
Onan

Parts Manual

ES

GenSet

Mobile Electric Generating Set



Onan Service Parts

928-0227
2-93 (Spec B-E)
Replaces 2-92 (Spec C-D)
Printed in U.S.A.

SAFETY PRECAUTIONS

The following symbols are used in Onan manuals to alert users to the potentially dangerous conditions relating to maintenance of the equipment and replacement of parts. Please read and observe.

▲DANGER *This symbol warns of immediate hazards which will result in severe personal injury or death.*

▲WARNING *This symbol refers to a hazard or unsafe practice which can result in severe personal injury or death.*

▲CAUTION *This symbol refers to a hazard or unsafe practice which can result in personal injury or product or property damage.*

MODEL IDENTIFICATION

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

For handy reference, insert your nameplate information in the spaces below:

MODEL AND SPEC NO.

SERIAL NO.

PRODUCT SAFETY PRECAUTIONS

▲WARNING

Contact with USED ENGINE OILS has been identified by a United States federal agency and some USA state agencies as causing CANCER or REPRODUCTIVE TOXICITY. When checking or changing engine oils take all necessary precautions not to ingest, breathe the fumes or contact the used oil.

▲WARNING

Contact with ASBESTOS has been identified by a United States federal agency and some USA state agencies as causing CANCER or REPRODUCTIVE TOXICITY. When handling engine gaskets take all necessary precautions not to ingest, breathe or contact the dust from the gaskets! Use adequate ventilation and wear protective gloves, masks and clothing!

▲WARNING

Contact with BENZINE and LEAD, found in gasoline, fuel additives and solvents has been identified by a United States federal agency and some USA agencies as causing CANCER or REPRODUCTIVE TOXICITY. When checking, draining or adding gasoline and fuel additives, or using solvents take all necessary precautions not to ingest, breathe the fumes, or contact the liquids. Use adequate ventilation and wear protective gloves, masks and clothing!

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Introduction

This manual applies to the ES Mobile Generator Sets as listed in the Generator Set Data Table. Parts are arranged in groups of related items and each illustrated part is identified by a reference number corresponding to the same reference number in the parts list. Parts illustrations are typical. Unless otherwise mentioned in the description, parts are interchangeable between models. Throughout this manual left and right sides are determined by facing the engine end (front) of the set.

Engine parts that have been modified or added by Onan are identified in this manual. All other engine replacement parts must be ordered from the engine manufacturer by referring to the engine manufacturer's nameplate and supplying all available information. Contact your nearest engine parts dealer for assistance in ordering replacement parts.

Generator Set Data Table

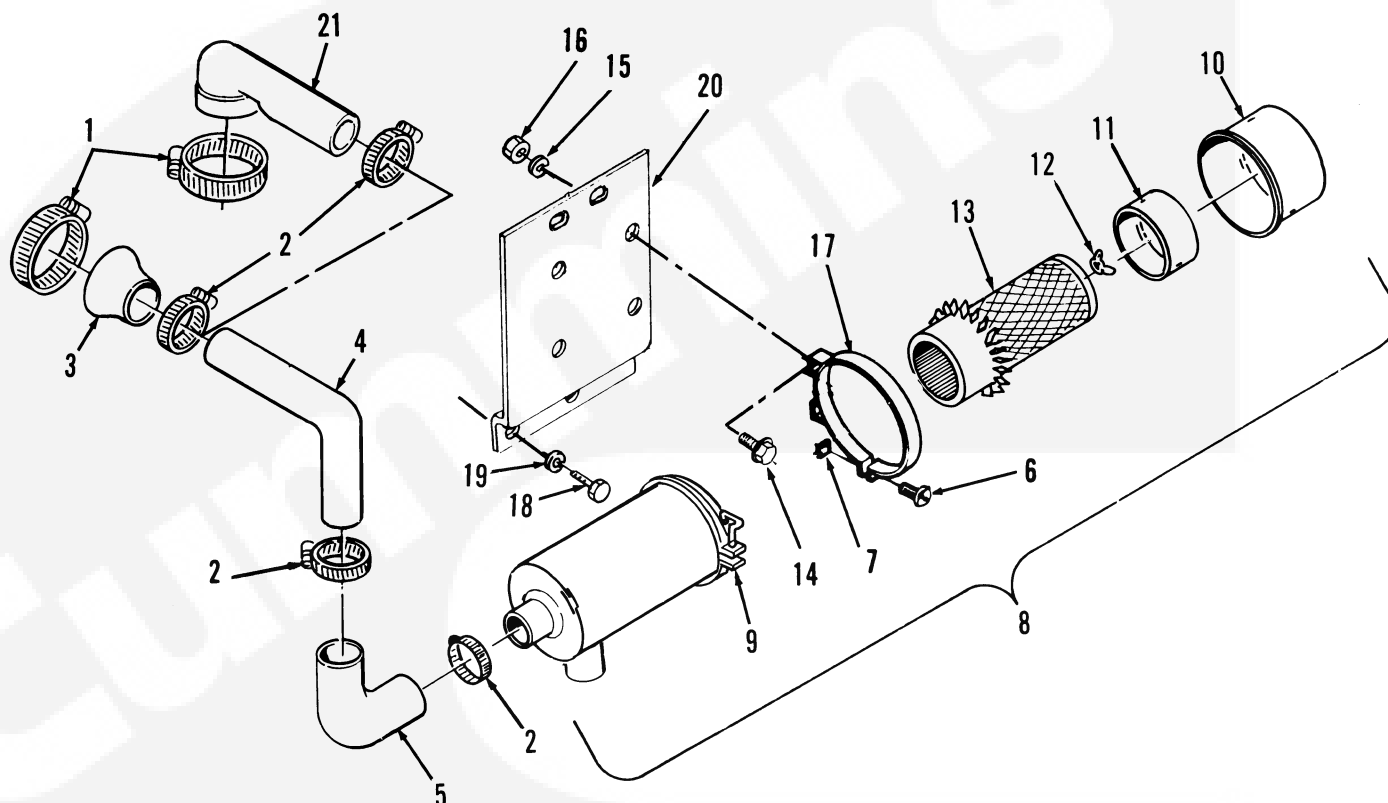
MODEL AND SPECIFICATION	ELECTRICAL DATA					FUEL USED
	WATTS	VOLTS	HERTZ	WIRE	PHASE	
20.0 ES-B/28981*	20,000	120/240	60	3	1	LPG
20.0 ES-B/29381*	20,000	120/240	60	3	1	LPG
20.0 ES-B/30422*	20,000	120/240	60	3	1	GASO
20.0 ES-B/30455*	20,000	120/240	60	3	1	GASO
20.0 ES-B/30491*	20,000	120/240	60	3	1	GASO
20.0 ES-B/30575*	20,000	120/240	60	3	1	LPG
20.0 ES-B/30611*	20,000	120/240	60	3	1	LPG
20.0 ES-B/30612*	20,000	120/240	60	3	1	GASO
20.0 ES-B/36287*	20,000	120/240	60	3	1	LPG
20.0 ES-B/38762*	20,000	120/240	60	3	1	LPG

* - The diagonal line (/) in the model and specification number separates generator set characteristics from the specification number and letter. The specification number denotes customer requested options or deviations from a standard (1A, 1B, etc.) non-mobile ES model. The specification letter advances (A to B, B to C, etc.) with major manufacturing changes. The letter "B" before the diagonal line is now used in the model to indicate the voltage code and replaces the corresponding number and letter designation of "3R" used on earlier models.

SPECIFICATION LETTER ADVANCE HISTORY

B to C	Alternator
C to D	Alternator
D to E	Starter

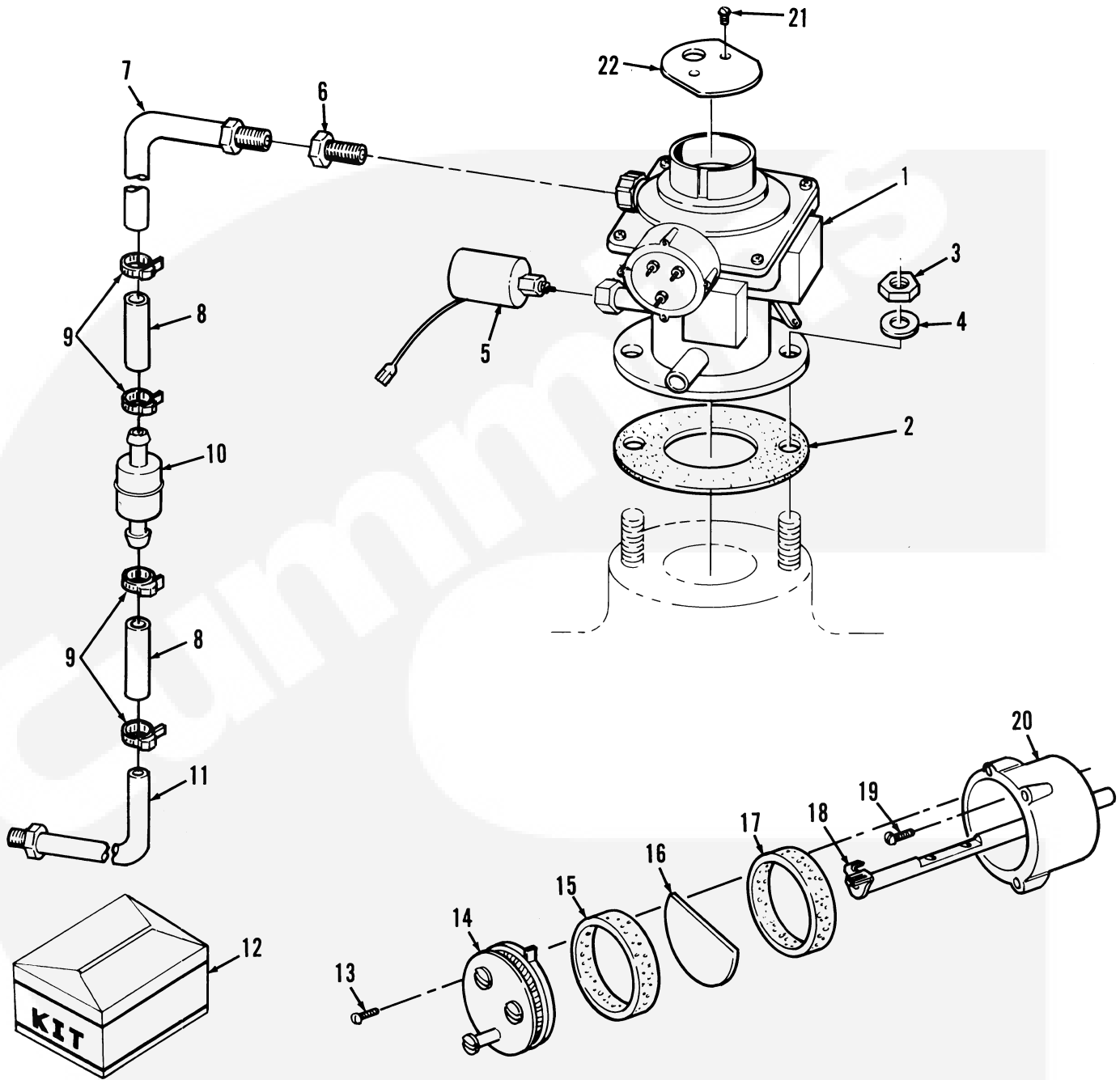
Air Cleaner



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	503-0465	1	Clamp	11	140-1439	1	*Baffle
2	503-0365	3	Clamp	12	140-1436	1	*Nut, Wing
3	503-1074	1	Hose, Reducer - Used With LPG Carburetor	13	140-0765	1	*Element
4	140-2124	1	Tube, Air Inlet Used with LPG Carburetor	14	800-0026	4	Screw, Cap - Hex Head (5/16-18 x 3/4")
	140-2190	1	Used with Gasoline Carburetor	15	850-0046	4	Washer, Lock - Spring (5/16")
5	503-0419	1	Elbow, Hose	16	862-0015	4	Nut, Hex (5/16-18)
6	812-0153	2	Screw, Machine - Round Head (1/4-20 x 1")	17	140-0722	2	Band, Mounting
7	861-0011	2	Nut, Square (1/4-20)	18	800-2085	2	Screw, Cap - Hex Head (M12 x 20MM)
8	140-0721	1	Cleaner Assembly, Air (Includes Parts Marked *)	19	850-2010	2	Washer, Lock - Spring (M10)
9	140-1437	1	*Clamp	20	140-1756	1	Bracket, Mounting
10	140-1438	1	*Cup	21	140-1283	1	Elbow, Air Inlet - Used With Gasoline Carburetor

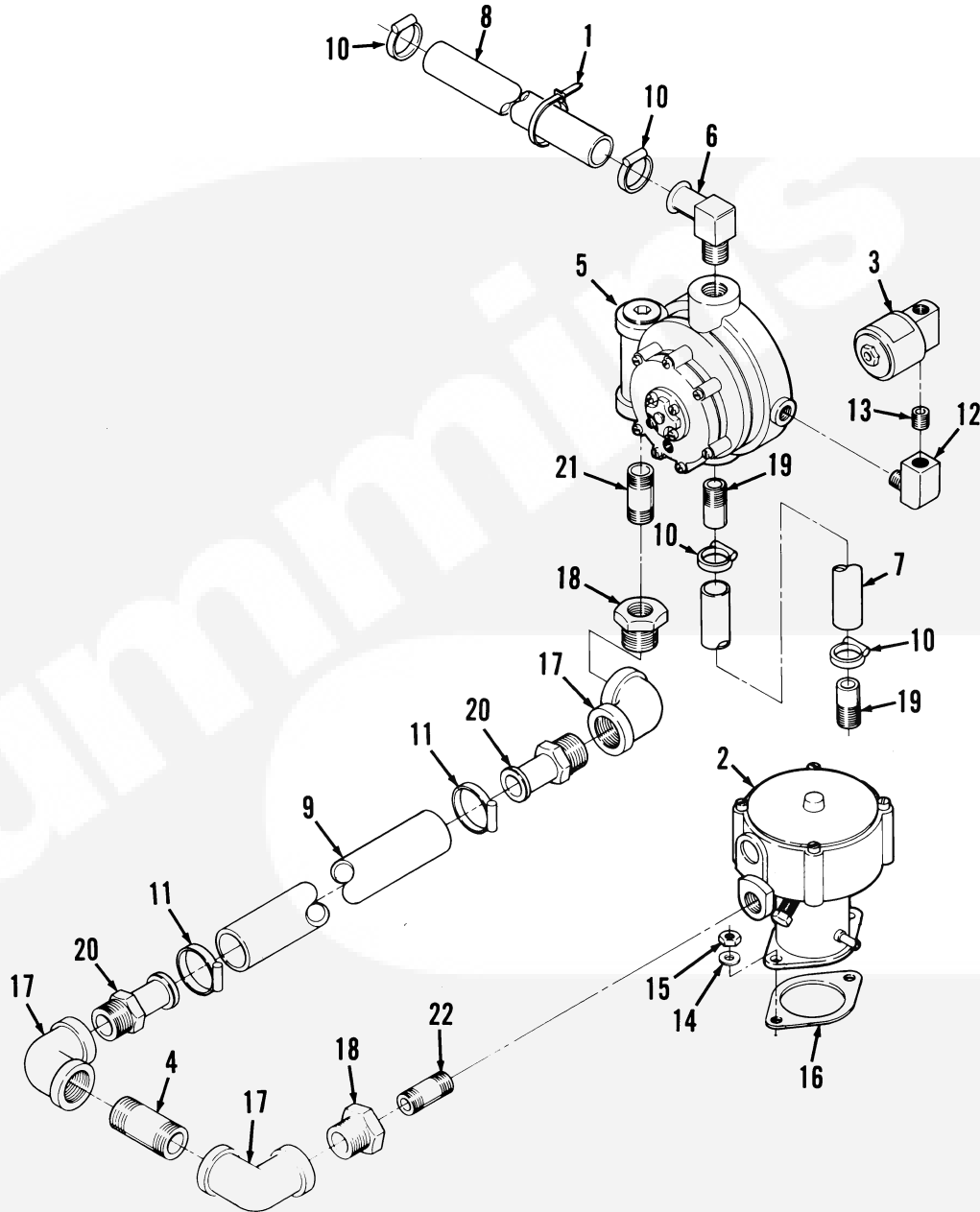
* - Parts Included in 140-0721 Air Cleaner Assembly.

Fuel System (Gasoline)



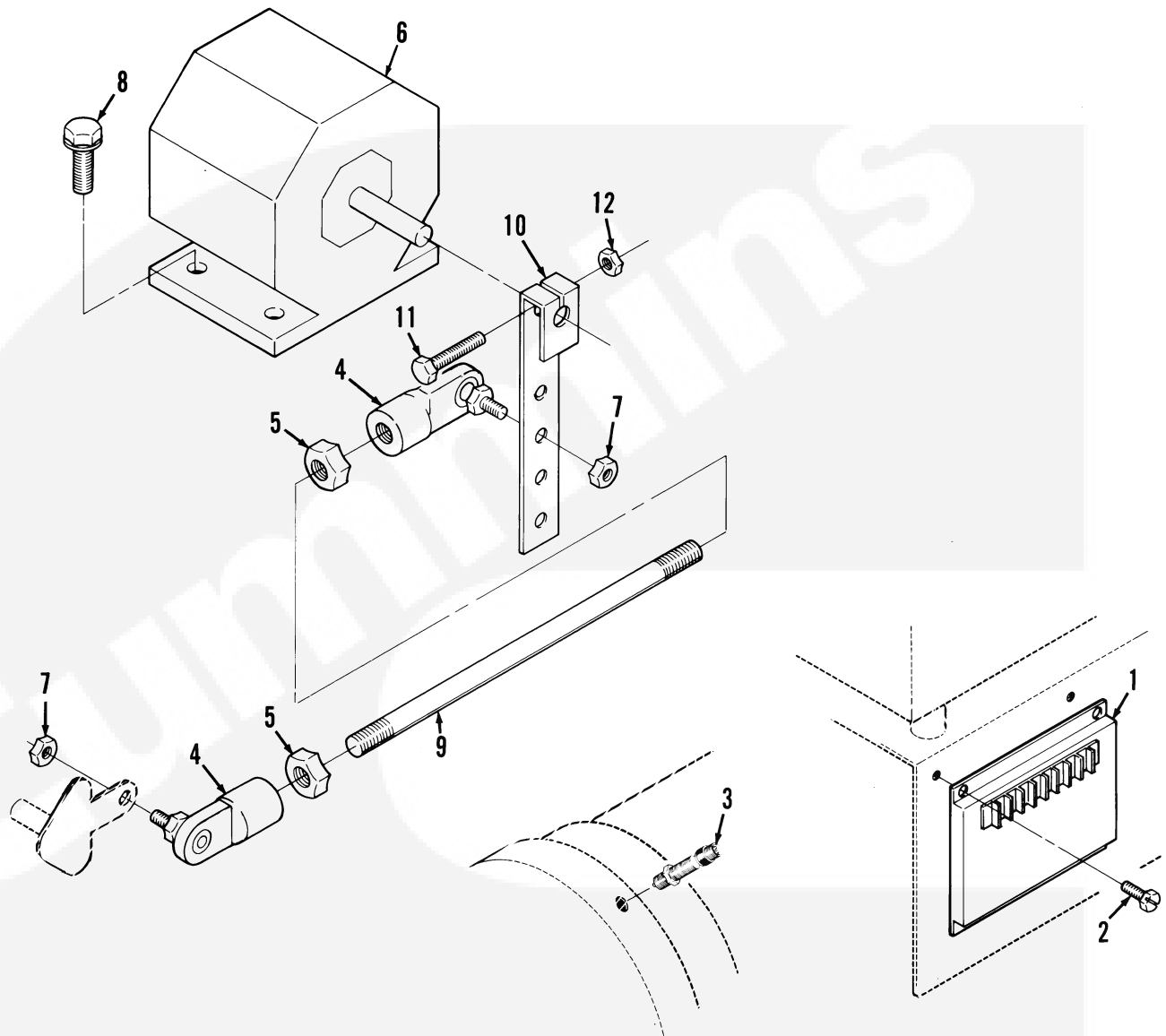
REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	141-0953	1	Carburetor - Gasoline (Includes Fuel Solenoid and Choke Plate)	14	141-0911	1	Cover, Choke
2	145-0120	1	Gasket, Mounting - Lead	15	141-0909	1	Insulator, Cork (1/2" x 4")
3	860-2008	2	Nut, Hex (M8)	16	141-0905	1	Plate, Heat Sink
4	526-2100	2	Washer, Flat (M8)	17	141-0910	1	Insulator, Cork (1/2" x 5-9/16")
5	141-0951	1	Solenoid (K1)	18	141-0908	1	Shaft, Choke
6	502-0018	1	Connector, Inverted Male	19	815-0103	1	Screw, Machine - Fillister Head (#10-24 x 1/2")
7	149-1775	1	Line, Fuel - Upper	20	145-0544	1	Housing, Choke
8	503-0883	2	Hose, Fuel (5/16" ID x 2")	21	141-0906	2	Screw - With Lockwasher (#5-40)
9	503-0685	4	Clamp	22	141-0916	1	Plate, Choke
10	149-1774	1	Filter, Fuel				
11	149-1776	1	Line, Fuel - Lower				
13	813-0096	3	Screw, Machine - Round Head (#10-32 x 1/4")				

Fuel System (LPG Vapor)



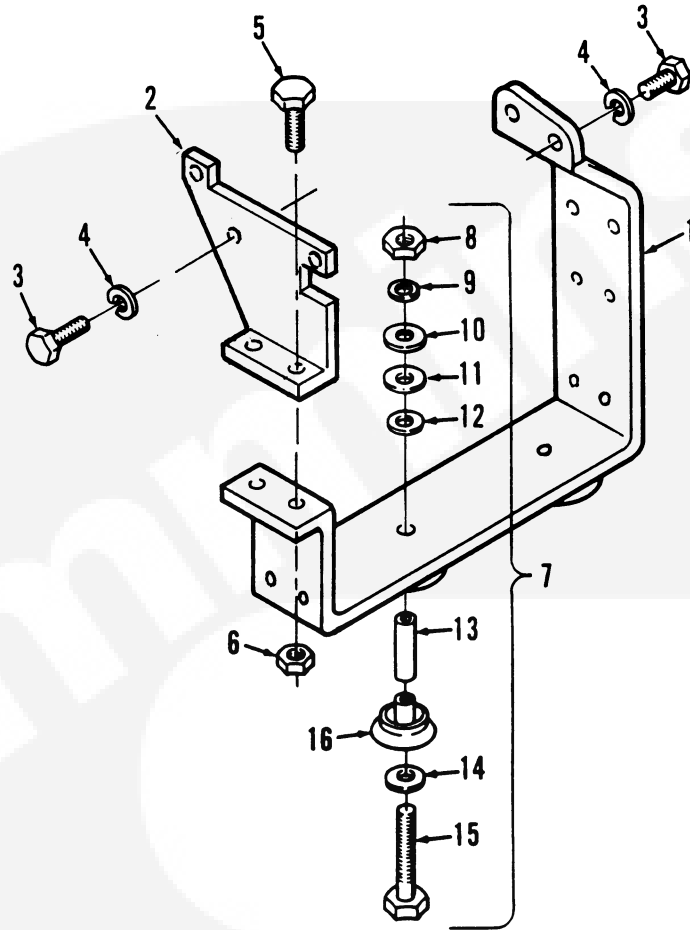
REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	332-0941	1	Tie, Cable	11	503-0398	2	Clamp, Hose
2	148-0902	1	Carburetor (LPG Vapor) (For Component Parts Refer to Carburetor Manufacturer)	12	502-0054	1	Elbow - 90° (1/4")
3	307-0268	1	Valve, Solenoid (K1)	13	502-0047	1	Nipple, Close (1/4")
4	505-0085	1	Nipple, Pipe (3/4" x 2")	14	526-2100	2	Washer, Flat (M8)
5	148-0737	1	Regulator	15	860-2008	2	Nut, Hex (M8)
6	502-0587	1	Elbow - 90° (3/8" Pipe to 5/8" ID Hose)	16	145-0120	1	Gasket - Lead
7	503-0352	1	Hose (5/8" ID x 20")	17	505-0132	3	Elbow - 90° (3/4")
8	503-0146	1	Hose (5/8" ID x 32")	18	505-0021	2	Bushing, Reducer (3/4" to 1/2")
9	503-1573	1	Hose - LPG (1" ID x 13")	19	505-0135	2	Nipple, Half (3/8" x 1-1/2")
10	503-0183	4	Clamp, Hose	20	502-0971	2	Connector, Hose (3/4")
				21	505-0210	1	Nipple, Pipe (1/2" x 2")
				22	505-0106	1	Nipple, Pipe (1/2" x 1-1/2")

Governor



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	151-0565	1	Control, Governor (A12)	8	821-0016	4	Screw, Locking - Hex Head Flange (5/16-18 x 3/4")
2	815-0652	4	Screw, Slotted - Hex Head (#10-32 x 1/2")	9	150-1923	1	Rod, Control
3	150-1406	1	Sensor, Speed - Magnetic (E6)	10	151-0591	1	Lever, Actuator
4	150-0939	2	Joint, Ball	11	800-0007	1	Screw, Cap - Hex Head (1/4-20 x 1")
5	870-0053	2	Nut, Hex (#10-32)	12	870-0065	1	Nut, Self-Locking (1/4-20)
6	151-0566	1	Actuator, Governor (A14)				
7	870-0131	2	Nut, Hex - With ET (#10-32)				

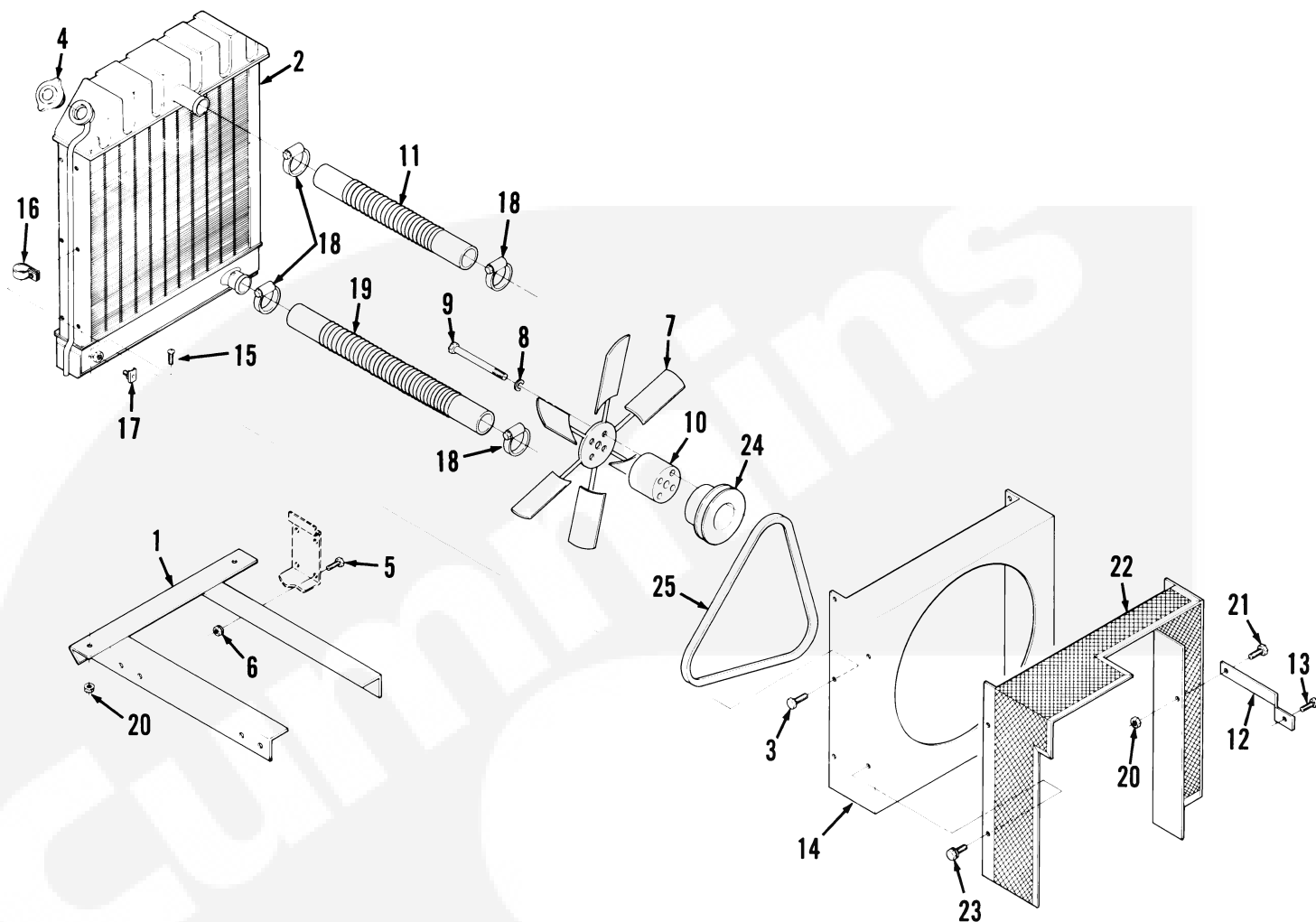
Mounting Hardware



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	403-1833	1	Bracket, Engine Mount	10	526-0014	4	*Washer, Flat (29/64" ID x 1-1/2" OD x 1/8" Thk)
2	403-3267	1	Bracket, Engine Mount - Upper	11	526-0198	8	*Washer, Flat (5/8" ID x 1-1/2" OD x 1/16" Thk) (Use as required)
3	800-2086	6	Screw, Cap - Hex Head (M10 x 25MM)	12	402-0282	4	*Snubber
4	850-2010	6	Washer, Lock - Spring (M10)	13	402-0290	4	*Bushing, Spacer
5	800-0050	2	Screw, Cap - Hex Head (3/8-16 x 1")	14	526-0195	4	*Washer, Flat (29/64" ID x 3-1/4" OD x 1/8" Thk)
6	870-0281	2	Nut, Self-Locking Hex (3/8-16)	15	800-0082	4	*Screw, Cap - Hex Head (7/16-14 x 3-3/4")
7	402-0327	1	Kit, Mounting Hardware (Hardware Package for 4 Mounts) (Includes Parts Marked *)	16	402-0285	4	Cushion, Vibration Engine End
8	862-0004	4	*Nut, Hex (7/16")		402-0286	4	Cushion, Vibration Generator End
9	850-0055	4	*Washer, Lock - Spring (7/16")				

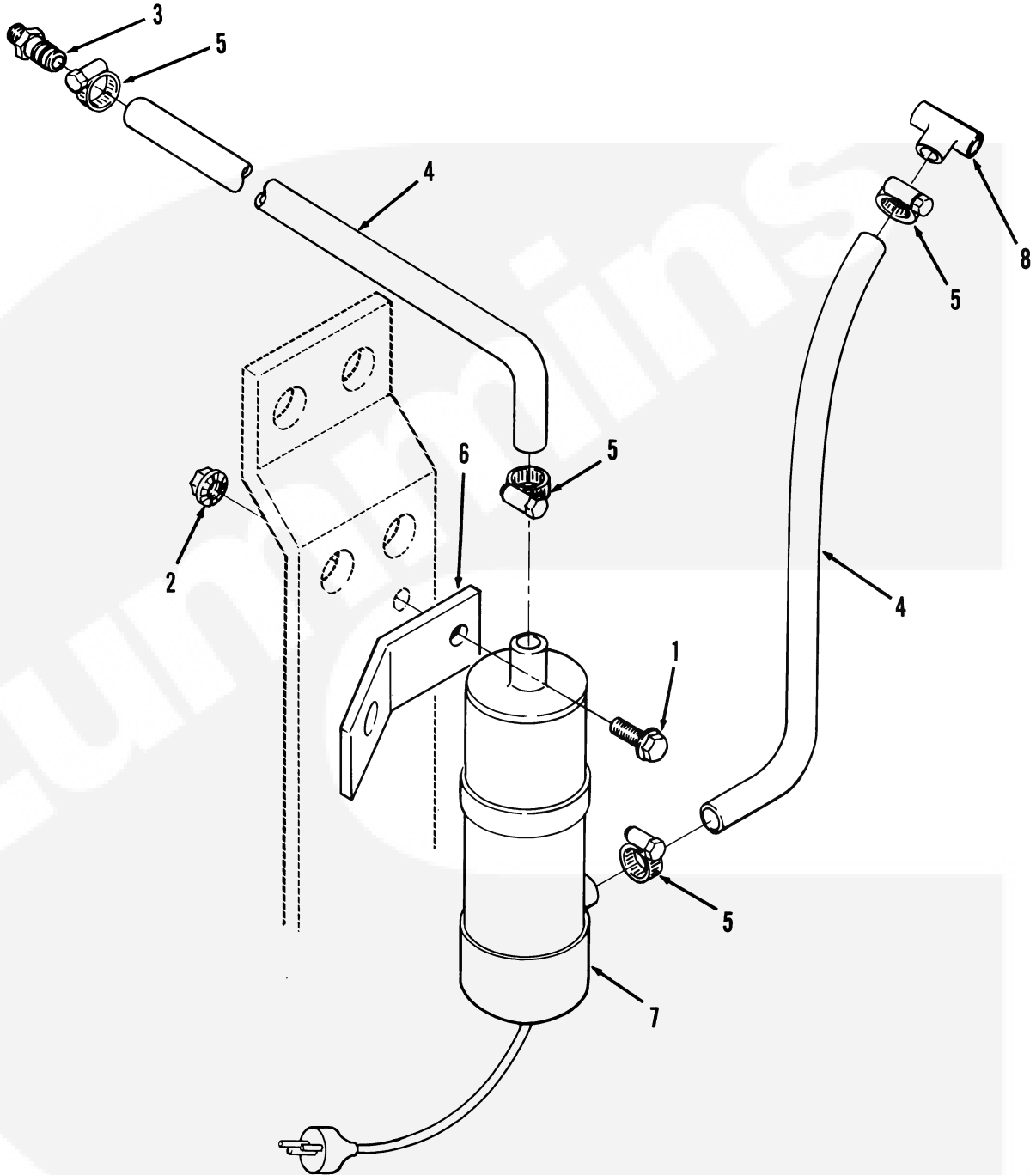
* - Parts Included in 402-0327 Mounting Hardware Kit

Radiator



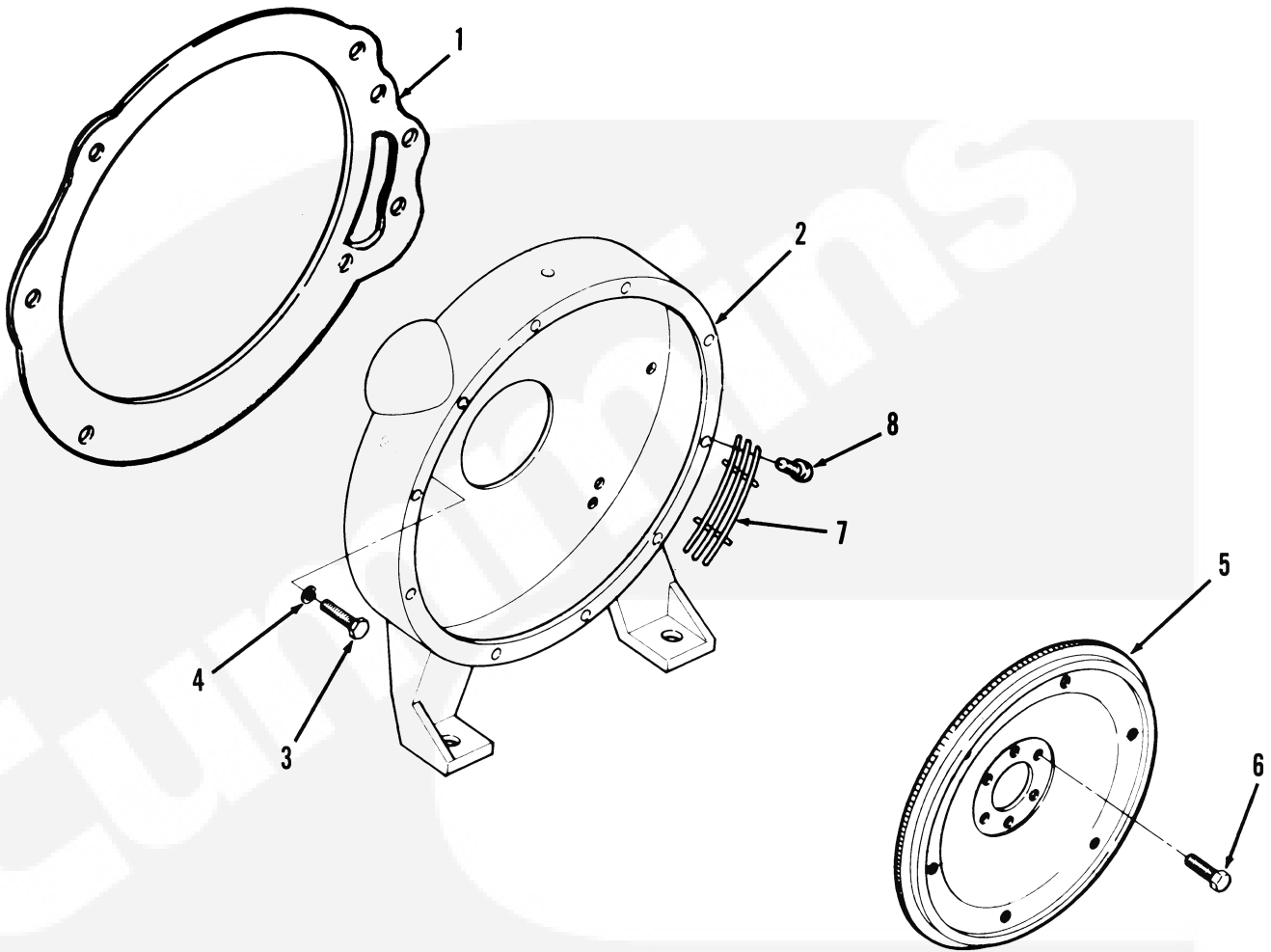
REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	130-3025	1	Support, Radiator	13	800-2084	1	Screw, Cap - Hex Head (M10 x 16MM)
2	130-3027	1	Radiator	14	130-1797	1	Shroud, Fan
3	815-0181	6	Screw, Hex Head - Thread Cutting With ET (#10-32 x 1/2")	15	816-0152	2	Bolt, Carriage (3/8-16 x 2")
4	130-1788	1	Cap, Pressure	16	332-0051	2	Clip, Retainer
5	800-0069	4	Screw, Cap - Hex Head (7/16-14 x 3/4")	17	504-0003	1	Cock, Drain
6	870-0437	4	Nut, Locking Head - Flange (7/16-14)	18	503-0429	4	Clamp, Hose
7	130-3079	1	Fan	19	503-0869	1	Hose, Radiator - Lower (20")
8	850-0045	4	Washer, Lock - Spring (5/16")	20	870-0281	3	Nut, Locking Head - Flange (3/8-16)
9	800-2072	4	Screw, Cap - Hex Head (M8 x 100MM)	21	821-0028	1	Screw, Locking - Hex Washer Head (3/8-16 x 1/2")
10	130-2253	1	Spacer, Fan	22	130-1805	1	Guard, Belt
11	503-1058	1	Hose, Radiator - Upper (15-1/2")	23	821-0014	4	Screw, Locking - Hex Washer Head (5/16-18 x 1/2")
12	130-3024	1	Brace, Radiator	24	512-0154	1	Pulley, Fan
				25	511-0112	1	Belt, Fan

Engine Tank Heater



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	821-0018	1	Screw, Self-Locking - Hex Washer Head (1/4-20 x 5/8")	6	130-0755	1	Bracket, Mounting Heater, Tank - 850 Watt, 115 Volt (Includes Hose Connector, Cord and Mounting Strap)
2	870-0212	1	Nut, Self-Locking - Hex Washer Head (1/4-20)	7	333-0203	1	
3	502-0613	1	Connector, Hose	8	502-0870	1	
4	503-1552-01	2	Hose (5/8" ID x 14")				
5	503-0183	6	Clamp, Hose				

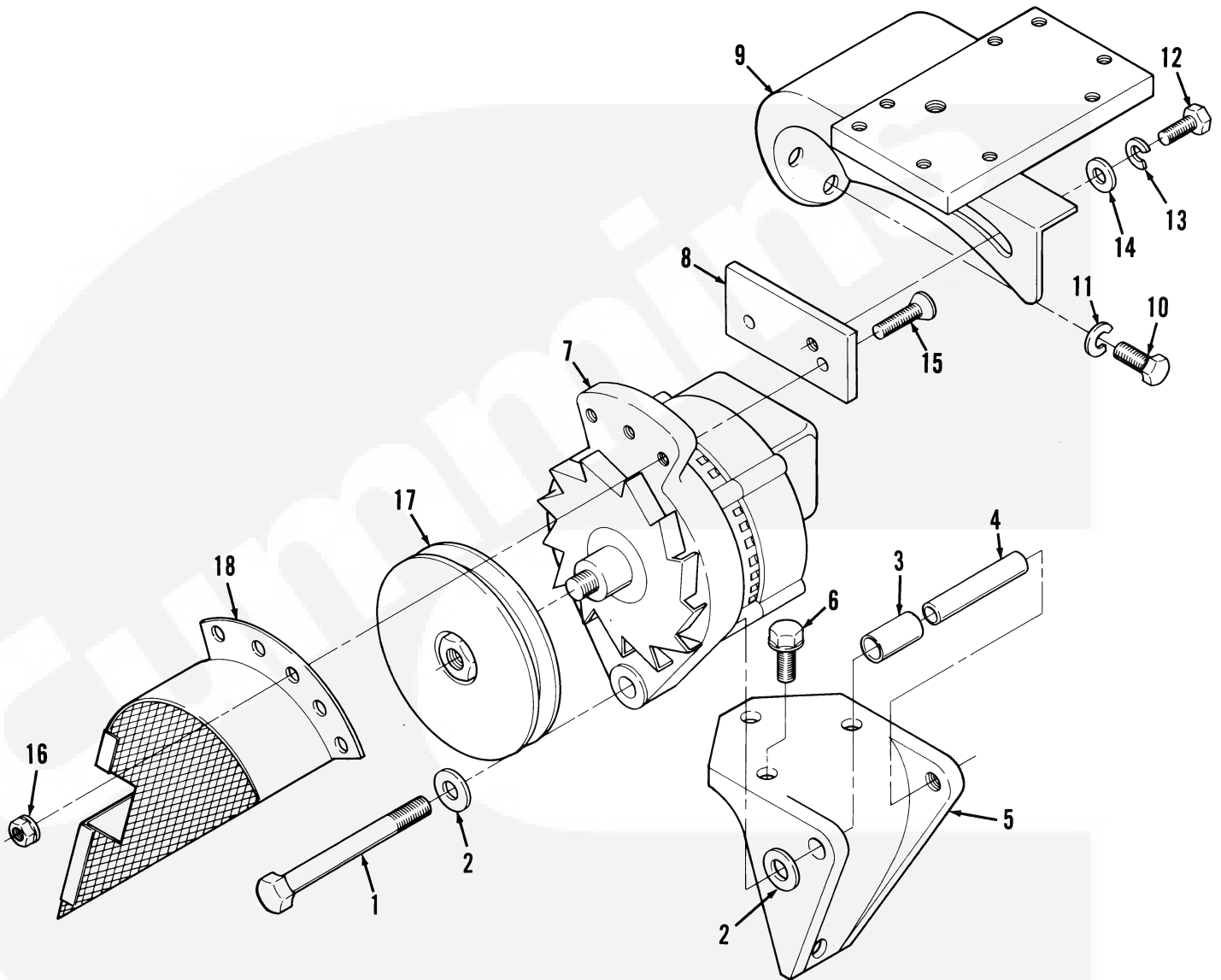
Flywheel



REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	403-2173	1	Plate, Rear Engine
2	231-0252	1	Adapter, Generator
3			Screw, Cap - Hex Head
	800-2087	1	M10 x 30MM
	800-2089	2	M10 x 40MM
	800-2091	2	M10 x 50MM
4	850-2010	5	Washer, Lock - Spring (M10)

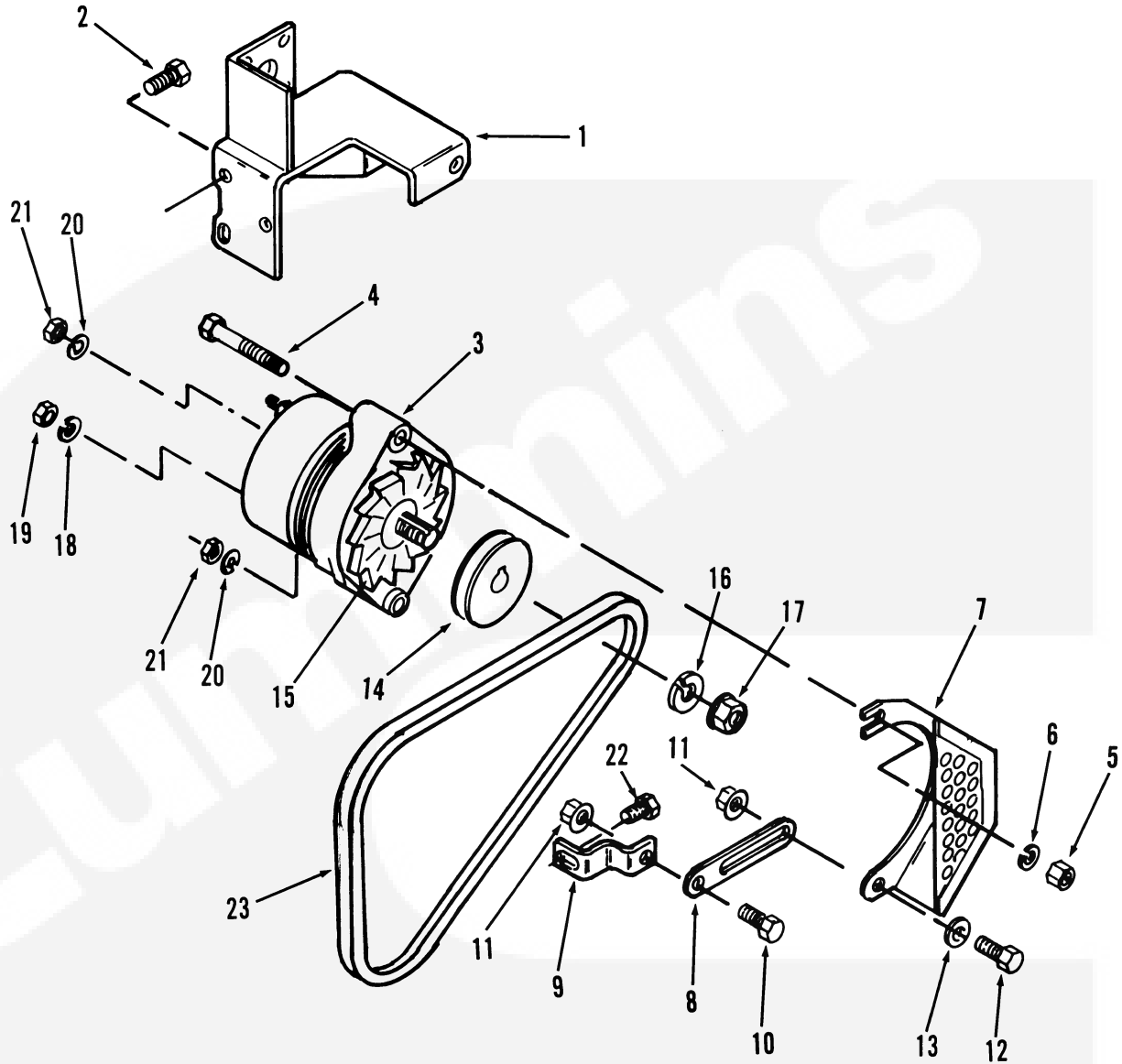
REF NO.	PART NO.	QTY USED	PART DESCRIPTION
5	104-1254	1	Flywheel
6	104-1255	6	Screw, Cap - Hex Head (M10 x 45MM)
7	234-0665	1	Grille, Air Outlet
8	803-0032	2	Screw, Socket Head (1/4-20 x 1/4")

Alternator (Spec B)



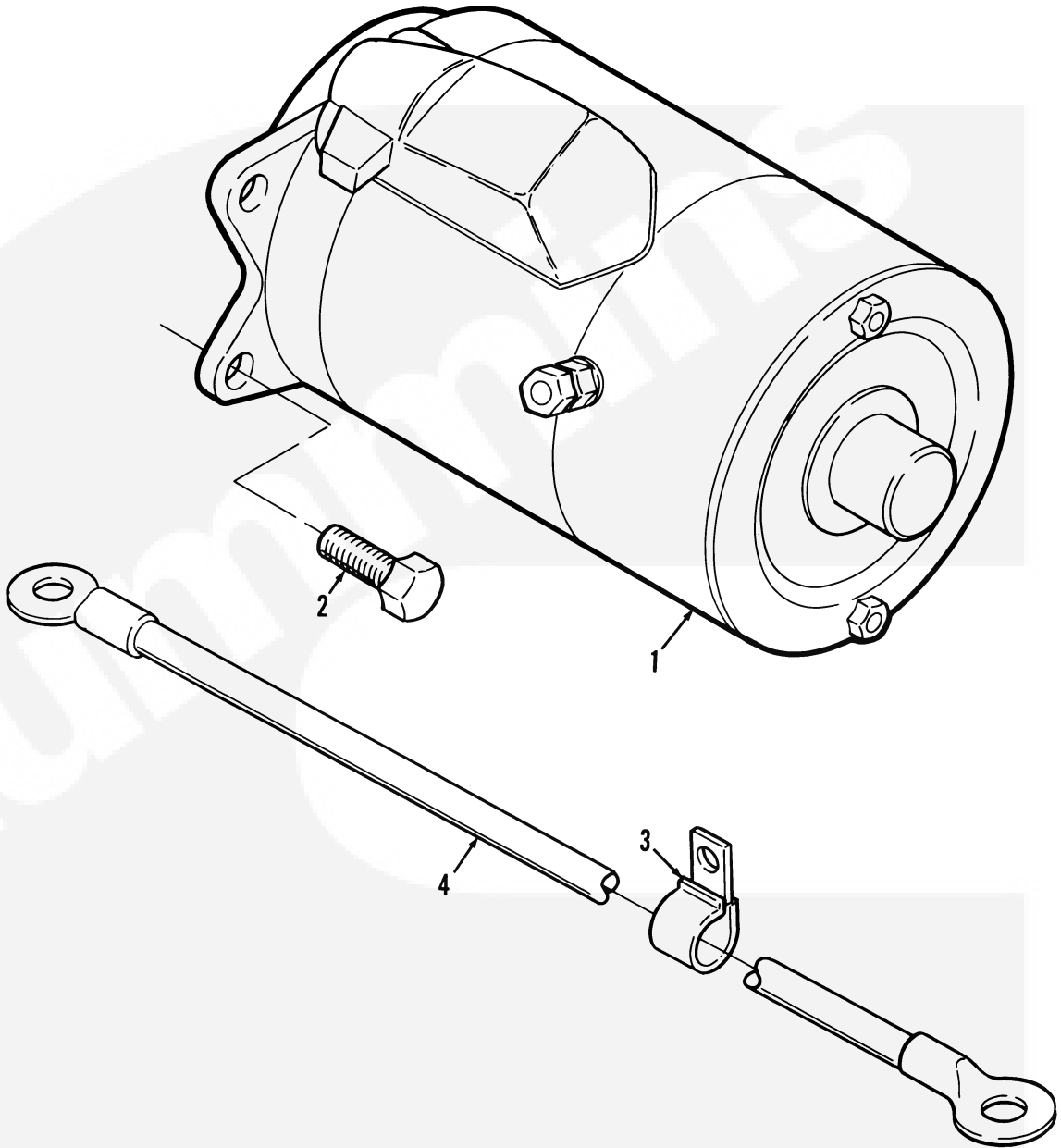
REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	191-1373	1	Screw (7/16-14 x 4-1/4")	10	130-1808	3	Screw (M8 x 25MM)
2	526-0032	2	Washer, Flat (7/16")	11	850-2008	3	Washer, Lock - Spring (M8)
3	191-0571	1	Spacer, Alternator Mounting (1-13/16" Long)	12	800-0048	1	Screw, Cap - Hex Head (3/8-16 x 3/4")
4	191-0716	1	Spacer, Alternator Mounting (2-3/4" Long)	13	850-0050	1	Washer, Lock - Spring (3/8")
5	191-1369	1	Bracket, Alternator Mounting	14	526-0030	1	Washer, Flat (3/8")
6	191-1371	3	Screw, Self-Locking - Hex Head Flange (M10 x 30MM)	15	814-2121	2	Screw, Machine - Countersunk Flat Head (M8 x 30MM)
7	191-1872	1	Alternator (12 VDC) (G1)	16	870-2055	2	Nut, Locking - Flange (M8)
8	191-1375	1	Spacer, Alternator Mounting	17	191-1387	1	Pulley, Alternator
9	191-1368	1	Arm, Alternator Adjusting	18	191-1361	1	Guard, Alternator Belt

Alternator (Spec C-E)



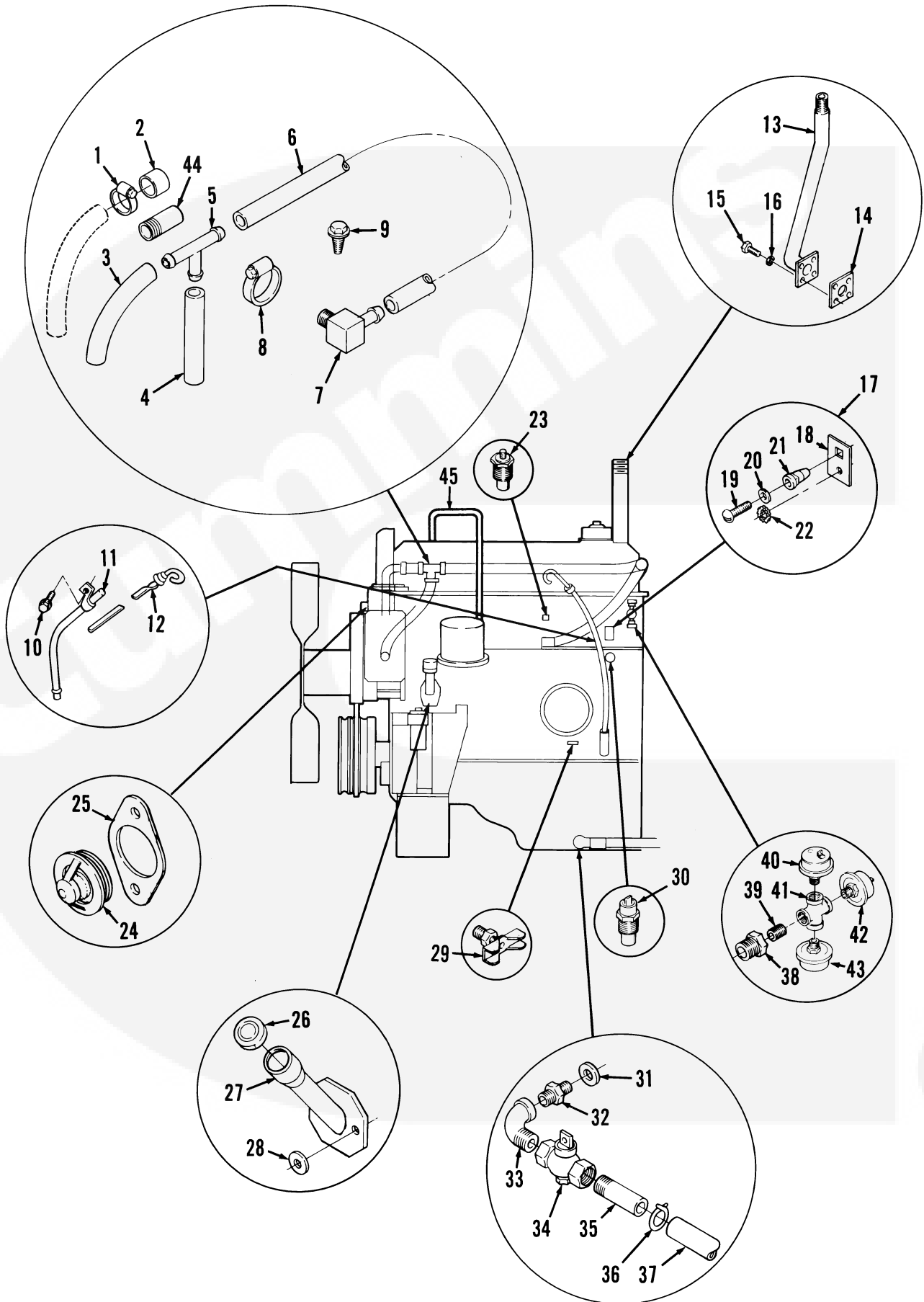
REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	150-2512	1	Bracket	12	800-2060	1	Screw, Cap - Hex Head (M8 x 1.25 x 35)
2	130-1808	3	Screw, (M8 x 25mm)	13	526-2106	1	Washer, Flat (M8)
3	191-1983-01	1	Alternator	14	191-2032	1	Pulley, Alternator
4	800-2096	1	Screw, Cap - Hex Head (M10 x 1.5 x 75)	15	191-1981	1	Fan, Alternator
5	860-2009	1	Nut (M10 x 1.5)	16	851-0039	1	Washer, Spring
6	850-2010	1	Lockwasher (M10)	17	870-2161	1	Nut, Hex (M16)
7	191-2086	1	Guard	18	850-2008	1	Washer, Lock (M8)
8	191-2085	1	Strap, Alternator Adjust	19	860-2008	1	Nut, Hex (M5)
9	191-2084	1	Bracket, Adjusting	20	850-2005	2	Washer, Lock (M5)
10	800-2058	2	Screw, Hex Head (M8 x 1.25 x 25)	21	860-2006	2	Nut, Hex (M5)
11	870-2055	2	Nut, Lock Flange (M8 x 1.25)	22	800-2085	1	Screw, (M10 x 1.5 x 20)
				23	512-0154	1	Belt, Fan

Starter



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	191-1370	1	Starter (12 VDC) (B1)	3	332-2634	1	Clamp, "J"
	191-2115	1	Spec B-D	4	226-3462-01	1	Lead (38") Starter to Relay
	191-2115	1	Spec E		226-3462-02	1	Spec B-D
2	191-1374	3	Screw, Cap - Hex Head (M10 x 25MM)				Spec E

Miscellaneous Engine Parts

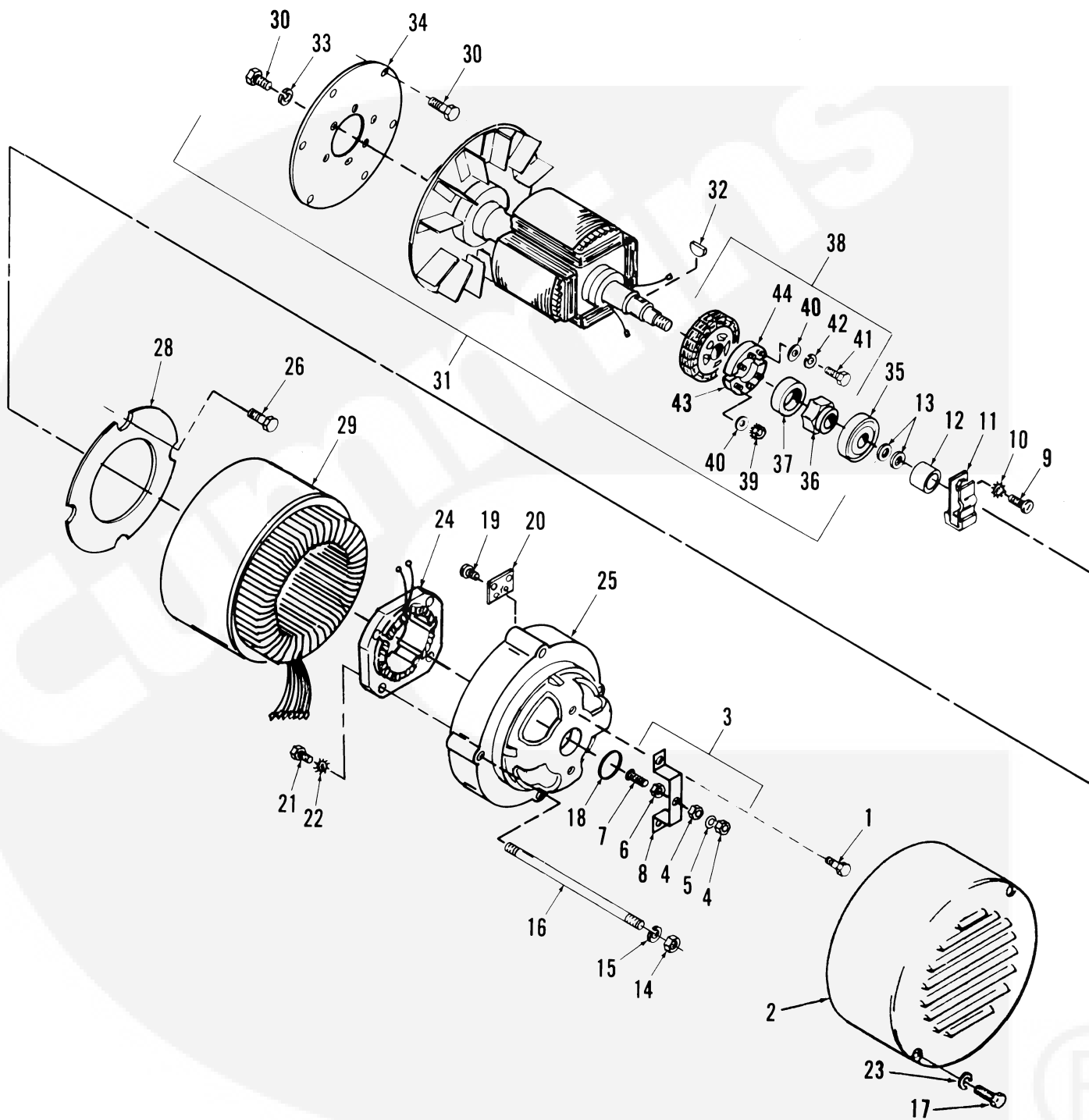


Miscellaneous Engine Parts

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	503-0183	1	*Clamp, Hose	26	123-1787	1	*Cap, Oil Fill
2	132-0222	1	*Cap, Water Outlet Tube	27	123-1786	1	*Tube, Oil Fill
3	503-1250	1	#Hose, Water Bypass (5/8" ID)	28	526-0122	2	*Washer, Flat (5/16")
4	503-1251	1	#Hose, Water Bypass (5/8" ID)	29	504-0133	1	Petcock (Mounted on Left Side of Engine)
5	502-0868	1	#Tee (3/8" x 5/8" x 5/8")	30	309-0437	1	Switch, Thermostat (S1)
6	503-1062	1	#Hose - Intake Manifold to Water Pump (3/8" ID)	31	102-1281	1	Gasket, Oil Drain
7	502-0869	1	#Connector (3/8")	32	102-1054	1	Adapter, Oil Drain
8	503-1061	8	#Clamp, Hose	33	505-0050	1	Elbow, Oil Drain (90° x 1/2")
9	503-1064	1	Screw, Self Tapping (#8-18 x 1/2")	34	504-0011	1	Valve, Shutoff
10	123-1535	1	Screw, Self-Locking - Hex Head Flange (M8 x 19MM)	35	505-0106	1	Nipple, Half (1/2" x 1-1/2")
11	123-1534	1	Tube, Oil Level	36	503-0197	1	Clamp, Hose
12	123-1533	1	Indicator, Oil Level	37	503-0808	1	Hose, Drain (14")
13	155-2076	1	Pipe, Exhaust	38	505-0007	1	Bushing, Reducer (1/4" to 1/8")
14	155-2073	1	Gasket, Exhaust Pipe	39	505-0098	1	Nipple, Short (1/8" x 3/4")
15	800-2085	4	Screw, Cap - Hex Head (M10 x 20MM)	40	309-0272	1	Switch, Low Oil Pressure (Closes at 20 lbs. Descending) (S2)
16	850-2010	4	Washer, Lock - Spring (M10)	41	505-0763	1	Crosspipe (1/8")
17	332-1292	1	Bracket Assembly, Terminal (#26) (Includes Parts Marked +)	42	309-0104	1	Switch, Low Oil Pressure (Closes at 5 lbs. Descending) (S2)
18	332-1281	1	+Bracket, Terminal	43	193-0244	1	Sender, Oil Pressure (E1)
19	809-0035	1	+Screw, Sheet Metal - Round Head (#8 x 3/4")	44	505-0135	1	*Nipple, Half (3/8" x 1-1/2")
20	508-0015	1	+Washer, Fiber	45	503-1262	1	Hose (5/16" ID x 38")
21	870-0196	1	+Nut, Insulation				
22	856-0008	1	Washer, Lock - EIT (5/16")				* - Parts used with LPG vapor fuel system.
23	193-0318	1	Sender, Water Temperature (E2)				# - Parts used with gasoline fuel system.
24	309-0509	1	Thermostat (170°)				+ - Parts Included in 332-1292 Terminal Bracket Assembly.
25	130-2307	1	Gasket, Water Outlet Elbow				



Generator



Generator

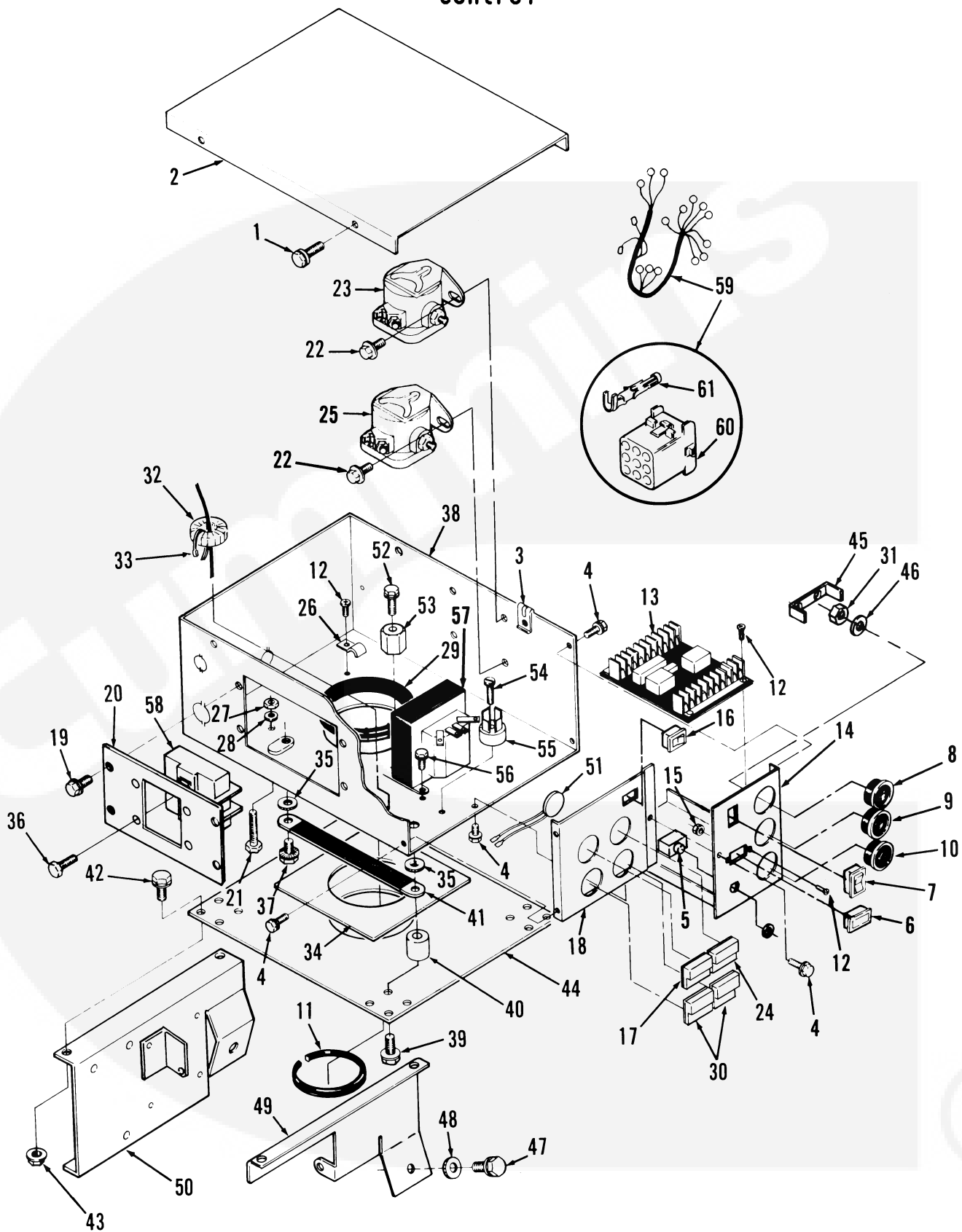
REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	821-0010	2	Screw, Self-Locking - Hex Washer Head (1/4-20 x 1/2")	22	850-0040	4	Washer, Lock - Spring (1/4")
2	234-0498	1	Cover, End Bell	23	850-0040	2	Washer, Lock - Spring (1/4")
3	150-1446	1	Bracket and Point Assembly (Includes Parts Marked *)	24	220-2009	1	Stator, Exciter
4	862-0001	2	*Nut, Hex (1/4-20)	25	211-0256	1	Bell, End
5	853-0013	1	*Washer, Lock - ET (1/4")	26	821-0010	4	Screw, Self-Locking - Hex Washer Head (1/4-20 x 1/2")
6	870-0250	1	*Nut, Insulating	28	234-0519	1	Baffle, Air
7	150-0723	1	*Point, Contact	29	220-3794	1	Stator, Generator
8	150-1445	1	*Bracket, Mounting	30	805-0015	12	Bolt, Place (3/8-16 x 3/4")
9	800-0051	1	Screw, Cap - Hex Head (3/8-16 x 1-1/4")	31	201-2937	1	Rotor Assembly, Generator (Includes Parts Marked #)
10	856-0010	1	Washer, Lock - EIT (3/8")	32	515-0094	1	#Key - Excitor Rotor
11	150-0717	1	Switch, Overspeed (S3)	33	526-1030	6	#Washer, Flat (3/8")
12	150-1735	1	Spacer, Overspeed Switch	34	232-2826	1	#Disk, Drive
13	526-0029	2	Washer, Flat (3/8") (Quantity as required)	35	510-0112	1	#Bearing, Ball
14	862-0011	4	Nut, Hex (3/8-16)	36	870-0284	1	*Nut, Self-Locking - Hex (1-1/8-12)
15	850-0050	4	Washer, Lock - Spring (3/8")	37	232-2398	1	#Spacer, Bearing
16	520-0799	4	Stud (3/8-16 x 11-3/8")	38	201-2151	1	*Rotor Assembly, Excitor (Includes Parts Marked +)
17	812-0167	2	Screw, Machine - Round Head (1/4-20 x 6")	39	870-0131	8	+Nut, Self-Locking - Hex with ET Lockwasher (#10-32)
18	509-0094	1	Seal, "O" Ring	40	526-0008	12	+Washer, Flat (#10)
19	815-0194	2	Screw, Tapping - Hex Head With ET Lockwasher (#10-32 x 3/8")	41	813-0100	4	+Screw, Machine - Round Head (#10-32 x 1/2")
20	232-2418	1	Board, Connection	42	853-0008	4	+Washer, Lock - ET (#10)
21	802-0038	4	Screw, Cap - Socket Head (1/4-20 x 1-1/2")	43	358-0070	1	+Rectifier Assembly - Negative
				44	358-0069	1	+Rectifier Assembly - Positive

* - Parts Included in 150-1446 Bracket and Point Assembly.

- Parts Included in 201-2937 Generator Rotor Assembly.

+ - Parts Included in 201-2151 Excitor Rotor Assembly.

Control

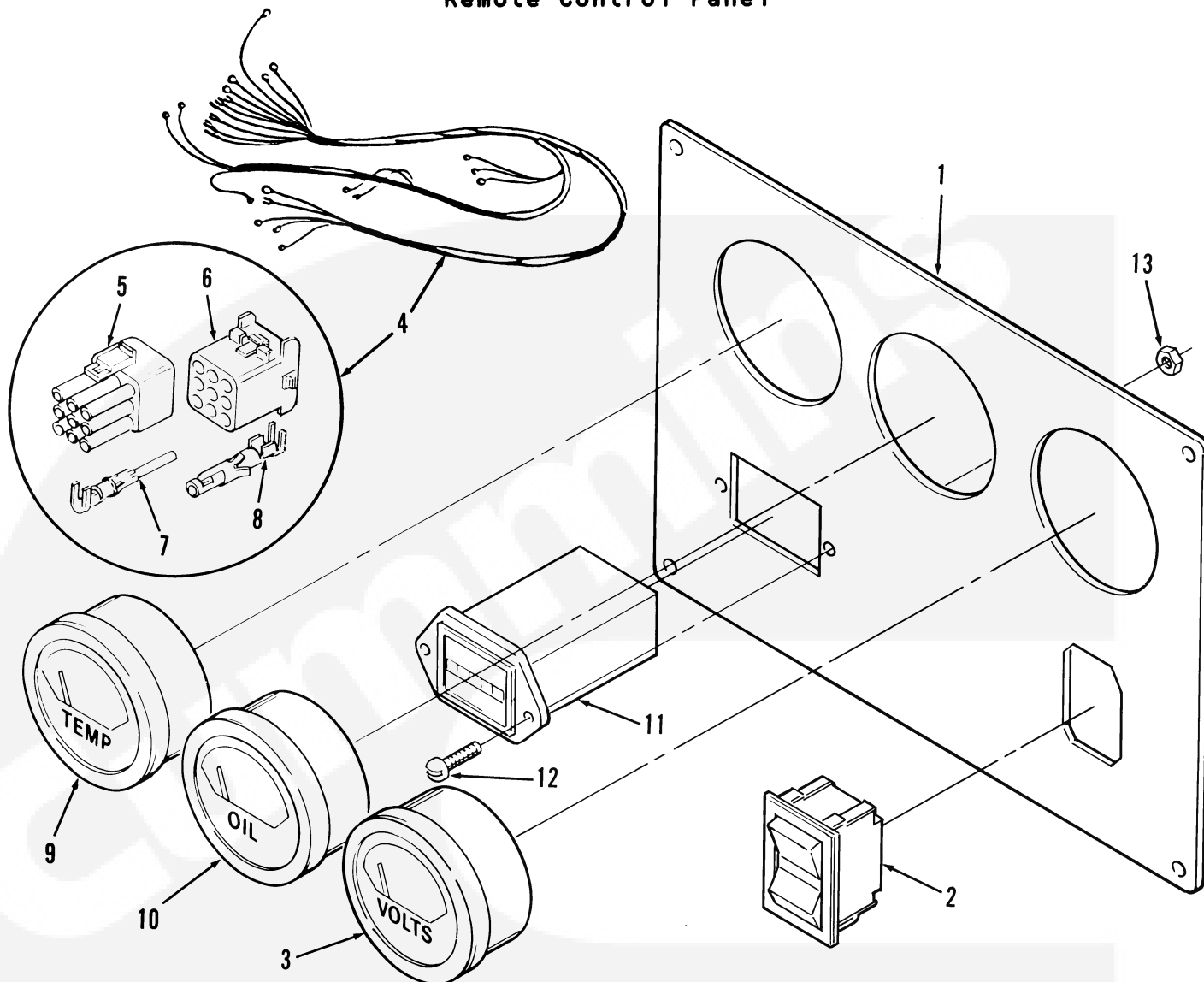


Control

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	821-0005	4	Screw, Self-Locking - Hex Washer Head (#10-32 x 1/2")	38	301-7807	1	Box, Control
2	301-7983	1	Cover, Control	39	821-0014	4	Screw, Locking Head - Flange (5/16-18 x 1/2")
3	870-0398	4	Nut, Retaining (#10-32)	40	402-0527	4	Dampener, Vibration
4	821-0004	5	Screw, Self-Locking - Hex Washer Head (#10-32 x 5/16")	41	337-0049	1	Strap, Ground - Control
5	320-1139	1	Breaker, Circuit (CB12)	42	821-0010	4	Screw, Self-Locking - Hex Washer Head (1/4-20 x 1/2")
6	302-0885	1	Meter, Time Totalizing (M11)	43	870-0212	4	Nut, Self-Locking - Hex Washer Head (1/4-20)
7	308-0739	1	Switch, Rocker (S11)	44	301-7685	1	Plate, Mounting - Control
8	193-0352	1	#Gauge, Oil Pressure (M12)	45	302-0270	3	#Clamp, Gauge Mounting
9	193-0351	1	#Gauge, Coolant Temperature (M13)	46	526-0049	18	#Washer, Flat (13/64" ID x 7/16" OD x 1/32" Thick)
10	302-1641	1	#Voltmeter - DC (M14)	47	815-0236	2	Screw, Tapping - Hex Head (5/16-18 x 5/8")
11	508-1043	1	Edging (19-1/2")	48	856-1008	2	Washer, Lock - EIT (5/16")
12	815-0544	7	Screw, Machine - Round Head, Cross Recessed, with IT Lockwasher (#6-32 x 1/2")	49	301-7699	1	Bracket, Mounting - Left Hand
13	300-2604	1	Monitor, Engine (A11)	50	301-9784	1	Bracket, Mounting - Right Hand
14	319-0087	1	Face, Control - With Tray Generator Sets with Remote Mounted DC Gauges	51	305-0703	1	Suppressor, Voltage (RV21)
	301-7686	1	# Generator Sets with Control Mounted DC Gauges	52	821-0008	4	Screw, Self-Locking - Hex Washer Head (1/4-20 x 5/16")
15	870-0183	2	Nut, Hex - With ET Lock Washer (#6-32)	53	332-2370	2	Standoff, Insulator (TB1, TB2)
16	320-1140	1	Breaker, Circuit (CB11)	54	815-0346	1	Screw, Machine - Round Head, Brass with ET Lockwasher (#10-32 x 5/8")
17	302-1175	1	*Voltmeter - AC (M21)	55	305-0696	1	Bridge, Rectifier (CR21)
18	301-7951	1	Face, Control Controls Without AC Meters	56	821-0004	4	Screw, Self-Locking - Hex Washer Head (#10-32 x 5/16")
	301-9790	1	* Controls With AC Meters	57	315-0651	1	Transformer, Voltage Regulating (T21)
19	821-0004	4	Screw, Self-Locking - Hex Washer Head (#10-32 x 5/16")	58	320-1207	1	Breaker, Circuit (CB22) 100 Amp, 240 Volt AC
20	301-7684	1	Plate, Cover - Access Controls without AC Breaker	59	338-2048-01	1	* Rectifier Bridge and AC Voltmeter to Exciter Field, Current Transformer, Frequency Meter and Insulator Standoffs
	301-7944	1	Controls with AC Breaker		338-2048-02	1	Rectifier Bridge to Exciter Field and Current Transformer
21	821-0012	2	Screw, Cap - Hex Washer Head (1/4-20 x 1-1/4") Ground Stud		338-1675-04	1	# Generator Sets with Control Mounted DC Gauges
22	821-0008	4	Screw, Cap - Hex Washer Head (1/4-20 x 5/16")		338-1675-06	1	Generator Sets with Remote Mounted DC Gauges
23	307-1166	1	Relay, Solenoid - Start (K11)		338-2184	1	Remote Control Connection (20") (Includes Parts Marked +)
24	302-1720	1	*Meter, Frequency - AC (M22)		338-2757	1	Engine to Control (Spec B)
25	307-1031	1	Relay, Solenoid - Pilot (K13)		338-2798	1	Engine to Control (Spec C,D)
26	518-0437	1	Clip, Holddown		338-2047	1	Engine to Control (Spec E)
27	871-0016	4	Nut, Hex - Brass (1/4-20) Ground Stud	60	323-1325	1	+Cap, Connector (9 Place) (J1)
28	853-0013	2	Washer, Lock - ET (1/4") Ground Stud	61	323-1200	7	+Socket, Female
29	508-0115	1	Grommet - 2-1/2" Hole				
30	302-1468	2	*Ammeter - AC (M23, M24)				
31	871-0010	9	#Nut, Hex - Brass (#10-32)				
32	302-0076	2	*Transformer, Current (CT21, CT22)				
33	332-0941	2	*Tie, Cable				
34	405-3156	2	Insulation				
35	856-0008	2	Washer, Lock - EIT (5/16")				
36	812-0061	4	Screw, Machine - Round Head (#6-32 x 3/8")				
37	821-0014	1	Screw, Locking Head - Flange (5/16-18 x 1/2")				

- Parts Used on Generator Sets with Control Mounted DC Gauges
 * - Parts Used on Controls with AC Meters
 + - Parts Included in 338-2184 Wiring Harness

Remote Control Panel



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
	300-3200	1	Panel Assembly, Remote Control - Complete (Includes Parts Marked +)	7	323-1199	7+*#	Pin, Male (Fifteen and twenty-five foot long remote control to generator set wiring harnesses use a quantity of 8)
1	319-0071	1	+Panel, Control	8	323-1200	7 +#	Socket, Female (Fifteen and twenty-five foot long remote control to generator set wiring harnesses use a quantity of 8)
2	308-0827	1	+Switch, Rocker (S11)	9	193-0319	1	+Gauge, Coolant Temperature (M13) Includes Mounting Hardware
3	302-1641	1	+Voltmeter - DC (M14) Includes Mounting Hardware	10	193-0320	1	+Gauge, Oil Pressure (M12) Includes Mounting Hardware
4	338-2185	1	+ Remote Control Panel (Includes Parts Marked *) Remote Control to Generator Set	11	302-0885	1	+Meter, Time Totalizing (M11)
	338-2321	1	One Foot (Includes Parts Marked #)	12	815-0385	2	+Screw, Machine - Round Head (#6-32 x 1/2")
	338-2237	1	Fifteen Foot (Includes Parts Marked @)	13	870-0183	2	+Nut, Hex - With ET (#6-32)
	338-2238	1	Twenty-Five Foot (Includes Parts Marked @)				
5	323-1291	10+*#	Plug, Connector (9 Place) (P1)				
6	323-1325	1	@+Cap, Connector (9 Place) (J1)				

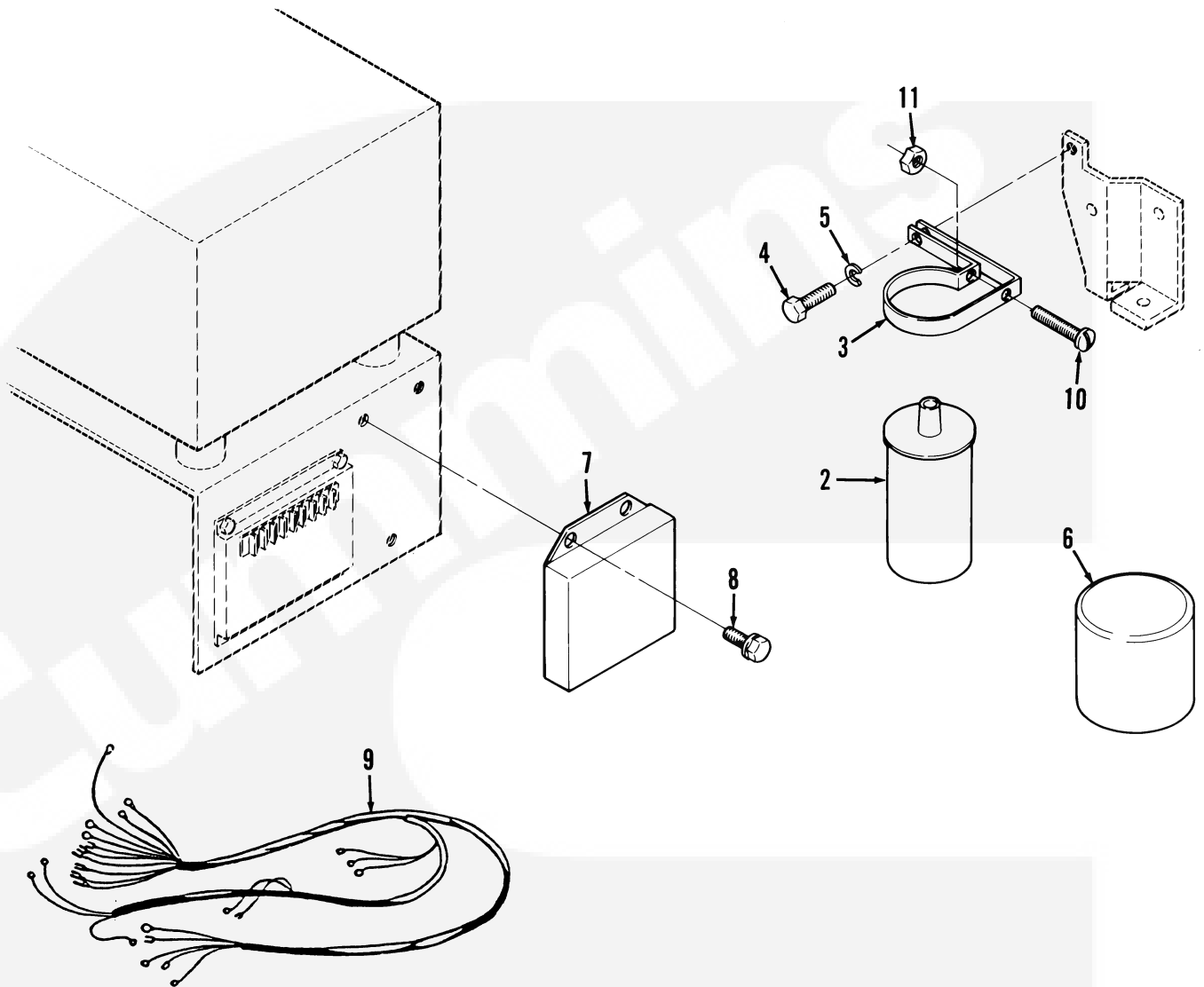
+ - Parts Included in 300-3200 Remote Control Panel Assembly

* - Parts Included in 338-2185 Wiring Harness

- Parts Included in 338-2321 Wiring Harness

@ - Parts Included in 338-2237 and 338-2238 Wiring Harnesses

Ignition



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	166-0733	1	Suppressor, Ignition Coil (Not Illustrated)	7	166-0731	1	Module, Ignition (A13)
2	166-0730	1	Coil, Ignition (T1)	8	821-0010	3	Screw, Self-Locking - Hex Head Flange (1/4-20 x 1/2")
3	166-0734	1	Strap, Ignition Coil	9	166-0728	1	Harness, Wiring - Ignition Module
4	800-2093	1	Screw, Cap - Hex Head (M10 x 60MM)	10	166-0735	1	Screw, Machine - Round Head (#10-32 x 1-5/8")
5	850-2010	1	Washer, Lock - Spring (M10)	11	166-0736	1	Nut, Hex (#10-32)
6	166-0729	1	Shield, Dust - Distributor				

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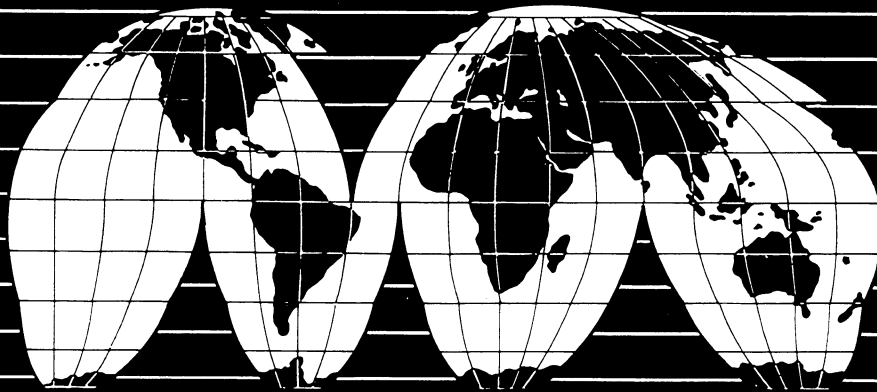
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Onan Corporation
1400 73rd Avenue N.E.
Minneapolis, MN 55432

World Wide **Parts and Service**



Telephone: 1-800-888-ONAN
Telex: 275477
Cable: ONAN
