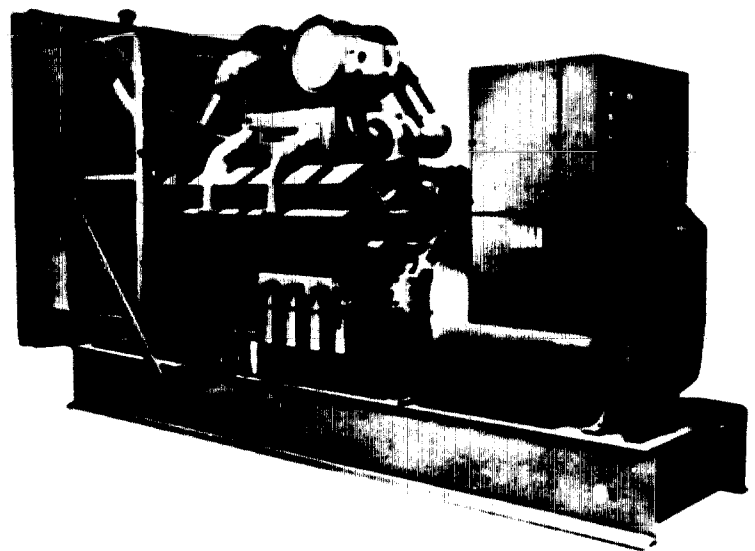


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numbers, or doesn't
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Parts Manual

DFX
LDFX
GenSet



960-0225
DFX 6-82 (SPEC A-D)
LDFX 6-82 (SPEC C-E)

Printed in U.S.A.

GENERAL INFORMATION

INSTRUCTIONS FOR ORDERING REPAIR PARTS

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

To avoid errors or delay in filling your parts order, please furnish all information requested.

Always refer to the nameplate on your unit.

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

The diagram shows a rectangular nameplate with two circular mounting holes at the top. At the top center is the text "McGRAW-EDISON". Below it is the "Onan" logo. Under the logo is a large rectangular box labeled "MODEL AND SPEC NO.". Below that is another rectangular box labeled "SERIAL NO.". The bottom right corner of the nameplate is folded over, revealing a second nameplate underneath. The number "16-1100" is printed at the bottom right of the diagram.

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

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

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

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

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

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

INDEX

	LOCATION
GENERAL INFORMATION	A2
SET DATA TABLE	A4
REPLACEMENT ENGINE	A5
EQUIPMENT PARTS SECTION	
Air Cleaner - DFX	A6
Air Cleaner - LDFX	A7
Air Duct Flanges, Radiator	A14
Alternator - Group I (with Single Groove Pulleys)	A8
Alternator - Group II (with Multi Groove Pulleys)	A10
Battery Cables	A12
Bus Bar Assembly	C4
Chassis	C1
Control, Engine - DFX	B8
Control, Engine - LDFX	B10
Control, Generator	B12
Cooling System with Radiator - Spec A and B - DFX	B4
Cooling System with Radiator - Begin Spec C - DFX & All LDFX	B6
Engine Parts, Miscellaneous	B2
Engine Coolant Temp Sender	Low Oil Pressure Switches
Fuel Lines	Oil Pressure Sender
High Engine Coolant Temp Switch (Alarm)	Oil Temperature Sender
High Engine Coolant Temp Switch (Shutdown)	Oil Drain Hardware
Low Engine Temp Switch	Tachometer Drive & Sender
	Wiring Harness - DFX
Generator Assembly	C2
Governor	A13
Housing, Control	B14
Rotor, Exciter	C6
Wiring Harness, Engine - LDFX	B1
OPTIONAL EQUIPMENT SECTION	
Control, Generator with Switching Regulator - DFX	D2
Cooling System for Remote Radiator	D12
Cooling System with Standpipe	D10
Filter Assembly - Fuel/Water	D14
Filter Assembly, Dual - Fuel	E1
Filter, Lube Oil	D13
Gauge, Fuel Pressure	D9
Header Assembly, Exhaust	E12
Heater, Control	D8
Heater, Engine Coolant	E2
Heater, Engine Coolant - Dual	E4
Heater, Generator	D6
Sensor Assembly, Dual - Over/Under Speed	D7
Switch, Low Coolant Level	E11
Tachometer	B8
Tank, Fuel Reservoir	E6
Tank, Fuel Reservoir - Overhead/Underground Supply Applications	E8
Voltage Suppressor Assembly	D4
Voltage Suppressor Assembly - Dual	D5
Wattmeter	E10

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
500.0DFX-*/#£	500.000 WATTS	600.0DFX-*/#£	600.000 WATTS
473.0LDFX-*/#£	473.000 WATTS	562.0LDFX-*/#£	562.000 WATTS

ELECTRICAL DATA TABLE

*VOLTAGE CODES	VOLTS	HERTZ	WIRE	PHASE	NOTES
4	120/208	60	4	3	
4X	277/480	60	4	3	
5	120/240	60	4	3	
6	240/480	60	4	3	
7	220/380	60	4	3	
7X	240/416	60	4	3	
9X	347/600	60	4	3	
	139/240	60	4	3	
519	110/190, 115/200	50	4	3	
520	220/380, 230/400	50	4	3	
521	120/208, 127/220	50	4	3	
522	240/416, 254/440	50	4	3	

* - Voltage codes follow model letter designations.

- Specification number; number 1 is standard, all others indicate variations.

£ - Specification letter; letter advances (A to B, B to C, etc.) with major manufacturing changes.

+ - No standard voltage code, code 99 marked on nameplate for reference information.

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

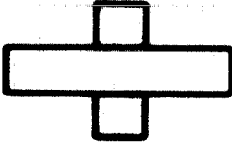
ONAN PART NO.

100-1383 *Engine, Replacement
Engine, Replacement

Includes: Complete Cylinder Block, Fuel Pump, Governor, Starter, Fan Blade (pusher type), Fan Belt, Flywheel, Water Pump, Fuel Filter, Oil Filter, and Turbocharger.

Excludes: Alternator, Water Temperature Sender, Oil Pressure Sender, Radiator, Ammeter, Voltage Regulator, Air Cleaner.

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

CUMMINS		CUMMINS ENGINE COMPANY, INC. COLUMBUS, INDIANA, U.S.A.					
SBM NO.		MODEL		ENG NO.		OTHER REF.NO.	

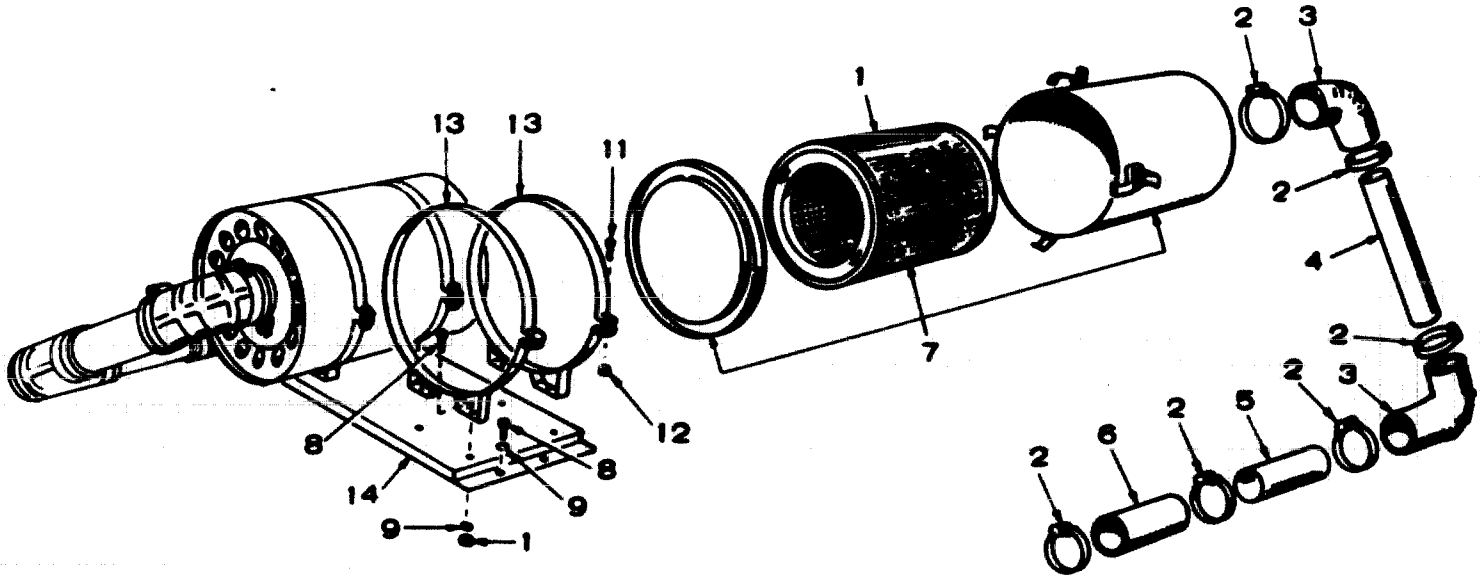
10-1386

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

ENGINE REPLACEMENT PARTS

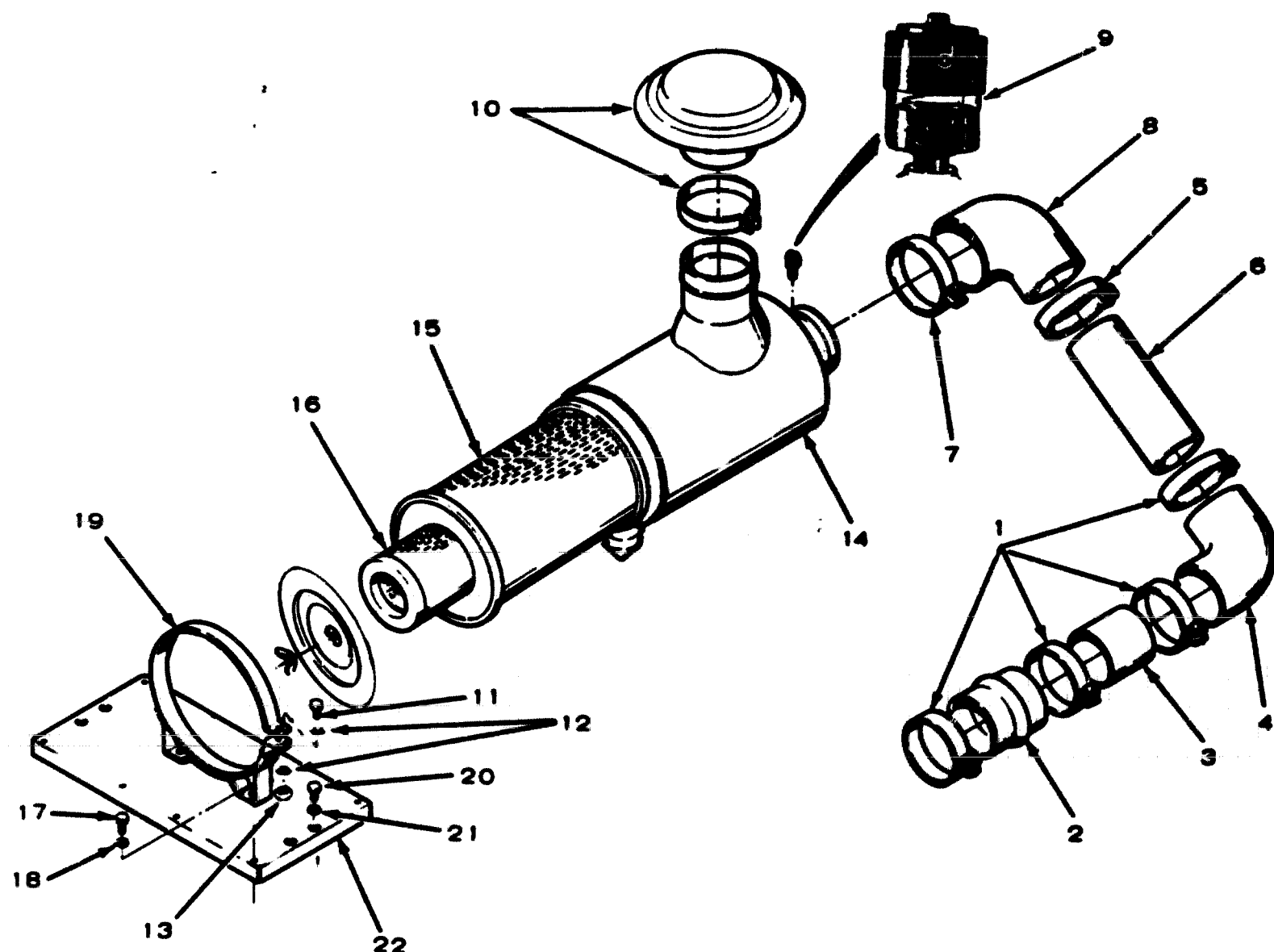
All engine replacement parts must be ordered from the engine manufacturer, except those modified or added by Onan. When ordering engine parts, refer to the manufacturer's nameplate and supply the Model, Spec, Serial numbers and other available information. Refer to the engine manufacturer's manuals for 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 -DFX



REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	140-1371	2	Filter, Air - Paper (Replacement)
2	503-0784	12	Clamp, Hose
3	140-1415	4	Elbow, Hose - 90°, Preformed
4	140-1397	2	Tube, Air (5-1/2" OD x 13" Lg)
5	140-1396	2	Tube, Air (5-1/2" OD x 7-1/2" Lg)
6	503-0806	2	Hose, Rubber (5-1/2" ID)
7	140-1434	2	Air Cleaner (Includes Replacement Filter)
8	800-0069	12	Screw, Cap - Hex Head (7/16-14 x 3/4")
9	850-0055	12	Washer, Lock - Spring (7/16")
10	862-0004	8	Nut, Hex (7/16-24)
11	800-0032	4	Screw, Cap - Hex Head (5/16-18 x 1-3/4")
12	870-0257	4	Nut, Self-locking, Hex (5/16-18)
13	140-1410	4	Band, Mounting - Air Cleaner
14	140-1398	1	Base, Plate - Air Cleaner

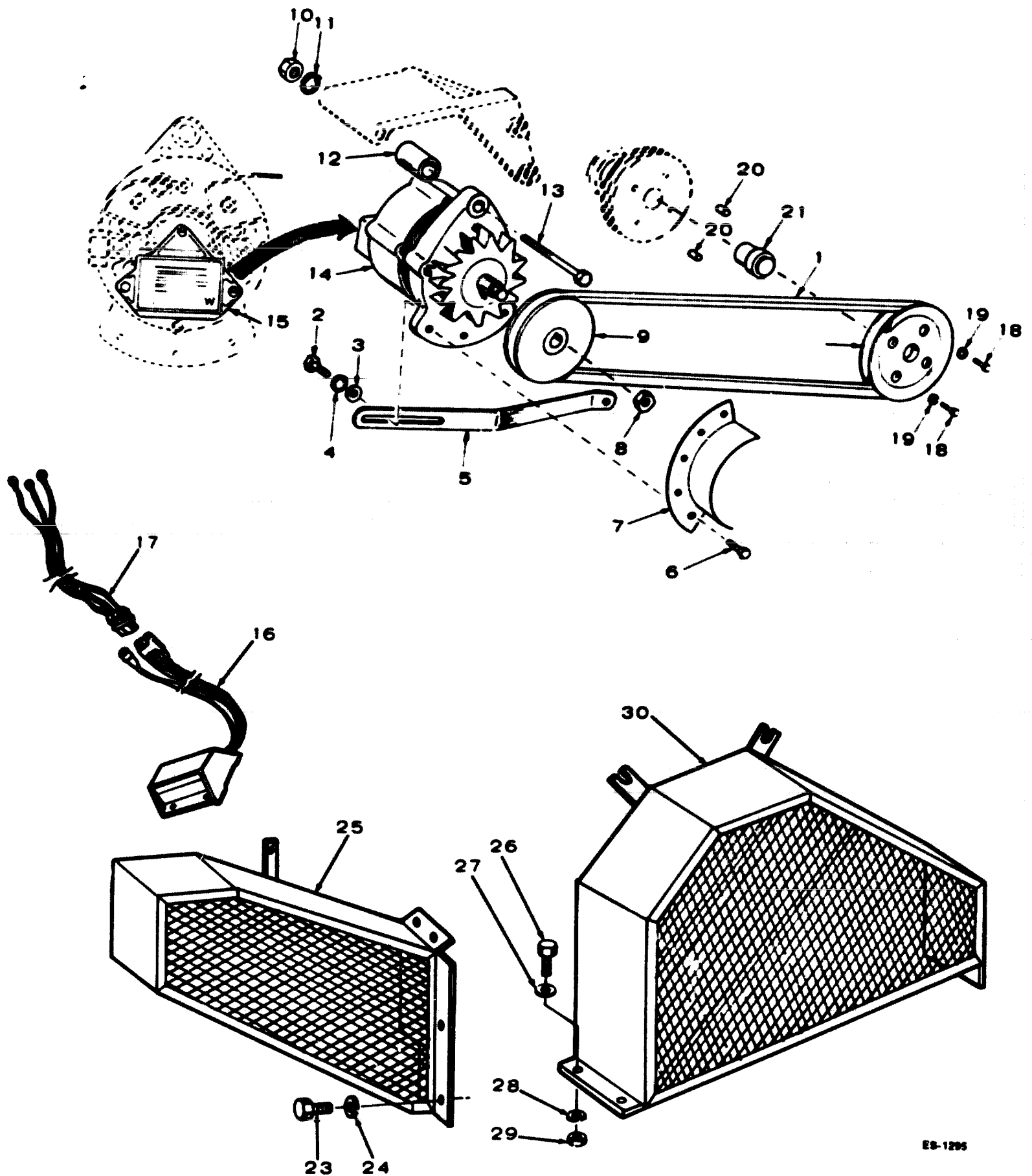
AIR CLEANER - LDFX



REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	503-0863	8	Clamp, Hose (6" ID)
2	503-0806	2	Hose, Rubber - Flexible (5-1/2" ID x 6" Lg)
3	140-1578	2	Tube (5-1/2" OD x 4" Lg)
4	140-1415	2	Elbow, Rubber - 90 Deg (5-1/2" ID)
5	503-0988	2	Clamp, Hose (6-1/4" ID)
6	140-1397	2	Tube (5-1/2" OD x 13" Lg)
7	503-0881	2	Clamp, Hose (7-3/4" ID)
8	503-0882	2	Elbow, Rubber - 90 Deg Reducing (7" ID x 5-1/2" ID)
9	140-1548	2	Indicator, Service - Air Cleaner
10	140-1580	2	Hood, Air Cleaner (7" ID Outlet)
11	800-0037	4	Screw, Cap - Hex Head (5/16-18 x 3")

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
12	526-0113	8	Washer, Flat - (11/32" ID x 1" OD x 3/32" Thk)
13	870-0257	4	Nut, Self-locking - Hex Washer Head (5/16-18)
14	140-1579	2	Cleaner, Air (Includes Filters)
15	140-1654	2	Element, Filter (Primary)
16	140-1655	2	Element, Filter (Safety)
17	800-0048	8	Screw, Cap - Hex Head (3/8-16 x 3/4")
18	850-0050	8	Washer, Lock - Spring (3/8")
19	140-0799	4	Band, Mounting (16" ID)
20	800-0069	4	Screw, Cap - Hex Head (7/16-14 x 3/4")
21	850-0055	4	Washer, Lock - Spring (7/16")
22	140-1581	1	Base, Mounting - Air Cleaner

ALTERNATOR & GROUP I



ES-1295

ALTERNATOR £ GROUP I

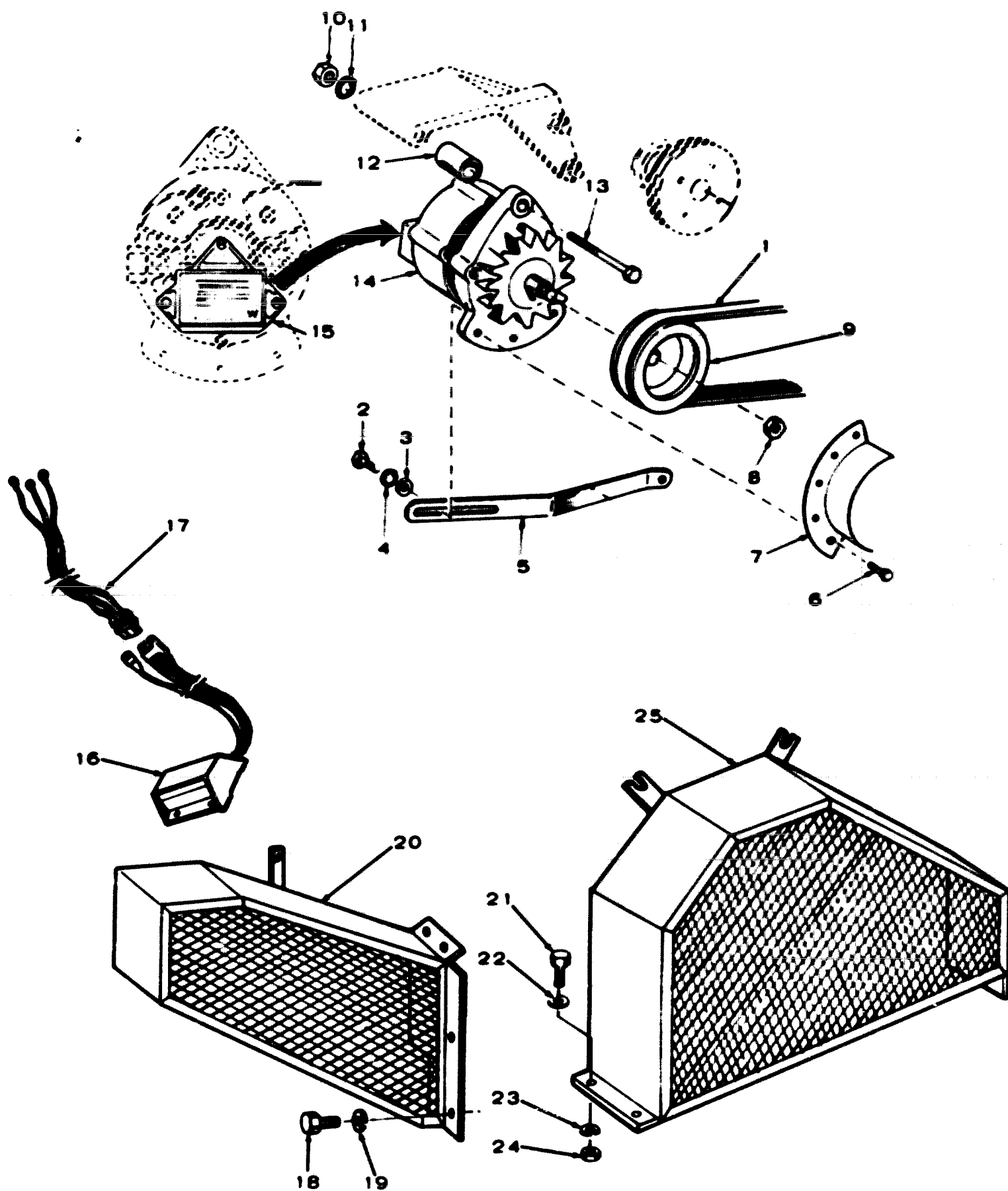
REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	BELT, DRIVE (Select as Required)		
	511-0059	1	44" Lg
	511-0104	1	41" Lg
2	800-0026	1	Screw, Cap - Hex Head (5/16-18 x 1")
3	526-0022	1	Washer, Flat (21/64" ID x 9/16" OD x 1/16" Thk)
4	850-0045	1	Washer, Lock - Spring (5/16")
5	191-1152	1	*Bracket, Adjusting - Alternator
6	821-0014	2	Screw, Self-locking - Hex Washer Head (5/16-18 x 1/2")
7	191-0725	1	Guard, Belt
8		1	Nut, Hex (5/16-18 NF-2A) - Part of Alternator
9	191-0781	1	Pulley, Drive - Single Groove
10	862-0016	1	Nut, Hex (1/2-13)
11	850-0060	1	Washer, Lock - Spring (1/2")
12	191-1227	1	Spacer, Sleeve
13	800-0110	1	Screw, Cap - Hex Head (1/2-13 x 7-1/2")
14	ALTERNATOR - 24 VDC		
	191-0688	1	Standard (Includes Regulator)
	191-1258	1	Marine Type - Optional
15	191-0733	1	Regulator, Voltage (Part of 191-0688 Alternator)
16	191-0548	1	Regulator, Voltage (Used with 191-1258 Alternator)
17	191-0681	1	Cable, Electrical (Alternator to Regulator)
18	800-0089	2	Screw, Cap - Hex Head (7/16-14 x 3/4")
19	850-0055	2	Washer, Lock - Spring (7/16")
20	191-1165	2	Spacer, Sleeve
21	191-1164	1	Adapter, Pulley
22	512-0075	1	Pulley, Drive
23	800-0003	4	Screw, Cap - Hex Head (1/4-20 x 1/2")
24	850-0040	4	Washer, Lock - Spring (1/4")
25	191-1238	1	*Guard, Belt
26	800-0026	4	Screw, Cap - Hex Head (5/16-18 x 1")
27	526-0022	4	Washer, Flat (21/64" ID x 9/16" OD x 1/16" Thk)
28	850-0045	4	Washer, Lock - Spring (5/16")
29	862-0015	4	Nut, Hex (5/16-18)
30	130-1156	1	*Guard, Belt

£ - Group I Configuration used on these GenSets through June 1981.

*Note: Field modification may be required to fit adjusting arm to this application.

* - Belt guards used only on Remote Radiator, Heat Exchanger or Standpipe Cooling Systems

ALTERNATOR £ GROUP II



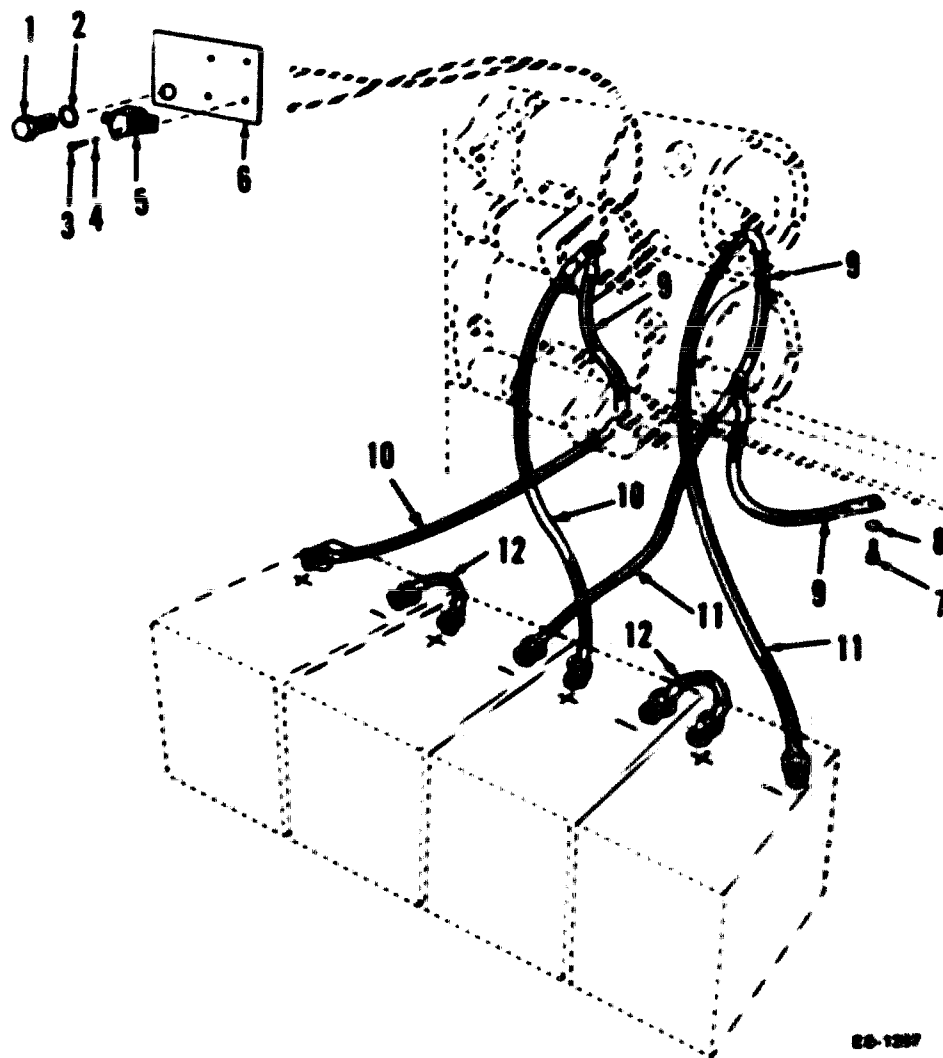
28-1296

ALTERNATOR £ GROUP II

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	511-0117	1	Belt, Drive - Multi Groove
2	800-0026	1	Screw, Cap - Hex Head (5/16-18 x 1")
3	526-0022	1	Washer, Flat (21/64" ID x 9/16" OD x 1/16" Thk)
4	850-0045	1	Washer, Lock - Spring (5/16")
5	191-1152	1	Bracket, Adjusting - Alternator
6	821-0014	2	Screw, Self-locking - Hex Washer Head (5/16-18 x 1/2")
7	191-0725	1	Guard, Belt
8		1	Nut, Hex (5/16-18 NF-2A) - Part of Alternator
9	191-1391	1	Pulley, Drive - Multi Groove
10	862-0016	1	Nut, Hex (1/2-13)
11	850-0080	1	Washer, Lock - Spring (1/2")
12	526-0219	3	Washer, Flat (17/32" ID x 1" OD x 1/8" Thk)
13	800-0107	1	Screw, Cap - Hex Head (1/2-13 x 6")
14	ALTERNATOR - 24 VDC		
	191-0888	1	Standard (Includes Regulator)
	191-1258	1	Marine Type - Optional
15	191-0733	1	Regulator, Voltage (Part of 191-0888 Alternator)
16	191-0548	1	Regulator, Voltage (Used with 191-1258 Alternator)
17	191-0881	1	Cable, Electrical (Alternator to Regulator)
18	800-0003	4	Screw, Cap - Hex Head (1/4-20 x 1/2")
19	850-0040	4	Washer, Lock - Spring (1/4")
20	191-1238	1	Guard, Belt
21	800-0026	4	Screw, Cap - Hex Head (5/16-18 x 1")
22	526-0022	4	Washer, Flat (21/64" ID x 9/16" OD x 1/16" Thk)
23	850-0045	4	Washer, Lock - Spring (5/16")
24	862-0015	4	Nut, Hex (5/16-18)
25	130-1156	1	Guard, Belt

- £ - Group II Configuration used on these GenSets
starting July 1981.
- - Belt guards used only on Remote Radiator,
Heat Exchanger or Standpipe Cooling Systems

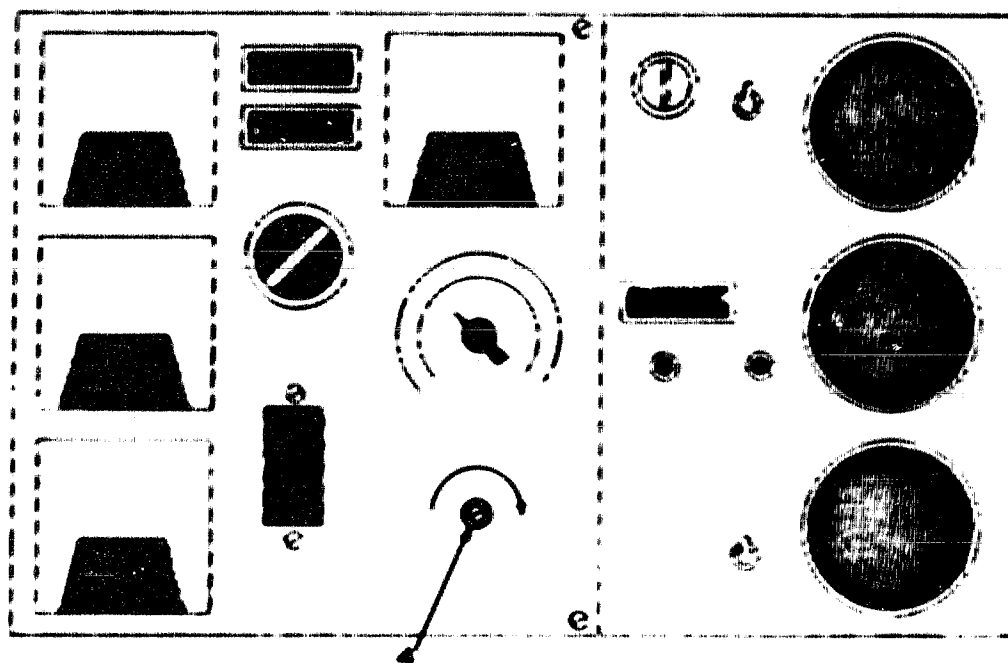
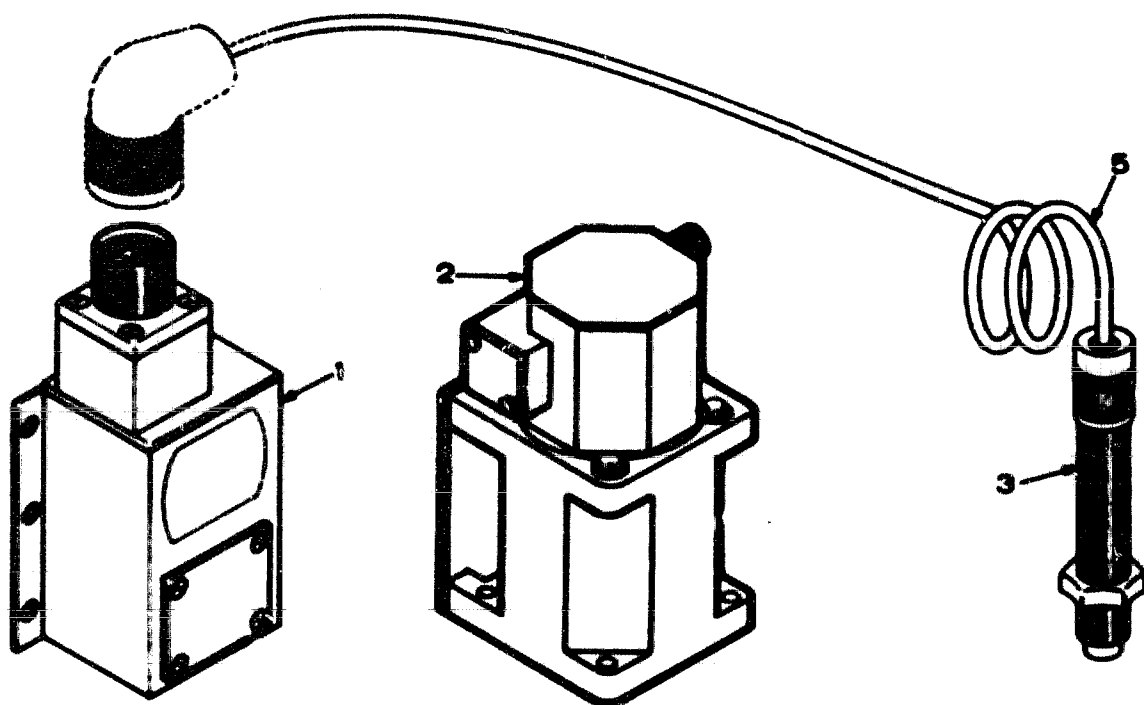
BATTERY CABLES



CS-1287

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	800-0151	1	Screw, Cap - Hex Head (3/4-10 x 1")
2	850-0779	1	Washer, Lock - Spring (3/4")
3	815-C216	4	Screw, Machine - Round Head Brass (#10-32 x 3/4")
4	850-0030	4	Washer, Lock - Spring (#10)
5	320-0240	2	Bracket, Circuit
6	301-4206	1	Bracket, Mounting
7	800-0090	1	Screw, Cap - Hex Head (1/2-13 x 1")
8	850-0060	1	Washer, Lock - Spring (1 2")
9	416-0660	3	Cable, Electrical
10	416-0682	2	Cable, Battery (Positive) (#20/44")
11	416-0681	2	Cable, Battery (Negative) (#20/44")
12	416-0473	2	Cable, Battery - Jumper

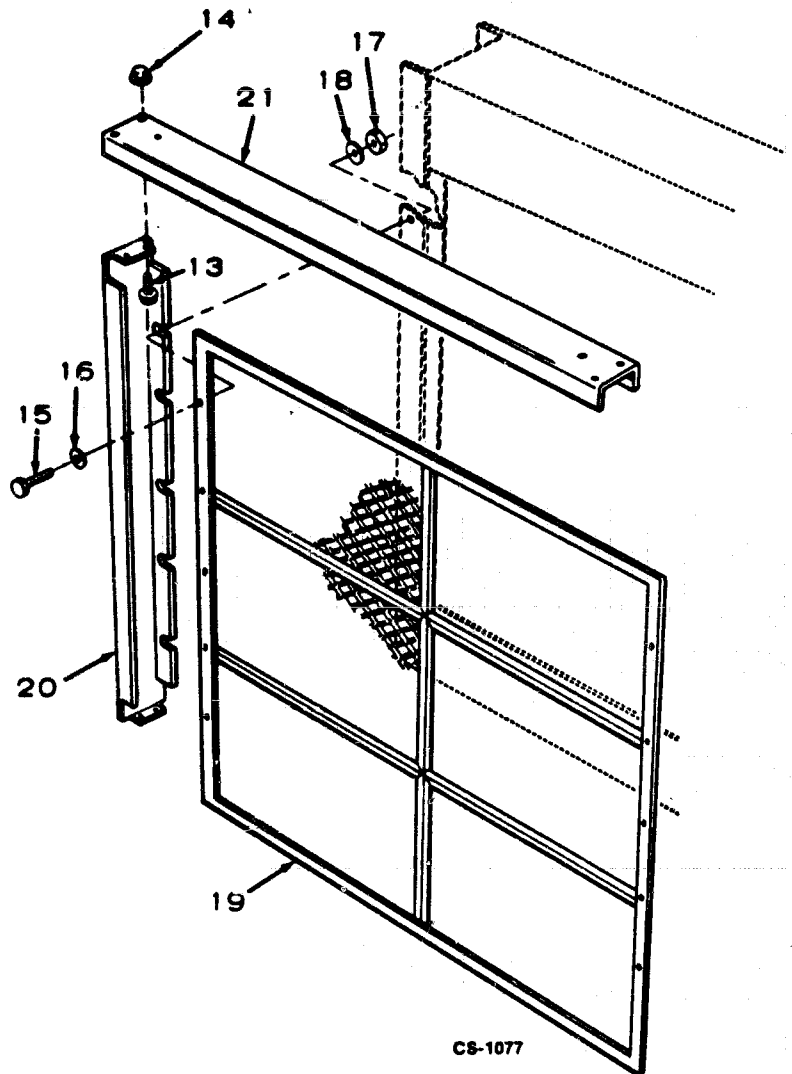
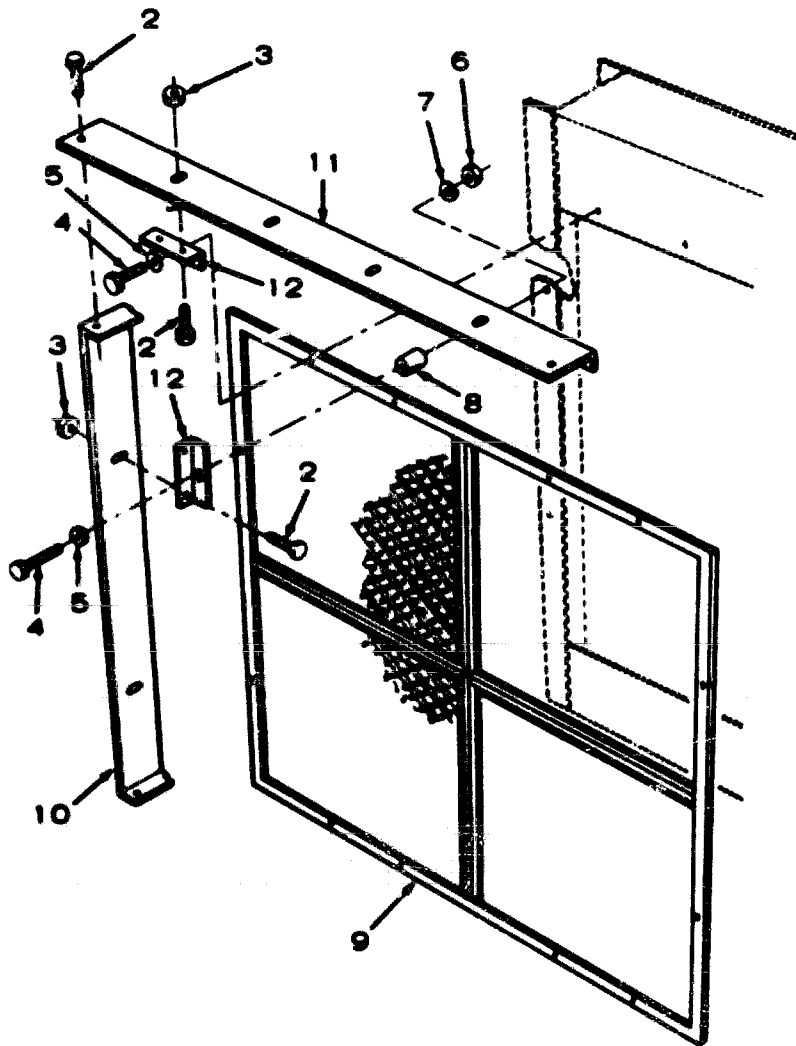
GOVERNOR



PS 1272-1

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	151-0389	1	Control Unit - Governor (24 volt)
2	151-0419	1	Actuator - Governor (24 Volt)
3	151-0411	1	Pickup, Magnetic
4	151-0402	1	Potentiometer - Speed Control (5K Ohms)
5	338-1086	1	Harness, Wiring - Governor

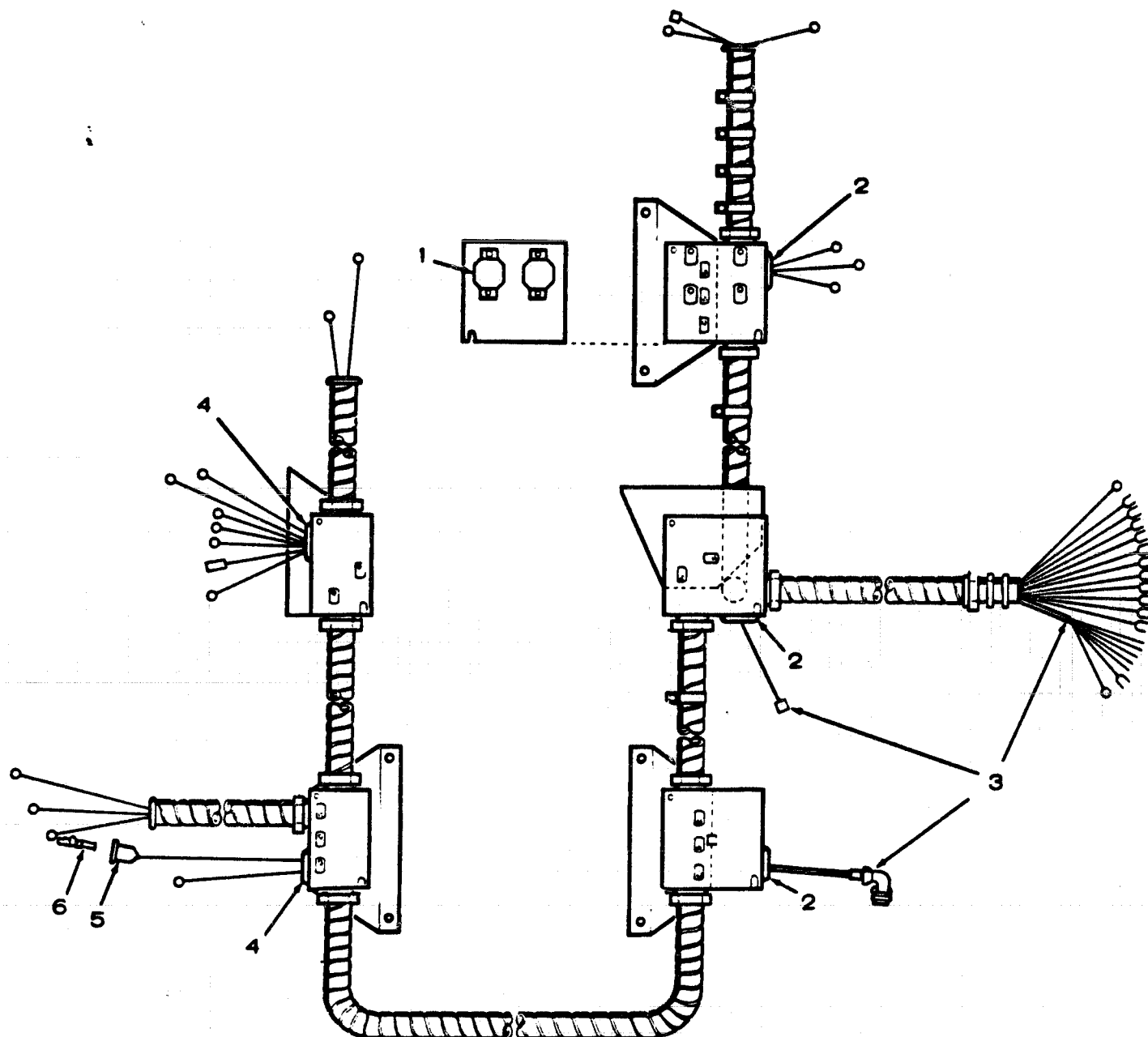
RADIATOR AIR DUCT FLANGES



REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
2	821-0010	28	Screw, Self-Locking - Hex Washer Head (1/4-20 x 1/2")
3	862-0001	10	Nut, Hex (1/4-20)
4	800-0032	10	Screw, Cap - Hex Head (5/16-18 x 1-3/4")
5	526-0115	10	Washer, Flat (11/32" ID x 11/16" OD x 1/16" Thk)
6	862-0015	10	Nut, Hex (5/16-18)
7	850-0045	10	Washer, Lock - Spring (5/16")
8	402-0017	10	Spacer, Sleeve
9		1	Guard, Radiator (Part of Radiator)
10	130-1114	2	Flange, Air Duct - Side
11	130-1115	2	Flange, Air Duct - Top/Bottom
12	370-1025	12	Angle, Radiator Flange

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
13	821-0010	8	Screw, Self-locking - Hex Washer Head (1/4-20 x 1/2")
14	870-0212	8	Nut, Self-locking - Hex (1/4-20)
15	800-0026	10	Screw, Cap - Hex Head (5/16-18 x 3/4")
16	526-0115	10	Washer, Flat (11/32" ID x 11/16" OD x 1/16" Thk)
17	862-0015	10	Nut, Hex (5/16-18)
18	850-0045	10	Washer, Lock - Spring (5/16")
19		1	Guard, Radiator (Part of Radiator)
20	130-1420	2	Flange, Air Duct - Side
21	130-1419	2	Flange, Air Duct - Top/Bottom

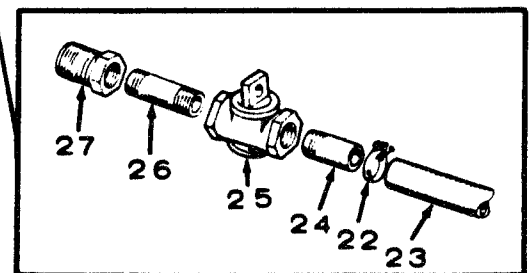
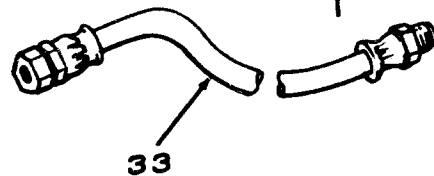
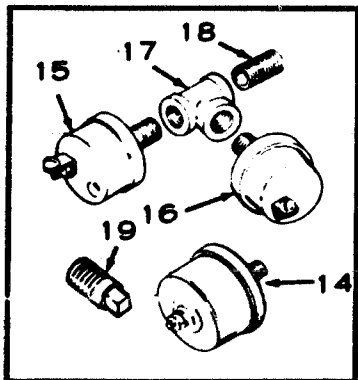
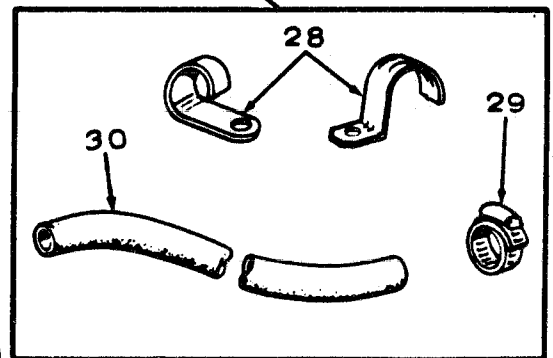
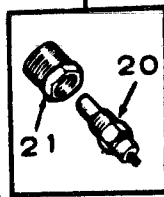
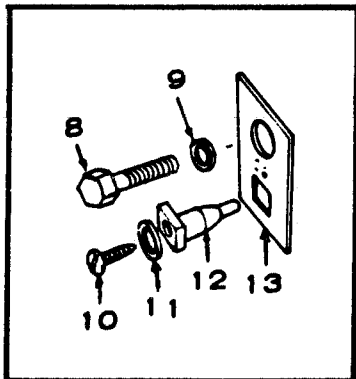
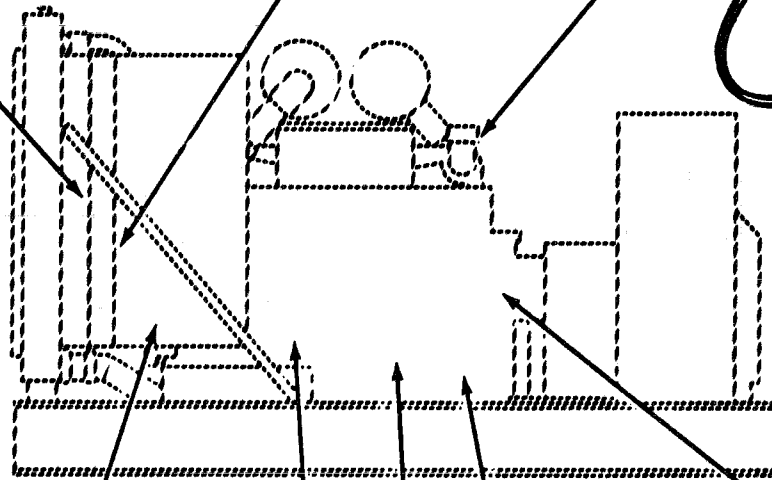
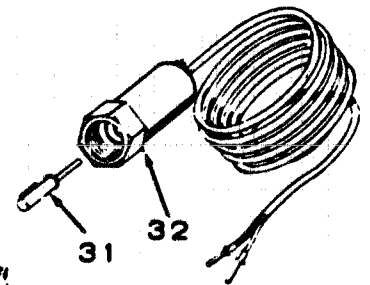
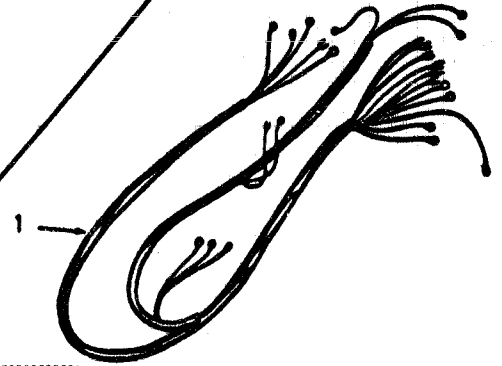
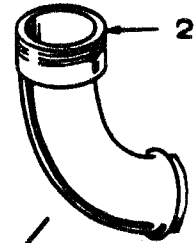
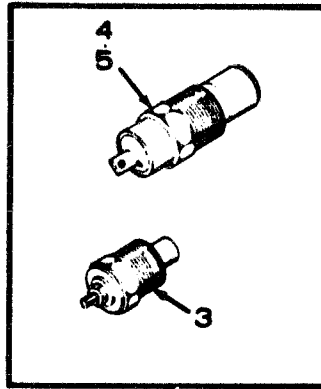
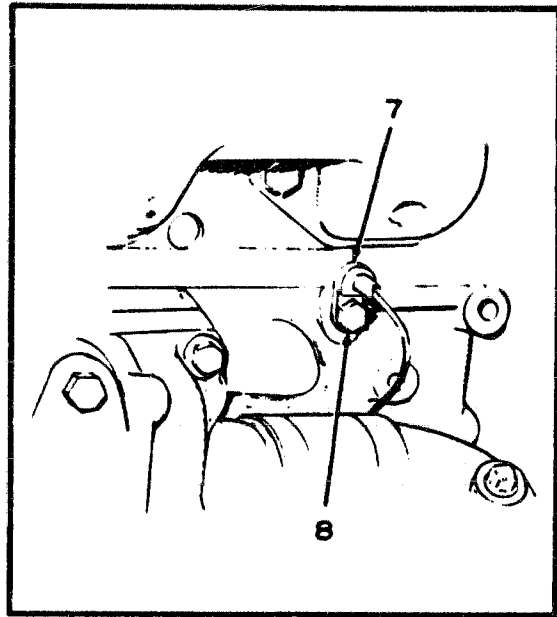
WIRING HARNESS - ENGINE



REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
WIRING HARNESS - ENGINE			
	338-1145	1	Standard
	338-1284	1	With Tachometer Sender
1	320-0240	2	Circuit Breaker
2	508-0009	3	Grommet (1" ID)
3	338-1141	1	Wiring Harness - Governor
4	508-0001	2	Grommet (3/4" ID)
5	302-1204	1	†Sender, Tachometer
6	302-0753	1	†Tang, Drive - Tachometer

† - Optional Items used with Meter on Engine Control Panel.

MISCELLANEOUS ENGINE PARTS



M-1201

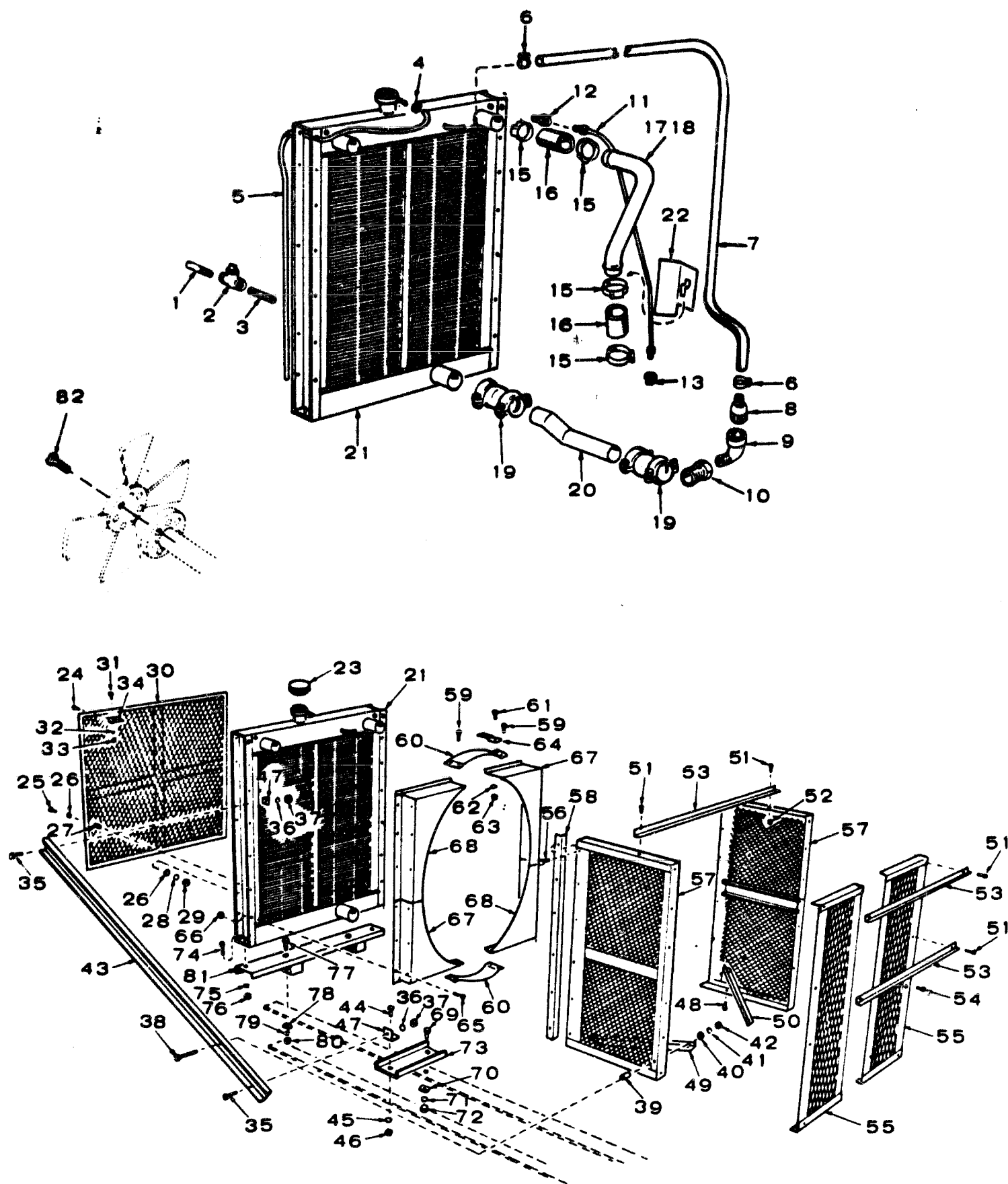
MISCELLANEOUS ENGINE PARTS

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	WIRING HARNESS - ENGINE 338-1029	1- 1	Standard Special (NOTE: Use Standard Wiring Harness and Add Electrical Leads as Required for Optional Sensors, Switches per GenSet Wiring Diagram)
2	155-1393	2	Elbow, Pipe - Exhaust
3	SENDER, TEMPERATURE - ENGINE COOLANT 193-0109	1	Spec A Only
	193-0247	1	Begin Spec B
4	309-0179	2	Switch, Thermostatic - High Coolant Temperature Shutdown
5	309-0178	2	Switch, Thermostatic - High Coolant Temperature Alarm
6	800-0061	1	Screw, Cap - Hex Head (3/8-16 x 3-3/4")
7	309-0269	1	Switch, Thermostatic - Low Engine Temperature
8	800-0069	1	Screw, Cap - Hex Head (7/16-14 x 3/4")
9	850-0055	1	Washer, Lock - Spring (7/16")
10	809-0035	1	Screw, Tapping - Round Head (#8-3/4")
11	508-0015	1	Washer, Flat - Fiber (#8)
12	870-0196	1	Nut, Insert - Insulator
13	332-1281	1	Bracket, Mounting
14	SENDER, OIL PRESSURE 193-0108	1	Spec A Only
	193-0244	1	Begin Spec B
15	309-0169	1	Switch, Pressure - Low Oil Pressure Shutdown
16	309-0272	1	Switch, Pressure - Low Oil Pressure Alarm
17	505-0059	2	Tee, Pipe (1/8" NPT)
18	505-0098	2	Nipple, Pipe - Close (1/8" NPT x 3/4")
19	505-0057	1	Plug, Pipe - Square Head (1/8" NPT)
20	SENDER, TEMPERATURE - OIL 193-0202	1	Spec A Only
	193-0249	1	Begin Spec B

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
21	505-0022	1	Bushing, Reducer - Hex (1" NPT x 1/2" NPT)
22	503-0197	1	Clamp, Hose
23	503-0789	1	Hose, Rubber (3/4" ID x 1" OD x 20" Lg)
24	505-0185	1	Nipple, Pipe - Half (1/2" NPT x 1-1/2")
25	504-0011	1	Valve, Shutoff - Oil Drain
26	505-0100	1	Nipple, Pipe (1/2" NPT x 1-1/8")
27	505-0022	1	Bushing, Reducer - Pipe (1" NPT x 1/2" NPT)
28	CLAMP, HOLDDOWN (Select as Required)		
	148-0274	4	Loop, 1" ID
	331-0151	3	Half Loop, 3/4" ID
	331-0152	3	Half Loop, 1" ID
29	503-0183	2	Clamp, Hose
30	503-0859	2	Hose, Rubber (5/8" ID x 7/8" OD x 42" Lg)
31	302-0750	1	†Sender, Tachometer
32	302-0753	1	†Tang, Drive - Tachometer
33	LINE, FUEL - FLEXIBLE (Select as Required)		
			RETURN - ENGINE TO TANK
	501-0216	1	42" Lg, 3/8-18 NPT Male x 3/4-16 SAE 45 Deg Female Swivel (Use on Spec A thru C)
	501-0349		42" Lg, 3/8-18 NPT Male x 7/8-14 JIC 37 Deg Female Swivel (Used beginning Spec D)
			IN - TANK TO ENGINE
	501-0217	1	52" Lg, 1/2-14 NPT Male x 1 1/16-14 SAE 45 Deg Female Swivel (Used on Spec A thru C)
	501-0350	1	52" Lg, 1/2-14 NPT Male x 1 1/16-12 JIC 37 Deg Female Swivel (Used beginning Spec D)

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

COOLING SYSTEM - SPEC A AND B (WITH FIXED RADIATOR INLET/OUTLET TUBES)

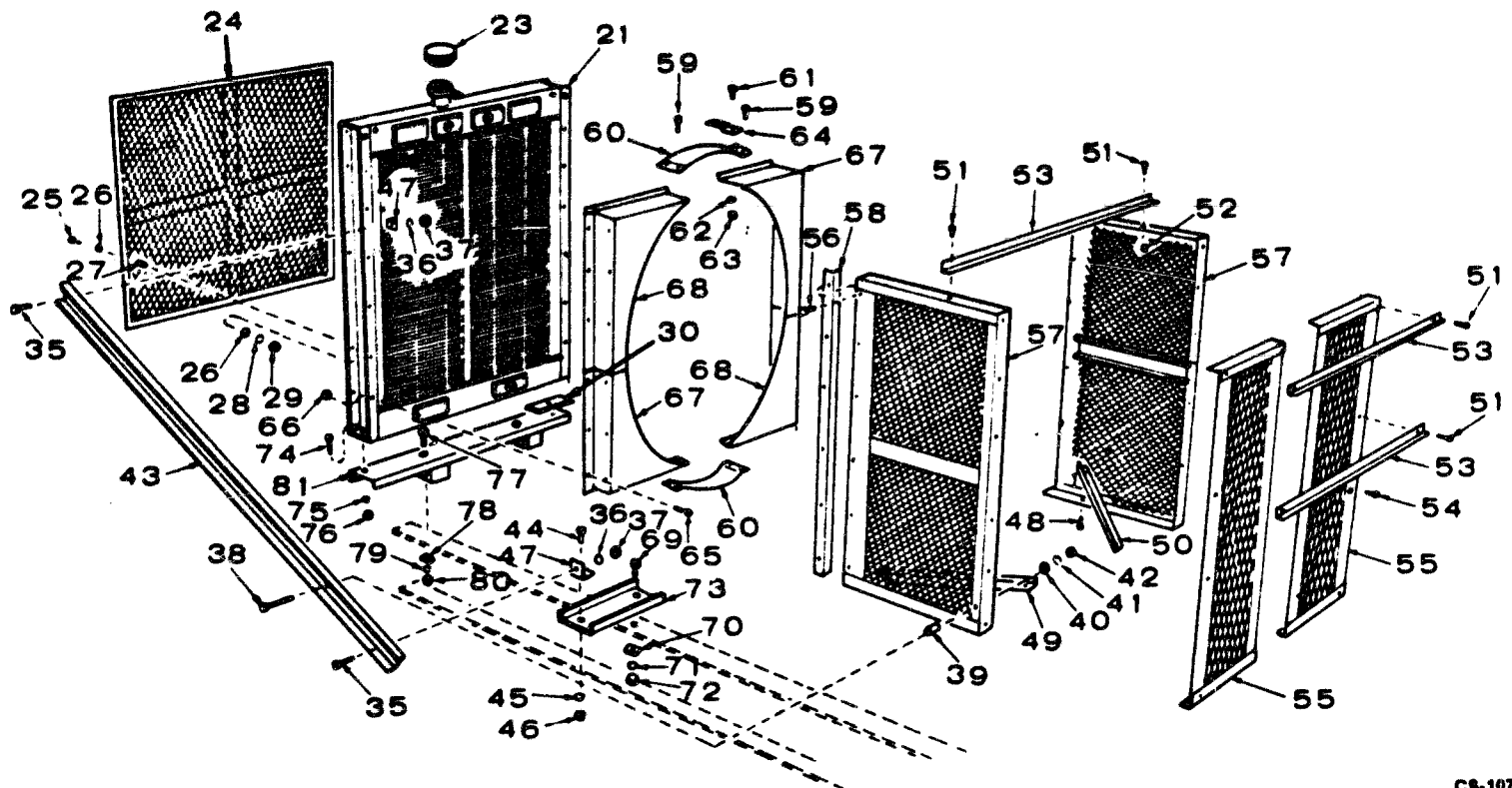
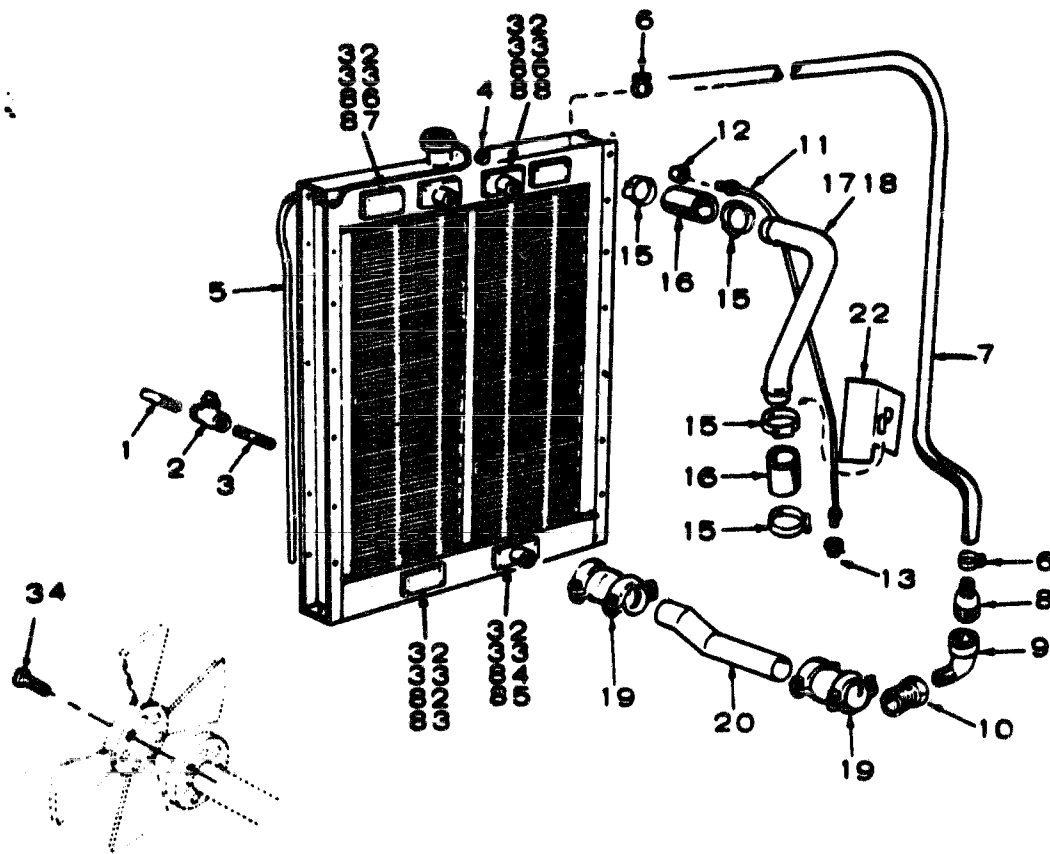


COOLING SYSTEM - SPEC A AND B **(WITH FIXED RADIATOR INLET/OUTLET TUBES)**

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	505-0185	1	Nipple, Pipe - Half (1/2" NPT x 1-1/2")
2	504-0011	1	Valve, Shut-off
3	505-0100	1	Nipple, Pipe (1/2" NPT x 1-1/8")
4	503-0547	1	Clamp, Hose
5	503-0803	1	Hose, Rubber (1/2" ID x 144" Lg)
6	503-0398	2	Clamp, Hose
7	503-0790	1	Hose, Rubber (1" ID x 1-3/8" OD x 96" Lg)
8	505-0759	1	Adapter, Pipe
9	505-0003	1	Elbow, Pipe - Street, 90° (1" NPT)
10	505-0023	1	Bushing, Reducer - Pipe (1-1/4" NPT x 1" NPT)
11	501-0213	2	Line, Flexible
12	502-0193	2	Connector, Pipe - Male
13	505-0007	2	Bushing, Reducer - Pipe (1/4" NPT x 1/8" NPT)
15	503-0621	8	Clamp, Hose
16	503-0788	4	Hose, Rubber (3" ID)
17	130-1032	1	Tube, Coolant - Right Side
18	130-1033	1	Tube, Coolant - Left Side
19	130-0966	2	Coupling, Flexible - Pipe
20	130-1044	1	Tube, Coolant - Lower
21	130-1043	1	Radiator, Engine Coolant
22	130-1073	1	Shield, Heat
23		1	Cap, Radiator (Part of Radiator)
24	821-0016	8	Screw, Self-locking - Hex Head (5/16-18 x 3/4")
25	800-0032	8	Screw, Cap - Hex Head (5/16-18 x 1-3/4")
26	526-0115	8	Washer, Flat (11/32" ID x 11/16" OD x 1/16" Thk)
27	402-0017	8	Spacer, Sleeve
28	850-0045	16	Washer, Lock - Spring (5/16")
29	862-0015	16	Nut, Hex (5/16-18)
30	130-1080	1	Guard, Radiator - Front
31	800-0027	16	Screw, Cap - Hex Head (5/16-18 x 7/8")
32	850-0045	16	Washer, Lock - Spring (5/16")
33	862-0015	16	Nut, Hex (5/16-18)
34	130-1078	1	Bracket, Angle - Radiator Guard
35	800-0092	4	Screw, Cap - Hex Head (1/2-13 x 1-1/2")
36	850-0060	4	Washer, Lock - Spring (1/2")
37	862-0016	4	Nut, Hex (1/2-13)
38	800-0014	2	Screw, Cap - Hex Head (1/4-20 x 2-3/4")
39	130-1107	2	Spacer
40	526-0018	2	Washer, Flat (17/64" ID x 5/8" OD x 1/16" Thk)
41	850-0040	2	Washer, Lock - Spring (1/4")
42	862-0001	2	Nut, Hex (1/4-20)
43	130-1045	2	Brace, Support - Radiator
44	800-0092	4	Screw, Cap - Hex Head (1/2-13 x 1-1/2")

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
45	850-0060	4	Washer, Lock - Spring (1/2")
46	862-0016	4	Nut, Hex (1/2-13)
47	130-0944	4	Bracket, Angle - Support Brace
48	821-0009	4	Screw, Self-locking - Hex Head (1/4-20 x 3/8")
49	130-1105	1	Gusset - Fan Guard (Right Side)
50	130-1108	1	Gusset - Fan Guard (Left Side)
51	821-0011	10	Screw, Self-locking - Hex Head (1/4-20 x 7/8")
52	870-0243	2	Nut, Self-locking - Hex (1/4-20)
53	370-1020	3	Bracket, Angle - Fan Guard
54	821-0011	8	Screw, Self-locking - Hex Head (1/4-20 x 7/8")
55	130-1104	2	Panel, Rear - Fan Guard
56	821-0010	12	Screw, Self-locking - Hex Head (1/4-20 x 1/2")
57	130-1101	2	Panel, Side - Fan Guard
58	130-1098	2	Stiffener - Side Panel
59	821-0009	12	Screw, Self-locking - Hex Head (1/4-20 x 3/8")
60	130-1068	2	Bridge, Support - Fan Shroud
61	800-0027	4	Screw, Cap - Hex Head (5/16-18 x 7/8")
62	850-0045	4	Washer, Lock - Spring (5/16")
63	862-0015	4	Nut, Hex (5/16-18)
64	130-1093	4	Bracket, Double Angle - Shroud Support
65	821-0016	10	Screw, Self-locking - Hex Head (5/16-18 x 3/4")
66	870-0257	10	Nut, Self-locking, Hex (5/16-18)
67	130-1069	2	Shroud, Fan (Lower Right, Upper Left)
68	130-1070	2	Shroud, Fan (Lower Left, Upper Right)
69	800-0158	4	Screw, Cap - Hex Head (3/4-10 x 2-3/4")
70	403-1141	4	Washer, Bevel - Square
71	850-0079	4	Washer, Lock - Spring (3/4")
72	862-0020	4	Nut, Hex (3/4-10)
73	130-1037	2	Channel - Radiator Support Brace
74	800-0156	2	Screw, Cap - Hex Head (3/4-10 x 2-1/4")
75	850-0079	2	Washer, Lock - Spring (3/4")
76	862-0020	2	Nut, Hex (3/4-10)
77	800-0158	2	Screw, Cap - Hex Head (3/4-10 x 2-3/4")
78	403-1141	2	Washer, Bevel - Square
79	850-0079	2	Washer, Lock - Spring (3/4")
80	862-0020	2	Nut, Hex (3/4-10)
81	130-1036	1	Support, Radiator
82	800-0105	6	Screw, Cap - Hex Head (1/2-13 x 5") Attaching Fan To Pulley

COOLING SYSTEM - BEGIN SPEC C **(WITH REMOVABLE RADIATOR INLET/OUTLET ADAPTER TUBES)**



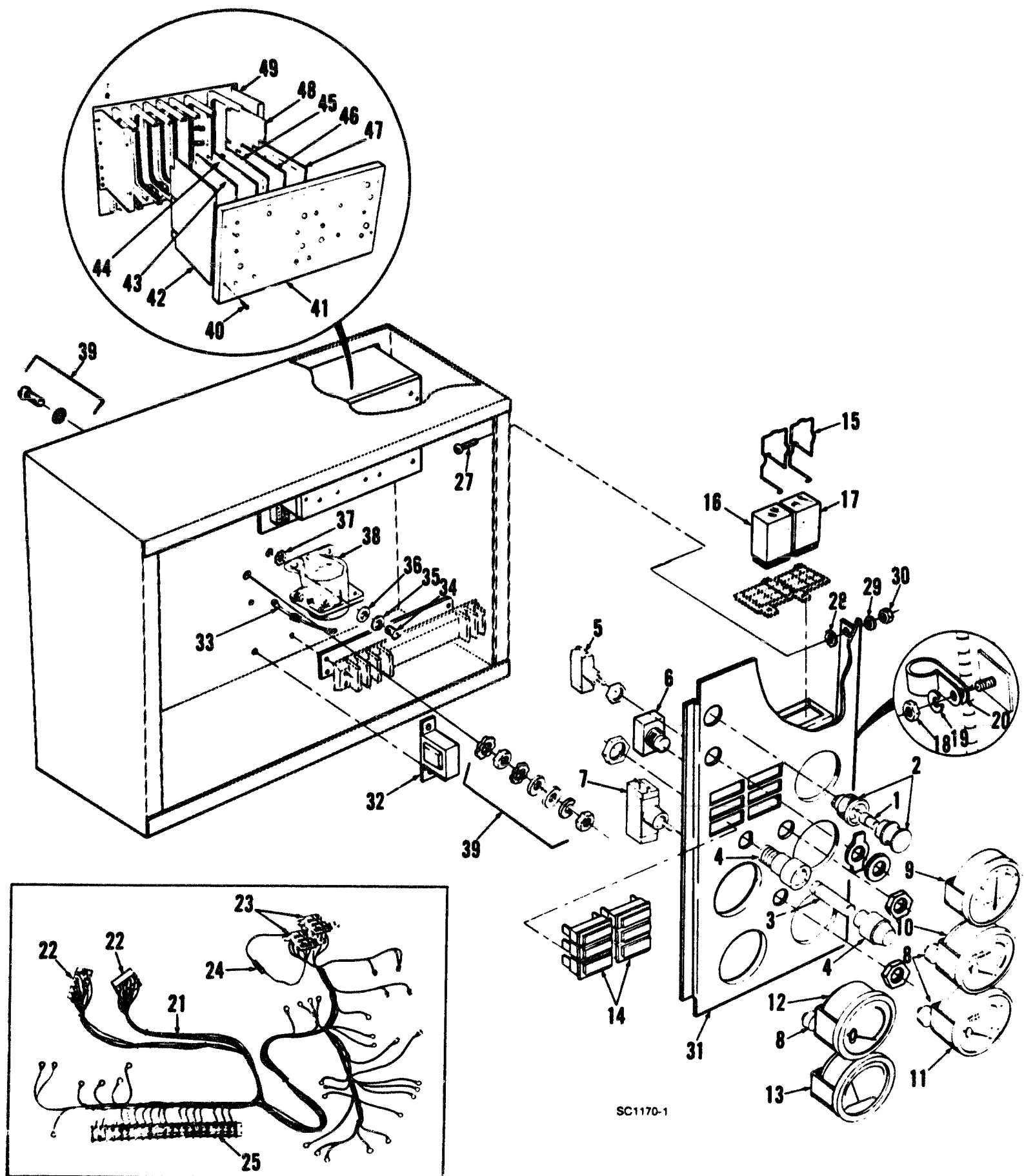
COOLING SYSTEM - BEGIN SPEC C

(WITH REMOVABLE RADIATOR INLET/OUTLET ADAPTER TUBES)

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	505-0185	1	Nipple, Pipe - Half (1/2" NPT x 1-1/2")
2	504-0011	1	Valve, Shut-off
3	505-0100	1	Nipple, Pipe (1/2" NPT x 1-1/8")
4	503-0547	1	Clamp, Hose
5	503-0803	1	Hose, Rubber (1/2" ID x 144" Lg)
6	503-0398	2	Clamp, Hose
7	503-0790	1	Hose, Rubber (1" ID x 1-3/8" OD x 96" Lg)
8	505-0759	1	Adapter, Pipe
9	505-0003	1	Elbow, Pipe - Street, 90° (1" NPT)
10	505-0023	1	Bushing, Reducer - Pipe (1-1/4" NPT x 1" NPT)
11	501-0247	2	Line, Flexible
12	502-0041	2	Elbow, Pipe - Invt Male (1/4 NPT)
13	505-0151	2	Bushing, Reducer - Pipe (1/2" NPT x 1/8" NPT)
15	503-0621	8	Clamp, Hose
16	503-0788	4	Hose, Rubber (3" ID)
17	130-1301	1	Tube, Coolant - Right Side
18	130-1302	1	Tube, Coolant - Left Side
19	130-0966	2	Coupling, Flexible - Pipe
20	130-1303	1	Tube, Coolant - Lower
21	130-1197	1	Radiator, Engine Coolant
22	130-1073	1	Shield, Heat
23		1	Cap, Radiator (Part of Radiator)
24		8	Guard (Part of Radiator)
25	800-0032	8	Screw, Cap - Hex Head (5/16-18 x 1-3/4")
26	526-0115	8	Washer, Flat (11/32" ID x 11/16" OD x 1/16" Thk)
27	402-0017	8	Spacer, Sleeve
28	850-0045	8	Washer, Lock - Spring (5/16")
29	862-0015	8	Nut, Hex (5/16-18)
30	130-1311	8	Shim
31	800-0027	16	Screw, Cap - Hex Head (5/16-18 x 7/8")
32	850-0050	24	Screw, Cap - Hex Head (3/8-16 x 1")
33	850-0050	24	Washer, Lock - Spring (3/8")
34	800-0105	6	Screw, Cap - Hex Head (1/2-13 x 5") Attaching Fan To Pulley
35	800-0092	4	Screw, Cap - Hex Head (1/2-13 x 1-1/2")
36	850-0060	4	Washer, Lock - Spring (1/2")
37	862-0016	4	Nut, Hex (1/2-13)
38	800-0014	2	Screw, Cap - Hex Head (1/4-20 x 2-3/4")
39	130-1107	2	Spacer
40	526-0018	2	Washer, Flat (17/64" ID x 5/8" OD x 1/16" Thk)
41	850-0040	2	Washer, Lock - Spring (1/4")
42	862-0001	2	Nut, Hex (1/4-20)
43	130-1045	2	Brace, Support - Radiator
44	800-0092	4	Screw, Cap - Hex Head (1/2-13 x 1-1/2")

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
45	850-0060	4	Washer, Lock - Spring (1/2")
46	862-0016	4	Nut, Hex (1/2-13)
47	130-0944	4	Bracket, Angle - Support Brace
48	821-0009	8	Screw, Self-locking - Hex Head (1/4-20 x 3/8")
49	130-1105	2	Gusset - Fan Guard (Right Side)
50	130-1108	2	Gusset - Fan Guard (Left Side)
51	821-0011	10	Screw, Self-locking - Hex Head (1/4-20 x 7/8")
52	870-0243	2	Nut, Self-locking - Hex (1/4-20)
53	370-1020	3	Bracket, Angle - Fan Guard
54	821-0011	8	Screw, Self-locking - Hex Head (1/4-20 x 7/8")
55	130-1104	2	Panel, Rear - Fan Guard
56	821-0010	12	Screw, Self-locking - Hex Head (1/4-20 x 1/2")
57	130-1101	2	Panel, Side - Fan Guard
58	130-1098	2	Stiffener - Side Panel
59	821-0009	12	Screw, Self-locking - Hex Head (1/4-20 x 3/8")
60	130-1068	2	Bridge, Support - Fan Shroud
61	800-0027	4	Screw, Cap - Hex Head (5/16-18 x 7/8")
62	850-0045	4	Washer, Lock - Spring (5/16")
63	862-0015	4	Nut, Hex (5/16-18)
64	130-1093	4	Bracket, Double Angle - Shroud Support
65	821-0016	10	Screw, Self-locking - Hex Head (5/16-18 x 3/4")
66	870-0257	10	Nut, Self-locking, Hex
67	130-1069	2	Shroud, Fan (Lower Right, Upper Left)
68	130-1070	2	Shroud, Fan (Lower Left, Upper Right)
69	800-0158	4	Screw, Cap - Hex Head (3/4-10 x 2-3/4")
70	403-1141	4	Washer, Bevel - Square
71	850-0079	4	Washer, Lock - Spring (3/4")
72	862-0020	4	Nut, Hex (3/4-10)
73	130-1037	2	Channel - Radiator Support Brace
74	800-0156	2	Screw, Cap - Hex Head (3/4-10 x 2-1/4")
75	850-0079	2	Washer, Lock - Spring (3/4")
76	862-0020	2	Nut, Hex (3/4-10)
77	800-0158	2	Screw, Cap - Hex Head (3/4-10 x 2-3/4")
78	403-1141	2	Washer, Bevel - Square
79	850-0079	2	Washer, Lock - Spring (3/4")
80	862-0020	2	Nut, Hex (3/4-10)
81	130-1036	1	Support, Radiator
82	130-1329	1	Gasket
83	130-1312	1	Cover Plate - Outlet
84	130-1229	1	Gasket
85	130-1285	1	Adapter Tube - Outlet
86	130-1227	4	Gasket
87	130-1223	2	Cover Plate - Inlet
88	130-1203	2	Adapter Tube - Inlet

ENGINE CONTROL - DFX



ENGINE CONTROL - DFX

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	322-0017	1	Lamp, Incandescent (24 VDC)
2	322-0149	1	Lampholder
3	321-0147	1	Fuse (5 Amp)
4	321-0217	1	Fuseholder
5	308-0002	1	Switch, Toggle (SPST)
6	SWITCH, PUSH (Select as Required)		
	308-0091	1	Used with Single Fault Light
	308-0410	1	Used with Multi Fault Light
7	SWITCH, TOGGLE - SELECTOR (Select as Required)		
	308-0220	1	Standard & Cycle Cranking Controls
	308-0347	1	Penn State Controls
	308-0539	1	Remote Alarm Circuit Controls
8	RESISTOR, GAUGE (Select as Required)		
	193-0189	2	Spec A Only
	193-0250	3	Begin Spec B
9	302-0061	1	Ammeter
10	GAUGE, PRESSURE - OIL (Select as Required)		
	193-0107	1	Spec A Only
	193-0243	1	Begin Spec B
11	GAUGE, TEMPERATURE - ENGINE COOLANT		
	193-0108	1	Spec A Only
	193-0245	1	Begin Spec B
12	‡GAUGE, TEMPERATURE - OIL (Select as Required)		
	193-0187	1	Spec A Only
	193-0248	1	Begin Spec B
13	302-0749	1	‡Tachometer - Electrical
14	LIGHT, INDICATOR - 28 VDC (Lens Color & Legend Listed Below)		
	322-0119	1	RED - OVERCRANK
	322-0120	1	RED - LO OIL PRESS
	322-0121	1	RED - HI ENG TEMP
	322-0122	1	RED - LO ENG TEMP
	322-0123	1	RED - OVERSPEED
	322-0129	1	RED - FAULT
	322-0135	1	RED - OVERVOLTAGE
	322-0137	1	£RED - (No Legend)
15	307-1157	2	Spring, Hold Down - Relay
16	307-1061	1	Relay - Starter Protection
17	307-1056	1	Relay - Start Disconnect
18	870-0053	1	Nut, Hex (#10-32)
19	850-0030	1	Washer, Lock - Spring (#10)
20	332-0052	1	Clamp, Loop
21	338-1016	1	Harness, Wiring - Engine Control (Includes Parts Marked †)
	ATTACHING HARDWARE FOR WIRING HARNESS		
	812-0061	4	Screw, Machine - Round Head (#6-32 x 3/8")
	812-0066	2	Screw, Machine - Round Head (#6-32 x 3/4")
	853-0003	6	Washer, Lock - Spring (#6)
	860-0006	4	Nut, Hex (#6-32)

22	323-0984	2	†Connector, Plug, Electrical (12 Pin)
23	323-0765	2	†Socket, Relay
24	357-0004	1	†Diode, (CR11)

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
25	332-1005	1	†Board, Terminal (20 Place)
26	332-1559	1	Strip, Marker
27	815-0026	3	Screw, Machine - Truss Head (#10-32 x 3/8")
28	856-0003	3	Washer, Lock - EIT (#10)
29	850-0030	3	Washer, Lock - Spring (#10)
30	870-0053	3	Nut, Hex (#10-32)
31	PANEL, CONTROL - ENGINE (Select as Required)		
	301-4086	1	With Three Gauge Mtg. Holes
	301-4223	1	With Four Gauge Mtg. Holes
	301-3997	1	With Five Gauge Mtg. Holes
32	315-0361	1	Transformer, Step-down
	ATTACHING PARTS FOR TRANSFORMER		
	812-0061	2	Screw, Machine - Round Head (#6-32 x 3/8")
	853-0003	2	Washer, Lock - EIT (#6)

33	DIODE WITH TERMINALS		
	357-0018	1	CR13
	357-0026	1	CR12
34	813-0098	2	Screw, Machine - Round Head (#10-32 x 3/8")
35	526-0030	2	Washer, Lock - Spring (#10)
36	526-0009	2	Washer, Flat (7/32" ID x 1/2" OD x 1/16" Thk)
37	856-0003	2	Washer, Lock - EIT (#10)
38	307-0061	1	Relay, Solenoid - Start (24 VDC)
39	GROUND TERMINAL ASSEMBLY (Includes Parts Marked #)		
	871-0010	2	#Nut, Hex - Brass (#10-32)
	850-0030	1	#Washer, Lock - Spring (#10)
	526-0062	2	#Washer, Flat - Brass (13/64" ID x 1/2" OD x 1/16" Thk)
	853-0008	1	#Washer, Lock - ET (#10)
	856-0003	1	#Washer, Lock - EIT (#10)
	815-0203	1	#Screw, Machine - Round Head, Brass (#10-32 x 7/8")
40	815-0387	4	Screw, Machine - Pan Head, Cross-Recessed Drive (#6-32 x 1/4")
41	301-4015	1	Cover, Access - Control Plug-in Modules
42	300-1573	1	Control, Cycle Cranker
43	300-1574	1	Control, Start - Disconnect
44	300-1575	1	Control, Overspeed
45	300-1576	1	Control, Engine Monitor No. 1
46	300-1577	1	Control, Engine Monitor No. 2
47	300-1578	1	Control, Engine Shutdown
48	300-1579	1	Control, Time Delay, Start-Stop
49	300-1572	1	Chassis, Control

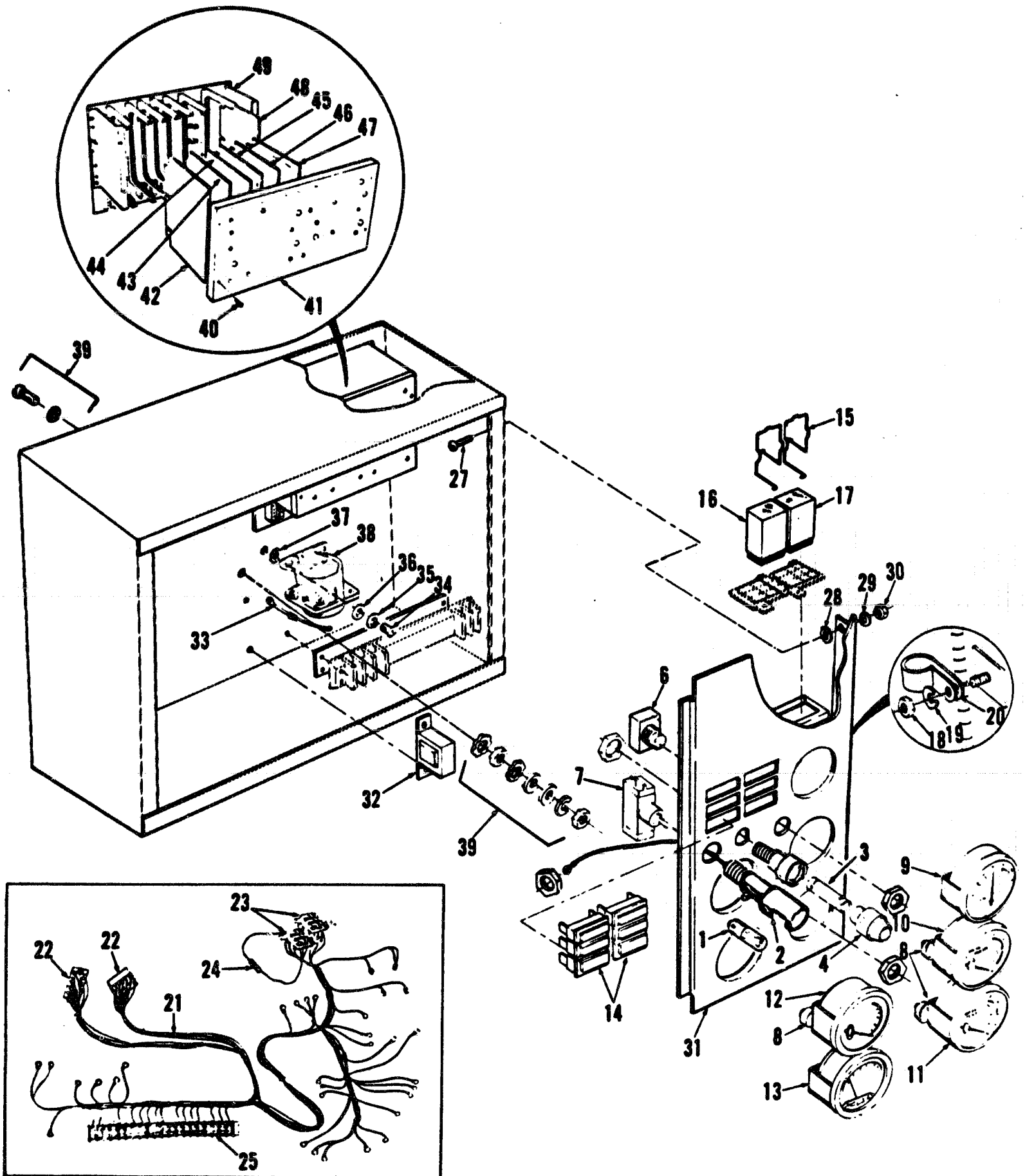
‡ - Optional Items Used with Engine Mounted Senders.

† - Parts Included in Wiring Harness.

- Parts Included in Ground Terminal Assembly.

£ - **NOTE:** For Lamp Replacement Order 322-0137. Remove and Discard Plain Red Lens, Install Lens with Legend from Burned Out Light - Lights Snap In and Out of Panel.

ENGINE CONTROL - LDFX



ENGINE CONTROL - LDFX

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	322-0066	1	Lamp, Incandescent (24 VDC)
2	322-0049	1	Lampholder with Switch
3	321-0147	1	Fuse (5 Amp)
4	321-0217	1	Fuseholder
6	308-0410	1	Switch, Push
7	SWITCH, TOGGLE - SELECTOR		
	308-0220	1	Standard & Cycle Cranking Controls
	308-0347	1	Penn State Controls
	308-0539	1	Remote Alarm Circuit Controls
8	193-0250	3	Resistor, Gauge
9	302-0061	1	Ammeter
10	193-0243	1	Gauge, Pressure - Oil
11	193-0245	1	Gauge, Temperature - Engine Coolant
12	193-0248	1	‡Gauge, Temperature - Oil
13	302-0749	1	‡Tachometer - Electrical
14	£LIGHT, INDICATOR - 28 VDC (Lens Color & Legend Listed Below)		
	322-0119	1	RED - OVERCRANK
	322-0120	1	RED - LO OIL PRESS
	322-0121	1	RED - HI ENG TEMP
	322-0122	1	RED - LO ENG TEMP
	322-0123	1	RED - OVERSPEED
	322-0135	1	RED - OVERVOLTAGE
	322-0137	1	£RED - (No Legend)
15	307-1157	2	Spring, Hold Down - Relay
16	307-1061	1	Relay - Starter Protection
17	307-1056	1	Relay - Start Disconnect
18	870-0053	1	Nut, Hex (#10-32)
19	850-0030	1	Washer, Lock - Spring (#10)
20	332-0052	1	Clamp, Loop
21	338-1016	1	Harness, Wiring - Engine Control (Includes Parts Marked †)
	ATTACHING HARDWARE FOR WIRING HARNESS		
	812-0061	4	Screw, Machine - Round Head (#6-32 x 3/8")
	812-0066	2	Screw, Machine - Round Head (#6-32 x 3/4")
	853-0003	6	Washer, Lock - Spring (#6)
	860-0006	4	Nut, Hex (#6-32)

22	323-0984	2	†Connector, Plug, Electrical (12 Pin)
23	323-0765	2	†Socket, Relay
24	357-0004	1	†Diode, (CR11)
25	332-1005	1	†Board, Terminal (20 Place)
26	332-1559	1	Strip, Marker
27	815-0026	3	Screw, Machine - Truss Head (#10-32 x 3/8")
28	856-0003	3	Washer, Lock - EIT (#10)
29	850-0030	3	Washer, Lock - Spring (#10)

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
30	870-0053	3	Nut, Hex (#10-32)
31	PANEL, CONTROL - ENGINE		
	301-4692	1	With Three Gauge Mtg. Holes
	301-4783	1	With Four Gauge Mtg. Holes
	301-5300	1	With Five Gauge Mtg. Holes
32	315-0361	1	Transformer, Step-down
	ATTACHING PARTS FOR TRANSFORMER		
	812-0061	2	Screw, Machine - Round Head (#6-32 x 3/8")
	853-0003	2	Washer, Lock - EIT (#6)

33	DIODE WITH TERMINALS		
	357-0018	1	CR13
	357-0026	1	CR12
34	813-0098	2	Screw, Machine - Round Head (#10-32 x 3/8")
35	850-0030	2	Washer, Lock - Spring (#10)
36	526-0009	2	Washer, Flat (7/32" ID x 1/2" OD x 1/16" Thk)
37	856-0003	2	Washer, Lock - EIT (#10)
38	307-0061	1	Relay, Solenoid - Start (24 VDC)
39	GROUND TERMINAL ASSEMBLY (Includes Parts Marked #)		
	871-0010	2	#Nut, Hex - Brass (#10-32)
	850-0030	1	#Washer, Lock - Spring (#10)
	526-0062	2	#Washer, Flat - Brass (13/64" ID x 1/2" OD x 1/16" Thk)
	853-0008	1	#Washer, Lock - ET (#10)
	856-0003	1	#Washer, Lock - EIT (#10)
	815-0203	1	#Screw, Machine - Round Head, Brass (#10-32 x 7/8")
40	815-0387	4	Screw, Machine - Pan Head, Cross-Recessed Drive (#6-32 x 1/4")
41	301-4015	1	Cover, Access - Control Plug-in Modules
42	300-1573	1	Control, Cycle Cranker
43	300-1574	1	Control, Start - Disconnect
44	300-1575	1	Control, Overspeed
45	300-1576	1	Control, Engine Monitor No. 1
46	300-1577	1	Control, Engine Monitor No. 2
47	300-1578	1	Control, Engine Shutdown
48	300-1579	1	Control, Time Delay, Start-Stop
49	300-1572	1	Chassis, Control

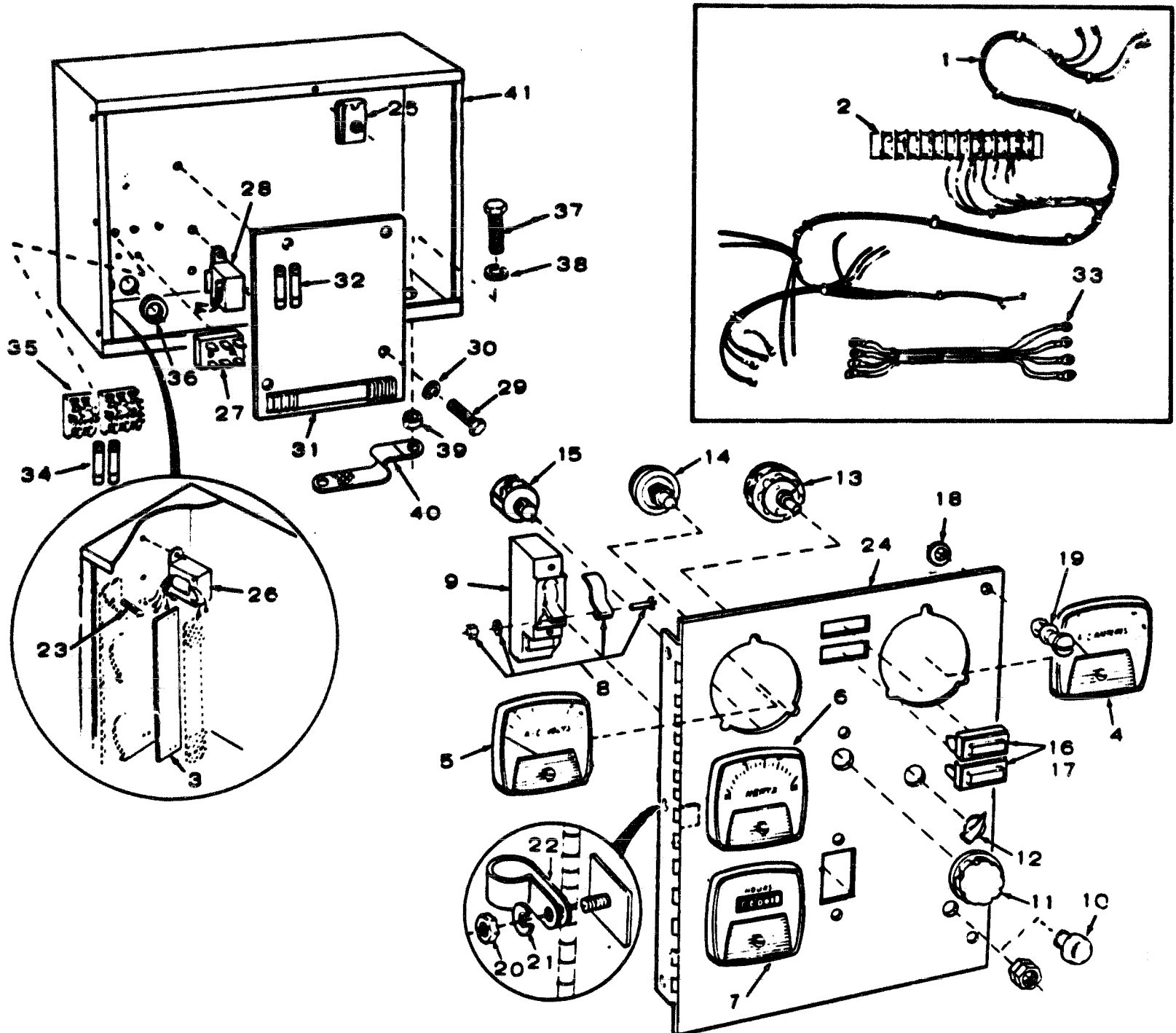
‡ - Optional Items Used with Engine Mounted Senders.

† - Parts Included in Wiring Harness.

- Parts Included in Ground Terminal Assembly.

£ - NOTE: For Lamp Replacement Order 322-0137. Remove and Discard Plain Red Lens, Install Lens with Legend from Burned Out Light - Lights Snap In and Out of Panel.

GENERATOR CONTROL



REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	WIRING HARNESS - GENERATOR CONTROL (Includes Terminal Block)		
	338-0759	1	Used on Codes 31, 4R, 4X, 54X, 8, 58, 519, 521
	338-0916	1	Used on Codes 57, 7X, 9X, 520, 522
	ATTACHING HARDWARE FOR WIRING HARNESS		
	812-0066	2	Screw, Machine - Round Head (#16-32 x 3/4")
	850-0020	2	Washer, Lock - Spring (#6)
2	332-0795	1	Block, Terminal - 16 Place
3	332-1242	1	Strip, Marker - 16 Place
4	AMMETER (Select as Required)		
			DUAL SCALE
	302-0880	1	0-750, 0-1500 Amp
	302-1208	1	0-1000, 0-1500 Amp
	302-1209	1	0-1200, 0-2000 Amp
	302-1210	1	0-1500, 0-3000 Amp

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
			SINGLE SCALE
	302-0414	1	0-500 Amp
	302-0415	1	0-750 Amp
	302-0416	1	0-1000 Amp
	302-0640	1	0-1200 Amp
	302-0641	1	0-1500 Amp
	302-0642	1	0-2000 Amp
	302-1044	1	0-2500 Amp
	302-1045	1	0-3000 Amp
5	VOLTMETER (Select as Required)		
			DUAL SCALE
	302-0718	1	0-300, 0-600 Volt
			SINGLE SCALE
	302-0421	1	0-300 Volts
	302-1283	1	0-500 Volts
	302-1072	1	0-600 Volts
	302-0779	1	0-750 Volts

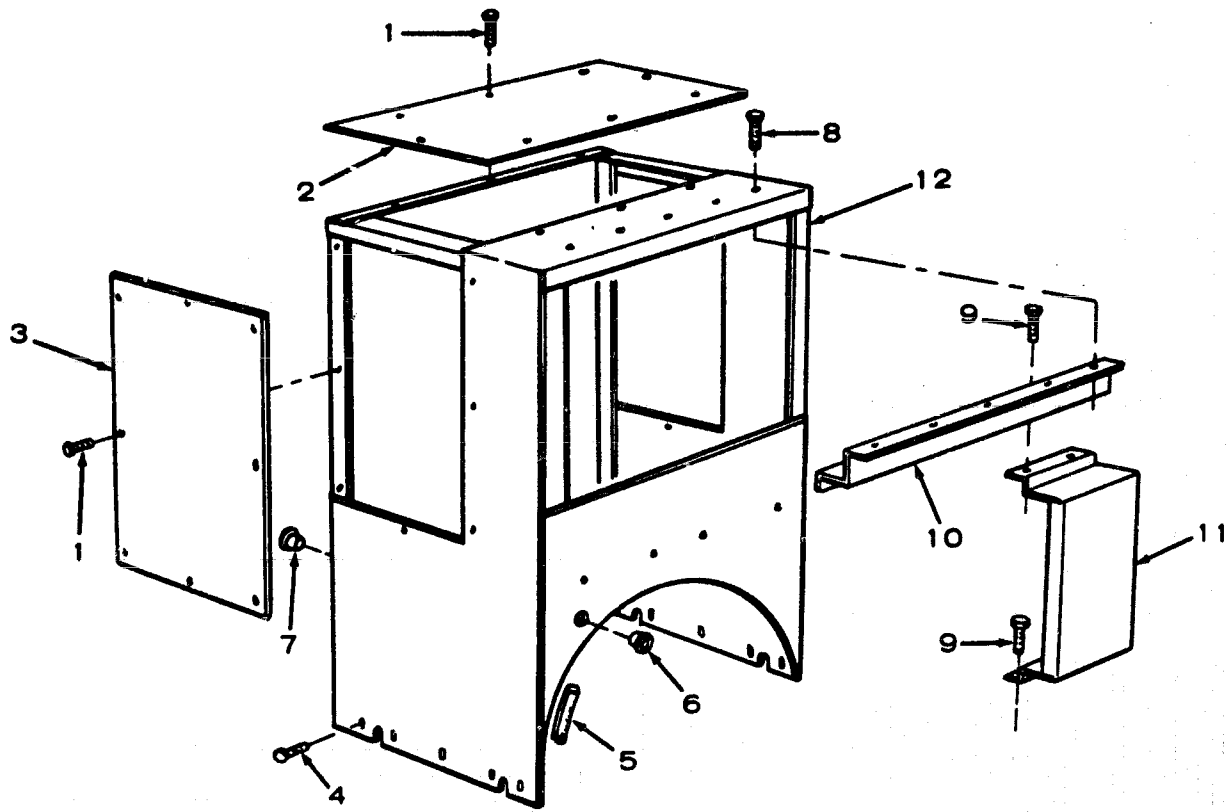
GENERATOR CONTROL

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
6	METER, FREQUENCY (Select as Required)		
			POINTER TYPE
	302-0810	1	60 Hz, 208 Volt
	302-0811	1	60 Hz, 240 Volt
	302-0894	1	50 Hz, 208 Volt
	302-0895	1	50 Hz, 240 Volt
			REED TYPE
	302-0221	1	60 Hz
	302-0256	1	50 Hz
7	METER, TIME TOTALIZING (Select as Required)		
	302-0466	1	60 Hz
	302-0469	1	50 Hz
8	320-0307	1	Lock, Handle - Circuit Breaker (Used on Penn State Sets)
	ATTACHING HARDWARE FOR LOCK		
	815-0203	1	Screw, Machine - Round Head (#10-32 x 7/8")
	854-0010	1	Washer, Lock - IT (#10)
	871-0010	1	Nut, Hex (#10-32)
9	320-0455	1	Circuit Breaker - 3 Amp, 240 Volt
	ATTACHING HARDWARE FOR CIRCUIT BREAKER		
	812-0061	2	Screw, Machine - Round Head (#6-32 x 3/8")
	850-0020	2	Washer, Lock - Spring (#6)
	815-0203	1	Screw, Machine - Round Head, Brass (#10-32 x 7/8")
	871-0010	1	Nut, Hex - Brass (#10-32)
	853-0008	1	Washer, Lock - ET (#10)
	526-0049	1	Washer, Flat - Brass (13/64" ID x 7/16" OD x 1/32" Thk)
10	517-0131	1	Plug, Plastic
11	303-0032	1	Knob
12	303-0076	1	Knob, Pointer
13	308-0284	1	Switch, Selector
14	303-0170	1	Rheostat (35K Ohms, 25 Watt)
15	151-0402	1	Potentiometer (5K Ohms)
16	LIGHT, INDICATOR - 125 VAC		
	322-0130	1	Red Lens, Lower Scale Legend
	322-0131	1	Red Lens, Upper Scale Legend
17	322-0178	1	Light, Indicator - 125 VAC (Replacement) - Discard Lens - Used Lens from Original Light
18	406-0334	2	Clip, Retaining - Turnbutton Fastener
19	406-0333	2	Stud, Turnbutton Fastener
20	870-0053	1	Nut, Hex (#10-32)
21	850-0030	1	Washer, Lock - Spring (#10)
22	332-0051	1	Clamp, Loop
23	815-0026	3	Screw, Machine - Truss Head (#10-32 x 3/8")
24	PANEL, CONTROL		
	301-3170	1	With Two Fault Light Mtg. Holes
	301-3342	1	Without Fault Light Mtg. Holes
25	406-0332	2	Receptacle, Turnbutton Fastener
26	315-0384	1	Reactor
	ATTACHING PARTS FOR REACTOR		
	812-0061	2	Screw, Machine - Round Head (#6-32 x 3/8")
	853-0003	2	Washer, Lock - ET (#6)

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
27	305-0875	1	Rectifier, Bridge
	ATTACHING PARTS FOR RECTIFIER		
	812-0070	2	Screw, Machine - Round Head (#6-32 x 1-1/4")
	850-0020	2	Washer, Lock - Spring (#6)
28	TRANSFORMER, VOLTAGE (Select as Applicable)		
	315-0342	1	120 VAC Output Signal
	315-0431	1	240 VAC Output Signal
	315-0456	1	240 VAC Output Signal (Used with Dual Scale Meters - Voltage Code 31 Sets)
	NOTE: Transformer is Matched to Voltage Regulator		
	ATTACHING PARTS FOR TRANSFORMER		
	812-0061	2	Screw, Machine - Round Head (#6-32 x 3/8")
	853-0003	2	Washer, Lock - ET (#6)
29	812-0065	4	Screw, Machine - Round Head (#6-32 x 5/8")
30	853-0003	4	Washer, Lock - ET (#6)
31	REGULATOR, VOLTAGE (Includes Fuses When Applicable)		
	332-1704	1	Requires 120 VAC Input Signal (Used Only on Early Spec A Models)
	332-2029	1	Requires 240 VAC Input Signal Semi-Frequency Sensitive Type
	332-2030	1	Requires 240 VAC Input Signal - Voltage Sensitive Type
	332-2031	1	Requires 240 VAC Input Signal - Frequency Sensitive Type
32	321-0204	2	Fuse, Cartridge (1/4 Amp) - Part of Voltage Regulator
33	338-1104	1	£Wiring Harness - Fuse Blocks to Terminal Board
34	321-0223	4	£Fuse, Cartridge (15 Amp)
35	£FUSE BLOCK		
	321-0176	1	Two Place
	321-0177	1	Three Place
36	508-0001	4	Grommet, Rubber
37	800-0045	4	Screw, Cap - Hex Head (5/16-18 x 3/8")
38	850-0045	4	Washer, Lock - Spring (5/16")
39	402-0070	4	Dampener, Vibration
40	337-0049	1	Strap, Ground
	ATTACHING PARTS FOR STRAP		
	800-0046	1	Screw, Cap - Hex Head (5/16-18 x 3/8")
	850-0045	1	Washer, Lock - Spring (5/16")
	856-0008	2	Washer, Lock - EIT (5/16")
	862-0015	1	Nut, Hex (5/16-18)
41	BOX, CONTROL		
	301-4135	1	Used on Sets Without Fuse Blocks
	301-4668	1	£Used on Sets With Fuse Blocks

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

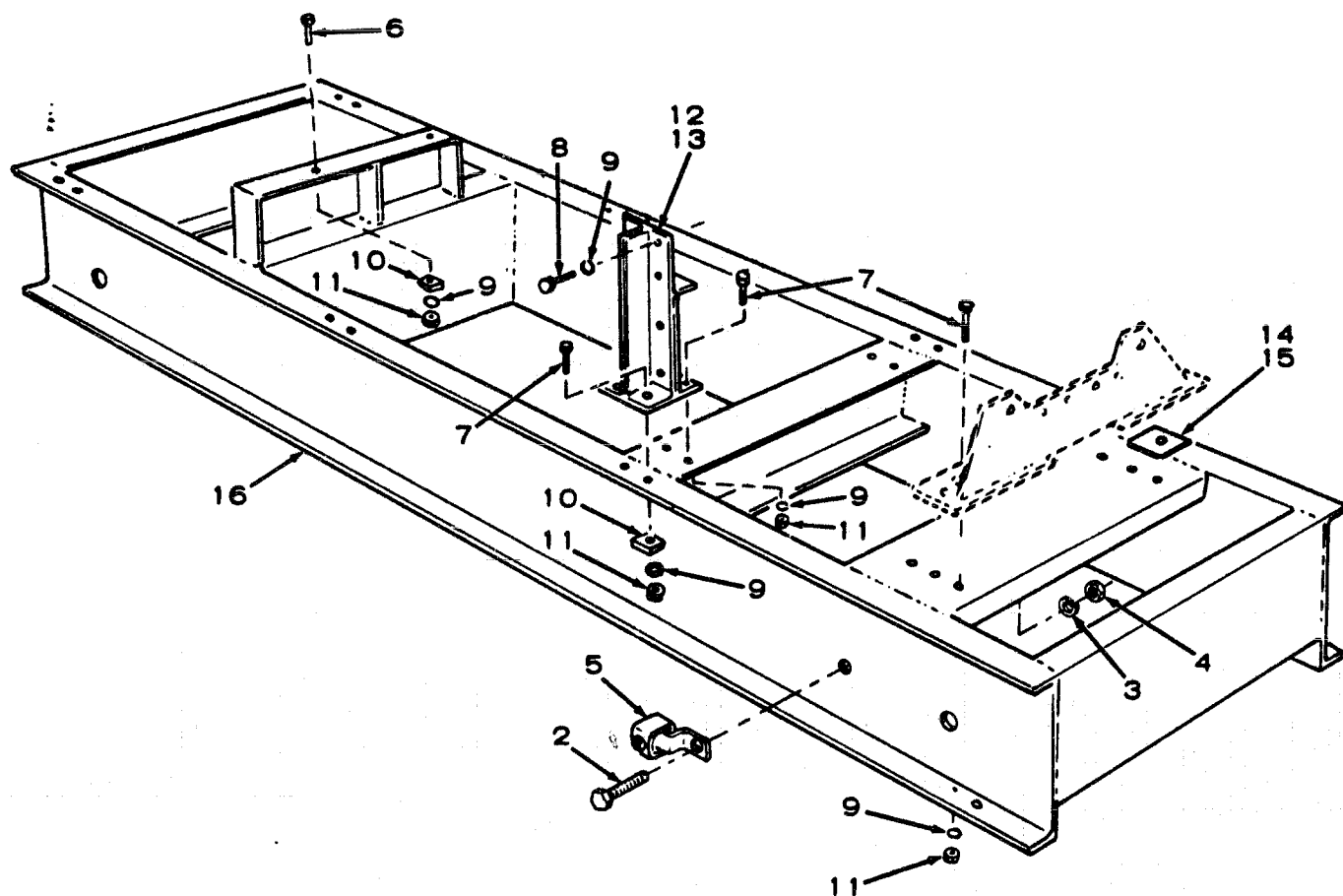
CONTROL, HOUSING



M-1202

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	821-0010	24	Screw, Self-locking - Hex Washer Head (1/4-20 x 1/2")
2	301-2904	1	Panel, Access - Top
3	301-2905	2	Panel, Access - Side
4	821-0014	8	Screw, Self-locking - Hex Washer Head (5/16-18 x 1/2")
5	508-1000	4	Channel, Rubber
6	331-0088	1	Bushing, Insulator
7	508-0203	1	Bushing, Insulator
8	821-0010	2	Screw, Self-locking - Hex Washer Head (1/4-20 x 1/2")
9	821-0014	4	Screw, Self-locking - Hex Washer Head (5/16-18 x 1/2")
10	301-4125	1	Bracket, Double Angle
11	301-4110	1	Panel, Control - Blank
12	301-4118	1	Housing, Control

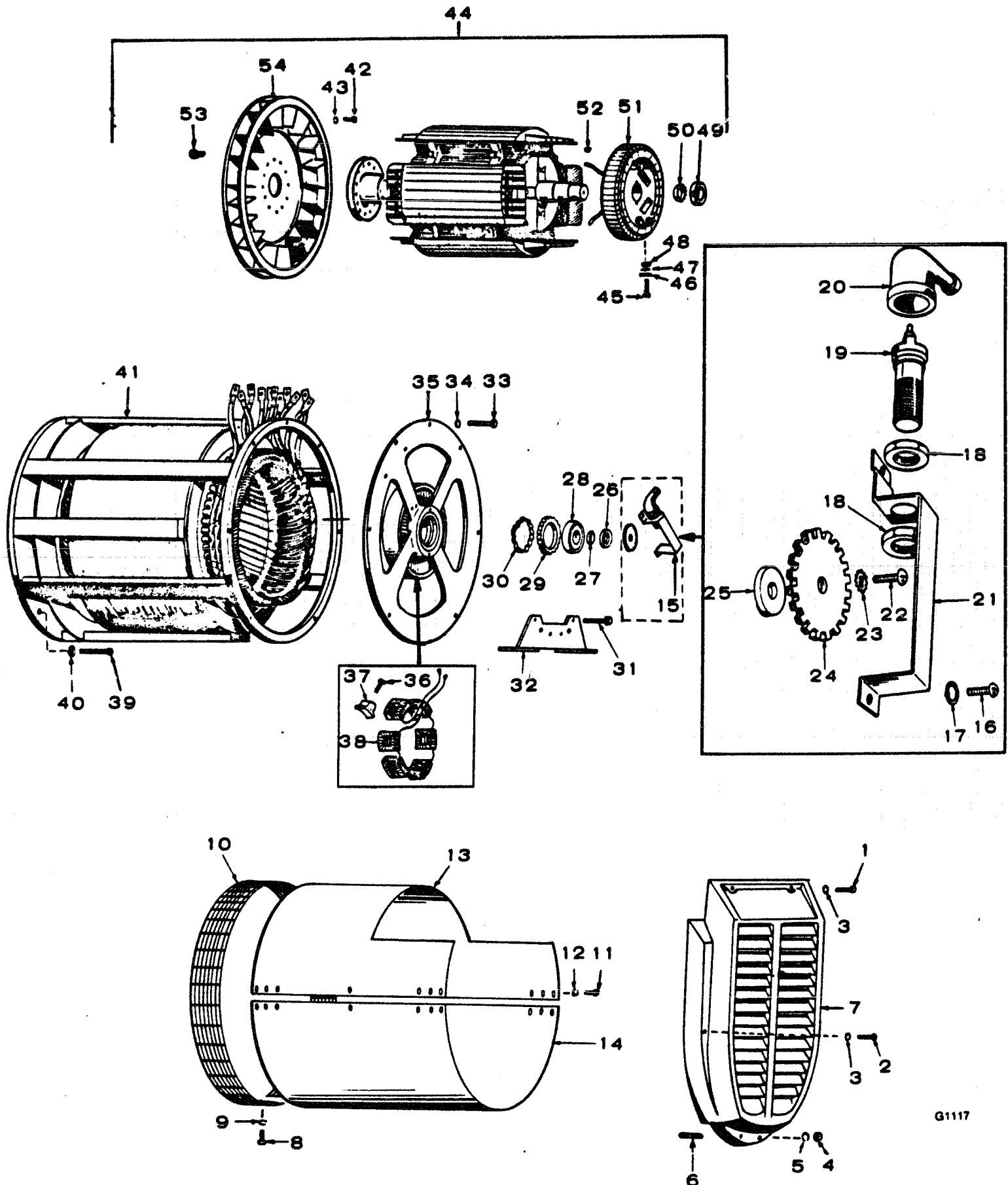
CHASSIS



M-1200

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	403-1405	REF	Chassis Assembly
2	800-0051	1	Screw, Cap - Hex Head (3/8-16 x 1-1/4")
3	850-0050	1	Washer, Lock - Spring (3/8")
4	862-0003	1	Nut, Hex (3/8-16)
5	332-2001	1	Lug, Terminal
6	800-0164	2	Screw, Cap - Hex Head (3/4-10 x 4-1/2")
7	800-0158	10	Screw, Cap - Hex Head (3/4-10 x 2-3/4")
8	800-0153	8	Screw, Cap - Hex Head (3/4-10 x 1-1/2")
9	850-0079	20	Washer, Lock - Spring (3/4")
10	403-1141	6	Washer, Bevel - Square
11	862-0008	12	Nut, Hex (3/4-10)
12	403-1250	1	Support, Engine - Left Side
13	403-1251	1	Support, Engine - Right Side
14	232-1489	6	Shim - Generator Mounting
15	232-1490	6	Shim - Generator Mounting
16	403-1244	1	Base, Skid - Generator Set

GENERATOR ASSEMBLY



G1117

GENERATOR ASSEMBLY

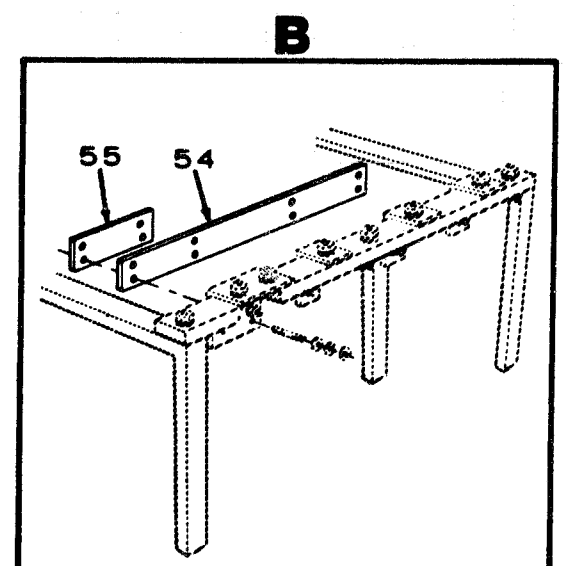
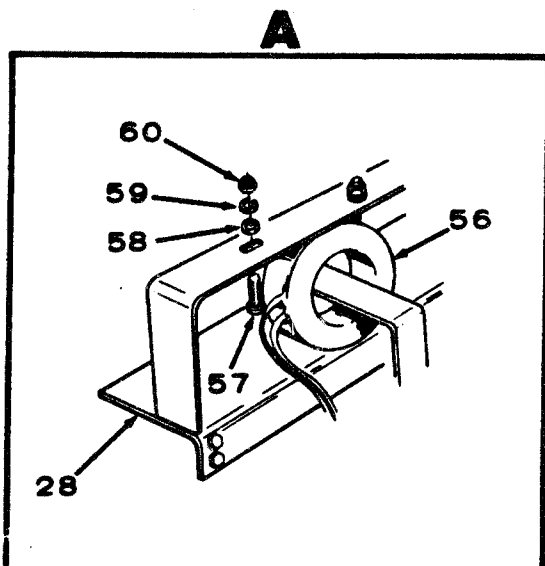
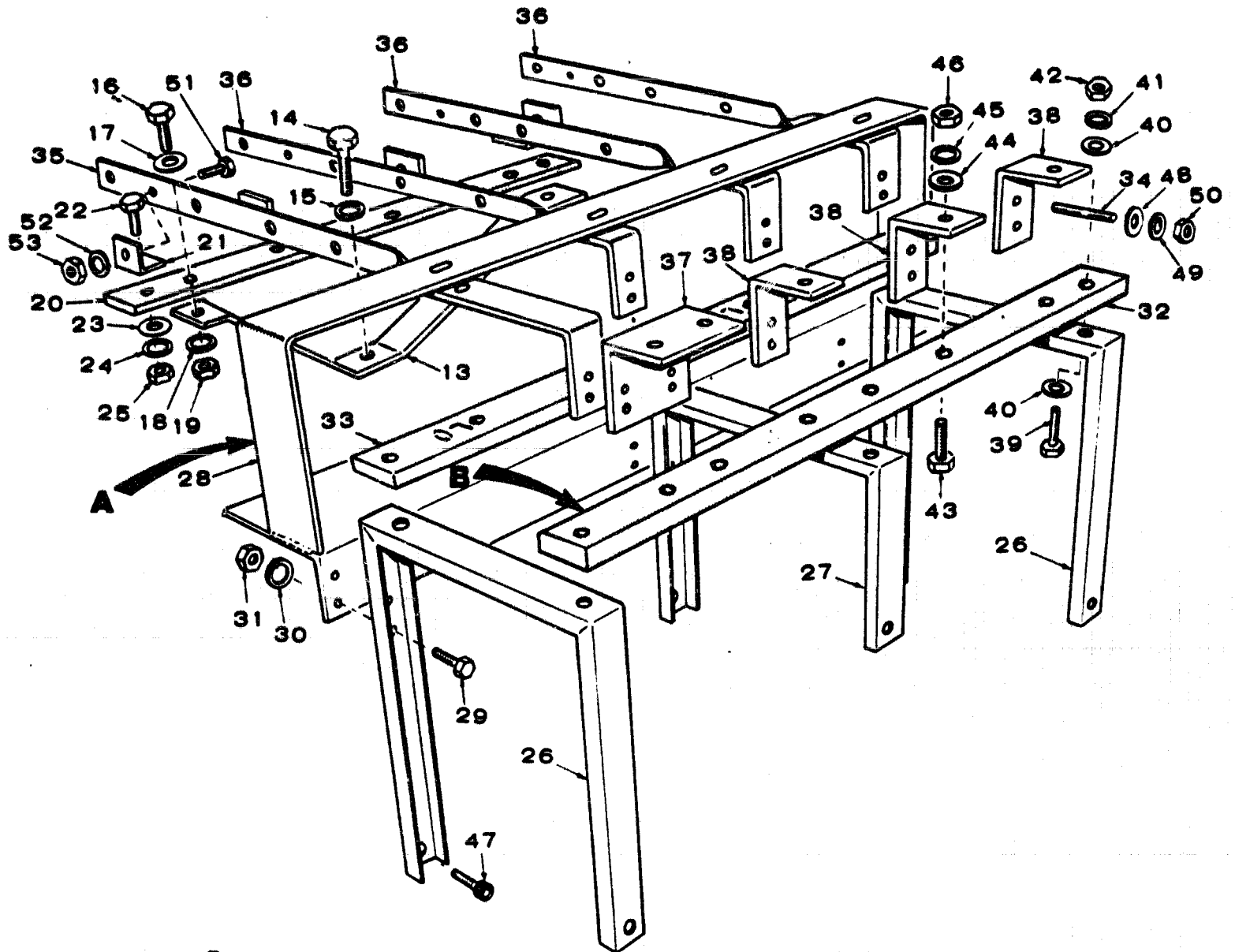
REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	800-0009	4	Screw, Cap - Hex Head (1/4-20 x 1-1/2")	40	850-0060	16	Washer, Lock - Spring (1/2")
2	800-0013	2	Screw, Cap - Hex Head (1/4-20 x 2-1/2")	41	STATOR, GENERATOR		
3	850-0040	6	Washer, Lock - Spring (1/4")		220-1099	1	Spec A Only
4	862-0007	4	Nut, Hex (5/8-11)		220-1099	1	Code 4; 120/208 V, 60 Hz
5	850-0070	6	Washer, Lock - Spring (5/8")		220-1100	1	Code 7X; 240/416 V, 60 Hz
6	520-0692	2	Stud (5/8-11 x 5/8-11 x 3-3/4")		220-1100	1	Code 4X; 227/480 V, 60 Hz
7	232-1973	1	Grill - Generator End Bell		220-1100	1	No Code; 139/240 V, 60 Hz
8	800-0003	1	Screw, Cap - Hex Head (1/4-20 x 1/2")		220-2719	1	Code 9X; 347/600 V, 60 Hz
9	850-0040	1	Washer, Lock - Spring (1/4")		220-1102	1	Code 5D; 120/240 V, 60 Hz
10	234-0272	1	Cover, Fan		220-1103	1	Code 6D; 240/480 V, 60 Hz
11	800-0026	6	Screw, Cap - Hex Head (5/16-18 x 3/4")		220-2713	1	Code 57; 220/380, 230/440 V, 50 Hz
12	850-0045	6	Washer, Lock - Spring (5/16")				Begin Spec B
13	234-0291	1	Band, Stator - Top		220-2799	1	Code 7X; 240/416 V, 60 Hz
14	234-0281	1	Band, Stator - Bottom		220-2800	1	Code 4; 120/208 V, 60 Hz
15	150-1556	1	Sensor Assembly - Speed (Includes Parts Marked †)		220-2801	1	Code 4X; 227/480 V, 60 Hz
16	812-0148	2	Screw, Machine - Round Head (1/4-20 x 1/2")		220-2802	1	No Code; 139/240 V, 60 Hz
17	850-0040	2	Washer, Lock - Spring (1/4")		220-2803	1	Code 9X; 347/600 V, 60 Hz
18	868-0011	2	†Nut, Hex - Jam (3/4-16)		220-2804	1	Code 5D; 120/240 V, 60 Hz
19	150-1406	1	†Sensor, Magnetic - Speed		220-2805	1	Code 6D; 240/480 V, 60 Hz
20	150-1410	1	†Cap, Insulator		220-2806	1	Code 7; 220/380 V, 60 Hz
21	150-1555	1	†Bracket, Mounting - Speed Sensor		220-3335	1	Code 31; 127/220 V, 220/380 V, 60 Hz
22	812-0192	1	Screw, Machine - Round Head (3/8-16 x 1")		220-2808	1	Code 520; 220/380, 230/400 V, 50 Hz
23	856-0010	1	Washer, Lock - External/ Internal Tooth (3/8")		220-2809	1	Code 519; 110/190, 115/200 V, 50 Hz
24	150-1557	1	Wheel - Speed Sensor		220-2810	1	Code 522; 240/416, 254/440 V, 50 Hz
25	526-0077	1	Washer, Flat (13/32" ID x 1-1/4" OD x 1/4" Thk)		220-2811	1	Code 521; 120/208, 127/220 V, 50 Hz
26	510-0091	1	£Nut, Lock - Bearing	42	800-0133	6	Screw, Cap - Hex Head (5/8-11 x 1-3/4")
27	510-0093	1	£Washer, Lock - Bearing	43	850-0070	6	Washer, Lock - Spring (5/8")
28	510-0090	1	£Bearing, Ball	44	ROTOR ASSEMBLY, GENERATOR (Includes Parts Marked £)		
29	232-1923	1	Ring, Holder - Bearing		201-1790	1	60 Hz
30	232-1924	1	Spring, Bearing Ring Holder		201-1791	1	50 Hz
31	805-0035	2	Bolt - Hex Head (5/8-11 x 1-1/2")	45	820-1067	2	£Screw, Machine - Pan Head, Cross-Recessed (#10-32 x 1")
32	232-1957	1	Support, Generator	46	526-1009	2	£Washer, Flat - Cadmium Plated (7/32" ID x 1/2" OD x 1/16" Thk)
33	800-0051	6	Screw, Cap - Hex Head (3/8-16 x 1-1/4")	47	850-1030	2	£Washer, Lock - Spring, Cadmium Plated (#10)
34	850-0050	6	Washer, Lock - Spring (3/8")	48	870-1053	2	£Nut, Hex (#10-32)
35	211-0170	1	End Bell Assembly (Includes Replaceable Parts Marked *)	49	510-0092	1	£Nut, Lock - Bearing
36	800-0031	12	*Screw, Cap - Hex Head (5/16-18 x 1-1/2")	50	510-0094	1	£Washer, Lock - Bearing
37	221-0153	6	*Shoe, Pole - Exciter Stator	51	£ROTOR ASSEMBLY, EXCITER (See Separate Group for Component Parts)		
38	222-1693	1	*Coil Assembly, Field - Exciter Stator (Set of Six Coils)		201-1501	1	60 Hz
39	800-0092	16	Screw, Cap - Hex Head (1/2-13 x 1-1/2")		201-1549	1	50 Hz
				52	515-0162	1	£Key, Rectangular
				53	805-0035	12	£Bolt (5/8-11 x 11-1/2")
				54	232-2833	1	£Disc and Fan Assembly

† - Included in Speed Sensor Assembly.

* - Included in End Bell Assembly.

£ - Included in Generator Rotor Assembly.

BUS BAR ASSEMBLY

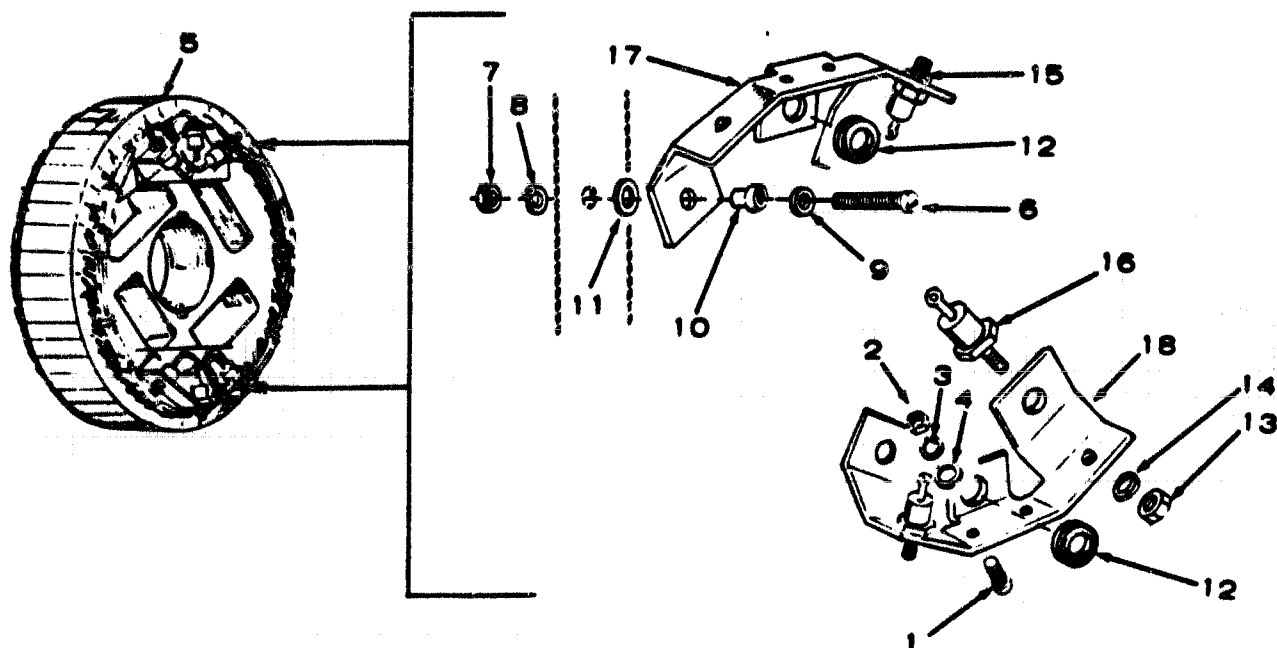


M-1203

BUS BAR ASSEMBLY

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
13	232-1994	1	Bracket, Bus Bar	41	850-0050	9	Washer, Lock - Spring (3/8")
14	800-0151	1	Screw, Cap - Hex Head (3/4-10 x 1")	42	862-0003	9	Nut, Hex (3/8-16)
15	850-0079	1	Washer, Lock - Spring (3/4")	43	800-0052	6	Screw, Cap - Hex Head (3/8-16 x 1-1/2")
16	800-0051	2	Screw, Cap - Hex Head (3/8-16 x 1-1/4")	44	526-0029	6	Washer, Flat (25/64" ID x 7/8" OD x 1/16" Thk)
17	526-0029	2	Washer, Flat (25/64" ID x 7/8" OD x 1/16" Thk)	45	850-0050	6	Washer, Lock - Spring (3/8")
18	850-0050	2	Washer, Lock - Spring (3/8")	46	862-0003	6	Nut, Hex (3/8-16)
19	862-0003	2	Nut, Hex (3/8-16)	47	802-0069	6	Screw, Cap - Socket Head (3/8-16 x 5/8")
20	232-1997	1	Board, Insulating	48	526-0115	32	Washer, Flat (11/32" ID x 11/16" OD x 1/16" Thk)
21	232-1992	4	Bracket, Bus Bar	49	850-0045	32	Washer, Lock - Spring (5/16")
22	800-0007	4	Screw, Cap - Hex Head (1/4-20 x 1")	50	862-0015	32	Nut, Hex (5/16-18)
23	526-0018	4	Washer, Flat (17/64" ID x 5/8" OD x 1/16")	51	800-0005	4	Screw, Cap - Hex Head (1/4-20 x 3/4")
24	850-0040	4	Washer, Lock - Spring (1/4")	52	850-0040	4	Washer, Lock - Spring (1/4")
25	862-0001	4	Nut, Hex (1/4-20)	53	862-0001	4	Nut, Hex (1/4-20)
26	232-1999	2	Bracket, Terminal Board Mounting	54	232-1993	1	Jumper, Bus Bar (Used on Paralle Wye Wound Generator)
27	232-2000	1	Bracket, Terminal Board Mounting	55	232-2005	1	Jumper, Bus Bar (Used on Delta Wound Generator)
28	315-0302	1	Shelf, Current Transformer	56	TRANSFORMER, CURRENT (Check Transformer Nameplate—Select According to Rating)		
29	800-0005	6	Screw, Cap - Hex Head (1/4-20 x 3/4")	302-0547	3	Nameplate Reads 500/5	
30	850-0040	6	Washer, Lock - Spring (1/4")	302-0625	3	Nameplate Reads 750/5	
31	862-0001	6	Nut, Hex (1/4-20)	302-0589	3	Nameplate Reads 1000/5	
32	232-1998	1	Board, Insulating	302-0643	3	Nameplate Reads 1200/5	
33	232-1995	1	Board, Insulating	302-0644	3	Nameplate Reads 1500/5	
34	520-0693	16	Stud (5/16-18 x 5/16-18 x 1-5/8")	302-0645	3	Nameplate Reads 2000/5	
35	232-1996	1	Bar, Bus (17-3/8" Lg)	57	800-0052	6	Screw, Cap - Hex Head (3/8-16 x 1-1/2")
36	232-2001	3	Bar, Bus (13-1/4" Lg)	58	526-0029	6	Washer, Flat (25/64" ID x 7/8" OD x 1/16" Thk)
37	232-1991	1	Bar, Bus (Double)	59	850-0050	6	Washer, Lock - Spring (3/8")
38	232-1990	3	Bar, Bus	60	862-0003	6	Nut, Hex (3/8-16)
39	800-0052	9	Screw, Cap - Hex Head (3/8-16 x 1-1/2")				
40	526-0029	18	Washer, Flat (25/64" ID x 7/8" OD x 1/16" Thk)				

EXCITER ROTOR



G-1092

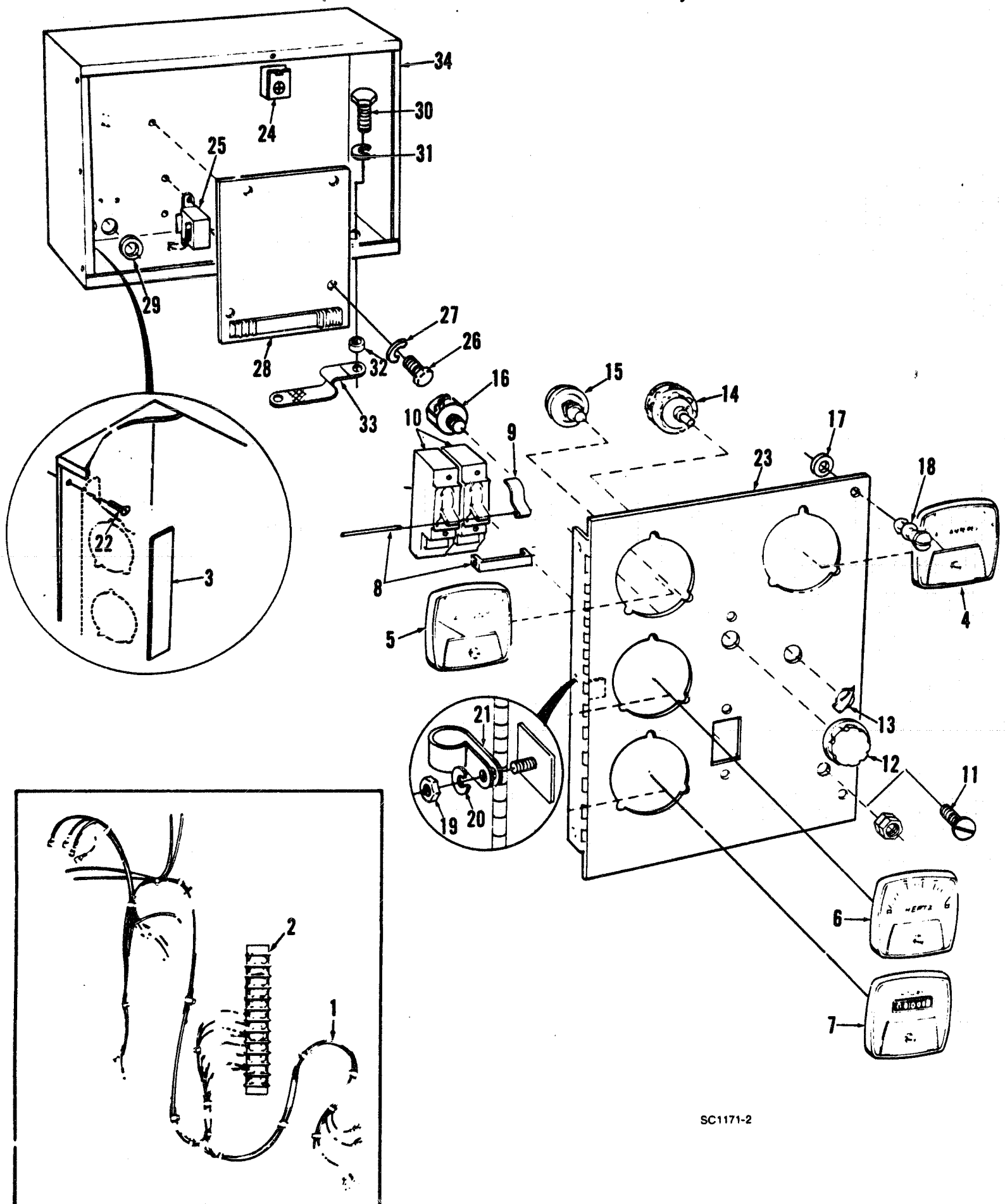
REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	813-0100	2	Screw, Machine - Round Head (#10-32 x 1/2")
2	870-0053	2	Nut, Hex (#10-32)
3	850-0030	2	Washer, Lock - Spring (#10)
4	526-0008	2	Washer, Flat (13/64" ID x 7/16" OD x 1/32" Thk)
5	ROTOR ASSEMBLY, EXCITER (Includes Parts Marked +)		
	201-1501	1	Standard, 60 Hz
	201-1549	1	Standard, 50 Hz
6	813-0114	4	+Screw, Machine - Round Head (#10-32 x 3")
7	870-0053	4	+Nut, Hex (#10-32)
8	850-0030	4	+Washer, Lock - Spring (#10)
9	526-0009	4	+Washer, Flat - (7/32" ID x 1/2" OD x 1/16" Thk)
10	508-0124	4	+Spacer, Stepped
11	508-0156	8	+Washer, Insulating
12	508-0093	2	+Grommet, Rubber
13	862-0001	6	+Nut, Hex (1/4-28)
14	850-0040	6	+Washer, Lock - Spring (1/4")
15	358-0011	3	+Diode, Rectifier - Positive (CR1, CR2, CR3)
16	358-0012	3	+Diode, Rectifier - Negative (CR4, CR5, CR6)
17	363-0025	1	+Heat, Sink - Positive Diodes
18	363-0033	1	+Heat, Sink - Negative Diodes

+ - Parts Included in the 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 GENERATOR CONTROL (WITH SWITCHING REGULATOR)

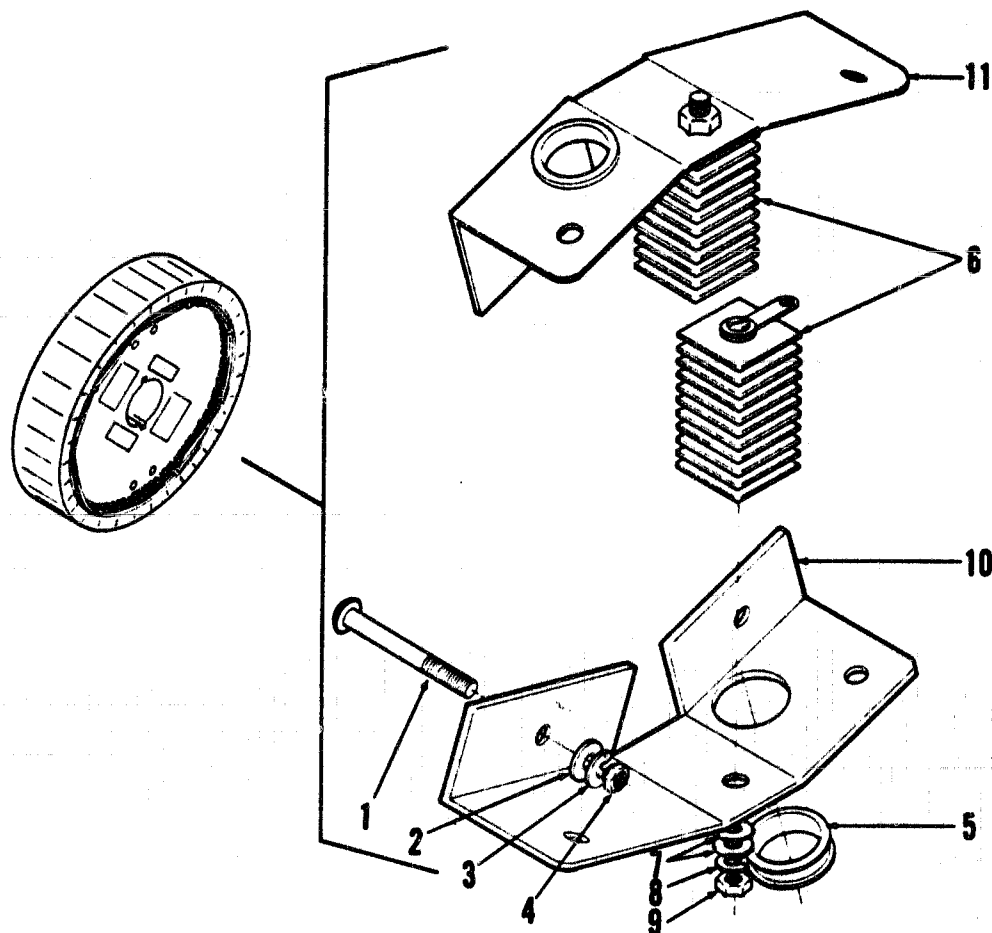


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OPTIONAL GENERATOR CONTROL (WITH SWITCHING REGULATOR)

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	338-1493	1	Wiring Harness (Includes Terminal Block)	11	517-0131	1	Plug, Plastic
	ATTACHING HARDWARE FOR WIRING HARNESS			12	303-0032	1	Knob
	812-0066	2	Screw, Machine - Round Head (#6-32 x 3/4")	13	303-0076	1	Knob, Pointer
	850-0020	2	Washer, Lock - Spring (#6)	14	308-0284	1	Switch, Selector
2	332-0795	1	Block, Terminal - 16 Place	15	303-0170	1	Rheostat (35 Ohm, 25 Watt)
3	332-1242	1	Strip, Marker - 16 Place	16	151-0402	1	Potentiometer (5K Ohms)
4	AMMETER (Select As Required)			17	406-0334	2	Clip, Retaining - Turnbutton Fastener
	302-0414	1	Scale Reads 0-500 Amperes	18	406-0333	2	Stud, Turnbutton Fastener
	302-0415	1	Scale Reads 0-750 Amperes	19	870-0053	1	Nut, Hex (#10-32)
	302-0416	1	Scale Reads 0-1000 Amperes	20	850-0030	1	Washer, Lock - Spring (#10)
	302-0640	1	Scale Reads 0-1200 Amperes	21	332-0051	1	Clamp, Loop
	302-0641	1	Scale Reads 0-1500 Amperes	22	815-0026	3	Screw, Machine - Truss Head (#10-32 x 3/8")
	302-0642	1	Scale Reads 0-2000 Amperes	23	301-6412	1	Panel, Control
	302-1044	1	Scale Reads 0-2500 Amperes	24	406-0332	2	Receptacle, Turnbutton Fastener
	302-1045	1	Scale Reads 0-3000 Amperes	25	315-0431	1	Transformer, Voltage (240 VAC Output Signal)
5	VOLTMETER (Select As Required)			26	812-0065	4	Screw, Machine - Round Head (#6-32 x 5/8")
	302-0421	1	Scale Reads 0-300 Volts	27	853-0003	4	Washer, Lock - ET (#6)
	302-1283	1	Scale Reads 0-500 Volts	28	REGULATOR, VOLTAGE (Requires 240 VAC Input Signal)		
	302-1072	1	Scale Reads 0-600 Volts		300-1928	1	Semi-Frequency Sensitive Type
	302-0779	1	Scale Reads 0-750 Volts		300-1929	1	Voltage Sensitive Type
6	METER, FREQUENCY (Select As Required)				300-1930	1	Frequency Sensitive Type
	302-0810	1	60 Hertz, 208 Volt	29	508-0001	4	Grommet, Rubber
	302-0811	1	60 Hertz, 240 Volt	30	800-0045	4	Screw, Cap - Hex Head (5/16-18 x 3/8")
	302-0894	1	50 Hertz, 208 Volt	31	850-0045	4	Washer, Lock - Spring (5/16")
	302-0895	1	50 Hertz, 240 Volt	32	402-0070	4	Dampener, Vibration
7	METER, TIME TOTALIZING (Select As Required)			33	337-0049	1	Strap, Ground
	302-0466	1	60 Hertz		ATTACHING PARTS FOR STRAP		
	302-0469	1	50 Hertz		800-0045	1	Screw, Cap - Hex Head (5/16-18 x 3/8")
8	320-0202	1	Tie Bar - Circuit Breaker		850-0045	1	Washer, Lock - Spring (5/16")
9	320-0307	1	Lock, Handle - Circuit Breaker (Used On Penn State Sets)		856-0008	2	Washer, Lock - EIT (5/16")
10	320-0455	2	Circuit Breaker - 3 Amp, 240 Volt		862-0015	1	Nut, Hex (5/16-18)
	ATTACHING HARDWARE FOR CIRCUIT BREAKER			34	301-4135	1	Box, Control
	812-0061	4	Screw, Machine - Round Head (#6-32 x 3/8")				
	850-0020	4	Washer, Lock - Spring (#6)				
	815-0203	2	Screw, Machine - Round Head, Brass (#10-32 x 7/8")				
	871-0010	2	Nut, Hex - Brass (#10-32)				
	853-0008	2	Washer, Lock - ET (#10)				
	526-0049	2	Washer, Flat - Brass (13/64" ID x 7/16" OD x 1/32" Thk)				

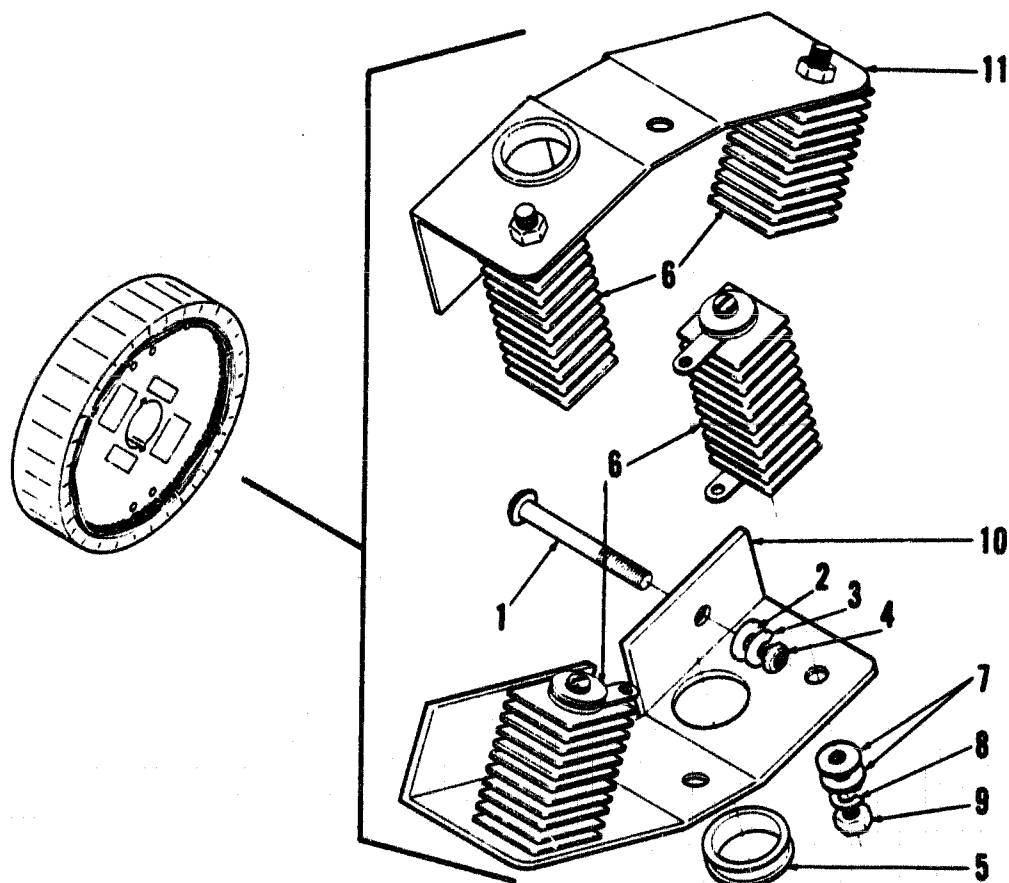
OPTIONAL VOLTAGE SUPPRESSOR ASSEMBLY



XES1229

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
		1	Voltage Suppressor Assembly
1	813-0120	4	Screw, Machine - Round Head (#10-32 x 3-1/2")
2	526-0140	4	Washer, Flat (7/32" ID x 3/8" OD x 3/64" Thk)
3	850-0030	4	Washer, Lock - Spring (#10)
4	870-0053	4	Nut, Hex (#10-32)
5	508-0093	2	Grommet, Rubber
6	305-0526	1	Set, Voltage Suppressor (Matched Pair) - Includes Attaching Parts
7	526-0140	4	Washer, Flat (7/32" ID x 3/8" OD x 3/64" Thk)
8	850-0030	4	Washer, Lock - Spring (#10)
9	870-0053	4	Nut, Hex (#10-32)
10	363-0025	1	Heatsink - Positive
11	363-0033	1	Heatsink - Negative

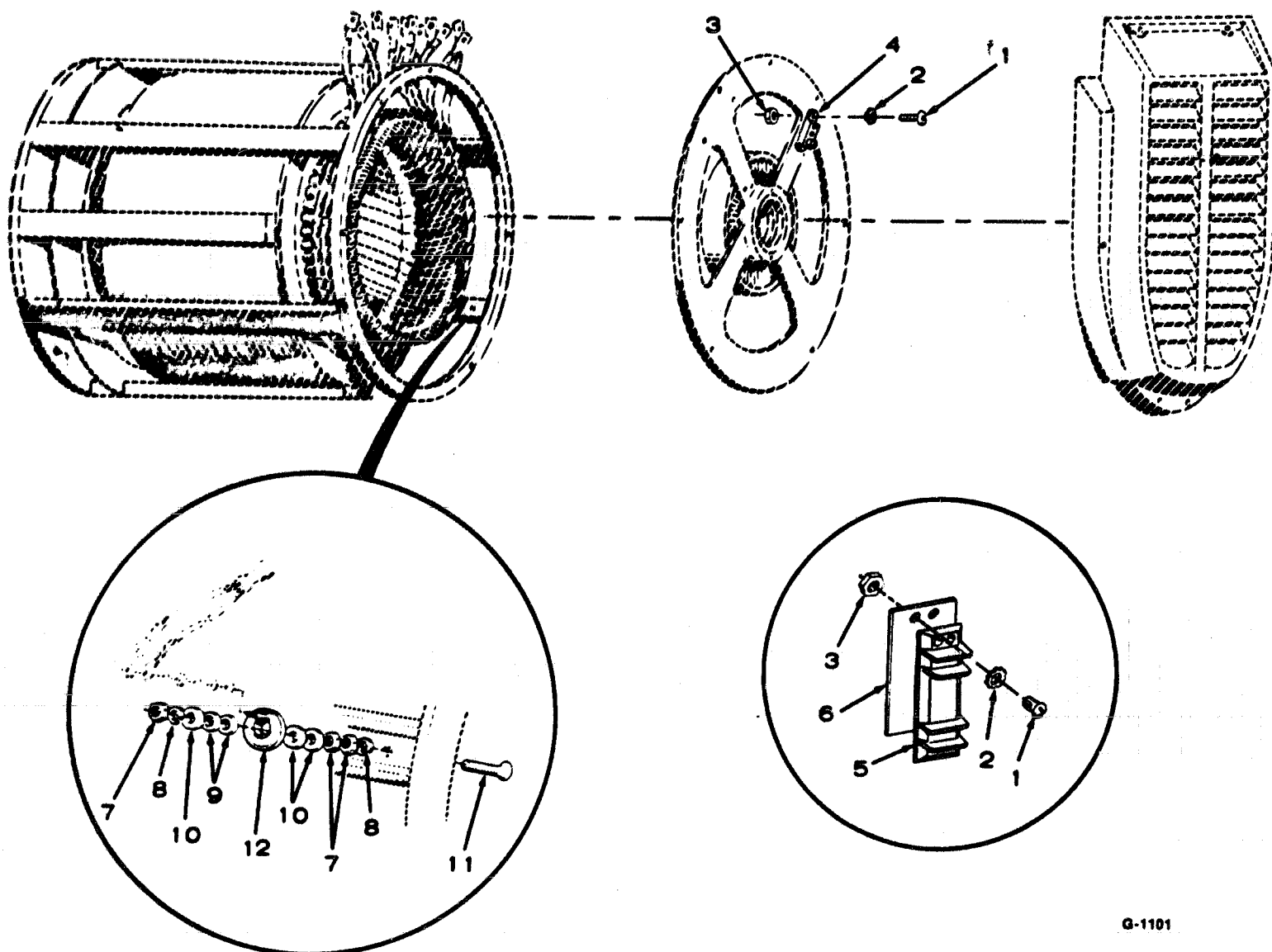
OPTIONAL DUAL VOLTAGE SUPPRESSOR ASSEMBLY



XES1230

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
		1	Dual Voltage Suppressor Assembly
1	813-0120	8	Screw, Machine - Round Head (#10-32 x 3-1/2")
2	526-0140	8	Washer, Flat (7/32" ID x 3/8" OD x 3/64" Thk)
3	850-0030	8	Washer, Lock - Spring (#10)
4	870-0053	8	Nut, Hex (#10-32)
5	508-0093	2	Grommet, Rubber
6	305-0526	2	Set, Voltage Suppressor (Matched Pair) - Includes Attaching Parts
7	526-0140	8	Washer, Flat (7/32" ID x 3/8" OD x 3/64" Thk)
8	850-0030	8	Washer, Lock - Spring (#10)
9	870-0053	8	Nut, Hex (#10-32)
10	363-0025	1	Heatsink - Positive
11	363-0033	1	Heatsink - Negative

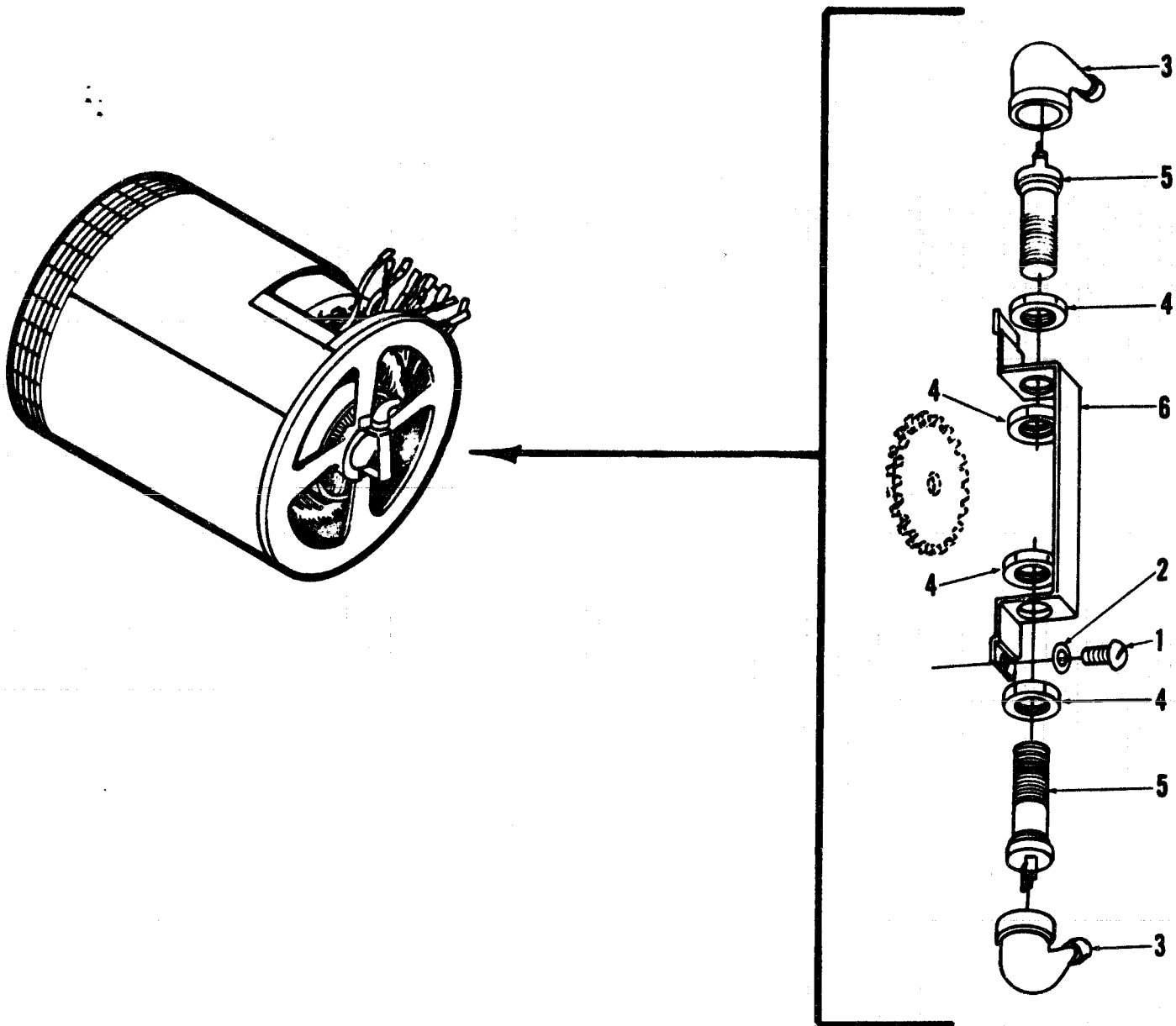
OPTIONAL GENERATOR HEATER



G-1101

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	812-0068	4	Screw, Machine - Round Head (#6-32 x 1")
2	853-0003	4	Washer, Lock - External Tooth (#6)
3	860-0005	4	Nut, Hex (#6-32)
4	309-0128	1	Thermostat - Adjustable
5	332-0333	1	Terminal Block
6	332-0499	1	Strip, Marker
7	862-0003	6	Nut, Hex (3/8-16)
8	850-0050	4	Washer, Lock - Spring (3/8")
9	526-0029	4	Washer, Flat (25/64" ID x 7/8" OD x 1/16" Thk)
10	526-0123	6	Washer, Flat (25/64" ID x 1-1/4" OD x 1/16" Thk)
11	814-0203	2	Screw, Machine - Flat Head (3/8-16 x 2")
12	333-0059	2	Heater - 120 Volt, 125 Watt

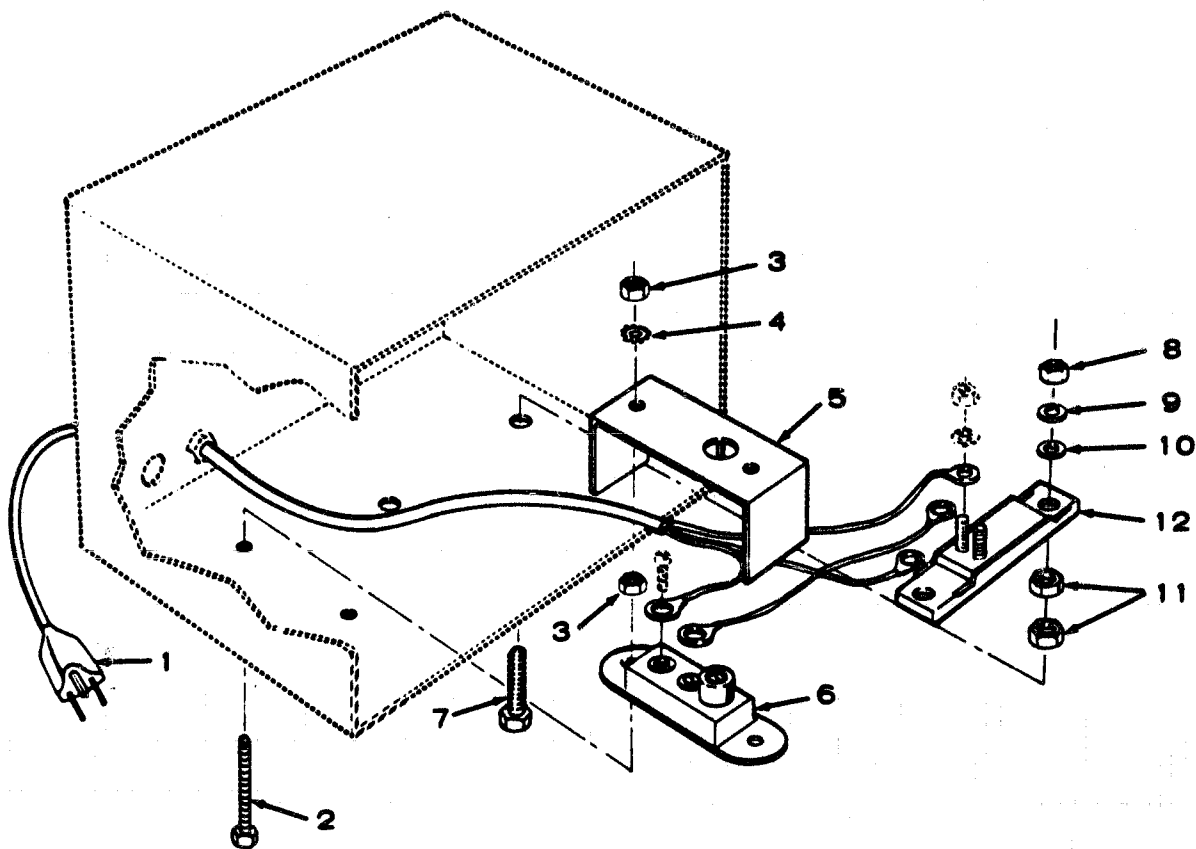
**OPTIONAL
DUAL SENSOR ASSEMBLY
(GENERATOR OVER/UNDER SPEED)**



ES1228

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	812-0148	1	Dual Sensor Assembly
2	850-0040	2	Screw, Machine - Round Head (1/4-20 x 1/2")
3	150-1410	2	Washer, Lock - Spring (1/4")
4	868-0011	2	Cap, Insulating
5	150-1406	4	Nut, Hex - Jam (3/4-16)
6	150-1878	2	Sensor, Magnetic
		1	Bracket, Mounting - Magnetic Sensor

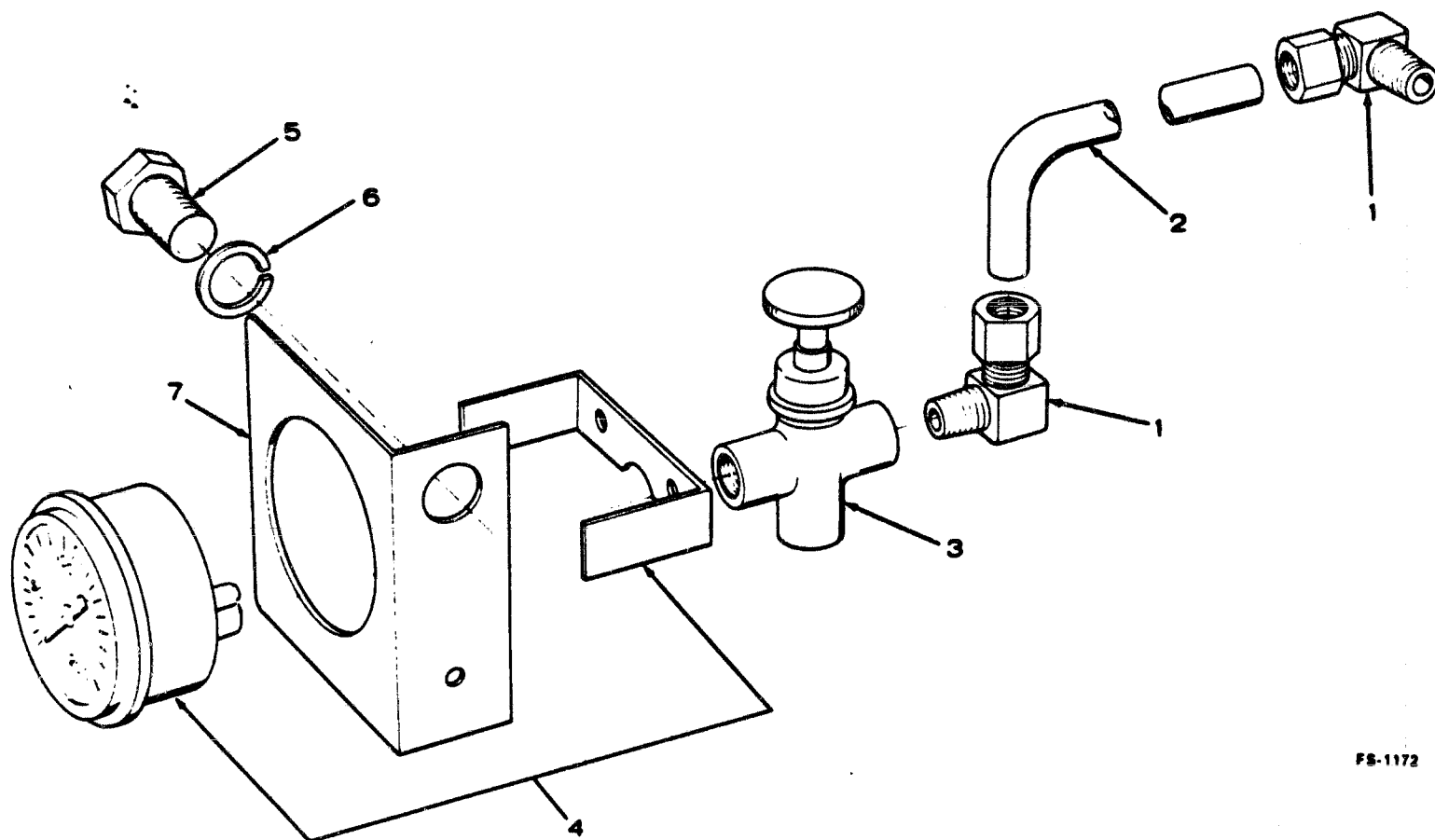
OPTIONAL CONTROL HEATER



8C-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

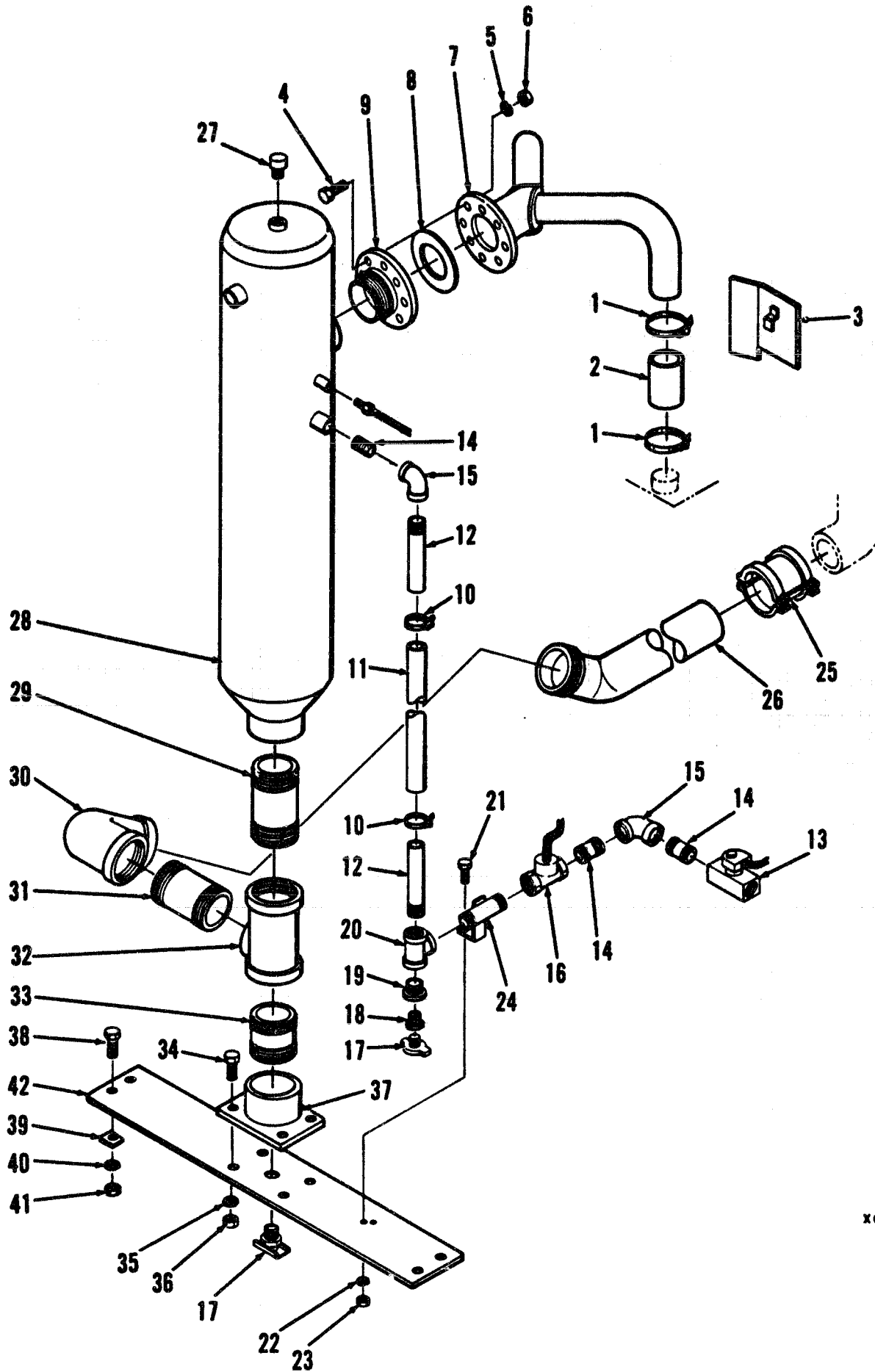
OPTIONAL FUEL PRESSURE GAUGE



FS-1172

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
FUEL PRESSURE GAUGE (Includes Parts Marked #)			
	539-0429	1	0 to 200 lbs. Range
1	502-0034	2	#Elbow with Compression Nut & Ring - Brass (1/8" NPT x 3/16" Tube)
2	370-4003	1 ✓	#Tube, Copper (3/16" OD x .030 Thk x 72")
3	504-0064	1	#Valve, Gate (1/8" NPT)
4	193-0128	1	#Gauge, Pressure with Bracket and Attaching Hardware
5	800-0130	1	#Screw, Cap - Hex Head (5/8-11 x 1")
6	850-0070	1	#Washer, Lock - Spring (5/8")
7	193-0029	1	#Bracket, Mounting - Gauge
# - Parts included in Fuel Gauge Assembly			

OPTIONAL COOLING SYSTEM WITH STANDPIPE

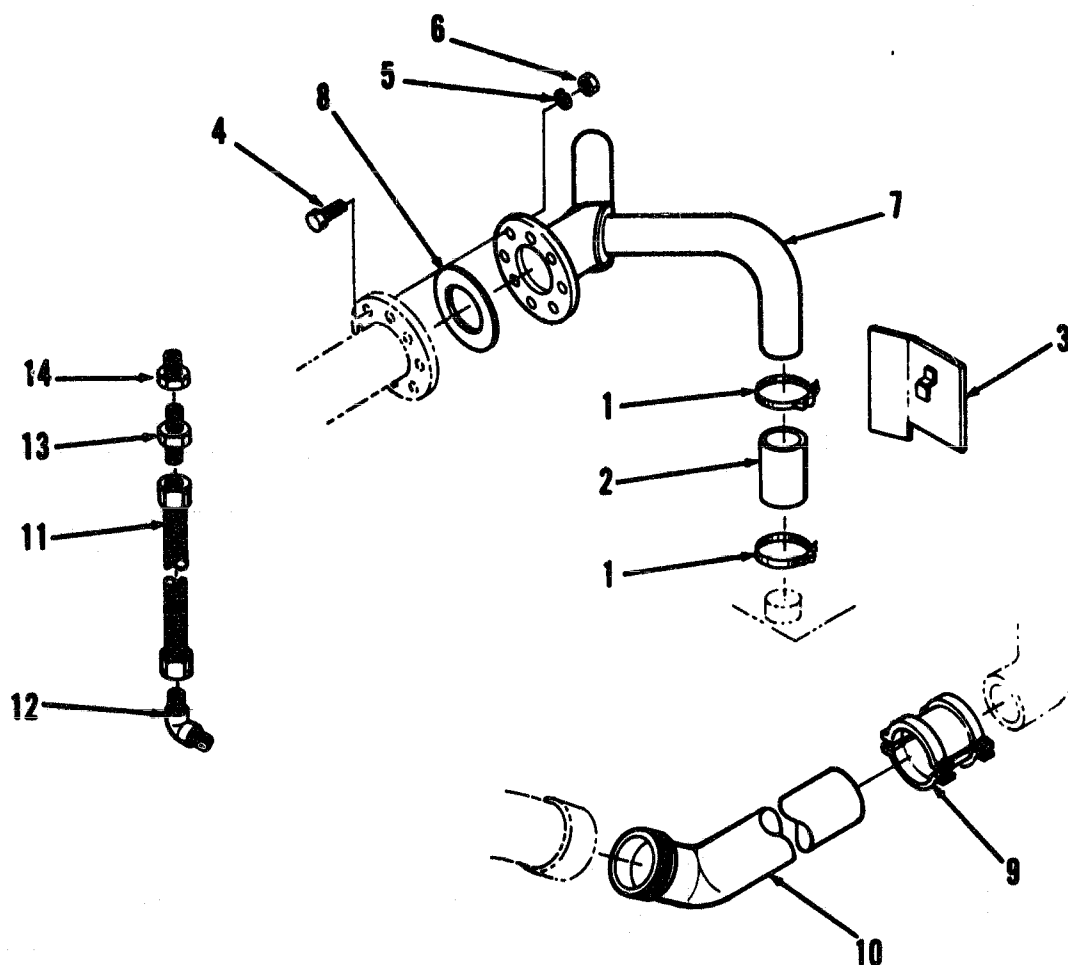


XCS-1187

OPTIONAL COOLING SYSTEM WITH STANDPIPE

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	503-0621	4	Clamp, Hose
2	503-0788	2	Hose, Rubber
3	130-1013	1	Shield, Heat
4	800-0160	8	Screw, Cap - Hex Head (3/4-10 x 3-1/4")
5	850-0079	8	Washer, Lock - Spring (3/4")
6	862-0008	8	Nut, Hex (3/4-10)
7	130-1127	1	Outlet, Water - Engine
8	155-0675	1	Gasket
9	130-1123	1	Flange, Water Outlet
10	503-0011	2	Clamp, Hose
11	503-0359	1	Hose, Rubber
12	505-0860	2	Nipple, Pipe - Half (1-1/4" NPT x 15" Lg)
13	307-0839	1	Valve, Control - Solenoid (1-1/4" NPT)
14	505-0258	3	Nipple, Pipe (1-1/4" NPT x 3" Lg)
15	505-0042	2	Elbow, Pipe - 90 Deg (1-1/4" NPT)
16	309-0243	1	Valve, Control - Temperature Regulating
17	504-0006	2	Cock, Drain (1/8" NPT)
18	505-0016	1	Bushing, Reducer - Hex (3/8" NPT x 1/8" NPT)
19	505-0128	1	Bushing, Reducer - Hex (1-1/4" NPT x 3/8" NPT)
20	505-0249	1	Tee, Pipe (1-1/4" NPT)
21	800-0006	2	Screw, Cap - Hex Head (1/4-20 x 7/8")
22	850-0040	2	Washer, Lock - Spring (1/4")
23	862-0001	2	Nut, Hex (1/4-20)
24	110-1168	1	Assembly, Nipple and Bracket
25	130-0966	1	Coupling, Pipe - Hex
26	130-1122	1	Tube, Inlet - Water
27	504-0062	1	Valve, Vacuum Relief
28	130-1128	1	Tank, Standpipe
29	505-0696	1	Nipple, Pipe (5" NPT x 9" Lg)
30	505-0663	1	Elbow, Pipe - 90 Deg (5" NPT)
31	505-0828	1	Nipple, Pipe (5" NPT x 7-1/2" Lg)
32	505-0809	1	Tee, Pipe (5" NPT)
33	505-0664	1	Nipple, Pipe (5" NPT x 5" Lg)
34	800-0152	4	Screw, Cap - Hex Head (3/4-10 x 1-1/4")
35	850-0079	4	Washer, Lock - Spring (3/4")
36	862-0020	4	Nut, Hex (3/4-10)
37	130-0963	1	Support, Standpipe
38	800-0157	4	Screw, Cap - Hex Head (3/4-10 x 2-1/2")
39	403-1141	4	Washer, Bevel - Square
40	850-0079	4	Washer, Lock - Spring (3/4")
41	862-0020	4	Nut, Hex (3/4-10)
42	130-0965	1	Plate, Support - Standpipe

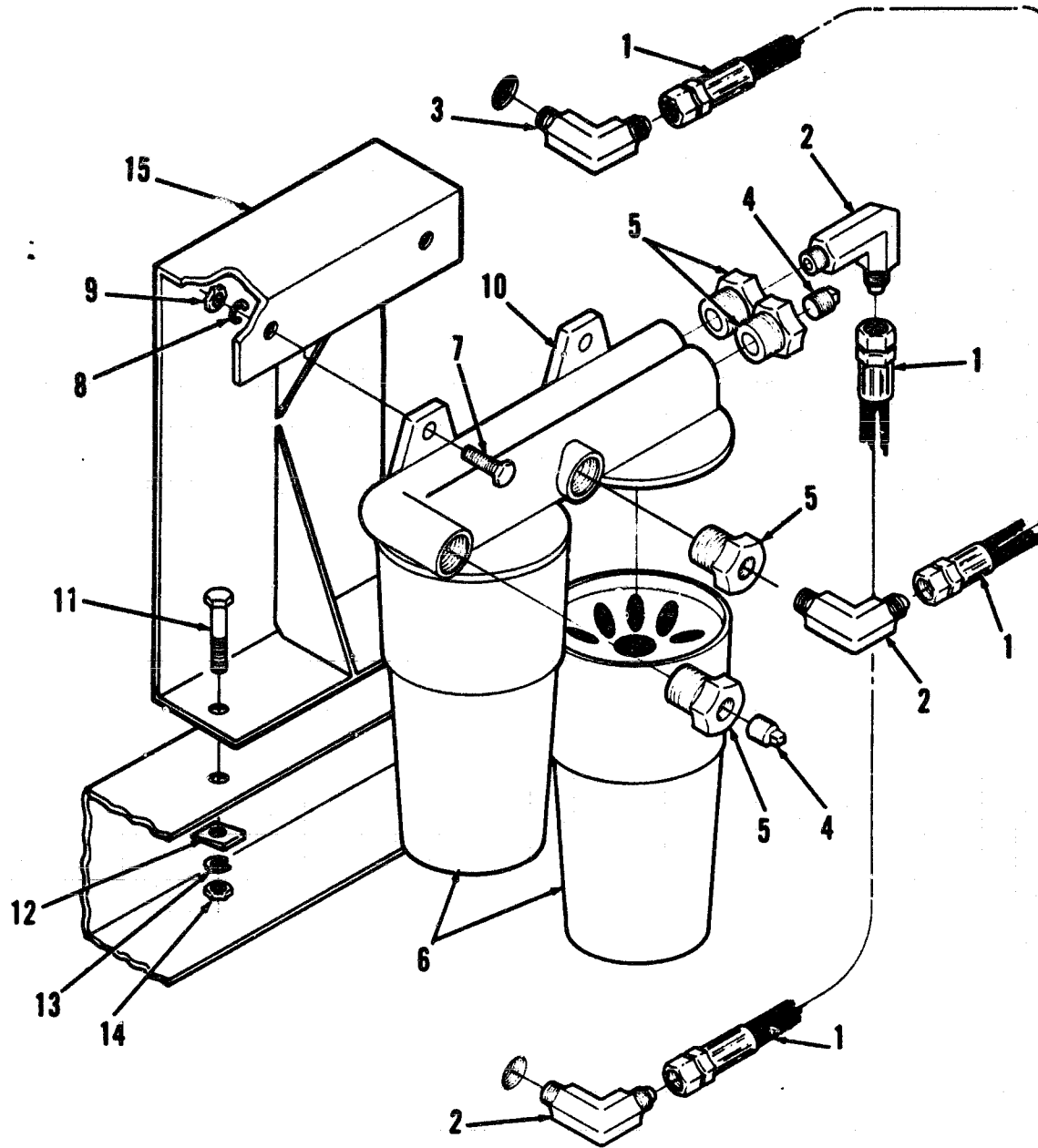
OPTIONAL COOLING SYSTEM FOR REMOTE RADIATOR



CS-1188

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	503-0621	4	Clamp, Hose
2	503-0788	2	Hose, Rubber
3	130-1013	1	Shield, Heat
4	800-0160	8	Screw, Cap - Hex Head (3/4-10 x 3-1/4")
5	850-0079	8	Washer, Lock - Spring (3/4")
6	862-0008	8	Nut, Hex (3/4-10)
7	130-1127	1	Outlet, Water - Engine
8	155-0675	1	Gasket
9	130-0966	1	Coupling, Pipe - Hex
10	130-1122	1	Tube, Inlet - Water
11	501-0213	2	Line, Fuel - Flexible
12	502-0287	2	Elbow, Pipe - 90 Deg. Male (1/4" NPT x 1/2-20 SAE Male)
13	502-0193	2	Connector - Line to Pipe
14	505-0007	2	Bushing, Reducer - Hex (1/4" NPT x 1/8" NPT)

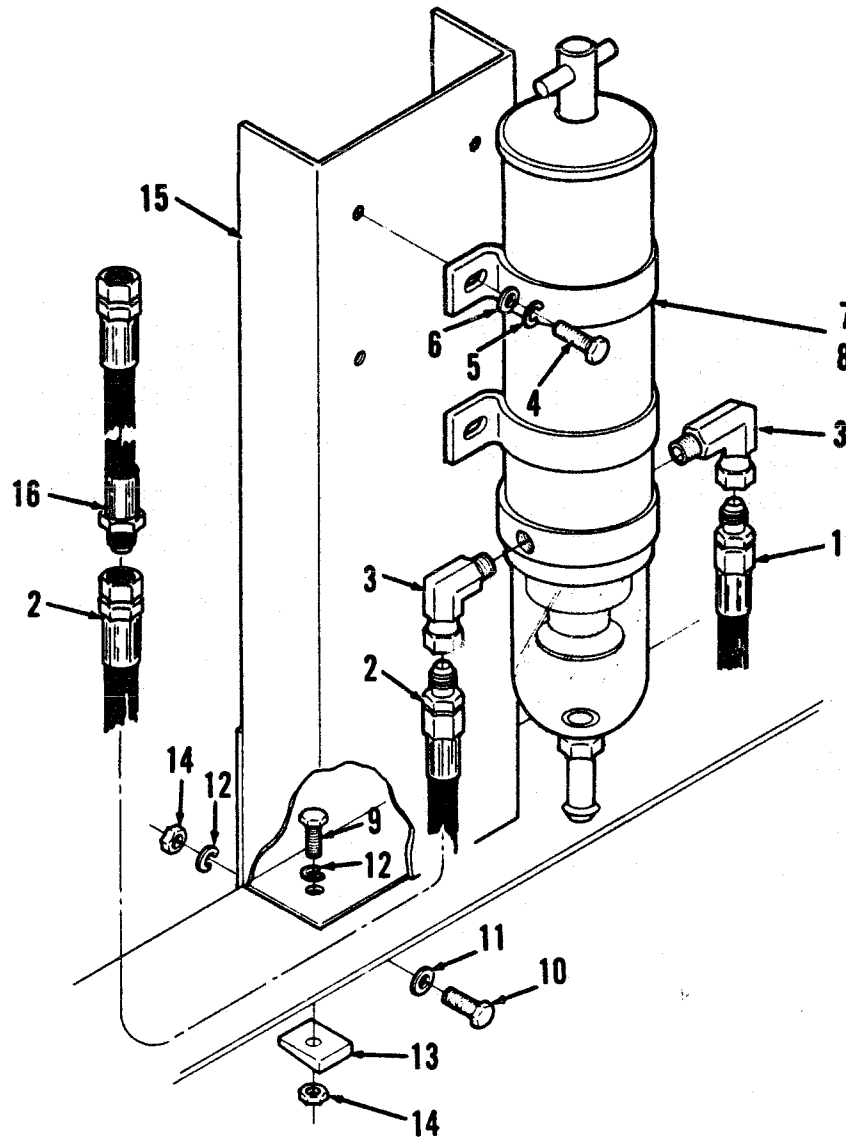
OPTIONAL FILTER - LUBE OIL



LS-1090

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	501-0381	2	Line, Fuel - Flexible (31" Lg), 3/4-16 JIC 37 Deg Female Swivel Both Ends)	5	502-0701	4	Bushing, Reducer - Hex (7/8-14 x 1/2" NPT)
2	502-0599	3	Elbow, Adapter - 90 Deg Steel (1/2-14 NPT Male x 3/4-16 JIC - 37 Deg Male)	6	122-0526	2	Element, Filter
3	502-0653	1	Elbow, Adapter - 90 Deg CRES (1/4-18 NPT Male x 3/4-16 JIC 37 Deg Male)	7	800-0075	2	Screw, Cap - Hex Head (7/16-14 x 2")
4	505-0056	2	Plug, Pipe - Square Head (1/2" NPT)	8	850-0055	2	Washer, Lock - Spring (7/16")
				9	862-0004	2	Nut, Hex (7/16-14)
				10	122-0525	1	Head, Filter
				11	800-0076	2	Screw, Cap - Hex Head (7/16-14 x 2-1/4")
				12	526-0314	2	Washer, Bevel
				13	850-0055	2	Washer, Lock - Spring (7/16")
				14	862-0004	2	Nut, Hex (7/16-14)
				15	122-0546	1	Bracket, Mounting - Lube Filter

OPTIONAL FILTER - FUEL/WATER



X FS-1355 -1

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
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FILTER ASSEMBLY - FUEL/WATER

(All Parts Common Except
as Marked)

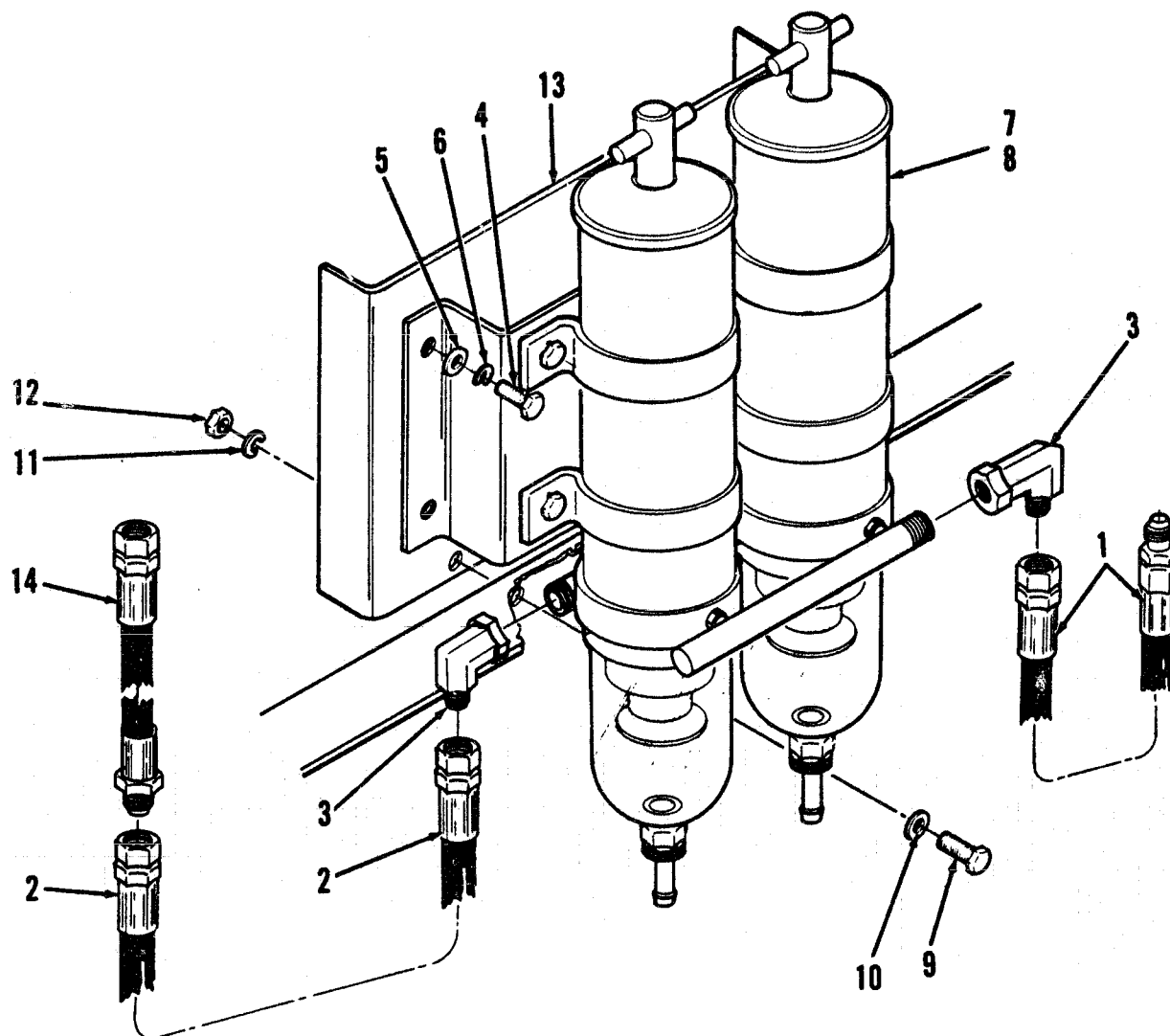
		1	Used on Spec A thru C
		1	Used Beginning Spec D (Includes Parts Marked *)
1	501-0292	1	Line, Fuel - Flexible (52" Lg, 3/4-16 NPT Male, Both Ends)
2	501-0291	1	Line, Fuel - Flexible (52" Lg, 3/4-16 NPT Male x 1 1/16-14) SAE 45 Deg Female Swivel)
3	502-0644	2	Elbow, Pipe - 90 Deg, Brass (7/8-14 NPT Male x 3/4-16 NPT Female Swivel)
4	800-0028	4	Screw, Cap - Hex Head (5/16-18 x 1")

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
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5	850-0045	4	Washer, Lock - Spring (5/16")
6	526-0022	4	Washer, Flat (21/64" ID x 9/16" OD x 1/16" Thk)
7	149-1625	1	Filter, Fuel/Water (Includes Element)
8	149-1689	1	Element, Fuel/Water Filter
9	800-0053	3	Screw, Cap - Hex Head (3/8-16 x 1-3/4")
10	800-0051	1	Screw, Cap - Hex Head (3/8-16 x 1-1/4")
11	526-0026	1	Washer, Flat (13/32" ID x 3/4" OD x 1/16" Thk)
12	850-0050	3	Washer, Lock - Spring (3/8")
13	526-0280	1	Washer, Bevel
14	862-0003	3	Nut, Hex (3/8-16)
15	149-1683	1	Bracket, Mounting - Fuel/Water Filter
16	501-0448	1	*Line, Fuel - Flexible (6" Lg, 1-1/16-14 SAE 45 Deg Male x 1-1/6 -12 JIC 37 Deg Female Swivel)

* - Parts Used Only on GenSets Beginning Spec D.

OPTIONAL DUAL FILTER - FUEL/WATER



X FS-1410

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
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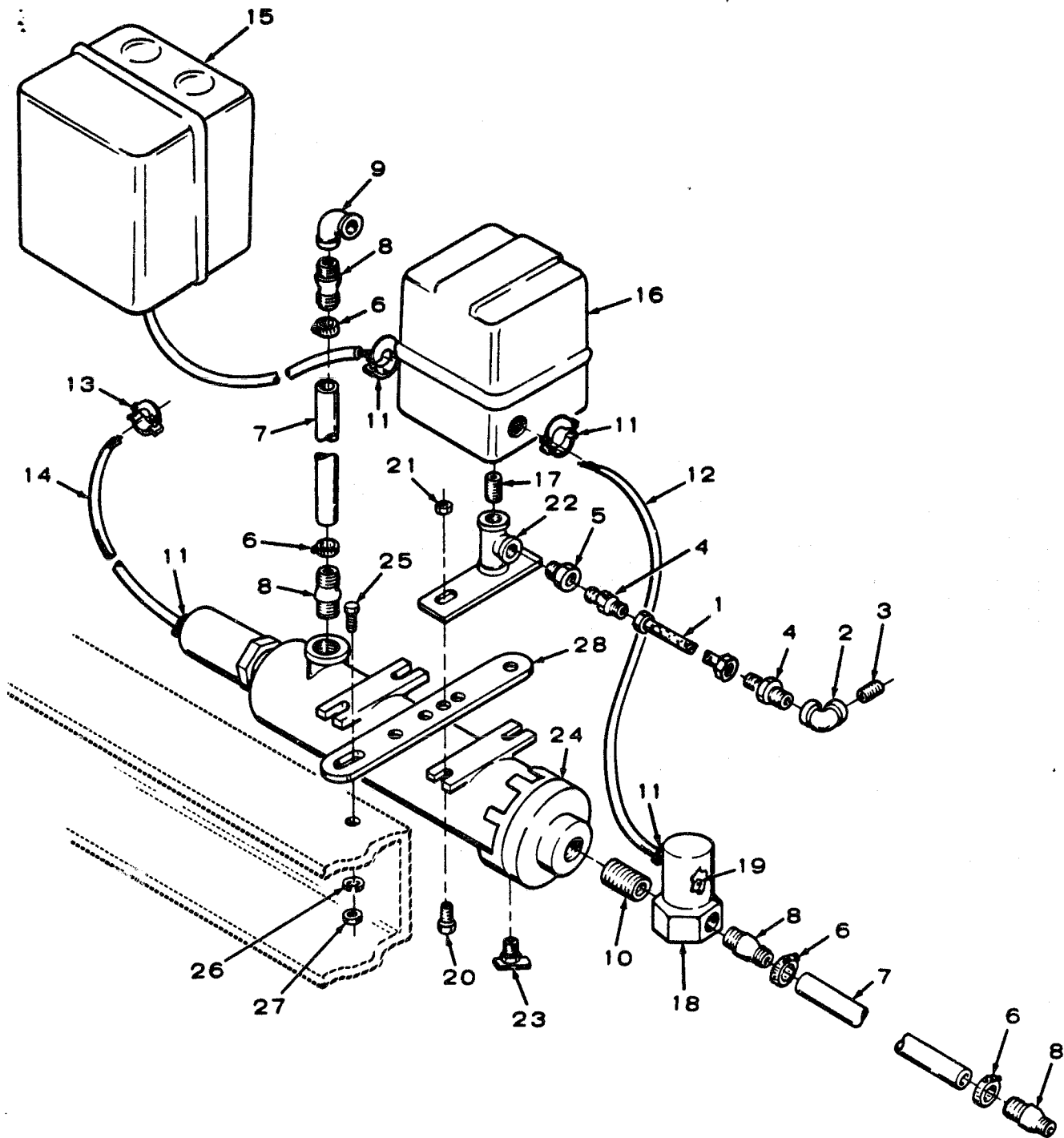
FILTER ASSEMBLY, DUAL - FUEL/WATER (All Parts Common Except as Marked)

		1	Used on Spec A thru C
		1	Used Beginning Spec D
1	501-0291	1	Line, Fuel - Flexible (52" Lg, 3/4-16 NPT Male x 1-1/16-14 SAE 45 Deg Female Swivel)
2	501-0290	1	Line, Fuel - Flexible (52" Lg 1-1/16-14 SAE 45 Deg Female Swivel x 1-1/16-12 JIC 37 Deg Female Swivel)
3	502-0643	2	Elbow, Pipe - 90 Deg, Brass (3/4-16 NPT Female x 1-1/16-14 45 Deg SAE Male)
4	800-0028	4	Screw, Cap - Hex Head (5/16-18 x 1")

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
5	526-0022	4	Washer, Flat (21/64" ID x 9/16" OD x 1/16" Thk)
6	850-0045	4	Washer, Lock - Spring (5/16")
7	149-1685	1	Filter, Fuel/Water (Includes Element)
8	149-1689	2	Element, Fuel/Water Filter
9	800-0051	4	Screw, Cap - Hex Head (3/8-16 x 1-1/4")
10	526-0026	4	Washer, Flat (13/32" ID x 3/4" OD x 1/16" Thk)
11	850-0050	4	Washer, Lock - Spring (3/8")
12	862-0003	4	Nut, Hex (3/8-16)
13	149-1686	1	Bracket, Mounting - Filter
14	501-0449	1	*Line, Fuel - Flexible (6" Lg, 1-1/16-14 SAE 45 Deg Female Swivel x 1-1/16-12 JIC 37 Deg Male)

* - Parts Used Only On GenSets Spec A Thru C.

OPTIONAL ENGINE COOLANT HEATER



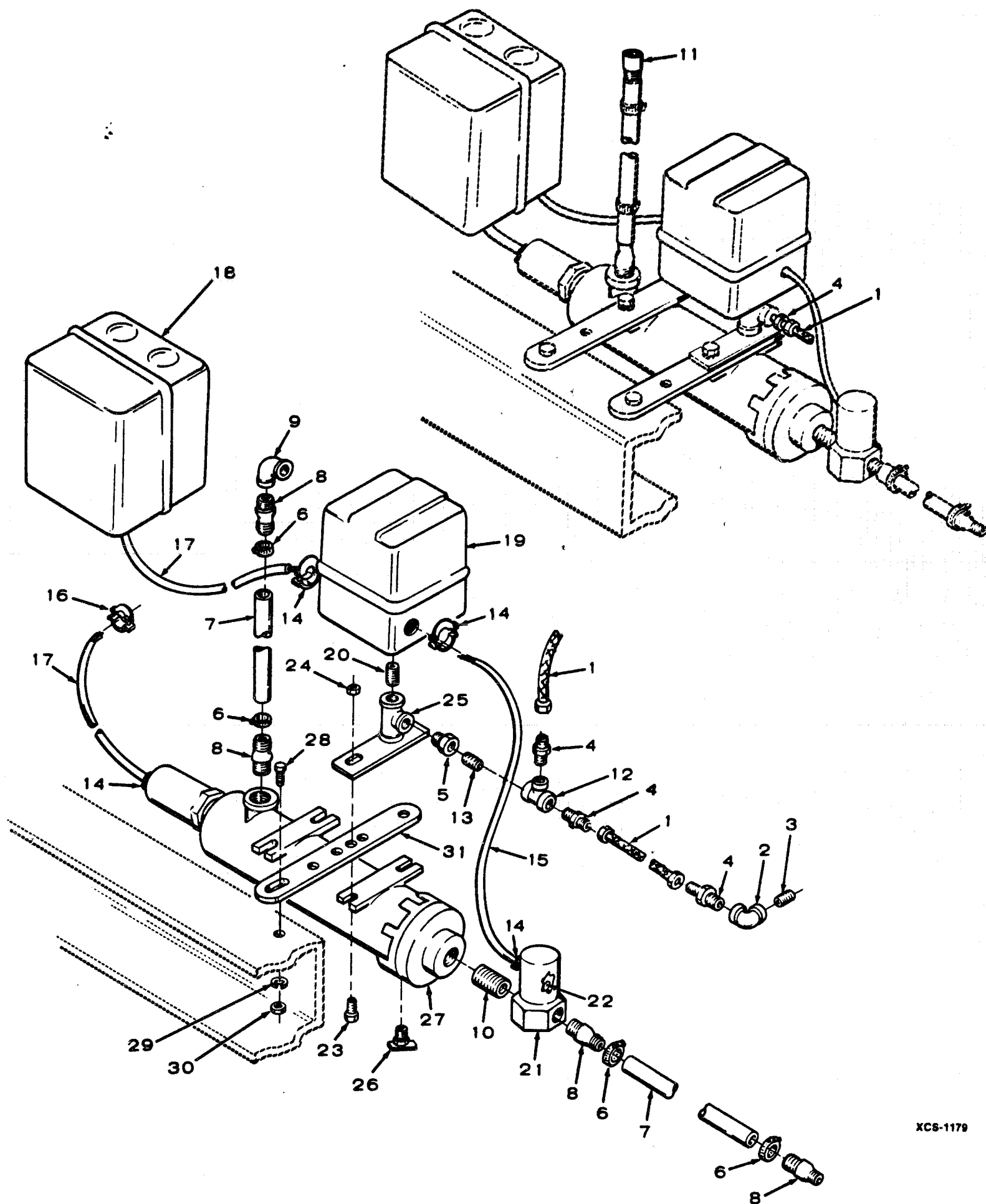
OPTIONAL ENGINE COOLANT HEATER

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
ENGINE COOLANT HEATER			
		1	208 Volt, 1 Phase
		1	208 Volt, 3 Phase
		1	240 Volt, 1 Phase
		1	240 Volt, 3 Phase
		1	277 Volt, 1 Phase
		1	380 Volt, 1 Phase
		1	380 Volt, 3 Phase
		1	440/480 Volt, 1 Phase
		1	440/480 Volt, 3 Phase
1	501-0199	1	Line, Fuel - Flexible
2	505-0037	1	Elbow, Pipe - 90 Deg (1/8" NPT)
3	505-0104	1	Nipple, Pipe - Close (1/8" NPT x 1-1/2")
4	502-0193	2	Connector, Line to Pipe
5	505-0007	1	Reducer, Bushing (1/4" NPT x 1/8" NPT)
6	503-0398	4	Clamp, Hose
7	HOSE, RUBBER - 1" ID x 1-3/8" OD (Select Length as Required)		
	503-0501	1	20"
	503-0282	1	10"
	503-0792	1	12-1/2"
	503-0796	1	40"
	503-0924	1	60"
8	505-0759	4	Adapter - Hose to Pipe
9	505-0003	1	Elbow, Pipe - Street, (1" NPT)
10	505-0004	1	Nipple, Pipe - Close (1" NPT x 1-1/2")
11	331-0027	2	Clamp, Cable (3/8" OD Cable)
12	#		Cord, Electrical (2-#14, Type SO, 600 Volt)
13	331-0027	4	Clamp, Cable (3/8" OD Cable) - Used with Contactor.
14	CABLE, ELECTRICAL (Type SO, 600 Volt)		
	#	4	3-#12 (Used on Single Phase Hookup)
	#	4	4-#14 (Used on Three Phase Hookup)

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
15	CONTACTOR, ELECTRICAL (Select as Applicable)		
	307-1460	1	230 VAC. 3 Pole
	307-1164	1	460 VAC. 3 Pole
16	309-0271	1	Switch, Pressure
17	505-0099	1	Nipple, Pipe - Close (1/4" NPT x 7/8")
18	309-0253	1	Switch, Thermostatic
19	TERMINALS		
	323-0957	2	Nut, Wire - Used on Ground Lead
	332-0014	4	Lug, Terminal - #10
	332-0149	4	Lug, Terminal - #8
20	800-0008	4	Screw, Cap - Hex Head (1/4-20 x 1-1/4")
21	870-0212	4	Nut, Self-locking - Hex (1/4-20)
22	333-0142	1	Support with Tee - Pressure Switch Mounting
23	504-0003	1	Cock, Drain (1/4" NPT)
24	HEATER, ELECTRICAL - ENGINE COOLANT (Select as Applicable to Match Voltage and Phase)		
	333-0143	1	4000 Watt, 208 VAC. 1 Phase
	333-0164	1	4000 Watt, 208 VAC. 3 Phase
	333-0138	1	4000 Watt, 240 VAC. 1 Phase
	333-0190	1	4000 Watt, 240 VAC. 3 Phase
	333-0150	1	4000 Watt, 277 VAC. 1 Phase
	333-0183	1	4000 Watt, 380 VAC. 1 Phase
	333-0174	1	4000 Watt, 380 VAC. 3 Phase
	333-0161	1	4000 Watt, 440/480 VAC. 1 Phase
	333-0144	1	4000 Watt, 440/480 VAC. 3 Phase
25	800-0030	4	Screw, Cap - Hex Head (5/16-18 x 1-1/4")
26	850-0045	4	Washer, Lock - Spring (5/16")
27	862-0015	4	Nut, Hex (5/16-18)
28	130-1191	2	Bracket, Mounting - Heater

- Electrical Cable and Cord Shown for Reference Purpose Only.

OPTIONAL DUAL ENGINE COOLANT HEATERS



XCS-1179

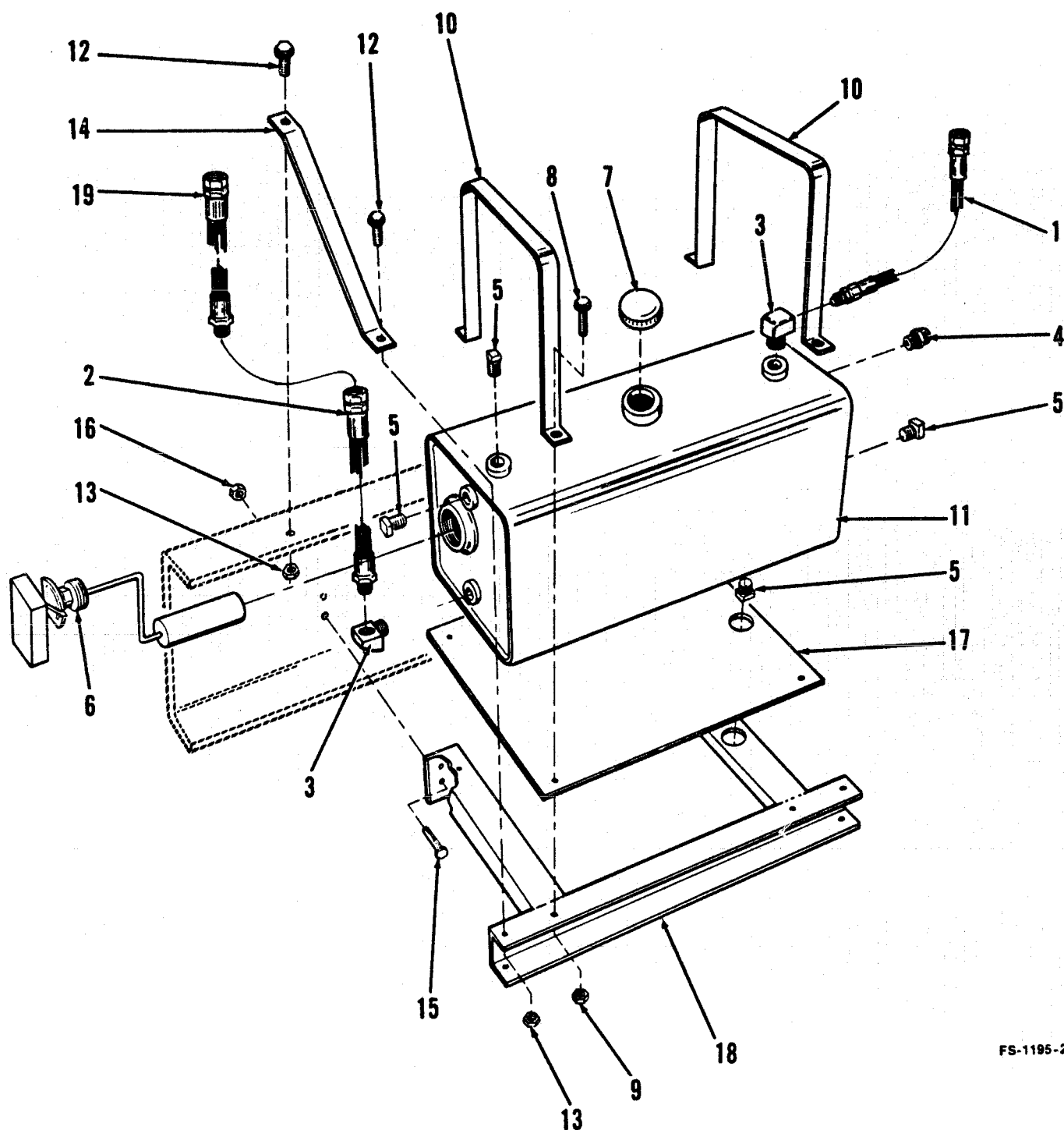
OPTIONAL DUAL ENGINE COOLANT HEATERS

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
ENGINE COOLANT HEATER - DUAL			
		1	208 Volt, 1 Phase
		1	208 Volt, 3 Phase
		1	240 Volt, 1 Phase
		1	240 Volt, 3 Phase
		1	277 Volt, 1 Phase
		1	380 Volt, 1 Phase
		1	380 Volt, 3 Phase
		1	440/480 Volt, 1 Phase
		1	440/480 Volt, 3 Phase
1	501-0199	2	Line, Fuel - Flexible
2	505-0037	1	Elbow, Pipe - 90 Deg (1/8" NPT)
3	505-0104	1	Nipple, Pipe - Close (1/8" NPT x 1-1/2")
4	502-0193	4	Connector, Line to Pipe
5	505-0007	1	Reducer, Bushing (1/4" NPT x 1/8" NPT)
6	503-0398	8	Clamp, Hose
7	HOSE, RUBBER - 1" ID x 1-3/8" OD (Select Length as Required)		
	503-0501	1	20"
	503-0282	1	10"
	503-0792	1	12-1/2"
	503-0796	1	40"
	503-0924	1	60"
8	505-0759	7	Adapter - Hose to Pipe
9	505-0003	1	Elbow, Pipe - Street, (1" NPT)
10	505-0004	1	Nipple, Pipe - Close (1" NPT x 1-1/2")
11	505-0324	1	Nipple, Pipe - Half (3/4" NPT x 2")
12	505-0059	1	Tee, Pipe (1/8" NPT)
13	505-0098	1	Nipple, Pipe - Close (1/8" NPT x 3/4")
14	331-0027	4	Clamp, Cable (3/8" OD Cable)
15	#		Cord, Electrical (2 - #14, Type SO, 600 Volt)
16	331-0027	4	Clamp, Cable (3/8" OD Cable) - Used with Contactor

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
17	CABLE, ELECTRICAL (Type SO, 600 Volt)		
	#		3-#12 (Used on Single Phase Hookup)
	#		4-#14 (Used on Three Phase Hookup)
18	CONTACTOR, ELECTRICAL (Select as Applicable)		
	307-1460	2	230 VAC, 3 Pole
	307-1164	2	460 VAC, 3 Pole
19	309-0271	2	Switch, Pressure
20	505-0099	2	Nipple, Pipe - Close (1/4" NPT x 7/8")
21	309-0253	2	Switch, Thermostat
22	TERMINALS		
	323-0957	2	Nut, Wire - Used on Ground Lead
	332-0014	4	Lug, Terminal - #10
	332-0149	4	Lug, Terminal - #8
23	800-0008	4	Screw, Cap - Hex Head (1/4-20 x 1-1/4")
24	870-0212	4	Nut, Self-locking - Hex (1/4-20)
25	333-0142	2	Support with Tee - Pressure Switch Mounting
26	504-0003	2	Cock, Drain (1/4" NPT)
27	HEATER, ELECTRICAL - ENGINE COOLANT (Select as Applicable to Match Voltage and Phase)		
	333-0143	2	4000 Watt, 208 VAC, 1 Phase
	333-0164	2	4000 Watt, 208 VAC, 3 Phase
	333-0138	2	4000 Watt, 240 VAC, 1 Phase
	333-0190	2	4000 Watt, 240 VAC, 3 Phase
	333-0150	2	4000 Watt, 277 VAC, 1 Phase
	333-0183	2	4000 Watt, 380 VAC, 1 Phase
	333-0174	2	4000 Watt, 380 VAC, 3 Phase
	333-0161	2	4000 Watt, 440/480 VAC, 1 Phase
	333-0144	2	4000 Watt, 440/480 VAC, 3 Phase
28	800-0030	8	Screw, Cap - Hex Head (5/16-18 x 1-1/4")
29	850-0045	8	Washer, Lock - Spring (5/16")
30	862-0015	8	Nut, Hex (5/16-18)
31	130-1191	4	Bracket, Mounting - Heater

- Electrical Cable and Cord Shown for Reference Purpose Only.

OPTIONAL FUEL TANK RESERVOIR



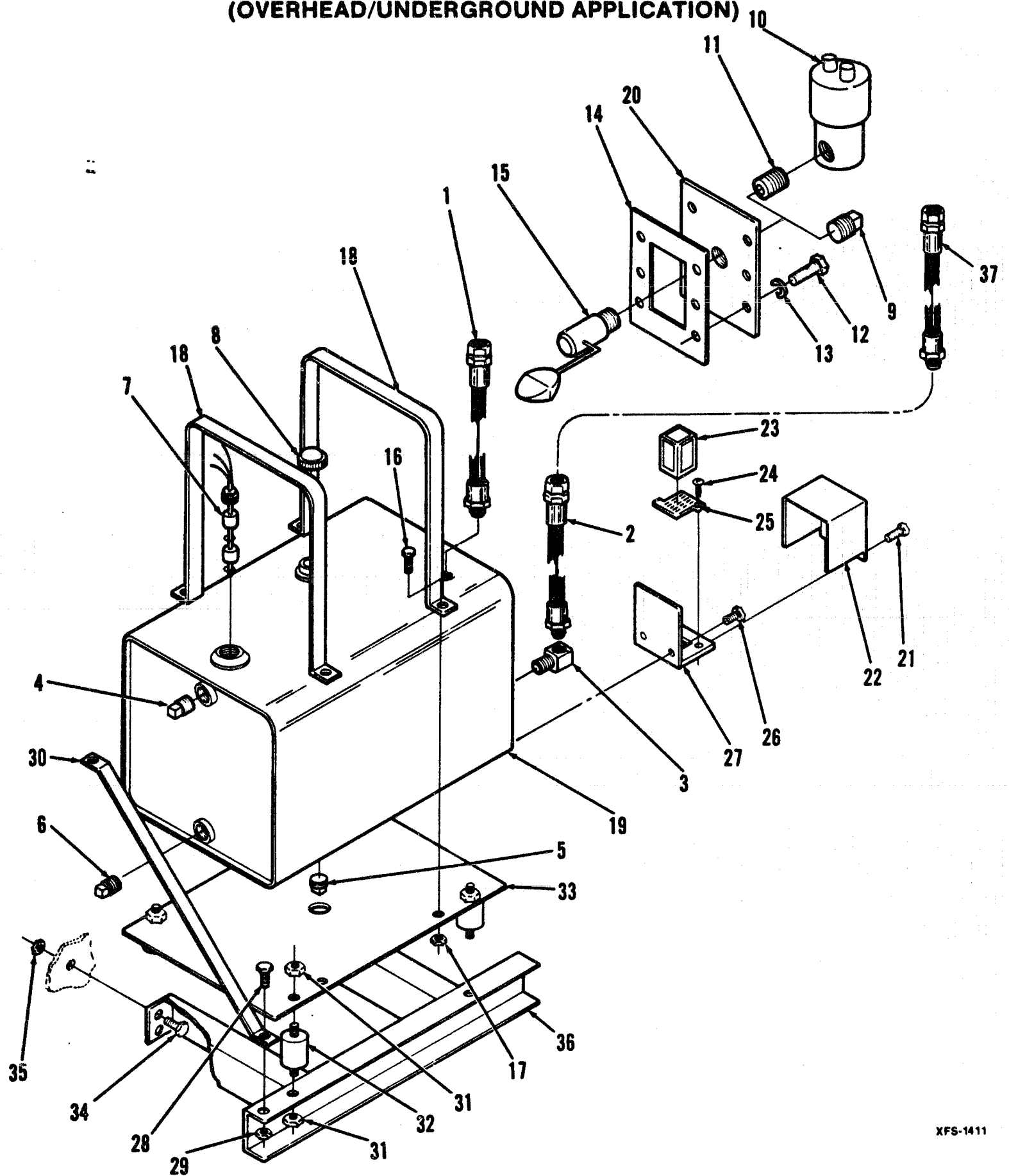
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OPTIONAL FUEL TANK RESERVOIR

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
		1	Used on Spec A Thru C and Beginning Spec D Sets With Optional Fuel/Water Filters
		1	Used on Sets Beginning Spec D, Without Optional Fuel/Water Filters (Include Parts Marked +)
1	501-0333	1	Line, Fuel - Flexible - Return, Engine to Tank (36" Lg, 1/2-14 NPT Male x 7/8-14 JIC 37 DEG Female Swivel)
2	501-0217	1	Line, Fuel - Flexible - In, Tank to Engine (52" Lg, 1/2-14 NPT Male x 1 1/16-14 SAE 45 DEG Female Swivel)
3	502-0133	2	Elbow, Pipe - Street, 90 DEG, Brass (1/2" NPT)
4	502-0448	1	Adapter, Pipe to Hose (1/2-14 NPT x 1 1/16-14 SAE 45 DEG Male)
5	PLUG, PIPE (Select as Required)		
	505-0056	3	1/2-14 NPT, Square Head
	505-0110	1	3/8-18 NPT, Square Head
6	415-0170	1	Switch, Fuel Level
7	159-0020	1	Cap, Tank
8	821-0023	4	Screw, Self-locking - Hex Washer Head (5/16-18 x 1-1/2")
9	870-0048	4	Nut, Self-locking - Hex Washer Head (5/16-18)
10	415-0110	2	Strap, Hold-down
11	415-0172	1	Tank, Fuel (25 GAL)
12	821-0013	4	Screw, Self-locking - Hex Washer Head (1/4-20 x 1")
13	870-0065	4	Nut, Self-locking - Hex Washer Head (1/4-20)
14	159-1059	2	Brace, Tank
15	800-0051	4	Screw, Cap - Hex Head (3/8-16 x 1-1/4")
16	870-0138	4	Nut, Self-locking - Hex Washer Head (3/8-16)
17	159-1058	1	Plate, Mounting - Fuel Tank
18	159-1057	1	Frame, Support - Fuel Tank
19	501-0448	1	+Line, Fuel - Flexible (6" Lg, 1 1/16-14 SAE 45 DEG Male, x 1 1/16-12 JIC 37 DEG Female Swivel)

+ - Part Used Only on GenSets Beginning Spec D Without
Optional Fuel/Water Filters.

OPTIONAL FUEL TANK RESERVOIR (OVERHEAD/UNDERGROUND APPLICATION)



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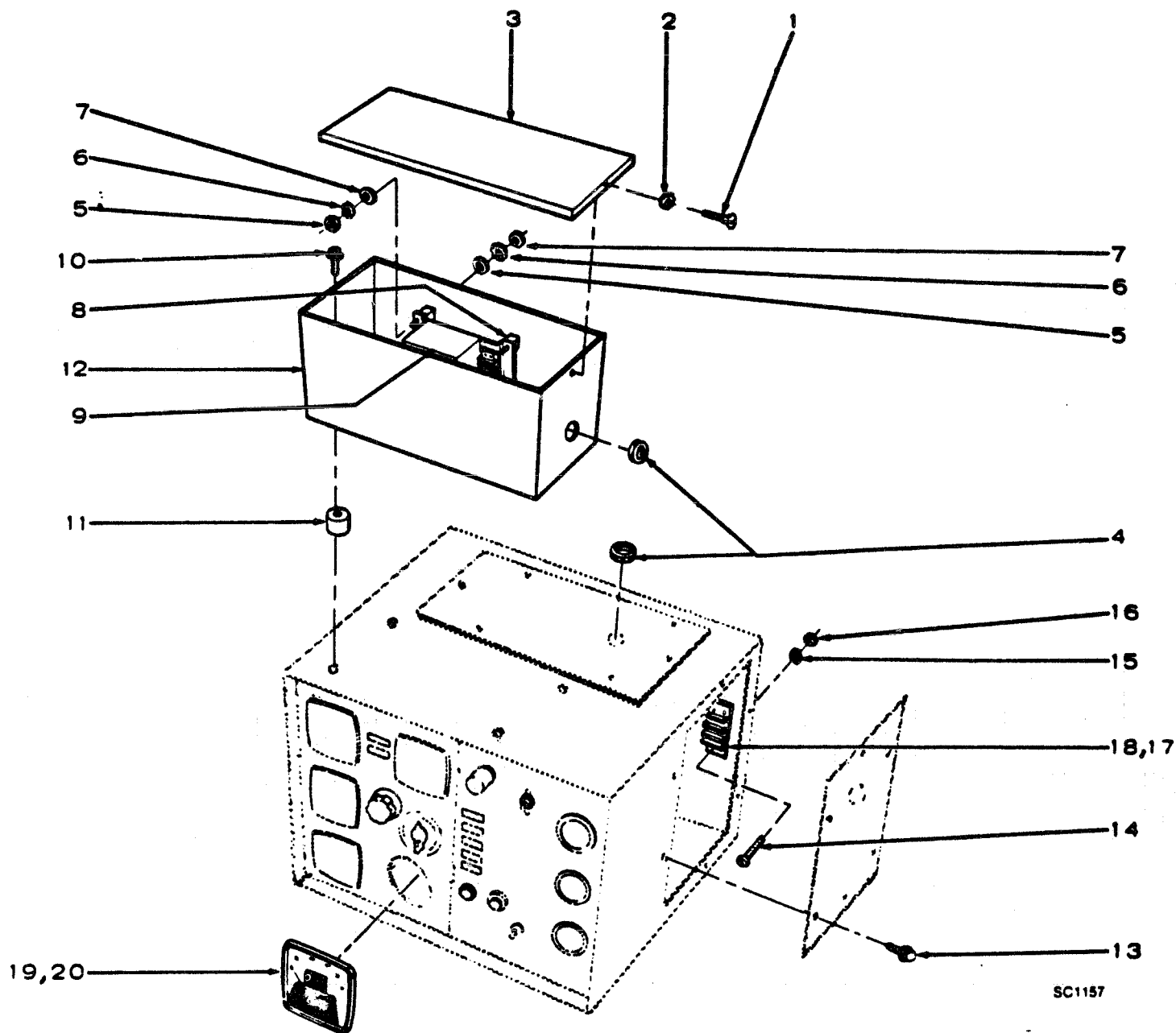
OPTIONAL FUEL TANK RESERVOIR (OVERHEAD/UNDERGROUND APPLICATION)

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
			FUEL TANK RESERVOIRS (All Parts Common Except as Marked)
			BEGIN SPEC D AND SPEC A THRU C WITH OPTIONAL FUEL/WATER FILTERS
		1	Underground Supply Tank Applications
		1	Overhead Supply Tank Applications
			SPEC A THRU C WITHOUT OPTIONAL FUEL/WATER FILTERS (Include Part Marked †)
		1	Underground Supply Tank Applications
		1	Overhead Supply Tank Applications
1	501-0333	1	Line, Fuel - Flexible - Return, Engine to Tank (36" Lg, 1/2-14 NPT Male x 7/8-14, JIC 37 DEG Female Swivel)
2	501-0334	1	Line, Fuel - Flexible - In, Tank to Engine (30" Lg, 1/2-14 NPT Male x 1 1/16-12 JIC 37 DEG Female Swivel)
3	502-0133	1	Elbow, Pipe - Street, 90 DEG, Brass (1/2" NPT)
4	505-0130	1	Plug, Pipe - Square Head (3/4" NPT)
5	505-0110	1	Plug, Pipe - Square Head (3/8" NPT)
6	505-0056	1	Plug, Pipe - Square Head (1/2" NPT)
7	415-0485	1	Switch, Float - Liquid Level
8	159-0020	1	Cap, Fuel Tank
9	505-0056	1	†Plug, Pipe - Square Head (1/2" NPT)
10	307-1861	1	£Solenoid - 24 VDC (1/2" NPT)
11	505-0100	1	£Nipple, Pipe - Close (1/2" NPT x 1-1/8" Lg)
12	800-0002	8	Screw, Cap - Hex Head (1/4-20 x 3/8")
13	526-0063	8	Washer, Flat - Copper (17/64" ID x 7/16" OD x 1/32" Thk)

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
14	415-0486	1	Gasket - Access Plate
15	309-0407	1	£Valve, Float
16	821-0023	4	Screw, Self-locking - Hex Washer Head (5/16-18 x 1-1/2")
17	870-0048	4	Nut, Self-locking - Hex Washer Head (5/16-18)
18	415-0110	2	Strap, Retaining - Fuel Tank
19	415-0482	1	Tank, Fuel - 25 GAL (Includes Access Cover Plate)
20	415-0513	1	Plate, Cover - Access
21	821-0004	2	Screw, Self-locking - Hex Washer Head (#10-32 x 5/16")
22	415-0464	1	Cover, Access - Relay
23	307-1056	1	Relay - 24 VDC
24	812-0079	2	Screw, Machine - Round Head (#8-32 x 1/2")
25	323-0804	1	Socket, Relay
26	821-0008	2	Screw, Self-locking - Hex Washer Head (1/4-20 x 5/16")
27	415-0463	1	Box, Control - Relay
28	821-0013	4	Screw, Self-locking - Hex Washer Head (1/4-20 x 1")
29	870-0065	4	Nut, Self-locking - Hex Washer Head (1/4-20)
30	159-1059	2	Brace, Support - Fuel Tank
31	870-0048	8	Nut, Self-locking - Hex Washer Head (5/16-18)
32	402-0485	4	Mount, Vibration
33	415-0483	1	Plate, Mounting - Fuel Tank
34	800-0051	4	Screw, Cap - Hex Head (3/8-16 x 1-1/4")
35	870-0138	4	Nut, Self-locking - Hex Washer Head (3/8-16)
36	159-1057	1	Frame, Support - Fuel Tank
37	501-0449	1	+Line, Fuel - Flexible (6" Lg, 1 1/16-12 JIC 37 DEG Male x 1 1/16-14 SAE 45 DEG Female Swivel)

† - Parts Used Only in Underground Supply Tank Applications.
£ - Parts Used Only in Overhead Supply Tank Applications.
+ - Part Used Only on Spec A Thru C Sets Without Optional Fuel/Water Filters.

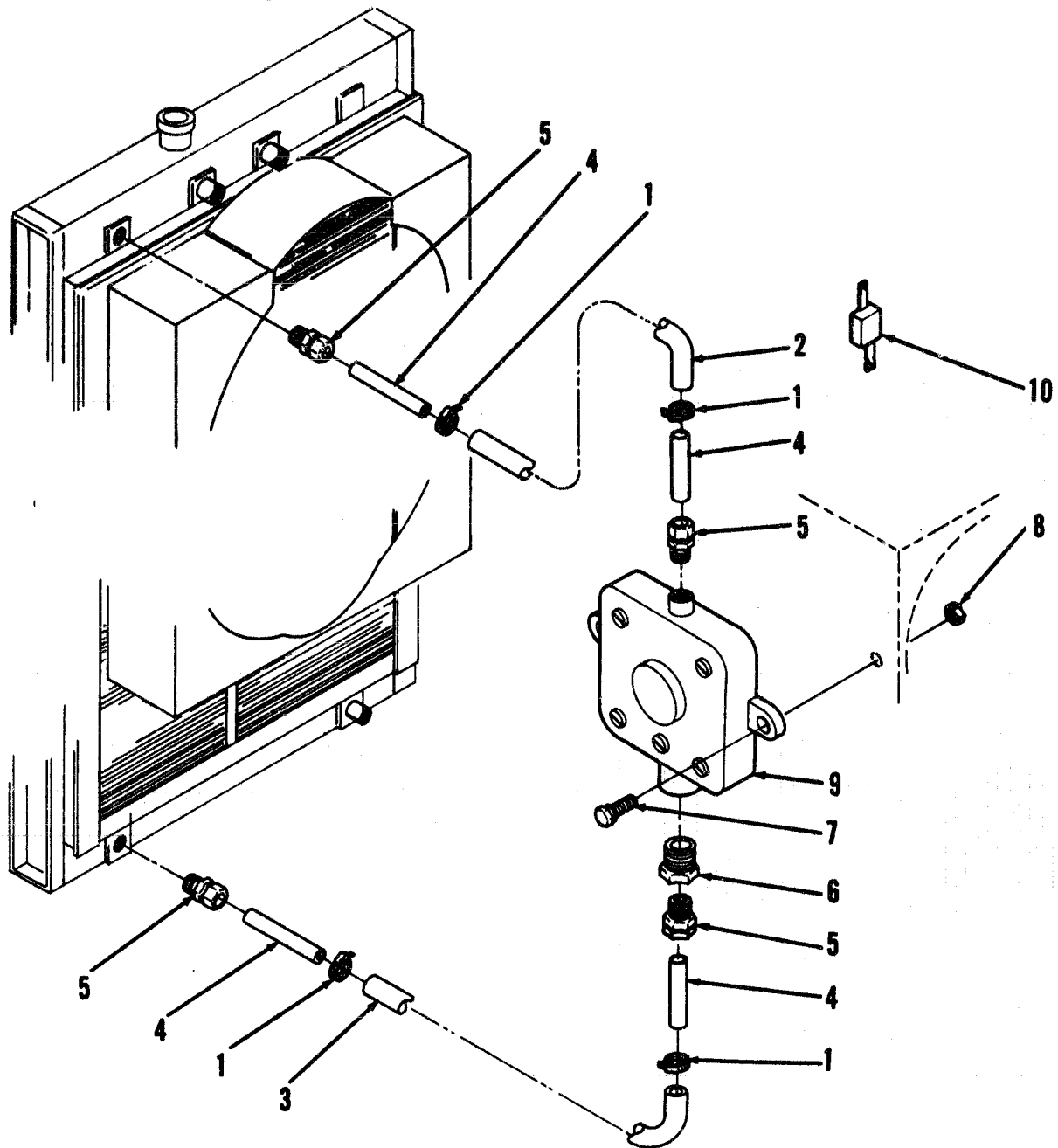
OPTIONAL WATTMETER



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

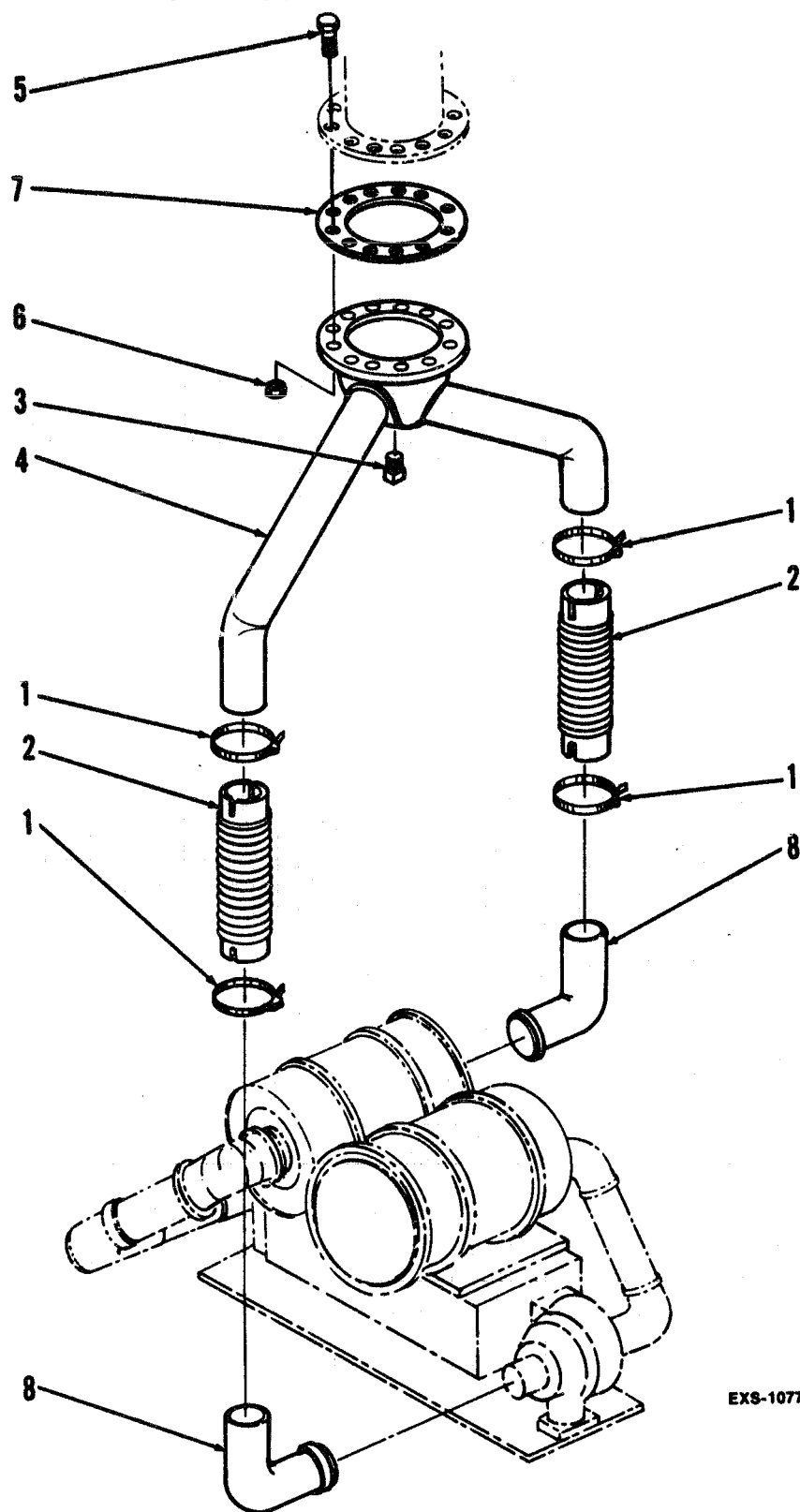
OPTIONAL LOW COOLANT LEVEL SWITCH



CS-1186

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	503-0685	4	Clamp, Hose
2	503-0757	1	Hose, Vinyl (1/4" OD x 24" Lg)
3	503-1119	1	Hose, Vinyl (1/4" ID x 60" Lg)
4	130-2053	4	Tube (1/4" OD x 2" Lg)
5	502-0801	4	Connector, Tube - Brass (1/4" NPT x 1/4" Tube)
6	502-0802	1	Bushing, Reducer - Brass (1/2" NPT x 1/4" NPT)
7	821-0011	2	Screw, Self-Locking - Hex Washer Head (1/4-20 x 7/8")
8	870-0212	2	Nut, Self-locking - Hex Washer Head (1/4-20)
9	193-0329	1	Switch - Coolant Level
10	357-0030	2	Diode, Rectifier

OPTIONAL EXHAUST HEADER ASSEMBLY



EXS-1077

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	503-0605	4	Clamp, Hose
2	155-1456	2	Tube, Exhaust - Flexible
3	505-0110	1	Plug, Pipe - Square Head (3/8" NPT)
4	155-1457	1	Header, Exhaust
5	800-0178	12	Screw, Cap - Hex Head (7/8-9 x 3-1/2")
6	862-0009	12	Nut, Hex (7/8-9)
7	155-1030	1	Gasket - Asbestos
8	155-1394	2	Elbow, Exhaust