

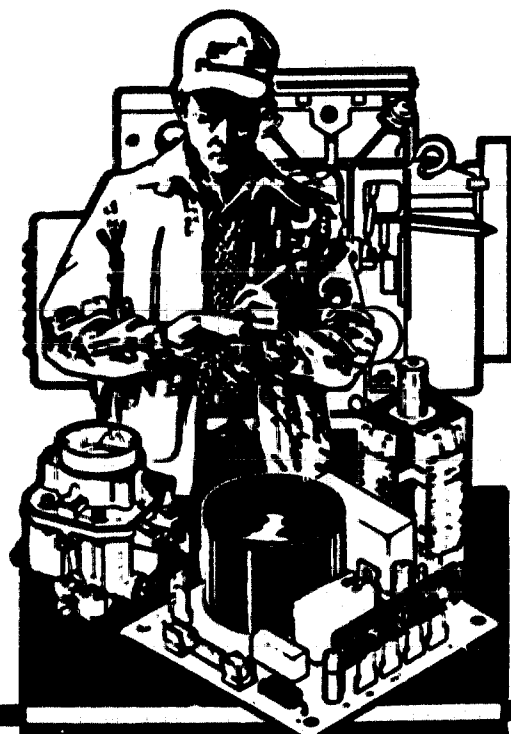
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has gaps in its page
numbers, or doesn't
have any numbers.
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order that Acrobat
assigns it.

McGRAW-EDISON

Onan

Parts Manual

**DYA
LDYA
GenSet**



Onan Service Parts

973-0220

10-84 (SPEC B-J)

Replaces

2-83 (Spec B-J)

Printed in U.S.A.

GENERAL INFORMATION

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

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

The diagram shows a rectangular nameplate with two circular mounting holes at the top. The text "McGRAW-EDISON" is at the top center, and the "Onan" logo is below it. A large rectangular box is labeled "MODEL AND SPEC NO." and a smaller rectangular box is labeled "SERIAL NO.". The bottom right corner of the nameplate is torn, revealing a second identical nameplate underneath.

McGRAW-EDISON

Onan

MODEL AND SPEC NO.

SERIAL NO.

M-1149

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

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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
47.0LDYA-*/#£	47,000 Watts	50.0DYA-*/#£	50,000 Watts
56.0LDYA-*/#£	56,000 Watts	60.0DYA-*/#£	60,000 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.	60	12	3	+
	120/240.				
	127/220.				
	139/240.				
	240/416.				
	254/440.				
	277/480				
515	110/220.	50	12	1	+
	115/230.				
515	110/190.	50	12	3	+
	110/220.				
	115/200.				
	115/230.				
	120/208.				
	127/220				
	220/380.				
	230/400.				
	240.416.				
	254/440.				
15R50	(@)	60	12	3	(@) +

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

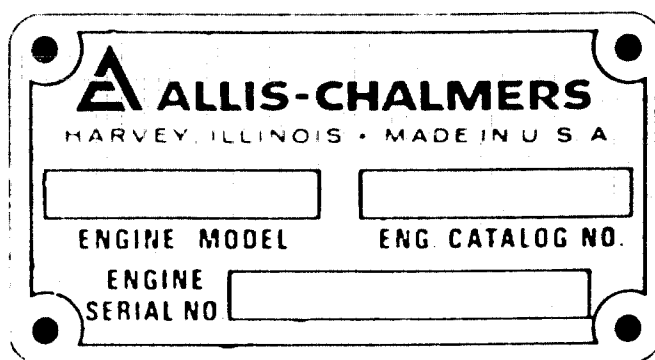
100-0868
100-1575

Standard - DYA
£Standard - LDYA

Includes: Complete Cylinder Block, Fuel Pump, Fuel 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, Alternator Belt, Temperature Sender, Oil Pressure Sender, Starter and Radiator.

***NOTE:** This replacement engine is for Onan's Standard Spec 1 generator sets, for all other refer to the factory for replacement information
£ - Air Cleaner not included with LDYA engine



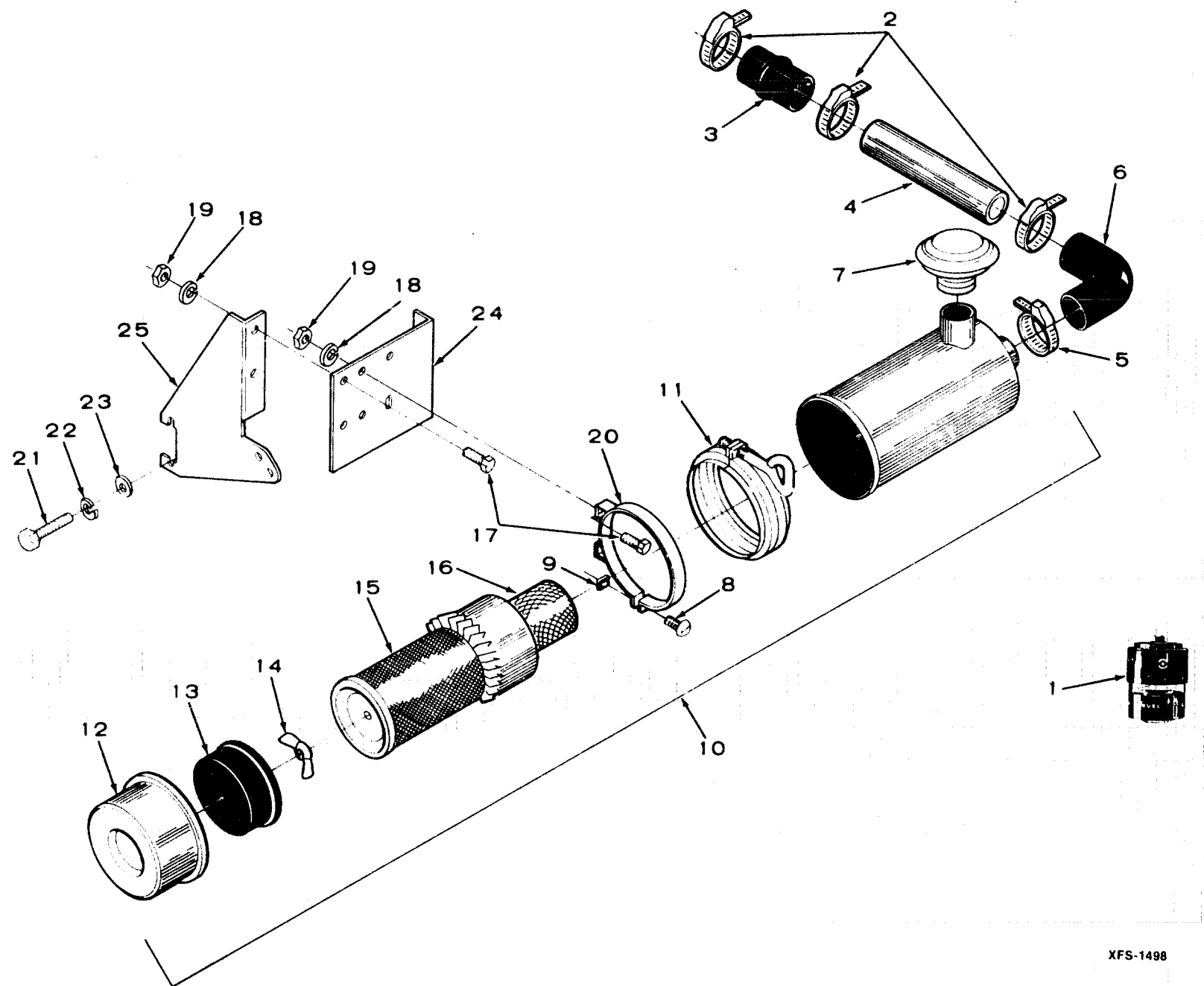
M-1467

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 manufacturer's manuals for your nearest authorized distributor or parts center; or contact the Onan distributor from whom you purchased this set for assistance in ordering replacement parts.

AIR CLEANER - LDYA

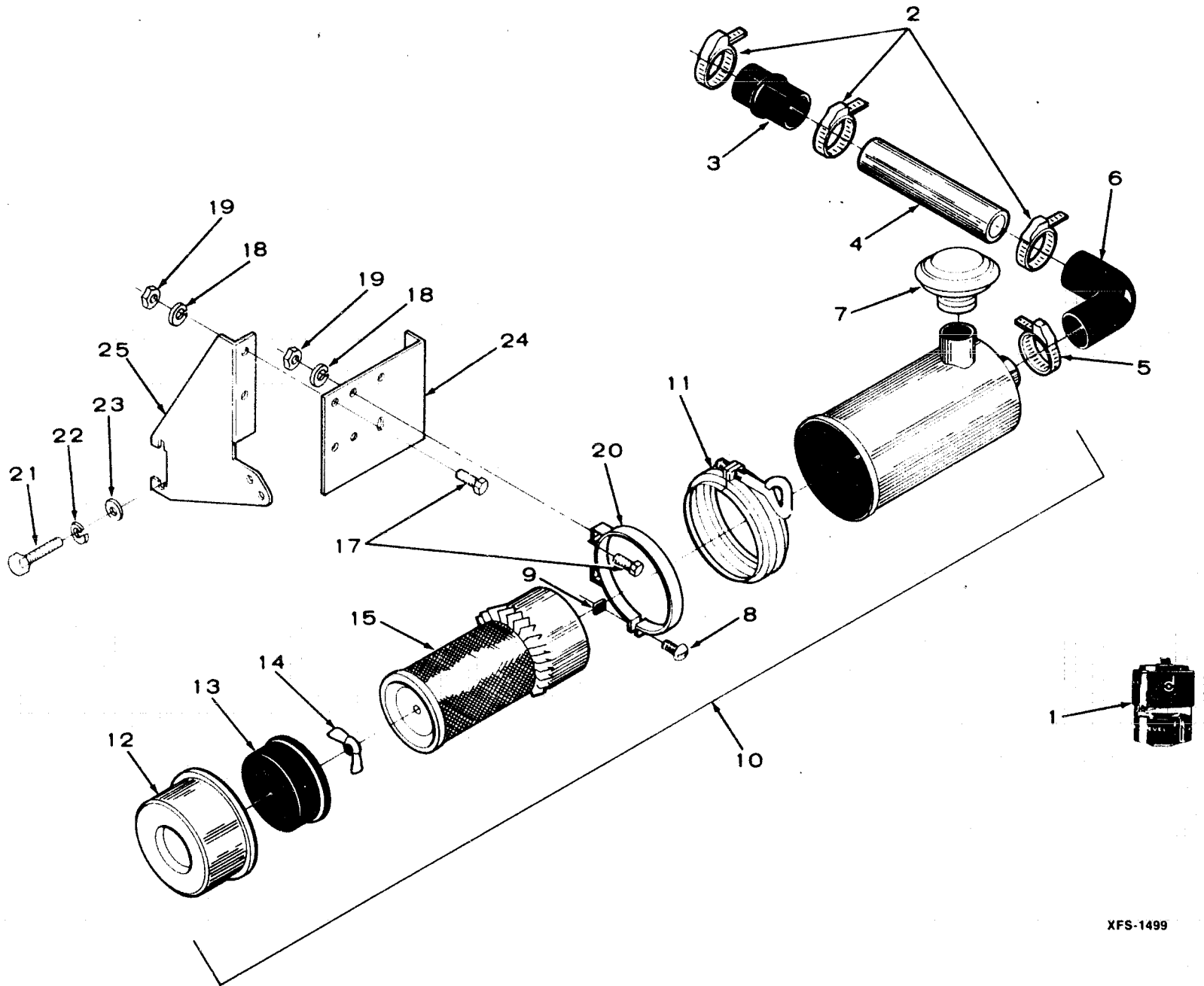


XFS-1498

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	140-1548	1	Indicator, Service	15	140-1619	1	*Element, Air Cleaner Primary
2	503-0868	3	Clamp, Hose (T Bolt Type)	16	140-1620	1	*Element, Air Cleaner Safety
3	503-0880	1	Adapter, Tube - Flexible	17	800-0027	7	Screw, Cap - Hex Head (5/16-18 x 7/8")
4	503-0886	1	Tube (3" OD x 12-1/2" Lg)	18	850-0045	7	Washer, Lock - Spring (5/16")
5	503-0885	1	Clamp, Hose (T Bolt Type)	19	862-0015	7	Nut, Hex (5/16-18)
6	140-1571	1	Elbow, Reducing, Rubber - Preformed	20	140-0317	2	Band, Mounting - Air Cleaner
7	140-1575	1	Hood, Air Cleaner	21	800-0031	2	Screw, Cap - Hex Head (5/16-18 x 1-1/2")
8	812-0156	2	Screw, Machine - Round Head (1/4-20 x 1-1/2")	22	850-0045	2	Washer, Lock - Spring (5/16")
9	863-0002	2	Nut, Square (1/4-20)	23	526-0264	2	Washer, Flat (11/32" ID x 23/32" OD x 1/8" Thk)
10	140-1555	1	Air Cleaner Assembly (Includes Parts Marked *)	24	140-1585	1	Bracket, Air Cleaner
11		1	*Clamp, Air Cleaner	25	140-1586	1	Brace, Air Cleaner
12		1	*Cup, Air Cleaner				
13		1	*Baffle, Air Cleaner				
14		1	*Nut, Wing				

* - Parts included in Air Cleaner Assembly.

AIR CLEANER - DYA



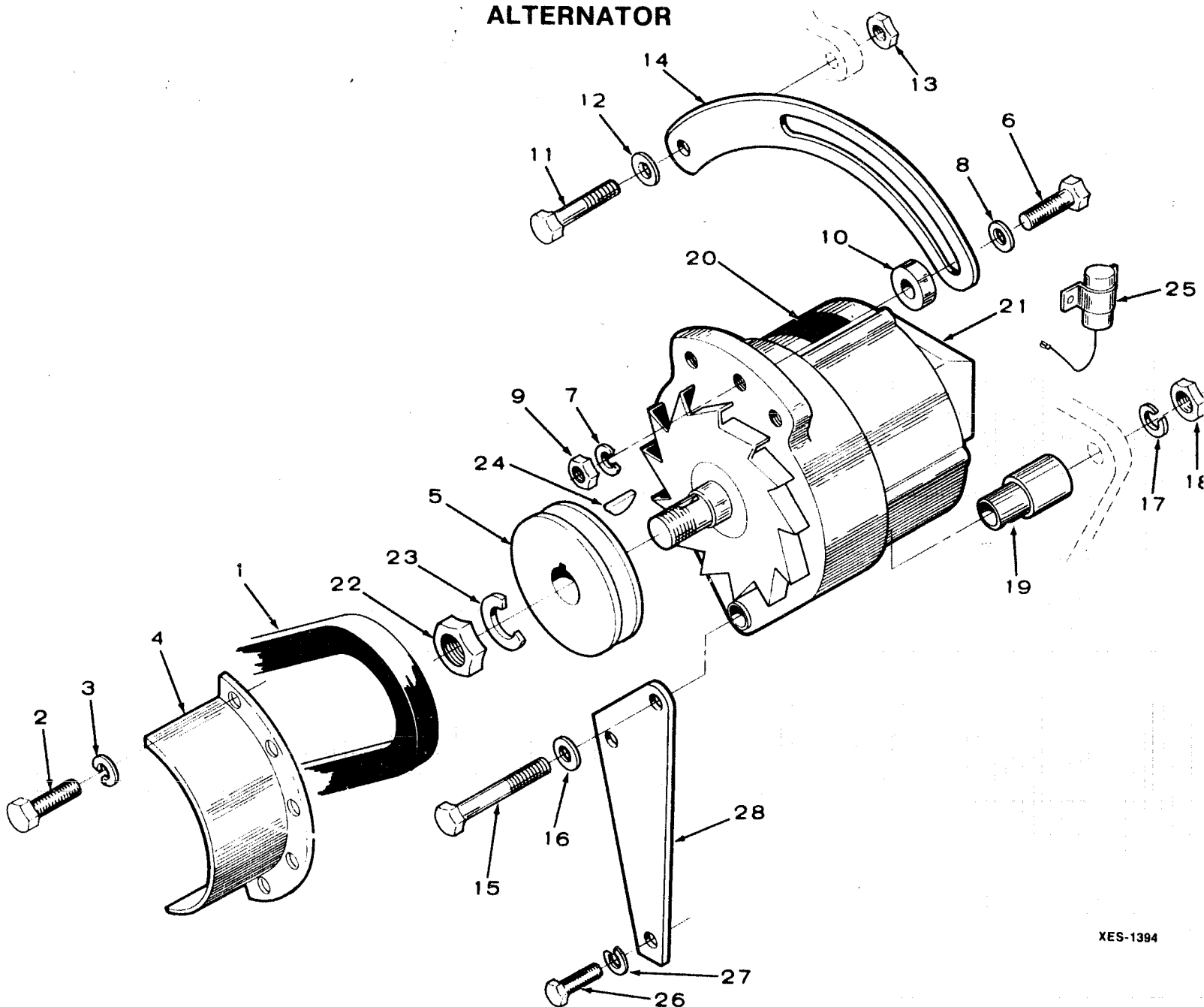
XFS-1499

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	140-1548	1	Indicator, Service
2	503-0868	3	Clamp, Hose (T Bolt Type)
3	503-0880	1	Adapter, Tube - Flexible
4		1	Tube
5	503-0868	1	Clamp, Hose (T Bolt Type)
6	140-1467	1	Elbow, Rubber - Preformed
7	140-1435	1	Hood, Air Cleaner
8	812-0156	2	Screw, Machine - Round Head (1/4-20 x 1-1/2")
9	863-0002	2	Nut, Square (1/4-20)
10	140-1454	1	Air Cleaner Assembly (Includes Parts Marked *)
11		1	*Clamp, Air Cleaner
12		1	*Cup, Air Cleaner
13		1	*Baffle, Air Cleaner
14		1	*Nut, Wing

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
15	140-1455	1	*Element, Air Cleaner
17	800-0027	7	Screw, Cap - Hex Head (5/16-18 x 7/8")
18	850-0045	7	Washer, Lock - Spring (5/16")
19	862-0015	7	Nut, Hex (5/16-18)
20	140-0317	2	Band, Mounting - Air Cleaner
21	800-0031	2	Screw, Cap - Hex Head (5/16-18 x 1-1/2")
22	850-0045	2	Washer, Lock - Spring (5/16")
23	526-0264	2	Washer, Flat (11/32" ID x 23/32" OD x 1/8" Thk)
24	140-1585	1	Bracket, Air Cleaner
25	140-1586	1	Brace, Air Cleaner

* - Parts included in Air Cleaner Assembly.

ALTERNATOR



XES-1394

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	511-0095	1	Belt, Drive
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	191-0649	1	Pulley
6	800-0031	1	Screw, Cap - Hex Head (5/16-18 x 1-1/2")
7	850-0045	1	Washer, Lock - Spring (5/16")
8	526-0030	1	Washer, Flat (13/32" ID x 7/8" OD x 1/8" Thk)
9	862-0015	1	Nut, Hex (5/16-18)
10	191-0791	1	Spacer
11	800-0054	1	Screw, Cap - Hex Head (3/8-16 x 2")
12	526-0100	1	Washer, Flat (9/16" ID x 1-3/8" OD x 7/64" Thk)
13	862-0003	1	Nut, Hex (3/8-16)
14	#	1	Strap, Adjusting
15	800-0059	1	Screw, Cap - Hex Head (3/8-16 x 3-1/4")
16	526-0100	1	Washer, Flat (9/16" ID x 1-3/8" OD x 7/64" Thk)

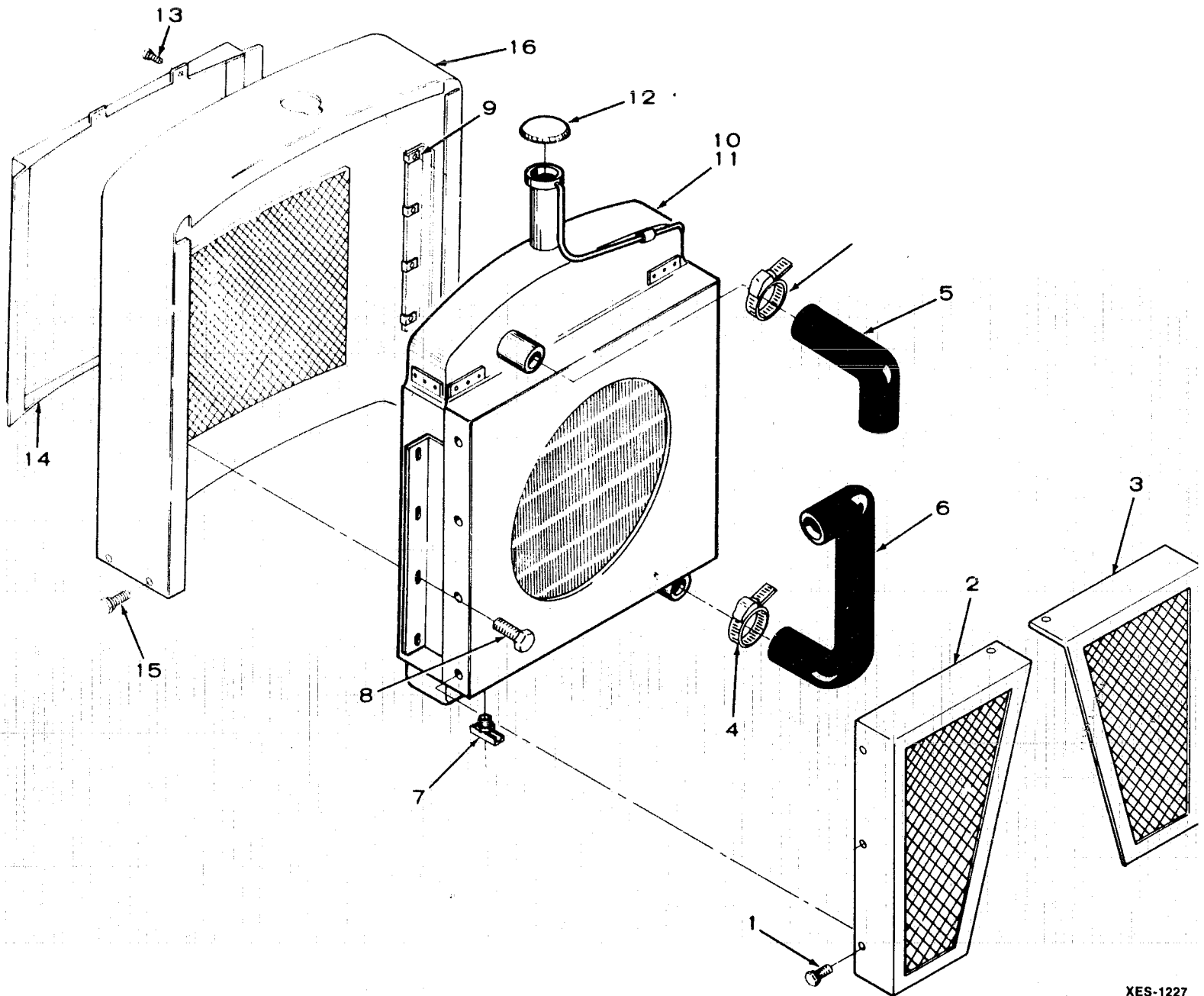
REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
17	850-0050	1	Washer, Lock - Spring (3/8")
18	862-0003	1	Nut, Hex (3/8-16)
19	191-0873	1	Spacer, Stepped
20	191-1388	1	Alternator - 12 VDC (Includes parts marked £)
21	191-1390	1	£Regulator, Voltage - 12 VDC (Includes parts marked '')
22	868-0007	1	£Nut, Hex (5/8-18)
23	850-0070	1	£Washer, Lock - Spring (5/3")
24	515-0093	1	£Key, Woodruff (#5)
25	312-0201	1	£Capacitor
26	800-0052	1	Screw, Cap - Hex Head (3/8-16 x 1-1/2")
27	850-0050	1	Washer, Lock - Spring (3/8")
29	191-0872	1	Bracket, Mounting

£ - Parts Included with Alternator

' - Parts Included with Voltage Regulator

- Parts Furnished with Engine - Refer to Manufacturers Parts Manual for Replacement.

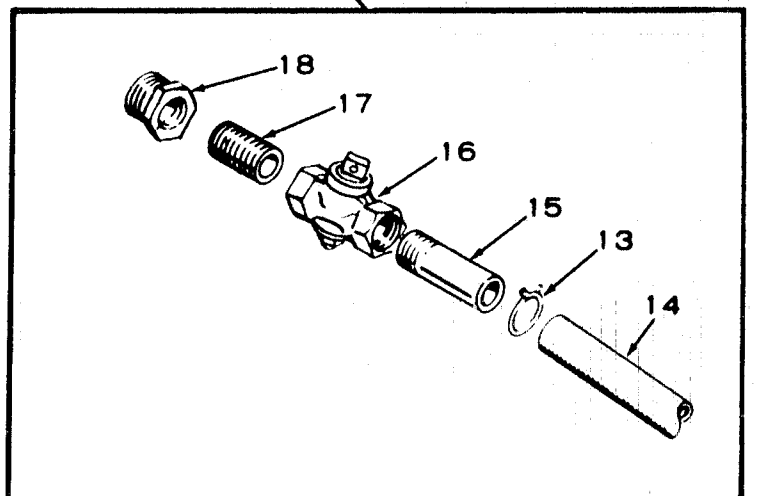
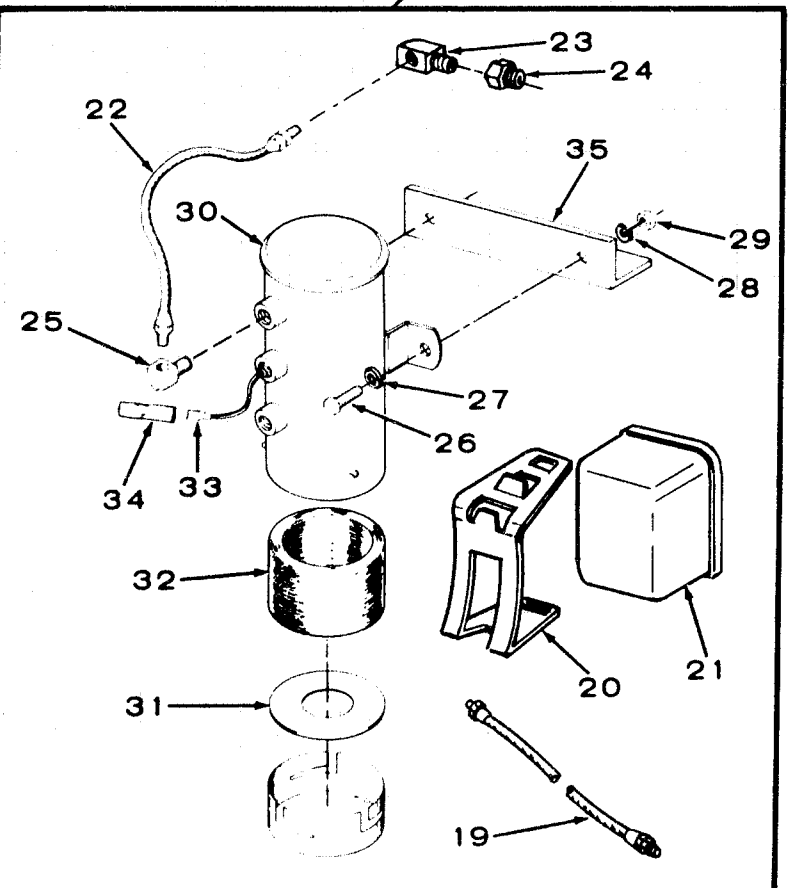
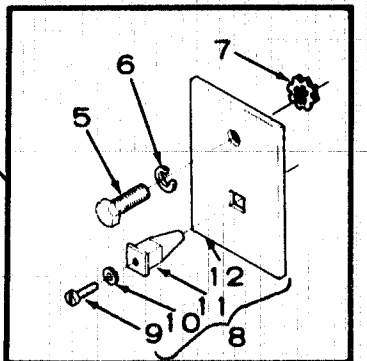
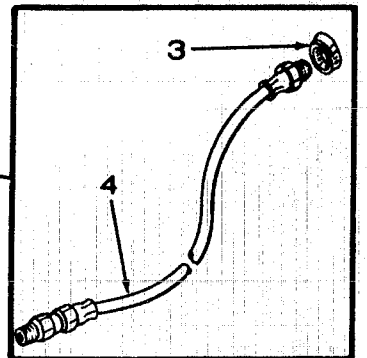
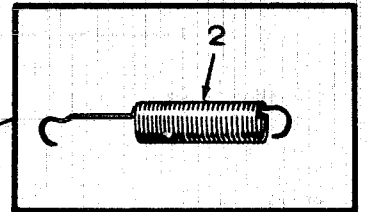
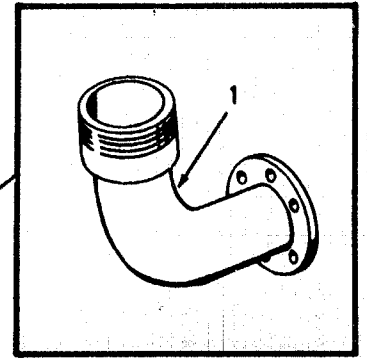
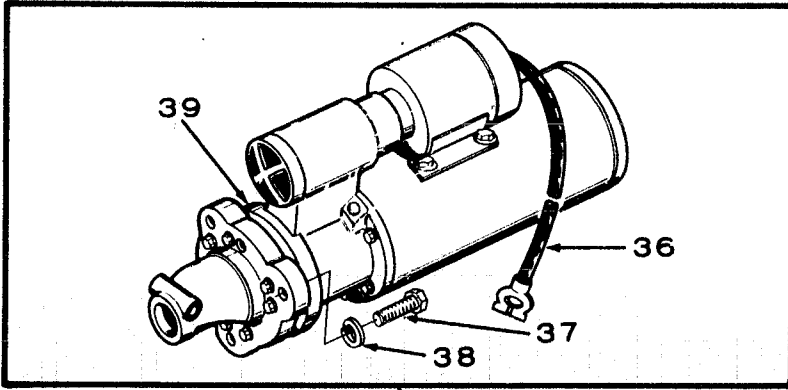
COOLING SYSTEM (WITH RADIATOR)



XES-1227

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	821-0010	10	Screw, Self-locking - Hex Washer Head (1/4-20 x 1/2")	10	130-0809	1	Radiator (Includes Cap) - DYA
2	130-0810	1	Guard, Fan - Right Side	11	130-1287	1	Radiator (Includes Cap) - LDYA
3	130-0811	1	Guard, Fan - Left Side	12	130-0449	1	Cap, Radiator
4	503-0365	4	Clamp, Hose	13	815-0181	10	Screw, Cap - Hex Head - Thread Cutting with ET Lock Washer (#10-32 x 1/2")
5	503-0594	1	Hose, Rubber - Preformed	14	405-1182	1	Flange, Air Duct
6	503-0595	1	Hose, Rubber - Preformed	15	821-0014	8	Screw, Self-locking - Hex Washer Head (5/16-18 x 1/2")
7	504-0028	1	Cock, Drain (3/8" NPT)	16	405-1153	1	Panel, Housing - Front
8	821-0016	8	Screw, Self-locking - Hex Washer Head (5/16-18 x 1")				
9	870-0113	8	Nut, Retainer (5/16-18)				

MISCELLANEOUS ENGINE PARTS (LEFT SIDE)



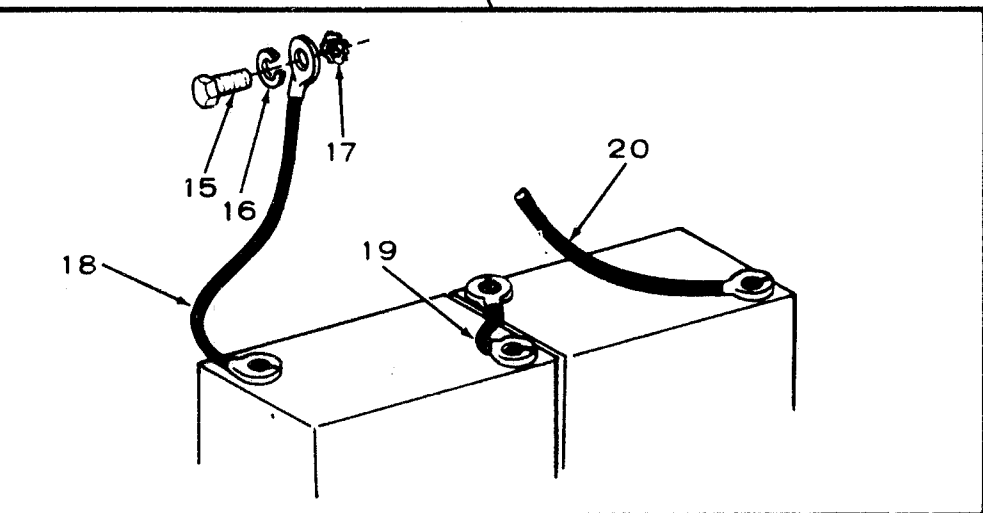
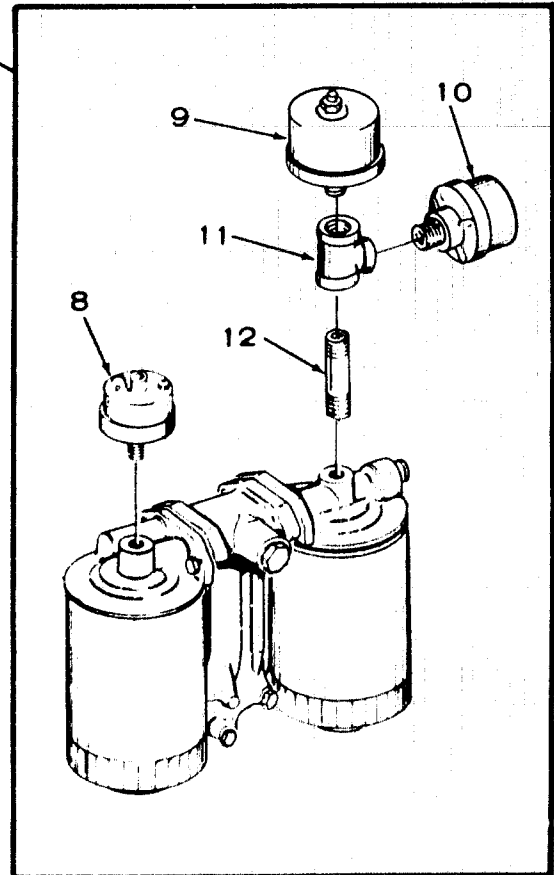
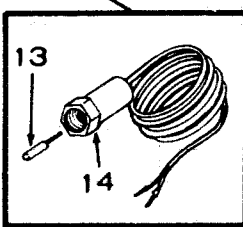
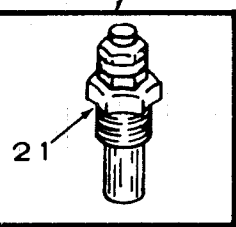
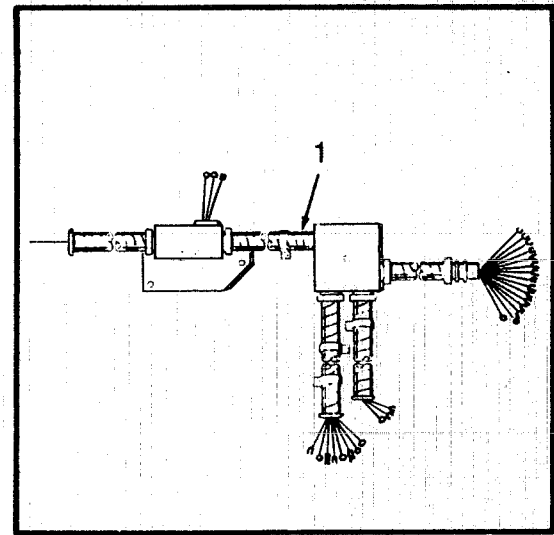
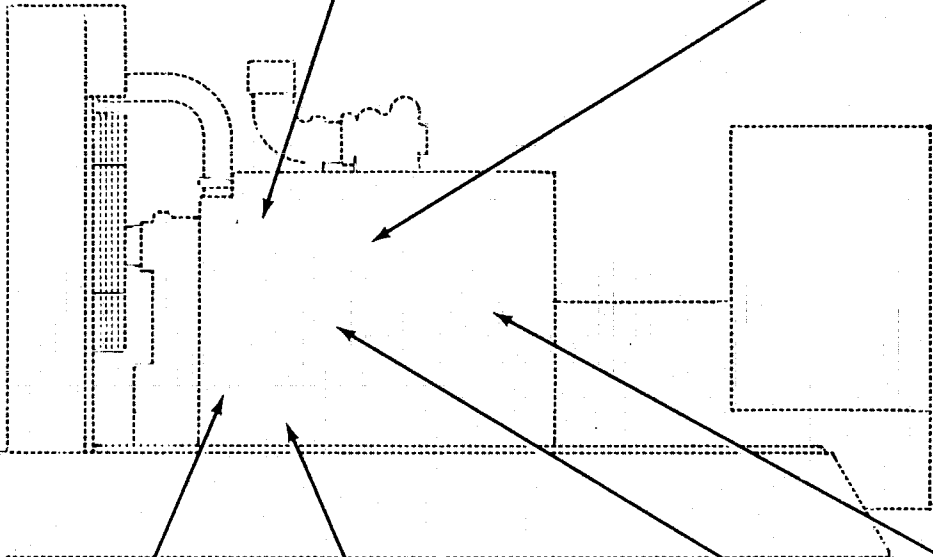
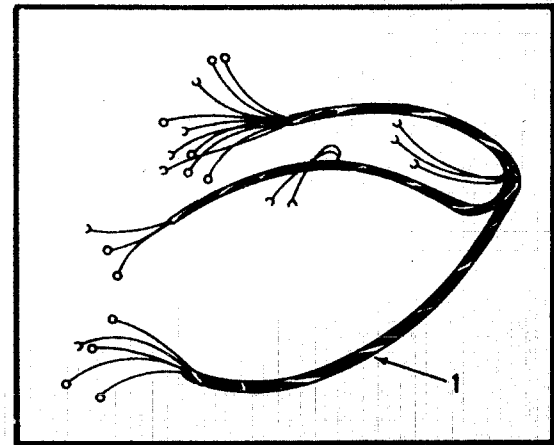
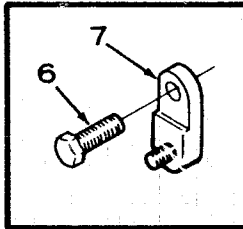
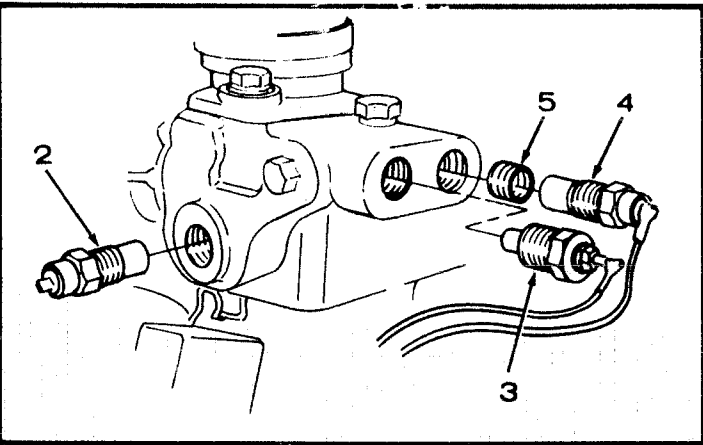
MISCELLANEOUS ENGINE PARTS (LEFT SIDE)

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	155-0996	1	Elbow, Exhaust
2	134-1437	1	Spring - Injection Pump Lever
3	503-0685	1	Clamp, Hose
4	LINE, FUEL - FLEXIBLE (Return Line)		
	501-0226	1	45" LG - With One End 1/8" NPT Male Fitting
	501-0225	1	45" Lg - With Both Ends 1/8" NPT Male Fittings
5	800-0026	1	Screw Cap - Hex Head (5/16-18 x 3/4")
6	850-0045	1	Washer, Lock - Spring (5/16")
7	856-0008	1	Washer, Lock - EIT (5/16")
8	332-1292	1	Terminal Board (Includes Parts Marked #)
9	809-0035	1	#Screw, Machine - Thread Cutting, Round Head (#8 x 3/4")
10	508-0015	1	#Washer, Insulating - Fiber (#8)
11	870-0196	1	#Nut, Insulating (#8)
12	332-1281	1	#Plate, Mounting - Terminal
13	503-0197	1	Clamp, Hose
14	503-0808	1	Hose, Rubber (3/4" ID x 1" OD x 14" Lg)
15	505-0185	1	Nipple, Pipe - Half (1/2" NPT x 1-1/2" Lg)
16	504-0011	1	Valve, Cock - Brass (1/2" NPT)
17	505-0100	1	Nipple, Pipe - Close (1/2" NPT x 1-1/8" Lg)
18	102-0778	1	Adapter, Pipe - Oil Drain
19	501-0227	1	Line, Fuel - Flexible (24" Lg x 1/8" NPT Male x 1/8" NPT Male Swivel)

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
20	149-1801	1	Clip, Retaining - Fuel Filter
21	149-1754	1	Element, Filter - Fuel
22	501-0002	1	Line, Fuel - Flexible (7" Lg x 1/8" NPT Male x 1/4" NPT Male Swivel)
23	502-0020	1	Elbow, Pipe - Street 90 Deg, Brass (1/8" NPT Female x 1/8" NPT Male)
24	502-0429	1	Adapter, Line to Filter
25	502-0002	1	Elbow, Pipe - Street 90 Deg, Brass (1/4" NPT Tube x 1/8" NPT Male)
26	800-0003	2	Screw, Cap - Hex Head (1/4-20 x 1/2")
27	856-0006	2	Washer, Lock - External Tooth (1/4")
28	850-0040	2	Washer, Lock - Spring (1/4")
29	862-0001	2	Nut, Hex (1/4-20)
30	149-1830	1	Pump, Fuel - Electric (Includes Parts Marked +)
31	149-1446	1	+Gasket, Cover
32	149-1445	1	+Filter, Fuel
33	332-0529	1	+Terminal
34	332-0556	1	+Connector, Splice
35	149-1162	1	Bracket, Mounting - Fuel Pump
36	416-0618	1	Cable, Battery - Positive
37	800-0055	3	Screw, Cap - Hex Head (3/8-16 x 2-1/4")
38	850-0050	3	Washer, Lock - Spring (3/8")
39	191-0721	1	Starter, Electrical (12 VDC)

- Parts Included in Terminal Board Assembly
+ - Parts Included in Fuel Pump

MISCELLANEOUS ENGINE PARTS (RIGHT SIDE)

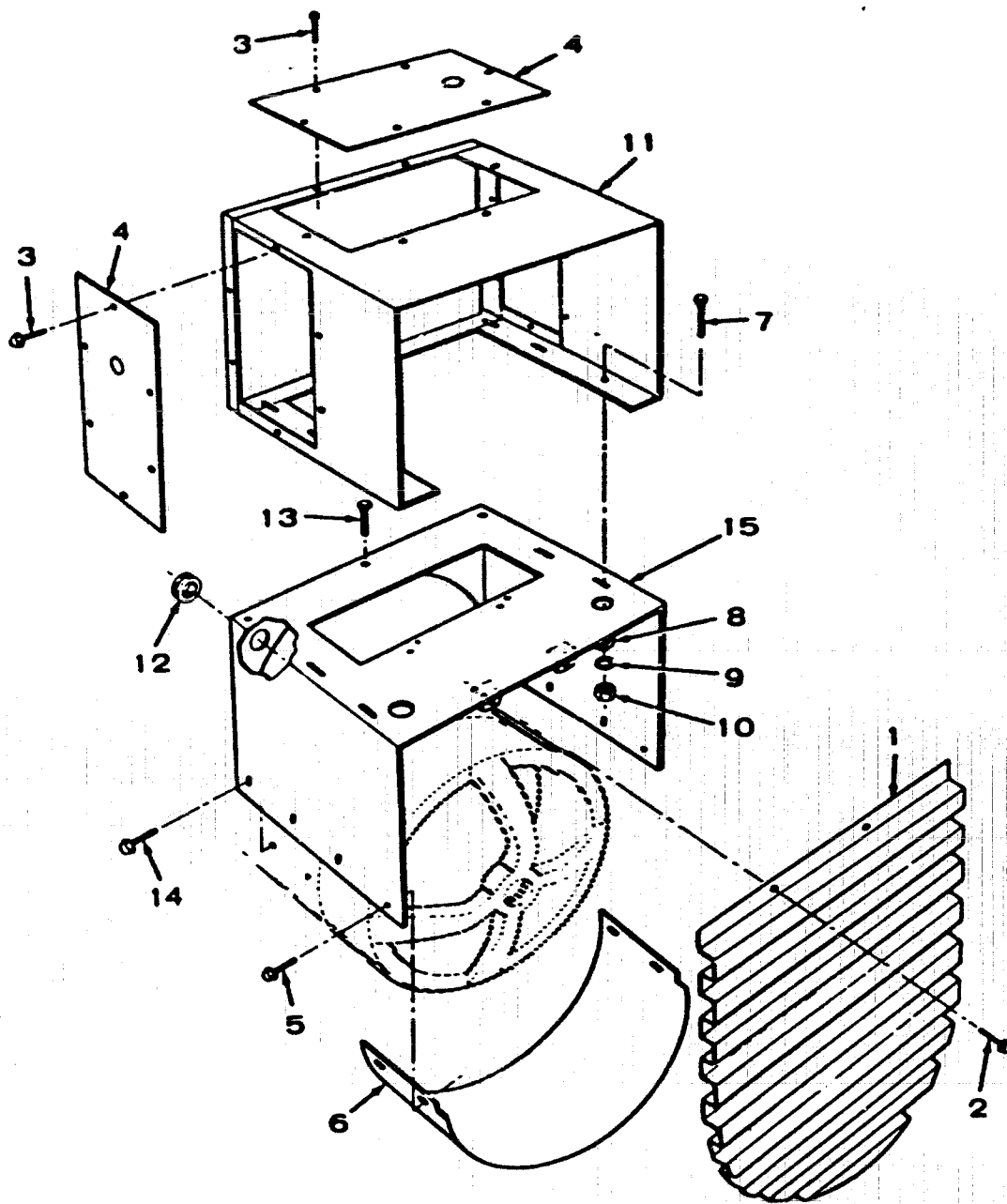


MISCELLANEOUS ENGINE PARTS (RIGHT SIDE)

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	WIRING HARNESS - ENGINE			8	309-0169	1	*Switch, Pressure - Low Oil
	338-0631	1	Standard - DYA	9	309-0064	1	*Switch, Pressure - Low Oil
	338-1148	1	Shielded - LDYA	10	193-0244	1	*Sender, Pressure - Oil
		1	Special (NOTE: Use Standard Wiring Harness and add electrical leads as required for optional sensors, switches per GenSet wiring diagram.	11	505-0059	1	Tee, Pipe (1/8" NPT)
				12	505-0104	1	Nipple, Pipe (1/8" NPT x 1-1/2" Lg)
2	309-0178	1	*Switch, Thermostatic - Hi Engine Coolant Temperature	13	302-0753	1	*Tang, Drive - Tachometer
3	193-0247	1	*Sender, Temperature - Engine Coolant	14	302-0750	1	*Sender, Tachometer
4	309-0179	1	*Switch, Thermostatic - Hi Engine Coolant Temperature	15	800-0069	1	Screw, Cap - Hex Head (7/16-14 x 3/4")
5	505-0117	1	*Bushing, Reducer - Flush, Brass (1/2" NPT x 3/8" NPT)	16	850-0055	1	Washer, Lock - Spring (7/16")
6	821-0029	1	Screw, Self-locking - Hex Washer Head (3/8-16 x 3/4")	17	856-0012	1	Washer, Lock - EIT (7/16")
7	309-0269	1	*Switch, Thermostatic - Low Engine Temperature	18	416-0619	1	Cable, Battery - Negative
				19	416-0446	1	Cable, Battery - Jumper
				20	416-0618	1	Cable, Battery - Positive
				21	193-0249	1	*Sender, Temperature Oil

* - Items Used with Fault Lights or Gauges on Engine Control Panel

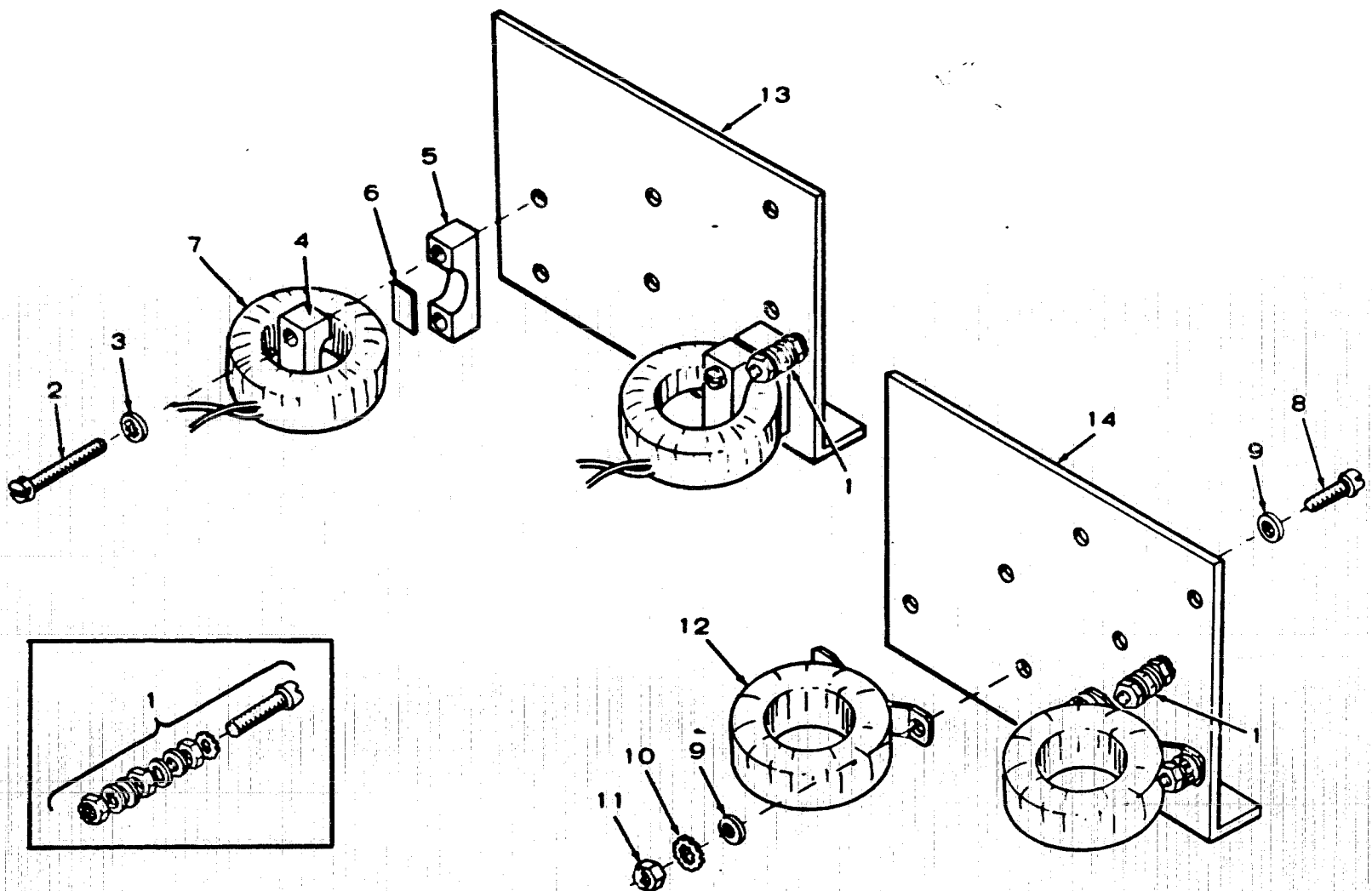
CONTROL HOUSING



M-1188

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

CURRENT TRANSFORMER ASSEMBLY

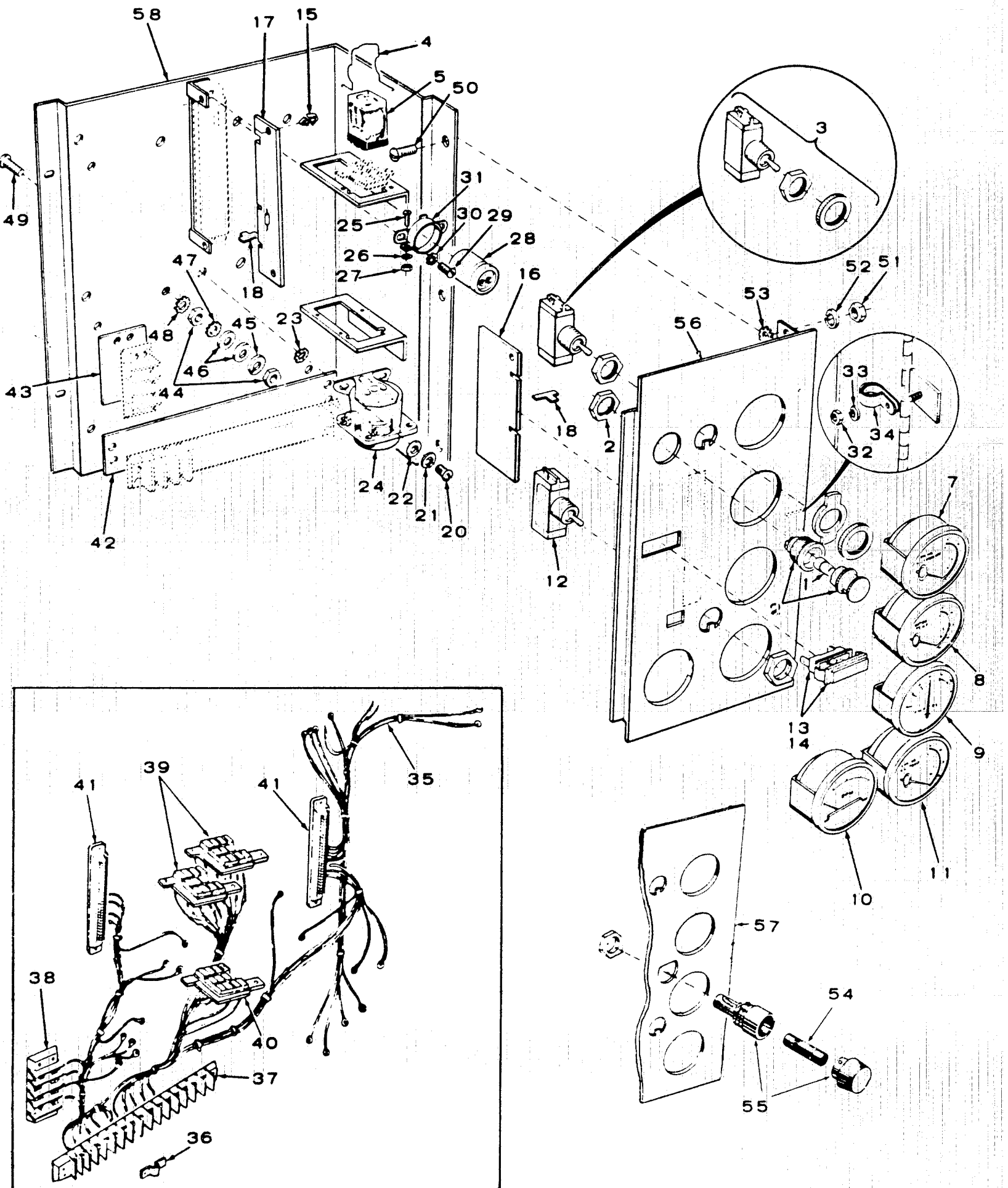


SC-1150

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

ENGINE CONTROL WITH ONE FAULT LIGHT



ENGINE CONTROL WITH ONE FAULT LIGHT

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	193-0243	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)		
	322-0128	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")
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

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
35	HARNESS, WIRING - ENGINE CONTROL		
	338-1065	1	Includes Parts Marked *
	338-1122	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 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	321-0181	1	£ Fuse (5 Amp)
55	321-0217	1	£ Fuseholder
56	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
57	£ PANEL, CONTROL - ENGINE		
	301-4572	1	With Three Gauge Mtg. Holes
		1	With Four Gauge Mtg. Holes
		1	With Five Gauge Mtg. Holes
58	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.

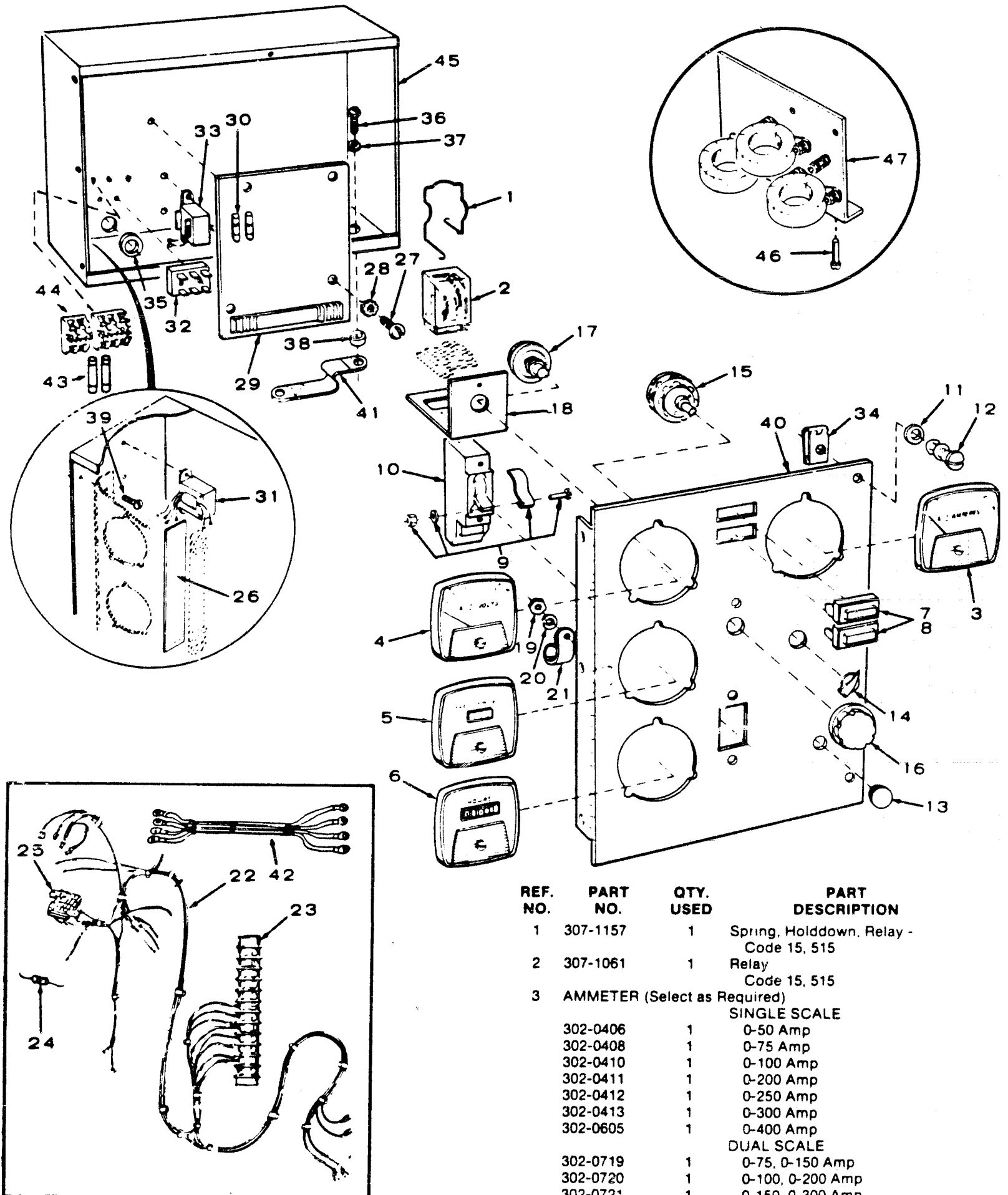
† - Optional items used with Engine Mounted Senders.

+ - Parts Included in Wiring Harness

- Parts Included in Ground Terminal Assembly

£ - Parts Used on Hi Ambient Temp (L) Type GenSets

GENERATOR CONTROL

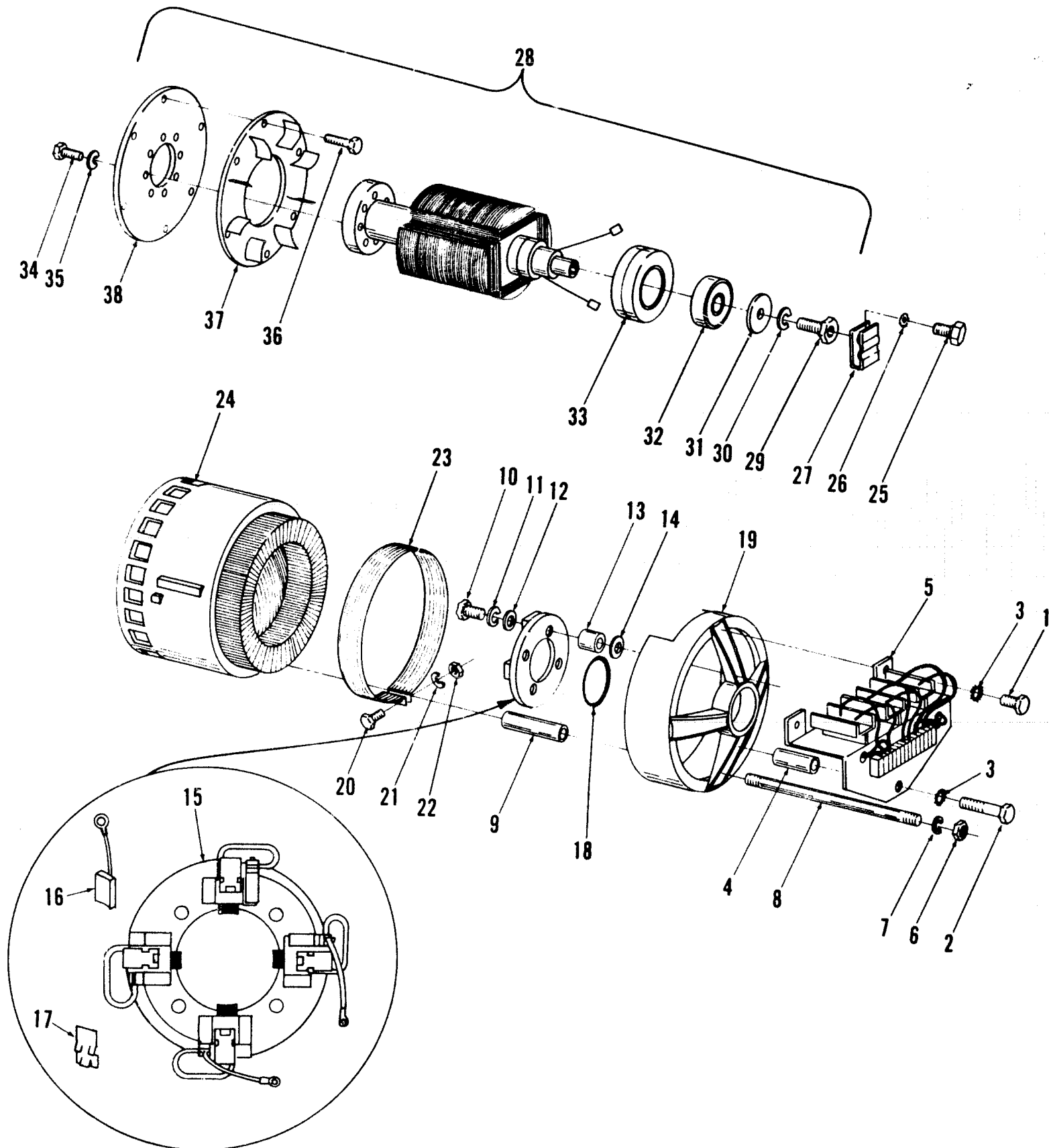


REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	307-1157	1	Spring, Holddown, Relay - Code 15, 515
2	307-1061	1	Relay Code 15, 515
3	AMMETER (Select as Required)		
			SINGLE SCALE
	302-0406	1	0-50 Amp
	302-0408	1	0-75 Amp
	302-0410	1	0-100 Amp
	302-0411	1	0-200 Amp
	302-0412	1	0-250 Amp
	302-0413	1	0-300 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				Socket, Relay - 11 Place - Code 15, 515
			DUAL SCALE	25	323-0765	1	Socket, Relay - 11 Place - Code 15, 515
	302-0718	1	0-300, 0-600 Volt	26	STRIP, MARKER (Select as Required)		
5	METER, FREQUENCY (Select as Required)						16 Place
			REED TYPE		332-1242	1	12 Place
	302-0213	1	115 VAC, 60 Hz		332-1248	1	12 Place
	302-0221	1	230 VAC, 60 Hz	27	812-0065	4	Screw, Machine - Round Head (#6-32 x 5/8")
	302-0234	1	115 VAC, 50 Hz				Washer, Lock - ET (#6)
	302-0256	1	230 VAC, 50 Hz	28	853-0003	4	Regulator, Voltage
			POINTER TYPE	29	332-1956	1	Fuse Cartridge (1.4 Amp)
	302-0809	1	120 VAC, 60 Hz	30	321-0204	2	Transformer, Voltage
	302-0810	1	208 VAC, 60 Hz	31	315-0431	1	ATTACHING PARTS FOR TRANSFORMER
	302-0811	1	240 VAC, 60 Hz				812-0061 2 Screw, Machine - Round Head (#6-32 x 3/8")
6	METER, TIME TOTALIZING (Select as Required)						Washer, Lock - ET (#6)
	302-0466	1	60 Hz		853-0003	2	Rectifier, Bridge
	302-0469	1	50 Hz	32	305-0675	1	ATTACHING PARTS FOR RECTIFIER
7	LIGHT, INDICATOR - 125 VAC (Lens Color & Legend Listed Below)						812-0070 2 Screw, Machine - Round Head (#6-32 x 1-1/4")
	322-0130	1	Red - Lower Scale				Washer, Lock - Spring (#6)
	322-0131	1	Red - Upper Scale		850-0020	2	Reactor
8	322-0178	1	Light, Indicator - 125 VAC (Replacement) - Discard Lens - Used Lens from Original Light	33	315-0384	1	ATTACHING PARTS FOR REACTOR
			Lock - Circuit Breaker Handle (Penn State Sets)				812-0061 2 Screw, Machine - Round Head (#6-32 x 3/8")
9	320-0307	1	Lock - Circuit Breaker Handle (Penn State Sets)				Washer, Lock - ET (#6)
			ATTACHING HARDWARE FOR LOCK		853-0003	2	Receptacle, Turnbutton Fastener
	815-0203	1	Screw, Machine - Round Head (#10-32 x 7/8")	34	406-0332	2	Grommet, Rubber
			Washer, Lock - IT (#10)	35	508-0001	4	Screw, Cap - Hex Head (5-16-18 x 3/8")
	854-0010	1	Nut, Hex (#10-32)	36	800-0045	4	Washer, Lock - Spring (5-16-18)
	871-0010	1	Circuit Breaker	37	850-0045	4	Dampener, Vibration
10	320-0431	1	ATTACHING HARDWARE FOR CIRCUIT BREAKER	38	402-0070	4	Screw, Machine - Truss Head (#10-32 x 3/8")
			812-0061 2 Screw, Machine - Round Head (#6-32 x 3/8")	39	815-0026	3	PANEL CONTROL
			Washer, Lock - Spring (#6)				Sets Without Meter Panel
	815-0203	1	Screw, Machine - Round Head Brass (#10-32 x 7/8")		301-3822	1	Code 3
			Nut, Hex - Brass (#10-32)		301-3821	1	Code 6D, 7, 9X
	871-0010	1	Washer, Lock - ET (#10)		301-3274	1	Code 15, 515
	853-0008	1	Washer, Flat - Brass (13/64" ID x 7/16" OD x 132" Thk)				Sets With Meter Panel
	526-0049	1	Clip, Retaining - Turnbutton Fastener		301-3169	1	Code 3
11	406-0334	2	Stud, Turnbutton Fastener		301-3342	1	Code 6D, 7, 9X
12	406-0333	2	Plug, Plastic		301-3170	1	Code 15, 515
13	517-0131	1	Knob, Pointer	41	337-0049	1	Strap, Ground
14	303-0076	1	Switch, Selector				ATTACHING PARTS FOR STRAP
15	308-0284	1	Knob				800-0045 1 Screw, Cap - Hex Head (5-16-18 x 3/8")
16	303-0032	1	Rheostat (35K Ohms, 25 Watt)				Washer, Lock - Spring (5-16-18)
17	303-0170	1	Bracket, Mounting, Relay - Code 15, 515		850-0045	1	Washer, Lock - ET (5-16-18)
18	301-3244	1	Nut, Hex (#10-32)		856-0008	2	Nut, Hex (5-16-18)
19	870-0053	1	Washer, Lock - Spring (#10)	42	338-1104	1	£Wiring Harness - Fuse Blocks to Terminal Board
20	850-0030	1	Clamp, Loop				£Fuse Cartridge (15 Amp)
21	332-0051	1	HARNESS, WIRING - GENERATOR CONTROL	43	321-0223	4	£FUSE BLOCK
22	Sets Without Meter Panel						321-0176 1 Two Place
	338-0765	1	Code 3				321-0177 1 Three Place
	338-0764	1	Code 15, 515	44	BOX, CONTROL		
	338-0766	1	Code 6D, 7, 9X				301-3158 1 Used on Sets Without Fuse Blocks
			Sets With Meter Panel				301-4586 1 £Used on Sets With Fuse Blocks
	338-0735	1	Code 3	45	821-0010	2	Screw, Self-locking - Hex Washer Head (1-4-20 x 1-2")
	338-0730	1	Code 15, 515	46	CURRENT TRANSFORMER ASSEMBLY (See Separate Figure For Parts) - NOTE: Assembly is Located Behind the Control Box.		
	338-0759	1	Code 6D, 7, 9X				£ - Parts Used on Hi Ambient Temp (L) Type GenSets
			ATTACHING HARDWARE FOR WIRING HARNESS				
	812-0061	2	Screw, Machine - Round Head (#6-32 x 3/8")				
	812-0066	2	Screw, Machine - Round Head (#6-32 x 3/4")				
	850-0020	2	Washer, Lock - Spring (#6)				
	853-0003	4	Washer, Lock - ET (#6)				
	853-0006	2	Nut, Hex (#6-32)				

GENERATOR ASSEMBLY (BRUSH TYPE) WITH INTEGRAL VOLTAGE REGULATOR



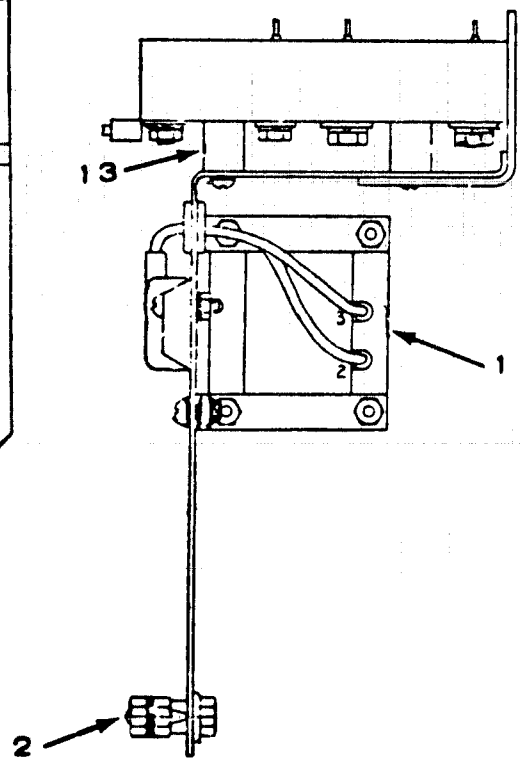
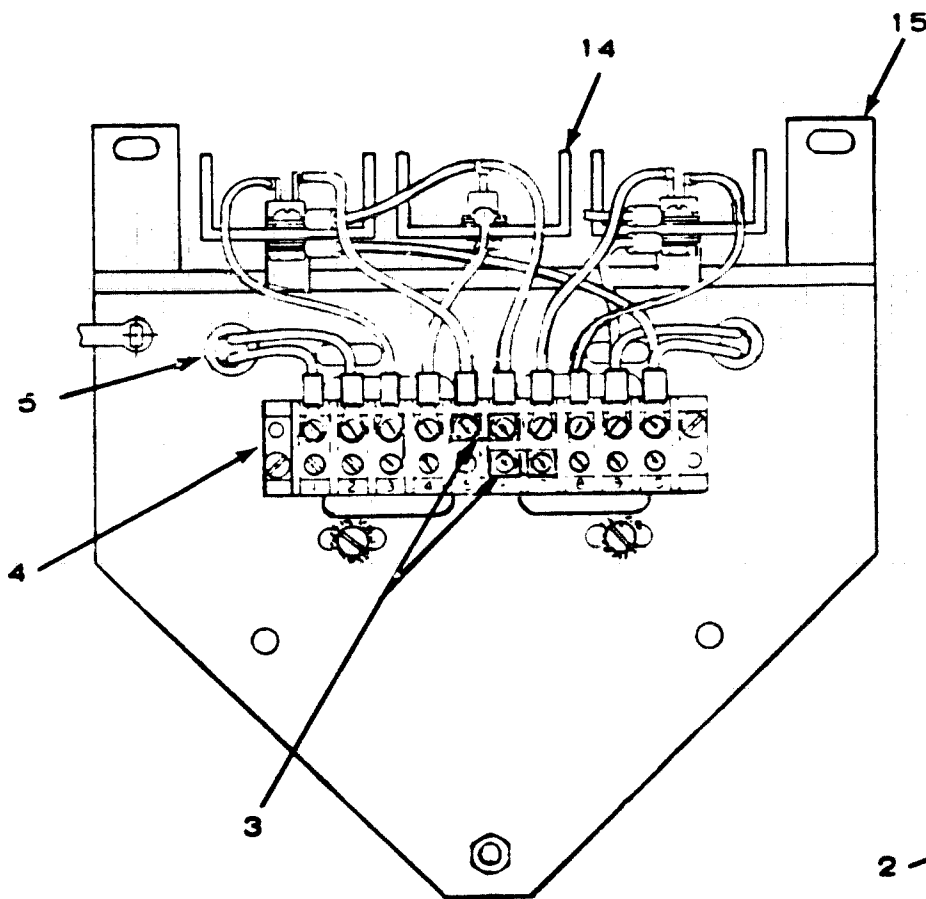
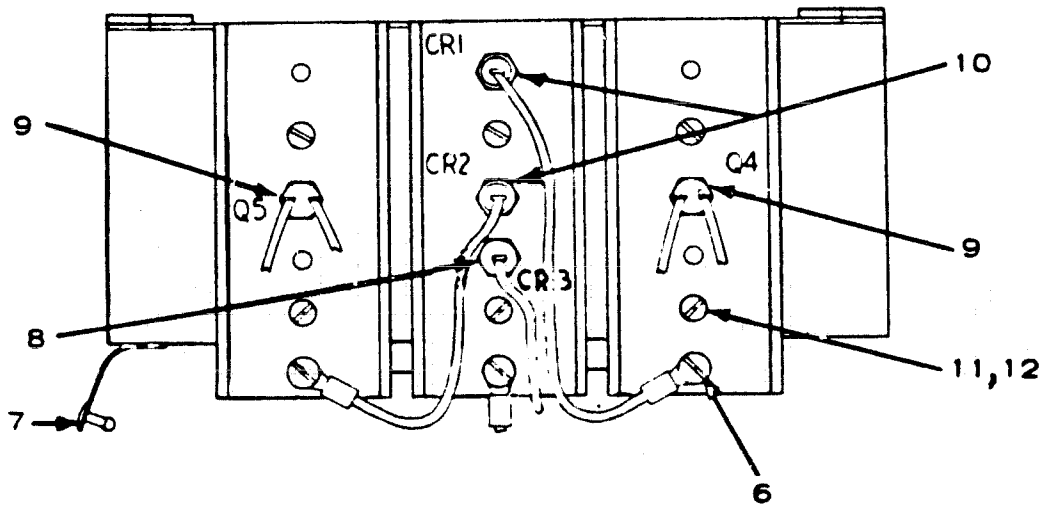
GENERATOR ASSEMBLY - BRUSH TYPE WITH INTEGRAL VOLTAGE REGULATOR

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	305-0483	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)		
	520-0726	4	3/8-16 UNC x 20- 1/16" Lg
	520-0723	4	3/8-16 UNC x 17-15/16" 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
	315-0203	4	*Screw, Machine - Round Head with External Tooth Lockwasher, Brass (#10-32 x 7/8")
	353-0008	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")
22	862-0001	2	Nut, Hex (1/4-20)
23	234-0368	1	Screen, Air - Generator
24	STATOR ASSEMBLY, GENERATOR		
	50 HERTZ SETS		
	220-1458	1	Code 515
	220-1458	1	‡ Code 515 (Extended Stack)
	60 HERTZ SETS		
	220-1456	1	Code 15
	220-1458	1	‡ Code 15 (Extended Stack)

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
25	800-0048	1	Screw, Cap - Hex 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 *)		
	50 HERTZ SETS		
	201-1645	1	Code 515
	201-1647	1	‡ Code 515 (Extended Stack)
	50 HERTZ SETS		
	201-1645	1	Code 15
	201-1647	1	‡ Code 15 (Extended Stack)
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	5/8-11 x 1"
	805-0035	8	5/16-11 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
- ‡ - 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

VOLTAGE REGULATOR - END BELL MOUNTED **USED WITH BRUSH TYPE GENERATOR**

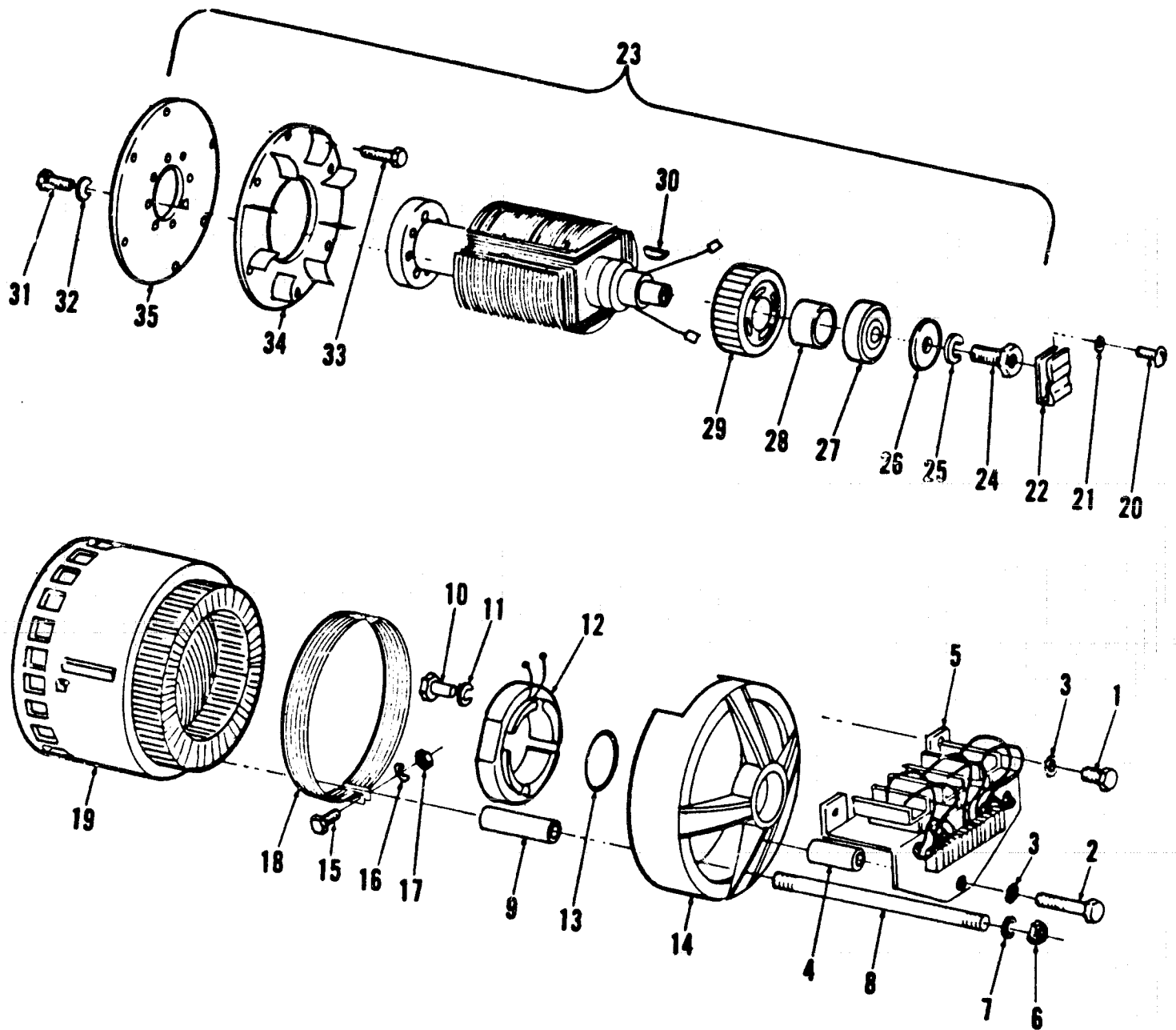


VOLTAGE REGULATOR - END BELL MOUNTED

USED WITH BRUSH TYPE GENERATOR

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
REGULATOR, VOLTAGE (All Parts Common Except As Marked)				6	ATTACHING HARDWARE FOR LEADS		
305-0489	1	Used on 30 (25) kW Sets, Codes 3, 53, 15 and 515 Single Phase Extended Stack type only.	812-0079	3	Screw, Machine - Round Head (#8-32 x 1/2")		
305-0489		Used on 30 (25) Through 55 (45) kW Sets, Codes 15 and 515 Single or Three Phase	853-0005	3	Washer, Lock - ET (#8)		
305-0483	1	Used on 45 (37.5) kW Sets, Codes 3, 53.	526-0048	2	Washer, Flat - Brass (11/64" ID x 3/8" OD x 1/32" Thk)		
305-0483	1	Used on 45 (37.5) Through 90 (75) kW Sets, Codes 15 and 515 Single Phase Extended Stack type.	871-0007	3	Nut, Hex - Brass (#8-32)		
305-0483	1	Used on 60 (50) Through 90 (75) kW Sets, Codes 15 and 515 Single or Three Phase.	7	332-1415	1	Clamp, Cable	
1	REACTOR (L1) (Select As Required)			8	358-0029	1	Rectifier (CR3)
315-0339	1	Used on 305-0483 Regulator	ATTACHING PARTS FOR RECTIFIER				
315-0341	1	Used on 305-0489 Regulator	871-0010	1	Nut, Hex - Brass (#10-32)		
		ATTACHING PARTS FOR REACTOR	850-0030	1	Washer, Lock - Spring (#10)		
813-0100	4	Screw, Machine - Round Head (#10-32 x 1/2")	526-0009	1	Washer, Flat (7/32" ID x 1/2" OD x 1/16" Thk)		
853-0008	4	Washer, Lock - ET (#10)	9	364-0012	2	Rectifier (Q4, Q5)	
2	CONTACT ASSEMBLY - OVERSPEED SWITCH (Includes the following parts Marked +)			ATTACHING PARTS FOR RECTIFIER			
862-0001	2	+Nut, Hex (1/4-20)	871-0018	2	Nut, Hex - Brass (1/4-20)		
853-0013	1	+Washer, Lock - ET (1/4")	850-0040	2	Washer, Lock - Spring (1/4")		
870-0250	1	+Nut, Insulating (1/4")	526-0018	2	Washer, Flat (17/64" ID x 5/8" OD x 1/16" Thk)		
150-0723	1	+Contact, Electrical - Threaded with Hex Head	10	358-0031	2	Rectifier (CR1, CR2)	
3	332-1043	2	Jumper - Terminal	ATTACHING PARTS FOR RECTIFIER			
4	332-1266	1	Block, Terminal	871-0018	2	Nut, Hex - Brass (1/4-20)	
			ATTACHING PARTS FOR TERMINAL BLOCK	850-0040	2	Washer, Lock - Spring (1/4")	
	812-0081	2	Screw, Machine - Round Head (#8-32 x 5/8")	526-0018	2	Washer, Flat (17/64" ID x 5/8" OD x 1/16" Thk)	
	853-0005	2	Washer, Lock - ET (#8)	11	812-0077	12	Screw, Machine - Round Head (#8-32 x 3/8")
	860-0008	2	Nut, Hex (#8-32)	12	853-0005	12	Washer, Lock - ET (#8)
5	508-0002	2	Grommet, Rubber	13	332-1265	6	Insulator, Standoff
				14	363-0048	3	Heatsink
				15	305-0482	1	Chassis
				+ - Parts included in Overspeed Switch Contact Assembly.			

WITH INTEGRAL VOLTAGE REGULATOR



GENERATOR ASSEMBLY - BRUSHLESS TYPE WITH INTEGRAL VOLTAGE REGULATOR

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 (1/4-20 x 1-1/2")
3	853-0013	4	Washer, Lock - ET (1/4")
4	305-0481	2	Spacer, Sleeve
5	305-0491	1	Regulator, Voltage (See Separate Group for Components)
6	862-0011	4	Nut, Hex - Grade 9 (3/8-16)
7	850-0050	4	Washer, Lock - Spring (3/8")
8	STUD (Select as Required)		
	520-0721	4	3/8-16 UNC x 16-11/32" Lg
	520-0723	4	3/8-16 UNC x 17-15/16" Lg
	520-0726	4	3/8-16 UNC x 20-1/16" Lg
9	503-0611	4	Hose, Rubber
10	800-0009	4	Screw, Cap - Hex Head (1/4-20 x 1-1/2")
11	850-0040	4	Washer, Lock - Spring (1/4")
12	STATOR, EXCITER (Select as Required)		
	220-2353	1	Standard
	220-1774	1	£Environmental Protected
13	509-0125	1	Seal, Oil - "O" Ring
14	211-0185	1	End Bell, Generator
15	800-0008	2	Screw, Cap - Hex Head (1/4-20 x 1-1/4")
16	850-0040	2	Washer, Lock - Spring (1/4")
17	862-0001	2	Nut, Hex (1/4-20)
18	234-0368	1	Screen, Air - Generator
19	STATOR ASSEMBLY, GENERATOR		
	50 HERTZ SETS		
	220-1456	1	Code 515
	220-1458	1	‡ Code 515 (Extended Stack)
	60 HERTZ SETS		
			Code 3
	220-1456	1	Code 15
	220-1458	1	‡ Code 15 (Extended Stack)
20	800-0048	1	Screw, Cap - Hex Head (3/8-16 x 3/4")
21	856-0010	1	Washer, Lock - EIT (3/8")
22	150-0717	1	Switch, Overspeed
23	ROTOR ASSEMBLY, GENERATOR (Includes Parts Marked *)		
	50 HERTZ SETS		
	201-2671	1	Code 515
	201-2673	1	‡ Code 515 (Extended Stack)
	60 HERTZ SETS		
			Code 3
	201-2671	1	Code 15
	201-2673	1	‡ Code 15 (Extended Stack)

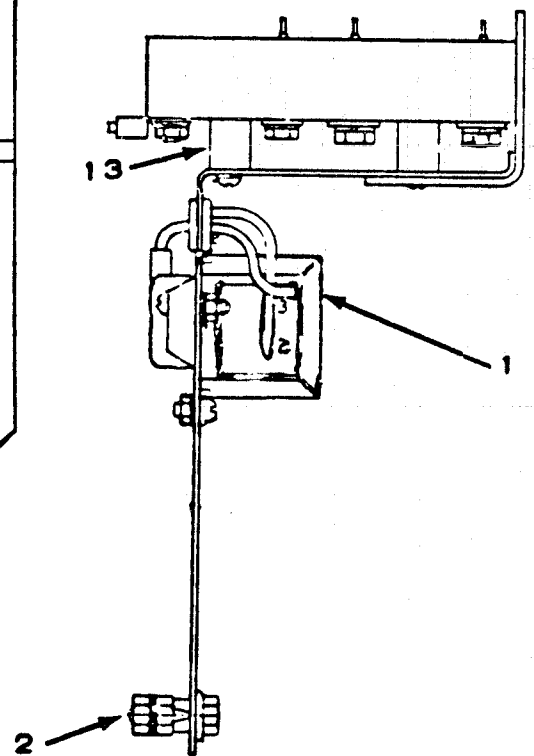
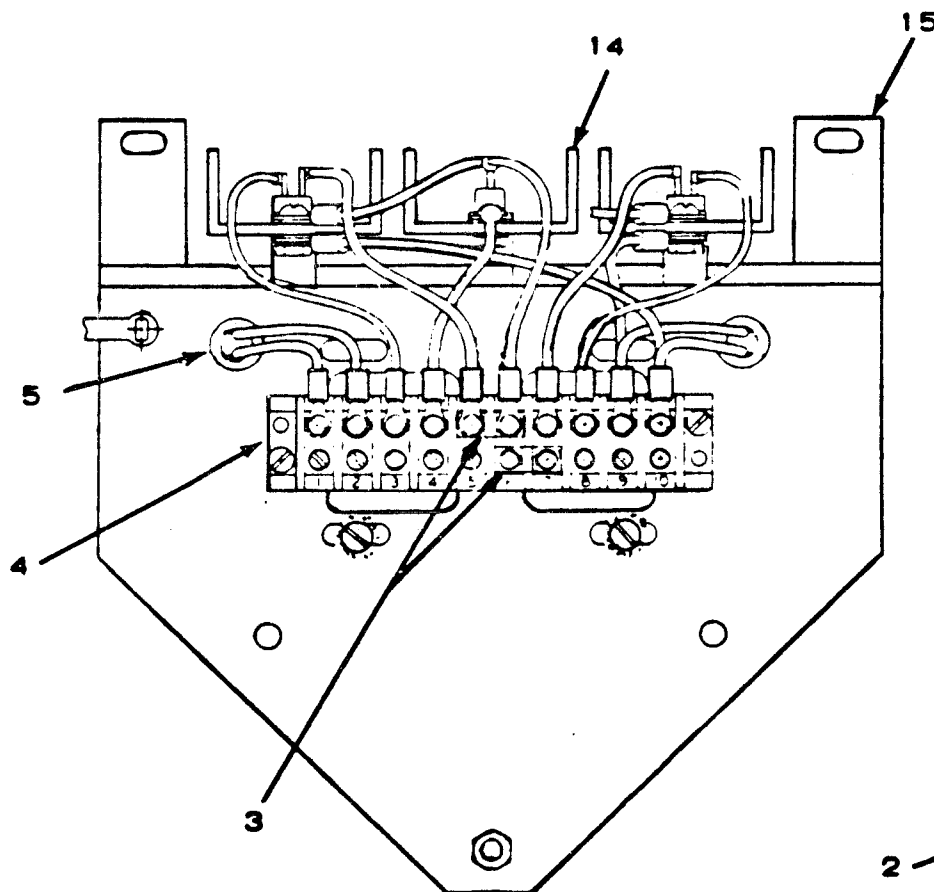
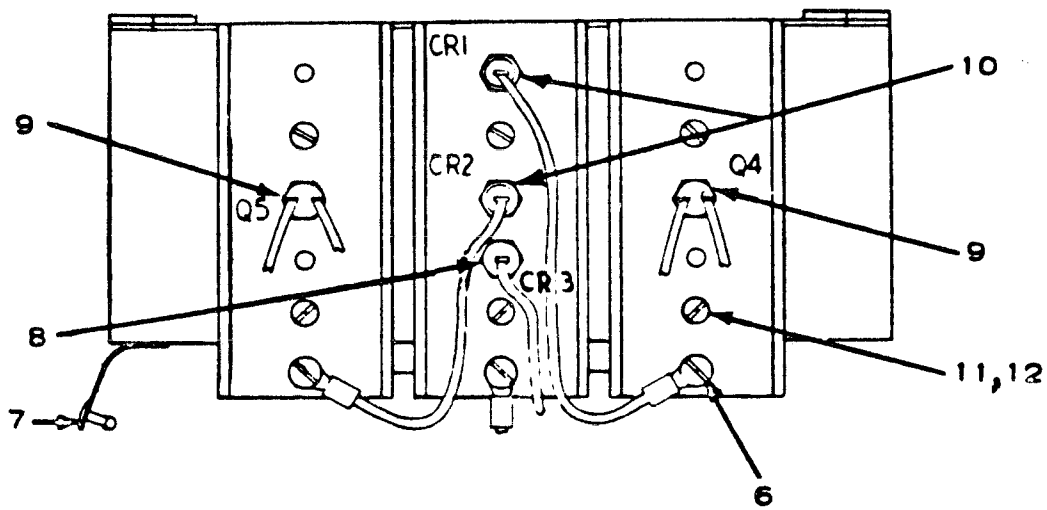
REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
24	800-0513	1	*Screw, Cap - Hex Head Modified with 3/8-16 Tapped Center Hole (3/4-10 x 1-1/2")
25	850-0079	1	*Washer, Lock - Spring (3/4")
26	526-0238	1	*Washer, Flat - Steel Alloy (13/16" ID x 2" OD x 3/16" Thk)
27	510-0101	1	*Bearing, Ball
28	232-2102	1	*Spacer, Sleeve
29	*ROTOR ASSEMBLY, EXCITER (See Separate Group for Component)		
	201-1739	1	Standard
	201-1845	1	£Environmental Protected
30	515-0145	1	*Key, Machine (1/4" x 1/4" x 7/8")
31	*BOLT, PLACE - HEX HEAD GRADE 8 (Select As Required)		
	805-0033	8	5/8-11 x 1"
	805-0035	8	5/8-11 x 1-1/2"
32	526-0259	8	*Washer, Flat - Hardened Steel (11/16" ID x 1-3/8" OD x 7/64" Thk)
33	*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"
34	205-0089	1	*Fan, Generator
35	232-2078	1	*Disk, Drive - Generator

* - 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

VOLTAGE REGULATOR - END BELL MOUNTED **USED WITH BRUSHLESS GENERATOR**



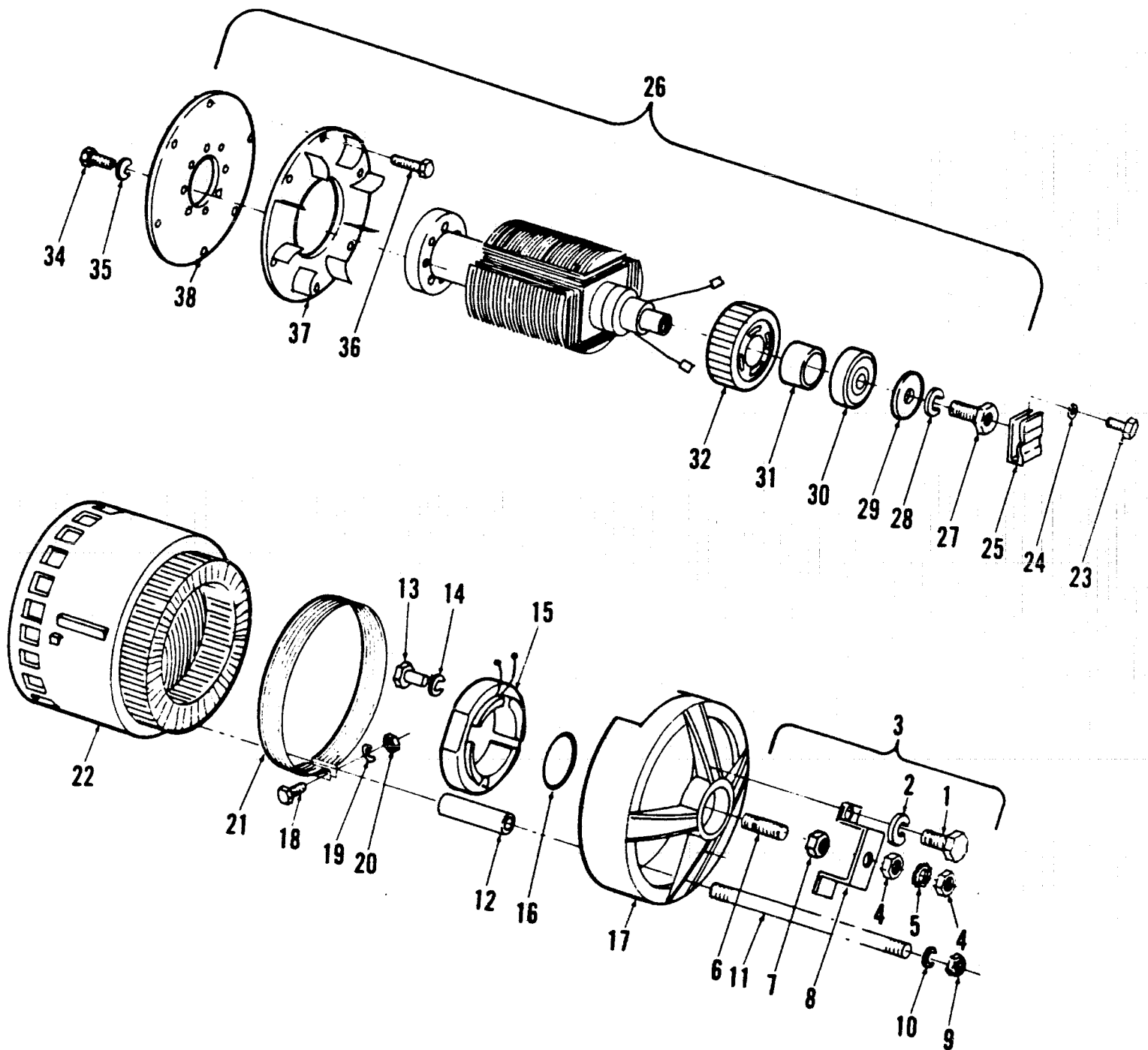
VOLTAGE REGULATOR - END BELL MOUNTED

USED WITH BRUSHLESS GENERATOR

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
	REGULATOR, VOLTAGE		
	305-0491	1	Used on 30 (25) Through 90 (75) kW Sets
1	315-0343	1	Reactor (L1) ATTACHING PARTS FOR REACTOR
	812-0077	2	Screw, Machine - Round Head (#8-32 x 3/8")
	853-0005	2	Washer, Lock - ET (#8)
	860-0008	2	Nut, Hex (#8-32) -----
2	CONTACT ASSEMBLY - OVERSPEED SWITCH (Includes the following parts Marked +)		
	862-0001	2	+Nut, Hex (1/4-20)
	853-0013	1	+Washer, Lock - ET (1/4")
	870-0250	1	+Nut, Insulating (1/4")
	150-0723	1	+Contact, Electrical - Threaded with Hex Head
3	332-1043	2	Jumper - Terminal
4	332-1266	1	Block, Terminal ATTACHING PARTS FOR TERMINAL BLOCK
	812-0081	2	Screw, Machine - Round Head (#8-32 x 5/8")
	853-0005	2	Washer, Lock - ET (#8)
	860-0008	2	Nut, Hex (#8-32) -----
5	508-0002	2	Grommet, Rubber
6	ATTACHING HARDWARE FOR LEADS		
	812-0079	3	Screw, Machine - Round Head (#8-32 x 1/2")
	853-0005	3	Washer, Lock - ET (#8)
	526-0048	2	Washer, Flat - Brass (11/64" ID x 3/8" OD x 1/32" Thk)
	871-0007	3	Nut, Hex - Brass (#8-32) -----
7	332-1415	1	Clamp, Cable
8	358-0029	1	Rectifier (CR3) ATTACHING PARTS FOR RECTIFIER
	871-0010	1	Nut, Hex - Brass (#10-32)
	850-0030	1	Washer, Lock - Spring (#10)
	526-0009	1	Washer, Flat (7/32" ID x 1/2" OD 1/16" Thk) -----
9	364-0012	2	Rectifier (Q4, Q5) ATTACHING PARTS FOR RECTIFIER
	871-0018	2	Nut, Hex - Brass (1/4-20)
	850-0040	2	Washer, Lock - Spring (1/4")
	526-0018	2	Washer, Flat (17/64" ID x 5/8" OD x 1/16" Thk) -----
10	358-0035	2	Rectifier (CR1, CR2) ATTACHING PARTS FOR RECTIFIER
	871-0018	2	Nut, Hex - Brass (1/4-20)
	850-0040	2	Washer, Lock - Spring (1/4")
	526-0018	2	Washer, Flat (17/64" ID x 5/8" OD x 1/16" Thk) -----
11	812-0077	12	Screw, Machine - Round Head (#8-32 x 3/8")
12	853-0005	12	Washer, Lock - ET (#8)
13	332-1265	6	Insulator, Standoff
14	363-0048	3	Heatsink
15	305-0482	1	Chassis

+ Parts included in Overspeed Switch Contact Assembly.

GENERATOR ASSEMBLY - BRUSHLESS TYPE USED WITH REMOTE VOLTAGE REGULATOR



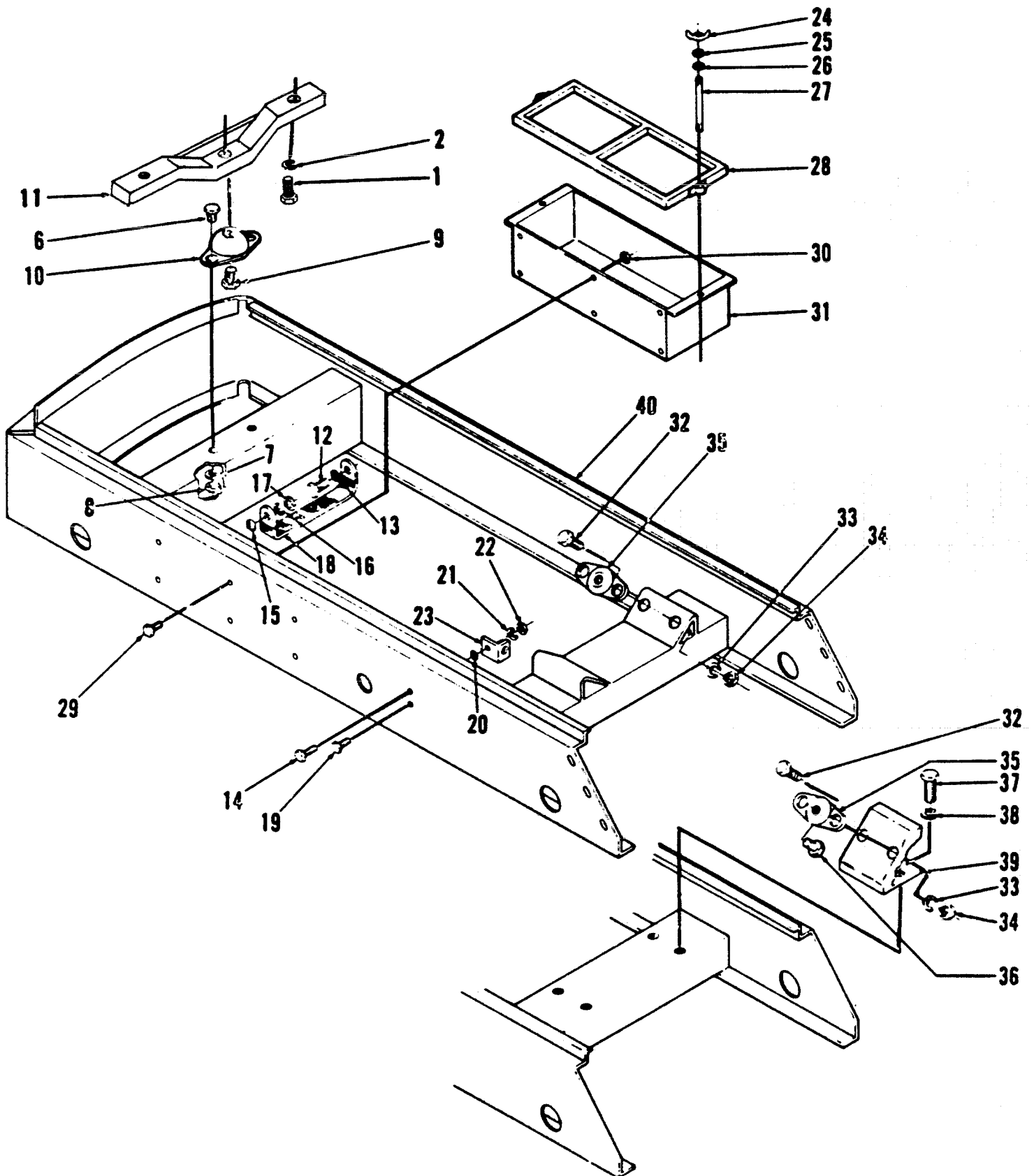
GENERATOR ASSEMBLY - BRUSHLESS TYPE USED WITH REMOTE VOLTAGE REGULATOR

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")
11	STUD (Select As Required)		
	520-0721	4	3/8-16 UNC x 16-11/32" Lg
	520-0723	4	3/8-16 UNC x 17-15/16" 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
12	503-0611	4	Hose, Rubber
13	800-0009	4	Screw, Cap - Hex Head (1/4-20 x 1-1/2")
14	850-0040	4	Washer, Lock - Spring (1/4")
15	STATOR, EXCITER (Select As Required)		
	220-2353	1	Standard
	220-1774	1	£Environmental Protected
16	509-0125	1	Seal, Oil - "O" Ring
17	211-0185	1	End Bell, Generator
18	800-0008	2	Screw, Cap - Hex Head (1/4-20 x 1-1/4")
19	850-0040	2	Washer, Lock - Spring (1/4")
20	862-0001	2	Nut, Hex (1/4-20)
21	234-0368	1	Screen, Air - Generator
22	STATOR ASSEMBLY, GENERATOR		
	50 HERTZ SETS		
	220-1999	1	Code 515
	220-2002		‡ Code 515 (Extended Stack)
	220-2250	1	£ Code 515 (Environmental Protected)
	220-2253	1	‡£ Code 515 (Extended Stack and Environmental Protected)
	60 HERTZ SETS		
			Code 3
			£ Code 3 (Environmental Protected)
	220-2626	1	Code 6D
	220-2464	1	Code 7
	220-1604	1	Code 9x
	220-1456	1	Code 15
	220-1459	1	‡ Code 15 (Extended Stack)
	220-1788	1	£ Code 15 (Environmental Protected)
	220-1792	1	‡£ Code 15 (Extended Stack and Environmental Protected)
23	800-0048	1	Screw, Cap - Hex Head (3/8-16 x 3/4")
24	856-0010	1	Washer, Lock - EIT (3/8")
25	150-0717	1	Switch, Overspeed

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
26	ROTOR ASSEMBLY, GENERATOR (Includes Parts Marked †)		
	50 HERTZ SETS		
	201-2671	1	Code 515
	201-2674	1	‡ Code 515 (Extended Stack)
	201-2687	1	£ Code 15 (Environmental Protected)
	201-2689	1	‡£ Code 15 (Extended Stack and Environmental Protected)
	60 HERTZ SETS		
			Code 3
			‡ Code 3 (Environmental Protected)
	201-2671	1	Codes 6D, 7, 9X, 15
	201-2674	1	‡ Code 15 (Extended Stack)
	201-2689	1	£ Code 15 (Environmental Protected)
	201-2692	1	‡£ Code 15 (Extended Stack and Environmental Protected)
27	800-0513	1	*Screw, Cap - Hex Head Modified with 3/8-16 Tapped Center Hole (3/4-10 x 1-1/2")
28	850-0079	1	*Washer, Lock - Spring (3/4")
29	526-0238	1	*Washer, Flat - Steel Alloy (13/16" ID x 2" OD x 3/16" Thk)
30	510-01C1	1	*Bearing, Ball
31	232-2102	1	*Spacer, Sleeve
32	*ROTOR ASSEMBLY, EXCITER (See Separate Group for Components)		
	201-1739	1	Standard
	201-1845	1	£Environmental Protected
33	515-0145	1	*Key, Machine (1/4" x 1/4" x 7/8")
34	*BOLT, PLACE - HEX HEAD, GRADE 8 (Select As Required)		
	805-0033	8	5/8-11 x 1"
	805-0035	8	5/8-11 x 1-1/2"
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 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

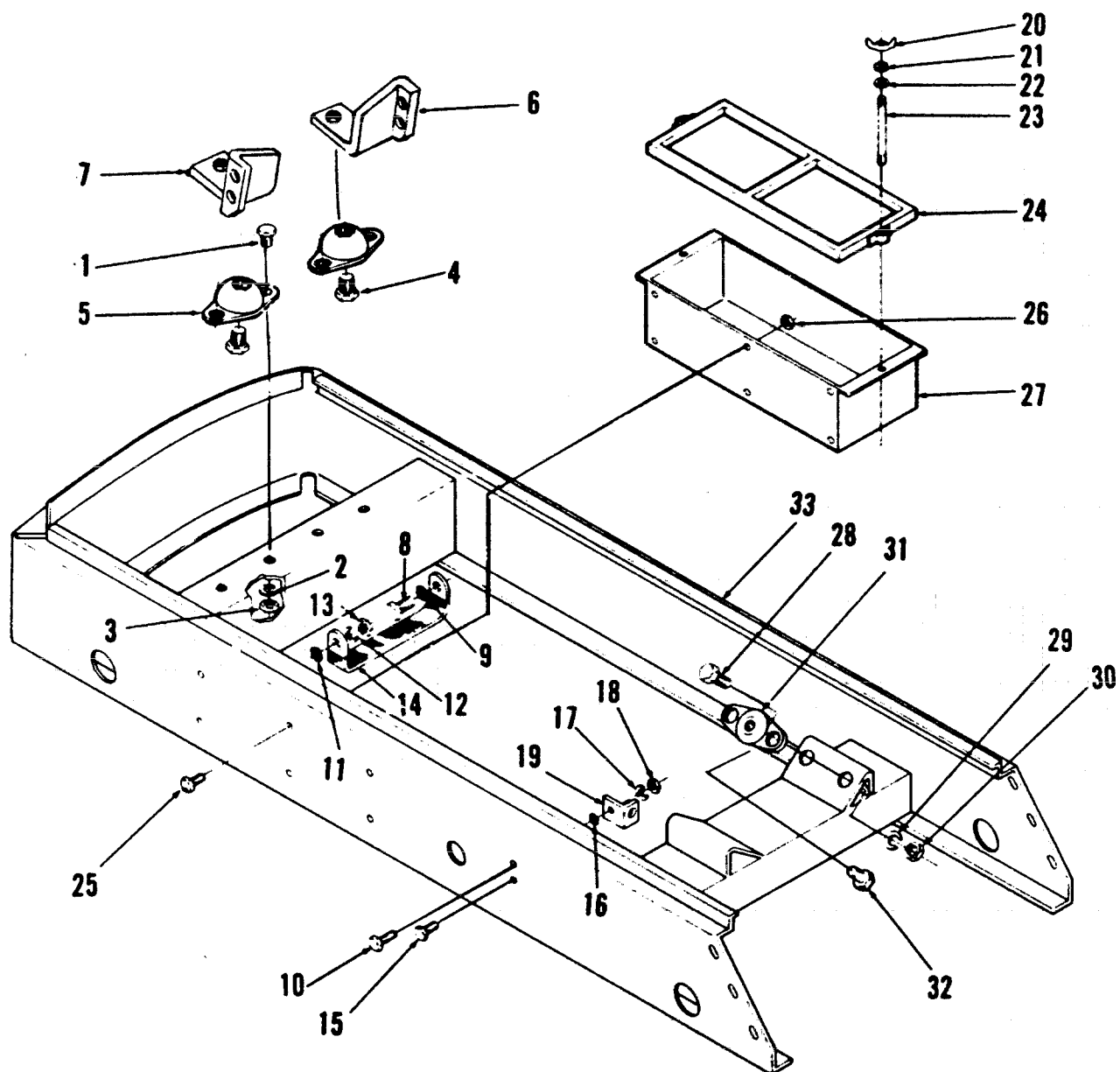
CHASSIS - DYA



CHASSIS — DYA

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	800-0077	2	Screw, Cap - Hex Head (7/16-14 x 1-1/2")
2	850-0055	2	Washer, Lock - Spring (7/16")
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	403-0908	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	402-0030	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 B Thru F
38	850-0060	4	Washer, Lock (1/2") — Spec B Thru F
39	232-2106	2	Bracket, Mounting - Generator — Spec B Thru F
40	403-0900	1	Chassis (NOTE: Begin Spec G, Generator Mounting Brackets are welded in place)

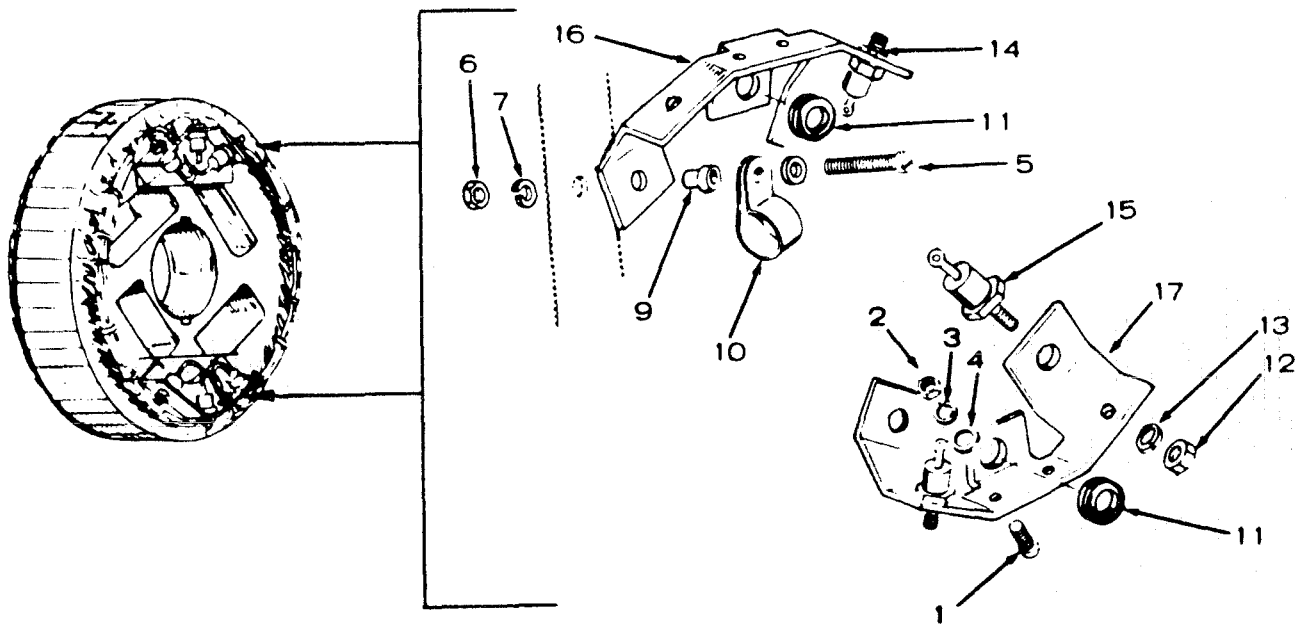
CHASSIS — LDY A



CHASSIS — LDYA

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	800-0090	10	Screw, Cap - Hex Head (1/2-13 x 1")
2	850-0060	10	Washer, Lock - Spring (1/2")
3	862-0016	6	Nut, Hex (1/2-13)
4	800-0520	2	Screw, Cap - Hex Head (3/4-10 x 1")
5	402-0030	2	Mount, Vibration
6	403-1411	1	Bracket, Support - Engine Left Side
7	403-1407	1	Bracket, Support - Engine Right Side
8	800-0090	1	Screw, Cap - Hex Head (1/2-13 x 1")
9	856-0013	1	Washer, Lock - EIT (1/2")
10	800-0091	1	Screw, Cap - Hex Head (1/2-13 x 1-1/4")
11	856-0013	1	Washer, Lock - EIT (1/2")
12	850-0060	1	Washer, Lock - Spring (1/2")
13	862-0016	1	Nut, Hex (1/2-13)
14	337-0090	1	Strap, Electrical
15	800-0028	1	Screw, Cap - Hex Head (5/16-18 x 1")
16	856-0008	1	Washer, Lock - EIT (5/16")
17	850-0045	1	Washer, Lock - Spring (5/16")
18	862-0015	1	Nut, Hex (5/16-18)
19	332-1473	1	Terminal, Lug
20	865-0007	2	Nut, Wing (5/16-18)
21	850-0045	2	Washer, Lock - Spring (5/16")
22	526-0115	2	Washer, Flat (11/32" ID x 11/16" OD x 1/16" Thk)
23	520-0663	2	Stud (5/16 x 18 x 5/16-18 x 3-1/4" Lg)
24	416-0480	1	Frame, Holddown - Battery
25	821-0029	6	Screw, Self-locking - Hex Washer Head (3/8-16 x 3/4")
26	870-0281	6	Nut, Self-locking, Hex Washer Head (3/8-16)
27	416-0666	1	Tray, Battery
28	800-0071	4	Screw, Cap - Hex Head (7/16-14 x 1")
29	850-0055	4	Washer, Lock - Spring (7/16")
30	862-0004	4	Nut, Hex (7/16-14)
31	402-0030	2	Mount, Vibration
32	800-0520	2	Screw, Cap - Hex Head (3/4-10 x 1")
33	403-1408	1	Chassis

EXCITER ROTOR



G-1030

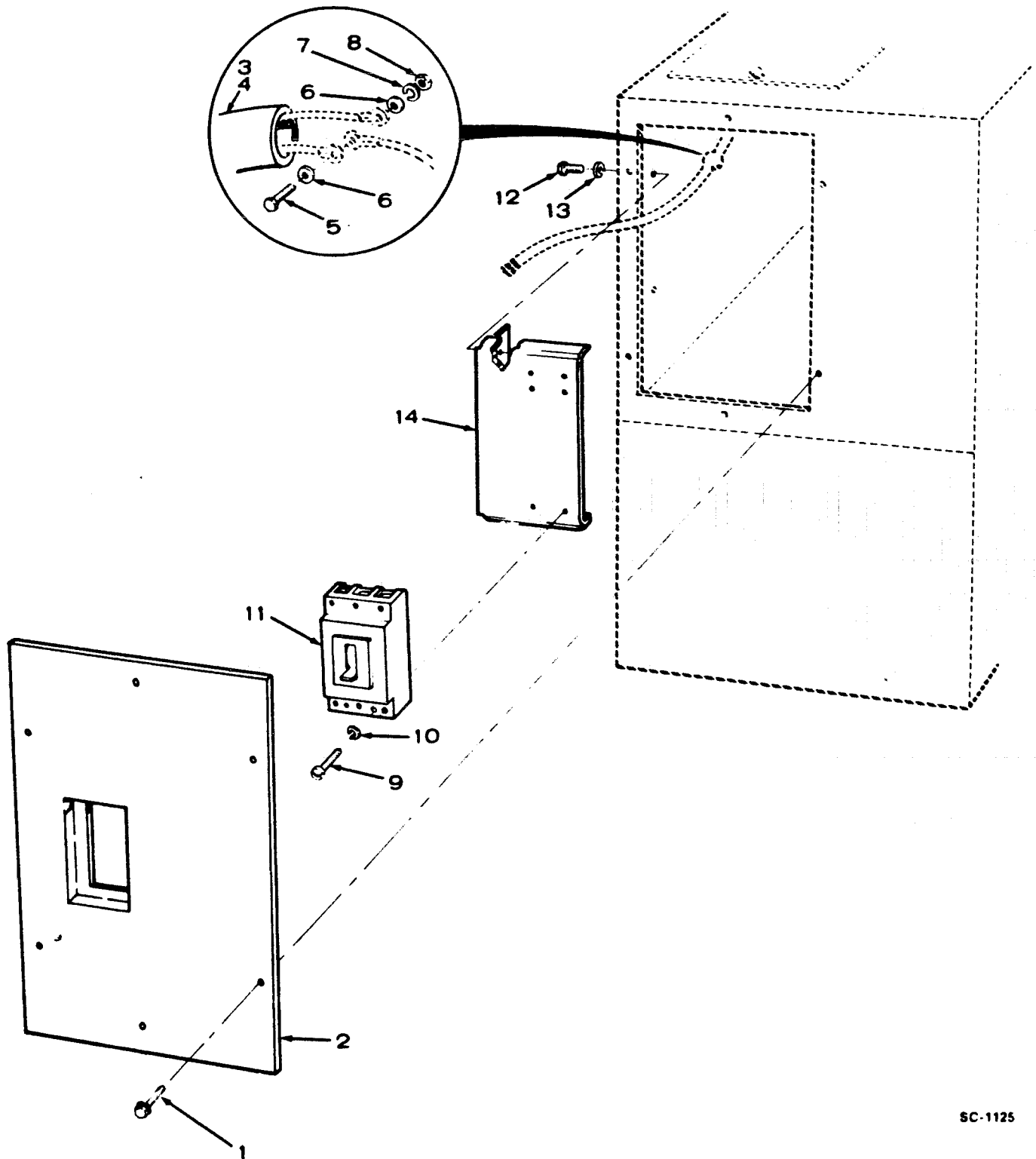
REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
ROTOR ASSEMBLY, EXCITER (Includes Parts Marked *)			
	201-1739	1	Standard
	201-1845	1	Enviromental Protected (Expoxyed)
1	813-0100	2	Screw, Machine - Round Head (#10-32 x 1/2")
2	870-0053	2	Nut, Hex (#10-32)
3	850-0030	2	Washer, Lock - Spring (#10)
4	526-0008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

* - Parts included in Exciter Rotor Assembly

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.

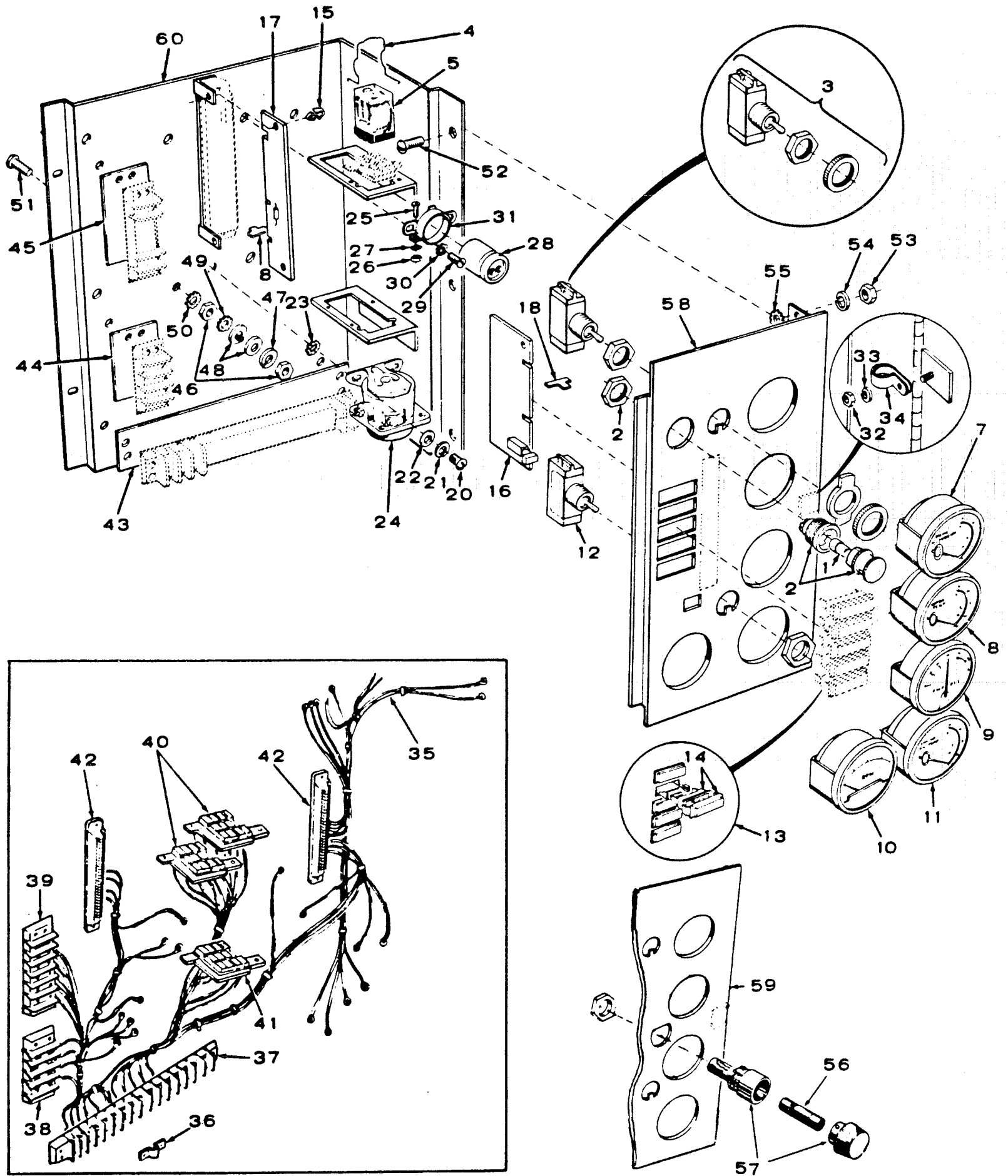
OPTIONAL CIRCUIT BREAKER



OPTIONAL CIRCUIT BREAKER

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	815-0350	6	Screw, Tapping - Hex Washer Head (#10-32 x 3/8)				125 AMP
2	301-3192	1	Panel, Cover - Circuit Breaker		320-0419	1	125 AMP, 3 PH, 200/346 - 220/380 VAC
3	SLEEVING, INSULATION - SHRINKABLE (Select as Required)						150 AMP
	898-0863		3/4" ID		320-0346	1	150 AMP, 3 PH, 120/208 - 120/240 VAC
	898-0865		1" ID		320-0425	1	150 AMP, 3 PH, 200/346 VAC
	898-0875		1-1/2" ID		320-0772	1	150 AMP, 3 PH, 127/220 VAC with 12 VDC shunt trip and AUX contacts
	898-0869		2" ID				
4	SLEEVING, INSULATION — FIBERGLASS (Select as Required)						175 AMP
	898-0974		3/4" ID		320-0344	1	175 AMP, 1 PH, 120/240 VAC
	898-0976		1" ID		320-0347	1	175 AMP, 3 PH, 120/208 - 120/240 VAC
5	800-0028	5	Screw, Cap - Hex Head (5/16-18 x 1")		320-0773	1	175 AMP, 3 PH, 127/220 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)				
7	850-0045	5	Washer, Lock - Spring (5/16")				
8	862-0015	5	Nut, Hex (5/16-18)				
9	812-0094	4	Screw, Machine - Round Head (#8-32 x 3-5/8")		320-0348	1	200 AMP 200 AMP, 3 PH, 120/208 - 120/240 VAC
10	850-0025	4	Washer, Lock - Spring (#8)				
11	CIRCUIT BREAKER (Select as Required)						225 AMP
			40-50-60 AMP		320-0359	1	225 AMP, 1 PH, 120/240 VAC
	320-0415	1	40 AMP, 3 PH, 347/600 VAC		320-0349	1	225 AMP, 3 PH, 120/208 VAC
	320-0413	1	50 AMP, 3 PH, 277/480 VAC	12	800-0003	2	Screw, Cap - Hex Head (1/4-20 x 1/2")
	320-0384	1	60 AMP, 3 PH, 200/346 - 220/380 VAC	13	850-0040	2	Washer, Lock - Spring (1/4")
	320-0416	1	60 AMP, 3 PH, 347/600 VAC	14	301-3197	1	Bracket, Mounting - Circuit Breaker
			70-90-100 AMP				
	320-0414	1	70 AMP, 3 PH, 277/480 VAC				
	320-0417	1	70 AMP, 3 PH, 347/600 VAC				
	320-0411	1	90 AMP, 3 PH, 120/240 VAC				
	320-0379	1	90 AMP, 3 PH, 200/346 - 220/380 - 277/480 VAC				
	320-0418	1	90 AMP, 3 PH, 347/600 VAC				
	320-0412	1	100 AMP, 3 PH, 120/208 VAC				
	320-0380	1	100 AMP, 3 PH, 200/346 - 220/380 - 277/480 VAC				
	320-0771	1	100 AMP, 3 PH, 127/220 VAC with 24 VDC shunt trip and AUX contacts				

OPTIONAL ENGINE CONTROL WITH FIVE FAULT LIGHTS



OPTIONAL ENGINE CONTROL WITH FIVE FAULT LIGHTS

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	193-0243	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
	309-0327	1	Penn State Controls
13	* LIGHT, INDICATOR-14 VDC (Lens Color & Legend Listed Below)		
	322-0107	1	Red - OVERCRANK
	322-0111	1	Red - OVERSPEED
	322-0108	1	Red - LO OIL PRESS
	322-0109	1	Red - HI ENG TEMP
	322-0110	2	Red - LO ENG TEMP
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		
	300-0681	1	Engine Control Monitor - Standard
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")
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

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
35	HARNESS, WIRING - ENGINE CONTROL		
	338-1066	1	Includes Parts Marked +
	338-1221	1	£ Includes Parts Marked +
	ATTACHING HARDWARE FOR WIRING HARNESS		
	812-0063	6	Screw, Machine - Round Head (#6-32 x 1/2")
	812-0066	6	Screw, Machine - Round Head (#6-32 x 3/4")
	853-0003	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	321-0181	1	£ Fuse (5 Amp)
57	321-0217	1	£ Fuseholder
	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
58	£ PANEL, CONTROL - ENGINE		
	301-4831	1	With Three Gauge Mtg Holes
	301-6152	1	With Four Gauge Mtg Holes
	301-6166	1	With Five Gauge Mtg Holes
59	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.

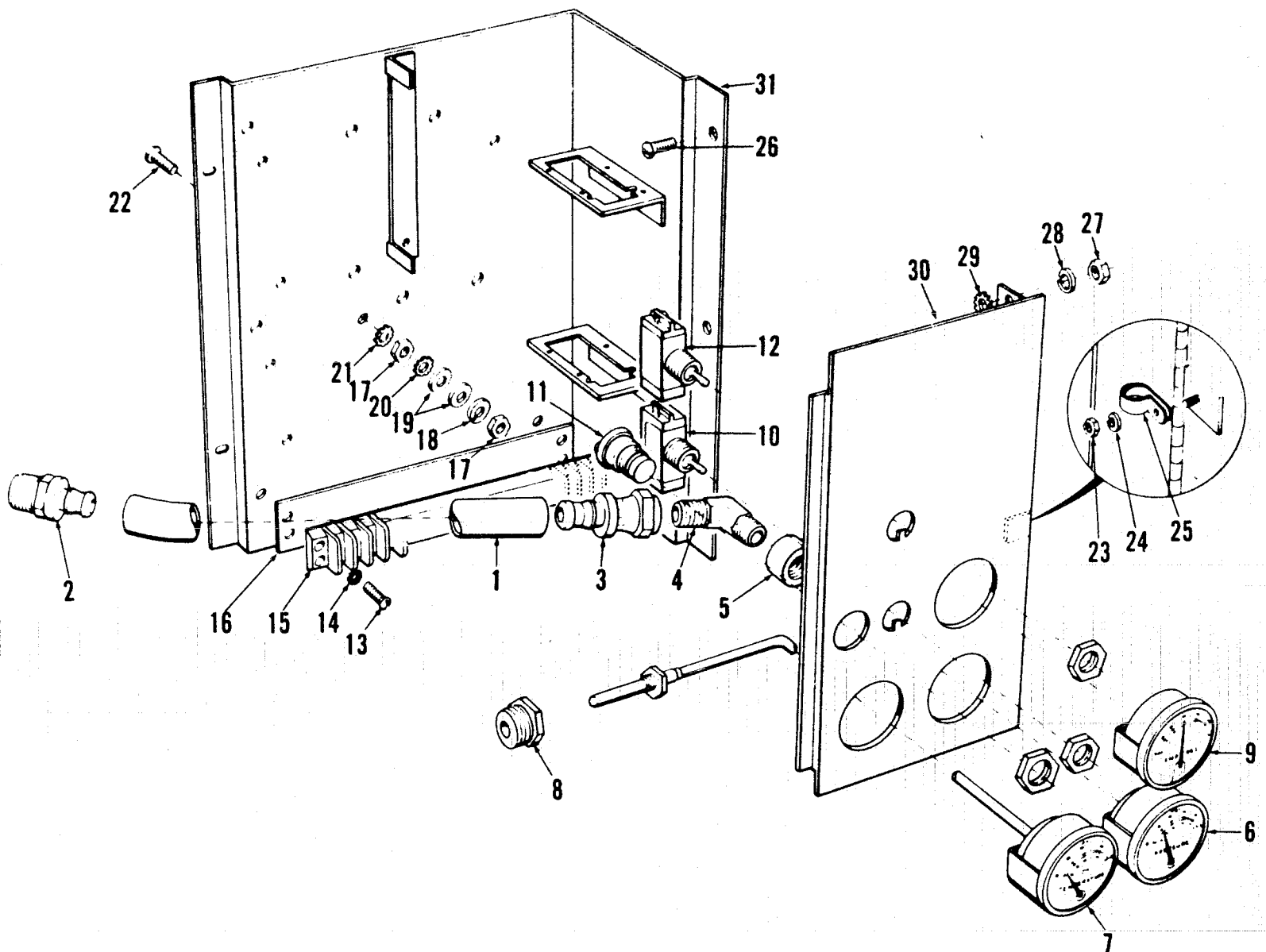
† - Optional items used with Engine Mounted Senders.

+ - Parts Included in Wiring Harness

- Parts Included in Ground Terminal Assembly

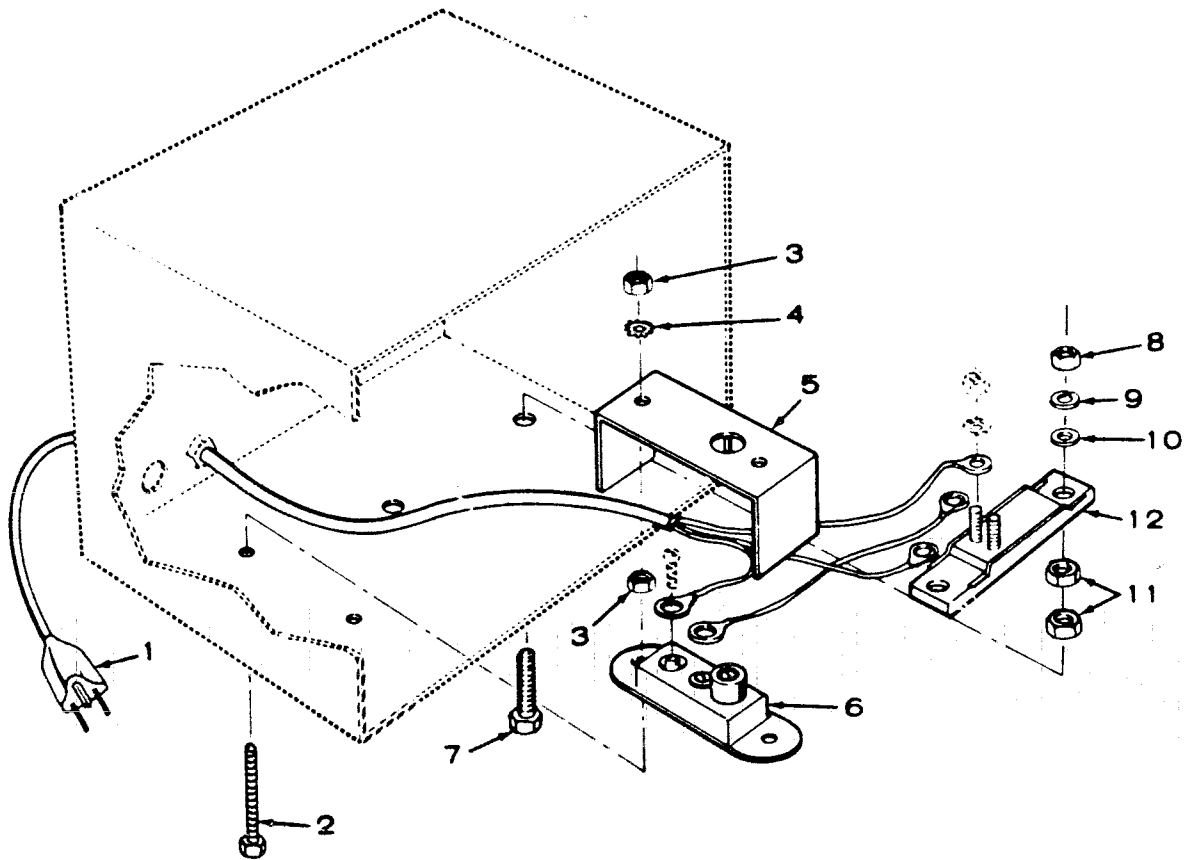
£ - Parts Used on Hi Ambient Temp (L) Type GenSets

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

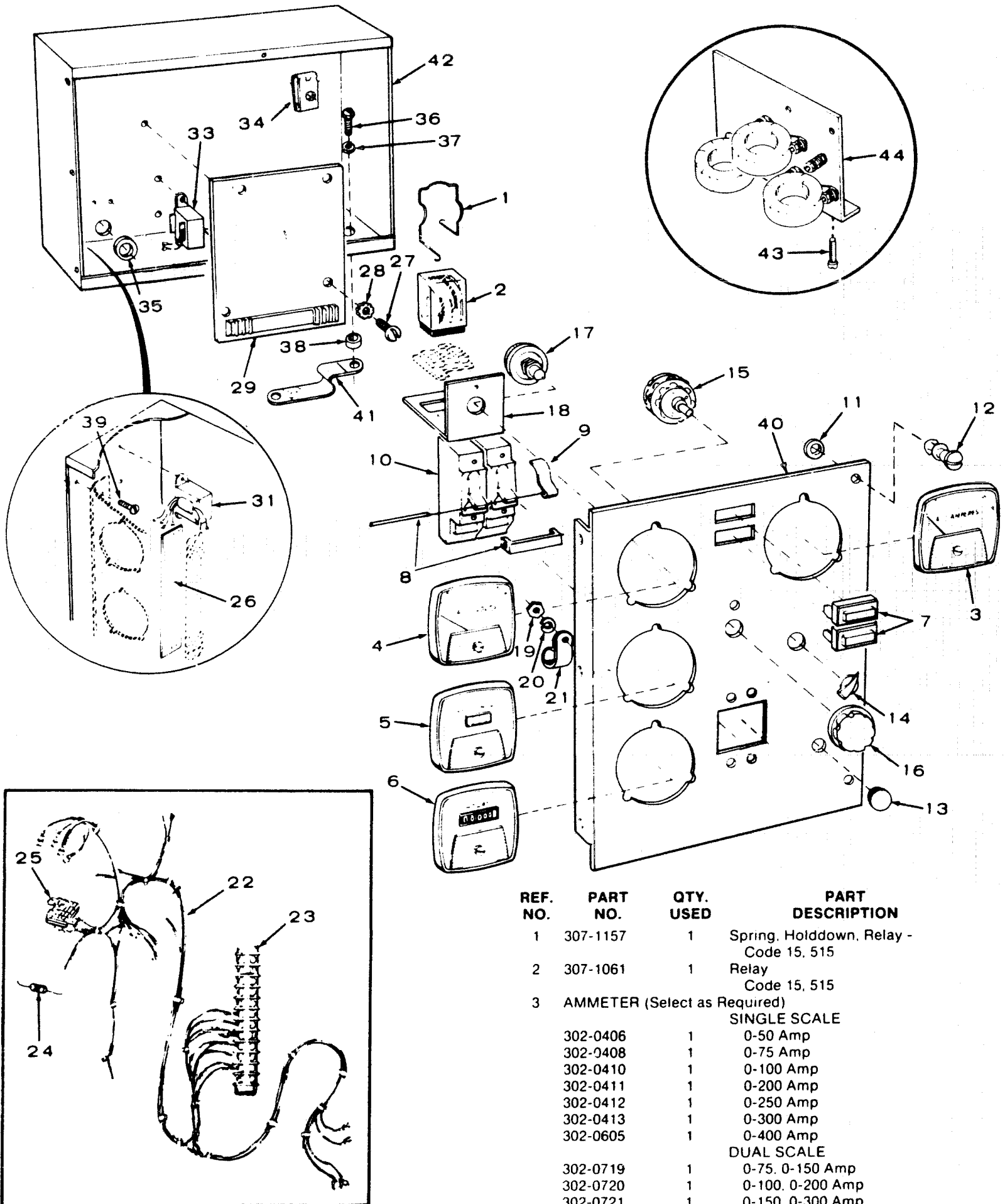
OPTIONAL CONTROL HEATER



SC-1156

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	335-0110	1	Cable, Electrical (3 Wire)
2	812-0090	2	Screw, Machine - Round Head (#6-32 x 2-1/4")
3	860-0006	4	Nut, Hex (#6-32)
4	856-0001	2	Washer, Lock - EIT (#6)
5	301-1886	1	Cover, Thermostat
6	309-0128	1	Thermostat - Adjustable
7	800-0007	2	Screw, Cap - Hex Head (1/4-20 x 1")
8	862-0001	2	Nut, Hex (1/4-20)
9	850-0040	2	Washer, Lock - Spring (1/4)
10	526-0052	2	Washer, Flat (17/64" ID x 9/16" OD x 1.16" Thk)
11	862-0015	4	Nut, Hex (5/16-18) - Used As Spacers
12	333-0151	1	Heater - 75 Watt, 120 VAC. 300 Watt, 240 VAC

OPTIONAL GENERATOR CONTROL (WITH SWITCHING REGULATOR)



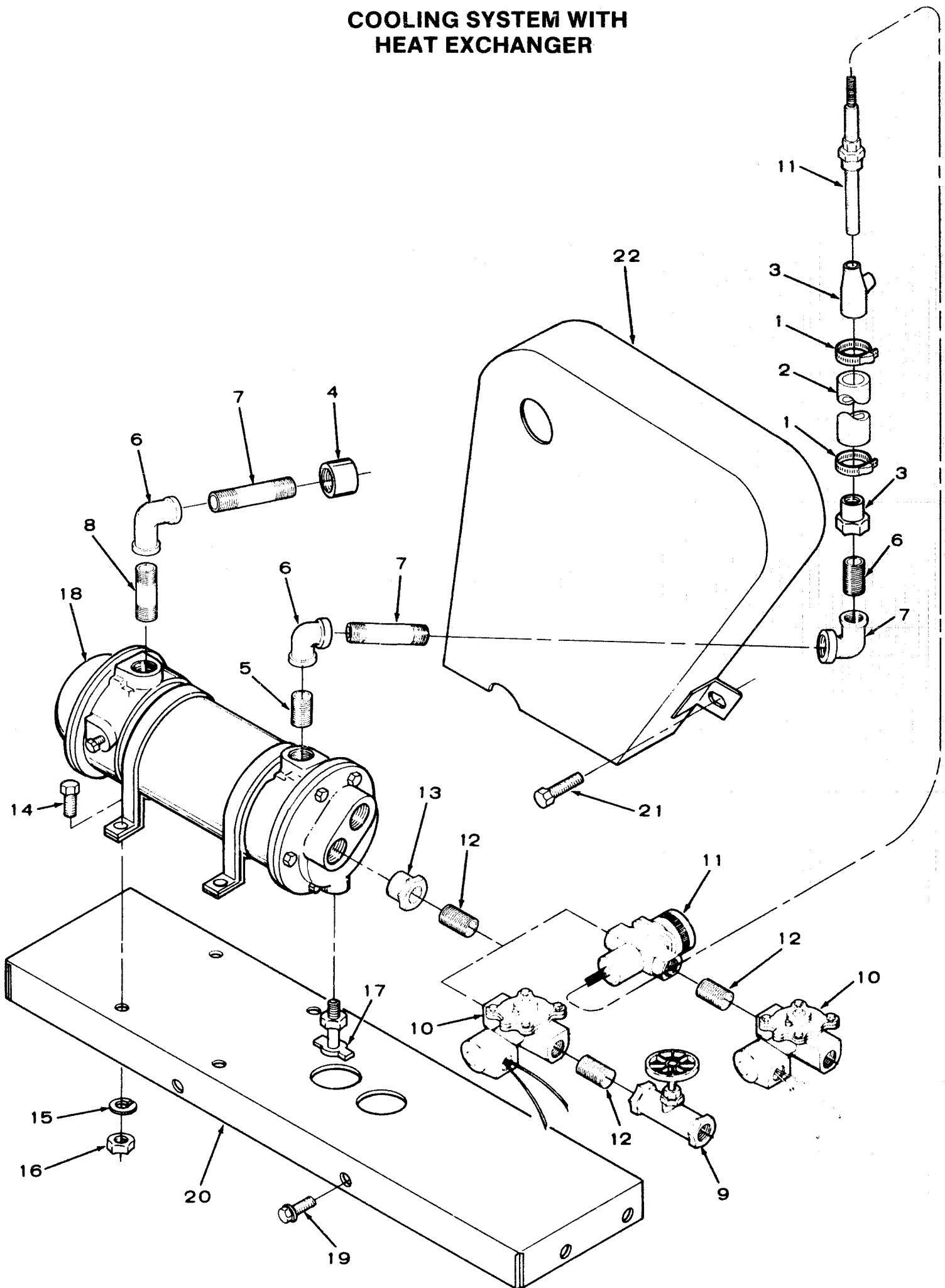
REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	307-1157	1	Spring, Holddown, Relay - Code 15, 515
2	307-1061	1	Relay Code 15, 515
3	AMMETER (Select as Required)		
			SINGLE SCALE
	302-0406	1	0-50 Amp
	302-0408	1	0-75 Amp
	302-0410	1	0-100 Amp
	302-0411	1	0-200 Amp
	302-0412	1	0-250 Amp
	302-0413	1	0-300 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

OPTIONAL GENERATOR CONTROL (WITH SWITCHING REGULATOR)

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)		
	302-0421	1	SINGLE SCALE		332-0607	1	12 Place
	302-0422	1	0-300 Volt		332-0795	1	16 Place
	302-0612	1	0-600 Volt	24	350-0556	1	Resistor, Fixed, Composition (47K Ohms, 1/2 Watt) - Code 15, 515
	302-0779	1	0-500 Volt				
			0-750 Volt	25	323-0765	1	Socket, Relay - 11 Place - Code 15, 515
	302-0718	1	DUAL SCALE				
			0-300, 0-600 Volt	26	STRIP, MARKER (Select as Required)		
5	METER, FREQUENCY (Select as Required)				332-1242	1	16 Place
			REED TYPE		332-1248	1	12 Place
	302-0213	1	115 VAC, 60 Hz	27	812-0065	4	Screw, Machine - Round Head (#6-32 x 5/8")
	302-0221	1	230 VAC, 60 Hz				
	302-0234	1	115 VAC, 50 HZ	28	853-0003	4	Washer, Lock - ET (#6)
	302-0256	1	230 VAC, 50 Hz	29	REGULATOR, VOLTAGE (Requires 240 VAC Input Signal)		
			POINTER TYPE		300-1928	1	Semi-Frequency Sensitive Type
	302-0809	1	120 VAC, 60 Hz		300-1929	1	Voltage Sensitive Type
	302-0810	1	208 VAC, 60 Hz		300-1930	1	Frequency Sensitive Type
	302-0811	1	240 VAC, 60 Hz	31	315-0431	1	Transformer, Voltage (240 VAC Output Signal)
6	METER, TIME TOTALIZING (Select as Required)						
	302-0466	1	60 Hz				
	302-0469	1	50 Hz				
7	*LIGHT, INDICATOR - 125 VAC (Lens Color & Legend Listed Below)				ATTACHING PARTS FOR TRANSFORMER		
	322-0130	1	Red - Lower Scale		812-0061	2	Screw, Machine - Round Head (#6-32 x 3/8")
	322-0131	1	Red - Upper Scale		853-0003	2	Washer, Lock - ET (#6)
	322-0178	1	*Light, Indicator - 125 VAC (Amber Lens - No Legend)				
8	320-0202	1	Tie Bar - Circuit Breaker				
9	320-0307	1	Lock, Handle - Circuit Breaker (Used On Penn State Sets)	33	315-0384	1	Reactor
10	320-0455	2	Circuit Breaker - 3 Amp, 240 Volt		ATTACHING PARTS FOR REACTOR		
	ATTACHING HARDWARE FOR CIRCUIT BREAKER				812-0061	2	Screw, Machine - Round Head (#6-32 x 3/8")
	812-0061	4	Screw, Machine - Round Head (#6-32 x 3/8")		853-0003	2	Washer, Lock - ET (#6)
	850-0020	4	Washer, Lock - Spring (#6)	34	406-0332	2	Receptacle, Turnbutton Fastener
	815-0203	2	Screw, Machine - Round Head, Brass (#10-32 x 7/8")	35	508-0001	4	Grommet, Rubber
	871-0010	2	Nut, Hex - Brass (#10-32)	36	800-0045	4	Screw, Cap - Hex Head (5/16-18 x 3/8")
	853-0008	2	Washer, Lock - ET (#10)	37	850-0045	4	Washer, Lock - Spring (5/16")
	526-0049	2	Washer, Flat - Brass (13/64" ID x 7/16" OD x 1/32" Thk)	38	402-0070	4	Dampener, Vibration
11	406-0334	2	Clip, Retaining - Turnbutton Fastener	39	815-0026	3	Screw, Machine - Truss Head (#10-32 x 3/8")
12	406-0333	2	Stud, Turnbutton Fastener	40	PANEL CONTROL		
13	517-0131	1	Plug, Plastic				
14	303-0076	1	Knob, Pointer		301-3822	1	Sets Without Meter Panel Code 3
15	308-0284	1	Switch, Selector		301-3821	1	Code 6D, 7, 9X
16	303-0032	1	Knob		301-7078	1	Code 15, 515
17	303-0170	1	Rheostat (35K Ohms, 25 Watt)				
18	301-3244	1	Bracket, Mounting, Relay - Code 15, 515		301-3169	1	Sets With Meter Panel Code 3
19	870-0053	1	Nut, Hex (#10-32)		301-3342	1	Code 6D, 7, 9X
20	850-0030	1	Washer, Lock - Spring (#10)		301-6298	1	Code 15, 515
21	332-0051	1	Clamp, Loop	41	337-0049	1	Strap, Ground
22	HARNESS, WIRING - GENERATOR CONTROL				ATTACHING PARTS FOR STRAP		
			Sets Without Meter Panel		800-0045	1	Screw, Cap - Hex Head (5/16-18 x 3/8")
	338-0765	1	Code 3		850-0045	1	Washer, Lock - Spring (5/16")
	338-0764	1	Code 15, 515		856-0008	2	Washer, Lock - EIT (5/16")
	338-0766	1	Code 6D, 7, 9X		862-0015	1	Nut, Hex (5/16-18)
			Sets With Meter Panel	42	301-3158	1	Box, Control
	338-0735	1	Code 3	43	821-0010	2	Screw, Self-locking - Hex Washer Head (1/4-20 x 1/2")
	338-1469	1	Code 15, 515				
	338-0759	1	Code 6D, 7, 9X	44	CURRENT TRANSFORMER ASSEMBLY (See Separate Figure For Parts) - NOTE: Assembly is Located Behind the Control Box.		
	ATTACHING HARDWARE FOR WIRING HARNESS						
	812-0061	2	Screw, Machine - Round Head (#6-32 x 3/8")				
	812-0066	2	Screw, Machine - Round Head (#6-32 x 3/4")				
	850-0020	2	Washer, Lock - Spring (#6)				
	853-0003	4	Washer, Lock - ET (#6)				
	853-0006	2	Nut, Hex (#6-32)				

* - NOTE: For lamp replacement order 322-0178. Remove and discard plain red lens, install lens with legend from burned out light — lights snap in and out of panel.

**OPTIONAL
COOLING SYSTEM WITH
HEAT EXCHANGER**



OPTIONAL COOLING SYSTEM WITH HEAT EXCHANGER

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
			COOLING SYSTEM WITH HEAT EXCHANGER
		1	†Sets Without Coolant Temperature Regulator
		1	£Sets With Coolant Temperature Regulator
1	503-0465	2	Clamp, Hose
2		1	Hose, Rubber (2-1/8" ID x 3" Lg)
3	#	1	Tee, Tube - Engine Coolant (Modified)
4	505-0032	1	Coupling, Pipe (1-1/2" NPT)
5	505-0220	2	Nipple, Pipe - Close (1-1/2" NPT x 1-3/4" Lg)
6	505-0043	3	Elbow, Pipe - 90 Deg (1-1/2" NPT)
7	505-0642	2	Nipple, Pipe (1-1/2" NPT x 4" Lg)
8	505-0109	1	Nipple, Pipe - Short (1-1/2" NPT x 2-1/2" Lg)
9	504-0090	1	†Valve, Globe (1" NPT)
10	307-1139	1	Valve, Solenoid - 12 VDC (1" NPT)
11	309-0242	1	£Valve, Control - Temperature Regulating

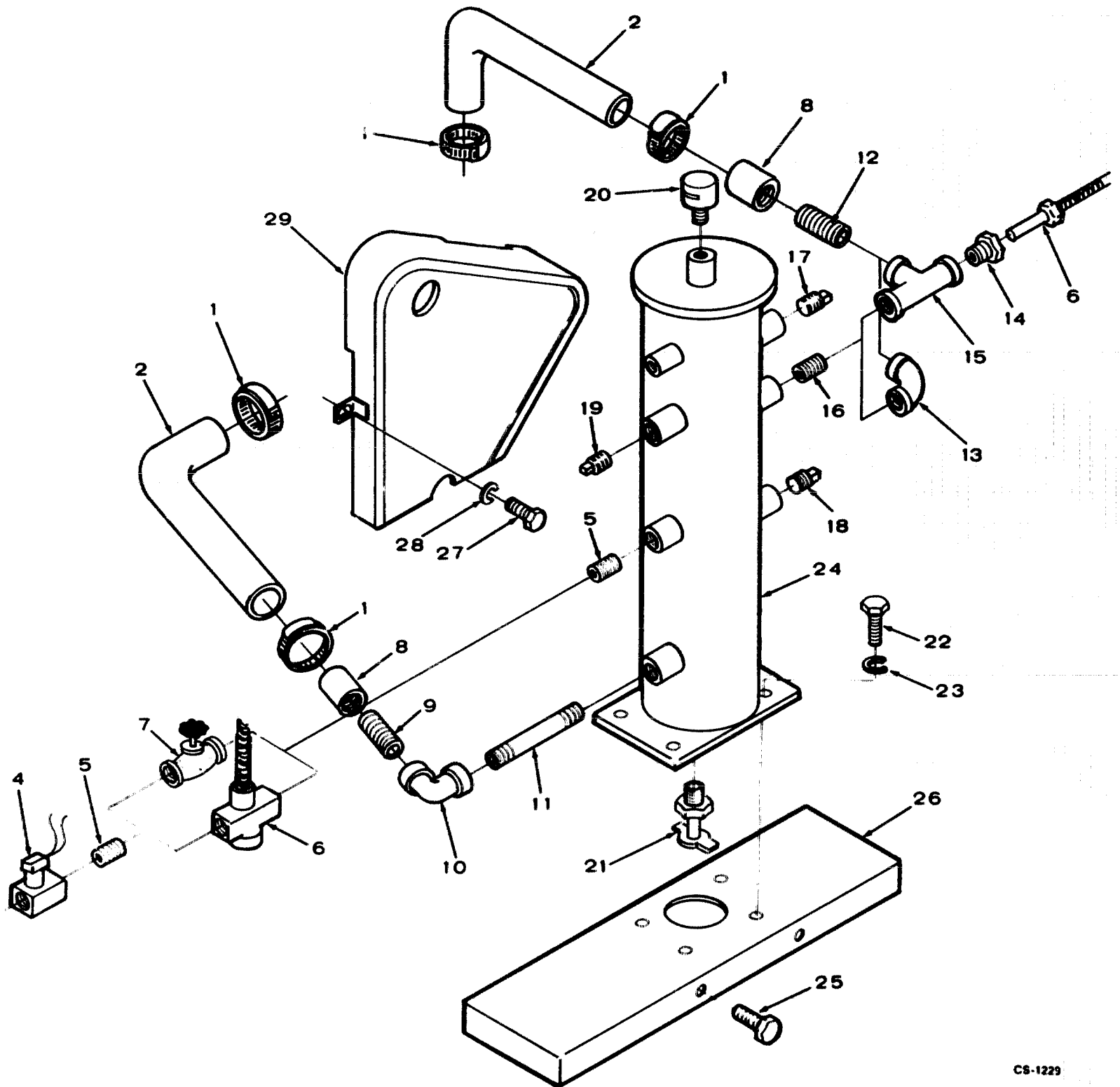
REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
12	505-0004	2	Nipple, Pipe - Close (1" NPT x 1-1/2" Lg)
13	505-0024	1	Bushing, Reducer (1-1/2" NPT x 1" NPT)
14	800-0049	4	Screw, Cap - Hex Head (3/8-16 x 7/8")
15	850-0050	4	Washer, Lock - Spring (3/8")
16	862-0003	4	Nut, Hex (3/8-16)
17	504-0003	2	Cock, Drain (1/4" NPT)
18	#	1	Heat Exchanger
19	821-0014	6	Screw, Self-locking Hex Washer Head (5/16-18 x 1/2")
20	130-0863	1	Plate, Mounting
21	800-0052	2	Screw, Cap - Hex Head (3/8-16 x 1-1/2")
22	130-0946	1	Guard, Bolt

† - Parts Included in Non-Regulated System

£ - Parts Included in Regulated System

- **NOTE:** Heat Exchanger and Coolant Tube Tee Supplied
by Engine Manufacturer.

OPTIONAL COOLING SYSTEM WITH STANDPIPE



OPTIONAL COOLING SYSTEM WITH STANDPIPE

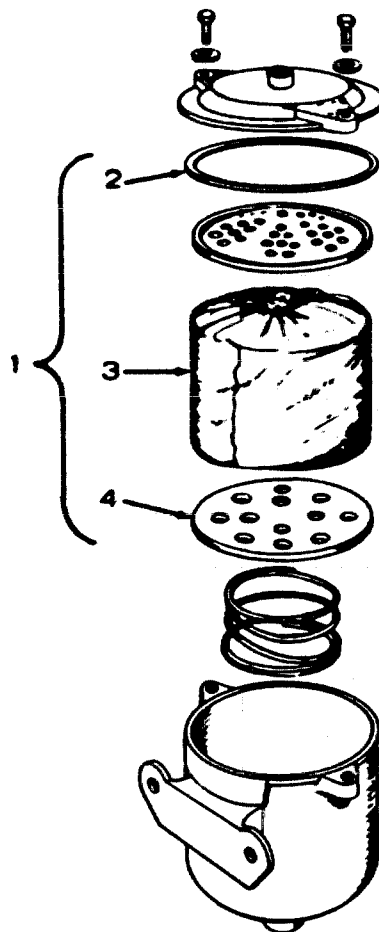
REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
COOLING SYSTEM WITH STANDPIPE			
		1	†Sets Without Coolant Temperature Regulator
		1	£Sets, with Coolant Temperature Regulator
1	503-0465	4	Clamp, Hose
2	503-0576	2	Hose, Rubber - Preformed
4	307-0835	1	Valve, Solenoid - 12 VDC
5	505-0102	2	Nipple, Pipe - Close (3/4" NPT x 1-3/8" Lg)
6	309-0241	1	£Valve, Control - Temperature Regulating
7	504-0046	1	†Valve, Glove (3/4" NPT)
8	505-0032	2	Coupling, Pipe (1-1/2" NPT)
9	505-0109	1	Nipple, Pipe - Short (1-1/2" NPT x 2-1/2" Lg)
10	505-0043	2	Elbow, Pipe - 90 DEG (1-1/2" NPT)
11	505-0641	1	Nipple, Pipe (1-1/2" NPT x 6" Lg)
12	505-0220	1	Nipple, Pipe - Close (1-1/2" NPT x 1-3/4" 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)

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
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	130-0636	1	Plate, Mounting - Standpipe
27	800-0052	2	Screw, Cap - Hex Head (3/8-16 x 1-1/2")
28	850-0050	2	Washer, Lock - Spring (3/8")
29	130-0946	1	Guard, Belt

† - Parts Used Only in Non-Regulated System

£ - Parts Used Only in Regulated System

OPTIONAL ENGINE COOLANT FILTER ASSEMBLY



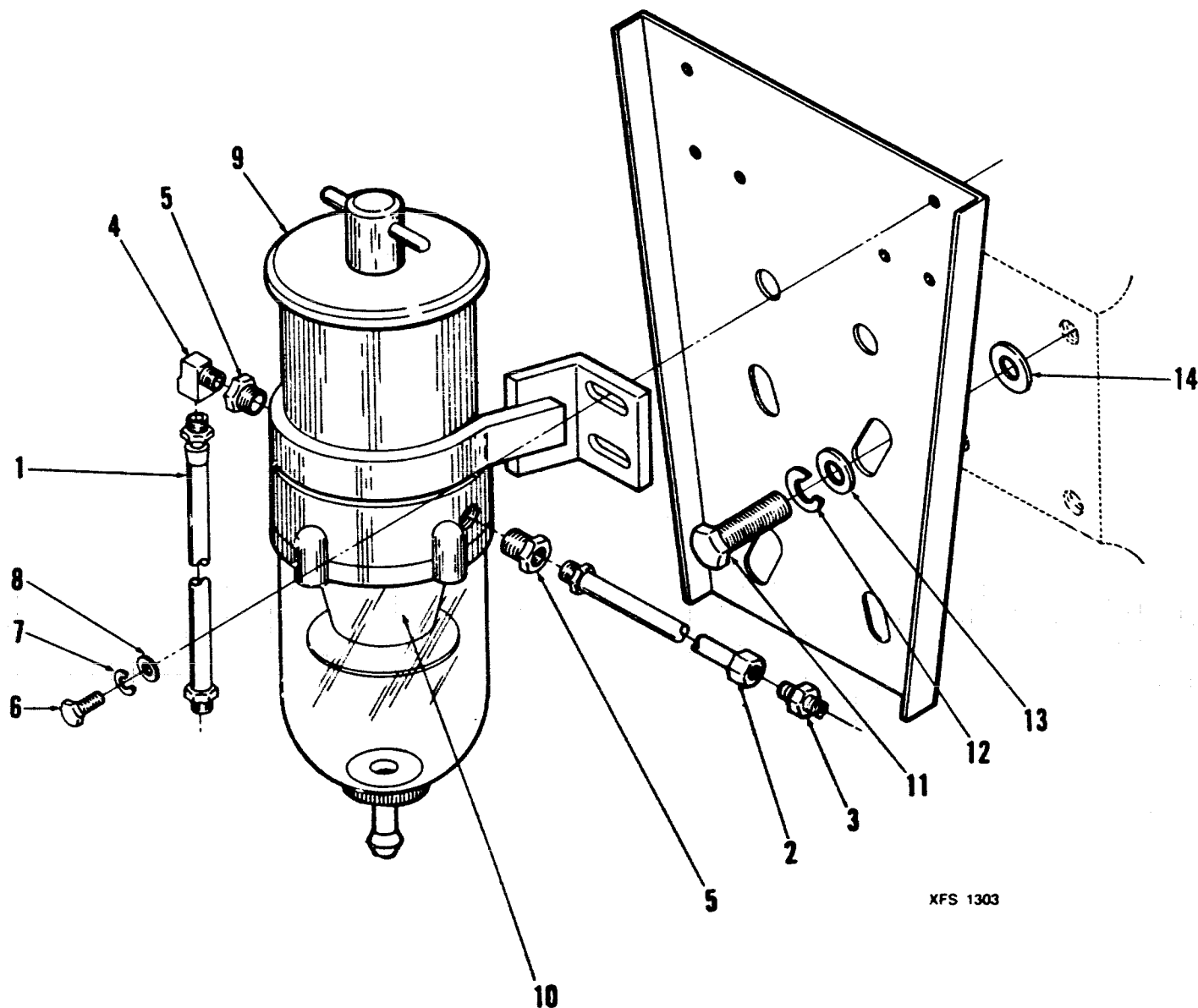
CS-1059

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

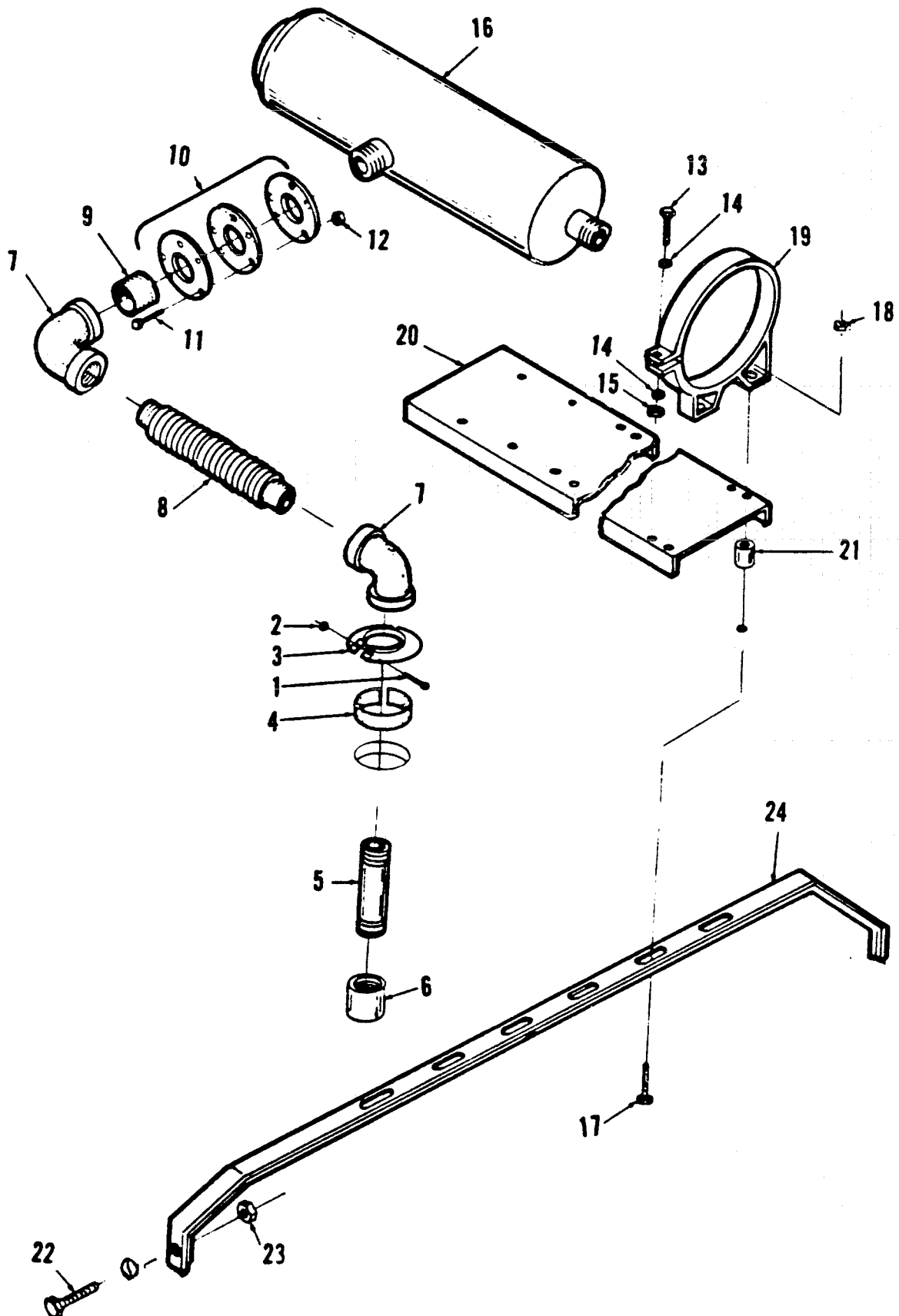
OPTIONAL FILTER - SEPARATOR (FUEL/WATER)



XFS 1303

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	501-0167	1	Line, Fuel - Flexible
2	501-0008	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	800-0090	4	Screw, Cap - Hex Head (1/2-13 x 1")
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
EXHAUST SYSTEM
(HOUSED SETS)**



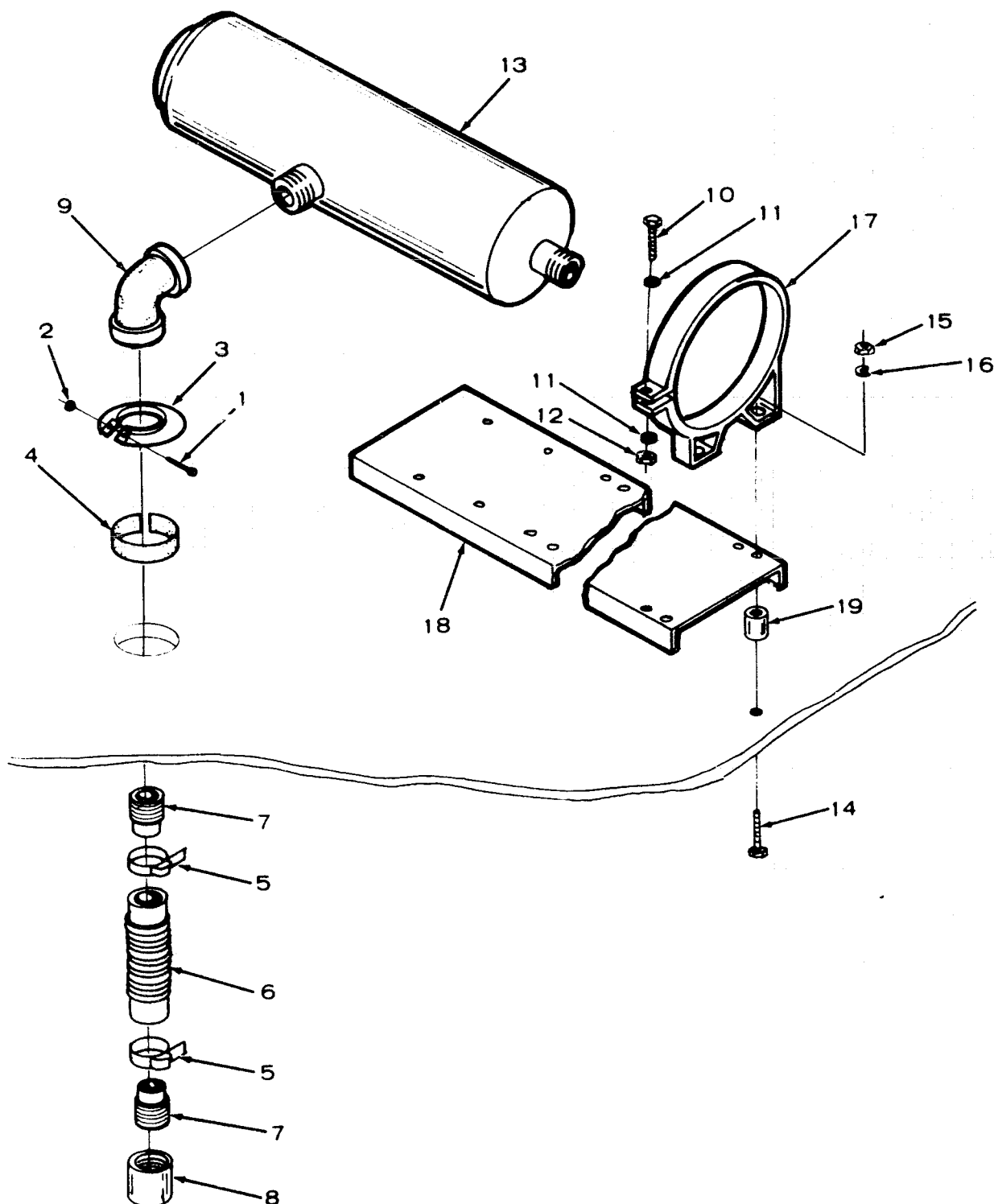
OPTIONAL EXHAUST SYSTEM (HOUSED SETS)

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
	EXHAUST SYSTEM (Parts Common Except as Marked)		
1	813-0105	2	Screw, Machine - Round Head (#10-32 x 1")
2	870-0188	2	Nut, Self-locking - Hex (#10-32)
3	155-1422	1	Shield, Rain
4	895-0159	1	Asbestos Strip (2" x 1/16" Thk x 12" Lg)
5	505-0832	1	Nipple, Pipe (3" NPT x 13-1/2" Lg)
6	505-0327	1	Coupling, Pipe (3" NPT)
7	505-0453	2	Elbow, Pipe - 90 Deg (3" NPT)
8	TUBE, EXHAUST		
	155-1131	1	3" NPT x 26" Lg
	155-1968	1	3" NPT x 13-1/2" Lg
9	505-0382	1	Nipple, Pipe - Close (3" NPT x 2-5/8" Lg)
10	154-0570	1	Package - Companion Flange (Includes Gasket, Flanges and Hardware)
11	800-0138	5	Screw, Cap - Hex Head (5/8-11 x 3")
12	862-0007	5	Nut, Hex (5/8-11)
13	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
14	526-0113	6	Washer, Flat (11/32" ID x 1" OD x 3/32" Thk)
15	870-0257	3	Nut, Self-locking, Hex Washer Head (5/16-18)
16	MUFFLER, EXHAUST		
	155-0989	1	Industrial (14" OD x 50" Lg)
	155-1513	1	SST - Industrial (14" OD x 50" Lg)
	155-1618	1	£Critical (14" OD x 62" Lg)
17	800-0028	6	Screw, Cap - Hex Head (5/16-18 x 1")
18	870-0048	6	Nut, Self-locking - Hex (5/16-18)
19	140-0757	3	Band, Mounting (14" ID)
20	HEAT SHIELD		
	155-1060	1	10" W x 46" Lg
	155-1670	1	£12" W x 58" Lg
21	155-1430	6	Spacer (1/2" ID x 1-1/2" OD x 2" Thk)
22	800-0028	6	Screw, Cap - Hex Head (5/16-18 x 1")
23	870-0048	6	Nut, Self-locking - Hex (5/16-18)
24	155-0789	3	Bracket, Support - Muffler Mounting

£ - Parts Used Only With Critical Muffler

OPTIONAL EXHAUST SYSTEM (OUTDOOR SHELTER SETS)

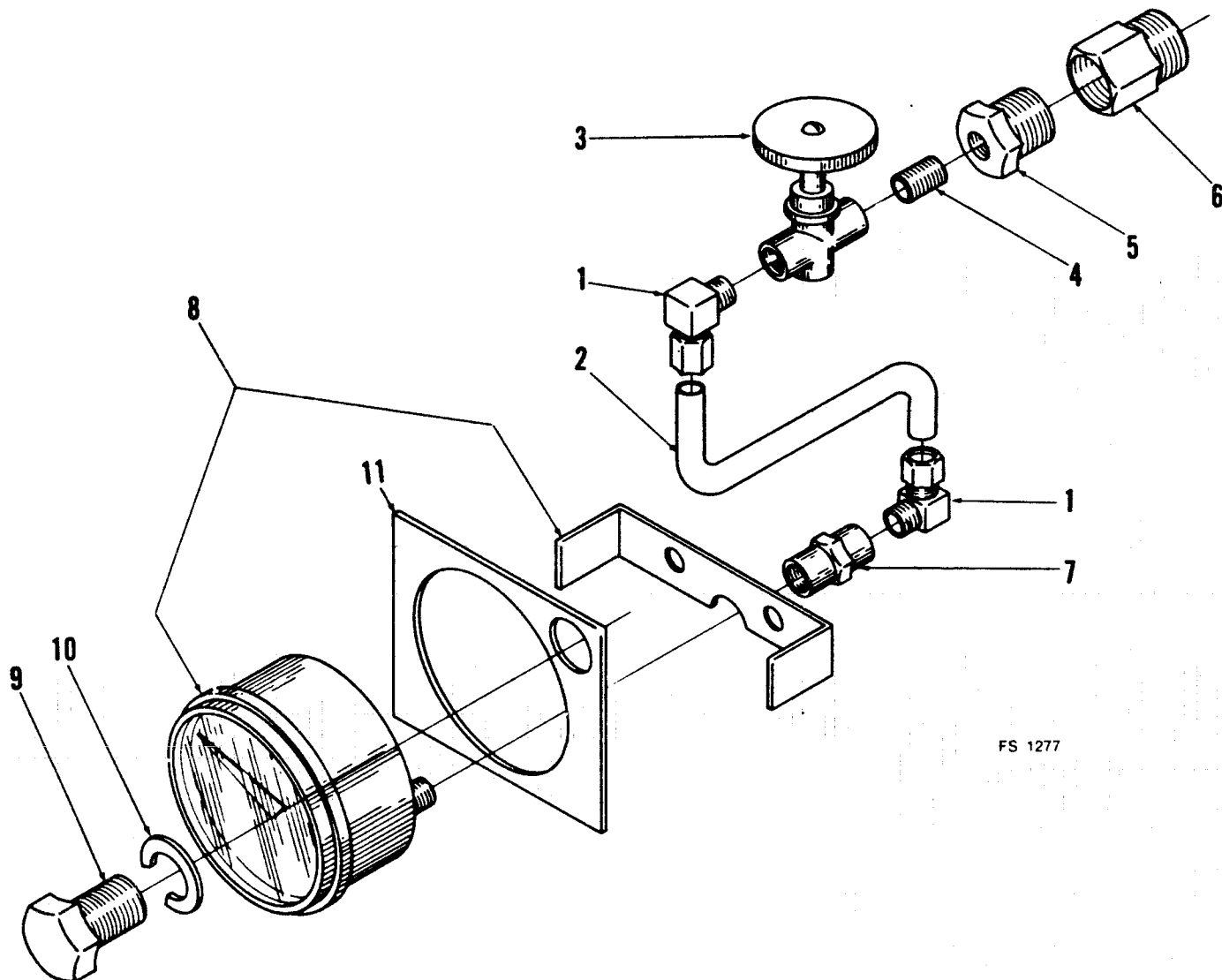


OPTIONAL EXHAUST SYSTEM (OUTDOOR SHELTER SETS)

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
EXHAUST SYSTEM			
1	813-0105	2	Screw, Machine - Round Head (#10-32 x 1")
2	870-0188	2	Nut, Self-locking - Hex (#10-32)
3	155-1423	1	Shield, Rain
4	895-0160	1	Asbestos Strip (2" x 1/16" Thk x 13-1/2" Lg)
5	503-0354	2	Clamp, Hose
6	155-1494	1	Tube, Exhaust - Flexible (3" OD x 25" Lg)
7	155-1463	2	Connector, Tube - Exhaust (3" NPT)
8	505-0327	1	Coupling, Pipe (3" NPT)
9	505-0453	1	Elbow, Pipe - 90 Deg (3" NPT)
10	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"

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
11	526-0113	6	Washer, Flat (11/32" ID x 1" OD x 3/32" Thk)
12	870-0257	3	Nut, Self-locking, Hex Washer Head (5/16-18)
13	MUFFLER, EXHAUST		
	155-0989	1	Industrial (14" OD x 50" Lg)
	155-1513	1	SST - Industrial (14" OD x 50" Lg)
	155-1618	1	Critical (14" OD x 62" Lg)
14	800-0037	6	Screw, Cap - Hex Head (5/16-18 x 3")
15	870-0048	6	Nut, Self-locking - Hex (5/16-18)
16	526-0115	6	Washer, Flat (11/32" ID x 11/16" OD x 1/16" Thk)
17	140-0757	3	Band, Mounting (14" ID)
18	155-1691	1	Heat Shield (14" W x 58" Lg)
19	155-1430	6	Spacer (1/2" ID x 1-1/2" OD x 2" Thk)

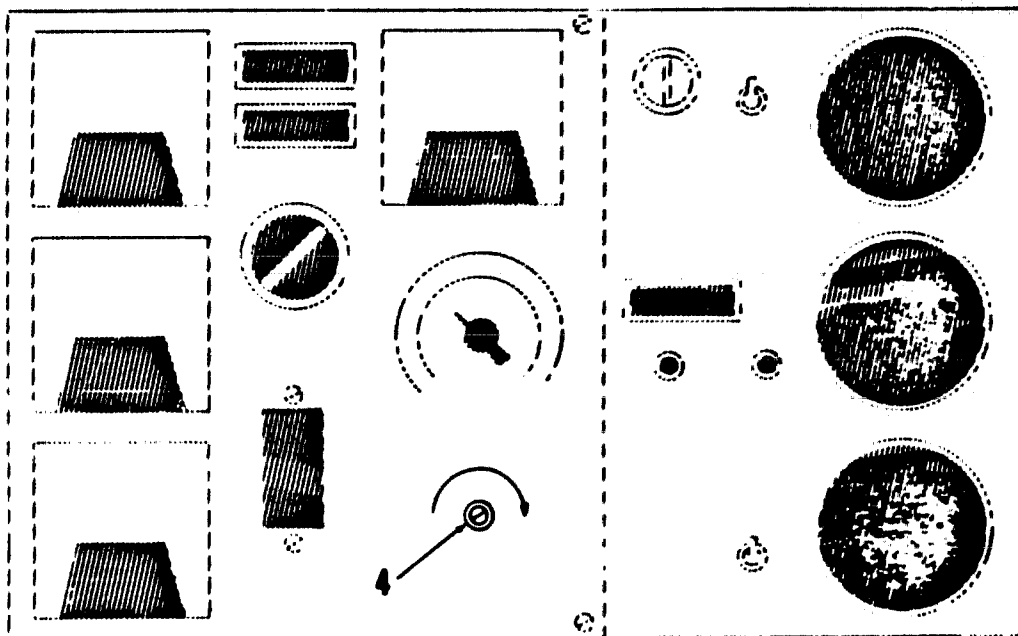
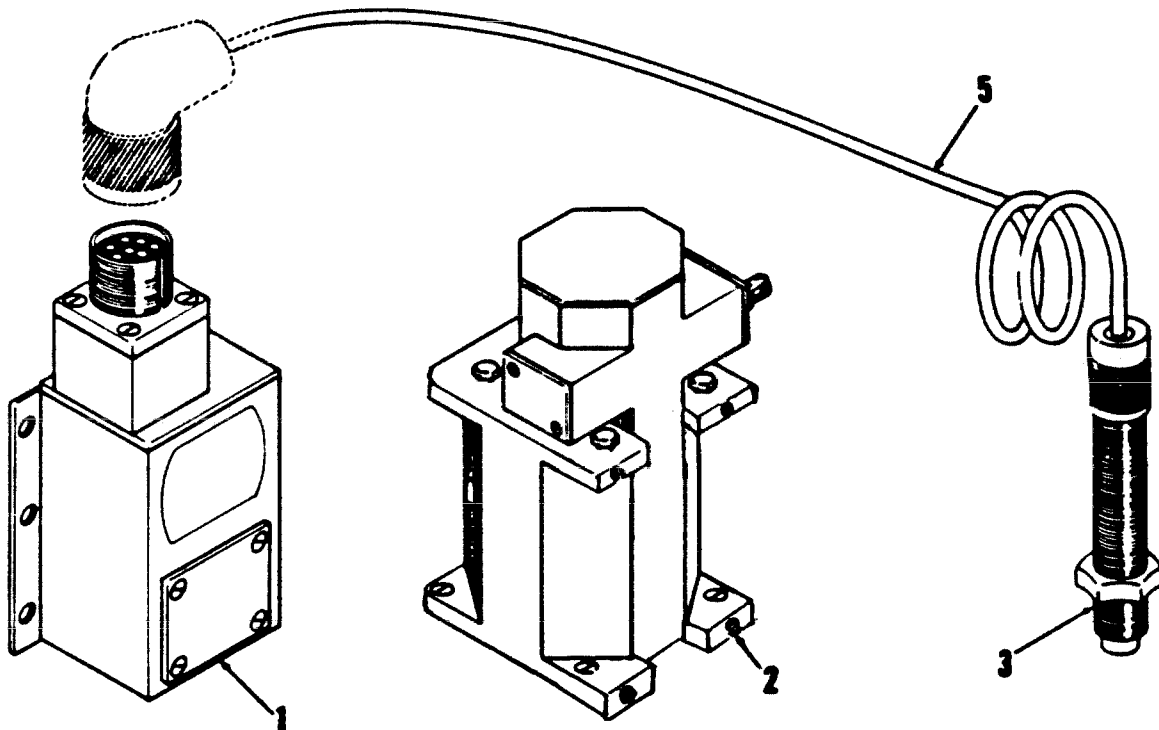
OPTIONAL FUEL PRESSURE GAUGE



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

OPTIONAL GOVERNOR



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		
	151-0398	1	24 Volt
	151-0431	1	12 Volt
3	151-0411	1	Pickup, Magnetic
4	151-0402	1	Potentiometer - Speed Control (5K Ohms)
5	338-0989	1	Harness, Wiring - Governor

This diagram illustrates the exploded view of a mechanical assembly, likely a pump or valve system. The components are numbered 1 through 29. The main assembly consists of a central cylindrical body (28) with a flange (27) at the top. A curved pipe (19) is connected to the top of the cylinder. A bracket (17) is attached to the side of the cylinder, with several screws (11, 12, 13, 14, 15, 16) securing it. A long, curved pipe (20) is connected to the bottom of the cylinder. Various fittings, valves, and connectors (1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 18, 21, 22, 23, 24, 25, 26, 29) are shown in their relative positions for assembly. The diagram is a technical drawing with clear lines and numbers.

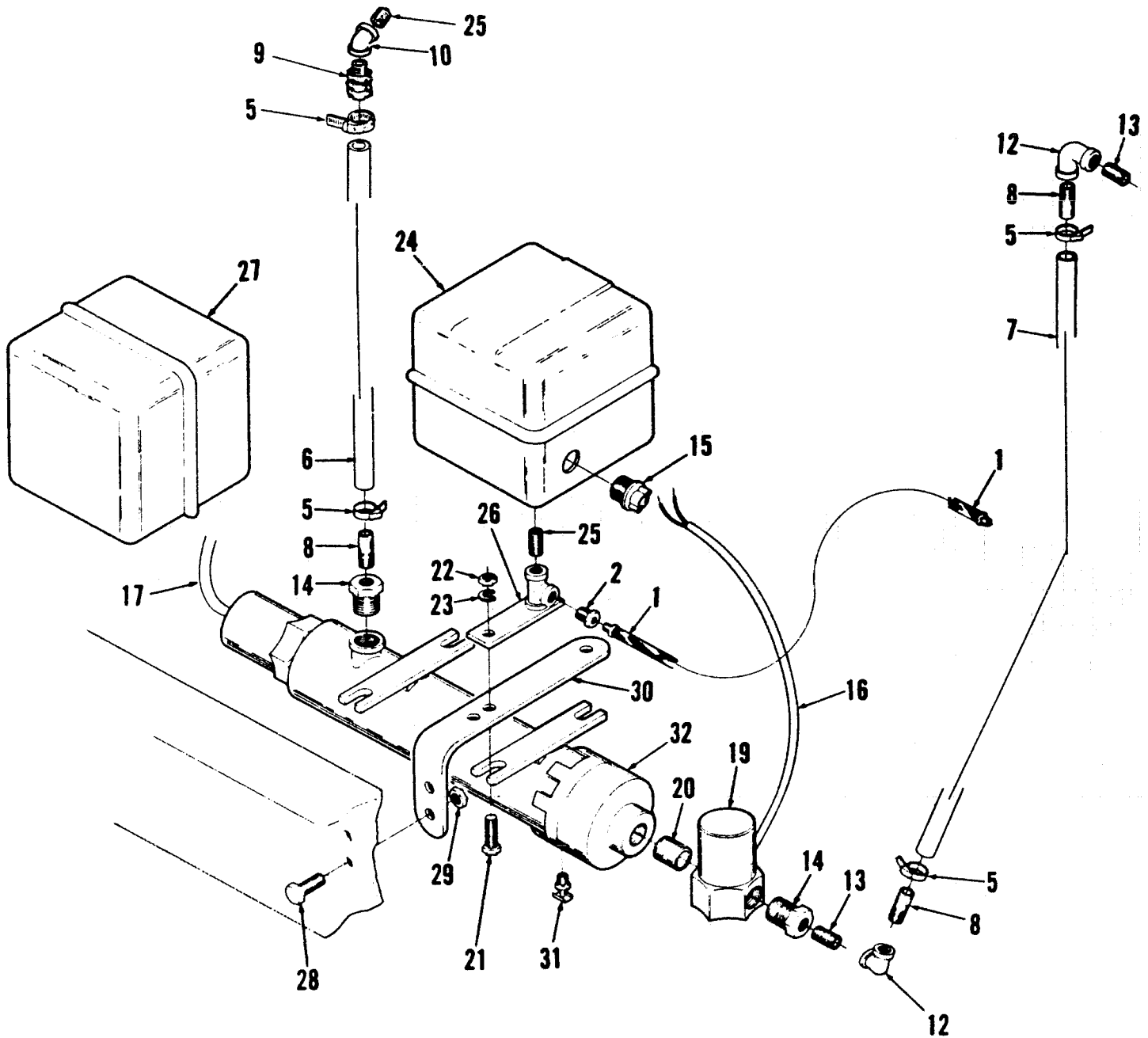
XCS 1128

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 ASSEMBLY
(HORIZONTAL TANK)**



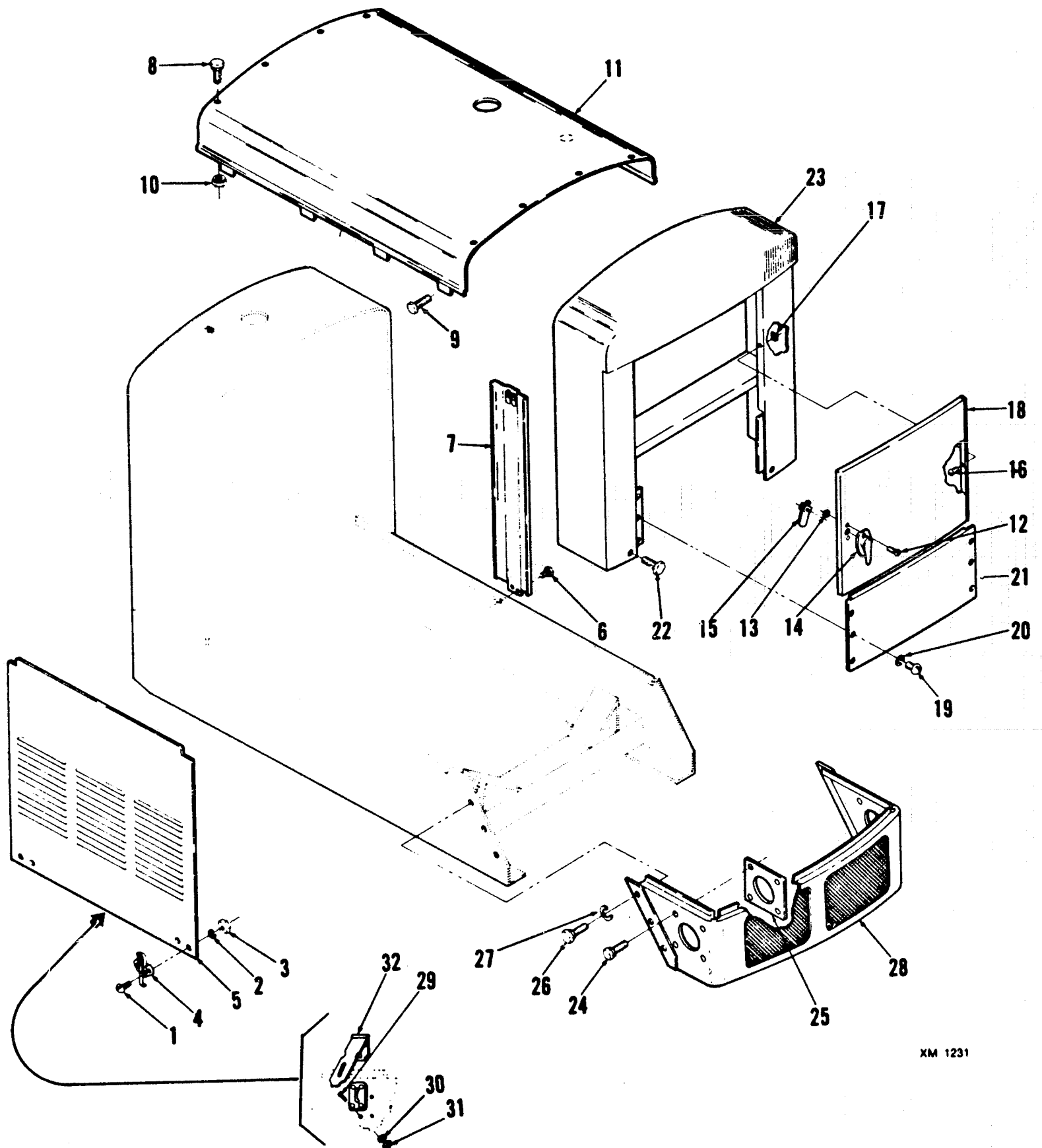
OPTIONAL ENGINE COOLANT HEATER ASSEMBLY (HORIZONTAL TANK)

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
ENGINE COOLANT HEATER ASSEMBLY			
		1	115 Volt, 1 Phase
		1	208 Volt, 1 Phase
		1	208 Volt, 3 Phase
		1	240 Volt, 1 Phase
		1	240 Volt, 3 Phase
		1	380 Volt, 1 Phase
		1	380 Volt, 3 Phase
		1	440 Volt, 1 Phase
		1	440 Volt, 3 Phase
		1	480 Volt, 1 Phase
		1	480 Volt, 3 Phase
1	501-0227	1	Line, Fuel - Flexible
2	505-0007	1	Bushing, Reducer - Hex (1/4" NPT x 1/8" NPT)
5	503-0183	4	Clamp, Hose
6	503-0113	1	Hose, Rubber (5/8" ID x 61/64" OD x 16" Lg)
7	503-0843	1	Hose, Rubber (5/8" ID x 61/64" OD x 40" Lg)
8	505-0135	4	Nipple, Pipe - Half (3/8" NPT x 1-1/2" Lg)
9	502-0613	1	Adapter, Hose to Pipe
10	505-0112	1	Elbow, Pipe - 45 Deg (1/4" NPT)
12	505-0038	2	Elbow, Pipe - 90 Deg (3/8" NPT)
13	505-0101	2	Nipple, Pipe - Close (3/8" NPT x 1" Lg)
14	505-0455	2	Bushing, Reducer - Hex (1" NPT x 3/8" 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	2	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
		1	2000 Watts, 240 Volt, 3 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, 440 Volt, 3 Phase

- Electrical cable and cord shown for Reference Purpose only.

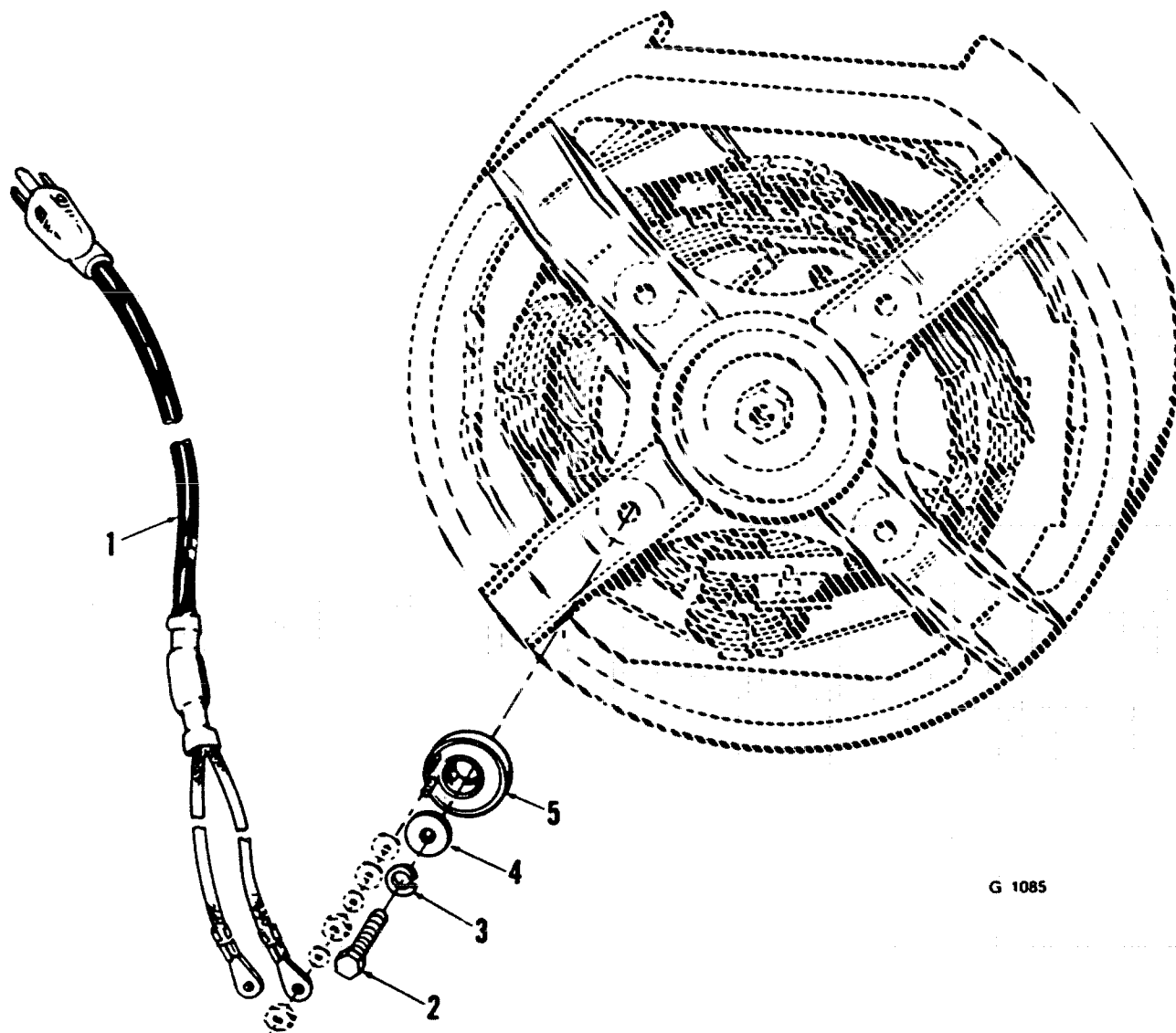
OPTIONAL SET HOUSING



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	405-1804	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	12	Nut, Clinch (5/16-18)
11	405-1810	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

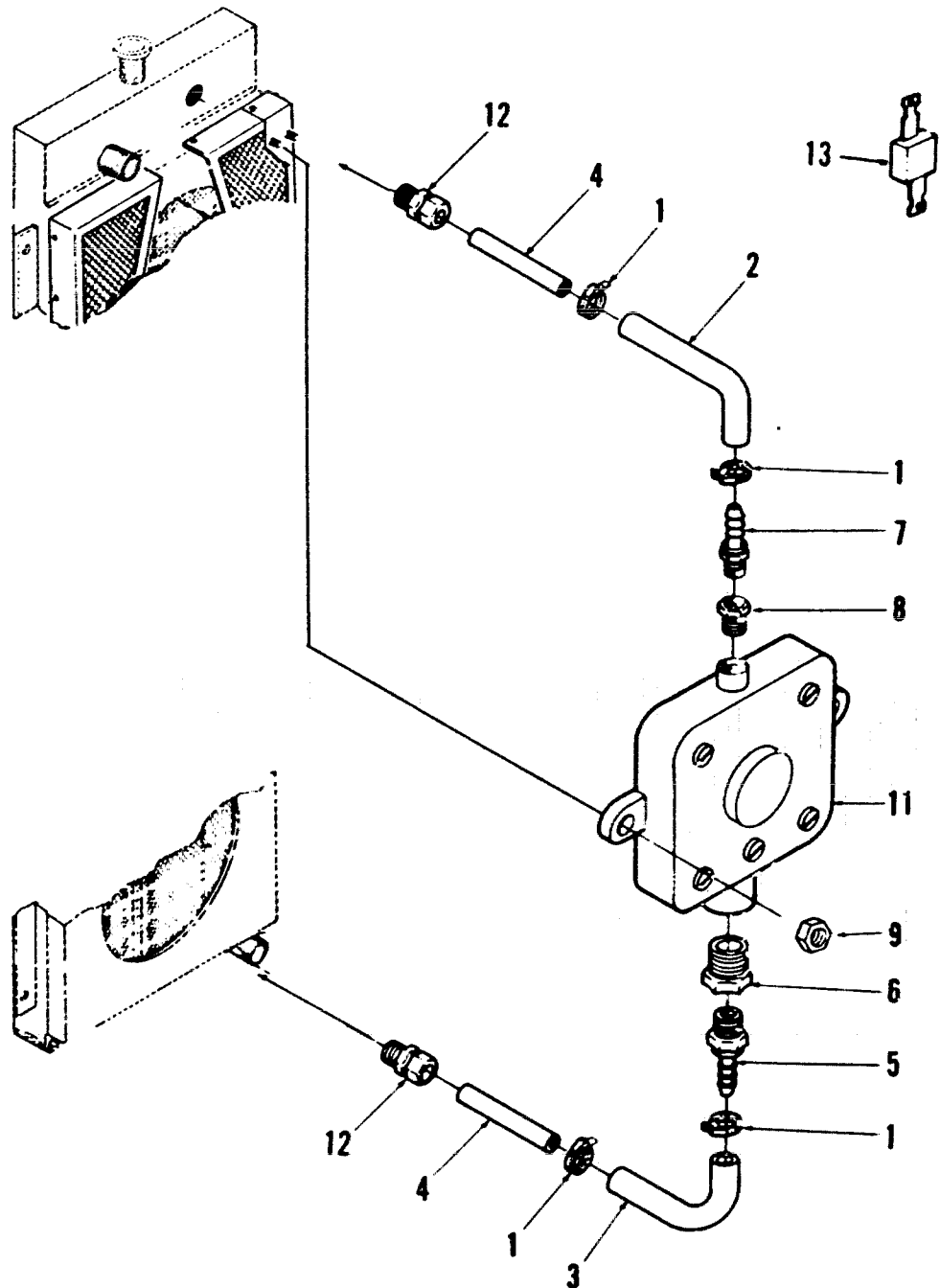
OPTIONAL GENERATOR HEATER



G 1085

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
	HEATER, GENERATOR		
			120 Volt
			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

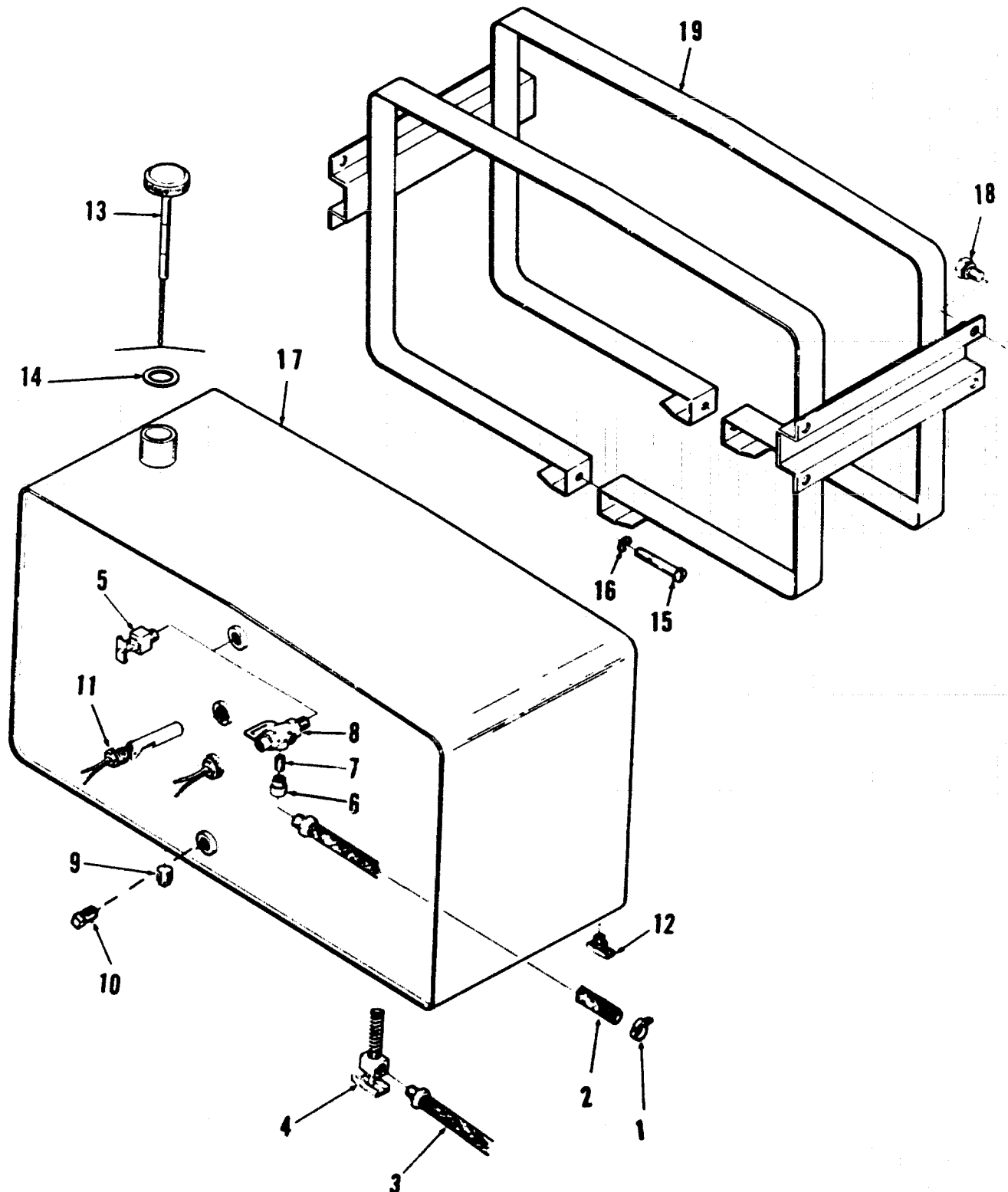
OPTIONAL LOW COOLANT LEVEL SWITCH



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	502-0389	1	Adapter - Hose to Pipe
6	505-0151	1	Bushing, Reducer - Brass (1/2" NPT x 1.8" NPT)
7	502-0389	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	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
FUEL TANK-MOUNTED
(HOUSED SETS)**



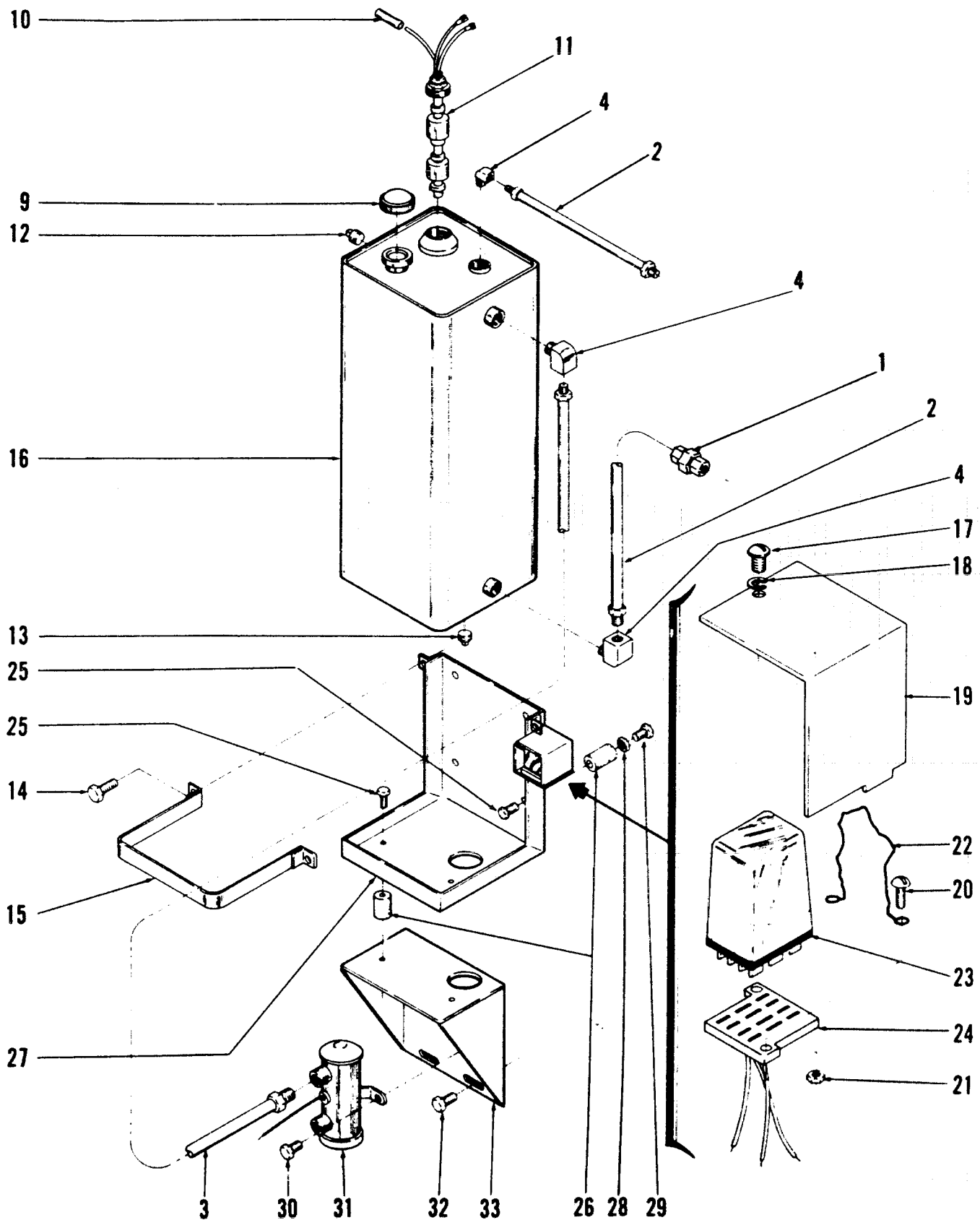
OPTIONAL FUEL TANK-MOUNTED (HOUSED SETS)

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	503-0685	1	Clamp, Hose (1/2" OD Hose)
2	LINE, FUEL - FLEXIBLE (Select as Required)		
	501-0104	1	48" Lg, 1/4 SAE Male Swivel
	501-0205	1	72" Lg, 1/4 SAE Male Swivel
3	LINE, FUEL - FLEXIBLE (Select Length as Required) (1/8 NPT Male x 1/4 SAE Male Swivel with 7/16-24 Thd)		
	501-0004	1	12" Lg
	501-0007	1	24" Lg
	501-0009	1	36" Lg
	501-0027	1	48" Lg
	501-0016	1	52" Lg
	501-0094	1	60" Lg
	501-0017	1	64" Lg
	501-0247	1	69" Lg
4	504-0013	1	Valve, Shutoff - with Screen (1/8" NPT)
5	504-0007	1	Valve, Shutoff (1/8" NPT)
6	502-0017	1	Connector, Inverted Female
7	502-0046	1	Nipple, Pipe - Close, Brass (1/8" NPT x 3/4" Lg)
8	504-0004	2	Valve, Shutoff - 3 Way
9	505-0057	1	Plug, Pipe - Square Head (1/8" NPT)

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
10	505-0130	2	Plug, Pipe - Square Head (3/4" NPT)
11	309-0326	2	Switch, Fuel Level
12	504-0005	1	Cock, Drain (1/8" NPT)
13	159-0512	1	Cap and Indicator, Fuel (Includes Gasket)
14	159-0751	1	Gasket, Fuel Cap
15	812-0158	2	Screw, Machine - Round Head (1/4-20 x 2")
16	850-0040	2	Washer, Lock - Spring (1/4")
17	TANK, FUEL - 20 GAL		
	159-0490	1	With Two Fuel Ports
	159-1025	1	With Three Fuel Ports
	159-1103	1	With Three Fuel Ports and Two Switch Ports
18	821-0010	8	Screw, Self-Locking - Hex Washer Head (1/4-20 x 1/2")
19	159-0489	1	Strap Assembly - Tank Mounting

NOTE: Tank 159-1025 may be substituted for tank 159-0490,
used a Pipe Plug in unused port.

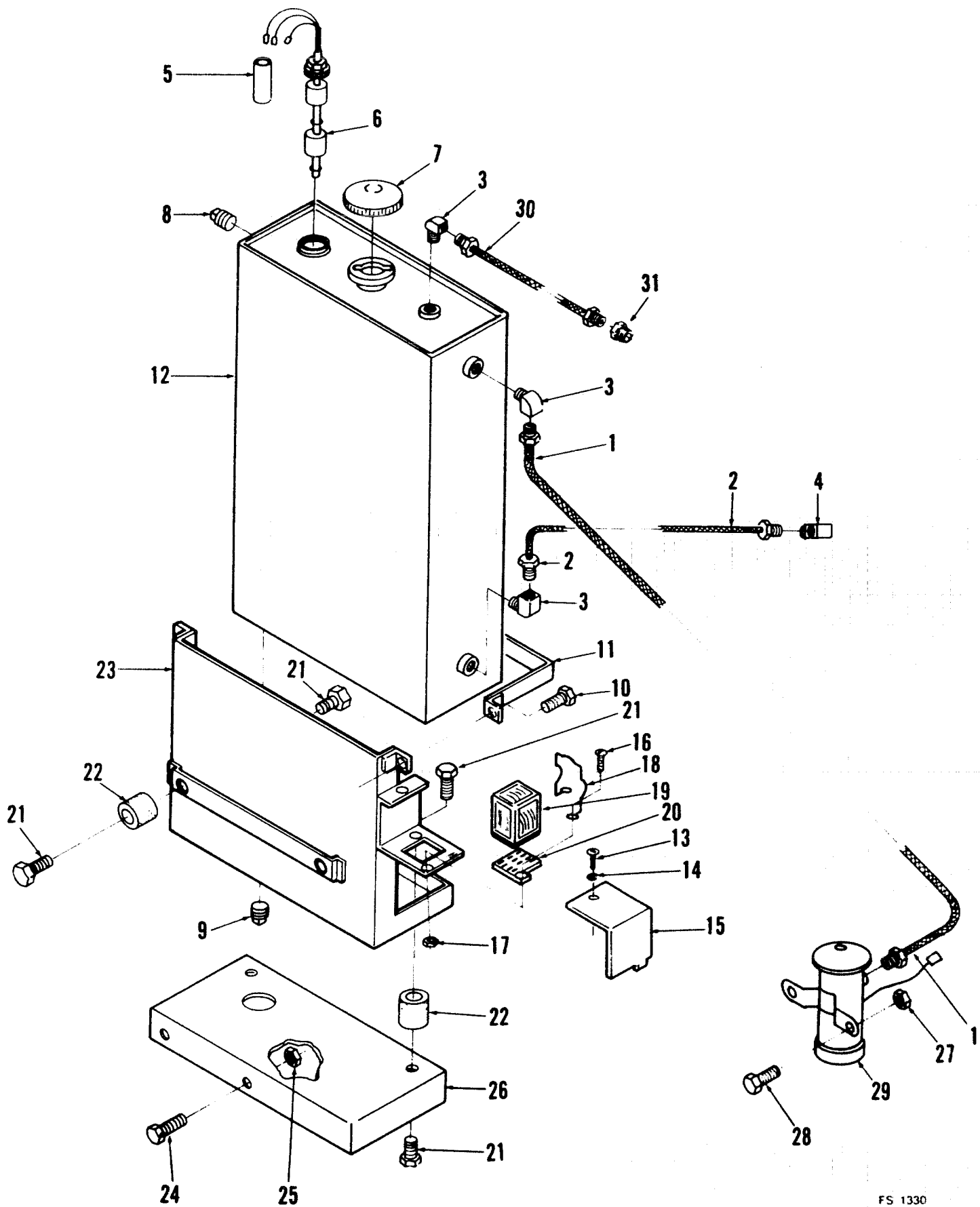
OPTIONAL FUEL TANK RESERVOIR (HOUSED SETS)



OPTIONAL FUEL TANK RESERVIOR (HOUSED SETS)

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
FUEL TANK RESERVIOR			
		1	For Housed Sets
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
9	159-0007	1	Cap, Fuel Tank
10	332-0556	4	Connector, Splice
11	415-0321	1	Switch, Float - Liquid Level
12	505-0054	1	Plug, Pipe - Square Head (1/4" NPT)
13	505-0110	1	Plug, Pipe - Square Head (3/8" NPT)
14	821-0013	2	Screw, Self-locking - Hex Washer Head (1/4-20 x 1")
15	415-0323	1	Strap, Retaining - Tank
16	415-0325	1	Tank, Fuel - Day
17	813-0098	1	Screw, Machine - Round Head (#10-32 x 3/8")
18	850-0030	1	Washer, Lock - Spring (#10)
19	415-0326	1	Cover, Access - Relay
20	812-0061	2	Screw, Machine - Round Head (#6-32 x 3/8")
21	870-1183	2	Nut, Self-locking, Hex - with External Tooth Lock Washer (#6-32)
22	307-1157	1	Spring, Hold Down - Relay
23	307-1058	1	Relay - 12 VDC
24	323-0897	1	Socket, Relay (Included Leads)
25	821-0014	6	Screw, Self-locking - Hex Washer Head (5/16-18 x 1/2")
26	402-0070	4	Mount, Vibration
27	415-0324	1	Bracket, Mounting - Fuel Tank
28	870-0048	2	Nut, Self-locking, Hex Washer Head (5/16-18)
29	821-0016	2	Screw, Self-locking - Hex Washer Head (5/16-18 x 3/4")
30	821-0018	2	Screw, Self-locking - Hex Washer Head (1/4-20 x 5/8")
31	149-1830	1	Pump, Fuel - Electric, 12 VDC
32	821-0014	2	Screw, Self-locking - Hex Washer Head (5/16-18 x 1/2")
33	130-1005	1	Bracket, Mounting - Fuel Pump

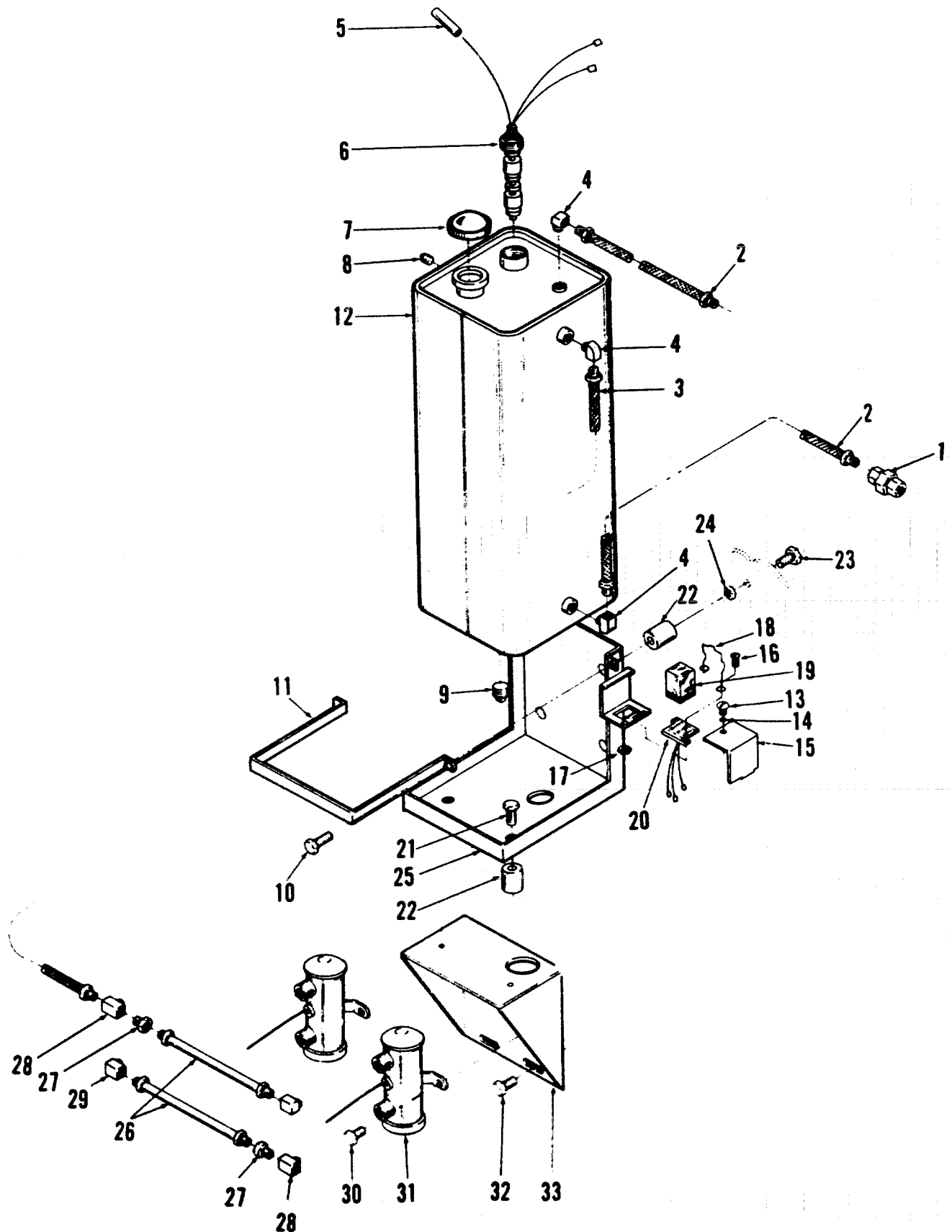
FUEL TANK RESERVOIR (HOUSED SETS)



FUEL TANK RESERVOIR (HOUSED SETS)

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
FUEL TANK RESERVOIR (Housed Sets)			
			For 12 Volt Systems
			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	821-0013	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, Vibrator
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)

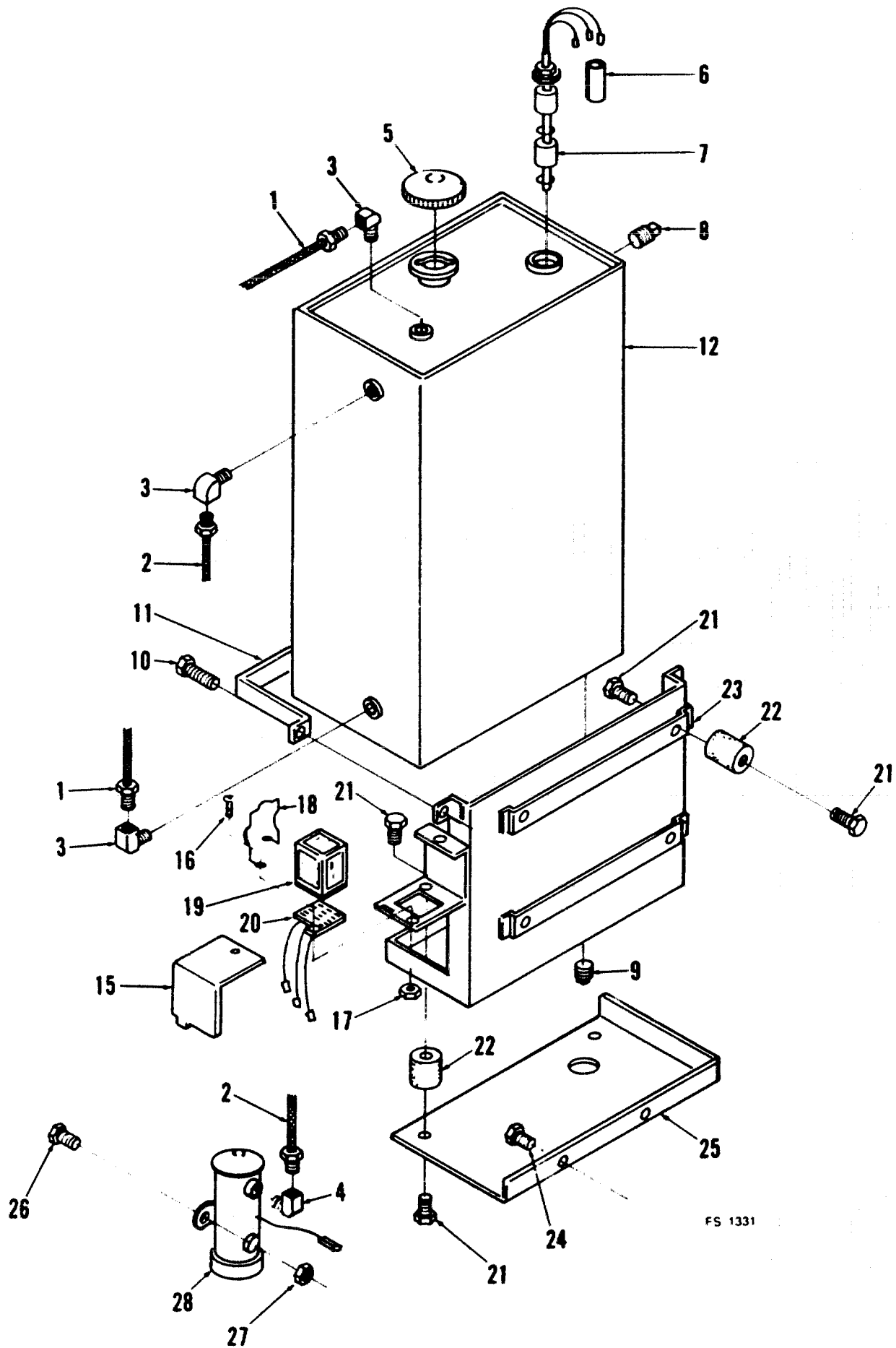
**OPTIONAL
FUEL TANK RESERVOIR
WITH DUAL PUMPS - (HOUSED SETS)**



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	821-0016	2	Screw, Self-locking - Hex Washer Head (5/16-18 x 3/4")
24	870-0048	2	Nut, Self-locking, Hex Washer Head (5/16-18)
25	415-0324	1	Bracket, Mounting - Fuel Tank
26	149-1435	2	Tube, Fuel
27	502-0106	2	Connector, Tube - Inverted Male
28	502-0057	2	Tee, Pipe - Brass, Male (1/8" NPT)
29	502-0246	2	Elbow, Pipe - 90 Deg. Brass (1/8" NPT x 5/8-18)
30	821-0018	4	Screw, Self-locking - Hex Washer Head (1/4-20 x 5/8")
31	PUMP, FUEL - ELECTRIC		
	149-1830	2	12 Volt
	149-1831	2	24 Volt
32	821-0014	2	Screw, Self-locking - Hex Washer Head (5/16-18 x 1/2")
33	130-1005	1	Bracket, Mounting - Fuel Pump

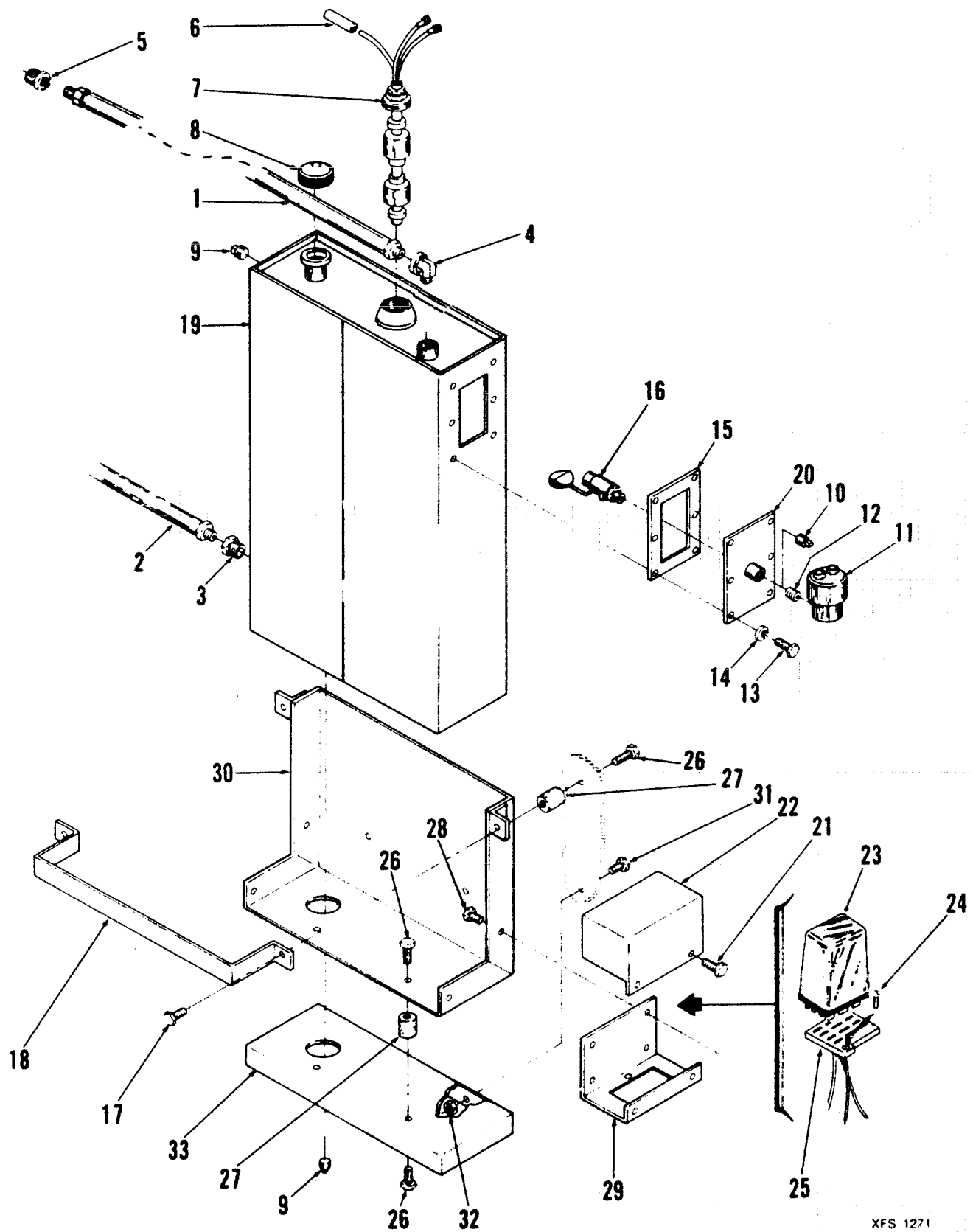
OPTIONAL FUEL TANK RESERVOIR (UNHOUSED SETS)



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)



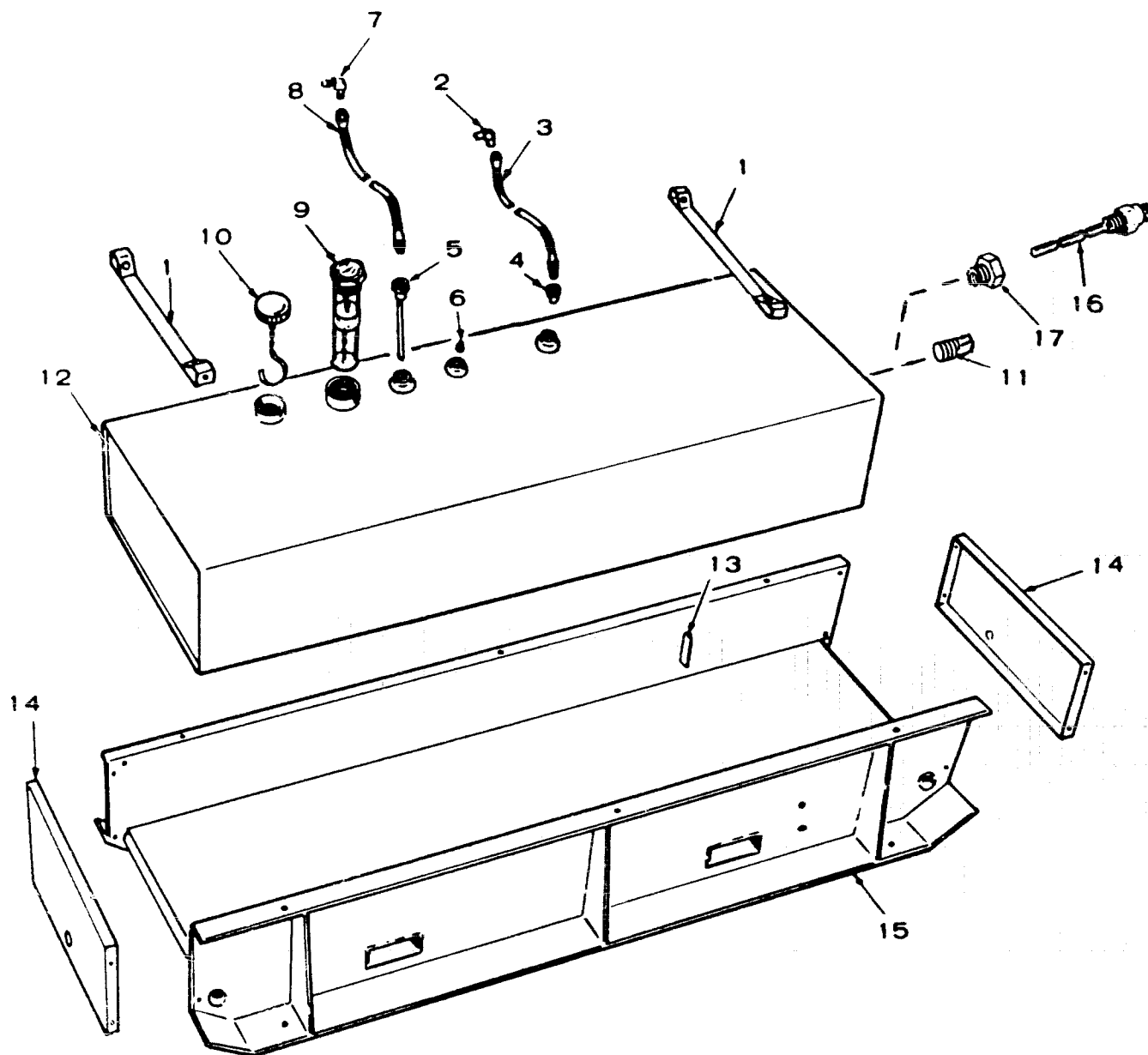
OPTIONAL FUEL TANK RESERVOIR (OVERHEAD/UNDERGROUND APPLICATIONS)

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	307-0565	1	£ Solenoid - 12 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	307-1058	1	Relay - 12 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.

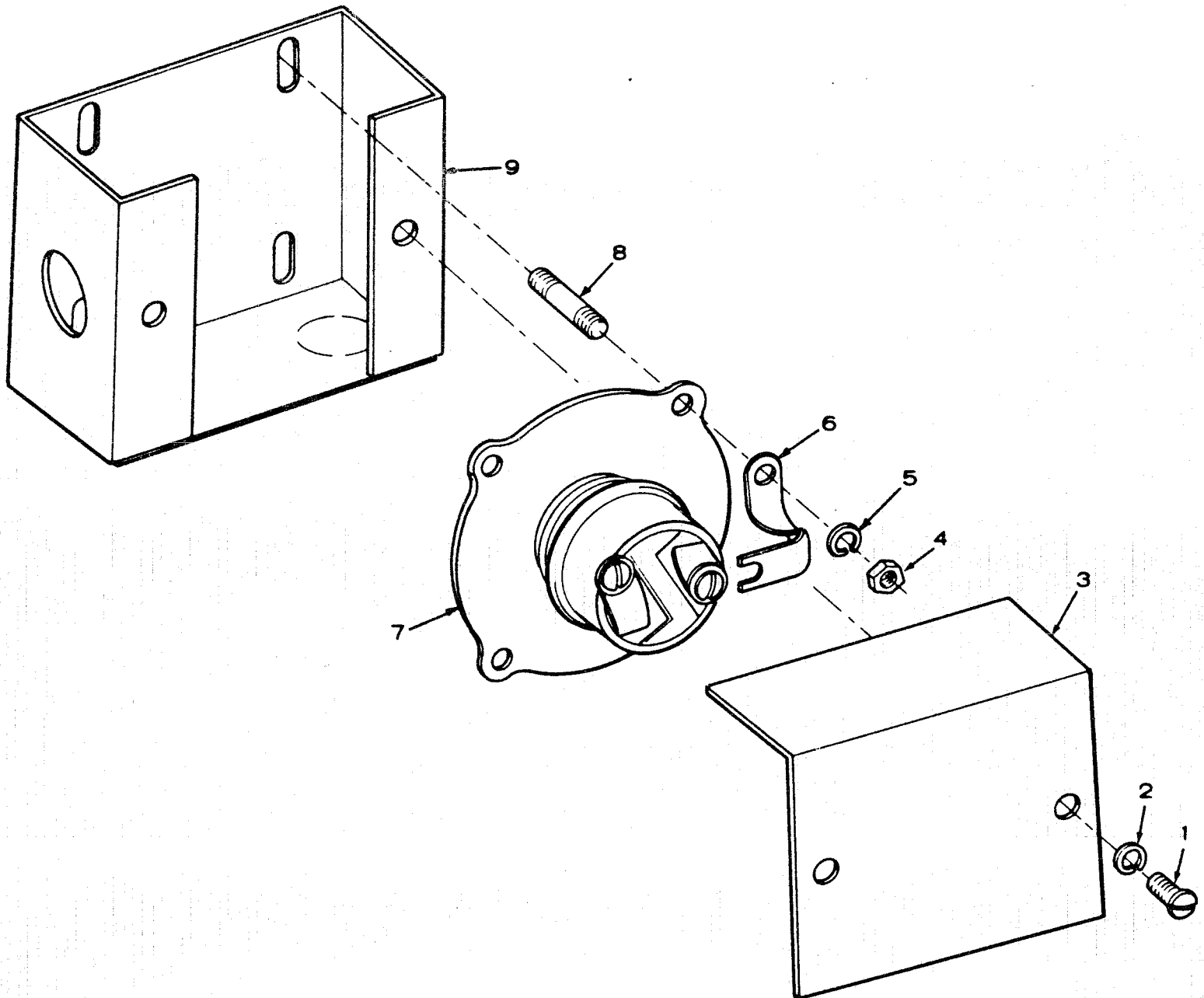
OPTIONAL FUEL TANK AND SUB BASE



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	403-1007	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 ENGINE TEMPERATURE SWITCH



CS-1063

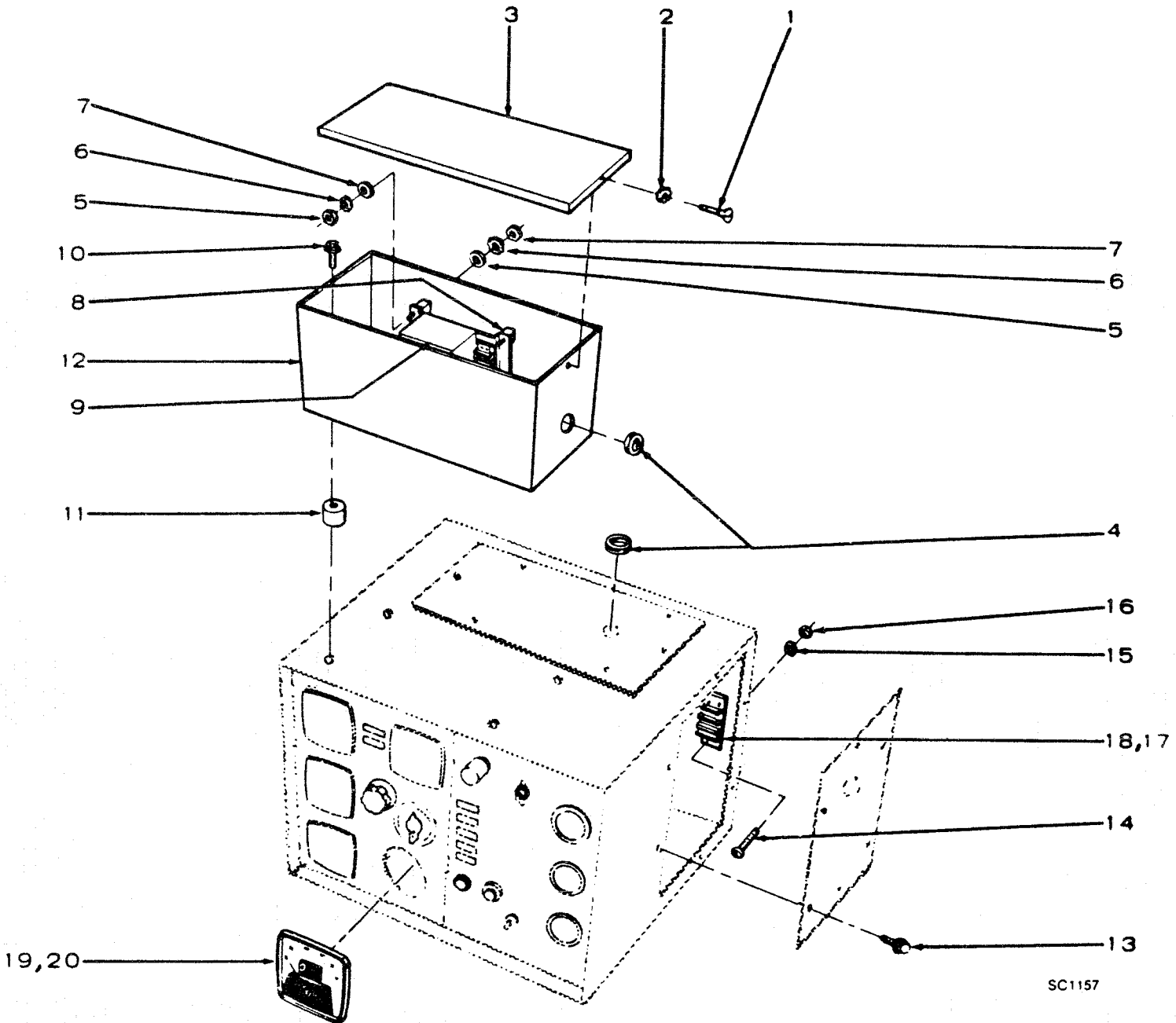
REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
		1	Low Engine Temperature Switch
1	812-0075	2	Screw, Machine - Round Head (#8-32 x 1/4")
2	850-0025	2	Washer, Lock - Spring (#8)
3	333-0013	1	Cover, Thermostat Box
4	870-0053	2	Nut, Hex (#10-32)
5	850-0030	2	Washer, Lock - Spring (#10)
6	160-0428	1	Strap, Ground
7	309-0029	1	Switch, Thermostatic - 120/240 Volt, 25 Amp (70 Deg close, 90 Deg open)
8	520-0446	2	Stud (#10-32 x 3/4")
9	333-0012	1	Box, Thermostat Mounting

VERNIER THROTTLE



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

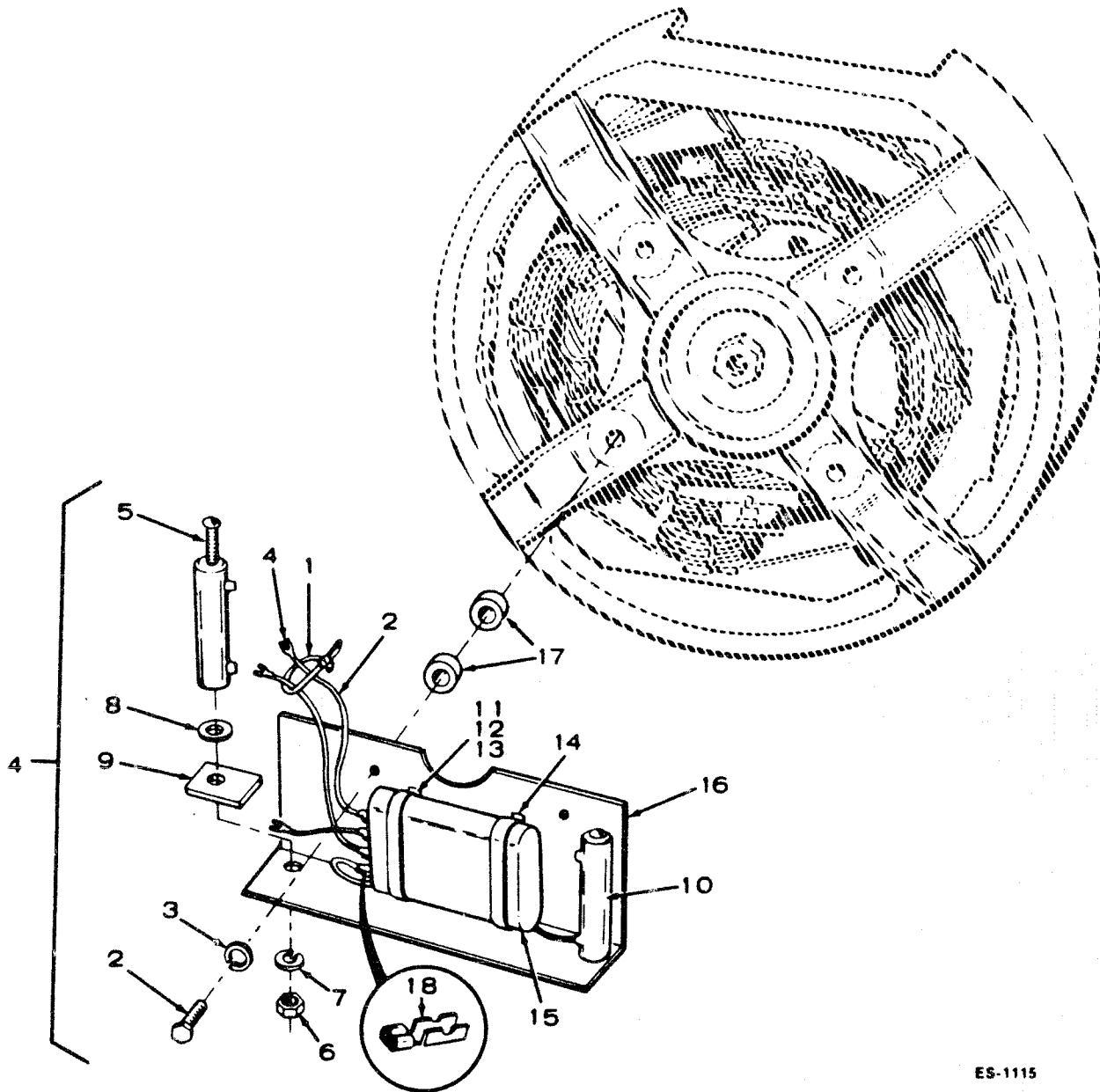


SC1157

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 VOLTAGE REGULATOR FILTER



ES-1115

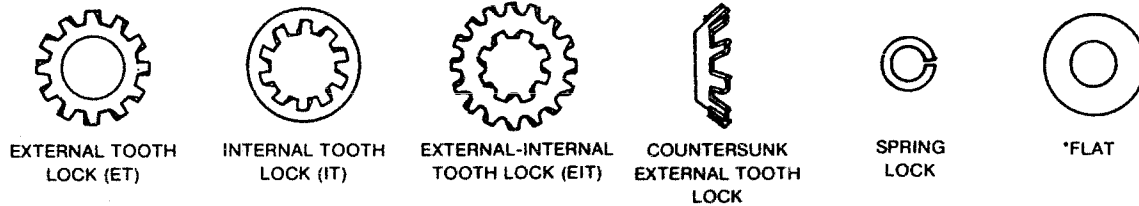
REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
	KIT, FILTER - VOLTAGE REGULATOR (Includes Parts Marked *)			7	850-0040	2	Washer, Lock - Spring (1/4")
	232-2694	1	Used on Sets with End Bell Mounted Voltage Regulator	8	304-0427	4	Washer, Centering (1/4")
	232-2695	1	Used on Sets with Voltage Regulator Mounted in Control Box	9	304-0292	2	Insulator
1	332-0941	5	*Tie, Cable	10	354-0025	2	Resistor, Fixed, Wire Wound (10-Ohm, 100 Watt)
2	800-0003	2	*Screw, Cap - Hex Head (1/4-20 x 1/2")	11	813-0098	4	Screw, Machine - Round Head (#10-32 x 3/8")
3	850-0040	2	*Washer, Lock - Spring (1/4")	12	870-0053	4	Nut, Hex (#10-32)
4	*FILTER ASSEMBLY (Includes all parts except as indicated)			13	850-0030	4	Washer, Lock - Spring (#10)
	232-2219	REF	Part of Kit 232-2694	14	312-0189	2	Bracket, Mounting - Capacitor
	232-2692	REF	Part of Kit 232-2695	15	312-0188	1	Capacitor, Fixed - 15 MFD, 440 VAC
5	812-0165	2	Screw, Machine - Round Head (1/4-20 x 4-1/2")	16	232-2210	1	Bracket, Mounting
6	862-0001	2	Nut, Hex (1/4-20)	17	526-0018	15	Washer, Flat (1/4")
				18	TERMINALS (Select as required)		
					332-1279	8	Insulated 14-16 AWG
					332-0529	4	Lug 14-16 AWG

* - Parts included in kits.

HARDWARE IDENTIFICATION

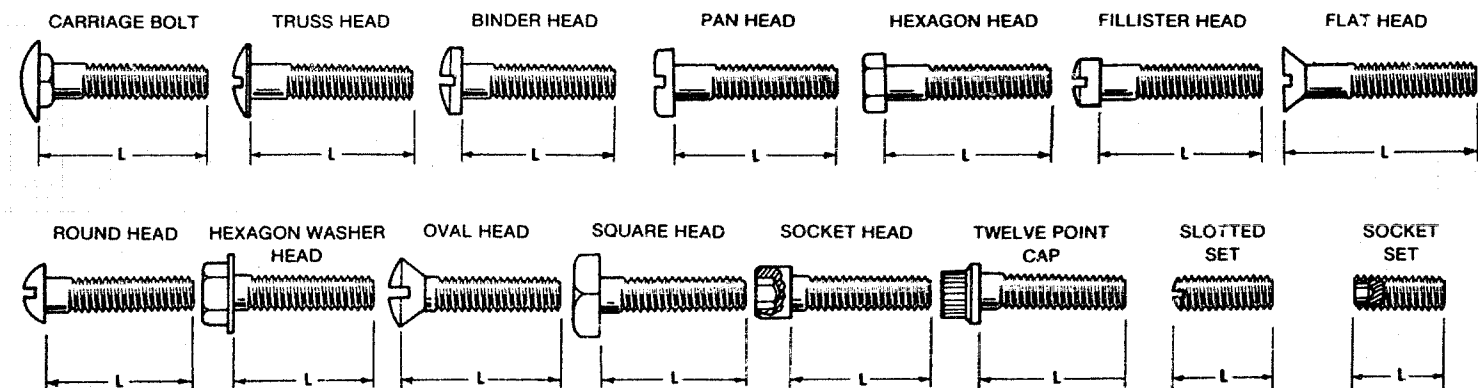
Illustrated hardware items are only for identification purposes. All hardware items listed throughout this parts catalog are steel SAE grade five (5) or lower (zinc plated with clear chromate dip) unless parts description indicates differently. All dimensions are in inches.

WASHER TYPES



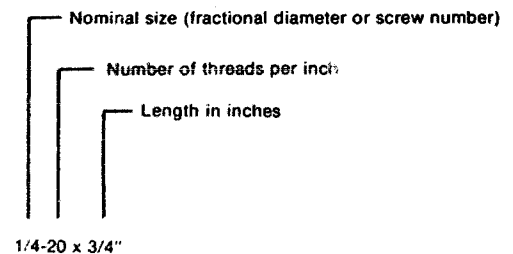
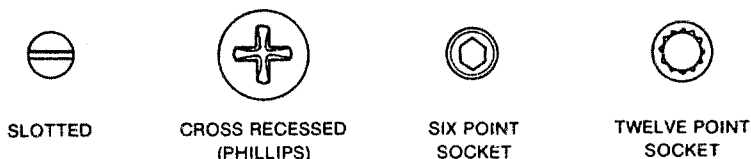
- Flat washer dimensions given are: Inside Diameter (ID), Outside Diameter (OD) and Thickness (Thk).

BOLT AND SCREW TYPES



L - Measure length between these points.

INTERNAL DRIVE TYPES



NUT TYPES

