

Service Parts

DETROIT DIESEL



Industrial Generator Sets

Model:

135-275GS/GSB

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

See MP-6009 Parts Catalog Industrial Controllers
for controller parts



Table of Contents

Introduction	5
Numbering System Significance	5
Illustrations	5
How to Find Part Numbers	5
Hardware References	5
Specification Number Index	6
Group 101: Air Intake	10
Group 104: Cooling System	12
Group 105: Engine	16
Group 107: Nameplate and Decals	19
Group 109: Skid and Plant Mounting	20
Group 201: Generator and Mounting	22
Permanent Magnet-Excited Alternators	22
Wound Field Alternators, 4UAW Alternators	28
Wound Field Alternators, 4SW Alternators	32
Control and Harness	34
Permanent Magnet-Excited Alternators	34
Wound Field Alternators	36
Group 701: Literature	38
Kit List	39
Cooling System Kits	40
Appendix A Abbreviations	41
Appendix B Common Hardware Application Guidelines	43
Appendix C General Torque Specifications	44
Appendix D Common Hardware Identification	45
Appendix E Common Hardware List	46
Index	49

Notes

Introduction

This manual lists service replacement parts for 135–275 kW generator sets.

Information in this publication represents data available at the time of print. The manufacturer of DDC/MTU Power Generation products reserves the right to change this publication and the products represented without notice and without any obligation or liability whatsoever.

This manual includes the following main sections:

Table of Contents. Lists the sections of the manual.

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

Specification Number Index. Lists the generator set specs and groups.

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

Kit Sections. List modules and accessories and their parts.

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

Numbering System Significance

This manual uses the following numbering systems:

Specification Number. The product identification number located on the generator set nameplate. Specification numbers break down into groups.

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

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

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

Illustrations

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

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.

Specification Number Index

Group Title	Air Intake	Cooling System	Engine	Nameplates and Decals	Skid and Plant Mounting	Generator and Mounting	Controller and Mounting	Literature
Group No.	101	104	105	107	109	201	301	701
Spec No.	Variation Number							
135 kW								
PA-194001	1	3	2	2	3	1	†	2
PA-194002	1	3	2	2	3	5	†	2
PA-194005	*	*	2	GR2S	*	*	†	2
PA-194052	5	14	13	2	12	1	†	6
PA-194054	*	*	13	GR2S	*	*	†	6
GM16893-GA1S	*	*	37	GR2S	*	*	†	2
GM16893-GA2S	*	*	41	GR2S	*	*	†	6
150 kW								
PA-194011	1	3	2	2	3	2	†	24
PA-194012	1	3	2	2	3	6	†	24
PA-194013	2	6	7	2	4	3	†	24
PA-194014	2	6	7	2	4	8	†	24
PA-194015	*	*	2	GR2S	*	*	†	24
PA-194031	*	*	7	2	*	*	†	24
PA-194033	2	6	7	2	10	17	†	24
PA-194034	2	6	7	2	10	18	†	24
PA-194035	*	*	7	GR1S	*	*	†	24
PA-194061	5	14	13	2	12	2	†	34
PA-194065	*	*	13	GR2S	*	*	†	34
GM16894-GA1S	*	*	37	GR2S	*	*	†	24
GM16894-GA2S	*	*	39	GR1S	*	*	†	24
GM16894-GA3S	*	*	41	GR2S	*	*	†	34
180 kW								
PA-194021	2	4	3	2	4	3	†	2
PA-194022	2	4	3	2	4	7	†	2
PA-194023	2	4	3	2	4	4	†	2
PA-194024	2	4	3	2	4	8	†	2
PA-194025	*	*	3	2	*	*	†	2
PA-194039	2	4	3	2	10	15	†	26
PA-194040	2	4	3	2	10	16	†	26
PA-194041	2	4	3	2	10	17	†	26
PA-194042	2	4	3	2	10	18	†	26
PA-194043	*	*	3	GR1S	*	*	†	26
PA-194072	4	12	12	2	8	25	†	36
PA-194074	4	12	12	2	8	19	†	36
PA-194076	*	*	12	GR1S	*	*	†	36
GM16895-GA1S	*	*	38	GR1S	*	*	†	26
GM16895-GA2S	*	*	40	GR1S	*	*	†	36

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

† Configured group. Refer to the generator set nameplate for the module number.
See controller parts catalog MP-6009 P/C Controllers for controller parts lists.

Specification Number Index

Group Title	Air Intake	Cooling System	Engine	Nameplates and Decals	Skid and Plant Mounting	Generator and Mounting	Controller and Mounting	Literature
Group No.	101	104	105	107	109	201	301	701
Spec No.	Variation Number							
200 kW								
PA-194200	3	8	8	2	6	9	†	4
PA-194201	3	8	8	2	6	10	†	4
PA-194202	3	8	8	2	6	13	†	4
PA-194203	3	8	8	2	6	14	†	4
PA-194204	3	*	8	2	*	*	†	4
PA-194240	4	18	19	2	8	19	†	4
PA-194241	4	18	19	2	8	20	†	4
PA-194242	4	18	19	2	8	23	†	4
PA-194243	4	18	19	2	8	24	†	4
PA-194244	*	*	19	GR1S	*	*	†	4
PA-194285	4	18	15	2	8	19	†	4
PA-194287	4	18	15	2	8	23	†	4
PA-194289	*	*	15	GR1S	*	*	†	4
GM16896-GA1S	*	*	46	GR1S	*	*	†	4
GM16896-GA2S	*	*	42	GR1S	*	*	†	4
230 kW								
PA-194210	3	8	9	2	6	9	†	4
PA-194211	3	8	9	2	6	10	†	4
PA-194212	3	8	9	2	6	13	†	4
PA-194213	3	8	9	2	6	14	†	4
PA-194214	*	*	9	2	*	*	†	4
PA-194250	4	18	20	2	8	19	†	28
PA-194251	4	18	20	2	8	20	†	28
PA-194252	4	18	20	2	8	23	†	28
PA-194253	4	18	20	2	8	24	†	28
PA-194254	*	*	20	GR1S	*	*	†	28
PA-194295	4	18	16	2	8	19	†	28
PA-194297	4	18	16	2	8	23	†	28
PA-194299	*	*	16	GR1S	*	*	†	28
GM16897-GA1S	*	*	47	GR1S	*	*	†	28
GM16897-GA2S	*	*	43	GR1S	*	*	†	28

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

Specification Number Index

Group Title	Air Intake	Cooling System	Engine	Nameplates and Decals	Skid and Plant Mounting	Generator and Mounting	Controller and Mounting	Literature
Group No.	101	104	105	107	109	201	301	701
Spec No.	Variation Number							
250 kW								
PA-194220	3	8	10	2	6	11	†	4
PA-194221	3	8	10	2	6	12	†	4
PA-194222	3	8	10	2	6	13	†	4
PA-194223	3	8	10	2	6	14	†	4
PA-194224	*	*	10	2	*	*	†	4
PA-194260	4	18	21	2	8	21	†	30
PA-194261	4	18	21	2	8	22	†	30
PA-194262	4	18	21	2	8	23	†	30
PA-194263	4	18	21	2	8	24	†	30
PA-194264	*	*	21	GR1S	*	*	†	30
PA-194303	4	18	17	2	8	21	†	30
PA-194305	*	*	17	GR1S	*	*	†	30
GM16898-GA1S	*	*	48	GR1S	*	*	†	30
GM16898-GA2S	*	*	44	GR1S	*	*	†	30
275 kW								
PA-194230	3	8	11	2	6	11	†	4
PA-194231	3	8	11	2	6	12	†	4
PA-194232	3	8	11	2	6	13	†	4
PA-194233	3	8	11	2	6	14	†	4
PA-194234	*	*	11	2	*	*	†	4
PA-194270	4	18	22	2	8	21	†	32
PA-194271	4	18	22	2	8	22	†	32
PA-194272	4	18	22	2	8	23	†	32
PA-194273	4	18	22	2	8	24	†	32
PA-194274	*	*	22	GR1S	*	*	†	32
PA-194309	4	18	18	2	8	23	†	4
PA-194311	*	*	18	GR1S	*	*	†	4
GM16899-GA1S	*	*	49	GR1S	*	*	†	32
GM16899-GA2S	*	*	45	GR1S	*	*	†	4

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

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

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

See controller parts catalog MP-6009 P/C Controllers for controller parts lists.

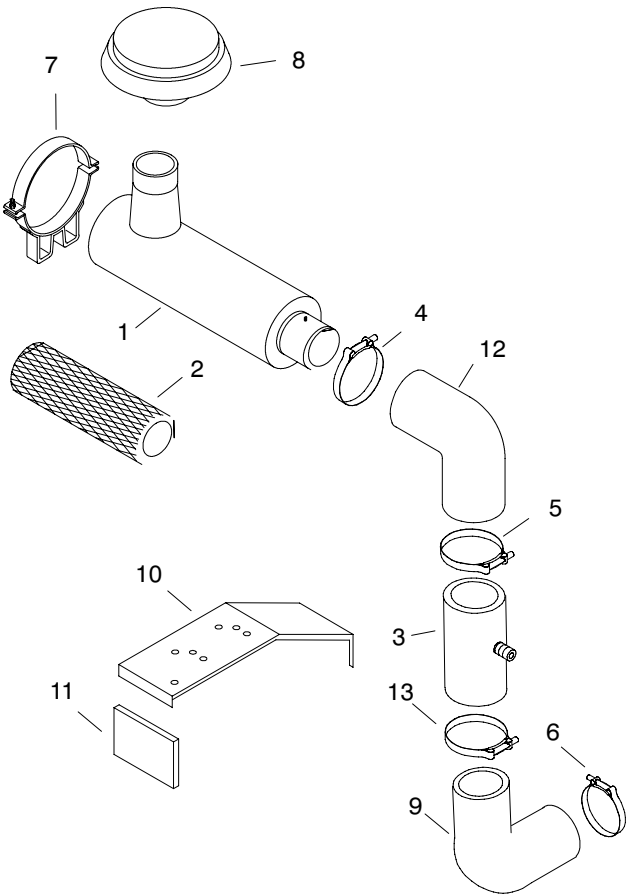
Specification Number Index

Group Title	Air Intake	Cooling System	Engine	Nameplates and Decals	Skid and Plant Mounting	Generator and Mounting	Controller and Mounting	Literature
Group No.	101	104	105	107	109	201	301	701
Spec No.	Variation Number							
135GSB								
GM16893-GA1S	*	*	37	GR1	*	*	†	57
GM16893-GA2S	*	*	41	GR1	*	*	†	58
150GSB								
GM16894-GA1S	*	*	37	GR1	*	*	†	61
GM16894-GA2S	*	*	39	GR1	*	*	†	61
GM16894-GA3S	*	*	41	GR1	*	*	†	62
180GSB								
GM16895-GA1S	*	*	38	GR1	*	*	†	65
GM16895-GA2S	*	*	40	GR1	*	*	†	66
200GSB								
GM16896-GA1S	*	*	46	GR1	*	*	†	68
GM16896-GA2S	*	*	42	GR1	*	*	†	68
230GSB								
GM16897-GA1S	*	*	47	GR1	*	*	†	70
GM16897-GA2S	*	*	43	GR1	*	*	†	70
250GSB								
GM16898-GA1S	*	*	48	GR1	*	*	†	72
GM16898-GA2S	*	*	44	GR1	*	*	†	72
275GSB								
GM16899-GA1S	*	*	49	GR1	*	*	†	74
GM16899-GA2S	*	*	45	GR1	*	*	†	74

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

† Configured group. Refer to the generator set nameplate for the module number.
See controller parts catalog MP-6009 P/C Controllers for controller parts lists.

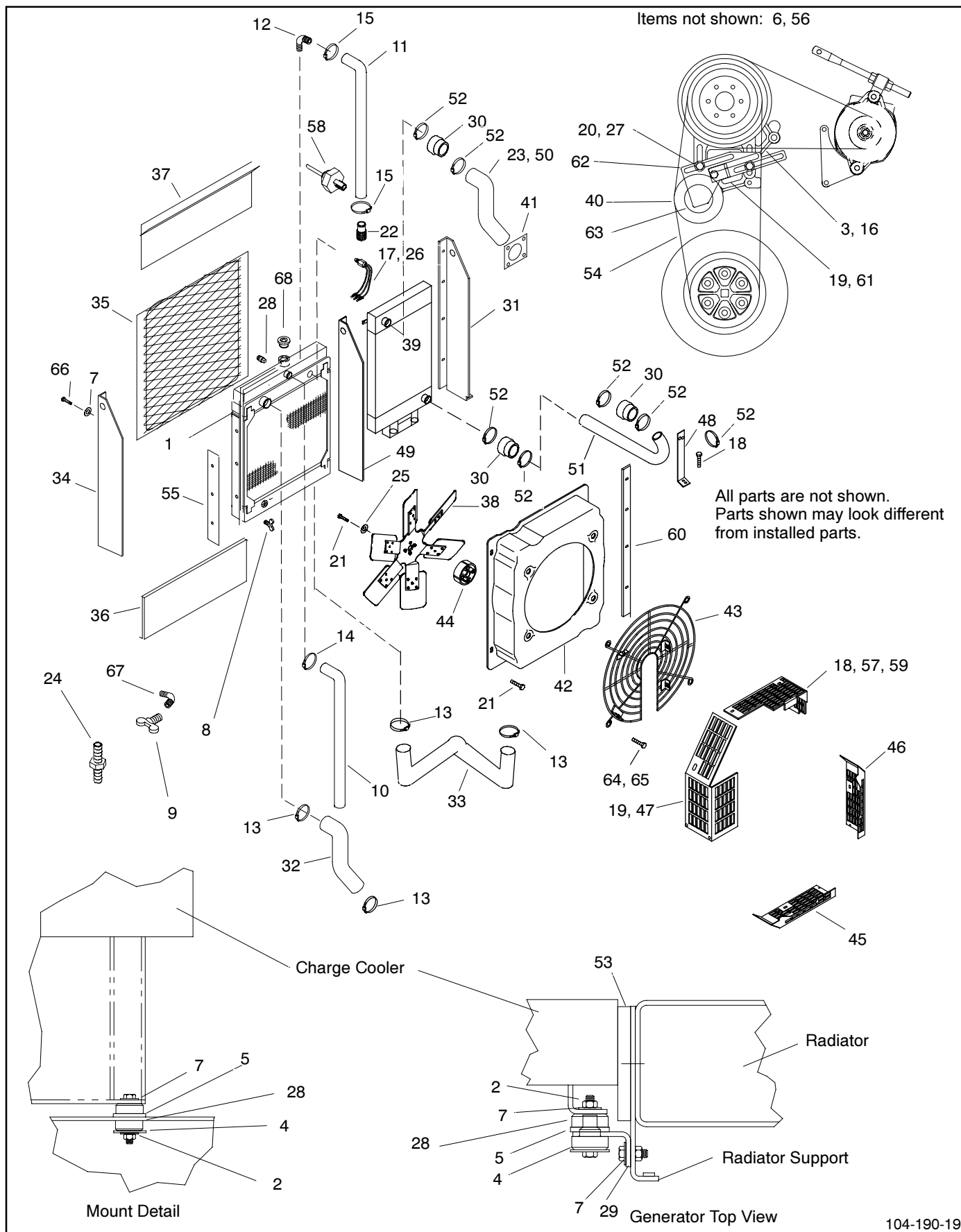
Group 101: Air Intake



Group 101: Air Intake

Item	Part Number	Description	Quantity														
			Variation Number/Module Number														
			1	2	3	4	5	343059	343060	343153	343154	343244	343346	343247	343356	343380	
1	A-324204	Air cleaner	1	1						1	1						
1	254004	Air cleaner															
1	343219	Air cleaner, industrial			1	1	1				1	1		1	1	1	
1	A-343258	Air cleaner											1				1
2	324418	Element, air cleaner	1	1						1	1						
2	254477	Element, air cleaner, heavy-duty									1	1					
2	343259	Element, air cleaner, heavy-duty											1				1
3	X-522-82	Tube, steel	1	1						1	1						
3	X-522-58	Tube, steel										1	1				
3	274623	Assembly, tube			1			1							1	1	
3	279754	Assembly, tube				1								1			
3	343261	Tube, air restriction											1				1
3	X-268-7	Cap, pipe (not shown)			1	1	1							1	1	1	
4	254013	Clamp, hose			1	1	1				1	1		1	1	1	
4	254344	Clamp, hose	1	1						1	1						
4	291504	Clamp, hose											1				1
5	254013	Clamp, hose	1	1	1	1	1			1	1	1	1	1	1	1	
5	291504	Clamp, hose											1				1
6	291504	Clamp, hose	1	1	1	1	1			1	1	1	1	1	1	1	1
7	324362	Mount, air cleaner	2	2						2	2						
7	254012	Band, mounting										2	2				
7	343218	Clamp			1	1	1						2	1	1	1	2
8	324364	Cap, rain	1	1						1	1						
8	324365	Cap, rain										1	1				
8	254010	Cap, rain												1			1
9	343042	Hose, elbow	1	1	1	1	1			1	1				1	1	
9	291502	Hose, elbow											1				1
10	343143	Bracket, air cleaner	1	1						1	1						
10	343170	Bracket, air cleaner										1	1				
10	343241	Bracket, air cleaner mounting			1	1	1							1	1	1	
10	343243	Bracket, air cleaner mounting											1				1
10	X-6052-7	Screw, hex head machine			1	1	1						2	1	1	1	2
11	343171	Bracket, air cleaner	1							1							1
11	343172	Bracket, air cleaner		1							1						
11	343173	Bracket, air cleaner										1					
11	343174	Bracket, air cleaner										1					
11	343242	Bracket, air cleaner support			1	1								1	1		
11	343368	Bracket, mounting					1									1	
12	343217	Hose, 90 degree elbow	1	1						1	1						
12	272627	Hose, 90 degree elbow			1	1	1					1	1	1	1	1	
13	254013	Clamp, hose	1	1	1	1	1			1	1	1	1	1	1	1	
13	291504	Clamp, hose											1				1

Group 104: Cooling System

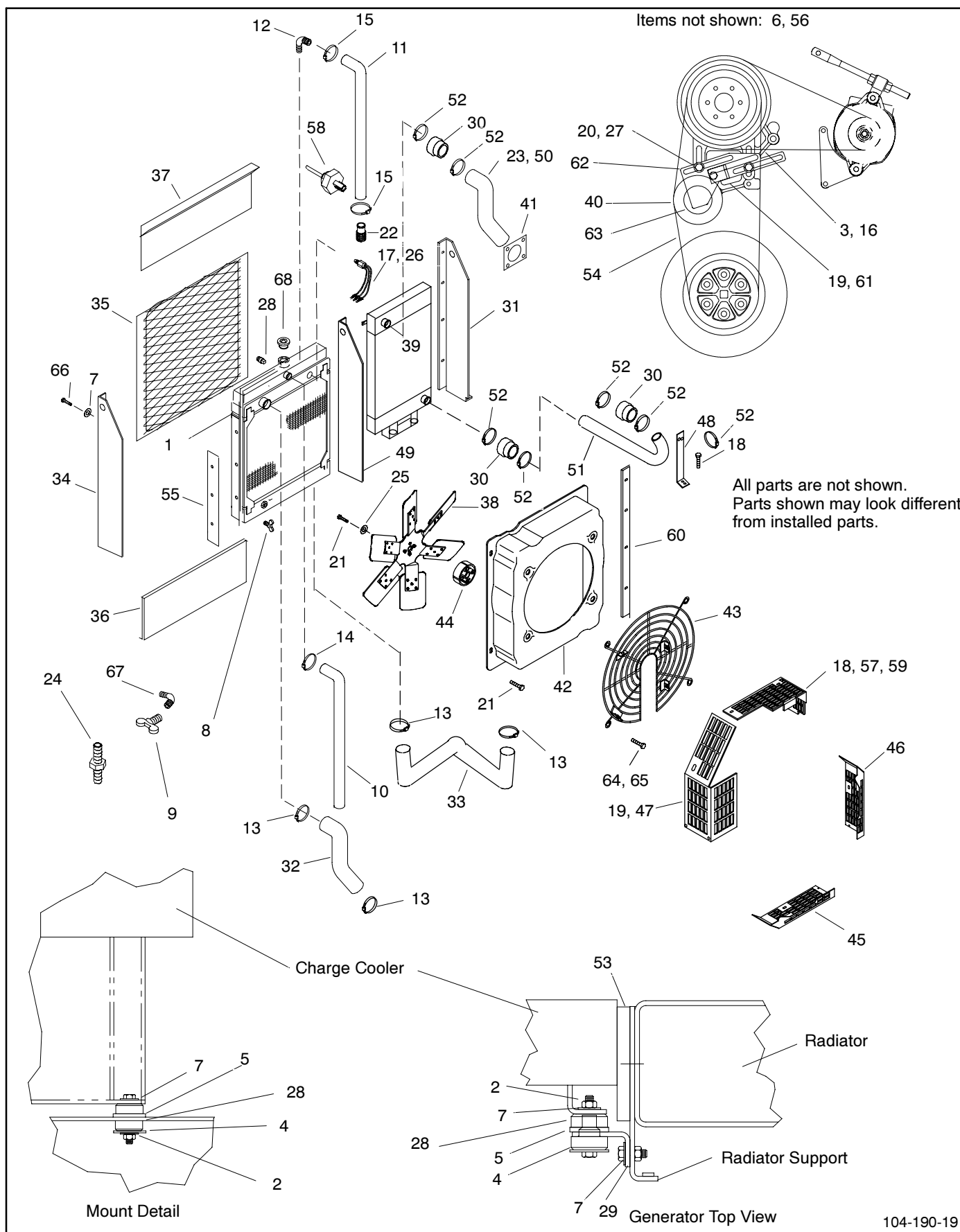


Group 104: Cooling System

Item	Part Number	Description	Quantity												
			Variation Number/Module Number												
			3	4	6	8	12	14	18	343065	343070	343161	343347	343379	343358
1	A-343033	Radiator assembly	1		1						1		1		
1	A-343001	Radiator assembly		1			1	1				1			
1	A-343177	Radiator assembly				1			1					1	1
2	X-101-16	Nut, elastic stop, 5/16-18	4	4	4	4	4	4	4	4	4	4	4	4	4
3	X-25-44	Washer, plain	1	1	1	1	1	1	1	1	1	1	1	1	1
4	X-25-143	Washer, plain	4	4	4	4	4	4	4	4	4	4	4	4	4
5	X-25-144	Washer, plain	4	4	4	4	4	4	4	4	4	4	4	4	4
6	X-25-30	Washer, plain (not shown)	2	2	2	2	2	2	2	2	2	2	2	2	2
7	X-25-75	Washer, plain .344 x .875 x .125	14	14	14	10	14	14	10	14	14	14	14	14	10
8	X-256-3	Valve, drain, 1/4	3	3	3	3	3	3	3	3	3	3	3	3	3
9	X-256-5	Valve, drain	1	1	1	1	1	1	1	1	1	1	1	1	1
10	X-356-33	Hose, vent, 6.17 ft.	1	1	1					1	1	1			
10	X-356-35	Hose, vent, 7.5 ft.				1	1	1	1				1	1	1
11	X-386-102	Hose, radiator overflow, 5.5 ft.	1	1	1	1	1	1	1	1	1	1	1	1	1
12	X-391-20	Connector, hose elbow	1	1	1	1	1	1	1	1	1	1	1	1	1
13	X-426-2	Clamp, hose, 3.25-2.31	4	4	4	2	2	2	2	4	4	4	2	2	2
13	275527	Clamp, hose, 2.81/3.12 in.				2	2	2	2				2	2	2
14	X-426-8	Clamp, hose, 1.75-.81	2	2	2	2	2	2	2	2	2	2	2	2	2
15	X-426-9	Clamp, hose, .70-.25	2	2	2	2	2	2	2	2	2	2	2	2	2
16	X-55-44	Screw, HC	1	1	1		1	1		1	1	1	1	1	
16	X-55-46	Screw, HC				1			1						1
17	X-6003-120	Conduit, convoluted	1	1	1	1	1	1	1	1	1	1	1	1	1
18	X-6050-3	Screw, HHC	3	3	3	1	3	1	1	3	3	3	3	1	1
18	X-6050-8	Screw, HHC				2		2	2					2	2
19	X-6052-1	Screw, HHC	3	3	3	1	1	1	1	3	3	3	1	1	1
20	X-6052-15	Screw, HHC	2	2	2	2	2	2	2	2	2	2	2	2	2
21	X-6238-36	Screw, HC	12	12	12	6	12	6	6	12	12	12	12	6	6
21	X-125-5	Screw, HC				6		6	6					6	6
22	X-652-3	Fitting, hose	1	1	1	1	1	1	1	1	1	1	1	1	1
23	X-672-19	Clamp, insulated	1	1	1	1	1	1	1	1	1	1	1	1	1
24	X-751-1	Adapter, hose, 1 x 1	1	1	1	1	1	1	1	1	1	1	1	1	1
25	X-801-3	Washer, hardened	6	6	6	6	6	6	6	6	6	6	6	6	6
26	365289	Sensor, low water level	1	1	1	1	1	1	1	1	1	1	1	1	1
27	257951	Washer, special	2	2	2	2	2	2	2	2	2	2	2	2	2
28	324433	Vibromount	4	4	4	4	4	4	4	4	4	4	4	4	4
29	324451	Bracket, charge cooler	2	2	2	2	2	2	2	2	2	2	2	2	2
30	326331	Hose, hump	2	2	2	1	2	2	1	2	2	2	2	2	1
30	324473	Hose, hump				2			2						2
31	343005	Support, charge cooler	1	1	1	1		1	1	1	1	1		1	1
31	343324	Support, charge cooler					1						1		
31	343182	Support, charge cooler				1			1						1
32	343006	Hose, upper radiator	1	1	1	1		1	1	1	1	1		1	1
32	X-6014-88	Hose, upper radiator				1	1	1	1				1	1	1
33	343007	Hose, lower radiator	1	1	1		1	1		1	1	1	1	1	
33	343289	Hose, lower radiator				1			1						1
34	343013	Support, radiator, left	1	1	1	1		1	1	1	1	1		1	1
34	343326	Support, radiator, left					1						1		
34	343184	Support, radiator, left				1			1						1
35	343014	Guard, radiator	1	1	1		1			1	1	1	1		
35	343186	Guard, radiator				1			1						1
36	343022	Guard, radiator, bottom	1					1		1				1	
36	343023	Guard, radiator, bottom		1	1		1				1	1	1		
36	343215	Guard, radiator, bottom				1			1						1
37	343026	Guard, radiator, top	1			1		1	1	1				1	1
37	343066	Guard, radiator, top		1	1						1	1			
37	343327	Guard, radiator, top					1						1		
37	343214	Guard, radiator, top				1			1						1
38	343027	Fan, pusher	1		1					1		1			
38	343011	Fan, pusher		1			1	1			1		1	1	
38	343180	Fan, pusher				1			1						1

Parts list continues

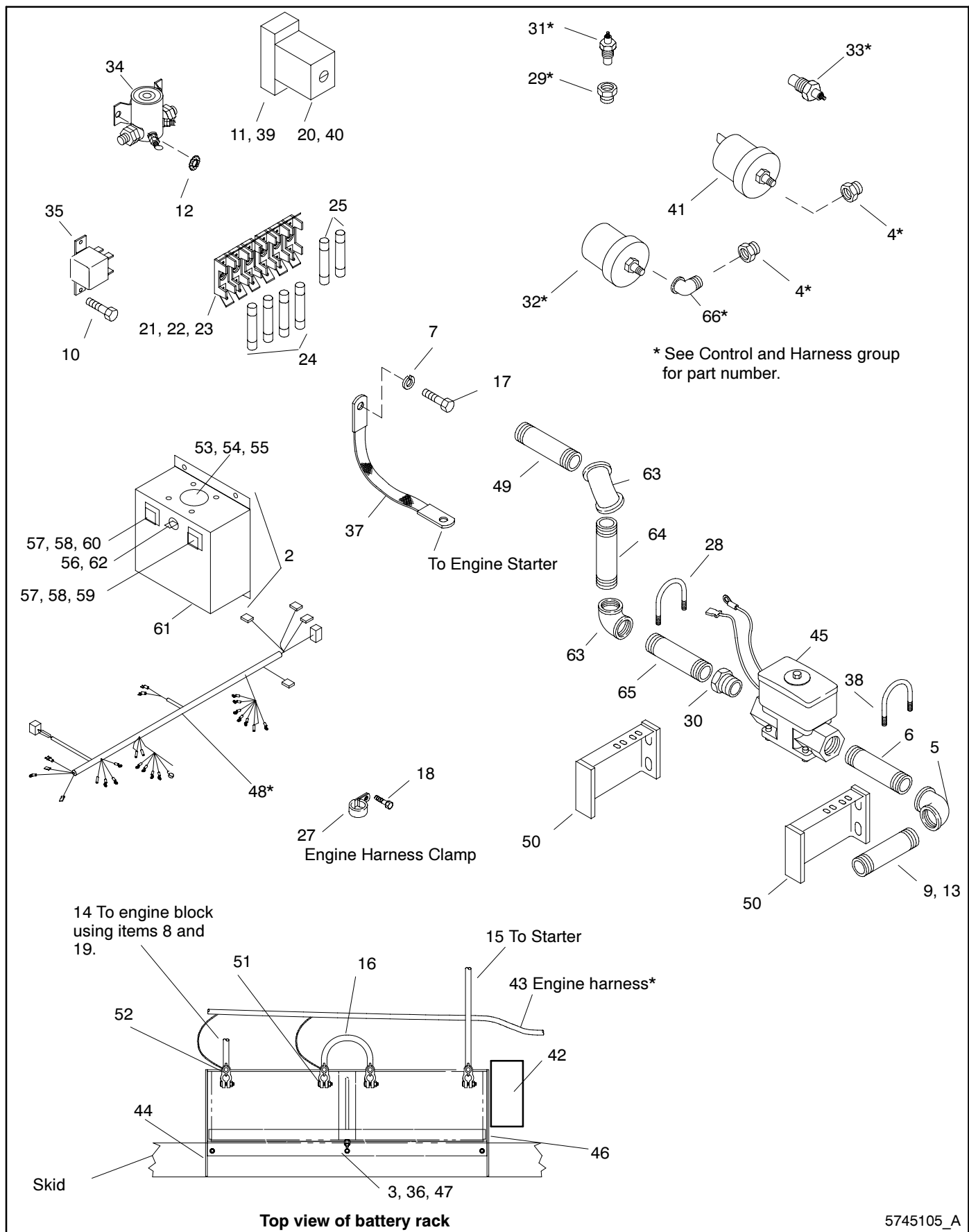
Group 104: Cooling System, continued



Group 104: Cooling System, continued

Item	Part Number	Description	Quantity													
			Variation Number/Module Number													
			3	4	6	8	12	14	18	343065	343070	343065	343347	343379	343358	
39	343035	Cooler, air charge	1		1						1		1			
39	343002	Cooler, charge air		1			1	1				1		1	1	
39	343178	Cooler, charge air				1										1
40	343621	Pulley, idler	1	1	1	1	1	1	1	1	1	1	1	1	1	1
41	343053	Gasket, intake	1	1	1	1	1	1	1	1	1	1	1	1	1	1
42	343054	Shroud, fan	1		1						1		1			
42	343003	Shroud, fan		1			1	1	1			1		1	1	
42	343176	Shroud, fan				1										
42	GM20771	Shroud, fan								1						1
43	343062	Guard, wire fan	1		1						1		1			
43	343004	Guard, wire fan		1				1	1			1			1	
43	343185	Guard, wire fan				1					1					1
44	343067	Spacer, fan	1	1	1	1	1	1	1	1	1	1	1	1	1	1
45	343097	Guard, bottom belt	1	1	1	1	1	1	1	1	1	1	1	1	1	1
46	343101	Guard, right hand belt	1	1	1	1	1	1	1	1	1	1	1	1	1	1
47	343122	Guard, left hand belt	1	1	1						1	1	1			
47	343262	Guard, left hand belt				1	1	1	1					1	1	1
47	343263	Bracket, mounting (not shown)				1	1	1	1					1	1	1
48	343136	Bracket, mounting	1	1	1	1	1	1	1	1	1	1	1	1	1	1
49	343162	Support, radiator	1			1			1	1		1			1	1
49	343012	Support, radiator, right		1	1							1	1			
49	343325	Support, radiator, right					1							1		
49	343183	Support, radiator, right				1				1						1
50	343166	Tube, upper charge cooler	1	1	1		1	1			1	1	1	1	1	
50	343189	Tube, upper charge cooler				1				1						1
51	343167	Tube, lower charge cooler	1	1	1						1	1	1			
51	343328	Tube, lower charge cooler					1	1						1	1	
51	343337	Tube, lower charge cooler				1				1						1
51	GM14114	Support, charge cooler tube (not shown)								1						1
51	GM14115	Tube, lower charge cooler								1						1
52	343175	Clamp, hose	4	4	4			4	4		4	4	4	4	4	
52	274824	Clamp, hose				2										2
52	291590	Clamp, hose				2					5					5
53	343193	Insulation, foam	1	1	1	1	1	1	1	1	1	1	1	1	1	1
54	343667	Belt, V	3	3	3						3	3	3			
54	343623	Belt, V				3	3	3	3					3	3	3
55	343288	Spacer, radiator	2	2	2	2	2	2	2	2	2	2	2	2	2	2
56	343290	Bracket, mounting, intake (not shown)	1	1	1	1	1	1	1	1	1	1	1	1	1	1
57	343291	Guard, belt, top right	1	1	1	1	1	1	1	1	1	1	1	1	1	1
58	354113	Sensor, liquid level	1	1	1	1	1	1	1	1	1	1	1	1	1	1
59	343301	Bracket, mounting	1	1	1	1	1	1	1	1	1	1	1	1	1	1
60	343422	Bracket, fan shroud	2		2						2		2			
60	343423	Bracket, fan shroud		2			2	2	2			2		2	2	
60	343424	Bracket, fan shroud				2				2						2
61	343619	Bracket, pulley tensioner	1	1	1	1	1	1	1	1	1	1	1	1	1	1
62	343620	Bracket, pulley tensioner	1	1	1	1	1	1	1	1	1	1	1	1	1	1
63	343622	Bushing, idler	1	1	1	1	1	1	1	1	1	1	1	1	1	1
64	X-125-5	Screw, HC	6	6	6	6	6	6	6	6	6	6	6	6	6	6
65	X-6365-1	Insert, threaded	6	6	6	6	6	6	6	6	6	6	6	6	6	6
66	X-125-24	Screw, HC	8	8	8	8	8	8	8	8	8	8	8	8	8	8
67	X-555-1	Fitting, elbow, 1/4 x 1/4 in.				1			1	1					1	1
68	GM25833	Cap, radiator	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Group 105: Engine



5745105_A

Group 105: Engine

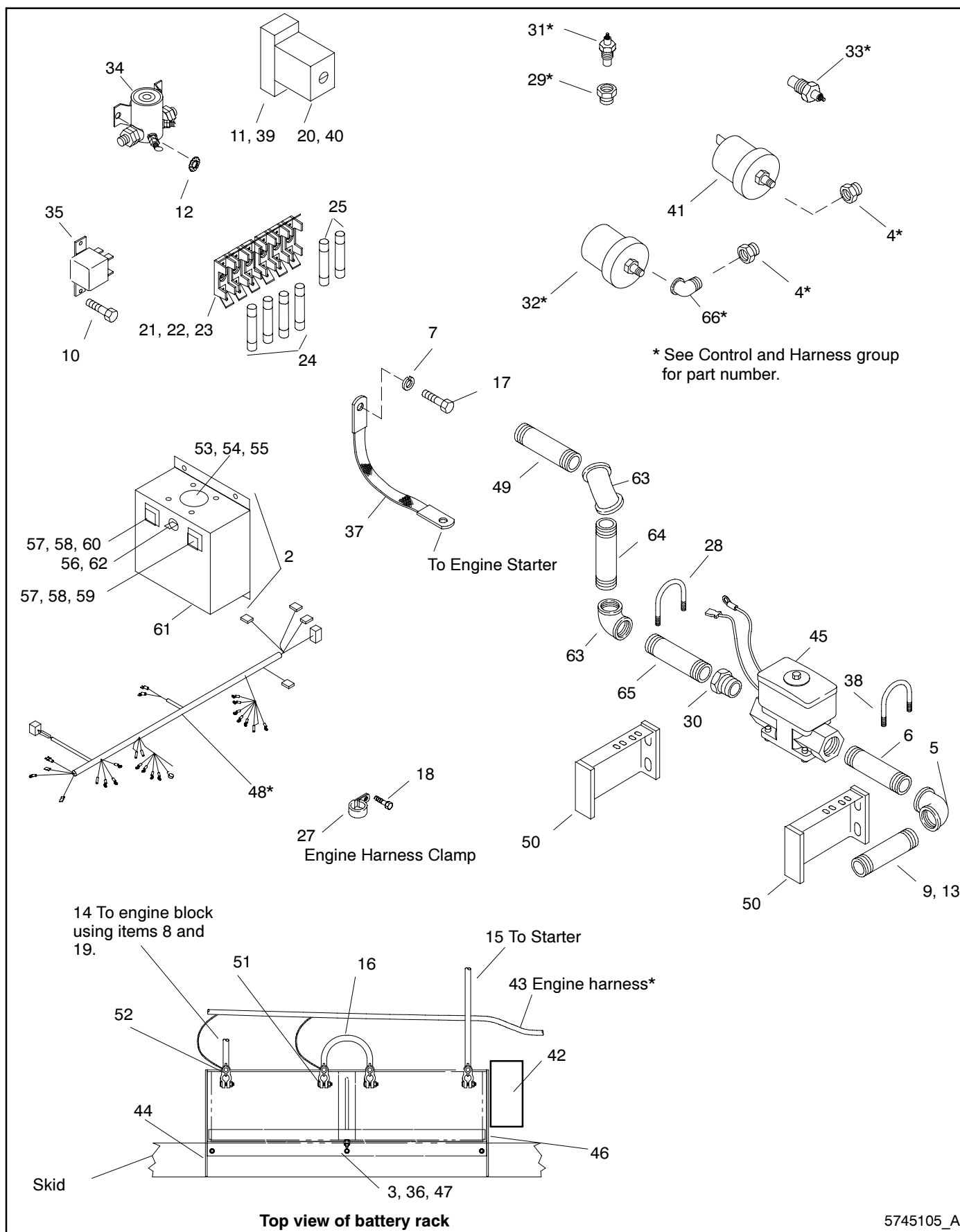
Item	Part Number	Description	Qty.
1	See chart on-page 19	Engine assembly (not shown)	1
2	A-343090	Box assembly (items 54-62)	1
3	X-101-4	Nut, hex elastic stop, 5/16-24	1
4	X-202-27	Bushing, reducer (variations 2-33)	2
4	*	Bushing, reducer (variations 37-49)	2
5	X-215-6	Elbow, pipe, 90 deg. x 2 in. NPT	1
6	X-219-6	Nipple, pipe, 2x 4	1
7	X-22-16	Washer, lock, 5/16 (135-180 kW, 60 Hz)	3
7	X-22-16	Washer, lock, 5/16 (135-180 kW, 50 Hz, 200-275 kW)	2
7	X-22-14	Washer, lock (135-180 kW, 50 Hz, 200-275 kW)	1
8	X-22-26	Washer, lock, 1/2	1
9	X-396-18	Pipe (135-180 kW, 60 Hz)	1
9	X-396-20	Pipe (135-180 kW, 50 Hz, 200-275 kW)	
10	X-49-26	Screw, slot, 6-32	2
11	X-49-36	Screw, RHM	2
12	X-22-12	Washer, lock	2
13	X-519-19	Plug, cap	1
14	X-545-112	Cable, battery black (-)	1
15	X-545-117	Cable, battery red (+) (135-180 kW, 60 Hz)	1
15	X-545-129	Cable, battery red (+) (200-275 kW)	
16	X-545-73	Cable, battery, black	1
17	M933-08025-60	Screw, HHC (135-180 kW, 60 Hz)	1
17	M933-10020-60	Screw, HHC (135-180 kW, 50 Hz, 200-275 kW)	1
18	M933-10025-60	Screw, HHC (135-180 kW, 60 Hz)	1
18	M933-08016-60	Screw, HHC (135-180 kW, 50 Hz, 200-275 kW)	1
19	M933-12020-60	Screw, HHC	1
20	X-6124-1	Strap, holddown	1
21	343690	Holder, fuse	1
22	GM14233	Strip, marker	1
23	361567	Base, tie wrap snap-in	1
24	283645	Fuse, 15 amp, F1-F4	4
25	239298	Fuse, 5 amp, F5, F6	2
27	X-672-31	Clamp, insulated (135-180 kW, 60 Hz)	1
27	X-672-4	Clamp, insulated (135-180 kW, 50 Hz, 200-275 kW)	1
28	X-722-5	Clamp, U	1
29	153659	Bushing, reducing (variations 2-33)	1
29	*	Bushing, reducing (variations 37-49)	1
30	160212	Bushing, reducer	1
31	241481	Switch, high temperature shutdown (variations 2-33)	1
31	*	Switch, high temperature shutdown (variations 37-49)	1
32	343473	Sender, oil pressure (variations 2-33)	1
32	*	Sender, oil pressure (variations 37-49)	1
33	268298	Sender, water temperature (variations 2-33)	1

Item	Part Number	Description	Qty.
33	*	Sender, water temperature (variations 37-49)	1
34	268371	Relay	1
35	GM10347	Relay assembly	1
36	286316	Bolt, angle	1
37	287363	Strap, ground (135-180 kW, 60 Hz)	1
37	266581	Strap, ground	1
38	288827	Clamp, muffler	1
39	295034	Socket, relay	1
40	295263	Relay	1
41	328309	Switch assembly, pressure (variations 2-33)	1
41	*	Switch assembly, pressure (variations 37-49)	1
42	343028	Battery, equalizer	1
43	See chart	Harness, engine	1
44	343775	Rack, battery (135-180 kW, 60 Hz)	1
44	343220	Rack, battery	1
45	343055	Solenoid	1
46	343061	Bracket, mounting	1
47	343089	Clamp, battery (135-180 kW, 60 Hz)	1
47	343221	Clamp, battery	1
48	See chart	Harness, wiring engine control	1
49	343195	Pipe (135-180 kW, 60 Hz)	1
49	343285	Pipe	
50	343196	Bracket, support (135-180 kW, 60 Hz)	2
50	343196	Bracket, support (135-180 kW, 50 Hz, 200-275 kW)	1
50	343213	Bracket, mounting (180 kW, 50 Hz, 200-275 kW)	1
50	343376	Bracket, mounting (135/150 kW, 50 Hz)	1
51	345039	Terminal, battery, positive	2
52	345056	Terminal, battery, negative	2
53	X-6214-6	Cap, plastic	1
54	X-49-41	Screw, pan head	4
55	X-74-6	Nut, hex	4
56	151511	Ring, lock switch	1
57	264513	Lamp	2
58	295325	Socket, lamp	2
59	295328	Lens	1
60	298010	Lens, lamp	1
61	343086	Box, silkscreened	1
62	354151	Switch, toggle, 2-pole	1
63	151771	Fitting, elbow, 90 degree (135-180 kW, 50 Hz, 200-275 kW)	2
64	X-205-15	Pipe, 1-1/2 NPT (180 kW 50 Hz, 200-275 kW)	1
64	155029-1	Pipe, 1-1/2 x 6 (135/150, 50 Hz)	1
65	151803	Nipple, pipe, 1 1/2 x 2 1/2 in.	
66	267428	Fitting, 45 degree street elbow (variations 2-33)	1
66	*	Fitting, 45 degree street elbow (variations 37-49)	1

Common hardware. Procure locally.

* See Control and Harness group for part number.

Group 105: Engine, continued



5745105_A

Group 105: Engine, continued

Engine Part Number

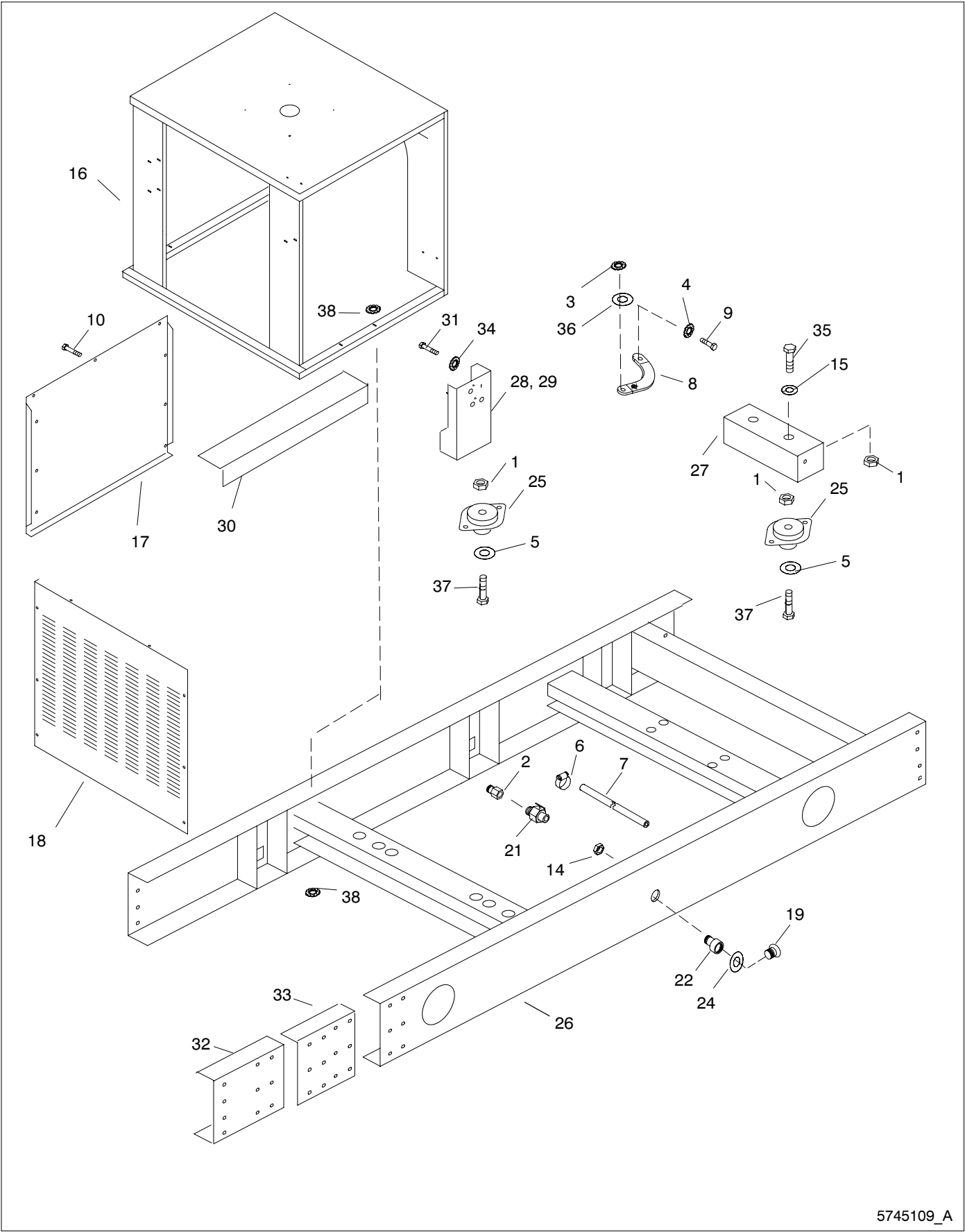
Use this table to identify the generator set's engine part number.

Variation No.	Item 1, Engine Assembly	Item 43, Engine Harness	Item 48, Control Harness
2	A-343044	343030	343125
3	A-343019	343030	343125
7	A-343044	343211	343210
8	A-343333	343110	343266
9	A-343334	343110	343266
10	A-343335	343110	343266
11	A-343336	343110	343266
12	A-343339	343110	343266
13	A-343338	343110	343266
15	A-343340	343110	343266
16	A-343341	343110	343266
17	A-343342	343110	343266
18	A-343343	343110	343266
19	A-343333	343110	343266
20	A-343334	343110	343266
21	A-343335	343110	343266
22	A-343336	343110	343266
37	A-343044	See Control and Harness Group	
38	A-343019	See Control and Harness Group	
39	A-343044		
40	A-343339		
41	A-343338	See Control and Harness Group	
42	A-343340		
43	A-343341		
44	A-343342	See Control and Harness Group	
45	A-343343		
46	A-343333		
47	A-343334	See Control and Harness Group	
48	A-343335		
49	A-343336		

Group 107: Nameplate and Decals

Item	Part Number	Description	Variation Quantity		
			2	GR1S	GR2S
1	238402	Decal, caution positive terminal only	1	1	1
2	249808	Decal, warning rotating parts	1	1	1
3	249809	Decal, warning hot engine	1	1	1
4	249810	Decal, warning hot coolant	1	1	1
5	257438	Decal, warning moving parts	3	3	3
6	257441	Decal, warning lifting eye	1	1	1
7	258815	Decal, warning voltage backfeed	1	1	1
8	259365	Decal, generator connections	1		
9	273780	Decal, warning explosion	1	1	1
10	324069	Nameplate	1	1	1
11	343165	Decal, caution—not a step	1	1	1
12	364116	Decal, caution welding disconnect	2	2	2
13	GM14023	Tag, hang caution ECM damage		1	1
14	GM13776	Decal, FRII reconnection		1	1
15	X-6301-3	Decal, DDC/MTU logo	2	2	2
16	X-6302-1	Decal, DDC/MTU symbol, 3.14 in. dia.	2	2	

Group 109: Skid and Plant Mounting



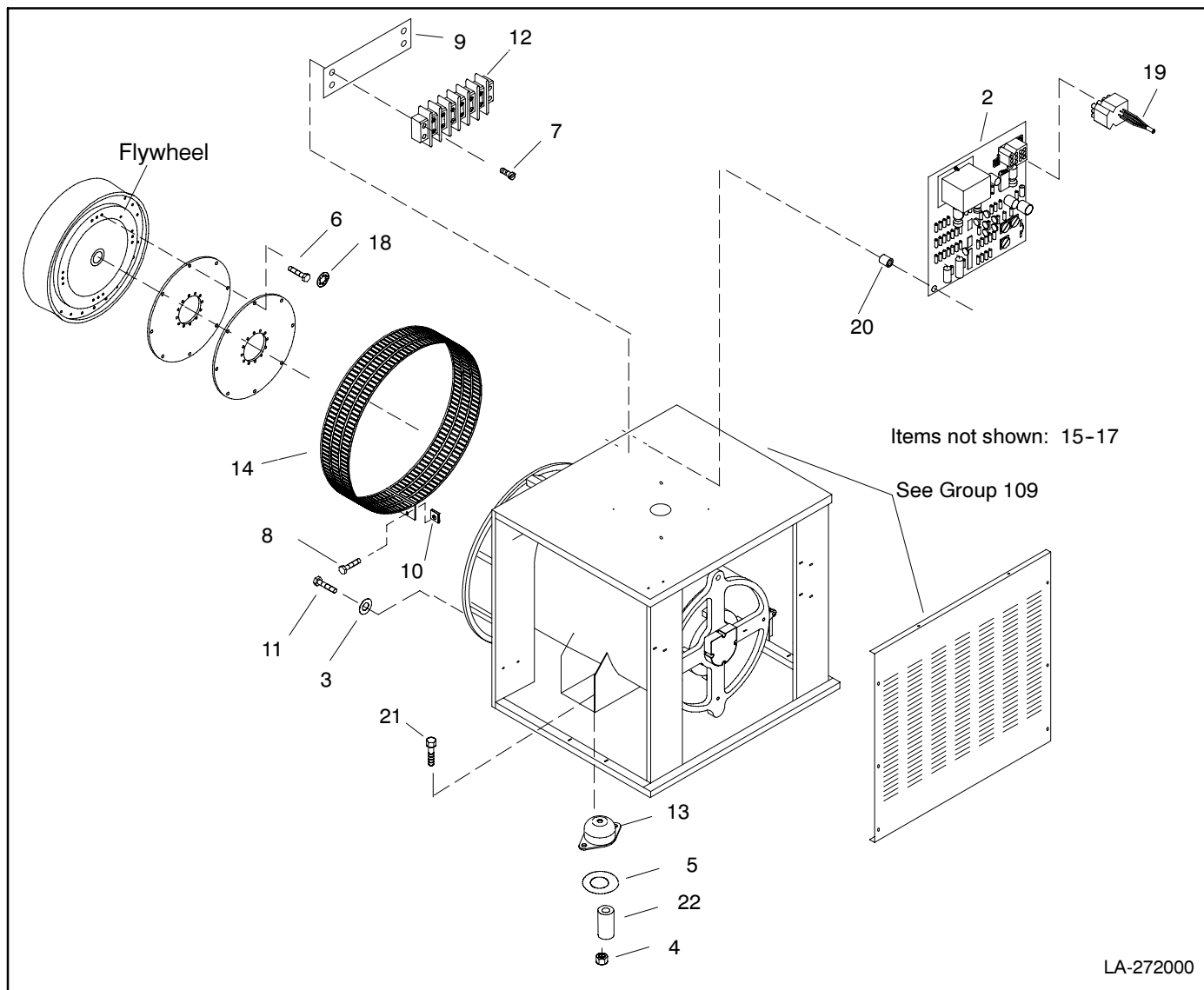
5745109_A

Group 109: Skid and Plant Mounting

Item	Part Number	Description	Quantity														
			Variation Number/Module Number														
			3	4	6	8	10	12	343095	343096	343344	343357	343378	GM34385-MA1	GM34385-MA2	GM34407-MA1	GM34408-MA1
1	X-101-15	Nut, elastic stop, 5/8-11	6	6	6	6	6	6	6	6	6	6					
1	M982-16-80	Nut, hex elastic stop											4	4	4	4	
1	M982-20-80	Nut, hex elastic stop											2	2	2	2	
2	X-202-41	Bushing, reducer	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
2	X-211-1	Fitting, elbow, street, 1/2 in. (not shown)			1	1		1				1	1		1	1	
3	X-22-16	Washer, lock, 5/16	1	1	1	1	1	1	1	1	1	1	1	1	7	1	
4	X-22-26	Washer, lock, 1/2	1	1	1	1	1	1	1	1	1	1	1	1	1	8	
5	X-25-112	Washer, plain, .688 x 3.00 x .190	4	4	4	4	4	4	4	4	4	4	4	4	4	4	
6	X-426-10	Clamp, hose	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
7	X-577-48	Hose, oil proof	1	1			1		1	1	1		1	1			
7	X-577-27	Hose, oil proof			1	1		1				1	1		1	1	
8	X-6046-5	Strap, ground	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
9	X-6052-1	Screw, HHC	1	1	1	1	1	1	1	1	1	1	1				
10	X-6216-1	Screw, Phillips head	12	12	12	12	12	12	12	12	12	12	12	12	12	12	
14	X-80-1	Nut, hex	1	1	1	1	1	1	1	1	1	1	1				
15	X-801-9	Washer, hardened	9	2	2	2	2	2	9	2	2	2	2				
15	X-801-8	Washer, hardened, .812 ID x 2 in. OD														2	
16	222825	Box, junction	1					1	1				1				
16	336021	Box, junction		1	1	1	1	1		1	1	1					
16	GM10555	Box, junction												1		1	
16	GM17623	Panel, junction box (front)												1		1	
16	GM17624	Panel, junction box (rear)												1		1	
17	222835	Cover, side	2					2	2				2				
17	336001	Cover, side		2	2	2	2	2		2	2	2			2	2	
17	GM17640-BLK	Cover, side												1		1	
18	222838	Cover, rear	1					1	1				1				
18	336005	Cover, rear		1	1	1	1	1		1	1	1					
18	GM17625-BLK	Cover, rear												1		1	
18	366004-BLK	Cover, rear													1	1	
19	241062	Plug, drain	1				1	1	1		1		1				
19	X-75-3	Plug, pipe, 1/2 in. NPT												1	1	1	
21	272701	Valve, oil drain	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
22	273729	Adapter, hose	1	1	1	1	1	1	1	1	1	1	1				
22	X-582-1	Connector, hose												1	1	1	
23	273739	Decal	2	2	2	2	2	2	2	2	2	2	2				
24	276552	Washer, nylon	1	1	1	1	1	1	1	1	1	1	1				
25	336024	Vibromount	4	4	4	4	4	4	4	4	4	4	4	4	4	4	
26	343029	Skid	1						1					1			
26	343102	Skid			1	1		1				1					
26	343008	Skid		1				1			1						
26	343375	Skid						1					1		1		
26	GM23239	Skid														1	
27	343032	Support, engine, front	1	1	1	1	1	1	1	1	1	1	1				
27	GM28345	Support, engine, front												1	1	1	
28	343083	Support, rear engine	1	1			1		1	1	1			1	1		
28	343103	Bracket, engine mounting			2	2		2		2		2	2			2	
29	343084	Support, rear engine	1	1			1		1	1	1			1	1		
30	336085	Bracket, junction box		2	2	2	2			2	2	2					
30	GM32571	Bracket, junction box mtg.													4	4	
31	X-6021-2	Screw, hex head machine	8	8			8		8	8	8	8					
31	X-55-25	Screw, hex socket head machine			8	8		8	8	8	8	8	8	8	8	8	
32	343105	Extension, skid			2	2						2					
32	GM23238	Extension, skid														2	
33	343107	Bracket, connection			2	2						2					
33	GM23237	Bracket, skid connection														2	
34	X-22-30	Washer, lock, .652 ID x 1.058 in. OD			8	8			8		8	8		8	8	8	
35	273049	Screw, hex head machine	2	2	2	2	2	2	2	2	2	2	2				
36	X-25-85	Washer, plain, .344 ID x .687 OD	1	1	1	1	1	1	1	1	1	1	1				
37	X-6021-12	Screw, hex head machine	2	2	2	2	2	2	2	2	2	2	2				
38	X-22-14	Washer, lock, .391 ID x .975 in. OD	2	2	2	2	2	2	2	2	2	2	2				
39	X-301-45	Plug, button (not shown)												1			
40	X-6033-15	Grommet												1		1	

Group 201: Generator and Mounting

Permanent Magnet-Excited Alternators



Item	Part Number	Description	Qty.
1	See chart next page	Alternator assembly	1
2	C-255670	Voltage regulator (variations 1-14)	1
2	A-354653	Voltage regulator (variations 15-25)	1
2	*	Voltage regulator	1
3	X-801-6	Washer, hardened	6
4	See chart next page	Nut, elastic stop, 5/8-11 (4S, 4U 60 Hz)	2
5	X-25-112	Washer, plain (4S alt.)	2
5	X-25-168	Washer, plain (4U/4UA alt.)	2
6	X-129-59	Bolt, hex cap	8
7	M7985A-04020-20	Screw, RHM, 8-32 x 3/4 (variations 1-25)	2
7	*	Screw, RHM, 8-32 x 3/4	2
8	X-67-125	Screw, self-tapping	2/4
9	255080	Marker, strip (variations 1-25)	1
9	*	Marker, strip	1
10	257442	Clip, speed	2/4
11	X-6024-14	Screw, hex head (4S alt., 50 Hz)	6
11	X-6024-15	Screw, hex head (4S alt., 60 Hz)	6

* See Control and Harness group for part number.

Item	Part Number	Description	Qty.
12	295314	Block, terminal (variations 1-25)	1
12	*	Block, terminal	1
13	See chart next page	Vibromount (4S alt., 4U 60 Hz)	2
14	257193	Guard, generator fan (4S alt.)	1
14	347268	Guard, generator fan (4U alt.)	2
15	X-750-14	Marker, wire tab no. 1	1
16	X-750-15	Marker, wire tab no. 2	1
17	X-750-16	Marker, wire tab no. 3	1
17	X-750-16	Marker, wire tab no. 3	1
18	290945	Washer, hardened	8
19	255481	Harness, wiring (variations 1-14)	1
19	354118	Harness, wiring (variations 15-25)	1
19	*	Harness, wiring	1
20	360459	Standoff, circuit board	4
20	*	Standoff, circuit board	4
21	See chart next page	Bolt, hex head	2
22	X-400-265	Spacer	2

Group 201: Generator and Mounting

Permanent Magnet-Excited Alternators

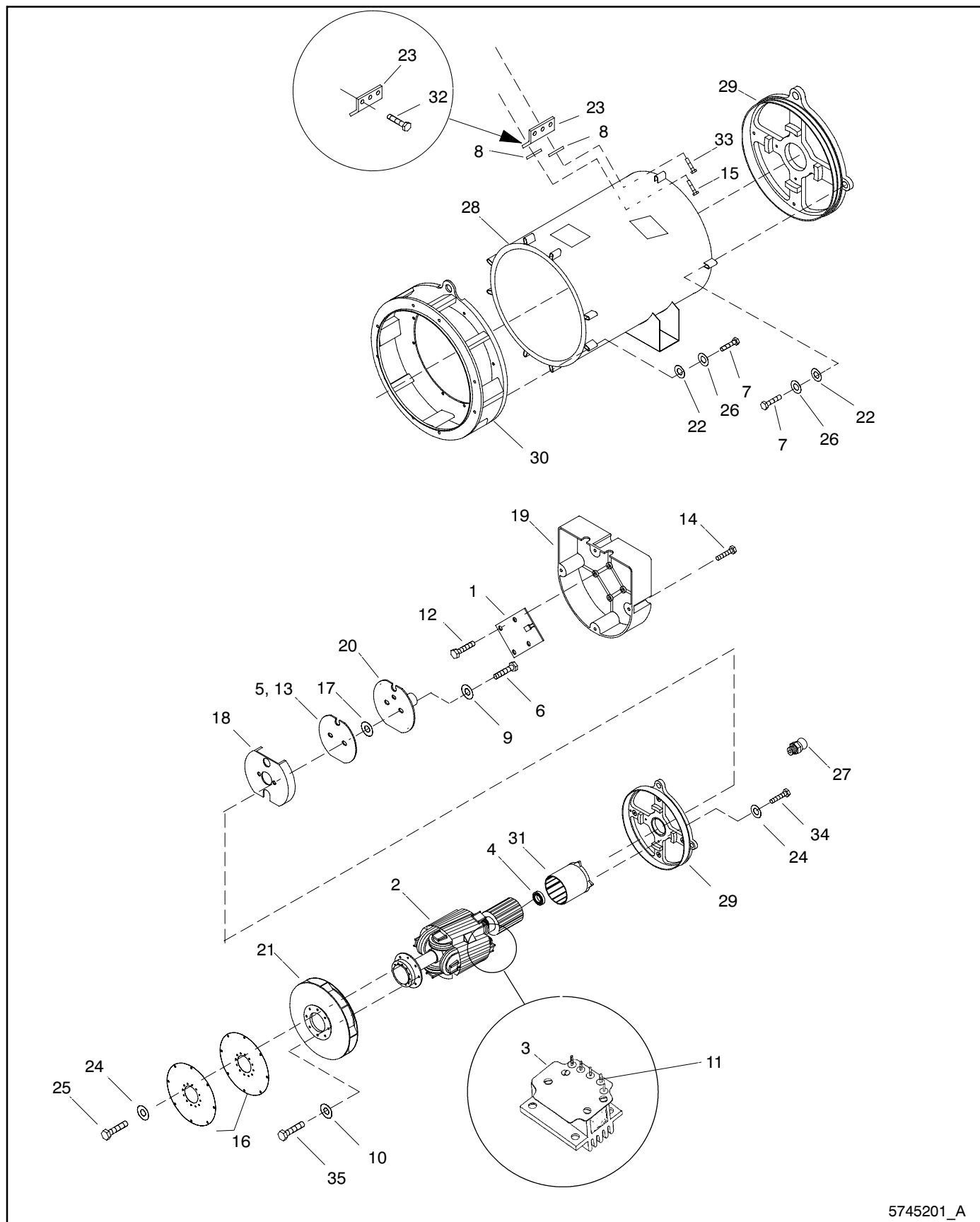
Alternator Part Numbers

Use this table to identify items 1, 4, 13, and 21.

Module/Kit No.	Variation No.	Alternator Description	Item 1, Alternator Assembly	Item 21, Bolt	Item 4, Nut	Item 13, Vibromount
343112	1	4S11	A-343034	X-6021-12	X-101-15	336024
343113	2	4S13	A-276680	X-6021-12	X-101-15	336024
343114	3	4U7	A-343200	X-129-30	X-101-23	324392
343115	4	4S13, 600 V	A-343202	X-6021-12	X-101-15	336024
343116	5	4S11, 600 V	A-343045	X-6021-12	X-101-15	336024
343117	6	4S13, 600 V	A-343020	X-6021-12	X-101-15	336024
343118	7	4U7, 600 V	A-343201	X-129-30	X-101-23	324392
343119	8	4U9, 600 V	A-343203	X-129-30	X-101-23	324392
343251	9	4U9	A-343202	X-129-30	X-101-23	324392
343252	10	4U9, 600 V	A-343203	X-129-30	X-101-23	324392
343253	11	4U10S	A-343204	X-129-30	X-101-23	324392
343254	12	4U10S, 600 V	A-343205	X-129-30	X-101-23	324392
343255	13	4U13	A-343206	X-129-30	X-101-23	324392
343256	14	4U13, 600 V	A-343207	X-129-30	X-101-23	324392
343313	15	4UA7	A-347121	X-129-30	X-101-23	324392
343314	16	4UA7, 600 V	A-347122	X-129-30	X-101-23	324392
343315	17	4UA9	A-347123	X-129-30	X-101-23	324392
343316	18	4UA9, 600 V	A-347124	X-129-30	X-101-23	324392
343305	19	4UA9	A-347123	X-129-30	X-101-23	324392
343306	20	4UA9, 600 V	A-347124	X-129-30	X-101-23	324392
343307	21	4UA10	A-347125	X-129-30	X-101-23	324392
343308	22	4UA10, 600 V	A-347126	X-129-30	X-101-23	324392
343309	23	4UA13	A-347127	X-129-30	X-101-23	324392
343310	24	4UA13, 600 V	A-347128	X-129-30	X-101-23	324392
343361	25	4UA7	A-347121	X-129-30	X-101-23	324392
GM18094-MA1	—	4S11	B-343034	M931-16060-60	M982-16-80	336024
GM18094-MA2	—	4S11	B-343034	M931-16060-60	M982-16-80	336024
GM18094-MA3	—	4S11, 600 V	B-343045	M931-16060-60	M982-16-80	336024
GM18094-MA4	—	4S13	B-276680	M931-16060-60	M982-16-80	336024
GM18094-MA5	—	4S13	B-276680	M931-16060-60	M982-16-80	336024
GM18094-MA6	—	4S13, 600 V	B-343020	M931-16060-60	M982-16-80	336024
GM18398-MA1	—	4UA7	B-347121	M931-16090-60	M982-16-80	336024
GM18398-MA2	—	4UA7	B-347121	M931-16120-60	M982-12-80	324392
GM18398-MA3	—	4UA7, 600 V	B-347122	M931-16090-60	M982-16-80	336024
GM18398-MA4	—	4UA9	B-347123	M931-16090-60	M982-16-80	336024
GM18398-MA5	—	4UA9	B-347123	M931-16120-60	M982-12-80	324392
GM18398-MA6	—	4UA9, 600 V	B-347124	M931-16090-60	M982-16-80	336024
GM18398-MA7	—	4UA9, 600 V	B-347124	M931-16120-60	M982-12-80	324392
GM18398-MA8	—	4UA10	B-347125	M931-16120-60	M982-12-80	324392
GM18398-MA9	—	4UA10, 600 V	B-347126	M931-16120-60	M982-12-80	324392
GM18398-MA10	—	4UA13	B-347127	M931-16120-60	M982-12-80	324392
GM18398-MA11	—	4UA13, 600 V	B-347128	M931-16120-60	M982-12-80	324392
GM17672-MA40	—	4S11	GM17563-19	M931-16100-60	M982-16-80	336024
GM17672-MA41	—	4S11	GM17563-19	M931-16100-60	M982-16-80	336024
GM17672-MA42	—	4S11, 600 V	GM17563-20	M931-16100-60	M982-16-80	336024
GM17672-MA43	—	4S13	GM17563-10	M931-16100-60	M982-16-80	336024
GM17672-MA44	—	4S13	GM17563-10	M931-16100-60	M982-16-80	336024
GM17672-MA45	—	4S13, 600 V	GM17563-18	M931-16100-60	M982-16-80	336024
GM19673-MA21	—	4UA7	GM24411-17	M931-16090-60	M982-16-80	336024
GM19673-MA22	—	4UA7	GM24411-17	M931-16120-60	M982-16-80	324392
GM19673-MA23	—	4UA7, 600 V	GM24411-18	M931-16090-60	M982-16-80	336024
GM19673-MA24	—	4UA9	GM24411-19	M931-16090-60	M982-16-80	336024
GM19673-MA25	—	4UA9	GM24411-19	M931-16120-60	M982-16-80	324392
GM19673-MA26	—	4UA9, 600 V	GM24411-20	M931-16090-60	M982-16-80	336024
GM19673-MA27	—	4UA9, 600 V	GM24411-20	M931-16120-60	M982-16-80	324392
GM19673-MA28	—	4UA10	GM24411-21	M931-16120-60	M982-16-80	324392
GM19673-MA29	—	4UA10, 600 V	GM24411-22	M931-16120-60	M982-16-80	324392
GM19673-MA30	—	4UA13	GM24411-23	M931-16120-60	M982-16-80	324392
GM19673-MA31	—	4UA13, 600 V	GM24411-24	M931-16120-60	M982-16-80	324392

Group 201: Generator and Mounting, continued

Permanent Magnet-Excited Alternators



5745201_A

Group 201: Generator and Mounting, continued

Permanent Magnet-Excited Alternators

Item	Part Number	Description	Qty.
1	A-257099	LED board	1
2	See chart on page 27	Assembly, rotor	1
3	A-354299	Activator, split (4UA alt.)	1
3	A-233999	Activator, split (4U alt.)	1
3	B-258549	Activator, split (4S alt.)	1
4	X-758-6	Bearing, ball (4S alt.)	1
4	X-758-9	Bearing, ball (4U alt.)	1
5	A-360418	Board, photo	1
6	X-117-5	Screw, hex head, 10-24 x 5	2
7	X-6238-6	Screw, 3/8-16 x 2.00 (4S alt.)	1
7	X-6238-9	Screw, 3/8-16 x 3.00 (4S alt.)	9
7	X-129-49	Screw, 1/2-13 x 3.00 gr. 8 (4UA alt.)	12
7	X-129-25	Screw, hex head (4U alt.)	12
8	X-22-45	Washer, lock, 5/16 (4S alt.)	2
8	X-22-46	Washer, lock (4U alt.)	2
9	X-22-9	Washer, lock, #10 int. tooth	2
10	X-25-93	Washer, plain, .406 x .750 x .125 (4S alt.)	4
10	X-25-93	Washer, plain, .406 x .750 x .125 (4U alt.)	8
11	X-283-7	Terminal, ring, #6 (4S alt.)	4
11	X-431-25	Terminal (4U alt.)	4
12	X-6071-1	Screw, thread forming, #10	4
13	X-6093-8	Sleeve	1
14	X-67-133	Screw, self-tapping, 10-24 x .375	4
15	X-791-7	Screw, hex head (4S alt.)	1
15	X-791-6	Screw, hex head (4U alt.)	1
16	257104	Disc, armature drive (4S alt.)	3
16	257581	Disc, armature drive (4U alt.)	4
17	243321	Washer, insulating	2
18	257077	Actuator, magnetic	1
19	257258	Cover, circuit board	1
20	257850	Insulator	1
21	257173	Fan, generator (4S alt.)	1
21	GM17179	Fan, generator (4U alt.)	1
22	257951	Washer, special	12
23	257985	Connector, lead (4S alt.)	1
23	257978	Connector, lead (4S alt. 1-phase, 4U alt.)	1
23	257979	Connector, lead (4UA13 alt.)	1
24	X-801-3	Washer, hardened	12
25	270956	Screw, hexagon head	12
26	290945	Washer, hardened (4U alt.)	12
26	X-25-93	Washer (4S alt.)	10
27	347119	Fitting, grease	1
28	See chart on page 27	Stator assembly	1
29	257983	Bracket, end (4S alt.)	1
29	257982	Bracket, end (4U alt.)	1
29	347236	Bracket, end (4UA alt.)	1
30	257192	Adapter, generator (4S alt.)	1
30	257579	Adapter, generator (4U alt.)	1
30	347236	Adapter, generator (4UA alt.)	1
31	276657	Field exciter assembly (4S alt.)	1
31	257963	Field exciter assembly (4U alt.)	1
31	347707	Field exciter assembly (4U alt.)	1
32	X-125-24	Screw, hex head (4S alt.)	3
32	X-6238-5	Screw, hex head (4S alt. 1-phase, 4U alt.)	3
32	X-6238-5	Screw, hex head (4U13 alt.)	6
33	X-6238-11	Screw, hex head (4U alt.)	1
33	X-125-31	Screw, hex head (4S alt.)	1
34	X-6238-1	Screw, hex head (4UA alt.)	4
34	X-125-34	Screw, hex head (4S alt.)	4
34	X-6237-7	Screw, hex head (4U alt.)	4
35	X-6238-11	Screw, hex head (4S alt.)	8
35	X-6238-11	Screw, hex head (4U alt.)	4

Notes

Group 201: Generator and Mounting, continued

Permanent Magnet-Excited Alternators

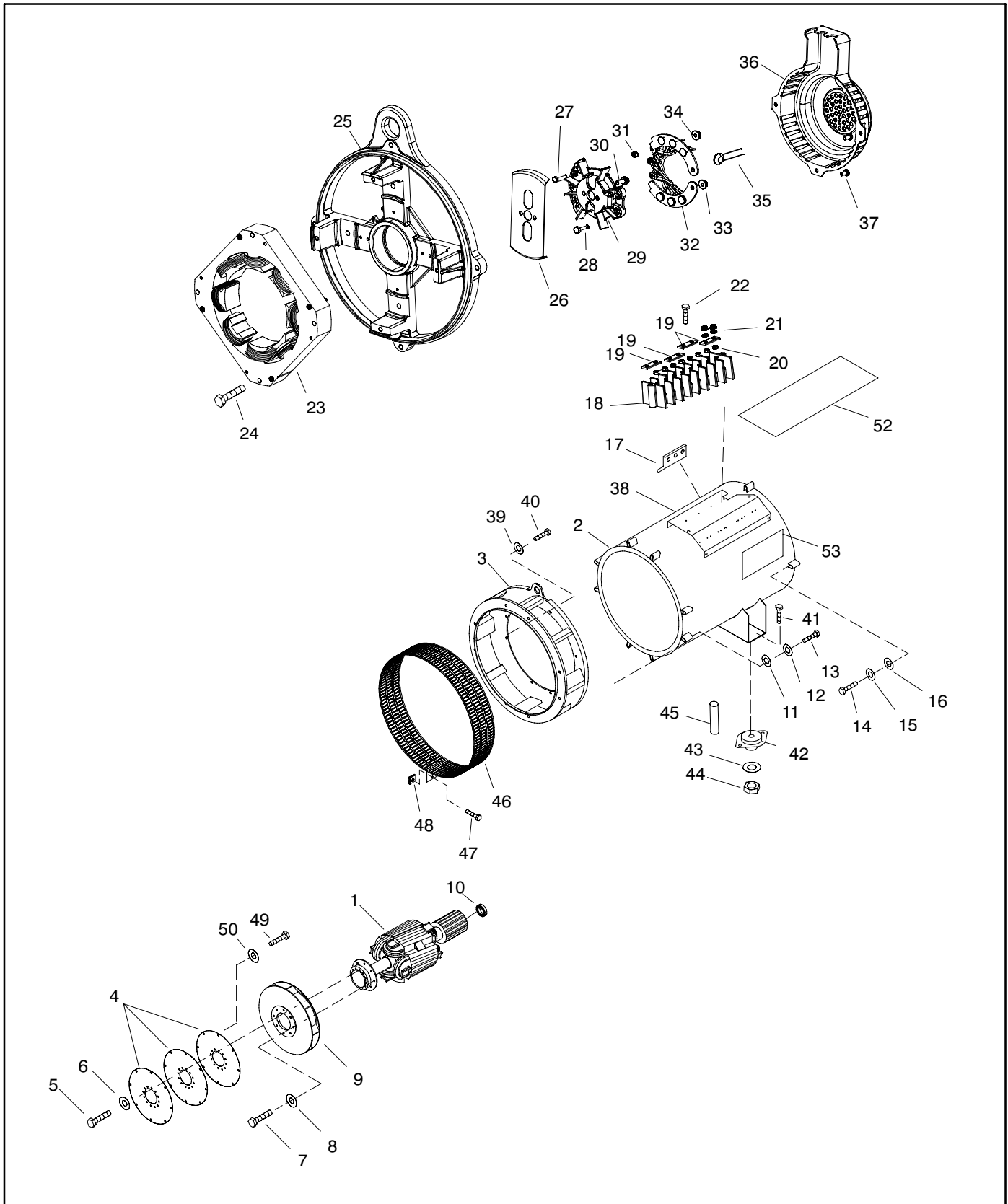
Alternator Part Numbers

Use this table to identify items 2 and 28.

Module/Kit No.	Variation No.	Alternator Description	Alternator Assembly	Item 2, Rotor Assembly	Item 28, Stator Assembly
343112	1	4S11	A-343034	A-343091	343092
343113	2	4S13	A-276680	A-276668	257689
343114	3	4U7	A-343200	A-257959	257573
343115	4	4S13, 600 V	A-343202	A-257960	257574
343116	5	4S11, 600 V	A-343045	A-343091	343094
343117	6	4S13, 600 V	A-343020	A-276668	257692
343118	7	4U7, 600 V	A-343201	A-257959	257777
343119	8	4U9, 600 V	A-343203	A-257960	257778
343251	9	4U9	A-343202	A-257960	257574
343252	10	4U9, 600 V	A-343203	A-257960	257778
343253	11	4U10S	A-343204	A-257974	257575
343254	12	4U10S, 600 V	A-343205	A-257974	257779
343255	13	4U13	A-343206	A-257962	257789
343256	14	4U13, 600 V	A-343207	A-257962	257792
343313	15	4UA7	A-347121	A-347186	347196
343314	16	4UA7, 600 V	A-347122	A-347186	347202
343315	17	4UA9	A-347123	A-347187	347197
343316	18	4UA9, 600 V	A-347124	A-347187	347203
343305	19	4UA9	A-347123	A-347187	347197
343306	20	4UA9, 600 V	A-347124	A-347187	347203
343307	21	4UA10	A-347125	A-347188	347198
343308	22	4UA10, 600 V	A-347126	A-347188	347204
343309	23	4UA13	A-347127	A-347189	347199
343310	24	4UA13, 600 V	A-347128	A-347189	347205
343361	25	4UA7	A-347121	A-347186	347196
GM18094-MA1	—	4S11	B-343034	A-343091	343092
GM18094-MA2	—	4S11	B-343034	A-343091	343092
GM18094-MA3	—	4S11, 600 V	B-343045	A-343091	343094
GM18094-MA4	—	4S13	B-276680	A-276668	257689
GM18094-MA5	—	4S13	B-276680	A-276668	257689
GM18094-MA6	—	4S13, 600 V	B-343020	A-276668	257692
GM18398-MA1	—	4UA7	B-347121	A-347186	347196
GM18398-MA2	—	4UA7	B-347121	A-347186	347196
GM18398-MA3	—	4UA7, 600 V	B-347122	A-347186	347202
GM18398-MA4	—	4UA9	B-347123	A-347187	347197
GM18398-MA5	—	4UA9	B-347123	A-347187	347197
GM18398-MA6	—	4UA9, 600 V	B-347124	A-347187	347203
GM18398-MA7	—	4UA9, 600 V	B-347124	A-347187	347203
GM18398-MA8	—	4UA10	B-347125	A-347188	347198
GM18398-MA9	—	4UA10, 600 V	B-347126	A-347188	347204
GM18398-MA10	—	4UA13	B-347127	A-347189	347199
GM18398-MA11	—	4UA13, 600 V	B-347128	A-347189	347205
GM17672-MA40	—	4S11	GM17563-19	A-343091	GM17559-4
GM17672-MA41	—	4S11	GM17563-19	A-343091	GM17559-4
GM17672-MA42	—	4S11, 600 V	GM17563-20	A-343091	GM17561-4
GM17672-MA43	—	4S13	GM17563-10	A-276668	GM17559-3
GM17672-MA44	—	4S13	GM17563-10	A-276668	GM17559-3
GM17672-MA45	—	4S13, 600 V	GM17563-18	A-276668	GM17561-3
GM19673-MA21	—	4UA7	GM24411-17	A-347186	GM24409-1
GM19673-MA22	—	4UA7	GM24411-17	A-347186	GM24409-1
GM19673-MA23	—	4UA7, 600 V	GM24411-18	A-347186	GM24410-1
GM19673-MA24	—	4UA9	GM24411-19	A-347187	GM24409-2
GM19673-MA25	—	4UA9	GM24411-19	A-347187	GM24409-2
GM19673-MA26	—	4UA9, 600 V	GM24411-20	A-347187	GM24410-2
GM19673-MA27	—	4UA9, 600 V	GM24411-20	A-347187	GM24410-2
GM19673-MA28	—	4UA10	GM24411-21	A-347188	GM24409-3
GM19673-MA29	—	4UA10, 600 V	GM24411-22	A-347188	GM24410-3
GM19673-MA30	—	4UA13	GM24411-23	A-347189	GM24409-4
GM19673-MA31	—	4UA13, 600 V	GM24411-24	A-347189	GM24410-4

Group 201: Generator and Mounting, continued

Wound Field Alternators, 4UAW Alternators



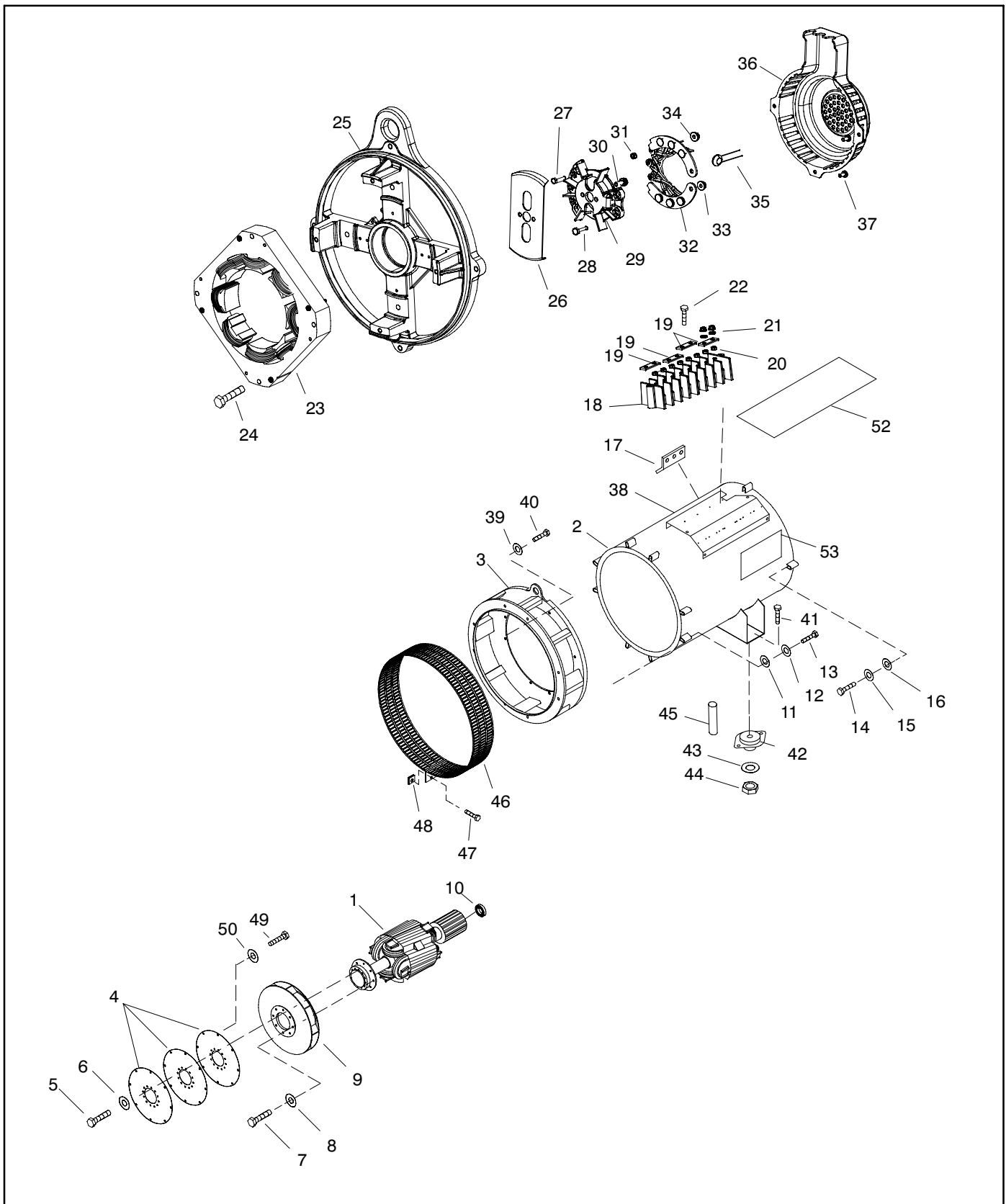
Group 201: Generator and Mounting, continued

Wound Field Alternators, 4UAW Alternators

Item	Part No.	Description	Qty.
1	See chart on page 31	Rotor assembly	1
2	See chart on page 31	Stator assembly	1
3	GM32011	Adapter, generator	1
4	GM31972	Disc, drive	4
5	M933-12040-82	Screw, hex cap	12
6	290945	Washer, .531 ID x 1.06 in. OD	12
7	M933-10025-60	Screw, hex cap	8
8	X-25-93	Washer, .406 ID x .75 in. OD	8
9	257855	Fan, generator	1
10	X-758-9	Bearing, ball	1
11	257951	Washer, .562 ID x 1.13 in. OD	8
12	290945	Washer, .531 ID x 1.06 in. OD	8
13	M931-12095-60	Screw, hex cap	8
14	M931-12095-60	Screw, hex cap	4
15	290945	Washer, .531 ID x 1.06 in. OD	4
16	257951	Washer, .562 ID x 1.13 in. OD	4
17	257978	Bus	1
18	GM31969	Block, terminal	1
19	See chart on page 31	Bus	
20	See chart on page 31	Nut, hex, 10 mm	
21	See chart on page 31	Washer, plain	
22	M7500D-06020-81	Screw	2
23	GM32518-3	Exciter field	1
23	GM32518-4	Exciter field (4UA13W alt.)	1
24	M931-08060-60	Screw, hex head	4
24	M931-08085-60	Screw, hex head (4UA13W alt.)	4
25	GM31973	Bracket, end	1
26	GM31967	Actuator, magnetic	1
27	M933-05020-60	Screw, hex cap	3
28	M933-06020-60	Screw, hex cap	2
29	GM31960	Hub, rotating diode assembly	1

Item	Part No.	Description	Qty.
30	M933-06016-60	Screw, hex cap	2
31	M934-05-50	Nut, hex, 5 mm	3
32	GM31963	Plates, diode assembly	1
33	M982-06-80	Nut, hex, elastic stop	2
34	M982-05-60	Nut, hex, elastic stop	3
35	228061	Varistor, 250 V	1
36	GM31968	Cover, rotating diode assembly	1
37	M7500D-05010-81	Screw, thread forming metric	3
38	344295	Decal, equipment ground	1
39	X-801-6	Washer, .469 ID x .922 in. OD	8
40	X-6024-15	Screw, hex head	8
41	M931-16090-60	Screw, hex cap (DDC S50G)	2
41	M931-16120-60	Screw, hex cap	2
42	336024	Vibromount (DDC S50G)	2
42	324392	Vibromount	2
43	X-25-112	Washer, plain (DDC S50G)	2
43	X-25-168	Washer, plain	2
44	M982-16-80	Nut, hex, elastic stop	2
45	X-400-265	Spacer	2
46	347268	Guard, generator fan	2
47	X-67-125	Screw, hex washer, thread-forming	4
48	257442	Clip, speed	4
49	X-129-59	Bolt, hex cap	8
50	290945	Washer, hardened, .531 ID x 1.06 in. OD	8
51	See chart on page 31	Alternator assembly (includes items 1-38, 52, 53)	1
52	See chart on page 31	Decal, terminal board	1
53	See chart on page 31	Decal, board reconnection	1

Group 201: Generator and Mounting, continued



Wound Field Alternators, 4UAW Alternators

Group 201: Generator and Mounting, continued

Wound Field Alternators, 4UAW Alternators

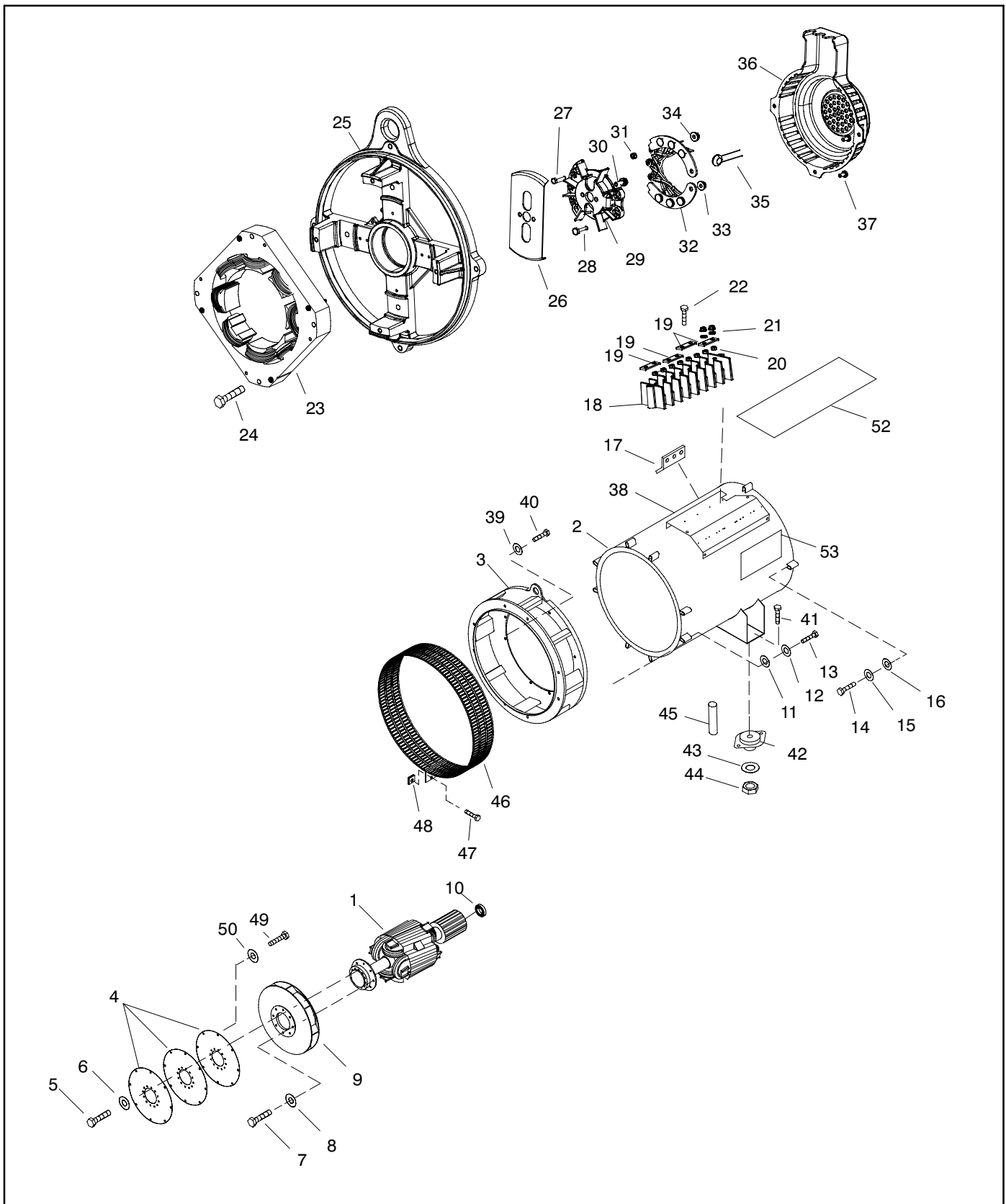
Alternator Part Number and Type

Use this table to identify items 1, 2, 19, 20, 21, 51, 52, and 53.

Module No.	Alternator Description	Item 51, Alternator assembly	Item 1, Rotor assembly	Item 2, Stator assembly	Items 19, 20, 21,
GM19673-MA62	4UA7W (DDC S50G engine)	GM33000-17	GM32424-2	GM32996-1	Item 19, Bus GM31970
GM19673-MA63	4UA7W	GM33000-17	GM32424-2	GM32996-1	Item 20, Nut M6923-10-80
GM19673-MA64	4UA7W, 600 V (DDC S50G engine)	GM33000-18	GM32424-2	GM32997-1	Item 21, Washer M125A-10-80
GM19673-MA65	4UA9W (DDC S50G engine)	GM33000-19	GM32424-4	GM32996-2	Item 19, Bus GM31970
GM19673-MA66	4UA9W	GM33000-19	GM32424-4	GM32996-2	Item 20, Nut M6923-10-80
GM19673-MA67	4UA9W, 600 V (DDC S50G engine)	GM33000-20	GM32424-4	GM32997-2	Item 21, Washer M125A-10-80
GM19673-MA68	4UA9W, 600 V	GM33000-20	GM32424-4	GM32997-2	Item 19, Bus GM31970
GM19673-MA69	4UA10W	GM33000-21	GM32424-6	GM32996-3	Item 20, Nut M6923-10-80
GM19673-MA70	4UA10W, 600 V	GM33000-22	GM32424-6	GM32997-3	Item 21, Washer M125A-10-80
GM19673-MA71	4UA13W	GM33000-23	GM32424-8	GM39830	Item 19, Bus GM31970
GM19673-MA72	4UA13W, 600 V	GM33000-24	GM32424-8	GM32997-4	Item 20, Nut M6923-10-80
					Item 21, Washer M125A-10-80
GM19673-MA127	4UA7W (DDC S50G engine)	GM39945-17	GM32424-2	GM32996-1	See Load Connection Kit for part no.
GM19673-MA128	4UA7W	GM39945-17	GM32424-2	GM32996-1	
GM19673-MA129	4UA7W, 600 V (DDC S50G engine)	GM39945-18	GM32424-2	GM32997-1	
GM19673-MA130	4UA9W (DDC S50G engine)	GM39945-19	GM32424-4	GM32996-2	See Load Connection Kit for part no.
GM19673-MA131	4UA9W	GM39945-19	GM32424-4	GM32996-2	
GM19673-MA132	4UA9W, 600 V (DDC S50G engine)	GM39945-20	GM32424-4	GM32997-2	
GM19673-MA133	4UA9W, 600 V	GM39945-20	GM32424-4	GM32997-2	See Load Connection Kit for part no.
GM19673-MA134	4UA10W	GM39945-21	GM32424-6	GM32996-3	
GM19673-MA135	4UA10W, 600 V	GM39945-22	GM32424-6	GM32997-3	
GM19673-MA136	4UA13W	GM39945-23	GM32424-8	GM39830	See Load Connection Kit for part no.
GM19673-MA137	4UA13W, 600 V	GM39945-24	GM32424-8	GM32997-4	

Module No.	Item 52, Decal	Item 53, Decal
GM19673-MA62	GM38474	GM38475
GM19673-MA63	GM38474	GM38475
GM19673-MA64	GM38474	GM38475
GM19673-MA65	GM38474	GM38475
GM19673-MA66	GM38474	GM38475
GM19673-MA67	GM38474	GM38475
GM19673-MA68	GM38474	GM38475
GM19673-MA69	GM38474	GM38475
GM19673-MA70	GM38474	GM38475
GM19673-MA71	GM38474	GM38475
GM19673-MA72	GM38474	GM38475
GM19673-MA127	GM39793	GM39792
GM19673-MA128	GM39793	GM39792
GM19673-MA129	GM39793	GM39792
GM19673-MA130	GM39793	GM39792
GM19673-MA131	GM39793	GM39792
GM19673-MA132	GM39793	GM39792
GM19673-MA133	GM39793	GM39792
GM19673-MA134	GM39793	GM39792
GM19673-MA135	GM39793	GM39792
GM19673-MA136	GM39793	GM39792
GM19673-MA137	GM39793	GM39792

Group 201: Generator and Mounting, continued



Wound Field Alternators, 4SW Alternators

Group 201: Generator and Mounting, continued

Wound Field Alternators, 4SW Alternators

Item	Part No.	Description	Qty.
1	See chart below	Rotor assembly	1
2	See chart below	Stator assembly	1
3	GM32010	Adapter, generator	1
4	257104	Disc, drive	3
5	M933-10035-82	Screw, hex cap	12
6	X-801-3	Washer, .406 ID x .812 in. OD	12
7	M933-10025-60	Screw, hex cap	4
8	X-25-93	Washer, .406 ID x .75 in. OD	4
9	257173	Fan, generator	1
10	X-758-6	Bearing, ball	1
11	—	Not used	
12	X-25-93	Washer, .406 ID x .75 in. OD	6
13	M931-10050-60	Screw, hex cap	1
13	M931-10080-60	Screw, hex cap	5
14	M933-10100-60	Screw, hex cap	4
15	X-25-93	Washer, .406 ID x .75 in. OD	4
16	—	Not used	
17	257978	Bus	1
18	GM31969	Block, terminal	1
19	See chart below	Bus	
20	See chart below	Nut, hex, 10 mm	
21	See chart below	Washer, plain	
22	M7500D-06020-81	Screw	2
23	GM32516-2	Exciter field	1
24	M931-08100-60	Screw, hex head	4
25	GM28964	Bracket, end	1
26	GM31967	Actuator, magnetic	1
27	M933-05020-60	Screw, hex cap	3
28	M933-06020-60	Screw, hex cap	2

Item	Part No.	Description	Qty.
29	GM31960	Hub, rotating diode assembly	1
30	M933-06016-60	Screw, hex cap	2
31	M934-05-50	Nut, hex, 5 mm	3
32	GM31963	Plates, diode assembly	1
33	M982-06-80	Nut, hex, elastic stop	2
34	M982-05-60	Nut, hex, elastic stop	3
35	228061	Varistor, 250 V	1
36	GM31968	Cover, rotating diode assembly	1
37	M7500D-05010-81	Screw, thread forming metric	3
38	344295	Decal, equipment ground	1
39	X-801-3	Washer, .406 ID x .812 in. OD	6
40	X-6024-15	Screw, hex cap (60 Hz)	6
40	X-6024-14	Screw, hex cap (50 Hz)	6
41	M931-16100-60	Screw, hex cap	2
42	336024	Vibromount	2
43	X-25-112	Washer, plain	2
44	M982-16-80	Nut, hex, elastic stop	2
45	—	Not used	
46	257193	Guard, generator fan	1
47	X-67-125	Screw, hex washer, thread-forming	2
48	257442	Clip, speed	2
49	X-129-59	Bolt, hex cap	8
50	290945	Washer, hardened, .531 ID x 1.06 in. OD	8
51	See chart below	Alternator assembly (includes items 1–38, 52, 53)	1
52	See chart below	Decal, terminal board	1
53	See chart below	Decal, board reconnection	1

Alternator Part Number and Type

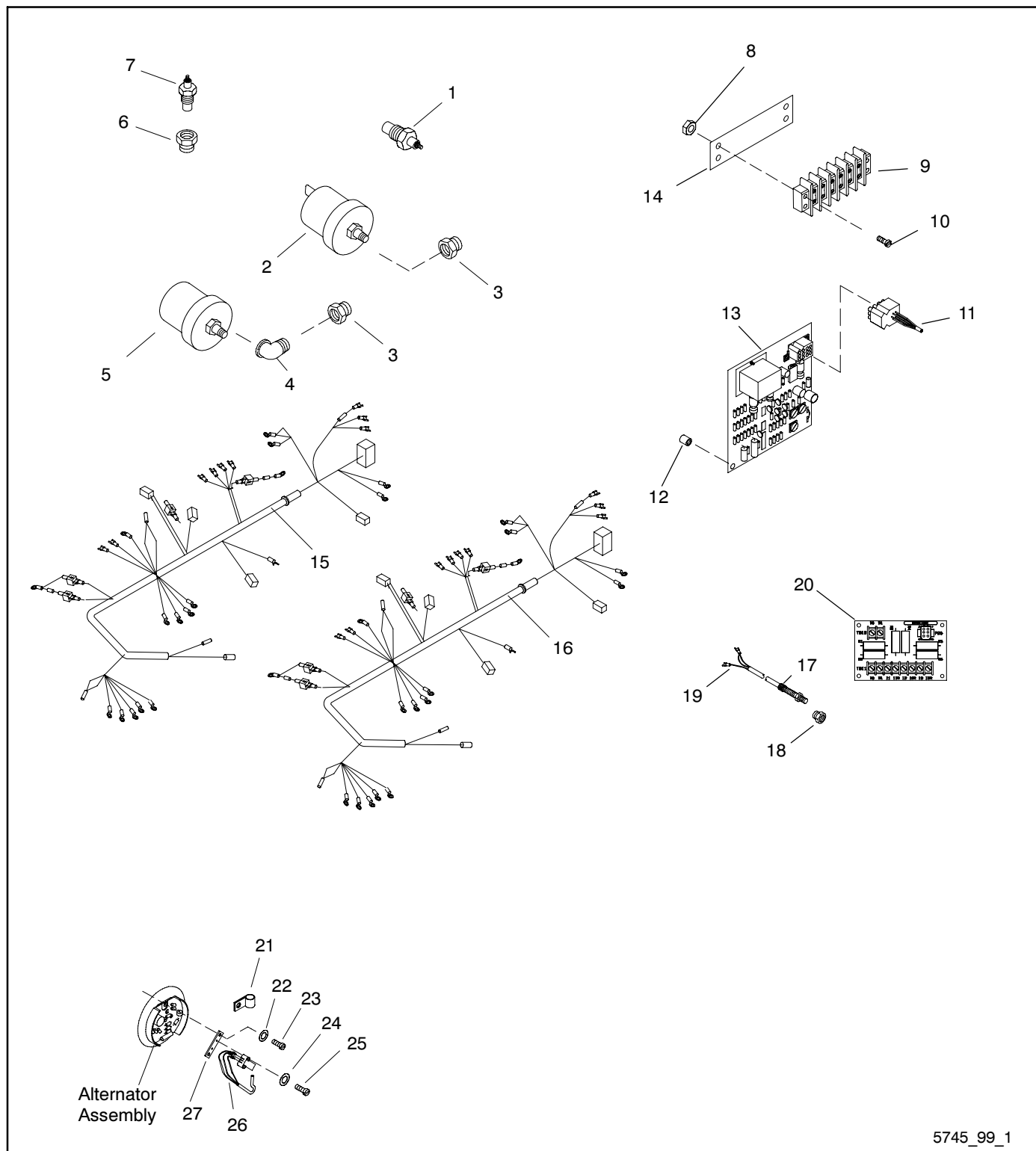
Use this table to identify items 1, 2, 19, 20, 21, 51, 52, and 53.

Module No.	Alternator Description	Item 51, Alternator assembly	Item 1, Rotor assembly	Item 2, Stator assembly	Items 19, 20, 21,
GM17672-MA85	4S11W	GM32995-18	GM32407-7	GM32991-3	Item 19, Bus GM31970
GM17672-MA86	4S11W	GM32995-18	GM32407-7	GM32991-3	Item 20, Nut M6923-10-80
GM17672-MA87	4S11W, 600 V	GM32995-20	GM32407-7	GM32993-3	Item 21, Washer M125A-10-80
GM17672-MA88	4S13W	GM32995-27	GM32407-10	GM32991-4	Item 19, Bus GM31970
GM17672-MA89	4S13W	GM32995-27	GM32407-10	GM32991-4	Item 20, Nut M6923-10-80
GM17672-MA90	4S13W, 600 V	GM32995-31	GM32407-10	GM32993-4	Item 21, Washer M125A-10-80
GM17672-MA130	4S11W	GM39944-18	GM32407-7	GM39940-3	See Load Connection Kit for part number
GM17672-MA131	4S11W	GM39944-18	GM32407-7	GM39940-3	
GM17672-MA132	4S11W, 600 V	GM39944-20	GM32407-7	GM39942-3	
GM17672-MA133	4S13W	GM39944-27	GM32407-10	GM39940-4	See Load Connection Kit for part number
GM17672-MA134	4S13W	GM39944-27	GM32407-10	GM39940-4	
GM17672-MA135	4S13W, 600 V	GM39944-31	GM32407-10	GM39942-4	

Module No.	Item 52, Decal	Item 53, Decal
GM19672-MA85	GM38474	GM38475
GM19672-MA86	GM38474	GM38475
GM19672-MA87	GM38474	GM38475
GM19672-MA88	GM38474	GM38475
GM19672-MA89	GM38474	GM38475
GM19672-MA90	GM38474	GM38475
GM17672-MA130	GM39793	GM39792
GM17672-MA131	GM39793	GM39792
GM17672-MA132	GM39793	GM39792
GM17672-MA133	GM39793	GM39792
GM17672-MA134	GM39793	GM39792
GM17672-MA135	GM39793	GM39792

Control and Harness

Permanent Magnet-Excited Alternators



5745_99_1

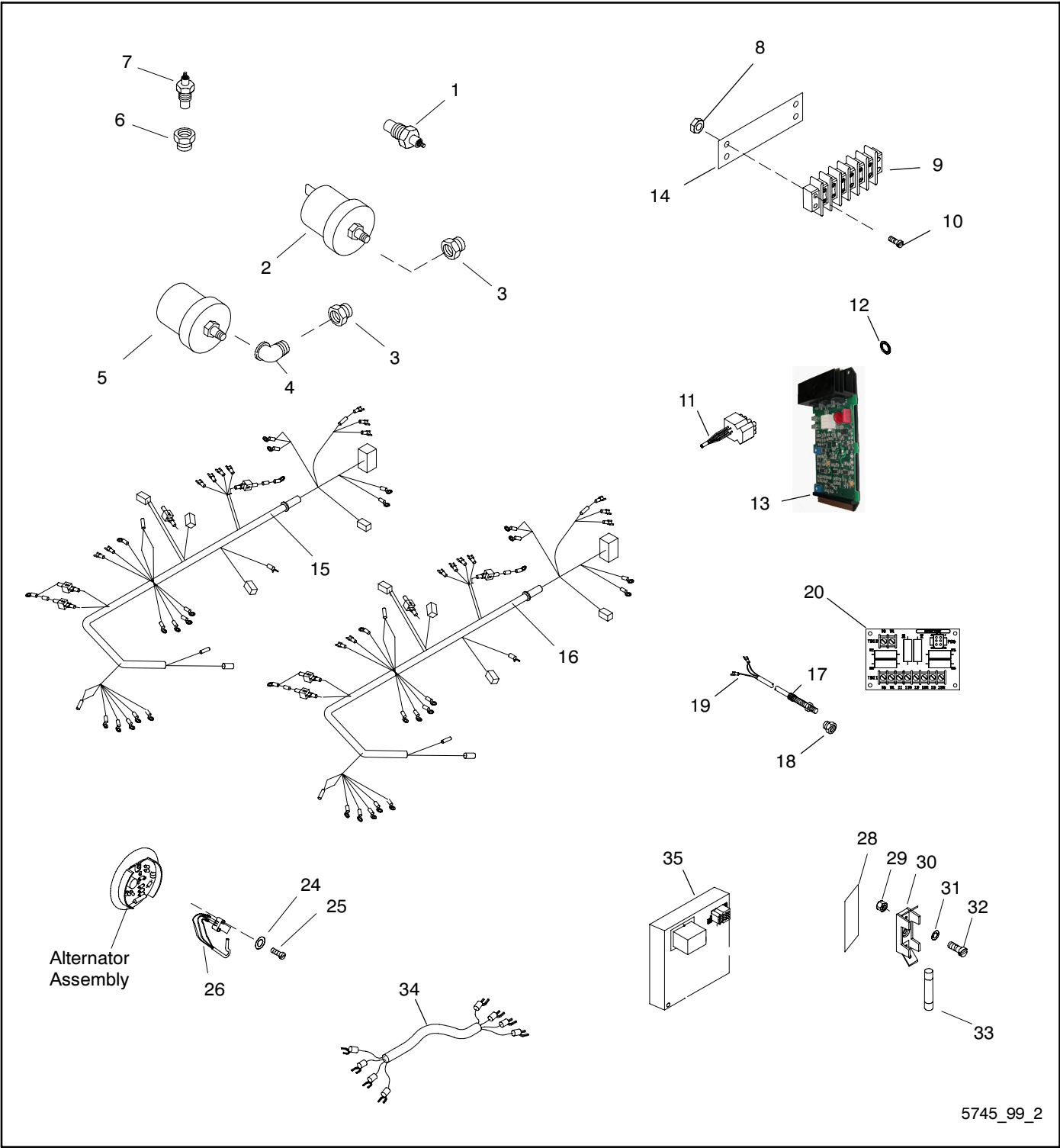
Control and Harness

Permanent Magnet-Excited Alternators

Item	Part Number	Description	Quantity									
			Module Number									
			GM17876-MA1	GM17876-MA2	GM19349-MA1	GM19349-MA2	GM18095-MA1	GM18095-MA2	GM19350-MA1	GM19350-MA2	GM19350-MA3	
1	241481	Switch, high temperature shutdown	1	1			1	1				
1	GM31045-1	Switch, water temperature			1	1			1	1	1	
2	328309	Switch assembly, pressure	1	1			1	1				
2	GM16788	Switch assembly, pressure			1	1			1	1	1	
3	X-202-27	Bushing, reducer	1	1	1	1	1	1	1	1	1	
4	267428	Fitting, 45 degree street elbow	1	1	1	1	1	1	1	1	1	
5	343473	Sender, oil pressure	1	1	1	1	1	1	1	1	1	
6	153659	Bushing, reducing, 3/4 x 1/2	1	1	1	1	1	1	1	1	1	
7	268298	Sender, water temperature	1	1			1	1				
8	M934-04-50	Nut, hex, 4mm	2	2	2	2	2	2	2	2	2	
9	295314	Block, terminal	1	1								
9	X-405-2	Block, terminal			1	1	1	1	1	1	1	
10	M7985A-04020-20	Screw, RHM, 8-32 x 3/4	2	2	2	2	2	2	2	2	2	
11	255481	Harness, wiring	1	1								
11	354118	Harness, wiring					1	1				
12	360459	Standoff, circuit board	5	5	5	5	5	5	5	5	5	
13	C-255670	Circuit board, voltage regulator	1	1								
13	A-354653	Circuit board, voltage regulator					1	1				
14	255080	Marker, strip	1	1								
14	254127	Marker, strip			1	1			1	1		
15	343030	Harness, engine					1					
15	343211	Harness, engine	1									
15	343110	Harness, engine		1				1				
15	GM17726	Harness, engine			1							
15	GM17727	Harness, engine				1			1			
15	GM17728	Harness, engine								1	1	
16	GM14222	Harness, power	1		1							
16	GM14224	Harness, power		1		1		1		1	1	
16	GM14223	Harness, power					1		1			
17	226529	Sensor, magnetic			1	1			1	1	1	
18	GM19354	Bushing, adaptor			1	1			1	1	1	
19	324617	Wiring harness, pickup			1	1			1	1	1	
20	GM13980	PCB assembly, CT burden resistor										
20	282829	Vibromount										1
21	X-672-25	Clamp, insulated	1	1			1	1				
22	X-22-9	Washer, lock, .20 ID x .373 in. OD	2	2			2	2				
23	X-117-5	Screw, hex head machine	2	2			2	2				
24	X-22-24	Washer, lock, .119 ID x .263 in. OD	2	2			2	2				
25	X-49-35	Screw, pan head, 4-40 x 7/8	2	2			2	2				
26	241623	Sensor, speed	1	1			1	1				
27	257070	Bracket, sensor mounting	1	1			1	1				

Control and Harness, continued

Wound Field Alternators



5745_99_2

Control and Harness, continued

Wound Field Alternators

Item	Part Number	Description	Quantity									
			Module Number									
			GM17876-MA3	GM17876-MA4	GM19349-MA3	GM19349-MA4	GM18095-MA3	GM18095-MA4	GM19350-MA4	GM19350-MA5	GM19350-MA6	
1	241481	Switch, high temperature shutdown	1	1			1	1				
1	GM31045-1	Switch, water temperature			1	1			1	1	1	
2	328309	Switch assembly, pressure	1	1			1	1				
2	GM16788	Switch assembly, pressure			1	1			1	1	1	
3	X-202-27	Bushing, reducer	2	2	1	1	2	2	1	1	1	
4	267428	Fitting, 45 degree street elbow	1	1			1	1				
5	343473	Sender, oil pressure	1	1			1	1				
6	153659	Bushing, reducing, 3/4 x 1/2	1	1			1	1				
7	268298	Sender, water temperature	1	1			1	1				
8	M934-04-50	Nut, hex, 4mm	2	2	2	2	2	2	2	2	2	
9	295314	Block, terminal	1	1			1	1				
9	X-405-2	Block, terminal			1	1						
10	M7985A-04020-20	Screw, RHM, 8-32 x 3/4	2	2	2	2	2	2	2	2	2	
11	GM39873	Harness, regulator	1	1			1	1				
12	#	Hardware, M5	4	4			4	4				
13	GM40179	Regulator, wound field exciter	1	1			1	1				
14	255080	Marker, strip	1	1			1	1				
14	254127	Marker, strip			1	1			1	1		
15	343030	Harness, engine					1					
15	343211	Harness, engine	1									
15	343110	Harness, engine		1				1				
15	GM35187	Harness, engine			1							
15	GM35188	Harness, engine				1				1	1	
15	GM35189	Harness, engine							1			
16	GM14222	Harness, power	1		1							
16	GM14224	Harness, power		1		1		1		1	1	
16	GM14223	Harness, power					1		1			
17	226529	Sensor, magnetic			1	1			1	1	1	
18	GM19354	Bushing, adapter			1	1			1	1	1	
19	324617	Wiring harness, pickup			1	1			1	1	1	
20	GM13980	PCB assembly, CT burden resistor										1
20	282829	Vibromount										1
24	X-22-24	Washer, lock, .119 ID x .263 in. OD	2	2			2	2				
25	M7985A-03020-20	Screw, pan head machine	2	2			2	2				
26	241623	Sensor, speed	1	1			1	1				
28	GM39798	Strip, marker					1	1				
29	M934-03-50	Nut, hex 3 mm	1	1			1	1				
30	336634	Fuse holder	1	1			1	1				
31	X-22-6	Washer, lock, .146 ID x .285 in. OD	1	1			1	1				
32	M7985A-03010-20	Screw, pan head	1	1			1	1				
33	358337	Fuse, 10 A, 250 V	1	1			1	1				
34	GM35357	Harness, wiring (AC harness)	1	1	1	1	1	1	1	1	1	
35	GM11718	PCB assy., excitation interface			1	1			1	1	1	

Common hardware. Procure locally.

Group 701: Literature

Wound Field Alternators

Item	Part Number	Description	Variation									
			Quantity									
			2	5	6	24	26	28	30	32	34	36
1	MP-5353	Service Manual, Generator	1	1	1	1	1	1	1	1	1	1
2	MP-5700	Standby Installation Manual	1	1	1	1	1	1	1	1	1	1
3	MP-5720	Wiring Diagram Manual, 135-275GS	1	1	1	1	1	1	1	1	1	1
4	MP-5745	Parts Catalog, 135-275GS	1	1	1	1	1	1	1	1	1	1
4	MP-5708	Parts Catalog, 20-275GS Accessories	1	1	1	1	1	1	1	1	1	1
4	MP-6009	Parts Catalog, Controllers	1	1	1	1	1	1	1	1	1	1
5	MP-5750	Operation Manual, 20-2000 kW	1	1	1	1	1	1	1	1	1	1
5	MP-5750-F	Operation Manual, 20-2000 kW, French	1	1	1	1	1	1	1	1	1	1
5	MP-5750-CS	Operation Manual, 20-2000 kW, Chinese Simplified	1	1	1	1	1	1	1	1	1	1
5	MP-5750-CT	Operation Manual, 20-2000 kW, Chinese Traditional	1	1	1	1	1	1	1	1	1	1
5	MP-5750-S	Operation Manual, 20-2000 kW, Spanish	1	1	1	1	1	1	1	1	1	1
6	MP-5829	Operation Manual, Digital Controller	1	1	1	1	1	1	1	1	1	1
6	MP-6083	Operation Manual, Digital 550 Controller	1	1	1	1	1	1	1	1	1	1
6	TP-5830	Operation Manual, 135-275 DDC Series 50/60 Engine	1	1	1	1	1	1	1	1	1	1
7	TP-5831	Service Manual, DDC Series 50 Engine	1			1	1					
7	TP-5843	Service Manual, DDC Series 60 Engine		1	1			1	1	1	1	1
8	TP-5832	Parts Catalog, DDC Series 50 Engine	1			1	1					
8	TP-5844	Parts Catalog, DDC Series 60 Engine		1	1			1	1	1	1	1
9	TP-5852	Installation Manual, DDC 50/60 Series	1	1	1	1	1	1	1	1	1	1

Wound Field Alternators

Item	Part Number	Description	Variation									
			Quantity									
			57	58	61	62	65	66	68	70	72	74
1	MP-5353	Service Manual, 20-300 kW, Industrial	1	1	1	1	1	1	1	1	1	1
2	MP-5700	Industrial Installation Manual	1	1	1	1	1	1	1	1	1	1
3	MP-5720	Wiring Diagram Manual, 135-275GS/GSB	1	1	1	1	1	1	1	1	1	1
4	MP-5745	Parts Catalog, 135-275GS/GSB	1	1	1	1	1	1	1	1	1	1
4	MP-5708	Parts Catalog, 20-275GS Accessories	1	1	1	1	1	1	1	1	1	1
4	MP-6009	Parts Catalog, Controllers	1	1	1	1	1	1	1	1	1	1
5	MP-6161	Operation Manual, Microprocessor Plus w/Comm.	1	1	1	1	1	1	1	1	1	1
5	MP-6140	Operation Manual, Controller Setup & Appl., 550 Controller	1	1	1	1	1	1	1	1	1	1
5	MP-6200	Operation Manual, Digital 550 Controller, Ver. 2.10+	1	1	1	1	1	1	1	1	1	1
6	TP-5830	Operation Manual, 135-275 DDC Series 50/60 Engine	1	1	1	1	1	1	1	1	1	1
7	TP-5831	Service Manual, DDC Series 50 Engine		1	1		1					
7	TP-5843	Service Manual, DDC Series 60 Engine	1			1		1	1	1	1	1
8	TP-5832	Parts Catalog, DDC Series 50 Engine		1	1		1					
8	TP-5844	Parts Catalog, DDC Series 60 Engine	1	1	1	1	1	1	1	1	1	1
9	TP-5852	Installation Manual, DDC 50/60 Series	1	1	1	1	1	1	1	1	1	1

Kit List

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

	135 kW	150 kW	180 kW	200 kW	230 kW	250 kW	275 kW
Controllers							
See Parts Catalog MP-6009 for parts lists.							
Cooling Systems							
Heater, Block							
100-120/190-240 V, 50 Hz	343264	343264	343264	343264	343264	343264	343264
100-120/190-240 V, 60 Hz	343098	343098	343098	343264	343264	343264	343264
380/480 V, 50 Hz	343265	343265	343265	343265	343265	343265	343265
380/480 V, 60 Hz	343099	343099	343099	343265	343265	343265	343265
Duct Flange, Radiator	343158	343158	343158	343265	343265	343265	343265
Paint and Miscellaneous Parts							
Paint	All models use 221331 spray can, 221332 gallon, GM19491 touch-up						

Cooling System Kits

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

Heater, Block, 110-120/190-240 V		343098
1	Pipe	A-107
4	Nut, elastic stop	X-101-8
1	Tee, pipe, 1/2	X-203-13
1	Nipple, pipe, 1/2 x 1 1	X-209-5
1	Elbow, pipe, 3/4	X-215-2
4	Clamp, hose, 1.25 in.	X-426-12
1	Connector, hose	X-582-7
1	Connector, hose	X-582-8
1	Strap, ground	X-6046-1
1	Hose, .75 x 52 in.	X-691-23
1	Hose	X-691-37
1	Strap, ground	223033
4	Bumper	259632
1	Bracket, support	274431
1	Tag, hang	279047
1	Tag, instruction	279280
1	Heater, block (includes item marked *)	279814
1	*Element, replacement	GM19501
4	Gasket	297001
1	Box, block heater control	354315
1	Cover, block heater control	354317
1	Gasket, control box	354318
1	Decal, warning	354325
1	Label, warning diagram	354327
1	Plug, freeze	324094
1	Bracket, block heater	343100
1	Thermostat, block heater	343222

Heater, Block 380/480 V		343099
1	Pipe	A-107
4	Nut, elastic stop	X-101-8
1	Tee, pipe, 1/2	X-203-13
1	Nipple, pipe, 1/2 x 1 1	X-209-5
1	Elbow, pipe, 3/4	X-215-2
4	Clamp, hose, 1.25 in.	X-426-12
1	Connector, hose	X-582-7
1	Connector, hose	X-582-8
1	Strap, ground	X-6046-1
1	Hose, .75 x 52 in.	X-691-23
1	Hose	X-691-37
1	Strap, ground	223033
4	Bumper	259632
1	Bracket, support	274431
1	Tag, hang	279047
1	Tag, instruction	279280
1	Heater, block (includes item marked *)	279815
1	*Element, replacement	GM19502
4	Gasket	297001
1	Box, block heater control	354316
1	Cover, block heater control	354317
1	Gasket, control box	354318
1	Decal, warning	354325
1	Label, warning diagram	354328
1	Plug, freeze	324094
1	Bracket, block heater	343100
1	Thermostat, block heater	343222

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

Heater, Block, 110-120/190-240 V		343264
1	Pipe	A-107
4	Nut, elastic stop	X-101-8
1	Tee, pipe, 1/2	X-203-13
1	Nipple, pipe, 1/2 x 1 1	X-209-5
1	Elbow, pipe, 3/4	X-215-2
4	Clamp, hose, 1.25 in.	X-426-12
1	Connector, hose	X-582-7
1	Connector, hose	X-582-8
1	Strap, ground	X-6046-1
1	Hose, .75 x 9 ft.	X-691-19
1	Hose	X-691-37
1	Strap, ground	223033
4	Bumper	259632
1	Bracket, support	274431
1	Tag, hang	279047
1	Tag, instruction	279280
1	Heater, block (includes item marked *)	279814
1	*Element, replacement	GM19501
4	Gasket	297001
1	Box, block heater control	354315
1	Cover, block heater control	354317
1	Gasket, control box	354318
1	Decal, warning	354325
1	Label, warning diagram	354327
1	Plug, freeze	324094
1	Bracket, block heater	343100
1	Thermostat, block heater	343222

Heater, Block, 380/480 V		343265
1	Pipe	A-107
4	Nut, elastic stop	X-101-8
1	Tee, pipe, 1/2	X-203-13
1	Nipple, pipe, 1/2 x 1 1	X-209-5
1	Elbow, pipe, 3/4	X-215-2
4	Clamp, hose, 1.25 in.	X-426-12
1	Connector, hose	X-582-7
1	Connector, hose	X-582-8
1	Strap, ground	X-6046-1
1	Hose, .75 x 9 ft.	X-691-19
1	Hose	X-691-37
1	Strap, ground	223033
4	Bumper	259632
1	Bracket, support	274431
1	Tag, hang	279047
1	Tag, instruction	279280
1	Heater, block (includes item marked *)	279815
1	*Element, replacement	GM19502
4	Gasket	297001
1	Box, block heater control	354316
1	Cover, block heater control	354317
1	Gasket, control box	354318
1	Decal, warning	354325
1	Label, warning diagram	354328
1	Plug, freeze	324094
1	Bracket, block heater	343100
1	Thermostat, block heater	343222

Radiator Duct Flange		343158
2	Frame, air duct	343156
2	Frame, air duct	343157

Radiator Duct Flange		343264
2	Frame, air duct, top/bottom	343271
2	Frame, air duct, sides	343272

Appendix A Abbreviations

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

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

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

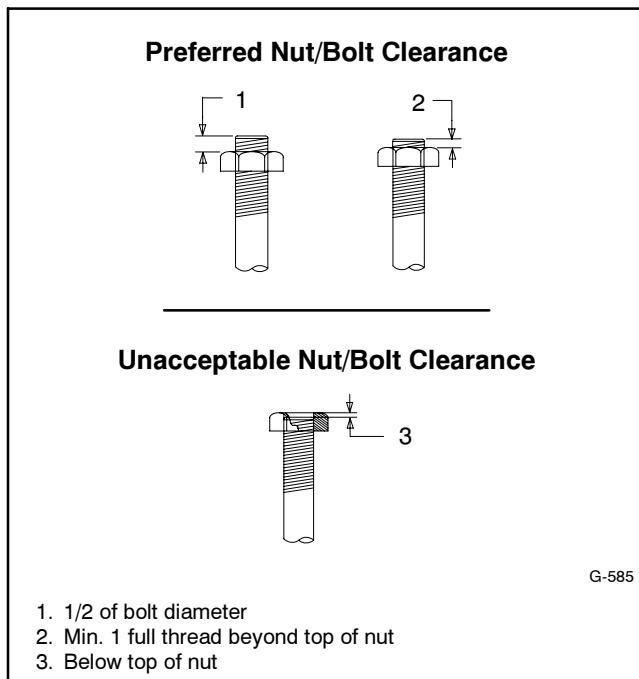


Figure 1 Acceptable Bolt Lengths

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.

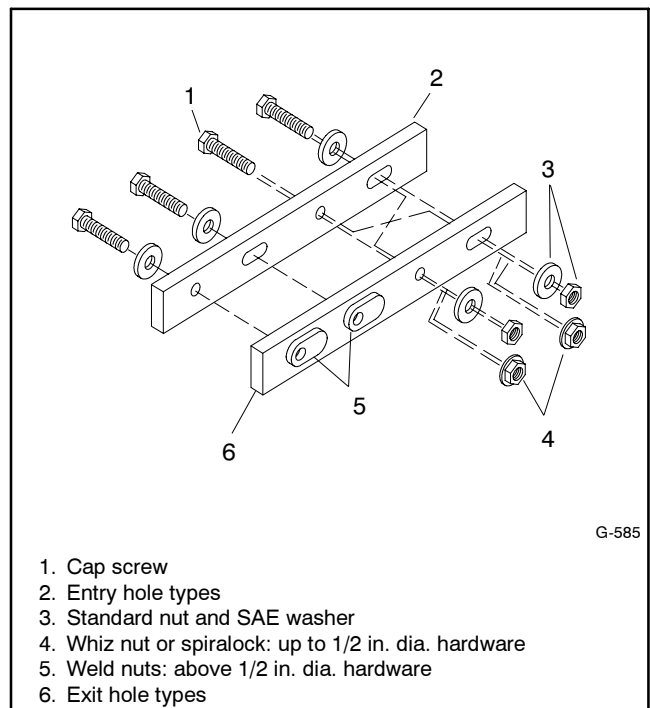


Figure 2 Acceptable Hardware Combinations

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. Do not use these values when the torque values are specified on the assembly drawing.
2. These values are based on new plates threads. Increase values by 15% if non-plated threads are used.
3. Hardware threaded into aluminum must have two diameters of thread engagement or may require 30% or more reduction in the torque.
4. Torques are calculated as equivalent stress loading to American hardware and approximately a preload of 90% of yield strength and 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	

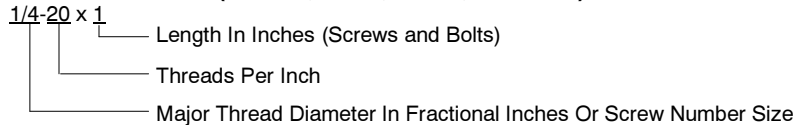
Hardness Grades	
American Standard	
Grade 2	
Grade 5	
Grade 8	
Grade 8/9 (Hex Socket Head)	
Metric	
Number stamped on hardware; 5.8 shown	

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

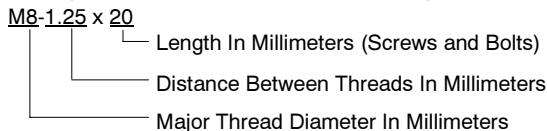
Phillips® screw is a registered trademark of Phillips Screw Company.

Sample Dimensions

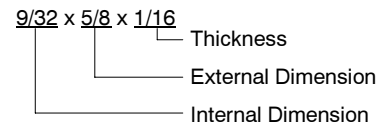
American Standard (Screws, Bolts, Studs, and Nuts)



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		
Hex Head Bolts (Grade 5)		Hex Head Bolts, cont.		Hex Nuts				
X-465-17	1/4-20 x .38	X-6238-14	3/8-24 x .75	X-6009-1	1-8	Standard		
X-465-6	1/4-20 x .50	X-6238-16	3/8-24 x 1.25					
X-465-2	1/4-20 x .62	X-6238-21	3/8-24 x 4.00					
X-465-16	1/4-20 x .75	X-6238-22	3/8-24 x 4.50					
X-465-18	1/4-20 x .88				X-6210-3	6-32	Whiz	
X-465-7	1/4-20 x 1.00	X-6024-5	7/16-14 x .75		X-6210-4	8-32	Whiz	
X-465-8	1/4-20 x 1.25	X-6024-2	7/16-14 x 1.00		X-6210-5	10-24	Whiz	
X-465-9	1/4-20 x 1.50	X-6024-8	7/16-14 x 1.25		X-6210-1	10-32	Whiz	
X-465-10	1/4-20 x 1.75	X-6024-3	7/16-14 x 1.50					
X-465-11	1/4-20 x 2.00	X-6024-4	7/16-14 x 2.00		X-6210-2	1/4-20	Spiralock	
X-465-12	1/4-20 x 2.25	X-6024-11	7/16-14 x 2.75		X-6210-6	1/4-28	Spiralock	
X-465-14	1/4-20 x 2.75	X-6024-12	7/16-14 x 6.50		X-6210-7	5/16-18	Spiralock	
X-465-21	1/4-20 x 5.00				X-6210-8	5/16-24	Spiralock	
X-465-25	1/4-28 x .38	X-129-15	1/2-13 x .75		X-6210-9	3/8-16	Spiralock	
X-465-20	1/4-28 x 1.00	X-129-17	1/2-13 x 1.00	X-6210-10	3/8-24	Spiralock		
		X-129-18	1/2-13 x 1.25	X-6210-11	7/16-14	Spiralock		
		X-129-19	1/2-13 x 1.50	X-6210-12	1/2-13	Spiralock		
X-125-33	5/16-18 x .50	X-129-20	1/2-13 x 1.75	X-6210-15	7/16-20	Spiralock		
X-125-23	5/16-18 x .62	X-129-21	1/2-13 x 2.00	X-6210-14	1/2-20	Spiralock		
X-125-3	5/16-18 x .75	X-129-22	1/2-13 x 2.25					
X-125-31	5/16-18 x .88	X-129-23	1/2-13 x 2.50	X-85-3	5/8-11	Standard		
X-125-5	5/16-18 x 1.00	X-129-24	1/2-13 x 2.75	X-88-12	3/4-10	Standard		
X-125-24	5/16-18 x 1.25	X-129-25	1/2-13 x 3.00	X-89-2	1/2-20	Standard		
X-125-34	5/16-18 x 1.50	X-129-27	1/2-13 x 3.50					
X-125-25	5/16-18 x 1.75	X-129-29	1/2-13 x 4.00					
X-125-26	5/16-18 x 2.00	X-129-30	1/2-13 x 4.50					
230578	5/16-18 x 2.25	X-463-9	1/2-13 x 5.50					
X-125-29	5/16-18 x 2.50	X-129-44	1/2-13 x 6.00					
X-125-27	5/16-18 x 2.75							
X-125-28	5/16-18 x 3.00	X-129-51	1/2-20 x .75					
X-125-22	5/16-18 x 4.50	X-129-45	1/2-20 x 1.25	X-25-46	.125	.250	.022	#4
X-125-32	5/16-18 x 5.00	X-129-52	1/2-20 x 1.50	X-25-9	.156	.375	.049	#6
X-125-35	5/16-18 x 5.50			X-25-48	.188	.438	.049	#8
X-125-36	5/16-18 x 6.00	X-6021-3	5/8-11 x 1.00	X-25-36	.219	.500	.049	#10
X-125-40	5/16-18 x 6.50	X-6021-4	5/8-11 x 1.25	X-25-40	.281	.625	.065	1/4
		X-6021-2	5/8-11 x 1.50	X-25-85	.344	.687	.065	5/16
X-125-43	5/16-24 x 1.75	X-6021-1	5/8-11 x 1.75	X-25-37	.406	.812	.065	3/8
X-125-44	5/16-24 x 2.50	273049	5/8-11 x 2.00	X-25-34	.469	.922	.065	7/16
X-125-30	5/16-24 x .75	X-6021-5	5/8-11 x 2.25	X-25-26	.531	1.062	.095	1/2
X-125-39	5/16-24 x 2.00	X-6021-6	5/8-11 x 2.50	X-25-15	.656	1.312	.095	5/8
X-125-38	5/16-24 x 2.75	X-6021-7	5/8-11 x 2.75	X-25-29	.812	1.469	.134	3/4
		X-6021-12	5/8-11 x 3.75	X-25-127	1.062	2.000	.134	1
X-6238-2	3/8-16 x .62	X-6021-11	5/8-11 x 4.50					
X-6238-10	3/8-16 x .75	X-6021-10	5/8-11 x 6.00					
X-6238-3	3/8-16 x .88							
X-6238-11	3/8-16 x 1.00	X-6021-9	5/8-18 x 2.50					
X-6238-4	3/8-16 x 1.25							
X-6238-5	3/8-16 x 1.50	X-6239-1	3/4-10 x 1.00					
X-6238-1	3/8-16 x 1.75	X-6239-8	3/4-10 x 1.25					
X-6238-6	3/8-16 x 2.00	X-6239-2	3/4-10 x 1.50					
X-6238-17	3/8-16 x 2.25	X-6239-3	3/4-10 x 2.00					
X-6238-7	3/8-16 x 2.50	X-6239-4	3/4-10 x 2.50					
X-6238-8	3/8-16 x 2.75	X-6239-5	3/4-10 x 3.00					
X-6238-9	3/8-16 x 3.00	X-6239-6	3/4-10 x 3.50					
X-6238-19	3/8-16 x 3.25							
X-6238-12	3/8-16 x 3.50	X-792-1	1-8 x 2.25					
X-6238-20	3/8-16 x 3.75	X-792-5	1-8 x 3.00					
X-6238-13	3/8-16 x 4.50	X-792-8	1-8 x 5.00					
X-6238-18	3/8-16 x 5.50							
X-6238-25	3/8-16 x 6.50							

Metric

Hex head bolts are hardness grade 8.8 unless noted.

Part No. Dimensions Hex Head Bolts (Partial Thread)

M931-05055-60	M5-0.80 x 55
M931-06040-60	M6-1.00 x 40
M931-06055-60	M6-1.00 x 55
M931-06060-60	M6-1.00 x 60
M931-06060-SS	M6-1.00 x 60
M931-06070-60	M6-1.00 x 70
M931-06070-SS	M6-1.00 x 70
M931-06075-60	M6-1.00 x 75
M931-06090-60	M6-1.00 x 90
M931-06145-60	M6-1.00 x 145
M931-06150-60	M6-1.00 x 150
M931-08035-60	M8-1.25 x 35
M931-08040-60	M8-1.25 x 40
M931-08045-60	M8-1.25 x 45
M931-08050-60	M8-1.25 x 50
M931-08055-60	M8-1.25 x 55
M931-08055-82	M8-1.25 x 55*
M931-08060-60	M8-1.25 x 60
M931-08070-60	M8-1.25 x 70
M931-08070-82	M8-1.25 x 70*
M931-08075-60	M8-1.25 x 75
M931-08080-60	M8-1.25 x 80
M931-08090-60	M8-1.25 x 90
M931-08095-60	M8-1.25 x 95
M931-08100-60	M8-1.25 x 100
M931-08110-60	M8-1.25 x 110
M931-08120-60	M8-1.25 x 120
M931-08130-60	M8-1.25 x 130
M931-08140-60	M8-1.25 x 140
M931-08150-60	M8-1.25 x 150
M931-08200-60	M8-1.25 x 200
M931-10040-82	M10-1.25 x 40*
M931-10040-60	M10-1.50 x 40
M931-10045-60	M10-1.50 x 45
M931-10050-60	M10-1.50 x 50
M931-10050-82	M10-1.25 x 50*
M931-10055-60	M10-1.50 x 55
M931-10060-60	M10-1.50 x 60
M931-10065-60	M10-1.50 x 65
M931-10070-60	M10-1.50 x 70
M931-10080-60	M10-1.50 x 80
M931-10080-82	M10-1.25 x 80*
M931-10090-60	M10-1.50 x 90
M931-10090-82	M10-1.50 x 90*
M931-10100-60	M10-1.50 x 100
M931-10110-60	M10-1.50 x 110
M931-10120-60	M10-1.50 x 120
M931-10130-60	M10-1.50 x 130
M931-10140-60	M10-1.50 x 140
M931-10180-60	M10-1.50 x 180
M931-10235-60	M10-1.50 x 235
M931-10260-60	M10-1.50 x 260
M960-10330-60	M10-1.25 x 330
M931-12045-60	M12-1.75 x 45
M960-12050-60	M12-1.25 x 50
M960-12050-82	M12-1.25 x 50*
M931-12050-60	M12-1.75 x 50
M931-12050-82	M12-1.75 x 50*
M931-12055-60	M12-1.75 x 55
M931-12060-60	M12-1.75 x 60
M931-12060-82	M12-1.75 x 60*
M931-12065-60	M12-1.75 x 65
M931-12075-60	M12-1.75 x 75
M931-12080-60	M12-1.75 x 80
M931-12090-60	M12-1.75 x 90
M931-12100-60	M12-1.75 x 100
M931-12110-60	M12-1.75 x 110

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

M960-16090-60	M16-1.50 x 90
M931-16090-60	M16-2.00 x 90
M931-16100-60	M16-2.00 x 100
M931-16100-82	M16-2.00 x 100*
M931-16120-60	M16-2.00 x 120
M931-16150-60	M16-2.00 x 150
M931-20065-60	M20-2.50 x 65
M931-20090-60	M20-2.50 x 90
M931-20100-60	M20-2.50 x 100
M931-20120-60	M20-2.50 x 120
M931-20140-60	M20-2.50 x 140
M931-20160-60	M20-2.50 x 160
M931-22090-60	M22-2.50 x 90
M931-22120-60	M22-2.50 x 120
M931-22160-60	M22-2.50 x 160
M931-24090-60	M24-3.00 x 90
M931-24120-60	M24-3.00 x 120
M931-24160-60	M24-3.00 x 160
M931-24200-60	M24-3.00 x 200

Hex Head Bolts (Full Thread)

M933-04006-60	M4-0.70 x 6
M933-05030-60	M5-0.80 x 30
M933-05035-60	M5-0.80 x 35
M933-05050-60	M5-0.80 x 50
M933-06010-60	M6-1.00 x 10
M933-06012-60	M6-1.00 x 12
M933-06014-60	M6-1.00 x 14
M933-06016-60	M6-1.00 x 16
M933-06020-60	M6-1.00 x 20
M933-06025-60	M6-1.00 x 25
M933-06030-60	M6-1.00 x 30
M933-06040-60	M6-1.00 x 40
M933-06050-60	M6-1.00 x 50
M933-07025-60	M7-1.00 x 25
M933-08010-60	M8-1.25 x 10
M933-08012-60	M8-1.25 x 12
M933-08016-60	M8-1.25 x 16
M933-08020-60	M8-1.25 x 20
M933-08025-60	M8-1.25 x 25
M933-08030-60	M8-1.25 x 30
M933-08030-82	M8-1.25 x 30*
M933-10012-60	M10-1.50 x 12
M961-10020-60	M10-1.25 x 20
M933-10020-60	M10-1.50 x 20
M933-10025-60	M10-1.50 x 25
M961-10025-60	M10-1.25 x 25
M933-10025-82	M10-1.50 x 25*
M961-10030-60	M10-1.25 x 30
M933-10030-60	M10-1.50 x 30
M933-10030-82	M10-1.50 x 30*
M961-10035-60	M10-1.25 x 35
M933-10035-60	M10-1.50 x 35
M933-10035-82	M10-1.50 x 35*
M961-10040-60	M10-1.25 x 40

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

M933-12016-60	M12-1.75 x 16
M933-12020-60	M12-1.75 x 20
M961-12020-60F	M12-1.50 x 20
M933-12025-60	M12-1.75 x 25
M933-12025-82	M12-1.75 x 25*
M961-12030-60	M12-1.25 x 30
M933-12030-82	M12-1.75 x 30*
M961-12030-82F	M12-1.50 x 30*
M933-12030-60	M12-1.75 x 30
M933-12035-60	M12-1.75 x 35
M961-12040-82	M12-1.25 x 40*
M933-12040-60	M12-1.75 x 40
M933-12040-82	M12-1.75 x 40*
M961-14025-60	M14-1.50 x 25
M933-14025-60	M14-2.00 x 25
M961-14050-82	M14-1.50 x 50*
M961-16025-60	M16-1.50 x 25
M933-16025-60	M16-2.00 x 25
M961-16030-82	M16-1.50 x 30*
M933-16030-82	M16-2.00 x 30*
M933-16035-60	M16-2.00 x 35
M961-16040-60	M16-1.50 x 40
M933-16040-60	M16-2.00 x 40
M961-16045-82	M16-1.50 x 45*
M933-16045-82	M16-2.00 x 45*
M933-16050-60	M16-2.00 x 50
M933-16050-82	M16-2.00 x 50*
M933-16060-60	M16-2.00 x 60
M933-16070-60	M16-2.00 x 70
M933-18035-60	M18-2.50 x 35
M933-18050-60	M18-2.50 x 50
M933-18060-60	M18-2.50 x 60
M933-20050-60	M20-2.50 x 50
M933-20055-60	M20-2.50 x 55
M933-24060-60	M24-3.00 x 60
M933-24065-60	M24-3.00 x 65
M933-24070-60	M24-3.00 x 70

Pan Head Machine Screws

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

Flat Head Machine Screws

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

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

Metric, continued

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

Washers

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

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

Index

This list provides part numbers and page numbers of modules listed in this manual. Italicized numbers refer to the page numbers on which modules appear.

343059, 11	GM17672-MA132, 33	GM19350-MA3, 35
343060, 11	GM17672-MA133, 33	GM19350-MA4, 37
343065, 13	GM17672-MA134, 33	GM19350-MA5, 37
343070, 13	GM17672-MA135, 33	GM19350-MA6, 37
343095, 21	GM17672-MA40, 23, 27	GM19672-MA85, 33
343096, 21	GM17672-MA41, 23, 27	GM19672-MA86, 33
343112, 23, 27	GM17672-MA42, 23, 27	GM19672-MA87, 33
343113, 23, 27	GM17672-MA43, 23, 27	GM19672-MA88, 33
343114, 23, 27	GM17672-MA44, 23, 27	GM19672-MA89, 33
343115, 23, 27	GM17672-MA45, 23, 27	GM19672-MA90, 33
343116, 23, 27	GM17672-MA85, 33	GM19673-MA127, 31
343117, 23, 27	GM17672-MA86, 33	GM19673-MA128, 31
343118, 23, 27	GM17672-MA87, 33	GM19673-MA129, 31
343119, 23, 27	GM17672-MA88, 33	GM19673-MA130, 31
343153, 11	GM17672-MA89, 33	GM19673-MA131, 31
343154, 11	GM17672-MA90, 33	GM19673-MA132, 31
343161, 13	GM17876-MA1, 35	GM19673-MA133, 31
343244, 11	GM17876-MA2, 35	GM19673-MA134, 31
343247, 11	GM17876-MA3, 37	GM19673-MA135, 31
343251, 23, 27	GM17876-MA4, 37	GM19673-MA136, 31
343252, 23, 27	GM18094-MA1, 23, 27	GM19673-MA137, 31
343253, 23, 27	GM18094-MA2, 23, 27	GM19673-MA21, 23, 27
343254, 23, 27	GM18094-MA3, 23, 27	GM19673-MA22, 23, 27
343255, 23, 27	GM18094-MA4, 23, 27	GM19673-MA23, 23, 27
343256, 23, 27	GM18094-MA5, 23, 27	GM19673-MA24, 23, 27
343305, 23, 27	GM18094-MA6, 23, 27	GM19673-MA25, 23, 27
343306, 23, 27	GM18095-MA1, 35	GM19673-MA26, 23, 27
343307, 23, 27	GM18095-MA2, 35	GM19673-MA27, 23, 27
343308, 23, 27	GM18095-MA3, 37	GM19673-MA28, 23, 27
343309, 23, 27	GM18095-MA4, 37	GM19673-MA29, 23, 27
343310, 23, 27	GM18398-MA1, 23, 27	GM19673-MA30, 23, 27
343313, 23, 27	GM18398-MA10, 23, 27	GM19673-MA31, 23, 27
343314, 23, 27	GM18398-MA11, 23, 27	GM19673-MA62, 31
343315, 23, 27	GM18398-MA2, 23, 27	GM19673-MA63, 31
343316, 23, 27	GM18398-MA3, 23, 27	GM19673-MA64, 31
343344, 21	GM18398-MA4, 23, 27	GM19673-MA65, 31
343346, 11	GM18398-MA5, 23, 27	GM19673-MA66, 31
343347, 13	GM18398-MA6, 23, 27	GM19673-MA67, 31
343356, 11	GM18398-MA7, 23, 27	GM19673-MA68, 31
343357, 21	GM18398-MA8, 23, 27	GM19673-MA69, 31
343358, 13	GM18398-MA9, 23, 27	GM19673-MA70, 31
343361, 23, 27	GM19349-MA1, 35	GM19673-MA71, 31
343378, 21	GM19349-MA2, 35	GM19673-MA72, 31
343379, 13	GM19349-MA3, 37	GM34385-MA1, 21
343380, 11	GM19349-MA4, 37	GM34385-MA2, 21
GM17672-MA130, 33	GM19350-MA1, 35	GM34407-MA1, 21
GM17672-MA131, 33	GM19350-MA2, 35	GM34408-MA1, 21

Notes



DDC/MTU Power Generation
605 North 8th Street, Suite 501
Sheboygan, Wisconsin 53081 USA
Phone 920-451-0846, Fax 920-451-0843
ddcmtupowergeneration.com