

Service Parts



Industrial Generator Sets

Model:

30-125GSG

30/50GSGB

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

See MP-6009 Parts Catalog Industrial Controllers
for controller parts



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Introduction

This manual lists service replacement parts for 30–125 kW generator sets.

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

Information in this publication represents data available at the time of print. The manufacturer of DDC/MTU Power Generation products 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.

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.

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.

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 Specification Number Index or 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.

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.

Specification Number Index

Group Title	Air Intake	Cooling System	Engine	Nameplates and Decals	Skid and Plant Mounting	Generator and Mounting	Controller and Mounting	Literature
Group No.	101	104	105	107	109	201	301	701
Spec No.	Variation Number							
30GSG								
GM13685-GA1S	*	*	1	1	*	*	†	97
GM13685-GA4S	*	*	2	1	*	*	†	97
GM13685-GA7S	*	*	3	1	*	*	†	97
GM13685-GA10S	*	*	7	1	*	*	†	97
GM22383-GA1S	*	*	35	1	*	*	†	97
GM22383-GA7S	*	*	36	1	*	*	†	97
GM22383-GA10S	*	*	37	1	*	*	†	97
GM39370-GA1S	*	*	57	1	*	*	†	97
GM39370-GA7S	*	*	58	1	*	*	†	97
GM39370-GA10S	*	*	59	1	*	*	†	97
GM39370-GA13S	*	*	67	1	*	*	†	97
GM39370-GA14S	*	*	68	1	*	*	†	97
30GSGB								
GM22316-GA1S	*	*	19	1	*	*	†	155
GM22316-GA2S	*	*	20	1	*	*	†	155
GM22316-GA3S	*	*	21	1	*	*	†	155
GM22316-GA4S	*	*	66	1	*	*	†	155
35GSG								
GM13685-GA2S	*	*	1	1	*	*	†	99
GM13685-GA5S	*	*	2	1	*	*	†	99
GM13685-GA8S	*	*	3	1	*	*	†	99
GM13685-GA11S	*	*	7	1	*	*	†	99
GM22383-GA2S	*	*	35	1	*	*	†	99
GM22383-GA8S	*	*	36	1	*	*	†	99
GM22383-GA11S	*	*	37	1	*	*	†	99
GM39370-GA2S	*	*	57	1	*	*	†	99
GM39370-GA8S	*	*	58	1	*	*	†	99
GM39370-GA11S	*	*	59	1	*	*	†	99
GM39370-GA15S	*	*	67	1	*	*	†	99
GM39370-GA16S	*	*	68	1	*	*	†	99

Specification Number Index

Group Title	Air Intake	Cooling System	Engine	Nameplates and Decals	Skid and Plant Mounting	Generator and Mounting	Controller and Mounting	Literature
Group No.	101	104	105	107	109	201	301	701
Spec No.	Variation Number							
45GSG								
GM13685-GA3S	*	*	1	1	*	*	†	101
GM13685-GA6S	*	*	2	1	*	*	†	101
GM13685-GA9S	*	*	3	1	*	*	†	101
GM13685-GA12S	*	*	7	1	*	*	†	101
GM22383-GA3S	*	*	35	1	*	*	†	101
GM22383-GA9S	*	*	36	1	*	*	†	101
GM22383-GA12S	*	*	37	1	*	*	†	101
GM39370-GA3S	*	*	57	1	*	*	†	101
GM39370-GA9S	*	*	58	1	*	*	†	101
GM39370-GA12S	*	*	59	1	*	*	†	101
GM39370-GA17S	*	*	67	1	*	*	†	101
GM39370-GA18S	*	*	68	1	*	*	†	101
50GSG								
GM13686-GA1S	*	*	4	1	*	*	†	93
GM13686-GA3S	*	*	5	1	*	*	†	93
GM13686-GA5S	*	*	6	1	*	*	†	93
GM13686-GA7S	*	*	8	1	*	*	†	93
50GSGB								
GM21302-GA1S	*	*	22	1	*	*	†	153
GM21302-GA5S	*	*	23	1	*	*	†	153
GM21302-GA7S	*	*	24	1	*	*	†	153
GM39374-GA1S	*	*	60	1	*	*	†	153
GM39374-GA5S	*	*	61	1	*	*	†	153
GM39374-GA7S	*	*	62	1	*	*	†	153

* Configured group. Refer to the generator set nameplate for the module number.

Turn to the respective group on the following pages for parts breakdowns.

† Configured group. Refer to the generator set nameplate for the module number.

See controller parts catalog MPMP-6009 P/C Controllers, Industrial for controller parts lists.

Specification Number Index

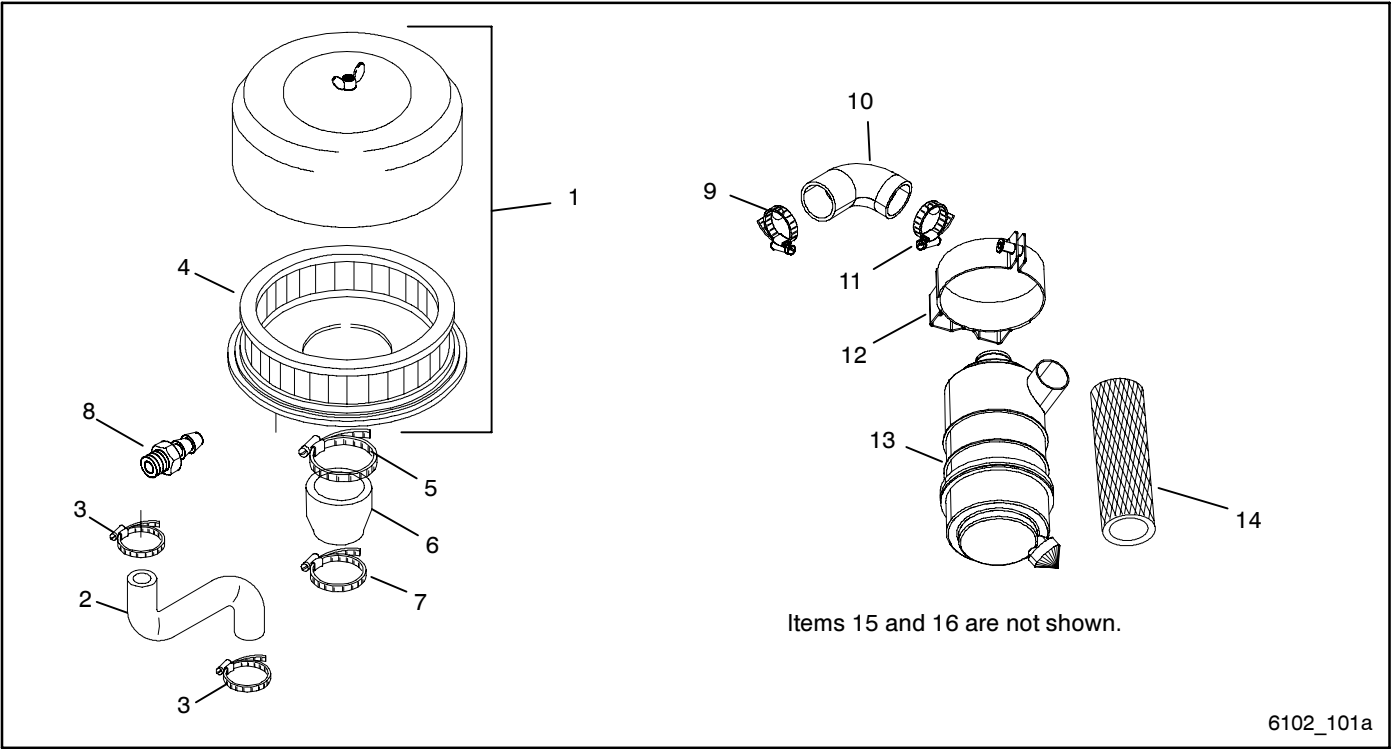
Group Title	Air Intake	Cooling System	Engine	Nameplates and Decals	Skid and Plant Mounting	Generator and Mounting	Controller and Mounting	Literature
Group No.	101	104	105	107	109	201	301	701
Spec No.	Variation Number							
60GSG								
GM13686-GA2S	*	*	4	1	*	*	†	95
GM13686-GA4S	*	*	5	1	*	*	†	95
GM13686-GA6S	*	*	6	1	*	*	†	95
GM13686-GA8S	*	*	8	1	*	*	†	95
GM21302-GA2S	*	*	38	1	*	*	†	95
GM21302-GA6S	*	*	39	1	*	*	†	95
GM21302-GA8S	*	*	40	1	*	*	†	95
GM39374-GA2S	*	*	63	1	*	*	†	95
GM39374-GA6S	*	*	64	1	*	*	†	95
GM39374-GA8S	*	*	65	1	*	*	†	95
80GSG								
GM13934-GA1S	*	*	9	2	*	*	†	103
GM13934-GA2S	*	*	10	2	*	*	†	103
GM13934-GA3S	*	*	12	2	*	*	†	103
GM13934-GA4S	*	*	11	2	*	*	†	103
GM22407-GA1S	*	*	27	2	*	*	†	103
GM22407-GA2S	*	*	28	2	*	*	†	103
GM22407-GA3S	*	*	29	2	*	*	†	103
GM22407-GA4S	*	*	30	2	*	*	†	103
GM34436-GA1S	*	*	45	2	*	*	†	103
GM34436-GA2S	*	*	46	2	*	*	†	103
GM34436-GA3S	*	*	47	2	*	*	†	103
GM34436-GA4S	*	*	48	2	*	*	†	103
100GSG								
GM13934-GA5S	*	*	13	2	*	*	†	105
GM13934-GA6S	*	*	14	2	*	*	†	105
GM13934-GA7S	*	*	16	2	*	*	†	105
GM13934-GA8S	*	*	15	2	*	*	†	105
GM22407-GA5S	*	*	31	2	*	*	†	103
GM22407-GA6S	*	*	32	2	*	*	†	103
GM22407-GA7S	*	*	33	2	*	*	†	103
GM22407-GA8S	*	*	34	2	*	*	†	103
GM34436-GA5S	*	*	49	2	*	*	†	103
GM34436-GA6S	*	*	50	2	*	*	†	103
GM34436-GA7S	*	*	51	2	*	*	†	103
GM34436-GA8S	*	*	52	2	*	*	†	103

Specification Number Index

Group Title	<i>Air Intake</i>	<i>Cooling System</i>	<i>Engine</i>	<i>Nameplates and Decals</i>	<i>Skid and Plant Mounting</i>	<i>Generator and Mounting</i>	<i>Controller and Mounting</i>	<i>Literature</i>
Group No.	101	104	105	107	109	201	301	701
Spec No.	Variation Number							
125GSG								
GM20568-GA1S	*	*	17	2	*	*	†	131
GM20568-GA2S	*	*	18	2	*	*	†	131
GM20568-GA3S	*	*	25	2	*	*	†	131
GM20568-GA4S	*	*	26	2	*	*	†	131
GM25339-GA1S	*	*	41	2	*	*	†	131
GM25339-GA2S	*	*	42	2	*	*	†	131
GM25339-GA3S	*	*	43	2	*	*	†	131
GM25339-GA4S	*	*	44	2	*	*	†	131
GM34464-GA1S	*	*	53	2	*	*	†	131
GM34464-GA2S	*	*	54	2	*	*	†	131
GM34464-GA3S	*	*	55	2	*	*	†	131
GM34464-GA4S	*	*	56	2	*	*	†	131

- * Configured group. Refer to the generator set nameplate for the module number.
Turn to the respective group on the following pages for parts breakdowns.
- † Configured group. Refer to the generator set nameplate for the module number.
See controller parts catalog MP-6009 P/C Controllers, Industrial for controller parts lists.

Group 101: Air Intake

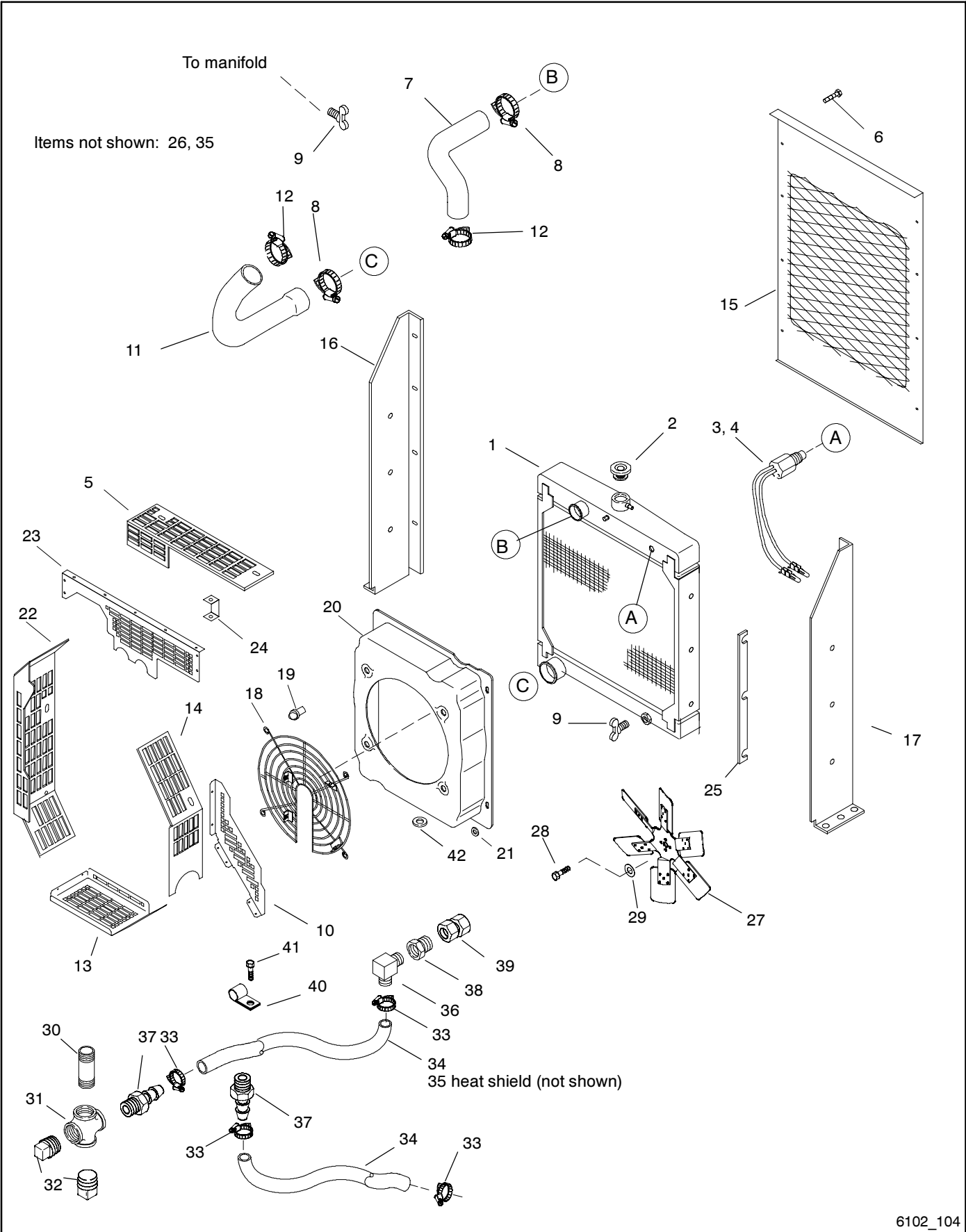


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Group 101: Air Intake

Item	Part Number	Description	Quantity							
			Module Number							
			GM13687-MA1	GM13687-MA2	GM13687-MA3	GM13687-MA4	GM13687-MA5	GM13687-MA6	GM13687-MA7	GM13687-MA8
1	A-326051	Air cleaner								
1	A-326315	Air cleaner								
1	GM14303	Air cleaner	1	1	1					
1	GM21040	Air cleaner				1				
1	A-253104	Air cleaner					1			1
2	GM13761	Hose, molded breather, 13 mm ID						1		
2	GM17414	Hose, molded breather, 9.5 mm ID	1	1		1		1		
2	X-651-3	Hose, rubber, straight, .375 in. ID			1					1
3	X-426-10	Clamp, hose, 0.5/1.0 in.								
3	X-426-9	Clamp, hose, 0.25/.70 in.	2	2	1	2		2		
4	326099	Element, air cleaner					1			2
4	258423	Element, air cleaner		1	1	1				
4	253107	Element, air cleaner	1							
4	GM22172	Element, air cleaner					1	1		
5	X-426-1	Clamp, hose, 2.81/3.75 in.						1		1
6	328006	Hose, reducer, 3.00 in. to 2.50 in. ID						1		
7	250081	Clamp, hose, 2.06/3 in.						1		
8	X-582-26	Connector, hose						1		
8	X-380-3	Connector, hose								1
9	250081	Clamp, hose, 2.06/3 in.							1	
10	GM31890	Hose, air cleaner							1	
11	X-426-16	Clamp, hose, 1.81/2.75 in.							1	
12	226956	Mount, air cleaner							1	
13	GM23382	Air cleaner assembly							1	
14	GM16944	Element, air cleaner							1	
15	GM31889	Bracket, air cleaner mtg. (not shown)							1	
16	X-75-4	Plug, pipe, 1/8 in. NPT (not shown)							1	

Group 104: Cooling System



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Group 104: Cooling System

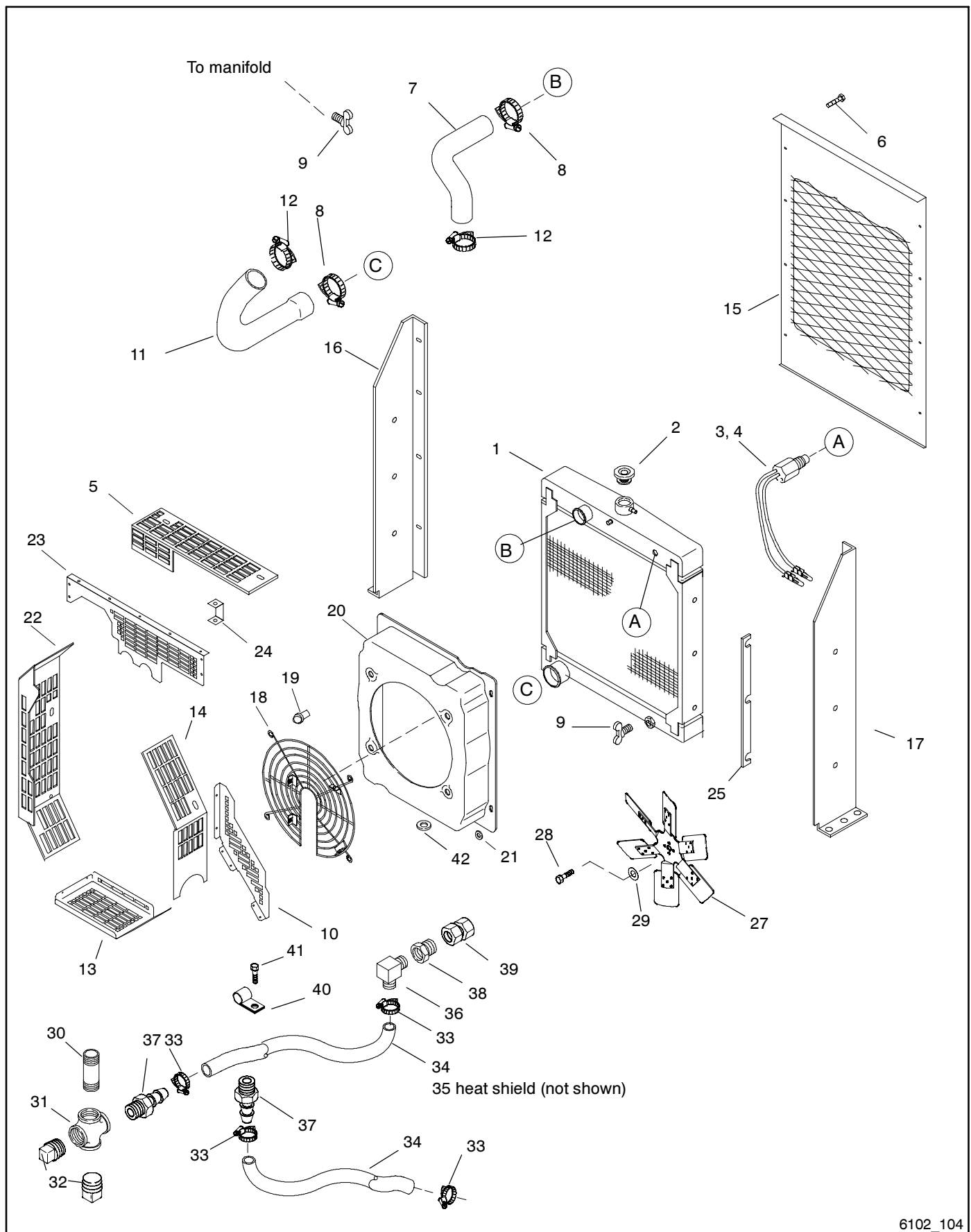
Item	Part Number	Description	Quantity											
			Module Number											
			GM14190-MA1	GM14190-MA2	GM30007-MA1	GM30007-MA2	GM30008-MA1	GM30008-MA2	GM13688-MA1	GM30009-MA1	GM13936-MA1	GM20570-MA1	GM30010-MA1	GM22317-MA1
1	GM14096	Radiator assembly							1					
1	GM14095	Radiator assembly	1	1										1
1	A-336663	Radiator assembly									1			
1	GM20718	Radiator assembly										1		
1	GM36222	Cooler, oil (not shown)										1		
1	GM29696	Radiator assembly			1									
1	GM29697	Radiator assembly				1	1							
1	GM29698	Radiator assembly						1		1				
1	GM29699	Radiator assembly											1	
1	GM30589	Cooler, oil (not shown)											1	
1	X-75-2	Plug, pipe, 1/4 NPT (not shown)									1	1		
2	GM22998	Cap, radiator			1	1	1	1		1				
2	GM22997	Cap, radiator	1	1										1
2	GM16641	Cap, radiator							1					
2	GM26184	Cap, radiator									1			
2	GM36221	Cap, radiator										1		
3	365289	Sensor, low fluid	1	1	1	1	1	1	1	1	1	1	1	1
4	X-6003-8	Conduit, convoluted	1	1	1	1	1	1	1	1	1	1	1	1
5	GM15347	Guard, belt top	1	1	1	1	1	1	1					
5	GM16075	Guard, belt top								1	1	1	1	
5	GM22176	Guard, belt top												1
6	X-794-1	Screw, HH seal washer, drill	10	10	10	10	10	10	10	10	10			10
7	GM13524	Hose, radiator, upper (see chart below)	1	1	1	1			1					
7	GM22939	Hose, radiator, upper (see chart below)					1	1	1					
7	GM13925	Hose, radiator, upper									1	1		
7	GM21049	Hose, radiator, upper												1
7	GM29884	Hose, radiator, upper								1				
7	GM31194	Hose, radiator, upper											1	
8	X-426-6	Clamp, hose, 1.56/2.5 in.	2	2	1	1	1	1	2	1	2	2	2	2
8	250081	Clamp, hose, 2.06/3 in.			1	1	1	1		1				
9	X-256-3	Valve, drain, 1/4 in. NPT	2	2	2	2	2	2	2	1	1	1	1	1
9	X-202-47	Bushing, reducing, 1/4 x 1/2 in. NPT (not shown)								1	1	1	1	
9	X-75-28	Plug, pipe, 1/2 NPT (not shown)								3	3			
10	GM15349	Guard, belt back	1	1	1	1	1	1	1					
10	GM16080	Guard, belt back								1	1	1	1	
10	GM22178	Guard, belt back												1
11	GM14098	Hose, radiator lower	1	1	1	1	1	1	1					
11	GM13884	Hose, radiator lower								1	1	1		
11	GM21048	Hose, radiator lower												1
11	GM31195	Hose, radiator lower											1	
12	X-426-4	Clamp, hose, 1.31/2.25 in.	2	2					2					1
12	X-426-8	Clamp, hose, .81/1.75 in.												1
12	X-426-2	Clamp, hose, 2.31/3.25 in.			1	1	1	1		1	1	1	1	
12	250081	Clamp, hose, 2.06/3 in.								1	1	1	1	
12	X-426-6	Clamp, hose, 1.56/2.5 in.			1	1	1	1		1				
13	GM15348	Guard, belt, bottom	1	1	1	1	1	1	1					
13	GM16079	Guard, belt, bottom								1	1	1	1	
13	GM22179	Guard, belt, bottom												1
14	GM15345	Guard, belt, right side	1	1	1	1	1	1	1					
14	GM16081	Guard, belt, right side								1	1	1	1	
14	GM22177	Guard, belt, right side												1

Parts list continues on next page

Module GM13688-MA1 Serial Number-Contingent Parts

Part Description	Part Number	
	Before Serial Number 0742838	Serial Numbers 0742838 and after
Item 7, Upper radiator hose	GM13524	GM22939

Group 104: Cooling System, continued

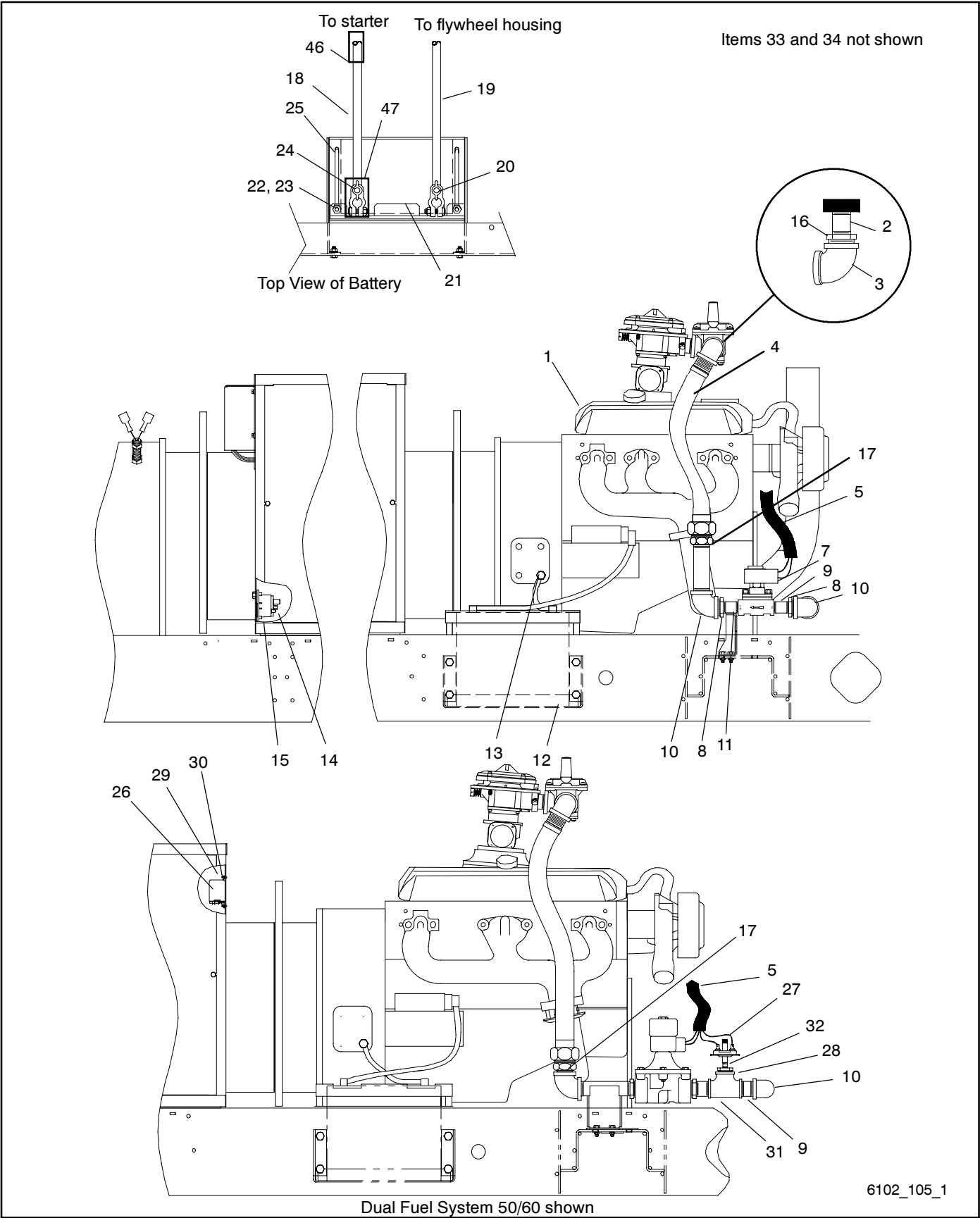


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Group 104: Cooling System, continued

Item	Part Number	Description	Quantity											
			Module Number											
			GM14190-MA1	GM14190-MA2	GM30007-MA1	GM30007-MA2	GM30008-MA1	GM30008-MA2	GM13688-MA1	GM30009-MA1	GM13936-MA1	GM20570-MA1	GM30010-MA1	GM22317-MA1
15	GM14100	Guard, radiator	1	1	1	1	1	1	1	1				1
15	GM13843	Guard, radiator									1	1		
15	GM31192	Guard, radiator											1	
16	GM14006	Support, radiator, left side		1	1	1	1	1						
16	GM29988	Support, radiator, left side	1	1	1	1	1	1	1	1	1	1		
16	GM32286	Support, radiator, left side											1	
17	GM29987	Support, radiator, right side	1	1	1	1	1	1	1	1	1	1		
17	GM32285	Support, radiator, right side											1	
18	352378	Guard, wire	1	1	1	1	1	1	1					1
18	GM16662	Guard, wire								1	1	1		
18	336888	Guard, wire											1	
19	X-6365-1	Insert, threaded, 5/16-18 in.	4	4	4	4	4	4	4	4	4	4	6	4
20	324076	Shroud, fan	1	1	1	1	1	1	1					1
20	276400	Shroud, fan									1			
20	GM29772	Shroud, fan								1				
20	GM20717	Shroud, fan										1		
20	GM29800	Shroud, fan											1	
21	X-25-73	Washer, plain, .266 ID x 1 OD	4	4	4	4	4	4	4					4
21	X-25-75	Washer, plain, .344 ID x .875 OD								4	4	4	4	
22	GM15346	Guard, belt, left side	1	1	1	1	1	1	1					
22	GM16077	Guard, belt, left side								1	1	1	1	
22	GM22180	Guard, belt, left side												1
23	GM15350	Guard, belt upper back	1	1	1	1	1	1	1					
23	GM16639	Guard, belt upper back								1	1	1	1	
23	GM22181	Guard, belt upper back												1
23	GM16633	Guard, belt upper back, left side (LP liquid fuel only)	1	1	1	1	1	1	1					
23	GM16783	Guard, belt upper back, right side (LP liquid fuel only)	1	1	1	1	1	1	1					
24	352384	Bracket, belt guard	2	2	2	2	2	2	2					
24	GM16078	Bracket, belt guard, bottom								2	2	2	2	
25	324229	Spacer, radiator							2					
26	X-75-28	Plug, pipe 1/2 in. (not shown)	3	3	3	3	3	3				3	3	
27	GM16769	Fan, pusher	1			1	1	1	1					
27	GM13526	Fan, pusher		1	1									
27	GM16770	Fan, pusher									1			
27	GM21284	Fan, pusher								1		1		
27	GM22215	Fan, pusher												1
27	GM31940	Fan, pusher												1
28	M933-08030-82	Screw, hex cap	4	4	4	4	4	4	4	4	4	4	4	4
29	M125A-08-80	Washer, plain	4	4	4	4	4	4	4	4	4	4	4	4
30	X-209-17	Pipe, 1/2 NPT x 9.5 in.										1	1	
31	X-207-7	Cross, pipe, 1/2 in.										1	1	
32	X-75-28	Plug, pipe brass										2	2	
33	X-426-3	Clamp, hose, 0.56/1.06 in.										4		
33	X-426-10	Clamp, hose, 0.5/1.0 in.											4	
34	X-6242-15	Line, flexible, 35 in.										1		
34	X-6242-13	Line, flexible												1
34	X-6242-16	Line, flexible, 40 in.										1		
34	X-6242-19	Line, flexible												1
35	GM10669	Shield, heat										2	2	
36	X-391-21	Connector, 90 deg., 1/2 ID hose										2		
37	X-582-5	Connector, hose + vibra seal										2	2	
38	X-202-41	Bushing, reducing, 1/2 x 3/4 NPT										2		
39	361598	Connector, swivel nut										2		
40	X-672-13	Clamp, insulated										2	2	
41	X-794-1	Screw, hex washer head										1	1	
42	243488	Grommet, round										2	2	

Group 105: Engine 30-60 kW



Group 105: Engine

30-60 kW

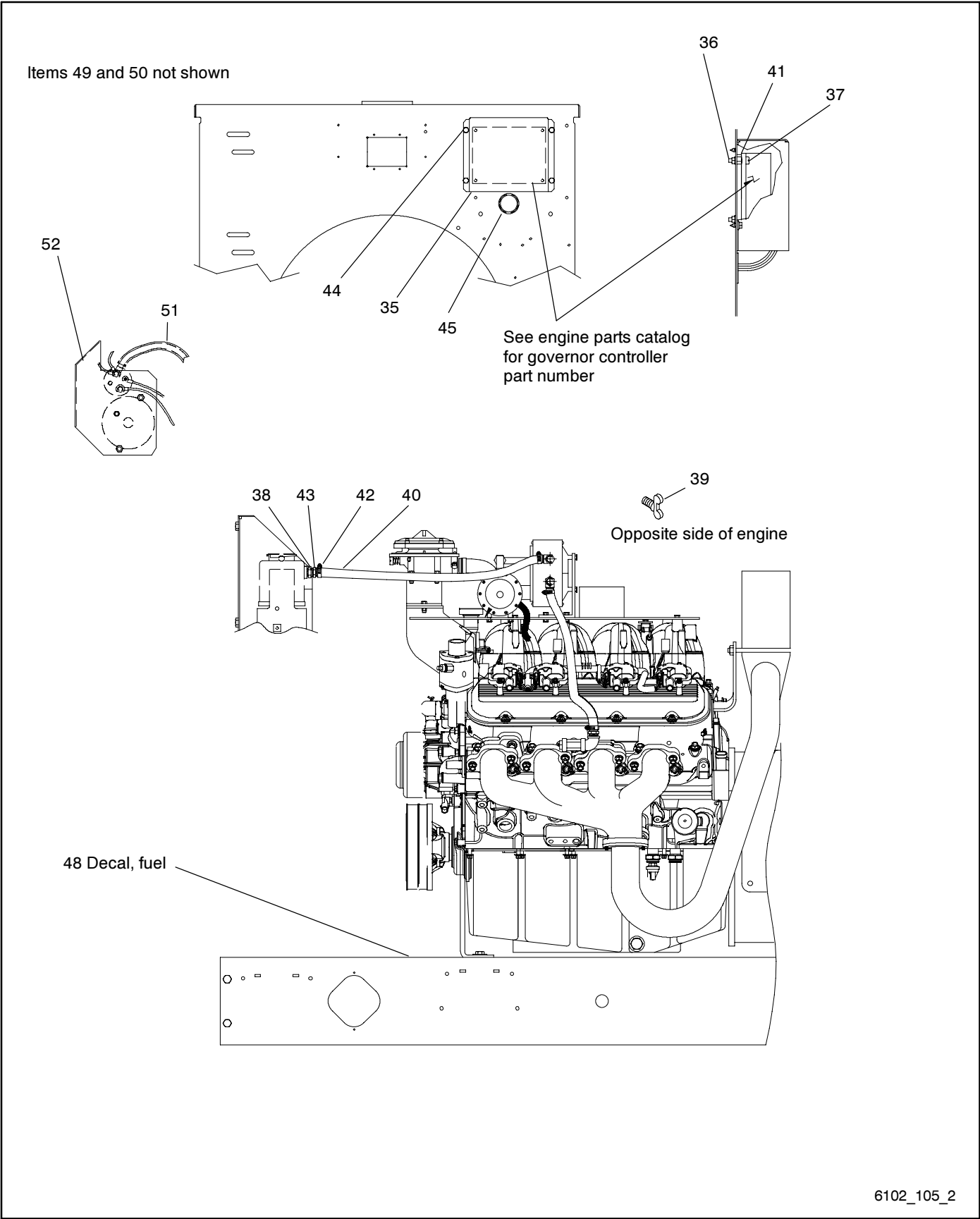
Internal and some external engine parts are shown in a separate engine parts catalog. See Group 701: Literature for part numbers of engine parts catalogs.

Item	Part Number	Description	Quantity																	
			Variation Number																	
			1	2	3	4	5	6	7	8	19	22	23	24	35	36	37	38	39	40
1	See chart page 17	Engine assembly	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	X-218-24	Nipple, pipe, 1 x 1 1/2 in.				1	1	2			1									
2	X-218-22	Nipple, pipe, 1 x 3 in.											2						2	
2	X-206-2	Pipe, 3/4 in. NPT x 2 in.	1	1	2															
2	X-206-6	Pipe, 3/4 in. NPT x 3.5 in.									1	1			1	2		1		
2	X-209-2	Pipe, 1/2 in. NPT x 1.19 in.																		
3	X-215-15	Fitting, elbow, 1 in., pipe	1	1	2	1	1	2				1	2		1	2		1	2	
3	X-225-8	Elbow, pipe, 45 deg. x 3/4 in. NPT									1									
4	X-504-20	Fuel line, flexible				1	1	2				1	2					1	2	
4	X-504-17	Fuel line, flexible	1	1	2										1	2				
4	X-504-18	Fuel line, flexible									1									
5	GM14263	Harness, fuel	1	1		1	1				1	1			1			1		
5	GM14264	Harness, dual fuel			1			1					1			1			1	
5	GM16632	Harness, fuel, LP liquid							1	1				1			1			1
7	326223	Valve assembly, gas	1	1	2						1				1	2				
7	X-431-29	Terminal, fast-on, male, 18-22 AWG	1	1	2						1				1	2				
7	X-431-52	Terminal, fast-on, female, 14-16 AWG	1	1	2						1				1	2				
7	A-254469	Valve assembly, gas				1	1	2				1	2					1	2	
7	X-431-29	Terminal, fast-on, male, 18-22 AWG				1	1	2				1	2					1	2	
7	X-431-25	Terminal, fast-on, female, 18-22 AWG				1	1	2				1	2					1	2	
8	X-202-1	Bushing, reducing, 3/4 x 1 in. NPT	2	2	2						1				2	4				
8	X-202-32	Bushing, reducing, 1 x 1 1/4 in. NPT				2	2	2				2	2					2	2	
9	X-206-2	Nipple, pipe, 3/4 x 2 in.	1	1	2						1				1	2				
9	X-218-24	Nipple, pipe, 1 x 1 1/2 in.				1	1	2				1	2					1	2	
10	X-215-15	Fitting, elbow, 1 in., pipe	2	2	4	2	2	4			2	2	4		2	4		2	4	
11	254456	Bracket, fuel valve	1	1							1				1	1				
11	GM13662	Bracket, support				1	1					1	1					1	1	
11	GM17262	Bracket, fuel valve			1											1				
11	GM17263	Bracket, fuel valve						1												
12	GM14099	Rack, battery	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
13	X-22-26	Washer, lock, .521 ID x 1.24 in. OD	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
14	291891	Solenoid	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
14	X-22-12	Washer, lock, .262 ID x .743 in.	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
15	X-6214-2	Cap	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
16	X-202-1	Bushing, reducing, 3/4 x 1 in. NPT	1	1	2							1			1	2		1		
16	X-202-41	Bushing, reducing, 1/2 x 3/4 in NPT									1									
17	X-218-22	Nipple, pipe, 1 x 3 in.	1	1	2										1	2				
17	X-218-24	Nipple, pipe, 1 x 1 1/2 in.				1	1	2				1	2					1	2	
17	X-206-15	Pipe, 3/4 in. NPT x 6 in.									1									
17	X-216-13	Coupling, pipe									1									
18	X-545-137	Cable, battery	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
19	X-545-112	Lead, battery cable, no. 2, 16 in.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
20	345056	Terminal, battery	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
21	324033	Clamp, battery	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
22	X-101-4	Nut, hex elastic stop, 5/16-24	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
23	X-25-44	Washer, plain, .328 ID x .562 OD	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
24	345039	Terminal, battery	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
25	286316	Bolt, angle, 5/16-24 x 11.5 in.	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
26	248362	Relay			1			1					1			1			1	
27	287387	Switch, vacuum			1			1								1			1	
27	GM35912	Switch, vacuum 2.0/2.5 in, water setting											1							
28	AC-1459	Bushing, reducing, 1/8 x 1 in. NPT			1			1					1			1			1	
29	M7985A-03012-20	Screw, pan head						2					2			2			2	
30	M934-03-50	Nut, hex, 3 mm			2			2					2			2			2	
31	X-203-2	Fitting, pipe tee, 1 x 1 x 1 in.			1			1					1			1			1	
32	X-217-6	Nipple, pipe, 1/8 x 3/4 in.			1			1					1			1			1	
33	358224	Plug, water, exhaust outlet tube (not shown)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
34	358306	Gasket, exhaust outlet tube (not shown)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Parts list continues on next page

Group 105: Engine, continued

30-60 kW, continued



Group 105: Engine, continued

30-60 kW, continued

Item	Part Number	Description	Quantity																	
			Variation Number																	
			1	2	3	4	5	6	7	8	19	22	23	24	35	36	37	38	39	40
35	GM17618	Cover, governor controller	1	1	1	1	1	1	1	1										
36	M125-05-80	Washer, plain	4	4	4	4	4	4	4	4										
37	M7985A-05025-20	Screw, pan head machine	4	4	4	4	4	4	4	4										
41	X-400-145	Spacer, .209 ID x .375 OD x .234 in.	4	4	4	4	4	4	4	4										
44	X-6216-1	Screw, Phillips hex crimpbite	4	4	4	4	4	4	4	4										
45	X-301-45	Plug, button									1	1	1	1				1	1	1
45	X-634-16	Bushing, 1.312 x 1.50 in. NPT	1	1	1	1	1	1	1	1										
46	GM20743	Boot, starter terminal	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
47	GM20745	Boot, battery lug	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
48	GM20577	Decal, fuel type (natural gas or LPG)									1	1			1			1		
48	GM20173	Decal, fuel type (natural gas)	1		1	1		1					1			1			1	
48	GM20174	Decal, fuel type (LPG vapor)		1	1		1	1					1			1			1	
48	GM20175	Decal, fuel type (LPG liquid)							1	1				1			1			1
49	GM16148	Spacer, thermostat cover (not shown)												1						1
50	GM16536	Gasket, water outlet (not shown)												1						1
51	GM21335	Shield, heat, 20 mm ID x 412 mm length													1	1	1	1	1	1
52	GM21188	Shield, heat												1	1	1	1	1	1	1

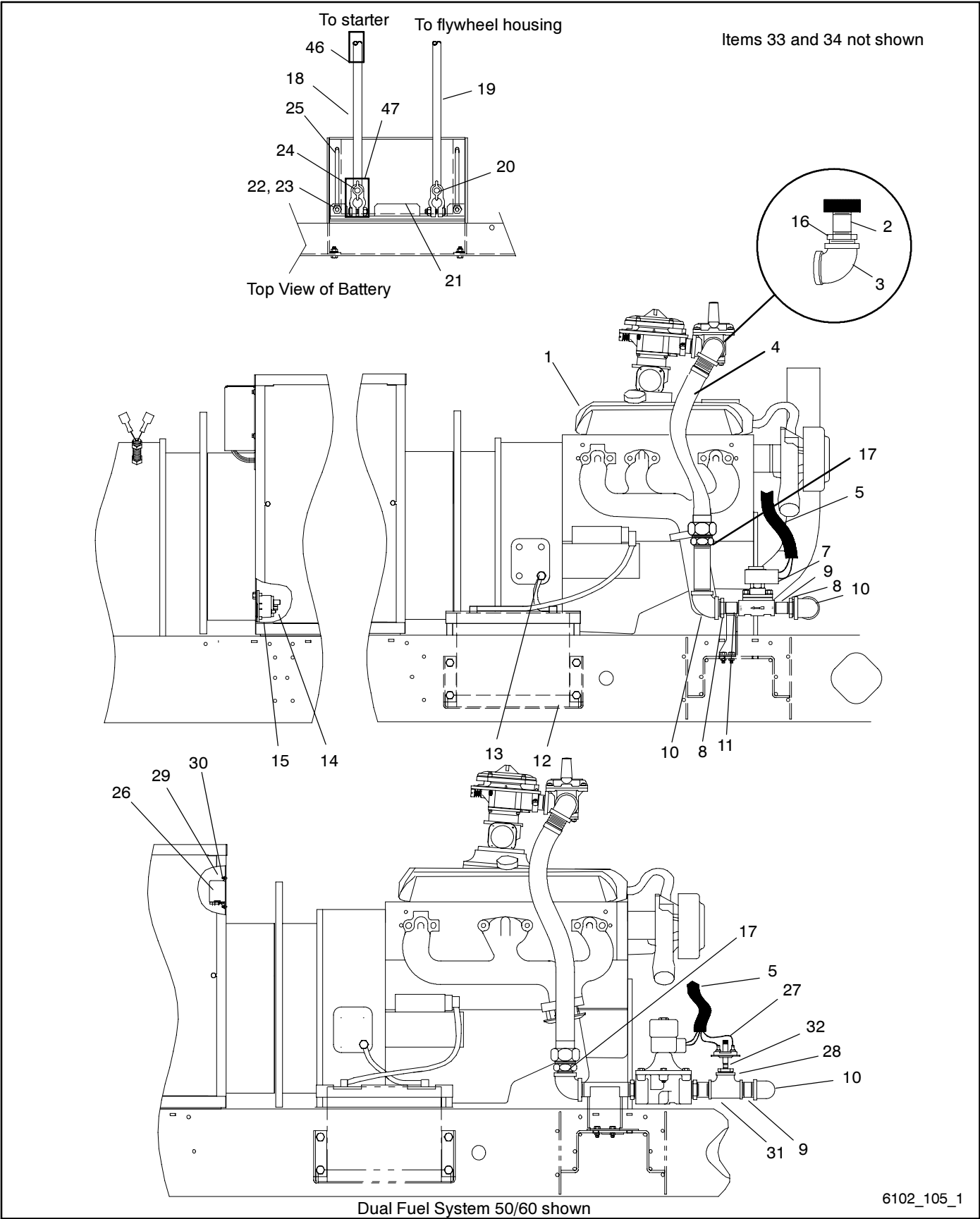
Engine Part Numbers

Use this table to identify item 1, engine assembly.

Variation No.	Engine Part Number	kW	Description
1	GM12363	30-45	4.3L, natural gas
2	GM12364	30-45	4.3L, LP
3	GM12366	30-45	4.3L, natural/LP gas
4	GM11942	50/60	5.7L, natural gas
5	GM12356	50/60	5.7L, LP
6	GM12358	50/60	5.7L, natural/LP gas
7	GM12365	30-45	4.3L, LPL
8	GM12357	50/60	5.7L, LPL
19	GM22360-1	30	3.0L, natural/LP gas
22	GM21297-1	50	5.0L, natural/LP gas
23	GM21297-4	50	5.0L, dual fuel
24	GM21297-3	50	5.0L, LPL
35	GM22379-1	30-45	4.3L, natural/LP gas
36	GM22379-4	30-45	4.3L, dual fuel
37	GM22379-3	30-45	4.3L, LPL
38	GM22351-1	50	5.7L, natural/LP gas
39	GM22351-4	50	5.7L, dual fuel
40	GM22351-3	50	5.7L, LPL

Group 105: Engine, continued

30-60 kW, continued



Group 105: Engine, continued

30-60 kW, continued

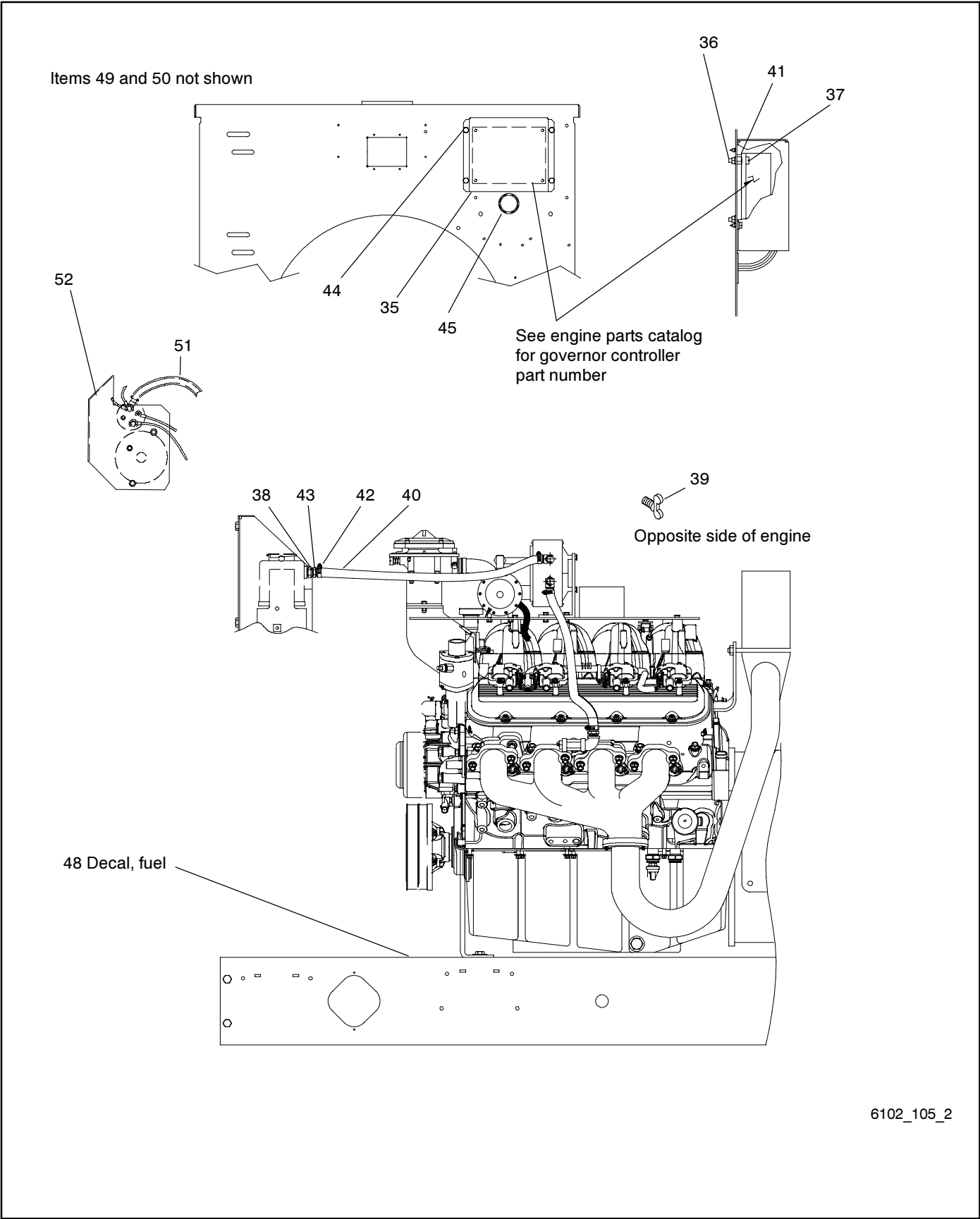
Internal and some external engine parts are shown in a separate engine parts catalog. See Group 701: Literature for part numbers of engine parts catalogs.

Item	Part Number	Description	Quantity											
			Variation Number											
			57	58	59	60	61	62	63	64	65	66	67	68
1	See chart page 21	Engine assembly	1	1	1	1	1	1	1	1	1	1	1	1
2	X-218-22	Nipple, pipe, 1 x 3 in.					2			2				
2	X-206-6	Pipe, 3/4 in. NPT x 3.5 in.	1	2		1			1			1	1	2
2	X-209-2	Pipe, 1/2 in. NPT x 1.19 in.												
3	X-215-15	Fitting, elbow, 1 in., pipe	1	2		1	2		1	2			1	2
3	X-225-8	Elbow, pipe, 45 deg. x 3/4 in. NPT										1		
4	X-504-20	Fuel line, flexible				1	2		1	2				
4	X-504-17	Fuel line, flexible	1	2									1	2
4	X-504-18	Fuel line, flexible										1		
5	GM14263	Harness, fuel	1			1			1			1	1	
5	GM14264	Harness, dual fuel		1			1			1				1
5	GM16632	Harness, fuel, LP liquid			1			1			1			
7	326223	Valve assembly, gas	1	2										
7	GM14319	Valve assembly, gas				1	2		1	2				
7	GM42530	Valve assembly, gas										1	1	2
8	X-202-1	Bushing, reducing, 3/4 x 1 in. NPT	2	4								1	2	4
8	X-202-32	Bushing, reducing, 1 x 1 1/4 in. NPT				2	2		2	2				
9	X-206-2	Nipple, pipe, 3/4 x 2 in.	1	2								1	1	2
9	X-218-24	Nipple, pipe, 1 x 1 1/2 in.				1	2		1	2				
10	X-215-15	Fitting, elbow, 1 in., pipe	2	4		2	4		2	4		2	2	4
11	254456	Bracket, fuel valve	1	1								1	1	1
11	GM13662	Bracket, support				1	1		1	1				
11	GM17262	Bracket, fuel valve		1										1
11	GM17263	Bracket, fuel valve												
12	GM14099	Rack, battery	1	1	1	1	1	1	1	1	1	1	1	1
13	X-22-26	Washer, lock, .521 ID x 1.24 in. OD	1	1	1	1	1	1	1	1	1	1	1	1
14	291891	Solenoid	1	1	1	1	1	1	1	1	1	1	1	1
14	X-22-12	Washer, lock, .262 ID x .743 in.	2	2	2	2	2	2	2	2	2	2	2	2
15	X-6214-2	Cap	1	1	1	1	1	1	1	1	1	1	1	1
16	X-202-1	Bushing, reducing, 3/4 x 1 in. NPT	1	2		1			1				1	2
16	X-202-41	Bushing, reducing, 1/2 x 3/4 in. NPT										1		
17	X-218-22	Nipple, pipe, 1 x 3 in.	1	2									1	2
17	X-218-24	Nipple, pipe, 1 x 1 1/2 in.				1	2		1	2				
17	X-206-15	Pipe, 3/4 in. NPT x 6 in.										1		
17	X-216-13	Coupling, pipe										1		
18	X-545-137	Cable, battery	1	1	1	1	1	1	1	1	1	1	1	1
19	X-545-112	Lead, battery cable, no. 2, 16 in.	1	1	1	1	1	1	1	1	1	1	1	1
20	345056	Terminal, battery	1	1	1	1	1	1	1	1	1	1	1	1
21	324033	Clamp, battery	1	1	1	1	1	1	1	1	1	1	1	1
22	X-101-4	Nut, hex elastic stop, 5/16-24	2	2	2	2	2	2	2	2	2	2	2	2
23	X-25-44	Washer, plain, .328 ID x .562 OD	2	2	2	2	2	2	2	2	2	2	2	2
24	345039	Terminal, battery	1	1	1	1	1	1	1	1	1	1	1	1
25	286316	Bolt, angle, 5/16-24 x 11.5 in.	2	2	2	2	2	2	2	2	2	2	2	2
26	248362	Relay		1			1				1			1
27	287387	Switch, vacuum		1						1				1
27	GM35912	Switch, vacuum, 2.0/2.5 water setting					1							
28	AC-1459	Bushing, reducing, 1/8 x 1 in. NPT		1			1			1				1
29	M7985A-03012-20	Screw, pan head		2			2			2				2
30	M934-03-50	Nut, hex, 3 mm		2			2			2				2
31	X-203-2	Fitting, pipe tee, 1 x 1 x 1 in.		1			1			1				1
32	X-217-6	Nipple, pipe, 1/8 x 3/4 in.		1			1			1				1
33	358224	Plug, water, exhaust outlet tube (not shown)	1	1	1	1	1	1	1	1	1	1	1	1
34	358306	Gasket, exhaust outlet tube (not shown)	1	1	1	1	1	1	1	1	1	1	1	1

Parts list continues on next page

Group 105: Engine, continued

30-60 kW, continued



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Group 105: Engine, continued

30-60 kW, continued

Item	Part Number	Description	Quantity											
			Variation Number											
			57	58	59	60	61	62	63	64	65	66	67	68
35	GM17618	Cover, governor controller												
36	M125-05-80	Washer, plain												
37	M7985A-05025-20	Screw, pan head machine												
41	X-400-145	Spacer, .209 ID x .375 OD x .234 in.												
44	X-6216-1	Screw, Phillips hex crimpite												
45	X-301-45	Plug, button	1	1	1				1	1	1	1	1	1
45	X-634-16	Bushing, 1.312 x 1.50 in. NPT												
46	GM20743	Boot, starter terminal	1	1	1	1	1	1	1	1	1	1	1	1
47	GM20745	Boot, battery lug	1	1	1	1	1	1	1	1	1	1	1	1
48	GM20577	Decal, fuel type (natural gas or LPG)	1			1			1			1	1	
48	GM20173	Decal, fuel type (natural gas)		1			1			1				1
48	GM20174	Decal, fuel type (LPG vapor)		1			1			1				1
48	GM20175	Decal, fuel type (LPG liquid)			1			1			1			
49	GM16148	Spacer, thermostat cover (not shown)						1			1			
50	GM16536	Gasket, water outlet (not shown)						1			1			
51	GM21335	Shield, heat, 20 mm ID x 412 mm length	1	1	1	1	1	1	1	1	1		1	1
52	GM21188	Shield, heat	1	1	1	1	1	1	1	1	1		1	1

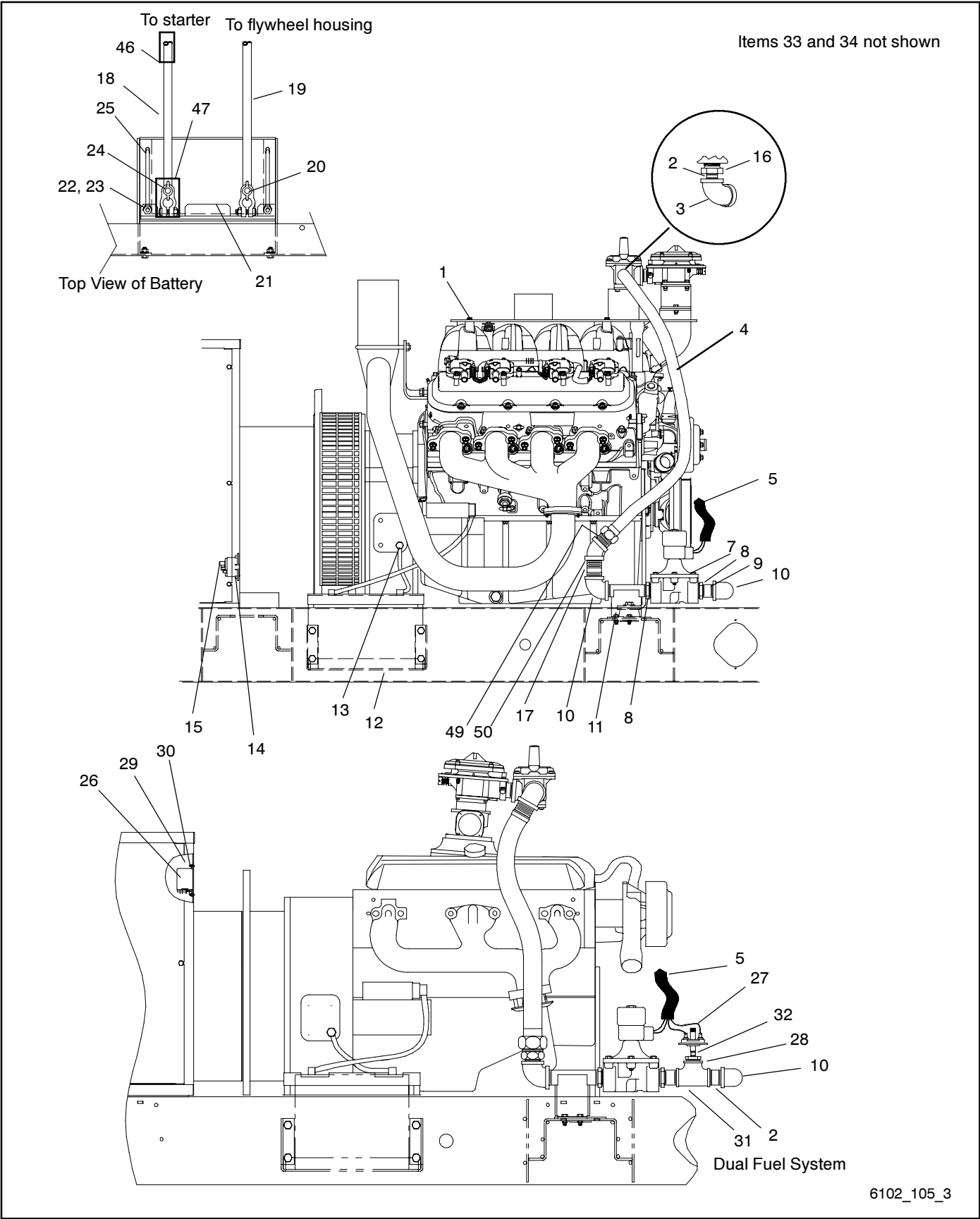
Engine Part Numbers

Use this table to identify item 1, engine assembly

Variation No.	Engine Part Number	kW	Description
57	GM40178-1	30-45	4.3L, natural/LP gas
58	GM40178-3	30-45	4.3L, dual fuel
59	GM40178-2	30-45	4.3L, LPL
60	GM40178-4	50	5.0L, natural/LP gas
61	GM40178-6	50	5.0L, dual fuel
62	GM40178-5	50	5.0L, LPL
63	GM40178-8	50	5.7L, natural/LP gas
64	GM40178-10	50	5.7L, dual fuel
65	GM40178-9	50	5.7L, LPL
66	GM22360-1	30	3.0L, natural/LP gas
67	GM40178-1	30-45	4.3L, natural/LP gas
68	GM40178-3	30-45	4.3L, dual fuel

Group 105: Engine, continued

80-100 kW



Group 105: Engine, continued

80-100 kW

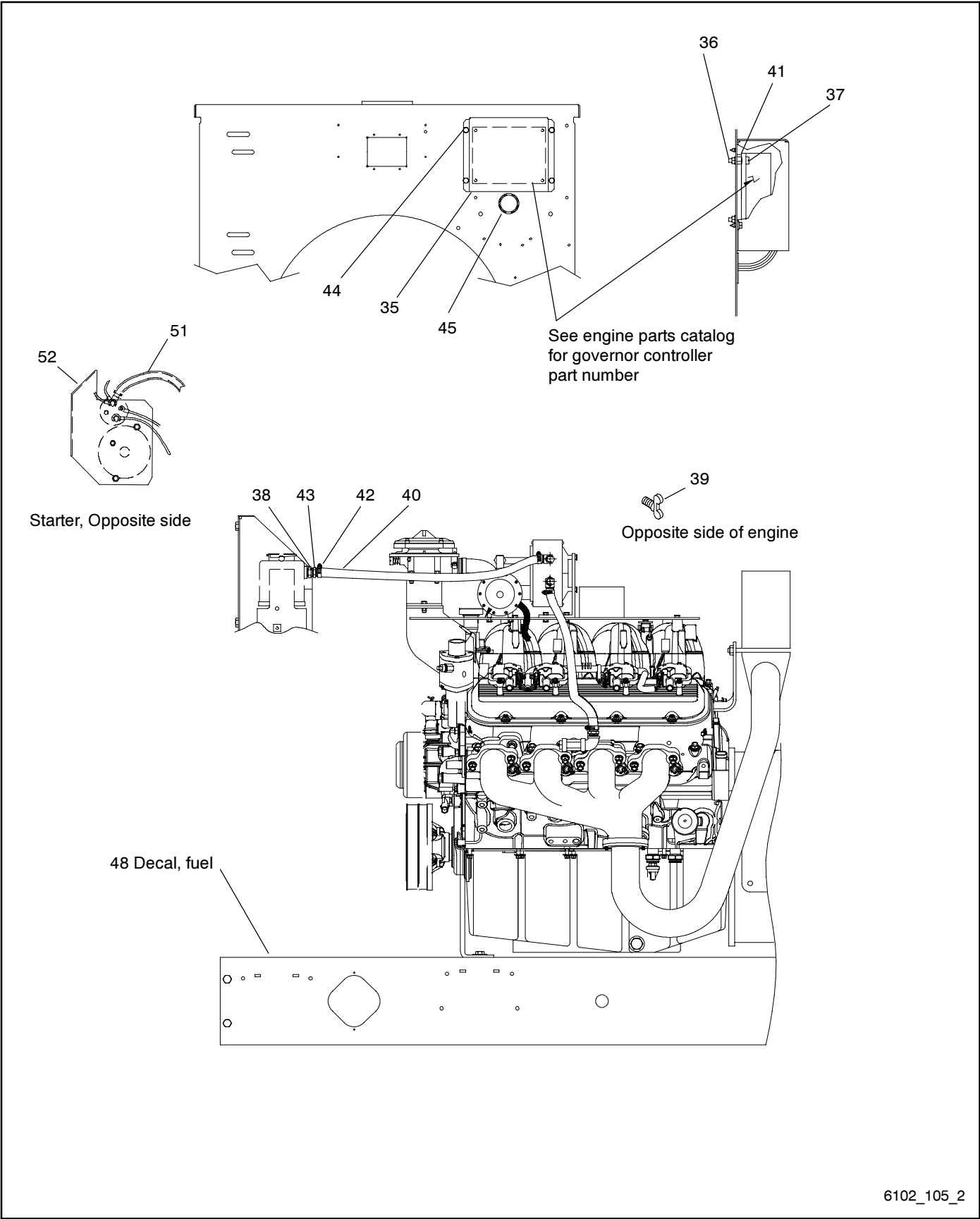
Internal and some external engine parts are shown in a separate engine parts catalog. See Group 701: Literature for part numbers of engine parts catalogs.

Item	Part Number	Description	Quantity															
			Variation Number															
9	10	11	12	13	14	15	16	27	28	29	30	31	32	33	34			
1	See chart page 25	Engine assembly	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	X-218-24	Nipple, pipe, 1 x 1 1/2 in.	2	2	4		2	2	4	1	2	2		4	2	2		4
3	X-215-15	Fitting, elbow, 1 in., pipe	1	1	2		1	1	2		1	1		2	1	1		2
4	X-504-20	Fuel line, flexible	1	1	2		1	1	2		1	1		2	1	1		2
5	GM14263	Harness, fuel	1	1			1	1										
5	GM16830	Harness, dual fuel			1				1									
5	GM19610	Harness, fuel, LP liquid				1				1								
5	GM25009	Harness, fuel, LP liquid									1			1			1	
7	GM14319	Valve assembly, gas	1	1	2		1	1	2		1	1		2	1	1		2
8	X-202-32	Bushing, reducing, 1 x 1 1/4 in. NPT	2	2	4		2	2	4		2	2		4	2	2		4
9	X-218-24	Nipple, pipe, 1 x 1 1/2 in.	1	1	2		1	1	2		1	1		2	1	1		2
10	X-215-15	Fitting, elbow, 1 in., pipe	2	2	4		2	2	4		2	2		4	2	2		4
11	GM13662	Bracket, support	1	1	2		1	1	2		1	1		2	1	1		2
12	GM14099	Rack, battery	1	1	1		1	1	1		1	1		1	1	1		1
13	X-22-26	Washer, lock, .521 ID x 1.24 in. OD	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
14	291891	Solenoid	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
14	X-22-12	Washer, lock, .262 ID x .743 in. OD (not shown)	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
15	X-6214-2	Cap	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
16	X-202-32	Bushing, reducing, 1 x 1 1/4 in. NPT	1	1	2		1	1	2		1	1		2	1	1		2
16	153016	Bushing, reducing, 1 1/4 x 1 1/2 in. NPT									1			1				1
17	X-218-22	Nipple, pipe, 1 x 3 in.	1	1	2		1	1	2		1	1		2	1	1		2
18	X-545-137	Cable, battery	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
19	X-545-112	Lead, battery cable, no. 2, 16 in.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
20	345056	Terminal, battery	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
21	324033	Clamp, battery	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
22	X-101-4	Nut, hex elastic stop, 5/16-24	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
23	X-25-44	Washer, plain, .328 ID x .562 OD	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
24	345039	Terminal, battery	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
25	286316	Bolt, 5/16-24 x 11.5 in.	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
26	248362	Relay			1				1									
27	287387	Switch, vacuum			1				1					1				1
28	AC-1459	Bushing, reducing, 1/8 x 1 in. NPT			1				1					1				1
29	M7985A-03012-20	Screw, pan head			2				2									
30	M934-03-50	Nut, hex, 3 mm			2				2									
31	X-203-2	Fitting, pipe tee, 1 x 1 x 1 in.			1				1					1				1
32	X-217-6	Nipple, pipe, 1/8 x 3/4 in.			1				1					1				1
33	358224	Plug, water, exhaust outlet tube (not shown)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
34	358306	Gasket, exhaust outlet tube (not shown)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
46	GM20743	Boot, starter terminal	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
47	GM20745	Boot, battery lug	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
49	X-218-24	Nipple, pipe, 1 x 1 1/2 in.	1	1	1		1	1	1		1	1		1	1	2		1
49	X-218-9	Nipple, pipe, 1 x 6.5 in.			1				1					1				1
50	X-225-9	Elbow, pipe, 45 deg. x 1 in. NPT	1	1	2		1	1	2		1	1		2	1	1		2

Parts list continues on next page

Group 105: Engine, continued

80-100 kW, continued



Group 105: Engine, continued

80-100 kW, continued

Internal and some external engine parts are shown in a separate engine parts catalog. See Group 701: Literature for part numbers of engine parts catalogs.

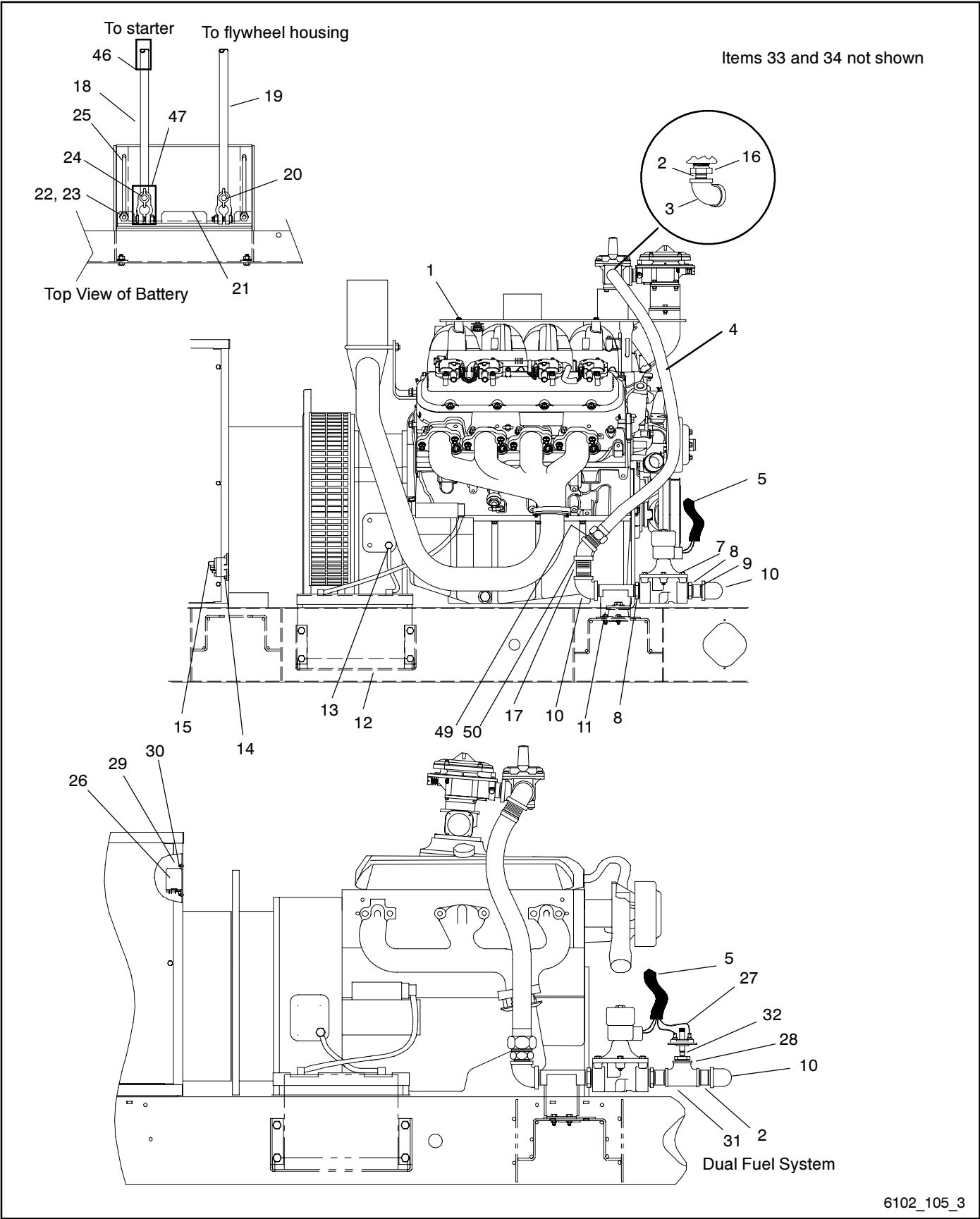
Item	Part Number	Description	Quantity															
			Variation Number															
			9	10	11	12	13	14	15	16	27	28	29	30	31	32	33	34
35	GM17618	Cover, governor control	1	1	1	1	1	1	1	1								
36	M125-05-80	Washer, plain	4	4	4	4	4	4	4	4								
37	M7985A-05025-20	Screw, pan head machine	4	4	4	4	4	4	4	4								
38	X-202-12	Bushing, reducing, 1 x 1/2 NPT				1				1			1				1	
39	X-256-5	Valve, drain, 1/2 NPT	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
40	X-312-5	Hose, molded, .62 in. ID				1				1			1				1	
41	X-400-145	Spacer, .209 ID x .375 OD x .234 in.	4	4	4	4	4	4	4	4								
42	X-426-3	Clamp, hose, .56/1.06 in.				2				2			2				2	
43	X-582-1	Connector, hose + vibra seal				1				1			1				1	
44	X-6216-1	Screw, Phillips hex crimpite	4	4	4	4	4	4	4	4								
45	X-634-16	Bushing, 1.312 x 1.50 in. NPT	1	1	1	1	1	1	1	1								
45	X-301-45	Plug, button									1	1		1	1	1	1	1
48	GM20173	Decal, fuel type (natural gas)	1		1		1		1		1			1	1			1
48	GM20174	Decal, fuel type (LPG vapor)		1				1				1				1		
48	GM20175	Decal, fuel type (LPG liquid)				1				1			1				1	
51	GM21335	Shield, heat, 20 mm ID x 412 mm length									1	1	1	1	1	1	1	1
52	GM21188	Shield, heat									1	1	1	1	1	1	1	1

Engine Part Numbers

Use this table to identify item 1, engine assembly

Variation No.	Engine Part Number	kW	Description
9	GM17324	80	8.1L, natural gas
10	GM12325	80	8.1L, LP
11	GM17327	80	8.1L, dual fuel
12	GM17326	80	8.1L, LPL
13	GM12371	100	8.1L, natural gas
14	GM12372	100	8.1L, LP
15	GM12374	100	8.1L, dual fuel
16	GM12373	100	8.1L, LPL
27	GM24983-1	80	8.1L, natural gas
28	GM24983-2	80	8.1L, LP gas
29	GM24983-3	80	8.1L, LPL
30	GM24983-4	80	8.1L, dual fuel
31	GM24982-1	100	8.1L, natural gas
32	GM24982-2	100	8.1L, LP gas
33	GM24982-3	100	8.1L, LPL
34	GM24982-4	100	8.1L, dual fuel

Group 105: Engine, continued 80-100 kW, continued



Group 105: Engine, continued

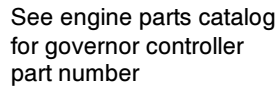
80-100 kW, continued

Internal and some external engine parts are shown in a separate engine parts catalog. See Group 701: Literature for part numbers of engine parts catalogs.

Item	Part Number	Description	Quantity							
			Variation Number							
			45	46	47	48	49	50	51	52
1	See chart page 29	Engine assembly	1	1	1	1	1	1	1	1
2	X-218-24	Nipple, pipe, 1 x 1 1/2 in.	2	2		4	2	2		4
3	X-215-15	Fitting, elbow, 1 in., pipe	1	1		2	1	1		2
4	X-504-20	Fuel line, flexible	1	1		2	1	1		2
5	GM25009	Harness, fuel, LP liquid			1	1			1	
7	GM14319	Valve assembly, gas	1	1		2	1	1		2
8	X-202-32	Bushing, reducing, 1 x 1 1/4 in. NPT	2	2		4	2	2		4
9	X-218-24	Nipple, pipe, 1 x 1 1/2 in.	1	1		2	1	1		2
10	X-215-15	Fitting, elbow, 1 in., pipe	2	2		4	2	2		4
11	GM13662	Bracket, support	1	1		2	1	1		2
12	GM14099	Rack, battery	1	1		1	1	1		1
13	X-22-26	Washer, lock, .521 ID x 1.24 in. OD	1	1	1	1	1	1	1	1
14	291891	Solenoid	1	1	1	1	1	1	1	1
14	X-22-12	Washer, lock, .262 ID x .743 in. OD (not shown)	2	2	2	2	2	2	2	2
15	X-6214-2	Cap	1	1	1	1	1	1	1	1
16	X-202-32	Bushing, reducing, 1 x 1 1/4 in. NPT	1	1		2	1	1		2
16	153016	Bushing, reducing 1 1/4 x 1 1/2 in. NPT				1				1
17	X-218-22	Nipple, pipe, 1 x 3 in.	1	1		2	1	1		2
18	X-545-137	Cable, battery, no.2 x 30 in., red+	1	1	1	1	1	1	1	1
18	X-545-153	Cable, battery, no.2 x 56 in., red+ (FAA configuration)					1	1		
19	X-545-112	Lead, battery cable, no. 2, 16 in.	1	1	1	1	1	1	1	1
20	345056	Terminal, battery	1	1	1	1	1	1	1	1
21	324033	Clamp, battery	1	1	1	1	1	1	1	1
22	X-101-4	Nut, hex elastic stop, 5/16-24	2	2	2	2	2	2	2	2
23	X-25-44	Washer, plain, .328 ID x .562 OD	2	2	2	2	2	2	2	2
24	345039	Terminal, battery	1	1	1	1	1	1	1	1
25	286316	Bolt, 5/16-24 x 11.5 in.	2	2	2	2	2	2	2	2
26	248362	Relay				1				1
27	287387	Switch, vacuum				1				1
28	AC-1459	Bushing, reducing, 1/8 x 1 in. NPT				1				1
29	M7985A-03012-20	Screw, pan head				2				2
30	M934-03-50	Nut, hex, 3 mm				2				2
31	X-203-2	Fitting, pipe tee, 1 x 1 x 1 in.				1				1
32	X-217-6	Nipple, pipe, 1/8 x 3/4 in.				1				1
33	358224	Plug, water, exhaust outlet tube (not shown)	1	1	1	1	1	1	1	1
34	358306	Gasket, exhaust outlet tube (not shown)	1	1	1	1	1	1	1	1
46	GM20743	Boot, starter terminal	1	1	1	1	1	1	1	1
47	GM20745	Boot, battery lug	1	1	1	1	1	1	1	1
49	X-218-24	Nipple, pipe, 1 x 1 1/2 in.	1	1		1	1	2		1
49	X-218-9	Nipple, pipe, 1 x 6.5 in.				1				1
50	X-225-9	Elbow, pipe, 45 deg. x 1 in. NPT	1	1		2	1	1		2

Parts list continues on next page

80-100 kW, continued



MP-6102 5/06

Group 105: Engine, continued

80-100 kW, continued

Internal and some external engine parts are shown in a separate engine parts catalog. See Group 701: Literature for part numbers of engine parts catalogs.

Item	Part Number	Description	Quantity							
			Variation Number							
			45	46	47	48	49	50	51	52
38	X-202-12	Bushing, reducing, 1 x 1/2 NPT			1				1	
39	X-256-5	Valve, drain, 1/2 NPT	1	1	1	1	1	1	1	1
40	X-312-5	Hose, molded, .62 in. ID			1				1	
41	X-400-145	Spacer, .209 ID x .375 OD x .234 in.								
42	X-426-3	Clamp, hose, .56/1.06 in.			2				2	
43	X-582-1	Connector, hose + vibra seal			1				1	
45	X-301-45	Plug, button	1	1		1	1	1	1	1
48	GM20173	Decal, fuel type (natural gas)	1			1	1			1
48	GM20174	Decal, fuel type (LPG vapor)		1				1		
48	GM20175	Decal, fuel type (LPG liquid)			1				1	
51	GM21335	Shield, heat, 20 mm ID x 412 mm length	1	1	1	1	1	1	1	1
52	GM21188	Shield, heat	1	1	1	1	1	1	1	1

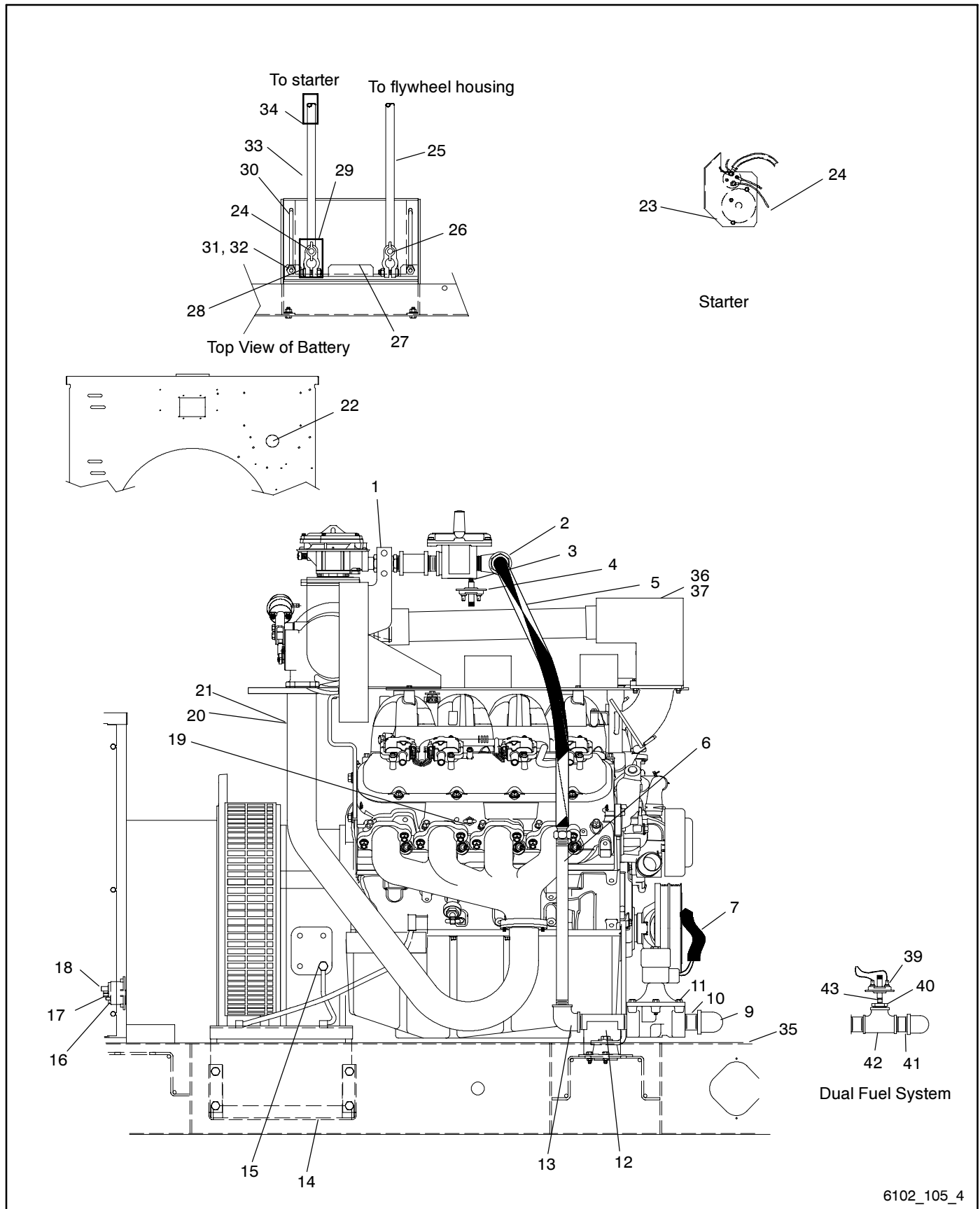
Engine Part Numbers

Use this table to identify item 1, engine assembly

Variation No.	Engine Part Number	kW	Description
45	GM24983-6	80	8.1L, natural gas (w/SAE J1939)
46	GM24983-7	80	8.1L, LP gas (w/SAE J1939)
47	GM24983-8	80	8.1L, LPL (w/SAE J1939)
48	GM24983-9	80	8.1L, dual fuel (w/SAE J1939)
49	GM24982-6	100	8.1L, natural gas (w/SAE J1939)
50	GM24982-7	100	8.1L, LP gas (w/SAE J1939)
51	GM24982-8	100	8.1L, LPL (w/SAE J1939)
52	GM24982-9	100	8.1L, dual fuel (w/SAE J1939)

Group 105: Engine, continued

125 kW



6102_105_4

Group 105: Engine, continued

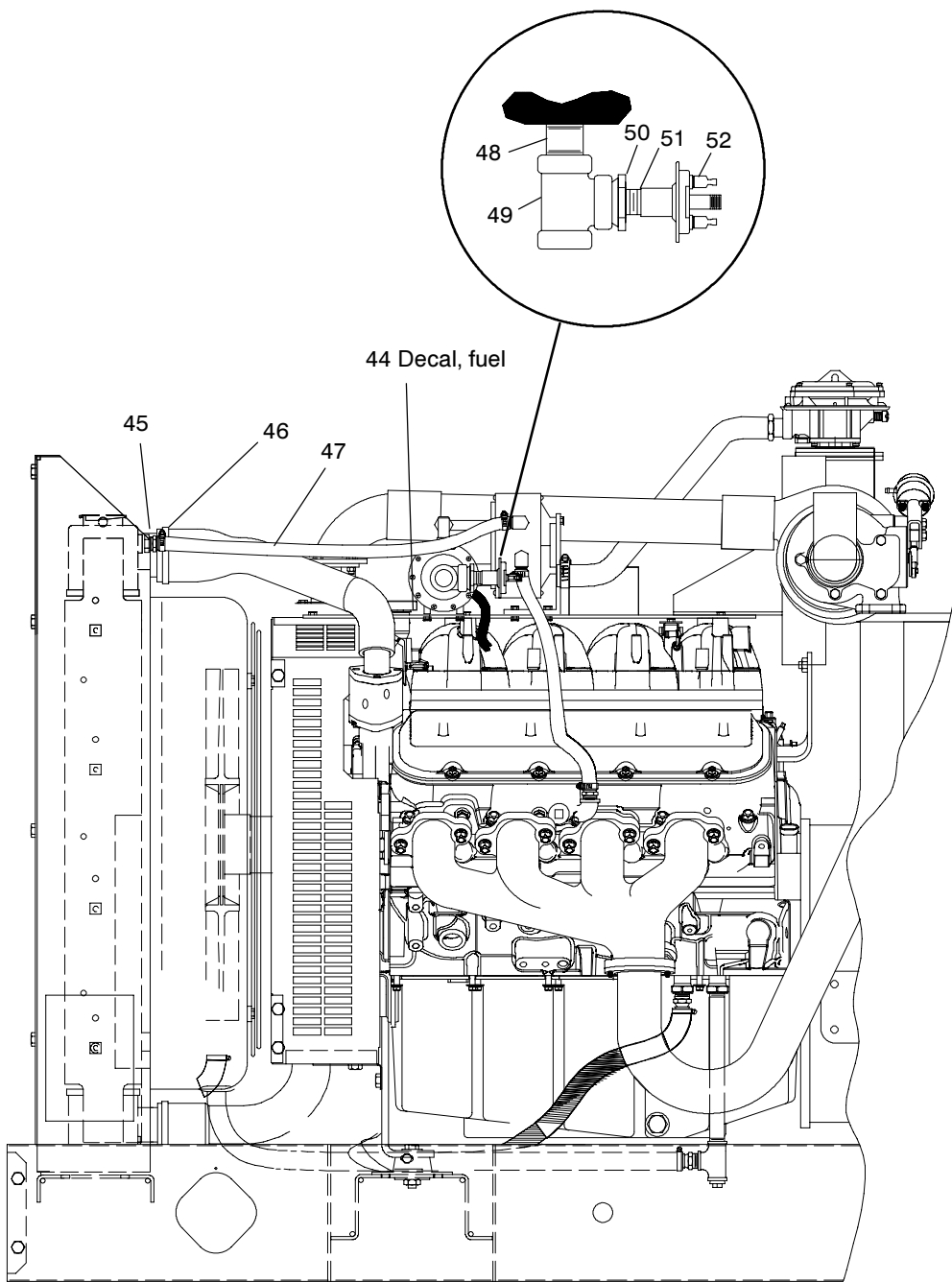
125 kW

Internal and some external engine parts are shown in a separate engine parts catalog. See Group 701: Literature for part numbers of engine parts catalogs.

Item	Part Number	Description	Quantity											
			Variation Number											
			17	18	25	26	41	42	43	44	53	54	55	56
1	See chart page 33	Engine assembly	1	1	1	1	1	1	1	1	1	1	1	1
2	A-27	Elbow, street, 90 deg. x 1 1/2 in NPT	1	1		1	1	1		2	1	1		1
2	155040	Pipe, 1 1/2 NPT x 1.75 in. (LPG side)				1								
2	151771	Elbow, pipe, 90 deg. x 1 1/2 in. NPT (LPG side)				1								
3	X-217-6	Nipple, pipe, 1/8 x 3/4 in.	1	1			1	1			1	1		
4	287387	Switch, vacuum	1	1			1	1			1	1		
5	X-504-22	Fuel line, flexible	1	1		2	1	1		2	1	1		2
6	X-205-25	Pipe, 1 1/2 NPT x 14.25 in.	1	1		2	1	1		2	1	1		2
7	GM14263	Harness, fuel	1	1										
7	GM24234	Harness, dual fuel				1								
7	GM19610	Harness, fuel, LP liquid			1									
7	GM25009	Harness, fuel, LP liquid							1	1			1	1
9	151771	Elbow, pipe, 90 deg. x 1 1/2 in. NPT	1	1		2	1	1		2	1	1		2
10	155040	Pipe, 1 1/2 NPT x 1.75 in.	1	1		2	1	1			1	1		
11	GM23543	Valve assembly, gas	1	1		2	1	1		2	1	1		2
12	GM23545	Bracket, support	1	1		2	1	1		2	1	1		2
13	151771	Elbow, pipe, 90 deg. x 1 1/2 in. NPT	1	1		2	1	1		2	1	1		2
14	GM14099	Rack, battery	1	1	1	1	1	1	1	1	1	1	1	1
15	X-22-26	Washer, lock, .521 ID x 1.24 in. OD	1	1	1	1	1	1	1	1	1	1	1	1
16	291891	Solenoid	1	1	1	1	1	1	1	1	1	1	1	1
17	X-22-12	Washer, lock, .262 ID x .743 in. OD	1	1	2	2	1	1	2	2	1	1	2	2
18	X-6214-2	Cap	1	1	1	1	1	1	1	1	1	1	1	1
19	X-256-5	Valve, drain, 1/2 NPT	1	1	1	1	1	1	1	1	1	1	1	1
20	358224	Plug, water, exhaust outlet tube	1	1	1	1	1	1	1	1	1	1	1	1
21	358306	Gasket, exhaust outlet tube	1	1	1	1	1	1	1	1	1	1	1	1
22	X-301-45	Plug, button	1	1	1	1	1	1	1	1	1	1	1	1
23	GM21188	Shield, heat (attached to studs at end of starter)	1	1	1	1	1	1	1	1	1	1	1	1
24	GM21335	Shield, heat (attached to positive battery cable)	1	1	1	1	1	1	1	1	1	1	1	1
25	X-545-112	Lead, battery cable, no. 2, 16 in.	1	1	1	1	1	1	1	1	1	1	1	1
26	345056	Terminal, battery	1	1	1	1	1	1	1	1	1	1	1	1
27	324033	Clamp, battery	1	1	1	1	1	1	1	1	1	1	1	1
28	345039	Terminal, battery	1	1	1	1	1	1	1	1	1	1	1	1
29	GM20745	Boot, battery lug	1	1	1	1	1	1	1	1	1	1	1	1
30	286316	Bolt, 5/16-24 x 11.5 in.	2	2	2	2	2	2	2	2	2	2	2	2
31	X-101-4	Nut, hex elastic stop, 5/16-24	2	2	2	2	2	2	2	2	2	2	2	2
32	X-25-85	Washer, plain	2	2	2	2			2	2			2	2
32	X-25-44	Washer, plain					2	2			2	2		
33	X-545-137	Cable, battery	1	1	1	1	1	1	1	1	1	1	1	1
34	GM22350	Boot, starter terminal	1	1	1	1	1	1	1	1	1	1	1	1
35	GM20173	Decal, fuel type (natural gas)	1			1	1			1	1			1
36	GM20174	Decal, fuel type (LPG vapor)		1		1		1		1		1		1
36	GM30905	Guard, hose, left					1	1			1	1	1	1
37	GM30906	Guard, hose, right					1	1			1	1	1	1
39	GM23590	Switch, vacuum				2				2				2
40	X-202-59	Bushing, reducer, 1 1/4 in. NPT to 1/8 in. NPT				2				2				2
41	155040	Pipe, 1 1/2 NPT x 1.75 in.				2				2				2
42	155039	Tee, pipe, 1 1/2 x 1 1/2 x 1 1/2 NPT				2				2				2
43	X-217-6	Nipple, pipe, 1/8 x 3/4 in.				2				2				2

Parts list continues on next page

Group 105 Engine, continued
125 kW, continued



6102_105_3

Group 105: Engine, continued

125 kW, continued

Internal and some external engine parts are shown in a separate engine parts catalog. See Group 701: Literature for part numbers of engine parts catalogs.

Item	Part Number	Description	Quantity											
			Variation Number											
			17	18	25	26	41	42	43	44	53	54	55	56
44	GM20175	Decal, fuel type (LPG liquid)			1				1				1	
45	X-582-22	Connector, hose + vibra seal			1				1				1	
46	X-426-3	Clamp, hose, .56/1.06 in.			2				2				2	
47	X-312-5	Hose, molded, .62 in. ID			1				1				1	
48	X-220-6	Pipe, 1/4 NPT x 1.50 in.			1				1				1	
49	A-110	Tee, pipe, 1/4 x 1/4 x 1/4 NPT			1				1				1	
50	A-106	Bushing, reducing, 1/8 x 1/4 in. NPT			1				1				1	
51	X-217-6	Pipe, 1/8 NPT x .75 in.			1				1				1	
52	253323	Switch assembly, pressure			1				1				1	

Engine Part Numbers

Use this table to identify item 1 on the previous page.

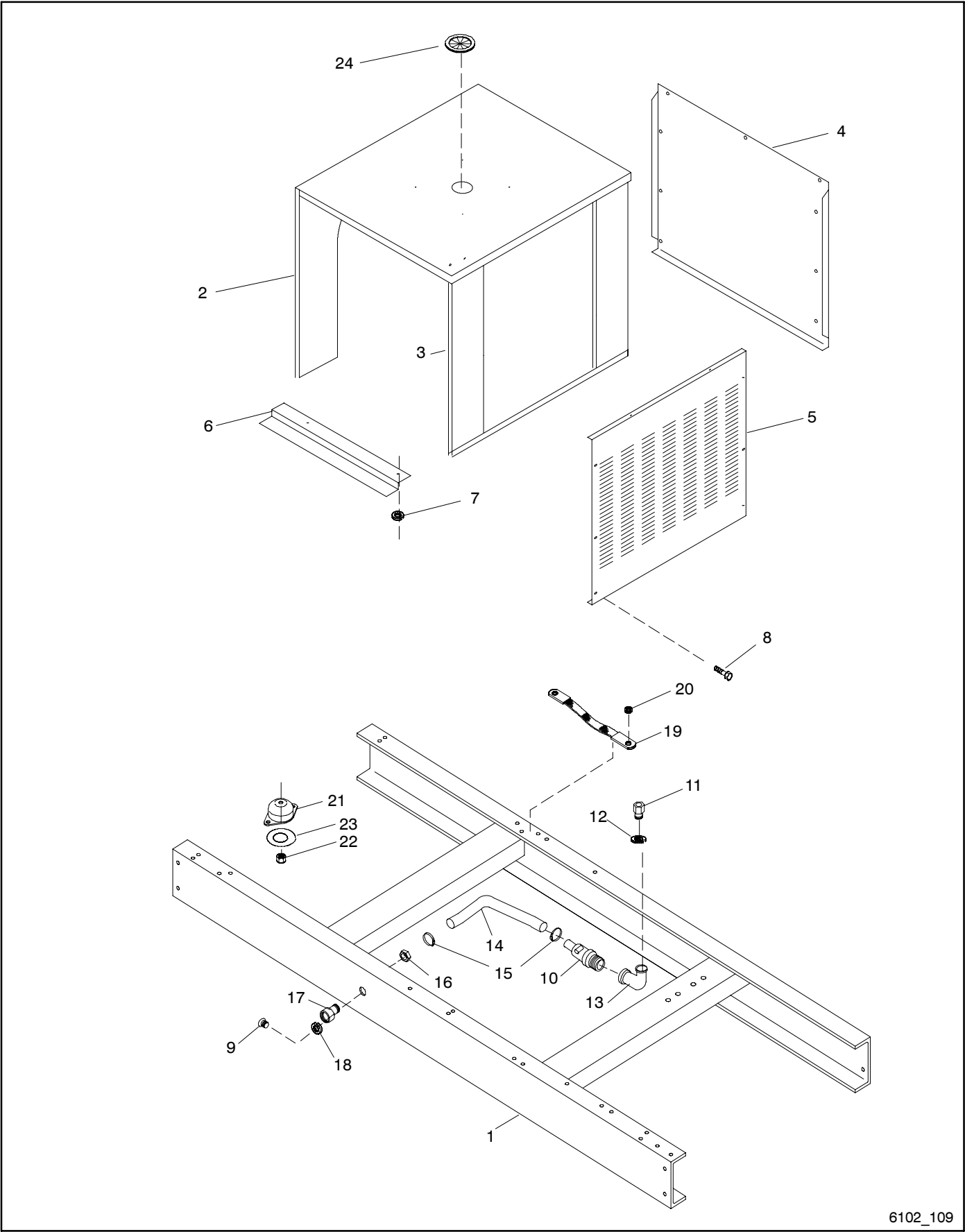
Variation No.	Engine Part Number	kW	Description
17	GM19664-1	125	8.1L, natural gas
18	GM19664-2	125	8.1L, LP gas
25	GM19664-3	125	8.1L, LPL
26	GM19664-4	125	8.1L, dual fuel
41	GM24984-1	125	8.1L, natural gas
42	GM24984-2	125	8.1L, LP gas
43	GM24984-3	125	8.1L, LPL
44	GM24984-4	125	8.1L, dual fuel
53	GM24984-6	125	8.1L, natural gas
54	GM24984-7	125	8.1L, LP gas
55	GM24984-8	125	8.1L, LPL
56	GM24984-9	125	8.1L, dual fuel

Notes

Group 107: Nameplate and Decals

Item	Part Number	Description	Quantity	
			Variation Number	
			1	2
1	238402	Decal, caution positive terminal only	1	1
2	249808	Decal, warning rotating parts	1	1
3	249809	Decal, caution hot engine	2	2
4	249810	Decal, warning hot coolant	1	1
5	273780	Decal, warning explosion	1	1
6	GM15300	Decal, exhaust piping	1	1
7	257438	Decal, danger moving rotor	3	3
8	257441	Decal, warning lifting eye	1	1
9	258815	Decal, warning voltage backfeed	1	1
10	324069	Nameplate, model/ratings, DDC/MTU logo	1	1
11	GM13776	Decal, FRII Reconnection	1	1
12	X-6301-8	Decal, DDC/MTU logo	2	
12	X-6301-1	Decal, DDC/MTU logo		2
13	GM20173	Decal, fuel type ,natural gas	1	1
13	GM20174	Decal, fuel type, LPG vapor withdrawal	1	1
13	GM20175	Decal, fuel type, LPG liquid withdrawal	1	1

Group 109: Skid and Plant Mounting

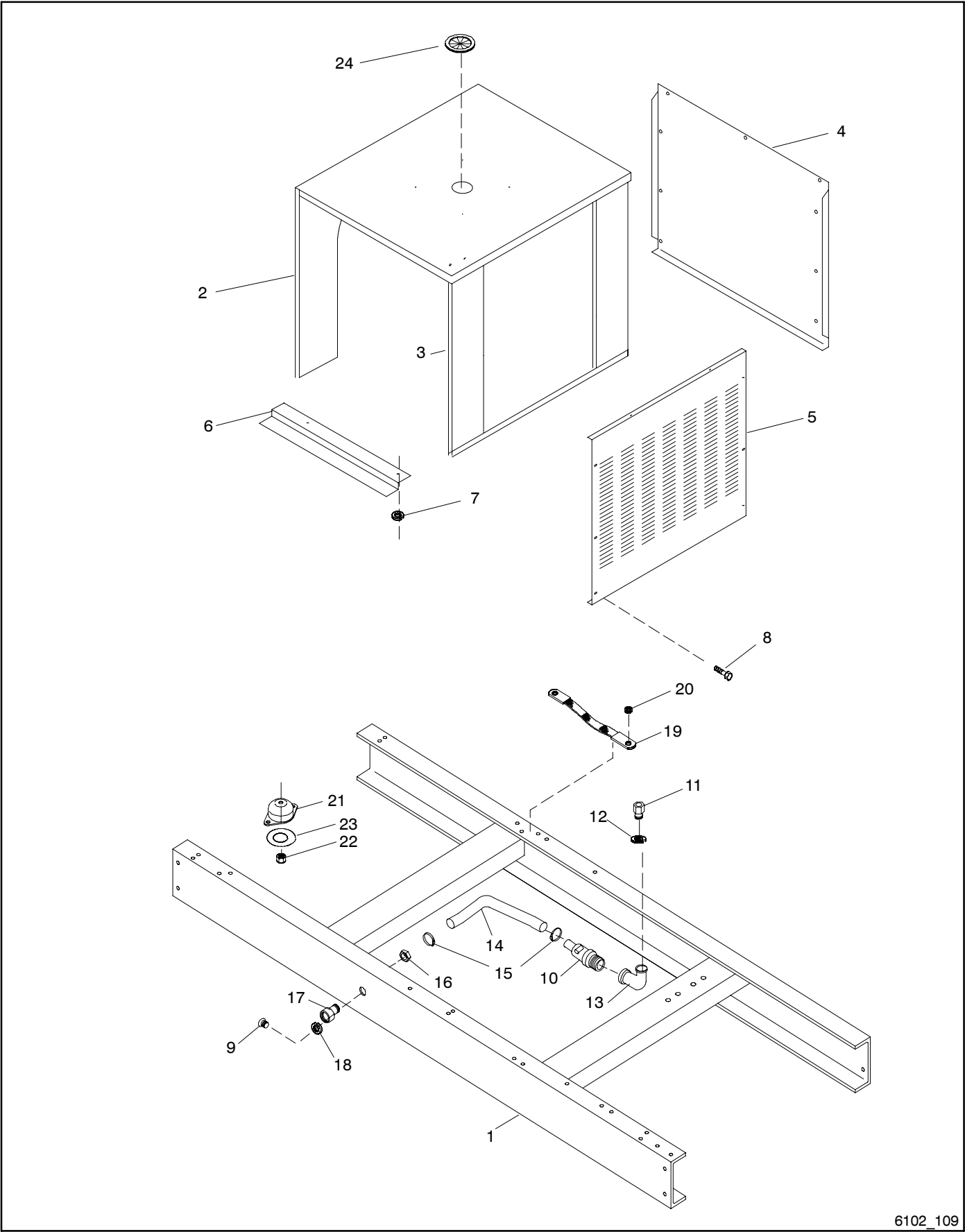


6102_109

Group 109: Skid and Plant Mounting

Item	Part Number	Description	Quantity					
			Module Number					
			GM14189-MA1	GM14189-MA2	GM13702-MA1	GM13702-MA2	GM13937-MA1	GM13937-MA2
1	GM14092	Skid			1			
1	GM14093	Skid				1		
1	GM14091	Skid	1	1				
1	GM16715	Skid					1	
1	GM32150	Skid						1
2	GM14076	Panel, junction box, front	1	1	1			
2	364036	Box, junction				1	1	1
3	GM14077	Panel, junction box, rear			1			
3	GM17418	Panel, junction box, rear	1	1				
4	222835	Cover, side				2	2	2
5	GM14079	Cover, rear	1	1	1			
5	364037	Cover, rear					1	1
6	GM14080	Support, junction box	2	2	2			
6	GM14196	Support, junction box				2	2	2
7	X-22-16	Washer, lock, .326 ID x .883 in. OD	2	2	6			
7	X-22-15	Washer, lock, .456 ID x 1.058 in. OD				4	4	4
8	X-6216-1	Screw, Phillips hex crimpite	12	12	12	12	12	12
9	X-75-3	Plug, pipe, 1/2 in. NPT	1	1	1	1	1	1
10	272701	Valve, oil drain		1				
10	GM19299	Valve, oil drain	1		1	1	1	1
11	276273	Adapter, bushing		1				
12	X-6278-9	Washer, nylon, .48 ID x .825 in. OD	1		1	1	1	1
12	276278	Washer, nylon, .511 ID x .906 in. OD		1				
14	X-577-28	Hose, rubber, straight, .62 in. ID			1	1		
14	X-577-47	Hose, rubber, straight, .62 in. ID	1					
14	X-577-5	Hose, rubber, straight, .62 in. ID, 1.17 ft.					1	1
14	X-577-34	Hose, rubber, straight, .62 in. ID		1				
14	GM10669	Shield, heat (not shown)					1	1
15	X-426-10	Clamp, hose, .5/1 in.	2	2	2	2	2	2
17	X-582-1	Connector, hose	1	1	1	1	1	1
19	290418	Strap, ground	1	1	1	1	2	2
20	X-22-15	Washer, lock, .456 ID x 1.058 in. OD	3	3	3	3	3	3
21	324073	Vibromount			2	2	2	2
21	276476	Vibromount	2	2				
22	M982-12-80	Nut, hex elastic stop	2	2	2	2	2	2
23	X-25-140	Washer, plain, .531 ID x 2 in. OD	2	2	2	2	2	2
24	X-6033-15	Grommet	1	1	1		1	1

Group 109: Skid and Plant Mounting, continued



6102_109

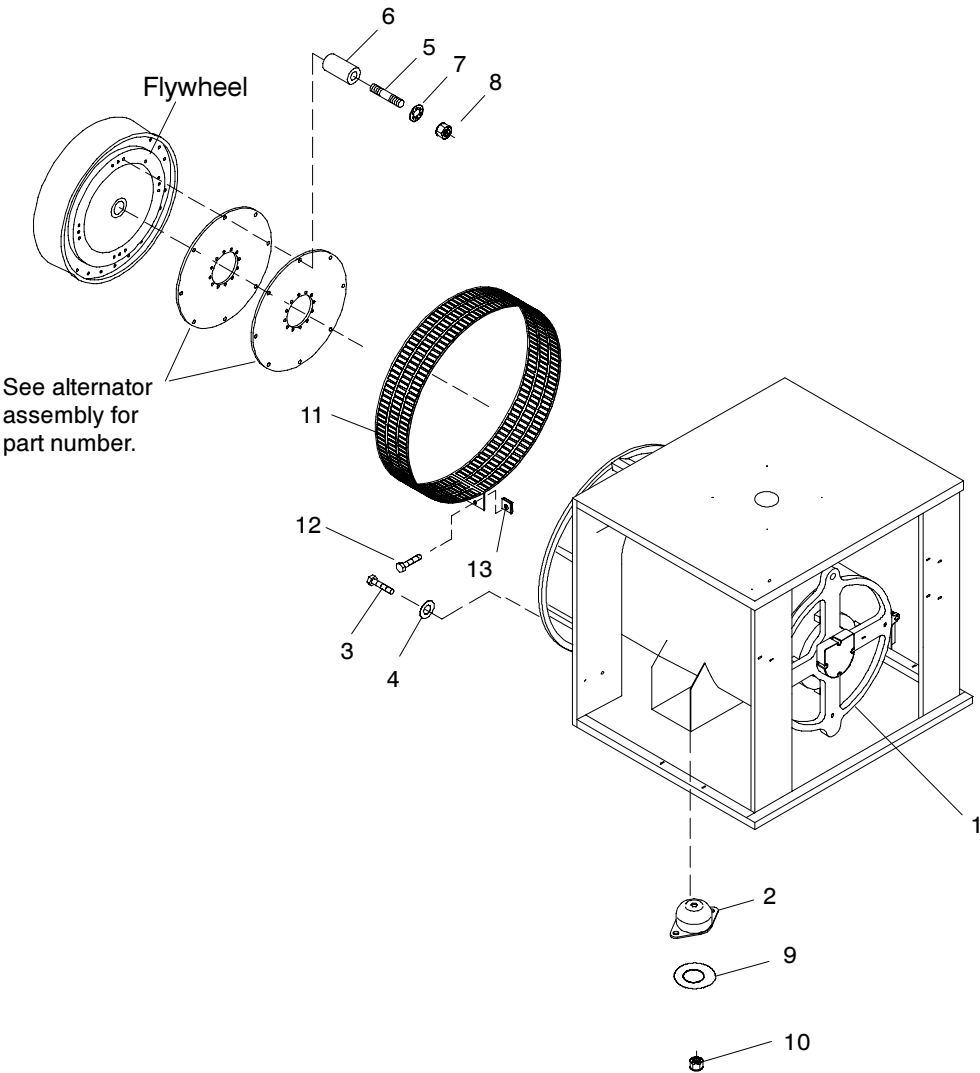
Group 109: Skid and Plant Mounting, continued

Item	Part Number	Description	Quantity									
			Module Number									
			GM17674-MA1	GM17674-MA2	GM17205-MA1	GM17673-MA1	GM17673-MA2	GM17064-MA1	GM17064-MA2	GM17277-MA1	GM17675-MA1	GM17675-MA2
1	GM17185	Skid	1	1	1							
1	GM17065	Skid				1		1				
1	GM17203	Skid					1		1			
1	GM17278	Skid								1	1	
1	GM32149	Skid										1
2	GM14076	Panel, junction box, front			1				1			
2	GM17623	Panel, junction box, front				1				1	1	1
2	GM17417	Panel, junction box, front	1	1			1					
2	364036	Box, junction						1				
3	GM14077	Panel, junction box, rear			1				1			
3	GM17624	Panel, junction box, rear				1				1	1	1
3	GM17418	Panel, junction box, rear	1	1			1					
4	222835	Cover, side						2				
4	GM17640	Cover, side				2					2	2
4	GM14078	Cover, side	2	2			2					
5	GM14079	Cover, rear			1				1			
5	364037	Cover, rear						1				
5	GM17625	Cover, rear				1				1	1	1
5	GM17419	Cover, rear	1	1			1					
7	X-22-16	Washer, lock, .326 ID x .883 in. OD	4	4	2	4	4		4	4	4	4
7	X-22-15	Washer, lock, .456 ID x 1.058 in. OD						2				
8	X-6216-1	Screw, Phillips hex crimp	12	12	12	12	12	12	12	12	12	12
9	241062	Plug, drain			1			1	1			
9	X-75-3	Plug, pipe, 1/2 in. NPT	1	1		1	1				1	1
10	272701	Valve, oil drain		1				1	1			
10	GM19299	Valve, oil drain	1		1	1	1			1	1	1
11	326815	Adapter, bushing						1	1			
11	276273	Adapter, bushing		1								
12	X-6278-9	Washer, nylon, .48 ID x .825 in. OD	1		1	1	1	1	1	1	1	1
12	276278	Washer, nylon, .511 ID x .906 in. OD		1								
13	X-211-1	Fitting, elbow, 1/2 in., street						1	1			
14	X-577-47	Hose, rubber, straight, .62 in. ID	1		1							
14	X-577-5	Hose, rubber, straight, .62 in. ID, 1.17 ft.				1	1	1	1	1	1	1
14	X-577-34	Hose, rubber, straight, .62 in. ID		1								
14	GM17809	Shield, heat (not shown)								1		
14	GM10669	Shield, heat (not shown)									1	1
15	X-426-10	Clamp, hose, .5/1 in.	2	2	2	2	2	2	2	2	2	2
16	X-80-1	Nut, hex jam, 1 1/4 in.			1			1	1	1		
17	273729	Adapter, hose			1			1	1	1		
17	X-582-1	Connector, hose	1	1		1	1				1	1
18	276552	Washer, nylon, .878 ID x 1.132 in. OD			1			1	1	1		
19	290418	Strap, ground	1	1	1	1	1	1	1	1	2	2
20	X-22-15	Washer, lock, .456 ID x 1.058 in. OD	3	3	3	3	3	3	3	3	3	3
21	324073	Vibromount				2	2	2	2	2	2	2
21	276476	Vibromount	2	2	2							
22	M982-12-80	Nut, hex elastic stop	2	2	2	2	2	2	2	2	2	2
23	X-25-140	Washer, plain, .531 ID x 2 in. OD	2	2	2	2	2	2	2	2	2	2
24	X-284-31	Grommet, round			1							
24	X-6033-15	Grommet	1	1		1	1		1	1	1	1

Group 201: Generator and Mounting

Permanent Magnet-Excited Alternators

Items 14-16 not shown.



6102_201_1

Group 201: Generator and Mounting

Permanent Magnet-Excited Alternators

Item	Part Number	Description	Qty.
1	See chart	Alternator assembly	1
2	324074	Vibromount, 4P7, 4P8, 4P10 alternator	2
2	324073	Vibromount, 4P5, 4Q5 alternator	2
2	324075	Vibromount, 4S7, 4V7 alternator	2
2	324391	Vibromount, 4S7*, 4S9, 4V9 alternator	2
2	336024	Vibromount, 4S13, 4V11 alternator	2
3	270956	Screw, 3/8-16 x 1 1/4, 4P, 4Q alternator	6
3	270158	Bolt, hex cap, 4S, 4V alternator	6
4	X-801-3	Washer, hardened, .406 ID x .812 OD	6
5	X-352-63	Stud, 3/8-16 x 4 in.	8
6	X-400-132	Spacer, .406 ID x .625 OD x 2.531 in.	8
7	X-801-3	Washer, hardened, .406 ID x .812 OD	8
8	X-6210-9	Nut, flange spirallock, 3/8-16	8
9	X-25-140	Washer, plain, .531 ID x 2 in. OD	2
9	X-25-112*	Washer, plain	2
10	M982-12-80	Nut, hex elastic stop	2
10	M982-16-80*	Nut, hex elastic stop	2
11	257046	Guard, generator fan	1
11	257179	Guard, generator fan, 4S and 4V alternator	1
12	X-67-125	Screw, hex washer, thread-forming	2
13	257442	Clip, speed	2
14	X-750-14	Marker, wire L1 (not shown)	1
15	X-750-15	Marker, wire L2 (not shown)	1
16	X-750-16	Marker, wire L3 (not shown)	1

Alternator assembly includes items 1-32 on following page.

The voltage regulator part number is found in the Control and Harness Group.

* Select this part number for modules using SAE 11 1/2 in. flywheel.

Alternator Part Number and Mount Type

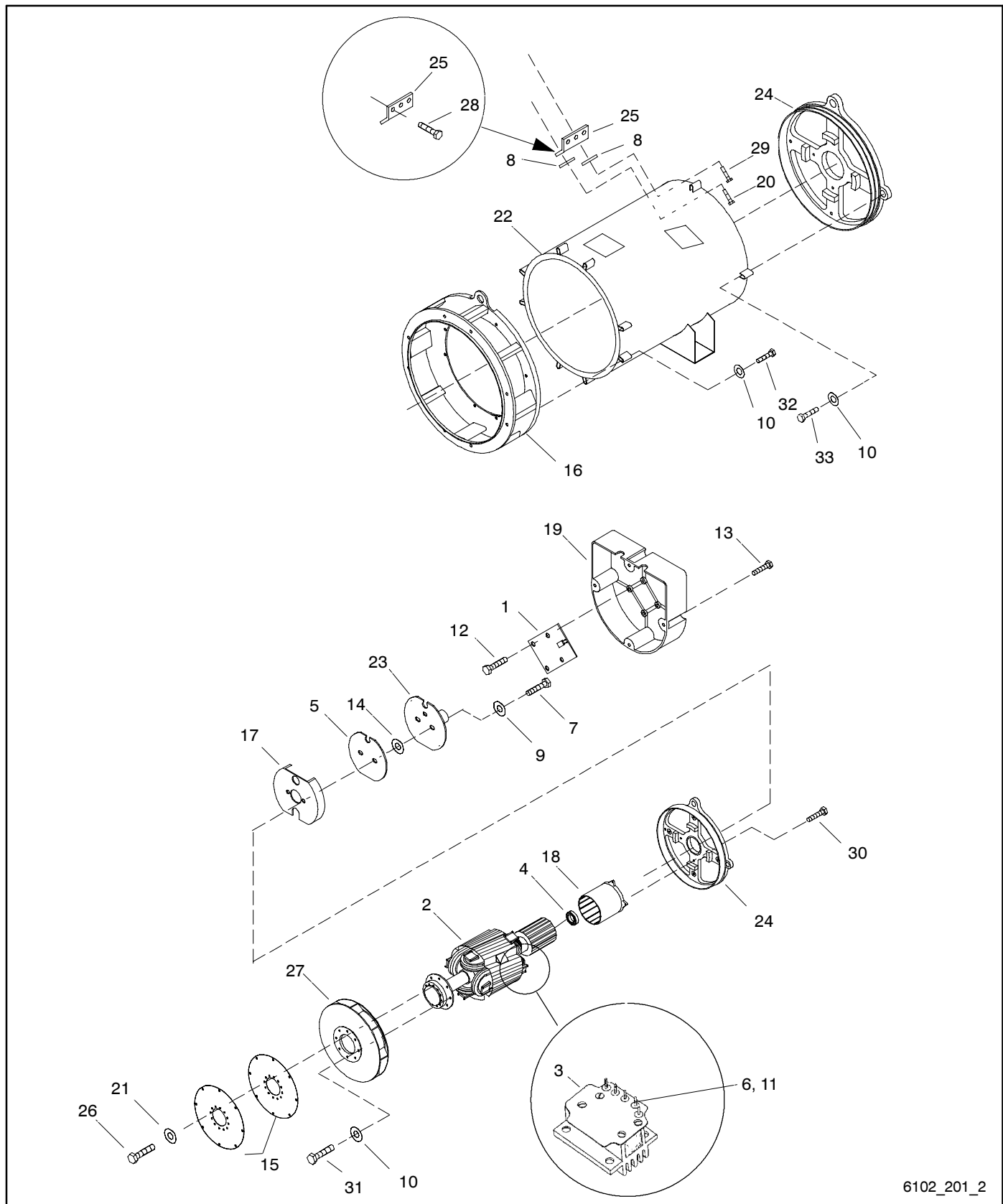
Use this table to identify the module number's alternator part number.

Module No.	Alternator Description	Item 1, Alternator Assembly
GM13729-MA1	4P5	B-257719
GM13729-MA2	4P5, 600 V	B-257726
GM13729-MA3	4P5B	GM13676
GM13729-MA4	4P5B, 600 V	GM13677
GM13729-MA5	4P7B	GM13678
GM13729-MA6	4P7B, 600 V	GM13679
GM13729-MA7	4P8	B-257721
GM13729-MA8	4P8, 600 V	B-257728
GM13729-MA9	4P10	B-257739
GM13729-MA10	4P10, 600 V	B-257729
GM13729-MA11	4Q5	A-360736
GM13729-MA12	4Q10	A-360739
GM13730-MA1	4S7	A-276669
GM13730-MA2	4S7, 600 V	A-276672
GM13730-MA3*	4S7	A-276686
GM13730-MA4*	4S7, 600 V	A-276688
GM13730-MA5	4S9	A-276687
GM13730-MA6	4S9, 600 V	A-276689
GM13730-MA7	4S13	A-276684
GM13730-MA8	4S13, 600 V	A-276685
GM13730-MA9	4V7	A-360741
GM13730-MA10	4V9	A-360405
GM13730-MA11	4V11	A-360379
GM17701-MA1	4P5	C-257719
GM17701-MA2	4P5, 600 V	C-257726
GM17701-MA3	4P5B	GM16880
GM17701-MA4	4P5B, 600 V	GM16881
GM17701-MA5	4P7B	GM16882
GM17701-MA6	4P7B, 600 V	GM16883
GM17701-MA7	4P8	C-257721
GM17701-MA8	4P8, 600 V	C-257728
GM17701-MA9	4P10	C-257739
GM17701-MA10	4P10, 600 V	C-257729
GM17701-MA11	4Q5	B-360736
GM17701-MA12	4Q10	B-360739
GM17672-MA1	4S7	GM17563-1
GM17672-MA2	4S7, 600 V	GM17563-4
GM17672-MA3*	4S7	GM17563-13
GM17672-MA4*	4S7, 600 V	GM17563-15
GM17672-MA5*	4S9	GM17563-14
GM17672-MA6*	4S9, 600 V	GM17563-16
GM17672-MA7*	4S13	GM17563-11
GM17672-MA8*	4S13, 600 V	GM17563-12
GM17672-MA9	4V7	GM17563-26
GM17672-MA10*	4V9	GM17563-24
GM17672-MA11*	4V11	GM17563-23
GM17672-MA12*	4S11	GM17563-21
GM17672-MA13*	4S11, 600 V	GM17563-22

* Modules use SAE 11 1/2 in. flywheel.

Group 201: Generator and Mounting, continued

Permanent Magnet-Excited Alternators



6102_201_2

Group 201: Generator and Mounting, continued

Alternator Parts

Permanent Magnet-Excited Alternators

Item	Part No.	Description	Qty.
1	A-257099	PCB assembly, LED, FRII	1
2	See chart	Rotor assembly	1
3	B-258545	Heatsink, 4P and 4Q alternators	1
3	B-258549	Heatsink, 4S and 4V alternators	1
4	X-758-2	Bearing, ball, 4P and 4Q alternators	1
4	X-758-6	Bearing, ball, 4S and 4V alternators	1
5	A-360418	PCB assembly, photo receiver	1
6	X-101-24	Nut, hex elastic stop, 6-32	5
7	X-117-5	Screw, hex head machine	2
8	X-22-44	Washer, lock, .262 ID x .743 in. OD, 4P and 4Q alternators	2
8	X-22-45	Washer, lock, .338 ID x .884 in. OD, 4S and 4 V alternators	2
9	X-22-9	Washer, lock, .20 ID x .373 in. OD	2
10	X-25-93	Washer, plain, .406 ID x .75 in. OD	14
11	X-283-7	Terminal, ring, male, 22-16 AWG	4
12	X-6071-1	Screw, Phillips pan head	4
13	X-67-133	Screw, hex washer, thread-forming	3
14	243321	Washer, insulating, .195 ID x .5 in.	2
15	257015	Lamination, armature drive, 4P and 4Q alternators	2
15	257103	Lamination, armature drive, 4S and 4V SAE 11 1/2 flywheel	3
15	257102	Lamination, armature drive, 4S and 4V SAE 10 in. flywheel	3
16	257018	Adapter, generator, 4P and 4Q alternators	1
16	257175	Adapter, generator, 4S and 4V alternators	1
17	257077	Actuator, magnetic cup	1
18	257080	Exciter field assembly, 30/35 kW	1
18	257081	Exciter field assembly, 45-60 kW	1
18	276657	Exciter field assembly, 80-150 kW	1
19	257258	Cover, FR LED circuit board	1
20	X-791-5	Screw, HHM, 4P and 4Q alternators	1
20	X-791-7	Screw, HHM, 4S and 4V alternators	1
21	X-801-3	Washer, hardened, .406 ID x .812 in.	8
21	X-801-3	Washer, hardened, .406 ID x .812 in.	12
22	See chart	Stator assembly	1
23	257850	Insulator	1
24	257984	End bracket, 4P and 4Q alternators	1
24	257983	End bracket, 4S and 4V alternators	1
25	257986	Lead connector, 4P and 4Q alternators	1
25	257985	Lead connector, 4S and 4V alternators	1
25	257978	Lead connector, 4S and 4V alternators, 1-phase	1
26	270956	Screw, cylinder head, 3/8-16 x 1 1/4, 4P and 4Q alternators	8
26	270956	Screw, cylinder head, 3/8-16 x 1 1/4, 4S and 4V alternators	12
27	347697	Fan, alternator, 4P and 4Q alternators	1
27	257173	Fan, alternator, 4S and 4V alternators	1
28	X-125-24	Screw, HC, 4S and 4V alternators	3
28	X-6238-5	Screw, HC, 4S and 4V alternators, 1-phase	3
28	X-465-8	Screw, HC, 4P and 4Q alternators	3
29	X-456-16	Screw, HC, 4S and 4V alternators	1
29	X-125-31	Screw, HC, 4P and 4Q alternators	1
30	X-125-34	Screw, HC	4
31	X-6238-11	Screw, HC	4
32	X-6238-6	Screw, HC, 4P and 4Q alternators	6
32	X-6238-6	Screw, HC, 4S and 4V alternators	1
32	X-6238-9	Screw, HC, 4S and 4V alternators	5
33	273736	Screw, hex head machine, special thread 4P and 4Q alternators	4
33	352415	Screw, hex head machine, special thread 4S and 4V alternators	4

Alternator Part Number and Mount Type

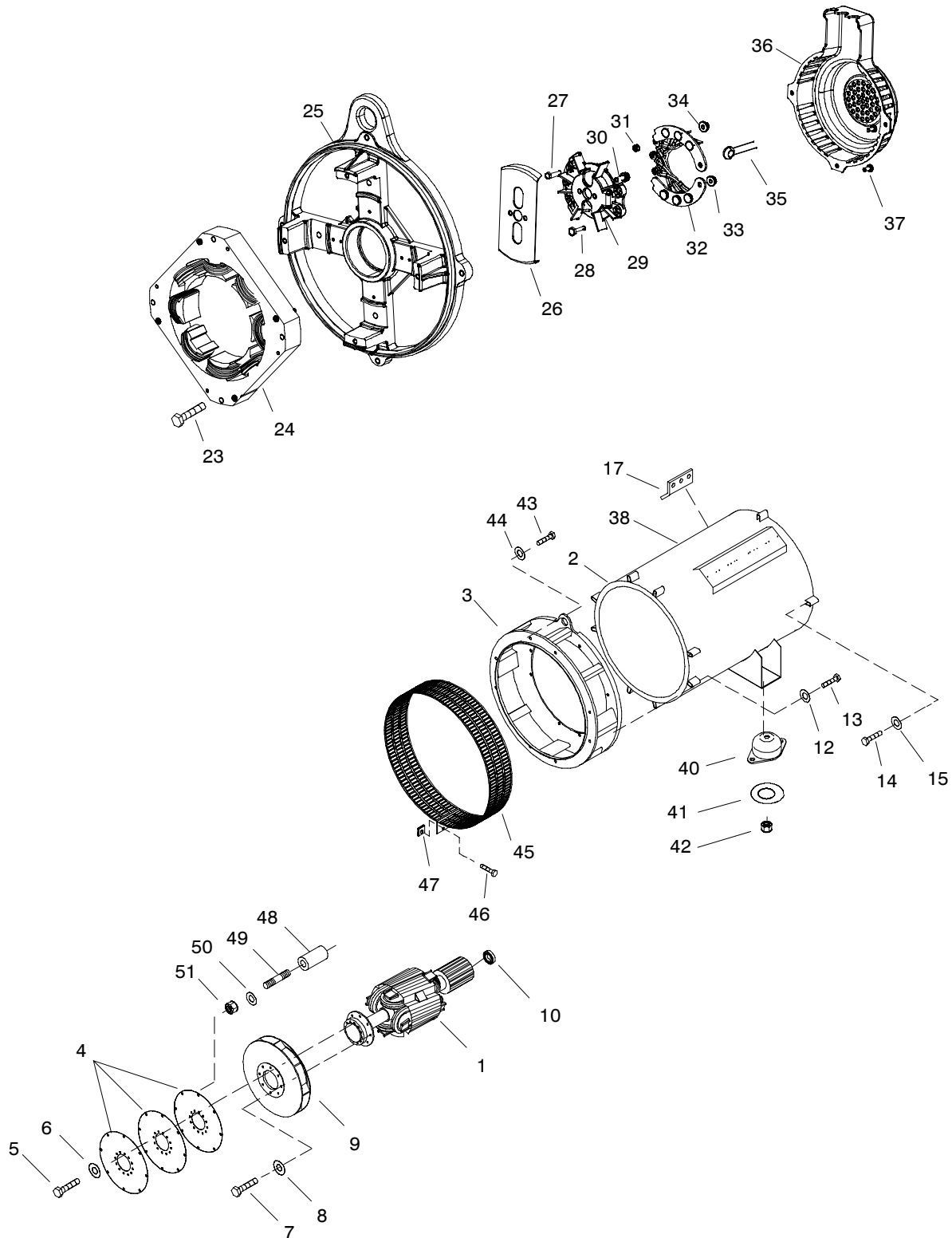
Use this table to identify the kit/module number's alternator, rotor, and stator part numbers.

Module No.	Alternator Description	Assembly		
		Alternator	Item 2, Rotor	Item 22, Stator
GM13729-MA1	4P5	B-257719	A-258979	257766
GM13729-MA2	4P5, 600V	B-257726	A-258979	257771
GM13729-MA3	4P5B	GM13676	A-326938	360501
GM13729-MA4	4P5B,600V	GM13677	A-326938	GM13681
GM13729-MA5	4P7B	GM13678	A-336564	326728
GM13729-MA6	4P7B,600V	GM13679	A-336564	GM13682
GM13729-MA7	4P8	B-257721	A-258977	257768
GM13729-MA8	4P8, 600V	B-257728	A-258977	257773
GM13729-MA9	4P10	B-257739	A-258975	257769
GM13729-MA10	4P10, 600V	B-257729	A-258975	257774
GM13729-MA12	4Q10	A-360739	A-258975	360751
GM13730-MA1	4S7	A-276669	A-276656	257692
GM13730-MA2	4S7, 600V	A-276672	A-276659	257690
GM13730-MA3*	4S7	A-276686	A-276664	257687
GM13730-MA4*	4S7, 600V	A-276688	A-276664	257690
GM13730-MA5	4S9	A-276687	A-276665	257688
GM13730-MA6	4S9, 600V	A-276689	A-276665	257691
GM13730-MA7	4S13	A-276684	A-276666	257689
GM13730-MA8	4S13, 600V	A-276685	A-276666	257692
GM13730-MA9	4V7	A-360741	A-276659	360752
GM13730-MA10	4V9	A-360405	A-276665	360410
GM13730-MA11	4V11	A-360379	A-343443	360380
GM17701-MA1	4P5	C-257719	A-258979	257766
GM17701-MA2	4P5, 600V	C-257726	A-258979	257771
GM17701-MA3	4P5B	GM16880	A-326938	360501
GM17701-MA4	4P5B,600V	GM16881	A-326938	GM13681
GM17701-MA5	4P7B	GM16882	A-336564	326728
GM17701-MA6	4P7B,600V	GM16883	A-336564	GM13682
GM17701-MA7	4P8	C-257721	A-258977	257768
GM17701-MA8	4P8, 600V	C-257728	A-258977	257773
GM17701-MA9	4P10	C-257739	A-258975	257769
GM17701-MA10	4P10, 600V	C-257729	A-258975	257774
GM17701-MA11	4Q5	B-360736	A-258979	360748
GM17701-MA12	4Q10	B-360739	A-258975	360751
GM17672-MA1	4S7	GM17563-1	A-276659	GM17559-1
GM17672-MA2	4S7, 600V	GM17563-4	A-276659	GM17561-1
GM17672-MA3*	4S7	GM17563-13	A-276664	GM17559-1
GM17672-MA4*	4S7, 600V	GM17563-15	A-276664	GM17561-1
GM17672-MA5*	4S9	GM17563-14	A-276665	GM17559-2
GM17672-MA6*	4S9, 600V	GM17563-16	A-276665	GM17561-2
GM17672-MA7*	4S13	GM17563-11	A-276666	GM17559-3
GM17672-MA8*	4S13,600V	GM17563-12	A-276666	GM17561-3
GM17672-MA9	4V7	GM17563-26	A-276659	GM17562-3
GM17672-MA10*	4V9	GM17563-24	A-276665	GM17562-2
GM17672-MA11*	4V11	GM17563-23	A-343443	GM17562-1
GM17672-MA12*	4S11	GM17563-21	A-343443	GM17559-4
GM17672-MA13*	4S11,600V	GM17563-22	A-343443	GM17561-4

* Modules use SAE 11 1/2 in. flywheel.

Group 201: Generator and Mounting, continued

Wound Field Alternators, 4PW and 4QW



Group 201: Generator and Mounting, continued

Wound Field Alternators, 4PW and 4QW

Item	Part No.	Description	Qty.
1	See table below	Rotor assembly	1
2	See table below	Stator assembly	1
3	GM32006	Adapter, generator	1
4	257015	Disc, drive	2
5	M933-10030-82	Screw, hex cap	8
6	X-801-3	Washer, hardened, .406 ID x .812 in. OD	8
7	M933-10025-60	Screw, hex cap	4
8	X-25-93	Washer, plain, .406 ID x .75 in. OD	4
9	347697	Fan, alternator	1
10	X-758-2	Bearing, ball	1
12	X-25-93	Washer, plain, .406 ID x .75 in. OD	6
13	M931-10050-60	Screw, hex cap	6
14	M933-10070-60	Screw, hex cap	4
15	X-25-93	Washer, plain, .406 ID x .75 in. OD	4
17	257986	Terminal	1
23	M931-08055-60	Screw, hex cap	4
24	GM32516-1	Exciter field, 8 pole, 41.3 stack	1
25	GM28965	Bracket, end	1
26	GM31967	Actuator, magnetic	1
27	M933-05020-60	Screw, hex cap	3
28	M933-06020-60	Screw, hex cap	2
29	GM31960	Hub, rotating diode assembly	1
30	M933-06016-60	Screw, hex cap	2
31	M934-05-50	Nut, hex, 5 mm	3
32	GM31963	Plates, diode assembly	1
33	M982-06-80	Nut, hex, elastic stop	2
34	M982-05-60	Nut, hex, elastic stop	3
35	228061	Varistor, 250 V	1
36	GM31968	Cover, rotating diode assembly	1
37	M7500D-05010-81	Screw, thread forming metric	3
38	344295	Decal, equipment ground	1
39	See table below	Alternator assembly (includes items 1-38)	1
40	324073	Vibromount, 4P5, 4Q5 alternator	2
40	324074	Vibromount, 4P7, 4P8, 4P10, 4Q10 alternators	2
41	X-25-140	Washer, plain, .531 ID x 2in. OD	2
42	M982-12-80	Nut, hex elastic stop	2
43	270956	Bolt, hex cap	6
44	X-801-3	Washer, hardened, .406 ID x .812 in. OD	6
45	257046	Guard, generator fan	1
46	X-67-125	Screw, thread-forming	2
47	257442	Clip, speed	2
48	X-400-132	Spacer, .406 ID x .625 OD x 2.531 in.	8
49	X-352-63	Stud, 3/8-16 x 4 in.	8
50	X-801-3	Washer, hardened, .406 ID x .812 in. OD	8
51	X-6210-9	Nut, flange spirallock, 3/8-16	8

The voltage regulator part number is found in the Control and Harness Group.

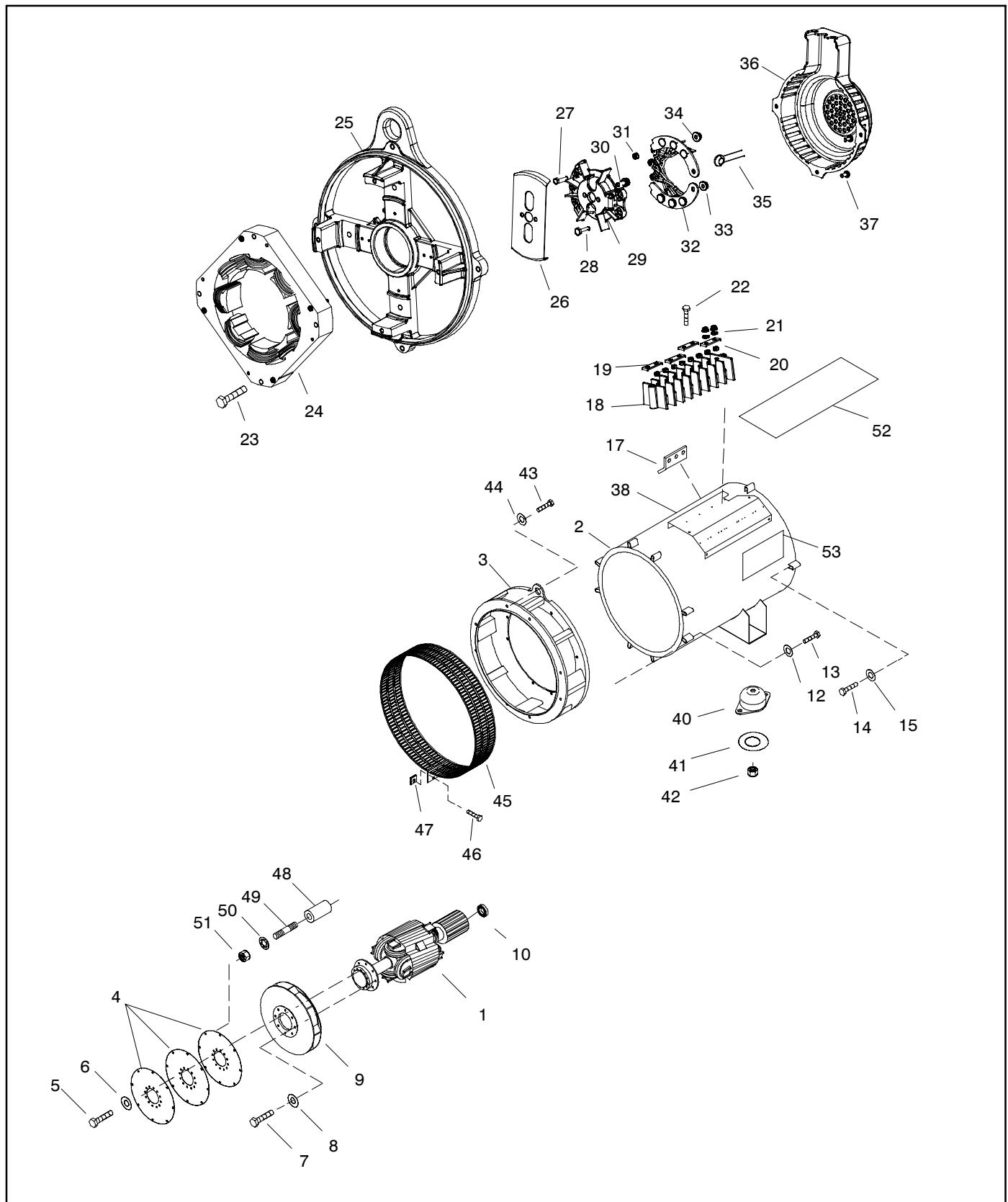
Part Numbers for Alternator, Rotor and Stator

Use this table to identify items 1, 2, and 39.

Module	Alternator Designation	Item 1, Rotor	Item 2, Stator	Item 39, Alternator
GM17701-MA18	4P5W	GM32406-4	GM32504-2	GM32507-7
GM17701-MA19	4P5W, 600 V	GM32406-4	GM32505-2	GM32507-9
GM17701-MA20	4P5BW	GM32406-5	GM32504-3	GM32507-12
GM17701-MA21	4P5BW, 600 V	GM32406-5	GM32505-3	GM32507-14
GM17701-MA22	4P7BW	GM32406-8	GM32504-5	GM32507-18
GM17701-MA23	4P7BW, 600 V	GM32406-8	GM32505-5	GM32507-19
GM17701-MA24	4P8W	GM32406-10	GM32504-6	GM32507-21
GM17701-MA25	4P8W, 600 V	GM32406-10	GM32505-6	GM32507-23
GM17701-MA26	4P10W	GM32406-11	GM32504-7	GM32507-27
GM17701-MA27	4P10W, 600 V	GM32406-11	GM32505-7	GM32507-29
GM17701-MA28	4Q5W	GM32406-4	GM32506-2	GM32507-11
GM17701-MA29	4Q10W	GM32406-11	GM32506-4	GM32507-31

Group 201: Generator and Mounting, continued

Wound Field Alternators, 4SW and 4VW



Group 201: Generator and Mounting, continued

Wound Field Alternators, 4SW and 4VW

Item	Part No.	Description	Qty.	Item	Part No.	Description	Qty.
1	See table below	Rotor assembly	1	30	M933-06016-60	Screw, hex cap	2
2	See table below	Stator assembly	1	31	M934-05-50	Nut, hex, 5 mm	3
3	GM32008	Adapter, generator	1	32	GM31963	Plates, diode assembly	1
4	257102	Disc, drive	3	33	M982-06-80	Nut, hex, elastic stop	2
4	257103*	Disc, drive	3	34	M982-05-60	Nut, hex, elastic stop	3
5	M933-10035-82	Screw, hex cap	12	35	228061	Varistor, 250 V	1
6	X-801-3	Washer, .406 ID x .812 in. OD	12	36	GM31968	Cover, rotating diode assembly	1
7	M933-10025-60	Screw, hex cap	4	37	M7500D-05010-81	Screw, thread forming metric	3
8	X-25-93	Washer, .406 ID x .75 in. OD	4	38	344295	Decal, equipment ground	1
9	257173	Fan, generator	1	39	See table below	Alternator assembly (includes items 1-38)	1
10	X-758-6	Bearing, ball	1	40	See table below	Vibromount	2
12	X-25-93	Washer, .406 ID x .75 in. OD	6	41	X-25-140	Washer, plain, .531 ID x 2 in. OD	2
13	M931-10050-60	Screw, hex cap	1	41	X-25-112*	Washer, plain	2
13	M931-10080-60	Screw, hex cap	5	42	M982-12-80	Nut, hex elastic stop	2
14	M933-10100-60	Screw, hex cap	4	42	M982-16-80*	Nut, hex elastic stop	2
15	X-25-93	Washer, .406 ID x .75 in. OD	4	43	270158	Bolt, hex cap	6
17	257978	Bus	1	44	X-801-3	Washer, .406 ID x .812 in. OD	6
18	GM31969	Block, terminal	1	45	257179	Guard, generator fan	1
19	See table below	Link, terminal block	3	46	X-67-125	Screw, thread-forming	2
20	See table below	Nut, hex, 10 mm	16	47	257442	Clip, speed	2
21	See table below	Washer, plain	8	48	X-400-132	Spacer, .406 ID x .625 OD x 2.531	8
22	M7500D-06020-81	Screw	2	49	X-352-63	Stud, 3/8-16 x 4 in.	8
23	M931-08100-60	Screw, hex cap	4	50	X-801-3	Washer, .406 ID x .812 in. OD	8
24	GM32516-2	Exciter field	1	51	X-6210-9	Nut	8
25	GM28964	Bracket, end	1	52	See table below	Decal, terminal board	1
26	GM31967	Actuator, magnetic	1	53	See table below	Decal, board reconnection	1
27	M933-05020-60	Screw, hex cap	3				
28	M933-06020-60	Screw, hex cap	2				
29	GM31960	Hub, rotating diode assembly	1				

The voltage regulator part number is found in the Control and Harness Group.

* Select this part number for modules using SAE 11 1/2 in. flywheel.

Alternator Parts

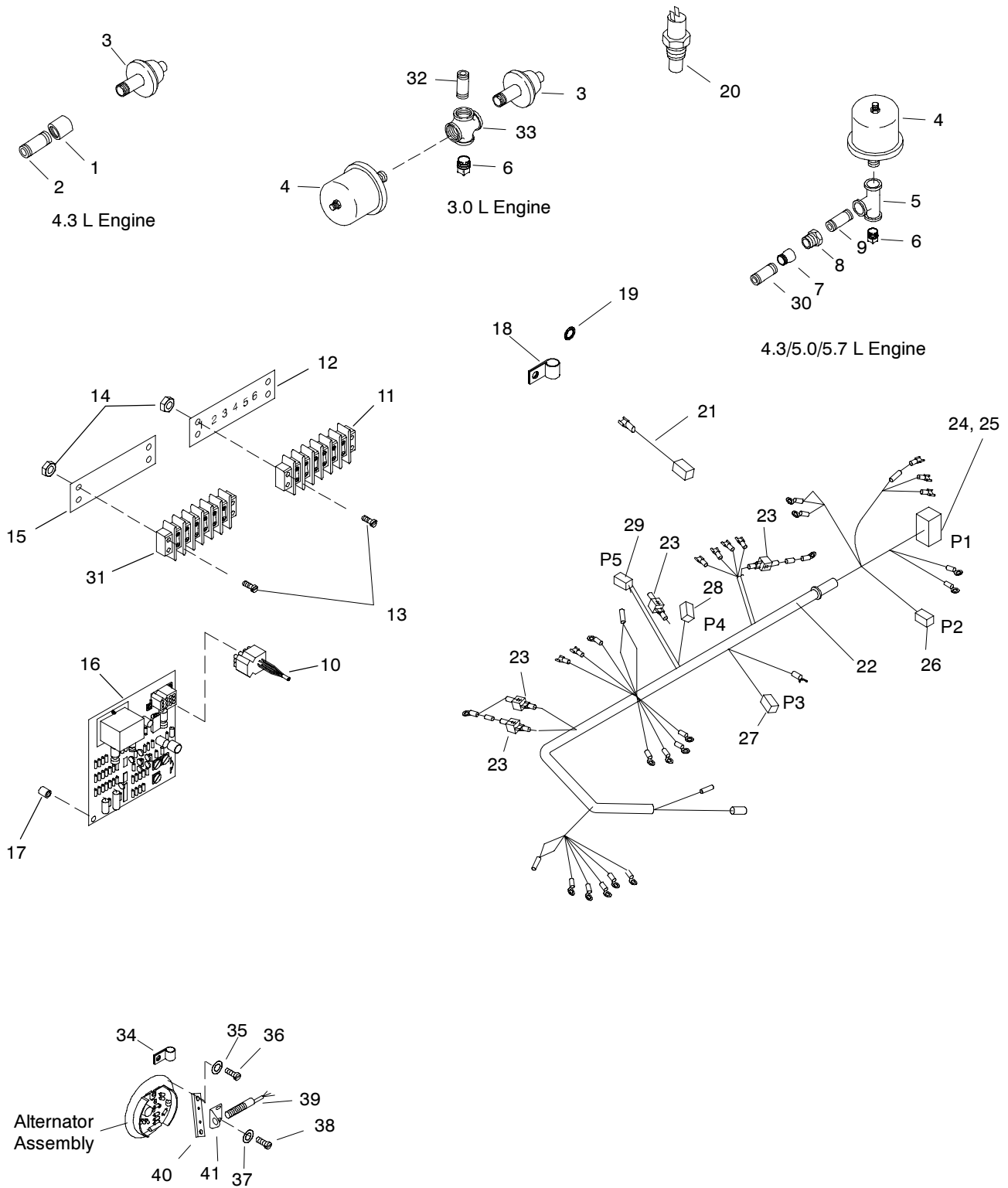
Use this table to identify items 1, 2, 19, 20, 21, 39, 40, 52, and 53..

Module	Item 1, Rotor	Item 2, Stator	Item 39, Alternator	Item 40, Vibro- mount	Items 19-21, Terminal Block Connections	Item 52, Decal	Item 53, Decal
GM17672-MA46	GM32407-1	GM32991-1	GM32995-1	324075	Item 19, Link GM31970 Item 20, Nut M6923-10-80 Item 21, Washer M125A-10-80	GM38474	GM38475
GM17672-MA47	GM32407-1	GM32993-1	GM32995-4	324075		GM38474	GM38475
GM17672-MA48*	GM32407-2	GM32991-1	GM32995-3	336813		GM38474	GM38475
GM17672-MA49*	GM32407-2	GM32993-1	GM32995-5	336813		GM38474	GM38475
GM17672-MA50*	GM32407-4	GM32991-2	GM32995-11	324391		GM38474	GM38475
GM17672-MA51*	GM32407-4	GM32993-2	GM32995-13	324391		GM38474	GM38475
GM17672-MA52*	GM32407-9	GM32991-4	GM32995-26	336024		GM38474	GM38475
GM17672-MA53*	GM32407-9	GM32993-4	GM32995-30	336024		GM38474	GM38475
GM17672-MA54	GM32407-1	GM32994-1	GM32995-6	324075		GM38474	GM38475
GM17672-MA55*	GM32407-4	GM32994-2	GM32995-16	324391		GM38474	GM38475
GM17672-MA56*	GM32407-6	GM32994-3	GM32995-23	336024		GM38474	GM38475
GM17672-MA57*	GM32407-6	GM32991-3	GM32995-17	336024		GM38474	GM38475
GM17672-MA58*	GM32407-6	GM32993-3	GM32995-19	336024		GM38474	GM38475
GM17672-MA91	GM32407-1	GM32991-1	GM39944-1	324075		GM39793	GM39792
GM17672-MA92	GM32407-1	GM32993-1	GM39944-4	324075		GM39793	GM39792
GM17672-MA93*	GM32407-2	GM32991-1	GM39944-3	336813		GM39793	GM39792
GM17672-MA94*	GM32407-2	GM32993-1	GM39944-5	336813		GM39793	GM39792
GM17672-MA95*	GM32407-4	GM32991-2	GM39944-11	324391		GM39793	GM39792
GM17672-MA96*	GM32407-4	GM32993-2	GM39944-13	324391		GM39793	GM39792
GM17672-MA97*	GM32407-9	GM32991-4	GM39944-26	336024	See Load Connection Kit for part numbers	GM39793	GM39792
GM17672-MA98*	GM32407-9	GM32993-4	GM39944-30	336024		GM39793	GM39792
GM17672-MA99*	GM32407-1	GM32994-1	GM39944-6	324075		GM39793	GM39792
GM17672-MA100*	GM32407-4	GM32994-2	GM39944-16	324391		GM39793	GM39792
GM17672-MA101*	GM32407-6	GM32994-3	GM39944-23	336024		GM39793	GM39792
GM17672-MA102*	GM32407-6	GM32991-3	GM39944-17	336024		GM39793	GM39792
GM17672-MA103*	GM32407-6	GM32993-3	GM39944-19	336024		GM39793	GM39792

* Modules use SAE 11 1/2 in. flywheel.

Control and Harness

30-60 kW, Non-550 Controller



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Control and Harness

30-60 kW, Non-550 Controller

Item	Part Number	Description	Quantity			
			Module Number			
			GM22321-MA1	GM22321-MA3	GM39354-MA1	GM39354-MA2
1	X-215-19	Pipe, 1/8 in. NPT x 1.50 in.			1	1
2	289055	Pipe, 1/8 in. NPT x 1.50 in.			1	1
3	328309	Switch assembly, pressure	1	1	1	1
4	343473	Sender, oil pressure	1	1	1	1
5	X-203-10	Tee, pipe, 1/8 x 1/8 x 1/8 NPT			1	1
6	X-75-4	Plug, pipe, 1/8			1	1
6	X-75-1	Plug, pipe, 1/8 in. NPT	1	1		
7	X-225-17	Elbow, pipe, 45 deg. x 1/4 in. NPT			1	1
8	X-202-27	Bushing, reducing, 1/8 x 1/4 in. NPT			1	1
9	X-217-6	Nipple, pipe, 1/8 x 3/4 in.			1	1
10	354118	Harness, wiring, CT harness	1	1	1	1
11	295314	Block, terminal	1	1	1	1
12	299090	Marker, strip	1	1	1	1
13	M7985A-04020-20	Screw, pan head machine	4	4	4	4
14	M934-04-50	Nut, hex, 4 mm	4	4	4	4
15	255080	Marker, strip	1	1	1	1
16	C-255670	PCB assembly, FRII voltage/Hz regulator		1	1	
16	A-354653	PCB assembly, FRII voltage/Hz regulator, 1-phase	1			1
17	360459	Standoff, circuit board	4	4	6	6
18	X-672-3	Clamp, insulating	4	4	2	2
18	X-672-36	Clamp (not shown)				
19	X-22-26	Washer, lock, .521 ID x 1.24 in. OD	1	1	1	1
20	GM10626	Switch, sensor			1	1
20	336923	Switch, sensor				
20	326105	Switch, sensor				
21	GM13701	Connector, weathertight, 2-position				
22	See chart below	Harness, engine	1	1	1	1
23	233959	Diode, 6 A	4	4	4	4
24	292800	Connector, cable	1	1	1	1
25	295145	Connector, 24-position	1	1	1	1
26	GM13271	Connector, plug, 12-pin	1	1		
26	GM20934	Connector, plug, 12-pin			1	1
27	GM13694	Connector, weathertight, 4-position	1	1	1	1
28	343126	Connector, weathertight	1	1		
29	GM13697	Connector, weathertight, 2-position	1	1	1	1
30	X-220-6	Pipe, 1/4 NPT x 1.50 in.			1	1
31	295314	Block, terminal	1	1	1	1
32	X-217-12	Pipe, 1/8 in. NPT x 2 in.	1	1		
33	164037	Cross, pipe, 1/8 in. NPT	1	1		
34	X-672-15	Clamp, insulating	1	1	1	1
35	X-22-9	Washer, lock, .20 ID x .373 in. OD	2	2	2	2
36	X-117-5	Screw, hex head machine	2	2	2	2
37	X-22-24	Washer, lock, .119 ID x .263 in. OD	2	2	2	2
38	X-49-43	Screw, slotted pan head machine	2	2	2	2
39	GM30120	Sensor, speed	1	1	1	1
40	257070	Bracket, sensor mounting	1	1	1	1
41	GM30122	Bracket, sensor mounting	1	1	1	1

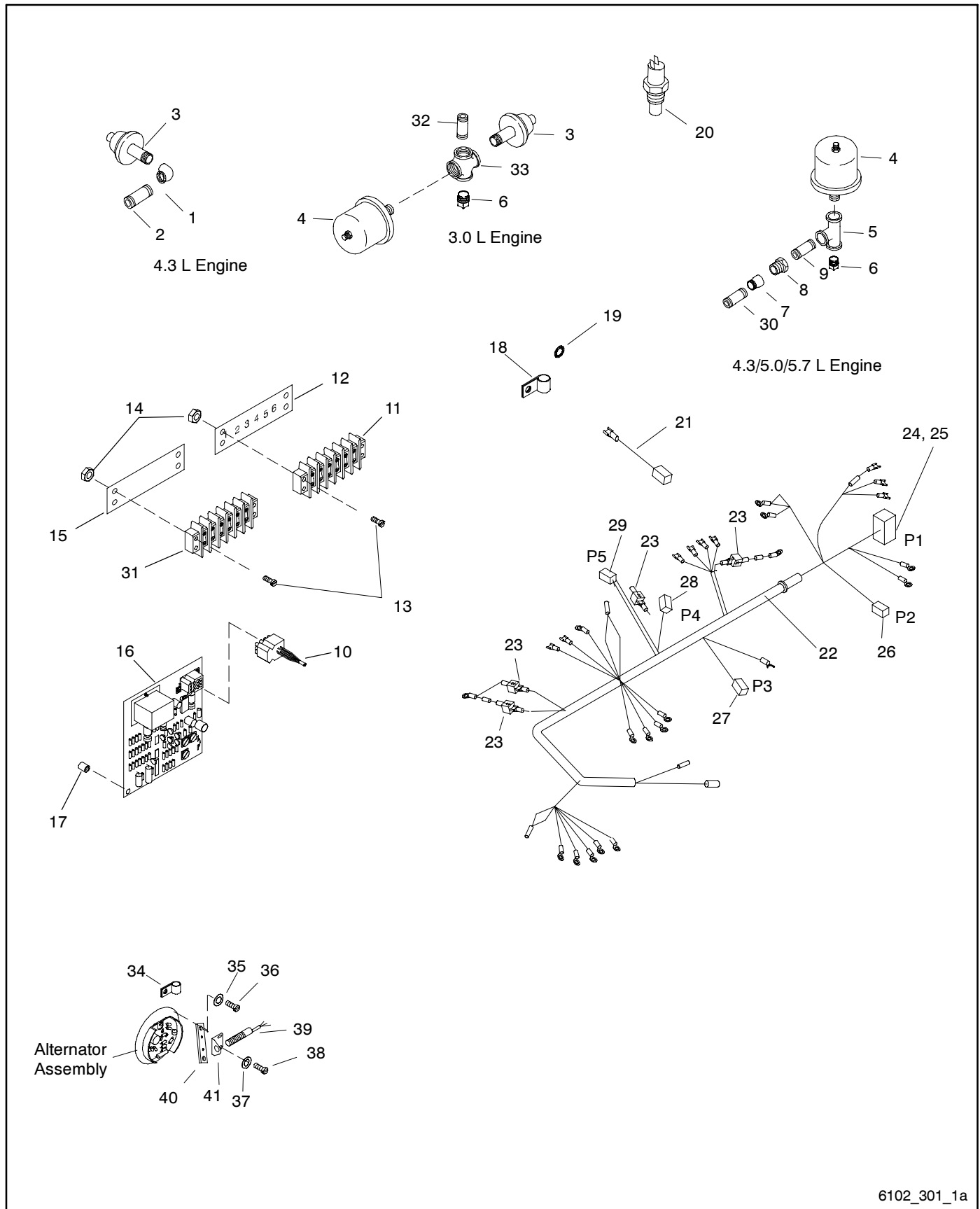
Engine Harness Part Numbers

Use this table to identify item 22, engine harness.

Kit Number	kW	Engine	Controllers	Item 22, Engine Harness
GM22321-MA1	30	3.0 L	Basic and 16-Light, 1-phase	GM22363
GM22321-MA3	30	3.0 L	Basic and 16-Light, 3-phase	GM22363
GM39354-MA1	30-60	4.3 /5.0/5.7L	Basic and 16-Light, 3-phase	GM39351
GM39354-MA2	30-60	4.3 /5.0/5.7L	Basic and 16-Light, 1-phase	GM39351

Control and Harness, continued

30-60 kW, Non-550 Controller, continued



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Control and Harness, continued

30-60 kW, Non-550 Controller, continued

Item	Part Number	Description	Quantity											
			Module Number											
			GM13705-MA1	GM13705-MA2	GM13705-MA3	GM13705-MA4	GM13705-MA5	GM13705-MA6	GM21300-MA1	GM21300-MA2	GM21300-MA4	GM21300-MA5	GM21300-MA7	GM21300-MA8
1	X-215-19	Elbow, pipe, 90 deg. x 1/8 in. NPT							1	1	1	1	1	1
1	X-216-24	Coupling, pipe, 1/8 x 1 3/16 in.	1		1		1							
2	289055	Pipe, 1/8 in. NPT x 1.50 in.							1	1	1	1	1	1
2	X-217-7	Pipe, 1/8 in. NPT x 1 in.	1		1		1							
3	328309	Switch assembly, pressure	1	1	1	1	1	1		1		1	1	1
4	343473	Sender, oil pressure	1	1			1	1	1	1		1	1	1
5	X-203-10	Tee, pipe, 1/8 x 1/8 x 1/8 NPT	1	1			1	1	1	1		1	1	1
6	X-75-4	Plug, pipe, 1/8	1	1			1	1	1	1		1	1	1
7	X-225-17	Elbow, pipe, 45 deg. x 1/4 in. NPT	1	1			1	1	1	1		1	1	1
8	X-202-27	Bushing, reducing, 1/8 x 1/4 in. NPT	1	1			1	1	1	1		1	1	1
9	X-217-6	Nipple, pipe, 1/8 x 3/4 in.	1	1			1	1	1	1		1	1	1
10	354118	Harness, wiring, CT harness	1	1	1	1	1	1	1	1	1	1	1	1
11	295314	Block, terminal	1	1	1	1	1	1	1	1	1	1	1	1
12	299090	Marker, strip	1	1	1	1	1	1	1	1	1	1	1	1
13	M7985A-04020-20	Screw, pan head machine	4	4	4	4	4	4	4	4	4	4	4	4
14	M934-04-50	Nut, hex, 4 mm	4	4	4	4	4	4	4	4	4	4	4	4
15	255080	Marker, strip	1	1	1	1	1	1	1	1	1	1	1	1
16	C-255670	PCB assembly, FRII voltage/Hz regulator	1	1	1	1			1	1	1			
16	A-354653	PCB assembly, FRII voltage/Hz regulator, 1-phase					1	1				1	1	1
17	360459	Standoff, circuit board	4	4	4	4	4	4	6	4	4	4	4	4
18	X-672-3	Clamp, insulating	2	2	2	2	2	2	2	2	2	2	2	2
19	X-22-26	Washer, lock, .521 ID x 1.24 in. OD	1	1	1	1	1	1	1	1	1	1	1	1
20	GM10626	Switch, sensor (HCT/CTS)	1	1			1	1	1	1		1		1
20	336923	Switch, sensor			1	1					1		1	
21	GM13701	Connector, weathertight, 2-position	1	1	1	1	1	1	1	1	1	1	1	1
22	See chart below	Harness, engine	1	1	1	1	1	1	1	1	1	1	1	1
23	233959	Diode, 6 A	4	4	4	4	4	4	4	4	4	4	4	4
24	292800	Connector, cable	1	1	1	1	1	1	1	1	1	1	1	1
25	295145	Connector, 24-position	1	1	1	1	1	1	1	1	1	1	1	1
25	GM13271	Connector, plug, 12-pin	1	1	1	1	1	1						
26	GM20934	Connector, plug, 12-pin							1	1	1	1	1	1
27	GM13694	Connector, weathertight, 4-position	1	1	1	1	1	1						
28	343126	Connector, weathertight	1	1	1	1	1	1						
29	GM13697	Connector, weathertight, 2-position	1	1	1	1	1	1	1	1	1	1	1	1
30	X-220-6	Pipe, 1/4 NPT x 1.50 in.	1	1			1	1	1	1		1	1	1
31	295314	Block, terminal	1	1	1	1	1	1	1	1	1	1	1	1
32	X-217-12	Pipe, 1/8 in. NPT x 2 in.	1	1	1	1	1	1						
34	X-672-15	Clamp, insulating							1					1
35	X-22-9	Washer, lock, .20 ID x .373 in. OD							2					2
36	X-117-5	Screw, hex head machine							2					2
37	X-22-24	Washer, lock, .119 ID x .263 in. OD							2					2
38	X-49-43	Screw, slotted pan head machine							2					2
39	GM30120	Sensor, speed							1					1
40	257070	Bracket, sensor mounting							1					1
41	GM30122	Bracket, sensor mounting							1					1

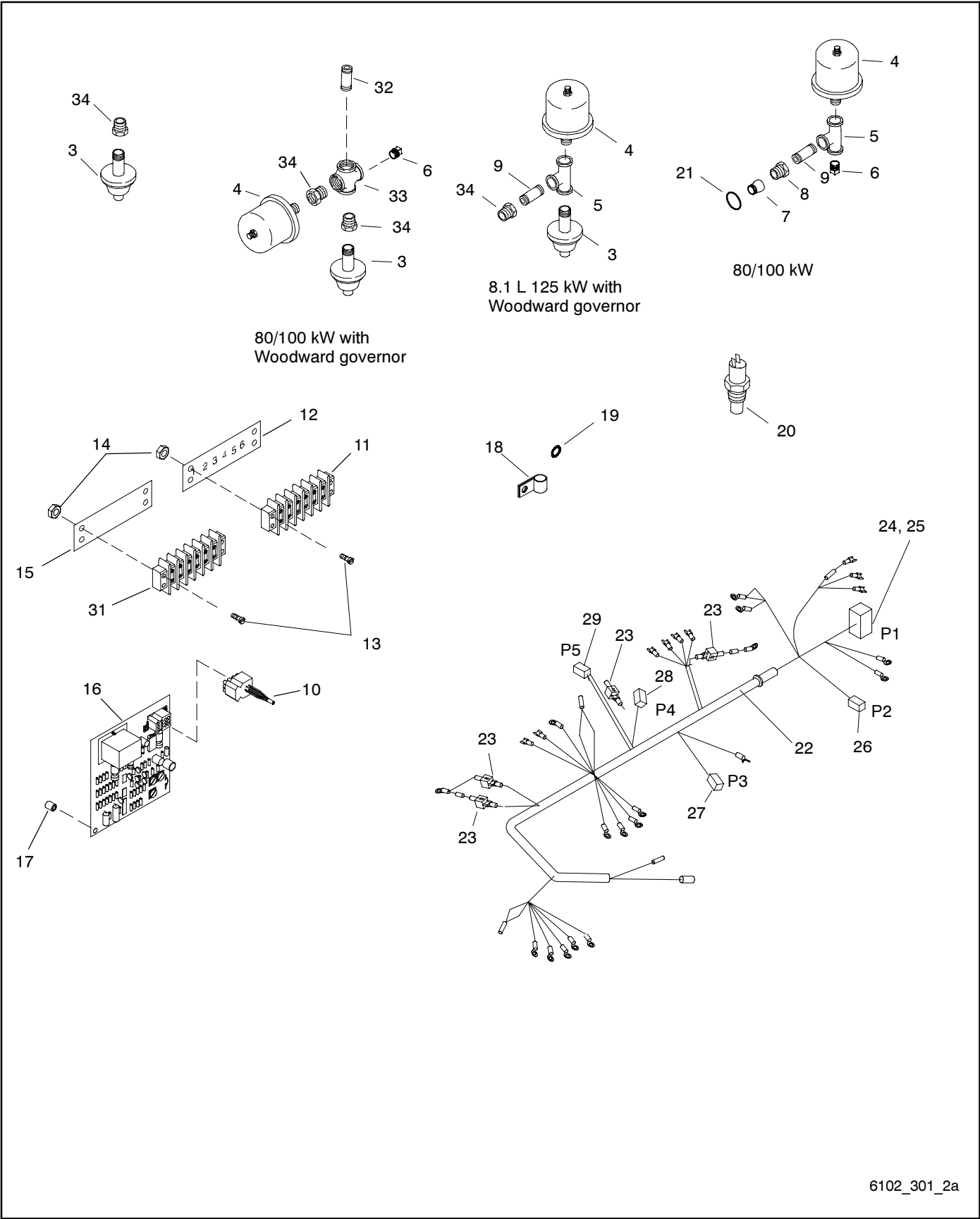
Engine Harness Part Numbers

Use this table to identify item 22, engine harness.

Kit Number	kW	Engine	Controllers	Item 22, Engine Harness
GM13705-MA1	30-45	4.3 L	Basic and 16-Light, 3-phase	GM13693
GM13705-MA2	50/60	5.7 L	Basic and 16-Light, 3-phase	GM13693
GM13705-MA3	30-45	4.3 L	Basic without meters/gauges and 16-Light, 3-phase	GM13693
GM13705-MA4	50/60	5.7 L	Basic without meters/gauges and 16-Light, 3-phase	GM13693
GM13705-MA5	30-45	4.3 L	Basic and 16-Light, 1-phase	GM13693
GM21300-MA1	35/45	4.3 L	Basic and 16-Light, 3-phase	GM21214
GM21300-MA2	50/60	5.0 L	Basic and 16-Light, 3-phase	GM21214
GM21300-MA4	50/60	5.0 L	Basic without meters/gauges and 16-Light, 3-phase	GM21214
GM21300-MA5	50/60	5.0 L	Basic and 16-Light, 1-phase	GM21214
GM21300-MA7	30-45	4.3 L	Basic without meters/gauges and 16-Light, 1-phase	GM21214
GM21300-MA8	30-45	4.3 L	Basic and 16-Light, 1-phase	GM21214

Control and Harness, continued

80-125 kW, Non-550 Controller



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Control and Harness, continued

80-125 kW, Non-550 Controller

Item	Part Number	Description	Quantity									
			Module Number									
			GM13938-MA1	GM13938-MA2	GM13938-MA3	GM13938-MA4	GM20571-MA1	GM20571-MA2	GM20571-MA3	GM20571-MA4	GM20571-MA5	GM20571-MA6
3	328309	Switch assembly, pressure	1	1	1	1	1		1	1		1
4	343473	Sender, oil pressure	1		1		1		1	1		1
5	X-203-10	Tee, pipe, 1/8 x 1/8 x 1/8 NPT	1		1		1			1		
6	X-75-4	Plug, pipe, 1/8	1		1				1			
6	X-75-28	Plug, pipe, 1/2 in. NPT							1			1
7	225127	Adapter, bushing	1		1							
8	D-228	Bushing, reducing, 1/8 x 3/8 in. NPT	1		1							
9	289055	Pipe, 1/8 x 1.5 in.	1		1		1			1		
10	354118	Harness, wiring, CT harness	1	1	1	1	1	1	1	1	1	1
11	295314	Block, terminal	1	1	1	1	1	1	1	1	1	1
12	299090	Marker, strip	1	1	1	1	1	1	1	1	1	1
13	M7985A-04020-20	Screw, pan head machine	4	4	4	4	4	4	4	4	4	4
14	M934-04-50	Nut, hex, 4 mm	4	4	4	4	4	4	4	4	4	4
15	255080	Marker, strip	1	1	1	1						
16	C-255670	PCB assembly, FRII voltage/Hz regulator	1	1			1	1	1			
16	A-354653	PCB assembly, FRII voltage/Hz regulator, 1-phase			1	1				1	1	1
17	360459	Standoff, circuit board	4	4	4	4	4	4	4	4	4	4
18	X-672-3	Clamp, insulating, 0.94 in. dia.	1	1	1	1	1	1	1	1	1	1
18	X-672-36	Clamp, 0.38 in. dia.	1	1	1	1	1	1	1	1	1	1
19	X-22-26	Washer, lock, .521 ID x 1.24 in. OD	2	2	2	2	2	2	2	2	2	2
20	GM10626	Switch, sensor	1		1		1		1	1		1
20	336923	Switch, sensor		1		1						
21	GM16112	O-ring, ISO 6149, 13.3 mm ID	1		1							
22	See chart below	Harness, engine	1	1	1	1	1	1	1	1	1	1
23	233959	Diode, 6 A	4	4	4	4	4	4	4	4	4	4
24	292800	Connector, cable	1	1	1	1	1	1	1	1	1	1
25	295145	Connector, 24-position	1	1	1	1	1	1	1	1	1	1
26	GM13271	Connector, plug, 12-pin	1	1	1	1						
26	GM20934	Connector, plug, 12-pin					1	1	1	1	1	1
28	343126	Connector, weathertight	1	1	1	1						
29	GM13697	Connector, weathertight, 2-position	1	1	1	1	1	1	1	1	1	1
31	295314	Block, terminal	1	1	1	1	1	1	1	1	1	1
32	X-209-26	Pipe, 1/2 in NPT x 12.00 in.							1			1
33	X-207-7	Cross, pipe, 1/2 in. NPT							1			1
34	X-202-29	Bushing, reducing, 1/8 x 1/2 in. NPT	1	1	1	1	1		2	1		2

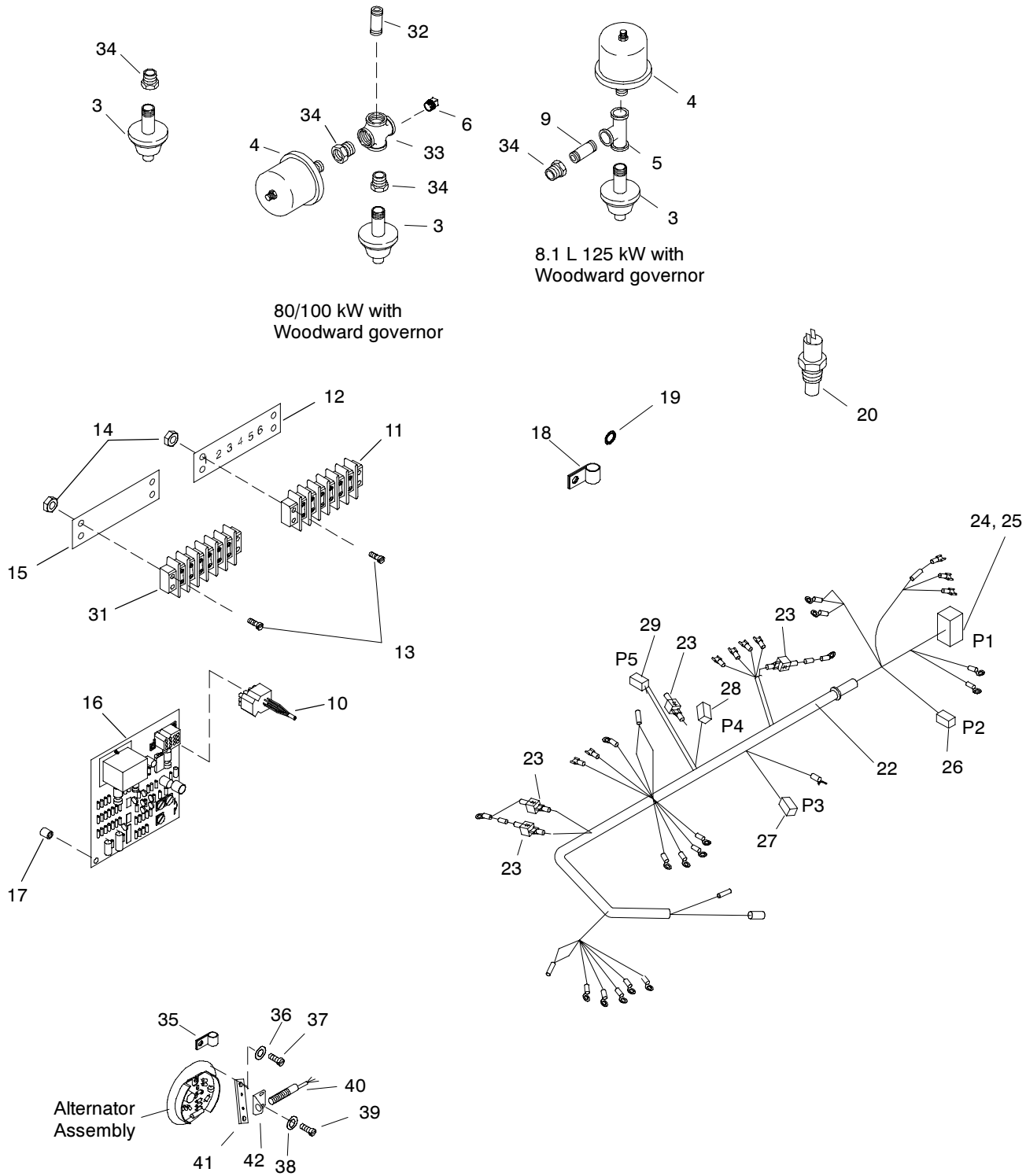
Engine Harness Part Numbers

Use this table to identify item 22, engine harness.

Kit Number	kW	Engine	Controllers	Item 22, Engine Harness
GM13938-MA1	80/100	8.1 L	Basic and 16-Light, 3-phase	GM14101
GM13938-MA2	80/100	8.1 L	Basic without meters/gauges and 16-Light, 3-phase	GM14101
GM13938-MA3	80/100	8.1 L	Basic and 16-Light, 1-phase	GM14101
GM13938-MA4	80/100	8.1 L	Basic without meters/gauges and 16-Light, 1-phase	GM14101
GM20571-MA2	80/100	8.1 L	Basic without meters/gauges and 16-Light, 3-phase	GM20720
GM20571-MA3	80/100	8.1 L	Basic and 16-Light, 3-phase	GM20720
GM20571-MA5	80/100	8.1 L	Basic without meters/gauges and 16-Light, 1-phase	GM20720
GM20571-MA6	80/100	8.1 L	Basic and 16-Light, 1-phase	GM20720
GM20571-MA1	125	8.1 L	Basic and 16-Light, 3-phase	GM23569
GM20571-MA4	125	8.1 L	Basic and 16-Light, 1-phase	GM23569

Control and Harness, continued

80-125 kW, Non-550 Controller, continued



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Control and Harness, continued

80-125 kW, Non-550 Controller, continued

Item	Part Number	Description	Quantity				
			Module Number				
			GM25015-MA1	GM25015-MA3	GM25015-MA4	GM25015-MA6	GM25015-MA7
3	328309	Switch assembly, pressure	1	1	1	1	1
4	343473	Sender, oil pressure	1	1	1	1	1
5	X-203-10	Tee, pipe, 1/8 x 1/8 x 1/8 NPT	1		1		
6	X-75-28	Plug, pipe, 1/2 in. NPT	1	1	1	1	1
9	289055	Pipe, 1/8 x 1.5 in.	1		1		
10	354118	Harness, wiring, CT harness	1	1	1	1	1
11	295314	Block, terminal	1	1	1	1	1
12	299090	Marker, strip	1	1	1	1	1
13	M7985A-04020-20	Screw, pan head machine	4	4	4	4	4
14	M934-04-50	Nut, hex, 4 mm	1	1	1	1	1
15	255080	Marker, strip	1	1	1	1	1
16	C-255670	PCB assembly, FRII voltage/Hz regulator	1	1			
16	A-354653	PCB assembly, FRII voltage/Hz regulator, 1-phase			1	1	1
17	360459	Standoff, circuit board	4	4	4	4	4
18	X-672-3	Clamp, insulating, 0.94 in. dia.	1	1	1	1	1
18	X-672-36	Clamp, 0.38 in. dia.	1	1	1	1	1
18	X-672-30	Clamp, insulated, 1.06 in.	1	1	1	1	1
19	X-22-26	Washer, lock, .521 ID x 1.24 in. OD	2	2	2	2	2
20	GM10626	Switch, sensor (CTS)					1
20	GM31870	Harness, auxiliary (not shown)					1
22	See chart below	Harness, engine	1	1	1	1	1
23	233959	Diode, 6 A	4	4	4	4	4
24	292800	Connector, cable	1	1	1	1	1
25	295145	Connector, 24-position	1	1	1	1	1
26	GM20934	Connector, plug, 12-pin	1	1	1	1	1
29	GM13697	Connector, weathertight, 2-position	1	1	1	1	1
31	295314	Block, terminal	1	1	1	1	1
32	X-209-26	Pipe, 1/2 in NPT x 12.00 in.		1		1	1
33	X-207-7	Cross, pipe, 1/2 in. NPT		1		1	1
34	X-202-29	Bushing, reducing, 1/8 x 1/2 in. NPT	1	2	1	2	2
35	X-672-15	Clamp, insulating	1	1	1	1	1
36	X-22-9	Washer, lock, .20 ID x .373 in. OD	2	2	2	2	2
37	X-117-5	Screw, hex head machine	2	2	2	2	2
38	X-22-24	Washer, lock, .119 ID x .263 in. OD	2	2	2	2	2
39	X-49-43	Screw, slotted pan head machine	2	2	2	2	2
40	GM30120	Sensor, speed	1	1	1	1	1
41	257070	Bracket, sensor mounting	1	1	1	1	1
42	GM30122	Bracket, sensor mounting	1	1	1	1	1

Engine Harness Part Numbers

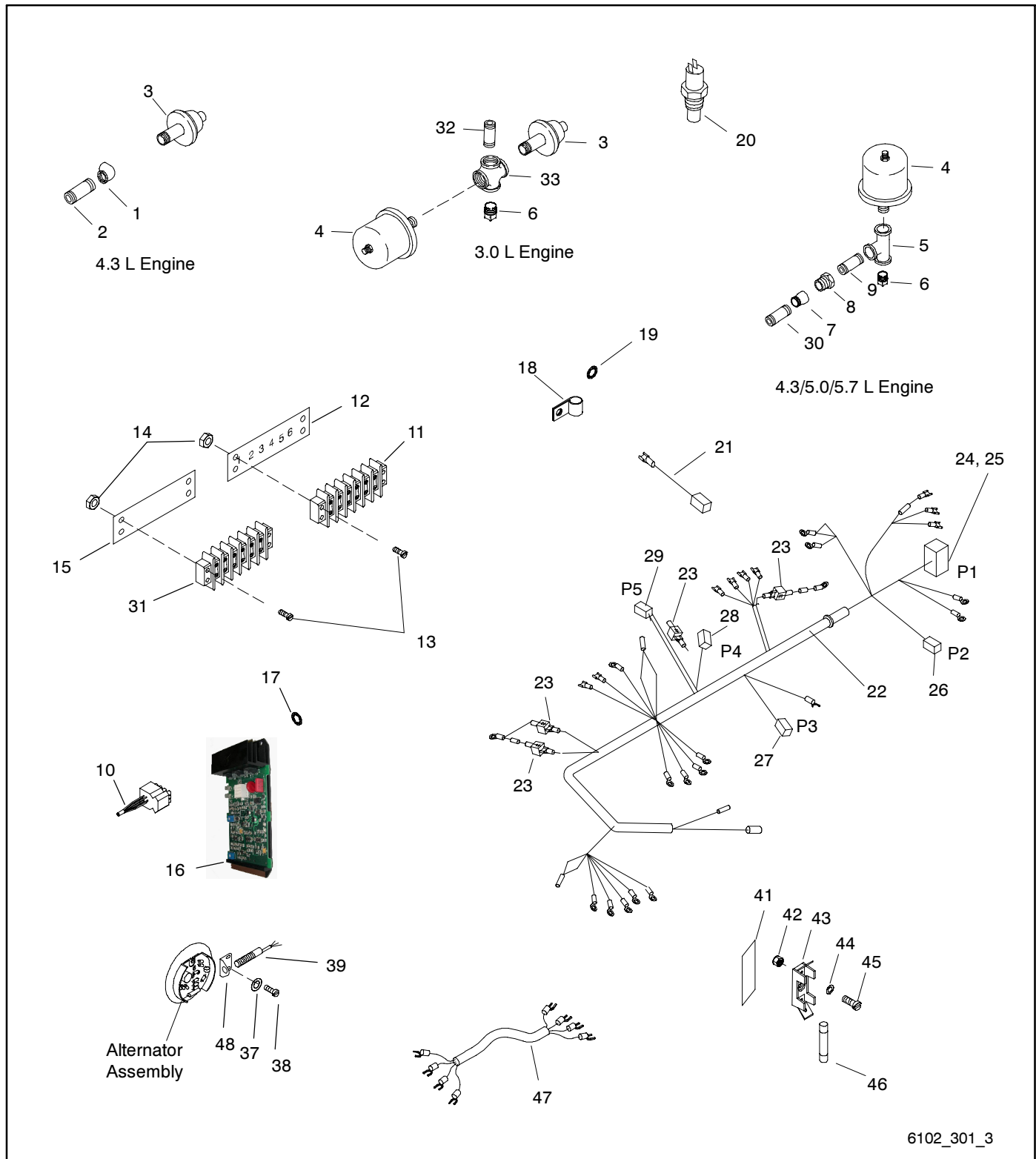
Use this table to identify item 22, engine harness.

Kit Number	kW	Engine	Controllers	Item 22, Engine Harness
GM25015-MA1	125	8.1 L	Basic and 16-Light, 3-phase	GM24999
GM25015-MA2	80/100	8.1 L	Basic and 16-Light, 3-phase	GM24999
GM25015-MA3	80/100	8.1 L	Basic and 16-Light, 3-phase	GM24999
GM25015-MA4	125	8.1 L	Basic and 16-Light, 1-phase	GM24999
GM25015-MA6	80/100	8.1 L	Basic and 16-Light, 1-phase	GM24999
GM25015-MA7	100	8.1 L	Basic and 16-Light, 1-phase	GM24999

Control and Harness, continued

30-60 kW, Non-550 Controller

Wound Field Alternators



6102_301_3

Control and Harness, continued

30-60 kW, Non-550 Controller

Wound Field Alternators

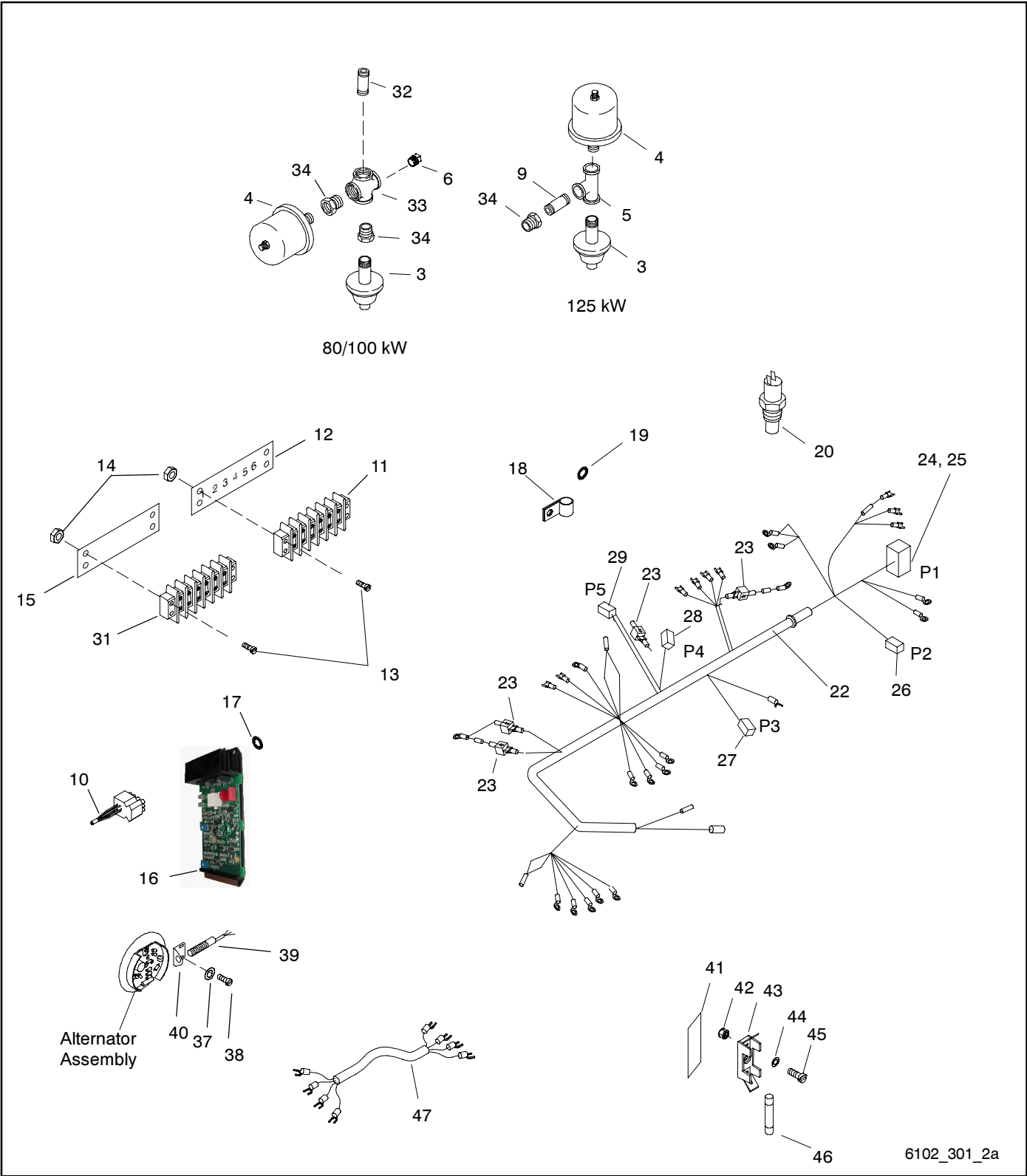
Item	Part Number	Description	Quantity				
			Module Number				
			GM22321-MA5	GM21300-MA9	GM21300-MA10	GM39354-MA3	GM39354-MA4
1	X-215-19	Elbow, pipe, 90 deg. x 1/8 in.		1	1	1	1
2	289055	Pipe, 1/8 x 1.50 in.		1	1	1	1
3	328309	Switch assembly, pressure	1	1	1	1	1
4	343473	Sender, oil pressure	1	1	1	1	1
5	X-203-10	Tee, pipe, 1/8 x 1/8 x 1/8 NPT		1	1	1	1
6	X-75-4	Plug, pipe, 1/8		1	1	1	1
6	X-75-1	Plug, pipe, 1/8 in. NPT	1				
7	X-225-17	Elbow, pipe, 45 deg. x 1/4 in. NPT		1	1	1	1
8	X-202-27	Bushing, reducing, 1/8 x 1/4 in. NPT		1	1	1	1
9	X-217-6	Nipple, pipe, 1/8 x 3/4 in.		1	1	1	1
10	GM39873	Harness, regulator	1	1	1	1	1
11	295314	Block, terminal	1	1	1	1	1
12	299090	Marker, strip	1	1	1	1	1
13	M7985A-04020-20	Screw, pan head machine	4	4	4	4	4
14	M934-04-50	Nut, hex, 4 mm	4	4	4	4	4
15	255080	Marker, strip	1	1	1	1	1
16	GM31850	PCB assembly, wound field voltage regulator	1	1	1	1	1
17	#	Hardware, M5	4	4	4	4	4
18	X-672-3	Clamp, insulating	2	2	2	2	2
19	X-22-26	Washer, lock, .521 ID x 1.24 in. OD	1	1	1	1	1
20	GM10626	Switch, sensor (HCT/CTS)		1	1	1	1
21	GM13701	Connector, weathertight, 2-position		1	1	1	1
22	GM22363	Harness, engine	1				
22	GM21214	Harness, engine		1	1		
22	GM39351	Harness, engine				1	1
23	233959	Diode, 6 A	4	4	4	4	4
24	292800	Connector, cable	1	1	1	1	1
25	295145	Connector, 24-position	1	1	1	1	1
26	GM13271	Connector, plug, 12-pin	1				
26	GM20934	Connector, plug, 12-pin		1	1	1	1
27	GM13694	Connector, weathertight, 4-position	1				
28	343126	Connector, weathertight	1				
29	GM13697	Connector, weathertight, 2-position		1	1	1	1
30	X-220-6	Pipe, 1/4 NPT x 1.50 in.		1	1	1	1
31	295314	Block, terminal	1	1	1	1	1
32	X-217-12	Pipe, 1/8 in. NPT x 2 in.	1				
33	164037	Cross, pipe, 1/8 in. NPT	1				
37	X-22-24	Washer, lock, .119 ID x .263 in. OD	2	2	2	2	2
38	M7985A-03010-20	Screw, pan head M3 x 10	2	2	2	2	2
39	GM30120	Sensor, speed	1	1	1	1	1
41	GM39798	Strip, marker	1	1	1	1	1
42	M934-03-50	Nut, hex 3 mm	1	1	1	1	1
43	336634	Fuse holder	1	1	1	1	1
44	X-22-6	Washer, lock, .146 ID x .285 in. OD	1	1	1	1	1
45	M7985A-03010-20	Screw, pan head M3 x 10	1	1	1	1	1
46	358337	Fuse, 10 A, 250 V	1	1	1	1	1
47	GM35357	Harness, wiring (AC)			1		
48	GM30122	Bracket, sensor mounting	1	1	1	1	1

Common hardware. Procure locally.

Control and Harness, continued

80-125 kW, Non-550 Controller

Wound Field Alternators



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Control and Harness, continued

80-125 kW, Non-550 Controller, continued

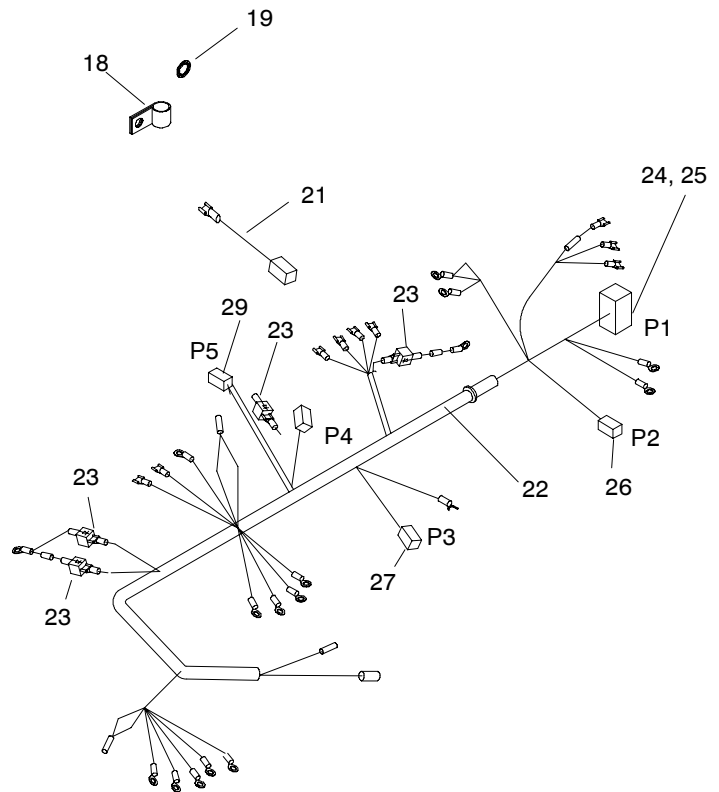
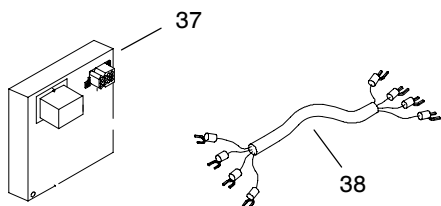
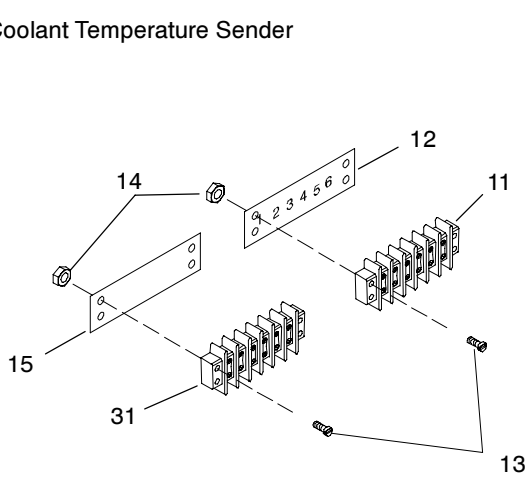
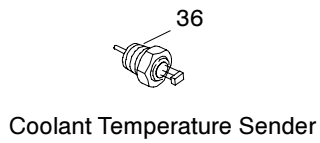
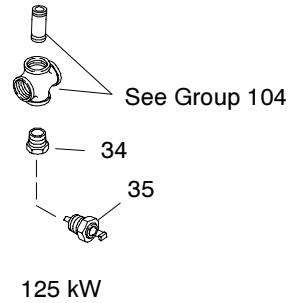
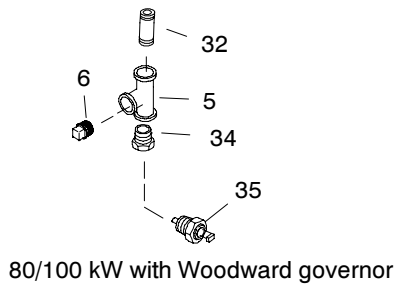
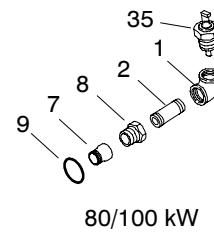
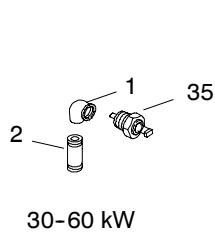
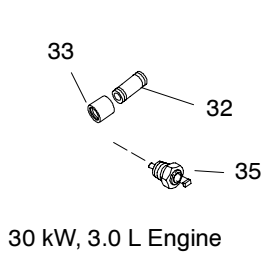
Wound Field Alternators

Item	Part Number	Description	Quantity	
			Module Number	
			GM25015-MA10	GM25015-MA11
3	328309	Switch assembly, pressure	1	1
4	343473	Sender, oil pressure	1	1
5	X-203-10	Tee, pipe, 1/8 x 1/8 x 1/8 NPT	1	
6	X-75-28	Plug, pipe, 1/2 in. NPT	1	1
9	289055	Pipe, 1/8 x 1.5 in.	1	
10	354118	Harness, wiring, CT harness	1	1
11	295314	Block, terminal	1	1
12	299090	Marker, strip	1	1
13	M7985A-04020-20	Screw, pan head machine	4	4
14	M934-04-50	Nut, hex, 4 mm	1	1
15	255080	Marker, strip	1	1
16	GM40179	PCB assembly, wound field voltage regulator	1	1
17	#	Hardware, M5	4	4
18	X-672-3	Clamp, insulating, 0.94 in. dia.	1	1
18	X-672-36	Clamp, 0.38 in. dia.	1	1
18	X-672-30	Clamp, insulated, 1.06 in.	1	1
19	X-22-26	Washer, lock, .521 ID x 1.24 in. OD	2	2
22	GM35357	Harness, engine	1	1
23	233959	Diode, 6 A	4	4
24	292800	Connector, cable	1	1
25	295145	Connector, 24-position	1	1
26	GM20934	Connector, plug, 12-pin	1	1
29	GM13697	Connector, weathertight, 2-position	1	1
31	295314	Block, terminal	1	1
32	X-209-26	Pipe, 1/2 in NPT x 12.00 in.		1
33	X-207-7	Cross, pipe, 1/2 in. NPT		1
34	X-202-29	Bushing, reducing, 1/8 x 1/2 in. NPT	1	2
37	X-22-24	Washer, lock, .119 ID x .263 in. OD	2	2
38	M7985A-03010-20	Screw, pan head M3 x 10	2	2
39	GM30120	Sensor, speed	1	1
40	GM30122	Bracket, sensor mounting	1	1
41	GM39798	Strip, marker	1	1
42	M934-03-50	Nut, hex 3 mm	1	1
43	336634	Fuse holder	1	1
44	X-22-6	Washer, lock, .146 ID x .285 in. OD	1	1
45	M7985A-03010-20	Screw, pan head, M3 x 10	1	1
46	358337	Fuse, 10 A, 250 V	1	1
47	GM35357	Harness, wiring (AC)	1	1

Common hardware. Procure locally.

Control and Harness, continued

30-125 kW, Digital 550 Controller



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Control and Harness, continued

30-125 kW, Digital 550 Controller

Item	Part Number	Description	Quantity								
			Module Number								
			GM2322-MA1	GM2322-MA2	GM34430-MA1	GM34430-MA2	GM34430-MA3	GM34430-MA4	GM39355-MA1	GM39355-MA2	GM39355-MA3
1	X-215-19	Elbow, pipe, 90 deg. x 1/8 in. NPT							1	1	1
2	289055	Pipe, 1/8 x 1.5 in.							1	1	1
5	X-203-13	Tee, pipe, 1/2 x 1/2 x 1/2 NPT				1		1			
6	X-75-28	Plug, pipe, 1/2 in. NPT				1		1			
7	225127	Adapter, bushing									
8	D-228	Bushing, reducing, 1/8 x 3/8 in. NPT									
9	GM16112	O-ring, ISO 6149, 13.3 mm ID									
11	295314	Block, terminal	1	1	1	1	1	1	1	1	1
12	299090	Marker, strip	1	1	1	1	1	1	1	1	1
13	M7985A-04020-20	Screw, pan head machine	4	4	4	4	4	4	4	4	4
14	M934-04-50	Nut, hex, 4 mm	4	4	4	4	4	4	4	4	4
15	254127	Marker, strip	1	1	1	1	1	1	1	1	1
18	X-672-3	Clamp, insulating , 0.94 in. dia.	4	4	1	1	1	1	2	2	2
18	X-672-36	Clamp, 0.38 in. dia.			1	1	1	1			
18	X-672-30	Clamp, insulated, 1.06 in.			1	1	1	1			
19	X-22-26	Washer, lock, .521 ID x 1.24 in. OD	1	1	2	2	2	2	1	1	1
21	GM13701	Connector, weathertight, 2-position							1	1	1
22	See chart below	Harness, engine	1	1					1	1	1
23	233959	Diode, 6 A	4	4					4	4	4
24	292800	Connector, cable	1	1					1	1	1
25	295145	Connector, 24-position	1	1					1	1	1
26	GM20934	Connector, plug, 12-pin	1	1					1	1	1
26	GM13271	Connector, plug, 12-pin									
27	GM15493	Connector, weathertight, 3-position	2	2					2	2	2
29	GM13697	Connector, weathertight, 2-position	1	1					1	1	1
31	X-405-2	Block, terminal	1	1	1	1	1	1	1	1	1
32	X-217-7	Pipe, 1/8 in. NPT x 1 in.	1	1							
32	X-209-26	Pipe, 1/2 in NPT x 12.00 in.				1		1			
33	X-216-24	Coupling, pipe, 1/8 in. NPT	1	1							
34	X-202-29	Bushing, reducing, 1/8 x 1/2 in. NPT			1	1	1	1			
35	GM16788	Sensor, pressure, 1/8-27 NPT	1	1					1	1	1
35	GM33945	Sensor, pressure			1	1	1	1			
36	GM16787	Sensor, temperature, 1/2-14 NPT							1	1	1
37	GM11718	PCB assy., excitation interface		1			1	1		1	1
38	GM35357	Harness, wiring (AC)					1	1			1

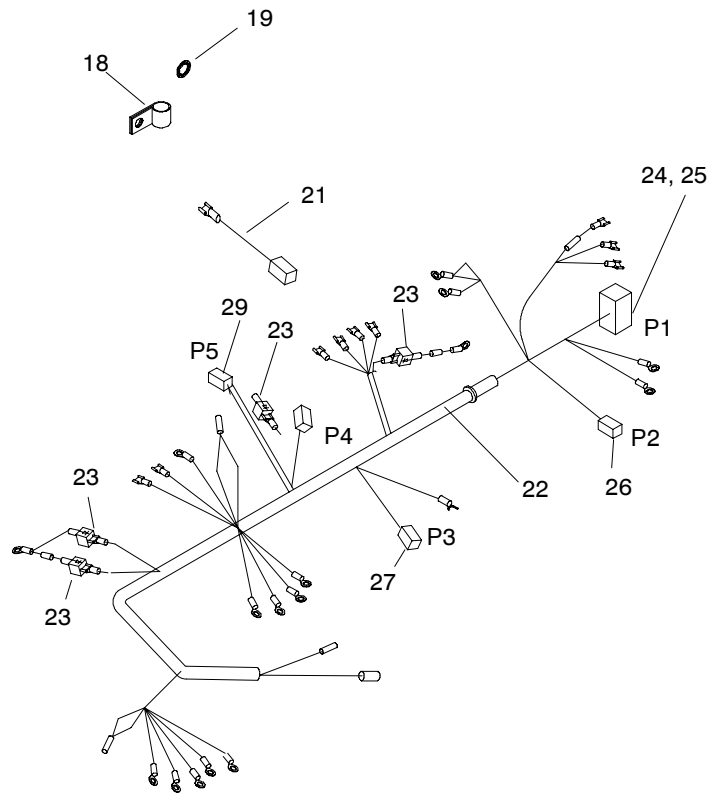
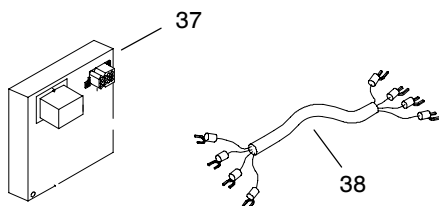
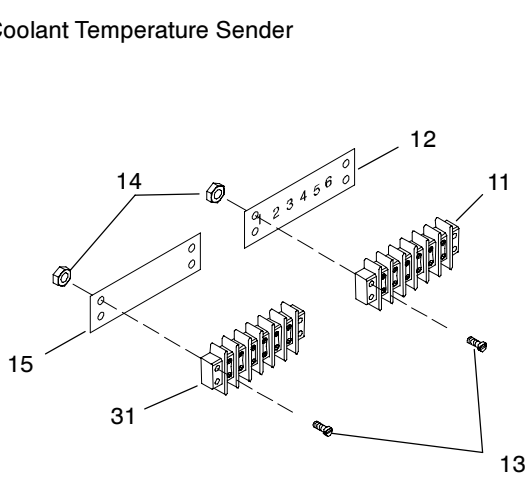
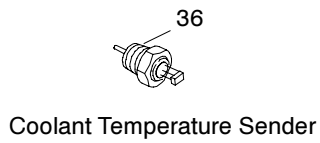
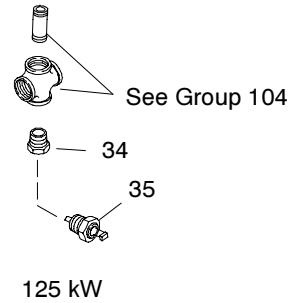
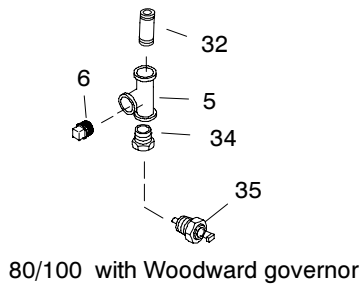
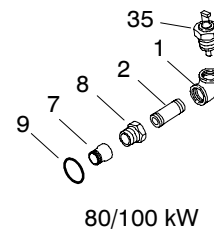
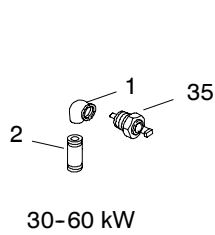
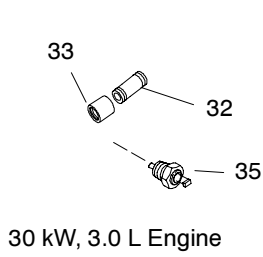
Engine Harness Part Numbers

Use this table to identify item 22, engine harness.

Kit Number	kW	Engine	Controllers	Item 22, Engine Harness
GM22322-MA1	30	3.0 L	Digital 550	GM22364
GM22322-MA2	30	3.0 L	Digital 550	GM35202
GM34430-MA1	125 w/SAE J1939	8.1 L	Digital 550	GM34427
GM34430-MA2	80/100 w/SAE J1939	8.1 L	Digital 550	GM34427
GM34430-MA3	125 w/SAE J1939	8.1 L	Digital 550	GM35203
GM34430-MA4	80/100 w/SAE J1939	8.1 L	Digital 550	GM35203
GM39355-MA1	30-60	4.3/5.0/5.7 L	Digital 550	GM39352
GM39355-MA2	30-60	4.3/5.0/5.7 L	Digital 550	GM39353
GM39355-MA3	30-60	4.3/5.0/5.7 L	Digital 550	GM39353

Control and Harness, continued

30-125 kW, Digital 550, continued



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Control and Harness, continued

30-125 kW, Digital 550, continued

Item	Part Number	Description	Quantity								
			Module Number								
			GM17654-MA1	GM17655-MA1	GM20706-MA1	GM20706-MA2	GM21301-MA1	GM21301-MA2	GM21301-MA3	GM25016-MA1	GM25016-MA2
1	X-215-19	Elbow, pipe, 90 deg. x 1/8 in. NPT	1	1			1	1	1		
2	289055	Pipe, 1/8 x 1.5 in.	1	1			1	1	1		
5	X-203-13	Tee, pipe, 1/2 x 1/2 x 1/2 NPT				1					1
6	X-75-28	Plug, pipe, 1/2 in. NPT				1					1
7	225127	Adapter, bushing		1							
8	D-228	Bushing, reducing, 1/8 x 3/8 in. NPT		1							
9	GM16112	O-ring, ISO 6149, 13.3 mm ID		1							
11	295314	Block, terminal	1	1	1	1	1	1	1	1	1
12	299090	Marker, strip	1	1	1	1	1	1	1	1	1
13	M7985A-04020-20	Screw, pan head machine	4	4	4	4	4	4	4	4	4
14	M934-04-50	Nut, hex, 4 mm	4	4	4	4	4	4	4	4	4
15	254127	Marker, strip	1	1	1	1	1	1	1	1	1
18	X-672-3	Clamp, insulating , 0.94 in. dia.	2	1	1	1	2	2	2	1	1
18	X-672-36	Clamp, 0.38 in. dia.		1	1	1				1	1
18	X-672-30	Clamp, insulated, 1.06 in.									
19	X-22-26	Washer, lock, .521 ID x 1.24 in. OD	1	2	2	2	1	1	1	2	2
21	GM13701	Connector, weathertight, 2-position	1				1	1	1		
22	See chart below	Harness, engine	1	1	1	1	1	1	1	1	1
23	233959	Diode, 6 A	4	4	4	4	4	4	4	4	4
24	292800	Connector, cable	1	1	1	1	1	1	1	1	1
25	295145	Connector, 24-position	1	1	1	1	1	1	1	1	1
26	GM20934	Connector, plug, 12-pin			1	1	1	1	1	1	1
26	GM13271	Connector, plug, 12-pin	1	1							
27	GM15493	Connector, weathertight, 3-position	2	2	2	2	2	2	2	2	2
29	GM13697	Connector, weathertight, 2-position	1	1	1	1	1	1	1	1	1
31	X-405-2	Block, terminal	1	1	1	1	1	1	1	1	1
32	X-217-7	Pipe, 1/8 in. NPT x 1 in.									
32	X-209-26	Pipe, 1/2 in NPT x 12.00 in.				1					1
33	X-216-24	Coupling, pipe, 1/8 in. NPT									
34	X-202-29	Bushing, reducing, 1/8 x 1/2 in. NPT			1	1				1	1
35	GM16788	Sensor, pressure, 1/8-27 NPT	1	1	1	1	1	1	1	1	1
35	GM33945	Sensor, pressure									
36	GM16787	Sensor, temperature, 1/2-14 NPT	1	1	1	1	1	1	1	1	1
37	GM11718	PCB assy., excitation interface						1	1		
38	GM35357	Harness, wiring (AC)							1		

Engine Harness Part Numbers

Use this table to identify item 22, engine harness.

Kit Number	kW	Engine	Controllers	Item 22, Engine Harness
GM17654-MA1	30-60	4.3/5.7 L	Digital 550	GM16876
GM17655-MA1	80/100	8.1 L	Digital 550	GM16877
GM20706-MA1	125	8.1 L	Digital 550	GM20721
GM20706-MA2	80/100	8.1 L	Digital 550	GM20721
GM21301-MA1	30-60	4.3/5.0/5.7 L	Digital 550	GM21215
GM21301-MA2	30-60	4.3/5.0/5.7 L	Digital 550	GM35204
GM21301-MA3	30-60	4.3/5.0/5.7 L	Digital 550	GM35204
GM25016-MA1	125	8.1 L	Digital 550	GM25014
GM25016-MA2	80/100	8.1 L	Digital 550	GM25014

Group 701: Literature

Item	Number	Description	Quantity							
			Variation Number							
			155	97	97	93	95	103	105	131
1	MP-5353	S/M 20-300kW, Industrial	1	1	1	1	1	1	1	1
2	MP-5374	Warranty, 1Yr. Ltd.	1	1	1	1	1	1	1	1
3	MP-5700	I/M Stationary Duty	1	1	1	1	1	1	1	1
4	MP-5708	P/C 20-800 kW, Accessories, Gas	1	1	1	1	1	1	1	1
5	MP-5750	O/M 20-2000 kW	1	1	1	1	1	1	1	1
6	MP-5750-CS	O/M 20-2000 kW, Chinese Simplified	1	1	1	1	1	1	1	1
7	MP-5750-CT	O/M 20-2000 kW, Chinese Traditional	1	1	1	1	1	1	1	1
8	MP-5750-F	O/M 20-2000 kW, French	1	1	1	1	1	1	1	1
9	MP-5750-S	O/M 20-2000 kW, Spanish	1	1	1	1	1	1	1	1
10	MP-6083	O/M Digital 550 Controller	1	1	1	1	1	1	1	1
11	MP-6140	O/I/M Controller Setup & Appl. Digital 550	1	1	1	1	1	1	1	1
12	MP-6009	P/C Controllers, Industrial	1	1	1	1	1	1	1	1
13	MP-6098	W/D 20-100GSG GM	1	1	1	1	1	1	1	1
14	MP-6102	P/C 30-125GSG	1	1	1	1	1	1	1	1
15	TP-6101	O/M GM 4.3L, 5.7L, 8.1L, Natural Gas	1	1	1	1	1	1	1	1
16	TP-6104	S/M GM 5.0/5.7L, Natural Gas	1			1	1			
16	TP-6103	S/M GM 4.3L, Natural Gas		1	1					
16	TP-6105	S/M GM 8.1L, Natural Gas						1	1	1
16	TP-6165	S/M GM 3.0L, Natural Gas	1							
17	TP-6107	P/C GM 5.7L, Natural Gas	1			1	1			
17	TP-6106	P/C GM 4.3L, Natural Gas		1	1					
17	TP-6108	P/C GM 8.1L, Natural Gas						1	1	1
17	TP-6151	P/C GM 3.0L, Natural Gas	1							

Kit List

This section lists the part numbers of modules/kits not listed in the group parts lists. Refer to the generator set nameplate or the list below to identify the module/kit number installed on your generator set. See the sections following this page for the parts list of the module/kit.

	30-60 kW	80-100 kW	125 kW
Controllers			
See Parts Catalog FPMP-6009 P/C Controllers, Industrial for parts lists.			
Cooling Systems			
Heater, block			
110-120 V	GM13734-KA1	GM14102-KA1	GM14102-KA1
190-240 V	GM13734-KA2	GM14102-KA2	GM14102-KA2
110-120 V	GM13734-KA3		
190-240 V	GM13734-KA4		
110-120 V (3.0L)	GM22325-KA1	—	—
190-240 V (3.0L)	GM22325-KA2	—	—
Radiator, remote	GM17000-MA1	GM18494-MA1	GM20866-MA1
Radiator, remote (3.0L)	GM22511-MA1	—	—
Cooling, city water	GM17017-MA1	GM18495-MA1	GM23191-MA1
Cooling, city water (3.0L)	GM22510-MA1	—	—
Duct flange, radiator	GM13896-KA1	GM13896-KA1	GM13896-KA1
	—	—	GM13896-KA2
Fuel Systems			
Fuel lines, flexible	GM13706-KP1	GM13706-KP1	GM13706-KP2
Fuel lines, flexible, dual fuel	GM14272-KP1	GM14272-KP1	GM14272-KP2
Filter, natural gas	PA-343303	PA-343303	PA-343303
Conversion Kit, natural gas to LP	—	GM17010-KP2	GM17010-KP4
Conversion Kit, natural gas to LP	—	GM17010-KP3	—
Kit, LP gas to dual fuel, 45 kW	GM24235		
Additional gas solenoid valve			
Natural gas (3.0 L)	GM39203-KA1	—	—
Natural gas (3.0 L)	GM42547-KA1	—	—
Natural gas (4.3 L)	GM39396-KA1	—	—
Natural gas (5.0/5.7 L)	GM39530-KA1	—	—
Natural gas	—	GM39788-KA1	GM39864-KA1
LP gas (3.0 L)	GM39203-KA1	—	—
LP gas (3.0 L)	GM42547-KA1	—	—
LP gas (4.3 L)	GM39396-KA1	—	—
LP gas (5.0/5.7 L)	GM39530-KA1	—	—
LP gas	—	GM39788-KA2	GM39864-KA2
Auto. dual fuel (4.3 L)	GM39396-KA2	—	—
Auto. dual fuel (5.0/5.7 L)	GM39530-KA2	—	—
Auto. dual fuel	—	GM39788-KA4	GM39864-KA4
LP liquid (4.3 L)	GM39396-KA3	—	—
LP liquid (5.0/5.7 L)	GM39530-KA3	—	—
LP liquid	—	GM39788-KA3	GM39864-KA3

Optional Kits

See Parts Catalog FPMP-5708 P/C Accessories, Gas for parts lists.

Paint and Miscellaneous Parts

Paint, gray

All models use 221331 spray can, 221332 gallon

Cooling System Kits

Qty.	Description	Part No.
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Block Heater, 110-120 V

GM13734-KA1

1	Bracket, block heater mounting	326219
1	Heater, block	326228
1	Sensor, thermostat (part of 326228)	224341
1	Thermostat, block heater (part of 326228)	279813
1	Hose, molded, .62 in. ID	276206
1	Hose, molded, .62 in. ID	X-312-35
4	Clamp, hose, .5/1 in.	X-426-10
2	Coupling, hose	X-582-1
1	Shield, heat	GM17809

Block Heater, 190-240 V

GM13734-KA2

1	Bracket, block heater mounting	326219
1	Heater, block	326229
1	Hose, molded, .62 in. ID	276206
1	Hose, molded, .62 in. ID	X-312-35
4	Clamp, hose, .5/1 in.	X-426-10
2	Coupling, hose	X-582-1
1	Shield, heat	GM17809

Block Heater, 110-120 V

GM13734-KA3

1	Bracket, block heater mounting	326219
1	Heater, block	326228
1	Sensor, thermostat (part of 326228)	224341
1	Thermostat, block heater (part of 326228)	279813
1	Hose, molded, .62 in. ID	276206
1	Hose, molded, .62 in. ID	X-312-35
4	Clamp, hose, .5/1 in.	X-426-10
2	Coupling, hose	X-582-1
1	Shield, heat	GM17809

Block Heater, 190-240 V

GM13734-KA4

1	Bracket, block heater mounting	326219
1	Heater, block	326229
1	Hose, molded, .62 in. ID	276206
1	Hose, molded, .62 in. ID	X-312-35
4	Clamp, hose, .5/1 in.	X-426-10
2	Coupling, hose	X-582-1
1	Shield, heat	GM17809

Block Heater, 190-240 V

GM14102-KA1

1	Bracket, block heater mounting	326219
1	Heater, block	
	(Before generator serial number 0731694)	326234
	Sensor, thermostat (part of 326234)	224341
1	Heater, block	
	(Generator serial number 0731694 and after)	GM23005
	Plug, block heater (part of GM23005)	GM23576
	Thermostat, block heater (part of GM23005)	GM25778
1	Shield, heat, 32 mm ID x 305 mm	GM10669
1	Shield, heat, 32 mm ID x 455 mm	GM23718
1	Tee, pipe, 1/2 x 1/2 x 1/2 NPT	X-203-13
1	Pipe, 1/2 in. NPT x 1.19 in.	X-209-2
1	Pipe, 1/2 in. NPT x 12 in.	X-209-26
1	Pipe, 1/2 in. NPT x 2.50 in.	X-209-3
1	Elbow, pipe, 90 deg. x 1/2 in. NPT	X-216-20
1	Coupling, pipe	X-216-20
1	Hose, molded, .62 in. ID	X-312-17
1	Hose, molded, .62 in. ID	X-312-51
4	Clamp, hose, .69/1.25 in.	X-426-12
2	Coupling, hose	X-582-1

Qty.	Description	Part No.
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Block Heater, 190-240 V

GM14102-KA2

1	Bracket, block heater mounting	326219
1	Heater, block	
	Before generator serial number 0731694	326235
	Generator serial number 0731694 and after	GM23006
1	Shield, heat, 32 mm ID x 305 mm	GM10669
1	Shield, heat, 32 mm ID x 455 mm	GM23718
1	Tee, pipe, 1/2 x 1/2 x 1/2 NPT	X-203-13
1	Pipe, 1/2 in. NPT x 1.19 in.	X-209-2
1	Pipe, 1/2 in. NPT x 12 in.	X-209-26
1	Pipe, 1/2 in. NPT x 2.50 in.	X-209-3
1	Elbow, pipe, 90 deg. x 1/2 in. NPT	X-216-20
1	Coupling, pipe	X-216-20
1	Hose, molded, .62 in. ID	X-312-17
1	Hose, molded, .62 in. ID	X-312-51
4	Clamp, hose, .69/1.25 in.	X-426-12
2	Coupling, hose	X-582-18

Block Heater, 110-120 V

GM22325-KA1

1	Bracket, block heater mounting	326219
1	Heater, block	GM31942
1	Tee, pipe, 1/2 x 1/2 x 1/2 NPT	X-203-13
1	Pipe, 1/2 in. NPT x 4.5 in.	X-209-21
1	Pipe, 1/2 in. x 1.5 in.	X-209-5
1	Elbow, pipe	X-215-1
1	Hose, molded, .62 in. ID	X-312-18
1	Hose, molded, .62 in. ID	X-312-50
4	Clamp, hose, .5/1 in.	X-426-10
2	Coupling, hose	X-582-1

Block Heater, 190-240 V

GM22325-KA2

1	Bracket, block heater mounting	326219
1	Heater, block	GM22325
1	Tee, pipe, 1/2 x 1/2 x 1/2 NPT	X-203-13
1	Pipe, 1/2 in. NPT x 4.5 in.	X-209-24
1	Pipe, 1/2 in. x 1.5 in.	X-209-5
1	Elbow, pipe	X-215-1
1	Hose, molded, .62 in. ID	X-312-18
1	Hose, molded, .62 in. ID	X-312-50
4	Clamp, hose, .5/1 in.	X-426-10
2	Coupling, hose	X-582-1

Duct Flange, Radiator

GM13896-KA1

2	Frame, air duct	GM13897
2	Frame, air duct	GM13898
8	Rivet, pop, .187 in.	X-781-19
4	Screw, hex seal washer head, drill	X-794-4

Duct Flange, Radiator

GM13896-KA2

2	Frame, air duct	GM32061
2	Frame, air duct	GM31193
8	Rivet, pop, .187 in.	X-781-19
4	Screw, hex seal washer head, drill	X-794-4

Cooling System Kits, continued

Qty.	Description	Part No.
City Water Cooling (CWC)		
2	Elbow, street, 90 deg. x 1 in. NPT	151385
2	Clamp, hose, 1.75/2 in.	249888
1	Cap, pressure	258037
1	Heat exchanger	326160
4	Elbow, street, 90 deg. x 1-1/2 in. NPT	A-27
2	Insert, threaded, metric, 6mm	GM11040-2
2	Clamp, hose	GM11993
1	Hose, upper radiator, 38 mm ID	GM13524
1	Guard, belt, RS	GM15345
1	Guard, belt, LS	GM15346
1	Guard, belt, top	GM15347
1	Guard, belt, bottom	GM15348
1	Guard, belt, back	GM15349
1	Guard, belt upper back	GM15350
2	Bracket, remote radiator and CWC	GM16996
1	Bracket, remote radiator and CWC	GM16997
1	Bracket, remote radiator and CWC	GM16998
1	Guard, remote radiator and CWC	GM16999
1	Tank, expansion	GM17014
2	Bracket, tank support	GM17015
1	Valve, thermostatic	GM17016
1	Pipe, 1 in. NPT x 2.00 in.	K-122
1	Bushing, reducing, 3/4 x 1 in. NPT	X-202-1
1	Pipe, 3/8 in. NPT x 2.00 in.	X-204-6
1	Pipe, 3/4 in. NPT x 1.38 in.	X-206-9
1	Coupling, pipe, 3/8 in.	X-216-23
2	Valve, drain, 3/8 in. NPT	X-256-1
1	Valve, drain, 1/4 in. NPT	X-256-3
1	Hose, radiator	X-304-19
1	Clamp, spring hose, .462/.545 in.	X-309-14
1	Valve, solenoid	X-350-8
1	Fuel line, flexible	X-386-36
2	Clamp, hose, 1.31/2.25 in.	X-426-4
4	Spacer, .406 ID x .75 OD x 1.05 in.	X-400-200
3	Adapter	X-570-17
1	Hose, radiator	GM14098
1	Hose, radiator, straight, 1.5 in. ID	X-6014-59
3	Plug, pipe, 1/2 in.	X-75-28
1	Clamp, hose, 1.31/2.25 in.	X-426-4
1	Clamp, hose, 1.56/2.5 in.	X-426-6

Qty.	Description	Part No.
City Water Cooling (CWC)		
1	Elbow, street, 90 deg. x 1 in. NPT	151385
2	Clamp, hose, 1.75/2 in.	249888
1	Cap, pressure	258037
2	Clamp, hose, 2.13/2.44 in.	276319
1	Heat exchanger	326160
1	Bracket, belt guard	352384
4	Elbow, street, 90 deg. x 1 1/2 in. NPT	A-27
1	Bracket, remote radiator and CWC	GM16997
1	Bracket, remote radiator and CWC	GM16998
1	Tank, expansion	GM17014
1	Regulator, water	GM17016
1	Guard, belt, RS	GM22177
1	Guard, belt, LS	GM22180
1	Guard, belt, top	GM22176
1	Guard, belt, bottom	GM22179
1	Guard, belt, back	GM22178
1	Guard, belt upper back	GM22181
1	Bracket, remote radiator and CWC	GM22557
1	Guard, remote radiator and CWC	GM22556
1	Plate, bottom, remote radiator and CWC	GM22690
1	Support, guard remote radiator and CWC, RS	GM22691
1	Support, guard remote radiator and CWC, LS	GM22692
1	Tube, upper CWC	GM31939
1	Pipe, coolant	GM34547
1	Guard, belt	GM38418
2	Pipe, 1 in. NPT x 2.00 in.	K-122
1	Bushing, reducing, 3/4 x 1 in. NPT	X-202-1
1	Bushing, reducing, 3/4 x 1 1/4 in. NPT	X-202-18
1	Pipe, 3/8 in. NPT x 2.00 in.	X-204-6
1	Pipe, 3/4 in. NPT x 1.5 in.	X-206-23
1	Pipe, 3/4 in. NPT x 1.38 in.	X-206-9
2	Elbow, pipe, 90 deg. x 1 1/4 in. NPT	X-215-14
1	Elbow, pipe, 90 deg. x 1 in. NPT	X-215-15
1	Coupling, pipe, 3/8 in.	X-216-23
2	Valve, drain, 3/8 in. NPT	X-256-1
2	Hose, radiator, straight, 1.5 in. ID	X-304-2
1	Clamp, spring hose, .462/.545 in.	X-309-14
1	Valve, solenoid	X-350-8
1	Fuel line, flexible	X-386-36
4	Spacer, .406 ID x .75 OD x 1.05 in.	X-400-200
4	Clamp, hose, 1.31/2.25 in.	X-426-4
3	Adapter	X-570-17
1	Adapter	X-570-18
1	Adapter	X-570-8
1	Hose, radiator	X-6014-118
1	Hose, radiator, straight, 1.5 in. ID	X-6014-59

Cooling System Kits, continued

Qty.	Description	Part No.
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City Water Cooling

2	Elbow, street, 90 deg. x 1 in. NPT	151385
1	Elbow, pipe, 90 deg. x 1 1/2 in. NPT	151771
1	Pipe, 1 1/2 in. NPT x 2.50 in.	151803
2	Bushing, reducing, 1 1/2 x 2 in. NPT	160212
2	Clamp, hose, 1.75/2 in.	249888
1	Cap, pressure	258037
2	Clamp, hose, 2.13/2.44 in.	276319
1	Heat exchanger	324309
1	Elbow, street, 90 deg. x 1 1/2 in. NPT	A-27
5	Insert, threaded, metric, 6mm	GM11040-2
1	Guard, belt, top	GM16075
1	Guard, belt, LS	GM16077
2	Bracket, belt guard	GM16078
1	Guard, belt, bottom	GM16079
1	Guard, belt, back	GM16080
1	Guard, belt, RS	GM16081
1	Guard, belt, front	GM16639
1	Tank, expansion	GM17014
1	Valve, thermostatic	GM17016
1	Guard, front, CWC	GM18493
2	Support, tank	GM19384
1	Support, tank	GM19385
1	Brace, tank	GM19386
1	Bushing, reducing, 3/4 x 1 in. NPT	X-202-1
2	Bushing, reducing, 1 x 1 1/2 in. NPT	X-202-11
1	Pipe, 3/8 in. NPT x 1.50 in.	X-204-8
1	Pipe, 3/4 in. NPT x 1.38 in.	X-206-9
2	Elbow, pipe, 90 deg. x 2 in. NPT	X-215-6
1	Coupling, pipe, 3/8 in.	X-216-23
1	Pipe, 1 in. NPT x 1.50 in.	X-218-24
2	Pipe, 2 in. NPT x 2.00 in.	X-219-9
2	Valve, drain, 3/8 in. NPT	X-256-1
1	Clamp, spring hose, .462/.545 in.	X-309-14
1	Valve, solenoid	X-350-8
1	Fuel line, flexible	X-386-36
2	Spacer, .344 ID x .75 OD x .438 in.	X-400-36
2	Clamp, hose, 1.56/2.5 in.	X-426-6
3	Adapter	X-570-17
1	Adapter	X-570-8
1	Hose, radiator wire insert, 1.75 ID	X-6014-108
1	Hose, radiator, straight, 1.5 in. ID	X-6014-59
3	Plug, pipe, 1/2 in. NPT	X-75-28
1	Elbow, molded hose, 1.50 in. ID	X-757-13

Qty.	Description	Part No.
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City Water Cooling

1	Elbow, street, 90 deg. x 1 in. NPT	151385
4	Elbow, pipe, 90 deg. x 1 1/2 in. NPT	151771
1	Pipe, 1 1/2 NPT x 2.50 in.	151803
1	Pipe, 1 1/2 in. NPT x 1.75 in.	155040
1	Clamp, muffler	237548
4	Clamp, hose, 2.25/2.56 in.	249887
2	Clamp, hose, 1.75/2 in.	249888
1	Cap, pressure	258037
2	Clamp, hose, 2.13/2.44 in.	276319
1	Heat exchanger	285662
1	Bonnet kit, in/out connection end (part of 285662)	GM33858
1	Bonnet kit, return end (part of 285662)	GM33859
2	Adapter, hose	285685
1	Elbow, street, 90 deg. x 1 1/2 in. NPT	A-27
2	Shield, heat	GM10669
5	Insert, threaded, metric, 6 mm	GM11040-2
2	Decal, drain	GM14167
1	Guard, belt top	GM16075
1	Guard, belt LS	GM16077
2	Bracket, belt guard	GM16078
1	Guard, belt bottom	GM16079
1	Guard, belt back	GM16080
1	Guard, belt RS	GM16081
1	Guard, belt front	GM16639
1	Tank, expansion	GM17014
1	Valve, thermostatic	GM17016
1	Guard, front	GM18493
2	Support, tank	GM19384
1	Support, tank	GM19385
1	Brace, tank	GM19386
1	Dwg., assy. city water heat exchanger	GM23191
1	Exchanger, heat	GM23192
1	Bracket, support	GM23193
2	O-ring	GM23204
2	Connector, swivel 37 deg. male flare	GM23205
1	Bushing, reducing, 3/4 x 1 in. NPT	X-202-1
3	Bushing, reducing, 1 x 1 1/2 in. NPT	X-202-11
1	Pipe, 3/4 in. NPT x 1.38 in.	X-206-9
1	Cross, pipe, 1/2 in. NPT	X-207-7
1	Pipe, 1/2 in. NPT x 9.50 in.	X-209-17
1	Pipe, 1 in. NPT x 4.00 in.	X-218-13
2	Pipe, 1 in. NPT x 1.50 in.	X-218-24
1	Pipe, 1 in. NPT x 5.00 in.	X-218-30
1	Elbow, pipe, 45 deg. x 1 1/2 in. NPT	X-225-3
2	Valve, drain, 3/8 in. NPT	X-256-1
2	Hose, radiator, straight, 2 in. ID	X-281-3
1	Clamp, spring hose, .462/.545 in.	X-309-14
1	Valve, solenoid	X-350-8
1	Fuel line, flexible	X-386-36
2	Spacer, .344 ID x .75 OD x .438 in.	X-400-36
4	Clamp, hose, .56/1.06 in.	X-426-3
2	Clamp, hose, 1.56/2.5 in.	X-426-6
3	Adapter	X-570-17
1	Adapter	X-570-8
2	Connector, hose + vibra seal	X-582-5
1	Hose, radiator wire insert	X-6014-112
1	Hose, radiator, straight, 1.5 in. ID	X-6014-2
2	Line, flex fuel	X-6242-13
2	Connector, hose	X-6370-6
2	Clamp, insulated, .88 in.	X-672-13
2	Clamp, muffler, 2.12 in.	X-722-5
6	Plug, pipe, 1/2 in. NPT	X-75-28
1	Elbow, molded hose, 1.50 in. ID	X-757-13
2	Screw, hex washer head, drill	X-794-1

Cooling System Kits, continued

Qty.	Description	Part No.	Qty.	Description	Part No.
City Water Cooling			Remote Radiator Cooling		
1	Elbow, street, 90 deg. x 1 in. NPT	151385	2	Insert, threaded, metric, 6 mm	GM11040-2
4	Elbow, pipe, 90 deg. x 1 1/2 in. NPT	151771	1	Hose, upper radiator, 38 mm ID	GM13524
1	Pipe, 1 1/2 NPT x 2.50 in.	151803	1	Hose, lower radiator, 44 mm ID	GM14098
1	Pipe, 1 1/2 in. NPT x 1.75 in.	155040	1	Guard, belt, RS	GM15345
1	Clamp, muffler	237548	1	Guard, belt, LS	GM15346
4	Clamp, hose, 2.25/2.56 in.	249887	1	Guard, belt, top	GM15347
2	Clamp, hose, 1.75/2 in.	249888	1	Guard, belt, bottom	GM15348
1	Cap, pressure	258037	1	Guard, belt, back	GM15349
2	Clamp, hose, 2.13/2.44 in.	276319	1	Guard, belt upper back	GM15350
1	Heat exchanger	285662	2	Bracket, remote radiator and CWC	GM16996
1	Bonnet kit, in/out connection end (part of 285662)	GM33858	1	Bracket, remote radiator and CWC	GM16997
1	Bonnet kit, return end (part of 285662)	GM33859	1	Bracket, remote radiator and CWC	GM16998
2	Adapter, hose	285685	1	Guard, remote radiator & CWC	GM16999
1	Elbow, street, 90 deg. x 1 1/2 in. NPT	A-27	1	Valve, drain, 1/4 in. NPT	X-256-3
2	Shield, heat	GM10669	2	Clamp, hose, 1.31/2.25 in.	X-426-4
5	Insert, threaded, metric, 6 mm	GM11040-2	2	Clamp, hose, 1.56/2.5 in.	X-426-6
2	Decal, drain	GM14167	3	Plug, pipe, 1/2 in. NPT	X-75-28
1	Guard, belt top	GM16075	Remote Radiator Cooling		
1	Guard, belt LS	GM16077	1	Clamp, hose, 2.06/3 in.	250081
2	Bracket, belt guard	GM16078	5	Insert, threaded, metric, 6 mm	GM11040-2
1	Guard, belt bottom	GM16079	1	Hose, lower radiator	GM13884
1	Guard, belt back	GM16080	1	Hose, upper radiator	GM13925
1	Guard, belt RS	GM16081	1	Guard, belt, top	GM16075
1	Guard, belt front	GM16639	1	Guard, belt, LS	GM16077
1	Tank, expansion	GM17014	2	Bracket, belt guard	GM16078
1	Valve, thermostatic	GM17016	1	Guard, belt, bottom	GM16079
1	Guard, front	GM18493	1	Guard, belt, back	GM16080
2	Support, tank	GM19384	1	Guard, belt RS	GM16081
1	Support, tank	GM32296	1	Guard, belt, front	GM16639
1	Brace, tank	GM19386	1	Guard, front, CWC	GM18493
1	Dwg., assy. city water heat exchanger	GM23191	1	Clamp, hose, 2.31/3.25 in.	X-426-2
1	Exchanger, heat	GM23192	2	Clamp, hose, 1.56/2.5 in.	X-426-6
1	Bracket, support	GM23193	3	Plug, pipe, 1/2 in. NPT	X-75-28
2	O-ring	GM23204	Remote Radiator Cooling		
2	Connector, swivel 37 deg. male flare	GM23205	1	Clamp, hose, 2.06/3 in.	250081
1	Bushing, reducing, 3/4 x 1 in. NPT	X-202-1	2	Shield, heat	GM10669
3	Bushing, reducing, 1 x 1 1/2 in. NPT	X-202-11	5	Insert, threaded, metric, 6 mm	GM11040-2
1	Pipe, 3/4 in. NPT x 1.38 in.	X-206-9	1	Hose, lower radiator	GM13884
1	Cross, pipe, 1/2 in. NPT	X-207-7	1	Hose, upper radiator	GM13925
1	Pipe, 1/2 in. NPT x 9.50 in.	X-209-17	1	Guard, belt, top	GM16075
1	Pipe, 1 in. NPT x 4.00 in.	X-218-13	1	Guard, belt, LS	GM16077
2	Pipe, 1 in. NPT x 1.50 in.	X-218-24	2	Bracket, belt guard	GM16078
1	Pipe, 1 in. NPT x 5.00 in.	X-218-30	1	Guard, belt, bottom	GM16079
1	Elbow, pipe, 45 deg. x 1 1/2 in. NPT	X-225-3	1	Guard, belt, back	GM16080
2	Valve, drain, 3/8 in. NPT	X-256-1	1	Guard, belt RS	GM16081
2	Hose, radiator, straight, 2 in. ID	X-281-3	1	Guard, belt, front	GM16639
1	Clamp, spring hose, .462/.545 in.	X-309-14	1	Guard, front, CWC	GM18493
1	Valve, solenoid	X-350-8	1	Cross pipe, 1/2 in. NPT	X-207-7
1	Fuel line, flexible	X-386-36	1	Pipe, 1/2 in. NPT x 9.50 in.	X-209-17
2	Spacer, .344 ID x .75 OD x .438 in.	X-400-36	4	Clamp, hose, .56/1.06 in.	X-426-3
4	Clamp, hose, .5/1 in.	X-426-10	1	Clamp, hose, 2.31/3.25 in.	X-426-2
2	Clamp, hose, 1.56/2.5 in.	X-426-6	2	Clamp, hose, 1.56/2.5 in.	X-426-6
3	Adapter	X-570-17	4	Connector, hose	X-582-5
1	Adapter	X-570-8	1	Conduit, convoluted	X-6003-8
2	Connector, hose + vibra seal	X-582-5	2	Line, flex fuel	X-6242-13
1	Hose, radiator wire insert	X-6014-112	2	Clamp, insulated, .88 in.	X-672-13
1	Hose, radiator, straight, 1.5 in. ID	X-6014-2	5	Plug, pipe, 1/2 in. NPT	X-75-28
2	Line, flex fuel	X-6242-13	2	Screw, hex washer head, drill	X-794-1
2	Connector, hose	X-6370-6			
2	Clamp, insulated, .88 in.	X-672-13			
2	Clamp, muffler, 2.12 in.	X-722-5			
6	Plug, pipe, 1/2 in. NPT	X-75-28			
1	Elbow, molded hose, 1.50 in. ID	X-757-13			
2	Screw, hex washer head, drill	X-794-1			

Cooling System Kits, continued

Qty.	Description	Part No.
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Remote Radiator Cooling

GM22511-MA1

2	Bracket, belt guard	352384
1	Bracket, remote radiator and CWC	GM16997
1	Bracket, remote radiator and CWC	GM16998
1	Hose, lower radiator	GM21048
1	Guard, belt, RS	GM22177
1	Guard, belt, LS	GM22180
1	Guard, belt, top	GM22176
1	Guard, belt, bottom	GM22179
1	Guard, belt, back	GM22178
1	Guard, belt upper back	GM22181
2	Bracket, remote radiator and CWC	GM22557
1	Guard, remote radiator and CWC	GM22556
1	Plate, top remote radiator	GM22686
1	Plate, bottom remote radiator and CWC	GM22690
1	Support, guard remote radiator and CWC, RS	GM22691
1	Support, guard remote radiator and CWC, LS	GM22692
1	Pipe, coolant	GM34547
1	Guard, belt	GM38418
1	Bushing, reducing, 3/4 x 1 1/4 in.	X-202-18
1	Pipe, 3/4 in. NPT x 1.5 in.	X-206-23
2	Elbow, pipe, 90 deg. x 1 1/4 in.	X-215-14
1	Hose, radiator, straight, 1.5 in. ID	X-304-2
1	Clamp, hose, 1/2 in.	X-426-19
1	Clamp, hose, 1.31/2.25 in.	X-426-4
1	Clamp, hose, 1.56/2.5 in.	X-426-6
1	Adapter	X-570-18

Fuel System Kits

Qty.	Description	Part No.
Fuel Lines, Flexible		
1	Nipple, pipe, 1 x 1 1/2 in.	GM13706-KP1 X-218-24
1	Fuel line, flexible	X-504-21
Fuel Lines, Flexible		
1	Pipe, (1-1/2" NPT x 1.75").	GM13706-KP2 155040
1	Fuel line, flexible	X-504-22
Fuel Lines, Flexible (Dual Fuel)		
2	Nipple, pipe, 1 x 1 1/2 in.	GM14272-KP1 X-218-24
2	Fuel line, flexible	X-504-21
Fuel Lines, Flexible (Dual Fuel)		
2	Pipe, 1 1/2 in NPT x 1.75 in.	GM14272-KP2 155040
2	Fuel line, flexible	X-504-22
Filter, Natural Gas		
1	Filter, gas	PA-343303 343302
1	Element, gas filter	343304
Conversion Kit, Natural Gas to LP		
1	Diaphragm assembly, LP	GM17010-KP1 GM17009
Conversion Kit, Natural Gas to LP		
1	Mixer, LP	GM17010-KP2 GM17382
1	Regulator, pressure	GM28970
1	Bushing, reducing, 1 x 1-1/2 in. NPT	X-202-11
1	Service Bulletin, Fuel Mix Adj, Oxygen Sensor	SB-634
1	Service Bulletin, NG to LP Conversion	SB-633
Conversion Kit, Natural Gas to LP		
1	Mixer	GM17010-KP3 GM28969
1	Regulator, pressure	GM28970
1	Bushing, reducing, 1 x 1-1/2 in. NPT	X-202-11
1	Service Bulletin, Fuel Mix Adj, Oxygen Sensor	SB-634
1	Service Bulletin, NG to LP Conversion	SB-633
Conversion Kit, Natural Gas to LP		
1	Mixer	GM17010-KP4 GM28966
1	Regulator, pressure	GM28970
1	Service Bulletin, Fuel Mix Adj, Oxygen Sensor	SB-634
1	Service Bulletin, NG to LP Conversion	SB-633
Kit, LP Gas to Dual Fuel		
1	Gasket, carburetor	GM24235 GM16150
1	Regulator, fuel, 3/4 in. NPT	GM16171
1	Bushing, 1 3/4 in.	GM16205
1	Pipe, closed nipple, 3/4 in.	GM16206
4	Screw, 10-24 x 5/8 SEMS	GM17388
1	Gasket, throttle body to mixer	GM17392
1	Pipe, nipple 3/4 x 3 in.	GM19736
1	Bracket, LS	GM24184
1	Fitting, tee 3/4 x 3/4 x 3/4	GM24185
1	U-bolt, 5/16 x 3/4 x 3	GM24186
1	Valve, line load	GM24187
2	Washer, lock	GM24188
2	Nut, 5/16-18	GM24189
2	Washer, flat 3/8 SAE	GM24190
Additional Gas Solenoid Valve		
1	Harness, gas solenoid valve	GM39203-KA1 GM39204
1	Valve assembly, gas	GM14318
1	Pipe, 3/4 in. NPT x 1.38 in.	X-206-9
Additional Gas Solenoid Valve		
1	Harness, additional gas solenoid valve	GM39396-KA1 GM39397
1	Valve assembly, gas	GM14318
1	Pipe, 3/4 in. NPT x 1.38 in.	X-206-9

Qty.	Description	Part No.
Additional Gas Solenoid Valve		
2	Valve assembly, gas	GM39396-KA2 GM14318
1	Harness, additional gas solenoid valve	GM39407
1	Harness, additional gas solenoid valve	GM39408
2	Pipe, 3/4 in. NPT x 1.38 in.	X-206-9
Additional Gas Solenoid Valve		
1	Harness, additional gas solenoid valve	GM39396-KA3 GM39397
1	Solenoid	326120
1	Pipe, 1/4 in. NPT x 2.50 in.	X-220-14
1	Elbow, male tube, 90 deg. + vibra seal	X-447-1
1	Terminal, fast-on, female, 18-22 AWG	X-431-25
1	Terminal, fast-on, male, 18-22 AWG	X-431-29
Additional Gas Solenoid Valve		
1	Spacer, .406 ID x .625 OD x .297 in.	GM39530-KA1 X-400-75
1	Spacer, .406 ID x .625 OD x .375 in.	X-400-89
1	Bracket, fuel support	GM39531
1	Elbow, pipe, 45 deg. x 1 in. NPT	X-225-9
1	Pipe, 1 in. NPT x 3.00 in.	X-218-22
1	Clamp, muffler	X-722-9
1	Elbow, pipe, 90 deg. x 1 in. NPT	X-215-15
1	Pipe, 1 in. NPT x 2.00 in.	K-122
1	Bushing, reducing, 1 x 1-1/4 in. NPT	X-202-32
1	Valve assembly, gas	A-254469
1	Bushing, reducing, 3/4 x 1-1/4 in. NPT	X-202-18
1	Elbow, street, 90 deg. x 1-1/4 in. NPTF	EH-2226
1	Harness, additional gas solenoid valve	GM39533
1	Pipe, 3/4 in. NPT x 2.50 in.	X-206-4
Additional Gas Solenoid Valve		
1	Spacer, .406 ID x .625 OD x .297 in.	GM39530-KA2 X-400-75
1	Spacer, .406 ID x .625 OD x .375 in.	X-400-89
1	Bracket, fuel support	GM39531
2	Elbow, pipe, 45 deg. x 1 in. NPT	X-225-9
2	Pipe, 1 in. NPT x 3.00 in.	X-218-22
2	Clamp, muffler	X-722-9
4	Elbow, pipe, 90 deg. x 1 in. NPT	X-215-15
4	Bushing, reducing, 1 x 1-1/4 in. NPT	X-202-32
2	Valve assembly, gas	A-254469
1	Bracket, fuel support	GM39532
5	Pipe, 1 in. NPT x 1.50 in.	X-218-24
1	Elbow, street, 45 deg. x 1 in. NPT	X-274-10
1	Harness, additional gas solenoid valve	GM39534
1	Harness, additional gas solenoid valve	GM39535
1	Pipe, 1 in. NPT x 5.00 in.	X-218-30
Additional Gas Solenoid Valve		
1	Harness, additional gas solenoid valve	GM39530-KA3 GM39397
1	Solenoid	326120
1	Pipe, 1/4 in. NPT x 2.50 in.	X-220-14
1	Elbow, male tube, 90 deg. + vibra seal	X-447-1
1	Terminal, fast-on, female, 18-22 AWG	X-431-25
1	Terminal, fast-on, male, 18-22 AWG	X-431-29
Additional Gas Solenoid Valve		
1	Harness, second solenoid valve	GM39788-KA1 GM37448
1	Bracket, fuel support	GM37446
1	Elbow, street, 90 deg. x 1-1/4 in. NPTF	EH-2226
1	Valve assembly, gas	A-254469
1	Pipe, 1-1/4 in. NPT x 1.63 in.	X-210-8
1	Terminal, fast-on, female, 18-22 AWG	X-431-25
1	Terminal, fast-on, male, 18-22 AWG	X-431-29
1	Clamp, muffler, 2.12 in.	X-722-5

Fuel System Kits, continued

Qty.	Description	Part No.
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Additional Gas Solenoid Valve

1	Harness, gas solenoid valve	GM39789
1	Bracket, fuel support	GM37446
2	Elbow, street, 90 deg. x 1-1/4 in. NPTF	EH-2226
1	Valve assembly, gas	A-254469
1	Pipe, 1-1/4 in. NPT x 1.63 in.	X-210-8
1	Terminal, fast-on, female, 18-22 AWG	X-431-25
1	Terminal, fast-on, male, 18-22 AWG	X-431-29
1	Clamp, muffler, 2.12 in.	X-722-5

Additional Gas Solenoid Valve

1	Harness, gas solenoid valve	GM39790
1	Solenoid	326120
1	Pipe, 1/4 in. NPT x 2.50 in.	X-220-14
1	Terminal, fast-on, female, 18-22 AWG	X-431-25
1	Terminal, fast-on, male, 18-22 AWG	X-431-29
1	Elbow, Male Tube, 90 deg. + vibra seal	X-447-1

Additional Gas Solenoid Valve

1	Harness, second solenoid valve	GM37448
1	Bracket, fuel support	GM37446
4	Elbow, street, 90 deg. x 1-1/4 in. NPTF	EH-2226
2	Valve assembly, gas	A-254469
2	Pipe, 1-1/4 in. NPT x 1.63 in.	X-210-8
2	Terminal, fast-on, female, 18-22 AWG	X-431-25
2	Terminal, fast-on, male, 18-22 AWG	X-431-29
1	Clamp, muffler, 2.12 in.	X-722-5
1	Harness, fuel LP	GM25009
1	Pipe, 1 in. NPT x 2.00 in.	K-122
1	Harness, gas solenoid valve	GM39790

GM39788-KA2

GM39788-KA3

GM39788-KA4

Qty.	Description	Part No.
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Additional Gas Solenoid Valve

1	Harness, second solenoid valve	GM37448
1	Valve, gas	GM23542
1	Pipe, 1-1/2 in. NPT x 1.75 in.	155040
1	Terminal, fast-on, female, 18-22 AWG	X-431-25
1	Terminal, fast-on, male, 18-22 AWG	X-431-29

Additional Gas Solenoid Valve

1	Harness, gas solenoid valve	GM39789
1	Valve, gas	GM23542
1	Pipe, 1-1/2 in. NPT x 1.75 in.	155040
1	Terminal, fast-on, female, 18-22 AWG	X-431-25
1	Terminal, fast-on, male, 18-22 AWG	X-431-29

Additional Gas Solenoid Valve

1	Harness, gas solenoid valve	GM39790
1	Solenoid	326120
1	Pipe, 1/4 in. NPT x 2.50 in.	X-220-14
1	Terminal, fast-on, female, 18-22 AWG	X-431-25
1	Terminal, fast-on, male, 18-22 AWG	X-431-29
1	Elbow, Male Tube, 90 deg. + vibra seal	X-447-1
1	Elbow, street, 90 deg. x 1/4 in. NPTF	X-555-1

Additional Gas Solenoid Valve

1	Harness, second solenoid valve	GM37448
2	Valve, gas	GM23542
2	Pipe, 1-1/2 in. NPT x 1.75 in.	155040
2	Terminal, fast-on, female, 18-22 AWG	X-431-25
2	Terminal, fast-on, male, 18-22 AWG	X-431-29
1	Harness, gas solenoid valve	GM39790
1	Harness, fuel LP	GM25009
1	Nipple, pipe, 1 x 1 1/2 in.	X-218-24
1	Fuel line, flexible	X-504-21

Additional Gas Solenoid Valve

1	Harness, gas solenoid valve	GM42534
1	Harness, additional gas solenoid valve	GM42559
1	Valve assembly, gas	GM42530
1	Pipe, 3/4 in. NPT x 1.38 in.	X-206-9

GM39864-KA1

GM39864-KA2

GM39864-KA3

GM39864-KA4

GM42547-KA1

Appendix A Abbreviations

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

A, amp	ampere	CG	center of gravity	ext.	external
ABDC	after bottom dead center	CID	cubic inch displacement	F	Fahrenheit, female
AC	alternating current	CL	centerline	fglass.	fiberglass
A/D	analog to digital	cm	centimeter	FHM	flat head machine (screw)
ADC	analog to digital converter	CMOS	complementary metal oxide substrate (semiconductor)	fl. oz.	fluid ounce
adj.	adjust, adjustment	cogen.	cogeneration	flex.	flexible
ADV	advertising dimensional drawing	com	communications (port)	freq.	frequency
AHWT	anticipatory high water temperature	coml	commercial	FS	full scale
AISI	American Iron and Steel Institute	Coml/Rec	Commercial/Recreational	ft.	foot, feet
ALOP	anticipatory low oil pressure	conn.	connection	ft. lb.	foot pounds (torque)
alt.	alternator	cont.	continued	ft./min.	feet per minute
Al	aluminum	CPVC	chlorinated polyvinyl chloride	g	gram
ANSI	American National Standards Institute (formerly American Standards Association, ASA)	crit.	critical	ga.	gauge (meters, wire size)
AO	anticipatory only	CRT	cathode ray tube	gal.	gallon
API	American Petroleum Institute	CSA	Canadian Standards Association	gen.	generator
approx.	approximate, approximately	CT	current transformer	genset	generator set
AR	as required, as requested	Cu	copper	GFI	ground fault interrupter
AS	as supplied, as stated, as suggested	cu. in.	cubic inch	GND, ⊕	ground
ASE	American Society of Engineers	cw.	clockwise	gov.	governor
ASME	American Society of Mechanical Engineers	CWC	city water-cooled	gph	gallons per hour
assy.	assembly	cyl.	cylinder	gpm	gallons per minute
ASTM	American Society for Testing Materials	D/A	digital to analog	gr.	grade, gross
ATDC	after top dead center	DAC	digital to analog converter	GRD	equipment ground
ATS	automatic transfer switch	dB	decibel	gr. wt.	gross weight
auto.	automatic	dBA	decibel (A weighted)	H x W x D	height by width by depth
aux.	auxiliary	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 fur 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. lb.	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
cft	cubic feet per hour	E-Stop	emergency stop	IP	iron pipe
cfm	cubic feet per minute	etc.	et cetera (and so forth)	ISO	International Organization for Standardization
		exh.	exhaust	J	joule
				JIS	Japanese Industry Standard
				k	kilo (1000)

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

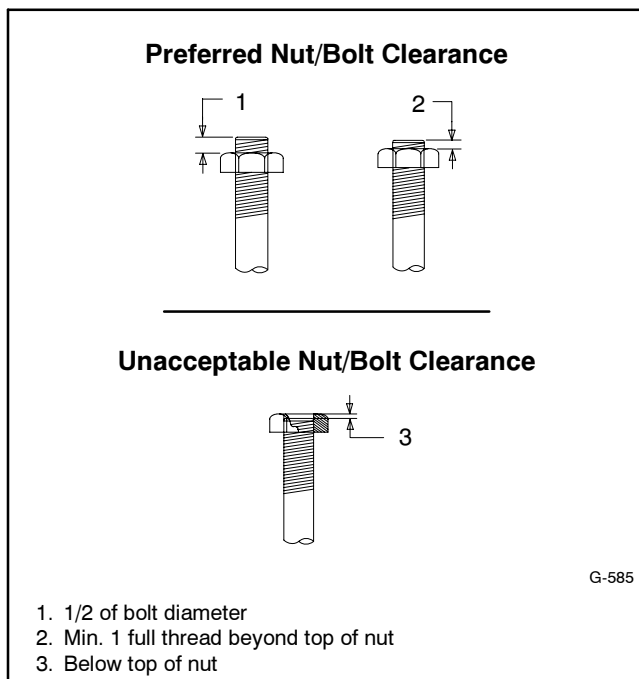


Figure 1 Acceptable Bolt Lengths

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.

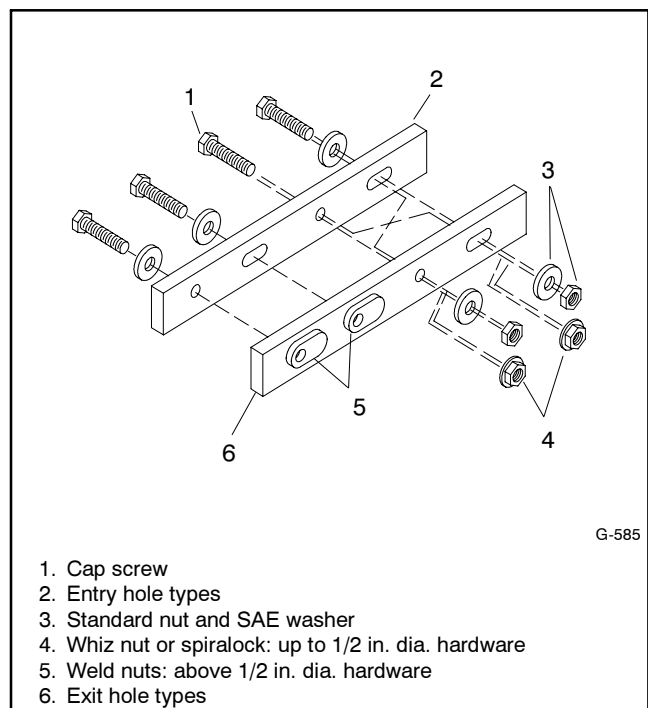


Figure 2 Acceptable Hardware Combinations

Appendix C General Torque Specifications

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)	—	See Note 3
10-24	Nm (in. lb.)	2.9 (26)	3.6 (32)	—	
10-32	Nm (in. lb.)	2.9 (26)	3.6 (32)	—	
1/4-20	Nm (in. lb.)	6.8 (60)	10.8 (96)	14.9 (132)	
1/4-28	Nm (in. lb.)	8.1 (72)	12.2 (108)	16.3 (144)	
5/16-18	Nm (in. lb.)	13.6 (120)	21.7 (192)	29.8 (264)	
5/16-24	Nm (in. lb.)	14.9 (132)	23.1 (204)	32.5 (288)	
3/8-16	Nm (ft. lb.)	24.0 (18)	38.0 (28)	53.0 (39)	
3/8-24	Nm (ft. lb.)	27.0 (20)	42.0 (31)	60.0 (44)	
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	6.2 (4.6)	9.5 (7)	13.6 (10)	See Note 3
M8 x 1.25	15.0 (11)	23.0 (17)	33.0 (24)	
M8 x 1.00	16.0 (11)	24.0 (18)	34.0 (25)	
M10 x 1.50	30.0 (22)	45.0 (34)	65.0 (48)	
M10 x 1.25	31.0 (23)	47.0 (35)	68.0 (50)	
M12 x 1.75	53.0 (39)	80.0 (59)	115.0 (85)	
M12 x 1.50	56.0 (41)	85.0 (63)	122.0 (90)	
M14 x 2.00	83.0 (61)	126.0 (93)	180.0 (133)	
M14 x 1.50	87.0 (64)	133.0 (98)	190.0 (140)	
M16 x 2.00	127.0 (94)	194.0 (143)	278.0 (205)	
M16 x 1.50	132.0 (97)	201.0 (148)	287.0 (212)	
M18 x 2.50	179.0 (132)	273.0 (201)	390.0 (288)	
M18 x 1.50	189.0 (140)	289.0 (213)	413.0 (305)	

Notes:

1. The torque values above are general guidelines. Always use the torque values specified in the service manuals and/or assembly drawings when they differ from the above torque values.
2. The torque values above are based on new plated threads. Increase torque values by 15% if non-plated threads are used.
3. Hardware threaded into aluminum must have either two diameters of thread engagement or a 30% or more reduction in the torque to prevent stripped threads.
4. Torque values are calculated as equivalent stress loading on American hardware with an approximate preload of 90% of the yield strength and a friction coefficient of 0.125.

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	Part No.	Dimensions	Part No.	Dimensions	Type		
Hex Head Bolts (Grade 5)		Hex Head Bolts, cont.		Hex Nuts				
X-465-17	1/4-20 x .38	X-6238-14	3/8-24 x .75					
X-465-6	1/4-20 x .50	X-6238-16	3/8-24 x 1.25	X-6009-1	1-8	Standard		
X-465-2	1/4-20 x .62	X-6238-21	3/8-24 x 4.00	X-6210-3	6-32	Whiz		
X-465-16	1/4-20 x .75	X-6238-22	3/8-24 x 4.50	X-6210-4	8-32	Whiz		
X-465-18	1/4-20 x .88			X-6210-5	10-24	Whiz		
X-465-7	1/4-20 x 1.00	X-6024-5	7/16-14 x .75	X-6210-1	10-32	Whiz		
X-465-8	1/4-20 x 1.25	X-6024-2	7/16-14 x 1.00					
X-465-9	1/4-20 x 1.50	X-6024-8	7/16-14 x 1.25	X-6210-2	1/4-20	Spiralock		
X-465-10	1/4-20 x 1.75	X-6024-3	7/16-14 x 1.50	X-6210-6	1/4-28	Spiralock		
X-465-11	1/4-20 x 2.00	X-6024-4	7/16-14 x 2.00	X-6210-7	5/16-18	Spiralock		
X-465-12	1/4-20 x 2.25	X-6024-11	7/16-14 x 2.75	X-6210-8	5/16-24	Spiralock		
X-465-14	1/4-20 x 2.75	X-6024-12	7/16-14 x 6.50	X-6210-9	3/8-16	Spiralock		
X-465-21	1/4-20 x 5.00	X-129-15	1/2-13 x .75	X-6210-10	3/8-24	Spiralock		
X-465-25	1/4-28 x .38	X-129-17	1/2-13 x 1.00	X-6210-11	7/16-14	Spiralock		
X-465-20	1/4-28 x 1.00	X-129-18	1/2-13 x 1.25	X-6210-12	1/2-13	Spiralock		
		X-129-19	1/2-13 x 1.50	X-6210-15	7/16-20	Spiralock		
X-125-33	5/16-18 x .50	X-129-20	1/2-13 x 1.75	X-6210-14	1/2-20	Spiralock		
X-125-23	5/16-18 x .62	X-129-21	1/2-13 x 2.00					
X-125-3	5/16-18 x .75	X-129-22	1/2-13 x 2.25	X-85-3	5/8-11	Standard		
X-125-31	5/16-18 x .88	X-129-23	1/2-13 x 2.50	X-88-12	3/4-10	Standard		
X-125-5	5/16-18 x 1.00	X-129-24	1/2-13 x 2.75	X-89-2	1/2-20	Standard		
X-125-24	5/16-18 x 1.25	X-129-25	1/2-13 x 3.00					
X-125-34	5/16-18 x 1.50	X-129-27	1/2-13 x 3.50					
X-125-25	5/16-18 x 1.75	X-129-29	1/2-13 x 4.00					
X-125-26	5/16-18 x 2.00	X-129-30	1/2-13 x 4.50					
230578	5/16-18 x 2.25	X-463-9	1/2-13 x 5.50					
X-125-29	5/16-18 x 2.50	X-129-44	1/2-13 x 6.00					
X-125-27	5/16-18 x 2.75							
X-125-28	5/16-18 x 3.00	X-129-51	1/2-20 x .75	X-25-46	.125	.250	.022	#4
X-125-22	5/16-18 x 4.50	X-129-45	1/2-20 x 1.25	X-25-9	.156	.375	.049	#6
X-125-32	5/16-18 x 5.00	X-129-52	1/2-20 x 1.50	X-25-48	.188	.438	.049	#8
X-125-35	5/16-18 x 5.50			X-25-36	.219	.500	.049	#10
X-125-36	5/16-18 x 6.00	X-6021-3	5/8-11 x 1.00	X-25-40	.281	.625	.065	1/4
X-125-40	5/16-18 x 6.50	X-6021-4	5/8-11 x 1.25	X-25-85	.344	.687	.065	5/16
		X-6021-2	5/8-11 x 1.50	X-25-37	.406	.812	.065	3/8
X-125-43	5/16-24 x 1.75	X-6021-1	5/8-11 x 1.75	X-25-34	.469	.922	.065	7/16
X-125-44	5/16-24 x 2.50	273049	5/8-11 x 2.00	X-25-26	.531	1.062	.095	1/2
X-125-30	5/16-24 x .75	X-6021-5	5/8-11 x 2.25	X-25-15	.656	1.312	.095	5/8
X-125-39	5/16-24 x 2.00	X-6021-6	5/8-11 x 2.50	X-25-29	.812	1.469	.134	3/4
X-125-38	5/16-24 x 2.75	X-6021-7	5/8-11 x 2.75	X-25-127	1.062	2.000	.134	1
		X-6021-12	5/8-11 x 3.75					
X-6238-2	3/8-16 x .62	X-6021-11	5/8-11 x 4.50					
X-6238-10	3/8-16 x .75	X-6021-10	5/8-11 x 6.00					
X-6238-3	3/8-16 x .88							
X-6238-11	3/8-16 x 1.00	X-6021-9	5/8-18 x 2.50					
X-6238-4	3/8-16 x 1.25							
X-6238-5	3/8-16 x 1.50	X-6239-1	3/4-10 x 1.00					
X-6238-1	3/8-16 x 1.75	X-6239-8	3/4-10 x 1.25					
X-6238-6	3/8-16 x 2.00	X-6239-2	3/4-10 x 1.50					
X-6238-17	3/8-16 x 2.25	X-6239-3	3/4-10 x 2.00					
X-6238-7	3/8-16 x 2.50	X-6239-4	3/4-10 x 2.50					
X-6238-8	3/8-16 x 2.75	X-6239-5	3/4-10 x 3.00					
X-6238-9	3/8-16 x 3.00	X-6239-6	3/4-10 x 3.50					
X-6238-19	3/8-16 x 3.25							
X-6238-12	3/8-16 x 3.50	X-792-1	1-8 x 2.25					
X-6238-20	3/8-16 x 3.75	X-792-5	1-8 x 3.00					
X-6238-13	3/8-16 x 4.50	X-792-8	1-8 x 5.00					
X-6238-18	3/8-16 x 5.50							
X-6238-25	3/8-16 x 6.50							

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
M931-08045-60	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
M931-08200-60	M8-1.25 x 200
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
M931-10235-60	M10-1.50 x 235
M931-10260-60	M10-1.50 x 260
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
M931-16100-82	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
M931-20090-60	M20-2.50 x 90
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
M931-24200-60	M24-3.00 x 200

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
M933-06030-60	M6-1.00 x 30
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

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

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
M933-12030-82	M12-1.75 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*
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
M934-04-B	M4-0.70	Brass
M934-05-50	M5-0.80	Standard
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.

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