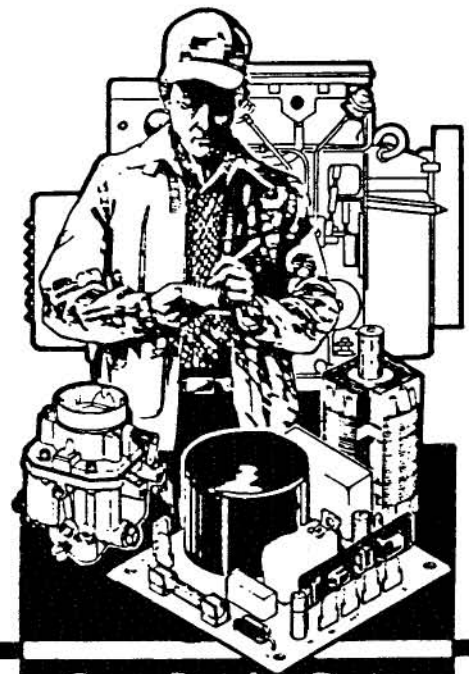

Onan

Parts Manual

DFZ GenSet



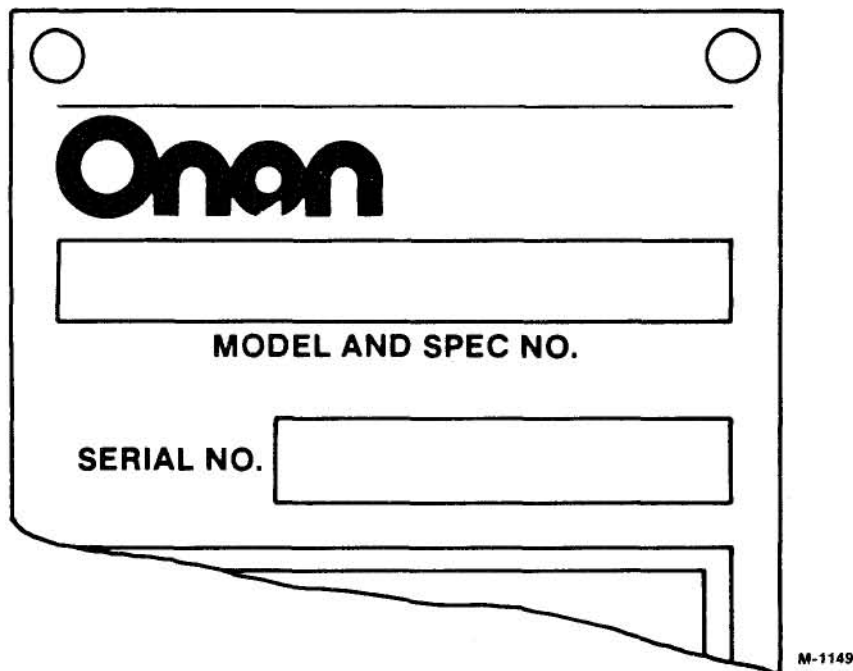
Onan Service Parts

960-0230
12-86 (Spec A-E)
Replaces 3-81 (Spec A-D)
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.



A rectangular nameplate template with two circular mounting holes at the top. The word "Onan" is printed in a large, bold, stylized font. Below it is a horizontal rectangular box labeled "MODEL AND SPEC NO.". Below that is another horizontal rectangular box labeled "SERIAL NO.". The bottom right corner of the template is torn, revealing a second identical template underneath. The text "M-1149" is printed at the bottom right of the template.

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

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Introduction

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

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

Set Data Table

MODEL IDENTIFICATION	RATING	RPM RATING	BATTERY VOLTAGE
625.0 DFZ - */ # @	625,000 WATTS	1500 RPM	24 VDC
650.0 DFZ - */ # @	650,000 WATTS	1500 RPM	24 VDC
750.0 DFZ - */ # @	750,000 WATTS	1800 RPM	24 VDC

Electrical Data Table

*VOLTAGE CODE	VOLTS	HERTZ	WIRE	PHASE	NOTES
4	120/208	60	4	3	
4X	277/480	60	4	3	
5D	120/240	60	4	3	
6D	240/480	60	4	3	
7	220/380	60	4	3	
7X	240/416	60	4	3	
8	127/220	60	4	3	
9X	347/600	60	4	3	
\$	139/240	60	4	3	\$
31	+	60	12	3	+
519	110/190,	50	4	3	
	115/200				
521	120/208,	50	4	3	
	127/220				
520	220/380,	50	4	3	
	230/400				
522	240/416,	50	4	3	
	254/440				
523	200/346	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.

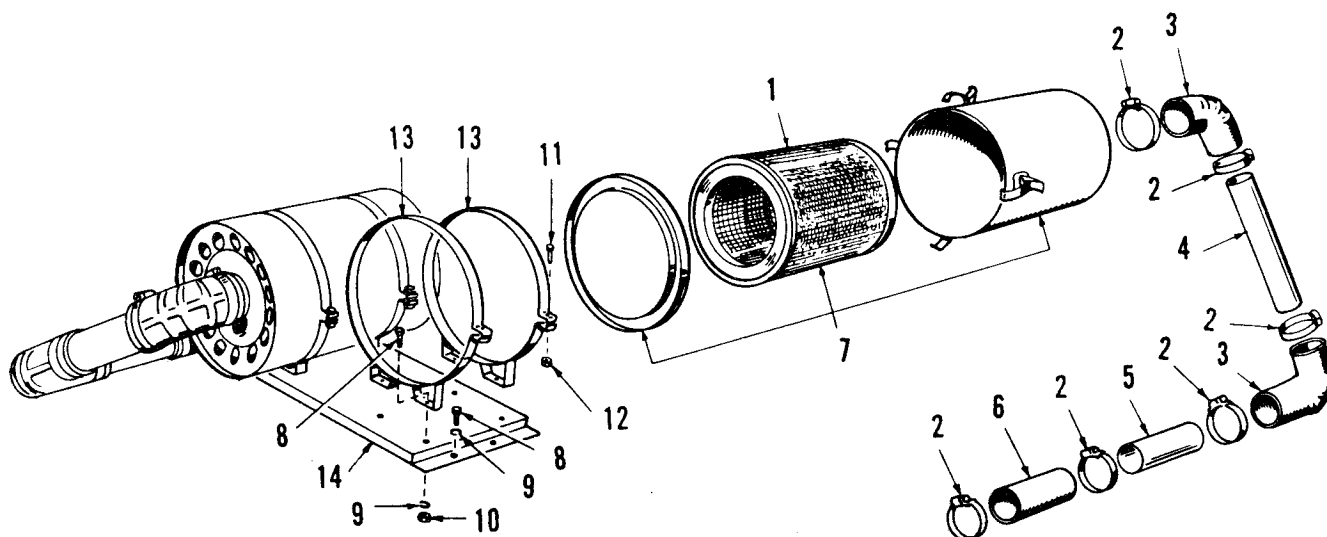
\$ - No Standard Voltage Code, number 99 is marked on the nameplate for reference information.

+ - The Stators are Reconnectible.

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 Engine Manufacturer's Nameplate and supply the Model, Specification, Serial Numbers and other available information. Refer to the Engine Manufacturer's Manuals for your nearest authorized Parts Distributor, or contact the Onan Distributor from whom you purchased this set, for assistance in ordering the replacement parts.

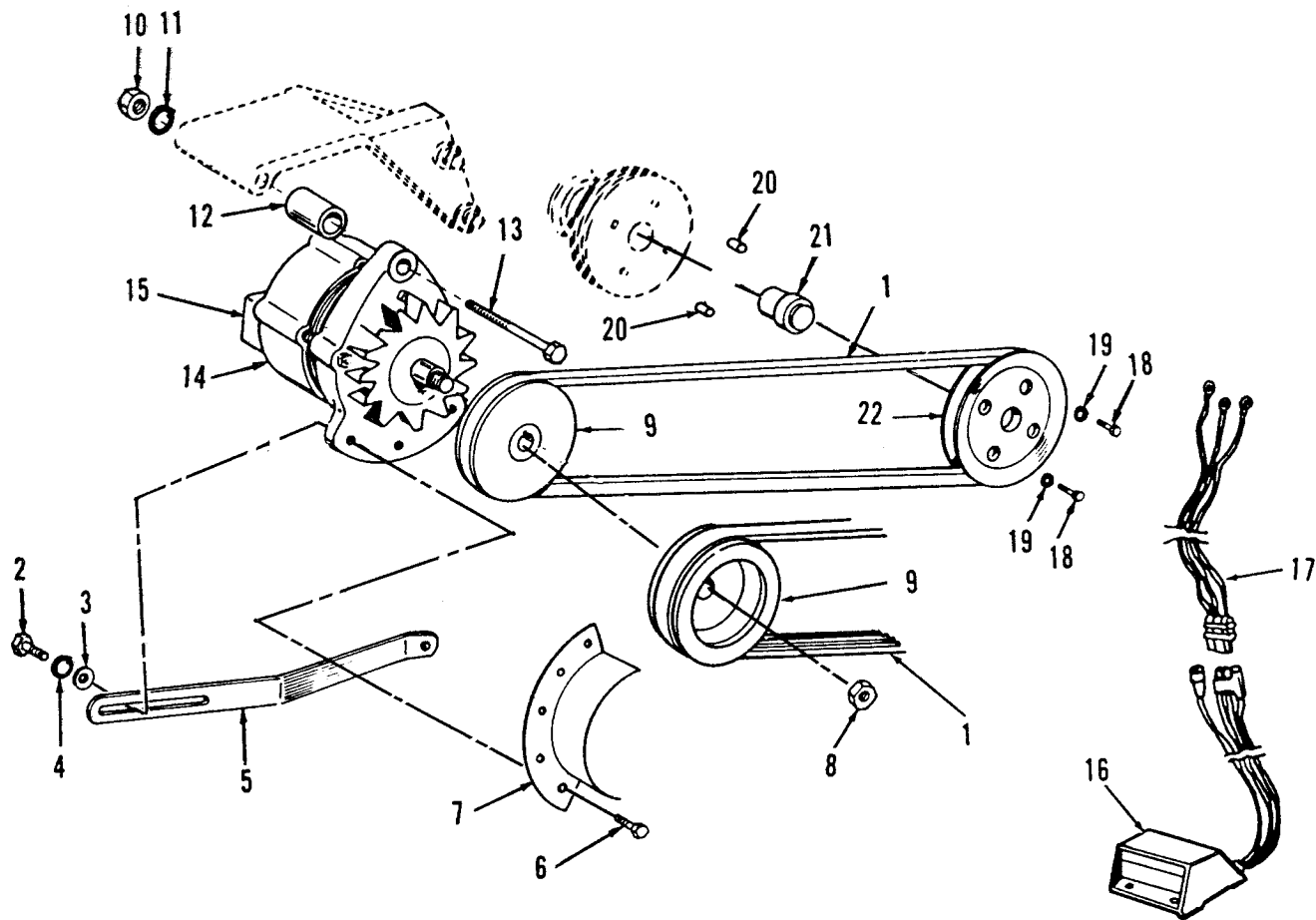
Air Cleaner



REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	140-1371	2	Element
2	503-0784	12	Clamp, Hose
3	140-1415	4	Elbow, Hose - 90 Degree
4	140-1397	2	Tube, Air
5	140-1436	2	Tube, Air
6	503-0806	2	Hose
7	140-1434	2	Air Cleaner (Includes Element)

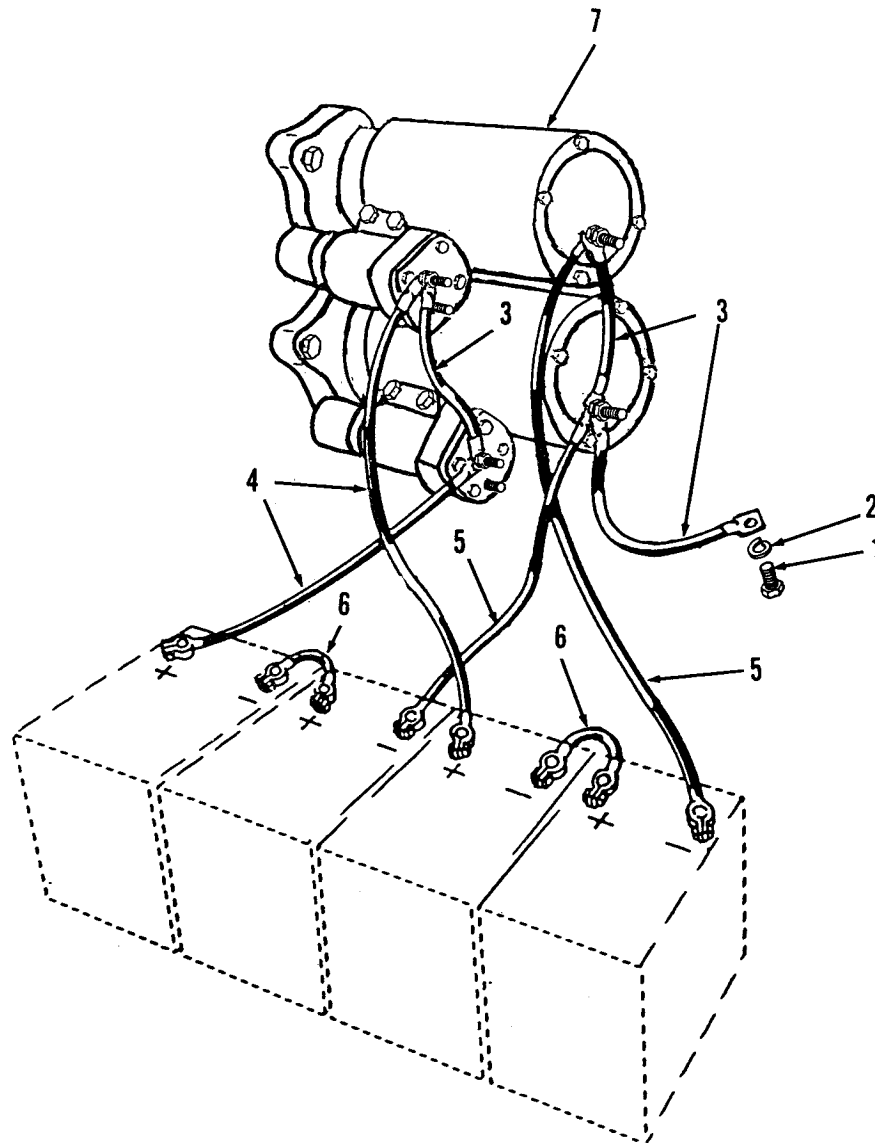
REF NO.	PART NO.	QTY USED	PART DESCRIPTION
8	800-0069	12	Screw, Cap - Hex Head (7/16-14 x 3/4")
9	850-0055	12	Washer, Lock - Spring (7/16")
10	862-0004	8	Nut, Hex (7/16-14)
11	800-0032	4	Screw, Cap - Hex Head (5/16-18 x 1-3/4")
12	870-0257	4	Nut, Self-locking - Hex (5/16-18)
13	140-1410	4	Band, Mounting
14	140-1398	1	Base, Mounting

Alternator



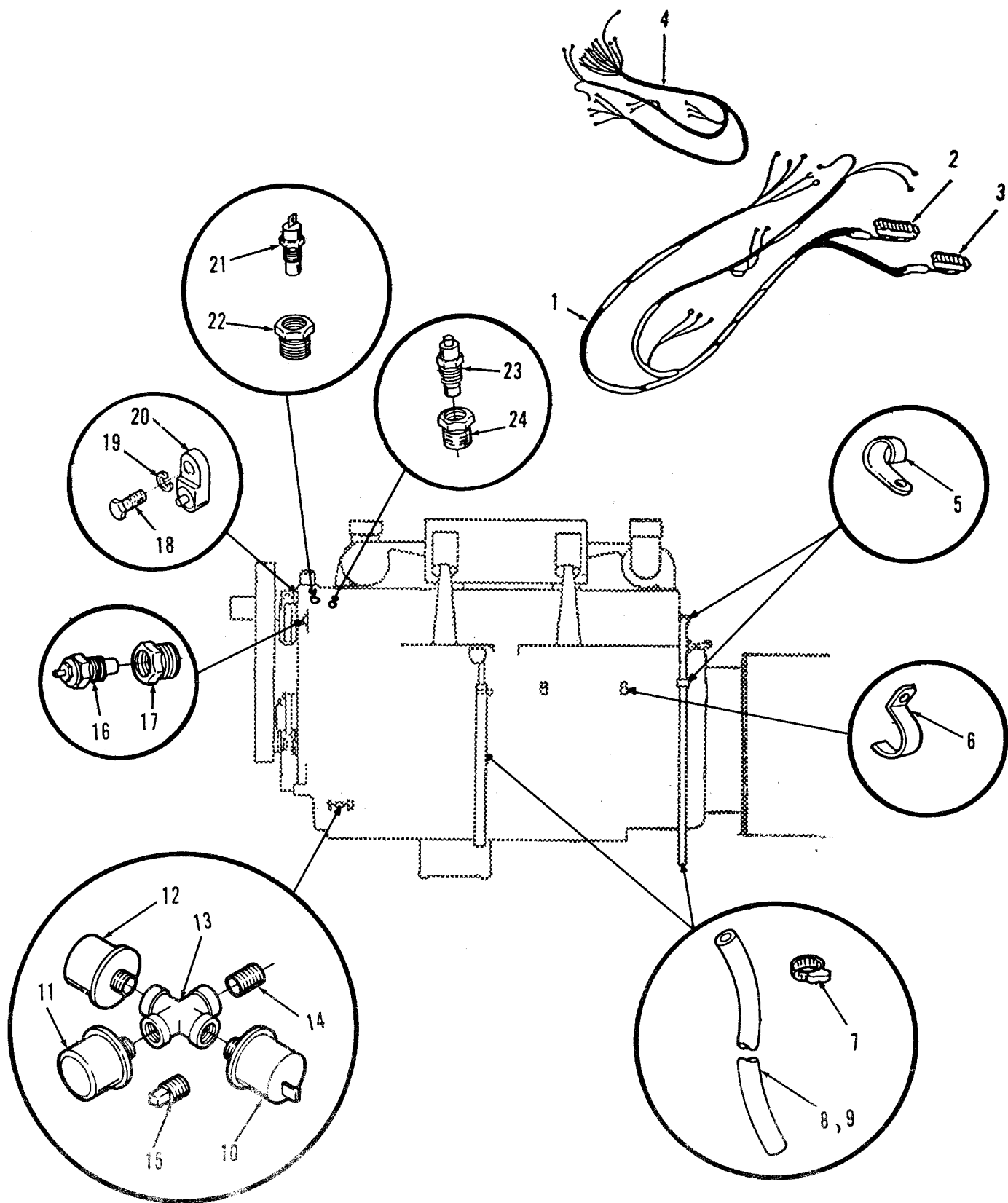
REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1			Belt, Drive	13			Screw, Cap - Hex Head
	511-0117	1	Multi Groove - Begin July 1981		800-0107	1	1/2-13 x 6" - Begin July 1981
	511-0104	1	Single Groove, 41" Lg - Used Thru June 1981		800-0110	1	1/2-13 x 7-1/2" - Used Thru June 1981
	511-0059	1	Single Groove, 44" Lg - Used Thru June 1981	14			Alternator
2	800-0028	1	Screw, Cap - hex Head (5/16-18 x 1")		191-0688	1	Standard (Includes Replaceable Regulator)
3	526-0022	1	Washer, Flat (5/16")		191-1258	1	Marine (Use Separate Regulator)
4	850-0045	1	Washer, Lock - Spring (5/16")	15	191-0733	1	Regulator, Voltage
5	191-1152	1	Arm, Adjusting	16	191-0548	1	Regulator, Voltage (Use with Marine Alternator)
6	821-0014	2	Screw, Selc-locking - Hex (5/16-18 x 1/2")	17	191-0681	1	Cable, Electrical (Use with Marine Alternator)
7	191-0725	1	Guard, Belt	18	800-0069	2	Screw, Cap - Hex Head (7/16-14 x 3/4")
8	868-0007	1	Nut, Hex (5/16-18)	19	850-0055	2	Washer, Lock - Spring (7/16")
9			Pulley	20	191-1165	2	Spacer (Used Thru June 1981)
	191-1391	1	Multi Groove - Begin July 1981	21	191-1164	2	Adapter, Pulley (Used Thru June 1981)
	191-0781	1	Single Groove - Used Thru June 1981	22	512-0075	1	Pulley, Drive (Used Thru June 1981)
10	862-0016	1	Nut, Hex (1/2-13)				
11	850-0060	1	Washer, Lock - Spring (1/2")				
12			Spacer/Washer				
	526-0219	3	Washer, Flat - Begin July 1981				
	191-1227	1	Spacer - Used Thru June 1981				

Starter



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	800-0090	1	Screw, Cap - Hex Head (1/2-13 x 1")	4	416-0444	2	Cable, Battery - Positive
2	850-0060	1	Washer, Lock - Spring (1/2")	5	416-0444	2	Cable, Battery - Positive
3	416-0680	3	Cable, Electrical	6	416-0473	2	Cable, Jumper
				7	191-1588	2	Starter

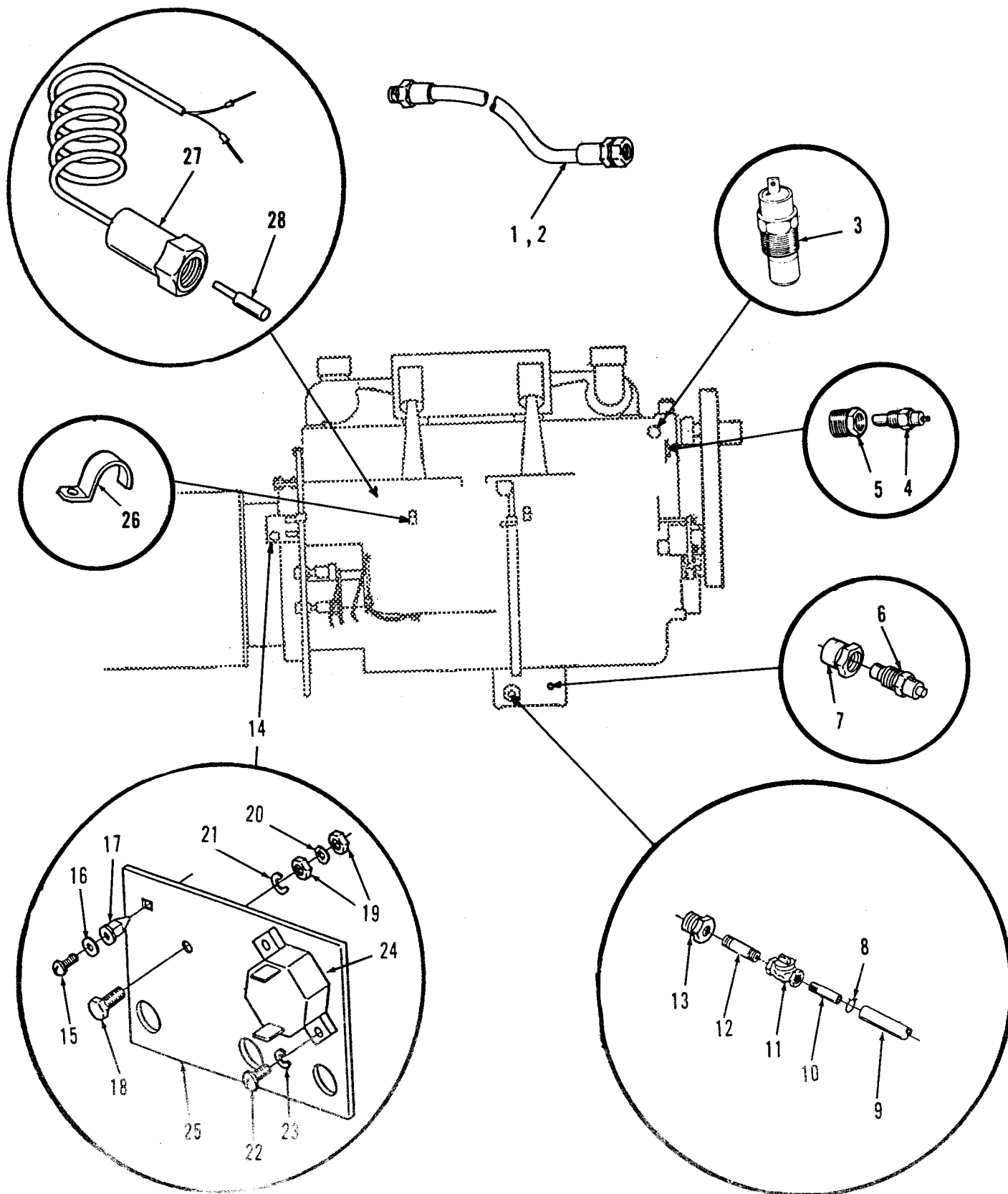
Miscellaneous Engine Parts Right Side



Miscellaneous Engine Parts Right Side

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	338-2068	1	Harness, Wiring - Begin Spec E (Includes Connectors)	13	505-0763	1	Cross, Pipe
2	323-1304	1	Housing, Connector - 6 Place	14	505-0098	1	Nipple, Pipe - Close
	323-1200	6	Contact, Pin	15			Plug, Pipe
3	323-1306	1	Housing, Connector - 8 Place		502-0028	1	Brass, Hex Head
	323-1200	8	Contact, Pin		505-0057	1	Steel, Square Head
4	338-1103	1	Harness, Wiring - Spec A Thru D	16	309-0179	1	Switch, Thermostatic - Coolant Temperature - Shutdown (S6)
5	148-0274	4	Clamp, Loop	17	505-0131	1	Bushing, Reducer - Hex
6	331-0152	2	Clamp, Half Loop	18	800-0028	1	Screw, Cap - Hex Head (5/16-18 x 1")
7	503-0398	2	Clamp, Hose	19	850-0045	1	Washer, Lock - Spring (5/16")
8	503-0877	2	Hose - Water	20	309-0269	1	Switch, Thermostatic - Low Engine Temperature (S4)
9	503-0859	2	Hose - Breather	21	193-0247	1	Sender, Temperature - Engine Coolant (E2)
10			Sender, Pressure - Oil (E1)	22	505-0131	1	Bushing, Reducer - Hex
	193-0108	1	Spec A Only	23	309-0178	1	Switch, Thermostatic - Coolant Temperature - Alarm (S2)
	193-0244	1	Begin Spec B	24	505-0131	1	Bushing, Reducer - Hex
11	309-0272	1	Switch, Pressure - Oil - Alarm (S5)				
12	309-0169	1	Switch, Pressure - Oil - Shutdown (S1)				

Miscellaneous Engine Parts Left Side



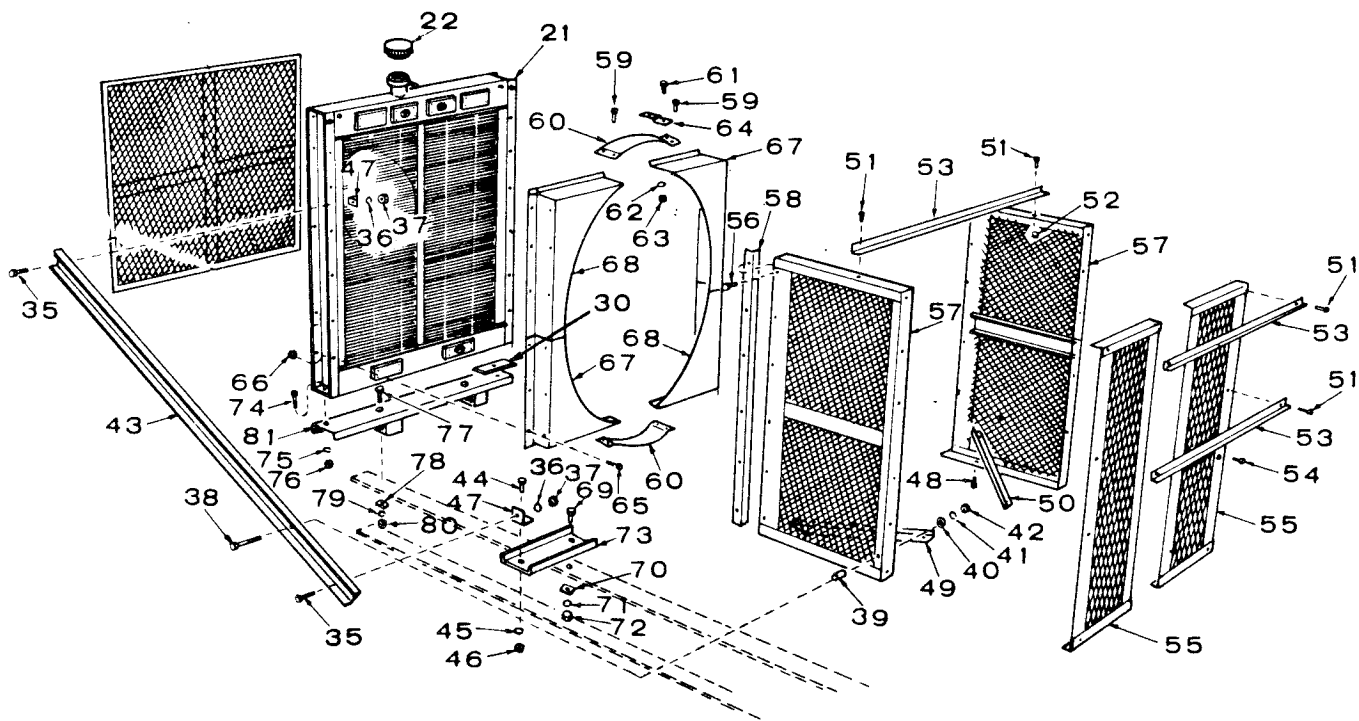
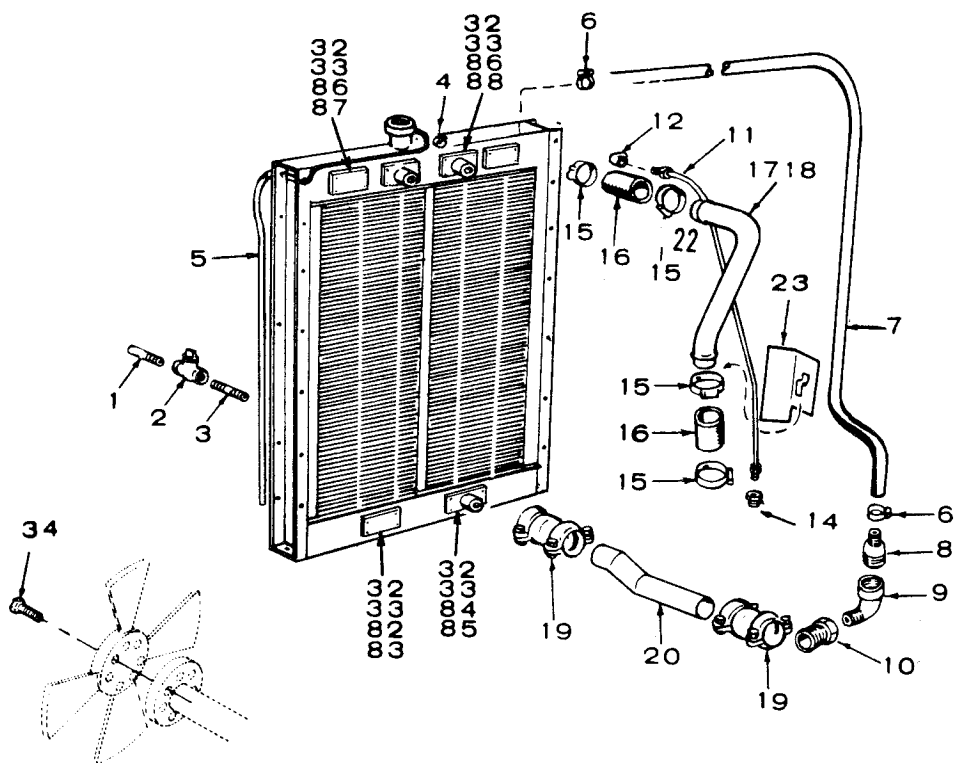
Miscellaneous Engine Parts Left Side

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	501-0217	1	Line, Fuel - Incoming	15	809-0035	1	*Screw, Tapping - Round Head (#8 x 3/4")
	501-0350	1	Spec A Thru C	16	508-0015	1	*Washer, Insulating
2			Begin Spec D	17	870-0196	1	*Nut, Insulated
	501-0216	1	Line, Fuel - Return	18	800-0005	1	*Screw, Cap - Hex Head (1/4-20 x 3/4")
	501-0349	1	Spec A Thru C	19	862-0001	2	*Nut, Hex (1/4-20)
3	309-0178	1	Begin Spec D	20	856-0006	1	*Washer, Lock - EIT (1/4")
			Switch, Thermostatic - Coolant	21	850-0040	1	*Washer, Lock - Spring (1/4")
4	309-0179	1	Temperature - Alarm (S2)	22	813-0103	2	*Screw, Machine - Round Head (#10-32 x 3/4")
			Switch, Thermostatic - Coolant	23	850-0030	2	*Washer, Lock - Spring (#10)
5	505-0131	1	Temperature - Shutdown (S6)	24	320-0240	1	*Breaker, Circuit
6	309-0392	1	Bushing, Reducer - Hex	25	332-1382	1	*Board, Terminal
7	505-0151	1	Sender, Temperature - Oil	26	331-0151	2	Clamp, Half Loop
8	503-0197	1	Bushing, Reducer - Hex	27	302-0750	1	Sender - Tachometer
9	503-0789	1	Clamp, Hose	28	302-0753	1	Tang, Drive - Tachometer
10	505-0185	1	Hose				
11	504-0011	1	Nipple, Pipe - Half				
12	505-0100	1	Valve, Shutoff				
13	505-0022	1	Nipple, Pipe				
14	332-1383	1	Bushing, Reducer - Hex				
			Terminal Assembly (Includes Parts Marked*)				
	800-0130	1	Screw, Cap - Hex Head (5/16-18 x 1")				
	856-0016	1	Washer, Lock - EIT (5/16")				

*- Parts included in Circuit Breaker Assembly.

Cooling System - Radiator

Begin Spec C

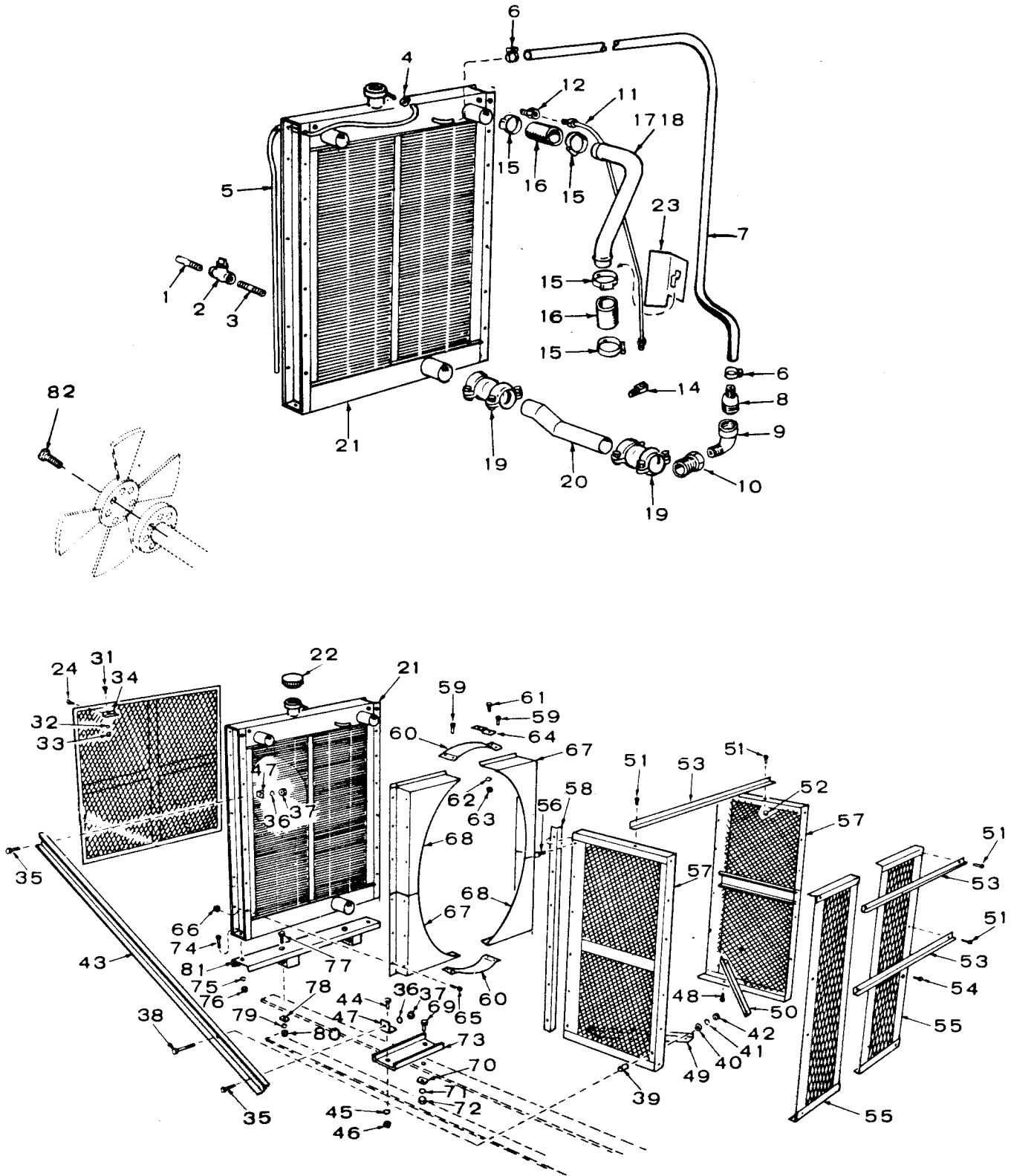


CS-1076

Cooling System - Radiator **Begin Spec C**

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	505-0185	1	Nipple, Pipe - Half	51	821-0011	10	Screw, Self-locking - Hex (1/4-20 x 7/8")
2	504-0011	1	Valve, Shutoff	52	870-0212	2	Nut, Self-locking - Hex (1/4-20)
3	505-0100	1	Nipple, Pipe - Close	53	370-1020	3	Bracket, Angle
4	503-0547	1	Clamp, Hose	54	821-0011	8	Screw, Self-locking - Hex (1/4-20 x 7/8")
5	503-0803	1	Hose	55	130-1104	2	Panel, Guard - Rear
6	503-0398	2	Clamp, Hose	56	821-0010	12	Screw, Self-locking - Hex (1/4-20 x 1/2")
7	503-0790	1	Hose	57	130-1101	2	Panel, Guard - Side
8	505-0759	1	Adapter, Hose	58	130-1098	2	Stiffener - Side Panel
9	505-0003	1	Elbow, Pipe - Street, 90 Degree	59	821-0009	12	Screw, Self-locking - Hex (1/4-20 x 3/8")
10	505-0023	1	Bushing, Reducer - Hex	60	130-1068	2	Bridge, Support - Shroud
11	501-0247	2	Line, Fuel	61	800-0027	4	Screw, Cap - Hex Head (5/16-18 x 7/8")
12	502-0041	2	Elbow, Pipe - Inverted Male	62	850-0045	4	Washer, Lock - Spring (5/16")
13	505-0151	2	Bushing, Reducer - Hex	63	862-0015	4	Nut, Hex (5/16-18)
15	503-0621	8	Clamp, Hose	64	130-1093	4	Bracket, Double Angle
16	503-0788	4	Hose	65	821-0016	10	Screw, Self-locking - Hex (5/16-18 x 3/4")
17	130-1301	1	Tube - Right Side	66	870-0257	10	Nut, Self-locking - Hex (5/16-18)
18	130-1302	1	Tube - Left Side	67	130-1069	2	Shroud, Fan
19	130-0966	2	Coupling, Pipe - Flexible	68	130-1070	2	Shroud, Fan
20	130-1303	1	Tube - Lower	69	800-0158	4	Screw, Cap - Hex Head (3/4-10 x 2-3/4")
21	130-1197	1	Radiator (Includes Cap and Front Guard)	70	403-1141	4	Washer, Bevel - Square
22	130-2981	1	Cap, Radiator	71	850-0079	4	Washer, Lock - Spring (3/4")
23	130-1073	1	Shield, Heat	72	862-0020	4	Nut, Hex (3/4-10)
30	130-1311	8	Shim	73	130-1037	2	Channel
32	800-0050	24	Screw, Cap - Hex Head (3/8-16 x 1")	74	800-0156	2	Screw, Cap - Hex Head (3/4-10 x 2-1/4")
33	850-0050	24	Washer, Lock - Spring (3/8")	75	850-0079	2	Washer, Lock - Spring (3/4")
34	800-0105	6	Screw, Cap - Hex Head (1/2-13 x 5")	76	862-0020	2	Nut, Hex (3/4-10)
35	800-0092	4	Screw, Cap - Hex Head (1/2-13 x 1-1/2")	77	800-0158	2	Screw, Cap - Hex Head (3/4-10 x 2-3/4")
36	850-0060	4	Washer, Lock - Spring (1/2")	78	403-1141	2	Washer, Bevel - Square
37	862-0016	4	Nut, Hex (1/2-13)	79	850-0079	2	Washer, Lock - Spring (3/4")
38	800-0014	2	Screw, Cap - Hex Head (1/4-20 x 2-3/4")	80	862-0020	2	Nut, Hex (3/4-10)
39	130-1107	2	Spacer	81	130-1036	1	Support, Radiator
40	526-0018	2	Washer, Flat (1/4")	82	130-1329	1	Gasket
41	850-0040	2	Washer, Lock - Spring (1/4")	83	130-1312	1	Cover Plate - Outlet
42	862-0001	2	Nut, Hex (1/4-20)	84	130-1229	1	Gasket
43	130-1045	2	Brace	85	130-1285	1	Adapter Tube - Outlet
44	800-0092	4	Screw, Cap - Hex Head (1/2-13 x 1-1/2")	86	130-1227	4	Gasket
45	850-0060	4	Washer, Lock - Spring (1/2")	87	130-1223	2	Cover Plate - Inlet
46	862-0016	4	Nut, Hex (1/2-13)	88	130-1203	2	Adapter Tube - Inlet
47	130-0944	2	Bracket, Angle				
48	821-0009	8	Screw, Self-locking - Hex (1/4-20 x 3/8")				
49	130-1105	2	Gusset - Right Side				
50	130-1108	2	Gusset - Left Side				

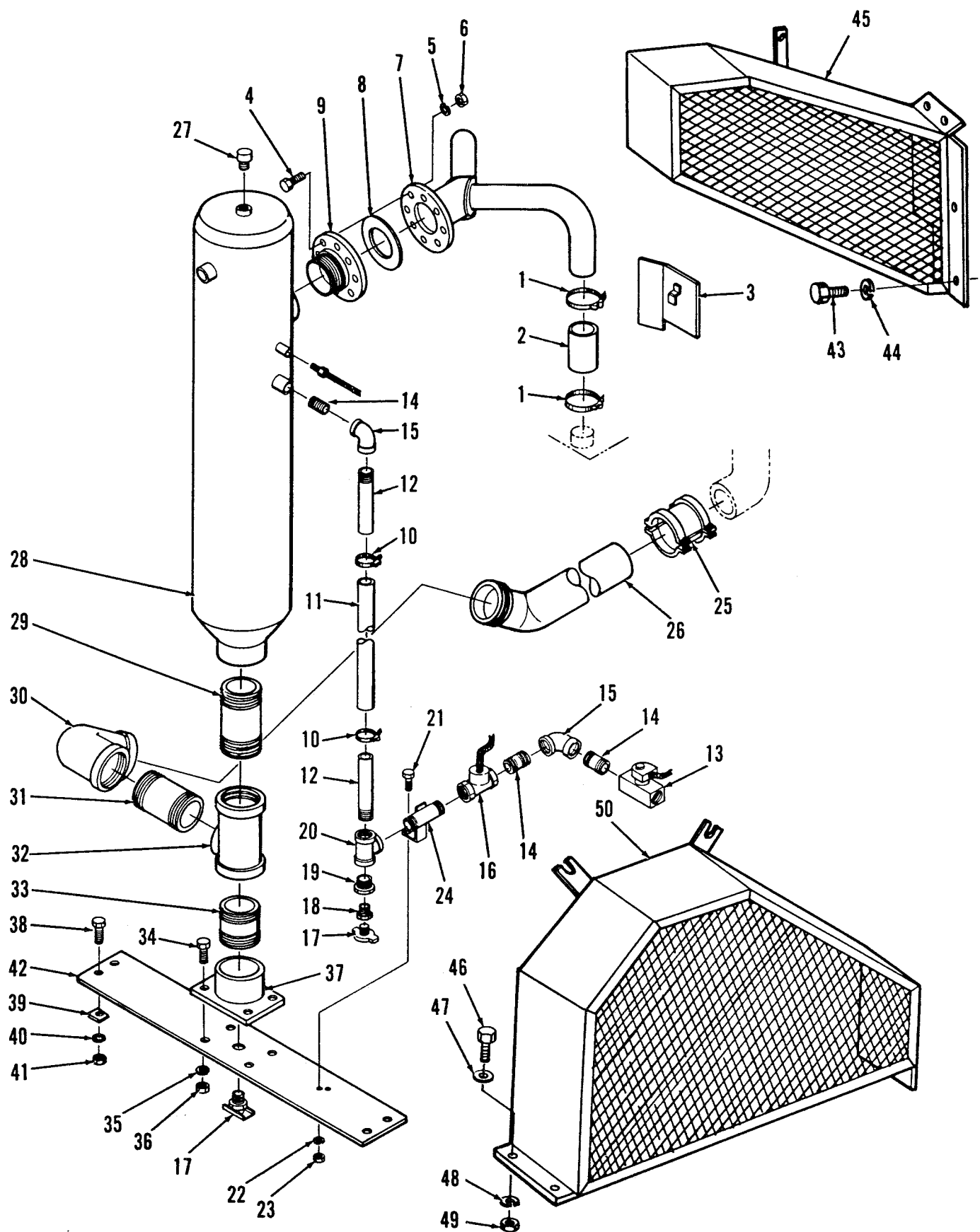
Cooling System - Radiator Spec A and B



Cooling System - Radiator Spec A and B

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	505-0185	1	Nipple, Pipe - Half	48	821-0009	4	Screw, Self-locking - Hex (1/4-20 x 3/8")
2	504-0011	1	Valve, Shutoff	49	130-1105	1	Gusset - Right Side
3	505-0100	1	Nipple, Pipe - Close	50	130-1108	1	Gusset - Left Side
4	503-0547	1	Clamp, Hose	51	821-0011	10	Screw, Self-locking - Hex (1/4-20 x 7/8")
5	503-0803	1	Hose	52	870-0212	2	Nut, Self-locking - Hex (1/4-20)
6	503-0398	2	Clamp, Hose	53	370-1020	3	Bracket, Angle
7	503-0790	1	Hose	54	821-0011	8	Screw, Self-locking - Hex (1/4-20 x 7/8")
8	505-0759	1	Adapter, Hose	55	130-1104	2	Panel, Guard - Rear
9	505-0003	1	Elbow, Pipe - Street, 90 Degree	56	821-0010	12	Screw, Self-locking - Hex (1/4-20 x 1/2")
10	505-0023	1	Bushing, Reducer - Hex	57	130-1101	2	Panel, Guard - Side
11	501-0213	2	Line, Fuel	58	130-1098	2	Stiffener - Side Panel
12	502-0193	2	Connector	59	821-0009	12	Screw, Self-locking - Hex (1/4-20 x 3/8")
13	505-0007	1	Bushing, Reducer - Hex	60	130-1068	2	Bridge, Support - Shroud
15	503-0621	8	Clamp, Hose	61	800-0027	4	Screw, Cap - Hex Head (5/16-18 x 7/8")
16	503-0788	4	Hose	62	850-0045	4	Washer, Lock - Spring (5/16")
17	130-1032	1	Tube - Right Side	63	862-0015	4	Nut, Hex (5/16-18)
18	130-1033	1	Tube - Left Side	64	130-1093	4	Bracket, Double Angle
19	130-0966	2	Coupling, Pipe - Flexible	65	821-0016	10	Screw, Self-locking - Hex (5/16-18 x 3/4")
20	130-1044	1	Tube - Lower	66	870-0257	10	Nut, Self-locking - Hex (5/16-18)
21	130-1043	1	Radiator (Includes Cap and Front Guard)	67	130-1069	2	Shroud, Fan
22	130-2981	1	Cap, Radiator	68	130-1070	2	Shroud, Fan
23	130-1073	1	Shield, Heat	69	800-0158	4	Screw, Cap - Hex Head (3/4-10 x 2-3/4")
24	821-0016	8	Screw, Self-locking - Hex (5/16-18 x 3/4")	70	403-1141	4	Washer, Bevel - Square
31	800-0027	16	Screw, Cap - Hex Head (5/16-18 x 3/4")	71	850-0079	4	Washer, Lock - Spring (3/4")
32	850-0045	16	Washer, Lock - Spring (5/16")	72	862-0020	4	Nut, Hex (3/4-10)
33	862-0015	16	Nut, Hex (5/16-18)	73	130-1037	2	Channel
34	130-1078	8	Bracket, Angle	74	800-0156	2	Screw, Cap - Hex Head (3/4-10 x 2-1/4")
35	800-0092	4	Screw, Cap - Hex Head (1/2-13 x 1-1/2")	75	850-0079	2	Washer, Lock - Spring (3/4")
36	850-0060	4	Washer, Lock - Spring (1/2")	76	862-0020	2	Nut, Hex (3/4-10)
37	862-0016	4	Nut, Hex (1/2-13)	77	800-0158	2	Screw, Cap - Hex Head (3/4-10 x 2-3/4")
38	800-0014	2	Screw, Cap - Hex Head (1/4-20 x 2-3/4")	78	403-1141	2	Washer, Bevel - Square
39	130-1107	2	Spacer	79	850-0079	2	Washer, Lock - Spring (3/4")
40	526-0018	2	Washer, Flat (1/4")	80	862-0020	2	Nut, Hex (3/4-10)
41	850-0040	2	Washer, Lock - Spring (1/4")	81	130-1036	1	Support, Radiator
42	862-0001	2	Nut, Hex (1/4-20)	82	800-0105	6	Screw, Cap - Hex Head (1/2-13 x 5")
43	130-1045	2	Brace				
44	800-0092	4	Screw, Cap - Hex Head (1/2-13 x 1-1/2")				
45	850-0060	4	Washer, Lock - Spring (1/2")				
46	862-0016	4	Nut, Hex (1/2-13)				
47	130-0944	2	Bracket, Angle				

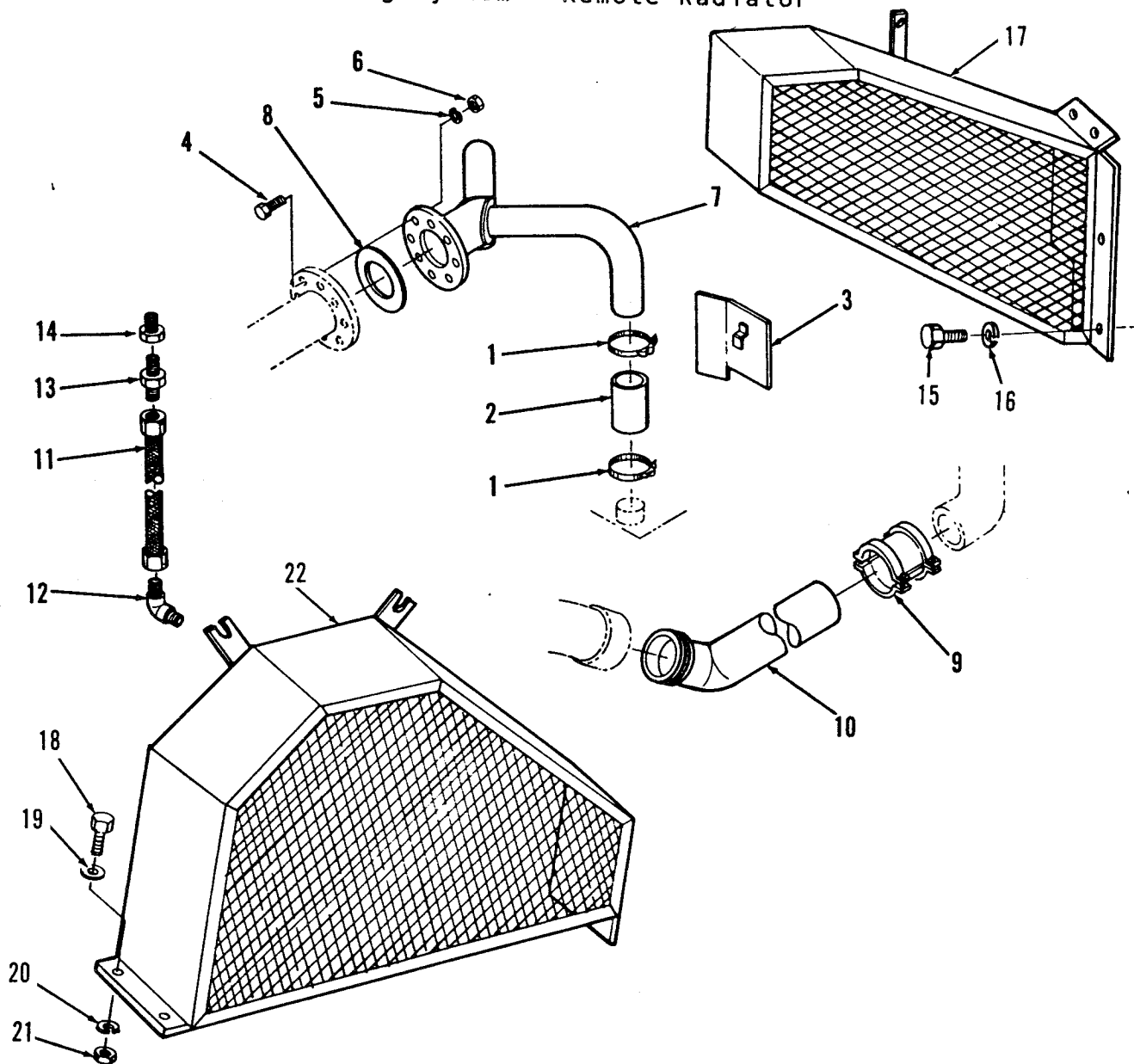
Cooling System - Standpipe



Cooling System - Standpipe

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	503-0621	4	Clamp, Hose	27	504-0062	1	Valve, Vacuum Relief
2	503-0788	2	Hose	28	130-1128	1	Tank, Standpipe
3	130-1013	1	Shield, Heat	29	505-0696	1	Nipple, Pipe
4	800-0160	8	Screw, Cap - Hex Head (3/4-10 x 3-1/4")	30	505-0683	1	Elbow, Pipe - 90 Degree
5	850-0079	8	Washer, Lock - Spring (3/4")	31	505-0828	1	Nipple, Pipe
6	862-0008	8	Nut, Hex (3/4-10)	32	505-0809	1	Tee, Pipe
7	130-1127	1	Outlet, Water - Engine	33	505-0664	1	Nipple, Pipe
8	155-0675	1	Gasket	34	800-0152	4	Screw, Cap - Hex Head (3/4-10 x 1-1/4")
9	130-1123	1	Flange, Outlet - Water	35	850-0079	4	Washer, Lock - Spring (3/4")
10	503-0011	2	Clamp, Hose	36	862-0020	4	Nut, Hex (3/4-10)
11	503-0359	1	Hose	37	130-0963	1	Support, Standpipe
12	505-0860	2	Nipple, Pipe - Half	38	800-0157	4	Screw, Cap - Hex Head (3/4-10 x 2-1/2")
13	307-0839	1	Valve, Solenoid	39	403-1141	4	Washer, Bevel - Square
14	505-0258	3	Nipple, Pipe	40	850-0079	4	Washer, lock - Spring (3/4")
15	505-0042	2	Elbow, Pipe - 90 Degree	41	862-0020	4	Nut, Hex (3/4-10)
16	309-0243	1	Valve, Control - Temperature Regulating	42	130-0965	1	Plate, Support - Standpipe
17	504-0006	2	Cock, Drain	43	800-0003	4	Screw, Cap - Hex Head (1/4-20 x 1/2")
18	505-0016	1	Bushing, Reducer - Hex	44	850-0040	4	Washer, Lock - Spring (1/4")
19	505-0128	1	Bushing, Reducer - Hex	45	191-1238	1	Guard, Belt
20	505-0249	1	Tee, Pipe	46	800-0026	4	Screw, Cap - Hex Head (5/16-18 x 1")
21	800-0006	2	Screw, Cap - Hex Head (1/4-20 x 7/8")	47	526-0022	4	Washer, Flat (5/16")
22	850-0040	2	Washer, Lock - Spring (1/4")	48	850-0045	4	Washer, Lock - Spring (1/4")
23	862-0001	2	Nut, Hex (1/4-20)	49	862-0015	4	Nut, Hex (5/16-18)
24	110-1168	1	Assembly, Bracket and Nipple	50	130-1156	1	Guard, Belt
25	130-0966	1	Coupling, Pipe - Hex				
26	130-1122	1	Tube, Inlet - Water				

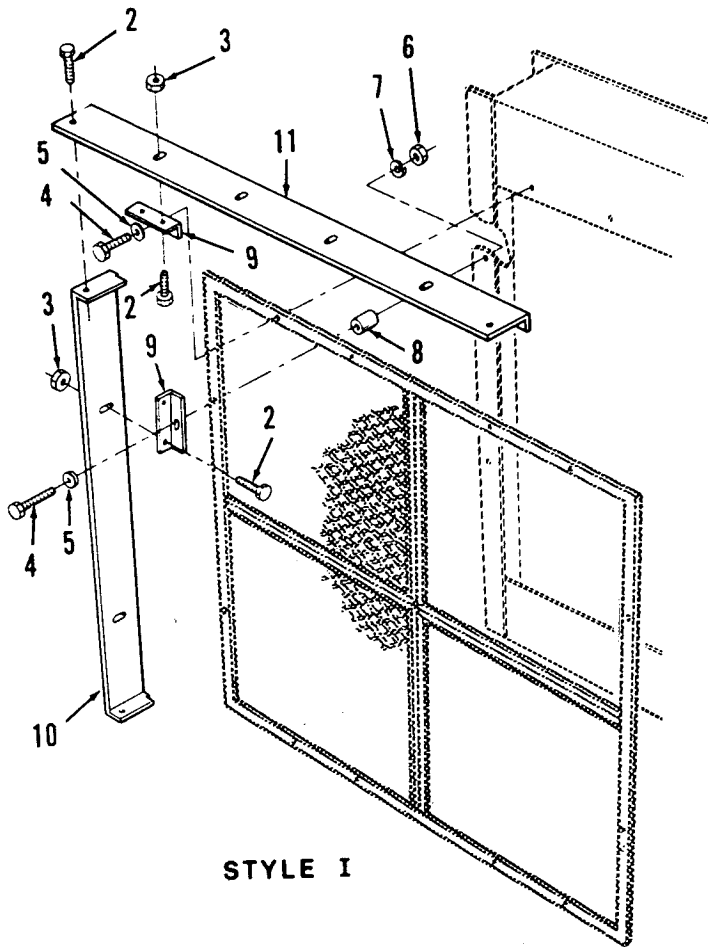
Cooling System - Remote Radiator



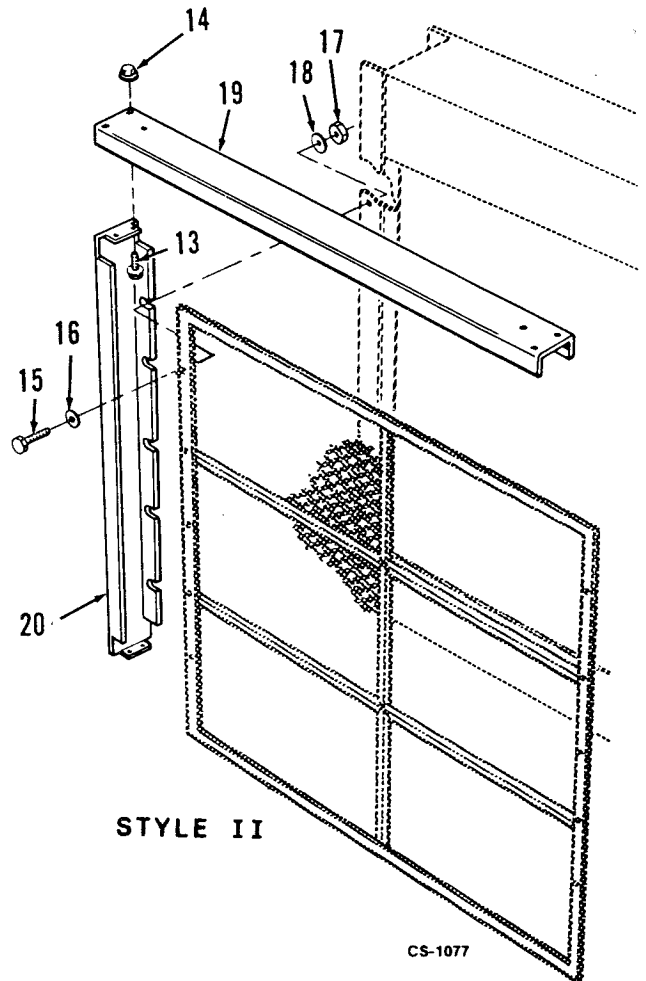
REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	503-0621	4	Clamp, Hose
2	503-0788	2	Hose
3	130-1013	1	Shield, Heat
4	800-0160	8	Screw, Cap - Hex Head (3/4-10 x 3-1/4")
5	850-0079	8	Washer, Lock - Spring (3/4")
6	862-0008	8	Nut, Hex (3/4-10)
7	130-1127	1	Outlet, Water - Engine
8	155-0675	1	Gasket
9	130-0966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

REF NO.	PART NO.	QTY USED	PART DESCRIPTION
13	502-0193	2	Connector, Line to Pipe
14	505-0007	2	Bushing, Reducer - Hex
15	800-0003	4	Screw, Cap - Hex Head (1/4-20 x 1/2")
16	850-0040	4	Washer, Lock - Spring (1/4")
17	191-1238	1	Guard, Belt
18	800-0026	4	Screw, Cap - Hex Head (5/16-18 x 1")
19	526-0022	4	Washer, Flat (5/16")
20	850-0045	4	Washer, Lock - Spring (1/4")
21	862-0015	4	Nut, Hex (5/16-18)
22	130-1156	1	Guard, Belt

Air Duct Flanges



STYLE I



STYLE II

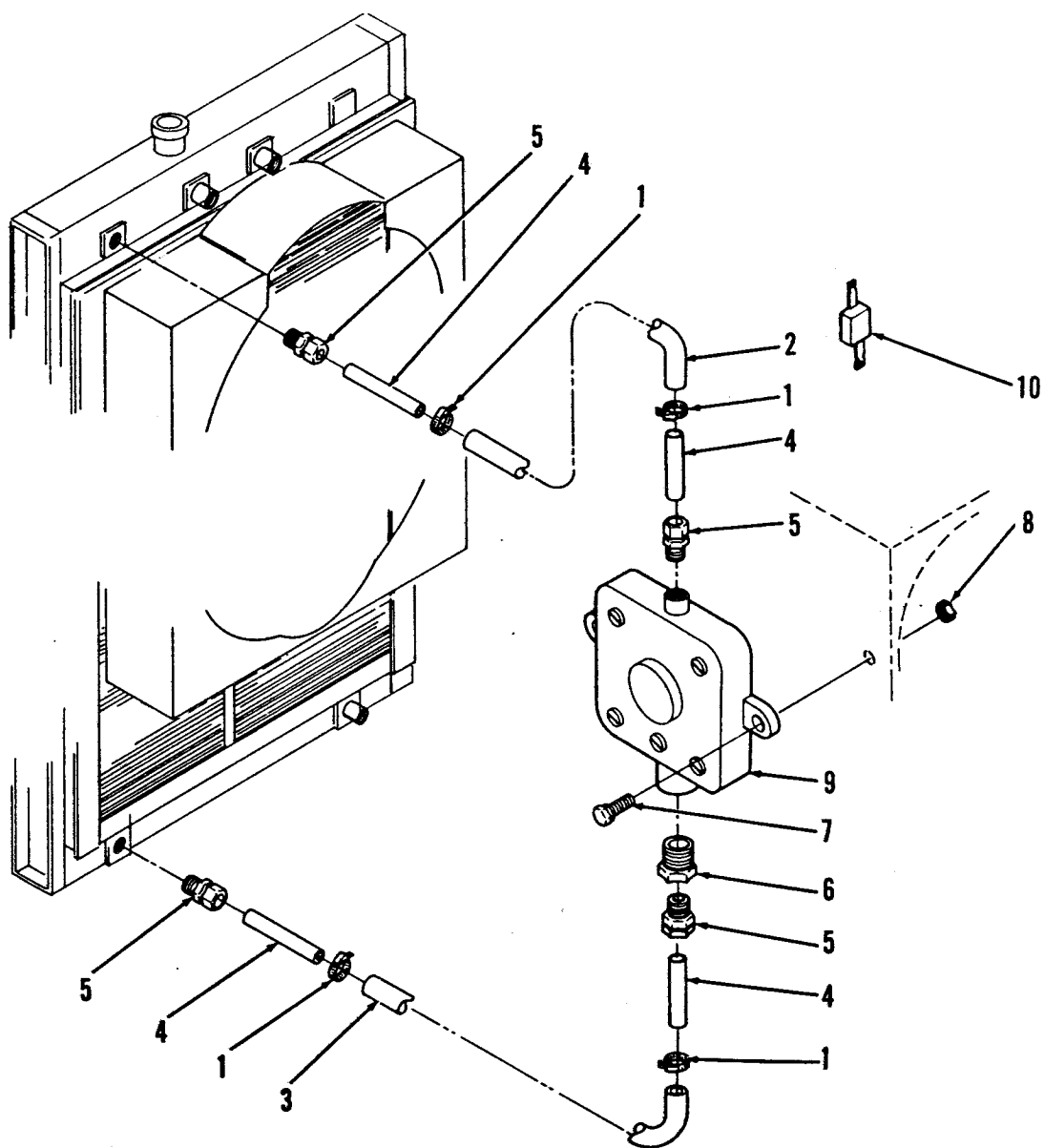
CS-1077

REF NO.	PART NO.	QTY USED	PART DESCRIPTION
*Style "I" Radiator Guard			
2	821-0010	28	Screw, Self-locking - Hex (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 (5/16")
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	370-1025	12	Angle, Mounting
10	130-1114	2	Flange, Side - Air Duct
11	130-1115	2	Flange, Top/Bottom - Air Duct

REF NO.	PART NO.	QTY USED	PART DESCRIPTION
*Style "II" Radiator Guard			
13	821-0010	8	Screw, Self-locking - Hex (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 (5/16")
17	862-0015	10	Nut, Hex (5/16-18)
18	850-0045	10	Washer, Lock - Spring (5/16")
19	130-1419	2	Flange, Top/Bottom - Air Duct
20	130-1420	2	Flange, Side - Air Duct

* - Radiator Guard Supplied as Part of The Radiator by its Manufacturer.

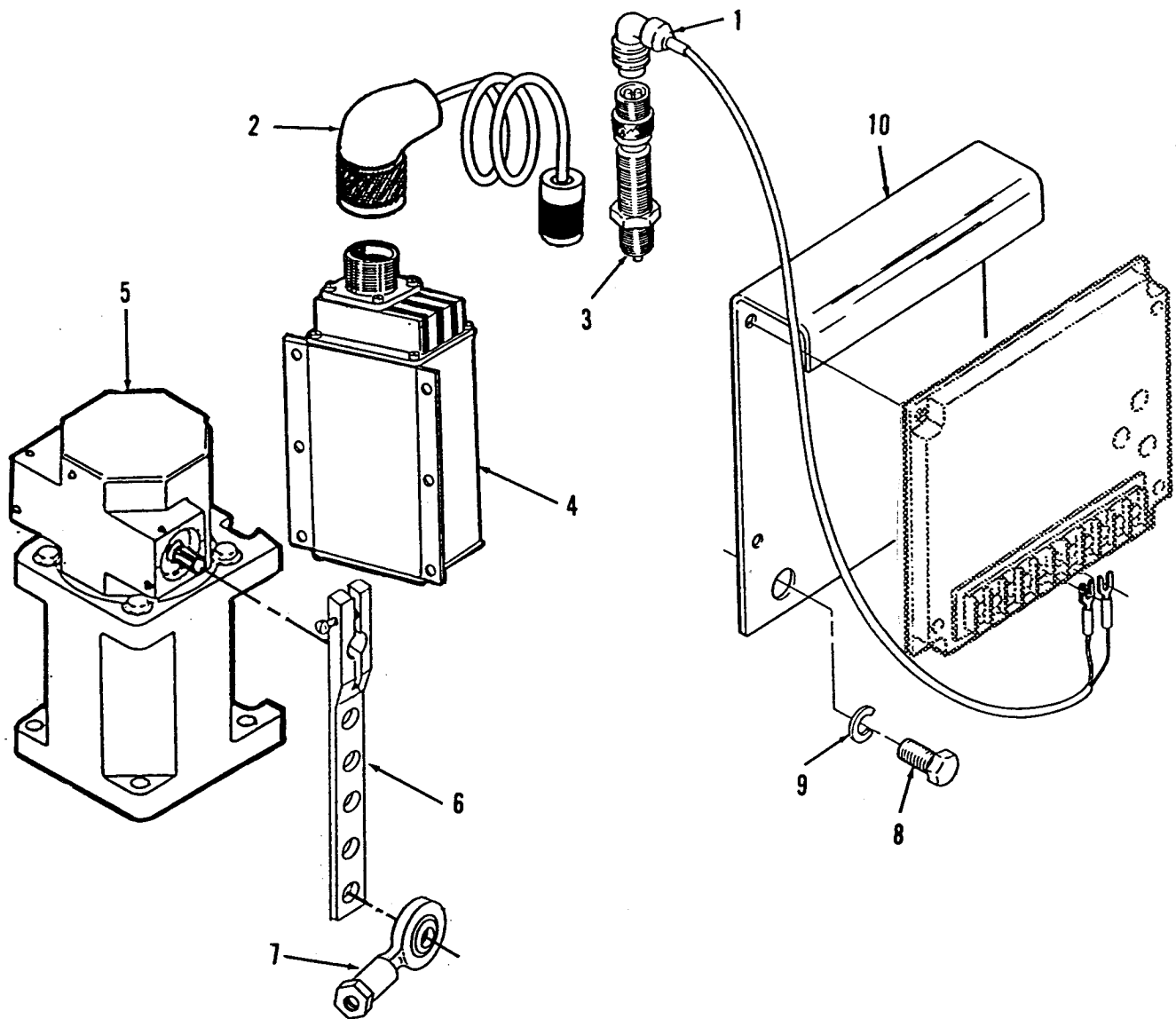
Coolant Level Switch



REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	503-0685	4	Clamp, Hose
2	503-0757	1	Hose
3	503-1119	1	Hose
4	130-2053	4	Tube
5	502-0801	4	Connector, Tube, Brass
6	502-0802	1	Bushing, Reducer - Hex

REF NO.	PART NO.	QTY USED	PART DESCRIPTION
7	821-0011	4	Screw, Self-locking - Hex (1/4-20 x 7/8")
8	870-0212	4	Nut, Self-locking - Hex (1/4-20)
9	193-0329	1	Switch, Level - Coolant
10	357-0030	2	Diode, Rectifier

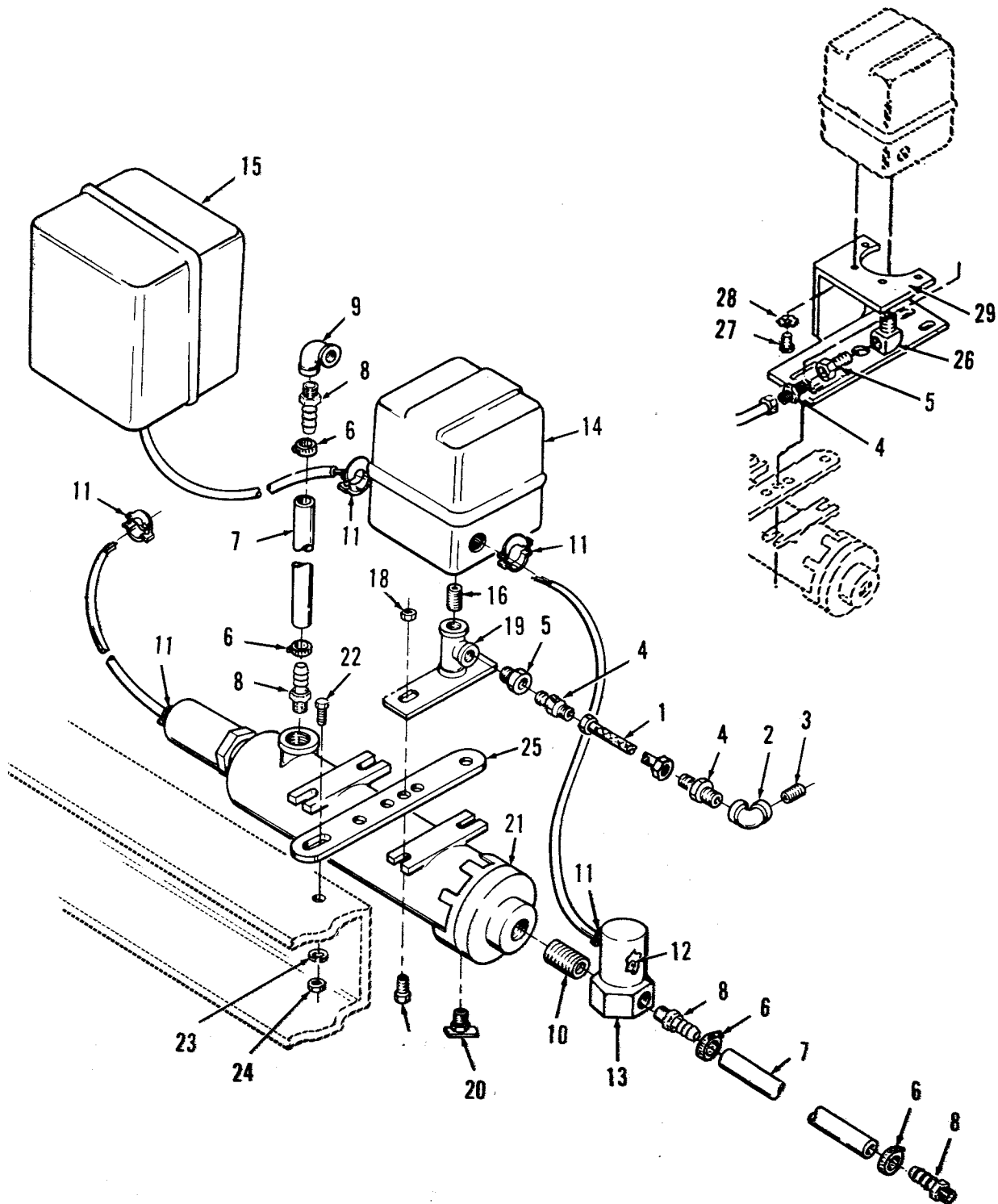
Electric Governor



REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	338-1777	1	Harness, Wiring - Standard - Begin Spec E
2	338-1086	1	Harness, Wiring - Used With Controller #151-0399
3	151-0411	1	Pickup, Magnetic
4	151-0399	1	Controller
5	151-0419	1	Actuator

REF NO.	PART NO.	QTY USED	PART DESCRIPTION
6	151-0441	1	Lever
7	151-0443	2	Joint, Ball
8	800-0151	2	Screw, Cap - Hex Head (3/4-10 x 1")
9	850-0079	2	Washer, Lock - Spring (3/4")
10	150-2007	1	Bracket, Mounting - Control - Begin Spec E

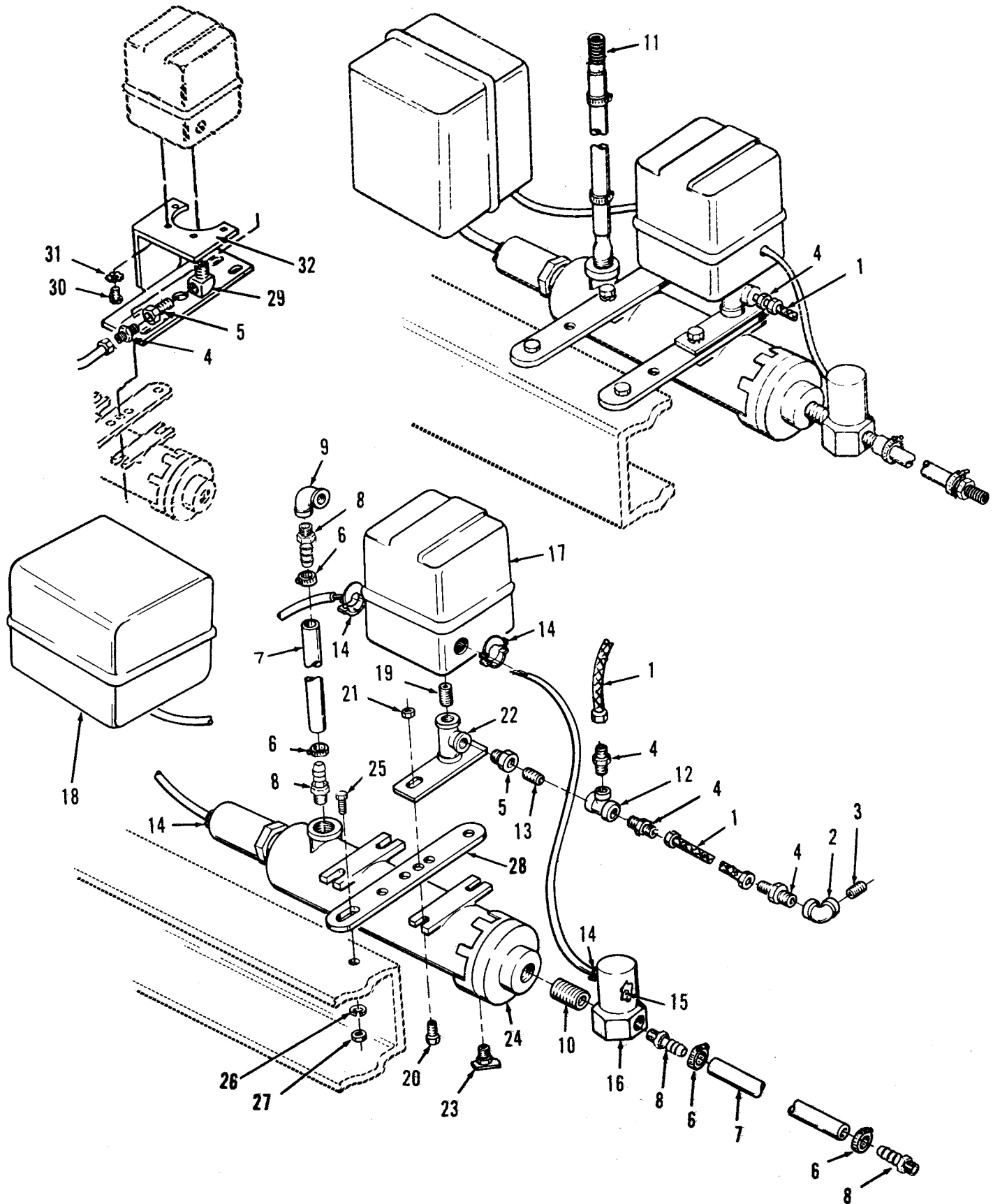
Heater Horizontal Tank



Heater Horizontal Tank

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	501-0199	1	Line, Fuel	18	870-0212	4	Nut, Self-locking - Hex (1/4-20)
2	505-0037	1	Elbow - 90 Degree	19	333-0142	1	Support with Tee (1979 Thru 1982)
3	505-0104	1	Nipple, Pipe - Close	20	504-0003	1	Cock, Drain
4	502-0193	2	Adapter	21			Heater, Electrical
5	505-0007	1	Bushing, Reducer - Hex		333-0143	1	4000 Watt, 208 VAC - 1 Phase
6	503-0398	4	Clamp, Hose		333-0164	1	4000 Watt, 208 VAC - 3 Phase
7			Hose		333-0138	1	4000 Watt, 240 VAC - 1 Phase
	503-0792	1	12-1/2"		333-0190	1	4000 Watt, 240 VAC - 3 Phase
	503-0501	1	20"		333-0150	1	4000 Watt, 277 VAC - 1 Phase
8	505-0759	4	Adapter, Hose to Pipe		333-0183	1	4000 Watt, 380 VAC - 1 Phase
9	505-0003	1	Elbow, Pipe - Street, 90 Degree		333-0174	1	4000 Watt, 380 VAC - 3 Phase
10	505-0004	1	Nipple, Pipe - Close		333-0161	1	4000 Watt, 480 VAC - 1 Phase
11	331-0027	8	Clamp, Cable		333-0144	1	4000 Watt, 480 VAC - 3 Phase
12			Terminals	22	821-0030	4	Screw, Self-locking - Hex Head (5/16-18 x 1-1/4")
	323-0957	2	Nut, Wire	23	850-0045	4	Washer, Lock - Spring (5/16")
	332-0014	4	Lug, Terminal - #10	24	862-0015	4	Nut, Hex (5/16-18)
	332-0149	4	Lug, Terminal - #8	25	130-1191	2	Bracket, Mounting
13			Switch, Thermostatic	26	502-0054	1	Elbow, Pipe - Street, 90 Degree (Begin 1983)
	309-0304	1	80° - 100° Fahrenheit	27	812-0079	4	Screw, Machine - Round Head (#8-32 x 1/2") (Begin 1983)
	309-0490	1	100° - 120° Fahrenheit	28	854-0007	4	Washer, Lock - ET (#8) (Begin 1983)
	309-0253	1	120° - 140° Fahrenheit	29	333-0224	1	Bracket, Support (Begin 1983)
14	309-0307	1	Switch, Pressure - Oil				
15			Contactors				
	307-1460	1	230 VAC, 3 Pole				
	307-1164	1	460 VAC, 3 Pole				
16	505-0099	1	Nipple, Pipe - Close (1979 Thru 1982)				
17	800-0008	4	Screw, Cap - Hex Head (1/4-20 x 1-1/4")				

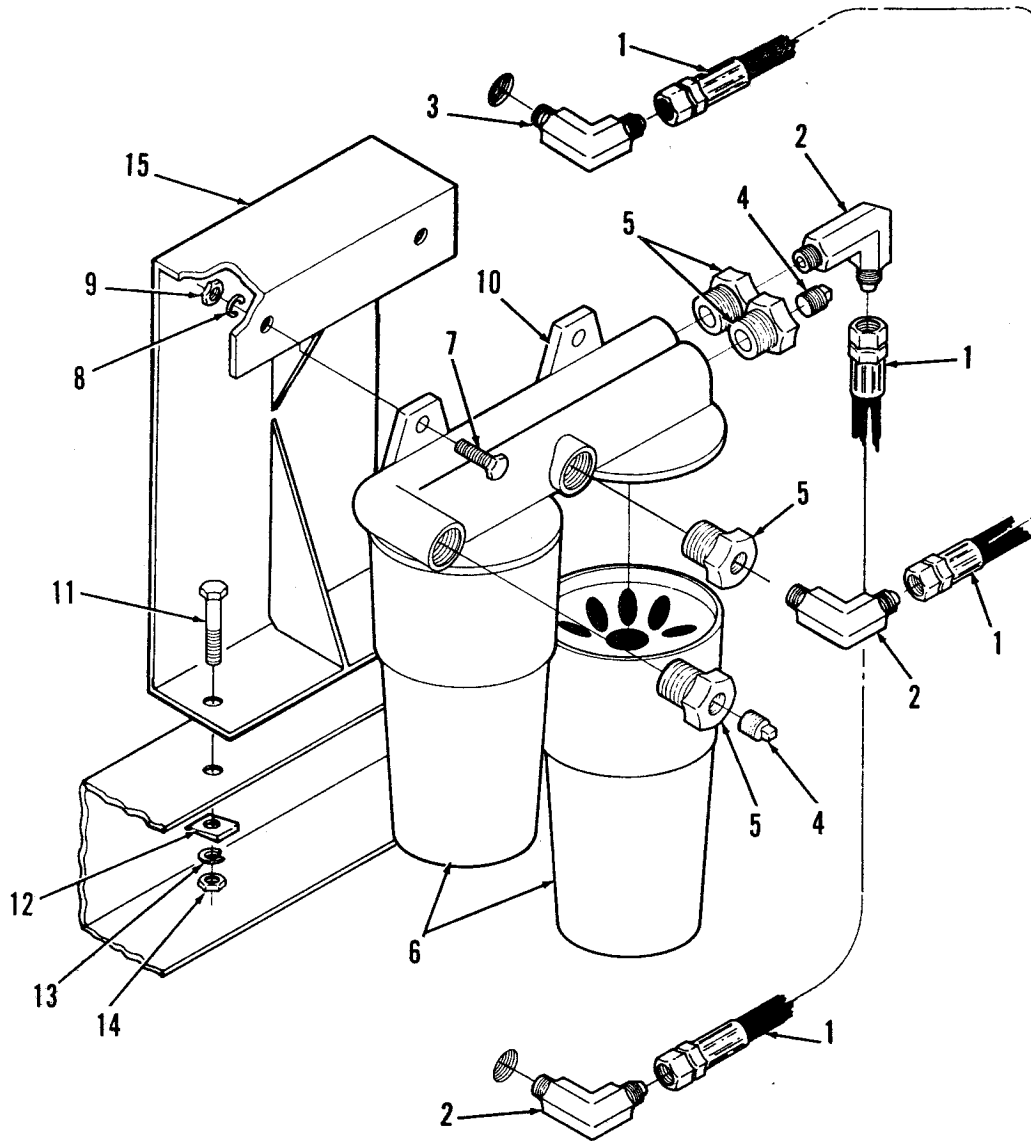
Dual Heater Horizontal Tank



Dual Heater Horizontal Tank

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	501-0199	2	Line, Fuel	19	505-0099	2	Nipple, Pipe - Close (1979 Thru 1982)
2	505-0037	1	Elbow - 90 Degree	20	800-0008	4	Screw, Cap - Hex Head (1/4-20 x 1-1/4")
3	505-0104	1	Nipple, Pipe - Close	21	870-0212	4	Nut, Self-locking - Hex (1/4-20)
4	502-0193	4	Adapter	22	333-0142	2	Support with Tee (1979 Thru 1982)
5	505-0007	1	Bushing, Reducer - Hex	23	504-0003	2	Cock, Drain
6	503-0398	8	Clamp, Hose	24			Heater, Electrical
7			Hose		333-0143	2	4000 Watt, 208 VAC - 1 Phase
	503-0282	1	10"		333-0164	2	4000 Watt, 208 VAC - 3 Phase
	503-0501	1	20"		333-0138	2	4000 Watt, 240 VAC - 1 Phase
	503-0796	1	40"		333-0190	2	4000 Watt, 240 VAC - 3 Phase
	503-0898	1	43"		333-0150	2	4000 Watt, 277 VAC - 1 Phase
8	505-0759	7	Adapter, Hose to Pipe		333-0183	2	4000 Watt, 380 VAC - 1 Phase
9	505-0003	1	Elbow, Pipe - Street, 90 Degree		333-0174	2	4000 Watt, 380 VAC - 3 Phase
10	505-0004	1	Nipple, Pipe - Close		333-0161	2	4000 Watt, 480 VAC - 1 Phase
11	505-0324	1	Nipple, Pipe - Half		333-0144	2	4000 Watt, 480 VAC - 3 Phase
12	505-0059	1	Tee, Pipe	25	821-0030	8	Screw, Self-locking - Hex Head (5/16-18 x 1-1/4")
13	505-0098	1	Nipple, Pipe - Close	26	850-0045	8	Washer, Lock - Spring (5/16")
14	331-0027	12	Clamp, Cable	27	862-0015	8	Nut, Hex (5/16-18)
15			Terminals	28	130-1191	4	Bracket, Mounting
	323-0957	4	Nut, Wire	29	502-0054	2	Elbow, Pipe - Street, 90 Degree (Begin 1983)
	332-0014	8	Lug, Terminal - #10	30	812-0079	8	Screw, Machine - Round Head (#8-32 x 1/2") (Begin 1983)
	332-0149	8	Lug, Terminal - #8	31	854-0007	8	Washer, Lock - ET (#8) (Begin 1983)
16			Switch, Thermostatic	32	333-0224	2	Bracket, Support (Begin 1983)
	309-0304	2	80° - 100° Fahrenheit				
	309-0490	2	100° - 120° Fahrenheit				
	309-0253	2	120° - 140° Fahrenheit				
17	309-0271	2	Switch, Pressure - Oil				
18			Contactor				
	307-1460	2	230 VAC, 3 Pole				
	307-1164	2	460 VAC, 3 Pole				

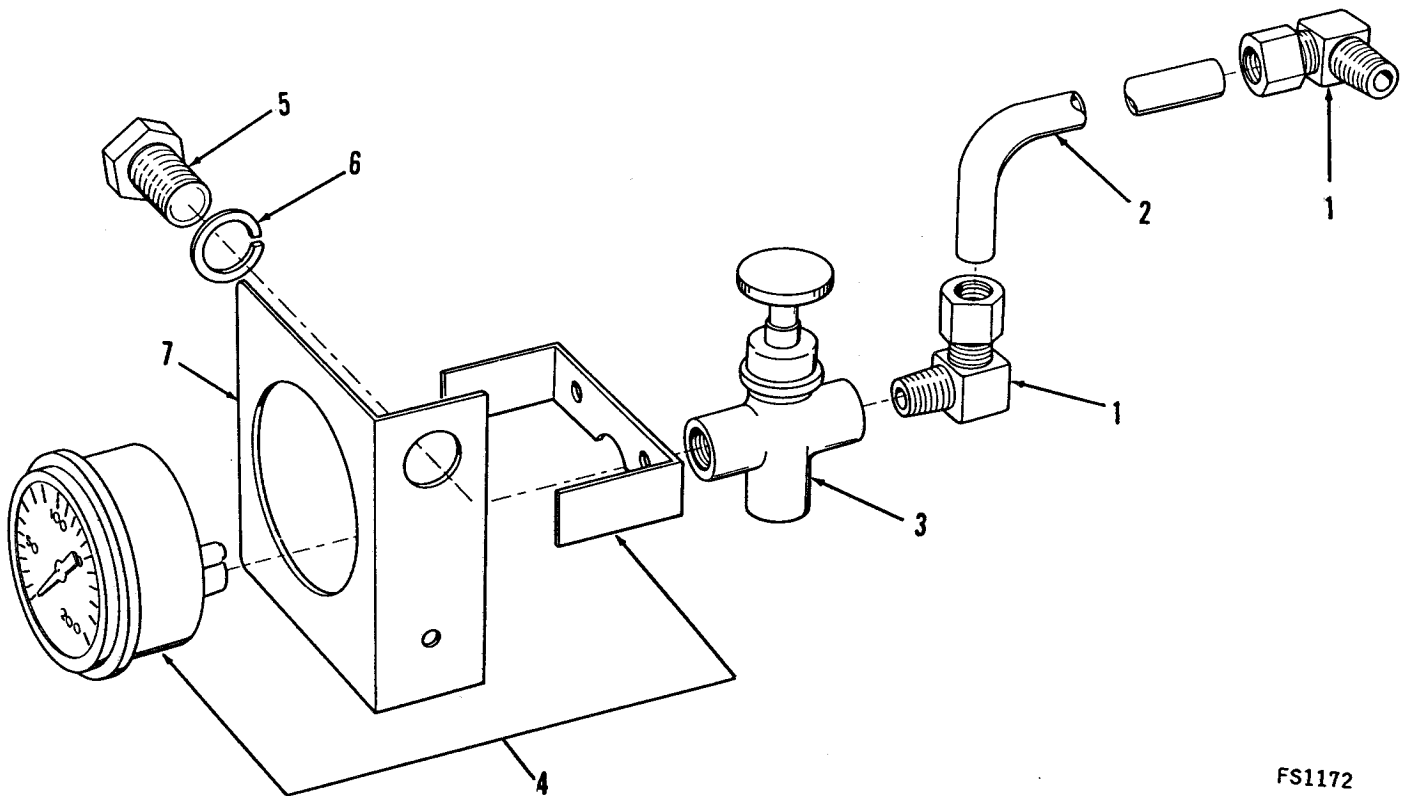
Lube Oil Filter



LS-1090

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

Fuel Pressure Gauge

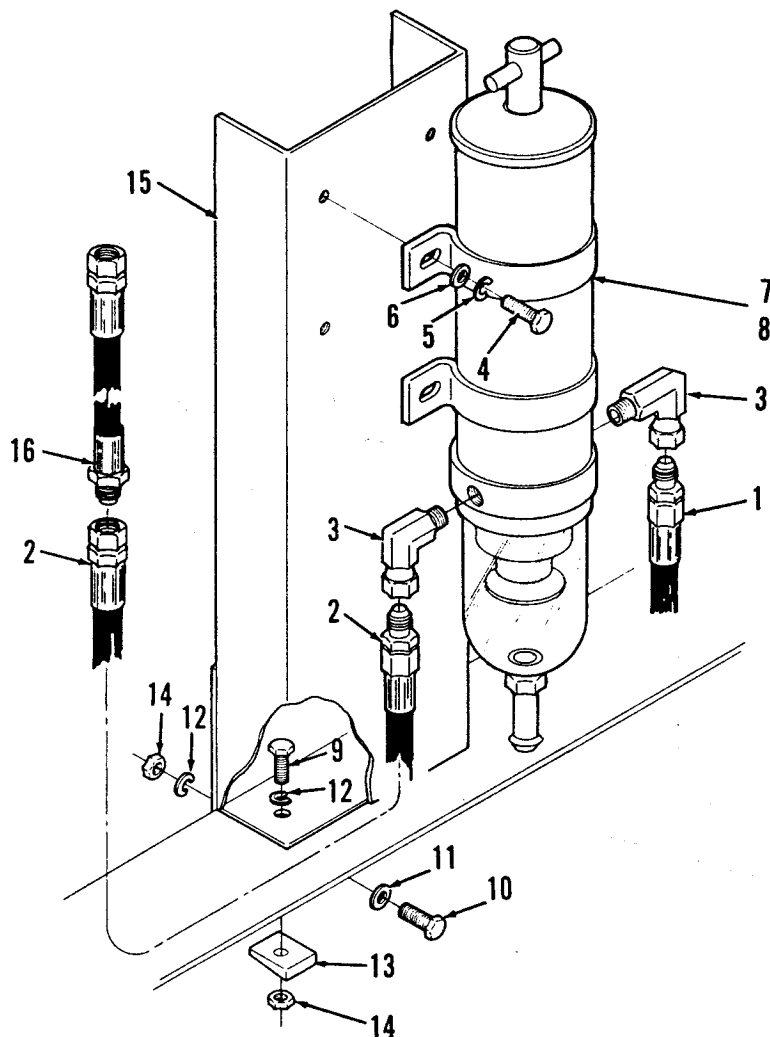


FS1172

REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	502-0034	2	Elbow, Tube - 90 Degree (Includes Nut and Ring)
2	370-4003	1	Tube, Copper
3	504-0064	1	Valve, Gate

REF NO.	PART NO.	QTY USED	PART DESCRIPTION
4	193-0128	1	Gauge, Pressure (Includes Bracket and 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

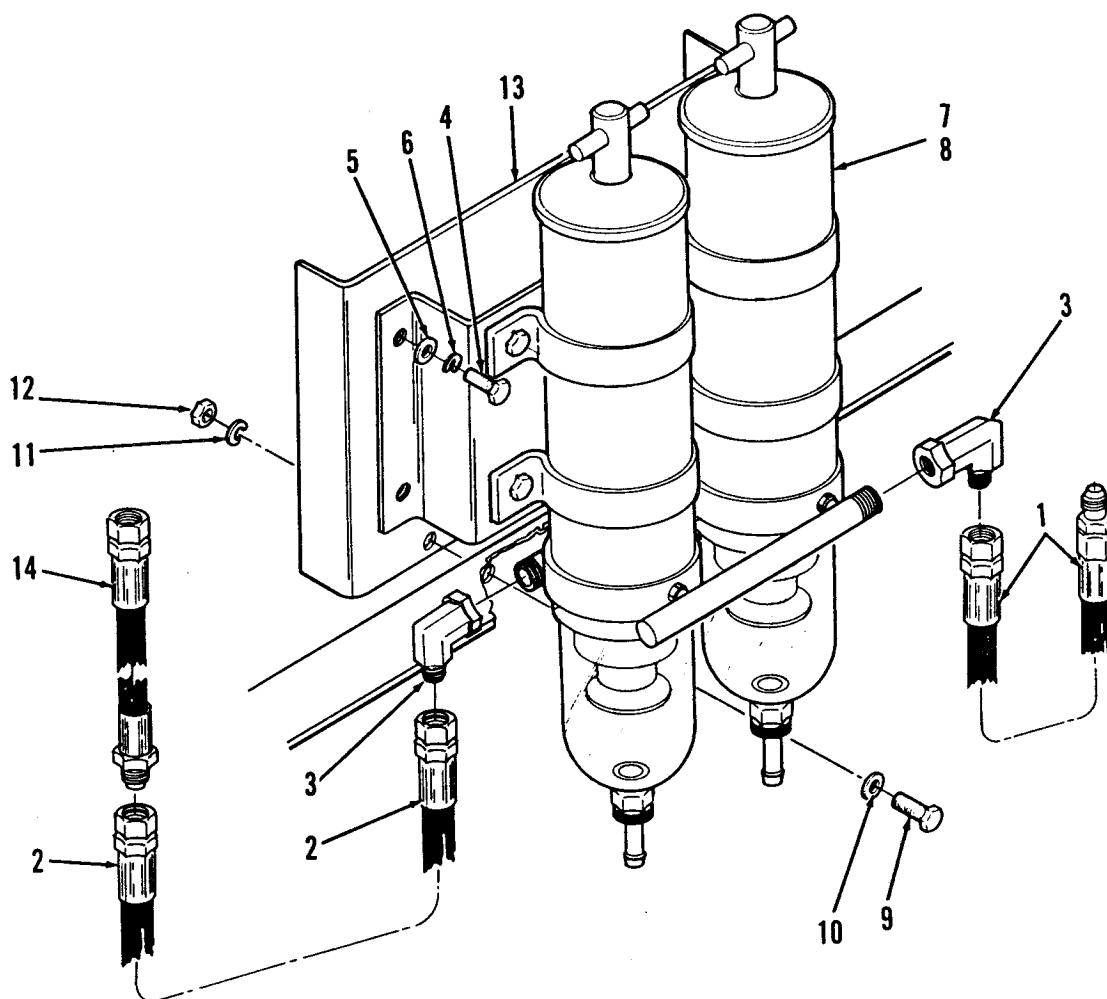
Fuel/Water Separator



XFS-1355-1

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	501-0292	1	Line, Fuel	9	800-0053	3	Screw, Cap - Hex Head (3/8-16 x 1-3/4")
2	501-0291	1	Line, Fuel	10	800-0051	1	Screw, Cap - Hex Head (3/8-16 x 1-1/4")
3	502-0644	2	Elbow, Pipe - Swivel, 90 Degree	11	526-0026	1	Washer, Flat (3/8")
4	800-0028	4	Screw, Cap - Hex Head (5/16-18 x 1")	12	850-0050	3	Washer, Lock Spring (3/8")
5	850-0045	4	Washer, Lock - Spring (5/16")	13	526-0280	1	Washer, Bevel
6	526-0022	4	Washer, Flat (5/16")	14	862-0003	3	Nut, Hex (3/8-16)
7	149-1625	1	Separator (Includes Element)	15	149-1683	1	Bracket, Mounting
8	149-1689	1	Element	16	501-0448	1	Line, Fuel - Flexible

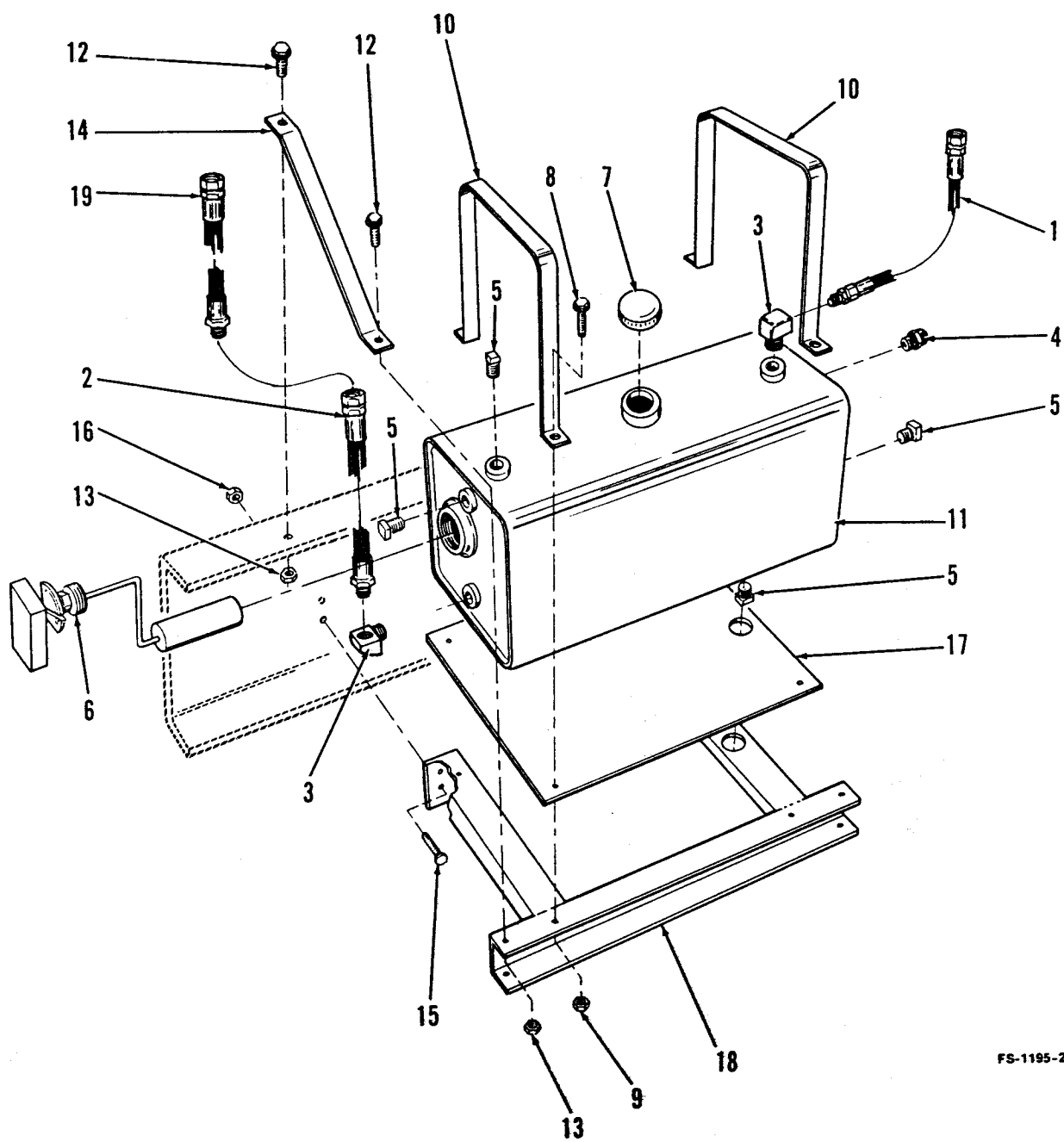
Duel Fuel/Water Separator



X FS-1410

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	501-0291	1	Line, Fuel	8	149-1689	2	Element
2	501-0292	1	Line, Fuel	9	800-0051	4	Screw, Cap - Hex Head (3/8-16 x 1-1/4")
3	502-0643	2	Elbow, Pipe - Swivel, 90 Degree	10	526-0026	4	Washer, Flat (3/8")
4	800-0028	4	Screw, Cap - Hex Head (5/16-18 x 1")	11	850-0050	4	Washer, Lock Spring (3/8")
5	526-0022	4	Washer, Flat (5/16")	12	862-0003	4	Nut, Hex (3/8-16)
6	850-0045	4	Washer, Lock - Spring (5/16")	15	149-1686	1	Bracket, Mounting
7	149-1685	1	Separator (Includes Element)	16	501-0449	1	Line, Fuel - Flexible

Fuel Tank

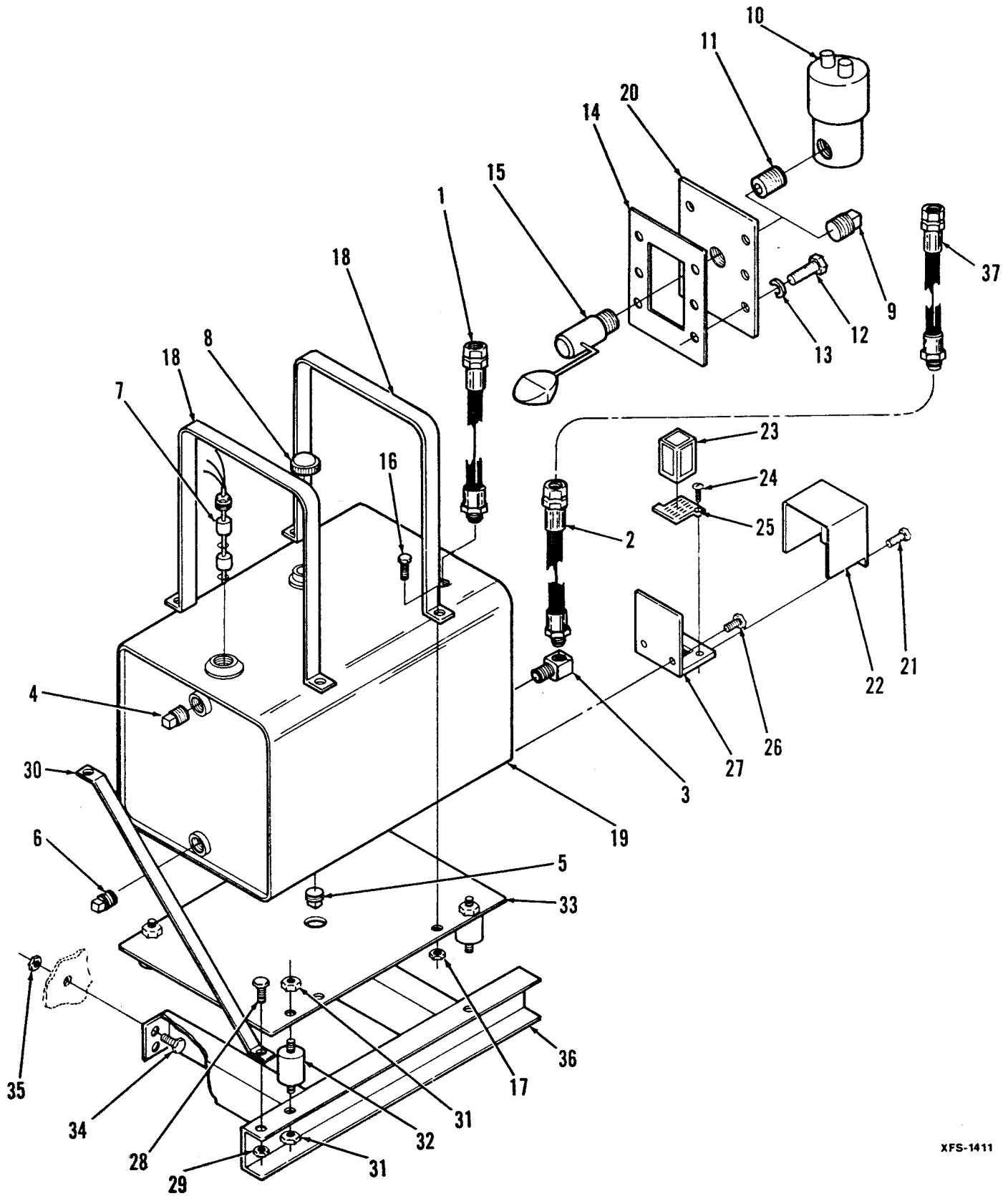


FS-1195-2

Fuel Tank

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	501-0333	1	Line, Fuel - Return	10	415-0110	2	Strap, Hold Down
2	501-0217	1	Line, Fuel - Incoming	11	415-0172	1	Tank, Fuel - 25 Gallon
3	502-0133	2	Elbow, Pipe - Street, 90 Degree	12	821-0013	4	Screw, Self-locking - Hex (1/4-20 x 1")
4	502-0448	1	Adapter, Hose to Pipe	13	870-0065	4	Nut, Self-locking - Hex (1/4-20)
5			Plug, Pipe - Square Head	14	159-1067	2	Brace
	505-0056	3	1/2-14	15	800-0051	4	Screw, Cap - Hex Head (3/8-16 x 1-1/4")
	505-0110	1	3/8-18	16	870-0138	4	Nut, Self-locking - Hex (3/8-16)
6	415-0170	1	Switch, Level	17	159-1058	1	Plate, Mounting
7	159-0020	1	Cap, Tank	18	159-1057	1	Frame, Support
8	821-0023	4	Screw, Self-locking - Hex (5/16-18 x 1-1/2")	19	501-0448	1	Line, Fuel - Flexible
9	870-0048	4	Nut, Self-locking - Hex (5/16-18)				

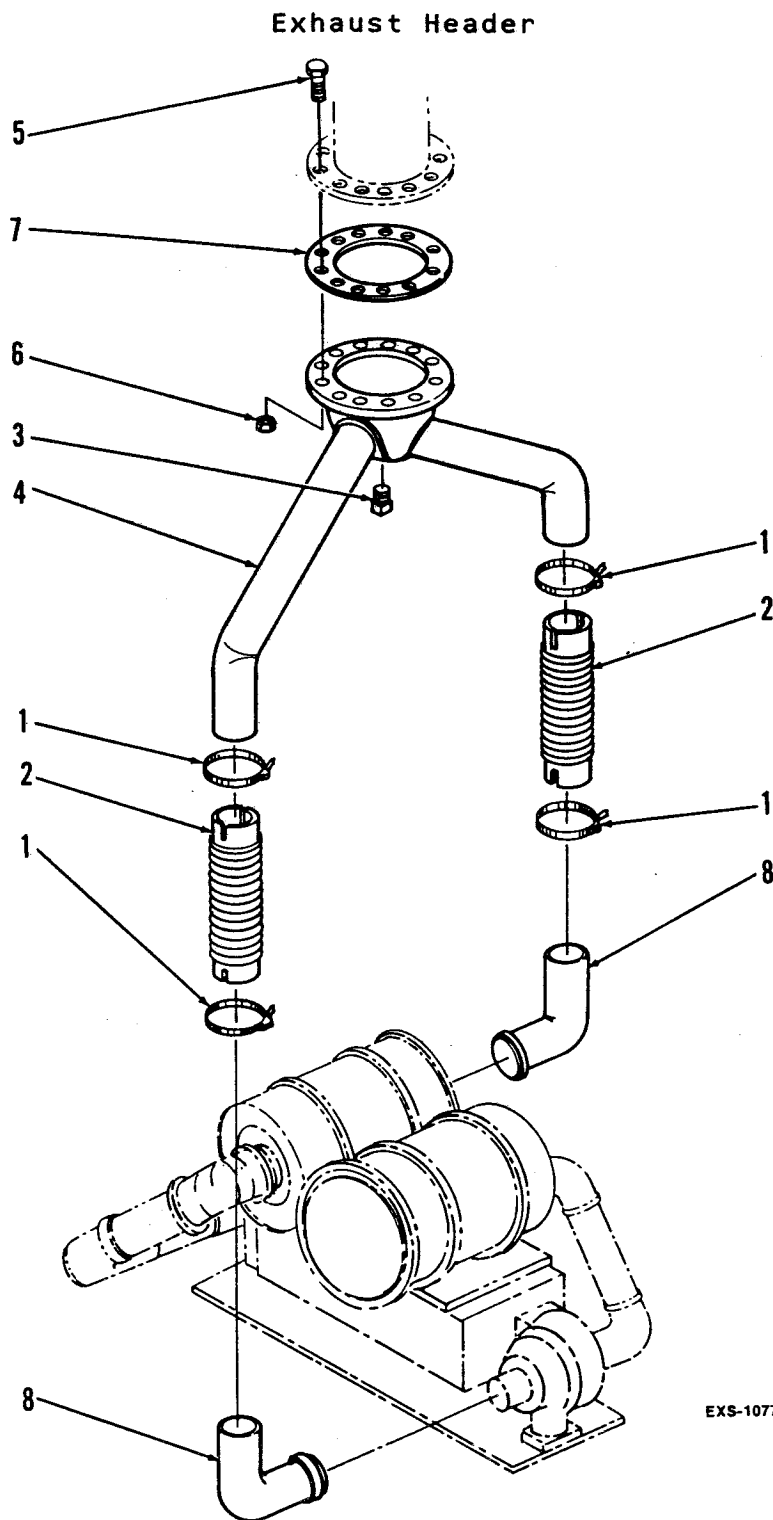
Fuel Tank Overhead/Underground Supply



XFS-1411

Fuel Tank Overhead/Underground Supply

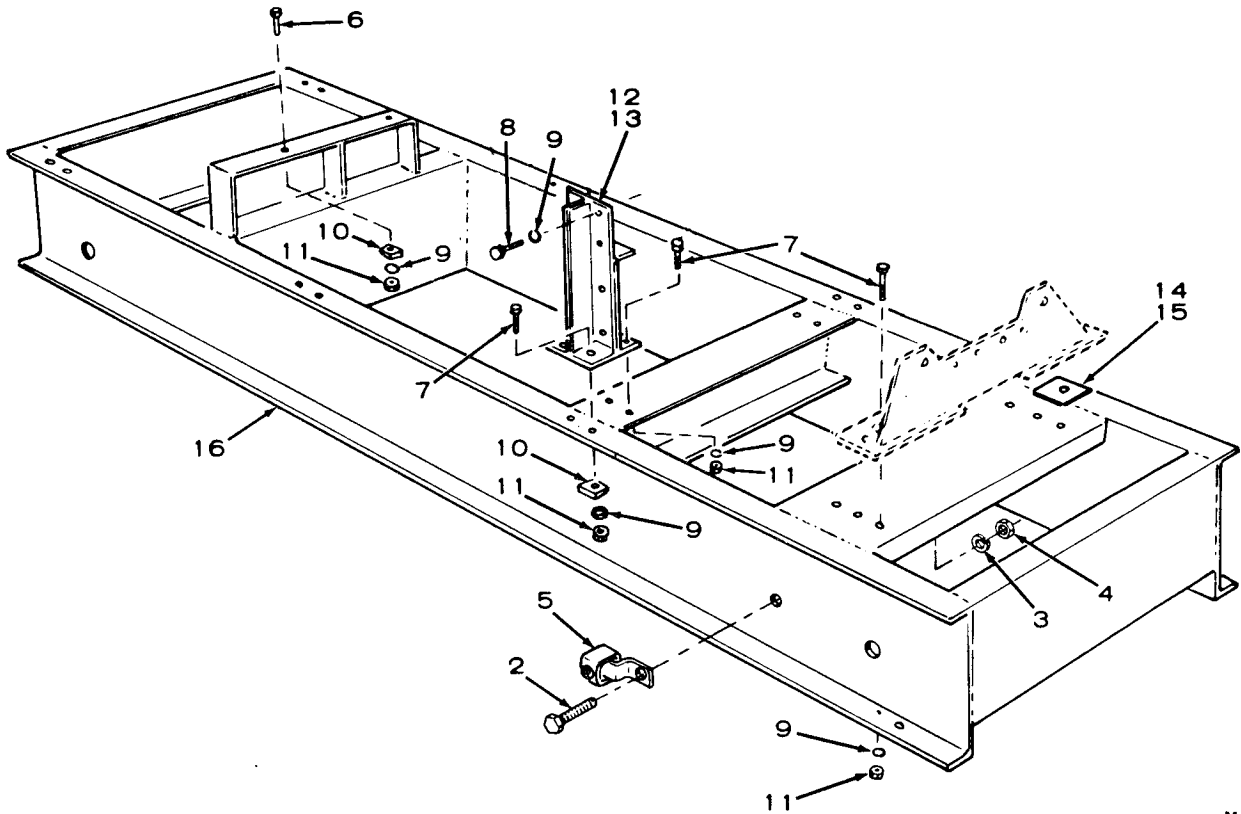
REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	501-0333	1	Line, Fuel - Return	21	821-0004	2	Screw, Self-locking - Hex (#10-32 x 5/16")
2	501-0334		Line, Fuel - Incoming				Cover, Access
3	502-0133	1	Elbow, Pipe - Street, 90 Degree	22	415-0464	1	Relay
4	505-0130	1	Plug, Pipe - Square Head	23	307-1056	1	Screw, Machine - Round Head (#8-32 x 1/2")
5	505-0110	1	Plug, Pipe - Square Head	24	812-0079	2	Socket, Relay
6	505-0056	1	Plug, Pipe - Square Head				Screw, Self-locking - Hex (1/4-20 x 5/16")
7	415-0485	1	Switch, Float	25	323-0804	1	Box
8	159-0020	1	Cap, Tank	26	821-0008	2	Screw, Self-locking - Hex (1/4-20 x 1")
9	505-0056	1	Plug, Pipe (Underground Supply)				Nut, Self-locking - Hex (1/4-20)
10	307-1861	1	Valve, Solenoid (Overhead Supply)	27	415-0463	1	Brace, Support - Tank
11	505-0100	1	Nipple, Pipe - Close	28	821-0013	4	Nut, Self-locking - Hex (5/16-18)
12	800-0002	8	Screw, Cap - Hex Head (1/4-20 x 3/8")	29	870-0065	4	Mount, Vibration
13	526-0063	8	Washer, Flat (1/4")				Plate, Mounting
14	415-0486	1	Gasket	30	159-1059	2	Screw, Cap - Hex Head (3/8-16 x 1-1/4")
15	309-0407	1	Valve, Float (Overhead Supply)	31	870-0048	8	Nut, Self-locking - Hex (3/8-16)
16	821-0023	4	Screw, Self-locking - Hex (5/16-18 x 1-1/2")	32	402-0485	4	Frame, Support - Tank
17	870-0048	4	Nut, Self-locking - Hex (5/16-18)	33	415-0483	1	Line, Fuel - Flexible
18	415-0110	2	Strap	34	800-0051	4	
19	415-0482	1	Tank, Fuel - 25 Gallon	35	870-0138	4	
20	415-0513	1	Plate, Access	36	159-1057	1	
				37	501-0449	1	



EXS-1077

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

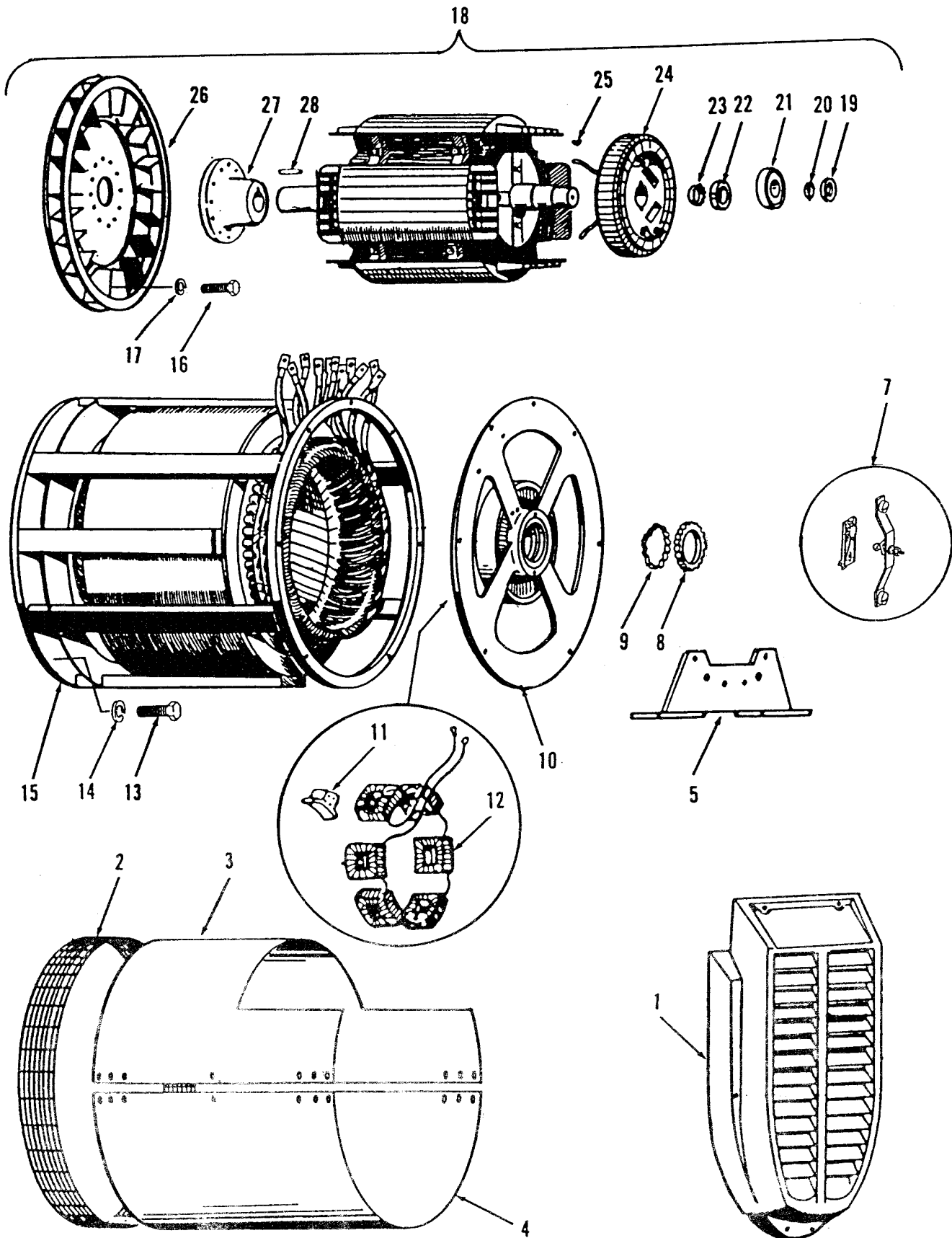
Chassis



M-1200

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

Generator
Begin Spec E

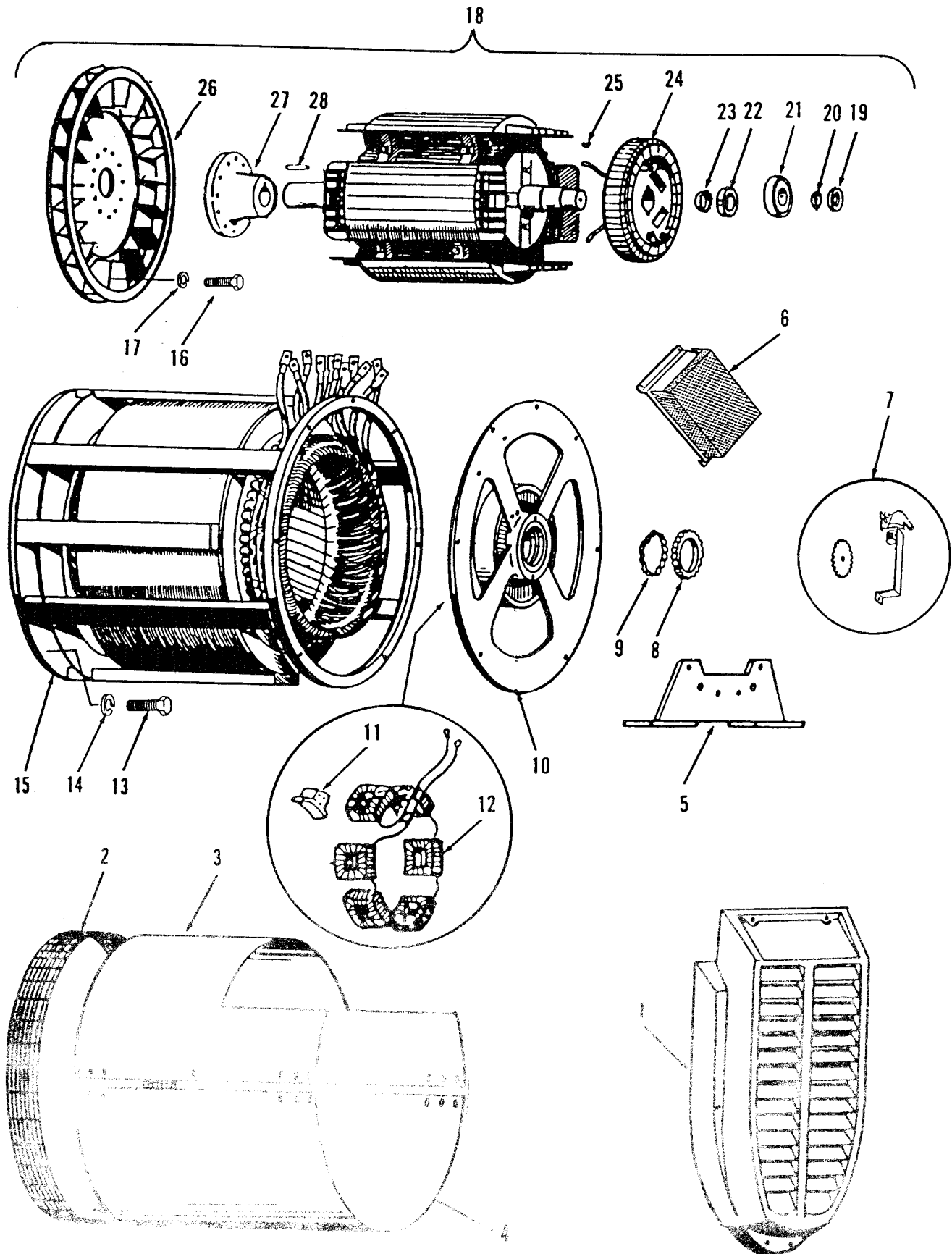


**Generator
Begin Spec E**

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	232-1973	1	Grille	13	800-0092	16	Screw, Cap - Hex Head (1/2-13 x 1-1/2")
	520-0692	2	Stud (5/16-18)	14	850-0060	16	Washer, Lock - Spring (1/2")
	800-0009	4	Screw, Cap - Hex Head (1/4-20 x 1-1/2")	15			Stator (Includes Bus Bar Assembly - See Separate Page for Bus Bar Components)
	800-0013	2	Screw, Cap - Hex Head (1/4-20 x 2-1/2")		220-2815	1	Code 4
	850-0040	6	Washer, Lock - Spring (1/4")		220-2816	1	Code 4X
	850-0070	4	Washer, Lock - Spring (5/16")		220-2819	1	Code 5D
	862-0007	4	Nut, Hex (5/16-18)		220-2820	1	Code 6D
2	234-0272	1	Screen		220-2821	1	Code 7
	800-0003	2	Screw, Cap - Hex Head (1/4-20 x 1/2")		220-2814	1	Code 7X
	850-0040	2	Washer, Lock - Spring (1/4")		220-2818	1	Code 9X
3	234-0292		Band, Top		220-3335	1	Code 31
	800-0026	2	Screw, Cap - Hex Head (5/16-18 x 3/4")		220-2817	1	No Code 139/240V
	850-0045	2	Washer, Lock - Spring (5/16")		220-2824	1	Code 519
4	234-0282		Band, Bottom		220-2823	1	Code 520
	800-0026	2	Screw, Cap - Hex Head (5/16-18 x 3/4")		220-2826	1	Code 521
	850-0045	2	Washer, Lock - Spring (5/16")		220-2825	1	Code 522
5	232-1957	1	Support	16	800-0133	6	Screw, Cap - Hex Head (5/8-11 x 1-3/4")
	805-0035	2	Bolt, Cap - Hex Head (5/8-11 x 1-1/2")	17	850-0070	6	Washer, Lock - Spring (5/8")
7			Switch, Over Speed (See Separate Page for Components)	18			Rotor Assembly (Includes Parts Marked *)
8	232-1923	1	Holder, Bearing		201-1792	1	Code 4, 4X, 5, 6, 7, 7X
9	232-1924	1	Spring, Holder		201-1792	1	Code 9X, 31, 139/240V
10	211-0170	1	Bell, End (Includes Coil and Pole Shoes)		201-1793	1	Code 519, 520, 521, 522
11	221-0153	6	Shoe, Pole	19	510-0091	1	*Nut, Locking - Bearing
	800-0031	12	Screw, Cap - Hex Head (5/16-18 x 1-1/2")	20	510-0093	1	*Washer, Locking - Nut
12	222-1693	1	Set, Coil - Field	21	510-0090	1	*Bearing, Ball
				22	510-0092	1	*Nut, Locking - Exciter
				23	510-0094	1	*Washer, Locking - Nut
				24			*Rotor, Exciter (See Separate Page for Components)
				25	515-0162	1	*Key
				26	232-2833	1	*Disk and Fan Assembly
					805-0035	12	*Bolt, Cap - Hex Head (5/8-11 x 1-1/2")
				27	232-1870	1	*Hub
				28	515-0161	1	*Key

* - Parts included in Rotor Assembly.

Generator
Spec A Thru D

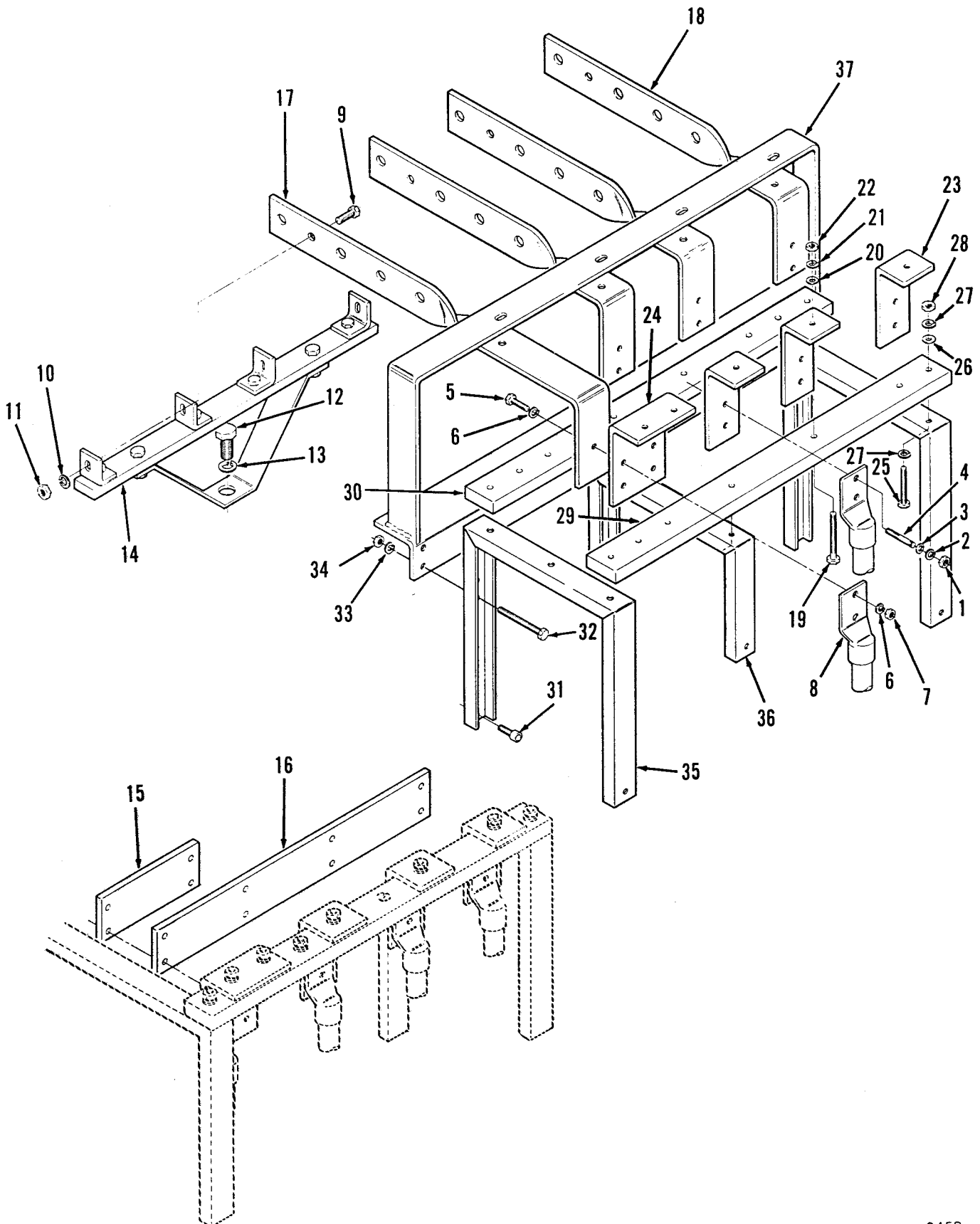


**Generator
Spec A Thru D**

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	232-1973	1	Grille	15			Stator (Includes Bus Bar Assembly - See Separate Page for Bus Bar Components)
	520-0692	2	Stud (5/16-18)				Spec A Only
	800-0009	4	Screw, Cap - Hex Head (1/4-20 x 1-1/2")				Code 4
	800-0013	2	Screw, Cap - Hex Head (1/4-20 x 2-1/2")	220-1105	1	1	Code 4X
	850-0040	6	Washer, Lock - Spring (1/4")	220-1106	1	1	Code 5D
	850-0070	4	Washer, Lock - Spring (5/16")	220-1108	1	1	Code 6D
	862-0007	4	Nut, Hex (5/16-18)	220-1109	1	1	Code 7X
2	234-0272	1	Screen	220-1105	1	1	Code 9X
	800-0003	2	Screw, Cap - Hex Head (1/4-20 x 1/2")	220-2720	1	1	No Code 139/240V
	850-0040	2	Washer, Lock - Spring (1/4")	220-1106	1	1	Code 57
3	234-0292	1	Band, Top	220-2714	1		Spec B Thru D
	800-0026	2	Screw, Cap - Hex Head (5/16-18 x 3/4")	220-2815	1	1	Code 4
	850-0045	2	Washer, Lock - Spring (5/16")	220-2816	1	1	Code 4X
4	234-0282	1	Band, Bottom	220-2819	1	1	Code 5D
	800-0026	2	Screw, Cap - Hex Head (5/16-18 x 3/4")	220-2820	1	1	Code 6D
	850-0045	2	Washer, Lock - Spring (5/16")	220-2821	1	1	Code 7
5	232-1957	1	Support	220-2814	1	1	Code 7X
	805-0035	2	Bolt, Cap - Hex Head (5/8-11 x 1-1/2")	220-2818	1	1	Code 9X
6		1	Regulator, Voltage - Spec A Only (See Separate Page for Component)	220-3335	1	1	Code 31
	813-0098	4	Screw, Machine - Round Head (#10-32 x 3/8")	220-2817	1	1	No Code 139/240V
	850-0030	4	Washer, Lock - Spring (#10)	220-2824	1	1	Code 519
7			Sensor, Over Speed (See Separate Page for Components)	220-2823	1	1	Code 520
8	232-1923	1	Holder, Bearing	220-2826	1	1	Code 521
9	232-1924	1	Spring, Holder	220-2825	1	1	Code 522
10	211-0170	1	Bell, End (Includes Coil and Pole Shoes)	16	800-0133	6	Screw, Cap - Hex Head (5/8-11 x 1-3/4")
11	221-0153	6	Shoe, Pole	17	850-0070	6	Washer, Lock - Spring (5/8")
	800-0031	12	Screw, Cap - Hex Head (5/16-18 x 1-1/2")	18			Rotor Assembly (Includes Parts Marked *)
12	222-1693	1	Set, Coil - Field	201-1792	1	1	Code 4, 4X, 5, 6, 7, 7X
13	800-0092	16	Screw, Cap - Hex Head (1/2-13 x 1-1/2")	201-1792	1	1	Code 9X, 31, 139/240V
14	850-0060	16	Washer, Lock - Spring (1/2")	201-1793	1	1	Code 519, 520, 521, 522
				19	510-0091	1	*Nut, Locking - Bearing
				20	510-0093	1	*Washer, Locking - Nut
				21	510-0090	1	*Bearing, Ball
				22	510-0092	1	*Nut, Locking - Exciter
				23	510-0094	1	*Washer, Locking - Nut
				24			*Rotor, Exciter (See Separate Page for Components)
				25	515-0162	1	*Key
				26	232-2833	1	*Disk and Fan Assembly
				805-0035	12	12	*Bolt, Cap - Hex Head (5/8-11 x 1-1/2")
				27	232-1870	1	*Hub
				28	515-0161	1	*Key

* - Parts included in Rotor Assembly.

Bus Bar Components Dual Insulator Bars



245D

Bus Bar Components Dual Insulator Bars

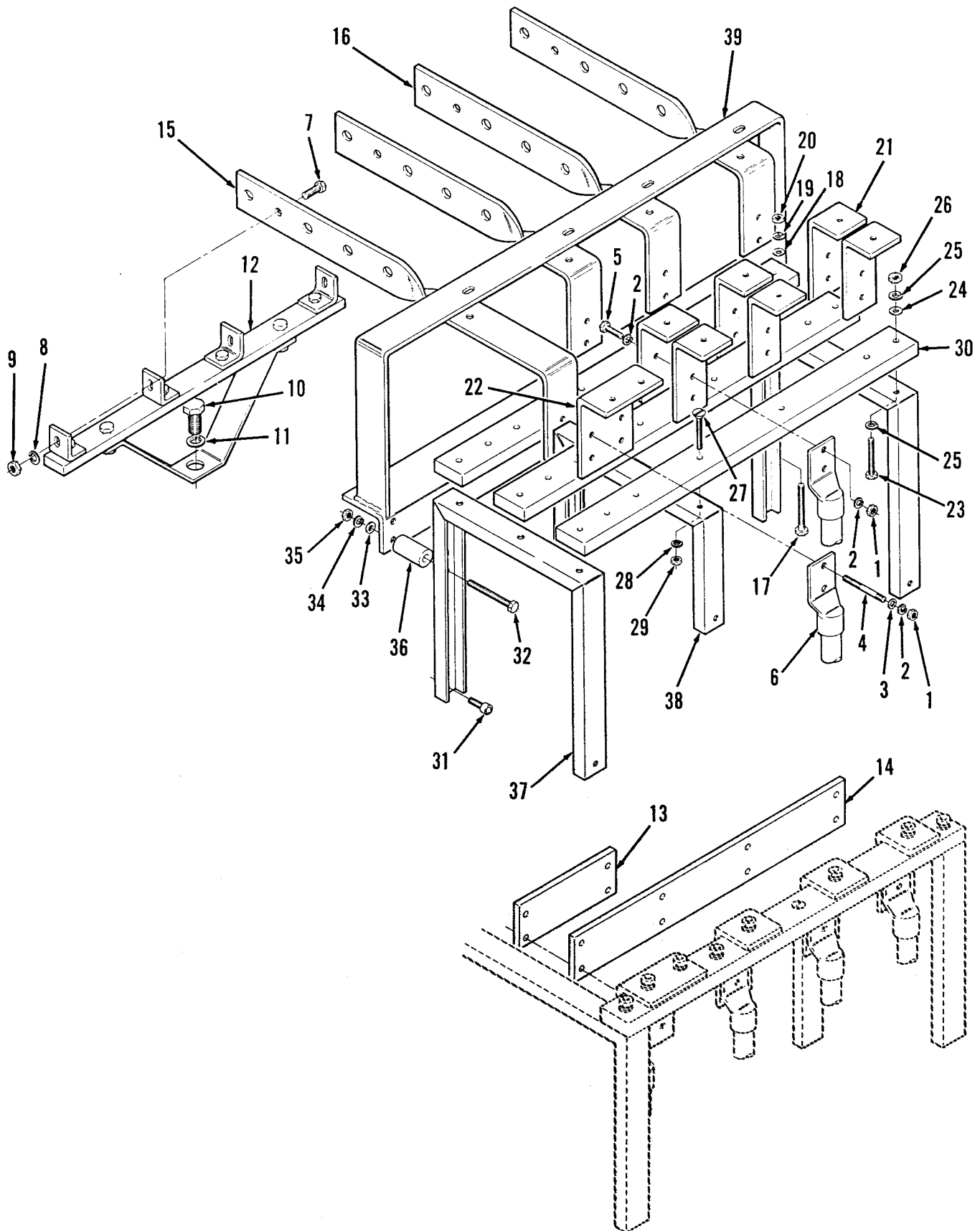
REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	862-0015	32	#Nut, Hex (5/16-18)	17			*Bar, Bus
2	850-0045	32	#Washer, Lock - Spring (5/16")		232-1996	1	1/4"W x 17-3/8"Lg
3	526-0115	32	#Washer, Flat (5/16")		232-2852	1	1/2"W x 19-1/8"Lg
4	520-0693	16	#Stud	18			*Bar, Bus
5	800-0052	16	@Screw, Cap - Hex Head (3/8-16 x 1-1/2")		232-2001	3	1/4"W x 13-1/4"Lg
6	850-0050	32	@Washer, Lock - Spring (3/8")		232-2853	3	1/2"W x 15-1/2"LG
7	862-0003	32	@Nut, Hex (3/8-16)	19			Screw, Cap - Hex Head
8			Terminal		800-0052	9	(3/8-16 x 1-1/2")
	332-1151	12	#2 Wire Size		800-0053	9	(3/8-16 x 1-3/4")
	332-1152	12	#1/0 Wire Size		800-0054	9	(3/8-16 x 2")
	332-1153	12	#2/0 Wire Size	20	526-0029	18	Washer, Flat (3/8")
	332-1154	12	#3/0 Wire Size	21	850-0050	9	Washer, Lock - Spring (3/8")
	332-1155	12	#4/0 Wire Size	22	862-0003	9	Nut, Hex (3/8-16)
	332-1156	12	250 Mil Wire Size	23	232-1990	3	*Bar, Bus
	332-1157	12	300 Mil Wire Size	24	232-1991	1	*Bar, Bus
	332-1158	12	350 Mil Wire Size	25	800-0052	6	Screw, Cap - Hex Head (3/8-16 x 1-1/2")
9	800-0005	4	Screw, Cap - Hex Head (1/4-20 x 3/4")	26	526-0029	12	Washer, Flat (3/8")
10	850-0040	4	Washer, Lock - Spring (1/4")	27	850-0050	6	Washer, Lock - Spring (3/8")
11	862-0001	4	Nut, Hex (1/4-20)	28	862-0003	6	Nut, Hex (3/8-16)
12	800-0151	1	Screw, Cap - Hex Head (3/4-10 x 1")	29	232-1998	1	Board, Insulating
13	850-0079	1	Washer, Lock - Spring (3/4")	30	232-1995	1	Board, Insulating
14		1	Support, Bus Bar (See Separate Page for Components	31	802-0069	6	Screw, Cap - Socket Head (3/8-16 x 5/8")
15	232-2005	1	Bar, Bus - Jumper (Used on Delta Applications)	32	800-0005	6	Screw, Cap - Hex Head (1/4-20 x 3/4")
16	232-1993	1	Bar, Bus - Jumper (Used on Parallel Wye Applications)	33	850-0040	6	Washer, Lock - Spring (1/4")
				34	862-0001	6	Nut, Hex (1/4-20)
				35	232-1999	2	Bracket, Mounting
				36	232-2000	1	Bracket, Mounting
				37	315-0302	1	Shelf - Current Transformer

- Terminal Hardware used thru June 1981.

@ - Terminal Hardware used beginning July 1981.

* - NOTE: Bus Bars contained tapped holes thru June 1981, beginning July 1981 the Terminal mounting holes were drilled out, requiring hardware marked @.

Bus Bar Components Triple Insulator Bars

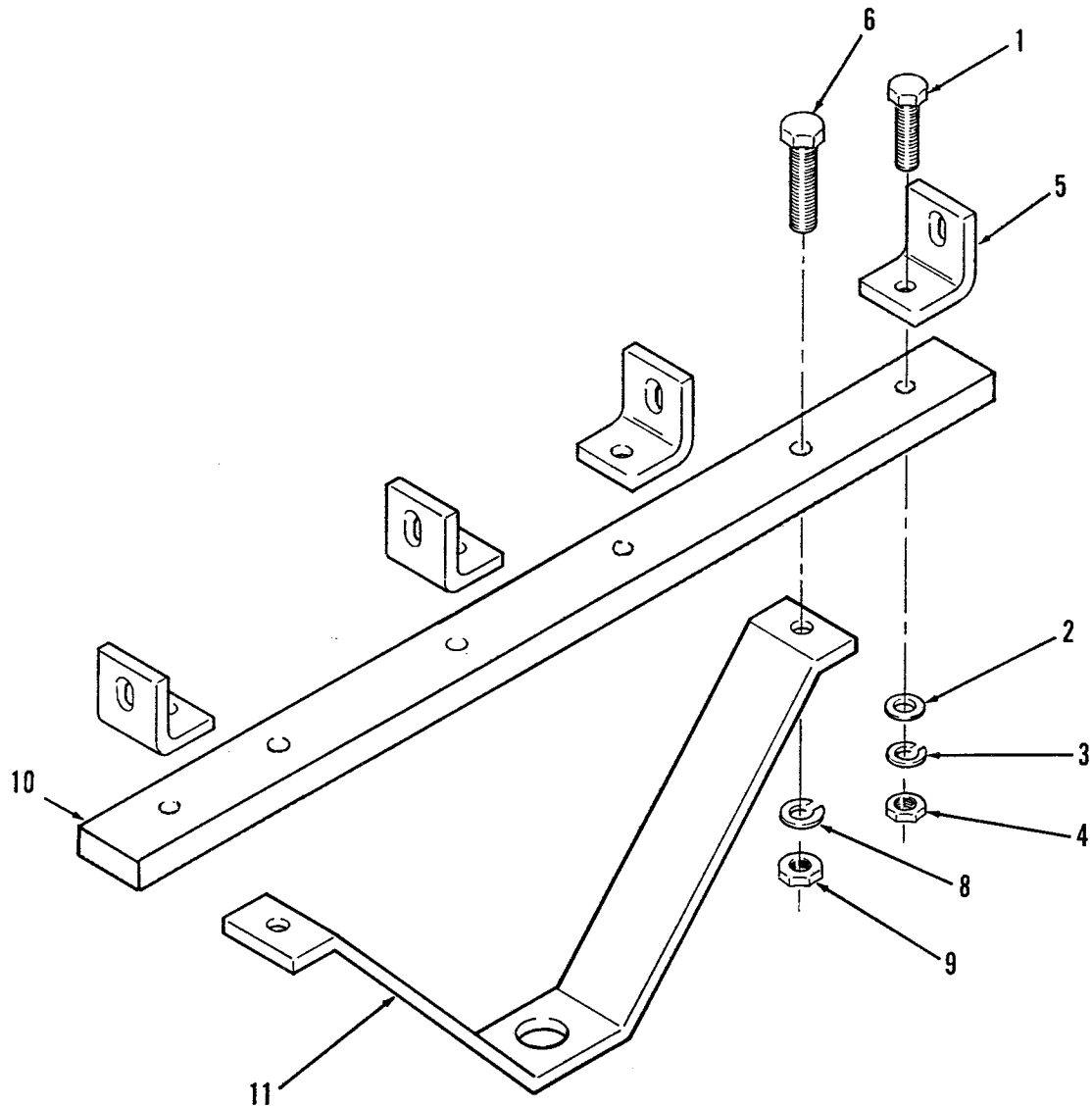


2280

Bus Bar Components Triple Insulator Bars

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	862-0015	24	Nut, Hex (5/16-18)	16	232-2249	3	Bar, Bus (1/4" x 13-1/4")
2	850-0045	44	Washer, Lock - Spring (5/16")	17	800-0562	11	Screw, Cap - Hex Head (3/8-16 x 2")
3	526-0115	24	Washer, Flat (5/16")	18	526-0029	11	Washer, Flat (3/8")
4	520-0693	2	Stud	19	850-0050	11	Washer, Lock - Spring (3/8")
5	800-0028	20	Screw, Cap - Hex Head (5/16-18 x 1")	20	862-0003	11	Nut, Hex (3/8-16)
6			Terminal	21	232-2758	6	Bar, Bus
	332-1151	12	#2 Wire Size	22	232-2759	1	Bar, Bus
	332-1152	12	#1/0 Wire Size	23	800-0052	8	Screw, Cap - Hex Head (3/8-16 x 1-1/2")
	332-1153	12	#2/0 Wire Size	24	526-0029	16	Washer, Flat (3/8")
	332-1154	12	#3/0 Wire Size	25	850-0050	8	Washer, Lock - Spring (3/8")
	332-1155	12	#4/0 Wire Size	26	862-0003	8	Nut, Hex (3/8-16)
	332-1156	12	250 Mil Wire Size	27	814-0182	1	Screw, Machine - Flat Head (5/16-18 x 1-1/2")
	332-1157	12	300 Mil Wire Size	28	850-0045	1	Washer, Lock - Spring (5/16")
	332-1158	12	350 Mil Wire Size	29	862-0015	1	Nut, Hex (5/16-18)
7	800-0005	4	Screw, Cap - Hex Head (1/4-20 x 3/4")	30	232-1998	3	Board, Insulating
8	850-0040	4	Washer, Lock - Spring (1/4")	31	802-0069	6	Screw, Cap - Socket Head (3/8-16 x 5/8")
9	862-0001	4	Nut, Hex (1/4-20)	32	800-0012	4	Screw, Cap - Hex Head (1/4-20 x 2-1/4")
10	800-0151	1	Screw, Cap - Hex Head (3/4-10 x 1")	33	526-0018	4	Washer, Flat (1/4")
11	850-0079	1	Washer, Lock - Spring (3/4")	34	850-0040	4	Washer, Lock - Spring (1/4")
12		1	Support, Bus Bar (See Separate Page for Components)	35	862-0001	4	Nut, Hex (1/4-20)
13	232-2005	1	Bar, Bus - Jumper (Used on Delta Applications)	36	232-2754	4	Spacer
14	232-1993	1	Bar, Bus - Jumper (Used on Parallel Wye Applications)	37	232-2752	2	Bracket, Mounting
15	232-1996	1	Bar, Bus (1/4" x 17-3/8")	38	232-2753	1	Bracket, Mounting
				39	301-5297	1	Shelf - Current Transformer

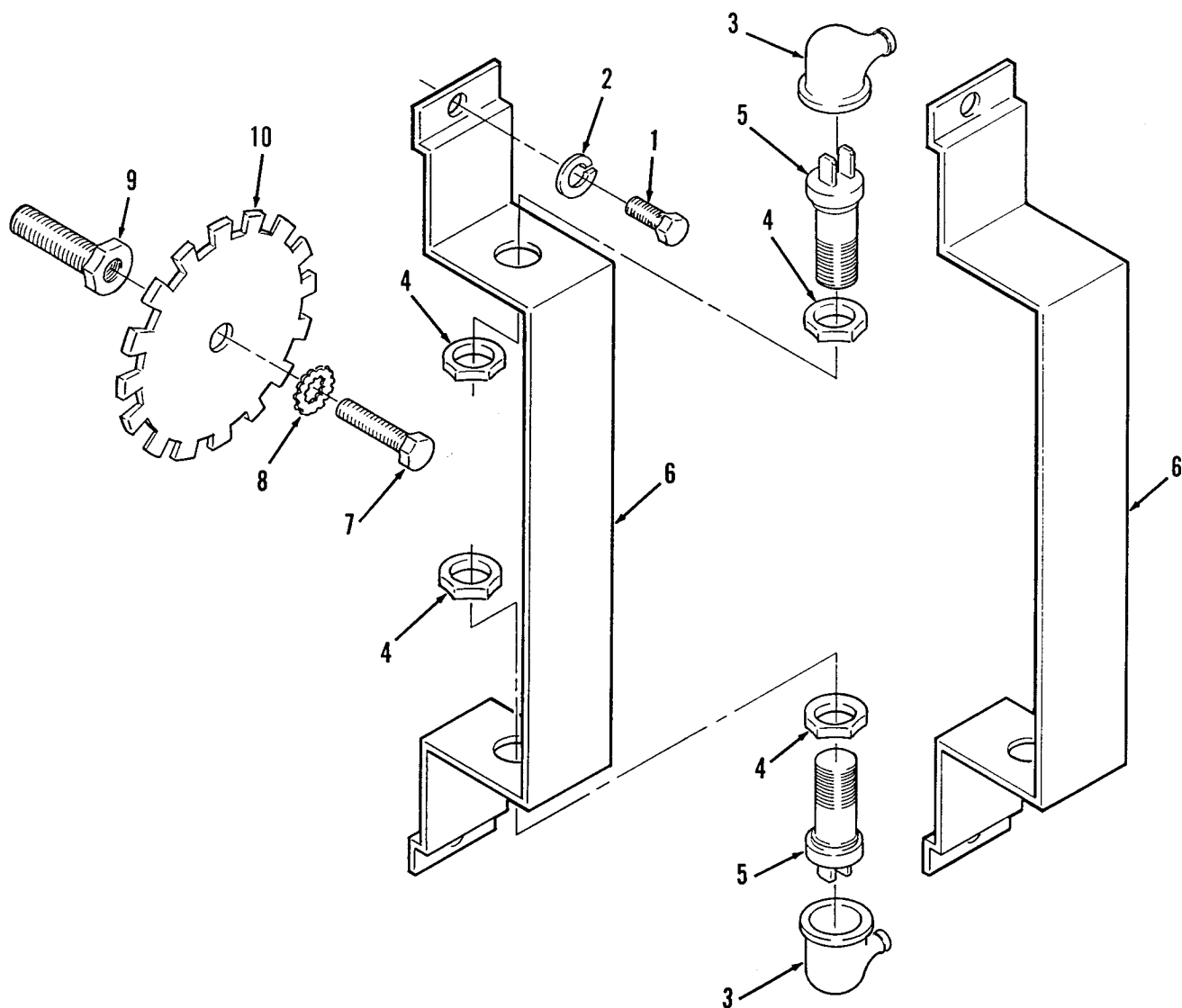
Support Components



244A

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	800-0007	4	Screw, Cap - Hex Head (1/4-20 x 1")	6	800-0051	2	Screw, Cap - Hex Head
2	526-0018	4	Washer, Flat (1/4")	7	526-0029	2	Washer, Flat (3/8")
3	850-0040	4	Washer, Lock - Spring (1/4")	8	850-0050	2	Washer, Lock - Spring (3/8")
4	862-0001	4	Nut, Hex (1/4-20)	9	862-0003	2	Nut, Hex (3/8-16)
5	232-1992	4	Bracket	10	232-1997	1	Board, Insulating
				11	232-1994	1	Bracket, Support

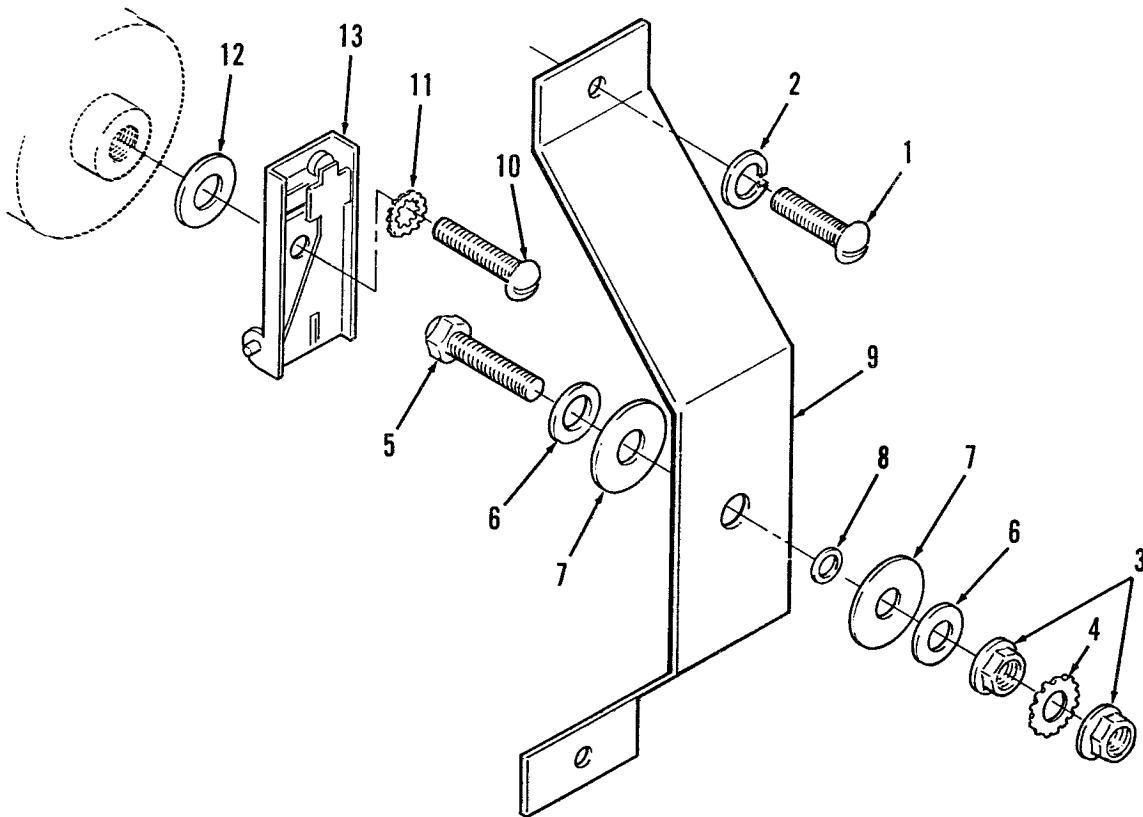
Over Speed Sensor Components



242A

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	800-0003	2	Screw, Cap - Hex Head (1/4-20 x 1/2")	6	150-1556	1	Bracket Standard
2	850-0040	2	Washer, Lock - Spring (1/4")		150-1878	1	Dual Application
3	150-1410	1	Cap, Insulating Standard	7	800-0050	1	Screw, Cap - Hex Head (3/8-16 x 1")
	150-1410	2	Dual Application	8	856-0010	1	Washer, Lock - EIT (3/8")
4	868-0011	4	Nut, Hex - Jam (3/4-16)	9	800-0513	1	Screw, Cap - Hex Head Modified with Tapped Hole
5	150-1406	1	Sensor Standard	10	150-1557	1	Wheel - Speed Sensor
	150-1406	2	Dual Application				

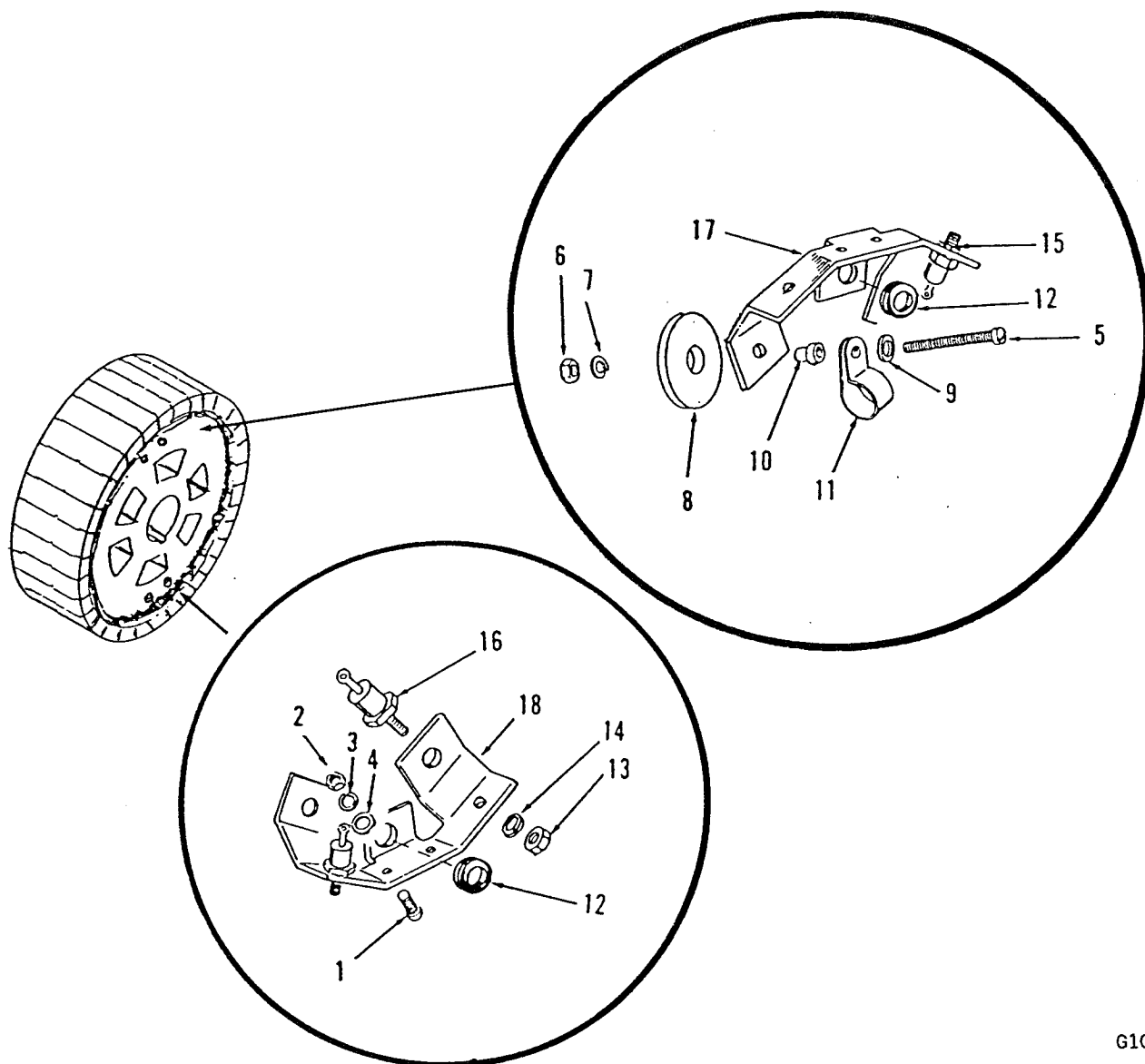
Over Speed Switch Components



241A

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	812-0148	2	Screw, Machine - Round Head (1/4-20 x 1/2")	7	508-0018	2	Washer, Insulating
2	850-0040	2	Washer, Lock - Spring (1/4")	8	508-0006	1	Washer, Insulating (3/8"OD)
3	871-0016	2	Nut, Hex - Brass (1/4-20)	9	150-1194	1	Bracket
4	854-0014	1	Washer, Lock - IT (1/4")	10	812-0189	1	Screw, Machine - Round Head (3/8-16 x 3/4")
5	150-0723	1	Contact	11	856-0010	1	Washer, Lock - EIT (3/8")
6	526-0052	2	Washer, Flat - Brass (1/4")	12	526-0030	1	Washer, Flat (3/8")
				13	150-0717	1	Switch, Over Speed

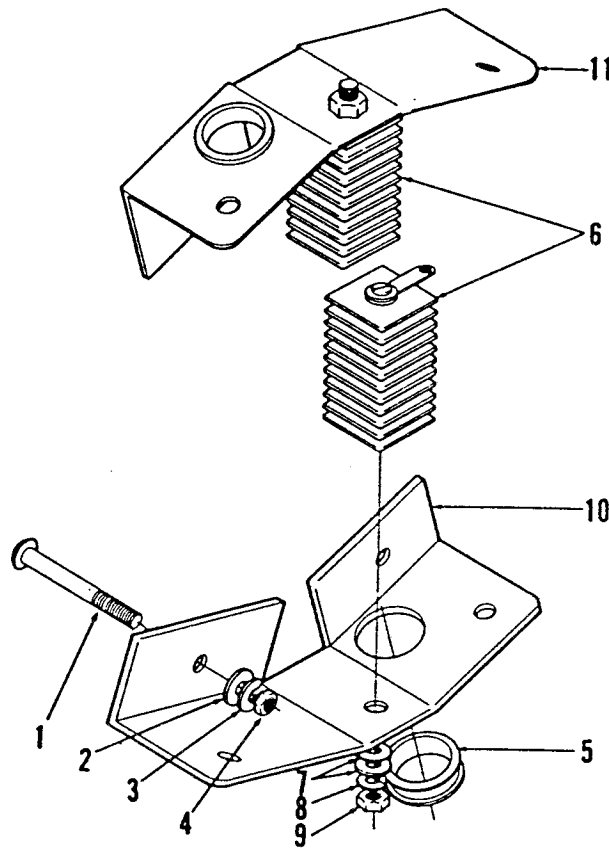
Exciter Rotor Components



G1092

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
	201-1501	1	Rotor, Exciter - 60 Hz	9	526-0009	4	Washer, Flat (7/32"ID x 1/2"OD x 1/16"THK)
	201-1549	1	Rotor, Exciter - 50 Hz	10	508-0124	4	Spacer, Stepped
1	813-0100	2	Screw, Machine - Round Head (#10-32 x 1/2")	11	332-0050	2	Clamp, Loop
2	870-0053	2	Nut, Hex (#10-32)	12	508-0093	2	Grommet, Rubber
3	850-0030	2	Washer, Lock - Spring (#10)	13	868-0001	6	Nut, Hex (1/4-28)
4	526-0008	2	Washer, Flat (13/64"ID x 7/16"OD x 1/32"THK)	14	850-0040	6	Washer, Lock - Spring (1/4")
5	813-0114	4	Screw, Machine - Round Head (#10-32 x 3")	15	358-0011	3	Rectifier, Diode - Positive (CR1, CR2, CR3)
6	870-0053	4	Nut, Hex (#10-32)	16	358-0012	3	Rectifier, Diode - Negative (CR4, CR5, CR6)
7	850-0030	4	Washer, Lock - Spring (#10)	17	363-0025	1	Sink, Heat - Positive
8	508-0156	4	Washer, Insulating	18	363-0033	1	Sink, Heat - Negative

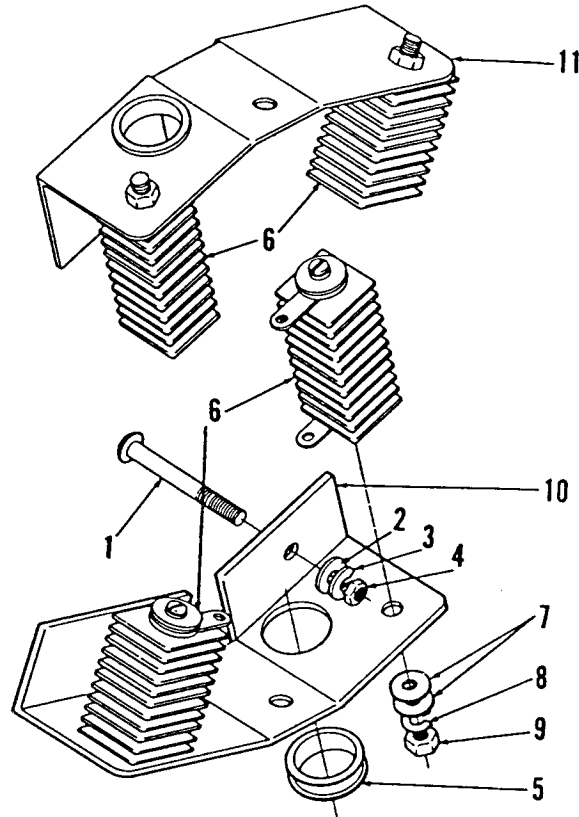
Voltage Suppressor Components



XES1229

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
	232-2445	1	Suppressor, Voltage	6	305-0526	1	Set, Voltage Suppressor
1	813-0120	4	Screw, Machine - Round Head (#10-32 x 3-1/2")	7	526-0140	4	Washer, Flat (#10)
2	526-0140	4	Washer, Flat (#10)	8	850-0030	4	Washer, Lock - Spring (#10)
3	850-0030	4	Washer, Lock - Spring (#10)	9	870-0053	4	Nut, Hex (#10-32)
4	870-0053	4	Nut, Hex (#10-32)	10	363-0025	1	Sink, Heat - Positive
5	508-0093	2	Grommet	11	363-0033	1	Sink, Heat - Positive

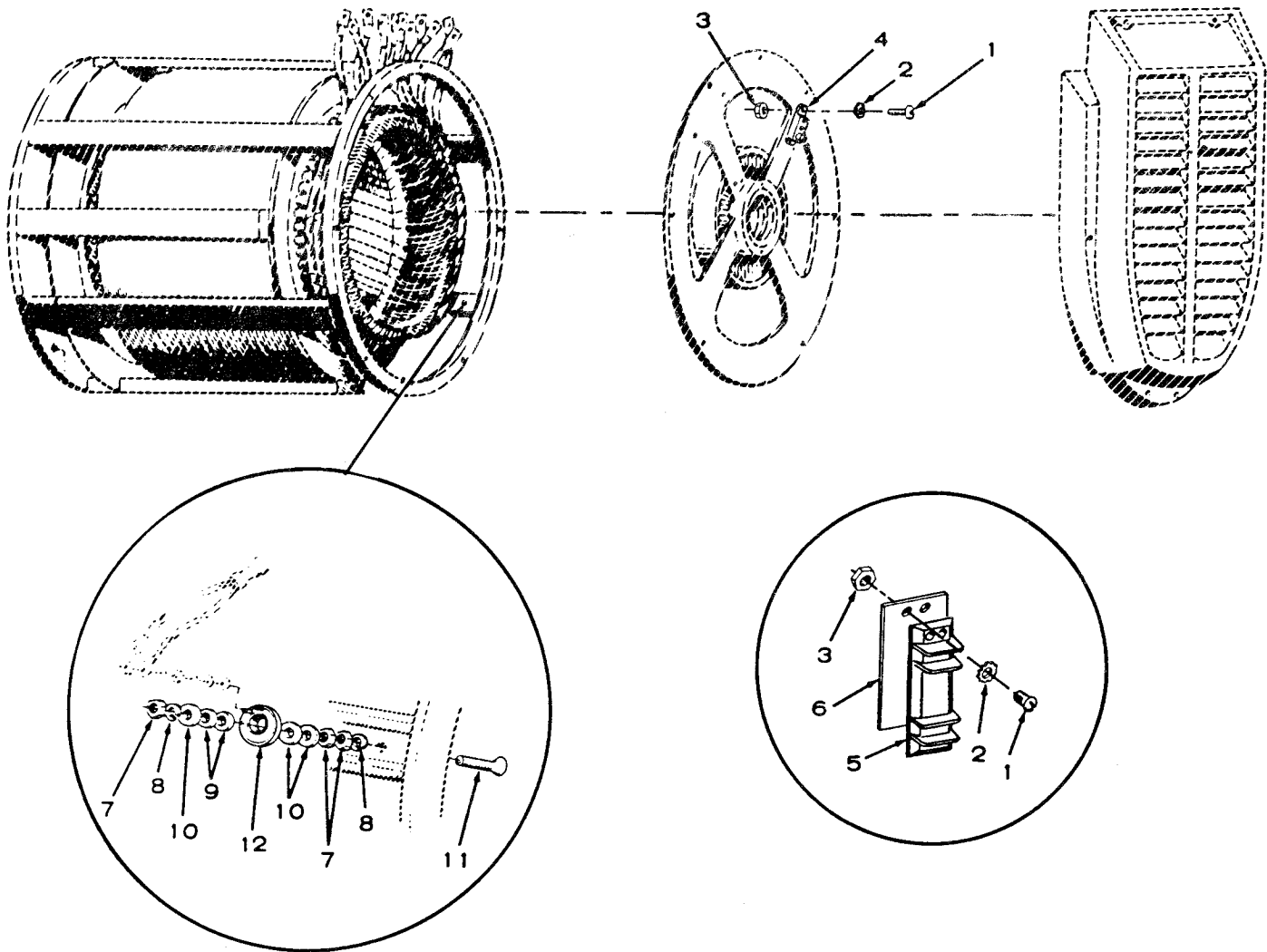
Dual Voltage Suppressor Components



XES1230

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
	232-2766	1	Suppressor, Voltage - Dual	6	305-0526	2	Set, Voltage Suppressor
1	813-0120	8	Screw, Machine - Round Head (#10-32 x 3-1/2")	7	526-0140	8	Washer, Flat (#10)
2	526-0140	8	Washer, Flat (#10)	8	850-0030	8	Washer, Lock - Spring (#10)
3	850-0030	8	Washer, Lock - Spring (#10)	9	870-0053	8	Nut, Hex (#10-32)
4	870-0053	8	Nut, Hex (#10-32)	10	363-0025	1	Sink, Heat - Positive
5	508-0093	2	Grommet	11	363-0033	1	Sink, Heat - Positive

Generator Heater

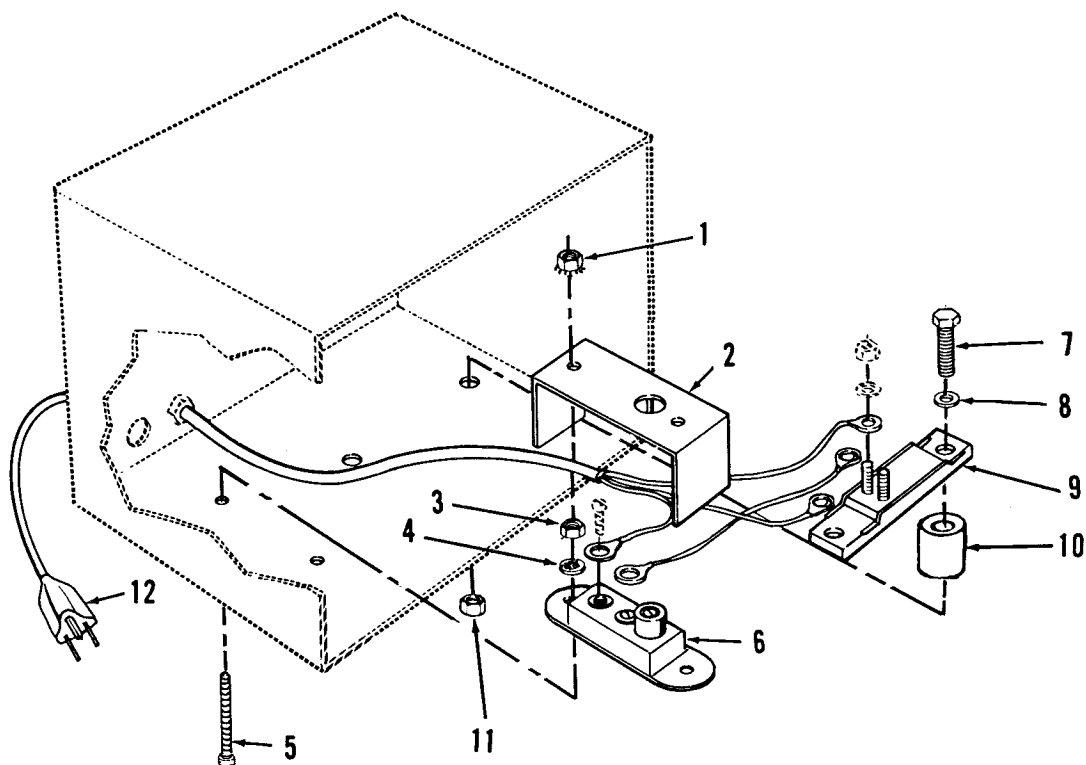


G1101

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 - ET (#6)
3	860-0005	4	Nut, Hex (#6-32)
4	309-0128	1	Thermostat
5	332-0333	1	Block, Terminal
6	332-0499	1	Strip, Marker
7	862-0003	6	Nut, Hex (3/8-16)

REF NO.	PART NO.	QTY USED	PART DESCRIPTION
8	850-0050	4	Washer, Lock - Spring (3/8")
9	526-0029	4	Washer, Flat (3/8")
10	526-0123	6	Washer, Flat (1-1/4"OD)
11	814-0203	2	Screw, Machine - Flat Head (3/8-16 x 2")
12	333-0059	2	Heater, Electrical (125 Watt, 120 VAC)

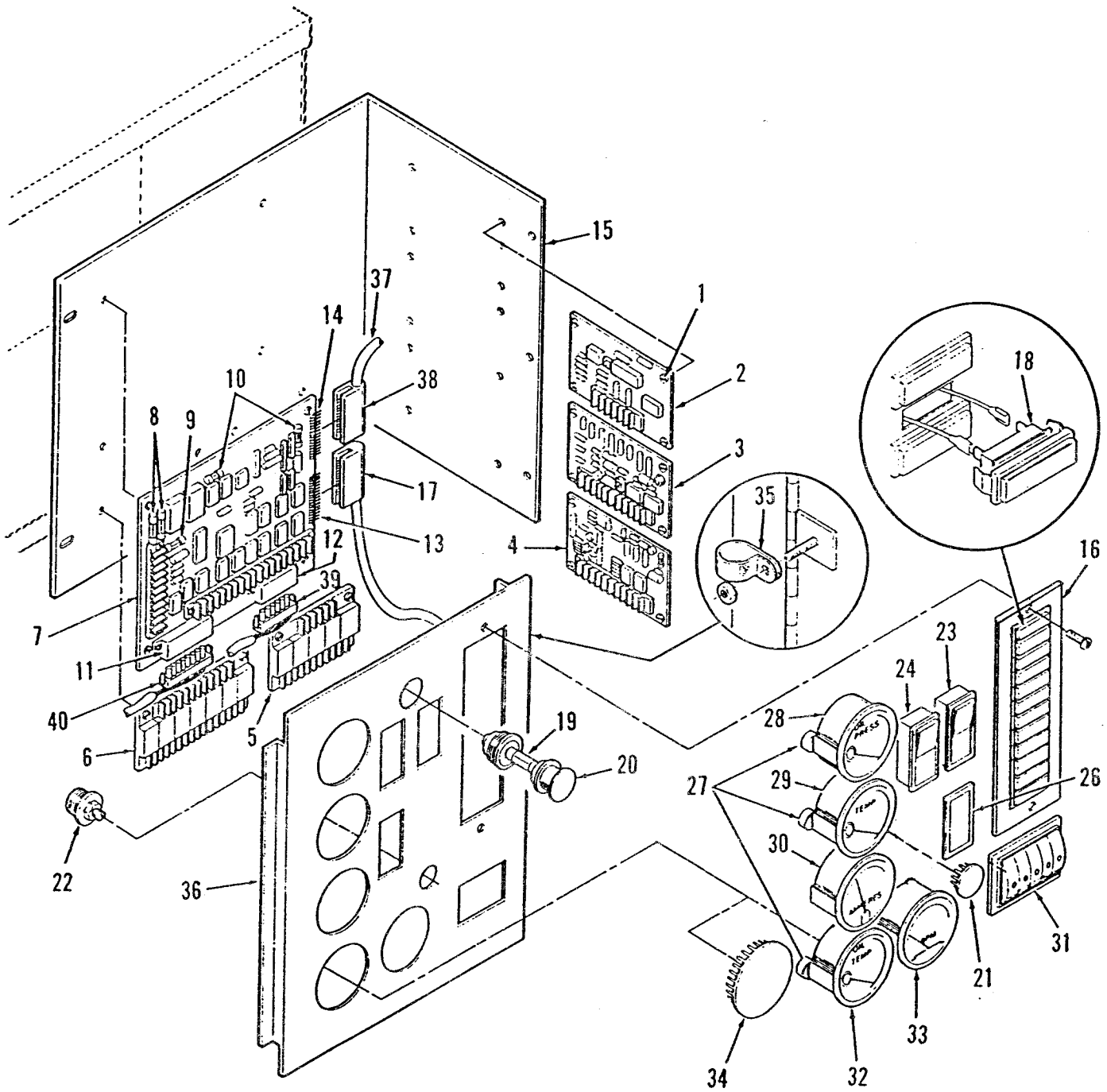
Control Heater



SC1156

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	870-0183	2	Nut, Self-locking - Hex (#6-32)	7	800-0034	2	Screw, Cap - Hex Head (5/16-18 x 2-1/4")
2	301-1886	1	Cover	8	526-0113	2	Washer, Flat (5/16")
3	860-0006	1	Nut, Hex (#6-32)	9	333-0151	1	Heater, Electrical
4	854-0006	2	Washer, Lock - IT (#6)	10	130-1107	2	Spacer
5	812-0070	2	Screw, Machine - Round Head (#6-32 x 1-1/4")	11	870-0257	2	Nut, Self-locking - Hex (5/16-18)
6	309-0128	1	Thermostat, Adjustable	12	335-0161	1	Cable, Electrical

Engine Control
Begin Spec E

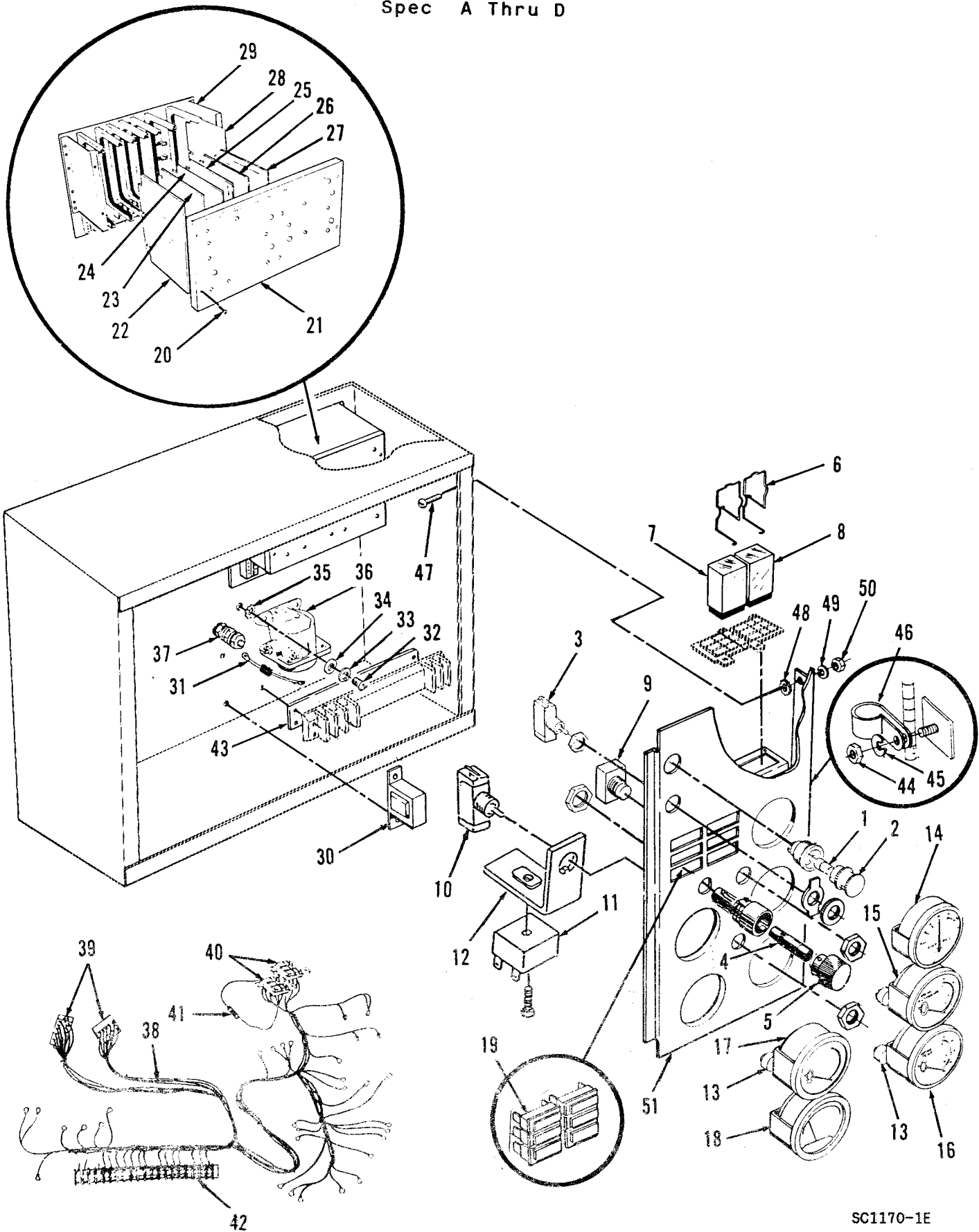


Engine Control Begin Spec E

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	815-0544	24	Screw, Machine - Round Head With IT Lock Washer (#6-32 x 1/2")	17	323-1310	1	Housing, 13 Pin (J3)
					323-1302	13	Contact, Pin
2	300-2900	1	Board, Time Delay, Start/Stop - 24 VDC (A15)	18	322-0369-02	1	Lamp, Incandescent - 1/3 Watt, 28 VDC
3			Board, Magnetic Sensor, Start Disconnect/Over Speed Sensor (A16)	19	322-0017	1	Lamp, Incandescent - 28 VDC (DS11)
	300-2903	1	Standard	20	322-0361	1	Holder, Lamp
	300-2904	1	Precision	21	517-0131	1	Plug, Button
4	300-2906	1	Board, Over-Under Voltage Sensor - 24 VDC (A17)	22	151-0402	1	Potentiometer (R11)
5	300-2856	1	Board, Relay - 24 VDC (A13)	23	308-0785	1	Switch, Push (S11)
6	300-2863	1	Board, Relay - 24 VDC (A14)	24	308-0784	1	Switch, Push (S12)
7			Board, Engine Monitor (A11) (Includes Fuses and Connectors)	26	301-6257	1	Cover
	300-2808	1	24 VDC, 2 Light	27	193-0250	3	Resistor, Gauge (R12,R13,R14)
	300-2812	1	24 VDC, 12 Light	28	193-0352	1	Gauge, Pressure - Oil (M11)
8	321-0270	2	Fuse, Cartridge - 20 Amp (F1, F2)	29	193-0351	1	Gauge, Temperature - Water (M12)
9	321-0231	1	Fuse, Cartridge - 15 Amp (F3)	30	302-1790	1	Ammeter (M13)
10	321-0094	2	Fuse, Cartridge - 5 Amp (F4, F5)	31	302-0885	1	Meter, Totalizing - Time (M14)
11	323-1305	1	Connector, 8 Pin (P1)	32	193-0330	1	Gauge, Temperature - Oil (M15)
12	323-1303	1	Connector, 6 Pin (P2)	33	302-1715	1	Tachometer (M16)
13	323-1309	1	Connector, 13 Pin (P3)	34	517-0221	1	Plug, Button
14	323-1307	1	Connector, 12 Pin (P4)	35	322-0052	1	Clamp, Loop
15	301-8851	1	Bracket, Mounting		870-0131	1	Nut, Self-locking - Hex (#10-32)
	821-0004	4	Screw, Self-locking - Hex (#10-32 x 5/16")	36			Door, Control
16			Module, Indicator - Fault (A12) (Includes Connector)		301-9055-01	1	5 Meter Holes
	322-0358-02	1	24 VDC, 2 Light		301-9055-02	1	3 Meter Holes
	322-0360-02	1	24 VDC, 12 Light	37	338-1817	1	Harness, Wiring - DC (Includes Connector)
	815-0385	2	Screw, Machine - Round Head (#6-32 x 1/2")	38	323-1308	1	Housing, 12 Pin (J4)
	870-0183	2	Nut, Self-locking - Hex (#6-32)		323-1302	12	Contact, Pin
				39	323-1304	1	*Housing, 6 Pin
					323-1200	6	*Contact, Pin
				40	323-1306	1	*Housing, 8 Pin
					323-1200	8	*Contact, Pin

* - Parts Included in Engine Wiring Harness

Engine Control
Spec A Thru D



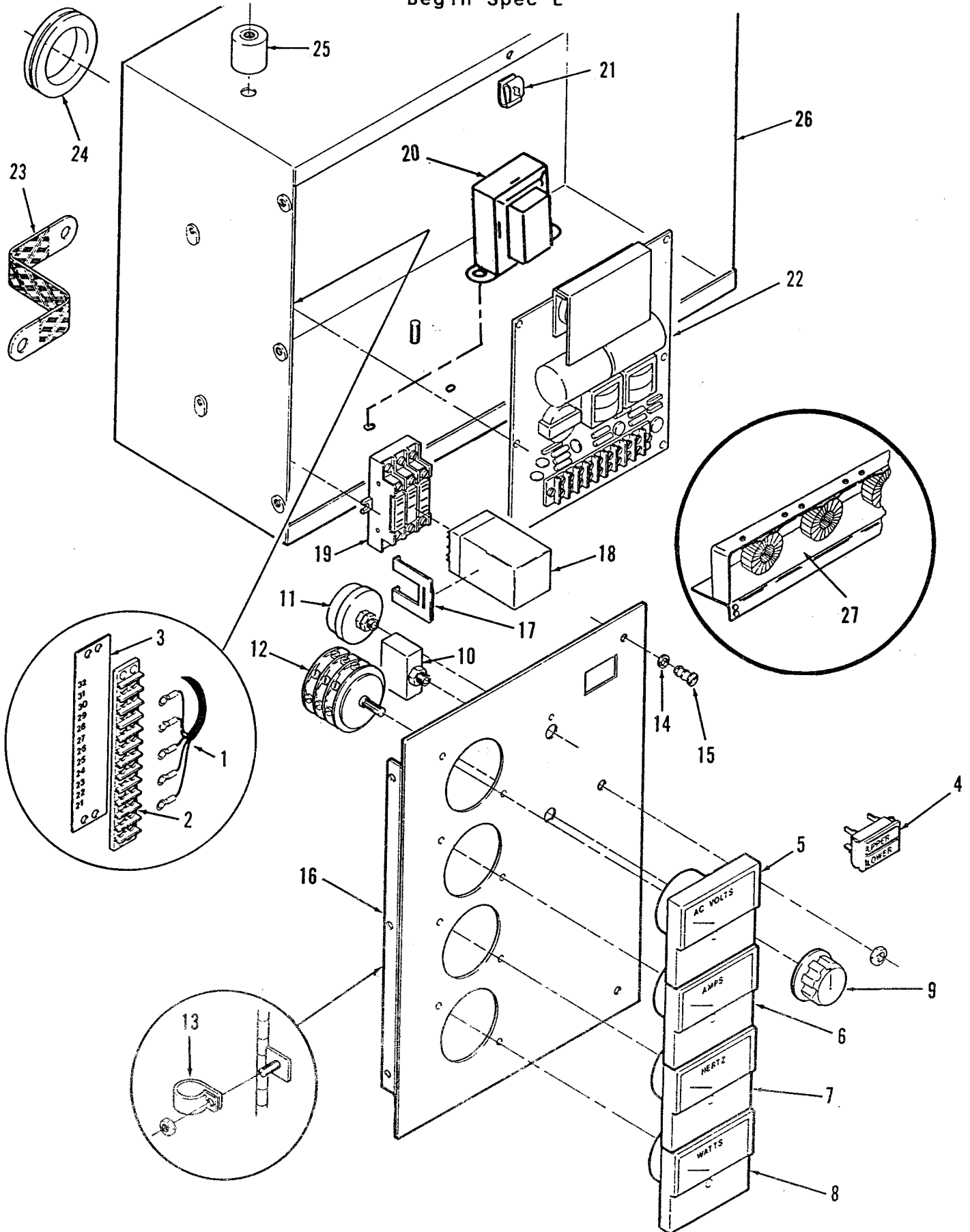
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Engine Control
Spec A Thru D

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	322-0017	1	Lamp, 24 VDC (DS18)	30	315-0361	1	Transformer, Step-down
2	322-0149	1	Light, Panel		812-0061	2	Screw, Machine - Round Head (#6-32 x 3/8")
3	308-0002	1	Switch, Toggle (S16)		853-0003	2	Washer, Lock - EIT (#6)
4	321-0147	1	Fuse (F1)	31	357-0018	1	Diode with Terminals
5	321-0217	1	Fuseholder	32	813-0098	2	Screw, Machine - Round Head (#10-32 x 3/8")
6	307-1157	2	Spring, Holddown - Relay	33	850-0030	2	Washer, Lock - Spring (#10)
7	307-1061	1	Relay, Start Protection (K14)	34	526-0009	2	Washer, Flat (#10)
8	307-1056	1	Relay, Ignition (K12)	35	856-0003	2	Washer, Lock - EIT (#10)
9	308-0140	1	Switch, Push (S15)	36	307-0061	1	Relay, Starting - 24 VDC (K13)
10			Switch, Toggle - Selector (S15)	37			Terminal, Ground (Includes Parts Marked *)
	308-0220	1	Standard		871-0010	2	*Nut, Hex (#10-32)
	308-0347	1	Penn State		850-0030	1	*Washer, Lock - Spring (#10)
	308-0539	1	Alarm Control		526-0062	2	*Washer, Flat (#10)
11	333-0194-02	1	Flasher, 24 VDC		853-0008	1	*Washer, Lock - ET (#10)
	813-0105	1	Screw, Machine - Round Head (#10-32 x 1")		856-0003	1	*Washer, Lock - EIT (#10)
12	301-6053	1	Bracket, Mounting - Flasher		815-0203	1	*Screw, Machine - Round Head (#10-32 x 7/8")
13	193-0250	3	Resistor, Gauge (R11,R12,R13)	38	338-1016	1	Harness, Wiring
14	302-0061	1	Ammeter (M11)		812-0061	4	Screw, Machine - Round Head (#6-32 x 3/8")
15	193-0243	1	Gauge, Pressure - Oil, 12 VDC (M12)		812-0066	2	Screw, Machine - Round Head (#6-32 x 3/4")
16	193-0245	1	Gauge, Temperature - Water - 12 VDC (M13)		853-0003	6	Washer, Lock - Spring (#6)
17	193-0248	1	Gauge, Temperature - Oil - 12 VDC (M15)		860-0006	4	Nut, Hex (#6-32)
18	302-0749	1	Tachometer (M14)	39	323-0984	2	Housing, Connector - Less Terminals
19			Light, Indicator - 28 VDC		323-0488	24	Terminal
	322-0119	1	Overcrank (DS12)	40	323-0765	2	Socket, Relay (Less Terminals)
	322-0120	1	Low Oil Pressure (DS14)		332-1280	11	Terminal
	322-0121	1	High Engine Temperature (DS15)	41	357-0004	1	Diode (CR11)
	322-0122	1	Low Engine Temperature (DS16)	42	332-1005	1	Block, Terminal
	322-0123	1	Overspeed (DS13)	43	332-1559	1	Strip, Marker
	322-0129	1	Fault (DS12)	44	870-0053	1	Nut, Hex (#10-32)
	322-0315	1	Switch Off (DS17)	45	850-0030	1	Washer, Lock - Spring (#10)
20	815-0387	4	Screw, Machine - Pan Head (#6-32 x 1/4")	46	332-0052	1	Clamp, Loop
21	301-4015	1	Cover	47	815-0026	3	Screw, Machine - Truss Head (#10-32 x 3/8")
22	300-1573	1	Board, Cyle Cranker		856-0003	3	Washer, Lock - ET (#10)
23	300-1574	1	Board, Start Disconnet	48	850-0030	3	Washer, Lock - Spring (#10)
24	300-1575	1	Board, Overspeed Sensor	50	870-0053	3	Nut, Hex (#10-32)
25	300-1576	1	Board, Engine Monitor No.1	51			Panel, Control
26	300-1577	1	Board, Engine Monitor No.2		301-4086	1	3 Meters, 1 Panel Light
27	300-1578	1	Board, Engine Shutdown		301-4223	1	4 Meters, 1 Panel Light
28	300-1579	1	Board, Time Delay-StartStop		301-3997	1	5 Meters, 1 Panel Light
29	300-1572	1	Chassis				

* - Parts Included in Ground Terminal.

Generator Control
Begin Spec E



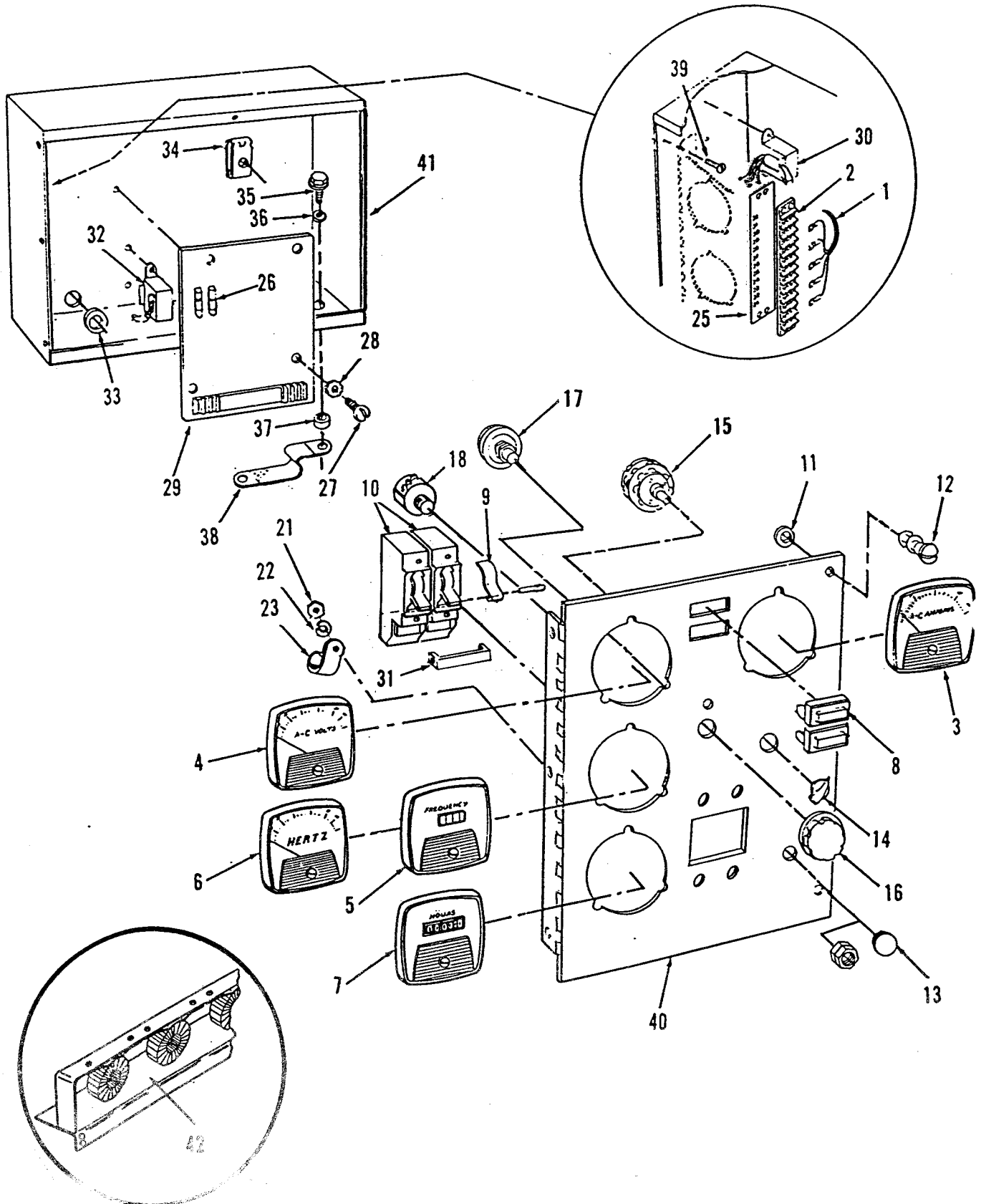
Generator Control
Begin Spec E

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1			Harness, Wiring - (Includes Terminal Block)	17	307-1987	2	Clip, Relay
	338-1818	1	Control with Meters	18	307-1056	1	Relay, 24 VDC (K21)
	338-1853	1	Control without Meters	19	323-0804	1	Socket, Relay
	812-0065	2	Screw, Machine - Round Head (#6-32 x 5/8")		815-0544	2	Screw, Machine - Round Head with IT Lock Washer (#6-32 x 1/2")
2	332-0607	1	Block, Terminal (TB1)	20	315-0642	1	Transformer, Step-down
3	332-2723	1	Strip, Marker		812-0077	2	Screw, Machine - Round Head (#8-32 x 3/8")
4	322-0363	1	Light, Indicator - Dual (DS21, DS22)		856-0002	2	Washer, Lock - EIT (#8)
5	302-1148	1	Voltmeter (M21) 0-300/600 VAC	21	406-0332	2	Receptacle, Fastener
6	302-1799	1	Ammeter (M22) 0-1500/3000 Amp Code 4X, 520	22	300-2977	1	Regulator, Voltage (VR21)
7	302-1720	1	Meter, Frequency (M23)		815-0544	6	Screw, Machine - Round Head with IT Lock Washer (#6-32 x 1/2")
8		1	Wattmeter (M24) (See Separate page for Components)	23	337-0049	1	Strap, Electrical
9	303-0032	1	Knob		800-0024	1	Screw, Cap - Hex Head (5/16-18 x 1/2")
10			Breaker, Circuit (CB21)		856-0008	1	Washer, Lock - EIT (5/16")
	320-1121	1	Standard	24	508-0051	1	Grommet
	320-1438	1	With Aux Contact	25	402-0527	2	Mount, Vibration
11	303-0261	1	Rheostat (R21)		800-0045	4	Screw, Cap - Hex Head (5/16-18 x 3/8")
12	308-0284	1	Switch, Rotary (S21)		850-0045	4	Washer, Lock - Spring (5/16")
13	332-0052	1	Clamp, Loop				
	870-0131	1	Nut, Self-locking - Hex with ET Lock Washer (#10-32)	26	301-8065	1	Box, Control
14	406-0334	2	Clip, Fastener	27		1	Current Transformer (See Separate Page for Components)
15	406-0333	2	Stud, Fastener				
16			Door, Control				
	301-9054-01	1	4 Meter Holes				
	301-9054-02	1	3 Meter Holes				
	301-9054-03	1	No Meter Holes				
	821-0004	3	Screw, Self-locking - Hex (#10-32 x 5/16")				

Generator Control Spec A Thru D

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	338-0759	1	Harness, Wiring	18	151-0402	1	Potentiometer- 5k Ohm
	338-0916	1	Code 4,5,6,8,54,58,519,521	21	870-0053	1	Nut, Hex (#10-32)
		1	Code 4X,7,7X,9X,57,520,522, and 523	22	850-0030	1	Washer, Lock - Spring (#10)
2			Block, Terminal (TB21)	23	332-0051	1	Clamp, Loop
	332-0607	1	12 Place	25	332-1242	1	Strip, Marker
	332-0795	1	16 Place		332-1248	1	16 Place
	812-0066	2	Screw, Machine - Round Head (#6-32 x 3/4")	26	321-0204	2	12 Place
	853-0003	2	Washer, Lock - ET (#6)	27	812-0065	4	Fuse, Cartridge - 1/4 Amp
	850-0020	2	Washer, Lock - Spring (#6)	28	853-0003	4	Screw, Machine - Round Head (#6-32 x 5/8")
3			Ammeter (M21)	29			Washer, Lock - ET (#6)
	302-0640	1	0-1200 Amp Code 4X, 9X, 17, 54X		332-1704	1	Regulator, Voltage (VR21)
	302-0641	1	0-1500 Amp Code 6D, 7, 7X, 56D, 522, 523		332-2029	1	120 VAC Input Signal Req'd
	302-1044	1	0-2500 Amp Code 5D, 520, 521		332-2030	1	240 VAC Input Signal Req'd (Semi-Frequency Sensitive)
	302-1210	1	0-1200/2400 Amp Code 31		332-2031	1	240 VAC Input Signal Req'd (Voltage Sensitive Type)
4			Voltmeter (M22)				240 VAC Input Signal Req'd (Frequency Sensitive Type)
	302-0421	1	0-300 VAC Code 4,5D,9X,54,58,519	30			Transformer, Voltage (T21)
	302-0612	1	0-500 VAC Code 6D,7,7X,520,522, and 523		315-0342	1	120 VAC
	302-1072	1	0-600 VAC Code 4X		315-0431	1	240 VAC
	302-0718	1	0-300/600 VAC Code 31		812-0061	2	Screw, Machine - Round Head (#6-32 x 3/8")
5			Meter, Frequency - Reed (M23)		853-0003	2	Washer, Lock - ET (#6)
	302-0221	1	230 VAC, 60 Hz	31	305-0675	1	Rectifier, Bridge (CR21)
	302-0256	1	230 VAC, 50 Hz		812-0070	2	Screw, Machine - Round Head (#6-32 x 1-1/4")
6			Meter, Frequency - Pointer (M23)		850-0020	2	Washer, Lock - Spring (#6)
	302-0810	1	208 VAC, 60 Hz	32	315-0384	1	Reactor (L21)
	302-0811	1	240 VAC, 60 Hz		812-0061	2	Screw, Machine - Round Head (#6-32 x 3/8")
	302-0894	1	240 VAC, 50 Hz		853-0003	2	Washer, Lock - ET (#6)
7			Meter, Totalizing - Time (M24)	33	508-0001	1	Grommet
	302-0466	1	60 Hz	34	406-0332	2	Receptacle, Fastener
	302-0469	1	50 Hz	35	800-0045	4	Screw, Cap - Hex Head (5/16-18 x 3/8")
8			Light, Indicator - Red - 125 VAC	36	850-0045	4	Washer, Lock - Spring (5/16")
	322-0130	1	Upper Scale (DS21)	37	402-0078	4	Dampener, Vibration
	322-0131	1	Lower Scale (DS22)	38	337-0049	1	Strap, Electrical - Ground
9	320-0307	1	Lock, Handle	39	815-0026	3	Screw, Machine - Truss Head (#10-32 x 3/8")
	815-0203	1	Screw, Machine - Round Head (#10-32 x 7/8")	40			Panel, Control
	854-0010	1	Washer, Lock - ET (#10)		301-3342	1	4 Meters, No Ind Light Hole
	871-0010	1	Nut, Hex (#10-32)		301-3170	1	4 Meters
10	320-0455	1	Breaker, Circuit (CB21)		301-3449	1	5 Meters, No Ind Light Hole
	812-0061	2	Screw, Machine - Round Head (#6-32 x 3/8")		301-3312	1	5 Meters
	850-0020	2	Washer, Lock - Spring (#6)	41	301-4135	1	Box, Control
11	406-0334	2	Clip, Fastener	42			Current Transformer
12	406-0333	2	Stud, Fastener				(See Separate Page for Components)
13	517-0131	1	Plug, Plastic				
14	303-0076	1	Knob, Pointer				
15	308-0284	1	Switch, Selector (S21)				
16	303-0032	1	Knob				
17	303-0170	1	Rheostat (R21)				

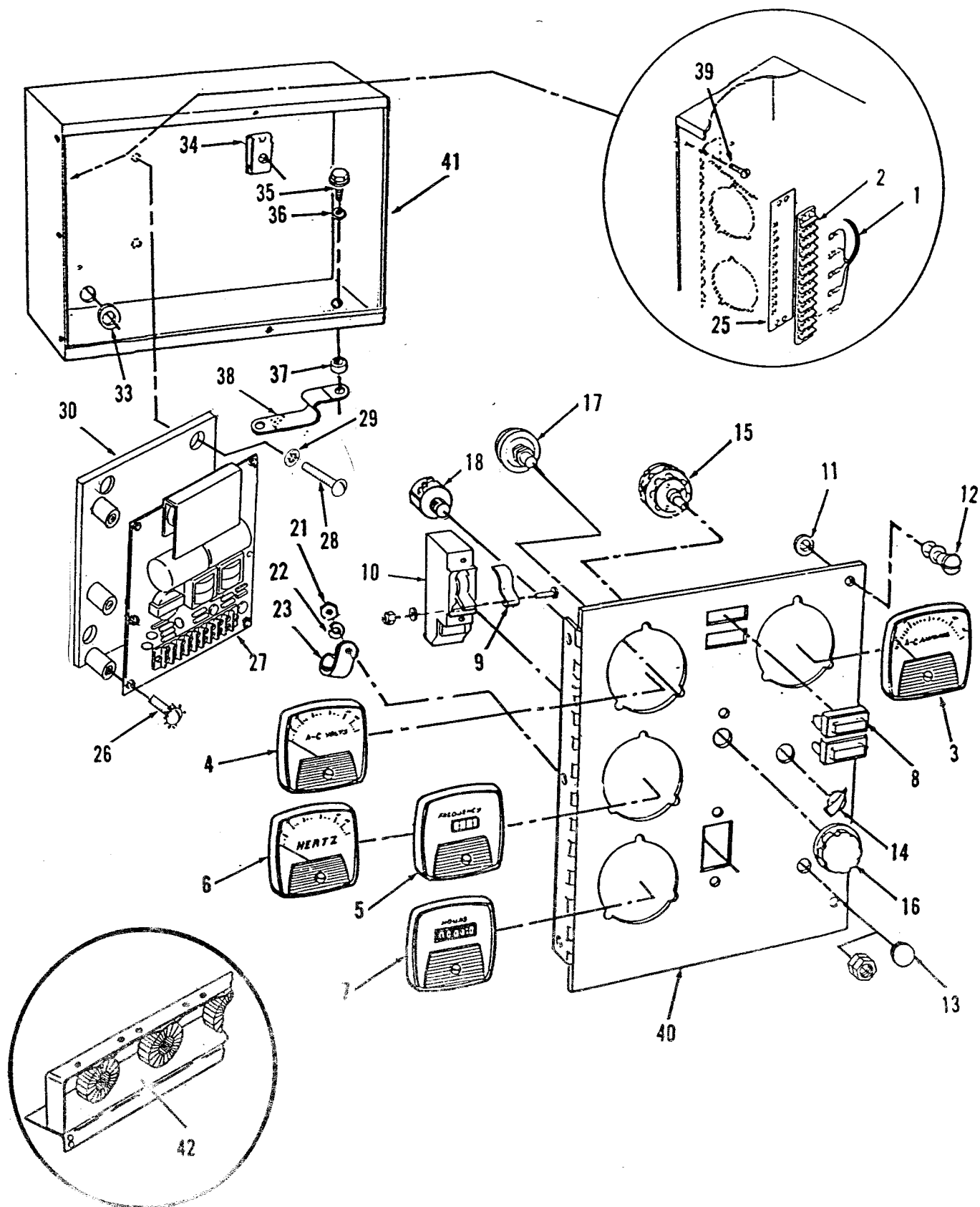
Generator Control
Switching Regulator
Spec A Thru D



**Generator Control
Switching Regulator
Spec A Thru D**

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1			Harness, Wiring	14	303-0076	1	Knob, Pointer
	338-0759	1	Code 4,5,6,8,54,58,519,521	15	308-0284	1	Switch, Selector (S21)
	338-0916	1	Code 4X,7,7X,9X,57,520,522, and 523	16	303-0032	1	Knob
2			Block, Terminal (TB21)	17	303-0170	1	Rheostat (R21)
	332-0607	1	12 Place	18	151-0402	1	Potentiometer - 5k Ohm
	332-0795	1	16 Place	21	870-0053	1	Nut, Hex (#10-32)
	812-0066	2	Screw, Machine - Round Head (#6-32 x 3/4")	22	850-0030	1	Washer, Lock - Spring (#10)
	853-0003	2	Washer, Lock - ET (#6)	23	332-0051	1	Clamp, Loop
	850-0020	2	Washer, Lock - Spring (#6)	25			Strip, Marker
3			Ammeter (M21)		332-1242	1	16 Place
	302-0640	1	0-1200 Amp Code 4X, 9X, 17, 54X		332-1248	1	12 Place
	302-0641	1	0-1500 Amp Code 6D, 7, 7X, 56D, 522, 523	27	812-0065	4	Screw, Machine - Round Head (#6-32 x 5/8")
	302-1044	1	0-2500 Amp Code 5D, 520, 521	28	853-0003	4	Washer, Lock - ET (#6)
	302-1210	1	0-1200/2400 Amp Code 31	29	332-1930	1	Regulator, Voltage (VR21)
4			Voltmeter (M22)	30	315-0431	1	Transformer, Voltage (T21) 240 VAC
	302-0421	1	0-300 VAC Code 4,5D,9X,54,58,519		812-0061	2	Screw, Machine - Round Head (#6-32 x 3/8")
	302-0612	1	0-500 VAC Code 6D,7,7X,520,522, and 523		853-0003	2	Washer, Lock - ET (#6)
	302-1072	1	0-600 VAC Code 4X	31	320-0202	1	Bar, Locking - with Thru Pin
	302-0718	1	0-300/600 VAC Code 31	32	315-0384	1	Reactor (L21)
5			Meter, Frequency - Reed (M23)		812-0061	2	Screw, Machine - Round Head (#6-32 x 3/8")
	302-0221	1	230 VAC, 60 Hz		853-0003	2	Washer, Lock - ET (#6)
	302-0256	1	230 VAC, 50 Hz	33	508-0001	1	Grommet
6			Meter, Frequency - Pointer (M23)	34	406-0332	2	Receptacle, Fastener
	302-0810	1	208 VAC, 60 Hz	35	800-0045	4	Screw, Cap - Hex Head (5/16-18 x 3/8")
	302-0811	1	240 VAC, 60 Hz		850-0045	4	Washer, Lock - Spring (5/16")
	302-0894	1	240 VAC, 50 Hz	37	402-0078	4	Dampener, Vibration
7			Meter, Totalizing - Time (M24)	38	337-0049	1	Strap, Electrical - Ground
	302-0466	1	60 Hz	39	815-0026	3	Screw, Machine - Truss Head (#10-32 x 3/8")
	302-0469	1	50 Hz				Panel, Control
8			Light, Indicator - Red - 125 VAC	40			4 Meters, No Ind Light Hole
	322-0130	1	Upper Scale (DS21)		301-6412	1	4 Meters
	322-0131	1	Lower Scale (DS22)		301-6298	1	5 Meters, No Ind Light Hole
9	320-0307	1	Lock, Handle		301-7088	1	5 Meters
10	320-0455	2	Breaker, Circuit (CB21)		301-8775	1	Box, Control
	812-0061	4	Screw, Machine - Round Head (#6-32 x 3/8")	41	301-4135	1	Current Transformer
	850-0020	2	Washer, Lock - Spring (#6)	42			(See Separate Page for Components)
11	406-0334	2	Clip, Fastener				
12	406-0333	2	Stud, Fastener				
13	517-0131	1	Plug, Plastic				

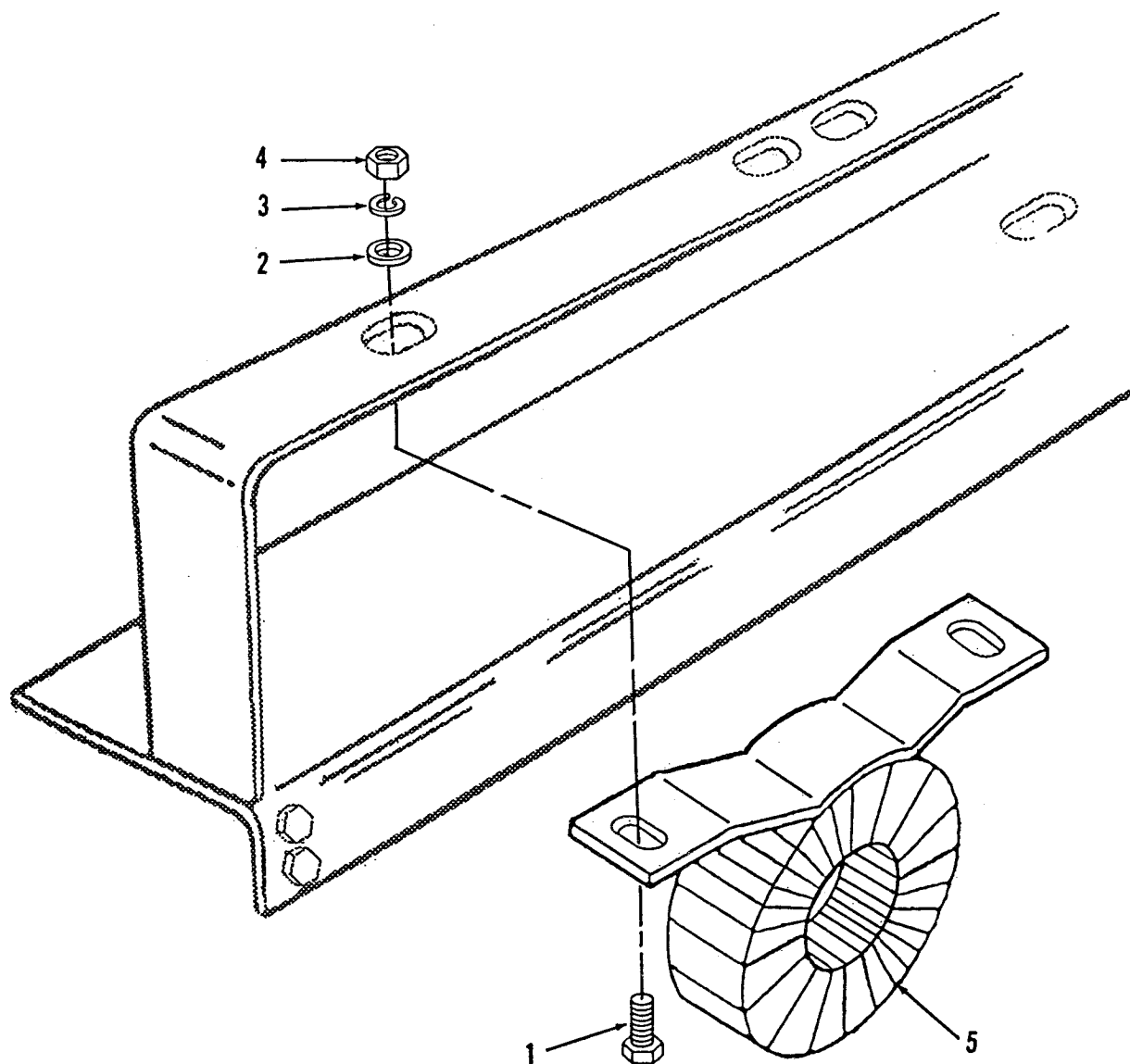
Generator Control
Torque Matched Regulator
Spec A Thru D



**Generator Control
Torque Matched Regulator
Spec A Thru D**

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	338-0759	1	Harness, Wiring	10	320-0455	1	Breaker, Circuit (CB21)
	338-0916	1	Code 4,5,6,8,54,58,519,521		812-0061	2	Screw, Machine - Round Head (#6-32 x 3/8")
			Code 4X,7,7X,9X,57,520,522, and 523		850-0020	2	Washer, Lock - Spring (#6)
2			Block, Terminal (TB21)	11	406-0334	2	Clip, Fastener
	332-0607	1	12 Place	12	406-0333	2	Stud, Fastener
	332-0795	1	16 Place	13	517-0131	1	Plug, Plastic
	812-0066	2	Screw, Machine - Round Head (#6-32 x 3/4")	14	303-0076	1	Knob, Pointer
	853-0003	2	Washer, Lock - ET (#6)	15	308-0284	1	Switch, Selector (S21)
	850-0020	2	Washer, Lock - Spring (#6)	16	303-0032	1	Knob
3			Ammeter (M21)	17	303-0170	1	Rheostat (R21)
	302-0640	1	0-1200 Amp Code 4X, 9X, 17, 54X	18	151-0402	1	Potentiometer- 5k Ohm
	302-0641	1	0-1500 Amp Code 6D, 7, 7X, 56D, 522, 523	21	870-0053	1	Nut, Hex (#10-32)
	302-1044	1	0-2500 Amp Code 5D, 520, 521	22	850-0030	1	Washer, Lock - Spring (#10)
	302-1210	1	0-1200/2400 Amp Code 31	23	332-0051	1	Clamp, Loop
4			Voltmeter (M22)	25	332-1242	1	Strip, Marker
	302-0421	1	0-300 VAC Code 4,5D,9X,54,58,519		332-1248	1	16 Place
	302-0612	1	0-500 VAC Code 6D,7,7X,520,522, and 523	26	815-0544	6	12 Place
	302-1072	1	0-600 VAC Code 4X				Screw, Machine - Round Head with IT Lock Washer (#6-32 x 1/2")
	302-0718	1	0-300/600 VAC Code 31	27	300-2977	1	Regulator, Voltage (VR21)
5			Meter, Frequency - Reed (M23)	28	812-0065	4	Screw, Machine - Round Head (#6-32 x 5/8")
	302-0221	1	230 VAC, 60 Hz	29	853-0003	4	Washer, Lock - ET (#6)
	302-0256	1	230 VAC, 50 Hz	30	301-9315	1	Bracket, Mounting
6			Meter, Frequency - Pointer (M23)	33	508-0001	1	Grommet
	302-0810	1	208 VAC, 60 Hz	34	406-0332	2	Receptacle, Fastener
	302-0811	1	240 VAC, 60 Hz	35	800-0045	4	Screw, Cap - Hex Head (5/16-18 x 3/8")
	302-0894	1	240 VAC, 50 Hz				Washer, Lock - Spring (5/16")
7			Meter, Totalizing - Time (M24)	36	850-0045	4	Dampener, Vibration
	302-0466	1	60 Hz	37	402-0078	4	Strap, Electrical - Ground
	302-0469	1	50 Hz	38	337-0049	1	Screw, Machine - Truss Head (#10-32 x 3/8")
8			Light, Indicator - Red - 125 VA	39	815-0026	3	Panel, Control
	322-0130	1	Upper Scale (DS21)				4 Meters, No Ind Light Hole
	322-0131	1	Lower Scale (DS22)	40			4 Meters
9	320-0307	1	Lock, Handle		301-3342	1	5 Meters, No Ind Light Hole
	815-0203	1	Screw, Machine - Round Head (#10-32 x 7/8")		301-3170	1	5 Meters
	854-0010	1	Washer, Lock - ET (#10)		301-3449	1	Box, Control
	871-0010	1	Nut, Hex (#10-32)		301-3312	1	Current Transformer (See Separate Page for Components)
				41	301-4135	1	
				42			

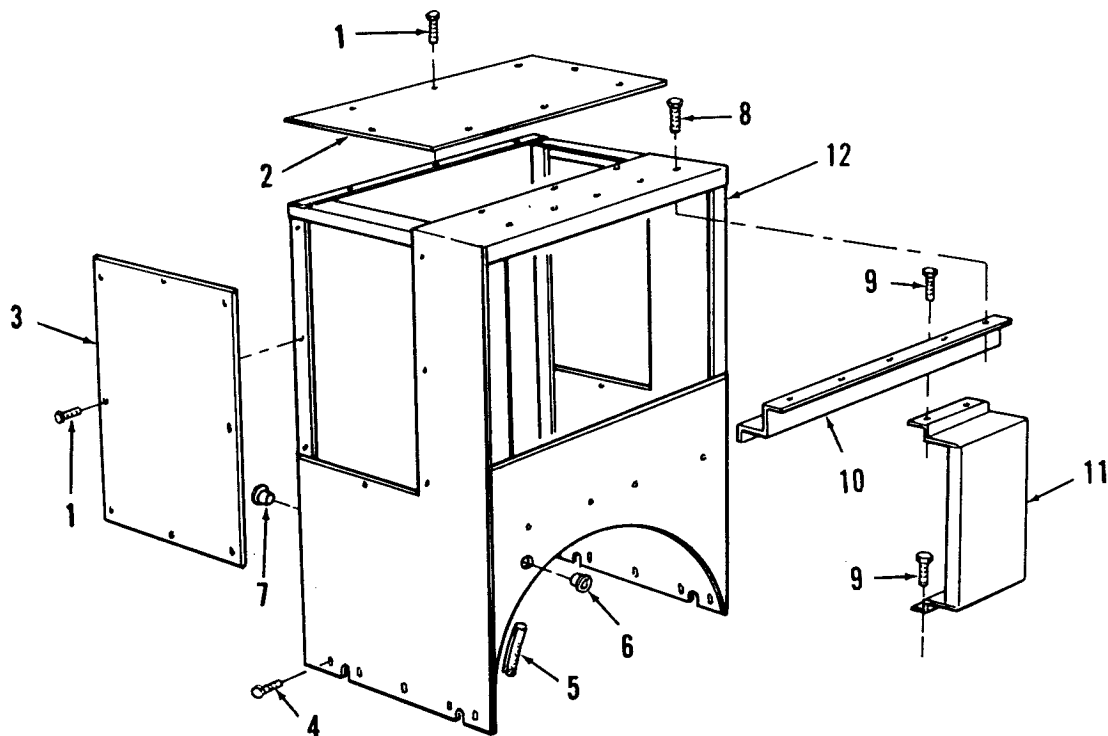
Current Transformer



REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	800-0052	6	Screw, Cap - Hex Head (3/8-16 1-1/2")
2	526-0029	6	Washer, Flat (3/8")
3	850-0050	6	Washer, Lock - Spring (3/8")
4	862-0003	6	Nut, Hex (3/8-16)

REF NO.	PART NO.	QTY USED	PART DESCRIPTION
5	302-0643	3	Transformer, Current 1200/5 Ratio Code 9X, 4X Spec A Thru D 1500/5 Ratio Code 6D, 7X, 31, 56D, 520, 522, 523 and Code 4X Begin Spec E 2500/5 Ratio Code 5D, 521 3000/5 Ratio Code 4, 8, 54, 58, 519
	302-0644	3	
	302-1073	3	
	302-1074	3	

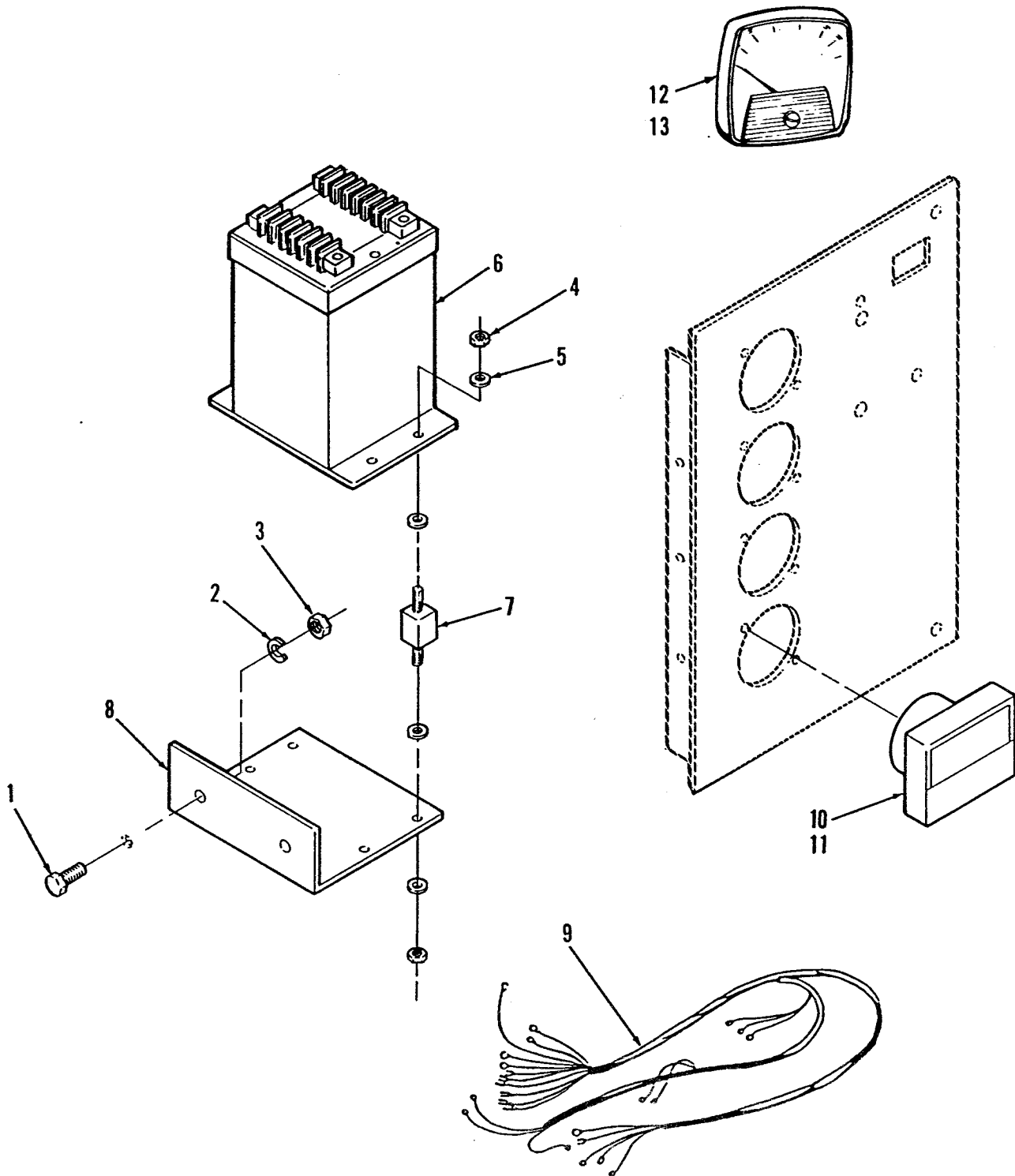
Control Housing



M-1202

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

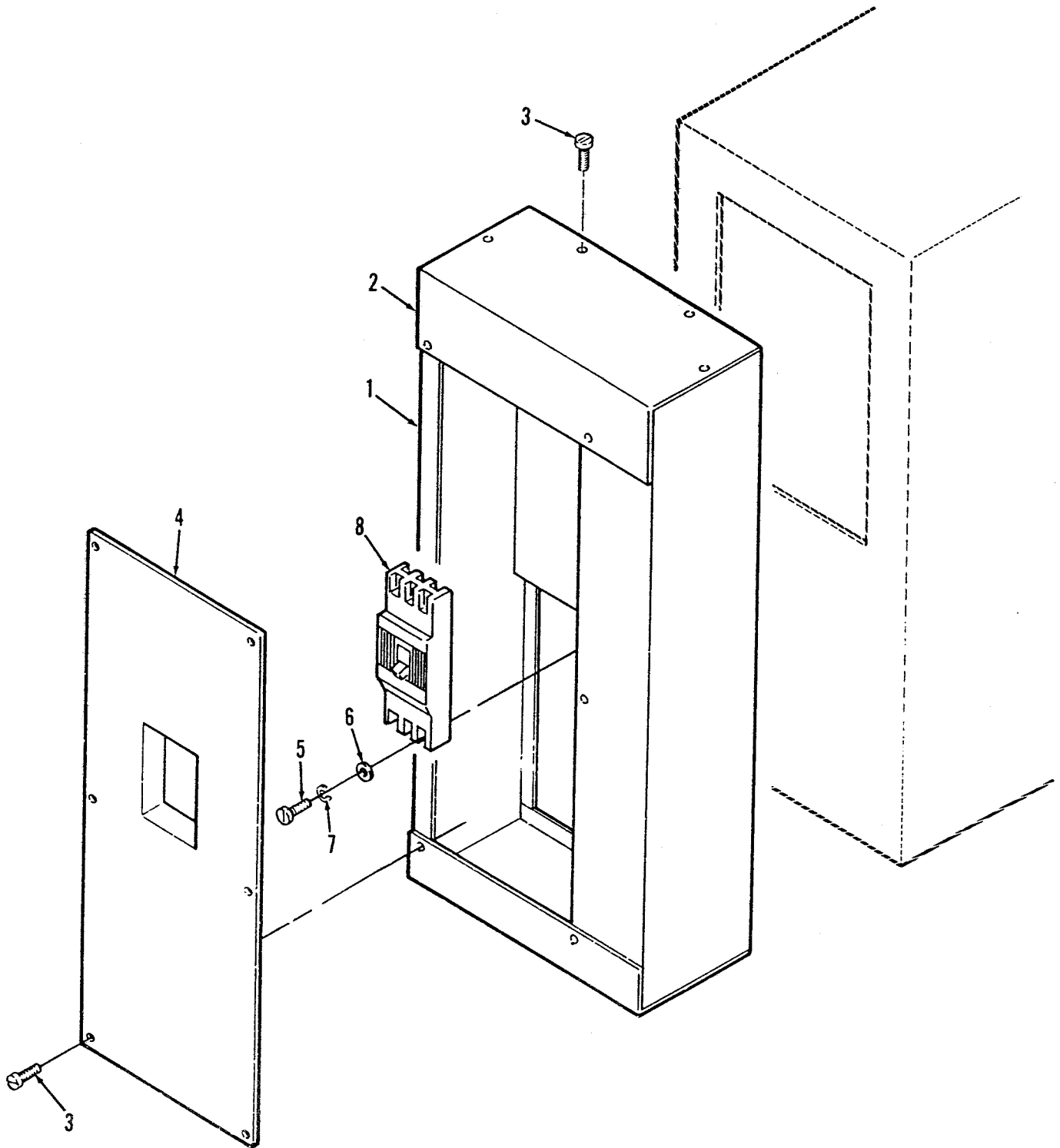
Wattmeter



Wattmeter

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	821-0017	2	Screw, Self-locking - Hex (5/16-18 x 1/2")	8	301-6987	1	Bracket, Mounting
2	850-0045	2	Washer, Lock - Spring (5/16")	9	338-1936	1	Harness, Wiring
3	862-0014	2	Nut, Hex (5/16-18)	10	302-1722	1	Wattmeter (Less Dial) - Begin Spec E
4	860-0008	8	Nut, Hex (#8-32)	11			Dial
5	856-0002	16	Washer, Lock - EIT (#8)		302-1721-15	1	Scale 0-750 kW
6			Transducer, Watt	12	302-1102	1	Wattmeter (Less Dial) - Spec A thru D
	302-1082	1	3 Phase, 60 Hz	13			Dial
	302-1083	1	3 Phase, 50 Hz		302-1121	1	Scale 0-750 kW
7	402-0078	4	Mount, Vibration				

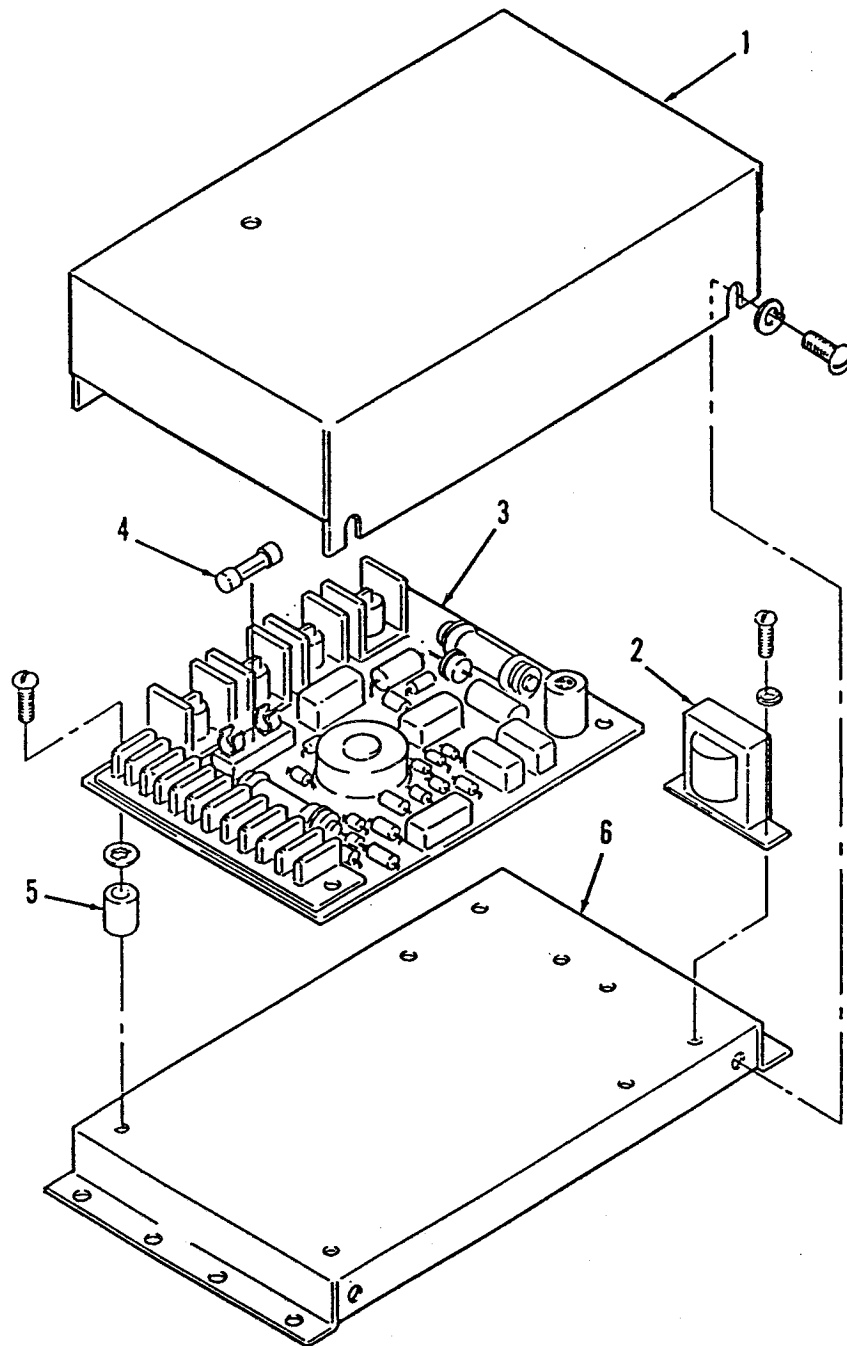
Circuit Breaker
Begin Spec E



**Circuit Breaker
Begin Spec E**

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	301-9778	1	Box, Breaker	320-1480-11	1	500 Amp	
2	301-9779	2	Panel, Breaker	320-1480-12	1	600 Amp	
3	821-0010	8	Screw, Self-locking - Hex (1/4-20 x 1/2")	320-1481-07	1	700 Amp	
4			Cover, Box - Circuit Breaker	320-1481-08	1	800 Amp	
	301-9781	1	3" x 4" Breaker Hole	320-1481-09	1	1000 Amp	
	301-9793	1	2-1/2" x 3-5/8" Breaker Hole	320-1481-10	1	1200 Amp	
5			Screw, Mounting	320-1484-09	1	400 Amp	With 480 VAC Shunt Trip
	812-0157	4	400 - 600 Amp Breaker	320-1484-10	1	450 Amp	
	800-0031	4	700 - 1200 Amp Breaker	320-1484-11	1	500 Amp	
6			Washer, Flat	320-1484-12	1	600 Amp	
	526-0108	4	400 - 600 Amp Breaker	320-1485-07	1	700 Amp	
	526-0115	4	700 - 1200 Amp Breaker	320-1485-08	1	800 Amp	
7			Washer, Lock	320-1485-09	1	1000 Amp	
	850-0040	4	400 - 600 Amp Breaker	320-1485-10	1	1200 Amp	
	850-0045	4	700 - 1200 Amp Breaker				With 12 VDC Shunt Trip & Auxiliary Contacts
8			Breaker, Circuit - 3 Pole - Standard	320-1488-09	1	400 Amp	
	320-1460-09	1	400 Amp	320-1488-10	1	450 Amp	
	320-1460-10	1	450 Amp	320-1488-11	1	500 Amp	
	320-1460-11	1	500 Amp	320-1488-12	1	600 Amp	
	320-1460-12	1	600 Amp	320-1489-07	1	700 Amp	
	320-1461-07	1	700 Amp	320-1489-08	1	800 Amp	
	320-1461-08	1	800 Amp	320-1489-09	1	1000 Amp	
	320-1461-09	1	1000 Amp	320-1489-10	1	1200 Amp	
	320-1461-10	1	1200 Amp				With 24 VDC Shunt Trip & Auxiliary Contacts
			With Auxiliary Contacts	320-1491-09	1	400 Amp	
	320-1464-09	1	400 Amp	320-1491-10	1	450 Amp	
	320-1464-10	1	450 Amp	320-1491-11	1	500 Amp	
	320-1464-11	1	500 Amp	320-1491-12	1	600 Amp	
	320-1464-12	1	600 Amp	320-1492-07	1	700 Amp	
	320-1465-07	1	700 Amp	320-1492-08	1	800 Amp	
	320-1465-08	1	800 Amp	320-1492-09	1	1000 Amp	
	320-1465-09	1	1000 Amp	320-1492-10	1	1200 Amp	
	320-1465-10	1	1200 Amp				With 120 VAC Shunt Trip & Auxiliary Contacts
			With 12 VDC Shunt Trip	320-1495-09	1	400 Amp	
	320-1468-09	1	400 Amp	320-1495-10	1	450 Amp	
	320-1468-10	1	450 Amp	320-1495-11	1	500 Amp	
	320-1468-11	1	500 Amp	320-1495-12	1	600 Amp	
	320-1468-12	1	600 Amp	320-1496-07	1	700 Amp	
	320-1469-07	1	700 Amp	320-1496-08	1	800 Amp	
	320-1469-08	1	800 Amp	320-1496-09	1	1000 Amp	
	320-1469-09	1	1000 Amp	320-1496-10	1	1200 Amp	
	320-1469-10	1	1200 Amp				With 240 VAC Shunt Trip & Auxiliary Contacts
			With 24 VDC Shunt Trip	320-1500-09	1	400 Amp	
	320-1472-09	1	400 Amp	320-1500-10	1	450 Amp	
	320-1472-10	1	450 Amp	320-1500-11	1	500 Amp	
	320-1472-11	1	500 Amp	320-1500-12	1	600 Amp	
	320-1472-12	1	600 Amp	320-1501-07	1	700 Amp	
	320-1473-07	1	700 Amp	320-1501-08	1	800 Amp	
	320-1473-08	1	800 Amp	320-1501-09	1	1000 Amp	
	320-1473-09	1	1000 Amp	320-1501-10	1	1200 Amp	
	320-1473-10	1	1200 Amp				With 480 VAC Shunt Trip & Auxiliary Contacts
			With 120 VAC Shunt Trip	320-1504-09	1	400 Amp	
	320-1476-09	1	400 Amp	320-1504-10	1	450 Amp	
	320-1476-10	1	450 Amp	320-1504-11	1	500 Amp	
	320-1476-11	1	500 Amp	320-1504-12	1	600 Amp	
	320-1476-12	1	600 Amp	320-1505-07	1	700 Amp	
	320-1477-07	1	700 Amp	320-1505-08	1	800 Amp	
	320-1477-08	1	800 Amp	320-1505-09	1	1000 Amp	
	320-1477-09	1	1000 Amp	320-1505-10	1	1200 Amp	
	320-1477-10	1	1200 Amp				
			With 240 VAC Shunt Trip				
	320-1480-09	1	400 Amp				
	320-1480-10	1	450 Amp				

Voltage Regulator Components



243A

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	305-0456	1	Cover	854-0006	4	4	Washer, Lock - IT (#6)
	813-0100	4	Screw, Machine - Round Head (#10-32 x 1/2")	358-0096	1	1	Rectifier (Not Illustrated)
	850-0029	4	Washer, Lock - Spring (#10)	358-0097	1	1	Rectifier (Not Illustrated)
2	315-0301	1	Inductor	364-0009	2	2	Rectifier (Not Illustrated)
	812-0030	2	Screw, Machine - Round Head (#8-32 x 1/2")	4	321-0038	1	Fuse
	860-1008	2	Washer, Lock - Spring (#8)	5	305-0458	4	Spacer
3	332-1160	1	Board (Includes Fuse and Rectifiers)	812-0061	4	4	Screw, Machine - Round Head (#6-32 x 3/8")
	812-0061	4	Screw, Machine - Round Head (#6-32 x 3/8")	854-0006	4	4	Washer, Lock - IT (#6)
				6	305-0454	1	Chassis



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