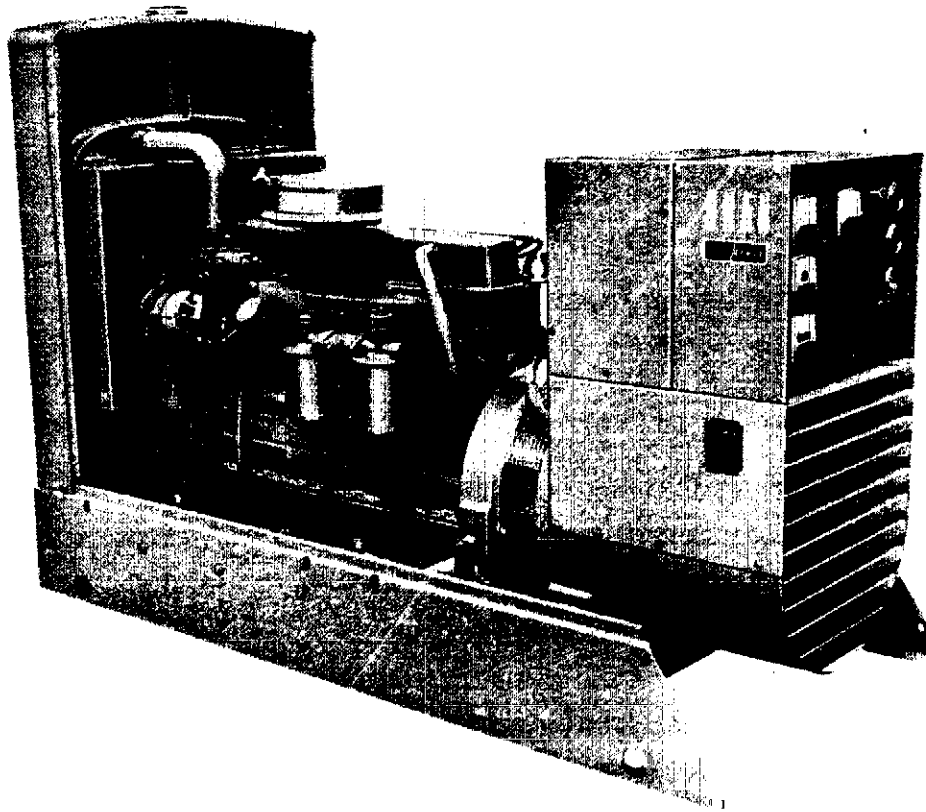


The following catalog has gaps in its page numbers, or doesn't have any numbers. We have chosen to leave the page numbering in the order that Acrobat assigns it.

Parts Catalog

SERIES
DYJ
GenSet



8-80 (SPECS A-D)
Replaces
6-79 (Specs A-D)

Redistribution or publication of this document
by any means, is strictly prohibited.

INDEX

GROUP TITLES	LOCATION
GENERATOR SET DATA TABLE	A3
EQUIPMENT PARTS SECTION:	
Board Assembly, Printed Circuit - Begin Spec B (332-1956)	B1
Board Assembly, Printed Circuit - Spec A (332-1268)	B2
Chassis	A6
Control (AC Portion)	A12,A13
Control (Engine Portion)	A10,A11
Cooling System	A7
Generator	A8,A9
Housing, Control	A4,A5
Miscellaneous Engine Parts	A14
Monitor, Engine Control (300-0679)	B3
Pump, Fuel (Electric)	A7
OPTIONAL EQUIPMENT SECTION:	
Box, Junction (Housed Sets)	D2
Breaker, Circuit	D9
City Water Cooling Installation	C6
City Water Cooling Installation (With Water Temp. Cont. Valve)	C7
Control Cycle Cranker	D11
Control (Engine Portion)	D4,D5
Control With Meter Panel (AC Portion)	D6,D7
Filter, Regulator - Voltage	D3
Heater, Engine Coolant (Horizontal) Installation	C10
Heater, Engine Coolant (Vertical) Installation	C11
Heater, Generator Installation	D8
Housing	D1
Miscellaneous Optional Parts	C2
Monitor, Engine Control (Sets With Five Fault Lights)	D10
Muffler Installation	C14
Radiator, Remote Installation	C3
Solenoid Valve & Regulator Installation	C8
Solenoid Valve & Regulator Installation (With Coolant Temp. Cont. Valve)	C9
Special Parts - Penn State Models	D12
Standpipe Cooling Installation	C4
Standpipe Cooling Installation (With Coolant Temp. Cont. Valve)	C5
Tank, Fuel - Mounted (Housed Sets)	C2
Tank, Reservoir (Day) Installation (Housed Sets)	C13
Tank, Reservoir (Day) Installation (Unhoused Sets)	C12

973-0226
DYJ PARTS CATALOG

This catalog applies to the DYJ generator sets listed below. Engine parts modified or added by Onan will be in this list and have Onan part numbers. These supersede similar parts listed in the Allis-Chalmers manual. Onan parts are arranged in groups of related items and are identified by a reference. All part illustrations are typical. Using the Model and Specification from the Onan nameplate, select the parts from this catalog that apply to your set.

GENERATING SET DATA TABLE

MODEL AND SPEC NO.	ELECTRICAL DATA				
	WATTS	VOLTS	HERTZ	WIRE	PHASE
37.5DYJ-515R/*	37,500	£	50	12	3
45.0DYJ-3R/*	45,000	120/240	60	3	1
45.0DYJ-9XR/*	45,000	347/600	60	4	3
45.0DYJ-15R/*	45,000	£	60	12	3

- * - The Specification letter advances (A to B, B to C, etc.) with Manufacturing Changes.
- £ - These Sets are reconnectable (broad range): Refer to Wiring Diagram inside AC Control Box Panel.

REPLACEMENT ENGINE

100-1259

1

Engine, Replacement (Allis-Chalmers Model 2800 Mark I)

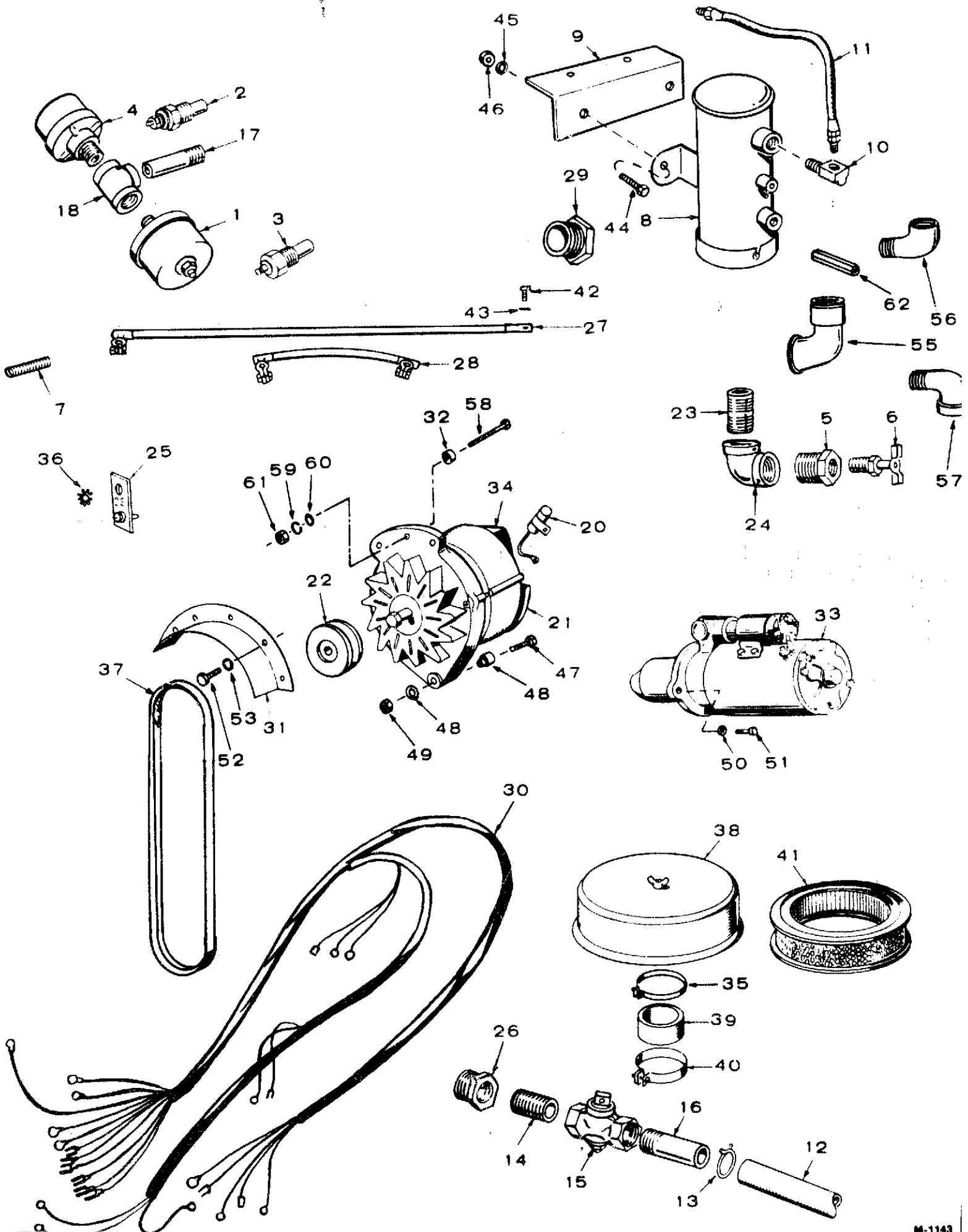
General Description

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

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

NOTE: Replacement engine is for standard Spec 1 generator sets. For all other Specs refer to factory.

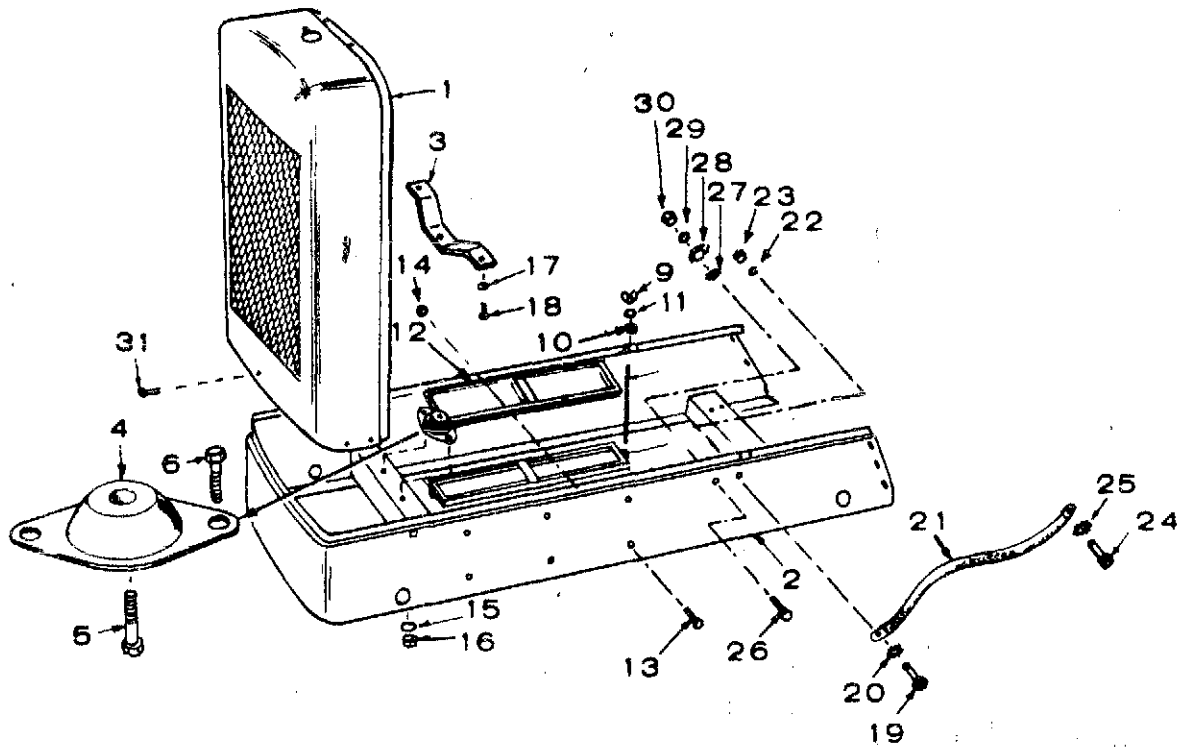
MISCELLANEOUS ENGINE PARTS



MISCELLANEOUS ENGINE PARTS

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	SENDER, OIL PRESSURE GAUGE			30	338-0519	1	Harness, Wiring - Engine Control
	193-0108	1	Spec A Only				
	193-0244	1	Begin Spec B	31	191-0725	1	Guard, Alternator Belt
2	SENDER, WATER TEMPERATURE GAUGE			32	191-0791	1	Spacer, Alternator Adjusting
	193-0109	1	Spec A Only	33	191-0721	1	Motor, Starting
	193-0247	1	Begin Spec B	34	191-0732	1	Regulator, Voltage (Part of Alternator)
3	309-0179	1	Switch, Hi Water Temperature				
4	309-0169	1	Switch, Low Oil Pressure	35	503-0354	1	Clamp, Hose (Air Cleaner)
5	505-0117	1	Bushing (1/2 x 3/8"), Producer - Block Drain	36	856-0008	1	Washer (5/16"), Shakeproof EIT - Terminal Bracket Mtg.
6	504-0028	1	Valve (3/8"), Drain - Block	37	511-0095	1	Belt, Alternator Drive
7	134-1437	1	Spring, Injection Pump Lever	38	140-1091	1	Cleaner, Air (Includes Element)
8	149-0554	1	Pump (Electric), Fuel (See Separate Group for Components)	39	503-0597	1	Hose, Air Cleaner
				40	503-0648	1	Clamp, Hose (Air Cleaner)
				41	140-1089	1	Element, Air Cleaner
9	149-1162	1	Bracket, Fuel Pump Mounting	42	800-0069	1	Screw, Cap - Hex Head - Battery Cable to Ground (7/16-14 x 3/4)
10	502-0002	1	Elbow, Fuel Pump Inlet	43	856-0012	1	Washer, Lock - EIT (7/16")
11	501-0002	1	Line (7"), Fuel - Flexible	44	821-0010	2	Screw, Cap - Hex Head Locking (1/4-20 x 1/2")
12	503-0808	1	Hose, Oil Drain				
13	503-0197	1	Clamp, Oil Drain	45	850-0040	2	Washer, Lock - Spring (1/4")
14	505-0100	1	Nipple (1/2"), Close - Oil Drain	46	862-0001	2	Nut, Hex (1/4-20)
15	504-0011	1	Valve, Oil Drain	47	800-0059	1	Screw, Cap - Hex Head (3/8-16 x 3-1/4")
16	505-0185	1	Nipple (1/2 x 1-1/2"), Half - Oil Drain	48	850-0050	2	Washer, Lock - Spring (3/8")
17	505-0104	1	Nipple (1/8 x 1-1/2"), Close - Oil Sender and Switch	49	862-0003	2	Nut, Hex (3/8-16)
				50	800-0055	3	Screw, Cap - Hex Head (3/8-16 x 2-1/4")
18	505-0059	1	Tee (1/8") - Oil Sender and Switch	51	850-0050	3	Washer, Lock - Spring (3/8")
19	191-0873	1	Spacer, Alternator Mounting	52	800-0024	1	Screw, Cap - Hex Head (5/16-18 x 1/2")
20	312-0058	1	Condenser, Alternator				
21	191-0665	1	Alternator, Charge (Includes Fan)	53	850-0045	1	Washer, Lock - Spring (5/16")
22	191-0649	1	Pulley, Alternator	54	LINE, FUEL		
23	505-0099	1	Nipple (1/4 x 7/8"), Close - Block Drain				
					501-0225	1	Outlet
					501-0227	1	Inlet
24	505-0038	1	Elbow (1/4 x 90°), Pipe - Block Drain	55	155-0996	1	Elbow, Exhaust
				56	502-0020	1	Elbow, Street
				57	502-0024	1	Elbow, Male
25	332-1292	1	Bracket, Terminal Mounting	58	800-0031	1	Screw, Cap - Hex Head (5/16-18 x 1-1/2")
26	102-0778	1	Adapter, Oil Drain				
27	CABLE, BATTERY			59	850-0045	1	Washer, Lock - Spring (5/16")
	416-0618	1	Positive (42")	60	526-0030	1	Washer, Flat (13/32" ID x 7/8" OD x 1/8" Thk)
	416-0619	1	Negative (18")				
28	416-0446	1	Cable, Battery Jumper	61	862-0015	1	Nut, Hex (5/16-18)
29	502-0429	1	Adapter, Fuel Line	62	502-0051	1	Coupling, Hex (1/8")

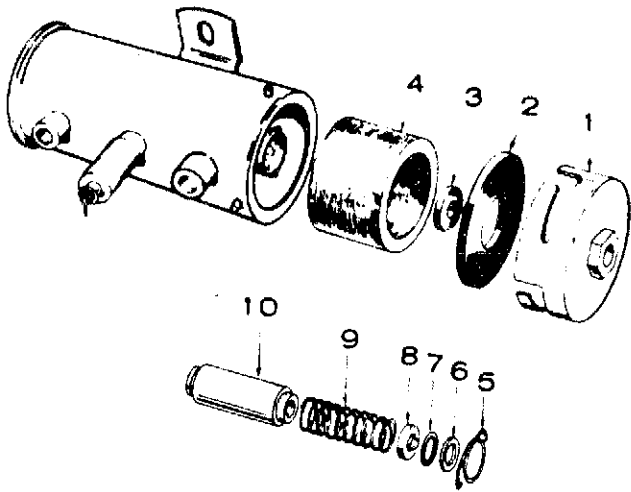
CHASSIS



REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	405-1153	1	Panel, Front	17	850-0055	2	Washer, Lock - Spring (7/16")
2	403-0900	1	Chassis, Mounting	18	800-0073	2	Screw, Cap - Hex Head (7/16-14 x 1-1/2")
3	403-0908	1	Support, Engine Mount	19	800-0091	1	Screw, Cap - Hex Head (1/2-13 x 1-1/4")
4	402-0030	1	Mount, Vibration - Engine	20	856-0013	1	Washer, Lock - EIT (1/2")
5	800-0520	1	Screw, Cap - Hex Head (3/4-10 x 1")	21	337-0090	1	Strap, Ground
6	800-0090	2	Screw, Cap - Hex Head (1/2-13 x 1")	22	850-0060	1	Washer, Lock - Spring (1/2")
7	416-0480	1	Frame, Battery Holddown	23	862-0016	1	Nut, Hex (1/2-13)
8	520-0663	2	Stud, Battery Holddown	24	800-0071	1	Screw, Cap - Hex Head (7/16-14 x 1")
9	865-0007	2	Nut, Wing (5/16-18)	25	856-0012	1	Washer, Lock - EIT (7/16")
10	526-0115	2	Washer, Flat (11/32" ID x 11/16" OD x 1/16" Thk)	26	800-0028	1	Screw, Cap - Hex Head (5/16-18 x 1")
11	850-0045	2	Washer, Lock - Spring (5/16")	27	856-0008	1	Washer, Lock - EIT (5/16")
12	416-0666	1	Tray, Battery	28	332-1473	1	Lug, Solderless
13	821-0029	6	Screw, Cap - Hex Head Locking (3/8-16 x 3/4")	29	850-0045	1	Washer, Lock - Spring (5/16")
14	870-0281	6	Nut, Hex - Locking (3/8-16)	30	862-0015	1	Nut, Hex (5/16-18)
15	850-0060	2	Washer, Lock - Spring (1/2")	31	821-0014	8	Screw, Cap - Hex Head Locking (5/16-18 x 1/2")
16	862-0016	2	Nut, Hex (1/2-13)				

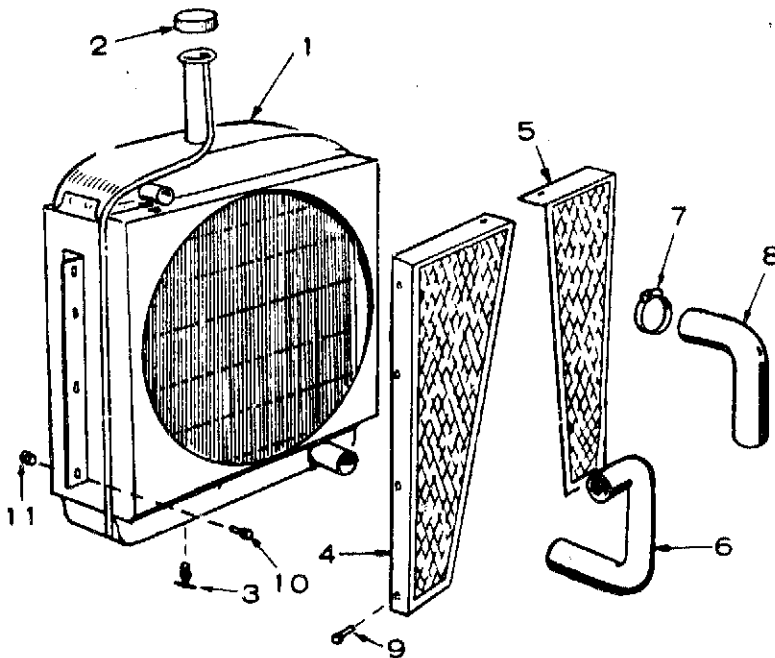
973-0226 (SEPTEMBER 1980)

FUEL PUMP (ELECTRIC)

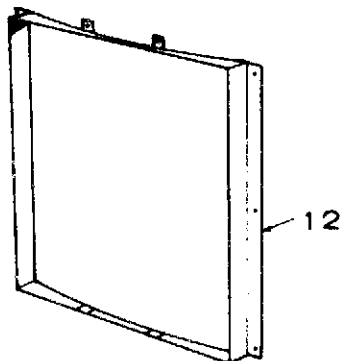


REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
	149-0554	1	Pump, Fuel (Complete)
1	149-1453	1	Cover
2	149-1446	1	Gasket, Cover
3	149-1447	1	Magnet
4	149-1445	1	Filter
5	149-1448	1	Retainer, Cup and Plunger
6	149-1449	1	Washer, Cup Gasket
7	149-1450	1	Gasket, Spring Cup
8	149-1451	1	Spring Cup and Valve
9	149-0705	1	Spring, Plunger Return
10	149-1452	1	Plunger

COOLING SYSTEM

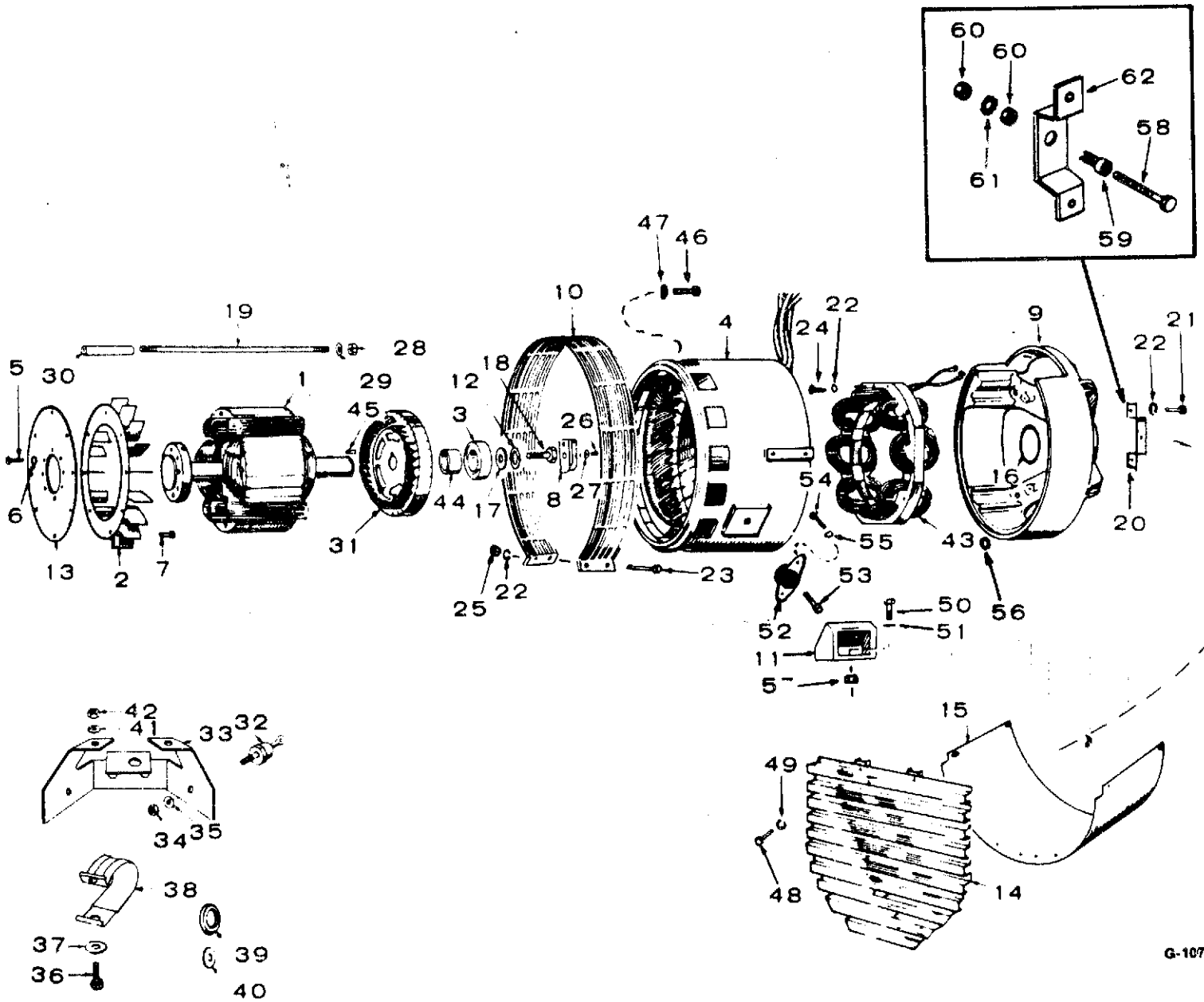


REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	130-0809	1	Radiator
2	130-0449	1	Cap, Radiator
3	504-0028	1	Valve, Radiator Drain
4	130-0810	1	Guard, Fan (R.H.)
5	130-0811	1	Guard, Fan (L.H.)
6	503-0595	1	Hose, Radiator - Lower
7	503-0365	4	Clamp, Hose
8	503-0594	1	Hose, Radiator - Upper
9	821-0010	10	Screw (1/4-20 x 1/2"), Self Locking - Fan Guard Mounting
10	821-0014	8	Screw (5/16-18 x 1/2"), Self Locking - Radiator Mounting
11	870-0113	8	Nut (5/16-18), Retainer - Radiators Mounting
12	405-1182	1	Flange, Radiator - Optional



073-0226 (SEPTEMBER 1980)

GENERATOR



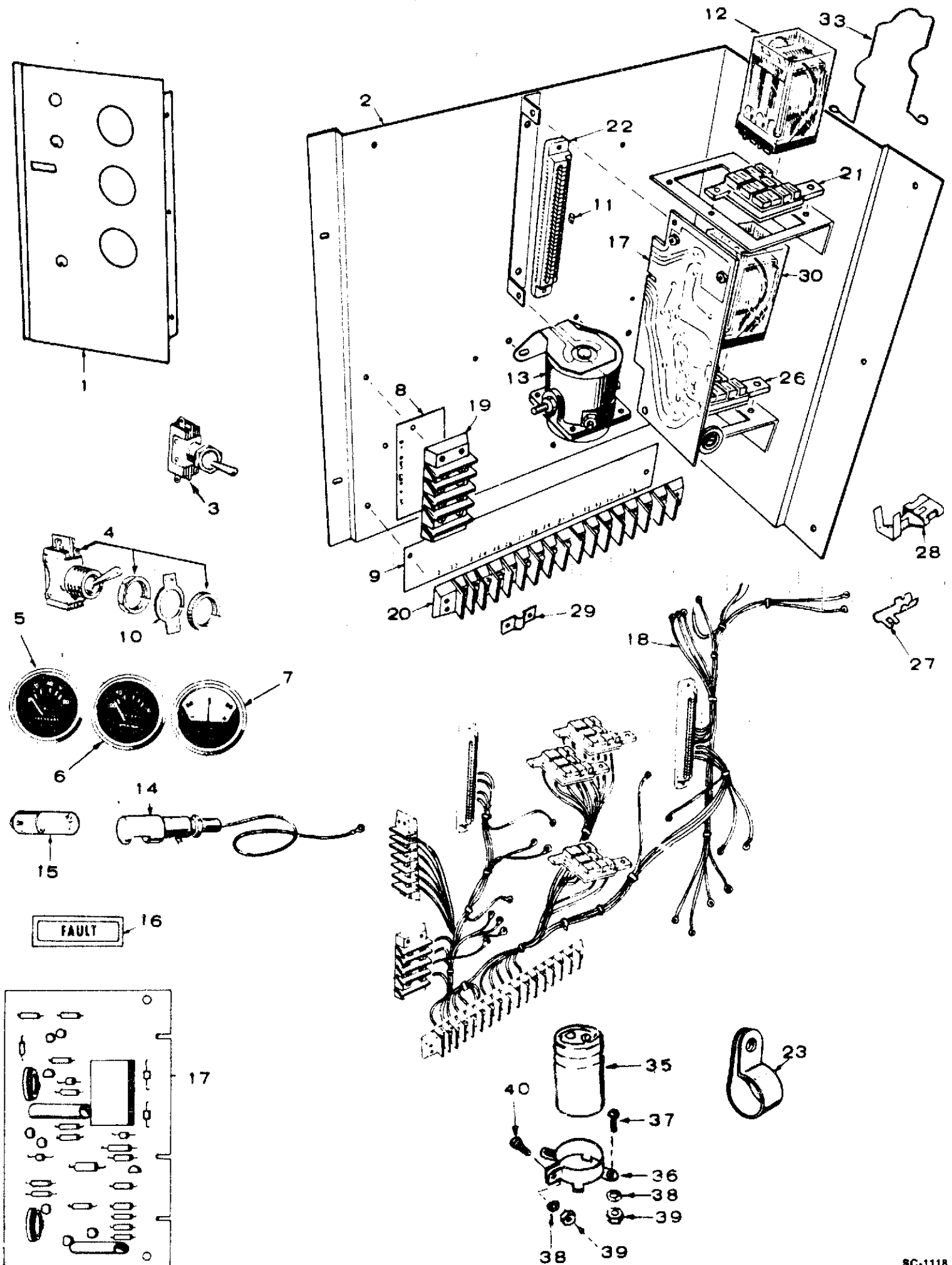
G-1076

GENERATOR

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	ROTOR ASSEMBLY, WOUND (INCLUDES PARTS MARKED ▲)			30	503-0611	4	Hose, Insulator
			Specs A and B	31	201-1739	1	▲Rotor Assembly, Wound - Exciter (Includes Parts Marked *)
	201-1719	1	15R, 9XR and 515R Sets	32	RECTIFIER, DIODE		
	201-1721	1	3R Sets		358-0015	3	*Negative
			Begin Spec C		358-0016	3	*Positive
	201-2669	1	15R, 9XR, 515R Sets	33	HEAT SINK, DIODE		
	201-2671	1	3R Sets		363-0055	1	*Negative
2	205-0089	1	▲Blower		363-0054	1	*Positive
3	510-0101	1	▲Bearing	34	870-0053	6	*Nut, Hex (#10-32)
4	STATOR ASSEMBLY, WOUND			35	850-0030	6	*Washer, Lock - Spring (#10)
	220-1554	1	3R Sets	36	813-0110	4	*Screw, Machine - Round Head (#10-32 x 2")
	220-1454	1	15R Sets	37	526-0009	4	*Washer, Flat (7/32" ID x 1/2" OD x 1/16" Thk)
	220-1602	1	9XR Sets	38	332-0050	2	*Clip, Wire
	220-1997	1	515R Sets	39	508-0187	4	*Bushing, Insulator
5	805-0033	8	▲Bolt, Place (5/8-11 x 1")	40	508-0156	4	*Washer, Insulating
6	526-0259	8	▲Washer, Flat (11/16" ID x 1-3/8" OD x 12 Ga. Thk)	41	850-0030	4	*Washer, Lock - Spring (#10)
7	805-0018	8	Bolt, Place (3/8-16 x 1")	42	870-0053	4	*Nut, Hex (#10-32)
8	150-0717	1	Switch, Overspeed	43	220-1774	1	Stator Assembly, Wound - Exciter
9	211-0185	1	Bell, End	44	232-2102	1	▲Spacer, Bearing
10	234-0368	1	Screen	45	515-0145	1	▲Key, Exciter Rotor
11	232-2106	2	Bracket, Generator Mtg - Spec A	46	800-0052	8	Screw, Cap - Hex Head (3/8-16 x 1-1/2")
12	850-0079	1	▲Washer, Lock - Spring (3/4")	47	850-0050	8	Washer, Lock - Spring (3/8")
13	232-2078	1	▲Disc, Generator Drive	48	812-0146	4	Screw, Machine - Round Head (1/4-20 x 3/8")
14	234-0370	1	Grille, Generator Air Inlet	49	850-0040	4	Washer, Lock - Spring (1/4")
15	234-0361	1	Wrapper, Generator End Bell	50	800-0091	4	Screw, Cap - Hex Head (1/2-13 x 1-1/4") - Spec A
16	509-0125	1	Seal, "O" Ring	51	850-0060	4	Washer, Lock - Spring (1/2") - Spec A
17	526-0238	1	▲Washer, Flat (13/16" ID x 2" OD x 3/16" Thk)	52	402-0030	2	Mount, Vibration - Generator
18	800-0513	1	▲Screw, Cap - Hex Head (3/4-10 x 1-1/2")	53	800-0520	2	Screw, Cap - Hex Head (3/4-10 x 1")
19	STUD, GENERATOR THROUGH			54	800-0071	4	Screw, Cap - Hex Head (7/16-14 x 1")
	520-0723	4	3R Sets	55	850-0055	4	Washer, Lock - Spring (7/16")
	520-0721	4	9XR, 15R and 515R Sets	56	508-0093	2	Grommet, Rubber
20	150-1456	1	Bracket and Point Assy. - Overspeed (Includes Parts Marked †)	57	862-0004	4	Nut, Hex (7/16-14)
21	800-0003	2	Screw, Cap - Hex Head (1/4-20 x 1/2")	58	150-0723	1	†Point, Overspeed Switch
22	850-0040	8	Washer, Lock - Spring (1/4")	59	870-0250	1	†Nut, Insulation
23	800-0008	2	Screw, Cap - Hex Head (1/4-20 x 1-1/4")	60	862-0001	2	†Nut, Hex (1/4-20)
24	800-0009	4	Screw, Cap - Hex Head (1/4-20 x 1-1/2")	61	853-0013	1	†Washer, Lock - ET (1/4")
25	862-0001	2	Nut, Hex (1/4-20)	62	150-1356	1	†Bracket, Overspeed Cam
26	812-0189	1	Screw, Machine - Round Head (3/8-16 x 3/4")				
27	856-0010	1	Washer, Lock - EIT (3/8")				
28	862-0011	4	Nut, Hex (3/8-16)				
29	850-0050	4	Washer, Lock - Spring (3/8")				

- ▲ - Parts included in the complete Wound Rotor Assembly.
- * - Parts included in 201-1739 Exciter Rotor Assembly.
- † - Parts included in 150-1456 Bracket and Point Assembly

CONTROL (ENGINE PORTION)

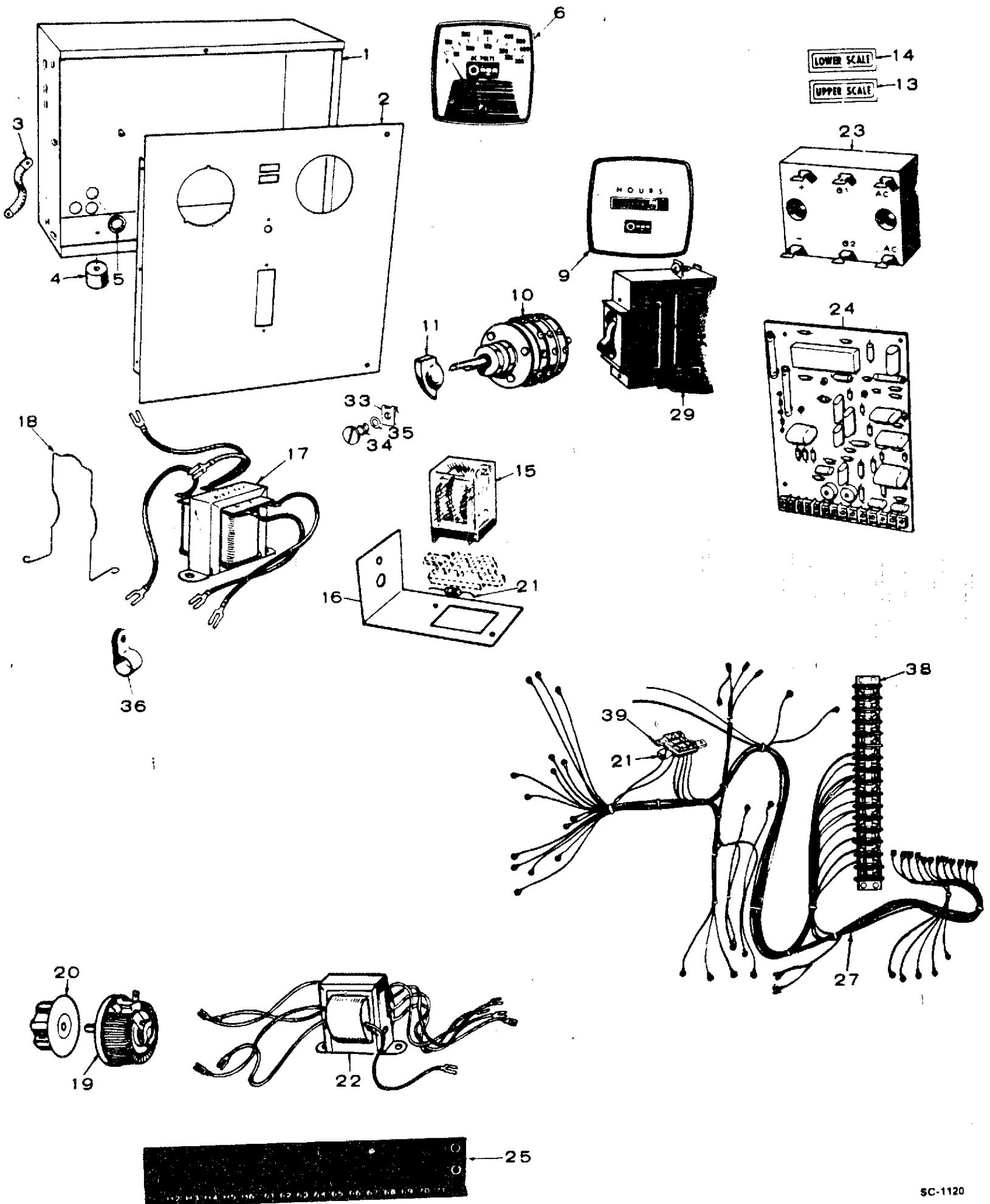


CONTROL (ENGINE PORTION)

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	301-3165	1	Panel, Engine Control	20	332-0795	1	*Block, Terminal (16 Place)
2	301-3253	1	Bracket, Control Mounting	21	323-0765	2	*Socket, Relay
3	308-0138	1	Switch, Toggle (SPDT)	22	332-1271	2	*Housing, Connector (PC Boards)
4	308-0002	1	Switch, Toggle (SPST) - Spec A	23	332-0051	1	Clamp, Loop
5	GAUGE, OIL PRESSURE			26	323-0764	1	*Socket, Relay
	193-0107	1	Spec A	27	332-1269	As Req	*Contact, Electrical (PC Boards)
	193-0243	1	Begin Spec B	28	332-1280	As Req	*Terminal, Lug
6	GAUGE, WATER TEMPERATURE			29	332-1043	1	*Jumper
	193-0106	1	Spec A	30	307-1061	1	Relay, Starter Protection
	193-0245	1	Begin Spec B	33	307-1157	3	Clip, Relay Retaining
7	302-0061	1	Ammeter, Charge (30-0-30)	35	356-0072	1	Capacitor - Begin Serial #780293785 During Spec B
8	332-1239	1	Strip, Marker (B+, Remote, Ground-Alarm)	36	356-0070	1	Bracket, Capacitor - Begin Serial #780293785 During Spec B
9	332-1241	1	Strip, Marker (21 thru 26)	37	812-0063	2	Screw, Machine - Round Head (#6-32 x 1/2") - Begin Serial #780293785 During Spec B
10	308-0003	1	Plate, Switch (On-Off) - Spec A	38	853-0003	3	Washer, Lock - ET (#6) - Begin Serial #780293785 During Spec B
11	332-1276	2	Plug, Keying	39	860-0006	3	Nut, Hex (#6-32) - Begin Serial #780293785 During Spec B
12	307-1058	2	Relay (1) Start Disconnect (1) Ignition	40	812-0061	1	Screw, Machine - Round Head (#6-32 x 3/8") - Begin Serial #780293785 During Spec B
13	307-1031	1	Relay, Start Solenoid				
14	322-0149	1	Light, Panel - Spec A				
15	322-0004	1	Lamp - Spec A				
16	322-0128	1	Light, Indicator - Fault				
17	MODULE, CONTROL (SEE SEPARATE GROUP FOR COMPONENTS)						
	300-0679	1	Engine Monitor				
	300-0733	1	Cranker				
18	HARNESS, WIRING (Includes Parts Marked *)						
	338-0528	1	Spec A				
	338-1065	1	Begin Spec B				
19	332-0537	1	*Block, Terminal (4 Place)				

* - Parts included in Wiring Harness.

CONTROL (AC PORTION)



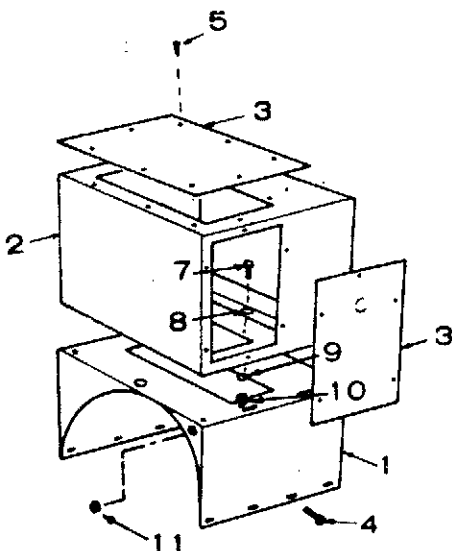
SC-1120

973-0226 (SEPTEMBER 1960)

CONTROL (AC PORTION)

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	301-3158	1	Box, Control	17	315-0384	1	Reactor
2	PANEL, CONTROL BOX			18	307-1157	1	Spring, Relay Holddown
	301-3822	1	3R Sets	19	303-0170	1	Rheostat, Voltage Adjustment
	301-3821	1	9XR Sets	20	303-0032	1	Knob, Rheostat
	301-3274	1	15R and 515R Sets	21	350-0556	1	*Resistor - 15R and 515R Sets
3	337-0049	1	Strap, Bond	22	TRANSFORMER, VOLTAGE		
4	402-0078	4	Dampener, Vibration		315-0342	1	Spec A
5	508-0001	4	Grommet, Rubber (1-1/16")		315-0431	1	Begin Spec B
6	VOLTMETER, AC			23	305-0524	1	Rectifier, Bridge
	302-0421	1	3R Sets (0-300)	24	BOARD ASSEMBLY, PRINTED CIRCUIT (See Separate Group for Components)		
	302-0779	1	9XR Sets (0-750)		332-1268	1	Spec A
	302-0718	1	15R and 515R Sets (0-300, 0-600)		332-1956	1	Begin Spec B
9	METER, RUNNING TIME			25	STRIP, MARKER		
	302-0466	1	60 Hertz		332-1242	1	3R Sets
	302-0469	1	50 Hertz		332-1248	1	9XR, 15R and 515R Sets
10	308-0012	1	Switch, Selector - 9XR, 15R and 515R Sets	27	HARNESS ASSEMBLY, WIRING - AC CONTROL (Includes Parts Marked *)		
11	303-0076	1	Knob, Selector Switch - 9XR, 15R and 515R Sets		338-0765	1	3R Sets
13	322-0131	1	Light, Upper Scale - 15R and 515R Sets		338-0766	1	9XR Sets
14	322-0130	1	Light, Lower Scale - 15R and 515R Sets		338-0764	1	15R and 515R Sets
15	307-1061	1	Relay, Voltage Selector - 15R and 515R Sets	29	320-0431	1	Breaker, Circuit
16	301-3244	1	Bracket, Relay Mounting - 15R and 515R Sets	33	406-0332	2	Receptacle, Fastener
				34	406-0333	2	Stud, Fastener
				35	406-0334	2	Washer, Stud Fastener
				36	332-0051	1	Clip, Tinnerman
				38	332-0607	1	*Block, Terminal (12 Place)
				39	323-0764	1	*Socket, Relay - 15R and 515R Sets

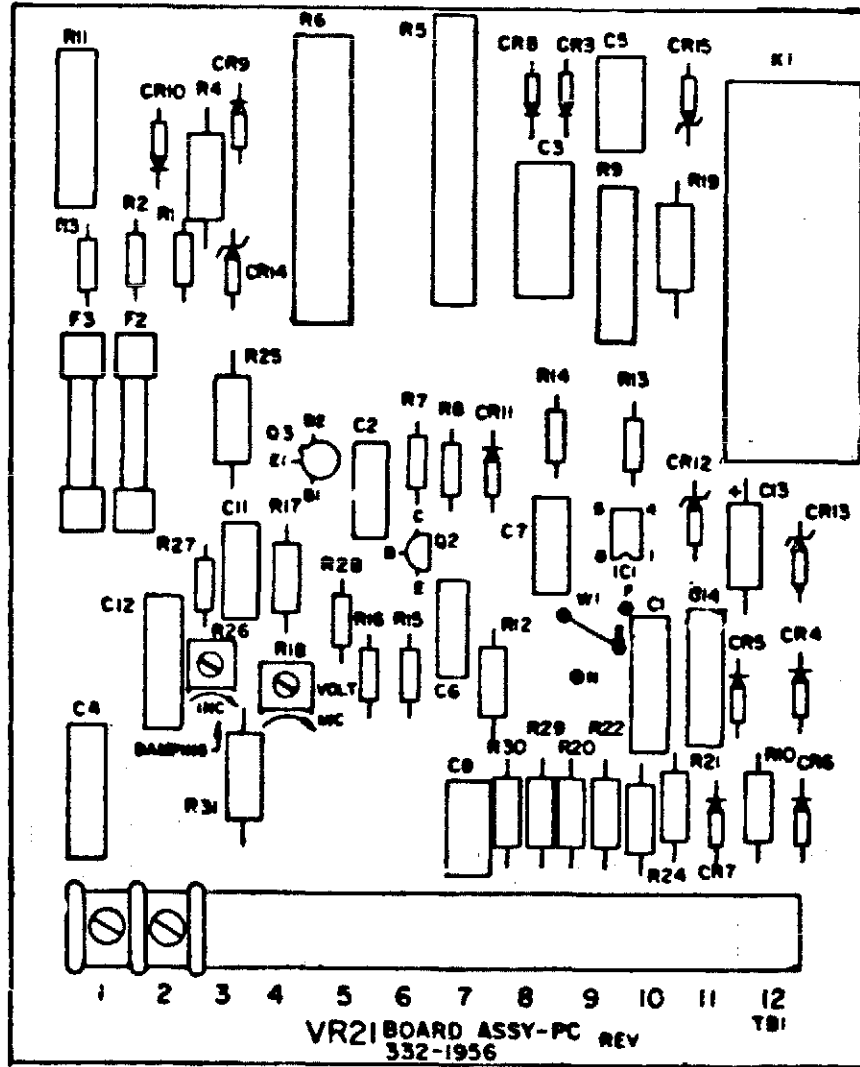
CONTROL HOUSING



M-1145

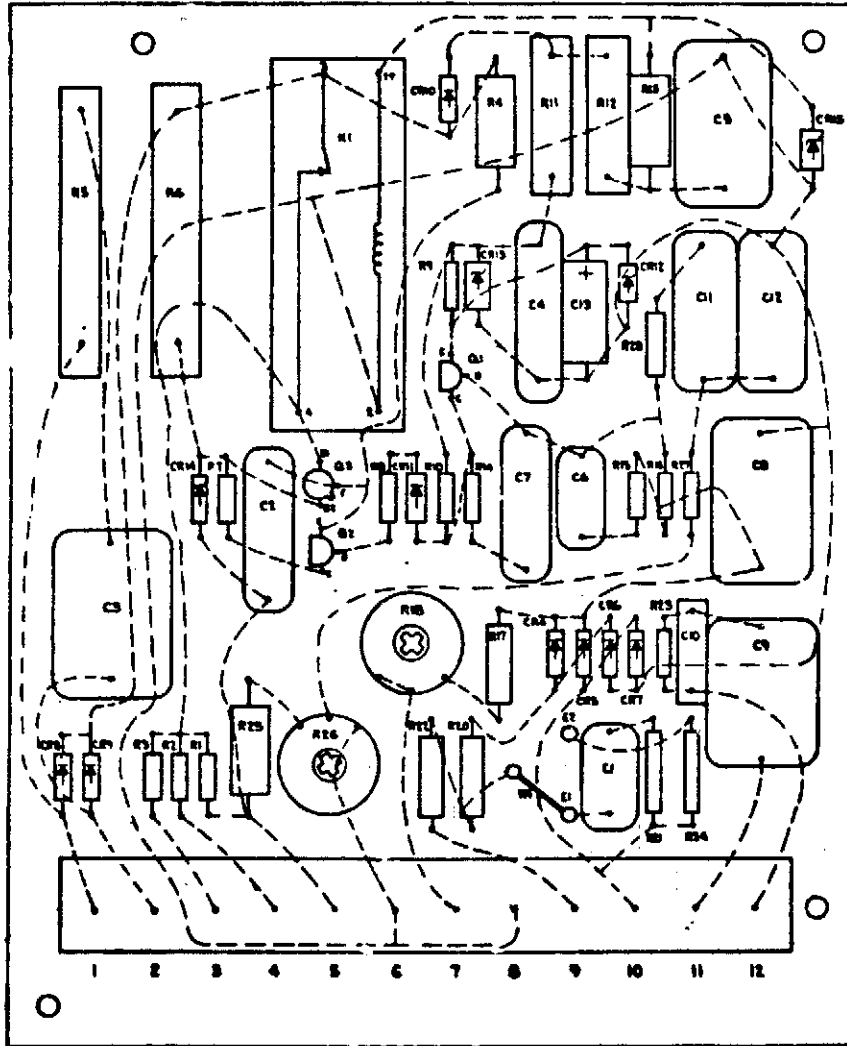
REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	301-3154	1	Saddle, Control Box
2	301-3155	1	Housing, Control Box
3	301-3156	3	Panel, Control Box Housing
4	821-0014	8	Screw, Cap - Hex Head Locking (5/16-18 x 1/2")
5	815-0350	6	Screw, Cap - Hex Head Locking (#10-32 x 3/8")
7	821-0018	6	Screw, Cap - Hex Head Locking (1/4-20 x 5/8")
8	526-0018	5	Washer, Flat (17/64" ID x 5/8" OD x 1/16" Thk)
9	856-0006	1	Washer, Lock - EIT (1/4")
10	870-0212	6	Nut, Hex - Locking (1/4-20)
11	508-0203	1	Bushing, Nylon

**PRINTED CIRCUIT BOARD ASSEMBLY - BEGIN SPEC B
(332-1956)**



REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
	332-1956	1	Board Assembly, Printed - Complete	R11, R9	352-0151	2	Resistor - Fixed 5 Watt, 15,000-Ohm
C1, 14	355-0042	2	Capacitor - 47 Mfd, 250 Volt	R12	351-0909	1	Resistor - 1/2 Watt, 90,900-Ohm
C2, C7	355-0043	2	Capacitor - 22 Mfd, 250 Volt	R13	350-0411	1	Resistor - 1/2 Watt, 10,000-Ohm
C3	355-0047	1	Capacitor - 47 Mfd, 400 Volt	R14	350-0443	1	Resistor - 1/2 Watt, 220,000-Ohm
C4, C12	355-0044	2	Capacitor - 47 Mfd, 250 Volt	R15, R27	350-0435	2	Resistor - 1/2 Watt, 100,000-Ohm
C5, C8	355-0046	2	Capacitor - 1 Mfd, 100 Volt	R17	351-0293	1	Resistor, Metal Film - 1/4 Watt, 11,000-Ohm
C6	355-0056	1	Capacitor - .33 Mfd, 250 Volt	R18	303-0210	1	Potentiometer - 5,000-Ohm, 1/2 Watt
C11	355-0048	1	Capacitor - 1 Mfd, 400 Volt	R20, 22, 29 & 30	351-0520	4	Resistor - 1/4 Watt, 28,000-Ohm
C13	356-0039	1	Capacitor - Electrolytic - 100 Mfd, 10 Volt	R21	351-0522	1	Resistor - Metal Film - 1/4 Watt, 5,110-Ohm
CR3 Thru 11	357-0014	9	Rectifier - Silicon	R24	351-0523	1	Resistor - Metal Film - 1/4 Watt, 8,870-Ohm
CR12	359-0036	1	Diode - Zener 5.6 Volt	R25, R31	350-1011	2	Resistor - 2 Watt, 10,000-Ohm
CR13	359-0025	1	Diode - Zener 20 Volt	R26	303-0211	1	Potentiometer - 1/2 Watt, 100,000-Ohm
CR14	359-0026	1	Diode - Zener 18 Volt	R28	350-0568	1	Resistor - 1/2 Watt, .47 Meg-Ohm
F2, F3	321-0204	2	Fuse 1/4 Amp	TB1	332-1252	1	Terminal Block
1C1	367-0005	1	Integrated Circuit	CR15	359-0015	1	Diode - Zener - 24 Volt
Q2	362-0017	1	Transistor - Silicon NPN		321-0163	6	Clip - Fuse
Q3	361-0004	1	Transistor - Unijunction	K1	307-1063	1	Relay, Magnetic Reed
R1	350-0355	1	Resistor - 1/2 Watt, 47-Ohm	R19	350-1007	1	Resistor - 2 Watt, 6,800-Ohm
R2, R3	350-0351	2	Resistor - 1/2 Watt, 33-Ohm				
R4	350-1075	1	Resistor - 2 Watt, 4.7 Meg-Ohm				
R5	353-0040	1	Resistor - Fixed 10 Watt, 270-Ohm				
R6	353-0039	1	Resistor - Fixed 15 Watt, 5,000-Ohm				
R7	350-0398	1	Resistor - 1/2 Watt, 3,000-Ohm				
R8, R16	350-0447	2	Resistor - 1/2 Watt, 330,000-Ohm				
R10	351-0885	1	Resistor - 1/2 Watt, 51,100-Ohm				

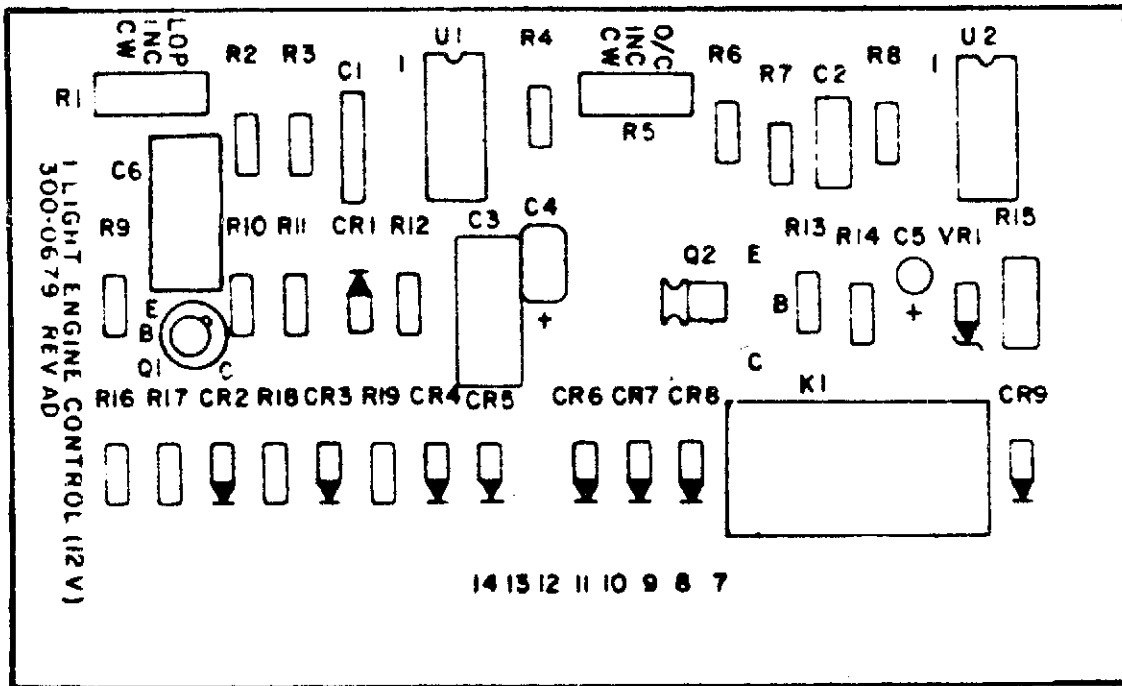
**PRINTED CIRCUIT BOARD ASSEMBLY (AC) - SPEC A
(332-1268)**



REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
	332-1268	1	Board Assembly, Printed - Complete	R6	353-0039	1	Resistor, Fixed (5,000-Ohm, 15 Watt)
TB1	332-1252	1	Terminal Block	R7	350-0398	1	Resistor (3,000-Ohm, 1/2 Watt)
C1	355-0018	1	Capacitor (.47 Mfd, 100 Volt)	R8, R16	350-0447	2	Resistor (330,000-Ohm, 1/2 Watt)
C2, C7	355-0005	2	Capacitor (.22 Mfd, 200 Volt)	R9, R10	350-0423	2	Resistor (33,000-Ohm, 1/2 Watt)
C3, C9	355-0017	2	Capacitor (.47 Mfd, 400 Volt)	R11	352-0151	1	Resistor, Fixed (15,000-Ohm, 5 Watt)
C4, C12	355-0006	2	Capacitor (.47 Mfd, 200 Volt)	R12	350-1014	1	Resistor (13,000-Ohm, 2 Watt)
C5, C8	355-0016	2	Capacitor (1 Mfd, 100 Volt)	R13	350-1007	1	Resistor (6,800-Ohm, 2 Watt)
C6	355-0015	1	Capacitor (.1 Mfd, 200 Volt)	R14	350-0443	1	Resistor (220,000-Ohm, 2 Watt)
C10	355-0014	1	Capacitor (.047 Mfd, 200 Volt)	R15, R27	350-0435	2	Resistor (100,000-Ohm, 1/2 Watt)
C11	355-0020	1	Capacitor (.1 Mfd, 400 Volt)	R17	351-0524	1	Resistor, Metal Film (13,000-Ohm, 1/4 Watt)
C13	356-0039	1	Capacitor (100 Mfd, 10 Volt)	R18	303-0168	1	Potentiometer
CR4 thru 11	357-0014	8	Rectifier, Silicon	R20, R22	351-0520	2	Resistor, Metal Film (28,000-Ohm, 1/4 Watt)
CR12	359-0035	1	Diode, Zener (6.8 Volt)	R21	351-0522	1	Resistor, Metal Film (5,110-Ohm, 1/4 Watt)
CR13	359-0025	1	Diode, Zener (20 Volt)	R24	351-0523	1	Resistor, Metal Film (8,870-Ohm, 1/4 Watt)
CR14	359-0028	1	Diode, Zener (18 Volt)	R25	350-1011	1	Resistor (10,000-Ohm, 2 Watt)
CR15	359-0015	1	Diode, Zener (24 Volt)	R26	303-0164	1	Potentiometer
K1	307-1063	1	Relay, Magnetic Head	R28	350-0459	1	Resistor (1.0 Megohm, 1 Watt)
Q1, Q2	362-0017	2	Transistor, Silicon (NPN)				
Q3	361-0004	1	Transistor, Unijunction				
R1, R23	350-0355	2	Resistor (47-Ohm, 1/2 Watt)				
R2, R3	350-0351	2	Resistor (33-Ohm, 1/2 Watt)				
R4	350-1075	1	Resistor (4.7 Megohm, 2 Watt)				
R5	353-0040	1	Resistor, Fixed (270-Ohm, 10 Watt)				

973-0226 (SEPTEMBER 1980)

ENGINE CONTROL MONITOR (12 VOLT) (300-0679)

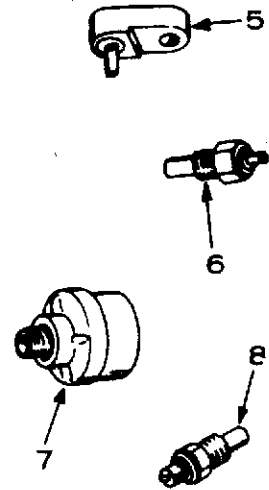
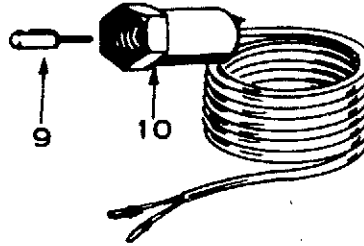
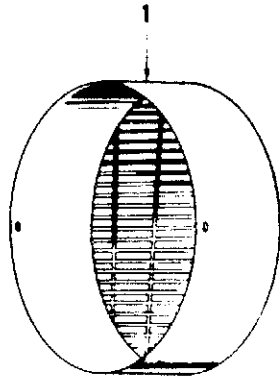


REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
	300-0679	1	Monitor Assembly, Complete - Engine Control
K1	307-1039	1	Relay
R3,7	350-0137	2	Resistor (120,000-Ohm)
C2	355-0069	1	Capacitor (.15 Mfd)
C3	356-0056	2	Capacitor (.33 Mfd)
C4	356-0066	1	Capacitor (47 Mfd)
CR1-9	357-0004	9	Diode
Q1	362-0048	1	Transistor
Q2	362-0044	4	Transistor
R1	303-0171	1	Potentiometer
R2,6	350-0121	1	Resistor (27,000-Ohm)
R4	350-0099	1	Resistor (3,300-Ohm)
R5	303-0222	1	Potentiometer
R8,11,13,14	350-0111	4	Resistor (10,000-Ohm)
R9,16,18,19	350-0103	1	Resistor (47,000-Ohm)
R12	350-0127	3	Resistor (47,000-Ohm)
R15	350-0363	2	Resistor (100-Ohm)
R17	350-0087	1	Resistor (1,000-Ohm)
C5	356-0051	1	Capacitor - Tantalum
C1	355-0070	1	Capacitor (.22 Mfd)
R10	350-0095	1	Resistor (2,200-Ohm)
U1,2	367-0025	2	Timer, IC Programmable
VR1	359-0002	1	Diode, Zener
	362-0049	1	Pad, Transistor Mounting

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.

MISCELLANEOUS OPTIONAL PARTS



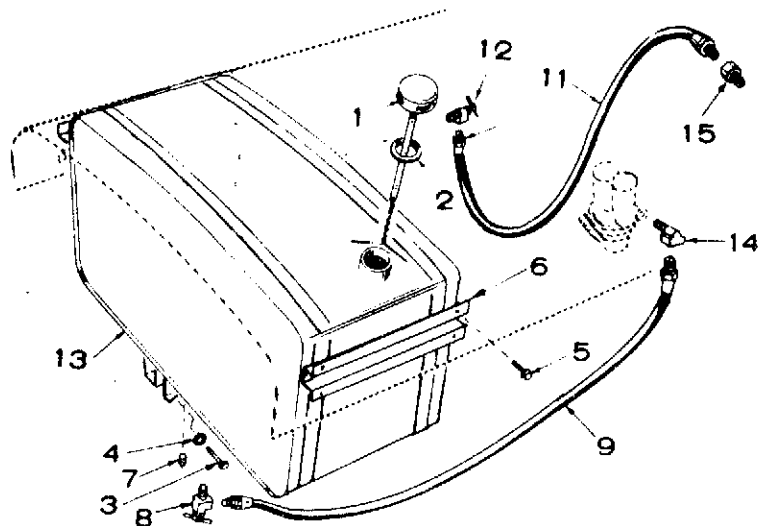
M-1148

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	234-0369	1	Cover, End Bell - Housed Sets
5	309-0269	1	Switch, Low Engine Temperature

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
6	SWITCH, HIGH WATER TEMPERATURE - SETS WITH FIVE FAULT LIGHTS		
	309-0178	1	Pre-Alarm
	309-0179	1	Shutdown
7	SWITCH, LOW OIL PRESSURE - SETS WITH FIVE FAULT LIGHTS		
	309-0169	1	Pre-Alarm
	309-0064	1	Shutdown
8	SENDER, OIL TEMPERATURE		
	193-0202	1	Spec A
	193-0249	1	Begin Spec B
9	302-0967	1	Tang, Drive - Tachometer Sender
10	302-0750	1	Sender, Tachometer

MOUNTED FUEL TANK (HOUSED SETS) - OPTIONAL EQUIPMENT

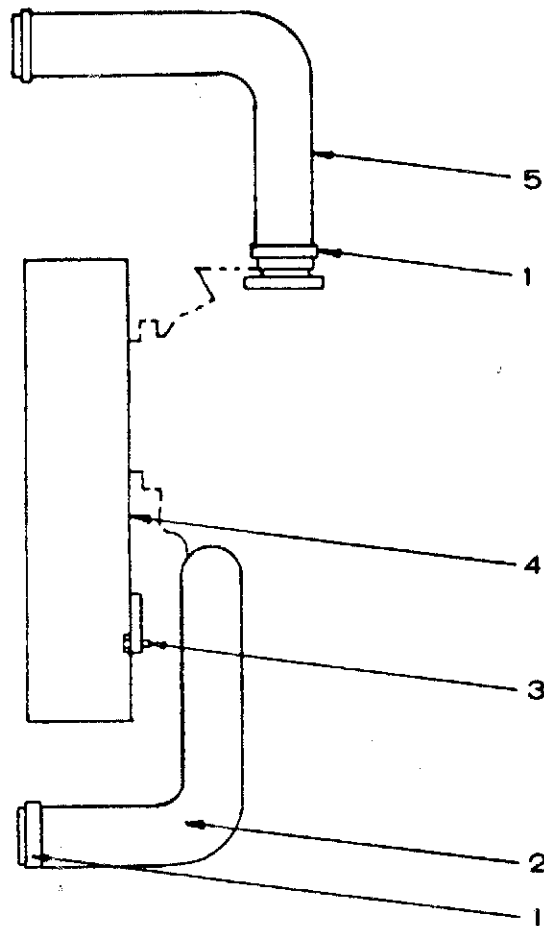
REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	159-0512	1	Cap and Indicator
2	159-0751	1	Gasket, Gas Cap
3	812-0158	2	Screw, Machine - Round Head (1/4-20 x 2")
4	850-0040	2	Washer, Lock - Spring (1/4)
5	821-0010	8	Screw, Self-Locking - Hex Head (1/4-20 x 1/2")
6	159-0489	1	Strap Assembly, Mounting
7	505-0057	1	Plug, Pipe - Square Head
8	504-0013	1	Valve, Globe
9	501-0010	1	Line, Fuel (42")
11	501-0066	1	Line, Fuel (31")
12	504-0007	1	Valve, Globe
13	159-0490	1	Tank, Fuel (20 gallon)
14	502-0002	1	Elbow, Pipe - 90°
15	502-0017	1	Connector



FS-1137

973-0226 (SEPTEMBER 1980)

REMOTE RADIATOR INSTALLATION - OPTIONAL

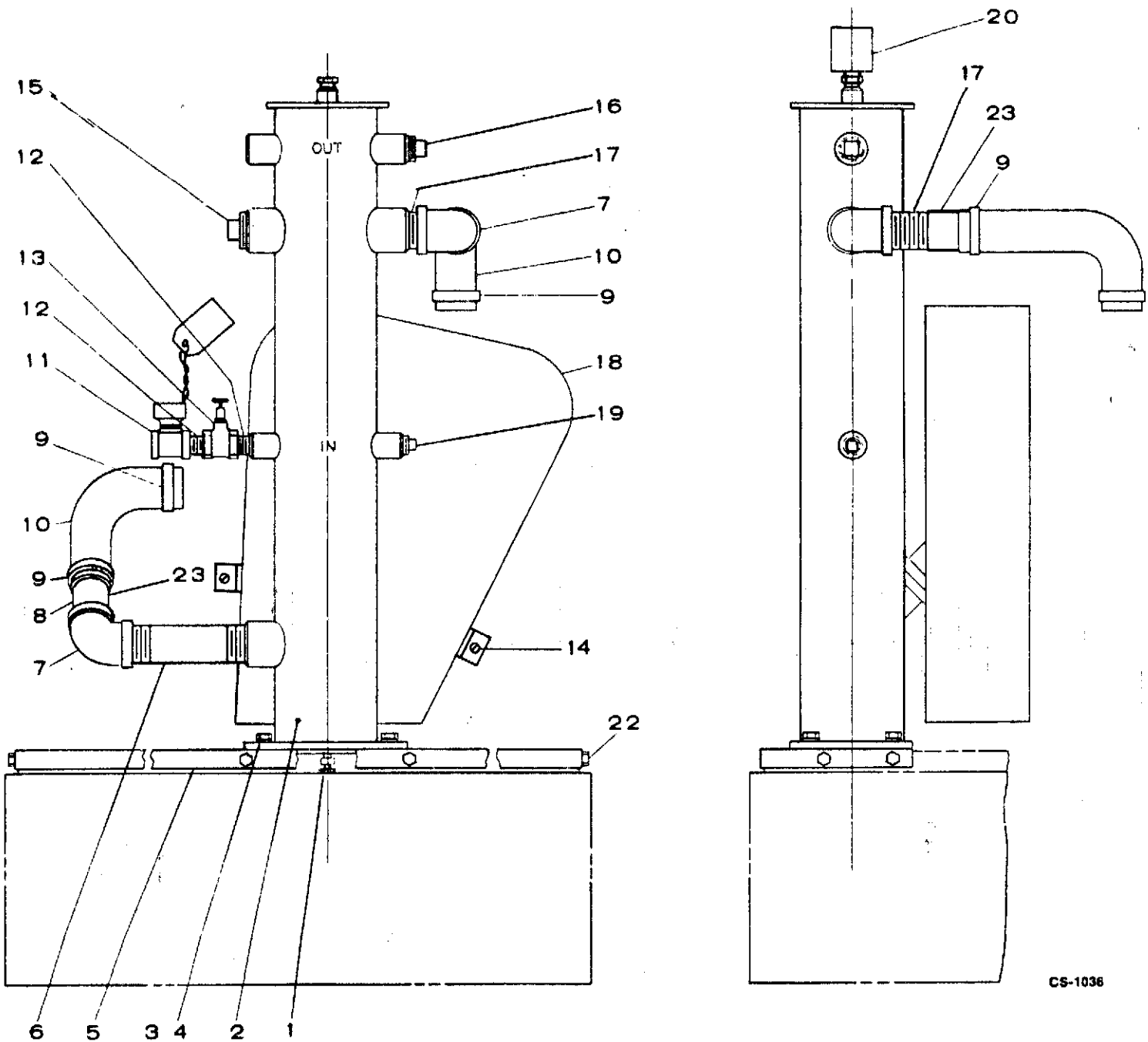


CS-1034

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
	179-2516	1	Package, Remote Radiator Installation - Complete
1	503-0465	4	Clamp, Hose
2	503-0595	1	Hose, Lower
3	800-0052	2	Screw, Cap - Hex Head (3/8-16 x 1-1/2")
4	130-0946	1	Guard, Belt
5	503-0594	1	Hose, Upper

STANDPIPE COOLING INSTALLATION - OPTIONAL

179-1014

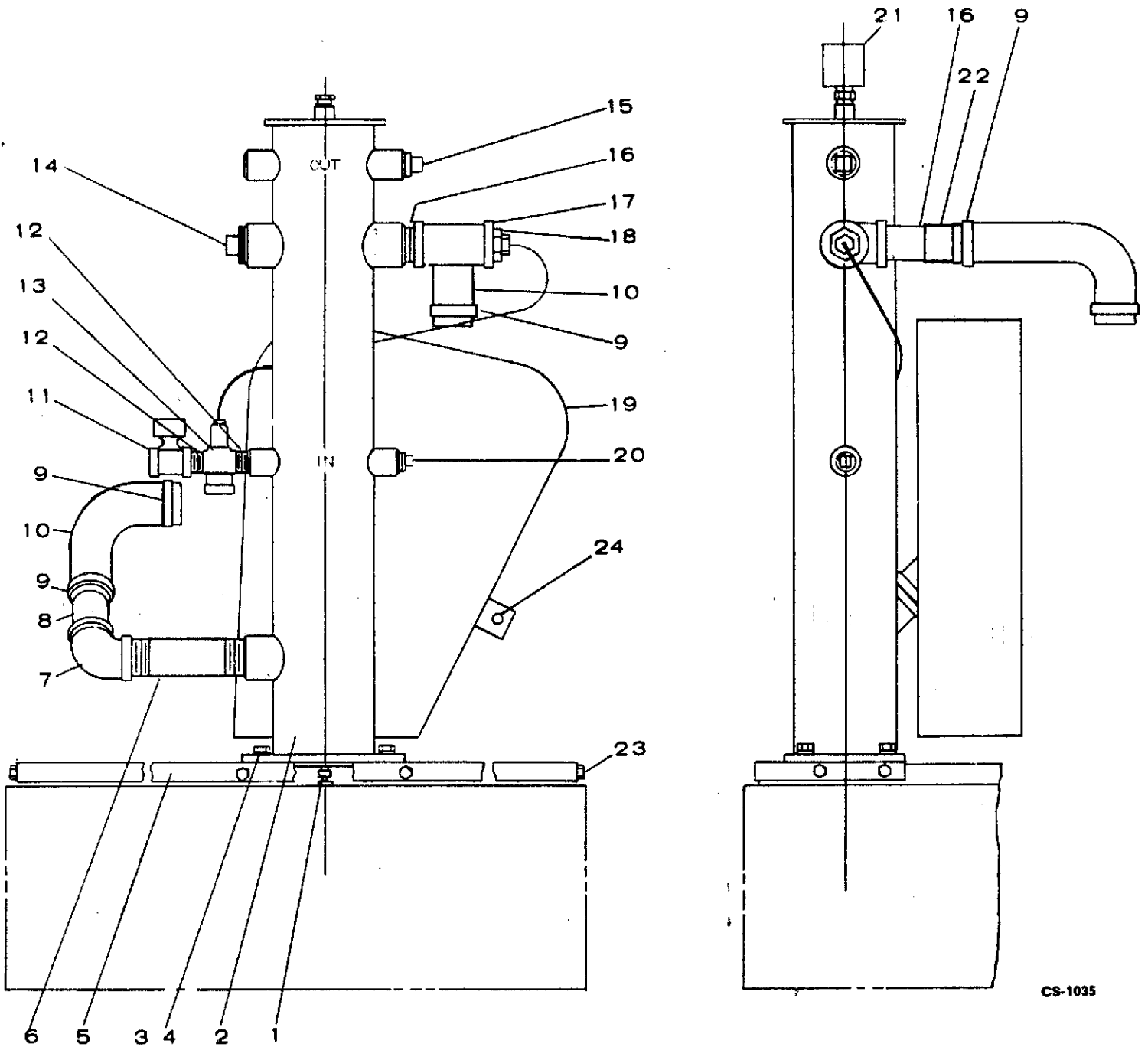


CS-1036

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
	179-1014	1	Package, Standpipe Cooling - Complete	12	505-0102	2	Nipple, Close (3/4 x 1-3/8")
1	504-0028	1	Valve, Drain	13	504-0048	1	Valve, Globe
2	130-0835	1	Standpipe	14	800-0052	1	Screw, Cap - Hex Head (3/8-16 x 1-1/2")
3	800-0050	4	Screw, Cap - Hex Head (3/8-16 x 1")	15	505-0402	1	Plug, Square Head (1-1/2")
4	850-0050	4	Washer, Lock - Spring (3/8")	16	505-0140	1	Plug, Square Head (1")
5	130-0636	1	Bracket, Mounting	17	505-0220	2	Nipple, Close (1-1/2 x 1-3/4")
6	505-0841	1	Nipple, Pipe (1-1/2 x 6")	18	130-0946	1	Guard, Belt
7	505-0043	2	Elbow, Pipe (1-1/2")	19	505-0130	1	Plug, Square Head (3/4")
8	505-0642	1	Nipple, Pipe	20	504-0082	1	Valve, Vacuum Relief
9	503-0465	4	Clamp, Hose	22	821-0014	8	Screw, Cap - Hex Head Locking (5/16-18 x 1/2")
10	503-0576	2	Hose, Exhaust	23	505-0032	2	Coupling (1-1/2")
11	307-0835	1	Valve, Solenoid				

973-0226 (SEPTEMBER 1980)

**STANDPIPE INSTALLATION - OPTIONAL
(WITH WATER TEMPERATURE CONTROL VALVE)
(179-1015)**

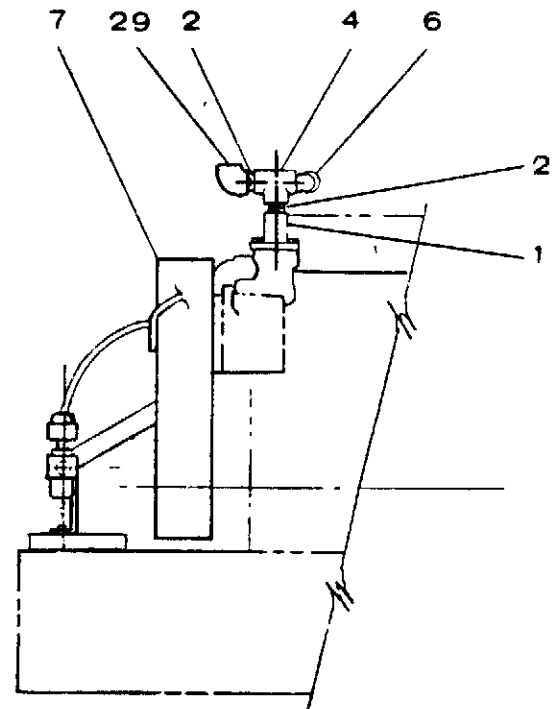
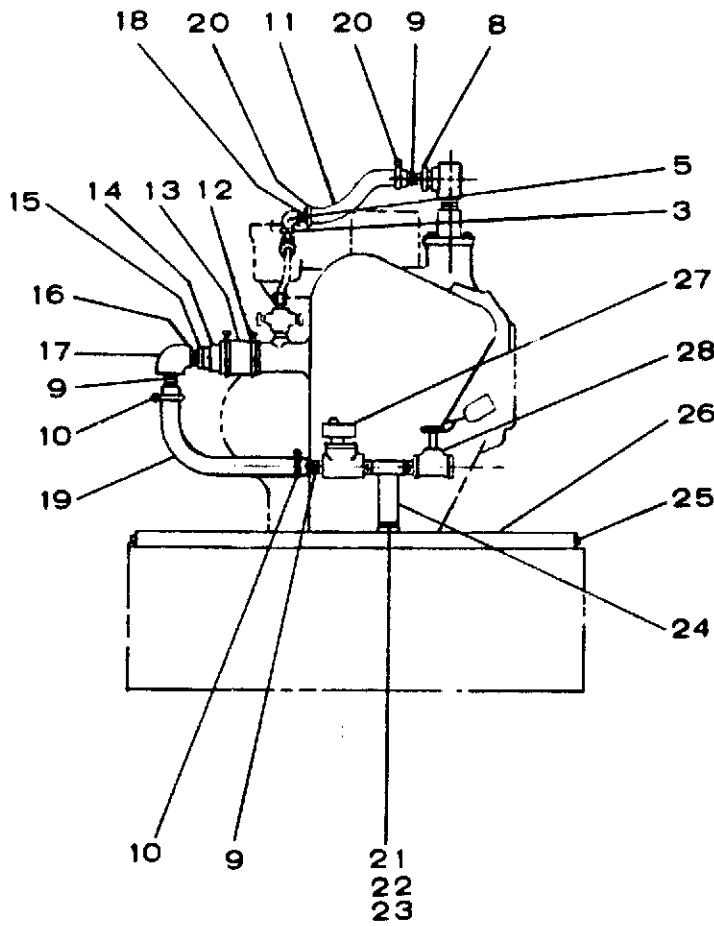


CS-1035

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
	179-1015	1	Standpipe Package (Complete)	14	505-0402	1	Plug (1-1/2"), Pipe
1	504-0028	1	Valve, Drain	15	505-0140	1	Plug (1"), Pipe
2	130-0635	1	Standpipe	16	505-0220	2	Nipple (1-1/2" x 1-3/4"), Close
3	800-0050	4	Screw (3/8-16 x 1")	17	505-0317	1	Tee (1-1/2"), Pipe
4	850-0050	4	Washer (3/8"), Lock	18	505-0289	1	Bushing (1-1/2 x 1"), Reducer
5	130-0636	1	Bracket, Standpipe	19	130-0946	1	Guard, Belt
6	505-0641	1	Nipple (1-1/2 x 6"), Pipe	20	505-0130	1	Plug (3/4"), Pipe
7	505-0043	1	Elbow (1-1/2" x 90°), Pipe	21	504-0062	1	Valve, Vacuum Relief
8	505-0642	1	Nipple (1-1/2 x 4" lg) - Half	22	505-0032	1	Coupling (1-1/2")
9	503-0465	4	Clamp, Hose	23	821-0014	6	Screw (5/16-18 x 1/2"), Self Locking
10	503-0576	2	Hose, Exhaust	24	800-0052	2	Screw, Cap - Hex Head (3/8-16 x 1-1/2")
11	307-0835	1	Valve, Solenoid				
12	505-0102	2	Nipple (3/4 x 1-3/8"), Close				
13	309-0241	1	Valve, Water Temperature Control				

973-0226 (SEPTEMBER 1990)

CITY WATER COOLED INSTALLATION - OPTIONAL



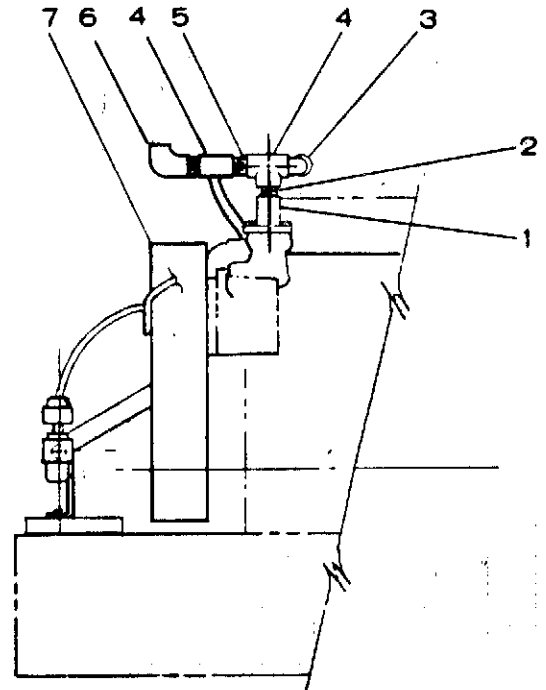
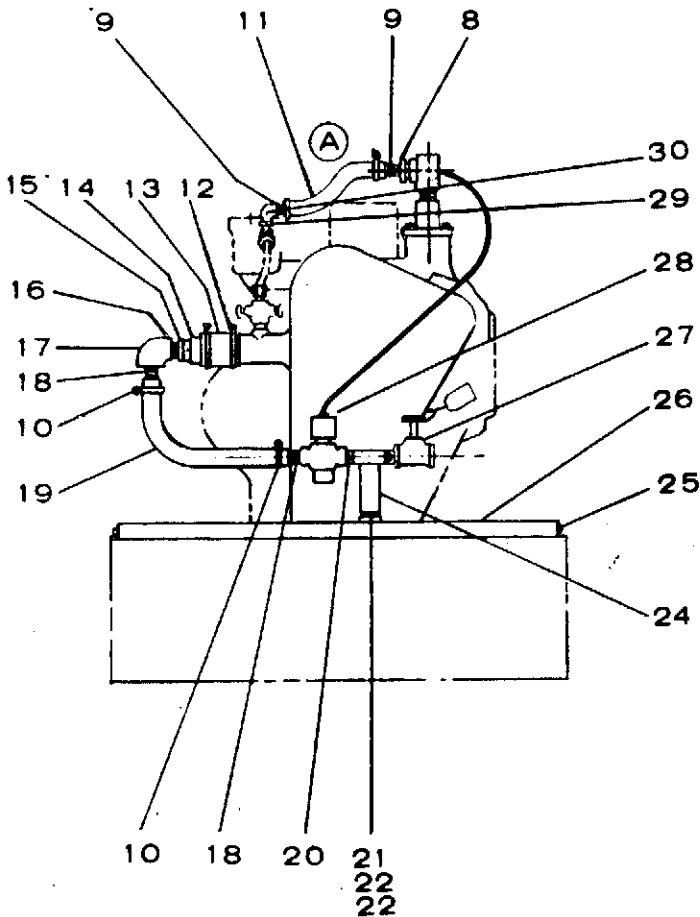
CS-1032

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
	179-1026	1	Package, City Water Cooled - Complete
1	130-0954	1	Outlet, Water
2	505-0004	2	Nipple, Pipe - Close (1 x 1-1/2")
3	505-0018	1	Bushing, Reducer (1/2 x 1/4)
4	505-0304	1	Tee, Pipe (1")
5	505-0011	1	Elbow, Street (1/4" x 90°)
6	505-0003	1	Elbow, Pipe - Street (1" x 90°)
7	130-0946	1	Guard, Belt
8	505-0802	1	Bushing, Reducer (1 x 1/4")
9	505-0185	2	Nipple, Half (1/2 x 1-1/2")
10	503-0189	2	Clamp, Hose
11		1	Hose (Order 12" of Bulk Hose #503-0110)
12	503-0465	2	Clamp, Hose
13		1	Hose (Order 4" of Bulk Hose #503-0646)
14	505-0294	1	Coupling, Pipe (1-1/2")

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
15	505-0399	1	Bushing, Reducer (1-1/2 x 1/2")
16	505-0100	1	Nipple, Close (1/2 x 1-1/8")
17	505-0040	1	Elbow, Pipe (1/2 x 90°)
18	505-0302	2	Nipple, Half (1/4 x 1-1/2")
19		1	Hose (Order 17" of Bulk Hose #503-0191)
20	503-0183	2	Clamp, Hose
21	800-0007	2	Screw, Cap - Hex Head (1/4-20 x 1")
22	850-0040	2	Washer, Lock - Spring (1/4")
23	862-0001	2	Nut, Hex (1/4-20)
24	110-0526	1	Bracket and Nipple
25	821-0014	6	Screw, Cap - Hex Head Locking (5/16-18 x 1/2")
26	130-0499	1	Bracket, Heat Exchanger Mtg.
27	307-0833	1	Valve, Solenoid
28	504-0019	1	Valve, Globe
29	505-0041	1	Elbow, 90°

CITY WATER COOLED INSTALLATION (WITH WATER TEMPERATURE CONTROL VALVE)

179-1025

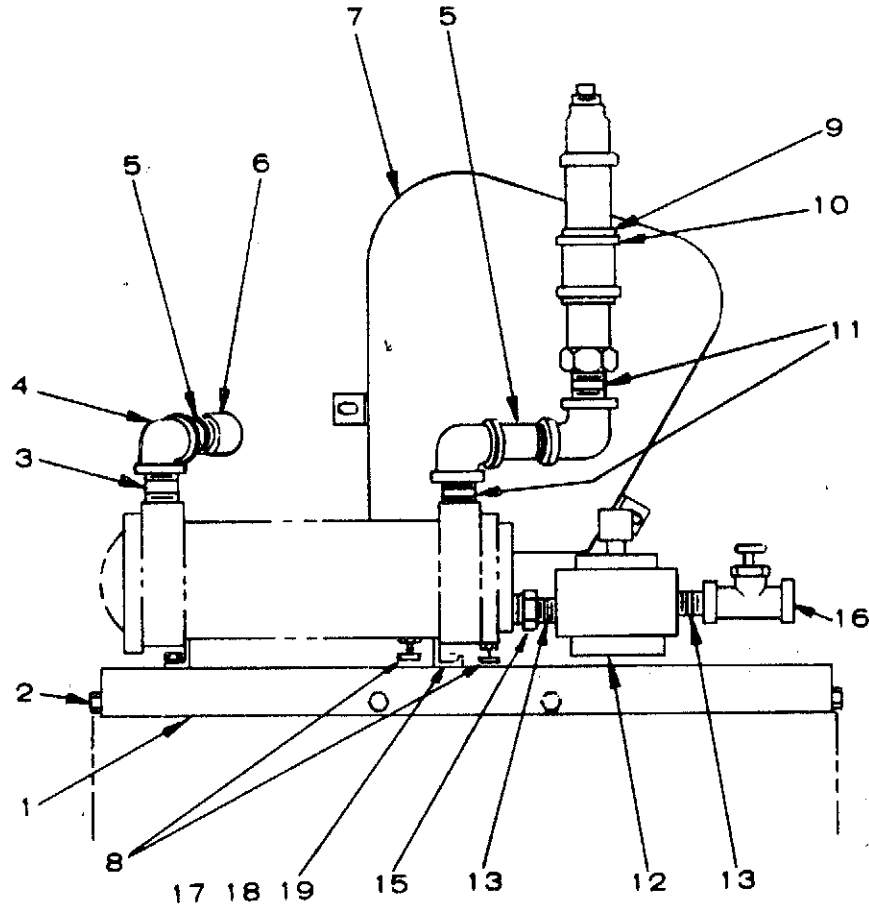


CS-1033

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	130-0954	1	Outlet, Water	17	505-0132	1	Elbow, Pipe (3/4" x 90°)
2	505-0004	1	Nipple, Pipe (1 x 1-1/2")	18	505-0324	2	Nipple, Pipe - Half (3/4 x 2")
3	505-0129	1	Bushing, Reducer (1 x 3/4")	19		1	Hose, Rubber (Order 17" of Bulk Hose #503-0249)
4	505-0304	2	Tee, Pipe (1")	20	505-0021	1	Bushing, Reducer (3/4 x 1/2")
5	505-0086	1	Nipple, Pipe (1 x 2-1/2")	21	800-0007	2	Screw, Cap - Hex Head (1/4-20 x 1")
6	505-0003	1	Elbow, Street (1" x 90°)	22	850-0040	2	Washer, Lock - Spring (1/4")
7	130-0946	1	Guard, Belt	23	862-0001	2	Nut, Hex (1/4-20)
8	505-0802	1	Bushing, Reducer (1 x 1/4")	24	110-0526	1	Bracket & Nipple
9	505-0302	2	Nipple, Pipe - Half (1/4 x 1-1/2")	25	821-0014	6	Screw, Cap - Hex Head Locking (5/16-18 x 1/2")
10	503-0189	2	Clamp, Hose	26	130-0499	1	Bracket, Heat Exchanger
11		1	Hose, Rubber (Order 12" of Bulk Hose #503-0110)	27	307-0833	1	Valve, Solenoid (12 Volt)
12	503-0465	2	Clamp, Hose	28	309-0241	1	Valve, Water Temperature Control
13		1	Hose, Rubber (Order 4" of Bulk Hose #503-0646)	29	505-0018	1	Bushing, Reducer (1/2 x 1/4")
14	505-0294	1	Coupling, Pipe (1-1/2")	30	505-0011	1	Elbow, Pipe (1/4" x 90°)
15	505-0289	1	Bushing, Reducer (1-1/2" x 3/4")	31	503-0183	2	Clamp, Hose
16	505-0102	1	Nipple, Close (3/4 x 1-3/8")				

SOLENOID VALVE & REGULATOR INSTALLATION - OPTIONAL (HEAT EXCHANGER COOLED)

179-0410
179-1018

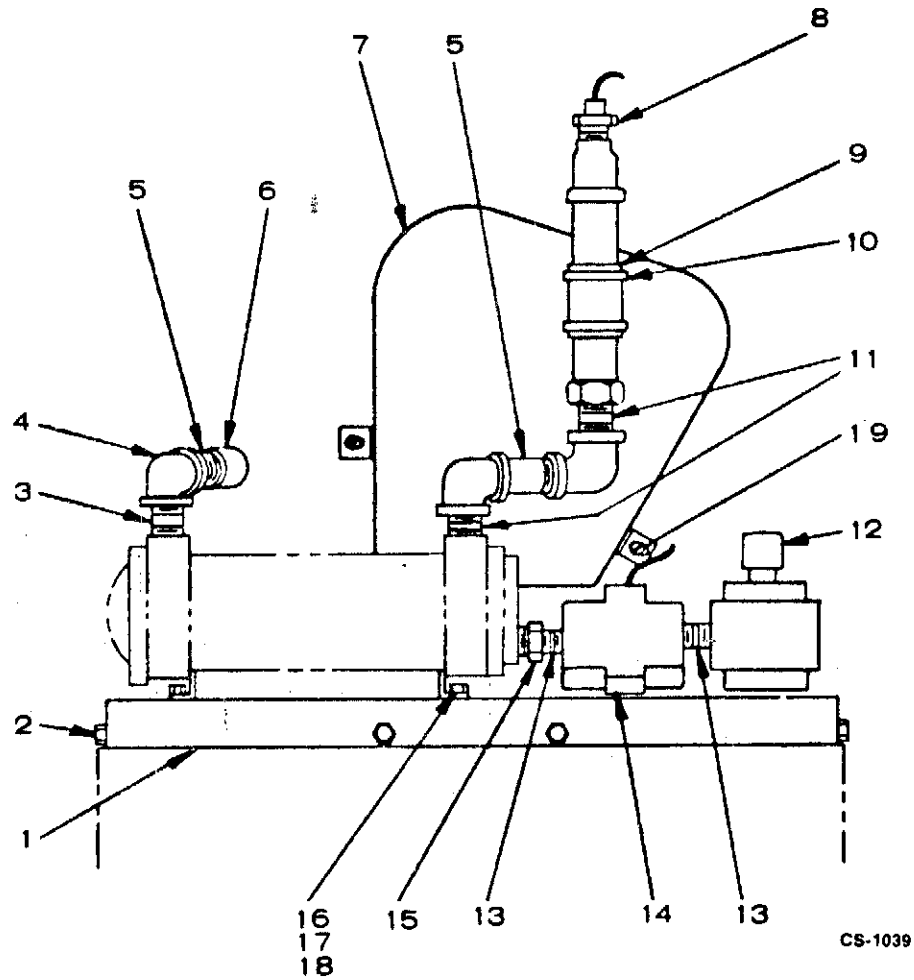


CS-1038

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
SOLENOID VALVE & REGULATOR PACKAGE (COMPLETE)				11	505-0220	2	Nipple (1-1/2 x 1-3/4"), Close
	179-0410	1	With 1" Inlet	12	VALVE, SOLENOID (12 Volt)	12	
	179-1018	1	With 3/4" Inlet	307-0835	1	3/4" (179-1018)	
1	130-0863	1	Bracket, Heat Exchanger Mtg.	307-1139	1	1" (179-0410)	
2	821-0014	6	Screw (5/16-18 x 1/2"), Self Locking	13	NIPPLE, CLOSE		
3	505-0109	1	Nipple (1-1/2 x 2-1/2"), Short	505-0102	2	3/4 x 1-1/8" (179-1018)	
4	505-0043	3	Elbow (1-1/2" x 90°), Pipe	505-0004	2	1 x 1-1/2" (179-0410)	
5	505-0642	2	Nipple (1-1/2 x 4"), Pipe	14	800-0052	2	Screw, Cap - Hex Head (3/8-16 x 1-1/2")
6	505-0032	1	Coupling (1-1/2"), Pipe	15	BUSHING, REDUCER		
7	130-0946	1	Guard, Belt	505-0289	1	1-1/2 to 3/4" (179-1018)	
8	504-0003	2	Valve, Drain	505-0024	1	1-1/2 to 1" (179-0410)	
9		1	Hose (Order 3" of Bulk Hose #503-0250)	16	504-0090	1	Valve, Globe
10	503-0465	2	Clamp, Hose	17	800-0049	4	Screw (3/8-16 x 7/8")
				18	850-0050	4	Washer (3/8"), Lock
				19	862-0003	4	Nut (3/8-16), Hex

SOLENOID VALVE & REGULATOR INSTALLATION - OPTIONAL (HEAT EXCHANGER COOLED WITH MARSH REGULATOR)

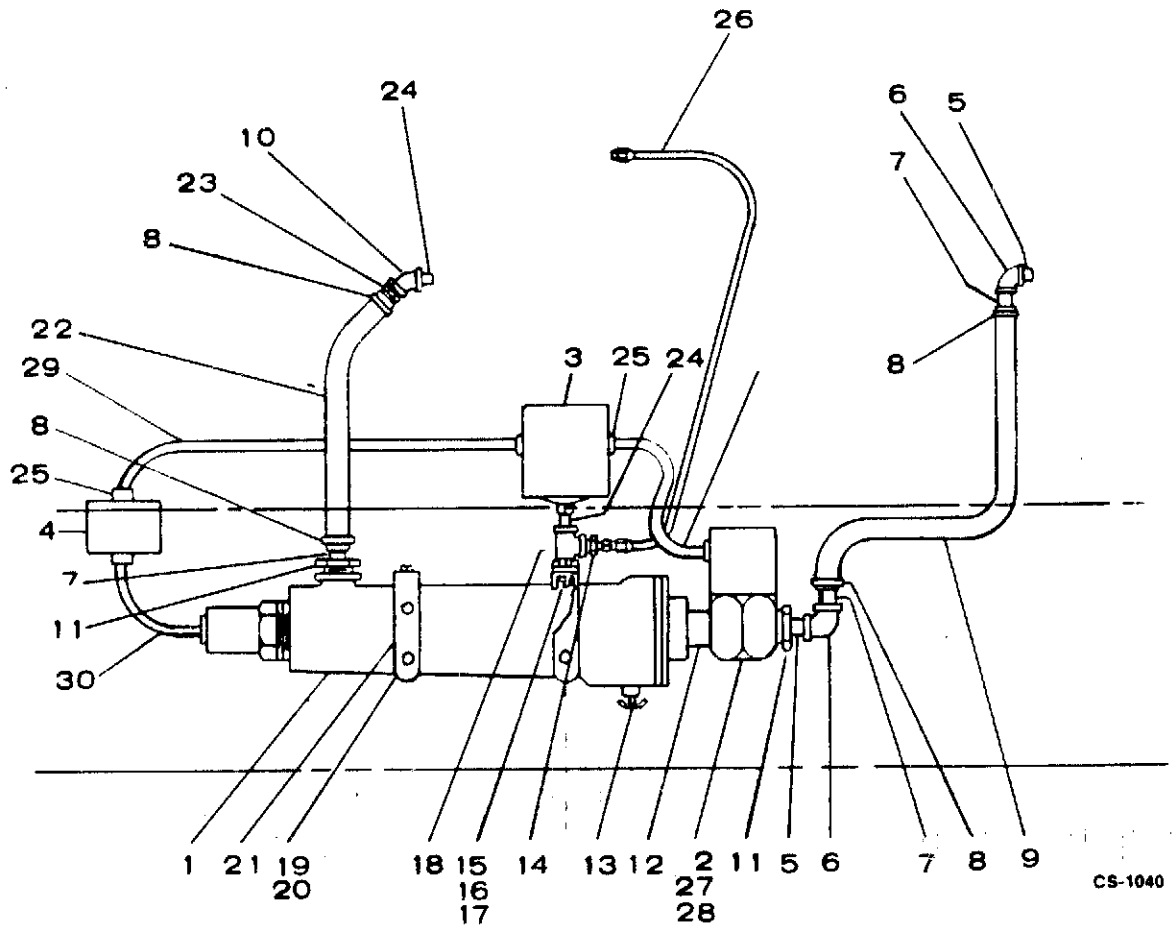
179-0409



REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
	179-0409	1	Solenoid Valve & Regulator Package (Complete)	10	503-0465	2	Clamp, Hose
1	130-0863	1	Bracket, Heat Exchanger Mounting	11	505-0220	2	Nipple (1-1/2 x 1-3/4"), Close
2	821-0014	6	Screw (5/16-18 x 1/2"), Self Locking	12	307-1139	1	Valve, Solenoid (12 Volt)
3	505-0109	1	Nipple (1-1/2 x 2-1/2"), Short	13	505-0004	2	Nipple (1 x 1-1/2"), Close
4	505-0043	3	Elbow (1-1/2" x 90°), Pipe	14	309-0242	1	Valve, Water Temperature Control (12 Volt)
5	505-0642	2	Nipple (1-1/2 x 4"), Pine	15	505-0024	1	Bushing (1-1/2 x 1"), Reducer
6	505-0032	1	Coupling (1-1/2"), Pipe	16	800-0049	4	Screw (3/8-16 x 7/8")
7	130-0946	1	Guard, Belt	17	850-0050	4	Washer (3/8"), Lock
8	505-0129	1	Bushing (3/4 x 1"), Reducer	18	862-0003	4	Nut (3/8-16), Hex
9		1	Hose (Order 3" of Bulk Hose #503-0250)	19	800-0052	1	Screw, Cap - Hex Head (3/8-16 x 1-1/2")

ENGINE COOLANT HEATER (HORIZONTAL) INSTALLATIONS - OPTIONAL

179-2059
179-2097
179-2100
179-2108
179-2111
179-2120
179-2140
179-2144

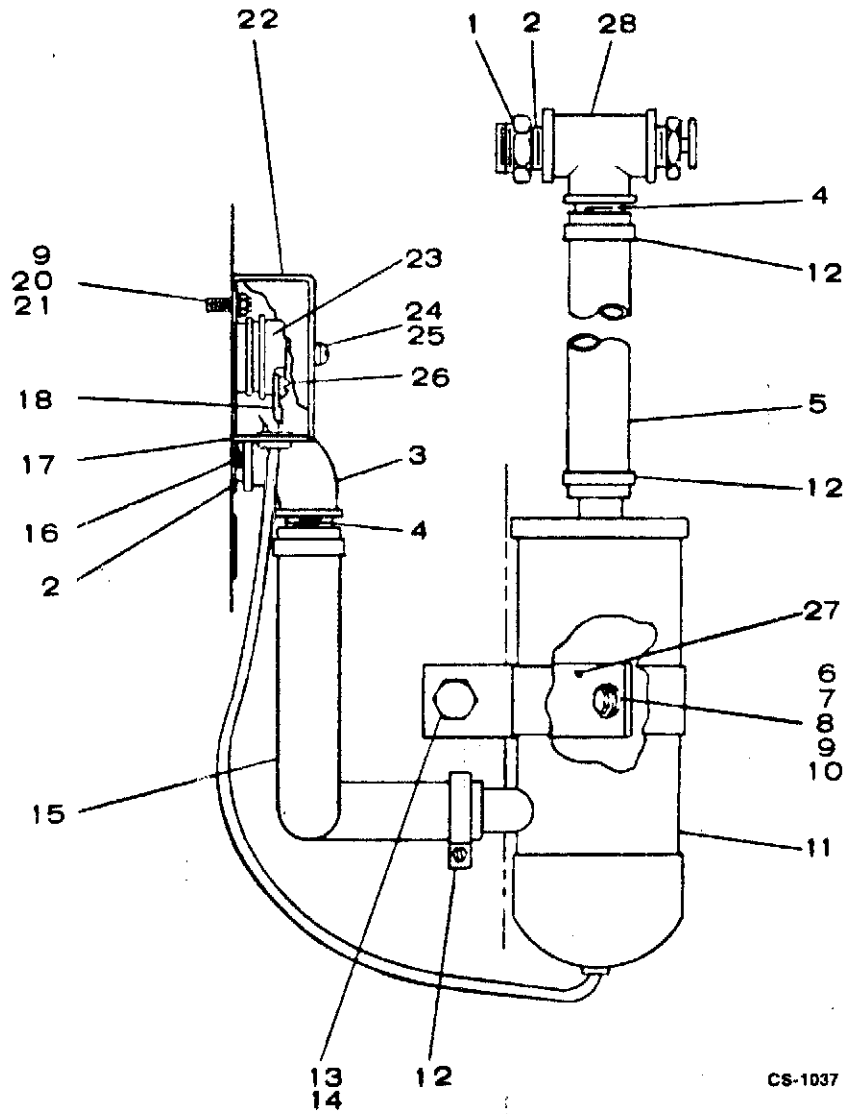


REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
	PACKAGE, COOLANT HEATER - COMPLETE (2000 WATT)			11	505-0455	2	Bushing, Reducer (1 x 3/8")
179-2059	1	120 Volt, Single Phase	12	505-0004	1	Nipple, Pipe (1 x 1-1/2")	
179-2100	1	208 Volt, Single Phase	13	504-0003	1	Valve, Drain	
179-2140	1	208 Volt, Three Phase	14	505-0007	1	Bushing, Reducer (1/4 x 1/8")	
179-2108	1	230 Volt, Single Phase	15	800-0007	4	Screw, Cap - Hex Head (1/4-20 x 1")	
179-2144	1	380 Volt, Single Phase	16	850-0040	4	Washer, Lock - Spring (1/4")	
179-2111	1	380 Volt, Three Phase	17	862-0001	4	Nut, Hex (1/4-20)	
179-2097	1	480 Volt, Single Phase	18	333-0142	1	Support, Pressure Switch	
179-2120	1	480 Volt, Three Phase	19	821-0016	4	Screw, Cap - Hex Head Locking (5/16-18 x 3/4")	
1	HEATER, COOLANT (2000 Watt)			20	870-0257	4	Nut, Hex - Locking (5/16-18)
333-0158	1	120 Volt, Single Phase	21	130-1192	2	Bracket, Heater Mounting	
333-0167	1	208 Volt, Single Phase	22	503-0113	1	Hose, Rubber (5/8" ID x 16")	
333-0148	1	208 Volt, Three Phase	23	502-0613	1	Connector, Hose	
333-0141	1	230 Volt, Single Phase	24	505-0099	2	Nipple, Pipe (1/4 x 7/8")	
333-0176	1	380 Volt, Single Phase	25	CONNECTOR, ROMAX			
333-0170	1	380 Volt, Three Phase		331-0027	2	120 Volt, 1 Phase; 208 Volt, 1 Phase; 250 Volt, 1 Phase	
333-0147	1	480 Volt, Single Phase		331-0027	4	208 Volt, 1 Phase; 380 Volt and 480 Volt	
333-0146	1	480 Volt, Three Phase		26	501-0227	1	Line, Flexible
2	309-0304	1	Switch, Thermostat	27	323-0957	2	Connector, Wire Nut (Black Leads)
3	309-0307	1	Switch, Oil Pressure	28	332-0149	2	Terminal (White Leads)
4	CONTACTOR			29		As Req	Cord, Electrical (Order Bulk Cord #334-0130)
	307-1460	1	Used on 208 Volt, 3 Phase Units			As Req	Cable, Electrical (Order Bulk Cable #334-0142) - Single Phase Units
	307-1164	1	Used on 380 and 480 Volt Units			As Req	Cable, Electrical (Order Bulk Cable #334-0143) - Three Phase Units
5	505-0101	2	Nipple, Pipe (3/8 x 1")				
6	505-0039	2	Elbow, Pipe (3/8 x 90°)				
7	505-0135	3	Nipple, Half - Pipe (3/8 x 1-1/2")				
8	503-0183	4	Clamp, Hose				
9	503-0843	1	Hose, Rubber (5/8" ID x 40")				
10	505-0112	1	Elbow, Pipe (1/4 x 45°)				

973-0226 (SEPTEMBER 1980)

Redistribution or publication of this document by any means, is strictly prohibited.

ENGINE COOLANT JACKET HEATER (VERTICAL) INSTALLATION - OPTIONAL 179-2020

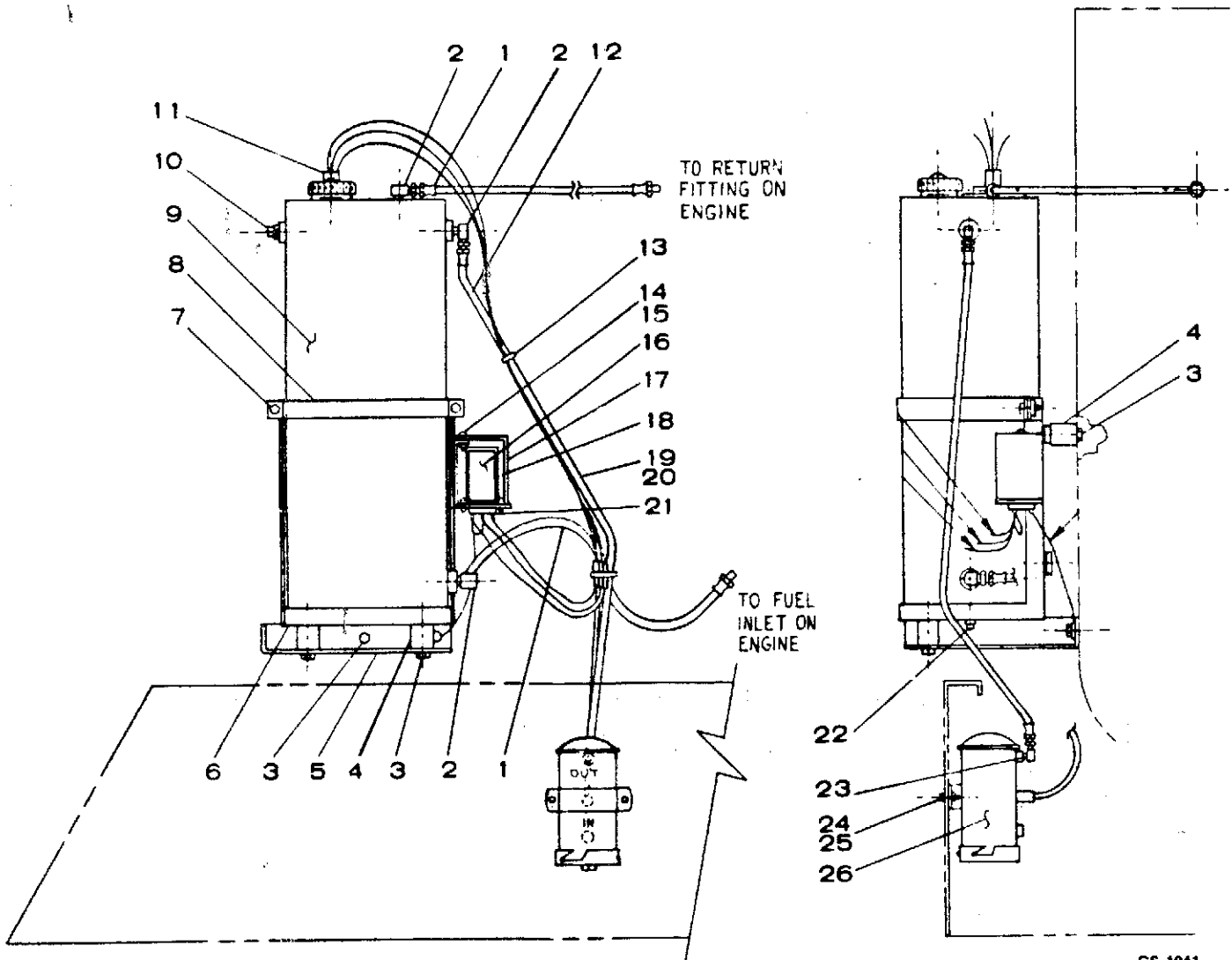


CS-1037

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
	179-2020	1	Coolant Jacket Heater Package (Complete)	14	850-0050	1	Washer (3/8"), Lock
1	505-0019	1	Bushing (1/2-3/8"), Reducer	15		1	Hose (Order 21" of Bulk Hose #503-0386)
2	505-0101	2	Nipple (3/8 x 1"), Close	16	508-0008	1	Grommet
3	505-0039	1	Elbow (3/8 x 90°), Pipe	17	333-0012	1	Box, Thermostat Mounting
4	505-0135	2	Nipple (3/8 x 1-1/2"), Half	18	332-0149	1	Terminal
5		1	Hose (Order 34" of Bulk Hose #503-0386)	19	520-0446	2	Stud (#10-32)
6	800-0031	1	Screw (5/16-18 x 1-1/2")	20	850-0030	2	Washer (#10), Lock
7	526-0115	2	Washer (5/16"), Flat	21	870-0053	2	Nut (10-32), Lock
8	856-0008	2	Washer (5/16"), Shake-proof EIT	22	333-0013	1	Cover, Thermostat Mounting Box
9	850-0045	1	Washer (5/16"), Lock	23	309-0106	1	Thermostat
10	862-0015	1	Nut (5/16-18)	24	812-0076	2	Screw (#8-32)
11	333-0052	1	Heater, Coolant	25	850-0025	2	Washer (#8), Lock
12	503-0183	4	Clamp, Hose	26		2	Screw (Part of #23)
13	856-0010	1	Washer (3/8"), Shake-proof EIT	27	130-0755	1	Bracket, Water Heater
				28	505-0060	1	Tee, Pipe (3/8")

RESERVOIR (DAY) TANK INSTALLATION (UNHOUSED SETS) - OPTIONAL

179-0465

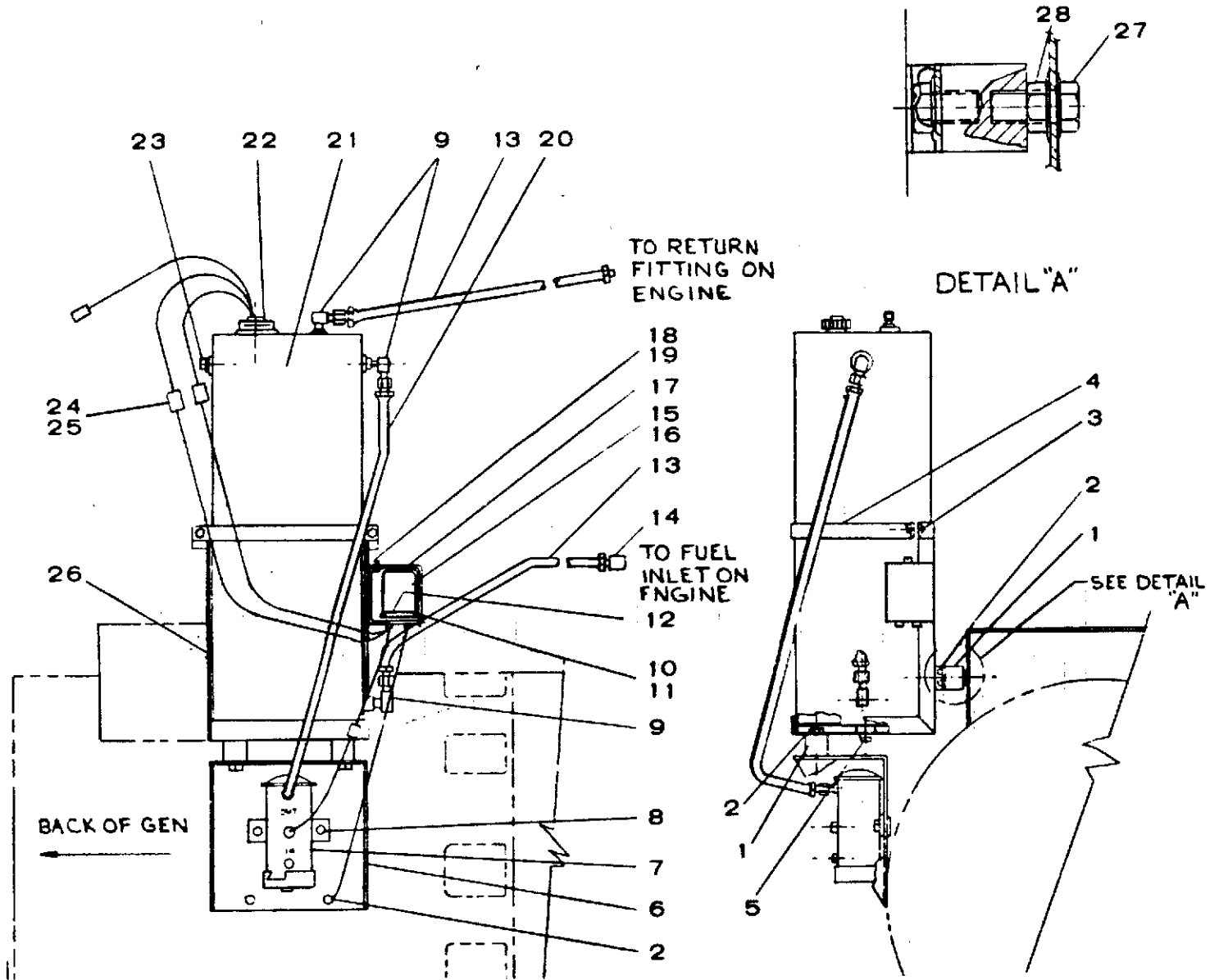


CS-1041

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
	179-0465	1	Package, Reservoir (Day) Tank (Unhoused Sets) - Complete	13	332-0942	2	Tie, Cable
1	501-0007	2	Line, Flex - Fuel	14	813-0098	1	Screw, Machine - Round Head (#10-32 x 3/8")
2	502-0041	3	Elbow, Inverted Male	15	850-0030	1	Washer, Lock - Spring (#10)
3	821-0014	10	Screw, Cap - Hex Head (5/16-18 x 1/2")	16	307-1058	1	Relay, 12 Volt
4	402-0078	4	Dampener, Vibration	17	415-0326	1	Cover, Tank Control
5	403-1118	1	Bracket, Tank Mounting	18	307-1157	1	Spring, Relay Holddown
6	415-0324	1	Bracket, Tank Mounting	19	870-1183	2	Nut, Hex W/ET (#6-32)
7	821-0013	2	Screw, Cap - Hex Head (1/4-20 x 1")	20	812-0061	2	Screw, Machine - Round Head (#6-32 x 3/8")
8	415-0323	1	Strap, Tank Mounting	21	323-0897	1	Socket & Lead
9	415-0325	1	Tank, Reservoir (Day)	22	505-0110	1	Plug, Square Head
10	505-0054	1	Plug, Square Head (1/4")	23	502-0020	1	Elbow, Street
11	415-0335	1	Switch, Float	24	821-0018	2	Screw, Cap - Hex Head Locking (1/4-20 x 5/8")
12	501-0008	1	Line, Flex - Fuel	25	870-0212	2	Nut, Hex - Locking (1/4-20)
				26	149-0554	1	Pump, Electric - 12 Volt

RESERVOIR (DAY) TANK INSTALLATION (HOUSED SETS) - OPTIONAL

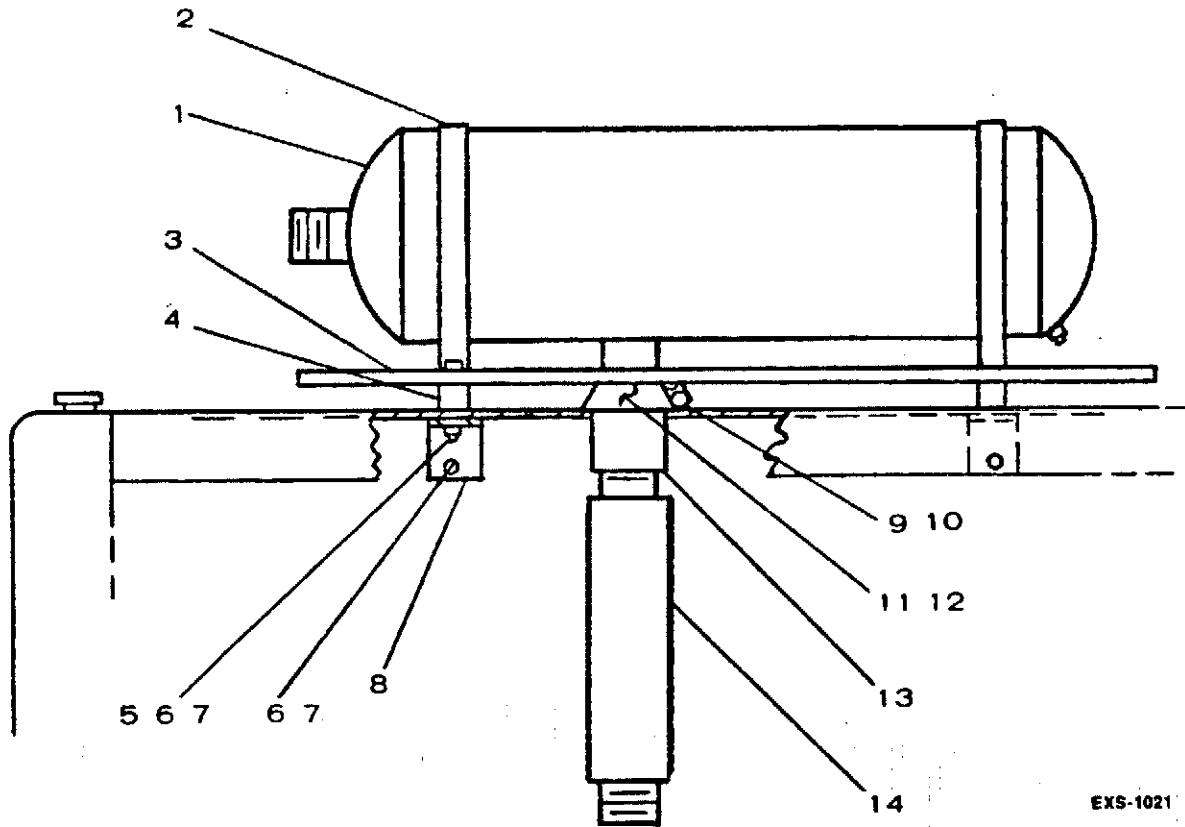
179-1034



REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
	179-1034	1	Package, Reservoir (Day) Tank (Housed Sets) - Complete
1	402-0078	4	Mount, Rubber
2	821-0014	8	Screw, Cap - Hex Head Locking (5/16-18 x 1/2")
3	821-0013	2	Screw, Cap - Hex Head Locking (1/4-20 x 1")
4	415-0323	1	Strap, Tank Mounting
5	505-0110	1	Plug, Square Head (3/8")
6	130-1005	1	Bracket, Tank
7	149-0554	1	Pump, Electric (12 Volt) (See Separate Group for Components)
8	821-0018	2	Screw, Cap - Hex Head Locking
9	502-0041	3	Elbow, Inverted Male
10	870-1183	2	Nut, Hex W/ET (#6-32)
11	812-0061	2	Screw, Machine - Round Head (#6-32 x 3/8")

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
12	323-0897	1	Socket and Lead
13	501-0008	2	Line, Fuel
14	502-0051	1	Coupling
15	307-1058	1	Relay, 12 Volt
16	307-1157	1	Spring, Relay Holddown
17	415-0326	1	Cover, Tank Control
18	813-0098	1	Screw, Machine - Round Head (#10-32 x 3/8")
19	850-0030	1	Washer, Lock - Spring (#10)
20	501-0015	1	Line, Flex - Fuel
21	415-0325	1	Tank, Day (Reservoir)
22	415-0335	1	Switch, Tank
23	505-0054	1	Plug, Square (1/4")
24	332-0529	4	Terminal, Faston
25	332-0550	4	Connector
26	415-0324	1	Bracket, Tank Mounting
27	821-0016	2	Screw, Cap - Hex Head (5/16-18 x 3/4")
28	870-0048	2	Nut, Hex - Locking (5/16-18)

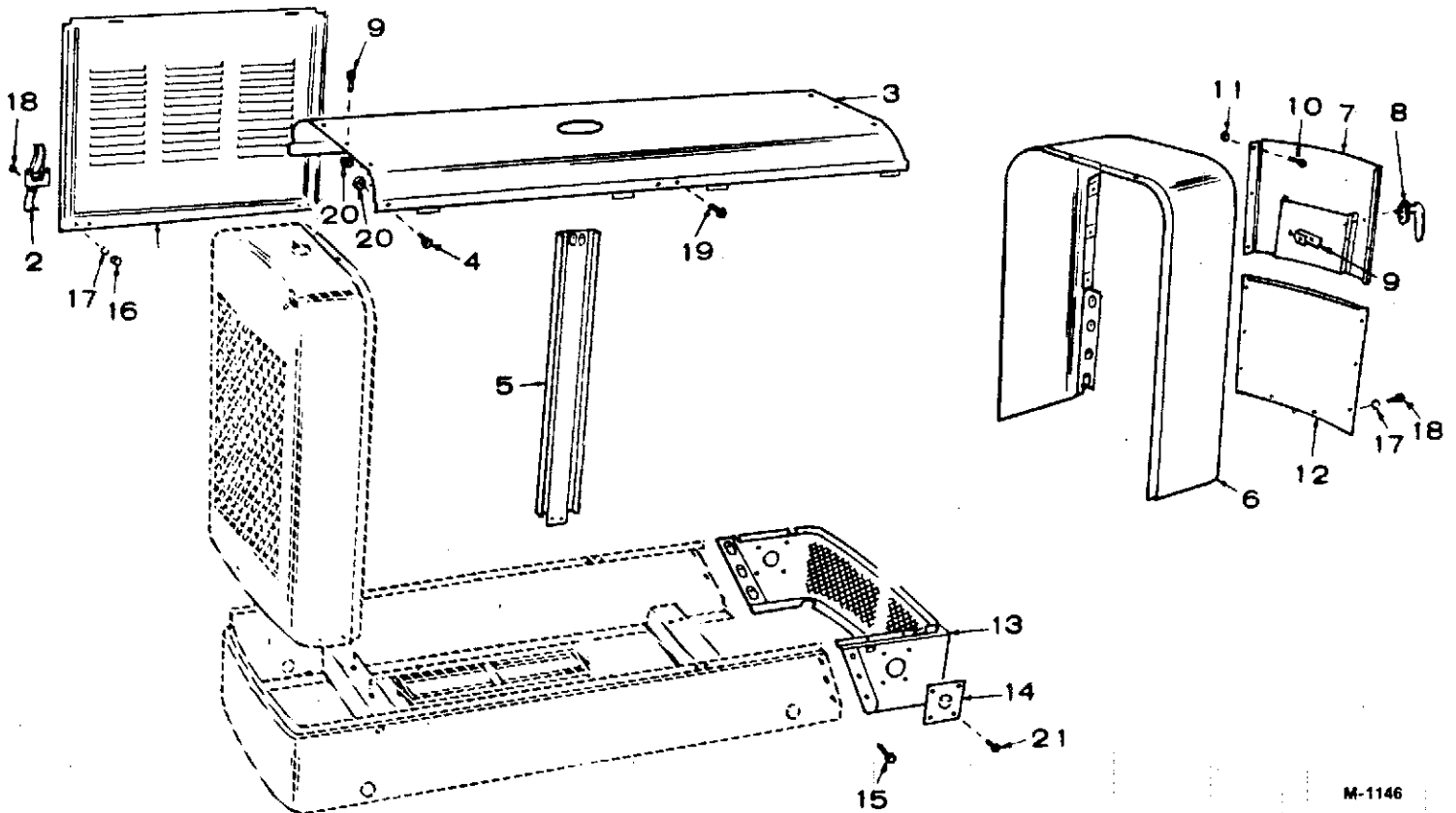
MUFFLER INSTALLATION - OPTIONAL 179-1519



EXS-1021

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
	179-1519	1	Muffler Package (Complete)
1	155-1268	1	Muffler
2	140-0649	2	Band, Muffler
3	155-1340	1	Shield, Heat
4	155-1430	4	Spacer, Muffler
5	800-0037	4	Screw, Cap - Hex Head (5/16-18 x 3" lg)
6	870-0048	10	Nut, Lock - Hex (5/16-18)
7	800-0026	6	Screw, Cap - Hex Head (5/16-18 x 3/4" lg)
8	155-0789	2	Bracket, Muffler Support
9	813-0105	2	Screw, Machine - Round Head (10-32 x 1" lg)
10	870-0188	2	Nut, Lock - Hex (10-32)
11	155-1420	1	Shield, Rain
12	895-0157	1	Asbestos
13	505-0454	1	Union, Ground Joint
14	155-1655	1	Tube Assembly, Exhaust

HOUSING - OPTIONAL

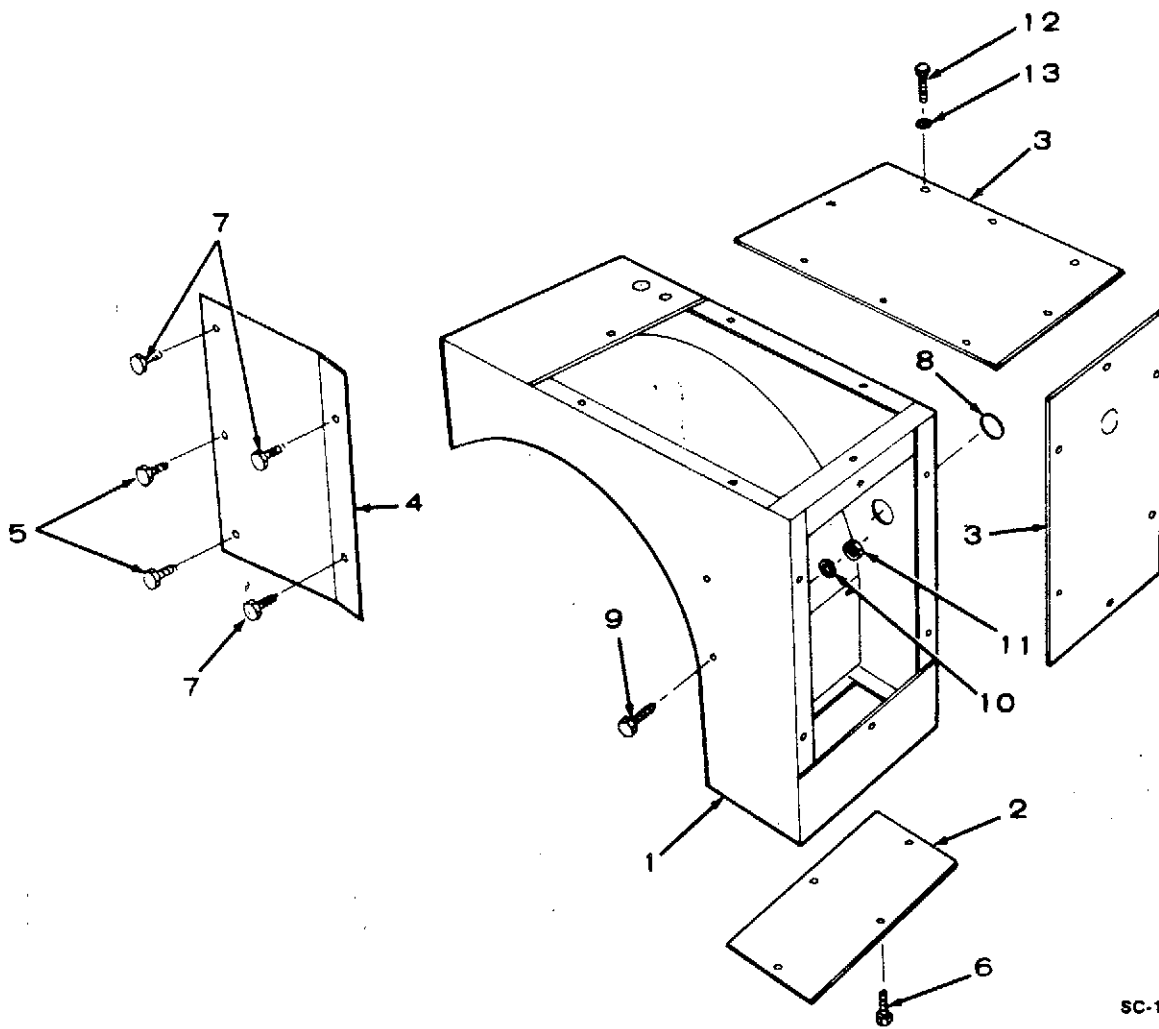


M-1146

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
	405-2196	1	Housing Package, Complete
1	405-1804	4	Panel, Door
2	406-0105	8	Clamp, Door
3	405-2149	1	Panel, Top
4	821-0016	4	Screw, Cap - Hex Head Locking (5/16-18 x 3/4")
5	405-1776	2	Support, Housing - Center
6	405-2159	1	Panel, Rear
7	405-1777	1	Panel, Rear Door
8	406-0157	1	Handle, Rear Door (Includes Key)
9	406-0089	1	Catch, Rear Door
10	809-0059	3	Screw, Tapping (#14 x 1/2")
11	870-0106	3	Nut, Speed (#14)

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
12	405-2158	1	Panel, Rear Housing
13	403-0894	1	Chassis, Rear
14	403-0895	2	Cover, Conduit Opening
15	821-0029	6	Screw, Cap - Hex Head Locking (3/8-16 x 3/4")
16	870-0053	16	Nut, Hex (#10-32)
17	850-0030	22	Washer, Lock - Spring (#10)
18	813-0098	22	Screw, Machine - Round Head (#10-32 x 3/8")
19	821-0014	22	Screw, Cap - Hex Head Locking (5/16-18 x 1/2")
20	870-0113	12	Nut, Retainer (5/16-18)
21	821-0010	8	Screw, Cap - Hex Head Locking (1/4-20 x 1/2")

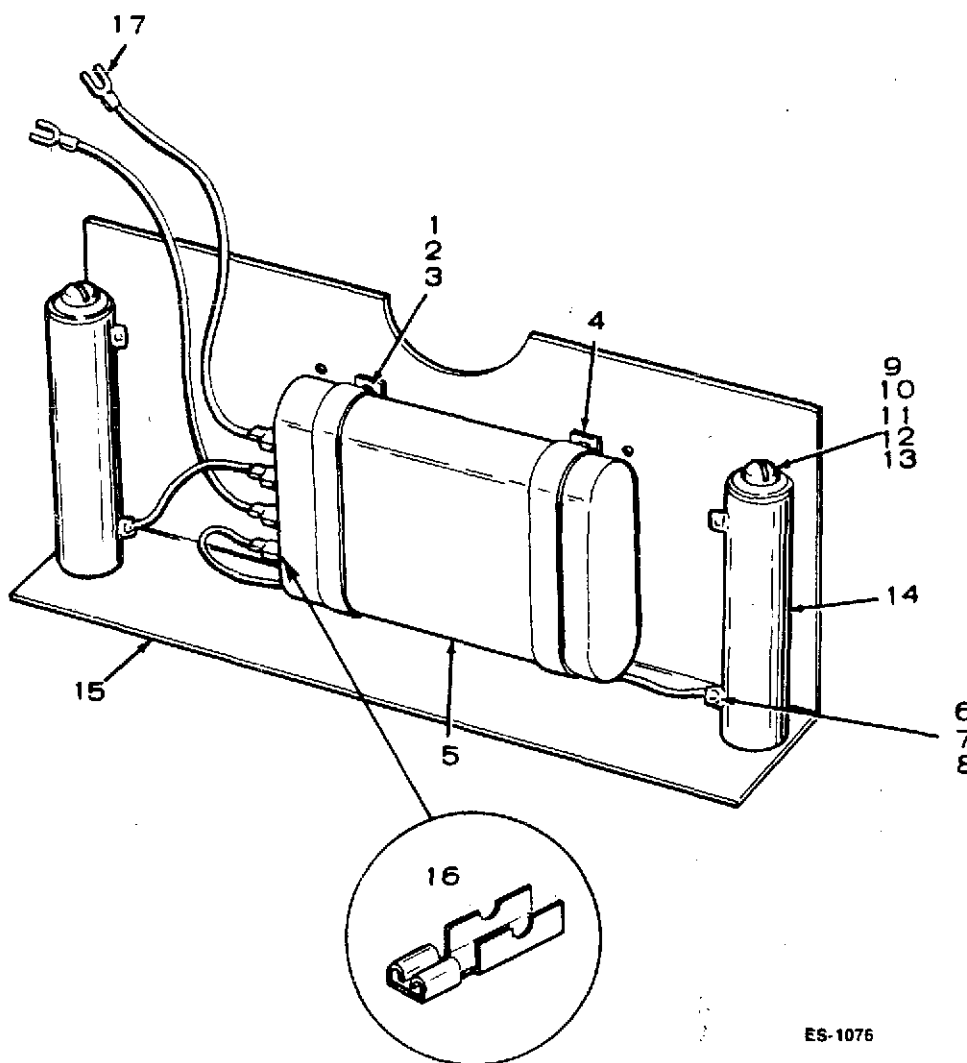
JUNCTION BOX - HOUSED SETS - OPTIONAL



SC-1126

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	301-3191	1	Box, Junction
2	301-3195	1	Plate, Junction Box Bottom
3	301-3156	2	Plate, Junction Box (NOTE: One only used on Sets with Circuit Breaker)
4	301-3196	1	Bracket, Circuit Breaker Mounting
5	821-0014	2	Screw, Cap - Hex Head Locking (5/16-18 x 1/2")
6	815-0350	6	Screw, Cap - Hex Head Locking (#10-32 x 3/8")
7	821-0010	4	Screw, Cap - Hex Head Locking (1/4-20 x 1/2")
8	508-0203	1	Bushing, Nylon
9	800-0008	1	Screw, Cap - Hex Head (1/4-20 x 1-1/4")
10	850-0040	1	Washer, Lock - Spring (1/4)
11	862-0001	1	Nut, Hex (1/4-20)
12	815-0026	14	Screw, Machine - Truss Head (#10-32 x 3/8")
13	853-0018	14	Washer, Lock - ET (#10)

VOLTAGE REGULATOR FILTER - OPTIONAL

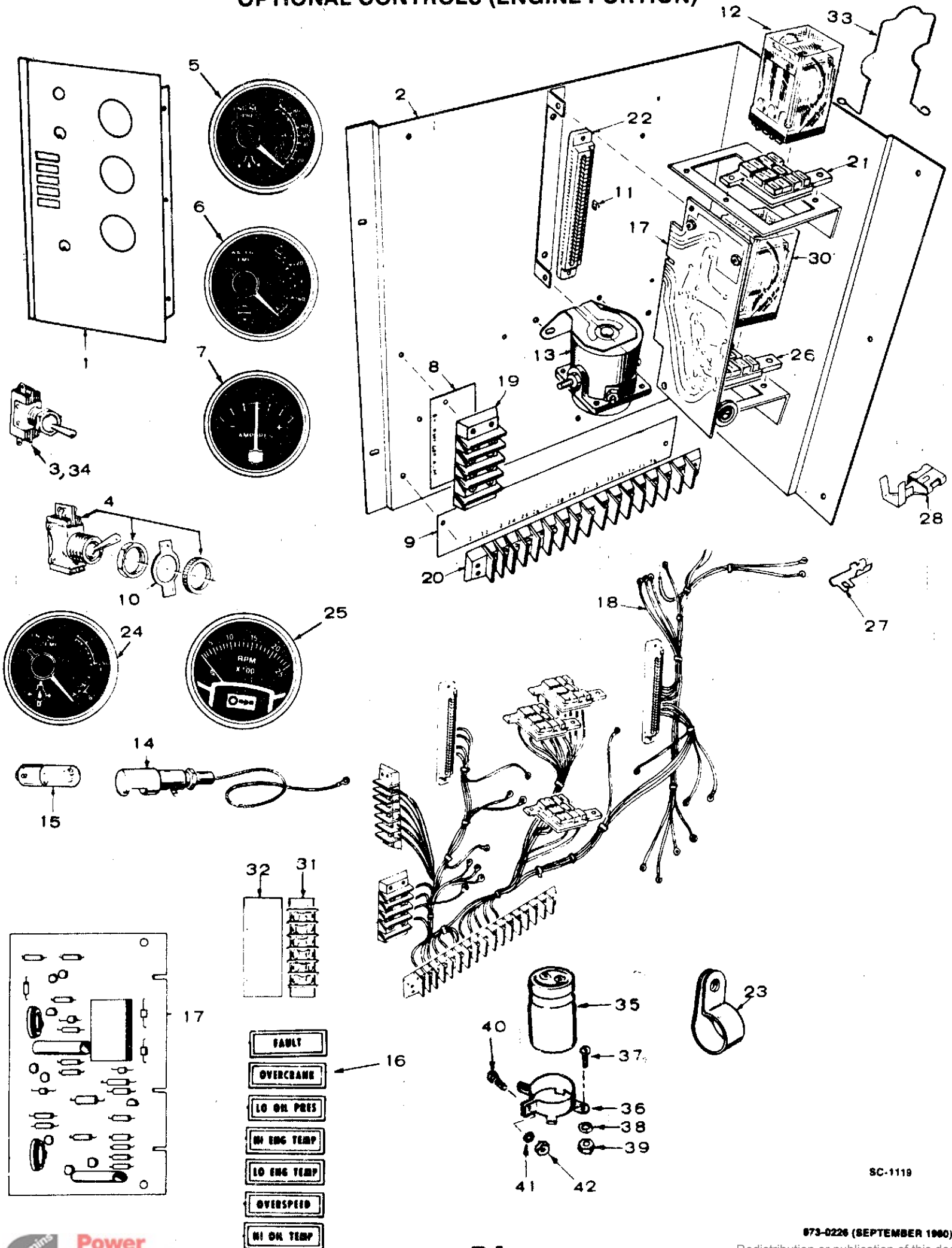


ES-1076

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
	232-2692	1	Filter Assembly, Regulator - Complete
1	813-0098	4	Screw, Machine - Round Head (#10-32 x 3/8")
2	850-0030	4	Washer, Lock - Spring (#10)
3	870-0053	4	Nut, Hex (#10-32)
4	312-0189	2	Bracket, Holddown - Capacitor
5	312-0188	1	Capacitor
6	815-0001	4	Screw, Machine - Binding Head, Brass (#6-32 x 1/4")
7	853-0003	4	Washer, Lock - External Tooth (#6)
8	860-0006	4	Nut, Hex (#6-32) - Spec B through F
9	812-0165	2	Screw, Machine - Round Head (1/4-20 x 4-1/2")
10	304-0427	4	Washer, Shoulder - Centering
11	304-0292	2	Insulator, Disk
12	850-0040	2	Washer, Lock - Spring (1/4)
13	862-0001	2	Nut, Hex (1/4-20)
14	354-0025	2	Resistor, Wirewound (10-Ohm, 100 Watts, 5%)
15	232-2218	1	Bracket, Angle - Mounting
16	332-0529	4	Terminal, Receptacle
17	332-1279	8	Terminal, Crimp

973-0226 (SEPTEMBER 1980)

OPTIONAL CONTROLS (ENGINE PORTION)



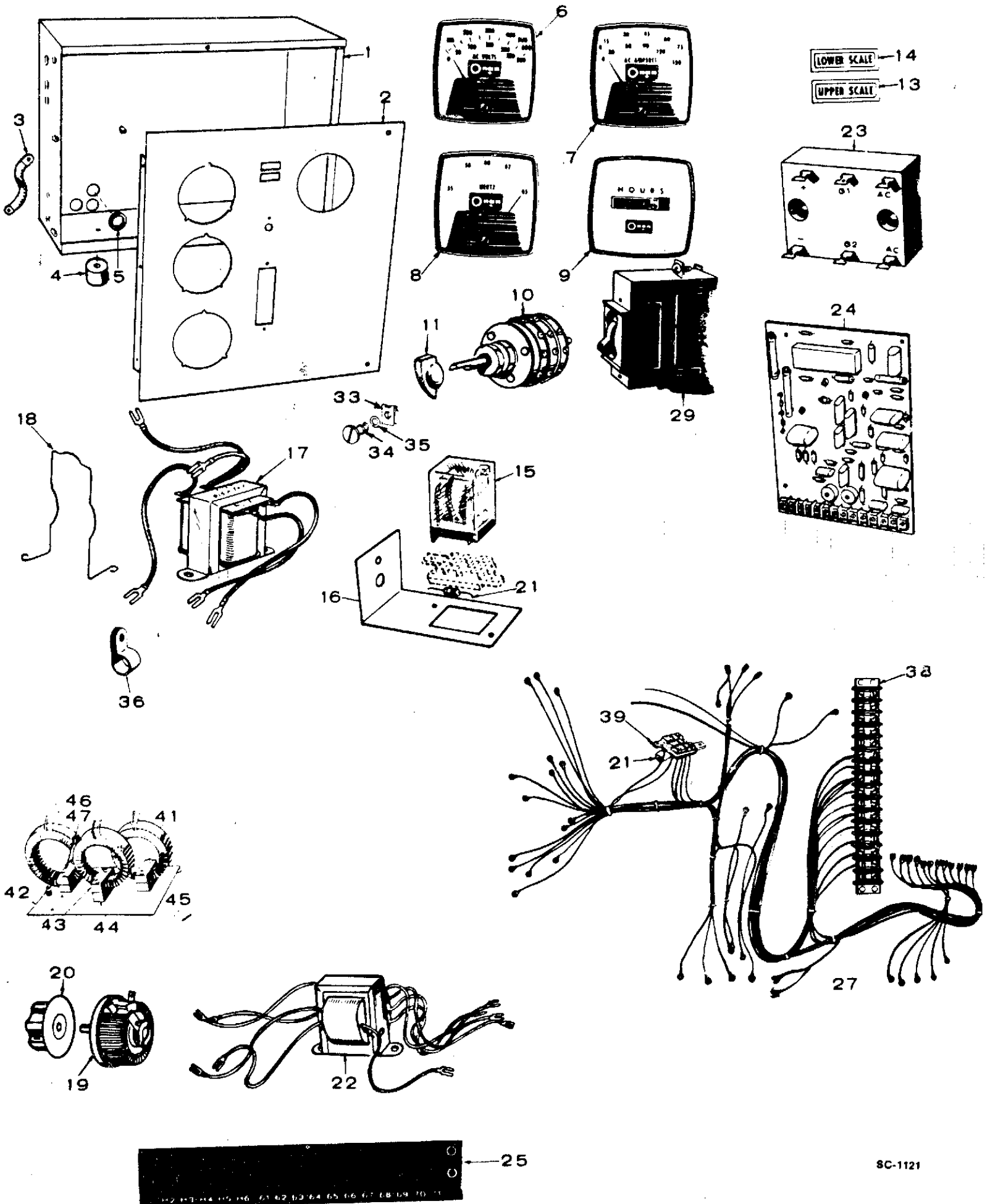
SC-1119

OPTIONAL CONTROLS (ENGINE PORTION)

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	PANEL, ENGINE CONTROL			18	HARNES, WIRING (INCLUDES PARTS MARKED *)		
	301-3267	1	Five Light, Three Gauges				Spec A
	301-3268	1	Five Light, Four Gauges		338-0528	1	One Fault Light
	301-3166	1	Five Light, Five Gauges		338-0534	1	Five Fault Light
	301-3286	1	One Light, Four Gauges				Begin Spec B
	301-3396	1	One Light, Five Gauges		338-1065	1	One Fault Light
2	301-3253	1	Bracket, Control Mounting		338-1066	1	Five Fault Light
3	308-0138	1	Switch, Toggle (SPDT)	19	332-0537	1	*Block, Terminal (4 Place)
4	308-0002	1	Switch, Toggle (SPST) - Spec A	20	*BLOCK, TERMINAL		
5	GAUGE, OIL PRESSURE				332-0795	1	Spec A (16 Place)
	193-0107	1	Spec A		332-1005	1	Begin Spec B (20 Place)
	193-0243	1	Begin Spec B	21	323-0765	2	*Socket, Relay (11 Pin)
6	GAUGE, WATER TEMPERATURE			22	332-1271	1	*Housing, Connector (PC Boards)
	193-0106	1	Spec A	23	332-0051	1	Clamp, Loop
	193-0245	1	Begin Spec B	24	GAUGE, OIL TEMPERATURE		
7	302-0061	1	Ammeter		193-0187	1	Spec A
8	332-1239	1	Strip, Marker (B+, Remote, Grd-Alarm)		193-0248	1	Begin Spec B
9	332-1559	1	Strip, Marker (26 thru 36)	25	302-0749	1	Tachometer, Electrical
10	308-0003	1	Plate, Switch - Spec A	26	323-0764	1	*Socket, Relay (10 Pin)
11	332-1276	2	Plug, Keying (Sets With Five Fault Lights use Quantity of One)	27	332-1269	As Req	*Contact, Electrical (PC Boards)
12	307-1058	2	Relay (1) Start Disconnect (1) Ignition	28	332-1280	As Req	*Terminal, Lug
13	307-1031	1	Relay, Start Solenoid	29	332-1043	1	*Jumper (One Fault Light Sets)
14	322-0149	1	Light, Panel - Spec A	30	307-1061	1	Relay, Starter Protection
15	322-0004	1	Lamp, Light - Spec A	31	332-0699	1	*Block, Terminal (6 Place)
16	LIGHT, INDICATOR			32	332-1240	1	Marker Strip (53 thru 58)
	322-0128	1	Fault	33	307-1157	3	Clip, Relay Retaining
	322-0107	1	Overcrank	35	356-0072	1	Capacitor - Begin Serial #780293785 During Spec B
	322-0108	1	Hi Engine Temperature	36	356-0070	1	Bracket, Capacitor Mounting - Begin Serial #780293785 During Spec B
	322-0110	1	Low Engine Temperature	37	812-0063	2	Screw, Machine - Round Head (#6-32 x 1/2") - Begin Serial #780293785 During Spec B
	322-0111	1	Overspeed	38	853-0003	3	Washer, Lock - ET (#6) - Begin Serial #780293785 During Spec B
	322-0112	1	High Oil Temperature	39	860-0006	3	Nut, Hex (#6-32) - Begin Serial #780293785 During Spec B
17	MODULE, CONTROL (See Separate Group for Components)			40	812-0061	1	Screw, Machine - Round Head (#6-32 x 3/8")
	300-0679	1	Engine Monitor - One Fault Light				
	300-0733	1	Standard Cranker				
	300-0714	1	Cycle Cranker				
	300-0681	1	Engine Monitor - Five Fault Light				

* - Parts included in Wiring Harness.

CONTROL WITH METER PANEL (AC PORTION) - OPTIONAL



8C-1121

973-0226 (SEPTEMBER 1960)
 Redistribution or publication of this document
 by any means, is strictly prohibited.

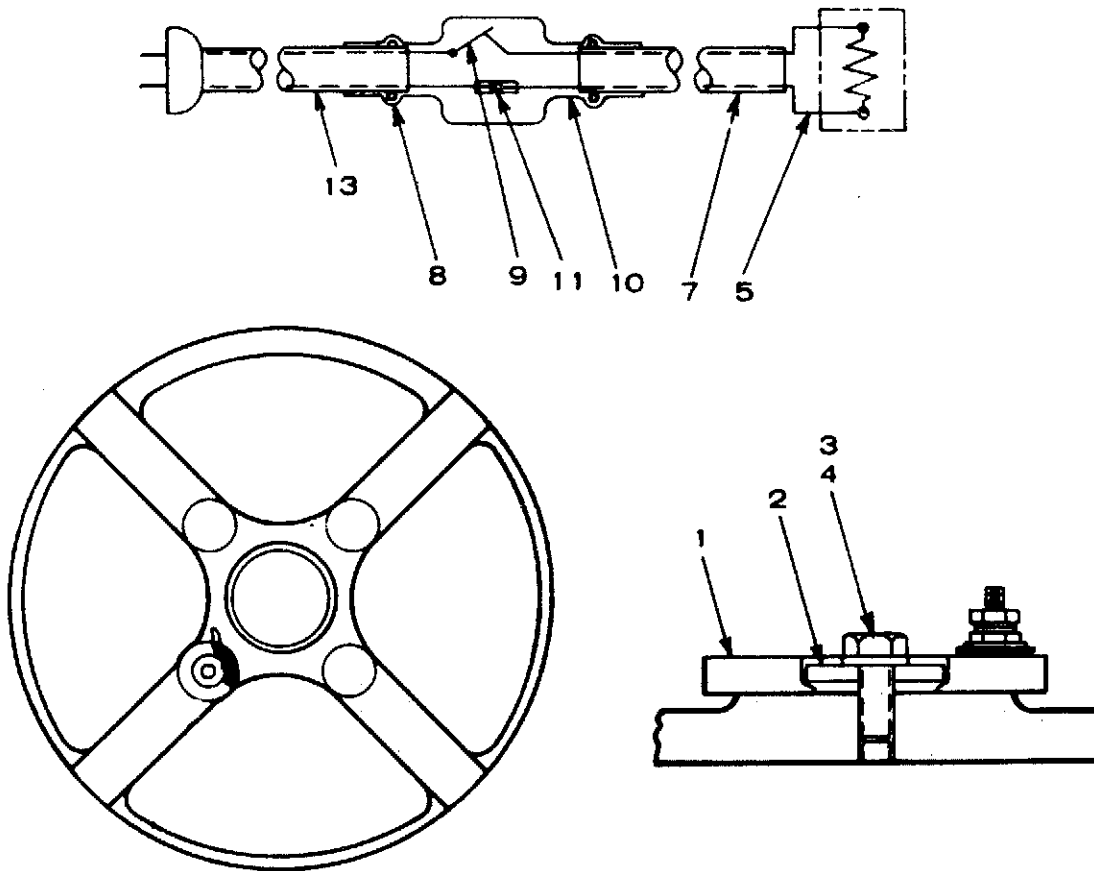
CONTROL WITH METER PANEL (AC PORTION) - OPTIONAL

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	301-3158	1	Box, Control	22	TRANSFORMER, VOLTAGE		
2	PANEL, CONTROL BOX			315-0342	1		Spec A Only
	301-3169	1	3R Sets	315-0431	1		Begin Spec B
	301-3342	1	9XR Sets	23	305-0524	1	Rectifier, Bridge
	301-3170	1	15R and 515R Sets	24	BOARD ASSEMBLY, PRINTED CIRCUIT (See Separate Group for Components)		
3	337-0049	1	Strap, Bond	332-1268	1		Spec A
4	402-0078	4	Dampener, Vibration	332-1956	1		Begin Spec B
5	508-0001	4	Grommet (1-1/16") Rubber	25	332-1242	1	Strip, Marker
6	VOLTMETER, AC			27	HARNES ASSEMBLY, WIRING (Includes Parts Marked *)		
	302-0421	1	3R Sets (0-300)	338-0735	1		3R Sets
	302-0779	1	9XR Sets (0-750)	338-0759	1		9XR Sets
	302-0718	1	15R and 515R Sets (0-300, 0-600)	338-0730	1		15R and 515R Sets
7	AMMETER, AC			29	320-0431	1	Breaker, Circuit
	302-0412	2	3R Sets (0-250)	33	406-0332	2	Receptacle, Fastener
	302-0406	1	9XR Sets (0-75)	34	406-0333	2	Stud, Fastener
	302-0720	1	15R Sets (0-100, 0-200)	35	406-0334	2	Washer, Stud Fastener
	302-0719	1	515R Sets (0-75, 0-150)	36	332-0051	1	Clip, Tinnerman
8	METER, FREQUENCY			38	332-0795	1	*Block, Terminal (16 Place)
	302-0221	1	60 Hertz	39	323-0764	1	*Socket, Relay - 15R and 515R Sets
	302-0256	1	50 Hertz				
9	METER, RUNNING TIME			41	TRANSFORMER, CURRENT		
	302-0466	1	60 Hertz	302-0209	2		3R Sets
	302-0469	1	50 Hertz	302-0076	3		9XR Sets
10	308-0284	1	Switch, Selector	302-0106	3		15R Sets
11	303-0076	1	Knob, Selector Switch	302-0079	3		515R Sets
13	322-0131	1	Light, Upper Scale - 15R and 515R Sets	42	302-0729	1	Bracket, Transformer Mounting
14	322-0130	1	Light, Lower Scale - 15R and 515R Sets	43	CLAMP, TRANSFORMER MOUNTING - UPPER		
15	307-1061	1	Relay, Voltage Selector - 15R and 515R Sets	302-0235	2		3R Sets
16	301-3244	1	Bracket, Relay Mounting - 15R and 515R Sets	302-0235	3		9XR, 15R and 515R Sets
17	315-0384	1	Reactor	44	CLAMP, TRANSFORMER MOUNTING - LOWER		
18	307-1157	1	Spring, Relay Holddown - 15R and 515R Sets	302-0236	2		3R Sets
19	303-0170	1	Rheostat, Voltage Adjustment	302-0236	3		9XR, 15R and 515R Sets
20	303-0032	1	Knob, Rheostat	45	302-0253	As Req	Shim, Transformer Mounting
21	350-0556	1	*Resistor - 15R and 515R Sets	46	SCREW, MACHINE, ROUND HEAD (#10-32 x 2")		
				813-0110	4		3R Sets
				813-0110	6		9XR, 15R and 515R Sets
				47	WASHER, LOCK - IT (#10)		
				854-0010	4		3R Sets
				854-0010	6		9XR, 15R and 515R Sets

* - Parts included in Wiring Diagram.

GENERATOR HEATER INSTALLATION - OPTIONAL

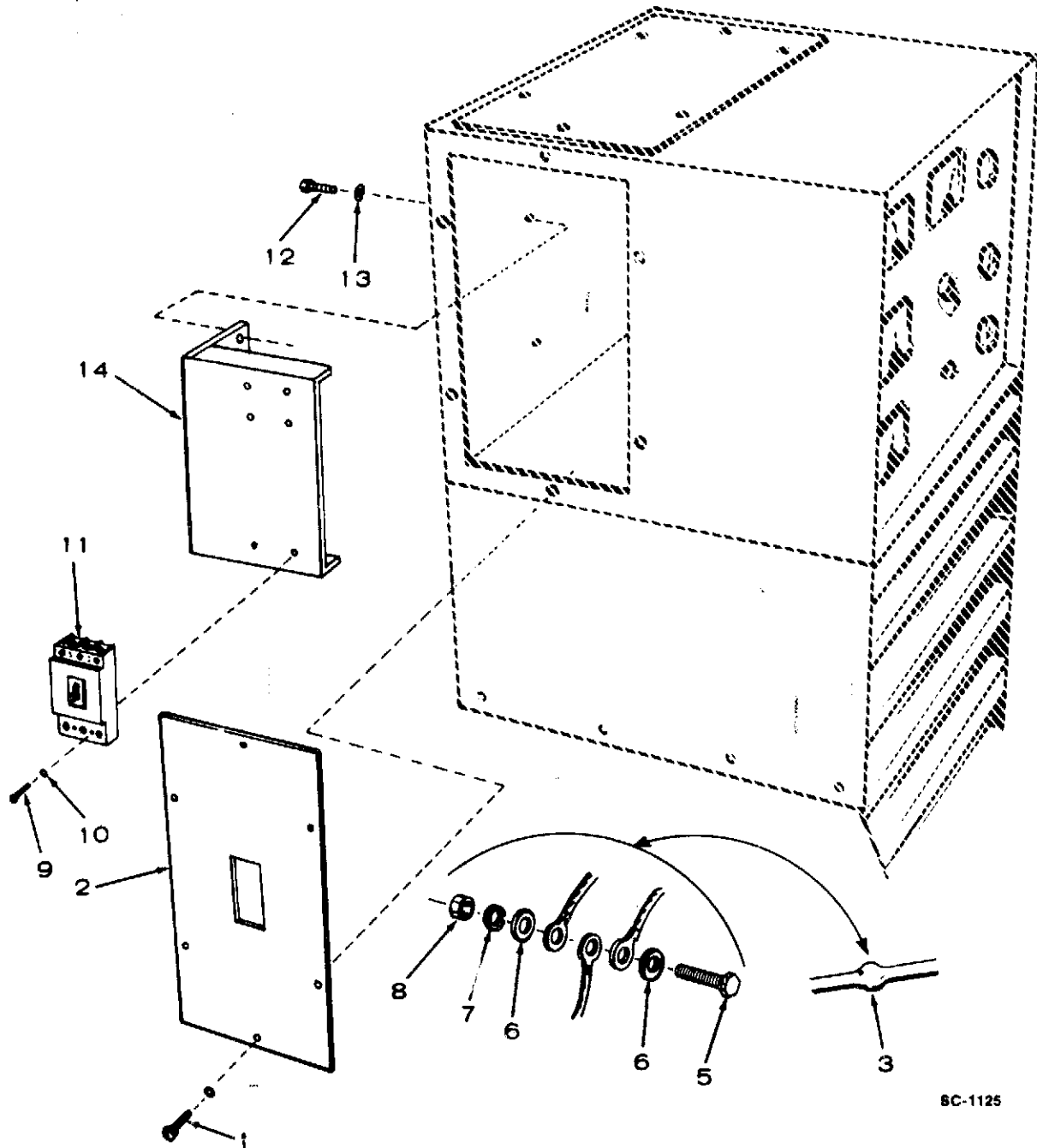
179-0369



G-1077

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
	179-0369	1	Package, Generator Heater - Complete
1	333-0059	1	Heater, 120 Volt, 125 Watt
2	526-0158	1	Washer, Flat (.261" ID x 1" OD x 1/8" Thk)
3	850-0038	1	Washer, Lock - Spring (1/4")
4	800-0004	1	Screw, Cap - Hex Head (1/4-20 x 5/8")
5	226-0090	2	Lead
7		1	Sleeve, Insulating (Order 15" of Bulk Sleeving #898-0020)
8	508-0114	2	Grommet, Rubber
9	309-0258	1	Thermostat
10		1	Sleeve, Insulating - Heat Shrink (Order 4" of Bulk Sleeving #898-0863)
11	332-1506	1	Connector, Insulated
13	335-0087	1	Cable, Electrical

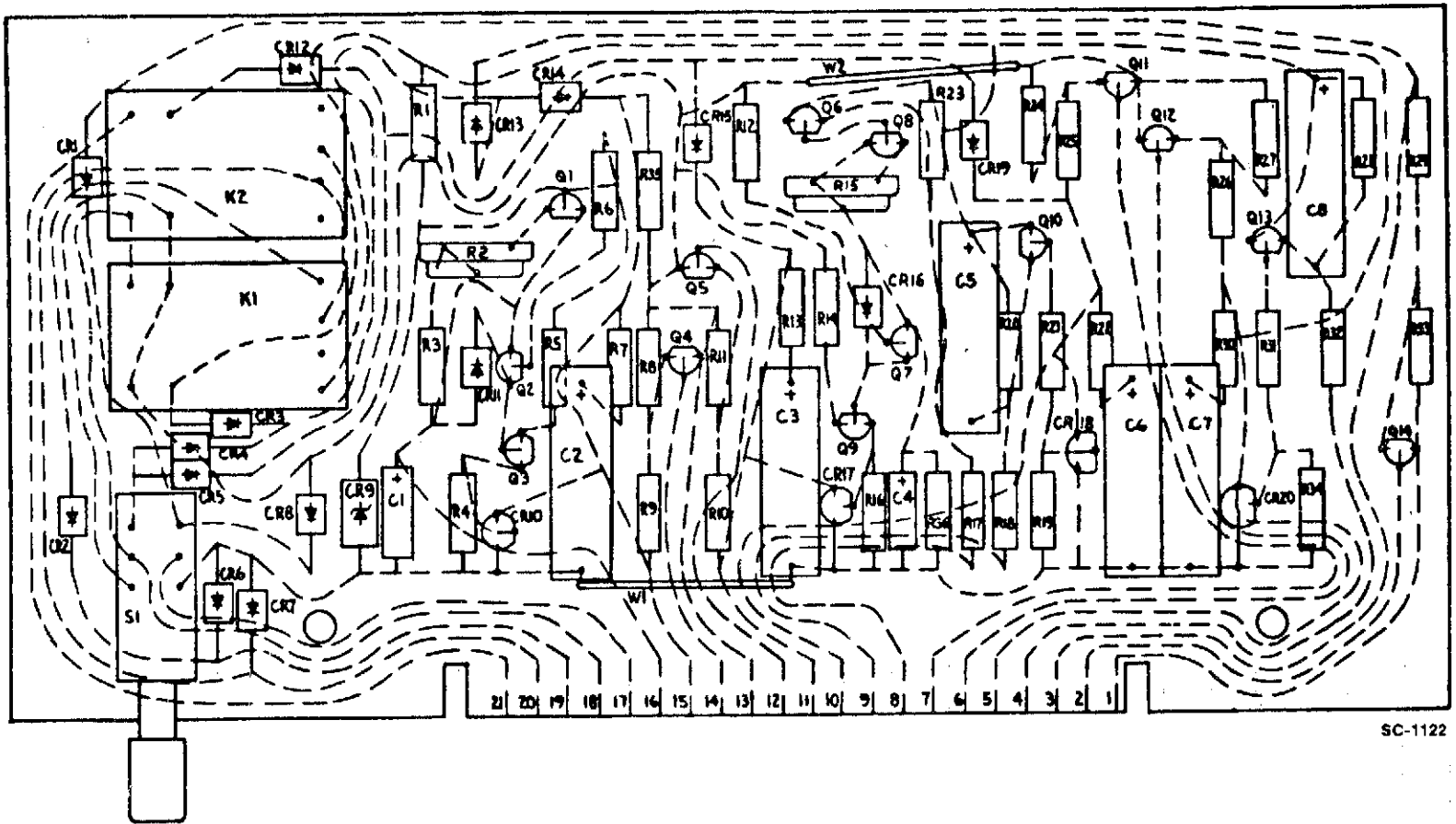
CIRCUIT BREAKER - OPTIONAL



BC-1125

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	815-0350	6	Screw, Tapping - Hex Washer Head (#10-32 x 3/8)	9	812-0094	4	Screw, Machine - Round Head (#8-32 x 3-5/8")
2	301-3192	1	Panel, Cover - Circuit Breaker	10	850-0025	4	Washer, Lock - Spring (#8)
3	SLEEVING, INSULATION - SHRINKABLE (Bulk Slewing, order length required)			11	CIRCUIT BREAKER (SELECT AS REQUIRED)		
	898-0863		3/4" ID	320-0346	1	150 AMP. 3PH. 120/208 - 120/240 VAC	
	898-0865		1" ID	320-0359	1	225 AMP. 1PH. 120/240 VAC	
	898-0875		1-1/2" ID	320-0379	1	90 AMP. 3PH. 200/346 - 220/380 - 277/480 VAC	
	898-0869		2" ID	320-0414	1	70 AMP. 3 PH. 277/480 VAC	
5	800-0028	5	Screw, Cap - Hex Head (5/16-18 x 1")	320-0416	1	60 AMP. 3 PH. 347/600 VAC	
6	526-0022	10	Washer, Flat (21/64" ID x 9/16" OD x 1/16" Thk)	12	800-0003	2	Screw, Cap - Hex Head (1/4-20 x 1/2")
7	850-0045	5	Washer, Lock - Spring (5/16")	13	850-0040	2	Washer, Lock - Spring (1/4")
8	862-0015	5	Nut, Hex (5/16-18)	14	301-3197	1	Bracket, Mounting - Circuit Breaker

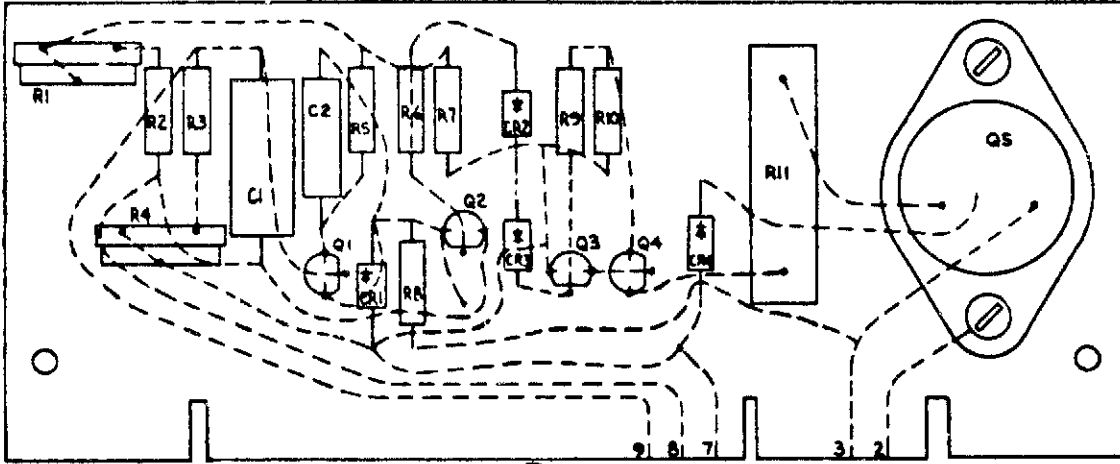
ENGINE CONTROL MONITOR (SETS WITH FIVE FAULT LIGHTS) - OPTIONAL



SC-1122

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
	300-0681	1	Monitor Assembly, Complete - Engine Control
K1, K2	307-1039	2	Relay
R6	350-0548	1	Resistor (10,000-Ohm)
C2, 3, 5, 6, 7, 8	355-0043	6	Capacitor (22 Mfd)
C1	356-0040	1	Capacitor (10 Mfd)
C4	356-0030	1	Capacitor (1 Mfd)
CR9	359-0027	1	Diode, Zener
CR1 thru 8, 11 thru 16, 19	357-0004	15	Rectifier, Diode
CR10, 17, 18, 20	364-0017	4	Rectifier, Gate Control
Q3, 9	362-0003	2	Transistor
Q1, 2, 7, 8	362-0031	4	Transistor, Field Effect
Q5, 6, 7, 11 thru 14	362-0008	8	Transistor, Silicon
R5, 14	350-0536	2	Resistor (1000-Ohm)
R1	350-0526	1	Resistor (150-Ohm)
R12	350-0552	1	Resistor (22,000-Ohm)
R2, 15	303-0169	2	Potentiometer
R3	350-0572	1	Resistor (1-Megohm)
R7, 13, 22, 30	350-0505	4	Resistor (2.7-Ohm)
R4, 16, 19, 34	350-0517	4	Resistor (27-Ohm)
R36	350-0584	1	Resistor (10-Megohm)
R8, 11, 20, 21, 23, 24, 27, 28, 31, 33	350-0529	10	Resistor (270-Ohm)
R9, 17, 18, 25, 26, 29, 32	350-0540	7	Resistor (2,200-Ohm)
R35	350-1128	1	Resistor (220-Ohm)
S1	308-0280	1	Switch, Push Button
C9	356-0066	1	Capacitor

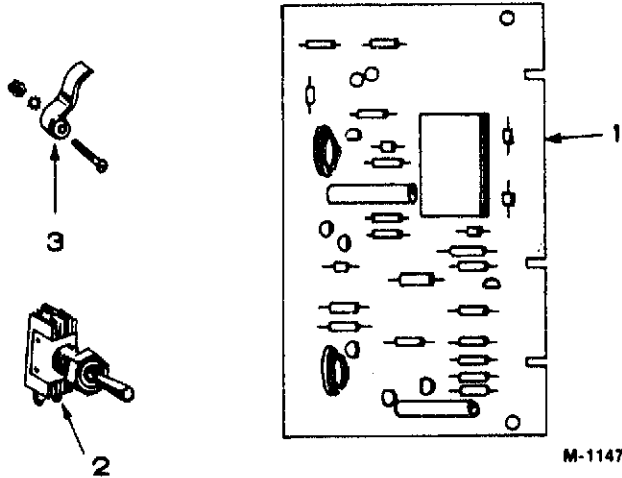
CONTROL, CYCLE CRANKER (OPTIONAL EQUIPMENT)



SC-1123

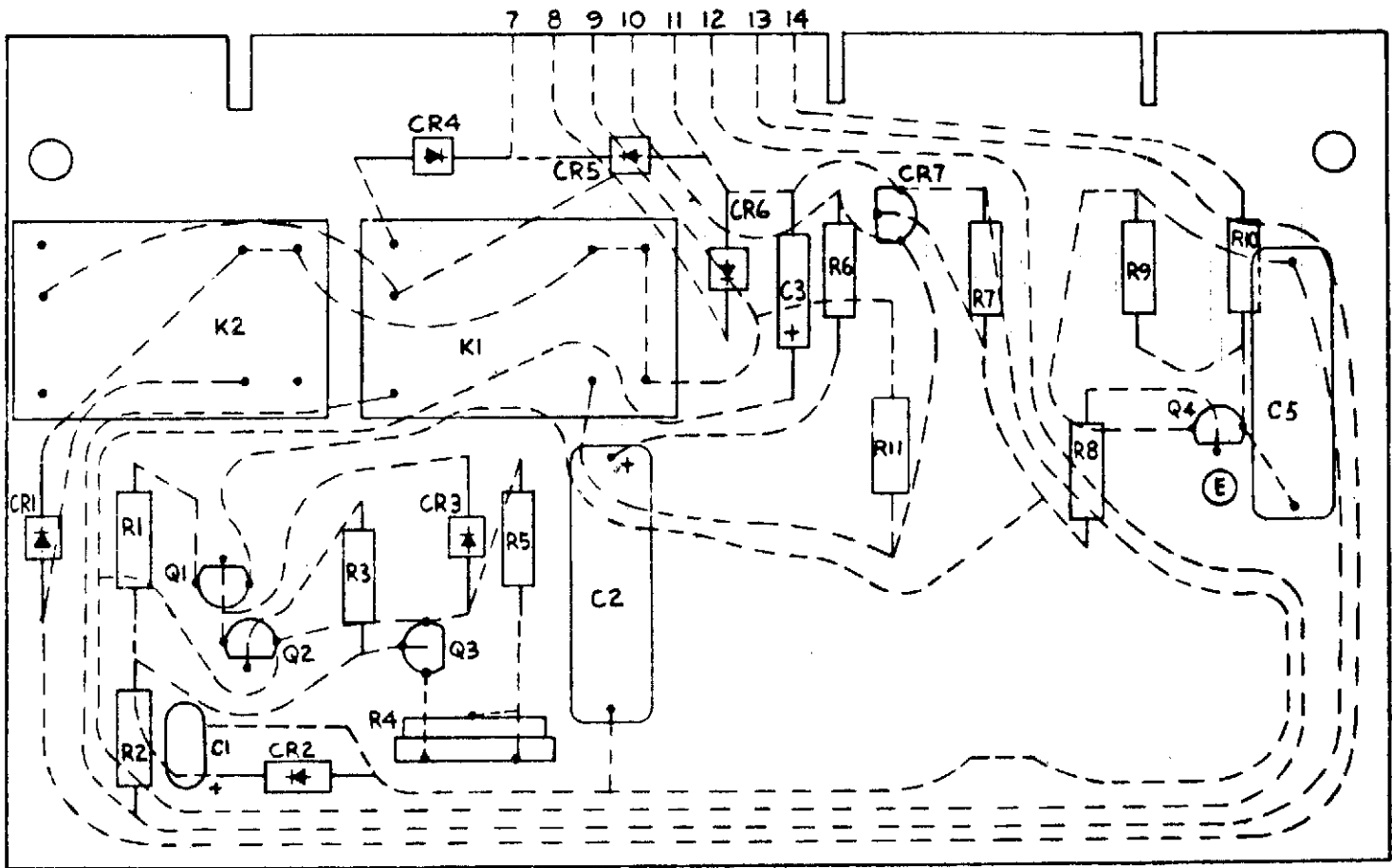
REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
	300-0714	1	Control, Cycle Cranker - Complete
C1	356-0039	1	Capacitor, Electrolytic (100 Mfd)
CR1	359-0027	1	Diode, Zener (7.5 Volts)
CR2,3,4	357-0004	3	Rectifier, Diode
Q1,2	362-0008	2	Transistor, Signal
Q3	362-0017	1	Transistor
Q4	362-0026	1	Transistor, Signal
Q5	362-0033	1	Transistor, Power
R1, R4	303-0171	2	Potentiometer (5,000-Ohm)
R2	350-0560	1	Resistor, Fixed (1 Megohm)
R3, R9	350-0548	2	Resistor, Fixed (10,000-Ohm)
R5	350-0558	1	Resistor, Fixed (68,000-Ohm)
R6	350-0420	1	Resistor, Fixed (24,000-Ohm)
R7	350-0546	1	Resistor, Fixed (6,800-Ohm)
R8	350-0526	1	Resistor, Fixed (150-Ohm)
R10	350-0500	1	Resistor, Fixed (1.0-Ohm)
R11	352-0152	1	Resistor, Fixed (5 Watt, 2.5-Ohm)
C2	355-0029	1	Capacitor, Composition (.015 Mfd, 100 Volt)
C3	356-0045	1	Capacitor, Electrolytic (25 Mfd, 15 Volt)
C4	355-0010	1	Capacitor, Composition (.0022 Mfd, 10 Volt)

SPECIAL PARTS - PENN STATE MODELS



REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	300-0730	1	Module, Engine Control Monitor (See Separate Group for Components)
2	308-0327	1	Switch, Toggle (SPDT) - Engine Control
3	320-0307	1	Lock, Circuit Breaker Handle - AC Control

ENGINE CONTROL MONITOR (12 VOLT PENN STATE) - SETS WITH ONE FAULT LIGHT



SC-1124

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
	300-0730	1	Monitor, Engine Control - Complete
K1, K2	307-1039	2	Relay
C2,5	355-0043	2	Capacitor (.22 Mfd)
C3	356-0040	1	Capacitor (10 Mfd)
CR1,3,4,5,6	357-0004	5	Rectifier - Diode
CR2	359-0027	1	Diode - Zener (7.5 Volt)
CR7	364-0017	1	Rectifier - Gate Control
Q1	361-0003	1	Transistor 2N4871
Q2,Q3	362-0031	2	Transistor - Field Effect
Q4	362-0008	1	Transistor - Silicon (PNP) 2N3702

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
R1	350-0536	1	Resistor (1000-Ohm)
R2	350-0526	1	Resistor (150-Ohm)
R3	350-0552	1	Resistor (22,000-Ohm)
R4	303-0169	1	Potentiometer (3.5 Megohm)
R5	350-0572	1	Resistor (1.0 Megohm)
R6	350-0505	1	Resistor (2.7-Ohm)
R7	350-0517	1	Resistor (27-Ohm)
R8, R9	350-0529	2	Resistor (270-Ohm)
R10	350-0540	1	Resistor (2,200-Ohm)
R11	350-0971	1	Resistor (220-Ohm)
C1	356-0066	1	Capacitor (47 Mfd)