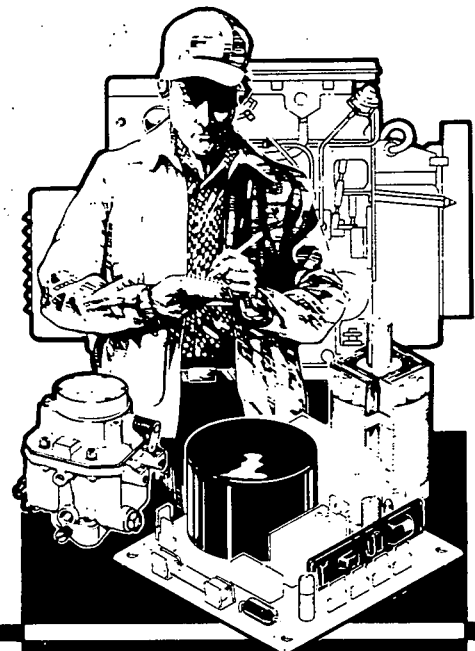

Onan

Parts Manual

DL6T

GenSet



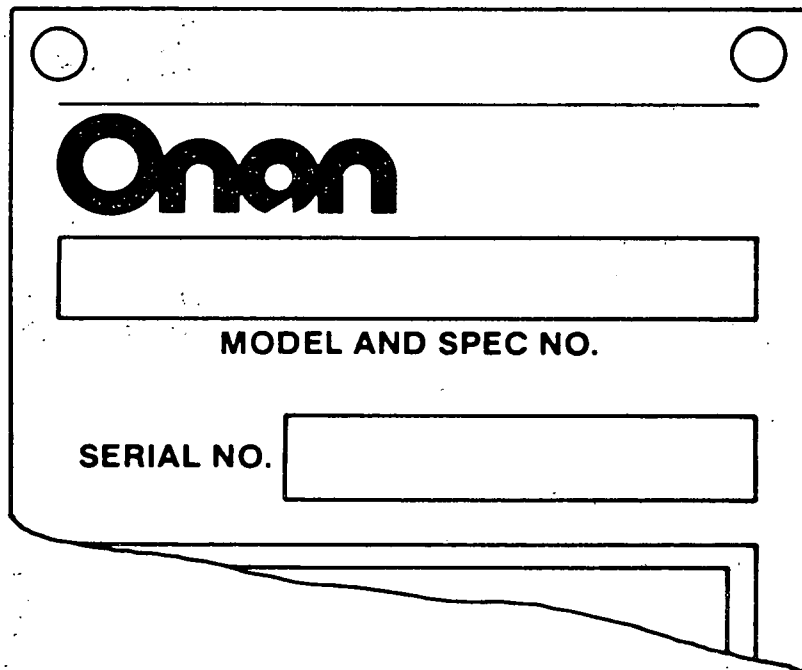
Onan Service Parts

934-0226
3-88 (SPEC A AND B)
Replaces
11-86 (Spec A)
Printed in U.S.A

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A rectangular nameplate template with rounded corners and two circular mounting holes at the top. The Onan logo is at the top left. Below it is a large rectangular box for 'MODEL AND SPEC NO.'. Below that is a smaller rectangular box for 'SERIAL NO.'. The bottom right corner of the nameplate is folded over.

Onan

MODEL AND SPEC NO.

SERIAL NO.

M-1149

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

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Introduction

This parts manual applies to the standard generator sets as listed below. 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. Unless otherwise mentioned in the description or page heading, parts are interchangeable between models. All references in the parts description or page heading that pertain to specification letter differences for replacement parts are for the model listed on the identification label affixed to the generator set control. Throughout this manual left (non-accessory) and right (accessory) sides are determined by facing the rear or generator end of the set.

Set Data Table

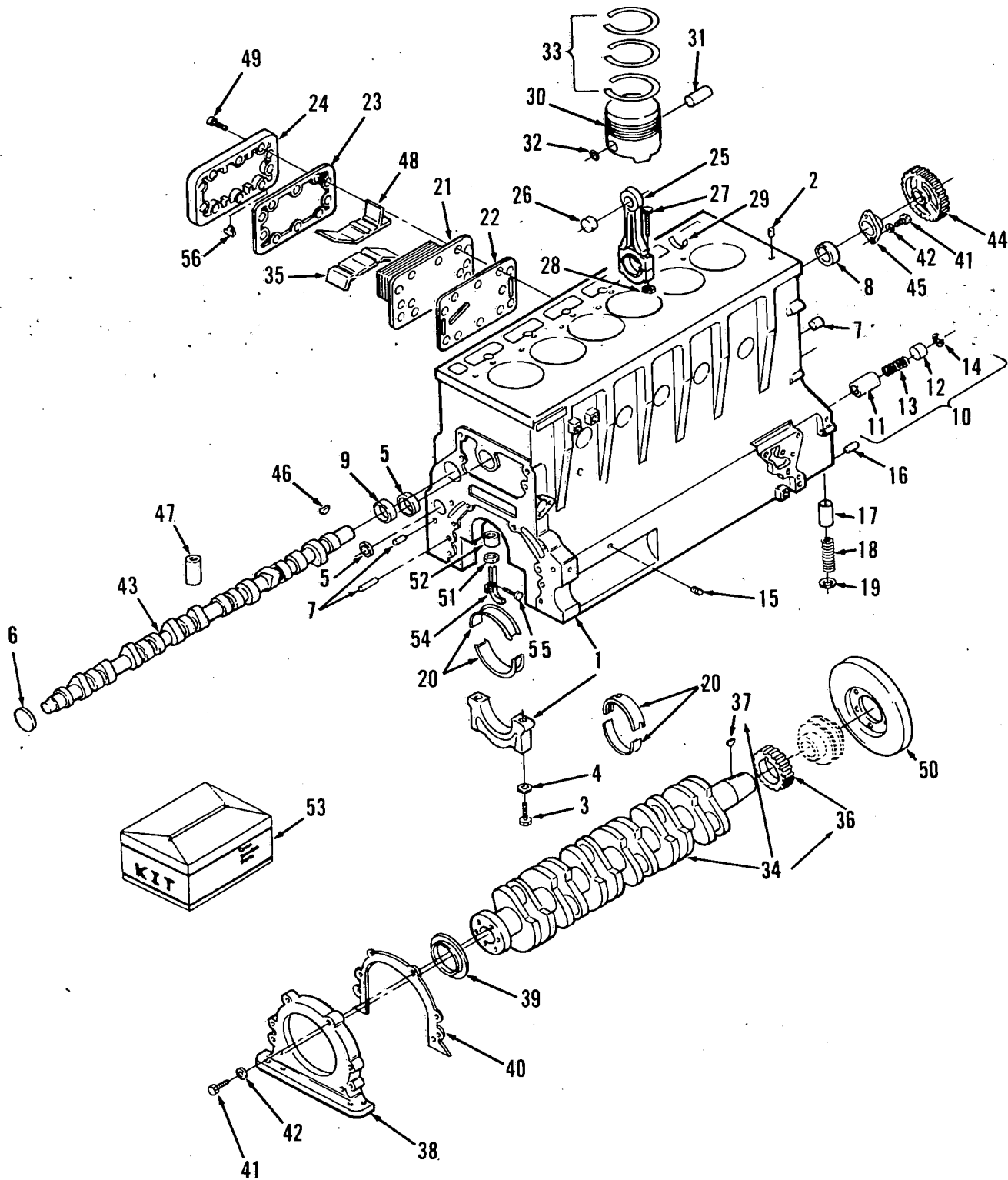
MODEL IDENTIFICATION	RATING	MODEL IDENTIFICATION	RATING
32.0 DL6T-*/#@	32,000 WATTS	40.0 DL6T-*/#@	40,000 WATTS

Electrical Data Table

*VOLTAGE CODES	VOLTS	HERTZ	WIRE	PHASE	NOTES
H (9XR)	347/600	60	4	3	+
L (15R)	120/208	60	12	3	
	120/240				
	127/220				
	139/240				
	240/416				
	254/440				+
Z (515R)	277/480	50	12	3	
	110/190				
	110/220				
	115/200				
	115/230				
	120/208				
	127/220				
	220/380				
	230/400				
	240/416				
	254/440				

- * - Voltage codes follow model letter designations. A letter is now used in the model to indicate the voltage codes and replaces the corresponding number and letter designations (in brackets) as listed in the Electrical Data Table column. (Example: 40.0 DL6T-H/ was formerly 40.0 DL6T-9XR/). The letter designation is used beginning with Spec B models.
- # - Specification number: Number 1 is standard, all others indicate variations.
- @ - Specification letter: Letter advances (A to B, B to C, etc.) with major manufacturing changes.
- + - These generators are reconnectable, refer to Operator's Manual for wiring data.

Cylinder Block



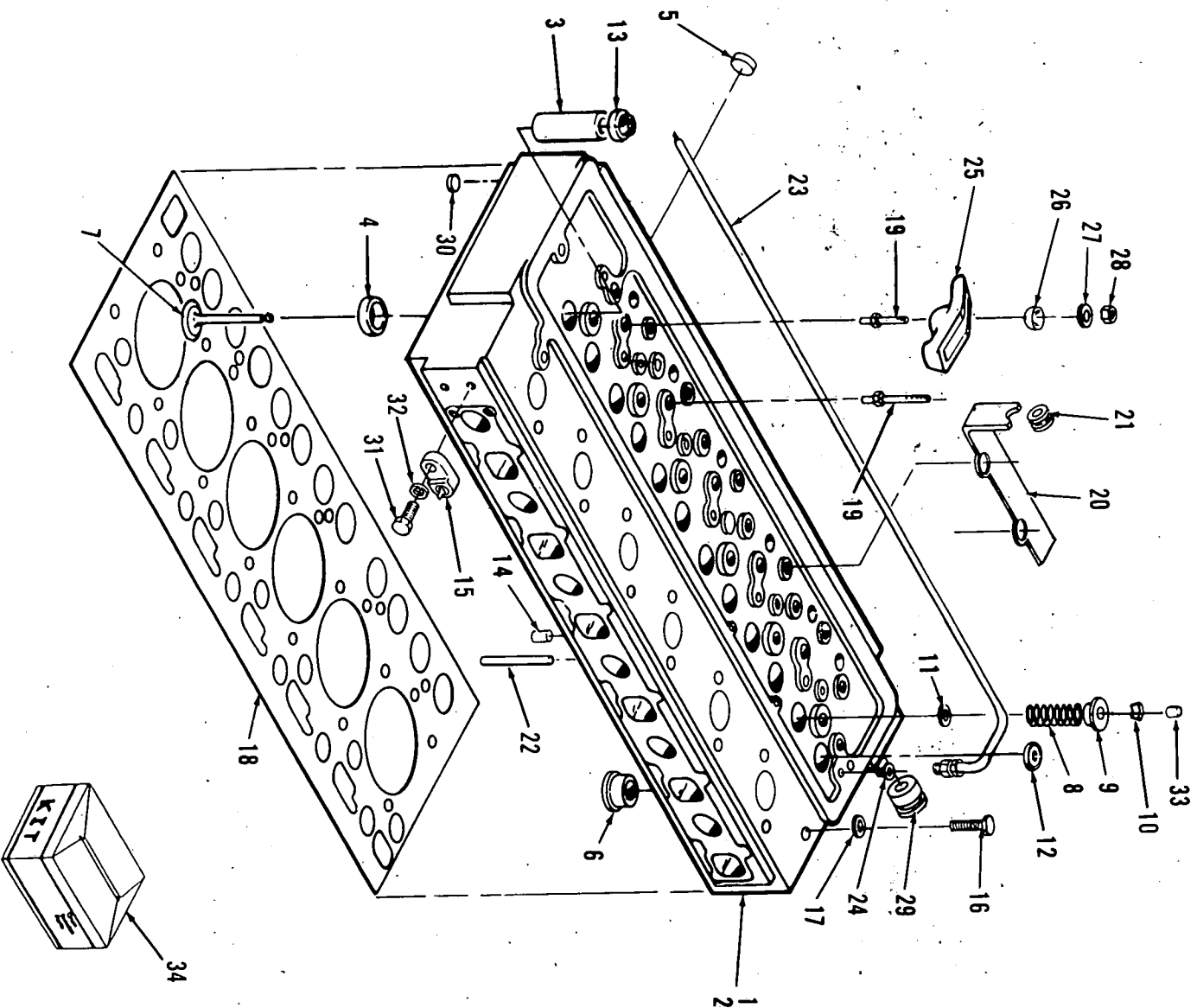
Cylinder Block

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	110-3297	1	Block, Assembly, Cylinder (Includes Parts Marked*)	29	114-0320	12	Bearing, Connecting Rod - Standard (Half)
2	110-2978	2	*Pin, Cylinder Head Alignment	30			Piston and Pin Kit (Includes Retaining Rings)
3	720-1801	14	*Screw, Cap - Hex Head - Special		112-0214	6	Standard
4	740-1801	14	*Washer, Flat - Special		112-0215	6	0.25 MM Oversize
5			Plug, Cup		112-0216	6	0.50 MM Oversize
	517-0141	6	* 50.8 MM Stainless Steel		112-0217	6	0.75 MM Oversize
	517-0144	2	* 12.7 MM Steel		112-0218	6	1.0 MM Oversize
	517-0146	1	* 31.75 MM Stainless Steel	31	112-0165	6	Pin, Piston
	517-0250	1	54.37 MM Stainless Steel (Oversize)	32	518-0409	12	Ring, Retaining - Piston Pin
6	517-0140	1	*Plug, Welch (57.15 MM) Steel	33			Ring Kit, Piston
7			Pin, Alignment		113-0261	6	Standard
	775-0074	2	* 8 MM x 20 MM		113-0262	6	0.25 MM Oversize
	775-0089	2	* 10 MM x 20 MM		113-0263	6	0.50 MM Oversize
	775-0078	2	* 8 MM x 40 MM		113-0264	6	0.75 MM Oversize
8	101-0511	1	*Bearing, Camshaft - Front		113-0265	6	1.0 MM Oversize
9	101-0471	6	*Bearing, Camshaft - Intermediate and Rear	34	104-1576	1	Crankshaft and Gear (Includes Key)
10	123-1613	1	*Valve Assembly, Pressure Relief (Includes Parts Marked +)	35	102-1166	1	Baffle, Oil Cooler - Bottom
11	123-1515	1	+Body, Relief Valve	36	104-1138	1	Gear, Crankshaft
12	123-1514	1	+Piston, Relief Valve	37	515-0245	1	Key - Crankshaft Gear
13	123-1508	1	+Spring, Relief Valve	38	101-0713	1	Plate, Rear Seal (Includes Seal)
14	518-0410	1	+Ring, Retaining	39	509-0203	1	Seal, Oil - Rear (Includes Wear Sleeve)
15			Plug, Pipe	40	101-0600	1	Gasket, Rear Seal Plate
	502-0153	7	* 6.35 MM - Brass	41	718-1037	8	Screw, Cap - Hex Head (M8 x 25 MM)
	505-0274	6	* 3.17 MM - Steel	42	740-1006	8	Washer, Flat (M8)
16	516-2102	1	*Pin, Regulator Valve Spring	43	105-0512	1	Camshaft
17	123-1514	1	*Piston, Regulator Valve	44	105-0515	1	Gear, Camshaft
18	123-1511	1	*Spring, Regulator Valve	45	105-0534	1	Retainer, Camshaft
19	740-1004	1	*Washer, Flat (M6)	46	515-0245	1	Key - Camshaft Gear
20			Bearing Kit, Main (Includes Upper and Lower Bearing Half)	47	115-0275	12	Tappet
	101-0689	1	Front (Standard)	48	102-1167	1	Baffle, Oil Cooler - Top
	101-0681	1	Center (Standard)	49	725-1058	10	Screw, Socket Head (M8 x 66 MM)
	101-0685	4	Intermediate (Except Center) (Standard)	50	104-1485	1	Damper, Crankshaft
	101-0677	1	Rear (Standard)	51	509-0178	6	*Seal, O-Ring
21	102-1024	1	Cooler, Oil	52	110-3235	6	*Sleeve, Cooling Piston
22	102-0973	1	Gasket, Oil Cooler	53	168-0173	1	Kit, Gasket - Lower End
23	102-0975	1	Gasket, Oil Cooler Cover	54	110-3206	6	*Nozzle, Piston Cooling
24	102-1131	1	Cover, Oil Cooler	55	815-0564	6	*Screw, Machine - Buttress Head (M6 x 20 MM)
25	114-0313	6	Rod, Connecting (Includes Finished Bearing, Bolts and Nuts)	56	504-0028	1	Valve, Coolant Drain
26	114-0316	6	Bushing, Connecting Rod (Semi Finished)				
27	114-0315	12	Bolt, Connecting Rod				
28	114-0318	12	Nut, Connecting Rod				

* - Parts Included in 110-3297 Cylinder Block Assembly

+ - Parts Included in 123-1613 Pressure Relief Valve Assembly

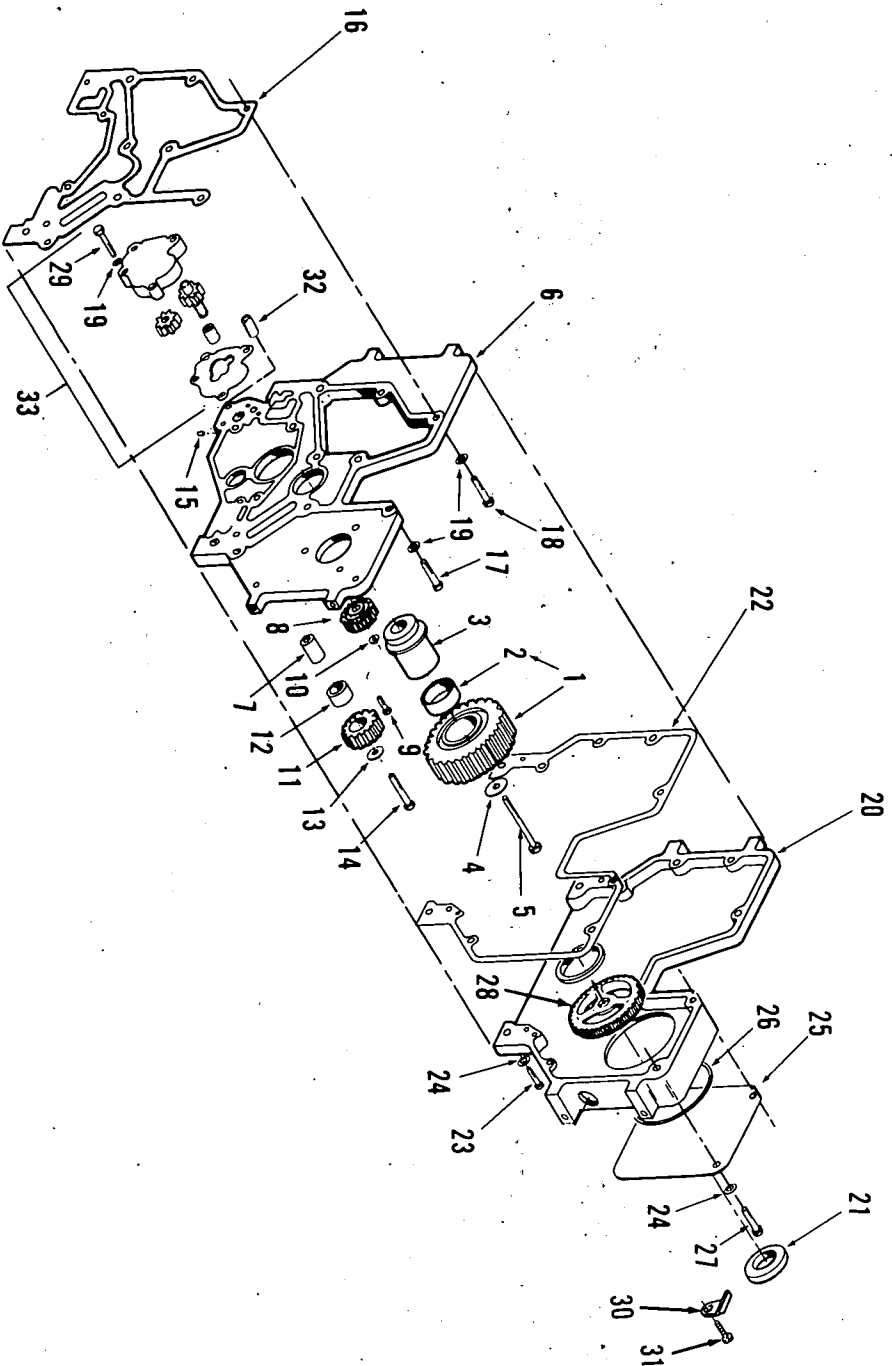
Cylinder Head



Cylinder Head

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	110-3298	1	Head Assembly, Cylinder (Includes Valve Guides, Valve Seats, Cup Plugs, Water Pump Adapter, Rotators, Valves, Springs, Retainers, Collets, Wear Plates, Sleeves and Seals)	12	110-3326	6	Rotator, Valve (Intake) Later Portion of Spec A (Note: Intake and exhaust valve rotators are included with all replacement cylinder heads.)
2	110-3455	1	Head, Cylinder (Includes Water Pump Adapter, Seats, Rotators and Guides)	13	110-3228	12	Seal Assembly, Valve Stem
3			Guide, Valve (Semi Finished)	14	110-2979	6	Sleeve, Sealing
	110-3495	6	Intake (Standard)	15	309-0269	1	Switch, Low Engine Temperature (S5) Controls With 9 Indicator Lights
	110-3496	6	Exhaust (Standard)	16	720-1802	26	Screw, Cap - Hex Head (M12 x 20 MM)
4			Seat, Valve	17	740-1801	20	Washer, Flat (M12)
			Intake	18	110-3225	1	Gasket, Cylinder Head
	110-3226-01	6	Standard	19			Stud, Rocker Arm
	110-3226-02	6	.25 MM Oversize		115-0204	6	Short
	110-3226-03	6	.50 MM Oversize		115-0270	6	Long
			Exhaust	20	115-0313	3	Guide, Pushrod
	110-2781-01	6	Standard	21	508-0228	3	Grommet
	110-2781-02	6	.25 MM Oversize	22	115-0253	12	Pushrod
	110-2781-03	6	.50 MM Oversize	23	120-0920	1	Tube, Rocker Arm Oil
5			Plug, Cup	24	502-0003	1	Connector, Inverted Male
	517-0142	11	38.1 MM	25	115-0316	12	Arm, Rocker
	517-0146	4	31.75 MM	26	115-0202	12	Ball, Rocker Arm
	517-0162	6	19.05 MM	27	526-2119	12	Washer, Flat
6	110-3039	6	Plug, Hot (Swirl)	28	115-0315	12	Locknut, Rocker Arm
7			Valve	29			Adapter, Water Pump
	110-3218	6	Intake		110-3045	1	Standard
	110-3260	6	Exhaust		110-3490	1	0.5 MM Oversize
8	110-3300	12	Spring, Valve	30	517-0167	1	Plug, Cup (22.6 MM)
9	110-3015	12	Retainer, Valve Spring	31	800-2085	1	Screw, Cap - Hex Head (M10 x 20 MM)
10	110-2752	24	Collet, Valve Lock	32	740-1008	1	Washer, Flat (M10)
11			Plate, Valve Spring Wear	33	110-3245	12	Cap, Valve Stem (Not used on some early models)
	110-2991	12	Early Portion of Spec A	34	168-0174	1	Kit, Gasket - Valve Grind
	110-2991	6	Later Portion of Spec A (Exhaust)				

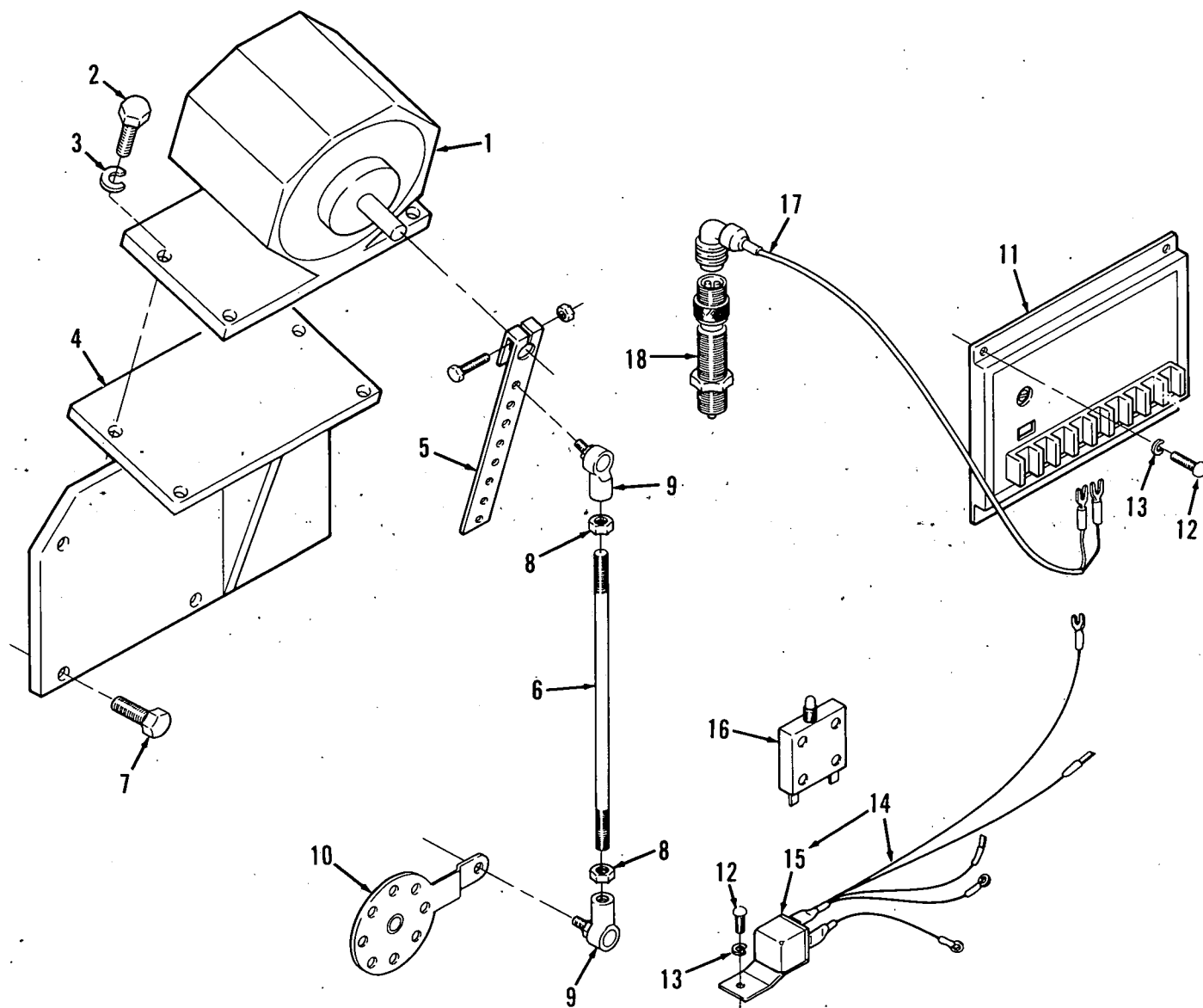
Gearcase



Gearcase

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	105-0513	1	Gear, Idler (Includes Finished Bearing)	19	740-1006	11	Washer, Flat (M8)
2	105-0519	1	Bearing, Idler Gear (Semi Finished)	20	103-0746	1	Gearcase (Includes Oil Seal and Oil Fill Tube)
3	105-0508	1	Shaft, Idler Gear	21	509-0191	1	Seal, Oil (Includes Wear Sleeve)
4	526-2127	1	Washer, Flat (M10)	22	103-0731	1	Gasket, Gearcase
5	718-1064	1	Screw, Cap - Hex Head (M10 x 75 MM)	23	718-1046	2	Screw, Cap - Hex Head M8 x 70 MM
6	103-0716	1	Backplate, Gearcase		718-1043	5	M8 x 55 MM
7	120-0983	1	Shaft, Oil Pump Idler Gear	24	740-1006	4	Washer, Flat M8
8	120-0885	1	Gear, Oil Pump Drive		740-1010	4	M12
9	718-1035	1	Screw, Cap - Hex Head (M8 x 16 MM)	25	103-0735	1	Cover, Injection Pump Gear
10	526-2106	1	Washer, Flat	26	509-0263	1	Seal, O-Ring
11	120-1063	1	Gear, Oil Pump Idler (Includes Finished Bearing)	27	718-1048	1	Screw, Cap - Hex Head M8 x 80 MM
12	120-1041	1	Bearing, Oil Pump Idler Gear (Semi Finished)		718-1044	2	M8 x 60 MM
13	526-2107	1	Washer, Flat		718-1036	1	M8 x 20 MM
14	718-1035	1	Screw, Cap - Hex Head (M8 x 16 MM)	28	147-0427	1	Gear, Injection Pump
15	725-1802	1	Screw, Hex Socket Set (M16 x 16 MM)	29	718-1044	2	Screw, Cap - Hex Head (M8 x 60 MM)
16	103-0733	1	Gasket, Gearcase Backplate	30	103-0750	1	Plate, Timing
17	718-1037	1	Screw, Cap - Hex Head M8 x 25 MM	31	815-0578	2	Screw, Cap - Hex Head (M6 x 14 MM)
	718-1039	2	M8 x 35 MM	32	120-0979	1	Bearing, Oil Pump Drive Shaft
18	725-1801	2	Screw, Low Socket Head Cap (M8 x 16 MM)	33	120-1091	1	Pump Kit, Oil (Includes Drive Shaft Bearing)

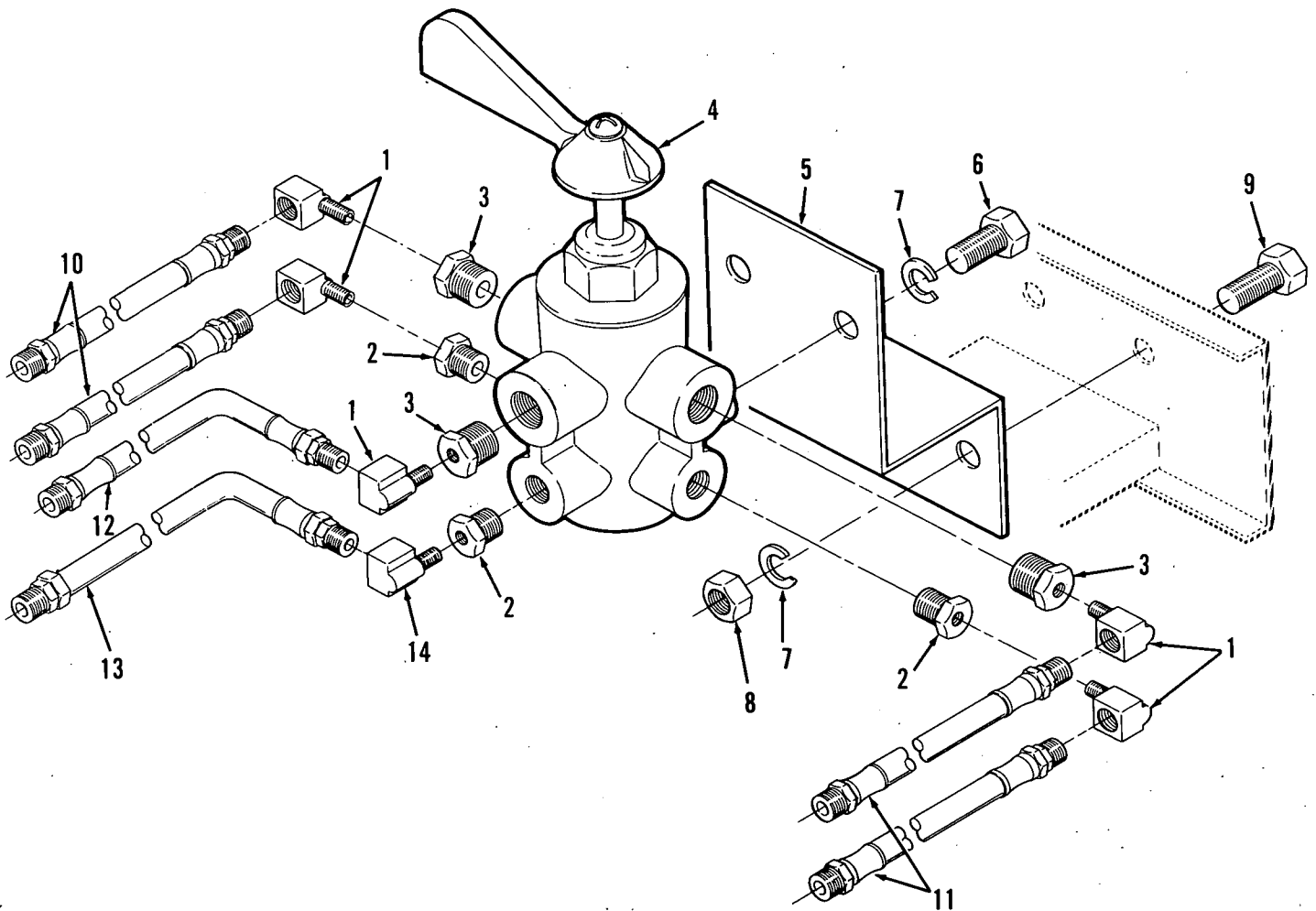
Electronic Governor



REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	151-0566	1	Actuator, Governor
2	800-0006	4	Screw, Cap - Hex Head (1/4-20 x 7/8")
3	850-0040	4	Washer, Lock - Spring (1/4")
4	150-1996	1	Bracket, Mounting
5	151-0567	1	Arm, Governor (Includes Screw and Nut)
6	150-1923	1	Rod, Governor Control
7	800-2071	4	Screw, Cap - Hex Head (M8 x 90 MM)
8	870-0131	2	Nut, Hex - with ET (#10-32)
9	150-0939	2	Joint, Ball
10	151-0437	1	Kit, Throttle Modification (Fuel Injection Pump)

REF NO.	PART NO.	QTY USED	PART DESCRIPTION
11	151-0565	1	Control, Governor (A12) (Includes Jumper)
12	813-0103	5	Screw, Machine - Round Head (#10-32 x 3/4")
13	850-0030	5	Washer, Lock - Spring (#10)
14	338-1705	1	Harness, Wiring - Includes Relay
15	307-1886	1	Relay
16	320-0540	1	Breaker, Circuit - 15 Amp (CB13) Includes Mounting Nuts
17	338-1765-01	1	Cable, Magnetic Pickup (60")
18	151-0603-02	1	Sensor, Magnetic Speed

Fuel Valve



REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	502-0002	5	Elbow, Inverted Male - 90°
2	505-0395	3	Bushing, Reducer (3/8" to 1/8")
3	505-0151	3	Bushing, Reducer (1/2" to 1/8")
4	504-0161	1	Valve, Fuel
5	159-1170	1	Bracket, Mounting
6	800-0048	2	Screw, Cap - Hex Head (3/8-16 x 3/4")
7	850-0050	4	Washer, Lock - Spring (3/8")
8	862-0003	2	Nut, Hex (3/8-16)

REF NO.	PART NO.	QTY USED	PART DESCRIPTION
9	800-0049	2	Screw, Cap - Hex Head (3/8-16 x 7/8")
10	501-0066	2	Line, Fuel (31") To Skid Fuel Tank Inlet and Outlet
11	501-0027	2	Line, Fuel (48") To Auxiliary Fuel Tank Inlet and Outlet
12	501-0007	1	Line, Fuel (24") To Engine Fuel Pump Inlet
13	501-0010	1	Line, Fuel (42") To Fuel Injection Pump Return
14	502-0020	1	Elbow, Street - 90°

This diagram illustrates the assembly of a fuel system. The main components are numbered as follows:

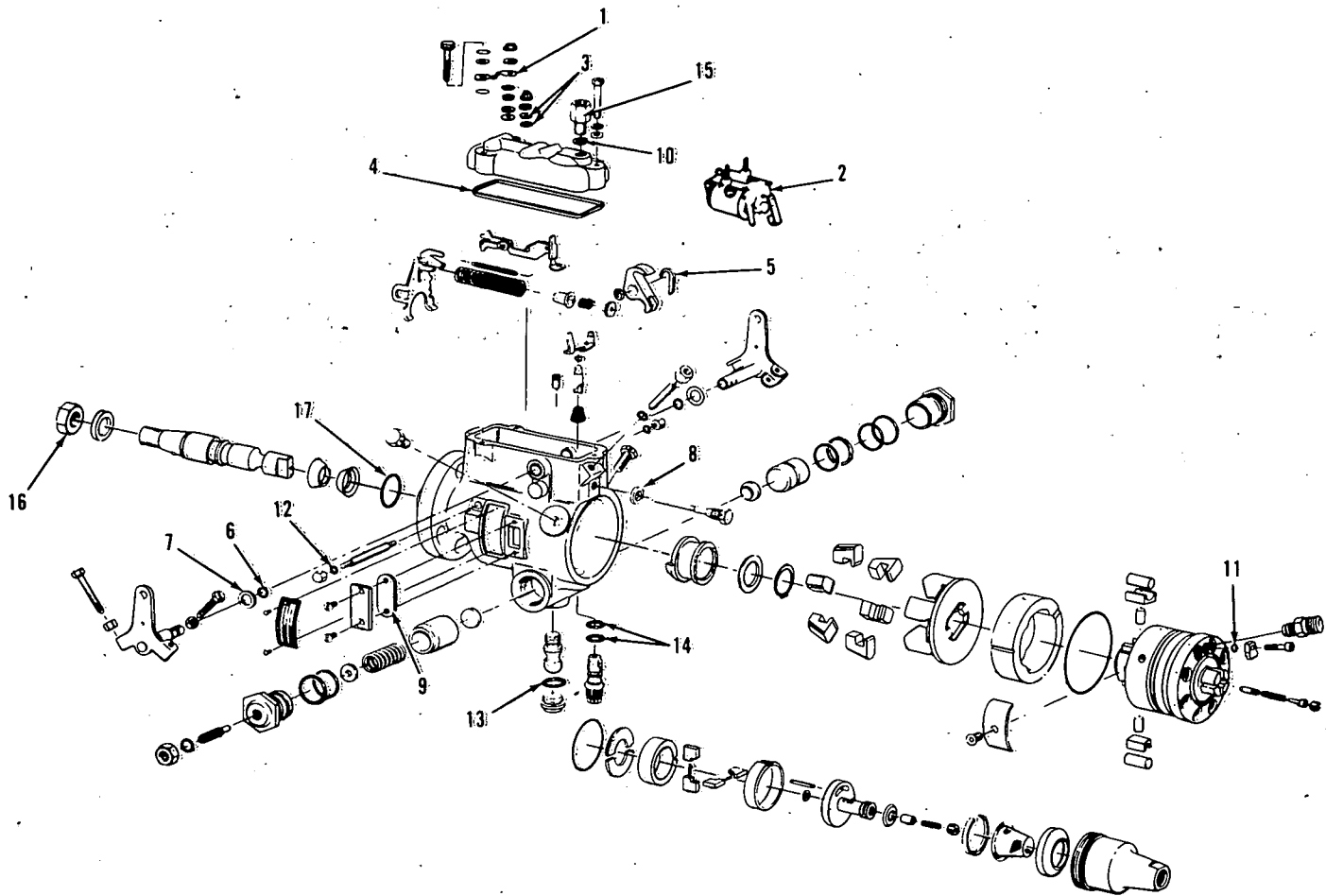
- 1**: Fuel pump assembly
- 2**: Mounting bracket for the pump
- 3**: Nut
- 4**: Washer
- 5**: Fuel line
- 6**: Fuel line
- 7**: Fuel line
- 8**: Fuel line
- 9**: Fuel filter
- 10**: O-ring
- 11**: Fuel line connector
- 12**: Fuel line
- 13**: Fuel line connector
- 14**: Fuel line
- 15**: Fuel line
- 16**: Fuel line
- 17**: Fuel line
- 18**: Fuel line

The diagram shows the fuel pump (1) mounted on a bracket (2) with nuts (3) and washers (4). Fuel lines (5, 6, 7, 8, 12, 14, 15, 18) are connected to the pump and other components using various connectors (11, 13) and a fuel filter (9). An inset shows the assembly of the fuel filter (9) with a nut (16) and a washer (17).

Fuel Injection

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	147-0465-02	1	Pump, Fuel Injection (See Separate Page for Components)	16			Washer, Injection Nozzle Shim
2	520-2403	3	Stud, Injection Pump (M8)	147-0617	As Req.	0.80 MM	
3	526-2106	3	Washer, Flat (M8)	147-0618	As Req.	0.84 MM	
4	750-1006	3	Nut, Hex (M8)	147-0619	As Req.	0.88 MM	
5	147-0666	1	Line, Fuel Injection (No. 1)	147-0620	As Req.	0.92 MM	
6	147-0667	1	Line, Fuel Injection (No. 2)	147-0621	As Req.	0.96 MM	
7	147-0668	1	Line, Fuel Injection (No. 3)	147-0622	As Req.	1.00 MM	
8	147-0669	1	Line, Fuel Injection (No. 4)	147-0623	As Req.	1.04 MM	
9	147-0701	6	Injector, Fuel (Includes Seal)	147-0624	As Req.	1.08 MM	
10	147-0436	6	Seal, Injector	147-0625	As Req.	1.12 MM	
11			Clamp, Fuel Line	147-0626	As Req.	1.16 MM	
	147-0672	3	Clamps Two Lines	147-0627	As Req.	1.20 MM	
	147-0673	2	Clamps Three Lines	147-0628	As Req.	1.24 MM	
	147-0674	1	Clamps Six Lines	147-0629	As Req.	1.28 MM	
12	502-0733	1	Connector	147-0630	As Req.	1.32 MM	
13	502-0057	1	Tee, Pipe - Special	147-0631	As Req.	1.36 MM	
14	147-0670	1	Line, Fuel Injection (No. 5)	147-0632	As Req.	1.40 MM	
15	147-0671	1	Line, Fuel Injection (No. 6)	147-0633	As Req.	1.44 MM	
				147-0634	As Req.	1.48 MM	
				147-0635	As Req.	1.52 MM	
				147-0636	As Req.	1.56 MM	
				147-0637	As Req.	1.60 MM	
				147-0638	As Req.	1.64 MM	
				147-0639	As Req.	1.68 MM	
				147-0640	As Req.	1.72 MM	
				147-0641	As Req.	1.76 MM	
				147-0642	As Req.	1.80 MM	
				147-0643	As Req.	1.84 MM	
				147-0644	As Req.	1.88 MM	
				147-0645	As Req.	1.92 MM	
				147-0646	As Req.	1.96 MM	
				17	147-0647	6	Tip, Nozzle
				18	501-0094	1	Line, Flexible Fuel - 60" (Fuel Return)

Fuel Injection Pump Components

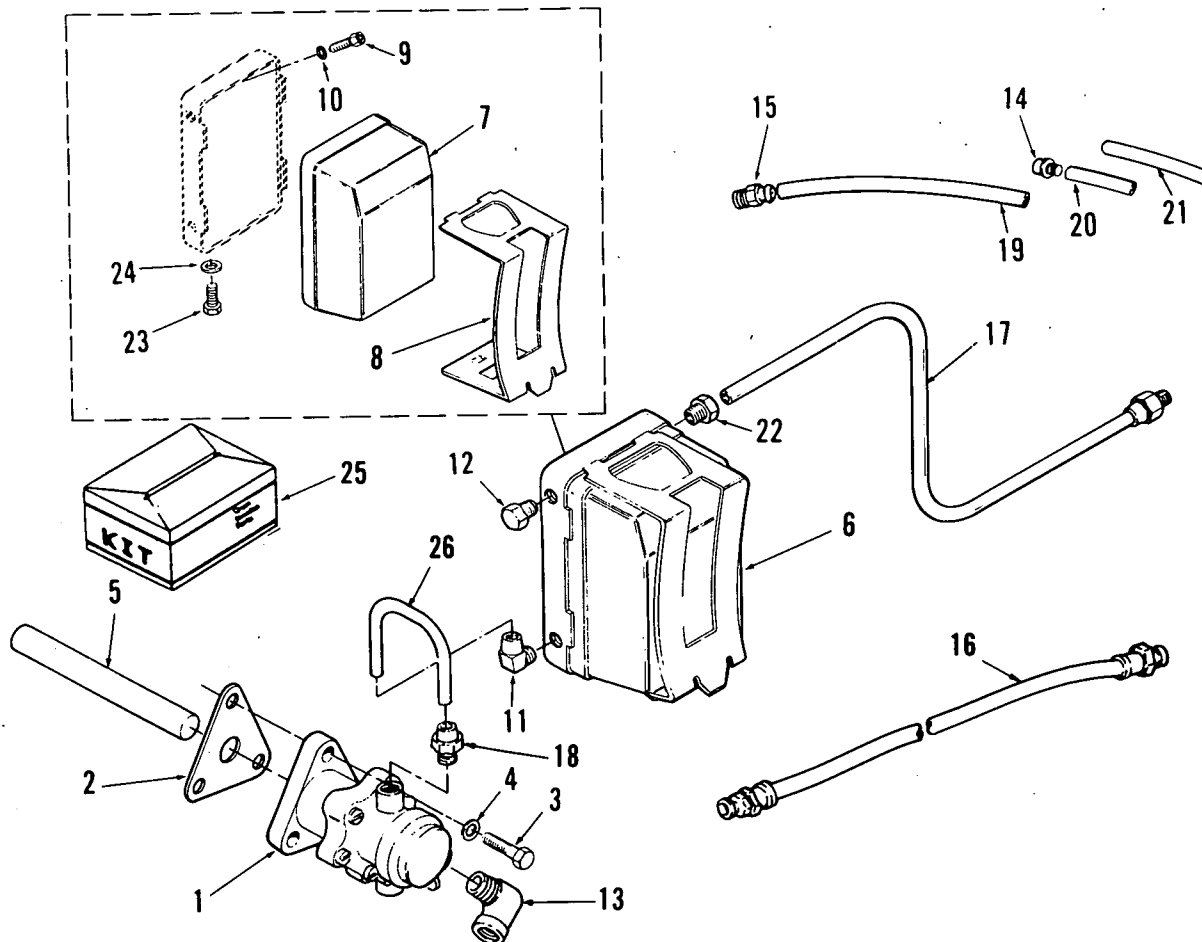


FS-1384

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
	147-0465-02	1	Pump, Fuel Injection - Complete	11	147-0583	1	Seal, Locking Plate
1	147-0592	1	Strap, Terminal Grounding	12	147-0582	2	Seal, Pivot Shaft
2	147-0593	1	Solenoid and Frame Kit	13	147-0581	1	Seal, Advance Screw Hole Plug
3	147-0591	2	Washer, Terminal Insulating	14	147-0580	2	Seal, Head Locating Screws
4	147-0590	1	Gasket, Governor Cover	15	147-0579	1	Connector, Return Line
5	147-0589	1	Clip, Shaft Retaining	16	147-0578	1	Nut, Drive Shaft
6	147-0588	2	Seal, Throttle Shaft	17	509-0265	1	Seal, Pilot Tube
7	147-0587	2	Washer, Throttle Shaft Seal				
8	147-0586	1	Washer, Guide Stud				
9	147-0585	1	Gasket, Timing Line Cover				
10	147-0584	1	Seal, Return Line Connector				

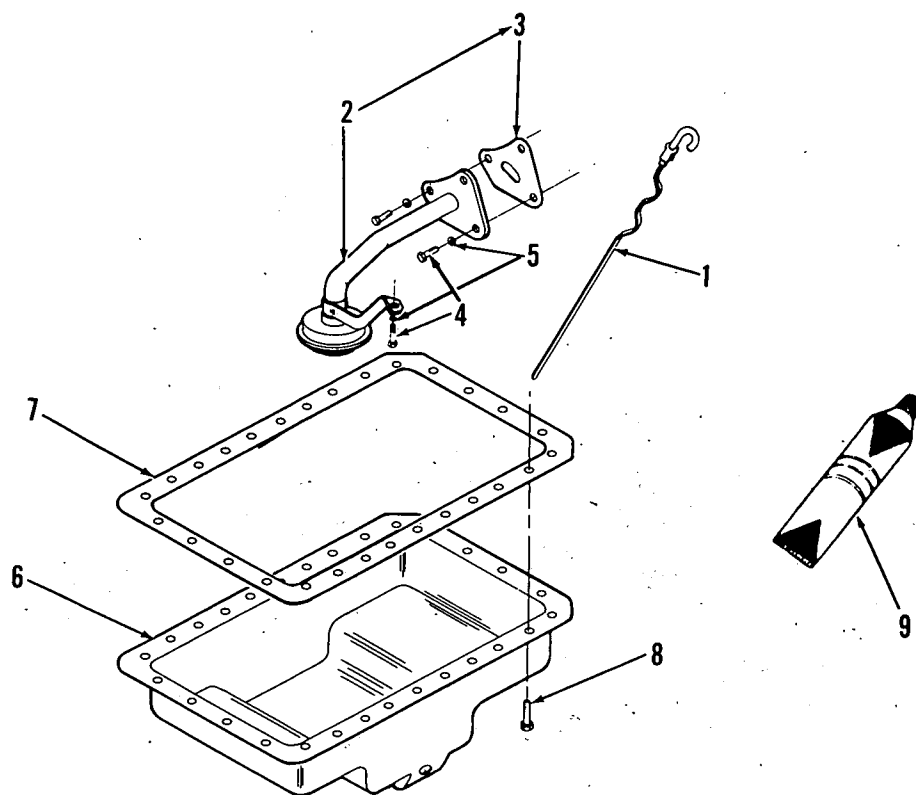
NOTE: For component parts not listed contact manufacturer shown on nameplate.

Fuel System



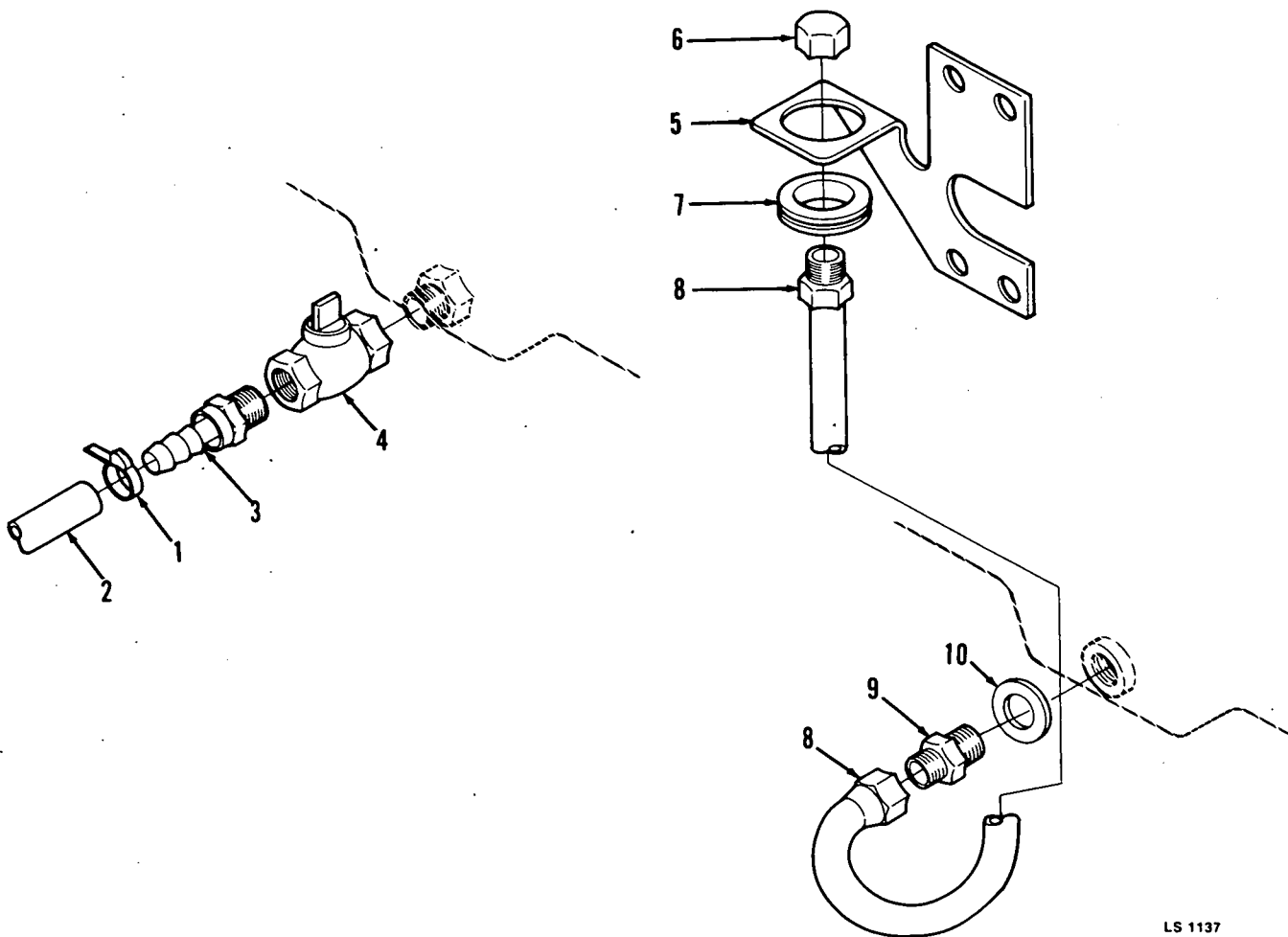
REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1			Kit, Fuel Transfer Pump (Includes Mounting Gasket)	17	149-1796	1	Line, Fuel
	149-2067	1	Used During Early Portion of Spec A (Pump Inlet and Outlet 60" Apart)	18			Fitting, Transfer Pump Outlet (Includes Sleeve and Nut)
	149-2068	1	Used During Later Portion of Spec A (Pump Inlet and Outlet 120" Apart)		502-0774	1	Elbow, Flareless Tube (Used During Early Portion of Spec A)
2	149-1728	1	Gasket, Fuel Transfer Pump		502-0773	1	Connector, Flareless Tube (Used During Later Portion of Spec A)
3	718-1021	3	Screw, Cap - Hex Head (M6 x 20 MM)	19	503-1055	1	Line, Fuel Return (Flexible) 380 MM Long
4	740-1004	3	Washer, Flat (M6)	20	503-1054	1	Line, Fuel Return (Flexible) 25 MM Long
5	149-1732	1	Pushrod, Fuel Transfer Pump	21	503-1053	5	Line, Fuel Return (Flexible) 180 MM Long
6	149-1755	1	Filter Assembly (Includes Filter, Base, Clamp, Drain Plug, Drain Seal and Plugs)	22	502-0773	1	Connector, Flareless Tube Fitting (Includes Sleeve and Nut)
7	149-1754	1	Filter, Fuel				Plug, Filter Drain
8	149-1801	1	Clamp, Fuel Filter	23	149-1835	1	Gasket, Filter Drain Plug
9	725-1074	2	Screw, Cap - Socket Head (M10 x 20 MM)	24	149-1836	1	Repair Package - Fuel Pump
10	740-1008	2	Washer, Flat (M10)	25	149-2069	1	Line, Fuel
11	502-0774	1	Elbow, Flareless Tube Fitting (Includes Sleeve and Nut)	26			Used During Early Portion of Spec A (Used With 149-2067 Fuel Transfer Pump)
12	502-0153	2	Plug, Pipe (1/4")		149-1797	1	
13	502-0054	1	Elbow, Pipe (Use Began During Later Portion of Spec A)				Used During Later Portion of Spec A (Used With 149-2068 Fuel Transfer Pump)
14	502-0736	1	Plug		149-2002	1	
15	502-0738	1	Connector, Male				
16	501-0441	1	Line, Flexible Fuel - 40" (Fuel Supply)				

Oil Pan



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	123-1582	1	Indicator, Oil Level	6	102-1190	1	Pan, Oil (Includes Plug and Plug Gasket)
2	120-1088	1	Pickup Kit, Oil (Includes Gasket)	7	102-1036	1	Gasket, Oil Pan - Spec A
3	120-0917	1	Gasket, Oil Pickup	8	815-0722	36	Screw, Cap - Hex Head (Includes Washer)
4	718-1036	2	Screw, Cap - Hex Head M8 x 20 MM				
	718-1048	2	M8 x 80 MM				
5	740-1006	4	Washer, Flat (M8)	9	541-0286	1	Kit, RTV Sealant - Oil Pan Mounting - Spec B

Oil Drain Hardware



LS 1137

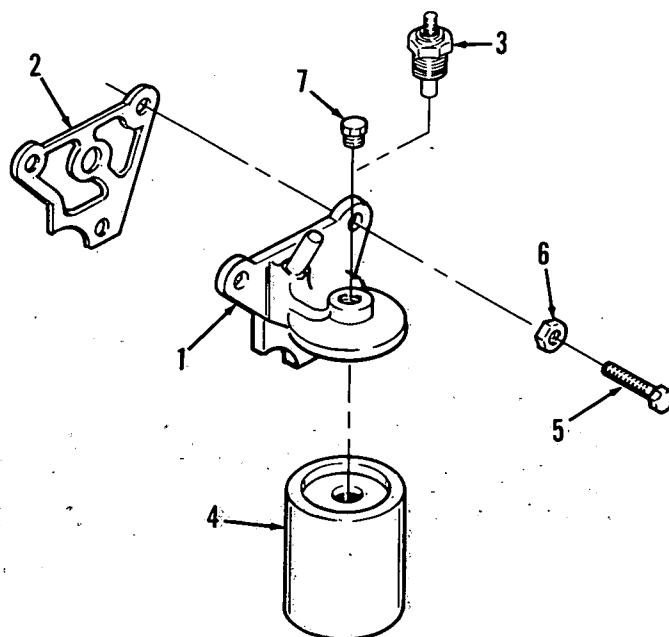
REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	503-0382	1	*Clamp, Hose
2	503-1069	1	*Hose, Oil Drain (14")
3	502-0415	1	*Adapter, Pipe to Hose
4	504-0011	1	*Valve, Shutoff
5	102-1235	1	#Bracket, Oil Drain
6	502-0876	1	#Cap, Pipe
7	508-0250	1	#Grommet

REF NO.	PART NO.	QTY USED	PART DESCRIPTION
8	501-0482	1	#Line, Oil Drain (24")
9	102-1237	1	#Adapter, Oil Drain
10	102-1147	1	#Gasket

* - Used during early portion of Spec A

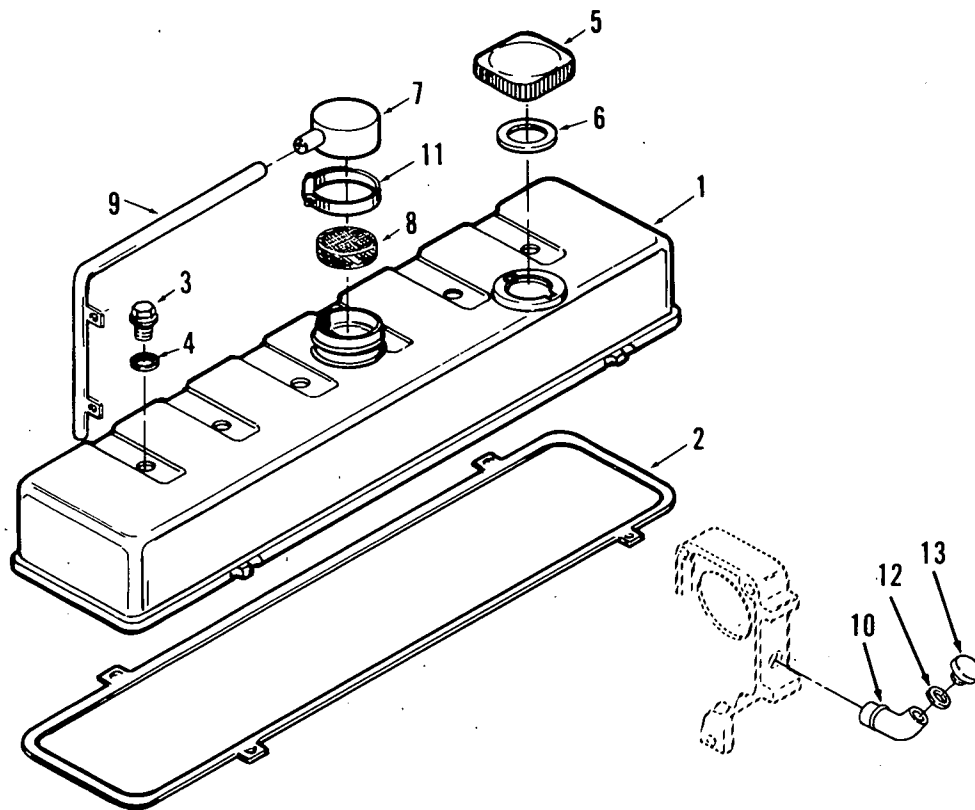
- Use began during later portion of Spec A

Oil Filter



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	122-0613	1	Adapter, Oil Filter (Includes Gasket)	4	122-0550	1	Filter, Oil
2	122-0635	1	Gasket, Adapter	5	718-1037	3	Screw, Cap - Hex Head (M8 x 25 MM)
3	193-0353	1	Sender, Oil Temperature (E3) Controls With 2 Indicator Lights and Oil Temperature Gauge	6	526-2108	3	Washer, Flat (M8)
				7	505-0274	1	Plug, Pipe - Countersunk (1/8")

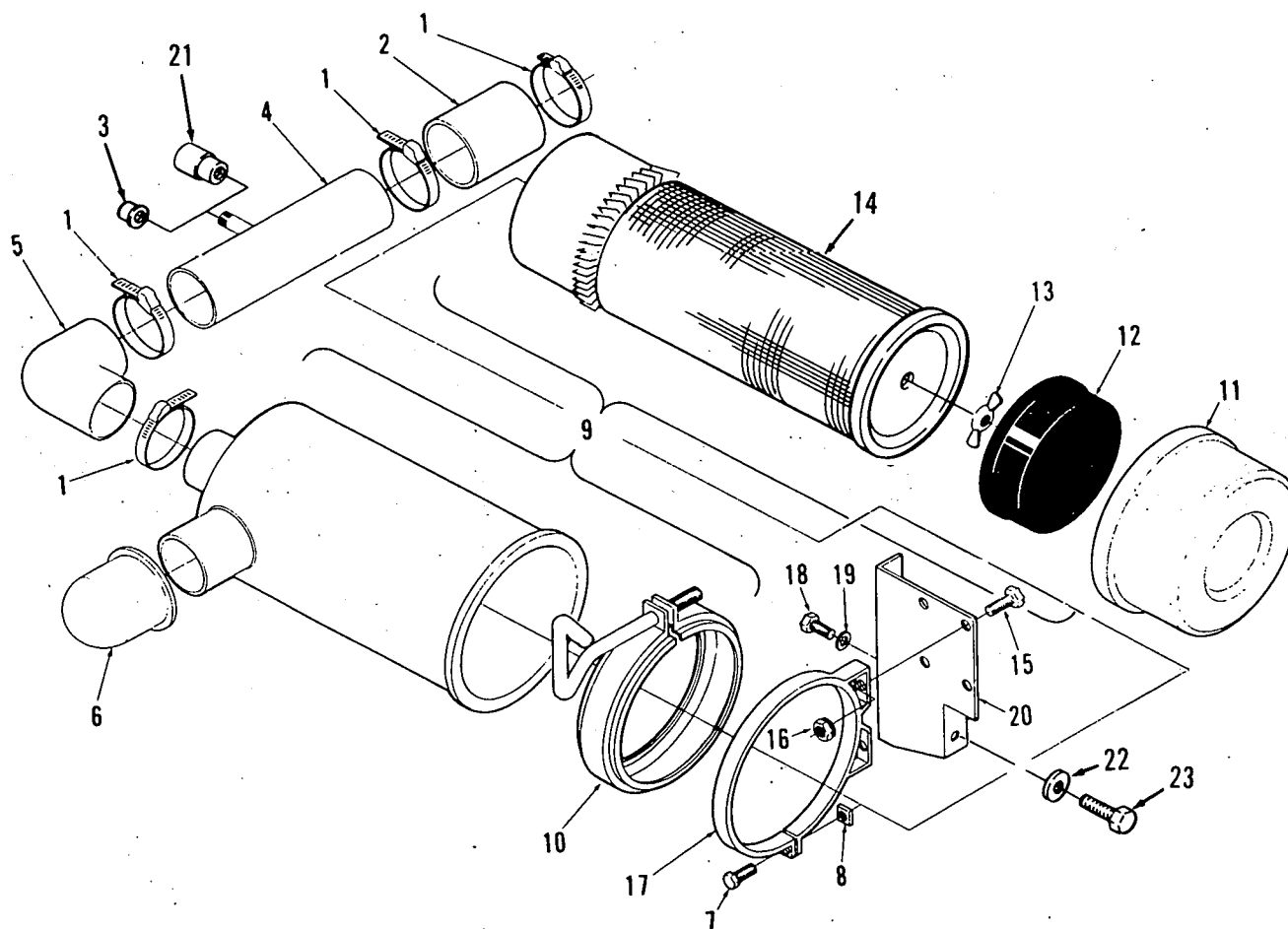
Oil Fill



LS-1119

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	115-0347	1	Kit, Rocker Cover	7	123-1583	1	Cover, Breather
2	115-0244	1	Gasket, Rocker Cover	8	123-1675	1	Element, Breather
3	115-0320	6	Capnut, Rocker Cover	9	123-1589	1	Tube, Breather
4	115-0232	6	Gasket, Capnut	10	123-1558	1	Tube, Oil Fill
5	123-1605	1	Cap, Oil Fill (Includes Gasket)	11	503-1143	1	Clamp, Hose
6	123-1518	1	Gasket, Oil Fill Cap	12	509-0142	1	Seal, O-Ring
				13	123-1647	1	Cap, Oil Fill

Air Cleaner

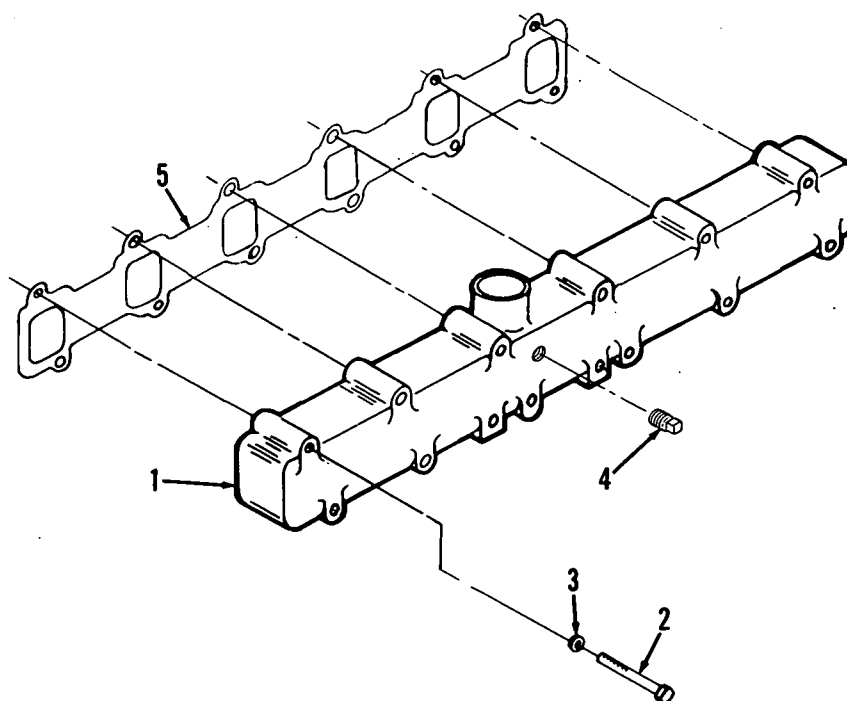


REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	503-0465	4	Clamp, Hose
2	503-0482	1	Hose, Rubber
3	505-0001	1	Cap, Pipe (1/8")
4	140-1871	1	Tube, Air Inlet
5	140-1864	1	Elbow, Rubber
6	140-1787	1	Cap, Air Cleaner
7	815-0115	2	Screw, Machine - Fillister Head (1/4-20 x 1")
8	863-0002	2	Nut, Square (1/4-20)
9	140-1786	1	Cleaner Assembly, Air (Includes Parts Marked *)
10	140-1437	1	*Clamp, Air Cleaner
11	140-1438	1	*Cup, Air Cleaner
12	140-1439	1	*Baffle, Air Cleaner
13	140-1436	1	*Nut Assembly, Wing
14	140-1204	1	*Element, Air Cleaner

REF NO.	PART NO.	QTY USED	PART DESCRIPTION
15	821-0014	4	Screw, Self-locking - Hex Washer Head (5/16-18 x 1/2")
16	870-0257	4	Nut, Lock - Hex Washer Head (5/16-18)
17	140-0078	2	Band, Mounting
18	718-1073	1	Screw, Cap - Hex Head (M12 x 25 MM)
19	740-1010	1	Washer, Flat (M12)
20	140-1868	1	Bracket, Mounting
21	140-0961	1	Indicator, Service
22	740-1008	2	Washer, Flat (M10)
23	718-1053	2	Screw, Cap - Hex Head (M10 x 20 MM)

* - Parts Included in 140-1786 Air Cleaner Assembly

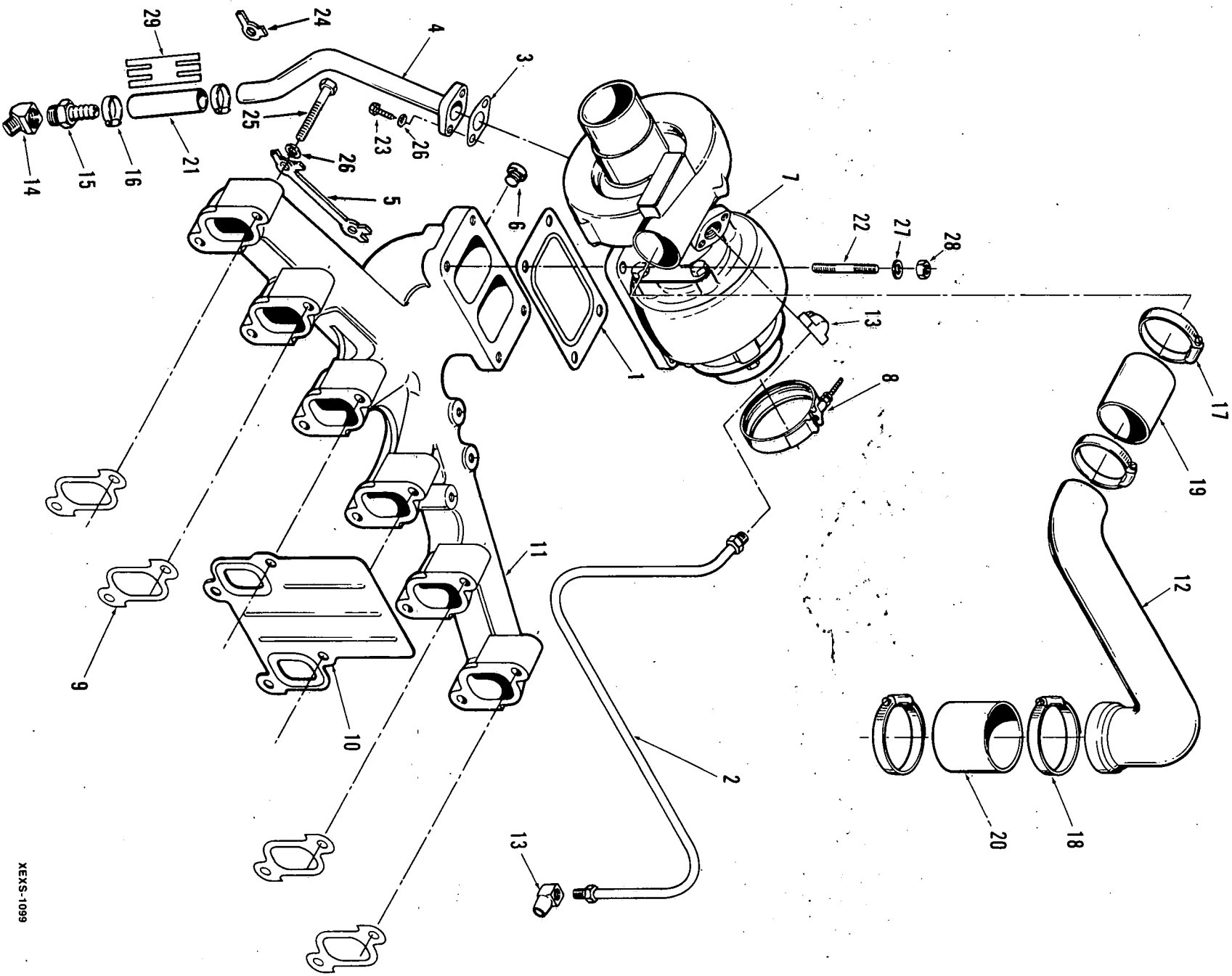
Intake Manifold



REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	154-2461	1	Manifold, Intake
2	718-1801	12	Screw, Cap - Hex Head (M8 x 85 MM)

REF NO.	PART NO.	QTY USED	PART DESCRIPTION
3	740-1006	12	Washer, Flat (M8)
4	505-0274	1	Plug, Pipe (1/8")
5	154-2300	1	Gasket, Intake Manifold

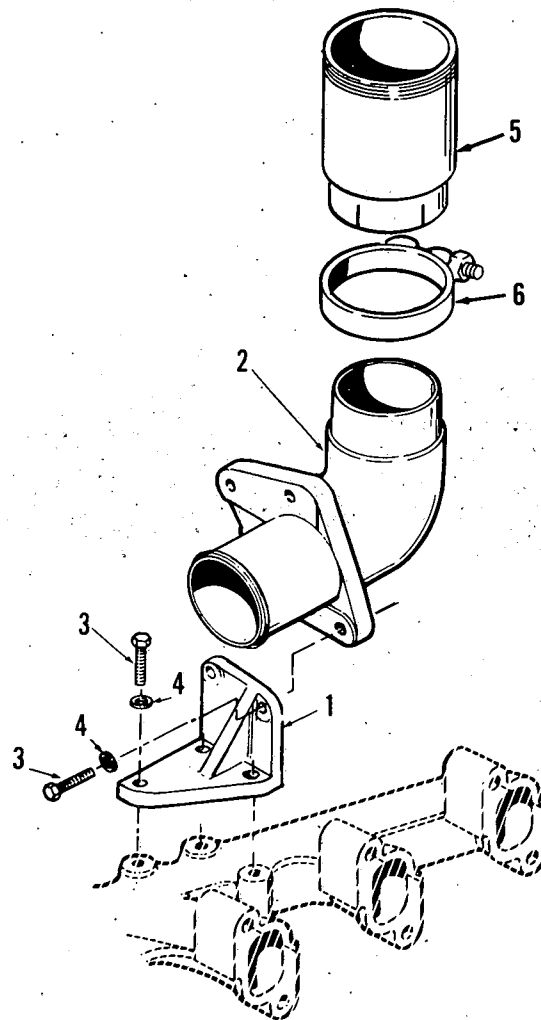
Exhaust Manifold and Turbocharger



Exhaust Manifold and Turbocharger

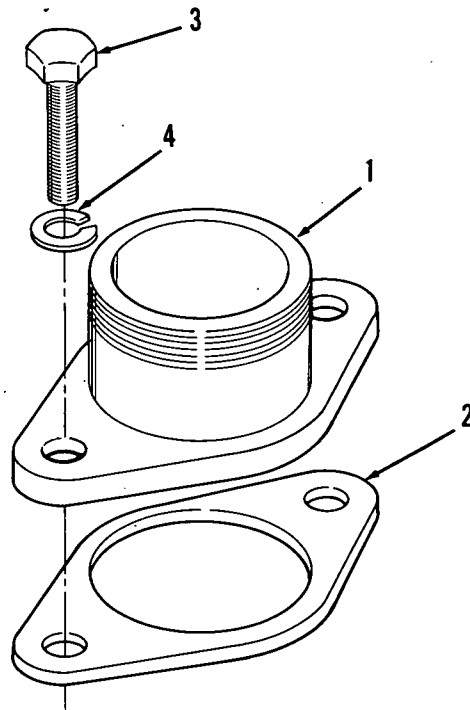
REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	127-0324	1	Gasket, Turbocharger	15	502-0827	1	Adapter, Pipe to Hose
2	127-0122	1	Line, Oil (Feed)	16	503-1136	2	Clamp, Hose
3	127-0338	1	Gasket, Oil Drain Flange	17	503-1141	2	Clamp, Hose
4	127-0341	1	Drain, Oil - Turbo	18	503-1142	2	Clamp, Hose
5	154-2738	1	Kit, Lock Tab Washer	19	503-1159	1	Hose (50.8 MM x 80 MM)
			(Includes Six "Dual" Style	20	503-1160	1	Hose (63.5 MM x 80 MM)
			Lock Tab Washers) (Use	21	503-1161	1	Hose (19.5 MM x 70 MM)
			Began During Later Portion	22	520-2407	4	Stud
			of Spec A)	23	720-1036	2	Screw, Cap - Hex Head
6	505-0180	2	Plug, Pipe - Countersunk				(M8 x 20 MM)
7	127-0313-03	1	Turbocharger	24	154-2648	12	Washer, Lock Tab (Used During
8	127-0315	1	Clamp, V				Early Portion of Spec A)
9	154-2162	4	Gasket, Exhaust Manifold	25	800-2516	12	Screw, Cap - Hex Head
10	154-2325	1	Gasket, Exhaust Manifold				(M8 x 40 MM)
11	154-2578	1	Manifold, Exhaust	26	740-1006	14	Washer, Flat (M8)
12	154-2351	1	Tube, Cross Over	27	740-1008	4	Washer, Flat (M10)
13	502-0825	2	Elbow, Inverted Flare	28	750-1008	4	Nut, Hex (M10)
14	502-0826	1	Elbow, Street (45°)	29	127-0344	1	Shield, Heat

Exhaust Elbow



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	127-0129	1	Bracket, Exhaust Duct	4	740-1006	5	Washer, Flat (M8)
2	127-0130	1	Flange, Exhaust Discharge	5	127-0132	1	Tube, Exhaust
3	720-1037	5	Screw, Cap - Hex Head (M8 x 25 MM)	6	503-0965	1	Clamp

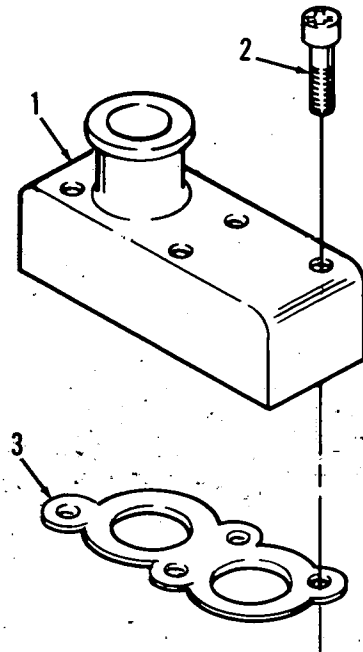
Exhaust Flange (Spec B)



REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	155-1916	1	Flange, Exhaust
2	155-1920	1	Gasket
3	720-1072	2	Screw, Cap - Hex Head (M12 x 20 MM)

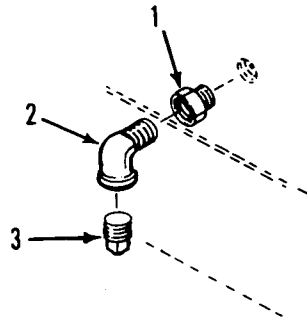
REF NO.	PART NO.	QTY USED	PART DESCRIPTION
4	850-2012	2	Washer, Lock - Spring (M12)

Coolant Outlet Connector



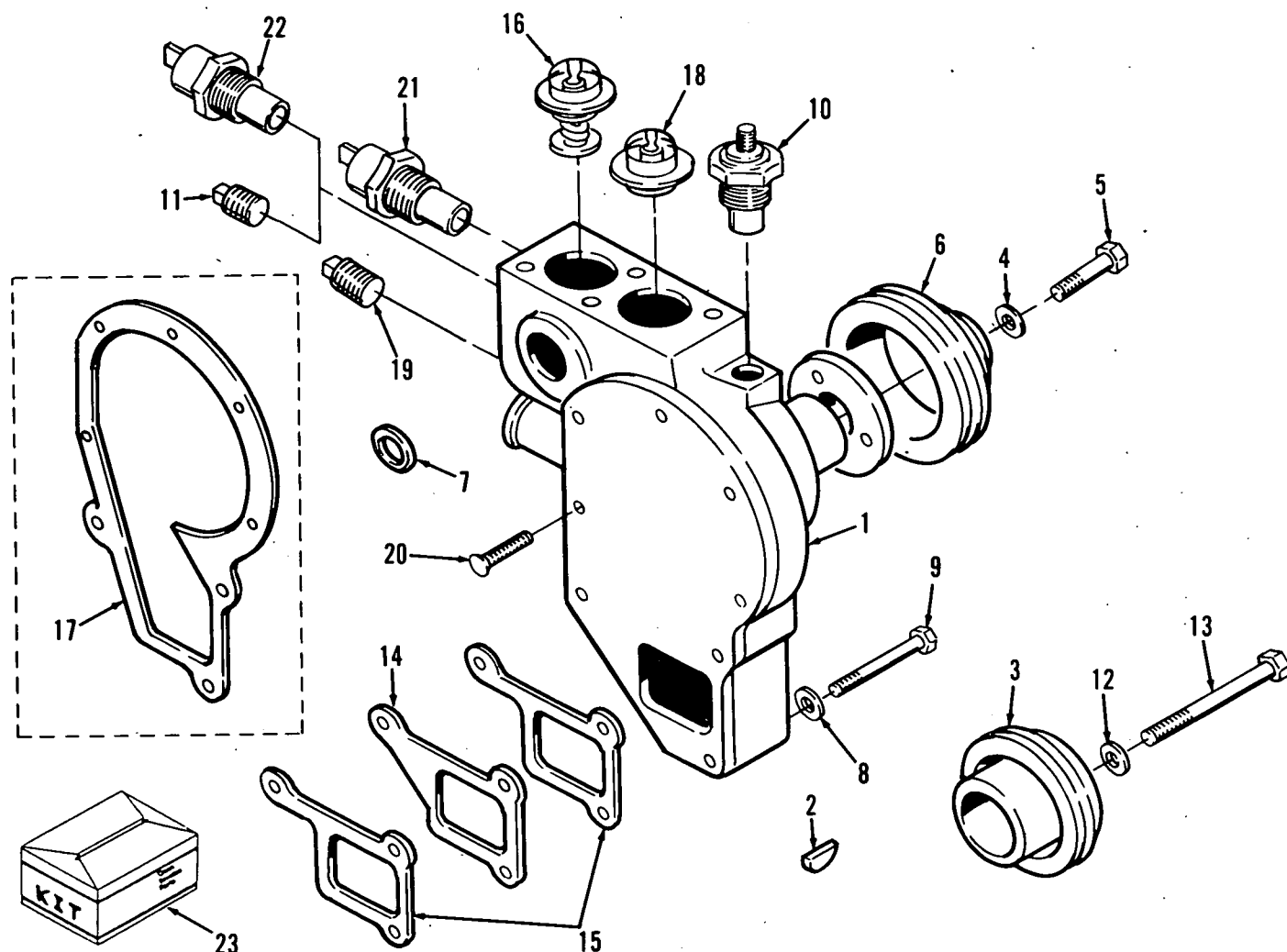
REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	309-0473	1	Cover, Thermostat (Includes Gasket)
2	725-1056	4	Screw, Cap - Socket Head (M8 x 50 MM)
3	309-0424	1	Gasket, Thermostat Cover

Coolant Heater Connection



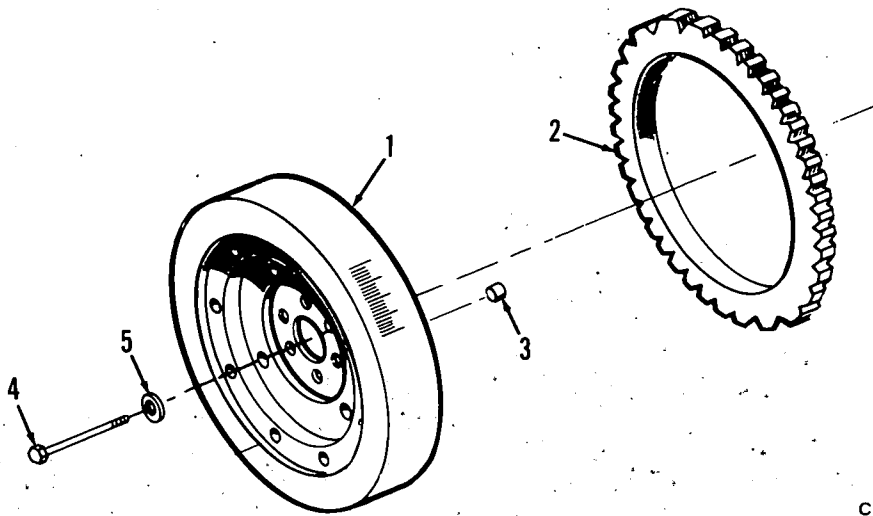
REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	505-0017	1	Bushing
2	502-0156	1	Elbow, Street
3	502-0153	1	Plug, Brass

Coolant Pump



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	131-0351	1	Kit, Coolant Pump (Includes Mounting Gaskets)	17	131-0335	1	Gasket, Backplate
2	515-0245	1	Key - Crankshaft Pulley	18	309-0462	1	Kit, Thermostat (180°) Includes Cover Gasket
3	104-1472	1	Pulley, Crankshaft	19	502-0317	1	Plug, Pipe (3/4")
4	740-1006	4	Washer, Flat (M8)	20	815-0612	5	Screw, Countersunk - Flat Head - Torque Drive (Special)
5	718-1035	4	Screw, Cap - Hex Head (M8 x 16 MM)	21	309-0437	1	Switch, Thermostat - High Engine Coolant Temperature (S1) (Opens at 202° F. - Closes at 222° F.)
6	131-0342	1	Pulley, Coolant Pump	22	309-0436	1	Switch, Thermostat - High Engine Coolant Temperature (S2 Spec A, S6 Spec B - Pre-Alarm) (Opens at 196° F. - Closes at 216° F.)
7	509-0264	1	Seal, O-Ring	23	541-0214-04	1	Kit, Repair - Coolant Pump (Includes Gaskets, Seal, Hub, Bearing, Impeller and Backplate Mounting Screws)
8	740-1006	3	Washer, Flat (M8)				
9	718-1044	3	Screw, Cap - Hex Head (M8 x 60 MM)				
10	193-0318	1	Sender, Water Temperature (E2)				
11	502-0775	1	Plug, Pipe (3/8") Controls with 2 Indicator Lights				
12	526-0283	1	Washer, Flat (M8)				
13	720-1123	1	Screw, Cap - Hex Head (M16 x 60 MM)				
14	131-0324	1	Spacer, Coolant Pump				
15	131-0294	2	Gasket, Pump Mounting				
16	309-0458	1	Kit, Thermostat (192") Includes Cover Gasket				

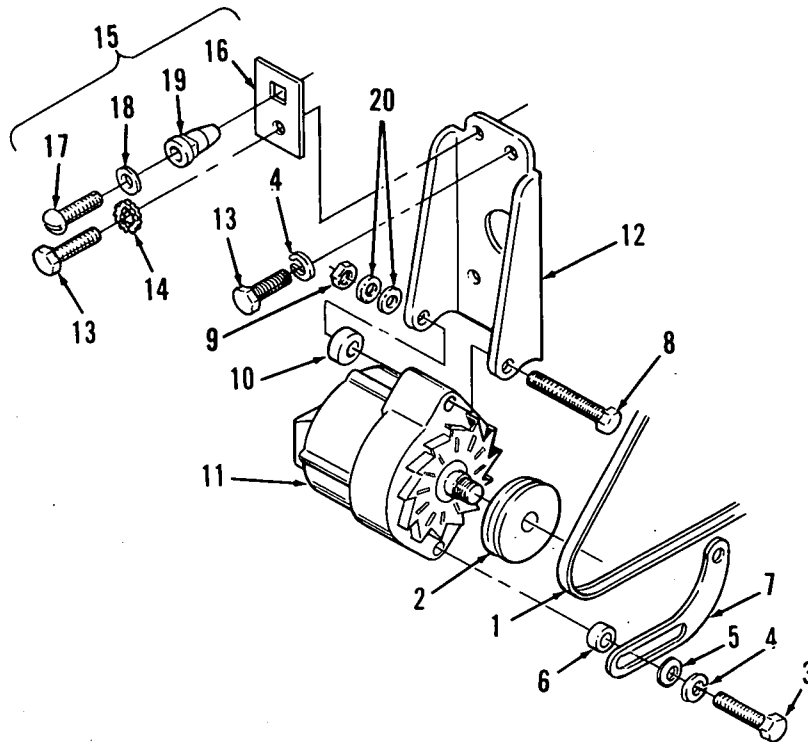
Flywheel



CS-1110

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	104-1462	1	Flywheel (Includes Ring Gear and Alignment Pin)	4	720-1804	6	Screw, Cap - Hex Head (M10 x 38 MM)
2	104-1169	1	Gear, Ring	5	740-1008	6	Washer, Flat (M10)
3	104-1171	1	Pin, Alignment				

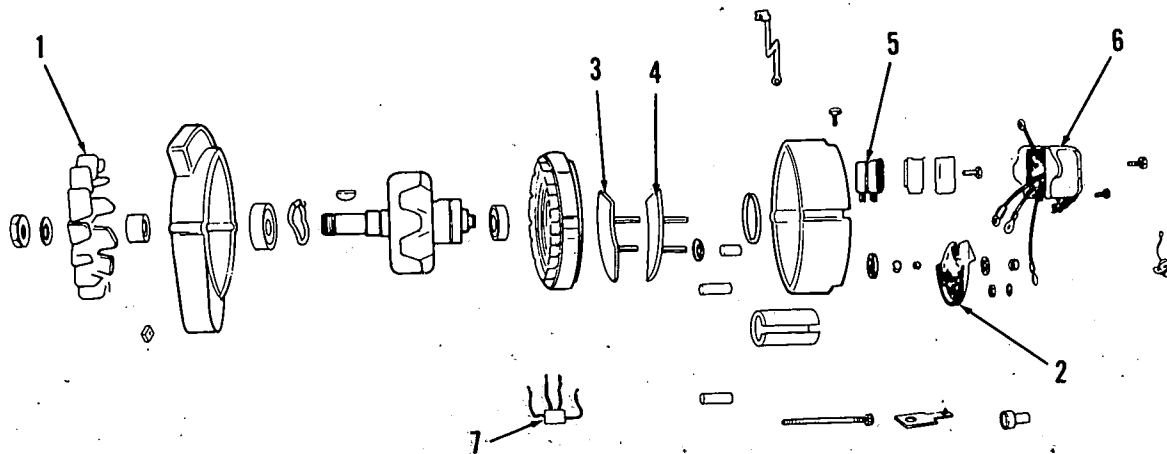
Alternator



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	511-0147-13	1	Belt	13	718-1037	4	Screw, Cap - Hex Head (M8 x 25 MM)
2	191-1339	1	Pulley	14	856-0010	1	Washer, Lock - EIT (3/8")
3	800-2060	1	Screw, Cap - Hex Head (M8 x 35 MM)	15	332-1292	1	Terminal Assembly (Includes Parts Marked *)
4	850-2008	4	Washer, Lock - Spring (M8)	16	332-1281	1	*Bracket, Terminal
5	526-2106	1	Washer, Flat (M8)	17	809-0035	1	*Screw, Sheet Metal - Round Head (#8 x 3/4")
6	191-1541	1	Spacer	18	508-0015	1	*Washer, Fiber
7	191-1312	1	Strap, Adjusting	19	870-0196	1	*Nut, Insulation
8	800-2100	1	Screw, Cap - Hex Head (M10 x 100 MM)	20	740-1008	2	Washer, Flat (M10)
9	860-2009	1	Nut, Hex (M10)				
10	191-1321	1	Spacer				
11	191-1525	1	Alternator (37 Amp) (G1) See Separate Group for Components				
12	191-1332	1	Bracket, Mounting				

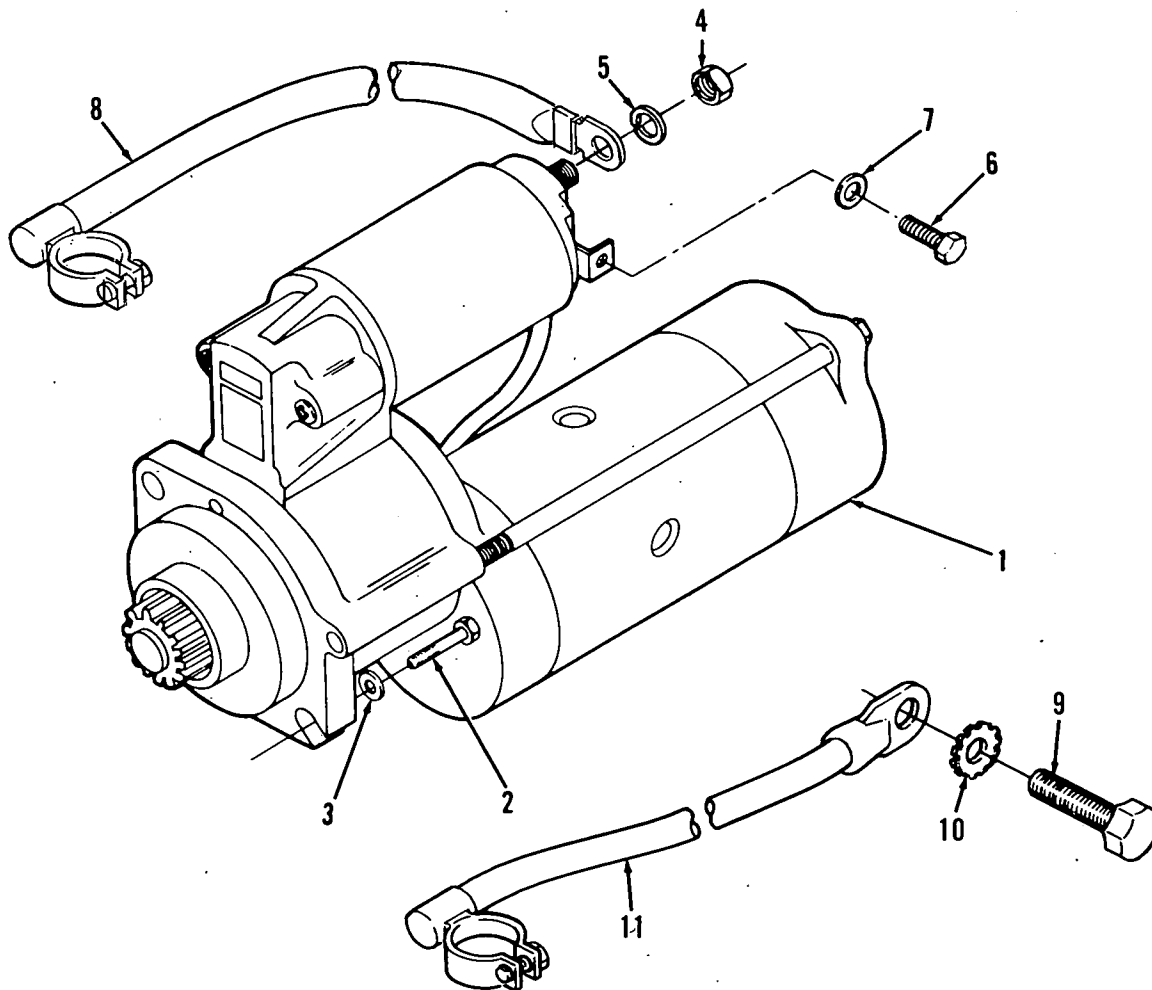
* - Parts Included in 332-1292 Terminal Assembly

Alternator Components



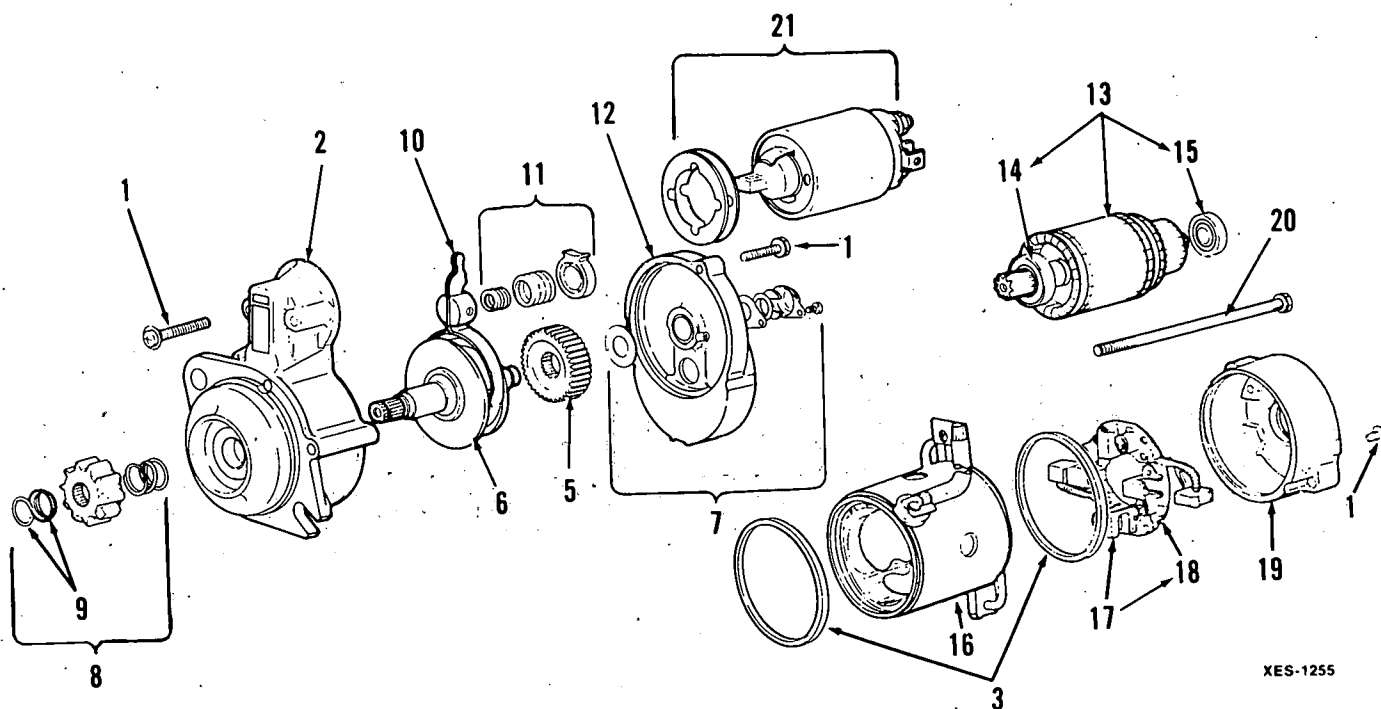
REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
	191-1525	1	Alternator (Complete) Used Beginning on Late Spec A Models - Has No Isolation Diodes on Back Side of Alternator (Replaces Early Spec A Models with Isolation Diode Assembly on Back Side of Alternator)	5			Brush Assembly Spec A
1	191-0943	1	Fan, Alternator		191-0659	1	Used on Early Spec A Models with Isolation Diode Assembly
2	191-1454	1	Diode Assembly, Isolation - Used on Early Spec A Models		191-1558	1	Used on Late Spec A Models without Isolation Diode Assembly
3			Diode, Rectifier - Negative Spec A		191-1558	1	Spec B
	191-1453	1	Used on Early Spec A Models with Isolation Diode Assembly	6			Regulator, Voltage Spec A
	191-1560	1	Used on Late Spec A Models without Isolation Diode Assembly		191-1457	1	Used on Early Spec A Models with Isolation Diode Assembly
	191-1560	1	Spec B		191-1557	1	Used on Late Spec A Models without Isolation Diode Assembly
4			Diode, Rectifier - Positive Spec A		191-1557	1	Spec B
	191-1452	1	Used on Early Spec A Models with Isolation Diode Assembly	7	191-1556	1	Diode, Trio - Used Beginning on Late Spec A Models Without Isolation Diode Assembly
	191-1559	1	Used on Late Spec A Models without Isolation Diode Assembly				
	191-1559	1	Spec B				

Starter



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1			Starter (B1) (Includes Switch Terminal Hardware) (See Separate Group for Components)	6	718-1002	1	Screw, Cap - Hex Head (M5 x 8 MM) Solenoid Terminal
	191-1394	1	Used During Early Portion of Spec A	7	850-2005	1	Washer, Lock - Spring (M5) Solenoid Terminal
	191-1888	1	Use Began During Later Portion of Spec A	8	416-0618	1	Cable, Battery - 42" (Positive)
2	720-1806	2	Screw, Cap - Flanged Hex Head (M12 x 30 MM)	9	800-2110	1	Screw, Cap - Hex Head (M12 x 20 MM)
3	740-1010	2	Washer, Flat (M12)	10	853-2012	1	Washer, Lock - ET (M12)
4	860-2008	1	Nut, Hex (M8) B+ Terminal	11	416-0530	1	Cable, Battery - 16" (Negative)
5	850-2008	1	Washer, Lock - Spring (M8) B+ Terminal				

Starter Components

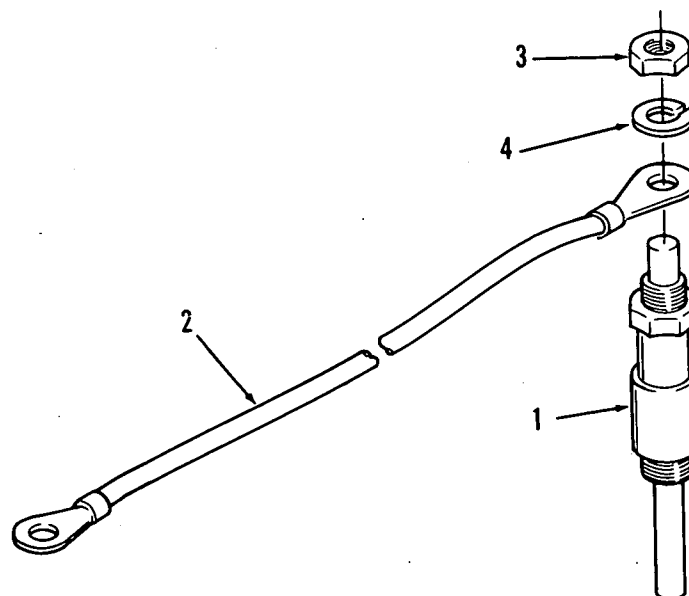


XES-1255

REF NO.	PART NO.	QTY USED	PART DESCRIPTION
	191-1394	1	Starter (Complete) Used During Early Portion of Spec A
	191-1888	1	Use Began During Later Portion of Spec A
1	191-1450	1	Screw Set
2	191-1449	1	Bracket Assembly, Front (Includes Bearing)
3	191-1893	2	Ring, "O" - Sealing (Used on 191-1888 Starter)
5	191-1446	1	Gear
6	191-1445	1	Clutch
7	191-1444	1	Cover Set (Includes Cover, Plate, Washers, Snap Ring, and Screws)
8	191-1443	1	Pinion Set (Includes Pinion, Spring, and Stopper Set)
9	191-1442	1	Stopper Set (Includes Stopper and Ring)

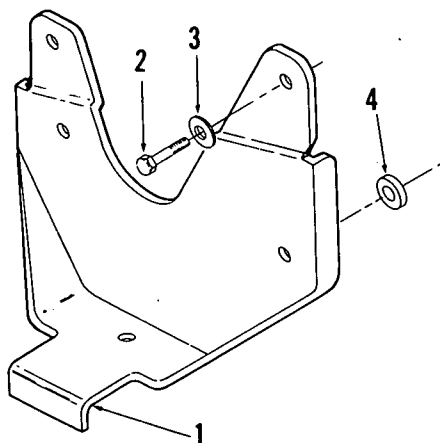
REF NO.	PART NO.	QTY USED	PART DESCRIPTION
10	191-1441	1	Lever Assembly
11	191-1440	1	Spring Set
12	191-1439	1	Bracket Assembly, Center
13	191-1438	1	Armature Assembly (Includes Bearings)
14	191-1437	1	Bearing, Center
15	191-1436	1	Bearing, Rear
16	191-1435	1	Yoke Assembly (Includes Pole Shoes, Field Coil and Positive Brushes)
17	191-1434	1	Holder, Brush (Includes Negative Brushes)
18	191-1433	4	Spring, Brush
19	191-1432	1	Bracket, Rear
20	191-1431	1	Bolt Set
21	191-1430	1	Switch Assembly

Glow Plug



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	333-0220	6	Plug, Glow	3	750-1002	6	Nut, Hex (M5)
2	336-4131	5	Lead, Glow Plug	4	850-2005	6	Washer, Lock - Spring (M5)

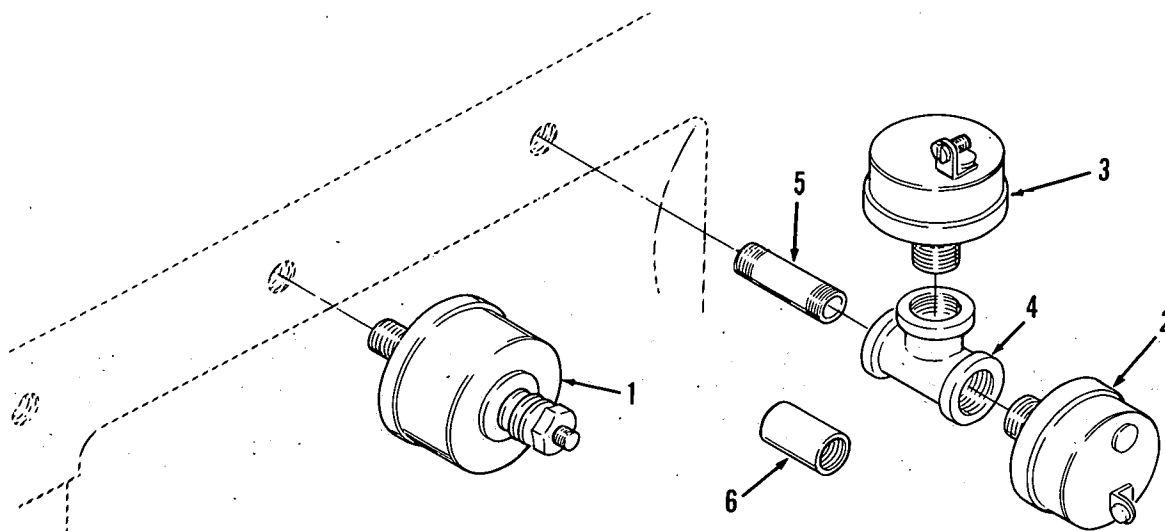
Front Engine Mount



M-1548

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	403-1925	1	Bracket, Mount	3	740-1010	4	Washer, Flat (M12)
2	718-1086	2	Screw, Cap - Hex Head	4	403-1932	2	Spacer, Bracket Mounting
	718-1802	2	M12 x 90 MM (Top)				
		2	M12 x 95 MM (Bottom)				

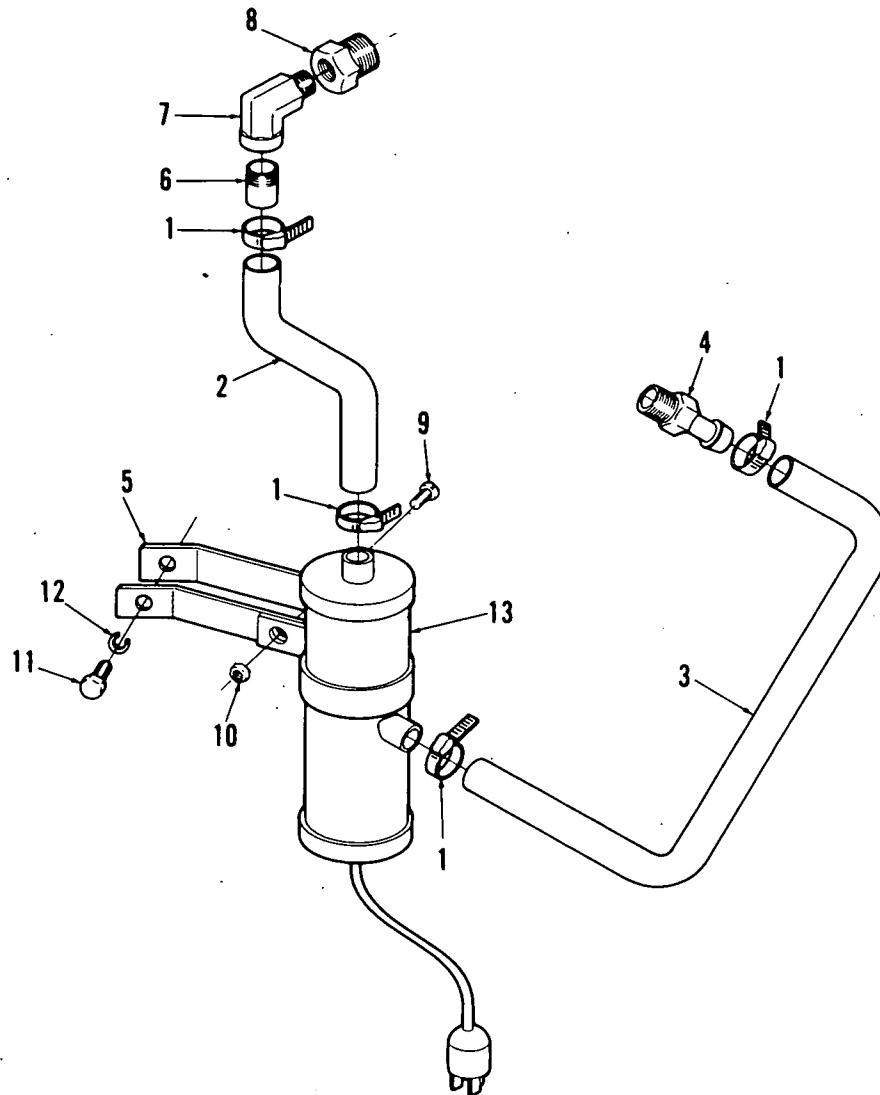
Oil Pressure Switch



REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	193-0244	1	Sender, Oil Pressure (E1)
2			Switch, Oil Pressure (Closes at 14 lbs. Descending)
	309-0169	1	Spec A (S3)
	309-0561	1	Spec B (S1)
3	309-0272	1	Switch, Oil Pressure (S4 Spec A, S5 Spec B Pre-Alarm) Closes at 20 lbs. Descending

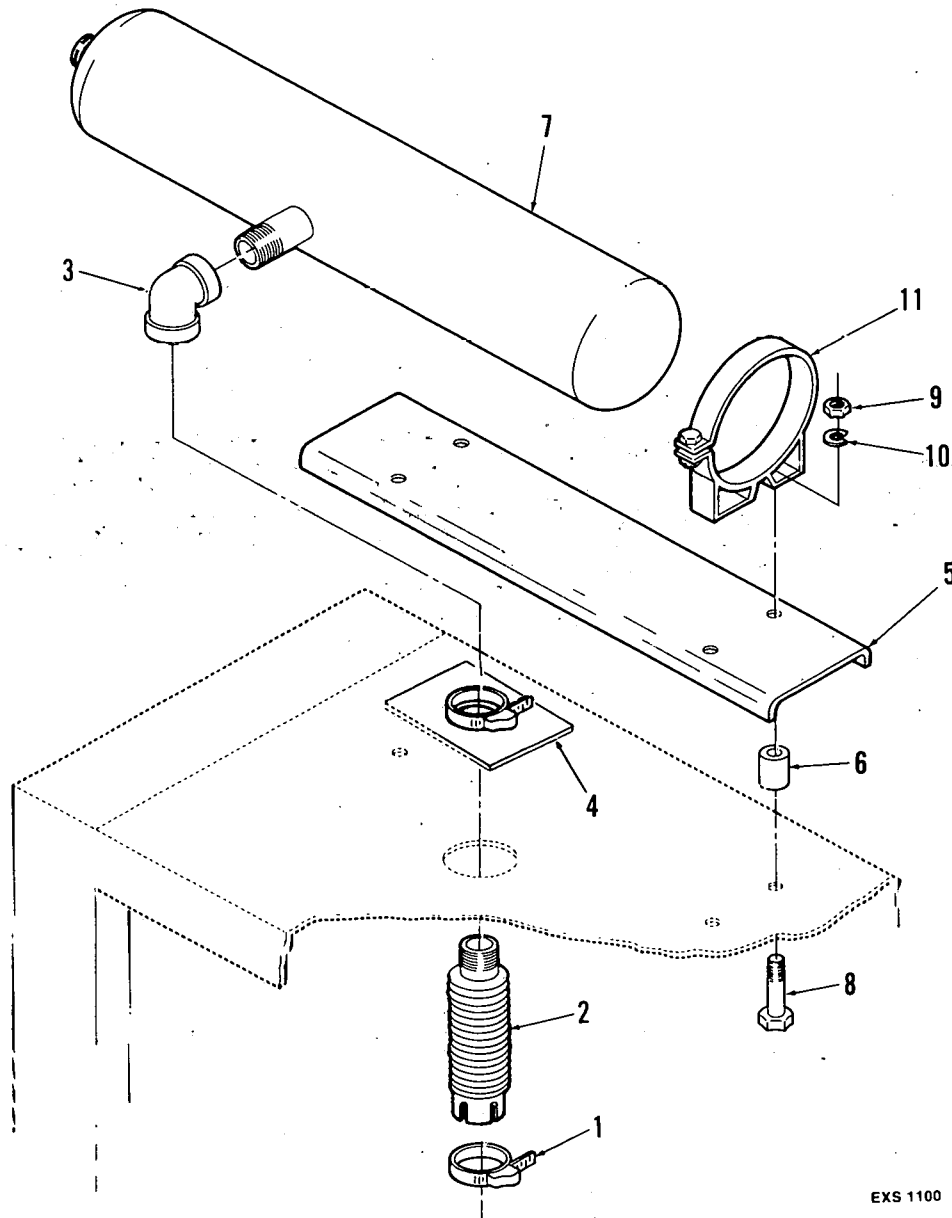
REF NO.	PART NO.	QTY USED	PART DESCRIPTION
4	505-0059	1	Tee, Pipe (1/8")
5	505-0098	1	Nipple, Pipe (1/8" x 3/4")
6	505-0026	1	Coupling, Pipe (1/8") Spec A

Engine Tank Heater



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	503-0183	4	Clamp, Hose	10	870-0257	1	Nut, Self-Locking - Hex Washer Head (5/16-18)
2	503-0832	1	Hose, Rubber (5/8" ID x 8")	11	718-1036	1	Screw, Cap - Hex Head (M8 x 20 MM)
3	503-1170	1	Hose, Rubber (5/8" ID x 50")	12	850-2008	1	Washer, Lock - Spring (M8)
4	502-0613	1	Adapter, Pipe to Hose (1/4" Pipe to 5/8" ID Hose)	13			Heater, Tank (Includes Hose Adapter, Cord and Mounting Strap)
5	130-0755	1	Bracket, Mounting		333-0204	1	1500 Watt, 115 Volt
6	505-0135	1	Nipple, Half (3/8" x 1-1/2")		333-0202	1	1500 Watt, 230 Volt
7	505-0120	1	Elbow, Street - 90° (3/8")				
8	505-0131	1	Bushing, Reducer (3/4" to 3/8")				
9	821-0016	1	Screw, Self-Locking - Hex Washer Head (5/16-18 x 3/4")				

Muffler (Housed Set)

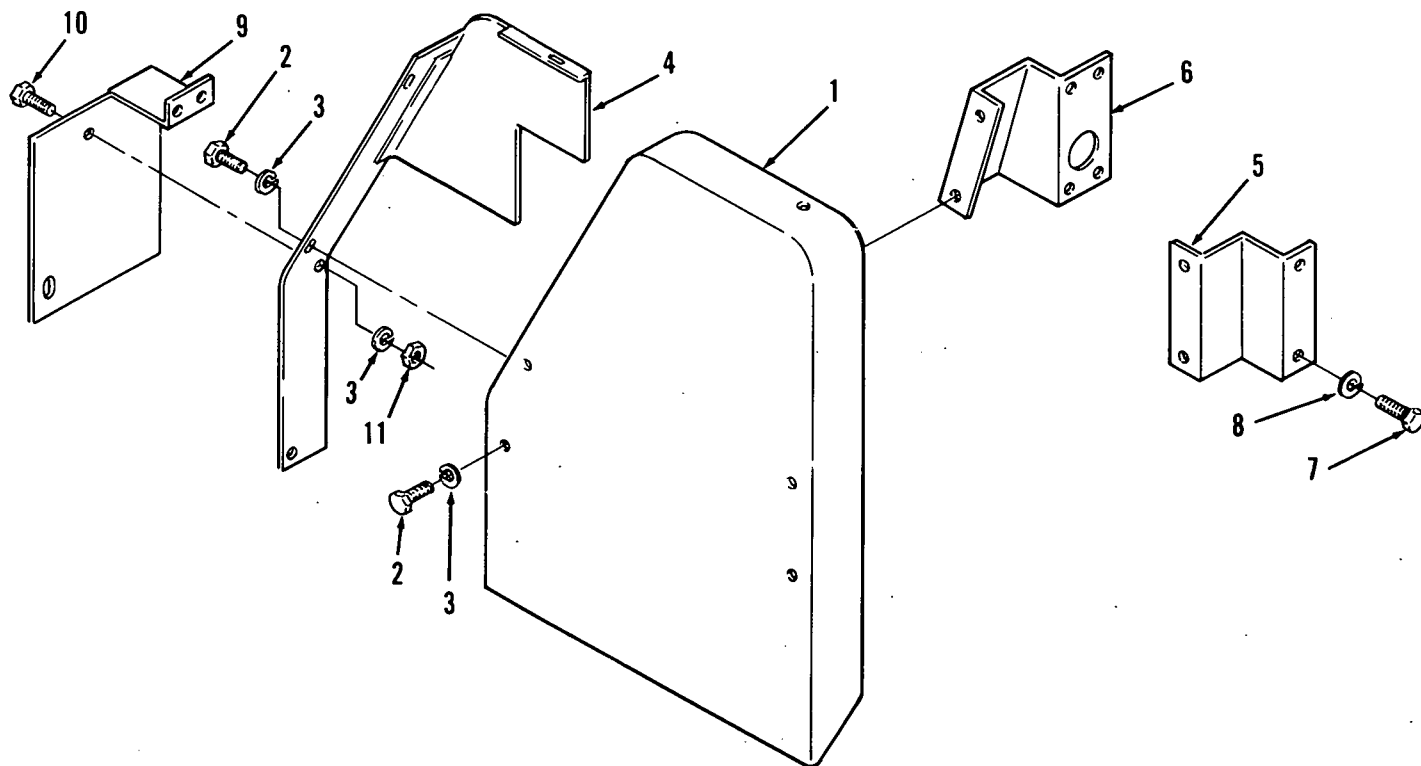


EXS 1100

REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	503-0965	1	Clamp, Hose
2	155-1998	1	Tube, Exhaust - Flexible
3	505-0044	1	Elbow, Pipe - 90° (2-1/2")
4	155-2020	1	Shield, Rain
5	155-1995	1	Shield, Heat
6	155-1430	4	Spacer
7	155-1994	1	Muffler, Exhaust

REF NO.	PART NO.	QTY USED	PART DESCRIPTION
8	800-0036	4	Screw, Cap -- Hex Head (5/16-18 x 2-3/4")
9	870-0048	4	Nut, Hex - Self-locking (5/16-18)
10	526-2123	4	Washer, Flat (M10)
11	140-0649	2	Band, Mounting

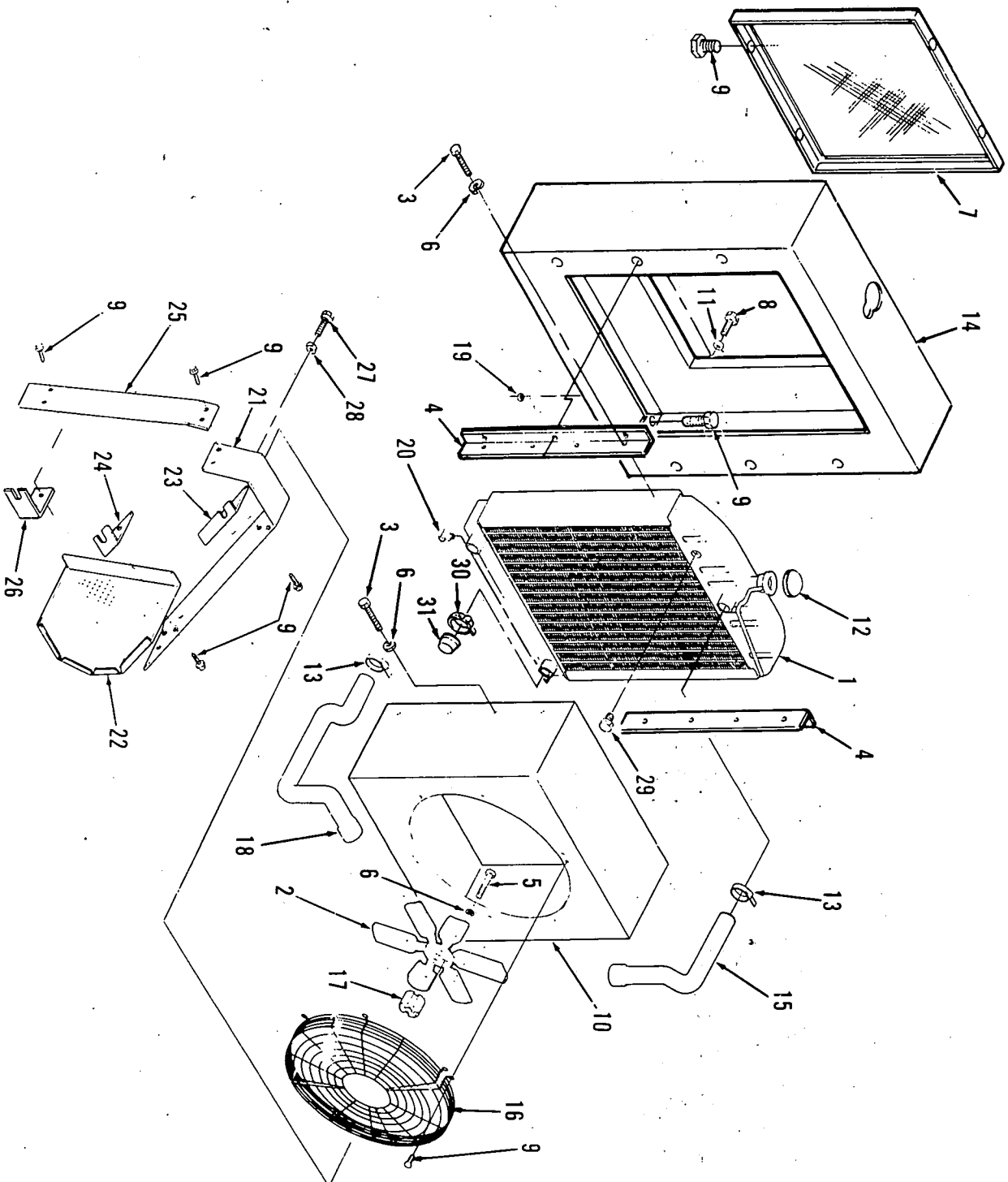
Belt Guard (With Remote Radiator)



REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	130-3008	1	Panel, Front
2	800-2029	8	Screw, Cap - Hex Head (M6 x 12 MM)
3	850-2006	9	Washer, Lock - Spring (M6)
4	130-3007	1	Panel, Side
5	130-2201	1	Bracket, Pulley Guard (Left Hand)
6	130-2202	1	Bracket, Pulley Guard (Right Hand)

REF NO.	PART NO.	QTY USED	PART DESCRIPTION
7	800-2056	2	Screw, Cap - Hex Head (M8 x 16 MM)
8	850-2008	2	Washer, Lock - Spring (M8)
9	191-1598	1	Guard, Alternator
10	718-1021	1	Screw, Cap - Hex Head (M6 x 20 MM)
11	750-1004	1	Nut, Hex (M6)

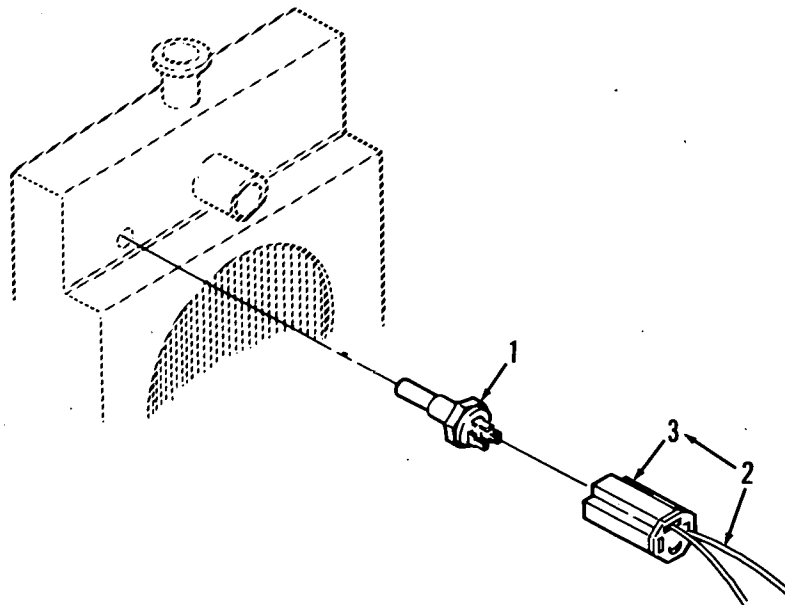
Cooling System



Cooling System

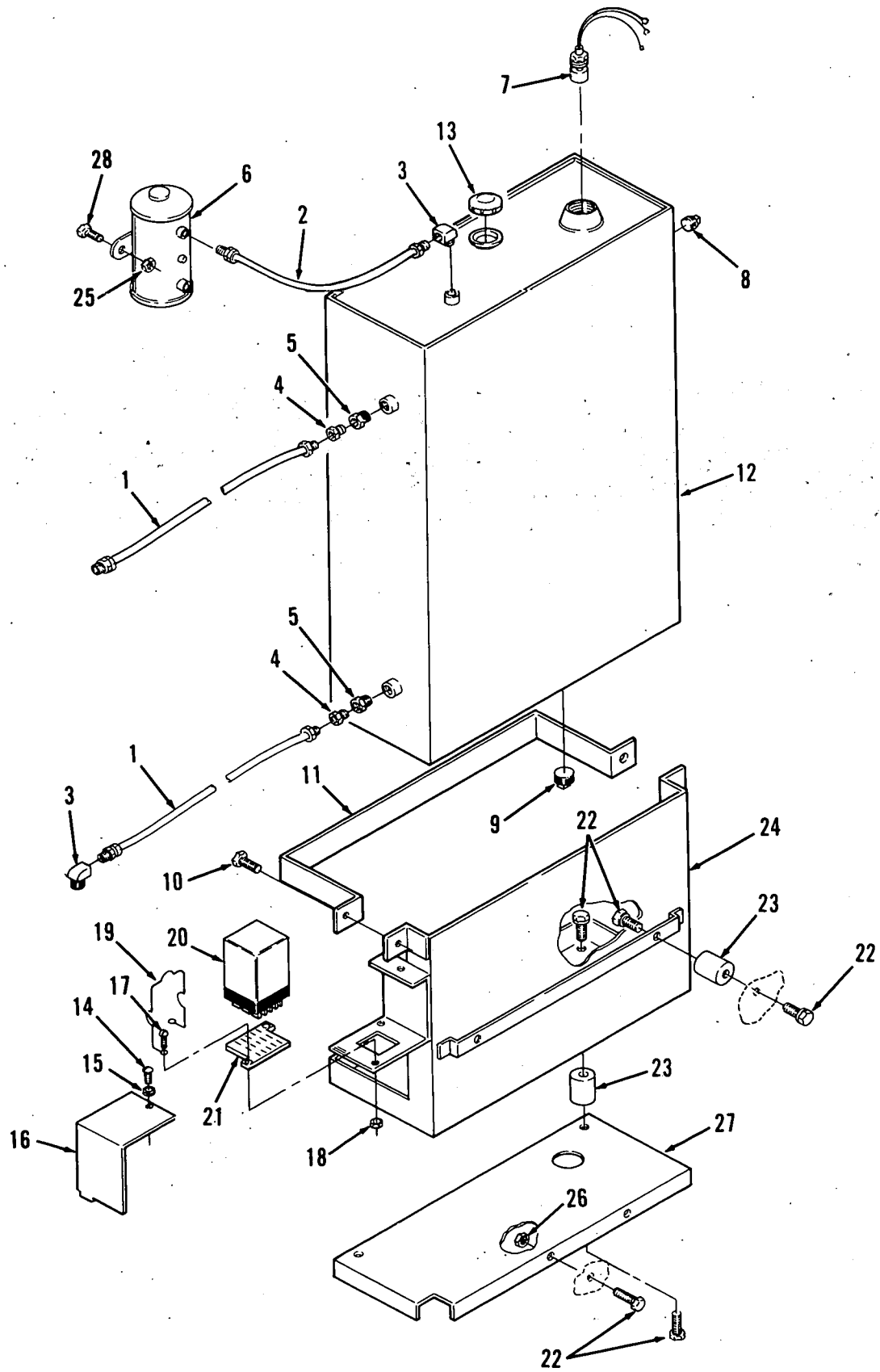
REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	130-1818	1	Radiator	15	503-1177	1	Hose, Radiator - Upper
2	130-1922	1	Fan	16	130-2160	2	Guard, Fan
3	718-1032	16	Screw, Cap - Hex Head (M8 x 10 MM)	17	130-1873	1	Spacer, Fan
4	130-2154	2	Bracket, Radiator Mounting	18	503-1070	1	Hose, Radiator - Lower
5	718-1047	4	Screw, Cap - Hex Head (M8 x 75 MM)	19	870-0212	5	Nut, Lock (1/4-20)
6	850-2008	20	Washer, Lock (M8)	20	504-0003	1	Valve, Drain
7	130-2150	1	Guard, Radiator	21	191-1540	1	Guard, Alternator Belt
8	800-0003	6	Screw, Cap - Hex Head (1/4-20 x 1/2")	22	191-1539	1	Guard, Alternator Belt
9	821-0010	31	Screw, Cap - Hex Head (1/4-20 x 1/2")	23	191-1542	1	Bracket, Belt Guard
10	130-2158	1	Shroud, Fan	24	191-1543	1	Bracket, Belt Guard
11	526-0021	6	Washer, Flat (1/4")	25	191-1546	1	Guard, Alternator Belt
12	130-1928	1	Cap, Pressure	26	191-1547	1	Bracket, Alternator Belt Guard
13	503-0365	4	Clamp, Hose	27	718-1035	1	Screw, Machine - Hex Head (M8 x 16 MM)
14	405-3809	1	Housing, Front	28	526-2100	1	Washer, Flat (M8)
				29	502-0153	1	Plug, Hex Head (1/4")
				30	503-0429	1	Clamp
				31	517-0263	1	Cap, Radiator (Lower Hose Fitting)

Low Coolant Level Switch



REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	193-0322	1	Switch - Coolant Level (S7)
2	338-1691	1	Harness, Wiring (Includes Housing)
3	323-1236	1	Housing, Connector

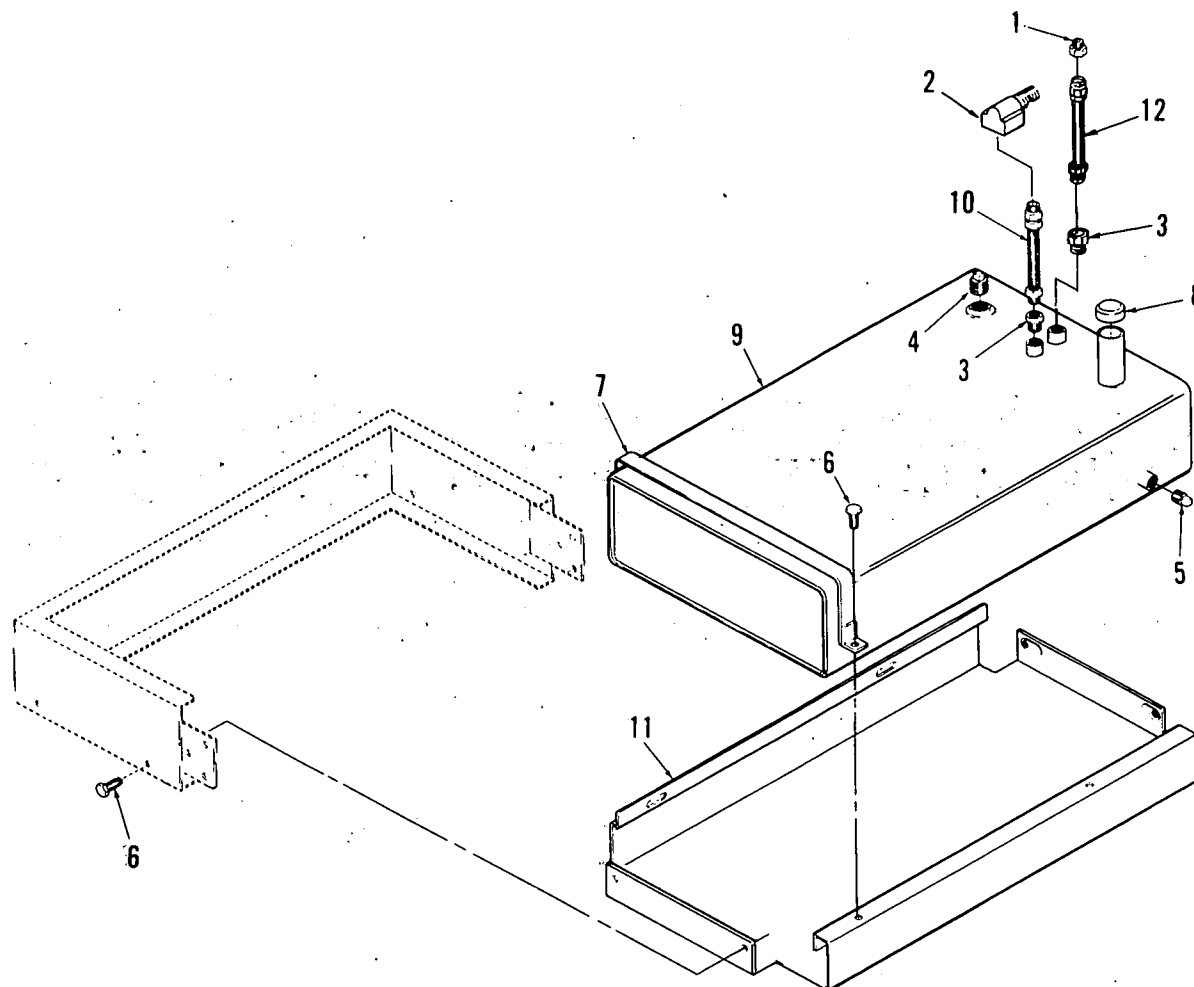
Day Tank



Day Tank

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	501-0027	2	Line, Fuel - Flexible (1/8 NPT Male x 1/4 SAE Male Swivel x 48" Lg)	12	415-0445	1	Tank, Fuel - Day (Includes Cap) (3-1/2 Gallons)
2	501-0007	1	Line, Fuel - Flexible (1/8 NPT Male x 1/4 SAE Male Swivel x 24" Lg)	13	159-0007	1	Cap - Fuel Tank
3	502-0041	2	Elbow, Pipe - Street, 90°, Brass-Inverted Male (1/4 NPT)	14	813-0098	1	Screw, Machine - Round Head (#10-32 x 3/8")
4	502-0003	2	Connector, Inverted Male (1/8")	15	850-0030	1	Washer, Lock - Spring (#10)
5	505-0007	2	Bushing, Reducer - Hex (1/4 NPT Male x 1/8 NPT Female)	16	415-0326	1	Cover, Access - Relay
6	149-1828	1	Pump, Fuel (12 VDC)	17	812-0061	2	Screw, Machine - Round Head (#6-32 x 3/8")
7	415-0321	1	Switch, Float - Liquid Level (Includes Mounting Plug)	18	870-1183	2	Nut, Self-locking, Hex - with ET (#6-32)
8	505-0054	1	Plug, Pipe - Square Head (1/4 NPT)	19	307-1157	1	Spring, Holddown - Relay
9	505-0110	1	Plug, Pipe - Square Head (3/8 NPT)	20	307-1058	1	Relay (12 VDC)
10	821-0013	2	Screw, Self-locking - Hex Washer Head (1/4-20 x 1")	21	323-0765	1	Socket, Relay
11	415-0451	1	Strap, Retaining - Tank	22	821-0014	10	Screw, Self-locking - Hex Washer Head (5/16-18 x 1/2")
				23	402-0078	4	Mount, Vibration
				24	159-1120	1	Bracket, Mounting - Fuel Tank
				25	870-0212	2	Nut, Self-locking - Hex Washer Head (1/4-20)
				26	870-0048	2	Nut, Self-locking - Hex Washer Head (5/16-18)
				27	159-1122	1	Plate, Support - Fuel Tank
				28	821-0018	2	Screw, Self-locking - Hex Washer Head (1/4-20 x 5/8")

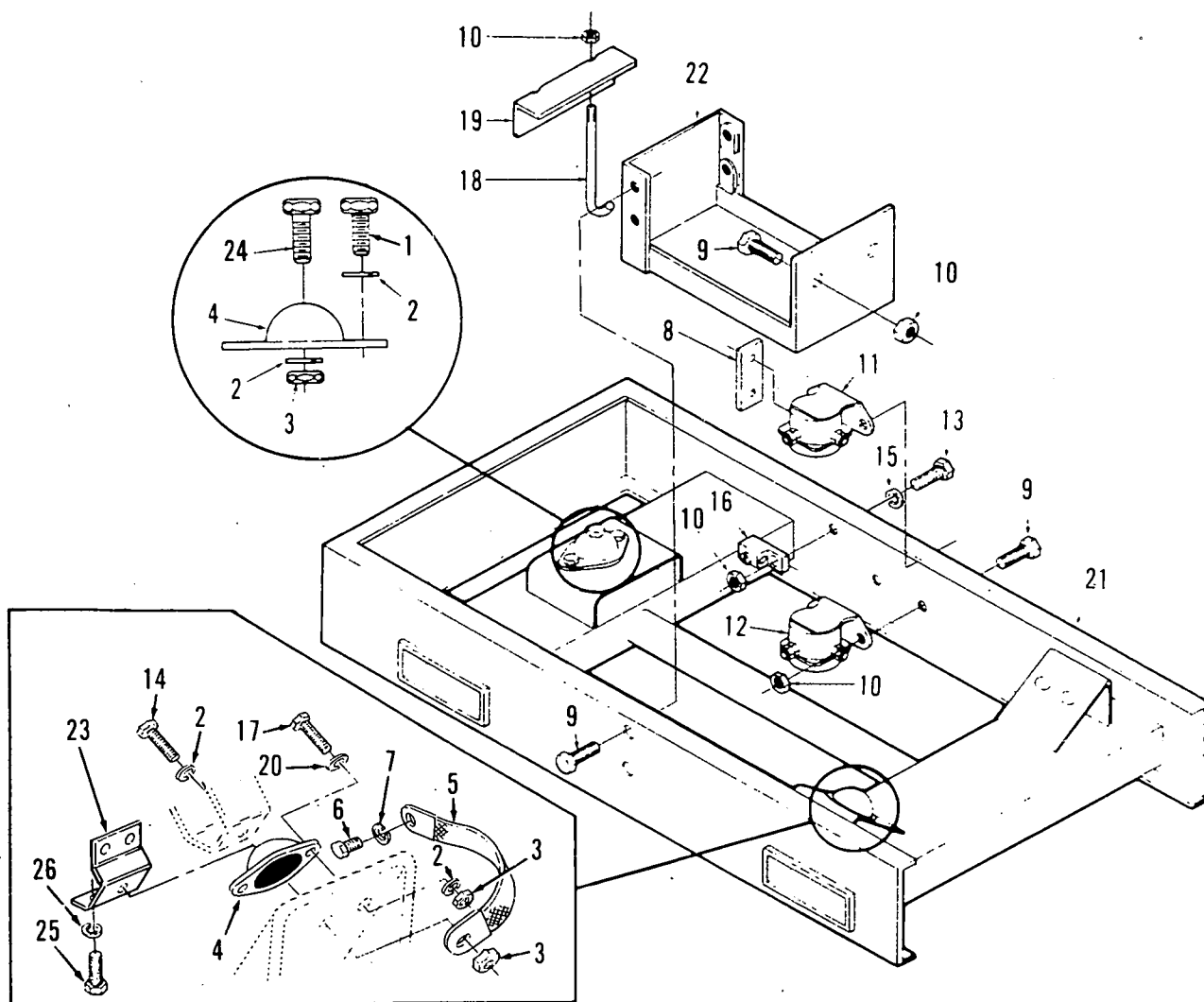
Fuel Tank (Skid Mounted)



REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	502-0003	1	Adapter, Pipe - Hex (5/16-24 Female x 1/8 NPT Male)
2	502-0041	1	Elbow, Pipe - Street, 90° (5/16-24 Female x 1/4 NPT Male)
3	505-0007	2	Bushing, Reducer - Hex (1/4 NPT Male x 1/8 NPT Female)
4	505-0949	1	Plug, Pipe - Square Head (1-1/4 NPT)
5	505-0054	1	Plug, Pipe - Square Head (1/4 NPT)

REF NO.	PART NO.	QTY USED	PART DESCRIPTION
6	821-0010	6	Screw, Self-locking - Hex Washer Head (1/4-20 x 1/2")
7	159-1126	2	Strap, Retaining - Fuel Tank
8	159-0007	1	Cap - Fuel Tank
9	159-1123	1	Tank, Fuel (8-1/2 Gallon)
10	501-0027	1	Line, Fuel - Flexible (1/8 NPT Male x 1/4 SAE Male Swivel x 48" Lg)
11	159-1124	1	Tray, Mounting - Fuel Tank
12	501-0094	1	Line, Fuel - Flexible (1/8 NPT Male x 1/4 SAE Male Swivel x 60" Lg)

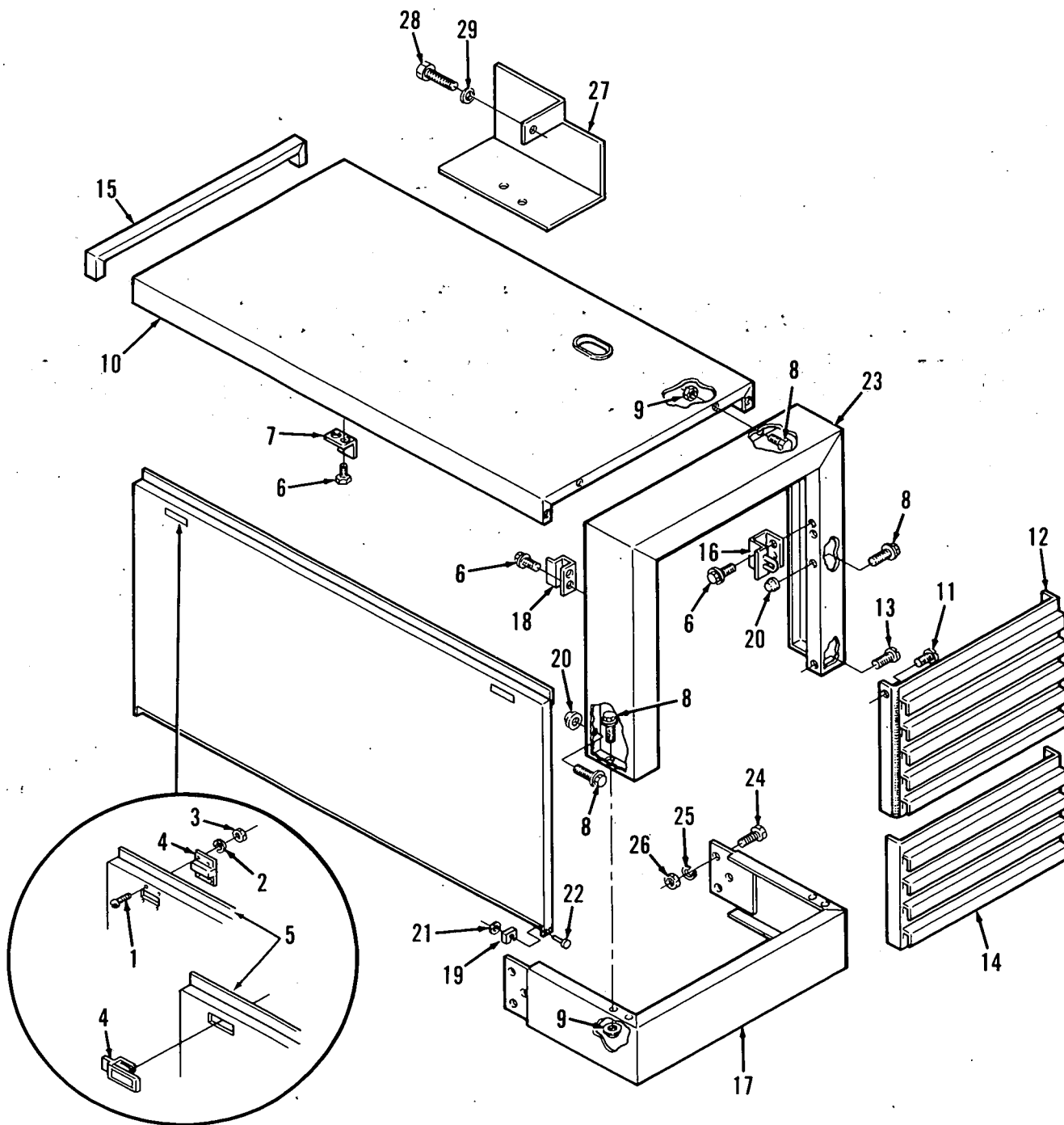
Chassis



REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	800-0090	2	Screw, Cap - Hex Head (1/2-13 x 1")
2	850-0060	9	Washer, Lock - Spring (1/2")
3	862-0016	7	Nut, Hex (1/2-13)
4	402-0466	3	Mount, Vibration
5	337-0090	1	Strap, Ground - Engine
6	800-2110	1	Screw, Cap - Hex Head (M12 x 20 MM)
7	853-2012	1	Washer, Lock - ET (M12)
8	332-0602	1	Jumper, Solenoid (Spec A)
9			Screw, Self-Locking - Hex Washer Head (1/4-20 x 1/2")
	821-0010	8	Spec A
	821-0010	6	Spec B
10			Nut, Self-Locking - Hex Washer Head (1/4-20)
	870-0212	9	Spec A
	870-0212	7	Spec B
11	307-1031	1	Relay, Solenoid - Heater (Upper) (K2)
12	307-1166	1	Relay, Solenoid - Start (Lower) (K1) (Spec A)

REF NO.	PART NO.	QTY USED	PART DESCRIPTION
13	821-0013	1	Screw, Self-Locking - Hex Washer Head (1/4-20 x 1")
14			Screw, Cap - Hex Head 1/2-13 x 1-1/4" (Spec A)
	800-0090	2	1/2-13 x 1" (Spec B)
15	856-0006	1	Washer, Lock - EIT (1/4")
16	332-1473	1	Lug, Solderless
17	800-0091	4	Screw, Cap - Hex Head (1/2-13 x 1-1/4")
18	416-0813	2	Rod, J Hook (1/4-20)
19	416-0812	1	Bracket, Holddown - Battery
20	526-0219	4	Washer, Flat (1/2")
21	403-2053	1	Skid
22	416-0821	1	Tray, Battery
23	403-1929	2	Mount, Engine - Spec B
24	800-0090	1	Screw, Cap - Hex Head (1/2-13 x 1")
25	720-1072	8	Screw, Cap - Hex Head (M12 x 20 MM) Spec B
26	850-2012	8	Washer, Lock - Spring (M12) Spec B

Housing

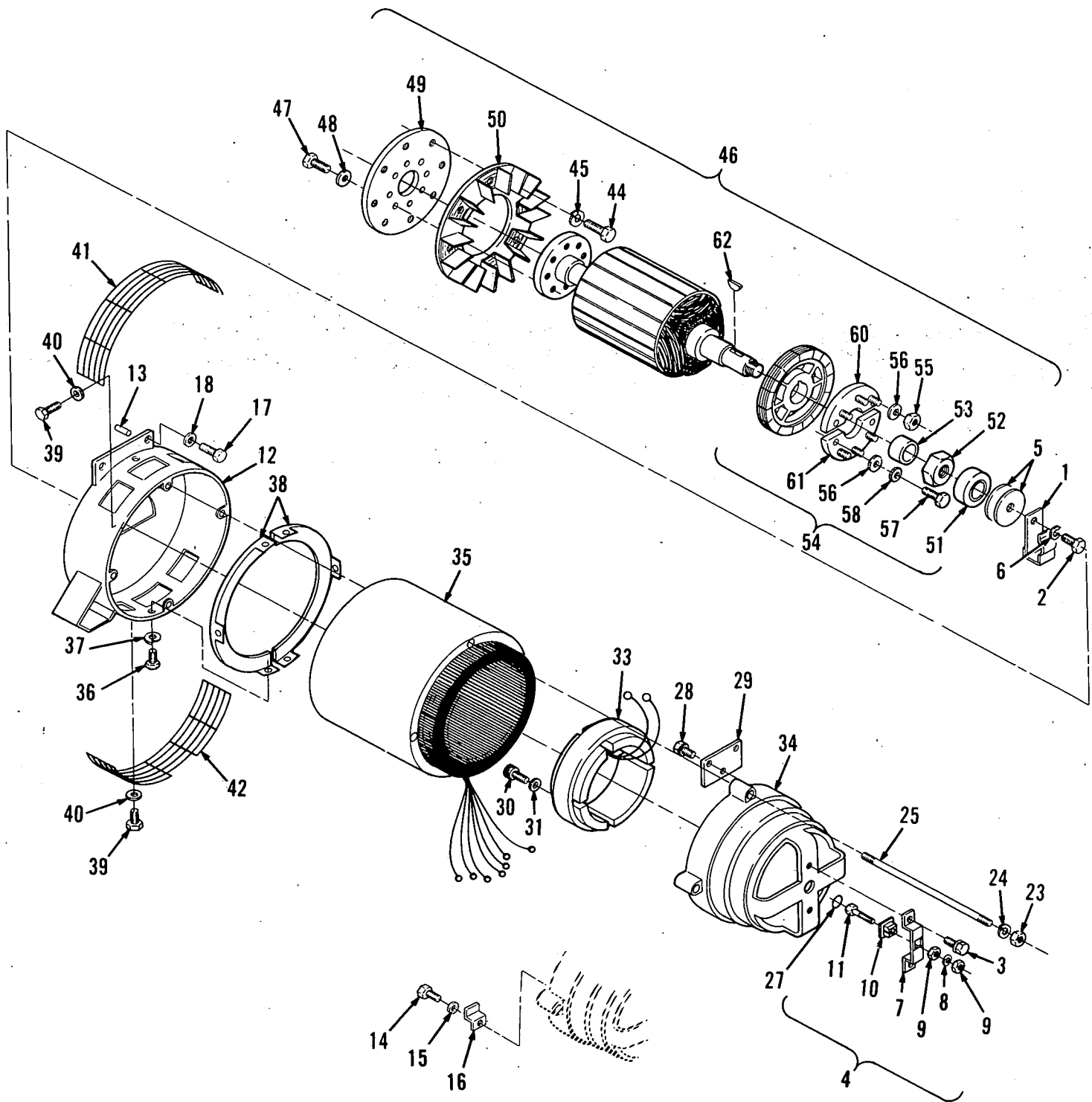


Housing

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	812-0148	16	Screw, Machine - Round Head (1/4-20 x 1/2")	12	405-2677	1	Cover, Control
2	850-0040	16	Washer, Lock - Spring (1/4")	13	812-0148	4	Screw, Machine - Round Head (1/4-20 x 1/2")
3	862-0001	16	Nut, Hex (1/4-20)	14	405-3082	1	Grille
4			Latch, Door	15	895-0195	-	Stripping, Weather - Bulk (Ordered by the foot - 5 foot required)
	406-0369	4	* Used During Early Portion of Spec A (With Mounting Holes)	16	406-0491	1	Latch, Cover
	406-0561	4	* Use Began During Later Portion of Spec A (Without Mounting Holes)	17	403-2064	1	Skid, Rear
5			Door, Engine	18	406-0493	4	Catch, Door
	405-2823	2	* Used During Early Portion of Spec A (With Latch Mounting Holes)	19	405-1872	4	Clip, Door
	405-3306	2	* Use Began During Later Portion of Spec A (Without Latch Mounting Holes)	20	870-0258	6	Nut, Weld (1/4-20)
6	821-0004	14	Screw, Self-locking - Hex Washer Head (10-32 x 5/16")	21	526-0003	8	Washer, Flat (#8)
7	406-0490	2	Latch, Door	22	818-0150	8	Rivet
8	821-0010	18	Screw, Self-locking - Hex Washer Head (1/4-20 x 1/2")	23	405-3070	1	Panel, Rear
9	870-0212	12	Nut, Self-locking - Hex (1/4-20)	24	800-0090	6	Screw, Cap - Hex Head (1/2-13 x 1")
10	405-3226	1	Panel, Top	25	850-0060	6	Washer, Lock - Spring (1/2")
11	813-0098	3	Screw, Machine - Round Head (#10-32 x 3/8")	26	862-0016	6	Nut, Hex (1/2-13)
				27	155-2053	1	Shield, Heat
				28	718-1036	3	Screw, Cap - Hex Head (M8 x 20 MM)
				29	850-0045	3	Washer, Lock - Spring (5/16")

* - Latches and doors with mounting holes are not interchangeable with latches and doors without mounting holes.

Generator



Generator

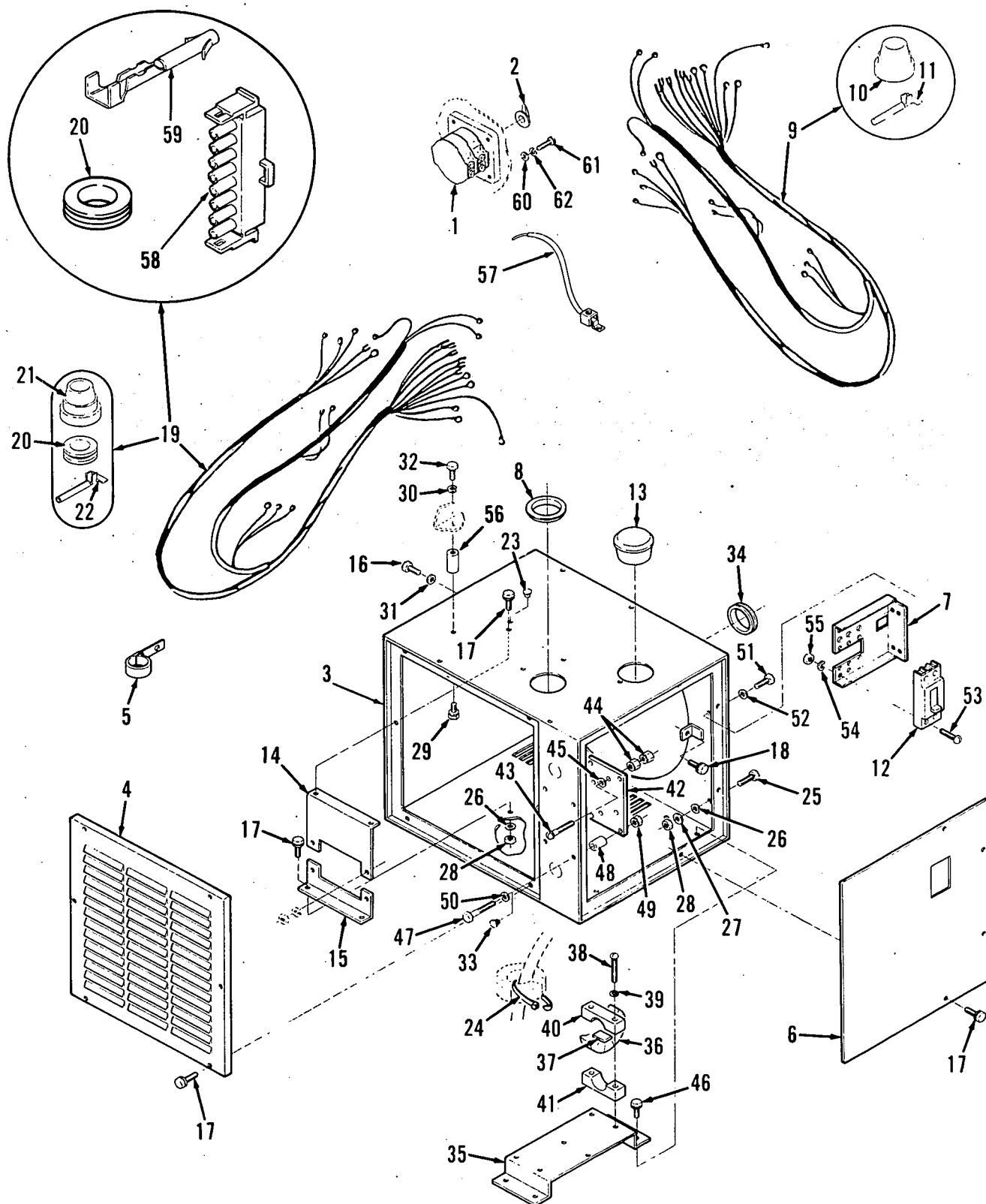
REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	150-0717	1	Switch, Overspeed	36	800-2033	6	Screw, Cap - Hex Head (M6 x 16 MM)
2	800-0051	1	Screw, Cap - Hex Head (3/8-16 x 1-1/4")	37	850-2006	6	Washer, Lock - Spring (M6)
3	821-0010	2	Screw, Self-locking - Hex Washer Head (1/4-20 x 1/2")	38	234-0688	2	Baffle, Air
4	150-1446	1	Bracket and Point Assembly (Includes Parts Marked #)	39	800-2029	8	Screw, Cap - Hex Head (M6 x 12 MM)
5	526-0077	2	Washer, Flat (3/8")	40	526-0022	8	Washer, Flat (5/16")
6	856-0010	1	Washer, Lock - EIT (3/8")	41	234-0689	1	Guard, Fan - Upper
7	150-1445	1	#Bracket, Mounting	42	234-0690	1	Guard, Fan - Lower
8	853-0013	1	#Washer, Lock - ET (1/4")	44	800-2085	8	Bolt, Hex Head (M10 x 20 MM)
9	862-0001	2	#Nut, Hex (1/4-20)	45	850-2010	8	Washer, Lock - Spring (M10)
10	870-0250	1	#Nut, Insulating	46			Rotor Assembly, Generator (Includes Parts Marked *)
11	150-0723	1	#Point, Contact		201-3059	1	Standard
12	231-0289	1	Adapter, Generator (Includes Timing Indicator)		201-3207	1	Environmentally Protected
13	160-1292	1	Indicator, Timing	47	805-0025	8	*Bolt, Hex Head - Slotted, Grade 8 (7/16-14 x 3/4")
14	800-0004	4	Screw, Cap - Hex Head (1/4-20 x 5/8") Exciter Stator Mounting (Early Spec A Models)	48	526-0249	8	*Washer, Flat - Hardened (15/32" ID x 1" OD x 1/8" Thk)
15	853-0013	4	Washer, Lock - ET (1/4") Exciter Stator Mounting (Early Spec A Models)	49	232-2921	1	*Disk, Drive
16	232-2584	4	Clip, Retaining - Exciter Stator Mounting (Early Spec A Models)	50	205-0145	1	*Fan, Generator
17	718-1078	6	Screw, Cap - Hex Head (M12 x 50 MM)	51	510-0112	1	*Bearing, Ball
18	740-1801	6	Washer, Flat (M12)	52	870-0284	1	*Nut, Self-locking Hex (1-1/8 - 12)
23	862-0003	4	Nut, Hex (3/8-16)	53	232-2398	1	*Spacer, Bearing
24	850-0050	4	Washer, Lock - Spring (3/8")	54			*Rotor Assembly, Exciter (Includes Parts Marked +)
25	520-0802	4	Stud		201-2152	1	Standard
27	509-0094	1	Seal, O-Ring		201-2298	1	Environmentally Protected
28	815-0194	2	Screw, Tapping - Hex Head With ET Lockwasher (#10-32 x 3/8")	55	870-0131	8	+Nut, Self-locking - Hex With ET Lockwasher (#10-32)
29	232-2418	1	Board, Terminal	56	526-0008	12	+Washer, Flat (#10)
30	802-0040	4	Screw, Cap - Socket Head (1/4-20 x 2")	57	813-0100	4	+Screw, Machine - Round Head (#10-32 x 1/2")
31	850-0040	4	Washer, Lock - ET (1/4")	58	853-0008	4	+Washer, Lock - ET (#10)
33			Stator, Exciter	60	358-0069	1	+Rectifier Assembly - Positive
	220-2010	1	Standard	61	358-0070	1	+Rectifier Assembly - Negative
	220-2309	1	Environmentally Protected	62	515-0094	1	*Key - Exciter Rotor
34	211-0256	1	Bell, End				
35			Stator, Generator				
	220-4149-04	1	Code 9XR				
			Code 15R				
	220-3806	1	Standard				
	220-3956	1	Environmentally Protected				
			Code 515R				
	220-3810	1	Standard				
	220-4110	1	Environmentally Protected				

- Parts Included in 150-1446 Bracket and Point Assembly

* - Parts Included in Generator Rotor Assemblies

+ - Parts Included in Exciter Rotor Assemblies

Output Box

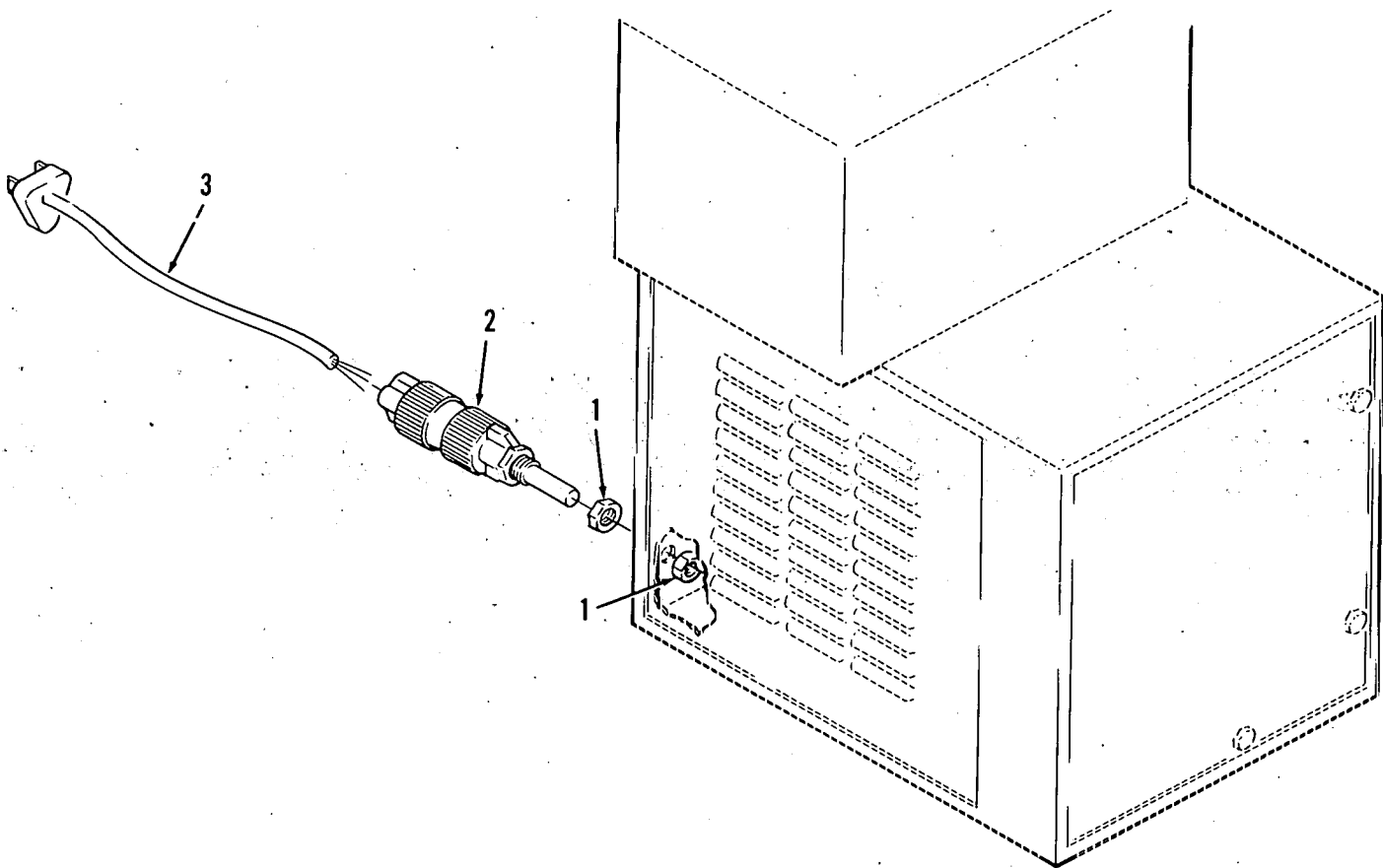


Output Box

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	308-0770	1	Switch, Tap - Dual Phase Selector (Includes Knob and Mounting Hardware)	23	517-0169	4	Plug, Plastic - 3/8" Hole
2	303-0218	1	Knob	24	332-0941	3	Tie, Cable
3	301-7903	1	Box, Output	25	800-0007	1	Screw, Cap - Hex Head (1/4-20 x 1") Grounding Stud
	319-0425	1	Spec A	26	856-0006	4	Washer, Lock - EIT (1/4")
4	301-7899	1	Spec B	27	526-0018	3	Washer, Flat (1/4")
5	332-2634	3	Grille	28	862-0001	3	Nut, Hex (1/4-20)
			Clamp, Insulated - DC Wiring Harness	29	821-0014	4	Screw, Self-Locking - Hex Washer Head (5/16-18 x 1/2")
6	301-7901	1	Cover	30	850-0045	4	Washer, Lock - Spring (5/16")
			Without Circuit Breaker Opening	31	526-0115	2	Washer, Flat (5/16")
	301-7941	1	With Circuit Breaker Opening	32	800-0024	4	Screw, Cap - Hex Head (5/16-18 x 1/2")
7	301-7572	1	Bracket, Mounting - Circuit Breaker	33	517-0045	4	Plug, Dot Button - 9/32" Hole (Output boxes without terminal blocks)
8	508-0257	1	Grommet, Plastic - 3-1/2" Hole	34	508-0055	1	Grommet, Rubber - 1-3/4" Hole
9	338-1647	1	Harness, Wiring - Generator to Control (Includes Plug and Pins)	35	301-8157	1	Bracket, Mounting
10	323-1136	1	Plug, Circular (14 Pin) (P2)	36	302-0106	3	Transformer, Current (Ratio 200/5, 1VA) (CT21,22,23)
11	323-1228	11	Pin, Male	37	302-0253	6	Shim
12			Breaker, Circuit (CB4 or CB5) Voltage Code L, 15R	38	813-0110	6	Screw, Machine - Round Head (#10-32 x 2")
	320-0384	1	60 Amp, 480 Volt	39	854-0010	6	Washer, Lock - IT (#10)
	320-0595	1	70 Amp, 480 Volt (With Shunt Trip)	40	302-0235	3	Clamp - Upper
			125 Amp, 240 Volt	41	302-0236	3	Clamp - Lower
	320-1061	1	Two Pole	42	332-2653	1	Block, Terminal
	320-1049	1	Three Pole	43	812-0160	1	Screw, Machine - Round Head 1/4-20 x 2-1/2"
	320-1556-06	1	Three Pole (With Auxillary Contacts)		812-0158	3	1/4-20 x 2"
	320-0346	1	150 Amp, 240 Volt	44	870-0212	8	Nut, Self-locking (1/4-20)
	320-0837	1	150 Amp, 240 Volt (With Shunt Trip)	45	854-0014	4	Washer, Lock - IT (1/4")
	320-0348	1	200 Amp, 240 Volt	46	821-0009	4	Screw, Self-Locking - Hex Washer Head (1/4-20 x 3/8")
	320-0384	1	Voltage Code Z, 515R - 60 Amp, 480 Volt	47	800-0010	4	Screw, Cap - Hex Head (1/4-20 x 3/4")
13	517-0190	1	Plug, Plastic - 3-1/2" Hole	48	332-1348	4	Spacer
14	301-7360	1	Bracket - Upper	49	870-0212	4	Nut, Self-Locking (1/4-20)
15	301-7361	1	Bracket - Lower	50	854-0014	4	Washer, Lock - IT (1/4")
16	815-0567	2	Screw, Self-Tapping - Hex Head (5/16-18 x 1-1/4")	51	800-0003	2	Screw, Cap - Hex Head (1/4-20 x 1/2")
17	821-0010	14	Screw, Self-Locking - Hex Washer Head (1/4-20 x 1/2")	52	850-0040	2	Washer, Lock - Spring (1/4")
18	815-0236	1	Screw, Self-Tapping - Hex Head (5/16-18 x 5/8")	53	812-0094	4	Screw, Machine - Round Head (#8-32 x 3-5/8")
19			Harness, Wiring - Engine to Control	54	850-0025	4	Washer, Lock - Spring (#8)
	338-1649	1	Spec A (Includes Parts Marked *)	55	860-0008	4	Nut, Hex (#8-32)
	338-2329	1	Spec B (Includes Parts Marked #)	56	402-0070	4	Dampener, Vibration - Spec A
20	508-0258	1	*#Grommet, Rubber - 1-1/2" Hole	57	226-3423	6	Lead, Generator Output Extension
21	323-1134	1	*Plug, Circular (16 Pin) (P1) (Spec A)	58	323-1304	1	#Housing, Connector - Spec B 6 Place (J2)
22			*Socket, Female (Spec A)		323-1306	1	8 Place (J1)
	323-1192	4	14-12 Gauge Wire	59	323-1200	12	#Socket, Female - Spec B
	323-1195	10	18-14 Gauge Wire	60	526-0052	4	Washer, Flat (1/4")
				61	812-0153	4	Screw, Machine - Round Head (1/4-20 x 1")
				62	850-0040	4	Washer, Lock - Spring (1/4")

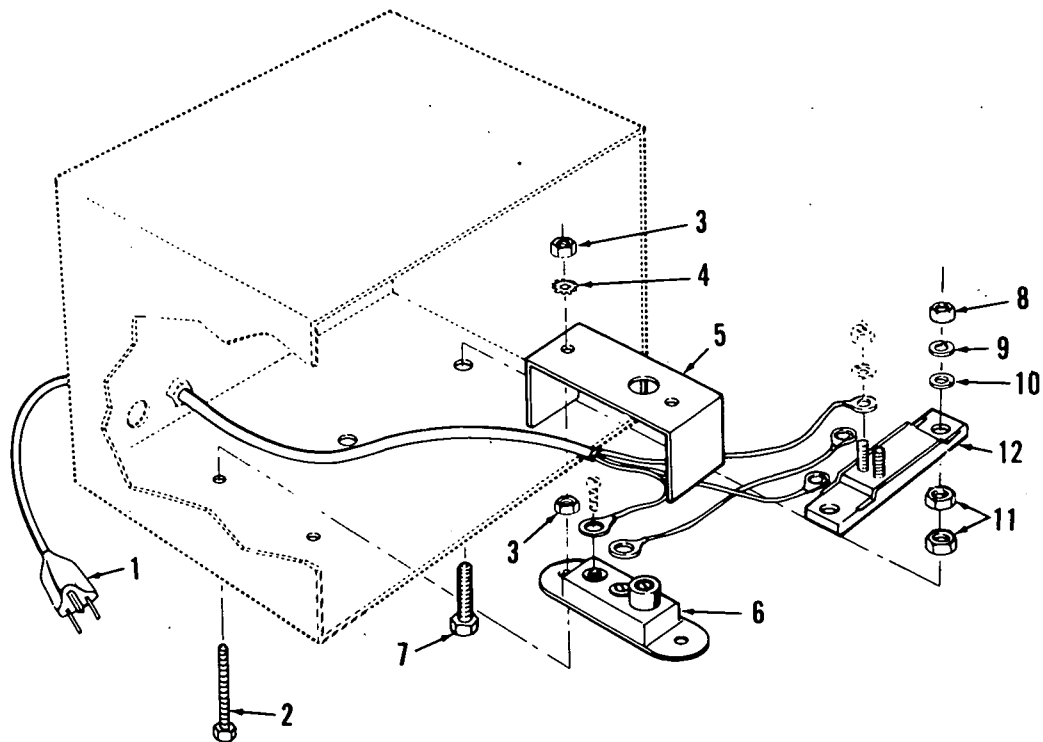
* - Parts Included in 338-1649 Wiring Harness
- Parts Included in 338-2329 Wiring Harness

Generator Heater



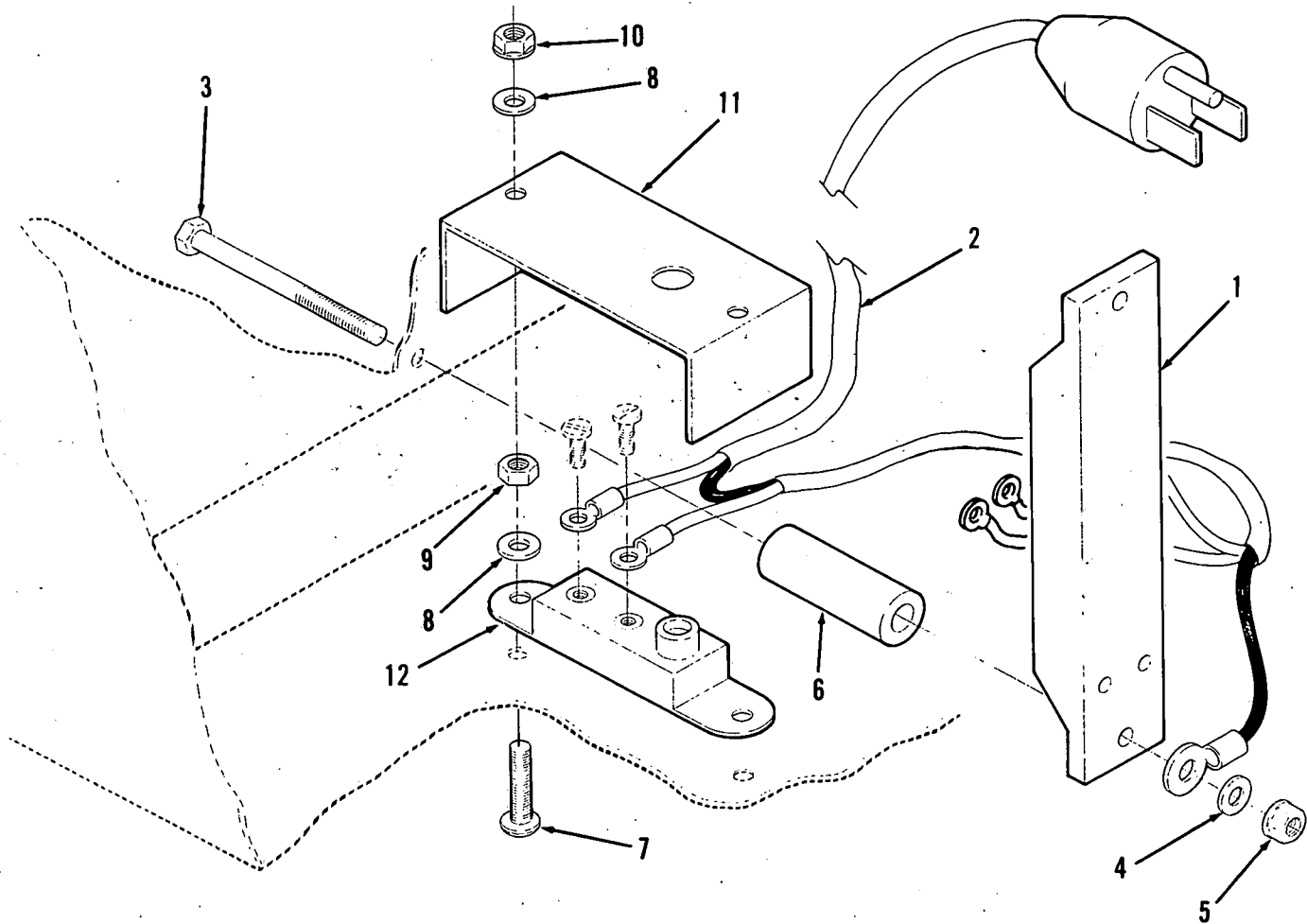
REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	331-0041	2	Nut, Hex - Special
2	333-0157	1	Heater, Electrical
3	333-0228	1	Cord, Heater (6')

Control Heater (Spec A)



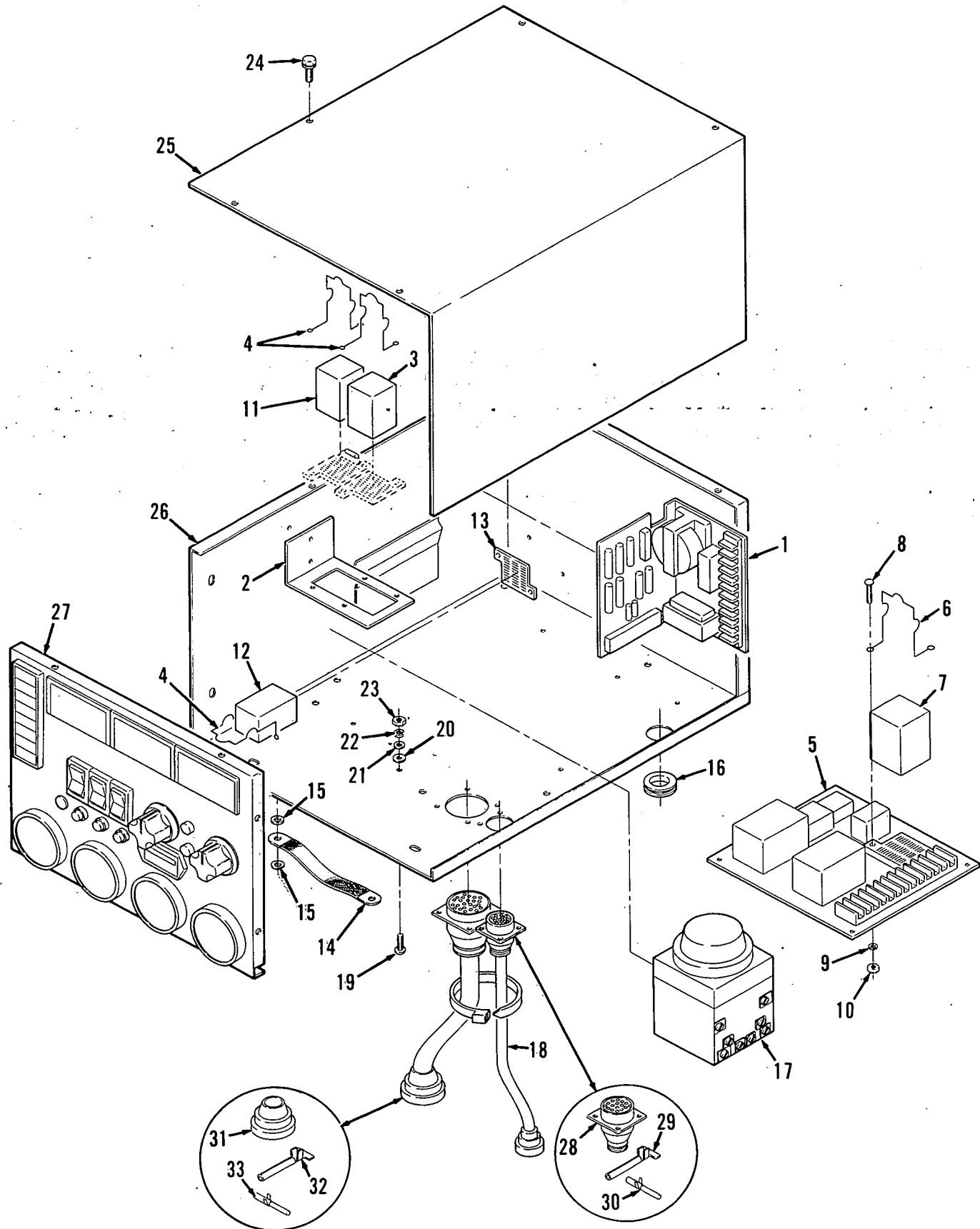
REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	335-0110	1	Cable, Electrical (3 Wire)	8	862-0001	2	Nut, Hex (1/4-20)
2	812-0090	2	Screw, Machine - Round Head (#6-32 x 2-1/4")	9	850-0040	2	Washer, Lock - Spring (1/4)
3	860-0006	4	Nut, Hex (#6-32)	10	526-0052	2	Washer,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

Control Heater (Spec B)



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	333-0151	1	Heater (HR1)	6	130-1107	2	Spacer
2	335-0161	1	Cable	7	812-0070	2	Screw, Machine - Round Head (#6-32 x 1-1/4")
3	800-0034	2	Screw, Cap - Hex Head (5/16-18 x 2-1/4")	8	854-0006	4	Washer, Lock - IT (#6)
4	526-0113	2	Washer, Flat (11/32" ID x 1" OD x 3/32" Thk)	9	860-0006	2	Nut, Hex (#6-32)
5	870-0257	2	Nut, Self-Locking - Hex Head (5/16-18)	10	870-0183	2	Nut, Hex - With ET (#6-32)
				11	301-1886	1	Cover
				12	309-0128	1	Thermostat

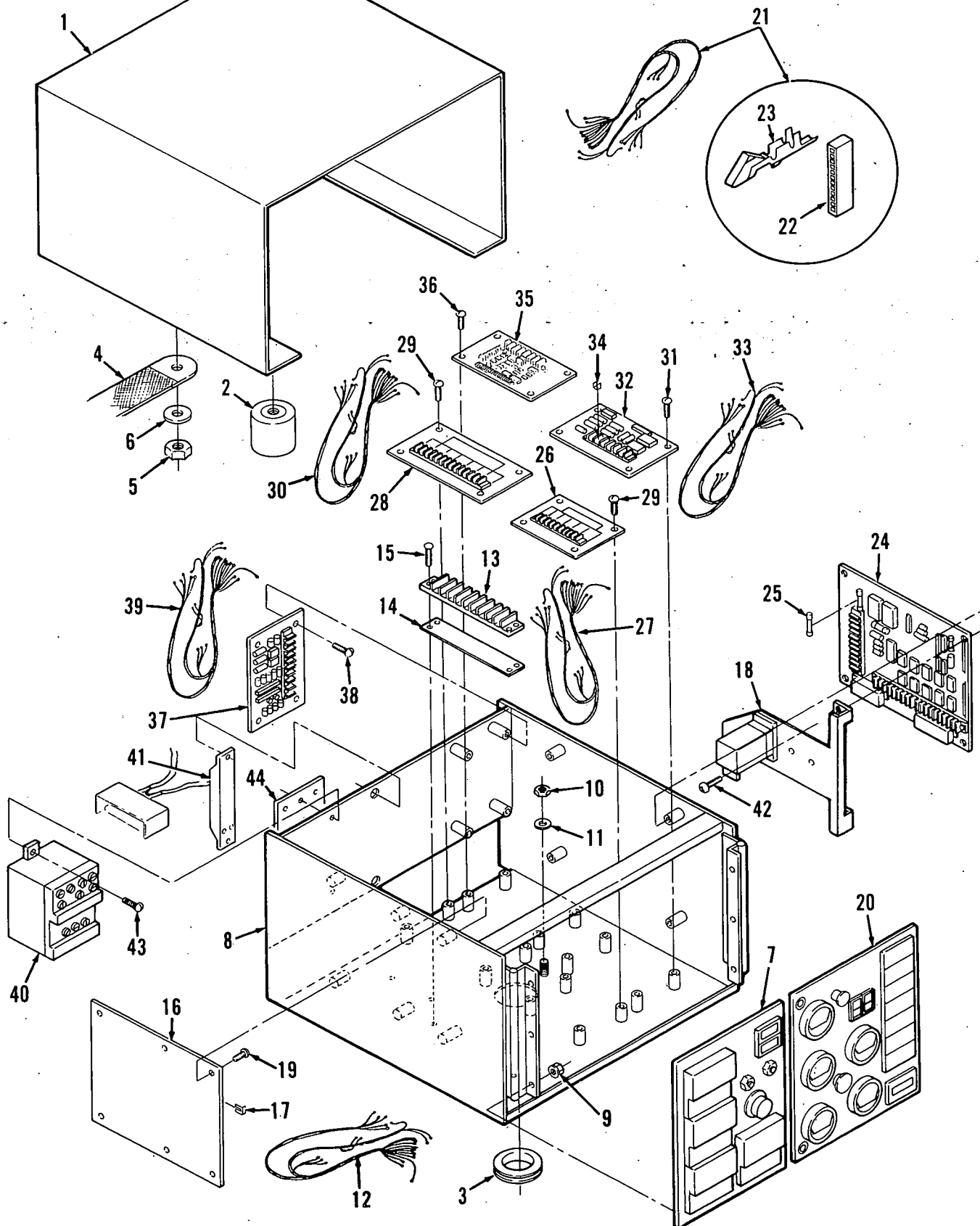
Control
(Spec A)



Control (Spec A)

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1			Regulator Assembly, Voltage (See Separate Page for Components)	18	338-1427	1	Harness, Wiring - Remote Control (30')
			Standard (VRA21)	19	815-0105	1	Screw, Machine - Round Head (Brass) (#10-32 x 1")
	305-0693-01	1	Fixed Resistor				Grounding Stud
	305-0693-02	1	External Adjust	20	526-0063	2	Washer, Flat - Brass (#10)
			Switching Regulator (VRA21)	21	856-0003	2	Washer, Lock - EIT (#10)
	305-0695-01	1	Fixed Resistor	22	851-0001	1	Washer, Lock - Spring (Brass) (#10)
	305-0695-02	1	External Adjust	23	871-0010	2	Nut, Hex - Brass (#10-32)
	305-0737	1	Standard (VRAS-2)	24	821-0005	5	Screw, Self-Locking - Hex Washer Head (#10-32 x 1/2")
2			Bracket, Mounting - Relay	25	301-5150	1	Cover, Control
	301-3244	1	One Socket Hole	26	301-6230	1	Box, Control
	301-7334	1	Two Socket Holes	27	-	1	Panel, Control (See Separate Page for Components)
3	307-1061	1	Relay - Start (K11)	28			Receptacle - Square Flange
4	307-1157	3	Spring, Holddown - Relay		323-1137	1	14 Pin (J2)
5			Monitor Assembly, Engine (Includes Replaceable Relay and Spring) (A11)		323-1135	1	16 Pin (J1)
	300-2510	1	Two Light Monitoring System (Standard)	29	323-1229	11	Socket, Female - Used With 14 Pin Receptacle
	300-2453-04	1	Nine Light Monitoring System	30			Pin, Male - Used With 16 Pin Receptacle
6	307-1157	1	Spring, Holddown - Relay		323-1193	4	16-12 Gauge Wire
7	307-1687	1	Relay (A11K1)		323-1194	12	18-14 Gauge Wire
8	812-0061	2	Screw, Machine - Round Head (#6-32 x 3/8")	31			Plug - Circular
9	854-0006	2	Washer, Lock - IT (#6)		323-1136	1	14 Pin (P2)
10	860-0006	2	Nut, Hex (#6-32)		323-1134	1	16 Pin (P1)
11	307-1061	1	Relay - Voltage Selector (K21)	32			Socket, Female - Used With 16 Pin Plug
12	307-1058	1	Relay - Run (K12)		323-1192	4	14-12 Gauge Wire
13	323-0804	1	Socket, Relay (K12)		323-1195	12	18-14 Gauge Wire
14	337-0049	1	Strap, Ground	33	323-1194	11	Pin, Male - Used With 14 Pin Plug
15	856-0008	2	Washer, Lock - EIT (5/16")				
16	508-0144	1	Grommet, Rubber (1" Hole)				
17			Relay - Time Delay (Stop) (K15)				
	307-1151	1	1 Second to 5 Minutes				
	307-1194	1	3 to 30 Minutes				
	307-1189	1	6 to 60 Minutes				

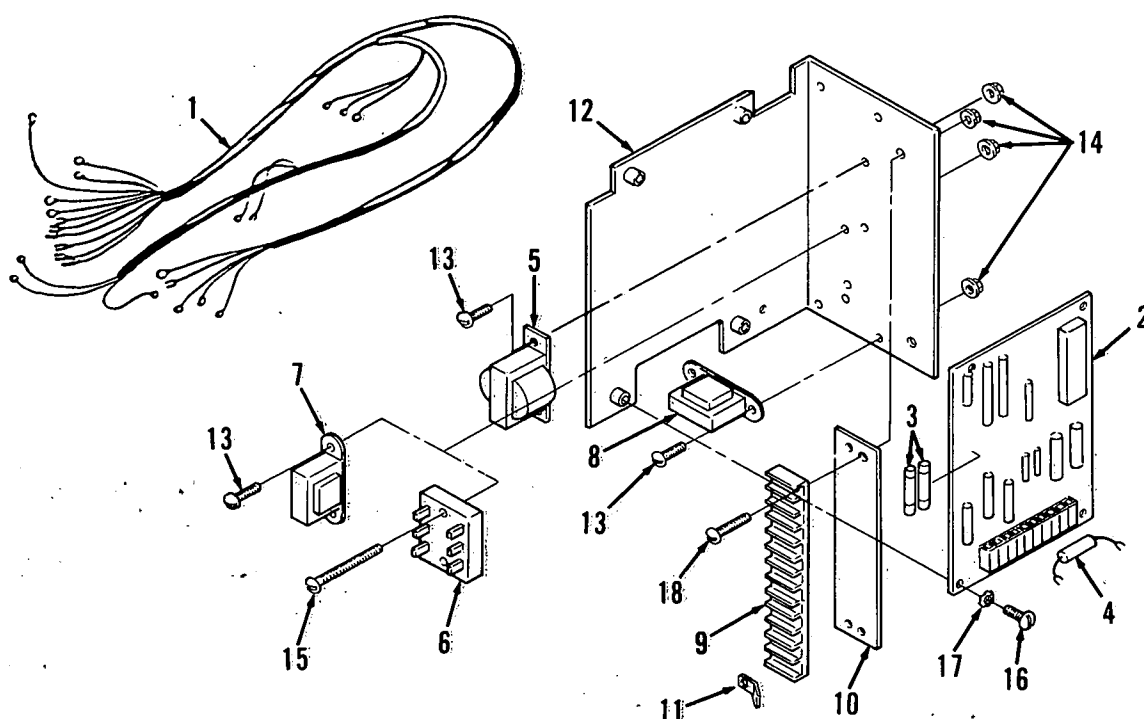
Control (Spec B)



Control (Spec B)

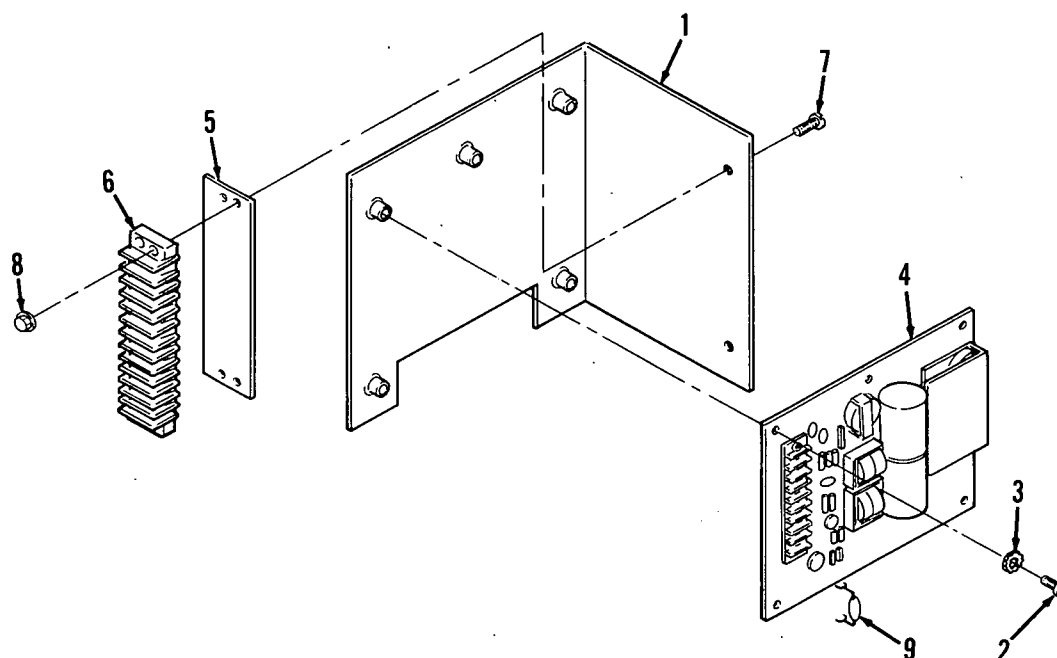
REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	319-0413	1	Cover, Control	27	338-1906	1	Harness, Wiring - Alarm Relay (7 and 12 Light Controls) (A13 to A11TB2)
2	402-0527	4	Isolator, Vibration				
3	508-0051	1	Grommet (2" Hole)	28			Board, Printed Circuit - Alarm Relay (7 and 12 Light Control) (A13)
4	337-0049	1	Strap, Ground		300-2862	1	12 VDC
5	862-0015	1	Nut, Hex (5/16-18)		300-2863	1	24 VDC
6	856-0008	1	Washer, Lock - EIT (5/16")	29			Screw, Machine - Round Head (#6-32 x 1/2")
7	-		Door Assembly, Control - AC (Left Hand Side Facing Control Doors) (See Separate Page for Components)		812-0063	4	7 Light Control
8	319-0416	1	Tray, Control		812-0063	8	12 Light Control
9	870-0131	6	Nut, Hex - ET (#10-32)	30	338-1905	1	Harness, Wiring - Alarm Relay (12 Light Control) (A14 to A11TB2)
10	871-0015	1	Nut, Hex (1/4-20) Grounding Stud	31	815-0544	4	Screw, Machine - Round Head - Cross Recessed with IT (#6-32 x 1/2")
11	853-0013	1	Washer, Lock - ET (1/4")	32			Board, Printed Circuit - Time Delay - Start/Stop/Preheat (A15)
12	338-2331	1	Harness, Wiring - AC (Includes Terminal Block) (AC Door Assembly to TB21 Terminal Block)				Without Preheat
13	332-0607	1	Block, Terminal - 12 Place (TB21)		300-2897	1	12 VDC
14	332-2723	1	Strip, Marker		300-2899	1	24 VDC
15	812-0065	2	Screw, Machine - Round Head (#6-32 x 5/8")		300-2898	1	With Preheat
16	300-2880	1	Board, Voltage Regulator (Includes Jumper) (VR21)		300-2900	1	12 VDC
17	332-2605	1	Jumper, Terminal (VR21TB1-3 to -4) (W1)	33	338-1904	1	24 VDC
18	-		Relay, Run (See Separate Page for Components)	34	332-2957	1	Harness, Wiring - Time Delay Start/Stop (A15 to A11TB1)
19	815-0544	6	Screw, Machine - Round Head - Cross Recessed with IT (#6-32 x 1/2")	35	-		Terminal, Tab (Double) (A15TB1-7)
20	-		Door Assembly, Control - DC (Right Hand Side Facing Control Doors) (See Separate Page for Components)				Board, Printed Circuit - Magnetic Pickup (A16) (See Separate Page for Part Number and Related Replacement Parts)
21	338-2330	1	Harness, Wiring - DC (Includes Connector Housing and Contact Pins) (DC Door Assembly to Engine Monitor)	36	812-0063	4	Screw, Machine - Round Head (#6-32 x 1/2")
22	323-1308	1	Housing, Connector - 12 Place (J4)	37			Board, Printed Circuit - Over/Under Voltage Sensor (A17)
23	323-1302	12	Pin, Contact		300-2905	1	12 VDC
24			Monitor, Engine (Includes Fuses) (A11)		300-2906	1	24 VDC
			7 Light Control	38	812-0063	4	Screw, Machine - Round Head (#6-32 x 1/2")
	300-2809	1	12 VDC	39	338-1940	1	Harness, Wiring - Over/Under Voltage Sensor (A17 to A11)
	300-2810	1	24 VDC	40	302-1833-01	1	Transducer, Watt (A21)
			12 Light Control	41	-		Heater, Control (See Separate Page for Components)
	300-2811	1	12 VDC	42	815-0544	4	Screw, Machine - Round Head - Cross Recessed with IT (#6-32 x 1/2")
	300-2812	1	24 VDC	43	813-0102	2	Screw, Machine - Round Head (#10-32 x 5/8")
25			Fuse	44	319-0030	1	Plate, Mounting - Transducer
	321-0270	2	20 Amp (F1,F2)				
	321-0231	1	15 Amp (F3)				
	321-0094	2	5 Amp (F5)				
26			Board, Printed Circuit - Alarm Relay (12 Light Control) (A14)				
	300-2855	1	12 VDC				
	300-2856	1	24 VDC				

Voltage Regulator Assembly (VRA21 - Spec A)



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
			Regulator Assembly, Voltage - Complete	7	315-0343	1	Reactor - Used on Switching Voltage Regulator Assemblies (VRA21L22)
			Standard	8	315-0343	1	Reactor (VRA21L21)
	305-0693-01	1	Fixed Resistor	9	332-0607	1	Block, Terminal (VRA21TB2)
	305-0693-02	1	External Adjust	10	332-2373	1	Strip, Marker
			Switching Regulator	11	332-2387	4	Terminal, Tab - Used on Standard Voltage Regulator Assemblies
	305-0695-01	1	Fixed Resistor				
	305-0695-02	1	External Adjust	12	301-5736	1	Panel, Mounting
1	338-1443	1	Harness, Wiring	13			Screw, Machine - Round Head (#6-32 x 3/8")
	338-1670	1	Standard Regulator		812-0061	4	Standard Voltage Regulator Assemblies
2			Switching Regulator		812-0061	6	Switching Voltage Regulator Assemblies
			Board, Voltage Regulator (VR21)	14	870-0183	8	Nut, Self-Locking - Hex Head With ET Lockwasher (#6-32)
	332-2045	1	Standard Regulator (Includes Fuses)	15	812-0070	2	Screw, Machine - Round Head (#6-32 x 1-1/4") Used on Standard Voltage Regulator Assemblies
	300-2409	1	Switching Regulator	16	812-0059	4	Screw, Machine - Round Head (#6-32 x 1/4")
3	321-0204	2	Fuse (1/4 Amp) Used With Standard Voltage Regulator Board (VR21F2,F3)	17	853-0003	4	Washer, Lock - ET (#6)
4	350-1190	1	Resistor - Fixed (1740 Ohms, 1/2 Watt) Used on Voltage Regulator Assemblies Without External Adjust (VRA21R21)	18	812-0065	2	Screw, Machine - Round Head (#6-32 x 5/8")
5	315-0431	1	Transformer (VRA21T21)				
6	305-0524	1	Bridge, Rectifier - Used on Standard Voltage Regulator Assemblies (VRA21CR21)				

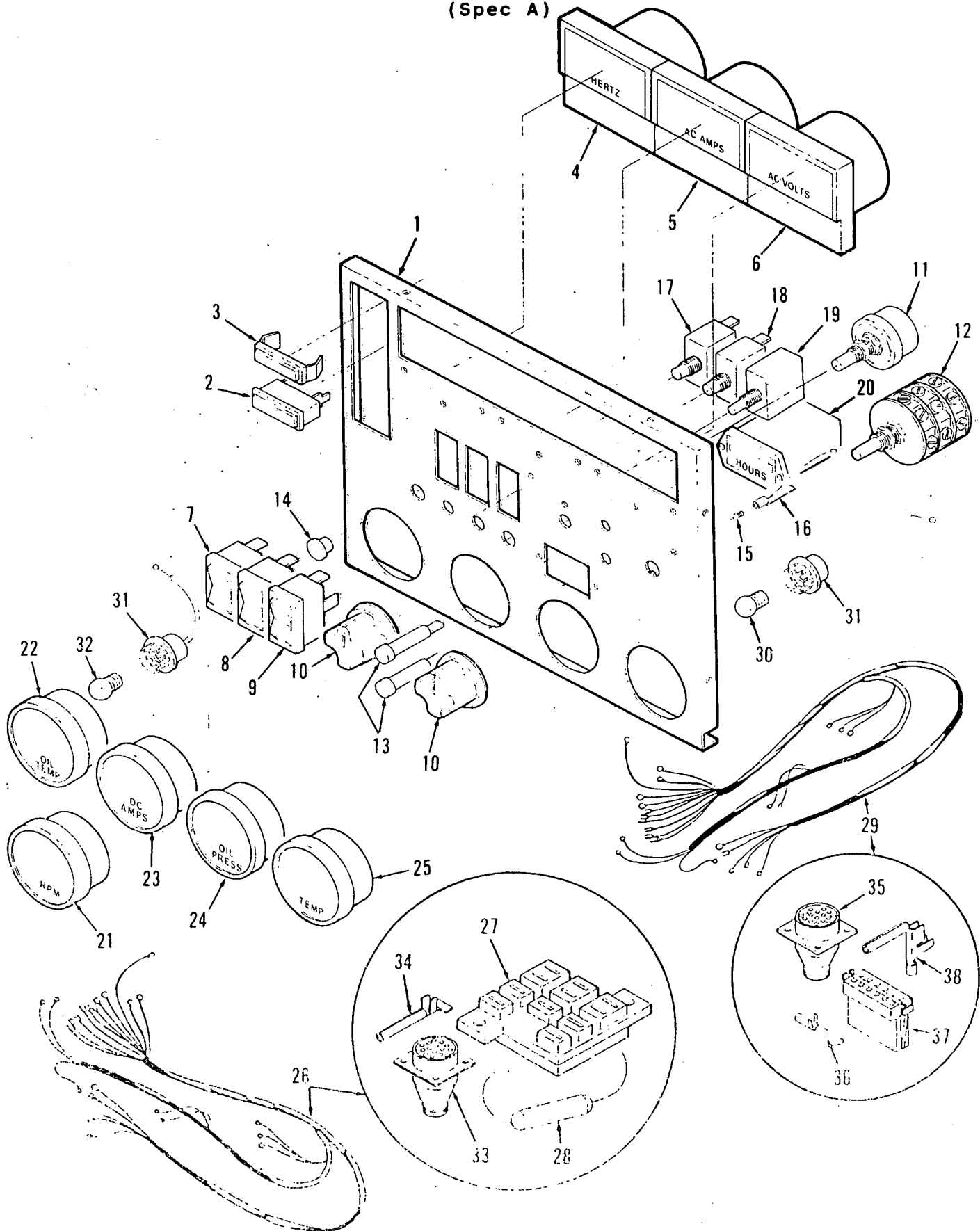
Voltage Regulator Assembly (VRAS-2 - Spec A)



REF NO.	PART NO.	QTY USED	PART DESCRIPTION
	305-0737	1	Regulator Assembly, Voltage - Complete
1	301-9334	1	Panel, Mounting
2	812-0059	5	Screw, Machine - Round Head (#6-32 x 1/4")
3	853-0003	5	Washer, Lock - ET (#6)
4	300-2880	1	Board, Voltage Regulator (VR21)
5	332-2373	1	Strip, Marker

REF NO.	PART NO.	QTY USED	PART DESCRIPTION
6	332-0607	1	Block, Terminal (VRAS-2TB2)
7	812-0065	2	Screw, Machine - Round Head (#6-32 x 5/8")
8	870-0183	2	Nut, Self-Locking - Hex Head With ET Lockwasher (#6-32)
9	350-0394	1	Resistor - Fixed (2000 Ohms, 1/2 Watt) Used on Voltage Regulator Assemblies Without External Adjust (VRAS-2R21)

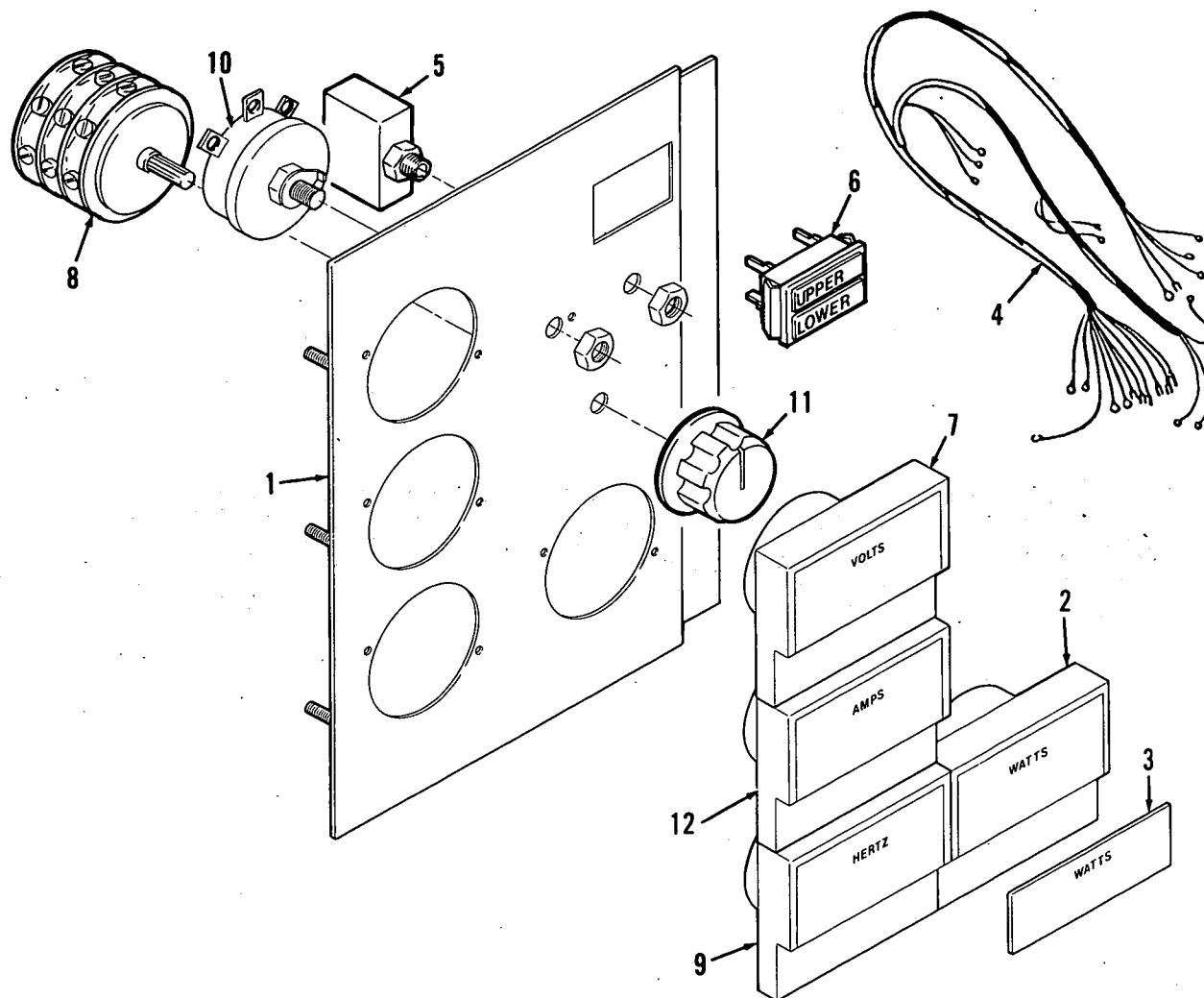
Control Panel (Spec A)



Control Panel (Spec A)

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1			Panel, Control	19			Breaker, Circuit - Field
	301-7348-01	1	Panels Without AC Meters				Used With VRA21 Voltage
	301-7348-02	1	Panels With Three Round Gauge Holes		320-1138	1	Regulator Assembly
			Panels With Four Round Gauge Holes		320-0530	1	3 Amp (Dual - CB3,CB4)
			Panels With AC Meters		320-1121	1	5 Amp (CB3)
	301-7349-01	1	Panels With Three Round Gauge Holes				Used With VRAS-2 Voltage
	301-7349-02	1	Panels With Four Round Gauge Holes				Regulator Assembly - 3 Amp (CB3)
2			Light, Indicator (14VDC)	20	302-0885	1	Meter, Time Totalizing (M4)
			Controls With Two Light Monitoring System	21	302-1715	1	Tachometer (Includes Socket and Lamp (M5))
	322-0238	1	RUN - Green (DS1)	22	193-0330	1	Gauge, Oil Temperature (M5)
	322-0128	1	FAULT - Red (DS2)	23	302-1402	1	Ammeter - DC (M1)
			Controls With Nine Light Monitoring System	24	193-0352	1	Gauge, Oil Pressure (M2)
	322-0238	1	RUN - Green (DS1)	25	193-0351	1	Gauge, Water Temperature (M3)
	322-0110	1	LO ENG TEMP - Red (DS2)	26			Harness, Wiring - AC
	322-0109	1	HI ENG TEMP - Red (DS3)				(Includes Socket for K11
	322-0108	1	LO OIL PRES - Red (DS4)		338-1642-03	1	Start Relay, Receptacle and Sockets)
	322-0111	1	OVERSPEED - Red (DS5)				Controls Without AC Meters
	322-0107	1	OVER CRANK - Red (DS6)		338-1642-01	1	Controls With AC Meters
	322-0240	1	PRE HI ENG TEMP - Amber (DS7)				All Except Voltage Code
	322-0241	1	PRE LO OIL PRESS - Amber (DS8)				9XR (Also Includes
	322-0283	1	SWITCH OFF - Red (DS9)		338-1642-04	1	Resistor and Socket
3	322-0141	7	Lens, Indicator Light (No Legend or Lamp) Controls With Two Light Monitoring System	27	323-0765	2	for K21 Voltage
4			Meter, Frequency - AC (M21)	28	350-0556	1	Selector Relay)
	302-1273	1	50 Hertz	29			Voltage Code 9XR
	302-1153	1	60 Hertz				Socket, Relay (For K11,K21
5			Ammeter - AC (M23)				Relays)
	302-1147	1	32.0 DL6T		338-1643-01	1	Resistor, Fixed - 47K Ohm,
			40.0 DL6T		338-1644	1	1/2 Watt (K21R22)
	302-1683	1	All Except Voltage Code 9XR				Harness, Wiring - DC (Includes
	302-1678	1	Voltage Code 9XR				Receptacle, Pins, Plug and
6			Voltmeter - AC (M22)				Sockets, where required.)
	302-1148	1	All Except Voltage Code 9XR		338-1646	1	Meters
	302-1300	1	Voltage Code 9XR		338-1644	1	Switches
7			Switch, Rocker (Remote, Stop, Start) (S10)		338-1646	1	Indicator Lights
	308-0531	1	Controls With Two Light Monitoring System		338-1645	1	Controls With Two Light
			Controls With Nine Light Monitoring System				Monitoring System
	308-0620	1	Standard				Controls With Nine Light
	308-0624	1	Pennsylvania State Approved				Monitoring System
8	308-0533	1	Switch, Rocker - Pre Heat (S11)	30	322-0308	3	Lamp, Pilot (DS10,DS11,DS12)
9	308-0532	1	Switch, Rocker - Lamp Test (S12)	31	322-0210	4	Socket, Lamp
10	303-0032	2	Knob	32	322-0004	1	Lamp, Pilot (DS13)
11			Potentiometer - 25 Watt (R23)	33	323-1137	1	Receptacle - Square Flange
	303-0170	1	Used With VRA21 Voltage				(14 Pin) (P2)
			Regulator Assembly With	34			Socket, Female
			External Adjust		323-1229	11	Used With 338-1642-01
	303-0261	1	Used With VRAS-2 Voltage		323-1229	5	Wiring Harness
			Regulator Assembly With		323-1229	10	Used With 338-1642-03
			External Adjust				Wiring Harness
12	308-0284	1	Switch, Rotary -	35	323-1135	1	Used With 338-1642-04
			Voltmeter/Ammeter (S21)				Wiring Harness
13	322-0211	2	Light, Pilot (DS21,DS22)				Receptacle - Square Flange
14	517-0132	1	Plug, Hole				(16 Pin) (P1) Used With
15	322-0203	2	Lamp (DS14,DS15)				338-1643-01 Wiring Harness
16	322-0213	2	Lampholder				Pin, Male - Used With
17	320-1110	1	Breaker, Circuit - Remote -		323-1193	3	323-1137 Receptacle
			7 Amp (CB1)		323-1194	10	16-12 Gauge Wire
18	320-1110	1	Breaker, Circuit - Control -		323-0984	3	18-14 Gauge Wire
			7 Amp (CB2)	36			Plug, Connector (12 Pin)
							(J1, J2, J3) Used With
				37			338-1643-01, 338-1644 and
							338-1645 Wiring Harnesses
				38			Socket, Male (Side Feed)
					323-0488	8	Used With 338-1643-01
							Wiring Harness
					323-0488	12	Used With 338-1644
							Wiring Harness
					323-0488	10	Used with 338-1645
							Wiring Harness

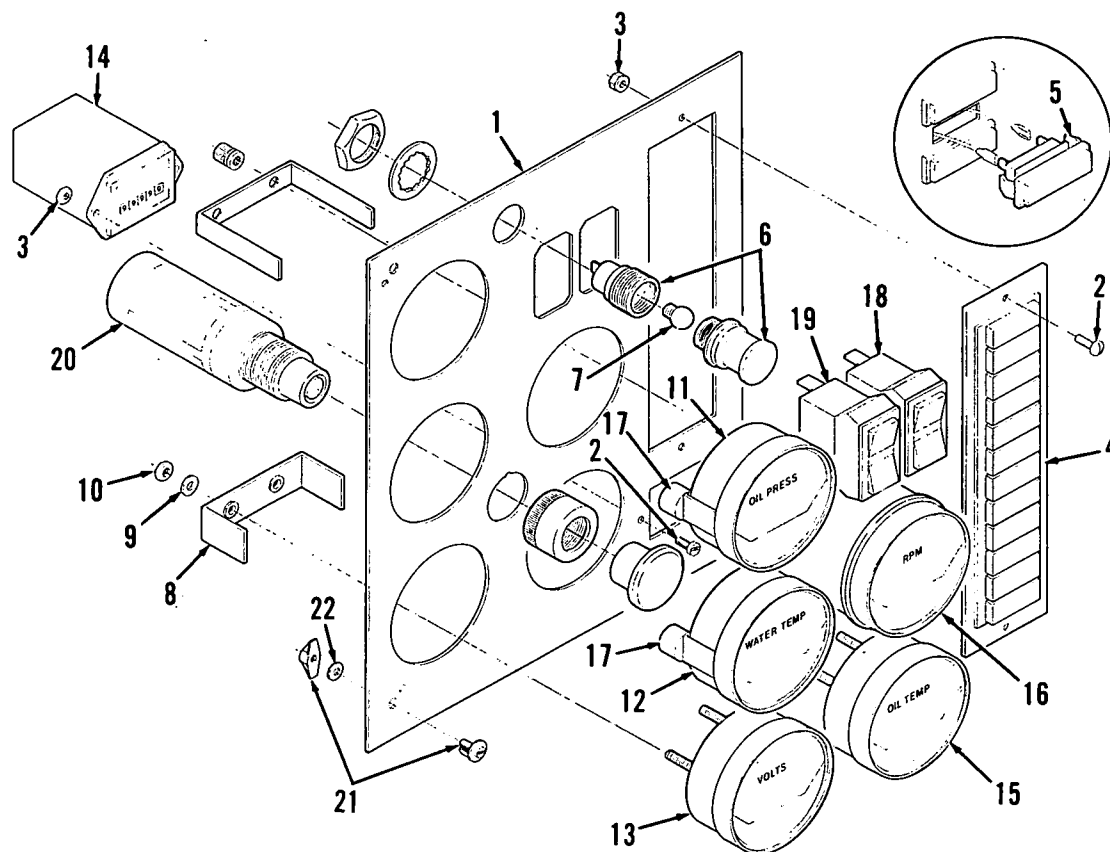
AC Control Door Assembly (Spec B)



REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	319-0417	1	Door, Control - AC Without Meters
	319-0418	1	Without Wattmeter
	319-0419	1	With Wattmeter
2	302-1722	1	Wattmeter (Dial Not Included) (M24)
3	302-1721-02	1	Dial, Wattmeter
4	338-1936	1	Harness, Wiring - Watts Transducer (A21 to M24 and TB21)
5	320-1121	1	Breaker, Circuit (CB21)
6	322-0363	1	Light, Indicator - Upper/Lower Scale (DS21, DS22)
7	302-1148	1	Voltmeter (M21) 0-300/600
	302-1753	1	0-750
8	308-0882	1	Switch, Rotary - Voltmeter/Ammeter (Knob Not Included) (S21)
9	302-1720	1	Meter, Frequency (Includes Resistor - Part Number Not Available at Time of Printing) (M23)

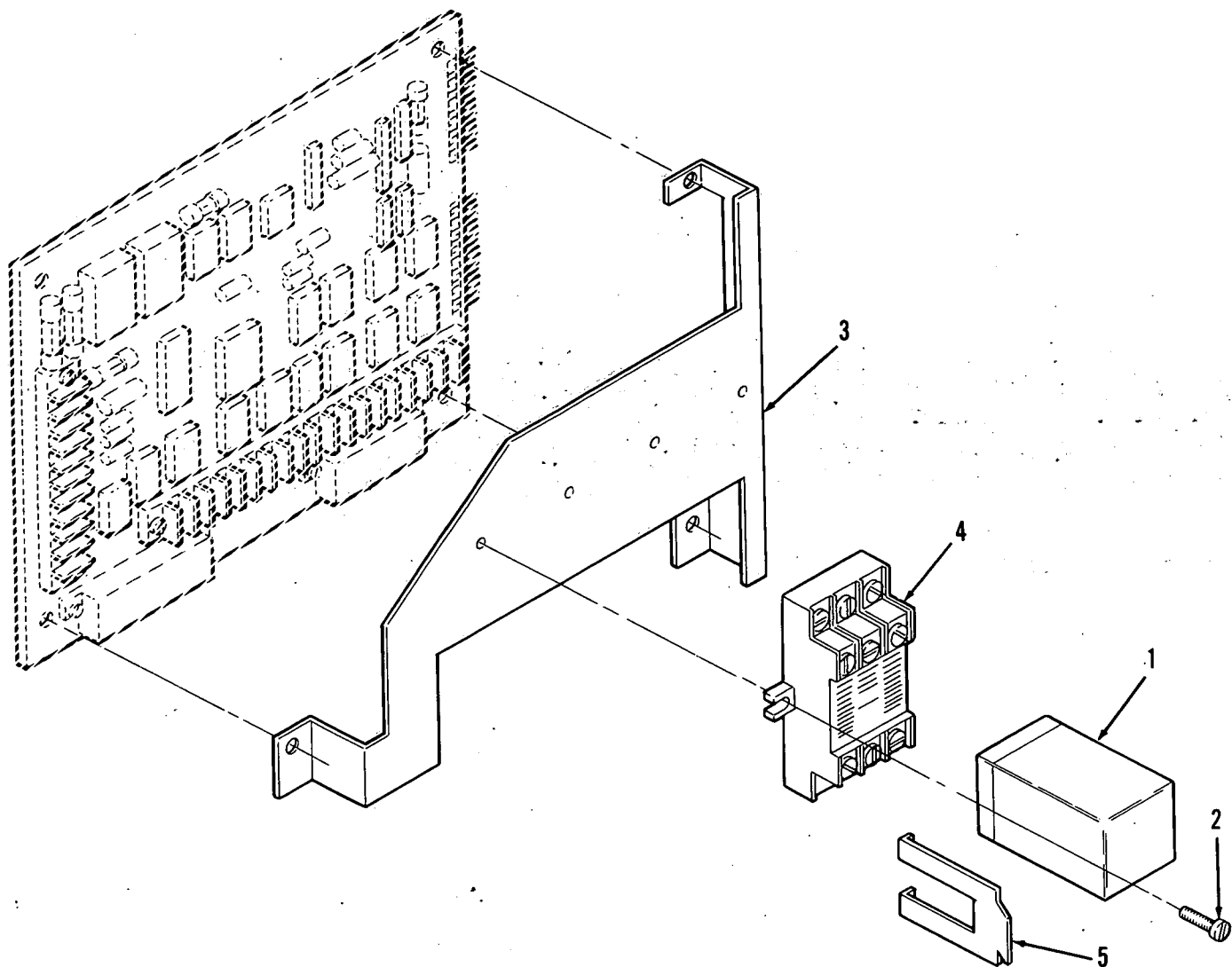
REF NO.	PART NO.	QTY USED	PART DESCRIPTION
10	303-0261	1	Potentiometer (R21)
11	303-0032	1	Knob, Rotary Switch
12	302-1473	1	Ammeter (M22) 0-50/100
	302-1147	1	0-75/150
	302-1683	1	0-100/200
	302-1684	1	0-150/300
	302-1685	1	0-200/400
	302-1724	1	0-250/500
	302-1725	1	0-375/750
	302-1726	1	0-400/800
	302-1727	1	0-500/1000
	302-1728	1	0-600/1200
	302-1729	1	0-750/1500
	302-1798	1	0-1000/2000
	302-1799	1	0-1500/3000
	302-1800	1	0-2000/4000

DC Control Door Assembly (Spec B)



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	319-0421	1	Door, Control - DC Doors with Three Round Gauge Holes	11	193-0352	1	Gauge, Oil Pressure (M11)
	319-0420	1	Doors with Five Round Gauge Holes	12	193-0351	1	Gauge, Water Temperature (M12)
2	815-0385	4	Screw, Machine - Round Head (#6-32 x 1/2")	13	302-1641	1	Voltmeter (M13) 12 VDC
3	870-0183	4	Nut, Hex - With ET (#6-32)		302-1642	1	24 VDC
4			Light Assembly, Indicator (Includes Wiring Harness and Connector Housing) (A12) Seven Light Assembly	14	302-0885	1	Meter, Time Totalizing (M14)
	322-0359-01	1	12 VDC	15	193-0330	1	Gauge, Oil Temperature (Includes Mounting Clamp)
	322-0359-02	1	24 VDC	16			Tachometer (Part numbers for bulb and mounting hardware were not available at time of printing) (M16)
	322-0360-01	1	12 VDC		302-1873-01	1	12 VDC
	322-0360-02	1	24 VDC		302-1873-02	1	24 VDC
5			Light, Indicator - Replacement	17	193-0250	2	Resistor, Gauge (Used on 24 VDC Applications) (R12,R13)
	322-0369-01	1	12 VDC	18	308-0892	1	Switch, Rocker - Restart/Preheat/Panel Light (S11)
	322-0369-02	1	24 VDC	19	308-0784	1	Switch, Rocker - Run/Stop/Remote (S12)
6	322-0361	1	Light, Panel (OS11) Bulb, Panel Light - Replacement	20	308-0853	1	Switch, Pushbutton - Emergency Stop (Part Number for Bulb Not Available at Time of Printing) (S14)
	322-0004	1	12 VDC	21	406-0661	2	Latch, Panel
	322-0017	1	24 VDC	22	526-0367	2	Washer, Flat
8	302-0270	3	Clamp, Mounting				
9	526-0049	9	Washer, Flat (#10)				
10	871-0010	18	Nut, Hex - Brass (#10-32)				

Run Relay (Spec B)



REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1			Relay, Run (K11) (Quantity as Required)
	307-1058	1	12 VDC
	307-1056	1	24 VDC
2	815-0388	2	*Screw, Pan Head - Cross Recessed Thread (#6-32 x 1/2")

REF NO.	PART NO.	QTY USED	PART DESCRIPTION
3	319-0447	1	Bracket, Relay Mounting
4	323-0804	1	*Socket, Relay
5	307-1987	2	*Holddown, Relay

* - Quantities listed are for one mounted relay.

This diagram illustrates the assembly of a mechanical device, likely a tape drive, with components numbered 1 through 19. The main assembly is shown in an exploded view, revealing the internal structure of a rectangular housing (19). Key components include a motor assembly (1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18) and a tape reel (19). The motor assembly consists of a motor unit (1) with a gear (2) and a pulley (3). A drive pulley (4) is connected to a motor pulley (5) via a timing belt (6). The motor unit is mounted on a base plate (7) with screws (8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18). The tape reel (19) is shown as a large spool with a central hub and a tape path. The diagram uses dashed lines to indicate the relative positions and assembly sequence of the parts.

REF NO.	PART NO.	QTY USED	PART DESCRIPTION
12	856-0010	1	Washer, Lock - EIT (3/8")
13	150-0717	1	Switch, Overspeed (S3)
14	526-0077	1	Washer, Flat (3/8")
15	150-1557	1	Wheel, Sensor
16	370-4011	1	Spacer
17	854-0031	1	Washer, Lock - IT (3/4")
18			Board, Printed Circuit - Magnetic Pickup (A16)
	300-2901	1	12 VDC
	300-2903	1	24 VDC
19	338-1930	1	Harness, Wiring - Magnetic Pickup (A16 to A11)

Paint, Thread Sealant and Gasket Kits

REF NO.	PART NO.	QTY USED	PART DESCRIPTION
	525-0305	-	Paint, Green - Enamel (13 oz. Pressurized Spray Can)
	518-0452	-	Sealant, Thread (50 cc Bottle)
	168-0173	1	Kit, Gasket - Lower End
	168-0174	1	Kit, Gasket - Valve Grind

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541-0286	18	740-1006	23	800-2100	31	821-0010	49
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718-1021	17	740-1006	26	800-2110	45	821-0013	43
718-1021	39	740-1006	29	800-2516	25	821-0013	45
718-1032	41	740-1008	9	802-0040	49	821-0014	22
718-1035	11	740-1008	17	805-0025	49	821-0014	43
718-1035	29	740-1008	22	809-0035	31	821-0014	51
718-1035	41	740-1008	25	812-0059	60	821-0016	37
718-1036	11	740-1008	30	812-0059	61	821-0018	43
718-1036	18	740-1008	31	812-0061	43	850-0025	51
718-1036	37	740-1010	11	812-0061	57	850-0030	12
718-1036	47	740-1010	22	812-0061	60	850-0030	43
718-1037	7	740-1010	33	812-0063	59	850-0040	12
718-1037	11	740-1010	35	812-0065	59	850-0040	47
718-1037	20	740-1801	7	812-0065	60	850-0040	49
718-1037	31	740-1801	9	812-0065	61	850-0040	51

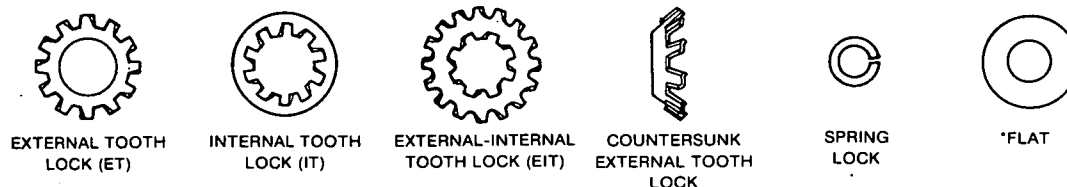
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850-0060	47	862-0015	59				
850-2005	33	862-0016	45				
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850-2008	41	870-0131	59				
850-2010	49	870-0183	54				
850-2012	27	870-0183	60				
850-2012	45	870-0183	61				
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853-0003	60	870-0196	31				
853-0003	61	870-0212	41				
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853-0013	59	870-0212	47				
853-0013	67	870-0212	51				
853-2012	33	870-0250	49				
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854-0006	54	870-0257	22				
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860-0006	57						
860-0008	51						
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HARDWARE IDENTIFICATION

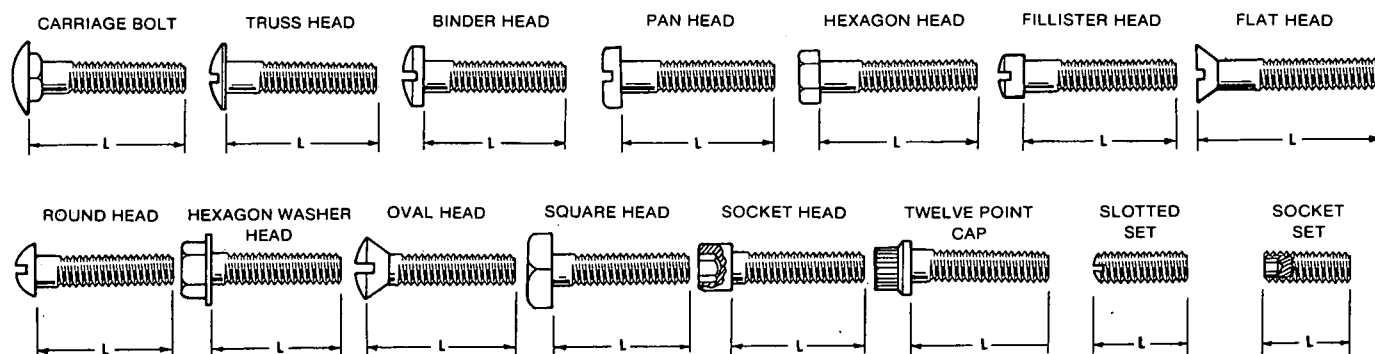
Illustrated hardware items are only for identification purposes. All hardware items listed throughout this parts catalog are steel SAE grade five (5) or lower (zinc plated with clear chromate dip) unless parts description indicates differently. All dimensions are in inches.

WASHER TYPES

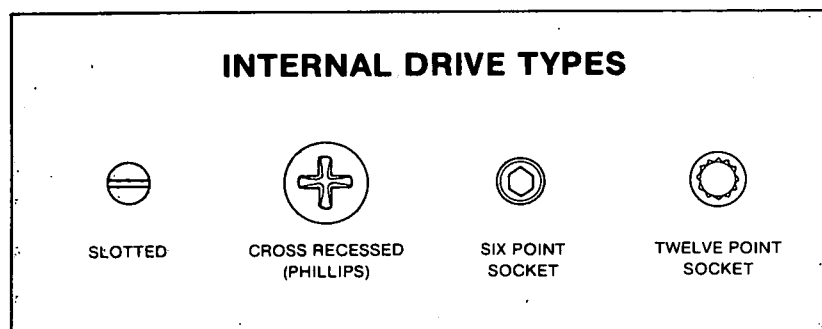


* - Flat washer dimensions given are: Inside Diameter (ID), Outside Diameter (OD) and Thickness (Thk).

BOLT AND SCREW TYPES



L - Measure length between these points.



Nominal size (fractional diameter or screw number)
 Number of threads per inch
 Length in inches

1/4-20 x 3/4"

NUT TYPES





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