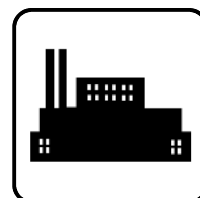


Service Parts

Industrial Generator Sets



Models:

17RY

18RY/RZ

20RZ

30RZ

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

See TP-6009 Parts Catalog Industrial Controllers
for controller parts



KOHLER®

POWER SYSTEMS

TP-5543 7/03d

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Introduction

This manual lists service replacement parts for 17/18RY and 18-30RZ 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.

Specification Number 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.

x:in:004:002

Numbering System Significance

This manual uses the following numbering systems:

Specification Number. The product identification number located on the generator set nameplate. Specification 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 a 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.

x:in:004:003:a

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.

x:in:004:004a

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.

x:in: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.

x:in:004:006

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>Starter</i>	<i>Generator and Mounting</i>	<i>Controller and Mounting</i>	<i>Literature</i>
Group No.	101	103	104	105	107	108	109	110	112	201	301	701
Spec No.	Variation Number											

17RY62												
185101	1	2	1	11	3	4	4	2	2	6	5	6
18R/RV/RZ												
185102	6	*	*	26	20	12	11	7	—	32	*	14
185103	6	18	18	26	2	12	11	7	—	32	14	14
185104	6	*	*	26	22	12	12	7	—	33	*	15
185105	6	*	*	26	21	12	12	7	—	34	*	15
185106	6	18	18	26	21	12	12	7	—	34	14	15
185107	8	*	*	28	25	E28	16	E28	—	43	*	17
185108	8	20	22	28	25	E28	16	E28	—	43	16	17
185109	6	*	*	28	22	12	12	7	—	33	*	17
185110	8	*	*	28	25	E28	17	E28	—	44	*	17
185111	8	20	22	28	25	E28	17	E28	—	44	16	17
185501	1	*	*	9	4	5	5	3	3	7	*	7
185502	1	6	5	9	4	5	5	3	3	7	6	7
185503	1	*	*	9	7	5	6	3	3	12	*	8
185504	1	*	*	9	5	5	6	3	3	9	*	8
185505	1	6	5	9	5	5	6	3	3	9	6	8
185506	1	6	11	21	4	5	7	3	3	13	6	7
185507	1	6	11	21	5	5	8	3	3	14	6	8
185508	1	*	*	21	4	5	7	3	3	13	*	7
185509	1	*	*	21	5	5	8	3	3	14	*	8
185510	1	*	*	21	7	5	8	3	3	15	*	8
185511	3	10	11	22	4	8	7	4	4	16	181-7	7
185512	3	10	11	22	8	8	8	4	4	17	181-7	8
185513	3	*	*	22	4	5	7	3	3	16	*	7
185514	3	*	*	22	5	5	8	3	3	17	*	8
185515	3	*	*	22	5	5	8	3	3	18	*	8
GM28727-GA1	8	*	22	32	25	E32	16	E32	—	43	*	8
GM28727-GA2	8	*	22	32	25	E32	17	E32	—	44	*	8

* Configured group. Refer to the generator set nameplate for the module number.
Turn to the Kit List for parts breakdowns.

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

Specification Number Index

Group Title	Air Intake	Fuel System	Cooling System	Engine	Nameplates and Decals	Oil Pressure Switch	Skid and Plant Mounting	Temperature Switch	Starter	Recommended Spare Parts	Generator and Mounting	Controller and Mounting	Literature
Group No.	101	103	104	105	107	108	109	110	112	119	201	301	701
Spec No.	Variation Number												

20RZ													
185030	1	1	1	10	4	1	1	1	1	—	77	‡	—
185031	1	1	1	1	4	2	1	2	1	—	82	3	—
185032	1	1	1	1	4	1	1	1	1	—	82	179-7	—
185033	1	2	1	10	10	1	1	1	1	—	77	‡	—
185034	1	2	1	1	10	2	1	2	1	—	82	3	—
185035	1	2	1	1	10	1	1	1	1	—	82	179-7	—
185036	1	2	1	10	10	1	1	1	1	—	87	‡	—
185037	5	17	12	24	9	9	9	5	—	1	24	181-8	5
185038	5	*	*	24	9	9	9	5	—	3	24	‡	5
185039	1	2	9	10	10	1	1	1	1	—	77	‡	—
185040	1	9	10	16	4	7	1	1	—	—	77	‡	5
185041	1	9	10	16	19	7	1	1	—	—	87	‡	5
185042	1	1	10	16	4	7	1	1	—	—	77	‡	5
185068	5	17	12	24	9	9	9	5	—	1	21	‡	5
185069	5	*	*	24	9	9	9	5	—	3	21	†	5
185070	5	17	12	24	10	9	9	5	—	1	25	‡	5
185071	5	*	*	24	10	9	9	5	—	3	25	†	5
185084	6	18	16	25	9	11	10	6	—	5	24	‡	12
185085	6	*	*	25	9	11	10	6	—	6	24	†	12
185086	6	18	16	25	9	11	10	6	—	5	21	‡	12
185087	6	*	*	25	9	11	10	6	—	6	21	†	12
185088	6	18	16	25	9	11	10	6	—	5	25	‡	12
185089	6	*	*	25	9	11	10	6	—	6	25	†	12
185112	8	20	20	29	23	E29	14	E29	—	5	37	‡	18
185113	†	*	*	29	23	E29	†	E29	—	6	†	‡	18
185114	8	20	20	29	23	E29	14	E29	—	5	38	‡	18
185115	†	*	*	29	23	E29	†	E29	—	6	†	‡	18
185116	8	20	20	29	23	E29	14	E29	—	5	39	‡	18
185117	†	*	*	29	23	E29	†	E29	—	6	†	‡	18
GM28726-GA1	†	*	*	31	GR1	E31	†	E31	—	6	†	‡	18

* Determine the kit number from the generator nameplate and see the Kit List for the parts list.

† Desired air, skid, and generator kit chosen from the price list. Determine the kit number from the generator nameplate and see the Group parts sections for the parts list.

‡ Controller group and controller assembly parts are listed in a separate parts catalog, TP-6009 Parts Catalog Industrial Controllers.

Specification Number Index

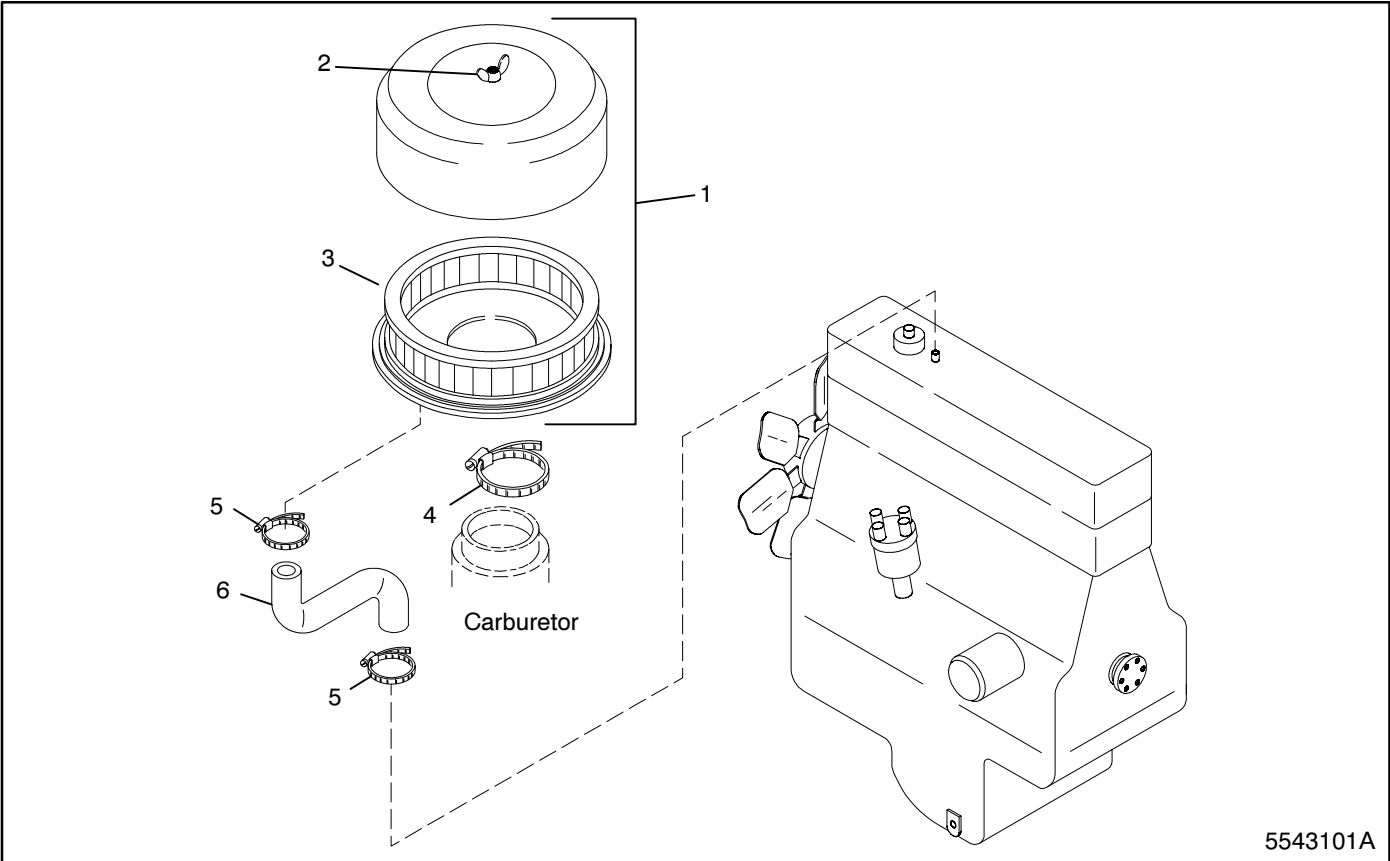
Group Title	Air Intake	Fuel System	Cooling System	Engine	Nameplates and Decals	Oil Pressure Switch	Skid and Plant Mounting	Temperature Switch	Starter	Recommended Spare Parts	Generator and Mounting	Controller and Mounting	Literature
Group No.	101	103	104	105	107	108	109	110	112	119	201	301	701
Spec No.	Variation Number												

30RZ													
185050	2	4	4	13	2	3	3	1	—	—	3	⌘	5
185051	2	4	4	6	2	2	3	2	1	—	4	3	—
185052	2	4	4	6	2	3	3	1	1	—	4	4	—
185053	2	4	4	12	2	3	3	1	—	—	5	⌘	5
185054	2	3	4	13	2	3	3	1	—	—	3	⌘	5
185055	2	3	4	7	2	2	3	2	1	—	4	3	—
185056	1	3	4	7	2	3	3	1	1	—	4	4	—
185057	2	3	4	7	2	3	3	1	—	—	5	⌘	5
185058	4	15	13	23	11	10	9	5	—	2	21	⌘	5
185059	4	*	*	23	11	10	9	5	—	4	21	⌘	5
185060	2	8	8	15	2	6	3	1	—	—	3	⌘	5
185061	2	8	8	15	2	6	3	1	—	—	5	⌘	5
185062	2	7	8	14	2	6	3	1	—	—	3	⌘	5
185063	2	7	8	14	6	6	3	1	—	—	5	⌘	5
185072	4	15	13	23	11	10	9	5	—	2	22	⌘	5
185073	4	*	*	23	11	10	9	5	—	4	22	⌘	5
185074	4	15	13	23	12	10	9	5	—	2	23	⌘	5
185075	4	*	*	23	12	10	9	5	—	4	23	⌘	5
185076	4	16	13	23	11	10	9	5	—	2	21	⌘	5
185078	4	16	13	23	11	10	9	5	—	2	22	⌘	5
185080	4	16	13	23	12	10	9	5	—	2	23	⌘	5
185090	179-3	179-7	179-9	179-9	34	179-3	179-3	179-3	—	179-1	18	⌘	20
185091	179-3	179-7	179-9	179-9	34	179-3	179-2	179-3	—	179-1	8	⌘	20
185092	179-3	179-7	179-9	179-9	35	179-3	179-3	179-3	—	179-1	19	⌘	20
185093	179-3	*	*	179-9	34	179-3	179-3	179-3	—	179-2	18	⌘	20
185094	179-3	*	*	179-9	34	179-3	179-2	179-3	—	179-2	8	⌘	20
185095	179-3	*	*	179-9	34	179-3	179-3	179-3	—	179-2	19	⌘	20

* Determine the kit number from the generator nameplate and see the Kit List for the parts list.

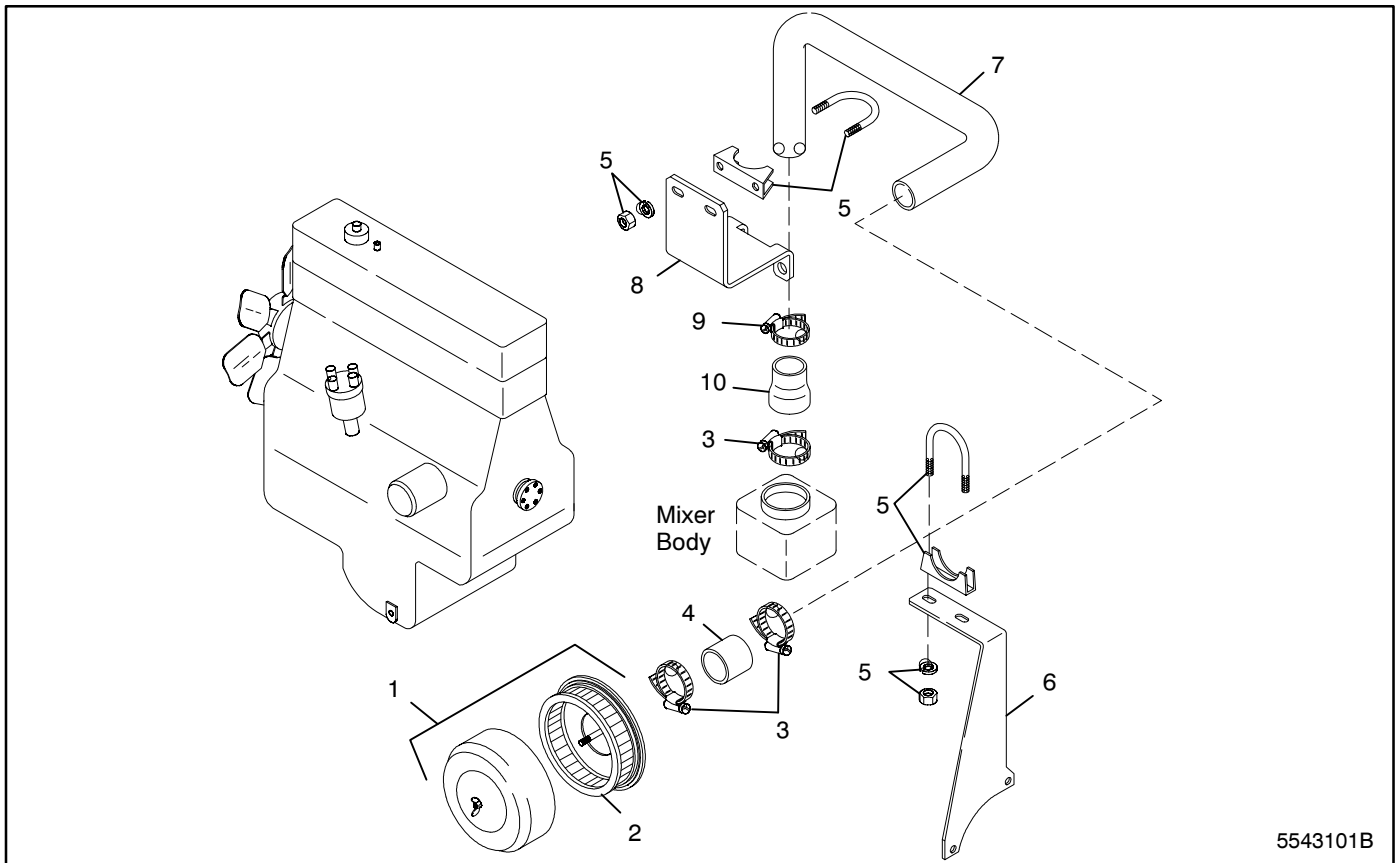
⌘ Controller group and controller assembly parts are listed in a separate parts catalog, TP-6009 Parts Catalog Industrial Controllers.

Group 101: Air Intake



Item	Part Number	Description	Quantity							
			Variation/Module No.							
			1	3	5	6	8	179-3	326878	
1	A-269441	Air Cleaner (includes items 2 and 3)	1	1	1	1	1	1	1	
1	A-326315	Air Cleaner (includes items 2 and 3)								1
2	254457	Nut, wing	1	1	1	1	1			
3	258423	Element, air cleaner	1	1	1	1	1	1	1	
4	X-426-10	Clamp	1							
5	X-426-10	Clamp		2	2	2	2			2
6	256870	Hose, molded	1	1	1					
6	326326	Hose				1				
6	326860	Hose					1			1

Group 101: Air Intake, continued



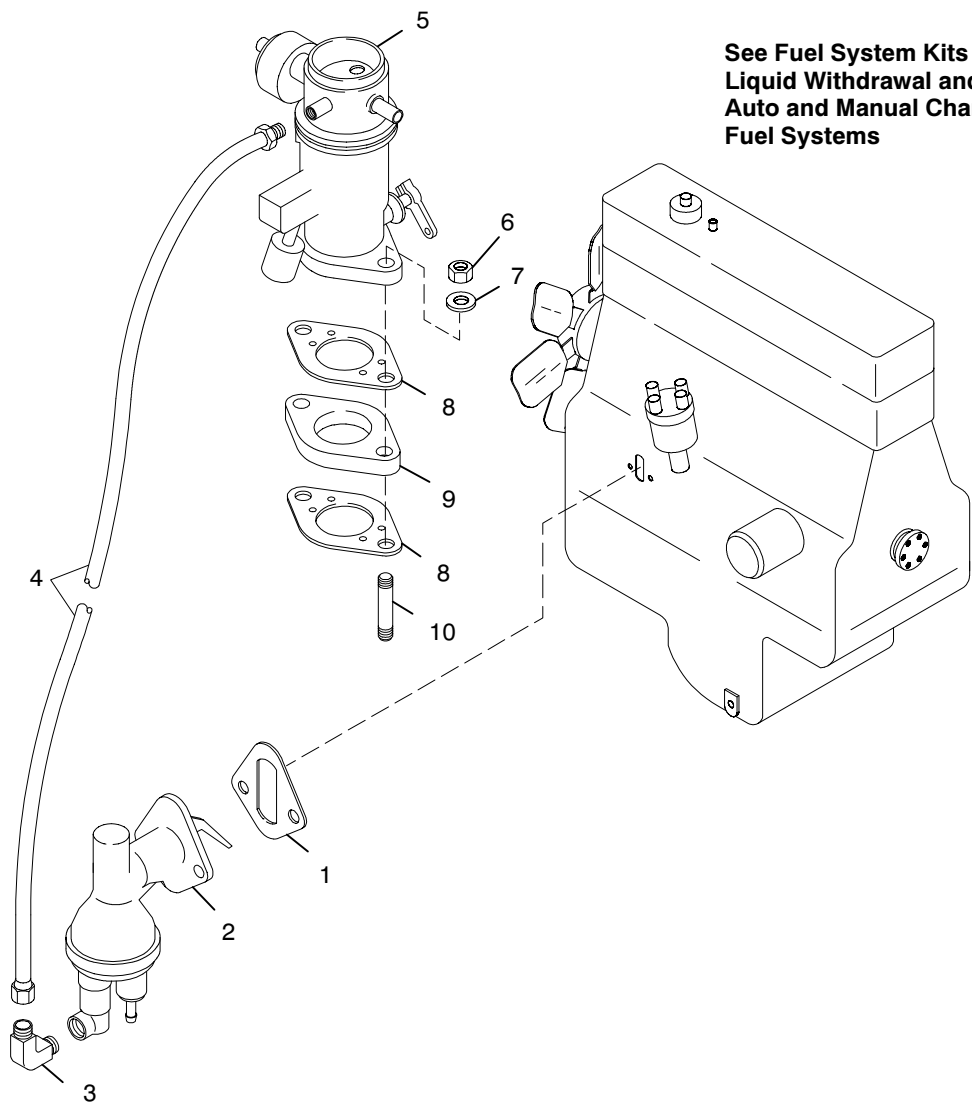
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Item	Part Number	Description	Quantity	
			Variation No.	
1	258883	Air Cleaner (includes item 2)	1	
1	A-273699	Air Cleaner Assembly		1
2	254471	Element, air cleaner	1	
2	253107	Element, air cleaner		1
3	250081	Clamp, hose	3	
3	X-426-1	Clamp, hose, 2 17/32-3 7/8		1
4	X-424-2	Hose	1	
5	X-722-2	Clamp, U	2	
5	286283	Clamp, U		1
6	258293	Bracket, air cleaner	1	
6	326108	Bracket, air cleaner		1
6	X-284-23	Grommet (not shown)		1
6	X-6050-2	Screw, hex head (not shown, fastens bracket to engine)		2
6	X-400-170	Spacer (not shown)		2
7	258860	Tube, air intake (steel)	1	
7	326107	Hose, air intake		1
8	258867	Bracket, intake	1	
9	X-426-6	Clamp, hose	1	
9	X-426-2	Clamp, hose		1
10	258872	Hose, step	1	

Group 103: Fuel System

Gasoline

See Fuel System Kits for parts lists of
Liquid Withdrawal and
Auto and Manual Changeover
Fuel Systems



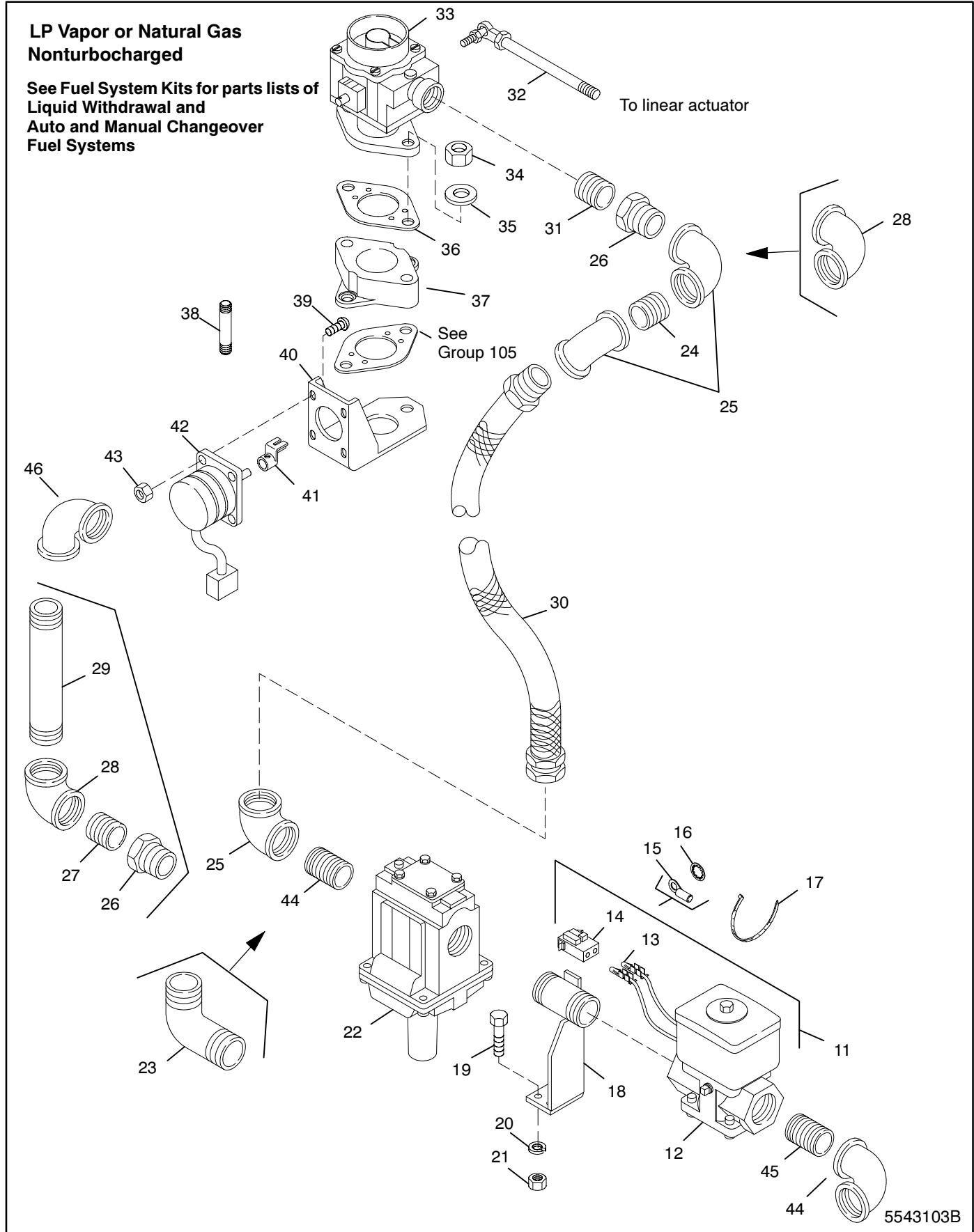
5543103A

Item	Part Number	Description	Quantity
			Var. No. 1
1	246058	Gasket, fuel pump	1
2	255243	Pump, fuel	1
3	X-447-4	Elbow	1
4	254493	Fuel Line, flexible	1
5	255245	Carburetor, gasoline	1
6	X-6053-2	Nut, hex	2
7	X-22-5	Washer, lock	2
8	280007	Gasket, carburetor	2
9	255595	Spacer	1
10	X-6054-6	Stud	2

Group 103: Fuel System, continued

LP Vapor or Natural Gas
Nonturbocharged

See Fuel System Kits for parts lists of
Liquid Withdrawal and
Auto and Manual Changeover
Fuel Systems



5543103B

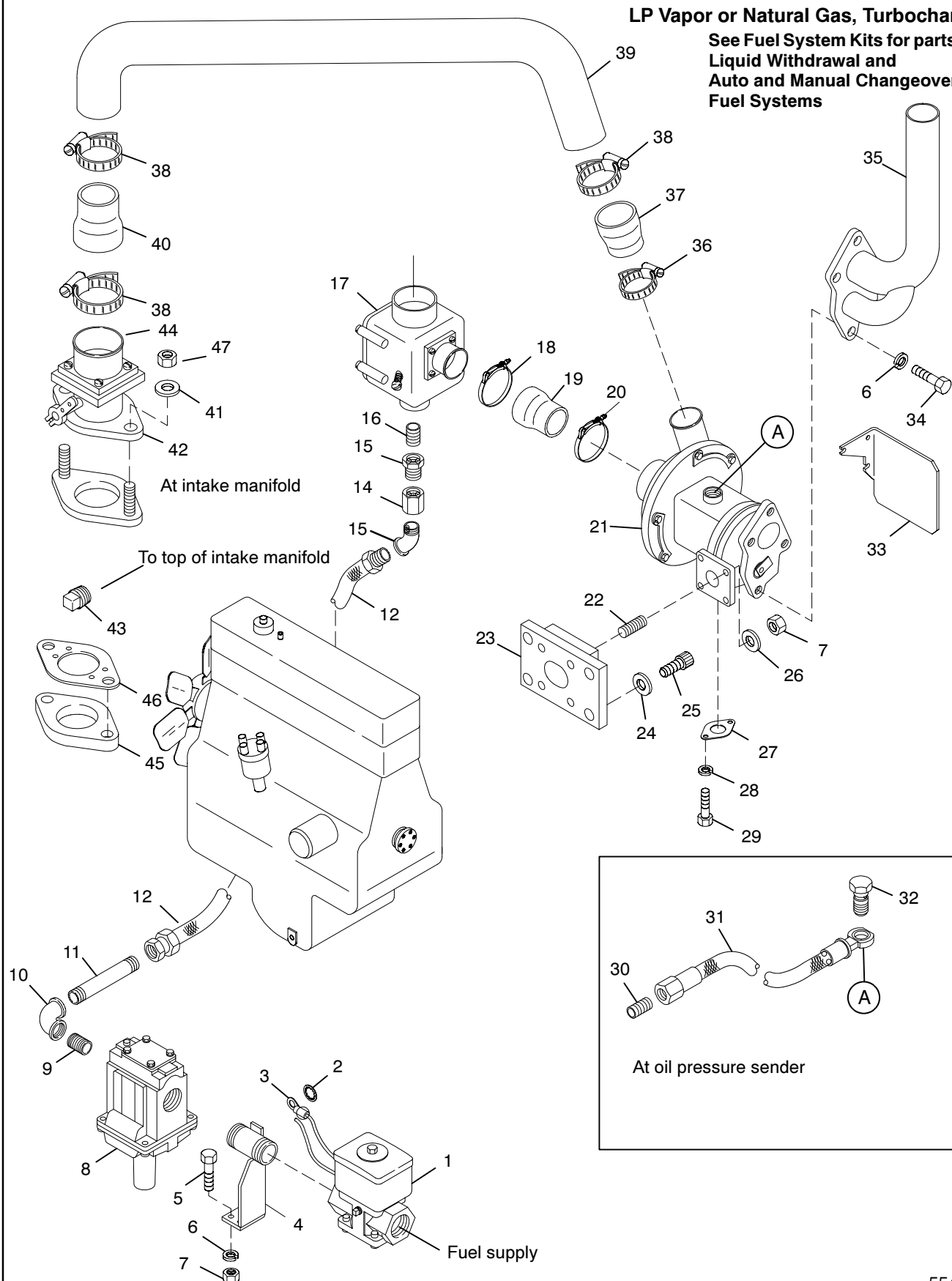
Group 103: Fuel System, continued

Item	Part Number	Description	Quantity								
			Variation No.								
			2	6	9	10	17	18	20	179-7	326425
11	254859	Valve Assembly, gas (includes items 12-14)		1		1		1	1		1
12	244621	Valve, gas	1		1		1				
12	326223	Valve, gas		1		1		1	1	1	1
13	241618	Terminal		2		2					2
14	292371	Connector, jack		1		1					1
15	X-283-6	Terminal	1		1						
15	X-283-32	Terminal					1				
16	X-22-14	Washer, shakeproof, 3/8 in.	1		1						
16	X-22-15	Washer, lock					1				
17	X-468-1	Tie, cable		1		1					
18	254456	Bracket, fuel valve	1	1	1	1	1	1	1	1	1
19	#	Screw, HC, 5/16-18	2	2	2	2	2	2	2		
20	#	Washer, lock, 5/16 in.	2	2	2	2	2	2	2		
21	X-82-2	Nut, hex, 5/16	2	2	2	2	2	2	2		
22	291259	Regulator, pressure	1	1	1	1	1	1	1	1	1
23	X-447-16	Elbow		1		1					
24	X-206-9	Nipple, pipe			1						
24	X-209-2	Nipple, pipe						1	1		1
25	X-215-2	Elbow, pipe			3		3				
26	X-202-23	Bushing, reducer	1		1		1				
26	X-202-41	Bushing, reducer						1	1	1	1
26	X-203-15	Tee, pipe, 3/8 x 3/8 (not shown)		1							
26	X-75-2	Plug, pipe (not shown)		1							
27	X-204-8	Nipple, pipe	1				1				
27	X-206-9	Nipple, pipe								1	
28	X-215-9	Elbow	1	1		1					
28	X-215-1	Elbow						1	1		1
28	X-215-5	Elbow								1	
29	X-204-17	Nipple, pipe	1								
30	X-504-12	Fuel Line, flexible	1								
30	225160	Fuel Line, flexible		1		1					
30	X-504-18	Fuel Line, flexible			1						
30	276395	Fuel Line, flexible					1			1	
30	326603	Fuel Line, flexible						1	1		1
31	X-204-9	Nipple, pipe	1	1	1	1	1				
31	X-209-2	Nipple, pipe						1	1		1
31	X-209-3	Nipple, pipe								1	
32	X-352-86	Stud		1							
33	255239	Carburetor	1								
33	254983	Carburetor		1	1		1				
33	226459	Carburetor				1					
33	A-326319	Carburetor						1	1		1
33	A-326593	Carburetor								1	
34	X-6053-2	Nut, hex	2	2	2	2					
35	X-22-5	Washer, lock	2	2	2	2					
36	280007	Gasket, carburetor	1	1	1	1	1				
37	255595	Spacer	1	1	1	1	1				
38	X-6054-6	Stud	2	2	2	2					
38	X-6050-4	Screw						2	2		2
39	X-50-8	Screw, RHM				4					
40	226464	Bracket, stepper motor				1					
41	226395	Coupling, governor				1					
42	A-226460	Actuator Assembly				1					
43	#	Nut, hex, #10-24				1					
43	258558	Tag, instruction (not shown)									
44	X-215-2	Elbow, pipe, 3/4 in.								1	
45	X-206-9	Nipple, pipe								1	
46	X-225-8	Elbow, 45°, 3/4 in.						1	1	1	1

Common hardware; procure locally.

Group 103: Fuel System, continued

LP Vapor or Natural Gas, Turbocharged
See Fuel System Kits for parts list of
Liquid Withdrawal and
Auto and Manual Changeover
Fuel Systems



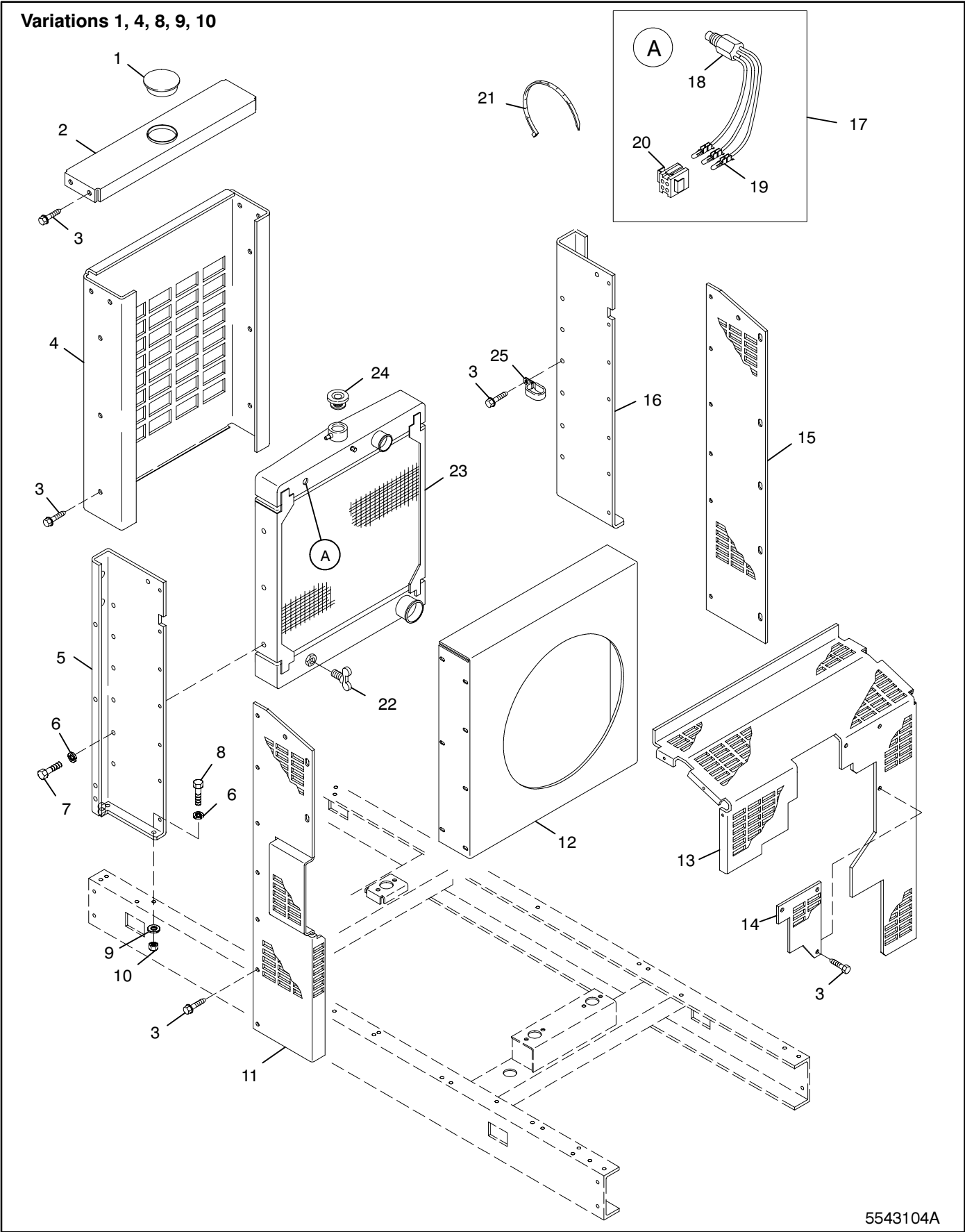
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Group 103: Fuel System, continued

Item	Part Number	Description	Quantity					
			Variation No.					
			3	4	7	8	15	16
1	244621	Valve, gas	1	1	1	1	1	1
2	X-22-14	Washer, shakeproof	1	1	1	1		
2	X-22-15	Washer, shakeproof					1	1
3	X-283-6	Terminal	1	1	1	1		
3	X-283-32	Terminal					1	1
4	254456	Bracket, fuel valve	1	1	1	1	1	1
5	X-125-3	Screw, HC	2	2	2	2	2	2
6	X-21-1	Washer, lock	6	6	6	6	6	6
7	X-82-2	Nut, hex	6	6	6	6	6	6
8	291259	Regulator, pressure	1	1	1	1	1	1
9	X-206-9	Nipple, pipe	1	1	1	1		
9	X-206-4	Nipple, pipe					1	1
10	X-215-2	Elbow, pipe	1	1	1	1	1	1
11	X-206-4	Nipple, pipe	1	1	1	1		
12	X-504-18	Fuel Line, flexible	1	1	1	1		
12	276395	Fuel Line, flexible					1	1
13	X-274-2	Elbow	1	1	1	1	1	1
14	X-216-13	Coupling, pipe	1	1	1	1	1	1
14	276389	Bracket, support (not shown)					1	1
14	X-297-1	Bolt, U (not shown)					1	1
14	X-6051-3	Screw, HC (not shown)					2	2
15	153659	Bushing, reducer	1	1	1	1		
15	X-202-41	Bushing, reducer					1	1
16	X-209-2	Nipple, pipe	1	1	1	1	1	1
17	A-258278	Body, mixer (natural gas)		1		1		
17	A-326112	Body, mixer					1	
17	A-326137	Body, mixer (LP vapor)	1		1			1
18	249887	Clamp, hose	1	1	1	1	1	1
19	258875	Hose, step	1	1	1	1	1	1
20	249888	Clamp, hose	1	1	1	1	1	1
21	258490	Turbocharger	1	1	1	1	1	1
22	X-352-65	Stud	4	4	4	4	4	4
23	258866	Adapter, turbocharger	1	1	1	1	1	1
24	X-25-28	Washer, plain	4	4	4	4	4	4
25	X-6055-3	Screw, socket head	4	4	4	4	4	4
26	X-25-85	Washer, flat	4	4	4	4		
27	258878	Gasket, turbo oil	1	1	1	1	1	1
28	X-20-1	Washer, lock	2	2	2	2	2	2
29	X-6049-2	Screw, HC	2	2	2	2	2	2
30	X-296-5	Connector	1				1	1
31	258492	Oil Line, feed	1	1	1	1	1	1
32	255628	Bolt, banjo	1	1	1	1	1	1
33	276258	Shield, heat	1	1	1	1	1	1
34	X-6050-3	Screw, HC	4	4	4	4	4	4
35	258876	Pipe, turbo discharge	1	1	1	1	1	1
36	X-426-8	Clamp, hose	1	1	1	1	1	1
37	258868	Hose, step	1	1	1	1	1	1
38	X-426-4	Clamp, hose	3	3	3	3	3	3
38	258869	Tube, turbo crossover	1	1	1	1	1	1
40	258874	Hose, step	1	1	1	1	1	1
41	X-22-5	Washer, lock	2	2	2	2		
42	326176	Kit, throttle body			1	1		
42	A-258494	Body, throttle	1	1				
42	A-326138	Body, throttle					1	1
43	X-75-2	Plug, pipe	2	2	2	2	2	2
44	326114	Adapter, throttle body					1	1
45	255595	Spacer					1	1
46	280007	Gasket, carburetor					1	1
46	258558	Tag, instruction (not shown)	3	4			1	1
47	X-6053-2	Nut, hex	2	2	2	2		

Group 104: Cooling System

Variations 1, 4, 8, 9, 10



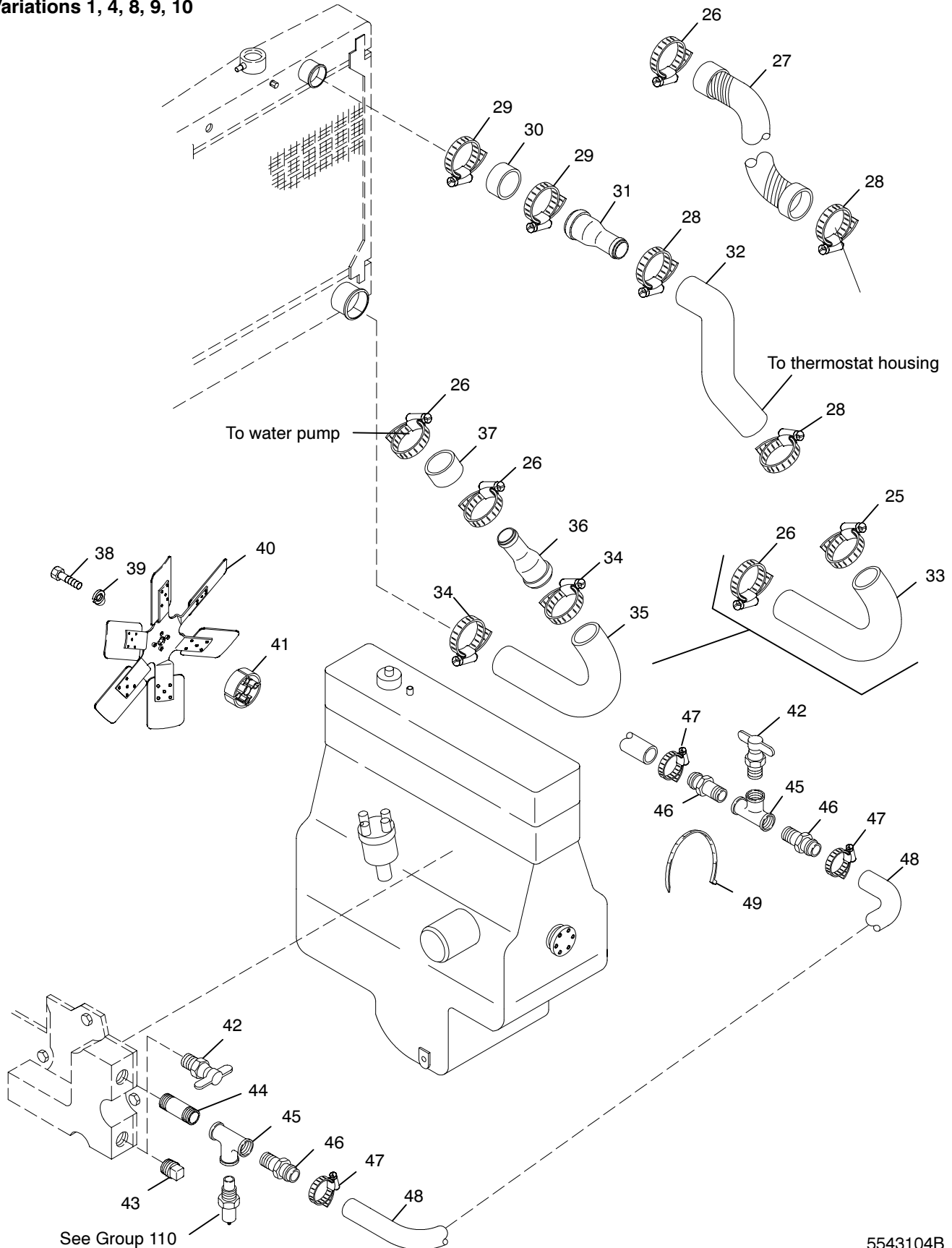
5543104A

Group 104: Cooling System

Item	Part Number	Description	Quantity				
			Variation No.				
			1	4	8	9	10
1	253268	Plug	1	1	1	1	1
2	253071	Cover, radiator	1	1	1	1	1
3	X-794-1	Screw, drill	28	34	34	28	32
4	255203	Shroud, radiator	1			1	1
4	255036	Shroud, radiator		1	1		
5	255201	Support, radiator (left)	1			1	1
5	253539	Support, radiator (left)		1	1		
6	X-21-1	Washer, lock	10	12	12	10	10
7	X-125-23	Screw, HC	4	6	6	4	4
8	X-125-3	Screw, HC	6	6	6	6	6
9	X-25-85	Washer, plain	6	6	6	6	6
10	X-82-2	Nut, hex	6	6	6	6	6
11	255267	Guard, fan (LS)	1			1	1
11	258865	Guard, fan (LS)		1	1		
12	255233	Shroud, fan	1				1
12	258862	Shroud, fan		1	1		
12	276184	Shroud, fan				1	
13	255268	Guard, fan (top)	1			1	
13	258864	Guard, fan (top)		1			
13	254418	Guard, fan (top)					1
13	254980	Guard, fan (top)			1		
14	276352	Plate, cover					1
15	276203	Guard, fan (RS)	1			1	1
15	276204	Guard, fan (RS)		1	1		
16	253538	Support, radiator (right)		1	1		
16	255202	Support, radiator (right)	1			1	1
17	273404	Switch Assembly, coolant level (includes items 18-20)			1	1	
18	273520	Sensor, low coolant			1	1	
19	239516	Pin			1	1	
20	239411	Connector, jack			1	1	
21	X-468-1	Tie, cable	1		2		2
22	X-256-3	Valve, drain	1	1	1	1	1
23	A-258504	Radiator Assembly (includes 7 psi cap)	1				1
23	A-255604	Radiator Assembly (includes 14 psi cap)		1	1		
23	A-276185	Radiator Assembly				1	
24	244366	Cap, radiator (7 psi)	1				1
24	244365	Cap, radiator (14 psi)		1	1		
25	X-672-10	Clamp					1
26	X-426-4	Clamp, hose	3	2	2	3	3
27	255237	Hose, radiator (upper)	2			2	2
28	X-426-8	Clamp, hose	1	2	2	1	1
29	X-426-6	Clamp, hose			2	2	
30	X-311-9	Hose, radiator		1	1		
31	259492	Adapter, water hose		1	1		
32	258859	Hose, radiator (upper)		1	1		
33	276186	Hose, radiator (lower)	1			1	1
34	250081	Clamp, hose		2	2		
35	258858	Hose, radiator (lower)		1	1		
36	258871	Adapter, hose		1	1		
37	X-304-14	Hose		1	1		
38	X-6068-4	Screw, HC	4	4	4	4	4
39	X-801-4	Washer, hardened	4	4	4		4
40	276101	Fan	1	1	1		
41	276102	Spacer, pulley to fan	1	1	1		1
42	X-256-1	Valve, drain	1	1	1	1	1
43	X-75-10	Plug, pipe	1			1	1
44	X-204-6	Nipple, pipe	1		1		1
44	X-204-9	Nipple, pipe				1	
45	X-203-15	Tee	1		1	1	1
46	X-582-9	Connector, hose	2		1		
47	X-426-10	Clamp, hose				2	2
48	X-651-19	Hose	1	1	1	1	1
49	X-468-2	Tie, cable			2		

Group 104: Cooling System, continued

Variations 1, 4, 8, 9, 10



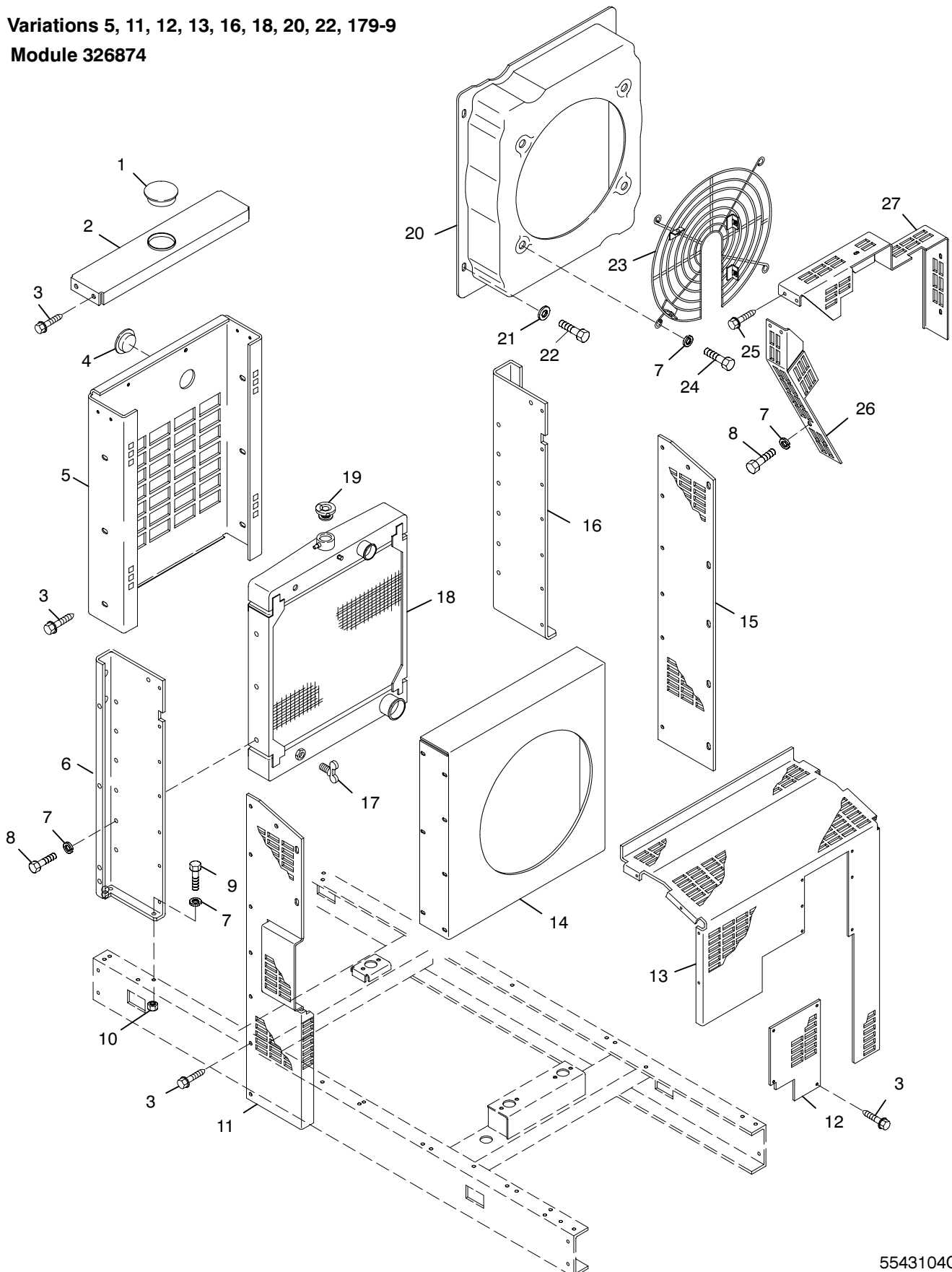
5543104B

Group 104: Cooling System, continued

Item	Part Number	Description	Quantity				
			Variation No.				
			1	4	8	9	10
1	253268	Plug	1	1	1	1	1
2	253071	Cover, radiator	1	1	1	1	1
3	X-794-1	Screw, drill	28	34	34	28	32
4	255203	Shroud, radiator	1			1	1
4	255036	Shroud, radiator		1	1		
5	255201	Support, radiator (left)	1			1	1
5	253539	Support, radiator (left)		1	1		
6	X-21-1	Washer, lock	10	12	12	10	10
7	X-125-23	Screw, HC	4	6	6	4	4
8	X-125-3	Screw, HC	6	6	6	6	6
9	X-25-85	Washer, plain	6	6	6	6	6
10	X-82-2	Nut, hex	6	6	6	6	6
11	255267	Guard, fan (LS)	1			1	1
11	258865	Guard, fan (LS)		1	1		
12	255233	Shroud, fan	1				1
12	258862	Shroud, fan		1	1		
12	276184	Shroud, fan				1	
13	255268	Guard, fan (top)	1			1	
13	258864	Guard, fan (top)		1			
13	254418	Guard, fan (top)					1
13	254980	Guard, fan (top)			1		
14	276352	Plate, cover					1
15	276203	Guard, fan (RS)	1			1	1
15	276204	Guard, fan (RS)		1	1		
16	253538	Support, radiator (right)		1	1		
16	255202	Support, radiator (right)	1			1	1
17	273404	Switch Assembly, coolant level (includes items 18-20)			1	1	
18	273520	Sensor, low coolant			1	1	
19	239516	Pin			1	1	
20	239411	Connector, jack			1	1	
21	X-468-1	Tie, cable	1		2		2
22	X-256-3	Valve, drain	1	1	1	1	1
23	A-258504	Radiator Assembly (includes 7 psi cap)	1				1
23	A-255604	Radiator Assembly (includes 14 psi cap)		1	1		
23	A-276185	Radiator Assembly				1	
24	244366	Cap, radiator (7 psi)	1				1
24	244365	Cap, radiator (14 psi)		1	1		
25	X-672-10	Clamp					1
26	X-426-4	Clamp, hose	3	2	2	3	3
27	255237	Hose, radiator (upper)	2			2	2
28	X-426-8	Clamp, hose	1	2	2	1	1
29	X-426-6	Clamp, hose			2	2	
30	X-311-9	Hose, radiator		1	1		
31	259492	Adapter, water hose		1	1		
32	258859	Hose, radiator (upper)		1	1		
33	276186	Hose, radiator (lower)	1			1	1
34	250081	Clamp, hose		2	2		
35	258858	Hose, radiator (upper) lower		1	1		
36	258871	Adapter, hose		1	1		
37	X-304-14	Hose		1	1		
38	X-6068-4	Screw, HC	4	4	4	4	4
39	X-801-4	Washer, hardened	4	4	4		4
40	276101	Fan	1	1	1		
41	276102	Spacer, pulley to fan	1	1	1		1
42	X-256-1	Valve, drain	1	1	1	1	1
43	X-75-10	Plug, pipe	1			1	1
44	X-204-6	Nipple, pipe	1		1		1
44	X-204-9	Nipple, pipe				1	
45	X-203-15	Tee	1		1	1	1
46	X-582-9	Connector, hose	2		1		
47	X-426-10	Clamp, hose				2	2
48	X-651-19	Hose	1	1	1	1	1
49	X-468-2	Tie, cable			2		

Group 104: Cooling System, continued

Variations 5, 11, 12, 13, 16, 18, 20, 22, 179-9
Module 326874



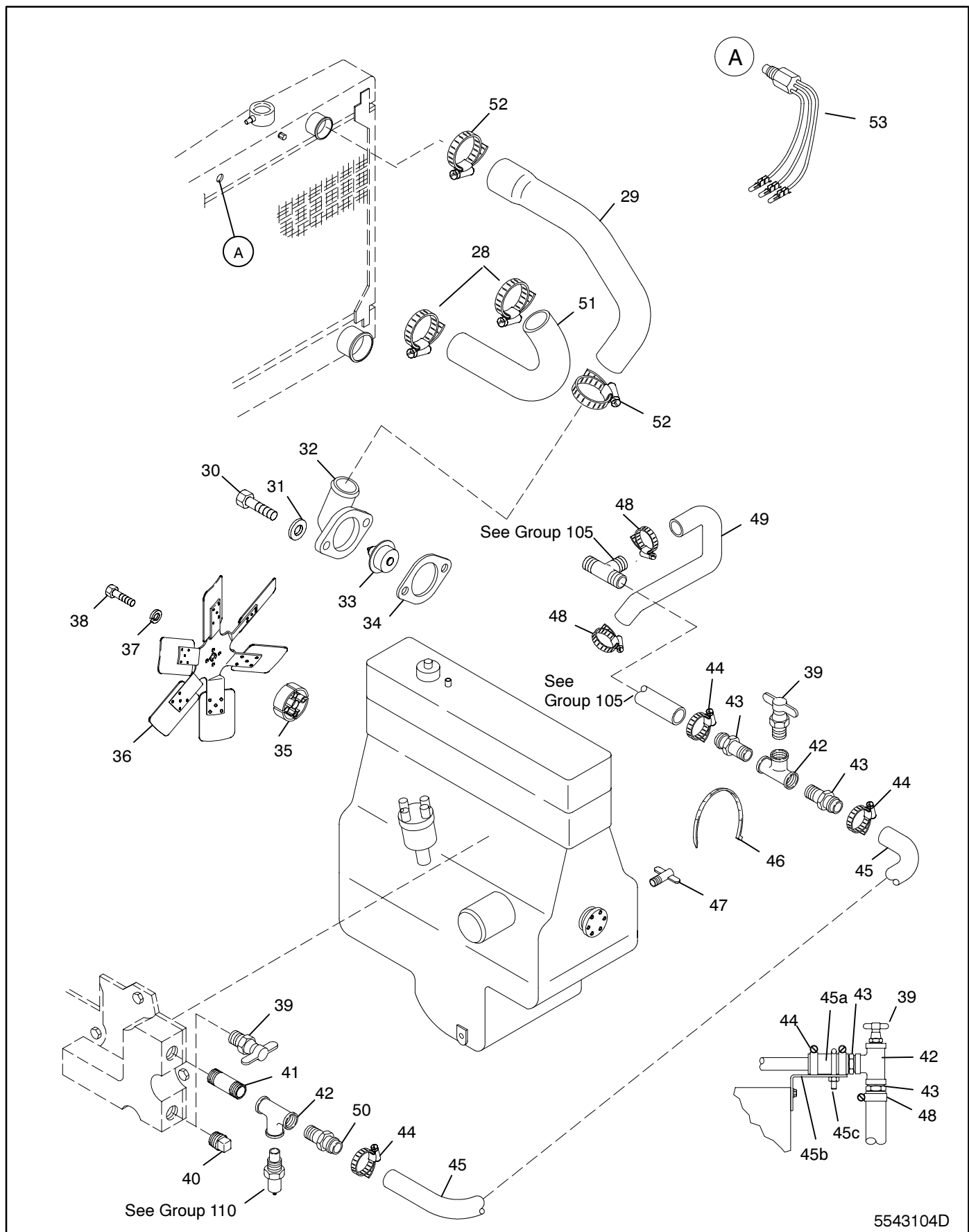
5543104C

Group 104: Cooling System, continued

Item	Part Number	Description	Quantity									
			Variation No.									
			5	11	12	13	16	18	20	326874	22	179-9
1	253268	Plug	1	1								
2	253071	Cover, radiator	1	1								
3	X-794-1	Screw, drill	38	10								
3	X-465-2	Screw, 1/4-20 x 5/8 in.			8	8						
4	254949	Plug	1	1				1			1	
5	254754	Shroud, radiator	1	1								
5	276491	Shroud, radiator			1	1						
5	326351	Shroud, radiator					1		1	1		
5	326436	Shroud, radiator						1			1	
5	360005	Shroud, radiator										1
6	253539	Support, radiator (left)	1									
6	276305	Support, radiator (left)		1								
6	276493	Support, radiator (left)			1	1						
6	326350	Support, radiator (left)					1		1	1		
6	326434	Support, radiator (left)						1			1	
6	326001	Support, radiator (left)										1
7	#	Washer, lock, 5/16 in.	16	16			16	16				
7	X-400-170	Spacer (not shown)		4								
8	X-125-23	Screw, HC	6	6			6	6				
9	#	Screw, HC, 5/16-18	6	6	6	6		6				
9	#	Hardware, 3/8-16							8	8	8	
10	#	Nut, hex, 5/16-18	6	6	6	6						
10	#	Hardware, 3/8-16							8	8	8	
11	254981	Guard, fan (LS)	1									
12	256860	Guard, fan (LS)	1									
13	256843	Guard, fan (top)	1									
14	258862	Shroud, fan	1									
15	276204	Guard, fan (RS)	1									
16	253538	Support, radiator (right)	1									
16	276306	Support, radiator (right)		1								
16	276492	Support, radiator (right)			1	1						
16	326349	Support, radiator (right)					1		1	1		
16	326435	Support, radiator (right)						1			1	
16	326002	Support, radiator (right)										1
16	273911	Spacer, radiator support (not shown)					1		1	1		1
17	X-256-3	Valve, drain	1	1	1	1	1		1	1	1	1
18	A-256829	Radiator Assembly (includes cap)	1									
18	A-326021	Radiator Assembly (includes cap)			1							
18	A-276304	Radiator Assembly (includes cap)		1		1						
18	A-326023	Radiator Assembly (includes cap)					1		1	1		1
18	A-326402	Radiator Assembly (includes cap)						1			1	
19	224365	Cap, radiator (14 psi)	1	1	1	1	1	1	1	1	1	1
19	224358	Cap, radiator (7 psi)	1	1	1	1	1	1	1	1	1	1
20	226334	Shroud, fan		1	1	1		1			1	
20	324039	Shroud, fan					1		1	1		1
21	X-25-73	Washer, plain		4	4	4	4	4			4	4
21	#	Washer, 1/4 in.							4	4		
22	X-465-2	Screw, HC		4	4	4	4	4	4	4	4	4
23	226335	Fan Guard, wire	1									
23	326106	Fan Guard, wire		1	1	1						
23	326358	Fan Guard, wire					1		1	1		
23	326473	Fan Guard, wire						1			1	
23	326006	Fan Guard, wire										1
24	X-125-23	Screw, HC		4	4	4		4				
24	#	Hardware, 5/16 in.					4		4	4		
24	X-6365-1	Insert, threaded (not shown)					4		4	4		
25	X-6216-1	Screw, hex crimp		2	5	5	10	8	10	10	8	6
26	226420	Guard, belt (bottom)		1								
26	326468	Guard, belt (bottom)					1	1	1	1	1	
26	326470	Bracket, mounting (not shown)					1	1	1	1	1	
26	326110	Guard, belt (left)			1	1						
26	326467	Guard, belt (left)					1		1	1		
26	326608	Guard, belt (left)						1			1	
26	326007	Guard, belt (left)										1
26	326109	Guard, belt (right)			1	1						
26	326686	Guard, belt (right)					1	1			1	
26	326933	Guard, belt (right)							1	1		
26	326008	Guard, belt (right)										1
26	326469	Bracket, mounting (not shown)					1		1	1		
26	326685	Bracket, mounting (not shown)						1			1	

Common hardware; procure locally.

Group 104: Cooling System, continued



5543104D

Group 104: Cooling System, continued

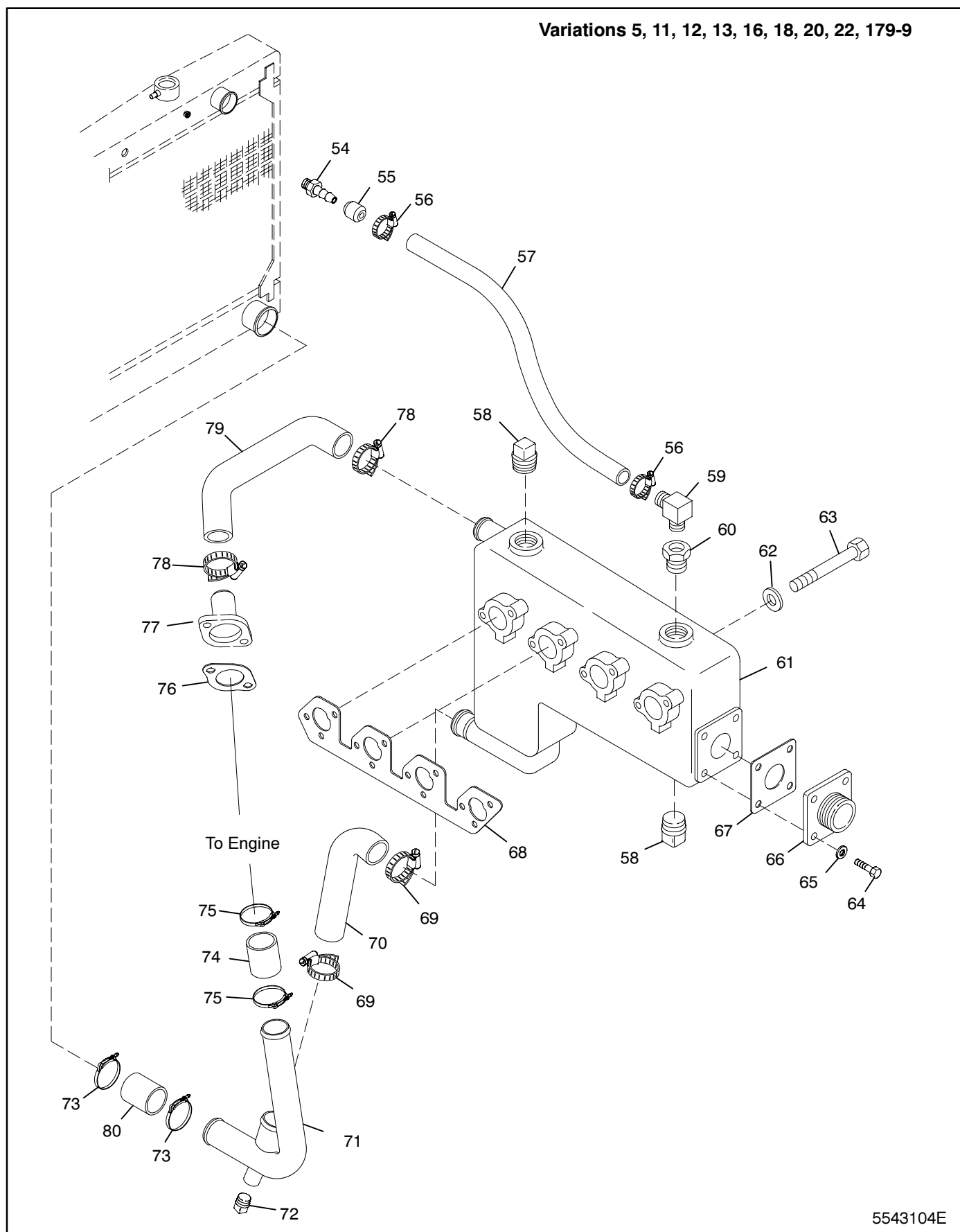
Item	Part Number	Description	Quantity									
			Variation No.									
			5	11	12	13	16	18	20	326874	22	179-9
27	226419	Guard, belt (top)		1								
27	326111	Guard, belt (top)			1	1						
27	326577	Guard, belt (top)					1	1	1	1	1	
27	326009	Guard, belt (top)										1
27	326449	Bracket, mounting (not shown)					1	1	1	1	1	
27	326144	Bracket, mounting (not shown)										1
28	X-426-4	Clamp, hose	5	4	2	2	2	4			4	2
28	X-426-6	Clamp, hose	1									
29	254804	Hose, upper radiator	1									
29	226406	Hose, upper radiator		1								
29	276287	Hose, upper radiator			1	1						
29	326356	Hose, upper radiator					1		1	1		
29	326422	Hose, upper radiator						1			1	
29	326004	Hose, upper radiator										1
30	X-125-5	Screw, HC	2	2				2			2	
31	#	Washer, lock, 5/16 in.	2	2				2			2	
32	254885	Housing, thermostat	1	1				1			1	
32	326863	Housing, thermostat							1	1		
32	326014	Housing, thermostat										1
33	249930	Thermostat	1	1	1	1		1			1	
33	276162	Thermostat										1
34	229963	Gasket, water outlet	1	1				1			1	
34	276160	Gasket, water outlet										1
35	276102	Spacer, pulley to fan			1	1						
35	226404	Spacer, fan		1					1	1	1	
35	326010	Spacer, fan										1
36	276101	Fan	1									
36	226406	Fan, radiator pusher		1								
36	276479	Fan, pusher			1			1			1	
36	276387	Fan, pusher				1						
36	326347	Fan, pusher					1		1	1		
36	326011	Fan, pusher										1
37	X-801-4	Washer, hardened	4	4	4	4			4	4	4	4
38	X-6068-4	Screw, HC	4	4								
38	X-6050-16	Screw, HC						4	4	4	4	
39	X-256-1	Valve, drain	1	1	1	1	1		1	1		
40	X-75-10	Plug, pipe	2									
41	X-204-6	Connector	1		1	1						
42	X-203-15	Tee	2	2	2	2				1		
43	X-582-9	Connector, hose (3/8 in. NPT x 3/8 in.)		2								
43	X-582-2	Connector, hose (3/8 in. NPT x 5/8 in.)					2	2		1		
43	X-582-11	Connector, hose (3/8 in. NPT x 3/4 in.)					2	2		1		
44	X-426-10	Clamp, hose, .5/1 in.	2	2			2		2	2		
44	X-426-18	Clamp, hose, .38/.88 in.		4								
44	X-426-12	Clamp, hose, .69/1.25 in.							2	2		
45	X-651-15	Hose, .75 ID x 46 in.	1									
45	X-651-19	Hose, .75 ID x 65 in.		1								
45a	X-691-39	Hose, .75 ID x 4 in.					1		1	1		
45b	326610	Bracket					1		1	1		
45c	X-397-6	Clamp, U					1		1	1		
46	X-468-1	Tie, cable		3								
47	X-256-3	Valve, drain	1	1								
48	X-426-3	Clamp, hose, .56/1.06 in.		6			2		2	2		
49	X-312-4	Hose	1	1								
49	326395	Hose, molded bypass					1		1	1		
50	X-582-9	Connector, hose		1	1	1						
51	276288	Hose, lower radiator			1	1						
52	X-426-8	Clamp, hose, .81/1.75 in.			2	2						
52	X-426-4	Clamp, hose, 1.31/2.25 in.					1	1	2	2		
52	X-426-6	Clamp, hose, 1.56/2.5 in.					1	1				2
53	273404	Switch, coolant level (before serial number 363369)			1	1	1		1	1		1
53	365289	Switch, coolant level (serial numbers 363369 and after)			1	1	1		1	1		1

Common hardware; procure locally.

33	279450	Thermostat			1	1	1		1			
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Group 104: Cooling System, continued

Variations 5, 11, 12, 13, 16, 18, 20, 22, 179-9



5543104E

Group 104: Cooling System, continued

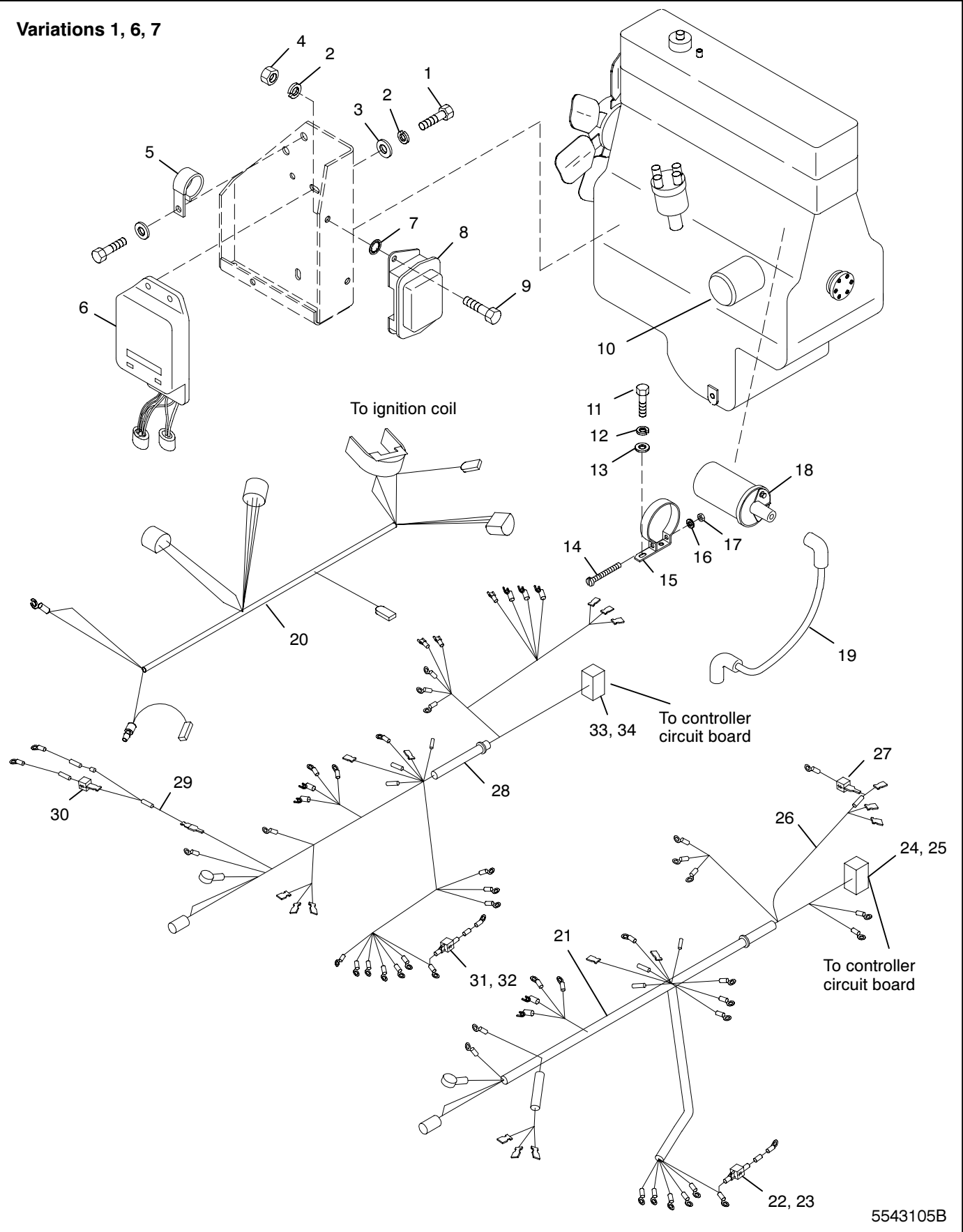
Item	Part Number	Description	Quantity									
			Variation No.									
			5	11	12	13	16	18	20	326874	22	179-9
54	X-380-4	Connector, hose	1	1								
55	254922	Orifice	1	1								
56	X-426-9	Clamp, hose	2	2								
56	X-426-3	Clamp, hose						2			2	
57	X-386-34	Line, flexible	1	1								
57	X-312-4	Line, flexible						1			1	
58	X-75-42	Plug, pipe	2	2				2				
58	X-75-48	Plug, pipe									1	
59	X-391-3	Connector, hose	1	1								
59	X-209-2	Nipple, pipe, 1/2 x 1 3/16 in.						1			1	
59	X-207-7	Pipe, cross, 1/2 in.						1			1	
59	X-75-28	Plug, pipe, 1/2 in.						1			1	
59	X-256-5	Valve Drain						1			1	
59	X-582-1	Connector, hose						1			1	
60	AC-1459	Bushing, reducer	1	1								
60	168848	Bushing, reducer						1			1	
61	254686	Manifold, exhaust	1	1								
61	326343	Manifold, exhaust					1		1	1		
62	X-801-3	Washer, hardened	8	8			8		8	8		
63	X-6051-11	Screw, HC	8	8								
63	X-6051-26	Screw, HC					8		8	8		
64	X-125-5	Screw, HC	4	4					4	4	4	
65	#	Washer, lock, 5/16 in.	4	4					4	4	4	
66	254692	Flange, exhaust outlet	1	1				1	1	1		
67	249905	Gasket, exhaust	1	1				1	1	1		
68	254923	Gasket, exhaust manifold	1	1				1	1	1	1	
69	X-426-4	Clamp, hose	2					2			2	
70	254803	Hose, radiator	1									
70	226418	Hose, radiator			1			1			1	
71	254802	Tube, radiator	1									
71	226405	Tube, radiator outlet (see note below)		1								
71	326357	Hose, radiator					1		1	1		
71	226880	Tube, radiator outlet (see note below)						1			1	
71	326003	Hose, radiator										1
72	X-75-10	Plug, pipe		1				1			1	
73	279604	Clamp, hose	2									
73	249888	Clamp, hose		2								
73	X-426-4	Clamp, hose			2	2	1		1	1		
73	X-426-6	Clamp, hose						2				
74	X-6014-46	Hose, radiator	1									
74	X-304-2	Hose	1	2				1			1	
75	X-426-4	Clamp, hose	2									
75	249888	Clamp, hose		2								
75	X-426-6	Clamp, hose					1	2	1	1	2	2
76	256476	Gasket, water outlet	1	1			1				1	
77	326430	Housing, thermostat						1			1	
78	X-426-8	Clamp, hose	2	2				2			2	
79	254805	Hose, radiator	1	1								
79	326423	Hose, radiator						1			1	
80	X-304-11	Hose, 6 in.						1			1	

Common hardware; procure locally.

18 kW only: Radiator outlet tube kit 226881 includes parts to replace the original radiator outlet tube with a new radiator outlet tube and hoses. The new design reduces the stress on the lower radiator fitting by increasing the flexibility between the engine and radiator during operation. The kit includes items 71, 73-75, 80, upper radiator outlet tube (Group 105), and O-ring (Group 105).

Group 105: Engine

Variations 1, 6, 7



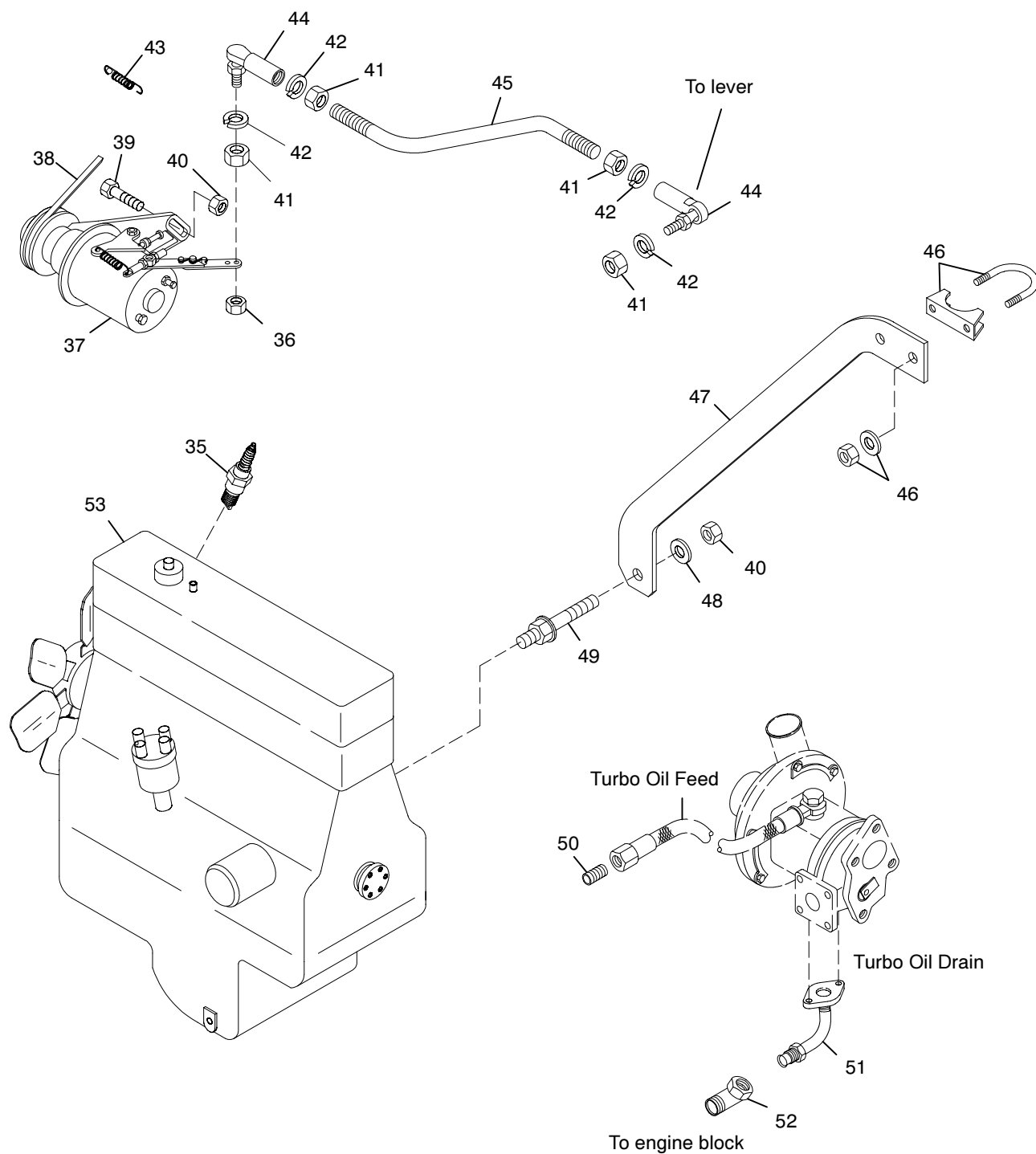
5543105B

Group 105: Engine

Item	Part Number	Description	Quantity		
			Variation No.		
1			1	6	7
1	X-465-6	Screw, HC	3	3	3
2	X-20-1	Washer, lock	5	5	5
3	X-25-40	Washer, plain	2	2	
4	X-81-1	Nut, hex	2	2	2
5	X-6084-1	J-Clip	1	1	1
6	276077	Module, ignition		1	1
7	X-22-12	Washer, shakeproof	2	2	2
8	276128	Regulator, alternator		1	1
9	X-465-2	Screw, HC	2	2	2
10	279449	Oil Filter	1	1	1
11	X-6050-4	Screw, HC	1	1	1
12	X-21-1	Washer, lock	1	1	
13	X-25-20	Washer, plain	1	1	1
14	X-50-57	Screw, RHM		1	1
15	276108	Strap, ignition coil		1	1
16	X-19-1	Washer, lock		1	1
17	X-70-3	Nut, hex		1	1
18	276107	Coil, ignition		1	1
19	276106	High Tension Lead		1	1
20	276094	Harness, wiring		1	1
21	255876	Harness, wiring engine (includes items 22-27)		1	1
22	233959	Diode, 6-amp, 100-volt		1	1
23	292970	Diode, assembly		1	1
24	292800	Connector, cable		1	1
25	295145	Connector, 24-position		1	1
26	258854	Harness, speed sensor (includes item 27)		1	1
27	233868	Diode		1	1
28	255193	Harness, wiring (includes items 29-34)	1		
29	255460	Capacitor/Diode Assembly (includes item 30)	1		
30	292336	Diode, 5-amp, 50-volt	1		
31	233959	Diode	1		
32	292970	Diode Assembly	1		
33	287501	Terminal	1		
34	287850	Plug, connector	1		
35	258276	Plug, spark			4
36	X-101-7	Nut, lock	1	1	1
37	255236	Governor, mechanical	1	1	1
38	276139	Belt, governor drive		1	1
39	X-6051-1	Screw, HC		3	3
40	X-6053-3	Nut, hex		4	4
41	X-81-2	Nut, hex		4	4
42	X-20-1	Washer, lock		5	5
43	255340	Spring, governor (50 Hz governor)	1		
44	276093	Socket		2	2
45	276076	Rod		1	1
46	X-722-5	Clamp		1	1
47	276125	Bracket, exhaust support		1	1
48	X-801-3	Washer, hardened		1	1
49	276153	Stud, hex shoulder		1	1
50	X-296-5	Connector, half union		1	
51	276131	Tube, oil return		1	1
52	276130	Tube, oil return		1	1
53	A-258762	Engine Assembly (Ford LSG-423)			
		See literature Group 701 for Ford engine parts catalog		1	1

Group 105: Engine, continued

Variations 1, 6, 7



5543105C

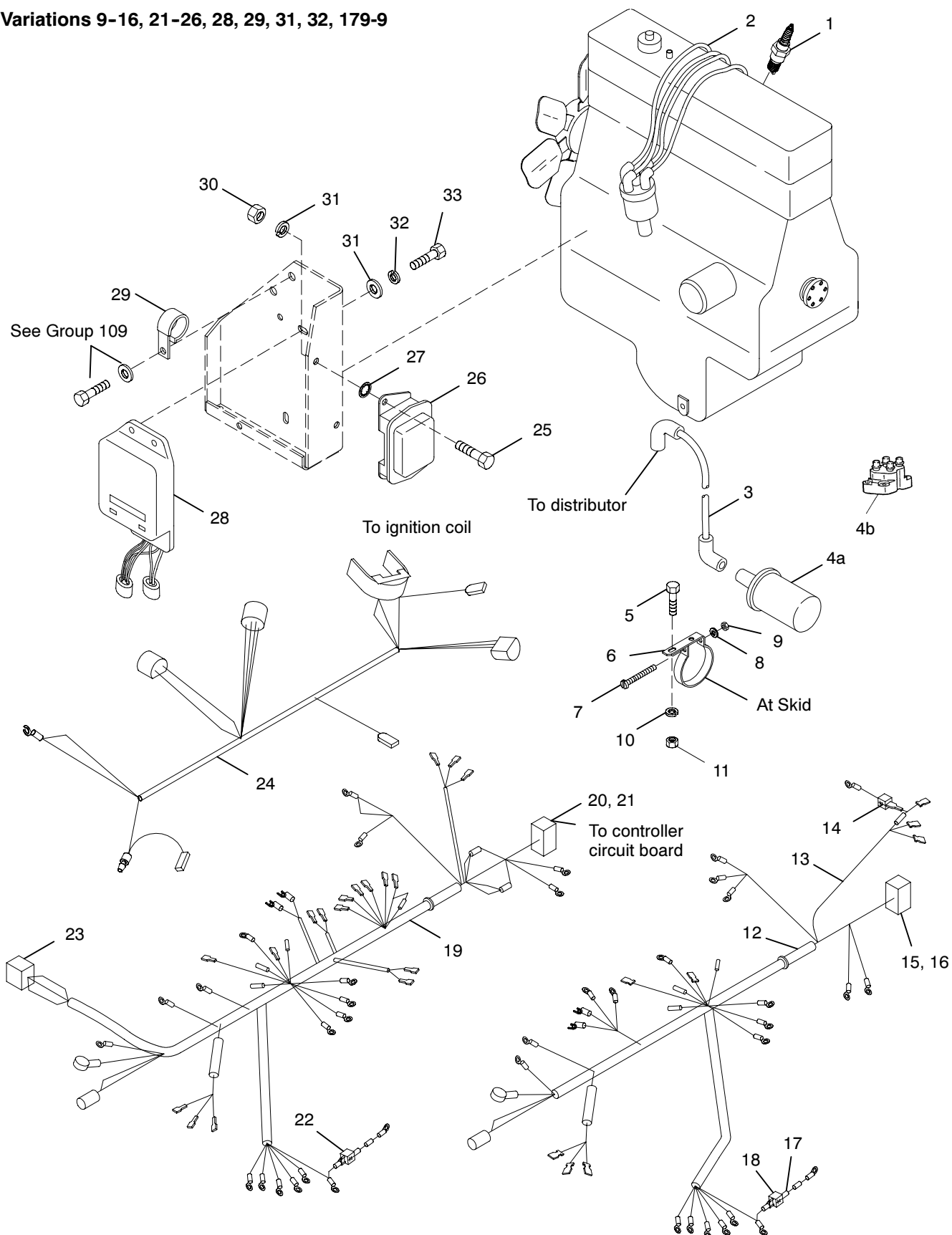
Group 105: Engine, continued

Item	Part Number	Description	Quantity		
			Variation No.		
			1	6	7
1	X-465-6	Screw, HC	3	3	3
2	X-20-1	Washer, lock	5	5	5
3	X-25-40	Washer, plain	2	2	
4	X-81-1	Nut, hex	2	2	2
5	X-6084-1	J-Clip	1	1	1
6	276077	Module, ignition		1	1
7	X-22-12	Washer, shakeproof	2	2	2
8	276128	Regulator, alternator		1	1
9	X-465-2	Screw, HC	2	2	2
10	279449	Oil Filter	1	1	1
11	X-6050-4	Screw, HC	1	1	1
12	X-21-1	Washer, lock	1	1	
13	X-25-20	Washer, plain	1	1	1
14	X-50-57	Screw, RHM		1	1
15	276108	Strap, ignition coil		1	1
16	X-19-1	Washer, lock		1	1
17	X-70-3	Nut, hex		1	1
18	276107	Coil, ignition		1	1
19	276106	High Tension Lead		1	1
20	276094	Harness, wiring		1	1
21	255876	Harness, wiring engine (includes items 22-27)		1	1
22	233959	Diode, 6-amp, 100-volt		1	1
23	292970	Diode, assembly		1	1
24	292800	Connector, cable		1	1
25	295145	Connector, 24-position		1	1
26	258854	Harness, speed sensor (includes item 27)		1	1
27	233868	Diode		1	1
28	255193	Harness, wiring (includes items 29-34)	1		
29	255460	Capacitor/Diode Assembly (includes item 30)	1		
30	292336	Diode, 5-amp, 50-volt	1		
31	233959	Diode	1		
32	292970	Diode Assembly	1		
33	287501	Terminal	1		
34	287850	Plug, connector	1		
35	258276	Plug, spark			4
36	X-101-7	Nut, lock	1	1	1
37	255236	Governor, mechanical	1	1	1
38	276139	Belt, governor drive		1	1
39	X-6051-1	Screw, HC		3	3
40	X-6053-3	Nut, hex		4	4
41	X-81-2	Nut, hex		4	4
42	X-20-1	Washer, lock		5	5
43	255340	Spring, governor (50 Hz governor)	1		
44	276093	Socket		2	2
45	276076	Rod		1	1
46	X-722-5	Clamp		1	1
47	276125	Bracket, exhaust support		1	1
48	X-801-3	Washer, hardened		1	1
49	276153	Stud, hex shoulder		1	1
50	X-296-5	Connector, half union		1	
51	276131	Tube, oil return		1	1
52	276130	Tube, oil return		1	1
53	A-258762	Engine Assembly (Ford LSG-423)			
		See literature Group 701 for Ford engine parts catalog		1	1

276079

Group 105: Engine, continued

Variations 9-16, 21-26, 28, 29, 31, 32, 179-9



5543105D

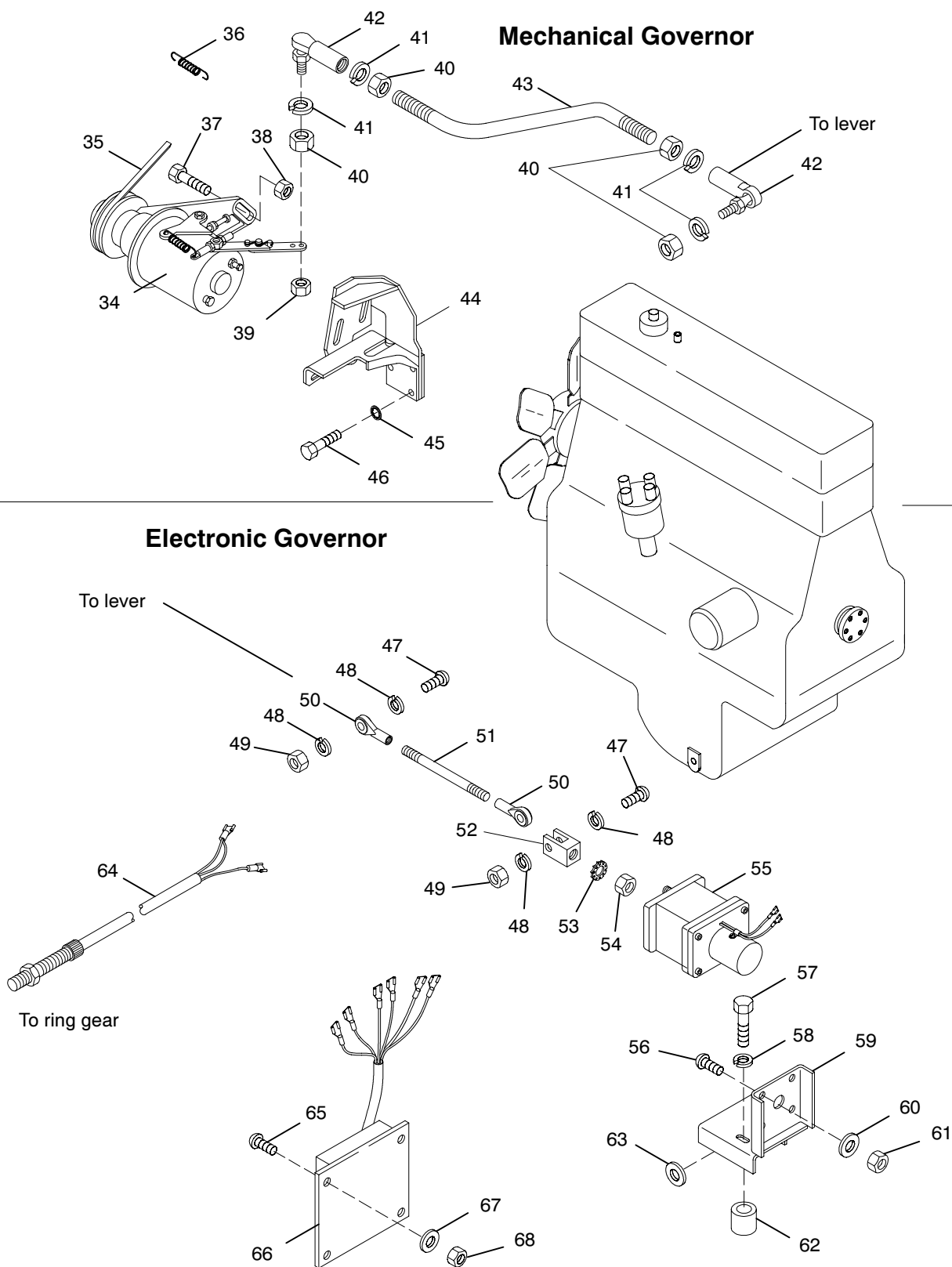
Group 105: Engine, continued

Item	Part Number	Description	Quantity																						
			Variation No.																						
			9	10	11	12	13	14	15	16	21	22	23	24	25	26	28	29	31	32	179-9				
1	258276	Plug, spark (LP fuel)					4	4								4									
1	326299	Plug, spark	4	4	4	4	4	4	4	4	4	4	4	4	4										
1	359452	Plug, spark																							
2	276120	Harness, wiring, spark plug	1	1	1	1	1	1	1	1	1	1	1	1	1	1		4	4	4	4	4	4		
2	326364	Harness, wiring, spark plug																1	1	1	1	1	1		
3	276106	High Tension Lead	1	1	1	1	1	1	1	1	1	1	1	1	1	1									
4a	276107	Coil, ignition	1	1	1	1	1	1	1	1	1	1	1	1	1	1									
4b	326361	Coil, ignition																1	1	1	1	1	1		
4	X-400-208	Spacer (not shown)																4	4	4	4	4	4		
4	X-50-42	Screw, RHM, 10-24																							
5	#	Screw, HC, 5/16-18	1	1	1	1	1	1	1	1	1	1	1	1	1	1				4	4	4	4		
6	276108	Strap, ignition coil	1	1	1	1	1	1	1	1	1	1	1	1	1	1									
6	326359	Bracket, ignition coil																1			1	1			
6	326429	Bracket, ignition coil																	1	1					
7	X-50-57	Screw, RHM			1	1	1	1	1	1	1	1	1	1	1	1			1	1			1		
8	#	Washer, lock, #10	1	1	1	1	1	1	1	1	1	1	1	1	1	1									
9	#	Nut, hex, #10-24	1	1	1	1	1	1	1	1	1	1	1	1	1	1									
10	#	Washer, lock, 5/16 in.	1	1	1	1	1	1	1	1	1	1	1	1	1	1									
11	#	Nut, hex, 5/16-18	1	1	1	1	1	1	1	1	1	1	1	1	1	1									
12	255876	Harness, wiring engine (includes items 13-18)																							
13	258854	Harness, speed sensor (includes item 14)			1	1	1	1	1																
14	233868	Diode			1	1	1	1	1																
15	295145	Connector, 24-position			1	1	1	1	1																
16	292800	Connector, cable			1	1	1	1	1																
17	292970	Diode Assembly			1	1	1	1	1																
18	233959	Diode, 6-amp, 100-volt			1	1	1	1	1								1	1							
19	276327	Harness, wiring engine (includes items 20-23)																							
19	276401	Harness, wiring engine																							
19	326399	Harness, wiring engine (before serial number 363369)																	1						
19	326613	Harness, wiring engine (serial numbers 363369 and after)																	1						
19	326013	Harness, wiring engine (before serial number 363369)																							1
19	326932	Harness, wiring engine																			1	1			
19	326614	Harness, wiring engine (serial numbers 363369 and after)																							1
20	295145	Connector, 24-position									1	1	1				1	1	1	1					1
21	292800	Connector, cable									1	1	1				1	1	1	1					1
22	253798	Lead Assembly									1	1	1				1	1	1	1					1
23	239408	Connector, 4-position									1	1	1				1	1	1	1					1
24	276094	Harness, ignition module wiring	1	1	1	1	1	1	1	1	1	1	1	1	1	1		1	1						1
24	326363	Harness, ignition module wiring																1	1						
24	359302	Harness, ignition module wiring																							
24	GM28715	Harness, wiring (module to MAP)																			1	1	1	1	
25	X-465-2	Screw, HC	2	2	2	2	2	2	2	2	2	2	2	2	2										
25	#	Hardware, 1/4-20																							
26	276128	Regulator, alternator	1	1	1	1	1	1	1	1	1	1	1	1	1	1									
27	X-22-12	Washer, shakeproof	6	3	2	3	3	6	6	6	6	6	2	2	2	2									
28	276077	Module, ignition	1	1	1	1	1	1	1	1	1	1	1	1	1	1									1
28	326362	Module, ignition																1	1						
28	GM28758	Module kit, ignition (includes items 182, 183, 186, and harness GM28715)																							
28	-	See item 182																							
28	326397	Bracket (not shown)																			1	1	1		
29	X-6084-1	J-Clip	1	1	1	1	1	1	1						1	1									
30	#	Nut, hex, 1/4-20	2	2	2	2	2	2	2	2	2	2	2	2	2										
31	#	Washer, lock, 1/4 in.	4	4	4	4	4	4	4	4	4	4	4	4	4										
32	#	Washer, flat, 1/4 in.	3	3	3	3	3	3	3	3	3	3	3	3	3										
33	X-465-16	Screw, HC	3	3	3	3	3	3	3	3	3	3	3	3	3										
33	X-465-21	Screw, HC															3	3							
33	X-50-3	Screw, RHM, 10-24																			2	2			

Common hardware; procure locally.

Group 105: Engine, continued

Variations 9-16, 21-26, 28, 29, 31, 32, 179-9



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Group 105: Engine, continued

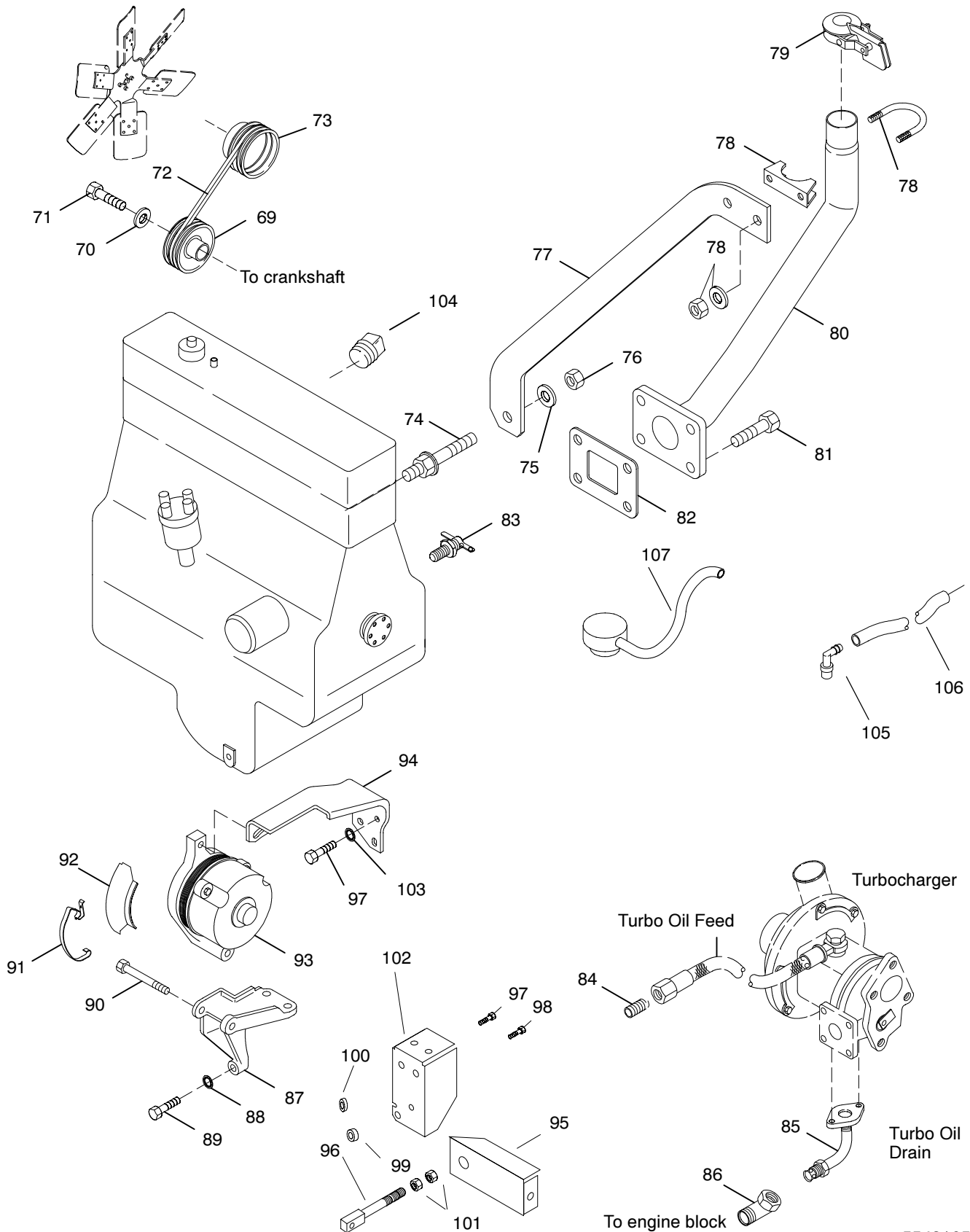
Item	Part Number	Description	Quantity																		
			Variation No.																		
			9	10	11	12	13	14	15	16	21	22	23	24	25	26	28	29	31	32	179-9
34	255236	Governor, mechanical		1	1	1	1														
35	276139	Belt, governor drive		1	1	1	1			1											
36	255340	Spring, governor (50 Hz governor)			1																
37	X-6051-1	Screw, HC	6	9	9	6	6	3	3	9	6	6									
38	X-6053-3	Nut, hex		7	7	4	4	1	1	4											
39	X-101-7	Nut, lock		1	1	1	1														
40	X-81-2	Nut, hex		4	4	4	4														
41	X-20-1	Washer, lock		4	4	4	4														
42	276093	Socket		2	2	2	2														
43	276079	Rod		1	1	1	1														
44	276138	Bracket			1	1	1														
45	X-22-1	Washer, shakeproof			3	3	3														
46	X-6050-1	Screw, HC		6	6	6	6	3	3	3											
47	X-50-56	Screw, RHM	2					2	2	2	2	2	2	2							
47	X-50-70	Screw, RHM																			
48	X-25-36	Washer, flat	4					4	4	4		4	4	4							
48	X-25-115	Washer, flat																			
49	X-101-12	Nut, lock	2					2	2	2	2		2	2							
49	X-101-9	Nut, lock																			
50	272456	Link, ball	2					2	2	2	2		2	2	2	2	2	2	2	2	2
51	X-532-86	Stud	1										1	1							
51	X-532-75	Stud						1	1	1											
51	X-532-79	Stud																			
51	X-532-73	Stud																			
X-352-51	X-70-11	Nut, hex (not shown)																			
52	273751	Yoke	1					1	1	1	1		1	1	1	1	1	1	1	1	1
53	X-22-11	Washer, lock	2		1			2	2	2	2		2	2	1	1	1	1	1	1	1
54	X-6053-1	Nut, actuator																			
55	249923	Actuator, linear	1							1	1			1	1	1	1	1	1	1	1
55	273748	Actuator, linear						1	1				1		1	1	1	1	1	1	1
56	#	Screw, 1/4-20	4					4	4	4	4			4	4						
56	#	Hardware, 1/4-20																			
57	X-6050-2	Screw, HC	1					1	1	1	1		1	1			4			4	
57	X-6050-3	Screw, HC																			
57	X-125-25	Screw, HC																			
57	X-6050-8	Screw, HC																			
58	#	Washer, lock, 5/16 in.	1					1	1	1	1		1	1							
59	256432	Bracket, linear actuator						1	1				1								
59	254722	Bracket, linear actuator	1							1	1			1							
59	326396	Bracket, linear actuator																			
59	256470	Bracket, linear actuator																			
59	326858	Bracket, linear actuator																			
60	#	Washer, flat, 1/4 in.	4					4	4	4	4		4	4							
61	#	Nut, hex, 1/4-20	4					4	4	4	4		4	4							
62	X-400-100	Spacer	1					1	1	1	1		1	1							
62	265693	Spacer, .344 x .625 x 1.062																			
63	X-25-85	Washer, flat	1							1											
64	246040	Pickup, magnetic						1	1	1		1									
64	276404	Pickup, magnetic											1	1	1	1	1	1	1	1	1
65	X-51-9	Screw, RHM						4	4	4				4	4	4					
65	X-51-11	Screw, RHM												4	4	4					
65	X-6216-1	Screw, hex head																			
66	A-246045	Governor Assembly						1	1	1			1	1	1	1		4	4		
67	#	Washer, flat, #8						4	4	4			4	4	4			1	1		
68	#	Nut, hex, #8-32						4	4	4			4	4	4						

Common hardware; procure locally.

326814

Group 105: Engine, continued

Variations 9-16, 21-26, 28, 29, 31, 32, 179-9



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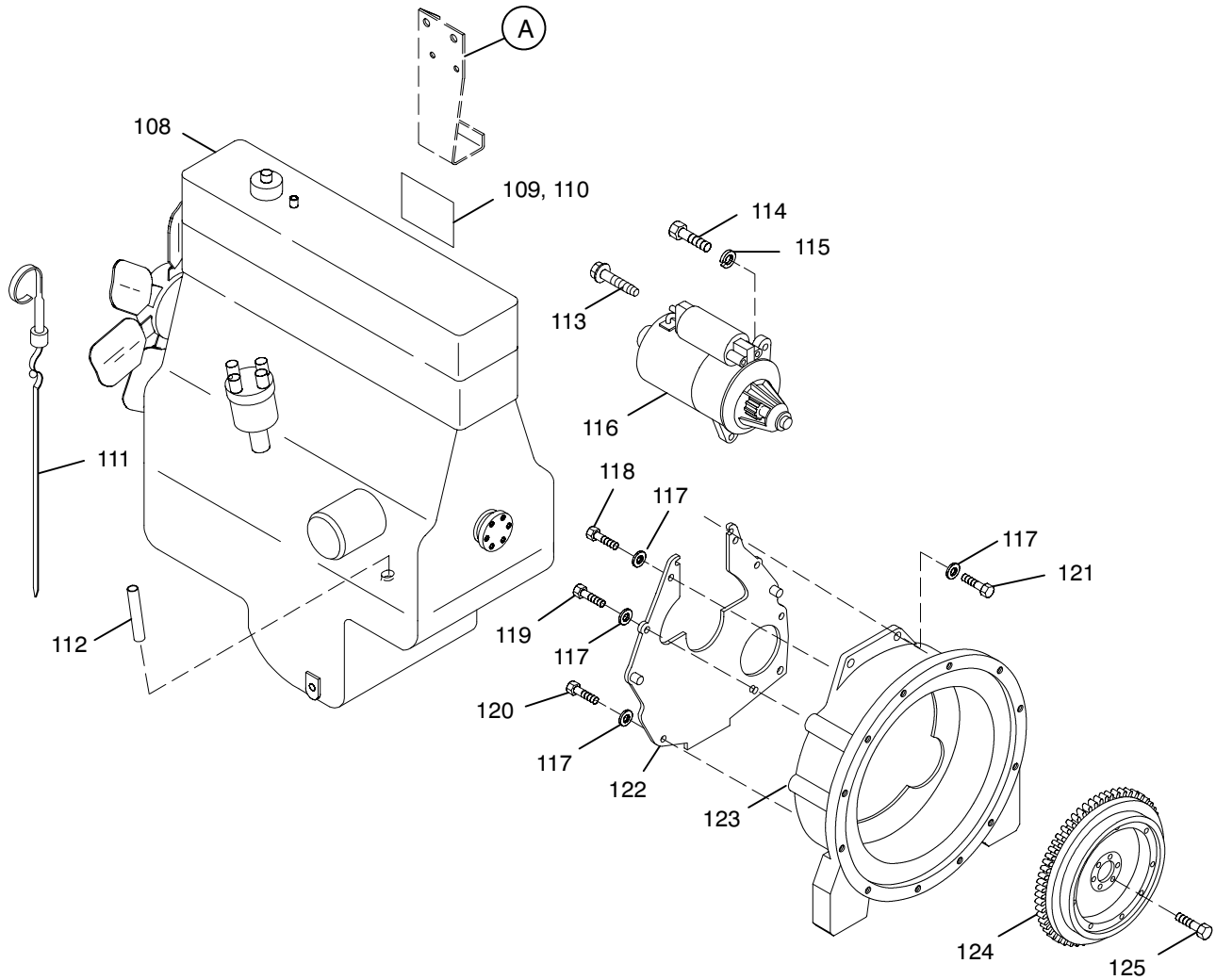
Group 105: Engine, continued

Item	Part Number	Description	Quantity																		
			Variation No.																		
			9	10	11	12	13	14	15	16	21	22	23	24	25	26	28	29	31	32	179-9
69	276105	Pulley, crankshaft	1	1	1	1	1	1	1	1	1	1	1	1							
70	276152	Washer, hardened	1	1	1	1	1	1	1	1	1	1	1	1							
71	276158	Bolt, HC	1	1	1	1	1	1	1	1	1	1	1	1							
72	276141	Belt, fan drive	1	1	1					1	1	1									
72	276148	Belt, fan drive				1	1	1	1					1	1						
72	326320	Belt, fan drive												1	1	1	1	1	1	1	
72	276142	Belt, matched pair																			1
73	276134	Pulley, water pump	1	1	1					1	1	1									
73	276118	Pulley, water pump				1	1	1	1					1	1						
73	326360	Pulley, water pump													1	1	1	1	1	1	
73	276157	Pulley, water pump																			1
74	276153	Stud, hex shoulder		1	1	1	1	1	1	1				1	1	1		1	1		
75	X-801-3	Washer, hardened		1	1	1	1	1	1	1				1	1			1	1		
76	X-6053-3	Nut, hex						1	1					1	1			1	1		
77	276125	Bracket, exhaust support		1	1	1	1	1	1	1				1	1	1		1	1		
78	X-722-5	Clamp, U		1	1	1	1	1	1	1				1	1	1		1	1		
79	276126	Cap, vertical exhaust		1	1					1					1	1					
80	276127	Pipe, muffler inlet		1	1		1			1				1	1	1		1	1		
80	276165	Pipe, exhaust																			1
80	276163	Flange, muffler pipe																			1
81	X-6051-3	Screw, HC		4	4					4				4				4	4		
82	276124	Gasket		1	1		1			1				1				1	1		
83	X-256-3	Valve, drain, 1/4 in.	1	1	1	1	1	1	1	1	1	1			1	1	1	1	1	1	
84	X-296-5	Connector, half union				1	1	1	1									1	1	1	
85	276131	Tube, oil return				1	1	1	1					1							
86	276130	Elbow, flared				1	1	1	1					1							
87	276149	Bracket, alternator mounting	1	1	1	1	1	1	1	1	1	1	1	1	1						
87	326318	Bracket, alternator mounting													1	1					
87	276143	Bracket, alternator mounting																			1
87	326314	Bracket, alternator mounting															1	1	1	1	
87	X-400-91	Spacer (not shown)													1	1					
87	X-400-207	Spacer (not shown)													1	1					
88	X-22-1	Washer, shakeproof, 3/8 in.	3	3	3	3	3	3	3	3	3	3	3	3	3						
89	X-6051-1	Screw, HC						3	3					3	3						
89	X-6051-24	Screw, HC															2	2	2	2	
90	X-6051-9	Screw, HC	1	1	1	1	1	1	1	1		1	1	1							
90	X-6238-20	Screw															1	1		1	
90	X-101-13	Nut, lock															1	1		1	
91	276136	Clip, alternator fan shield	1	1	1	1	1	1	1	1	1	1	1	1							
92	376137	Shield, alternator	1	1	1	1	1	1	1	1	1	1	1	1							
93	276140	Alternator	1	1	1	1	1	1	1	1	1	1	1	1							
93	326348	Alternator													1	1	1	1	1	1	
93	276182	Alternator																			1
93	276144	Hub, alternator pulley (not shown)																			1
94	276272	Arm, alternator adjusting	1	1				1	1	1	1	1	1	1							
94	276145	Arm, alternator adjusting																			1
95	326317	Bracket, rod adjustment													1	1	1	1	1	1	
96	326316	Bracket, rod adjustment													1	1	1	1	1	1	
97	X-6050-4	Screw, HC	3								3	3	3	3							
98	X-6051-3	Screw, HC		1	1	1	1	1	1	1							1	1	1	1	
99	X-400-91	Spacer															1	1	1	1	
100	X-400-207	Spacer															1	1	1	1	
101	X-70-10	Nut, hex															2	2	2	2	
102	326318	Bracket, mounting															1	1	1	1	
103	#	Washer, lock, 5/16 in.	3	3	3	3	3	3	3	3	3	3	3	3							
104	276212	Plug, freeze												1							
104	X-75-28	Plug, pipe (not shown)												1							
104	X-202-41	Bushing, reducer (not shown)												1							
105	276179	Regulator, crankcase vent																			1
105	326367	PVC Valve														1	1	1	1	1	
106	276177	Hose, crankcase vent																			1
106	276176	Hose, crankcase vent																			1
106	326366	Hose, vent														1	1	1	1	1	
107	276178	Hose, crankcase vent																			1

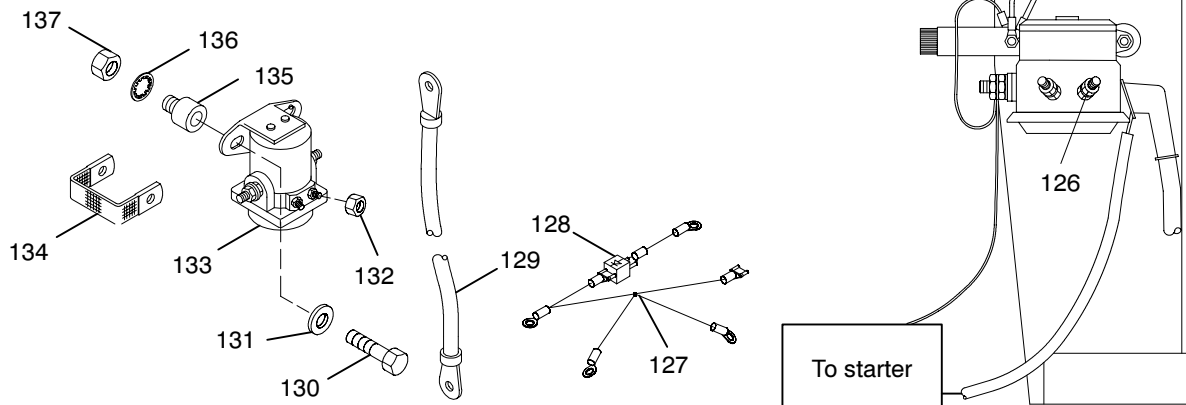
Common hardware; procure locally.

Group 105: Engine, continued

Variations 9-16, 21-26, 28, 29, 31, 32, 179-9



A Starter Solenoid



5543105G

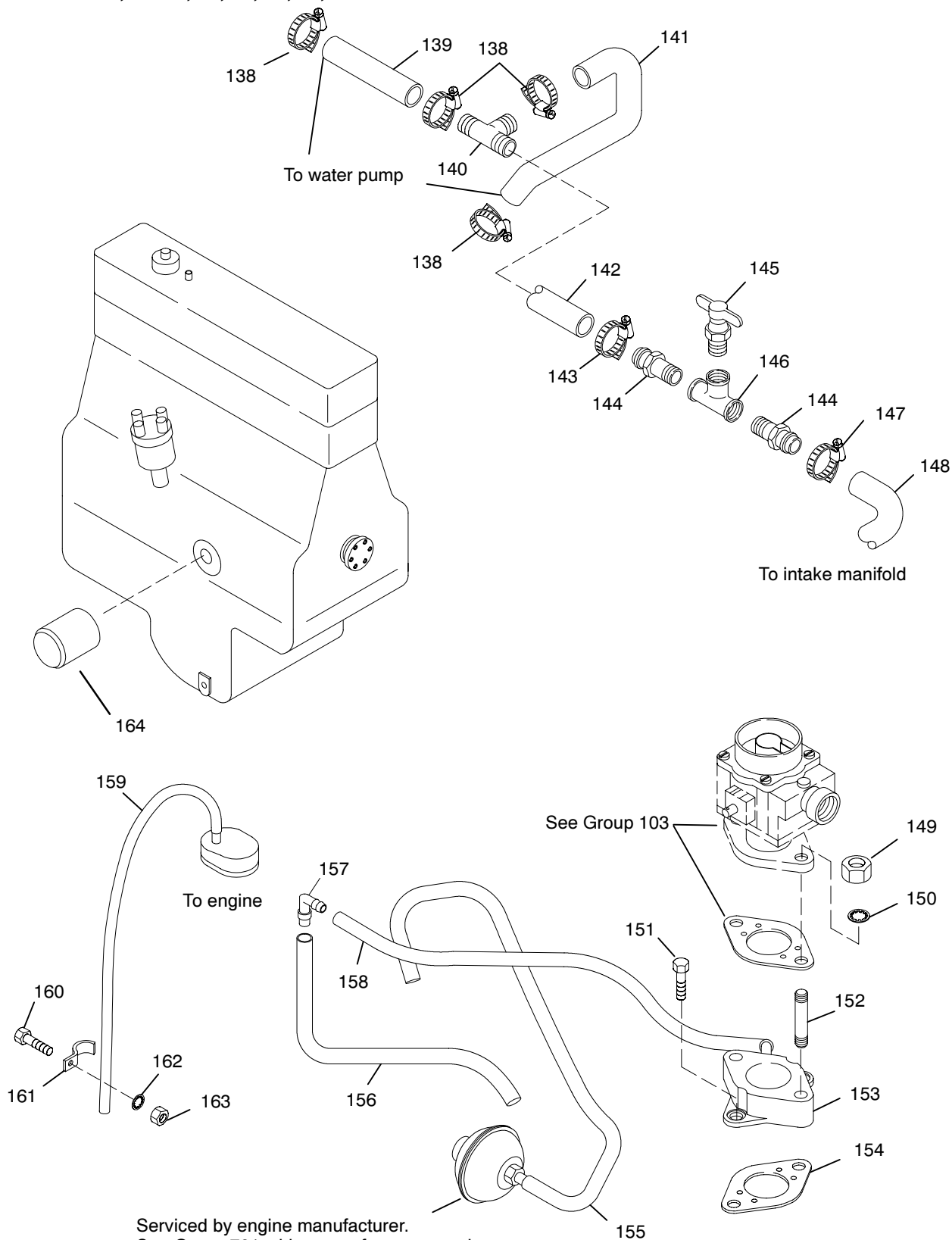
Group 105: Engine, continued

Item	Part Number	Description	Quantity																		
			Variation No.																		
			9	10	11	12	13	14	15	16	21	22	23	24	25	26	28	29	31	32	179-9
108	A-276397	Engine Assembly, Ford LSG-423	1	1	1	1	1	1	1	1	1	1	1	1							
108	A-326352	Engine Assembly, Ford LRG-423														1	1				
108	A-326275	Engine Assembly, Ford CSG-649																			1
108	A-359288	Engine Assembly, Ford LRG-425																1			
108	B-359288	Engine Assembly, Ford LRG-425																		1	
108	A-359289	Engine Assembly, Ford LRG-425																1			
108	B-359289	Engine Assembly, Ford LRG-425																	1		
109	276129	Nameplate, engine		1	1					1				1							
109	276132	Nameplate, engine				1	1	1	1				1						1		
110	246066	Adhesive, neoprene		1	1	1	1	1	1	1			1	1							
111	276111	Indicator, oil level	1	1	1	1	1	1	1	1	1	1	1	1							
111	326365	Indicator, oil level													1	1	1	1	1	1	
111	276181	Indicator, oil level																			1
112	276110	Tube, oil level indicator	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
112	276180	Tube, oil level indicator																			1
113	276096	Screw, washer head	1	1	1	1	1	1	1	1	1										
114	X-6051-3	Screw, HC	3			3	3	3	3		3										
114	X-6238-4	Screw, HC											3	3							3
115	X-22-1	Washer, lock	3	3	3	3	3	3	3	3	3					3					
115	X-22-14	Washer, lock												1	1		1	1	1	1	
116	276112	Starter Assembly	1	1	1	1	1	1	1	1	1		1	1	1		1	1	1	1	
116	276175	Starter Assembly																			1
116	326101	Cover, starter (not shown)																			1
116	326872	Terminal (not shown)													1	1	1	1	1	1	
116	X-6053-2	Nut, hex (not shown)															1	1	1	1	
117	X-801-3	Washer, hardened	7								7	7									
118	X-6051-10	Screw, HC	2	2	2	2	2	2	2	2	2	2									
119	X-6051-9	Screw, HC	3	3	3	3	3	3	3	3	3	3									
119	X-6238-5	Screw, HC											2	2				2	2	2	2
120	X-6051-1	Screw, HC	3			3	3				3	3		2	2			2	2	2	2
121	X-6051-1	Screw, HC	3			3	3				3	3		2	2			2	2	2	2
121	X-6265-2	Screw, HC											2	2				2	2	2	2
122	276116	Plate, engine cover rear	1	1	1	1	1	1	1	1	1	1		1	1	1	1	1	1	1	
122	276390	Adapter Plate																			
123	276135	Housing, flywheel	1	1	1	1	1	1	1	1	1	1		1	1	1	1	1	1	1	
123	326078	Adapter, generator																			1
124	276103	Flywheel	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
124	326095	Flywheel																			1
125	276104	Bolt, locking	6	6	6	6	6	6	6	6	6	6	6	6			6	6	6	6	6
125	276169	Bolt, locking																			6
126	X-6214-2	cap, plastic	1						1	1	1							1	1	1	1
127	276340	Harness, wiring (includes item 60)	1	1	1	1	1	1	1	1											
128	233959	Diode	1	1	1	1	1	1	1	1											
129	X-545-34	Cable, battery	1						1	1	1										
130	#	Screw, HC, 1/4-20	2					2	2	2										2	
131	#	Washer, flat, 1/4 in.	2					2	2	2								2		2	
132	#	Nut, hex, #10-32	2					2	2	2			2	2						2	
133	291891	Solenoid, starter	1					1	1	1			1	1	1	1		1	1	1	1
134	223033	Strap, ground	1					1	1	1											
135	259632	Bumper	2					2	2	2											
136	X-22-12	Washer, shakeproof	2					2	2	2							2	2	2	2	2
137	#	Nut, hex, 1/4-20	2					2	2	2											

Common hardware; procure locally.

Group 105: Engine, continued

Variations 9-16, 21-26, 28, 29, 31, 32, 179-9



Serviced by engine manufacturer.
See Group 701—Literature for parts catalog
number.

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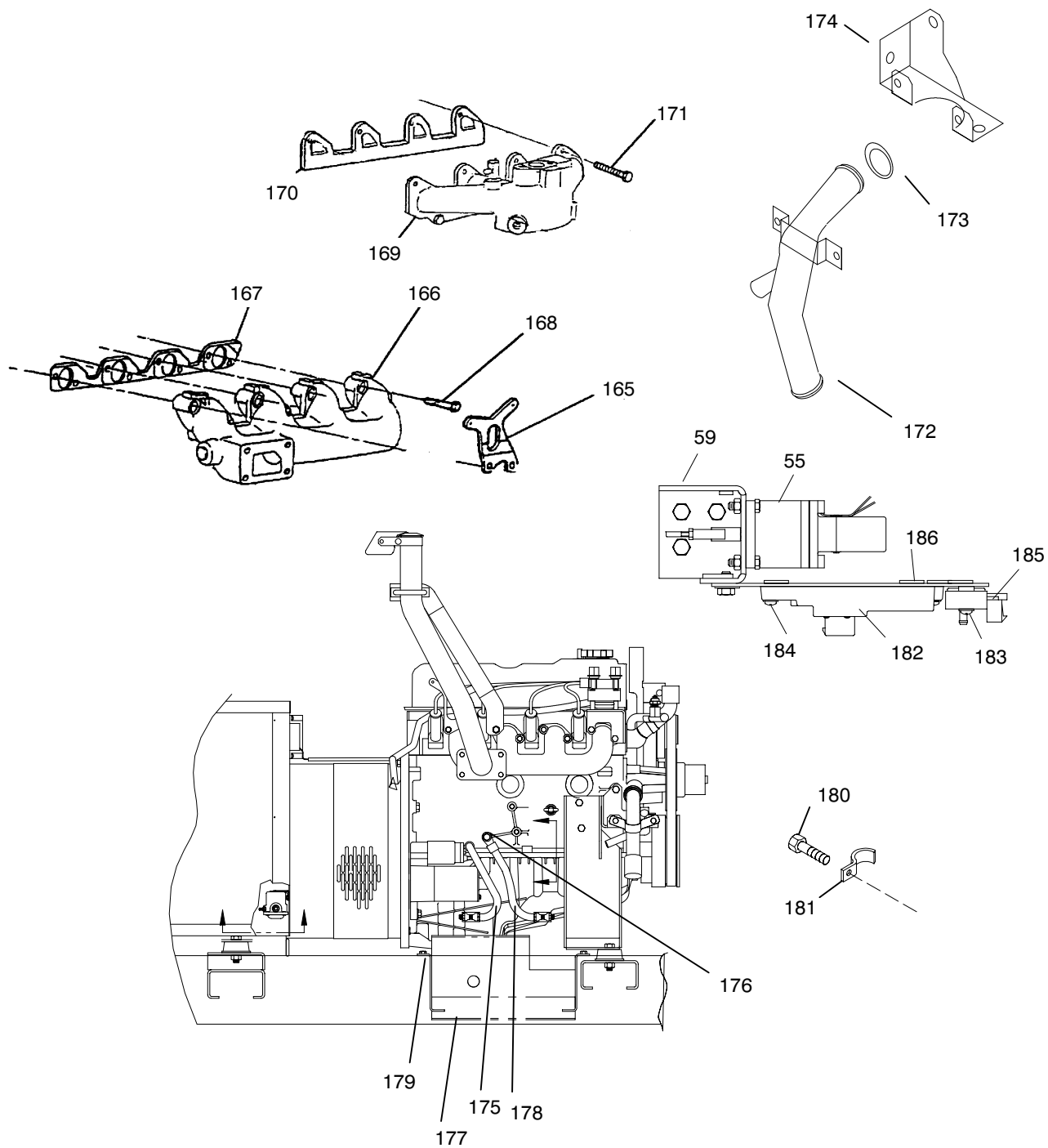
Group 105: Engine, continued

Item	Part Number	Description	Quantity																		
			Variation No.																		
			9	10	11	12	13	14	15	16	21	22	23	24	25	26	28	29	31	32	179-9
138	X-426-3	Clamp, hose	4			4	4	4	4	4	4	4	4	4							
139	X-577-9	Hose						1	1	1	1	1									
139	X-577-37	Hose	1	1	1	1	1						1	1							
140	276123	Tee	1	1	1	1	1	1	1	1	1	1	1	1							
140	X-211-8	Elbow, street, 3/8 in. (not shown)											1	1							
141	X-577-38	Hose	1	1	1	1	1	1	1	1			1	1							
141	X-577-48	Hose									1	1									
142	X-651-22	Hose, rubber						1	1	1	1	1									
142	X-651-27	Hose, rubber											1	1							
143	X-426-10	Clamp, hose						2	2	2	4	4									
143	X-426-12	Clamp, hose		4	4																
143	X-426-9	Clamp, hose											4	4							
144	X-582-9	Connector, hose	2					1	1	1	3	3	2	2							
145	X-256-1	Valve, drain	1					1	1	1	1	1	1	1							
146	X-203-15	Tee, black iron	1								1	1	1	1							
147	X-426-18	Clamp, hose	4			2	2														
147	X-426-12	Clamp, hose		2	2																
147	X-426-9	Clamp, hose											2	2							
148	X-651-15	Hose, rubber	1	1	1																
148	X-651-19	Hose, rubber				1	1	1	1	1	1	1									
148	X-651-13	Hose, rubber											1	1							
149	X-6053-2	Nut, hex	2			4	4	2	2		2		2	2							
149	X-6210-10	Nut, hex																			2
150	X-22-5	Washer, shakeproof	2			2	2	2	2		2		2	2							
150	X-22-10	Washer, shakeproof																			2
151	X-6265-1	Screw	2	2	2	2	2	2	2	2	2	2	2	2							2
151	X-55-29	Screw																			2
152	X-6054-11	Stud				2	2	2	2				2	2							
152	X-6054-6	Stud	2			2	2				2		2	2							
152	X-352-76	Stud																			2
153	276099	Adapter, carburetor	1	1	1					1	1	1		1							
153	276117	Adapter, carburetor				1	1	1	1				1								1
153	276146	Adapter, carburetor																			
154	276098	Gasket, carburetor to manifold	1	1	1	1	1	1	1	1	1	1	1	1							
154	276147	Gasket, carburetor to manifold																			1
155	X-386-74	Line, flexible	1	1	1					1	1	1		1							
155	X-386-106	Hose, breather													1						
155	X-391-35	Elbow (not shown)																			1
156	276121	Hose, crankcase vent	1	1	1					1	1	1		1							
157	276122	Regulator, crankcase vent	1	1	1					1	1	1		1							
158	X-651-23	Hose, rubber	1	1	1					1	1	1		1							
159	X-312-13	Hose				1	1														
159	X-312-24	Hose											1								
160	#	Screw, hex cap, 5/16-18				1	1	1	1												
161	X-672-3	Clamp, insulating				1	1	1	1												
162	X-22-16	Washer, shakeproof				1	1	1	1												
163	#	Nut, hex, 5/16-18				1	1	1	1												
164	279449	Oil Filter	1	1	1	1	1	1	1	1	1	1	1	1							

Common hardware; procure locally.

Group 105: Engine, continued

Variations 25, 26, 28, 29, 31, 32, 179-9



Group 105: Engine, continued

Item	Part Number	Description	Quantity						
			25	26	28	29	31	32	179-9
165	326596	Lifting Bracket	1	1		1	1		
166	326419	Exhaust Manifold	1			1	1		
166	See Group 104	Exhaust Manifold		1					
167	326420	Gasket, exhaust manifold	1			1	1		
167	See Group 104	Gasket, exhaust manifold		1					
168	X-6051-9	Screw, hex head cap				6	6		
169	326416	Intake Manifold	1	1	1	1	1	1	
170	326417	Gasket, intake manifold	1	1	1	1	1	1	
171	X-6050-3	Screw			2	2	2	2	
171	X-6050-4	Screw			6	6	6	6	
172	326415	Water Tube Assembly	1						
172	326398	Water Tube Assembly		1					
172	226879	Water Tube Assembly			1			1	
172	326862	Water Tube Assembly				1	1		
173	326414	O-ring	1	1	1	1	1	1	
174	326355	Water Inlet Bracket	1			1	1		
174	326684	Water Inlet Bracket		1	1			1	
174	X-400-217	Spacer (not shown)			1			1	
174	X-6051-12	Screw, HC (not shown)			1			1	
175	X-545-98	Cable, battery negative				1	1		
175	X-545-49	Cable, battery negative			1			1	
176	X-6238-10	Screw, HC				1	1		
177	X-794-1	Screw, drill hex			2	2	2	2	
178	244723	Cable, battery positive				1	1		
178	GM20743	Boot, starter terminal (not shown)				1	1		
178	GM20748	Boot, battery 90 deg. right (not shown)				1	1		
178	X-545-50	Cable, battery positive			1			1	
179	326864	Rack, battery				1	1		
179	256981	Rack, battery			1			1	
179	360491	Bolt, angle (not shown)			2			2	
179	X-101-4	Nut, elastic stop 10-24 (not shown)			2			2	
179	256982	Clamp, battery (not shown)				1			
179	324033	Clamp, battery (not shown)			1		1	1	
180	X-6051-2	Screw, hex head cap			1	1	1	1	
181	X-672-31	Clamp			1	1	1	1	
182	GM28714	Module, ignition control						1	
183	GM17771	Manifold, air pressure module						1	
184	X-50-8	Screw, slotted head machine						3	
185	X-50-7	Screw, slotted head machine						2	
186	326858	Bracket, ignition module mtg.						1	

Group 107: Nameplate and Decals

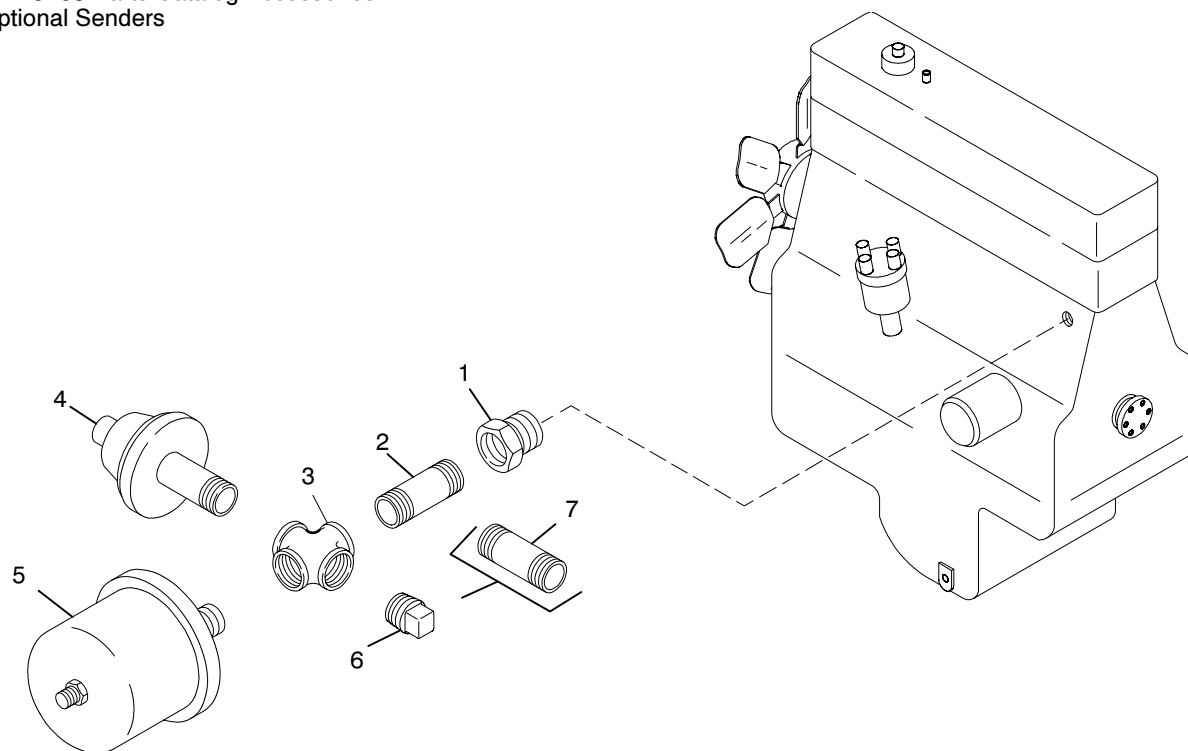
Item	Part Number	Description	Quantity											
			Variation No.											
			2	3	4	5	6	7	8	9	10	11	12	
1	X-6247-14	Decal, 18 kW			2	2		2	2					
1	X-6247-1	Decal, model 20 kW						2	2					
1	X-6298-1	Decal, model								2	2			
1	X6247-2	Decal, model 30 kW	2											
1	X-6298-2	Decal, model										2	2	
2	X-6232-1	Decal, stripes	2											
2	X-6232-2	Decal, stripes	1							2	2	2	2	
2	X-6235-5	Decal, stripes												
3	X-6246-1	Decal, Kohler Power System								2	2	2	2	
4	X-6275-3	Logo, Kohler								1	1	1		
5	224234	Decal, 1-800 number								1	1	1	1	
6	238402	Decal, 12-volt	1	1	1	1	1	1	1	1	1	1	1	
7	249808	Decal, warning, rotating parts			1	1		1	1					
8	249809	Decal, hot engine			1	1				1	1	1	1	
9	257437	Decal, lifting sling method	1	1	1	1	1	1	1	1	1	1	1	
10	257438	Decal, hazardous voltage/moving rotor	1	1	1	1	1	1	1	1	1	1	1	
11	257441	Decal, unbalanced weight								1	1	1	1	
12	258815	Decal, hazardous voltage			1					1	1	1	1	
13	259365	Decal, backfeed	1			1		1	1	1	1	1	1	
14	273739	Decal, Fast Response								1	1	1	1	
15	238162	Marker, adhesive			1	1		1	1					
16	239796	Decal, warning, carbon monoxide			1	1		1	1					
17	241067	Decal, instruction	1		1	1		1	1	1	1	1	1	
18	290435	Decal, equipment ground				1		1	1					
19	249810	Decal, warning, hot coolant				1		1	1					
20	254831	Decal, regulator adjustment				1		1	1	1				
21	255882	Decal, standby service						1			1		1	
22	255084	Decal, Fast Response	1											
23	280561	Decal, water drain	1											
24	274323	Decal, warning								1	1	1	1	
25	239776	Decal, caution, lifting support									1		1	
26	279958	Decal, warning, 600-volt connection									1		1	
27	273780	Decal, warning												

Group 107: Nameplate and Decals

Item	Part Number	Description	Quantity									
			Variation No.									
			19	20	21	22	23	GR1	25	34	35	179-4
1	X-6247-14	Decal, 18 kW		2	2				2			
1	-	Decal, model (See parts bulletin 96)	2			2	2	2		2	2	2
2	X-6232-1	Decal, stripes										2
2	X-6232-2	Decal, stripes										1
2	X-6232-6	Decal, stripes						3		3	2	
2	X-6235-5	Decal, stripes					3					
3	X-6246-1	Decal, Kohler Power System					2			2	2	
3	X-6246-6	Decal, Kohler Power System						2				
4	X-6275-3	Logo, Kohler					1		1	1	1	
5	224233	Decal, 1-800 number					1	1	1	1	1	
6	238402	Decal, positive terminal only	1	1	1	1	1	1	1	1	1	1
7	249808	Decal, warning, rotating parts		1	1	1	1	1	1	1	1	
8	249809	Decal, hot engine					1	2	1	1	1	
9	257437	Decal, lifting sling method	1	1	1	1	1		1	1	1	1
10	257438	Decal, hazardous voltage/moving rotor	1	1	1	1	1	1	1	1	1	1
11	257441	Decal, warning, lifting eye					1	1		3	2	
12	258815	Decal, voltage backfeed		1			1	1	1	1	1	
13	259365	Decal, backfeed			1	1	1		1	1		1
14	273739	Decal, Fast Response					1	1		1	1	
15	238162	Marker, adhesive		1	1							
16	239796	Decal, warning, carbon monoxide		1	1				1			
17	241067	Decal, instruction					1	1	1			1
18	290435	Decal, equipment ground										
19	249810	Decal, warning, hot coolant		1	1	1	1	1	1			
20	254831	Decal, regulator adjustment			1	1			1			
21	255882	Decal, standby service				1			1			
22	255084	Decal, Fast Response										1
23	280561	Decal, water drain										1
24	274323	Decal, warning										
25	239776	Decal, caution, lifting support									1	
26	279958	Decal, warning, 600-volt connection					1				1	
26	GM13776	Decal, FRIL reconnection						1				
27	273780	Decal, warning, explosion				1	1	1				
28	GM15300	Decal, exhaust piping					1	1				
29	GM20577	Decal, fuel type					1	1				

Group 108: Oil Pressure Switch

See TP-5708 Parts Catalog Accessories
for Optional Senders

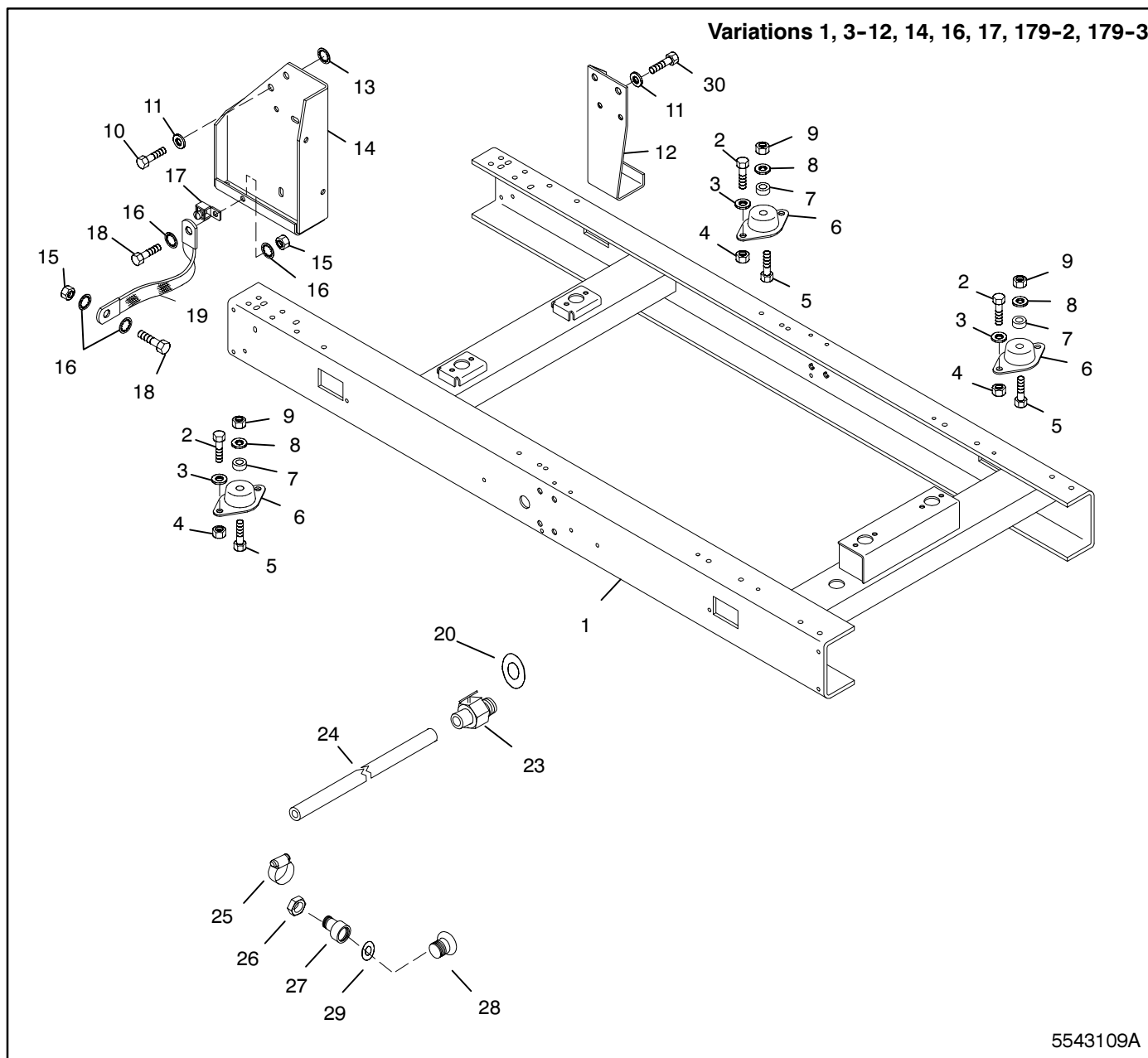


5543108A

Item	Part Number	Description	Quantity																
			Variation No.																
			1	2	3	4	5	6	7	8	9	10	11	12	179-3	E28	E29	E31	E32
1	A-106	Bushing, reducer					1			1	1	1	1	1	1	1	1	1	1
1	X-202-27	Bushing, reducer	1	1	1	1		1	1										
2	289055	Nipple, pipe	1	1	1			1	1		1	1	1		1		1	1	
3	164037	Cross, pipe	1	1	1			1	1		1	1	1		1		1	1	
4	328309	Switch, pressure	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
5	264390	Sender, oil pressure	1		1			1	1		1	1	1		1		1	1	
6	X-75-1	Plug, pipe	1	1	1				1		1	1	1		1		1	1	
7	296-5	Connector						1				1							
7	X-203-16	Tee, pipe, 1/8 x 1/8 x 1/8 in.										1							

Notes

Group 109: Skid and Plant Mounting



5543109A

Item	Part Number	Description	Quantity																
			Variation No.																
			1	3	4	5	6	7	8	9	10	11	12	326879	14	16	17	179-2	179-3
1	244222	Skid, engine mounting	1																
1	258870	Skid, engine mounting		1															
1	254460	Skid, engine mounting			1														
1	254696	Skid, engine mounting				1													
1	254708	Skid, engine mounting					1												
1	276333	Skid, engine mounting						1											
1	276334	Skid, engine mounting							1										
1	276301	Skid, engine mounting								1									
1	326313	Skid, engine mounting									1								
1	326312	Skid, engine mounting										1				1			
1	326412	Skid, engine mounting											1				1		
1	326866	Skid, engine mounting												1		1			
1	326015	Skid, engine mounting													1			1	1
2	#	Screw, HC, 1/2-13	8	8	8	8	8			8									
2	#	Screw. 3/8-16								8				8	8			8	8

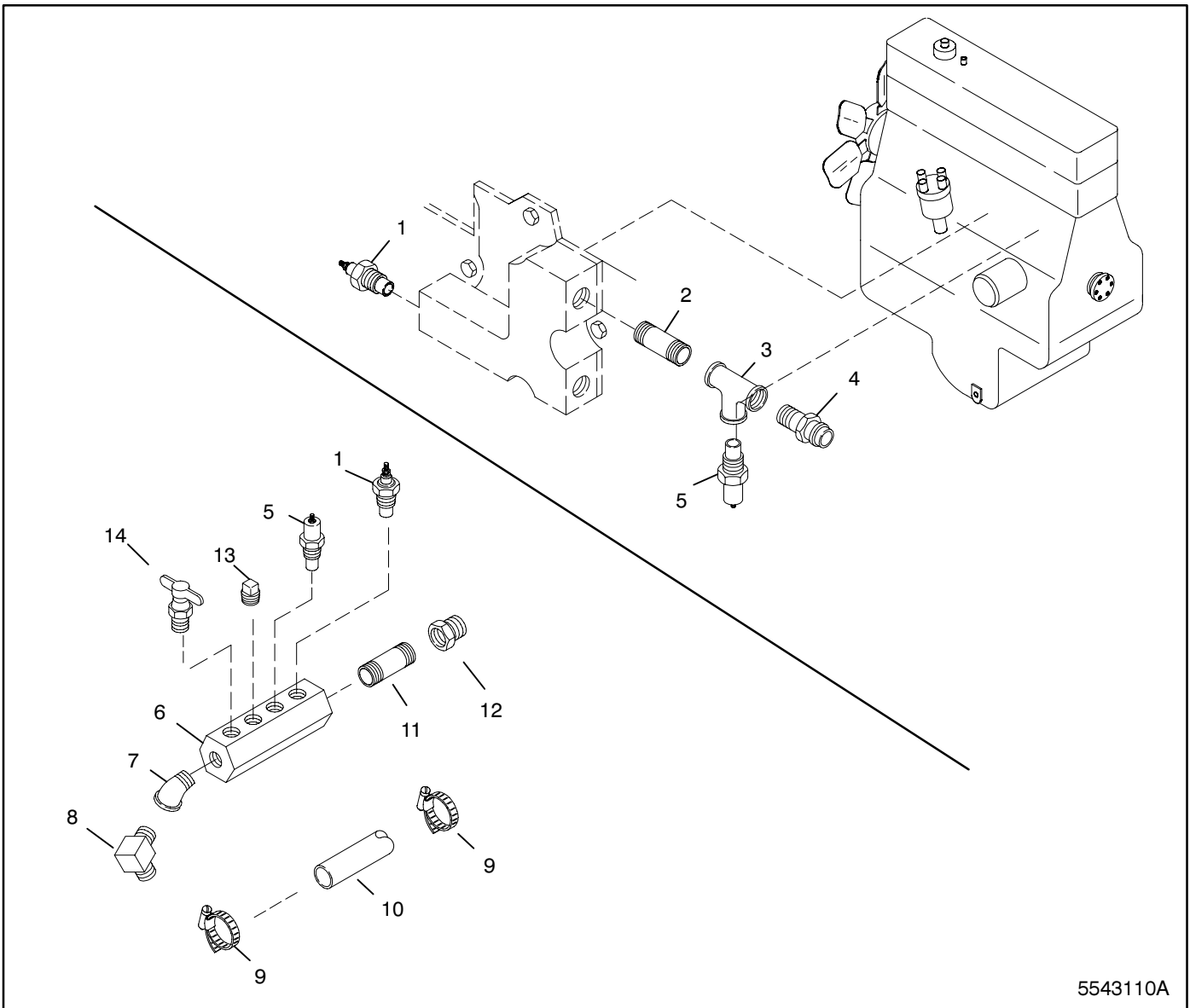
Common hardware; procure locally.

Group 109: Skid and Plant Mounting, continued

Item	Part Number	Description	Quantity																
			Variation No.																
			1	3	4	5	6	7	8	9	10	11	12	14	326879	16	17	179-2	179-3
2	#	Screw, HC, 5/16-18						8	8										
3	#	Washer, plain, 1/2 in.	8	8	8	8	8			8									
3	#	Washer, plain, 3/8 in.									8			8	8			8	8
3	#	Washer, plain, 5/16 in.						8	8										
4	#	Nut, hex, 1/2-13	8	8	8	8	8			8									
4	#	Nut, hex, 3/8-16									8			8	8			8	8
4	#	Nut, HC, 5/16-18						8	8										
5	#	Screw, HC, 1/2-13	4	4	4	4	4			4	4							4	
5	#	Screw, HC, 3/8-16						4	4										
5	X-129-24	Screw												2	2				
5	X-129-23	Screw												2	2	2	2		
6	244210	Vibromount	4	4	4	4	4												
6	226458	Vibromount (engine, right)						1	1										
6	229127	Vibromount (engine, left)						1	1										
6	276476	Vibromount (engine end)								2	2	2	2	2	2	2	2		
6	324073	Vibromount (engine end)																2	2
6	258659	Vibromount (generator end)						2	2										
6	324073	Vibromount (generator end)								2								2	
6	324074	Vibromount (generator end)									2			2	2				
6	278322	Vibromount (generator end)										2	2			2	2		
6	276309	Vibromount (generator end)																	2
7	X-400-191	Spacer						4	4			4	4			4	4		
8	X-25-96	Washer, plain						4	4			4	4						
8	X-25-140	Washer, plain								4	4			4	4	2	2	4	4
9	X-101-23	Nut, hex stop	4	4	4	4	4			4	4			4	4	2	2	4	4
9	#	Nut, hex stop						4	4										
10	X-6051-3	Screw, HC	4	4	4	4	4	4	4	4									
10	X-6051-24	Screw, HC									2	2	2						
10	X-6051-2	Screw, HC												1	1	1	1		
10	X-6051-8	Screw, HC												1	1	1	1		
11	#	Washer, plain, 7/16 in.	4	4	4	4	4	4	4					2	2	2	2		
11	X-22-14	Washer																	
12	255235	Support, engine (RS)	1	1	1														
12	254932	Support, engine (RS)				1	1	1	1										
12	276303	Support, engine (RS)								1									
12	326310	Support, engine (RS)									1	1	1	1	1	1	1		
12	326017	Support, engine (RS)																1	1
12	X-6024-2	Screw, HC (not shown)																4	4
13	X-22-15	Washer, lock	2	2	2	2	2	2	2	4									
13	X-22-14	Washer, lock												1	1				
13	X-22-16	Washer, lock												1	1				
14	255234	Support, engine (LS)	1	1	1	1	1	1	1										
14	276302	Support, engine (LS)								1									
14	326311	Support, engine (LS)									1	1	1	1	1	1	1		
14	326016	Support, engine (LS)																1	1
14	X-400-209	Spacer (not shown)									2	2	2	2	2	2	2		
15	#	Nut, hex, 5/16-18	2	2	2	2	2	2	2										
16	XX-22-16	Washer, lock, 5/16 in.	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
17	X-377-11	Terminal, grounding			1	1	1	1	1										
18	X-125-5	Screw, HC, 5/16-18	2	2	2	2	2	2	2										
18	#	Hardware, 5/16-18								4	4			4	4			4	4
19	290418	Strap, ground	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
20	276317	Washer, nylon															1	1	
23	359300	Valve, oil drain												1	1	1	1		
24	326921	Hose, molded												1	1	1	1		
25	X-426-9	Clamp, hose												2	2	2	2		
26	X-80-1	Nut, hex												1	1	1	1		
27	254720	Adapter, hose												1	1	1	1		
28	241062	Plug, drain												1	1	1	1		
29	276552	Washer, nylon												1	1	1	1		
30	X-6051-21	Screw												1	1	1	1		

Common hardware; procure locally.

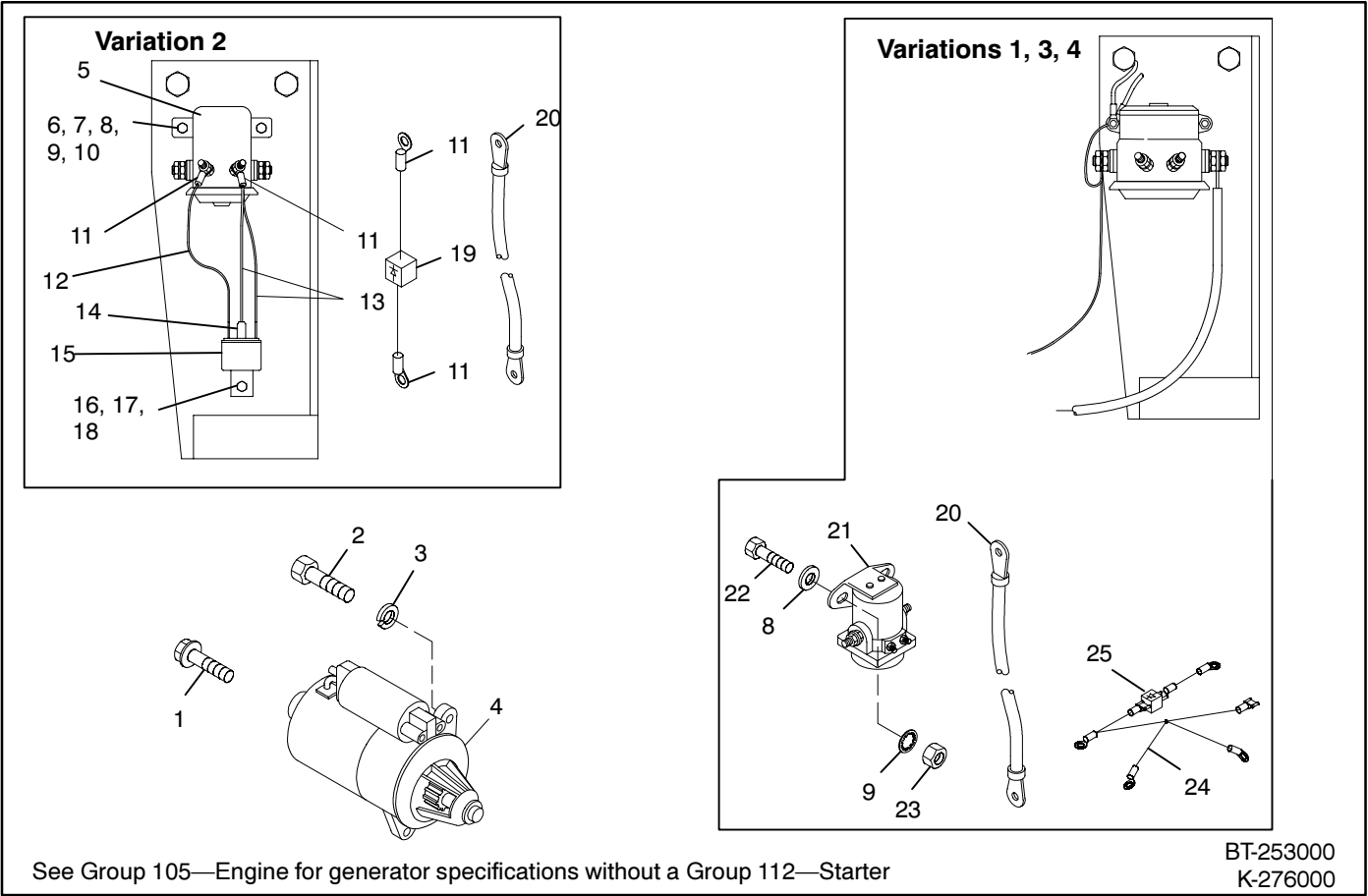
Group 110: Temperature Switch



5543110A

Item	Part Number	Description	Quantity												
			Variation No.												
			1	2	3	4	5	6	7	E28	E29	E31	E32	179-3	
1	255240	Sender, water temperature	1				1	1			1	1			
1	268298	Sender, water temperature												1	
2	X-204-9	Nipple, pipe			1										
3	X-203-15	Tee			1										
4	X-582-9	Connector, hose		1	1										
5	255241	Switch, high temperature	1	1	1	1	1								
5	326105	Switch, high temperature						1	1	1	1	1	1		
5	241308	Switch, high temperature												1	
6	273659	Manifold, temperature switch												1	
7	X-211-3	Elbow												1	
8	X-391-33	Elbow, hose												1	
9	X-426-3	Clamp, hose												1	
10	X-312-23	Hose												1	
11	X-209-2	Nipple, pipe, 1/2 x 1 3/16												1	
12	X-202-41	Bushing, reducer												1	
13	X-75-3	Plug, pipe												1	
14	X-256-5	Valve, drain												1	

Group 112: Starter



Item	Part Number	Description	Quantity			
			Variation No.			
			1	2	3	4
1	276096	Screw, washer head			1	1
2	X-6051-3	Screw, HC			3	3
3	#	Washer, lock, 7/16 in.			3	3
4	276112	Motor Assembly, starter			1	1
5	233442	Relay		1		
6	X-465-16	Screw, HC		2		
7	X-20-1	Washer, lock		2		
8	X-25-52	Washer, plain		2		
9	X-22-12	Washer, shakeproof	2	2	2	2
10	X-81-1	Nut, hex		2		
11	X-283-3	Terminal		4		
12	LW-1805-5714	Lead		1		
13	LW-1805-5700	Lead		2		
14	X-431-30	Terminal		1		
15	259391	Relay		1		
16	X-117-5	Screw, HC		1		
17	X-19-1	Washer, lock		1		
18	X-70-2	Nut, hex		1		
19	233712	Diode		1		
20	X-545-34	Cable, battery	1	1	1	1
21	291891	Solenoid, starter	1	1	1	1
22	#	Screw, HC, 1/4-20	2		2	2
23	#	Nut, hex, 1/4-20	2		2	2
24	276340	Harness, wiring (includes item 25)			1	1
25	233959	Diode			1	1

Common hardware; procure locally.

Group 119: Recommended Spare Parts

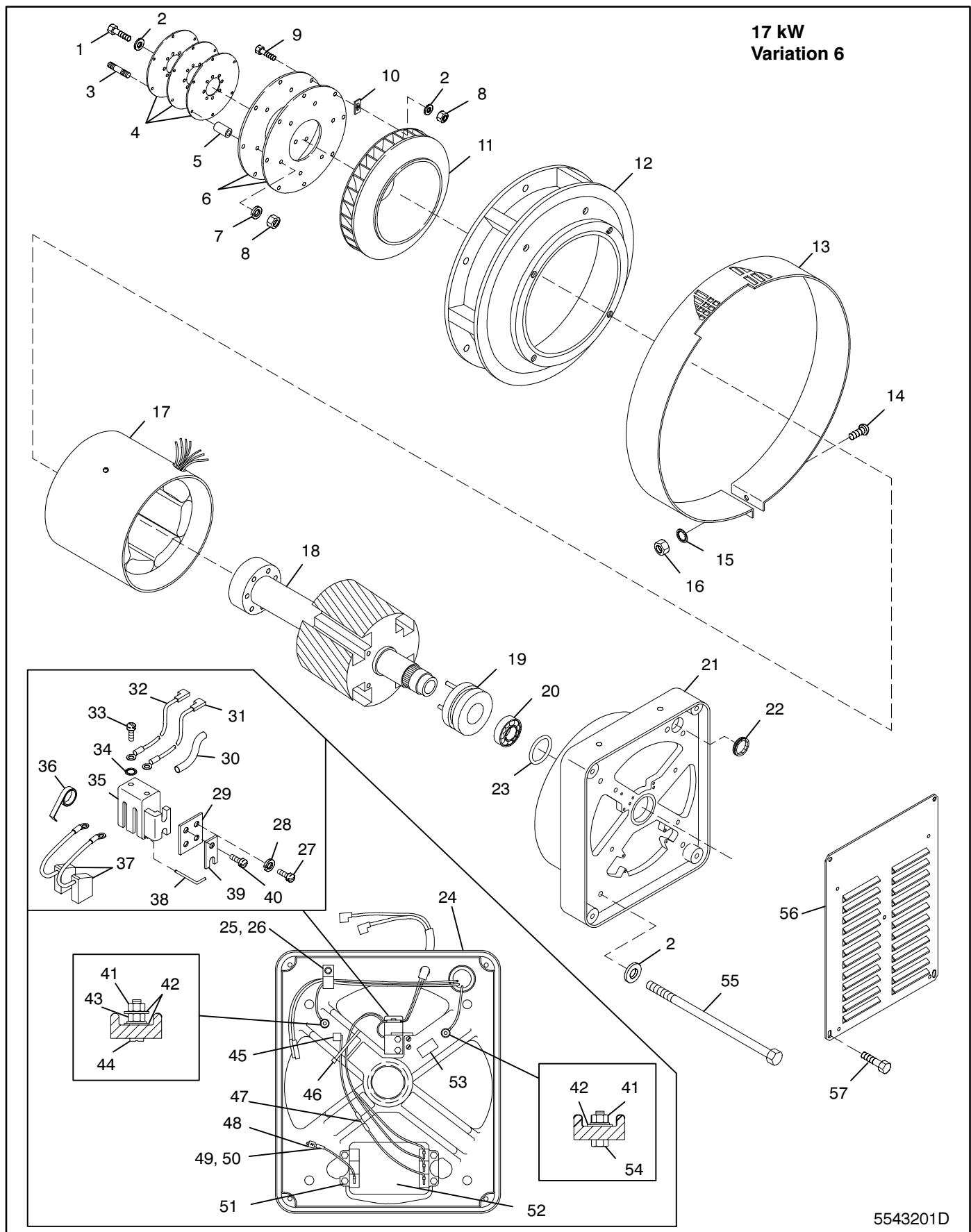
Item	Part Number	Description	Quantity							
			Variation No.							
			1	2	3	4	5	6	179-1	179-2
1	291207	Fuse, 1.5-amp	5	5			5		5	
2	243273	Fuse, 3-amp	5	5			5		5	
3	283645	Fuse, 15-amp	5	5			5		5	
4	See chart below	Main Circuit Board	1	1			1		1	
5	B-360418	Photo Board	1	1	1	1	1	1	1	1
6	B-258545	Split Activator	1	1	1	1	1	1	1	1
7	A-257099	LED Board	1	1	1	1	1	1	1	1
8	C-255670	Voltage Regulator	1	1	1	1	1	1	1	1
9	See chart below	Indicator Board	1	1			1		1	
10	241927	Speed Sensor	1	1			1		1	
11	255126	Bulb	5	5			5		5	
12	276287	Hose, upper radiator	1	1						
12	326356	Hose, upper radiator					1			
12	326004	Hose, upper radiator							1	
13	276288	Hose, lower radiator	1	1						
13	326357	Hose, lower radiator					1			
13	326003	Hose, lower radiator							1	
14	279450	Thermostat and seal	1	1	1	1	1	1		
14	276162	Thermostat							1	1
15	276148	Fan Belt	1	1	1	1				
15	326320	Fan Belt					1	1		
15	276142	Fan Belt (matched pair)							1	1
16	258423	Air Filter	4		4		4	4	4	4
16	253107	Air Filter		4		4				
16	326099	Air Filter							4	4
17	279449	Oil Filter	8	8	8	8	8	8	8	8
	279218	Oil Filter (LRG-425 engine)					8	8		

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

Notes

Group 201: Generator and Mounting



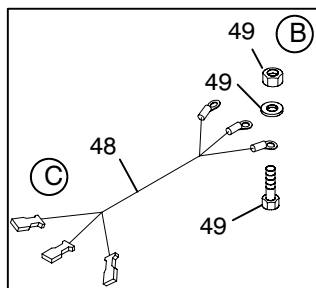
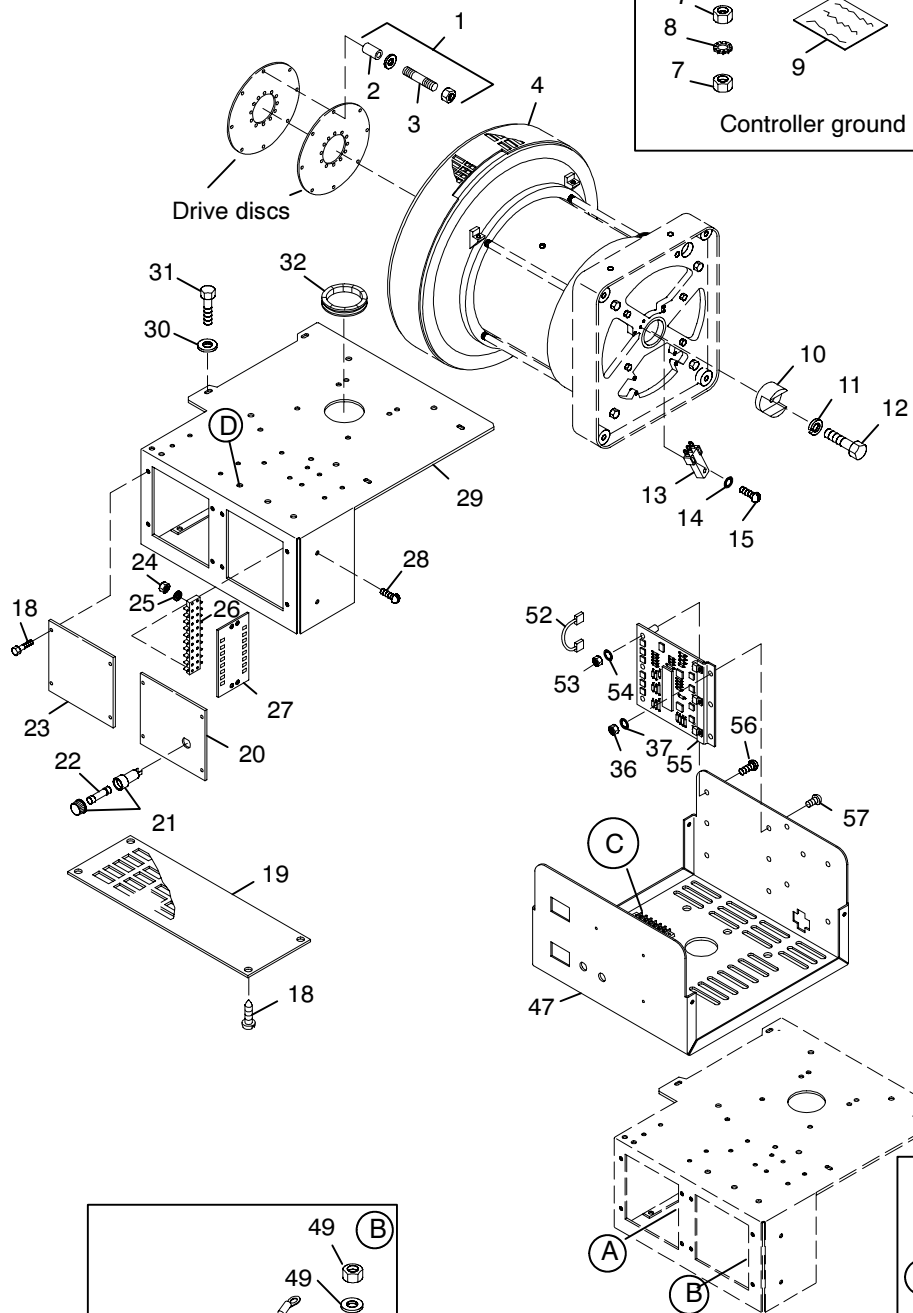
Group 201: Generator and Mounting

Item	Part Number	Description	Quantity
			Var. No.
1	270158	Screw, cylinder head	8
2	X-801-3	Washer, hardened	20
3	X-352-17	Stud	6
4	254461	Disc, drive	3
5	X-400-175	Spacer	6
6	254463	Plate, adapter	2
7	X-22-1	Washer, lock	6
8	X-83-2	Nut, hex	14
9	X-6238-4	Screw, HC	8
10	295025	Retainer	8
11	259956	Fan, generator	1
12	250602	Adapter, generator	1
13	269425	Guard, generator	1
14	X-50-42	Screw, round head machine	1
15	X-22-9	Washer, shakeproof	1
16	X-70-2	Nut, hex	1
17	250606	Stator Assembly	1
18	A-254462	Rotor Assembly (Includes 19 and 20)	1
19	238134	Ring, collector	1
20	X-758-1	Bearing	1
21	A-258384	Bracket Assembly, end (Includes 22-54)	1
22	X-284-22	Grommet	1
23	256466	O-Ring	1
24	256443	Bracket, end	1
25	X-67-51	Screw, HC	1
26	X-672-10	Clamp	1
27	X-50-56	Screw, RHM	2
28	X-19-1	Washer, lock	2
29	259275	Bracket, brush holder	1
30	X-415-2	Sleeve, insulating	1
31	SWOP-1822-15312	Lead	1
32	SWON-1822-15312	Lead	1
33	X-49-1	Screw, RHM	2
34	X-22-6	Washer, lock	2
35	239247	Holder, brush	1
36	238150	Spring	2
37	239282	Brush	2
38	238247	Retainer, wire	1
39	238248	Shim, brush holder	1
40	X-97-13	Screw, HC	2
41	X-81-8	Nut, hex	2
42	X-22-12	Washer, shakeproof	3
43	X-81-1	Nut, hex	1
44	X-73-9	Screw, RHM	1
45	201620-152	Tab, ident	1
46	X-468-3	Tie, cable	1
47	A-258406	Holder Assembly, fuse	1
48	233959	Diode	1
49	X-6004-3	Terminal	2
50	LW-1804-15257	Lead	1
51	X-67-59	Screw, self-tapping	4
52	228602	Regulator Assembly	1
53	238575	Decal, ground	1
54	X-465-18	Screw, HC	1
55	250614	Bolt, over	4
56	250713	Panel, louver	1
57	X-67-52	Screw, HC	4

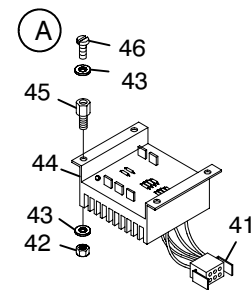
Group 201: Generator and Mounting, continued

18 kW

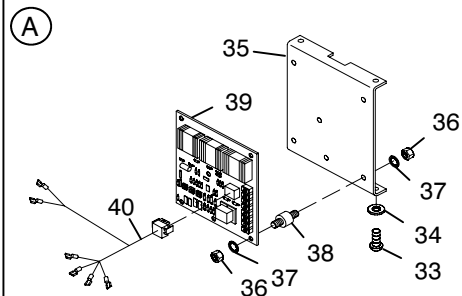
Variations 7, 9, 12-18, 32-34, 43, 44



Variations 7, 13, 16, 43



Variations 9, 12, 14, 15, 17, 18, 44



Group 201: Generator and Mounting, continued

Item	Part Number	Description	Quantity													
			Variation No.													
			7	9	12	13	14	15	16	17	18	32	33	34	43	44
1	257498	Hardware Kit, engine attaching (Includes Items 2 and 3)	1	1	1	1	1	1	1	1	1					
2	X-400-132	Spacer	6	6	6	6	6	6	6	6	6	6	6	6	6	6
2	X-400-75	Spacer														
3	X-352-63	Stud	6	6	6	6	6	6	6	6	6	6	6	6	6	6
3	X-6238-11	Screw														
4	A-257369	Alternator Assembly	1			1			1			6	6	6	6	6
4	A-257371	Alternator Assembly		1			1			1						
4	A-257373	Alternator Assembly			1			1			1					
4	A-326376	Alternator Assembly										1			1	
4	A-326378	Alternator Assembly											1			
4	A-326377	Alternator Assembly												1	1	1
5	267491	Screw, special	1	1	1	1	1	1	1	1	1	1	1	1	1	1
6	X-22-12	Washer, shakeproof	1	1	1	1	1	1	3	3	3	3	1	1	3	3
7	X-81-1	Nut, hex	2	2	2	2	2	2	2	2	2	2	2	2	2	2
8	X-22-11	Washer, lock, 1/4 in.	1	1	1	1	1	1	1	1	1	1	1	1	1	1
9	201620-94	Tab, ident	1	1	1	1	1	1	1	1	1	1	1	1	1	1
10	254904	Actuator, magnetic	1	1	1	1		1	1		1	1	1	1	1	1
11	#	Washer, lock, 1/4 in.	1	1	1	1		1	1		1	1	1	1	1	1
12	X-465-18	Screw, HC	1	1	1	1		1	1		1	1	1	1	1	1
13	241623	Sensor, ferromagnetic	1	1	1	1	1	1	1	1	1	1	1	1	1	1
14	X-22-24	Washer, shakeproof	2	2	2	2	2	2	2	2	2	2	2	2	2	2
15	X-49-35	Screw, RHM	2	2	2	2	2	2	2	2	2	2	2	2	2	2
16	250713	Panel, louver	1	1	1	1	1	1	1	1	1	1	1	1	1	1
17	X-67-52	Screw, HC	4	4	4	4	4	4	4	4	4	4	4	4	4	4
18	X-6216-1	Screw, hex head	12	12	12	12	12	12	12	12	12	12	12	12	12	12
19	254853	Panel, junction box bottom cover	1													
19	254840	Panel, junction box bottom cover		1	1											
19	226417	Panel, junction box bottom cover				1			1			1			1	
19	226416	Panel, junction box bottom cover					1	1		1			1	1		1
20	254724	Panel, regulator	2	2	2	2	2	2	2		1	2	2	2	2	2
21	238426	Holder, fuse	1			1			1			1			1	
21	X-301-21	Plug, button	1	2	1	1	1	1	1	1	1		1			
21	X-301-23	Plug, button										1		2		
22	223316	Fuse, 10-amp	1			1			1			1			1	
23	254724	Panel, junction box	1		1	1	1	1	1			1				
24	X-71-2	Nut, hex	2	2	2	2	2	2	2	2	2	2	2	2	2	2
25	X-22-6	Washer, lock	2	2	2	2	2	2	2	2	2	2	2	2	2	2
26	254819	Strip, terminal	1	1	1	1	1	1	1	1	1	1	1	1	1	1
27	254821	Marker, strip	1	1	1	1	1	1	1	1	1	1	1	1	1	1
28	X-49-3	Screw, RHM	2	2	2	2	2	2	2	2	2	2	2	2	2	2
29	256477	Box, junction	1													
29	256478	Box, junction		1	1											
29	226410	Box, junction				1			1			1			1	
29	226411	Box, junction					1	1		1	1		1	1		1
30	#	Washer, 1/4 in.	4	4	4	4	4	4	4	4	4					
31	X-465-2	Screw, HC	4	4	4	4	4	4	4	4	4	4	4	4	4	4
32	X-6033-2	Grommet, nylon	1	1	1	1	1	1	1	1	1	1	1	1	1	1
33	X-50-13	Screw, RHM		4	4		4	4		4	4		4			4
34	#	Washer, #10		4	4		4	4		4	4					
35	226482	Bracket, regulator		1	1		1	1		1	1		1	1		1
36	X-72-4	Nut, hex		12	12		12	12			12	3				
37	X-22-7	Washer, lock													15	15
38	282829	Cushion, vibromount		6	6		6	6		6	6		6	6		6
39	B-258296	Voltage Regulator Assembly (PB-5)		1	1		1	1		1	1					1
40	254817	Harness, wiring		1	1		1	1		1	1		1	1		1
41	254995	Harness, wiring	1			1			1			1			1	
42	#	Nut, hex, #8-32	4			4			4			4			4	
43	#	Washer, #8	8			8			8			8			8	
44	228605	Voltage Regulator (PBIIE)	1			1			1			1			1	
45	249986	Spacer	4			4			4			4			4	
46	X-51-5	Screw, RHM	4			4			4			4			4	
47	254905	Box, controller					1									
48	254815	Harness, wiring	1			1			1			1			1	
49	#	Hardware, 1/4-20	3	3	3	3	3	3	3	3	3	3	3	3	3	3
52	LW-1603-5656	Lead, jumper	1	1	1	1	1	1			1	1	1	1		
53	X-71-2	Nut, hex	3	3	3	3	3	3				5	5	5	5	5
54	X-22-6	Washer, lock	3	3	3	3	3	3							3	3
55	GM22741	Kit, governor control	1	1	1	1	1	1								
55	A-249922	Board Assembly, governor										1			1	1
56	X-49-6	Screw, RHM	3	3	3	3	3	3	3	3	3	3	3	3	3	3
57	X-51-15	Screw, RHM	3	3	3	3	3	3	3	3	3	3	3	3	3	3

Group 201: Generator and Mounting, continued



Group 201: Generator and Mounting, continued

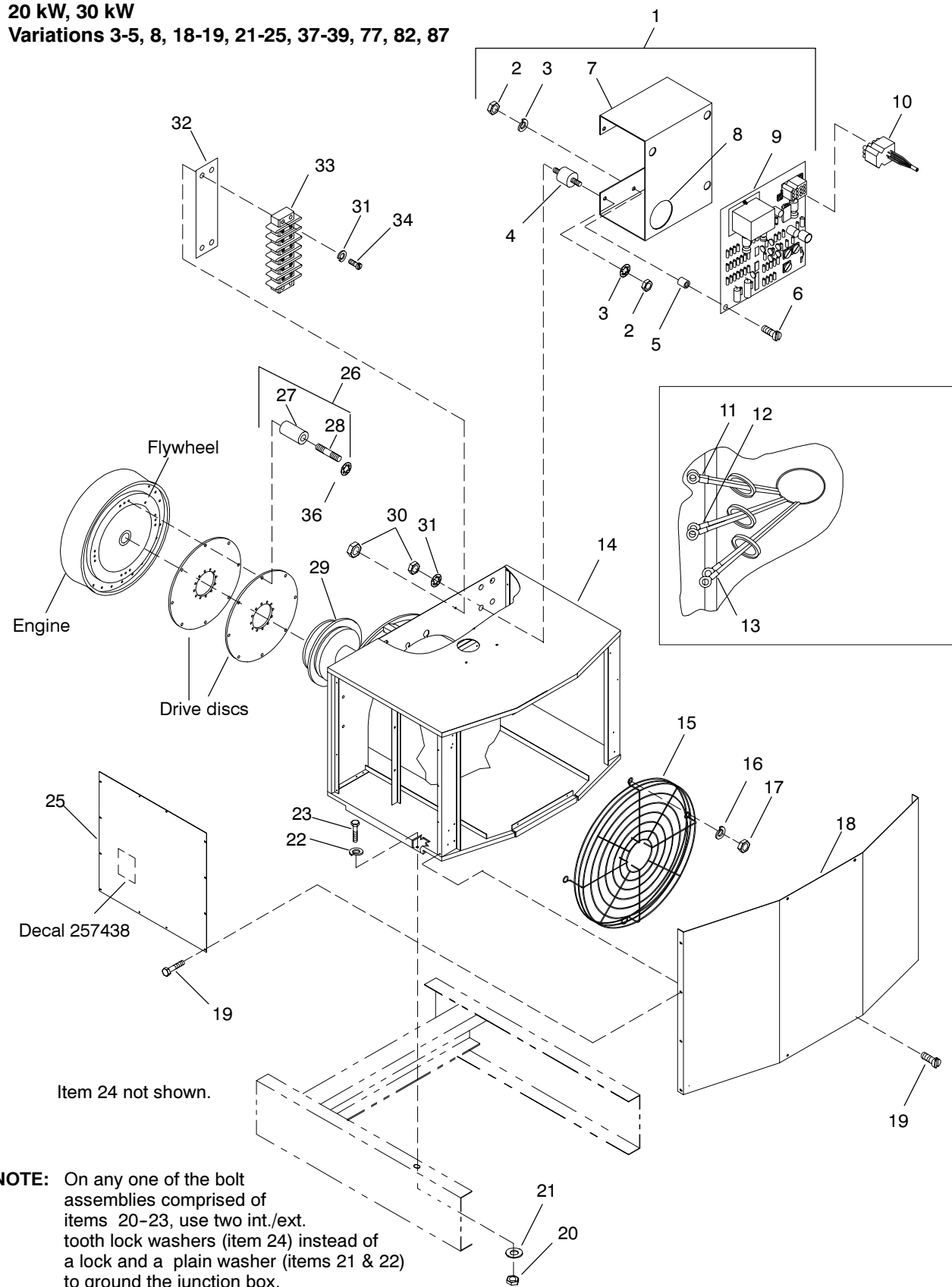
Item	Part Number	Description	Quantity													
			Variation No.													
			7	9	12	13	14	15	16	17	18	32	33	34	43	44
1	270956	Screw, HC	8	8	8	8	8	8	8	8	8	8	8	8	8	8
2	X-801-3	Washer, hardened	12	12	12	12	12	12	12	12	12	12	12	12	12	12
3	257014	Disc, armature drive	2	2	2	2	2	2	2	2	2	2	2	2	2	2
4	X-6238-11	Screw, HC	4	4	4	4	4	4	4	4	4	4	4	4	4	4
5	X-25-93	Washer, plain	4	4	4	4	4	4	4	4	4	4	4	4	4	4
6	257020	Fan, generator	1	1	1	1	1	1	1	1	1	1	1	1	1	1
7	239614	Adapter	1	1	1	1	1	1	1	1	1					
7	326328	Adapter										1	1	1	1	1
8	257046	Guard, generator fan	1	1	1	1	1	1	1	1	1					
8	326346	Guard, generator fan										1	1	1	1	1
9	257442	Clip, speed	2	2	2	2	2	2	2	2	2	2	2	2	2	2
10	X-67-125	Screw, self-tapping	2	2	2	2	2	2	2	2	2	2	2	2	2	2
11	239629	Stator Assembly		1			1			1				1		1
11	257355	Stator Assembly	1			1			1			1			1	
11	254912	Stator Assembly			1			1			1		1			
12	A-257362	Rotor Assembly	1			1			1							
12	A-326477	Rotor Assembly										1				
13	238134	Collector Ring	1			1			1			1			1	
14	X-758-1	Bearing	1			1			1			1			1	
15	A-239643	Rotor Assembly (includes items 16-19)		1	1		1	1		1	1					
15	A-326478	Rotor Assembly (includes items 16-19)											1	1		1
16	X-400-143	Spacer		2	2		2	2		2	2		2	2		2
17	A-239669	Circuit Board		1	1		1	1		1	1		1	1		1
18	X-6071-5	Screw, HC		1	1		1	1		1	1		1	1		1
19	X-758-1	Bearing		1	1		1	1		1	1		1	1		1
20	239702	Exciter Assembly		1	1		1	1		1	1		1	1		1
21	256466	O-Ring	1	1	1	1	1	1	1	1	1	1	1	1	1	1
22	228614	Bracket, end	1	1	1	1	1	1	1	1	1	1	1	1	1	1
23	X-6072-2	Grommet, nylon	1	1	1	1	1	1	1	1	1	1	1	1	1	1
24	X-415-2	Sleeve, insulating	1			1			1			1			1	
25	SWOP-1617-5712	Lead	1			1			1			1			1	
26	SWON-1617-5712	Lead	1			1			1			1			1	
27	X-49-1	Screw, round head	1			1			1			1			1	
28	X-22-6	Washer, lock	1			1			1			1			1	
29	239247	Holder, brush	1			1			1			1			1	
30	238150	Spring, brush	2			2			2			2			2	
31	239282	Brush	2			2			2			2			2	
32	238247 238282	Retainer, wire	1			1			1			1			1	
33	X-97-13	Screw, slotted	2			2			2			2			2	
34	X-50-56	Screw, slotted	2			2			2			2			2	
35	X-19-1	Washer, lock	1			1			1			1			1	
36	238248	Shim, brush holder	1			1			1			1			1	
37	259275	Bracket, brush	1			1			1			1			1	
38	X-468-1	Tie, cable	1			1			1			1			1	
39	X-801-2	Washer, hardened	4	4	4	4	4	4	4	4	4	4	4	4	4	4
40	X-465-16	Screw, HC	4	4	4	4	4	4	4	4	4	4	4	4	4	4
41	239720	Bolt	4	4	4	4	4	4	4	4	4	4	4	4	4	4

Common hardware; procure locally.

Group 201: Generator and Mounting, continued

20 kW, 30 kW

Variations 3-5, 8, 18-19, 21-25, 37-39, 77, 82, 87



5543201E

EC, ED-255000

Group 201: Generator and Mounting, continued

Item	Part Number	Description	Quantity																			
			Variation No.																			
			3	4	5	8	18	19	21	22	23	24	25	37	38	39	77	82	87	326880	326881	326882
1	B-292789	Regulator, Voltage (items 2-9)	1	1	1												1	1	1			
2	X-72-4	Nut, hex	8	8	8				2	2	2	2	2	2	2	2	8	8	8	2	2	2
3	X-22-20	Washer, shakeproof	8	8	8	4				4	4	4	4				8	8	8			
4	259919	Cushion, vibromount	3	3	3												3	3	3			
4	282829	Vibromount				3																
4	360459	Standoff, circuit board					4	4	4	4	4	4	4	4	4	4				4	4	4
5	239513	Bushing, insulating	5	5	5												5	5	5			
6	X-51-11	Screw, RHM	5	5	5												5	5	5			
7	282832	Bracket, regulator	1	1	1												1	1	1			
8	X-634-16	Bushing	1	1	1				1	1	1	1	1				1	1	1			
9	C-255670	Circuit Board, voltage regulator	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
10	255481	Harness, wiring	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
11	X-750-14	Tag, lead L1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
12	X-750-15	Tag, lead L2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
13	X-750-16	Tag, lead L3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
14	255020	Box, junction	1	1	1												1	1	1			
14	222823	Box, junction			1	1	1	1	1	1	1	1	1	1	1	1				1	1	1
15	274596	Guard, generator			1			1	1		1	1	1						1			
16	X-22-10	Washer, lock			4			4	4		4	4	4						4			
17	X-83-2	Nut, hex, 3/8-16			4			4	4		4		4						4			
18	273430	Cover, rear	1		1												1		1			
18	255022	Cover, rear		1														1				
18	222834	Cover, rear				1	1	1	1	1	1	1	1	1	1	1				1	1	1
19	X-794-1	Screw, drill hex	16	16	16												16	16	16			
19	X-6216-1	Screw, hex head				12	12	12	12	12	12	12	12	12	12	12				12	12	12
20	#	Nut, hex, 5/16-18	4	4	4												4	4	4			
20	#	Nut, 3/8-16							8	8	8	8	8									
21	#	Washer, steel, 11/32 x 3/4 x 1	3	3	3				3	3	3	3	3				3	3	3			
22	#	Washer, split lock, 5/16 in.	3	3	3												3	3	3			
22	#	Washer, lock, 3/8-16							3	3	3	3	3									
23	#	Screw, HC, 5/16-18 x 1	4	4	4												4	4	4			
23	#	Screw, HC, 3/8-16							4	4	4	4	4									
24	X-22-16	Washer, lock, 5/16 in. (see note)	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
25	273429	Cover, side	2		2												2		2			
25	255021	Cover, side		2														2				
25	222833	Cover, side				2	2	2	2	2	2	2	2	2	2	2				2	2	2
26	257498	Hardware Kit, enging attach. (includes items 27 and 28)	1	1	1				1	1	1	1	1	1	1	1	1	1	1	1	1	1
27	X-400-132	Spacer	6	6	6				6	6	6	6	6	6	6	6	6	6	6	6	6	6
27	X-400-75	Spacer				8	8	8														
28	X-352-63	Stud	6	6	6				6	6	6	6	6	6	6	6	6	6	6	6	6	6
28	X-6238-27	Screw				8	8	8														
29	B-257775	Alternator Assembly (includes items 1-42 shown on following pages)	1	1																		
29	B-257817	Alternator Assembly			1																	
29	B-257731	Alternator Assembly															1	1				
29	B-257734	Alternator Assembly																	1			
29	B-276411	Alternator Assembly							1	1						1					1	
29	A-276412	Alternator Assembly								1												
29	B-276414	Alternator Assembly									1											
29	B-276410	Alternator Assembly										1		1						1		
29	B-276413	Alternator Assembly											1				1					1
29	A-326080	Alternator Assembly				1																
29	A-326374	Alternator Assembly					1															
29	A-326375	Alternator Assembly						1														
30	#	Nut, hex 8-32	5	5	5				5	5	5	5	5	5	5	5	5	5	5	5	5	5
31	X-22-7	Washer, lock, #8	4	4	4	4	8	8	8	8	8	8	8	8	8	8	4	4	4	8	8	8
32	255080	Marker, strip	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
33	295314	Block, terminal	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
34	X-51-11	Screw, RHM	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
35	276307	Bracket, junction box							2	2	2	2	2	2	2	2				2	2	2
35	326581	Bracket, junction box				2	2	2														
36	X-801-3	Washer, hardened							6	6	6	6	6	6	6	6				6	6	6

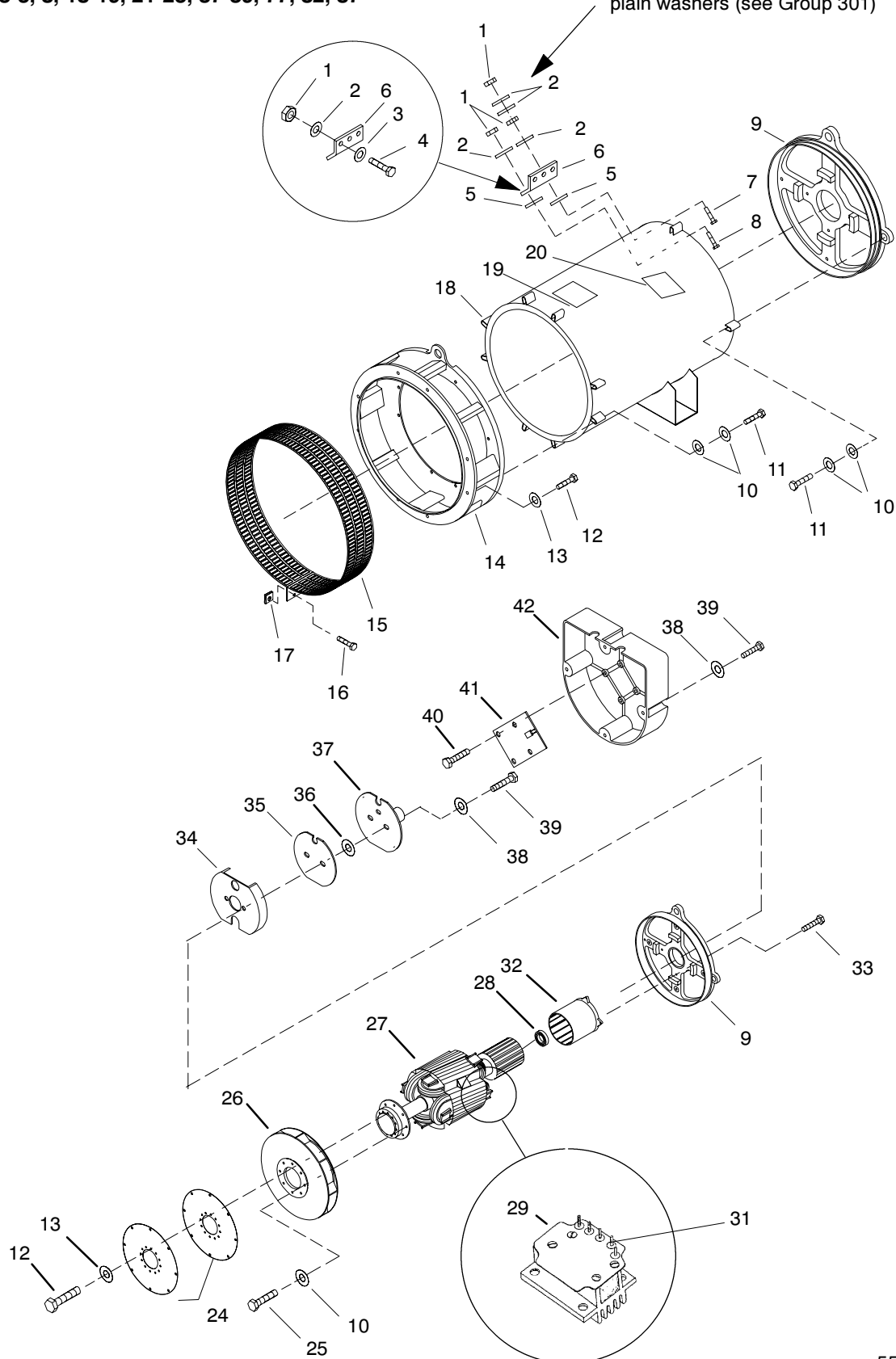
Common hardware; procure locally.

Group 201: Generator and Mounting, continued

20 kW, 30 kW

Variations 3-5, 8, 18-19, 21-25, 37-39, 77, 82, 87

Controller ground is strap located between plain washers (see Group 301)



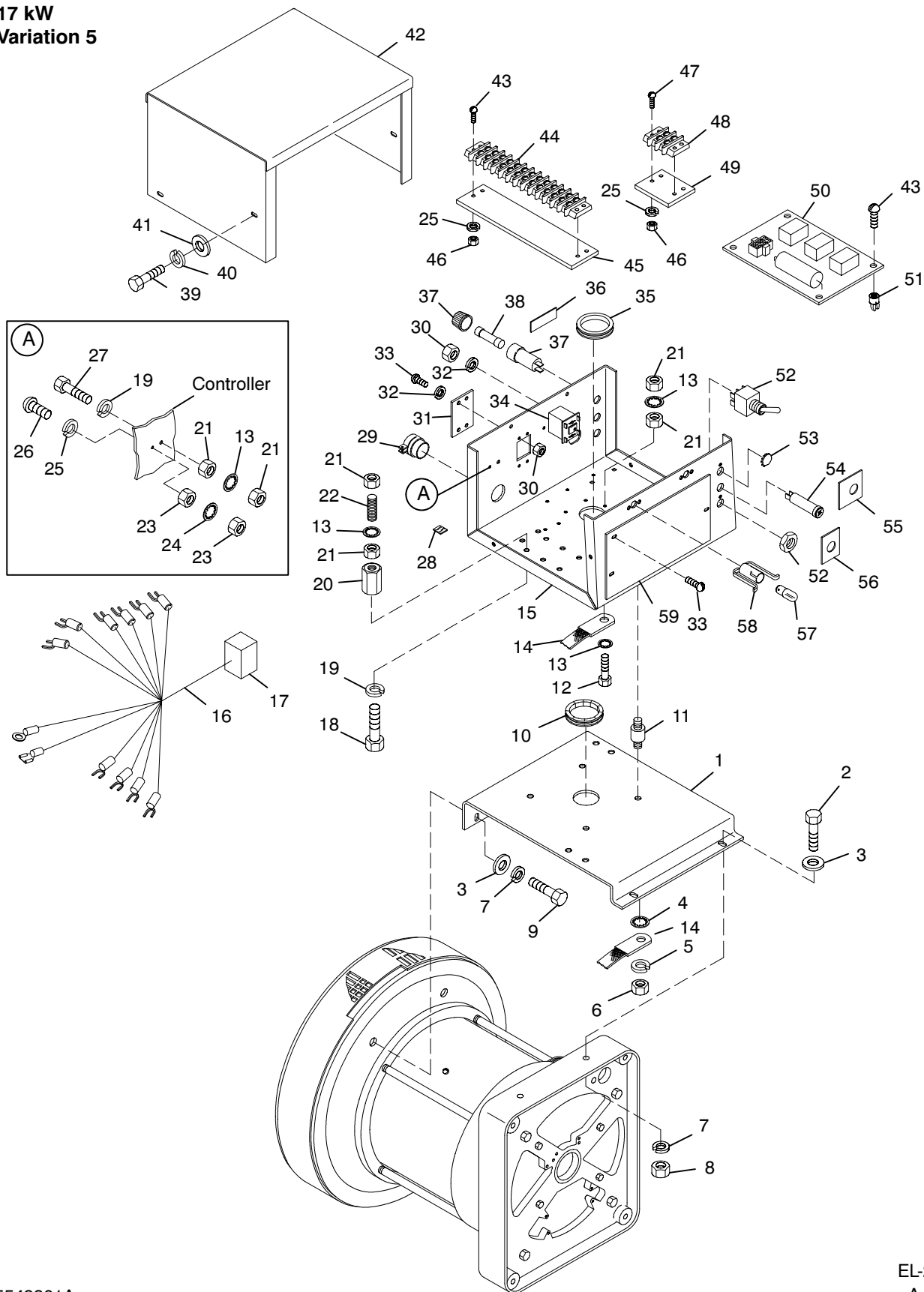
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Group 201: Generator and Mounting, continued

Item	Part Number	Description	Quantity																	
			Variation No.																	
			3	4	5	8	18	19	21	22	23	24	25	37	38	39	77	82	87	326880
1	X-6234-1	Nut, hex	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
2	X-25-136	Washer	5	5	5		5	5									5	5	5	5
2	X-25-133	Washer				5			5	5				5	5	5				
3	X-6086-16	Washer, spring	6	6	6	5	6	6	5	5	5	5	5	5	5	5	6	6	6	5
4	X-465-23	Screw, HC	3	3	3	3			3	3	3	3	3	3	3	3	3	3	3	3
5	X-22-44	Washer	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
6	257986	Terminal, lead	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
7	X-791-8	Screw, HC	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
7	X-791-5	Screw, HC							1											
8	X-465-22	Screw, HC	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
9	257984	Bracket, end	1	1	1	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	20	20	14	14	14	14	14	14	14	14	20	20	20	14
11	X-6238-6	Screw, HC	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
12	270956	Screw, hex head	8	8	8												8	8	8	
13	X-801-3	Washer, hardened	2	2	2												2	2	2	
14	257019	Adapter, generator	1	1	1												1	1	1	
15	326143	Guard, generator fan	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
16	X-67-125	Screw, self-tapping	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
17	257442	Clip, speed	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
18	257766	Stator Assembly	1	1																
18	257771	Stator Assembly			1															
18	276406	Stator Assembly							1						1					1
18	276407	Stator Assembly								1										
18	276409	Stator Assembly									1									
18	276405	Stator Assembly										1		1						1
18	276408	Stator Assembly											1			1				
18	257765	Stator Assembly															1	1		1
18	257770	Stator Assembly																	1	
18	326085	Stator Assembly																		
18	326086	Stator Assembly				1														
18	326372	Stator Assembly					1													
18	326371	Stator Assembly						1												
19	257437	Decal, warning	1	1	1												1	1	1	
20	257441	Decal, warning	1	1	1												1	1	1	
20	257438	Decal, warning	1	1	1												1	1	1	
21	X-6238-6	Screw, HC	10	10					6	6	6	6	6	6	6	6	10	10		6
21	273736	Screw, HC			8														8	
22	270956	Screw, HC	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
23	X-801-3	Washer, hardened	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
24	257014	Disc, armature drive	2	2	2				2	2	2	2	2	2	2	2	2	2	2	2
24	257015	Disc, armature drive	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
25	X-6238-11	Screw, HC	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
26	257020	Fan, generator	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
27	A-258817	Rotor Assembly	1	1	1	1			1		1		1		1		1		1	1
27	A-326271	Rotor Assembly								1										
27	A-258981	Rotor Assembly										1	1	1		1	1	1	1	1
27	A-326089	Rotor Assembly				1														
27	A-326373	Rotor Assembly					1	1												
28	X-758-2	Bearing	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
29	B-258545	SCR Assembly	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
30	X-101-24	Nut	5	5	5	5	5	5									5	5	5	
30	X-101-22	Nut							5	5	5	5	5	5	5	5				5
31	X-283-7	Terminal	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
32	257080	Exciter Assembly	1	1	1	1	1	1	1		1	1	1	1	1	1	1	1	1	1
32	257081	Exciter Assembly								1										
33	X-125-34	Screw, HC	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
34	257007	Actuator, magnetic	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
35	257850	Insulator	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
36	243321	Washer, insulating	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
37	B-360418	Circuit Board, split activator	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
38	X-22-9	Washer, lock	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
39	X-117-5	Screw, HC	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
40	X-6071-1	Screw, washer head	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
41	A-257099	Circuit Board, LED	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
42	257258	Cover, circuit board	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
43	X-6238-4	Screw, hex cap	4	4	4	4	4	4									4	4		
43	273736	Screw, hex cap							4		4	4	4	4	4	4				4

Group 301: Controller and Mounting

17 kW
Variation 5



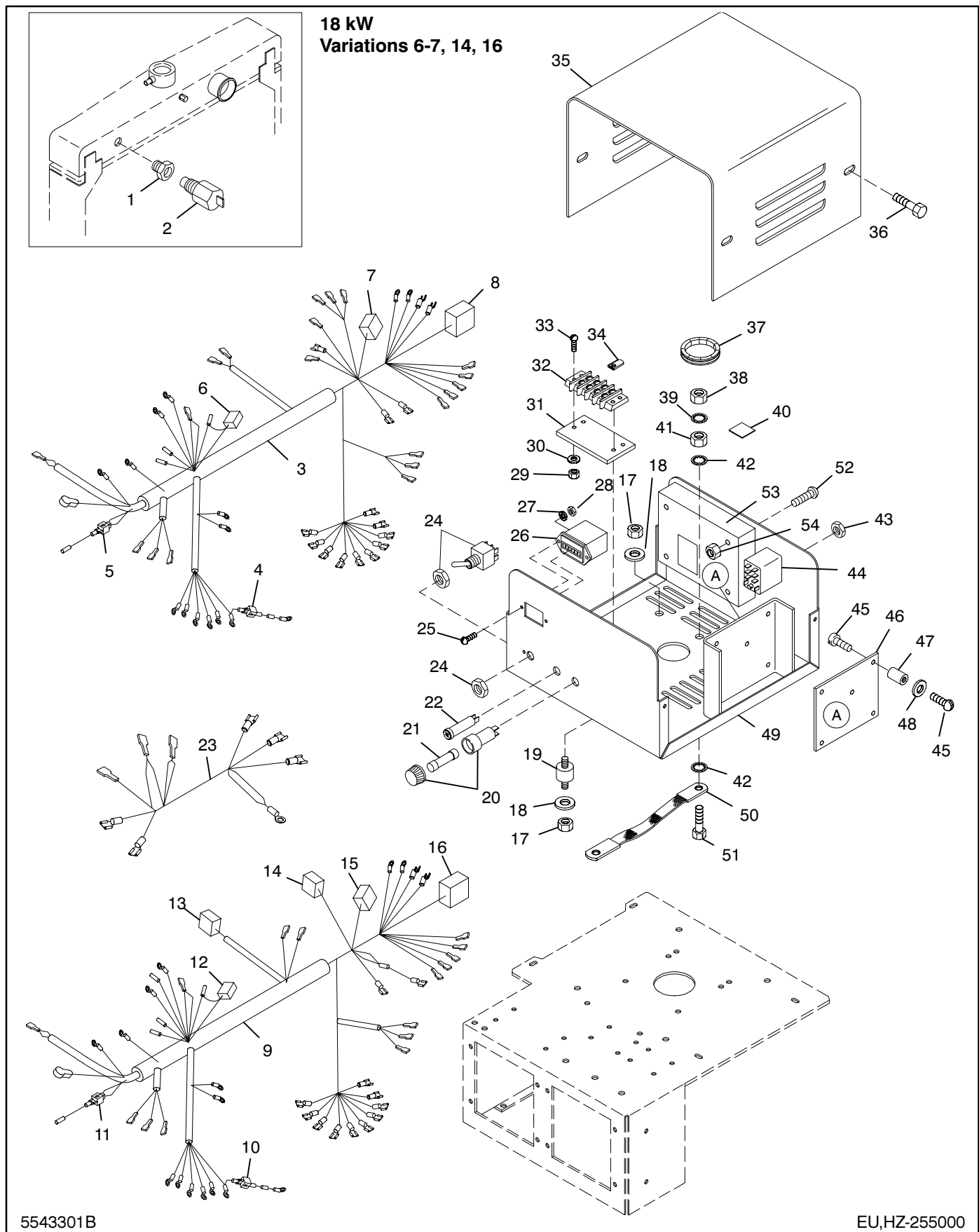
5543301A

EL-255000
A-254464

Group 301: Controller and Mounting

Item	Part Number	Description	Quantity
			Var. No. 5
1	250601	Bracket, controller	1
2	X-465-18	Screw, HC	2
3	X-25-53	Washer, flat	4
4	X-22-13	Washer, shakeproof	1
5	X-18-2	Washer, lock	4
6	X-72-4	Nut, hex	4
7	X-20-1	Washer, lock	4
8	X-81-1	Nut, hex	2
9	X-465-2	Screw, HC	2
10	X-6003-12	Grommet	1
11	259919	Cushion, vibromount	4
12	X-465-7	Screw, hex cap	1
13	X-22-12	Washer, shakeproof	5
14	230857	Lead, ground	1
15	250500	Box, controller	1
16	250597	Harness, wiring (includes item 17)	1
17	269366	Plug, connector	1
18	X-465-17	Screw, HC	2
19	X-20-1	Washer, lock	3
20	233269	Insulator, panel	2
21	X-76-2	Nut, hex	8
22	237612	Stud, brass	2
23	X-72-4	Nut, hex	2
24	X-22-18	Washer, shakeproof	1
25	X-18-2	Washer, lock	5
26	X-51-11	Screw, RHM	1
27	X-465-16	Screw, HC	1
28	201620-84	Tab, ident	1
29	X-252-8	Connector, conduit	1
30	X-71-2	Nut, hex	7
31	245264	Plate, cover	1
32	X-18-1	Washer, lock	7
33	X-49-2	Screw, RHM	5
34	A-256367	Circuit Board, field flash	1
35	X-284-2	Grommet	1
36	X-6230-2	Decal, 10-amp fuse	1
37	238426	Holder, fuse	1
38	223316	Fuse, 10-amp	1
39	X-67-52	Screw, HC	6
40	X-19-1	Washer, lock	6
41	X-25-36	Washer, flat	6
42	250501	Cover, controller	1
43	X-51-15	Screw, RHM	8
44	246114	Block, terminal	1
45	250572	Marker, strip	1
46	X-72-4	Nut, hex	6
47	X-51-9	Screw, RHM	2
48	X-405-2	Block, terminal	1
49	250588	Marker, strip	1
50	B-241883	Circuit Board, relay control	1
51	X-593-1	Grommet, plastic	4
52	241911	Switch, toggle	1
53	X-301-31	Plug button	2
54	269373	Lamp	1
55	250584	Decal	1
56	250585	Decal	1
57	268310	Bulb, light	1
58	284990	Socket, lamp	2
59	250510	Plate, cover	1
	A-254464	Controller Assembly (includes items 11-59)	1

Group 301: Controller and Mounting, continued



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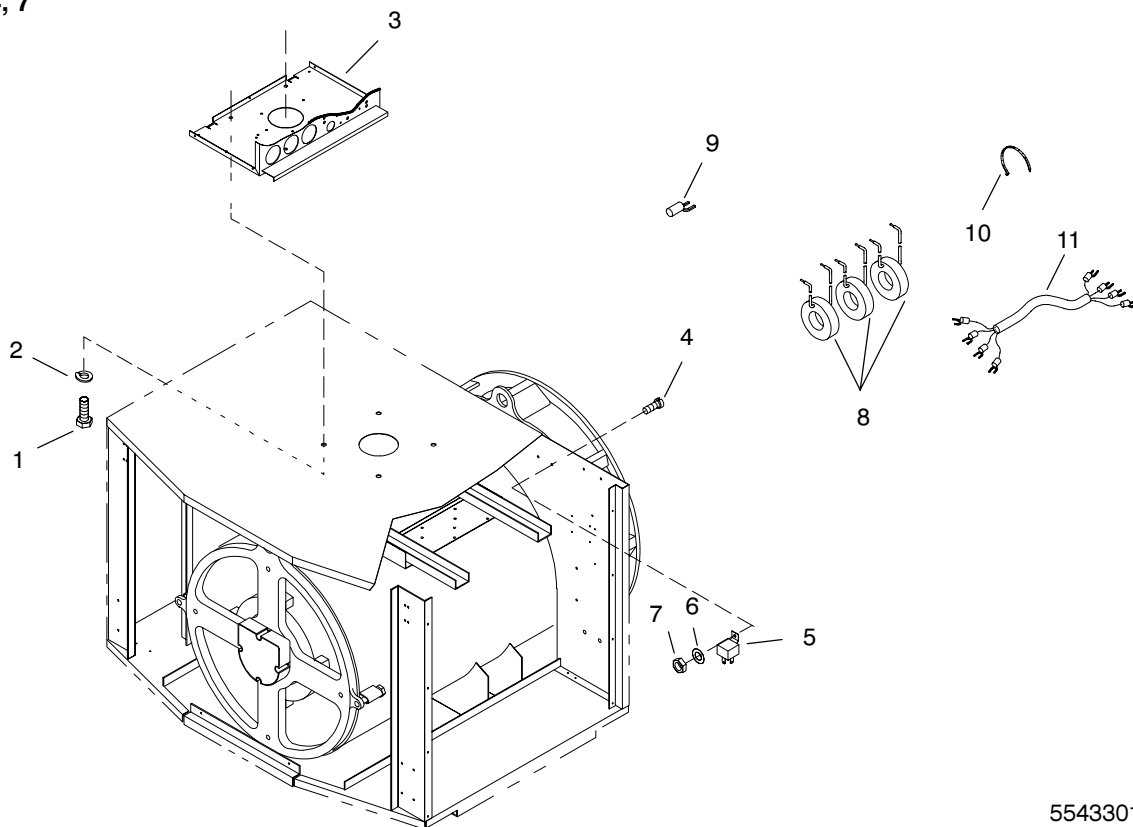
Group 301: Controller and Mounting, continued

Item	Part Number	Description	Quantity			
			Variation No.			
			6	7	14	16
1	X-202-28	Bushing, reducer	1	1	1	1
2	254832	Sensor, low fluid	1	1	1	1
3	254812	Harness, wiring (includes items 4-8)	1			
3	326450	Harness, wiring (includes items 4-8)			1	
3	326869	Harness, wiring (includes items 4-8)				1
4	253798	Lead Assembly	1	1	1	1
5	233959	Diode, 6-amp, 100-volt	1	1	1	1
6	292370	Connector, P8	1	1	1	1
7	292371	Connector, P2	1	1	1	1
8	269366	Connector, P1	1	1	1	1
9	226461	Harness, wiring (includes items 10-16)		1		
10	253798	Lead Assembly		1		
11	233959	Diode, 6-amp, 100-volt		1		
12	292370	Connector, P8		1		
13	269190	Connector, J5		1		
14	241605	Connector, P4		1		
15	292371	Connector, P2		1		
16	269366	Connector, P1		1		
17	#	Nut, hex	8	8	8	8
18	#	Washer, lock	8	8	8	
19	241769	Mount, controller	4	4	4	4
20	238426	Holder, fuse	1	1	1	1
21	223316	Fuse, 10-amp	1	1	1	1
22	269373	Lamp	1	1	1	1
23	254820	Harness, wiring	1	1	1	1
24	287812	Switch, toggle	1	1	1	1
25	X-49-39	Screw, pan head	2	2	2	2
26	238736	Meter, hour	1	1	1	1
27	X-22-6	Washer, lock	2	2	2	2
28	X-71-2	Nut, hex	2	2	2	2
29	#	Nut, hex, #10-24	2	2	2	2
30	#	Washer, lock, #10	2	2	2	2
31	254822	Marker, strip	1	1	1	1
32	292940	Strip, terminal	1	1	1	1
33	X-50-3	Screw, RHM	2	2	2	2
34	238582	Terminal	4	4	4	4
35	254800	Cover, controller	1	1	1	1
36	X-6216-1	Screw, hex head	4	4	4	4
37	X-6033-6	Grommet, nylon	1	1	1	1
38	X-81-8	Nut, hex	1	1	1	1
39	X-22-11	Washer, lock	1	1	1	1
40	201620-152	Tab, indent	1	1	1	1
41	#	Nut, hex, 1/4-20	1	1	1	1
42	X-22-12	Washer, shakeproof	2	2	2	2
43	#	Nut, hex, #6-32	1	1	1	1
44	241736	Circuit Breaker (relay)	1	1	1	1
45	X49-25	Screw, RHM	10	10	10	10
46	F-254717	Circuit Board, standby relay	1	1	1	1
47	287948	Spacer, PC board	5	5	5	5
48	#	Washer, #6	5	5		5
49	254823	Box, silkscreened	1			
49	226439	Box, silkscreened		1		
49	227858	Box, silkscreened				1
50	246083	Strap, ground	1	1	1	
50	LK-1216-1515	Lead				1
51	267491	Screw, special	1	1	1	1
52	X-51-33	Screw, round head		4		
52	X-51-15	Screw, round head				4
53	See Group 201	Governor Assembly	1	1	1	1
54	#	Nut, hex, #8-32				
	B-254801	Controller Assembly (includes items 20-54 where applicable)	1		1	
	B-226440	Controller Assembly		1		
	A-254954	Controller Assembly				1

Common hardware; procure locally.

Group 301: Controller and Mounting, continued

Variations 3, 4, 7

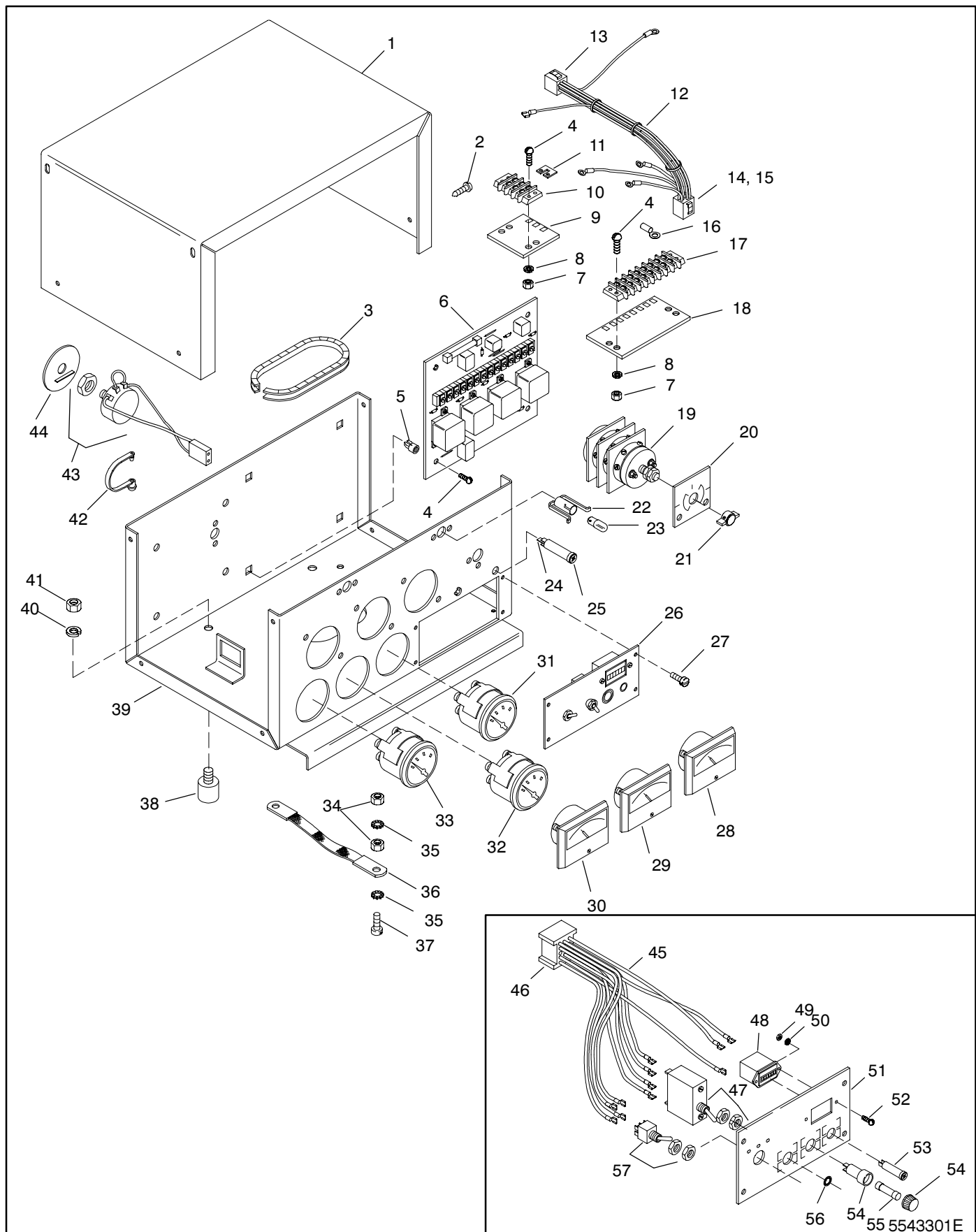


5543301C

Item	Part Number	Description	Quantity		
			Variation No.		
			3	4	7
1	X-6-12	Screw, HC, 5/16-18 x 5/8 in.	4	4	4
2	X-21-1	Washer, lock, 5/16 in.	3	3	3
2	X-22-16	Washer, lock, 5/16 in.	1	1	1
3	B-282945	Box Assembly, relay control	1		
3	B-282943	Box Assembly, relay control		1	
3	B-282953	Box Assembly, relay control			1
4	X-117-5	Screw, RHM	2	2	2
5	241600	Relay	1	1	1
6	X-19-1	Washer, lock	2	2	2
7	X-70-2	Nut, hex	2	2	2
8	246886	Transformer		3	
8	456885	Transformer			3
9	X-285-1	Terminal		3	
9	X-285-3	Terminal			3
9	X-285-7	Terminal			3
9	X-285-11	Terminal		3	
10	X-468-1	Tie, cable		3	
11	255040	Harness, wiring (current transformer)		1	1

Notes

Group 301: Controller and Mounting, continued



Group 301: Controller and Mounting, continued

Item	Part Number	Description	Quantity		
			Variation No.		
			3	4	7
1	269380	Cover, controller	1	1	1
2	X-6216-1	Screw, hex head	8	8	8
3	X-6033-2	Grommet, nylon	1	1	1
4	X-51-53	Screw, RHM	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
10	223096	Strip, terminal		1	1
11	X-6048-2	Jumper		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
20	282941	Nameplate		1	1
21	269356	Knob, pointer		1	1
22	284990	Socket, lamp		2	2
23	268310	Bulb, light		2	2
24	236830	Terminal		1	1
25	291740	Lamp		2	2
26	B-282946	Panel Assembly	1	1	1
27	X-794-2	Screw, drill head	1	1	1
28	295337	Ammeter, AC		1	
28	282934	Ammeter, AC			1
29	282814	Voltmeter, AC		1	1
30	295069	Meter, frequency		1	1
31	253329	Voltmeter, DC		1	1
32	282898	Gauge, water temperature		1	1
33	282897	Gauge, oil pressure		1	1
34	X-70-2	Nut, hex	2	2	2
35	X-22-12	Washer, shakeproof	2	2	2
36	241611	Strap, ground	1	1	1
37	X-50-7	Screw, RHM	1	1	1
38	292834	Bumper	4	4	4
39	258241	Box, controller	1	1	1
39	282944	Plate, front (not shown)	1		
40	X-21-1	Washer, lock	4	4	4
41	X-82-2	Nut, hex	4	4	4
42	X-526-3	Strap, wire	1	1	1
43	A-255041	Potentiometer Assembly	1	1	1
44	201534	Plate, instruction	1	1	1
45	255944	Harness, wiring (includes item 46)	1	1	1
46	269366	Connector, plug	1	1	1
47	250512	Breaker, magnetic TD	1	1	1
48	238736	Meter, hour	1	1	1
49	X-71-2	Nut, hex	2	2	2
50	X-18-1	Washer, lock	2	2	2
51	255659	Panel, silkscreen	1	1	1
52	X-49-26	Screw, RHM	2	2	2
53	269373	Lamp	1	1	1
54	238426	Holder, fuse	1	1	1
55	283645	Fuse, 15-amp	1	1	1
56	X-22-26	Washer, shakeproof	1	1	1
57	287812	Switch, toggle	1	1	1

Group 701: Literature

Item	Part Number	Description	Quantity									
			Variation No.									
5	6	7	8	12	14	15	17	18	20			
1	TP-5700	Installation Manual, industrial	1	1	1	1	1	1	1	1	1	1
2	TP-5543	Parts Catalog, 17-18RY; 18/20/30RZ	1	1	1	1	1	1	1	1	1	1
2	TP-5172	Parts Catalog, Ford LSG-423 engine	1	1								
2	TP-5743	Parts Catalog, 18-20 Ford LRG-423 engine				1	1	1				
2	TP-5708	Parts Catalog, 17-100RZ Accessories				1	1	1	1	1	1	1
2	TP-5939	Parts Catalog, Ford LRG-425 engine							1	1		
2	TP-5186	Parts Catalog, Ford CSG-649 engine										1
3	TP-5184	Service Manual, Ford LSG-423 engine	1	1	1	1						
3	TP-5262	Service Manual, FR II Relay Controller	1									
3	TP-5744	Service Manual, 18-20 LSG-423 engine				1	1	1				
3	TP-5110	Service Manual, 1-Phase		1								
3	TP-5940	Service Manual, Ford LRG-425 engine							1	1		
3	TP-5185	Service Manual, Ford CSG-649 engine							1			1
3	TP-5353	Service Manual, 20-300RZ; 20-180RZ				1					1	1
3	TP-5847	Service Manual, 10-18RY/RZ Industrial			1	1	1	1	1			
4	TP-5208	Operation Manual, Ford LSG-423 engine	1	1	1	1						
4	TP-5742	Operation Manual, 18-20 LRG-423 engine				1	1	1				
4	TP-5938	Operation Manual, Ford LRG-425 engine							1	1		
4	TP-5151	Operation Manual, Ford CSG-649 engine										1
4	TP-5750	Operation Manual, 20-2000 kW	1			1					1	1
4	TP-5387	Operation Manual, 17RY		1								
4	TP-5870	Operation Manual, 18RY/RZ			1	1	1	1	1			
5	TP-5716	Wiring Diagrams, 10-18RY/RZ					1	1	1			
5	TP-5719	Wiring Diagrams, 20-100RZ					1			1	1	

	17RY	18RY	20RZ	30RZ
Controllers, Optional (Group 301)				
5-Light Controller (RY only)	N/A	326459 254808	N/A	N/A
5-Light Controller (RZ only)	N/A	326460 254689	N/A	N/A
5-Light Controller, 600-volt	N/A	326461 254688	N/A	N/A
5-Light Remote Controller	N/A	256486 225190	N/A	N/A
5-Light Remote Controller	N/A	256488 225191	N/A	N/A
1-Light Relay Controller	N/A	254924	N/A	N/A
Manual	N/A	N/A	276427	327011
Manual, 600-volt	N/A	N/A	327026	327026
Decision-Maker™ 1 Controllers	See TP-6009 for parts lists			
Decision-Maker™ 3, 3+ Controllers	See TP-6009 for parts lists			
Decision-Maker™ 340 Controllers	See TP-6009 for parts lists			
Cooling System Accessories (Group 104)				
Cooling, city water	N/A	326591 256921	326440	326102
Cooling, radiator	N/A	326451	326874 326424	326031
Cooling, radiator, 40°C ambient	N/A	254998	276428	326032 326025
Cooling, radiator with sound shield	N/A	326480 226402	N/A	N/A
Cooling, remote radiator	N/A	N/A	326441 326178	326103 326178
Duct Flange, radiator	N/A	324203 255169	324205 255169 324203	324205 255169 324203
Heater, block				
110-120-volt	276210	326475 256820	326447 276223 326038	326232 276210 326230
190-240-volt	276211	326476 256821	326448 276224 326039	326233 276211 326231

Continued

Kit List, continued

	17RY	18RY	20RZ	30RZ
Fuel System Accessories (Group 103)				
Bypass, manual valve and gas solenoid	255634	255634	255634	326094 255634
Changeover, automatic (natural gas to LP gas)	N/A	326442	326442 326179	326611
Changeover, manual (LP gas to gasoline)	N/A	326590 256993	326443	326068
Fuel Line, flexible gas	PA-255177	PA-256869	PA-255177	PA-255177
Fuel Line, flexible gasoline (additional)	N/A	326607 256842	276284	276285
Fuel Pump, electric	N/A	324405 225208	324405 225208	324405
Gas Solenoid Valve (additional)	244621	N/A	244621 326127	244621 326127
Gasoline Fuel System	N/A	326588 254997	326444 326050	326093
LP Gas Fuel System	N/A	326425	326425 276432	326594 276431
LP Gas Liquid Withdrawal	N/A	326586 256986	326445 326180	326612 326181
Natural Gas Fuel System	N/A	326425 254996	326425 276432	326594 276430
Natural Gas or LP	N/A	326875	326875	N/A
Strainer, gas	290275	290275	290276	290276

1- and 5-Light Controller Kits

1- and 5-Light Controller Kit Parts								
Qty.	Description	Kit Number/Unique Parts						
		225190	225191	254688	254689	254808	254924	326868
1	Controller Assembly*	A-225185	A-225186	A-254788	A-254787	A-254787	B-254801	A-254954
1	Washer, shakeproof, 3/8	N/A	N/A	X-22-14	X-22-14	X-22-14	N/A	N/A
	Screw, RHM, 10-24 x 5	N/A	N/A	(12) X-50-8	(8) X-50-8	(8) X-50-8	N/A	N/A
1	Plug, pipe, 1/8	N/A	N/A	X-75-1	X-75-1	X-75-1	N/A	N/A
1	Cross, pipe, 1/8	N/A	N/A	164037	164037	164037	N/A	N/A
1	Harness, wiring	N/A	N/A	254814	254814	254814	254812	326869
1	Diode	N/A	N/A	254990	254990	254990	N/A	N/A
1	Sender, temperature	N/A	N/A	255240	255240	255240	N/A	N/A
	Transformer	N/A	N/A	(3) 259359	(3) 259359	(2) 259359	N/A	N/A
1	Sender, oil pressure gauge	N/A	N/A	264390	264390	264390	N/A	N/A
1	Switch Assembly, level	N/A	N/A	273404	273404	273404	N/A	N/A
1	Nipple, pipe, 1/8 x 1 1/2	N/A	N/A	289055	289055	289055	N/A	N/A
1	Bushing, reducer, 3/8 x 1/2	N/A	N/A	N/A	N/A	N/A	X-202-28	X-202-28
4	Mount, controller	N/A	N/A	N/A	N/A	N/A	241769	241769
1	Sensor, low fluid	N/A	N/A	N/A	N/A	N/A	254960	254832

254832

1- and 5-Light Controller Kit Parts					
Qty.	Description	Kit Number/Unique Parts			
		256489	326459	326460	326461
1	Controller Assembly*	A-254787	A-225185	A-225185	A-225186
1	Washer, shakeproof, 3/8	N/A	N/A	N/A	X-22-14
1	Plug, pipe, 1/8	N/A	X-75-1	X-75-1	X-75-1
1	Cross, pipe, 1/8	N/A	164037	164037	164037
1	Harness, wiring	N/A	326453	326452	326452
1	Diode	N/A	N/A	N/A	254990
1	Sender, water temperature	N/A	268298	268298	268298
	Transformer	N/A	(2) 259359	(3) 259359	(3) 259793
1	Sender, oil pressure gauge	N/A	264390	264390	264390
1	Switch Assembly, level	N/A	273404	273404	273404
1	Nipple, pipe, 1/8 x 1 1/2	N/A	289055	289055	289055
1	Bushing, reducer, 3/8 x 1/2	N/A	N/A	N/A	N/A
4	Mount, controller	N/A	N/A	N/A	N/A
1	Sensor, low fluid	N/A	N/A	N/A	N/A
1	Bracket, CT mounting	N/A	226481	226480	226480
1	Bracket, governor mounting	N/A	226661	226661	226661

*See Controller Assembly section for parts list.

N/A Not Applicable

1- and 5-Light Controller Assemblies

Qty.	Description	Common Parts	1- and 5-Light Controller Assembly Number/Unique Parts				
			A-225185	A-225186	A-254787	A-254788	B-254801
1	Potentiometer Assembly		A-254796	A-254796	A-254796	A-254796	N/A
1	Circuit Board, indicator		B-292381	B-292381	B-292381	B-292381	N/A
1	Circuit Board, main		G-292806	G-292806	G-292806	G-292806	E-254717
1	Washer, shakeproof, E.T.		X-22-20	X-22-20	X-22-20	X-22-20	N/A
2	Washer, lock		X-22-50	X-22-50	X-22-50	X-22-50	N/A
3	Washer, lock, #6		(4) X-22-6	(4) X-22-6	(4) X-22-6	(4) X-22-6	(2) X-22-6
1	Washer, lock, #8		X-22-7	X-22-7	X-22-7	X-22-7	N/A
1	Grommet		X-284-31	X-284-31	X-284-31	X-284-31	X-6033-6
1	Plug, button		N/A	N/A	X-301-29	X-301-29	N/A
1	Spacer		X-400-135	X-400-135	X-400-135	X-400-135	N/A
2	Terminal		X-431-42	X-431-42	X-431-42	X-431-42	N/A
2	Screw, RHM, 6-32 x 3/8		X-49-2	X-49-2	X-49-2	X-49-2	N/A
2	Screw, RHM, 6-32 x 1/4		(18) X-49-25	(18) X-49-25	(18) X-49-25	(18) X-49-25	(10) X-49-25
2	Screw, pan head	X-49-39					
1	Screw, RHM, 10-24 x 1-3/8	X-50-10					
2	Screw, RHM, 10-24 x 3/4	X-50-3					
1	Screw, pan head machine		X-50-70	X-50-70	X-50-70	X-50-70	N/A
2	Screw, RHM		X-51-53	X-51-53	X-51-53	X-51-53	N/A
2	Plug, cap, 1/8 inches		X-519-9	X-519-9	X-519-1	X-519-1	N/A
1	Jumper	X-6048-2					
2	Tube, heat shrink	X-6079-2					
2	Screw, Phillips® hex crimp		(10) X-6216-1	(10) X-6216-1	(10) X-6216-1	(10) X-6216-1	(12) X-6216-1
2	Nut, hex		X-6234-6	X-6234-6	X-6234-6	X-6234-6	N/A
2	Screw, thread forming		X-67-127	X-67-127	X-67-127	X-794-2	N/A
1	Tube, vinyl		X-696-2	X-696-2	X-696-2	X-696-2	N/A
4	Spacer		X-712-9	X-712-9	X-712-9	X-712-9	N/A
1	Nameplate		225716	225177	254794	254794	N/A
1	Fuse, 10-amp		N/A	N/A	N/A	N/A	223316
1	Strip, marker		225178	225178	N/A	N/A	N/A
1	Strip, marker		225179	225179	292823	N/A	254822
1	Box, controller		225180	226598	292375	292375	254823
1	Cover, controller		225181	225181	292818	292818	254800
1	Plate, hinge		227850	227850	254824	254824	N/A
2	Diode, 6-amp, 100-volt		233959	233959	233959	233959	N/A
1	Meter, hour	238736					
1	Terminal		238898	238898	238898	238898	N/A
1	Connector, plug, 6-position		241617	241617	241617	241617	N/A
1	Relay	241736					
1	Strap, ground	246083					
1	Block, terminal		246115	246115	246115	246115	292940
1	Voltmeter		253329	253329	253329	253329	N/A
2	Lamp		255126	255126	255126	255126	238582
1	Voltmeter, AC		282814	282815	282816	282817	N/A
1	Gauge, oil pressure		282897	282897	282897	282897	N/A
1	Gauge, water temperature		282898	282898	282898	282898	292940
1	Ammeter		282934	282933	282800	282930	N/A
2	Socket, lamp		284990	284990	284990	284990	N/A
3	Spacer, PC board		(9) 287948	(9) 287948	(9) 287948	(9) 287948	(5) 287948
3	Fuse, 1.5-amp		291207	291207	291207	291207	N/A
3	Lamp		(2) 291740	(2) 291740	(2) 291740	(2) 291740	(1) 269373
1	Decal		292347	292347	292347	292347	N/A
1	Decal		292361	292361	292361	292361	N/A
1	Switch, selector		292373	292374	292373	292374	287812
1	Holder, fuse		292821	292821	292821	292821	238426
4	Bumper		292834	292834	292834	292834	N/A
1	Harness, wiring		292836	292836	292836	292836	226594
1	Meter, frequency		295069	295069	282818	282818	N/A

1- and 5-Light Controller Assemblies

Qty.	Description	1- and 5-Light Controller Assembly Number/ Unique Parts
		A-254954
1	Governor Assembly	A-249922
1	Circuit Board, cyclic cranking	C-284507
1	Circuit Board, main	F-254717
1	Washer, lock, 1/4 int. tooth	X-22-11
2	Washer, lock, 1/4 int./ext. tooth	X-22-12
2	Washer, lock, #6	X-22-6
18	Screw, p.h.m. 6-32 x 1/4	X-49-25
2	Screw, p.h.m. 6-32 x 1/2	X-49-39
2	Screw, RHM, 6-32 x 3/8	X-49-6
2	Screw, RHM, 10-24 x 3/4	X-50-3
2	Screw, RHM	X-51-15
1	Grommet	X-6033-6
1	Tube, heat shrink	X-6081-3
4	Screw, Phillips® hex crimp-tite	X-6216-1
2	Nut, hex	X-81-8
1	Tube, heat shrink	X-748-21
1	Fuse, 10-amp	223316
1	Box, controller	227858
1	Strap, ground	230857
1	Holder, fuse	238426
1	Terminal	238582
1	Meter, hour	238736
1	Relay	241736
1	Cover, controller	254800
1	Harness, wiring	254820
1	Marker, strip	254822
1	Screw, special	267491
1	Lamp	269373
1	Switch, toggle	287812
9	Spacer, PC board	287948
2	Strip, terminal	292940

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					X-6003-17	
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	Switch Assembly, water level	336656					

MANUAL CONTROLLER KIT PARTS							
Qty.	Description	Common	Kit Number/Unique Parts				
			327037	327042	327047	327062	276427
1	Controller Assembly*		A-273384	A-273383	A-273385	A-273386	A-273378
4	Washer, lock, 5/16	X-22-16					
1	Terminal	X-283-8					
1	Conduit, convoluted					X-6003-17	X-6003-17
1	Screw, drill hex	X-794-1					
1	Harness, wiring	255040					
3	Transformer, current		259359	255860	253503	259360	259359
1	Bracket, CT mounting	276417					
1	Switch Assembly, water level	336656					

* See Controller Assembly section for parts list.

Manual Controller Assemblies

Qty.	Description	Common Parts	Manual Controller Assembly Number/Unique Parts				
			A-273378	A-273379	A-273380	A-273381	A-273382
1	Potentiometer Assembly	A-255041					
1	Overspeed Circuit Board	A-249812					
1	Main Circuit Board	H-239563					
1	Washer, shakeproof, #10	X-22-13					
4	Washer, lock, #6	X-22-6					
1	Grommet	X-284-31					
1	Plug, button	X-301-23					
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-50-70					
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 head	X-6216-1					
1	Sleeve	X-696-5					
1	Tab, identification	201620-86					
1	Fuse, 10-amp	223316					
1	Holder, fuse	238426					
1	Hourmeter	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	282817	282816	282816	282817
1	Gauge, oil pressure	282897					
1	Gauge, water temperature	282898					
1	Ammeter, AC		282800	282800	282801	282802	282801
2	Socket, lamp	284990					
8	Spacer, circuit board	287948					
3	Fuse, 1.5-amp	291207					
1	Decal	292347					
1	Resistor		N/A	292352	N/A	N/A	292352
1	Decal	292361					
1	Switch, elector		292373	292374	292373	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		273373	273374	273373	273373	273374
1	Box, controller	273375					

Manual Controller Assemblies, continued

Qty.	Description	Common Parts	Manual Controller Assembly Number/ Unique Parts			
			A-273383	A-273384	A-273385	A-273385
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 head	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	Hourmeter	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	282817	282816	282816
1	Gauge, oil pressure	282897				
1	Gauge, water temperature	282898				
1	Ammeter, AC		282804	282802	282805	282805
2	Socket, lamp	284990				
8	Spacer, circuit board	287948				
3	Fuse, 1.5-amp	291207				
1	Decal	292347				
1	Resistor		N/A	292352	N/A	292352
1	Decal	292361				
1	Switch, selector		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		273373	273374	273373	273374
1	Box, controller	273375				

Cooling System Kits

Qty.	Description	Part No.
Cooling System, City Water		256921
2	Elbow, street, 1 1/2	A-27
1	Bushing, reducer, 1/8 x 1	AC-1459
1	Tee, black iron, 3/8 x 3	X-203-15
1	Nipple, pipe, 3/8 x 1	X-204-9
2	Nipple, 1/2 x 1 3/16	X-209-2
1	Elbow, street, 1/2	X-211-1
3	Valve, drain, 3/8	X-256-1
1	Hose	X-304-14
1	Hose, radiator	X-304-15
1	Hose	X-304-2
1	Clamp, hose, 1/2	X-309-14
1	Hose, 5/ 8 x 14 1/2	X-312-4
1	Valve, solenoid, 5/8, 12-volt	X-350-7
1	Connector, hose	X-380-4
1	Line, flexible fuel, .312 x 2	X-386-32
1	Line, fuel	X-386-70
1	Connector, hose, 5/16 x 1	X-391-3
1	Clip, tube, 9/16 x 11/32	X-414-1
2	Clamp, hose, 1/2-1 13/32	X-426-3
10	Clamp, hose, 1.375 x 2.10	X-426-4
2	Clamp, hose, 1 15/16	X-426-8
2	Clamp, hose	X-426-9
3	Adapter	X-570-17
1	Hose, radiator	X-6014-59
1	Channel, U	X-6047-9
8	Screw, HC	X-6051-11
1	Plug, pipe, 3/8	X-75-10
2	Plug, pipe	X-75-42
14	Screw, drill hex	X-794-1
8	Washer, hardened	X-801-3
2	Bushing, reducer, 1/2	168848
1	Gasket, water outlet	246059
1	Gasket, exhaust	249905
1	Thermostat	249930
1	Manifold, exhaust	254686
1	Flange, exhaust outlet	254692
1	Hose, radiator	254803
1	Hose, radiator	254805
1	Housing, thermostat	254885
1	Orifice	254922
1	Gasket, exhaust manifold	254923
1	Gasket, water outlet	256476
1	Bracket, expansion tank	256914
1	Guard, belt	256915
1	Guard, belt	256916
1	Guard, belt	256917
1	Tank, expansion	256918
1	Plate, heat exchanger	256919
1	Tube, coolant	256920
1	Cap, pressure	258037
2	Decal, water drain	280561
1	Exchanger, heat	285662
1	Regulator, water	290176
1	Plate, heat exchanger mounting	290377

Qty.	Description	Part No.
Cooling System, City Water		326177
3	Adapter	X-570-17
1	Adapter, hose	X-570-21
1	Hose, radiator	X-6014-59
1	Screw, HC	X-6051-12
2	Clamp	X-672-10
3	Elbow, 90°, 1 1/2	151771
3	Nipple, pipe, 1 1/2 x 1 3/4	155040
1	Bushing, reducer	160212
2	Bushing, reducer, 1/2	168848
2	Clamp, hose	249888
1	Cap, pressure	258037
1	Tank, expansion	274645
1	Hose, upper radiator	276287
1	Regulator, water	290176
1	Exchanger, heat	326160
1	Guard, belt (top)	326261
1	Guard, belt (left)	326262
1	Guard, belt (right)	326263
1	Guard, belt (cover)	326264
1	Bracket, mounting	326265
1	Bracket, mounting	326266
2	Bracket, mounting	326267
1	Hose, molded	326288
2	Support, surge tank	326289
1	Support, top	326290
2	Bracket, support	326290
Cooling System, City Water		326102
1	Valve, solenoid, 5/8, 12-volt	X-350-7
1	Line, fuel	X-386-36
2	Clamp, hose	X-426-4
2	Clamp, hose	X-426-6
3	Adapter	X-570-17
1	Hose, radiator	X-6014-10
1	Clamp	X-672-10
4	Elbow, 90°	151771
1	Bushing, 2 1/16 x 1 1/4	153016
3	Nipple, pipe, 1 1/2 x 1 3/4	155040
2	Bushing, reducer, 1/2	168848
2	Clamp, hose	249887
1	Hose, radiator	255172
1	Bracket, expansion tank	255325
1	Guard, belt	255326
1	Cap, pressure	258037
2	Decal, water drain	280561
3	Adapter, hose	285685
1	Regulator, water	290176
1	Tank, expansion	291457
1	Hose, upper radiator	326004
2	Bracket, heat exchanger	326124
1	Guard, belt	326125
1	Guard, belt	326126
1	Exchanger, heat	326160
2	Plate, heat exchanger	326166
1	Guard, belt	326215

Cooling System Kits, continued

Qty.	Description	Part No.
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Cooling System, City Water

326440

1	Bushing, reducer	X-202-45
2	Nipple, 1/2 x 1 3/16	X-209-2
1	Elbow, street, 1/2	X-211-1
1	Coupling, pipe, 3/8	X-216-23
3	Valve, drain, 3/8	X-256-1
1	Clamp, hose, 1/2	X-309-14
1	Valve, solenoid, 5/8, 12-volt	X-350-7
1	Line, fuel	X-386-36
2	Clamp, hose	X-426-3
2	Clamp, hose	X-426-4
3	Adapter	X-570-17
1	Hose, radiator	X-6014-59
1	Hose, radiator	X-6014-77
1	Clamp	X-672-10
4	Elbow, 90°	151771
4	Nipple, pipe, 1 1/2 x 1 3/4	155040
2	Bushing, reducer, 1/2	168848
4	Clamp, hose	249888
1	Cap, pressure	258037
1	Tank, expansion	274645
1	Regulator, water	290176
1	Exchanger, heat	326160
2	Bracket, mounting	326287
2	Support, surge tank	326289
1	Support, top surge tank	326290
2	Bracket, support	326291
1	Hose, bypass	326295
1	Bracket, mounting top	326449
1	Bracket, mounting right	326469
1	Bracket, mounting left	326470
1	Guard, belt right	326578
1	Guard, belt left	326579
1	Guard, belt bottom	326580
1	Guard, belt top	326581
1	Guard, belt cover	326582
1	Hose, upper	326583
1	Bracket, support	326610

326395

Qty.	Description	Part No.
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Cooling System, City Water

326591

2	Elbow, street, 1 1/2	A-27
2	Nipple, 1/2 x 1 3/16	X-209-2
1	Elbow, street, 1/2	X-211-1
1	Elbow, 45°	X-225-1
3	Valve, drain, 3/8	X-256-1
1	Hose	X-304-14
1	Clamp, hose, 1/2	X-309-14
1	Valve, solenoid, 5/8, 12-volt	X-350-7
1	Line, fuel	X-386-70
1	Clip, tube, 9/16 x 11/32	X-414-1
4	Clamp, hose, 1.375 x 2.10	X-426-4
2	Clamp, hose, 1 15/16	X-426-8
3	Adapter	X-570-17
1	Hose, radiator	X-6014-59
1	Hose, radiator	X-6014-7
1	Channel, U	X-6047-9
1	Plug, pipe, 3/8	X-75-10
1	Plug, pipe	X-75-2
1	Nipple, pipe, 1 1/2 x 1 3/4	155040
2	Bushing, reducer, 1/2	168848
1	Gasket, water outlet	229963
1	Gasket, exhaust	249905
1	Thermostat	249930
1	Flange, exhaust outlet	254692
1	Hose, radiator	254803
1	Hose, radiator	254805
1	Sensor, low fluid	365289
1	Housing, thermostat	254885
1	Tank, expansion	256918
1	Plate, heat exchanger	256919
1	Tube, coolant	256920
1	Cap, pressure	258037
4	Spacer, .406 x .750 x .375	280528
3	Decal, water drain	280561
1	Exchanger, heat	285662
1	Regulator, water	290176
1	Plate, heat exchanger mounting	290377
1	Hose, radiator	326423
1	Tube, radiator outlet	326598
1	Bracket, expansion tank	326599
1	Guard, belt guard (left)	326600
1	Guard, belt guard (right)	326601
1	Guard, belt guard (front)	326602

Cooling System Kits, continued

Qty.	Description	Part No.
Cooling System, Radiator 254998		
1	Radiator Assembly	A-256829
1	Bushing, reducer, 1/8	AC-1459
1	Valve, drain, 3/8	X-256-1
1	Valve, drain, 1/4	X-256-3
1	Hose	X-304-2
1	Hose, 5/8 x 14 1/2	X-312-4
1	Connector, hose	X-380-4
1	Line, flexible fuel, 5/16 x 28	X-386-34
1	Connector, hose, 5/16 x 1/8	X-391-3
4	Clamp, hose	X-426-18
2	Clamp, hose, 1/2-1 13/32	X-426-3
5	Clamp, hose, 1.375 x 2.10	X-426-4
1	Clamp, hose, 1 9/16 x 2 1/2	X-426-6
2	Clamp, hose, 1 15/16 x 1 3/16	X-426-8
2	Clamp, hose	X-426-9
1	Tie, cable	X-468-1
1	Hose	X-577-37
1	Hose	X-577-38
3	Connector, hose	X-582-9
1	Hose, radiator	X-6014-46
8	Screw, HC	X-6051-11
4	Screw, HC	X-6068-4
1	Hose, rubber, .375 x 34	X-651-15
2	Plug, pipe, 3/8	X-75-10
2	Plug, pipe	X-75-42
38	Screw, drill hex	X-794-1
8	Washer, hardened	X-801-3
4	Washer, hardened	X-801-4
1	Gasket, water outlet	246059
1	Gasket, exhaust	249905
1	Thermostat	249930
1	Cover, radiator	253071
1	Plug	253268
1	Support, radiator right	253538
1	Support, radiator left	253539
1	Manifold, exhaust	254686
1	Flange, exhaust outlet	254692
1	Shroud, radiator	254754
1	Hose, radiator	254802
1	Hose, radiator	254803
1	Hose, radiator	254804
1	Hose, radiator	254805
1	Housing, thermostat	254885
1	Orifice	254922
1	Gasket, exhaust manifold	254923
1	Plug	254949
1	Guard, fan	254981
1	Gasket, water outlet	256476
1	Guard, fan (top)	256843
1	Guard, fan	256860
1	Shroud, fan	258862
1	Fan	276101
1	Spacer, pulley to fan	276102
1	Guard, fan	276204
2	Clamp, hose	279604

Qty.	Description	Part No.
Cooling System, Radiator 276428		
1	Radiator Assembly	A-326021
1	Cap, radiator	224358
4	Washer, plain	X-25-73
1	Valve, drain, 3/8	X-256-1
1	Valve, drain, 1/4	X-256-3
2	Clamp, hose, 1.375 x 2.100	X-426-4
2	Clamp, hose, 1 15/16	X-426-8
4	Screw, HC	X-6068-4
5	Screw, crimpite	X-6216-1
4	Washer, hardened	X-801-4
1	Shroud, fan	226334
1	Switch Assembly, level	273404
1	Spacer, pulley to fan	276102
1	Hose, upper radiator	276287
1	Hose, lower radiator	276288
1	Fan, pusher	276479
1	Guard, radiator	276491
1	Support, radiator	276492
1	Support, radiator	276493
1	Guard, wire fan	326106
1	Guard, belt (right)	326109
1	Guard, belt (left)	326110
1	Guard, belt (top)	326111

Cooling System, Radiator 326025		
1	Radiator Assembly	A-276304
1	Cap, radiator	224358
4	Washer, plain	X-25-73
1	Valve, drain, 3/8	X-256-1
1	Valve, drain, 1/4	X-256-3
2	Clamp, hose, 1.375 x 2.100	X-426-4
2	Clamp, hose, 1 15/16	X-426-8
4	Screw, HC	X-6068-4
5	Screw, crimpite	X-6216-1
4	Washer, hardened	X-801-4
1	Shroud, fan	226334
1	Switch Assembly, level	273404
1	Spacer, pulley to fan	276102
1	Hose, upper radiator	276287
1	Hose, lower radiator	276288
1	Fan, pusher	276387
1	Guard, radiator	276491
1	Support, radiator	276492
1	Support, radiator	276493
1	Guard, wire fan	326106
1	Guard, belt (right)	326109
1	Guard, belt (left)	326110
1	Guard, belt (top)	326111

Cooling System Kits, continued

Qty.	Description	Part No.
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Cooling System, Radiator 40 Ambient 326031

See Group 104, variation 179-9 for parts listing.

Cooling System, Radiator 50 Ambient 326032		
1	Radiator Assembly	A-326018
1	Valve, drain, 1/4	X-256-3
2	Clamp, hose, 1.375 x 2.10	X-426-4
2	Clamp, hose, 1 9/16 x 2 1/2	X-426-6
4	Washer, hardened	X-801-3
1	Sensor, low fluid	365289
4	Spacer, radiator support	273911
1	Fan Shroud	324039
1	Support, radiator left	326001
1	Support, radiator right	326002
1	Hose, lower radiator	326003
1	Hose, upper radiator	326004
1	Guard, wire fan	326006
1	Guard, belt left	326007
1	Guard, belt right	326008
1	Guard, belt top	326009
1	Spacer	326010
1	Fan	326011
1	Bracket, belt guard	326144

Cooling System, Radiator 50 Ambient 326424

See Group 104, variation 16 for parts listing.

Cooling System, Radiator 326451

See Group 104, variation 18 for parts listing.

Cooling System, Radiator 326874

See Group 104, variation 20 for parts listing.

Qty.	Description	Part No.
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Cooling System, Radiator for Sound Shield 226402

1	Radiator Assembly	A-276300
1	Bushing, reducer, 1/8	AC-1459
4	Washer, plain	X-25-73
1	Valve, drain, 1/4	X-256-3
2	Hose	X-304-2
1	Connector, hose	X-380-4
1	Line, flexible fuel, 5/16 x 28	X-386-34
1	Connector, hose, 5/16 x 1/8	X-391-3
4	Clamp, hose, 1.375 x 2.10	X-426-4
2	Clamp, hose, 1 15/16	X-426-8
2	Clamp, hose	X-426-9
4	Screw, HC, M8 x 1.25 x 2.75	X-6050-16
8	Screw, HC	X-6051-11
2	Screw, HH	X-6216-1
1	Plug, pipe, 3/8	X-75-10
2	Plug, pipe	X-75-42
8	Washer, hardened	X-801-3
4	Washer, hardened	X-801-4
1	Shroud, fan	226334
1	Guard, wire fan	226335
1	Fan, radiator pusher	226403
1	Spacer, fan	226404
1	Tube, radiator outlet	226405
1	Hose, radiator	226406
1	Support, radiator	226407
1	Support, radiator	226408
2	Insulation, foam	226409
1	Hose, radiator	226418
1	Guard, belt (top)	226419
1	Guard, belt (bottom)	226420
2	Insulation, foam	226421
1	Gasket, water outlet	246059
4	Clamp, hose	249888
1	Gasket, exhaust	249905
1	Thermostat	249930
1	Manifold, exhaust	254686
1	Flange, exhaust outlet	254692
1	Hose, radiator	254805
1	Housing, thermostat	254885
1	Orifice	254922
1	Gasket, exhaust manifold	254923
1	Gasket, water outlet	256476
1	Duct Flange, radiator	255169
8	Rivet, pop	X-781-11
10	Screw, drill	X-794-2
2	Frame, air duct	292995
2	Frame, air duct	292996

Cooling System Kits, continued

Qty.	Description	Part No.
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Cooling System, Radiator for Sound Shield

326480

1	Radiator Assembly	A-326402
4	Washer, plain	X-25-73
1	Valve, drain, 1/4	X-256-3
2	Hose	X-304-2
4	Clamp, hose, 1.375 x 2.10	X-426-4
2	Clamp, hose	X-426-6
2	Clamp, hose, 1 15/16	X-426-8
1	Plug, pipe, 3/8	X-75-10
4	Washer, hardened	X-801-4
1	Shroud, fan	226334
1	Fan, radiator pusher	226403
1	Support, radiator	226407
1	Support, radiator	226408
2	Insulation, foam	226409
1	Hose, radiator	226418
2	Insulation, foam	226421
1	Gasket, water outlet	229963
1	Gasket, exhaust	249905
1	Thermostat	249930
1	Flange, exhaust outlet	254692
1	Hose, radiator	254805
1	Housing, thermostat	254885
1	Hose, upper radiator	326422
1	Hose, radiator	326423
1	Bracket, mounting top	326449
1	Guard, belt left	326467
1	Guard, belt bottom	326468
1	Bracket, mounting left	326470
1	Guard, wire fan	326473
1	Guard, belt top	326577
1	Bracket, belt guard	326685
1	Guard, belt	326686

Cooling System, Remote Radiator

326103

1	Hose	X-312-16
2	Clamp, hose	X-426-6
1	Hose, radiator	X-6014-45
1	Hose, 2 x 8	X-6014-8
2	Clamp, hose	249888
1	Bracket, expansion tank	255325
1	Guard, belt	255326
1	Hose, lower radiator	326003
1	Guard, belt	326125
1	Guard, belt	326126
1	Guard, belt	326215

Cooling System, Remote Radiator

326178

1	Valve, drain, 3/8	X-256-1
2	Clamp, hose, 1.375 x 2.100	X-426-4
2	Clamp, hose, 1 15/16	X-426-8
1	Hose, upper radiator	276287
1	Hose, lower radiator	276288
1	Bracket, mounting	326265
1	Bracket, mounting	326270
1	Guard, belt (right)	326263
1	Guard, belt (left)	326262
1	Guard, belt (top)	326261
1	Guard, belt (cover)	326264

Qty.	Description	Part No.
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Cooling System, Remote Radiator

326441

2	Clamp, hose, 1.375 x 2.10	X-426-2
3	Clamp, hose, 1.375 x 2.10	X-426-4
1	Clamp, hose	X-426-6
1	Hose, upper	326356
1	Hose, lower	326357
1	Hose, bypass	326395
1	Bracket, mounting (top)	326449
1	Bracket, mounting (right)	326469
1	Bracket, mounting (left)	326470
1	Guard, belt (right)	326578
1	Guard, belt (left)	326579
1	Guard, belt (bottom)	326580
1	Guard, belt (top)	326581
1	Guard, belt (cover)	326582

Duct Flange, Radiator

255169

8	Rivet, pop	X-781-11
10	Screw, drill hex	X-794-2
2	Frame, air duct	292995
2	Frame, air duct	292996

Duct Flange, Radiator

324203

8	Rivet, pop	X-781-11
6	Screw, drill hex	X-794-1
2	Frame, air duct	324199
2	Frame, air duct	324201

Duct Flange, Radiator

324205

8	Rivet, pop	X-781-11
6	Screw, drill hex	X-794-1
2	Frame, air duct	324200
2	Frame, air duct	324201

Heater, Block

256820

1	Elbow	SA-472
1	Nipple, pipe, 3/8	X-204-9
1	Cross, pipe	X-207-5
1	Valve, drain, 3/8	X-256-1
6	Clamp, hose	X-426-10
1	Tie, cable	X-468-1
2	Hose, oilproof	X-577-5
1	Hose .625 x 20 in.	X-577-8
1	Connector, hose	X-582-2
1	Connector, hose	X-582-3
1	Bracket, mounting	226360
1	Hose, molded	276206
1	Heater, block	276209
1	Plug, freeze	276212
1	Tag, hang	279047

Cooling System Kits, continued

Qty.	Description	Part No.
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Heater, Block

256821

1	Elbow	SA-472
1	Nipple, pipe, 3/8 x 1	X-204-9
1	Valve, drain, 3/8	X-256-1
6	Clamp, hose	X-426-10
1	Tie, cable	X-468-1
2	Hose, oil-proof	X-577-5
1	Hose, .625 x 20 in.	X-577-8
1	Connector, hose	X-582-2
1	Connector, hose	X-582-3
1	Bracket, mounting	226360
1	Heater, block	276208
1	Plug, freeze	276212
1	Tag, hang	279047

Heater, Block

276210

1	Elbow	SA-472
6	Clamp, hose	X-426-10
1	Hose, .625 x 21 in.	X-577-24
1	Hose, .625 x 17 in.	X-577-28
1	Connector, hose	X-582-3
2	Clamp, hose	250081
1	Connector, hose	276205
1	Hose, molded	276206
1	Heater, block	276209
1	Plug, freeze	276212
1	Bracket, mounting	276311

Heater, Block

276211

1	Elbow	SA-472
6	Clamp, hose	X-426-10
1	Hose, .625 x 21 in.	X-577-24
1	Hose, .625 x 17 in.	X-577-28
1	Connector, hose	X-582-3
2	Clamp, hose	250081
1	Connector, hose	276205
1	Hose, molded	276206
1	Heater, block	276208
1	Plug, freeze	276212
1	Bracket, mounting	276311
1	Tag, hang	279047

Heater, Block

276223

1	Elbow	SA-472
6	Clamp, hose	X-426-10
1	Clamp, hose 1.375 x 2.10	X-426-4
1	Hose, .625 x 21 in.	X-577-24
1	Hose, .625 x 17 in.	X-577-28
1	Connector, hose	X-582-3
1	Hose, molded	276206
1	Heater, block	276209
1	Plug, freeze	276212
1	Connector, hose	276222
1	Bracket, mounting	276311
1	Tag, hang	279047

Qty.	Description	Part No.
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Heater, Block

276224

1	Elbow	SA-472
6	Clamp, hose	X-426-10
2	Clamp, hose, 1.375 x 2.10	X-426-4
1	Hose, .625 x 21 in.	X-577-24
1	Hose, .625 x 17 in.	X-577-28
1	Connector, hose	X-582-3
1	Hose, molded	276206
1	Heater, block	276208
1	Plug, freeze	276212
1	Connector, hose	276222
1	Bracket, mounting	276311
1	Tag, hang	279047

Heater, Block

326038

2	Bushing, reducer	X-202-41
1	Tee, pipe, 1/2	X-203-13
1	Nipple, 1/2 x 1 3/16	X-209-2
1	Hose	X-312-18
1	Hose	X-312-34
6	Clamp, hose	X-426-10
2	Connector, hose	X-582-1
2	Screw, HHC	X-6051-2
1	Clamp, insulated	X-672-20
1	Plug, pipe, 1/2	X-75-28
1	Hose, molded	276206
2	Plug, freeze	276212
1	Tag, hang	279047
1	Bracket, block heater	326219
1	Heater, block	326222
1	Shield, heat	326225

Heater, Block

326039

2	Bushing, reducer	X-202-41
1	Tee, pipe, 1/2	X-203-13
1	Nipple, 1/2 x 1 3/16	X-209-2
1	Hose	X-312-18
1	Hose	X-312-34
6	Clamp, hose	X-426-10
2	Connector, hose	X-582-1
2	Screw, HHC	X-6051-2
1	Clamp, insulated	X-672-20
1	Plug, pipe, 1/2	X-75-28
1	Hose, molded	276206
2	Plug, freeze	276212
1	Tag, hang	279047
1	Bracket, block heater	326219
1	Heater, block	326224
1	Shield, heat	326225

Cooling System Kits, continued

Qty.	Description	Part No.
Heater, Block		326230
1	Bushing, reducer	X-202-41
1	Tee, pipe, 1/2	X-203-13
1	Nipple, 1/2 x 1 3/16	X-209-2
1	Hose	X-312-18
1	Hose	X-312-34
6	Clamp, hose	X-426-10
2	Connector, hose	X-582-1
1	Clamp, insulated	X-672-20
1	Plug, pipe, 1/2	X-75-28
1	Hose, molded	276206
2	Plug, freeze	276212
1	Tag, hang	279047
1	Bracket, block heater	326219
1	Heater, block	326222
1	Shield, heat	326227

Heater, Block		326231
1	Bushing, reducer	X-202-41
1	Tee, pipe, 1/2	X-203-13
1	Nipple, 1/2 x 1 3/16	X-209-2
1	Hose	X-312-18
1	Hose	X-312-34
6	Clamp, hose	X-426-10
2	Connector, hose	X-582-1
1	Clamp, insulated	X-672-20
1	Plug, pipe, 1/2	X-75-28
1	Hose, molded	276206
2	Plug, freeze	276212
1	Tag, hang	279047
1	Bracket, block heater	326219
1	Heater, block	326224
1	Shield, heat	326227

Heater, Block		326232
2	Bushing, reducer	X-202-41
1	Nipple, pipe, 1/2 x 3	X-209-11
1	Nipple, pipe, 1/2 x 2 1/2	X-209-3
2	Elbow, pipe, 1/2	X-215-1
1	Hose	X-312-17
1	Hose	X-312-51
1	Spacer	X-400-201
4	Clamp, hose	X-426-10
2	Connector, hose	X-582-1
2	Plug, freeze	276215
1	Bracket, support	276351
1	Bracket, block heater mounting	326219
1	Heater, block	326228
1	Shield, heat	326236
1	Plug, freeze	326307

Qty.	Description	Part No.
Heater, Block		326233
2	Bushing, reducer	X-202-41
1	Nipple, pipe, 1/2 x 3	X-209-11
2	Elbow, pipe, 1/2	X-215-1
1	Hose	X-312-17
1	Hose	X-312-51
1	Spacer	X-400-201
4	Clamp, hose	X-426-10
2	Connector, hose	X-582-1
2	Plug, freeze	276215
1	Bracket, support	276351
1	Bracket, block heater mounting	326219
1	Heater, block	326229
1	Shield, heat	326236
1	Plug, freeze	326307

Heater, Block		326447
1	Bushing, reducer	X-202-41
1	Tee, pipe, 1/2	X-203-13
1	Nipple, pipe, 1/2 x 1 3/16	X-209-2
1	Elbow, 45°, 1/2	X-225-17
1	Nipple, pipe, 1/4 x 7/8	X-220-5
2	Hose	X-312-34
1	Hose	X-312-45
6	Clamp, hose	X-426-10
1	Connector, hose	X-582-1
1	Connector, hose	X-582-22
1	Plug, freeze	276212
1	Bracket, mounting	326219
1	Heater, block	326222

Heater, Block		326448
1	Tee, pipe, 1/4	A-110
1	Bushing, reducer	X-202-41
1	Tee, pipe, 1/2	X-203-13
1	Nipple, pipe, 1/2 x 1 3/16	X-209-2
1	Elbow, 45°, 1/2	X-225-17
1	Nipple, pipe, 1/4 x 7/8	X-220-5
2	Hose	X-312-34
1	Hose	X-312-45
6	Clamp, hose	X-426-10
1	Connector, hose	X-582-1
1	Connector, hose	X-582-22
1	Plug, freeze	276212
1	Bracket, mounting	326219
1	Heater, block	326224

Cooling System Kits, continued

Qty.	Description	Part No.
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Heater, Block

326475

1	Bushing, reducer	X-202-41
1	Tee, pipe, 1/2	X-203-13
1	Nipple, pipe, 3/8 x 2	X-204-6
1	Cross, pipe	X-207-5
1	Pipe	X-209-19
1	Pipe	X-209-21
1	Elbow, 45°, 1.2	X-225-7
1	Hose	X-312-17
1	Hose, 5/8	X-312-44
1	Hose	X-312-52
1	Valve, drain, 3/8	X-256-1
1	Spacer	X-400-201
4	Clamp, hose	X-426-10
2	Connector, hose	X-582-1
1	Clamp, insulated	X-672-20
1	Plug, freeze	276212
1	Bracket, support	276351
1	Bracket, block heater	326219
1	Plug, freeze	276212
1	Heater, block	326222

Qty.	Description	Part No.
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Heater, Block

326476

1	Bushing, reducer	X-202-41
1	Tee, pipe, 1/2	X-203-13
1	Nipple, pipe, 3/8 x 2	X-204-6
1	Cross, pipe	X-207-5
1	Pipe	X-209-19
1	Pipe	X-209-21
1	Elbow, 45°, 1/2	X-225-7
1	Valve, drain, 3/8	X-256-1
1	Hose	X-312-17
1	Hose, 5/8	X-312-44
1	Hose	X-312-52
6	Clamp, hose	X-426-10
1	Connector, hose	X-582-1
1	Connector, hose	X-582-2
1	Plug, freeze	276212
1	Bracket, mounting	326219
1	Heater, block	326224

Fuel System Kits

Qty.	Description	Kit/Part No.
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Bypass, Manual Valve and Gas Solenoid

Bypass, Manual Valve and Gas Solenoid	255634
2 Tee, pipe 3/4	A-108
1 Elbow	SA-472
1 Nipple, pipe, 3/4 x 2	X-206-2
1 Nipple, pipe	X-206-4
2 Nipple, pipe	X-206-9
1 Elbow, pipe, 3/4	X-215-2
1 Line, flexible fuel, 3/4 x 12	X-504-2
1 Bracket, fuel valve	254456
1 Valve	255632

Bypass, Manual Valve and Gas Solenoid	326094
1 Pipe, 3/4 x 4	A-107
2 Tee, pipe, 3/4	A-108
1 Nipple, pipe	X-206-4
3 Nipple, pipe	X-206-9
1 Elbow, pipe, 3/4	X-215-2
1 Bolt, U, 5/16-18 x 1 1/2	X-397-1
1 Line, flex. fuel, 3/4 x 12	X-504-2
1 Bracket, fuel valve	254456
1 Valve	255632

Changeover, Automatic (LP Gas/Natural Gas)

Changeover, Automatic	326179
2 Tee, pipe, 3/4	A-108
1 Bushing, reducer, 1/8	A-106
1 Bushing, reducer, 3/4	X-202-1
1 Bushing, reducer, 3/8	X-202-23
1 Bushing, reducer	X-202-39
1 Nipple, pipe, 3/8	X-204-9
1 Nipple, pipe	X-206-2
1 Nipple, pipe	X-206-4
5 Nipple, pipe	X-206-9
2 Elbow, pipe, 3/4	X-215-2
1 Coupling, pipe, 3/4	X-216-13
1 Nipple, pipe, 1/8 x 3/4	X-217-6
1 Label, "natural gas"	X-543-3
1 Elbow, street, 1/8 x 1/8	X-555-2
1 Valve, gas	244621
1 Relay	245748
1 Carburetor Assembly	254983
1 Line, flexible fuel	276395
1 Label, "LP gas"	285623
1 Switch, vacuum	287387
2 Regulator, pressure	291259
1 Bracket, fuel	326065
1 Valve, line load	326077
1 Line, flexible fuel	326260
1 Harness, wiring	326267

Qty.	Description	Kit/Part No.
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Changeover, Automatic	326442
2 Tee, pipe, 3/4	A-108
1 Bushing, reducer, 1/8	A-106
2 Bushing, reducer, 3/4	X-202-1
1 Bushing, reducer	X-202-39
1 Bushing, reducer	X-202-41
1 Nipple, pipe	X-206-4
7 Nipple, pipe	X-206-9
2 Nipple, 1/2 x 1 3/16	X-209-2
2 Elbow, pipe, 1/2	X-215-1
1 Nipple, pipe, 1/8 x 3/4	X-217-6
1 Elbow, 45°, 3/4	X-225-8
1 Label, "natural gas"	X-543-3
2 Valve, gas	244621
1 Relay	245748
1 Carburetor Assembly	A-326319
1 Label, "LP gas"	285623
1 Switch, vacuum	287387
2 Regulator, pressure	291259
1 Bracket, fuel	GM11473
1 Valve, line load	326077
1 Line, flexible fuel	326260
1 Harness, wiring	326267

Changeover, Automatic	326611
2 Tee, pipe, 3/4	A-108
1 Fitting, elbow, 45 degree	X-225-8
1 Nipple, pipe	X-206-4
2 Bushing, reducer, 3/4	X-202-1
1 Bushing, reducer	X-202-56
1 Bushing, reducer	X-202-41
8 Nipple, pipe	X-206-9
2 Nipple, 1/2 x 2 1/2	X-209-3
3 Elbow, pipe, 1/2	X-215-2
1 Nipple, pipe, 1/8 x 3/4	X-217-6
1 Elbow, 45°, 3/4	X-225-8
4 Terminal	X-283-3
1 Label, "natural gas"	X-543-3
1 Relay	245748
1 Carburetor Assembly	A-326593
1 Line, flexible fuel	276395
1 Label, "LP gas"	285623
1 Switch, vacuum	287387
2 Regulator, pressure	291259
1 Bracket, fuel	326065
1 Valve, line load	326077
2 Solenoid	326223
1 Harness, wiring	326267

Fuel System Kits, continued

Qty.	Description	Kit/Part No.
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Changeover, Manual (LP Gas to Gasoline)

Changeover, Manual (Gas to Gasoline) 256993		
1	Coupling, pipe	X-216-11
2	Washer, lock, shakeproof	X-22-5
1	Connector, 90° elbow	X-391-22
2	Clamp, hose	X-426-15
2	Clamp, hose	X-426-18
1	Elbow, 1/2-20 x 1/4	X-447-6
3	Tie, cable	X-468-1
2	Screw, RHM, 10-32 x 1/2	X-50-1
2	Stud	X-6054-6
1	Hose	X-651-34
1	Harness, wiring	226299
1	Solenoid Assembly, fuel	226304
1	Switch, toggle	241911
1	Bracket, fuel valve	254456
1	Line, flexible fuel	254493
1	Valve Assembly, gas	254859
1	Pump, fuel	255243
1	Spacer	255595
1	Adapter, mixer	256977
1	Mixer, gas	256987
1	Hose	256989
1	Bracket, fuel switch	256990
1	Decal	256991
1	Decal	256992
1	Carburetor	256994
1	Tag, instruction	258558
1	Gasket, carburetor	280007
1	Regulator, pressure	291259

Changeover, Manual (Gas to Gasoline) 326068		
1	Carburetor Assembly	A-291440
1	Nipple, pipe, 3/4 x 10	X-206-16
2	Nipple, pipe	X-206-4
1	Nipple, pipe	X-206-9
2	Elbow, pipe, 3/4	X-215-2
1	Hose, rubber	X-312-36
2	Elbow, pipe, 3/4	X-215-2
1	Elbow, 45°, 3/4	X-225-8
1	Terminal	X-367-1
1	Line, flexible fuel, 1/4 x 40	X-386-56
2	Connector, hose, 1/8	X-391-1
1	Bolt, U, 5/16-18 x 1 1/2	X-397-1
2	Clamp, hose	X-426-10
2	Clamp, hose	X-426-9
2	Clamp, hose	X-426-3
1	Connector, hose	X-582-16
1	Switch, toggle	241911
1	Pump, electric fuel	247076
1	Bracket, fuel valve	254456
1	Adapter, mixer	256977
1	Mixer, gas	256987
1	Hose	256989
1	Bracket, fuel switch	256990
1	Decal	256991
1	Decal	256992
1	Adapter, carburetor	279013
1	Gasket, carburetor	280494
1	Regulator, pressure	291259
1	Solenoid	326223

Qty.	Description	Kit/Part No.
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Changeover, Manual (Gas to Gasoline) 326443		
1	Elbow, pipe, 1/2	X-215-5
1	Nipple, pipe, 1/8 x 3/4	X-217-6
1	Hose, rubber	X-312-36
1	Hose, rubber, .62 ID	X-312-46
1	Stud	X-352-75
2	Connector, hose, 5/8	X-391-2
1	Connector, 90°, elbow	X-391-22
2	Clamp, hose	X-426-15
2	Clamp, hose	X-426-18
4	Clamp, hose	X-426-3
1	Elbow, 1/2-20 x 1/4	X-447-6
2	Screw, RHM, 10-32 x 1/2	X-50-1
2	Nut, hex	X-6053-2
2	Stud	X-6054-11
1	Hose	X-651-34
1	Harness, wiring	226299
1	Solenoid Assembly, fuel	226304
1	Switch, toggle	241911
1	Pump, electric fuel	247076
1	Bracket, fuel valve	254456
1	Valve Assembly, gas	254859
1	Adapter, mixer	256977
1	Mixer, gas	256987
1	Hose	256989
1	Bracket, fuel switch	256990
1	Decal	256991
1	Decal	256992
1	Carburetor	256994
1	Tag, instruction	258558
1	Gasket, carburetor	280007
1	Regulator, pressure	291259
1	Bracket, fuel pump	326589
1	Line, flexible fuel	326592

Fuel System Kits, continued

Qty.	Description	Kit/Part No.
Changeover, Manual (Gas to Gasoline)		326590
1	Elbow, pipe, 1/2	X-215-5
1	Nipple, pipe, 1/8 x 3/4	X-217-6
1	Stud	X-352-75
1	Line, 1/2 x 25 in.	X-386-12
1	Connector, elbow	X-391-21
1	Connector, 90°, elbow	X-391-22
1	Hose	X-422-29
2	Clamp, hose	X-426-15
2	Clamp, hose	X-426-18
4	Clamp, hose	X-426-3
1	Elbow, 1/2-20 x 1/4	X-447-6
2	Screw, RHM, 10-32 x 1/2	X-50-1
2	Nut, hex	X-6053-2
2	Stud	X-6054-6
1	Hose	X-651-34
1	Bushing, reducer, 1/2	168848
1	Harness, wiring	226299
1	Solenoid Assembly, fuel	226304
1	Switch, toggle	241911
1	Pump, electric fuel	247076
1	Bracket, fuel valve	254456
1	Valve Assembly, gas	254859
1	Adapter, mixer	256977
1	Mixer, gas	256987
1	Hose	256989
1	Bracket, fuel switch	256990
1	Decal	256991
1	Decal	256992
1	Carburetor	256994
1	Tag, instruction	258558
1	Gasket, carburetor	280007
1	Regulator, pressure	291259
1	Bracket, fuel pump	326589
1	Line, flex. fuel	326592

Fuel Lines, Flexible Gas

Fuel Line, Flexible Gas		PA-255177
Fuel Line, Flexible Gas		PA-255177-SD
1	Bushing, reducer, 3/4	X-202-1
1	Nipple, pipe, 3/4	X-206-2
1	Elbow, pipe, 1	X-215-15
1	Elbow	151385
1	Line, flexible fuel	276353
Fuel Line, Flexible Gas		PA-256869
1	Line, flexible fuel	256857

Qty.	Description	Kit/Part No.
Fuel Lines, Flexible Gasoline		
Fuel Line, Flexible Gasoline		256842
1	Clamp, hose	X-426-9
2	Tie, cable	X-468-1
1	Line, flexible fuel	256841
Fuel Line, Flexible Gasoline		276284
1	Cap, pipe	X-268-3
1	Clamp, hose	X-426-9
1	Elbow, 1/2-20 x 1/4	X-447-6
1	Tie, cable	X-468-1
1	Line, flexible fuel	276283
Fuel Line, Flexible Gasoline		276285
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 connect	X-447-7
1	Line, flexible fuel	273614
Fuel Line, Flexible Gasoline		326607
1	Clamp, hose	X-426-9
1	Connector, hose, 5/16	X-391-3
1	Line, flexible fuel	256841
Fuel Pump, Electric		
Fuel Pump, Auxiliary		225208
1	Pump, electric fuel	247076
Fuel Pump, Auxiliary		324405
1	Pump, electric fuel	324420
Gas Solenoid Valve		
Gas Solenoid Valve		244621
1	Valve, gas	244621
Gas Solenoid Valve		326127
1	Valve, gas	326223

Fuel System Kits, continued

Qty.	Description	Kit/Part No.
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Gasoline Fuel Systems

Gasoline Fuel System

254997

1	Coupling, pipe, 1/8 x 1 3/16	X-216-24
2	Washer, lock, shakeproof	X-22-5
1	Stud	X-352-75
1	Elbow, 1/2-20 x 1/8	X-447-4
2	Nut, hex	X-6053-2
2	Stud	X-6054-6
1	Line, flexible fuel	254493
1	Pump, fuel	255243
1	Spacer	255595
1	Carburetor	256994
1	Gasket, carburetor	280007
1	Nipple, pipe, 1/8 x 1 1/2	289055

Gasoline Fuel System

326050

2	Washer, lock, shakeproof	X-22-5
1	Elbow, 1/2-20 x 1/8	X-447-4
2	Nut, hex	X-6053-2
1	Stud	X-6054-6
1	Line, flexible fuel	254493
1	Pump, fuel	255243
1	Gasket, fuel pump	255244
1	Spacer	255595
1	Carburetor	255245
1	Gasket, carburetor	280007

Gasoline Fuel System

326093

1	Carburetor Assembly	A-291440
1	Air Cleaner Assembly	A-269441
1	Terminal	X-367-1
1	Line, flexible fuel, 1/4 x 40	X-386-56
2	Connector, hose, 1/8	X-391-1
2	Clamp, hose	X-426-9
1	Terminal	X-431-38
1	Pump, electric fuel	247076
1	Adapter, carburetor	279013
1	Gasket, carburetor	280494

Gasoline Fuel System

326444

1	Air Cleaner Assembly	A-269441
1	Elbow, pipe, 90°	X-215-19
1	Pipe	X-217-15
1	Connector, half union	X-296-9
1	Hose, rubber	X-312-36
1	Hose, rubber, .62 ID	X-312-47
1	Stud	X-352-75
12	Connector, hose, 5/8	X-391-2
4	Clamp, hose	X-426-3
2	Nut, hex	X-6053-2
2	Stud	X-6054-11
1	Pump, electric fuel	247076
1	Carburetor	256994
1	Gasket, carburetor	280007
1	Bracket, fuel pump	326589
1	Line, flexible fuel	326592

Qty.	Description	Kit/Part No.
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Gasoline Fuel System

326588

1	Air Cleaner Assembly	A-269441
1	Elbow, pipe, 90°	X-215-19
1	Pipe	X-217-15
1	Connector, half union	X-296-9
1	Stud	X-352-75
1	Line, 1/2 x 25 in.	X-386-12
1	Connector, elbow	X-391-13
1	Connector, hose elbow	X-391-21
1	Hose	X-422-29
2	Clamp, hose	X-426-10
2	Clamp, hose	X-426-18
4	Clamp, hose	X-426-3
2	Nut, hex	X-6053-2
2	Stud	X-6054-11
1	Bushing, reducer, 1/2	168848
1	Pump, electric fuel	247076
1	Hose, molded	256870
1	Carburetor	256994
1	Gasket, carburetor	280007
1	Regulator, pressure	291259
1	Bracket, fuel pump	326589
1	Line, flexible fuel	326592

Fuel System Kits, continued

Qty.	Description	Kit/Part No.
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LP Gas Fuel Systems

LP Gas Fuel System		276431
1	Body Assembly, mixer	A-326137
1	Body Assembly, throttle	A-326138
1	Bushing, reducer	X-202-41
1	Nipple, pipe	X-206-4
1	Nipple, 1/2 x 1 3/16	X-209-2
1	Elbow, pipe, 3/4	X-215-2
1	Coupling, pipe, 3/4	X-216-13
1	Washer, lock	X-22-15
4	Washer, plain	X-25-28
1	Terminal, 16-14 wire	X-283-32
4	Stud	X-352-65
1	Bolt, U, 5/16-18	X-397-1
3	Clamp, hose, 1.375 x 2.100	X-426-4
1	Clamp, hose, 1 15/16	X-426-8
2	Screw, HC, M6 x 1 x 16	X-6049-2
4	Screw, hex	X-6050-3
2	Screw, hex	X-6051-3
4	Screw, socket head cap	X-6055-3
2	Plug, pipe	X-75-2
1	Valve, gas	244621
1	Clamp, hose	249887
1	Clamp, hose	249888
1	Bracket, fuel valve	254456
1	Spacer	255595
1	Bolt, banjo	255628
4	Plug, spark	258276
1	Turbocharger	258490
1	Line, oil feed	258492
1	Adapter, turbo	258866
1	Hose, step	258868
1	Tube, turbo crossover	258869
1	Hose, step	258874
1	Hose, step	258875
1	Pipe, turbo discharge	258876
1	Gasket, turbo oil outlet	258878
1	Shield, heat	276258
1	Bracket, mixer support	276389
1	Line, flexible fuel	276395
1	Gasket, carburetor	280007
1	Regulator, pressure	291259
1	Adapter	326114

Qty.	Description	Kit/Part No.
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LP Gas Fuel System		276432
1	Tee, pipe, 3/4	A-108
1	Bushing, reducer, 3/8	X-202-23
1	Bushing, reducer	X-202-39
1	Nipple, pipe, 3/8	X-204-9
2	Nipple, pipe	X-206-4
2	Elbow, pipe, 3/4	X-215-2
1	Washer, lock	X-22-15
1	Terminal, 16-14 wire	X-283-32
3	Plug, pipe	X-75-2
1	Valve, gas	244621
1	Bracket, fuel valve	254456
1	Carburetor Assembly	254983
1	Spacer	255595
1	Line, flexible fuel	276395
1	Gasket, carburetor	280007
1	Regulator, pressure	291259

LP Gas Fuel System		326425
1	Carburetor	A-326319
1	Bushing, reducer	X-202-41
2	Nipple, 1/2 x 1 3/16	X-209-2
1	Elbow, pipe, 1/2	X-215-1
1	Elbow, 45°, 3/4	X-225-8
1	Valve, gas	254859
1	Bracket, fuel valve	254456
1	Line, flexible fuel	326603
1	Regulator, pressure	291259

LP Gas Fuel System		326594
1	Carburetor	A-326593
1	Bushing, reducer	X-202-41
1	Nipple, pipe, 3/4 x 10 1/4	X-206-16
1	Nipple, pipe	X-206-4
1	Nipple, pipe	X-206-9
2	Nipple, 1/2 x 2 1/2	X-209-3
1	Elbow, pipe, 1/2	X-215-1
1	Elbow, 45°, 3/4	X-225-8
1	Valve, gas	254859
1	Bracket, fuel valve	254456
1	Line, flexible fuel	276395
1	Regulator, pressure	291259
1	Solenoid	326223

Fuel System Kits, continued

Qty.	Description	Kit/Part No.
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LP Gas Liquid Withdrawal Fuel Systems

LP Gas Fuel System		326180
1	Bushing, reducer	X-202-41
2	Nipple, pipe, 3/8 x 1 1/2	X-204-8
1	Cross Pipe, 1/2	X-207-7
1	Nipple, 1/2 x 1 3/16	X-209-2
1	Elbow, pipe, 1/4	X-215-5
2	Elbow, pipe	X-215-9
1	Nipple, pipe, 1/4 x 1 1/2	X-220-6
1	Hose, 5/8 ID x 31 1/2	X-312-15
1	Hose	X-312-53
1	Connector, hose elbow	X-391-19
1	Connector, hose, 5/8 x 3/8	X-391-2
4	Clamp, hose, 1/2-1 13/32	X-426-3
2	Clamp, hose, 1.375 x 2.1	X-426-4
1	Elbow	X-447-17
1	Connector, hose	X-582-2
2	Plug, pipe	X-75-2
2	Plug, pipe, 1/2 in.	X-75-28
1	Line, flexible fuel	225160
1	Converter, gas	226576
1	Carburetor Assembly	254983
1	Spacer	255595
1	Bracket, converter	256888
1	Solenoid, fuel	256976
1	Plug, freeze	276212
1	Connector, hose	276222
1	Gasket, carburetor	280007

Qty.	Description	Kit/Part No.
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LP Gas Fuel System 326181

1	Body Assembly, mixer	A-326137
1	Body Assembly, throttle	A-326138
1	Bushing, reducer, 3/8	X-202-23
2	Bushing, reducer	X-202-41
1	Nipple, pipe, 3/8 x 3	X-204-7
1	Cross Pipe, 1/2	X-207-7
2	Nipple, 1/2 x 1 3/16	X-209-2
1	Elbow, pipe, 1/4	X-215-5
1	Coupling, pipe, 3/4	X-216-13
2	Washer, lock	X-22-5
1	Nipple, pipe, 1/4 x 1 1/2	X-220-6
4	Washer, plain	X-25-28
1	Elbow	X-274-2
1	Hose, 5/8 ID x 31 1/2	X-312-15
1	Hose	X-312-53
4	Stud	X-352-65
1	Bolt, U, 5/16-18	X-397-1
4	Clamp, hose, 1/2-1 13/32	X-426-3
5	Clamp, hose, 1.375 x 2.100	X-426-4
1	Clamp, hose, 1 15/16	X-426-8
1	Connector, hose	X-582-2
2	Screw, HC, M6 x 1 x 16	X-6049-2
4	Screw, hex cap	X-6050-3
2	Screw, hex cap	X-6051-3
4	Screw, socket head cap	X-6055-3
2	Plug, pipe, 1/2 in.	X-75-28
2	Plug, pipe	X-75-2
1	Converter, gas	226576
1	Clamp, hose	249887
1	Clamp, hose	249888
1	Spacer	255595
1	Bolt, banjo	255628
1	Bracket, converter	256888
1	Solenoid, fuel	256976
4	Plug, spark	258276
1	Turbocharger	258490
1	Line, oil feed	258492
1	Adapter, turbo	258866
1	Hose, step	258868
1	Tube, turbo crossover	258869
1	Hose, step	258874
1	Hose, step	258875
1	Pipe, turbo discharge	258876
1	Gasket, turbo oil outlet	258878
1	Plug, freeze	276212
1	Connector, hose	276222
1	Shield, heat	276258
1	Bracket, mixer support	276389
1	Line, flexible fuel	276395
1	Gasket, carburetor	280007
1	Adapter	326114

Fuel System Kits, continued

Qty.	Description	Kit/Part No.
LP Gas Liquid Withdrawal 256986		
1	Bushing, reducer, 1/4 x 1	X-202-12
1	Bushing, reducer, 3/8	X-202-28
1	Tee, pipe, 1/2	X-203-13
1	Nipple, pipe, 3/8 x 1	X-204-9
1	Nipple, 1/2 x 1-3/16	X-209-2
1	Elbow, pipe, 1/4	X-215-5
1	Elbow	X-215-9
2	Washer, lock, shakeproof	X-22-5
1	Nipple, pipe, 1/4 x 1 1/2	X-220-6
1	Hose, 5/8 ID x 31 1/2	X-312-15
1	Hose, rubber, 5/8 x 49	X-312-37
1	Stud	X-352-86
1	Connector, hose	X-380-4
1	Connector, hose elbow	X-391-19
3	Connector, hose, 5/8 x 3/8	X-391-2
4	Clamp, hose, 1/2-1 13/32	X-426-3
1	Elbow, 5/8-18 x 3/8	X-447-9
2	Nut, hex	X-6053-2
2	Stud	X-6054-6
1	Plug, pipe, 1/2	X-75-3
1	Bushing, reducer, 1/2	168848
1	Line, flexible fuel	225160
1	Carburetor Assembly	254983
1	Spacer	255595
1	Solenoid Assembly, fuel	256449
1	Bracket, converter	256888
1	Converter	256903
1	Gasket, carburetor	280007
LP Gas Fuel System 326445		
1	Carburetor Assembly	A-326319
1	Bushing, reducer	X-202-41
1	Bushing, reducer	X-202-46
1	Cross, pipe, 1/2	X-207-7
2	Nipple, 1/2 x 1 3/16	X-209-2
1	Nipple, 1/2 x 1 1/2	X-209-5
1	Elbow, pipe, 1/4	X-215-5
1	Elbow, pipe, 1/2	X-215-1
1	Nipple, pipe, 1/4 x 1 1/2	X-220-6
1	Elbow, 45°, 1/2	X-225-7
1	Connector, half union	X-296-13
1	Hose, 5/8 ID x 31 1/2	X-312-15
1	Hose	X-312-53
1	Connector, hose elbow	X-391-19
1	Connector, hose, 5/8 x 3/8	X-391-2
4	Clamp, hose, 1/2-1 13/32	X-426-3
2	Clamp, hose, 1.375 x 2.100	X-426-4
1	Connector, hose	X-582-2
2	Plug, pipe, 1/2 in.	X-75-28
1	Line, flexible fuel	225160
1	Converter	226876
1	Bracket, converter	256888
1	Solenoid, fuel	256976
1	Plug, freeze	276212
1	Connector, hose	276222

Qty.	Description	Kit/Part No.
LP Gas Fuel System 326586		
1	Carburetor Assembly	A-326319
1	Bushing, reducer	X-202-41
1	Bushing, reducer	X-202-46
2	Nipple, 1/2 x 1 3/16	X-209-2
1	Elbow, pipe, 1/4	X-215-5
1	Elbow, pipe, 1/2	X-215-1
1	Nipple, pipe, 1/4 x 1 1/2	X-220-6
1	Elbow, 45°, 1/2	X-225-7
1	Connector, half union	X-296-13
1	Hose, 5/8 ID x 31 1/2	X-312-15
1	Hose	X-312-53
1	Connector, hose elbow	X-391-19
3	Connector, hose, 5/8 x 3/8	X-391-2
4	Clamp, hose, 1/2-1 13/32	X-426-3
2	Plug, pipe, 1/2 in.	X-75-28
1	Line, flexible fuel	225160
1	Converter	256903
1	Bracket, converter	256888
1	Solenoid, fuel	256449
1	Plug, freeze	276212

LP Gas Fuel System 326612		
1	Carburetor Assembly	A-326593
1	Elbow	SA-472
1	Bushing, reducer, 3/4	X-202-1
1	Bushing, reducer	X-202-30
1	Bushing, reducer	X-202-41
1	Tee, pipe, 1/2	X-203-13
1	Nipple, pipe, 3/4 x 10	X-206-16
1	Nipple, pipe	X-206-4
1	Nipple, pipe, 3/4 x 3 1/2	X-206-6
1	Pipe	X-209-18
1	Nipple, 1/2 x 2 1/2	X-209-3
2	Elbow, street, 1/4	X-211-6
1	Elbow, pipe, 3/4	X-215-2
1	Nipple, pipe, 1/4 x 4	X-220-2
2	Elbow, 45°, 3/4	X-225-8
1	Hose	X-312-17
1	Hose	X-312-49
1	Connector, hose elbow	X-391-19
2	Connector, hose, 5/8 x 3/8	X-391-2
4	Clamp, hose, 1/2-1 13/32	X-426-10
1	Line, flexible fuel	276395
1	Connector, hose	275581
1	Converter	326067
1	Bracket, converter	326069
1	Solenoid, fuel	326070

Fuel System Kits, continued

Qty.	Description	Kit/Part No.
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Natural Gas Fuel Systems

Natural Gas Fuel System 254996

1	Tee, pipe, 3/4	A-108
1	Bushing, reducer, 3/8	X-202-23
1	Bushing, reducer	X-202-39
1	Nipple, pipe, 3/8	X-204-9
1	Elbow	X-215-9
2	Washer, lock, shakeproof	X-22-5
1	Stud	X-352-86
1	Elbow, oil line	X-447-16
1	Tie, cable	X-468-1
2	Nut, hex	X-6053-2
2	Stud	X-6054-6
1	Line, flexible fuel	225160
1	Bracket, fuel valve	254456
1	Valve Assembly, gas	254859
1	Carburetor Assembly	254983
1	Spacer	255595
1	Tag, instruction	258558
1	Gasket, carburetor	280007
1	Regulator, pressure	291259

Natural Gas Fuel System 276432

1	Tee, pipe, 3/4	A-108
1	Bushing, reducer, 3/8	X-202-23
1	Bushing, reducer	X-202-39
1	Nipple, pipe, 3/8	X-204-9
2	Nipple, pipe	X-206-4
2	Elbow, pipe, 3/4	X-215-2
1	Washer, lock	X-22-15
1	Terminal, 16-14 wire	X-283-32
3	Plug, pipe	X-75-2
1	Valve, gas	244621
1	Bracket, fuel valve	254456
1	Carburetor Assembly	254983
1	Spacer	255595
1	Line, flexible fuel	276395
1	Gasket, carburetor	280007
1	Regulator, pressure	291259

Qty.	Description	Kit/Part No.
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Natural Gas Fuel System 276430

1	Elbow, pipe, 3/4	X-215-2
1	Coupling, pipe, 3/4	X-216-13
1	Washer, lock	X-22-15
4	Washer, plain	X-25-28
1	Terminal, 16-14 wire	X-283-32
4	Stud	X-352-65
1	Bolt, U, 5/16-18	X-397-1
3	Clamp, hose, 1.375 x 2.100	X-426-4
1	Clamp, hose, 1 15/16	X-426-8
2	Screw, HC, M6 x 1 x 16	X-6049-2
4	Screw, hex head cap	X-6050-3
2	Screw, hex head cap	X-6051-3
4	Screw, socket head cap	X-6055-3
2	Plug, pipe	X-75-2
1	Valve, gas	244621
1	Clamp, hose	249887
1	Clamp, hose	249888
1	Bracket, fuel valve	254456
1	Spacer	255595
1	Bolt, banjo	255628
1	Turbocharger	258490
1	Line, oil feed	258492
1	Adapter, turbo	258866
1	Hose, step	258868
1	Tube, turbo crossover	258869
1	Hose, step	258874
1	Hose, step	258875
1	Pipe, turbo discharge	258876
1	Gasket, turbo oil outlet	258878
1	Shield, heat	276258
1	Bracket, mixer support	276389
1	Line, flexible fuel	276395
1	Gasket, carburetor	280007
1	Regulator, pressure	291259
1	Adapter	326114

Natural Gas Fuel System 326425

1	Carburetor	A-326319
1	Bushing, reducer	X-202-41
2	Nipple, 1/2 x 1 3/16	X-209-2
1	Elbow, pipe, 1/2	X-215-1
1	Elbow, 45°, 3/4	X-225-8
1	Valve, gas	254859
1	Bracket, fuel valve	254456
1	Line, flexible fuel	326603
1	Regulator, pressure	291259

Fuel System Kits, continued

Qty.	Description	Kit/Part No.
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Natural Gas Fuel System

326594

1	Carburetor	A-326593
1	Bushing, reducer	X-202-41
1	Nipple, pipe, 3/4 x 101/4	X-206-16
1	Nipple, pipe	X-206-4
1	Nipple, pipe	X-206-9
2	Nipple, 1/2 x 2 1/2	X-209-3
1	Elbow, pipe, 1/2	X-215-1
1	Elbow, 45°, 3/4	X-225-8
1	Valve, gas	254859
1	Bracket, fuel valve	254456
1	Line, flexible fuel	276395
1	Regulator, pressure	291259
1	Solenoid	326223

Qty.	Description	Kit/Part No.
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Natural Gas or LP Fuel System

326875

1	Carburetor	A-326319
1	Bushing, reducer	X-202-41
2	Nipple, 1/2 x 1 3/16	X-209-2
1	Elbow, pipe, 1/2	X-215-1
1	Elbow, 45°, 3/4	X-225-8
2	Screw, hex head cap	X-6050-4
1	Valve, gas	254859
1	Bracket, fuel valve	254456
1	Line, flexible fuel	326603
1	Regulator, pressure	291259

Strainer, Gas

Strainer, Gas

290276

1	Strainer, gas	292490
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Strainer, Gas

290275

1	Strainer, gas	292485
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Notes

Appendix A Abbreviations

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

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

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

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 Appendix C, General Torque Specifications, and other torque specifications in the service literature.

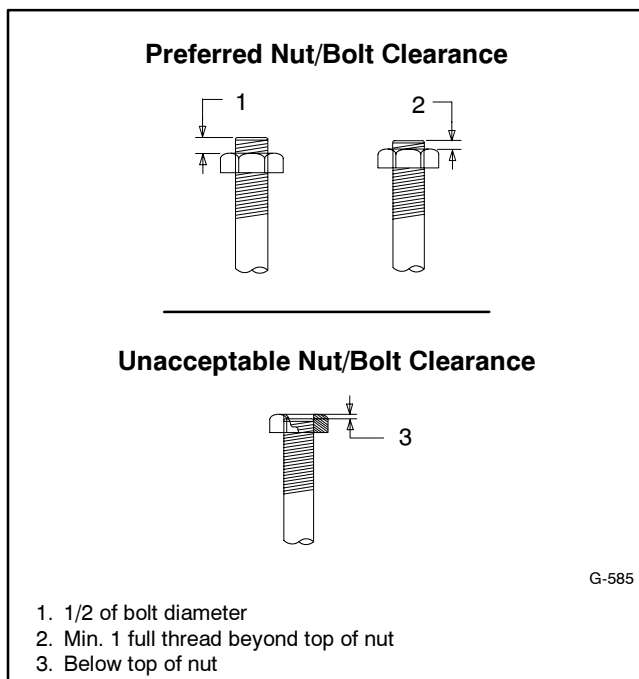


Figure 1 Acceptable Bolt Lengths

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 Figure 2.

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 Figure 2, which depicts the preceding hardware configuration possibilities.

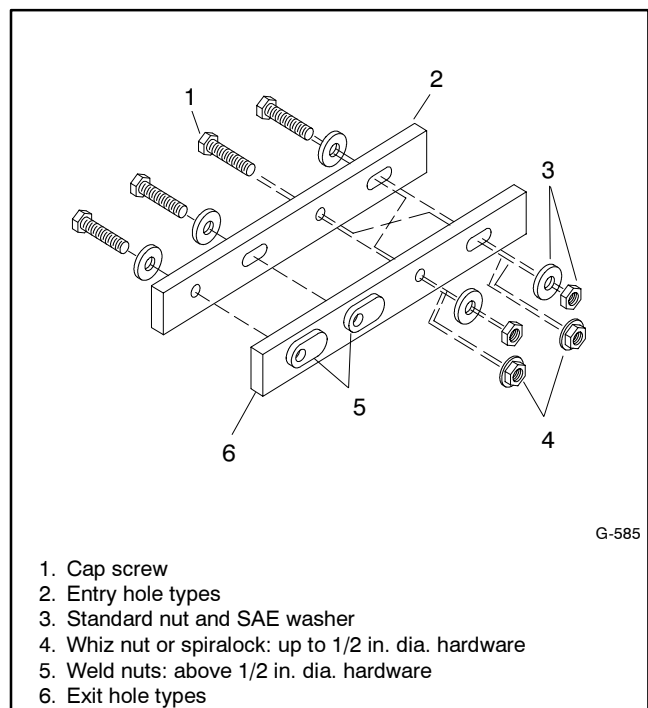


Figure 2 Acceptable Hardware Combinations

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	Nm (in. lb.)	1.8 (16)	2.3 (20)	—	1.8 (16)
10-24	Nm (in. lb.)	2.9 (26)	3.6 (32)	—	2.9 (26)
10-32	Nm (in. lb.)	2.9 (26)	3.6 (32)	—	2.9 (26)
1/4-20	Nm (in. lb.)	6.8 (60)	10.8 (96)	14.9 (132)	6.8 (60)
1/4-28	Nm (in. lb.)	8.1 (72)	12.2 (108)	16.3 (144)	8.1 (72)
5/16-18	Nm (in. lb.)	13.6 (120)	21.7 (192)	29.8 (264)	13.6 (120)
5/16-24	Nm (in. lb.)	14.9 (132)	23.1 (204)	32.5 (288)	14.9 (132)
3/8-16	Nm (ft. lb.)	24.0 (18)	38.0 (28)	53.0 (39)	24.0 (18)
3/8-24	Nm (ft. lb.)	27.0 (20)	42.0 (31)	60.0 (44)	27.0 (20)
7/16-14	Nm (ft. lb.)	39.0 (29)	60.0 (44)	85.0 (63)	—
7/16-20	Nm (ft. lb.)	43.0 (32)	68.0 (50)	95.0 (70)	—
1/2-13	Nm (ft. lb.)	60.0 (44)	92.0 (68)	130.0 (96)	—
1/2-20	Nm (ft. lb.)	66.0 (49)	103.0 (76)	146.0 (108)	—
9/16-12	Nm (ft. lb.)	81.0 (60)	133.0 (98)	187.0 (138)	—
9/16-18	Nm (ft. lb.)	91.0 (67)	148.0 (109)	209.0 (154)	—
5/8-11	Nm (ft. lb.)	113.0 (83)	183.0 (135)	259.0 (191)	—
5/8-18	Nm (ft. lb.)	128.0 (94)	208.0 (153)	293.0 (216)	—
3/4-10	Nm (ft. lb.)	199.0 (147)	325.0 (240)	458.0 (338)	—
3/4-16	Nm (ft. lb.)	222.0 (164)	363.0 (268)	513.0 (378)	—
1-8	Nm (ft. lb.)	259.0 (191)	721.0 (532)	1109.0 (818)	—
1-12	Nm (ft. lb.)	283.0 (209)	789.0 (582)	1214.0 (895)	—

Metric Fasteners Torque Specifications, Measured in Nm (ft. lb.)				
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	5.6 (4)	9.9 (7)	14.0 (10)	5.6 (4)
M8 x 1.25	13.6 (10)	25.0 (18)	35.0 (26)	13.6 (10)
M8 x 1.00	21.0 (16)	25.0 (18)	35.0 (26)	21.0 (16)
M10 x 1.50	27.0 (20)	49.0 (35)	68.0 (50)	27.0 (20)
M10 x 1.25	39.0 (29)	49.0 (35)	68.0 (50)	39.0 (29)
M12 x 1.75	47.0 (35)	83.0 (61)	117.0 (86)	—
M12 x 1.50	65.0 (48)	88.0 (65)	125.0 (92)	—
M14 x 2.00	74.0 (55)	132.0 (97)	185.0 (136)	—
M14 x 1.50	100.0 (74)	140.0 (103)	192.0 (142)	—
M16 x 2.00	115.0 (85)	200.0 (148)	285.0 (210)	—
M16 x 1.50	141.0 (104)	210.0 (155)	295.0 (218)	—
M18 x 2.50	155.0 (114)	275.0 (203)	390.0 (288)	—
M18 x 1.50	196.0 (145)	305.0 (225)	425.0 (315)	—

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)

1/4-20 x 1
 — Length In Inches (Screws and Bolts)
 — Threads Per Inch
 — Major Thread Diameter In Fractional Inches Or Screw Number Size

Metric (Screws, Bolts, Studs, and Nuts)

M8-1.25 x 20
 — Length In Millimeters (Screws and Bolts)
 — Distance Between Threads In Millimeters
 — Major Thread Diameter In Millimeters

Plain Washers

9/32 x 5/8 x 1/16
 — Thickness
 — External Dimension
 — Internal Dimension

Lock Washers

5/8
 — Internal Dimension

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	1/2-20	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 Hex Head Bolts (Partial Thread)

M931-05055-60	M5-0.80 x 55
M931-06040-60	M6-1.00 x 40
M931-06055-60	M6-1.00 x 55
M931-06060-60	M6-1.00 x 60
M931-06060-SS	M6-1.00 x 60
M931-06070-60	M6-1.00 x 70
M931-06070-SS	M6-1.00 x 70
M931-06075-60	M6-1.00 x 75
M931-06090-60	M6-1.00 x 90
M931-06145-60	M6-1.00 x 145
M931-06150-60	M6-1.00 x 150
M931-08035-60	M8-1.25 x 35
M931-08040-60	M8-1.25 x 40
M931-08040-82	M8-1.25 x 40*
M931-08045-60	M8-1.25 x 45
M931-08050-60	M8-1.25 x 50
M931-08055-60	M8-1.25 x 55
M931-08055-82	M8-1.25 x 55*
M931-08060-60	M8-1.25 x 60
M931-08070-60	M8-1.25 x 70
M931-08070-82	M8-1.25 x 70*
M931-08075-60	M8-1.25 x 75
M931-08080-60	M8-1.25 x 80
M931-08090-60	M8-1.25 x 90
M931-08095-60	M8-1.25 x 95
M931-08100-60	M8-1.25 x 100
M931-08110-60	M8-1.25 x 110
M931-08120-60	M8-1.25 x 120
M931-08130-60	M8-1.25 x 130
M931-08140-60	M8-1.25 x 140
M931-08150-60	M8-1.25 x 150
M931-10040-82	M10-1.25 x 40*
M931-10040-60	M10-1.50 x 40
M931-10045-60	M10-1.50 x 45
M931-10050-60	M10-1.50 x 50
M931-10050-82	M10-1.25 x 50
M931-10055-60	M10-1.50 x 55
M931-10060-60	M10-1.50 x 60
M931-10065-60	M10-1.50 x 65
M931-10070-60	M10-1.50 x 70
M931-10080-60	M10-1.50 x 80
M931-10080-82	M10-1.25 x 80
M931-10090-60	M10-1.50 x 90
M931-10090-82	M10-1.50 x 90*
M931-10100-60	M10-1.50 x 100
M931-10110-60	M10-1.50 x 110
M931-10120-60	M10-1.50 x 120
M931-10130-60	M10-1.50 x 130
M931-10140-60	M10-1.50 x 140
M931-10180-60	M10-1.50 x 180
M960-10330-60	M10-1.25 x 330
M931-12045-60	M12-1.75 x 45
M960-12050-60	M12-1.25 x 50
M960-12050-82	M12-1.25 x 50*
M931-12050-60	M12-1.75 x 50
M931-12050-82	M12-1.75 x 50
M931-12055-60	M12-1.75 x 55
M931-12060-60	M12-1.75 x 60
M931-12060-82	M12-1.75 x 60
M931-12065-60	M12-1.75 x 65
M931-12075-60	M12-1.75 x 75
M931-12080-60	M12-1.75 x 80
M931-12090-60	M12-1.75 x 90
M931-12100-60	M12-1.75 x 100
M931-12110-60	M12-1.75 x 110

Part No. Dimensions Hex Head Bolts (Partial Thread), continued

M960-16090-60	M16-1.50 x 90
M931-16090-60	M16-2.00 x 90
M931-16100-60	M16-2.00 x 100
M931-16120-60	M16-2.00 x 120
M931-16150-60	M16-2.00 x 150
M931-20065-60	M20-2.50 x 65
M931-20100-60	M20-2.50 x 100
M931-20120-60	M20-2.50 x 120
M931-20140-60	M20-2.50 x 140
M931-20160-60	M20-2.50 x 160
M931-22090-60	M22-2.50 x 90
M931-22120-60	M22-2.50 x 120
M931-22160-60	M22-2.50 x 160
M931-24090-60	M24-3.00 x 90
M931-24120-60	M24-3.00 x 120
M931-24160-60	M24-3.00 x 160

Hex Head Bolts (Full Thread)

M933-04006-60	M4-0.70 x 6
M933-05030-60	M5-0.80 x 30
M933-05035-60	M5-0.80 x 35
M933-05050-60	M5-0.80 x 50
M933-06010-60	M6-1.00 x 10
M933-06012-60	M6-1.00 x 12
M933-06014-60	M6-1.00 x 14
M933-06016-60	M6-1.00 x 16
M933-06020-60	M6-1.00 x 20
M933-06025-60	M6-1.00 x 25
M933-06040-60	M6-1.00 x 40
M933-06050-60	M6-1.00 x 50
M933-07025-60	M7-1.00 x 25
M933-08010-60	M8-1.25 x 10
M933-08012-60	M8-1.25 x 12
M933-08016-60	M8-1.25 x 16
M933-08020-60	M8-1.25 x 20
M933-08025-60	M8-1.25 x 25
M933-08030-60	M8-1.25 x 30
M933-08030-82	M8-1.25 x 30*
M933-10012-60	M10-1.50 x 12
M961-10020-60	M10-1.25 x 20
M933-10020-60	M10-1.50 x 20
M933-10025-60	M10-1.50 x 25
M961-10025-60	M10-1.25 x 25
M933-10025-82	M10-1.50 x 25
M961-10030-60	M10-1.25 x 30
M933-10030-60	M10-1.50 x 30
M933-10030-82	M10-1.50 x 30*
M961-10035-60	M10-1.25 x 35
M933-10035-60	M10-1.50 x 35
M933-10035-82	M10-1.50 x 35
M961-10040-60	M10-1.25 x 40
M933-12016-60	M12-1.75 x 16
M933-12020-60	M12-1.75 x 20
M961-12020-60F	M12-1.50 x 20
M933-12025-60	M12-1.75 x 25
M933-12025-82	M12-1.75 x 25*
M961-12030-60	M12-1.25 x 30
M961-12030-82F	M12-1.50 x 30
M933-12030-60	M12-1.75 x 30
M933-12035-60	M12-1.75 x 35
M961-12040-82	M12-1.25 x 40*
M933-12040-60	M12-1.75 x 40
M933-12040-82	M12-1.75 x 40*

Part No. Dimensions Hex Head Bolts (Full Thread), continued

M961-14025-60	M14-1.50 x 25
M933-14025-60	M14-2.00 x 25
M961-14050-82	M14-1.50 x 50
M961-16025-60	M16-1.50 x 25
M933-16025-60	M16-2.00 x 25
M961-16030-82	M16-1.50 x 30*
M933-16030-82	M16-2.00 x 30*
M933-16035-60	M16-2.00 x 35
M961-16040-60	M16-1.50 x 40
M933-16040-60	M16-2.00 x 40
M961-16045-82	M16-1.50 x 45
M933-16045-82	M16-2.00 x 45
M933-16050-60	M16-2.00 x 50
M933-16050-82	M16-2.00 x 50*
M933-16060-60	M16-2.00 x 60
M933-16070-60	M16-2.00 x 70
M933-18035-60	M18-2.50 x 35
M933-18050-60	M18-2.50 x 50
M933-18060-60	M18-2.50 x 60
M933-20050-60	M20-2.50 x 50
M933-20055-60	M20-2.50 x 55
M933-24060-60	M24-3.00 x 60
M933-24065-60	M24-3.00 x 65
M933-24070-60	M24-3.00 x 70

Pan Head Machine Screws

M7985A-03010-20	M3-0.50 x 10
M7985A-03012-20	M3-0.50 x 12
M7985A-04010-20	M4-0.70 x 10
M7985A-04016-20	M4-0.70 x 16
M7985A-04020-20	M4-0.70 x 20
M7985A-04050-20	M4-0.70 x 50
M7985A-04100-20	M4-0.70 x 100
M7985A-05010-20	M5-0.80 x 10
M7985A-05012-20	M5-0.80 x 12
M7985A-05016-20	M5-0.80 x 16
M7985A-05020-20	M5-0.80 x 20
M7985A-05025-20	M5-0.80 x 25
M7985A-05030-20	M5-0.80 x 30
M7985A-05080-20	M5-0.80 x 80
M7985A-05100-20	M5-0.80 x 100
M7985A-06100-20	M6-1.00 x 100

Flat Head Machine Screws

M965A-04012-SS	M4-0.70 x 12
M965A-05012-SS	M5-0.80 x 12
M965A-05016-20	M5-0.80 x 16
M965A-06012-20	M6-1.00 x 12

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

Metric, continued

Part No.	Dimensions	Type
Hex Nuts		
M934-03-50	M3-0.50	Standard
M934-04-50	M4-0.70	Standard
M934-05-50	M5-0.80	Standard
M982-05-60	M5-0.80	Elastic Stop
M934-06-60	M6-1.00	Standard
M934-06-64	M6-1.00	Std. (green)
M6923-06-80	M6-1.00	Spiralock
M982-06-80	M6-1.00	Elastic Stop
M934-08-60	M8-1.25	Standard
M6923-08-80	M8-1.25	Spiralock
M982-08-80	M8-1.25	Elastic Stop
M934-10-60	M10-1.50	Standard
M934-10-60F	M10-1.25	Standard
M6923-10-80	M10-1.50	Spiralock
M6923-10-62	M10-1.50	Spiralock†
M982-10-80	M10-1.50	Elastic Stop
M934-12-60	M12-1.75	Standard
M934-12-60F	M12-1.25	Standard
M6923-12-80	M12-1.75	Spiralock
M982-12-80	M12-1.75	Elastic Stop
M982-14-60	M14-2.00	Elastic Stop
M6923-16-80	M16-2.00	Spiralock
M982-16-80	M16-2.00	Elastic Stop
M934-18-80	M18-2.5	Standard
M982-18-60	M18-2.50	Elastic Stop
M934-20-80	M20-2.50	Standard
M982-20-80	M20-2.50	Elastic Stop
M934-22-60	M22-2.50	Standard
M934-24-80	M24-3.00	Standard
M982-24-60	M24-3.00	Elastic Stop
M934-30-80	M30-3.50	Standard

Washers

Part No.	ID	OD	Thick.	Bolt/ Screw
M125A-03-80	3.2	7.0	0.5	M3
M125A-04-80	4.3	9.0	0.8	M4
M125A-05-80	5.3	10.0	1.0	M5
M125A-06-80	6.4	12.0	1.6	M6
M125A-08-80	8.4	16.0	1.6	M8
M125A-10-80	10.5	20.0	2.0	M10
M125A-12-80	13.0	24.0	2.5	M12
M125A-14-80	15.0	28.0	2.5	M14
M125A-16-80	17.0	30.0	3.0	M16
M125A-18-80	19.0	34.0	3.0	M18
M125A-20-80	21.0	37.0	3.0	M20
M125A-24-80	25.0	44.0	4.0	M24

† This metric hex nut's hardness is grade 8.

TP-5543 7/03d

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