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Onan

Parts Manual

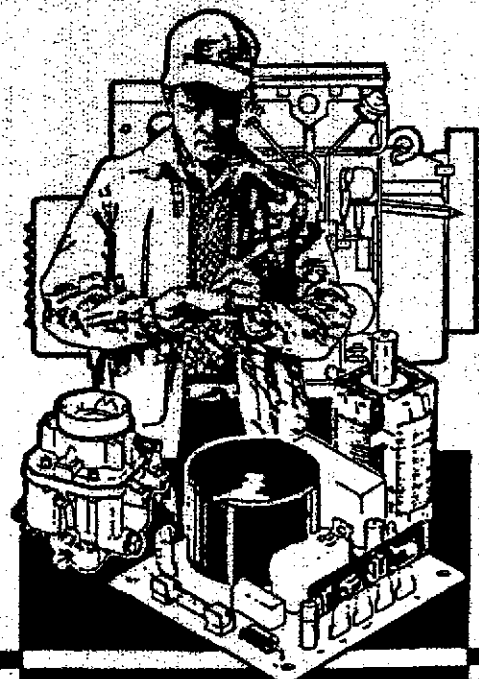
DB Series

DC Series

DM Series

330 - 450 kW

GEN SETS



Onan Service Parts

903-0205

6-88 (Spec A & B)

Printed in U.S.A.

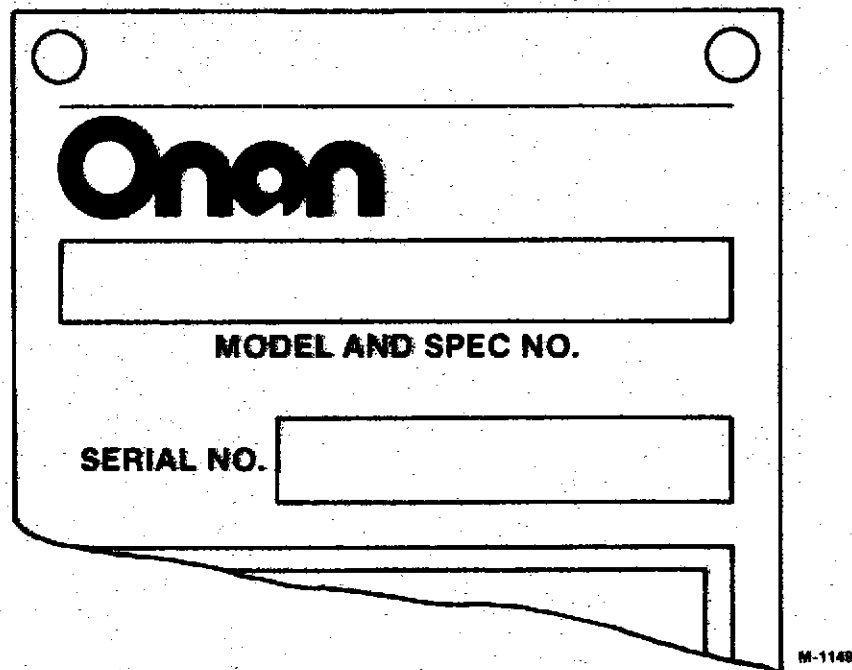


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General Information

For parts or service, contact the dealer from whom you purchased this equipment or refer to your Nearest Authorized Onan Parts and Service Center.

To avoid errors or delay in filling your parts order, always give the MODEL, SPEC NO. and SERIAL NO. from the Onan nameplate.



A rectangular nameplate template with rounded corners and two circular mounting holes at the top. The word "Onan" is printed in a large, bold, sans-serif font. Below it is a horizontal rectangular box. Underneath that box, the text "MODEL AND SPEC NO." is printed. Below this text is another horizontal rectangular box. To the left of this box, the text "SERIAL NO." is printed. The bottom right corner of the nameplate is folded over. The identifier "M-1149" is printed in the bottom right corner of the template.

For handy reference, insert "YOUR" nameplate information in the spaces above.

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Introduction

This Parts Manual applies to the Standard Gen Sets Listed below. The illustrations are arranged in groups of related items, and each part or assembly is identified by a Reference Number. All parts illustrated are typical, and unless otherwise mentioned in the description column the parts are interchangeable between models.

These typical illustrations are subject to change and reflect only the latest replacement parts arrangement. The Right and Left sides of the Set are determined by FACING the FRONT (Engine end) of the Set.

Set Data Table

MODEL IDENTIFICATION	RATING	RPM RATING	BATTERY VOLTAGE
330.0D_EB - */ # @	330,000 WATTS	1500 RPM	24 VDC
400.0D_EB - */ # @	400,000 WATTS	1800 RPM	24 VDC
400.0D_FA - */ # @	400,000 WATTS	1500 RPM	24 VDC
450.0D_FA - */ # @	450,000 WATTS	1800 RPM	24 VDC

- * - Voltage Codes follow Model Letter designations.
- # - Specification Number: Number 1 is Standard, all others indicate variations.
- @ - Specification Letter: Letter advances (A to B, B to C, etc) with major manufacturing changes.

Electrical Data Table

*VOLTAGE CODE	VOLTS	HERTZ	WIRE	PHASE	NOTES
H	347/600	60	4	3	
L	120/208	60	12	3	+
	127/220	60	12	3	
	139/240	60	12	3	
	240/416	60	12	3	
	254/440	60	12	3	
	277/480	60	12	3	
Z	110/190	50	12	3	+
	115/200	50	12	3	
	120/208	50	12	3	
	127/220	50	12	3	
	220/380	50	12	3	
	230/400	50	12	3	
	240/416	50	12	3	
	254/440	50	12	3	

+ - The Stators are Reconnectible.

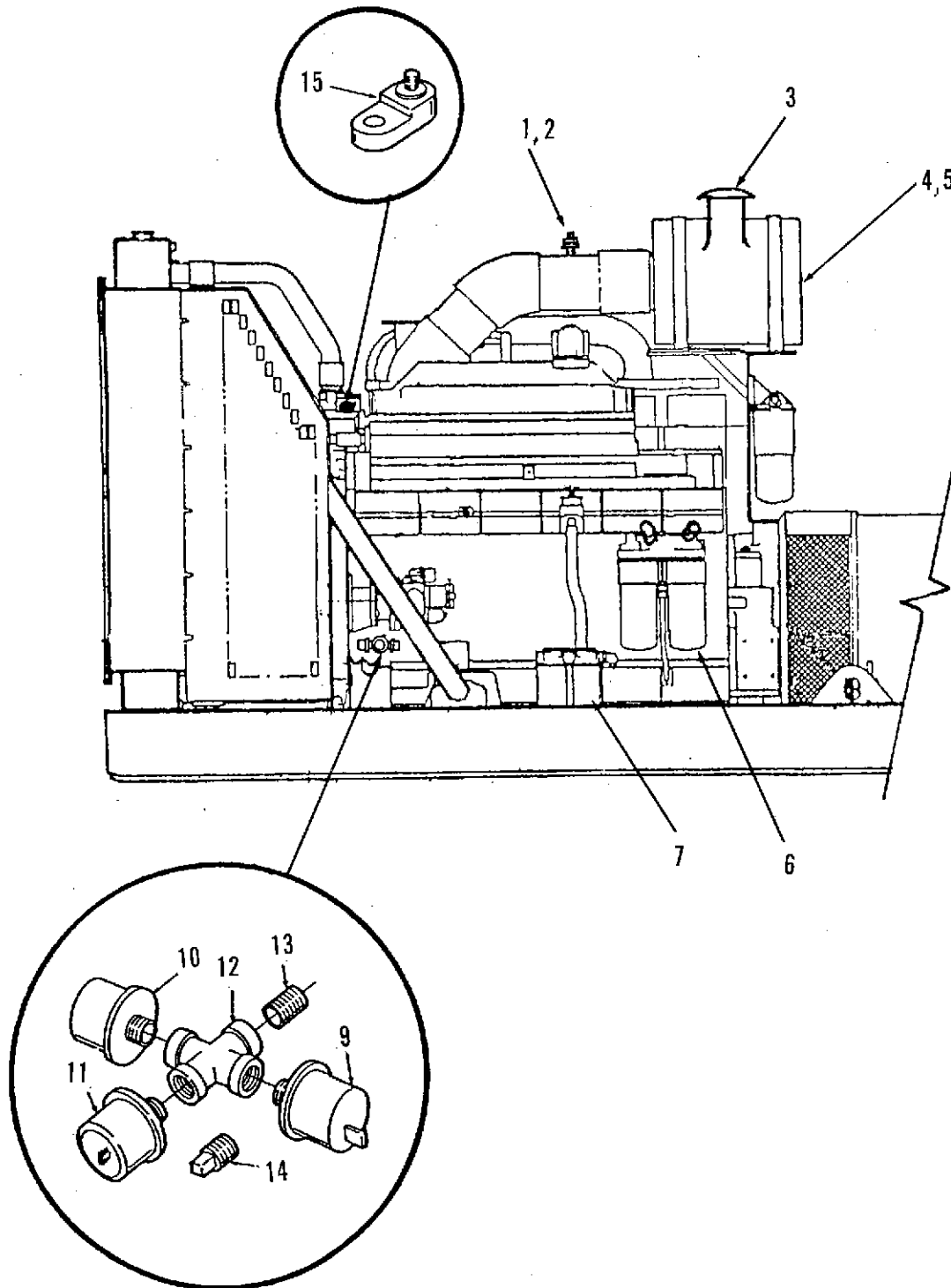
Engine Replacement Parts

The External Engine Components added or modified during the Generator Set Assembly have been identified in this Parts Manual. For Internal Engine Parts and External Engine Accessories not covered herein; refer to the applicable Cummins Engine Parts Catalog.

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External Engine Components Right Side



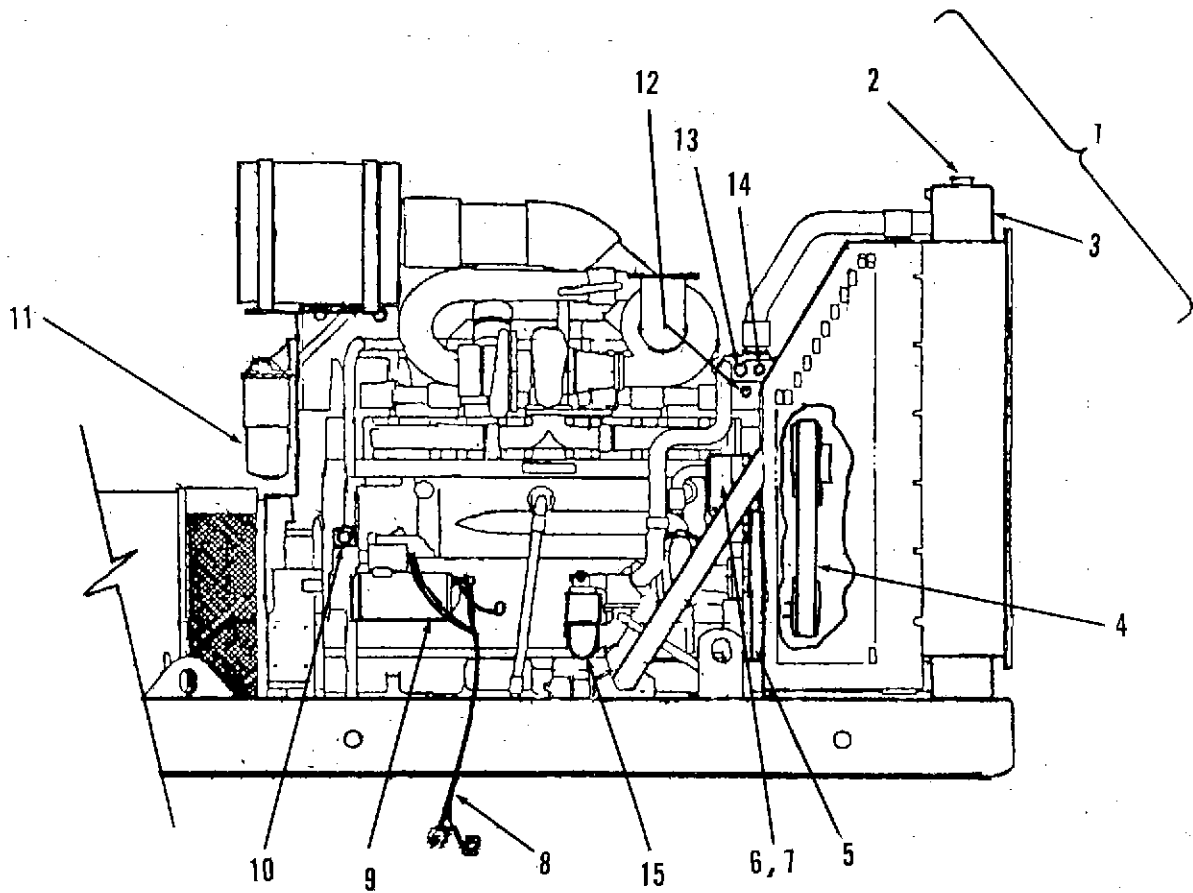
External Engine Components Right Side

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	140-2226	1	Indicator, Air Restriction (Includes Fitting)	6		2	Filter, Oil (CEC#3313279) [LF670]
2	140-1260	1	Fitting, Male - Hex	7		2	Filter, Fuel with Drain Plug (CEC# 3315847) [FF1050]
3		1	Cap, Air Cleaner	9	309-0272	1	Switch, Pressure - Oil - Alarm (S5)
	140-1545	1	Outdoor (CEC# 3017003)	10	193-0244	1	Sender, Pressure - Oil (E1)
4		1	Heavy Duty (CEC# 3013238)	11	309-0169	1	Switch, Pressure - Oil - Shutdown (S1)
	140-2264	1	Cleaner, Air	12	505-0763	1	Cross, Pipe
		1	Indoor (CEC# 3028847)	13	505-0104	1	Nipple, Pipe - Close
		1	Outdoor (CEC# 3017002)	14	505-0057	1	Plug, Pipe - Square Head
	140-2301	1	Heavy Duty (CEC# 3056713)	15	309-0269	1	Switch, Temperature - Low Engine Temperature (S4)
5		1	Element - Indoor/Outdoor				
		1	(CEC# 3018042) [AF872M]				
		1	Elements - Heavy Duty				
		1	Primary (CEC#3060220)				
		1	Secondary (CEC# 3060221)				

NOTES:

(CEC#) Numbers in Parans are Cummins Engine Company Identification.
 [] Numbers in Brackets are Fleetwood Inc. Identification.

External Engine Components Left Side



External Engine Components Left Side

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1		Ref	@Cooling System - Radiator (Select replaceable items as required)	8			Cable, Electrical
			Spec A		416-0632	1	Ground
					416-0636	1	Battery (Positive)
					416-0639	1	Battery (Negative)
					416-0473	1	Battery (Jumper)
		1	D_EB (BEARWARD # 53902-3PA)	9	191-1588	1	Starter (24 VDC)
		1	D_FA (BEARWARD # 53903-3P)	10	307-2621-02	1	Switch, Magnetic
			Spec B	11	122-0526	1	Filter, Oil - Bypass
		1	D_EB (BEARWARD # 53902-2P)	12			Switch & Bushing
		1	D_FA (BEARWARD # 53903-3PA)		309-0436	1	Switch, Thermostatic (S6) (Prealarm)
	503-0998	4	Clamp, Hose		505-0117	1	Bushing, Reducer - Flush (1/2NPT x 3/8NPT)
	503-0625	2	Hose - Upper				Sender & Bushing
	130-3383	2	Tube, Water - Upper	13	192-0375	1	Sender, Temperature (E2)
	503-0885	4	Clamp, Hose		505-0021	1	Bushing, Reducer (3/4NPT x (1/2NPT)
	503-0856	2	Hose - Lower				Switch & Bushing
	130-3384	2	Tube, Water - Lower				Switch, Thermostatic (S2) (Shutdown)
2	130-3395	1	Cap, Radiator (10 PSI)	14	309-0437	1	Bushing, Reducer - Flush (1/2NPT x 3/8NPT)
3			Radiator (Excludes Cap)		505-0117	1	*Filter, Water - W/Corrosion Inhibiting Chemical DCA4
			Spec A				Service for 20-40 Gal Cooling System (CEC# 3318157)[WF2070]
	130-3282	1	D_EB				Service for 40-60 Gal Cooling System (CEC# 3315116)[WF2071]
	130-3283	1	D_FA				Pre-Charging for 20-90 Gal Cooling System (CEC# 3318319) [WF2076]
			Spec B	15			
	130-3398	1	D_EB				
	130-3499	1	D_FA				
4	511-0162	1	Belt, Drive - Fan			1	
5	511-0161	1	Belt, Drive - Alternator			1	
6	191-1846-01	1	Alternator (35 Amp, 24 VDC)			1	
7	130-3317-01	1	Pulley, Drive			1	

NOTES:

@ Cooling Systems Manufactured by:
BEARWARD ENGINEERING LTD.
Main Road, Far Cotton
Northampton, England NN4 9HU

USA Office:
BEARWARD RADIATOR
Route 222 Box 187
Fleetwood, PA 19522
215-944-6017

* Replacement cartridges recommend and should be used in lieu of the Original Engine Factory Installed Item which contains a Pre-Charge amount of DCA or DCA4 Chemical. Replacement with Pre-charge Cartridge may overload the Cooling System and cause problems or failure of the Set.

(CEC#) Numbers in Parans are Cummins Engine Company Identification.
[] Numbers in Brackets are Fleetwood Inc. Identification.

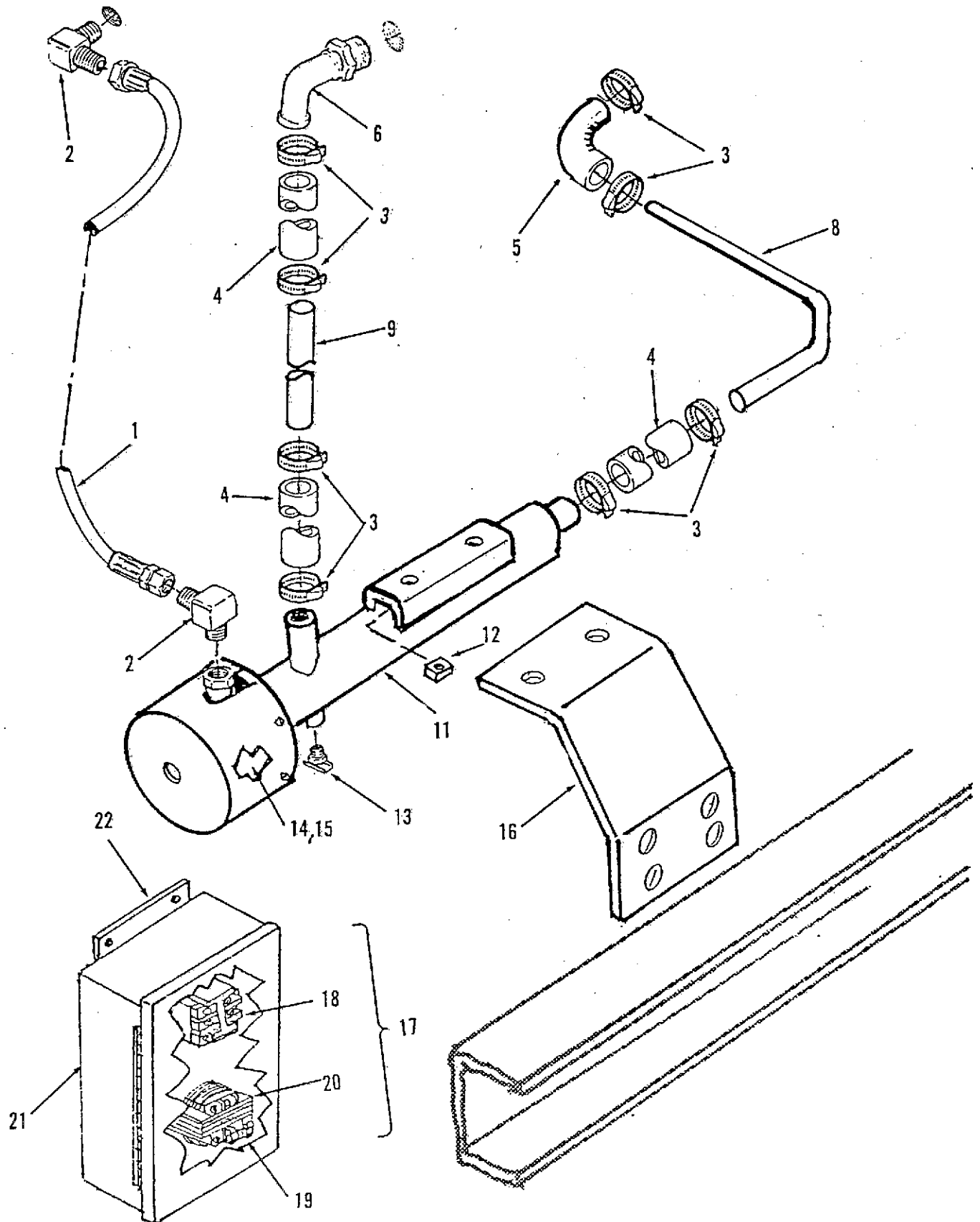


Engine Coolant Heater (Kim Type)

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	501-0199	1	Line, Fuel	20	333-0224	1	Bracket, Support
2	505-0037	1	Elbow, Pipe - 90°		800-0007	4	Attaching Parts for Bracket
3	505-0098	1	Nipple, Pipe - Close				Screw, Cap - Hex Head
4	502-0193	2	Connector		850-0040	4	(1/4-20 x 1")
5	505-0007	1	Bushing, Reducer - Hex		862-0001	4	Washer, Lock - Spring (1/4"
6	502-0054	1	Elbow, Pipe - Street, 90°			4	Nut, Hex (1/4-20)
7	503-0429	4	Clamp, Hose	21			Contactor
8	503-1411	AR	Hose, Bulk		307-1460	1	230 VAC, 3 Pole
9	505-0759	3	Adapter, Hose to Pipe		307-1164	1	460 VAC, 3 Pole
10	505-0041	2	Elbow, Pipe - 90°	23	130-1375	2	Bracket, Mounting
11	505-0004	3	Nipple, Pipe - Close		800-0052	2	Attaching Parts for Bracket
12	505-0324	1	Nipple, Pipe - Half				Screw, Cap - Hex Head
13	505-0132	1	Elbow, Pipe - 90°		862-0003	2	(3/8-16 x 1-1/2")
14	505-0102	1	Nipple, Pipe - Close		504-0003	1	Nut, Hex (3/8-16)
15	331-0027	6	Clamp, Cable	24		1	Cock, Drain
16	323-0957	2	Nut, Wire	25			Heater, Electrical
17	332-0149	8	Lug, Terminal		333-0143	1	4000 Watt, 208 VAC - 1 Phase
18			Switch, Thermostatic		333-0164	1	4000 Watt, 208 VAC - 3 Phase
	309-0304	1	80° - 100° Fahrenheit		333-0138	1	4000 Watt, 240 VAC - 1 Phase
	309-0490	1	100° - 120° Fahrenheit		333-0190	1	4000 Watt, 240 VAC - 3 Phase
	309-0253	1	120° - 140° Fahrenheit		333-0150	1	4000 Watt, 277 VAC - 1 Phase
19	309-0307	1	Switch, Pressure - Oil		333-0183	1	4000 Watt, 380 VAC - 1 Phase
			Attaching Parts for Switch		333-0174	1	4000 Watt, 380 VAC - 3 Phase
	812-0079	4	Screw, Machine - Round Head		333-0161	1	4000 Watt, 480 VAC - 1 Phase
			(#8-32 x 1/2")		333-0144	1	4000 Watt, 480 VAC - 3 Phase
	854-0007	4	Washer, Lock - ET (#8)				

AR : As Required, Bulk Hose available in Multifoot lengths.

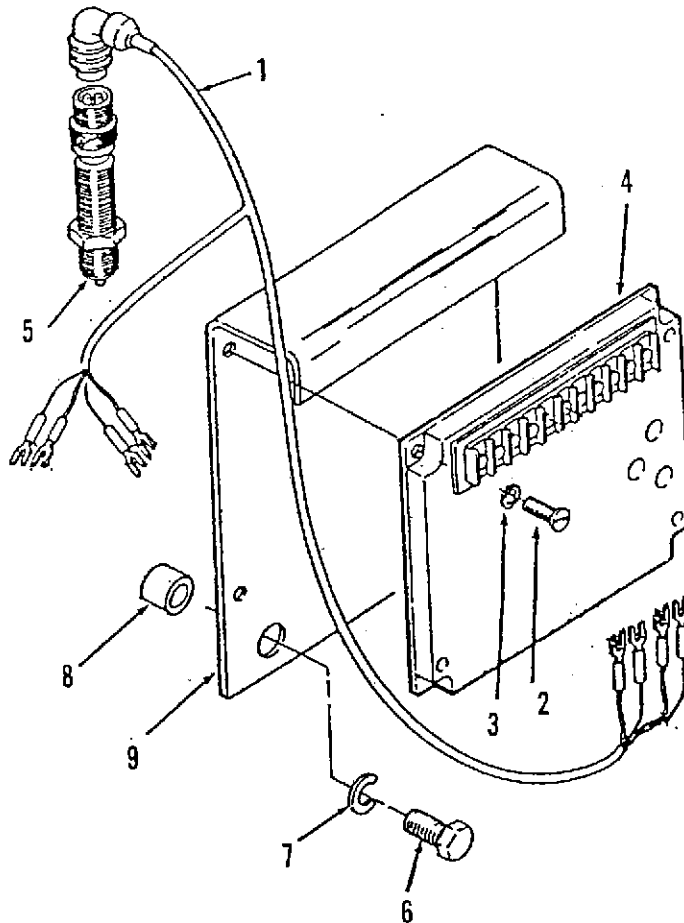
Engine Coolant Heater (Watlow Type)



Engine Coolant Heater (Watlow Type)

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	501-0537-07	1	Hose Assembly - Oil Pressure	16	130-3189	1	Bracket, Mounting - Heater
2	502-1043-08	2	Elbow, Pipe - Male, 90°				Attaching Parts for Bracket
3	503-1603	8	Clamp, Hose		800-0210	4	Screw, Cap - Hex Head (3/8-16 x 1-1/4")
4	503-1602	3	Hose, Rubber		850-0103	4	Washer, lock - Spring (3/8")
5	503-1604	1	Elbow, Hose - Rubber		871-0028	4	Nut, Hex - Brass (3/8-16)
6	502-1049		Coupling, Hose - Elbow, 45°				Switch, Control - Heater (Includes Contactor, Step-down Transformer w/ Fuse [480V Unit Only], Ground Lug and Box)
8	130-3269	1	Tube, Water	17			120 VAC
9	130-3268	1	Tube, Water				480 VAC
11			Heater, Electrical (Includes Thermostat, Oil Press Switch, Drain Cock and Mounting Nuts)				Attaching Parts for Switch
	333-0413-08	1	4000 Watt, 208 VAC		309-0567-01	1	Screw, Cap - Hex Head (1/4-20 x 3/4")
	333-0389-02	1	4000 Watt, 240 VAC		309-0567-02	1	Washer, lock - Spring (1/4")
	333-0389-04	1	4000 Watt, 480 VAC (Includes Heater Control Switch Unit)		800-0222	4	Nut, Hex (1/4-20)
	333-0389-06	1	4000 Watt, 120 VAC (Includes Heater Control Switch Unit)		850-0101	4	Contactor (37.5 AMP, 3 Pole, SPST, 120 VAC Coil)
			Attaching Parts for Heater		862-0031	4	Fuse (1 AMP)
	800-0222	2	Screw, Cap - Hex Head (1/4-20 x 3/4")	18		1	Transformer, Step-down (240/480VAC Pri, 120VAC Secondary, with Fuse clips on output Terminals)
	850-0101	2	Washer, lock - Spring (1/4")	19		1	Box, Electrical
	402-0608	2	Isolator, Vibration	20			Bracket, Mounting - Switch
	402-0609	2	Isolator, Vibration				Attaching Parts for Bracket
12		2	Nut, Special (Supplied with Heater)	21		1	Screw, Cap - Hex Head (3/8-16 x 1-1/4")
13	504-0003	1	Cock, Drain (1/4 NPT)	22	333-0390	1	Washer, lock - Spring (3/8")
14		1	Thermostat		800-0210	2	Nut, Hex - Brass (3/8-16)
15		1	Switch, Pressure - Oil		850-0103	2	
					871-0028	2	

Electric Governor



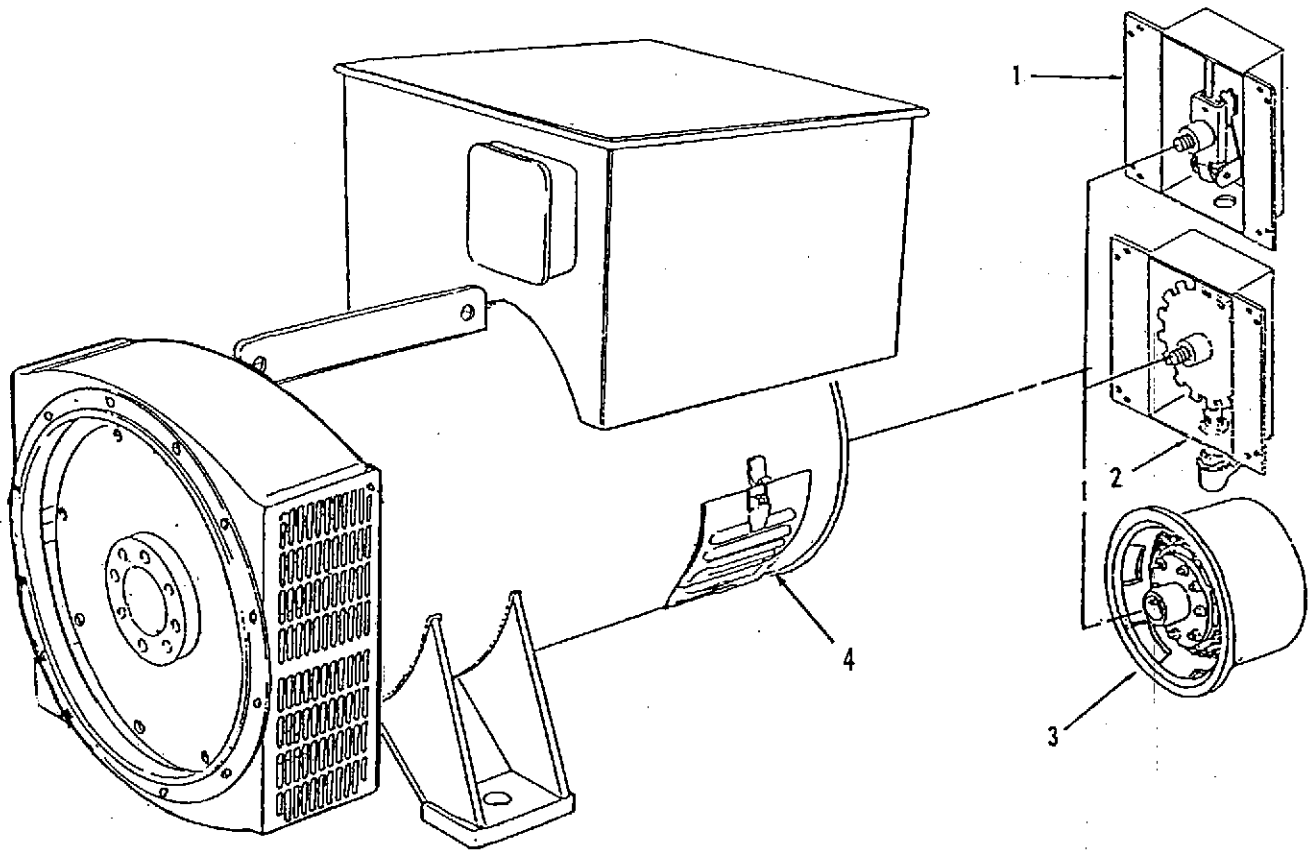
REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	338-1777	1	Harness, Wiring	5	151-0411	1	Pickup, Magnetic
2	813-0103	4	Screw, Machine - Round Head (#10-32 x 3/4")	6	800-0151	2	Screw, Cap - Hex Head (3/4-10 x 1")
3	870-0131	4	Nut, Self-locking, Hex (#10-32)	7	850-0079	2	Washer, Lock - Spring (3/4")
4	151-0637	1	Controller, Governor	8	370-4040	2	Spacer, Sleeve
				9	150-2007	1	Bracket, Mounting

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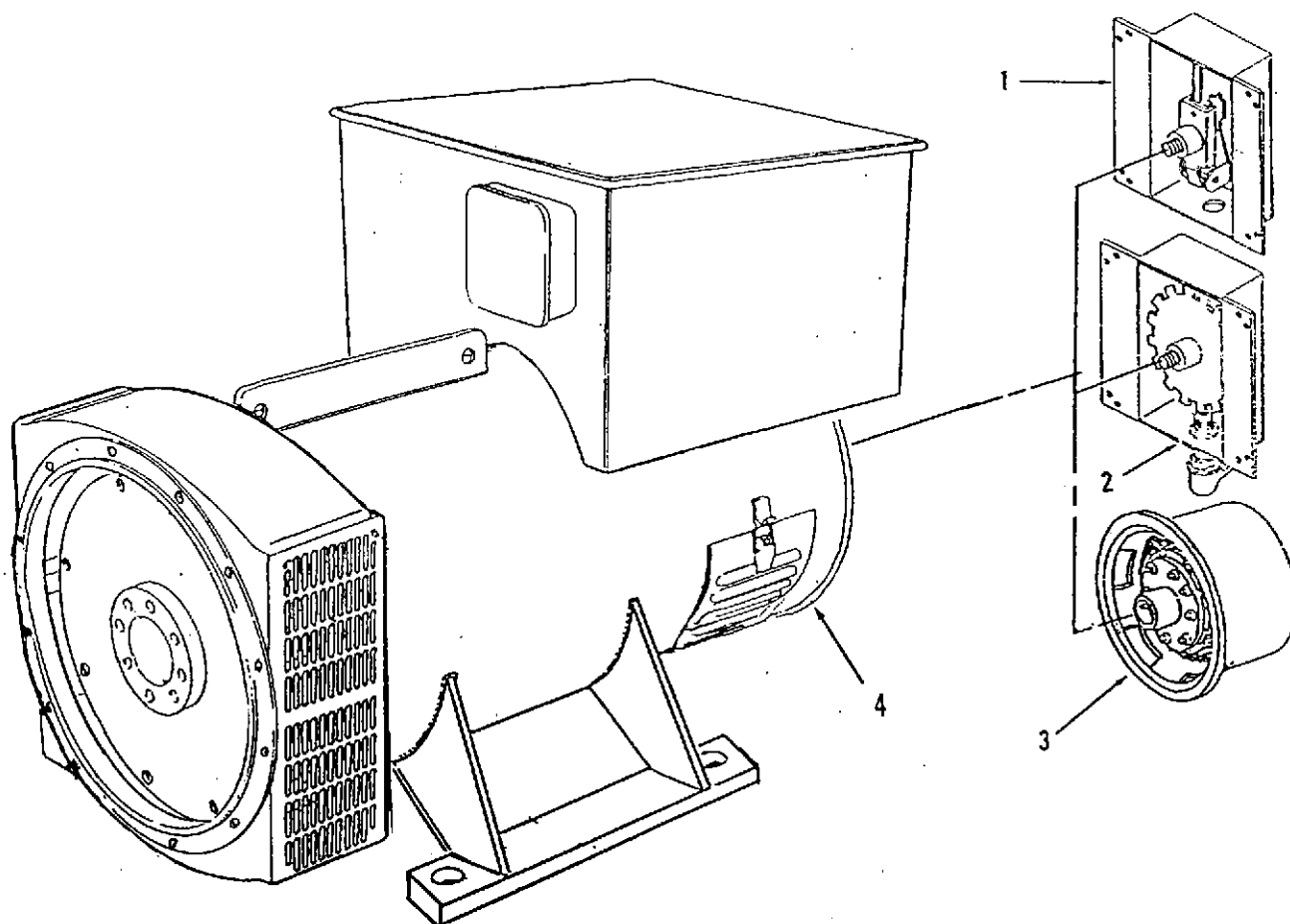
Generator Spec A



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1		1	Module, Overspeed Switch (See Separate Page for Parts)	4	Note 1		Generator (Spec A) (See Separate pages for Parts)
	821-2045	4	Screw, Self-locking - Hex Hd (M8 x 1.25 x 16mm)		800-0579	2	Screw, Cap - Hex Head (1-8 x 2-3/4")
2		1	Module, Overspeed Sensor (See Separate Page for Parts)		850-0087	2	Washer, Lock - Spring (1")
	821-2045	4	Screw, Self-locking - Hex Hd (M8 x 1.25 x 16mm)		526-0084	2	Washer, Flat (1")
3		1	Module, Perm. Magnet Exciter (See Separate Page for Parts)		862-0018	2	Nut, Hex (1-8)
	249-0298	4	Screw, Cap - Hex Head (M8 x 16mm)		800-0558	12	Adapter to Flywheel Housing Screw, Cap - Hex Head, Gr 8 (1/2-13 x 1-1/2")
	249-0218	4	Washer, Lock (M8)		850-0060	12	Washer, Lock - Spring (1/2")
	249-0315	4	Clamp, Retaining		800-0530	6	Drive Disc to Flywheel Screw, Cap - Hex Head, Gr 8 (5/8-11 x 1-1/4")

Note 1: For replacement Generator please supply the complete Gen Set nameplate and Generator nameplate data.

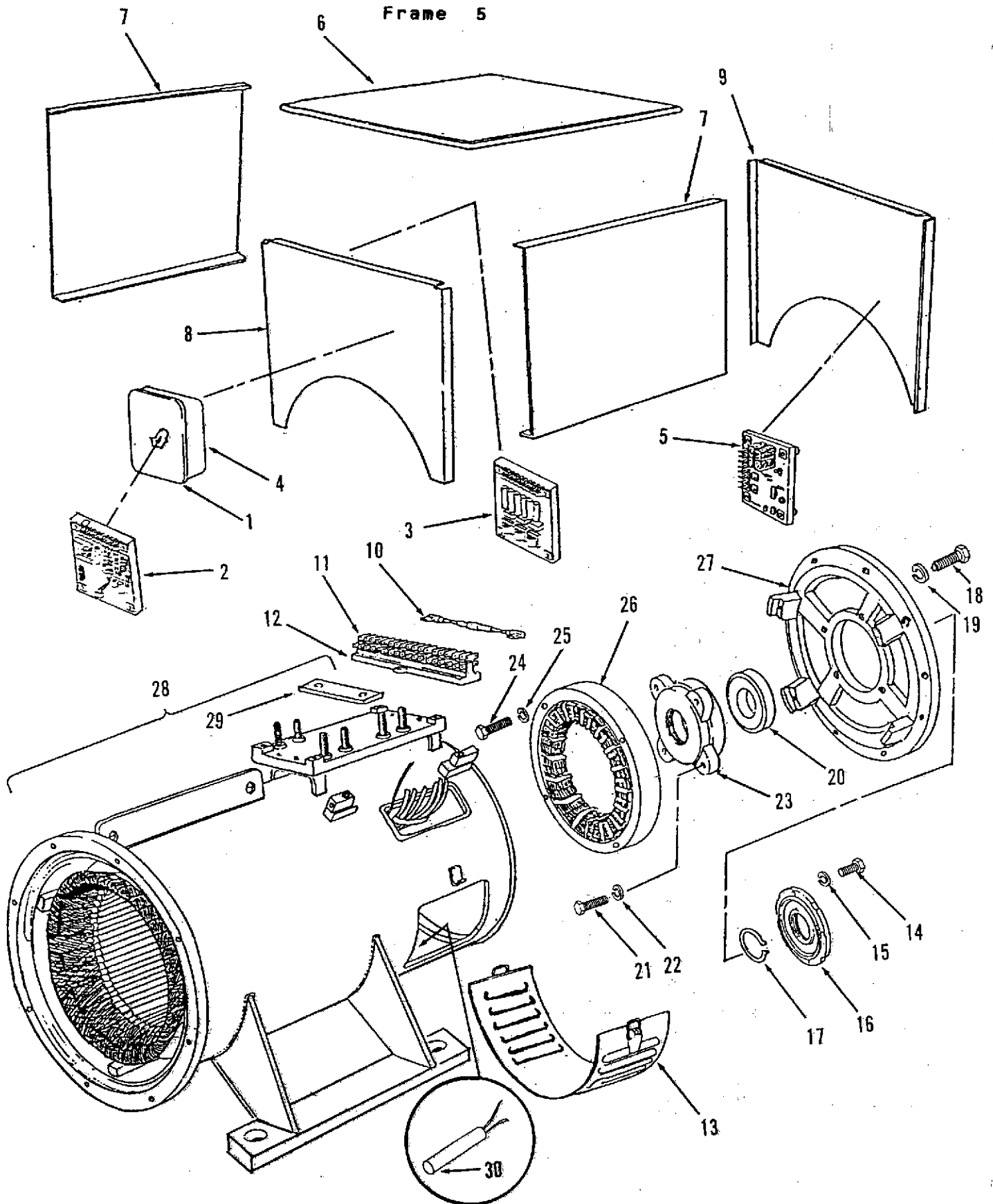
Generator Begin Spec B



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1		1	Module, Overspeed Switch (See Separate Page for Parts)	4	Note 1		Generator (Begin Spec B) (See Separate pages for Parts)
	821-2045	4	Attaching Parts Screw, Self-locking - Hex Hd (M8 x 1.25 x 16mm)		800-0579	4	Attaching Parts Generator to Chassis Screw, Cap - Hex Head (1-8 x 2-3/4")
2		1	Module, Overspeed Sensor (See Separate Page for Parts)		850-0087	4	Washer, Lock - Spring (1")
	821-2045	4	Attaching Parts Screw, Self-locking - Hex Hd (M8 x 1.25 x 16mm)		526-0084	4	Washer, Flat (1")
3		1	Module, Perm. Magnet Exciter (See Separate Page for Parts)		862-0018	4	Nut, Hex (1-8)
	249-0298	4	Attaching Parts Screw, Cap - Hex Head (M8 x 16mm)		800-0558	12	Adapter to Flywheel Housing Screw, Cap - Hex Head, Gr 8 (1/2-13 x 1-1/2")
	249-0218	4	Washer, Lock (M8)		850-0060	12	Washer, Lock - Spring (1/2")
	249-0315	4	Clamp, Retaining		800-0530	6	Drive Disc to Flywheel Screw, Cap - Hex Head, Gr 8 (5/8-11 x 1-1/4")

Note 1: For replacement Generator please supply the complete Gen Set nameplate and Generator nameplate data.

Generator Stator Section Frame 5

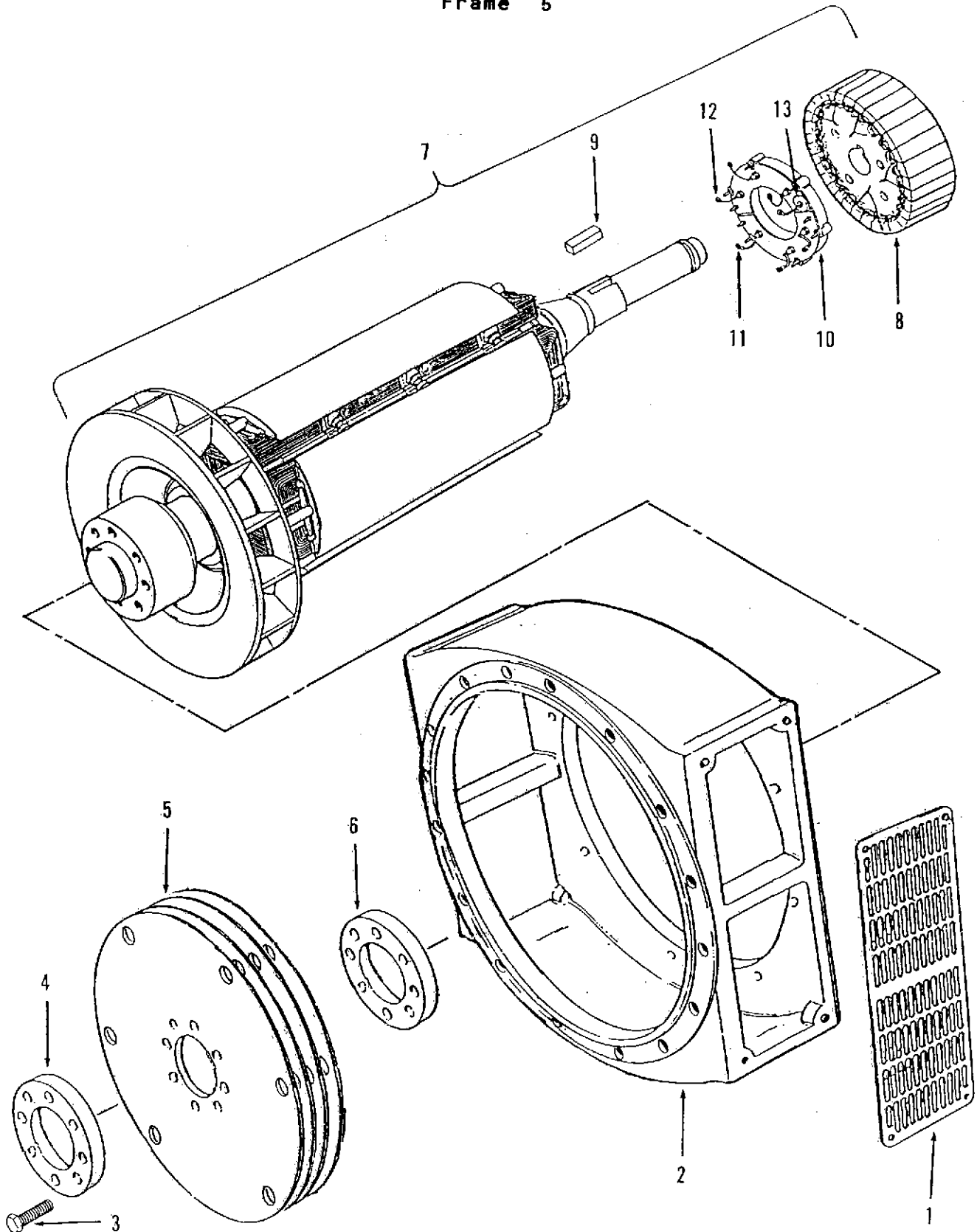


**Generator
Stator Section
Frame 5**

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	249-0631	2	Lid	14	249-0201	8	Screw, Cap - Hex Head (M10 x 35mm)
	249-0304	4	Attaching Parts Screw, Captive	15	249-0202	8	Washer, Lock - Spring (M10)
2			Regulator, Voltage	16	249-0242	1	Cap, Bearing - Outer
	305-0770	1	Standard 1 Phase u/w PMG	17	249-0232	1	Circlip
	305-0778	1	3 Phase (Used with PMG Exciter & 3 Phase Sensing Module)	18	249-0243	4	Screw, Cap - Hex Head (M10 x 30mm)
	305-0803	1	Manual	19	249-0202	4	Washer, Lock - Spring (M10)
	249-0398	4	Attaching Parts Pillar, Threaded	20	249-0241	1	Bearing, Ball
3	249-0564	1	Module, 3 Phase Sensing	21	249-0245	4	Screw, Cap - Hex Head (M10 x 50mm)
	249-0398	4	Attaching Parts Pillar, Threaded	22	249-0202	4	Washer, Lock - Spring (M10)
4	249-0395	2	Box	23	249-0244	1	Cap, Bearing - Inner
5	300-3209-02	1	Module, Frequency Detection	24	249-0256	6	Screw, Cap - Hex Head (M6 x 65mm)
	249-0295	4	Attaching Parts Screw, Cap - Hex Head (M5 x 35mm)	25	249-0212	6	Washer, Lock - Spring (M6)
	249-0288	4	Washer, Plastic (M5)	26	249-0255	1	Stator, Exciter
	249-0287	4	Nut, Hex - Nylon (M5)	27	249-0272	1	Bracket, End
6	NFS	1	Lid	28	NFS	1	Stator, Generator (Includes Terminal Studs and Links)
7	NFS	2	Panel, Side				Attaching Parts Stator to Adapter
8	NFS	1	Panel, Front		249-0268	8	Screw, Cap - Hex Head (M12 x 35mm)
9	NFS	1	Panel, Rear		249-0205	8	Washer, Lock - Spring (M12)
10	249-0428	1	Resistor (Voltage Code H Only)	29	249-0200	4	Link, Terminal
11	249-0289	3	Block, Terminal - AUX	30			Heater, Electrical - Replacement
12	249-0424	1	Base, Terminal - AUX		249-0621	1	70 Watt, 120 VAC
13	249-0408	2	Grille, Inlet - Air		249-0622	1	70 Watt, 240 VAC

NFS - Not For Sale

Generator
Rotor Section
SAE 0 / SAE 18
Frame 5

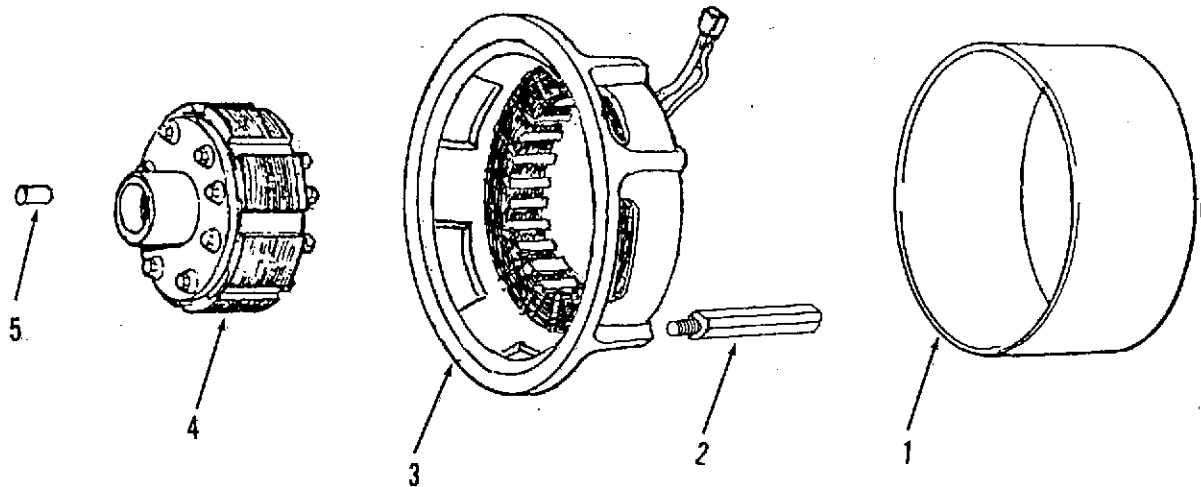


**Generator
Rotor Section
SAE 0 / SAE 18
Frame 5**

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	249-0408	2	Screen, Air - Adapter	7	NFS	1	Rotor, Generator (Includes
	249-0294	12	Attaching Parts Screw, Cap - Hex Head (M5 x 12mm)	8	249-0522	1	Exciter, Key, and Rectifier Assemblies)
	249-0307	12	Washer, Lock - Spring (M5)	9	249-0271	1	Rotor, Exciter (Does Not Include Rectifier Assy)
	249-0365	12	Washer, Flat (M5)	10	249-0237	1	Key
2	249-0322	1	Adapter, Generator SAE 0				Rectifier Assy (Includes Diodes)
3	249-0437	8	Screw, Cap - Hex Head (M20 x 75mm)	11	249-0239	3	Diode, Forward Polarity
4	249-0230	1	Plate, Pressure	12	249-0238	3	Diode, Reverse Polarity
5	249-0276	4	Disc, Drive SAE 18	13	249-0240	1	Varister
6	249-0277	1	Spacer				

NFS - Not For Sale

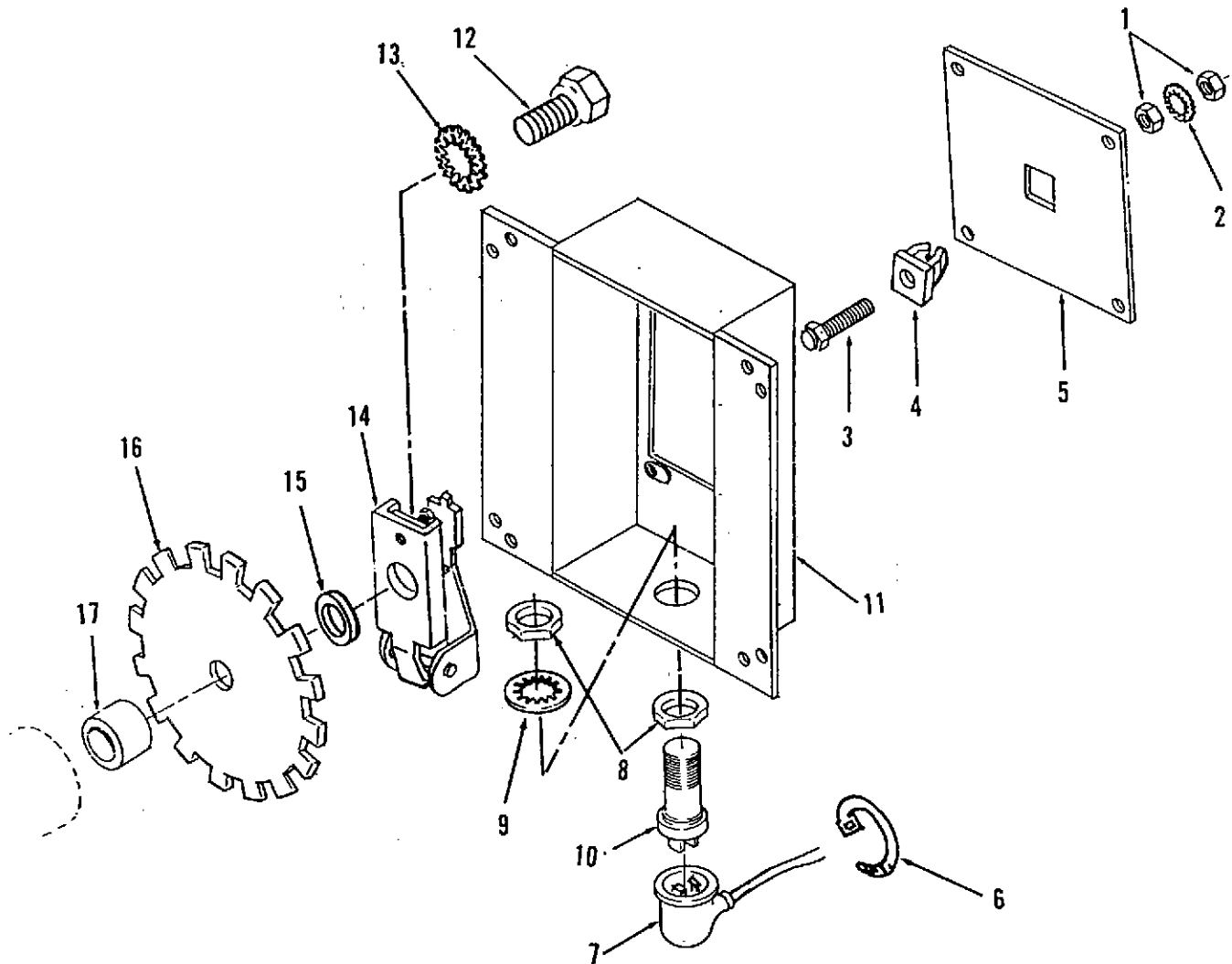
Generator Permanent Magnet Exciter



REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	249-0497	1	Cover
	249-0294	3	Screw, Cap - Hex Head (M5 x 12mm)
	249-0307	3	Washer, Lock (M5)
2	249-0496	3	Pillar, Threaded
3	249-0426	1	Stator, Exciter with Frame

REF NO.	PART NO.	QTY USED	PART DESCRIPTION
4			Rotor, Exciter
	249-0427	1	Frame 2, 3, 4 Generators
	249-0644	1	Frame 5, 6, 7 Generators
			Attaching Parts for Rotor
	249-0399	1	Bolt
	249-0202	1	Washer, Lock (M10)
5	249-0313	1	Pin, Dowel

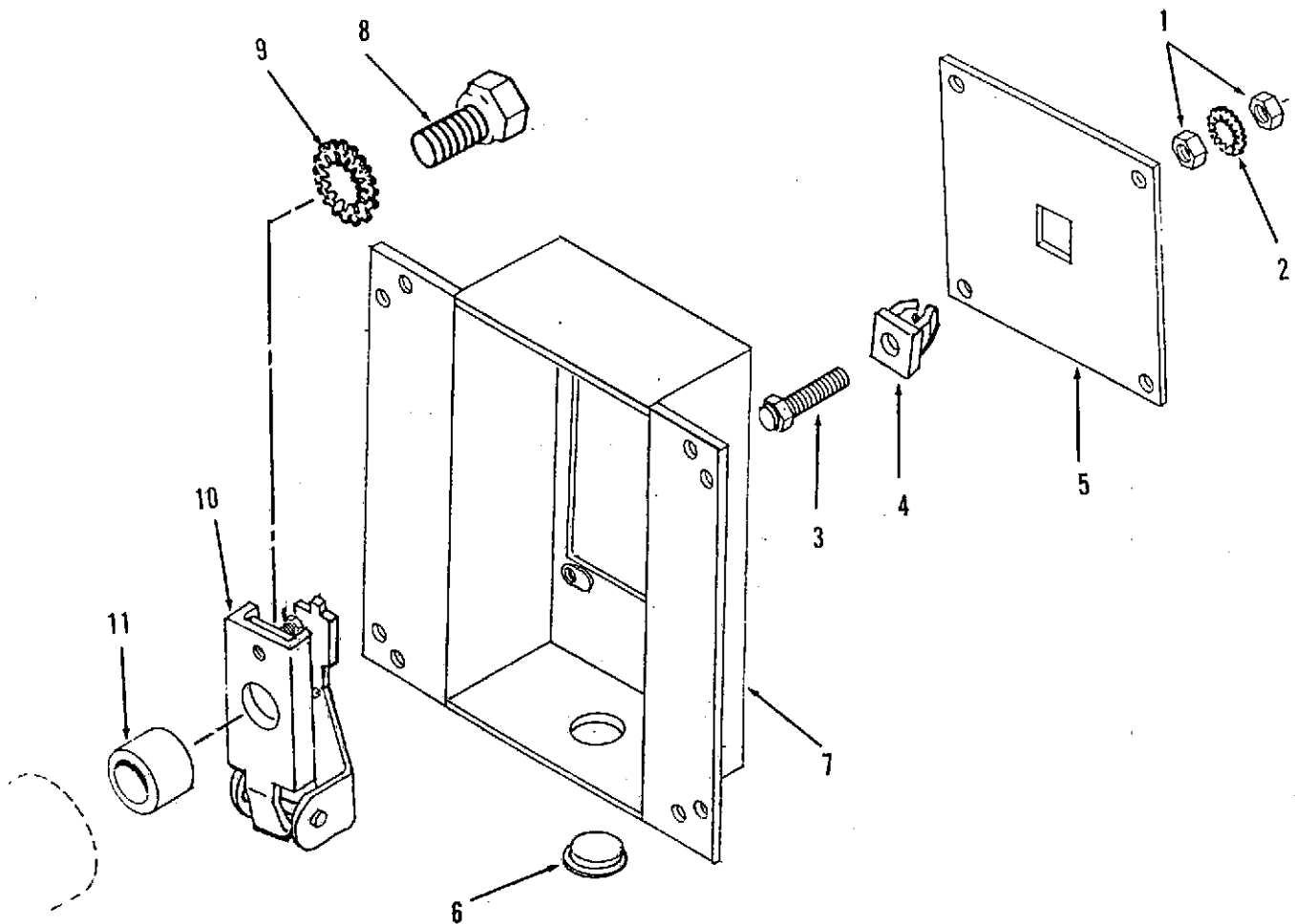
Generator Overspeed Sensor



REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	862-0001	2	Nut, Hex (1/4-20)
2	853-0013	1	Washer, Lock - EIT (1/4")
3	150-0723	1	Point, Overspeed
4	870-0250	1	Nut, Insulated
5	150-2206	1	Plate, Mounting
	821-0005	4	Screw, Self-locking - Hex (#10-32 x 1/2")
6	332-1445	5	Tie, Cable
7	338-2189-02	1	Harness, Wiring
8	868-0011	2	Nut, Jam - Hex (3/4-16)

REF NO.	PART NO.	QTY USED	PART DESCRIPTION
9	854-0031	1	Washer, Lock - IT (3/4")
10	150-1406	1	Sensor, Speed
11	150-2207	1	Cover, Overspeed Switch
12	718-1058	1	Screw, Cap - Hex Head (M10 x 1.5 x 45mm)
13	856-0010	1	Washer, Lock - EIT (3/8")
14	150-0956	1	Switch, Overspeed
15	370-4031	1	Spacer, Sleeve
16	150-2204	1	Wheel - Speed Sensor
17	370-4032	1	Spacer, Sleeve

Generator Overspeed Switch



REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	862-0001	2	Nut, Hex (1/4-20)
2	853-0013	1	Washer, Lock - EIT (1/4")
3	150-0723	1	Point, Overspeed
4	870-0250	1	Nut, Insulated
5	150-2206	1	Plate, Mounting
	821-0005	4	Screw, Self-locking - Hex (#10-32 x 1/2")

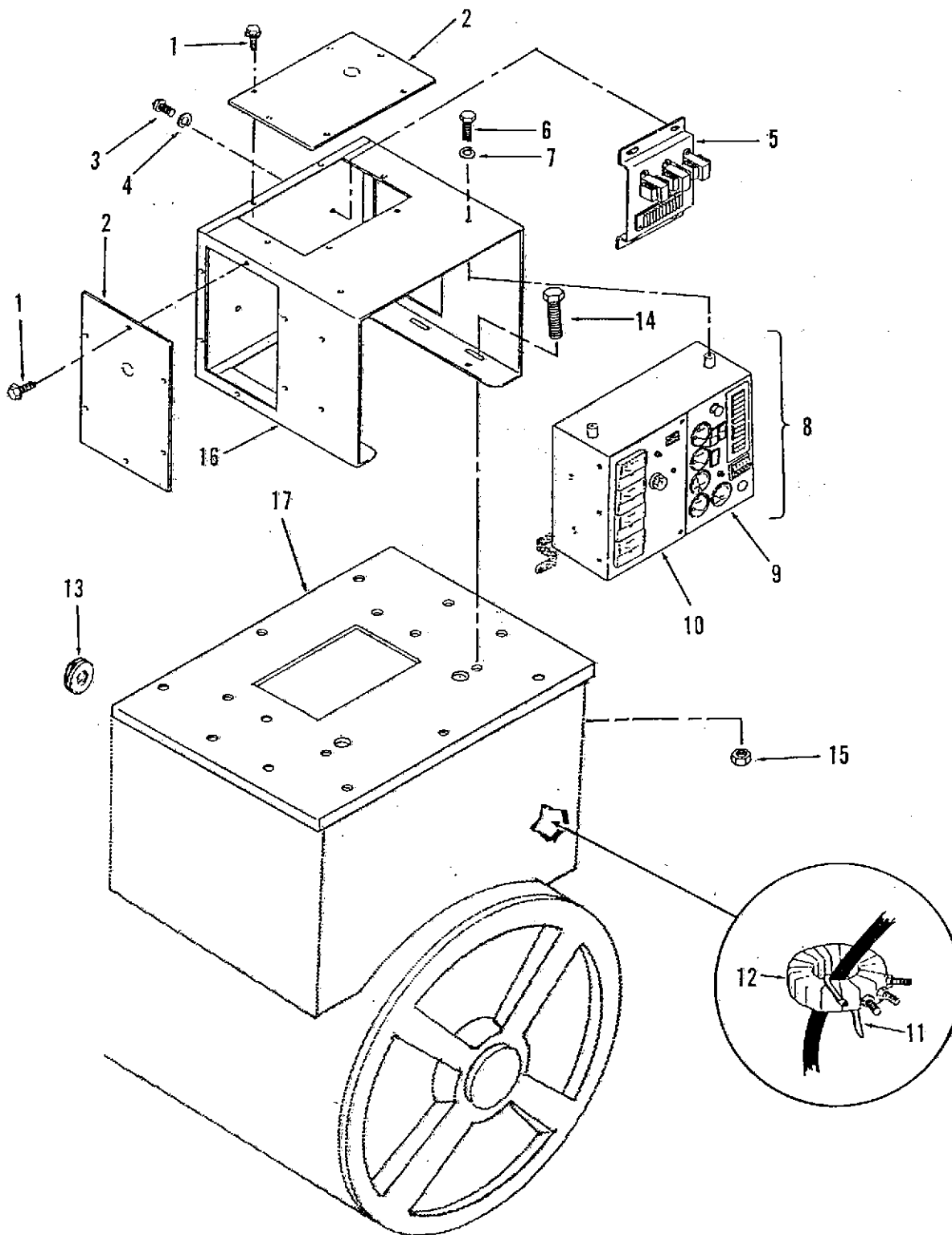
REF NO.	PART NO.	QTY USED	PART DESCRIPTION
6	517-0136	1	Plug, Plastic
7	150-2207	1	Cover, Overspeed Switch
8	718-1058	1	Screw, Cap - Hex Head (M10 x 1.5 x 45mm)
9	856-0010	1	Washer, Lock - EIT (3/8")
10	150-0956	1	Switch, Overspeed
11	370-4032	1	Spacer, Sleeve

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Generator Set Control (With Housing Enclosure)

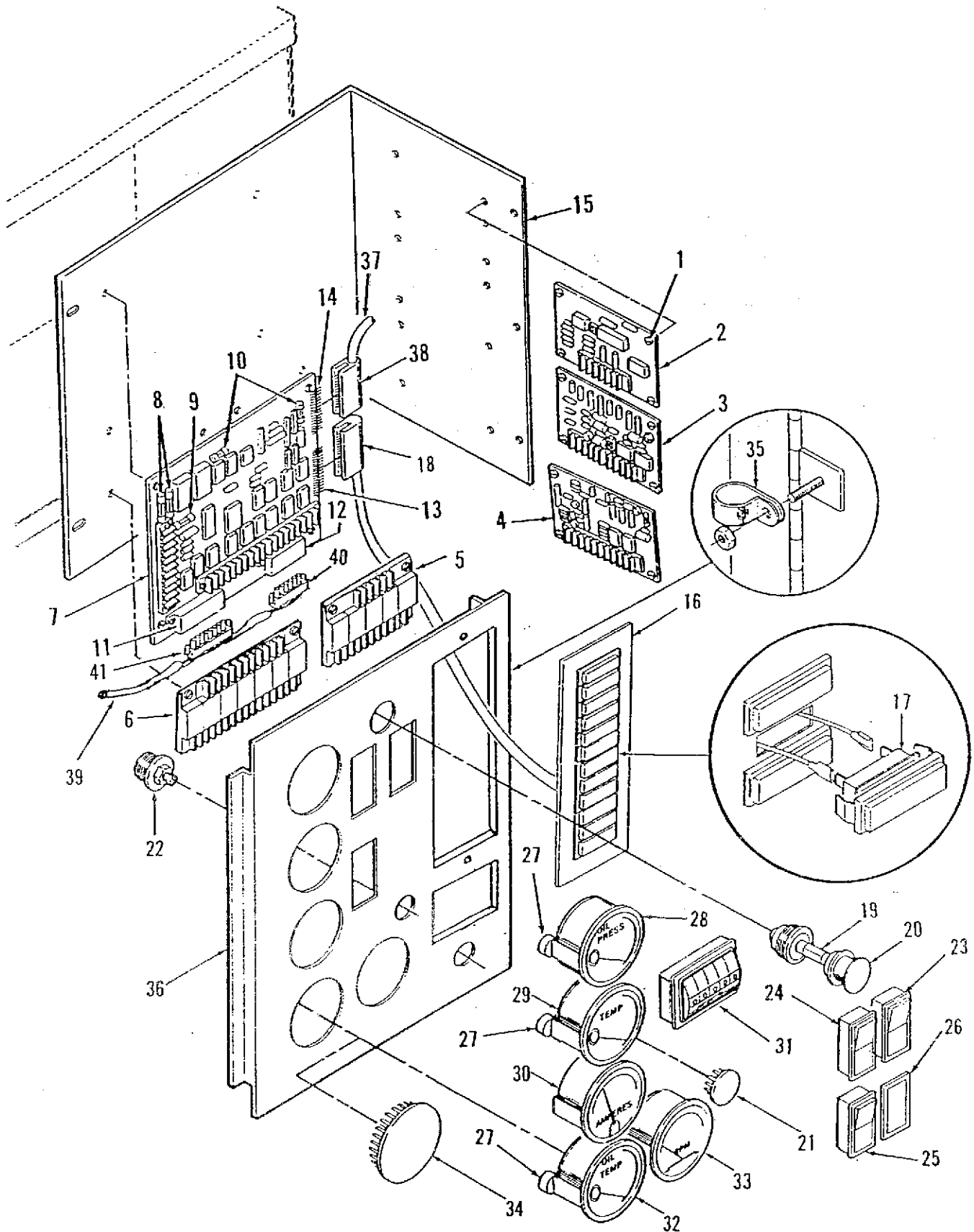


**Generator Set Control
(With Housing Enclosure)**

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	821-0005	18	Screw, Self-locking - Hex (#10-32 x 1/2")	11	332-0941	6	Tie, Cable
2	NFS	3	Panel, Box - Control	12			Transformer, Current - Recon- nectible
3	812-0156	4	Screw, Machine - Round Head (1/4-20 x 1/2")		303-1794-05	3	500:5 Ratio; 400kW Voltage Code H.
4	850-0040	4	Washer, Lock - Spring (1/4")		302-1794-10	3	600/1200:5 Ratio; 330kW Voltage Code Z.
5	NFS	1	Transformer Assy, Potential (See Separate Page for Components)		302-1794-11	3	750/1500:5 Ratio; 400kW Voltage Codes L & Z, 450kW Voltage Code H.
6	800-0051	4	Screw, Cap - Hex Head (5/16-18 x 1/2")		302-1794-12	3	1000/2000:5 Ratio; 450kW Voltage Code L.
7	850-0045	4	Washer, Lock - Spring (5/16")	13	508-0051	1	Grommet
8	NFS	1	Control, Set (See item 9 & 10 for Components)	14	870-0212	6	Nut, Self-locking - Hex
9	NFS	1	Control, Engine (See Separate Page for Components)	15	821-0018	6	Screw, Self-locking - Hex Head (1/4-20 x 5/8")
10	NFS	1	Control, Generator (See Sep- arate Page for Components)	16	NFS	1	Housing, Control
				17	NFS		Adapter, Housing to Terminal Box

NFS - Not For Sale

Engine Control Components (Sets with Housing Enclosure)

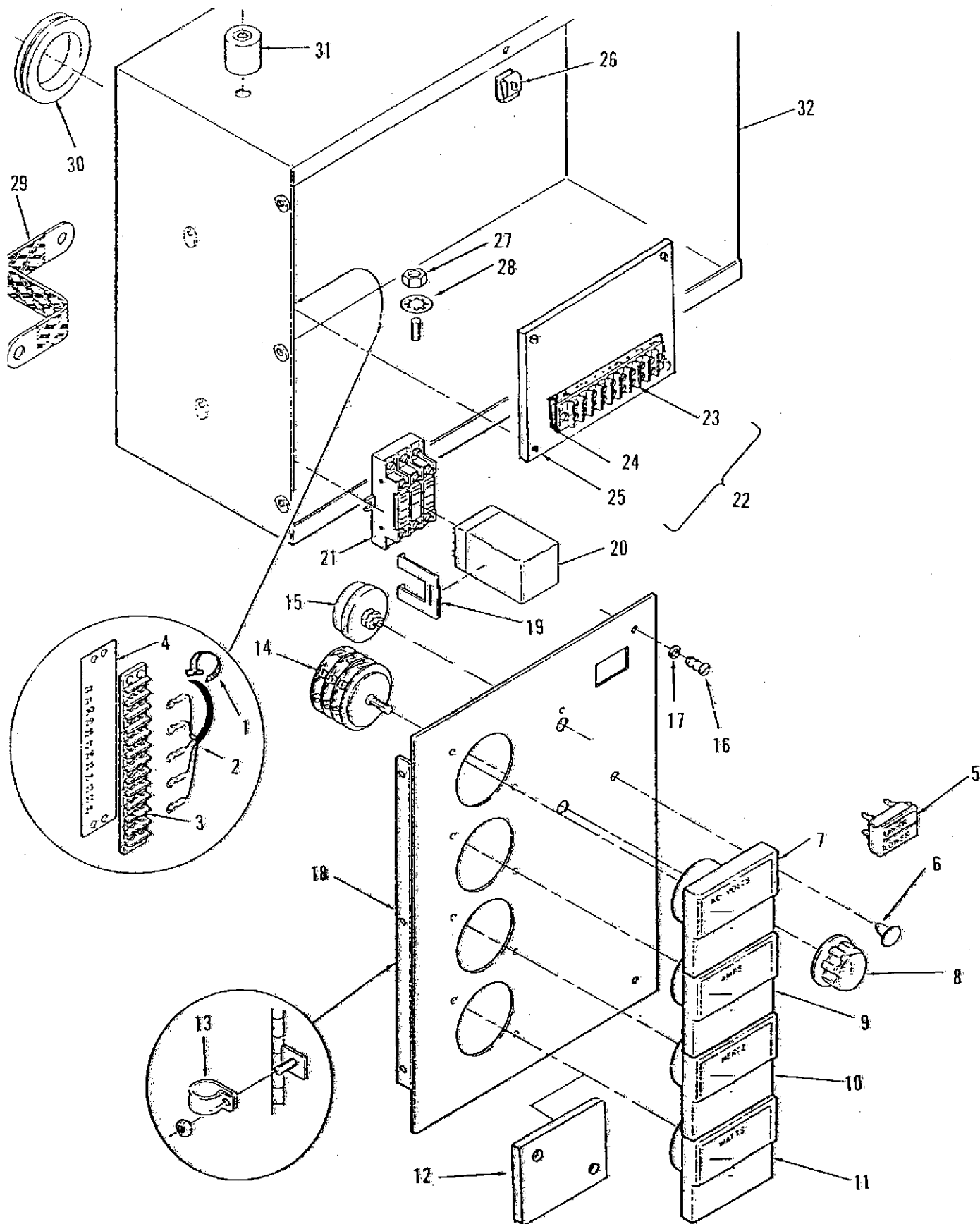


Engine Control Components (Sets with Housing Enclosure)

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	815-0544	24	Screw, Machine - Round Head - With IT Lock Washer (#6-32 x 1/2")	17	322-0369-02	12	Lamp, Incandescent - 1/3 Watt 28 VDC
2	300-2899	1	Board, Time Delay, Start/Stop - 24 VDC (A15)	18	323-1310	1	Housing, 13 Pin (J3)
3			Board, Magnetic Sensor, Start Disconnect/Over Speed Sensor (A16)	19	322-0017	1	Contact, Pin
	300-2903	1	Standard	20	322-0361	1	Lamp, Incandescent - 28 VDC (DS11)
	300-2904	1	Precision	21	517-0131	1	Holder, Lamp
4	300-2906	1	Board, Over-Under Voltage Sensor - 24 VDC (A17)	22	303-0280	1	Plug, Button
5	300-2856	1	Board, Relay - 24 VDC (A13)	23	308-0785	1	Potentiometer (R11)
6	300-2863	1	Board, Relay - 24 VDC (A14)	24	308-0784	1	Switch, Push (S11)
7			Board, Engine Monitor (A11) (Includes Fuses and Connectors)	26	301-6257	1	Switch, Push (S12)
	300-2808	1	24 VDC, 2 Light	27	193-0250	3	Cover
	300-2812	1	24 VDC, 12 Light	28	193-0352	1	Resistor, Gauge (R12)
8	321-0270	2	Fuse, Cartridge - 20 Amp (F1, F2)	29	193-0351	1	Gauge, Pressure - Oil (M11)
9	321-0231	1	Fuse, Cartridge - 15 Amp (F3)	30	302-1790	1	Gauge, Temperature - Water (M12)
10	321-0094	2	Fuse, Cartridge - 5 Amp (F4, F5)	31	302-0885	1	Ammeter (M13)
11	323-1305	1	Connector, 8 Pin (P1)		815-0385	2	Meter, Totalizing - Time (M14)
12	323-1303	1	Connector, 6 Pin (P2)		870-0183	2	Screw, Machine - Round Head (#6-31 x 1/2")
13	323-1309	1	Connector, 13 Pin (P3)	32	193-0330	1	Nut, Hex with ET Lockwasher (#6-32)
14	323-1307	1	Connector, 12 Pin (P4)	33	302-1873-01	1	Gauge, Temperature - Oil (M15)
15	NFS	1	Bracket, Mounting	34	517-0221	1	Tachometer (M16)
	821-0004	4	Screw, Self-locking - Hex Hd (#10-32 x 5/16")	35	332-0052	1	Plug, Button
16			Module, Indicator - Fault (Includes replaceable lamps, Harness with connector housing & contact pins)(A12)		870-0131	1	Clamp, Loop
	322-0358-02	1	24 VDC, 2 Light	36	NFS		Nut, Hex with ET Lockwasher (#10-32 x 1/2")
	322-0360-02	1	24 VDC, 12 Light	37	338-1817	1	Door, Control
	815-0385	2	Screw, Machine - Round Head (#6-32 x 1/2")	38	323-1308	1	Harness, Wiring - DC Meter (Includes Connector & Pins)
	870-0183	2	Nut, Self-locking - Hex (#6-32)	39	323-1302	12	Housing, 12 Pin (J4)
					338-2169	1	Contact, Pin
				40	323-1304	1	Harness, Wiring - Control to Engine (Includes Connectors and Pins)
					323-1200	6	Housing, 6 Pin
				41	323-1306	1	Contact, Pin
					323-1200	8	Housing, 8 Pin
							Contact, Pin

NFS - Not For Sale

Generator Control Components (Sets with Housing Enclosure)

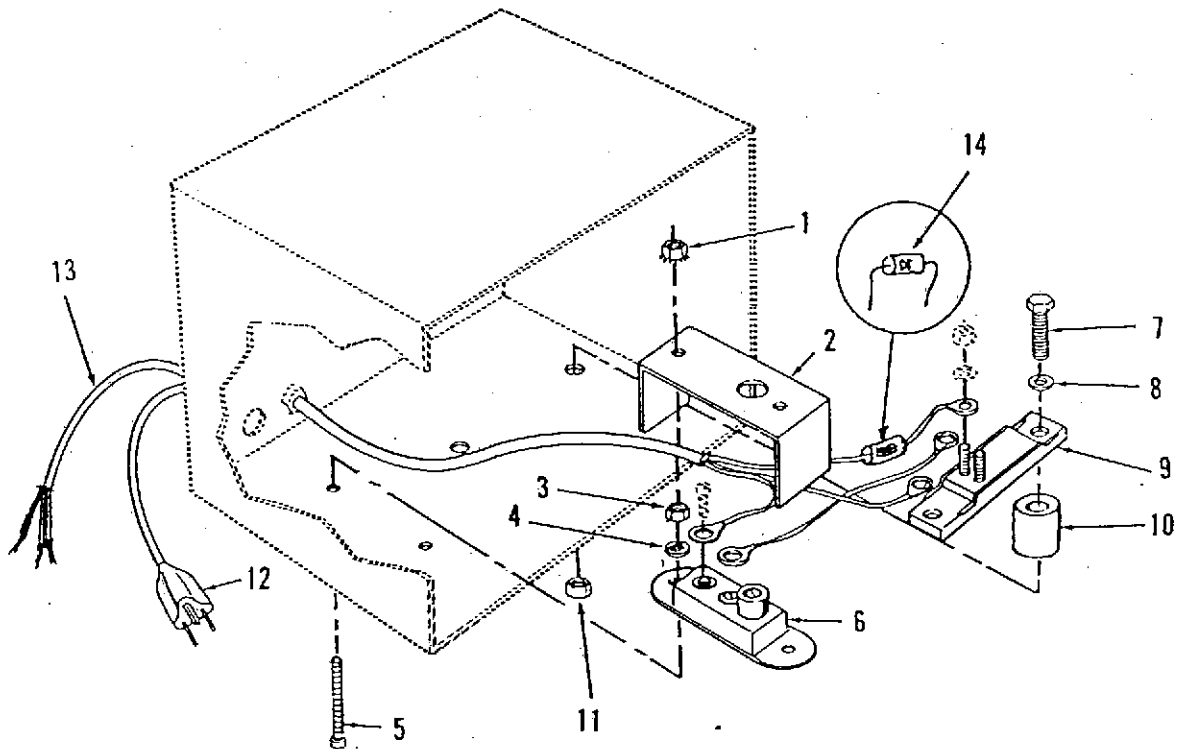


Generator Control Components (Sets with Housing Enclosure)

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	332-1445	2	Tie, Cable	13	332-0052	1	Clamp, Loop
2			Harness, Wiring		870-0131	1	Nut, Self-locking - Hex with ET Lock Washer (#10-32)
	338-1818	1	Control with Meters (Includes Terminal Block)	14	308-0284	1	Switch, Rotary (S21)
	338-1853	1	Control without Meters	15	303-0261	1	Rheostat (R21)
	812-0065	2	Screw, Machine - Round Head (#6-32 x 5/8")	16	406-0334	2	Clip, Fastener
3	332-0607	1	Block, Terminal (T81)	17	406-0333	2	Stud, Fastener
4	332-2723	1	Strip, Marker	18	NFS	1	Door, Control
5	322-0363	1	Light, Indicator - Dual (DS21, DS22)		821-0004	3	Screw, Self-locking - Hex (#10-32 x 5/16")
6	517-0131	1	Plug, Button	19	307-1987	2	Clip, Relay
7			Voltmeter (M21)	20	307-1056	1	Relay, 24 VDC (K21)
	302-1148	1	Dual Scale 0-300/0-600V	21	323-0804	1	Socket, Relay
	302-1753	1	Single Scale 0-750V		815-0544	2	Screw, Machine - Round Head with IT Lock Washer (#6-32 x 1/2")
8	303-0032	1	Knob	22	NFS	1	Terminal Board Assembly
9			Ammeter (M22)		812-0065	4	Screw, Machine - Round Head (#6-32 x 5/8")
	302-1730	1	Single Scale Voltage Code H 400kW, 0-500 Amp	23	332-0751	1	Block, Terminal
	302-1731	1	450kW, 0-750 Amp		812-0066	2	Screw, Machine - Round Head (#6-32 x 3/4")
			Dual Scale Voltage Code Z 330kW, 0-600/0-1200 Amp, 208 & 480 VAC Only.	24	332-0853	1	Strip, Marker
	302-1728	1	330kW, 0-600/0-1200 Amp, 380VAC Only; and 400 kW all voltages.	25	NFS	1	Plate
	302-1729	1	Dual Scale Voltage Code L 400kW, 0-750/0-1500 Amp, all voltages.	26	406-0332	2	Receptacle, Fastener
			400kW, 0-750/0-1500 Amp, all voltages.	27	871-0015	1	Nut, Hex (1/4-20)
	302-1729	1	450kW, 0-1000/0-2000 Amp, all voltages.	28	853-0013	1	Washer, Lock - ET (1/4")
10	302-1720	1	Meter, Frequency (M23)	29	337-0049	1	Strap, Electrical (Ground)
11			Wattmeter (M24) (See Separate page for Components)		800-0024	1	Screw, Cap - Hex Head (5/16-18 x 1/2")
			Cover, Meter Hole		856-0008	1	Washer, Lock - EIT (5/16")
12	NFS	1	Cover, Meter Hole	30	508-0051	1	Grommet
	815-0385	2	Screw, Machine - Round Head, Black (#6-32 x 1/2")	31	402-0527	2	Mount, Vibration
			Nut, Hex with ET Lockwasher (#6-32)		800-0051	4	Screw, Cap - Hex Head (5/16-18 x 1/2")
	870-0183	2	Nut, Hex with ET Lockwasher (#6-32)		850-0045	4	Washer, Lock - Spring (5/16")
				32	NFS	1	Box, Control

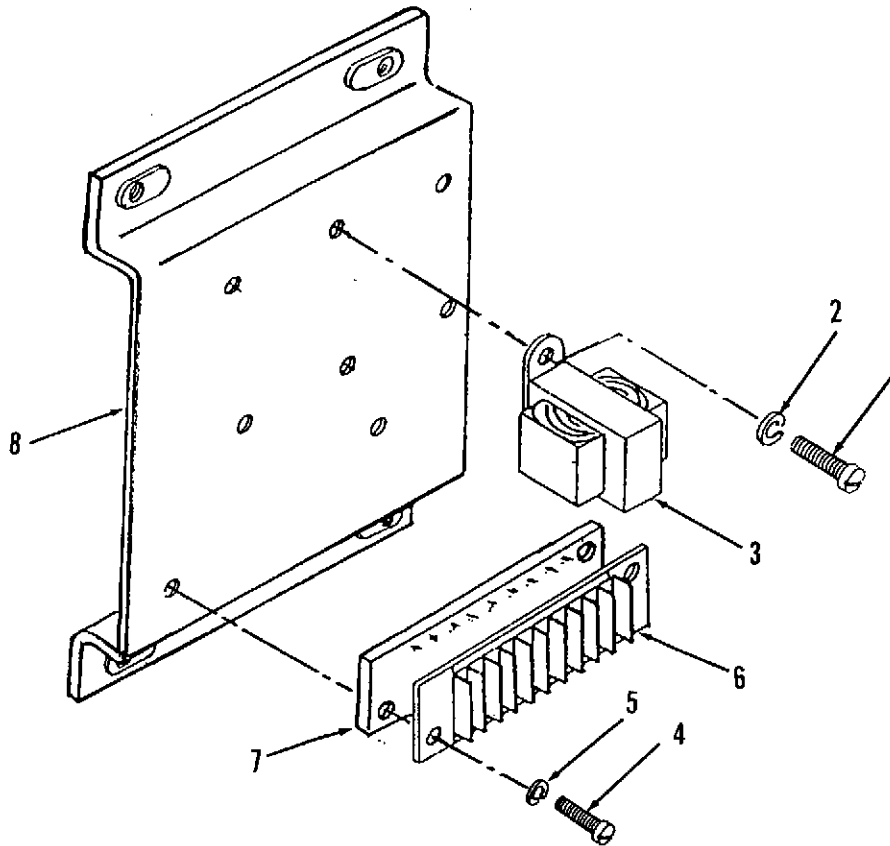
NFS - Not For Sale

Control Heater



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	870-0183	2	Nut, Self-locking - Hex (#6-32)	9			Heater, Electrical
2	301-1886	1	Cover		333-0151	1	120VAC
3	860-0006	1	Nut, Hex (#6-32)		333-0378	1	240VAC
4	854-0006	2	Washer, Lock - IT (#6)	10	130-1107	2	Spacer
5	812-0070	2	Screw, Machine - Round Head (#6-32 x 1-1/4")	11	870-0257	2	Nut, Self-locking - Hex (5/16-18)
6	309-0128	1	Thermostat, Adjustable	12	335-0161	1	Cable, Electrical (120VAC Application)
7	800-0034	2	Screw, Cap - Hex Head (5/16-18 x 2-1/4")	13	338-2121	1	Harness Wiring with Diode, less plug (240VAC Application)
8	526-0113	2	Washer, Flat (5/16")	14	357-0013	1	Diode
				15	98-3232	1	Decal, Warning - Shock Hazard (Not Illustrated)

Potential Transformer

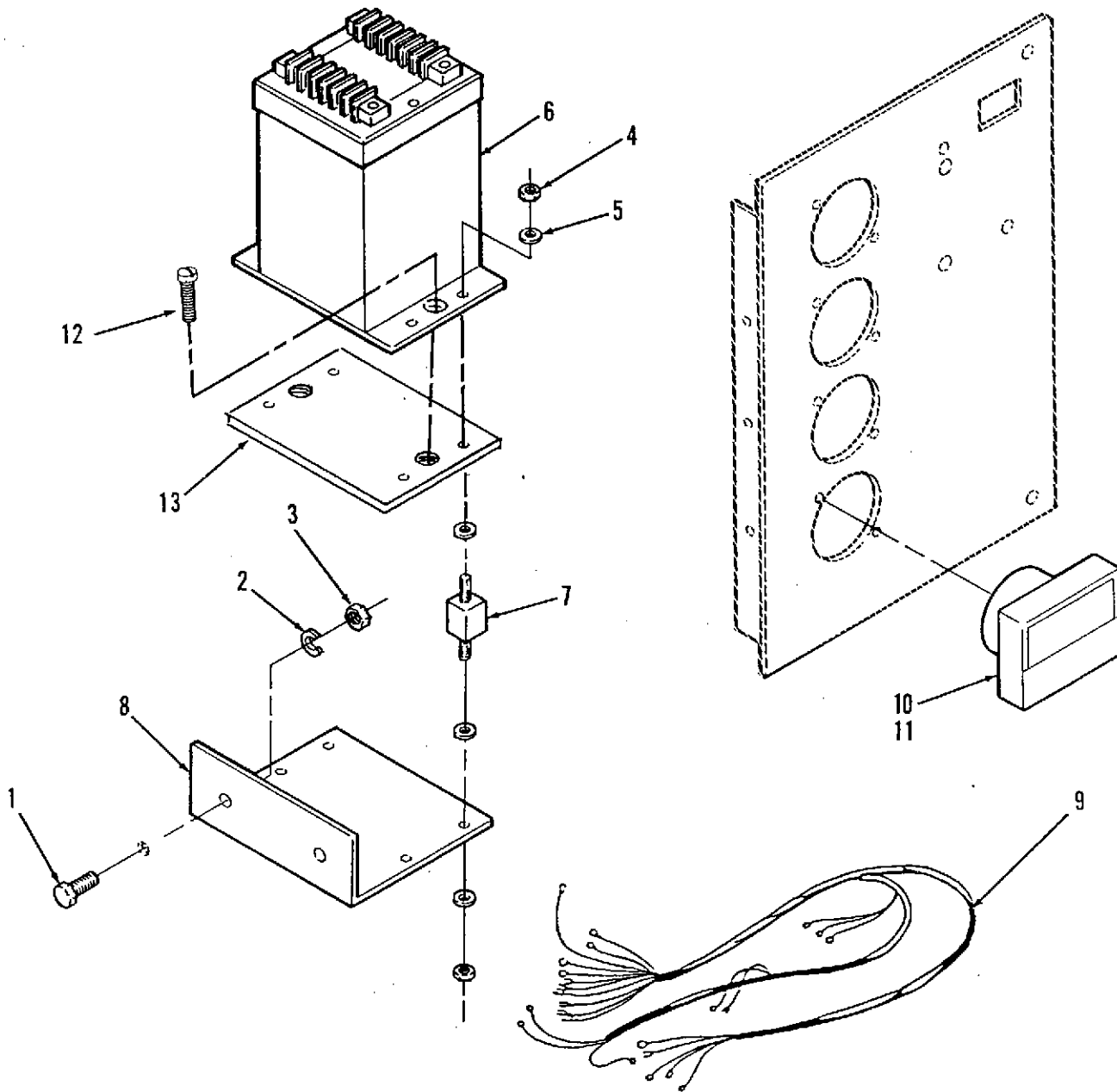


REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	812-0079	6	Screw, Machine - Round Head (#8-32 x 1/2")
2	850-0025	6	Washer, Lock - Spring (#8)
3	315-0642	3	Transformer, Potential
4	812-0077	2	Screw, Machine - Round Head (#8-32 x 3/8")

REF NO.	PART NO.	QTY USED	PART DESCRIPTION
5	850-0025	2	Washer, Lock - Spring (#8)
6	332-2562	1	Block, Terminal (10 Place)
7	332-2563	1	Strip, Marker
8	NFS	1	Bracket, Mounting

NFS - Not For Sale

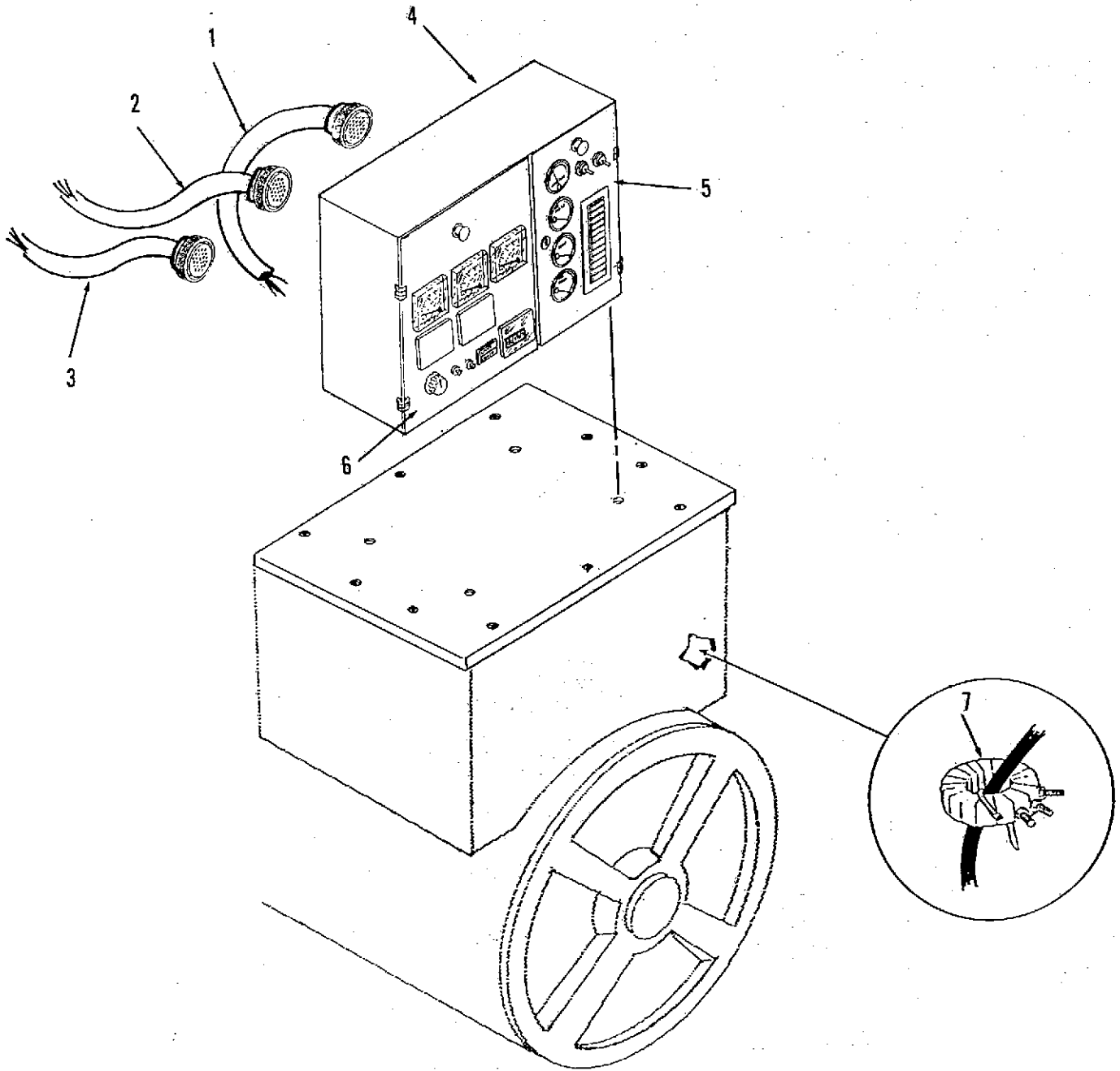
**Wattmeter
(Sets with Housing Enclosure)**



REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	821-0017	2	Screw, Cap - Hex Head (5/16-18 x 1/2")
2	850-0045	2	Washer, Lock (5/16)
3	862-0014	2	Nut, Hex (5/16-18)
4	860-0008	8	Nut, Hex (#8-32)
5	856-0002	16	Washer, Lock - ET (#8)
6	302-1833-01	1	Transducer, Watt
7	402-0354	4	Mount, Shock

REF NO.	PART NO.	QTY USED	PART DESCRIPTION
8	301-6987	1	Bracket, Mounting
9	338-1936	1	Harness, Wiring
10	302-1722	1	Wattmeter (Less Dial)
11	302-1721-13	1	Dial, Wattmeter Scale 0-500 kW
12	813-0102	2	Screw, Machine - Round Head (#10-32 x 3/8")
13	319-0030	1	Plate, Support - Transducer

Generator Set Control
(Without Housing Enclosure)

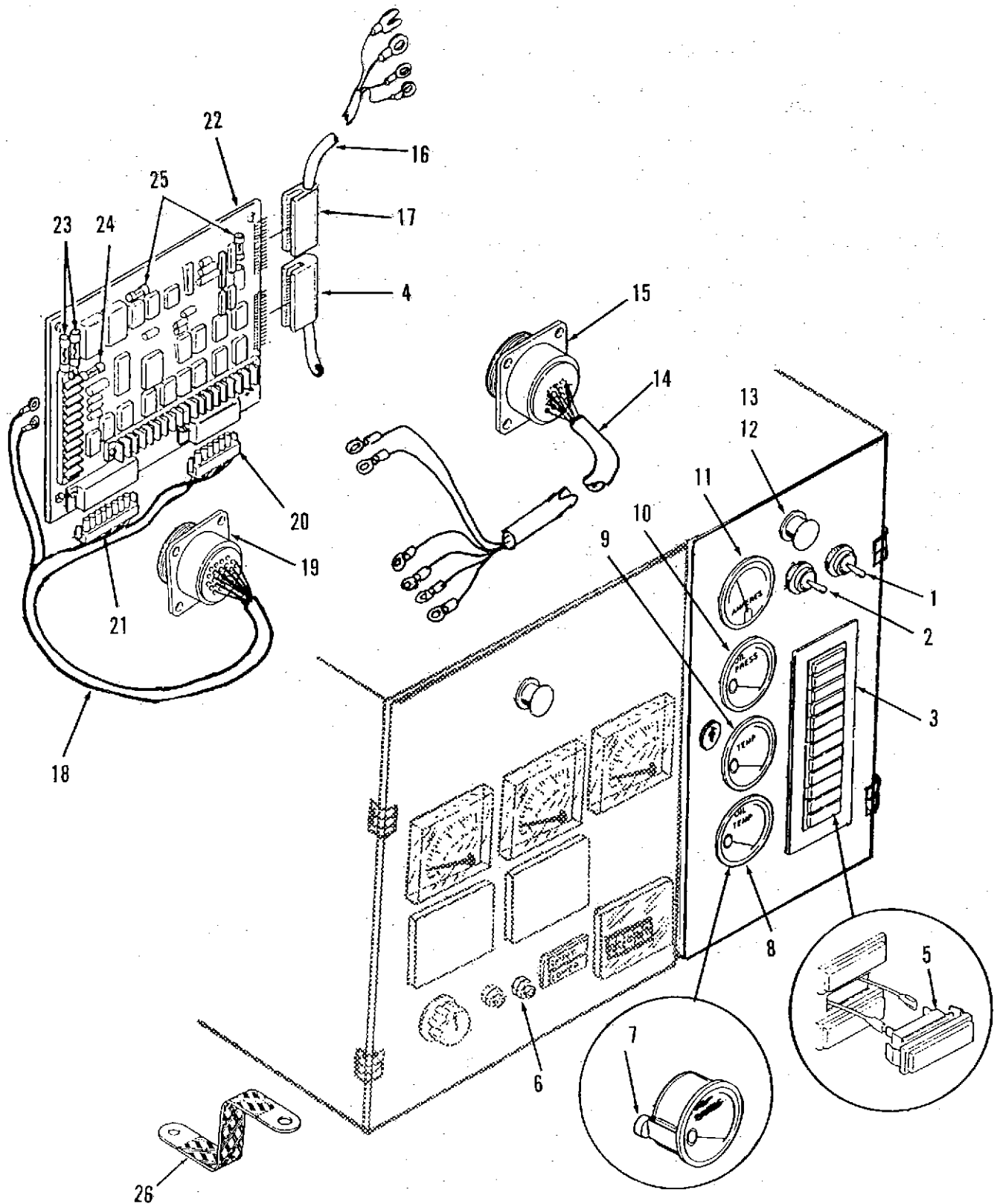


**Generator Set Control
(Without Housing Enclosure)**

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	338-2201-01	1	Harness, Wiring - Control to Generator (Includes a connector Housing)	7			Transformer, Current (Select As Applicable)
	323-1135	1	Housing, Connector (J21)	302-1785-01	3		1200:5 Ratio
	323-1193	4	Contact, Pin	302-1785-02	3		1500:5 Ratio
	323-1194	10	Contact, Pin	302-1785-03	3		1600:5 Ratio
2	338-2196-01	1	Harness, Wiring - Control to Governor (Includes a connector housing)	302-1785-04	3		2000:5 Ratio
	323-1135	1	Housing, Connector (J12)	302-1785-05	3		2500:5 Ratio
	323-1193	4	Contact, Pin	302-1785-06	3		2000:5 Ratio (380V Only)
	323-1194	10	Contact, Pin	302-1785-07	3		3000:5 Ratio
3	338-2191-01	1	Harness, Wiring - Control to Engine Components (Includes a connector housing)	302-1785-08	3		4000:5 Ratio
	323-1206	1	Housing, Connector (J11)	302-1785-09	3		5000:5 Ratio
	323-1194	20	Contact, Pin	302-1786-01	3		500/1000:5 Ratio
4	NFS	1	Control, Set (See item 5 & 6 for Components)	302-1786-02	3		600/1200:5 Ratio
	402-0527	4	Mount, Vibration	302-1786-03	3		750/1500:5 Ratio
	800-0051	8	Screw, Cap - Hex Head (5/16-18 x 1/2")	302-1786-04	3		800/1600:5 Ratio
	850-0045	8	Washer, Lock - Spring (5/16")	302-1786-05	3		900/1800:5 Ratio
5	NFS	1	Control, Engine (See Separate Page for Components)	302-1786-06	3		1000/2000:5 Ratio
6	NFS	1	Control, Generator (See Separate Page for Components)	302-1786-07	3		1200/2400:5 Ratio
				302-1786-08	3		250/500:5 Ratio
				302-1786-09	3		300/600:5 Ratio
				302-1786-10	3		400/800:5 Ratio
				302-1786-11	3		375/750:5 Ratio
				302-1786-12	3		75/150:5 Ratio
				302-1786-13	3		100/200:5 Ratio
				302-1786-14	3		150/300:5 Ratio
				302-1786-15	3		200/400:5 Ratio
				302-1786-16	3		1500/3000:5 Ratio

NFS - Not For Sale

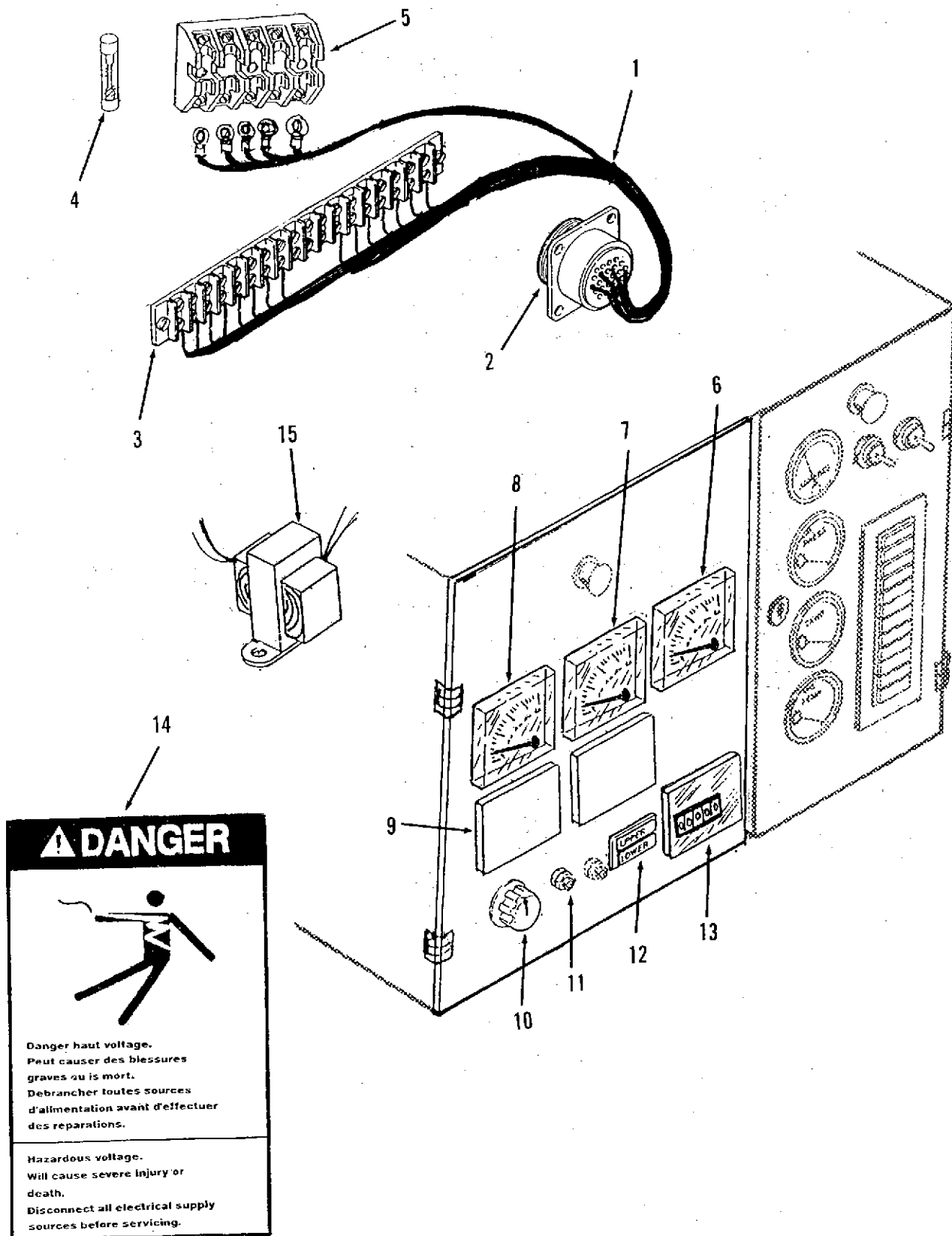
Engine Control Components (Sets without Housing Enclosure)



**Engine Control Components
(Sets without Housing Enclosure)**

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	308-0625	1	Switch, Push (S12) [Run/Stop/Remote]	15	323-1134	1	Housing, Connector (P12)
2	308-0900	1	Switch, Push (S11) [Reset/Panel Light]		323-1192	4	Contact, Socket
3			Module, Indicator - Fault (Includes Harness with a Connector Housing & Contact Pins, Replaceable Lamps) (A12)		323-1195	10	Contact, Socket
	322-0358-02	1	24 VDC, 2 Light	16	338-1817	1	Harness, Wiring - Engine Monitor Board to Meters (Includes Connector Housing)
	322-0360-02	1	24 VDC, 12 Light				
	815-0385	2	Attaching Parts for Module Screw, Machine - Round Head (#6-32 x 1/2")	17	323-1308	1	Housing, Connector (J4)
	870-0183	2	Nut, Self-locking - Hex (#6-32)		323-1302	15	Contact, Pin
4	323-1310	1	Housing, Connector (J3)	18			Harness, Wiring - Engine to Engine Monitor Board (Includes Connector Housings, Terminals and Contacts)
	323-1302	13	Contact, Pin		338-2241-01	1	Control with 2 Light Module
5	322-0369-02	1	Lamp, Incandescent - 1/3 Watt 28 VDC		338-2200-01	1	Control with 12 Light Module
6	303-0289	1	Rheostat - Speed Control (R23)	19	323-1207	1	Housing, Connector (P11)
7	193-0250	3	Resistor, Gauge (R11,R12,R15)		323-1195	22	Contact, Socket
8	193-0330	1	Gauge, Temperature - Oil, 12 VDC (M15) or		323-1190	1	Key
	302-1715	1	Tachometer (M16) or	20	323-1304	1	Housing, Connector (J2)
	302-1723	1	Gauge, Blank		323-1200	6	Contact, Pin
9	193-0351	1	Gauge, Temperature - Water, 12 VDC (M12)	21	323-1306	1	Housing, Connector (J1)
10	193-0352	1	Gauge, Pressure - Oil, 12 VDC (M11)		323-1200	8	Contact, Pin
11	302-1790	1	Ammeter (M13)	22			Board, Engine Monitor (A11) (Includes Fuses)
12	322-0017	1	Lamp, Incandescent - 28 VDC (DS10,DS11)		300-2808	1	24 VDC, 2 Light
13	322-0361	2	Holder, Lamp		300-2812	1	24 VDC, 12 Light
14			Harness, Wiring - Governor to Speed Control & Tachometer (Includes Connector Housing)	23	321-0270	2	Fuse, Cartridge - 20 Amp (F1, F2)
	338-2279-01	1	Control with 2 Light Module	24	321-0231	1	Fuse, Cartridge - 15 Amp (F3)
	338-2290-01	1	Control with 12 Light Module	25	321-0094	2	Fuse, Cartridge - 5 Amp (F4, F5)
					815-0544	4	Attaching Parts for Module Screw, Machine - Round Head With IT Lock Washer (#6-32 x 1/2")
				26	337-0049	1	Strap, Electrical - Ground

Generator Control Components (Sets without Housing Enclosure)



Generator Control Components (Sets without Housing Enclosure)

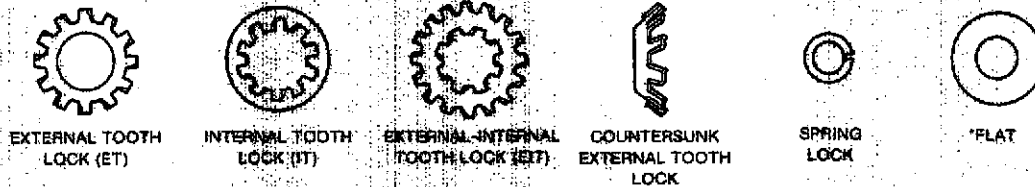
REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1			Harness, Wiring (Includes Connector and Terminal Strip)		302-1839-09	1	0-300/0-600 Amp
	338-2280-01	1	Sets with 12 Lead Generator		302-1839-10	1	0-400/0-800 Amp
	338-2281-01	1	Sets with 6 Lead Generator		302-1839-11	1	0-375/0-750 Amp
2	323-1134	1	Housing, Connector (P21)		302-1839-12	1	0-75/0-150 Amp
	323-1192	4	Contact, Socket		302-1839-13	1	0-100/0-200 Amp
	323-1195	10	Contact, Socket		302-1839-14	1	0-150/0-300 Amp
	323-1190	1	Key		302-1839-15	1	0-200/0-400 Amp
3		1	Terminal, Strip (18 Place)		302-1839-16	1	0-1500/0-3000 Amp
4	321-0293	5	Fuse F1 thru F5		302-1839-17	1	0-2000/0-4000 Amp
5	321-0294	1	Holder, Fuse		302-1840-01	1	0-1200 Amp
6	302-1842	1	Meter, Frequency (M23)		302-1840-02	1	0-1500 Amp
7	302-1841-03	1	Voltmeter (M21)		302-1840-03	1	0-1600 Amp
8			Ammeter (M22)		302-1840-04	1	0-2000 Amp
			Dual Scale		302-1840-05	1	0-2500 Amp
	302-1839-01	1	0-500/0-1000 Amp		302-1840-07	1	0-3000 Amp
	302-1839-02	1	0-600/0-1200 Amp		302-1840-08	1	0-4000 Amp
	302-1839-03	1	0-750/0-1500 Amp		302-1840-09	1	0-5000 Amp
	302-1839-04	1	0-800/0-1600 Amp	9	302-1849	2	Meter, Blank
	302-1839-05	1	0-900/0-1800 Amp	10	308-0883	1	Switch, Rotary (S21)
	302-1839-06	1	0-1000/0-2000 Amp	11	303-0287	1	Rheostat (R21)
	302-1839-07	1	0-1200/0-2400 Amp	12	322-0363	1	Light, Indicator - Dual (DS21, DS22)
	302-1839-08	1	0-250/0-500 Amp	13	302-1850	1	Meter, Time Totalizing (M14)
				14	98-5724	2	Decal (Warning)
				15	315-0664	3	Transformer, Potential (T21 - T23)

--cont--

HARDWARE IDENTIFICATION

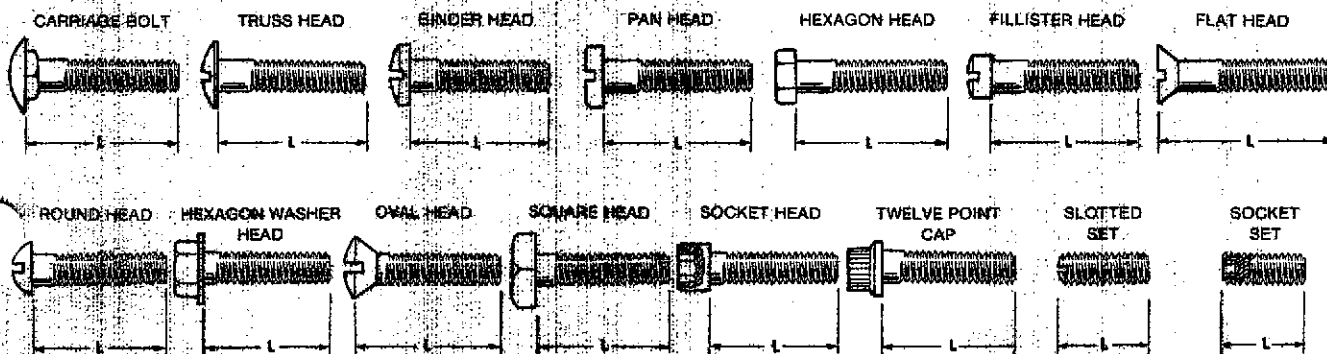
Illustrated hardware items are only for identification purposes. All hardware items listed throughout this parts catalog are steel SAE grade five (5) or lower (zinc plated with clear chromate dip) unless parts description indicates differently. All dimensions are in inches.

WASHER TYPES



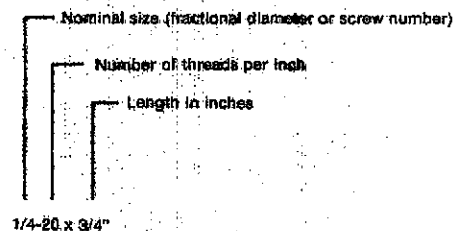
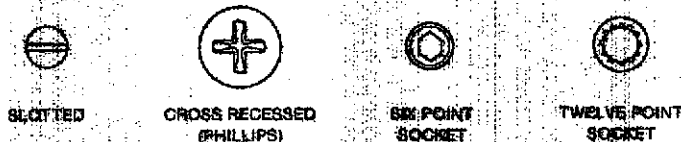
* - Flat washer dimensions given are: Inside Diameter (ID), Outside Diameter (OD) and Thickness (Thk).

BOLT AND SCREW TYPES



L - Measure length between these points.

INTERNAL DRIVE TYPES



NUT TYPES





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