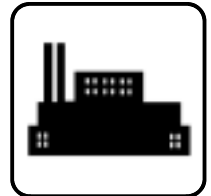


Service Parts

Industrial Generator Sets



Models:

20ROZJB
20-230REOZJB

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

See TP-6009 Parts Catalog Industrial Controllers for controller parts

9001
SI **KOHLER**
POWER SYSTEMS
NATIONALLY REGISTERED

KOHLER[®]
POWER SYSTEMS

TP-6142 2/02

Table of Contents

Introduction	1
Numbering System Significance	1
Illustrations	1
How to Find Part Numbers	1
Hardware References	1
Specification Number Index	2
Group 101: Air Intake	6
Group 104: Cooling System	8
Group 105: Engine	12
Group 107: Nameplate and Decals	15
Group 109: Skid and Plant Mounting	16
Group 201: Generator and Mounting	18
Control and Harness	24
Group 701: Literature	28
Kit List	29
Cooling System Kits	30
Appendix A Abbreviations	A-1
Appendix B Common Hardware Application Guidelines	A-3
Appendix C General Torque Specifications	A-4
Appendix D Common Hardware Identification	A-5
Appendix E Common Hardware List	A-6

Introduction

This manual lists service replacement parts for 20–230 kW generator sets.

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

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

This manual includes the following main sections:

Table of Contents. Lists the sections of the manual.

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

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.

xin:004:002

Numbering System Significance

This manual uses the following numbering systems:

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

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

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

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

xin:004:003:a

Illustrations

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

xin:004:004

How to Find Part Numbers

Use the following steps to locate a service replacement part.

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

xin:004:005

Hardware References

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

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

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

xin:004:006

Specification Number Index

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							
20ROZJB								
GM19369-GA1	*	*	1	1	*	*	†	132
GM19369-GA2	*	*	2	1	*	*	†	132
20REOZJB								
GM19369-GA3	*	*	3	1	*	*	†	134
GM19369-GA4	*	*	4	1	*	*	†	134
30REOZJB								
GM19369-GA5	*	*	3	1	*	*	†	136
GM19369-GA6	*	*	4	1	*	*	†	136
40REOZJB								
GM19369-GA7	*	*	3	1	*	*	†	138
GM19369-GA8	*	*	4	1	*	*	†	138

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

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

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								
50REOZJB									
GM21199	GM21100 -GA1	*	*	17	3	*	*	†	156
GM21199	GM21100 -GA2	*	*	18	3	*	*	†	156
GM21199	GM21100 -GA3	*	*	19	3	*	*	†	156
GM21199	GM21100 -GA4	*	*	20	3	*	*	†	156
60REOZJB									
GM21199	GM21100 -GA5	*	*	17	3	*	*	†	158
GM21199	GM21100 -GA6	*	*	18	3	*	*	†	158
GM21199	GM21100 -GA7	*	*	19	3	*	*	†	158
GM21199	GM21100 -GA8	*	*	20	3	*	*	†	158
80REOZJB									
GM21199	GM21100 -GA9	*	*	21	1	*	*	†	160
GM21199	GM21100 -GA10	*	*	22	1	*	*	†	160
GM21199	GM21100 -GA11	*	*	23	1	*	*	†	160
GM21199	GM21100 -GA12	*	*	24	1	*	*	†	160
100REOZJB									
	GM21528-GA1	*	*	25	1	*	*	†	162
	GM21528-GA2	*	*	26	1	*	*	†	162
	GM21528-GA3	*	*	27	1	*	*	†	162
	GM21528-GA4	*	*	28	1	*	*	†	162
125REOZJB									
	GM21528-GA5	*	*	25	1	*	*	†	164
	GM21528-GA6	*	*	26	1	*	*	†	164
	GM21528-GA7	*	*	27	1	*	*	†	164
	GM21528-GA8	*	*	28	1	*	*	†	164

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

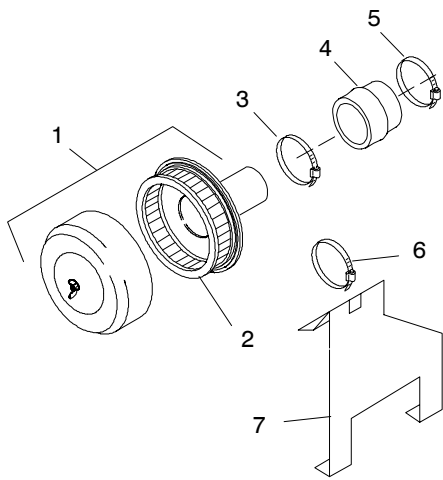
Specification Number Index

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							
150REOZJB								
GM20148-GA1	*	*	5	2	*	*	†	146
GM20148-GA2	*	*	6	2	*	*	†	146
GM20148-GA3	*	*	7	2	*	*	†	146
GM20148-GA4	*	*	8	2	*	*	†	146
180REOZJB								
GM19534-GA1	*	*	9	2	*	*	†	140
GM19534-GA2	*	*	10	2	*	*	†	140
GM19534-GA3	*	*	11	2	*	*	†	140
GM19534-GA4	*	*	12	2	*	*	†	140
200REOZJB								
GM19534-GA5	*	*	13	2	*	*	†	142
GM19534-GA6	*	*	14	2	*	*	†	142
230REOZJB								
GM19534-GA7	*	*	15	2	*	*	†	144
GM19534-GA8	*	*	16	2	*	*	†	144

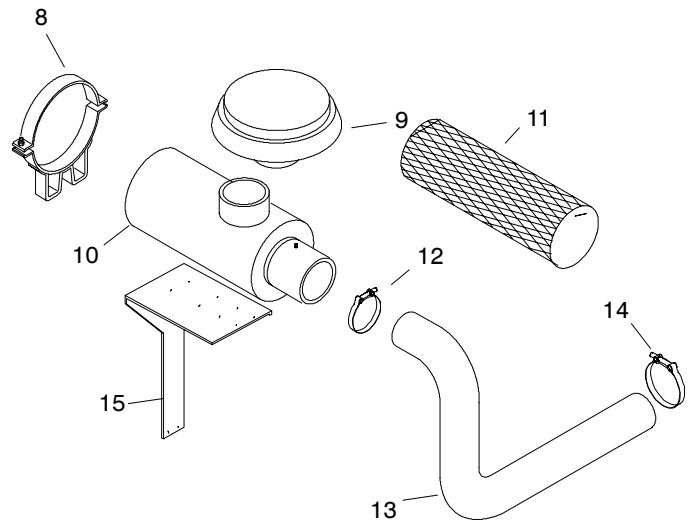
- * Configured group. Refer to the generator set nameplate for the module number.
Turn to the respective group on the following pages for parts breakdowns.
- † Configured group. Refer to the generator set nameplate for the module number.
See controller parts catalog TP-6009 for controller parts lists.

Notes

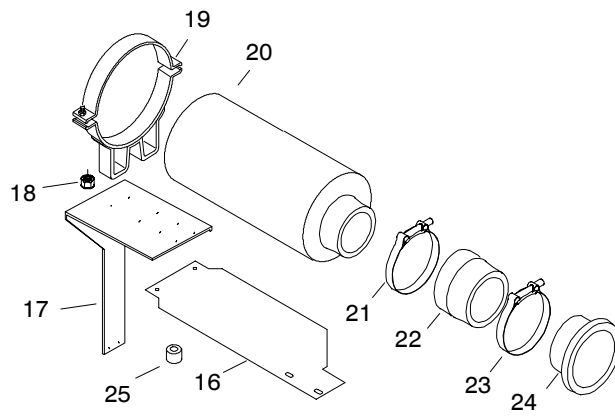
Group 101: Air Intake



20-150 kW



Heavy-Duty



180-230 kW

6142_101

Group 101: Air Intake

Cross-reference the module number of your air intake to the letter key in the Model Number to Key Cross-Reference table below. Refer to the key column in the following table.

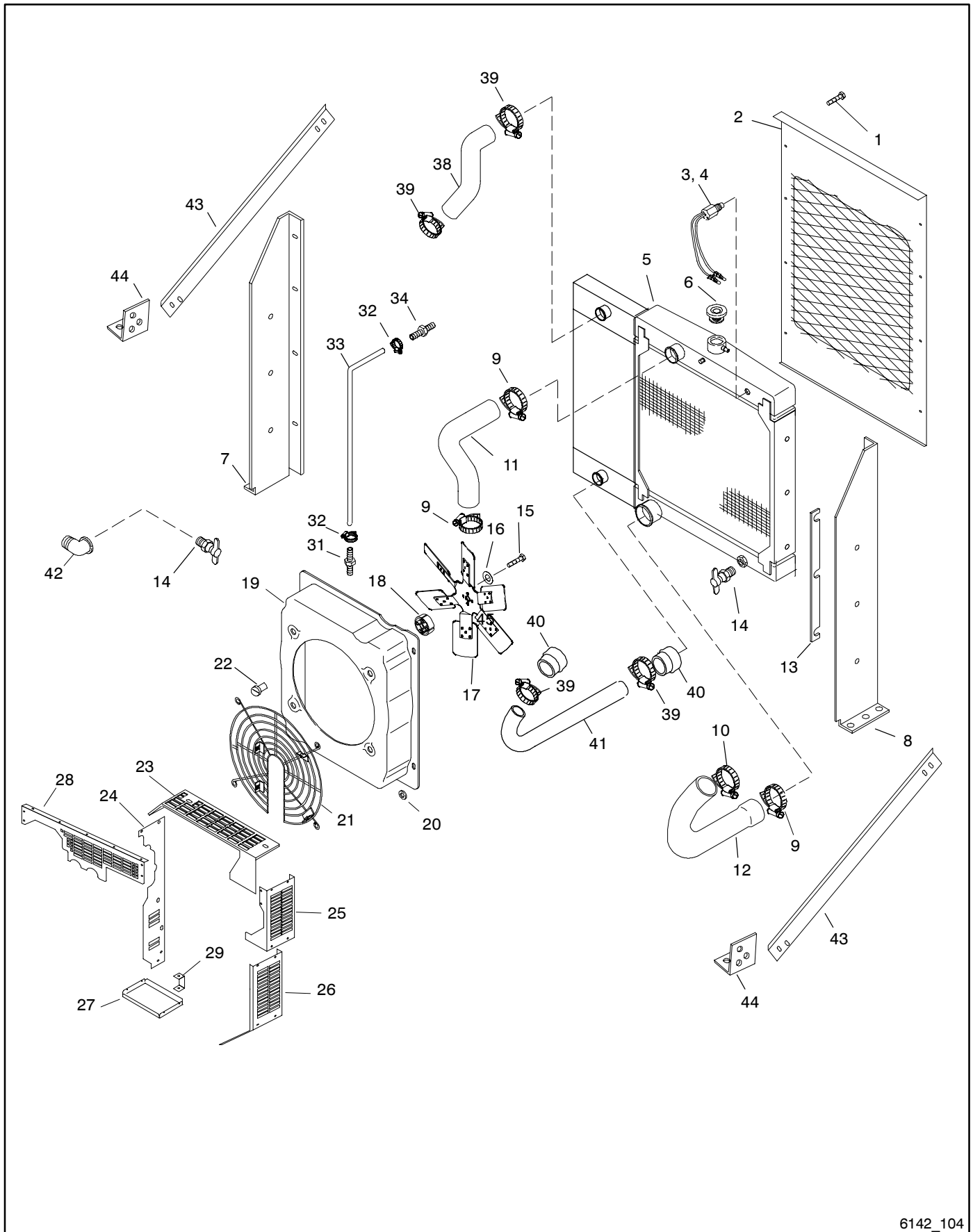
Item	Part Number	Description	Quantity									
			Module									
			A	B	C	D	E	F	G	H	I	J
1	A-253104	Air cleaner	1									
1	A-273699	Air cleaner, John Deere		1	1							
1	A-273700	Air cleaner, John Deere		1	1					1		
2	253107	Element, air cleaner		1	1							
2	253108	Element, air cleaner								1		
3	X-426-1	Clamp, hose, 2.81/3.75 in.	1	1	1							
3	274545	Clamp, hose, 4.31/4.62 in.								1		
4	328006	Hose, reducer, 3.00 in. to 2.50 in. ID	1	1								
4	X-507-1	Hose, straight, 3 in. ID			1							
4	352335	Hose, reducer, 4.00 in. to 3.00 in. ID								1		
5	X-426-1	Clamp, hose, 2.81/3.75 in.			1					1		
5	250081	Clamp, hose, 2.06/3 in.	1	1								
6	X-426-5	Clamp, hose, 3.56/4.5 in.								1		
7	352336	Bracket, mounting								1		
7	GM22483	Bracket, mounting		1								
8	279380	Mount, air cleaner				2	2					2
8	254012	Band, mounting							2			
8	290856	Mount, air cleaner									2	
9	253664	Cap				1	1					1
9	254010	Cap, rain							1			
9	254006	Cap, rain									1	
10	254004	Air cleaner							1			
10	A-274721	Air cleaner				1	1					1
10	A-324360	Air cleaner									1	
11	274726	Element, air cleaner				1	1					1
11	274729	Element, air cleaner									1	
12	X-426-5	Clamp, hose, 3.56/4.5 in.				1	1					
12	272960	Clamp, hose, 6.56/6.87 in.							1			
12	343049	Clamp, hose, 5.56/5.87 in.									1	
12	336229	Clamp, hose, 3.88/4.19 in.										1
13	GM19837	Hose, molded				1						
13	GM19838	Hose, molded					1			1		
13	336227	Hose, molded air intake, 4.00 in. ID							1			
13	352339	Hose, molded, 3.00 in. ID									1	
13	336224	Hose, molded air intake, 3.00 in. ID										1
14	X-426-1	Clamp, hose, 2.81/3.75 in.				1						
14	250081	Clamp, hose, 2.06/3 in.					1			1		
14	324555	Clamp, hose, 4.63/4.94 in.							1			
14	274824	Clamp, hose, 3.68/4 in.									1	
14	324342	Clamp, hose, 3.43/3.75 in.										1
15	GM19841	Bracket, mounting				1	1			1		
15	336244	Bracket, air cleaner							1			
15	GM16953	Bracket, mounting									1	
16	GM11970	Shield, heat						1				
17	GM11452	Bracket, air cleaner						1				
18	M982-10-80	Nut, elastic stop						4	4			
19	343218	Clamp						1				
20	343219	Air cleaner, industrial						1				
21	254013	Clamp, hose, 6.25/6.56 in.						1				
22	343429	Hose, hump, 6.00 in. ID to 5.00 in. ID						1				
23	291562	Clamp, hose, 5.25/5.56 in.						1				
24	GM11458	Insert, hose reducer, 5.00 in. to 4.00 in.						1				
25	X-400-210	Spacer, .406 ID x .625 OD x 2.344 in.						2				

Module Number to Key Cross-Reference

Use the module number of your air intake from the generator set nameplate to determine the key.

Module Number to Key Cross-Reference			
kW	Type	Module Number	Key
20 (non-emissions)	Standard	GM19374-MA1	A
20 (non-emissions)	Heavy-duty	GM19375-MA1	D
20-40 (emissions)	Standard	GM19374-MA2	B
20-40 (emissions)	Heavy-duty	GM19375-MA2	E
50-80	Standard	GM19374-MA3	C
50-80	Heavy-duty	GM21224-MA1	J
100-150	Standard	GM20783-MA1	H
100-150	Heavy-duty	GM20784-MA1	I
180-230	Standard	GM19539-MA1	F
180-230	Heavy-duty	GM19540-MA1	G

Group 104: Cooling System



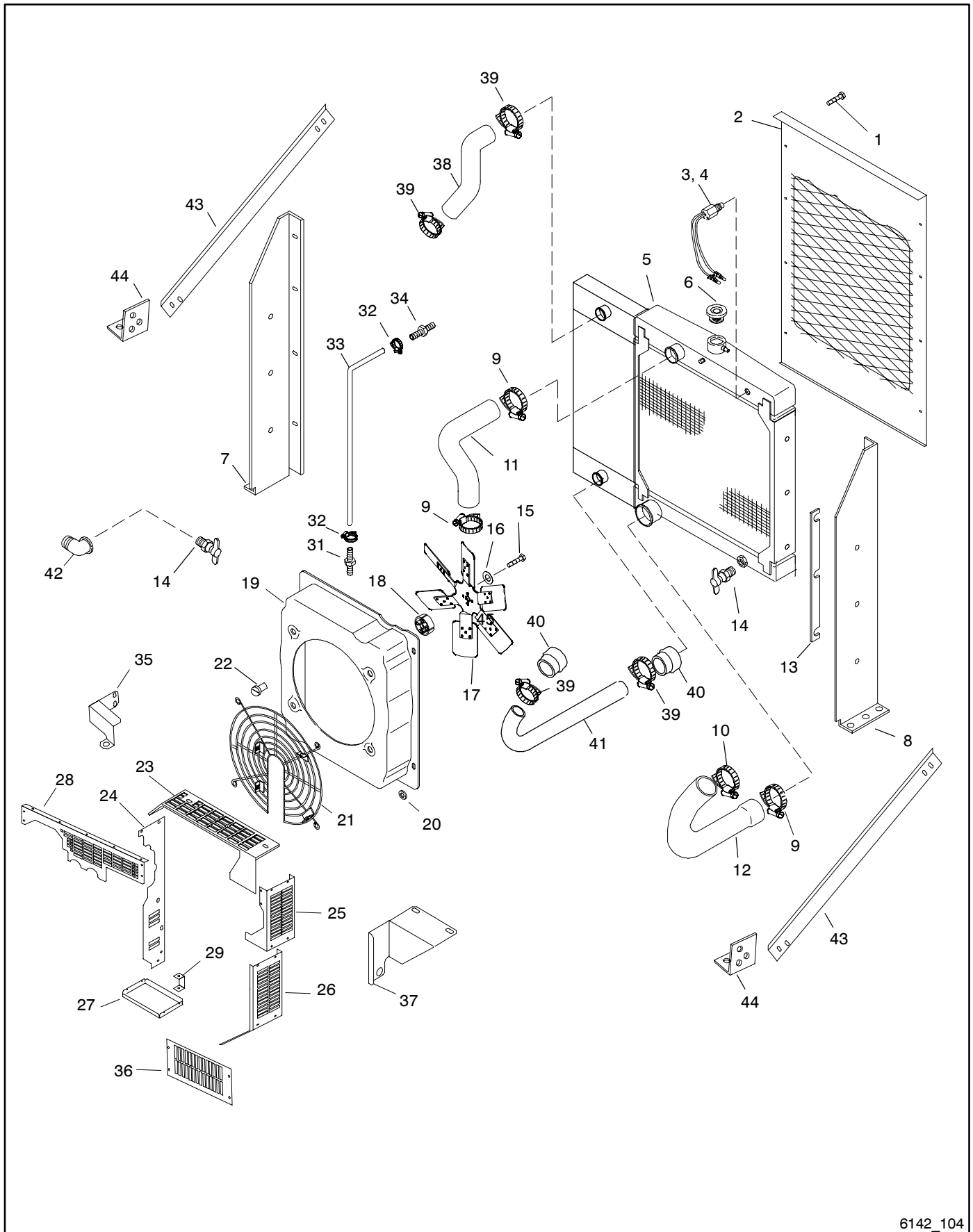
6142_104

Group 104: Cooling System

Cross-reference the module number of your cooling system to the letter key in the Model Number to Key Cross-Reference table below. Refer to the key column in the following table.

Item	Part Number	Description	Quantity							
			Module							
			A	B	C	D	E	F	G	H
1	X-794-1	Screw, hex washer head, drill	10				10	10	10	
2	GM14100	Guard, radiator	1	1		1				1
2	GM20049	Guard, radiator			1					
2	GM20050	Guard, radiator								
2	GM14100	Guard, radiator					1	1		
2	GM13843	Guard, radiator							1	
3	365289	Sensor, low fluid	1	1	1	1	1	1	1	1
4	X-6003-8	Conduit, convoluted		1	1	1			1	1
5	GM22415	Radiator assembly	1							
5	GM10988	Radiator assembly		1						1
5	GM19944	Radiator assembly			1					
5	GM20534	Radiator assembly (charger cooler)				1				
5	GM14095	Radiator assembly					1			
5	GM14096	Radiator assembly						1		
5	A-336663	Radiator assembly							1	
6	GM22997	Cap, radiator					1	1		
6	GM22998	Cap, radiator								
7	GM17067	Support, radiator, left side	1				1	1	1	
7	GM20048	Support, radiator, left side	1	1	1	1				1
8	GM17066	Support, radiator, right side	1				1	1	1	
8	GM20047	Support, radiator, right side		1	1	1				1
9	250081	Clamp, hose, 2.06/3 in.				3	1	1	3	
9	X-426-1	Clamp, hose, 2.81/3.75 in.								1
9	X-426-2	Clamp, hose, 2.31/3.25 in.		2	2					2
9	X-426-4	Clamp, hose, 1.31/2.25 in.	3							
9	X-426-6	Clamp, hose, 1.56/2.5 in.		1	1		2	2		1
10	250081	Clamp, hose, 2.06/3 in.				1	1	1		
10	X-426-6	Clamp, hose, 1.56/2.5 in.	1	1	1					1
11	336664	Hose, molded coolant, 2.50 in. ID		1						1
11	GM19031	Hose, upper radiator, 38.0 mm ID	1							
11	GM20051	Hose, molded coolant, 2.50 in. ID			1					
11	GM20688	Hose, upper radiator				1				
11	GM20738	Hose, upper radiator					1	1		
11	GM21387	Hose, upper radiator, 44.5 mm ID							1	
12	273418	Hose, lower radiator, 1.88 in. ID	1							
12	336878	Hose, lower radiator, 2.00 in. ID		1						1
12	GM20052	Hose, lower radiator, 2.00 in. ID			1					
12	GM20687	Hose, lower radiator				1				
12	GM20739	Hose, lower radiator					1	1		
12	GM21388	Hose, lower radiator, 50.8 mm ID							1	
13	273911	Spacer, radiator support	4							
13	324229	Spacer, radiator						2		
14	X-202-47	Bushing, reducing, 1/4 x 1/2 in. NPT		1	1				1	1
14	X-256-3	Valve, drain, 1/4 in. NPT	2	1	1		1	1	1	1
14	X-256-5	Valve, drain, 1/2 in. NPT				1				
15	X-125-27	Screw, hex cap	4							
15	X-6238-40	Bolt, hex cap		6	6					6
15	M931-08130-60	Screw, hex cap							4	
16	X-801-3	Washer, hardened, .406 ID x .812 in. OD		6	6					6
16	X-801-4	Washer, hardened, .328 ID x .719 in. OD	4			4	4	4	4	
17	324045	Fan, pusher	1							
17	GM22261	Fan, pusher			1					
17	GM19383	Fan, pusher				1				
17	GM19943	Fan, pusher		1						1
17	GM21245	Fan, pusher					1	1		
17	GM21346	Fan, blower							1	
18	222932	Spacer, fan, 1.63 in.	1				1	1		
18	336879	Spacer, fan, 3 in.		1	1					1
18	GM20545	Spacer, fan				1			1	
19	222953	Shroud, fan		1		1				1
19	324039	Shroud, fan	1							
19	343054	Shroud, fan			1					
19	324076	Shroud, fan					1	1		
19	276400	Shroud, fan							1	
20	X-25-73	Washer, plain, .266 ID x 1 in. OD	4	8			4	4		8
20	X-25-75	Washer, plain, .344 ID x .875 in. OD							4	

Group 104: Cooling System, continued



6142_104

Group 104: Cooling System, continued

Item	Part Number	Description	Quantity							
			Module							
			A	B	C	D	E	F	G	H
21	222958	Guard, wire fan	1							
21	336888	Guard, wire fan		1						1
21	GM22311	Guard, wire fan				1				
21	GM11418	Guard, wire fan			1					
21	GM20740	Guard, wire fan					1	1		
22	X-6365-1	Insert, threaded, 5/16-18 in.	4				4	4	4	
22	X-6365-2	Insert, threaded		6	6	6				6
23	GM19548	Guard, belt, top		1	1					1
23	GM19633	Guard, belt, top	1							
23	GM20824	Guard, top rear, right side				1				
23	GM20825	Guard, top rear, left side				1				
23	GM20826	Guard, top				1				
23	GM22162	Guard, belt, top					1	1		
24	GM19567	Guard, belt, left side		1	1					1
24	GM19632	Guard, belt, left side	1							
24	GM20827	Guard, left side				1				
24	GM22161	Guard, belt, left side					1	1		
25	GM19550	Guard, belt, right side		1	1					1
25	GM19630	Guard, belt, right side upper	1							
25	GM20828	Guard, right side				1				
25	GM22160	Guard, belt, right side					1	1		
26	GM19552	Guard, belt, bottom		1	1					1
26	GM19631	Guard, belt, right side lower	1							
27	GM19634	Guard, belt, bottom	1							
27	GM20829	Guard, front lower				1				
27	GM22163	Guard, belt, bottom top					1	1		
28	GM19635	Guard, belt, back	1							
29	352384	Bracket, belt guard	1							
29	GM19553	Bracket, mounting, lower		1	1					1
29	GM21204	Bracket, belt guard mounting					1	1		
31	X-582-32	Connector, hose + vibraseal		1	1					1
32	X-426-9	Clamp, hose, .25/.70 in.		2	2					2
33	X-6359-1	Hose, rubber, straight, .25 in. ID		1	1					1
34	X-652-3	Connector, hose + vibraseal		1	1					1
35	352181	Bracket		1	1					1
36	GM19551	Guard, belt, front		1	1					1
37	GM19549	Bracket, mounting, top		1	1					1
38	GM20689	Hose, upper charge air cooler				1				
39	250081	Clamp, hose, 2.06/3 in.				6				
40	GM20588	Hose, step				2				
41	GM20690	Tube, lower charge air cooler				1				
42	227521	Fitting, 45 deg. street elbow + vibraseal	1							
43	GM22461	Support, radiator								2
44	GM22462	Bracket, radiator support								2

Module Number to Key Cross-Reference

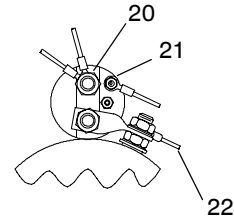
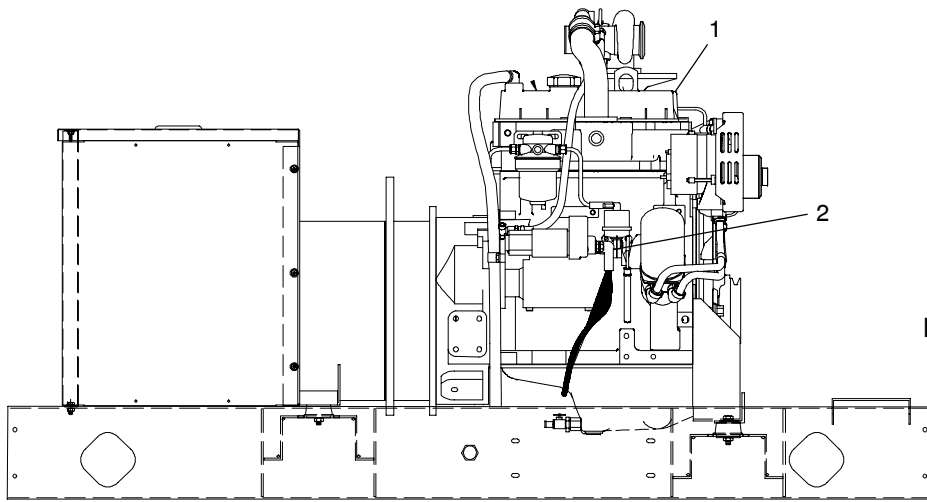
Use the module number of your cooling system from the generator set nameplate to determine the key.

Module Number to Key Cross-Reference

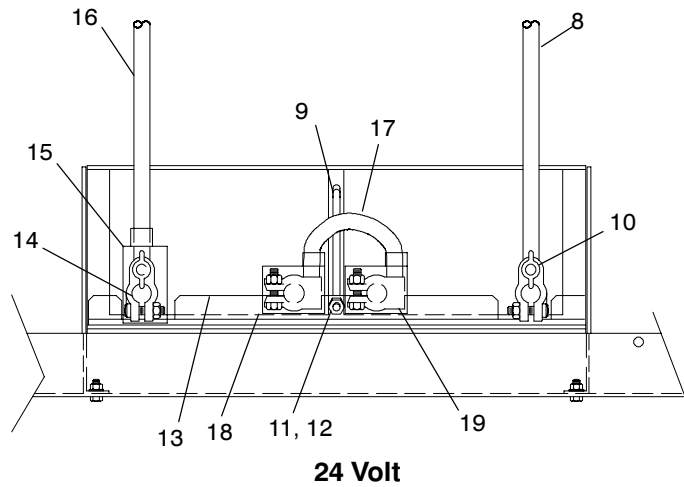
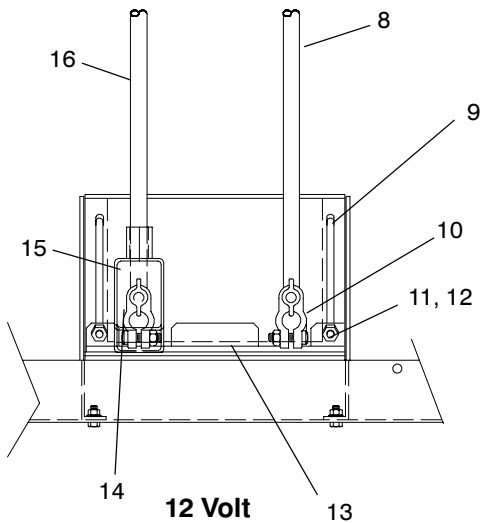
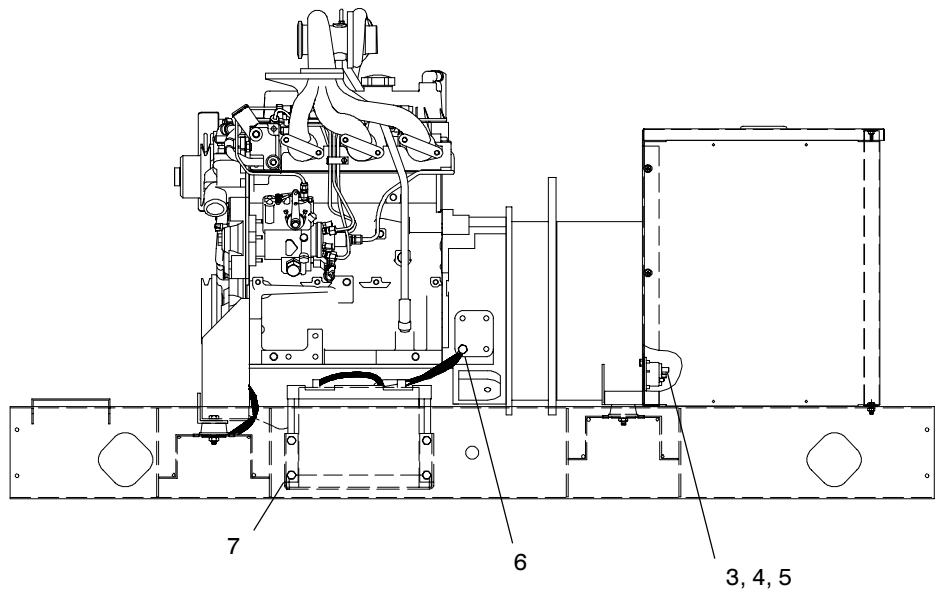
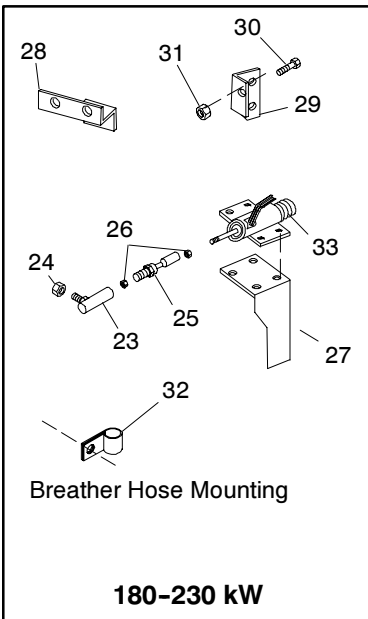
kW	Module Number	Key
20-40	GM19372-MA1	A
50/60	GM21202-MA1	E
80	GM21202-MA2	F
100/125	GM22243-MA1	G
150	GM20818-MA1	D
180/200	GM19537-MA1	B
200	GM19537-MA2	H
230	GM19827-MA1	C

See Kit section for city water and remote radiator set-up cooling systems.

Group 105: Engine



**End View of Starter Solenoid,
24 Volt**



6102_105

Group 105: Engine

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

Item	Part Number	Description	Quantity
1	—	Engine assembly (see chart on following page)	1
2	GM20743	Boot, starter terminal, 180-230 kW	1
3	291891	Solenoid, 12 V	1
3	268371	Solenoid, 24 V	1
4	X-6214-2	Cap	1
5	X-22-12	Washer, lock, .262 ID x .743 in. OD	2
6	X-22-26	Washer, lock, .521 ID x 1.24 in. OD	1
6	X-22-26	Washer, lock, .521 ID x 1.24 in. OD, 100-150 kW	2
6	X-22-30	Washer, lock, .652 ID x 1.058 in. OD, 200/230 kW	1
7	GM14099	Rack, battery, 12 V	1
7	GM23203	Rack, battery, 12 V 180-230 kW	1
7	GM19543	Rack, battery, 24 V	1
8	X-545-112	Lead, battery cable, No. 2, 16 in.	1
8	X-545-152	Cable, battery, 180-230 kW	1
9	286316	Bolt, angle, 24 V	1
9	286316	Bolt, angle, 12 V	2
10	345056	Terminal, battery	1
11	X-101-4	Nut, hex elastic stop, 5/16-24, 24 V	1
11	X-101-4	Nut, hex elastic stop, 5/16-24, 12 V	2
12	X-25-44	Washer, plain, 20-40, 100-230 kW, 24 V	1
12	X-25-44	Washer, plain, 20-40, 100-230 kW, 12 V	2
12	X-25-85	Washer, plain, 50-80 kW, 24 V	1
12	X-25-85	Washer, plain, 50-80 kW, 12 V	2
13	324033	Clamp, battery, 12 V	1
13	336673	Clamp, battery, 12 V 180-230 kW	1
13	343089	Clamp, battery, 24 V	1
14	345039	Terminal, battery	1
15	GM20745	Boot, battery lug	1
16	X-545-150	Cable, battery, 50-80 kW, 12 V	1
16	X-545-118	Cable, battery, No. 2, 60 in., 100-150 kW	1
16	X-545-151	Cable, battery, 50-80 kW, 24 V, 180-230 kW	1
17	280133	Lead, battery cable, 8.5 in., 24 V	1
18	GM20748	Boot, battery, 90 deg. right, 24 V	1
19	GM20744	Boot, battery lug, 24 V	1
20	X-22-4	Washer, lock, .521 ID x .884 in. OD	1
21	X-22-9	Washer, lock, .20 ID x .373 in. OD	1
22	GM11941	Harness, 24 V starter, lead 10F	1
23	276570	Joint, ball, 180-230 kW	1
24	X-101-7	Nut, hex elastic stop, 1/4-28, 180-230 kW	1
25	273731	Ball joint, 180-230 kW	1
26	X-81-9	Nut, hex jam, 1/4-28, 180-230 kW	2
27	336777	Bracket, solenoid mounting, 180-230 kW	1
28	336779	Bracket, throttle stop, 180-230 kW	1
29	336780	Bracket, throttle, 180-230 kW	1
30	336851	Screw, hex head machine, special thread, 180-230 kW	1
31	X-101-16	Nut, hex elastic stop, 5/16-18, 180-230 kW	1
32	X-672-32	Clamp, insulated, 1.06 in., 180-230 kW	1
33	273716	Solenoid, 180-230 kW	1
33	227262	Solenoid, 24 V, 180-230 kW	1

Group 105: Engine, continued

Engine Part Number

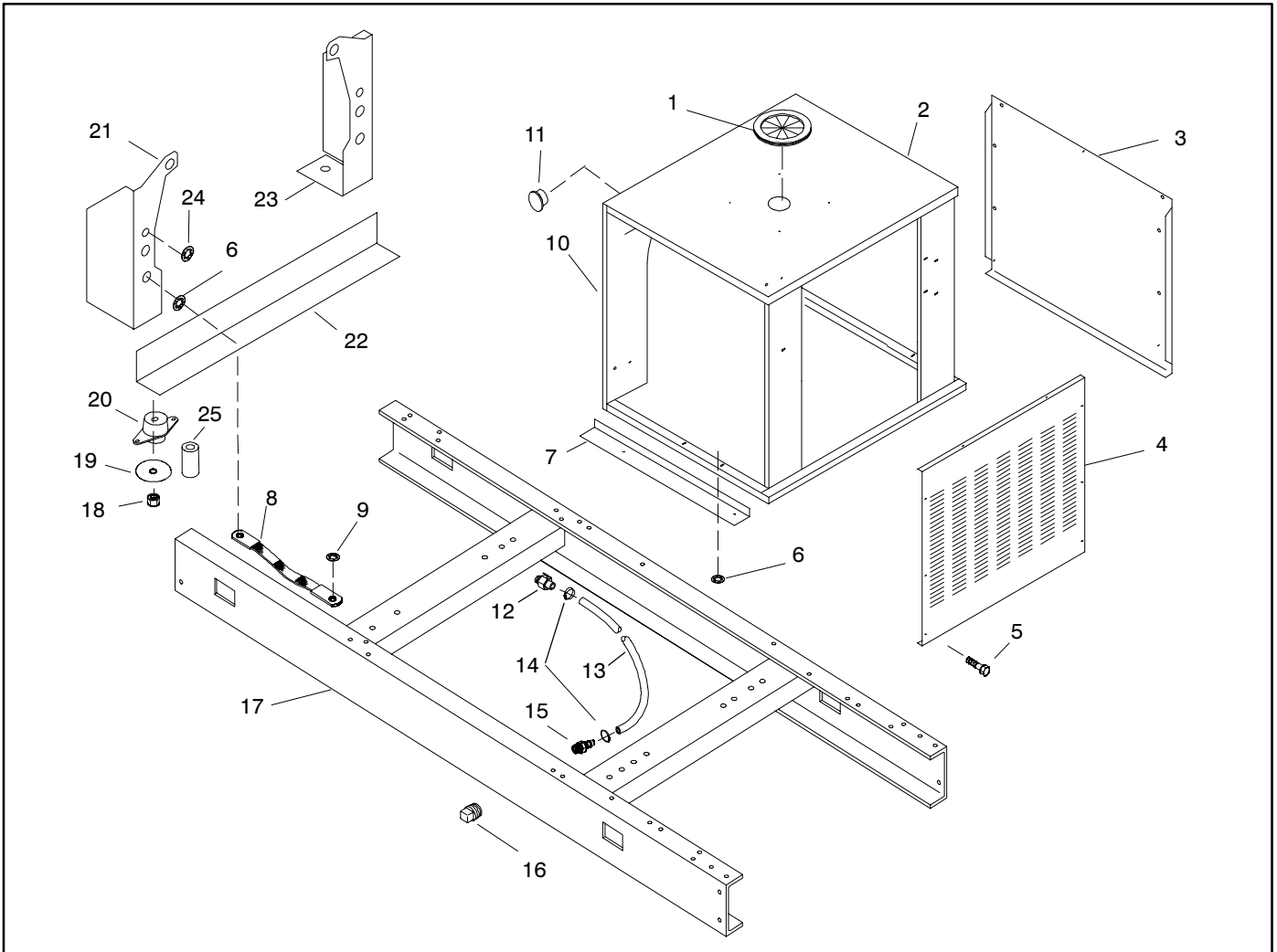
Use this table to identify the variation number's engine part number.

Variation No.	Module No.	Model	Engine Part Number	Engine Description
1	GM19370-GR1	20	GM16663	3029DF120, 12 V, 60 Hz
2	GM19370-GR2	20	GM17208	3029DF120, 12 V, 50 Hz
3	GM19370-GR3	20/30/40	GM17102	3029TF150, 12 V, 60 Hz
4	GM19370-GR4	20/30/40	GM17209	3029TF120, 12 V, 50 Hz
5	GM20149-GR1	150	GM17115	6068HF120, 12 V, 50 Hz
6	GM20149-GR2	150	GM17116	6068HF120, 24 V, 50 Hz
7	GM20149-GR3	150	GM17117	6068HF150, 12 V, 60 Hz
8	GM20149-GR4	150	GM17118	6068HF150, 24 V, 60 Hz
9	GM19535-GR1	180	GM17119	6081AF001, 12 V, 50 Hz
10	GM19535-GR2	180	GM17120	6081AF001, 24 V, 50 Hz
11	GM19535-GR3	180	GM17121	6081AF001, 12 V, 60 Hz
12	GM19535-GR4	180	GM17122	6081AF001, 24 V, 60 Hz
13	GM19535-GR5	200	GM17123	6081AF001, 24 V, 50 Hz
14	GM19535-GR6	200	GM17124	6081AF001, 24 V, 60 Hz
15	GM19535-GR7	230	GM19862	6081AF001, 24 V, 50 Hz
16	GM19535-GR8	230	GM19863	6081AF001, 24 V, 60 Hz
17	GM21200-GR1	50/60	GM17105	4045TF150, 12 V, 60 Hz
18	GM21200-GR2	50/60	GM17103	4045TF120, 12 V, 50 Hz
19	GM21200-GR3	50/60	GM17106	4045TF150, 24 V, 60 Hz
20	GM21200-GR4	50/60	GM17104	4045TF120, 24 V, 50 Hz
21	GM21200-GR5	80	GM17109	4045TF250, 12 V, 60 Hz
22	GM21200-GR6	80	GM17107	4045TF220, 12 V, 50 Hz
23	GM21200-GR7	80	GM17110	4045TF250, 24 V, 60 Hz
24	GM21200-GR8	80	GM17108	4045TF220, 24 V, 50 Hz
25	GM21529-GR1	100/125	GM17111	6068TF220, 12 V, 50 Hz
26	GM21529-GR2	100/125	GM17112	6068TF220, 24 V, 50 Hz
27	GM21529-GR3	100/125	GM17113	6068TF250, 12 V, 60 Hz
28	GM21529-GR4	100/125	GM17114	6068TF250, 24 V, 60 Hz

Group 107: Nameplate and Decals

Item	Part Number	Description	Quantity		
			Module		
			GM14282-GR1	GM14282-GR2	GM14282-GR3
1	238402	Decal, caution positive terminal only	1	1	1
2	249808	Decal, warning rotating parts	1	1	1
3	249809	Decal, caution hot engine	2	2	2
4	249810	Decal, warning hot coolant	1	1	1
5	273780	Decal, warning explosion	1	1	1
6	224233	Decal, 1-800 number	1	1	1
7	257438	Decal, danger moving rotor	3	3	3
8	257441	Decal, warning lifting eye	1	1	1
9	258815	Decal, warning voltage backfeed	1	1	1
10	GM13776	Decal, FRII reconnection	1	1	1
11	327004	Nameplate, model/ratings, Kohler	1	1	1
12	X-6232-3	Decal, stripes		1	
12	X-6232-6	Decal, stripe	3	2	3
13	X-6246-1	Decal, Kohler Power System	2	2	
13	X-6246-6	Decal, Kohler Power System			2
14	273739	Decal, Fast Response	2	2	2
15	GM15300	Decal, exhaust piping	1	1	1
16	GM19296	Decal, fuel type	1	1	

Group 109: Skid and Plant Mounting



Group 109: Skid and Plant Mounting

Cross-reference the module number of your cooling system to the letter key in the Model Number to Key Cross-Reference table below. Refer to the key column in the following table.

Item	Part Number	Description	Quantity											
			A	B	C	E	D	F	G	H	I	J	K	
1	X-284-31	Grommet, round			1								1	1
1	X-6033-15	Grommet	1	1					1	1			1	1
2	GM17417	Panel, junction box, front	1	1					1	1				
2	GM17623	Panel, junction box, front			1	1					1	1	1	1
2	GM10555	Box, junction					1							
3	GM14078	Cover, side	2	2					2	2				
3	GM17640	Cover, side			2	2					2	2	2	2
3	336001	Cover, side						2						
4	GM17419	Cover, rear	1	1					1	1				
4	GM17625	Cover, rear			1	1					1	1	1	1
4	336004	Cover, rear						1						
5	X-6216-1	Screw, Phillips hex crimpite	12	12	12	12	12	12	12	12	12	12	12	12
6	X-22-16	Washer, lock, .326 ID x .883 in. OD	6	6	8	8	10	6	6	6	6	6	4	10
6	X-22-15	Washer, lock, .456 ID x 1.058 in. OD		2	2	2					2			
7	GM17670	Support, junction box		2						2				
7	GM17632	Support, junction box			2	2						2		2
7	GM19557	Bracket, junction box mounting					4							
8	290418	Strap, ground	1	1	2	1	3	1	1	2	2	3	3	
9	X-22-14	Washer, lock, .391 ID x .975 in. OD	1	1				1	1	2	2			
9	X-22-16	Washer, lock, .326 ID x .883 in. OD											4	4
10	GM17418	Panel, junction box, rear	1	1				1	1					
10	GM17624	Panel, junction box, rear			1	1				1	1	1	1	1
11	X-301-45	Plug, button	1	1				1	1	1	1	1	1	1
12	272701	Valve, oil drain	1	1	1	1	1	1	1	1	1	1	1	1
12	352360	Adapter, bushing				1		1	1	1	1	1	1	1
12	276550	Adapter, bushing			1		1							
12	GM11694	O-ring				1		1	1	1	1	1	1	1
12	365615	O-ring			1		1							
13	X-577-27	Hose, rubber, straight, .62 in. ID	1					1		1				
13	X-577-18	Hose, rubber, straight, .62 in. ID		1					1			1		
13	X-577-24	Hose, rubber, straight, .62 in. ID			1	1	1						1	1
14	X-426-10	Clamp, hose, .5/1 in.	2	2	2	2	2	2	2	2	2	2	2	2
15	X-582-1	Connector, hose + vibraseal	1	1	1	1	1	1	1	1	1	1	1	1
16	X-75-28	Plug, pipe, 1/2 in. NPT	1	1	1	1	1	1	1	1	1	1	1	1
17	GM17583	Skid	1											
17	GM20600	Skid		1										
17	GM20709	Skid				1								
17	GM19554	Skid			1									
17	GM19555	Skid					1							
17	GM17586	Skid						1						
17	GM21151	Skid							1					
17	GM17587	Skid								1				
17	GM21152	Skid									1			
17	GM22137	Skid											1	
17	GM22138	Skid												1
18	M982-12-80	Nut, hex elastic stop	2	2				2	2	2	2	2	2	2
18	M982-16-80	Nut, hex elastic stop			2	2	2							
19	X-25-140	Washer, plain, .531 ID x 2 in. OD	2	2				2	2	2	2	2	2	2
19	X-25-112	Washer, plain			2	2	2						2	2
20	324073	Vibromount	2	2				2	2	2	2	2		
20	324389	Vibromount				2							2	2
20	324391	Vibromount			2		2							
21	GM17579	Support, engine, left side	1	1		1		1	1	1	1	1	1	1
21	GM19556	Bracket, engine mounting			1		1							
22	GM17601	Support, engine mount	1	1										
23	GM17578	Support, engine, right side	1	1		1		1	1	1	1	1	1	1
23	GM19556	Bracket, engine mounting			1		1							
24	X-22-26	Washer, lock, .521 ID x 1.24 in. OD	2	2		2		2	2	2	2	2	2	2
24	X-22-30	Washer, lock, .652 ID x 1.058 in. OD			1		1							
25	X-400-154	Spacer, .527 ID x .625 OD x 2.3 in.											2	2

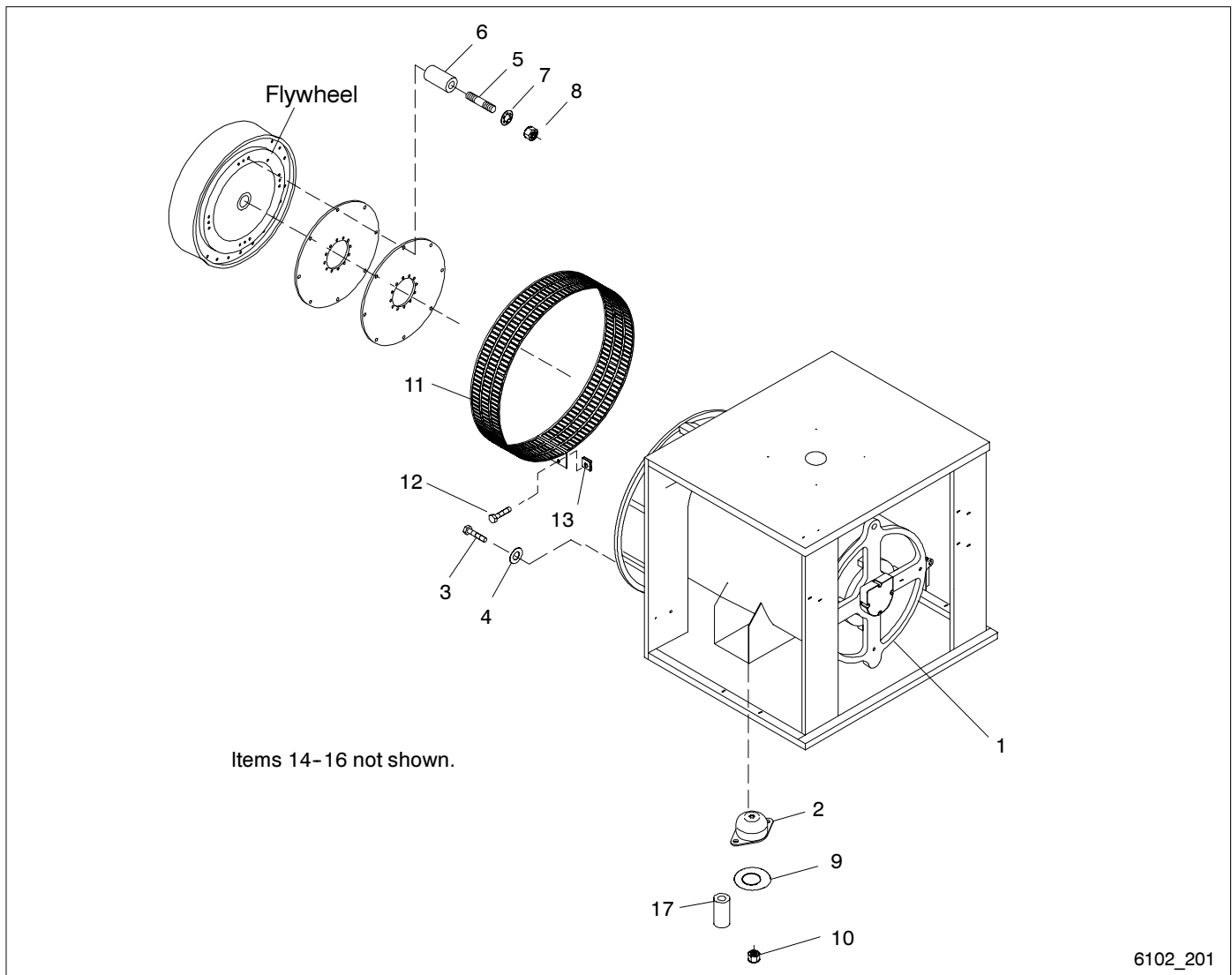
Module Number to Key Cross-Reference

Use the module number of your skid and mounting from the generator set nameplate to determine the key.

Module Number to Key Cross-Reference			
kW	Skid Width, in.	Module Number	Key
20-40	34	GM19373-MA1	A
20-40	41	GM19373-MA2	B
50-80	34	GM21203-MA1	F
50-80	41	GM21203-MA2	G
50-80	34	GM21203-MA3	H
50-80	41	GM21203-MA4	I

Module Number to Key Cross-Reference			
kW	Skid Width, in.	Module Number	Key
100/125	34	GM21530-MA1	J
100/125	41	GM21530-MA2	K
150	41	GM20497-MA1	E
180	41	GM19538-MA1	C
200/230	41	GM19828-MA1	D

Group 201: Generator and Mounting



6102_201

Item	Part Number	Description	Qty.
1	See chart on following page	Alternator assembly	1
2	See chart on following page	Vibromount	2
3	See chart on following page	Bolt, hex cap	6/8
4	X-801-3	Washer, hardened, .406 ID x .812 OD (4P, 4Q and 4S)	6
4	X-801-6	Washer, hardened, .469 ID x .922 in. OD (4UA)	8
5	X-352-63	Stud, 3/8-16 x 4 in. (4P, 4Q, and 4S)	8
5	X-129-54	Bolt, hex cap (4U)	8
6	X-400-132	Spacer, .406 ID x .625 OD x 2.531 in. (4P, 4Q, and 4S)	8
7	X-801-3	Washer, hardened, .406 ID x .812 OD (4P, 4Q, and 4S)	8
7	290945	Washer, hardened, .531 ID x 1.06 in. OD (4UA)	8
8	X-6210-9	Nut, flange spirallock, 3/8-16 (4P, 4Q, and 4S)	8
9	See chart on following page	Washer, plain	2
10	See chart on following page	Nut, hex elastic stop	2
11	257046	Guard, generator fan (4P and 4Q)	1
11	257179	Guard, generator fan (4S and 4V)	1
11	347268	Guard, generator fan (4UA)	2
12	X-67-125	Screw, hex washer, thread-forming	2
12	X-67-125	Screw, hex washer, thread-forming (4UA)	4
13	257442	Clip, speed	2
13	257442	Clip, speed (4UA)	4
14	X-750-14	Marker, wire L1 (not shown)	1
15	X-750-15	Marker, wire L2 (not shown)	1
16	X-750-16	Marker, wire L3 (not shown)	1
17	X-400-197	Spacer, .532 ID x .75 OD x 2.88 in. (used with vibromounts 324392 and 324393)	2

Group 201: Generator and Mounting

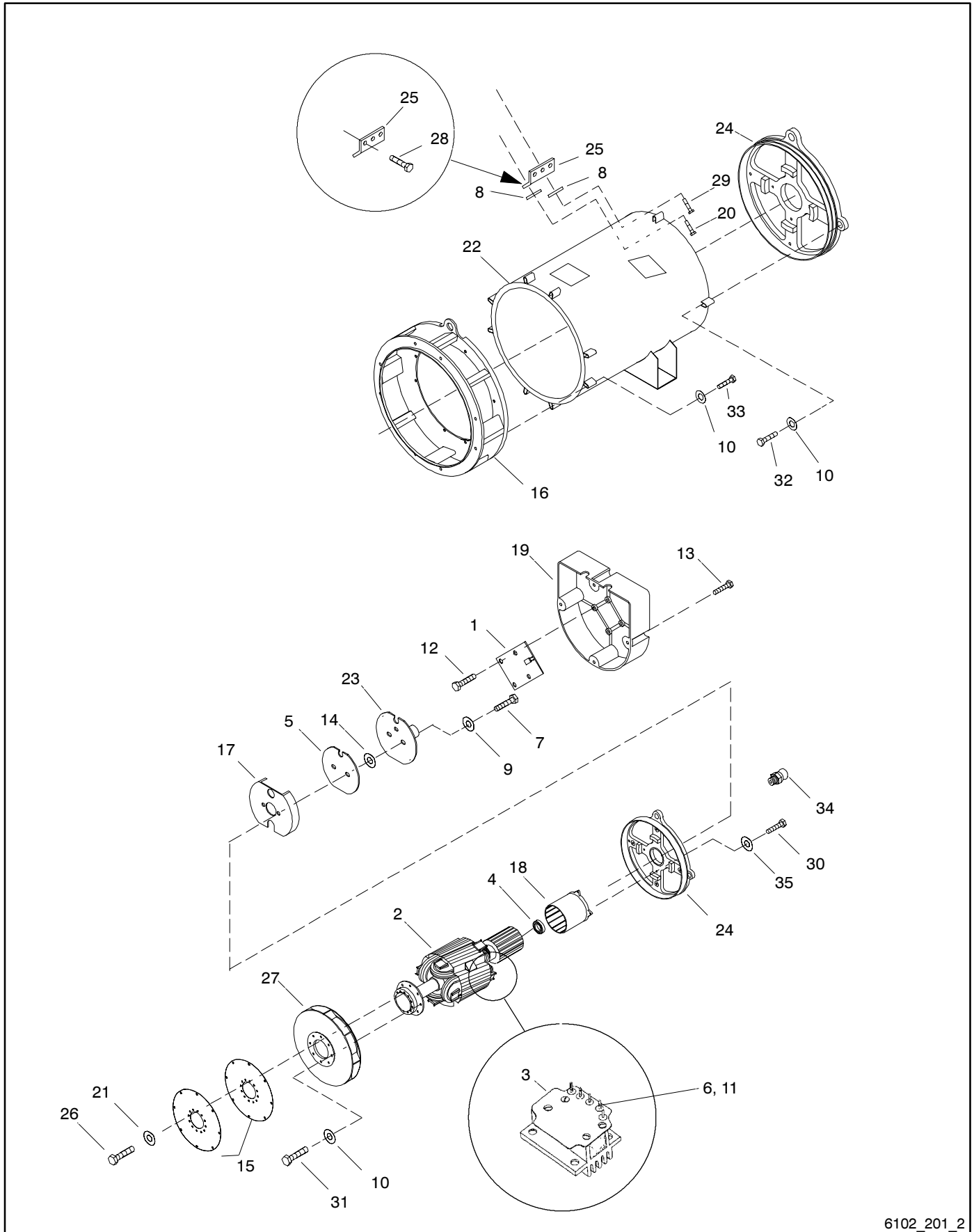
Alternator Part Number and Mount Type

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

Module No.	Alternator Description	Item 1, Alternator Assembly	Item 2, Vibromount	Item 3, Bolt	Item 9, Washer	Item 10, Nut
GM19371-MA1	4P4	C-257730	324073	270956 (6)	X-25-140	M982-12-80
GM19371-MA2	4P4, 600 V	B-257848	324073	270956 (6)	X-25-140	M982-12-80
GM19371-MA3	4Q4	B-360730	324073	270956 (6)	X-25-140	M982-12-80
GM19371-MA4	4P5	C-257722	324074	270956 (6)	X-25-140	M982-12-80
GM19371-MA5	4P5, 600 V	C-257735	324074	270956 (6)	X-25-140	M982-12-80
GM19371-MA6	4P7	C-257723	324075	270956 (6)	X-25-140	M982-12-80
GM19371-MA7	4P7, 600 V	B-257845	324075	270956 (6)	X-25-140	M982-12-80
GM19371-MA8	4P8	C-257724	324075	270956 (6)	X-25-140	M982-12-80
GM19371-MA9	4P8, 600 V	C-257736	324075	270956 (6)	X-25-140	M982-12-80
GM19371-MA10	4Q10	B-360734	324075	270956 (6)	X-25-140	M982-12-80
GM17672-MA1	4S7	GM17563-1	324075	270158 (6)	X-25-140	M982-12-80
GM17672-MA2	4S7, 600 V	GM17563-4	324075	270158 (6)	X-25-140	M982-12-80
GM17672-MA3	4S7	GM17563-13	336813	270158 (6)	X-25-112	M982-16-80
GM17672-MA4	4S7, 600 V	GM17563-15	336813	270158 (6)	X-25-112	M982-16-80
GM17672-MA5	4S9	GM17563-14	324391	270158 (6)	X-25-112	M982-16-80
GM17672-MA6	4S9, 600 V	GM17563-16	324391	270158 (6)	X-25-112	M982-16-80
GM17672-MA7	4S13	GM17563-11	336024	270158 (6)	X-25-112	M982-16-80
GM17672-MA8	4S13, 600 V	GM17563-12	336024	270158 (6)	X-25-112	M982-16-80
GM17672-MA9	4V7, 1 Phase	GM17563-26	324075	270158 (6)	X-25-140	M982-12-80
GM17672-MA10	4V9, 1 Phase	GM17563-24	324391	270158 (6)	X-25-112	M982-16-80
GM17672-MA11	4V11, 1 Phase	GM17563-23	336024	270158 (6)	X-25-112	M982-16-80
GM17672-MA12	4S11	GM17563-21	336024	270158 (6)	X-25-112	M982-16-80
GM17672-MA13	4S11, 600 V	GM17563-20	336024	270158 (6)	X-25-112	M982-16-80
GM17672-MA14	4V7, 1 Phase	GM17563-25	336813	M933-10035-82 (6)	X-25-112	M982-16-80
GM17672-MA15	4S9	GM17563-14	324392	270158 (6)	X-25-103	M982-12-80
GM17672-MA16	4S9, 600 V	GM17563-16	324392	270158 (6)	X-25-103	M982-12-80
GM17672-MA17	4V11, 1 Phase	GM17563-23	324392	270158 (6)	X-25-103	M982-12-80
GM17672-MA18	4S11	GM17563-21	324392	270158 (6)	X-25-103	M982-12-80
GM17672-MA19	4S11, 600 V	GM17563-20	324392	270158 (6)	X-25-103	M982-12-80
GM17672-MA20	4S13	GM17563-11	324392	270158 (6)	X-25-103	M982-12-80
GM17672-MA21	4S13, 600 V	GM17563-12	324392	270158 (6)	X-25-103	M982-12-80
GM17672-MA22	4S15	GM17563-32	324393	270158 (6)	X-25-103	M982-12-80
GM17672-MA23	4S15, 600 V	GM17563-33	324393	270158 (6)	X-25-103	M982-12-80
GM17672-MA24	4S7	GM17563-13	336813	M933-10035-82 (6)	X-25-112	M982-12-80
GM17672-MA25	4S7, 600 V	GM17563-15	336813	M933-10035-82 (6)	X-25-112	M982-12-80
GM17672-MA26	4S9	GM17563-14	324391	M933-10035-82 (6)	X-25-112	M982-12-80
GM17672-MA27	4S9, 600 V	GM17563-16	324391	M933-10035-82 (6)	X-25-112	M982-12-80
GM17672-MA28	4V9, 1 Phase	GM17563-24	324391	M933-10035-82 (6)	X-25-112	M982-12-80
GM17701-MA1	4P5	C-257719	324073	270956 (6)	X-25-140	M982-12-80
GM17701-MA2	4P5, 600 V	C-257726	324073	270956 (6)	X-25-140	M982-12-80
GM17701-MA3	4P5B	GM16880	324073	270956 (6)	X-25-140	M982-12-80
GM17701-MA4	4P5B, 600 V	GM16881	324073	270956 (6)	X-25-140	M982-12-80
GM17701-MA5	4P7B	GM16882	324074	270956 (6)	X-25-140	M982-12-80
GM17701-MA6	4P7B, 600 V	GM16883	324074	270956 (6)	X-25-140	M982-12-80
GM17701-MA7	4P8	C-257721	324074	270956 (6)	X-25-140	M982-12-80
GM17701-MA8	4P8, 600 V	C-257728	324074	270956 (6)	X-25-140	M982-12-80
GM17701-MA9	4P10	C-257739	324074	270956 (6)	X-25-140	M982-12-80
GM17701-MA10	4P10, 600 V	C-257729	324074	270956 (6)	X-25-140	M982-12-80
GM17701-MA11	4Q5, 1 Phase	B-360736	324073	270956 (6)	X-25-140	M982-12-80
GM17701-MA12	4Q10, 1 Phase	B-360739	324074	270956 (6)	X-25-140	M982-12-80
GM17701-MA13	4Q10, 1 Phase	B-360739	324075	M933-10030-82 (6)	X-25-140	M982-12-80
GM17701-MA14	4P8	C-257721	324075	M933-10030-82 (6)	X-25-140	M982-12-80
GM17701-MA15	4P8, 600 V	C-257728	324075	M933-10030-82 (6)	X-25-140	M982-12-80
GM17701-MA16	4P10	C-257739	324075	M933-10030-82 (6)	X-25-140	M982-12-80
GM17701-MA17	4P10, 600 V	C-257729	324075	M933-10030-82 (6)	X-25-140	M982-12-80
GM19673-MA1	4U9	B-347209	324393	X-6024-14 (8)	X-25-103	M982-12-80
GM19673-MA2	4U9, 600 V	B-347213	324393	X-6024-14 (8)	X-25-103	M982-12-80
GM19673-MA3	4U10	B-347210	324393	X-6024-14 (8)	X-25-103	M982-12-80
GM19673-MA4	4U10, 600 V	B-347214	324393	X-6024-14 (8)	X-25-103	M982-12-80
GM19673-MA5	4U13	B-347211	324393	X-6024-14 (8)	X-25-103	M982-12-80
GM19673-MA6	4U13, 600 V	B-347215	324393	X-6024-14 (8)	X-25-103	M982-12-80

Alternator assembly includes items 1-32 on following page.

Group 201: Generator and Mounting, continued

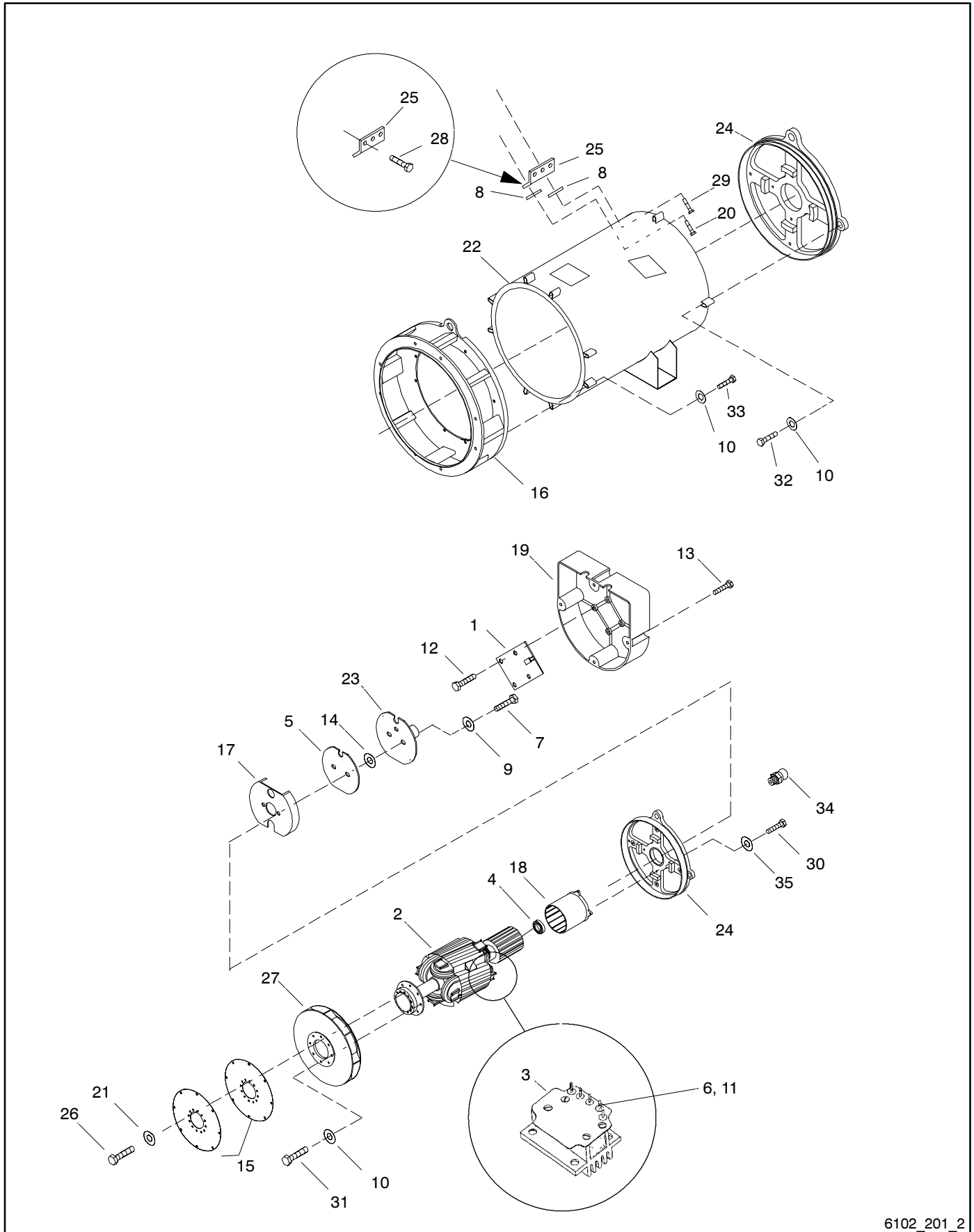


6102_201_2

Group 201: Generator and Mounting, continued

Item	Part Number	Description	Qty.
1	A-257099	PCB assembly, LED, FRIL	1
2	See chart on following page	Rotor assembly	1
3	B-258545	Heatsink (4P and 4Q alternators)	1
3	B-258549	Heatsink (4S and 4V alternators)	1
3	B-354999	Heatsink (4UA alternators)	1
4	X-758-2	Bearing, ball (4P and 4Q alternators)	1
4	X-758-6	Bearing, ball (4S and 4V alternators)	1
4	X-758-9	Bearing, ball (4UA alternators)	1
5	A-360418	PCB assembly, photo receiver	1
6	X-101-24	Nut, hex elastic stop, 6-32	5
7	X-117-5	Screw, hex head machine	2
8	X-22-44	Washer, lock, .262 ID x .743 in. OD (4P and 4Q alternators)	2
8	X-22-45	Washer, lock, .338 ID x .884 in. OD (4S and 4V alternators)	2
8	X-22-46	Washer, lock, .391 ID x .975 in. OD (4UA alternators)	2
9	X-22-9	Washer, lock, .20 ID x .373 in. OD	2
10	X-25-93	Washer, plain, .406 ID x .75 in. OD	14
10	290945	Washer, hardened, .531 ID x 1.06 in. OD (4UA alternators)	12
10	257951	Washer, special, .562 ID x 1.13 in. OD (4UA alternators)	12
11	X-283-7	Terminal, ring, male, 22-16 AWG	4
11	X-431-25	Terminal, fast-on, female	4
12	X-6071-1	Screw, Phillips pan head	4
13	X-67-133	Screw, hex washer, thread-forming	3
14	243321	Washer, insulating, .195 ID x .5 in.	2
15	See chart on following page	Disc, drive	2/3
16	See chart on following page	Adapter, generator	1
17	257077	Actuator, magnetic cup	1
18	See chart on following page	Exciter field assembly	1
19	257258	Cover, FR LED circuit board	1
20	X-791-5	Screw, hex head machine (4P and 4Q alternators)	1
20	X-791-7	Screw, hex head machine (4S and 4V alternators)	1
20	X-791-6	Screw, hex head machine (4UA alternators)	1
21	X-801-3	Washer, hardened, .406 ID x .812 in. (4P and 4Q alternators)	8
21	X-801-3	Washer, hardened, .406 ID x .812 in. (4S, 4V, and 4UA alternators)	12
22	See chart on following page	Stator assembly	1
23	257850	Insulator	1
24	257984	Bracket, end (4P and 4Q alternators)	1
24	257983	Bracket, end (4S and 4V alternators)	1
24	347236	Bracket, end (4UA alternators)	1
25	See chart on following page	Connector, lead	1
26	270956	Screw, cylinder head, 3/8-16 x 1 1/4 (4P and 4Q alternators)	8
26	270956	Screw, cylinder head, 3/8-16 x 1 1/4 (4S and 4V alternators)	12
26	270158	Screw, cylinder head, 3/8-16 x 1 1/4 (4UA alternators)	12
27	347697	Fan, alternator (4P and 4Q alternators)	1
27	257173	Fan, alternator (4S and 4V alternators)	1
28	X-465-8	Screw, hex cap (4P and 4Q alternators)	3
28	X-125-24	Screw, hex cap (4S alternators)	3
28	X-6238-5	Screw, hex cap (4V alternators)	3
29	X-456-16	Screw, hex cap (4P and 4Q alternators)	1
29	X-125-31	Screw, hex cap (4S and 4V alternators)	1
29	X-6238-11	Screw, hex cap (4UA alternators)	1
30	X-125-34	Screw, hex cap	4
30	X-6238-17	Screw, hex cap (4UA alternators)	4
31	X-6238-11	Screw, hex cap	4
32	X-6238-6	Screw, hex cap (4P and 4Q alternators)	4
32	X-6238-9	Screw, hex cap (4S and 4V alternators)	4
32	X-129-25	Screw, hex cap (4UA alternators)	4
33	X-6238-6	Screw, hex cap (4P alternators)	6
33	X-6238-6	Screw, hex cap (4S and 4V alternators)	1
33	X-6238-9	Screw, hex cap (4S and 4V alternators)	5
33	X-129-25	Screw, hex cap (4UA alternators)	8
34	347119	Fitting, grease	1
35	X-801-3	Washer, hardened, .406 ID x .812 in. (4UA alternators)	4

Group 201: Generator and Mounting, continued



6102_201_2

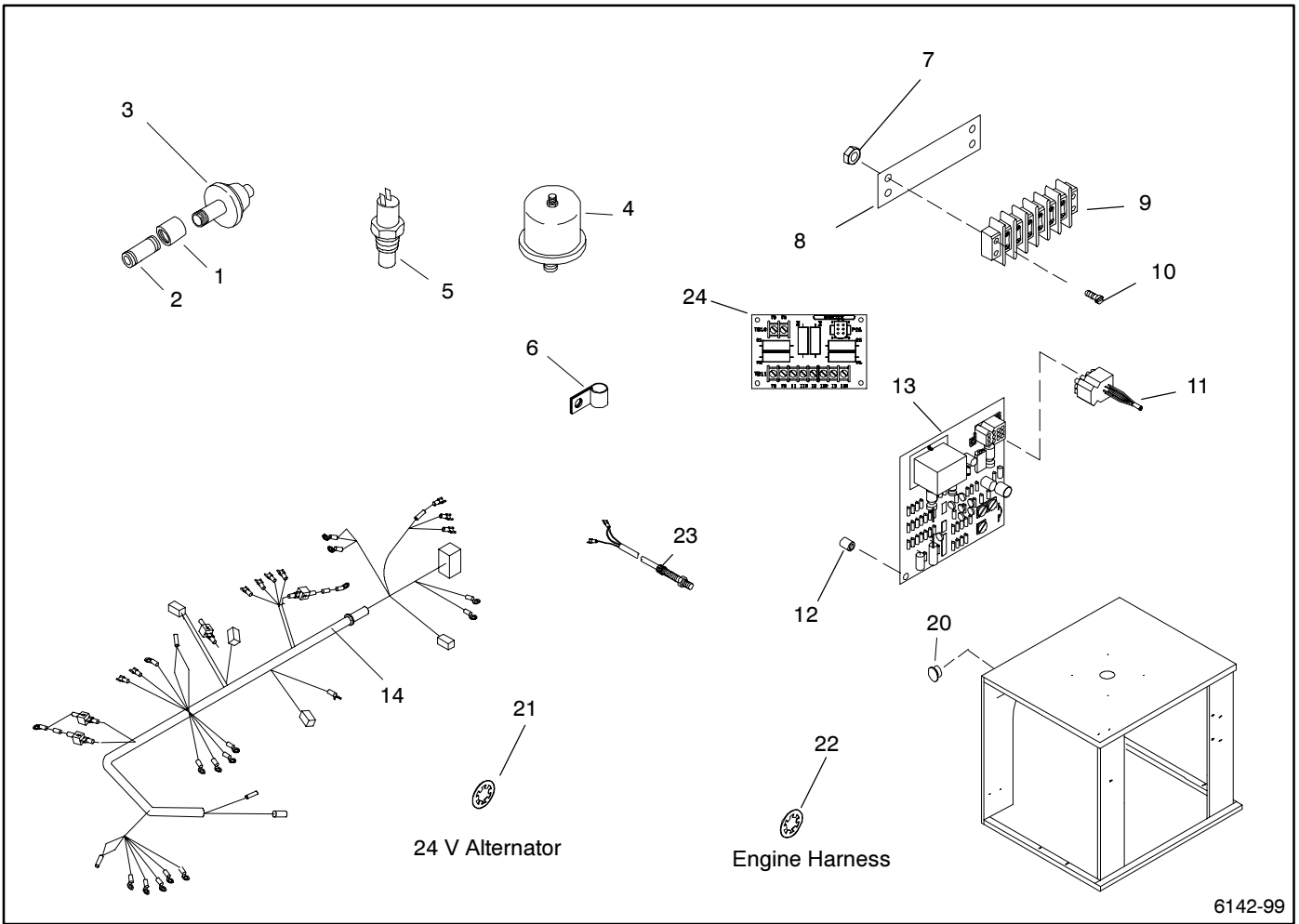
Group 201: Generator and Mounting, continued

Alternator Part Number and Mount Type

Use this table to identify the part numbers of items 2, 15, 16, 18, 22, and 25.

Module No.	Alternator Description	Alternator Assembly	Item 2, Rotor Assembly	Item 15, Drive Disc	Item 16, Adapter	Item 18, Field Exciter	Item 22, Stator Assembly	Item 25, Lead Connector
GM19371-MA1	4P4	C-257730	A-258980	257015	257019	257080	257765	257986
GM19371-MA2	4P4, 600 V	B-257848	A-258980	257015	257019	257080	257770	257986
GM19371-MA3	4Q4	B-360730	A-258980	257015	257019	257080	360747	257986
GM19371-MA4	4P5	C-257722	A-258979	257015	257019	257080	257766	257986
GM19371-MA5	4P5, 600 V	C-257735	A-258979	257015	257019	257080	257771	257986
GM19371-MA6	4P7	C-257723	A-258978	257015	257019	257081	257767	257986
GM19371-MA7	4P7, 600 V	B-257845	A-258978	257015	257019	257081	257772	257986
GM19371-MA8	4P8	C-257724	A-258977	257015	257019	257081	257768	257986
GM19371-MA9	4P8, 600 V	C-257736	A-258977	257015	257019	257081	257773	257986
GM19371-MA10	4Q10	B-360734	A-258975	257015	257019	257081	360751	257986
GM17672-MA1	4S7	GM17563-1	A-276659	257102	257175	276657	GM17559-1	257985
GM17672-MA2	4S7, 600 V	GM17563-4	A-276659	257102	257175	276657	GM17561-1	257985
GM17672-MA3	4S7	GM17563-13	A-276664	257103	257175	276657	GM17559-1	257985
GM17672-MA4	4S7, 600 V	GM17563-15	A-276664	257103	257175	276657	GM17561-1	257985
GM17672-MA5	4S9	GM17563-14	A-276665	257103	257175	276657	GM17559-2	257985
GM17672-MA6	4S9, 600 V	GM17563-16	A-276665	257103	257175	276657	GM17561-2	257985
GM17672-MA7	4S13	GM17563-11	A-276666	257103	257175	276657	GM17559-3	257985
GM17672-MA8	4S13, 600 V	GM17563-12	A-276666	257103	257175	276657	GM17561-3	257985
GM17672-MA9	4V7, 1 Phase	GM17563-26	A-276659	257102	257175	276657	GM17562-3	257978
GM17672-MA10	4V9, 1 Phase	GM17563-24	A-276665	257103	257175	276657	GM17562-2	257978
GM17672-MA11	4V11, 1 Phase	GM17563-23	A-343443	257103	257175	276657	GM17562-1	257978
GM17672-MA12	4S11	GM17563-21	A-343443	257103	257175	276657	GM17559-4	257985
GM17672-MA13	4S11, 600 V	GM17563-20	A-343091	257104	257192	276657	GM17561-4	257985
GM17672-MA14	4V7, 1 Phase	GM17563-25	A-276664	257103	257175	276657	GM17562-3	257978
GM17672-MA15	4S9	GM17563-14	A-276665	257103	257175	276657	GM17559-2	257985
GM17672-MA16	4S9, 600 V	GM17563-16	A-276665	257103	257175	276657	GM17561-2	257985
GM17672-MA17	4V11, 1 Phase	GM17563-23	A-343443	257103	257175	276657	GM17562-1	257978
GM17672-MA18	4S11	GM17563-21	A-343443	257103	257175	276657	GM17559-4	257985
GM17672-MA19	4S11, 600 V	GM17563-20	A-343091	257104	257192	276657	GM17561-4	257985
GM17672-MA20	4S13	GM17563-11	A-276666	257103	257175	276657	GM17559-3	257985
GM17672-MA21	4S13, 600 V	GM17563-12	A-276666	257103	257175	276657	GM17561-3	257985
GM17672-MA22	4S15	GM17563-32	A-364409	257103	257175	276657	GM17560	257985
GM17672-MA23	4S15, 600 V	GM17563-33	A-364409	257103	257175	276657	GM17561-5	257985
GM17672-MA24	4S7	GM17563-13	A-276664	257103	257175	276657	GM17559-1	257985
GM17672-MA25	4S7, 600 V	GM17563-15	A-276664	257103	257175	276657	GM17561-1	257985
GM17672-MA26	4S9	GM17563-14	A-276665	257103	257175	276657	GM17559-2	257985
GM17672-MA27	4S9, 600 V	GM17563-16	A-276665	257103	257175	276657	GM17561-2	257985
GM17672-MA28	4V9, 1 Phase	GM17563-24	A-276665	257103	257175	276657	GM17562-2	257978
GM19673-MA1	4UA9	B-347209	A-347187	257581	347240	347707	347197	257978
GM19673-MA2	4UA9, 600 V	B-347213	A-347187	257581	347240	347707	347203	257978
GM19673-MA3	4UA10	B-347210	A-347188	257581	347240	347707	347198	257978
GM19673-MA4	4UA10, 600 V	B-347214	A-347188	257581	347240	347707	347204	257978
GM19673-MA5	4UA13	B-347211	A-347189	257581	347240	347707	347199	257979
GM19673-MA6	4UA13, 600 V	B-347215	A-347189	257581	347240	347707	347205	257978
GM17701-MA1	4P5	C-257719	A-258979	257015	257018	257080	257766	257986
GM17701-MA2	4P5, 600 V	C-257726	A-258979	257015	257018	257080	257771	257986
GM17701-MA3	4P5B	GM16880	A-326938	257015	257018	257080	360501	257986
GM17701-MA4	4P5B, 600 V	GM16881	A-326938	257015	257018	257080	GM13681	257986
GM17701-MA5	4P7B	GM16882	A-336564	257015	257018	257081	326728	257986
GM17701-MA6	4P7B, 600 V	GM16883	A-336564	257015	257018	257081	GM13682	257986
GM17701-MA7	4P8	C-257721	A-258977	257015	257018	257081	257768	257986
GM17701-MA8	4P8, 600 V	C-257728	A-258977	257015	257018	257081	257773	257986
GM17701-MA9	4P10	C-257739	A-258975	257015	257018	257081	257769	257986
GM17701-MA10	4P10, 600 V	C-257729	A-258975	257015	257018	257081	257774	257986
GM17701-MA11	4Q5, 1 Phase	B-360736	A-258979	257015	257018	257080	360748	257986
GM17701-MA12	4Q10, 1 Phase	B-360739	A-258975	257015	257018	257081	360751	257986
GM17701-MA13	4Q10, 1 Phase	B-360739	A-258975	257015	257018	257081	360751	257986
GM17701-MA14	4P8	C-257721	A-258977	257015	257018	257081	257768	257986
GM17701-MA15	4P8, 600 V	C-257728	A-258977	257015	257018	257081	257773	257986
GM17701-MA16	4P10	C-257739	A-258975	257015	257018	257081	257769	257986
GM17701-MA17	4P10, 600 V	C-257729	A-258975	257015	257018	257081	257774	257986

Control and Harness



Control and Harness

Cross-reference the module number of your control and harness and engine group variation to the letter key in the Model Number to Key Cross-Reference table below. Refer to the key column in the following table.

Item	Part Number	Description	Quantity											
			Module Key											
			A	B	C	D	F	G	H	I	J	K	P	Q
1	X-216-24	Coupling, pipe, 1/8 x 1 3/16 in.	1	1	1	1	1	1	1	1	1			
2	X-217-6	Nipple, pipe, 1/8 x 3/4 in.	1	1	1	1	1	1	1	1				
3	328309	Switch assembly, pressure	1	1	1	1	1	1	1	1		1	1	1
4	343473	Sender, oil pressure	1			1	1	1		1	1	1	1	1
5	GM10626	Switch, sensor	1				1	1		1	1	1	1	
5	336923	Switch, high temperature shutoff		1	1				1					1
6	X-672-3	Clamp, insulating	2	2	2	2							2	2
6	X-672-37	Clamp					1		1	1			1	1
6	X-672-38	Clamp						1						
6	298776	Base, tie wrap					1	1	1	1	1	1	1	
7	M934-04-50	Nut, hex, 4 mm	4	4	4	4	2	2	2	2	2	2	2	2
8	255080	Marker, strip	1	1	1	1	1	1	1	1	1	1	1	1
9	295314	Block, terminal	1	1	1	1	1	1	1	1	1	1	1	1
10	M7985A-04020-20	Screw, pan head machine	4	4	4	4	2	2	2	2	2	2	2	2
11	226650	Harness, wiring	1	1	1	1								
11	354118	Harness, wiring					1	1	1	1	1	1	1	1
12	360459	Standoff, circuit board	6	6	6	6	5	5	5	5	5	5	6	6
13	A-226646	PCB assembly, FRIL voltage, Hz regulator	1	1										
13	A-360800	PCB assembly, FRIL voltage, Hz regulator			1	1								
13	C-255670	PCB assembly, FRIL voltage, Hz regulator					1		1	1	1	1	1	1
13	A-354653	PCB assembly, FRIL voltage, Hz regulator						1						
14	GM17613	Harness, engine, 20-40 kW*	1	1	1	1								
14	GM19883	Harness, engine, 180 kW*					1		1					
14	GM19884	Harness, engine, 200/230 kW*						1						
14	GM22168	Harness, engine, 180 kW, 24 V*								1				
14	GM20876	Harness, engine, 150 kW*									1	1		
14	GM21272	Harness, engine, 50-80 kW*											1	1
15	GM13701	Connector, weathertight, 2-position	1	1	1	1	1	1	1	1	1	1	1	1
16	233959	Diode, 6 A	4	4	4	4	4	4	4	4	4	4	4	4
17	292800	Connector, cable	1	1	1	1	1	1	1	1	1	1	1	1
18	295145	Connector, 24-position	1	1	1	1	1	1	1	1	1	1	1	1
20	X-301-45	Plug, button					1	1	1	1	1	1	1	1
21	X-22-16	Washer, lock, .326 ID x .883 in. OD						1	1	1	1	1	1	1
22	X-22-15	Washer, lock, .456 ID x 1.058 in. OD (4UA alternator)						1						
22	X-22-26	Washer, lock, .521 ID x 1.24 in. OD (4S alternator)						1	1	1	1	1	1	1

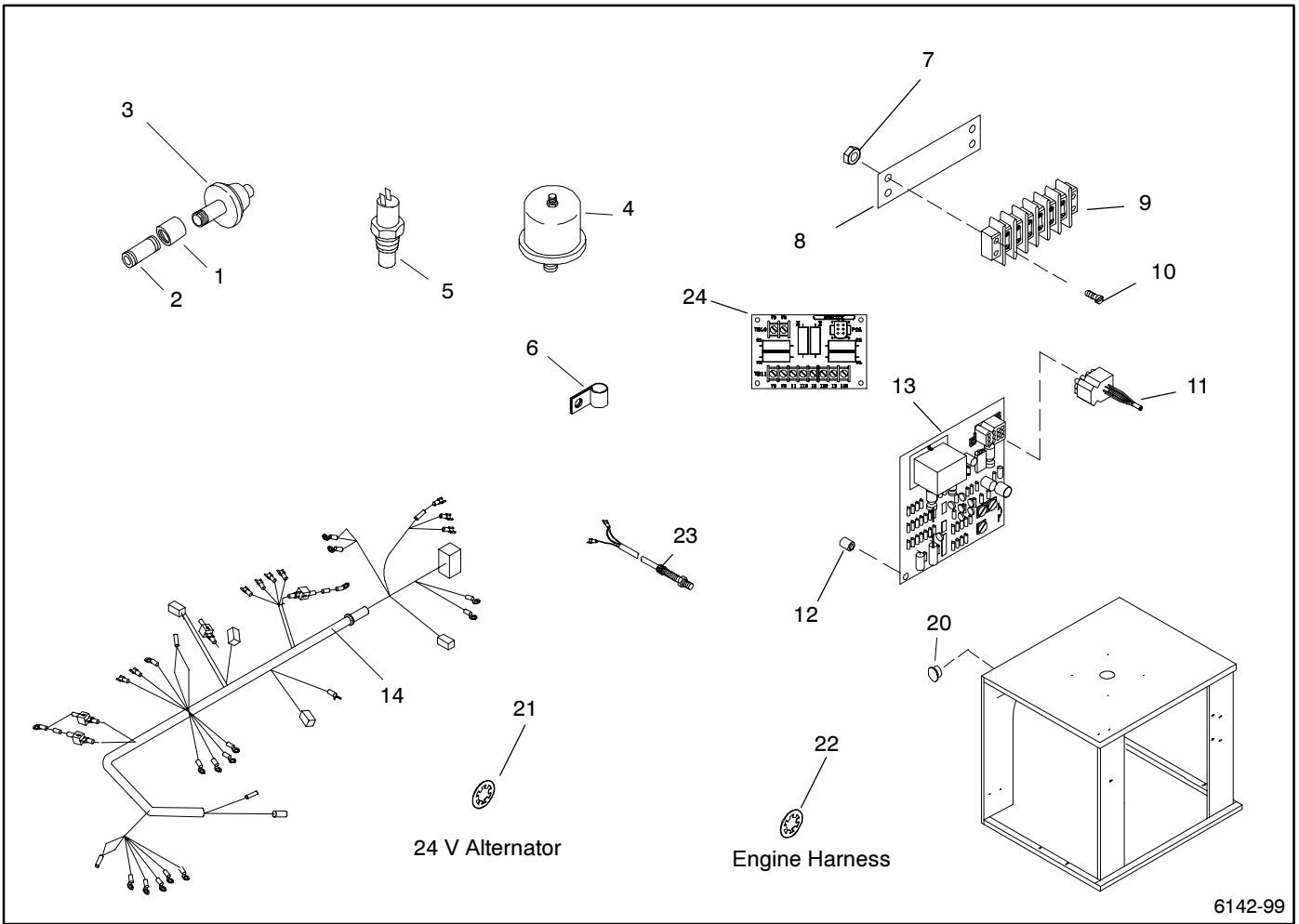
* Harness includes items 15-18, not shown.

Module Number to Key Cross-Reference

Use the module number of your control and harness from the generator set nameplate or engine group variation from the Specification Number Index to determine the key.

kW	Controllers	Kit Number	Key
20-40	Decision-Maker 1 without gauges and meters, 1 phase	GM19459-MA3	C
20-40	16-Light and Decision-Maker 1 with gauges and meters, 1 phase	GM19459-MA4	D
30-45	16-Light and Decision-Maker 1	GM19459-MA1	A
30-45	Decision-Maker 1 without gauges and meters	GM19459-MA2	B
50-80	16-Light and Decision-Maker 1 with gauges and meters	GM21205-MA1	P
50-80	Decision-Maker 1 without gauges and meters	GM21205-MA2	Q
100-150	16-Light and Decision-Maker 1 with gauges and meters	GM20880-MA1	J
100/125	Decision-Maker 1 without gauges and meters	GM20880-MA2	K
180/12 V	16-Light and Decision-Maker 1 with gauges and meters	GM19873-MA1	F
180/12 V	Decision-Maker 1 without gauges and meters	GM19873-MA3	H
180/24 V	16-Light	GM19873-MA4	I
200230	16-Light	GM19873-MA2	G

Control and Harness



Control and Harness

Cross-reference the module number of your control and harness and engine group variation to the letter key in the Model Number to Key Cross-Reference table below. Refer to the key column in the following table.

Item	Part Number	Description	Quantity					
			Module Key					
			E	L	M	N	O	R
4	GM16788	Sensor, pressure	1	1	1	1	1	1
5	GM16787	Sensor, temperature	1	1	1	1	1	1
6	X-672-3	Clamp, insulating	2					2
6	X-672-37	Clamp		1		1		1
6	X-672-38	Clamp			1			
6	298776	Base, tie wrap		1	1	1	1	
7	M934-04-50	Nut, hex, 4 mm	2	2		2	2	2
8	254127	Marker, strip	1	1		1	1	1
9	X-405-2	Block, terminal	1	1		1	1	1
10	M7985A-04020-20	Screw, pan head machine	2	2		2	2	2
14	GM19353	Harness, engine, 20-40 kW*	1					
14	GM19885	Harness, engine, 180 kW*		1				
14	GM19886	Harness, engine, 200/230 kW*			1			
14	GM22169	Harness, engine, 180 kW, 24 V*				1		
14	GM20877	Harness, engine, 150 kW*					1	
14	GM21273	Harness, engine, 50-80 kW*						1
15	GM13701	Connector, weathertight, 2-position	1	1	1	1	1	1
16	233959	Diode, 6 A	4	4	4	4	4	4
17	292800	Connector, cable	1	1	1	1	1	1
18	295145	Connector, 24-position	1	1	1	1	1	1
19	GM15493	Connector, 3-position	1	1	1	1	1	1
20	X-301-45	Plug, button		1	1	1	1	
21	X-22-16	Washer, lock, .326 ID x .883 in. OD			1			
22	X-22-15	Washer, lock, .456 ID x 1.058 in. OD (4UA alternator)			1	1		
22	X-22-26	Washer, lock, .521 ID x 1.24 in. OD (4S alternator)		1		1	1	
23	255750	Pickup, magnetic	1					1
23	273758	Pickup, magnetic		1	1	1	1	
23	X-22-17	Washer, lock			2			
23	X-25-29	Washer, plain		1		1	1	
24	GM13980	PCB assembly, CT burden resistor			1			
24	282829	Vibromount			4			

* Harness includes items 15-19, not shown.

Module Number to Key Cross-Reference

Use the module number of your control and harness from the generator set nameplate or engine group variation from the Specification Number Index to determine the key.

kW	Controllers	Kit Number	Key
20-40	Decision-Maker 550	GM19460-MA1	E
50-80	Decision-Maker 550	GM21206-MA1	R
100-150	Decision-Maker 550	GM20881-MA1	O
180, 24 V	Decision-Maker 550	GM19878-MA3	N
180, 12 V	Decision-Maker 550	GM19878-MA1	L
200/230 24 V	Decision-Maker 550	GM19878-MA2	M

Group 701: Literature

Item	Part Number	Description	Quantity													
			Variation Number													
			132	134	136	138	140	142	144	146	156	158	160	162	164	
1	TP-5353	S/M 20-300kW, Industrial	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	TP-5374	Warranty, 1 Yr. Ltd.	1	1	1	1	1	1	1	1	1	1	1	1	1	1
3	TP-5700	I/M Stationary Duty	1	1	1	1	1	1	1	1	1	1	1	1	1	1
4	TP-5750	O/M 20-2000 kW	1	1	1	1	1	1	1	1	1	1	1	1	1	1
5	TP-5889	O/M John Deere Engine Service Supplement	1	1	1	1	1	1	1	1	1	1	1	1	1	1
6	TP-6009	P/C Controllers, Industrial	1	1	1	1	1	1	1	1	1	1	1	1	1	1
7	TP-6083	O/M Decision-Maker 550 Controller	1	1	1	1	1	1	1	1	1	1	1	1	1	1
8	TP-6116	P/C Accessories, 20-200 kW Diesel, Industrial	1	1	1	1	1	1	1	1	1	1	1	1	1	1
9	TP-6141	P/C John Deere 3029	1	1	1	1										
9	TP-5826	P/C John Deere 6081					1	1	1							
9	TP-5386	P/C John Deere 6059/6068								1		1	1	1	1	1
9	TP-5434	P/C John Deere 4039/4045									1	1	1	1	1	1
10	TP-6142	P/C 20-230REOZJB	1	1	1	1	1	1	1	1	1	1	1	1	1	1
11	TP-6144	O/M John Deere Diesel Engine 3029DF	1	1	1	1										
11	TP-5824	O/M John Deere 6081					1	1	1							
11	TP-5853	O/M John Deere 4045/6068								1	1	1	1	1	1	1
12	TP-6145	S/M John Deere Diesel Engine 3029DF	1	1	1	1										
12	TP-5825	S/M John Deere 6081					1	1	1							
12	TP-5854	S/M John Deere 4045/6068								1	1	1	1	1	1	1
13	TP-6146	W/D John Deere 20-230REOZJB	1	1	1	1	1	1	1	1	1	1	1	1	1	1
11	TP-5826	P/C John Deere 6081					1	1	1							
11	TP-5386	P/C John Deere 6059/6068								1					1	1
11	TP-5434	P/C John Deere 4039/4045									1	1	1	1	1	1
12	TP-5824	O/M John Deere 6081					1	1	1							
12	TP-5853	O/M John Deere 4045/6068								1	1	1	1	1	1	1
13	TP-5825	S/M John Deere 6081					1	1	1							
13	TP-5854	S/M John Deere 4045/6068								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.

	20-40 kW	50/60 kW	80 kW	100/125 kW
Controllers				
See Parts Catalog TP-6009 for parts lists.				
Cooling Systems				
Heater, block				
110-120 V	GM19451-KA1	GM20968-KA3	GM20968-KA3	GM20968-KA1
190-240 V	GM19451-KA2	GM20968-KA4	GM20968-KA4	GM20968-KA2
Remote radiator	GM20116-MA1	GM17686-MA1	GM17686-MA1	TBD
City water cooling	GM20115-MA1	GM17685-MA1	GM17685-MA3	TBD
City water cooling, 24 V	N/A	GM17685-MA2	GM17685-MA4	TBD
Duct flange, radiator	GM13896-KA1	GM13896-KA1	GM13896-KA1	GM13896-KA1
Optional Kits				
See Parts Catalog TP-6116 for parts lists.				
Paint and Miscellaneous Parts				
Paint, Kohler Cream Beige	All models use 221338 spray can, 221337 gallon, GM19489 touch-up			

	150 kW	180/200 kW	230 kW
Controllers			
See Parts Catalog TP-6009 for parts lists.			
Cooling Systems			
Heater, block			
110-120 V	GM20968-KA1	GM19947-KA1	GM19947-KA1
190-240 V	GM20968-KA2	GM19947-KA2	GM19947-KA2
Remote radiator	TBD	GM20579-MA1	GM20579-MA1
City water cooling	TBD	GM20578-MA1	GM20578-MA1
City water cooling, 24 V	TBD	GM20578-MA2	GM20578-MA2
Duct flange, radiator	GM21035-KA1	GM21035-KA1	GM21035-KA2
Optional Kits			
See Parts Catalog TP-6116 for parts lists.			
Paint and Miscellaneous Parts			
Paint, Kohler Cream Beige	All models use 221338 spray can, 221337 gallon, GM19489 touch-up		

Cooling System Kits

Qty.	Description	Part No.
------	-------------	----------

Block Heater, 110-120 V

Qty.	Description	Part No.
1	Heater, block	326228
1	Bushing, reducing, 1/2 x 1 in. NPT	168848
1	Bracket, block heater mounting	326219
1	Hose, molded, .62 in. ID	X-312-5
1	Hose, molded, .62 in. ID	X-312-35
4	Clamp, hose, .5/1 in.	X-426-10
2	Connector, hose + vibraseal	X-582-1
1	Clamp	X-672-37
2	Elbow, pipe, 90 deg. x 1/2 in. NPT	X-215-3
2	Pipe, 1/2 in. NPT x 3.00 in.	X-209-11
1	Coupling, pipe, 1/2 in.	X-216-32
2	Washer, plain	M125A-06-80
2	Washer, plain	M125A-10-80
2	Nut, hex, 6 mm	M6923-06-80
2	Nut, hex, 10 mm	M6923-10-80
2	Screw, hex cap	M933-06014-60
2	Screw, hex cap	M933-10025-60
1	Bolt, hex cap	X-129-15
2	Cable tie	X-468-1

Block Heater, 190-240 V

Qty.	Description	Part No.
1	Heater, block	326229
1	Bushing, reducing, 1/2 x 1 in. NPT	168848
1	Bracket, block heater mounting	326219
1	Hose, molded, .62 in. ID	X-312-5
1	Hose, molded, .62 in. ID	X-312-35
4	Clamp, hose, .5/1 in.	X-426-10
2	Connector, hose + vibraseal	X-582-1
1	Clamp	X-672-37
2	Elbow, pipe, 90 deg. x 1/2 in. NPT	X-215-3
2	Pipe, 1/2 in. NPT x 3.00 in.	X-209-11
1	Coupling, pipe, 1/2 in.	X-216-32
2	Washer, plain	M125A-06-80
2	Washer, plain	M125A-10-80
2	Nut, hex, 6 mm	M6923-06-80
2	Nut, hex, 10 mm	M6923-10-80
2	Screw, hex cap	M933-06014-60
2	Screw, hex cap	M933-10025-60
1	Bolt, hex cap	X-129-15
2	Cable tie	X-468-1

Block Heater, 120V

Qty.	Description	Part No.
1	Heater, block	326234
1	Adapter, bushing	273692
1	O-ring	273693
1	Tag, hang	279047
1	Bracket, block heater mounting	326219
1	Elbow, street, 90 deg. x 3/4 in. NPTF	SA-472
1	Elbow, street, 90 deg. x 1/2 in. NPTF	X-211-1
1	Hose, .63 in. ID x 30 in.	X-312-24
1	Hose, .63 in. ID x 56 in.	X-312-49
4	Clamp, hose, .5/1 in.	X-426-10
1	Connector, hose + vibraseal	X-582-1
1	Connector, hose + vibraseal	X-582-3
1	Hose, rubber, straight, .25 in. ID	X-6359-7

Block Heater, 240V

Qty.	Description	Part No.
1	Heater, block	326235
1	Adapter, bushing	273692
1	O-ring	273693
1	Tag, hang	279047
1	Bracket, block heater mounting	326219
1	Elbow, street, 90 deg. x 3/4 in. NPTF	SA-472
1	Elbow, street, 90 deg. x 1/2 in. NPTF	X-211-1
1	Hose, .63 in. ID x 30 in.	X-312-24
1	Hose, .63 in. ID x 56 in.	X-312-49
4	Clamp, hose, .5/1 in.	X-426-10
1	Connector, hose + vibraseal	X-582-1
1	Connector, hose + vibraseal	X-582-3
1	Hose, rubber, straight, .25 in. ID	X-6359-7

Qty.	Description	Part No.
------	-------------	----------

Block Heater, 1500W, 120V

Qty.	Description	Part No.
1	Heater, block	326228
1	Hose, .63 in. ID x 30 in.	X-312-24
1	Hose, .63 in. ID x 56 in.	X-312-49
1	Elbow, street, 45 deg. x 1/2 in. NPT	227642
2	Adapter, bushing	273692
2	O-ring	273693
1	Tag, hang	279047
1	Bracket, block heater mounting	326219
1	Adapter, bushing	326471
1	O-ring, ISO 6149, 11.3 mm ID	365499
1	Pipe, 1/2 in. NPT x 4.00 in.	X-209-18
1	Elbow, pipe, 90 deg. x 1/2 in. NPT	X-215-3
4	Clamp, hose, .5/1 in.	X-426-10
2	Connector, hose + vibraseal	X-582-1
1	Clamp, insulating	X-672-3

Block Heater, 1500W, 240V

Qty.	Description	Part No.
1	Heater, block	326229
1	Hose, .63 in. ID x 30 in.	X-312-24
1	Hose, .63 in. ID x 56 in.	X-312-49
1	Elbow, street, 45 deg. x 1/2 in. NPT	227642
2	Adapter, bushing	273692
2	O-ring	273693
1	Tag, hang	279047
1	Bracket, block heater mounting	326219
1	Adapter, bushing	326471
1	O-ring, ISO 6149, 11.3 mm ID	365499
1	Pipe, 1/2 in. NPT x 4.00 in.	X-209-18
1	Elbow, pipe, 90 deg. x 1/2 in. NPT	X-215-3
4	Clamp, hose, .5/1 in.	X-426-10
2	Connector, hose + vibraseal	X-582-1
1	Clamp, insulating	X-672-3

Block Heater, 1500W, 120V

Qty.	Description	Part No.
1	Heater, block	326228
1	Hose, .63 in. ID x 5.5 in.	X-312-17
1	Hose, .63 in. ID x 49 in.	X-312-37
1	Elbow, street, 45 deg. x 1/2 in. NPT	227642
2	Adapter, bushing	273692
2	O-ring	273693
1	Tag, hang	279047
1	Bracket, block heater mounting	326219
1	Adapter, bushing	326471
1	O-ring, ISO 6149, 11.3 mm ID	365499
1	Pipe, 1/2 in. NPT x 4.00 in.	X-209-18
1	Elbow, pipe, 90 deg. x 1/2 in. NPT	X-215-3
4	Clamp, hose, .5/1 in.	X-426-10
2	Connector, hose + vibraseal	X-582-1
1	Clamp, insulating	X-672-3

Block Heater, 1500W, 240V

Qty.	Description	Part No.
1	Heater, block	326229
1	Hose, .63 in. ID x 5.5 in.	X-312-17
1	Hose, .63 in. ID x 49 in.	X-312-37
1	Elbow, street, 45 deg. x 1/2 in. NPT	227642
2	Adapter, bushing	273692
2	O-ring	273693
1	Tag, hang	279047
1	Bracket, block heater mounting	326219
1	Adapter, bushing	326471
1	O-ring, ISO 6149, 11.3 mm ID	365499
1	Pipe, 1/2 in. NPT x 4.00 in.	X-209-18
1	Elbow, pipe, 90 deg. x 1/2 in. NPT	X-215-3
4	Clamp, hose, .5/1 in.	X-426-10
2	Connector, hose + vibraseal	X-582-1
1	Clamp, insulating	X-672-3

Cooling System Kits

Qty.	Description	Part No.
------	-------------	----------

Remote Radiator		GM20116-MA1
1	Fitting, 45 deg. street elbow + vibraseal	227521
1	Hose, lower radiator, 1.88 in. ID	273418
2	Bracket, remote radiator and city water cooling	GM16996
1	Hose, upper radiator, 38.0 mm ID	GM19031
1	Guard, belt right side upper	GM19630
1	Guard, belt right side lower	GM19631
1	Guard, belt left side	GM19632
1	Guard, belt top	GM19633
1	Guard, belt bottom	GM19634
1	Guard, belt back	GM19635
1	Guard, belt front	GM20069
1	Bracket, mounting top	GM20070
1	Bracket, mounting, left side	GM20071
1	Valve, drain, 1/4 in. NPT	X-256-3
3	Clamp, hose, 1.31/2.25 in.	X-426-4
1	Clamp, hose, 1.56/2.5 in.	X-426-6
7	Screw, hex washer head, drill	X-794-1

Remote Radiator Set-Up		GM20579-KA1
1	Hose, molded coolant, 2.50 in. ID	336664
1	Hose, lower radiator, 2.00 in. ID	336878
1	Bracket	352181
8	Insert, threaded (metric) 6mm	GM11040-2
1	Guard, belt, top	GM19548
1	Bracket, mounting, top	GM19549
1	Guard, belt, right side	GM19550
1	Guard, belt, front	GM19551
1	Guard, belt, bottom	GM19552
1	Bracket, mounting, lower	GM19553
1	Guard, belt, left side	GM19567
1	Cover, front belt guard	GM21082
1	Valve, drain, 1/2 in. NPTF	X-256-5
4	Clamp, hose, 1.56/2.5 in.	X-426-6

Qty.	Description	Part No.
------	-------------	----------

City Water Cooling (CWC)		GM20115-MA1
6	Elbow, pipe, 90 deg. x 1-1/2 in. NPT	151771
4	Pipe, 1-1/2 in. NPT x 1.75 in.	155040
1	Bushing, reducing, 1/2 x 1 in. NPT	168848
1	Fitting, 45 deg. street elbow + vibraseal	227521
4	Clamp, hose, 1.75/2 in.	249888
1	Cap, pressure	258037
1	Hose, lower radiator, 1.88 in. ID	273418
1	Heat exchanger	326160
2	Bracket, remote radiator and city water cooling	GM16996
1	Tank, expansion	GM17014
2	Bracket, tank support	GM17015
1	Valve, thermostatic	GM17016
1	Guard, belt right side upper	GM19630
1	Guard, belt right side lower	GM19631
1	Guard, belt left side	GM19632
1	Guard, belt top	GM19633
1	Guard, belt bottom	GM19634
1	Guard, belt back	GM19635
1	Guard, belt front	GM20069
1	Bracket, mounting top	GM20070
1	Bracket, mtg., left side	GM20071
2	Pipe, 1 in. NPT x 2.00 in.	K-122
1	Pipe, 3/8 in. NPT x 2.00 in.	X-204-6
1	Pipe, 1-1/2 in. NPT x 3.25 in.	X-205-11
1	Pipe, 1-1/2 in. NPT x 5.00 in.	X-205-21
1	Pipe, 1/2 in. NPT x 1.19 in.	X-209-2
1	Elbow, street, 90 deg. x 1/2 in. NPT	X-211-1
1	Elbow, pipe, 90 deg. x 1 in. NPT	X-215-15
1	Coupling, pipe, 3/8 in. NPSC	X-216-23
2	Valve, drain, 3/8 in. NPT	X-256-1
1	Valve, drain, 1/4 in. NPT	X-256-3
1	Terminal, ring, male, 10-12 AWG	X-283-11
1	Clamp, spring hose, .462/.545 in.	X-309-14
1	Valve, solenoid, 5/8-12	X-350-7
1	Fuel line, flexible	X-386-36
4	Spacer, .406 ID x .75 OD x 1.05 in.	X-400-200
1	Clamp, hose, 1.31/2.25 in.	X-426-4
1	Clamp, hose, 1.56/2.5 in.	X-426-6
1	Terminal, flag, female, 16-14 AWG	X-431-37
3	Adapter	X-570-17
1	Adapter, hose	X-570-19
1	Hose, radiator wire inset 1.50 ID	X-6014-109
1	Hose, radiator, straight, 1.5 in. ID	X-6014-77
21	Screw, Phillips hex crimplite	X-6216-1
7	Screw, hex washer head, drill	X-794-1

Cooling System Kits

Qty.	Description	Part No.
------	-------------	----------

Cooling, City Water, Heat Exchanger (12V) GM20578-MA1

1	Pipe, 1 1/2 in. NPT x 1.75 in.	155040
1	Decal, warning hot coolant	249810
4	Clamp, hose, 2.25/2.56 in.	249887
1	Cap, pressure	258037
1	Tank, expansion	274645
1	Regulator, water	289477
1	Hose, upper radiator, 2.50 in. ID, city water cooling	336680
1	Bracket	352181
8	Insert, threaded (metric) 6mm	GM11040-2
1	Brace, tank	GM19386
1	Guard, belt, top	GM19548
1	Bracket, mounting, top	GM19549
1	Guard, belt, right side	GM19550
1	Guard, belt, front	GM19551
1	Guard, belt, bottom	GM19552
1	Bracket, mounting, lower	GM19553
1	Guard, belt, left side	GM19567
1	Exchanger, heater	GM20594
1	Cover, front belt guard	GM21082
2	Support, expansion tank	GM21083
1	Bracket, expansion tank mounting	GM21084
1	Elbow, street, 90 deg. x 3/4 in. NPTF	SA-472
1	Bushing, reducing, 3/4 x 1 1/2 in. NPT	X-202-40
2	Pipe, 3/8 in. NPT x 1.50 in.	X-204-8
1	Pipe, 3/4 in. NPT x 1.38 in.	X-206-9
1	Elbow, street, 90 deg. x 2 1/2 in. NPT	X-211-9
3	Elbow, pipe, 90 deg. x 2 in. NPT	X-215-6
2	Coupling, pipe, 3/8 in. NPSC	X-216-23
3	Pipe, 2 in. NPT x 2.00 in.	X-219-9
3	Valve, drain, 3/8 in. NPTF	X-256-1
1	Valve, drain, 1/2 in. NPTF	X-256-5
1	Clamp, spring hose, .462/.545 in.	X-309-14
1	Valve, solenoid	X-350-8
1	Fuel line, flexible	X-386-36
2	Clamp, hose, 2.31/3.25 in.	X-426-2
1	Adapter, hose	X-570-1
2	Hose, radiator, straight, 2 in. ID	X-6014-79
3	Nipple, combination	X-6268-2
1	Plug, pipe, 1 1/2 in. NPTF	X-75-16
1	Plug, pipe, 1/2 in. NPTF	X-75-3

Qty.	Description	Part No.
------	-------------	----------

Cooling, City Water, Heat Exchanger (24V) GM20578-MA2

1	Pipe, 1 1/2 in. NPT x 1.75 in.	155040
1	Decal, warning hot coolant	249810
4	Clamp, hose, 2.25/2.56 in.	249887
1	Cap, pressure	258037
1	Tank, expansion	274645
1	Regulator, water	289477
1	Hose, upper radiator, 2.50 in. ID, city water cooling	336680
1	Bracket	352181
8	Insert, threaded (metric) 6mm	GM11040-2
1	Brace, tank	GM19386
1	Guard, belt, top	GM19548
1	Bracket, mounting, top	GM19549
1	Guard, belt, right side	GM19550
1	Guard, belt, front	GM19551
1	Guard, belt, bottom	GM19552
1	Bracket, mounting, lower	GM19553
1	Guard, belt, left side	GM19567
1	Exchanger, heater	GM20594
1	Cover, front belt guard	GM21082
2	Support, expansion tank	GM21083
1	Bracket, expansion tank mounting	GM21084
1	Elbow, street, 90 deg. x 3/4 in. NPTF	SA-472
1	Bushing, reducing, 3/4 x 1 1/2 in. NPT	X-202-40
2	Pipe, 3/8 in. NPT x 1.50 in.	X-204-8
1	Pipe, 3/4 in. NPT x 1.38 in.	X-206-9
1	Elbow, street, 90 deg. x 2 1/2 in. NPT	X-211-9
3	Elbow, pipe, 90 deg. x 2 in. NPT	X-215-6
2	Coupling, pipe, 3/8 in. NPSC	X-216-23
3	Pipe, 2 in. NPT x 2.00 in.	X-219-9
3	Valve, drain, 3/8 in. NPTF	X-256-1
1	Valve, drain, 1/2 in. NPTF	X-256-5
1	Clamp, spring hose, .462/.545 in.	X-309-14
1	Valve, solenoid	X-350-11
1	Fuel line, flexible	X-386-36
2	Clamp, hose, 2.31/3.25 in.	X-426-2
1	Adapter, hose	X-570-1
2	Hose, radiator, straight, 2 in. ID	X-6014-79
3	Nipple, combination	X-6268-2
1	Plug, pipe, 1 1/2 in. NPTF	X-75-16
1	Plug, pipe, 1/2 in. NPTF	X-75-3

Duct Flange, Radiator

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

GM13896-KA1

Duct Flange, Radiator

2	Frame, air duct	364295
2	Frame, air duct	364312
8	Rivet, pop, .187 in.	X-781-11

GM21035-KA1

Duct Flange, Radiator

2	Frame, air duct	GM21038
2	Frame, air duct	GM21039
8	Rivet, pop, .187 in.	X-781-11

GM21035-KA2

Appendix A Abbreviations

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

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

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

Appendix B Common Hardware Application Guidelines

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

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

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

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

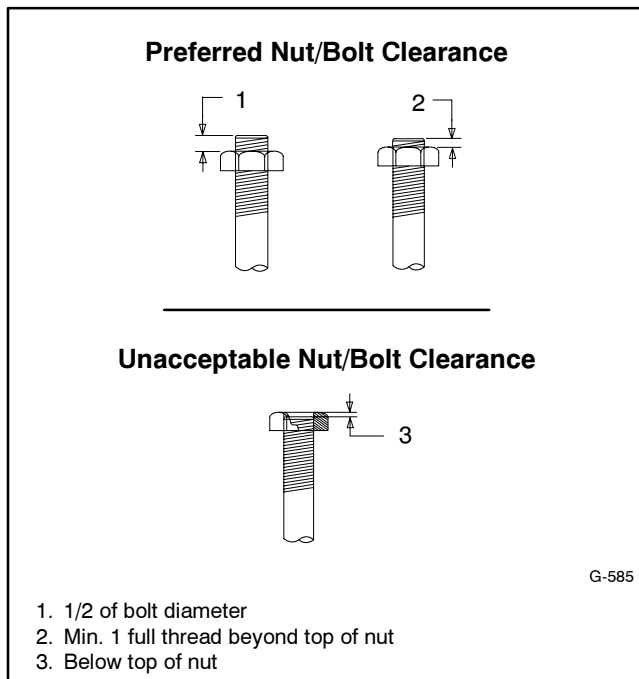


Figure 1 Acceptable Bolt Lengths

Steps for common hardware application:

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

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

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

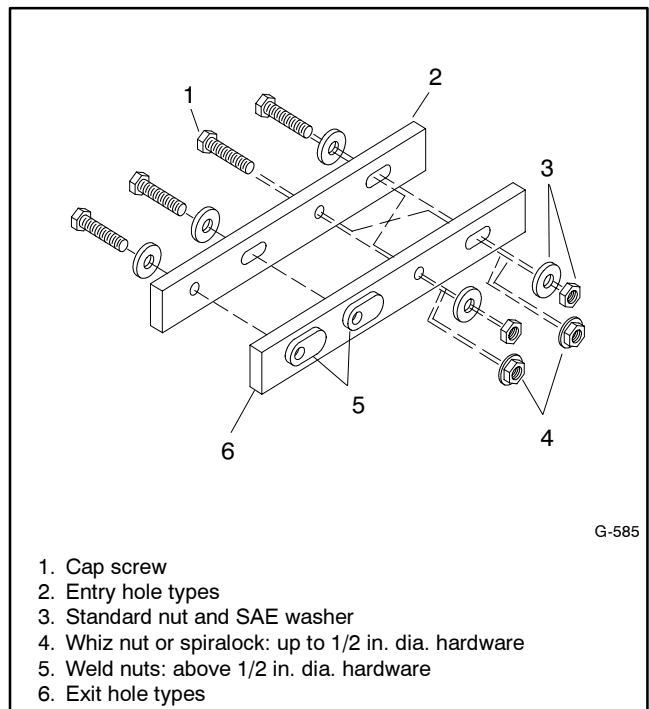


Figure 2 Acceptable Hardware Combinations

Appendix C General Torque Specifications















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












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






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

Metric Fasteners Torque Specifications, Measured in Nm (ft. lb.)					
Size (mm)	Assembled into Cast Iron or Steel			Assembled into Aluminum Grade 5.8 or 8.8	
	Grade 5.8	Grade 8.8	Grade 10.9		
M6 x 1.00	5.6 (4)	9.9 (7)	14.0 (10)	5.6 (4)	
M8 x 1.25	13.6 (10)	25.0 (18)	35.0 (26)	13.6 (10)	
M8 x 1.00	21.0 (16)	25.0 (18)	35.0 (26)	21.0 (16)	
M10 x 1.50	27.0 (20)	49.0 (35)	68.0 (50)	27.0 (20)	
M10 x 1.25	39.0 (29)	49.0 (35)	68.0 (50)	39.0 (29)	
M12 x 1.75	47.0 (35)	83.0 (61)	117.0 (86)	—	
M12 x 1.50	65.0 (48)	88.0 (65)	125.0 (92)	—	
M14 x 2.00	74.0 (55)	132.0 (97)	185.0 (136)	—	
M14 x 1.50	100.0 (74)	140.0 (103)	192.0 (142)	—	
M16 x 2.00	115.0 (85)	200.0 (148)	285.0 (210)	—	
M16 x 1.50	141.0 (104)	210.0 (155)	295.0 (218)	—	
M18 x 2.50	155.0 (114)	275.0 (203)	390.0 (288)	—	
M18 x 1.50	196.0 (145)	305.0 (225)	425.0 (315)	—	

Appendix D Common Hardware Identification

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

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

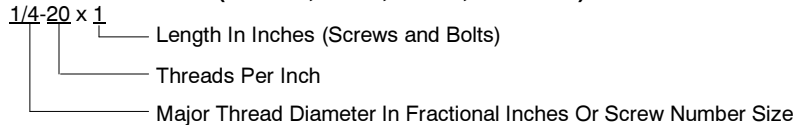
Hardness Grades	
American Standard	
Grade 2	
Grade 5	
Grade 8	
Grade 8/9 (Hex Socket Head)	
Metric	
Number stamped on hardware; 5.8 shown	

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

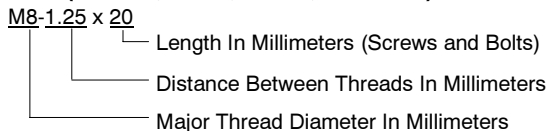
Phillips® screw is a registered trademark of Phillips Screw Company.

Sample Dimensions

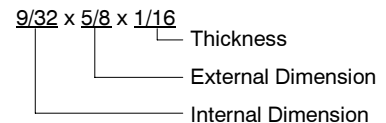
American Standard (Screws, Bolts, Studs, and Nuts)



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-6024-5	7/16-14 x .75	X-6009-1	1-8	Standard
X-465-6	1/4-20 x .50	X-6024-2	7/16-14 x 1.00	X-6210-3	6-32	Whiz
X-465-2	1/4-20 x .62	X-6024-8	7/16-14 x 1.25	X-6210-4	8-32	Whiz
X-465-16	1/4-20 x .75	X-6024-3	7/16-14 x 1.50	X-6210-5	10-24	Whiz
X-465-18	1/4-20 x .88	X-6024-4	7/16-14 x 2.00	X-6210-1	10-32	Whiz
X-465-7	1/4-20 x 1.00	X-6024-11	7/16-14 x 2.75	X-6210-2	1/4-20	Spiralock
X-465-8	1/4-20 x 1.25	X-6024-12	7/16-14 x 6.50	X-6210-6	1/4-28	Spiralock
X-465-9	1/4-20 x 1.50	X-129-15	1/2-13 x .75	X-6210-7	5/16-18	Spiralock
X-465-10	1/4-20 x 1.75	X-129-17	1/2-13 x 1.00	X-6210-8	5/16-24	Spiralock
X-465-11	1/4-20 x 2.00	X-129-18	1/2-13 x 1.25	X-6210-9	3/8-16	Spiralock
X-465-12	1/4-20 x 2.25	X-129-19	1/2-13 x 1.50	X-6210-10	3/8-24	Spiralock
X-465-14	1/4-20 x 2.75	X-129-20	1/2-13 x 1.75	X-6210-11	7/16-14	Spiralock
X-465-21	1/4-20 x 5.00	X-129-21	1/2-13 x 2.00	X-6210-12	1/2-13	Spiralock
X-465-25	1/4-28 x .38	X-129-22	1/2-13 x 2.25	X-6210-15	7/16-20	Spiralock
X-465-20	1/4-28 x 1.00	X-129-23	1/2-13 x 2.50	X-6210-14	1/2-20	Spiralock
X-125-33	5/16-18 x .50	X-129-24	1/2-13 x 2.75	X-85-3	5/8-11	Standard
X-125-23	5/16-18 x .62	X-129-25	1/2-13 x 3.00	X-88-12	3/4-10	Standard
X-125-3	5/16-18 x .75	X-129-27	1/2-13 x 3.50	X-89-2	1/2-20	Standard
X-125-31	5/16-18 x .88	X-129-29	1/2-13 x 4.00			
X-125-5	5/16-18 x 1.00	X-129-30	1/2-13 x 4.50			
X-125-24	5/16-18 x 1.25	X-463-9	1/2-13 x 5.50			
X-125-34	5/16-18 x 1.50	X-129-44	1/2-13 x 6.00			
X-125-25	5/16-18 x 1.75	X-129-51	1/2-20 x .75			
X-125-26	5/16-18 x 2.00	X-129-45	1/2-20 x 1.25			
230578	5/16-18 x 2.25	X-129-52	1/2-20 x 1.50			
X-125-29	5/16-18 x 2.50	X-6021-3	5/8-11 x 1.00			
X-125-27	5/16-18 x 2.75	X-6021-4	5/8-11 x 1.25			
X-125-28	5/16-18 x 3.00	X-6021-2	5/8-11 x 1.50			
X-125-22	5/16-18 x 4.50	X-6021-1	5/8-11 x 1.75			
X-125-32	5/16-18 x 5.00	273049	5/8-11 x 2.00			
X-125-35	5/16-18 x 5.50	X-6021-5	5/8-11 x 2.25			
X-125-36	5/16-18 x 6.00	X-6021-6	5/8-11 x 2.50			
X-125-40	5/16-18 x 6.50	X-6021-7	5/8-11 x 2.75			
X-125-43	5/16-24 x 1.75	X-6021-12	5/8-11 x 3.75			
X-125-44	5/16-24 x 2.50	X-6021-11	5/8-11 x 4.50			
X-125-30	5/16-24 x .75	X-6021-10	5/8-11 x 6.00			
X-125-39	5/16-24 x 2.00	X-6021-9	5/8-18 x 2.50			
X-125-38	5/16-24 x 2.75	X-6239-1	3/4-10 x 1.00			
X-6238-2	3/8-16 x .62	X-6239-8	3/4-10 x 1.25			
X-6238-10	3/8-16 x .75	X-6239-2	3/4-10 x 1.50			
X-6238-3	3/8-16 x .88	X-6239-3	3/4-10 x 2.00			
X-6238-11	3/8-16 x 1.00	X-6239-4	3/4-10 x 2.50			
X-6238-4	3/8-16 x 1.25	X-6239-5	3/4-10 x 3.00			
X-6238-5	3/8-16 x 1.50	X-6239-6	3/4-10 x 3.50			
X-6238-1	3/8-16 x 1.75	X-792-1	1-8 x 2.25			
X-6238-6	3/8-16 x 2.00	X-792-5	1-8 x 3.00			
X-6238-17	3/8-16 x 2.25	X-792-8	1-8 x 5.00			
X-6238-7	3/8-16 x 2.50					
X-6238-8	3/8-16 x 2.75					
X-6238-9	3/8-16 x 3.00					
X-6238-19	3/8-16 x 3.25					
X-6238-12	3/8-16 x 3.50					
X-6238-20	3/8-16 x 3.75					
X-6238-13	3/8-16 x 4.50					
X-6238-18	3/8-16 x 5.50					
X-6238-25	3/8-16 x 6.50					
X-6238-14	3/8-24 x .75					
X-6238-16	3/8-24 x 1.25					
X-6238-21	3/8-24 x 4.00					
X-6238-22	3/8-24 x 4.50					

Washers				Bolt/ Screw
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.

Part No.	Dimensions	Part No.	Dimensions	Part No.	Dimensions	Type	
Hex Head Bolts (partial thread)			Hex Head Bolts (full thread)			Hex Nuts	
M931-05055-60	M5-0.80 x 55	M933-04006-60	M4-0.70 x 6	M934-03-50	M3-0.50	Standard	
M931-06040-60	M6-1.00 x 40	M933-05035-60	M5-0.80 x 35	M934-035-50	M3.5-0.50	Standard	
M931-06055-60	M6-1.00 x 55	M933-05050-60	M5-0.80 x 50	M934-04-50	M4-0.70	Standard	
M931-06060-60	M6-1.00 x 60	M933-06010-60	M6-1.00 x 10	M934-05-50	M5-0.80	Standard	
M931-06070-60	M6-1.00 x 70	M933-06014-60	M6-1.00 x 14	M982-05-80	M5-0.80	Elastic Stop	
M931-06070-SS	M6-1.00 x 70	M933-06016-60	M6-1.00 x 16	M934-06-60	M6-1.00	Standard	
M931-06075-60	M6-1.00 x 75	M933-06020-60	M6-1.00 x 20	M934-06-64	M6-1.00	Std. (green)	
M931-06090-60	M6-1.00 x 90	M933-06025-60	M6-1.00 x 25	M6923-06-80	M6-1.00	Spirallock	
M931-06150-60	M6-1.00 x 150	M933-06040-60	M6-1.00 x 40	M982-06-80	M6-1.00	Elastic Stop	
M931-08035-60	M8-1.25 x 35	M933-06050-60	M6-1.00 x 50	M934-08-60	M8-1.25	Standard	
M931-08040-60	M8-1.25 x 40	M933-08012-60	M8-1.25 x 12	M6923-08-80	M8-1.25	Spirallock	
M931-08040-82	M8-1.25 x 40*	M933-08016-60	M8-1.25 x 16	M982-08-80	M8-1.25	Elastic Stop	
M931-08045-60	M8-1.25 x 45	M933-08020-60	M8-1.25 x 20	M934-10-60	M10-1.50	Standard	
M931-08050-60	M8-1.25 x 50	M933-08025-60	M8-1.25 x 25	M934-10-60F	M10-1.25	Standard	
M931-08055-60	M8-1.25 x 55	M933-08030-60	M8-1.25 x 30	M6923-10-80	M10-1.50	Spirallock	
M931-08055-82	M8-1.25 x 55*	M933-08030-82	M8-1.25 x 30*	M6923-10-62	M10-1.50	Spirallock†	
M931-08060-60	M8-1.25 x 60	M933-10012-60	M10-1.50 x 12	M982-10-80	M10-1.50	Elastic Stop	
M931-08070-60	M8-1.25 x 70	M961-10020-60	M10-1.25 x 20	M934-12-60	M12-1.75	Standard	
M931-08070-82	M8-1.25 x 70*	M933-10020-60	M10-1.50 x 20	M934-12-60F	M12-1.25	Standard	
M931-08075-60	M8-1.25 x 75	M933-10025-60	M10-1.50 x 25	M6923-12-80	M12-1.75	Spirallock	
M931-08080-60	M8-1.25 x 80	M961-10030-60	M10-1.25 x 30	M982-12-80	M12-1.75	Elastic Stop	
M931-08090-60	M8-1.25 x 90	M933-10030-60	M10-1.50 x 30	M982-14-80	M14-2.00	Elastic Stop	
M931-08095-60	M8-1.25 x 95	M933-10030-82	M10-1.50 x 30*	M6923-16-80	M16-2.00	Spirallock	
M931-08100-60	M8-1.25 x 100	M961-10035-60	M10-1.25 x 35	M982-16-80	M16-2.00	Elastic Stop	
M931-08120-60	M8-1.25 x 120	M933-10035-60	M10-1.50 x 35	M934-18-80	M18-2.5	Standard	
M931-08130-60	M8-1.25 x 130	M933-12016-60	M12-1.75 x 16	M982-18-80	M18-2.50	Elastic Stop	
M931-08140-60	M8-1.25 x 140	M933-12020-60	M12-1.75 x 20	M934-20-80	M20-2.50	Standard	
M931-10040-82	M10-1.25 x 40*	M933-12025-60	M12-1.75 x 25	M982-20-80	M20-2.50	Elastic Stop	
M931-10040-60	M10-1.50 x 40	M933-12025-82	M12-1.75 x 25*	M934-22-60	M22-2.50	Standard	
M931-10045-60	M10-1.50 x 45	M961-12030-60	M12-1.25 x 30	M934-24-80	M24-3.00	Standard	
M931-10050-60	M10-1.50 x 50	M933-12030-60	M12-1.75 x 30	M982-24-80	M24-3.00	Elastic Stop	
M931-10055-60	M10-1.50 x 55	M933-12030-82	M12-1.75 x 30*	M934-30-80	M30-3.50	Standard	
M931-10060-60	M10-1.50 x 60	M961-12040-82	M12-1.25 x 40*				
M931-10065-60	M10-1.50 x 65	M933-12040-60	M12-1.75 x 40	Washers			
M931-10070-60	M10-1.50 x 70	M933-12040-82	M12-1.75 x 40*	Part No.	ID	OD	Bolt/ Thick. Screw
M931-10080-60	M10-1.50 x 80	M961-14025-60	M14-1.50 x 25	M125A-03-80	3.2	7.0	0.5 M3
M931-10090-60	M10-1.50 x 90	M933-14025-60	M14-2.00 x 25	M125A-04-80	4.3	9.0	0.8 M4
M931-10090-82	M10-1.50 x 90*	M961-16025-60	M16-1.50 x 25	M125A-05-80	5.3	10.0	1.0 M5
M931-10100-60	M10-1.50 x 100	M933-16025-60	M16-2.00 x 25	M125A-06-80	6.4	12.0	1.6 M6
M931-10110-60	M10-1.50 x 110	M961-16030-82	M16-1.50 x 30*	M125A-08-80	8.4	16.0	1.6 M8
M931-10120-60	M10-1.50 x 120	M933-16030-82	M16-2.00 x 30*	M125A-10-80	10.5	20.0	2.0 M10
M931-10130-60	M10-1.50 x 130	M961-16040-60	M16-1.50 x 40	M125A-12-80	13.0	24.0	2.5 M12
M931-10140-60	M10-1.50 x 140	M933-16035-60	M16-2.00 x 35	M125A-14-80	15.0	28.0	2.5 M14
M931-10180-60	M10-1.50 x 180	M961-16040-60	M16-1.50 x 40	M125A-16-80	17.0	30.0	3.0 M16
M931-12045-60	M12-1.75 x 45	M933-16040-60	M16-2.00 x 40	M125A-18-80	19.0	34.0	3.0 M18
M960-12050-60	M12-1.25 x 50	M933-16050-60	M16-2.00 x 50	M125A-20-80	21.0	37.0	3.0 M20
M960-12050-82	M12-1.25 x 50*	M933-16050-82	M16-2.00 x 50*	M125A-24-80	25.0	44.0	4.0 M24
M931-12050-60	M12-1.75 x 50	M933-16060-60	M16-2.00 x 60				
M931-12055-60	M12-1.75 x 55	M933-18035-60	M18-2.50 x 35				
M931-12060-60	M12-1.75 x 60	M933-18050-60	M18-2.50 x 50				
M931-12065-60	M12-1.75 x 65	M933-18060-60	M18-2.50 x 60				
M931-12075-60	M12-1.75 x 75	M933-20050-60	M20-2.50 x 50				
M931-12080-60	M12-1.75 x 80	M933-20055-60	M20-2.50 x 55				
M931-12090-60	M12-1.75 x 90						
M931-12100-60	M12-1.75 x 100	Pan Head Machine Screws					
M931-12110-60	M12-1.75 x 110	M7985A-03010-20	M3-0.50 x 10				
M960-16090-60	M16-1.50 x 90	M7985A-03012-20	M3-0.50 x 12				
M931-16090-60	M16-2.00 x 90	M7985A-04010-20	M4-0.70 x 10				
M931-16100-60	M16-2.00 x 100	M7985A-04020-20	M4-0.70 x 20				
M931-20065-60	M20-2.50 x 65	M7985A-04100-20	M4-0.70 x 100				
M931-20120-60	M20-2.50 x 120	M7985A-05010-20	M5-0.80 x 10				
M931-20160-60	M20-2.50 x 160	M7985A-05012-20	M5-0.80 x 12				
M931-22090-60	M22-2.50 x 90	M7985A-05016-20	M5-0.80 x 16				
M931-22120-60	M22-2.50 x 120	M7985A-05100-20	M5-0.80 x 100				
M931-22160-60	M22-2.50 x 160	M7985A-06100-20	M6-1.00 x 100				
M931-24090-60	M24-3.00 x 90						
M931-24120-60	M24-3.00 x 120	Flat Head Machine Screws					
M931-24160-60	M24-3.00 x 160	M965A-04012-SS	M4-0.70 x 12				
		M965A-05012-SS	M5-0.80 x 12				
		M965A-05016-20	M5-0.80 x 16				

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

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

TP-6142 2/02

© 2002 by Kohler Co. All rights reserved.

KOHLER[®] POWER SYSTEMS

KOHLER CO. Kohler, Wisconsin 53044
Phone 920-565-3381, Fax 920-459-1646
For the nearest sales and service outlet in the
US and Canada, phone 1-800-544-2444
kohlergenerators.com

Kohler Power Systems
Asia Pacific Headquarters
7 Jurong Pier Road
Singapore 619159
Phone (65)264-6422, Fax (65)264-6455