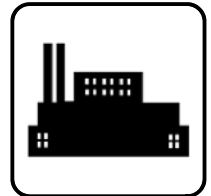


# Service Parts

## Industrial Generator Sets



Models:

**50/60/125/150REZGB**

**80/100REZGD**

**80/100RZGD**

**125/150REZGC**

**125/150RZGC**

**50/60/125ERESB**

**80/100ERESD**

**125/150ERESC**

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



**KOHLER**  
Power Systems

TP-6784 8/16b

# Common Replacement Parts

Figure 1 identifies common replacement parts for your generator set. Refer to the groups on the following pages and the engine parts manual listed in Group 701: Literature for a complete list of maintenance and service parts.

Description	Part Number/Quantity On Model					
	50 kW	60 kW	80/100 kW	125 kW	150 kW	125/150 kW
	5.0L	5.7L	5.7L	8.1L	8.1L	8.8L
Belt, alternator	GM16132 (1)	GM16132 (1)	GM16132 (1)	GM16132 (1)	GM66205 (1)	GM87590 (1)
Element, air cleaner	253107 (1)	253107 (1)	GM62309 (1)	GM62309 (1)	GM62309 (1)	GM62309 (1)
Oil filter	GM16703 (1)	GM16703 (1)	GM42034 (1)	GM16703 (1)	GM16703 (1)	GM87592 (1)
Spark plug	GM16531 (8)	GM16531 (8)	GM22171 (8)	GM22171 (8)	GM22171 (8)	GM87608 (8)
Thermostat	GM16537 (1)	GM16537 (1)	GM16537 (1)	GM19726 (1)	GM19726 (1)	GM87618 (1)

**Figure 1 Common Replacement Parts**

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4S_X Alternators GC70194- .....	70
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# Introduction

This manual lists service replacement parts Kohler Power Systems generator sets. See front cover for list of models.

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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 the Specification Number Index or the module number found on the generator set nameplate in the appropriate column on the right side of the parts list table. Find the quantity used at the intersection of the item number row and the variation column. A blank space at the intersection means the variation/module does not use that part number.

## 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.

# Notes

# 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							
<b>50REZGB</b>								
GM79036-GA1	*	*	4	1	*	*	†	454
GM79036-GA2	*	*	5	1	*	*	†	454
GM79036-GA3	*	*	6	1	*	*	†	454
<b>60REZGB</b>								
GM79037-GA1	*	*	7	1	*	*	†	455
GM79037-GA2	*	*	8	1	*	*	†	455
GM79037-GA3	*	*	9	1	*	*	†	455
GM89957-GA1	*	*	42	1	*	*	†	455
<b>80REZGD</b>								
GM81112-GA1	*	*	20	1	*	*	†	471
GM81112-GA4	*	*	20	2	*	*	†	471
<b>80RZGD</b>								
GM81112-GA3	*	*	29	1	*	*	†	478
GM81112-GA6	*	*	29	2	*	*	†	478
<b>100REZGD</b>								
GM81112-GA7	*	*	21	2	*	*	†	473
GM81112-GA9	*	*	24	2	*	*	†	473
<b>100RZGD</b>								
GM81112-GA11	*	*	25	2	*	*	†	479
GM81112-GA12	*	*	28	2	*	*	†	479
<b>125REZGB</b>								
GM77561-GA1	*	*	12	2	*	*	†	475
GM77561-GA2	*	*	15	2	*	*	†	475
GM77561-GA5	*	*	16	2	*	*	†	475
<b>125REZGC</b>								
GM81460-GA1	*	*	36	2	*	*	†	491
GM81460-GA3	*	*	38	2	*	*	†	491
GM81460-GA7	*	*	40	2	*	*	†	491
GM99493-GA1	*	*	43	2	*	*	†	491
GM99493-GA3	*	*	44	2	*	*	†	491
GM99493-GA7	*	*	45	2	*	*	†	491
<b>125RZGC</b>								
GM81460-GA2	*	*	37	2	*	*	†	492
GM81460-GA4	*	*	39	2	*	*	†	492
GM81460-GA8	*	*	41	2	*	*	†	492
GM99493-GA2	*	*	46	2	*	*	†	492
GM99493-GA4	*	*	47	2	*	*	†	492
GM99493-GA8	*	*	48	2	*	*	†	492

# 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							
<b>150REZGB</b>								
GM77562-GA1	*	*	10	2	*	*	†	477
<b>150REZGC</b>								
GM80580-GA1	*	*	30	2	*	*	†	489
GM80580-GA3	*	*	32	2	*	*	†	489
GM80580-GA5	*	*	34	2	*	*	†	489
GM99599-GA1	*	*	49	2	*	*	†	489
GM99599-GA3	*	*	50	2	*	*	†	489
GM99599-GA5	*	*	51	2	*	*	†	489
<b>150RZGC</b>								
GM80580-GA2	*	*	31	2	*	*	†	490
GM80580-GA4	*	*	33	2	*	*	†	490
GM80580-GA6	*	*	35	2	*	*	†	490
GM99599-GA2	*	*	52	2	*	*	†	490
GM99599-GA4	*	*	53	2	*	*	†	490
GM99599-GA6	*	*	54	2	*	*	†	490

# Specification Number Index

Group Title	Air Intake	Cooling System	Engine	Nameplates and Decals	Skid and Plant Mounting	Generator and Mounting	Controller and Mounting	Literature
<b>Group No.</b>	<b>101</b>	<b>104</b>	<b>105</b>	<b>107</b>	<b>109</b>	<b>201</b>	<b>301</b>	<b>701</b>
<b>Spec No.</b>	<b>Variation Number</b>							

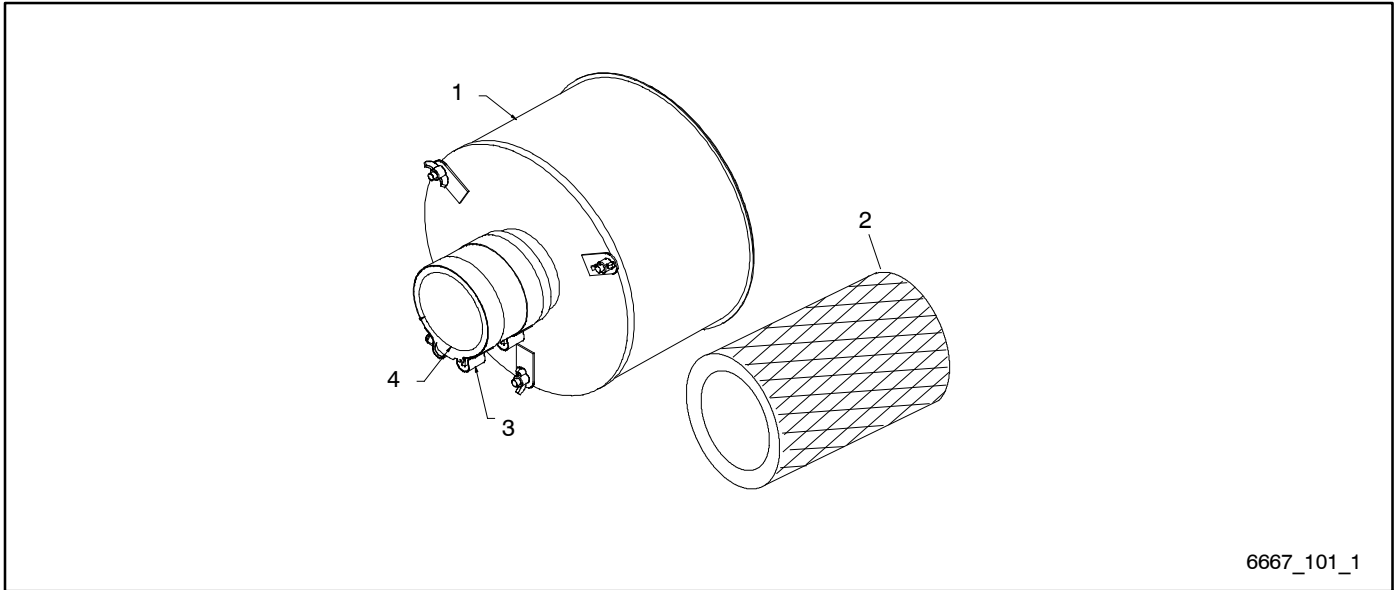
<b>50ERESB</b>								
GM79036-GA4	*	*	4	1	*	*	†	456
GM79036-GA5	*	*	5	1	*	*	†	456
GM79036-GA6	*	*	6	1	*	*	†	456
<b>60ERESB</b>								
GM79037-GA4	*	*	7	1	*	*	†	457
GM79037-GA5	*	*	8	1	*	*	†	457
GM79037-GA6	*	*	9	1	*	*	†	457
<b>80ERESD</b>								
GM81112-GA2	*	*	20	1	*	*	†	472
GM81112-GA5	*	*	20	2	*	*	†	472
<b>100ERESD</b>								
GM81112-GA8	*	*	21	2	*	*	†	474
GM81112-GA10	*	*	24	2	*	*	†	474
<b>125ERESB</b>								
GM77561-GA3	*	*	12	2	*	*	†	476
GM77561-GA4	*	*	15	2	*	*	†	476
GM77561-GA6	*	*	16	2	*	*	†	476
<b>125ERESC</b>								
GM81460-GA5	*	*	36	2	*	*	†	493
GM81460-GA6	*	*	38	2	*	*	†	493
GM81460-GA9	*	*	40	2	*	*	†	493
GM99493-GA5	*	*	43	2	*	*	†	493
GM99493-GA6	*	*	44	2	*	*	†	493
GM99493-GA9	*	*	45	2	*	*	†	493
<b>150ERESC</b>								
GM80580-GA7	*	*	30	2	*	*	†	494
GM80580-GA8	*	*	32	2	*	*	†	494
GM80580-GA9	*	*	34	2	*	*	†	494
GM99599-GA7	*	*	49	2	*	*	†	494
GM99599-GA8	*	*	50	2	*	*	†	494
GM99599-GA9	*	*	51	2	*	*	†	494

- \* 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 for controller parts lists.



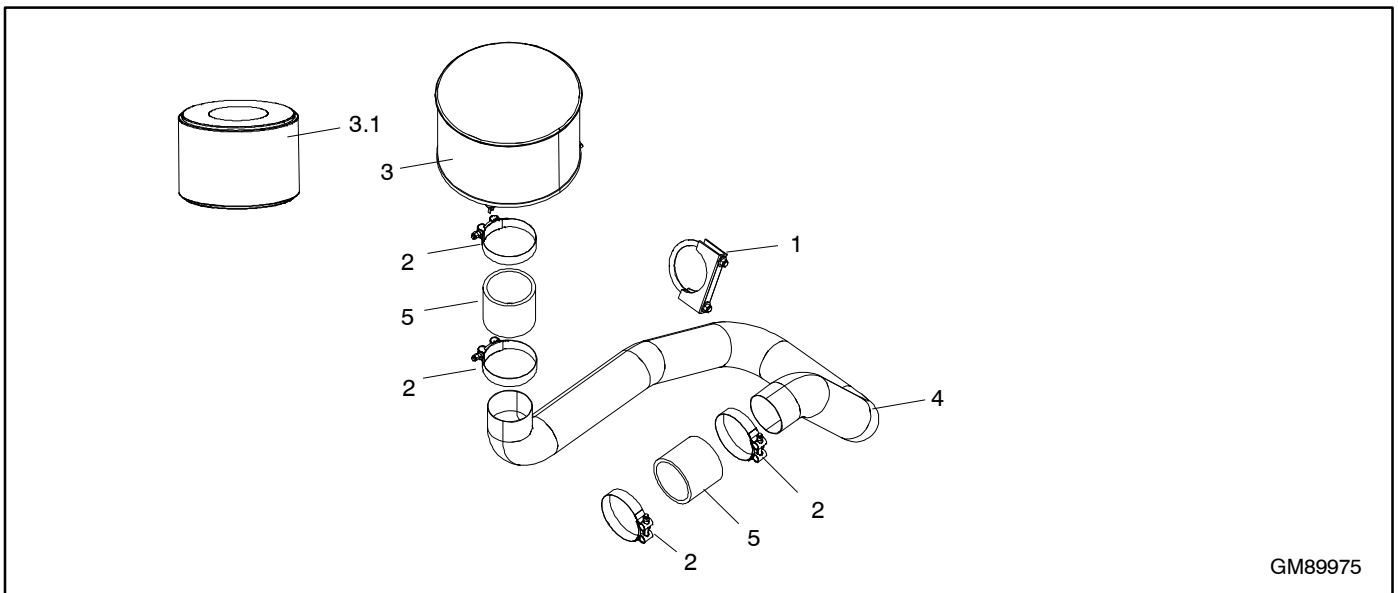
# Group 101: Air Intake

50/60 kW



6667\_101\_1

Item	Part Number	Description	Quantity
			ModuleNumber GM66788-MA1
1	A-253104	Air cleaner assembly	1
2	253107	Element, Air Cleaner	1
3	291542	Clamp, Hose, 3.25/3.56 in.	2
4	X-6014-137	Hose, Wire Insert 3 in. ID	1

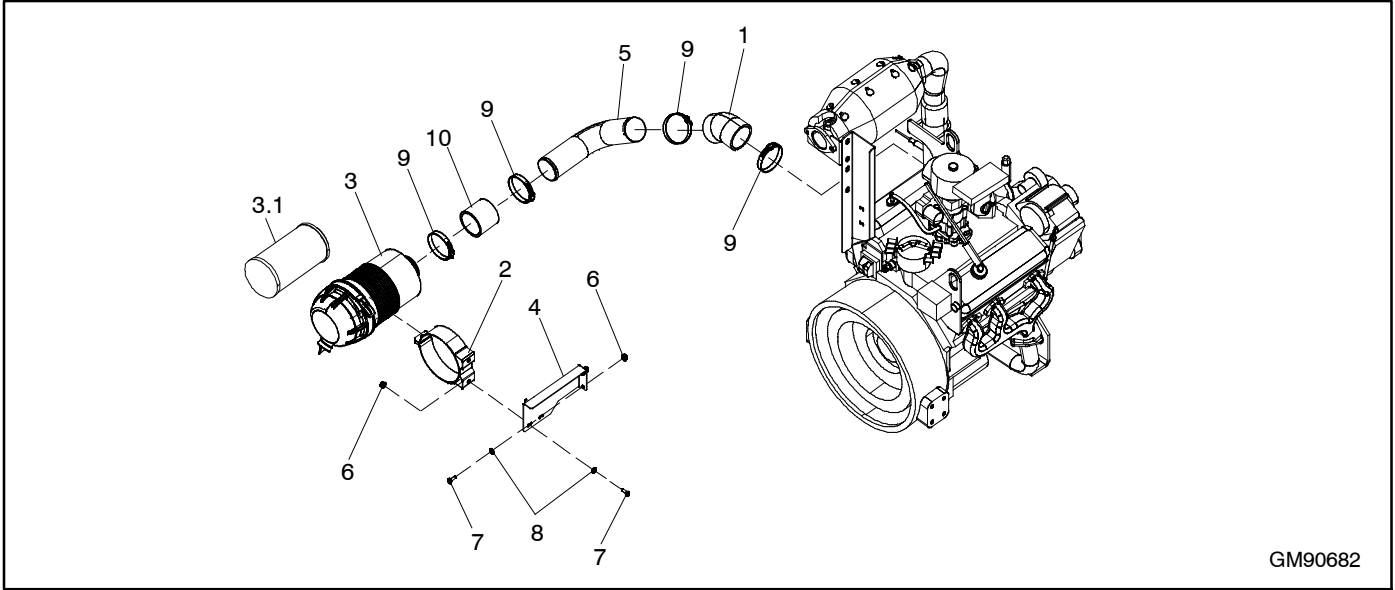


GM89975

Item	Part Number	Description	Quantity
			ModuleNumber GM89975-MA1
1	286283	Clamp, muffler, 3.12 in.	1
2	291542	Clamp, Hose, 3.25/3.56 in.	4
3	A-253104	Air cleaner assembly	1
3.1	253107	Element, Air Cleaner with pre-cleaner	1
4	GM89965	Tube, Air Cleaner	1
5	X-6014-137	Hose, Radiator Wire Insert, 3" ID	2

# Group 101: Air Intake

60 kW, Prime

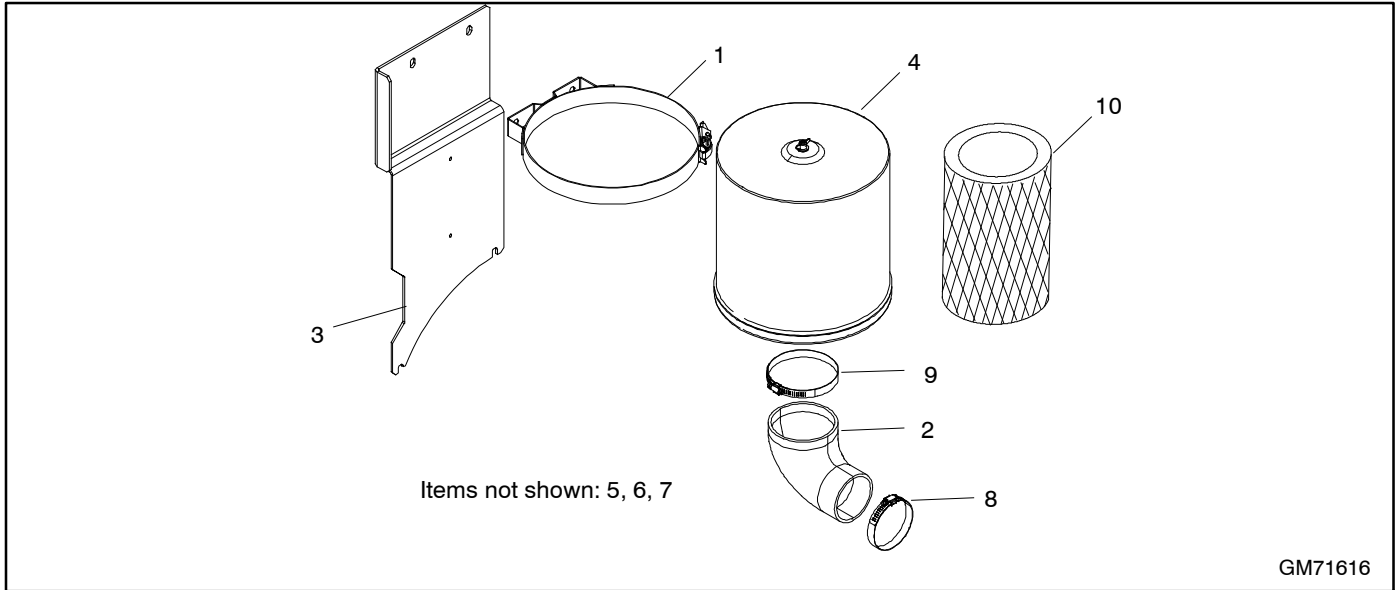


GM90682

Item	Part Number	Description	Quantity	
			ModuleNumber	GM90682-MA1
1	359249	Hose, 45 deg. elbow (3.00" ID)	1	
2	GM14200	Mount, air cleaner ( 6.76" ID)	1	
3	GM90280	Air Cleaner Assy	1	
3.1	GM90281	Element, Air Cleaner	1	
4	GM90680	Bracket, Air Intake	1	
5	GM90681	Tube, Air Intake	1	
6	M6923-08-80	Nut, Hex 8mm	4	
7	M933-08020-60	Screw, Hex cap	4	
8	X-25-40	Washer, plain, .281 ID x .625 in. OD	4	
9	X-426-5	Clamp, hose, 3.56/4.5 in.	4	
10	X-6014-137	Hose, Radiator Wire Insert, 3" ID	1	

# Group 101: Air Intake

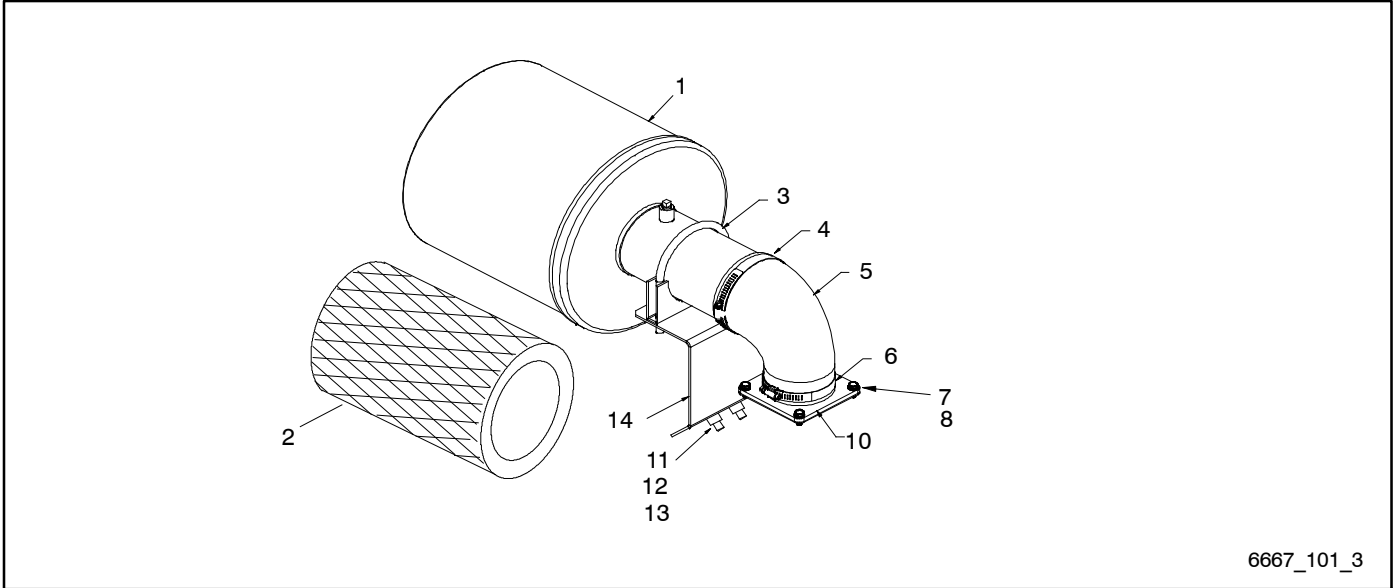
80/100 kW with 5.7L Engine



Item	Part Number	Description	Quantity	
			Module Number	GM71616-MA3
1	343530	Clamp, air cleaner (11.00" ID)	1	1
2	GM49984	Hose 90 deg. Elbow	1	1
3	GM79383	Bracket, Air Cleaner Mtg	1	
3	GM77555	Bracket, Air Cleaner Mtg		1
4	GM74000	Air Cleaner Assembly	1	1
5	M125A-10-80	Washer, Plain, 10.5 ID x 20.0 OD	2	2
6	M6923-10-80	Nut, Hex 10mm	2	2
7	M933-10025-60	Screw, hex cap, fully thrd M10 x 25mm	2	2
8	X-426-5	Clamp, hose, 3.56/4.5 in.	1	1
9	X-426-5	Clamp, hose, 3.56/4.5 in.	1	1
10	GM62309	Element, Air Cleaner	1	1

# Group 101: Air Intake, continued

125/150 kW



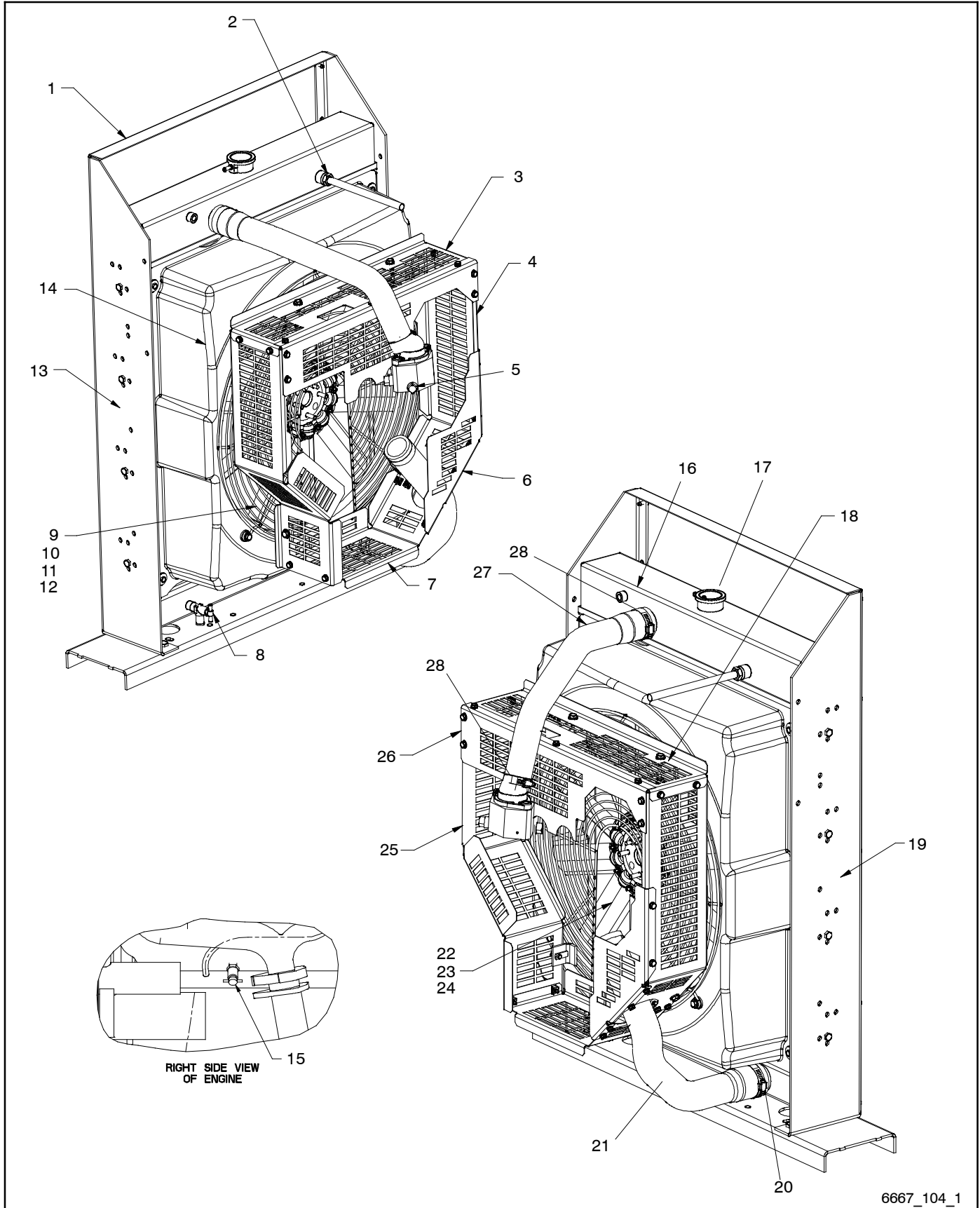
6667\_101\_3

Item	Part Number	Description	Quantity	
			Module Number	GM64064-MA1
1	GM62308	Air Cleaner Assy.		1
2	GM62309	Element, Air Cleaner		1
3	289372	Clamp, muffler, 4.12 in.		1
4	X-426-7	Clamp, hose, 4.06/5 in.		1
5	GM49984	Hose 90 deg. Elbow		1
6	X-426-5	Clamp, hose, 3.56/4.5 in.		1
7	M933-06016-60	Screw, hex cap, M6x16mm, js500 full thrd		4
8	M125A-06-80	Washer, Plain		4
10	GM64041	Flange, Air Cleaner		1
11	X-400-89	Spacer, .406 ID x .625 OD x .375 in.		2
12	X-6238-11	Bolt, Hex Cap (3/8-16 x 1 in.) gr. 5		2
13	X-25-28	Washer, plain, .406 ID x .656 OD		2
14	GM64052	Support, Air Cleaner		1

# Notes

# Group 104: Cooling System

50/60 kW



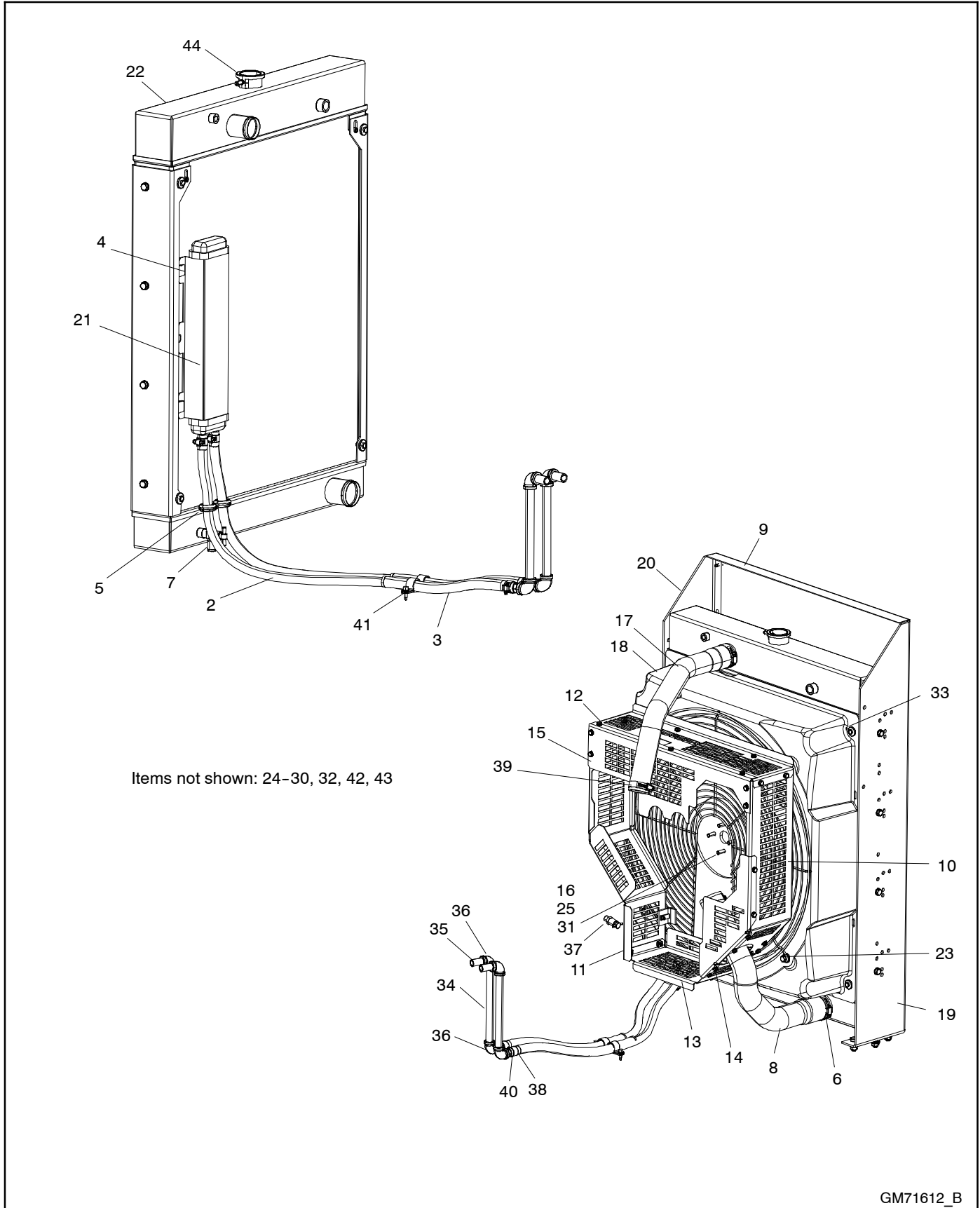
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## Group 104: Cooling System

Item	Part Number	Description	Quantity	
			Module	
			GM73886-MA1	GM73886-MA2
1	GM14100	Guard, Radiator	1	1
2	-	See Control and Harness Group	1	1
3	GM15347	Guard, Belt Top	1	1
4	GM15345	Guard, Belt RH	1	1
5	X-75-28	Plug, pipe (1/2 in. nptf)	3	
6	GM15349	Guard, Belt Back	1	1
7	GM15348	Guard, Belt Bottom	1	1
8	278788	Valve, drain (3/8 in. nptf)	1	1
9	352378	Guard, Wire Fan	1	1
10	X-6365-2	Insert, threaded, 5/16-18 in.	4	4
11	M933-08025-60	Bolt, Hex Cap	4	4
12	M125A-08-80	Washer, plain	4	4
13	GM29988	Support, radiator	1	1
14	324076	Shroud, fan	1	1
15	X-256-3	Valve, drain (1/4 in. nptf)	1	1
16	GM52729	Radiator Assembly	1	
16	GM52730	Radiator Assembly		1
17	352327	Cap, radiator	1	1
18	352384	Bracket, belt guard	2	2
19	GM29987	Support, radiator	1	1
20	250081	Clamp, hose, 2.06/3 in.	2	2
21	GM14098	Hose, lower radiator (44mm ID)	1	1
22	GM16769	Fan, Pusher	1	1
23	M933-08030-82	Screw, Hex Cap	4	4
24	M125A-08-80	Washer, Plain 8.4 ID x 16.0 OD	4	4
25	GM15346	Guard, Belt LH	1	1
26	GM15350	Guard, Belt Upper Back	1	1
27	GM22939	Hose, upper radiator (1.5 in. ID)	1	1
28	X-426-6	Clamp, hose, 1.56/2.5 in.	2	2

# Group 104: Cooling System, continued

80 kW with 5.7L Engine



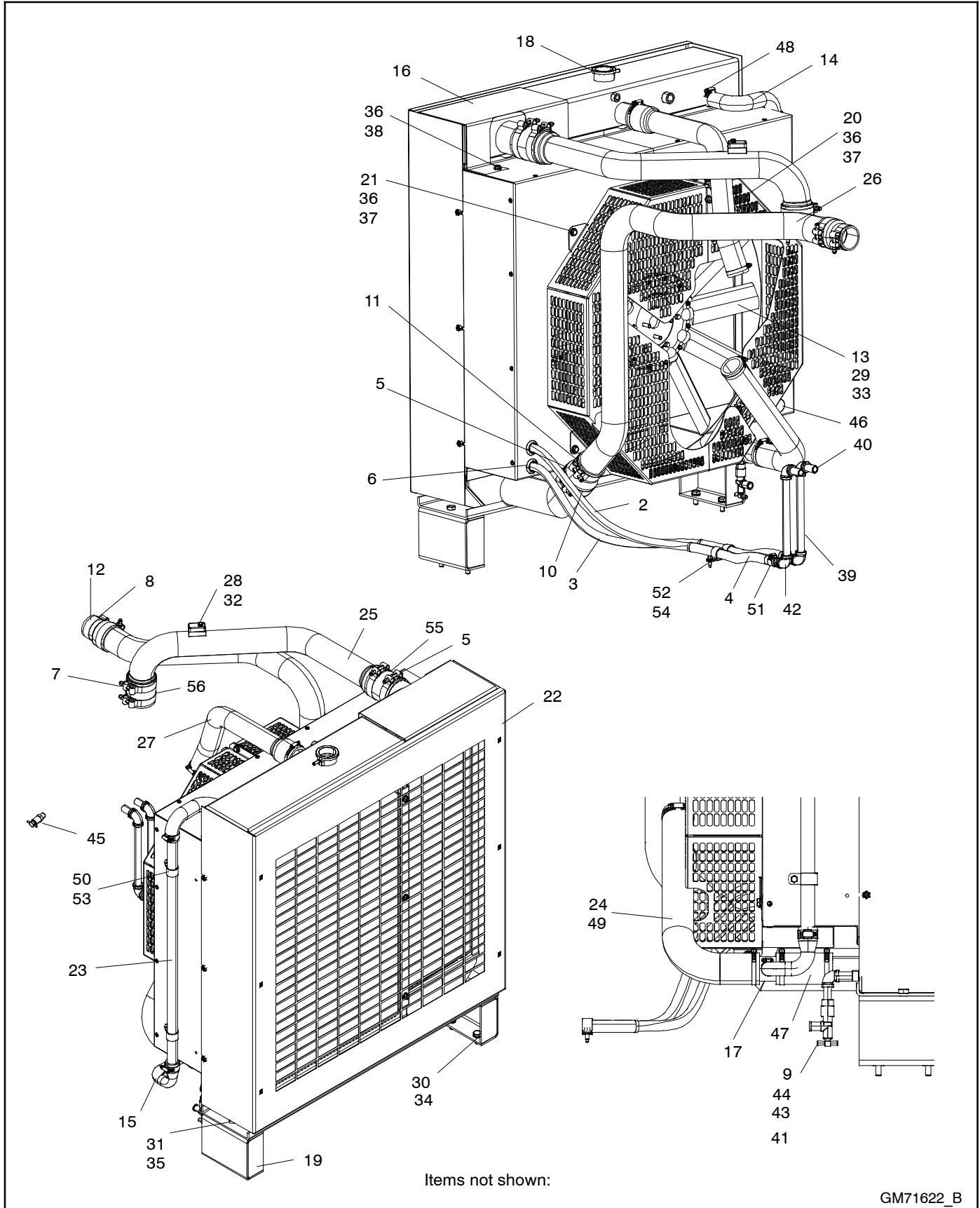


## Group 104: Cooling System, continued

Item	Part Number	Description	Quantity
			Module Number GM71612-MA1
2	X-6242-15	Line, Flex Fuel	2
3	GM23718	Shield, heat (32mm ID x 455mm length)	2
4	GM74847	Strap, Mounting Package	4
5	243488	Grommet, round	2
6	X-426-2	Clamp, hose, 2.31/3.25 in.	2
7	278788	Valve, drain ( 3/8"nptf)	1
8	GM14098	Hose, lower radiator ( 44mm ID)	1
9	GM14100	Guard, Radiator	1
10	GM15345	Guard, Belt RH	1
11	GM15346	Guard, Belt LH	1
12	GM15347	Guard, Belt Top	1
13	GM15348	Guard, Belt Bottom	1
14	GM15349	Guard, Belt Back	1
15	GM15350	Guard, Belt Upper Back	1
16	GM16770	Fan, Pusher	1
17	GM22939	Hose, upper radiator (1.50" ID)	1
18	GM29772	Shroud, Fan	1
19	GM29987	Support, radiator	1
20	GM29988	Support, radiator	1
21	GM30589	Cooler, Engine Oil	1
22	GM52730	Radiator Assembly	1
23	GM71609	Guard, Wire Fan	1
24	M125A-06-80	Washer, Plain	25
25	M125A-08-80	Washer, Plain, 8.4 ID x 16.0 OD	16
26	M125A-10-80	Washer, Plain, 10.5 ID x 20.0 OD	6
27	M6923-10-80	Nut, Hex 10mm	6
28	M933-06016-60	Screw, hex cap, M6x16mm, js500 full thrd	29
29	M933-08016-60	Screw, hex cap	8
30	M933-08025-60	Screw, hex cap	4
31	M933-08030-82	Screw, hex cap	4
32	M933-10025-60	Screw, hex cap, fully thrd M10 x 25mm	6
33	X-25-75	Washer,plain, .344 ID x .875 in. OD	4
34	X-204-17	Pipe (3/8"npt x 8.00")	2
35	X-204-8	Pipe (3/8"npt x 1.50")	2
36	X-215-9	Elbow, pipe (90 deg x 3/8"npt)	4
37	X-256-3	Valve, drain ( 1/4"nptf)	1
38	X-426-12	Clamp, hose, .69/1.25 in.	4
39	X-426-19	Clamp, hose, 1.00/2.00 in.	2
40	X-582-4	Connector, hose + Vibra Seal	2
41	X-672-13	Clamp, insulated, .88 in.	2
42	X-794-1	Screw, hex wshr hd, drill 1/4-14 x 5/8	12
43	X-6365-2	Insert, threaded	4
44	352327	Cap, Radiator	1

# Group 104: Cooling System, continued

100 kW with 5.7L Engine



GM71622\_B

## Group 104: Cooling System, continued

Item	Part Number	Description	Quantity
			Module Number GM71622-MA1
2	X-612-26	Hose, Oil Proof	1
3	X-612-14	Hose, Oil Proof	1
4	GM23718	Shield, heat (32mm id x 455mm length)	2
5	343175	Clamp, hose, 3.06/3.38 in.	3
6	243488	Grommet, round	2
7	275527	Clamp, hose, 2.81/3.12 in.	2
8	276319	Clamp, hose, 2.13/2.44 in.	1
9	278788	Valve, drain ( 3/8"nptf)	1
10	324879	Hose, reducer (3.00" to 2.50" id) Hi-Temp	1
11	336228	Clamp, hose, 2.63/2.94 in.	2
12	GM30983	Hose, Step	1
13	GM31940	Fan, Pusher	1
14	GM51923	Hose, Radiator Bypass	1
15	GM51972	Hose, Lower Radiator Bypass	1
16	GM55317	Guard, Charge Cooler	1
17	GM59156	Connector, Hose	1
18	GM71626	Radiator/CAC Assembly	1
18.1	GM54994	Cap, Radiator	1
19	GM71627	Bracket, Radiator Mtg	2
20	GM84957	Guard, Belt RH	1
20	GM84958	Guard, Belt	1
21	GM84959	Guard, Belt LH	1
21	GM84960	Guard, Belt LS	1
21	GM84961	Guard, Belt	1
22	GM73989	Guard, Radiator	1
23	GM73991	Tube, Radiator Bypass	1
24	GM73992	Hose, Lower Radiator	1
25	GM73995	Tube, Intake (CAC)	1
26	GM73996	Tube, Turbo (CAC)	1
27	GM73997	Hose, Upper Radiator	1
28	M125A-06-80	Washer, Plain	6
29	M125A-08-80	Washer, plain 8.4 ID x 16.0 OD	4
30	M125A-10-80	Washer, Plain 10.5 ID x 20.0 OD	4
31	M6923-12-80	Nut, Hex	1
32	M933-06014-60	Screw, Hec Cap	6
33	M933-08030-82	Screw, Hex Cap	4
34	M933-10025-60	Screw, hex cap,fully thrd M10 x 25mm	4
35	M933-12030-60	SCREW, HEX CAP	2
36	X-25-85	Washer, plain, .344 ID x .687 in.OD	6
37	X-125-3	Bolt, Hex Cap	4
38	X-125-33	Bolt, Hex Cap5/16-18 x 1/2"	2
39	X-204-17	Pipe (3/8"npt x 8.00")	2
40	X-204-8	Pipe (3/8"npt x 1.50")	2
41	X-215-5	Elbow, pipe (90 deg x 1/4"npt)	1
42	X-215-9	Elbow, pipe (90 deg x 3/8"npt)	4
43	X-220-6	Pipe (1/4"npt x 1.50")	2
44	X-250-2	Coupling, reducer ( 3/8" x 1/4"npt)	1
45	X-256-3	Valve, drain ( 1/4"nptf)	1
46	X-301-19	Plug, button	2
47	X-311-7	Hose, radiator, straight, 1.75 in. ID	1
48	X-426-12	Clamp, hose, .69/1.25 in.	8
49	X-426-19	Clamp, hose, 1.00/2.00 in.	6
50	X-465-6	Bolt, Hex Cap (1/4-20 x 1/2") Gr5	2
51	X-582-4	Connector, hose + Vibra Seal	2
52	X-672-13	Clamp, insulated, .88 in.	2
53	X-672-32	Clamp, insulated, 1.06 in.	2
54	X-794-1	Screw, hex wshr hd, drill 1/4-14 x 5/8	2
55	X-6380-4	Hose, Nomex	1
56	X-6380-5	Hose, Nomex	1



## Group 104: Cooling System, continued

Item	Part Number	Description	Quantity	
			Module Number	
			GM65367-MA2	GM81462-MA1
1	GM52731	Radiator assembly	1	1
2	352327	Cap, radiator	1	1
3	GM64617	Guard, belt top	1	1
4	GM64270	Bracket, belt guard	1	1
5	GM66599	Guard, belt rh	1	1
6	GM16080	Guard, belt back	1	1
7	GM31940	Fan, pusher	1	1
8	M933-08030-82	Screw, hex cap	4	4
9	M125A-08-80	Washer, plain 8.4ID x 16.0 OD	4	4
10	X-204-6	Pipe, Nipple (3/8" npt x 2.00")	1	1
10	X-216-23	Coupling, pipe (3/8"npsc)	1	1
11	278788	Valve, drain	1	1
12	GM32286	Support, radiator (LH)	1	1
13	GM31192	Guard, radiator	1	1
14	-	See Control and Harness Group	1	1
15	X-6003-8	Conduit, convoluted	1	1
16	GM29800	Shroud, fan	1	1
17	336888	Guard, wire fan	1	1
18	X-125-31	Bolt, hex cap	6	
18	M933-08025-60	Screw, hex cap		6
19	X-25-85	Washer, plain, .344 ID x .687 in. OD	6	
19	M125A-08-80	Washer, Plain, 8.4 ID x 16.0 OD		6
20	X-6365-1	Insert, threaded, 5/16-18 in.	6	
20	X-6365-2	Insert, threaded		6
21	GM32285	Support, radiator (rh)	1	1
22	X-426-2	Clamp, hose, 2.31/3.25 in.	1	1
23	GM31195	Hose, lower radiator	1	1
24	X-426-19	Clamp, hose, 1.00/2.00 in.	1	
24	X-426-16	Clamp, hose, 1.81/2.75 in.		1
25	GM16078	Bracket, belt guard	2	2
26	GM66596	Guard, belt bottom	1	1
27	X-209-26	Pipe (1/2in. npt x 12.00 in. )	1	1
28	X-203-13	Tee, pipe (1/2 x 1/2 x 1/2 npt)	1	
28	X-215-1	Elbow, pipe (90 deg x 1/2"npt)		2
29	GM16077	Guard, belt l.h.	1	1
29	GM94862*	Guard, belt l.h.	1	1
30	GM66597	Guard, belt	1	1
31	GM64271	Bracket, belt guard	1	1
32	GM31194	Hose, upper radiator	1	
32	GM81468	Hose, upper radiator		1
33	X-426-19	Clamp, hose, 1.00/2.00 in.	1	1
34	X-426-2	Clamp, hose, 2.31/3.25 in.	1	1
35	X-612-30	Hose, Oil Proof	1	1
36	X-426-10	Clamp, hose, .5/1 in.	2	
36	X-426-12	Clamp, hose, .69/1.25 in.		2
37	X-612-25	Hose, Oil Proof	1	
37	X-612-30	Hose, Oil Proof		1
38	X-426-10	Clamp, hose, .5/1 in.	2	
38	X-426-12	Clamp, hose, .69/1.25 in.		2
39	GM23718	Shield, heat (32mm ID x 455mm length)	1	1
40	X-582-5	Connector, hose + vibra seal	1	1
41	X-672-13	Clamp, insulated, .88 in.	2	2
42	X-582-5	Connector, hose + vibra seal	1	
42	X-209-31	Pipe, Nipple 1/2" NPT x 10.5" Long		1
43	243488	Grommet	2	2
44	GM30589	Cooler, engine oil	1	1
45	GM71831	Shield, heat	1	

\* Valid as of build date 5/18/2015

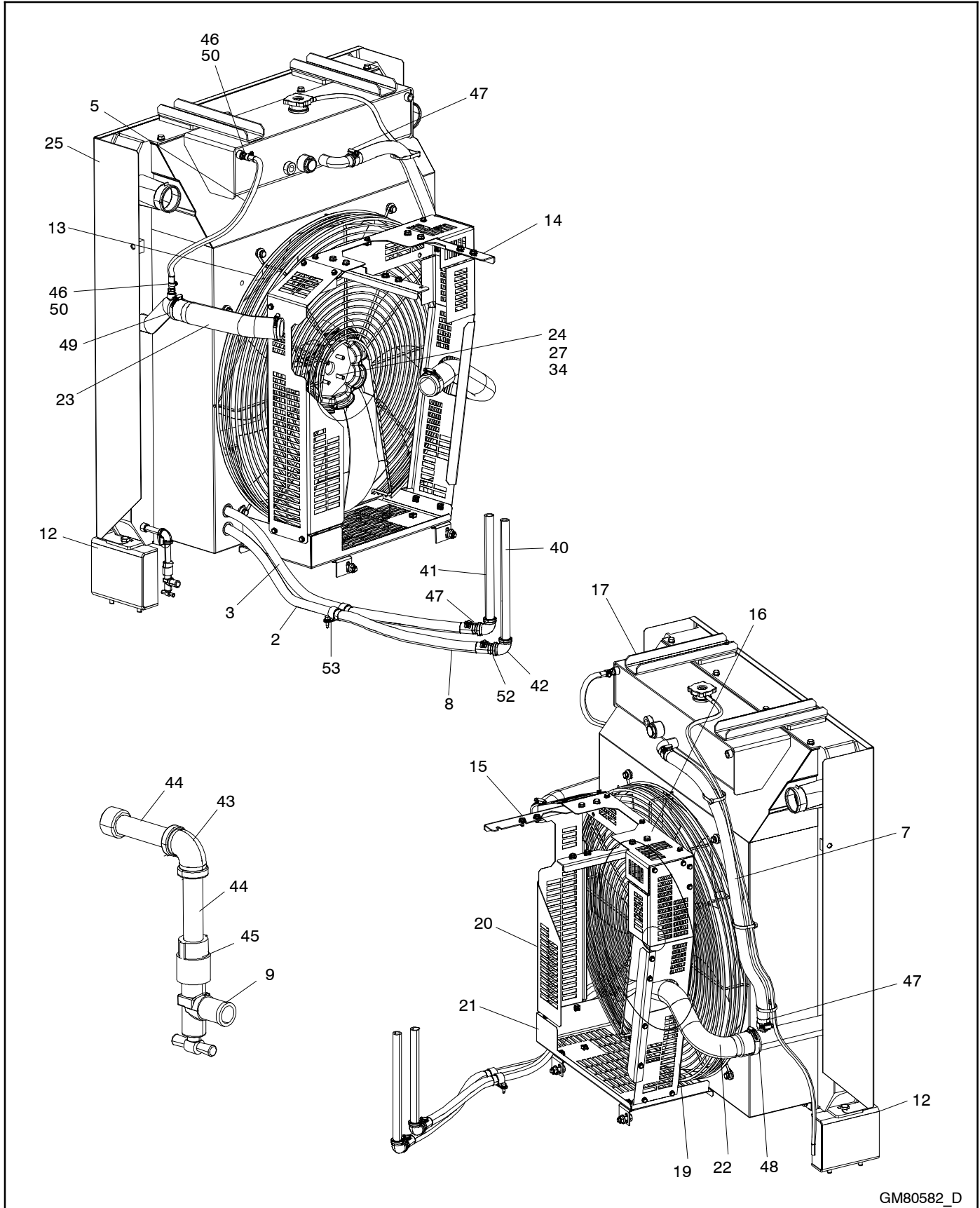


## Group 104: Cooling System, continued

Item	Part Number	Description	Quantity
			Module Number GM64159-MA2
1	GM55317	Guard, Charge Cooler	1
2	343175	Clamp, hose, 3.06/3.38 in.	1
3	GM64392	Cap, radiator	1
4	GM49660	Radiator Assembly	1
5	GM64270	Bracket, Belt Guard	1
7	GM64263	Guard, Belt Rear	1
8	GM55480	Bracket, Heat Shield	1
10	X-582-5	Connector, hose + Vibra Seal	1
11	GM23718	Shield, heat (32mm ID x 455mm length)	2
12	X-582-5	Connector, hose + Vibra Seal	1
13	GM64267	Bracket, Belt Guard	2
14	X-672-13	Clamp, insulated, .88 in.	2
15	X-612-25	Hose, Oil Proof	1
16	X-426-10	Clamp, hose, .5/1 in.	2
17	343175	Clamp, hose, 3.06/3.38 in.	1
18	GM49983	Bracket, Radiator Mtg.	1
19	243488	Grommet, round	2
20	GM64264	Guard, Belt Lower Left	1
21	GM58171	Guard, Radiator	1
22	GM64239	Guard, Wire Fan	1
23	GM51912	Hose, Upper Radiator	1
24	X-426-6	Clamp, hose, 1.56/2.5 in.	2
25	-	See Control and Harness Group	1
26	GM51923	Hose, Radiator Bypass	1
27	X-426-15	Clamp, hose, .75/1.5 in.	2
28	GM52263	Tube, Radiator Bypass	1
29	GM64268	Guard, Belt Upper Right	1
30	X-672-30	Clamp, insulated, 1.06 in.	2
31	GM64261	Guard, Belt Right Lower	1
32	X-311-7	Hose, radiator, straight, 1.75 in. ID	1
33	X-426-6	Clamp, hose, 1.56/2.5 in.	2
34	GM49983	Bracket, Radiator Mtg.	1
35	278788	Valve, drain (3/8 in. nptf)	1
36	X-250-2	Coupling, reducer ( 3/8 in. x 1/4 in. npt)	1
37	X-220-6	Pipe (1/4 in. npt x 1.50 in.)	1
38	GM51972	Hose, Lower Radiator Bypass	1
39	X-426-15	Clamp, hose, .75/1.5 in.	1
40	X-426-3	Clamp, hose, .56/1.06 in.	1
41	GM59156	Connector, Hose	1
42	GM58131	Hose, Lower Radiator	1
43	X-426-6	Clamp, hose, 1.56/2.5 in.	2
44	GM64262	Guard, Belt Bottom	1
45	X-612-32	Hose, Oil Proof	1
46	X-426-10	Clamp, hose, .5/1 in.	2
47	X-203-13	Tee, pipe (1/2 x 1/2 x 1/2 npt)	1
48	X-215-1	Elbow, pipe (90 deg x 1/2 in. npt)	1
49	X-209-26	Pipe (1/2 in. npt x 12.00 in.)	1
50	X-209-31	Pipe, Nipple 1/2 in. NPT x 10.5 in. Long	1
51	GM55481	Shield, Heat	1
52	GM64266	Guard, Belt Manifold	1
53	GM64265	Guard, Belt Upper Left	1
54	GM64271	Bracket, Belt Guard	1
55	GM49816	Fan, Pusher	1
56	X-125-5	Bolt, Hex Cap	4
57	X-801-4	Washer, hardened, .328 ID x .719 in. OD	4
58	GM64269	Guard, Belt Top	1

# Group 104: Cooling System, continued

150 kW with 8.8L Engine



GM80582\_D



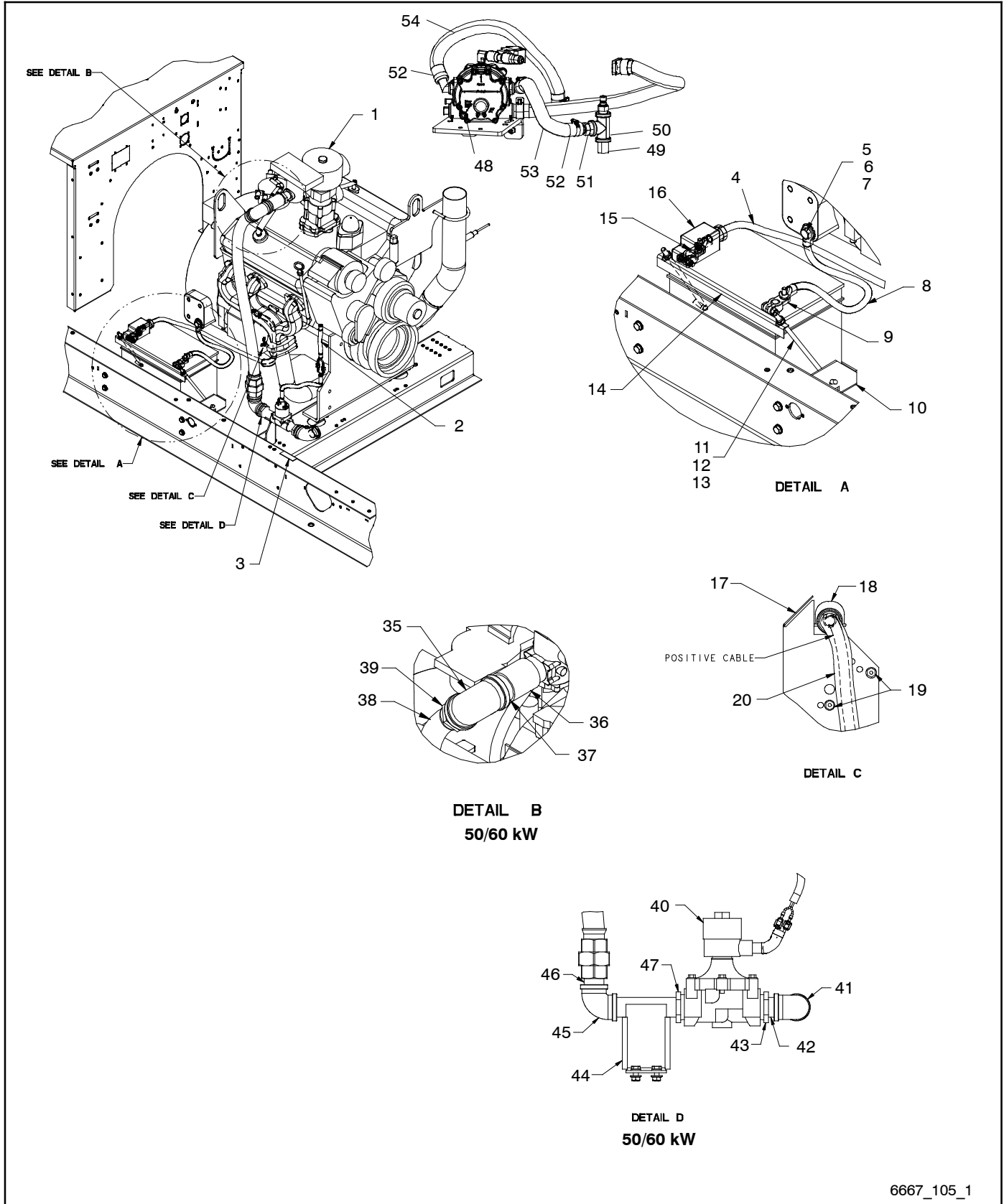
## Group 104: Cooling System, continued

Item	Part Number	Description	Quantity
			Module Number GM80582-MA1
2	X-612-7	Hose, Oil Proof	1
3	X-612-25	Hose, Oil Proof	1
5	X-386-32	Fuel line, flexible	1
7	X-356-43	Hose, Radiator Wire Insert	1
8	GM23718	Shield, heat (32mm ID x 455mm length)	2
9	278788	Valve, drain ( 3/8"nptf)	1
12	GM49983	Bracket, Radiator Mtg.	2
13	GM64239	Guard, Wire Fan	1
14	GM64270	Bracket, Belt Guard	1
15	GM64271	Bracket, Belt Guard	1
17	GM77552	Radiator Assy., CAC	1
16	GM88343	Guard, Belt Top	1
19	GM88341	Guard, Belt RH	1
19	GM88345	Guard, Belt Upper (RH)	1
19	GM94859*	Guard, Belt Upper (RH)	1
20	GM88340	Guard, Belt LH	1
20	GM94858*	Guard, Belt (LH)	1
21	GM88342	Guard, Belt Bottom	1
22	GM80596	Hose, Lower Radiator	1
23	GM80597	Hose, Upper Radiator	1
24	GM87380	Fan, Pusher	1
25	GM81484	Guard, Radiator	1
27	M125A-08-80	Washer, Plain 8.4 ID x 16.0 OD	4
34	M933-08030-82	Screw Hex Cap	4
40	X-209-26	Pipe (1/2"npt x 12.00")	1
41	X-209-31	Pipe, Nipple 1/2" NPT x 10.5" Long	1
42	X-215-1	Elbow, pipe (90 deg x 1/2"npt)	2
43	X-215-5	Elbow, pipe (90 deg x 1/4"npt)	1
44	X-220-14	Pipe (1/4"npt x 2.50")	2
45	X-250-2	Coupling, reducer ( 3/8" x 1/4"npt)	1
46	X-380-4	Connector, hose + Vibra Seal	2
47	X-426-12	Clamp, hose, .69/1.25 in.	6
48	X-426-16	Clamp, hose, 1.81/2.75 in.	2
49	X-426-19	Clamp, hose, 1.00/2.00 in.	2
50	X-426-9	Clamp, hose, .25/.70 in.	2
52	X-582-5	Connector, hose + Vibra Seal	2
53	X-672-13	Clamp, insulated, .88 in.	2

\* Valid as of build date 5/18/2015

# Group 105: Engine

50/60 kW, Natural Gas/LPG Vapor/LP Liquid Withdrawal



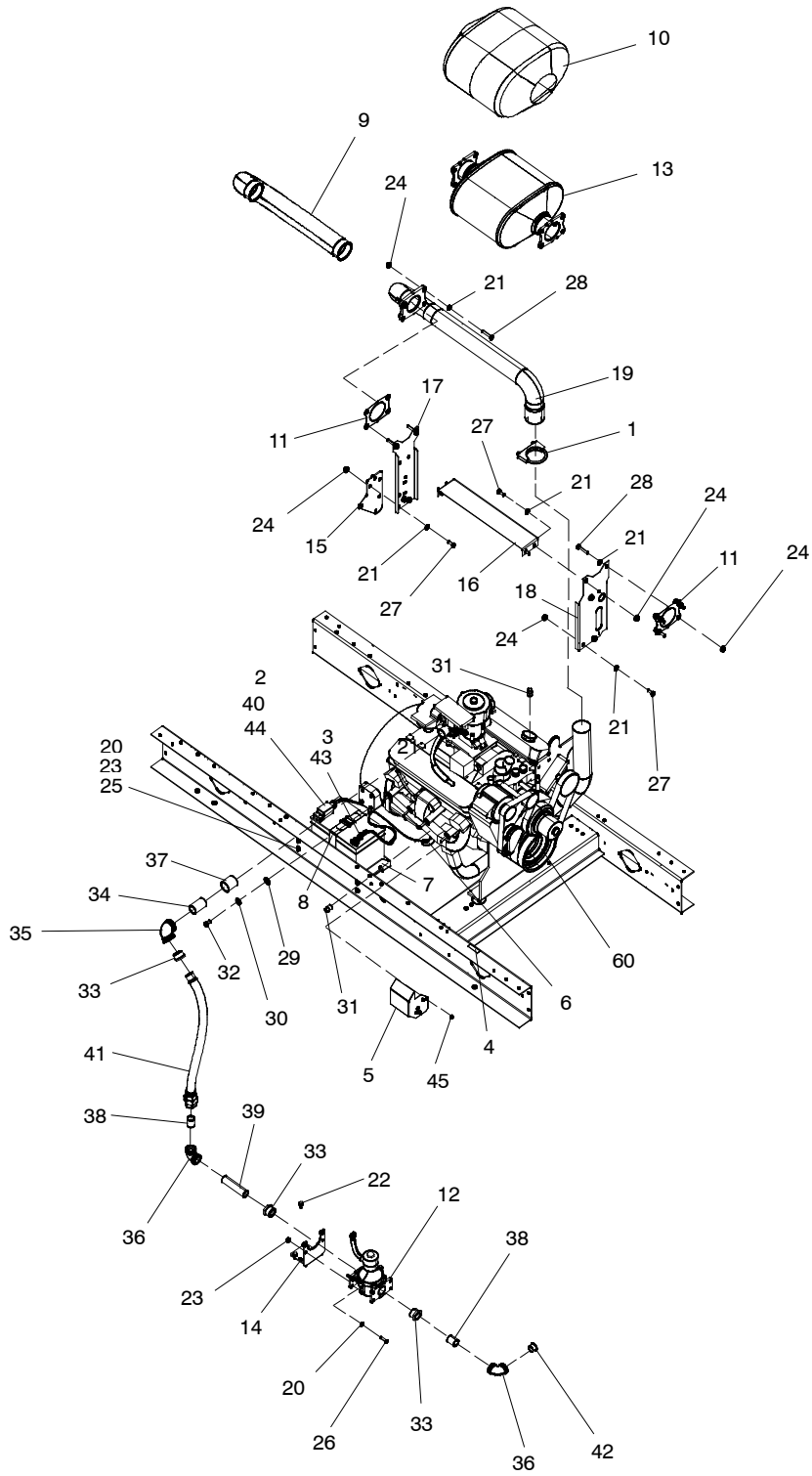
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# Group 105: Engine

Item	Part Number	Description	Quantity			
			Variation Number			
			4	6	7	9
1	GM65420-1	Engine Assy 4.3L 12V Nat./LP Gas				
1	GM65421-1	Engine Assy 5.0L 12V Nat./LP Gas	1	1		
1	GM65422-1	Engine Assy 5.7L 12V Nat./LP Gas			1	1
2	GM14263	Harness, Fuel Nat./LP Gas	1		1	
2	GM70629	Harness, Liquid Fuel				
2	GM70480	Harness, Liquid Fuel		1		1
3	GM20577	Decal, Fuel Type	1		1	
3	GM20175	Decal, Fuel Type		1		1
4	X-545-137	Cable, battery (No.2 x 30 in.) red+	1	1	1	1
5	X-129-15	Bolt, Hex Cap	1	1	1	1
6	X-22-26	Washer,lock, .521 ID x 1.24 in. OD	1	1	1	1
7	X-25-26	Washer, plain, .531 ID x 1.062 in. OD	1	1	1	1
8	X-545-112	Cable, battery (No.2 x 16 in.) black-	1	1	1	1
9	345056	Terminal, battery	1	1	1	1
10	GM57161	Rack, Battery	1	1	1	1
11	290869	Bolt, Angle	2	2	2	2
12	X-101-16	Nut, hex elastic stop, 5/16-18	2	2	2	2
13	X-25-44	Washer, plain, .328 ID x .562 OD	2	2	2	2
14	324033	Clamp, battery	1	1	1	1
15	345039	Terminal, battery	1	1	1	1
16	GM20745	Boot, Battery Lug	1	1	1	1
17	GM21188	Shield, Heat	1	1	1	1
18	GM22350	Boot, Starter Terminal	1	1	1	1
19	X-6210-5	Nut, flange whiz, 10-24	2	2	2	2
20	GM21335	Shield, heat (20mm ID x 412mm length)	1	1	1	1
35	X-215-14	Elbow, pipe (90 deg x 1-1/4 in. npt)	1		1	
36	X-216-22	Coupling, pipe (1-1/4 in. npsc)	1		1	
37	X-210-28	Fitting, Pipe Nipple (2.50")	1		1	
38	X-504-20	Fuel line, flexible (1.00 in. ID x 29 in.)	1		1	
39	X-202-32	Bushing, reducing (1 x 1-1/4 in. npt)	1		1	
40	GM70497	Valve assembly, gas	1		1	
41	X-215-15	Elbow, pipe (90 deg x 1 in. npt)	1		1	
42	X-218-24	Pipe (1 in. npt x 1.50 in.)	1		1	
43	X-202-32	Bushing, reducing (1 x 1-1/4 in. npt)	1		1	
44	GM86089	Bracket, Support	1		1	
44	X-218-30	Pipe (1"npt x 5.00")	1		1	
45	X-215-15	Elbow, pipe (90 deg x 1 in. npt)	1		1	
46	X-218-24	Pipe (1 in. npt x 1.50 in.)	1		1	
47	X-202-32	Bushing, reducing (1 x 1-1/4 in. npt)	1		1	
48	GM70198	Vaporizer, LP Liquid Withdrawal		1		1
48	GM70313	Vaporizer, LP Liquid Withdrawal		1		1
49	X-209-5	Pipe (1/2"npt x 1.50")		1		1
50	X-203-13	Tee, pipe (1/2 x 1/2 x 1/2 npt)		1		1
51	X-582-1	Connector, hose		1		1
52	X-426-12	Clamp, hose, .69/1.25 in.		4		4
53	X-312-52	Hose, .63 ID x 19 in.		1		1
54	X-312-34	Hose, .63 ID x 10 in.		1		1
54	X-6047-14	Channel, U (not shown)		1		1

# Group 105: Engine, continued

50/60 kW, Natural Gas/LP Gas, Prime



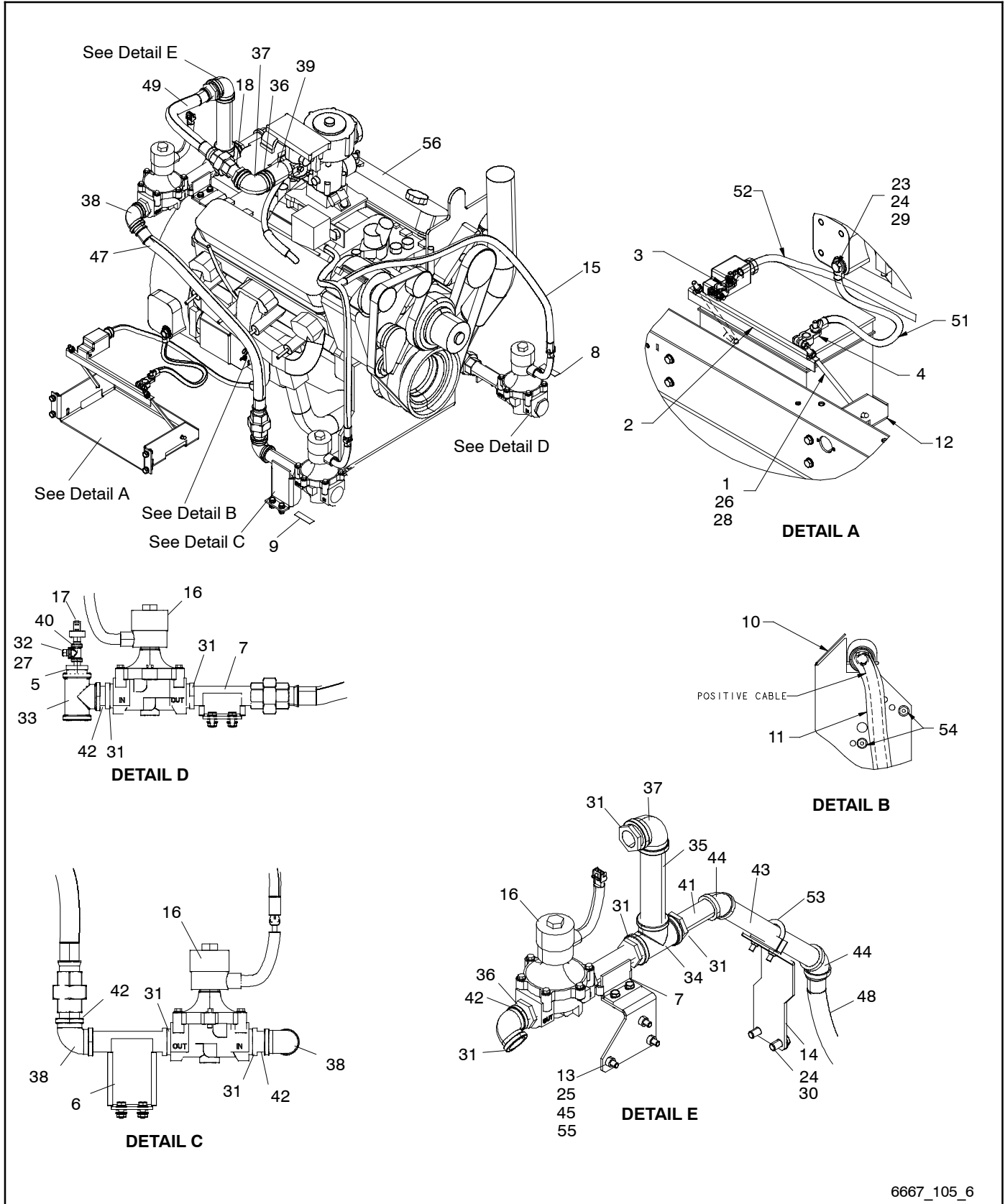
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## Group 105: Engine, continued

Item	Part Number	Description	Qty.
			Var. No. 42
1	286283	Clamp, muffler, 3.12 in.	1
2	345039	Terminal, battery	1
3	345056	Terminal, battery	1
4	GM20577	Decal, Fuel Type	1
5	GM21188	Shield, Heat	1
6	GM21335	Shield, heat (20mm ID x 412mm length)	1
7	GM57161	Rack, Battery	1
8	GM61432	Strap, Poly Battery	1
9	GM62589	Insulation, Exhaust Tube	1
10	GM65752	Wrap, Catalyst	1
11	GM66053	Gasket, Exhaust	2
12	GM70497	Valve, Gas Assy	1
13	GM75660	Catalyst	1
14	GM86089	Bracket, Support	1
15	GM89959	Plate, Support	1
16	GM89960	Bracket, Support	1
17	GM89961	Bracket, Support	1
18	GM89962	Bracket, Support	1
19	GM89964	Tube, Exhaust	1
20	M125A-08-80	Washer, Plain 8.4 ID x 16.0 OD	8
21	M125A-10-80	Washer, Plain 10.5 ID x 20.0 OD	17
22	M6921-08020-60	Screw, Hex Flange M8 x 20	2
23	M6923-08-80	Nut, Hex 8mm	8
24	M6923-10-80	Nut, Hex 10mm	17
25	M933-08020-60	Screw, Hex cap	4
26	M933-08030-60	Screw, Hex cap	4
27	M933-10025-60	Screw, hex cap, fully thrd M10 x 25mm	9
28	M933-10050-60	Screw, Hex Cap	8
29	X-22-26	Washer, lock .521 ID x 1.24 in. OD	1
30	X-25-26	Washer, Plain	1
31	X-75-28	Plug, pipe ( 1/2"nptf)	2
32	X-129-15	Bolt, Hex Cap	1
33	X-202-32	Bushing, reducing (1 x 1-1/4"npt)	3
34	X-210-28	Fitting, Pipe Nipple (2.50")	1
35	X-215-14	Elbow, pipe (90 deg x 1-1/4"npt)	1
36	X-215-15	Elbow, pipe (90 deg x 1"npt)	2
37	X-216-22	Coupling, pipe (1-1/4"npsc) straight	1
38	X-218-24	Pipe (1"npt x 1.50")	2
39	X-218-30	Pipe (1"npt x 5.00")	1
40	X-468-1	Cable Tie	2
41	X-504-20	Fuel line, flexible (1.00" ID * 29")	1
42	X-519-20	Plug, Cap	1
43	X-545-112	Cable, battery (No.2 x 16") black-	1
44	X-545-137	Cable, battery (No.2 x 30") red+	1
45	X-6210-5	Nut, flange whiz, 10-24	2
60	GM85267	Engine Assy., 5.7L 12V Nat./LP Gas	1

# Group 105: Engine, continued

50/60 kW, Dual Fuel Natural Gas/LPG Vapor



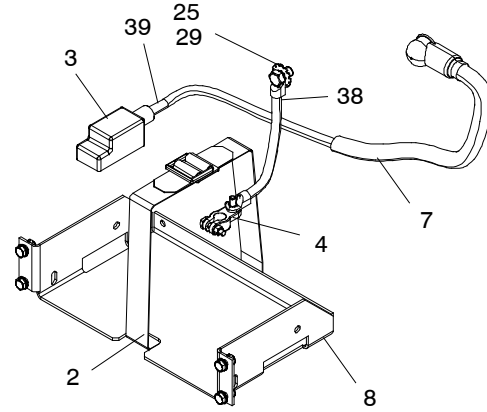
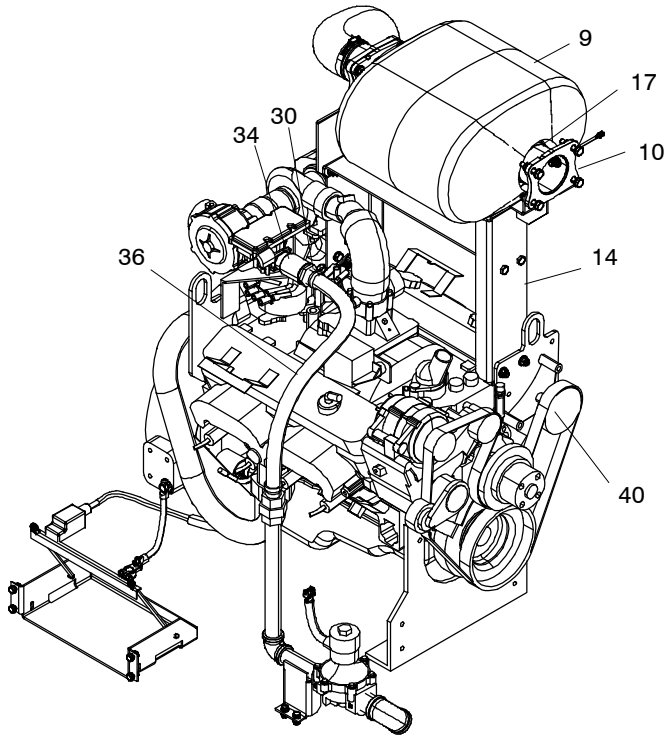
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## Group 105: Engine, continued

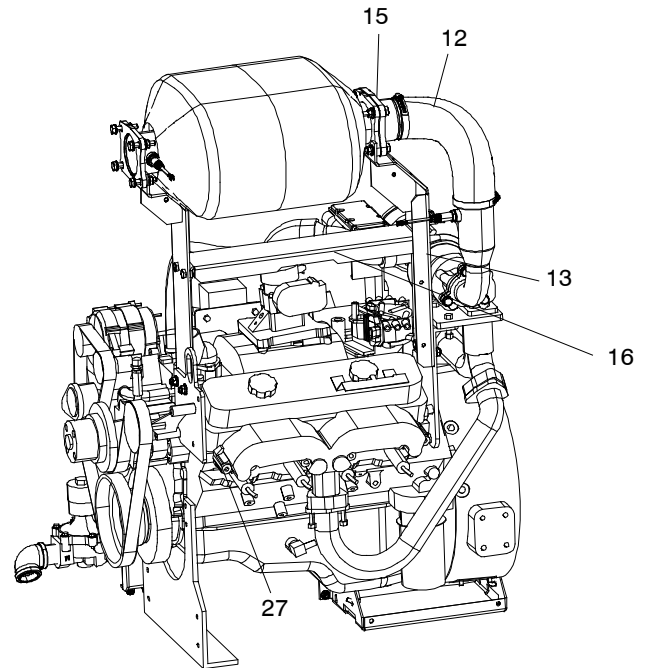
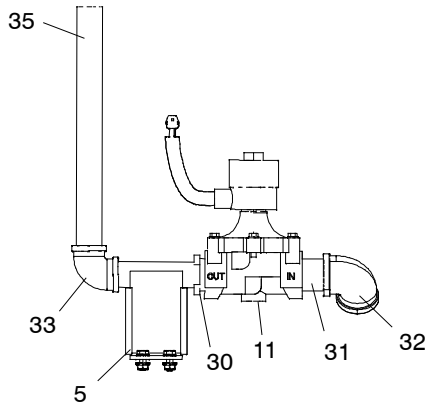
Item	Part Number	Description	Qty.	
			5	8
1	290869	Bolt, Angle	2	2
2	324033	Clamp, battery	1	1
3	345039	Terminal, battery	1	1
4	345056	Terminal, battery	1	1
5	AC-1459	Bushing, reducing (1/8 x 1 in. npt)	1	1
6	GM86089	Bracket, Support	1	1
6	X-218-30	Pipe (1"npt x 5.00")	1	1
7	GM17263	Bracket, Fuel Valve	2	2
8	GM20174	Decal, Fuel Type	1	1
9	GM20173	Decal, Fuel Type	1	1
10	GM21188	Shield, Heat	1	1
11	GM21335	Shield, heat (20mm ID x 412mm length)	1	1
12	GM57161	Rack, Battery	1	1
13	GM70377	Bracket, Support	1	1
14	GM70399	Bracket, Support	1	1
15	GM70471	Harness, Dual Fuel Nat/LP Gas	1	1
16	GM70497	Valve, Gas Assy	3	3
17	GM70538	Switch, Pressure 6.27 in. H2O	1	1
18	K-122	Pipe (1 NPT x 2 in.)	1	1
23	X-22-26	Washer, lock, .521 ID x 1.24 in. OD	1	1
24	X-25-26	Washer, plain, .531 ID x 1.062 in. OD	3	3
25	X-25-37	Washer, plain, .406 ID x.812 in. OD	3	3
26	X-25-44	Washer, Plain.328 ID x .562 OD	2	2
27	X-75-1	Plug, pipe ( 1/8 in. nptf)	1	1
28	X-101-16	Nut, hex elastic stop, 5/16-18	2	2
29	X-129-15	Bolt, Hex Cap	1	1
30	X-129-17	Bolt, Hex Cap	2	2
31	X-202-32	Bushing, reducing (1 x 1-1/4 in. npt)	10	10
32	X-203-10	Tee, pipe (1/8 x 1/8 x 1/8 npt)	1	1
33	X-203-2	Tee, pipe (1 x 1 x 1 npt)	1	1
34	X-203-26	Tee, pipe (1-1/4 x 1-1/4 x 1-1/4 npt)	1	1
35	X-210-18	Pipe (1-1/4 in. npt x 7.00 in.)	1	1
36	X-210-8	Pipe (1-1/4 in. npt x 1.63 in.)	2	1
37	X-215-14	Elbow, pipe (90 deg x 1-1/4 in. npt)	3	2
38	X-215-15	Elbow, pipe (90 deg x 1 in. npt)	2	3
39	X-216-22	Coupling, pipe (1-1/4 in. npsc)	1	1
40	X-217-6	Pipe (1/8 in. npt x .75 in.)	1	1
41	X-218-13	Pipe (1 in. npt x 4.00 in.)	1	1
42	X-218-24	Pipe (1 in. npt x 1.50 in.)	3	4
43	X-218-26	Pipe (1 in. npt x 12.75 in.)	1	1
44	X-225-9	Elbow, pipe (45 deg x 1 in. npt)	2	2
45	X-400-75	Spacer, .406 ID x .625 OD x .297 in.	3	3
47	X-504-20	Fuel line, flexible (1.00 in. ID x 29 in.)	1	1
48	X-504-20	Fuel line, flexible (1.00 in. ID x 29 in.)	1	1
49	X-504-21	Fuel line, flexible (1.00 in. ID x 18 in.)	1	1
51	X-545-112	Cable, battery (No.2 x 16 in.) black-	1	1
52	X-545-137	Cable, battery (No.2 x 30 in.) red+	1	1
53	X-722-8	Clamp, muffler, 1.37 in.	1	1
54	X-6210-5	Nut, flange whiz, 10-24	2	2
55	X-6238-11	Bolt, Hex Cap (3/8-16 x 1 in.) Gr. 5	3	3
56	GM65421-2	Engine Assy 5.0L 12V Nat./LP Gas	1	
56	GM65422-2	Engine Assy 5.7L 12V Nat./LP Gas		1

# Group 105: Engine, continued

80/100 kW with 5.7L Engine, Natural Gas/LPG Vapor



Items not shown: 6, 18-24



GM71611  
GM74851

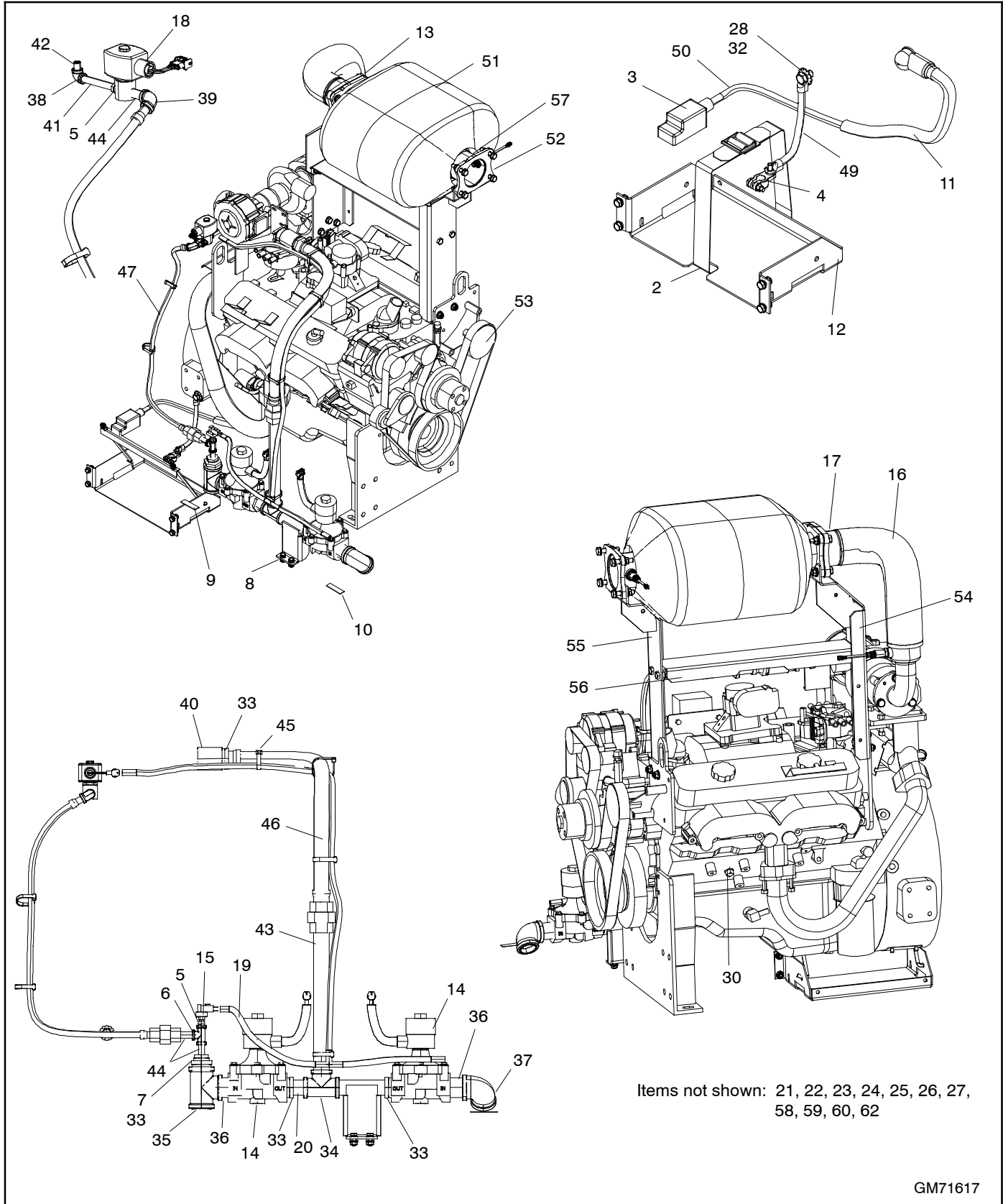


## Group 105: Engine, continued

Item	Part Number	Description	Quantity			
			Variation Number			
			20	21	25	29
2	GM61432	Strap, battery	1	1	1	1
3	345039	Terminal, battery	1	1	1	1
4	345056	Terminal, battery	1	1	1	1
5	GM86089	Bracket, Support	1	1	1	1
5	X-218-30	Pipe (1"npt x 5.00")	1	1	1	1
6	GM20173	Decal,Fuel Type	1		1	1
6	GM20577	Decal,Fuel Type		1		
7	GM21335	Shield, heat (20mm ID x 412mm length)	1	1	1	1
8	GM57161	Rack, Battery	1	1	1	1
9	GM65752	Wrap, Catalyst	1	1		
10	GM66053	Gasket, Exhaust	2	2	1	1
11	GM70497	Valve, Gas Assy	1	1	1	1
12	GM71006	Insulation, Exhaust Tube	1	1	1	1
13	GM73987	Bracket, Catalyst Mtg	1	1	1	1
14	GM73988	Bracket, Catalyst Mtg	1	1		
15	GM73990	Tube, Exhaust	1	1	1	1
16	GM73993	Bracket, Support	1	1		
17	GM75660	Catalyst	1	1		
18	M125A-08-80	Washer, Plain, 8.4 ID x 16.0 OD	8	8	8	8
19	M125A-10-80	Washer, Plain, 10.5 ID x 20.0 OD	25	25	11	11
20	M6923-08-80	Nut, Hex 8mm	7	7	7	7
21	M6923-10-80	Nut, Hex 10mm	17	17	4	4
22	M933-08020-60	Screw, hex cap	4	4	4	4
23	M933-10030-60	Screw, hex cap	12	12	3	3
24	M933-10050-60	Screw, Hex Cap (Metric)	8	8	4	4
25	X-22-26	Washer, lock, .521 ID x 1.24 in. OD	1	1	1	1
27	X-75-28	Plug, pipe ( 1/2"nptf)	2	2	2	2
29	X-129-15	Bolt, Hex Cap	1	1	1	1
30	X-202-32	Bushing, reducing (1 x 1-1/4"npt)	2	2	2	2
31	X-210-8	Pipe (1-1/4"npt x 1.63")	1	1	1	1
32	X-215-14	Elbow, pipe (90 deg x 1-1/4"npt)	1	1	1	1
33	X-215-15	Elbow, pipe (90 deg x 1"npt)	1	1	1	1
34	X-216-22	Coupling, pipe (1-1/4"npsc) straight	1	1	1	1
35	X-218-26	Pipe (1"npt x 12.75")	1	1	1	1
36	X-504-20	Fuel line, flexible (1.00" ID x 29")	1	1	1	1
38	X-545-112	Cable, battery (No.2 x 16") black-	1	1	1	1
39	X-545-137	Cable, battery (No.2 x 30") red+	1	1		
39	X-545-135	Cable, battery (No.0 x 30") red+			1	1
40	GM71607-1	Engine, 5.7L GM, Single Fuel, Nat.Gas	1			
40	GM71608-1	Engine, 5.7L CAC GM, Single Fuel,Nat.Gas		1		
40	GM71607-2	Engine, 5.7L GM, Single Fuel, Nat.Gas				1
40	GM71608-2	Engine, 5.7L CAC GM, Single Fuel,Nat.Gas			1	

# Group 105: Engine, continued

100 kW with 5.7L Engine, Dual Fuel, Natural Gas/LPG

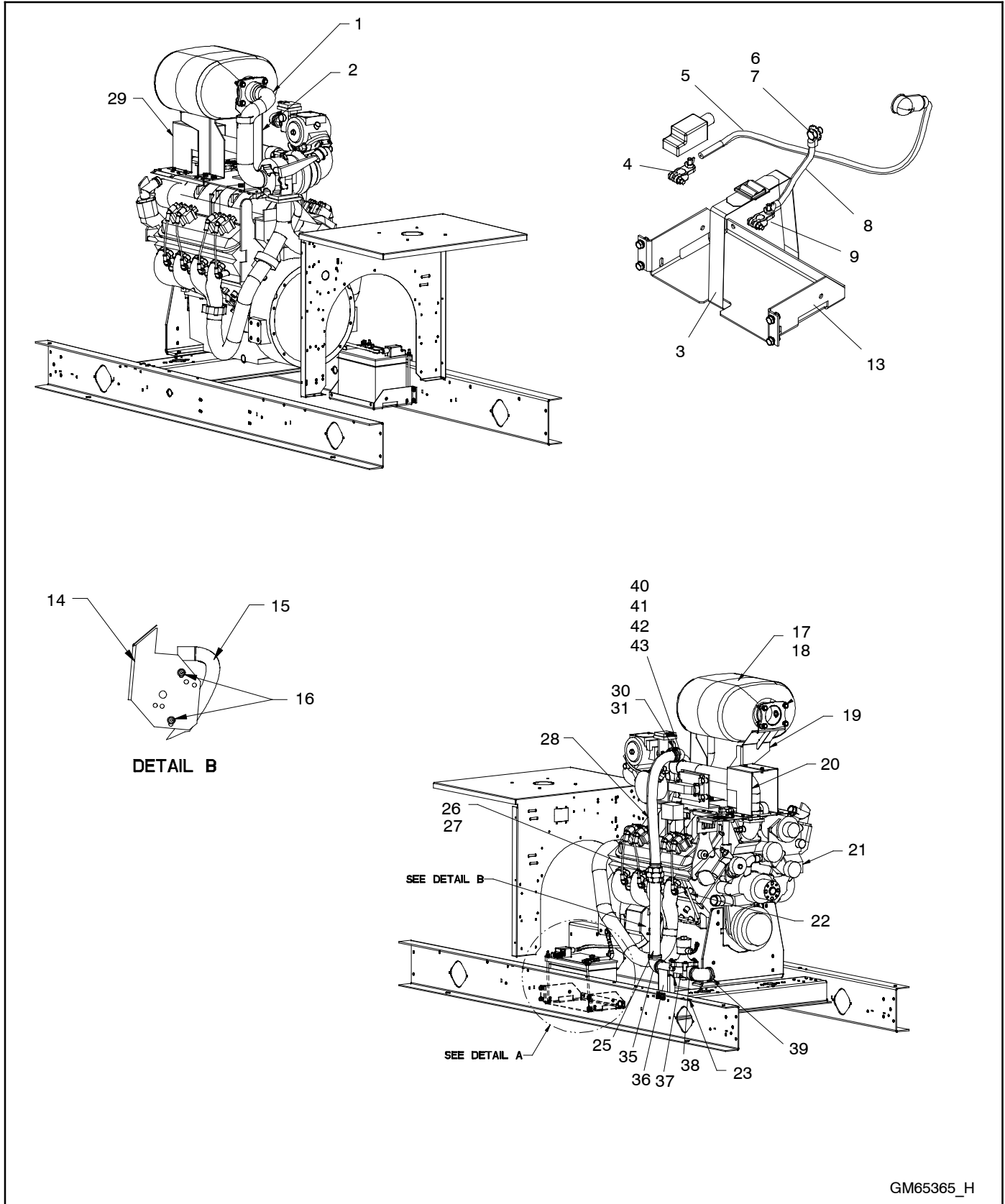


## Group 105: Engine, continued

Item	Part Number	Description	Quantity	
			Variation Number 24	Variation Number 28
2	GM61432	Strap, battery	1	1
3	345039	Terminal, battery	1	1
4	345056	Terminal, battery	1	1
5	A-106	Bushing, reducing (1/8 x 1/4"npt)	2	2
6	A-110	Tee, pipe (1/4 x 1/4 x 1/4 npt)	1	1
7	D-2159	Bushing, Reducer	1	1
8	GM86089	Bracket, Support	1	1
8	X-218-30	Pipe (1"npt x 5.00")	1	1
9	GM20173	Decal,Fuel Type	1	1
10	GM20174	Decal, Fuel Type	1	1
11	GM21335	Shield, heat (20mm ID x 412mm length)	1	1
12	GM57161	Rack, Battery	1	1
13	GM66053	Gasket, Exhaust	1	1
14	GM70497	Valve, Gas Assy	2	2
15	GM70536	Switch, Pressure 3.6" H2O	1	1
16	GM71006	Insulation, Exhaust Tube	1	1
17	GM73990	Tube, Exhaust	1	1
18	GM74499	Valve Assembly, Vent	1	1
19	GM74500	Harness, Dual Fuel	1	1
20	K-122	Pipe (1"npt x 2.00")	1	1
21	M125A-08-80	Washer, Plain, 8.4 ID x 16.0 OD	4	4
22	M125A-10-80	Washer, Plain, 10.5 ID x 20.0 OD	11	11
23	M6923-08-80	Nut, Hex 8mm	4	4
24	M6923-10-80	Nut, Hex 10mm	4	4
25	M933-08020-60	Screw, hex cap	6	6
26	M933-10030-60	Screw, hex cap	3	3
27	M933-10050-60	Screw, Hex Cap (Metric)	4	4
28	X-22-26	Washer, lock, .521 ID x 1.24 in. OD	1	1
30	X-75-28	Plug, pipe ( 1/2"nptf)	2	2
32	X-129-15	Bolt, Hex Cap	1	1
33	X-202-32	Bushing, reducing (1 x 1-1/4"npt)	4	4
34	X-203-2	Tee, pipe (1 x 1 x 1 npt)	1	1
35	X-203-26	Tee, pipe (1-1/4 x 1-1/4 x 1-1/4 npt)	1	1
36	X-210-8	Pipe (1-1/4"npt x 1.63")	2	2
37	X-215-14	Elbow, pipe (90 deg x 1-1/4"npt)	1	1
38	X-215-19	Elbow, pipe (90 deg x 1/8"npt)	1	1
39	X-215-5	Elbow, pipe (90 deg x 1/4"npt)	1	1
40	X-216-22	Coupling, pipe (1-1/4"npsc) straight	1	1
41	X-217-15	Pipe, Nipple (1/8" npt x 3.00")	1	1
42	X-217-6	Pipe (1/8"npt x .75")	1	1
43	X-218-26	Pipe (1"npt x 12.75")	1	1
44	X-220-6	Pipe (1/4"npt x 1.50")	3	3
45	X-468-1	Cable Tie	6	6
46	X-504-20	Fuel line, flexible (1.00" ID x 29")	1	1
47	X-504-25	Line, Flex Fuel	1	1
49	X-545-112	Cable, battery (No.2 x 16") black-	1	1
50	X-545-135	Cable, battery (No.0 x 30") red+	1	1
51	GM65752	Wrap, Catalyst	1	
52	GM66053	Gasket, Exhaust	1	
53	GM71608-1	Engine, 5.7L CAC GM, Single Fuel,Nat.Gas	1	
53	GM71608-2	Engine, 5.7L CAC GM, Dual Fuel,Nat		1
54	GM73987	Bracket, Catalyst Mtg	1	
55	GM73988	Bracket, Catalyst Mtg	1	
56	GM73993	Bracket, Support	1	
57	GM75660	Catalyst	1	
58	M125A-10-80	Washer, Plain, 10.5 ID x 20.0 OD	17	
59	M6923-10-80	Nut, Hex 10mm	13	
60	M933-10030-60	Screw, hex cap	9	
62	M933-10050-60	Screw, Hex Cap (Metric)	4	

# Group 105: Engine, continued

125 kW, Natural Gas/LPG Vapor

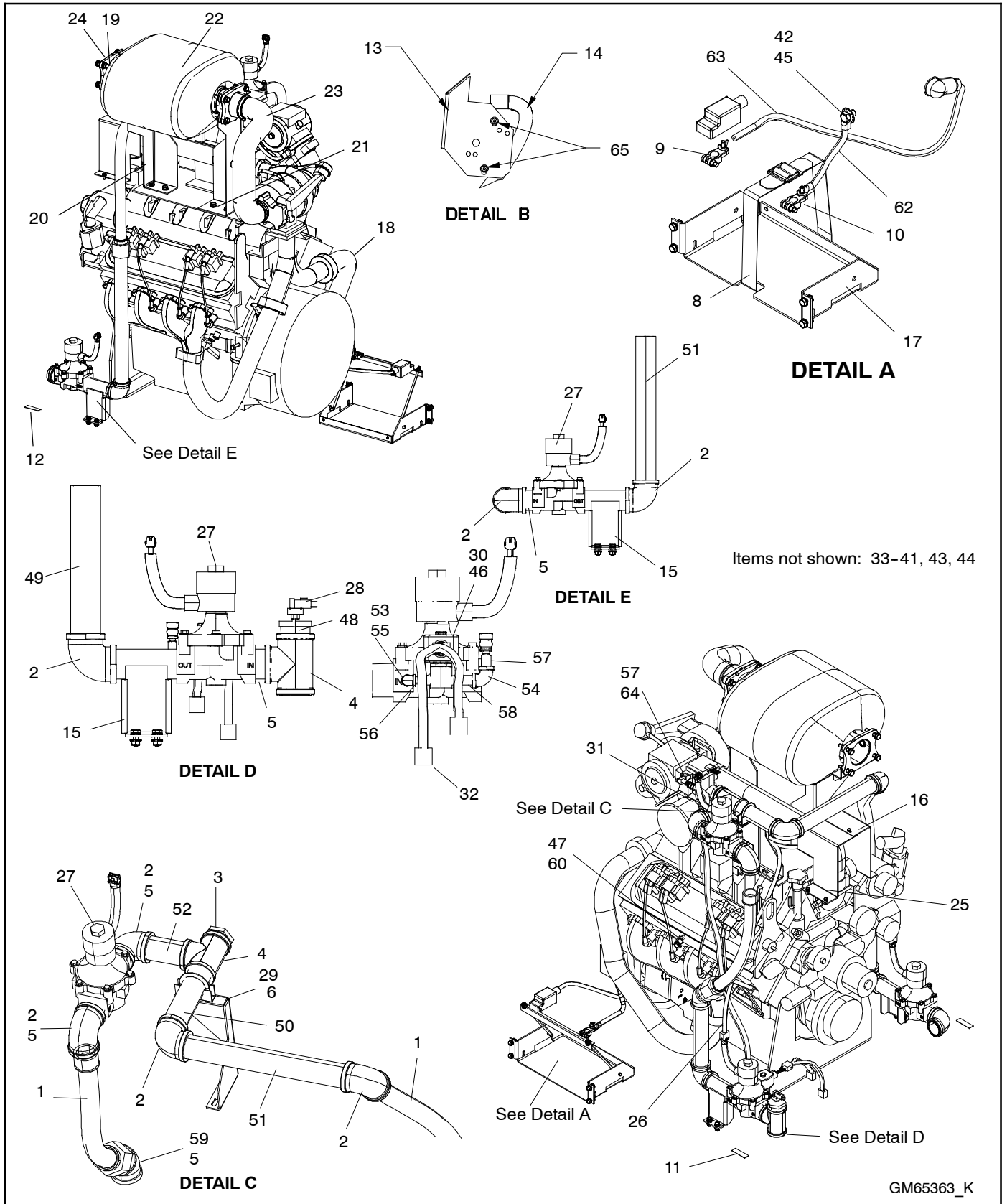


## Group 105: Engine, continued

Item	Part Number	Description	Qty.
			Var. No. 12
1	GM66052	Tube, exhaust	1
2	GM65751	Bracket, support	1
3	GM61432	Strap, battery	1
4	345039	Terminal, battery	1
5	X-545-137	Cable, battery (no.2 x 30 in.) red+	1
6	X-129-15	Bolt, hex cap	1
7	X-22-26	Washer, lock, .521 ID x 1.24 in. OD	1
8	X-545-112	Cable, battery (no.2 x 16 in.) black-	1
9	345056	Terminal, battery	1
13	GM57161	Rack, battery	1
14	GM21188	Shield, heat	1
15	GM21335	Shield, heat (20mm ID x 412mm length)	1
16	X-6210-5	Nut, flange whiz, 10-24	2
17	GM65728	Catalyst	1
17	GM65752	Wrap, catalyst	1
18	GM66053	Gasket, exhaust	2
19	GM65743	Bracket, support	1
20	GM66598	Guard, hose (left)	1
21	GM62288-1	Engine assy turbo 8.1L 12V NG/LPG	1
22	X-22-14	Washer, lock, .391 ID x .975 in. OD	1
23	GM20577	Decal, fuel type	1
25	X-205-25	Pipe (1-1/2 in. npt x 14.25 in.)	1
26	X-209-3	Pipe, Nipple, (1/2" NPT x 2.50)	1
26	X-203-13	Tee, pipe (1/2 x 1/2 x 1/2 NPT)	1
26	X-75-28	Plug, pipe (1/2" NPT)	1
27	X-256-3	Valve, drain ( 1/4 in. nptf)	1
27	X-202-47	Bushing, reducing (1/4 x 1/2 in. npt)	1
28	X-504-22	Fuel line, flexible (1.50 in. ID x 28.25 in.)	1
29	GM30906	Guard, hose (right)	1
30	151771	Elbow, pipe (90 deg x 1-1/2 in. npt)	1
31	153016	Bushing, reducer	1
35	151771	Elbow, pipe (90 deg x 1-1/2 in. npt)	1
36	GM23545	Bracket, support	1
37	GM70498	Valve, gas	1
38	155040	Pipe (1-1/2 in. npt x 1.75 in.)	1
39	151771	Elbow, pipe (90 deg x 1-1/2 in. npt)	1
40	X-210-27	Pipe, Nipple (1-1/4" npt x 5.00")	1
41	X-216-22	Coupling, pipe (1-1/4"npvc) straight	1
42	GM70920	Bracket, Fuel Support	1
43	277706	Clamp, muffler, 1.87 in.	1

# Group 105: Engine, continued

125 kW, Dual Fuel Natural Gas/LPG Vapor

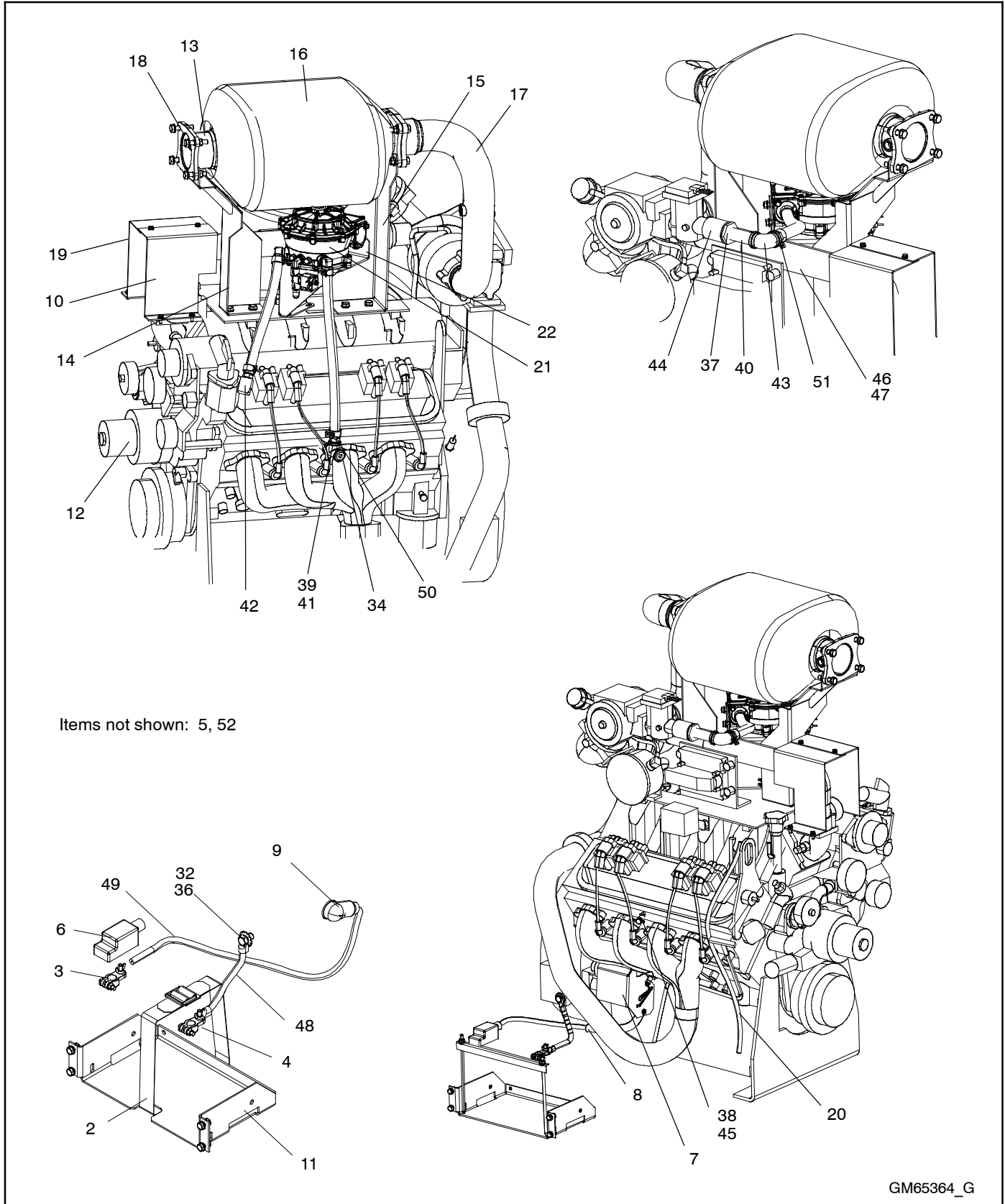


## Group 105: Engine, continued

Item	Part Number	Description	Qty.
			Var. No. 15
1	X-504-22	Fuel line, flexible (1.50" id x 28.25")	2
2	151771	Elbow, pipe (90 deg x 1-1/2" npt)	7
3	153016	Bushing, reducing (1-1/4 x 1-1/2" npt)	1
4	155039	Tee, pipe (1-1/2 x 1-1/2 x 1-1/2 npt)	2
5	155040	Pipe (1-1/2" npt x 1.75")	5
6	X-722-5	Clamp, muffler, 2.12 in.	1
8	GM61432	Strap, battery	1
9	345039	Terminal, battery	1
10	345056	Terminal, battery	1
11	GM20173	Decal, Fuel Type	1
12	GM76139	Decal, Fuel Type	1
13	GM21188	Shield, Heat	1
14	GM21335	Shield, heat (20mm id x 412mm length)	1
15	GM23545	Bracket, Support	2
16	GM30906	Guard, Hose (Right)	1
17	GM57161	Rack, Battery	1
18	GM62288-2	Engine Assy Turbo 8.1L 12V Dual NG/LPG	1
19	GM65728	Catalyst	1
20	GM65743	Bracket, Support	1
21	GM65751	Bracket, Support	1
22	GM65752	Wrap, Catalyst	1
23	GM66052	Tube, Exhaust	1
24	GM66053	Gasket, Exhaust	2
25	GM66598	Guard, hose (left)	1
26	GM70471	Harness, Dual Fuel Nat/LP Gas	1
27	GM70498	Valve, Gas Assy	3
28	GM70538	Switch, Pressure 7.0" H2O	1
29	GM70920	Bracket, Fuel Support	1
30	GM74499	Valve Assembly, Vent	1
31	GM75369	Hose, Flex Fuel	1
32	GM75370	Harness, Dual Fuel Gas Vent	1
33	M125A-06-80	Washer, Plain	6
34	M125A-08-80	Washer, Plain, 8.4 ID x 16.0 OD	8
35	M125A-10-80	Washer, Plain, 10.5 ID x 20.0 OD	16
36	M6923-08-80	Nut, Hex 8mm	8
37	M6923-10-80	Nut, Hex 10mm	12
38	M933-06016-60	Screw, hex cap, M6x16mm, js500 full thrd	6
39	M933-08020-60	Screw, hex cap	8
40	M933-10025-60	Screw, hex cap, fully thrd M10 x 25mm EXP	4
41	M933-10050-60	Screw, Hex Cap (Metric)	8
42	X-22-26	Washer, lock. 521 ID x 1.24 in. OD	1
45	X-129-15	Bolt, Hex Cap	1
46	X-202-27	Bushing, reducing (1/8 x 1/4" npt) + vibra	1
47	X-209-3	Pipe, Nipple, (1/2" NPT x 2.50)	1
47	X-203-13	Tee, pipe (1/2 x 1/2 x 1/2 NPT)	1
47	X-75-28	Plug, pipe (1/2" NPT)	1
48	X-202-59	Bushing, reducing (1-1/2" npt to 1/8" npt)	1
48	GM77915	Fitting, Restriction (not shown)	1
48	X-216-24	Coupling, pipe (1/8" npt) (not shown)	1
49	X-205-15	Pipe (1-1/2" npt x 7.00")	1
50	X-205-15	Pipe (1-1/2" npt x 7.00")	1
51	X-205-25	Pipe (1-1/2" npt x 14.25")	4
52	X-205-7	Pipe (1-1/2" npt x 4.00")	1
53	X-215-19	Elbow, pipe (90 deg x 1/8" npt)	1
54	X-215-5	Elbow, pipe (90 deg x 1/4" npt)	1
55	X-217-2	Pipe, Nipple (1/8" NPT x 1.50")	1
56	X-217-6	Pipe (1/8" npt x .75")	1
57	X-220-5	Pipe (1/4" npt x .87")	2
58	X-220-6	Pipe (1/4" npt x 1.50")	1
59	X-225-3	Elbow, pipe (45 deg x 1-1/2" npt)	1
60	X-256-3	Valve, drain (1/4 in. nptf)	1
60	X-202-47	Bushing, reducing (1/4 x 1/2 in. npt)	1
62	X-545-112	Cable, battery (No. 2 x 16") black-	1
63	X-545-137	Cable, battery (No. 2 x 30") red+	1
64	X-555-1	Elbow, street (90 deg x 1/4" nptf)	2
65	X-6210-5	Nut, flange whiz, 10-24	2

# Group 105: Engine, continued

125 kW, Liquid Withdrawal



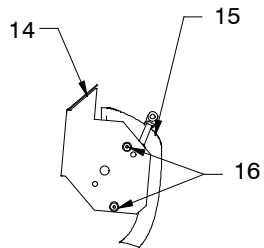
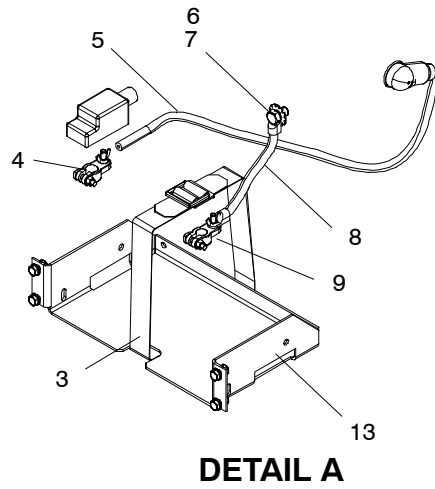
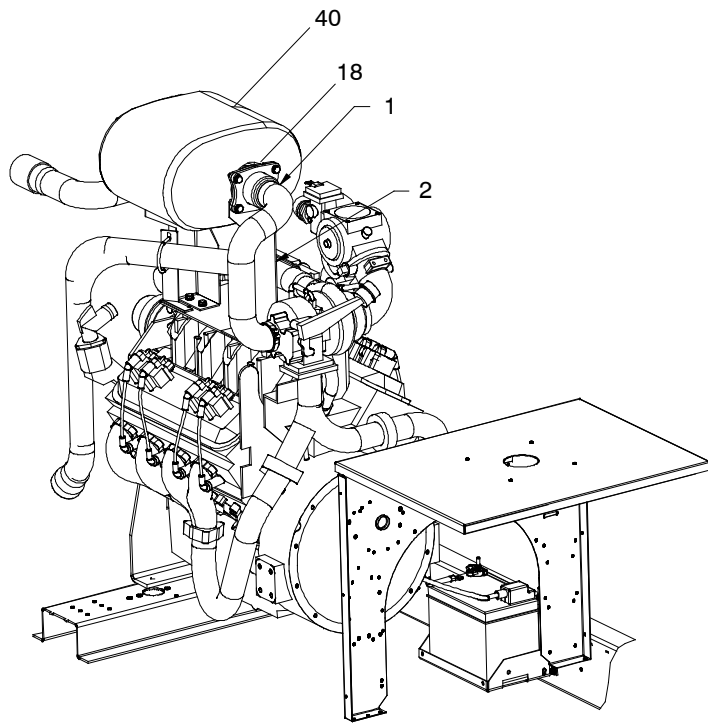


## Group 105: Engine, continued

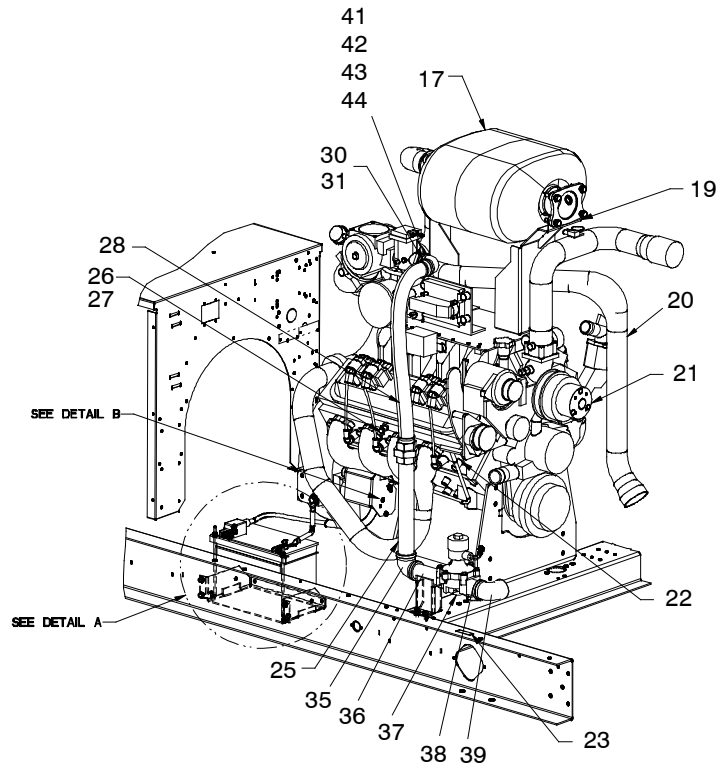
Item	Part Number	Description	Qty.
			Var. No. 16
2	GM61432	Strap, battery	1
3	345039	Terminal, battery	1
4	345056	Terminal, battery	1
5	GM20175	Decal, Fuel Type	1
6	GM20745	Boot, Battery Lug	1
7	GM21188	Shield, Heat	1
8	GM21335	Shield, heat (20mm ID x 412mm length)	1
9	GM22350	Boot, Starter Terminal	1
10	GM30906	Guard, Hose (Right)	1
11	GM57161	Rack, Battery	1
12	GM62288-1	Engine Assy Turbo 8.1L 12V NG/LPG	1
13	GM65728	Catalyst	1
14	GM65743	Bracket, Support	1
15	GM65751	Bracket, Support	1
16	GM65752	Wrap, Catalyst	1
17	GM66052	Tube, Exhaust	1
18	GM66053	Gasket, Exhaust	2
19	GM66598	Guard, hose (left)	1
20	GM75612	Harness, extension LP Liquid Fuel	1
21	GM71290	Vaporizer, LP Liquid Withdrawal	1
22	GM71331	Bracket, vaporizer mounting	1
32	X-22-26	Washer, lock, .521 ID x 1.24 in. OD	1
34	X-75-54	Plug, pipe (1/2 in. nptf) brass	1
36	X-129-15	Bolt, Hex Cap	1
37	X-202-18	Bushing, reducing (3/4 x 1-1/4 in. npt)	1
38	X-209-3	Pipe, Nipple, (1/2" NPT x 2.50)	1
38	X-203-13	Tee, pipe (1/2 x 1/2 x 1/2 NPT)	1
38	X-75-28	Plug, pipe (1/2" NPT)	1
39	X-203-13	Tee, pipe (1/2 x 1/2 x 1/2 npt)	1
40	X-206-6	Pipe (3/4 in. npt x 3.50 in.)	1
41	X-209-21	Pipe (1/2"npt x 4.50")	1
42	X-211-3	Elbow, street (90 deg x 1/2 in. nptf)	1
43	X-215-2	Elbow, pipe (90 deg x 3/4 in. npt)	1
44	X-216-30	Coupling	1
45	X-256-3	Valve, drain (1/4 in. nptf)	1
45	X-202-47	Bushing, reducing (1/4 x 1/2 in. npt)	1
46	X-431-25	Terminal, fast-on, female, 18-22 awg	1
47	X-431-29	Terminal, fast-on, male, 18-22 AWG	1
48	X-545-112	Cable, battery (No.2 x 16 in.) black-	1
49	X-545-137	Cable, battery (No.2 x 30 in.) red+	1
50	X-582-1	Connector, Hose 5/8 in. x 1/2 in. MIP Brass	2
50	X-426-12	Clamp, hose, .69/1.25 in.	4
51	X-582-8	Connector, hose + Vibra Seal	1
52	X-6210-5	Nut, flange whiz, 10-24	2

# Group 105: Engine, continued

150 kW



DETAIL B



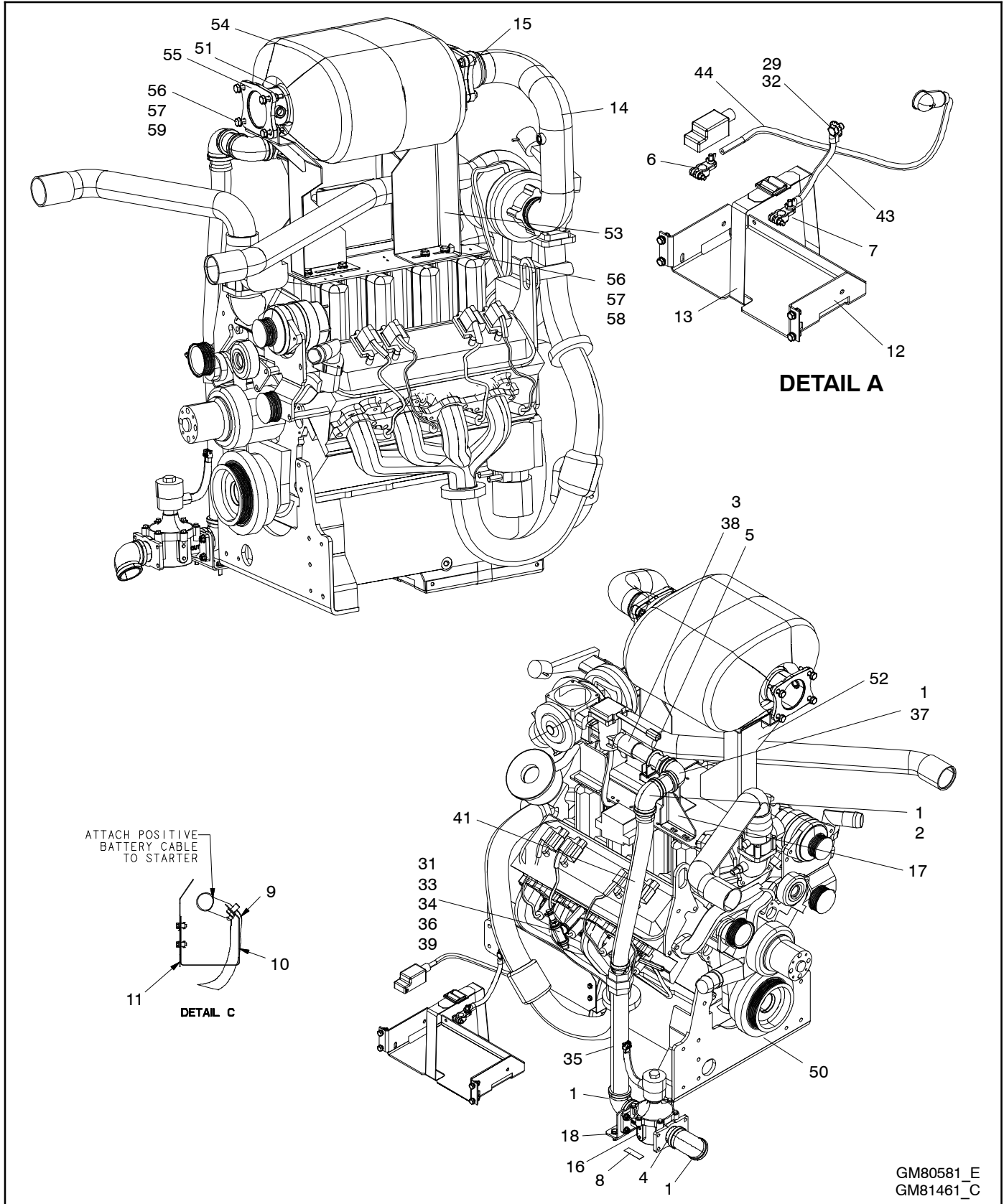
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## Group 105: Engine, continued

Item	Part Number	Description	Qty.
			Var. No. 10
1	GM66052	Tube, Exhaust	1
2	GM65751	Bracket, Support	1
3	GM61432	Strap, battery	1
4	345039	Terminal, battery	1
5	X-545-137	Cable, battery (No.2 x 30 in.) red+	1
6	X-129-15	Bolt, Hex Cap	1
7	X-22-26	Washer, lock, .521 ID x 1.24 in. OD	1
8	X-545-112	Cable, battery (No.2 x 16 in.) black-	1
9	345056	Terminal, battery	1
13	GM57161	Rack, Battery	1
14	GM21188	Shield, Heat	1
15	GM21335	Shield, heat (20mm ID x 412mm length)	1
16	X-6210-5	Nut, flange whiz, 10-24	2
17	GM65728	Catalyst	1
18	GM66053	Gasket, Exhaust	2
19	GM65743	Bracket, Support	1
20	GM64376	Tube, Charge Cooler	1
21	GM62289-1	Engine Assy, Turbo CAC 8.1L 12V NG/LPG	1
22	X-22-14	Washer, lock, .391 ID x .975 in. OD	1
23	GM20577	Decal, Fuel Type	1
	-	Solenoid, Gas Group (includes items 35-39)	1
25	X-205-25	Pipe (1-1/2 in. npt x 14.25 in.)	1
26	X-202-47	Bushing, reducing (1/4 x 1/2 in. npt)	1
27	X-256-3	Valve, drain (1/4 in. nptf)	1
28	X-504-22	Fuel line, flexible (1.50 in. ID x 28.25 in.)	1
30	X-215-14	Elbow, pipe (90 deg x 1-1/4 in. npt)	1
31	153016	Bushing, reducing (1-1/4 x 1-1/2 in. npt)	1
35	151771	Elbow, pipe (90 deg x 1-1/2 in. npt)	1
36	GM23545	Bracket, Support	1
37	GM70498	Valve, gas	1
38	155040	Pipe (1-1/2 in. npt x 1.75 in.)	1
39	151771	Elbow, pipe (90 deg x 1-1/2 in. npt)	1
40	GM65752	Wrap, Catalyst	1
41	X-210-27	Pipe, Nipple (1-1/4" npt x 5.00")	1
42	X-216-22	Coupling, pipe (1-1/4"npsc) straight	1
43	GM70920	Bracket, Fuel Support	1
44	277706	Clamp, muffler, 1.87 in.	1

# Group 105: Engine, continued

125/150 kW with 8.8L Engine

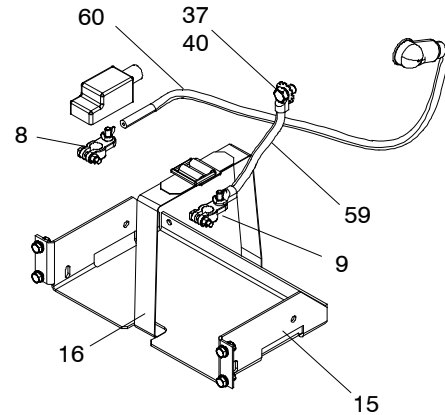
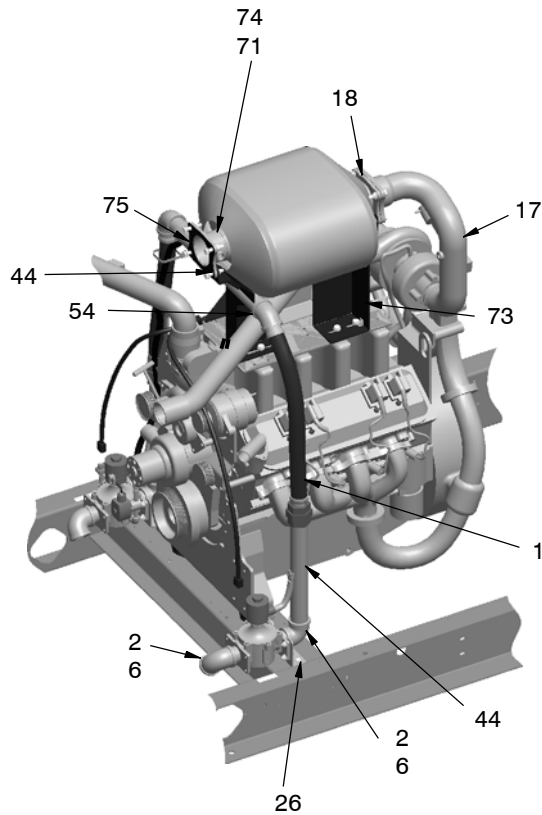


## Group 105: Engine, continued

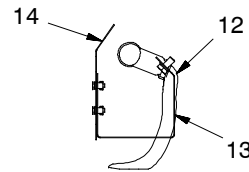
Item	Part Number	Description	Quantity							
			Variation No.							
			30	31	36	37	43	46	49	52
1	151771	Elbow, pipe (90 deg x 1-1/2"npt)	3	3	3	3	3	3	3	3
2	151803	Pipe (1-1/2"npt x 2.50")	1	1	1	1	1	1	1	1
3	153016	Bushing, reducing (1-1/4 x 1-1/2"npt)	1	1	1	1	1	1	1	1
4	155040	Pipe (1-1/2"npt x 1.75")	2	2	2	2	2	2	2	2
5	GM41094	Clamp, muffler, 1.88 in.	1	1	1	1	1	1	1	1
6	345039	Terminal, battery	1	1	1	1	1	1	1	1
7	345056	Terminal, battery	1	1	1	1	1	1	1	1
8	GM20577	Decal, Fuel Type	1	1	1	1	1	1	1	1
9	GM21335	Shield, heat (20mm ID x 412mm length)	1	1	1	1	1	1	1	1
10	GM55480	Bracket, Heat Shield	1	1	1	1	1	1	1	1
11	GM55481	Shield, heat	1	1	1	1	1	1	1	1
12	GM57161	Rack, Battery	1	1	1	1	1	1	1	1
13	GM61432	Strap, Poly Battery	1	1	1	1	1	1	1	1
14	GM66052	Tube, Exhaust	1	1	1	1	1	1	1	1
14	X-426-5	Clamp, hose, 3.56/4.5 in. (not shown)	2	2					2	2
14	19000 09400	Insulation, fiberglass (4" tape) 17 ft. (not shown)	2	2					2	2
15	GM66053	Gasket, Exhaust	1	1	1	1	1	1	1	1
16	GM70498	Valve, Gas Assy	1	1	1	1	1	1	1	1
17	GM70920	Bracket, Fuel Support	1	1	1	1	1	1	1	1
18	GM80600	Bracket, Support	1	1	1	1	1	1	1	1
29	X-22-26	Washer, lock, .521 ID x 1.24 in. OD	1	1	1	1	1	1	1	1
31	X-75-28	Plug, pipe ( 1/2"nptf)	1	1	1	1	1	1	1	1
32	X-129-15	Bolt, Hex Cap	1	1	1	1	1	1	1	1
33	X-202-47	Bushing, reducing (1/4 x 1/2"npt)	1	1	1	1	1	1	1	1
34	X-203-13	Tee, Pipe (1/2 x 1/2 x 1/2 npt)	1	1	1	1	1	1	1	1
35	X-205-15	Pipe (1-1/2"npt x 7")	1	1	1	1	1	1	1	1
36	X-209-21	Pipe (1/2"npt x 4.50")	1	1	1	1	1	1	1	1
37	X-205-7	Pipe (1-1/2"npt x 4.00")	1	1	1	1	1	1	1	1
38	X-216-21	Coupling, pipe (1-1/2"npsc)	2	2	2	2	2	2	2	2
39	X-256-3	Valve, drain (1/4"nptf)	1	1	1	1	1	1	1	1
41	X-504-22	Fuel line, flexible (1.50" ID x 28.25")	1	1	1	1	1	1	1	1
43	X-545-112	Cable, battery (No.2 x 16") black-	1	1	1	1	1	1	1	1
44	X-545-137	Cable, battery (No.2 x 30") red+	1	1	1	1	1	1	1	1
50	GM77529-1	Engine, 150 kW GM 8.8L , EPA Certified	1							
50	GM77529-2	Engine, 150 kW GM 8.8L , Non-EPA		1						
50	GM77528-1	Engine, 125 kW GM 8.8L , EPA Certified			1					
50	GM77528-2	Engine, 125 kW GM 8.8L , Non-EPA				1				
50	GM99488-1	Engine, 150 kW GM 8.8L , EPA Certified							1	
50	GM99488-2	Engine, 150 kW GM 8.8L , Non-EPA Certified								1
50	GM99486-1	Engine, 125 kW GM 8.8L , EPA Certified					1			
50	GM99486-2	Engine, 125kW GM 8.8L ,Non-EPA Certified						1		
51	GM65728	Catalyst	1		1		1		1	
52	GM65743	Bracket, Support	1		1		1		1	
53	GM65751	Bracket, Support	1	1	1	1	1	1	1	1
54	GM95640	Wrap, Catalyst	1		1		1		1	
55	GM66053	Gasket, Exhaust	1		1		1		1	
56	M125A-10-80	Washer, Plain, 10.5 ID x 20.0 OD	12		12		12		12	
57	M6923-10-80	Nut, Hex 10mm	8		8		8		8	
58	M933-10025-60	Screw, hex cap, fully thrd M10 x 25mm	4		4		4		4	
59	M933-10050-60	Screw, Hex Cap (Metric)	4		4		4		4	
60	GM97434	Plate, Guard (not shown, placed on LH belt guard over LP withdrawal piping location)	1	1	1	1	1	1	1	1

# Group 105: Engine, continued

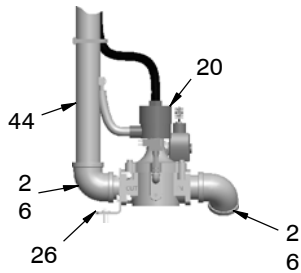
125/150 kW with 8.8L Engine, Dual Fuel



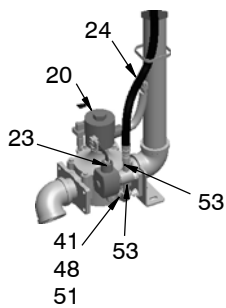
DETAIL A



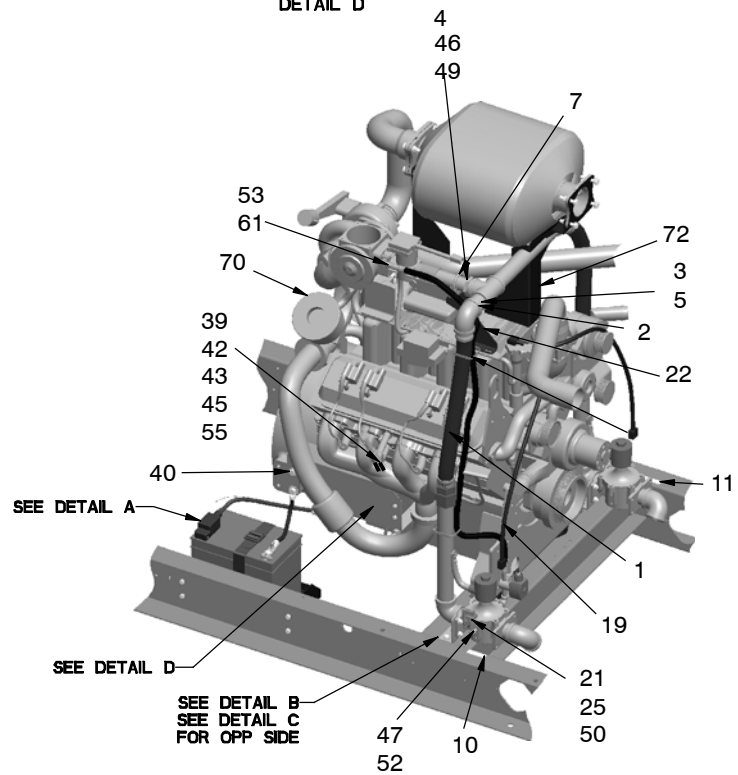
DETAIL D



DETAIL B



DETAIL C  
VIEWED FROM LEFT SIDE



SEE DETAIL A

SEE DETAIL D

SEE DETAIL B  
SEE DETAIL C  
FOR OPP SIDE

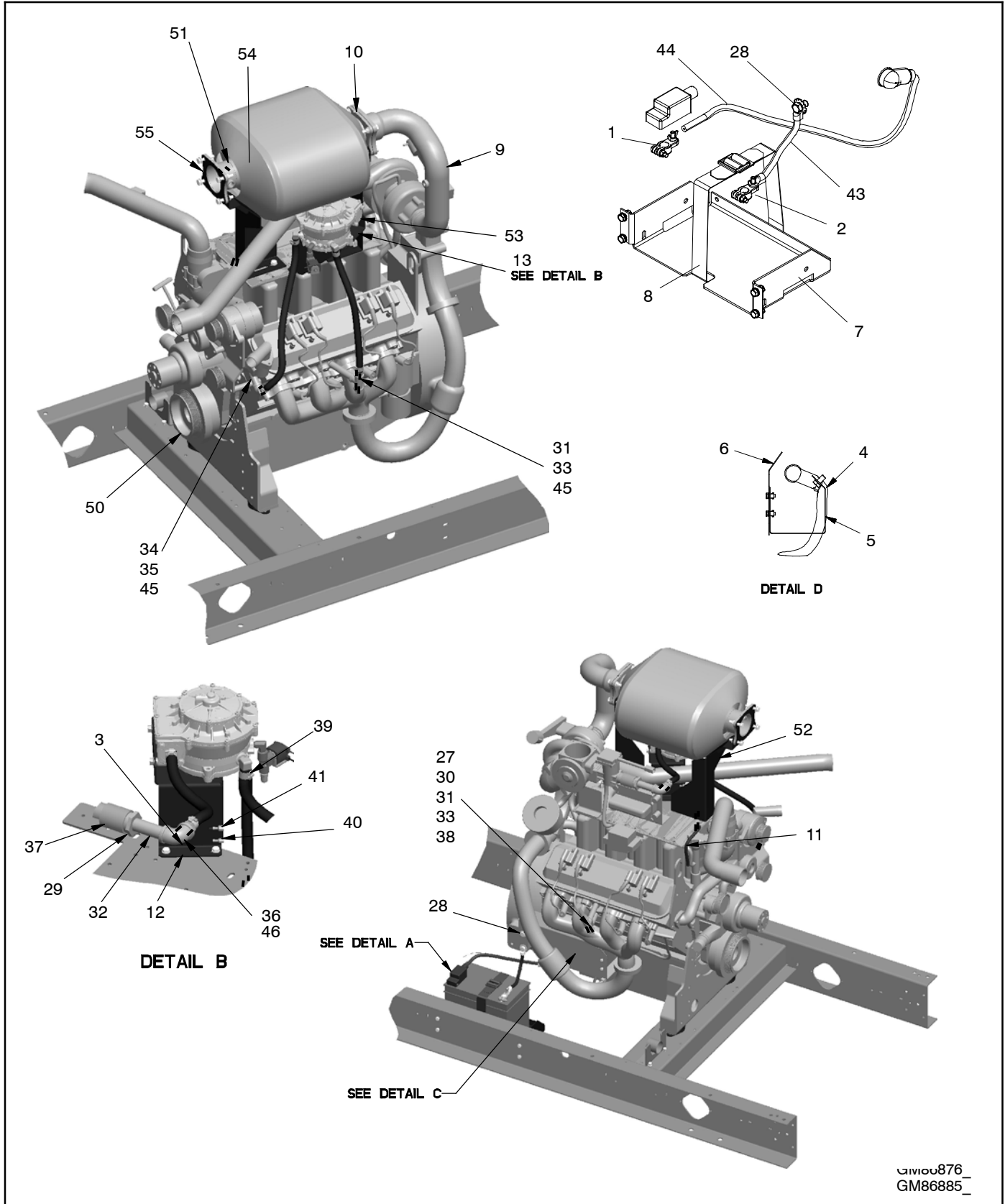
GM80583\_E  
GM81463\_C

## Group 105: Engine, continued

Item	Part Number	Description	Quantity							
			Variation No.							
			32	33	38	39	44	47	50	53
1	X-504-22	Fuel line, flexible (1.50" ID x 28.25")	2	2	2	2	2	2	2	2
1	155040	Pipe (1-1/2"npt x 1.75") (not shown)	1	1	1	1	1	1	1	1
2	151771	Elbow, pipe (90 deg x 1-1/2"npt)	5	5	5	5	5	5	5	5
3	151803	Pipe (1-1/2"npt x 2.50")	1	1	2	2	2	2	1	1
4	153016	Bushing, reducing (1-1/4 x 1-1/2"npt)	1	1	1	1	1	1	1	1
5	155039	Tee, pipe (1-1/2 x 1-1/2 x 1-1/2 npt)	1	1	1	1	1	1	1	1
6	155040	Pipe (1-1/2"npt x 1.75")	4	4	4	4	4	4	4	4
7	277706	Clamp, muffler, 1.87 in.	1	1	1	1	1	1	1	1
8	345039	Terminal, battery	1	1	1	1	1	1	1	1
9	345056	Terminal, battery	1	1	1	1	1	1	1	1
10	GM20173	Decal, Fuel Type	1	1	1	1	1	1	1	1
11	GM20174	Decal, Fuel Type	1	1	1	1	1	1	1	1
12	GM21335	Shield, heat (20mm ID x 412mm length)	1	1	1	1	1	1	1	1
13	GM55480	Bracket, Heat Shield	1	1	1	1	1	1	1	1
14	GM55481	Shield, heat	1	1	1	1	1	1	1	1
15	GM57161	Rack, Battery	1	1	1	1	1	1	1	1
16	GM61432	Strap, Poly Battery	1	1	1	1	1	1	1	1
17	GM66052	Tube, Exhaust	1	1	1	1	1	1	1	1
17	X-426-5	Clamp, hose, 3.56/4.5 in. (not shown)	2	2					2	2
17	19000 09400	Insulation, fiberglass (4" tape) 17 ft. (not shown)	2	2					2	2
18	GM66053	Gasket, Exhaust	1	1	1	1	1	1	1	1
19	GM78644	Harness, Dual Fuel	1	1	1	1	1	1	1	1
20	GM70498	Valve, Gas Assy	2	2	2	2	2	2	2	2
21	GM70538	Switch, Pressure 7.0" H2O	1	1	1	1	1	1	1	1
22	GM70920	Bracket, Fuel Support	1	1	1	1	1	1	1	1
23	GM74499	Valve Assembly, Vent	1	1	1	1	1	1	1	1
24	GM75369	Hose, Flex Fuel	1	1	1	1	1	1	1	1
25	GM77915	Fitting, Restriction	1	1	1	1	1	1	1	1
26	GM80600	Bracket, Support	2	2	2	2	2	2	2	2
37	X-22-26	Washer, lock, .521 ID x 1.24 in. OD	1	1	1	1	1	1	1	1
39	X-75-28	Plug, pipe ( 1/2"nptf)	1	1	1	1	1	1	1	1
40	X-129-15	Bolt, Hex Cap	1	1	1	1	1	1	1	1
41	X-202-27	Bushing, reducing (1/8 x 1/4"npt)+vibra	1	1	1	1	1	1	1	1
42	X-202-47	Bushing, reducing (1/4 x 1/2"npt)	1	1	1	1	1	1	1	1
43	X-203-13	Tee, Pipe (1/2 x 1/2 x 1/2 npt)	1	1	1	1	1	1	1	1
44	X-205-25	Pipe (1-1/2"npt x 7.00")	2	2	1	1	1	1	2	2
44	X-205-15	Pipe (1-1/2"npt x 7.00")	1	1	2	2	2	2	1	1
45	X-205-15	Pipe (1-1/2"npt x 7.00")	1	1	1	1	1	1	1	1
46	X-205-7	Pipe (1-1/2"npt x 4.00")	1	1	1	1	1	1	1	1
47	X-215-19	Elbow, pipe (90 deg x 1/8"npt)	1	1	1	1	1	1	1	1
47	X-205-15	Pipe (1-1/2"npt x 7.00")			1	1	1	1		
48	X-215-5	Elbow, pipe (90 deg x 1/4"npt)	1	1	1	1	1	1	1	1
49	X-216-21	Coupling, pipe (1-1/2"npsc)	2	2	2	2	2	2	2	2
50	X-216-24	Coupling, pipe ( 1/8"npt)	1	1	1	1	1	1	1	1
51	X-217-2	Pipe, Nipple (1/8" NPT x 1.50")	1	1	1	1	1	1	1	1
52	X-217-7	Pipe, Nipple (1/8" NPT x 1.00")	1	1	1	1	1	1	1	1
53	X-220-6	Pipe (1/4"npt x 1.50")	3	3	3	3	3	3	3	3
54	X-225-3	Elbow, pipe (45 deg x 1-1/2"npt)	1	1	2	2	2	2	1	1
55	X-256-3	Valve, drain ( 1/4"nptf)	1	1	1	1	1	1	1	1
59	X-545-112	Cable, battery (No.2 x 16") black-	1	1	1	1	1	1	1	1
60	X-545-137	Cable, battery (No.2 x 30") red+	1	1	1	1	1	1	1	1
61	X-555-1	Elbow, street (90 deg x 1/4"nptf)	2	2	2	2	2	2	2	2
70	GM77529-1	Engine, 150 kW GM 8.8L , EPA Certified	1							
70	GM77529-2	Engine, 150 kW GM 8.8L , Non-EPA		1						
70	GM77528-1	Engine, 125 kW GM 8.8L , EPA Certified			1					
70	GM77528-2	Engine, 125 kW GM 8.8L , Non-EPA			1					
70	GM99488-1	Engine, 150 kW GM 8.8L , EPA Certified							1	
70	GM99488-2	Engine, 150 kW GM 8.8L , Non-EPA Certified								1
70	GM99486-1	Engine, 125 kW GM 8.8L , EPA Certified					1			
70	GM99486-2	Engine, 125kW GM 8.8L ,Non-EPA Certified						1		
71	GM65728	Catalyst	1		1		1		1	
72	GM65743	Bracket, Support	1		1		1		1	
73	GM65751	Bracket, Support	1	1	1	1	1	1	1	1
74	GM95640	Wrap, Catalyst	1		1		1		1	
75	GM66053	Gasket, Exhaust	1		1		1		1	
76	GM97434	Plate, Guard (not shown, placed on LH belt guard over LP withdrawal piping location)	1	1	1	1	1	1	1	1

# Group 105: Engine, continued

125/150 kW with 8.8L Engine, Liquid Withdrawal





## Group 105: Engine, continued

Item	Part Number	Description	Quantity								
			Variation No.								
			34	35	40	41	45	48	51	54	
1	345039	Terminal, battery	1	1	1	1	1	1	1	1	1
2	345056	Terminal, battery	1	1	1	1	1	1	1	1	1
3	GM20175	Decal, Fuel Type	1	1	1	1	1	1	1	1	1
4	GM21335	Shield, heat (20mm id x 412mm length)	1	1	1	1	1	1	1	1	1
5	GM55480	Bracket, Heat Shield	1	1	1	1	1	1	1	1	1
6	GM55481	Shield, heat	1	1	1	1	1	1	1	1	1
7	GM57161	Rack, Battery	1	1	1	1	1	1	1	1	1
8	GM61432	Strap, Poly Battery	1	1	1	1	1	1	1	1	1
9	GM66052	Tube, Exhaust	1	1	1	1	1	1	1	1	1
9	X-426-5	Clamp, hose, 3.56/4.5 in. (not shown)	2	2						2	2
9	19000 09400	Insulation, fiberglass (4" tape) 17 ft. (not shown)	2	2						2	2
10	GM66053	Gasket, Exhaust	1	1	1	1	1	1	1	1	1
11	GM75612	Harness, Extension L.P. Liquid	1	1	1	1	1	1	1	1	1
12	GM86873	Bracket, Vaporizor Mounting	1	1	1	1	1	1	1	1	1
13	GM71290	Vaporizor, LP Liquid Withdrawal 8.8L	1	1	1	1	1	1	1	1	1
28	X-129-15	Bolt, Hex Cap	2	2	2	2	2	2	2	2	2
29	X-202-18	Bushing, reducing (3/4 x 1-1/4"npt)	1	1	1	1	1	1	1	1	1
30	X-202-47	Bushing, reducing (1/4 x 1/2"npt)	1	1	1	1	1	1	1	1	1
31	X-203-13	Tee, Pipe (1/2 x 1/2 x 1/2 npt)	2	2	2	2	2	2	2	2	2
32	X-206-6	Pipe (3/4"npt x 3.50")	1	1	1	1	1	1	1	1	1
33	X-209-21	Pipe (1/2"npt x 4.50")	1	1	1	1	1	1	1	1	1
34	X-209-18	Pipe, Nipple (1/2" NPT x 4.00")	1	1	1	1	1	1	1	1	1
35	X-215-1	Elbow, pipe (90 deg x 1/2"npt)	1	1	1	1	1	1	1	1	1
36	X-215-2	Elbow, pipe (90 deg x 3/4"npt)	2	2	1	1	1	1	2	2	2
38	X-256-3	Valve, drain ( 1/4"nptf)	1	1	1	1	1	1	1	1	1
37	X-216-22	Coupling, pipe (1-1/4"npvc) straight	1	1	1	1	1	1	1	1	1
39	X-426-12	Clamp, hose, .69/1.25 in.	6	6	6	6	6	6	6	6	6
40	X-431-25	Terminal, fast-on, female, 18-22 awg	1	1	1	1	1	1	1	1	1
41	X-431-29	Terminal, fast-on, male, 18-22 AWG	1	1	1	1	1	1	1	1	1
43	X-545-112	Cable, battery (No.2 x 16") black-	1	1	1	1	1	1	1	1	1
44	X-545-137	Cable, battery (No.2 x 30") red+	1	1	1	1	1	1	1	1	1
45	X-582-1	Connector, Hose 5/8" x 1/2" MIP Brass	2	2	2	2	2	2	2	2	2
46	X-582-8	Connector, hose + Vibra Seal	1	1	1	1	1	1	1	1	1
50	GM77529-1	Engine, 150 kW GM 8.8L, EPA Certified	1								
50	GM77529-2	Engine, 150 kW GM 8.8L, Non-EPA		1							
50	GM77528-1	Engine, 125 kW GM 8.8L, EPA Certified			1						
50	GM77528-2	Engine, 125 kW GM 8.8L, Non-EPA				1					
50	GM99488-1	Engine, 150 kW GM 8.8L , EPA Certified							1		
50	GM99488-2	Engine, 150 kW GM 8.8L , Non-EPA Certified								1	
50	GM99486-1	Engine, 125 kW GM 8.8L , EPA Certified					1				
50	GM99486-2	Engine, 125kW GM 8.8L ,Non-EPA Certified						1			
51	GM65728	Catalyst	1		1		1			1	
52	GM65743	Bracket, Support	1		1		1			1	
53	GM65751	Bracket, Support	1	1	1	1	1	1	1	1	1
54	GM95640	Wrap, Catalyst	1		1		1			1	
55	GM66053	Gasket, Exhaust	1		1		1			1	

# Group 107: Nameplate and Decals

## 50-60 kW (GM79168-GR1)

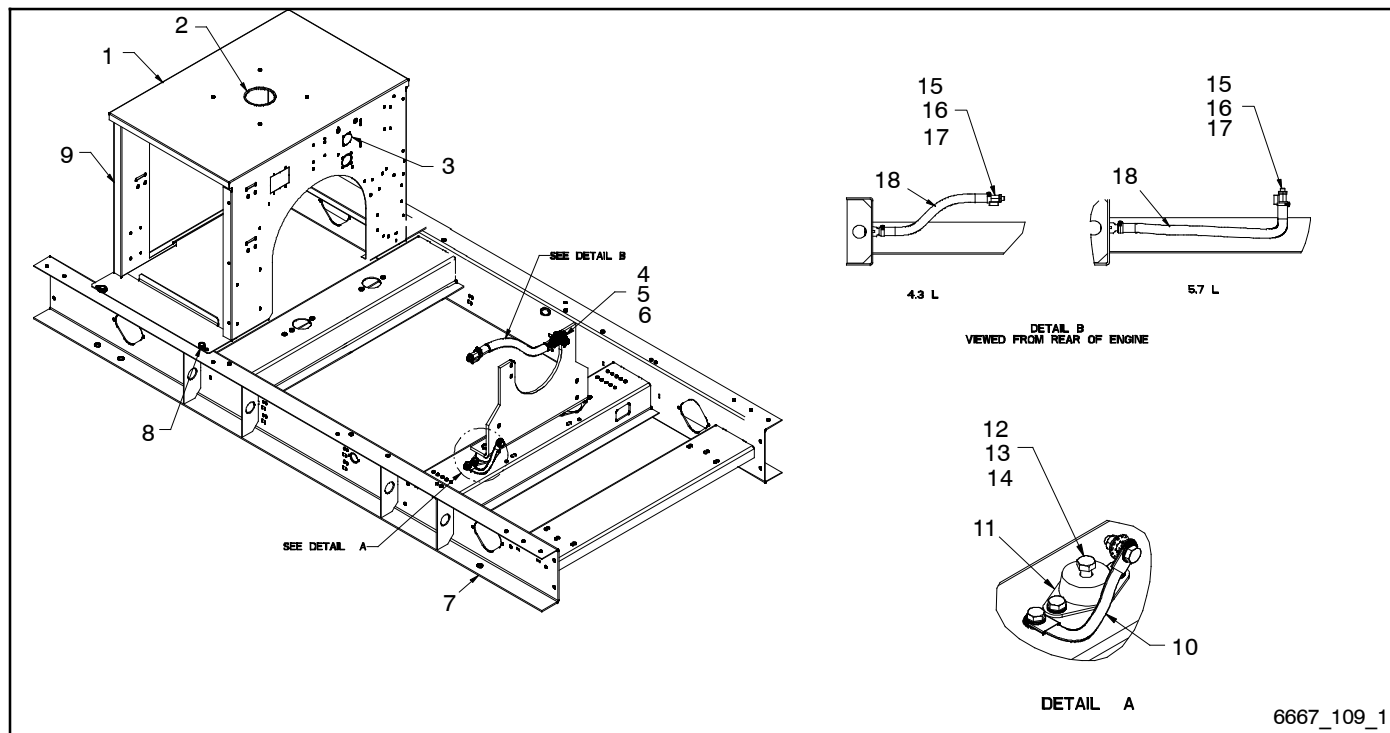
Item	Part Number	Description	Qty.
			Var. No.
1	238402	Decal, caution positive term.only	1
2	249808	Decal, warning rotating parts	1
3	249809	Decal, Caution Hot Engine	2
4	249810	Decal, warning hot coolant	1
5	273780	Decal, warning explosion	1
6	GM15300	Decal, Exhaust Piping	1
7	224233	Decal, 1-800 number	1
8	257438	Decal, danger moving rotor	3
9	257441	Decal, warning lifting eye	1
10	258815	Decal, warning voltage backfeed	1
11	362176	Decal, danger	2
12	GM13776	Decal, FRII Reconnection	1
13	GM20172	Decal, Unbalanced Load	1
14	GM39683	Tag, Hang	1
15	GM60531	Decal, Control Height	1
16	X-6232-6	Decal, stripe	3
17	X-6246-6	Decal, Kohler Power System	2

## 80-150 kW(GM79168-GR2)

Item	Part Number	Description	Qty.
			Var. No.
1	238402	Decal, caution positive term.only	1
2	249808	Decal, warning rotating parts	1
3	249809	Decal, Caution Hot Engine	2
4	249810	Decal, warning hot coolant	1
5	273780	Decal, warning explosion	1
6	GM15300	Decal, Exhaust Piping	1
7	224233	Decal, 1-800 number	1
8	257438	Decal, danger moving rotor	3
9	257441	Decal, warning lifting eye	1
10	258815	Decal, warning voltage backfeed	1
11	362176	Decal, danger	2
12	GM13776	Decal, FRII Reconnection	1
13	GM20172	Decal, Unbalanced Load	1
14	GM39683	Tag, Hang	1
15	GM60531	Decal, Control Height	1
16	X-6232-6	Decal, stripe	3
17	X-6246-1	Decal, Kohler Power System	2

# Group 109: Skid and Plant Mounting

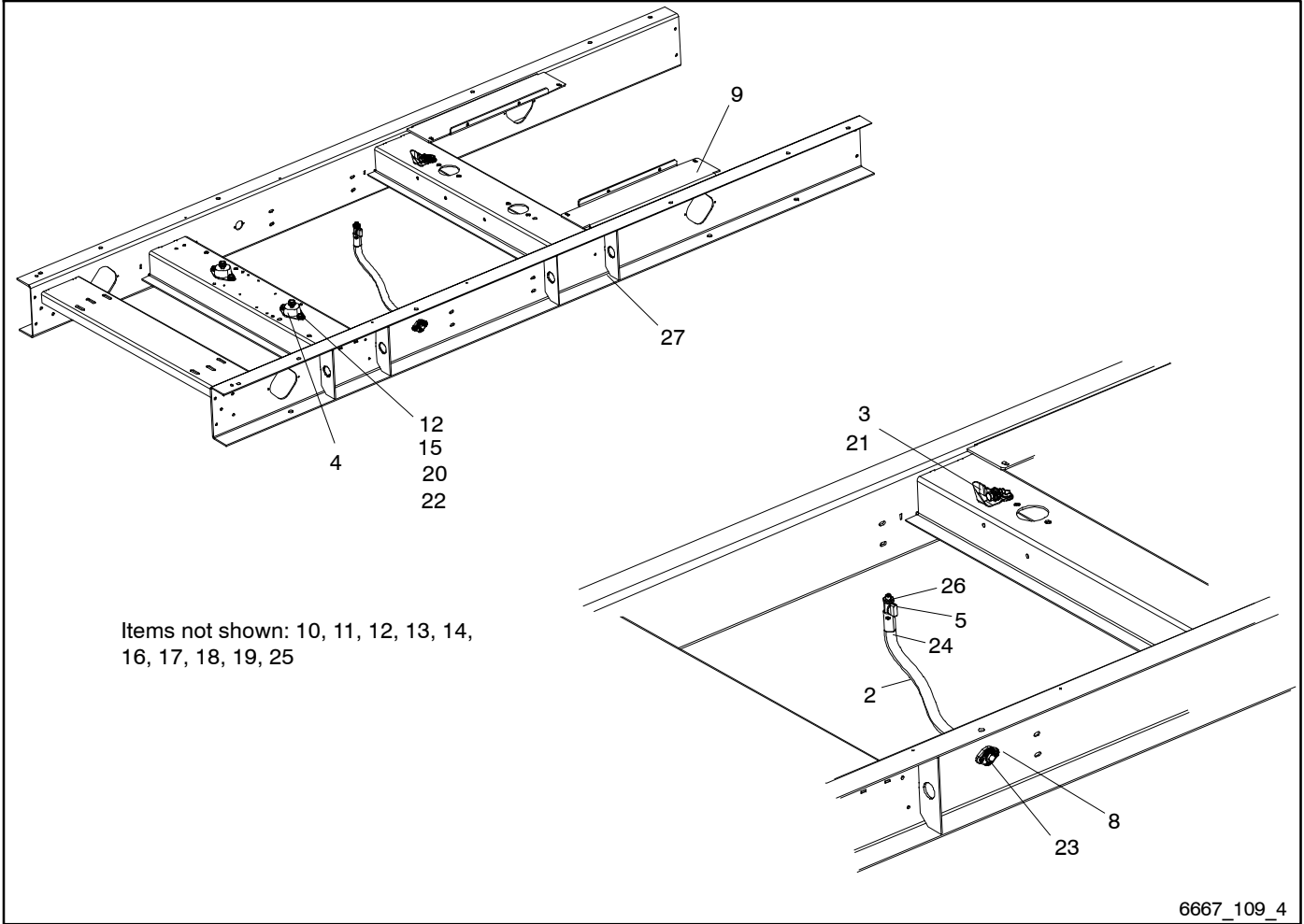
50/60 kW



Item	Part Number	Description	Quantity					
			Module					
			GM71692-MA1	GM71692-MA2	GM71693-MA1	GM71693-MA2	GM71694-MA1	GM71695-MA1
1	-	See Control and Harness Group	1	1	1	1	1	1
2	-	See Control and Harness Group	1	1	1	1	1	1
3	-	See Control and Harness Group	1	1	1	1	1	1
4	GM59015	Fitting, Bulkhead Drain	1	1	1	1	1	1
5	X-781-15	Rivet, pop, .187 in.	2	2	2	2	2	2
6	X-75-58	Plug, Pipe	1	1	1	1	1	1
7	GM65723	Skid, 34 in.	1					
7	GM65779	Skid, 34 in.		1				
7	GM65780	Skid, 34 in.					1	
7	GM65763	Skid, 41 in.			1			
7	GM65781	Skid, 41 in.				1		
7	GM65782	Skid, 41 in.						1
8	GM65811	Support, Junction Box			2	2		
8	GM65810	Support, Junction Box						2
9	-	See Control and Harness Group						1
10	290418	Strap, ground (8 in.)	1	1	1	1	1	1
11	276476	Vibromount	2		2			
11	324073	Vibromount		2		2	2	2
12	M931-12065-60	Screw, hex cap	2	2	2	2	2	2
13	X-25-140	Washer, plain, .531 ID x2 in. OD	2	2	2	2	2	2
14	M982-12-80	Nut, hex elastic stop	2	2	2	2	2	2
15	GM19299	Valve, oil drain (M12 x 1.75)	1	1	1	1	1	1
16	X-6278-9	Washer, nylon, .48 ID x .825 in. OD	1	1	1	1	1	1
17	X-426-10	Clamp, hose, .5/1 in.	2	2	2	2	2	2
18	X-577-5	Hose, rubber, straight, .62 in. ID (1.17 ft.)	1		1			
18	X-577-24	Hose, rubber, straight, .62 in. ID (1.75 ft.)		1		1	1	1

# Group 109: Skid and Plant Mounting, continued

80/100 kW with 5.7L Engine

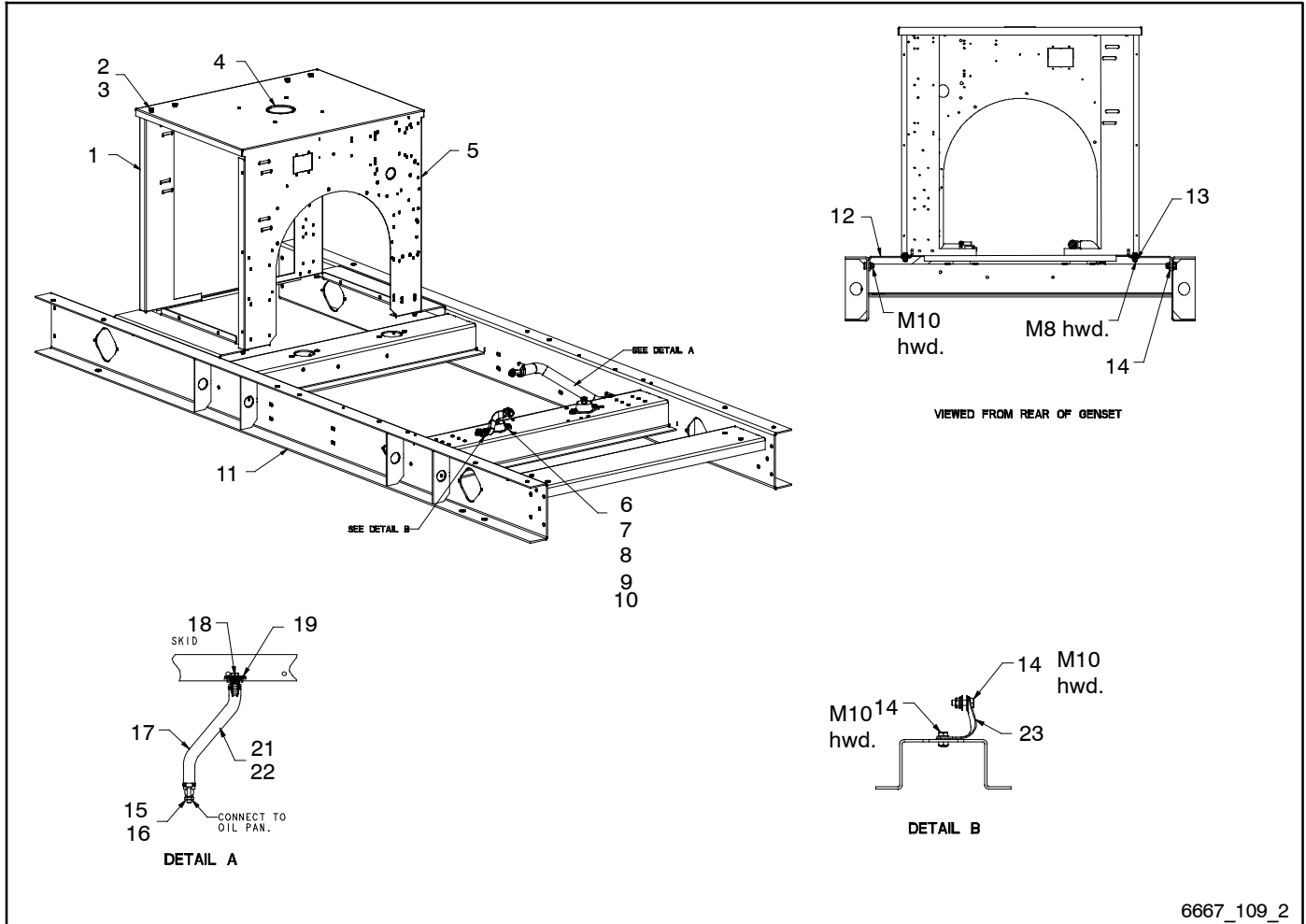


## Group 109: Skid and Plant Mounting, continued

Item	Part Number	Description	Quantity Module				
			GM71623-MA1	GM71623-MA2	GM71613-MA1	GM77553-MA1	GM78283-MA1
2	X-577-27	Hose, rubber, straight, .62 in. ID	1	1			1
2	X-577-24	Hose, rubber, straight, .62 in. ID			1	1	
3	290418	Strap, ground (8 in.)	2	2	2	2	2
4	324073	Vibromount	2	2	2	2	2
5	GM19299	Valve, oil drain (M12 x 1.75)	1	1	1	1	1
8	GM59015	Fitting, Bulkhead Drain	1	1	1	1	1
9	GM64117	Support, Junction Box	2	2			
9	GM78279	Support, Junction Box					2
10	M125A-08-80	Washer, Plain, 8.4 ID x 16.0 OD	2	2	2	2	2
11	M125A-10-80	Washer, Plain, 10.5 ID x 20.0 OD	10	10	7	7	10
12	M125A-12-80	Washer, Plain	2	2	2	2	2
13	M6923-08-80	Nut, Hex 8mm	2	2	2	2	2
14	M6923-10-80	Nut, Hex 10mm	5	5	1	1	5
15	M931-12065-60	Screw, hex cap	2	2	2	2	2
16	M933-08025-60	Screw, hex cap	2	2	2	2	2
17	M933-10020-60	Screw, hex cap	5	5	5	5	5
18	M933-10025-60	Screw, hex cap, fully thrd M10 x 25mm	4	4	4	4	
18	M933-10020-60	Screw, hex cap					4
19	M933-10035-60	Screw, hex cap	1	1	1	1	1
20	M982-12-80	Nut, hex elastic stop	2	2	2	2	2
21	X-22-15	Washer, lock, .456 ID x 1.058 in. OD	5	5	3	3	5
22	X-25-140	Washer, plain, .531 ID x 2 in.OD	2	2	2	2	2
23	X-75-58	Plug, Pipe	1	1	1	1	1
24	X-426-10	Clamp, hose, .5/1 in.	2	2	2	2	2
25	X-781-15	Rivet, pop, .187 in.	2	2	2	2	2
26	X-6278-9	Washer, nylon, .48 ID x .825 in. OD	1	1	1	1	1
27	GM71621	Skid, 44"	1				
27	GM71625	Skid, 44"		1			
27	GM71620	Skid, 34"			1		
27	GM71624	Skid, 34"				1	
27	GM78271	Skid, 44"					1

# Group 109: Skid and Plant Mounting, continued

125/150 kW



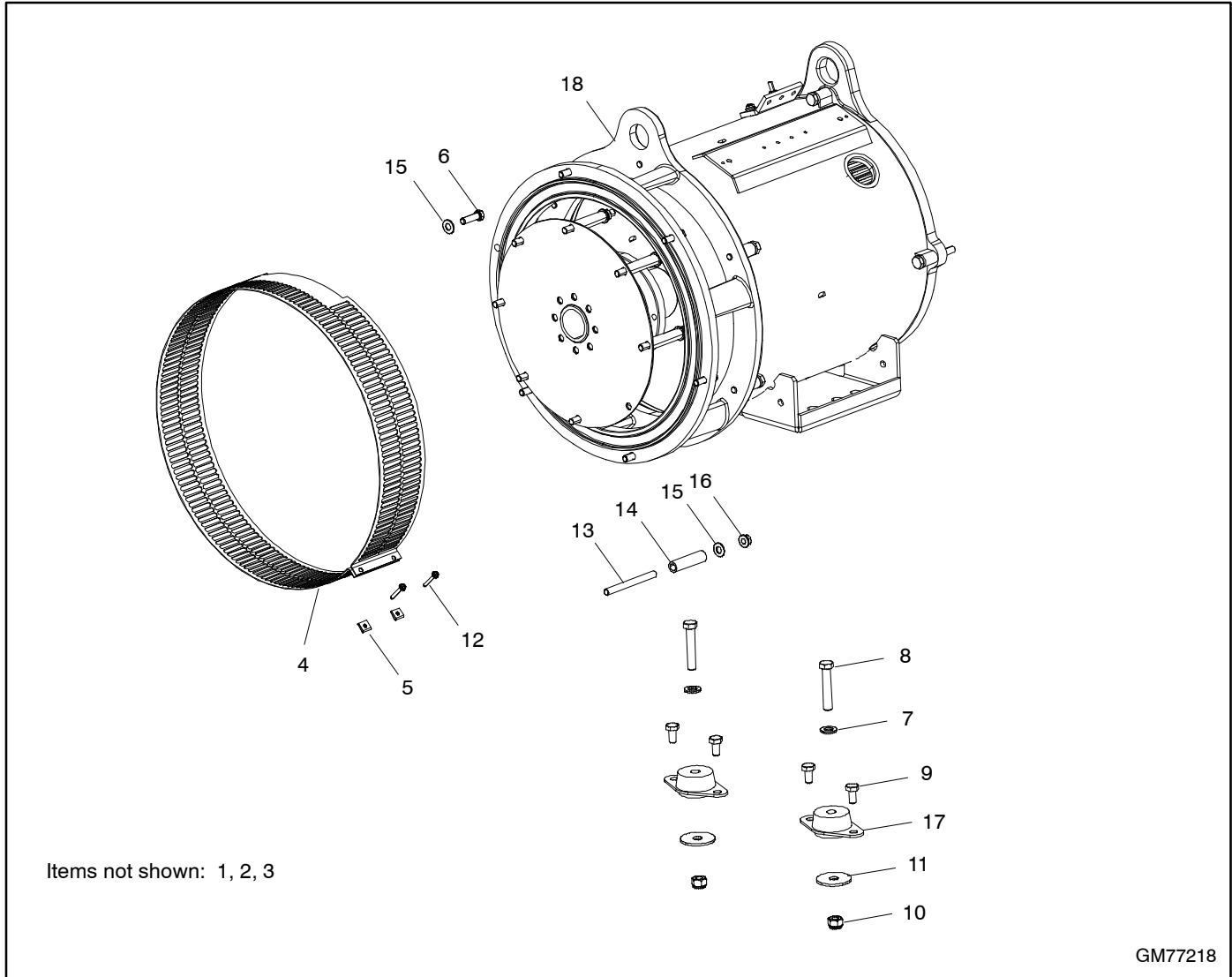
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## Group 109: Skid and Plant Mounting, continued

Item	Part Number	Description	Quantity Module							
			GM71684-MA1	GM71684-MA2	GM71684-MA3	GM71656-MA1	GM71656-MA2	GM80591-MA1	GM81465-MA1	GM81467-MA1
1	-	See Control and Harness Group								
2	-	See Control and Harness Group								
3	-	See Control and Harness Group								
4	-	See Control and Harness Group								
5	-	See Control and Harness Group								
6	324073	Vibromount	2	2	2	2	2		2	2
6	324074	Vibromount						2		
7	M933-10020-60	Screw, hex cap	4	4	4	4	4	4	4	4
8	M931-12065-60	Screw, hex cap	2	2	2	2	2	2	2	2
9	M982-12-80	Nut, hex elastic stop	2	2	2	2	2	2	2	2
10	X-25-140	Washer, plain, .531 ID x2 in. OD	2	2	2	2	2	2	2	2
11	GM64063	Skid	1							
11	GM65342	Skid		1						
11	GM66560	Skid			1					
11	GM65377	Skid				1				
11	GM67060	Skid					1			
11	GM80590	Skid						1		
11	GM81464	Skid							1	
11	GM81466	Skid								1
12	GM64117	Support, Junction Box	2	2	2			2	2	
13	-	See Control and Harness Group	4	4	4	4	4	4	4	
14	X-22-15	Washer, lock, .456 ID x 1.058 in. OD	5	5	5	3	3	5	5	3
15	GM19299	Valve, oil drain (M12 x 1.75)	1	1	1	1	1	1	1	1
16	X-6278-9	Washer, nylon, .48 ID x .825 in. OD	1	1	1	1	1	1	1	1
17	GM10669	Shield, heat (32mm ID x 305mm length)	1	1	1	1	1	1	1	1
18	X-75-58	Plug, Pipe	1	1	1	1	1	1	1	1
19	GM59015	Fitting, Bulkhead Drain	1	1	1	1	1	1	1	1
21	X-577-5	Hose, rubber, straight, .62 in. ID	1	1	1	1	1	1	1	1
22	X-426-10	Clamp, hose, .5/1 in.	2	2	2	2	2	2	2	
23	290418	Strap, ground (8 in.)	2	2	2	2	2	2	2	2

# Group 201: Generator and Mounting

4P\_X/4Q\_X Alternator Modules GM77218-



GM77218

Item	Part Number	Description	Qty.
1	X-750-14	Marker, wire L1 (not shown)	1
2	X-750-15	Marker, wire L2 (not shown)	1
3	X-750-16	Marker, wire L3 (not shown)	1
4	257046	Guard, generator fan	1
5	257442	Clip, speed	2
6	270956	Screw, 3/8-16 x 1 1/4, (4P, 4Q alternator)	6
7	M125A-12-80	Washer, plain	2
8	M931-12065-60	Screw, hex cap	2
9	M933-10020-60	Screw, hex cap	4
10	M982-12-80	Nut, hex elastic stop	2
11	X-25-140	Washer, plain, 0.531 ID x 2 in. OD	2
12	X-67-125	Screw, hex washer, thread-forming	2
13	X-352-63	Stud, 3/8-16 x 4 in.	8
14	X-400-132	Spacer, 0.406 ID x 0.625 OD x 2.531 in.	8
15	X-801-3	Washer, hardened, 0.406 ID x 0.812 OD	14
16	X-6210-9	Nut, flange spirallock, 3/8-16	8
17	See chart page 57	Vibromount	2
18	See chart page 57	Alternator assembly	1



# Group 201: Generator and Mounting

## 4P\_X/4Q\_X Alternator Modules GM77218- Alternator Module Parts

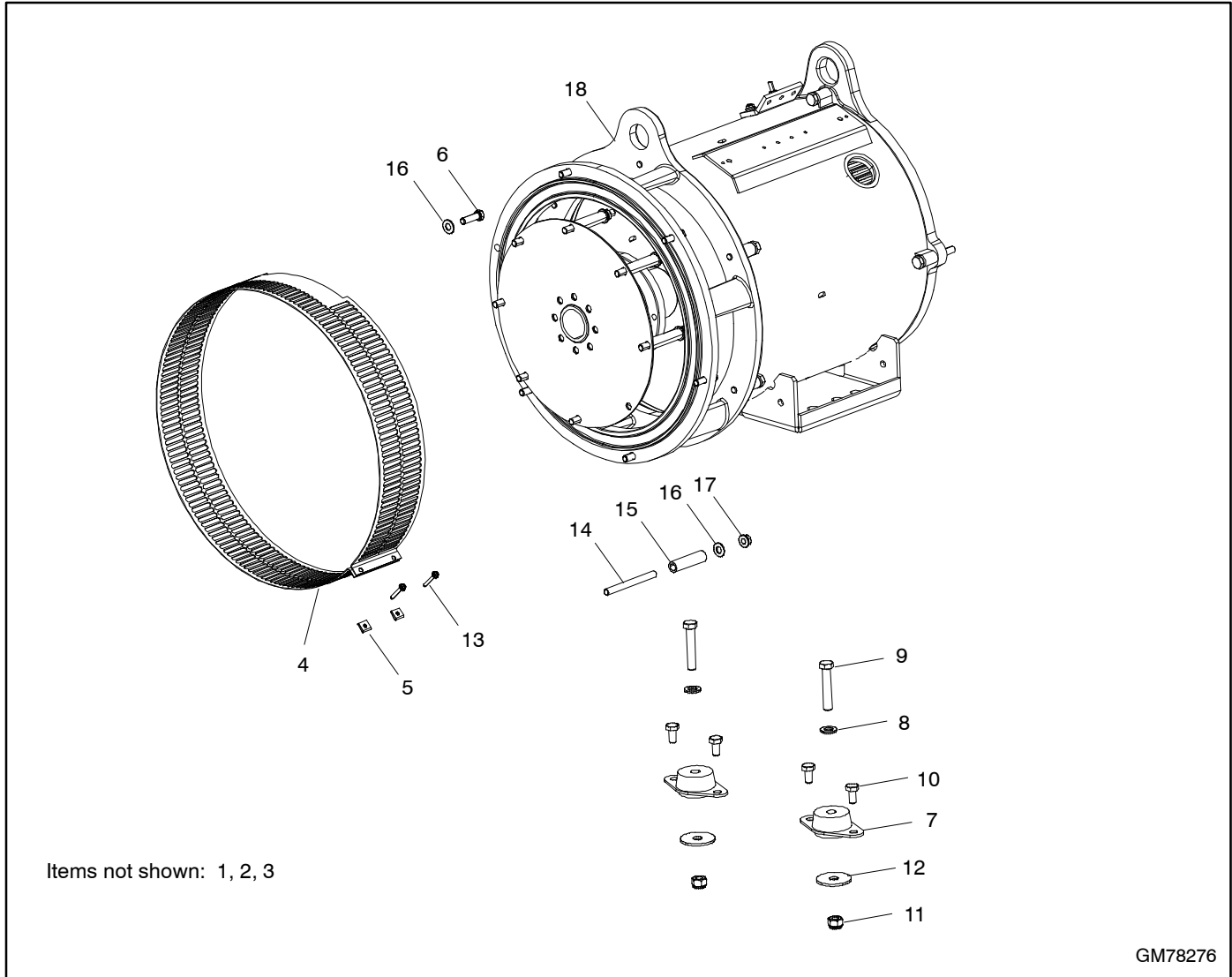
Use this table to identify the module number's alternator part number and vibromount part number.

Module No.	Alternator Description	Item 17, Vibromount	Item 18, Alternator Assembly
GM77218-MA1	4P4X	276310	GC70113-2
GM77218-MA2	4P4X, 600 V	276310	GC70113-4
GM77218-MA3	4Q4X	276310	GC70113-6
GM77218-MA4	4P5X	276310	GC70113-8
GM77218-MA5	4P5X, 600 V	276310	GC70113-10
GM77218-MA6	4Q5X	276310	GC70113-12
GM77218-MA7	4P7BX	324073	GC70113-20
GM77218-MA8	4P7BX, 600 V	324073	GC70113-22
GM77218-MA9	4Q7BX	324073	GC70113-24
GM77218-MA10	4P10X	324074	GC70113-32
GM77218-MA11	4P10X, 600 V	324074	GC70113-35
GM77218-MA12	4Q10X	324074	GC70113-38
GM77218-MA13	4P8X	GC70113-26	324073
GM77218-MA14	4P8X, 600 V	GC70113-28	324073

Alternator assembly includes items on pages 56-59 .

# Group 201: Generator and Mounting, continued

4P10X Alternator Modules GM78276-



GM78276

Item	Part Number	Description	Qty.
1	X-750-14	Marker, wire L1 (not shown)	1
2	X-750-15	Marker, wire L2 (not shown)	1
3	X-750-16	Marker, wire L3 (not shown)	1
4	257046	Guard, generator fan	1
5	257442	Clip, speed	2
6	270158	Bolt, Hex Cap	6
7	See chart page 55	Vibromount	2
8	M125A-12-80	Washer, plain	2
9	M931-12065-60	Screw, hex cap	2
10	M933-10020-60	Screw, hex cap	4
11	M982-12-80	Nut, hex elastic stop	2
12	X-25-140	Washer, plain, 0.531 ID x 2 in. OD	2
13	X-67-125	Screw, hex washer, thread-forming	2
14	X-352-63	Stud, 3/8-16 x 4 in.	8
15	X-400-132	Spacer, 0.406 ID x 0.625 OD x 2.531 in.	8
16	X-801-3	Washer, hardened, 0.406 ID x 0.812 OD	14
17	X-6210-9	Nut, flange spirallock, 3/8-16	8
18	See chart page 55	Alternator assembly	1

# Group 201: Generator and Mounting, continued

## 4P10X Alternator Modules GM78276- Alternator Module Parts

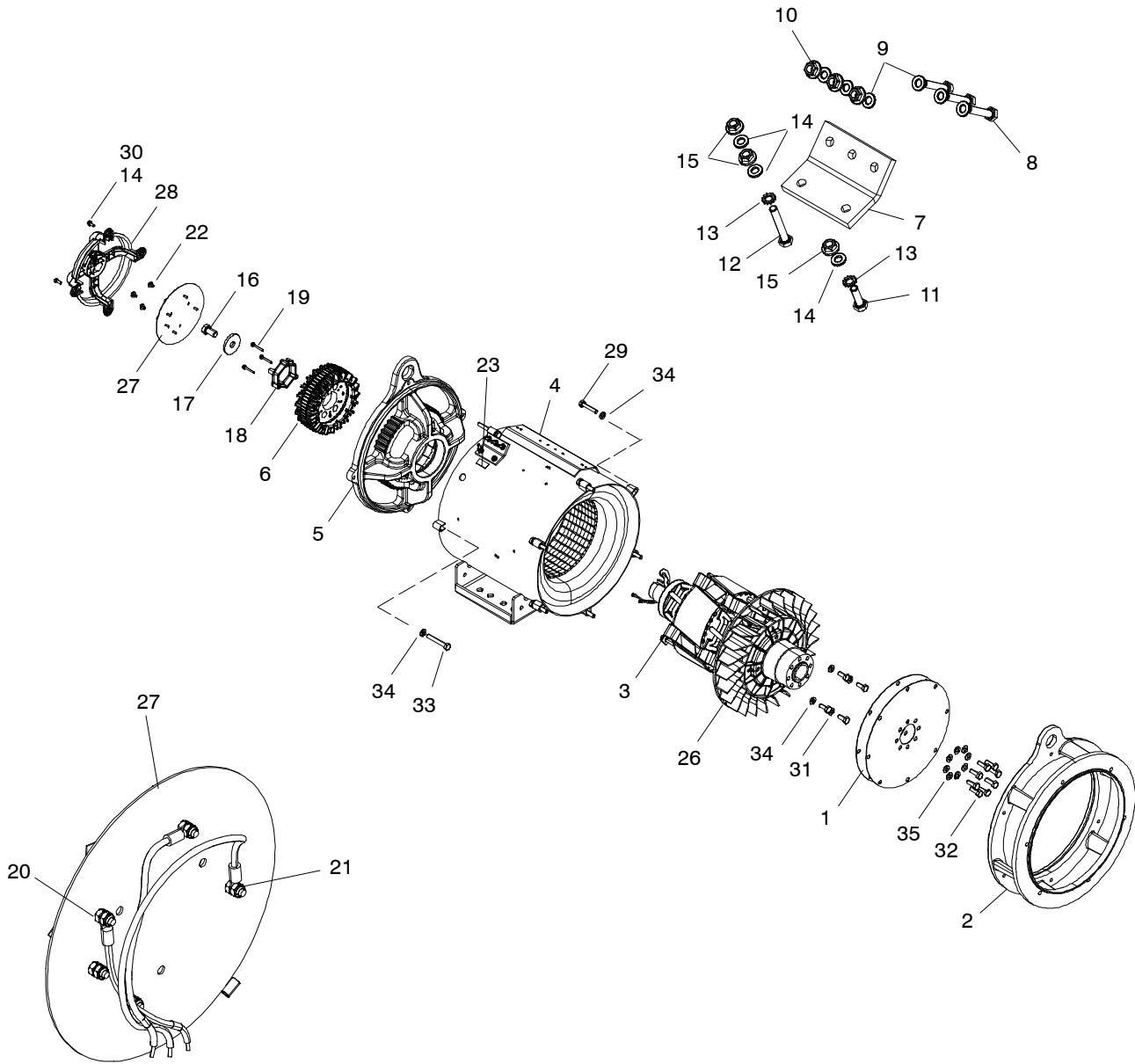
Use this table to identify the module number's alternator part number and vibromount part number.

<b>Module No.</b>	<b>Alternator Description</b>	<b>Item 7, Vibromount</b>	<b>Item 18, Alternator Assembly</b>
GM78276-MA1	4P10X	324075	GC70113-33
GM78276-MA2	4P10X, 600 V	324075	GC70113-36

Alternator assembly includes items on pages 56-59.

# Group 201: Generator and Mounting, continued

4P\_X/4Q\_X Alternators GC70113-



GC70113

# Group 201: Generator and Mounting, continued

4P\_X/4Q\_X Alternators GC70113-

Item	Part No.	Description	Qty.
1	See chart page 58	Disc, Drive	2
2	See chart page 58	Adapter, Generator	1
3	See chart page 58	Rotor Assembly	1
4	See chart page 58	Stator Assembly	1
5	See chart page 58	Bracket Assembly, End	1
6	See chart page 59	Exciter Armature, SCR	1
7	See chart page 59	Bus, Ground	1
8	See chart page 59	Screw, Hex Cap	3
9	See chart page 59	Washer, Plain	6
10	See chart page 59	Nut, Hex	3
11	M933-06020-60	Screw, hex cap	1
12	M933-06040-60	Screw, hex cap	1
13	M6797A-06-SS	Washer, Internal & External Tooth	2
14	M125A-06-80	Washer, Plain	7
15	M6923-06-80	Nut, Hex 6mm	3
16	M933-16030-82	Screw, hex cap	1
17	GM70070	Washer, FRX Exciter Mtg	1
18	GM70076	Spacer, FRX Activator	1
19	M7500D-05035-85	Screw, Metric Thread Forming	3
20	M934-04-SS	Nut, Hex (Stainless Steel)	5
21	M985-04-SS	Nut, Hex Elastic Stop	5
22	X-6071-8	Screw, Thread Forming	3
23	344295	Decal, equipment grd	1
26	347697	Fan, Alternator	1
27	GM72391	PCB Assy., Alternator Activator	1
28	GM74218	Holder Assy, LED Optic Board	1
29	M931-10050-60	Screw, hex cap	6
30	M933-06016-60	Screw, hex cap, M6x16mm, js500 full thrd	4
31	M933-10025-60	Screw, hex cap, fully thrd M10 x 25mm EXP	4
32	M933-10030-82	Screw, hex cap	8
33	M933-10070-60	Screw, Hex Cap	4
34	X-25-93	Washer, plain .406ID x .75in. OD	14
35	X-801-3	Washer, hardened, .406 ID x .812 in. OD	8

# Group 201: Generator and Mounting, continued

## 4P\_X/4Q\_X Alternators GC70113-

### Alternator Part Numbers and Components

Use this table to identify part numbers of items 1-5.

Alternator No.	Item/Part Number				
	Item 1, Drive Disc	Item 2, Adapter	Item 3, Rotor Assy.	Item 4, Stator Assy.	Item 5, End Bracket
GC70113-1	257015	GM32007	GC70100-1	GC70110-1	GM70080-1
GC70113-2	257015	GM32006	GC70100-1	GC70110-1	GM70080-1
GC70113-3	257015	GM32007	GC70100-1	GC70111-1	GM70080-1
GC70113-4	257015	GM32006	GC70100-1	GC70111-1	GM70080-1
GC70113-5	257015	GM32007	GC70100-1	GC70112-1	GM70080-1
GC70113-6	257015	GM32006	GC70100-1	GC70112-1	GM70080-1
GC70113-7	257015	GM32007	GC70100-2	GC70110-2	GM70080-1
GC70113-8	257015	GM32006	GC70100-2	GC70110-2	GM70080-1
GC70113-9	257015	GM32007	GC70100-2	GC70111-2	GM70080-1
GC70113-10	257015	GM32006	GC70100-2	GC70111-2	GM70080-1
GC70113-11	257015	GM32007	GC70100-2	GC70112-2	GM70080-1
GC70113-12	257015	GM32006	GC70100-2	GC70112-2	GM70080-1
GC70113-13	257015	GM32007	GC70100-3	GC70110-3	GM70080-2
GC70113-14	257015	GM32006	GC70100-3	GC70110-3	GM70080-2
GC70113-15	257015	GM32007	GC70100-3	GC70111-3	GM70080-2
GC70113-16	257015	GM32006	GC70100-3	GC70111-3	GM70080-2
GC70113-17	257015	GM32007	GC70100-3	GC70112-3	GM70080-2
GC70113-18	257015	GM32006	GC70100-3	GC70112-3	GM70080-2
GC70113-19	257015	GM32007	GC70100-4	GC70110-4	GM70080-2
GC70113-20	257015	GM32006	GC70100-4	GC70110-4	GM70080-2
GC70113-21	257015	GM32007	GC70100-4	GC70111-4	GM70080-2
GC70113-22	257015	GM32006	GC70100-4	GC70111-4	GM70080-2
GC70113-23	257015	GM32007	GC70100-4	GC70112-4	GM70080-2
GC70113-24	257015	GM32006	GC70100-4	GC70112-4	GM70080-2
GC70113-25	257015	GM32007	GC70100-5	GC70110-5	GM70080-2
GC70113-26	257015	GM32006	GC70100-5	GC70110-5	GM70080-2
GC70113-27	257015	GM32007	GC70100-5	GC70111-5	GM70080-2
GC70113-28	257015	GM32006	GC70100-5	GC70111-5	GM70080-2
GC70113-29	257015	GM32007	GC70100-5	GC70112-5	GM70080-2
GC70113-30	257015	GM32006	GC70100-5	GC70112-5	GM70080-2
GC70113-31	257015	GM32007	GC70100-6	GC70110-6	GM70080-2
GC70113-32	257015	GM32006	GC70100-6	GC70110-6	GM70080-2
GC70113-33	257016	GM32006	GC70100-7	GC70110-6	GM70080-2
GC70113-34	257015	GM32007	GC70100-6	GC70111-6	GM70080-2
GC70113-35	257015	GM32006	GC70100-6	GC70111-6	GM70080-2
GC70113-36	257016	GM32006	GC70100-7	GC70111-6	GM70080-2
GC70113-37	257015	GM32007	GC70100-6	GC70112-6	GM70080-2
GC70113-38	257015	GM32006	GC70100-6	GC70112-6	GM70080-2
GC70113-39	257016	GM32006	GC70100-7	GC70112-6	GM70080-2

# Group 201: Generator and Mounting, continued

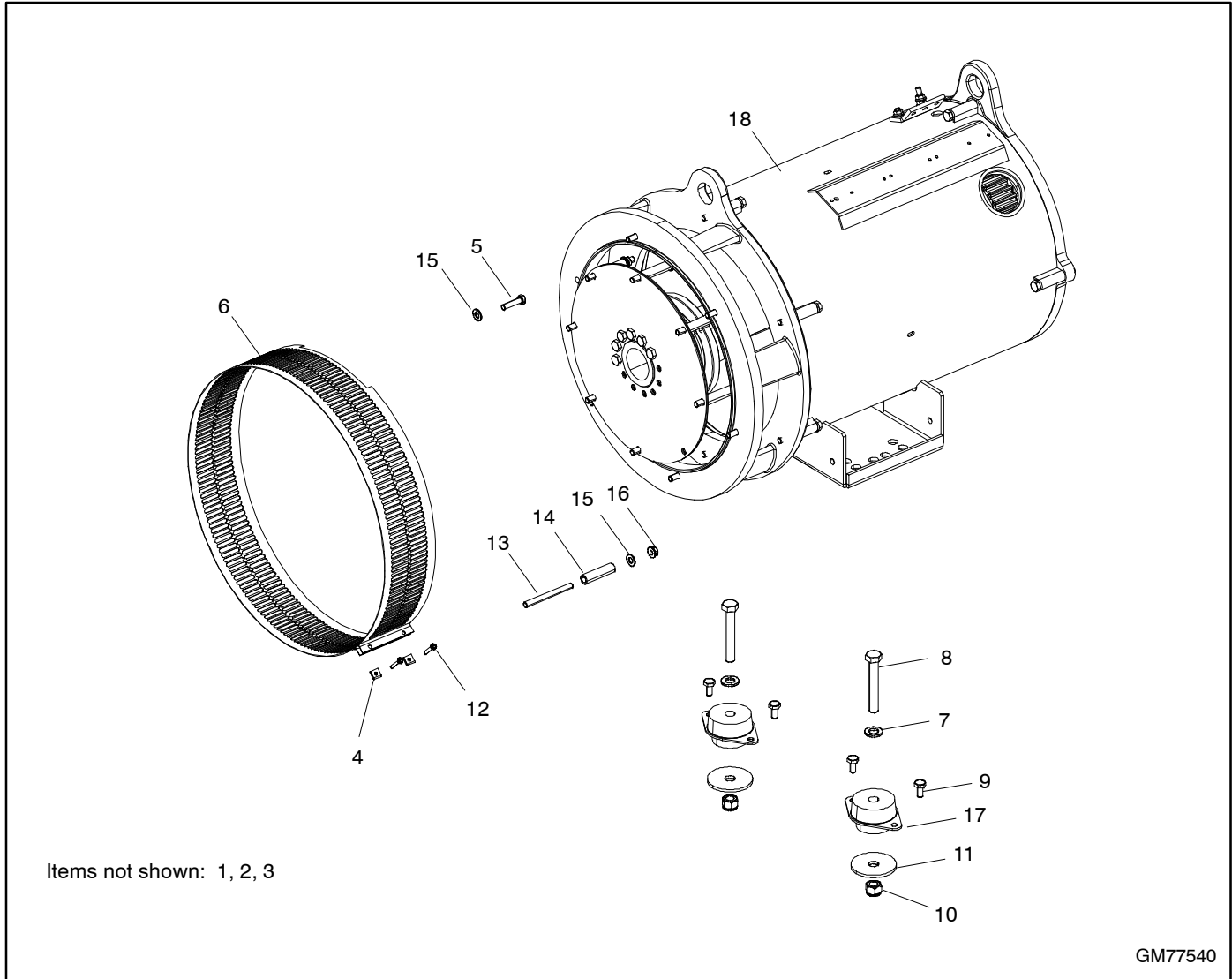
4P\_X/4Q\_X Alternators GC70113-  
Alternator Part Numbers and Components

Use this table to identify part numbers of items 6-10.

Alternator No.	Item/Part Number				
	Item 6, Exciter	Item 7, Ground Bus	Item 8, Screws	Item 9, Washers	Item 10, Nuts
GC70113-1	GC70064-1	257986	M933-06030-60	M125A-06-80	M6923-06-80
GC70113-2	GC70064-1	257986	M933-06030-60	M125A-06-80	M6923-06-80
GC70113-3	GC70064-1	257986	M933-06030-60	M125A-06-80	M6923-06-80
GC70113-4	GC70064-1	257986	M933-06030-60	M125A-06-80	M6923-06-80
GC70113-5	GC70064-1	257985	M933-08030-60	M125A-08-80	M6923-08-80
GC70113-6	GC70064-1	257985	M933-08030-60	M125A-08-80	M6923-08-80
GC70113-7	GC70064-1	257986	M933-06030-60	M125A-06-80	M6923-06-80
GC70113-8	GC70064-1	257986	M933-06030-60	M125A-06-80	M6923-06-80
GC70113-9	GC70064-1	257986	M933-06030-60	M125A-06-80	M6923-06-80
GC70113-10	GC70064-1	257986	M933-06030-60	M125A-06-80	M6923-06-80
GC70113-11	GC70064-1	257985	M933-08030-60	M125A-08-80	M6923-08-80
GC70113-12	GC70064-1	257985	M933-08030-60	M125A-08-80	M6923-08-80
GC70113-13	GC70064-2	257986	M933-06030-60	M125A-06-80	M6923-06-80
GC70113-14	GC70064-2	257986	M933-06030-60	M125A-06-80	M6923-06-80
GC70113-15	GC70064-2	257986	M933-06030-60	M125A-06-80	M6923-06-80
GC70113-16	GC70064-2	257986	M933-06030-60	M125A-06-80	M6923-06-80
GC70113-17	GC70064-2	257985	M933-08030-60	M125A-08-80	M6923-08-80
GC70113-18	GC70064-2	257985	M933-08030-60	M125A-08-80	M6923-08-80
GC70113-19	GC70064-2	257986	M933-06030-60	M125A-06-80	M6923-06-80
GC70113-20	GC70064-2	257986	M933-06030-60	M125A-06-80	M6923-06-80
GC70113-21	GC70064-2	257986	M933-06030-60	M125A-06-80	M6923-06-80
GC70113-22	GC70064-2	257986	M933-06030-60	M125A-06-80	M6923-06-80
GC70113-23	GC70064-2	257985	M933-08030-60	M125A-08-80	M6923-08-80
GC70113-24	GC70064-2	257985	M933-08030-60	M125A-08-80	M6923-08-80
GC70113-25	GC70064-2	257986	M933-06030-60	M125A-06-80	M6923-06-80
GC70113-26	GC70064-2	257986	M933-06030-60	M125A-06-80	M6923-06-80
GC70113-27	GC70064-2	257986	M933-06030-60	M125A-06-80	M6923-06-80
GC70113-28	GC70064-2	257986	M933-06030-60	M125A-06-80	M6923-06-80
GC70113-29	GC70064-2	257985	M933-08030-60	M125A-08-80	M6923-08-80
GC70113-30	GC70064-2	257985	M933-08030-60	M125A-08-80	M6923-08-80
GC70113-31	GC70064-2	257986	M933-06030-60	M125A-06-80	M6923-06-80
GC70113-32	GC70064-2	257986	M933-06030-60	M125A-06-80	M6923-06-80
GC70113-33	GC70064-2	257986	M933-06030-60	M125A-06-80	M6923-06-80
GC70113-34	GC70064-2	257986	M933-06030-60	M125A-06-80	M6923-06-80
GC70113-35	GC70064-2	257986	M933-06030-60	M125A-06-80	M6923-06-80
GC70113-36	GC70064-2	257986	M933-06030-60	M125A-06-80	M6923-06-80
GC70113-37	GC70064-2	257985	M933-08030-60	M125A-08-80	M6923-08-80
GC70113-38	GC70064-2	257985	M933-08030-60	M125A-08-80	M6923-08-80
GC70113-39	GC70064-2	257985	M933-08030-60	M125A-08-80	M6923-08-80

# Group 201: Generator and Mounting, continued

4R\_X/4T\_X Alternator Modules GM77540-



Item	Part Number	Description	Qty.
1	X-750-14	Marker, wire L1 (not shown)	1
2	X-750-15	Marker, wire L2 (not shown)	1
3	X-750-16	Marker, wire L3 (not shown)	1
4	257442	Clip, speed	2
5	270158	Bolt, Hex Cap	6
6	GM70117	Guard, generator fan	1
7	M125A-16-80	Washer, plain	2
8	M931-16100-60	Screw, hex cap	2
9	M933-10020-60	Screw, hex cap	4
10	M982-16-80	Nut, hex elastic stop	2
11	X-25-112	Washer, plain	2
12	X-67-125	Screw, hex washer, thread-forming	2
13	X-352-63	Stud, 3/8-16 x 4 in.	8
14	X-400-132	Spacer, 0.406 ID x 0.625 OD x 2.531 in.	8
15	X-801-3	Washer, hardened, 0.406 ID x 0.812 OD	14
16	X-6210-9	Nut, flange spirallock, 3/8-16	8
17	See chart page 61	Vibromount	2
18	See chart page 61	Alternator assembly	1



# Group 201: Generator and Mounting, continued

## 4R\_X/4T\_X Alternator Modules GM77540- Alternator Module Parts

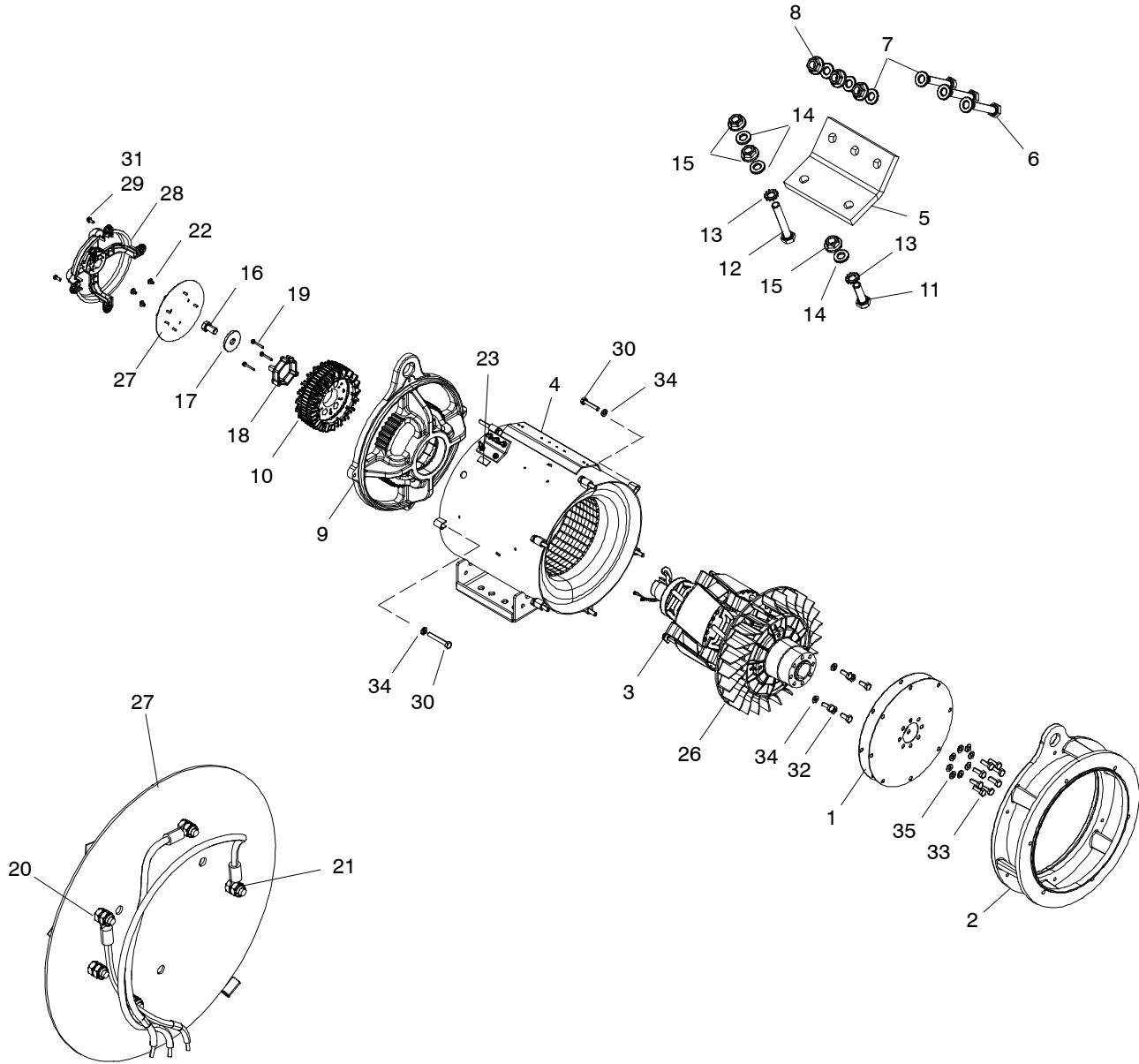
Use this table to identify the module number's alternator part number and vibromount part number.

<b>Module No.</b>	<b>Alternator Description</b>	<b>Item 17, Vibromount</b>	<b>Item 18, Alternator Assembly</b>
GM77540-MA1	4R9X	336813	GC70164-2
GM77540-MA2	4R9X, 600 V	336813	GC70164-4
GM77540-MA3	4R12X	324391	GC70164-8
GM77540-MA4	4R12X, 600 V	324391	GC70164-11
GM77540-MA5	4R13X	336024	GC70164-17
GM77540-MA6	4R13X, 600 V	336024	GC70164-21
GM77540-MA7	4T12X	324391	GC70164-14
GM77540-MA8	4T13X	336024	GC70164-25
GM77540-MA9	4T9X	336813	GC70164-6

Alternator assembly includes items on pages 62-63.

# Group 201: Generator and Mounting, continued

4R\_X/4T\_X Alternators GC70164-



GC70164

# Group 201: Generator and Mounting, continued

4R\_X/4T\_X Alternators GC70164-

Item	Part No.	Description	Qty.
1	See chart below	Disc, Drive	3
2	See chart below	Adapter, Generator	1
3	See chart below	Rotor Assembly	1
4	See chart below	Stator Assembly	1
5	See chart below	Bus, Ground	1
6	See chart below	Screw, Hex Cap	3
7	See chart below	Washer, Plain	6
8	See chart below	Nut, Hex	3
9	GM70116	Bracket Assembly, End	1
10	GC70064-3	Exciter Armature, SCR	1
11	M933-08025-60	Screw, hex cap	1
12	M933-08045-60	Screw, hex cap	1
13	M6797A-08-SS	Washer, Internal & External Tooth	2
14	M125A-08-80	Washer, Plain	3
15	M6923-08-80	Nut, Hex 8mm	3
16	M933-16030-82	Screw, hex cap	1
17	GM70070	Washer, FRX Exciter Mtg	1
18	GM70076	Spacer, FRX Activator	1
19	M7500D-05035-85	Screw, Metric Thread Forming	3
20	M934-04-SS	Nut, Hex (Stainless Steel)	5
21	M985-04-SS	Nut, Hex Elastic Stop	5
22	X-6071-8	Screw, Thread Forming	3
23	344295	Decal, equipment grd	1
26	GM70159	Fan, Alternator	1
27	GM72391	PCB ASSY, World Alternator Activator	1
28	GM74218	Holder Assy, LED Optic Board	1
29	M125A-06-80	Washer, Plain	4
30	M931-10080-60	Screw, hex cap	10
31	M933-06016-60	Screw, hex cap, M6x16mm, js500 full thrd	4
32	M933-10025-60	Screw, hex cap, fully thrd M10 x 25mm EXP	4
33	M933-10030-82	Screw, hex cap	12
34	X-25-93	Washer, plain .406ID x .75in. OD	14
35	X-801-3	Washer, hardened, .406 ID x .812 in. OD	12

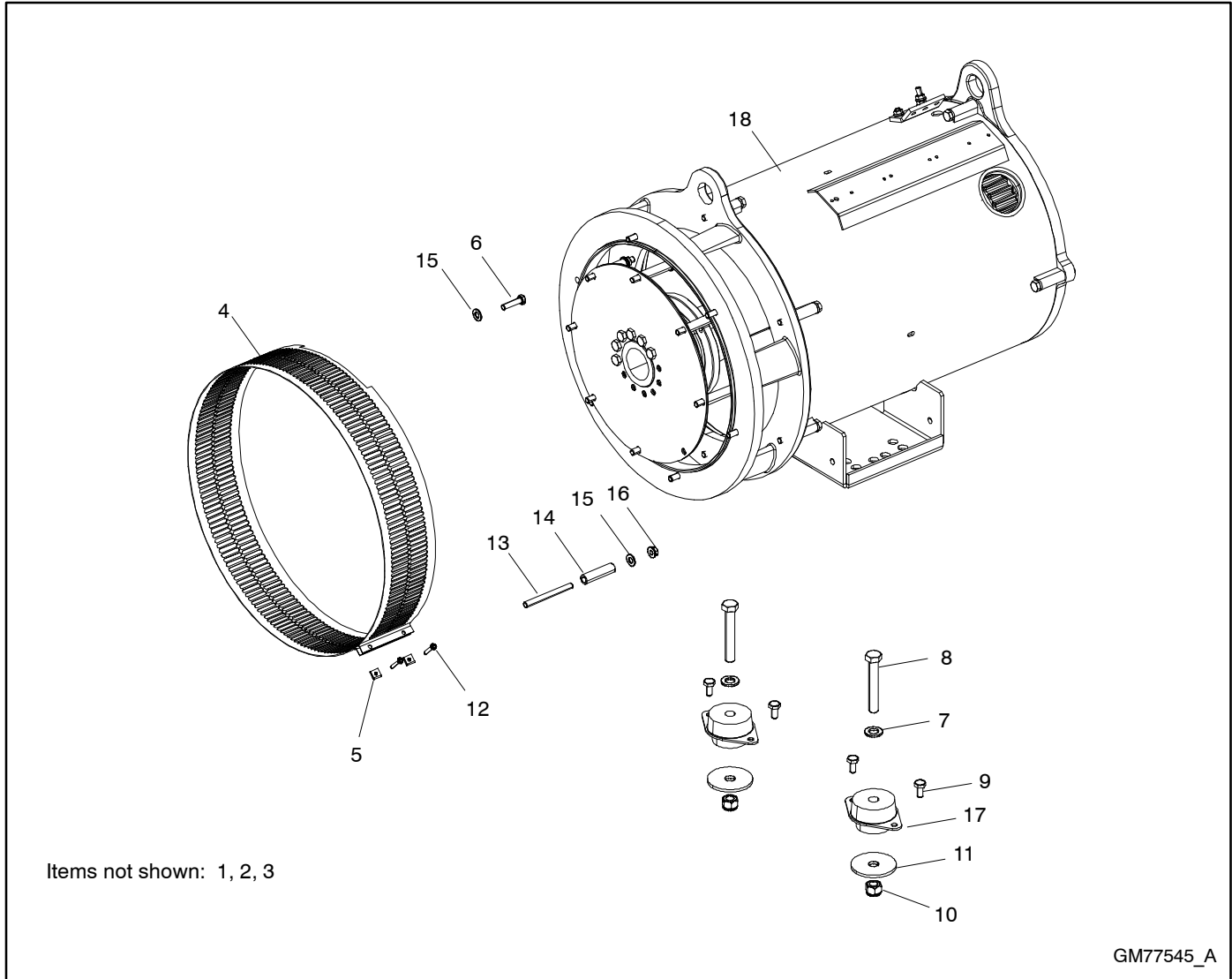
4R\_X/4T\_X Alternators GC70164-  
Alternator Part Numbers and Components

Use this table to identify part numbers of items 1-8.

Alternator No.	Item/Part Number							
	Item 1, Drive Disc	Item 2, Adapter	Item 3, Rotor Assy.	Item 4, Stator Assy.	Item 5, Ground Bus	Item 6, Screws	Item 7, Washers	Item 8, Nuts
GC70164-1	257102	GM70119	GC70145-1	GC70161-1	257985	M933-08030-60	M125A-08-80	M6923-08-80
GC70164-2	257103	GM70119	GC70145-2	GC70161-1	257985	M933-08030-60	M125A-08-80	M6923-08-80
GC70164-3	257102	GM70119	GC70145-1	GC70162-2	257985	M933-08030-60	M125A-08-80	M6923-08-80
GC70164-4	257103	GM70119	GC70145-2	GC70162-1	257985	M933-08030-60	M125A-08-80	M6923-08-80
GC70164-5	257102	GM70119	GC70145-1	GC70163-1	257978	M933-10030-60	M125A-10-80	M6923-10-80
GC70164-6	257103	GM70119	GC70145-2	GC70163-1	257978	M933-10030-60	M125A-10-80	M6923-10-80
GC70164-7	257102	GM70119	GC70145-3	GC70161-2	257985	M933-08030-60	M125A-08-80	M6923-08-80
GC70164-8	257103	GM70119	GC70145-4	GC70161-2	257985	M933-08030-60	M125A-08-80	M6923-08-80
GC70164-9	257104	GM70123	GC70145-5	GC70161-2	257985	M933-08030-60	M125A-08-80	M6923-08-80
GC70164-10	257102	GM70119	GC70145-3	GC70162-2	257985	M933-08030-60	M125A-08-80	M6923-08-80
GC70164-11	257103	GM70119	GC70145-4	GC70162-2	257985	M933-08030-60	M125A-08-80	M6923-08-80
GC70164-12	257104	GM70123	GC70145-5	GC70162-2	257985	M933-08030-60	M125A-08-80	M6923-08-80
GC70164-13	257103	GM70119	GC70145-3	GC70163-2	257978	M933-10030-60	M125A-10-80	M6923-10-80
GC70164-14	257104	GM70119	GC70145-4	GC70163-2	257978	M933-10030-60	M125A-10-80	M6923-10-80
GC70164-15	257105	GM70123	GC70145-5	GC70163-2	257978	M933-10030-60	M125A-10-80	M6923-10-80
GC70164-16	257102	GM70119	GC70145-6	GC70161-3	257985	M933-08030-60	M125A-08-80	M6923-08-80
GC70164-17	257103	GM70119	GC70145-7	GC70161-3	257985	M933-08030-60	M125A-08-80	M6923-08-80
GC70164-18	257103	GM70121	GC70145-7	GC70161-3	257985	M933-08030-60	M125A-08-80	M6923-08-80
GC70164-19	257104	GM70123	GC70145-8	GC70161-3	257985	M933-08030-60	M125A-08-80	M6923-08-80
GC70164-20	257102	GM70119	GC70145-6	GC70162-3	257985	M933-08030-60	M125A-08-80	M6923-08-80
GC70164-21	257103	GM70119	GC70145-7	GC70162-3	257985	M933-08030-60	M125A-08-80	M6923-08-80
GC70164-22	257103	GM70121	GC70145-7	GC70162-3	257985	M933-08030-60	M125A-08-80	M6923-08-80
GC70164-23	257104	GM70123	GC70145-8	GC70162-3	257985	M933-08030-60	M125A-08-80	M6923-08-80
GC70164-24	257102	GM70119	GC70145-6	GC70163-3	257978	M933-10030-60	M125A-10-80	M6923-10-80
GC70164-25	257103	GM70119	GC70145-7	GC70163-3	257978	M933-10030-60	M125A-10-80	M6923-10-80
GC70164-26	257103	GM70121	GC70145-7	GC70163-3	257978	M933-10030-60	M125A-10-80	M6923-10-80
GC70164-27	257104	GM70123	GC70145-8	GC70163-3	257978	M933-10030-60	M125A-10-80	M6923-10-80

# Group 201: Generator and Mounting, continued

4S\_X Alternator Modules GM77545-



Item	Part Number	Description	Qty.
1	X-750-14	Marker, wire L1 (not shown)	1
2	X-750-15	Marker, wire L2 (not shown)	1
3	X-750-16	Marker, wire L3 (not shown)	1
4	257179	Guard, generator fan	1
5	257442	Clip, speed	2
6	270158	Bolt, Hex Cap	6
7	M125A-16-80	Washer, plain	2
8	M931-16100-60	Screw, hex cap	2
9	M933-10020-60	Screw, hex cap	4
10	M982-16-80	Nut, hex elastic stop	2
11	X-25-112	Washer, plain	2
12	X-67-125	Screw, hex washer, thread-forming	2
13	X-352-63	Stud, 3/8-16 x 4 in.	8
14	X-400-132	Spacer, 0.406 ID x 0.625 OD x 2.531 in.	8
15	X-801-3	Washer, hardened, 0.406 ID x 0.812 OD	14
16	X-6210-9	Nut, flange spirallock, 3/8-16	8
17	See chart page 65	Vibromount	2
18	See chart page 65	Alternator assembly	1

# Group 201: Generator and Mounting, continued

## 4S\_X Alternator Modules GM77545- Alternator Module Parts

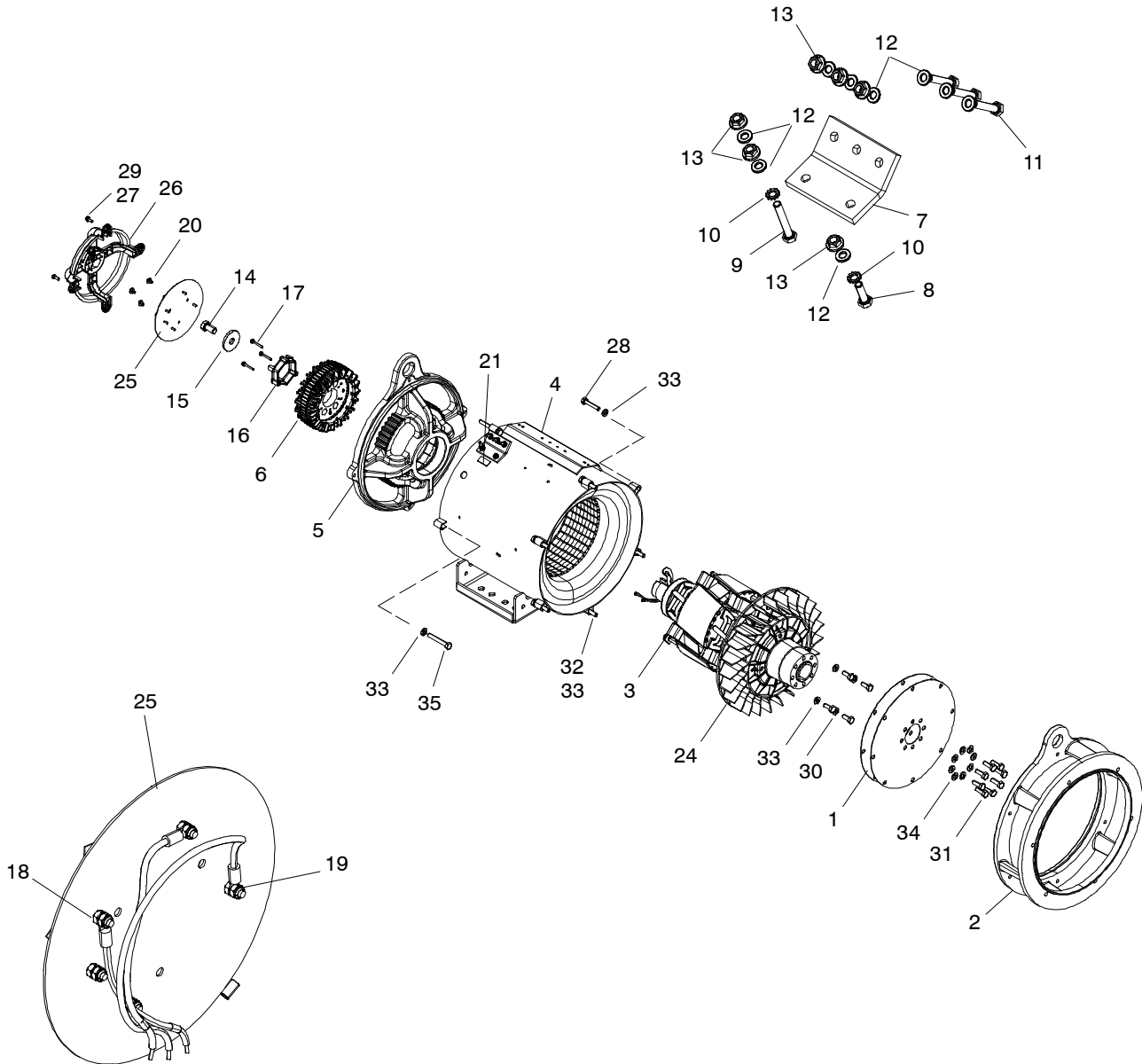
Use this table to identify the module number's alternator part number and vibromount part number.

<b>Module No.</b>	<b>Alternator Description</b>	<b>Item 17, Vibromount</b>	<b>Item 18, Alternator Assembly</b>
GM77545-MA1	4S12X	336024	GC70194-1
GM77545-MA2	4S12X, 600 V	336024	GC70194-4
GM77545-MA3	4S13X	336024	GC70194-11
GM77545-MA4	4S13X, 600 V	336024	GC70194-12

Alternator assembly includes items on pages 66-67.

# Group 201: Generator and Mounting, continued

4S\_X Alternators GC70194-



GC70194\_C

# Group 201: Generator and Mounting, continued

## 4S\_X Alternators GC70194-

Item	Part No.	Description	Qty.
1	See chart below	Disc, Drive	3
2	See chart below	Adapter, Generator	1
3	See chart below	Rotor Assembly	1
4	See chart below	Stator Assembly	1
5	GM70167	Bracket Assembly, End	1
6	GC70064-4	Exciter Armature, SCR	1
7	257978	Bus, Ground	1
8	M933-10030-60	Screw, hex cap	1
9	M933-10050-60	Screw, hex cap	1
10	M6797A-10-SS	Washer, Internal & External Tooth	2
11	M933-10035-60	Screw, Hex Cap	3
12	M125A-10-80	Washer, Plain	9
13	M6923-10-80	Nut, Hex 10mm	6
14	M933-16030-82	Screw, hex cap	1
15	GM70070	Washer, FRX Exciter Mtg	1
16	GM70076	Spacer, FRX Activator	1
17	M7500D-05035-85	Screw, Metric Thread Forming	3
18	M934-04-SS	Nut, Hex (Stainless Steel)	5
19	M985-04-SS	Nut, Hex Elastic Stop	5
20	X-6071-8	Screw, Thread Forming	3
21	344295	Decal, equipment grd	1
24	GM79507	Fan, Alternator	1
25	GM72391	PCB ASSY, World Alternator Activator	1
26	GM74218	Holder Assy, LED Optic Board	1
27	M125A-06-80	Washer, Plain	4
28	M931-10080-60	Screw, hex cap	5
29	M933-06016-60	Screw, hex cap, M6x16mm, js500 full thrd	4
30	M933-10025-60	Screw, hex cap, fully thrd M10 x 25mm EXP	4
31	M933-12040-82	Screw, hex cap	10
32	M931-10055-60	Screw, hex cap	1
33	X-25-93	Washer, plain .406ID x .75in. OD	14
34	290945	Washer, hardened, .531 ID x 1.06 in. OD	10
35	M933-10100-60	Screw, hex cap	4

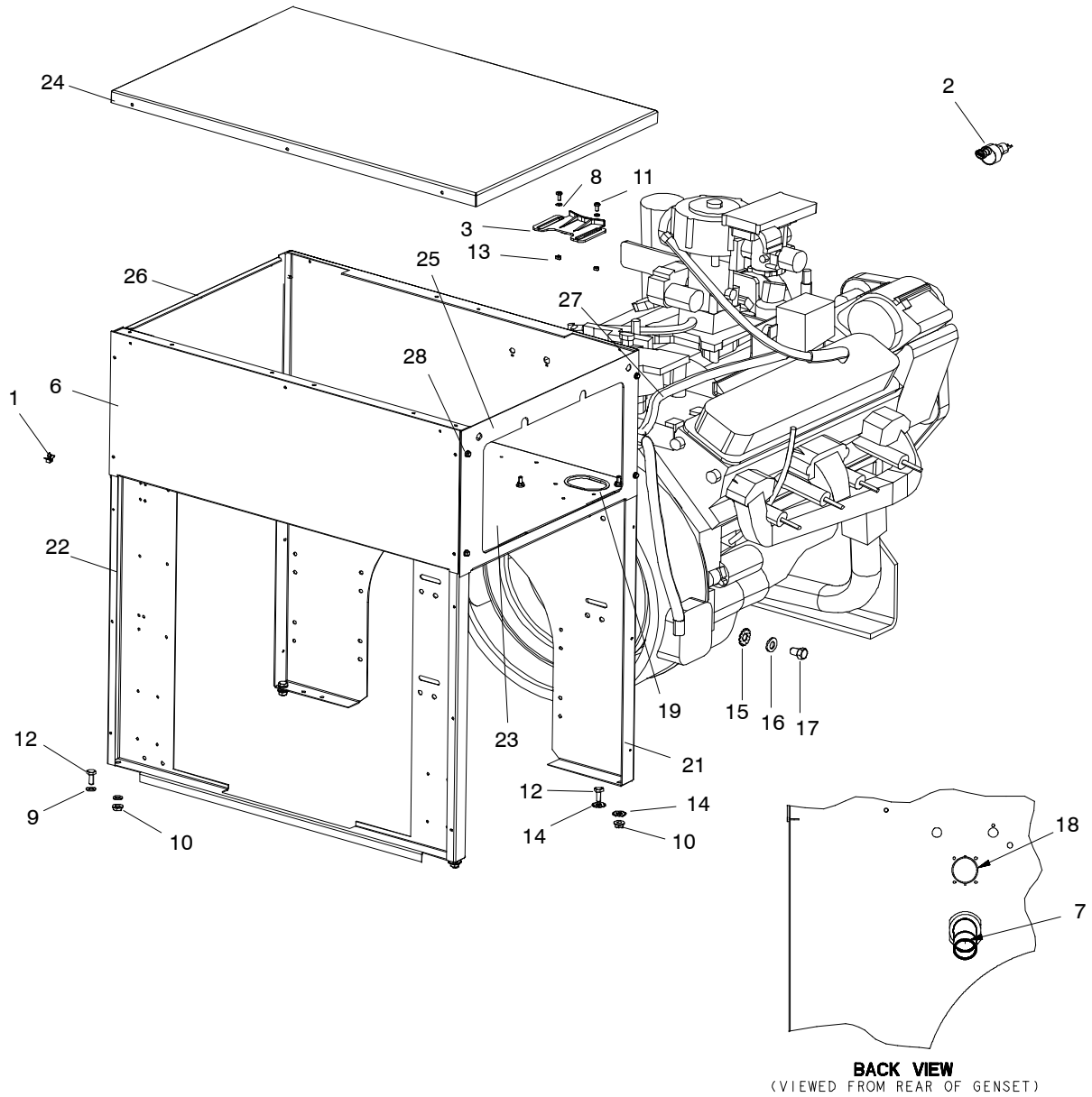
## 4S\_X Alternators GC70194- Alternator Part Numbers and Components

Use this table to identify part numbers of items 1-4.

Alternator No.	Assembly			
	Item 1, Drive Disc	Item 2, Adapter	Item 3, Rotor Assy.	Item 4, Stator Assy.
GC70194-1	GM70180	GM78317	GC70182-1	GC70192-1
GC70194-2	GM70180	GM78316	GC70182-1	GC70192-1
GC70194-3	GM70181	GM78315	GC70182-2	GC70192-1
GC70194-4	GM70180	GM78317	GC70182-1	GC70193-1
GC70194-5	GM70180	GM78316	GC70182-1	GC70193-1
GC70194-6	GM70181	GM78315	GC70182-2	GC70193-1
GC70194-7	GM70180	GM78316	GC70182-3	GC70192-2
GC70194-8	GM70181	GM78315	GC70182-4	GC70192-2
GC70194-9	GM70180	GM78316	GC70182-3	GC70193-2
GC70194-10	GM70181	GM78315	GC70182-4	GC70193-2
GC70194-11	GM70180	GM78317	GC70182-3	GC70192-2
GC70194-12	GM70180	GM78317	GC70182-3	GC70193-2

# Control and Harness

50/60 kW, Decision-Maker 550



GM77349

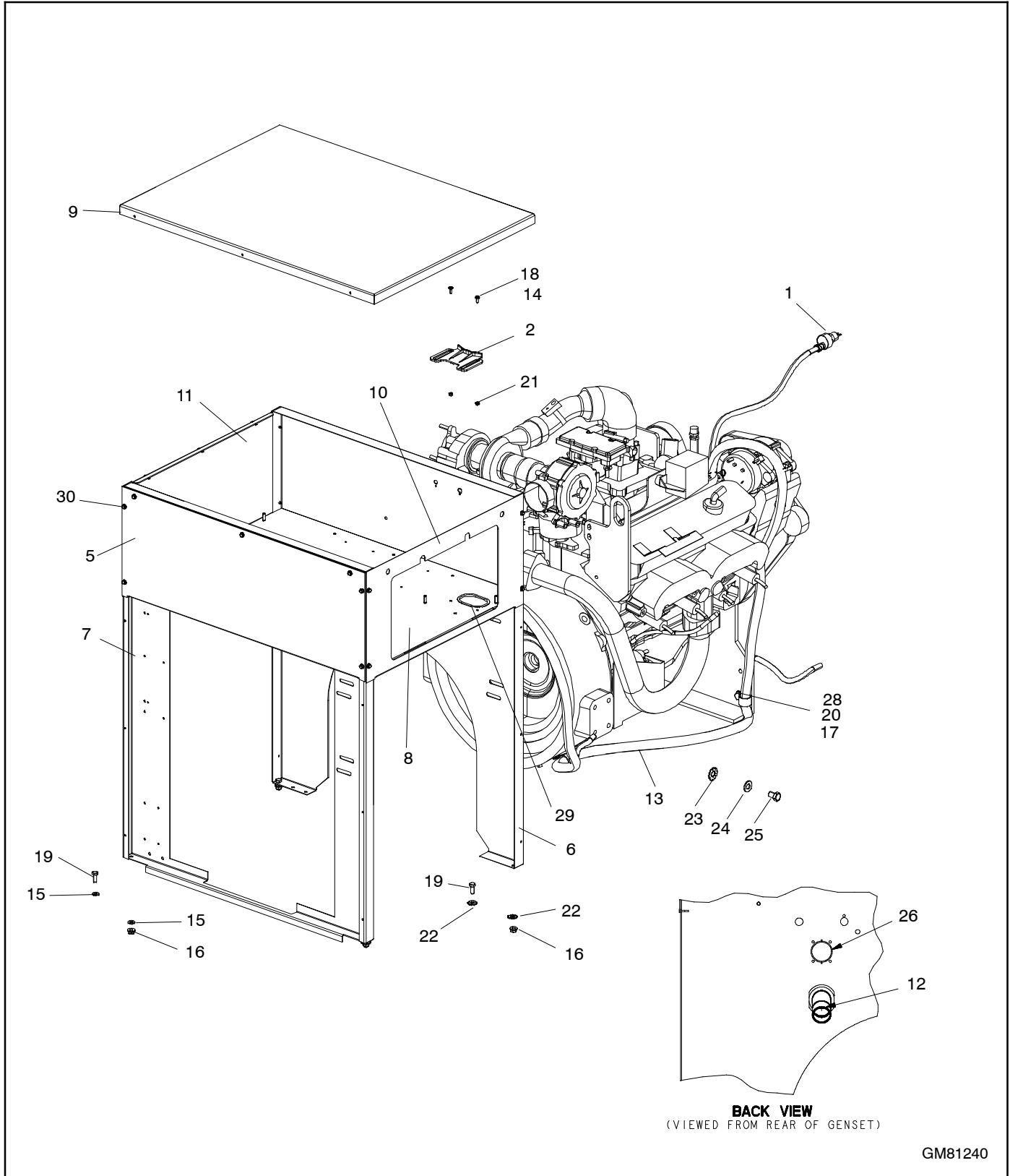


# Control and Harness

Item	Part Number	Description	Quantity
			Module Number GM77349-MA1
1	361567	Base, tie wrap snapin	2
2	GM66270	Sensor, Low Coolant Level	1
3	GM74531	Guard, Rodent	1
6	GM76175	Cover, Controller (Rear)	1
7	GM77406	Harness, Control Box 25-250 kW Gas	1
8	M125A-05-80	Washer, plain	2
9	M125A-08-80	Washer, plain 8.4 ID x 16.0 OD	4
10	M6923-08-80	Nut, Hex 8mm	4
11	M7985A-05012-20	Screw, pan head mach.	2
12	M933-08020-60	Screw, hex cap	4
13	M934-05-50	Nut, Hex 5mm	2
14	X-22-16	Washer, lock.326 IDx.883 in.OD	4
15	X-22-26	Washer,lock.521 IDx1.24 in.OD	1
16	X-25-26	Washer, Plain, .531 IDx1.062 in.OD	1
17	X-129-15	Bolt, Hex Cap	1
18	X-301-35	Button, Plug	1
19	X-6033-5	Grommet, U-channel	1
21	GM76167	Panel, Junction Box (Front)	1
22	GM76168	Panel, Junction Box (Rear)	1
23	GM76169	Panel, Junction Box (Shelf)	1
24	GM76170	Cover, Junction Box (Top)	1
25	GM76172	Panel, Controller Face	1
26	GM76173	Cover, Controller (Left)	1
27	GM77409	Harness, Engine 50-60 kW GM	1
28	X-6216-1	Screw, Phillips hex crimpite	30

# Control and Harness, continued

80-150 kW, Decision-Maker 550/6000

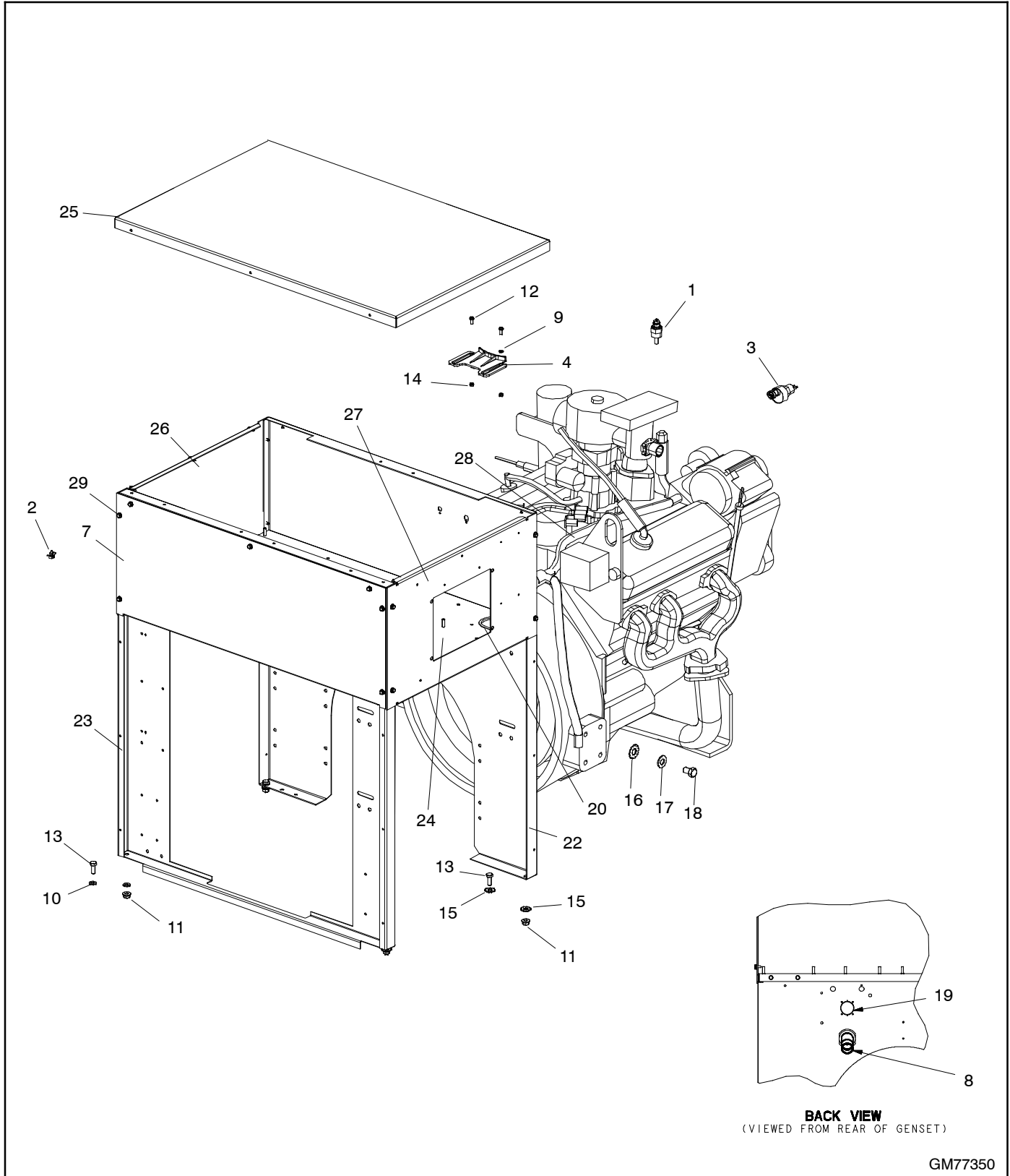


## Control and Harness, continued

Item	Part Number	Description	Quantity										
			Module										
			GM81240-MA1	GM81240-MA2	GM78274-MA1	GM77534-MA1	GM77534-MA2	GM77534-MA3	GM77534-MA4	GM77534-MA5	GM77534-MA6	GM77534-MA7	GM77534-MA8
1	GM66270	Sensor, Low Coolant Level	1	1	1	1	1	1	1	1	1	1	1
1	GM78797	Sensor, Low Coolant Level											
2	GM74531	Guard, Rodent	1	1	1	1	1	1	1	1	1	1	1
5	GM76175	Cover, Controller (Rear)	1	1	1	1	1	1	1	1	1	1	1
6	GM76176	Panel, Junction Box (Front)	1	1		1	1			1	1		
6	GM76167	Panel, Junction Box (Front)			1								
6	GM77548	Panel, Junction Box (Front)						1	1			1	1
7	GM76177	Panel, Junction Box (Rear)	1	1		1	1	1	1	1	1	1	1
7	GM76168	Panel, Junction Box (Rear)			1								
8	GM76178	Panel, Junction Box (Shelf)	1	1		1	1	1	1	1	1	1	1
8	GM76169	Panel, Junction Box (Shelf)			1								
9	GM76179	Cover, Junction Box (Top)	1	1		1	1	1	1	1	1	1	1
9	GM76170	Cover, Junction Box (Top)			1								
10	GM76180	Panel, Controller Face	1	1		1	1	1	1	1	1	1	1
10	GM76172	Panel, Controller Face			1								
11	GM76181	Cover, Controller (Left)	1	1		1	1	1	1	1	1	1	1
11	GM76173	Cover, Controller (Left)			1								
12	GM77406	Harness, Control Box 25-250 kW Gas	1		1	1		1		1		1	
12	GM79038	Harness, Control Box 25-250 kW Gas		1				1		1		1	
13	GM77937	Harness, Engine 5.7L GM, 80/100 kW	1	1	1								
13	GM78643	Harness, Engine				1	1	1	1	1	1	1	1
14	M125A-05-80	Washer, plain	2	2	2	2	2	2	2	2	2	2	2
15	M125A-08-80	Washer, plain 8.4 ID x 16.0 OD	4	4	4	2	2	2	2	2	2	2	2
16	M6923-08-80	Nut, Hex 8mm	4	4	4	4	4	4	4	4	4	4	4
17	M6923-10-80	Nut, Hex 10mm	1	1	1	1	1	1	1	1	1	1	1
18	M7985A-05012-20	Screw, pan head machine	2	2	2	2	2	2	2	2	2	2	2
19	M933-08020-60	Screw, hex cap	4	4	4	4	4	4	4	4	4	4	4
20	M933-10030-60	Screw, hex cap	1	1	1	1	1	1	1	1	1	1	1
21	M934-05-50	Nut, Hex 5mm	2	2	2	2	2	2	2	2	2	2	2
22	X-22-16	Washer, lock, .326 ID x.883 in. OD	4	4	4	4	4	4	4	4	4	4	4
23	X-22-26	Washer,lock, .521 ID x1.24 in. OD	1	1	1	1	1	1	1	1	1	1	1
24	X-25-26	Washer, Plain, .531 ID x1.062 in. OD	1	1	1	1	1	1	1	1	1	1	1
25	X-129-15	Bolt, Hex Cap	1	1	1	1	1	1	1	1	1	1	1
26	X-301-35	Button, Plug	1	1	1	1	1	1	1	1	1	1	1
28	X-672-32	Clamp, Insulated, 1.06 in.	2	2	2	2	2	2	2	2	2	2	2
29	X-6033-5	Grommet, U-channel	1	1	1	1	1	1	1	1	1	1	1
30	X-6216-1	Screw, Phillips hex crimpitite	24	24	24	28	28	28	28	28	28	28	28

# Control and Harness, continued

40/60 kW, Decision-Maker 3000

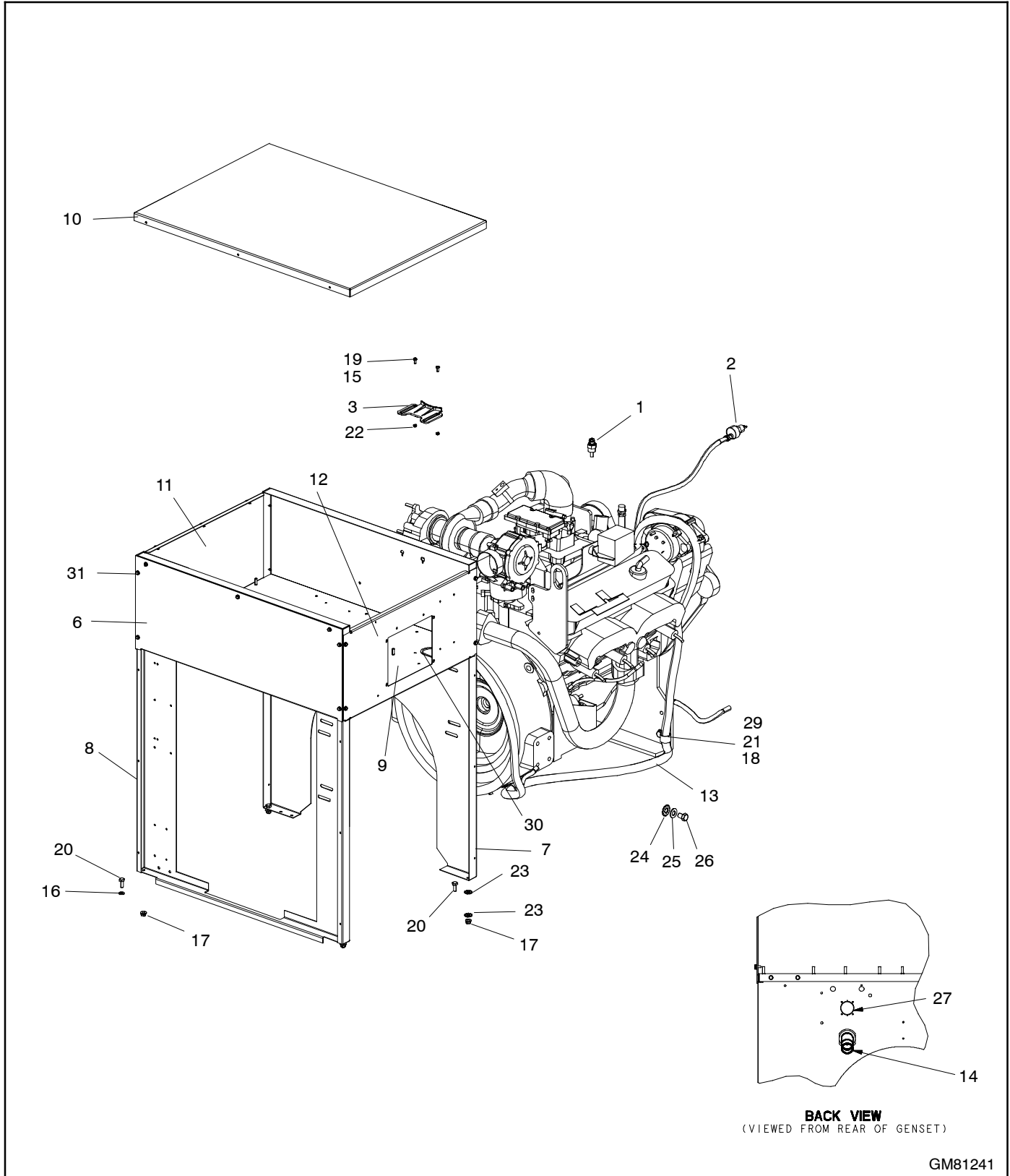


## Control and Harness, continued

Item	Part Number	Description	Quantity
			Module Number GM77350-MA1
1	GM39458	Sender, Temperature	1
2	361567	Base, tie wrap snapin	2
3	GM66270	Sensor, Low Coolant Level	1
4	GM74531	Guard, Rodent	1
7	GM76175	Cover, Controller (Rear)	1
8	GM77945	Harness, Control Box 20-250 kW Gas	1
9	M125A-05-80	Washer, plain	2
10	M125A-08-80	Washer, plain 8.4 ID x 16.0 OD	4
11	M6923-08-80	Nut, Hex 8mm	4
12	M7985A-05012-20	Screw, pan head mach.	2
13	M933-08020-60	Screw, hex cap	4
14	M934-05-50	Nut, Hex 5mm	2
15	X-22-16	Washer, lock.326 IDx.883 in.OD	4
16	X-22-26	Washer,lock.521 IDx1.24 in.OD	1
17	X-25-26	Washer, Plain, .531 IDx1.062 in.OD	1
18	X-129-15	Bolt, Hex Cap	1
19	X-301-35	Button, Plug	1
20	X-6033-5	Grommet, U-channel	1
22	GM76167	Panel, Junction Box (Front)	1
23	GM76168	Panel, Junction Box (Rear)	1
24	GM76169	Panel, Junction Box (Shelf)	1
25	GM76170	Cover, Junction Box (Top)	1
26	GM76173	Cover, Controller (Left)	1
27	GM76174	Panel, J-Box DEC3000 Mnt (Right)	1
28	GM77409	Harness, Engine 50-60 kW GM	1
29	X-6216-1	Screw, Phillips hex crimpite	24

# Control and Harness, continued

80-150 kW, Decision-Maker 3000



GM81241

## Control and Harness, continued

Item	Part Number	Description	Quantity					
			Module					
			GM81241-MA1	GM78275-MA1	GM77535-MA1	GM77535-MA2	GM77535-MA3	GM77535-MA4
1	GM39458	Sender, Temperature	1	1	1	1	1	1
2	GM66270	Sensor, Low Coolant Level	1	1	1	1		
2	GM78797	Sensor, Low Coolant Level					1	1
3	GM74531	Guard, Rodent	1	1	1	1	1	1
6	GM76175	Cover, Controller (Rear)	1	1	1	1	1	1
7	GM76176	Panel, Junction Box (Front)	1		1		1	
7	GM76167	Panel, Junction Box (Front)		1				
7	GM77548	Panel, Junction Box (Front)				1		1
8	GM76168	Panel, Junction Box (Rear)		1				
8	GM76177	Panel, Junction Box (Rear)	1		1	1	1	1
9	GM76169	Panel, Junction Box (Shelf)		1				
9	GM76178	Panel, Junction Box (Shelf)	1		1	1	1	1
10	GM76170	Cover, Junction Box (Top)		1				
10	GM76179	Cover, Junction Box (Top)	1		1	1	1	1
11	GM76173	Cover, Controller (Left)		1				
11	GM76181	Cover, Controller (Left)	1		1	1	1	1
12	GM76174	Panel, J-Box DEC3000 Mnt (Right)		1				
12	GM76182	Panel, J-Box DEC3000 Mnt (Right)	1		1	1	1	1
13	GM77937	Harness, Engine 5.7 L, 80/100 kW	1	1				
13	GM78643	Harness, Engine			1	1	1	1
14	GM77945	Harness, Control Box 20-250 kW Gas	1	1	1	1	1	1
15	M125A-05-80	Washer, plain	2	2				
16	M125A-08-80	Washer, plain 8.4 ID x 16.0 OD	4	4	4	4	4	4
17	M6923-08-80	Nut, Hex 8mm	4	4	4	4	4	4
18	M6923-10-80	Nut, Hex 10mm	1	1	1	1	1	1
19	M7985A-05012-20	Screw, pan head mach.	2	2				
19	X-794-1	Screw, hex wshr hd, drill 1/4-14 x 5/8			2	2	2	2
20	M933-08020-60	Screw, hex cap	4	4	4	4	4	4
21	M933-10030-60	Screw, hex cap	1	1	1	1	1	1
22	M934-05-50	Nut, Hex 5mm	2	2				
23	X-22-16	Washer, lock.326 IDx.883 in.OD	4	4	4	4	4	4
24	X-22-26	Washer,lock.521 IDx1.24 in.OD	1	1	1	1	1	1
25	X-25-26	Washer, Plain, .531 IDx1.062 in.OD	1	1	1	1	1	1
26	X-129-15	Bolt, Hex Cap	1	1	1	1	1	1
27	X-301-35	Button, Plug	1	1	1	1	1	1
29	X-672-32	Clamp, insulated 1.02 in.	2	2	2	2	2	2
30	X-6033-5	Grommet, U-channel	1		1	1	1	1
31	X-6216-1	Screw, Phillips hex crimpitite	24	24	28	28	28	28

# Group 701: Literature

Item	Part Number	Description	Quantity							
			Variation Number							
			454	455	456	457	471	472	473	474
1	TP-5374	Warranty 1-Year Limited, Industrial	1	1	1	1	1	1	1	1
2	TP-5700	I/M 20-3250kW, Industrial	1	1	1	1	1	1	1	1
3	TP-6101	O/M Supplement, GM Engines	1	1	1	1	1	1	1	1
4	TP-6140	O/I/M Cntrlr Setup & Appl, DecMaker550	1	1	1	1	1	1	1	1
5	TP-6200	O/M 20-2000 kW, DecMaker550	1	1	1	1	1	1	1	1
6	TP-6356	S/M Controllers, 20-2800 kW	1	1	1	1	1	1	1	1
7	TP-6694	O/M DEC 3000 Controller	1	1	1	1	1	1	1	1
8	TP-6712	W/D 40-150REZG/ERES	1	1			1		1	
8	TP-6791	W/D 40-125ERES/ERESB, Res/Coml			1	1		1		1
9	TP-6724	S/M PSI/GM 1.6-8.1L Emission-Certified	1	1	1	1	1	1	1	1
9	TP-6104	S/M GM 5.0/5.7L 50-60 kW					1	1	1	1
10	TP-6731	P/C GM 5.0/5.7L Powertrain, 50/60 kW	1	1	1	1	1	1	1	1
11	TP-6780	P/C DEC 550 Controller (J-Box Panel Mt)	1	1	1	1	1	1	1	1
12	TP-6781	P/C DEC 3000 Controller	1	1	1	1	1	1	1	1
13	TP-6783	S/M Fast Response X (FR-X) Alternator	1	1	1	1	1	1	1	1
14	TP-6784	P/C 25-150 kW GM with FR-X alternator	1	1	1	1	1	1	1	1
15	TP-6746	P/C DPS System								1
16	TP-6747	O/I/M DPS System Installation and Setup								1
17	TP-6750	O/M DEC 6000 Controller								1

Item	Part Number	Description	Quantity				
			Variation Number				
			475	476	477	478	479
1	TP-5374	Warranty 1-Year Limited, Industrial	1	1	1	1	1
2	TP-5700	I/M 20-3250kW, Industrial	1	1	1	1	1
3	TP-6101	O/M Supplement, GM Engines	1	1	1	1	1
4	TP-6140	O/I/M Cntrlr Setup & Appl, DecMaker550	1	1	1	1	1
5	TP-6200	O/M 20-2000 kW, DecMaker550	1	1	1	1	1
6	TP-6356	S/M Controllers, 20-2800 kW	1	1	1	1	1
7	TP-6694	O/M DEC 3000 Controller	1	1	1	1	1
8	TP-6712	W/D 40-150REZG/ERES	1		1	1	1
8	TP-6791	W/D 40-125ERES/ERESB, Res/Coml		1			
9	TP-6724	S/M PSI/GM 1.6-8.1L Emission-Certified	1	1	1	1	1
9	TP-6104	S/M GM 5.0/5.7L 50-60 kW				1	1
10	TP-6731	P/C GM 5.0/5.7L Powertrain, 50/60 kW				1	1
10	TP-6732	P/C GM	1	1	1		
11	TP-6780	P/C DEC 550 Controller (J-Box Panel Mt)	1	1	1	1	1
12	TP-6781	P/C DEC 3000 Controller	1	1	1	1	1
13	TP-6783	S/M Fast Response X (FR-X) Alternator	1	1	1	1	1
14	TP-6784	P/C 25-150 kW GM with FR-X alternator	1	1	1	1	1
15	TP-6746	P/C DPS System	1		1	1	1
16	TP-6747	O/I/M DPS System Installation and Setup	1		1	1	1
17	TP-6750	O/M DEC 6000 Controller	1		1	1	1

Item	Part Number	Description	Quantity					
			Variation Number					
			489	490	491	492	493	494
1	TP-5374	Warranty 1-Year Limited, Industrial	1	1	1	1	1	1
2	TP-5700	I/M 20-3250kW, Industrial	1	1	1	1	1	1
3	TP-6101	O/M Supplement, GM Engines	1	1	1	1	1	1
4	TP-6140	O/I/M Cntrlr Setup & Appl, DecMaker550	1	1	1	1	1	1
5	TP-6200	O/M 20-2000 kW, DecMaker550	1	1	1	1	1	1
6	TP-6356	S/M Controllers, 20-2800 kW	1	1	1	1	1	1
7	TP-6694	O/M DEC 3000 Controller	1	1	1	1	1	1
8	TP-6799	W/D 25-150kW, GM, Industrial	1	1	1	1		
8	TP-6491	W/D 40-125ERES/ERESB, Res/Coml					1	1
9	TP-6870	S/M PSI 8.8 L Engine Service Manual	1	1	1	1	1	1
9	TP-6871	S/M PSI 8.8 L Engine Fuel and Emission	1	1	1	1	1	1
10	TP-6846	P/C PSI 8.8L Engine	1	1	1	1	1	1
11	TP-6780	P/C DEC 550 Controller (J-Box Panel Mt)	1	1	1	1	1	1
12	TP-6781	P/C DEC 3000 Controller	1	1	1	1	1	1
13	TP-6783	S/M Fast Response X (FR-X) Alternator	1	1	1	1	1	1
14	TP-6784	P/C 25-150 kW GM with FR-X alternator	1	1	1	1	1	1
15	TP-6746	P/C DPS System	1	1	1	1		
16	TP-6747	O/I/M DPS System Installation and Setup	1	1	1	1		
17	TP-6750	O/M DEC 6000 Controller	1	1	1	1		



# Kit List

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

	50/60 kW	80/100 kW	125 kW	150 kW	125/150 kW w/8.8L
<b>Cooling Systems</b>					
Heater, block					
110-120 V	GM75565-KA1	GM77944-KA1	GM75566-KA1	GM75566-KA1	GM85060-KA1
190-240 V	GM75565-KA2	GM77944-KA2	GM75566-KA2	GM75566-KA2	GM85060-KA2
Duct Flange, radiator	GM13896-KA1	GM13896-KA1	GM13896-KA2	GM13896-KA5	GM81486-KA1
<b>Fuel Systems</b>					
Fuel lines, flexible	GM13706-KP1	GM71618-KP1	GM13706-KP2	GM13706-KP2	GM13706-KP2
Fuel lines, flexible, dual fuel	GM14272-KP1				
Filter, natural gas	PA-343303	PA-343303	PA-343303	PA-343303	PA-343303
Additional gas solenoid valve					
Nat. gas	GM70040-KA1	GM71619-KA1	GM71195-KA1	GM71195-KA1	GM71195-KA1
LP gas	GM70040-KA1	GM71619-KA1	GM71195-KA1		GM71195-KA1
Auto. dual fuel	GM70612-KA1		GM70928-KA2		GM71195-KA1
LP liquid	GM70639-KA1		GM78581-KA1		GM78581-KA1

## Touch-Up Paint

Gloss and textured paint available from Aftermarket Parts.

Color Description	Part Number		
	Touch-up Bottle	Spray Can	Gallon
Cream Beige	N/A	GM71383	GM71387
White	N/A	GM71381	221334
ANSI 61	N/A	GM71384	N/A
ANSI 49	N/A	GM71380	N/A
Spectrum Gray	N/A	GM75954	221332
Black	N/A	GM71382	N/A
Matterhorn White	N/A	GM48126	N/A
Sage Green	GM50484	N/A	N/A
Textured KCB	GM83001	GM82834	GM82835
Textured Black	GM83002	GM82836	N/A
Textured Cashmere	GM84772	GM84771	N/A
Tank Touch-Up	GM82837	N/A	N/A

# Cooling System Kits

Qty.	Description	Part No.
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<b>Block Heater, 1500W, 110-120V</b>			<b>GM75565-KA1</b>
1	Heater, block (120V, 1500 amp)		352945
1	Hose, molded (.62 in. ID)		276206
1	Tag, hang		279047
1	Shield, heat (32mm ID x 152mm length)		GM17809
1	Bracket, Block Heater Mtg.		GM64285
2	Washer, Plain		M125A-06-80
2	Washer, Plain 10.5 ID x 20.0 OD		M125A-10-80
2	Nut, Hex 6mm		M6923-06-80
2	Nut, Hex 10mm		M6923-10-80
2	Screw, hex cap		M933-06020-60
2	Screw, hex cap, fully thrd M10 x 25mm		M933-10025-60
1	Hose, .63 ID		X-312-35
4	Clamp, hose, .69/1.25 in.		X-426-12
2	Connector, Hose 5/8 in. x 1/2 in. MIP Brass		X-582-1

<b>Block Heater, 1500W, 190-240V</b>			<b>GM75565-KA2</b>
1	Heater, block (240V, 1500 amp)		352946
1	Hose, molded (.62 in. ID)		276206
1	Tag, hang		279047
1	Shield, heat (32mm ID x 152mm length)		GM17809
1	Bracket, Block Heater Mtg.		GM64285
2	Washer, Plain		M125A-06-80
2	Washer, Plain 10.5 ID x 20.0 OD		M125A-10-80
2	Nut, Hex 6mm		M6923-06-80
2	Nut, Hex 10mm		M6923-10-80
2	Screw, hex cap		M933-06020-60
2	Screw, hex cap, fully thrd M10 x 25mm		M933-10025-60
1	Hose, .63 ID		X-312-35
4	Clamp, hose, .69/1.25 in.		X-426-12
2	Connector, Hose 5/8 in. x 1/2 in. MIP Brass		X-582-1

<b>Block Heater, 1800W, 110-120V</b>			<b>GM75566-KA1</b>
1	Tag, hang		279047
1	Shield, heat (32mm ID x 305mm length)		GM10669
1	Shield, heat (32mm ID x 455mm length)		GM23718
1	Bracket, Block Heater Mtg.		GM64285
1	Heater, block (120V, 1800 amp)		GM75552
2	Washer, Plain		M125A-06-80
2	Washer, Plain 10.5 ID x 20.0 OD		M125A-10-80
2	Nut, Hex 6mm		M6923-06-80
2	Nut, Hex 10mm		M6923-10-80
2	Screw, hex cap		M933-06020-60
2	Screw, hex cap, fully thrd M10 x 25mm		M933-10025-60
2	Tee, pipe (1/2 x 1/2 x 1/2 npt)		X-203-13
2	Pipe (1/2"npt x 1.19")		X-209-2
1	Pipe (1/2"npt x 12.00")		X-209-26
2	Pipe, Nipple (1/2" NPT x 2.50")		X-209-3
1	Elbow, pipe (90 deg x 1/2"npt)		X-215-1
1	Coupling, pipe ( 1/2"npsc)		X-216-20
1	Hose, .63 ID		X-312-34
1	Hose, .63 ID		X-312-51
4	Clamp, hose, .69/1.25 in.		X-426-12
2	Connector, Hose 5/8 in. x 1/2 in. MIP Brass		X-582-1

Qty.	Description	Part No.
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<b>Block Heater, 1800W, 190-240V</b>			<b>GM75566-KA2</b>
1	Tag, hang		279047
1	Shield, heat (32mm ID x 305mm length)		GM10669
1	Shield, heat (32mm ID x 455mm length)		GM23718
1	Bracket, Block Heater Mtg.		GM64285
1	Heater, block (240V, 2000 amp)		GM75553
2	Washer, Plain		M125A-06-80
2	Washer, Plain 10.5 ID x 20.0 OD		M125A-10-80
2	Nut, Hex 6mm		M6923-06-80
2	Nut, Hex 10mm		M6923-10-80
2	Screw, hex cap		M933-06020-60
2	Screw, hex cap, fully thrd M10 x 25mm		M933-10025-60
2	Tee, pipe (1/2 x 1/2 x 1/2 npt)		X-203-13
2	Pipe (1/2"npt x 1.19")		X-209-2
1	Pipe (1/2"npt x 12.00")		X-209-26
2	Pipe, Nipple (1/2" NPT x 2.50")		X-209-3
1	Elbow, pipe (90 deg x 1/2"npt)		X-215-1
1	Coupling, pipe ( 1/2"npsc)		X-216-20
1	Hose, .63 ID		X-312-34
1	Hose, .63 ID		X-312-51
4	Clamp, hose, .69/1.25 in.		X-426-12
2	Connector, Hose 5/8 in. x 1/2 in. MIP Brass		X-582-1

<b>Block Heater, 1500W, 110-120V</b>			<b>GM77944-KA1</b>
1	Heater, block (120V, 1500 amp)		352945
1	Sensor, thermostat		224341
1	Thermostat, block heater		279813
1	Tag, hang		279047
1	Shield, heat		GM42198
1	Bracket, Block Heater Mtg.		GM64285
2	Washer, Plain		M125A-06-80
2	Washer, Plain 10.5 ID x 20.0 OD		M125A-10-80
2	Nut, Hex 6mm		M6923-06-80
2	Screw, hex cap		M933-06020-60
2	Screw, hex cap, fully thrd M10 x 25mm		M933-10025-60
1	Elbow, street (45 deg x 1/2"npt)		X-274-13
1	Hose, .63 ID		X-312-35
1	Hose, .63 ID		X-312-52
4	Clamp, hose, .5/1 in.		X-426-10
2	Connector, Hose 5/8 in. x 1/2 in. MIP Brass		X-582-1

<b>Block Heater, 1500W, 190-240V</b>			<b>GM77944-KA2</b>
1	Heater, block (240V, 1500 amp)		352946
1	Tag, hang		279047
1	Shield, heat		GM42198
1	Bracket, Block Heater Mtg.		GM64285
2	Washer, Plain		M125A-06-80
2	Washer, Plain 10.5 ID x 20.0 OD		M125A-10-80
2	Nut, Hex 6mm		M6923-06-80
2	Screw, hex cap		M933-06020-60
2	Screw, hex cap, fully thrd M10 x 25mm		M933-10025-60
1	Elbow, street (45 deg x 1/2"npt)		X-274-13
1	Hose, .63 ID		X-312-35
1	Hose, .63 ID		X-312-52
4	Clamp, hose, .5/1 in.		X-426-10
2	Connector, Hose 5/8 in. x 1/2 in. MIP Brass		X-582-1

<b>Block Heater</b>			<b>GM85060-KA1</b>
1	Heater, block (120V, 1800W)		GM75552
1	Tag, hang		279047
1	Shield, heat (32mm id x 305mm length)		GM10669
1	Shield, heat (32mm id x 455mm length)		GM23718
1	Bracket, Block Heater Mtg.		GM64285
1	Pipe (1/2"npt x 12.00")		X-209-26
1	Coupling, pipe ( 1/2"npsc)		X-216-20
1	Hose, .63 ID		X-312-34
1	Hose, .63 ID		X-312-51
4	Clamp, hose, .69/1.25 in.		X-426-12
2	Connector, Hose 5/8 in. x 1/2 in. MIP Brass		X-582-1

# Cooling System Kits

Qty.	Description	Part No.
<b>Block Heater</b>		<b>GM85060-KA2</b>
1	Heater, block (240V, 1800W)	GM75553
1	Tag, hang	279047
1	Shield, heat (32mm id x 305mm length)	GM10669
1	Shield, heat (32mm id x 455mm length)	GM23718
1	Bracket, Block Heater Mtg.	GM64285
1	Pipe (1/2"npt x 12.00")	X-209-26
1	Coupling, pipe ( 1/2"npsc)	X-216-20
1	Hose, .63 ID	X-312-34
1	Hose, .63 ID	X-312-51
4	Clamp, hose, .69/1.25 in.	X-426-12
2	Connector, Hose 5/8 in. x 1/2 in. MIP Brass	X-582-1
<b>Duct Flange, Radiator</b>		<b>GM13896-KA1</b>
2	Frame, air duct	GM13897
2	Frame, air duct	GM13898
<b>Duct Flange, Radiator</b>		<b>GM13896-KA2</b>
2	Frame, air duct	GM32061
2	Frame, air duct	GM31193
<b>Duct Flange, Radiator</b>		<b>GM13896-KA5</b>
2	Frame, air duct	GM32061
2	Frame, air duct, vertical	GM50558
<b>Duct Flange, Radiator</b>		<b>GM81486-KA1</b>
2	Frame, air duct	GM32061
2	Frame, air duct, vertical	GM81485

# Fuel System Kits

Qty.	Description	Part No.
<b>Fuel Lines, Flexible</b>		
1	Nipple, pipe, 1 x 1 1/2 in.	GM13706-KP1 X-218-24
1	Fuel line, flexible	X-504-21
<b>Fuel Lines, Flexible</b>		
1	Pipe, 1 1/2 in. NPT x 1.75 in.	GM13706-KP2 155040
1	Fuel line, flexible	X-504-22
<b>Fuel Lines, Flexible (Dual Fuel)</b>		
2	Nipple, pipe, 1 x 1 1/2 in.	GM14272-KP1 X-218-24
2	Fuel line, flexible	X-504-21
<b>Fuel Lines, Flexible (Dual Fuel)</b>		
1	Elbow, pipe (90 deg x 1-1/2"npt)	GM71618-KP1 151771
2	Bushing, reducing (1-1/4 x 1-1/2"npt)	153016
2	Pipe (1-1/4"npt x 1.63")	X-210-8
2	Fuel line, flexible (1.50" id x 28.25")	X-504-22
<b>Filter, Natural Gas</b>		
1	Filter, gas	PA-343303 343302
1	Element, gas filter	343304

Qty.	Description	Part No.
<b>Additional Gas Solenoid Valve</b>		
1	Bracket, fuel support	GM70040-KA1 GM39531
1	Valve, Gas Assy	GM70497
1	Pipe (1"npt x 2.00")	K-122
1	Pipe (1 1/4"npt x 1.63")	X-210-8
2	Elbow, pipe, 90 deg. x 1 in. NPT	X-215-15
1	Pipe, 1 in. NPT x 6.50 in.	X-218-9
2	Spacer, .406 ID x .625 OD x .297 in.	X-400-75
1	Clamp, muffler	X-722-8
<b>Additional Gas Solenoid Valve Dual Fuel</b>		
1	Elbow, street (90 deg x 1-1/4"nptf)	GM70612-KA1 EH-2226
1	Valve, Gas Assy	GM70497
1	Pipe (1-1/4" npt x 1.63")	X-210-8
<b>Additional Gas Solenoid Valve</b>		
1	Harness, extension LP liquid fuel	GM70639-KA1 GM70480
1	Solenoid, LP fuel	GM74259
1	Pipe, 1/4 in. NPT x 4.00 in.	X-220-2
1	Terminal, fast-on, female, 18-22 AWG	X-431-25
1	Terminal, fast-on, male, 18-22 AWG	X-431-29
<b>Additional Gas Solenoid Valve</b>		
1	Valve, Gas Assy	GM71619-KA1 GM70497
1	Bracket, Solenoid Valve Mtg.	GM74846
1	Pipe (1"npt x 2.00")	K-122
2	Bushing, reducing (1 x 1-1/4"npt)	X-202-32
2	Elbow, pipe (90 deg x 1"npt)	X-215-15
2	Pipe, Nipple (1" NPT x 3.00")	X-218-22
1	Pipe (1"npt x 1.50")	X-218-24
1	Clamp, muffler, 1.37 in.	X-722-8
<b>Additional Gas Solenoid Valve Dual Fuel</b>		
1	Pipe (1-1/2"npt x 1.75")	GM70928-KA2 155040
1	Valve, Gas Assy	GM70498
1	Pipe (1-1/2"npt x 4.00")	X-205-7
<b>Additional Gas Solenoid Valve</b>		
1	Pipe (1-1/2"npt x 1.75")	GM71195-KA1 155010
1	Valve, gas	GM70498
<b>Additional Gas Solenoid Valve, LP Liquid</b>		
1	Harness, Gas Solenoid Valve	GM78581-KA1 GM39790
1	Valve, Solenoid	GM74259
2	Pipe (1/4"npt x 1.50")	X-220-6
1	Elbow, Male Tube (90 deg) + vibra	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

# Appendix A Abbreviations

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

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

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

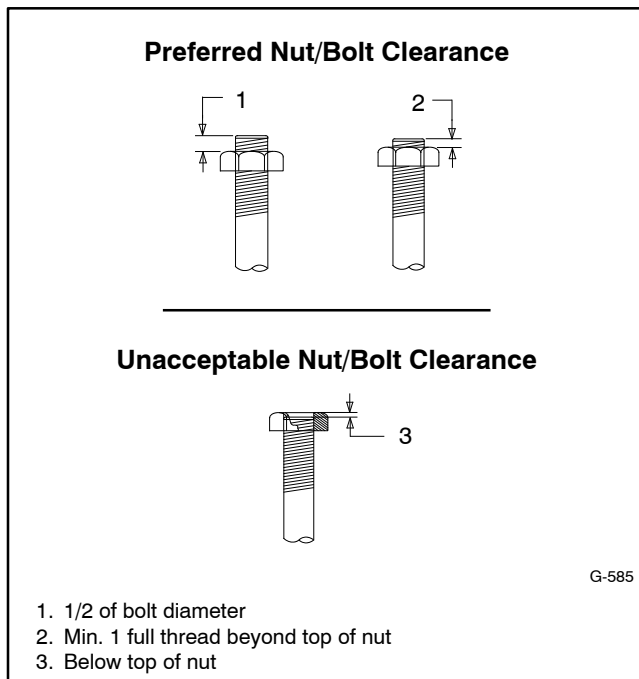
# Appendix B Common Hardware Application Guidelines

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.



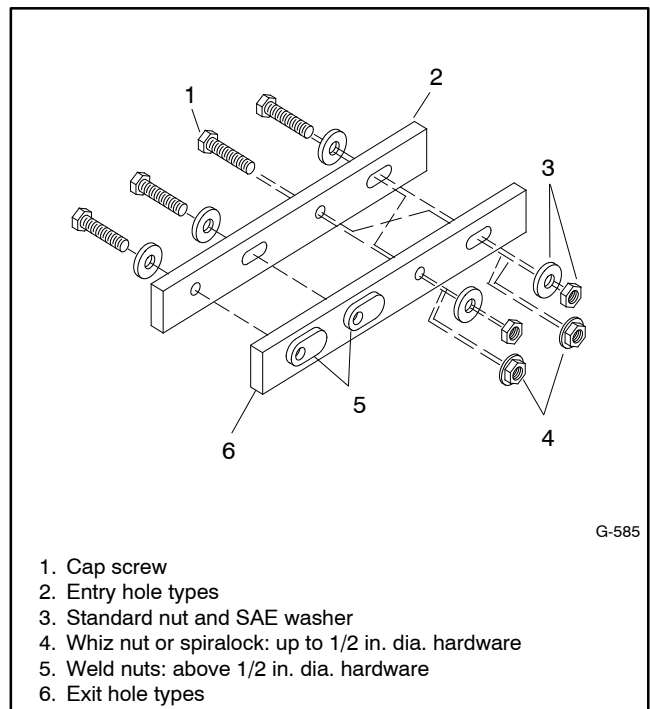
**Figure 1** Acceptable Bolt Lengths

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	

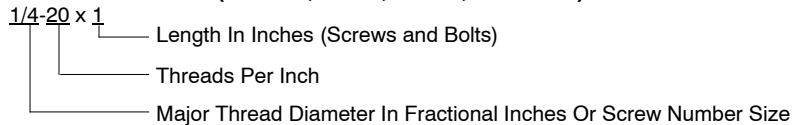
Hardness Grades	
American Standard	
Grade 2	
Grade 5	
Grade 8	
Grade 8/9 (Hex Socket Head)	
Metric	
Number stamped on hardware; 5.8 shown	

Allen™ head screw is a trademark of Holo-Krome Co.

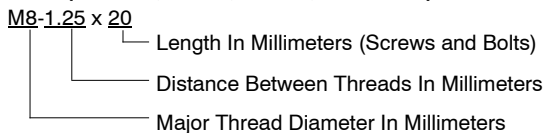
Phillips® screw is a registered trademark of Phillips Screw Company.

## Sample Dimensions

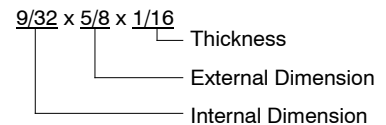
### American Standard (Screws, Bolts, Studs, and Nuts)



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



### Plain Washers



### Lock Washers



# Appendix E Common Hardware List

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

## American Standard

Part No.	Dimensions	Part No.	Dimensions	Part No.	Dimensions	Type
<b>Hex Head Bolts (Grade 5)</b>						
X-465-17	1/4-20 x .38	X-6238-14	3/8-24 x .75	X-6009-1	1-8	Standard
X-465-6	1/4-20 x .50	X-6238-16	3/8-24 x 1.25	X-6210-3	6-32	Whiz
X-465-2	1/4-20 x .62	X-6238-21	3/8-24 x 4.00	X-6210-4	8-32	Whiz
X-465-16	1/4-20 x .75	X-6238-22	3/8-24 x 4.50	X-6210-5	10-24	Whiz
X-465-18	1/4-20 x .88	X-6024-5	7/16-14 x .75	X-6210-1	10-32	Whiz
X-465-7	1/4-20 x 1.00	X-6024-2	7/16-14 x 1.00	X-6210-2	1/4-20	Spiralock
X-465-8	1/4-20 x 1.25	X-6024-8	7/16-14 x 1.25	X-6210-6	1/4-28	Spiralock
X-465-9	1/4-20 x 1.50	X-6024-3	7/16-14 x 1.50	X-6210-7	5/16-18	Spiralock
X-465-10	1/4-20 x 1.75	X-6024-4	7/16-14 x 2.00	X-6210-8	5/16-24	Spiralock
X-465-11	1/4-20 x 2.00	X-6024-11	7/16-14 x 2.75	X-6210-9	3/8-16	Spiralock
X-465-12	1/4-20 x 2.25	X-6024-12	7/16-14 x 6.50	X-6210-10	3/8-24	Spiralock
X-465-14	1/4-20 x 2.75	X-129-15	1/2-13 x .75	X-6210-11	7/16-14	Spiralock
X-465-21	1/4-20 x 5.00	X-129-17	1/2-13 x 1.00	X-6210-12	1/2-13	Spiralock
X-465-25	1/4-28 x .38	X-129-18	1/2-13 x 1.25	X-6210-15	7/16-20	Spiralock
X-465-20	1/4-28 x 1.00	X-129-19	1/2-13 x 1.50	X-6210-14	1/2-20	Spiralock
X-125-33	5/16-18 x .50	X-129-20	1/2-13 x 1.75	X-85-3	5/8-11	Standard
X-125-23	5/16-18 x .62	X-129-21	1/2-13 x 2.00	X-88-12	3/4-10	Standard
X-125-3	5/16-18 x .75	X-129-22	1/2-13 x 2.25	X-89-2	1/2-20	Standard
X-125-31	5/16-18 x .88	X-129-23	1/2-13 x 2.50			
X-125-5	5/16-18 x 1.00	X-129-24	1/2-13 x 2.75			
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-129-51	1/2-20 x .75			
X-125-28	5/16-18 x 3.00	X-129-45	1/2-20 x 1.25			
X-125-22	5/16-18 x 4.50	X-129-52	1/2-20 x 1.50			
X-125-32	5/16-18 x 5.00	X-6021-3	5/8-11 x 1.00			
X-125-35	5/16-18 x 5.50	X-6021-4	5/8-11 x 1.25			
X-125-36	5/16-18 x 6.00	X-6021-2	5/8-11 x 1.50			
X-125-40	5/16-18 x 6.50	X-6021-1	5/8-11 x 1.75			
X-125-43	5/16-24 x 1.75	273049	5/8-11 x 2.00			
X-125-44	5/16-24 x 2.50	X-6021-5	5/8-11 x 2.25			
X-125-30	5/16-24 x .75	X-6021-6	5/8-11 x 2.50			
X-125-39	5/16-24 x 2.00	X-6021-7	5/8-11 x 2.75			
X-125-38	5/16-24 x 2.75	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-6021-9	5/8-18 x 2.50			
X-6238-11	3/8-16 x 1.00	X-6239-1	3/4-10 x 1.00			
X-6238-4	3/8-16 x 1.25	X-6239-8	3/4-10 x 1.25			
X-6238-5	3/8-16 x 1.50	X-6239-2	3/4-10 x 1.50			
X-6238-1	3/8-16 x 1.75	X-6239-3	3/4-10 x 2.00			
X-6238-6	3/8-16 x 2.00	X-6239-4	3/4-10 x 2.50			
X-6238-17	3/8-16 x 2.25	X-6239-5	3/4-10 x 3.00			
X-6238-7	3/8-16 x 2.50	X-6239-6	3/4-10 x 3.50			
X-6238-8	3/8-16 x 2.75	X-792-1	1-8 x 2.25			
X-6238-9	3/8-16 x 3.00	X-792-5	1-8 x 3.00			
X-6238-19	3/8-16 x 3.25	X-792-8	1-8 x 5.00			
X-6238-12	3/8-16 x 3.50					
X-6238-20	3/8-16 x 3.75					
X-6238-13	3/8-16 x 4.50					
X-6238-18	3/8-16 x 5.50					
X-6238-25	3/8-16 x 6.50					

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

## Metric

Hex head bolts are hardness grade 8.8 unless noted.

<b>Part No.</b>	<b>Dimensions</b>	<b>Part No.</b>	<b>Dimensions</b>	<b>Part No.</b>	<b>Dimensions</b>
<b>Hex Head Bolts (Partial Thread)</b>		<b>Hex Head Bolts (Partial Thread), continued</b>		<b>Hex Head Bolts (Full Thread), continued</b>	
M931-05055-60	M5-0.80 x 55	M960-16090-60	M16-1.50 x 90	M933-12016-60	M12-1.75 x 16
M931-06040-60	M6-1.00 x 40	M931-16090-60	M16-2.00 x 90	M933-12020-60	M12-1.75 x 20
M931-06055-60	M6-1.00 x 55	M931-16100-60	M16-2.00 x 100	M961-12020-60F	M12-1.50 x 20
M931-06060-60	M6-1.00 x 60	M931-16100-82	M16-2.00 x 100*	M933-12025-60	M12-1.75 x 25
M931-06060-SS	M6-1.00 x 60	M931-16120-60	M16-2.00 x 120	M933-12025-82	M12-1.75 x 25*
M931-06070-60	M6-1.00 x 70	M931-16150-60	M16-2.00 x 150	M961-12030-60	M12-1.25 x 30
M931-06070-SS	M6-1.00 x 70			M933-12030-82	M12-1.75 x 30*
M931-06075-60	M6-1.00 x 75	M931-20065-60	M20-2.50 x 65	M961-12030-82F	M12-3.00 x 30*
M931-06090-60	M6-1.00 x 90	M931-20090-60	M20-2.50 x 90	M933-12030-60	M12-1.75 x 30
M931-06145-60	M6-1.00 x 145	M931-20100-60	M20-2.50 x 100	M933-12035-60	M12-1.75 x 35
M931-06150-60	M6-1.00 x 150	M931-20120-60	M20-2.50 x 120	M961-12040-82	M12-1.25 x 40*
		M931-20140-60	M20-2.50 x 140	M933-12040-60	M12-1.75 x 40
M931-08035-60	M8-1.25 x 35	M931-20160-60	M20-2.50 x 160	M933-12040-82	M12-1.75 x 40*
M931-08040-60	M8-1.25 x 40				
M931-08045-60	M8-1.25 x 45	M931-22090-60	M22-2.50 x 90	M961-14025-60	M14-1.50 x 25
M931-08050-60	M8-1.25 x 50	M931-22120-60	M22-2.50 x 120	M933-14025-60	M14-2.00 x 25
M931-08055-60	M8-1.25 x 55	M931-22160-60	M22-2.50 x 160	M961-14050-82	M14-1.50 x 50*
M931-08055-82	M8-1.25 x 55*				
M931-08060-60	M8-1.25 x 60	M931-24090-60	M24-3.00 x 90	M961-16025-60	M16-1.50 x 25
M931-08070-60	M8-1.25 x 70	M931-24120-60	M24-3.00 x 120	M933-16025-60	M16-2.00 x 25
M931-08070-82	M8-1.25 x 70*	M931-24160-60	M24-3.00 x 160	M961-16030-82	M16-1.50 x 30*
M931-08075-60	M8-1.25 x 75	M931-24200-60	M24-3.00 x 200	M933-16030-82	M16-2.00 x 30*
M931-08080-60	M8-1.25 x 80			M933-16035-60	M16-2.00 x 35
M931-08090-60	M8-1.25 x 90	<b>Hex Head Bolts (Full Thread)</b>			
M931-08095-60	M8-1.25 x 95	M933-04006-60	M4-0.70 x 6	M961-16040-60	M16-1.50 x 40
M931-08100-60	M8-1.25 x 100			M933-16040-60	M16-2.00 x 40
M931-08110-60	M8-1.25 x 110	M933-05030-60	M5-0.80 x 30	M961-16045-82	M16-1.50 x 45*
M931-08120-60	M8-1.25 x 120	M933-05035-60	M5-0.80 x 35	M933-16045-82	M16-2.00 x 45*
M931-08130-60	M8-1.25 x 130	M933-05050-60	M5-0.80 x 50	M933-16050-60	M16-2.00 x 50
M931-08140-60	M8-1.25 x 140			M933-16050-82	M16-2.00 x 50*
M931-08150-60	M8-1.25 x 150	M933-06010-60	M6-1.00 x 10	M933-16060-60	M16-2.00 x 60
M931-08200-60	M8-1.25 x 200	M933-06012-60	M6-1.00 x 12	M933-16070-60	M16-2.00 x 70
		M933-06014-60	M6-1.00 x 14		
M931-10040-82	M10-1.25 x 40*	M933-06016-60	M6-1.00 x 16	M933-18035-60	M18-2.50 x 35
M931-10040-60	M10-1.50 x 40	M933-06020-60	M6-1.00 x 20	M933-18050-60	M18-2.50 x 50
M931-10045-60	M10-1.50 x 45	M933-06025-60	M6-1.00 x 25	M933-18060-60	M18-2.50 x 60
M931-10050-60	M10-1.50 x 50	M933-06030-60	M6-1.00 x 30		
M931-10050-82	M10-1.25 x 50*	M933-06040-60	M6-1.00 x 40	M933-20050-60	M20-2.50 x 50
M931-10055-60	M10-1.50 x 55	M933-06050-60	M6-1.00 x 50	M933-20055-60	M20-2.50 x 55
M931-10060-60	M10-1.50 x 60				
M931-10065-60	M10-1.50 x 65	M933-07025-60	M7-1.00 x 25	M933-24060-60	M24-3.00 x 60
M931-10070-60	M10-1.50 x 70			M933-24065-60	M24-3.00 x 65
M931-10080-60	M10-1.50 x 80	M933-08010-60	M8-1.25 x 10	M933-24070-60	M24-3.00 x 70
M931-10080-82	M10-1.25 x 80*	M933-08012-60	M8-1.25 x 12		
M931-10090-60	M10-1.50 x 90	M933-08016-60	M8-1.25 x 16	<b>Pan Head Machine Screws</b>	
M931-10090-82	M10-1.50 x 90*	M933-08020-60	M8-1.25 x 20	M7985A-03010-20	M3-0.50 x 10
M931-10100-60	M10-1.50 x 100	M933-08025-60	M8-1.25 x 25	M7985A-03012-20	M3-0.50 x 12
M931-10110-60	M10-1.50 x 110	M933-08030-60	M8-1.25 x 30		
M931-10120-60	M10-1.50 x 120	M933-08030-82	M8-1.25 x 30*	M7985A-04010-20	M4-0.70 x 10
M931-10130-60	M10-1.50 x 130			M7985A-04016-20	M4-0.70 x 16
M931-10140-60	M10-1.50 x 140	M933-10012-60	M10-1.50 x 12	M7985A-04020-20	M4-0.70 x 20
M931-10180-60	M10-1.50 x 180	M961-10020-60	M10-1.25 x 20	M7985A-04050-20	M4-0.70 x 50
M931-10235-60	M10-1.50 x 235	M933-10020-60	M10-1.50 x 20	M7985A-04100-20	M4-0.70 x 100
M931-10260-60	M10-1.50 x 260	M933-10025-60	M10-1.50 x 25		
M960-10330-60	M10-1.25 x 330	M961-10025-60	M10-1.25 x 25	M7985A-05010-20	M5-0.80 x 10
		M933-10025-82	M10-1.50 x 25*	M7985A-05012-20	M5-0.80 x 12
M931-12045-60	M12-1.75 x 45	M961-10030-60	M10-1.25 x 30	M7985A-05016-20	M5-0.80 x 16
M960-12050-60	M12-1.25 x 50	M933-10030-60	M10-1.50 x 30	M7985A-05020-20	M5-0.80 x 20
M960-12050-82	M12-1.25 x 50*	M933-10030-82	M10-1.50 x 30*	M7985A-05025-20	M5-0.80 x 25
M931-12050-60	M12-1.75 x 50	M961-10035-60	M10-1.25 x 35	M7985A-05030-20	M5-0.80 x 30
M931-12050-82	M12-1.75 x 50*	M933-10035-60	M10-1.50 x 35	M7985A-05080-20	M5-0.80 x 80
M931-12055-60	M12-1.75 x 55	M933-10035-82	M10-1.50 x 35*	M7985A-05100-20	M5-0.80 x 100
M931-12060-60	M12-1.75 x 60	M961-10040-60	M10-1.25 x 40		
M931-12060-82	M12-1.75 x 60*			M7985A-06100-20	M6-1.00 x 100
M931-12065-60	M12-1.75 x 65				
M931-12075-60	M12-1.75 x 75			<b>Flat Head Machine Screws</b>	
M931-12080-60	M12-1.75 x 80			M965A-04012-SS	M4-0.70 x 12
M931-12090-60	M12-1.75 x 90				
M931-12100-60	M12-1.75 x 100			M965A-05012-SS	M5-0.80 x 12
M931-12110-60	M12-1.75 x 110			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
<b>Hex Nuts</b>		
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	Spirallock
M982-06-80	M6-1.00	Elastic Stop
M934-08-60	M8-1.25	Standard
M6923-08-80	M8-1.25	Spirallock
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	Spirallock
M6923-10-62	M10-1.50	Spirallock†
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	Spirallock
M982-12-80	M12-1.75	Elastic Stop
M982-14-60	M14-2.00	Elastic Stop
M6923-16-80	M16-2.00	Spirallock
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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