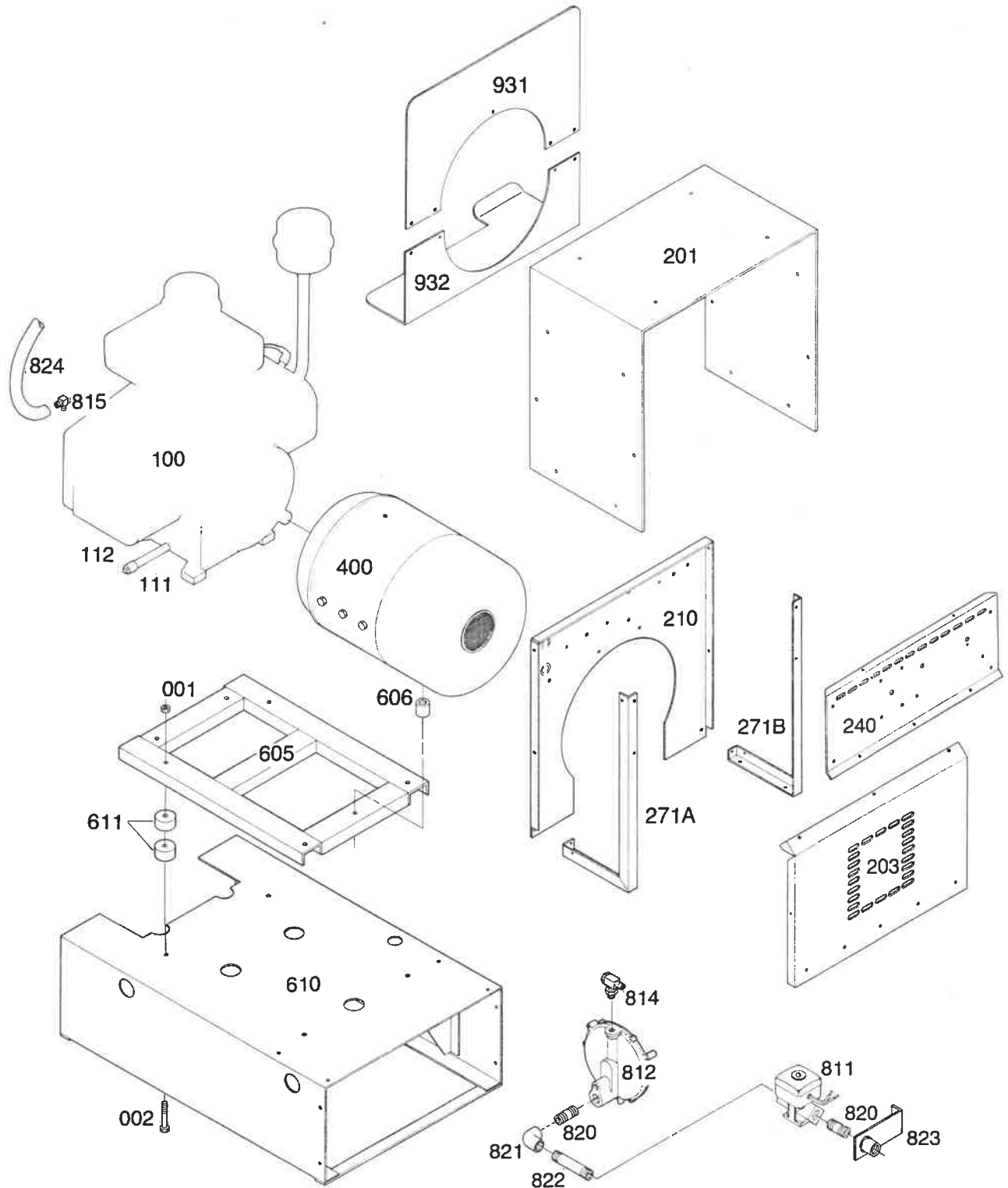


Figure 9 — Models 3W056B & 3W057B Exploded View

APB 5000

Replacement Parts List for Model 3W056B

Ref. No.	Part No.	Description	Qty.	Ref. No.	Part No.	Description	Qty.
001	458	Nut — 5/16-18	4	441A	55422	Field coil (L)	1
002	480	Lockwasher — 5/16 split	5	441B	55422-001	Field coil (R)	1
003	3290	Capscrew — 3/8-16 × 1¼	4	442	23207	Pole shoe	2
004	9416-4	Capscrew — 5/16-18 × 1¾	4	443	23208	Pole shoe retainer	2
005	55224	Lockwasher — 11/16 ext. tooth	1	444	55417	Field shell and bracket weldment	1
006	23558	Washer — 11/32 flat	1	446	41393	Brush — D.C.	2
007	23605	Hex nut — 5/16-24	1	447	23607	Brush — A.C.	6
008	4637	Machine screw #10-24 × 3/8	4	455	23451	Stud	4
009	40746	Machine screw #8-32 × 5/16	18	460A	55423	Brush rack assembly (L)	1
				460B	55423-001	Brush rack assembly (R)	1
214	41984	Resistor - 4 ohm, 50 watts	1	461	41744	Riveted brush rack (L)	1
250	54023-001	Diode assembly	1	462	23500	Brush holder	6
401	55101	Fan	1	463	41221	Capacitor — A.C.	2
402	23197-007	Special arm retaining bolt	1	465	41744-001	Riveted brush rack (R)	1
411	54178	End bracket	1	466	41180	Capacitor — D.C.	1
430	55317	Armature	1	473		Not used on this model	
432	55223	Bearing	1	491	61701-001	End cover	1

Replacement Parts List for Model 3W057B

Ref. No.	Part No.	Description	Qty.	Ref. No.	Part No.	Description	Qty.
001	458	Nut — 5/16-18	4	441A	59146	Field coil (L)	1
002	480	Lockwasher — 5/16 split	5	441B	59146-001	Field coil (R)	1
003	54028	Capscrew — 7/16-14 × 1¼	4	442	42882	Pole shoe	2
004	91658-4	Capscrew — 3/8-16 × 1¾	6	443	61438	Pole shoe retainer	2
005	40552	Lockwasher — 11/16 int. tooth	1	444	61699	Field shell and bracket weldment	1
006	23558	Washer — 11/32 flat	1	446	47683	Brush — D.C.	2
007	23605	Hex nut — 5/16-24	1	447	55536	Brush — A.C.	9
008	4637	Machine screw #10-24 × 3/8	4	455	51434	Stud	4
009	40746	Machine screw #8-32 × 5/16	18	460A	52374	Brush rack assembly (L)	1
				460B	52374-001	Brush rack assembly (R)	1
214		Not used on this model		461	47684	Riveted brush rack (L)	1
250	54729	Heat sink	1	462	59690	Brush holder	9
401	23404	Fan	1	463	41221	Capacitor — A.C.	2
402	23197-12	Special arm retaining bolt	1	465	59847	Riveted brush rack (R)	1
411	54025	End bracket	1	466	41180	Capacitor — D.C.	1
430	61437	Armature	1	473	59688	Barrier/spacer	9
432	50215	Bearing	1	491	61701-001	End cover	1

**ORDER REPLACEMENT PARTS
THROUGH DEALER FROM WHOM
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Please provide following information:

- Model Number
- Serial Number (if any)
- Part Description and Number as shown in parts list.

If dealer cannot supply, order from:

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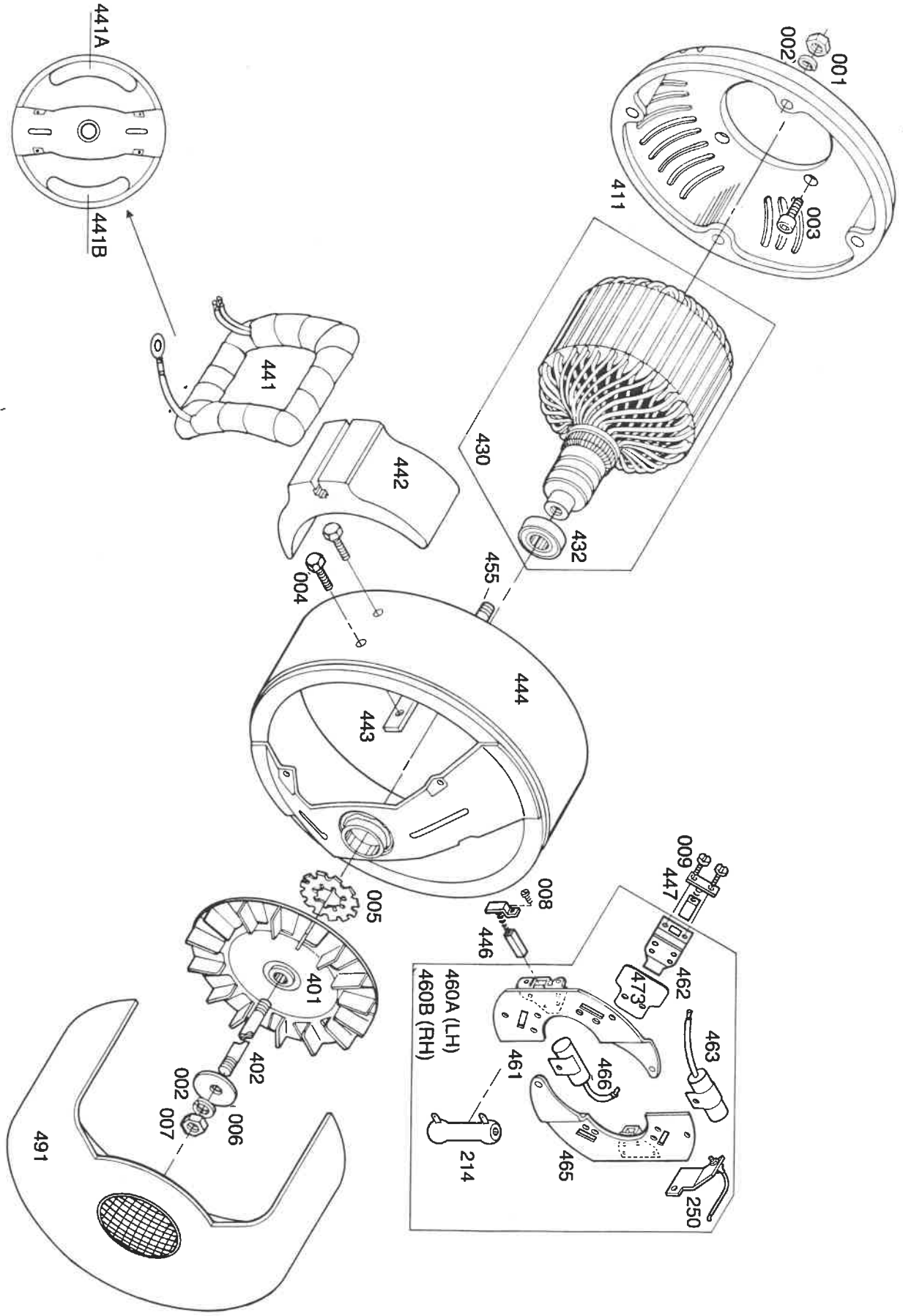


Figure 10 — Models 3W056B & 3W057B Exploded View

**Replacement Parts List for Models 3W056B & 3W057B
Back Panel Assembly**

Ref. No.	Part No. for Models:		Description	Qty.	Ref. No.	Part No. for Models:		Description	Qty.
	3W056B	3W057B				3W056B	3W057B		
212	61455	61559	Back panel only	1	316A	61695	61695	Auxiliary switch (elect. interlock)	2
307	59944-006	59944-006	Relay (S.S.R.) D.P.D.T. 240 vac	1	321	51060	51060	Reverse current diode	1
312	92065 92605	92065 92605	Relay (S.C.R.) 240 vac	1	322	*	54599	Resistor 25 ohm/100 w	2
313	23635	23635	Resistor 750 ohm variable	1	323	24601	24601	Start solenoid	1
316	61694 ARROW PART REC-46420Z2	61694	Contactors 4 P.D.T. @ 40 amps (ATS)	1	346	48525	48525	Thermal delay timer (T.D.R.)	1
					933	61587	61587	Bracket	1

*Not used on Model 3W056B

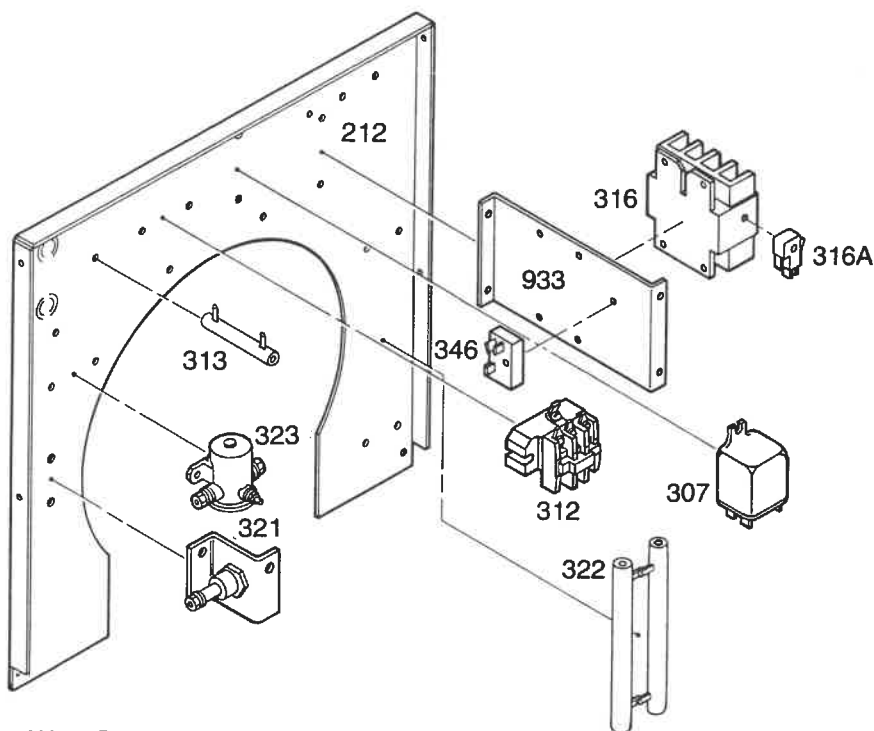


Figure 11 — Models 3W056B & 3W057B Back Panel Assembly

**Replacement Parts List for Models 3W056B & 3W057B
Front Panel Assembly**

Ref. No.	Part No.	Description	Qty.
249	61456	Front panel only	1
303	57946	Mode selector switch	1
309	48585	Thermal delay timer (O.C.R.)	1
341	61222	Trickle charger assembly	1

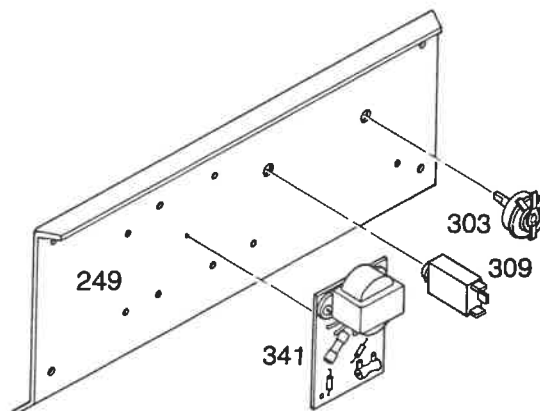


Figure 12 — Models 3W056B & 3W057B
Front Panel Assembly