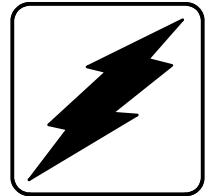


# Service Parts

## Industrial Generator Sets



Models:

**50-100RZ**

See Group 701: Literature, inside this manual for part numbers of engine and accessory parts catalogs

See TP-6009 Parts Catalog Industrial Controller for controller parts



**KOHLER**<sup>®</sup>  
POWER SYSTEMS

Specification Series 187

TP-5614 3/00c

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# Introduction

This manual lists service replacement parts for 50–100 kW generator sets.

At the time of print this manual applied to the generator set specification (spec) numbers listed in the Specification Number Index. On occasion this manual may apply to specs not listed in the Specification Number Index.

Information in this publication represents data available at the time of print. Kohler Co. reserves the right to change this publication and the products represented without notice and without any obligation or liability whatsoever.

This manual includes the following main sections:

**Table of Contents.** Lists the sections of the manual.

**Introduction (and other information sections).** Contains introductory material about part numbers, illustrations, and hardware.

**Index.** Lists the generator set specs and groups.

**Group Parts Lists.** List the part numbers of parts in the groups.

**Kit Sections.** List modules and accessories and their parts.

**Appendices.** Include Abbreviations, Common Hardware Application Guidelines, General Torque Specifications, Common Hardware Identification, and Common Hardware List.

xin:004:002

## Numbering System Significance

This manual uses the following numbering systems:

**Specification Number.** A six-digit number with a PA-prefix. The Specification Number Index does not show the prefix. Spec numbers break down into groups.

**Group Number.** A unique number representing a parts group needed to assemble a generator set function. For example, Group 101 is the Air Intake group.

**Variation or Module Number.** A group might have several variations. Each variation performs the same function with different parts lists. For example, a 50 Hz generator alternator and 60 Hz generator alternator both perform the same function, however, with different parts. Each difference requires a group variation or module number.

**Part Number.** The part number identifies an individual assembly, subassembly, component, or accessory kit.

xin:004:003

## Illustrations

Illustrations (or exploded-view drawings) best representing the widest range of variations accompany most groups in this manual. Illustrations do not depict all details and may not show all parts. Do not use illustrations for assembly or disassembly instructions.

xin:004:004

## How to Find Part Numbers

Use the following steps to locate a service replacement part.

1. Locate the generator set nameplate to **identify the generator set spec number**.
2. Locate a second generator set nameplate listing accessories to **identify installed modules**. On some models the accessory nameplate is mounted inside the generator junction box.
3. **Turn to the Specification Number Index**. The first column lists the generator set spec numbers. The headings identify the groups of parts that make up the generator set.
4. **Identify the group** most likely to include the service part number.
5. **Find the group variation number** at the intersection of the spec number row and the group column. Note the variation number.
6. **Page forward to locate the group** identified in step 4 or find the appropriate page in the Table of Contents.
7. **Find the part on the illustration** and note the item number of the part or **find the part description in the parts list**.
8. Select **the part number that corresponds to your group variation**. The first column lists the illustration item number. Find the variation identified in the Specification Number Index or the module number found on the generator set nameplate in the appropriate column on the right side of the parts list table. Find the quantity used at the intersection of the item number row and the variation column. A blank space at the intersection means the variation/module does not use that part number.

xin:004:005

## Hardware References

Many common hardware items do not appear in parts manuals or will appear as common hardware entries. A common hardware entry lists the size of the hardware. For example, an item that appears as “Hardware, 3/8-16” in the text means that the piece is 3/8-16 size. Obtain common hardware locally or, if contacting the factory, use the Common Hardware List in the appendix to identify the common hardware part number and specifications. See Common Hardware Application Guidelines in the appendix for mating hardware instructions.

Some hardware items require a specific size or some other characteristic. In that case, use the part number listed in the text.

**When replacing hardware, do not substitute inferior grade hardware.** Replacement hardware grade should be equal to or better than the grade of the manufacturer’s original hardware. Use the Common Hardware List in the appendix to identify the common hardware hardness.

xin:004:006

# Specification Number Index

<b>Group Title</b>	<i>Air Intake</i>	<i>Fuel System</i>	<i>Cooling System</i>	<i>Engine</i>	<i>Nameplates and Decals</i>	<i>Oil Pressure Switch</i>	<i>Skid and Plant Mounting</i>	<i>Temperature Switch</i>	<i>Alternator and Fan Belts</i>	<i>Exhaust System</i>	<i>Recommended Spare Parts</i>	<i>Generator and Mounting</i>	<i>Controller and Mounting</i>	<i>Literature</i>
<b>Group No.</b>	101	103	104	105	107	108	109	110	113	116	119	201	301	701
<b>Spec No.</b>	<b>Variation Number</b>													

<b>50RZ</b>														
187130	1	1	1	27	12	1	4	1	4	1	—	80	†	14
187131	1	2	1	27	12	1	4	1	4	1	—	80	†	14
187132	1	2	1	17	12	1	4	1	4	1	—	85	5	14
187133	1	2	1	27	12	1	4	1	4	1	—	90	†	14
187136	1	1	1	29	12	1	4	1	4	1	—	80	†	14
187137	1	2	1	29	12	1	4	1	4	1	—	80	†	14
187138	1	2	1	29	12	1	4	1	4	1	—	90	†	14
187139	5	7	16	32	1	8	5	7	—	8	1	9	†	14
187140	5	7	16	32	1	8	5	7	—	8	1	11	†	14
187141	5	7	16	32	2	8	5	7	—	8	1	10	†	14
187142	5	*	*	32	1	8	5	7	—	8	3	9	†	14
187143	5	*	*	32	1	8	5	7	—	8	3	11	†	14
187144	5	*	*	32	2	8	5	7	—	8	3	10	†	14

\* Configured group. Refer to the generator set nameplate for the module number. Turn to the respective group on the following pages for parts breakdowns.

† Configured group. Refer to the generator set nameplate for the module number. See controller parts catalog TP-6009 for controller parts lists.

— Not applicable.

# Specification Number Index

Group Title	<i>Air Intake</i>	<i>Fuel System</i>	<i>Cooling System</i>	<i>Engine</i>	<i>Nameplates and Decals</i>	<i>Oil Pressure Switch</i>	<i>Skid and Plant Mounting</i>	<i>Temperature Switch</i>	<i>Alternator and Fan Belts</i>	<i>Exhaust System</i>	<i>Recommended Spare Parts</i>	<i>Generator and Mounting</i>	<i>Controller and Mounting</i>	<i>Literature</i>
Group No.	101	103	104	105	107	108	109	110	113	116	119	201	301	701
Spec No.	Variation Number													

60RZ														
187060	1	1	1	23	8	1	4	1	2	1	—	81	†	10
187061	1	1	1	17	8	2	4	2	2	1	—	86	17	10
187062	1	1	1	17	8	1	4	1	2	1	—	86	12	10
187063	1	2	1	23	8	1	4	1	4	1	—	81	†	10
187064	1	2	1	17	8	2	4	2	2	1	—	86	17	10
187065	1	2	1	17	8	1	4	1	2	1	—	86	12	10
187066	1	2	1	27	8	1	4	1	4	1	—	91	†	10
187067	1	1	15	27	8	1	4	1	4	1	—	81	†	10
187068	1	2	15	27	8	1	4	1	4	1	—	81	†	10
187071	1	1	1	29	8	1	4	1	4	1	—	81	†	10
187072	1	1	15	29	8	1	4	1	4	1	—	81	†	10
187073	1	2	1	29	8	1	4	1	4	1	—	81	†	10
187074	1	2	15	29	8	1	4	1	4	1	—	81	†	10
187075	1	2	1	29	8	1	4	1	4	1	—	91	†	10
187076	5	7	16	32	3	8	5	7	—	8	2	11	†	10
187077	5	7	16	32	3	8	6	7	—	8	2	13	†	10
187078	5	7	16	32	3	8	5	7	—	8	1	12	†	10
187079	5	*	*	32	3	8	5	7	—	8	3	11	†	10
187080	5	*	*	32	3	8	6	7	—	8	4	13	†	10
187081	5	*	*	32	4	8	5	7	—	8	3	12	†	10

\* Configured group. Refer to the generator set nameplate for the module number. Turn to the respective group on the following pages for parts breakdowns.

† Configured group. Refer to the generator set nameplate for the module number. See controller parts catalog TP-6009 for controller parts lists.

— Not applicable.

# Specification Number Index

Group Title	<i>Air Intake</i>	<i>Fuel System</i>	<i>Cooling System</i>	<i>Engine</i>	<i>Nameplates and Decals</i>	<i>Oil Pressure Switch</i>	<i>Skid and Plant Mounting</i>	<i>Temperature Switch</i>	<i>Alternator and Fan Belts</i>	<i>Exhaust System</i>	<i>Recommended Spare Parts</i>	<i>Generator and Mounting</i>	<i>Controller and Mounting</i>	<i>Literature</i>
Group No.	101	103	104	105	107	108	109	110	113	116	119	201	301	701
Spec No.	Variation Number													

70RZ														
187260	1	1	1	27	9	1	3	1	4	1	—	95	†	11
187261	1	1	1	17	9	2	3	2	2	1	—	96	17	11
187262	1	1	1	17	9	1	3	1	2	1	—	96	12	11
187263	4	4	1	27	9	1	3	1	4	1	—	95	†	11
187264	4	4	1	17	9	2	3	2	2	1	—	96	17	11
187265	4	4	1	17	9	1	3	1	2	1	—	96	12	11
187266	4	4	1	27	9	1	3	1	4	1	—	97	†	11
187269	1	1	1	31	9	1	3	1	4	1	—	95	†	11
187270	1	4	1	31	9	1	3	1	4	1	—	95	†	11
187271	4	4	1	31	9	1	3	1	4	1	—	97	†	11
187272	5	7	16	33	5	8	6	7	—	8	2	13	†	27
187273	5	7	16	33	5	8	6	7	—	8	2	15	†	27
187274	5	7	16	33	5	8	6	7	—	8	2	14	†	27
187275	5	*	*	33	5	8	6	7	—	8	4	13	†	27
187276	5	*	*	33	5	8	6	7	—	8	4	15	†	27
187277	5	*	*	33	6	8	6	7	—	8	4	14	†	27

\* Configured group. Refer to the generator set nameplate for the module number. Turn to the respective group on the following pages for parts breakdowns.

† Configured group. Refer to the generator set nameplate for the module number. See controller parts catalog TP-6009 for controller parts lists.

— Not applicable.

# Specification Number Index

Group Title	<i>Air Intake</i>	<i>Fuel System</i>	<i>Cooling System</i>	<i>Engine</i>	<i>Nameplates and Decals</i>	<i>Oil Pressure Switch</i>	<i>Skid and Plant Mounting</i>	<i>Temperature Switch</i>	<i>Alternator and Fan Belts</i>	<i>Exhaust System</i>	<i>Recommended Spare Parts</i>	<i>Generator and Mounting</i>	<i>Controller and Mounting</i>	<i>Literature</i>
Group No.	101	103	104	105	107	108	109	110	113	116	119	201	301	701
Spec No.	Variation Number													

80RZ														
187320	2	5	3	24	13	7	3	1	2	4	—	37	†	12
187321	2	5	3	19	13	3	3	2	2	4	—	57	17	12
187322	2	5	3	19	13	7	3	1	2	4	—	57	12	12
187323	2	5	3	24	13	7	3	1	2	6	—	37	†	12
187324	2	5	3	19	13	3	3	2	2	6	—	57	17	12
187325	2	5	3	19	13	7	3	1	2	6	—	57	12	12
187326	2	5	3	24	13	7	3	1	2	6	—	93	†	12
187327	3	5	3	22	16	4	3	1	2	4	—	7	6	12
187328	2	5	13	24	13	7	3	1	2	6	—	37	†	12
187330	2	5	3	24	13	7	3	1	2	6	—	98	†	12
187331	2	5	3	19	13	3	3	2	2	6	—	99	17	12
187332	2	5	3	19	13	7	3	1	2	6	—	99	12	12
187333	2	5	5	24	13	7	3	1	2	6	—	100	†	12
187334	2	5	13	28	13	7	3	1	4	6	—	98	†	12
187335	2	5	13	28	13	7	3	1	4	6	—	100	†	12
187336	3	5	14	14	17	6	3	3	2	6	—	4	1	12
187339	2	5	13	30	13	7	3	1	4	6	—	98	†	12
187340	2	5	13	30	13	7	3	1	4	6	—	100	†	12
187341	7	8	17	34	7	9	6	7	—	9	5	13	†	29
187342	7	8	17	34	7	9	6	7	—	9	5	15	†	29
187343	7	8	17	34	183-7	9	6	7	—	9	5	14	†	29
187344	7	*	*	34	7	9	6	7	—	9	6	13	†	29
187345	7	*	*	34	7	9	6	7	—	9	6	15	†	29
187346	7	*	*	34	183-8	9	6	7	—	9	6	14	†	29

- \* Configured group. Refer to the generator set nameplate for the module number. Turn to the respective group on the following pages for parts breakdowns.
- † Configured group. Refer to the generator set nameplate for the module number. See controller parts catalog TP-6009 for controller parts lists.
- Not applicable.

# Specification Number Index

Group Title	<i>Air Intake</i>	<i>Fuel System</i>	<i>Cooling System</i>	<i>Engine</i>	<i>Nameplates and Decals</i>	<i>Oil Pressure Switch</i>	<i>Skid and Plant Mounting</i>	<i>Temperature Switch</i>	<i>Alternator and Fan Belts</i>	<i>Exhaust System</i>	<i>Recommended Spare Parts</i>	<i>Generator and Mounting</i>	<i>Controller and Mounting</i>	<i>Literature</i>
Group No.	101	103	104	105	107	108	109	110	113	116	119	201	301	701
Spec No.	Variation Number													

100RZ														
187425	2	5	12	24	12	7	3	4	2	5	—	38	†	13
187426	2	5	12	19	12	3	3	5	2	5	—	58	17	13
187427	2	5	12	19	12	7	3	4	2	5	—	58	14	13
187428	2	5	12	24	12	7	3	4	2	7	—	38	†	13
187429	2	5	12	19	12	3	3	5	2	7	—	58	17	13
187430	2	5	12	19	12	7	3	4	2	7	—	58	14	13
187431	2	5	12	24	12	7	3	4	2	7	—	94	†	13
187432	2	5	11	14	13	6	3	6	2	7	—	3	183-5	13
187433	3	5	11	20	13	4	3	4	2	7	—	3	4	13
187434	3	5	10	22	15	4	3	4	2	7	—	8	7	13
187435	3	5	12	28	12	7	3	4	4	7	—	101	†	13
187436	2	5	12	19	12	3	3	5	2	7	—	102	17	13
187437	2	5	12	19	12	7	3	4	2	7	—	102	14	13
187438	2	5	12	28	12	7	3	4	4	7	—	103	†	13
187441	7	8	18	34	183-9	9	6	8	—	10	5	15	†	14
187442	7	8	18	34	183-9	9	7	8	—	10	5	17	†	14
187443	7	8	18	34	183-10	9	6	8	—	10	5	16	†	14
187444	7	*	*	34	183-9	9	6	8	—	10	6	15	†	14
187445	7	*	*	34	183-9	9	7	8	—	10	6	17	†	14
187446	7	*	*	34	183-10	9	6	8	—	10	6	16	†	14

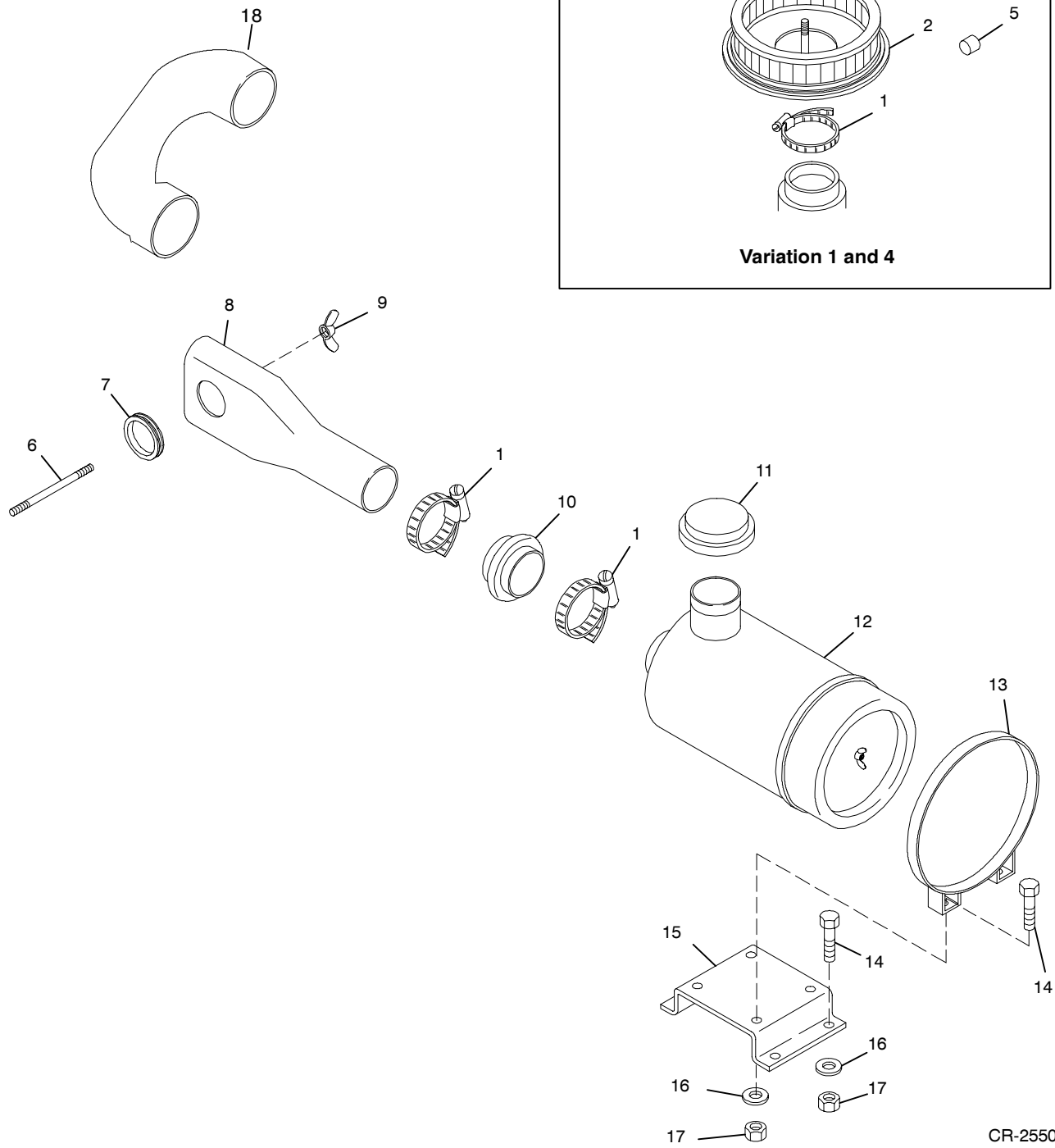
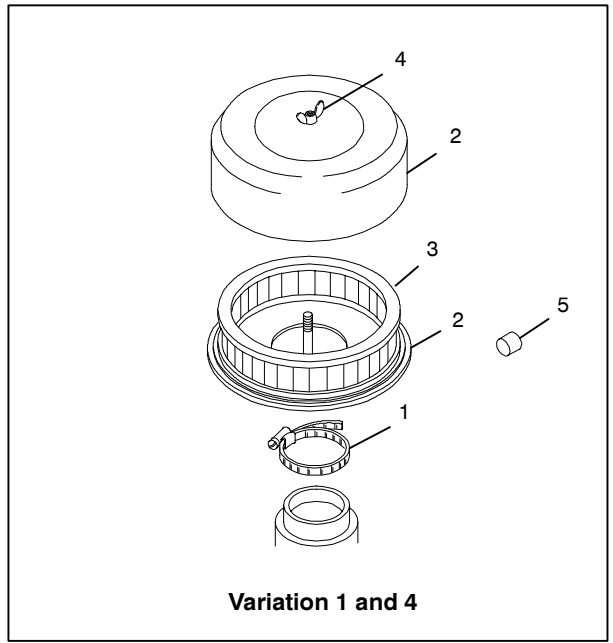
\* Configured group. Refer to the generator set nameplate for the module number. Turn to the respective group on the following pages for parts breakdowns.

† Configured group. Refer to the generator set nameplate for the module number. See controller parts catalog TP-6009 for controller parts lists.

— Not applicable.

# Notes

# Group 101: Air Intake



CR-255000  
CN-255000  
A-269441

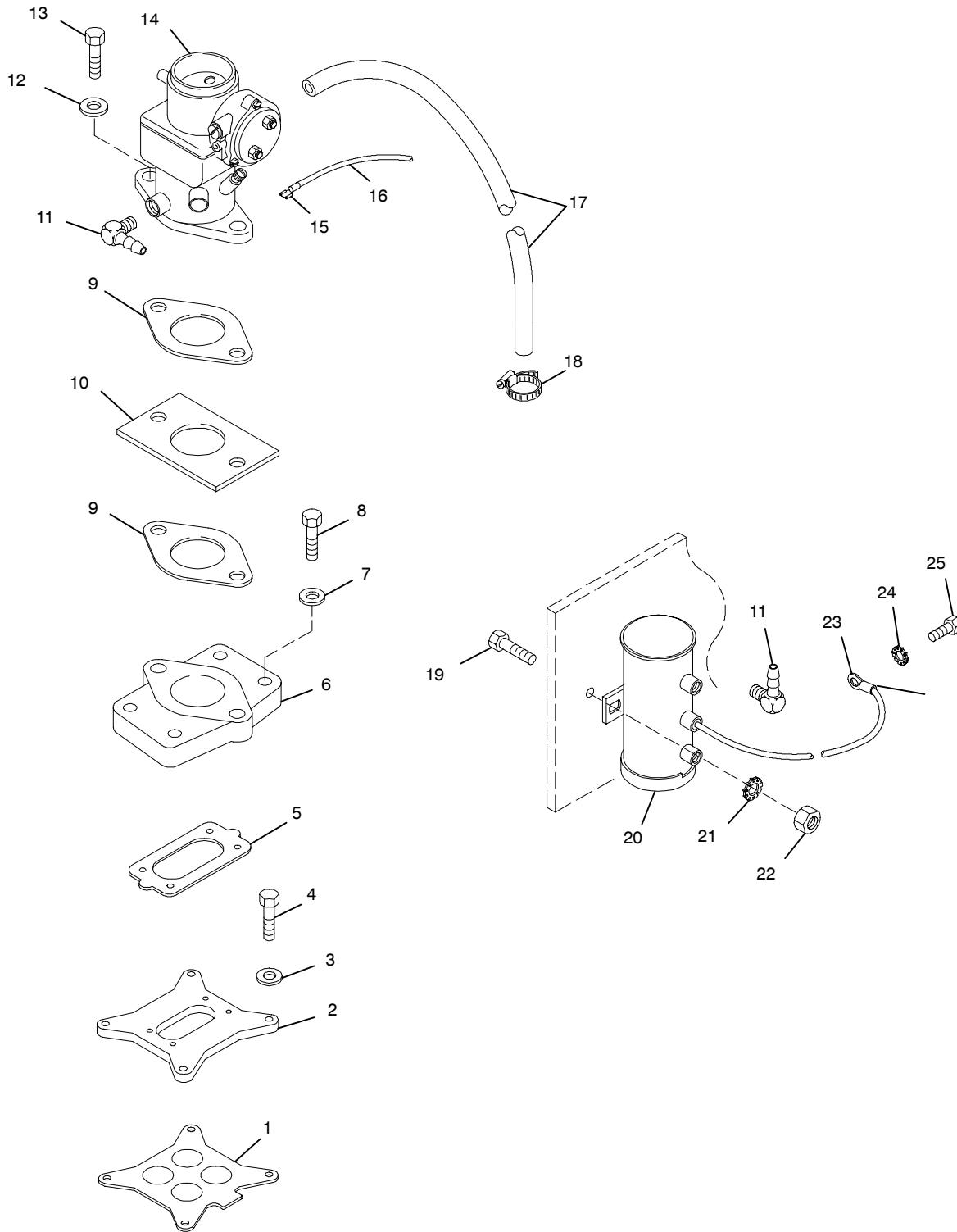
# Group 101: Air Intake

Item	Part Number	Description	Quantity						
			Variation Number						
			1	2	3	4	5	7	
1	X-426-14	Clamp, hose	1			1			
1	X-426-14	Clamp, hose		2	2				
1	X-426-1	Clamp, hose 2 17/32-3 6/8							1
1	X-426-7	Clamp, hose 4.875 x 6.625							1
2	A-269441	Air cleaner (includes items 3 and 4)	1						
2	255665	Air cleaner (includes item 3)				1			
2	A-326096	Air cleaner						1	
3	258423	Element, air cleaner	1						
3	258448	Element, air cleaner				1			
3	326098	Element, air cleaner						1	
4	254457	Nut, wing	1				1	1	
5	X-519-13	Plug, cap	1				1		
6	X-352-13	Stud		1	1				
7	X-284-24	Grommet		1	1				
8	255515	Duct, air		1	1				
8	Use item 18	Duct, air							1
9	X-276-7	Nut, wing		1	1				
10	255516	Hose, hump		1	1				
10	Use item 18	Hose, hump							1
11	253668	Cap, rain		1	1				
11	324139	Cap, rain							1
12	255513	Air cleaner (includes element)		1	1				
12	A-324131	Air cleaner (includes element)							1
12	255739	Element, air cleaner		1	1				
12	324134	Element, air cleaner							1
13	253674	Mount, air cleaner		2	2				
13	253674	Mount, air cleaner							2
14	#	Screw, hex cap 3/8-16			4				
14	#	Screw, hex cap 3/8-16		8					
14	#	Hardware, 5/16-18							7
15	255561	Bracket, support		2					
15	326131	Bracket, air cleaner							1
15	326132	Shield, heat (not shown)							1
15	#	Hardware, 1/4-20 (not shown)							2
16	X-25-82	Washer, plain			4				
17	#	Nut, 3/8-16		8	8				
17	#	Hardware, 5/16-18							7
18	326296	Hose, hump							1

# Common hardware. Procure locally.

# Group 103: Fuel System

## Gasoline



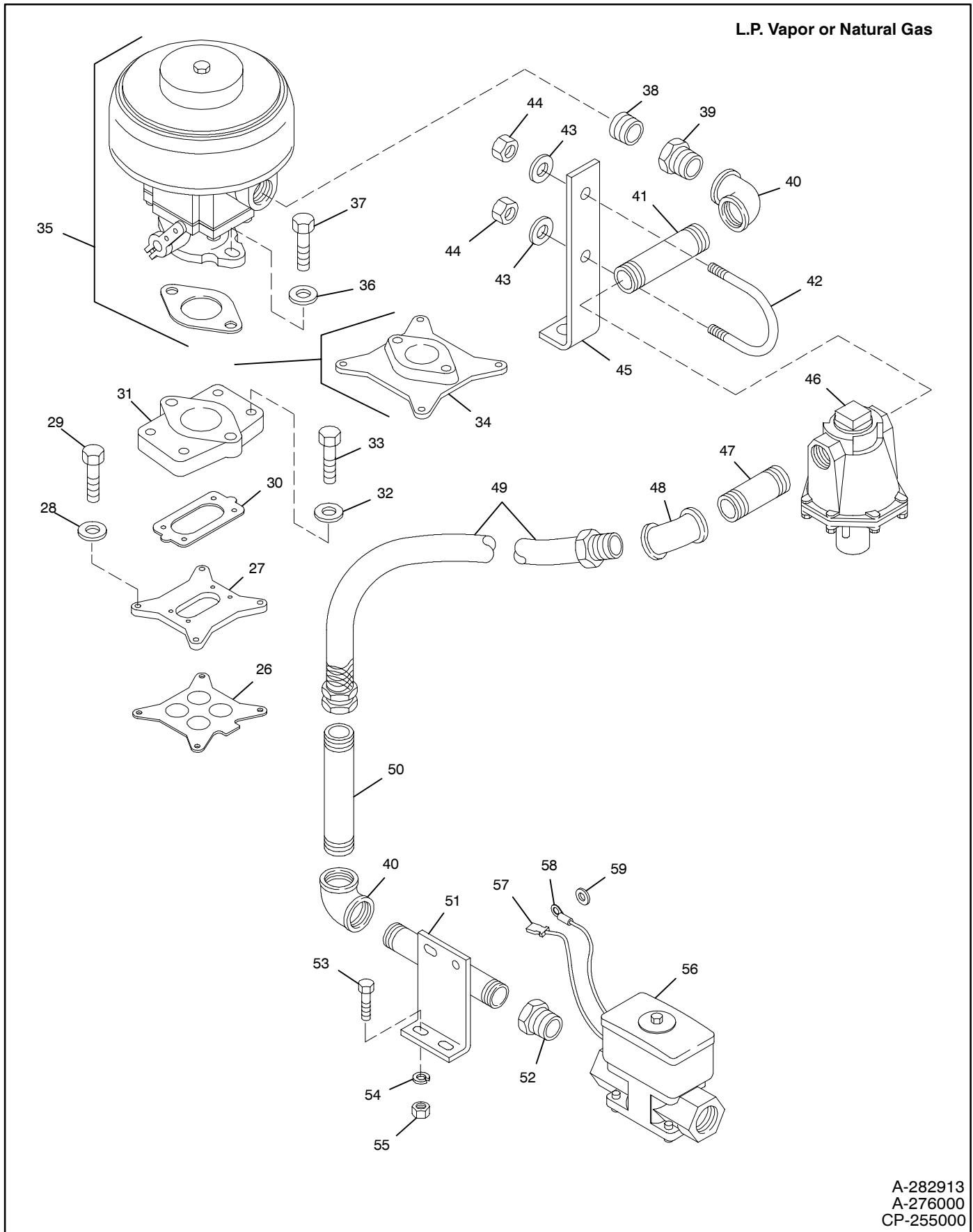
A-276000  
CN-255000

## Group 103: Fuel System

Item	Part Number	Description	Quantity	
			Variation Number	1
1	276082	Gasket		1
2	276081	Adapter		1
3	#	Washer, plain 5/16 in.		4
4	X-125-24	Screw, hex cap		4
5	291430	Gasket, carburetor		1
6	291769	Adapter, carburetor		1
7	#	Washer, plain 5/16 in.		4
8	X-125-5	Screw, hex cap		4
9	280494	Gasket, carburetor		2
10	291770	Spacer, carburetor		1
11	X-391-1	Connector, hose		2
12	X-25-82	Washer, plain		2
13	X-6238-11	Screw, hex cap		2
14	A-291440	Carburetor, gasoline		1
15	X-367-1	Terminal		1
16	LN-1604-1400	Lead		1
17	X-386-69	Fuel line, flexible		1
18	X-426-9	Clamp, hose		2
19	X-465-7	Screw, hex cap		2
20	247076	Pump, fuel electric		1
21	X-22-12	Washer, shakeproof		2
22	#	Nut, 1/4-20		2
23	X-283-5	Terminal		1
24	X-22-12	Washer, shakeproof		1
25	X-125-23	Screw, hex cap		1

# Common hardware. Procure locally.

# Group 103: Fuel System, continued



A-282913  
A-276000  
CP-255000

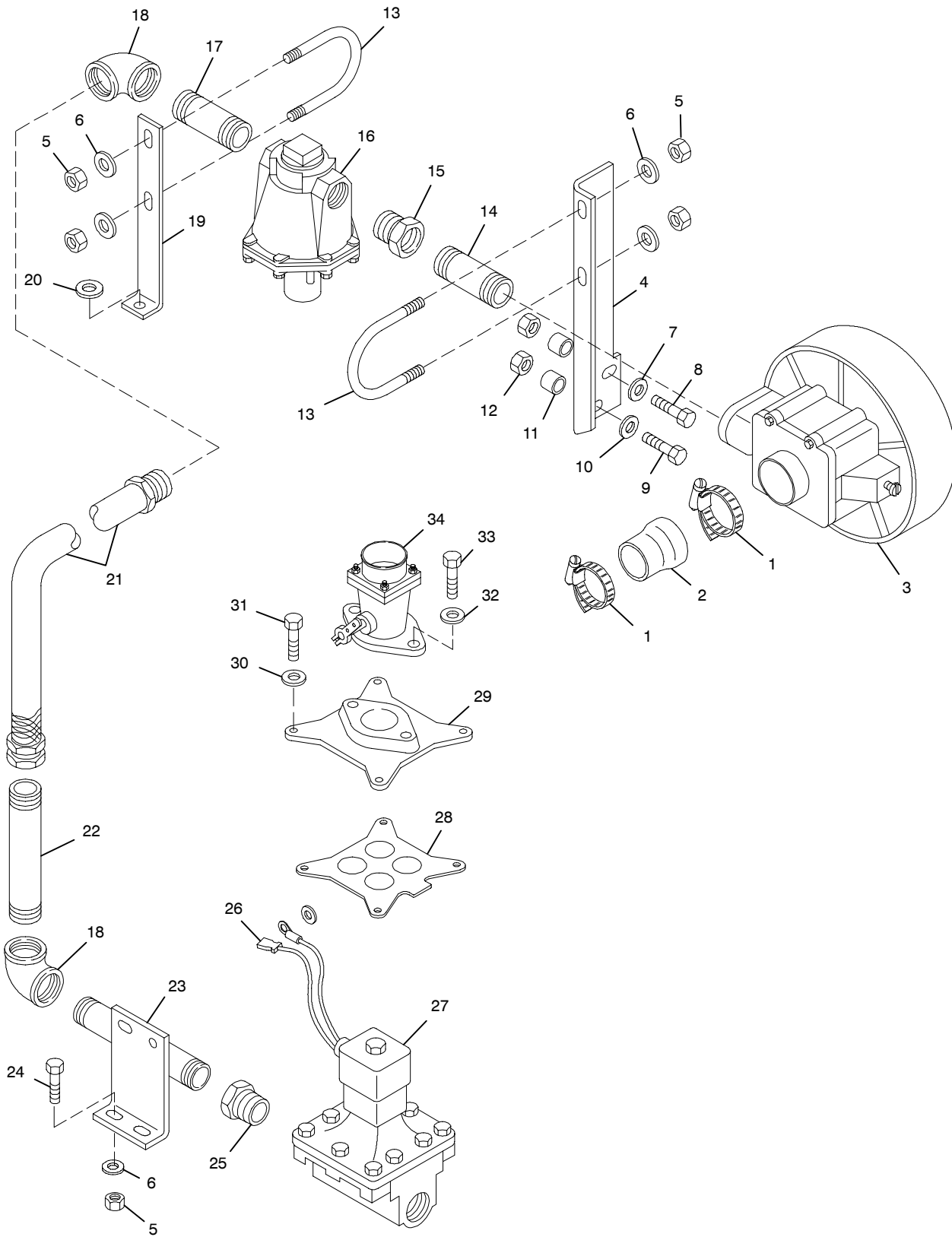
## Group 103: Fuel System, continued

Item	Part Number	Description	Quantity		
			Variation Number		
			2	4	7
26	276082	Gasket	1	1	1
27	276081	Adaptor	1		
28	#	Washer, plain 5/16 in.	4	4	
29	X-125-24	Screw, hex cap	4	4	
30	291430	Gasket, carburetor	1		
30	326165	Gasket, carburetor			1
31	291769	Adapter, carburetor	1		
31	327102	Adapter, carburetor			1
32	#	Washer, plain 5/16 in.		4	
33	X-125-5	Screw, hex cap		4	
33	X-352-96	Stud, 7/16-14 x 1.5"			2
34	255519	Adapter, manifold	1		1
35	A-282913	Carburetor, L.P. vapor or natural gas		1	
35	A-291429	Carburetor, L.P. vapor or natural gas	1		
35	A-326117	Carburetor, L.P. vapor or natural gas			1
36	X-25-82	Washer, plain	2		
37	X-6238-11	Screw, hex cap	2		
38	X-206-9	Nipple, pipe		1	1
38	X-209-5	Nipple, pipe	1		
39	X-202-1	Bushing, reducer		1	1
39	X-209-5	Bushing, reducer	1		
40	X-215-2	Elbow, pipe	1		
40	X-215-15	Elbow, pipe		1	1
41	X-206-6	Nipple, pipe	1		
41	X-218-13	Nipple, pipe		1	
41	X-218-9	Nipple, pipe			1
42	X-397-1	U-bolt	1	1	
43	#	Washer, 5/16 in.	2	2	2
44	#	Nut, 5/16-18	2	2	2
45	255666	Bracket, support		1	
45	291439	Bracket, support	1		
45	326796	Bracket, support			1
46	291259	Regulator, pressure	1		
46	291260	Regulator, pressure		1	1
47	X-206-9	Nipple, pipe	1		
47	X-218-24	Nipple, pipe		1	1
48	X-225-8	Elbow, 45 degree	1		
48	X-225-9	Elbow, 45 degree		1	
48	X-215-15	Elbow, pipe			1
49	X-504-18	Fuel line, flexible	1		
49	X-504-20	Fuel line, flexible		1	1
50	X-206-16	Nipple, pipe	1		
50	X-206-15	Nipple, pipe	1		
50	X-218-9	Nipple, pipe		1	
50	X-218-27	Nipple, pipe			1
51	276331	Bracket, support	1	1	
51	326256	Bracket, support			1
52	X-202-1	Bushing, reducer	1		
52	X-202-32	Bushing, reducer		1	1
53	#	Screw, hex cap 5/16-18	2	2	2
54	#	Washer, lock 5/16 in.	2	2	
55	#	Nut, 5/16-18	2	2	2
56	244914	Valve, gas	1		
56	A-254469	Valve, gas		1	1
57	X-367-1	Terminal	1	1	
58	X-283-5	Terminal	1	1	
59	X-22-12	Washer, shakeproof	1	1	1

# Common hardware. Procure locally.

# Group 103: Fuel System, continued

L.P. Vapor or Natural Gas  
Turbocharged



CR-255000

## Group 103: Fuel System, continued

Item	Part Number	Description	Quantity	
			Variation 5	Number 8
1	X-426-2	Clamp, hose	2	2
2	255520	Hose, reducer	1	1
3	A-326218	Body, mixer	1	1
4	255521	Bracket	1	1
5	#	Nut, 5/16-18	6	6
6	#	Washer, lock 5/16 in.	6	6
7	#	Washer, 7/16 in.	1	1
8	X-6024-8	Screw, hex cap	1	1
9	X-129-19	Screw, hex cap	1	1
10	#	Washer, 1/2 in.	1	1
11	X-400-147	Spacer	2	2
12	X-25-59	Washer, plain	2	2
13	X-397-1	U-bolt	2	2
14	A-107	Pipe	1	1
15	X-202-1	Bushing, reducer	1	1
16	291260	Regulator, pressure	1	1
17	X-218-28	Pipe	1	1
18	X-215-15	Elbow, pipe	2	2
19	255755	Support, fuel pipe	1	1
20	X-25-44	Washer, plain	2	2
21	X-504-20	Fuel line, flexible	1	1
22	X-218-28	Nipple, pipe	1	1
23	276332	Bracket, support	1	
23	326256	Bracket, support		1
24	#	Screw, hex cap 6/16-18	2	2
25	X-202-32	Bushing, reducer	1	1
26	X-285-6	Terminal	1	1
27	A-254469	Valve, gas	1	1
28	276082	Gasket	1	1
29	255519	Adapter, manifold	1	1
30	#	Washer, plain 5/16 in.	4	4
31	X-125-24	Screw, hex cap	4	4
32	#	Washer, plain 7/16 in.	2	2
33	X-6024-2	Screw, hex cap	2	2
34	B-255517	Body, throttle	1	1
	258558	Tag, instruction (Not Shown)	1	

# Common hardware. Procure locally.



## Group 104: Cooling System

Item	Part Number	Description	Quantity			
			Variation	Number	16	17
1	X-794-1	Screw, drill	34			
2	255298	Cover, radiator	1			
3	253268	Plug	1			
4	X-125-5	Screw, hex cap	4	4	4	4
5	X-801-4	Washer, hardened	4	4	4	4
6	255651	Fan	1			
6	276468	Fan		1		
6	276473	Fan			1	1
7	258955	Belt, V 42 in.	1	1	1	1
8	276114	Spacer, fan	1	1	1	1
9	276076	Pulley, water pump	1	1	1	1
10	249888	Clamp, hose	2			
10	X-426-4	Clamp, hose 1.32 x 2.10		2	2	2
11	X-6014-2	Hose, upper radiator	1			
11	276488	Hose, upper radiator		1	1	1
12	249887	Clamp, hose	2			
12	X-426-16	Clamp, hose		2	2	2
13	X-6014-3	Hose, lower radiator	1			
13	276489	Hose, lower radiator		1	1	1
14	X-468-1	Tie, cable	4	4	4	4
15	See chart below	Sensor, low fluid	1	1	1	1
16	See chart below	Sensor, low fluid	1	1	1	1
17	See chart below	Pin	3	3	3	3
18	See chart below	Connector, jack	1	1	1	1
19	258904	Guard, fan (right side)	1			
19	326118	Guard, belt, right (not shown)		1	1	1
20	255296	Support, radiator (right)	1			
20	276497	Support, radiator (right)		1	1	1
21	A-255605	Radiator assembly (includes item 22)	1			
21	A-276469	Radiator assembly (includes item 22)		1		
21	A-276470	Radiator assembly (includes item 22)			1	
21	A-276471	Radiator assembly (includes item 22)				1
22	224365	Cap, radiator (14 psi)	1			
22	224358	Cap, radiator (7 psi)		1	1	1
23	X-256-3	Valve, drain	1	1	1	1
23	X-202-47	Bushing, reducer 1/4 (not shown)	1	1	1	1
24	255287	Shroud, fan	1			
24	276400	Shroud, fan		1	1	1
24	326044	Guard, wire (not shown)		1	1	1
25	258906	Guard, fan (top)	1			
25	326246	Guard, belt, bottom (not shown)		1	1	1
26	258905	Guard, fan (left side)	1			
26	326119	Guard, belt, left (not shown)		1	1	1
27	#	Nut, hex 5/16-18	6			
28	#	Washer, lock 5/16 in.	12			
29	#	Screw, hex cap 5/16-18	6			
29	#	Hardware, 3/8-16		8	8	8
30	255288	Support, radiator (left)	1			
30	276496	Support, radiator (left)		1	1	1
31	X-125-3	Screw, hex cap	6			
31	X-125-3	Screw, hex cap		8	8	8
32	255286	Shroud, radiator	1			
32	276498	Guard, radiator		1	1	1

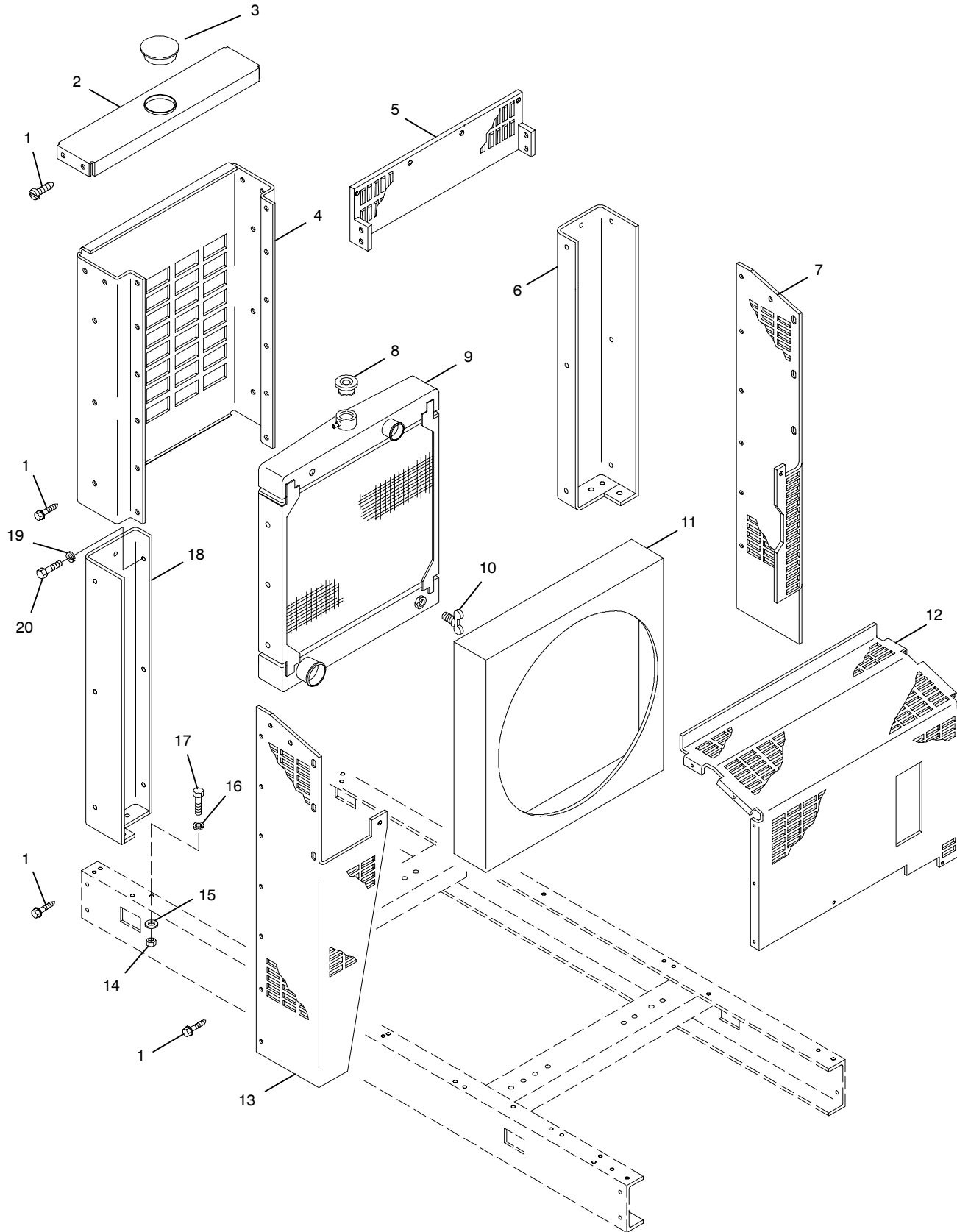
# Common hardware. Procure locally.

### Serial Number-Contingent Cooling System Parts

Part Description	Part Number	
	Before Serial Number 363369	Serial Numbers 363369 and after
Sensor, low fluid (assembly)	273404	365289
Sensor, low fluid (item 16)	273520	365288
Pin (item 17)	239516	NA
Connector, jack (item 18)	239411	NA

# Group 104: Cooling System, continued

Variations 3, 5, 8, 10-15



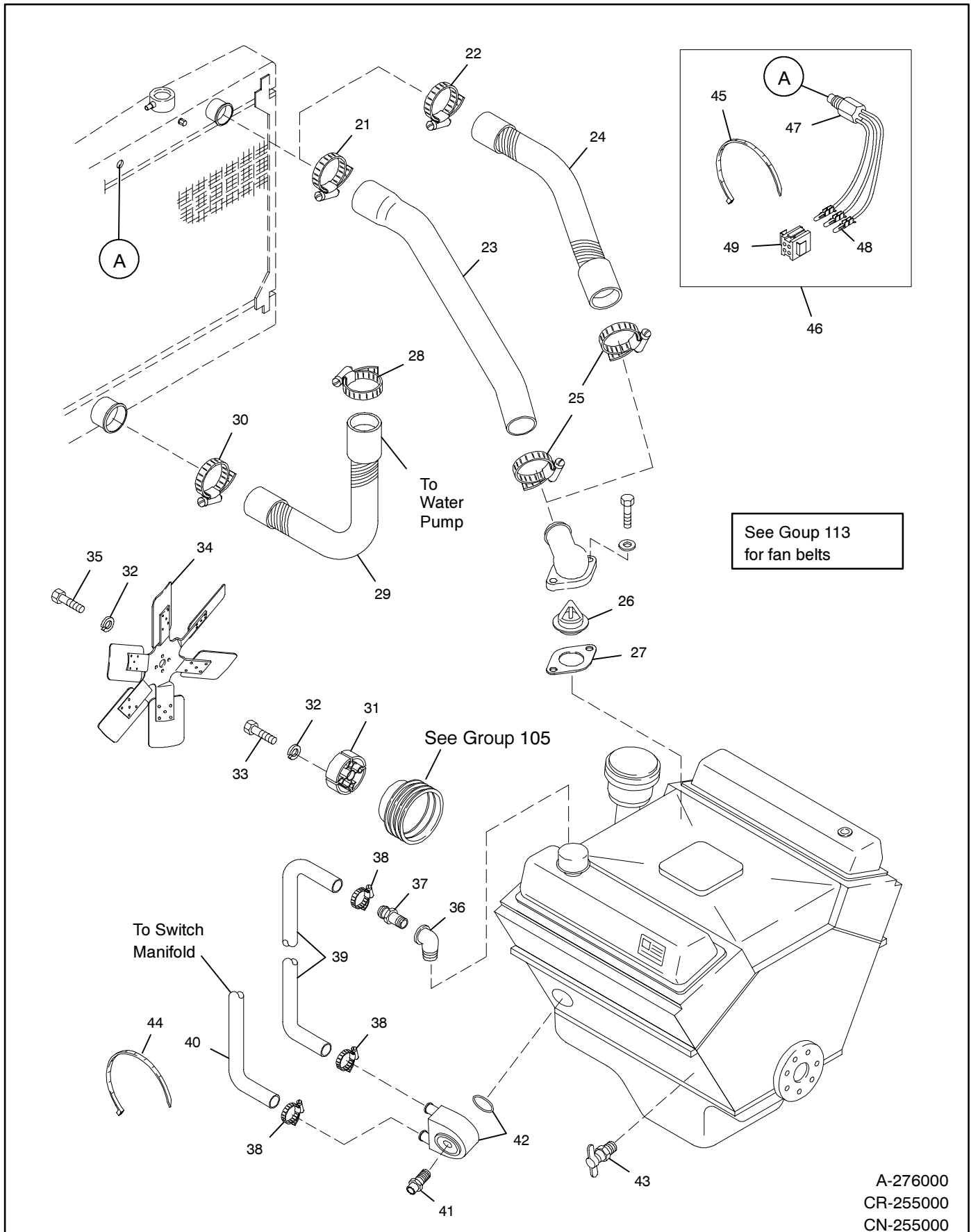
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## Group 104: Cooling System, continued

Item	Part Number	Description	Quantity								
			Variation Number								
			3	5	8	10	11	12	13	14	15
1	X-794-1	Screw, drill	34	34	34	38	38	42	42	42	34
2	255298	Cover, radiator	1	1	1	1	1			1	1
3	253268	Plug	1		1	1		1	1		1
3	253399	Plug		1			1			1	
4	255286	Shroud, radiator	1								1
4	255540	Shroud, radiator		1							
4	255709	Shroud, radiator			1						
4	255710	Shroud, radiator				1					
4	253878	Shroud, radiator					1			1	
4	276341	Shroud, radiator						1	1		
5	255702	Enclosure					1			1	
5	255762	Enclosure				1					
5	276342	Enclosure						1	1		
6	255529	Support, radiator (right)	1	1	1	1	1	1	1		
6	255529	Support, radiator (right)								1	1
7	258498	Guard, fan (right side)				1	1	1	1	1	
7	258904	Guard, fan (right side)	1	1	1						1
8	224365	Cap, radiator (14psi)				1	1	1	1	1	
9	A-255763	Radiator assembly				1	1	1	1	1	
9	A-255765	Radiator assembly	1	1	1						1
10	X-256-3	Valve, drain	1	1	1	1	1	1	1	1	1
11	255440	Shroud, fan				1	1	1	1	1	
11	255523	Shroud, fan	1	1	1						1
12	258839	Guard, fan (top)				1	1	1	1	1	
12	258906	Guard, fan (top)	1	1	1						1
13	258499	Guard, fan (left side)				1	1	1	1	1	
13	258905	Guard, fan (left side)	1	1	1						1
14	#	Nut, hex 5/16-18	6	6	6	6	6	6	6	6	
14	X-82-2	Nut, hex	6	6	6	6					6
15	X-25-85	Washer, plain	6	6	6	6					6
16	#	Washer, lock 5/16 in.	6	6	6	6	6			6	
16	X-21-1	Washer, lock	6	6	6	6					12
17	#	Screw, hex cap 5/16-18	6	6	6	6	6	6	6	6	
17	X-125-5	Screw, hex cap									6
18	255528	Support, radiator (left)	1	1	1	1	1	1	1	1	1
19	#	Washer, lock 3/8 in.	6	6	6	6				6	
19	X-22-1	Washer, lock									4
20	X-6-7	Screw, hex cap	6	6	6	6					
20	X-7-8	Screw, hex cap	6	6	6	6					
20	X-125-3	Screw, hex cap									6
20	X-6238-10	Screw, hex cap	6	6	6	6	6			6	4

# Common hardware. Procure locally.

# Group 104: Cooling System, continued



A-276000  
 CR-255000  
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## Group 104: Cooling System, continued

Item	Part Number	Description	Quantity								
			Variation Number								
			3	5	8	10	11	12	13	14	15
21	250081	Clamp, hose								2	
22	250081	Clamp, hose	1	1	1	1	1				1
23	258837	Hose, upper radiator (molded)				1	1	1	1	1	
24	255531	Hose, upper radiator (flexible)	1	1	1						1
25	X-426-4	Clamp, hose	1	1	1	1	1	1	1	1	1
26	255751	Thermostat	1	1	1	1	1	1	1	1	1
27	255752	Gasket, thermostat	1	1	1	1	1	1	1	1	1
28	X-426-6	Clamp, hose	2	2	2						2
28	X-426-6	Clamp, hose				1	1			1	
28	249887	Clamp, hose						1	1		
29	255532	Hose, lower radiator				1	1	1	1	1	
29	255603	Hose, lower radiator	1	1	1						1
30	279604	Clamp, hose						1	1		
31	276114	Spacer, fan	1	1	1	1	1	1	1	1	1
32	X-801-4	Washer, hardened	8	8	8	8	8	8	8	8	8
33	X-125-38	Screw, hex cap	4	4	4	4	4	4	4	4	4
33	#	Screw, hex cap 5/16-24 x 2.75	4	4	4	4	4	4	4	4	4
34	255522	Fan	1	1	1	1	1	1	1	1	1
35	X-125-5	Screw, hex cap	4	4	4	4	4	4	4	4	4
35	#	Screw, hex cap 5/16-18 x 1	4	4	4	4	4	4	4	4	4
36	S-404	Elbow, street				1	1	1	1		
37	X-582-2	Connector, hose				1	1	1	1		
38	X-426-12	Clamp, hose				4	4	4	4		
39	X-577-24	Hose, oil cooler				1	1	1	1		
40	X-577-26	Hose, oil cooler				1	1	1	1		
41	258795	Adaptor, oil cooler				1	1	1	1		
42	258794	Cooler, oil (includes gasket)				1	1	1	1		
43	X-256-3	Valve, drain	1	1	1	1	1	1	1	1	1
44	X-468-1	Tie, cable				2	2	2	2		
45	X-468-1	Tie, cable						3	1		
46	273404	Switch assembly, level (includes 47, 48 and 49)						1	1		
47	273520	Sensor, low coolant						1	1		
48	239516	Pin						3	3		
49	239411	Connector, jack						1	1		

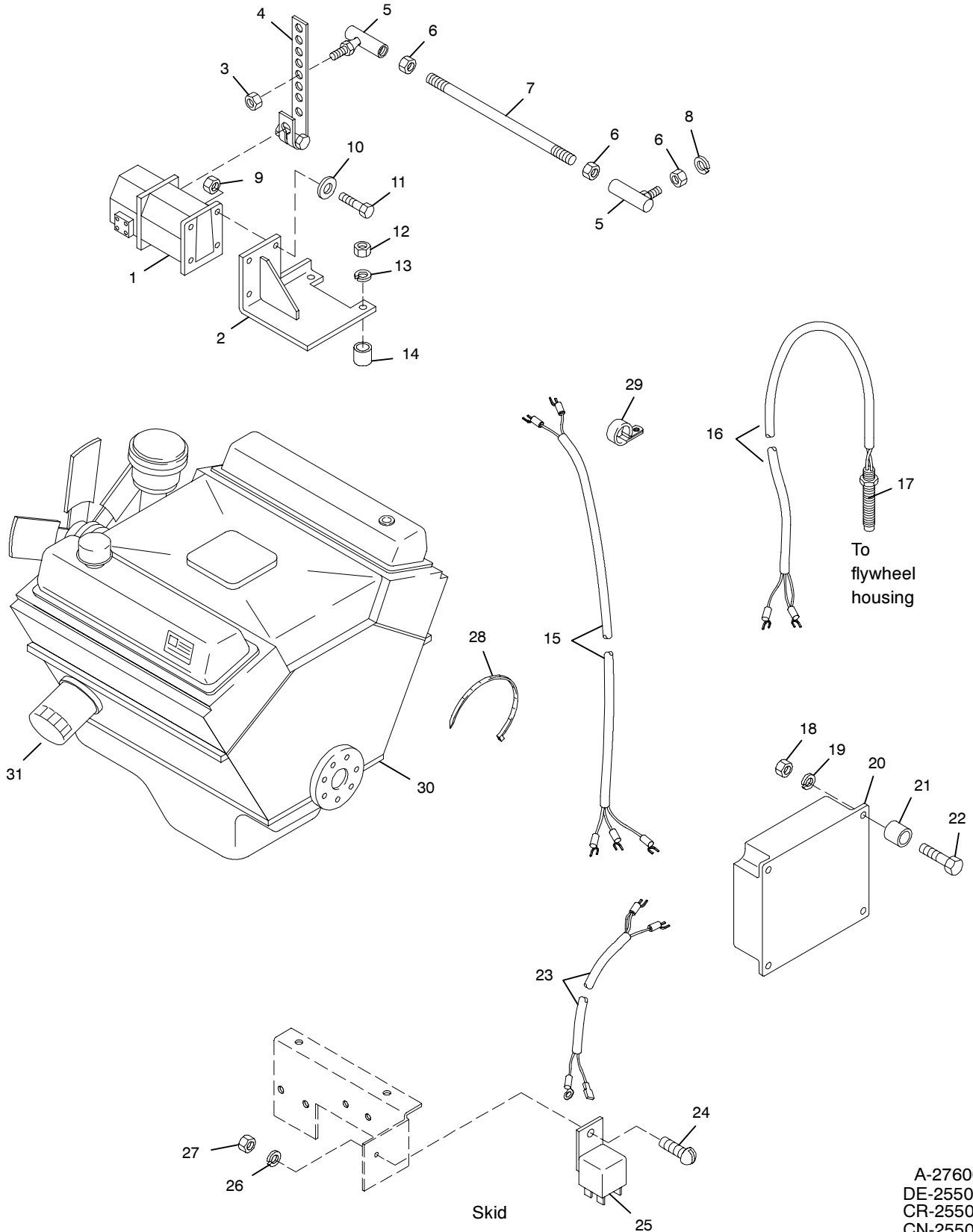
# Common hardware. Procure locally.

# Group 105: Engine

## Electronic Governor

Variations 14, 17, 19, 20, 22-24, 27, 28

NOTE: Parts list continues through page 31.



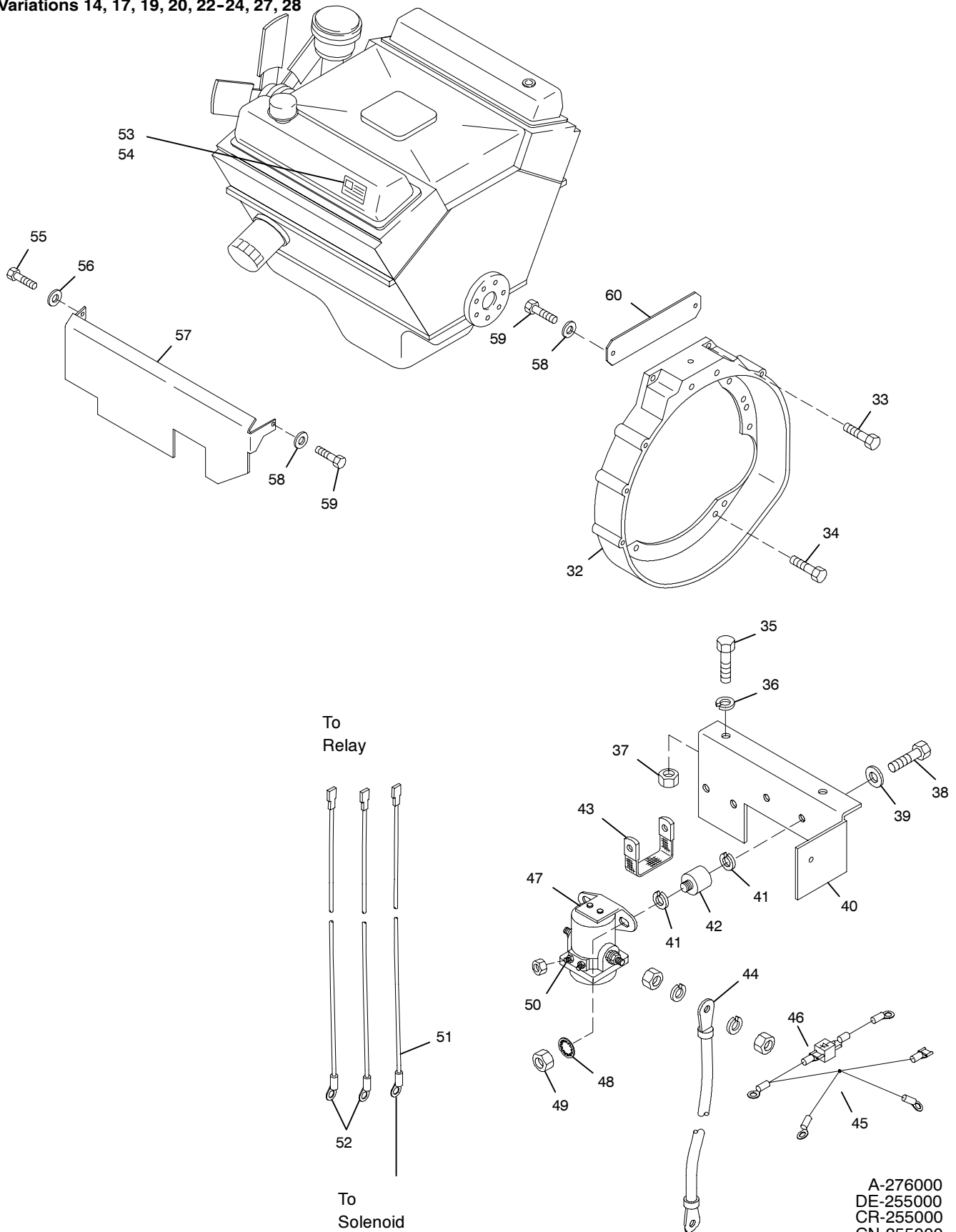
A-276000  
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CN-255000

# Group 105: Engine

Item	Part Number	Description	Quantity									
			Variation Number									
			14	17	19	20	22	23	24	27	28	
1	255746	Actuator, governor	1	1	1	1	1	1	1	1	1	1
2	255754	Bracket, governor	1	1	1	1	1	1	1	1	1	1
3	X-101-7	Nut, lock	1	1	1	1	1	1	1	1	1	1
4	255748	Lever, actuator	1	1	1	1	1	1	1	1	1	1
5	271097	Ball joint	2	2	2	2	2	2	2	2	2	2
6	X-81-2	Nut, hex		3	3	3	3	3	3	3		
7	X-352-46	Stud	1	1	1	1	1	1	1	1	1	1
8	X-81-2	Nut, hex		1	1	1	1	1	1	1		
9	X-81-1	Nut, hex	4	6	4	4	4	6	4	4		
10	X-25-72	Washer, plain	4	4	4	4	4	4	4	4	4	4
11	X-5-7	Screw, hex cap		4	4	4	4	4	4	4		
12	X-6-28	Nut, hex		2	2	2	2	2	2	2		
13	X-21-1	Washer, lock		4	4	7	7	7	5	5		
14	X-400-41	Spacer	2	4	2	2	2	2	2	4	2	
15	255761	Cable, actuator	1	1	1	1	1	1	1	1	1	1
16	255759	Cable, pick-up	1	1	1	1	1	1	1	1	1	1
17	255749	Pick-up, magnetic	1	1	1	1	1	1	1	1	1	1
18	X-70-2	Nut, hex		4	4	4	4	4	4	4		
19	X-19-1	Washer, lock		4	4	4	4	4	4	4		
19	X-20-1	Washer, lock		6	6	6	6	6	6	6		
20	255932	Control, governor	1	1	1	1	1	1	1	1	1	1
21	X-400-143	Spacer		4	4	4	4	4	4	4	4	4
22	X-117-5	Screw, hex cap	4	4	4	4	4	4	4	4	4	4
23	255760	Cable, governor power	1	1	1	1	1	1	1	1	1	1
24	X-51-5	Screw, round head machine			2				2		2	
24	X-51-5	Screw, round head machine	1	1		1	1			1		
25	259391	Relay	1	1	1	1	1	1	1	1	1	1
26	X-22-18	Washer, shakeproof	1	1	2	1	1	1	2	1	2	
27	X-72-4	Nut, hex		1	2	1	1	1	2			
28	X-468-1	Tie, cable	8	8	8	8	8	8	8	8	8	8
29	X-672-10	Clamp	1	1	1	1	1	1	1	1	1	1
29	X-672-3	Clamp, insulating	1	1	1	1	1	1	1	1	1	1
29	X-672-7	Clamp, insulated		2	2	2	2	2	2			
30	A-255653	Engine assembly	1	1	1	1	1	1	1			
30	A-276202	Engine assembly									1	1
31	279449	Oil filter (supplied by Ford)	1	1	1	1	1	1	1	1	1	1

# Group 105: Engine, continued

Variations 14, 17, 19, 20, 22-24, 27, 28



A-276000  
 DE-255000  
 CR-255000  
 CN-255000

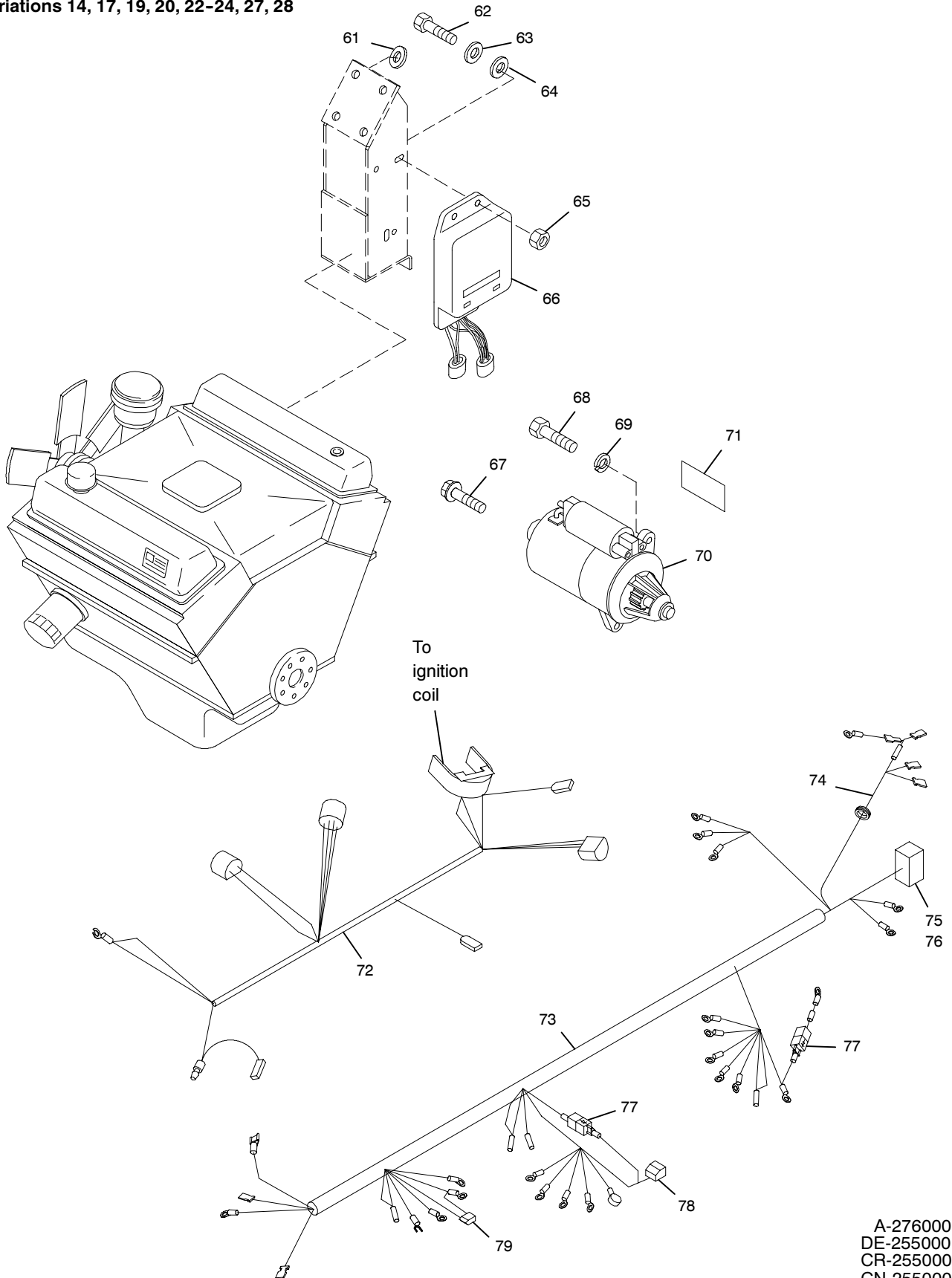
## Group 105: Engine, continued

Item	Part Number	Description	Quantity									
			Variation Number									
			14	17	19	20	22	23	24	27	28	
32	291384	Housing, flywheel	1	1	1	1	1	1	1	1	1	1
33	X-6024-8	Screw, hex cap			6					6		
34	X-6238-10	Screw, hex cap		4	4	3	3	4	4			
35	X-125-3	Screw, hex head		2	2	2	2	2	2	2		
36	X-22-16	Washer, shakeproof	2	2	2	2	2	2	2	2	2	2
37	X-82-2	Nut, hex		2	2	2	2	2	2	2		
38	X-465-6	Screw, hex cap	2	2	2	2	2	2	2	2		
39	X-25-53	Washer, plain	2		2					2		
40	255414	Bracket, fuel pump	1	1	1	1	1	1	1	1	1	1
41	X-22-12	Washer, shakeproof	4	4	4	4	4	4	4	4	4	4
42	259632	Vibro mount	2	2	2	2	2	2	2	2	2	2
43	223033	Strap, ground	1	1	1	1	1	1	1	1		1
44	X-545-55	Cable, battery	1	1	1	1	1	1	1	1	1	1
45	276340	Harness, wiring (includes item 46)									1	1
46	233959	Diode										1
47	291891	Solenoid, starter	1	1	1	1	1	1	1	1	1	1
48	X-22-12	Washer, shakeproof	2	2	2	2	2	2	2	2	2	
49	#	Nut, hex 1/4-20		2	2	2	2	2	2	2		
50	X-6214-2	Cap, plastic										1
51	SWOP-1007-5716	Lead	1	1	1	1	1	1	1			
52	SWON-1608-5715	Lead	1	1	1	1	1	1	1	1	1	1
52	SW70-1608-5700	Lead	1	1	1	1	1	1	1	1	1	1
53	276095	Nameplate, engine									1	1
54	246066	Adhesive, neoprene									1	1
55	X-6024-5	Screw, hex cap									1	1
56	#	Washer, lock 7/16 in.									1	1
57	276346	Shield, heat										1
58	#	Washer, lock 3/8 in.									3	3
59	X-6238-10	Screw, hex cap									2	2
60	326076	Plate, cover									1	1

# Common hardware. Procure locally.

# Group 105: Engine, continued

Variations 14, 17, 19, 20, 22-24, 27, 28



A-276000  
DE-255000  
CR-255000  
CN-255000

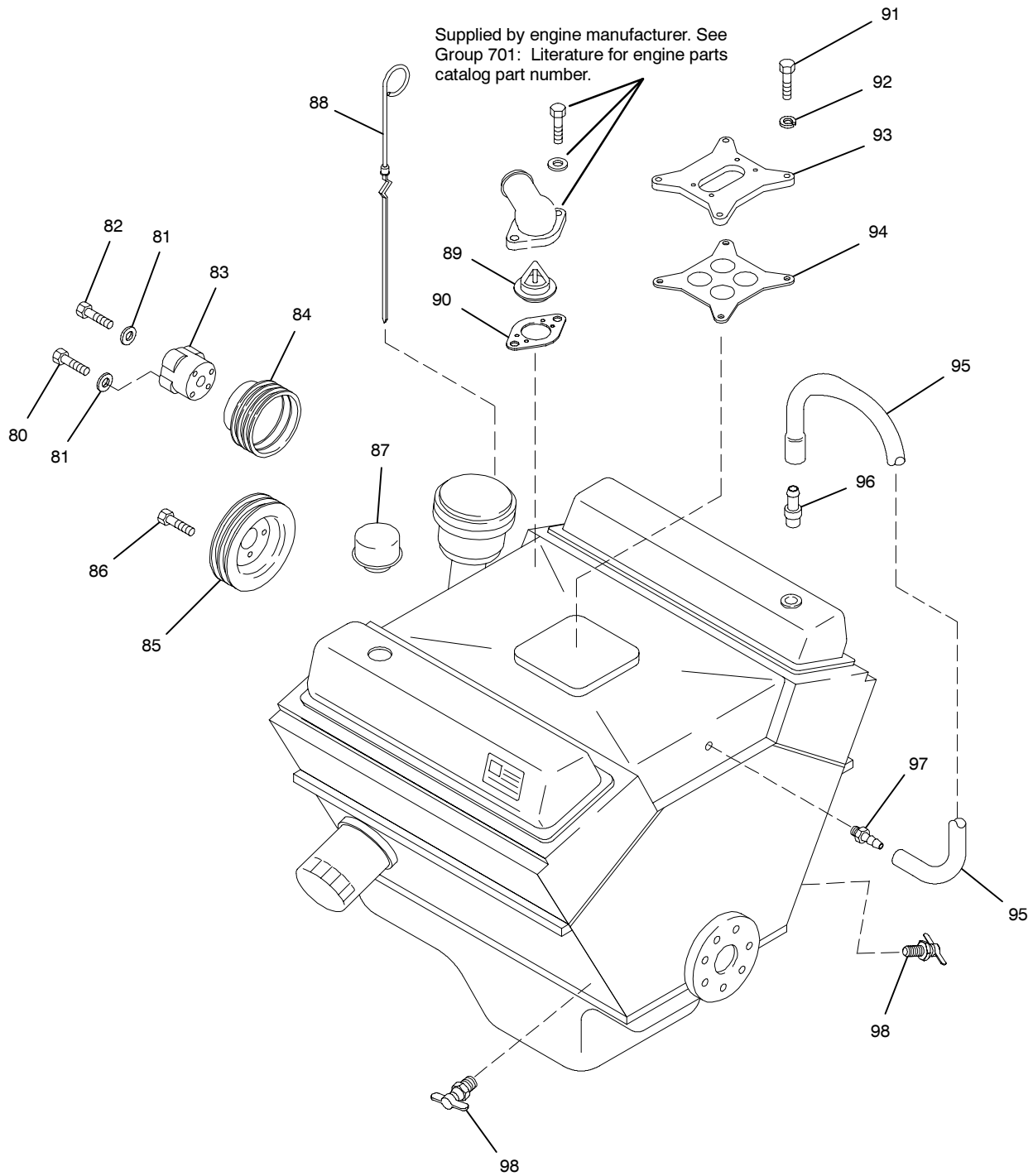
## Group 105: Engine, continued

Item	Part Number	Description	Quantity								
			Variation Number								
			14	17	19	20	22	23	24	27	28
61	X-23-1	Washer, lock		7	6	7	7	7	6		
61	X-456-6	Screw, hex cap						3	3		
62	X-465-7	Screw, hex cap		3	3	3	3	3	3		
63	X-21-1	Washer, lock						3	3		
64	X-25-40	Washer, plain		2	2	2	2	2	2		
65	X-81-1	Nut, hex						3	3		
66	276077	Variation, ignition						1	1	1	1
67	276096	Screw, washer head						1	1	1	1
68	X-6238-4	Screw, hex cap						2	2		
69	#	Washer, lock 3/8 in.						2	2		
70	276097	Starter assembly						1	1	1	1
71	246052	Decal, 12-volt						1	1		
72	276094	Harness, wiring						1	1	1	1
73	255914	Harness, wiring (includes items 74-79)						1	1		
74	258854	Lead						1	1		
75	295145	Connector, 24 position						1	1		
75	292838	Pin, female, gold-plated						A/R	A/R		
76	292800	Connector, cable						1	1		
77	292970	Diode assembly						2	2		
77	241739	Diode						2	2		
78	255256	Terminal, 3 position						1	1		
79	269165	Terminal, 2 position						1	1		

# Common hardware. Procure locally.

# Group 105: Engine, continued

Variations 14, 17, 19, 20, 22-24, 27, 28



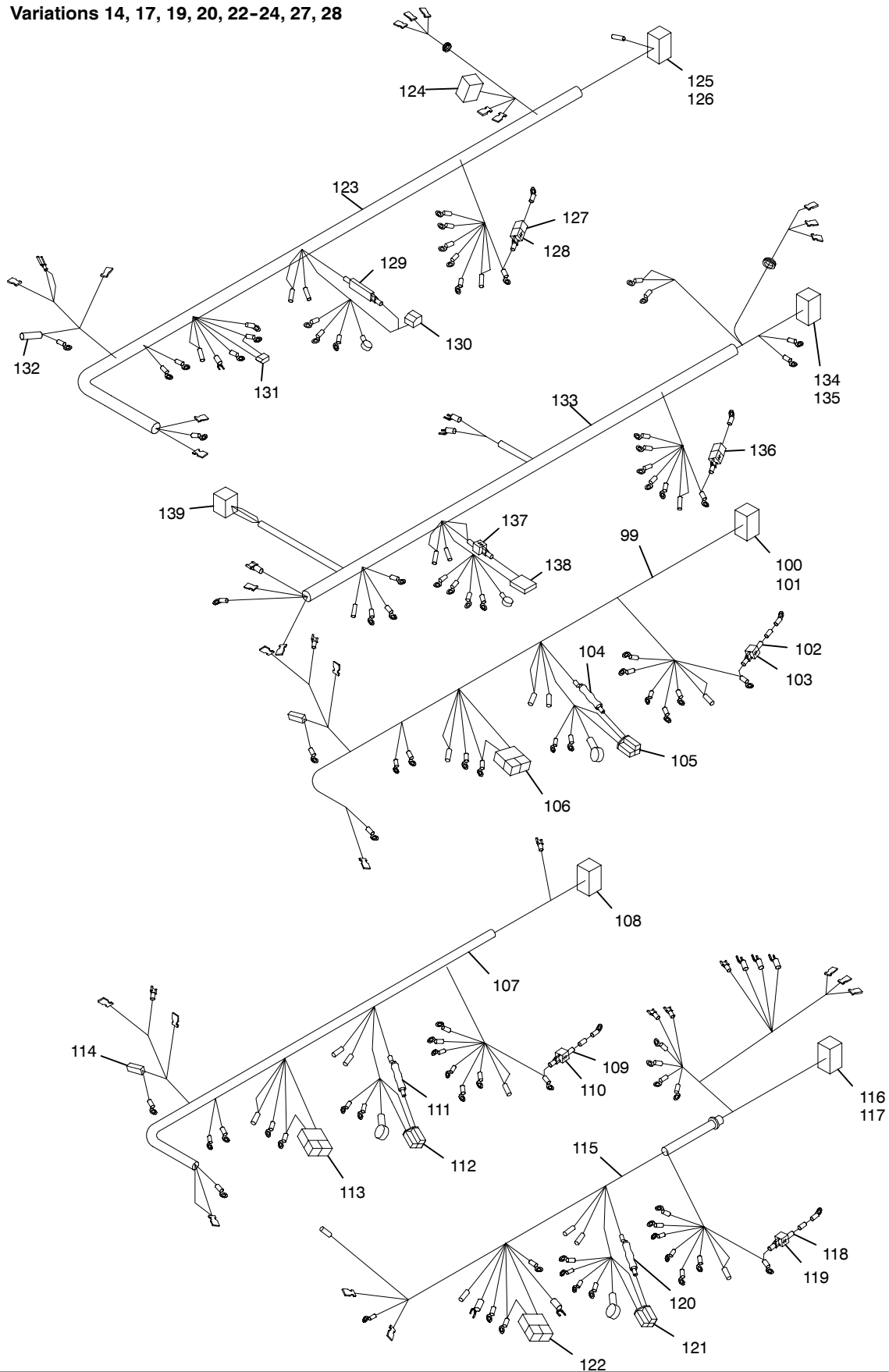
A-276000  
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CR-255000  
CN-255000

## Group 105: Engine, continued

Item	Part Number	Description	Quantity								
			Variation Number								
			14	17	19	20	22	23	24	27	28
80	X-125-38	Screw, hex head						4	4		
81	X-801-4	Washer, hardened						8	8		
82	X-125-5	Screw, hex cap						4	4		
83	276114	Spacer, fan						1	1		
84	276076	Pulley, water pump						1	1	1	1
85	276075	Pulley, crankshaft						1	1	1	1
86	X-6238-5	Screw, hex cap						4	4		
87	276085	Cap, oil fill						1	1	1	1
88	276078	Dipstick						1	1		
89	255751	Thermostat	1		1	1	1		1		1
90	255752	Gasket, thermostat	1		1	1	1		1		1
91	X-125-24	Screw, hex cap		2	2	2	2				
91	X-125-24	Screw, hex cap							6		
92	X-21-1	Washer, lock		4	4	4	4	4	4		
93	276081	Adapter						1	1		
94	276082	Gasket						1	1		
95	276164	Hose, crankcase vent						1	1	1	1
96	276115	Valve, crankcase vent						1	1	1	1
97	X-582-2	Connector, hose adapter	1	1				1		1	
98	X-256-3	Valve, drain	2	2	2	2	2	2	2	2	2
-	246055	Tag, warning (Not Shown)						1	1		

# Group 105: Engine, continued

Variations 14, 17, 19, 20, 22-24, 27, 28



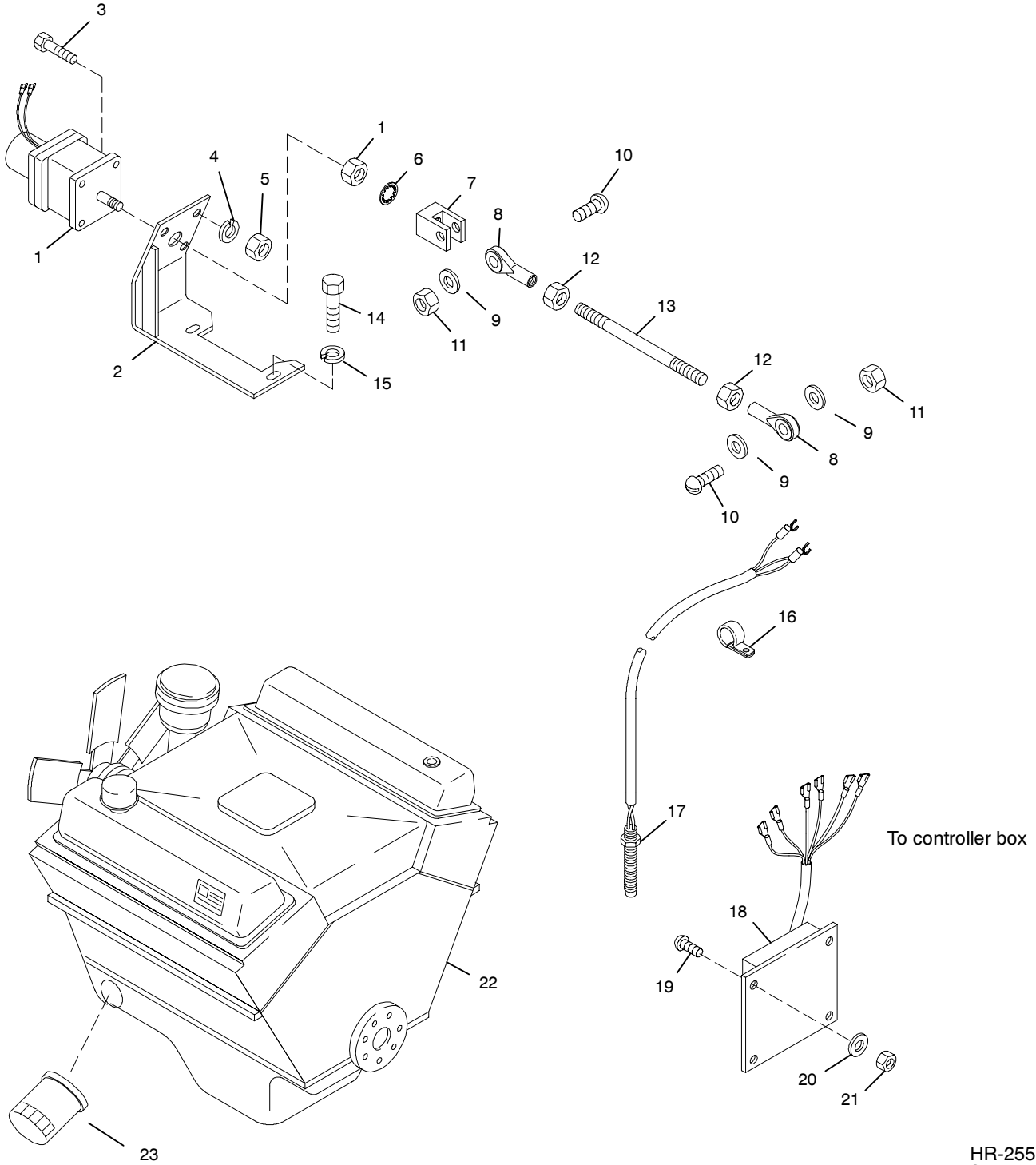
DE-255000  
CR-255000  
CN-255000

## Group 105: Engine, continued

Item	Part Number	Description	Quantity								
			Variation Number								
			14	17	19	20	22	23	24	27	28
99	255989	Harness, wiring (includes items 100-106)					1				
100	287850	Connector, 24-position					1				
101	287851	Connector, cable					1				
102	292970	Diode assembly					1				
103	233959	Diode					1				
104	255976	Resistor					1				
105	255256	Connector, 3-position					1				
106	269165	Connector, 2-position					1				
107	254234	Harness, wiring (includes items 108-114)				1					
108	259689	Connector, 9-position				1					
109	292970	Diode assembly				1					
110	233959	Diode				1					
111	255976	Resistor				1					
112	255256	Connector, 3-position				1					
113	269165	Connector, 2-position				1					
114	277563	Connector				1					
115	258803	Harness, wiring (includes items 116-122)		1	1						
116	287850	Connector, 24-position		1	1						
117	287851	Connector, cable		1	1						
118	292970	Diode assembly		1	1						
119	233959	Diode		1	1						
120	255976	Resistor		1	1						
121	255256	Connector, 3-position		1	1						
122	269165	Connector, 2-position		1	1						
123	253801	Harness, wiring (includes items 124-132)	1								
123	287541	Pin, female, gold-plated (18 gauge)	A/R								
123	287535	Pin, female, gold-plated (14 gauge)	A/R								
124	253333	Connector, 6-position	1								
125	287850	Connector, 24-position	1								
126	257851	Connector, cable	1								
127	292870	Diode assembly	1								
128	233959	Diode	1								
129	255262	Resistor	1								
130	255256	Connector, 3-position	1								
131	269165	Connector, 2-position	1								
132	277563	Connector	1								
133	276225	Harness, wiring (includes items 134-139)								1	1
133	292838	Pin, female, gold-plated								A/R	A/R
134	295145	Connector, 24-position								1	1
135	292800	Connector, cable								1	1
136	253798	Diode								1	1
137	233959	Diode								1	1
138	254986	Connector, 2-position								1	1
139	239408	Connector, 4-position								1	1

# Group 105: Engine, continued

## Electronic Governor Variations 29-34



HR-255000  
CP-255000  
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CN-255000

## Group 105: Engine, continued

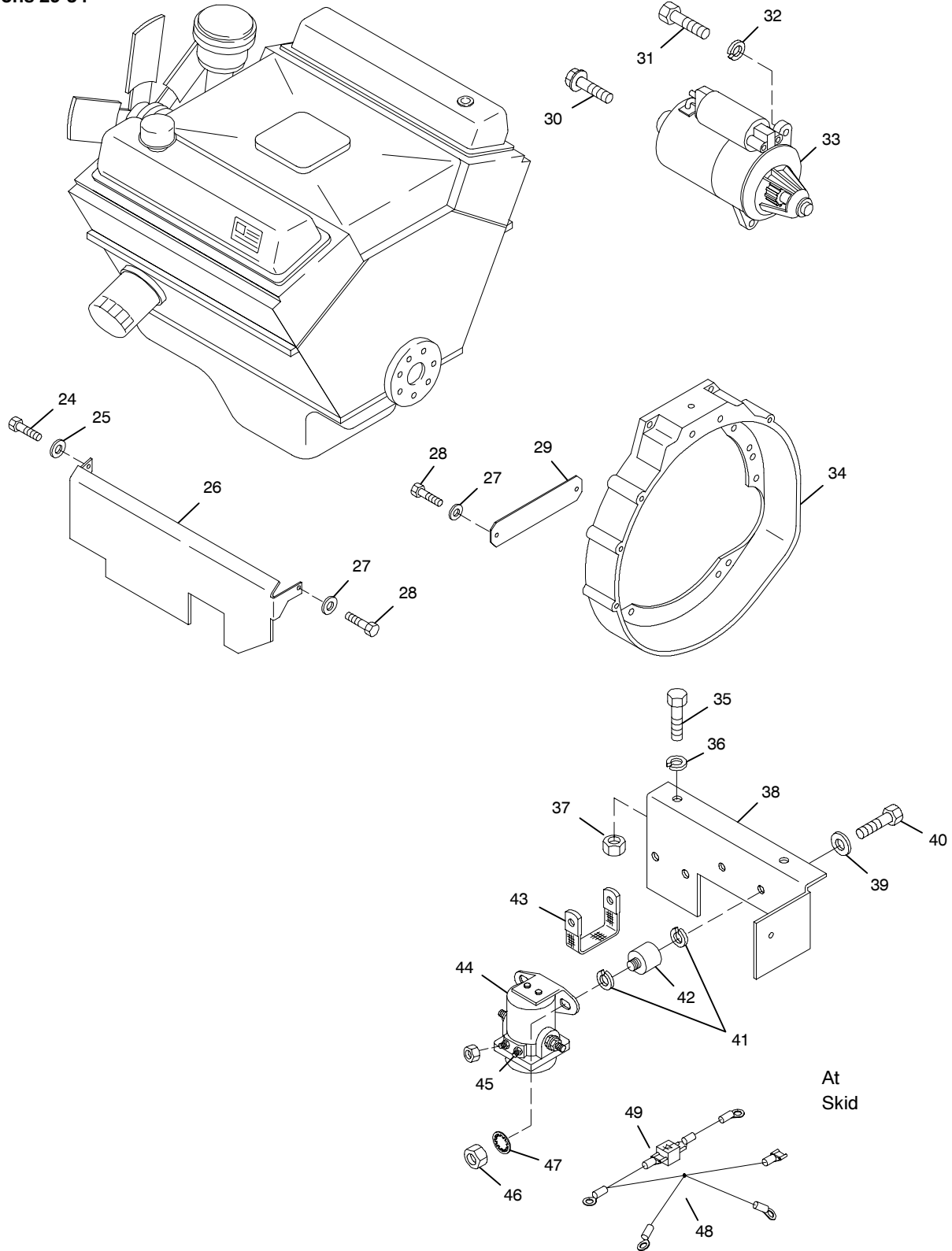
Item	Part Number	Description	Quantity					
			Variation Number					
			29	30	31	32	33	34
1	273748	Actuator, linear	1	1	1	1	1	1
2	276282	Bracket, actuator	1					
2	276330	Bracket, actuator		1	1			1
2	326139	Bracket, actuator				1	1	
3	#	Screw, hex cap 1/4-20	4	4	4	4	4	4
4	#	Washer, lock 1/4 in.	4	4	4	4	4	4
5	#	Nut, hex 1/4-20	4	4	4	4	4	4
6	X-22-11	Washer, lock		5	5			
6	X-22-11	Washer, lock		1		1	1	1
7	273751	Yoke	1	1	1	1	1	1
8	272456	Link, ball	2	2	2	2	2	2
9	X-25-115	Washer, lock #10	3	3	3	3	3	3
10	X-73-14	Screw, round head machine	2	2	2			
10	X-50-70	Screw, round head machine	2	2	2	2	2	2
11	X-101-9	Nut, lock 10-24	2	2	2	2	2	2
11	X-6053-1	Nut, hex	1		1			
12	X-70-11	Nut, hex		2		2	2	2
13	X-352-79	Stud	1			1	1	
13	X-352-73	Stud		1	1			1
14	#	Screw, hex cap 5/16-18 x 1 1/2	2	2	2	2	2	
15	#	Washer, lock 5/16 in.	2	2	2	2	2	
16	X-672-10	Clamp	1	1	1			
16	X-672-3	Clamp, insulated	1	1	1			
16	X-672-7	Clamp, insulated	1	1	2	1	1	1
17	255749	Pick-up, magnetic	1	1	1	1	1	1
18	A-246045	Governor assembly				1	1	1
18	326814	Governor assembly	1	1	1			
19	X-6216-1	Screw, Phillips head crimp	4	4	4	4	4	4
20	#	Washer, lock #8	4	4	4			
21	#	Nut, hex #8-32	4	4	4			
22	A-276202	Engine assembly	1	1	1			
22	A-326274	Engine assembly*				1	1	1
23	279449	Oil filter (supplied by Ford)	1	1	1	1	1	1

# Common hardware. Procure locally.

\* Engine assembly A-326274 includes engine A-276419, alternator, and items 51, 53, 58, 59, 62, 63. see Group 113: Alternator for alternator and related parts.

# Group 105: Engine, continued

Variations 29-34



CR-255000  
CN-255000

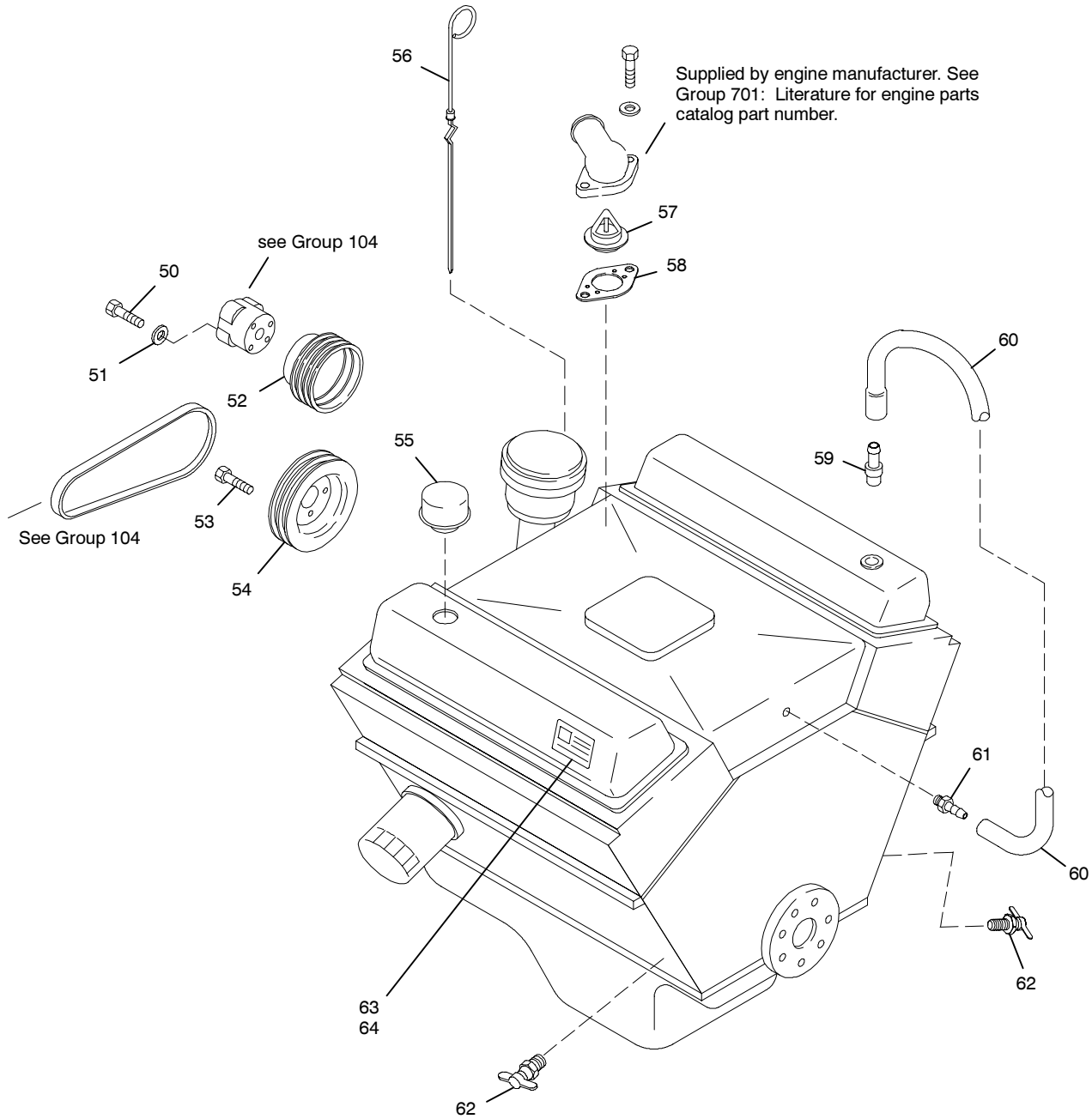
## Group 105: Engine, continued

Item	Part Number	Description	Quantity					
			Variation Number					
			29	30	31	32	33	34
24	X-6024-5	Screw, hex cap	1	1	1	1	1	1
25	#	Washer, lock 7/16 in.	1	1	1	1	1	1
26	276346	Shield, heat	1	1	1	1	1	1
27	#	Washer, lock 3/8 in.	3	3	3	3	3	3
28	X-6238-10	Screw, hex cap	3	3	3	3	3	3
29	326076	Plate, cover	1	1	1	1	1	1
30	276096	Screw, washer head	1	1	1			
30	X-6238-4	Screw, 3/8-16 x 1.25				1	1	1
31	#	Screw, hex cap 3/8-16	2	2	2	2	2	2
32	#	Washer, lock 3/8 in.	2	2	2	2	2	2
33	276097	Starter assembly	1	1	1			
33	326136	Starter assembly				1	1	1
33	326872	Terminal (not shown)				1	1	1
34	291384	Housing, flywheel	1	1	1			
35	#	Screw, hex cap 5/16-18	1	1	1			
36	X-22-16	Washer, lock	2	2	2			
37	#	Nut, hex 5/16-18	2	2	2			
38	255414	Bracket, fuel pump	1	1	1			
39	#	Washer, lock 1/4 in.	2	2	2			
40	X-465-6	Screw, hex cap	2	2	2			
40	#	Hardware, 1/4-20				2	2	2
41	X-22-12	Washer, shakeproof	6	6	6	2	2	2
42	259632	Bumper	2	2	2			
43	223033	Strap, ground	1	1	1			
44	291891	Solenoid, starter	1	1	1	1	1	1
45	X-6214-2	Cap, plastic	1	1	1			
46	#	Nut, hex 1/4-20	2	2	2	2	2	2
47	#	Washer, lock 1/4 in.	2	2	2			
48	276340	Harness, wiring (includes item 49)	1	1	1			
49	233959	Diode	1	1	1			

# Common hardware. Procure locally.

# Group 105: Engine, continued

Variations 29-34



A-276000  
CR-255000  
CN-255000

## Group 105: Engine, continued

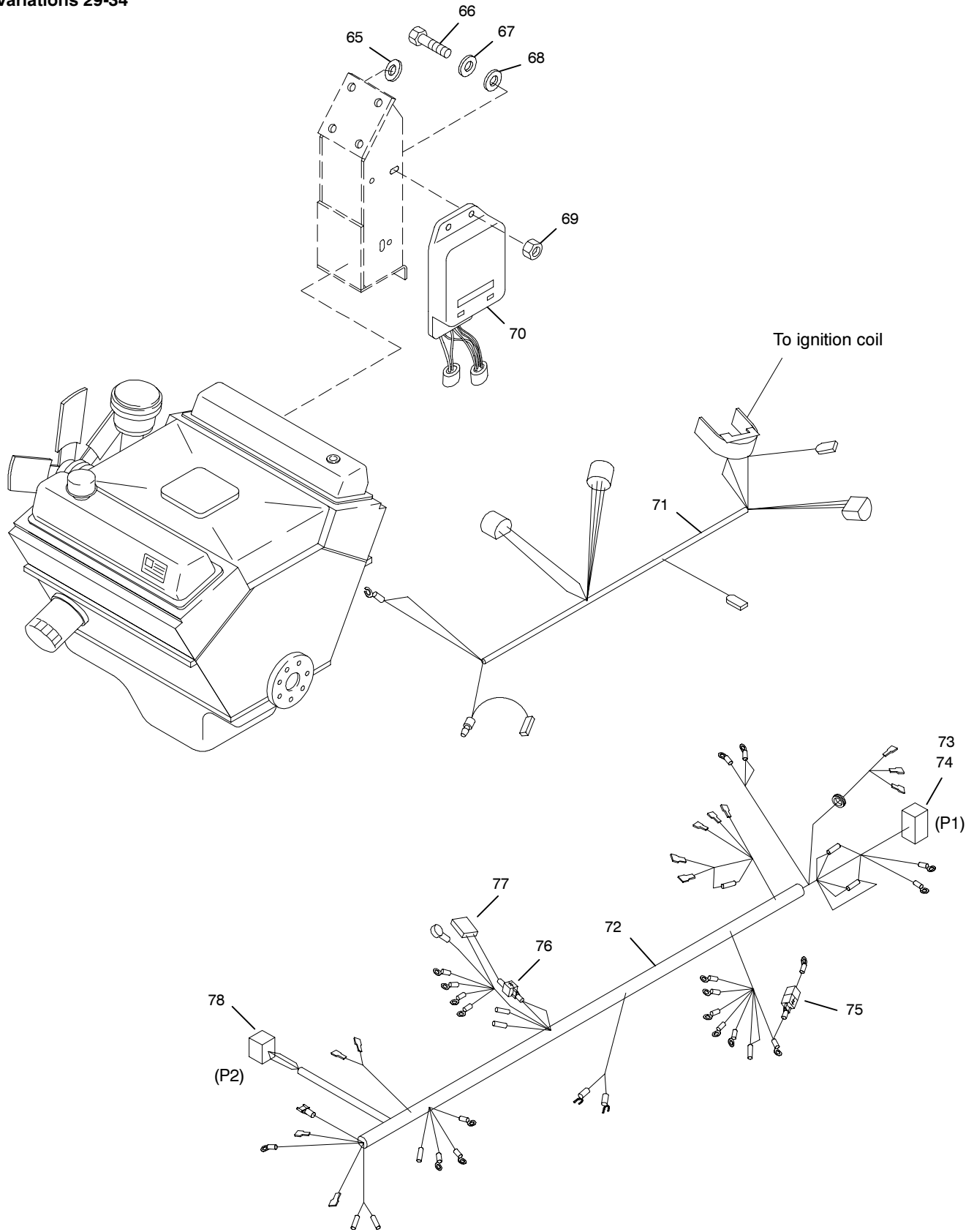
Item	Part Number	Description	Quantity					
			Variation Number					
			29	30	31	32	33	34
50	#	Screw, hex cap 5/16-24	4	4	4			
51	X-801-4	Washer, hardened	4	4	4			
52	276076	Pulley, water pump	1	1	1	1	1	1
53	#	Screw, hex cap 3/8-16	4	4	4			
54	276075	Pulley, crankshaft	1	1	1	1	1	1
55	276085	Cap, oil fill	1	1	1			
55	326259	Cap, oil fill						1
56	276078	Dipstick	1	1	1			
56	226641	Dipstick				1	1	1
56	226640	Tube, dipstick (not shown)				1	1	1
57	276162	Thermostat*	1	1				1
58	255752	Gasket, thermostat*		1				1
59	276115	Valve, crankcase vent	1	1	1	1	1	1
60	276164	Hose, crankcase vent	1	1	1	1	1	1
60	326257	Tube, breather (not shown)						1
60	326258	Bracket, support (not shown)						1
60	X-672-31	Clamp, insulated (not shown)						1
61	X-582-2	Connector, hose adapter	1		1			
62	X-256-3	Valve, drain	2	2	2	2	2	2
63	276095	Nameplate, engine	1	1	1	1	1	1
64	246066	Adhesive, neoprene	1	1	1	1	1	1

# Common hardware. Procure locally.

\* This part replaces the part shown in the Ford engine parts catalog.

# Group 105: Engine, continued

Variations 29-34



CR-255000  
CN-255000

## Group 105: Engine, continued

Item	Part Number	Description	Quantity					
			Variation Number					
			29	30	31	32	33	34
65	X-22-15	Washer, lock	1	1	1			
66	#	Screw, hex cap 1/4-20	3	3	3	3	3	3
67	#	Washer, lock 1/4 in.	3	3	3	3	3	3
68	#	Washer, plain 1/4 in.	3	3	3	3	3	3
69	#	Nut, hex 1/4-20	3	3	3	3	3	3
70	276077	Module, ignition	1	1	1	1	1	1
71	276094	Harness, wiring	1	1	1			
72	276329	Harness, wiring (engine) (includes item 73-78)	1	1	1			
72	326100	Harness, wiring (includes items 73-78) before serial number 363369				1	1	1
72	326615	Harness, wiring serial numbers 363369 and after				1	1	1
72	236978	Pin, male	A/R	A/R	A/R	A/R	A/R	A/R
72	292879	Pin, female, gold-plated				A/R	A/R	A/R
73	295145	Connector, 24-position	1	1	1	1	1	1
74	292800	Connector, cable	1	1	1	1	1	1
75	253798	Diode	1	1	1	1	1	1
76	233959	Diode, 6 amp, 100 V	A/R	A/R	A/R	A/R	A/R	A/R
77	254986	Connector, 2-position	1	1	1	1	1	1
78	239408	Connector, 4-position	1	1	1	1	1	1
78	239408	Connector, 4-position	1	1	1	1	1	1

# Common hardware. Procure locally.

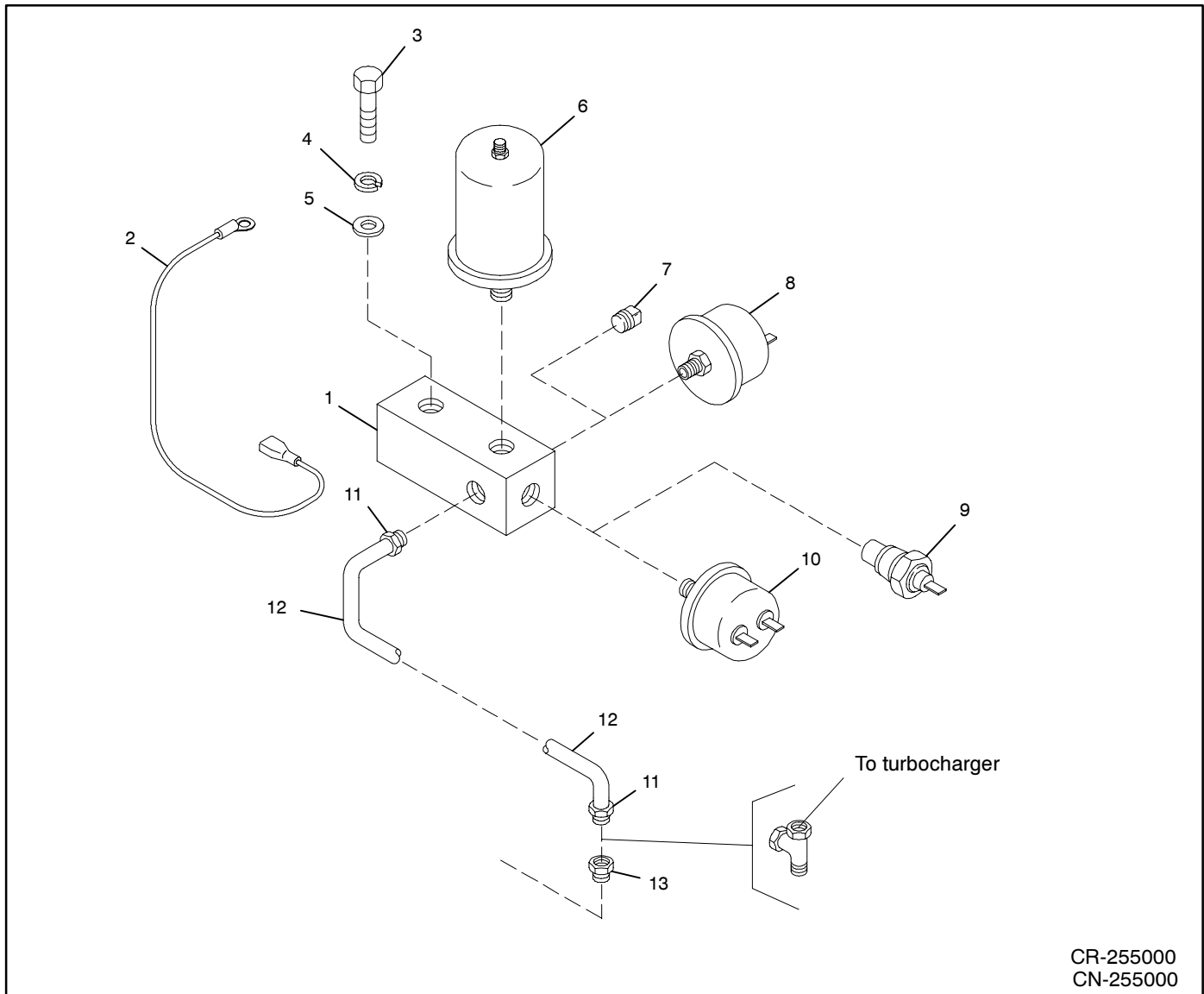
# Group 107: Nameplates and Decals

Item	Part Number	Description	Quantity										
			Variation Number										
			1	2	3	4	5	6	7	8	9	10	
1	X-5232-5	Decal, stripes	3	3	3	3	3	3	3	3	3	3	3
2	X-6246-1	Decal, Kohler Power Systems	2	2	2	2	2	2	2	2	2	2	2
2	X-6275-3	Logo, Kohler	1	1	1	1	1	1	1	1	1	1	1
3	X-6298-4	Decal, model 50 kW	2	2									
3	X-6298-5	Decal, model 60 kW			2	2							
3	X-6298-13	Decal, model 70 kW					2	2					
3	X-6298-6	Decal, model 80 kW							2	2			
4	238402	Decal, 12 volt positive terminal	1	1	1	1	1	1	1	1	1	1	1
5	246055	Tag, warning	1	1	1	1	1	1	1	1	1	1	1
6	273739	Decal, "Fast Response"	2	2	2	2	2	2	2	2	2	2	2
7	257438	Decal, danger: haz. volt./moving rotor	2	2	2	2	2	2	2	2	2	2	2
8	259365	Decal, backfeed	1	1	1	1	1	1	1	1	1	1	1
9	280561	Decal, water drain	2	2	2	2	2	2	2	2	2	2	2
10	257437	Decal, warning, unbalanced weight w/sling	1	1	1	1	1	1	1	1	1	1	1
11	257441	Decal, warning, unbalanced weight	1	1	1	1	1	1	1	1	1	1	1
12	224233	Decal, 1-800 number	1	1	1	1	1	1	1	1	1	1	1
13	249809	Warning, hot engine	1	1	1	1	1	1	1	1	1	1	1
14	258815	Decal, warning haz. volt./backfeed	1	1	1	1	1	1	1	1	1	1	1
15	249808	Decal, warning rotating parts	1	1	1	1	1	1	1	1	1	1	1
16	239776	Decal, lifting support		1		1		1		1		1	
17	255882	Decal, standby service		1		1		1		1		1	
18	279958	Decal, 600V connection		1		1		1		1		1	
19	249810	Decal, warning hot coolant	1	1	1			1		1		1	

# Group 107: Nameplates and Decals

Item	Part Number	Description	Quantity									
			Variation Number									
			11	12	13	14	15	16	17	179-8	179-9	
1	X-6232-1	Decal, stripes		2							2	2
1	X-6232-2	Decal, stripes		1							1	1
2	X-6247-7	Decal, model									2	
3	X-6275-3	Logo, Kohler	1	1								
4	X-6233-4	Decal, model		2								
5	X-6247-8	Decal, 70Kw										2
6	X-781-1	Rivet, pop		4							4	4
6	X-793-3	Rivet, pop			4			4	4	4		
7	Not Available	Nameplate, serial number		4	4			4	4	4	4	4
8	241541	Nameplate		2							2	2
9	X-6276-4	Nameplate		2							2	2
10	238402	Decal, 12 volt positive terminal	1	1							1	1
11	246055	Tag, warning		1							1	1
12	255084	Decal, "Fast Response"		2							2	2
13	257438	Decal, danger: haz. volt./moving rotor	2	2							2	2
14	259365	Decal, backfeed	1	1	1	1	1	1	1	1	1	1
15	280561	Decal, water drain	2	2	2	2	2	2	2	2	2	2
16	282904	Nameplate, generator, 50 Hz		1							1	1
16	282905	Nameplate, generator, 60 Hz		1							1	1
17	255879	Decal, oil warning			1			1	1	1		
18	257437	Decal, warning, unbalanced weight w/sling	1	1								
19	257441	Decal, warning, unbalanced weight	1	1								
20	253258	Decal, warning			1			1	1	1		
21	253259	Tag, instruction			1			1	1	1		
22	253816	Decal, warning			1					1		
23	253817	Nameplate			1			1	1	1		
24	253933	Decal, distributor chart			1					1		
25	255736	Decal, distributor chart						1	1			
26	290435	Decal			1			1	1	1		

# Group 108: Oil Pressure Switches

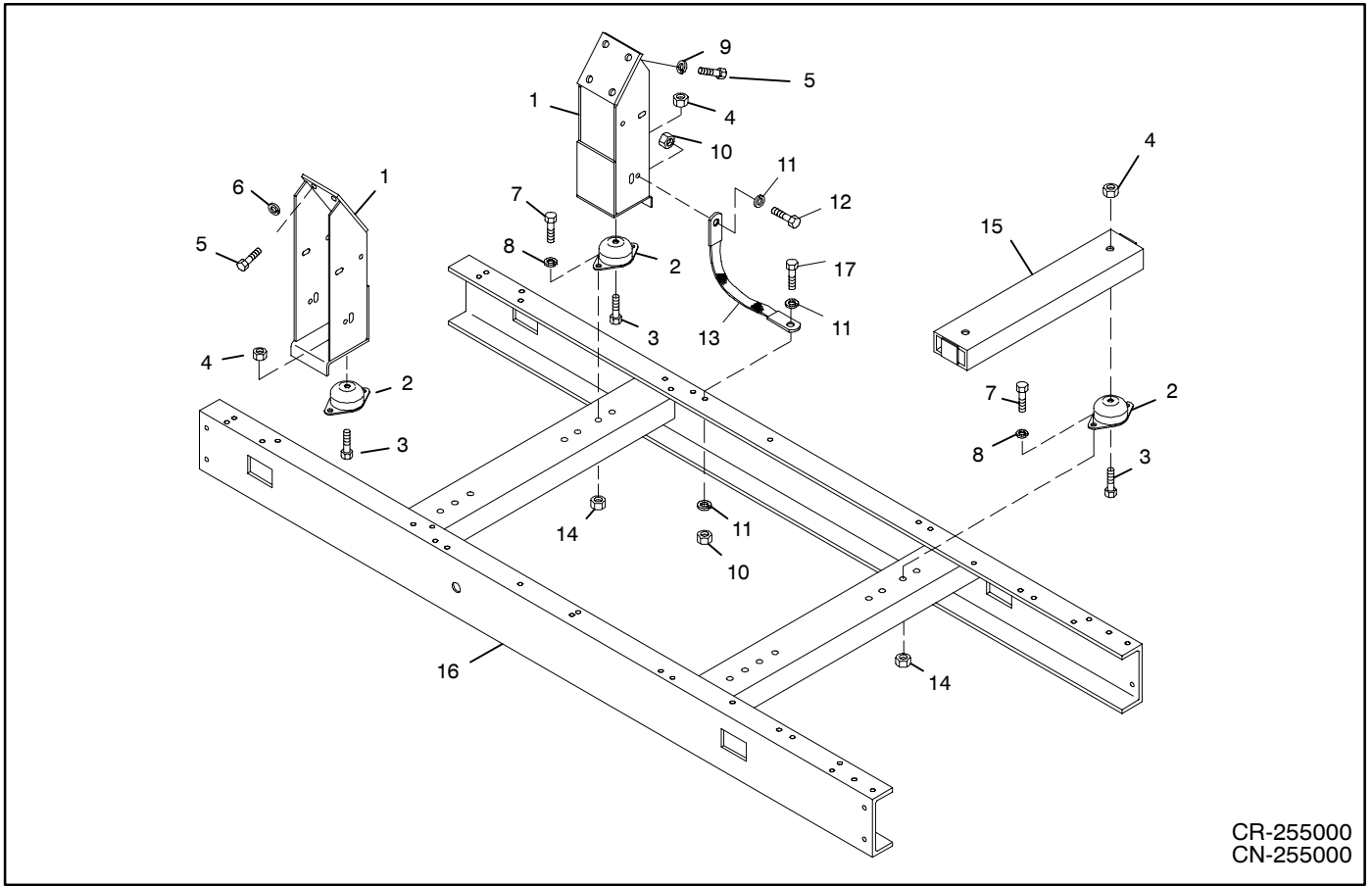


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Item	Part Number	Description	Quantity								
			Variation Number								
			1	2	3	4	5	6	7	8	9
1	267548	Block, oil gauge sender	1	1	1	1	1	1	1	1	1
2	LN-1808-1613	Lead			1	1		1	1		1
3	230578	Screw, hex cap	3	3	3	3	3	3	3	3	3
4	X-22-16	Washer, lock			1	1		1	1		1
5	#	Washer, flat 5/16 in.	1	1	1	1		1	1		1
6	264390	Sender, oil pressure	1		1	1		1	1	1	1
7	X-75-1	Plug, pipe	2	2	2	2	2	2	2	2	2
8	255912	Switch, oil pressure			1	1		1	1		1
9	328309	Switch, oil pressure	1	1						1	
10	255913	Switch, pressure						1			1
11	D-244	Connector, compression	2	2	2	2	2	2	2	2	2
12	X-294-1	Oil line, vent	1	1	1	1	1	1	1	1	1
13	A-106	Bushing, reducer	1	1	1	1	1	1	1	1	1

# Common hardware. Procure locally.

# Group 109: Skid and Plant Mounting

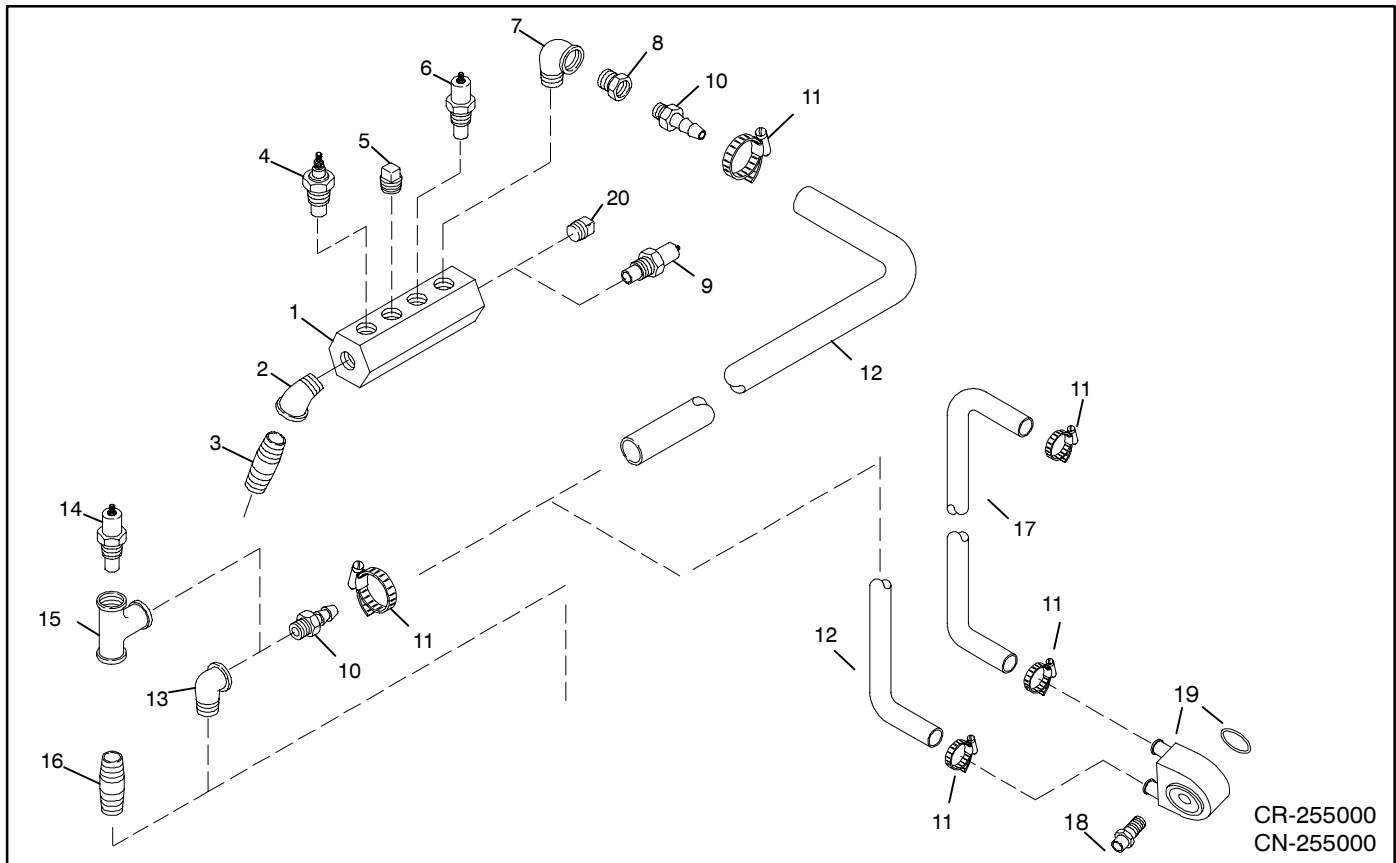


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Item	Part Number	Description	Quantity				
			Variation Number				
			3	4	5	6	7
1	255289	Support, engine	2	2			
1	276467	Support, engine			2	2	2
2	244210	Mount, vibration	4	4			
2	326156	Mount, vibration				4	
2	324155	Mount, vibration (engine end)			2		2
2	324156	Mount, vibration (generator end)			2		2
2	X-25-141	Washer, plain (not shown)			4	4	4
3	#	Screw, hex cap 1/2-13	4	4			
4	X-101-23	Nut, hex stop	4	4			
5	X-6024-2	Screw, hex cap	6	6			
6	X-22-15	Washer, lock	1				
7	#	Screw, hex cap 1/2-13	8	8			
8	#	Washer, lock 1/2 in.	8	8			
9	#	Washer, lock 7/16	5	5			
10	#	Nut, hex 5/16-18	2	2	2	2	2
11	X-22-16	Washer, lock	4	4			
11	X-22-16	Washer, lock			3	3	3
12	#	Screw, hex cap 5/16-18	1	1	1	1	1
13	290418	Strap, ground	1	1			
14	#	Nut, hex 1/2-13	8	8			
14	#	Nut, hex 3/8-16			8	8	8
15	253371	Spacer, generator		1			
16	258496	Skid	1	1			
16	276474	Skid			1		
16	276477	Skid				1	1
16	326238	Heat shield (not shown)			1	1	1
17	#	Screw, hex cap 5/16-18	1	1			
17	X-67-131	Screw, self-tapping			1	1	1

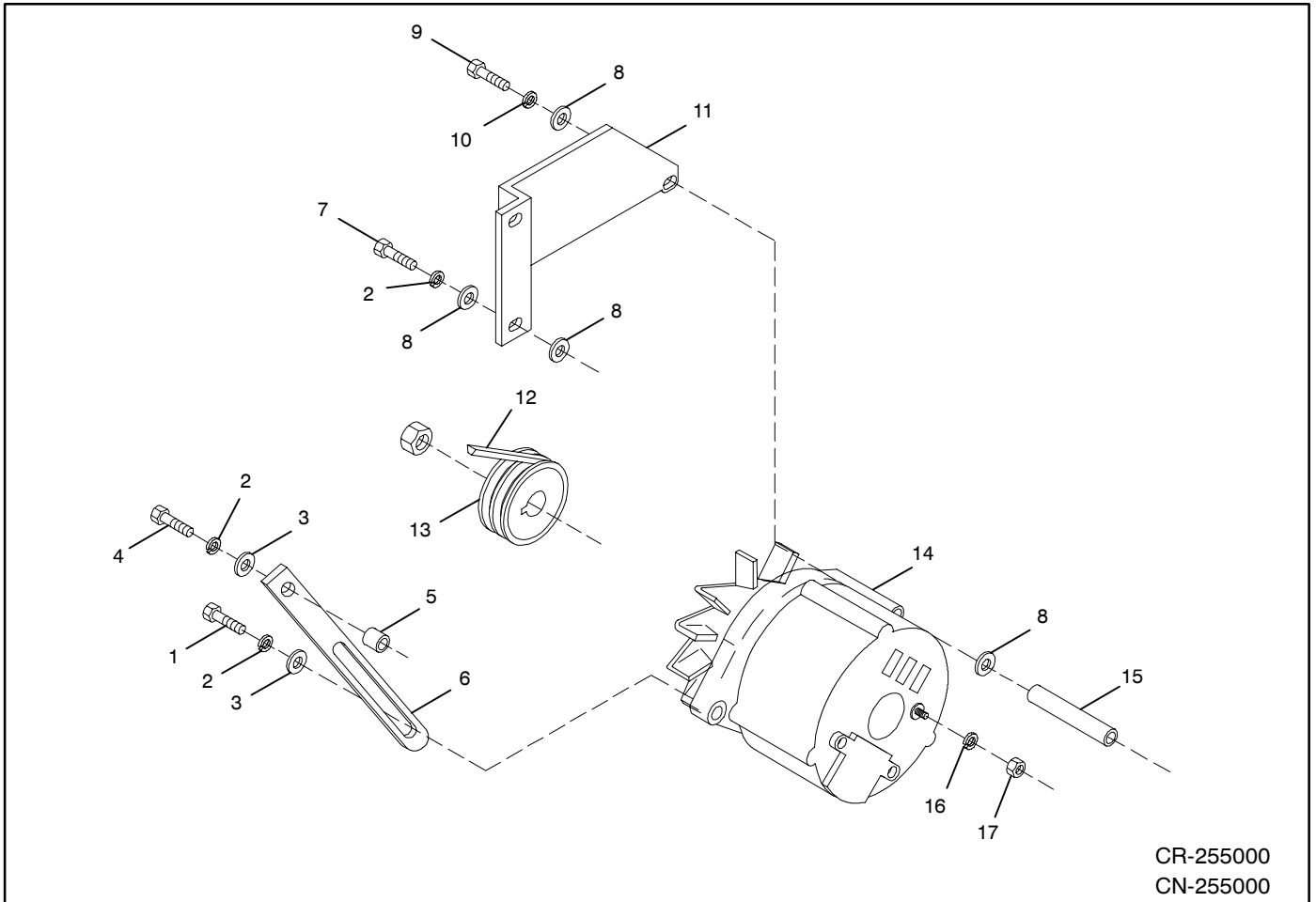
# Common hardware. Procure locally.

# Group 110: Water Temperature Switches



Item	Part Number	Description	Quantity							
			Variation Number							
			1	2	3	4	5	6	7	8
1	273659	Manifold, water temperature sender	1		1	1		1	1	1
1	291010	Manifold, water temperature sender		1			1			
2	X-274-13	Elbow, street	1	1	1	1	1	1	1	1
3	X-209-6	Nipple, pipe	1	1	1	1	1	1	1	1
4	268298	Sender, water temperature	1		1	1		1	1	1
5	X-75-28	Plug, pipe	2	2	2	2	2	2	1	1
6	241308	Switch, high temperature	1	1	1	1	1	1	1	1
7	X-211-1	Elbow, street	1	1	1	1	1	1		
8	X-202-28	Bushing, reducer	1	1	1					
8	X-202-46	Bushing, reducer							1	
9	241481	Switch, high temperature shut-off			1			1		
10	X-582-9	Connector, hose	2	2	2				2	
10	X-582-1	Connector, hose				1	1	1		1
10	X-582-2	Connector, hose				1	1	1		1
11	X-426-10	Clamp, hose	2	2	2				2	
11	X-426-12	Clamp, hose								4
12	X-651-16	Hose	1		1				1	
12	X-312-34	Hose, oil cooler								1
13	S-404	Elbow, street 3/8	1			1			1	1
14	255264	Switch, low water temperature			1			1		
14	X-256-1	Valve, drain 3/8							1	1
15	X-203-15	Tee, 3/8 x 3/8		1	1		1	1	1	1
16	X-204-9	Nipple, pipe 3/8 x 1		1	1		1	1	1	1
17	X-312-50	Hose, oil cooler								1
18	258795	Adaptor, oil cooler								1
19	258794	Cooler, oil (includes gasket)								1
20	X-75-3	Plug, pipe 1/2"						1		1

# Group 113: Alternator



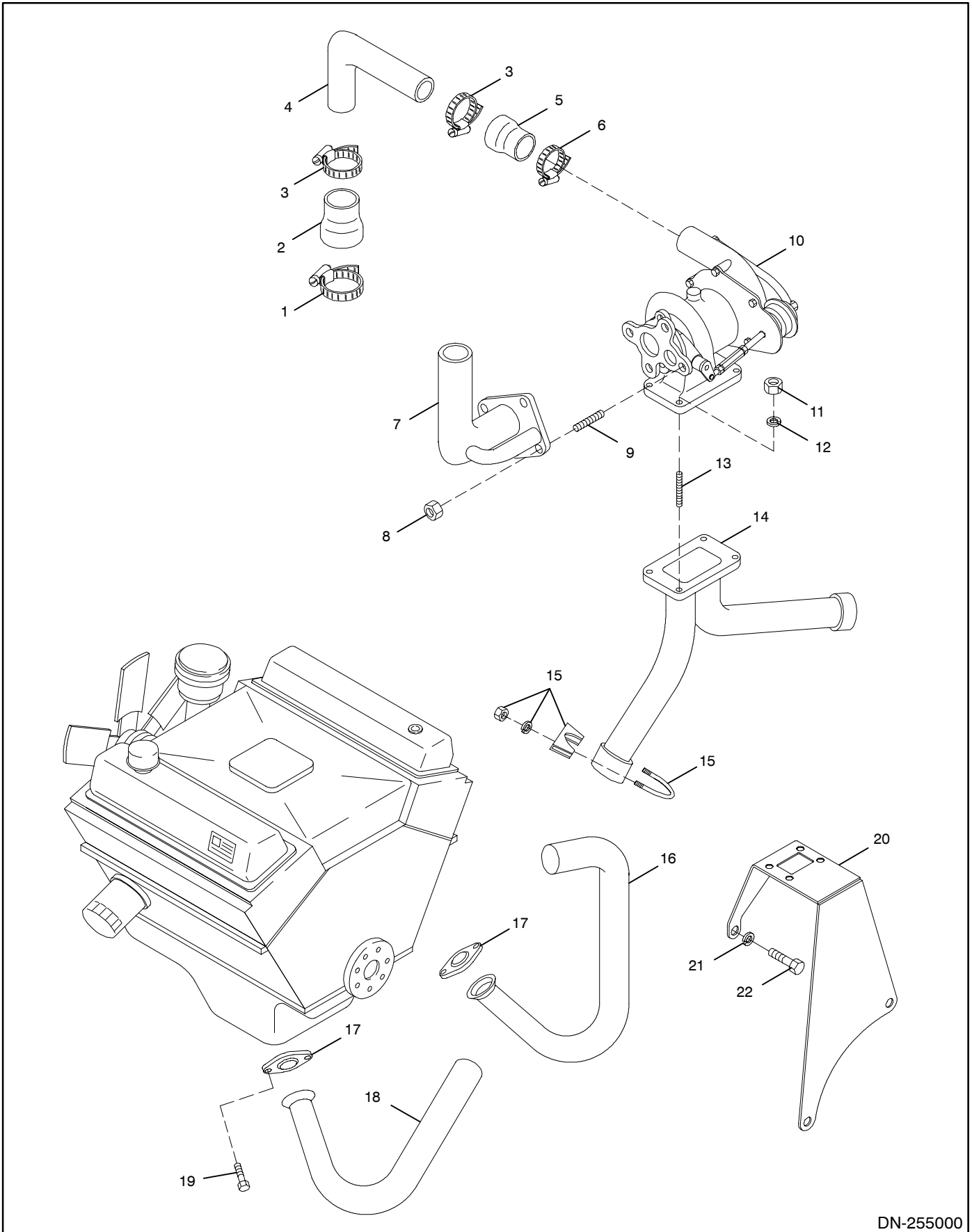
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Item	Part Number	Description	Quantity		
			2	4	99*
1	X-6050-4	Screw, hex cap	1	1	1
2	X-21-1	Washer, lock	4		
2	#	Washer, lock 5/16 in.		1	
3	X-25-5	Washer, plain	2		
3	X-25-85	Washer, plain			2
4	230578	Screw	1		1
5	280528	Spacer	1	1	1
6	291724	Arm, adjusting	1	1	1
7	X-125-22	Screw, hex cap	2		2
8	X-25-93	Washer, plain	6	6	6
9	X-6238-18	Screw, hex cap	1		1
10	X-22-1	Washer, lock	1		
10	#	Washer, lock 3/8 in.		1	
11	291401	Bracket, alternator mounting	1	1	1
12	258955	Belt, alternator and fan (matched pair)	1	1	1
13	256420	Pulley, alternator	1	1	1
14	255013	Alternator	1		
14	276226	Alternator		1	1
15	X-400-118	Spacer	1	1	1
16	X-22-11	Washer, lock	1	1	1
17	X-6053-1	Nut, hex	1	1	1

# Common hardware. Procure locally.

\* Component of engine assembly A-326274

# Group 116: Exhaust

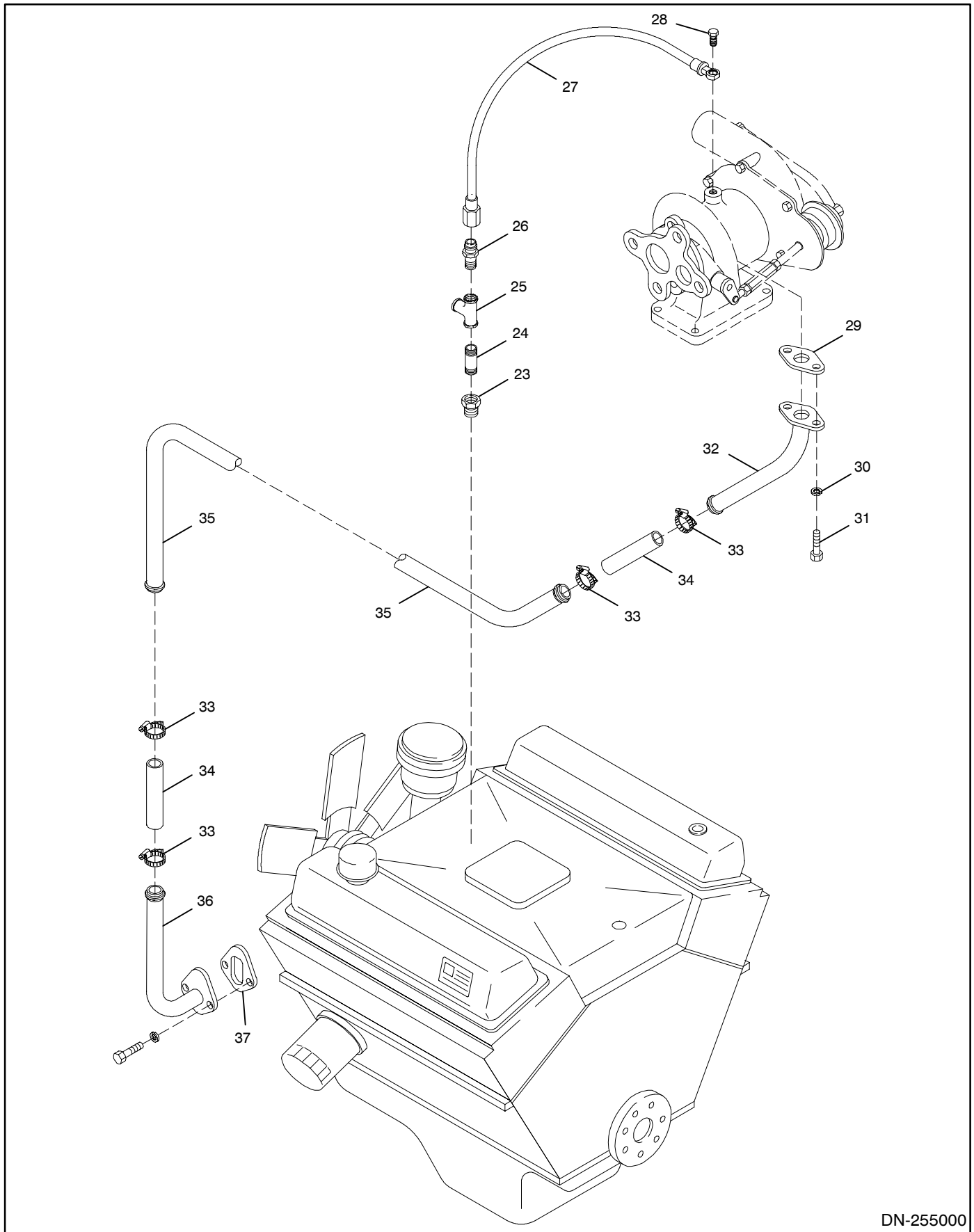


DN-255000

# Group 116: Exhaust

Item	Part Number	Description	Quantity								
			Variation Number								
			1	4	5	6	7	8	9	10	
1	X-426-2	Clamp, hose		1	1	1	1	1		1	1
2	258465	Hose, step		1	1	1	1	1		1	1
3	250081	Clamp, hose		2	2	2	2	2		2	2
4	258454	Pipe, compression discharge		1	1	1	1	1		1	1
5	255625	Hose, step		1	1	1	1	1		1	1
6	X-426-6	Clamp, hose		1	1	1	1	1		1	1
7	255623	Pipe, compression discharge		1	1	1	1	1		1	1
8	X-6053-2	Hose, step		4	4					4	4
8	258957	Clamp, hose				4	4			4	4
9	X-6054-8	Stud		4	4					4	4
9	258956	Stud				4	4			4	4
10	255553	Turbocharger		1		1				1	
10	255554	Turbocharger			1			1			1
11	X-82-2	Nut, hex 5/16		4	4						
12	X-21-1	Washer, lock 5/16		4	4						
13	X-352-65	Stud		4	4	4	4			4	4
14	258450	Pipe, turbo inlet		1	1						
14	258922	Pipe, turbo inlet				1	1			1	1
14	255555	Pipe, exhaust	1						1		
15	X-722-5	U-clamp		2	2	2	2			2	2
15	288827	Clamp, muffler	1						2		
16	258452	Pipe, exhaust (right)		1	1						
16	258923	Pipe, exhaust (right)				1	1			1	1
16	255556	Pipe, exhaust (right)	1						1		
17	291781	Flange, exhaust	1	1	1				1		
17	258836	Flange, exhaust				2	2			2	2
18	258451	Pipe, exhaust (left)		1	1						
18	258924	Pipe, exhaust (left)				1	1			1	1
18	255557	Pipe, exhaust (left)	1						1		
19	X-8-10	Screw, hex cap		4	4						
19	X-6024-3	Screw, hex cap	4						4		
19	X-6024-8	Screw, hex cap								4	4
20	258456	Support, turbocharger		1	1	1	1				
20	326130	Support, turbocharger								1	1
21	X-22-1	Washer, lock	1	1							
22	X-7-8	Screw, hex cap	1	1							
22	X-6238-10	Screw, hex cap								1	1

# Group 116: Exhaust



DN-255000

## Group 116: Exhaust

Item	Part Number	Description	Quantity						
			Variation Number						
			4	5	6	7	9	10	
23	A-106	Bushing, reducing	1	1	1	1			
24	X-217-6	Nipple, pipe	1	1	1	1			
25	X-203-10	Tee, pipe	1	1	1	1	1	1	1
26	X-296-5	Connector, half-union	1	1	1	1	1	1	1
27	255626	Line, oil feed	1	1	1	1	1	1	1
28	255628	Bolt, banjo	1	1	1	1	1	1	1
28	S-368	Washer, plain			2	2	2	2	2
29	255664	Gasket	1	1	1	1	1	1	1
30	X-20-1	Washer, lock	2	2					
31	X-6049-3	Screw, hex cap	2	2	2	2	2	2	2
32	255630	Fitting, oil drain	1	1	1	1	1	1	1
33	X-426-3	Clamp, hose	4	4	4	4	4	4	4
34	258461	Hose	2	2	2	2	2	2	2
35	258460	Line, oil drain	1	1	1	1	1	1	1
36	255674	Fitting, oil drain	1	1	1	1	1	1	1
37	258895	Gasket	2	2	2	2	2	2	2

## Group 119: Recommended Spare Parts

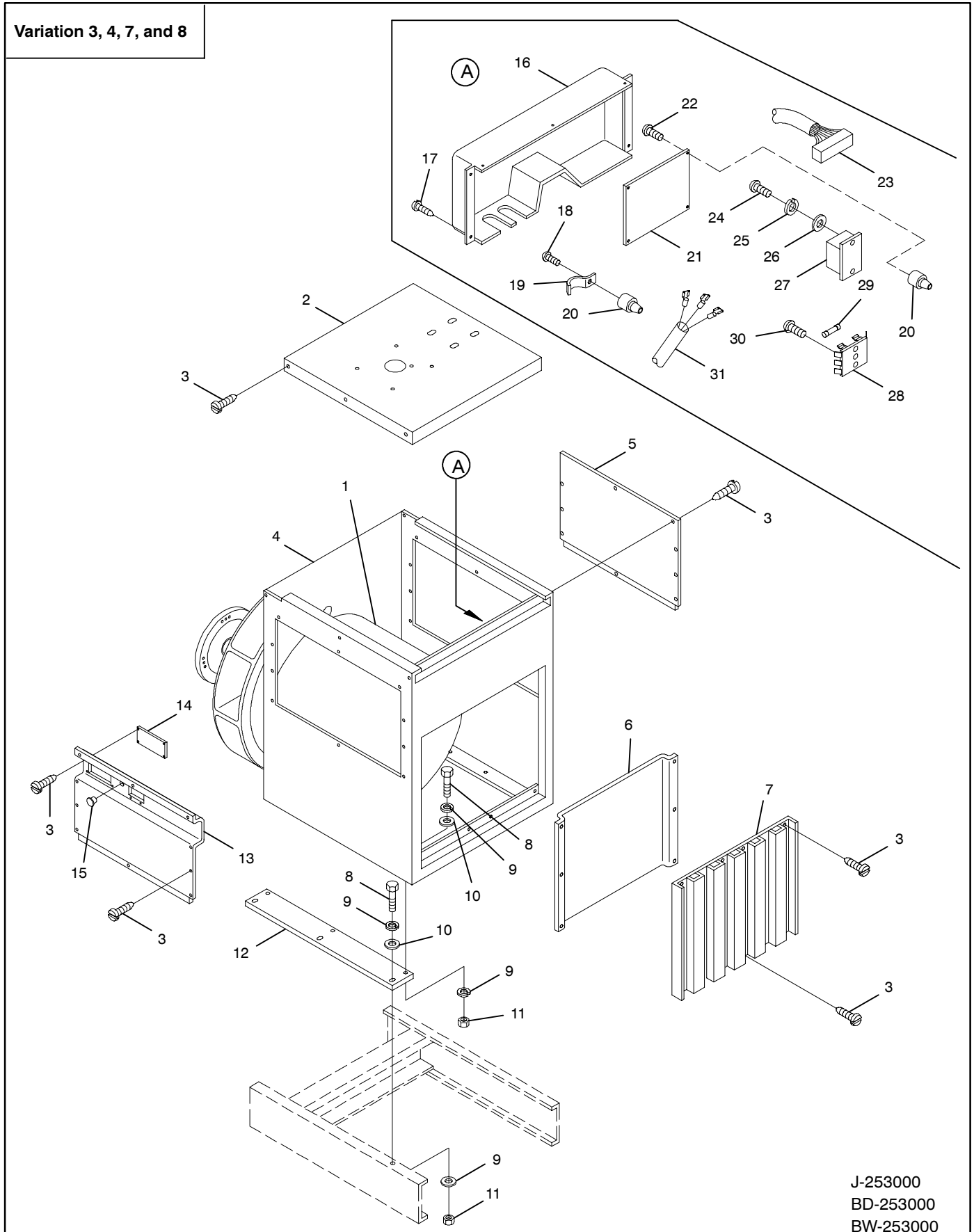
Item	Part Number	Description	Quantity						
			Variation Number						
			1	2	3	4	5	6	
1	A-257099	LED board	1	1	1	1	1	1	1
2	B-258545	Split activator	1		1				
2	B-258549	Split activator				1			1
3	See Chart Below	Indicator board	1	1				1	
4	B-292902	Photo board	1	1	1	1	1	1	1
5	C-255670	Voltage regulator	1	1	1	1	1	1	1
6	See Chart Below	Main circuit board	1	1					1
7	241927	Speed sensor	1	1					
8	243273	Fuse, 3 amp	5	5					
9	255126	Bulb	5	5				5	
10	276162	Thermostat	1	1	1	1	1	1	1
11	255752	Gasket, thermostat	1	1	1	1	1	1	1
12	258955	Fan belts (matched pair)	1	1	1	1	1	1	1
13	276488	Upper radiator hose	1	1				1	
14	279449	Oil filter	8	8	8	8	8	8	8
15	276489	Lower radiator hose	1	1				1	
16	283645	Fuse, 15 amp	5	5				5	
16	291207	Fuse, 15 amp	5	5				5	
17	326098	Air filter element	4	4	4	4			
17	324134	Air filter element						4	4

### Serial Number-Contingent Spare Parts

Part Description	Part Number	
	Before Serial Number 363369	Serial Numbers 363369 and after
Main Circuit Board	G-292806	A-336415
Indicator Board	B-292357	A-336432

# Group 201: Generator and Mounting

Variation 3, 4, 7, and 8



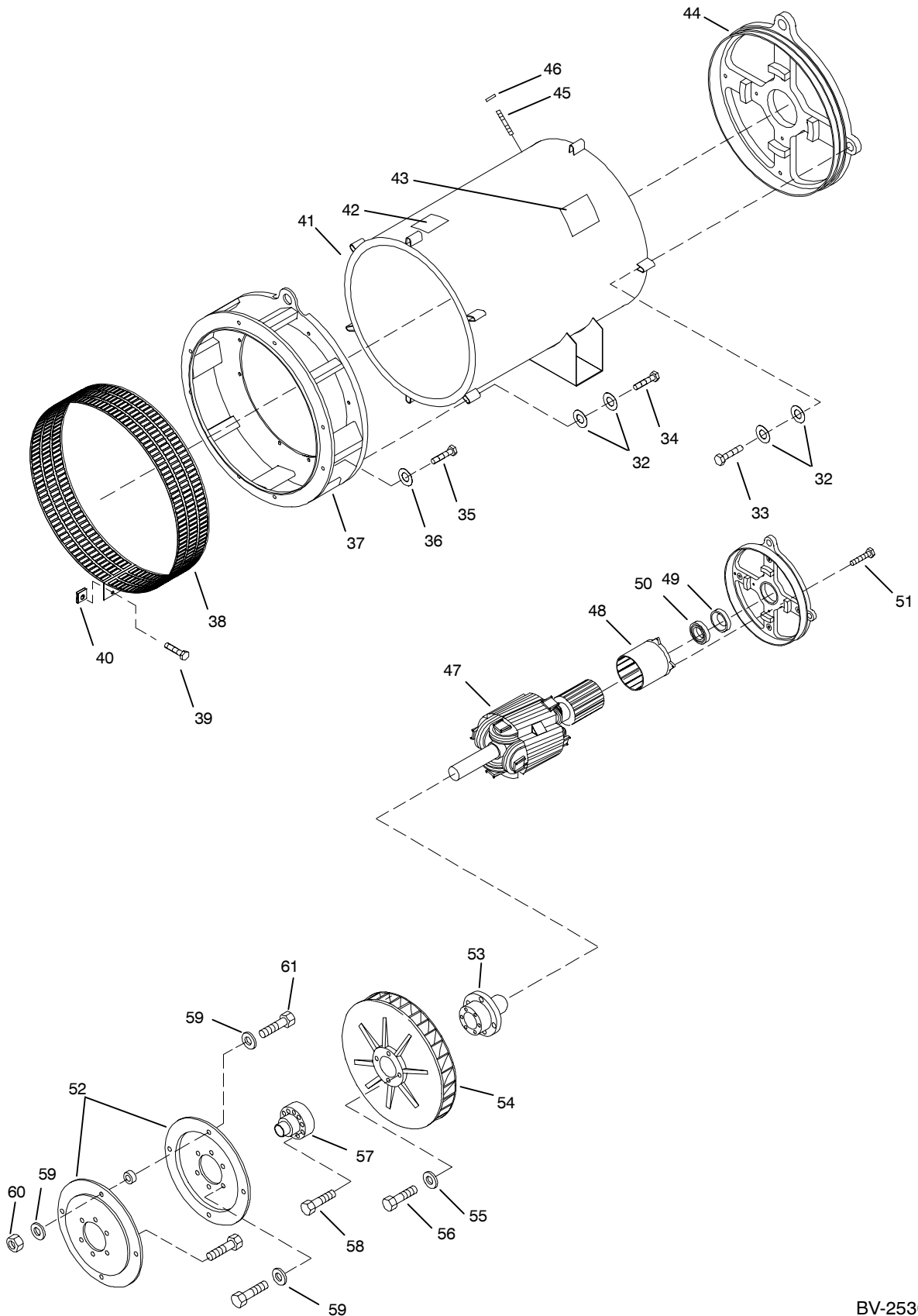
J-253000  
BD-253000  
BW-253000

# Group 201: Generator and Mounting

Item	Part Number	Description	Quantity			
			Variation Number			
			3	4	7	8
1	A-257323	Alternator assembly (includes items 32-61)	1			1
1	A-257319	Alternator assembly (includes items 32-61)				
2	255565	Cover, junction box	1	1	1	1
3	X-794-2	Screw, drill	38	38	42	42
4	253792	Box, junction	1	1	1	1
5	253642	Cover, side	1	1	1	1
6	253807	Plate, inner	1	1		
7	253808	Panel, junction box	1	1		
7	255712	Panel, junction box			1	1
8	X-6051-3	Screw, hex cap	12	12	12	12
9	X-23-1	Washer, lock	10	10	10	10
9	X-22-15	Washer, lock	4	4	4	4
10	X-25-37	Washer, plain	12	12	12	12
11	X-6053-3	Nut, hex	12	12	12	12
12	255552	Support, junction box	2	2	2	2
13	253641	Bracket, control panel	1	1	1	1
14	269986	Panel, front			1	1
15	X-301-23	Button, plug			1	1
--	253170	Kit, voltage regulator (includes items 16-31)	1	1		
--	255734	Kit, voltage regulator (includes items 16-27)			1	1
16	253415	Cover, regulator	1	1	1	1
17	X-794-2	Screw, drill	4	4	4	4
18	X-51-11	Screw, round head machine	2	2	2	2
19	X-339-8	Clip, wire	1	1	1	1
20	X-593-3	Grommet, plastic	8	8	8	8
21	E-253276	Circuit board, voltage regulator	1	1	1	1
22	X-51-9	Screw, round head machine	6	6	6	6
23	253417	Harness, wiring	1	1		
23	253741	Harness, wiring			1	1
24	X-51-15	Screw, round head machine	2	2	2	2
25	X-18-2	Washer, lock	2	2	2	2
26	X-25-48	Washer, plain	2	2	2	2
27	258783	SCR power package	1	1	1	1
28	292821	Holder, fuse	1	1		
29	254071	Fuse	3	3		
30	X-49-2	Screw, round head machine	2	2		
31	254073	Harness	1	1		
--	255564	Kit, junction box (includes items 2-13)	1	1		
--	255720	Kit, junction box (includes items 2-5 and 7-15)			1	1

# Group 201: Generator and Mounting, continued

Variations 3, 4, 7, and 8



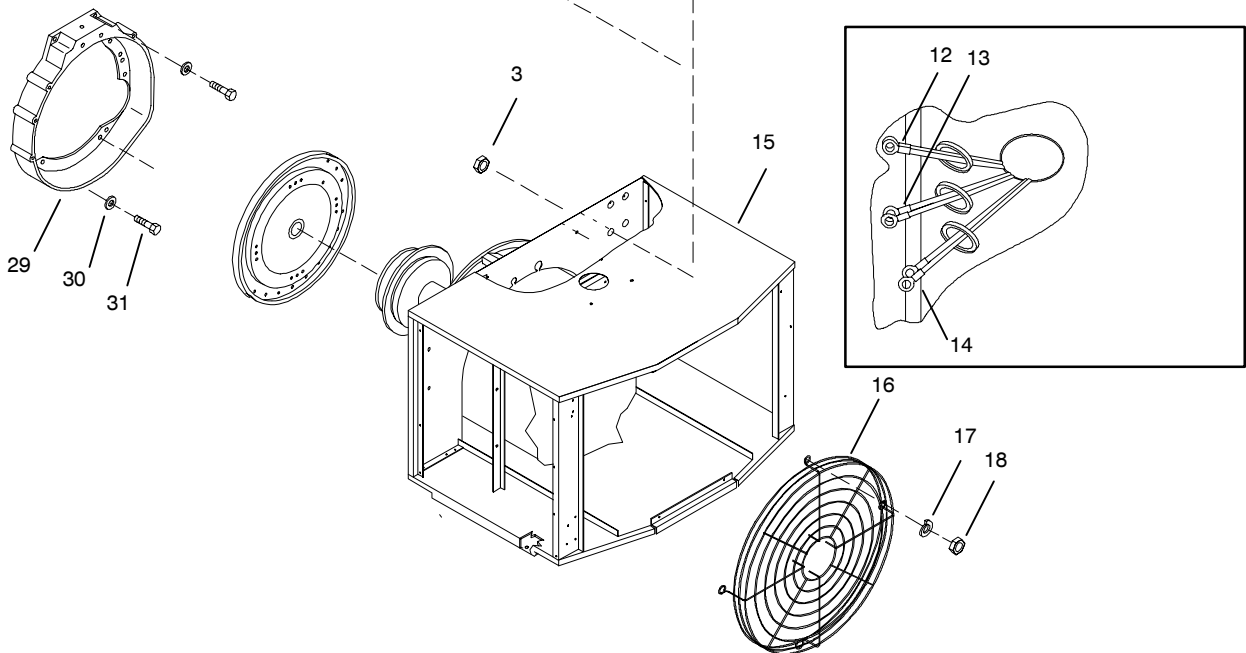
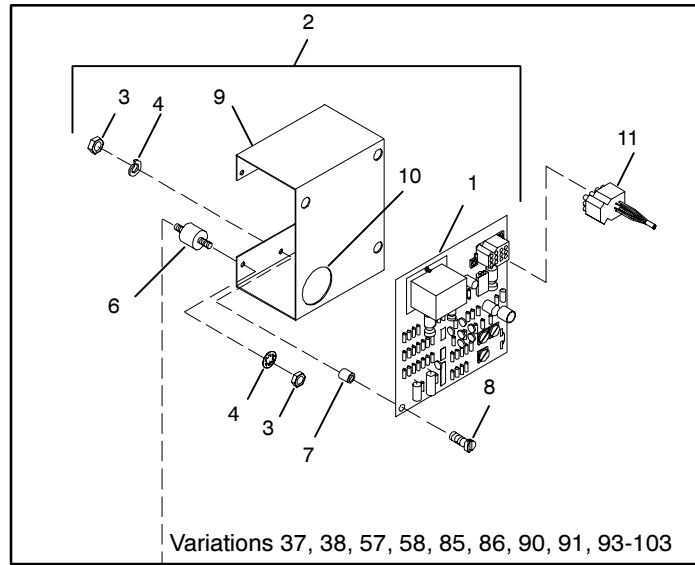
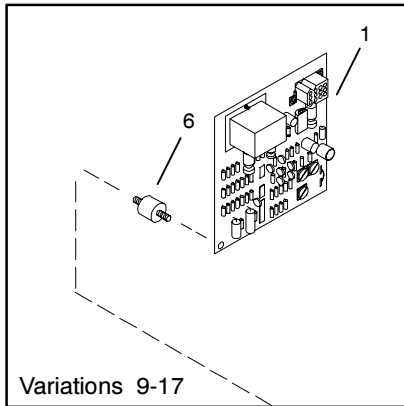
BV-253000

## Group 201: Generator and Mounting, continued

Item	Part Number	Description	Quantity			
			Variation 3	Variation 4	Variation 7	Variation 8
32	X-25-93	Washer, plain	10	10	10	10
33	X-7-15	Screw, hex cap	4	4	4	4
34	X-7-3	Screw, hex cap	6	6	6	6
35	X-7-17	Screw, hex cap	6	6	6	6
36	X-22-1	Washer, lock	6	6	6	6
37	257248	Adapter, generator	1	1	1	1
38	257179	Guard, generator fan	1	1	1	1
39	X-67-51	Screw, hex head	2	2	2	2
40	257442	Clip, speed	2	2	2	2
41	257537	Stator assembly	1			1
41	257536	Stator assembly		1	1	
42	257437	Decal, warning	1	1	1	1
--	257438	Decal, warning (Not Shown)	1	1	1	1
43	257441	Decal, warning	1	1	1	1
44	257167	Bracket, end	1	1	1	1
45	X-352-52	Stud	1	1	1	1
46	X-22-5	Washer, shakeproof	4	4	4	4
47	B-257149	Rotor assembly		1	1	
47	B-257150	Rotor assembly	1			1
48	257172	Exciter assembly	1	1	1	1
49	257168	Ring, tolerance	1	1	1	1
50	X-758-2	Bearing, ball	1	1	1	1
51	X-6-34	Screw, hex cap	4	4	4	4
52	257506	Kit, engine drive (includes items 22-30)	1	1	1	1
53	257493	Hub, drive	1	1	1	1
54	257173	Fan, generator	1	1	1	1
55	X-25-93	Washer, plain	4	4	4	4
56	X-7-1	Screw, hex cap	4	4	4	4
57	257491	Adapter, drive hub	1	1	1	1
58	X-55-17	Screw, hex socket head	6	6	6	6
59	290945	Washer, hardened	14	14	14	14
60	X-79-2	Nut, hex	4	4	4	4
61	X-6024-2	Screw, hex cap	4	4	4	4
--	A-257181	Alternator sub-assembly (includes items 41 and 47)		1	1	
--	A-257180	Alternator sub-assembly (includes items 41 and 47)	1			1

# Group 201: Generator and Mounting, continued

Variations 9-17, 37, 38, 57, 58, 80, 81, 85, 86, 90, 91, 93-103



EA, EE, EF-255000

## Group 201: Generator and Mounting, continued

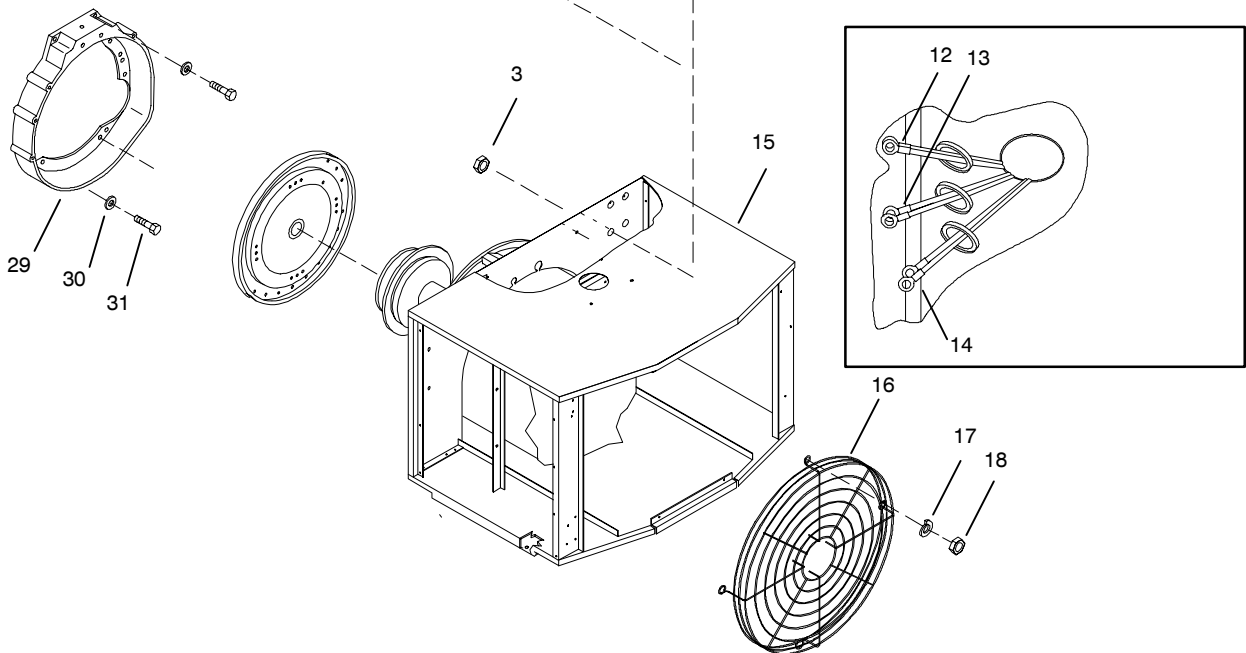
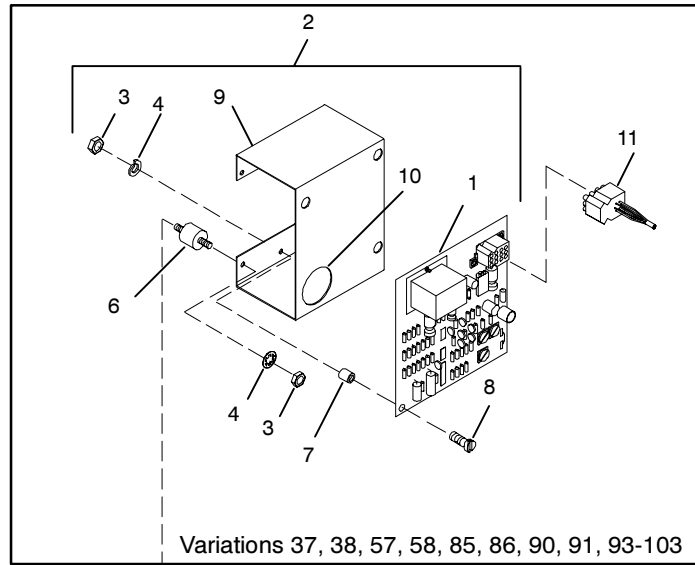
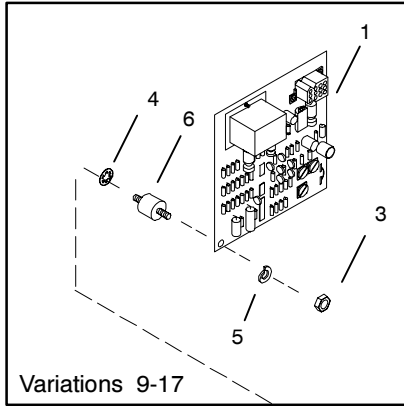
Item	Part Number	Description	Quantity														
			Variation Number														
			9	10	11	12	13	14	15	16	17	37	38	57	58	80	81
1	C-255670	Board, voltage regulator	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	B-292789	Regulator assembly, voltage (includes items 3-10)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
3	X-72-4	Nut, hex	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
4	X-22-20	Washer, shakeproof	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
5	X-22-7	Washer, lock #8	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
6	259919	Cushion, vibro mount											3			3	3
6	282829	Cushion, vibro mount											3		3	3	
6	360459	Standoff, circuit board	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
7	239513	Bushing, insulating											5	5	5	5	
8	X-51-11	Screw, round head machine											5	5	5	5	
9	282832	Bracket, regulator											1	1	1	1	
10	X-634-16	Bushing											1	1	1	1	
11	255029	Harness, wiring													1	1	
11	255481	Harness, wiring	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
12	X-750-14	Tag, lead - L1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
13	X-750-15	Tag, lead - L2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
14	X-750-16	Tag, lead - L3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
15	255020	Box, junction														1	1
15	255044	Box, junction															
15	255550	Box, junction											1	1	1	1	
15	222823	Box, junction	1	1	1	1											
15	222824	Box, junction					1	1	1	1	1						
16	274596	Guard, generator															
16	274597	Guard, generator															
17	X-22-10	Washer, lock															
18	#	Nut, hex 3/8-16															
19	A-257663	Alternator assembly*											1		1		
19	B-257738	Alternator assembly*														1	
19	A-276461	Alternator assembly*	1														
19	A-276462	Alternator assembly*		1													
19	A-276463	Alternator assembly*			1												
19	A-276464	Alternator assembly*				1											
19	A-276483	Alternator assembly*					1										
19	A-276484	Alternator assembly*						1									
19	A-276485	Alternator assembly*							1								
19	A-276486	Alternator assembly*								1							
19	A-276487	Alternator assembly*									1						

# Common hardware. Procure locally.

\* Alternator assemblies included items 1-48 beginning on page 58.

# Group 201: Generator and Mounting, continued

Variations 9-17, 37, 38, 57, 58, 80, 81, 85, 86, 90, 91, 93-103



EA, EE, EF-255000

# Group 201: Generator and Mounting, continued

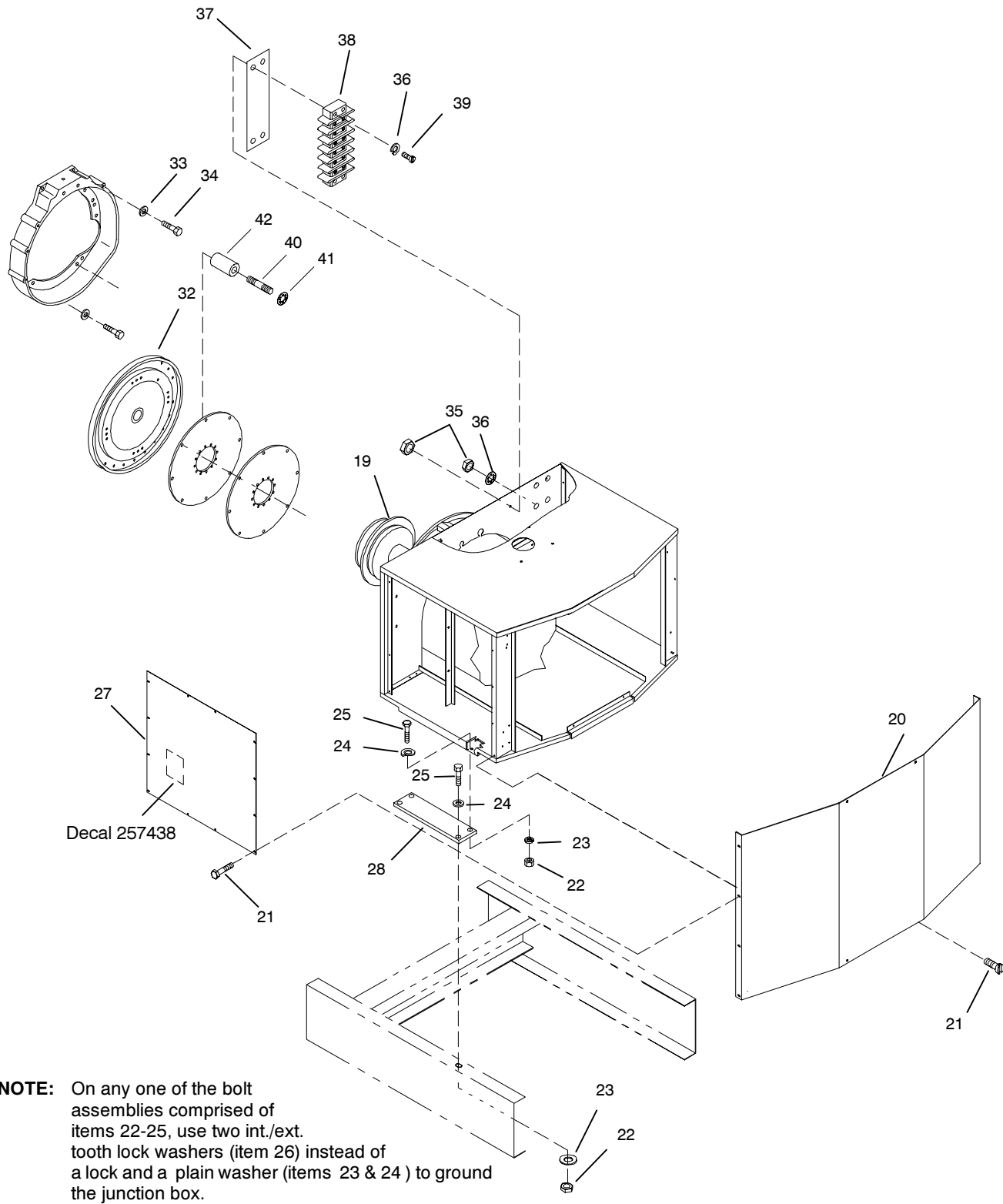
Item	Part Number	Description	Quantity															
			Variation Number															
			85	86	90	91	93	94	95	96	97	98	99	100	101	102	103	
1	C-255670	Board, voltage regulator	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	B-292789	Regulator assembly, voltage(includes items 3-10)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
3	X-72-4	Nut, hex	4	4			4				4		4				4	
4	X-22-20	Washer, shakeproof	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
5	X-22-7	Washer, lock #8																
6	259919	Cushion, vibro mount			3	3		3	3		3	3		3	3		3	
6	282829	Cushion, vibro mount	3	3			3			3			3				3	
6	282829	Cushion, vibro mount																
7	239513	Bushing, insulating	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
8	X-51-11	Screw, round head machine	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
9	5282832	Bracket, regulator	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
10	X-634-16	Bushing	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
11	255029	Harness, wiring	1	1						1			1				1	
11	255481	Harness, wiring			1	1	1	1	1	1	1	1	1	1	1	1	1	1
12	X-452-2	Tag, lead - L1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
13	X-452-3	Tag, lead - L2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
14	X-452-4	Tag, lead - L3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
15	255020	Box, junction	1	1	1	1												
15	255044	Box, junction							1	1	1							
15	255550	Box, junction					1	1				1	1	1	1	1	1	1
15	222823	Box, junction																
15	222824	Box, junction																
16	274596	Guard, generator			1	1												
16	274597	Guard, generator										1			1			1
17	X-22-10	Washer, lock			4	4						4			4			4
18	#	Nut, hex 3/8-16			4	4						4			4			4
19	B-257738	Alternator assembly*	1															
19	B-257741	Alternator assembly*		1														
19	B-257833	Alternator assembly*			1													
19	B-257737	Alternator assembly*				1												
19	A-257795	Alternator assembly*					1											
19	A-257796	Alternator assembly*						1										
19	B-257663	Alternator assembly*							1	1		1	1					
19	B-257795	Alternator assembly*									1				1			
19	B-257669	Alternator assembly*														1	1	
19	B-257796	Alternator assembly*																1

# Common hardware. Procure locally.

\* Alternator assemblies included items 1-48 beginning on page 58.

# Group 201: Generator and Mounting, continued

Variations 9-17, 37, 38, 57, 58, 80, 81, 85, 86, 90, 91, 93-103



**NOTE:** On any one of the bolt assemblies comprised of items 22-25, use two int./ext. tooth lock washers (item 26) instead of a lock and a plain washer (items 23 & 24) to ground the junction box.

EA, EE, EF-255000

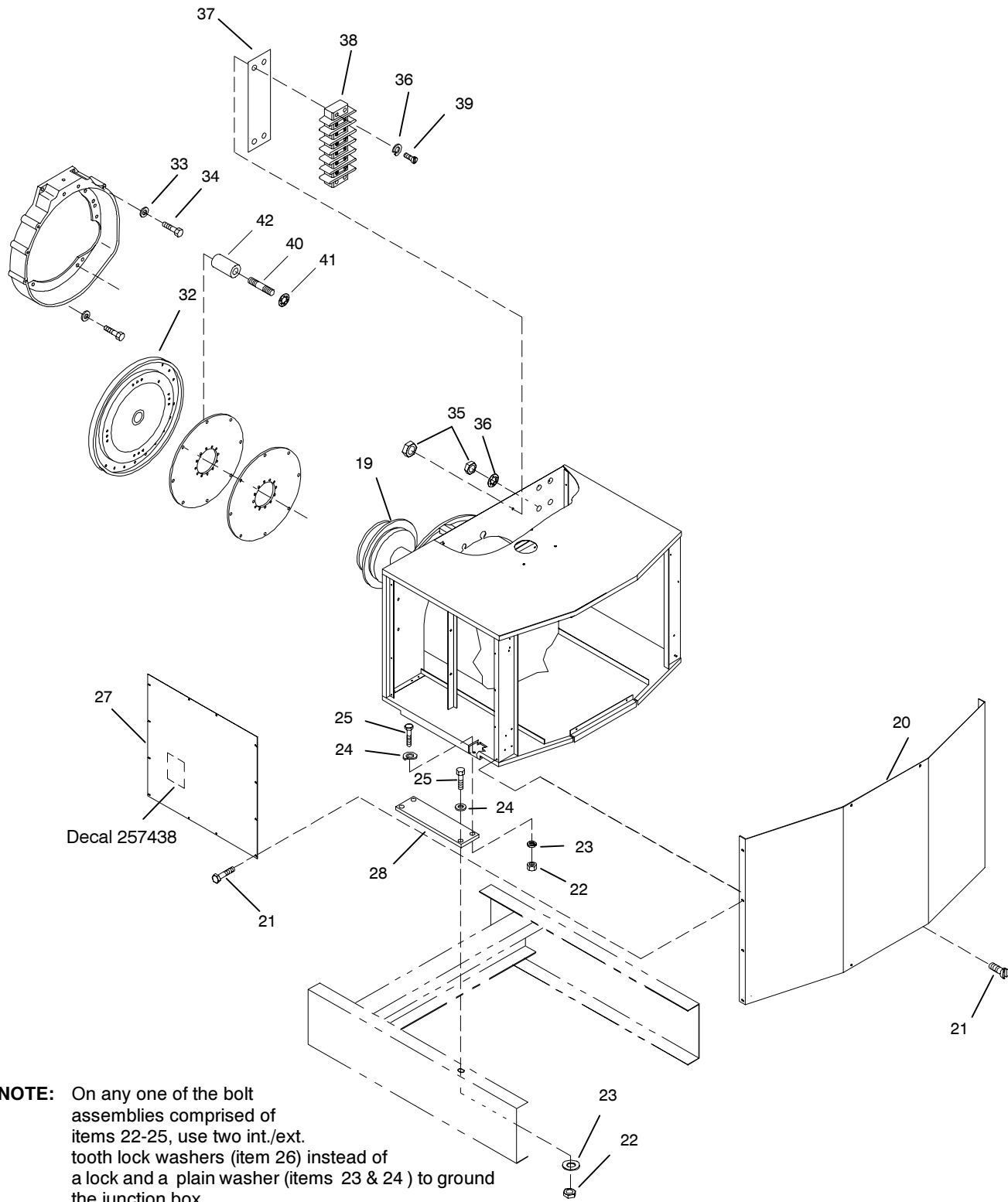
## Group 201: Generator and Mounting, continued

Item	Part Number	Description	Quantity																	
			Variation Number																	
			9	10	11	12	13	14	15	16	17	37	38	57	58	80	81			
20	255046	Cover, junction box													1	1	1	1		
20	255022	Cover, junction box																		
20	273483	Cover, junction box																		
20	222834	Cover, junction box	1	1	1	1														
20	222836	Cover, junction box						1	1	1	1	1								
21	X-794-1	Screw, drill hex													16	16	16	16		
21	X-6216-1	Screw, drill hex	12	12	12	12														
22	X-82-2	Nut, hex													8	8	8	8	8	8
22	#	Hardware, 3/8-16	8	8	8	8														
23	#	Washer, lock 5/16 in. split																	6	6
23	290945	Washer, hardened																	8	
23	#	Hardware, 3/8-16	8	8	8	8														
23	X-25-5	Washer, steel													3		3	3		
23	X-25-85	Washer, plain														3				
24	X-21-1	Washer, lock													6	6	6	6		
24	#	Hardware, 3/8-16	8	8	8	8														
25	X-6-7	Screw, hex cap													8		8	8		
25	X-125-5	Screw, hex cap														8				
25	#	Hardware, 3/8-16	8	8	8	8														
26	X-22-16	Washer, lock													4	4	4	4		
26	X-22-14	Washer, lock	4	4	4	4	4	4	4	4	4	4	4	4						
27	255045	Cover, junction box													2		2	2		
27	273484	Cover, junction box														2				
27	273429	Cover, junction box																	2	2
27	222833	Cover, junction box	2	2	2	2														
27	222835	Cover, junction box						2	2	2	2	2	2							
28	255284	Bracket, junction box													2	2	2	2		
28	352625	Support, junction box (not shown)	2	2	2	2														
28	326115	Support, junction box (not shown)						2	2	2	2	2	2							
32	276080	Flywheel													1	1	1	1		
35	X-72-4	Nut, hex													5	5	5	5		
36	X-18-2	Washer, lock													5	5	5	5		
37	255080	Marker, strip	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
38	295314	Block, terminal	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
39	X-51-11	Screw, round head machine	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
40	X-352-93	Stud	8	8	8	8	8	8	8	8	8	8	8	8						
41	X-801-3	Washer, hardened	8	8	8	8	8	8	8	8	8	8	8	8						
42	X-400-198	Spacer	8	8	8	8	8	8	8	8	8	8	8	8						

# Common hardware. Procure locally.

# Group 201: Generator and Mounting, continued

Variations 9-17, 37, 38, 57, 58, 80, 81, 85, 86, 90, 91, 93-103



**NOTE:** On any one of the bolt assemblies comprised of items 22-25, use two int./ext. tooth lock washers (item 26) instead of a lock and a plain washer (items 23 & 24) to ground the junction box.

EA, EE, EF-255000

# Group 201: Generator and Mounting, continued

lt.	Part Number	Description	Quantity														
			Variation Number														
			85	86	90	91	93	94	95	96	97	98	99	100	101	102	103
20	255046	Cover, junction box					1	1		1			1			1	
20	255022	Cover, junction box	1	1													
20	273483	Cover, junction box							1		1	1		1	1		1
21	X-794-1	Screw, drill hex	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
22	X-82-2	Nut, hex	8	8	8	8	4	4		8			8			8	
23	#	Washer, lock 5/16 in. split			6	6				8		8					
23	290945	Washer, hardened															
23	X-25-5	Washer, steel	3	3						3			3				
23	X-25-85	Washer, plain						3								3	
24	X-21-1	Washer, lock	6	6			3	3		6			6			6	
25	X-6-7	Screw, hex cap	8	8			4			4			4				
25	X-125-5	Screw, hex cap						4								8	
25	#	Hardware, 3/8-16															
26	X-22-16	Washer, lock	4	4	4	4	2	2	4	4	4	4	4	2	4	4	2
27	273484	Cover, junction box					2	2	2	2	2	2	2	2	2	2	2
27	273429	Cover, junction box			2	2											
28	255284	Bracket, junction box	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
29	291384	Housing, flywheel					1	1			1			1			1
30	X-22-1	Washer, lock					6	6									
31	X-6238-10	Screw, hex cap						3									
31	X-7-8	Screw, hex cap					3										
32	276080	Flywheel	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
33	X-23-1	Washer, lock					6	6									
34	X-8-10	Screw, hex cap					6										
34	X-6024-8	Screw, hex cap						6									
35	X-72-4	Nut, hex	5	5			5	5		5			5			5	
36	X-18-2	Washer, lock	5	5			5	5		5			5			5	
37	255080	Marker, strip	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
38	295314	Block, terminal	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
39	X-51-11	Screw, round head machine	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2

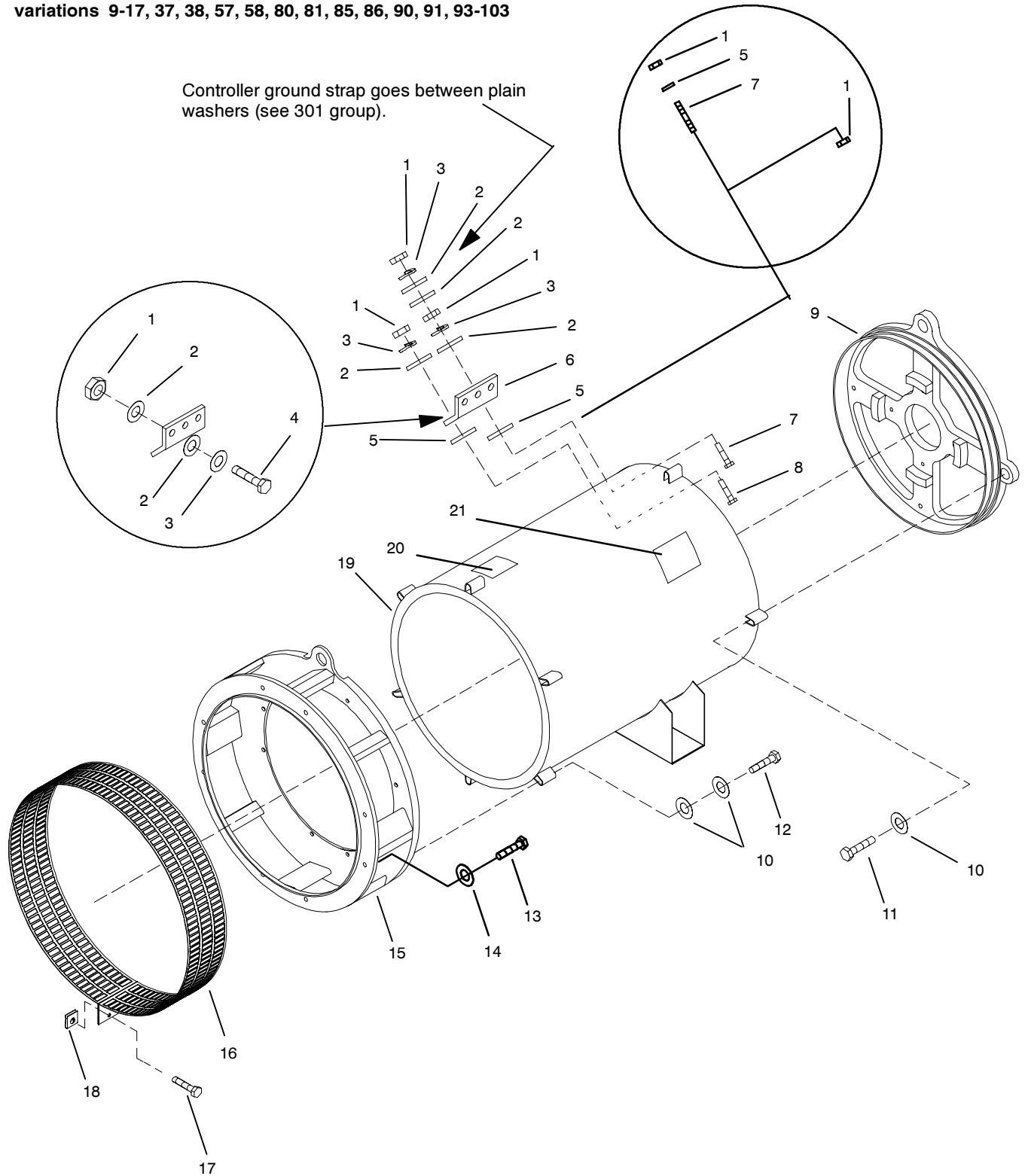
# Common hardware. Procure locally.

# Group 201: Generator and Mounting, continued

## Alternator assembly

variations 9-17, 37, 38, 57, 58, 80, 81, 85, 86, 90, 91, 93-103

Controller ground strap goes between plain washers (see 301 group).



B-257669  
B-257795  
B-257796

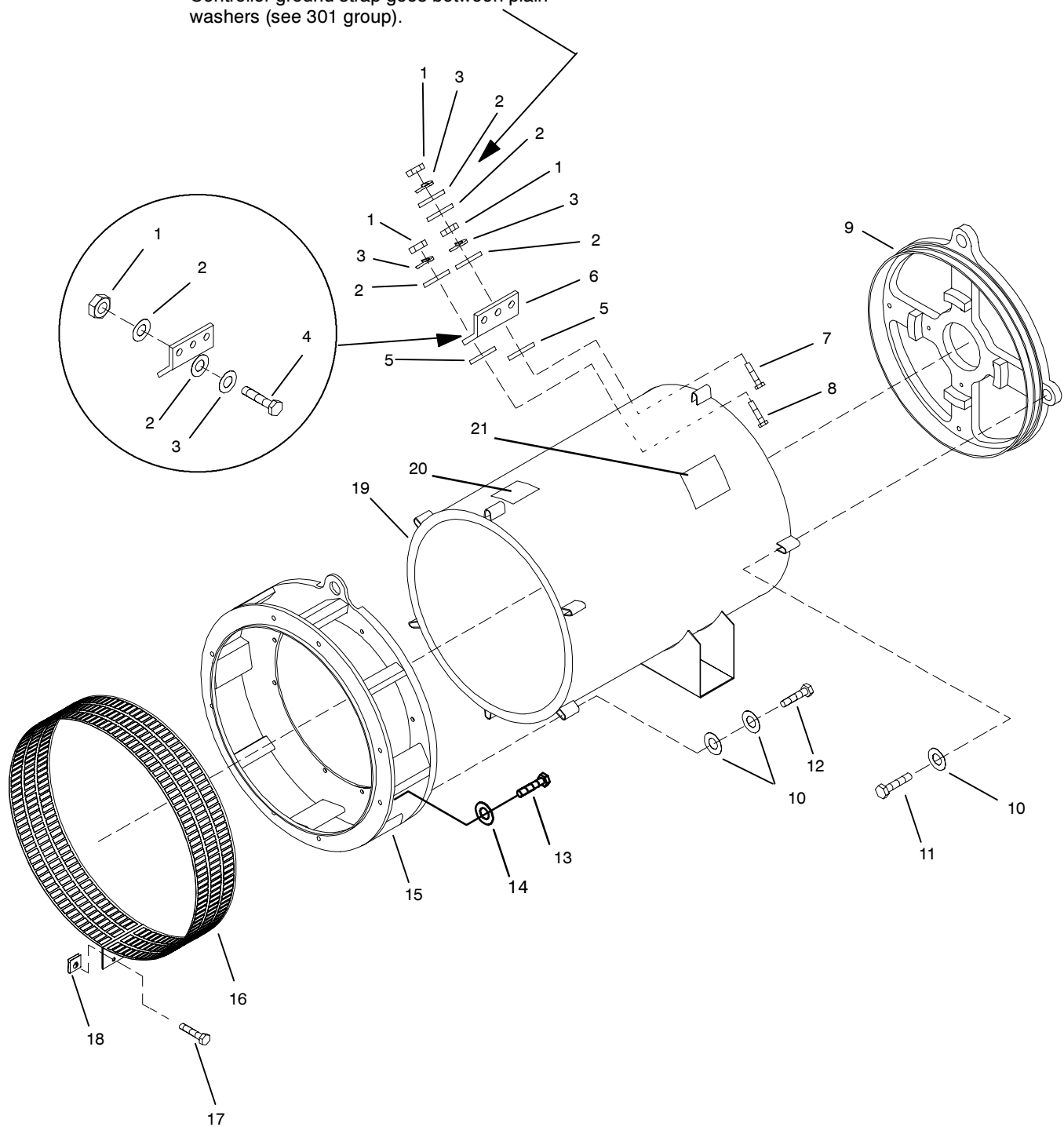


# Group 201: Generator and Mounting, continued

## Alternator assembly

variations 9-17, 37, 38, 57, 58, 80, 81, 85, 86, 90, 91, 93-103

Controller ground strap goes between plain washers (see 301 group).



B-257669  
B-257795  
B-257796

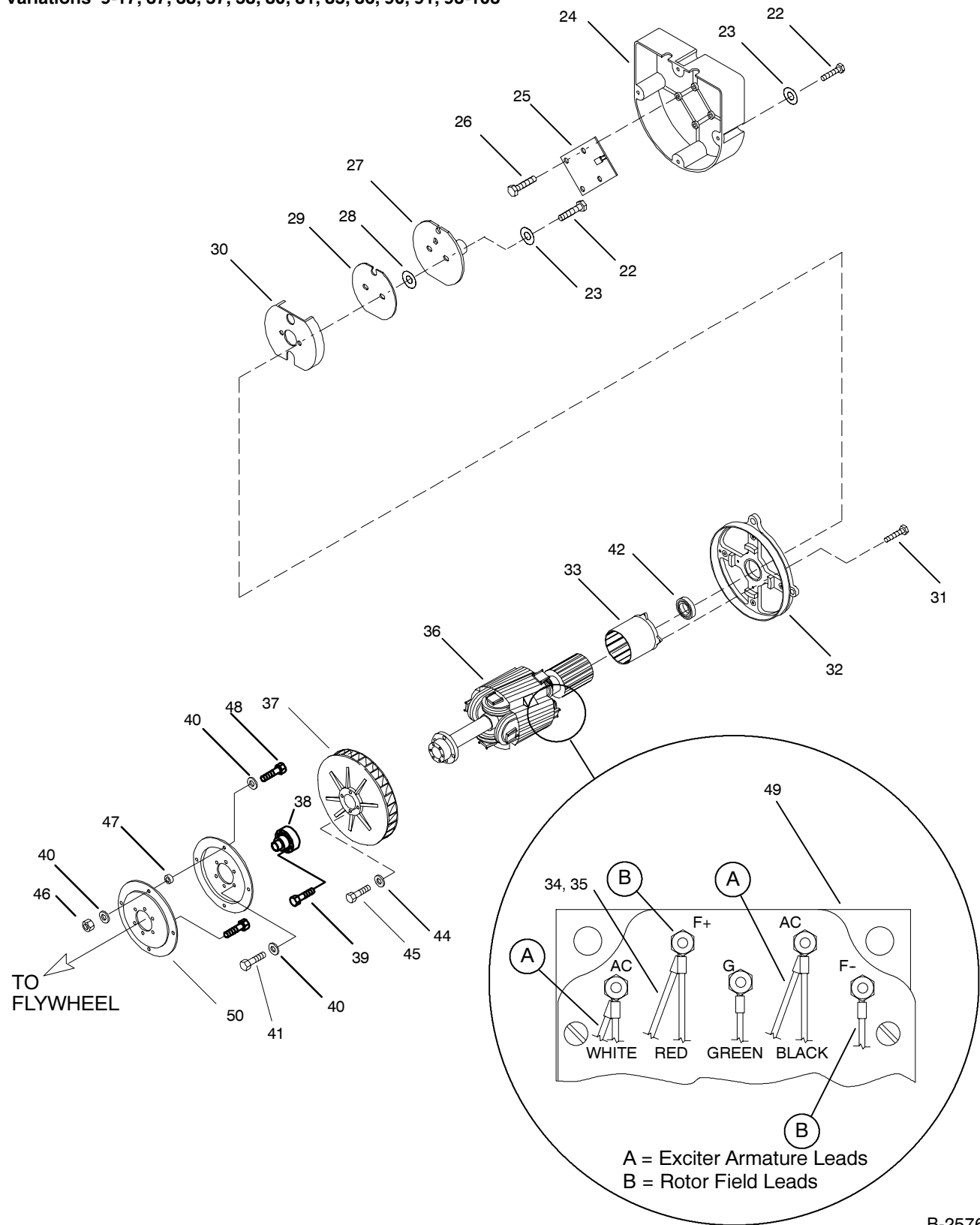
# Group 201: Generator and Mounting, continued

It.	Part Number	Description	Quantity														
			Variation Number														
			85	86	90	91	93	94	95	96	97	98	99	100	101	102	103
1	X-81-10	Nut, hex			6	6					6			6	6	6	6
1	X-82-6	Nut, hex					4	4									
2	X-25-136	Washer, plain	3	3	3	3											
2	X-25-109	Washer, plain									3			3	3	3	3
2	X-25-134	Washer, plain									3			3	3	3	3
3	X-6086-16	Washer, spring			6	6											
3	X-6086-17	Washer, spring							6	6	6	6	6	6	6	6	6
4	X-179-8	Screw, hex cap			3	3											
4	X-465-23	Screw, hex cap									3			3	3	3	3
5	X-22-5	Washer, shakeproof					4	4									
5	X-22-44	Washer, shakeproof	2	2	2	2			2	2		2	2				
5	X-22-45	Washer, shakeproof															
5	X-22-16	Washer, shakeproof										4		4	4	4	4
6	257986	Lead terminal	1	1	1	1											
6	257985	Lead terminal					1	1	1	1	1	1	1	1	1	1	1
7	X-352-52	Stud					1	1									
7	X-791-5	Screw, hex cap			1	1											
7	X-791-7	Screw, hex head									1			1	1	1	1
8	X-465-22	Screw, hex cap			1	1	1	1	1	1	1	1	1	1	1	1	1
9	--	See item 32	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
10	X-25-93	Washer, plain	20	20	20	20	10	10	10	10	14	10	10	14	14	14	14
11	X-6236-6	Screw, hex cap	6	6			6	6			6			6	6	6	6
11	X-7-3	Screw, hex cap							6	6		6	6				
12	X-6238-8	Screw, hex cap					4	4									
12	X-6236-6	Screw, hex cap	4	4											4	4	
12	273736	Screw, hex cap			4	4											
12	273737	Screw, hex cap									4			4			4
12	X-7-15	Screw, hex cap							4	4		4	4				
13	X-6238-5	Screw, hex cap					6	6									
13	X-6238-6	Screw, hex cap	6	6													
13	X-7-17	Screw, hex cap							6	6	6	6	6	6	6	6	6
14	X-801-3	Washer, hardened					12	12			12			12	12	12	12
14	X-22-1	Washer					6	6	6	6		6	6				
15	257247	Adapter, generator	1	1	1	1											
15	257248	Adapter, generator					1	1	1	1	1	1	1	1	1	1	1
16	257190	Guard, generator fan	1	1	1	1											
16	257179	Guard, generator fan					1	1	1	1	1	1	1	1	1	1	1
17	X-67-125	Screw, self-tapping	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
18	257442	Clip, speed	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
19	257768	Stator assembly	1														
19	257769	Stator assembly		1													
19	257773	Stator assembly			1												
19	257774	Stator assembly				1											
19	257690	Stator assembly					1				1			1			
19	257691	Stator assembly						1									1
19	257687	Stator assembly							1	1		1	1				
19	257688	Stator assembly													1	1	
20	257437	Decal, warning			1	1	1	1			1			1	1	1	1
-	257438	Decal, warning			1	1	1	1			1			1	1	1	1
21	257441	Decal, warning			1	1	1	1			1			1	1	1	1

# Group 201: Generator and Mounting, continued

## Alternator assembly

variations 9-17, 37, 38, 57, 58, 80, 81, 85, 86, 90, 91, 93-103



B-257669  
B-257795  
B-257796

# Group 201: Generator and Mounting

Item	Part Number	Description	Quantity														
			Variation Number														
			9	10	11	12	13	14	15	16	17	37	38	57	58	80	81
22	X-117-5	Screw, hex cap	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
23	X-22-9	Washer, lock	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
24	257258	Cover, circuit board	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
25	A-257099	Circuit board, LED	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
26	X-6071-1	Screw, washer Head	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
27	A-257100	Circuit board photo										1	1	1	1		
27	B-292902	Circuit board, split activator	1	1	1	1	1	1	1	1	1					1	1
28	243321	Washer, insulating	2	2	2	2	2	2	2	2	2					2	2
29	257850	Insulator	1	1	1	1	1	1	1	1	1					1	1
30	257077	Actuator, magnetic	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
31	X-125-24	Screw, hex cap										4	4	4	4		
31	X-125-34	Screw, hex cap	4	4	4	4	4	4	4	4	4					4	4
31	#	Screw, hex cap															
31	X-6-34	Screw, hex cap															
32	257167	Bracket, end										1	1	1	1		
32	257984	Bracket, end	1	1	1	1										1	1
32	257983	Bracket, end					1	1	1	1	1						
33	257081	Exciter assembly	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
34	X-101-24	Nut	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
34	X-101-22	Nut														5	5
35	X-431-24	Terminal										5	5	5	5		
35	X-283-7	Terminal	4	4	4	4	4	4	4	4	4					4	4
36	A-257680	Rotor assembly										1		1			
36	A-257681	Rotor assembly											1		1		
36	A-326942	Rotor assembly*	1	1													
36	A-326943	Rotor assembly*			1	1											
36	A-276480	Rotor assembly					1	1									
36	A-276481	Rotor assembly							1	1							
36	A-276482	Rotor assembly									1						
37	257020	Fan, generator	1	1	1	1										1	1
37	257173	Fan, generator					1	1	1	1	1						
38	257490	Adapter, drive hub														1	1
38	257491	Adapter, drive hub										1	1	1	1		
39	X-55-17	Screw, hex head socket										6	6	6	6	6	6
40	290945	Washer, hardened										14	14	14	14	14	14
40	X-801-3	Washer, hardened					12	12	12	12	12						
41	276083	Bolt, locking														6	6
41	270956	Screw, hex head	8	8	8	8											
41	270956	Screw, hex head					12	12	12	12	12						
42	257168	Ring, tolerance										1	1	1	1		
42	X-758-2	Ball bearing					1	1	1	1	1	1	1	1	1		
42	X-758-6	Ball bearing	1	1	1	1										1	1
44	X-25-93	Washer, plain	4	4	4	4	4	4	4	4	4	4	4	4	4		
45	X-6238-11	Screw, hex cap	4	4	4	4	4	4	4	4	4	4	4	4	4		
46	X-79-2	Nut, hex										4	4	4	4		
47	X-25-15	Washer, plain										4	4	4	4		
48	X-6024-2	Screw, hex cap										4	4	4	4		
49	258219	FR activator kit										1	1	1	1		
49	B-258545	SCR assembly	1	1	1	1										1	1
49	B-258549	SCR assembly					1	1	1	1	1						
50	276457	Disc, armature drive	3	3	3	3											
50	276475	Disc, armature drive					2	2	2	2	2						

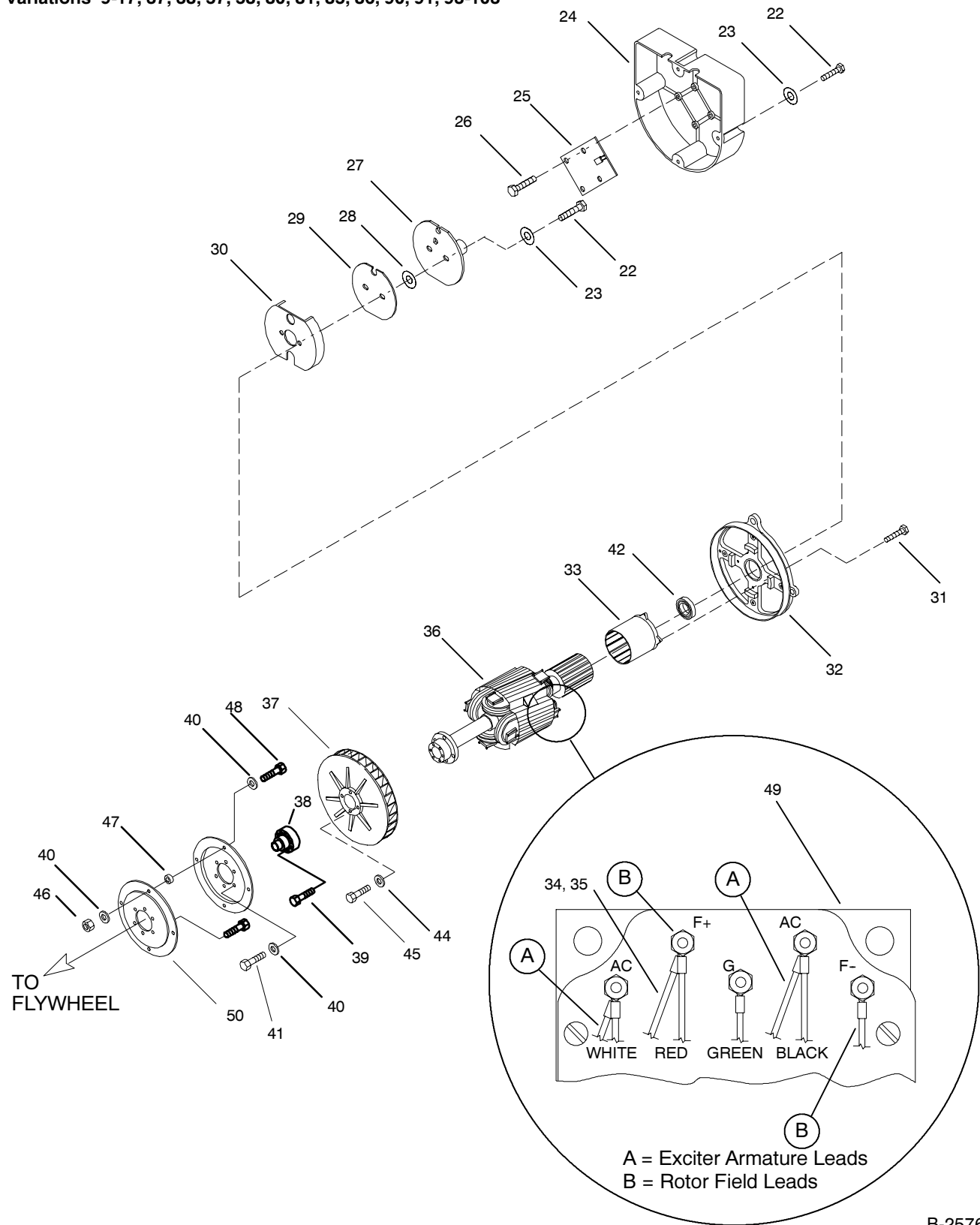
\* Order Rotor Service Kit 326945 (variations 9 and 10) or Kit 326946 variations 11 and 12) if replacing rotor assembly on units built before September 7, 1999.

\* Order Rotor Service Kit 326945 (variations 18 and 19) or Kit 326946 variations 20 and 21) if replacing rotor assembly on units built before September 7, 1999.

# Group 201: Generator and Mounting, continued

## Alternator assembly

variations 9-17, 37, 38, 57, 58, 80, 81, 85, 86, 90, 91, 93-103



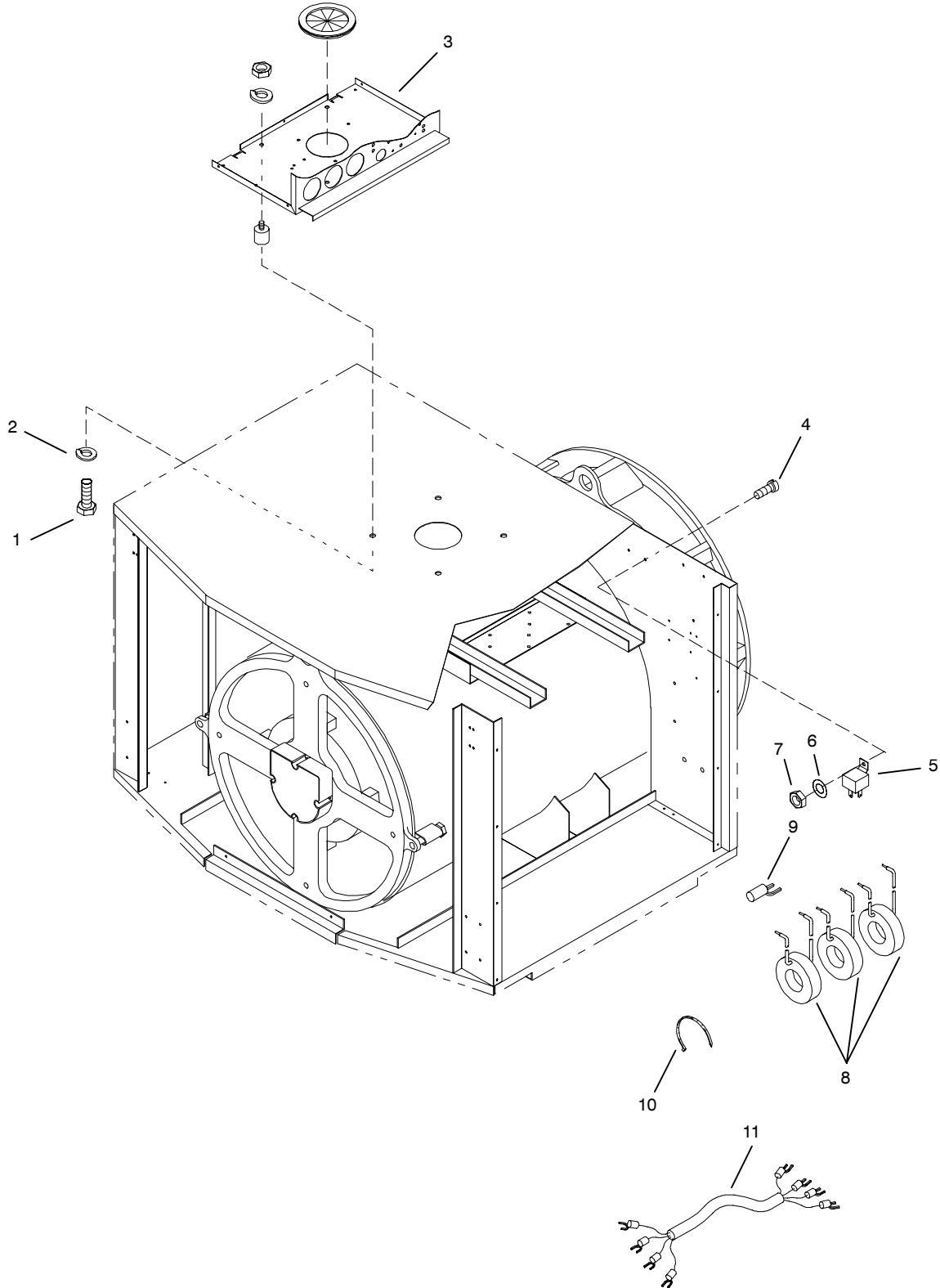
B-257669  
 B-257795  
 B-257796

## Group 201: Generator and Mounting, continued

Item	Part Number	Description	Quantity													
			Variation Number													
			85	86	90	91	93	94	95	96	97	98	99	100	101	102
22	X-117-5	Screw, hex cap	6	6	6	6	6	6	6	6	6	6	6	6	6	6
23	X-22-9	Washer, lock	6	6	6	6	6	6	6	6	6	6	6	6	6	6
24	257258	Cover, circuit board	1	1	1	1	1	1	1	1	1	1	1	1	1	1
25	A-257099	Circuit board, LED	1	1	1	1	1	1	1	1	1	1	1	1	1	1
26	X-6071-1	Screw, washer head	4	4	4	4	4	4	4	4	4	4	4	4	4	4
27	A-257100	Circuit board					1	1								
27	B-292902	Circuit board, split activator	1	1	1	1					1			1	1	1
28	243321	Washer, insulating	2	2	2	2	2	2	2	2	2	2	2	2	2	2
29	257850	Insulator	1	1	1	1	1	1	1	1	1	1	1	1	1	1
30	257077	Actuator, magnetic	1	1	1	1	1	1	1	1	1	1	1	1	1	1
31	X-125-24	Screw, hex cap					4	4								
31	X-125-34	Screw, hex cap														
31	#	Screw, hex cap	4	4	4	4										
31	X-6-34	Screw, hex cap							4	4	4	4	4	4	4	4
32	257167	Bracket, end					1	1								
32	257984	Bracket, end	1	1	1	1										
32	257983	Bracket, end							1	1	1	1	1	1	1	1
33	257081	Exciter assembly	1	1	1	1	1	1	1	1	1	1	1	1	1	1
34	X-101-24	Nut					5	5								
34	X-101-22	Nut	5	5	5	5			5	5	5	5	5	5	5	5
35	X-431-24	Terminal					2	2								
35	X-283-7	Terminal	4	4	4	4			4	4	4	4	4	4	4	4
36	A-257680	Rotor assembly					1									
36	A-257681	Rotor assembly						1								
36	A-258976	Rotor assembly	1		1											
36	A-258913	Rotor assembly		1		1										
36	A-257519	Rotor assembly							1	1	1	1	1	1		
36	A-257520	Rotor assembly													1	1
37	257020	Fan, generator	1	1	1	1										
37	257173	Fan, generator					1	1	1	1	1	1	1	1	1	1
38	257490	Adapter, drive hub	1	1	1	1										
38	257491	Adapter, drive hub					1	1	1	1	1	1	1	1	1	1
39	X-55-17	Screw, hex head socket	6	6	6	6	6	6	6	6	6	6	6	6	6	6
40	290945	Washer, hardened	14	14	14	14	14	14	14	14	14	14	14	14	14	14
41	276083	Bolt, locking	6	6	6	6	6	6	6	6	6	6	6	6	6	6
42	257168	Ring, tolerance					1	1								
43	X-758-2	Ball bearing					1	1	1	1	1	1	1	1	1	1
43	X-758-6	Ball bearing	1	1	1	1										
44	X-25-93	Washer, plain					4	4								
45	X-6238-11	Screw, hex cap					4	4								
46	X-79-2	Nut, hex					4	4								
47	X-25-15	Washer, plain					4	4								
48	X-6024-2	Screw, hex cap					4	4								
49	258219	FR activator kit					1	1								
49	B-258545	SCR assembly	1	1	1	1			1	1	1	1	1	1	1	1
49	B-258549	SCR assembly														

# Group 301: Controller and Mounting

Variations 178-5, 12, 14, and 17



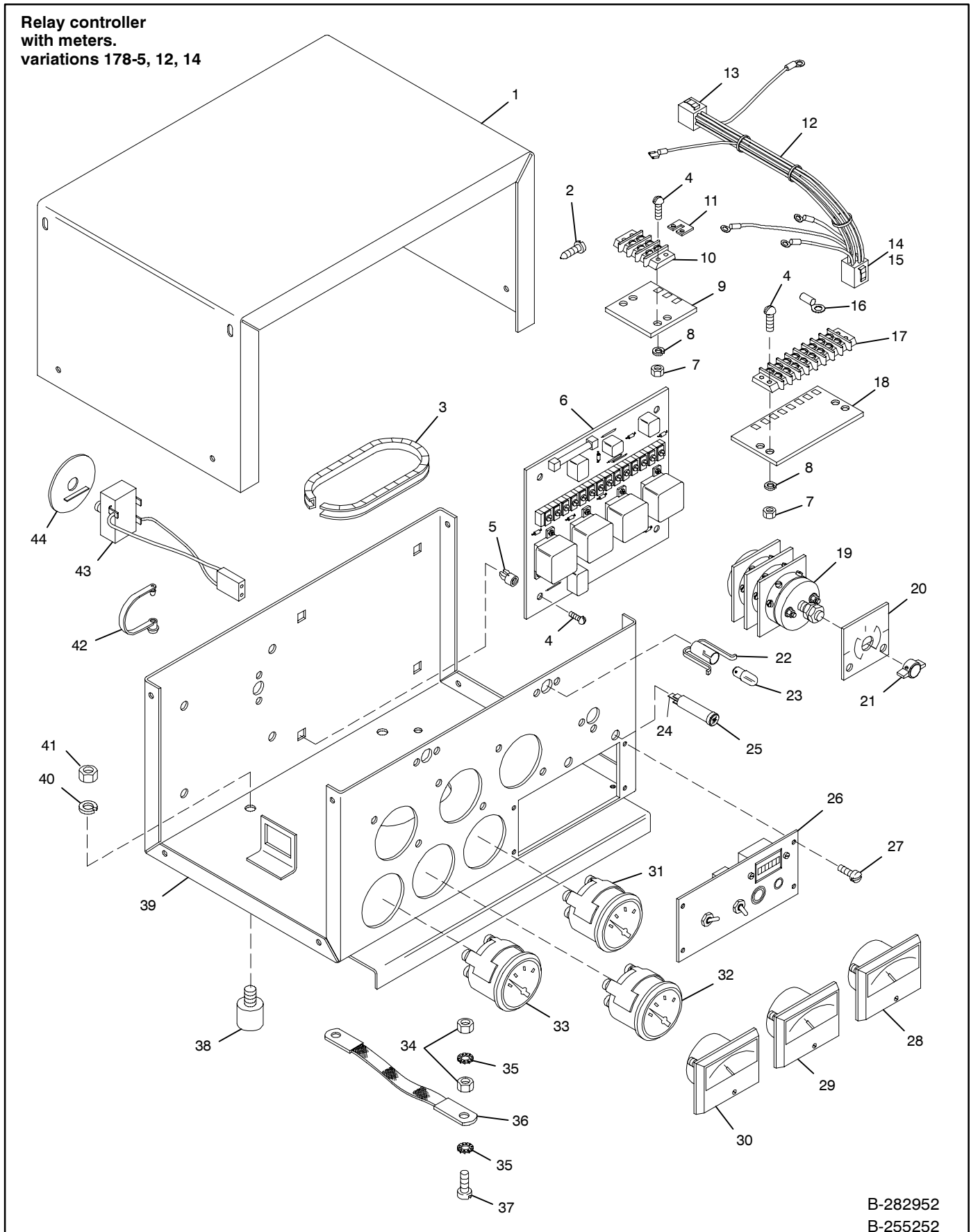
B, DG, EC-255000

## Group 301: Controller and Mounting

Item	Part Number	Description	Quantity			
			Variation Number			
			178-5	12	14	17
1	X-6-1	Screw, hex cap				4
1	X-6-12	Screw, hex cap		4		
2	X-21-1	Washer, lock		3		4
2	X-22-16	Washer, lock		1		
3	B-282945	Box assembly, relay control (see page 74)				1
3	B-282951	Box assembly, meter (see page 72)	1			
3	B-255252	Box assembly, meter (see page 72)			1	
3	B-282952	Box assembly, meter (see page 72)		1		
4	X-117-5	Screw, round head machine	2	2	2	2
5	282972	Relay, K1	1	1	1	1
6	X-19-1	Washer, lock	2	2	2	
7	X-70-2	Nut, hex	2	2	2	2
8	248874	Transformer, current			3	
8	246887	Transformer, current	3			
8	246889	Transformer		3		
9	X-285-3	Terminal	3	3	3	
9	X-285-11	Terminal	1	1	1	
10	X-468-1	Tie, cable			1	
11	255040	Harness, wiring	1	1	1	

# Group 301: Controller and Mounting, continued

Relay controller  
with meters.  
variations 178-5, 12, 14



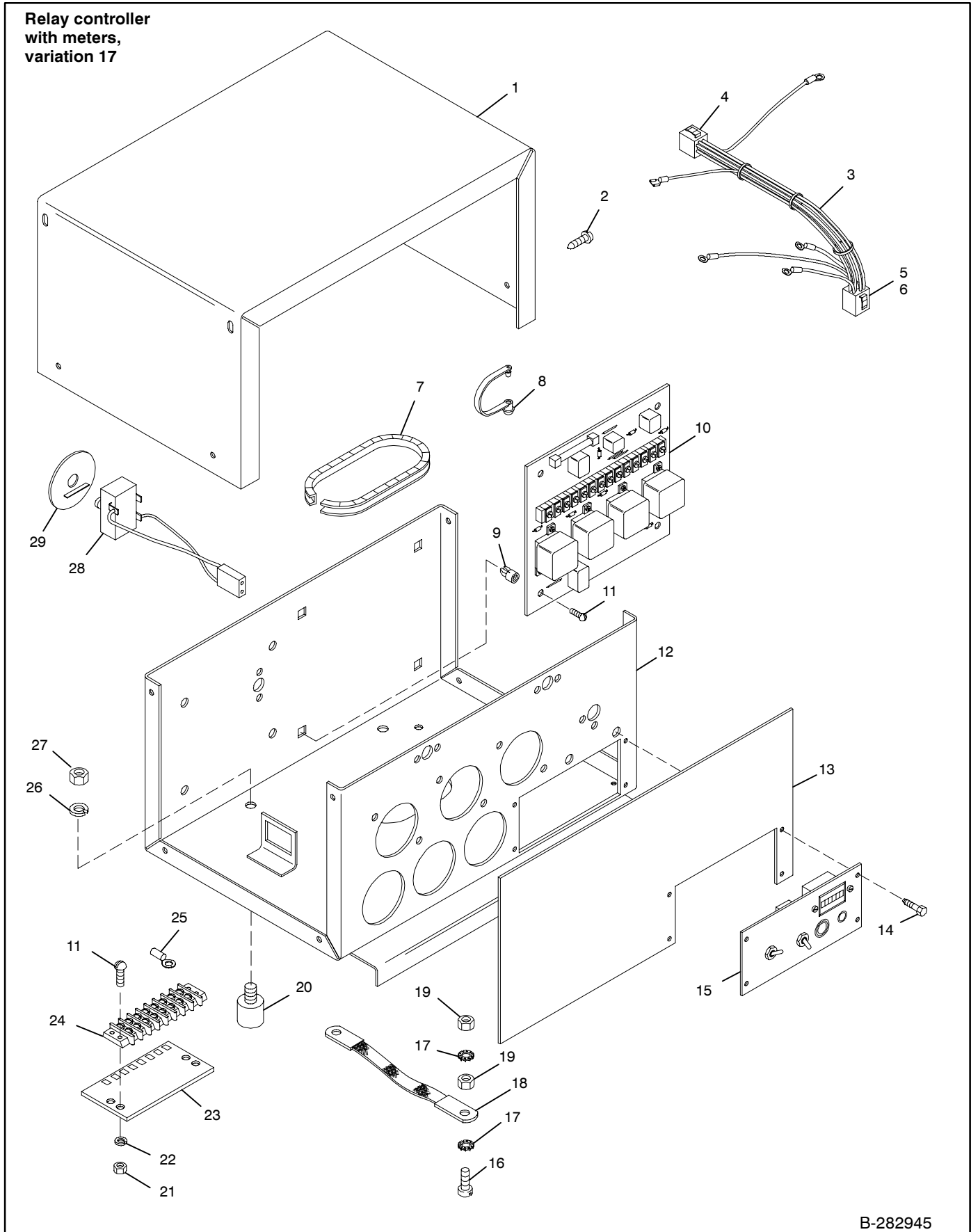
B-282952  
B-255252

## Group 301: Controller and Mounting, continued

Item	Part Number	Description	Quantity		
			Variation 178-5	Number 12	Number 14
--	B-282952	Meter box assembly		1	
--	B-282951	Meter box assembly	1		
--	B-255252	Meter box assembly			1
1	269380	Cover, controller	1	1	1
2	X-6216-1	Screw, Phil hex crim	8	8	8
3	X-6033-2	Grommet, nylon	1	1	1
4	X-51-53	Screw, round head machine	8	8	8
5	X-593-3	Grommet, plastic	4	4	4
6	A-255658	Circuit board, FR-II relay	1	1	1
7	X-72-4	Nut, hex	4	4	4
8	X-18-2	Washer, lock	4	4	4
9	282823	Marker, strip	1	1	1
10	223096	Strip, terminal	1	1	1
11	X-6048-2	Jumper	1	1	1
12	255859	Harness, wiring (includes items 13-15)	1	1	1
13	259689	Connector, 9 position	1	1	1
14	287849	Connector, 24 position	1	1	1
15	287540	Terminal	1	1	1
16	238898	Terminal	1	1	1
17	246115	Block, terminal	1	1	1
18	282824	Marker, strip	1	1	1
19	259821	Switch, selector	1	1	1
20	282941	Nameplate	1	1	1
21	269356	Knob, pointer	1	1	1
22	284990	Socket, lamp	2	2	2
23	268310	Bulb, light	2	2	2
24	236830	Terminal	1	1	1
25	291740	Lamp	2	2	2
26	B-282946	Panel assembly (see page 89)	1	1	1
27	X-794-2	Screw, drill head	4	4	4
28	282950	Ammeter, AC		1	
28	295338	Ammeter, AC	1		
28	282954	Ammeter, AC			1
29	282814	Voltmeter	1	1	1
30	295069	Meter, frequency	1	1	1
31	253329	Voltmeter	1	1	1
32	282898	Gauge, water temperature	1	1	1
33	282897	Gauge, oil pressure	1	1	1
34	X-70-2	Nut, hex	2	2	2
35	X-22-13	Washer, shakeproof	2	2	2
36	241611	Strap, ground	1	1	1
37	X-50-7	Screw, round head machine	1	1	1
38	292834	Bumper	4	4	4
39	258241	Box, controller	1	1	1
40	X-21-1	Washer, lock	4	4	4
41	X-82-2	Nut, hex	4	4	4
42	X-526-2	Strap, wire	1	1	1
42	X-526-3	Strap, wire	1	1	1
43	A-255041	Potentiometer assembly	1	1	1
44	201534	Plate, instruction	1	1	1

# Group 301: Controller and Mounting, continued

Relay controller  
with meters,  
variation 17



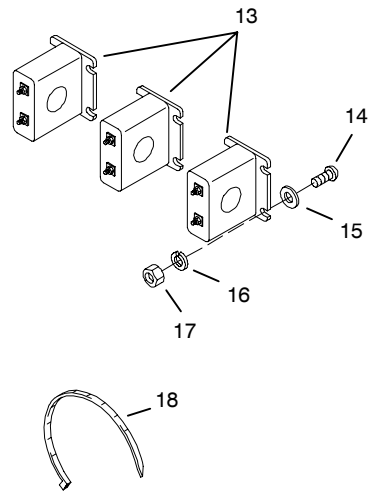
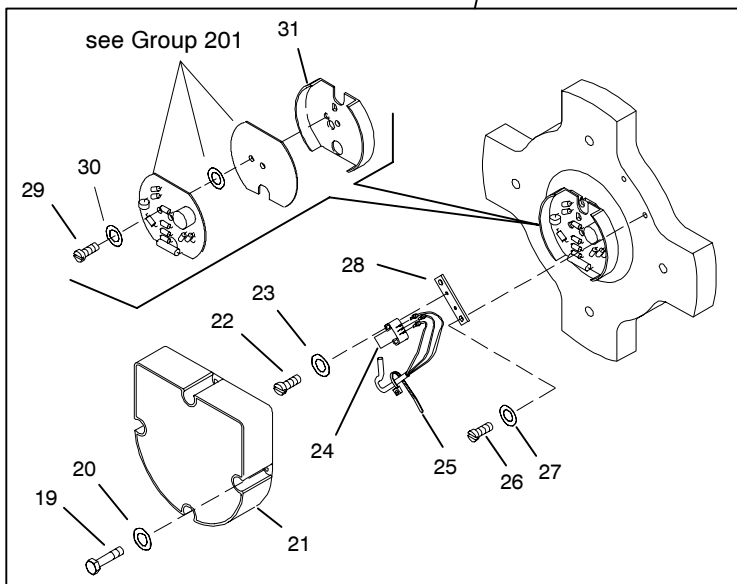
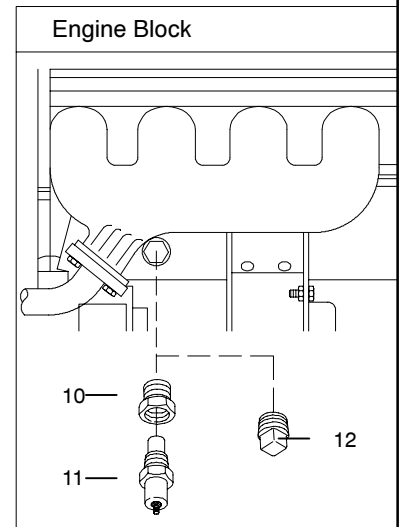
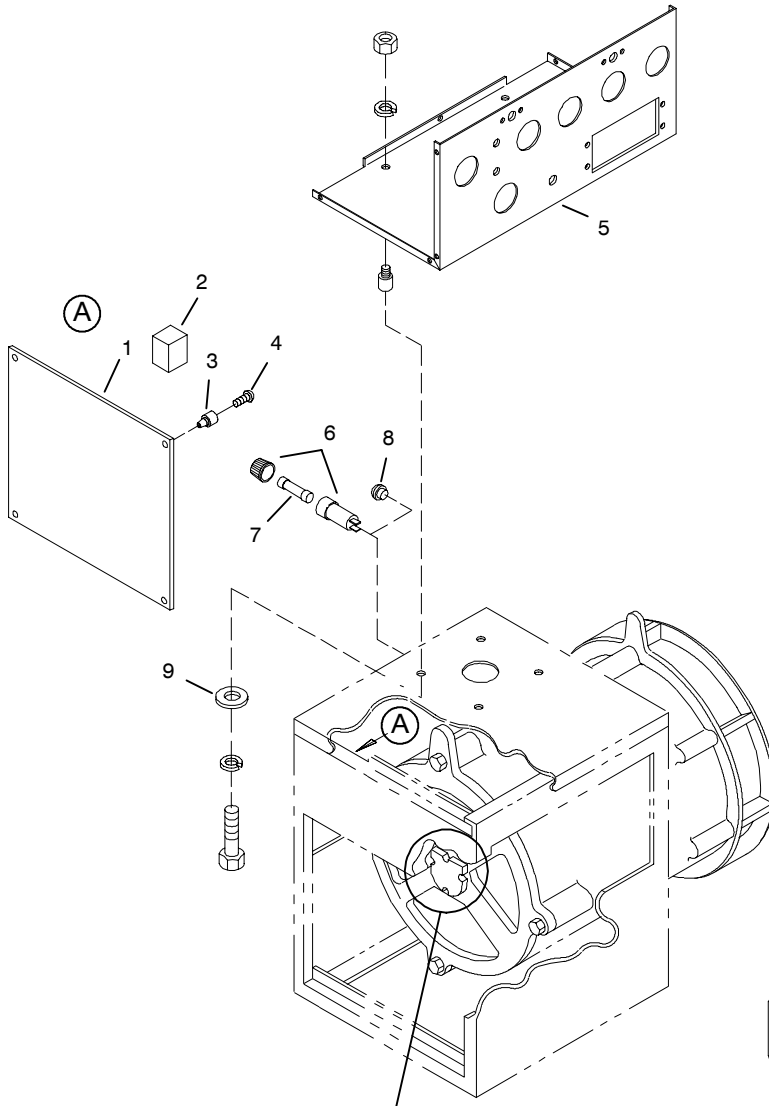
B-282945

## Group 301: Controller and Mounting, continued

Item	Part Number	Description	Quantity		
			Variation Number	17	
--	B-292945	Controller assembly (includes items 1-29)		1	
1	269380	Cover, controller		1	
2	X-6216-1	Screw, Phil hex crim		8	
3	255859	Harness, wiring (includes items 4-6)		1	
4	259689	Connector, 9 position		1	
5	287849	Connector, 24 position		1	
6	287540	Terminal		1	
7	X-6033-2	Grommet, nylon		1	
8	X-526-2	Strap, wire		1	
8	X-526-3	Strap, wire		1	
9	X-593-3	Grommet, plastic		4	
10	A-255658	Circuit board, FR-II relay		1	
11	X-51-9	Screw, round head machine		6	
12	258241	Box, controller		1	
13	282944	Plate		1	
14	X-794-2	Screw, drill		4	
15	B-282946	Panel assembly (see page 89)		1	
16	X-50-7	Screw, round head machine		1	
17	X-22-13	Washer, shakeproof		2	
18	241611	Strap, ground		1	
19	X-70-2	Nut, hex		8	
20	292834	Bumper		4	
21	X-72-4	Nut, hex		2	
22	X-18-2	Washer, lock		2	
23	282824	Marker, strip		1	
24	246115	Block, terminal		1	
25	238898	Terminal		1	
26	X-21-1	Washer, lock		4	
27	X-82-2	Nut, hex		4	
28	A-255041	Potentiometer assembly		1	
29	201534	Plate, instruction		1	

# Group 301: Controller and Mounting, continued

Variations 1, 4, and  
183-5



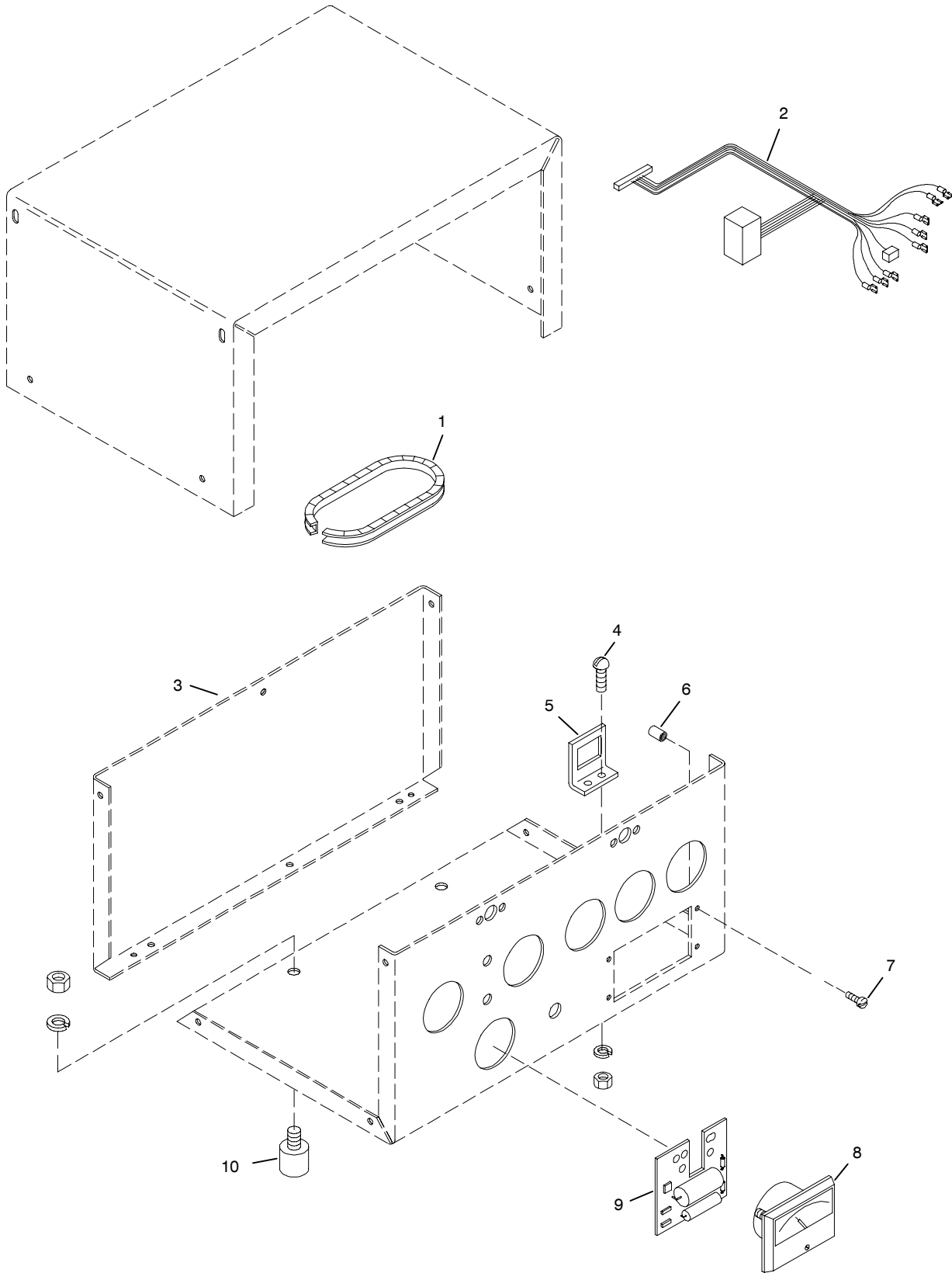
BS, BX-253000  
G-255000

## Group 301: Controller and Mounting, continued

Item	Part Number	Description	Quantity		
			Variation Number		
			1	4	183-5
1	B-282778	Board assembly, circuit		1	
1	A-253442	Interlock assembly (see page 88)	1		1
2	282972	Relay		1	
3	X-593-3	Grommet, plastic	4	4	4
4	X-51-9	Screw, round head machine	4	4	4
5	A-253273	Box assembly, meter (see page 83)	1	1	1
6	238426	Holder, fuse		1	
7	223316	Fuse, 10 amp		1	
8	X-301-23	Button, plug	1		1
9	X-25-52	Washer, plain	1		1
10	X-202-27	Bushing, reducer	1		1
11	255264	Switch, low water temperature			
12	X-75-3	Plug, pipe	1		1
13	253503	Transformer, current	3		
13	253610	Transformer, current		3	3
14	X-50-8	Screw, round head machine	6	6	6
15	X-25-45	Washer, plain	6	6	6
16	X-19-1	Washer, lock transfer		6	
17	X-70-2	Nut, hex transfer		6	
18	X-468-1	Tie, cable	2	2	2
19	X-117-5	Screw, hex cap	4		4
20	X-22-9	Washer, shakeproof	4		4
21	257258	Cover, circuit board	1		1
22	X-49-35	Screw, round head machine	2		2
23	X-22-24	Washer, shakeproof	2		2
24	241623	Sensor, ferromagnetic	1		1
25	X-468-2	Tie, cable	1		1
26	X-117-5	Screw, hex cap	2		2
27	X-19-1	Washer, lock	2		2
28	257070	Bracket, sensor mounting	1		1
29	X-97-3	Screw, slotted hex machine	2		2
30	X-22-9	Washer, shakeproof	2		2
31	257077	Actuator, magnetic	1		1

# Group 301: Controller and Mounting, continued

Variations 1 and  
183-5



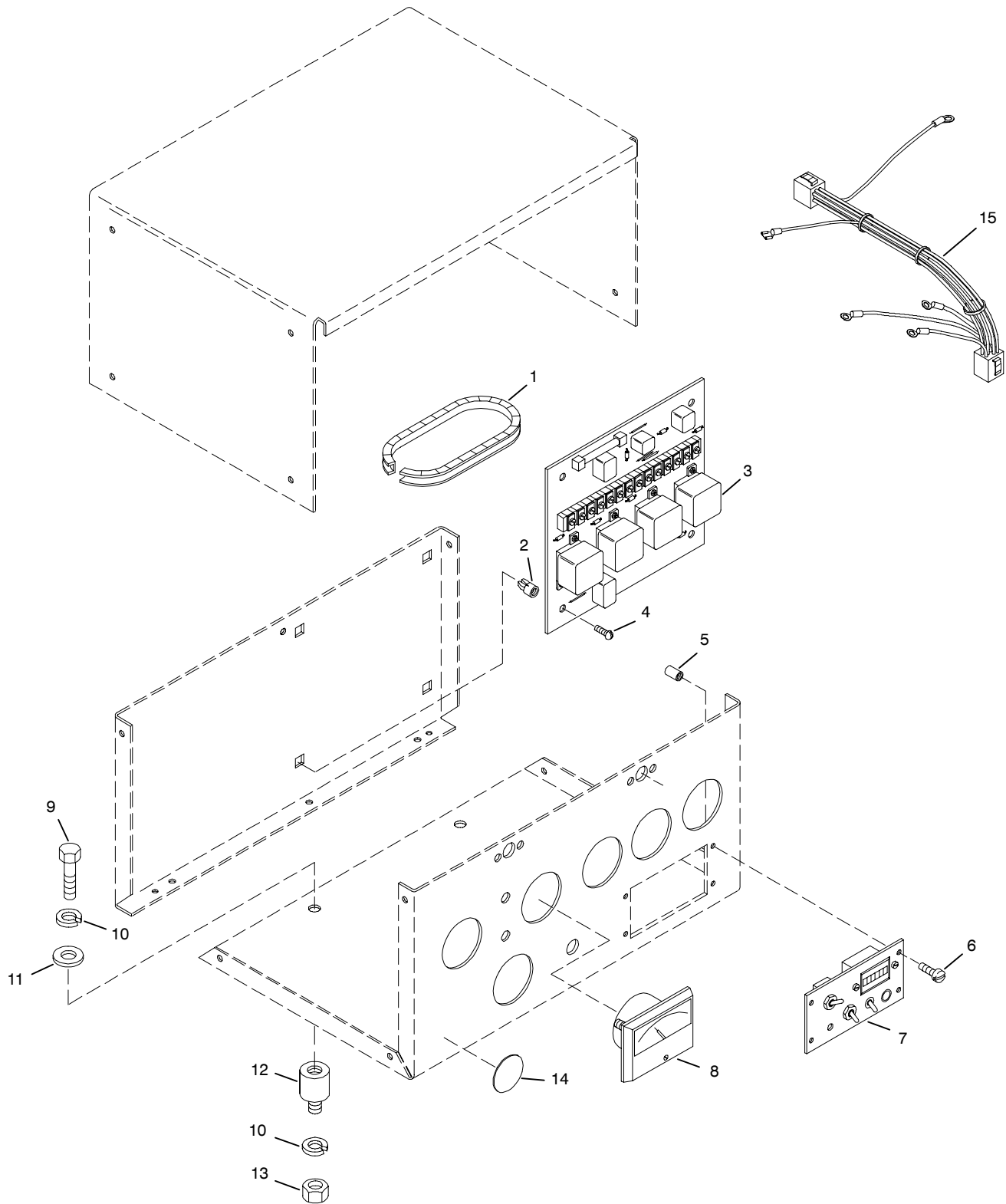
B-282943  
B-282951

## Group 301: Controller and Mounting, continued

Item	Part Number	Description	Quantity	
			Variation Number	
			1	183-5
1	X-6033-2	Grommet, nylon	1	1
2	253436	Harness, wire	1	1
3	B-253384	Panel assembly (see page 91)	1	1
4	X-51-12	Screw, round head machine	2	2
5	253400	Bracket	1	1
6	X-6004-6	Sleeve	1	1
7	X-794-2	Screw, drill	4	4
8	295339	Ammeter		1
8	282954	Ammeter	1	
9	D-287742	Circuit board, FR-II AC interlock	1	1
10	259632	Bumper	4	4

# Group 301: Controller and Mounting, continued

Variation 4



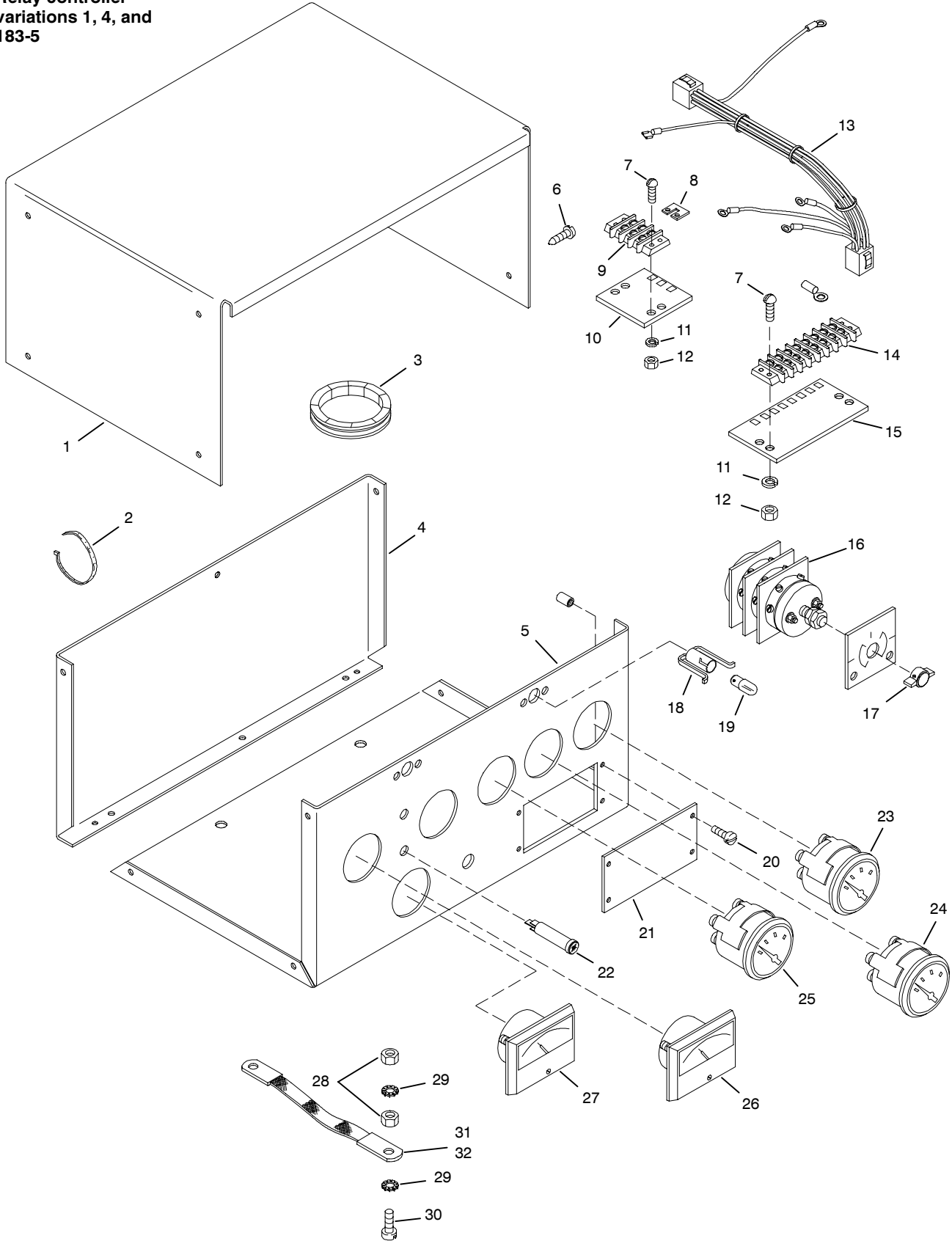
BP,BS-253000  
A-253273  
B-282946

## Group 301: Controller and Mounting, continued

Item	Part Number	Description	Quantity		
			4	Variation Number	
--	A-253273	Box assembly, meter (see page 83)	1		
1	X-6033-2	Grommet, nylon	1		
2	X-593-3	Grommet, plastic	4		
3	282972	Relay	1		
4	X-49-25	Screw, round head machine	4		
5	X-6004-6	Sleeve	1		
6	X-794-2	Screw, drill	4		
7	C-253319	Panel sub-assembly (see page 86)	1		
8	295339	Ammeter	1		
9	X-5-13	Screw, hex cap	4		
10	X-20-1	Washer, lock	8		
11	X-25-52	Washer, plain	4		
12	259632	Bumper	4		
13	X-81-1	Nut, hex	4		
14	253816	Decal	1		
15	253436	Harness, wire	1		

# Group 301: Controller and Mounting

Relay controller  
variations 1, 4, and  
183-5



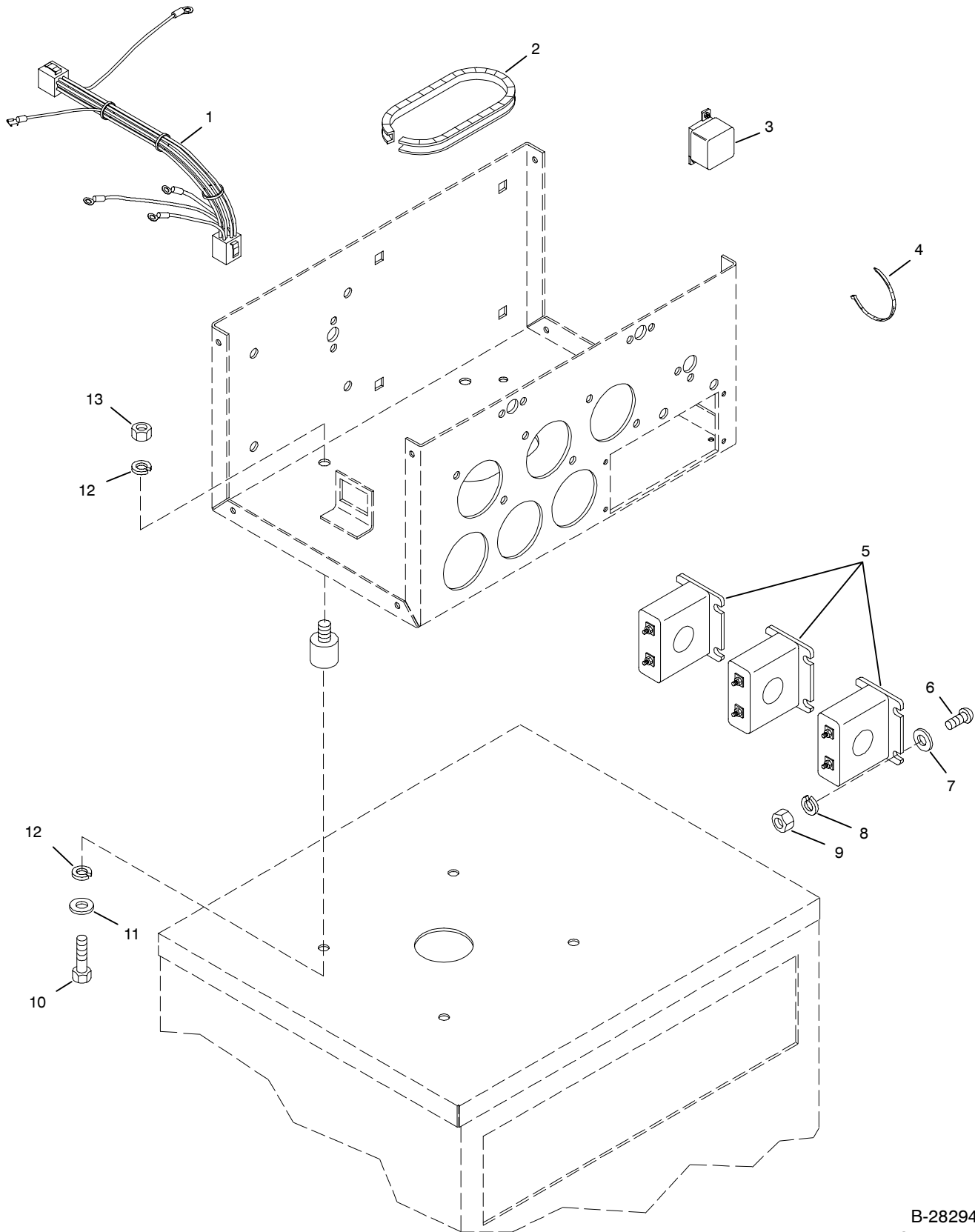
A-253273

# Group 301: Controller and Mounting

Item	Part Number	Description	Quantity		
			Variation Number		
			1	4	183-5
--	A-253273	Meter box assembly (includes items 1-32)	1	1	1
1	253085	Cover, meter box	1	1	1
2	X-468-2	Tie, cable	3	3	3
3	X-6033-2	Grommet, nylon	1	1	1
4	253084	Panel, rear meter	1	1	1
5	253320	Box, meter (screened)	1	1	1
6	X-67-59	Screw, self-tapping	12	12	12
7	X-51-53	Screw, round head machine	4	4	4
8	X-6048-2	Jumper	1	1	1
9	223096	Strip, terminal	1	1	1
10	282823	Marker, strip	1	1	1
11	X-18-2	Washer, lock	4	4	4
12	X-72-4	Nut, hex	4	4	4
13	253272	Harness, wiring	1	1	1
14	246115	Block, terminal	1	1	1
15	282824	Marker, strip	1	1	1
16	259821	Switch, selector	1	1	1
17	253342	Knob, pointer	1	1	1
18	284990	Socket, lamp	2	2	2
19	268310	Bulb, light	2	2	2
20	X-794-2	Screw, drill head	4	4	4
21	269986	Panel, front	1	1	1
22	253332	Lamp	2	2	2
23	253329	Voltmeter	1	1	1
24	282898	Gauge, water temperature	1	1	1
25	282897	Gauge, oil pressure	1	1	1
26	295069	Meter, frequency	1	1	1
27	282814	Voltmeter	1	1	1
28	X-70-2	Nut, hex	2	2	2
29	X-22-13	Washer, shakeproof	2	2	2
30	X-50-3	Screw, round head machine	1	1	1
31	X-6046-2	Strap, ground	1	1	1
32	X-696-5	Sleeve	1	1	1

# Group 301: Controller and Mounting, continued

Variations 6 and 7

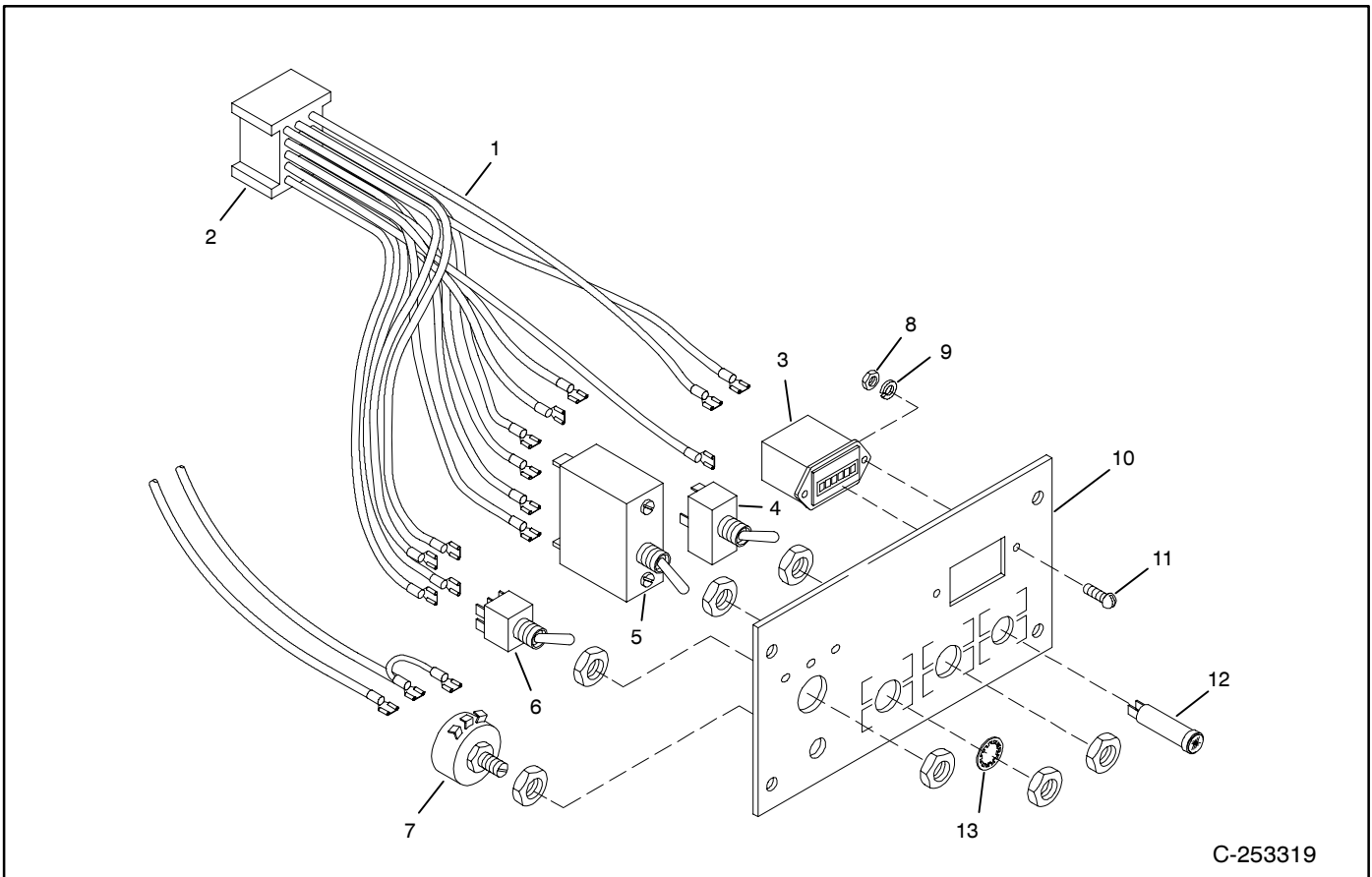


B-282943  
CH-255000

## Group 301: Controller and Mounting, continued

Item	Part Number	Description	Quantity		
			Variation Number		
			6	7	
--	B-282943	Box assembly, meter	1	1	
1	255864	Harness, wiring	1	1	
2	X-6033-2	Grommet, nylon	1	1	
3	282972	Relay	1	1	
4	X-468-1	Tie, cable	2	2	
5	253503	Transformer, current		3	
5	255860	Transformer, current	3		
6	X-50-8	Screw, round head machine	6	6	
7	X-25-49	Washer, plain	6	6	
8	X-19-1	Washer, lock	6	6	
9	X-70-2	Nut, hex	6	6	
10	X-465-6	Screw, hex cap	4	4	
11	X-25-52	Washer, plain	4	4	
12	X-20-1	Washer, lock	8	8	
13	#	Nut, hex 1/4-20	4	4	

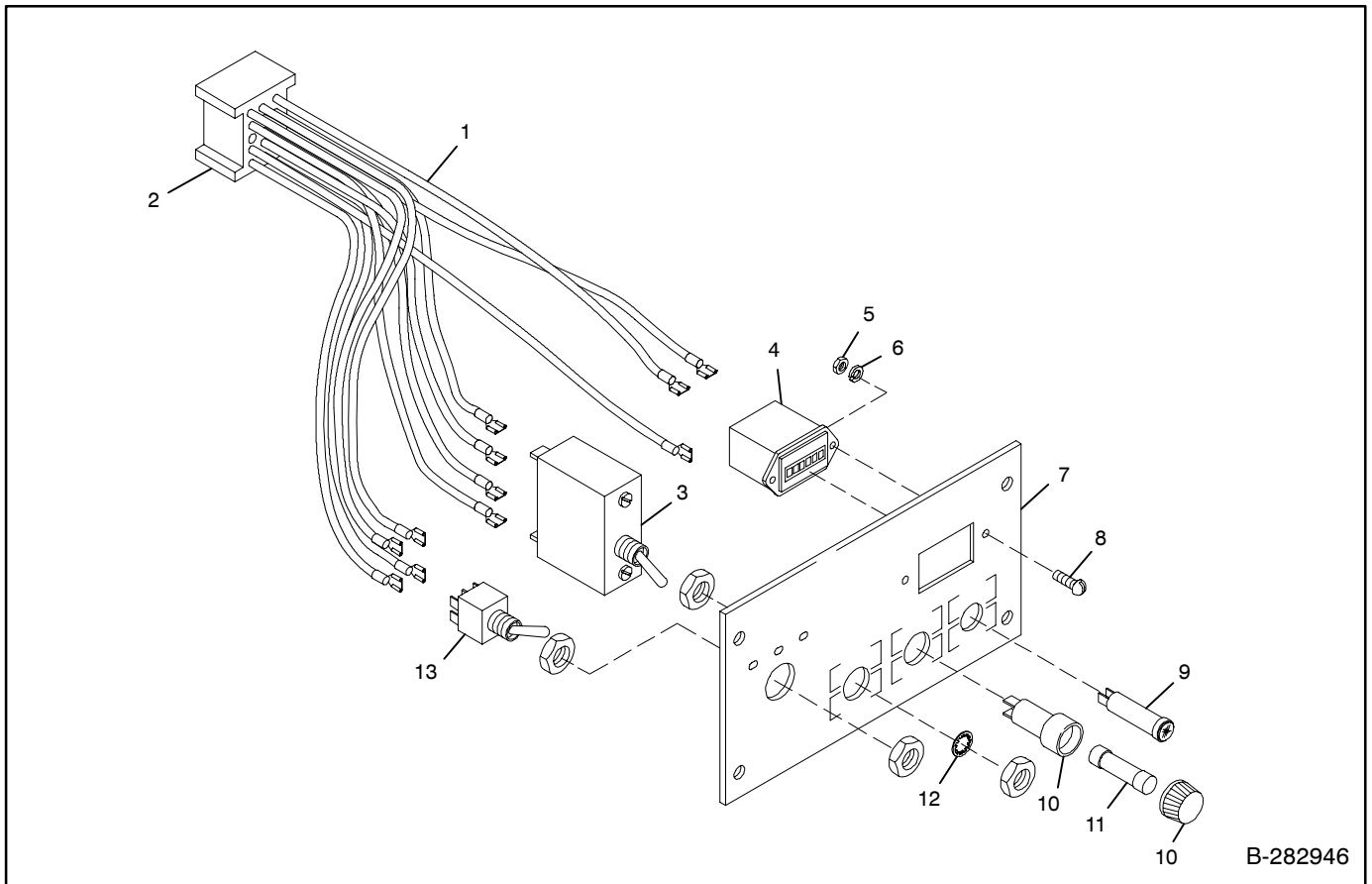
# Group 301: Controller and Mounting, continued



C-253319

Item	Part Number	Description	Quantity		
			4	Variation	Number
--	C-253319	Panel subassembly (includes items 1-13)	1		
1	254368	Harness, wiring	1		
2	269366	Connector, plug	1		
3	238736	Meter, hour	1		
4	283375	Switch, toggle	1		
5	250512	Breaker, magnetic TD	1		
6	287812	Switch, toggle	1		
7	A-253443	Potentiometer assembly	1		
8	X-71-2	Nut, hex	2		
9	X-18-1	Washer, lock	2		
10	254369	Panel, silkscreened	1		
11	X-49-26	Screw, round head machine	2		
12	269373	Lamp	1		
13	X-22-26	Washer, lock	1		

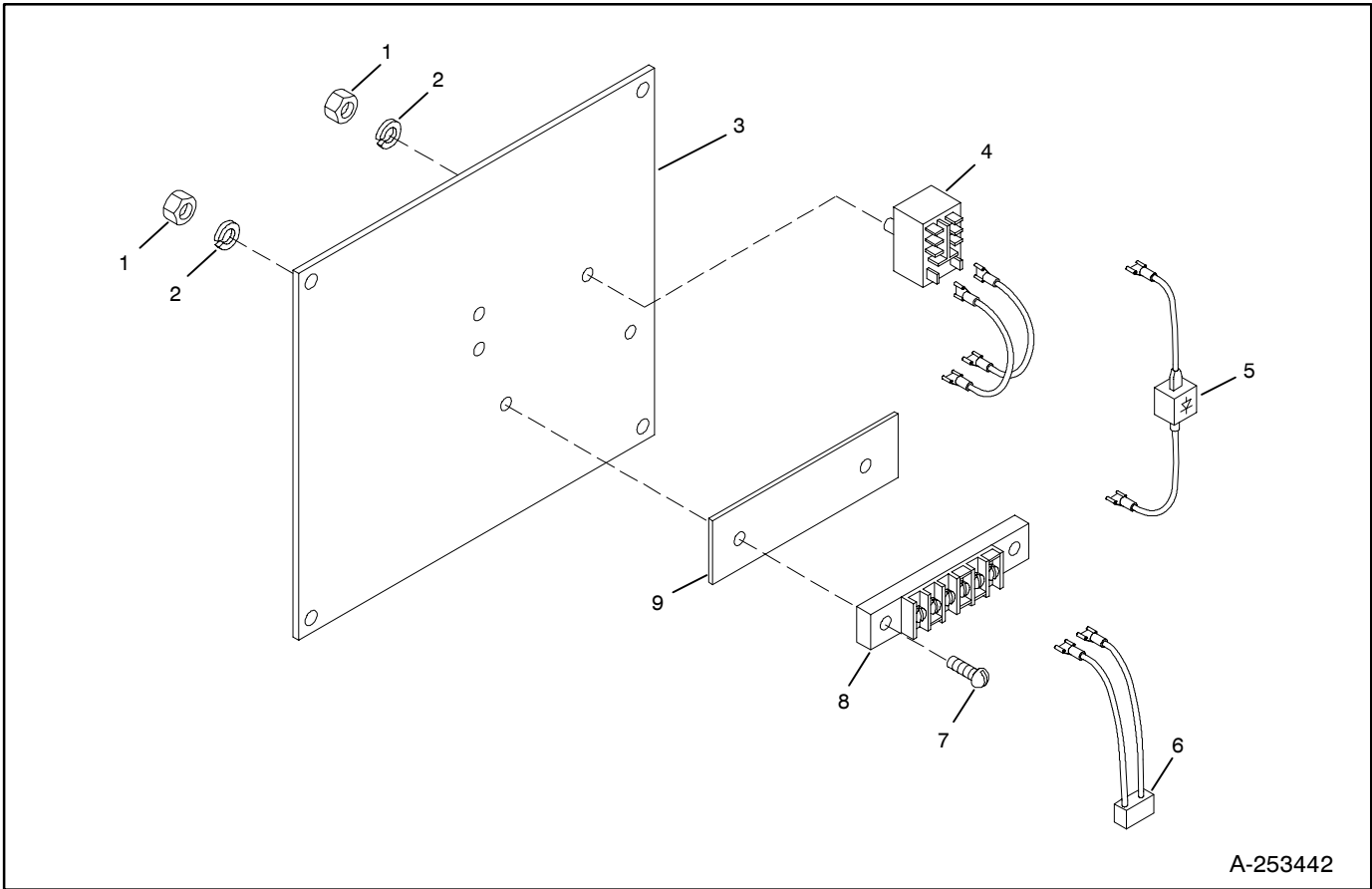
# Group 301: Controller and Mounting, continued



B-282946

Item	Part Number	Description	Quantity			
			178-5	12	14	17
--	B-282946	Panel assembly (includes Item 1-13)	1	1	1	1
1	255944	Harness, wiring (includes item 2)	1	1	1	1
2	269366	Connector, plug	1	1	1	1
3	250512	Breaker, magnetic TD	1	1	1	1
4	238736	Meter, hour	1	1	1	1
5	X-71-2	Nut, hex	2	2	2	2
6	X-18-1	Washer, lock	2	2	2	2
7	255659	Panel, silkscreen	1	1	1	1
8	X-49-26	Screw, round head machine	2	2	2	2
9	269373	Lamp	1	1	1	1
10	238426	Holder, fuse	1	1	1	1
11	283645	Fuse, 15 amp	1	1	1	1
12	X-22-26	Washer, shakeproof	1	1	1	1
13	287812	Switch, toggle	1	1	1	1

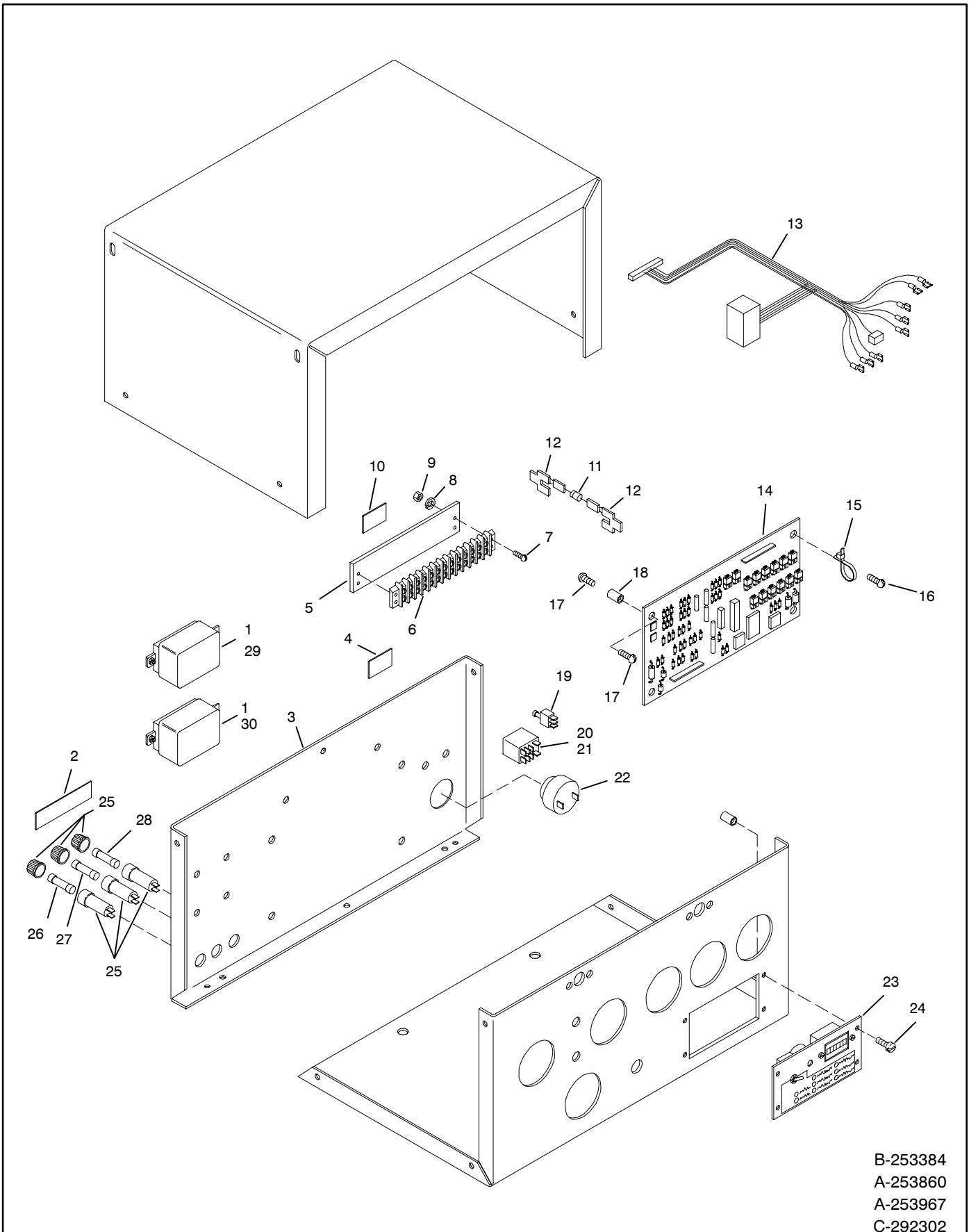
# Group 301: Controller and Mounting, continued



Item	Part Number	Description	Quantity	
			1	183-5
--	A-253442	Interlock assembly (includes items 1-9)	1	1
1	X-71-2	Nut, hex	3	3
2	X-18-1	Washer, lock	3	3
3	253440	Plate, mounting	1	1
4	241737	Relay	1	1
5	241739	Diode, 6A 100V	1	1
6	253331	Harness, wiring	1	1
7	X-49-2	Screw, round head machine	2	2
8	253330	Strip, terminal	1	1
9	253441	Marker, strip	1	1

# Notes

# Group 301: Controller and Mounting, continued



B-253384  
A-253860  
A-253967  
C-292302

## Group 301: Controller and Mounting, continued

Item	Part Number	Description	Quantity	
			Variation 1	Number 183-5
--	B-253384	Panel assembly (includes items 1-30)	1	1
1	248362	Relay	2	2
2	255489	Decal	1	1
3	253383	Panel, rear	1	1
4	X-365-27	Decal	1	1
5	269377	Marker, strip	1	1
6	258891	Block, terminal	1	1
7	X-49-6	Screw, round head machine	2	2
8	X-18-1	Washer, lock	2	2
9	X-71-2	Nut, hex	2	2
10	253608	Decal	1	1
11	A-253860	Diode assembly	1	1
12	287571	Adapter, tab	6	6
13	254381	Harness, wiring	1	1
14	C-292302	Circuit board, main	1	1
15	X-468-3	Tie, cable	3	3
16	X-49-26	Screw, round head machine	4	4
17	X-49-25	Screw, round head machine	7	7
18	287948	Spacer, PC board	5	5
19	287524	Switch, push button	1	1
20	241736	Relay	1	1
21	236830	Terminal	1	1
22	253386	Horn, alarm	1	1
23	A-253967	Panel assembly, front	1	1
24	X-794-2	Screw, drill head	4	4
25	238426	Holder, fuse	3	3
26	243272	Fuse, 3 amp.	1	1
27	282896	Fuse, 4 amp.	1	1
28	283645	Fuse, 15 amp.	1	1
29	201620-88	Tab, identification	1	1
30	201620-101	Tab, identification	1	1

# Group 701: Literature

Item	Part Number	Description	Quantity								
			Variation Number								
			10	11	12	13	14	25	27	29	31
1	TP-5700	Installation manual	1	1	1	1	1	1	1	1	1
2	TP-5209	Operation manual, Ford LSG-875 engine	1	1	1	1	1	1	1	1	1
2	TP-5255	Operation manual, generator	1	1	1	1					
2	TP-5750	Operation manual, generator					1	1	1	1	1
2	TP-5829	Operation manual, Decision-Maker 340 controller					1	1	1	1	1
3	TP-5262	Service manual, generator	1	1	1	1					
3	TP-5353	Service manual, generator					1	1	1	1	1
4	TP-5171	Service manual, Ford LSG-875 engine	1	1	1	1	1	1	1	1	1
5	TP-5719	Wiring diagrams					1	1	1	1	1
6	TP-5194	Parts catalog, Ford LSG-875 engine	1	1	1	1	1	1	1	1	1
7	TP-5614	Parts catalog, generator	1	1	1	1	1	1	1	1	1
8	TP-5708	Parts catalog, accessories	1	1	1	1	1	1	1	1	1

# Kit List

This section lists the part numbers of modules/kits not listed in the Group Parts Lists. Refer to the generator set nameplate or the list below to identify the module/kit

number installed on your generator set. See the sections following this page for the parts list of the module/kit.

	50 kW	60 kW	70 kW	80 kW	100 kW
<b>Controllers</b>					
See Parts Catalog TP-6009 for parts lists for 7-light, 16-light, and Decision-Maker 340 controllers.					
Manual	327021	327021	327042	327042	327047
Manual, 600 V	327031	327037	327062	327062	327062
<b>Cooling Systems</b>					
City Water	326183	326183	326183	326196	326196
Radiator, 40 Ambient	326170	326170	326171	326172	326172
Radiator, 50 Ambient	326171	326171	326172	326173	326173
Remote Radiator Setup	326197	326197	326197	326197	326197
Duct Flange, Radiator	326214	326214	326214	326214	326214
	273402	273402	273402	255472	255472
Heater, Block					
110-120 V, 1800 W	326174	326174	326174	326174	326174
110-120 V, 1500 W	276347	276347	276347	276349	276349
190-280/220-240 V, 1500/2000 W	326175	326175	326175	326175	326175
280-240 V, 1100-1500 W	276348	276348	276348	276350	276350
<b>Fuel Systems</b>					
Bypass, Manual Valve and Gas Solenoid	255635	255635	255635	255635	255635
Changeover, Automatic (Nat. Gas to LP Gas)	326185	326185	326185	326273	326273
Fuel Line, Flexible (Gas)	PA-276286	PA-276286	PA-255599	PA-255599	PA-255599
Fuel Line, Flexible (Gasoline)	276285	276285	276285	N/A	N/A
Fuel Pump, Electric (Gasoline)	PA-225208	PA-225208	PA-225208	N/A	N/A
Gas Solenoid Valve, Secondary	PA-326128	PA-326128	PA-326129	PA-326129	PA-326129
LP Gas Liquid Withdrawal	326073	326073	326073	326198	326199
Natural Gas or LP Fuel System	326209	326209	326209	326211	326211
Strainer, Gas	PA-290276	PA-290276	PA-290276	PA-290277	PA-290277
<b>Optional Kits</b>					
See Parts Catalog TP-5708 for parts lists.					
<b>Paint and Miscellaneous Parts</b>					
Paint, Kohler Cream Beige	All models use 221338 Spray Can, 221337 Gallon				
N/A Not Applicable					

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# Manual Controller Kits

MANUAL CONTROLLER KIT PARTS							
Qty.	Description	Common	Kit Number/Unique Parts				
			327011	327016	327021	327026	327031
1	Controller assembly*		A-273380	A-273381	A-273383	A-273379	A-273382
4	Washer, lock 5/16	X-22-16					
1	Terminal	X-283-8					
1	Conduit, convoluted		N/A	N/A	N/A	X-6003-17	N/A
1	Screw, drill hex	X-794-1					
1	Harness, wiring	255040					
3	Transformer, current		259360	259414	255860	259793	259792
1	Bracket, CT mounting	276417					
1	Bushing, reducer 3/8	X-202-28					
1	Sensor, low coolant	273520					

MANUAL CONTROLLER KIT PARTS, CONTINUED							
Qty.	Description	Common	Kit Number/Unique Parts				
			327037	327042	327047	327052	327057
1	Controller assembly*		A-273384	A-273383	A-273385	A-273387	A-27390
4	Washer, lock 5/16	X-22-16					
1	Terminal	X-283-8					
1	Conduit, convoluted		N/A	N/A	N/A	X-6003-17	N/A
1	Screw, drill hex	X-794-1					
1	Harness, wiring	255040					
3	Transformer, current		259359	255860	253503	259414	272691
1	Bracket, CT mounting		276417	276417	276417	276417	325382
1	Bushing, reducer 3/8	X-202-28					
1	Sensor, low coolant	273520					

MANUAL CONTROLLER KIT PARTS, CONTINUED							
Qty.	Description	Common	Kit Number/Unique Parts				
			327062	327067	327072	327077	
1	Controller assembly*		A-273386	A-273393	A-273389	A-273391	
4	Washer, lock 5/16	X-22-16					
1	Terminal	X-283-8					
1	Conduit, convoluted		X-6003-17	N/A	N/A	X-6003-17	
1	Screw, drill hex	X-794-1					
1	Harness, wiring	255040					
3	Transformer, current		259360	273257	253610	279272	
1	Bracket, CT mounting		276417	299966	299966	325382	
1	Bushing, reducer 3/8	X-202-28					
1	Sensor, low coolant	273520					

\* See Controller Assembly section for parts list.

N/A Not Applicable

# Manual Controller Assemblies

Qty.	Description	Common Parts	Manual Controller Assembly Number/Unique Parts					
			A-273379	A-273380	A-273381	A-273382	A-273383	A-273384
1	Potentiometer assembly	A-255041						
1	Overspeed circuit board	A-249812						
1	Main circuit board	F-239563						
1	Washer, shakeproof #10	X-22-13						
4	Washer, lock #6	X-22-6						
1	Grommet	X-284-31						
1	Plug, button	X-301-34						
2	Terminal	X-431-25						
2	Terminal	X-431-29						
2	Screw, RHM 6-32 x 3/8	X-49-2						
18	Screw, RHM 6-32 x 1/4	X-49-25						
2	Screw, pan head	X-49-39						
4	Screw, RHM 10-24 x 3/4	X-50-3						
1	Screw, RHM 10-24 x 1	X-50-7						
2	Screw, RHM 8-32 x 3/8	X-51-12						
2	Screw, RHM	X-51-53						
1	Strap, ground	X-6046-2						
1	Jumper	X-6048-2						
10	Screw, hex crimplite	X-6216-1						
2	Screw, thread-forming	X-67-127						
1	Sleeve	X-696-5						
1	Tab, identification	201620-86						
1	Fuse, 10 amp	223316						
1	Holder, fuse	238426						
1	Meter, hour	238736						
1	Terminal	238898						
1	Block, terminal	246115						
1	Switch, rocker	249406						
1	Voltmeter	253329						
1	Lamp	269373						
2	Lamp	255126						
1	Lamp	269373						
1	Plate, hinge	273376						
1	Harness, controller	274710						
1	Voltmeter, AC		282817	282816	282816	282817	282816	282817
1	Gauge, oil pressure	282897						
1	Gauge, water temperature	282898						
1	Ammeter, AC		282800	282801	282802	282801	282804	282802
2	Socket, lamp	284990						
8	Spacer, circuit board	287948						
3	Fuse, 1.5 amp	291207						
1	Decal	292347						
1	Resistor		292352	N/A	N/A	292352	N/A	292352
1	Decal	292361						
1	Switch, selector		292374	292373	292373	292374	292373	292374
1	Holder, fuse	292821						
1	Marker, strip	292823						
1	Bumper	292834						
1	Meter, frequency	282818						
1	Transformer, controller	295281						
1	Cover, controller	292818						
1	Nameplate		273374	273373	273373	273374	273373	273374
1	Box, controller	273375						

N/A Not Applicable

# Manual Controller Assemblies, continued

Qty.	Description	Common Parts	Manual Controller Assembly Number/Unique Parts						
			A-273385	A-273386	A-273387	A-273389	A-273390	A-273391	A-273392
1	Potentiometer assembly	A-255041							
1	Overspeed circuit board	A-249812							
1	Main circuit board	F-239563							
1	Washer, shakeproof #10	X-22-13							
4	Washer, lock #6	X-22-6							
1	Grommet	X-284-31							
1	Plug, button	X-301-34							
2	Terminal	X-431-25							
2	Terminal	X-431-29							
2	Screw, RHM 6-32 x 3/8	X-49-2							
18	Screw, RHM 6-32 x 1/4	X-49-25							
2	Screw, pan head	X-49-39							
4	Screw, RHM 10-24 x 3/4	X-50-3							
1	Screw, RHM 10-24 x 1	X-50-7							
2	Screw, RHM 8-32 x 3/8	X-51-12							
2	Screw, RHM	X-51-53							
1	Strap, ground	X-6046-2							
1	Jumper	X-6048-2							
10	Screw, hex crimpite	X-6216-1							
2	Screw, thread-forming	X-67-127							
1	Sleeve	X-696-5							
1	Tab, identification	201620-86							
1	Fuse, 10 amp	223316							
1	Holder, fuse	238426							
1	Meter, hour	238736							
1	Terminal	238898							
1	Block, terminal	246115							
1	Switch, rocker	249406							
1	Voltmeter	253329							
1	Lamp	269373							
2	Lamp	255126							
2	Lamp	291740							
1	Plate, hinge	273376							
1	Harness, controller	274710							
1	Voltmeter, AC		282816	282816	282817	282816	282816	282817	282816
1	Gauge, oil pressure	282897							
1	Gauge, water temperature	282898							
1	Ammeter, AC		282805	282805	282805	282807	282808	282806	282806
2	Socket, lamp	284990							
8	Spacer, circuit board	287948							
3	Fuse, 1.5 amp	291207							
1	Decal	292347							
1	Resistor		N/A	292352	292352	N/A	N/A	292352	N/A
1	Decal	292361							
1	Switch, selector		292373	292374	292374	292373	292373	292374	292373
1	Holder, fuse	292821							
1	Marker, strip	292823							
1	Bumper	292834							
1	Meter, frequency	282818							
1	Transformer, controller	295281							
1	Cover, controller	292818							
1	Nameplate		273373	273374	273374	273373	273373	273374	273373
1	Box, controller	273375							

N/A Not Applicable

# Cooling System Kits

Qty.	Description	Kit/Part No.
<b>Cooling, City Water</b>		<b>326183</b>
1	Elbow, street 1 1/2	A-27
1	Elbow, street	EH-2226
1	Bushing, reducer 3/4	X-202-1
2	Tee, pipe 1/2	X-203-13
1	Nipple, pipe 3/8	X-204-8
1	Nipple, pipe 1 1/2 x 4	X-205-7
1	Nipple, pipe	X-206-9
1	Nipple, pipe 1/2 x 3	X-209-11
1	Pipe	X-209-18
1	Nipple 1/2 x 1 3/16	X-209-2
1	Nipple 1/2 x 2 1/2	X-209-3
2	Nipple, pipe 1/2	X-209-5
4	Elbow, street 1/2	X-211-1
2	Elbow, street 2 1/2	X-211-9
2	Elbow, pipe 1/2	X-215-1
1	Coupling, pipe 3/8 x 1	X-216-23
1	Elbow, 45 degrees	X-225-3
2	Elbow, pipe	X-225-6
2	Valve, drain 3/8	X-256-1
1	Valve, drain	X-256-5
1	Elbow, street 45 degrees	X-274-13
1	Hose, radiator	X-281-4
1	Clamp, hose 1/2	X-309-14
1	Valve, solenoid	X-350-8
1	Line, flexible fuel 5/16	X-386-36
1	Clip, tube 9/16	X-414-1
8	Clamp, hose	X-426-12
2	Pipe	X-458-1
1	Pipe 2 1/2 x 12 7/8	X-500-2
1	Pipe 2 1/2 x 3 1/2	X-501-8
1	Adapter	X-570-18
8	Connector, hose	X-582-7
1	Hose 2" X 18"	X-6014-3
1	Hose, radiator	X-6014-7
1	Hose 2" X 8"	X-6014-8
1	Clamp, insulating	X-672-4
2	Hose	X-691-10
1	Hose, .75" x 20"	X-691-12
1	Hose, .75" x 22.5"	X-691-13
4	Plug, pipe 1/2"	X-75-28
1	Plug, pipe 2 1/2"	X-75-33
25	Screw, drill hex	X-794-1
1	Elbow	151385
4	Elbow, 90 degrees	151771

Qty.	Description	Kit/Part No.
2	Nipple, pipe 1 1/2 x 21	151803
1	Nipple, pipe 1 1/2 x 6	155029-1
1	Nipple, pipe 1 1/2 x 1	155040
1	Bushing, reducer 1/2	168848
6	Clamp, hose	249887
2	Clamp, hose	249888
1	Cap, pressure	258037
1	Manifold, water temperature	273659
1	Elbow, water outlet	280005
1	Decal, water drain	280561
3	Adapter, hose	285685
2	Clamp, exhaust pipe	286283
1	Line, flexible exhaust	286781
1	Shield, heat	287469
1	Clamp, exhaust pipe 4"	289372
1	Regulator, water	290176
2	Support, heat exchange	290378
1	Shield, heat	290753
1	Tank, expansion	291457
1	Guard, belt	291459
2	Manifold, exhaust	291460
1	Gasket set	291461
1	Exchanger, heat	326160
2	Plate, heat exchange	326166
1	Bracket, tank	326252
1	Guard, belt (left)	326253
1	Guard, belt (right)	326254
1	Guard, alternator	326255
1	Y-branch, 45 degree exhaust	326298

# Cooling System Kits, continued

Qty.	Description	Kit/Part No.	Qty.	Description	Kit/Part No.
<b>Cooling, City Water</b>			<b>Cooling, Radiator</b>		
		<b>326196</b>			<b>326170</b>
1	Elbow, street 1 1/2	A-27	1	Radiator assembly	A-276469
1	Valve, water regulator	A-289128	1	Cap, radiator	224358
1	Elbow, street	EH-2226	1	Valve, drain 1/4	X-256-3
1	Bushing, reducer 3/4	X-202-1	1	Clamp, hose	X-426-16
2	Bushing, reducer	X-202-11	2	Clamp, hose 1 9/16	X-426-6
1	Nipple, pipe 3/8	X-204-8	8	Washer, hardened	X-801-4
1	Nipple, pipe 1 1/2 x 4	X-205-7	1	Switch assembly, level	273404
1	Nipple, pipe	X-206-9	1	Shroud, fan	276400
1	Coupling, pipe 3/8 x 1	X-216-23	1	Fan, cooling	276468
1	Nipple, pipe 1 x 1 1/2	X-218-24	1	Hose, radiator (upper)	276488
1	Elbow, 45 degrees	X-225-3	1	Hose, radiator (lower)	276489
2	Valve, drain 3/8	X-256-1	1	Support, radiator (l)	276496
1	Hose, radiator	X-281-4	1	Support, radiator (r)	276497
1	Clamp, hose 1/2	X-309-14	1	Guard, radiator	276498
1	Valve, solenoid	X-350-8	1	Guard, fan	326044
1	Line, flexible fuel 5/16	X-386-36	1	Guard, belt (right)	326118
1	Clip, tube 9/16	X-414-1	1	Guard, belt (left)	326119
1	Adapter	X-570-18	1	Guard, belt (bottom)	326246
1	Hose 2" x 18"	X-6014-3			
1	Hose, radiator	X-6014-7	<b>Cooling, Radiator</b>		
1	Hose 2" x 8"	X-6014-8			<b>326171</b>
1	Plug, pipe 1"	X-75-22	1	Radiator assembly	A-276470
3	Plug, pipe 1/2"	X-75-28	1	Cap, radiator	224358
25	Screw, drill hex	X-794-1	1	Valve, drain 1/4	X-256-3
3	Elbow	151385	2	Clamp, hose	X-426-16
4	Elbow, 90 degrees	151771	2	Clamp, hose 1 9/16	X-426-6
2	Nipple, pipe 1 1/2 x 21	151803	8	Washer, hardened	X-801-4
1	Nipple, pipe 1 1/2 x 6	155029-1	1	Switch assembly, level	273404
1	Nipple, pipe 1 1/2 x 1	155040	1	Shroud, fan	276400
2	Bushing, reducer	160212	1	Fan, blower	276473
6	Clamp, hose	249887	1	Hose, radiator (upper)	276488
2	Clamp, hose	249888	1	Hose, radiator (lower)	276489
1	Cap, pressure	258037	1	Support, radiator (l)	276496
1	Elbow, water outlet	280005	1	Support, radiator (r)	276497
1	Decal, water drain	280561	1	Guard, radiator	276498
3	Adapter, hose	285685	1	Guard, fan	326044
2	Plate, heat exchanger mounting	290377	1	Guard, belt (right)	326118
2	Support, heat exchanger	290378	1	Guard, belt (left)	326119
1	Tank, expansion	291457	1	Guard, belt (bottom)	326246
1	Guard, belt	291459			
1	Exchanger, heat	324309	<b>Cooling, Radiator</b>		
1	Bracket, tank	326252			<b>326172</b>
1	Guard, belt (left)	326253	1	Radiator assembly	A-276471
1	Guard, belt (right)	326254	1	Cap, radiator	224358
1	Guard, alternator	326255	1	Valve, drain 1/4	X-256-3
			2	Clamp, hose	X-426-16
			2	Clamp, hose 1 9/16	X-426-6
			8	Washer, hardened	X-801-4
			1	Switch assembly, level	273404
			1	Shroud, fan	276400
			1	Fan, blower	276473
			1	Hose, radiator (upper)	276488
			1	Hose, radiator (lower)	276489
			1	Support, radiator (l)	276496
			1	Support, radiator (r)	276497
			1	Guard, radiator	276498
			1	Guard, fan	326044
			1	Guard, belt (right)	326118
			1	Guard, belt (left)	326119
			1	Guard, belt (bottom)	326246

# Cooling System Kits, continued

Qty.	Description	Kit/Part No.
<b>Cooling, Radiator</b>		
	<b>326173</b>	
1	Radiator assembly	A-276472
1	Cap, radiator	224358
1	Valve, drain 1/4	X-256-3
2	Clamp, hose	X-426-16
2	Clamp, hose 1 9/16	X-426-6
8	Washer, hardened	X-801-4
1	Switch assembly, level	273404
1	Shroud, fan	276400
1	Fan, blower	276473
1	Hose, radiator (upper)	276488
1	Hose, radiator (lower)	276489
1	Support, radiator (l)	276496
1	Support, radiator (r)	276497
1	Guard, radiator	276498
1	Guard, fan	326044
1	Guard, belt (right)	326118
1	Guard, belt (left)	326119
1	Guard, belt (bottom)	326246
1	Pulley, water pump	326292
2	V-belt	326293

<b>Cooling, Remote Radiator Set-up</b>		
	<b>326197</b>	
1	Hose, radiator	X-281-4
1	Hose, radiator	X-6014-7
1	Hose 2" x 8"	X-6014-8
3	Plug, pipe 1/2"	X-75-28
25	Screw, drill hex	X-794-1
6	Clamp, hose	249887
2	Clamp, hose	249888
1	Elbow, water outlet	280005
1	Guard, belt	291459
1	Bracket, tank	326252
1	Guard, belt (left)	326253
1	Guard, belt (right)	326254
1	Guard, alternator	326255

<b>Radiator Duct Flange</b>		
	<b>255472</b>	
8	Rivet, pop	X-781-1
10	Screw, drill hex 1/4-14 x .75	X-794-1
2	Frame, air duct	292983
2	Frame, air duct	292984

<b>Radiator Duct Flange</b>		
	<b>273402</b>	
8	Rivet, pop	X-781-11
10	Screw, drill hex 1/4-14 x .75	X-794-1
2	Frame, air duct	292985
2	Frame, air duct	292988

<b>Radiator Duct Flange</b>		
	<b>326214</b>	
8	Rivet, pop	X-781-11
4	Screw, drill hex	X-794-1
2	Frame, air duct	326212
2	Frame, air duct	326213

Qty.	Description	Kit/Part No.
<b>Block Heater, 110-120 V, 1500 W</b>		
	<b>276347</b>	
4	Clamp, hose	X-426-10
2	Hose, oil 5/8 x 11	X-577-6
1	Connector, hose	X-582-3
1	Bushing, reducing 3/4 x 1/2	153659
2	Clamp, hose	249887
2	Plug, freeze	276212
1	Connector, hose	276216
1	Bracket, heater	276217
1	Heater, block	276691
1	Tag, hang	279047

<b>Block Heater, 208-240 V, 1100-1500 W</b>		
	<b>276348</b>	
4	Clamp, hose	X-426-10
2	Hose, oil 5/8 x 11	X-577-6
1	Connector, hose	X-582-3
1	Bushing, reducing 3/4 x 1/2	153659
2	Clamp, hose	249887
1	Plug, freeze	276212
1	Connector, hose	276216
1	Bracket, heater	276217
1	Heater, block	276692
1	Tag, hang	279047

<b>Block Heater, 110-120 V, 1500 W</b>		
	<b>276349</b>	
4	Clamp, hose	X-426-10
1	Hose, oil 5/8 x 11	X-577-6
1	Connector, hose	X-582-3
1	Bushing, reducing 3/4 x 1/2	153659
1	Hose, molded	276206
2	Plug, freeze	276212
1	Connector, hose	276216
1	Bracket, heater	276217
2	Clamp, hose	276320
1	Heater, block	276691
1	Tag, hang	279047

<b>Block Heater, 208-240 V, 1100-1500 W</b>		
	<b>276350</b>	
4	Clamp, hose	X-426-10
1	Hose, oil 5/8 x 11	X-577-6
1	Connector, hose	X-582-3
1	Bushing, reducing 3/4 x 1/2	153659
1	Hose, molded	276206
2	Plug, freeze	276212
1	Connector, hose	276216
1	Bracket, heater	276217
2	Clamp, hose	276320
1	Heater, block	276692
1	Tag, hang	279047

# Cooling System Kits, continued

Qty.	Description	Kit/Part No.
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<b>Block Heater</b>		<b>326174</b>
1	Hose 5/8 x 36	X-312-13
4	Clamp, hose	X-426-10
2	Connector, hose	X-582-3
2	Screw, self-tapping	X-67-131
2	Clamp, insulating	X-672-3
1	Hose, molded	276206
2	Plug, freeze	276212
1	Tag, hang	279047
1	Bracket, block heater	326219
1	Heater, block	326234

Qty.	Description	Kit/Part No.
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<b>Block Heater</b>		<b>326175</b>
1	Hose 5/8 x 36	X-312-13
4	Clamp, hose	X-426-10
2	Connector, hose	X-582-3
2	Screw, self-tapping	X-67-131
2	Clamp, insulating	X-672-3
1	Hose, molded	276206
2	Plug, freeze	276212
1	Tag, hang	279047
1	Bracket, block heater	326219
1	Heater, block	326235

# Fuel System Kits

Qty.	Description	Kit/Part No.
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<b>Bypass, Manual Valve and Gas Solenoid</b>		<b>255639</b>
2	Tee, pipe 3/4	A-108
2	Bushing, reducer 3/4 x 1	X-202-1
1	Nipple, pipe 3/4 x 6	X-206-15
1	Nipple, pipe 3/4 x 2	X-206-2
1	Nipple, pipe 3/4 x 2.5	X-206-4
3	Nipple, pipe 3/4 x 1.38	X-206-9
1	Elbow, pipe 1	X-215-15
1	Elbow, pipe 3/4	X-215-2
1	Line, flexible fuel 3/4 x 12	X-504-2
1	Valve	255632
1	Bracket, support	276332

<b>Bypass, Manual Valve and Gas Solenoid</b>		<b>255635</b>
1	Bushing, reducer	X-202-32
2	Tee, pipe	X-203-2
1	Nipple, pipe 1 x 4	X-218-13
3	Nipple, pipe 1 x 1 1/2	X-218-24
1	Nipple, pipe 1 x 6 1/2	X-218-9
1	Line, flexible fuel	X-504-17
1	Elbow	151385
1	Valve	255633
1	Bracket, support	276332

<b>Changeover, Automatic (Nat. Gas to LP)</b>		<b>326185</b>
1	Valve, gas	A-254469
1	Carburetor assembly	A-326117
1	Bushing, reducer 1/8	AC-1459
2	Bushing, reducer 3/4	X-202-1
2	Bushing, reducer	X-202-32
2	Tee, pipe 1 x 1 x 1	X-203-2
2	Nipple, pipe	X-206-9
1	Elbow, pipe 1	X-215-15
2	Elbow, pipe 3/4	X-215-2
1	Nipple, pipe 1/8 x 3/4	X-217-6
1	Nipple, pipe 1 x 1 1/2	X-218-24
1	Nipple, pipe 1 x 6 1/2	X-218-9
1	Line, flexible fuel	X-504-20
1	Label, "Nat. gas"	X-543-3
1	Elbow, street 1/8	X-555-2
1	Valve, gas	244621
1	Relay	245748
1	Bracket, fuel valve	254456
1	Label, "LP gas"	285623
1	Switch, vacuum	287387
1	Regulator, pressure	291259
1	Regulator, pressure	291260
1	Valve, line load	326077
1	Gasket, carburetor	326165
1	Harness, wiring	326266
1	Bracket, support	326796
1	Adapter, flange	327102

Qty.	Description	Kit/Part No.
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<b>Changeover, Automatic (Nat. Gas to LP)</b>		<b>326210</b>
1	Valve, gas	A-254469
1	Carburetor assembly	A-326117
1	Bushing, reducer 3/4	X-202-1
1	Bushing, reducer 1	X-202-32
1	Nipple, pipe	X-206-9
2	Elbow, pipe 1	X-215-15
1	Nipple, pipe 1 x 4	X-218-13
1	Nipple, pipe 1 x 1 1/2	X-218-24
1	Nipple, pipe 1 x 6 1/2	X-218-9
1	Washer, shakeproof	X-22-12
1	Elbow, 45 degree	X-225-9
1	Terminal	X-283-5
1	Terminal	X-367-1
1	Bolt, U 5/16-18	X-397-1
1	Line, flexible fuel	X-504-20
1	Adapter, manifold	255519
1	Bracket, support	255666
1	Gasket	276082
1	Bracket, support	276332
1	Regulator, pressure	291260

<b>Changeover, Automatic (Nat. Gas to LP)</b>		<b>326273</b>
2	Valve, gas	A-254469
1	Body, mixer	A-326218
1	Bushing, reducer 1/8	AC-1459
1	Body assembly, throttle	B-255517
1	Bushing, reducer 3/4	X-202-1
4	Bushing, reducer	X-202-32
2	Tee, pipe 1 x 1 x 1	X-203-2
1	Nipple, pipe 3/4 x 3 1/2	X-206-6
3	Elbow, pipe 1	X-215-15
1	Nipple, pipe 1/8 x 3/4	X-217-6
4	Nipple, pipe 1 x 1 1/2	X-218-24
3	Pipe	X-218-27
1	Pipe	X-218-28
1	Nut, wing 1/4-20	X-276-7
1	Elbow, 45 degree	X-274-10
1	Grommet	X-284-24
1	Stud, 1/4-20 x 3-1/8	X-352-13
2	Bolt, U 5/16-18	X-397-1
2	Spacer	X-400-147
2	Clamp, hose 1 7/8	X-426-2
2	Line, flexible fuel	X-504-20
1	Elbow, street 1/8	X-555-2
1	Elbow	151385
1	Terminal, adapter	233704
1	Relay	245748
1	Adapter, manifold	255519
1	Hose, reducer	255520
1	Bracket	255521
1	Support, fuel pipe	255755
1	Gasket	276082
1	Switch, vacuum	287387
2	Regulator, pressure	291260
1	Valve, line load	326077
2	Bracket, support	326256
1	Bracket, support	326309

# Fuel System Kits, continued

Qty.	Description	Kit/Part No.
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<b>Flexible Fuel Line (Gas)</b>		<b>PA-255599</b>
1	Bushing, reducer	X-202-32
1	Elbow, pipe 1	X-215-15
1	Nipple, pipe 1 x 6 1/2	X-218-9
1	Line, flexible fuel	276353
1	Installation Instructions	TT-864

<b>Flexible Fuel Line (Gas)</b>		<b>PA-276286</b>
1	Elbow, pipe 1	X-215-15
1	Nipple, pipe 1 x 6-1/2	X-218-9
1	Line, flexible fuel	276353
1	Installation Instructions	TT-864

<b>Flexible Fuel Line (Gasoline)</b>		<b>276285</b>
1	Cap, pipe	X-268-3
1	Connector, 7/16-20 x 1/8	X-296-1
1	Elbow, 7/16-20 x 1/8	X-447-10
1	Elbow, oil line connector	X-447-7
1	Tie, cable	X-468-1
1	Line, flexible fuel	273614

<b>Fuel Pump, Electric</b>		<b>PA-225208</b>
1	Pump, electric fuel	247076

<b>Gas Solenoid Valve, Secondary</b>		<b>PA-326128</b>
1	Valve, gas	244914

<b>Gas Solenoid Valve, Secondary</b>		<b>PA-326129</b>
1	Valve, gas	A-286741

<b>LP Gas Liquid Withdrawal</b>		<b>326073</b>
1	Carburetor assembly	A-326117
1	Bushing, reducer	X-202-1
1	Bushing, reducer	X-202-28
1	Bushing, reducer	X-202-30
4	Nipple, pipe 3/8 x 1	X-204-9
1	Nipple, pipe 3/4 x 6	X-206-15
1	Nipple, pipe	X-206-9
1	Elbow, pipe 3/4	X-215-2
4	Elbow	X-215-9
1	Nipple, pipe 1/4 x 7/8	X-220-5
4	Clamp, hose	X-426-10
4	Connector, hose	X-582-9
2	Hose .375" x 46"	X-651-11
1	Solenoid, fuel	256976
1	Gasket, carburetor	280494
1	Vaporizer, LP fuel	326075
1	Bracket, support	326796
1	Gasket, carburetor	326165
1	Adapter, flange	327102

Qty.	Description	Kit/Part No.
------	-------------	--------------

<b>LP Gas Liquid Withdrawal</b>		<b>326198</b>
1	Body, mixer	A-326218
1	Body assembly, throttle	B-255517
1	Elbow, street 1/4	Eh-2248
1	Bushing, reducer 3/4	X-202-1
1	Nipple, pipe	X-206-4
1	Nipple, pipe 1/4	X-220-6
2	Washer, plain	X-25-59
1	Nut, wing 1/4-20	X-276-7
1	Grommet	X-284-24
1	Terminal	X-285-1
1	Stud, 1/4-20 x 3 1/8	X-352-13
2	Connector, hose 5/8	X-391-2
1	Bolt, U 5/16-18	X-397-1
2	Spacer	X-400-147
4	Clamp, hose 1.25	X-426-12
2	Clamp, hose 1 7/8	X-426-2
1	Hose	X-577-44
1	Hose, oil-proof	X-577-47
1	Connector, hose	X-582-1
1	Connector, hose	X-582-2
1	Adapter, manifold	255519
1	Hose, reducer	255520
1	Bracket	255521
1	Gasket	276082
1	Vaporizer, LP fuel	326075
1	Solenoid, fuel	326120

<b>LP Gas Liquid Withdrawal</b>		<b>326199</b>
1	Body, mixer	A-326218
1	Body assembly, throttle	B-255517
1	Elbow, street 1/4	EH-2248
1	Bushing, reducer 3/4	X-202-1
1	Nipple, pipe	X-206-4
1	Nipple, pipe 1/4	X-220-6
2	Washer, plain	X-25-59
1	Nut, wing 1/4-20	X-276-7
1	Grommet	X-284-24
1	Terminal	X-285-1
1	Stud, 1/4-20 x 3 1/8	X-352-13
2	Connector, hose 5/8	X-391-2
1	Bolt, U 5/16-18	X-397-1
2	Spacer	X-400-147
2	Clamp, hose 1.25	X-426-12
2	Clamp, hose 1 7/8	X-426-2
1	Hose, oil-proof	X-577-36
1	Hose	X-577-44
1	Adapter, manifold	255519
1	Hose, reducer	255520
1	Bracket	255521
1	Gasket	276082
1	Vaporizer, LP fuel	326075
1	Solenoid, fuel	326120

## Fuel System Kits, continued

Qty.	Description	Kit/Part No.
<b>Natural Gas or LP Fuel System</b>		
		<b>326209</b>
1	Valve, gas	A-254469
1	Carburetor assembly	A-326117
1	Bushing, reducer 3/4	X-202-1
1	Bushing, reducer 1 x 1 1/4	X-202-32
1	Nipple, pipe	X-206-9
1	Elbow, pipe 1	X-215-15
1	Nipple, pipe 1 x 1 1/2	X-218-24
1	Pipe	X-218-27
1	Nipple, pipe 1 x 6 1/2	X-218-9
1	Washer, shakeproof	X-22-12
1	Terminal	X-283-5
1	Terminal	X-367-1
1	Line, flexible fuel	X-504-20
1	Adapter, manifold	255519
1	Gasket	276082
1	Regulator, pressure	291260
1	Bracket, support	326796
1	Gasket, carburetor	326165
1	Bracket, support	326256
1	Adapter, flange	327102

Qty.	Description	Kit/Part No.
<b>Natural Gas or LP Fuel System</b>		
		<b>326211</b>
1	Pipe, 3/4 x 4	A-107
1	Valve, gas	A-254469
1	Body, mixer	A-326218
1	Body assembly, throttle	B-255517
1	Bushing, reducer 3/4	X-202-1
1	Bushing, reducer 1 x 1 1/4	X-202-32
2	Elbow, pipe 1	X-215-15
1	Nipple, pipe	X-218-26
1	Pipe	X-218-27
1	Pipe	X-218-28
2	Washer, plain	X-25-44
2	Washer, plain	X-25-59
1	Terminal	X-285-6
2	Bolt, U 5/16-18 x 1 1/2	X-397-1
2	Spacer	X-400-147
2	Clamp, hose 1 7/8-3 5/32	X-426-2
1	Line, flexible fuel	X-504-20
1	Adapter, manifold	255519
1	Hose, reducer	255520
1	Bracket	255521
1	Support, fuel pipe	255755
1	Tag, Instruction	258558
1	Gasket	276082
1	Regulator, pressure	291260
1	Bracket, support	326256

<b>Strainer, Gas</b>	<b>PA-290276</b>
1 Strainer, gas	292490

<b>Strainer, Gas</b>	<b>PA-290277</b>
1 Strainer, gas	292489

# Notes

# Appendix A. Abbreviations

The following list contains abbreviations that may appear in this publication.

A, amp	ampere	cm	centimeter	freq.	frequency
ABDC	after bottom dead center	cmm	cubic meters per minute	FS	full scale
AC	alternating current	CMOS	complementary metal oxide substrate (semiconductor)	ft.	foot, feet
A/D	analog to digital			ft. lbs.	foot pounds (torque)
ADC	analog to digital converter	cogen.	cogeneration	ft./min.	feet per minute
adj.	adjust, adjustment	COM	communications (port)	g	gram
ADV	advertising dimensional drawing	conn.	connection	ga.	gauge (meters, wire size)
AHWT	anticipatory high water temperature	cont.	continued	gal.	gallon
		CPVC	chlorinated polyvinyl chloride	gen.	generator
AISI	American Iron and Steel Institute	crit.	critical	genset	generator set
ALOP	anticipatory low oil pressure	CRT	cathode ray tube	GFI	ground fault interrupter
alt.	alternator	CSA	Canadian Standards Association	gnd.	ground
Al	aluminum	CT	current transformer	gov.	governor
ANSI	American National Standards Institute (formerly American Standards Association, ASA)	Cu	copper	gph	gallons per hour
		cu. in.	cubic inch	gpm	gallons per minute
AO	anticipatory only	cw.	clockwise	gr.	grade, gross
API	American Petroleum Institute	CWC	city water-cooled	gr. wt.	gross weight
approx.	approximate, approximately	cyl.	cylinder	H x W x D	height by width by depth
AR	as required, as requested	D/A	digital to analog	HC	hex cap
AS	as supplied, as stated, as suggested	DAC	digital to analog converter	HCHT	high cylinder head temperature
		dB	decibel	HD	heavy duty
ASE	American Society of Engineers	dba	decibel (A weighted)	HET	high exhaust temperature
ASME	American Society of Mechanical Engineers	DC	direct current	hex	hexagon
		DCR	direct current resistance	Hg	mercury (element)
assy.	assembly	deg., °	degree	HH	hex head
ASTM	American Society for Testing Materials	dept.	department	HHC	hex head cap
		dia.	diameter	HP	horsepower
ATDC	after top dead center	DI/EO	dual inlet/end outlet	hr.	hour
ATS	automatic transfer switch	DIN	Deutsches Institut fur Normung e. V. (also Deutsche Industrie Normenausschuss)	HS	heat shrink
auto.	automatic			hsg.	housing
aux.	auxiliary	DIP	dual inline package	HVAC	heating, ventilation, and air conditioning
A/V	audio/visual	DPDT	double-pole, double-throw	HWT	high water temperature
avg.	average	DPST	double-pole, single-throw	Hz	hertz (cycles per second)
AVR	automatic voltage regulator	DS	disconnect switch	IC	integrated circuit
AWG	American Wire Gauge	DVR	digital voltage regulator	ID	inside diameter, identification
AWM	appliance wiring material	E, emer.	emergency (power source)	IEC	International Electrotechnical Commission
bat.	battery	EDI	electronic data interchange	IEEE	Institute of Electrical and Electronics Engineers
BBDC	before bottom dead center	EFR	emergency frequency relay	IMS	improved motor starting
BC	battery charger, battery charging	e.g.	for example ( <i>exempli gratia</i> )	in.	inch
BCA	battery charging alternator	EG	electronic governor	in. H <sub>2</sub> O	inches of water
BCI	Battery Council International	EGSA	Electrical Generating Systems Association	in. Hg	inches of mercury
BDC	before dead center	EIA	Electronic Industries Association	in. lbs.	inch pounds
BHP	brake horsepower	EI/EO	end inlet/end outlet	Inc.	incorporated
blk.	black (paint color), block (engine)	EMI	electromagnetic interference	ind.	industrial
blk. htr.	block heater	emiss.	emission	int.	internal
BMEP	brake mean effective pressure	eng.	engine	int./ext.	internal/external
bps	bits per second	EPA	Environmental Protection Agency	I/O	input/output
br.	brass	EPS	emergency power system	IP	iron pipe
BTDC	before top dead center	ER	emergency relay	ISO	International Organization for Standardization
Btu	British thermal unit	ES	engineering special, engineered special	J	joule
Btu/min.	British thermal units per minute	ESD	electrostatic discharge	JIS	Japanese Industry Standard
C	Celsius, centigrade	est.	estimated	k	kilo (1000)
cal.	calorie	E-Stop	emergency stop	K	kelvin
CARB	California Air Resources Board	etc.	et cetera (and so forth)	kA	kiloampere
CB	circuit breaker	exh.	exhaust	KB	kilobyte (2 <sup>10</sup> bytes)
cc	cubic centimeter	ext.	external	kg	kilogram
CCA	cold cranking amps	F	Fahrenheit, female	kg/cm <sup>2</sup>	kilograms per square centimeter
ccw.	counterclockwise	fglass.	fiberglass	kgm	kilogram-meter
CEC	Canadian Electrical Code	FHM	flat head machine (screw)	kg/m <sup>3</sup>	kilograms per cubic meter
cfh	cubic feet per hour	fl. oz.	fluid ounce	kHz	kilohertz
cfm	cubic feet per minute	flex.	flexible		
CG	center of gravity				
CID	cubic inch displacement				
CL	centerline				

kJ	kilojoule	N, norm.	normal (power source)	rnd.	round
km	kilometer	NA	not available, not applicable	ROM	read only memory
kOhm, kΩ	kilo-ohm	nat. gas	natural gas	rot.	rotate, rotating
kPa	kilopascal	NBS	National Bureau of Standards	rpm	revolutions per minute
kph	kilometers per hour	NC	normally closed	RS	right side
kV	kilovolt	NEC	National Electrical Code	RTV	room temperature vulcanization
kVA	kilovolt ampere	NEMA	National Electrical Manufacturers Association	SAE	Society of Automotive Engineers
kVAR	kilovolt ampere reactive	NFPA	National Fire Protection Association	scfm	standard cubic feet per minute
kW	kilowatt	Nm	newton meter	SCR	silicon controlled rectifier
kWh	kilowatt-hour	NO	normally open	s, sec.	second
kWm	kilowatt mechanical	no., nos.	number, numbers	SI	<i>Système international d'unités</i> , International System of Units
L	liter	NPS	National Pipe, Straight	SI/EO	side in/end out
LAN	local area network	NPSC	National Pipe, Straight-coupling	sil.	silencer
L x W x H	length by width by height	NPT	National Standard taper pipe thread per general use	SN	serial number
lb.	pound	NPTF	National Pipe, Taper-Fine	SPDT	single-pole, double-throw
lbm/ft <sup>3</sup>	pounds mass per cubic feet	NR	not required, normal relay	SPST	single-pole, single-throw
LCB	line circuit breaker	ns	nanosecond	spec, specs	specification(s)
LCD	liquid crystal display	O/C	overcrank	sq.	square
ld. shd.	load shed	OD	outside diameter	sq. cm	square centimeter
LED	light emitting diode	OEM	original equipment manufacturer	sq. in.	square inch
Lph	liters per hour	O/F	overfrequency	SS	stainless steel
Lpm	liters per minute	opt.	option, optional	std.	standard
LOP	low oil pressure	O/S	oversize, overspeed	stl.	steel
LP	liquefied petroleum	OSHA	Occupational Safety and Health Administration	tach.	tachometer
LPG	liquefied petroleum gas	O/V	overvoltage	TD	time delay
LS	left side	oz.	ounce	TDC	top dead center
L <sub>wa</sub>	sound power level, A weighted	p., pp.	page, pages	TDEC	time delay engine cooldown
LWL	low water level	PA	packed accessory	TDEN	time delay emergency to normal
LWT	low water temperature	PC	personal computer	TDES	time delay engine start
m	meter, milli (1/1000)	PCB	printed circuit board	TDNE	time delay normal to emergency
M	mega (10 <sup>6</sup> when used with SI units), male	pF	picofarad	TDOE	time delay off to emergency
m <sup>3</sup>	cubic meter	PF	power factor	TDON	time delay off to normal
m <sup>3</sup> /min.	cubic meters per minute	ph.	phase	temp.	temperature
mA	milliampere	PHC	Phillips head crimplite (screw)	term.	terminal
man.	manual	PHH	Phillips hex head (screw)	TIF	telephone influence factor
max.	maximum	PHM	pan head machine (screw)	TIR	total indicator reading
MB	megabyte (2 <sup>20</sup> bytes)	PLC	programmable logic control	tol.	tolerance
MCM	one thousand circular mils	PMG	permanent magnet generator	turbo.	turbocharger
meggar	megohmmeter	pot	potentiometer, potential	typ.	typical (same in multiple locations)
MHz	megahertz	ppm	parts per million	U/F	underfrequency
mi.	mile	PROM	programmable read only memory	UHF	ultrahigh frequency
mil	one one-thousandth of an inch	psi	pounds per square inch	UL	Underwriter's Laboratories, Inc.
min.	minimum, minute	pt.	pint	UNC	unified coarse thread (was NC)
misc.	miscellaneous	PTC	positive temperature coefficient	UNF	unified fine thread (was NF)
MJ	megajoule	PTO	power takeoff	univ.	universal
mJ	millijoule	PVC	polyvinyl chloride	U/S	undersize, underspeed
mm	millimeter	qt.	quart	UV	ultraviolet
mOhm, mΩ	milliohm	qty.	quantity	U/V	undervoltage
MOhm, MΩ	megohm	R	replacement (emergency) power source	V	volt
MOV	metal oxide varistor	rad.	radiator, radius	VAC	volts alternating current
MPa	megapascal	RAM	random access memory	VAR	voltampere reactive
mpg	miles per gallon	RDO	relay driver output	VDC	volts direct current
mph	miles per hour	ref.	reference	VFD	vacuum fluorescent display
MS	military standard	rem.	remote	VGA	video graphics adapter
m/sec.	meters per second	RFI	radio frequency interference	VHF	very high frequency
MTBF	mean time between failure	RH	round head	W	watt
MTBO	mean time between overhauls	RHM	round head machine (screw)	WCR	withstand and closing rating
mtg.	mounting	rly.	relay	w/	with
MW	megawatt	rms	root mean square	w/o	without
mW	milliwatt			wt.	weight
μF	microfarad			xfrm	transformer

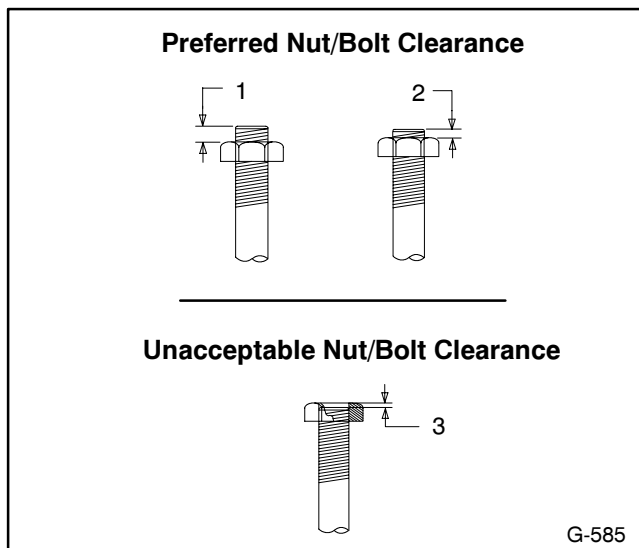
# Appendix B. Common Hardware Application Guidelines

Use the information below and on the following pages to identify proper fastening techniques when no specific reference for reassembly is made.

**Bolt/Screw Length:** When bolt/screw length is not given, use Figure 1 as a guide. As a general rule, a minimum length of one thread beyond the nut and a maximum length of 1/2 the bolt/screw diameter beyond the nut is the preferred method.

**Washers and Nuts:** Use split lock washers as a bolt locking device where specified. Use SAE flat washers with whiz nuts, spirallock nuts, or standard nuts and preloading (torque) of the bolt in all other applications.

See General Torque Specifications and other torque specifications in the service literature.



1. 1/2 of Bolt Diameter
2. Min. 1 Full Thread Beyond Top of Nut
3. Below Top of Nut

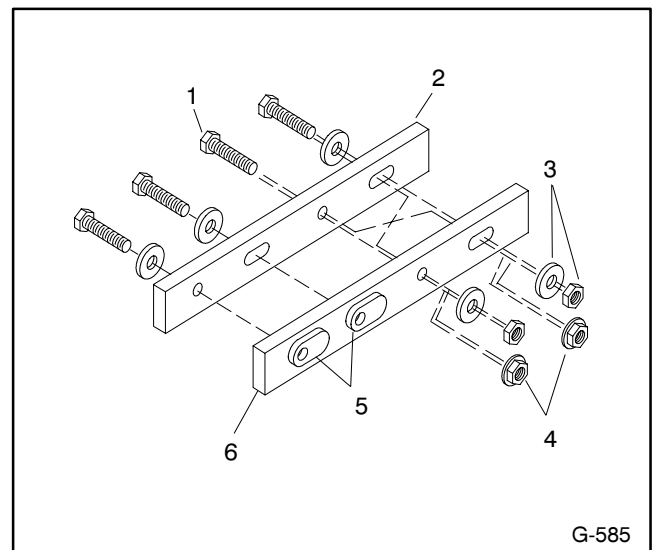
**Figure 1. Acceptable Bolt Lengths**

## Steps for common hardware application:

1. Determine entry hole type: round or slotted.
2. Determine exit hole type: fixed female thread (weld nut), round, or slotted.

For round and slotted exit holes, determine if hardware is greater than 1/2 inch in diameter, or 1/2 inch in diameter or less. Hardware that is *greater than 1/2 inch* in diameter takes a standard nut and SAE washer. Hardware *1/2 inch or less* in diameter can take a properly torqued whiz nut or spirallock nut. See the diagram below.

3. Follow these SAE washer rules after determining exit hole type:
  - a. Always use a washer between hardware and a slot.
  - b. Always use a washer under a nut (see 2 above for exception).
  - c. Use a washer under a bolt when the female thread is fixed (weld nut).
4. Refer to the diagram below, which depicts the preceding hardware configuration possibilities.



1. Cap screw
2. Entry hole types
3. Standard nut and SAE washer
4. Whiz nut or spirallock: up to 1/2" dia. hardware
5. Weld nuts: above 1/2" dia. hardware
6. Exit hole types

**Figure 2. Acceptable Hardware Combinations**

# Appendix C. General Torque Specifications

Use the following torque specifications when service literature instructions give no specific torque values. The charts list values for new plated, zinc phosphate, or oiled

threads. Increase values by 15% for nonplated threads. All torque values are +0%/-10%.















## American Standard Fasteners Torque Specifications












Size	Torque Measurement	Assembled into Cast Iron or Steel			Assembled into Aluminum Grade 2 or 5
		Grade 2	Grade 5	Grade 8	
8-32	in. lbs. (Nm)	16 (1.8)	20 (2.3)	—	16 (1.8)
10-24	in. lbs. (Nm)	26 (2.9)	32 (3.6)	—	26 (2.9)
10-32	in. lbs. (Nm)	26 (2.9)	32 (3.6)	—	26 (2.9)
1/4-20	in. lbs. (Nm)	60 (6.8)	96 (10.8)	132 (14.9)	60 (6.8)
1/4-28	in. lbs. (Nm)	72 (8.1)	108 (12.2)	144 (16.3)	72 (8.1)
5/16-18	in. lbs. (Nm)	120 (13.6)	192 (21.7)	264 (29.8)	120 (13.6)
5/16-24	in. lbs. (Nm)	132 (14.9)	204 (23.1)	288 (32.5)	132 (14.9)
3/8-16	ft. lbs. (Nm)	18 (24)	28 (38)	39 (53)	18 (24)
3/8-24	ft. lbs. (Nm)	20 (27)	31 (42)	44 (60)	20 (27)
7/16-14	ft. lbs. (Nm)	29 (39)	44 (60)	63 (85)	—
7/16-20	ft. lbs. (Nm)	32 (43)	50 (68)	70 (95)	—
1/2-13	ft. lbs. (Nm)	44 (60)	68 (92)	96 (130)	—
1/2-20	ft. lbs. (Nm)	49 (66)	76 (103)	108 (146)	—
9/16-12	ft. lbs. (Nm)	60 (81)	98 (133)	138 (187)	—
9/16-18	ft. lbs. (Nm)	67 (91)	109 (148)	154 (209)	—
5/8-11	ft. lbs. (Nm)	83 (113)	135 (183)	191 (259)	—
5/8-18	ft. lbs. (Nm)	94 (128)	153 (208)	216 (293)	—
3/4-10	ft. lbs. (Nm)	147 (199)	240 (325)	338 (458)	—
3/4-16	ft. lbs. (Nm)	164 (222)	268 (363)	378 (513)	—
1-8	ft. lbs. (Nm)	191 (259)	532 (721)	818 (1109)	—
1-12	ft. lbs. (Nm)	209 (283)	582 (789)	895 (1214)	—






## Metric Fasteners Torque Specifications, Measured in ft. lbs. (Nm)

Size (mm)	Assembled into Cast Iron or Steel			Assembled into Aluminum Grade 5.8 or 8.8
	Grade 5.8	Grade 8.8	Grade 10.9	
M6 x 1.00	4 (5.6)	7 (9.9)	10 (14)	4 (5.6)
M8 x 1.25	10 (13.6)	18 (25)	26 (35)	10 (13.6)
M8 x 1.00	16 (21)	18 (25)	26 (35)	16 (21)
M10 x 1.50	20 (27)	35 (49)	50 (68)	20 (27)
M10 x 1.25	29 (39)	35 (49)	50 (68)	29 (39)
M12 x 1.75	35 (47)	61 (83)	86 (117)	—
M12 x 1.50	48 (65)	65 (88)	92 (125)	—
M14 x 2.00	55 (74)	97 (132)	136 (185)	—
M14 x 1.50	74 (100)	103 (140)	142 (192)	—
M16 x 2.00	85 (115)	148 (200)	210 (285)	—
M16 x 1.50	104 (141)	155 (210)	218 (295)	—
M18 x 2.50	114 (155)	203 (275)	288 (390)	—
M18 x 1.50	145 (196)	225 (305)	315 (425)	—

# Appendix D. Common Hardware Identification

Screw/Bolts/Studs	
Head Styles	
Hex Head or Machine Head	
Hex Head or Machine Head with Washer	
Flat Head (FHM)	
Round Head (RHM)	
Pan Head	
Hex Socket Head Cap or Allen™ Head Cap	
Hex Socket Head or Allen™ Head Shoulder Bolt	
Sheet Metal Screw	
Stud	
Drive Styles	
Hex	
Hex and Slotted	
Phillips®	
Slotted	
Hex Socket	

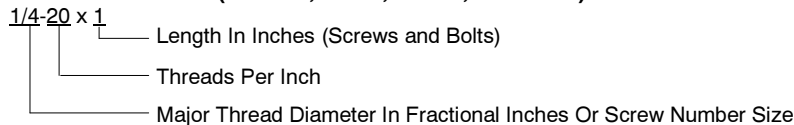
Nuts	
Nut Styles	
Hex Head	
Lock or Elastic	
Square	
Cap or Acorn	
Wing	
Washers	
Washer Styles	
Plain	
Split Lock or Spring	
Spring or Wave	
External Tooth Lock	
Internal Tooth Lock	
Internal-External Tooth Lock	

Hardness Grades	
American Standard	
Grade 2	
Grade 5	
Grade 8	
Grade 8/9 (Hex Socket Head)	
Metric	
Number stamped on hardware; 5.8 shown	

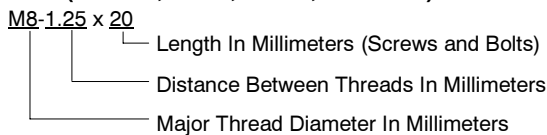
Allen™ head screw is a trademark of Holo-Krome Co.  
Phillips® screw is a registered trademark of Phillips Screw Company.

## Sample Dimensions

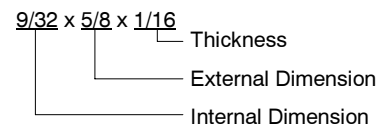
### American Standard (Screws, Bolts, Studs, and Nuts)



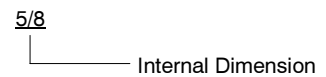
### Metric (Screws, Bolts, Studs, and Nuts)



### Plain Washers



### Lock Washers



# Appendix E. Common Hardware List

The Common Hardware List lists part numbers and dimensions for common hardware items.

## American Standard

### Part No. Dimensions Hex Head Bolts (Grade 5)

X-465-17	1/4-20 x .38
X-465-6	1/4-20 x .50
X-465-2	1/4-20 x .62
X-465-16	1/4-20 x .75
X-465-18	1/4-20 x .88
X-465-7	1/4-20 x 1.00
X-465-8	1/4-20 x 1.25
X-465-9	1/4-20 x 1.50
X-465-10	1/4-20 x 1.75
X-465-11	1/4-20 x 2.00
X-465-12	1/4-20 x 2.25
X-465-14	1/4-20 x 2.75
X-465-21	1/4-20 x 5.00
X-465-25	1/4-28 x .38
X-465-20	1/4-28 x 1.00
X-125-33	5/16-18 x .50
X-125-23	5/16-18 x .62
X-125-3	5/16-18 x .75
X-125-31	5/16-18 x .88
X-125-5	5/16-18 x 1.00
X-125-24	5/16-18 x 1.25
X-125-34	5/16-18 x 1.50
X-125-25	5/16-18 x 1.75
X-125-26	5/16-18 x 2.00
230578	5/16-18 x 2.25
X-125-29	5/16-18 x 2.50
X-125-27	5/16-18 x 2.75
X-125-28	5/16-18 x 3.00
X-125-22	5/16-18 x 4.50
X-125-32	5/16-18 x 5.00
X-125-35	5/16-18 x 5.50
X-125-36	5/16-18 x 6.00
X-125-40	5/16-18 x 6.50
X-125-43	5/16-24 x 1.75
X-125-44	5/16-24 x 2.50
X-125-30	5/16-24 x .75
X-125-39	5/16-24 x 2.00
X-125-38	5/16-24 x 2.75
X-6238-2	3/8-16 x .62
X-6238-10	3/8-16 x .75
X-6238-3	3/8-16 x .88
X-6238-11	3/8-16 x 1.00
X-6238-4	3/8-16 x 1.25
X-6238-5	3/8-16 x 1.50
X-6238-1	3/8-16 x 1.75
X-6238-6	3/8-16 x 2.00
X-6238-17	3/8-16 x 2.25
X-6238-7	3/8-16 x 2.50
X-6238-8	3/8-16 x 2.75
X-6238-9	3/8-16 x 3.00
X-6238-19	3/8-16 x 3.25
X-6238-12	3/8-16 x 3.50
X-6238-20	3/8-16 x 3.75
X-6238-13	3/8-16 x 4.50
X-6238-18	3/8-16 x 5.50
X-6238-25	3/8-16 x 6.50

### Part No. Dimensions Hex Head Bolts, cont.

X-6238-14	3/8-24 x .75
X-6238-16	3/8-24 x 1.25
X-6238-21	3/8-24 x 4.00
X-6238-22	3/8-24 x 4.50
X-6024-5	7/16-14 x .75
X-6024-2	7/16-14 x 1.00
X-6024-8	7/16-14 x 1.25
X-6024-3	7/16-14 x 1.50
X-6024-4	7/16-14 x 2.00
X-6024-11	7/16-14 x 2.75
X-6024-12	7/16-14 x 6.50
X-129-15	1/2-13 x .75
X-129-17	1/2-13 x 1.00
X-129-18	1/2-13 x 1.25
X-129-19	1/2-13 x 1.50
X-129-20	1/2-13 x 1.75
X-129-21	1/2-13 x 2.00
X-129-22	1/2-13 x 2.25
X-129-23	1/2-13 x 2.50
X-129-24	1/2-13 x 2.75
X-129-25	1/2-13 x 3.00
X-129-27	1/2-13 x 3.50
X-129-29	1/2-13 x 4.00
X-129-30	1/2-13 x 4.50
X-463-9	1/2-13 x 5.50
X-129-44	1/2-13 x 6.00
X-129-51	1/2-20 x .75
X-129-45	1/2-20 x 1.25
X-129-52	1/2-20 x 1.50
X-6021-3	5/8-11 x 1.00
X-6021-4	5/8-11 x 1.25
X-6021-2	5/8-11 x 1.50
X-6021-1	5/8-11 x 1.75
273049	5/8-11 x 2.00
X-6021-5	5/8-11 x 2.25
X-6021-6	5/8-11 x 2.50
X-6021-7	5/8-11 x 2.75
X-6021-12	5/8-11 x 3.75
X-6021-11	5/8-11 x 4.50
X-6021-10	5/8-11 x 6.00
X-6021-9	5/8-18 x 2.50
X-6239-1	3/4-10 x 1.00
X-6239-8	3/4-10 x 1.25
X-6239-2	3/4-10 x 1.50
X-6239-3	3/4-10 x 2.00
X-6239-4	3/4-10 x 2.50
X-6239-5	3/4-10 x 3.00
X-6239-6	3/4-10 x 3.50
X-792-1	1-8 x 2.25
X-792-5	1-8 x 3.00
X-792-8	1-8 x 5.00

### Part No. Dimensions Type

#### Hex Nuts

X-6009-1	1-8	Standard
X-6210-3	6-32	Whiz
X-6210-4	8-32	Whiz
X-6210-5	10-24	Whiz
X-6210-1	10-32	Whiz
X-6210-2	1/4-20	Spiralock
X-6210-6	1/4-28	Spiralock
X-6210-7	5/16-18	Spiralock
X-6210-8	5/16-24	Spiralock
X-6210-9	3/8-16	Spiralock
X-6210-10	3/8-24	Spiralock
X-6210-11	7/16-14	Spiralock
X-6210-12	1/2-13	Spiralock
X-6210-15	7/16-20	Spiralock
X-6210-14		Spiralock
X-85-3	5/8-11	Standard
X-88-12	3/4-10	Standard
X-89-2	1/2-20	Standard

#### Washers

Part No.	ID	OD	Thick.	Bolt/ Screw
X-25-46	.125	.250	.022	#4
X-25-9	.156	.375	.049	#6
X-25-48	.188	.438	.049	#8
X-25-36	.219	.500	.049	#10
X-25-40	.281	.625	.065	1/4
X-25-85	.344	.687	.065	5/16
X-25-37	.406	.812	.065	3/8
X-25-34	.469	.922	.065	7/16
X-25-26	.531	1.062	.095	1/2
X-25-15	.656	1.312	.095	5/8
X-25-29	.812	1.469	.134	3/4
X-25-127	1.062	2.000	.134	1

**Metric**

Hex head bolts are hardness grade 8.8 unless noted.

Part No.	Dimensions	Part No.	Dimensions	Part No.	Dimensions	Type		
<b>Hex Head Bolts (partial thread)</b>		<b>Hex Head Bolts (full thread)</b>		<b>Hex Nuts</b>				
M931-06040-60	M6-1.00 x 40	M933-04006-60	M4-0.70 x 6	M934-03-50	M3-0.50	Standard		
M931-06055-60	M6-1.00 x 55	M933-05050-60	M5-0.80 x 50	M934-04-50	M4-0.70	Standard		
M931-06060-60	M6-1.00 x 60	M933-06010-60	M6-1.00 x 10	M934-05-50	M5-0.80	Standard		
M931-06070-60	M6-1.00 x 70	M933-06014-60	M6-1.00 x 14	M982-05-80	M5-0.80	Elastic Stop		
M931-06075-60	M6-1.00 x 75	M933-06016-60	M6-1.00 x 16	M6923-06-80	M6-1.00	Spiralock		
M931-06090-60	M6-1.00 x 90	M933-06020-60	M6-1.00 x 20	M934-06-64	M6-1.00	Std. (green)		
M931-08035-60	M8-1.25 x 35	M933-06025-60	M6-1.00 x 25	M982-06-80	M6-1.00	Elastic Stop		
M931-08040-60	M8-1.25 x 40	M933-06040-60	M6-1.00 x 40	M6923-08-80	M8-1.25	Spiralock		
M931-08040-82	M8-1.25 x 40*	M933-06050-60	M6-1.00 x 50	M934-08-60	M8-1.25	Standard		
M931-08045-60	M8-1.25 x 45	M933-08016-60	M8-1.25 x 16	M982-08-80	M8-1.25	Elastic Stop		
M931-08050-60	M8-1.25 x 50	M933-08020-60	M8-1.25 x 20	M6923-10-80	M10-1.50	Spiralock		
M931-08055-82	M8-1.25 x 55*	M933-08025-60	M8-1.25 x 25	M982-10-80	M10-1.50	Elastic Stop		
M931-08060-60	M8-1.25 x 60	M933-08030-60	M8-1.25 x 30	M6923-12-80	M12-1.75	Spiralock		
M931-08070-60	M8-1.25 x 70	M933-10012-60	M10-1.50 x 12	M982-12-80	M12-1.75	Elastic Stop		
M931-08070-82	M8-1.25 x 70*	M961-10020-60	M10-1.25 x 20	M982-14-80	M14-2.00	Elastic Stop		
M931-08075-60	M8-1.25 x 75	M933-10020-60	M10-1.50 x 20	M6923-16-80	M16-2.00	Spiralock		
M931-08080-60	M8-1.25 x 80	M933-10025-60	M10-1.50 x 25	M982-16-80	M16-2.00	Elastic Stop		
M931-08090-60	M8-1.25 x 90	M933-10030-60	M10-1.50 x 30	M982-18-80	M18-2.50	Elastic Stop		
M931-08095-60	M8-1.25 x 95	M933-10030-82	M10-1.50 x 30*	M934-20-80	M20-2.50	Standard		
M931-08100-60	M8-1.25 x 100	M961-10035-60	M10-1.25 x 35	M982-20-80	M20-2.50	Elastic Stop		
M931-10040-60	M10-1.50 x 40	M933-10035-60	M10-1.50 x 35	M934-22-80	M22-2.50	Standard		
M931-10045-60	M10-1.50 x 45	M933-12016-60	M12-1.75 x 16	M982-22-80	M22-2.50	Elastic Stop		
M931-10050-60	M10-1.50 x 50	M933-12020-60	M12-1.75 x 20	M934-24-80	M24-3.00	Standard		
M931-10055-60	M10-1.50 x 55	M933-12025-60	M12-1.75 x 25	M982-24-80	M24-3.00	Elastic Stop		
M931-10060-60	M10-1.50 x 60	M933-12025-82	M12-1.75 x 25*	<b>Washers</b>				
M931-10065-60	M10-1.50 x 65	M933-12030-60	M12-1.75 x 30	<b>Part No.</b>	<b>ID</b>	<b>OD</b>	<b>Bolt/ Thick. Screw</b>	
M931-10070-60	M10-1.50 x 70	M933-12040-60	M12-1.75 x 40	M125A-03-80	3.2	7.0	0.5 M3	
M931-10080-60	M10-1.50 x 80	M933-12040-82	M12-1.75 x 40*	M125A-04-80	4.3	9.0	0.8 M4	
M931-10090-60	M10-1.50 x 90	M961-14025-60	M14-1.50 x 25	M125A-05-80	5.3	10.0	1.0 M5	
M931-10100-60	M10-1.50 x 100	M933-14025-60	M14-2.00 x 25	M125A-06-80	6.4	12.0	1.6 M6	
M931-12045-60	M12-1.75 x 45	M961-16025-60	M16-1.50 x 25	M125A-08-80	8.4	16.0	1.6 M8	
M931-12050-60	M12-1.75 x 50	M933-16025-60	M16-2.00 x 25	M125A-10-80	10.5	20.0	2.0 M10	
M931-12055-60	M12-1.75 x 55	M933-16030-82	M16-2.00 x 30*	M125A-12-80	13.0	24.0	2.5 M12	
M931-12060-60	M12-1.75 x 60	M933-16035-60	M16-2.00 x 35	M125A-14-80	15.0	28.0	2.5 M14	
M931-12065-60	M12-1.75 x 65	M933-16040-60	M16-2.00 x 40	M125A-16-80	17.0	30.0	3.0 M16	
M931-12080-60	M12-1.75 x 80	M933-16050-60	M16-2.00 x 50	M125A-18-80	19.0	34.0	3.0 M18	
M931-12090-60	M12-1.75 x 90	M933-16050-82	M16-2.00 x 50*	M125A-20-80	21.0	37.0	3.0 M20	
M931-12100-60	M12-1.75 x 100	M933-16060-60	M16-2.00 x 60	M125A-24-80	25.0	44.0	4.0 M24	
M931-12110-60	M12-1.75 x 110	M933-18050-60	M18-2.50 x 50	<b>Pan Head Machine Screws</b>				
M931-16090-60	M16-2.00 x 90	M933-18060-60	M18-2.50 x 60	M7985A-03010-20	M3-0.50 x 10			
M931-20065-60	M20-2.50 x 65					M7985A-03012-20	M3-0.50 x 12	
M931-20120-60	M20-2.50 x 120					M7985A-04020-20	M4-0.70 x 20	
M931-20160-60	M20-2.50 x 160					M7985A-05010-20	M5-0.80 x 10	
M931-22090-60	M22-2.50 x 90					M7985A-05012-20	M5-0.80 x 12	
M931-22120-60	M22-2.50 x 120					<b>Flat Head Machine Screws</b>		
M931-22160-60	M22-2.50 x 160					M965A-05016-20	M5-0.80 x 16	
M931-24090-60	M24-3.00 x 90							
M931-24120-60	M24-3.00 x 120							
M931-24160-60	M24-3.00 x 160							

\* This metric hex bolt's hardness is grade 10.9.

**TP-5614 3/00c**

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