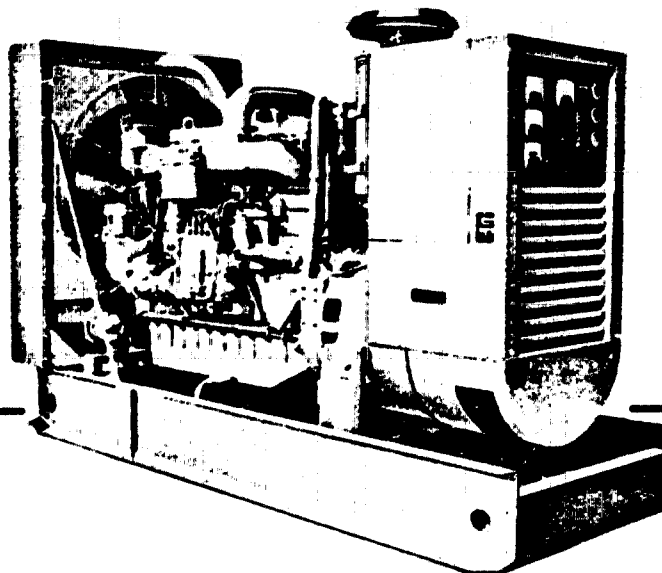


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order that Acrobat
assigns it.

Parts Manual

DYG
GenSet



GENERAL INFORMATION

INSTRUCTIONS FOR ORDERING REPAIR PARTS

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, please furnish all information requested.

Always refer to the nameplate on your unit.

1. Always give the MODEL, SPEC NO. and SERIAL NO.

The diagram shows a rectangular nameplate with rounded corners. At the top center, the text "McGRAW-EDISON" is printed in a bold, sans-serif font. Below this, the "Onan" logo is prominently displayed in a large, stylized font. Underneath the logo is a horizontal rectangular box. Below this box, the text "MODEL AND SPEC NO." is printed. Further down is another horizontal rectangular box. To the left of this box, the text "SERIAL NO." is printed. The entire nameplate is enclosed in a thin black border. There are two small circles at the top corners of the plate, likely for mounting screws. A small number "M-1149" is printed at the bottom right corner of the plate.

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

2. Do not order by reference number; always use part number and description.
3. Give the part number, description and quantity needed of each item. If an older part cannot be identified, return the part prepaid to your dealer or nearest Onan Parts and Service Center. Print your name and address plainly on the package. Write a letter to the same address stating the reason for returning the part.
4. State definite shipping instructions. Any claim for loss or damage to your unit in transit should be filed promptly against the transportation company making the delivery. Shipments are complete unless the packing list indicates items are back ordered.

Prices are purposely omitted from this Parts Manual due to the confusion resulting from fluctuating costs, import duties, sales taxes, exchange rates, etc.

For current parts prices, consult your Onan Dealer, Distributor or Parts and Service Center.

"En esta lista de partes los precios se omiten de proposito, ya que bastante confusion resulto de fluctuaciones de los precios, derechos aduanales, impuestos de venta, cambios extrajeros, etc."

Consiga los precios vigentes de su distribuidor de productos "ONAN."

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This parts catalog applies to the standard generator sets listed below. Any engine parts modified or added by Onan will be listed in this catalog and have been assigned Onan part numbers for identification. These modified or added parts supersede similar parts listed in the Engine Manufacturer's manuals. 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, parts are interchangeable. These typical illustrations are subject to change and reflect only the latest replacement parts arrangement. The Right and Left generator set sides are determined by facing the front end of the engine.

150/175 kW SETS

MODEL IDENTIFICATION	RATING	MODEL IDENTIFICATION	RATING
125.0DYG-*/#£	125,000 WATTS	@130.0DYG-*/#£	130,000 WATTS
150.0DYG-*/#£	150,000 WATTS	175.0DYG-*/#£	175,000 WATTS

ELECTRICAL DATA TABLE

*VOLTAGE CODES	VOLTS	HERTZ	WIRE	PHASE	NOTES
3	120/240	60	3	1	
6D	240/480	60	4	3	
7	220/380	60	4	3	
9X	347/600	60	4	3	
15	120/240	60	12	1	+
15	120/208, 120/240, 127/220, 139/240, 240/416, 254/440, 277/480,	60	12	3	+
515	110/220, 115/230	50	12	1	+
515	110/190, 110/120, 115/200, 115/230, 120/208, 127/220, 220/380, 230/400, 240/416, 254/440	50	12	3	+
523	200/346	50	4	3	
15R50	@	60	12	3	@+

- * - Voltage codes follow model letters 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.
- + - These generators are reconnectable, refer to Operator's manual for wiring data.
- @ - These are Penn State Sets; voltage codes same as 15; special parts are identified in the parts manual when applicable.

DATA TABLES CONTINUED NEXT PAGE.

NOTICE!

ITEMS REFERENCED AS **OPTIONAL** INDICATE PART IS FACTORY INSTALLED AND MAY NOT BE APPLICABLE TO ALL MODELS. FOR FIELD CONVERSIONS ADDITIONAL PARTS ARE USUALLY REQUIRED.

200 kW SETS

MODEL IDENTIFICATION	RATING	MODEL IDENTIFICATION	RATING
165.0DYG-*/#£	165,000 WATTS	200.0DYG-*/#£	200,000 WATTS

ELECTRICAL DATA TABLE

*VOLTAGE CODES	VOLTS	HERTZ	WIRE	PHASE	NOTES
5D	120/240	60	4	3	
6D	240/480	60	4	3	
7	220/380	60	4	3	
9X	347/600	60	4	3	
17	120/208, 127/220, 139/240, 240/416, 254/440, 277/480,	60	12	3	+
517	110/190, 115/200, 120/208, 127/220, 220/380, 230/400, 240/416, 254/440	50	12	3	+

- * - Voltage codes follow model letters 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.
- + - These generators are reconnectable, refer to Operator's manual for wiring data.

REPLACEMENT ENGINE

ONAN PART NO.

100-0987

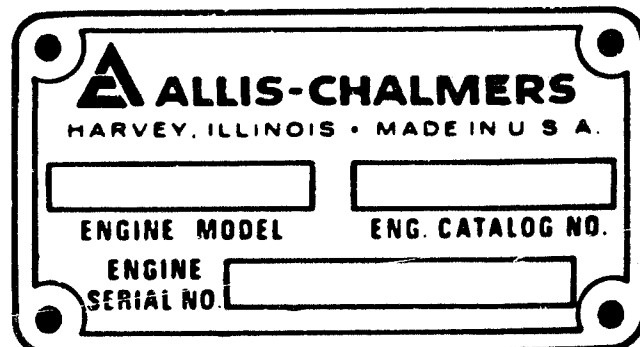
*Engine, Replacement Standard

Includes: Complete Cylinder Block, Fuel Pump, Fuel Oil Filter, Governor, Fan Blades (pusher type), Flywheel, Water Pump, Oil Pan, Exhaust Manifold, Fan Belt and Fuel Shut-off Valve.

Excludes: Alternator, Alternator Mounting Brackets, Alternator Belt, Temperature Sender, Oil Pressure Sender, Starter, Radiator and Air Cleaner.

***NOTE:** This replacement engine is for Onan's Standard Spec 1 generator sets, for all other refer to the factory for replacement information.

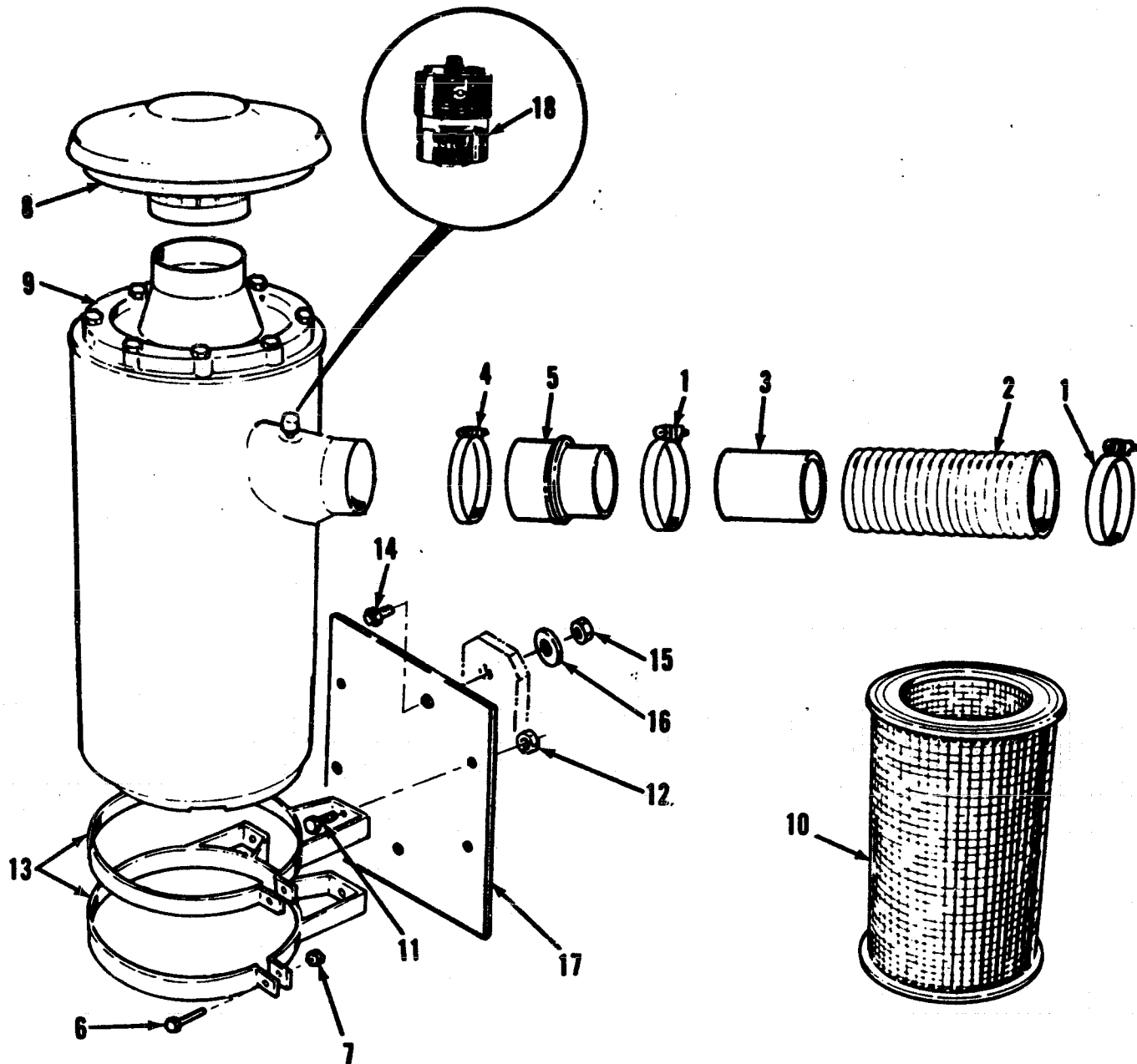
For handy reference, insert "YOUR" nameplate information in the spaces.



ENGINE REPLACEMENT PARTS

All engine replacement parts must be ordered from the engine manufacturer, except those modified or added by Onan. When ordering engine parts, refer to the manufacturer's nameplate and supply the Model, Spec, Serial numbers and other available information. Refer to the engine manufacturer's manuals for your nearest authorized distributor or parts center; or contact the Onan distributor from whom you purchased this set for assistance in ordering replacement parts.

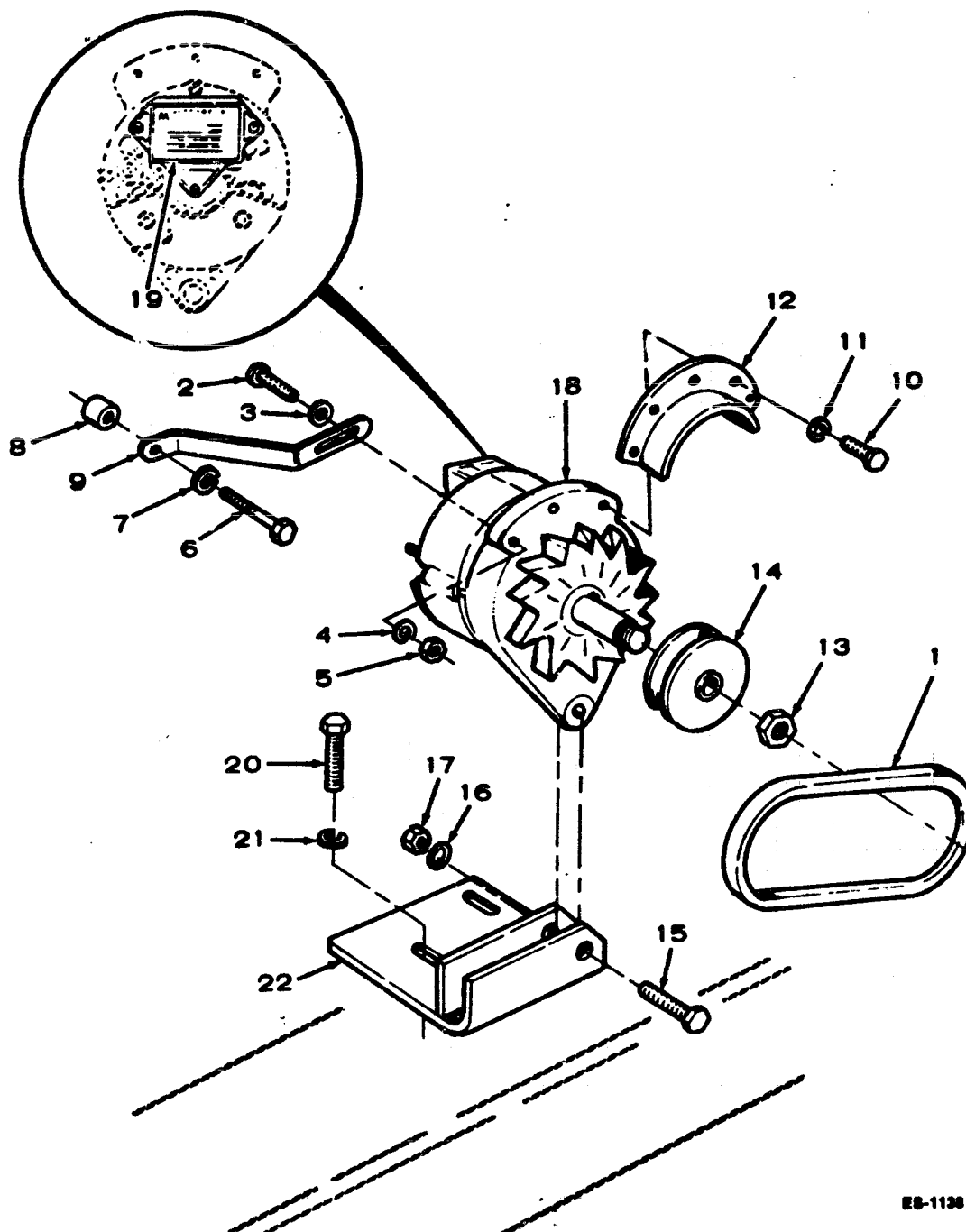
AIR CLEANER



REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	503-0612	2	Clamp, Hose
2	503-0820	1	Hose, Flexible
3	503-0822	1	Tube, Air
4	503-0784	1	Clamp, Hose
5	503-0821	1	Reducer
6	800-0031	2	Screw, Cap - Hex Head (5/16-18 x 1-1/2")
7	870-0257	2	Nut, Self-locking - Hex Washer Head (5/16-18)
8	140-1347	1	Cap, Air Cleaner
9	140-1346	1	Air Cleaner, (Includes Element)
10	140-1376	1	Element, Air Cleaner
11	821-0029	4	Screw, Self-locking - Hex Washer Head (3/8-16 x 3/4")

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
12	870-0281	4	Nut, Self-locking - Hex Washer Head (3/8-16)
13	140-1345	2	Band, Mounting
14	821-0030	1	Screw, Self-locking - Hex Washer Head (3/8-16 x 1")
15	870-0281	1	Nut, Self-locking - Hex Washer Head (3/8-16)
16	526-0195	1	Washer, Flat (29/64" ID x 3-1/2" OD x 1/8" Thk)
17	140-1475	1	Plate, Mounting
18	140-1548	1	Indicator, Service

ALTERNATOR

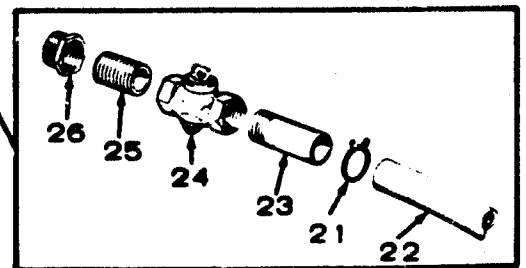
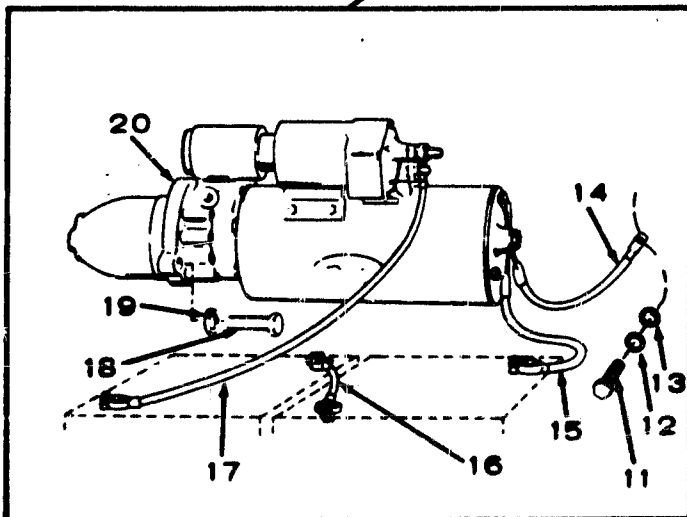
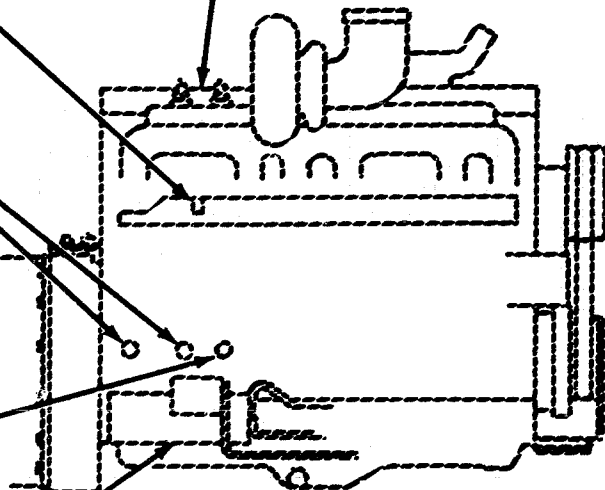
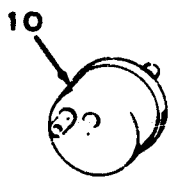
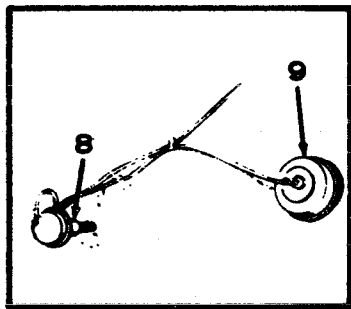
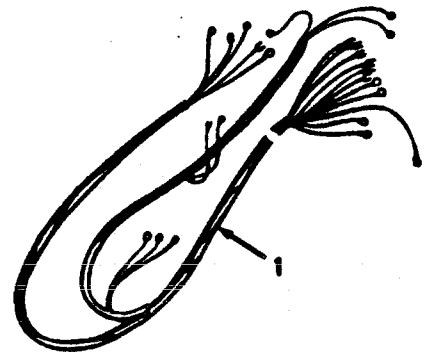
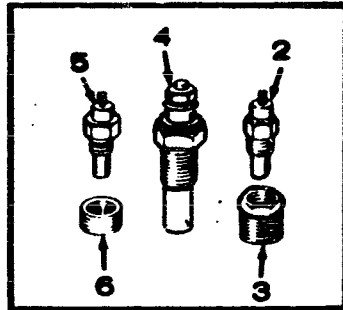
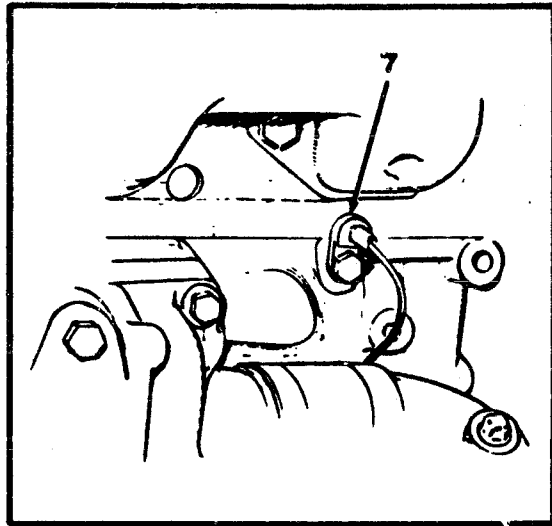


ES-1138

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	511-0092	1	Belt, Drive
2	800-0030	1	Screw, Cap - Hex Head (5/16-18 x 1-1/4")
3	526-0022	1	Washer, Flat (21/64" ID x 9/16" OD x 1/16" Thk)
4	850-0045	1	Washer, Lock-Spring (5/16")
5	862-0015	1	Nut, Hex (5/16-18)
6	800-0055	1	Screw, Cap - Hex Head (3/8-16 x 2-1/4")
7	850-0050	1	Washer, Lock-Spring (3/8")
8	130-0988	1	Spacer, Sleeve
9	191-0858	1	Bracket, Adjusting - Alternator
10	800-0025	1	Screw, Cap - Hex Head (5/16-18 x 5/8")
11	850-0045	1	Washer, Lock-Spring (5/8")
12	191-0725	1	Guard, Belt
13		1	Nut, Hex (5/8-18 NF-2A) - Part of Alternator

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
14	191-0781	1	Pulley - Alternator Drive
15	800-0095	1	Screw, Cap - Hex Head (1/2-13 x 2-1/4")
16	850-0060	1	Washer, Lock-Spring (1/2")
17	862-0016	1	Nut, Hex (1/2-13)
18	191-0888	1	Alternator
19	191-0733	1	Regulator, Voltage - Part of Alternator
20	800-0132	2	Screw, Cap - Hex Head (5/8-11 x 1-1/2")
21	850-0070	2	Washer, Lock-Spring (5/8")
22	191-0858	1	Bracket, Mounting - Alternator

MISCELLANEOUS ENGINE PARTS (LEFT SIDE)



M-1215

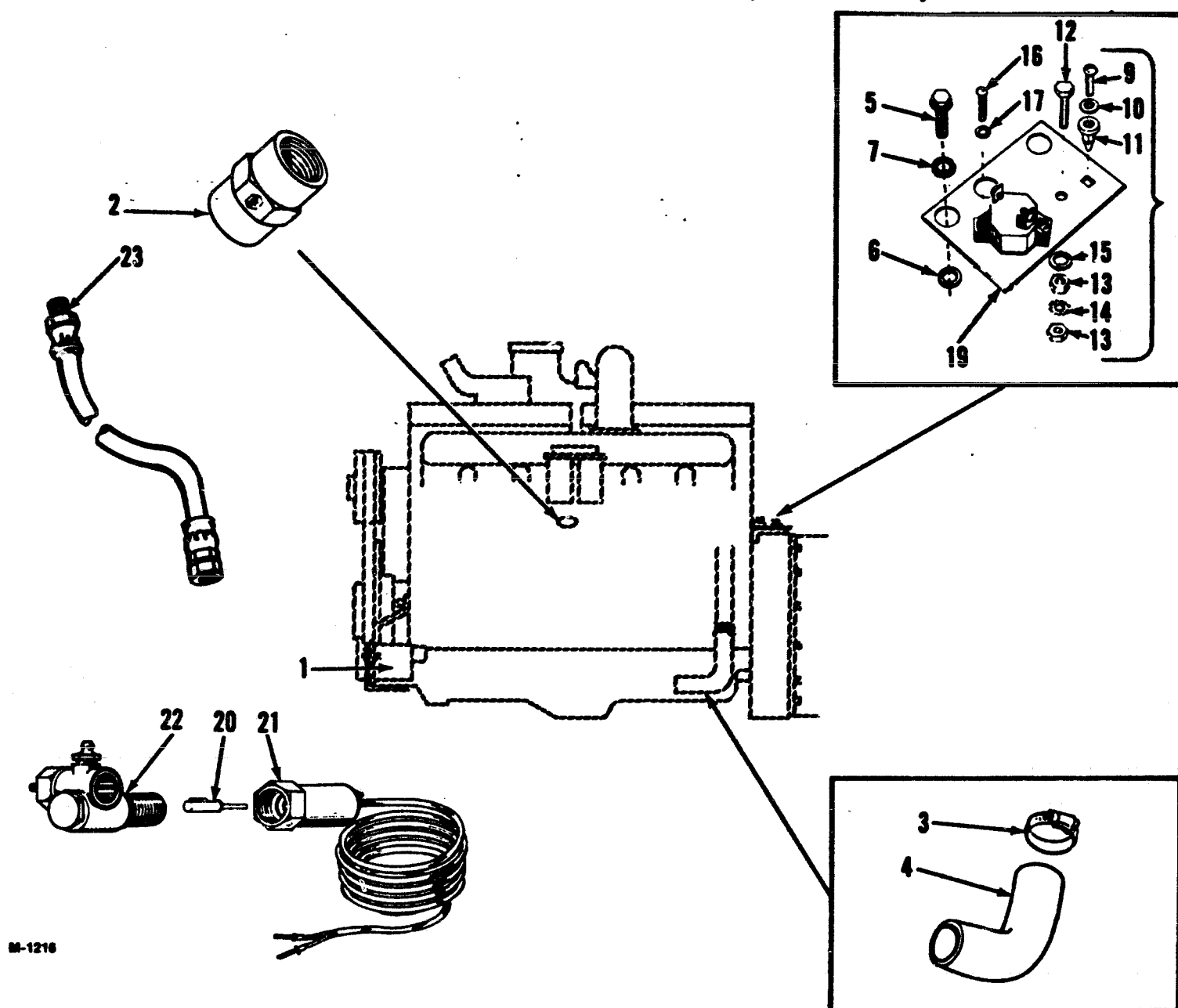
MISCELLANEOUS ENGINE PARTS (LEFT SIDE)

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	WIRING HARNESS - ENGINE 338-0706	1	Standard Special (NOTE: Use Standard Wiring Harness and electrical leads as required for optional sensors, switches per Gen Set wiring diagram).
2	309-0179	1	†Switch, Thermostatic - High Coolant Temperature
3	505-0455	1	†Reducer, Bushing - Hex (1 NPT x 3/8 NPT)
4	193-0247	1	Sender, Temperature - Engine Coolant
5	309-0178	1	Switch, Thermostatic - High Coolant Temperature
6	505-0117	1	Reducer, Bushing - Brass (1/2 NPT x 3/8 NPT)
7	309-0269	1	†Switch, Thermostatic - Low Engine Temperature
8	309-0169	1	Switch, Pressure - Low Oil
9	193-0244	1	Sender, Pressure - Oil
10	309-0272	1	†Switch Pressure - Low Oil
11	800-0090	1	Screw, Cap - Hex Head (1/2-13 x 1")
12	850-0060	1	Washer, Lock-Spring (1/2")

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
13	853-0013	1	Washer, Lock-EIT (1/2")
14	416-0632	1	Cable, Electrical - Starter To Ground
15	416-0444	1	Cable, Battery - Negative
16	416-0473	1	Cable, Battery - Jumper
17	416-0636	1	Cable, Battery - Positive
18	800-0135	3	Screw, Cap - Hex Head (5/8-11 x 2-1/4")
19	850-0070	3	Washer, Lock-Spring (5/8")
20	191-1348	1	Starter, Electrical - 24 Volt
21	503-0197	1	Clamp, Hose
22	503-0509	1	Hose, Rubber (3/4" ID x 1" OD x 13")
23	505-0185	1	Nipple, Pipe - Half (1/2 NPT x 1-1/2")
24	504-0011	1	Valve, Cock
25	505-0100	1	Nipple, Pipe - Close (1/2 NPT x 1-1/8")
26	505-0022	1	Reducer, Bushing - Hex

† - Optional Items, Used With Fault Lights or Gauges on
Engine Control Panel.

MISCELLANEOUS ENGINE PARTS (RIGHT SIDE)



88-1216

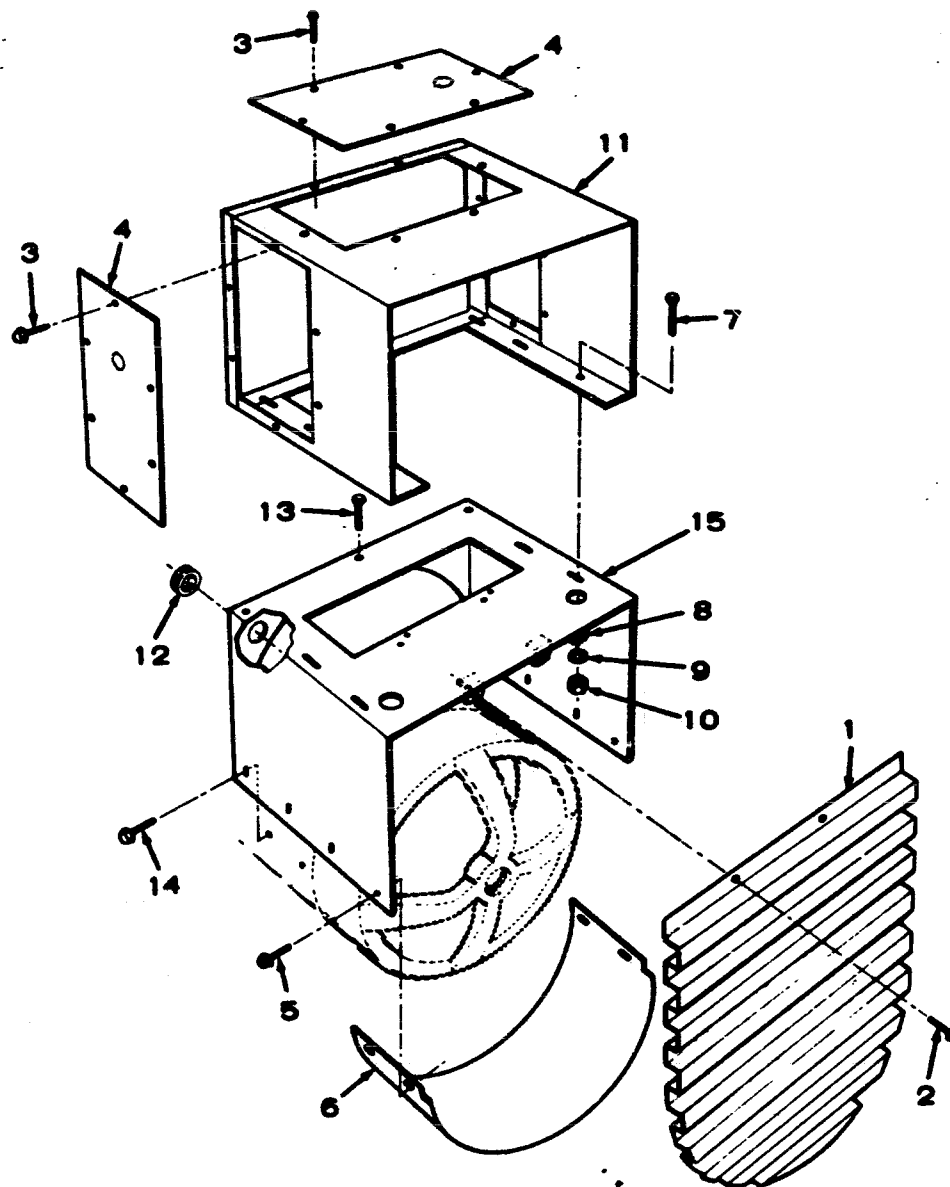
REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	REF		Alternator Assembly (See Separate Group for Components)
2	502-0168	1	Coupling, Pipe - Hex, Brass (3/8 NPT)
3	503-0365	1	Clamp, Hose
4	503-0441	1	Hose, Rubber - Preformed (Crankcase Breather System)
5	821-0029	1	Screw, Self-Locking - Hex Washer Head (3/8-16 x 3/4")
6	526-0013	1	Washer, Flat (25/64" ID x 1" OD x 1/16" Thk)
7	853-0018	1	Washer, Lock-ET (3/8")
8	332-1383	1	Assembly - Circuit Breaker & Terminal (Includes Items Marked #)
9	809-0035	1	#Screw, Tapping - Roundhead (#8-34")

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
10	508-0015	1	#Washer, Insulating - Fiber
11	870-0196	1	#Nut, Insulated
12	800-0005	1	#Screw, Cap - Hex Head (1/4-20 x 3/4")
13	862-0001	2	#Nut, Hex (1/4-20)
14	856-0006	1	#Washer, Lock - EIT (1/4")
15	850-0040	1	#Washer, Lock - Spring (1/4")
16	813-0103	2	#Screw, Machine - Roundhead (#10-32 x 3/4")
17	850-0030	2	#Washer, Lock - Spring (#10)
18	320-0240	1	#Circuit Breaker
19	332-1382	1	#Board, Mounting
20	302-0753	1	†Tang, Drive - Tachometer
21	302-0750	1	†Sender, Tachometer
22	302-0756	1	†Drive, Tachometer
23	501-0229	2	Line, Fuel

† - Optional Items, Used With Fault Lights or Gauges on Engine Control Panel.

- Parts Included in Circuit Breaker Assembly.

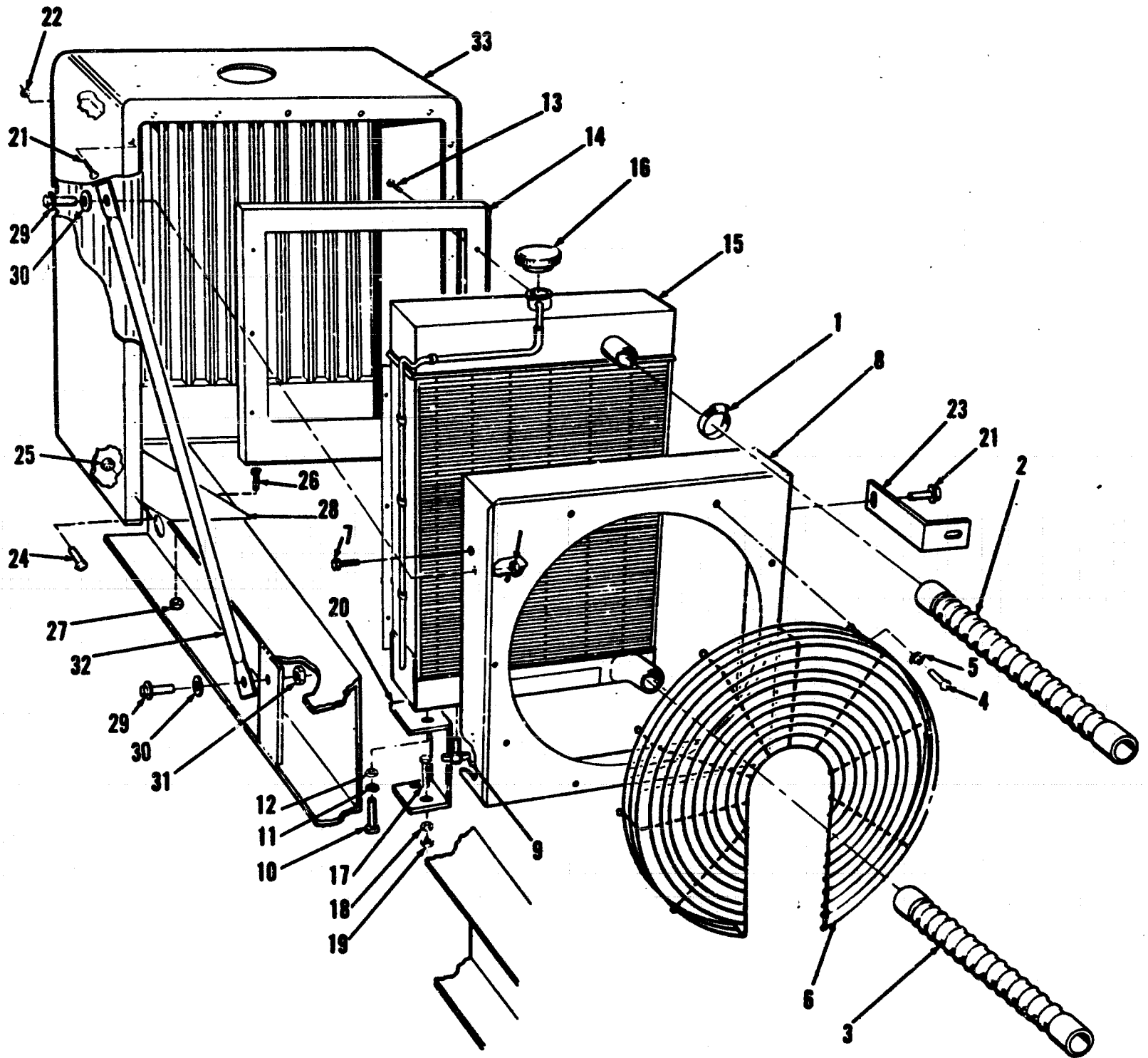
CONTROL HOUSING — 150/175 kW SETS



M-1188

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	821-0010	8	Screw, Self-locking - Hex Washer Head (1/4-20 x 1/2")	8	856-0006	1	Washer, Lock - EIT (1/4")
2	234-0370	1	Grill, Air - Generator Inlet	9	526-0018	5	Washer, Flat (17/64" ID x 5/8" OD x 1/16" Thk)
3	815-0350	18	Screw, Tapping - Hex Washer Head (#10-32 x 3/8")	10	870-0212	6	Nut, Hex (1/4-20)
4	301-3156	3	Panel, Access	11	301-3155	1	Housing, Control Box
5	821-0010	4	Screw, Self-locking - Hex Washer Head (1/4-20 x 1/2")	12	508-0203	1	Bushing, Cable - Nylon
6	234-0361	1	Wrapper, End Bell	13	821-0010	1	Screw, Self-locking - Hex Washer Head (1/4-20 x 1/2")
7	821-0018	6	Screw, Self-locking - Hex Washer Head (1/4-20 x 5/8")	14	821-0014	8	Screw, Self-locking - Hex Washer Head (5/16-18 x 1/2")
				15	301-3154	1	Saddle, Control Box

COOLING SYSTEM (WITH RADIATOR)

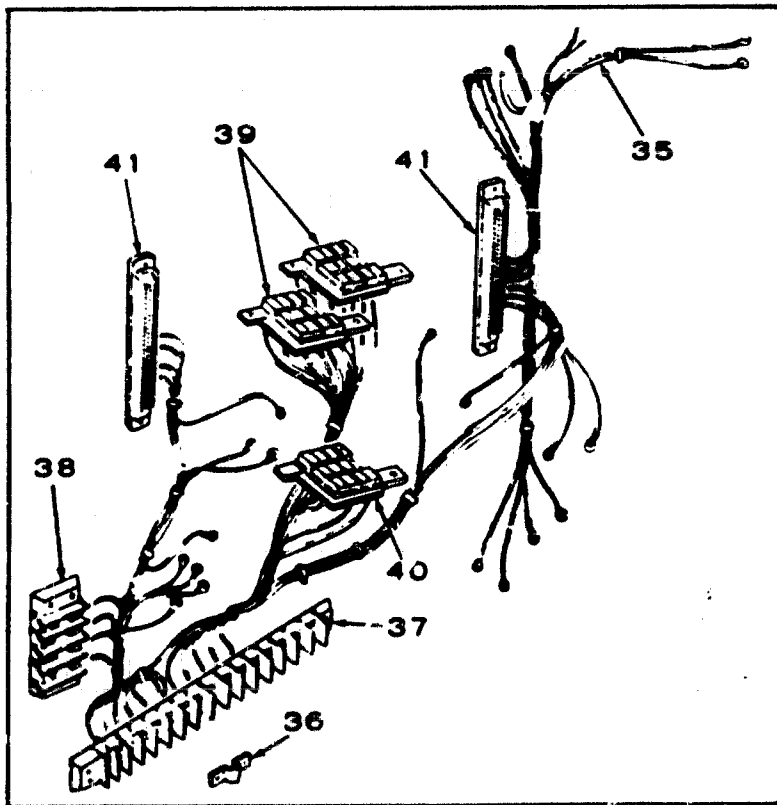
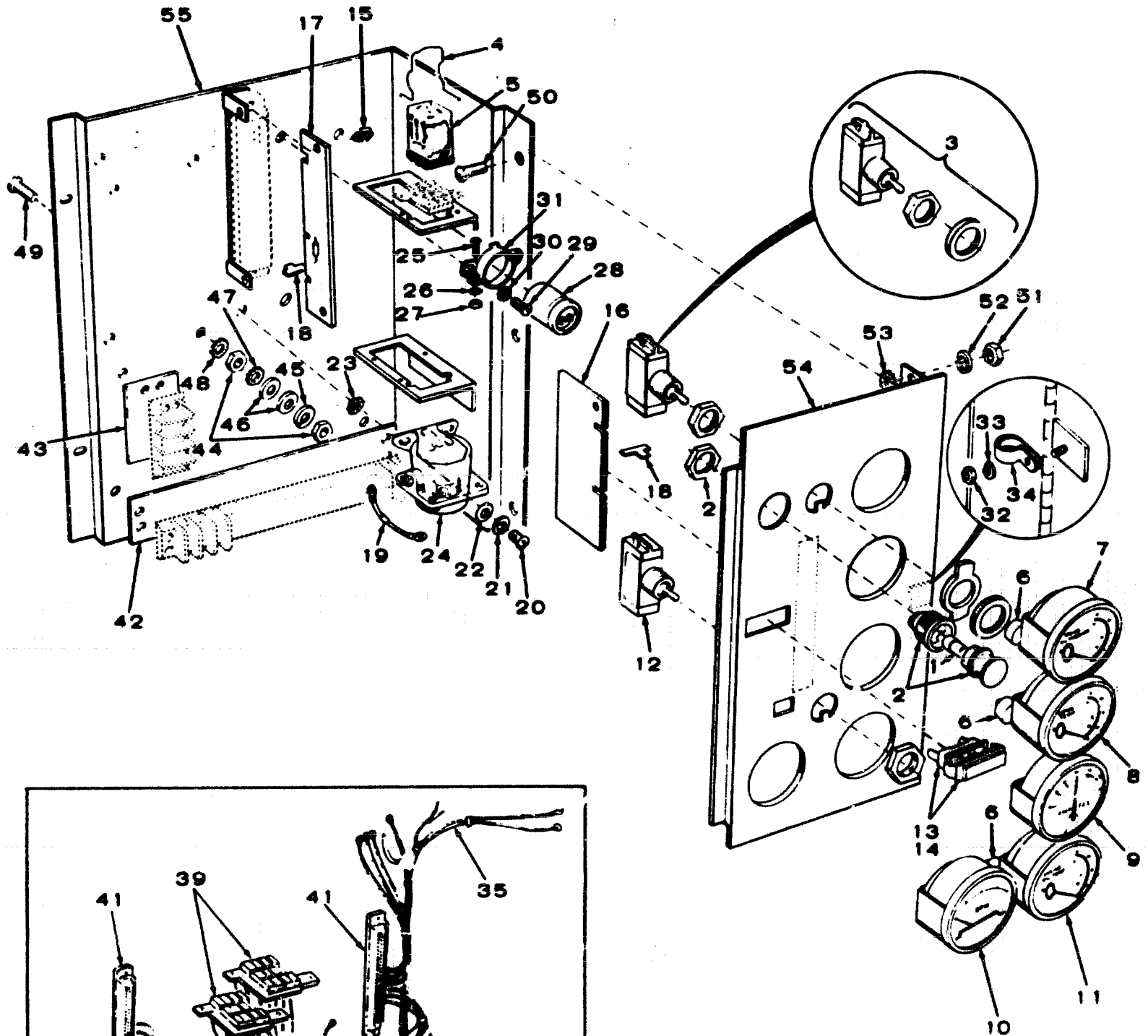


XC8-1000

COOLING SYSTEM (WITH RADIATOR)

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	503-0364	4	Clamp, Hose	17	800-0082	4	Screw, Cap - Hex Head (1/2-13 x 1-1/2")
2	503-0616	1	Hose, Rubber - Upper	18	862-0016	4	Nut, Hex (1/2-13)
3	503-0615	1	Hose, Rubber - Lower	19	850-0080	4	Washer, Lock-Spring (1/2")
4	821-0018	8	Screw, Self-Locking - Hex Washer Head (1/4-20 x 5/8")	20	BRACKET, SUPPORT - RADIATOR		
5	526-0045	8	Washer, Flat (21/64" ID x 5/8" OD x 1/8" Thk)		130-0843	2	150/175 kW Sets
6	130-0824	1	Guard, Fan		130-1412	2	200 kW Sets
7	821-0014	6	Screw, Self-Locking - Hex Washer Head (5/16-18 x 1/2")	21	821-0016	4	Screw, Self-Locking - Hex Washer Head (5/16-18 x 3/4")
8	130-0918	1	Shroud, Fan	22	870-0257	2	Nut, Self-Locking - Hex (5/16-18)
9	504-0028	1	Cock, Drain	23	130-0848	2	Brace, Support - Radiator
10	800-0130	4	Screw, Cap - Hex Head (5/8-11 x 1")	24	821-0016	4	Screw, Self-Locking - Hex Washer Head (5/16-18 x 3/4")
11	850-0070	4	Washer, Lock-Spring (5/8")	25	870-0257	4	Nut, Self-Locking - Hex (5/16-18)
12	526-0112	4	Washer, Flat (11/16" ID x 1-3/8" OD x 7/64" Thk)	26	800-0030	4	Screw, Cap - Hex Head (5/16-18 x 1-1/4")
13	821-0014	8	Screw, Self-Locking - Hex Washer Head (5/16-18 x 1/2")	27	870-0048	6	Nut, Self-Locking - Hex (5/16-18)
14	130-0842	1	Shroud, Radiator	28	405-2016	2	Bracket, Mounting - Front Panel
15	130-0836	1	Radiator (Includes Cap)	29	821-0030	4	Screw, Self-Locking - Hex Washer Head (3/8-16 x 1")
16	130-0449	1	Cap, Radiator	30	526-0013	4	Washer, Flat (25/64" ID x 1" OD x 1/16" Thk)
				31	870-0133	4	Nut, Self-Locking - Hex (3/8-16)
				32	405-1888	2	Brace, Support - Radiator
				33	405-1884	1	Panel, Housing - Front

ENGINE CONTROL WITH ONE FAULT LIGHT — 150/175 kW SETS



SC-1106

ENGINE CONTROL WITH ONE FAULT LIGHT — 150/175 kW SETS

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	322-0017	1	Lamp, Incandescent (24 VDC)
2	322-0149	1	Lampholder
3	308-0002	1	Switch, Toggle (SPST)
4	307-1157	3	Spring, Holddown - Relay
5	RELAY (24 VDC)		
	307-1056	1	(Ignition)
	307-1056	1	(Start Disconnect)
	307-1061	1	(Starter Protection)
6	193-0250	3	Resistor - Gauge
7	193-0243	1	Gauge - Oil Pressure (12 VDC)
8	193-0245	1	Gauge - Water Temperature (12 VDC)
9	302-0061	1	Ammeter
10	302-0749	1	£Tachometer - Electrical
11	193-0248	1	£Gauge - Oil Temperature (12 VDC)
12	SWITCH, TOGGLE - SELECTOR		
	308-0138	1	Standard & Cycle Cranking Controls
	308-0327	1	Penn State Controls
13	*LIGHT, INDICATOR - 28 VDC (Lens Color & Legend Listed Below)		
	322-0129	1	Red - Fault
14	322-0137	1	*Light, Indicator - 14 VDC (Red Lens - No Legend)
15	519-0374	4	Fastener, Snap-In (Printed Circuit Boards)
16	PRINTED CIRCUIT BOARD ASSEMBLY		
	300-0751	1	Standard Cranker (24 VDC)
	300-0715	1	Cycle Cranker (24 VDC)
17	PRINTED CIRCUIT BOARD ASSEMBLY		
	300-0680	1	Engine Control Monitor - Standard
	300-0731	1	Engine Control Monitor - Penn State
18	332-1276	4	Plug, Keying - PC Board
19	357-0018	1	Diode, with Terminals
20	813-0098	2	Screw, Machine - Round Head (#10-32 x 3/8")
21	850-0030	2	Washer, Lock - Spring (#10)
22	526-0009	2	Washer, Flat (7/32" ID x 1/2" OD x 1/16" Thk)
23	856-0003	2	Washer, Lock - EIT (#10)
24	307-0061	1	Relay, Solenoid - Start (24 VDC)
25	812-0061	1	Screw, Machine - Round Head (#6-32 x 3/8")
26	880-0006	1	Nut, Hex (#6-32)
27	853-0003	1	Washer, Lock - ET (#6)
28	356-0072	1	Capacitor, Fixed, Electrolytic (4000 MFD, 30 VDC)
29	812-0063	2	Screw, Machine - Round Head (#6-32 x 1/2")

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
30	853-0003	2	Washer, Lock - ET (#6)
31	356-0070	1	Clamp, Capacitor Mounting
32	870-0053	1	Nut, Hex (#10-32)
33	850-0030	1	Washer, Lock - Spring (#10)
34	332-0051	1	Clamp, Loop
35	HARNESS, WIRING - ENGINE CONTROL		
	338-1065	1	Includes Parts Marked +
	ATTACHING HARDWARE FOR WIRING HARNESS		
	812-0061	4	Screw, Machine - Round Head (#6-32 x 3/8")
	812-0066	6	Screw, Machine - Round Head (#6-32 x 3/4")
	853-0003	14	Washer, Lock - ET (#6)
	880-0006	10	Nut, Hex (#6-32)
36	332-1043	1	+Jumper, Terminal
37	332-0785	1	+Block, Terminal - 16 Place
38	332-0537	1	+Block, Terminal - 4 Place
39	323-0765	2	+Socket, Relay - 11 Place
40	323-0764	1	+Socket, Relay - 8 Place
41	332-1271	2	+Connector, Electrical - PC BD Board
42	332-1241	1	Strip, Marker - Terminal
43	332-1239	1	Strip, Marker - Terminal
	GROUND TERMINAL ASSEMBLY (Includes Parts Marked #)		
44	871-0010	2	#Nut, Hex - Brass (#10-32)
45	850-0030	1	#Washer, Lock - Spring (#10)
46	526-0062	2	#Washer, Flat - Brass (13/64" ID x 1/2" OD x 1/16" Thk)
47	853-0008	1	#Washer, Lock - ET (#10)
48	856-0003	1	#Washer, Lock - ETI (#10)
49	815-0203	1	Screw, Machine - Round Head, Brass (#10-32 x 7/8")
50	815-0026	5	Screw, Machine - Truss Head (#10-32 x 3/8")
51	870-0053	1	Nut, Hex (#10-32)
52	850-0030	1	Washer, Lock - Spring (#10)
53	856-0003	1	Washer, Lock - EIT (#10)
54	PANEL, CONTROL - ENGINE		
	301-3165	1	With Three Gauge Mtg. Holes
	301-3286	1	With Four Gauge Mtg. Holes
	301-3396	1	With Five Gauge Mtg. Holes
55	301-3253	1	Bracket, Mounting Engine Control

* - NOTE: For lamp replacement order 322-0137.

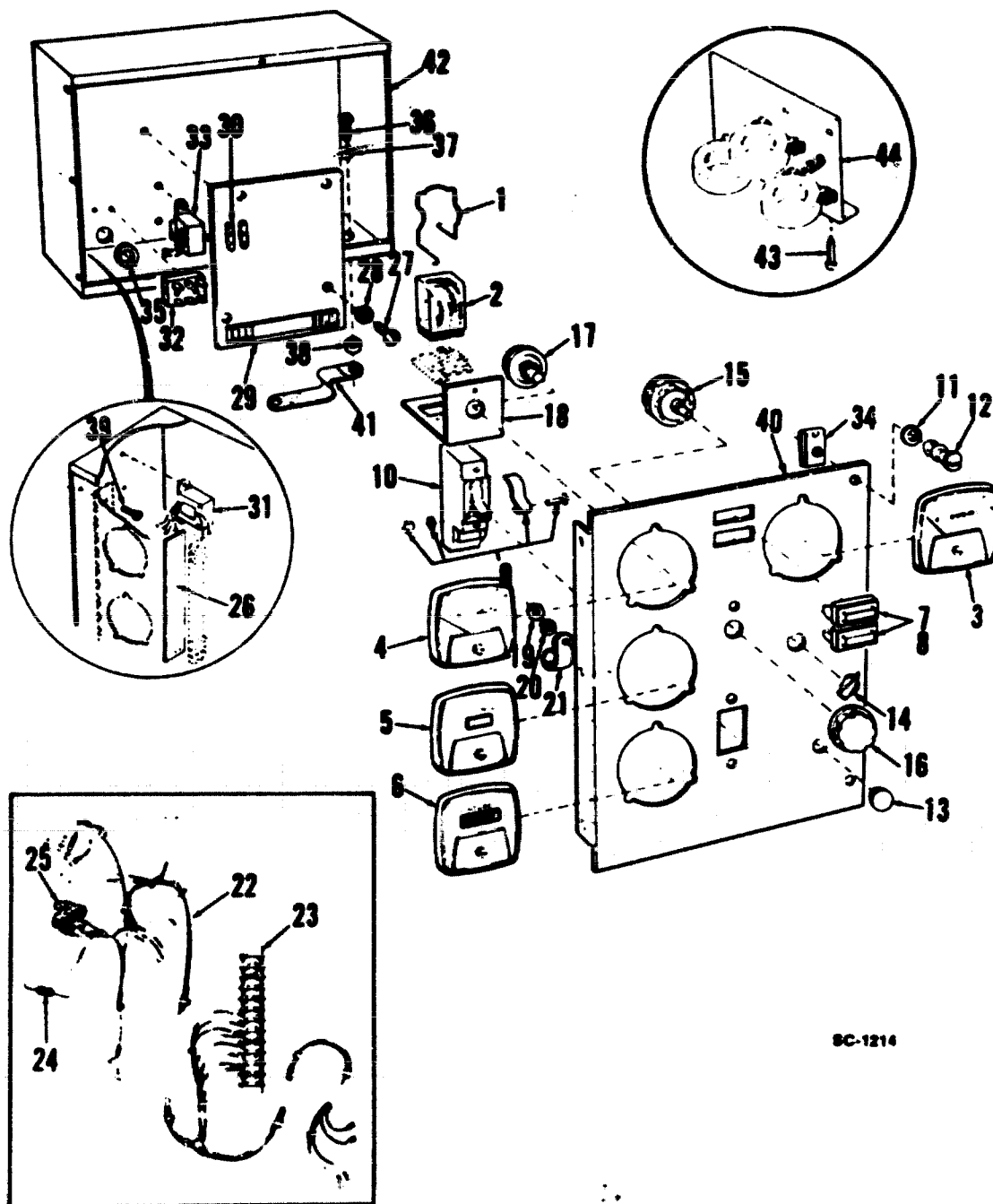
Remove and discard plain red lens, install lens with legend from burned out light — lights snap in and out of panel.

£ - Optional items used with Engine Mounted Senders.

+ - Parts Included in Wiring Harness

- Parts Included in Ground Terminal Assembly

GENERATOR CONTROL — 150/175 kW SETS



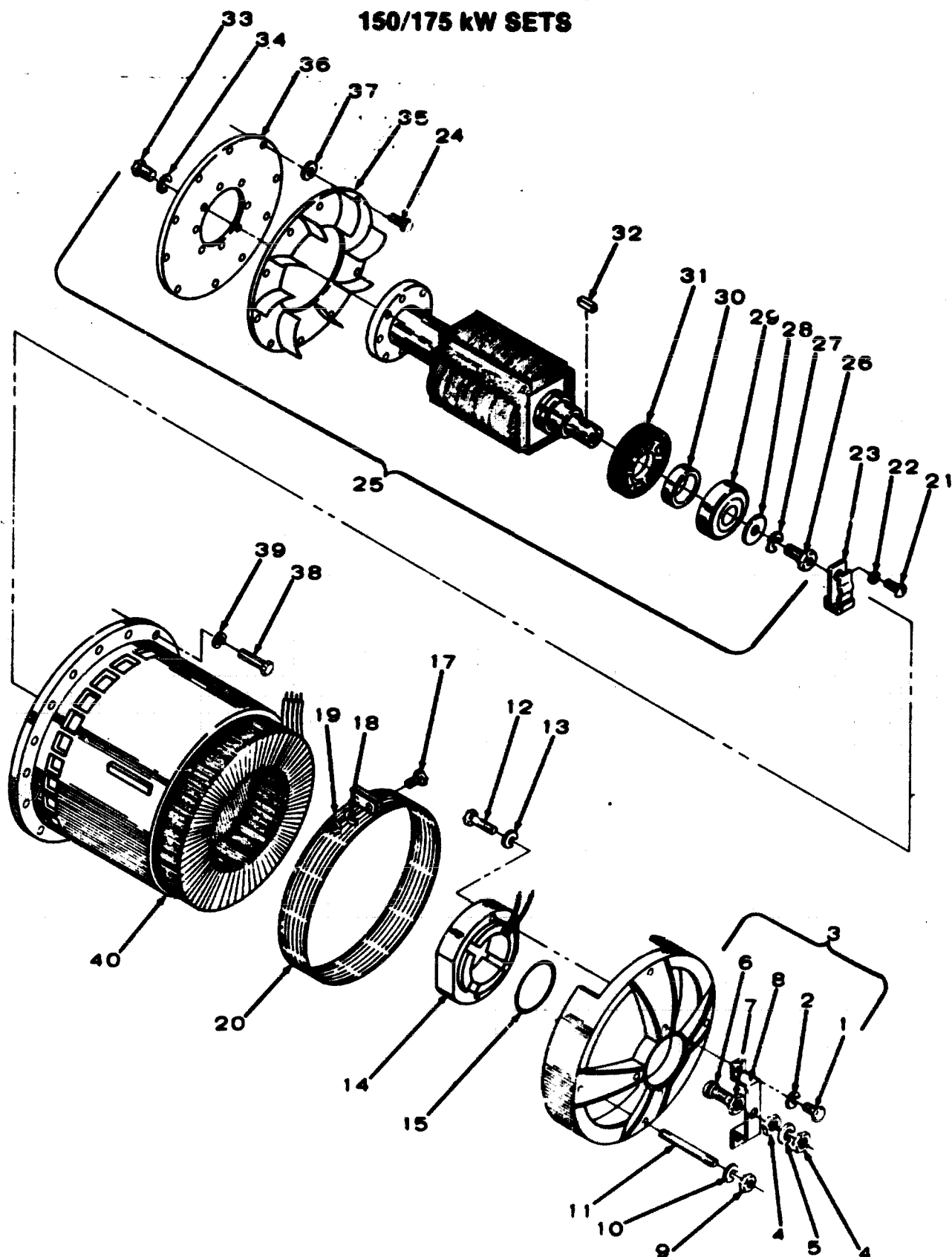
8C-1214

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	
1	307-1157	1	Spring, Holddown, Relay - Code 15R, 515R Only)		302-0412	1	0-250 Amp (121-150 kW) Codes 6DR, 6DR50, 7R, 7R50	
2	307-1061	1	Relay (24 VDC) - Code 15R, 515R Only		302-0412	1	0-250 Amp (146 to 180 kW) Codes 9XR, 9XR50	
3	AMMETER (Select as Required)				302-0413	1	0-300 Amp (151 to 180 kW) Codes 6DR, 6DR50	
			DUAL SCALE		302-0605	1	0-400 Amp (146 to 180 kW) Codes 7R, 7R50	
	302-0723	1	0-250, 0-500 Amp (101-125 kW) Codes - 15R, 15R50, 515R	4	VOLTMETER (Select as Required)			
	302-0724	1	0-37 1/2, 0-750 Amp (126-180 kW) Codes 15R, 15R50, 515R			302-0718	1	Dual Scale (0-300 V, 0-600 V) Codes 15R, 15R50, 515R
			SINGLE SCALE			302-0422	1	Scale (0-600 V) Codes 6DR, 6DR50
	302-0410	1	0-150 Amp, (71-110 kW) Codes 9XR, 9XR50			302-0612	1	Scale (0-500 V) Codes 7R, 7R50
	302-0411	1	0-200 Amp (91-120 kW) Codes 6DR, 6DR50, 7R, 7R50			302-0779	1	Scale (0-750 V) Codes 9XR, 9XR50
	302-0411	1	0-200 Amp (111-145 kW) Codes 9XR, 9XR50					

GENERATOR CONTROL — 150/175 kW SETS

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
5	METER, FREQUENCY (Select as Required)			23	332-0795	1	Block, Terminal - 16 Place
			REED TYPE	24	350-0556	1	Resistor, Fixed, Composition (47 K Ohms, 1/2 Watt)
	302-0213	1	15 VAC, 60 Hz	25	323-0765	1	Socket, Relay - 11 Place
	302-0221	1	230 VAC, 60 Hz	26	332-1242	1	Strip, Marker - Terminal
	302-0234	1	115 VAC, 50 Hz	27	812-0065	4	Screw, Machine - Round Head (#6-32 x 5/8")
	302-0256	1	230 VAC, 50 Hz	28	853-0003	4	Washer, Lock - ET (#6)
			POINTER TYPE	29	REGULATOR, VOLTAGE (Select As Required)		
	302-0809	1	120 VAC, 60 Hz		NOTE: REGULATOR MATCHED TO VOLTAGE TRANSFORMER, Item #31.		
	302-0810	1	208 VAC, 60 Hz		332-1268	1	Used With 120 VAC Input Signal
	302-0811	1	240 VAC, 60 Hz		332-1956	1	Used with 240 VAC Input Signal
6	METER, TIME TOTALIZING (Select as Required)			30	321-0204	2	Fuse, Cartridge (1/4 Amp) - Part of 332-1956 Voltage Regulator
	302-0466	1	60 Hz	31	TRANSFORMER, VOLTAGE (Select as Required)		
	302-0469	1	50 Hz		NOTE: Transformer Matched to Voltage Regulator, Item #29		
7	LIGHT, INDICATOR - 125 VAC (Lens Color & Legend Listed Below)				315-0342	1	120 VAC
	322-0130	1	Red - Lower Scale		315-0431	1	240 VAC
	322-0131	1	Red - Upper Scale		ATTACHING PARTS FOR TRANSFORMER		
8	322-0178	1	Light, Indicator - 125 VAC		812-0061	2	Screw, Machine - Round Head (#6-32 x 3/8")
	(Replacement) - Discard Lens - Used Lens From Original Light				853-0003	2	Washer, Lock - ET (#6)
9	320-0307	1	Lock - Circuit Breaker Handle (Penn State Sets)	32	305-0675	1	Rectifier Bridge
	ATTACHING HARDWARE FOR LOCK				ATTACHING PARTS FOR RECTIFIER BRIDGE		
	815-0203	1	Screw, Machine - Round Head (#10-32 x 7/8")		812-0070	2	Screw, Machine - Round Head (#6-32 x 1-1/4")
	854-0010	1	Washer, Lock - IT (#10)		850-0020	2	Washer, Lock - Spring (#6)
	871-0010	1	Nut, Hex (#10-32)	33	315-0384	1	Reactor
10	320-0431	1	Circuit Breaker - 2 Amp		ATTACHING PARTS FOR REACTOR		
	ATTACHING HARDWARE FOR CIRCUIT BREAKER				812-0061	2	Screw, Machine - Round Head (#6-32 x 3/8")
	812-0061	2	Screw, Machine - Round Head (#6-32 x 3/8")		853-0003	2	Washer, Lock - ET (#6)
	850-0020	2	Washer, Lock - Spring (#6)	34	406-0332	2	Receptacle, Turnbutton Fastener
	815-0203	1	Screw, Machine - Round Head Brass (#10-32 x 7/8")	35	508-0001	4	Grommet, Rubber
	871-0010	1	Nut, Hex - Brass (#10-32)	36	800-0045	4	Screw, Cap - Hex Head (5 16-18 x 3/8")
	853-0008	1	Washer, Lock - ET (#10)	37	850-0045	4	Washer, Lock - Spring (5 16")
	526-0049	1	Washer, Flat - Brass (13/64" ID x 7/16" OD x 1/32" Thk)	38	402-0070	4	Dampener, Vibration
11	406-0334	2	Clip, Retaining - Turnbutton Fastener	39	815-0026	3	Screw, Machine - Truss Head (#10-32 x 3/3")
12	406-0333	2	Stud, Turnbutton Fastener	40	PANEL CONTROL		
13	517-0131	1	Plug, Plastic		301-3170	1	Codes 15, 15R50, 515
14	303-0076	1	Knob, Pointer		301-3342	1	Codes 5D, 6D, 7, 9XR
15	308-0284	1	Switch, Selector	41	337-0049	1	Strap Ground
16	303-0032	1	Knob		ATTACHING PARTS FOR STRAP		
17	303-0170	1	Rheostat (35K Ohms, 25 Watt)		800-0046	1	Screw, Cap, Hex Head (5 16-18 x 3/8")
18	301-3244	1	Bracket, Mounting, Relay - Code 15R, 15R50, 515R Only		850-0045	1	Washer, Lock - Spring (5 16")
19	870-0053	1	Nut, Hex (#10-32)		856-0008	2	Washer, Lock - ET (5 16")
20	850-0030	1	Washer, Lock - Spring (#10)		862-0015	1	Nut, Hex (5 16-18)
21	332-0051	1	Clamp, Loop	42	301-3158	1	Box Control
22	HARNESS, WIRING - GENERATOR CONTROL (Includes Item 23)			43	821-0010	2	Screw, Self-Locking - Hex Washer Head (1 4-20 x 1 2")
	338-0730	1	Codes 15R, 15R50, 515R (Includes Items 24, 25)	44	CURRENT TRANSFORMER ASSEMBLY (See Separate Figure For Parts) - NOTE: Assembly is Located Behind The Control Box		
	338-0759	1	Codes 6DR, 9XR				
	338-1063	1	Code 7R				
	ATTACHING HARDWARE FOR WIRING HARNESS						
	812-0061	2	Screw, Machine - Round Head (#6-32 x 3/8")				
	812-0066	2	Screw, Machine - Round Head (#6-32 x 3/4")				
	850-0020	2	Washer, Lock - Spring (#6)				
	853-0003	4	Washer, Lock - ET (#6)				
	860-0006	2	Nut, Hex (#6-32)				

GENERATOR ASSEMBLY — 150/175 kW SETS



G-1116

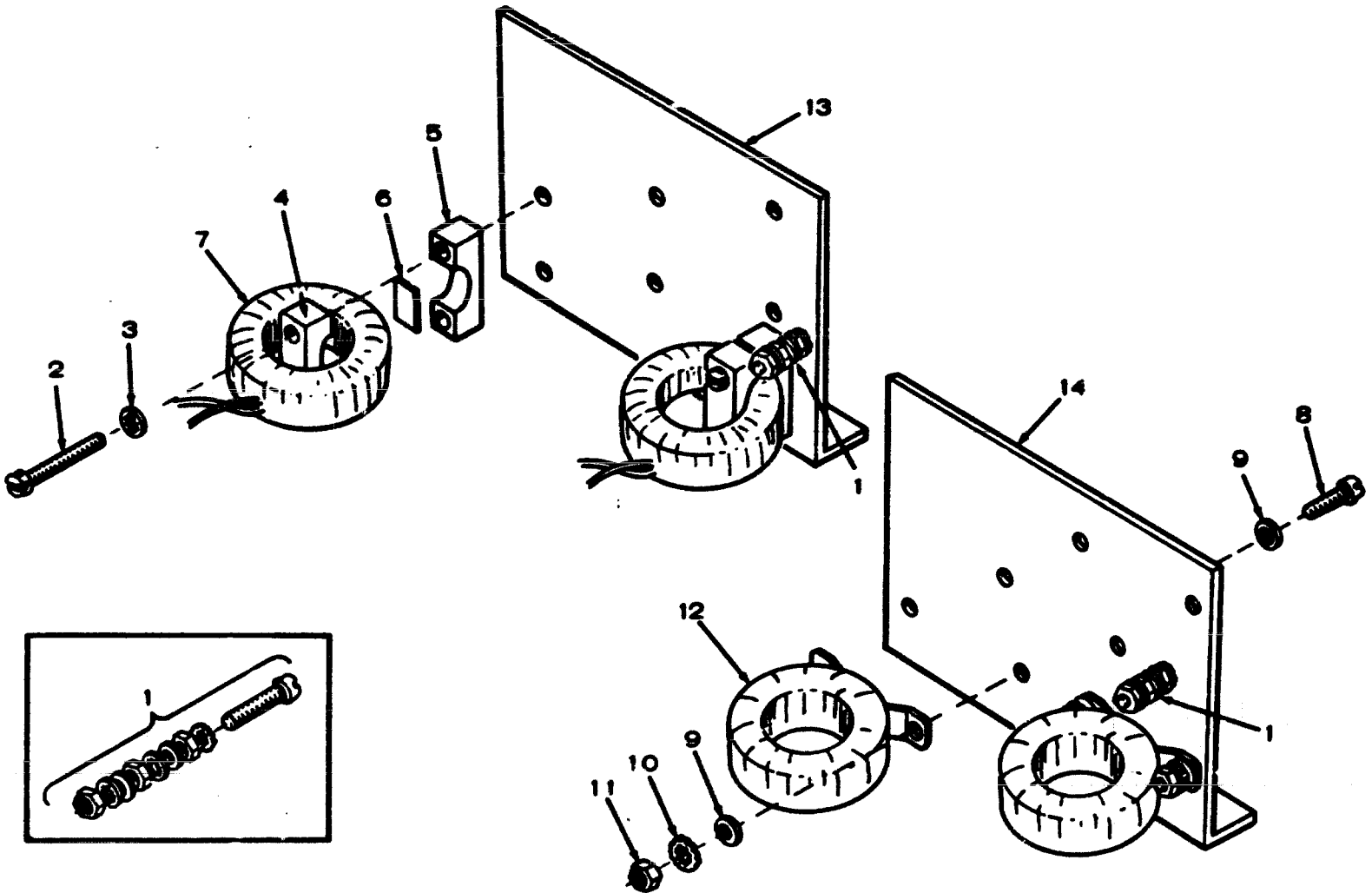
GENERATOR ASSEMBLY — 150/175 kW SETS

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	800-0003	2	Screw, Cap - Hex Head (1/4-20 x 1/2")
2	850-0040	2	Washer, Lock - Spring (1/4")
3	150-1456	1	Contact Assembly - Overspeed Switch (Includes Parts Marked +)
4	862-0001	2	+Nut, Hex (1/4-20)
5	853-0013	1	+Washer, Lock - ET (1/4")
6	150-0723	1	+Contact, Electrical
7	870-0250	1	+Nut, Insulator
8	150-1356	1	+Bracket, Mounting - Contact
9	862-0011	4	Nut, Hex - Grade 8 (3/8-16)
10	850-0050	4	Washer, Lock - Spring (3/8")
11	520-0735	4	Stud, (3/8-16 UNC x 5-3/4")
12	800-0009	4	Screw, Cap - Hex Head (1/4-20 x 1-1/2")
13	850-0040	4	Washer, Lock - Spring (1/4")
14	STATOR, EXCITER	(Select As Required)	
	220-2353	1	Standard
	220-1774	1	§Environmental Protected
15	509-0125	1	Seal, Oil - "O" Ring
16	211-0185	1	End Bell, Generator
17	800-0008	2	Screw, Cap - Hex Head (1/4-20 x 1-1/4")
18	850-0040	2	Washer, Lock - Spring (1/4")
19	862-0001	2	Nut, Hex (1/4-20)
20	234-0368	1	Screen, Air - Generator
21	812-0189	1	Screw, Machine - Round Head (3/8-16 x 3/4")
22	856-0010	1	Washer, Lock - EIT (3/8")
23	150-0717	1	Switch, Overspeed
24	805-0032	8	Bolt, Place - Hex Head, Grade 8 (1/2-13 x 1-1/4")
25	ROTOR ASSEMBLY, GENERATOR	(Includes Parts Marked *)	
			50 HERTZ SETS
	201-2680	1	125 kW, Code 515
	201-2478	1	145 kW, Code 515
	201-2536	1	§ 145 kW, Code 515 (Environmental Protected)
			60 HERTZ SETS
	201-2680	1	150 kW, Code 6D
	201-2680	1	150 kW, Code 7
	201-2680	1	150 kW, Code 9X
	201-2680	1	150 kW, Code 15
	201-2698	1	§ 150 kW, Code 15 (Environmental Protected)
	201-2478	1	175 kW, Code 6D
	201-2478	1	175 kW, Code 7
	201-2478	1	175 kW, Code 9X
	201-2478	1	175 kW, Code 15
	201-2536	1	§ 175 kW, Code 15 (Environmental Protected)
26	800-0513	1	*Screw, Cap - Hex Head, Modified with 3/8-16 Tapped Center Hole (3/4-10 x 1-1/2")

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
27	850-0079	1	*Washer, Lock - Spring (3/4")
28	526-0238	1	*Washer, Flat - Steel Alloy (13/16" ID x 2" OD x 3/16" Thk)
29	510-0101	1	*Bearing, Ball
30	232-2102	1	*Spacer, Sleeve
31	ROTOR ASSEMBLY, EXCITER	(See Separate Illustration for Component Parts)	
	201-1739	1	Standard
	201-1845	1	§ Environmental Protected
32	515-0145	1	*Key, Machine (1/4" x 1/4" x 7/8")
33	BOLT, PLACE - HEX HEAD, GRADE 8	(Select As Required)	
	805-0033	8	5/8-11 x 1"
	805-0035	8	5/8-11 x 1-1/2"
34	526-0259	8	*Washer, Flat - Std Hardened (11/16" OD x 1-3/8" OD x 7/64" Thk)
35	205-0085	1	*Fan, Generator
36	DISC, DRIVE - GENERATOR	(Select As Required)	
	232-2037	1	150 kW Sets
	232-2580	1	175 kW Sets
37	526-0028	8	*Washer, Flat (9/16" ID x 15/16" OD x 1/16" Thk) Used Only on 175 kW Sets
38	800-0073	12	Screw Cap - Hex Head (7/16-14 x 1-1/2")
39	850-0055	12	Washer, Lock - Spring (7/16")
40	STATOR ASSEMBLY, GENERATOR	(Select As Required)	
			50 HERTZ SETS
	220-1960	1	125 kW, Code 515
	220-1991	1	145 kW, Code 515
	220-2261	1	§ 145 kW, Code 515 (Environmental Protected)
			60 HERTZ SETS
	220-2640	1	150 kW, Code 6D
	220-2455	1	150 kW, Code 7
	220-1613	1	150 kW, Code 9X
	220-1518	1	150 kW, Code 15
	220-1779	1	§ 150 kW, Code 15 (Environmental Protected)
	220-2641	1	175 kW, Code 6D
	220-2456	1	175 kW, Code 7
	220-1614	1	175 kW, Code 9X
	220-1519	1	175 kW, Code 15
	220-1780	1	§ 175 kW, Code 15 (Environmental Protected)

- + - Parts Included in Overspeed Switch Assembly.
- * - Parts Included in Generator Rotor Assembly.
- § - Environmental Protected Assemblies or Parts Which are
Coated with Epoxy and are for Use in High Humidity Areas

CURRENT TRANSFORMER ASSEMBLY — 150/175 kW SETS

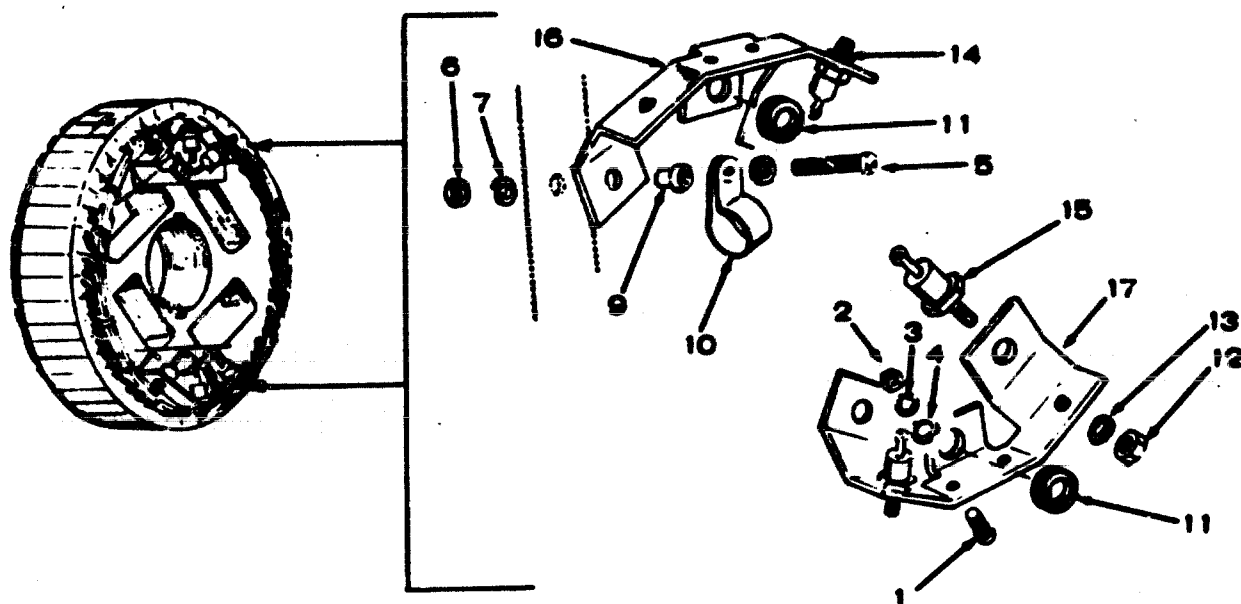


SC-1189

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
CURRENT TRANSFORMER ASSEMBLY (Select Components as Required)			
1	GROUND TERMINAL ASSEMBLY (Includes Following Items)		
	815-0203	1	Screw, Machine - Round Head, Brass (#10-32 x 7/8")
	871-0010	3	Nut, Hex - Brass (#10-32)
	856-0003	1	Washer, Lock - EIT (#10)
	854-0010	2	Washer, Lock - IT (#10)
	526-0049	2	Washer, Flat - Brass (13/64" ID x 7/32" OD x 1/32" Thk)
2	813-0110	6	Screw, Machine - Round Head (#10-32 x 2")
3	854-0010	6	Washer, Lock - IT (#10)
4	302-0235	3	Clamp, Upper
5	302-0236	3	Clamp, Lower
6	302-0253	6	Shim

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
7	CURRENT TRANSFORMER (Select Size as Required)		
	302-0117	3	Ratio 50/5, 3 VA
	302-0076	3	Ratio 75/5, 2 VA
	302-0078	3	Ratio 100/5, 2 VA
	302-0079	3	Ratio 150/5, 1 VA
	302-0108	3	Ratio 200/5, 1 VA
	302-0209	3	Ratio 230/5, 1 VA
	302-0107	3	Ratio 300/5, 1 VA
8	813-0100	6	Screw, Machine - Round Head (#10-32 x 1/2")
9	526-0008	6	Washer, Flat (13/64" ID x 7/16" OD x 1/32" Thk)
10	856-0003	6	Washer, Lock - EIT (#10)
11	870-0053	6	Nut, Hex (#10-32)
12	CURRENT TRANSFORMER (Select Size as Required)		
	302-0952	3	Ratio 75/5, 2 VA
	302-0864	3	Ratio 150/5, 2 VA
	302-0865	3	Ratio 200/5, 2 VA
	302-0866	3	Ratio 250/5, 2 VA
	302-0808	3	Ratio 400/5, 2 VA
	302-0547	3	Ratio 500/5, 2 VA
	302-0471	3	Ratio 750/5, 2 VA
13	302-0729	1	Bracket, Mounting - Transformer
14	302-0764	1	Bracket, Mounting - Transformer

EXCITER ROTOR — 150/175 kW SETS

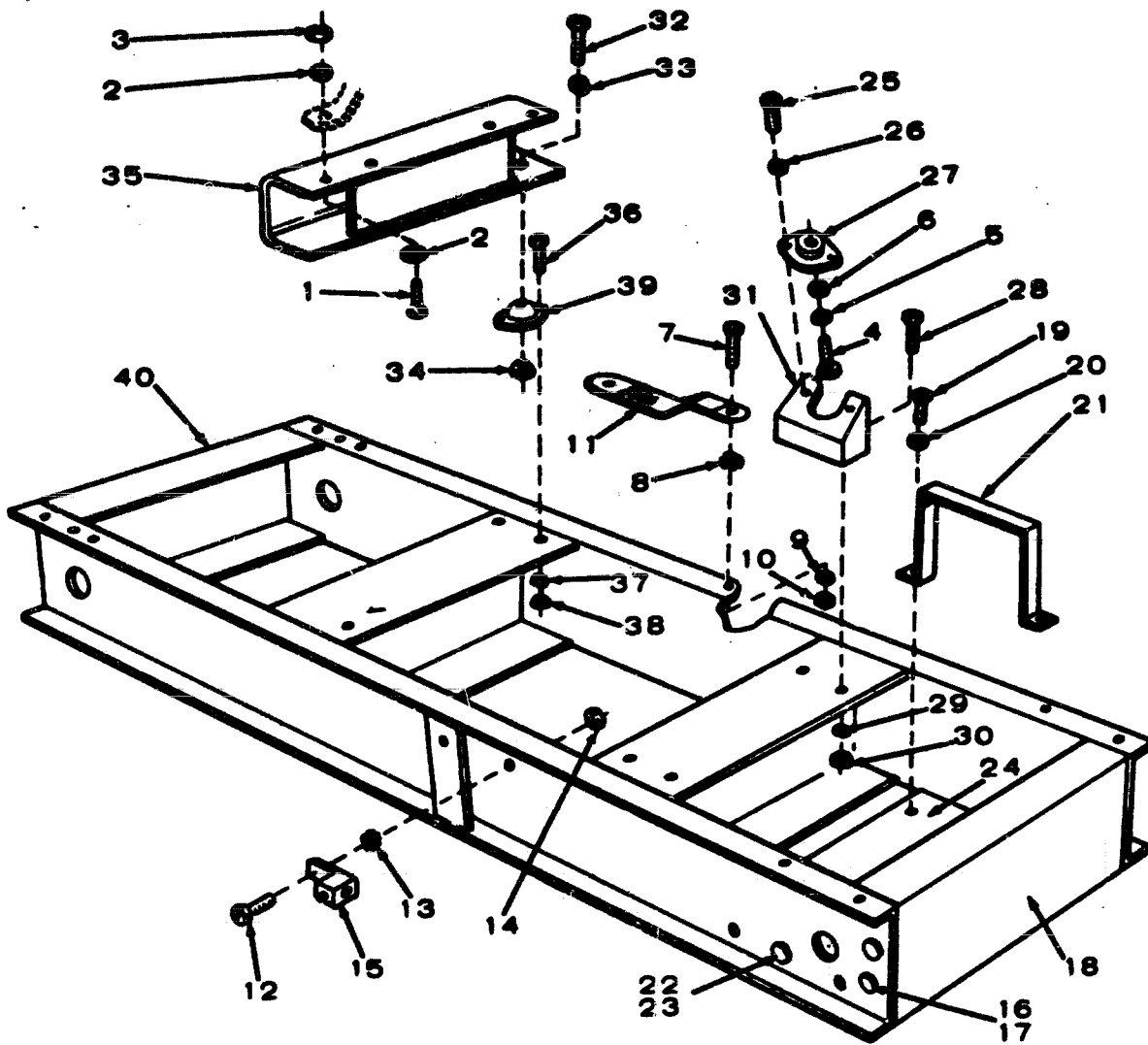


G-1638

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
ROTOR ASSEMBLY, EXCITER (Includes Parts Marked *)			
	201-1739	1	Standard
	201-1845	1	Enviromental Protected (Expoxyed)
1	813-0100	2	Screw, Machine - Round Head (#10-32 x 1/2")
2	870-0053	2	Nut, Hex (#10-32)
3	850-0030	2	Washer, Lock - Spring (#10)
4	526-0008	2	Washer, Flat (13/64" ID x 7/16" OD x 1/32" Thk)
5	813-0110	4	*Screw, Machine - Round Head (#10-32 x 2")
6	870-0053	4	*Nut, Hex (#10-32)
7	850-0030	4	*Washer, Lock - Spring (#10)
8	526-0009	4	*Washer, Flat (7/32" ID x 1/2" OD x 1/16" Thk)
9	508-0187	4	*Spacer, Stepped
10	332-0050	2	*Clamp, Loop
11	508-0093	2	*Grommet, Rubber
12	870-0053	6	*Nut, Hex (#10-32)
13	850-0030	6	*Washer, Lock - Spring (#10)
14	*DIODE, RECTIFIER - POSITIVE (CR1, CR2, CR3)		
	358-0016	3	Standard
	358-0044	3	Enviromental Protected (Expoxyed)
15	*DIODE, RECTIFIER - NEGATIVE (CR4, CR5, CR6)		
	358-0015	3	Standard
	358-0043	3	Enviromental Protected (Expoxyed)
16	363-0054	1	*Heat, Sink - Positive Diodes
17	363-0055	1	*Heat, Sink - Negative Diodes

* - Parts Included in Exciter Rotor Assembly

CHASSIS — 150/175 kW SETS



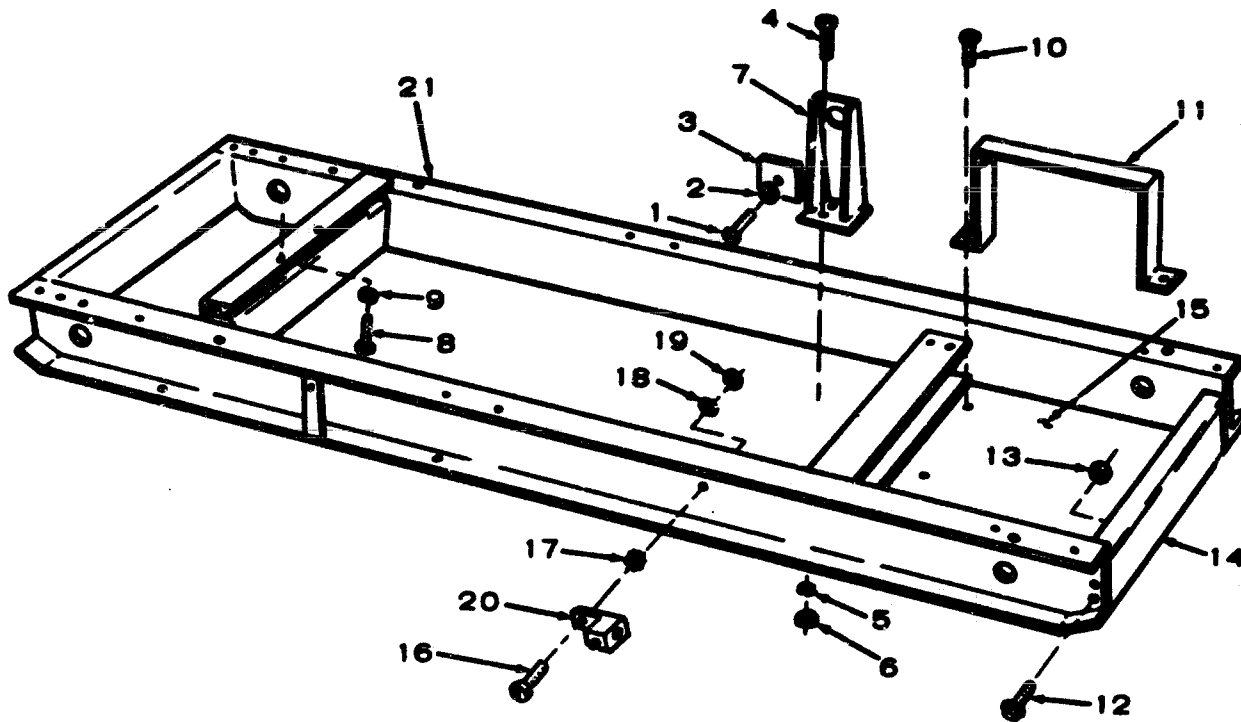
88-1297

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	800-0132	2	Screw, Cap - Hex Head (5/8-11 x 1-1/2")
2	850-0070	2	Washer, Lock - Spring (5/8")
3	862-0007	2	Nut, Hex (5/8-11)
4	800-0163	2	Screw, Cap - Hex Head (3/4-10 x 4")
5	526-0238	2	Washer, Flat (13/16" ID x 2" OD x 3/16" Thk)
6	850-0079	2	Washer, Lock - Spring (3/4")
7	800-0092	1	Screw, Cap - Hex Head (1/2-13 x 1-1/2")
8	856-0013	1	Washer, Lock - EIT (1/2")
9	850-0060	1	Washer, Lock - Spring (1/2")
10	862-0016	1	Nut, Hex (1/2-13)
11	337-0090	1	Strap, Ground
12	800-0028	1	Screw, Cap - Hex Head (5/16-18 x 1")
13	856-0008	1	Washer, Lock - EIT (5/16")
14	870-0257	1	Nut, Self-Locking, Hex (5/16-18)
15	332-1473	1	Lug, Terminal - Solderless
16	821-0016	4	Screw, Self-Locking - Hex Washer Head (5/16-18 x 3/4")
17	870-0257	4	Nut, Self-locking, Hex (5/16-18)
18	403-1198	1	Panel, End
19	800-0035	4	Screw, Cap - Hex Head (5/16-18 x 2-1/2")

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
20	850-0045	4	Washer, Lock - Spring (5/16-18)
21	416-0635	2	Strap, Holddown - Battery
22	821-0016	6	Screw, Self-Locking - Hex Washer Head (5/16-18 x 3/4")
23	870-0257	6	Nut, Self-Locking, Hex (5/16-18)
24	416-0673	1	Tray, Battery
25	800-0090	4	Screw, Cap - Hex Head (1/2-13 x 1")
26	850-0060	4	Washer, Lock - Spring (1/2")
27	402-0384	2	Mount, Vibration - Generator
28	800-0132	4	Screw, Cap - Hex Head (5/8-11 x 1-1/2")
29	850-0070	4	Washer, Lock - Spring (5/8")
30	862-0007	4	Nut, Hex (5/8-11)
31	232-2208	2	Bracket, Mounting - Generator
32	800-0153	2	Screw, Cap - Hex Head (3/4-10 x 1-1/2")
33	850-0079	2	Washer, Lock - Spring (3/4")
34	862-0008	2	Nut, Hex (3/4-10)
35	403-0886	1	Support, Mounting - Engine
36	800-0091	4	Screw, Cap - Hex Head (1/2-13 x 1-1/4")
37	850-0060	4	Washer, Lock - Spring (1/2")
38	862-0016	4	Nut, Hex (1/2-13)
39	402-0371	2	Mount, Vibration - Engine
40	403-1133	1	Base, Skid

B10

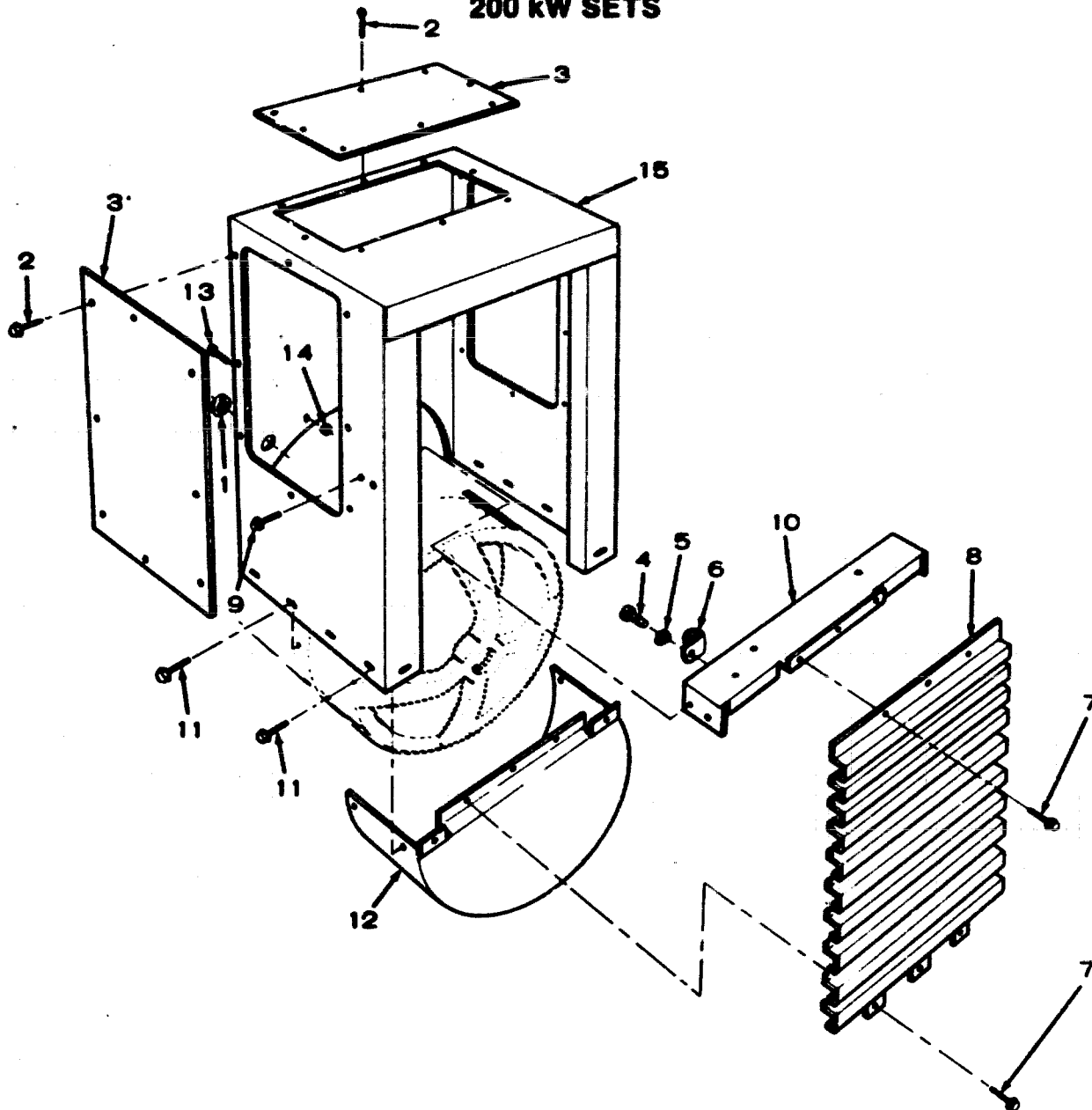
CHASSIS — 200 kW SETS



8-1217

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	800-0153	2	Screw, Cap - Hex Head (3/4-10 x 1-1/2")	11	416-0635	2	Strap, Holddown - Battery
2	850-0079	2	Washer, Lock-Spring (3/4")	12	821-0016	10	Screw, Self-Locking - Hex Washer Head (5/16-18 x 3/4")
3	232-2385	2	Plate, Mounting - Generator	13	870-0257	10	Nut, Self-Locking - Hex (5/16-18)
4	800-0156	4	Screw, Cap - Hex Head (3/4-10 x 2-1/4")	14	403-1200	1	Panel, Rear - Chassis
5	850-0079	4	Washer, Lock-Spring (3/4")	15	416-0674	1	Tray, Support-Battery
6	862-0020	4	Nut, Hex (3/4-10)	16	800-0028	1	Screw, Cap - Hex Head (5/16-18 x 1")
7	232-2389	2	Bracket, Mounting - Generator	17	856-0008	1	Washer, Lock-EIT (5/16")
8	800-0132	2	Screw, Cap - Hex Head (5/8-11 x 1-1/2")	18	850-0045	1	Washer, Lock-Spring (5/16")
9	850-0070	2	Washer, Lock-Spring (5/8")	19	862-0015	1	Nut, Hex (5/16-18)
10	800-0035	4	Screw, Cap - Hex Head (5/16-18 x 2-1/2")	20	332-1473	1	Lug, Terminal
				21	403-1025	1	Base, Skid

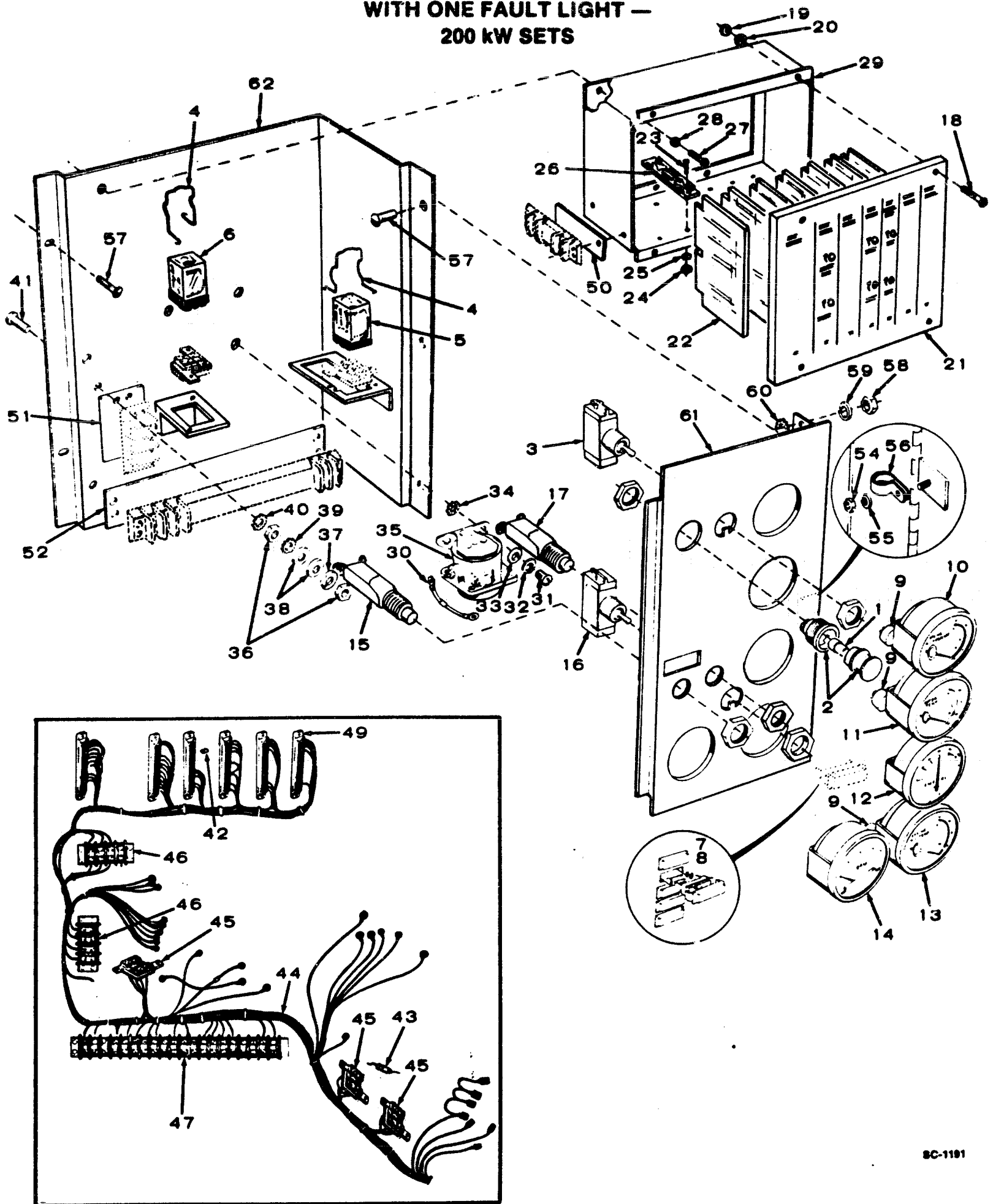
CONTROL HOUSING — 200 kW SETS



M-1213

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	508-0203	1	Bushing, Grommet
2	821-0010	24	Screw, Self-locking - Hex Washer Head (1/4-20 x 1/2")
3	301-3731	3	Plate, Access
4	813-0102	1	Screw, Machine - Round Head (#10-32 x 5/8")
5	850-0030	1	Washer, Lock - Spring (#10)
6	332-0052	3	Clamp, Loop
7	821-0010	6	Screw, Self-locking - Hex Washer Head (1/4-20 x 1/2")
8	234-0490	1	Grille - Generator Air Inlet
9	821-0010	4	Screw, Self-locking - Hex Washer Head (1/4-20 x 1/2")
10	301-3604	1	Shelf, Mounting - Control Box
11	821-0014	10	Screw, Self-locking - Hex Washer Head (5/16-18 x 1/2")
12	234-0489	1	Cover - Generator End Bell
13	821-0016	2	Screw, Self-locking - Hex Washer Head (5/16-18 x 3/4")
14	870-0257	2	Nut, Self-locking - Hex (5/16-18)
15	301-3605	1	Housing, Control

ENGINE CONTROL WITH ONE FAULT LIGHT — 200 kW SETS



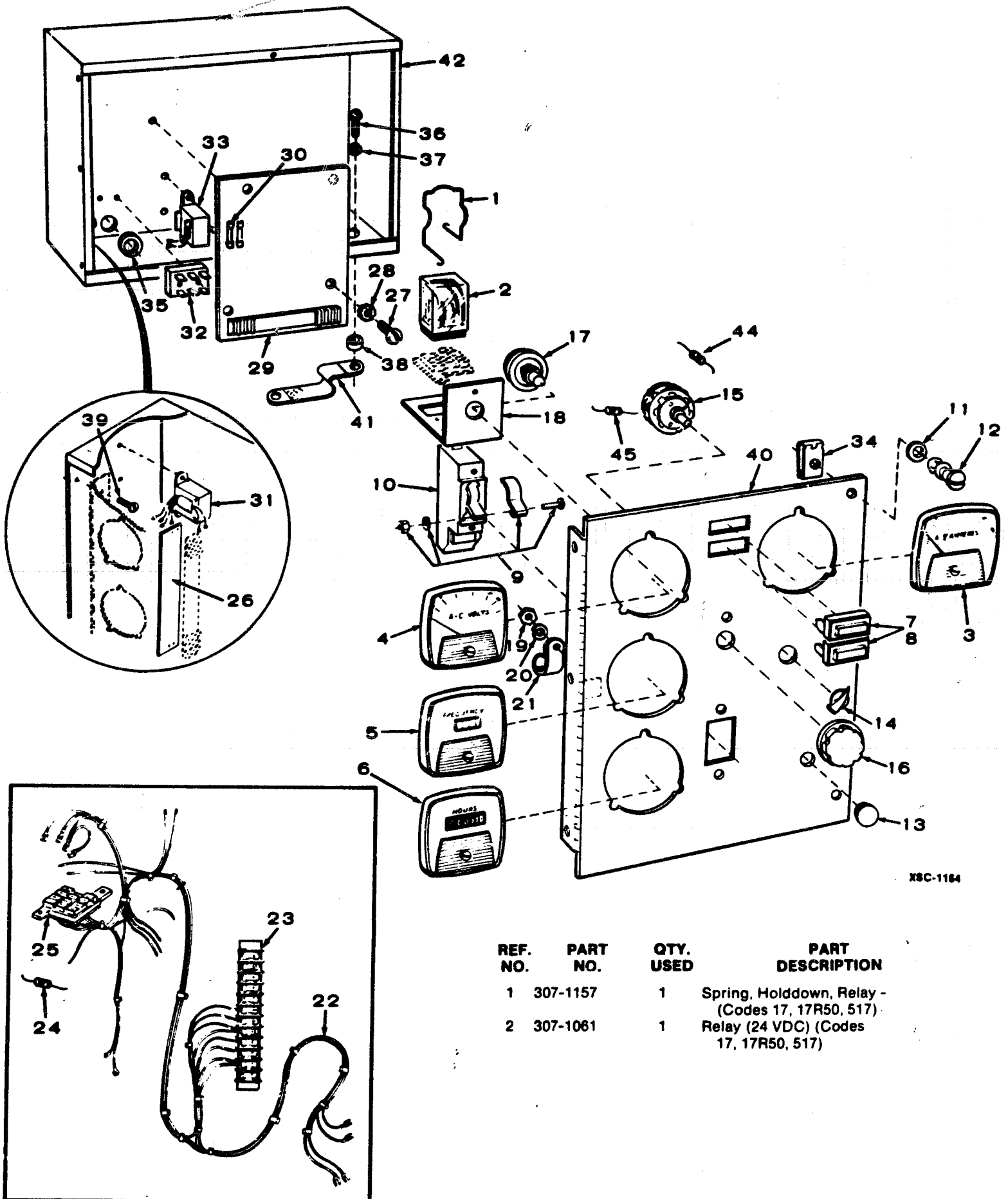
ENGINE CONTROL WITH ONE FAULT LIGHT — 200 kW SETS

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	322-0017	1	Lamp, Incandescent (24 VDC)
2	322-0149	1	Lampholder
3	308-0002	1	Switch, Toggle (SPST)
4	307-1157	3	Spring, Holddown - Relay
5	307-1056	2	Relay
6	307-1061	1	Relay
7	LIGHT, INDICATOR - 28 VDC (Lens Color & Legend Listed Below)		
	322-0129	1	Red - Fault
	NOTE: For lamp replacement order 322-0137 remove and discard plain red lens, install lens with legend from burned out light — lights snap in and out of panel.		
8	322-0137	1	Light, Indicator 28 VDC (Red Lens - No Legend)
9	193-0250	3	Resistor - Gauge
10	193-0243	1	Gauge - Oil Pressure (12 VDC)
11	193-0245	1	Gauge - Water Temperature (12 VDC)
12	302-0061	1	Ammeter
13	193-0248	1	Gauge - Oil Temperature (12 VDC)
14	302-0749	1	Tachometer - Electrical
15	308-0337	1	Switch, Push - Lamp Test
16	SWITCH, TOGGLE - SELECTOR		
	308-0220	1	Standard Control (DPDT-3 Position)
	308-0347	1	Penn State Control (DPDT)
17	308-0051	1	Switch, Push - Alarm Reset
18	812-0063	4	Screw, Machine - Round Head (#6-32 x 1/2")
19	860-0006	4	Nut, Hex (#6-32)
20	853-0003	4	Washer, Lock-ET (#6)
21	301-3635	1	Corer, Printed Circuit Assembly
22	PRINTED CIRCUIT BOARD ASSEMBLY		
	300-0953	1	Control, Engine Monitor
	300-0954	1	Control, Engine Shutdown
	300-0956	1	Control, Cyle Cranker
	300-0957	1	Control, Overspeed Sensor
	300-0958	1	Control, Starter Disconnect
	300-0973	1	Control, Start-Stop Time Delay
	300-0977	1	Control, Standard Cranker
	300-0987	1	Control, Bypass
23	812-0063	24	Screw, Machine - Round Head (#6-32 x 1/2")
24	860-0006	24	Nut, Hex (#6-32)
25	853-0003	24	Washer, Lock-ET (#6)
26	323-0814	12	Guide, Printed Circuit Board
27	813-0100	4	Screw, Machine - Round Head (#10-32 x 1/2")
28	850-0030	4	Washer, Lock-Spring (#10)
29	301-3588	1	Rack
30	357-0018	1	Diode, with Terminals

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
31	813-0098	2	Screw, Machine - Round Head (#10-32 x 3/8")
32	850-0030	2	Washer, Lock - Spring (#10)
33	526-0009	2	Washer, Flat (7/32" ID x 1/2" OD x 1/16" Thk)
34	856-0003	2	Washer, Lock - EIT (#10)
35	307-0061	1	Relay, Solenoid - Start (24 VDC)
	GROUND TERMINAL ASSEMBLY (includes the Following Items)		
36	871-0010	2	Nut, Hex - Brass (#10-32)
37	850-0030	1	Washer, Lock - Spring (#10)
38	526-0062	2	Washer, Flat - Brass (13/64" ID x 1/2" OD x 1/16" Thk)
39	853-0008	1	Washer, Lock - ET (#10)
40	856-0003	1	Washer, Lock - EIT (#10)
41	815-0203	1	Screw, Machine - Round Head, Brass (#10-32 x 7/8")
42	332-1276	7	Plug, Keying - PC Board
43	357-0004	1	Diode
	ATTACHING HARDWARE FOR WIRING HARNESS		
	812-0063	6	Screw, Machine - Round Head (#6-32 x 1/2")
	812-0066	6	Screw, Machine - Round Head (#6-32 x 3/4")
	853-0003	26	Washer, Lock - ET (#6)
	860-0006	18	Nut, Hex (#6-32)
44	338-0715	1	Harness, Wiring (Includes Following Items)
45	323-0765	3	Socket, Relay
46	332-0537	2	Block, Terminal - 4 Place
47	332-1005	1	Block, Terminal - 20 Place
49	332-1271	6	Connector - Printed Circuit Board
50	332-1561	1	Strip, Marker - Terminal
51	332-1239	1	Strip, Marker - Terminal
52	332-1559	1	Strip, Marker - Terminal
54	870-0053	1	Nut, Hex (#10-32)
55	850-0030	1	Washer, Lock - Spring (#10)
56	332-0051	1	Clamp, Loop
57	815-0026	5	Screw, Machine - Truss Head (#10-32 x 3/8")
58	870-0053	1	Nut, Hex (#10-32)
59	850-0030	1	Washer, Lock - Spring (#10)
60	856-0003	1	Washer, Lock - EIT (#10)
61	PANEL, CONTROL - ENGINE		
	301-3661	1	With Three Gauge Mtg. Holes
	301-3978	1	With Four Gauge Mtg. Holes
	301-3979	1	With Five Gauge Mtg. Holes
62	301-3621	1	Bracket, Mounting - Engine Control

£ - Optional Items Used With Engine Mounted Senders.

GENERATOR CONTROL — 200 KW SETS



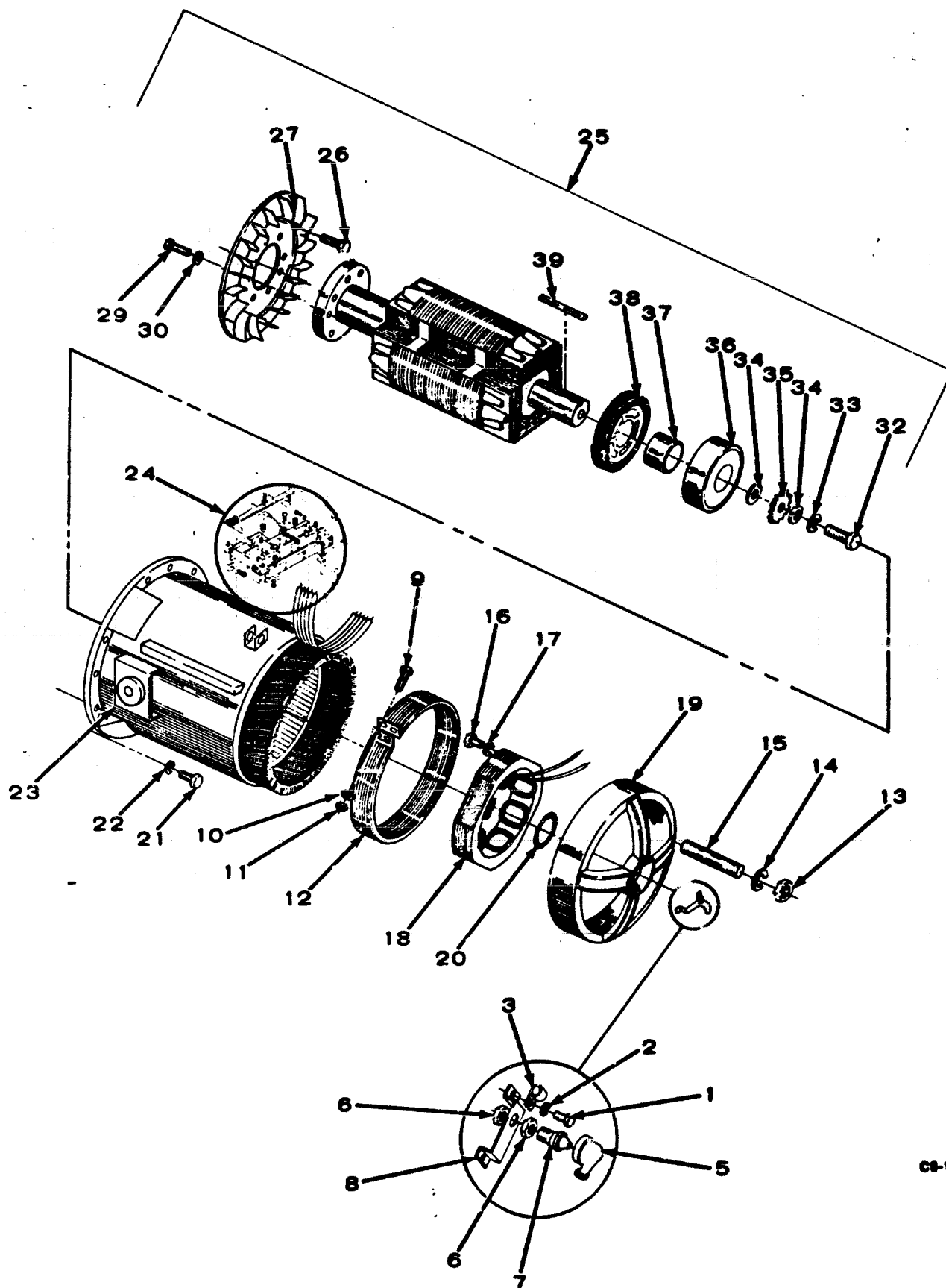
XSC-1164

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	307-1157	1	Spring, Holddown, Relay - (Codes 17, 17R50, 517)
2	307-1081	1	Relay (24 VDC) (Codes 17, 17R50, 517)

GENERATOR CONTROL — 200 kW SETS

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
3	AMMETER (Select As Required)			22	HARNESS, WIRING - GENERATOR CONTROL (Includes Item 23)		
			DUAL SCALE (Codes 17, 17R50, 517)	338-0730	1		Codes 17, 17R50, 517 (Includes Items 24, 25)
	302-0877	1	0-400, 0-800 Amp	338-0759	1		Codes 5D, 6D, 9XR
	302-0878	1	0-500, 0-1000 Amp	338-0916	1		Code 7
	302-0879	1	0-600, 0-1200 Amp	ATTACHING HARDWARE FOR WIRING HARNESS			
	302-0880	1	0-750, 0-1500 Amp	812-0061	2		Screw, Machine - Round Head (#6-32 x 3/8")
			SINGLE SCALE (Codes 5D, 6D, 7, 9XR)	812-0066	2		Screw, Machine - Round Head (#6-32 x 3/4")
	302-0413	1	0-300 Amp	850-0020	2		Washer, Lock - Spring (#6)
	302-0414	1	0-500 Amp	853-0003	4		Washer, Lock - ET (#6)
	302-0415	1	0-750 Amp	860-0006	2		Nut, Hex (#6-32)
	302-0416	1	0-1000 Amp	23	332-0795	1	Block, Terminal - 16 Place
	302-0605	1	0-400 Amp	24	350-0556	1	Resistor, Fixed, Composition (47 K Ohms, 1/2 Watt)
	302-0640	1	0-1200 Amp	25	323-0765	1	Socket, Relay - 11 Place
	302-0641	1	0-1500 Amp	26	332-1242	1	Strip, Marker - Terminal
4	VOLTMETER (Select As Required)			27	812-0065	4	Screw, Machine - Round Head (#6-32 x 5/8")
			DUAL SCALE (Codes 17, 17R50, 517)	28	853-0003	4	Washer, Lock - ET #6
	302-0718	1	0-300, 0-600 Volt	29	REGULATOR, VOLTAGE (Select As Required)		
			SINGLE SCALE (Codes 5D, 6D, 7, 9XR)	NOTE: REGULATOR MATCHED TO VOLTAGE TRANSFORMER, Item #31.			
	302-0421	1	0-300 Volt	332-1268	1		Used With 120 VAC Input Signal
	302-0612	1	0-500 Volt	332-1956	1		Used with 240 VAC Input Signal
	302-0422	1	0-600 Volt	30	321-0204	2	Fuse, Cartridge (1/4 Amp) - Part of 332-1956 Voltage Regulator
	302-0779	1	0-750 Volt	31	TRANSFORMER, VOLTAGE (Select as Required)		
5	METER, FREQUENCY (Select as Required)			315-0342	1		120 VAC
			POINTER TYPE	315-0431	1		240 VAC
	302-0810	1	60 Hz (Codes 7, 17, 17R50)	NOTE: Transformer Matched to Voltage Regulator, Item #29			
	302-0810	1	60 Hz (Codes 5D, 6D, 9XR)	ATTACHING PARTS FOR TRANSFORMER			
	302-0894	1	50 Hz (Code 517)	812-0061	2		Screw, Machine - Round Head (#6-32 x 3/8")
			REED TYPE	853-0003	2		Washer, Lock - ET (#6)
	302-0221	1	60 Hz	32	305-0524	1	Rectifier Bridge
	302-0256	1	50 Hz	ATTACHING PARTS FOR RECTIFIER BRIDGE			
6	METER, TIME TOTALIZING (Select As Required)			812-0066	2		Screw, Machine - Round Head (#6-32 x 3/4")
	302-0466	1	60 Hz	853-0003	2		Washer, Lock - ET (#6)
	302-0469	1	50 Hz	33	315-0384	1	Reactor
7	LIGHT, INDICATOR - 125 VAC (Codes 17, 17R50, 517)			ATTACHING PARTS FOR REACTOR			
	322-0130	1	Red Lens, Lower Scale Legend)	812-0061	2		Screw, Machine - Round Head (#6-32 x 3/8")
	322-0131	1	Red Lens, Upper Scale Legend	853-0003	2		Washer, Lock - ET (#6)
8	322-0178	1	Light, Indicator - 125 VAC (Replacement) - Discard Lens - Used Lens From Original Light	34	406-0332	2	Receptacle, Turnbutton Fastener
9	320-0307	1	Lock - Circuit Breaker Handle (Penn State Sets)	35	508-0001	4	Grommet, Rubber
	ATTACHING HARDWARE FOR LOCK			36	800-0045	4	Screw, Cap - Hex Head (5/16-18 x 3/8")
	815-0203	1	Screw, Machine - Round Head (#10-32 x 7/8")	37	850-0045	4	Washer, Lock - Spring (5/16")
	854-0010	1	Washer, Lock - IT (#10)	38	402-0070	4	Dampener, Vibration
	871-0010	1	Nut, Hex (#10-32)	39	815-0026	3	Screw, Machine - Truss Head (#10-32 x 3/8")
10	320-0455	1	Circuit Breaker - 3 Amp	40	PANEL, CONTROL		
	ATTACHING HARDWARE FOR CIRCUIT BREAKER			301-3170	1		Codes 17, 17R50, 517
	812-0061	2	Screw, Machine - Round Head (#6-32 x 3/8")	301-3342	1		Codes 5D, 6D, 7, 9XR
	850-0020	2	Washer, Lock - Spring (#6)	41	337-0049	1	Strap, Ground
	815-0203	1	Screw, Machine - Round Head, Brass (#10-32 x 7/8")	ATTACHING PARTS FOR STRAP			
	871-0010	1	Nut, Hex - Brass (#10-32)	800-0046	1		Screw, Cap - Hex Head (5/16-18 x 3/8")
	853-0008	1	Washer, Lock - ET (#10)	850-0045	1		Washer, Lock - Spring (5/16")
	526-0049	1	Washer, Flat - Brass (13/64" ID x 7/16" OD x 1/32" Thk)	856-0008	2		Washer, Lock - EIT (5/16")
11	406-0334	2	Clip, Retaining - Turnbutton Fastener	862-0015	1		Nut, Hex (5/16-18)
12	406-0333	2	Stud, Turnbutton Fastener	42	301-3158	1	Box, Control
13	517-0131	1	Plug, Plastic	43	821-0010	2	Screw, Self-Locking - Hex Washer Head (1/4-20 x 1/2")
14	303-0076	1	Knob, Pointer	44	350-0088	1	Resistor, Fixed, Composition (3000 Ohms, 1/2 Watt)
15	308-0284	1	Switch, Selector	45	350-0101	1	Resistor, Fixed, Composition (3900 Ohms, 1/2 Watt)
16	303-0032	1	Knob				
17	303-0170	1	Rheostat (35K Ohms, 25 Watt)				
18	301-3244	1	Bracket, Mounting, Relay - Code 17, 17R50, 517				
19	870-0053	1	Nut, Hex (#10-32)				
20	850-0030	1	Washer, Lock - Spring (#10)				
21	332-0051	1	Clamp, Loop				

GENERATOR ASSEMBLY — 200 kW SETS



CS-1102

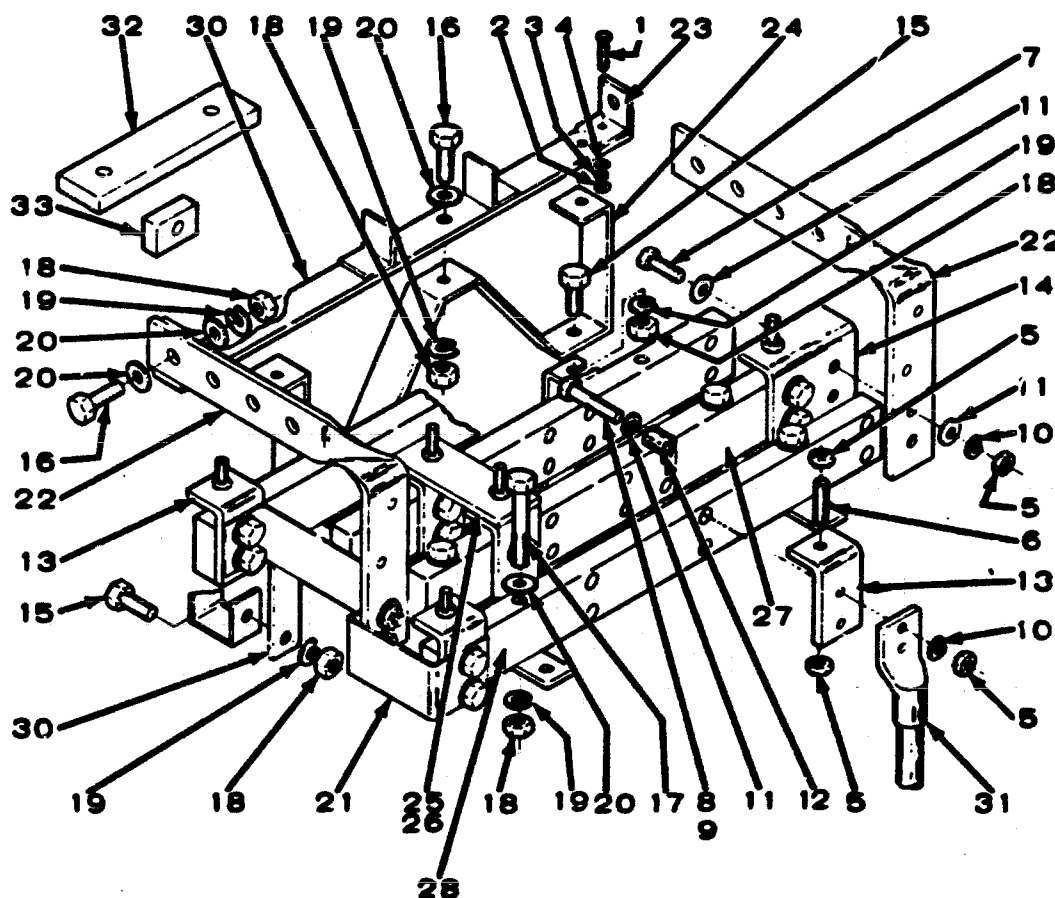
GENERATOR ASSEMBLY — 200 kW SETS

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	800-0005	2	Screw, Cap - Hex Head (1/4-20 x 1-1/2" L)
2	850-0040	2	Washer, Lock - Spring (1/4")
3	332-1554	1	Clamp, Loop
4	150-1411	1	Sensor Assembly - Speed (Includes Parts Marked †)
5	150-1410	1	†Cap, Insulator
6	868-0011	2	†Nut, Hex, Jam (3/4-16)
7	150-1406	1	†Sensor, Magnetic - Speed
8	150-1407	1	†Bracket, Mounting - Speed Sensor
9	800-0008	2	Screw, Cap - Hex Head (1/4-20 x 1-1/4" L)
10	850-0040	2	Washer, Lock - Spring (1/4")
11	862-0001	2	Nut, Hex (1/4-20)
12	234-0455	1	Screen, Air - Generator
13	862-0016	4	Nut, Hex (1/2-13)
14	850-0060	4	Washer, Lock - Spring (1/2")
15	520-0780	4	Stud (1/2-13 x 6-1/2" L)
16	800-0009	4	Screw, Cap - Hex Head (1/4-20 x 1-1/2" L)
17	850-0040	4	Washer, Lock - Spring (1/4")
18	STATOR, EXCITER		
	220-1920	1	Standard
	220-2607	1	£Environmental Protected
19	211-0214	1	End Bell
20	509-0151	1	Seal "O" Ring
21	800-0073	12	Screw, Cap - Hex Head (7/16-14 x 1-1/2" L)
22	850-0065	12	Washer, Lock - Spring (7/16")
23	STATOR, GENERATOR (Includes Bus Bars)		
	220-2135	1	Code 517, 50 Hz, 165 kW
	220-3631	1	£Code 517, 50 Hz, 165 kW Environmental Protected
	220-2341	1	Code 5D, 60 Hz, 200 kW
	220-2347	1	Code 6D, 60 Hz, 200 kW
	220-2443	1	Code 7, 60 Hz, 200 kW
	220-2317	1	Code 9X, 60 Hz, 200 kW
	220-1912	1	Code 17, 60 Hz, 200 kW
	220-2611	1	£Code 17, 60 Hz, 200 kW, Environmental Protected

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
24		REF	Bus Bars, (See Separate Group for Component Parts)
25	ROTOR ASSEMBLY, GENERATOR (Includes Parts Marked*)		
	201-1940	1	Standard
	201-2456	1	£Environmental Protected
26	805-0032	8	*Bolt, Cap - Hex Head (1/2-13 x 1-1/4" L)
27	232-2666	1	*Disc & Fan Assembly
29	805-0035	8	*Bolt, Cap - Hex Head (5/8-11 x 1-1/2" L)
30	526-0259	8	*Washer, Flat - Hardened (11/16" ID x 1-3/8" OD x 7/64" Thk)
32	800-0082	1	*Screw, Cap - Hex Head (1/2-13 x 1-1/2" L)
33	850-0060	1	*Washer, Lock - Spring (1/2")
34	526-0252	2	*Washer, Flat (13/16" ID x 2-3/8" OD x 5/32" Thk)
35	150-1405	1	*Wheel - Speed Sensor
36	510-0106	1	*Bearing
37	232-2317	1	*Spacer, Sleeve
38	ROTOR ASSEMBLY, EXCITER (See Separate Group for Parts)		
	201-1902	1	Standard
	201-2453	1	£Environmental Protected
39	515-0145	1	*Key, Rectangular

† - Parts Included in Speed Sensor Assembly
 * - Parts Included in Generator Rotor Assembly
 £ - Parts Environmental Protected by Epoxy Impregnation

BUS BARS — 200 kW SETS

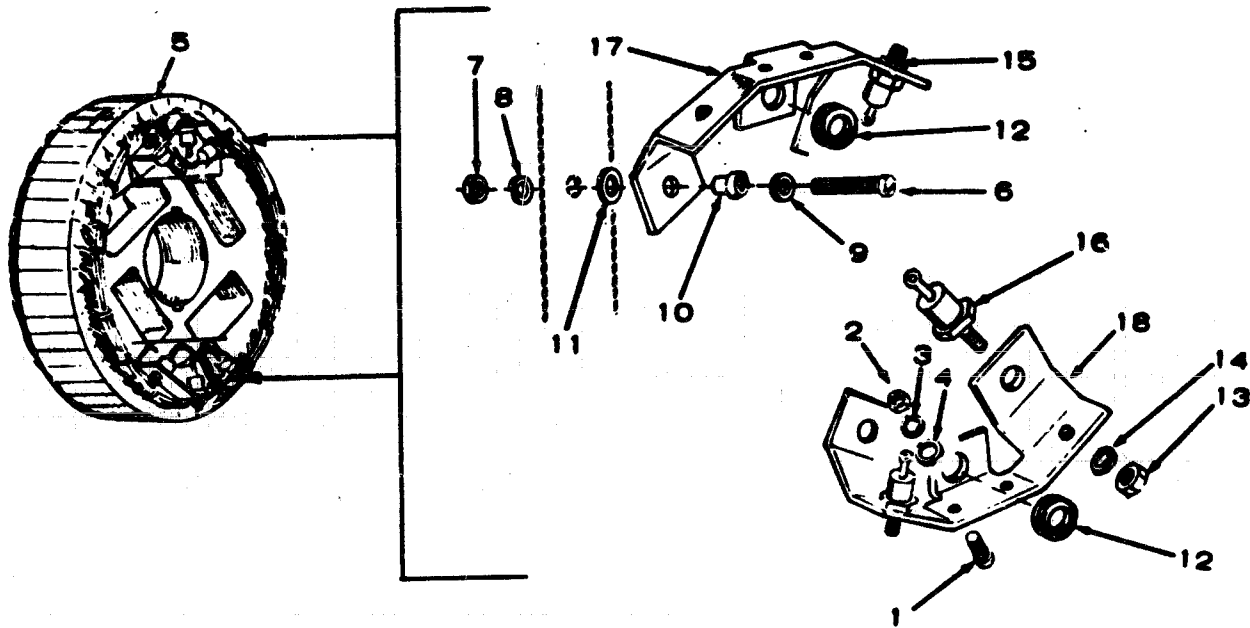


KES-1184

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	800-0007	4	Screw, Cap - Hex Head (1/4-20 x 1")
2	862-0001	4	Nut, Hex (1/4-20)
3	850-0040	4	Washer, Lock - Spring (1/4")
4	526-0018	4	Washer, Flat (21/64" ID x 3/4" OD x 1/16" Thk)
5	862-0015	50	Nut, Hex (5/16-18)
6	520-0142	14	Stud (5/16-18 x 1-1/4")
7	800-0028	4	Screw, Cap - Hex Head (5/16-18 x 1")
8	800-0032	24	Screw, Cap - Hex Head (5/16-18 x 1-3/4")
9	800-0033	8	Screw, Cap - Hex Head (5/16-18 x 2")
10	850-0045	36	Washer, Lock - Spring (5/16")
11	526-0115	36	Washer, Flat (11/32" ID x 11/16" OD x 1/16" Thk)
12	232-2344	32	Spacer, Sleeve
13	232-2241	11	Bus Bar
14	232-2343	3	Bus Bar
15	800-0050	4	Screw, Cap - Hex Head (3/8-16 x 1")

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
16	800-0051	7	Screw, Cap - Hex Head (3/8-16 x 1-1/4")
17	800-0056	8	Screw, Cap - Hex Head (3/8-16 x 2-1/2")
18	862-0003	19	Nut, Hex (3/8-16)
19	850-0050	19	Washer, Lock - Spring (3/8")
20	526-0029	19	Washer, Flat (25/64" ID x 7/8" OD x 1/16" Thk)
21	232-2238	1	Bracket, Bus Bar
22	232-2240	2	Bus Bar
23	232-2387	4	Bracket, Angle
24	232-2237	1	Bracket, Support
25	232-2248	3	Bar, Reconnection - Short
26	232-2246	2	Bar, Reconnection - Long
27	232-2242	2	Board, Insulator
28	232-2243	2	Board, Insulator
29	232-2245	1	Board, Insulator
30	232-2249	2	Bracket, Mounting - Bus Bar
31	332-1152	12	Terminal, Lug - Stator Leads
32	232-2582	1	Jumper - Bus Bar
33	232-2583	1	Spacer - Bus Bar

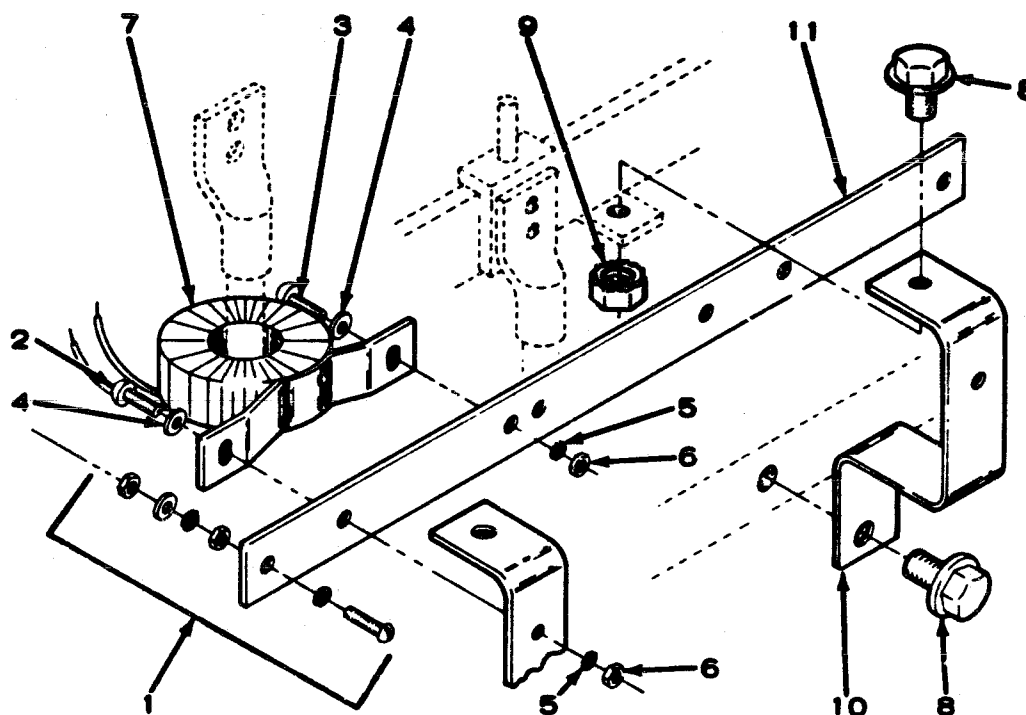
EXCITER ROTOR — 200 kW SETS



G-1092

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	813-0100	2	Screw, Machine - Round Head (#10-32 x 1/2")
2	870-0053	2	Nut, Hex (#10-32)
3	850-0030	2	Washer, Lock - Spring (#10)
4	526-0008	2	Washer, Flat (13/64" ID x 7/16" OD x 1/32" Thk)
5	ROTOR ASSEMBLY, EXCITER (Includes items 6 thru 18)		
	201-1902	1	Standard
	201-2453	1	Environmental Protected
6	813-0110	4	Screw, Machine - Round Head (#10-32 x 2")
7	870-0053	4	Nut, Hex (#10-32)
8	850-0030	4	Washer, Lock - Spring (#10)
9	526-0009	4	Washer, Flat (7/32" ID x 1/2" OD x 1/16" Thk)
10	508-0187	4	Spacer, Stepped
11	508-0156	4	Washer, Insulating
12	508-0093	2	Grommet, Rubber
13	862-0001	6	Nut, Hex (1/4-28)
14	850-0040	6	Washer, Lock - Spring (1/4")
15	358-0011	3	Diode, Rectifier - Positive (CR1, CR2, CR3)
16	358-0012	3	Diode, Rectifier - Negative (CR4, CR5, CR6)
17	363-0049	1	Heat, Sink - Positive Diodes
18	363-0050	1	Heat, Sink - Negative Diodes

CURRENT TRANSFORMER ASSEMBLY — 200 kW SETS



XES-1185

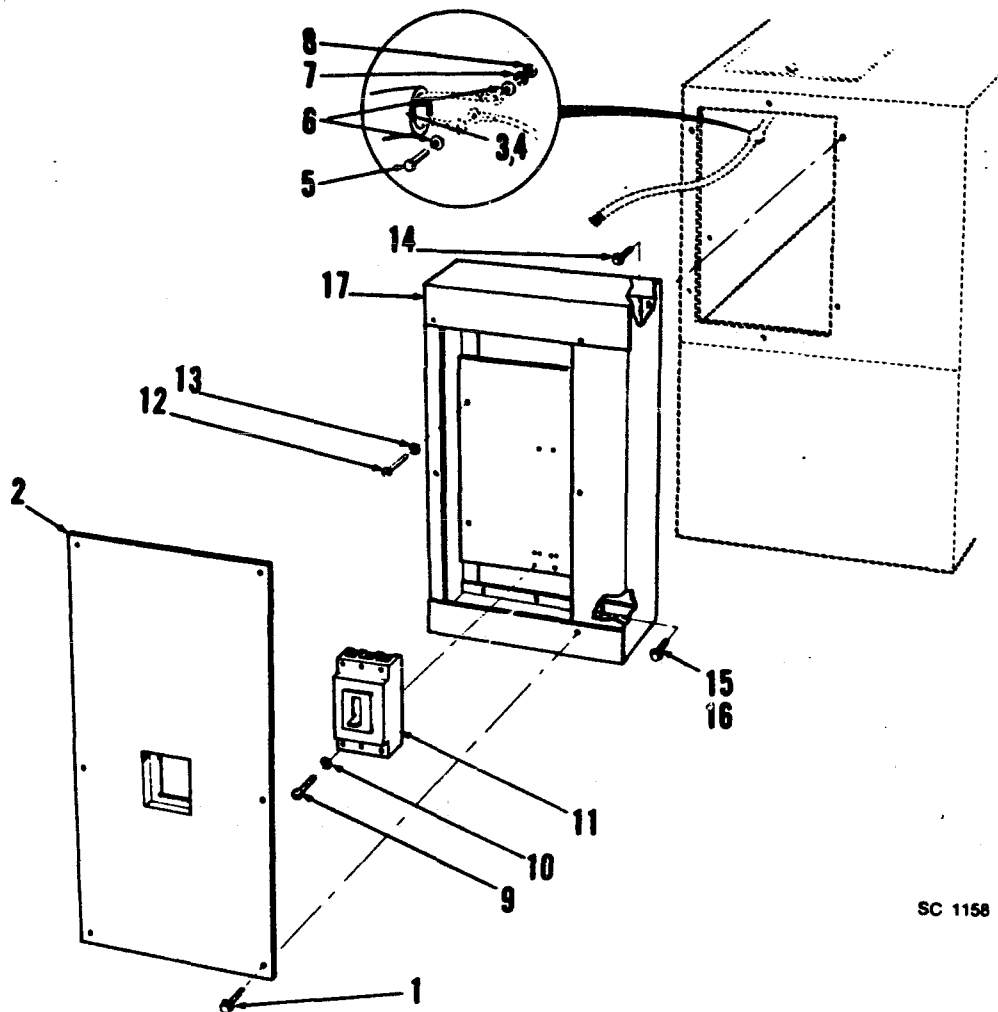
REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
CURRENT TRANSFORMER ASSEMBLY (Select Components As Required)			
1	GROUND TERMINAL ASSEMBLY (Includes Following Items)		
	815-0203	1	Screw, Machine - Round Head, Brass (#10-32 x 7/8")
	871-0010	2	Nut, Hex - Brass (#10-32)
	856-0003	2	Washer, Lock - EIT (#10)
	526-0049	1	Washer, Flat - Brass (13/64" ID x 7/32" OD x 1/32" Thk)
2	813-0103	2	Screw, Machine - Round Head (#10-32 x 3/4")
3	813-0100	4	Screw, Machine - Round Head (#10-32 x 1/2")
4	526-0008	6	Washer, Flat (13/64" x 7/16" OD x 1/32 Thk)
5	856-0003	6	Washer, Lock - EIT (#10)
6	870-0053	6	Nut, Hex (#10-32)

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
7	CURRENT TRANSFORMER (Select Size Required)		
	302-0865	3	Ratio 200/5, 2VA
	302-0866	3	Ratio 300/5, 2VA
	302-0608	3	Ratio 400/5, 2VA
	302-0609	3	Ratio 400/5, 5VA
	302-0547	3	Ratio 500/5, 2VA
	302-0438	3	Ratio 500/5, 5VA
	302-0876	3	Ratio 600/5, 2VA
	302-0471	3	Ratio 750/5, 2VA
	302-1090	3	Ratio 750/5, 5VA
	302-0963	3	Ratio 1000/5, 2VA
	302-0643	3	Ratio 1000/5, 5VA
	302-0964	3	Ratio 1200/5, 2VA
	302-0589	3	Ratio 1200/5, 5VA
8	821-0029	4	Screw, Self-locking - Hex Washer Head (3/8-16 x 3/4)
9	870-0281	4	Nut, Self-locking - Hex (3/8-16)
10	232-2342	2	Bracket, Mounting - Transformer
11	315-0389	1	Plate, Mounting - Transformer

OPTIONAL EQUIPMENT SECTION

**This section contains parts listing of factory installed options.
NOTE: options may not be applicable to all models; for field
installations, additional parts are usually required.**

OPTIONAL CIRCUIT BREAKER — 150/175 kW SETS



SC 1158

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	815-0350	8	Screw, Tapping - Hex Washer Head (#10-32 x 3/8)
2	301-3272	1	Cover - Circuit Breaker Box
3	SLEEVING, INSULATION - SHRINKABLE (Select as Required)		
	898-0879	1	3/4" ID x 13" Lg
	898-1082	1	1" ID x 14-1/2" Lg
	898-1085	1	1-1/2" ID x 14-1/2" Lg
	898-1112	1	2" ID x 20" LG
4	SLEEVING, INSULATION - FIBER GLASS (Select as Required)		
	898-0981	1	3/4" ID x 6" Lg
	898-0972	1	1" ID x 4-1/2" Lg
5	800-0028	5	Screw, Cap - Hex Head (5/16-18 x 1")
6	526-0022	10	Washer, Flat (21/64" ID x 9/16" OD x 1/16" Thk)
7	850-0045	5	Washer, Lock - Spring (5/16")
8	862-0015	5	Nut, Hex (5/16-18)
9	SCREW, MACHINE - ROUND HEAD (Select as Required)		
	812-0156	4	1/4-20 x 1-1/2"
	812-0157	4	1/4-20 x 1-3/4"
	812-0182	4	5/16-18 x 1-1/2"
	812-0183	4	5/16-18 x 1-3/4"
10	WASHER, LOCK - SPRING (Select as Required)		
	850-0040	4	1/4"
	850-0045	4	5/16"
11	CIRCUIT BREAKER (Select as Required)		
	100 AMP THREE PHASE		
	320-0424	1	347/600 VAC
	320-0771	1	127/220 VAC with 24 VDC shunt trip and AUX contacts

125 AMP THREE PHASE

347/600 VAC
347/600 VAC with 12 VDC shunt trip and AUX contacts
347/600 VAC with 120 VAC shunt trip and AUX contacts

150 AMP THREE PHASE

200/346, 277/480, 347/600 VAC
347/600 VAC with AUX
200/346, 277/480, 347/600 VAC with 12 VDC shunt trip and AUX contacts
127/220 VAC with 12 VDC shunt trip and AUX contacts
200/346, 277/480, 347/600 VAC with 24 VDC shunt trip and AUX contacts
200/346, 277/480, 347/600 VAC with 120 VAC shunt trip and AUX contacts

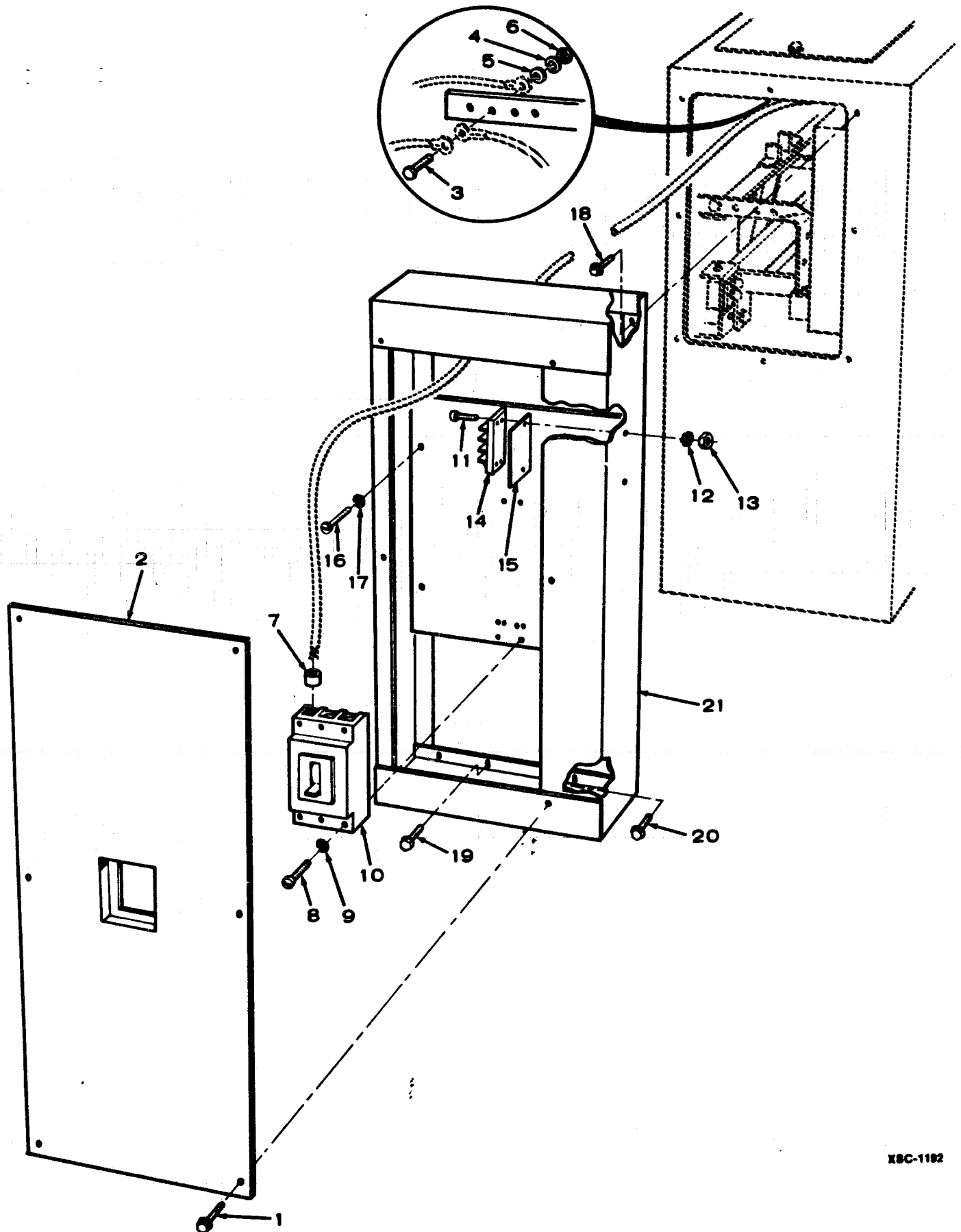
175 AMP THREE PHASE

200/346, 220/380, 277/480, 347/600 VAC
200/346, 277/480 VAC with 12 VDC shunt trip and AUX contacts
127/220 VAC with 12 VDC shunt trip and AUX contacts
200/346, 220/380, 277/480, 347/600 VAC with 24 VDC shunt trip and AUX contacts
200/346, 220/380, 277/480, 347/600 VAC with 120 VAC shunt trip and AUX contacts

OPTIONAL CIRCUIT BREAKER — 150/175 kW SETS

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
			200 AMP THREE PHASE				400 AMP SINGLE PHASE
	320-0447	1	200/346, 220/380, 277/480, 347/600 VAC		320-0705	1	120/240 VAC
	320-0392	1	200/346, 220/380, 277/480, 347/600 VAC with 12 VDC shunt trip and AUX contacts		320-0449	1	400 AMP THREE PHASE
	320-0579	1	200/346, 220/380, 277/480, 347/600 VAC with 24 VDC shunt trip and AUX contacts		320-0405	1	120/208, 120/240 VAC
	320-0573	1	200/346, 220/380, 277/480, 347/600 VAC with 120 VAC shunt trip and AUX contacts		320-0598	1	200/346 VAC
			225 AMP THREE PHASE		320-0245	1	500 AMP THREE PHASE
	320-0269	1	200/346, 220/380, 277/480, 347/600 VAC		320-0403	1	120/208, 120/240 VAC
	320-0285	1	200/346, 220/380, 277/480, 347/600 VAC with 120 VAC shunt trip and AUX contacts		320-0236	1	120/208, 120/240 VAC
			250 AMP THREE PHASE		320-0398	1	120/208, 120/240 VAC with 12 VDC shunt trip and AUX contacts
	320-0422	1	120/240 VAC		320-0780	1	120/208, 120/240 VAC with 24 VDC shunt trip and AUX contacts
	320-0626	1	200/346, 220/380, 277/480 VAC				120/208, 120/240 VAC with 120 VAC shunt trip and AUX contacts
	320-0975	1	220/380, 277/480 VAC with AUX contacts				120/208, 120/240 VAC with 480 VAC shunt trip and AUX contacts
	320-0695	1	200/346, 220/380, 277/480 with 24 VDC shunt trip and AUX contacts		320-0599	1	127/220 VAC with 24 VDC shunt trip and AUX contacts
	320-0774	1	127/220 VAC with 24 VDC shunt trip and AUX contacts		320-0267	1	600 AMP THREE PHASE
	320-0708	1	200/346, 220/380, 277/480 VAC with 120 VAC shunt trip and AUX contacts		320-0432	1	120/208, 120/240 VAC
			300 AMP SINGLE PHASE		320-0386	1	120/208, 120/240 VAC with 24 VDC shunt trip and AUX contacts
	320-0420	1	120/240 VAC				120/208, 120/240 VAC with 120 VAC shunt trip and AUX contacts
	320-0620	1	120/240 VAC with AUX contacts		320-0372	1	120/208, 120/240 VAC with 240 VAC shunt trip and AUX contacts
			300 AMP THREE PHASE		320-0338	1	120/208, 120/240 VAC with 480 VAC shunt trip and AUX contacts
	320-0423	1	120/208, 120/240 VAC				700 AMP THREE PHASE
	320-0401	1	200/346, 220/380, 277/480 VAC		320-0518	1	120/208
	320-0620	1	120/208, 120/240 VAC with AUX contacts		320-0436	1	120/208 VAC with 24 VDC shunt trip and AUX contacts
	320-0300	1	220/380, 277/480 VAC with AUX contacts		320-0213	1	120/208 VAC with 120 VAC shunt trip and AUX contacts
	320-0370	1	200/346, 220/380, 277/480 VAC with 12 VDC shunt trip and AUX contacts		320-0433	1	120/208 VAC with 240 VAC shunt trip and AUX contacts
	320-0438	1	120/208, 120/240, 220/380, 277/480 VAC with 24 VDC shunt trip and AUX contacts		320-0396	1	120/240 VAC with 480 VAC shunt trip and AUX contacts
	320-0268	1	200/346, 220/380, 277/480 with 480 VAC shunt trip and AUX contacts				Screw, Machine - Round Head (#10-32 x 3/4")
			350 AMP THREE PHASE	12	813-0103	2	
	320-0448	1	120/240, 120/208 VAC	13	850-0030	2	Washer, Lock - Spring (#10)
	320-0523	1	200/346, 220/380 VAC	14	815-0350	3	Screw, Tapping - Hex Washer Head (#10-32 x 3/8")
	320-0627	1	120/208, 120/240 VAC with 24 VDC shunt trip and AUX contacts	15	821-0010	1	Screw, Self-locking - Hex Washer Head (1/4-20 x 1/2")
	320-0524	1	208/346, 220/380 VAC with 24 VDC shunt trip and AUX contacts	16	821-0010	2	Screw, Self-locking - Hex Washer Head (5/16-18 x 1/2")
	320-0275	1	208/346, 220/380 VAC with 120 VAC shunt trip and AUX contacts	17	301-3271	1	Box - Circuit Breaker
	320-0279	1	208/346, 220/380 VAC with 480 VAC shunt trip and AUX contacts				

**OPTIONAL
CIRCUIT BREAKER —
200 kW SETS**



XBC-1192

OPTIONAL CIRCUIT BREAKER — 200 kW SETS

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	815-0350	6	Screw, Tapping - Hex Washer Head (#10-32 x 3/8")
2	COVER, CIRCUIT BREAKER BOX		
	301-3729	1	Used with Circuit Breakers Marked #
	301-3730	1	Used with Circuit Breakers Marked £
3	SCREW, CAP - HEX HEAD (SELECT AS REQUIRED)		
	800-0071	8	7/16-14 x 1"
	800-0072	8	7/16-14 x 1-1/2"
	800-0090	8	1/2-13 x 1"
	800-0092	8	1/2-13 x 1-1/2"
4	WASHER, LOCK - SPRING (SELECT AS REQUIRED)		
	850-0055	8	7/16"
	850-0060	8	1/2"
5	WASHER, FLAT (SELECT AS REQUIRED)		
	526-0141	8	15/32" ID x 1-1/4" OD x 1/8" Thk)
	526-1194	8	33/64" ID x 1-1/4" OD x 1/8" Thk)
6	NUT, HEX (SELECT AS REQUIRED)		
	862-0004	8	7/16-14
	862-0005	8	1/2-13
7	WIRE CONNECTOR (USED AS ADAPTER - CABLE) TO CIRCUIT BREAKER		
	332-0397	As Req.	Size 1/0, AWG
	332-0521	As Req.	Size 2/0, AWG
8	SCREW, MACHINE - ROUND HEAD (SELECT AS REQUIRED)		
	812-0156	4	1/4-20 x 1-1/2"
	812-0157	4	1/4-20 x 1-3/4"
	812-0182	4	5/16-18 x 1-1/2"
	812-0183	4	5/16-18 x 1-3/4"
9	WASHER, LOCK - SPRING (SELECT AS REQUIRED)		
	850-0040	4	1/4"
	850-0045	4	5/16"

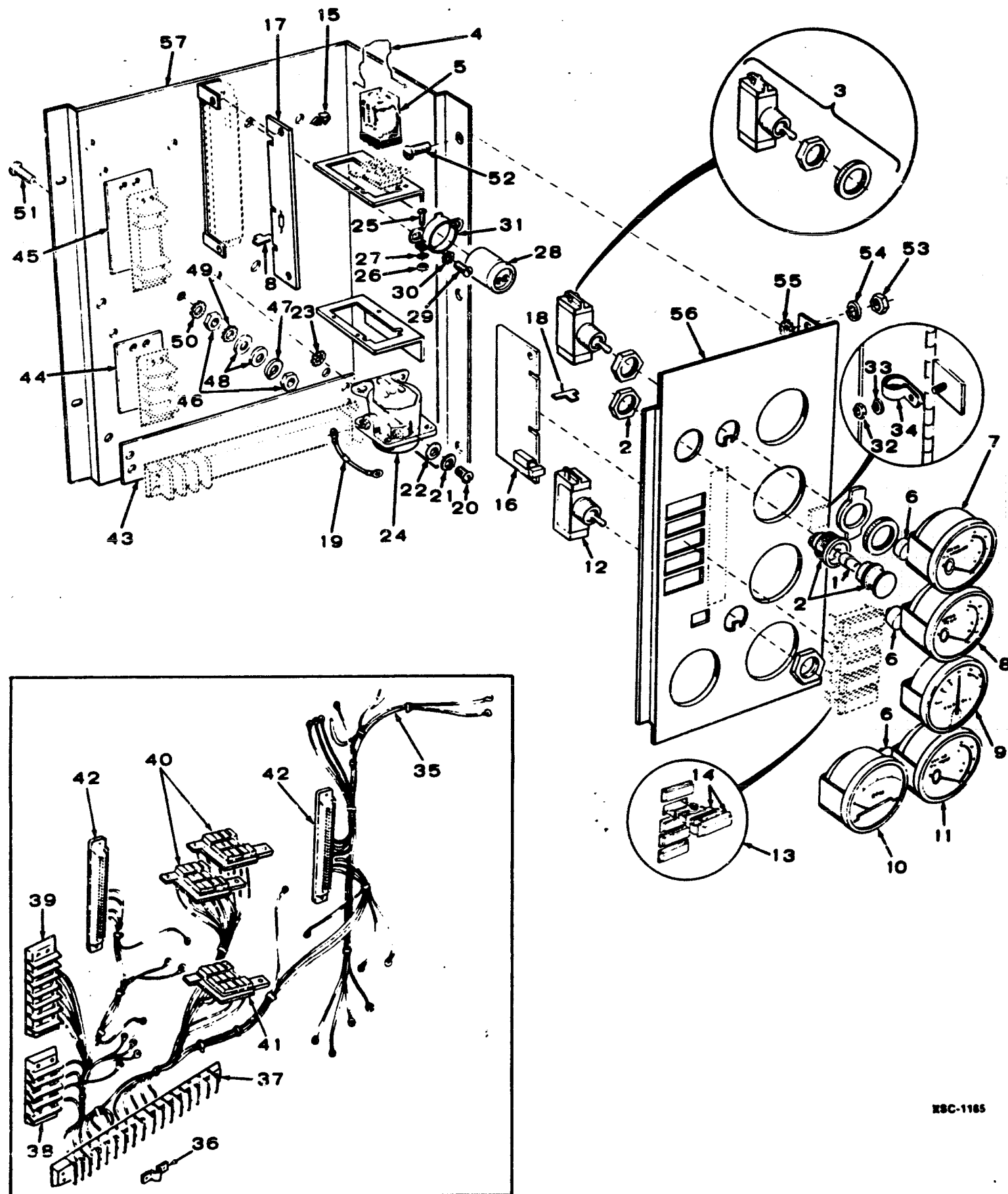
REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
10	CIRCUIT BREAKER (SELECT AS REQUIRED)		
	320-0445	1	£250 Amp, 3 PH, 347/600 VAC
	320-0401	1	£300 Amp, 3 PH, 240/480 - 347/600 VAC
	320-0523	1	£350 Amp, 3 PH, 200/346 - 220/380 VAC
	320-0405	1	£400 Amp, 3 PH, 200/346 - 220/380 - 240/480 - 277/480 - 347/600 VAC
	320-0625	1	£450 Amp, 3 PH, 200/346 - 347/600 VAC
	320-0598	1	£500 Amp, 3 PH, 200/346 - 220/380 - 240/480 - 277/480 VAC
	320-0599	1	£600 Amp, 3 PH, 120/208 - 120/240 - 200/346 - 220/360 - 277/480 VAC
	320-0518	1	£700 Amp, 3 PH - 120/208 - 120/240 VAC
	320-0519	1	£800 Amp, 3 PH - 120/208 - 120/240 VAC
	320-0520	1	#900 Amp, 3 PH - 120/208 - 120/240 VAC
	320-0779	1	*#900 Amp, With AUX Contacts 3 PH, 127/220 VAC
	320-0521	1	#1000 Amp, 3 PH, 120/208 - 120/240 VAC
	320-0522	1	#1200 Amp, 3 PH, 120/208 - 120/240 VAC
11	812-0063	4	Screw, Machine - Round Head (#6-32 x 1/2")
12	853-0003	4	Washer, Lock - External Tooth (#6)
13	860-0006	4	Nut, Hex (#6-32)
14	332-0604	1	*Terminal, Strip
15	332-0613	1	*Marker, Strip
16	813-0103	2	Screw, Machine - Round Head (#10-32 x 3/4")
17	850-0030	2	Washer, Lock - Spring (#10)
18	815-0350	3	Screw, Tapping - Hex Washer Head (#10-32 x 3/8")
19	821-0010	1	Screw, Self-locking - Hex Washer Head (1/4-20 x 1/2")
20	821-0014	2	Screw, Self-locking - Hex Washer Head (5/16-18 x 1/2")
21	301-3728	1	Box - Circuit Breaker

* - Used with AUX Contact Type Circuit Breakers

- Cover Used with Circuit Breakers Marked

£ - Cover Used with Circuit Breakers Marked £

**OPTIONAL
ENGINE CONTROL WITH FIVE FAULT LIGHTS —
150/175 kW SETS**



XSC-1185

OPTIONAL ENGINE CONTROL WITH FIVE FAULT LIGHTS — 150/175 kW SETS

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	322-0017	1	Lamp Incandescent (24 VDC)
2	322-0149	1	Lampholder
3	308-0002	1	Switch, Toggle (SPST)
4	307-1157	3	Spring, Holddown - Relay
5	RELAY (24 VDC)		
	307-1056	1	(Ignition)
	307-1056	1	(Start Disconnect)
	307-1061	1	(Starter Protection)
6	193-0250	3	Resistor - Gauge
7	193-0243	1	Gauge - Oil Pressure (12 VDC)
8	193-0245	1	Gauge - Water Temperature (12 VDC)
9	302-0061	1	Ammeter
10	302-0749	1	£Tachometer - Electrical
11	193-0248	1	£Gauge - Oil Temperature (12 VDC)
12	SWITCH, TOGGLE - SELECTOR		
	308-0138	1	Standard & Cycle Cranking Controls
	308-0327	1	Penn State Controls
13	*LIGHT, INDICATOR - 28 VDC (Lens Color & Legend Listed Below)		
	322-0119	1	Red - OVERCRANK
	322-0123	1	Red - OVERSPEED
	322-0120	1	Red - LO OIL PRESS
	322-0121	1	Red - HI ENG TEMP
	322-0122	1	Red - LO ENG TEMP
14	322-0137	1	*Light, Indicator - 28 VDC (Red Lens - No Legend)
15	518-0374	4	Fastener, Snap-In (Printed Circuit Boards)
16	PRINTED CIRCUIT BOARD ASSEMBLY		
	300-0751	1	Standard Cranker (24 VDC)
	300-0715	1	Cycle Cranker (24 VDC)
17	PRINTED CIRCUIT BOARD ASSEMBLY		
	300-0682	1	Engine Control Monitor - Standard
18	332-1276	4	Plug, Keying - PC Board
19	357-0018	1	Diode, with Terminals
20	813-0098	2	Screw, Machine - Round Head (#10-32 x 3/8")
21	850-0030	2	Washer, Lock - Spring (#10)
22	526-0009	2	Washer, Flat (7/32" ID x 1/2" OD x 1/16" Thk)
23	856-0003	2	Washer, Lock - EIT (#10)
24	307-0061	1	Relay, Solenoid - Start (24 VDC)
25	812-0061	1	Screw, Machine - Round Head (#6-32 x 3/8")

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
26	860-0006	1	Nut, Hex (#6-32)
27	853-0003	1	Washer, Lock - ET (#6)
28	356-0072	1	Capacitor, Fixed, Electrolytic (4000 MFD, 30 VDC)
29	812-0063	2	Screw, Machine - Round Head (#6-32 x 1/2")
30	853-0003	2	Washer, Lock - ET (#6)
31	356-0070	1	Clamp, Capacitor Mounting
32	870-0053	1	Nut, Hex (#10-32)
33	850-0030	1	Washer, Lock - Spring (#10)
34	332-0051	1	Clamp, Loop
35	HARNES, WIRING - ENGINE CONTROL		
	338-1066	1	Includes Parts Marked †
	ATTACHING HARDWARE FOR WIRING HARNES		
	812-0063	6	Screw, Machine - Round Head (#6-32 x 1/2")
	812-0066	6	Screw, Machine - Round Head (#6-32 x 3/4")
	853-0003	14	Washer, Lock - ET (#6)
	860-0006	10	Nut, Hex (#6-32)
36	332-1043	1	†Jumper Terminal
37	332-0795	1	†Block, Terminal - 20 Place
38	332-0537	1	†Block, Terminal - 4 Place
39	332-0699	1	†Block, Terminal - 6 Place
40	323-0765	2	†Socket, Relay - 11 Place
41	323-0764	2	†Socket, Relay - 8 Place
42	332-1271	1	Connector, Electrical - PC BD
43	332-1559	1	Strip, Marker - Terminal
44	332-1239	1	Strip, Marker - Terminal
45	332-1240	1	Strip, Marker - Terminal
	GROUND TERMINAL ASSEMBLY (Includes Parts Marked #)		
46	871-0010	2	#Nut, Hex - Brass (#10-32)
47	850-0030	1	#Washer, Lock - Spring (#10)
48	526-0062	2	#Washer, Flat - Brass (13/64" ID x 1/2" OD x 1/16" Thk)
49	853-0006	1	#Washer, Lock - ET (#10)
50	856-0003	1	#Washer, Lock - EIT (#10)
51	815-0203	1	#Screw, Machine - Round Head, Brass (#10-32 x 7/8")
52	815-0026	5	Screw, Machine - Truss Head (#10-32 x 3/8")
53	870-0053	1	Nut, Hex (#10-32)
54	850-0030	1	Washer, Lock - Spring (#10)
55	856-0003	1	Washer, Lock - EIT (#10)
56	PANEL, CONTROL - ENGINE		
	301-3267	1	With Three Gauge Mtg. Holes
	301-3286	1	With Four Gauge Mtg. Holes
	301-3166	1	With Five Gauge Mtg. Holes
57	301-3253	1	Bracket, Mounting - Engine Control

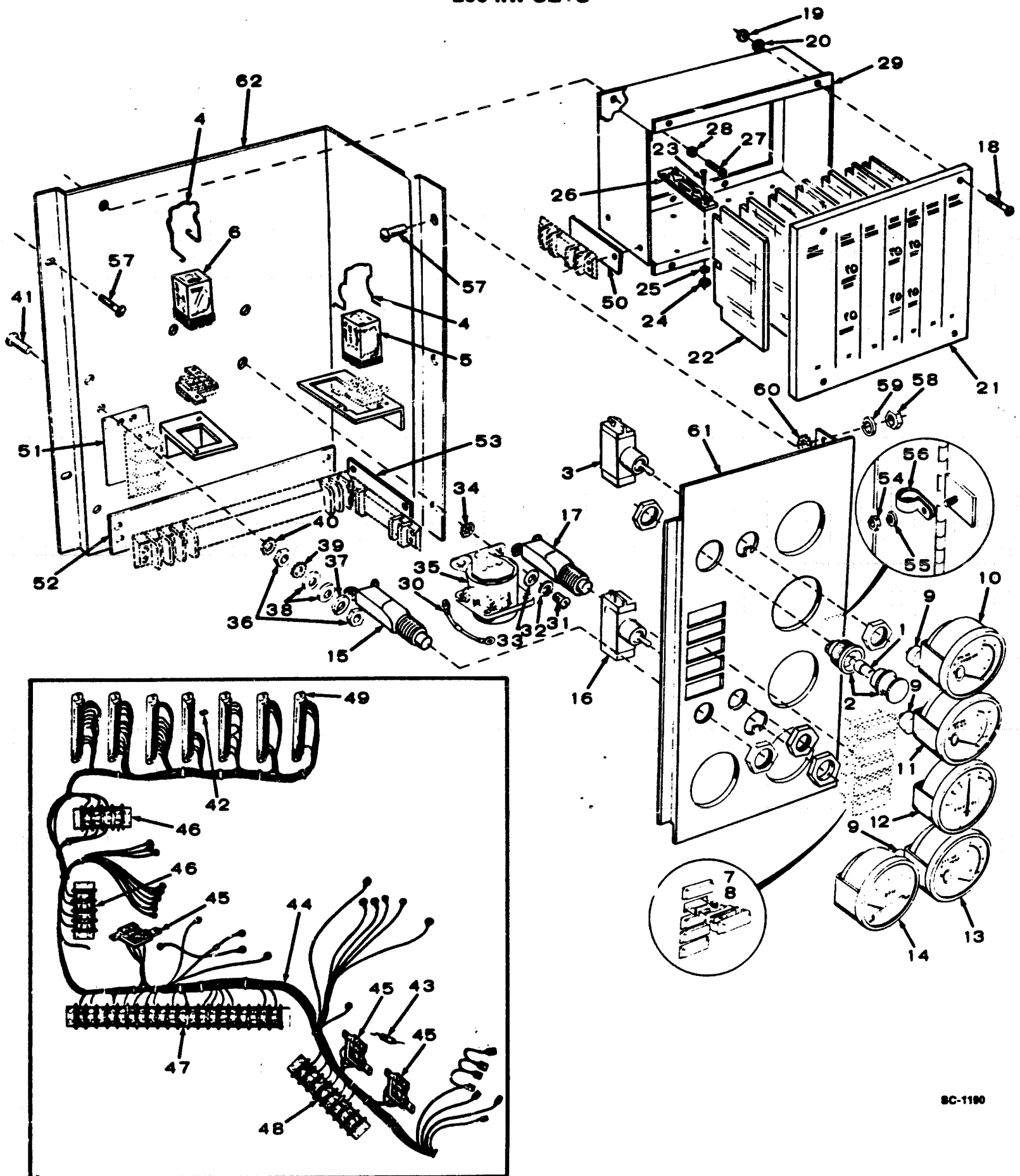
* - NOTE: For lamp replacement order 322-0137 remove and discard plain red lens, install lens with legend from burned out light — lights snap in and out of panel.

£ - Optional items used with Engine Mounted Senders.

† - Parts Included in Wiring Harness.

- Parts Included in Ground Terminal Assembly.

**OPTIONAL ENGINE CONTROL
WITH FIVE FAULT LIGHTS —
200 kW SETS**



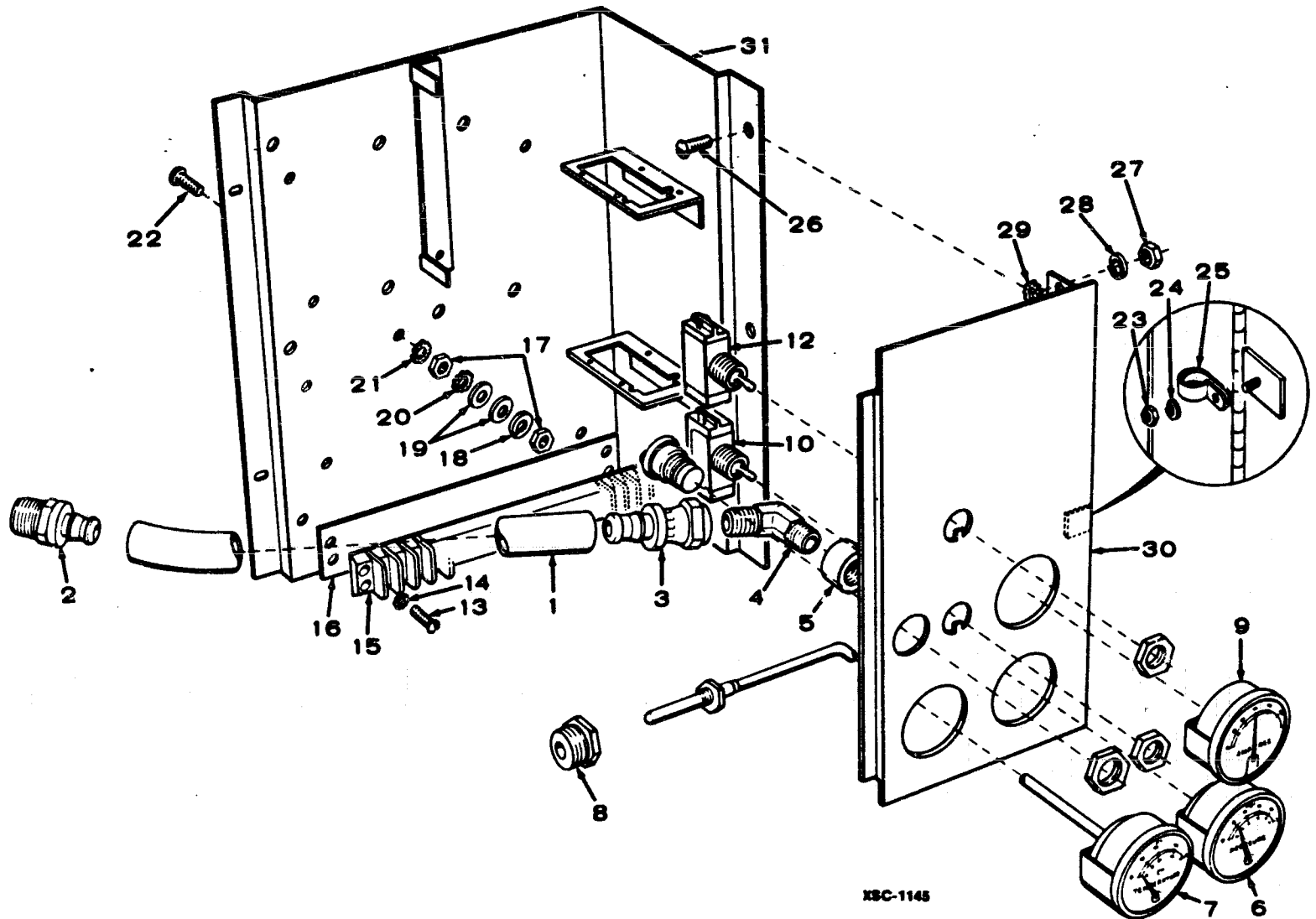
8C-1190

OPTIONAL ENGINE CONTROL WITH FIVE FAULT LIGHTS — 200 kW SETS

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	322-0017	1	Lamp, Incandescent (24 VDC)	29	301-3588	1	Rack
2	322-0149	1	Lampholder	30	357-0018	1	Diode, with Terminals
3	308-0002	1	Switch, Toggle (SPST)	31	813-0098	2	Screw, Machine - Round Head (#10-32 x 3/8")
4	307-1157	3	Spring, Holddown - Relay	32	850-0030	2	Washer, Lock - Spring (#10)
5	307-1056	2	Relay	33	526-0009	2	Washer, Flat (7/32" ID x 1/2" OD x 1/16" Thk)
6	307-1061	1	Relay	34	856-0003	2	Washer, Lock - EIT (#10)
7	LIGHT, INDICATOR - 28 VDC Lens Color & Legend Listed Below)			35	307-0061	1	Relay, Solenoid - Start (24 VDC)
	322-0119	1	Red - OVERCHANK	GROUND TERMINAL ASSEMBLY (Includes the Following Items)			
	322-0123	1	Red - OVERSPEED	36	871-0010	2	Nut, Hex - Brass (#10-32)
	322-0120	1	Red - LO OIL PRESS	37	850-0030	1	Washer, Lock - Spring (#10)
	322-0121	1	Red - HI ENG TEMP	38	526-0062	2	Washer, Flat - Brass (13/64" ID x 1/2" OD x 1/16" Thk)
	322-0122	1	Red - LO ENG TEMP	39	853-0008	1	Washer, Lock - ET (#10)
	NOTE: For lamp replacement order 322-0137 remove and discard plain red lens, install lens with legend from burned out light — lights snap in and out of panel.			40	856-0003	1	Washer, Lock - EIT (#10)
8	322-0137	1	Light, Indicator 28 VDC (Red Lens - Nc Legend)	41	815-0203	1	Screw, Machine - Round Head Brass (#10-32 x 7/8")
9	193-0250	3	Resistor - Gauge	42	332-1276	7	Plug, Keying - PC Board
10	193-0243	1	Gauge - Oil Pressure (12 VDC)	43	357-0004	1	Diode
11	193-0245	1	Gauge - Water Temperature (12 VDC)	ATTACHING HARDWARE FOR WIRING HARNESS			
12	302-0061	1	Ammeter	812-0063	8	Screw, Machine - Round Head (#6-32 x 1/2")	
13	193-0248	1	Gauge - Oil Temperature (12 VDC)	812-0066	6	Screw, Machine - Round Head (#6-32 x 3/4")	
14	302-0749	1	Tachometer - Electrical	853-0003	28	Washer, Lock - ET (#6)	
15	308-0337	1	Switch, Push - Lamp Test	860-0006	20	Nut, Hex (#6-32)	
16	SWITCH, TOGGLE - SELECTOR			44	338-0705	1	Harness Wiring (Includes the Following Items)
	308-0220	1	Standard Control (DPDT - 3 Position)	45	323-0765	3	Socket, Relay
	308-0539	1	Alarm Control (DPDT - Position & Aux Contact)	46	332-0537	2	Block, Terminal - 4 Place
	308-0347	1	Penn State Control (DPDT)	47	332-1005	1	Block, Terminal - 20 Place
17	308-0051	1	Switch, Push - Alarm Reset	48	332-0699	1	Block, Terminal - 8 Place
18	812-0063	4	Screw, Machine - Round Head (#16-32 x 1/2")	49	332-1271	7	Connector - Printed Circuit Board
19	860-0006	4	Nut, Hex (#6-32)	50	332-1561	1	Strip, Marker - Terminal
20	853-0003	4	Washer, Lock - ET (#6)	51	332-1239	1	Strip, Marker - Terminal
21	301-3635	1	Corer, Printed Circuit Assembly	52	332-1559	1	Strip, Marker - Terminal
22	PRINTED CIRCUIT BOARD ASSEMBLY			53	332-1560	1	Strip, Marker - Terminal
	300-0953	1	Control, Engine Monitor	54	870-0053	1	Nut, Hex (#10-32)
	300-0954	1	Control, Engine Shutdown	55	850-0030	1	Washer, Lock - Spring (#10)
	300-0955	1	Control, Remote Indicator	56	332-0051	1	Clamp, Loop
	300-0956	1	Control, Cyle Cranker	57	815-0026	5	Screw, Machine - Truss Head (#10-32 x 3/8")
	300-0957	1	Control, Overspeed Sensor	58	870-0053	1	Nut, Hex (#10-32)
	300-0958	1	Control, Starter Disconnect	59	850-0030	1	Washer, Lock - Spring (#10)
	300-0973	1	Control, Start-Stop Time Delay	60	856-0003	1	Washer, Lock - EIT (#10)
	300-0977	1	Control, Standard Cranker	61	PANEL, CONTROL - ENGINE		
	300-0987	1	Control, Bypass		301-3661	1	With Three Gauge Mtg. Holes
23	812-0063	28	Screw, Machine - Round Head (#6-32 x 1/2")		301-3976	1	With Four Gauge Mtg. Holes
24	860-0006	28	Nut, Hex (#6-32)		301-3977	1	With Five Gauge Mtg. Holes
25	853-0003	28	Washer, Lock - ET (#6)	62	301-3621	1	Bracket, Mounting - Engine Control
26	323-0814	14	Guide, Printed Circuit Board				
27	813-0100	4	Screw, Machine - Round Head (#10-32 x 1/2")				
28	850-0030	4	Washer, Lock - Spring (#10)				

£ - Optional Items Used With Engine Mounted Senders.

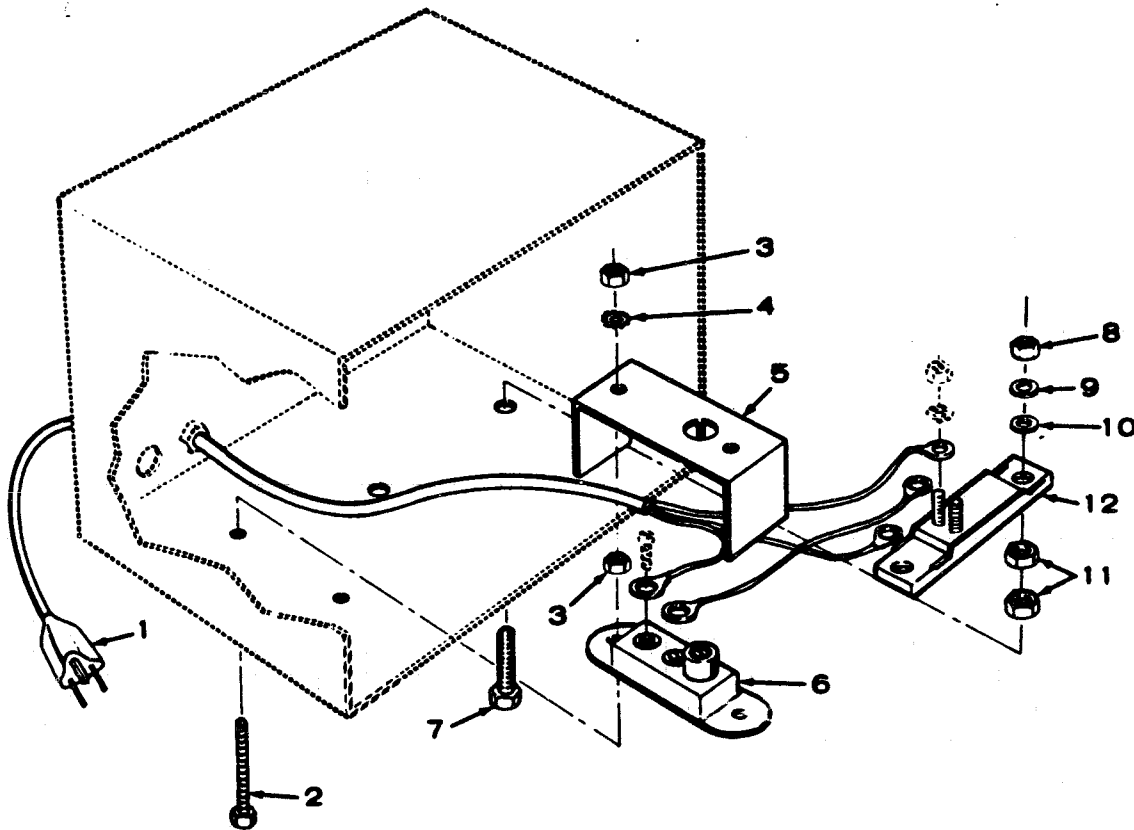
OPTIONAL ENGINE CONTROL WITH MECHANICAL GAUGES



REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	503-1077	1	Hose, Rubber - High Pressure (1/4" ID x 1/2" OD x 96" lg)
2	502-0444	1	Adapter, Pipe to Hose - Male (1/8" NPT x 1/4" ID Hose)
3	502-0445	1	Adapter, Pipe to Hose - Female (7/16-20 UNF x 1/4" ID Hose)
4	502-0583	1	Elbow, Pipe - 45 Deg. (7/16-20 UNF x 1/8" NPT)
5	502-0051	1	Coupling, Pipe (1/8" NPT)
6	GAUGE, OIL PRESSURE (Select as Required)		
	193-0232	1	Scale Range 0 to 75 PSI
	193-0233	1	Scale Range 0 to 150 PSI
7	GAUGE, TEMPERATURE (Select as Required)		
	193-0234	1	With 72" Capillary Tube
	193-0235	1	With 84" Capillary Tube
	193-0236	1	With 96" Capillary Tube
	193-0305	1	With 144" Capillary Tube
8		1	Reducer, Hex (Included with Gauge) (5/8-18 UNF x 1/2" NPT)
9	302-0061	1	Ammeter
10	308-0088	1	Switch, Toggle (DPST)
11	308-0297	1	Switch, Push
12	308-0155	1	Switch, Toggle (SPST)

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
13	812-0066	2	Screw, Machine - Round Head (#6-32 x 3/4")
14	853-0003	2	Washer, Lock - ET (#6)
15	332-0795	1	Block, Terminal - 20 Place
16	332-1241	1	Strip, Marker - Terminal
	GROUND TERMINAL ASSEMBLY		
17	871-0010	2	Nut, Hex - Brass (#10-32)
18	850-0030	1	Washer, Lock - Spring (#10)
19	526-0062	2	Washer, Flat - Brass (13/64" ID x 1/2" OD x 1/16" Thk)
20	853-0008	1	Washer, Lock - ET (#10)
21	856-0003	1	Washer, Lock - ET (#10)
22	815-0203	1	Screw, Machine - Round Head, Brass (#10-32 x 7/8")
23	870-0053	1	Nut, Hex (#10-32)
24	850-0030	1	Washer, Lock - Spring (#10)
25	332-0051	1	Clamp, Loop
26	815-0026	5	Screw, Machine - Truss Head (#10-32 x 3/8")
27	870-0053	1	Nut, Hex (#10-32)
28	850-0030	1	Washer, Lock - Spring (#10)
29	856-0003	1	Washer, Lock - ET (#10)
30	301-4009	1	Panel, Control - Engine
31	301-3253	1	Bracket, Mounting - Engine Control

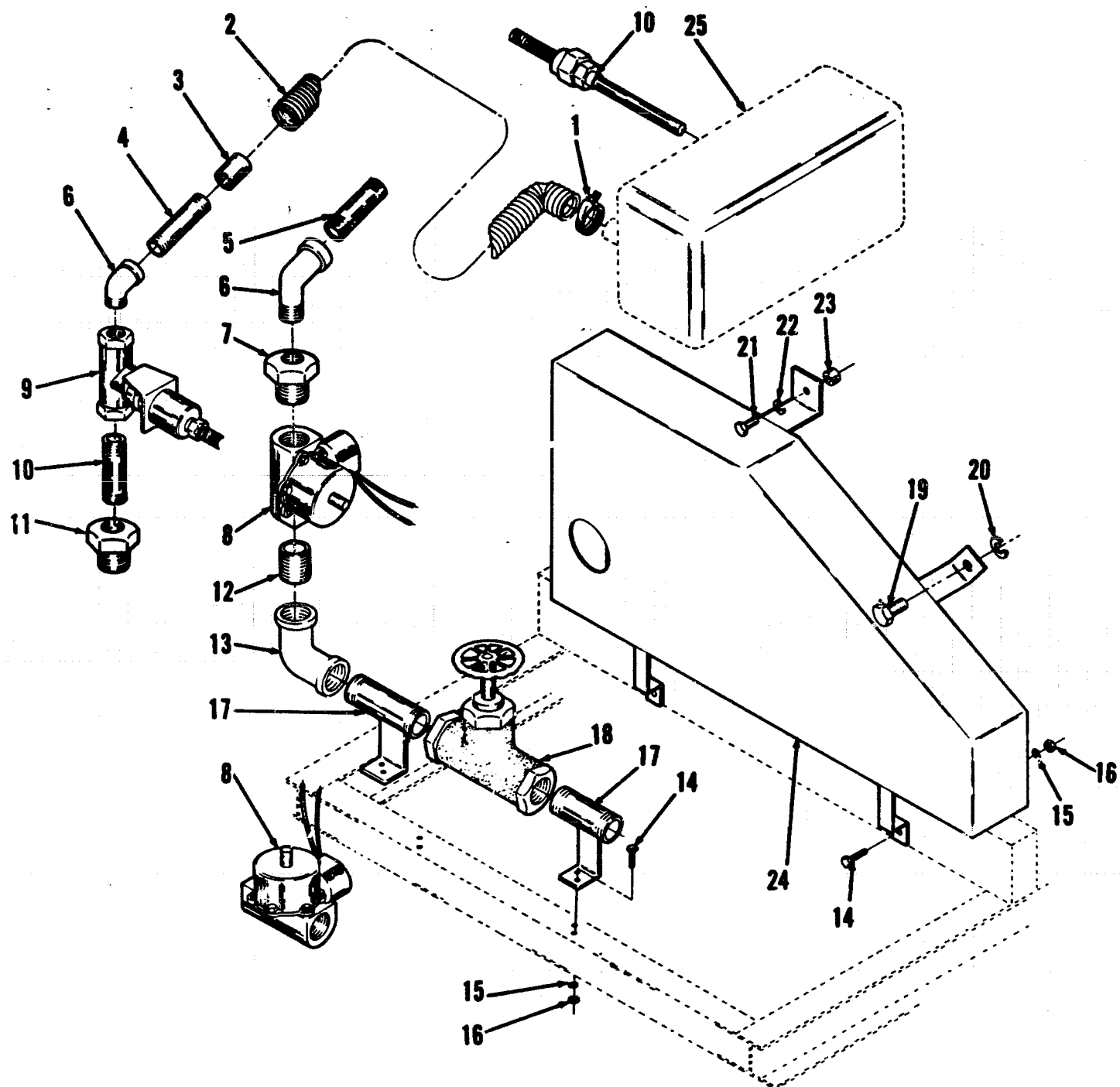
OPTIONAL CONTROL HEATER



SC-1156

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	335-0110	1	Cable, Electrical (3 Wire)
2	812-0090	2	Screw, Machine - Round Head (#6-32 x 2-1/4")
3	860-0006	4	Nut, Hex (#6-32)
4	856-0001	2	Washer, Lock - EIT (#6)
5	301-1886	1	Cover, Thermostat
6	309-0128	1	Thermostat - Adjustable
7	800-0007	2	Screw, Cap - Hex Head (1/4-20 x 1")
8	862-0001	2	Nut, Hex (1/4-20)
9	850-0040	2	Washer, Lock - Spring (1/4)
10	526-0052	2	Washer, Flat (17/64" ID x 9/16" OD x 1/16" Thk)
11	862-0015	4	Nut, Hex (5/16-18) - Used As Spacers
12	333-0151	1	Heater - 75 Watt, 120 VAC. 300 Watt, 240 VAC

**OPTIONAL
COOLING SYSTEM WITH HEAT EXCHANGER —
150/175 kW SETS**

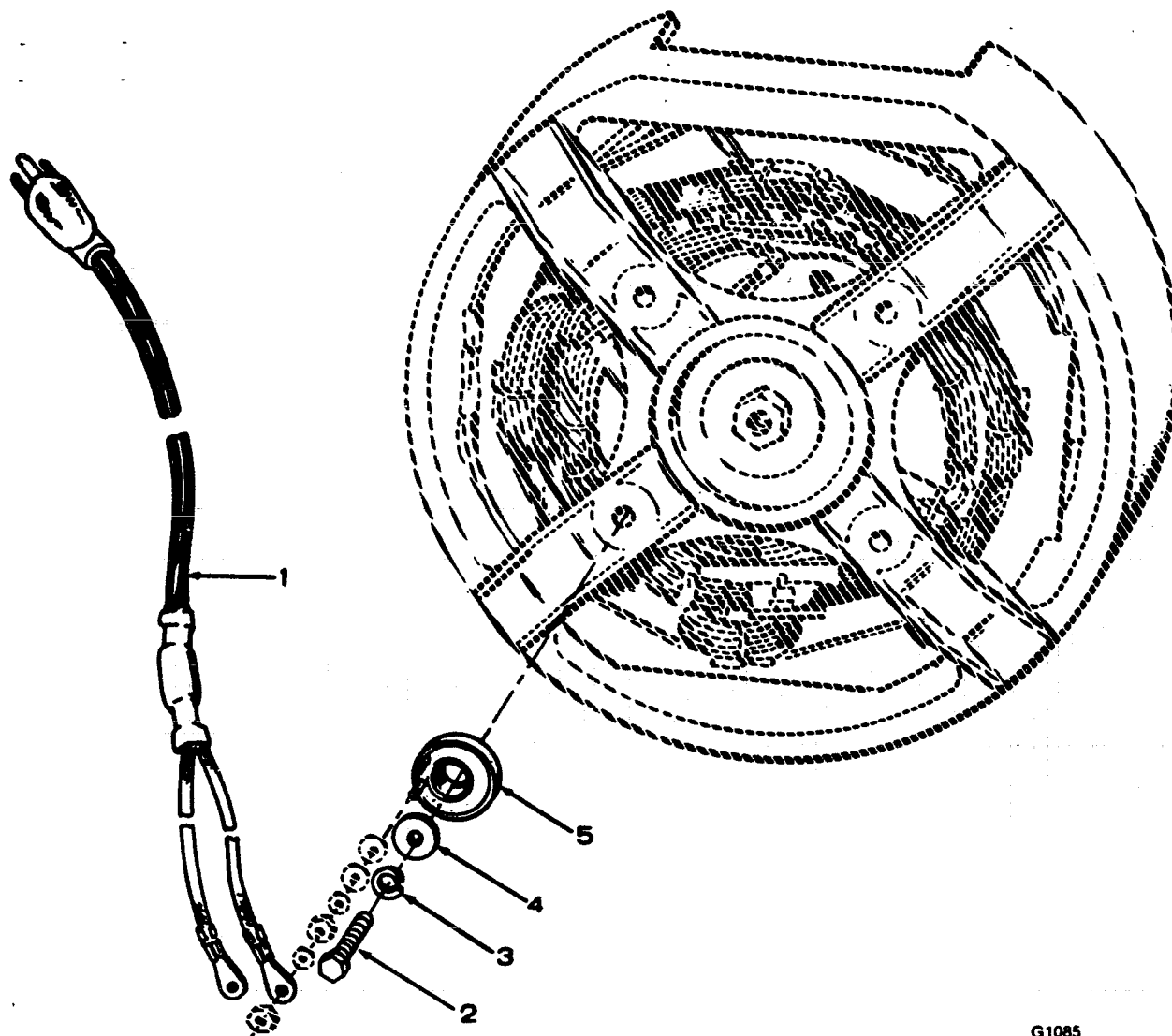


OPTIONAL **COOLING SYSTEM WITH HEAT EXCHANGER —** **150/175 kW SETS**

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
HEAT EXCHANGER COOLING SYSTEM (All Parts Common Except As Marked)			
		1	#Without Coolant Temperature Regulator
		1	£With Coolant Temperature Regulator
1	503-0365	2	Clamp, Hose
2	503-0635	1	Hose, Rubber - Flexible (1-3/4" ID x 2" OD x 19" Lg)
3	505-0349	1	Coupling, Pipe - Half (1-1/4" NPT)
4	505-0311	1	#Nipple, Pipe (1-1/4" NPT x 8-1/2")
5	505-0177	1	£Nipple, Pipe - Close (1-1/4" NPT x 5/8" Lg)
6	505-0362	1	Elbow, Pipe - Street, 45 DEG (1-1/4" NPT)
7	502-0270	1	#Bushing, Reducer (2" NPT x 1-1/4" NPT)
8	307-0844	1	Valve, Control - Solenoid 12 VDC (2" NPT)
9	309-0243	1	£Valve, Control - Temperature Regulating (1-1/4" NPT)
10	505-0177	1	£Nipple, Pipe (1-1/4" NPT x 1-5/8" Lg)
11	502-0270	1	£Bushing, Reducer (2" NPT x 1-1/4" NPT)
12	505-0172	1	Nipple, Pipe - Close (2" NPT x 2")
13	505-0175	1	Elbow, Pipe - 95 DEG (2" NPT)
14	800-0007	6	Screw, Cap - Hex Head (1/4-20 x 1")
15	850-0040	6	Washer, Lock - Spring (1/4")
16	862-0001	6	Nut, Hex (1/4-20)
17	130-0801	2	Nipple, Support Assembly
18	504-0057	1	#Valve, Globe - 2" NPT
19	800-0058	1	Screw, Cap - Hex Head (3/8-16 x 3")
20	526-0030	1	Washer, Flat (13/32" ID x 7/8" OD x 1/8" Thk)
21	800-0092	1	Screw, Cap, Hex Head (1/2-13 x 1-1/2")
22	850-0060	1	Washer, Lock - Spring (1/2")
23	191-0879	1	Spacer, Sleeve
24	191-0878	1	Guard, Belt.
25		REF	Tank, Heat Exchanger - Supplied With Engine (Modify as Necessary)

- Parts Included in Non-Regulated System.
£ - Parts Included in Regulated System.

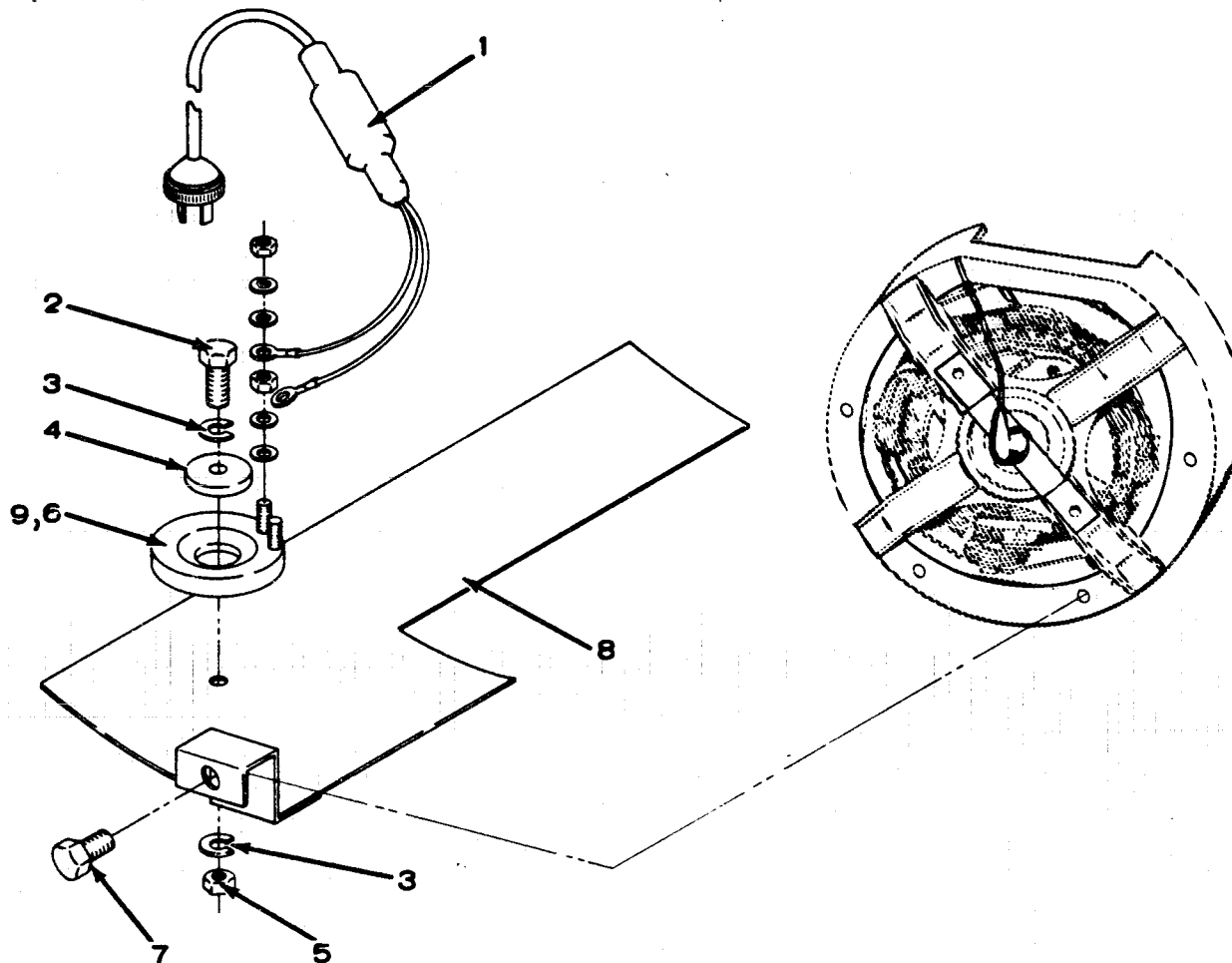
**OPTIONAL
GENERATOR HEATER —
150/175 kW SETS**



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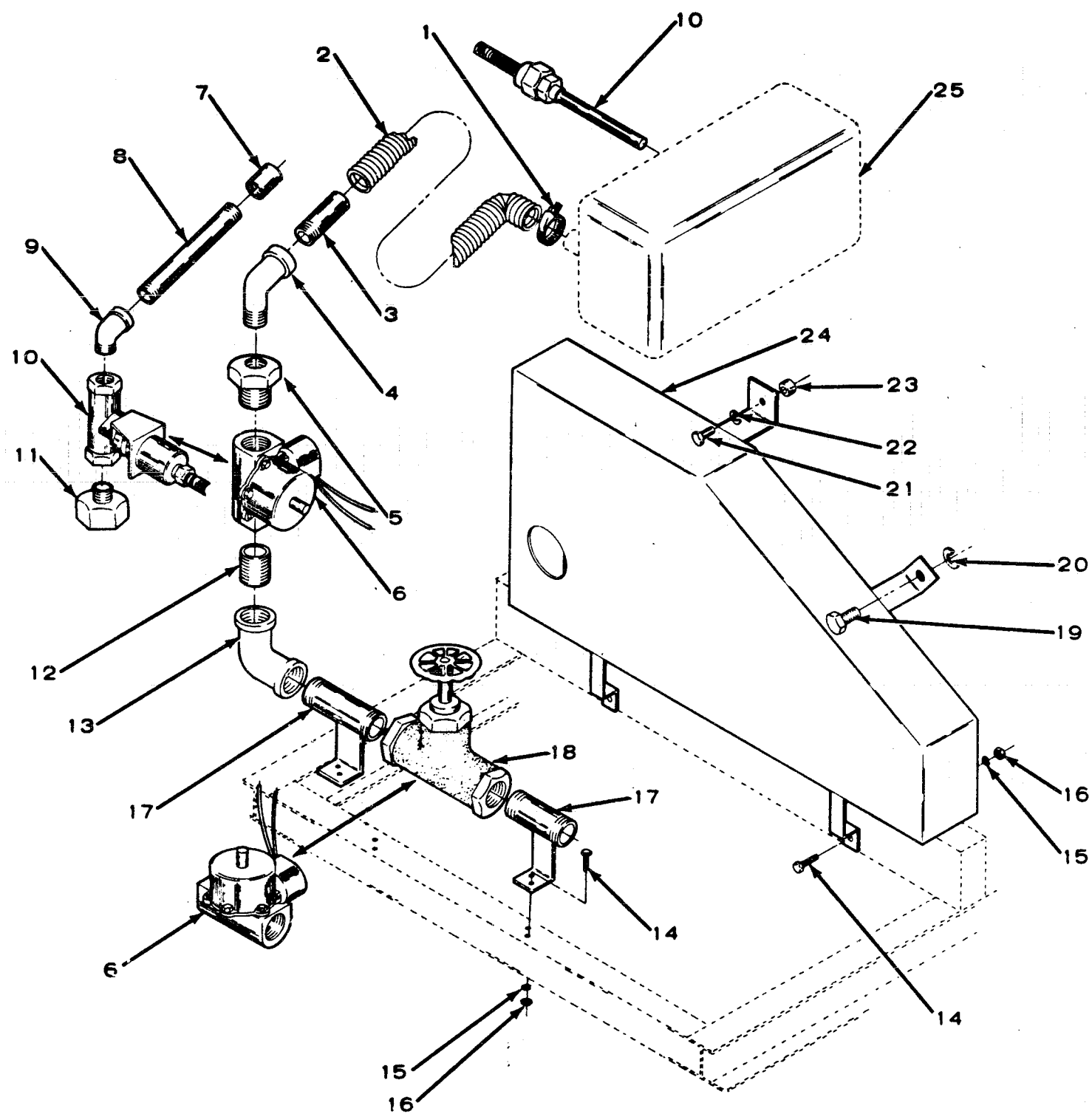
REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
HEATER, GENERATOR			
		1	120 Volt
		1	240 Volt
1	CABLE ASSEMBLY (Includes Thermostat)		
	335-0146	1	120 Volt
	335-0147	1	240 Volt
2	800-0004	1	Screw, Cap - Hex Head (1/4-20 x 5/8")
3	850-0038	1	Washer, Lock - Spring (1/4")
4	526-0158	1	Washer, Flat (17/64" ID 1" OD x 1/8" Thk)
5	HEATER, ELECTRICAL		
	333-0059	1	120 Volt, 125 Watt
	333-0192	1	240 Volt, 200 Watt

OPTIONAL GENERATOR HEATER — 200 kW SETS



REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
HEATER, GENERATOR			
		1	120 Volt
		1	240 Volt
1	338-1420	1	Cable Assembly (Includes Thermostat)
2	800-0004	1	Screw, Cap - Hex Head (1/4-20 x 5/8")
3	850-0038	2	Washer, Lock - Spring (1/4")
4	526-0158	1	Washer, Flat - .261" ID x 1" OD x 1/8" Thk)
5	862-0001	1	Nut, Hex (1/4-20)
6	HEATER, ELECTRICAL		
	333-0059	1	120 Volt, 125 Watt
	333-0192	1	240 Volt, 200 Watt
7	821-0014	1	Screw, Self-locking - Hex Washer Head (5/16-18 x 1/2")
8	BRACKET, MOUNTING		
	232-2446	1	120 Volt Heater
	232-2832	1	240 Volt Heater

**OPTIONAL
COOLING SYSTEM WITH HEAT EXCHANGER —
200 kW SETS**



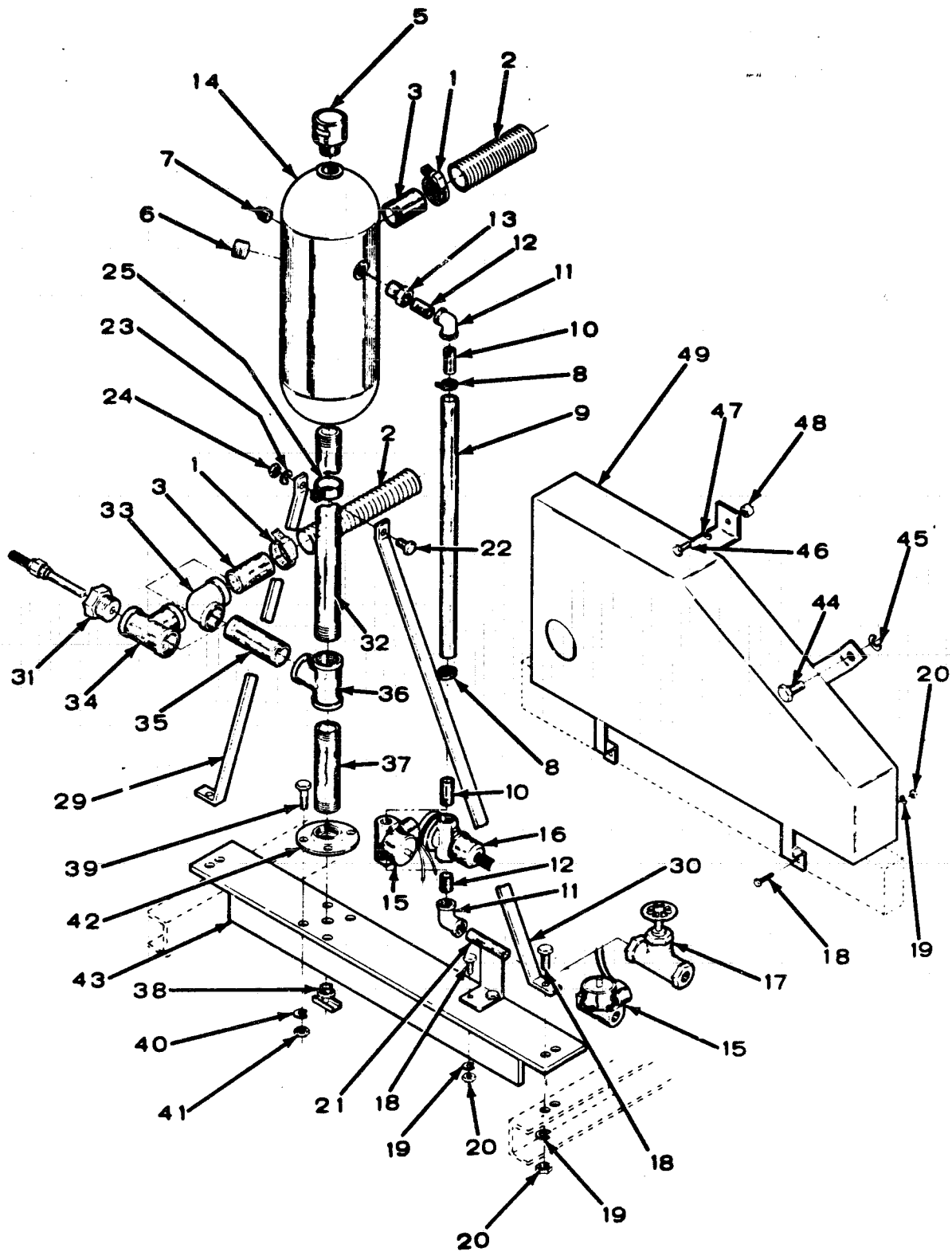
OPTIONAL COOLING SYSTEM WITH HEAT EXCHANGER — 200 KW SETS

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
HEAT EXCHANGER COOLING SYSTEM (All Parts Common Except as Marked)				11	502-0270	1	£Bushing, Reducer (2" NPT x 1-1/4" NPT)
		1	#Without Coolant Temperature Regulator	12	505-0172	1	Nipple, Pipe - Close (2" NPT x 2")
		1	£With Coolant Temperature Regulator	13	505-0175	1	Elbow, Pipe - 95 DEG (2" NPT)
1	503-0365	2	Clamp, Hose	14	800-0007	6	Screw, Cap - Hex Head (1/4-20 x 1")
2	503-0635	1	Hose, Rubber - Flexible (1-3/4" ID x 2" OD x 19" Lg)	15	850-0040	6	Washer, Lock - Spring (1/4")
3	505-1040	1	#Nipple, Pipe - Half (1-1/2" NPT x 7")	16	862-0001	6	Nut, Hex (1/4-20)
4	505-0644	1	#Elbow, Pipe - Street, 45 DEG (1-1/2" NPT)	17	130-0801	2	Nipple, Support Assembly
5	505-0187	1	#Bushing, Reducer (2" NPT x 1-1/2" NPT)	18	504-0057	1	#Valve, Globe
6	307-0844	1	Valve, Control - Solenoid	19	800-0058	1	Screw, Cap - Hex Head (3/8-16 x 3")
7	505-0349	1	£Coupling, Pipe - Half (1-1/4" NPT)	20	526-0030	1	Washer, Flat (13/32" ID x 7/8" OD x 1/8" Thk)
8	505-0311	1	£Nipple, Pipe (1-1/4" NPT x 8-1/2")	21	800-0092	1	Screw, Cap, Hex Head (1/2-13 x 1-1/2")
9	505-0362	1	£Elbow, Pipe - Street, 45 DEG (1-1/4" NPT)	22	850-0060	1	Washer, Lock - Spring (1/2")
10	309-0243	1	£Valve, Control - Temperature Regulating	23	191-0879	1	Spacer, Sleeve
				24	191-0878	1	Guard, Belt
				25		REF	Tank, Heat Exchanger - Supplied With Engine (Modify as Necessary)

- Parts Included in Non-Regulated System.

£ - Parts Included in Regulated System.

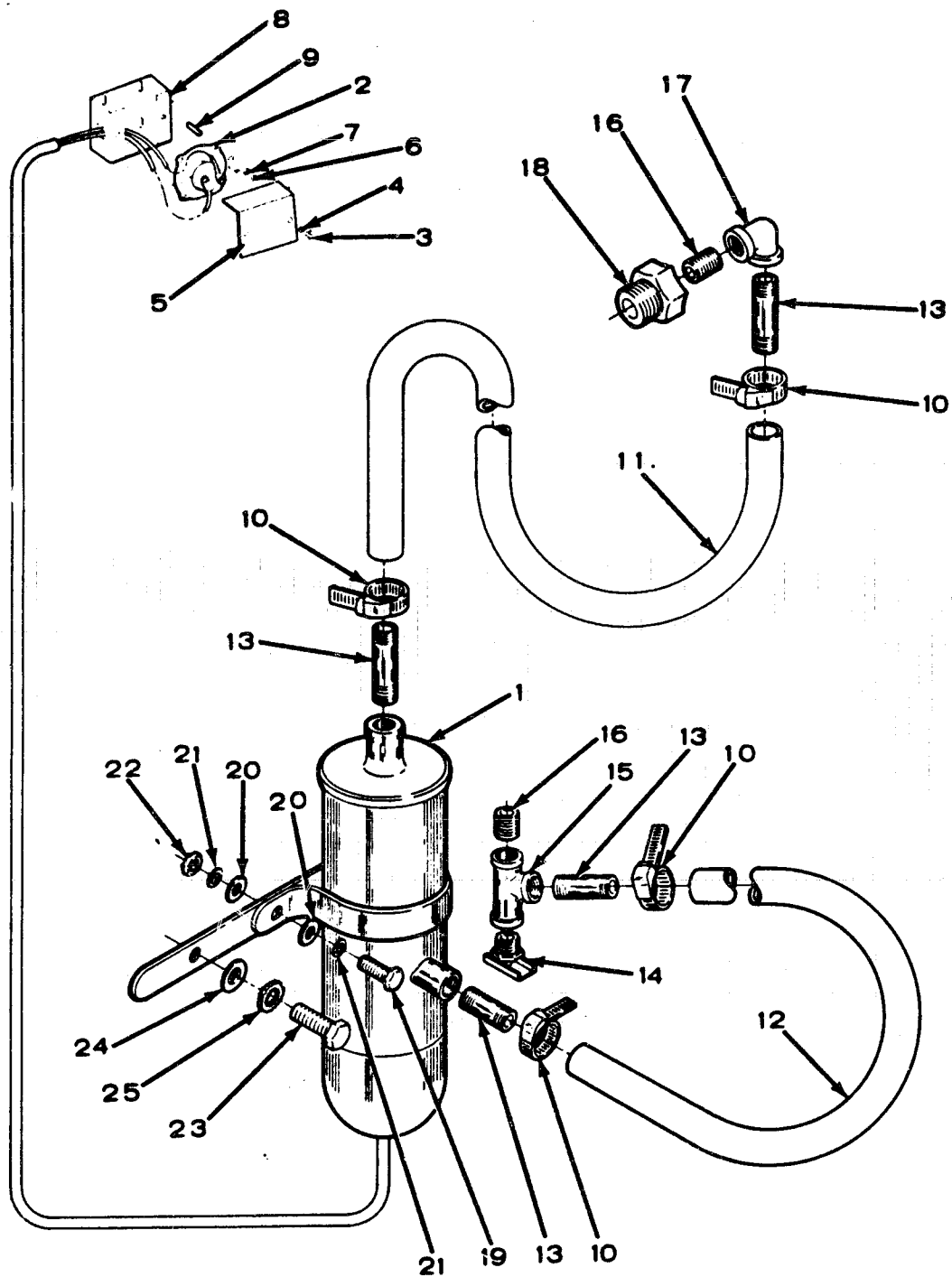
OPTIONAL COOLING SYSTEM WITH STANDPIPE



OPTIONAL COOLING SYSTEM WITH STANDPIPE

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
STANDPIPE COOLING SYSTEM (All Parts Common Except as Marked)				22	800-0051	1	Screw, Cap - Hex Head (3/8-16 x 1-1/4")
		1	Without Coolant Temperature Regulator	23	850-0050	1	Washer, Lock - Spring (3/8")
		1	With Coolant Temperature Regulator	24	862-0003	1	Nut, Hex (3/8-16)
1	503-0354	4	Clamp, Hose	25	130-0871	1	Clamp, Loop
2	503-0631	2	Hose, Rubber - Flexible (2-1/4" ID x 2-1/2" ID x 18" Lg)	26	800-0092	4	Screw, Cap - Hex Head (1/2-13 x 1-1/2")
3	505-0204	1	Nipple, Pipe - Half (2" NPT x 2")	27	850-0060	4	Washer, Lock - Spring (1/2")
4	505-0764	1	Nipple, Pipe - Half (2" NPT x 4")	28	862-0005	4	Nut, Hex (1/2-13)
5	504-0062	1	Valve, Vacuum Relief	29	130-0870	1	Brace, Support - Standpipe
6	505-0949	1	Plug, Pipe - Square Socket Drive (1-1/4" NPT)	30	130-0869	1	Brace, Support - Standpipe
7	505-0140	1	Plug, Pipe - Square Head (1" NPT)	31	505-0351	1	Bushing, Reducer (2" NPT x 3/4" NPT) Part of Regulated System
8	503-0189	2	Clamp, Hose	32	505-0377	1	Nipple, Pipe (2" NPT x 18-1/2")
9	503-0361	1	Hose, Rubber (1-1/4" ID x 1-5/8" OD x 36" Lg)	33	505-0175	1	Elbow, Pipe - 90 DEG (2" NPT) - Part of Non-Regulated System
10	505-0330	2	Nipple, Pipe - Half (1" NPT x 2")	34	505-0374	1	Tee, Pipe (2" NPT) - Part of Regulated System.
11	505-0041	2	Elbow, Pipe - 90 DEG (1" NPT)	35	505-0405	1	Nipple, Pipe (2" NPT x 5")
12	505-0004	2	Nipple, Pipe - Close (1" NPT x 1-1/2")	36	505-0374	1	Tee, Pipe (2" NPT)
13	505-0023	1	Bushing, Reducer (1-1/4" NPT x 1" NPT)	37	505-0421	1	Nipple, Pipe (2" NPT x 8")
14	130-0425	1	Tank, Standpipe	38	504-0006	1	Cock, Drain
15	307-1135	1	Valve, Control - Solenoid	39	800-0092	4	Screw, Cap - Hex Head (1/2-13 x 1-1/2")
16	309-0242	1	Valve, Control - Temperature Regulating (Part of Regulated System)	40	850-0060	4	Washer, Lock - Spring (1/2")
17	504-0090	1	Valve, Globe (Part of Non-Regulated System)	41	862-0005	4	Nut, Hex (1/2-13)
18	800-0007	4	Screw, Cap - Hex Head (1/4-20 x 1")	42	130-0442	1	Base, Standpipe
19	850-0040	4	Washer, Lock - Spring (1/4")	43	130-0927	1	Support, Mounting - Standpipe
20	862-0001	4	Nut, Hex (1/4-20)	44	800-0058	1	Screw, Cap - Hex Head (3/8-16 x 3")
21	130-0797	1	Nipple, Support Assembly	45	526-0030	1	Washer, Flat (13/32" ID x 7/8" OD x 1/8" Thk)
				46	800-0092	1	Screw, Cap - Hex Head (1/2-13 x 1-1/2")
				47	850-0060	1	Washer, Lock - Spring (1/2")
				48	191-0879	1	Spacer, Sleeve
				49	191-0878	1	Guard, Belt

OPTIONAL ENGINE COOLANT HEATER ASSEMBLY

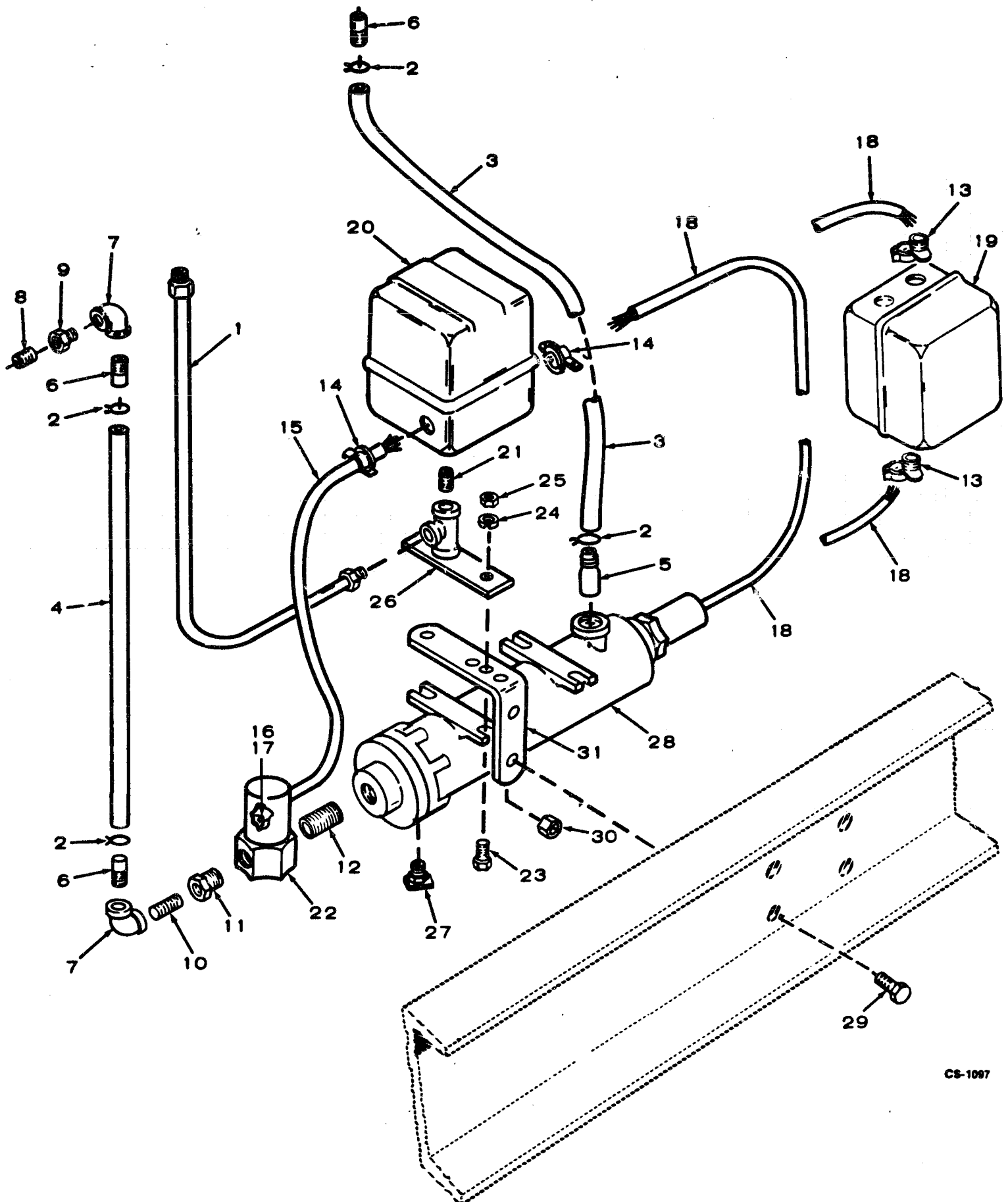


OPTIONAL **ENGINE COOLANT HEATER ASSEMBLY**

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
	ENGINE COOLANT HEATERS ASSEMBLY		
		1	120 Volt, 1 Phase
		1	208/240 Volt, 1 Phase
1	HEATER, ENGINE COOLANT		
	333-0053	1	120 Volt, 2000 Watts
	333-0073	1	208/240 Volt, 1875-2000 Watts
2	SWITCH, THERMOSTATIC		
	309-0106	1	120 Volt, 25 Amp, SPST (120 Deg Close, 130 Deg Open)
	309-0256	1	120/250 Volt, 40-25 Amp, DPST (100 Deg Close, 130 Deg Open)
3	812-0075	2	Screw, Machine - Roundhead (#8-32 x 1/4")
4	850-0025	2	Washer, Lock - Spring (#8)
5	COVER, THERMOSTAT BOX		
	333-0013	1	Used On 120 Volt Applications
	333-0056	1	Used On 240 Volt Applications
6	870-0053	2	Nut, Hex (#10-32)
7	850-0030	2	Washer, Lock - Spring (#10)
8	BOX, THERMOSTAT		
	333-0012	1	Used On 120 Volt Applications
	333-0057	1	Used On 240 Volt Applications
9	STUD		
	520-0446	2	#10-32 x 3/4" - Part of 179-0326
	332-0672	2	#10-32 x 1" - Part of 179-2000

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
10	503-0183	4	Clamp, Hose
11	503-1000	1	Hose, Rubber - (5/8" ID x 61/64" OD x 50")
12	503-0800	1	Hose, Rubber (5/8" ID x 61/64" OD x 19" Lg)
13	505-0135	4	Nipple, Pipe (3/8" NPT x 1-1/2")
14	504-0028	1	Cock, Drain (3/8" NPT)
15	505-0060	1	Tee, Pipe (3/8" NPT)
16	505-0101	2	Nipple, Pipe - Close (3/8" NPT x 1")
17	505-0039	1	Elbow, Pipe - 90 Deg (3/8" NPT)
18	505-0455	1	Bushing, Reducer (1" NPT to 3/8" NPT)
19	800-0031	1	Screw, Cap - Hex Head (5/16-18 x 1-1/2")
20	526-0115	2	Washer, Flat (11/32" ID x 11/16" OD x 1/16" Thk)
21	856-0008	2	Washer, Lock - EIT (5/16")
22	862-0015	1	Nut, Hex (5/16-18)
23	800-0091	1	Screw, Cap - Hex Head (1/2-13 x 1-1/4")
24	850-0050	1	Washer, Lock - Spring (1/2")
25	856-0013	1	Washer, Lock - EIT (1/2")
26	130-0755	1	Bracket, Mounting

OPTIONAL ENGINE COOLANT HEATER



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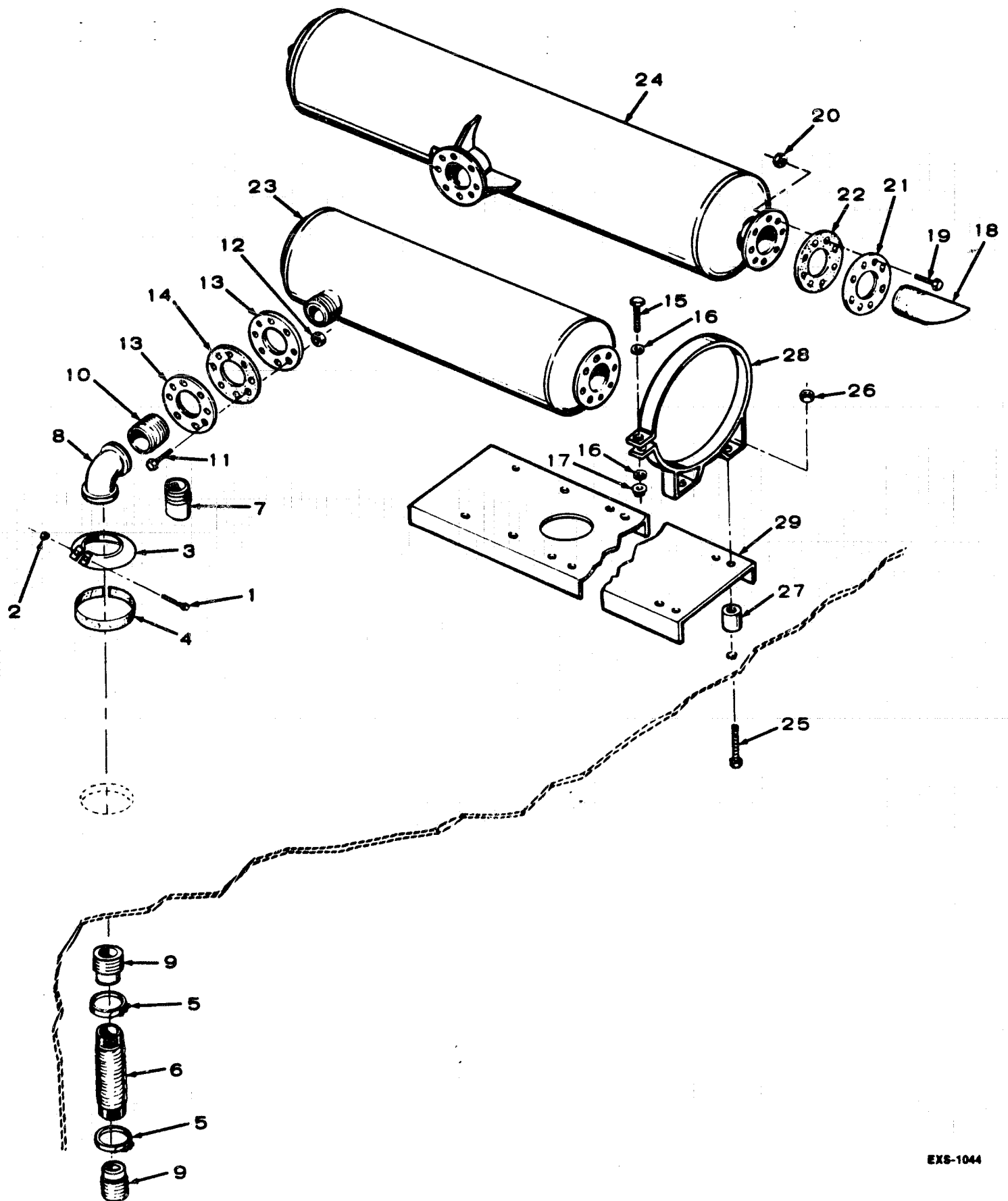
OPTIONAL ENGINE COOLANT HEATER

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
ENGINE COOLANT HEATER			
		1	208 VAC, 1 Phase
		1	208 VAC, 3 Phase
		1	240 VAC, 1 Phase
		1	240 VAC, 3 Phase
		1	277 VAC, 1 Phase
		1	380 VAC, 1 Phase
		1	380 VAC, 3 Phase
		1	440/480 VAC, 1 Phase
		1	440/480 VAC, 3 Phase
1	501-0227	1	Line, Fuel - Flexible
2	503-0429	4	Clamp, Hose
3	503-0847	1	Hose, Rubber (1" ID x 1-3/8" OD x 30" Lg)
4	503-0792	1	Hose, Rubber (1" ID x 1-3/8" OD x 12-1/2" Lg)
5	505-0759	1	Adapter - Hose to Pipe
6	505-0324	3	Nipple, Pipe - Half (3/4" NPT x 2")
7	505-0132	2	Elbow, Pipe - 90 DEG (3/4" NPT)
8	505-0100	1	Nipple, Pipe - Close (1/2" NPT x 1-1/8")
9	505-0027	1	Bushing, Reducer (3/4" NPT x 1/2" NPT)
10	505-0102	1	Nipple, Pipe - Close (3/4" NPT x 1-3/8")
11	505-0129	1	Bushing Reducer (1" NPT x 3/4" NPT)
12	505-0004	1	Nipple, Pipe - Close (1" NPT x 1-1/2")
13	331-0027	6	Clamp, Cable (3/8" OD Cable) - used with Contactor
14	331-0027	2	Clamp, Cable (3/8" OD Cable)
15	#	REF	Cable, Electrical - (2-#14, Type S0, 600 Volt)
16	323-0957	1	Nut, Wire - Used on Ground Lead
17	332-0149	8	Lug, Terminal - Used on White Leads

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
18	CABLE, ELECTRICAL (Type S0, 600 Volt)		
	#	REF	3-#12 Wires (Single Phase Heaters)
	#	REF	4-#14 Wires (Three Phase Heaters)
19	CONTACTOR, ELECTRICAL		
	307-1460	1	230 VAC, 3 Pole
	307-1164	1	460 VAC, 3 Pole
20	308-0307	1	Switch, Pressure
21	505-0099	1	Nipple, Pipe - Close (1/4" NPT x 7/8")
22	308-0304	1	Switch, Thermostatic
23	800-0007	4	Screw, Cap - Hex Head (1/4-20 x 1")
24	850-0040	4	Washer, Lock - Spring (1/4")
25	862-0001	4	Nut, Hex (1/4-20)
26	333-0142	1	Support with Tee, Pressure Switch Mounting
27	504-0003	1	Cock, Drain (1/4" NPT)
28	HEATER, ELECTRICAL - ENGINE COOLANT (Select as Applicable to Match Voltage and Phase)		
	333-0143	1	4000 Watt, 208 VAC, 1 Phase
	333-0164	1	4000 Watt, 208 VAC, 3 Phase
	333-0138	1	4000 Watt, 240 VAC, 1 Phase
	333-0190	1	4000 Watt, 240 VAC, 3 Phase
	333-0150	1	4000 Watt, 277 VAC, 1 Phase
	333-0183	1	4000 Watt, 380 VAC, 1 Phase
	333-0174	1	4000 Watt, 380 VAC, 3 Phase
	333-0161	1	4000 Watt, 440/480 VAC, 1 Phase
	333-0144	1	4000 Watt, 440/480 VAC, 3 Phase
29	821-0016	4	Screw, Self-locking - Hex Washer Head (5/16-18 x 3/4")
30	870-0257	4	Nut, Hex (5/16-18)
31	130-1192	2	Bracket, Mounting - Heater

- Electrical Cable and Cord Shown for Reference Purpose Only.

**OPTIONAL
EXHAUST MUFFLER
RESIDENTIAL & CRITICAL TYPES
(HOUSED SETS)**



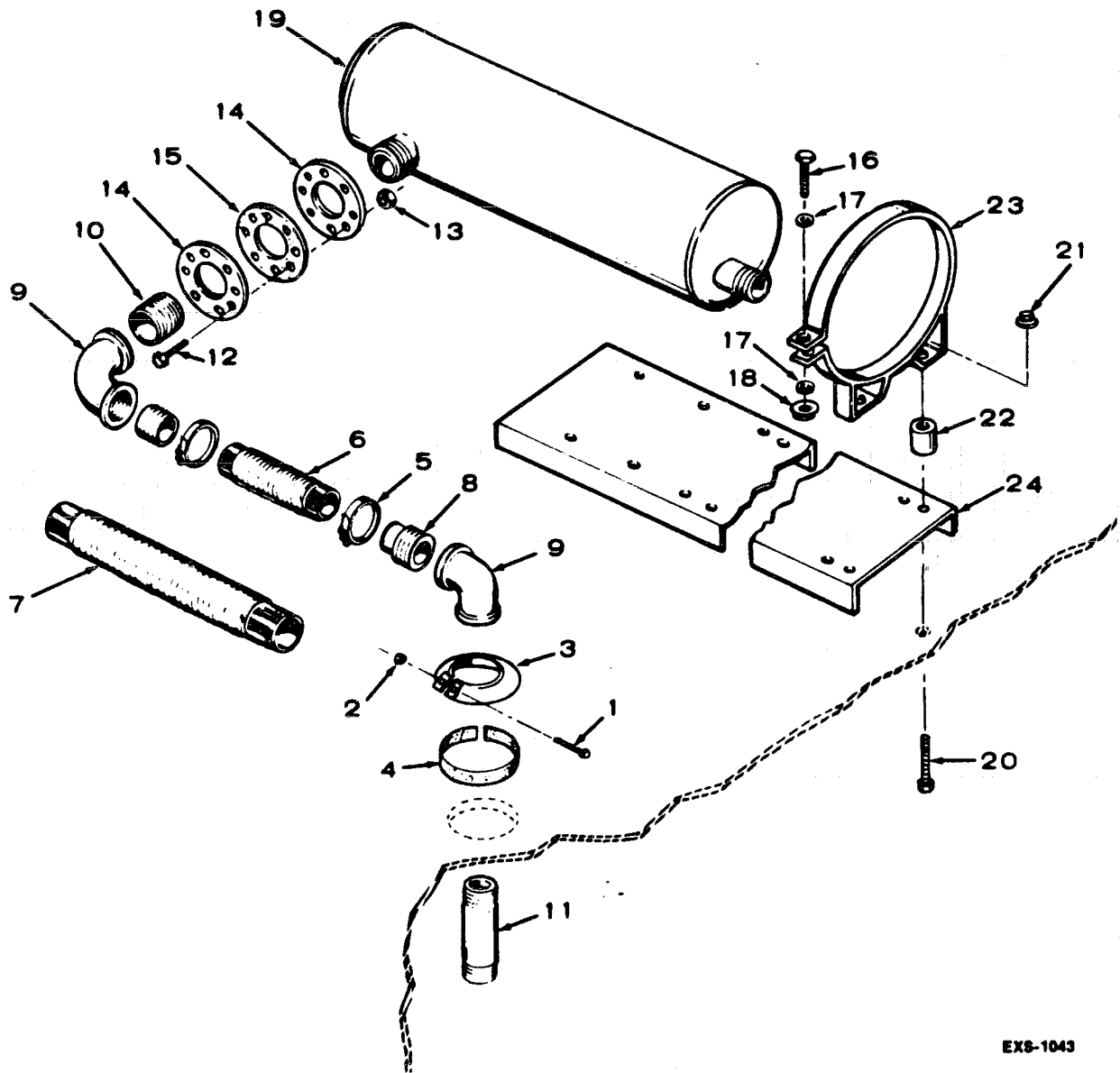
EXS-1044

**OPTIONAL
EXHAUST MUFFLER
RESIDENTIAL & CRITICAL TYPES
(HOUSED SETS)**

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
EXHAUST MUFFLER — RESIDENTIAL CRITICAL TYPE			
			HOUSED SETS
		1	Residential Type
		1	Critical Type
		1	Critical Type w/Flanged Inlet
			OUTDOOR SHELTER SETS
		1	Residential Type
		1	Critical Type
1	813-0105	2	Screw, Machine - Round Head (#10-32 x 1)
2	870-0188	2	Nut, Self-locking, Hex (#10-32)
3	SHIELD, RAIN 155-1426	1	6" ID
	155-1428	1	7-1/2" ID
4	STRIP, ASBESTOS 895-0163	1	2" x 22" x 1/16" Thk
	895-0164	1	2" x 28" x 1/16" Thk
5	503-0701	2	Clamp, Loop
6	TUBE, EXHAUST — FLEXIBLE, CRES 155-1354	1	6" ID x 25" Lg
	155-1478	1	6" ID x 16" Lg
	155-1480	1	6" ID x 19" Lg
	155-1582	1	6" ID x 9" Lg
7	505-0786	1	Coupling, Pipe - 6" NPT (Used When Muffler Exhaust Inlet is Vertical Down.)
8	505-0741	1	Elbow, Pipe - 90 DEG, 6" NPT (Used Direct or With Flanges to Muffler Side Inlet)
9	155-1282	2	Nipple, Pipe - Half, Modified (6" NPT)
10	505-0745	1	Nipple, Pipe - Close (6" NPT x 6-1/2") - Used With Flanges
11	800-0160	8	Screw, Cap - Hex Head (3/4-10 x 3-1/4")
12	862-0008	8	Nut, Hex (3/4-10)
13	155-0652	2	Flanges, Pipe - Companion (6" NPT)

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
14	155-0676	1	Gasket, Flange - Asbestos (6" ID)
15	SCREW, CAP - HEX HEAD (Select as Required) 800-0035	3	5/16-18 x 2-1/2"
	800-0036	3	5/16-18 x 2-3/4"
	800-0037	3	5/16-18 x 3"
16	526-0113	6	Washer, Flat (11/32" ID x 1" OD x 3/32" Thk)
17	870-0257	3	Nut, Self-locking, Hex Washer Head (5/16-18)
18	505-0785	1	Nipple, Pipe - Half, Modified With Diagonal Cutoff
19	800-0160	8	Screw, Cap - Hex Head (3/4-10 x 3-1/4")
20	862-0008	8	Nut, Hex (3/4-10)
21	155-0652	1	Flange, Pipe - Companion (6" NPT)
22	155-0676	1	Gasket, Flange - Asbestos (6" ID)
23	MUFFLER, EXHAUST - RESIDENTIAL 155-1289	1	18" OD x 60" Lg
	155-1288	1	22" OD x 70" Lg
24	MUFFLER, EXHAUST - CRITICAL 155-0308	1	18" OD x 93" Lg
	155-1584	1	18" OD x 93" Lg (With Flanged Inlet)
25	300-0037	6	Screw, Cap - Hex Head (5/16-18 x 3")
26	870-0048	6	Nut, Self-locking, Hex (5/16-18)
27	155-1430	6	Spacer, Sleeve (1/2" ID x 1-1/2" OD x 2" Thk)
28	BAND, MOUNTING 140-0751	3	18" ID
	155-1291	3	22" ID
29	HEAT SHIELD 155-1296	1	
	155-1313	1	18" x 84"
	155-1331	1	18" x 84" With 8" Cutout
	155-1583	1	18" x 93"

**OPTIONAL
EXHAUST MUFFLER - INDUSTRIAL TYPE
(HOUSED SETS)**



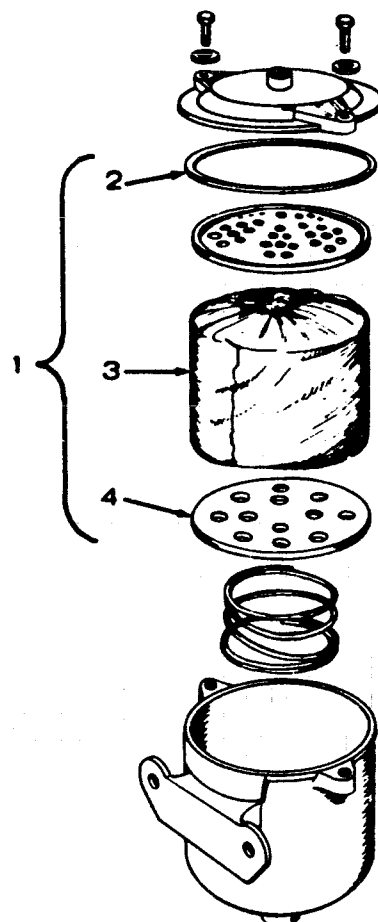
EX8-1043

**OPTIONAL
EXHAUST MUFFLER - INDUSTRIAL TYPE
(HOUSED SETS)**

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
EXHAUST MUFFLER - INDUSTRIAL TYPE			
			HOUSED SETS
		1	Includes One Piece Horizontal Flex Tube
		1	Includes Multi Piece Horizontal Flex Tube
			OUTDOOR SHELTER SETS
		1	Includes One Piece Horizontal Flex Tube
1	813-0105	2	Screw, Machine - Round Head (#10-32 x 1")
2	870-0188	2	Nut, Self-locking, Hex (#10-32)
3	155-1426	1	Shield, Rain
4	895-0163	1	Asbestos, Strip (2" x 22" x 1/16" Thk)
5	503-0701	2	Clamp, Loop
6	155-1321	1	Tube, Exhaust - Flexible, CRES
7	155-1160	1	Tube, Exhaust - Flexible, CRES
8	155-1282	2	Nipple, Pipe - Half, Modified (6" NPT)
9	505-0741	2	Elbow, Pipe - 90 DEG (6" NPT)
10	505-0740	1	Nipple, Pipe - Close (6" NPT x 4-1/2")

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
11	NIPPLE, PIPE (6" NPT)		
	505-0821	1	16-1/2" Lg (Housed Sets)
	505-0961	1	26-1/2" Lg (Outdoor Sheltered Sets)
12	800-0160	8	Screw, Cap - Hex Head (3/4-10 x 3-1/4")
13	862-0008	8	Nut, Hex (3/4-10)
14	155-0652	2	Flange, Pipe - Companion (6" NPT)
15	155-0676	1	Gasket, Flange - Asbestos (6" ID)
16	800-0037	3	Screw, Cap - Hex Head (5/16-18 x 3")
17	526-0113	6	Washer, Flat (11/32" ID x 1" OD x 3/32" Thk)
18	870-0257	3	Nut, Self-locking, Hex Washer Head (5/16-18)
19	155-1158	1	Muffler, Exhaust - Industrial (14" OD x 80" Lg)
20	800-0037	6	Screw, Cap - Hex Head (5/16-18 x 3")
21	870-0048	6	Nut, Self-locking, Hex (5/16-18)
22	155-1430	6	Spacer, Sleeve (1/2" ID x 1-1/2" OD x 2" Thk)
23	140-0757	2	Band, Mounting
24	155-1161	1	Heat Shield (13" x 74" Lg)

OPTIONAL ENGINE COOLANT FILTER ASSEMBLY



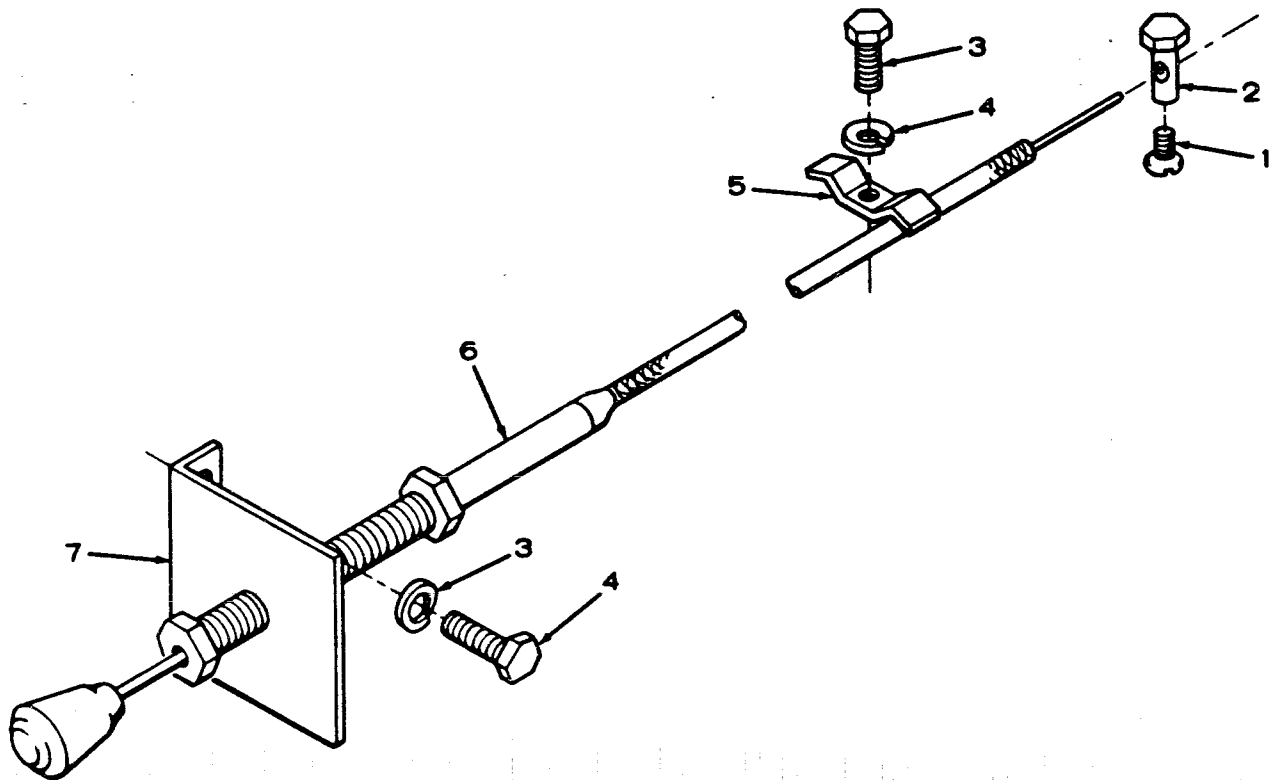
CS-1059

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
	FILTER ASSEMBLY, ENGINE COOLANT		
	130-0462	1	15 to 30 Gallon Capacity (Replacement Items Marked £)
	130-0497	1	5 to 10 Gallon Capacity (Replacement Items Marked †)
1	KIT REPLACEMENT - FILTER (Includes Items 2 Thru 4)		
	130-0769	1	£Original Equipment (Water Coolant)
	130-0770	1	£Special (Perm. Anti-Freeze Coolant)
	130-0771	1	†Original Equipment (Water Coolant)
	130-0772	1	†Special (Perm. Anti-Freeze Coolant)
2	GASKET, COVER		
	130-0777	1	£
	130-0778	1	†
3	ELEMENT, FILTER		
	130-0773	1	£Chromate (Water Coolant)
	130-0774	1	£Special (Perm. Anti-Freeze Coolant)
4	PLATE, SACRIFICIAL		
	130-0779	1	£
	130-0780	1	†

£ - **NOTE:** Used on 130-0462 Filter Assembly.

† - **NOTE:** Used on 130-0497 Filter Assembly.

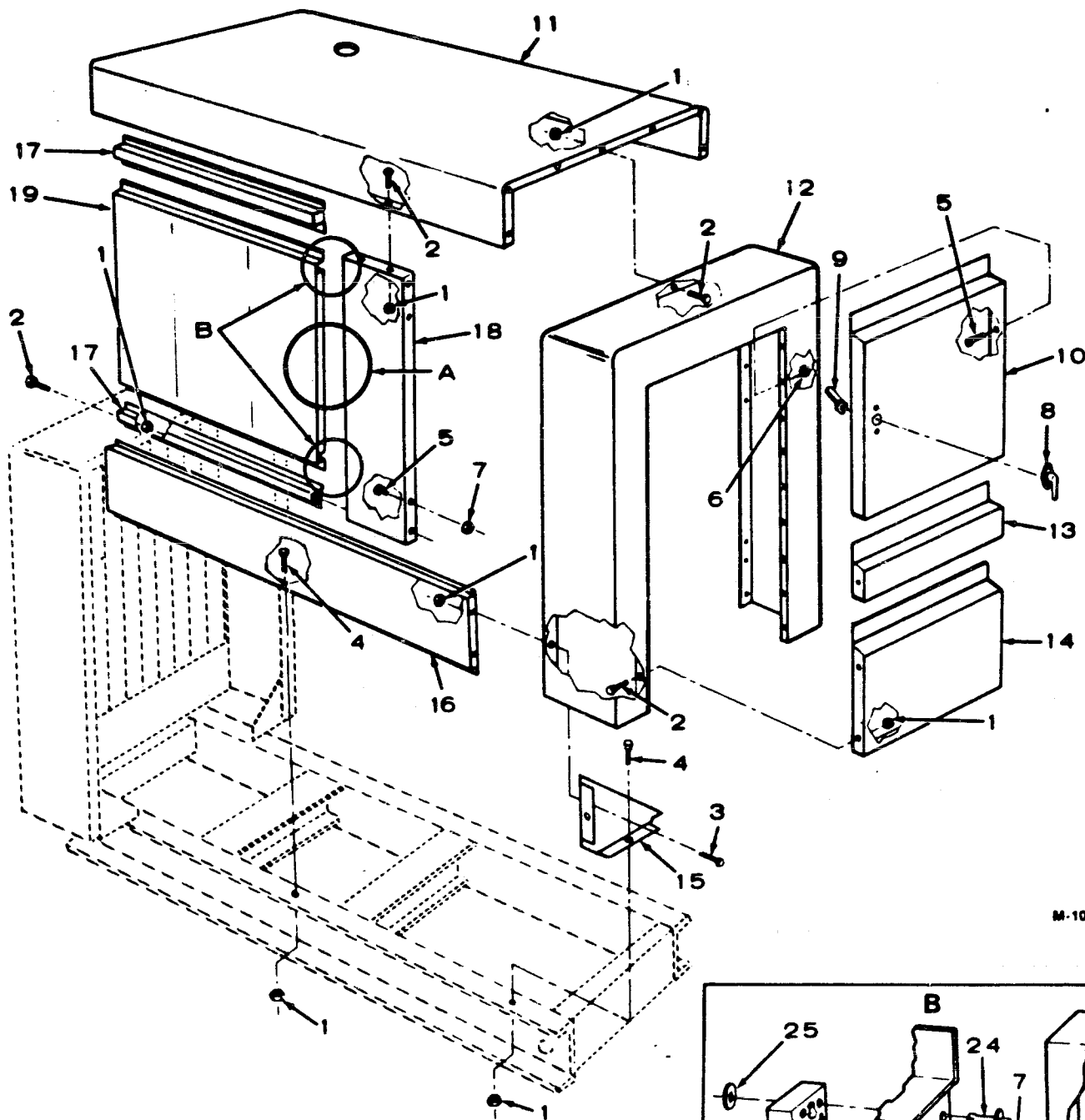
OPTIONAL VERNIER THROTTLE



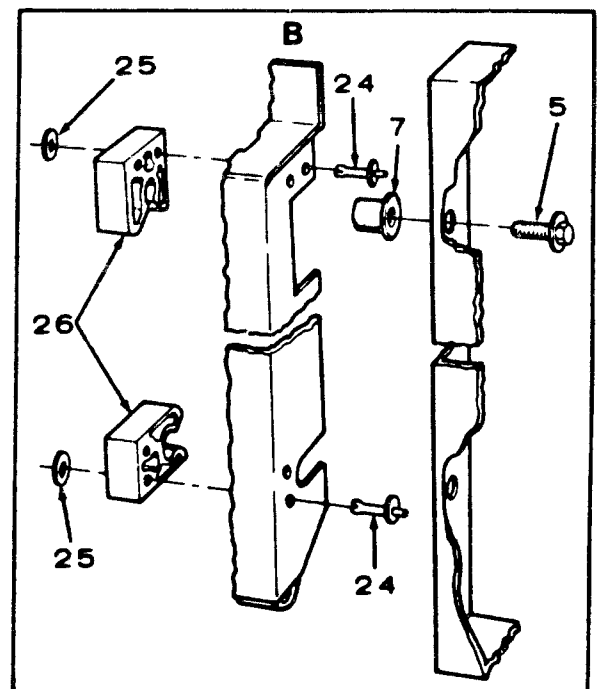
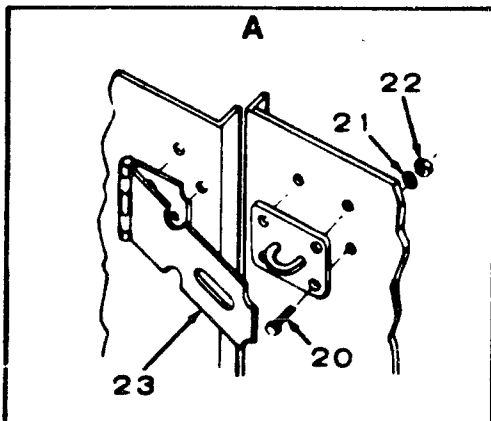
M-1179

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	812-0075	1	Screw, Machine - Round Head (#8-32 x 1/4")
2	152-0158	1	Swivel
3	800-0005	3	Screw, Cap - Hex Head (1/4-20 x 3/4")
4	850-0040	3	Washer, Lock - Spring (1/4")
5	152-0036	1	Clamp, Holddown - Cable
6	152-0120	1	Throttle Control - Vernier
7	151-0230	1	Bracket, Mounting - Throttle Control

OPTIONAL SET HOUSING



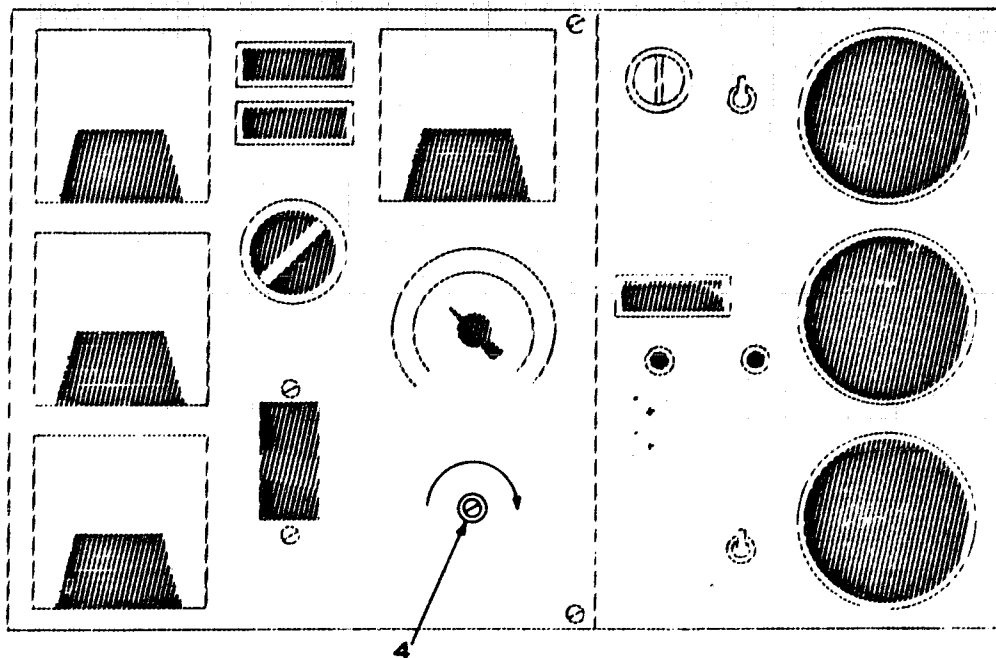
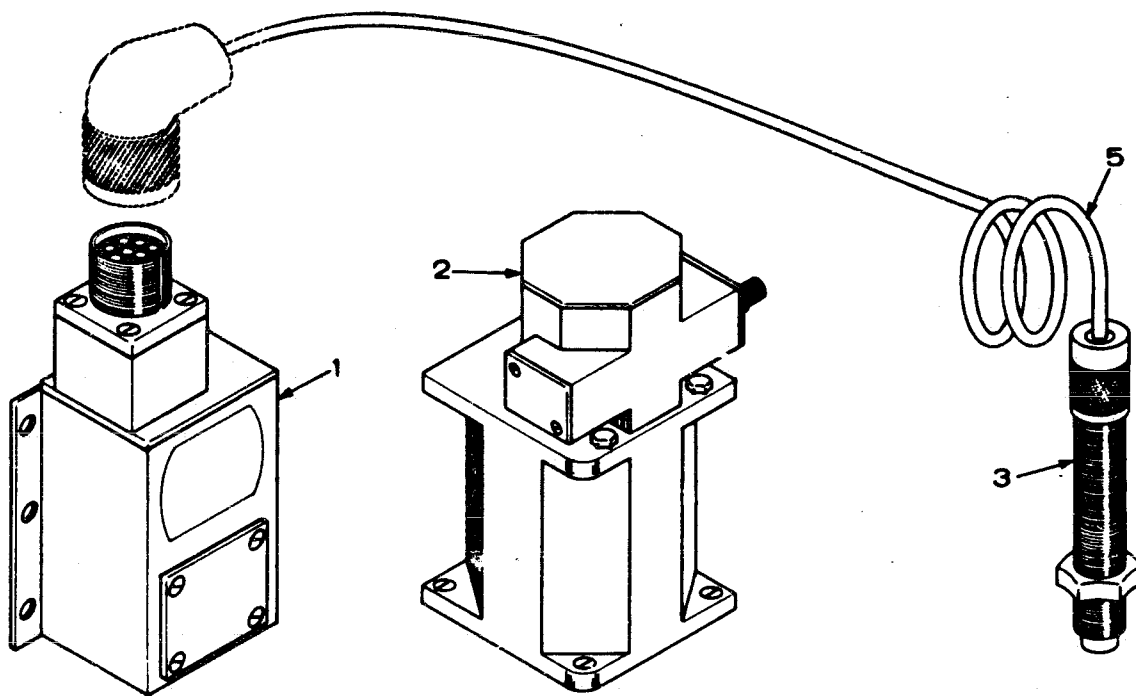
M-1004



OPTIONAL SET HOUSING

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	870-0257	62	Nut, Hex (5/16-18)
2	821-0014	48	Screw, Cap - Locking Head (5/16-18 x 1/2")
3	821-0016	8	Screw, Cap - Locking Head (5/16-18 x 3/4")
4	800-0030	6	Screw, Cap - Hex Head (5/16-18 x 1-1/4")
5	821-0010	20	Screw, Cap - Locking Head (1/4-20)
6	870-0212	4	Nut, Hex (1/4-20)
7	870-0258	16	Nut, Weld - Door Mounting
8	406-0157	1	Handle, Lock
9	406-0089	1	Catch
10	405-1880	1	Door, Rear
11	PANEL, TOP - HOUSING		
	405-1882	1	150/175 kW Sets
	405-2013	1	200 kW Sets
12	405-1883	1	Panel, Rear
13	405-1858	2	Panel, Rear Louver
14	405-1856	1	Panel, Lower Rear Housing
15	405-2016	4	Bracket, Panel Mounting
16	PANEL, BASE		
	405-2165	2	150/175 kW Sets
	405-2015	2	200 kW Sets
17	PANEL, LOUVER		
	405-1875	8	150/175 kW Sets
	405-2014	8	200 kW Sets
18	PANEL, CENTER		
	405-1873	2	150/175 kW Sets
	405-1873	2	200 kW Sets
19	DOOR, REMOVABLE		
	405-1877	4	150-175 kW Sets
	405-2011	4	200 kW Sets
20	814-0079	28	Screw, Machine - Flat Head (#8-32 x 1/2")
21	850-0025	28	Washer, Lock - Spring (#8)
22	860-0008	28	Nut, Hex (#8-32)
23	406-0249	4	Hasp Set - Optional
24	818-0150	32	Rivet, Drive Pin
25	526-0003	32	Washer, Flat (11/64" ID x 3/8" OD x 1/32" Thk)
26	405-1872	16	Clip, Door - Plastic

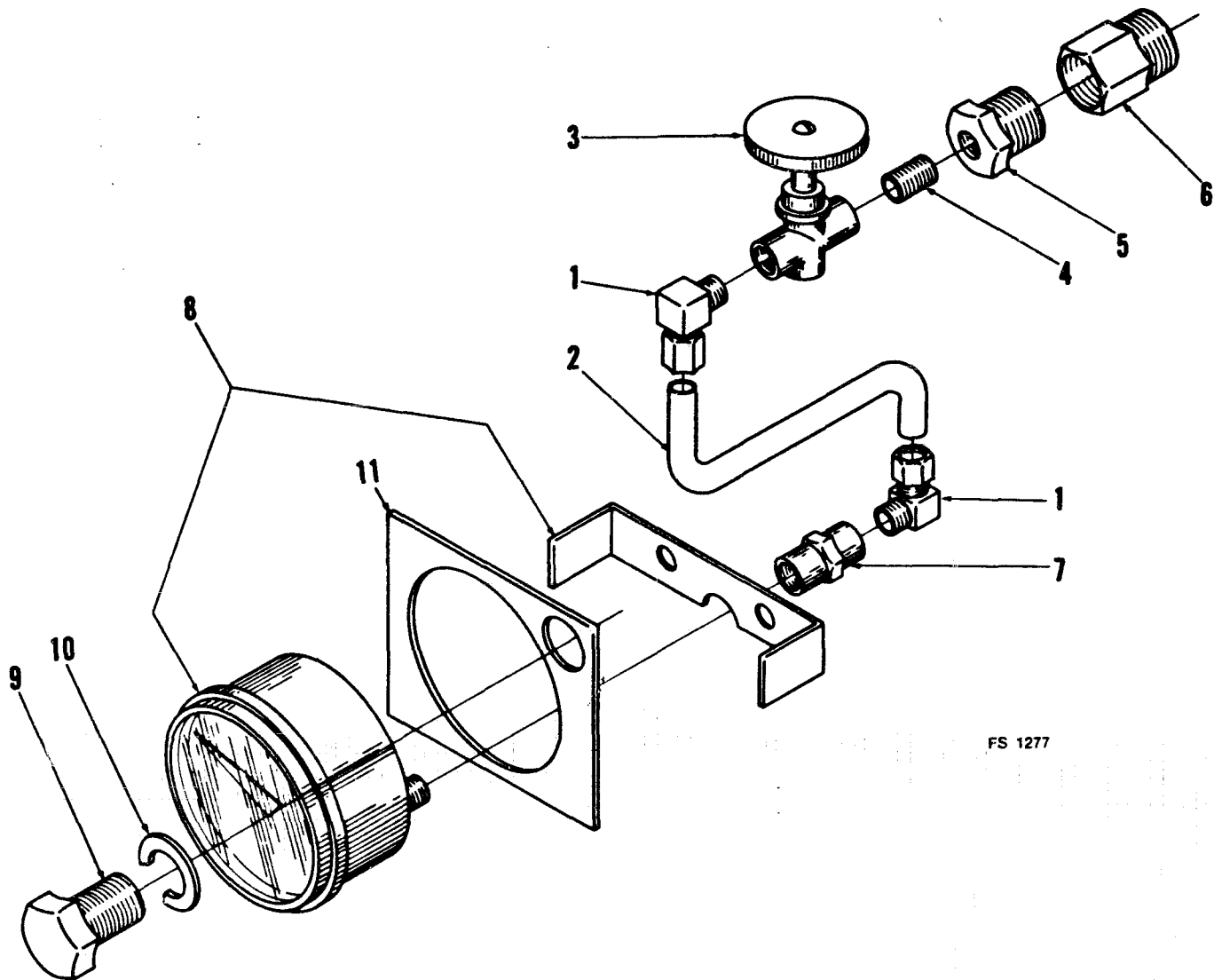
OPTIONAL GOVERNOR



FS-1272

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	151-0399	1	Control Unit - Governor (24 Volt)
2	151-0439	1	Actuator - Governor (24 Volt)
3	151-0411	1	Pickup, Magnetic
4	151-0402	1	Potentiometer - Speed Control (5K Ohms)
5	338-1086	1	Harness, Wiring - Governor

OPTIONAL FUEL PRESSURE GAUGE

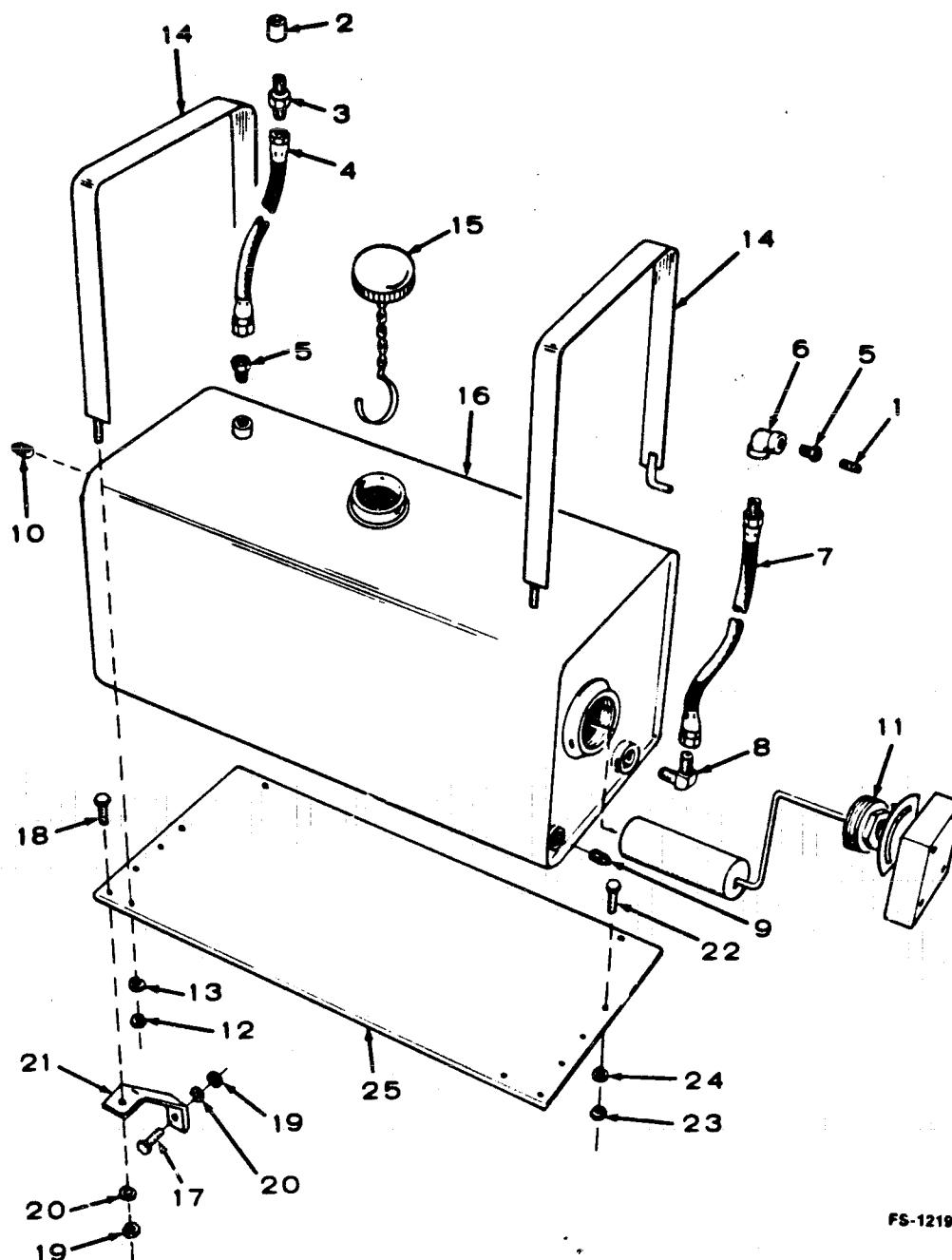


FS 1277

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
FUEL PRESSURE GAUGE ASSEMBLY			
	179-0547	1	0 to 15 Lbs Range
	#	1	0 to 30 Lbs Range
1	370-4003	1	Tube, Copper (3/16" OD x .030" Thk x 72 Lg)
2	502-0034	2	Elbow with Compression Nut & Ring - 90 DEG, Brass (1/8" NPT x 3/16" Tube)
3	504-0064	1	Valve, Gate (1/8" NPT)
4	502-0045	1	Nipple, Pipe - Close, Brass (1/8" NPT x 3/4" Lg)
5	502-0029	1	Bushing, Reducer - Hex, Brass (1/4" NPT x 1/8" NPT)
6	502-0639	1	Adapter, Pipe - Brass (1/4" NPT x 9/16-18 UNF)
7	502-0051	1	Coupling, Pipe - Brass
8	GAUGE, PRESSURE WITH BRACKET AND HARDWARE		
	193-0146	1	0 to 15 Lbs Range
	193-0200	1	0 to 30 Lbs Range
9	800-0130	1	Screw, Cap - Hex Head (5/8-11 x 1")
10	850-0070	1	Washer, Lock - Spring (5/8")
11	193-0308	1	Bracket, Mounting - Gauge

- Part number not available at time of publication.

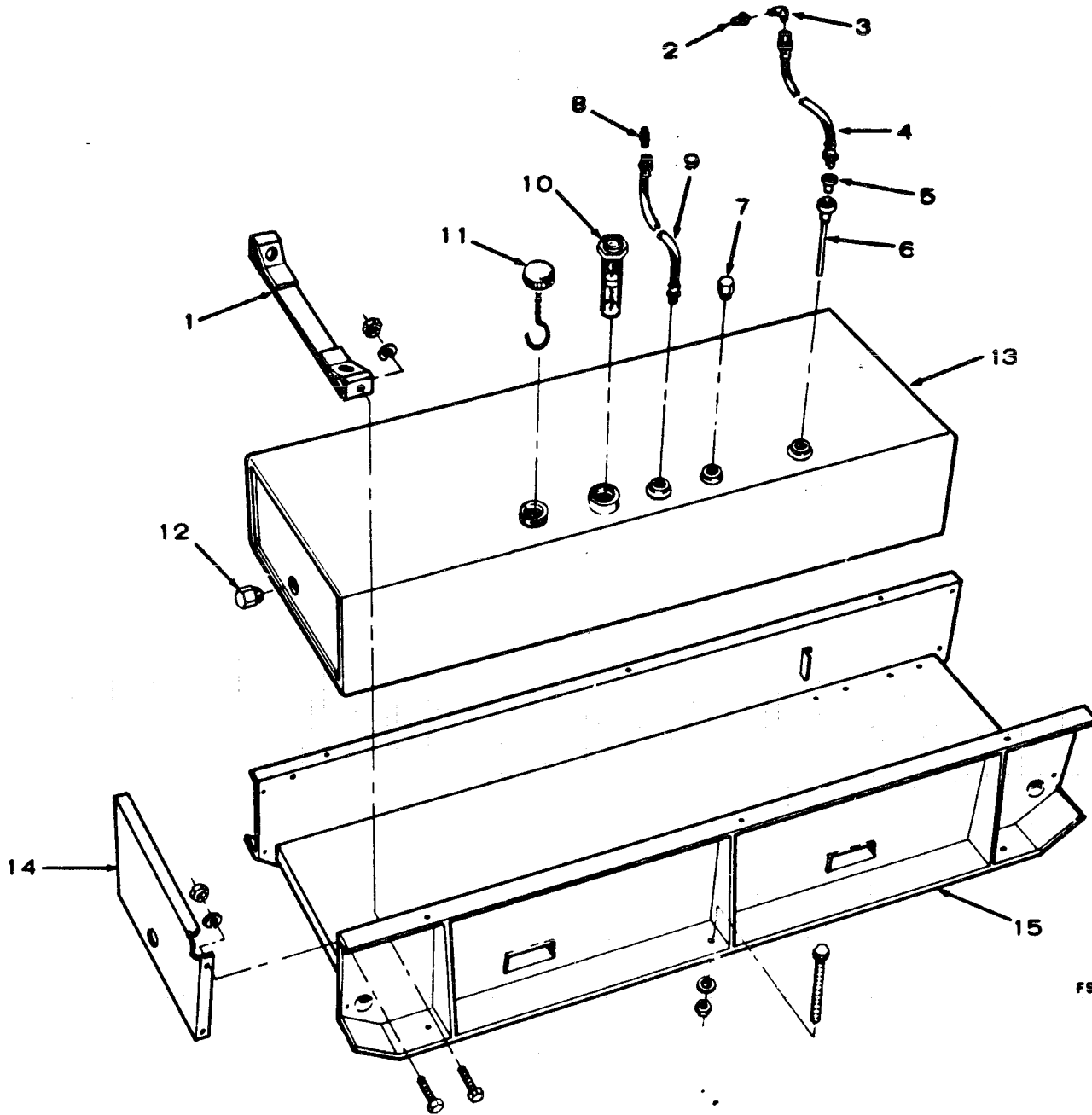
OPTIONAL FUEL TANK RESERVOIR



FS-1219

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	505-0105	1	Nipple, Pipe (1/4" NPT x 1-1/2")	11	415-0170	1	Switch, Fuel Level
2	502-0168	1	Coupling, Pipe (1/4" NPT)	12	862-0001	2	Nut, Hex (1/4-20)
3	502-01	1	Connector, Pipe - Male	13	850-0040	2	Washer, Lock - Spring (1/4")
4	501-0085	1	Line, Fuel - Flexible (Injector Return to Tank)	14	415-0331	2	Strap, Hold-down
5	505-0017	2	Bushing, Reducer (3/8" x 1/4" NPT)	15	159-0020	1	Cap, Fuel Tank
6	502-0039	1	Elbow, Pipe - 90 Deg. Brass (3/8" NPT)	16	415-0322	1	Tank, Fuel (8.5 Gal)
7	501-0083	1	Line, Fuel - Flexible (Tank to Filters)	17	800-0007	2	Screw, Cap - Hex Head (1/4-20 x 1")
8	502-0268	1	Elbow, Pipe - 90 Deg. Brass (1/2" NPT)	18	800-0005	2	Screw, Cap - Hex Head (1/4-20 x 3/4")
9	505-0110	1	Plug, Pipe - Square Head (3/8" NPT)	19	862-0001	4	Nut, Hex (1/4-20)
10	505-0056	1	Plug, Pipe - Square Head (1/2" NPT)	20	850-0040	4	Washer, Lock - Spring (1/4")
				21	415-0329	2	Brace, Tank Support
				22	800-0007	2	Screw, Cap - Hex Head (1/4-20 x 1")
				23	862-0001	2	Nut, Hex (1/4-20)
				24	850-0040	2	Washer, Lock - Spring (1/4")
				25	415-0330	1	Plate, Mounting - Fuel Tank

OPTIONAL FUEL TANK AND SUB BASE

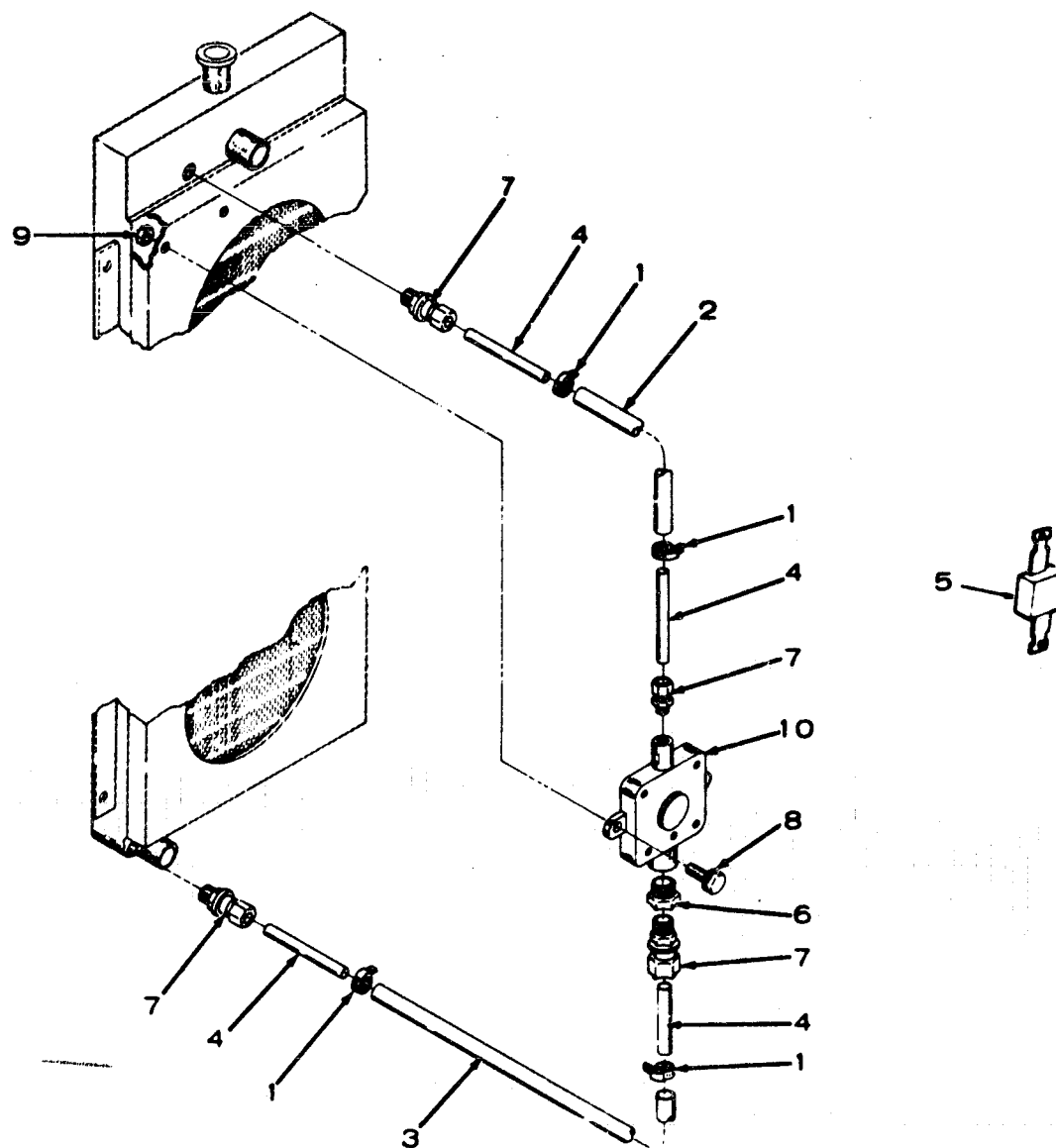


FS-1168

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
	159-1102	1	Kit, Fuel Tank and Sub Base
1	159-1100	2	Strap, Tank Holddown
2	502-0270	1	Adapter
3	502-0218	1	Elbow
4	501-0192	1	Line, Fuel
5	505-0018	1	Bushing, Reducer
6	415-0317	1	Pipe, Suction
7	505-0334	1	Plug, Pipe
8	502-0189	1	Connector
9	501-0193	1	Line, Fuel
10	193-0216	1	Gauge, Fuel
11	159-0020	1	Cap, Tank
12	505-0247	1	Plug, Pipe
13	159-1101	1	Tank, Fuel
14	403-1743	2	Plate, End

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
15	403-1744	1	Base, Sub
ATTACHING HARDWARE			
	800-0050	8	Screw, Cap - Hex Head (3/8-16 x 1")
	800-0051	4	Screw, Cap - Hex Head (3/8-16 x 1")
	800-0156	6	Screw, Cap - Hex Head (3/4-10 x 2-1/4")
	850-0050	12	Washer, Lock - Spring (3/8")
	850-0079	6	Washer, Lock - Spring (3/4")
	526-0013	4	Washer, Flat (25/64" ID x 1" OD x 1/16" Thk)
	862-0003	12	Nut, Hex (3/8-16")
	862-0020	6	Nut, Hex (3/4-10")

OPTIONAL LOW COOLANT LEVEL SWITCH

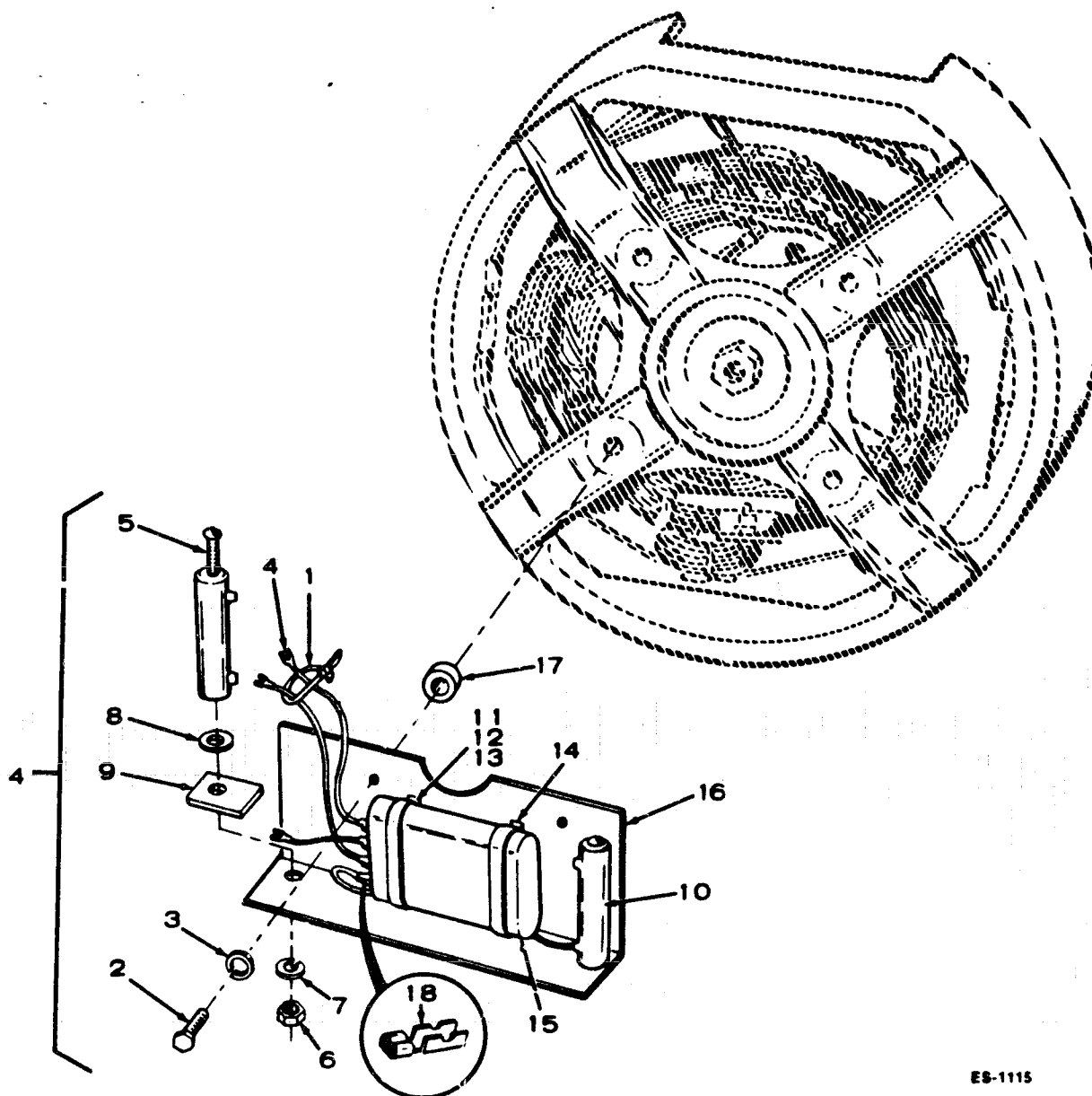


CS-1148 -1

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	503-0685	4	Clamp, Hose
2	503-0707	1	Hose, Vinyl (1/4" OD x 12" Lg)
3	503-1119	1	Hose, Vinyl (1/4" ID x 60" Lg)
4	130-2053	4	Tube (1/4" OD x 2" Lg)
5	357-0030	2	Diode, Rectifier

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
6	502-0802	1	Bushing, Reducer - Brass (1/2" NPT x 1" NPT)
7	502-0801	4	Connector, Tube - Brass (1/4" NPT x 1/4" Tube)
8	821-0011	2	Screw, Self-Locking - Hex Washer Head (1/4-20 x 7/8")
9	870-0212	2	Nut, Self-Locking - Hex Washer Head (1/4-20)
10	193-0329	1	Switch - Coolant Level

OPTIONAL VOLTAGE REGULATOR FILTER



ES-1115

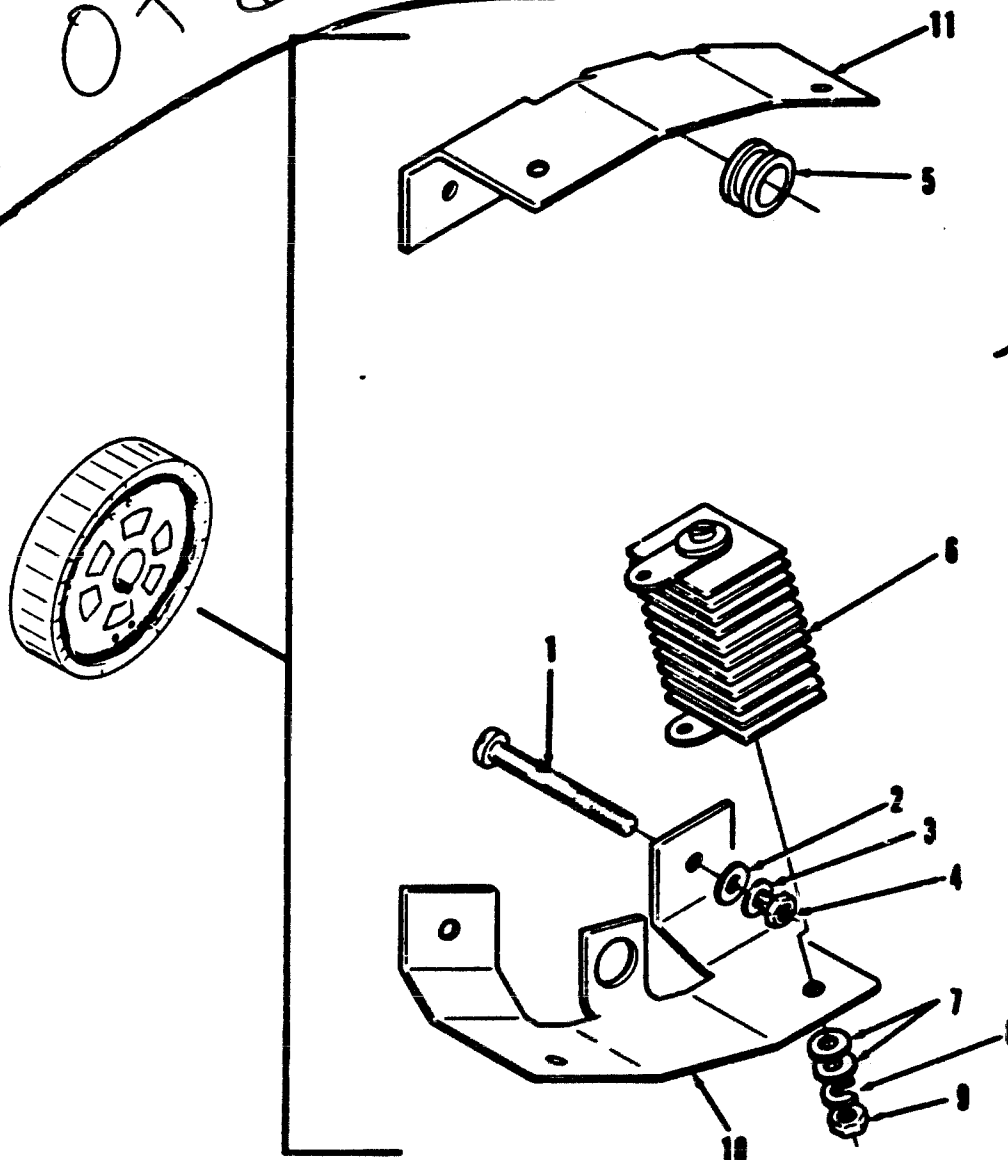
REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
	KIT, FILTER - VOLTAGE REGULATOR (Includes Parts Marked *)		
	232-2694	1	Used on Sets with End Bell Mounted Voltage Regulator
	232-2695	1	Used on Sets with Voltage Regulator Mounted in Control Box
1	332-0941	5	*Tie, Cable
2	800-0003	2	*Screw, Cap - Hex Head (1/4-20 x 1/2")
3	850-0040	2	*Washer, Lock - Spring (1/4")
4	*FILTER ASSEMBLY (Includes all parts except as indicated)		
	232-2219	REF	Part of Kit 232-2694
	232-2692	REF	Part of Kit 232-2695
5	812-0165	2	Screw, Machine - Round Head (1/4-20 x 4-1/2")
6	862-0001	2	Nut, Hex (1/4-20)

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
7	850-0040	2	Washer, Lock - Spring (1/4")
8	304-0427	4	Washer, Centering (1/4")
9	304-0292	2	Insulator
10	354-0025	2	Resistor, Fixed, Wire Wound (10-Ohm, 100 Watt)
11	813-0098	4	Screw, Machine - Round Head (#10-32 x 3/8")
12	870-0053	4	Nut, Hex (#10-32)
13	850-0030	4	Washer, Lock - Spring (#10)
14	312-0189	2	Bracket, Mounting - Capacitor
15	312-0188	1	Capacitor, Fixed - 15 MFD, 440 VAC
16	232-2210	1	Bracket, Mounting
17	232-2693	3	Spacer (Part of 232-2692 Only)
18	TERMINALS (Select as required)		
	332-1279	8	Insulated 14-16 AWG
	332-0529	4	Lug 14-16 AWG

* - Parts included in kits.

OPTIONAL VOLTAGE SUPPRESSOR ASSEMBLY

Ed. Out of DFN done in April by Lind O'L.



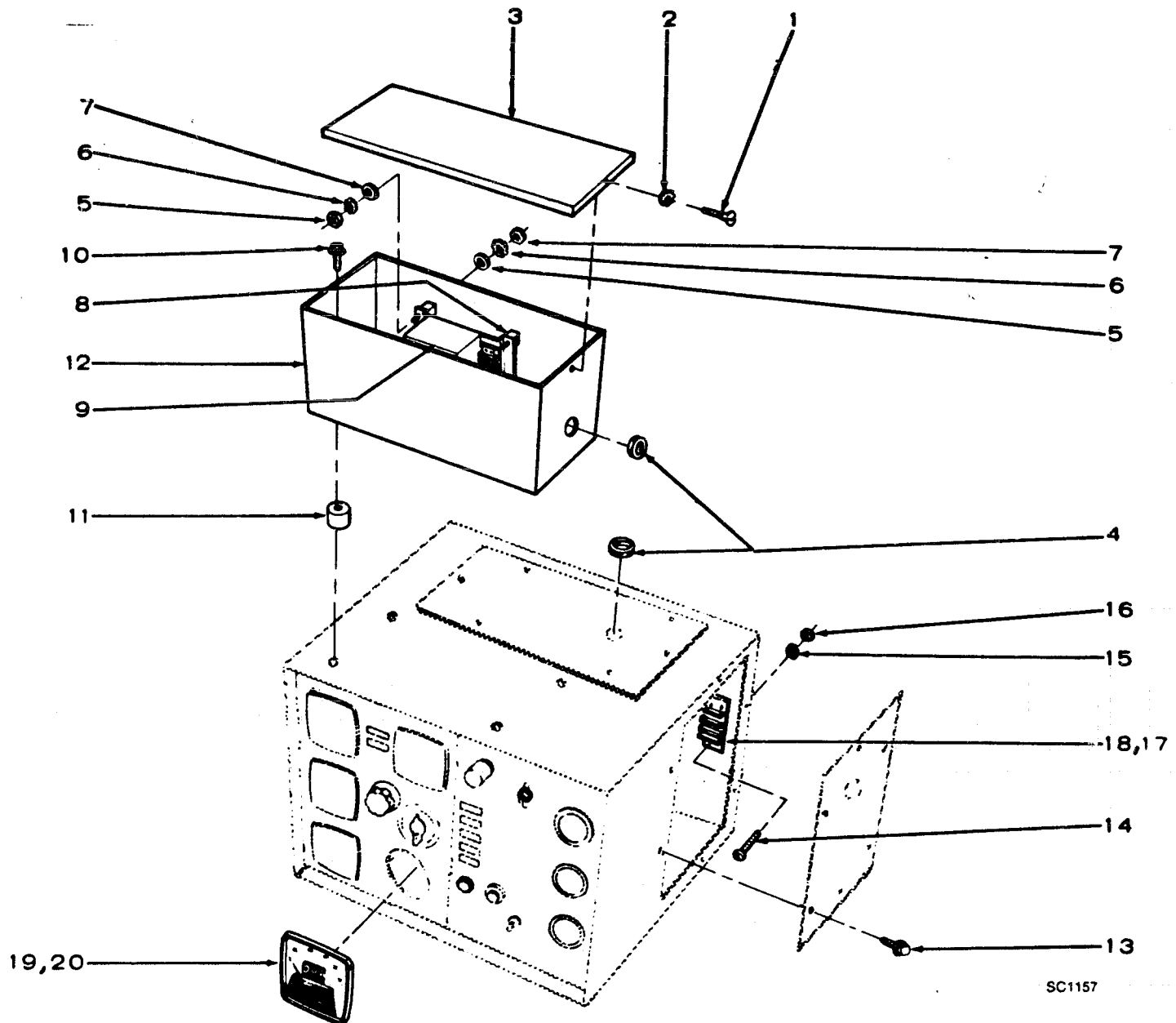
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DMB

28-1205

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
	232-244	1	Voltage Suppressor Assembly
1	813-0112	4	Screw, Machine - Round Head (#10-32 x 2-1/2")
2	526-0140	4	Washer, Flat (7/32" ID x 3/8" OD x 3/64" Thk)
3	850-0030	4	Washer, Lock - Spring (#10)
4	870-0053	4	Nut, Hex (#10-32)
5	508-0093	2	Grommet, Rubber
6	305-0526	1	Set, Voltage Suppressor: (Matched Pair) - Includes Attaching Parts
7	526-0140	4	Washer, Flat (7/32" ID x 3/8" OD x 3/64" Thk)
8	850-0030	4	Washer, Lock - Spring (#10)
9	870-0053	4	Nut, Hex (#10-32)
10	363-0054	1	Heatsink - Positive
11	363-0055	1	Heatsink - Negative

OPTIONAL WATTMETER



SC1157

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	815-0026	2	Screw, Machine - Truss Head (#10-32 x 3/8")
2	853-0008	2	Washer, Lock - External Tooth (#10)
3	301-3476	1	Cover - Transducer Box
4	508-0001	2	Grommet, Rubber (1-1/6" OD)
5	860-0008	8	Nut, Hex (#8-32)
6	853-0005	8	Washer, Lock - External Tooth (#8)
7	526-0003	8	Washer, Flat (11/64" ID x 3/8" OD x 1/32" Thk)
8	402-0354	4	Mount, Vibration
9	TRANSDUCER (Select as Required)		
	302-1082	1	60 Hertz
	302-1083	1	50 Hertz
10	821-0014	8	Screw, Self-locking - Hex Washer Head (5/16-18 x 1/2")
11	402-0070	4	Mount, Vibration
12	301-3477	1	Box, Transducer
13	815-0350	6	Screw, Tapping - Hex Washer Head (#10-32 x 3/8")
14	812-0063	4	Screw, Machine - Round Head (#6-32 x 1/2")

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
15	853-0003	4	Washer, Lock - External Tooth (#6)
16	860-0006	4	Nut, Hex (#6-32)
17	332-0609	1	Terminal, Strip
18	332-0610	1	Marker, Strip
19	302-1102	1	Wattmeter (Less Replaceable Dial)
20	DIAL, WATTMETER (Select as Required)		
	302-1103	1	Scale 0-35 kW
	302-1104	1	Scale 0-50 kW
	302-1105	1	Scale 0-70 kW
	302-1106	1	Scale 0-90 kW
	302-1107	1	Scale 0-115 kW
	302-1108	1	Scale 0-160 kW
	302-1109	1	Scale 0-180 kW
	302-1110	1	Scale 0-200 kW
	302-1115	1	Scale 0-250 kW
	302-1116	1	Scale 0-300 kW
	302-1117	1	Scale 0-350 kW
	302-1118	1	Scale 0-400 kW
	302-1119	1	Scale 0-450 kW
	302-1120	1	Scale 0-550 kW
	302-1121	1	Scale 0-650 kW
	302-1122	1	Scale 0-750 kW