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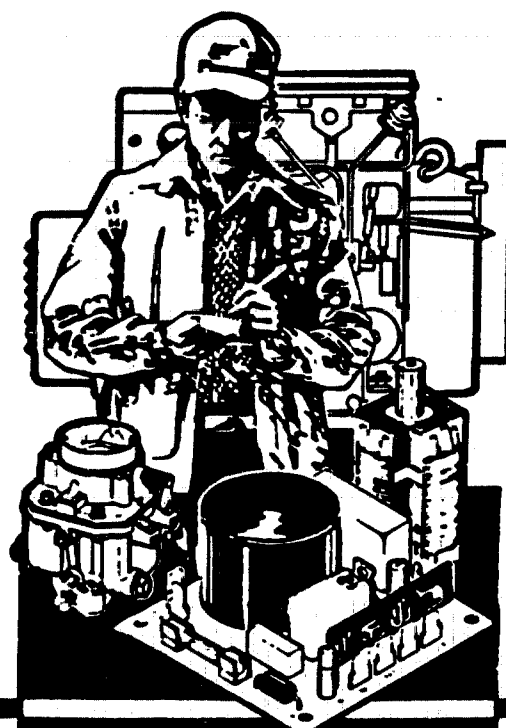
McGRAW-EDISON

Onan

**Parts
Manual**

DYC

GenSet



973-0222
9-83 (SPEC A-K)
REPLACES
8-81 (SPEC A-K)
Printed in U.S.A.

Onan Service Parts

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.

McGRAW-EDISON

Onan

MODEL AND SPEC NO.

SERIAL NO.

M-1149

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.

SET DATA TABLE

MODEL IDENTIFICATION	RATING	MODEL IDENTIFICATION	RATING
62.5 DYC - * / # £	62,500 WATTS	80.0 DYC - * / # £	80,000 WATTS
70.0 DYC - * / # £	70,000 WATTS	90.0 DYC - * / # £	90,000 WATTS
75.0 DYC - * / # £	75,000 WATTS	100.0 DYC - * / # £	100,000 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, 110/220, 115/200, 115/230, 120/208, 127/220, 220/380, 230/400, 240/416, 254/440	50	12	3	+
15R50	@	@	60	12	3	@ +

- * - Voltage codes follow model letters designations.
- # - Specification number; number 1 is standard, all others indicate variations.
- £ - Specifications letter; letter advances (A to B, B to C, etc.) with major manufacturing changes.
- + - These generators are reconnectible, refer to Operator's manual for wiring data.
- @ - These are Penn State Sets; special parts are identified in the Parts manual when applicable.

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.

REPLACEMENT ENGINE

ONAN PART NO.

*Engine, Replacement

100-1501 Begin Spec G - 62.5 DYC, 75.0 DYC, and 90 DYC
100-1476 Begin Spec G - 80.0 DYC and 100 DYC

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

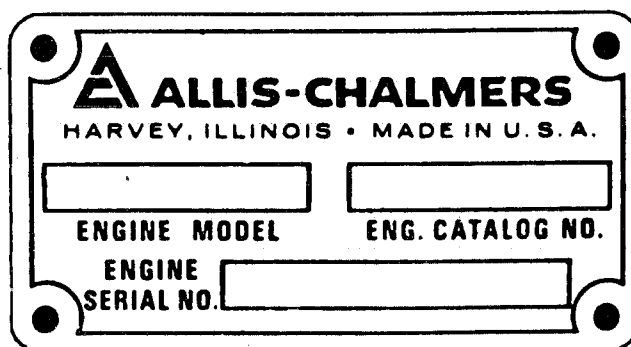
Excludes: Alternator, Alternator Mounting Brackets, Temperature Sender, Oil Pressure Sender, Starter, Radiator, and Air Cleaner.

100-0953 Spec A through E
100-1350 Spec F

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

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

***NOTE:** Engine listed is for Standard Spec 1 (Radiator Cooled) generator sets, for all other models refer to factory.)

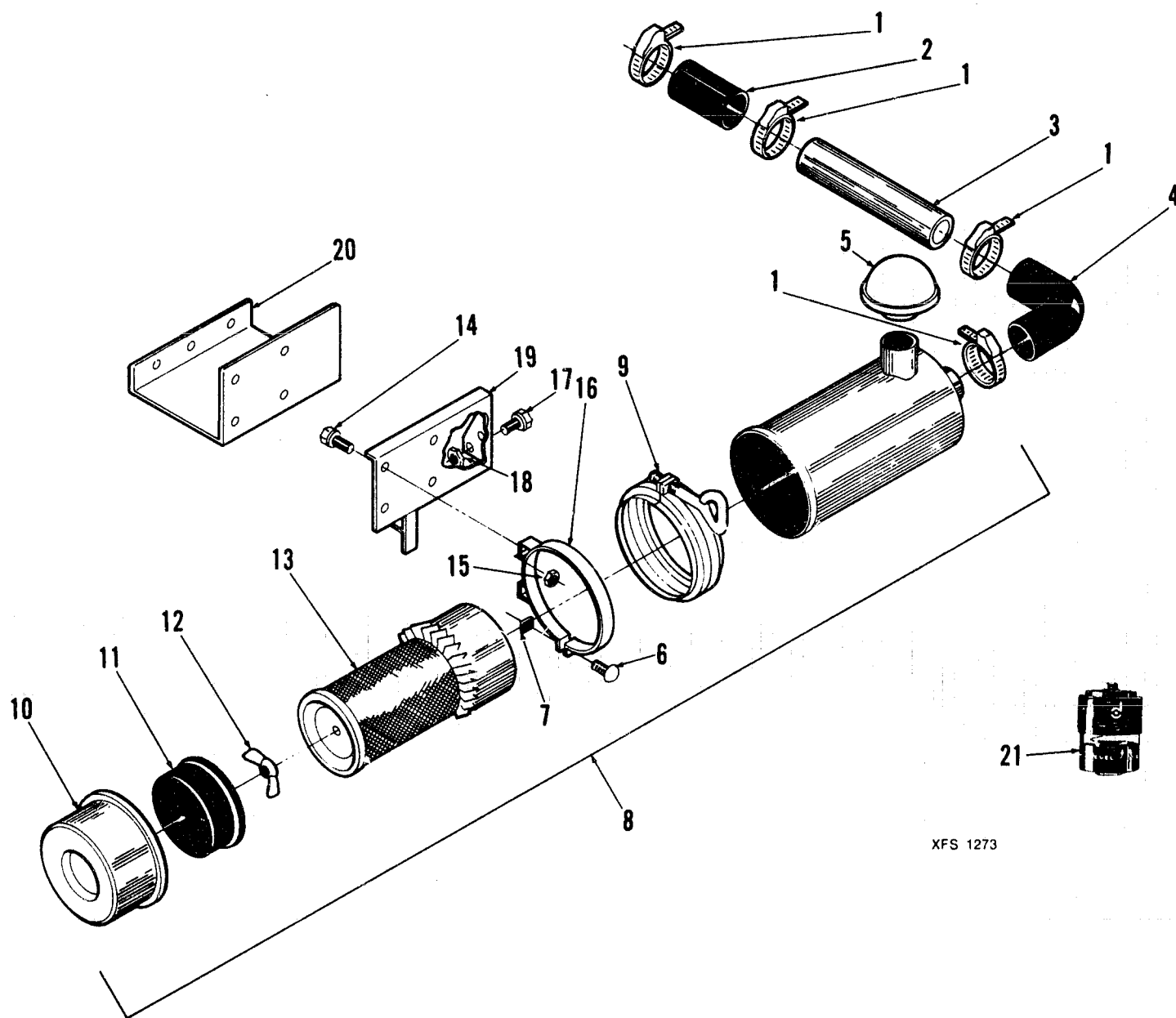


For handy reference, insert "YOUR" nameplate information in the spaces above.

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 manufacture'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



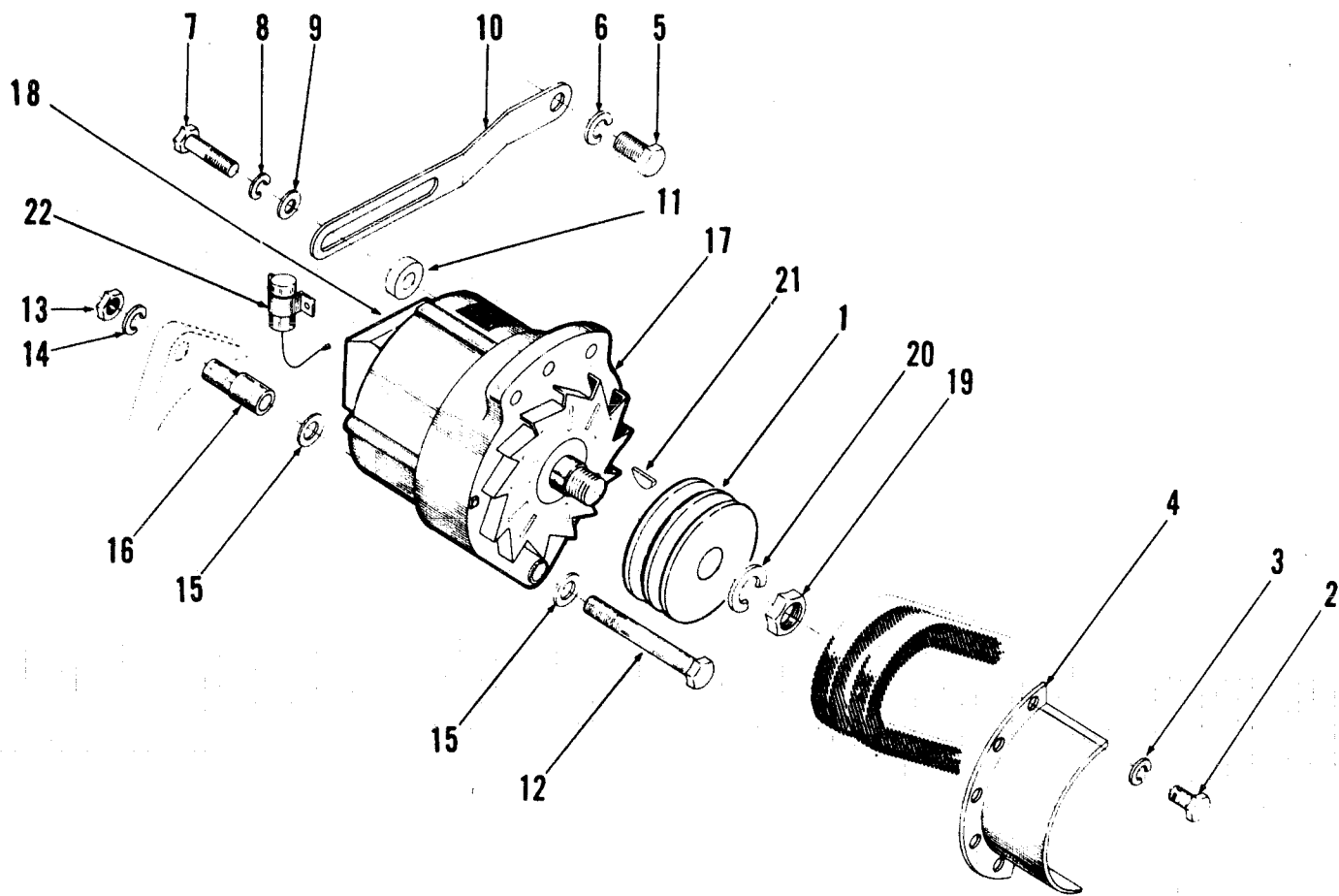
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REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	503-0648	4	Clamp, Hose
2	503-0788	1	Hose, Rubber
3	140-1468	1	Tube, Connector (3" OD x 10" Lg)
4	140-1467	1	Elbow, Rubber - Preformed
5	140-1435	1	Cap, Air Cleaner
6	815-0115	2	Screw, Machine - Fillister Head (1/4-20 x 1")
7	863-0002	2	Nut, Square (1/4-20)
8	140-1454	1	Air Cleaner Assembly (Includes Parts Marked *)
9		1	*Clamp, Air Cleaner
10		1	*Cap, Air Cleaner
11		1	*Baffle, Air Cleaner
12		1	*Nut, Wing
13	140-1455	1	*Element, Air Cleaner
14	821-0016	4	Screw, Self-locking - Hex Washer Head (5/16-18 x 3/4")

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
15	870-0257	4	Nut, Self-locking, Hex (5/16-18)
16	140-0317	2	Band, Mounting - Air Cleaner
17	821-0018	2	Screw, Self-locking - Hex Washer Head (1/4-20 x 5/8")
18	870-0212	2	Nut, Hex (14-20)
19	140-1465	1	Bracket, Mounting (Used on Dry Exhaust Manifold Applications)
20	140-1482	1	Bracket, Mounting (Used on Liquid Cooled Exhaust Manifold Applications)
21	140-1548	1	Indicator, Air Service (Used on Spec A Thru F)

* - Parts Included in Air Cleaner Assembly.

ALTERNATOR



XFS 1182

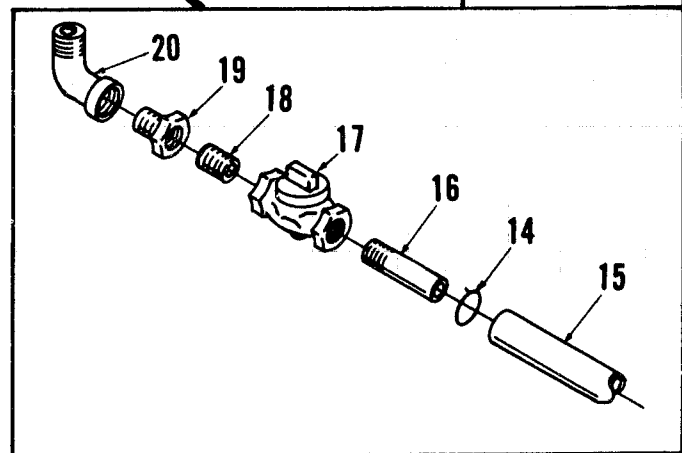
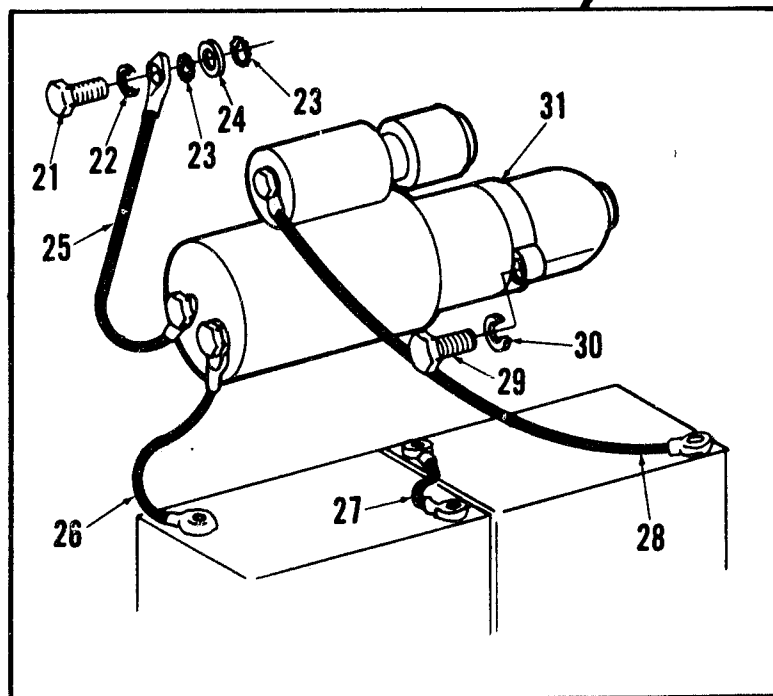
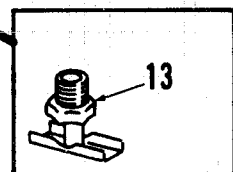
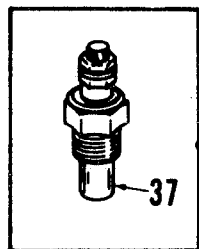
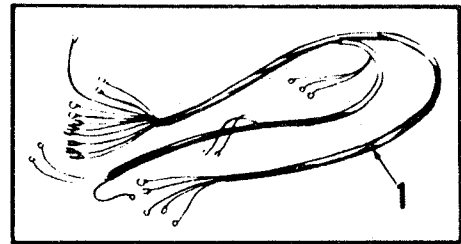
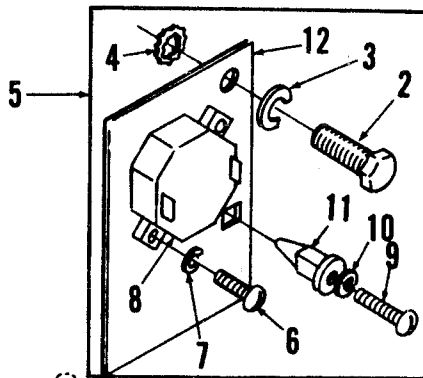
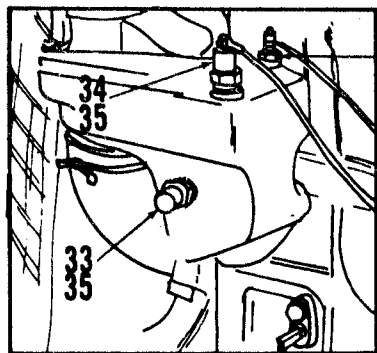
REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	PULLEY, ALTERNATOR		
	191-1120	1	Begin Spec F
	191-0817	1	Spec A Thru E
2	800-0024	1	Screw, Cap - Hex Head (5/16-18 x 1/2")
3	850-0045	1	Washer, Lock - Spring (5/16")
4	191-0725	1	Guard, Belt
5	800-0048	1	Screw, Cap - Hex Head (3/8-16 x 3/4")
6	850-0050	1	Washer, Lock - Spring (3/8")
7	800-0029	1	Screw, Cap - Hex Head (5/16-18 x 1-1/8")
8	850-0045	1	Washer, Lock - Spring (5/16")
9	526-0030	1	Washer, Flat (13/32" ID x 7/8" OD x 1/8" Thk)
10	191-0101	1	Strap, Adjusting
11	191-0791	1	Spacer (Spec A Thru E)
12	800-0061	1	Screw, Cap - Hex Head (3/8-16 x 3-3/4")
13	862-0003	1	Nut, Hex (3/8-16)
14	850-0050	1	Washer, Lock - Spring (3/8")
15	526-0100	2	Washer, Flat (9/16" x 1-3/8" OD x 7/64" Thk)

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
16	232-2183	1	Spacer, Stepped
17	ALTERNATOR (Includes Parts Marked £)		
	191-0688	1	24 VDC - Begin Spec G
	191-1388	1	12 VDC - Spec A Thru F (A Replacement Kit, Includes Part Marked *)
18	£REGULATOR, VOLTAGE		
	191-0733	1	Begin Spec G
	191-1390	1	Spec A Thru F (A Replacement Kit, Includes Part Marked *)
19	868-0007	1	£Nut, Hex (5/8-18)
20	850-0070	1	£Washer, Lock - Spring (5/8")
21	515-0093	1	£Key, Woodruff (#5)
22	CAPACITOR		
	312-0058	1	Spec A Thru F (Used with Original Voltage Regulator Only)
	312-0201	1	*Spec A Thru F (Replacement Alternator and Regulator Applications Only)

£ - Parts included in Alternators.

* - Part included in Replacement Kits.

MISCELLANEOUS ENGINE PARTS (RIGHT SIDE)



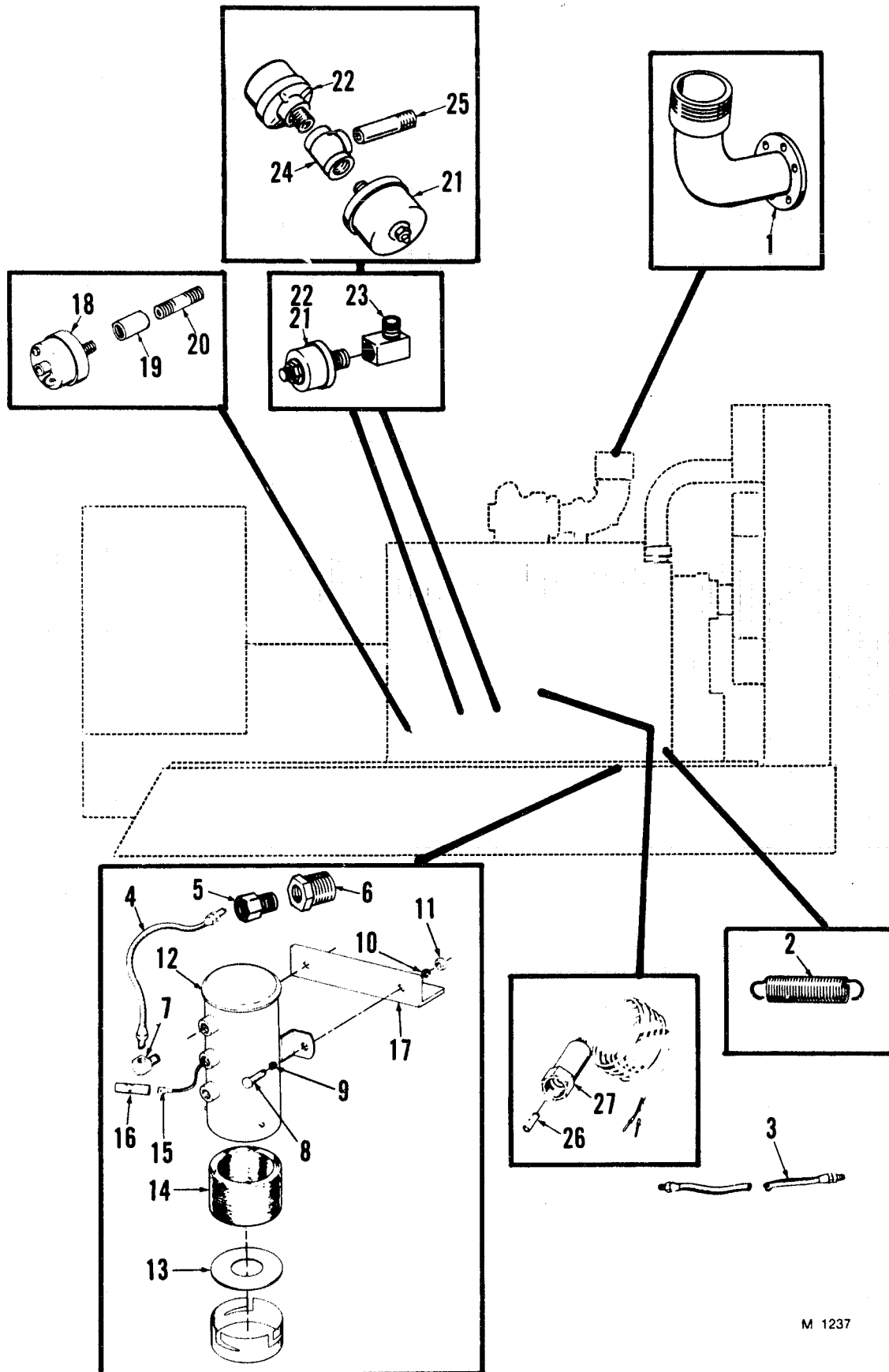
XM 1238

MISCELLANEOUS ENGINE PARTS (RIGHT SIDE)

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
WIRING HARNESS - ENGINE			
1	338-0539	1	Standard Special (NOTE: Use Standard Wiring Harness and add elec- trical leads as required for optional sensors, switches per Gen Set wiring diagram.)
2	800-0048	2	Screw, Cap - Hex Head (3/8-16 x 3/4")
3	850-0050	2	Washer, Lock - Spring (3/8")
4	856-0010	2	Washer, Lock - EIT (3/8")
5	CIRCUIT BREAKER AND TERMINAL ASSEMBLY (Includes Parts Marked #)		
	332-2053	1	Begin Spec G (24 VDC)
	332-1294	1	Spec A Thru F (12 VDC)
6	811-0103	2	#Screw, Machine - Round Head, Brass (#10-32 x 3/4")
7	850-0030	2	#Washer, Lock - Spring (#10)
8	#CIRCUIT BREAKER		
	320-0240	1	Begin Spec G (24 VDC, 12 A).
	320-0165	1	Spec A Thru F (12 VDC, 20A)
9	809-0035	1	#Screw, Tapping - Round Head (#8 x 3/4")
10	508-0015	1	#Washer, Insulating - Fiber (#8)
11	870-0196	1	#Nut, Insulating
12	332-1295	1	#Plate, Mounting - Circuit Breaker
13	504-0003	1	Cock, Drain (1/4" NPT)
14	503-0197	1	Clamp, Hose
15	503-0808	1	Hose, Rubber (3/4" ID x 1" OD x 14" Lg)
16	505-0185	1	Nipple, Pipe - Half (1/2" NPT x 1-1/2" Lg)
17	504-0011	1	Valve, Cock - Brass (1/2" NPT)
18	505-0100	1	Nipple, Pipe - Close (1/2" NPT x 1-1/8" Lg)
19	505-0021	1	Bushing, Reducer - Hex (3/4" NPT x 1/2" NPT)
20	502-0390	1	Elbow, Pipe - 90 DEG (3/4" NPT x 3/4" NPT)
21	800-0048	1	Screw, Cap - Hex Head (3/8-16 x 3/4")
22	850-0050	1	Washer, Lock - Spring (3/8")
23	856-0010	2	Washer, Lock - EIT (3/8")
24	526-0029	1	Washer, Flat (25/64" ID x 7/8" OD x 1/16" Thk)
25	336-1243	1	Cable, Electrical
26	416-0619	1	Cable, Battery - Negative
27	416-0446	1	Cable, Battery - Jumper
28	416-0614	1	Cable, Battery - Positive
29	800-0135	3	Screw, Cap - Hex Head (5/16-18 x 2-1/4")
30	850-0070	3	Washer, Lock - Spring (5/16")
31	STARTER, ELECTRICAL		
	191-1348	1	Begin Spec G (24 VDC)
	191-0826	1	Spec A Thru F (12 VDC)
32	309-0269	1	*Switch, Thermostatic - Low Engine Temperature
33	309-0178	1	*Switch, Thermostatic - Hi Engine Coolant Temperature
34	309-0179	1	*Switch, Thermostatic - Hi Engine Coolant Temperature
35	505-0117	2	*Bushing, Reducer - Flush, Brass (1/2" NPT x 3/8" NPT)
36	*SENDER, TEMPERATURE - ENGINE COOLANT		
	193-0247	1	Begin Spec G
	193-0109	1	Spec A Thru F
37	*SENDER, TEMPERATURE - OIL		
	193-0249	1	Begin Spec G
	193-0202	1	Spec A Thru F

* - Items used with fault lights or gauges on Engine Control Panel.

MISCELLANEOUS ENGINE PARTS (LEFT SIDE)



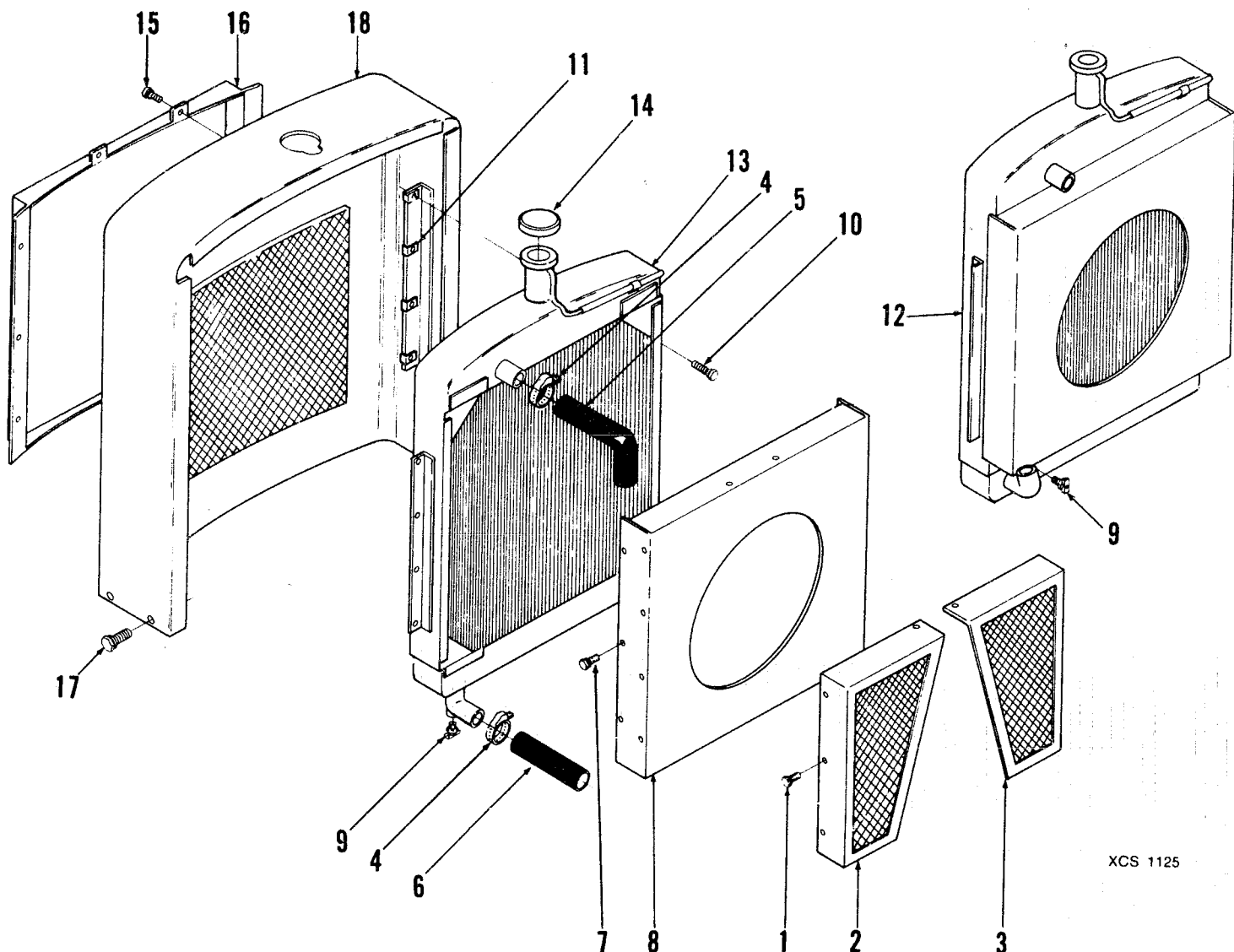
M 1237

MISCELLANEOUS ENGINE PARTS (LEFT SIDE)

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	155-1106	1	Elbow, Exhaust
2	134-1437	1	Spring - Injection Pump Lever
3	HOSE, FUEL - FLEXIBLE		
	501-0225	1	45" Lg
	501-0227	1	24" Lg
4	501-0003	1	Hose, Fuel - Flexible (17" Lg)
5	502-0639	1	Adapter, Pipe
6	502-0029	1	Bushing, Reducer - Brass (1/4" NPT to 1/8" NPT)
7	502-0002	1	Elbow, Pipe - 90 DEG, Brass (1/8" NPT x 1/4" Tube)
8	800-0003	2	Screw, Cap - Hex Head (1/4-20 x 1/2")
9	856-0006	2	Washer, Lock - External Tooth (1/4")
10	850-0040	2	Washer, Lock - Spring (1/4")
11	862-0001	2	Nut, Hex (1/4-20)
12	PUMP, FUEL - ELECTRIC (Includes Parts Marked *)		
	149-1831	1	24 VDC - Begin Spec G
	149-1830	1	12 VDC - Spec A Thru F
13	149-1446	1	Gasket, Cover
14	149-1445	1	Filter, Fuel
15	332-0529	1	Terminal
16	332-0556	1	Connector, Splice
17	149-1162	1	Bracket, Mounting - Fuel Pump
18	309-0064	1	*Switch, Pressure - Low Oil
19	505-0026	1	Coupling, Pipe (1/8" NPT)
20	505-0104	1	Nipple, Pipe (1/8" NPT x 1-1/2" LG)
21	*SENDER, PRESSURE - OIL		
	193-0244	1	Begin Spec G
	193-0108	1	Spec A Thru F
22	309-0169	1	*Switch, Pressure - Low Oil
23	502-0053	2	Elbow, Pipe - 45 DEG, Brass (1/8" NPT)
24	505-0059	1	Tee, Pipe (1/8" NPT) - Spec A Thru E
25	505-0061	1	Nipple, Pipe (1/8" NPT x 2" LG) - Spec A Thru E
26	302-0753	1	*Tang, Drive - Tachometer
27	302-0750	1	*Sender, Tachometer

* - Items used with fault lights or gauges on Engine Control Panel.

COOLING SYSTEM (WITH RADIATOR) SPEC A THRU F

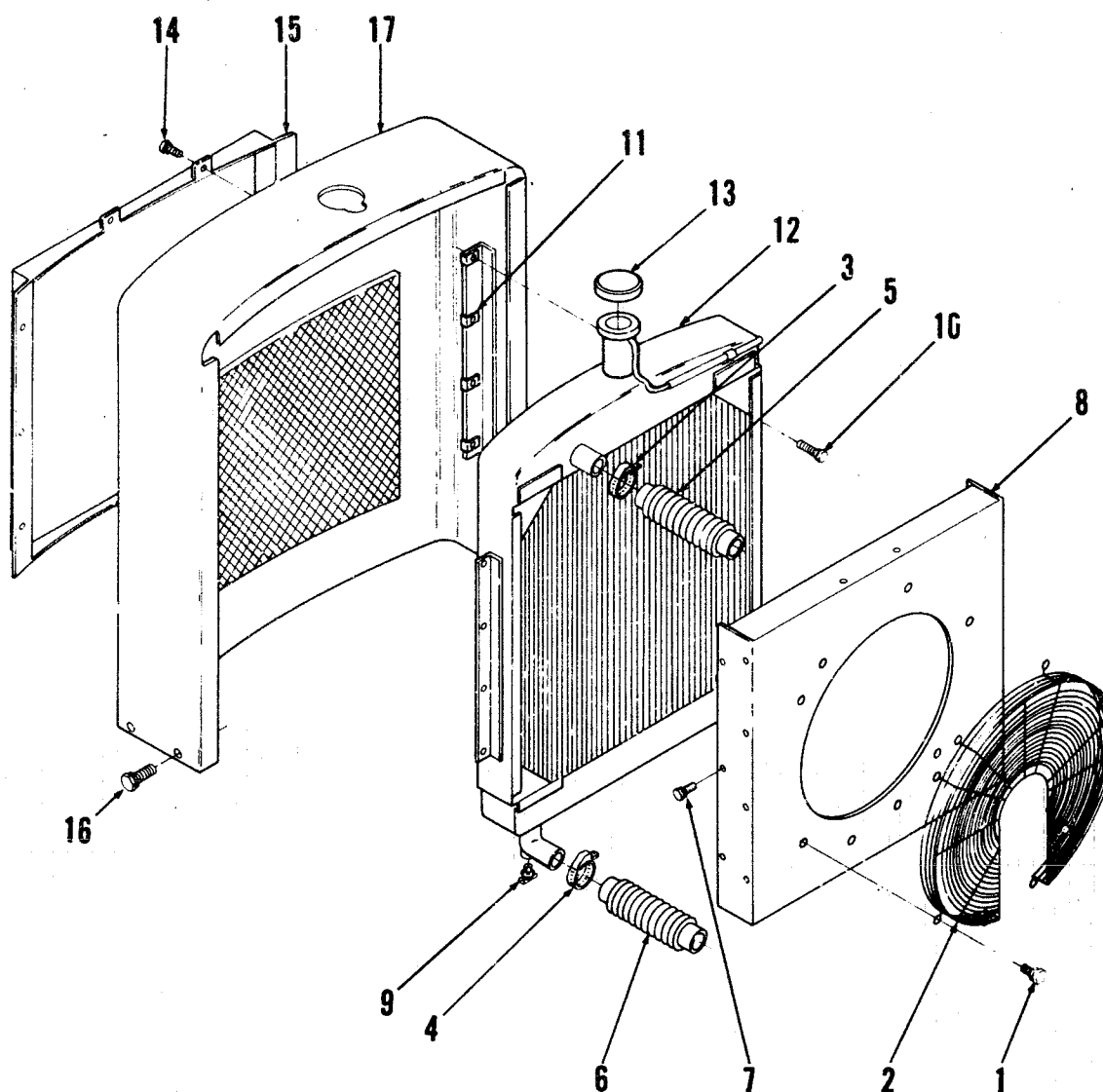


XCS 1125

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	821-0010	10	Screw, Self-locking - Hex Washer Head (1/4-20 x 1/2")
2	130-0858	1	Guard, Fan - Right Side
3	130-0859	1	Guard, Fan - Left Side
4	503-0274	4	Clamp, Hose
5	503-0592	1	Hose, Rubber - Preformed
6	503-0593	1	Hose, Rubber
7	821-0010	6	Screw, Self-locking - Hex Washer Head (1/4-20 x 1/2") - Spec F Only
8	130-0976	1	Shroud, Fan - Spec F Only
9	504-0028	1	Cock, Drain (3/8" NPT)
10	821-0014	8	Screw, Self-locking - Hex Washer Head (5/16-18 x 1/2")
11	870-0113	8	Nut, Retainer (5/16-18)
12	130-0817	1	Radiator (Includes Cap) - Spec A Thru E
13	130-0961	1	Radiator (Includes Cap) - Spec F Only
14	130-0449	1	Cap, Radiator
15	815-0181	10	Screw, Cap - Hex Head - Thread Cutting, with ET Lock Washer (#10-32 x 1/2")
16	405-1182	1	Flange, Air Duct
17	821-0014	8	Screw, Self-locking - Hex Washer Head (5/16-18 x 1/2")
18	405-1836	1	Panel, Housing - Front

COOLING SYSTEM (WITH RADIATOR)

BEGIN SPEC G

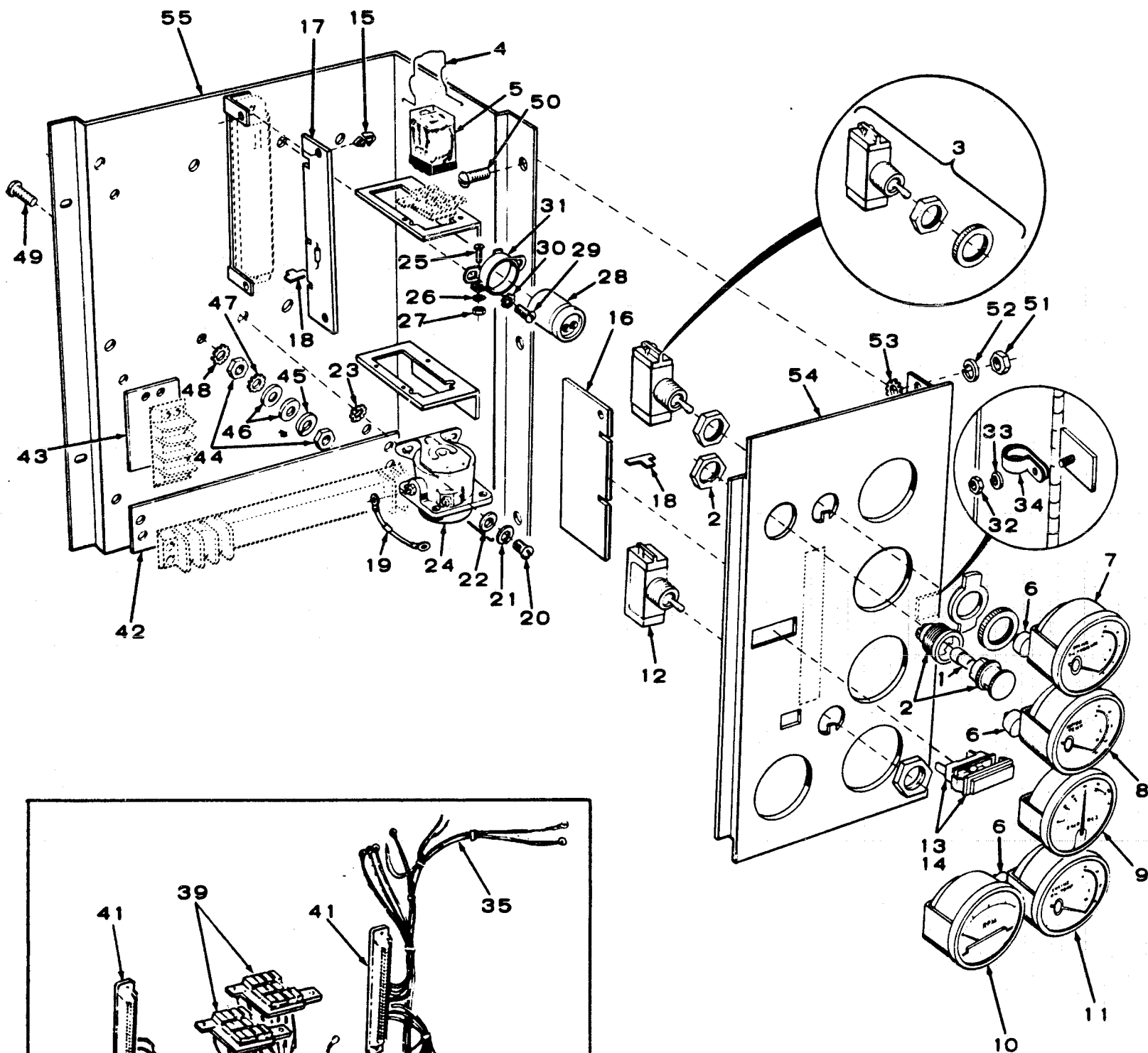


XCS 1126

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	821-0010	8	Screw, Self-locking - Hex Washer Head (1/4-20 x 1/2")
2	130-0986	1	Guard, Fan
3	503-0365	2	Clamp, Hose
4	503-0354	2	Clamp, Hose
5	503-0747	1	Hose, Rubber
6	503-0746	1	Hose, Rubber
7	821-0010	6	Screw, Self-locking - Hex Washer Head (1/4-20 x 1/2")
8	SHROUD, FAN 130-1181	1	62, 75, 90 kW DYC - Spec G Thru J
	130-0975	1	62, 75, 90 kW DYC - Begin Spec K
	130-0975	1	80, 100 kW DYC - Begin Spec G
9	504-0028	1	Cock, Drain (3/8" NPT)
10	821-0014	8	Screw, Self-locking - Hex Washer Head (5/16-18 x 1/2")

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
11	870-0113	8	Nut, Retainer (5/16-18)
12	RADIATOR (Includes Cap) 130-0961	1	62, 75, 90 kW DYC - Spec G Thru J
	130-1161	1	62, 75 90 kW DYC - Begin Spec K
	130-1161	1	80, 100 kW DYC - Begin Spec G
13	130-0449	1	Cap, Radiator
14	815-0181	10	Screw, Cap - Hex Head - Thread Cutting, with ET Lockwasher (#10-32 x 1/2")
15	405-1182	1	Flange, Air Duct
16	821-0014	8	Screw, Self-locking - Hex Washer Head (5/16-18 x 1/2")
17	405-1836	1	Panel, Housing - Front

ENGINE CONTROL WITH ONE FAULT LIGHT BEGIN SPEC G



SC-1166

ENGINE CONTROL WITH ONE FAULT LIGHT BEGIN SPEC G

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 (Lens Color & Legend Listed Below)		
	322-0129	1	Red - Fault - 28 VDC
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		
	300-0680	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")

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	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)
	860-0006	10	Nut, Hex (#6-32)
36	332-1043	1	†Jumper, Terminal
37	332-0795	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
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 1/2" OD x 1/16" Thk)
47	853-0008	1	#Washer, Lock - ET (#10)
48	856-0003	1	#Washer, Lock - ET (#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		
	302-3165	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

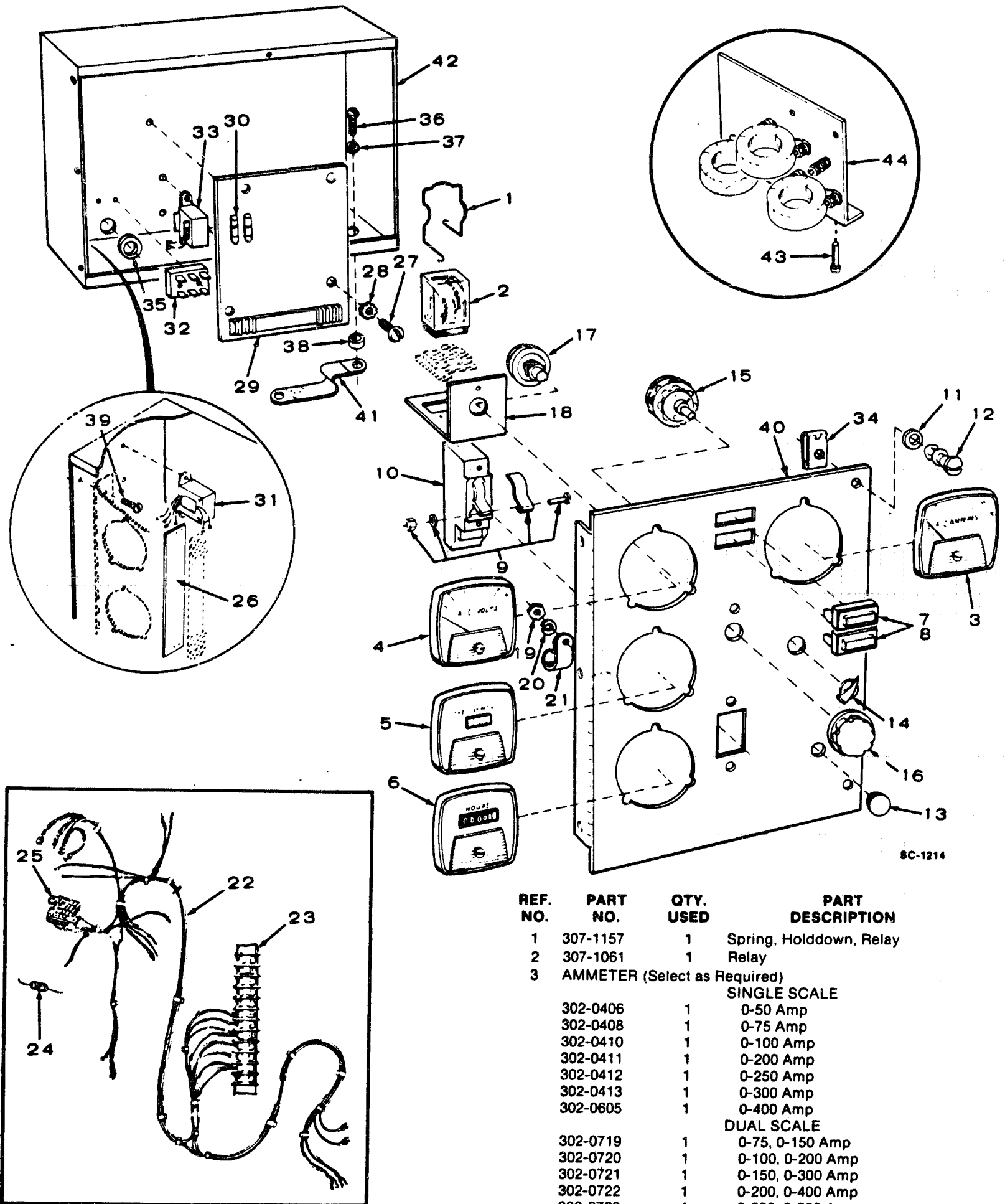
* - **NOTE:** For lamp replacement order 322-0137 remove and discard plain red lens, install lens with legend from burned out light —

£ - Optional items used with Engine Mounted Senders.

+ - Parts included in Wiring Harness.

- Parts included in Ground Terminal Assembly.

GENERATOR CONTROL



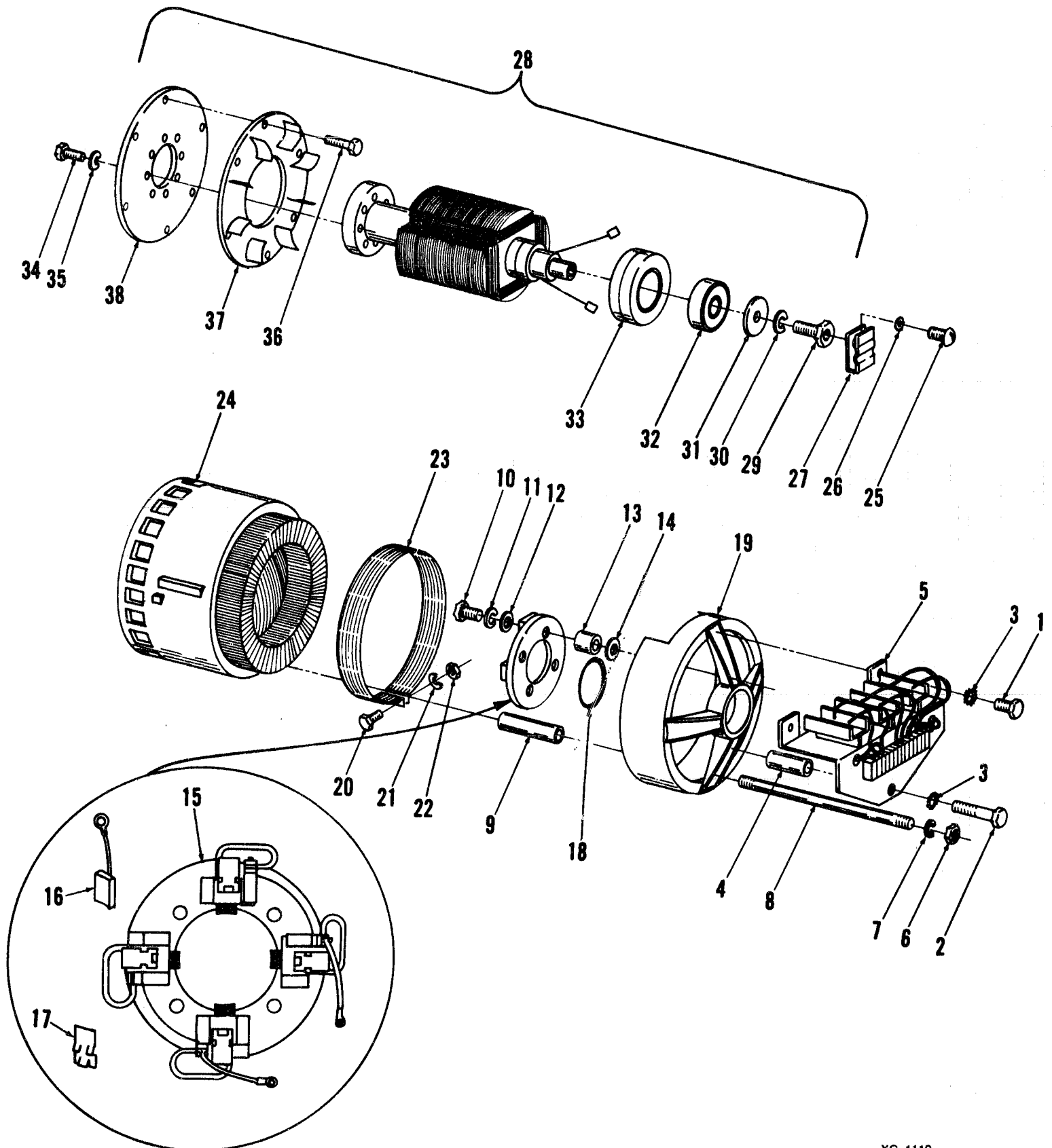
8C-1214

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	307-1157	1	Spring, Holddown, Relay
2	307-1061	1	Relay
3	AMMETER (Select as Required)		
			SINGLE SCALE
	302-0406	1	0-50 Amp
	302-0408	1	0-75 Amp
	302-0410	1	0-100 Amp
	302-0411	1	0-200 Amp
	302-0412	1	0-250 Amp
	302-0413	1	0-300 Amp
	302-0605	1	0-400 Amp
			DUAL SCALE
	302-0719	1	0-75, 0-150 Amp
	302-0720	1	0-100, 0-200 Amp
	302-0721	1	0-150, 0-300 Amp
	302-0722	1	0-200, 0-400 Amp
	302-0723	1	0-250, 0-500 Amp
	302-0724	1	0-375, 0-750 Amp

GENERATOR CONTROL

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
4	VOLTMETER (Select as Required)			23	BLOCK, TERMINAL (Select as Required)		
			SINGLE SCALE				12 Place
	302-0421	1	0-300 Volt		332-0607	1	16 Place
	302-0422	1	0-600 Volt		332-0795	1	16 Place
	302-0612	1	0-500 Volt	24	350-0556	1	Resistor, Fixed, Composition (47K Ohms, 1/2 Watt) - Code 15, 515
	302-0779	1	0-750 Volt				
			DUAL SCALE	25	323-0765	1	Socket, Relay - 11 Place - Code 15, 515
	302-0718	1	0-300, 0-600 Volt				
5	METER, FREQUENCY (Select as Required)			26	STRIP, MARKER (Select as Required)		
			REED TYPE				16 Place
	302-0213	1	115 VAC, 60 Hz		332-1242	1	12 Place
	302-0221	1	230 VAC, 60 Hz		332-1248	1	12 Place
	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				
			POINTER TYPE	28	853-0003	4	Washer, Lock - ET (#6)
	302-0809	1	120 VAC, 60 Hz	29	REGULATOR, VOLTAGE (Select As Required)		
	302-0810	1	208 VAC, 60 Hz		NOTE: REGULATOR MATCHED TO VOLTAGE TRANSFORMER, Item #31		
	302-0811	1	240 VAC, 60 Hz				
6	METER, TIME TOTALIZING (Select as Required)				332-1268	1	Used With 120 VAC Input Signal
	302-0466	1	60 Hz		332-1956	1	Used with 240 VAC Input Signal
	302-0469	1	50 Hz	30	321-0204	2	Fuse Cartridge (1/4 Amp) - Part of 332-1956 Voltage Regulator
7	LIGHT, INDICATOR - 125 VAC (Lens Color & Legend Listed Below)						
	322-0130	1	Red - Lower Scale	31	TRANSFORMER, VOLTAGE (Select as Required)		
	322-0131	1	Red - Upper Scale		NOTE Transformer Matched to Voltage Regulator, Item #29		
8	322-0178	1	Light, Indicator - 125 VAC (Replacement) - Discard Lens - Used Lens From Original Light		315-0342	1	120 VAC
9	320-0307	1	Lock - Circuit Breaker Handle (Penn State Sets)		315-0431	1	240 VAC
	ATTACHING HARDWARE FOR LOCK				ATTACHING PARTS FOR TRANSFORMER		
	815-0203	1	Screw, Machine - Round Head (#10-32 x 7/8")		812-0061	2	Screw, Machine - Round Head (#6-32 x 3/8")
	854-0010	1	Washer, Lock - IT (#10)				
	871-0010	1	Nut, Hex (#10-32)		853-0003	2	Washer, Lock - ET (#6)
10	320-0431	1	Circuit Breaker	32	305-0675	1	Rectifier, Bridge
	ATTACHING HARDWARE FOR CIRCUIT BREAKER				ATTACHING PARTS FOR RECTIFIER		
	812-0061	2	Screw, Machine - Round Head (#6-32 x 3/8")		812-0070	2	Screw, Machine - Round Head (#6-32 x 1-1/4")
	850-0020	2	Washer, Lock - Spring (#6)				
	815-0203	1	Screw, Machine - Round Head, Brass (#10-32 x 7/8")	33	850-0020	2	Washer, Lock - Spring (#6)
	871-0010	1	Nut, Hex - Brass (#10-32)		315-0384	1	Reactor
	853-0008	1	Washer, Lock - ET (#10)		ATTACHING PARTS FOR REACTOR		
	526-0049	1	Washer, Flat - Brass (13/64" ID x 7/16" OD x 132" Thk)		812-0061	2	Screw, Machine - Round Head (#6-32 x 3/8")
11	406-0334	2	Clip, Retaining - Turnbutton Fastener				
12	406-0333	2	Stud, Turnbutton Fastener		853-0003	2	Washer, Lock - ET (#6)
13	517-0131	1	Plug, Plastic	34	406-0332	2	Receptacle, Turnbutton Fastener
14	303-0076	1	Knob, Pointer	35	508-0001	4	Grommet, Rubber
15	308-0284	1	Switch, Selector	36	800-0045	4	Screw, Cap - Hex Head (5/16-18 x 3/8")
16	303-0032	1	Knob	37	850-0045	4	Washer, Lock - Spring (5/16")
17	303-0170	1	Rheostat (35K Ohms, 25 Watt)	38	402-0070	4	Dampener, Vibration
18	301-3244	1	Bracket, Mounting, Relay - Code 15, 515	39	815-0026	3	Screw, Machine - Truss Head (#10-32 x 3/8")
19	870-0053	1	Nut, Hex (#10-32)				
20	850-0030	1	Washer, Lock - Spring (#10)	40	PANEL CONTROL		
21	332-0051	1	Clamp, Loop				Sets Without Meter Panel
22	HARNESS, WIRING - GENERATOR CONTROL				301-3822	1	Code 3
			Sets Without Meter Panel		301-3821	1	Code 6D, 7, 9X
	338-0765	1	Code 3		301-3274	1	Code 15, 515
	338-0764	1	Code 15, 515				Sets With Meter Panel
	338-0766	1	Code 6D, 7, 9X		301-3169	1	Code 3
			Sets With Meter Panel		301-3342	1	Code 6D, 7, 9X
	338-0735	1	Code 3		301-3170	1	Code 15, 515
	338-0730	1	Code 15, 515	41	337-0049	1	Strap, Ground
	338-0759	1	Code 6D, 7, 9X		ATTACHING PARTS FOR STRAP		
	ATTACHING HARDWARE FOR WIRING HARNESS				800-0045	1	Screw, Cap - Hex Head (5/16-18 x 3/8")
	812-0061	2	Screw, Machine - Round Head (#6-32 x 3/8")				
	812-0066	2	Screw, Machine - Round Head (#6-32 x 3/4")		850-0045	1	Washer, Lock - Spring (5/16")
	850-0020	2	Washer, Lock - Spring (#6)		856-0008	2	Washer, Lock - EIT (5/16")
	853-0003	4	Washer, Lock - ET (#6)		862-0015	1	Nut, Hex (5/16-18)
	853-0006	2	Nut, Hex (#6-32)	42	301-3158	1	Box, Control
				43	821-0010	2	Screw, Self-locking - Hex Washer Head (1/4-20 x 1/2")
				44	CURRENT TRANSFORMER ASSEMBLY (See Separate Figure For Parts) - NOTE: Assembly is Located Behind the Control Box.		

GENERATOR ASSEMBLY (BRUSH TYPE) SPEC A ONLY



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GENERATOR ASSEMBLY (BRUSH TYPE) SPEC A ONLY

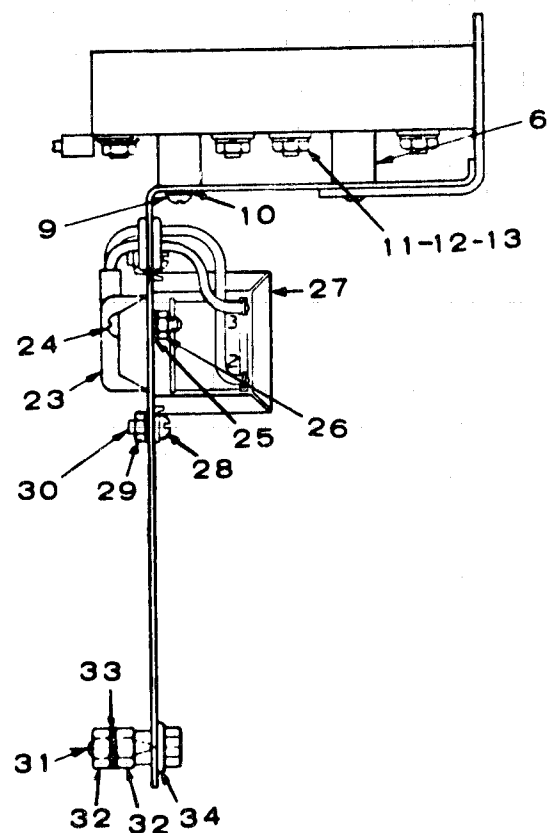
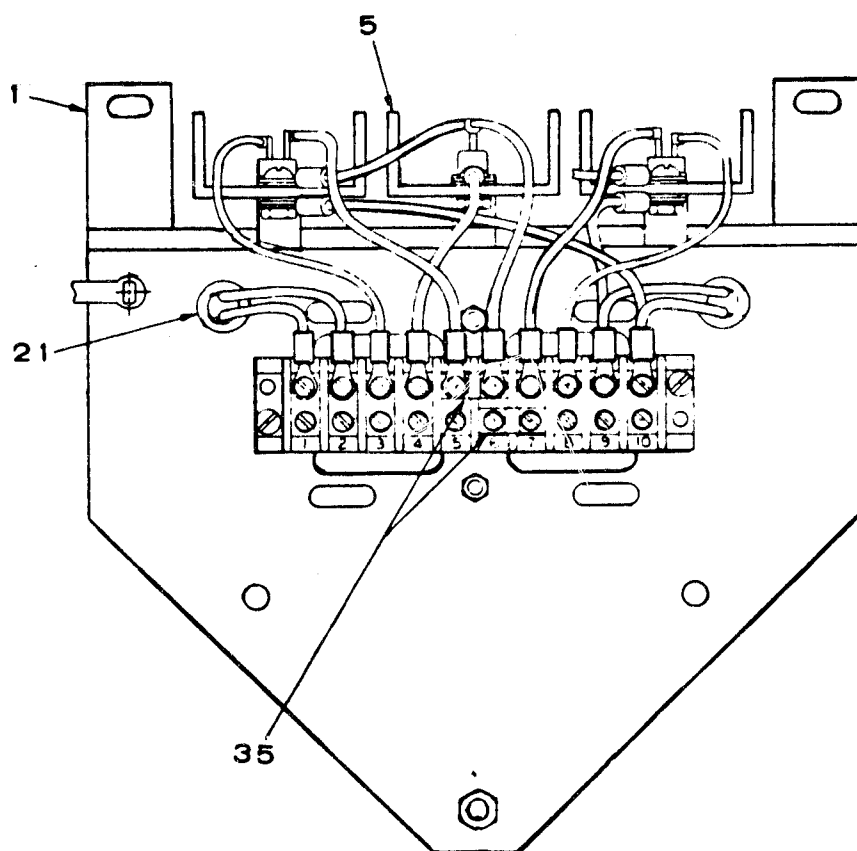
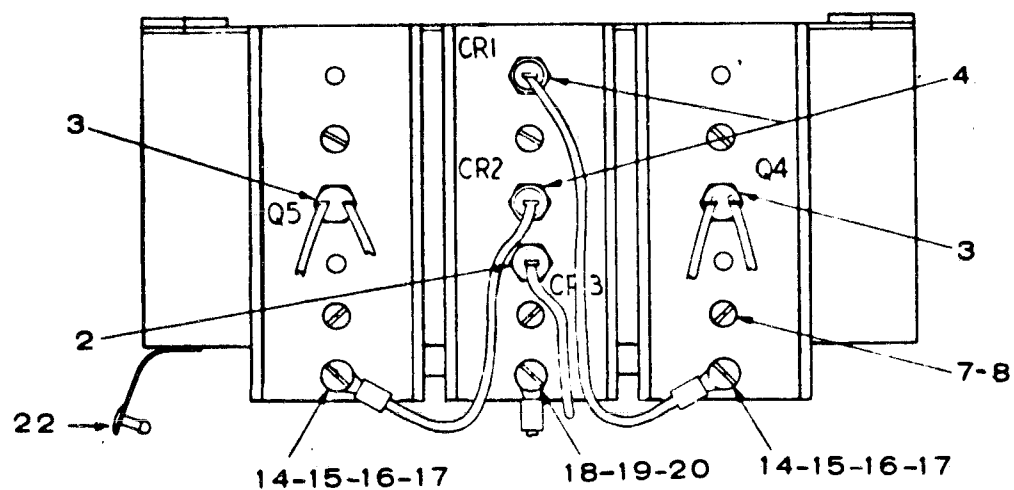
REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	800-0003	2	Screw, Cap - Hex Head (1/4-20 x 1/2")
2	800-0009	2	Screw, Cap - Hex Head (1/4-21 x 1-1/2")
3	853-0013	4	Washer, Lock - ET (1/4")
4	305-0481	2	Spacer, Sleeve
5	305-0489	1	Regulator, Voltage (See Separate Group for Components)
6	862-0011	4	Nut, Hex - Grade 8 (3/8-16)
7	850-0050	4	Washer, Lock - Spring (3/8")
8	STUD (Select as Required)		
	520-0724	4	3/8-16 UNC x 18-29/32" Lg
	520-0726	4	3/8-16 UNC x 20-1/16" Lg
	520-0729	4	3/8-16 UNC x 24-11/16" Lg
9	503-0611	4	Hose, Rubber
10	114-0023	4	Screw, Cap - Hex Head, Special Heat-Treated (1/4-20 x 1-1/4")
11	850-0040	4	Washer, Lock - Spring (1/4")
12	526-0108	4	Washer, Flat (17/64" ID x 7/16" OD x 1/32" Thk)
13	212-1225	4	Spacer, Sleeve
14	526-0018	8	Washer, Flat (17/64" ID x 5/8" OD x 1/16" Thk)
15	212-0413	1	Brush Rig Assembly (Includes Parts Marked +)
16	214-0046	4	+Brush, Generator Attaching Hardware For Brush
	815-0203	4	+Screw, Machine - Round Head with External Tooth Lockwasher, Brass (#10-32 x 7/8")
	853-0008	12	+Washer, Lock - ET (#10)
	526-0049	4	+Washer, Flat - Brass (13/64" ID x 7/16" OD x 1/32" Thk)
	871-0010	8	+Nut, Hex - Brass (#10-32)
17	212-1105	4	+Spring, Brush
18	509-0125	1	Seal, Oil - "O" Ring
19	211-0185	1	End Bell, Generator
20	800-0008	2	Screw, Cap - Hex Head (1/4-20 x 1-1/4")
21	850-0040	2	Washer, Lock - Spring (1/4")

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
22	862-0001	2	Nut, Hex (1/4-20)
23	234-0368	1	Screen, Air - Generator
24	STATOR ASSEMBLY, GENERATOR		
			50 HERTZ
	220-2000	1	62.5 kW, Code 515
	220-2001	1	75.0 kW, Code 515
			60 HERTZ
	220-1457	1	75.0 kW, Code 15
	220-1458	1	90.0 kW, Code 15
25	812-0189	1	Screw, Machine - Round Head (3/8-16 x 3/4")
26	856-0010	1	Washer, Lock - EIT (3/8")
27	150-0717	1	Switch, Overspeed
28	ROTOR ASSEMBLY, GENERATOR (Includes Parts Marked *)		
	201-1646	1	62.5 kW, Code 515; 75 kW, Code 15
	201-1647	1	75 kW, Code 515; 90 kW, Code 15
29	800-0513	1	*Screw, Cap - Hex Head, Modified with 3/8-16 Tapped Center Hole (3/4-10 x 1-1/2")
30	850-0079	1	*Washer, Lock - Spring (3/4")
31	526-0238	1	*Washer, Flat - Steel Alloy (13/16" ID x 2" OD x 3/16" Thk)
32	510-0101	1	*Bearing, Ball
33	204-0083	1	*Ring, Collector
34	*BOLT, PLACE — HEX HEAD, GRADE 8 (Select as Required)		
	805-0033	8	5/18-11 x 1"
	805-0035	8	5/18-11 x 1-1/2"
35	526-0259	8	*Washer, Flat - Hardened Steel (11/16" ID x 1-3/8" OD x 7/64" Thk)
36	*BOLT, PLACE — HEX HEAD, GRADE 8 (Select as Required)		
	805-0018	8	3/8-16 x 1"
	805-0019	8	3/8-16 x 1-1/4"
37	205-0089	1	*Fan, Generator
38	232-2078	1	*Disk, Drive - Generator

+ - Parts included in Brush Rig Assembly.

* - Parts included in Generator Rotor Assembly.

VOLTAGE REGULATOR - SPECS A THROUGH D



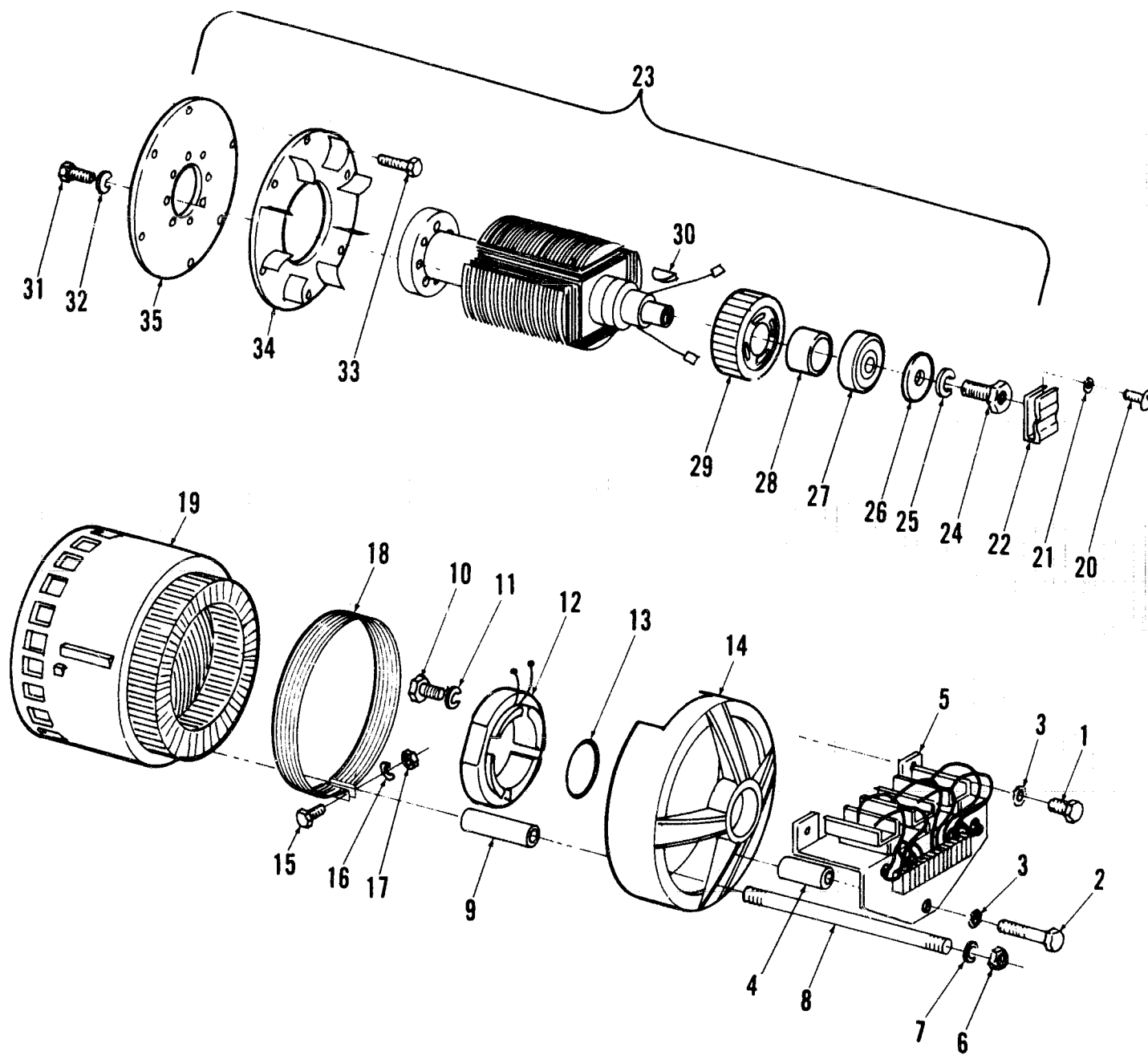
VOLTAGE REGULATOR - SPECS A THROUGH D

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
	REGULATOR, VOLTAGE (Parts common except as marked)		
	305-0491	1	Used on Brushless Generator (Includes Parts Marked *)
	305-0489	1	Used on Brush Type Generator (Includes Parts Marked +)
1	305-0482	1	Chassis
2	358-0029	1	Rectifier (CR3)
3	RECTIFIER		
	364-0014	2	*(Q4, Q5)
	364-0012	2	+(Q4, Q5)
4	RECTIFIER		
	358-0035	2	*(CR1, CR2)
	358-0031	2	+(CR1, CR2)
5	363-0048	3	Heatsink
6	332-1265	6	Insulator, Standoff
7	812-0077	6	Screw, Machine - Roundhead (#8-32 x 3/8")
8	853-0005	6	Washer, Lock - ET (#8)
9	812-0077	6	Screw, Machine - Roundhead (#8-32 x 3/8")
10	853-0005	6	Washer, Lock - ET (#8)
11	871-0010	3	Nut, Hex - Brass (#10-32)
12	526-0009	3	Washer, Flat (7/32" ID x 1/2" OD x 1/16" Thk)
13	850-0030	3	Washer, Lock - Spring (#10)
14	812-0079	2	Screw, Machine - Roundhead (#8-32 x 1/2")
15	526-0048	2	Washer, Flat - Brass (11/64" ID x 3/8" OD x 1/32" Thk)
16	853-0005	2	Washer, Lock - ET (#8)
17	871-0007	2	Nut, Hex - Brass (#8-32)
18	812-0079	1	Screw, Machine - Roundhead (#8-32 x 1/2")
19	853-0005	1	Washer, Lock - ET (#8)
20	871-0007	1	Nut, Hex - Brass (#8-32)
21	508-0002	2	Grommet, Rubber
22	332-1415	1	Clamp, Cable
23	332-1266	1	Block, Terminal
24	812-0081	2	Screw, Machine - Roundhead (#8-32 x 5/8")
25	853-0005	2	Washer, Lock - ET (#8)
26	860-0008	2	Nut, Hex (#8-32)
27	REACTOR		
	315-0343	1	*(L1)
	315-0341	1	+(L1)
28	812-0077	2	Screw, Machine - Roundhead (#8-32 x 3/8")
29	853-0005	2	Washer, Lock - ET (#8)
30	860-0008	2	Nut, Hex (#8-32)
31	150-0723	1	Contact - Overspeed Switch
32	862-0001	2	Nut, Hex (1/4-20)
33	853-0013	1	Washer, Lock - ET (1/4)
34	870-0250	2	Nut, Insulating (1/4)
35	332-1043	2	Jumper - Terminal Block

* - Parts used only on 305-0491 Regulator.

+ - Parts used only on 305-0489 Regulator.

GENERATOR ASSEMBLY (BRUSHLESS TYPE) **SPEC B THRU D**



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GENERATOR ASSEMBLY (BRUSHLESS TYPE)

SPEC B THRU D

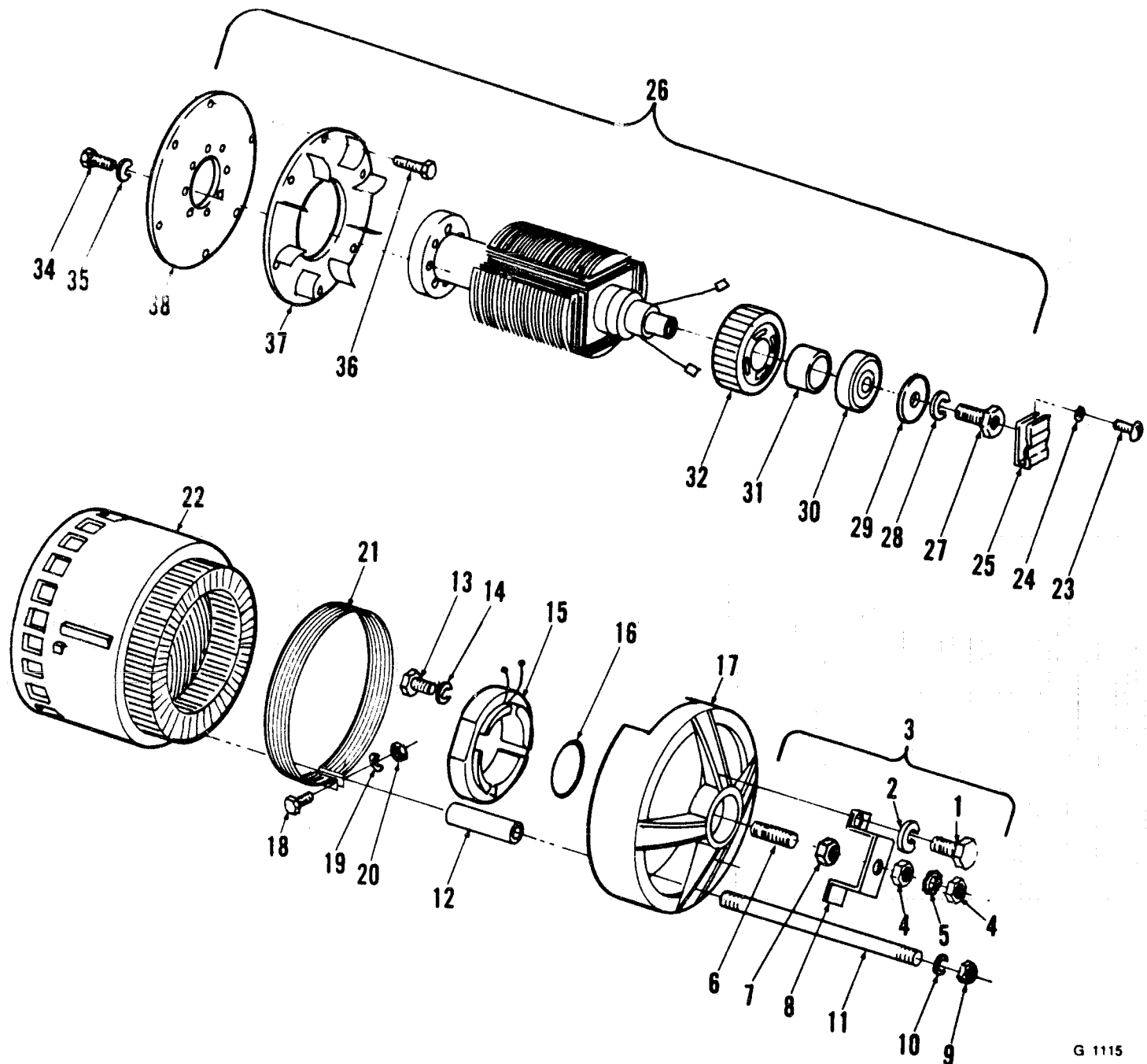
REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	
1	800-0003	2	Screw, Cap - Hex Head (1/4-20 x 1/2")	20	812-0189	1	Screw, Machine - Round Head (3/8-16 x 3/4")	
2	800-0009	2	Screw, Cap - Hex Head (1/4-20 x 1-1/2")	21	856-0010	1	Washer, Lock - EIT (3/8")	
3	853-0013	4	Washer, Lock - ET (1/4")	22	150-0717	1	Switch, Overspeed	
4	305-0481	2	Spacer, Sleeve	23	ROTOR ASSEMBLY, GENERATOR (Includes Parts Marked *			
5	305-0491	1	Regulator, Voltage (See Separate Group for Components)	201-2672	1	62.5 kW, Code 515	50 HERTZ SETS	
6	862-0011	4	Nut, Hex - Grade 8 (3/8-16)	201-2675	1	‡62.5 kW, Code 515 (Extended Stack)		
7	850-0050	4	Washer, Lock - Spring (3/8")	201-2673	1	75 kW, Code 515		
8	STUD (Select as Required)			201-2676	1	‡75 kW, Code 515 (Extended Stack)		
	520-0724	4	3/8-16 UNC x 18-29/32" Lg			60 HERTZ SETS		
	520-0726	4	3/8-16 UNC x 20-1/16" Lg	201-2672	1	75 kW, Codes 6D, 7, 9x, 15		
	520-0727	4	3/8-16 UNC x 21-7/16" Lg	201-2675	1	‡75 kW, Code 15 (Extended Stack)		
	520-0728	4	3/8-16 UNC x 22-15/16" Lg			£75 kW, Code 15		
	520-0729	4	3/8-16 UNC x 24-11/16" Lg	201-2690	1	(Environmental Protected)		
	520-0863	4	3/8-16 UNC x 26-7/8" Lg			‡£75 kW, Code 15		
9	503-0611	4	Hose, Rubber	201-2693	1	(Extended Stack and Environmental Protected)		
10	800-0009	4	Screw, Cap - Hex Head (1/4-20 X 1-1/2")	201-2673	1	90 kW, Codes 6D, 7, 9x, 15		
11	850-0040	4	Washer, Lock - Spring (1/4")	201-2676	1	‡90 kW, Code 15 (Extended Stack)		
12	STATOR, EXCITER (Select as Required)			201-2691	1	£90 kW, Code 15 (Environmental Protected)		
	220-2353	1	Standard	201-2694	1	‡£90 kW, Code 15 (Extended Stack and Environmental Protected)		
	220-1774	1	£Environmental Protected			*Screw, Cap - Hex Head, Modified with 3/8-16 Tapped Center Hole (3/4-10 x 1-1/2")		
13	509-0125	1	Seal, Oil - "O" Ring	25	850-0079	1	*Washer, Lock - Spring (3/4")	
14	211-0185	1	End Bell, Generator	26	526-0238	1	*Washer, Flat - Steel Alloy (13/16" ID x 2" OD x 3/16" Thk)	
15	800-0008	2	Screw, Cap - Hex Head (1/4-20 x 1-1/4")	27	510-0101	1	*Bearing, Ball	
16	850-0040	2	Washer, Lock - Spring (1/4")	28	232-2102	1	*Spacer, Sleeve	
17	862-0001	2	Nut, Hex (1/4-20)	29	*ROTOR ASSEMBLY, EXCITER (See Separate Group For Components)			
18	234-0368	1	Screen, Air - Generator	201-1739	1	Standard		
19	STATOR ASSEMBLY, GENERATOR			201-1845	1	£Environmental Protected		
			50 HERTZ SETS	30	515-0145	1	*Key, Machine (1/4" x 1/4" x 7/8")	
	220-2000	1	62.5 kW, Code 515	31	*BOLT, PLACE — HEX HEAD, GRADE 8 (Select as Required)			
	220-2003	1	‡62.5 kW, Code 515 (Extended Stack)	805-0033	8	5/8-11 x 1"		
	220-2001	1	75 kW, Code 515	805-0035	8	5/8-11 x 1-1/2"		
	220-2004	1	‡75 kW, Code 515 (Extended Stack)	32	526-0259	8	*Washer, Flat - Hardened Steel (11/16" ID x 1-3/8" OD x 7/64" Thk)	
			60 HERTZ SETS	33	*BOLT, PLACE — HEX HEAD, GRADE 8 (Select as Required)			
	220-2627	1	75 kW, Code 6D	805-0018	8	3/8-16 x 1"		
	220-2645	1	75 kW, Code 7	805-0019	8	3/8-16 x 1-1/4"		
	220-1605	1	75 kW, Code 9x	34	205-0089	1	*Fan, Generator	
	220-1457	1	75 kW, Code 15	35	232-2078	1	*Disk, Drive - Generator	
	220-1460	1	‡75 kW, Code 15 (Extended Stack)					
	220-1789	1	£75 kW, Code 15 (Environmental Protected)					
	220-1792	1	‡£75 kW, Code 15 (Extended Stack and Environmental Protected)					
	220-2628	1	90 kW, Code 6D					
	220-2466	1	90 kW, Code 7					
	220-1606	1	90 kW, Code 9x					
	220-1458	1	90 kW, Code 15					
	220-1461	1	‡90 kW, Code 15 (Extended Stack)					
	220-1790	1	£90 kW, Code 15 (Environmental Protected)					
	220-1793	1	‡£90 kW, Code 15 (Extended stack and Environmental Protected)					

* - Parts included in Generator Rotor Assembly.

‡ - Extended Stack type assemblies that are used on sets having full power output on both single and three phase hookups. Both phases carry same kW and kVA ratings.

£ - Environmental protected assemblies or parts which are coated with epoxy and are for use in high humidity areas.

GENERATOR ASSEMBLY - BRUSHLESS TYPE USED WITH REMOTE VOLTAGE REGULATOR



G 1115

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, Insulated
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")

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
11	STUD (Select as Required)		
	520-0724	4	3/8-16 UNC x 18-29/32" Lg
	520-0726	4	3/8-16 UNC x 20-1/16" Lg
	520-0727	4	3/8-16 UNC x 21-7/16" Lg
	520-0728	4	3/8-16 UNC x 22-15/16" Lg
	520-0729	4	3/8-16 UNC x 24-11/16" Lg
	520-0863	4	3/8-16 UNC x 26-7/8" Lg
12	503-0611	4	Hose, Rubber
13	800-0009	4	Screw, Cap - Hex Head (1/4-20 x 1-1/1")
14	850-0040	4	Washer, Lock - Spring (1/4")
15	STATOR, EXCITER (Select as Required)		
	220-2353	1	Standard
	220-1774	1	£Environmental Protected

GENERATOR ASSEMBLY (BRUSHLESS TYPE)

BEGIN SPEC E

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
16	509-0125	1	Seal, Oil - "O" Ring	26	ROTOR ASSEMBLY, GENERATOR (Includes Parts Marked *)		
17	211-0185	1	End Bell, Generator		50 HERTZ SETS		
18	800-0008	2	Screw, Cap - Hex Head (1/4-20 x 1-1/4")	201-2672	1	62.5 kW, Code 515	
19	850-0040	2	Washer, Lock - Spring (1/4")	201-2675	1	‡62.5 kW, Code 515 (Extended Stack)	
20	862-0001	2	Nut, Hex (1/4-20)	201-2673	1	75 kW, Code 515	
21	234-0368	1	Screen, Air - Generator	201-2676	1	‡75 kW, Code 515 (Extended Stack)	
22	STATOR ASSEMBLY, GENERATOR			201-2674	1	80 kW, Code 515	
			50 HERTZ SETS		60 HERTZ SETS		
	220-2000	1	62.5 kW, Code 515	201-2672	1	75 kW, Codes 6D, 7, 9x, 15	
	220-2003	1	‡62.5 kW, Code 515 (Extended Stack)	201-2675	1	‡75 kW, Code 15 (Extended Stack)	
	220-2001	1	75 kW, Code 515	201-2690	1	£75 kW, Code 15 (Environmental Protected)	
	220-2004	1	‡75 kW, Code 515 (Extended Stack)	201-2693	1	‡£75 kW, Code 15 (Extended Stack and Environmental Protected)	
	220-2002	1	80 kW, Code 515				
			60 HERTZ SETS	201-2673	1	90 kW, Codes 6D, 7, 9x, 15	
	220-2627	1	75 kW, Code 6D	201-2676	1	‡90 kW, Code 15 (Extended Stack)	
	220-2645	1	75 kW, Code 7	201-2691	1	£90 kW, Code 15 (Environmental Protected)	
	220-1605	1	75 kW, Code 9x	201-2694	1	‡£90 kW, Code 15 (Extended Stack and Environmental Protected)	
	220-1457	1	75 kW, Code 15				
	220-1460	1	‡75 kW, Code 15 (Extended Stack)	201-2674	1	100 kW, Codes 6D, 7, 9x, 15	
	220-1789	1	£75 kW, Code 15 (Environmental Protected)	201-2682	1	‡100 kW, Code 15 (Extended Stack)	
	220-1792	1	‡£75 kW, Code 15 (Extended Stack and Environmental Protected)	201-2692	1	£100 kW, Code 15 (Environmental Protected)	
	220-2628	1	90 kW, Code 6D	27	800-0513	1	*Screw, Cap - Hex Head, Modified with 3/8-16 Tapped Center Hole (3/4-10 x 1-1/2")
	220-2466	1	90 kW, Code 7	28	850-0079	1	*Washer, Lock - Spring (3/4")
	220-1606	1	90 kW, Code 9x	29	526-0238	1	*Washer, Flat - Steel Alloy (13/16" ID x 2" OD x 3/16" Thk)
	220-1458	1	90 kW, Code 15	30	510-0101	1	*Bearing, Ball
	220-1461	1	‡90 kW, Code 15 (Extended Stack)	31	232-2102	1	*Spacer, Sleeve
	220-1790	1	£90 kW, Code 15 (Environmental Protected)	32	*ROTOR ASSEMBLY, EXCITER (See Separate Group for Components)		
	220-1793	1	‡£90 kW, Code 15 (Extended Stack and Environmental Protected)	201-1739	1	Standard	
	220-2629	1	100 kW, Code 6D	201-1845	1	£Environmental Protected	
	220-2467	1	100 kW, Code 7	33	515-0145	1	*Key, Machine (1/4" x 1/4" x 7/8")
	220-1607	1	100 kW, Code 9x	34	*BOLT, PLACE — HEX HEAD, GRADE 8 (Select as Required)		
	220-1459	1	100 kW, Code 15	805-0033	8	5/8-11 x 1"	
	224-1462	1	‡100 kW, Code 15 (Extended Stack)	805-0035	8	5/8-11 x 1-1/2"	
	220-1791	1	£100 kW, Code 15 (Environmental Protected)	35	526-0259	8	*Washer, Flat - Hardened Steel (11/16" ID x 1-3/8" OD x 7/64" Thk)
23	812-0189	1	Screw, Machine - Round Head (3/8-16 x 3/4")	36	*BOLT, PLACE — HEX HEAD, GRADE 8 (Select as Required)		
24	856-0010	1	Washer, Lock - EIT (3/8")	805-0018	8	3/8-16 x 1"	
25	150-0717	1	Switch, Overspeed	805-0019	8	3/8-16 x 1-1/4"	
				37	205-0089	1	*Fan, Generator
				38	232-2078	1	*Disk, Drive - Generator

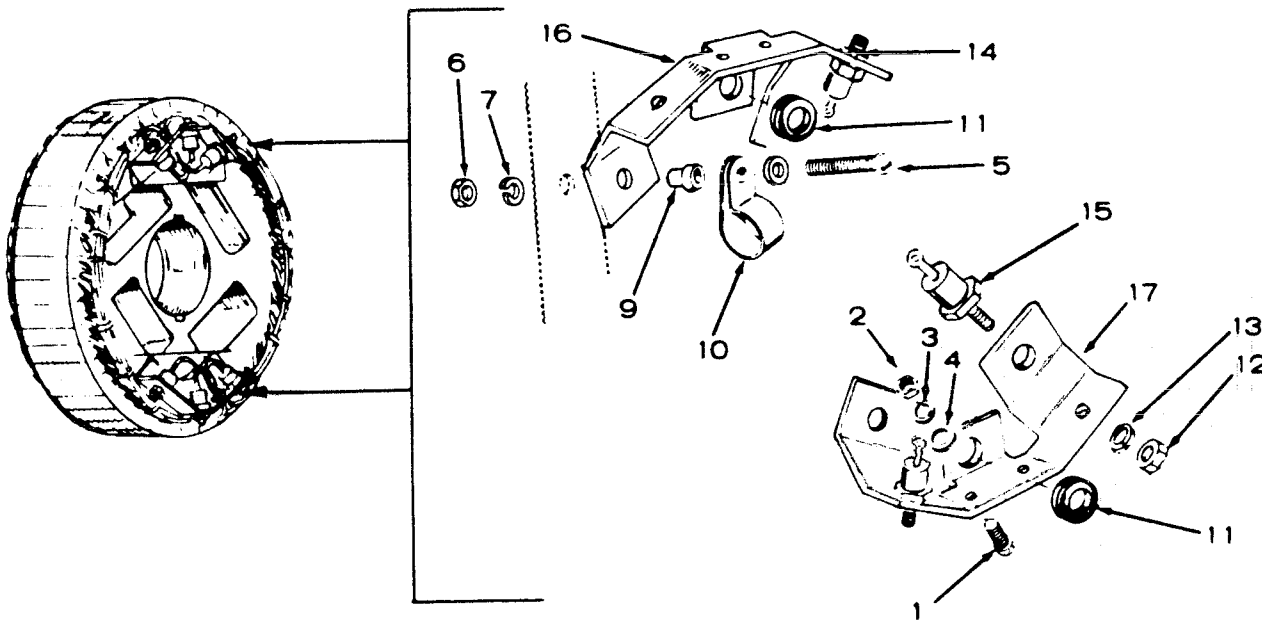
+ - Parts included in Overspeed Switch Assembly.

* - Parts included in Generator Rotor Assembly.

‡ - Extended Stack type assemblies that are used on sets having full power output on both single and three phase hookups. Both phases carry same kW and kVA ratings.

£ - Environmental protected assemblies or parts which are coated with epoxy and are for use in high humidity areas.

EXCITER ROTOR

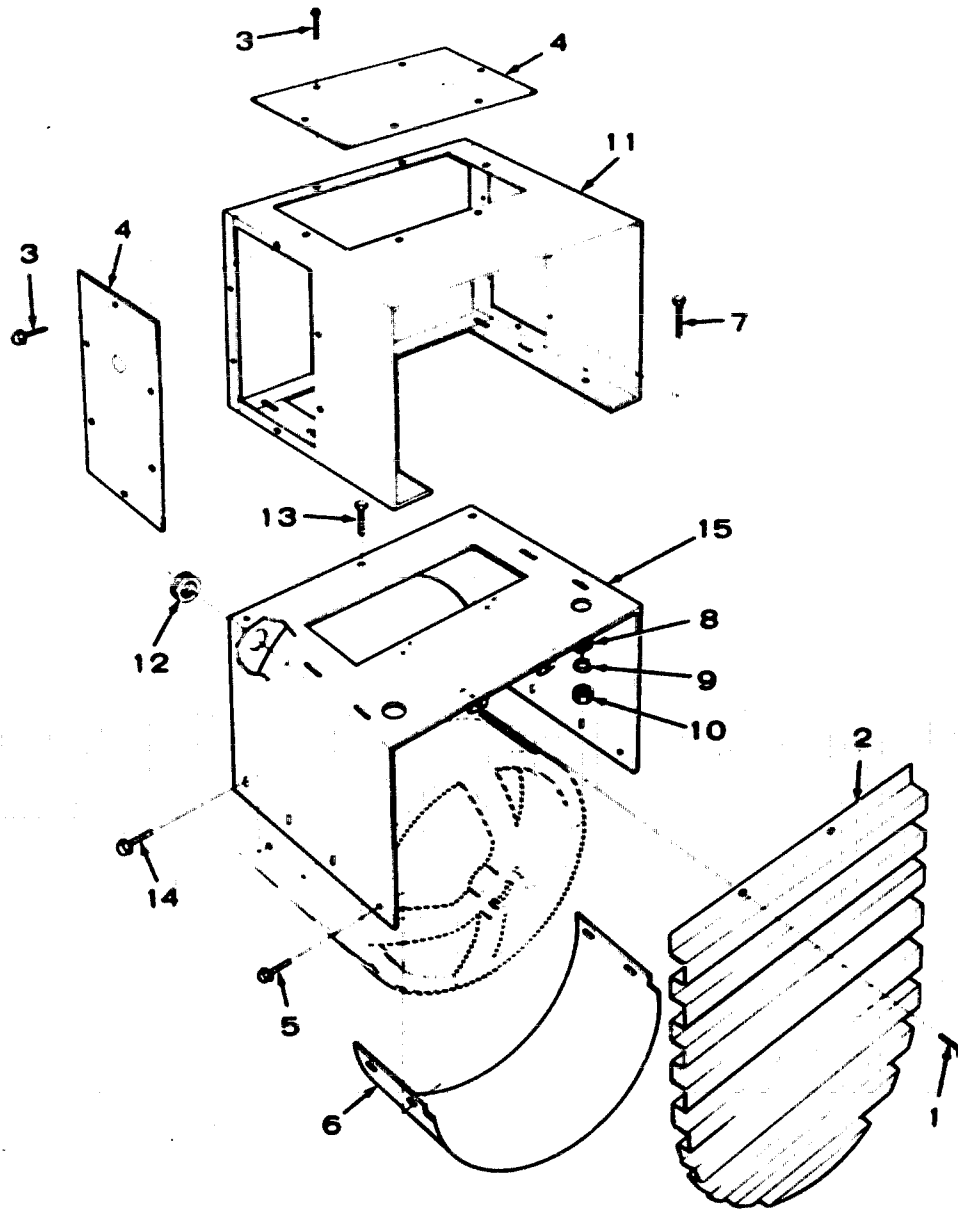


G 1030

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
ROTOR ASSEMBLY, EXCITER (Includes Parts Marked *)			
	201-1739	1	Standard
	201-1845	1	Environmental Protected (Epoxyed)
1	813-0100	2	Screw, Machine - Roundhead (#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 - Roundhead (#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	Environmental Protected (Epoxyed)
15	*DIODE, RECTIFIER - NEGATIVE (CR4, CR5, CR6)		
	358-0015	3	Standard
	358-0043	3	Environmental Protected (Epoxyed)
16	363-0054	1	*Heat, Sink - Positive Diodes
17	363-0055	1	*Heat, Sink - Negative Diodes

* - Parts included in Exciter Rotor Assembly.

CONTROL HOUSING

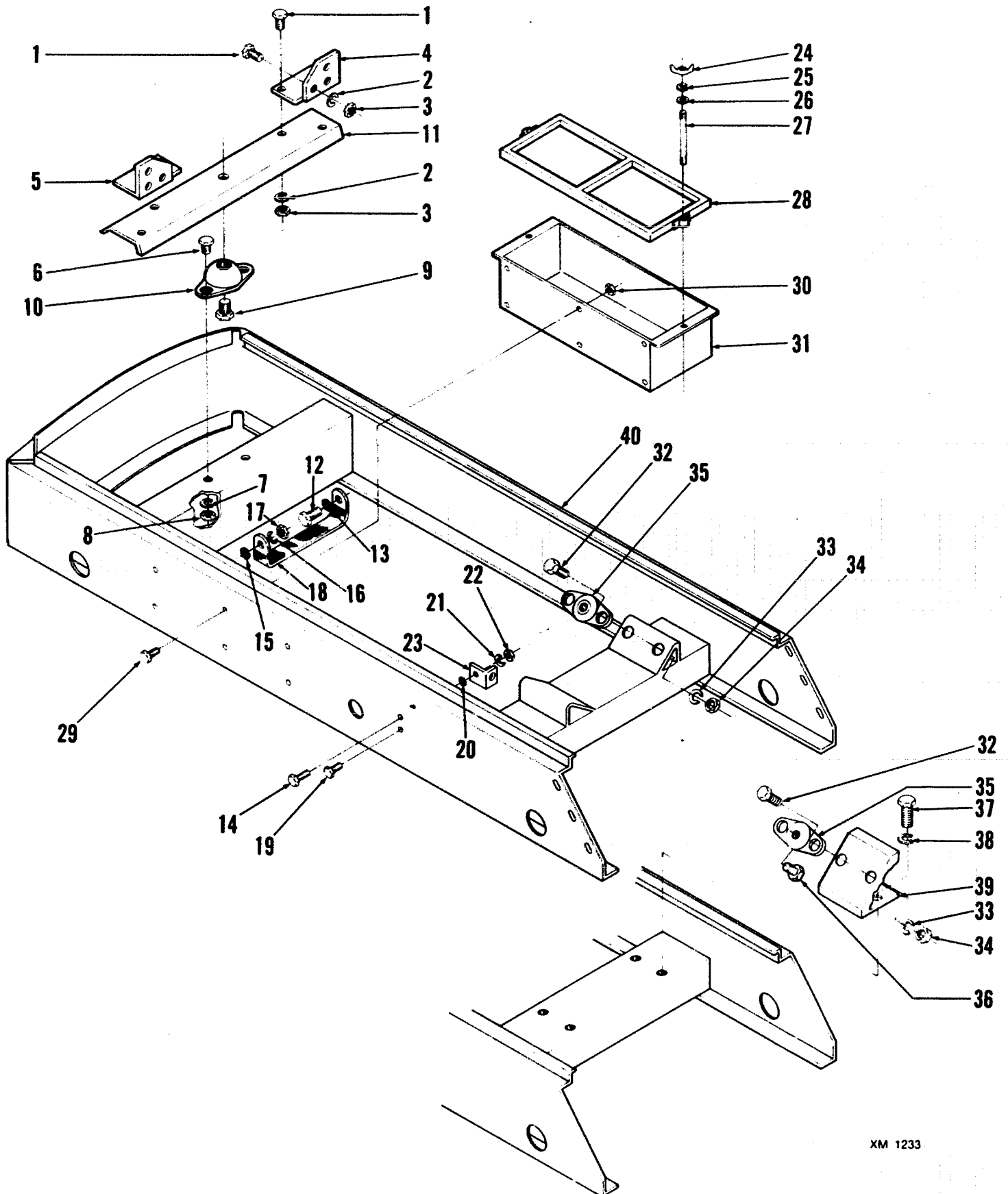


M-1180

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	821-0010	8	Screw, Self-locking - Hex Washer Head (1/4-20 x 1/2")
2	234-0370	1	Grill, Air - Generator Inlet
3	815-0350	18	Screw, Tapping - Hex Washer Head (#10-32 x 3/8")
4	301-3156	3	Panel, Access
5	821-0010	4	Screw, Self-locking - Hex Washer Head (1/4-20 x 1/2")
6	234-0361	1	Wrapper, End Bell
7	821-0018	6	Screw, Self-locking - Hex Washer Head (1/4-20 x 5/8")

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
8	856-0006	1	Washer, Lock - EIT (1/4")
9	526-0018	5	Washer, Flat (17/64" ID x 5/8" OD x 1/16" Thk)
10	870-0212	6	Nut, Hex (1/4-20)
11	301-3155	1	Housing, Control Box
12	508-0203	1	Bushing, Cable - Nylon
13	821-0010	1	Screw, Self-locking - Hex Washer Head (1/4-20 x 1/2")
14	821-0014	8	Screw, Self-locking - Hex Washer Head (5/16-18 x 1/2")
15	301-3154	1	Saddle, Control Box

CHASSIS

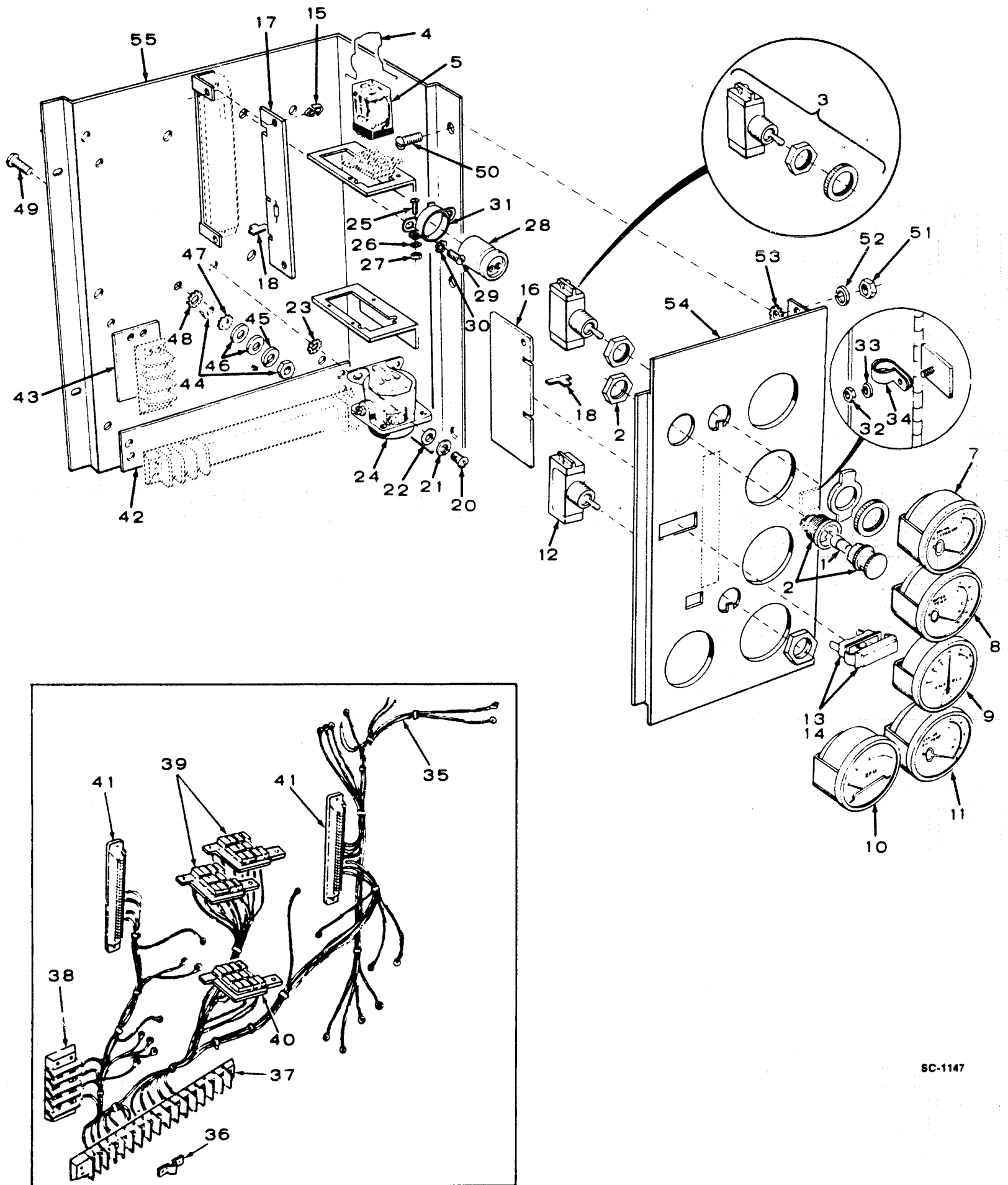


XM 1233

CHASSIS

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	800-0091	10	Screw, Cap - Hex Head (1/2-13 x 1-1/4")
2	850-0060	10	Washer, Lock - Spring (1/2")
3	862-0016	10	Nut, Hex (1/2-13)
4	403-1187	1	Bracket, Support - Engine Left Side
5	403-1188	1	Bracket, Support - Engine Right Side
6	800-0090	2	Screw, Cap - Hex Head (1/2-13 x 1")
7	850-0060	2	Washer, Lock - Spring (1/2")
8	862-0016	2	Nut, Hex (1/2-13)
9	800-0520	1	Screw, Cap - Hex Head (3/4-10 x 1")
10	402-0030	1	Mount, Vibration
11	403-0920	1	Bracket, Support - Engine
12	800-0090	1	Screw, Cap - Hex Head (1/2-13 x 1")
13	856-0013	1	Washer, Lock - EIT (1/2")
14	800-0091	1	Screw, Cap - Hex Head (1/2-13 x 1-1/4")
15	856-0013	1	Washer, Lock - EIT (1/2")
16	850-0060	1	Washer, Lock - Spring (1/2")
17	862-0016	1	Nut, Hex (1/2-13)
18	337-0090	1	Strap, Electrical
19	800-0028	1	Screw, Cap - Hex Head (5/16-18 x 1")
20	856-0008	1	Washer, Lock - EIT (5/16")
21	850-0045	1	Washer, Lock - Spring (5/16")
22	862-0015	1	Nut, Hex (5/16-18)
23	332-1473	1	Terminal, Lug
24	865-0007	2	Nut, Wing (5/16-18)
25	850-0045	2	Washer, Lock - Spring (5/16")
26	526-0115	2	Washer, Flat (11/32" ID x 11/16" OD x 1/16" Thk)
27	520-0663	2	Stud (5/16 x 18 x 5/16-18 x 3-1/4" Lg)
28	416-0480	1	Frame, Holddown - Battery
29	821-0029	6	Screw, Self-locking - Hex Washer Head (3/8-16 x 3/4")
30	870-0281	6	Nut, Self-locking, Hex Washer Head (3/8-16)
31	416-0666	1	Tray, Battery
32	800-0071	4	Screw, Cap - Hex Head (7/16-14 x 1")
33	850-0055	4	Washer, Lock - Spring (7/16")
34	862-0004	4	Nut, Hex (7/16-14)
35	402-0371	2	Mount, Vibration
36	800-0520	2	Screw, Cap - Hex Head (3/4-10 x 1")
37	800-0091	4	Screw, cap - Hex Head (1/2-13 x 1-1/4") — Spec A Thru F
38	850-0060	4	Washer, Lock (1/2") — Spec A Thru F
39	232-2106	2	Bracket, Mounting - Generator — Spec A Thru F
40	403-0919	1	Chassis (NOTE: Begin Spec G, Generator Mounting Brackets are welded in place.)

ENGINE CONTROL WITH ONE FAULT LIGHT SPEC A THRU F



SC-1147

ENGINE CONTROL WITH ONE FAULT LIGHT SPEC A THRU F

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	322-0004	1	Lamp Incandescent (12 VDC)
2	322-0149	1	Lampholder
3	308-0002	1	Switch, Toggle (SPST)
4	307-1157	3	Spring, Holddown - Relay
5	RELAY (12 VDC)		
	307-1058	1	(Ignition)
	307-1058	1	(Start Disconnect)
	307-1061	1	(Starter Protection)
7	193-0107	1	Gauge - Oil Pressure (12 VDC)
8	193-0106	1	Gauge - Water Temperature (12 VDC)
9	302-0061	1	Ammeter
10	302-0749	1	£Tachometer - Electrical
11	193-0187	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 (Lens Color & Legend Listed Below)		
	322-0128	1	Red - Fault - 14 VDC
14	322-0136	1	*Light, Indicator - 14 VDC (Red Lens - No Legend)
15	518-0374	4	Fastener, Snap-In (Printed Circuit Boards)
16	PRINTED CIRCUIT BOARD ASSEMBLY		
	300-0733	1	Standard Cranker (12 VDC)
	300-0714	1	Cycle Cranker (12 VDC)
17	PRINTED CIRCUIT BOARD ASSEMBLY		
	300-0679	1	Engine Control Monitor - Standard
	300-0730	1	Engine Control Monitor - Penn State
18	332-1276	4	Plug, Keying - PC Board
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	307-1031	1	Relay, Solenoid - Start (12 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		
	338-0528	1	Includes parts marked †
	ATTACHING HARDWARE FOR WIRING HARNES		
	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)
	860-0006	10	Nut, Hex (#6-32)
36	332-1043	1	†Jumper, Terminal
37	332-0795	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
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 - EIT (#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

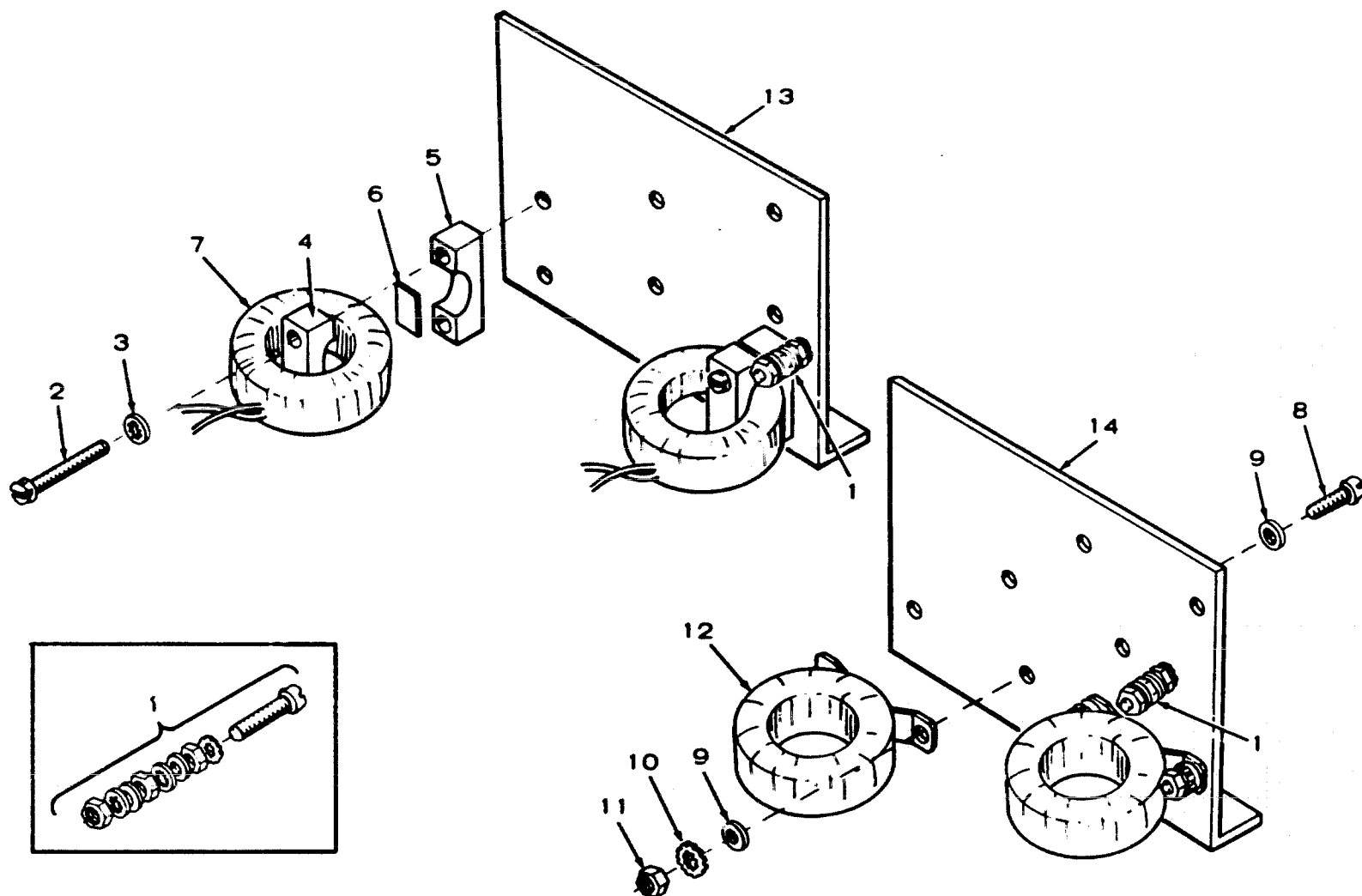
* - NOTE: For lamp replacement order 322-0136 remove and discard plain red lens, install lens with legend from burned out light — lights snap in and out of panel.

£ - Optional items used with Engine Mounted Senders.

† - Parts includes in Wiring Harness

- Parts includes in Ground Terminal Assembly

CURRENT TRANSFORMER ASSEMBLY



SC-1150

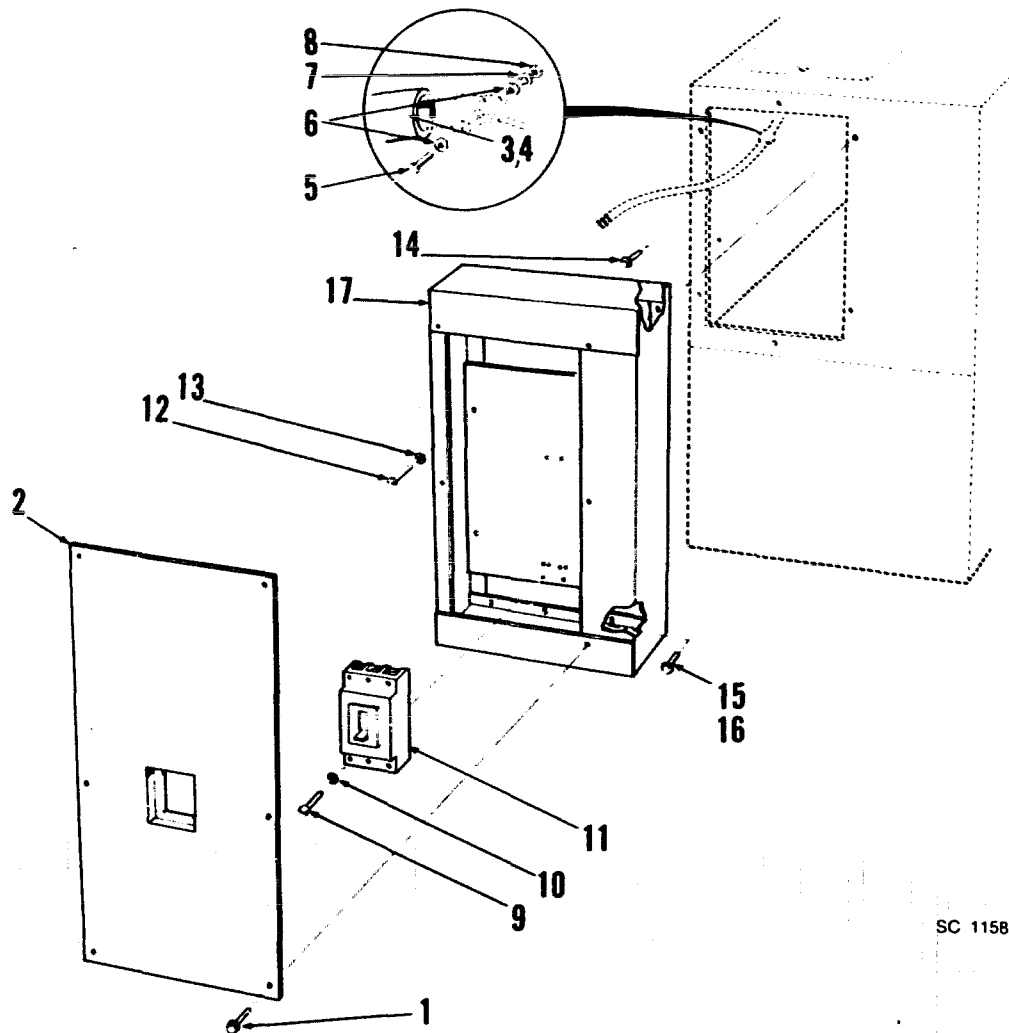
REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
	CURRENT TRANSFORMER ASSEMBLY (Select Components as Required)		
1	GROUND TERMINAL ASSEMBLY (Includes Following Items)		
	815-0203	1	Screw, Machine - Round Head, Brass (#10-32 x 7/8")
	871-0010	3	Nut, Hex - Brass (#10-32)
	856-0003	1	Washer, Lock - EIT (#10)
	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
	302-0106	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
	302-0608	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

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



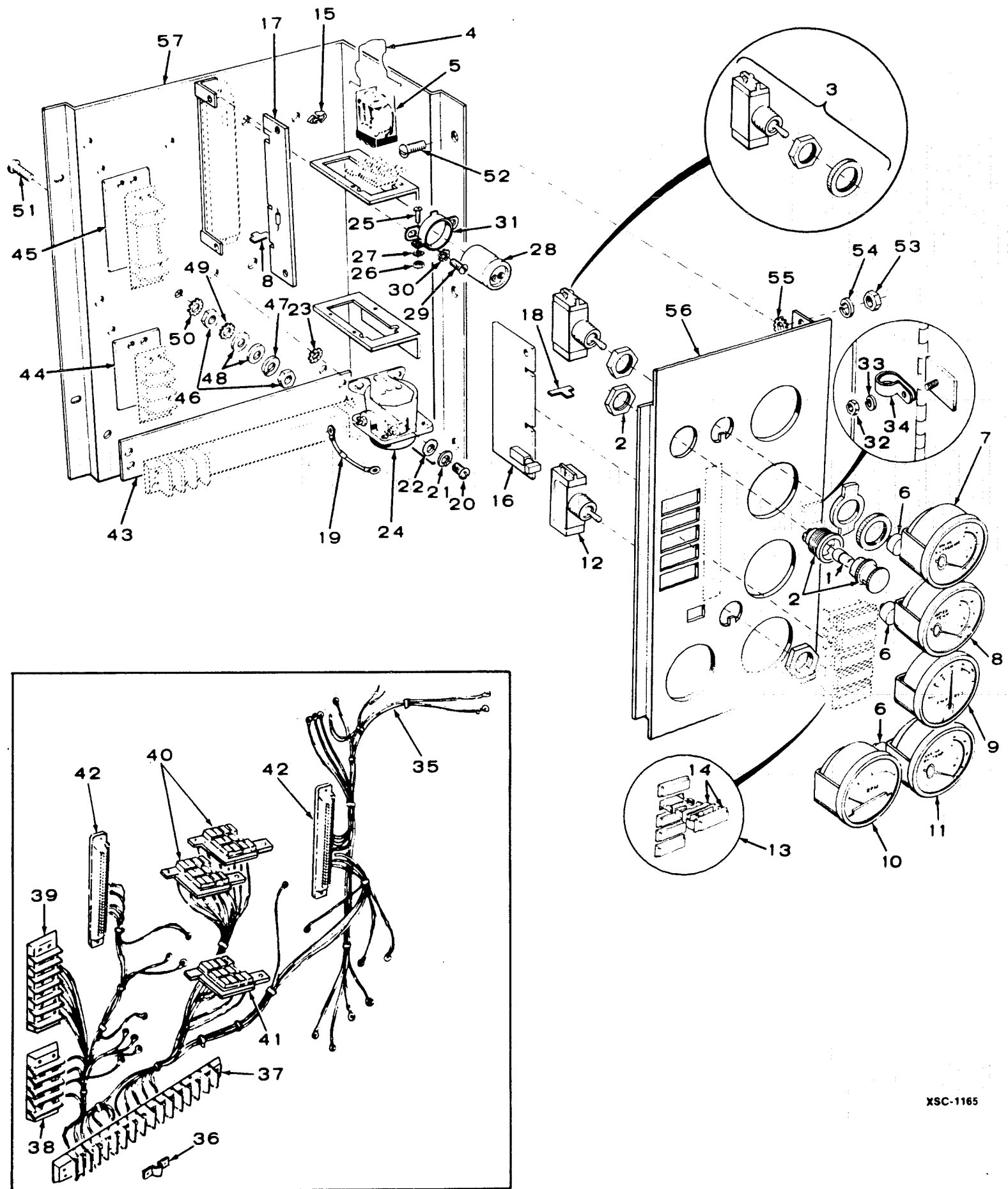
SC 1158

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	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		320-0446	1	125 AMP THREE PHASE 347/600 VAC
	898-1082	1	1" ID x 14-1/2" Lg		320-0556	1	347/600 VAC with 12 VDC shunt trip and AUX contacts
	898-1085	1	1-1/2" ID x 14-1/2" Lg		320-0238	1	347/600 VAC with 120 VAC shunt trip and AUX contacts
	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		320-0425	1	150 AMP THREE PHASE 200/346, 277/480, 347/600 VAC
	898-0972	1	1" ID x 4-1/2" Lg		320-0738	1	347/600 VAC with AUX
5	800-0028	5	Screw, Cap - Hex Head (5/16-18 x 1")		320-0653	1	200/346, 277/480, 347/600 VAC with 12 VDC shunt trip and AUX contacts
6	526-0022	10	Washer, Flat (21/64" ID x 9/16" OD x 1/16" Thk)		320-0772	1	127/220 VAC with 12 VDC shunt trip and AUX contacts
7	850-0045	5	Washer, Lock - Spring (5/16")		320-0688	1	200/346, 277/480, 347/600 VAC with 24 VDC shunt trip and AUX contacts
8	862-0015	5	Nut, Hex (5/16-18)		320-0315	1	200/346, 277/480, 347/600 VAC with 120 VAC shunt trip and AUX contacts
9	SCREW, MACHINE - ROUND HEAD (Select as Required)						
	812-0156	4	1/4-20 x 1-1/2"		320-0426	1	175 AMP THREE PHASE 200/346, 220/380, 277/480, 347/600 VAC
	812-0157	4	1/4-20 x 1-3/4"		320-0453	1	200/346, 277/480 VAC with 12 VDC shunt trip and AUX contacts
	812-0182	4	5/16-18 x 1-1/2"		320-0773	1	127/220 VAC with 12 VDC shunt trip and AUX contacts
	812-0183	4	5/16-18 x 1-3/4"		320-0731	1	200/346, 220/380, 277/480, 347/600 VAC with 24 VDC shunt trip and AUX contacts
10	WASHER, LOCK - SPRING (Select as Required)						
	850-0040	4	1/4"		320-0215	1	200/346, 220/380, 277/480, 347/600 VAC with 120 VAC shunt trip and AUX contacts
	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				

OPTIONAL CIRCUIT BREAKER

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				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	320-0403	1		120/208, 120/240 VAC with 12 VDC shunt trip and AUX contacts
			250 AMP THREE PHASE	320-0236	1		120/208, 120/240 VAC with 24 VDC shunt trip and AUX contacts
320-0422	1		120/240 VAC	320-0398	1		120/208, 120/240 VAC with 120 VAC shunt trip and AUX contacts
320-0626	1		200/346, 220/380, 277/480 VAC				120/208, 120/240 VAC with 480 VAC shunt trip and AUX contacts
320-0975	1		220/380, 277/480 VAC with AUX contacts	320-0780	1		127/220 VAC with 24 VDC 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		600 AMP THREE PHASE
320-0774	1		127/220 VAC with 24 VDC shunt trip and AUX contacts	320-0267	1		120/208, 120/240 VAC
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 with 12 VDC shunt trip and AUX contacts
			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				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	320-0213	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	320-0433	1		120/240 VAC with 480 VAC shunt trip and AUX contacts
320-0268	1		200/346, 220/380, 277/480 VAC with 120 VAC shunt trip and AUX contacts				
320-0331	1		200/346, 220/380, 277/480 VAC with 480 VAC shunt trip and AUX contacts	320-0396	1		
			350 AMP THREE PHASE	12 813-0103	2		Screw, Machine - Round Head (#10-32 x 3/4")
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 ENGINE CONTROL WITH FIVE FAULT LIGHTS — BEGIN SPEC G



XSC-1165

OPTIONAL ENGINE CONTROL WITH FIVE FAULT LIGHTS — BEGIN SPEC G

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	853-0008	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

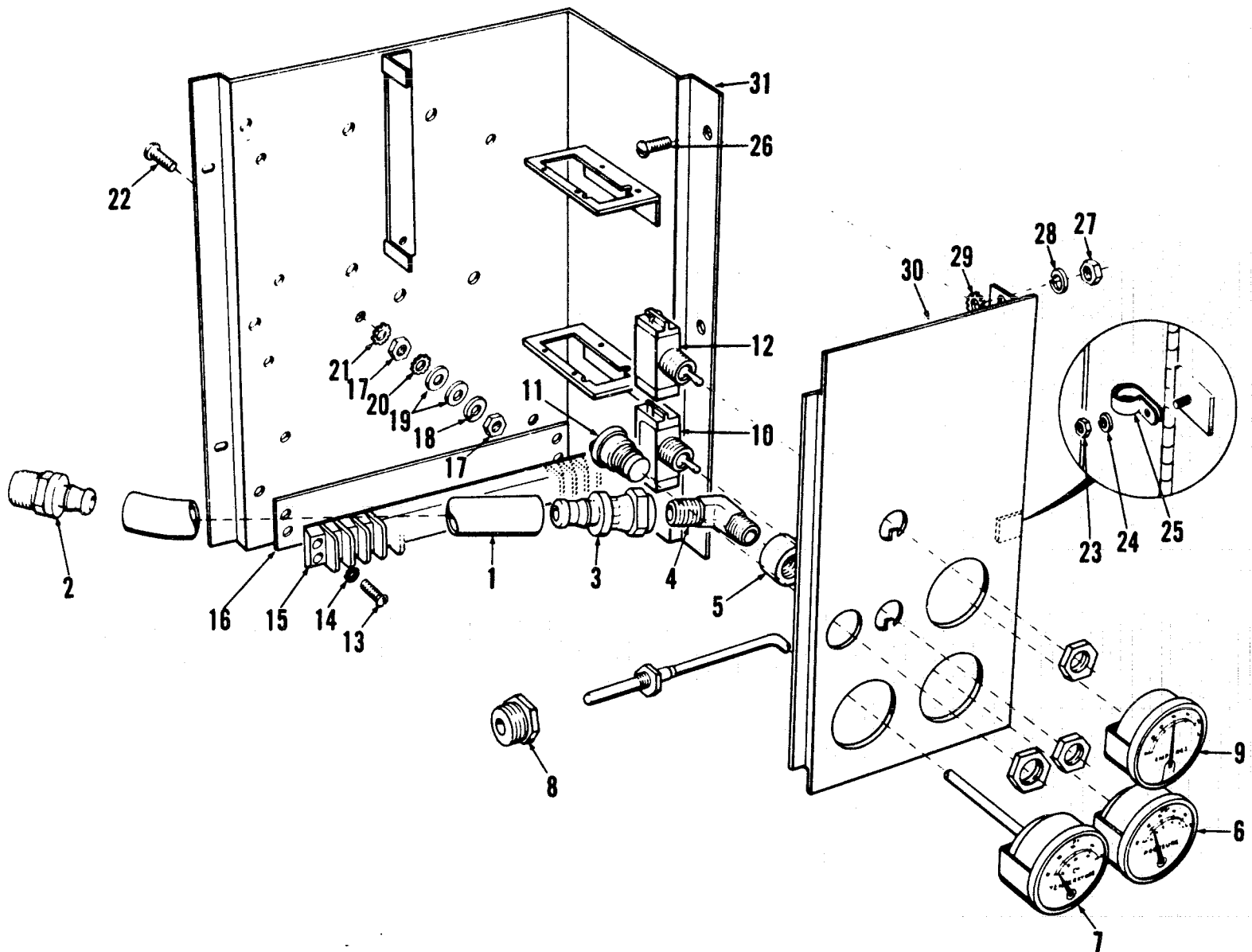
* - **NOTE:** For lamp replacement order 322-0137 remove and discard plain red lens, install lens with legend from burned out light — lights snap in and out of panel.

£ - Optional items used with Engine Mounted Senders.

† - Parts Included in Wiring Harness.

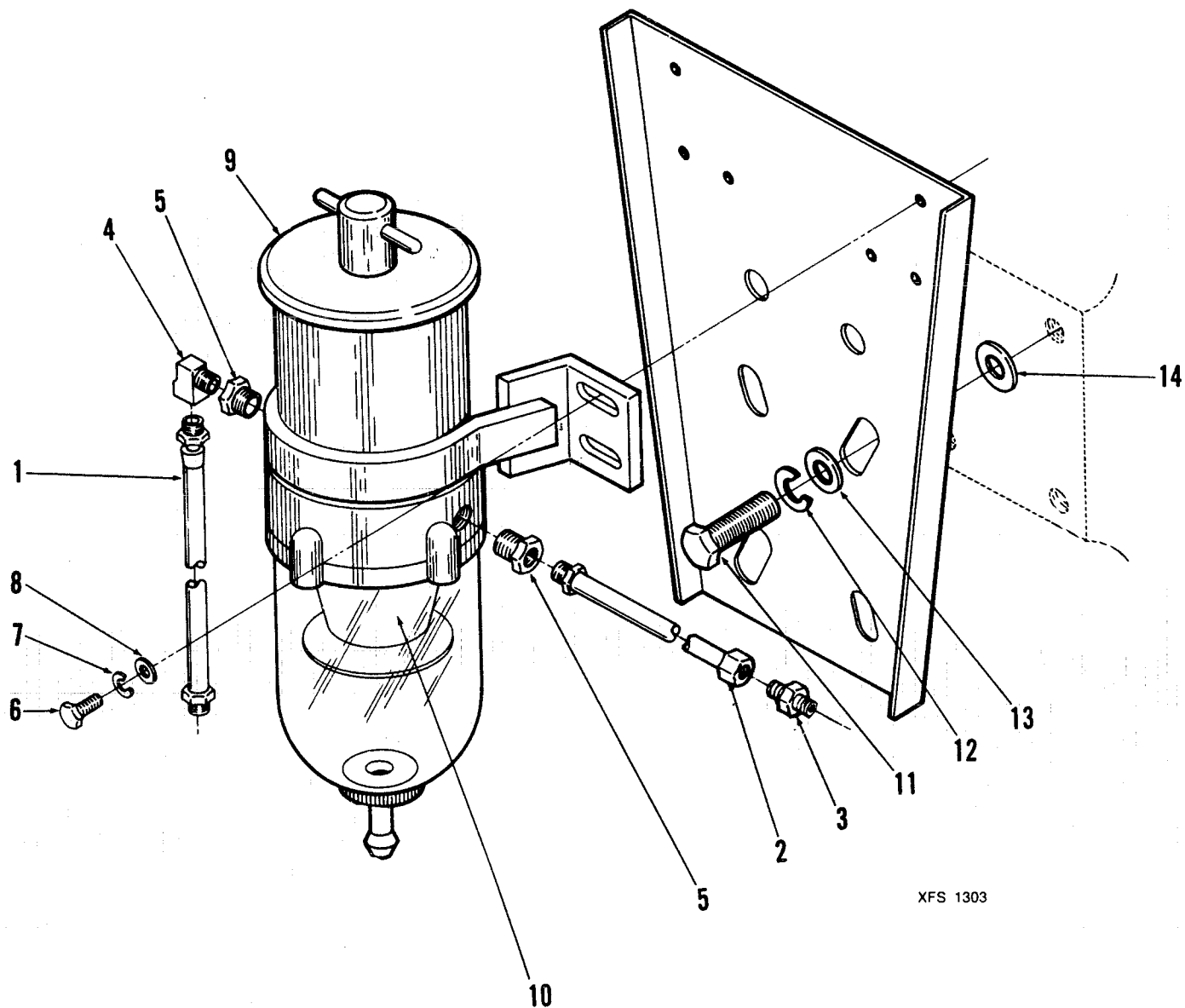
- Parts Included in Ground Terminal Assembly.

OPTIONAL ENGINE CONTROL WITH MECHANICAL GAUGES



REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	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)	13	812-0066	2	Screw, Machine - Round Head (#6-32 x 3/4")
2	502-0444	1	Adapter, Pipe to Hose - Male (1/8" NPT x 1/4" ID Hose)	14	853-0003	2	Washer, Lock - ET (#6)
3	502-0445	1	Adapter, Pipe to Hose - Female (7/16-20 UNF x 1/4" ID Hose)	15	332-0795	1	Block, Terminal - 20 Place
4	502-0583	1	Elbow, Pipe - 45 Deg. (7/16-20 UNF x 1/8" NPT)	16	332-1241	1	Strip, Marker - Terminal
5	502-0051	1	Coupling, Pipe (1/8" NPT)	GROUND TERMINAL ASSEMBLY			
6	GAUGE, OIL PRESSURE (Select as Required)			17	871-0010	2	Nut, Hex - Brass (#10-32)
	193-0232	1	Scale Range 0 to 75 PSI	18	850-0030	1	Washer, Lock - Spring (#10)
	193-0233	1	Scale Range 0 to 150 PSI	19	526-0062	2	Washer, Flat - Brass (13/64" ID 1/2" OD x 1/16" Thk)
7	GAUGE, TEMPERATURE (Select as Required)			20	853-0008	1	Washer, Lock - ET (#10)
	193-0234	1	With 72" Capillary Tube	21	856-0003	1	Washer, Lock - EIT (#10)
	193-0235	1	With 84" Capillary Tube	22	815-0203	1	Screw, Machine - Round Head, Brass (#10-32 x 7/8")
	193-0236	1	With 96" Capillary Tube				
	193-0305	1	With 144" Capillary Tube	23	870-0053	1	Nut, Hex (#10-32)
8	REF		Reducer, Hex (Included with Gauge) (5/8-18 UNF x 1/2" NPT)	24	850-0030	1	Washer, Lock - Spring (#10)
9	302-0061	1	Ammeter	25	332-0051	1	Clamp, Loop
10	308-0088	1	Switch, Toggle (DPST)	26	815-0026	5	Screw, Machine - Truss Head (#10-32 x 3/8")
11	308-0297	1	Switch, Push	27	870-0053	1	Nut, Hex (#10-32)
12	308-0155	1	Switch, Toggle (SPST)	28	850-0030	1	Washer, Lock - Spring (#10)
				29	856-0003	1	Washer, Lock - EIT (#10)
				30	301-4009	1	Panel, Control - Engine
				31	301-3253	1	Bracket, Mounting - Engine Control

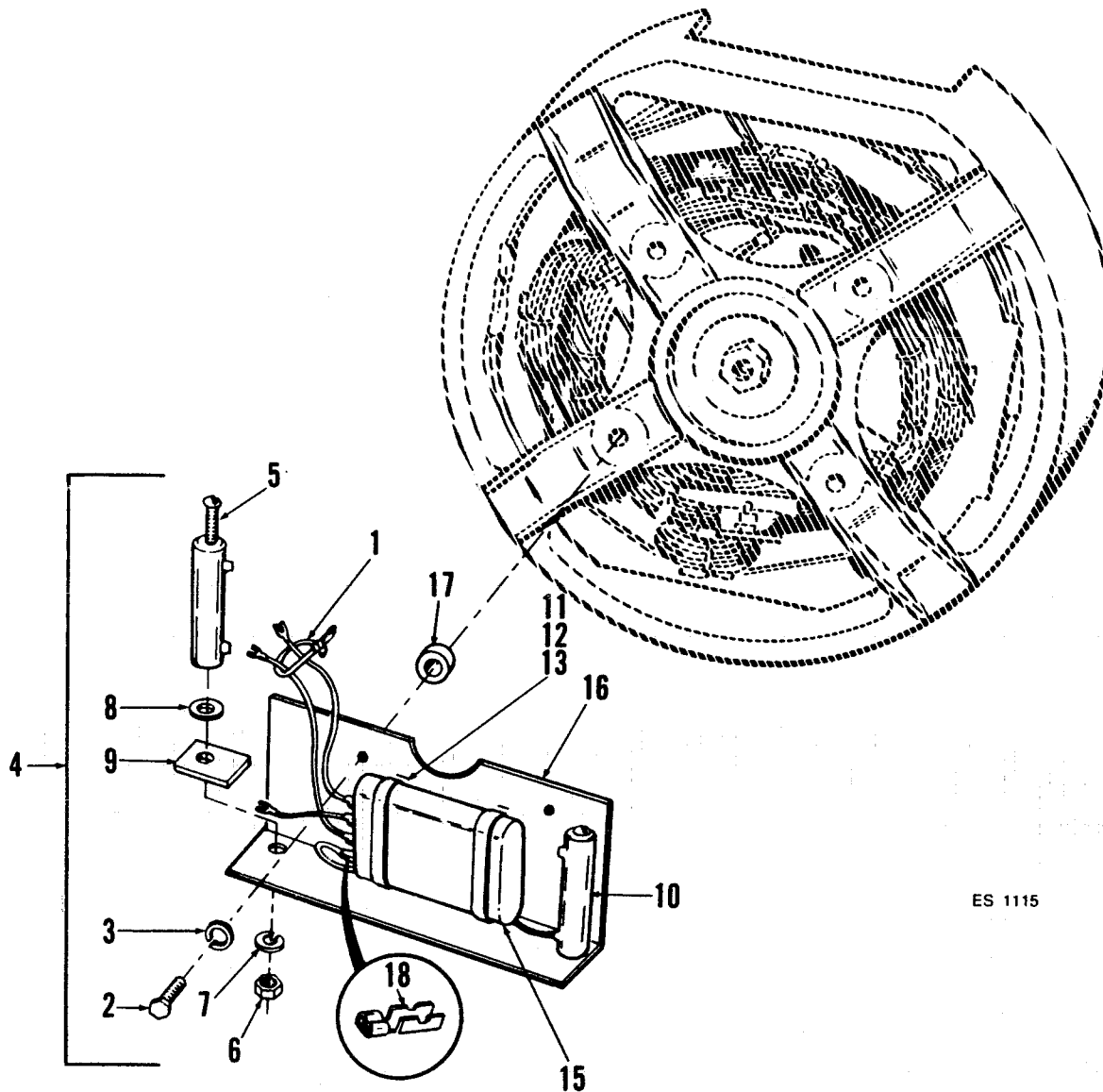
OPTIONAL FILTER - SEPARATOR (FUEL/WATER)



XFS 1303

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	501-0167	1	Line, Fuel - Flexible
2	501-0286	1	Line, Fuel - Flexible
3	502-0018	1	Connector, Line - Inverted Male
4	502-0041	1	Elbow, Street - Inverted Male
5	502-0639	2	Adapter - Pipe to Line
6	800-0003	4	Screw, Cap - Hex Head (1/4-20 x 1/2")
7	850-0040	4	Washer, Lock-Spring (1/4")
8	526-0015	4	Washer, Flat (9/32" ID x 9/16" OD x 1/16" Thk)
9	149-1612	1	Filter - Fuel/Water (Includes Element)
10	149-1690	1	Element - Fuel Filter
11	800-0091	4	Screw, Cap - Hex Head (1/2-13 x 1-1/4")
12	850-0060	4	Washer, Lock - Spring (1/2")
13	526-0028	4	Washer, Flat (9/16" ID x 15/16" OD x 1/16" Thk)
14	526-0219	8	Washer, Flat (12/32" ID x 1" OD x 1/8" Thk)
15	149-1614	1	Bracket, Mounting - Fuel Filter

OPTIONAL VOLTAGE REGULATOR FILTER



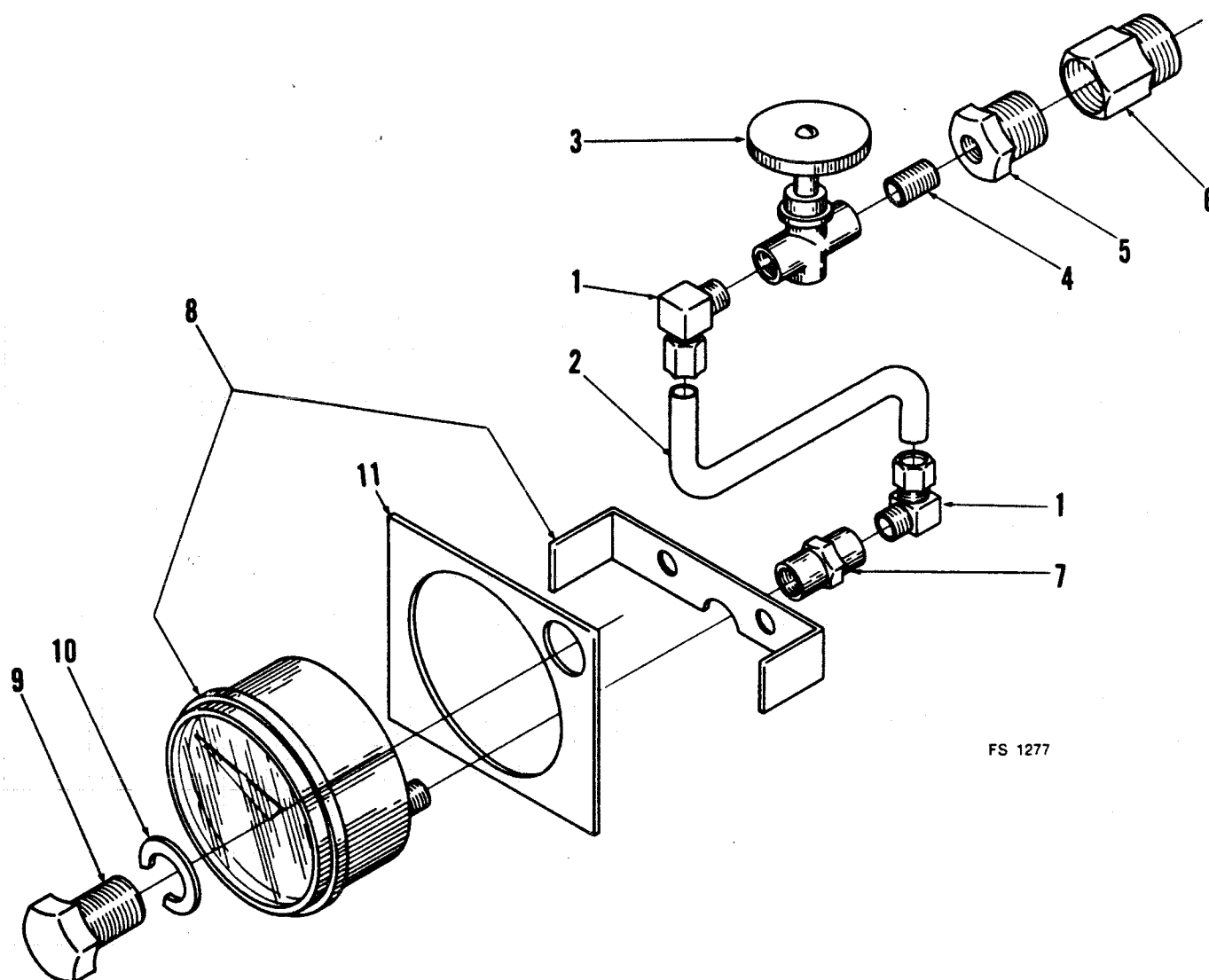
ES 1115

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	850-0003	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)
7	850-0040	2	Washer, Lock - Spring (1/4")

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
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 FUEL PRESSURE GAUGE



FS 1277

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
FUEL PRESSURE GAUGE ASSEMBLY			
		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	502-0046	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

XCS 1127



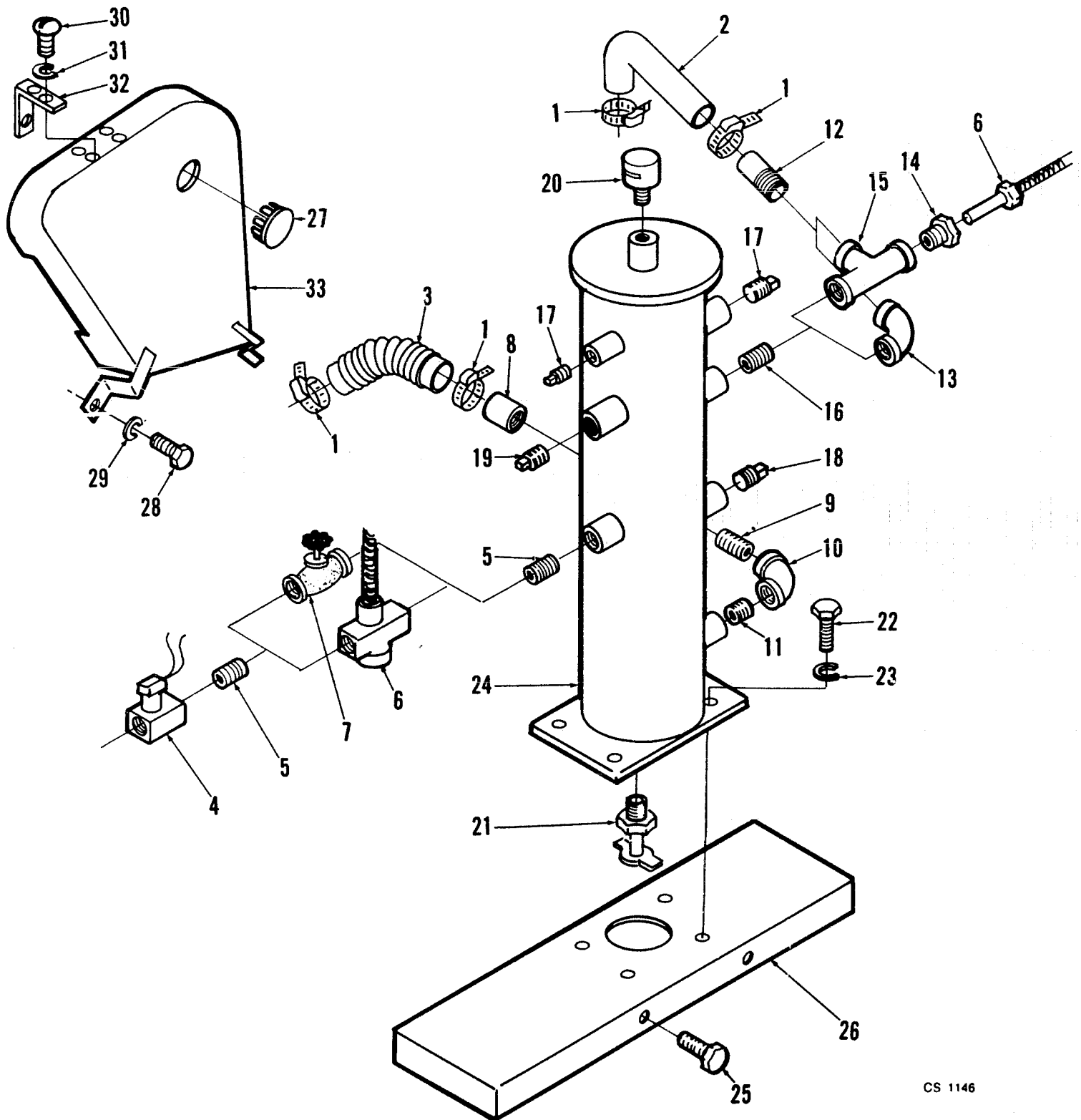
OPTIONAL - COOLING SYSTEM WITH HEAT EXCHANGER

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
COOLING SYSTEM WITH HEAT EXCHANGER			
		1	†For 12 Volt Sets, Without Coolant Temperature Regulator
		1	£For 12 Volt Sets, With Coolant Temperature Regulator
		1	†For 24 Volt Sets, Without Coolant Temperature Regulator
		1	£For 24 Volt Sets, With Coolant Temperature Regulator
1	503-0189	2	Clamp, Hose
2	503-0360	1	Hose, Rubber (1-1/4" ID x 1-5/8" OD x 10-1/2" Lg)
3	505-0330	2	Nipple, Pipe - Half (1" NPT x 2" LG)
4	505-0041	1	Elbow, Pipe - 90 DEG (1" NPT)
5	505-0004	1	Nipple, Pipe - Close (1" NPT x 1-1/2" Lg)
6	VALVE, SOLENOID (1" NPT)		
	307-1139	1	12 Volt
	307-1135	1	24 Volt
7	504-0090	1	†Valve, Globe (1" NPT)
8	309-0242	1	£Valve, Control - Temperature Regulating
9	505-0004	2	£Nipple, Pipe - Close (1" NPT x 1-1/2" Lg)
10	505-0041	2	£Elbow, Pipe - 90 DEG (1" NPT)
11	505-0086	1	£Nipple, Pipe - (1" NPT x 2-1/2" LG)
12	505-0041	1	Elbow, Pipe - 90 DEG (1" NPT)
13	NIPPLE, PIPE		
	505-0004	1	†Close (1" NPT x 1-1/2" Lg)
	505-0090	1	£(1" NPT x 6" Lg)
14	505-0024	1	Bushing, Reducer - Hex (1-1/2" NPT x 1" NPT)
15	800-0007	2	Screw, Cap - Hex Head (1/4-20 x 1")
16	850-0040	2	Washer, Lock - Spring (1/4")
17	862-0001	2	Nut, Hex (1/4-20)
18	130-1797	1	Nipple and Support Assembly
19	821-0014	8	Screw, Self-locking - Hex Washer Head (5/16-18 x 1/2")
20	130-0499	1	Plate, Mounting
21	517-0151	1	Plug, Button (2-1/4")
22	800-0052	3	Screw, Cap - Hex Head (3/8-16 x 1-1/2")
23	850-0050	3	Washer, Lock - Spring (3/8")
24	813-0098	2	Screw, Machine - Round Head (#10-32 x 3/8")
25	850-0030	2	Washer, Lock - Spring (#10)
26	130-0862	1	Bracket, Support - Belt Guard
27	130-0861	1	Guard, Belt
28		REF	Heat exchanger - Supplied with Engine (Modify as necessary to install Temperature Sensor Tube)

† - Parts Included in Non-Regulated System.

£ - Parts Included in Regulated System.

OPTIONAL - COOLING SYSTEM WITH STANDPIPE



CS 1146

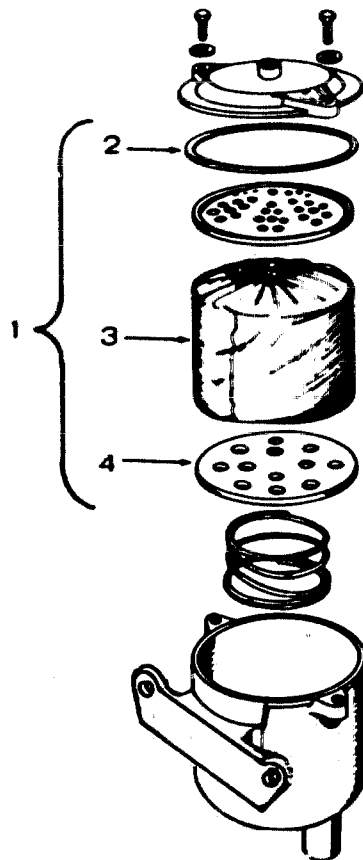
OPTIONAL - COOLING SYSTEM WITH STANDPIPE

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
COOLING SYSTEM WITH STANDPIPE			
		1	†12 Volt Sets, Without Coolant Temperature Regulator
		1	£12 Volt Sets, With Coolant Temperature Regulator
		1	†24 Volt Sets, Without Coolant Temperature Regulator
		1	£24 Volt Sets, With Coolant Temperature Regulator
1	503-0465	4	Clamp, Hose
2	503-0639	1	Hose, Rubber (2" ID x 2-1/2" ID x 20" Lg)
3	503-0747	1	Hose, Rubber (2" ID x 2-1/2" ID x 17-1/2" Lg)
4	VALVE, SOLENOID		
	307-0835	1	12 Volt
	307-1653	1	24 Volt
5	505-0102	2	Nipple, Pipe - Close (3/4" NPT x 1-3/8" Lg)
6	309-0241	1	£Valve, Control - Temperature Regulating
7	504-0046	1	†Valve, Globe (3/4" NPT)
8	505-0032	1	Coupling, Pipe (1-1/2" NPT)
9	505-0220	1	Nipple, Pipe - Close (1-1/2" NPT x 1-3/4" Lg)
10	505-0043	2	Elbow, Pipe - 90 DEG (1-1/2" NPT)
11	NIPPLE, PIPE (Select as Required)		
	505-0641	1	1-1/2" NPT x 6" Lg
	505-0630	1	1-1/2" NPT x 9-1/2" Lg
12	505-0385	1	Nipple, Pipe - Half (1-1/2" NPT 3" Lg)
13	505-0043	1	†Elbow, Pipe - 90 DEG (1-1/2" NPT)
14	505-0289	1	£Bushing, Reducer - Hex (1-1/2" NPT x 1" NPT)
15	505-0317	1	£Tee, Pipe (1-1/2" NPT)
16	505-0220	1	Nipple, Pipe - Close (1-1/2" NPT x 1-3/4" Lg)
17	505-0140	2	Plug, Pipe - Square Head (1" NPT)
18	505-0130	1	Plug, Pipe - Square Head (3/4" NPT)
19	505-0402	1	Plug, Pipe - Square Head (1-1/2" NPT)
20	504-0062	1	Valve, Relief - Vacuum (1/2" NPT)
21	504-0028	1	Cock, Drain (3/8" NPT)
22	800-0050	4	Screw, Cap - Hex Head (3/8-16 x 1")
23	850-0050	4	Washer, Lock - Spring (3/8")
24	130-0635	1	Tank, Standpipe
25	821-0014	6	Screw, Self-locking - Hex Washer Head (5/16-18 x 1/2")
26	130-0860	1	Plate, Mounting - Standpipe
27	517-0151	1	Plug, Button (2-1/4")
28	800-0052	3	Screw, Cap - Hex Head (3/8-16 x 1-1/2")
29	850-0050	3	Washer, Lock - Spring (3/8")
30	813-0098	2	Screw, Machine - Round Head (#10-32 x 3/8")
31	850-0030	2	Washer, Lock - Spring (3/8")
32	130-0862	1	Bracket, Support - Bolt Guard
33	130-0861	1	Guard, Belt

† - Parts used only on Non-Regulated System.

£ - Parts Included in Regulated System.

OPTIONAL ENGINE COOLANT FILTER ASSEMBLY



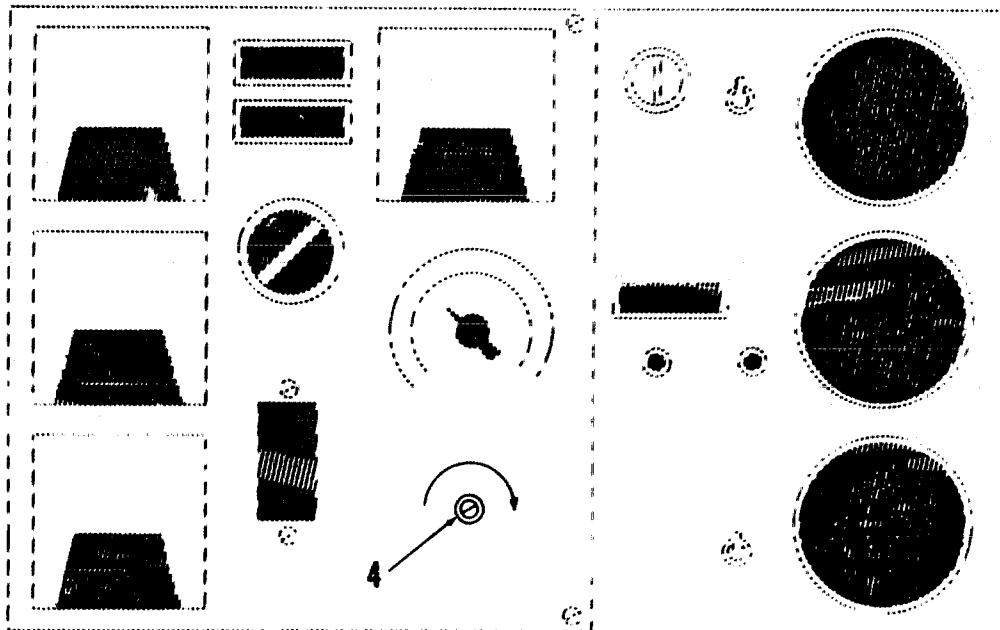
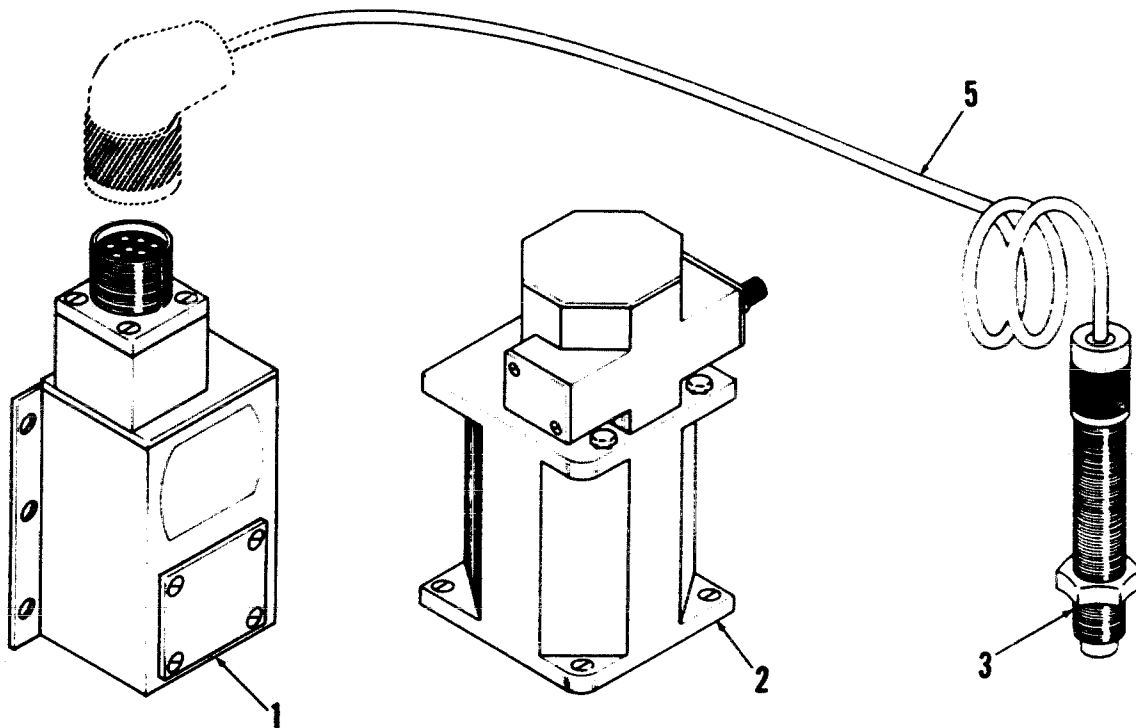
CS-1059

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.

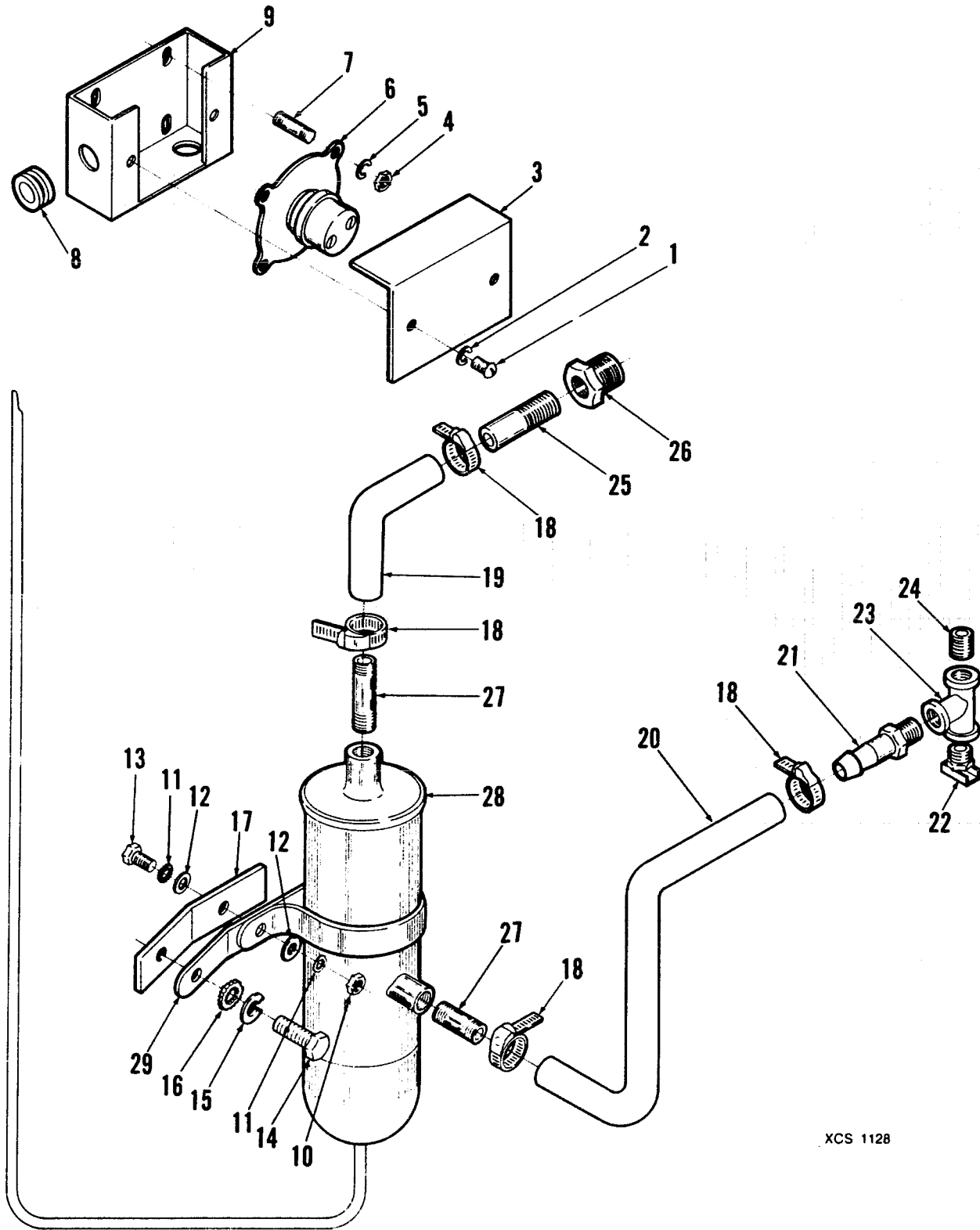
OPTIONAL GOVERNOR.



FS 1314

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	CONTROL UNIT - GOVERNOR		
	151-0430	1	12 Volt
	151-0399	1	24 Volt
2	ACTUATOR - GOVERNOR		
	151-0452	1	12 Volt
	151-0439	1	24 Volt
3	151-0411	1	Pickup, Magnetic
4	151-0402	1	Potentiometer - Speed Control (5K Ohms)
5	338-0989	1	Harness, Wiring - Governor

OPTIONAL ENGINE COOLANT HEATER (VERTICAL TANK)



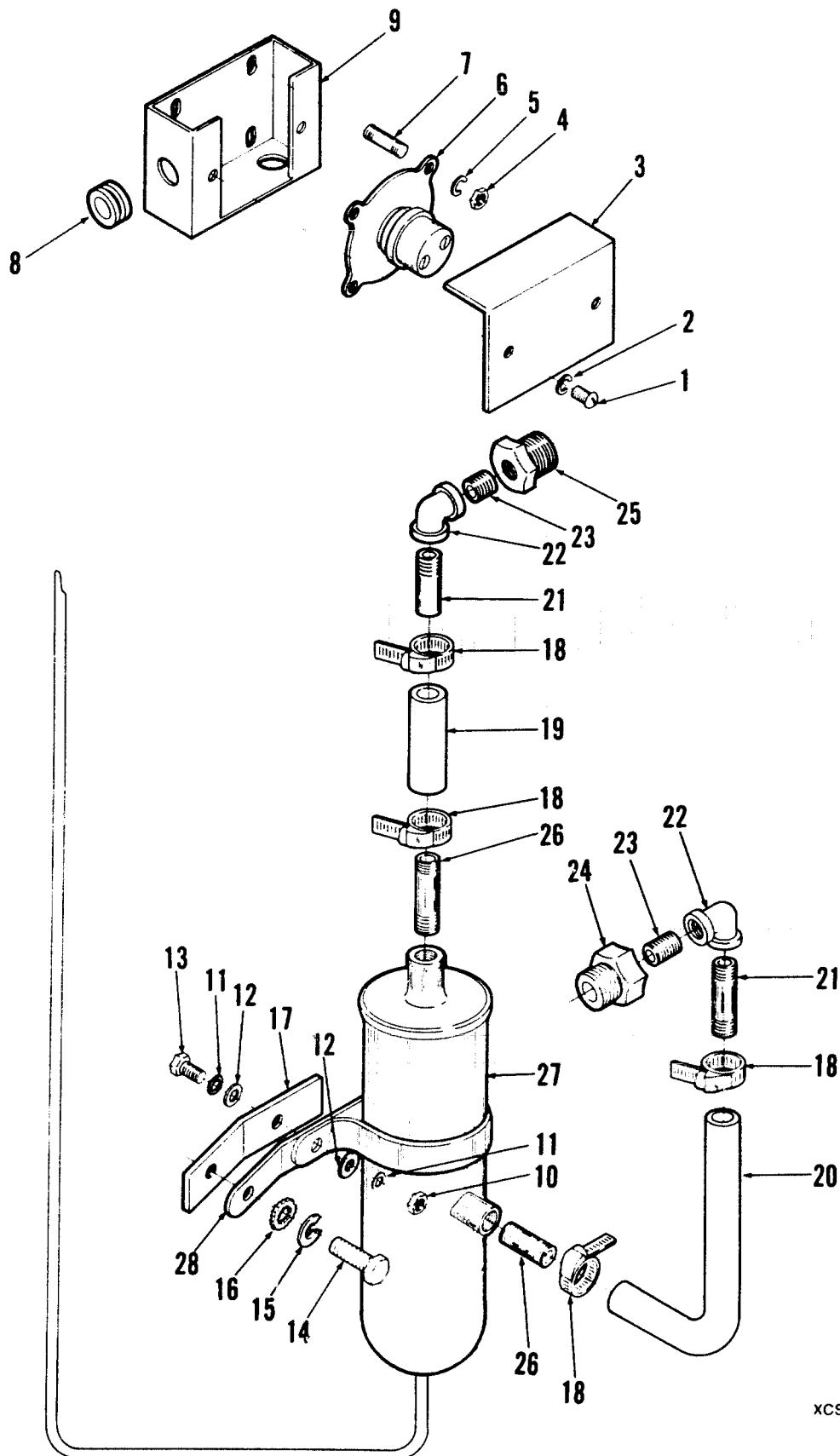
XCS 1128

OPTIONAL ENGINE COOLANT HEATER (VERTICAL TANK)

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
ENGINE COOLANT HEATERS			
		1	120 Volt, 1500 Watts
		1	120 Volt, 2000 Watts
		1	208/240 Volt, 1875-2000 Watts
1	812-0076	2	Screw, Machine - Round Head (#8-32 x 5/16")
2	850-0025	2	Washer, Lock - Spring (#8)
3	COVER, THERMOSTAT BOX		
	333-0013	1	Used on 120 Volt Applications
	333-0056	1	Used on 240 Volt Applications
4	870-0053	2	Nut, Hex (#10-32)
5	850-0030	2	Washer, Lock - Spring (#10)
6	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)
7	STUD		
	520-0446	2	#10-32 x 3/4"
	520-0672	2	#10-32 x 1"
8	508-0008	2	Grommet, Rubber
9	BOX, THERMOSTAT		
	333-0012	1	Used on 120 Volt Application
	333-0057	1	Used on 208/240 Volt Applications
10	862-0015	1	Nut, Hex (5/16-18)
11	856-0008	2	Washer, Lock - EIT (5/16")
12	526-0115	2	Washer, Flat (11/32" ID x 11/16" OD x 1/16" Thk)
13	800-0031	1	Screw, Cap - Hex Head (5/16-18 x 1- 1/2")
14	800-0091	1	Screw, Cap - Hex Head (1/2-13 x 1-1/4")
15	850-0060	1	Washer, Lock - Spring (1/2")
16	856-0013	1	Washer, Lock - EIT (1/2")
17	130-0755	1	Bracket, Mounting - Heater
18	503-0183	4	Clamp, Hose
19	503-0113	1	Hose, Rubber (5/8" ID x 61/64" OD x 16" Lg)
20	503-0800	1	Hose, Rubber (5/8" ID x 61/64" OD x 19" Lg)
21	502-0613	1	Adapter, Pipe to Hose (1/4" NPT x 5/8" ID Hose)
22	504-0003	1	Cock, Drain (1/4" NPT)
23	505-0184	1	Tee, Pipe (1/4" NPT)
24	505-0099	1	Nipple, Pipe - Close (1/4" NPT x 7/8" Lg)
25	505-0135	1	Nipple, Pipe - Half (3/8" NPT x 1-1/2" Lg)
26	504-0019	1	Bushing, Reducer - Hex (1/2" NPT x 3/8" NPT)
27	505-0135	2	†Nipple, Pipe - Half 3/8" NPT x 1-1/2" Lg)
28	HEATER, ENGINE COOLANT (Includes Mounting Strap)		
	333-0052	1	1500 Watts, 120 Volt
	333-0053	1	2000 Watts, 120 Volt
	333-0073	1	2000 Watts, 208/240 Volt
29		1	Strap, Mounting - (Part of Heater)

† - Parts used with 2000 Watt Heaters only.

OPTIONAL ENGINE COOLANT HEATER (VERTICAL TANK)



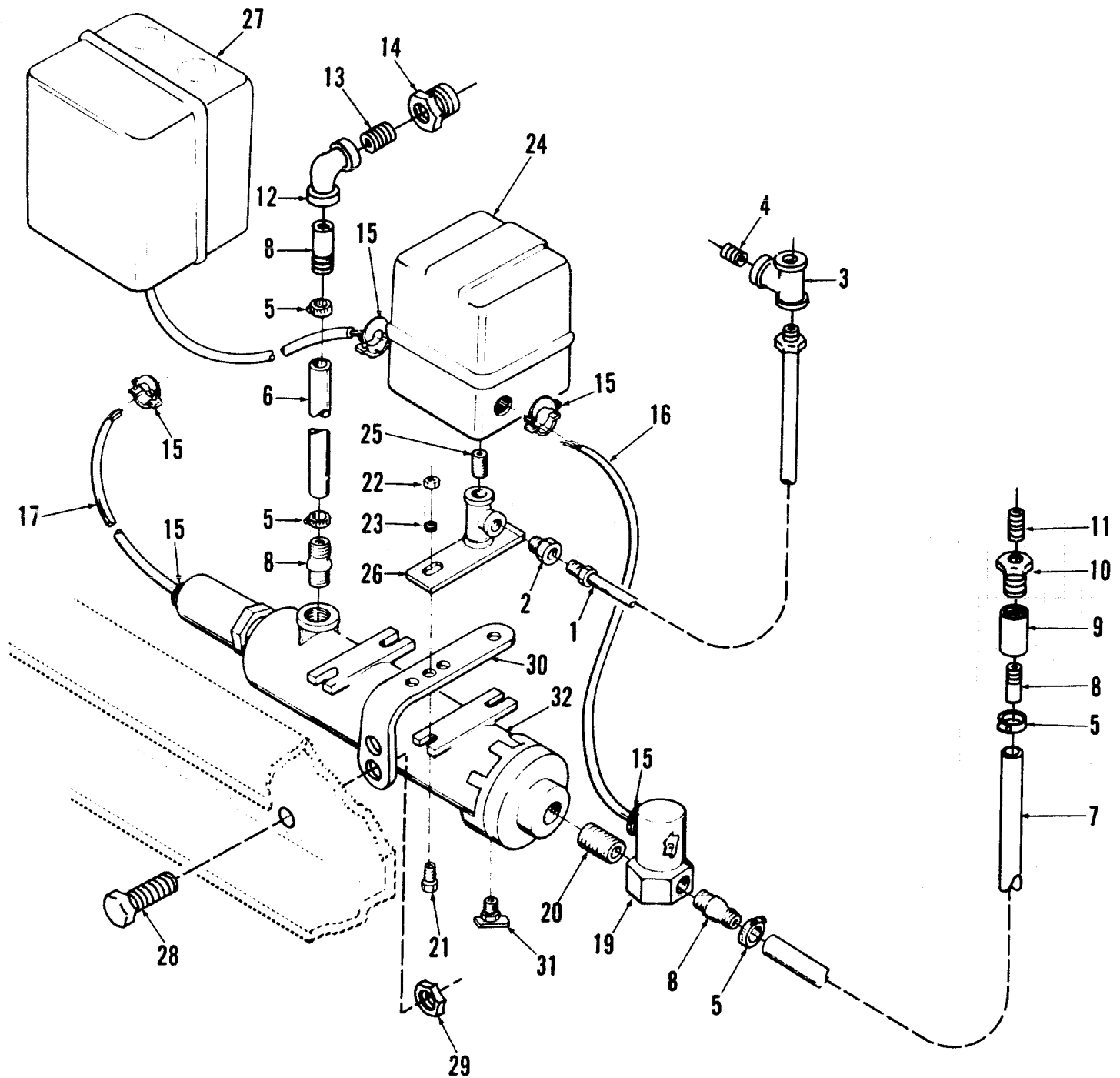
XCS 1129

OPTIONAL ENGINE COOLANT HEATER (VERTICAL TANK)

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
ENGINE COOLANT HEATERS			
		1	120 Volt, 1500 Watts
		1	120 Volt, 2000 Watts
		1	208/240 Volt, 1875-2000 Watts
1	812-0076	2	Screw, Machine - Round Head (#8-32 x 5/16")
2	850-0025	2	Washer, Lock - Spring (#8)
3	COVER, THERMOSTAT BOX		
	333-0013	1	Used on 120 Volt Applications
	333-0056	1	Used on 240 Volt Applications
4	870-0053	2	Nut, Hex (#10-32)
5	850-0030	2	Washer, Lock - Spring (#10)
6	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)
7	STUD		
	520-0446	2	#10-32 x 3/4"
	520-0672	2	#10-32 x 1"
8	508-0008	2	Grommet, Rubber
9	BOX, THERMOSTAT		
	333-0012	1	Used on 120 Volt Applications
	333-0057	1	Used on 208/240 Volt Applications
10	862-0015	1	Nut, Hex (5/16-18)
11	856-0008	2	Washer, Lock - EIT (5/16")
12	526-0115	2	Washer, Flat (11/32" ID x 11/16" OD x 1/16" Thk)
13	800-0031	1	Screw, Cap - Hex Head (5/16-18 x 1-1/2")
14	800-0091	1	Screw, Cap - Hex Head (1/2-13 x 1-1/4")
15	850-0060	1	Washer, Lock - Spring (1/2")
16	856-0013	1	Washer, Lock - EIT (1/2")
17	130-0755	1	Bracket, Mounting - Heater
18	503-0183	4	Clamp, Hose
19	503-0073	1	Hose, Rubber (5/8" ID x 61/64" OD x 12" Lg)
20	503-0051	1	Hose, Rubber (5/8" ID x 61/64" OD x 42" Lg)
21	505-0135	2	Nipple, Pipe - Half (3/8" NPT x 1-1/2" Lg)
22	505-0039	2	Elbow, Pipe - 90 Deg (3/8" NPT)
23	505-0101	2	Nipple, Pipe - Close (3/8" NPT x 1" Lg)
24	505-0019	1	Bushing, Reducer - Hex (1/2" NPT x 3/8" NPT)
25	505-0128	1	Bushing, Reducer - Hex (1-1/4" NPT x 3/8" NPT)
26	505-0135	2	+Nipple, Pipe - Half (3/8" NPT x 1-1/2" Lg)
27	HEATER, ENGINE COOLANT (Includes Mounting Strap)		
	333-0052	1	1500 Watts, 120 Volt
	333-0053	1	2000 Watts, 120 Volt
	333-0073	1	2000 Watts, 208/240 Volt
28		1	Strap, Mounting (Part of Heater)

+ - Parts used with 2000 Watt Heaters only.

OPTIONAL ENGINE COOLANT HEATER ASSEMBLY (HORIZONTAL TANK)



CS 1078-1

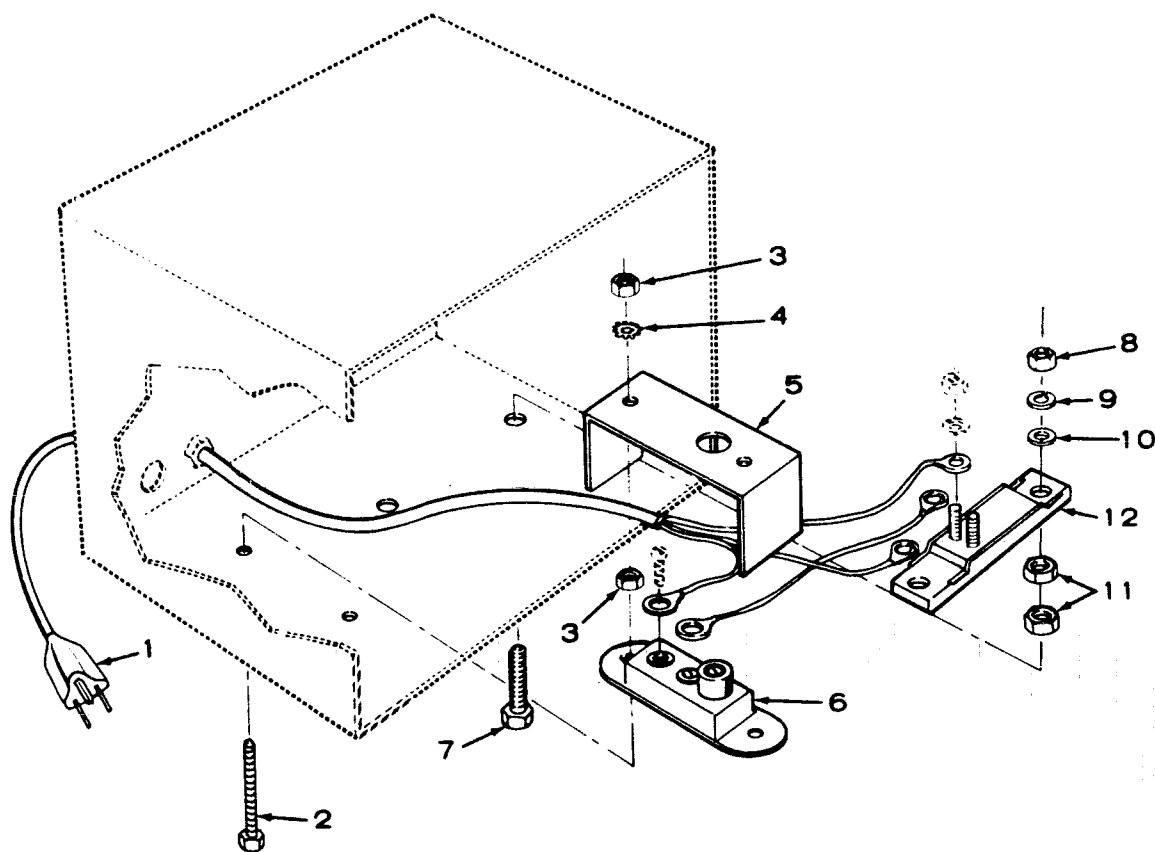
OPTIONAL ENGINE COOLANT HEATER ASSEMBLY (HORIZONTAL TANK)

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
	ENGINE COOLANT HEATER ASSEMBLY		
		1	115 Volt, 1 Phase
		1	240 Volt, 1 Phase
		1	480 Volt, 1 Phase
		1	480 Volt, 3 Phase
		1	208 Volt, 3 Phase
		1	208 Volt, 1 Phase
		1	380 Volt, 3 Phase
		1	380 Volt, 1 Phase
		1	440 Volt, 3 Phase
1	501-0227	1	Line, Fuel - Flexible
2	505-0007	1	Bushing, Reducer - Hex (1/4" NPT x 1/8" NPT)
3	505-0059	1	Tee, Pipe (1/8" NPT)
4	505-0098	1	Nipple, Pipe - Close (1/8" NPT x 3/4")
5	503-0429	4	Clamp, Hose
6	503-0838	1	Hose, Rubber (1" ID x 1-3/8" OD x 20" Lg)
7	503-0848	1	Hose, Rubber (1" ID x 1-3/8" OD x 36" Lg)
8	505-0324	4	Nipple, Pipe - Half (3/4" NPT x 2" Lg)
9	505-0029	1	Coupling, Pipe (3/4" NPT)
10	505-0021	1	Bushing, Reducer - Hex (3/4" NPT x 1/2" NPT)
11	505-0100	1	Nipple, Pipe - Close (1/2" NPT x 1-1/8")
12	505-0132	1	Elbow, Pipe - 90 Deg (3/4" NPT)
13	505-0102	1	Nipple, Pipe - Close (3/4" NPT x 1-3/8" Lg)
14	505-0297	1	Bushing, Reducer - Hex (1-1/4" NPT x 3/4" NPT)
15	331-0027	6	Clamp, Cable
16	#		Cord, Electrical (2-#14, Type 60, 600 Volt)
17	CABLE, ELECTRICAL (TYPE SO, 600 Volt)		
	#		3 - #12 (Used on Single Phase Hookup)
	#		4 - #14 (Used on Three Phase Hookup)

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
18	TERMINALS (Select as required)		
	332-0014	2	#10 (Used on White Leads)
	332-0149	4	#8 (Used on White Leads)
	323-0957	4	Wire, Nut Type (Used on Black Leads)
19	309-0304	1	Switch, Thermostatic
20	505-0004	1	Nipple, Pipe - Close (1" NPT x 1-1/4" Lg)
21	800-0007	4	Screw, Cap - Hex Head (1/4-20 x 1")
22	862-0001	4	Nut, Hex (1/4-20)
23	850-0040	4	Washer, Lock - Spring (1/4")
24	309-0307	1	Switch, Pressure
25	505-0099	1	Nipple, Pipe - Close (1/4" NPT x 7/8")
26	333-0142	1	Support with Tee - Pressure Switch Mounting
27	CONTACTOR, ELECTRICAL (Select as Applicable)		
	307-1460	1	230 VAC, 3 Pole
	307-1164	1	460 VAC, 3 Pole
28	821-0018	4	Screw, Self-locking - Hex Washer Head (5/16-18 x 3/4")
29	870-0257	4	Nut, Self-locking, Hex Washer Head (5/16-18)
30	130-1192	2	Bracket, Mounting - Heater
31	504-0003	1	Cock, Drain (1/4" NPT)
32	HEATER, ELECTRICAL - ENGINE COOLANT (Select as Applicable)		
	333-0158	1	2000 Watts, 115 Volt, 1 Phase
	333-0167	1	2000 Watts, 208 Volt, 1 Phase
	333-0148	1	2000 Watts, 208 Volt, 3 Phase
	333-0141	1	2000 Watts, 240 Volt, 1 Phase
	333-0176	1	2000 Watts, 380 Volt, 1 Phase
	333-0170	1	2000 Watts, 380 Volt, 3 Phase
	333-0147	1	2000 Watts, 480 Volt, 1 Phase
	333-0146	1	2000 Watts, 480 Volt, 3 Phase
	333-0172	1	2500 Watts, 440 Volt, 3 Phase

- Electrical Cable and Cord shown for Reference Purpose only.

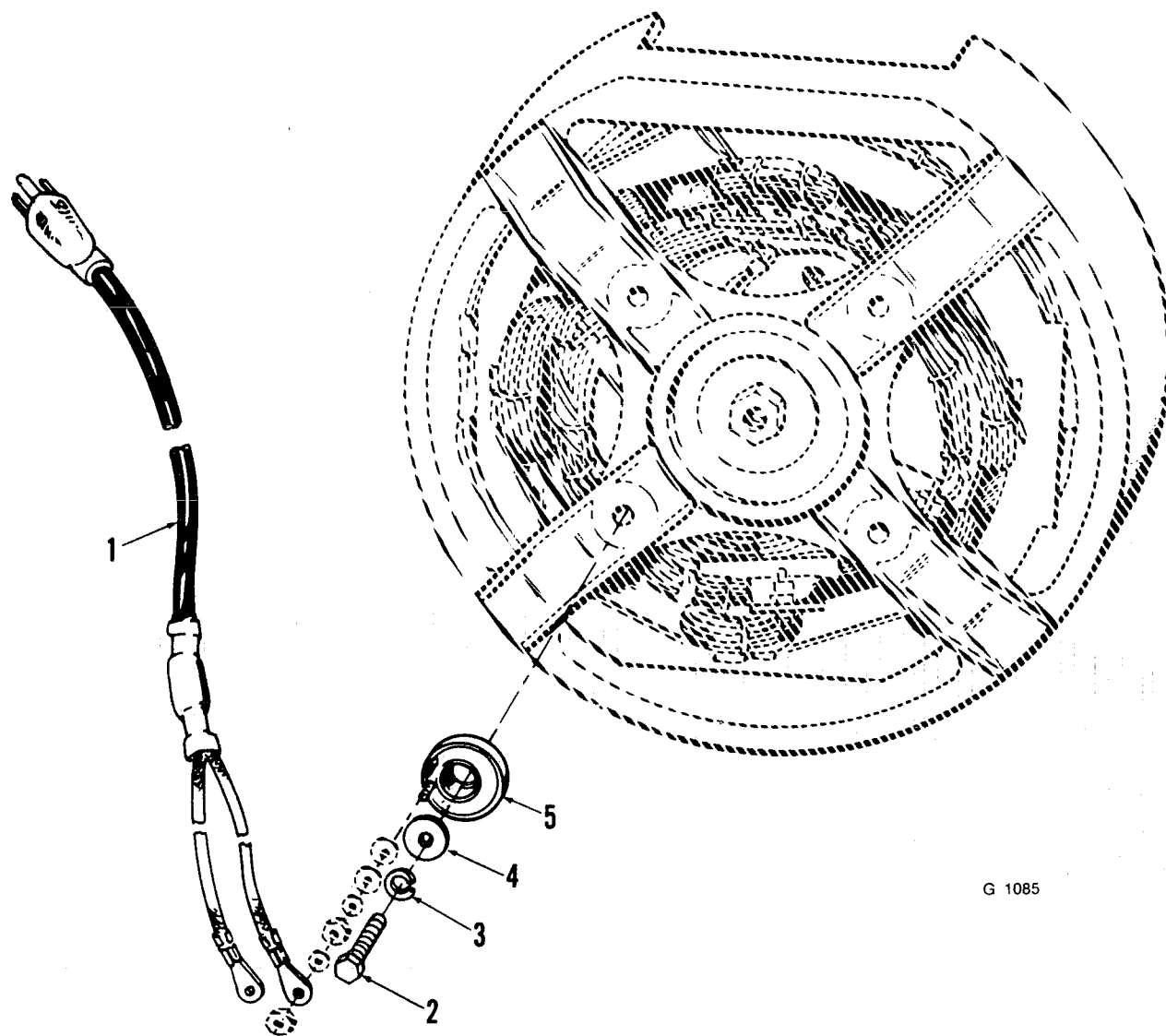
OPTIONAL CONTROL HEATER INSTALLATION



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

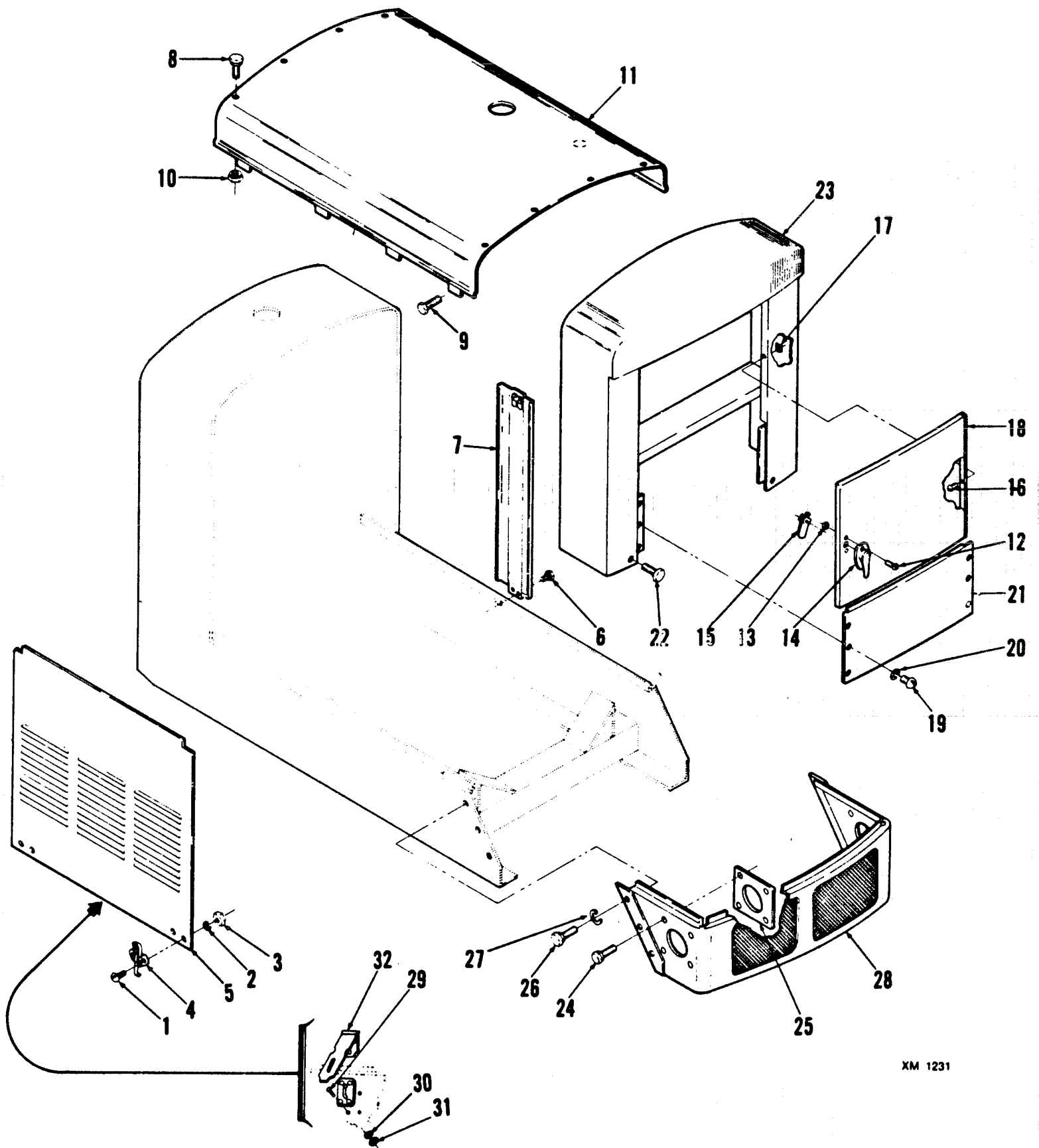
OPTIONAL GENERATOR HEATER



G 1085

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
	HEATER, GENERATOR		
	179-0369	1	120 Volt
	179-2185	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 SET HOUSING

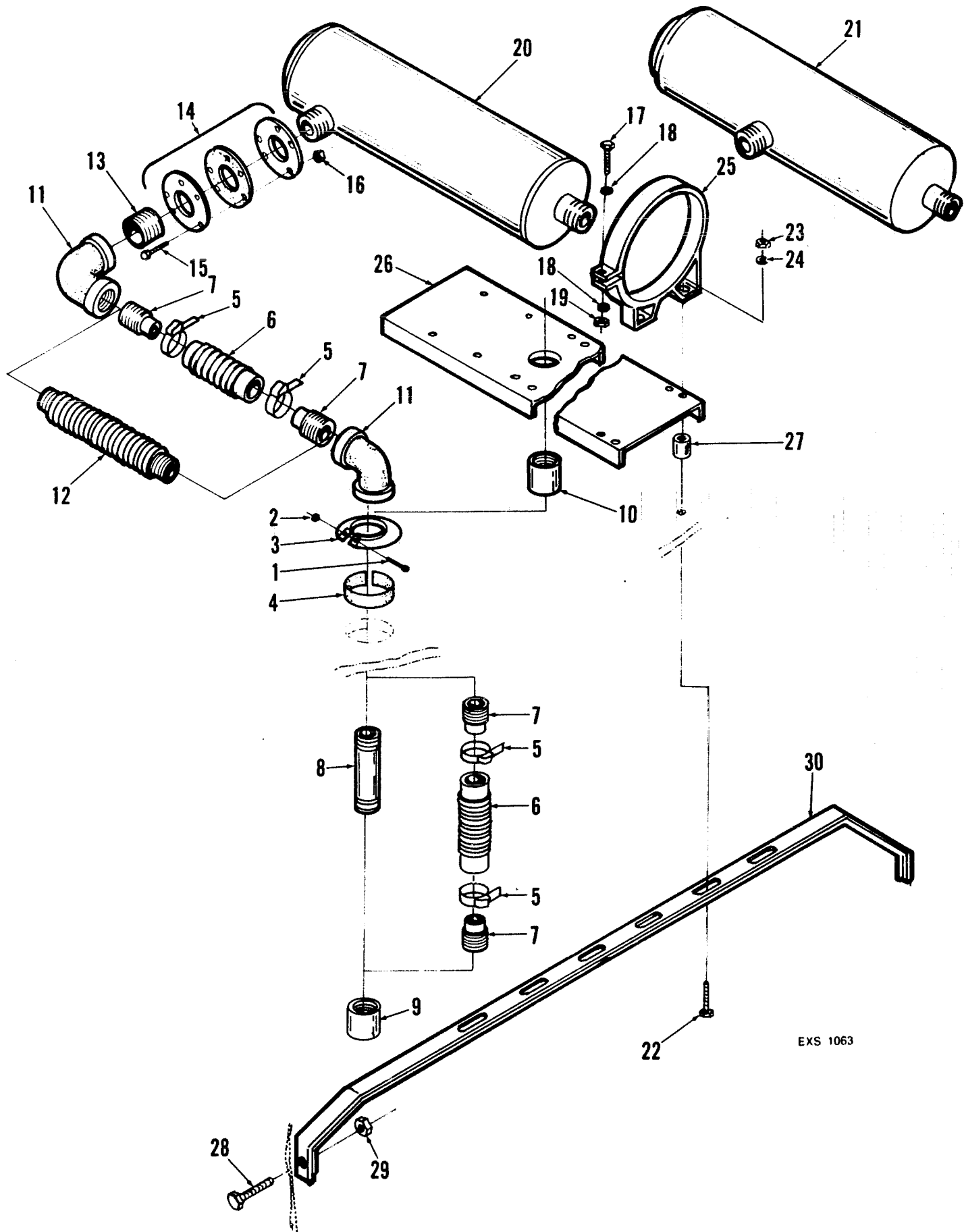


XM 1231

OPTIONAL SET HOUSING

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	813-0098	16	Screw, Machine - Round Head (#10-32 x 3/8")
2	850-0030	16	Washer, Lock - Spring (#10)
3	870-0053	16	Nut, Hex (#10-32)
4	406-0105	8	Clamp, Door
5	405-1836	4	Door, Access, Louvered Side
6	821-0014	8	Screw, Self-locking - Hex Washer Head (5/16 x 18 x 1/2")
7	405-1776	2	Support, Housing - Center
8	821-0014	12	Screw, Self-locking - Hex Washer Head (5/16-18 x 1/2")
9	821-0016	4	Screw, Self-locking - Hex Washer Head (5/16-18 x 3/4")
10	870-0113	11	Nut, Clinch (5/16-18)
11	405-1839	1	Panel, Housing - Top
12	812-0149	2	Screw, Machine - Round Head (1/4-20 x 9/16")
13	870-0232	2	Nut, Self-locking, Hex - with ET Lockwasher (1/4-20)
14	406-0157	1	Handle, Latch (Includes Keys)
15	406-0089	1	Catch, Latch
16	809-0059	3	Screw, Tapping - Round Head (1/4 x 1/2")
17	870-0106	3	Nut, Sheet Spring (1/4")
18	405-1777	1	Door, Access - Rear
19	813-0098	6	Screw, Machine - Round Head (#10-32 x 3/8")
20	850-0030	6	Washer, Lock - Spring (#10)
21	405-1780	1	Panel, Access - Rear
22	821-0014	8	Screw, Self-locking - Hex Washer Head (5/16-18 x 1/2")
23	405-1775	1	Panel, Housing - Rear
24	821-0010	8	Screw, Self-locking - Hex Washer Head (1/4-20 x 1/2")
25	403-0895	2	Plate, Cover
26	800-0048	6	Screw, Cap - Hex Head (3/8-16 x 3/4")
27	850-0050	6	Washer, Lock - Spring (3/8")
28	403-0894	1	Chassis - Rear
29	814-0079	28	Screw, Machine - Flat Head (#8-32 x 1/2")
30	850-0025	28	Washer, Lock - Spring (#8)
31	860-0008	28	Nut, Hex (#8-32)
32	406-0249	4	Hasp Set - Optional

**OPTIONAL
EXHAUST SYSTEM - INDUSTRIAL TYPE
(HOUSED/OUTDOOR SHELTER SETS)**



EXS 1063

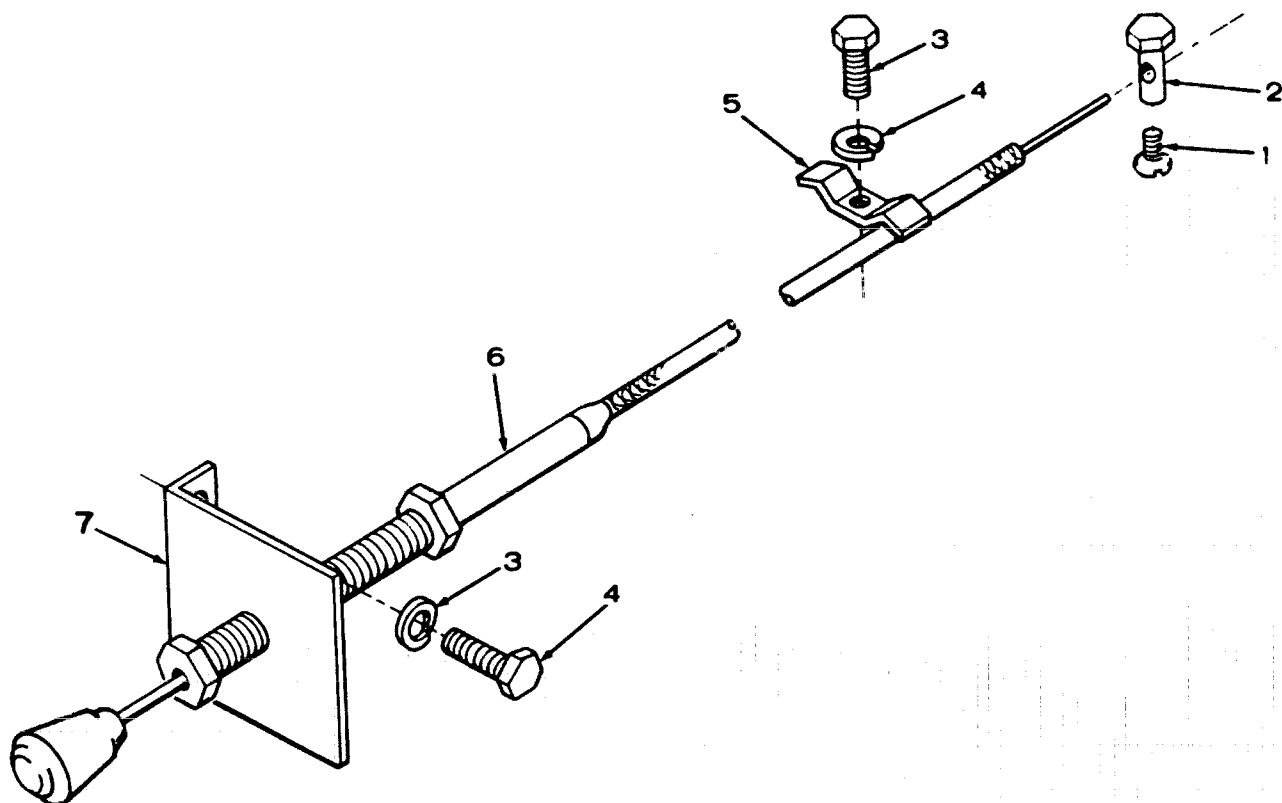
OPTIONAL **EXHAUST SYSTEM - INDUSTRIAL TYPE** **(HOUSED/OUTDOOR SHELTER SETS)**

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
EXHAUST SYSTEM (Parts Common except as Marked)			
			HOUSED SETS
		1	*Spec A Thru E
		1	+Begin Spec F
			OUTDOOR SHELTER SETS
		1	£ALL SPECS
1	813-0105	2	Screw, Machine - Round Head (#10-32 x 1")
2	870-0188	2	Nut, Self-locking, Hex (#10-32)
3	155-1424	1	Shield, Rain
4	895-0161	1	Asbestos Strip (2" x 1/16" Thk x 15" Lg)
5	503-0591	2	+£Clamp, Hose
6	155-1458	1	+£Tube, Exhaust - Flexible, SST (4" x 10" Lg)
7	155-1460	2	+£Connector, Tube - Exhaust (4" NPT)
8	NIPPLE, PIPE		
	505-0824	1	*(4" NPT x 8-1/2" Lg)
	505-0824	1	+(4" NPT x 10-1/2" Lg)
9	505-0411	1	Coupling, Pipe (4" NPT)
10	505-0411	1	£Coupling, Pipe (4" NPT)
11	505-0171	2	*+Elbow, Pipe - 90 Deg (4" NPT)
12	155-1103	1	*Tube, Exhaust - Flexible (4" x 18-1/2" Lg)
13	505-0164	1	*Nipple, Pipe - Close (4" NPT x 2-7/8" Lg)
14	154-1391	1	*Package - Companion Flange (Includes Gasket, Flanges and Hardware)
15	800-0138	5	*Screw, Cap - Hex Head (5/8-11 x 3")
16	862-0007	5	*Nut, Hex (5/8-11)
17	SCREW CAP - HEX (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"

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
18	526-0113	6	Washer, Flat (11/32" ID x 1" OD x 3/32" Thk)
19	870-0257	3	Nut, Self-locking, Hex Washer Head (5/16-18)
20	155-1134	1	* Muffler, Exhaust (14" OD x 50" LG)
21	155-1461	1	+£Muffler, Exhaust (14" OD x 50" Lg)
22	SCREW, CAP - HEX HEAD		
	800-0028	4	*5/16-18 x 1"
	800-0508	6	+£5/16-18 x 2-3/4"
23	NUT, HEX		
	862-0015	4	*5/16-18
	870-0048	6	+£5/16-18, Self-locking
24	850-0045	4	*Washer, Lock - Spring (5/16")
25	BAND, MOUNTING		
	140-0757	2	*+(14" ID)
	140-0757	3	£(14" ID)
26	HEATSHIELD		
	155-1060	1	*(10" W x 46" Lg)
	155-1278	1	+£(12" W x 46" Lg, with Tube Hole)
27	SPACER		
	526-0172	4	*(1/2" OD x 2-1/4" OD x 1/4" Thk)
	155-1430	6	+£(1/2" ID x 1-1/2" OD x 2" Thk)
28	800-0028	4	Screw, Cap - Hex Head 5/16-18 x 1"
29	870-0048	4	Nut, Self-locking, Hex (5/16-18)
30	405-0789	2	Bracket, Support - Muffler Mounting

* - Parts used only on 75-90 kW Sets - Spec A thru E.
+ - Parts used only on 75-90 kW Sets - Begin Spec F.
£ - Parts used only on Outdoor Shelter 75-90 kW Sets.

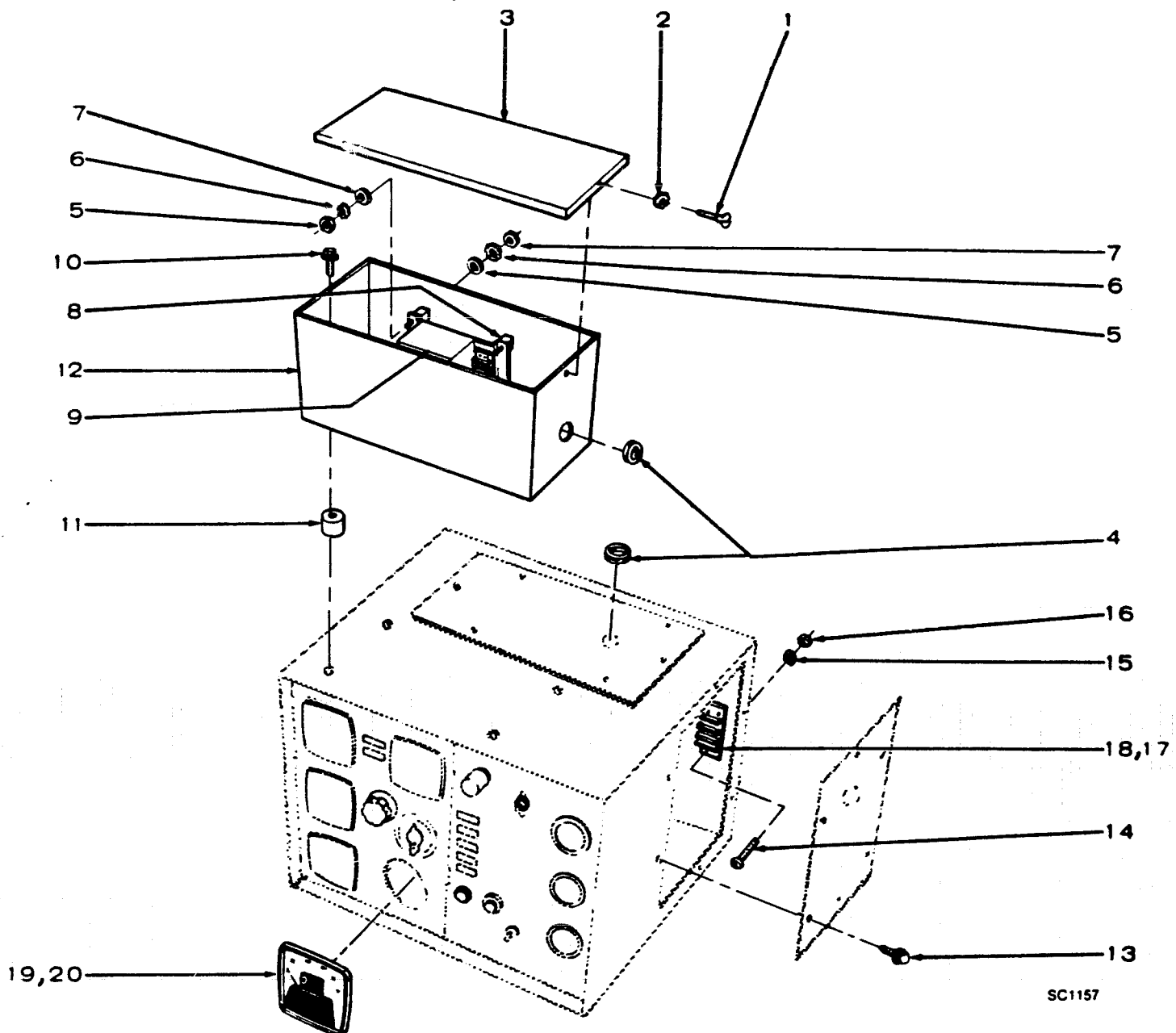
OPTIONAL VERNIER THROTTLE



M-1178

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 WATTMETER

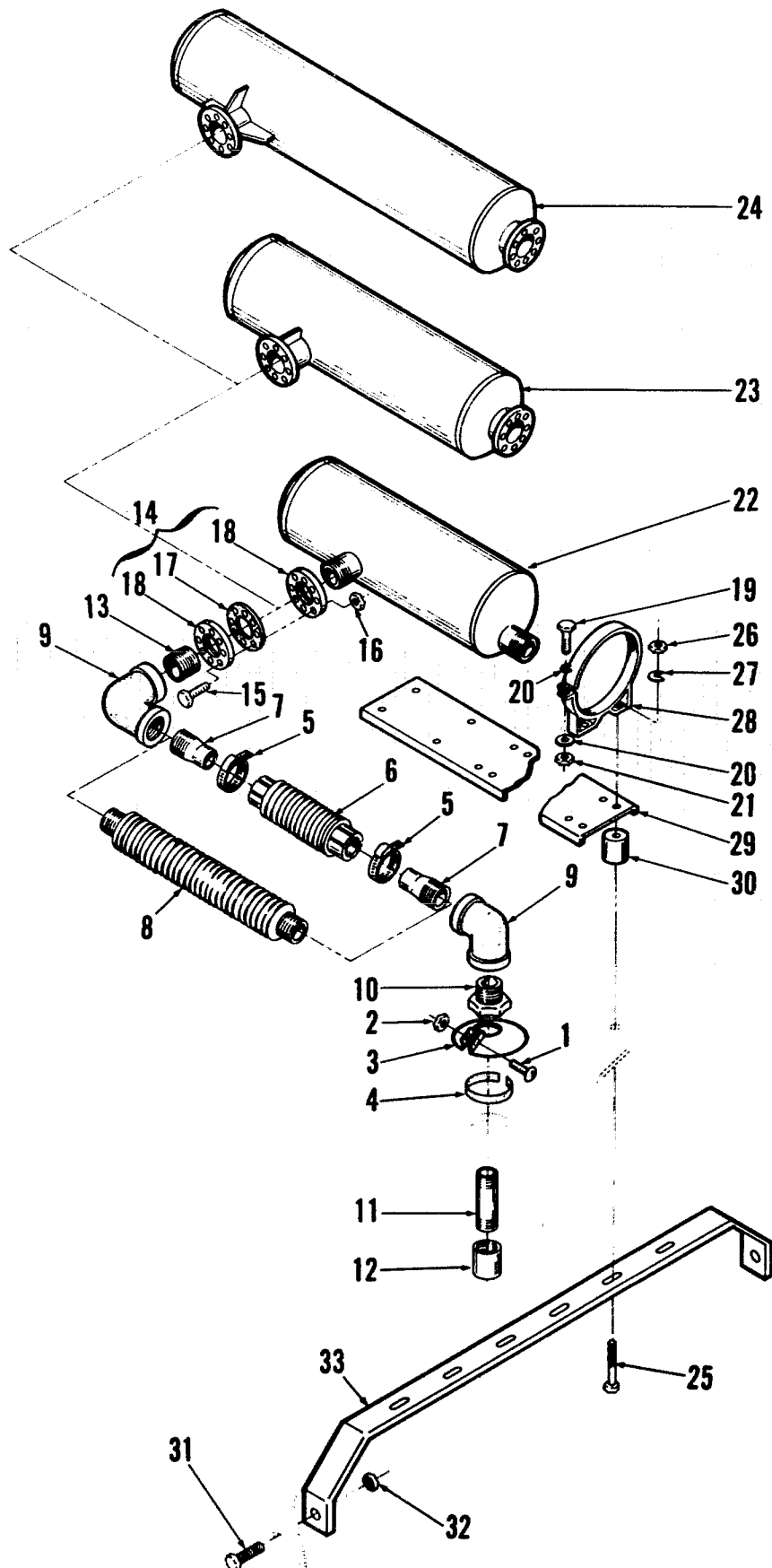


SC1157

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

**OPTIONAL
EXHAUST SYSTEM - RESIDENTIAL/CRITICAL TYPE
(HOUSED/OUTDOOR SHELTER SETS)**



XEXS 1060

**OPTIONAL
EXHAUST SYSTEM - RESIDENTIAL/CRITICAL TYPE
(HOUSED/OUTDOOR SHELTER SETS)**

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
EXHAUST SYSTEM (Parts Common except as Marked)			
HOUSED SETS			
		1	*75-90 kW Sets - Spec A thru E
		1	+75-90 kW Sets - Begin Spec F
		1	£100 kW Sets - Residential Type
		1	‡100 kW Sets - 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	155-1424	1	Shield, Rain
4	895-0161	1	Asbestos Strip (2" x 1/16" Thk x 15" Lg)
5	CLAMP, HOSE		
	503-0591	2	+(4")
	503-0701	2	£‡(5")
6	TUBE, EXHAUST - FLEXIBLE		
	155-1285	1	+(4" NPT x 28" Lg)
	155-1493	1	£‡(5" OD x 22-1/2" Lg)
7	CONNECTOR, TUBE - EXHAUST		
	155-1460	2	+(4" NPT)
	155-1275	2	£‡(5" NPT)
8	155-0594	1	*Tube, Exhaust - Flexible (4" NPT x 28" Lg)
9	ELBOW, PIPE - 90 DEG		
	505-0171	2	+(4" NPT)
	505-0665	2	£‡(5" NPT)
10	505-0140	1	£‡Bushing, Reducer - Hex (5" NPT x 4" NPT)
11	NIPPLE, PIPE		
	505-0732	1	*(4" NPT x 8-1/2" Lg)
	505-0824	1	+£‡(4" NPT x 10-1/2" Lg)
12	505-0411	1	Coupling Pipe (4" NPT)
13	NIPPLE, PIPE		
	505-0164	1	*+Close (4" NPT x 2-7/8")
	505-0664	1	£‡(5" NPT x 5" Lg)
14	PACKAGE - COMPANION FLANGE (Includes Flanges, Gasket, and Hardware)		
	154-1391	1	*+(4" NPT)
	155-0679	1	£‡(5" NPT)
15	SCREW, CAP - HEX HEAD		
	800-0138	5	*+(5/8-11 x 3")
	800-0160	8	£‡(3/4-10 x 3-1/4")
16	NUT, HEX		
	862-0007	5	*+(5/8-11)
	862-0008	8	£‡(3/4-10)
17	155-0675	1	£‡Gasket
18	155-0658	2	£‡Flange (5" NPT)

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
19	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"
20	526-0113	6	Washer, Flat (11/32" ID x 1" OD x 3/32" Thk)
21	870-0257	3	Nut, Self-locking, Hex Washer Head (5/16-18)
22	155-1391	1	*+Muffler, Exhaust - Critical (14" OD x 62" Lg)
23	155-1600	1	£Muffler, Exhaust - Residential (16" OD x 60" Lg)
24	155-1543	1	‡Muffler, Exhaust - Critical (16" OD x 74" Lg)
25	SCREW, CAP - HEX HEAD		
	821-0023	4	*Self-locking (5/16-18 x 1-1/2")
	800-0508	6	£‡(5/16-18 x 2-3/4")
	800-0023	4	+(5/16-18 x 3")
26	NUT, HEX		
	870-0048	4	*+Self-locking (5/16-18)
	870-0048	6	£‡Self-locking (5/16-18)
27	850-0045	4	*Washer, Lock-Spring (5/16")
28	BAND, MOUNTING		
	140-0757	2	*+(14" ID)
	140-0799	3	£‡(16" ID)
29	HEAT, SHIELD		
	155-1392	1	*+(12" W x 60" Lg)
	155-1647	1	£(16" W x 54" Lg)
	155-1545	1	‡(16" W x 72" Lg)
30	SPACER		
	526-0172	8	*(1/2" ID x 2-1/4" OD x 1/4" Thk)
	155-1430	6	+ £‡(1/2" ID x 1-1/2" OD x 2" Thk)
31	821-0020	4	*+Screw, Self-locking, Hex Washer Head (5/16-18 x 7/8")
32	870-0048	4	*+Nut, Self-locking, Hex Washer Head (5/16-18)
33	155-0789	2	*+Bracket, Support - Muffler Mounting

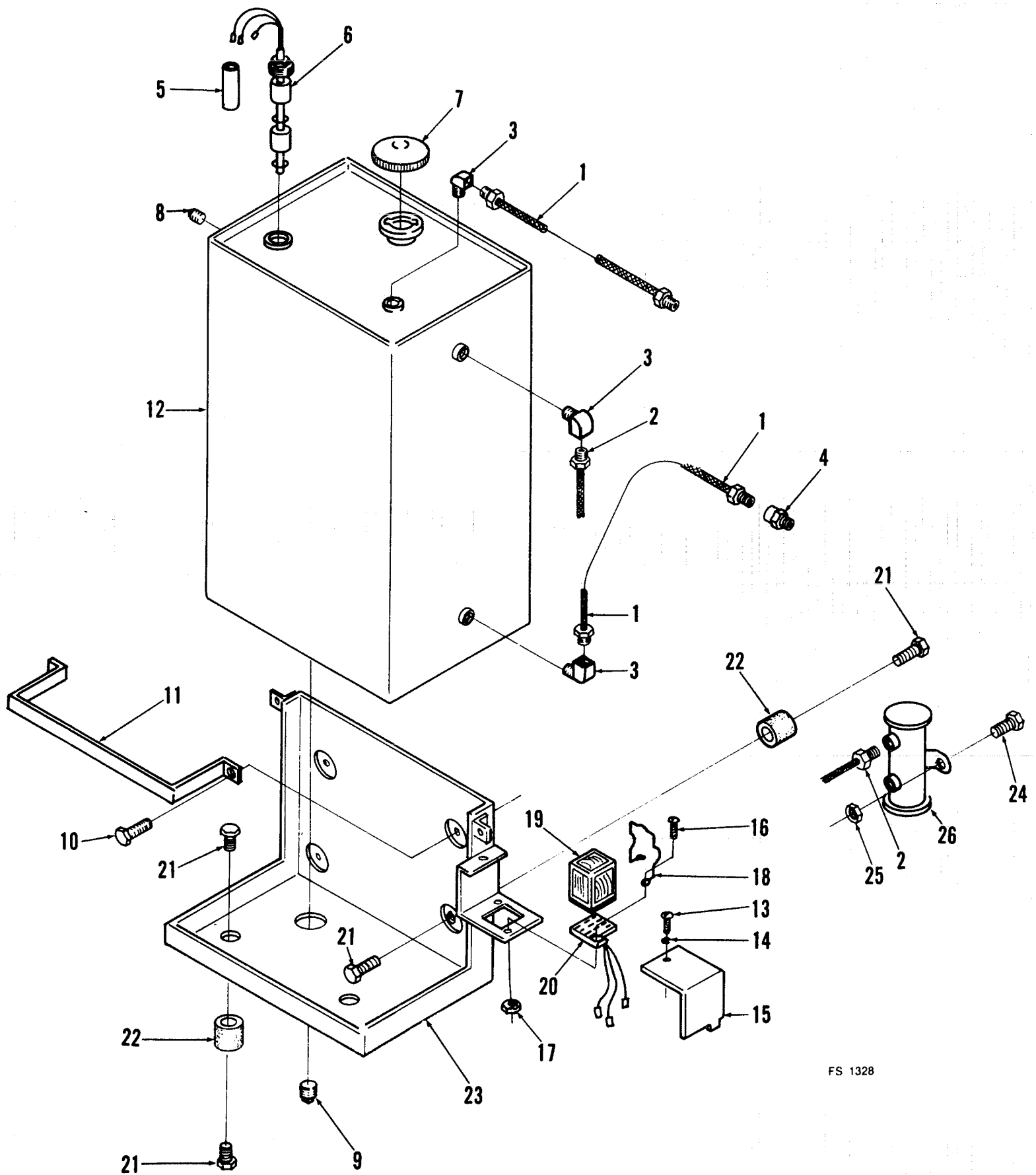
* - Parts used only on 75-90 kW Sets - Spec A thru E.

+ - Parts used only on 75-90 kW Sets - Begin Spec F.

£ - Parts used only on 100 kW Sets - Residential Exhaust System.

‡ - Parts used only on 100 kW Sets - Critical Exhaust System.

OPTIONAL FUEL TANK RESERVOIR (HOUSED SETS)

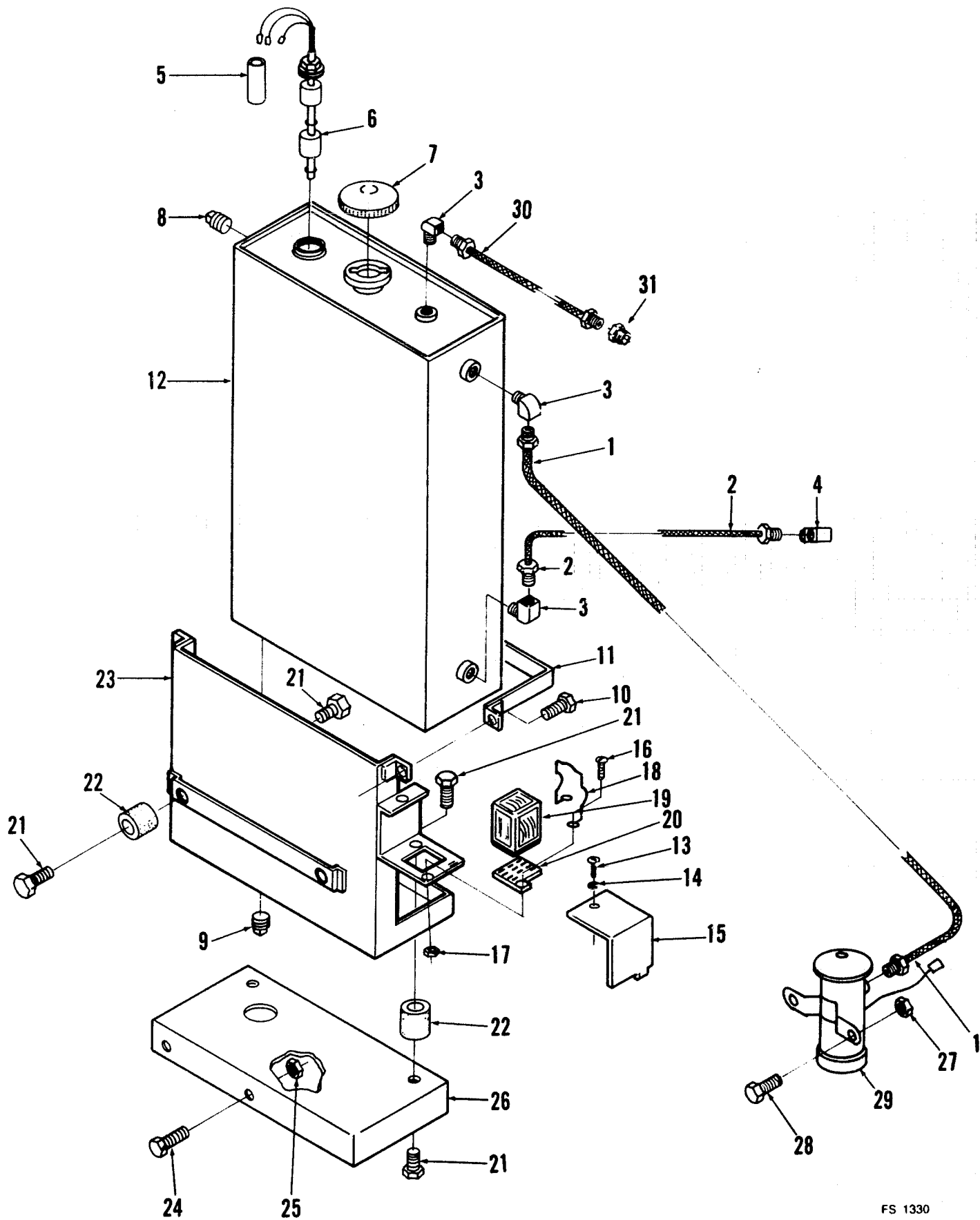


FS 1328

OPTIONAL FUEL TANK RESERVOIR (HOUSED SETS)

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
FUEL TANK RESERVOIRS (Housed Sets)			
		1	For 12 Volt Systems
		1	For 24 Volt Systems
1	501-0008	2	Line, Fuel - Flexible
2	501-0015	1	Line, Fuel - Flexible
3	502-0041	3	Elbow, Pipe - Street, 90 Deg, Brass (1/4" NPT) - Inverted Male
4	502-0051	1	Coupling, Pipe - Brass (1/4" NPT)
5	332-0556	4	Connector, Splice
6	415-0321	1	Switch, Float - Liquid Level
7	159-0007	1	Cap - Fuel Tank
8	505-0054	1	Plug, Pipe - Square Head (1/4" NPT)
9	505-0110	1	Plug, Pipe - Square Head (3/8" NPT)
10	821-0013	2	Screw, Self-locking - Hex Washer Head (1/4-20 x 1")
11	415-0323	1	Strap, Retaining - Tank
12	415-0325	1	Tank, Fuel - Day
13	813-0098	1	Screw, Machine - Round Head (#10-22 x 3/8")
14	850-0030	1	Washer, Lock - Spring (#10)
15	415-0326	1	Cover, Access - Relax
16	812-0061	2	Screw, Machine - Round Head (#6-32 x 3/8")
17	870-1183	2	Nut, Self-locking, Hex - With External Tooth Lockwasher (#6-32)
18	307-1157	1	Spring, Holddown - Relay
19	RELAY		
	307-1058	1	12 Volt
	307-1056	1	24 Volt
20	323-0897	1	Socket, Relay
21	821-0014	8	Screw, Self-locking - Hex Washer Head (5/16-18 x 1/2")
22	402-0070	4	Mount, Vibration
23	415-0324	1	Bracker, Mounting - Fuel Tank
24	821-0018	2	Screw, Self-locking - Hex Washer Head (1/4-20 x 5/8")
25	870-0212	2	Nut, Self-locking - Hex Washer Head (1/4-20)
26	PUMP, FUEL - ELECTRIC		
	149-1830	1	12 Volt
	149-1831	1	24 Volt

OPTIONAL FUEL TANK RESERVOIR (HOUSED SETS)

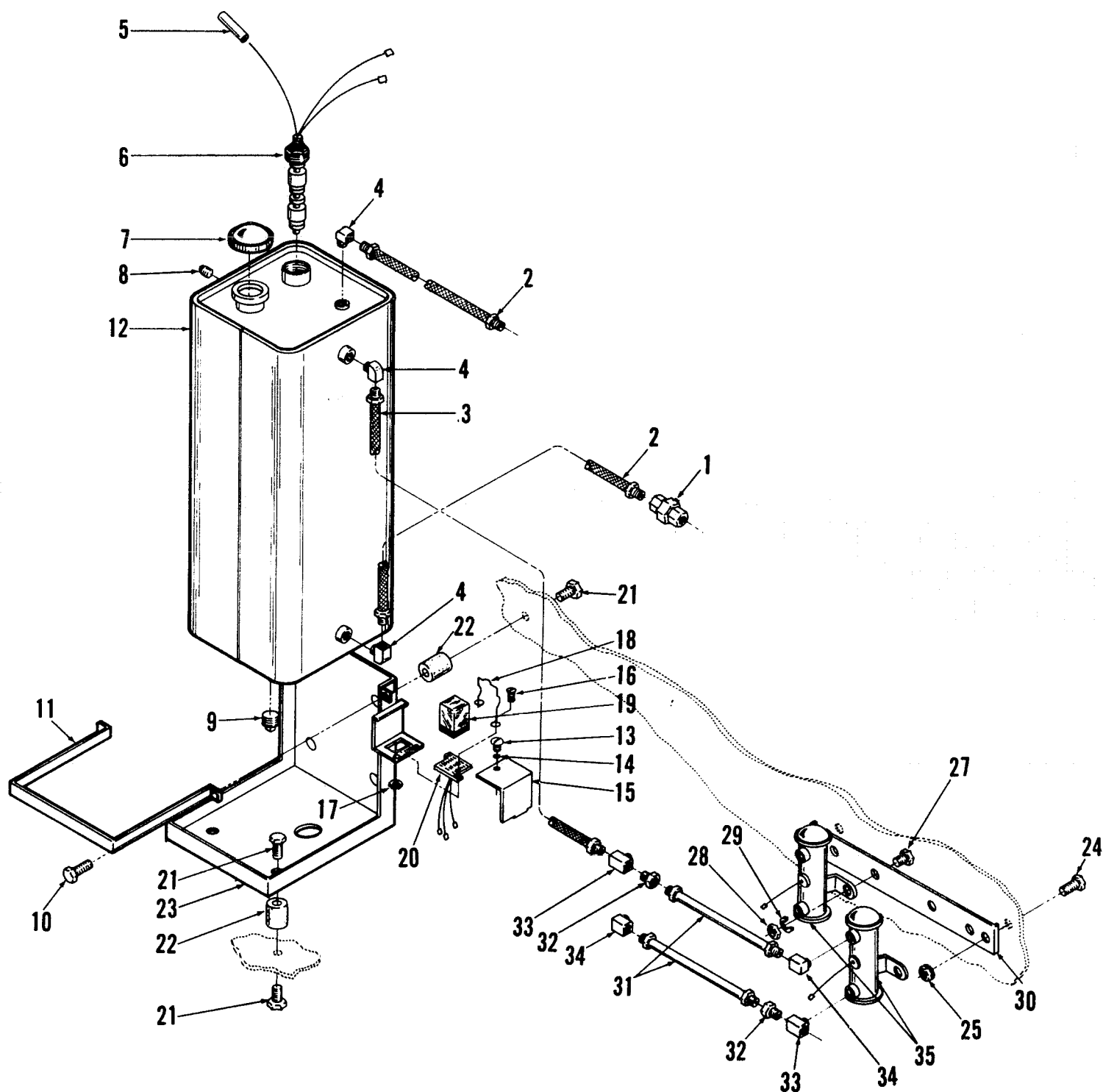


FS 1330

**OPTIONAL
FUEL TANK RESERVOIR
(HOUSED SETS)**

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
	FUEL TANK RESERVOIR (Housed Sets)		
		1	For 12 Volt Systems
		1	For 24 Volt Systems
1	501-0007	1	Line, Fuel - Flexible
2	501-0066	1	Line, Fuel - Flexible
3	502-0041	3	Elbow, Pipe - Street, 90 Deg, Brass (1/4" NPT) - Inverted Male
4	502-0002	1	Elbow, Pipe - Street, 90 Deg, Brass (1/8" NPT x 1/4" Tube)
5	332-0556	4	Connector, Splice
6	415-0321	1	Switch, Float - Liquid Level
7	159-0007	1	Cap - Fuel Tank
8	505-0054	1	Plug, Pipe - Square Head (1/4" NPT)
9	505-0110	1	Plug, Pipe - Square Head (3/8" NPT)
10	813-0098	2	Screw, Self-locking - Hex Washer Head (1/4-20 x 1")
11	415-0451	1	Strap, Retaining - Tank
12	415-0445	1	Tank, Fuel - Day
13	813-0098	1	Screw, Machine - Round Head (#10-32 x 3/8")
14	850-0030	1	Washer, Lock - Spring (#10)
15	415-0326	1	Cover, Access - Relay
16	812-0061	2	Screw, Machine - Round Head (#6-32 x 3/8")
17	870-1183	2	Nut, Self-locking, Hex - With External Tooth Lock Washer (#6-32)
18	307-1157	1	Spring, Holddown - Relay
19	RELAY		
	307-1058	1	12 Volt
	307-1056	1	24 Volt
20	323-0897	1	Socket, Relay
21	821-0014	8	Screw, Self-locking - Hex Washer Head (5/16-18 x 1/2")
22	402-0070	4	Mount, Vibrater
23	415-0450	1	Bracket, Mounting - Fuel Tank
24	821-0014	3	Screw, Self-locking - Hex Washer Head (5/16-18 x 1/2")
25	870-0048	3	Nut, Hex (5/16-18)
26	415-0449	1	Bracket, Support - Fuel Tank
27	821-0018	2	Screw, Self-locking - Hex Washer Head (1/4-20 x 5/8")
28	870-0212	2	Nut, Self-locking - Hex Washer Head (1/4-20)
29	PUMP, FUEL - ELECTRIC		
	149-1830	1	12 Volt
	149-1831	1	24 Volt
30	501-0011	1	Line, Fuel - Flexible
31	502-0003	1	Adapter - Line to Pipe (1/4" Line x 1/8" NPT)

OPTIONAL FUEL TANK RESERVOIR WITH DUAL PUMPS - (HOUSED SETS)



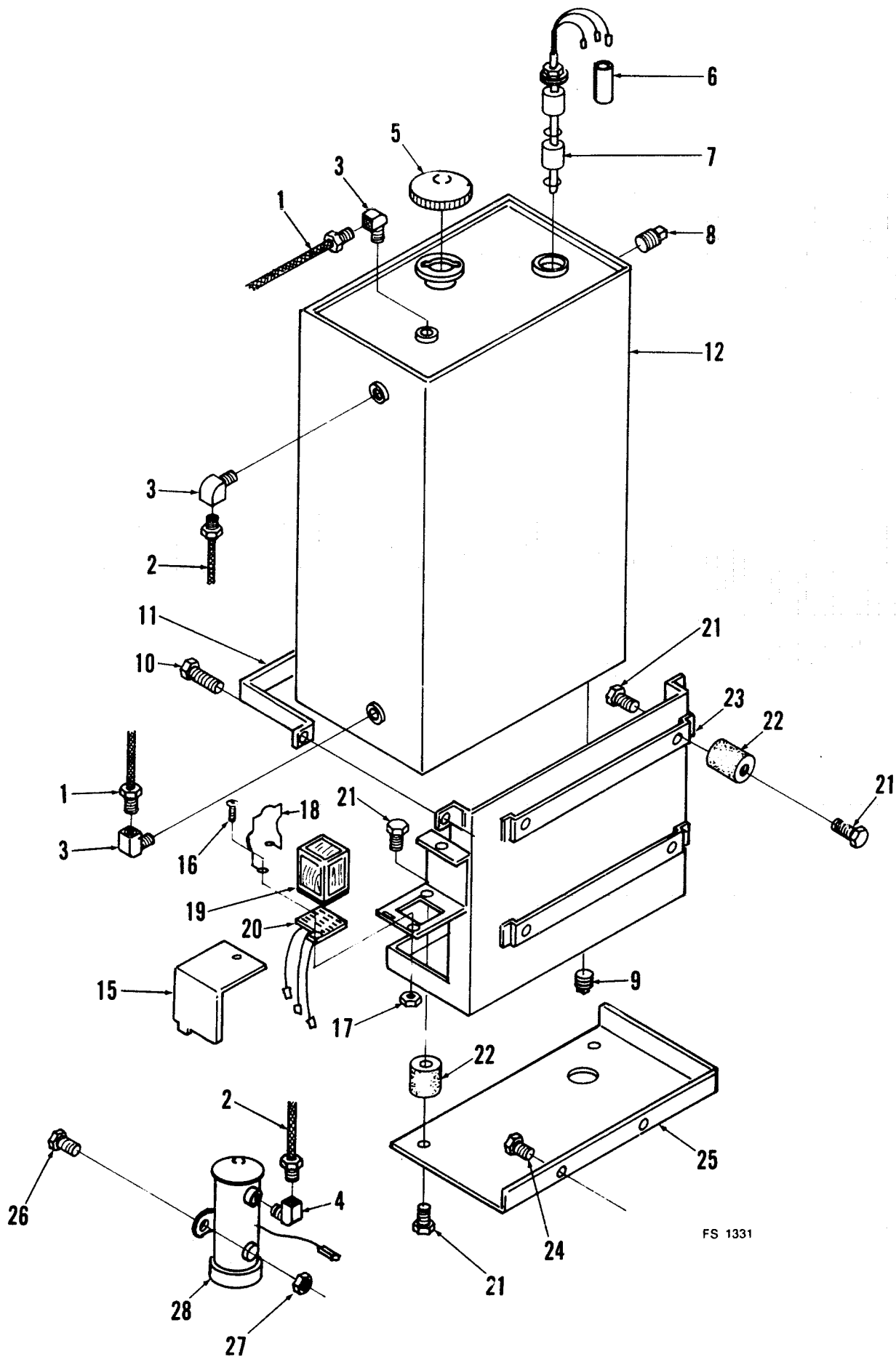
XFS 1312

OPTIONAL FUEL TANK RESERVOIR WITH DUAL PUMPS - (HOUSED SETS)

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
		1	For 12 Volt Systems
		1	For 24 Volt Systems
1	502-0051	1	Coupling, Pipe - Brass (1/4" NPT)
2	501-0008	2	Line, Fuel - Flexible
3	501-0015	1	Line, Fuel - Flexible
4	502-0041	3	Elbow, Pipe - Street, 90 Deg, Brass (1/4" NPT) - Inverted Male
5	332-0556	4	Connector, Splice
6	415-0321	1	Switch, Float - Liquid Level
7	159-0007	1	Cap - Fuel Tank
8	505-0054	1	Plug, Pipe - Square Head (1/4" NPT)
9	505-0110	1	Plug, Pipe - Square Head (3/8" NPT)
10	821-0013	2	Screw, Self-locking - Hex Washer Head (1/4-20 x 1")
11	415-0323	1	Strap, Retaining - Tank
12	415-0325	1	Tank, Fuel - Day
13	813-0098	1	Screw, Machine - Round Head (#10-32 x 3/8")
14	850-0030	1	Washer, Lock - Spring (#10)
15	415-0326	1	Cover, Access - Relay
16	812-0061	2	Screw, Machine - Round Head (#6-32 x 3/8")
17	870-1183	2	Nut, Self-locking, Hex - With External Tooth Lock Washer (#6-32)
18	307-1157	1	Spring, Holddown - Relay
19	RELAY		
	307-1058	1	12 Volt
	307-1056	1	24 Volt
20	323-0897	1	Socket, Relay
21	821-0014	8	Screw, Self-locking - Hex Washer Head (5/16-18 x 1/2")
22	402-0070	4	Mount, Vibration
23	415-0324	1	Bracket, Mounting - Fuel Tank
24	821-0018	2	Screw, Self-locking - Hex Washer Head (1/4-20 x 5/8")
25	870-0212	2	Nut, Self-locking - Hex Washer Head (1/4-20)
26	FUEL PUMP ASSEMBLY - DUAL (Includes Parts Marked *)		
	149-0893	1	12 Volt
	149-0894	1	24 Volt
27	800-0004	4	*Screw Cap - Hex Head (1/4-20 x 5/8")
28	862-0001	4	*Nut, Hex (1/4-20)
29	850-0040	4	*Washer, Lock - Spring
30	149-0891	1	*Bracket, Mounting - Fuel Pump
31	149-0892	2	*Tube, Fuel
32	502-0106	2	*Connector, Tube - Inverted Male
33	502-0057	2	*Tee, Pipe - Brass, Male (1/8" NPT)
34	502-0246	2	*Elbow, Pipe - 90 Deg, Brass (1/8" NPT x 5/8-18)
35	*PUMP, FUEL - ELECTRIC		
	149-1830	2	12 Volt
	149-1831	2	24 Volt

* - Parts included in Dual Fuel Pump Assembly.

OPTIONAL FUEL TANK RESERVOIR (UNHOUSED SETS)

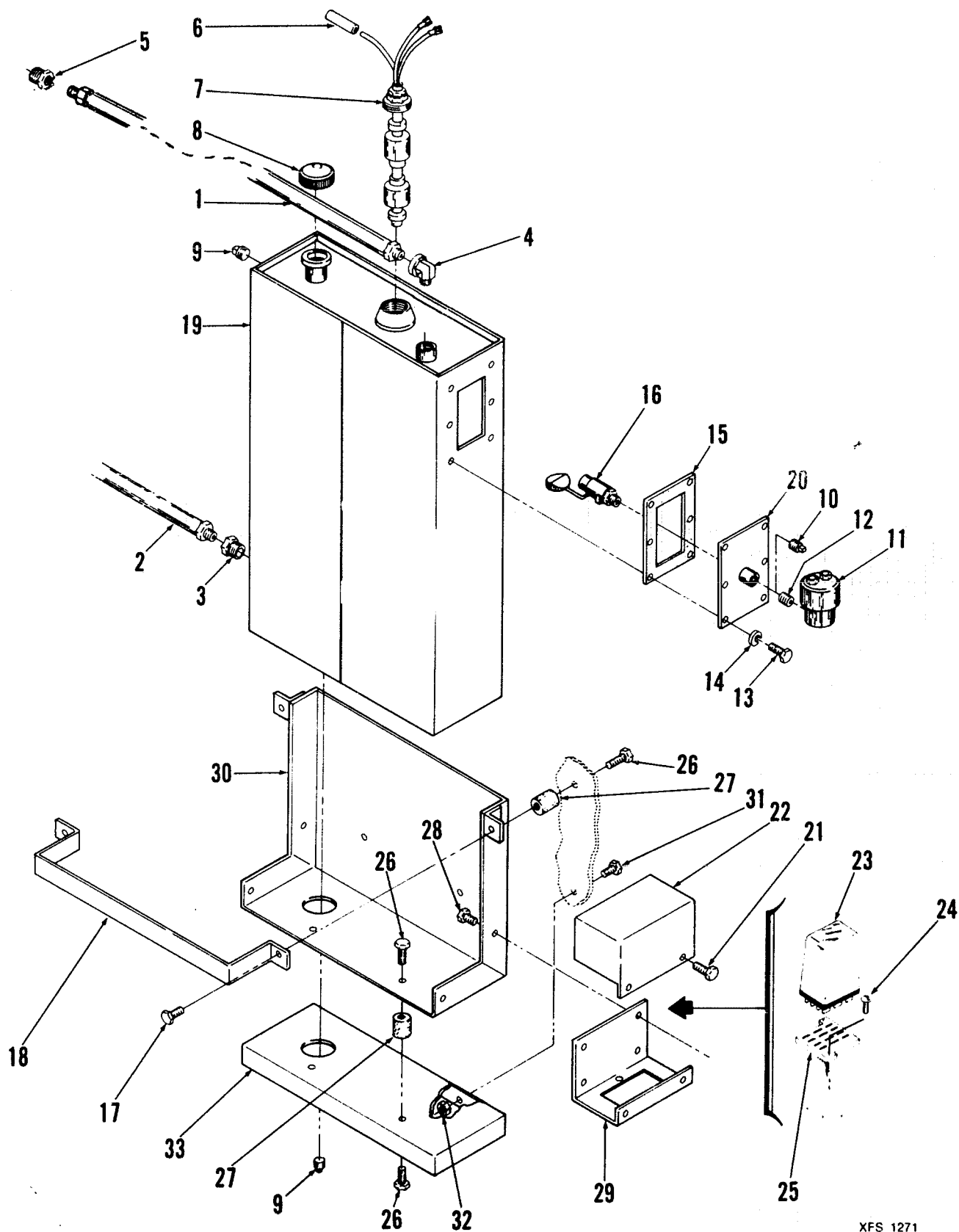


FS 1331

OPTIONAL FUEL TANK RESERVOIR (UNHOUSED SETS)

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
FUEL TANK RESERVOIR (Unhoused Sets)			
		1	For 12 Volt Systems
		1	For 24 Volt Systems
1	501-0007	2	Line, Fuel - Flexible
2	501-0008	1	Line, Fuel - Flexible
3	502-0041	3	Elbow, Pipe - Street, 90 Deg. Brass (1/4" NPT) - Inverted Male
4	502-0020	1	Elbow, Pipe - Street, 90 Deg. Brass (1/8" NPT)
5	159-0007	1	Cap - Fuel Tank
6	332-0556	4	Connector, Splice
7	415-0321	1	Switch, Float - Liquid Level
8	505-0054	1	Plug, Pipe - Square Head (1/4" NPT)
9	505-0110	1	Plug, Pipe - Square Head (3/8" NPT)
10	821-0013	2	Screw, Self-locking - Hex Washer Head (1/4-20 x 1")
11	415-0323	1	Strap, Retaining - Tank
12	415-0325	1	Tank, Fuel - Day
13	813-0098	1	Screw, Machine - Round Head (#10-32 x 3/8")
14	850-0030	1	Washer, Lock - Spring (#10)
15	415-0326	1	Cover, Access - Relay
16	812-0061	2	Screw, Machine - Round Head (#6-32 x 3/8")
17	870-1183	2	Nut, Self-locking, Hex - With External Tooth Lock Washer (#6-32)
18	307-1157	1	Spring, Holddown - Relay
19	RELAY		
	307-1058	1	12 Volt
	307-1056	1	24 Volt
20	323-0897	1	Socket, Relay
21	821-0014	8	Screw, Self-locking - Hex Washer Head (5/16-18 x 1/2")
22	402-0070	4	Mount, Vibration
23	415-0324	1	Bracket, Mounting - Fuel Tank
24	821-0014	2	Screw, Self-locking - Hex Washer Head (5/16-18 x 1/2")
25	403-1118	1	Plate, Support - Fuel Tank
26	821-0018	2	Screw, Self-locking - Hex Washer Head (1/4-20 x 5/8")
27	870-0212	2	Nut, Self-locking - Hex Washer Head (1/4-20)
28	PUMP, FUEL - ELECTRIC		
	149-1830	1	12 Volt
	149-1831	1	24 Volt

**OPTIONAL
FUEL TANK RESERVOIR
(OVERHEAD/UNDERGROUND APPLICATIONS)**



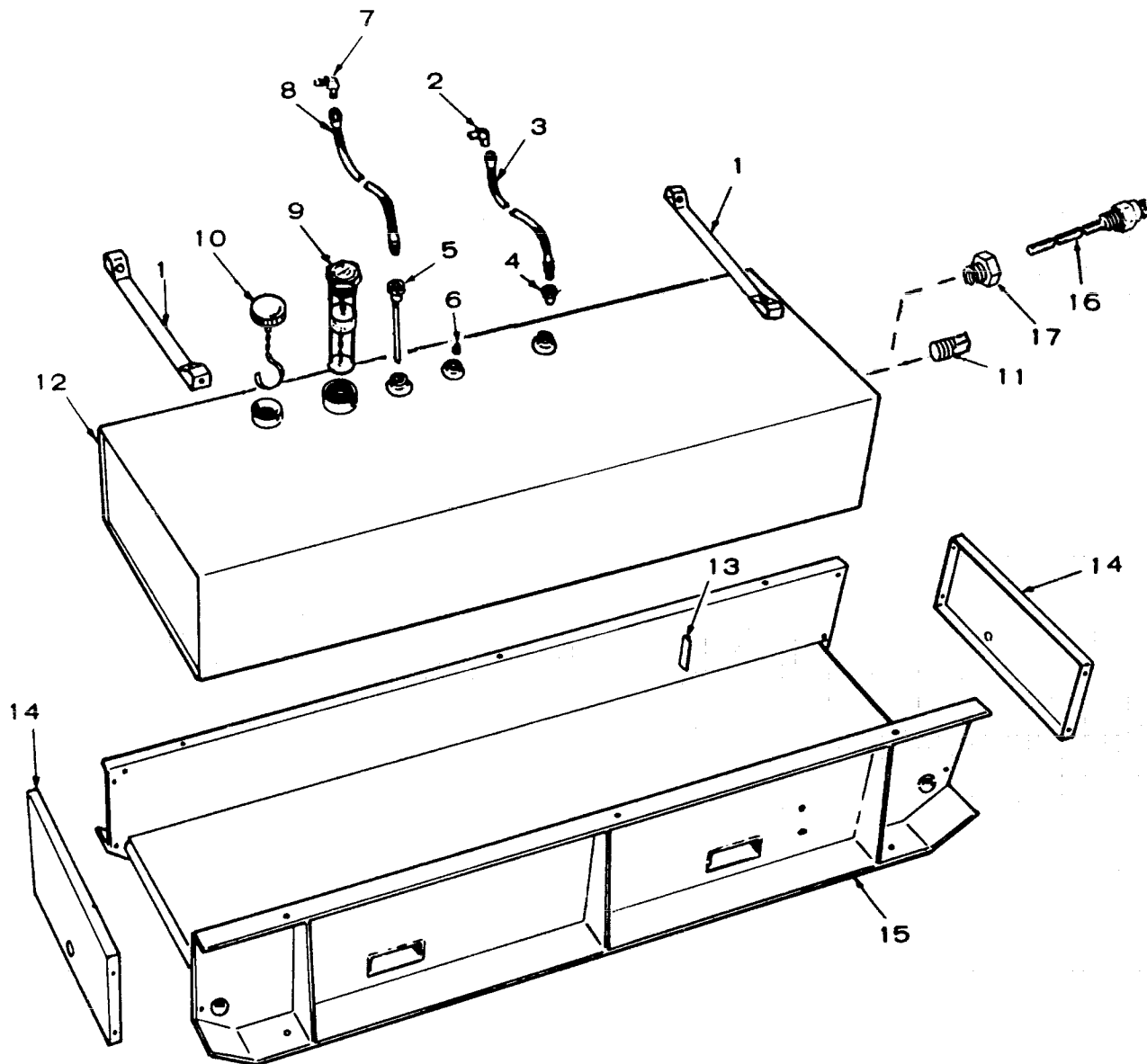
XFS 1271

**OPTIONAL
FUEL TANK RESERVOIR
(OVERHEAD/UNDERGROUND APPLICATIONS)**

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
FUEL TANK RESERVOIR			
		1	£ Overhead Tank Application
		1	† Underground Tank Application
1	501-0011	1	Line, Fuel - Flexible
2	501-0321	1	Line, Fuel - Flexible
3	502-0029	1	Bushing, Reducer - Hex (1/4" NPT x 1/8" NPT)
4	502-0041	1	Elbow, Pipe - Street, 90 Deg (1/8" NPT)
5	502-0003	1	Adapter - Line to Pipe (1/4" Line x 1/8" NPT)
6	332-0556	4	Connector, Splice
7	415-0466	1	Switch, Float - Liquid Level
8	159-0007	1	Cap - Fuel Tank
9	502-0155	2	Plug, Pipe - Square Head, Brass (3/8" NPT)
10	505-0057	1	† Plug, Pipe - Square Head. (1/8" NPT)
11	307-1816	1	£ Solenoid - 24 VDC
12	505-0098	1	£ Nipple, Pipe - Close (1/8" NPT x 3/4")
13	800-0002	6	Screw, Cap - Hex Head (1/4-20 x 3/8")
14	526-0063	6	Washer, Flat - Copper (17/64" ID x 7/16" OD x 1/32" Thk)
15	415-0467	1	Gasket - Access Plate
16	309-0410	1	£ Valve, Float
17	821-0013	2	Screw, Self-locking - Hex Washer Head (1/4-20 x 1")
18	415-0451	1	Strap, Retaining - Fuel Tank
19	415-0468	1	Tank, Fuel - Day (Includes Access Cover Plate)
20	415-0516	1	Plate, Cover - Access
21	821-0004	2	Screw, Self-locking - Hex Washer Head (#10-32 x 5/16")
22	415-0464	1	Cover, Access - Relay
23	307-1056	1	Relay - 24 VDC
24	812-0079	2	Screw, Machine - Round Head (#8-32 x 1/2")
25	323-0804	1	Socket, Relay
26	821-0014	8	Screw, Self-locking - Hex Washer Head (5/16-18 x 1/2")
27	402-0078	4	Mount, Vibration
28	821-0008	2	Screw, Self-locking - Hex Washer Head (1/4"-20 x 5/16")
29	415-0463	1	Box, Control - Relay
30	415-0471	1	Bracket, Mounting - Fuel Tank
31	821-0014	6	Screw, Self-locking - Hex Washer Head (5/16-18 x 1/2")
32	870-0046	3	Nut, Hex (5/16-18)
33	415-0449	1	Bracket, Support - Fuel Tank

† - Parts used only in Underground Tank Application.
£ - Parts used only in Overhead Tank Application.

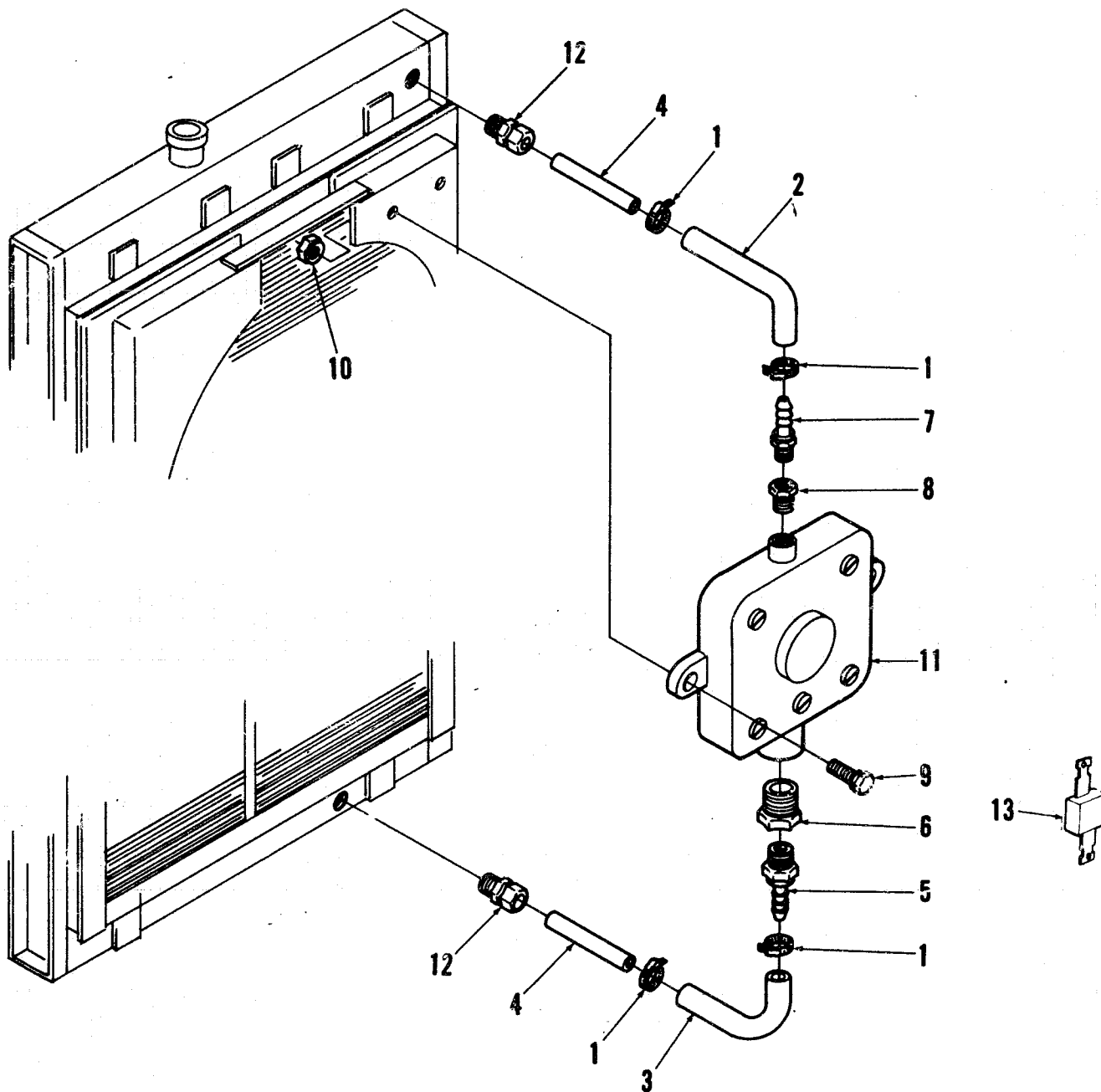
OPTIONAL FUEL TANK AND SUB BASE



REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	159-1007	2	Strap, Hold-down - Fuel Tank
2	502-0005	1	Elbow
3	501-0196	1	Line, Fuel - Flexible
4	505-0018	1	Bushing, Reducer
5	415-0318	1	Pipe, Suction
6	505-0334	1	Plug, Pipe
7	502-0002	1	Elbow
8	501-0103	1	Line, Fuel - Flexible
9	193-0217	1	Gauge, Liquid Level
10	159-0020	1	Cap, Tank
11	505-0247	1	Plug, Pipe
12	159-1006	1	Tank, Fuel - 58 Gallon
13	159-1005	2	Stop, Fuel Tank
14	403-1009	2	Plate, End - Sub-Base
15	403-1006	1	Base, Sub - Fuel Tank

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
16	130-1424	1	Sensor, Fuel Level
17	505-0316	1	Bushing, Reducer - Special
ATTACHING HARDWARE - NOT ILLUSTRATED (Select as Applicable)			
	800-0050	12	Screw, Cap - Hex Head (3/8-16 x 1")
	800-0051	4	Screw, Cap - Hex Head (3/8-16 x 1-1/4")
	800-0091	6	Screw, Cap - Hex Head (1/2-13 x 1-1/4")
	850-0050	16	Washer, Lock - Spring (3/8")
	850-0060	6	Washer, Lock - Spring (1/2")
	526-0219	5	Washer, Flat (17/32" ID 1" OD x 1/8" Thk)
	862-0003	16	Nut, Hex (3/8-16)
	862-0016	6	Nut, Hex (1/2-13)

OPTIONAL LOW COOLANT LEVEL SWITCH

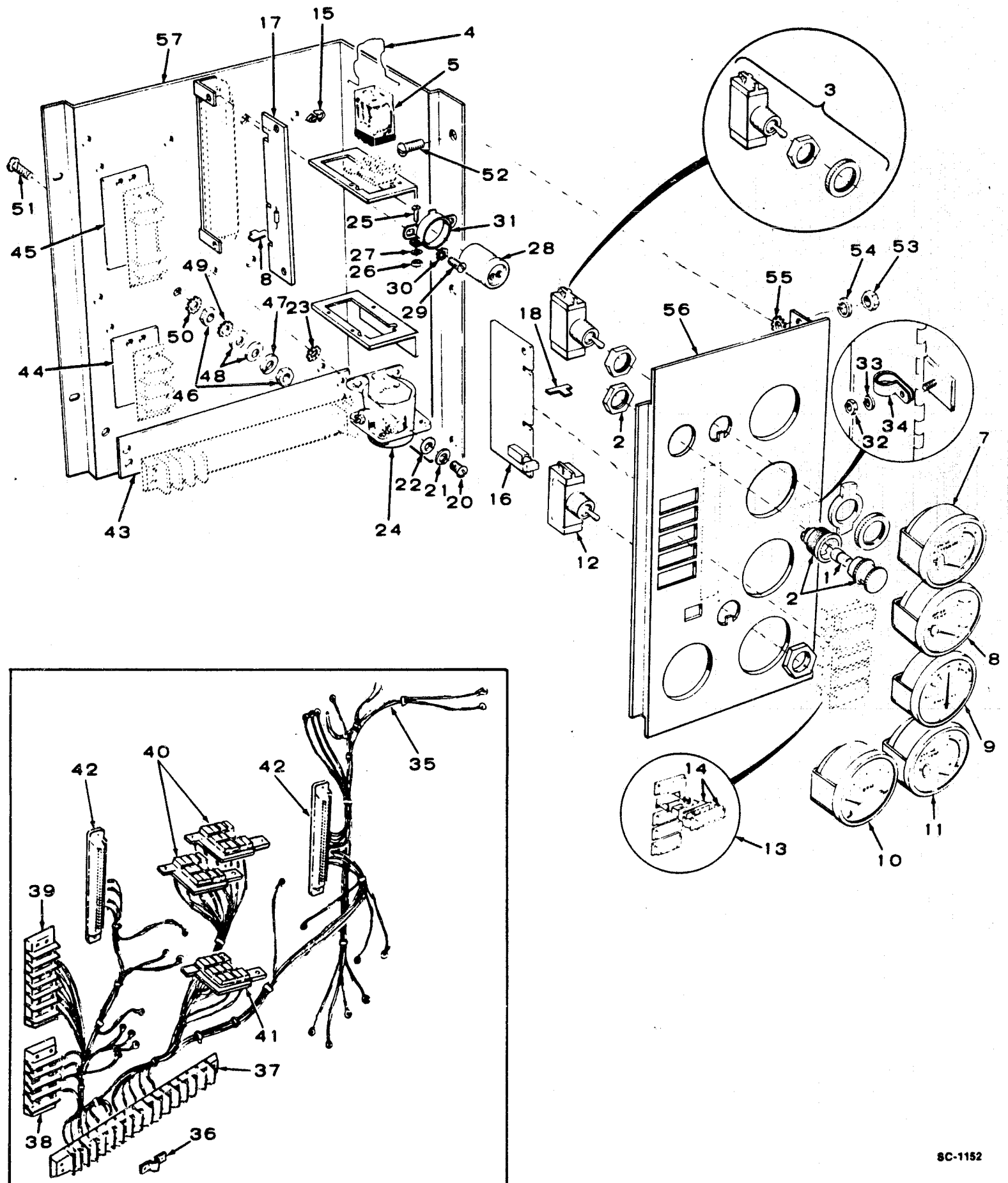


XCS-1121-1

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	503-0446	4	Clamp, Hose
2	503-0707	1	Hose, Vinyl (1/4" ID x 12" Lg)
3	503-1117	1	Hose, Vinyl (1/4" ID x 36" Lg)
4	130-2053	2	Tube (1/4" OD x 2" Lg)
5	502-0395	1	Adapter - Hose to Pipe
6	505-0151	1	Bushing, Reducer - Brass (1/2" NPT x 1/8" NPT)
7	502-0313	1	Adapter - Hose to Pipe

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
8	505-0007	1	Bushing, Reducer - Brass (1/4" NPT x 1/8" NPT)
9	821-0011	2	Scrow, Self-locking - Hex Washer Head (1/4-20 x 7/8")
10	870-0212	2	Nut, Self-locking - Hex Washer Head (1/4-20)
11	193-0329	1	Switch - Coolant Level
12	502-0809	2	Adapter, Tube (Blind Hole Fitting) (5/8" OD x 1/4" Tube)
13	357-0030	2	Diode, Rectifier

OPTIONAL ENGINE CONTROL WITH FIVE FAULT LIGHTS SPEC A THRU F



OPTIONAL ENGINE CONTROL WITH FIVE FAULT LIGHTS SPEC A THRU F

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	322-0004	1	Lamp Incandescent (12 VDC)	26	860-0006	1	Nut, Hex (#6-32)
2	322-0149	1	Lampholder	27	853-0003	1	Washer, Lock - ET (#6)
3	308-0002	1	Switch, Toggle (SPST)	28	356-0072	1	Capacitor, Fixed Electrolytic (4000 MFD, 30 VDC)
4	307-1157	3	Spring, Holddown - Relay	29	812-0063	2	Screw, Machine - Round Head (#6-32 x 1/2")
5	RELAY (12 VDC)			30	853-0003	2	Washer, Lock - ET (#6)
	307-1058	1	(Ignition)	31	356-0070	1	Clamp, Capacitor Mounting
	307-1058	1	(Start Disconnect)	32	870-0053	1	Nut, Hex (#10-32)
	307-1061	1	(Starter Protection)	33	850-0030	1	Washer, Lock - Spring (#10)
7	193-0107	1	Gauge - Oil Pressure (12 VDC)	34	332-0051	1	Clamp, Loop
8	193-0106	1	Gauge - Water Temperature (12 VDC)	35	HARNESS, WIRING - ENGINE CONTROL		
9	302-0061	1	Ammeter		338-0534	1	Includes Parts Marked †
10	302-0749	1	£Tachometer - Electrical		ATTACHING HARDWARE FOR WIRING HARNESS		
11	193-0187	1	£Gauge - Oil Temperature (12 VDC)		812-0063	6	Screw, Machine - Round Head (#6-32 x 1/2")
12	SWITCH, TOGGLE - SELECTOR				812-0066	6	Screw, Machine - Round Head (#6-32 x 3/4")
	308-0138	1	Standard & Cycle Cranking Controls		853-0003	14	Washer, Lock - ET (#6)
	308-0327	1	Penn State Controls		860-0006	10	Nut, Hex (#6-32)
13	*LIGHT, INDICATOR-14 VDC (Lens Color & Legend Listed Below)			36	332-1043	1	†Jumper, Terminal
	322-0107	1	Red - OVERCRANK	37	332-0795	1	†Block, Terminal - 20 Place
	322-0111	1	Red - OVERSPEED	38	332-0537	1	†Block, Terminal - 4 Place
	322-0108	1	Red - LO OIL PRESS	39	332-0699	1	†Block, Terminal - 6 Place
	322-0109	1	Red - HI ENG TEMP	40	323-0765	2	†Socket, Relay - 11 Place
	322-0110	2	Red - LO ENG TEMP	41	323-0764	2	†Socket, Relay - 8 Place
14	322-0136	1	*Light, Indicator - 14 VDC (Red Lens - No Legend)	42	332-1271	1	†Connector, Electrical - PC BD
15	518-0374	4	Fastener, Snap-In (Printed Circuit Boards)	43	332-1559	1	Strip, Marker - Terminal
16	PRINTED CIRCUIT BOARD ASSEMBLY			44	332-1239	1	Strip, Marker - Terminal
	300-0733	1	Standard Cranker (12 VDC)	45	332-1240	1	Strip, Marker - Terminal
	300-0714	1	Cycle Cranker (12 VDC)		GROUND TERMINAL ASSEMBLY (Includes Parts Marked #)		
17	PRINTED CIRCUIT BOARD ASSEMBLY			46	871-0010	2	#Nut, Hex - Brass (#10-32)
	300-0681	1	Engine Control Monitor - Standard	47	850-0030	1	#Washer, Lock - Spring (#10)
18	332-1276	4	Plug, Keying - PC Board	48	526-0062	2	#Washer, Flat - Brass (13/64" ID x 1/2" OD x 1/16" Thk)
20	813-0098	2	Screw, Machine - Round Head (#10-32 x 3/8")	49	853-0008	1	#Washer, Lock - ET (#10)
21	850-0030	2	Washer, Lock - Spring (#10)	50	856-0003	1	#Washer, Lock - EIT (#10)
22	526-0009	2	Washer, Flat (7/32" ID x 1/2" OD x 1/16" Thk)	51	815-0203	1	#Screw, Machine - Round Head, Brass (#10-32 x 7/8")
23	856-0003	2	Washer, Lock - EIT (#10)	52	815-0026	5	Screw, Machine - Truss Head (#10-32 x 3/8")
24	307-1031	1	Relay, Solenoid - Start (12 VDC)	53	870-0053	1	Nut, Hex (#10-32)
25	812-0061	1	Screw, Machine - Round Head (#6-32 x 3/8")	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 322-0136 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

SUPPLEMENTARY PARTS LIST

This Supplementary Parts List Applies to the Standard LDYC Models listed below. Use these parts in place of/or in addition to those listed in Main Parts Catalog, 973-0222.

SET DATA TABLE

MODEL AND SPEC NO.	ELECTRICAL DATA				
	WATTS	VOLTS	HERTZ	PHASE	WIRE
63.0 LDYC-515R/*	63,000	#	50	1 or 3	12
72.0 LDYC-515R/*	72,000	#	50	1 or 3	12
76.0 LDYC-15R/*	76,000	#	60	1 or 3	12
84.0 LDYC-15R/*	84,000	#	60	1 or 3	12

* - The Specification Letter Advances (A to B, B to C, etc.) with Manufacturing Changes.

- These sets are Broad Range Reconnectable; Refer to Connection diagram inside Control Box Cover.

100-1476 1 Engine Replacement

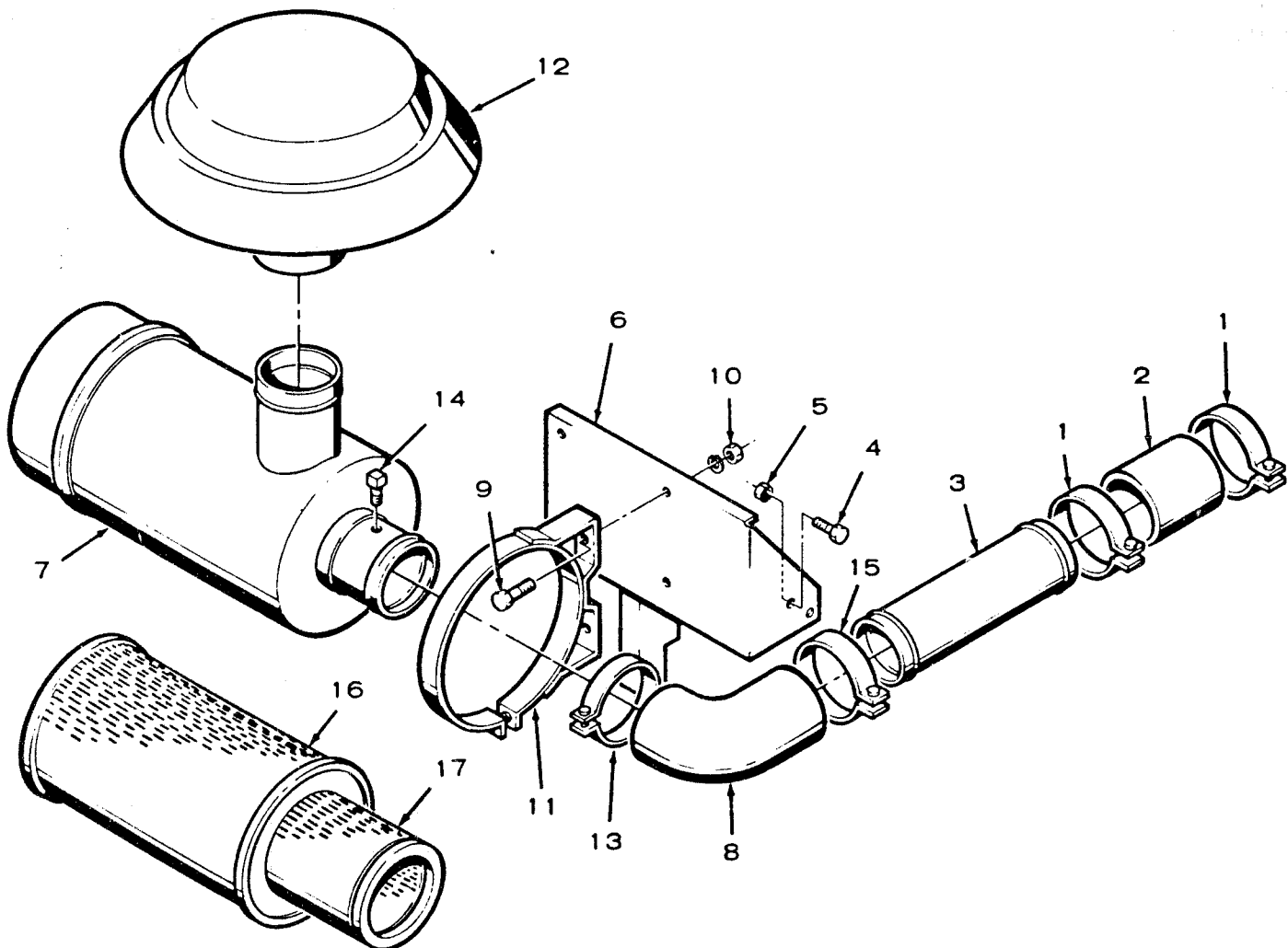
COOLING SYSTEM

<u>REF. NO.</u>	<u>PART NO.</u>	<u>QTY. USED</u>	<u>PART DESCRIPTION</u>
1	130-1235	1	Radiator (Includes Cap)
5	503-0747	1	Hose, Flexible - Lower
7	503-0354	2	Clamp, Hose
11	405-1836	1	Panel, Front
12	130-1392	1	Fan
13	130-1792	1	Fan, Radiator
14	503-0365	2	Clamp, Hose

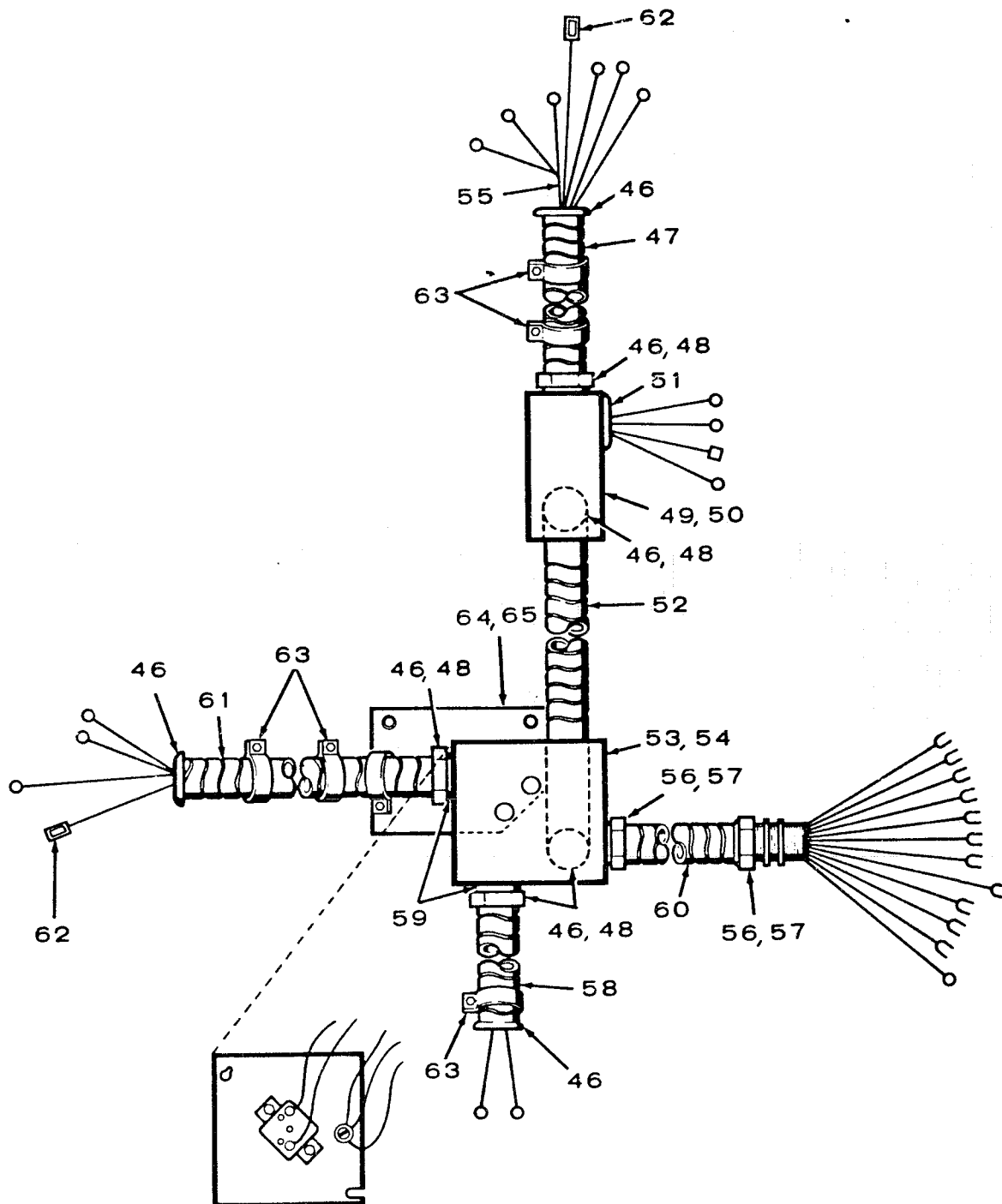
AIR CLEANER

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	503-0868	2	Clamp, Hose
2	503-0880	1	Adapter, Tube
3	140-1468	1	Connector, Pipe
4	821-0018	2	Screw, Cap-Locking Head - ($\frac{1}{4}$ -20 X 5/8" LG)
5	870-0212	2	Nut, Hex - Self Locking ($\frac{1}{4}$ -20)
6	140-1465	1	Bracket, Air Cleaner
7	140-1600	1	Cleaner, Air (Includes Elements)
8	503-0899	1	Elbow, Reducing
9	821-0016	4	Screw, Cap-Locking Head (5/16-18 X 3/4" LG)
10	870-0048	4	Nut, Hex - Self Locking - (5/16-18)
11	140-1599	2	Band, Air Cleaner Mtg.
12	140-1601	1	Hood, Air Inlet
13	503-0900	1	Clamp, Hose
14	140-1548	1	Indicator, Service
15	503-0885	1	Clamp, Hose
16	140-1621	1	Element, Primary
17	140-1622	1	Element, Safety

AIR CLEANER PARTS



MISCELLANEOUS ENGINE PARTS



MISCELLANEOUS ENGINE PARTS

<u>REF. NO.</u>	<u>PART NO.</u>	<u>QTY. USED</u>	<u>PART DESCRIPTION</u>
24	505-0185	1	Nipple, Half
30	338-1162	1	Harness, Engine Wiring (Includes Parts Marked *)
39	332-2053	1	Bracket, Circuit Breaker Mtg.
46	508-0201	8	* Bushing
47	331-0168	1	* Conduit, Flex
48	331-0149	5	* Connector
49	330-0094	1	* Box, Outlet (2 X 4)
50	330-0004	1	* Cover, Outlet Box
51	508-0009	1	* Grommet
52	331-0154	1	* Conduit, Flex
53	330-0093	1	* Box, Outlet (4 X 4)
54	330-0099	1	* Cover, Outlet Box
55	332-1445	1	* Tie, Cable
56	331-0150	2	* Connector
57	505-0202	2	* Bushing
58	331-0145	1	* Conduit, Flex
59	331-0153	4	* Washer, Reducing
60	331-0169	1	* Conduit, Flex
61	331-0166	1	* Conduit, Flex
62	332-0819	2	* Housing, Connector - Push On
63	331-0180	6	* Strip, Half
64	821-0010	2	* Screw, Cap-Locking Head - (1/4-20 X 1/2" Long)
65	330-0113	1	* Bracket, Junction Box Mtg.
66	502-0639	1	Adapter, Fuel Line
67	502-0029	1	Bushing, Reducer

* - Parts Included in 338-1162 Wiring Harness Assembly.

CONTROL HOUSING

<u>REF. NO.</u>	<u>PART NO.</u>	<u>QTY. USED</u>	<u>PART DESCRIPTION</u>
14	301-4965	1	Bracket
15	301-4964	1	Bracket
16	332-2261	2	Strip, Mounting
17	332-2262	8	Tie, Cable

CHASSIS

<u>REF. NO.</u>	<u>PART NO.</u>	<u>QTY. USED</u>	<u>PART DESCRIPTION</u>
1	403-1425	1	Chassis
14	403-1421	1	Support, Engine (LH)
15	403-1422	1	Support, Engine (RH)

GENERATOR

<u>REF. NO.</u>	<u>PART NO.</u>	<u>QTY. USED</u>	<u>PART DESCRIPTION</u>
37	Stator, Generator		
	220-2000	1	63.0 LDYC Sets (50 Hertz)
	220-2001	1	72.0 LDYC Sets (50 Hertz)
	220-1457	1	76.0 LDYC Sets (60 Hertz)
	220-1458	1	84.0 LDYC Sets (60 Hertz)
54	Rotor Assembly		
	201-2672	1	63.0 LDYC & 76.0 LDYC Sets
	201-2673	1	72.0 LDYC & 84.0 LDYC Sets
55	234-0370	1	Grille, Air Inlet

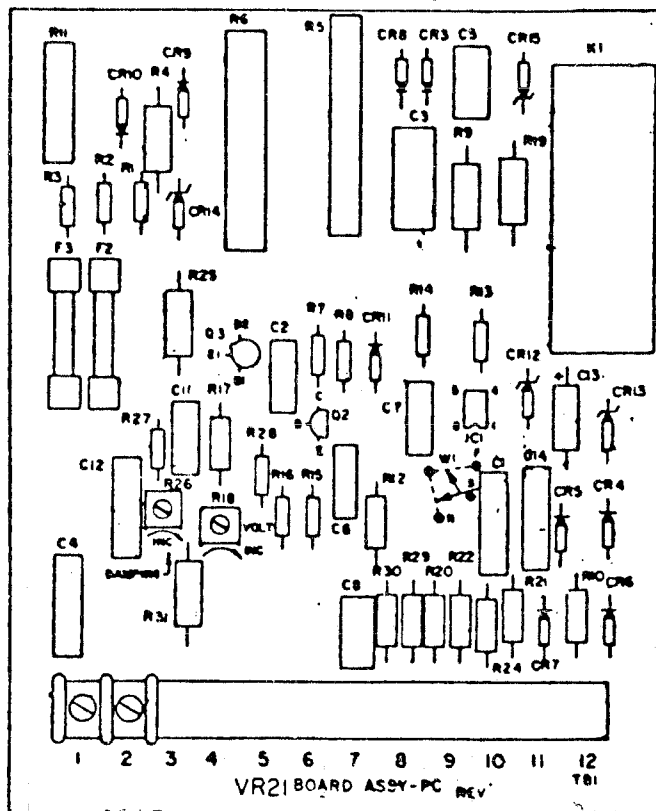
CONTROL (ENGINE PORTION) - ONE FAULT LIGHT

<u>REF. NO.</u>	<u>PART NO.</u>	<u>QTY. USED</u>	<u>PART DESCRIPTION</u>
1	301-4572	1	Panel, Engine Control
4	308-0002	1	Switch, Toggle
10	308-0003	1	Plate, Switch
19	338-1122	1	Harness, Wiring
41	322-0017	1	Lamp, Panel
42	322-0149	1	Holder, Lamp
43	321-0181	1	Fuse
44	321-0217	1	Holder, Fuse

CONTROL (AC PORTION) - WITHOUT METER PANEL

<u>REF. NO.</u>	<u>PART NO.</u>	<u>QTY. USED</u>	<u>PART DESCRIPTION</u>
1	301-4586	1	Box, Control
17	332-2044	1	Board, Voltage Regulator
33	321-0223	5	Fuse, - 15 Ampere
34	321-0177	1	Block, Fuse (3 Pole)
35	321-0176	1	Block, Fuse (2 Pole)
36	338-1104	1	Harness, Wiring

VOLTAGE REGULATOR BOARD ASSEMBLY



REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
	332-1954	1	Printed Circuit Board
C1,14	355-0042	2	Capacitor - 47 Mfd., 250 Volt
C2,7	355-0043	2	Capacitor - .22 Mfd, 250 Volt
C3	355-0047	1	Capacitor - .47 Mfd, 400 Volt
C4,12	355-0044	2	Capacitor - .47 Mfd, 250 Volt
C5,8	355-0046	2	Capacitor - 1 Mfd, 100 Volt
C6	355-0056	1	Capacitor - .33 Mfd, 250 Volt
C11	355-0048	1	Capacitor - .1 Mfd, 400 Volt
C13	356-0039	1	Capacitor - Electrolytic, 100 Mfd, 10 Volt
CR3 thru 11	357-0014	9	Rectifier - Silicon
CR12	359-0036	1	Diode, Zener - 5.6 Volt
CR13	359-0025	1	Diode, Zener - 20 Volt
CR14	359-0026	1	Diode, Zener - 18 Volt
F1,2,3	321-0204	3	Fuse - 1.4 Amp
IC1	367-0005	1	Integrated Circuit
Q2	362-0017	1	Transistor - Silicon (NPN)
Q3	361-0004	1	Transistor - Unijunction
R1	350-0355	1	Resistor - 1/2 Watt, 47-Ohm
R2,3	350-0351	2	Resistor - 1/2 Watt, 33-Ohm
R4	350-1075	1	Resistor - 2 Watt, 4,700,000-Ohm
R5	353-0040	1	Resistor, Fixed - 10 Watt, 270-Ohm
R6	353-0039	1	Resistor, Fixed - 15 Watt, 5,000-Ohm
R7	350-0398	1	Resistor - 1/2 Watt, 3,000-Ohm
R8,16	350-0447	2	Resistor - 1/2 Watt, 330,000-Ohm
R10	351-0885	1	Resistor - 1/2 Watt, 51,000-Ohm
R11	352-0151	1	Resistor, Fixed - 5 Watt, 15,000-Ohm
R12	351-0909	1	Resistor - 1/2 Watt, 90,900-Ohm
R13	350-0411	1	Resistor - 1/2 Watt, 10,000-Ohm
R14	350-0443	1	Resistor - 1/2 Watt, 220,000-Ohm
R15,27	350-0435	2	Resistor - 1/2 Watt, 100,000-Ohm
R17	351-0293	1	Resistor - Metal Film - 1/4 Watt, 11,000-Ohm
R18	303-0210	1	Potentiometer - 1/2 Watt, 5,000-Ohm
R20,22,29 & 30	351-0520	4	Resistor - 1/4 Watt, 28,000-Ohm
R21	351-0522	1	Resistor, Metal Film - 1/4 Watt, 5,110,000-Ohm
R24	351-0523	1	Resistor, Metal Film - 1/4 Watt, 8,870,000-Ohm
R25,31	350-1011	2	Resistor - 2 Watt, 10,000-Ohm
R26	303-0211	1	Potentiometer - 1/2 Watt, 100,000-Ohm
R28	350-0568	1	Resistor - 1/2 Watt
TB1	332-1252	1	Terminal Block
CR15	359-0015	1	Diode, Zener - 24 Volt
	321-0163	6	Clip - Fuse
K1	307-1063	1	Relay - Magnetic Reed
R9	350-1014	1	Resistor - 2 Watt, 13,000-Ohm
R19	350-1007	1	Resistor - 2 Watt, 6,800-Ohm