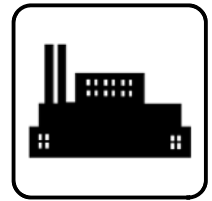


Service Parts

Industrial Generator Sets



Models:

15-60REOZK

20REOZK-C

KOHLER®

TP-6923 7/18e

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Introduction

This manual lists service replacement parts for generator set models as listed on the front cover.

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.

Numbering System Significance

This manual uses the following numbering systems:

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

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

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

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

Illustrations

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

How to Find Part Numbers

Use the following steps to locate a service replacement part.

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

Hardware References

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

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

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

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							
15REOZK								
GM89099-GA1	*	*	1	1	*	*	*	14
20REOZK								
GM87379-GA1	*	*	2	1	*	*	*	15
30REOZK								
GM91476-GA1	*	*	3	1	*	*	*	16
40REOZK								
GM91435-GA1	*	*	5	2	*	*	*	17
GM98968-GA1	*	*	7	2	*	*	*	22
50REOZK								
GM91435-GA2	*	*	6	2	*	*	*	18
GM98968-GA2	*	*	7	2	*	*	*	21
60REOZK								
GM91435-GA3	*	*	4	2	*	*	*	19
GM98968-GA3	*	*	7	2	*	*	*	20

- * 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 Group 701: Literature for list of controller parts manuals.

Module List

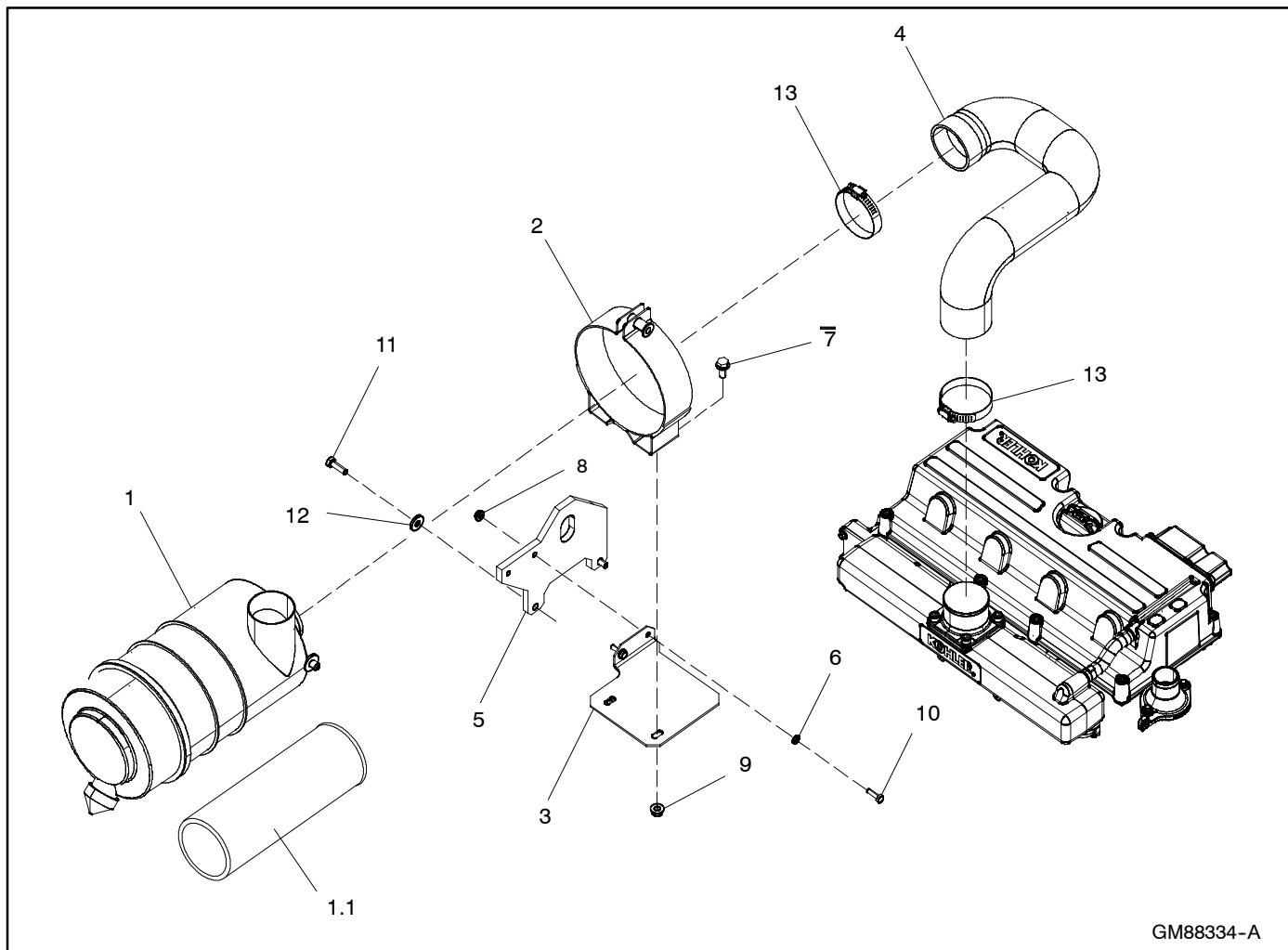
The following table lists the Kohler part numbers of the modules that make up a 20REOZK-C unit. The module parts lists follow in the order in which they are listed in this

table. Page forward to locate the modules or use the Index at the end of this manual for the page number on which to find each module.

Description	Model/Specification	
	20REOZK-C GM102740-SA1	20REOZK-C GM102740-SA2
Installed Base Modules		
Engine and Decals	GM87379-GA1	GM87379-GA1
Alternator	GM88320-MA5	GM88320-MA5
Cooling, Unit Mounted Radiator	GM102762-MA1	GM102762-MA1
Tank	GM102632-KA1	GM102672-KA1
Air Intake	GM102763-MA1	GM102763-MA1
Genset/Battery Mounting	GM102764-MA1	GM102764-MA1
Control and Mounting 1 Phase	GM102680-MA1	GM102680-MA1
Other Installed Modules		
Battery	256985	256985
Run Relay, 12V	GM89315-KA3	GM89315-KA3
Relay Dry Contact	GM89315-KA5	GM89315-KA5
Flexible Fuel Lines	GM90288-KA1	GM90288-KA1
Electronic Governor	GM90661-KA1	GM90661-KA1
Block Heater, 700W, 120V	GM95556-KA1	GM95556-KA1
Assy Air Cleaner Restriction	GM96296-KA2	-
Battery Charger 12V, 6A	GM96388-KA1	GM96388-KA1
Aux Contact	GM52345-KA1	GM52345-KA1
Shunt Trip, 12Vdc	GM52359-KA1	GM52359-KA1
Alarm Switch	GM52657-KA1	GM52657-KA1
LCB, 100A, HDP, Therm Mag, 80%	GM79734-KA1	GM79734-KA1
Mounting, LCB H-Frame	GM90199-KA2	GM90199-KA2
Cover, J-Box	GM90204-KA1-KCB	GM90204-KA1-KCB
Isolated Neutral	GM97092-KA1	GM97092-KA1

Air Intake

(15/20REOZK) GM88334

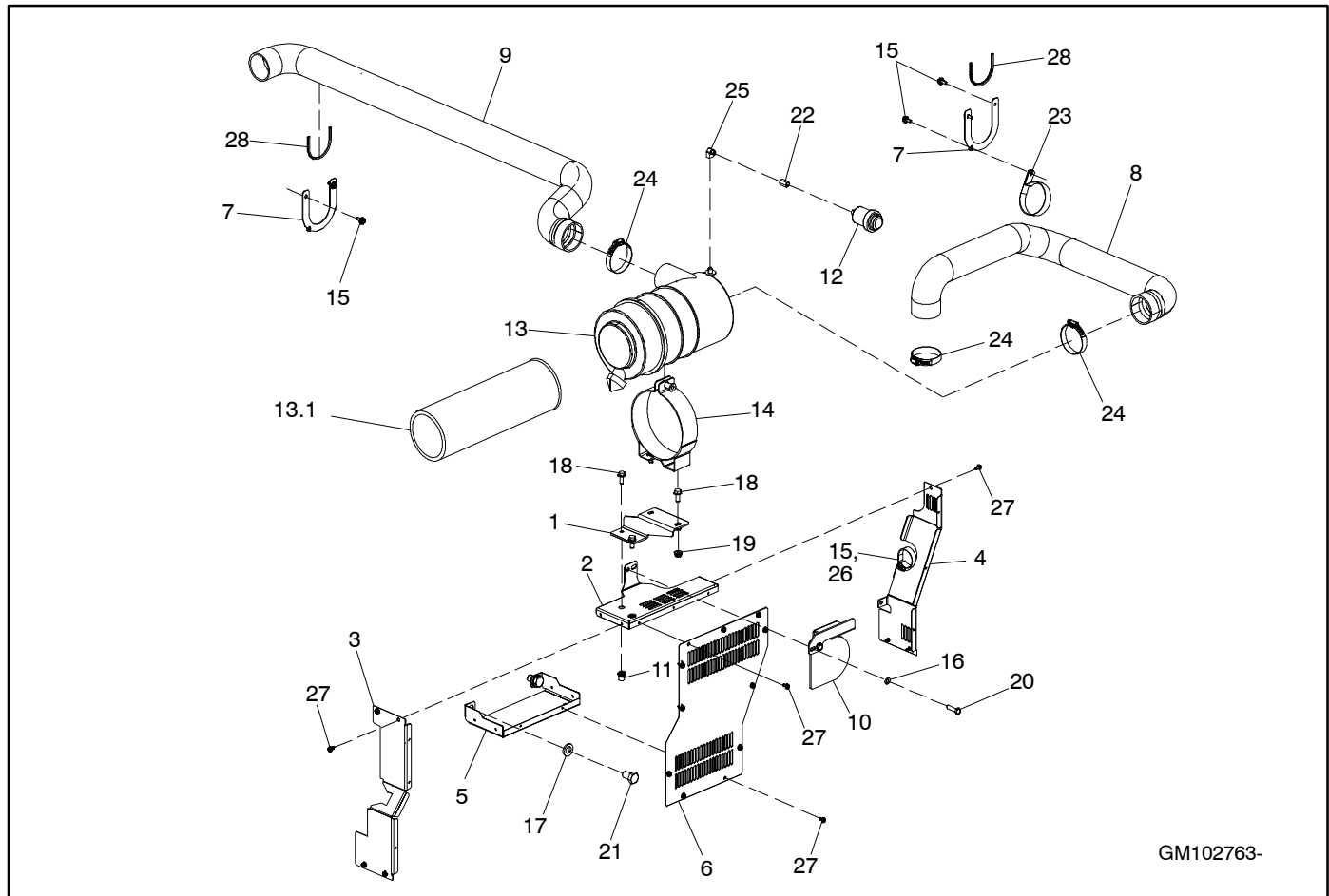


GM88334-MA1

Item	Part Number	Description	Quantity
1	GM14199	Air cleaner assembly	1
1.1	226915	Element, Air Cleaner	1
2	GM14200	Mount, air cleaner (6.76" id)	1
3	GM87803	Brkt, Air Cleaner Mtg.	1
4	GM87815	Hose, Air Intake	1
5	GM90737	Brkt, Lifting, Rear KDI	1
6	M125A-06-80	Washer, Plain	2
7	M6921-08020-60	Screw, Hex Flange M8 x 20	4
8	M6923-06-80	Nut, Hex 6mm	2
9	M6923-08-80	Nut, Hex 8mm	2
10	M933-06020-60	Screw, hex cap	2
11	M933-08025-82	Screw, Hex Cap (Metric)	2
12	X-25-75	Washer, plain, .344 ID x .875 in. OD	2
13	X-426-1	Clamp, hose, 2.81/3.75 in.	2

Air Intake, continued

(20REOZK-C) GM102763



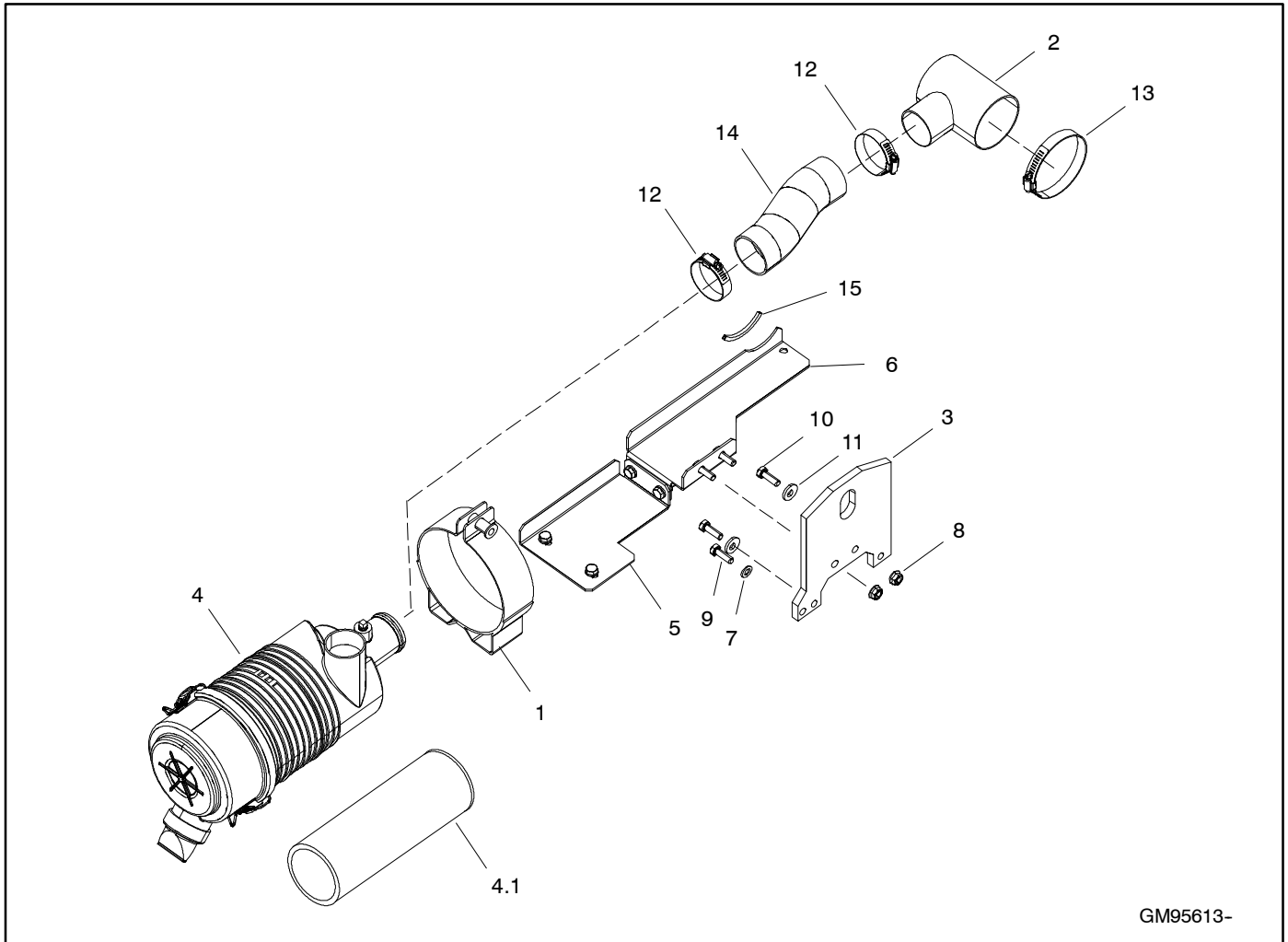
GM102763-

GM102763-MA1

Item	Part Number	Description	Quantity
1	GM102436	Support, air cleaner	1
2	GM102723	Guard, belt (top)	1
3	GM102724	Guard, belt (RH)	1
4	GM102725	Guard, belt (LH)	1
5	GM102726	Guard, belt (BTM)	1
6	GM102727	Guard, belt (FRT)	1
7	GM102857	Support, intake pipe	2
8	GM103062	Hose, air intake	1
9	GM103063	Hose, air intake	1
10	GM103432	Shield	1
11	GM11040-9	Insert, threaded 8mm	2
12	GM11489	Gauge, restriction	1
13	GM14199	Air cleaner assembly	1
13.1	226915	Element, Air cleaner	1
14	GM14200	Mount, air cleaner (6.76 in. ID)	1
15	GM78761-1	Screw	6
16	M125A-08-80	Washer, plain (8.4 ID x 16.0 OD)	2
17	M125A-16-80	Washer, plain	2
18	M6921-08020-60	Screw, hex flange (M8 x 20)	4
19	M6923-08-80	Nut, hex (8mm)	2
20	M933-08030-60	Screw, hex cap	2
21	M961-16025-60	Screw, hex Cap	2
22	X-216-24	Coupling, pipe (1/8 in. NPT)	1
23	X-414-11	Clamp, non-insulated	1
24	X-426-1	Clamp, hose (2.81/3.75 in.)	3
25	X-555-2	Elbow, street (90 deg x 1/8 in. nptf)	1
26	X-672-17	Clamp, insulated, 1.75 in.	1
27	X-6216-1	Screw, phillips hex	18
28	X-6352-5	Grommet, u-channel	2

Air Intake, continued

(30REOZK) GM95613



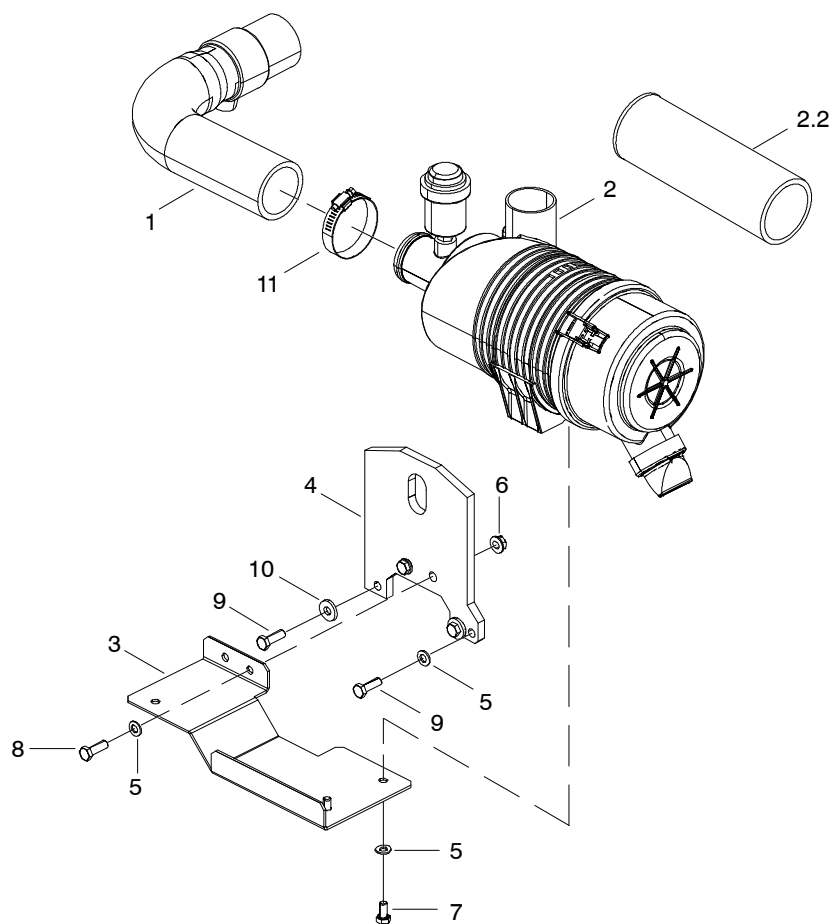
GM95613-

GM95613-MA1

Item	Part Number	Description	Quantity
1	226956	Mount, air cleaner (5.72" ID)	1
2	GM92267	Adapter, Air Intake	1
3	GM92268	Brkt, Mtg Air Cleaner	1
4	GM93825	Air cleaner assembly	1
4.1	GM93888	Primary Element, Air Filter	1
5	GM95611	Bracket, Air Cleaner Mtg.	1
6	GM95612	Bracket, Air Cleaner Mtg.	1
7	M125A-08-80	Washer, Plain 8.4 ID x 16.0 OD	7
8	M6923-08-80	Nut, Hex 8mm	6
9	M933-08025-60	Screw, hex cap	6
10	M933-08025-82	Screw, Hex Cap (Metric)	3
11	X-25-75	Washer,plain, .344 ID x .875 in. OD	2
12	X-426-2	Clamp, hose, 2.31/3.25 in.	2
13	X-426-5	Clamp, hose, 3.56/4.5 in.	1
14	X-581-16	Hose, flexible air, molded, 2 in. ID	1
15	X-6033-3	Grommet, U-channel	1

Air Intake, continued

(30REOZK) GM102695



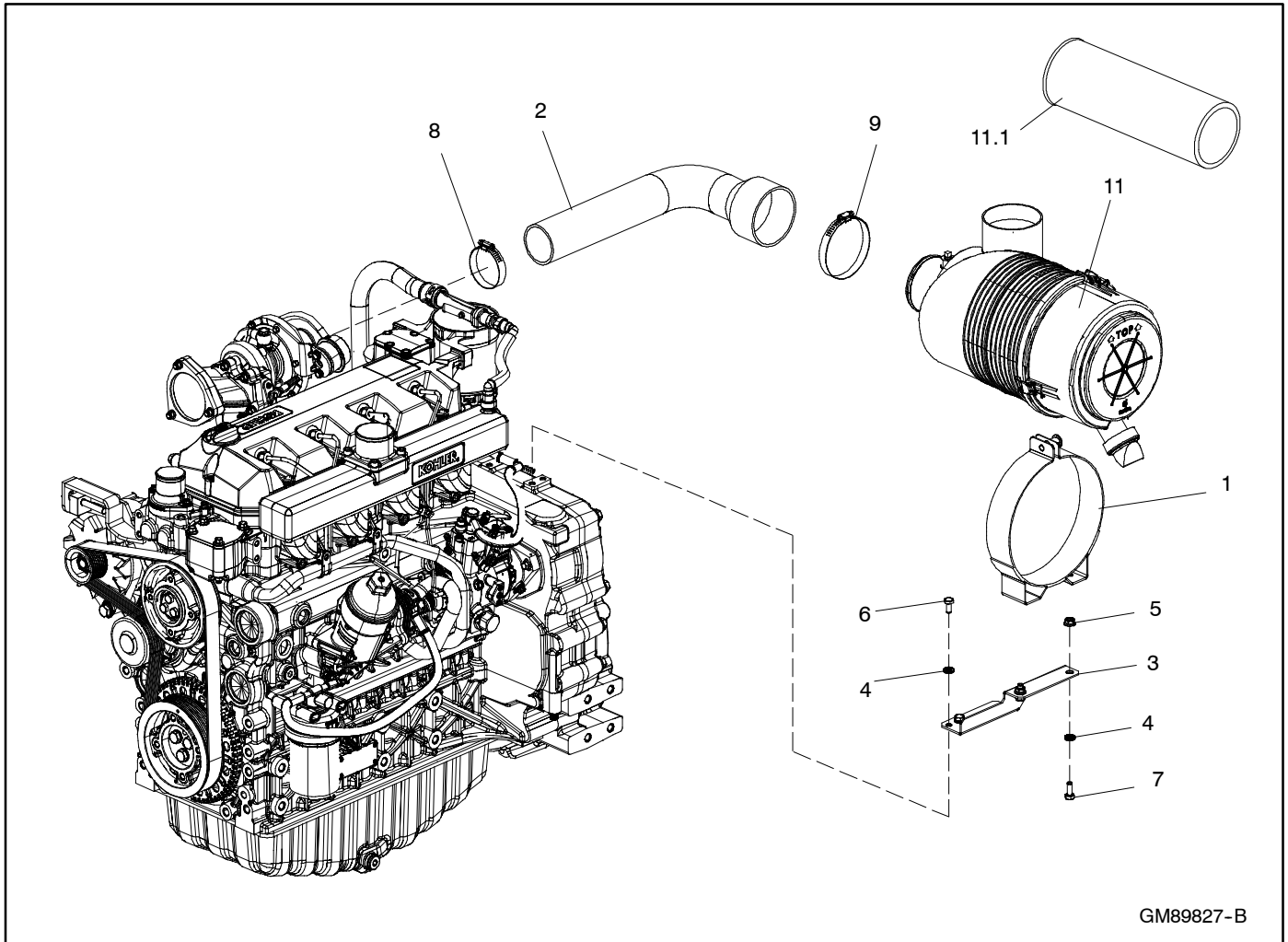
GM102695-

GM102695-MA1

Item	Part Number	Description	Quantity
1	GM102606	Hose, air intake molded 50.8mm ID	1
2	GM102607	Air cleaner assembly	1
2.2	GM93888	Air cleaner element	1
3	GM102694	Bracket, air cleaner Mtg.	1
4	GM92268	Bracket, air cleaner Mtg.	1
5	M125A-08-80	Washer, plain 8.4 ID x 16.0 OD	5
6	M6923-08-80	Nut, hex 8 mm	2
7	M933-08016-60	Screw, hex cap	2
8	M933-08025-60	Screw, hex cap	2
9	M933-08025-82	Screw, hex cap	3
10	X-25-75	Washer, plain, .344 ID x .875 in. OD	2
11	X-426-2	Clamp, hose, 2.31/3.25 in.	1

Air Intake, continued

(40-60REOZK) GM89827



GM89827-MA1

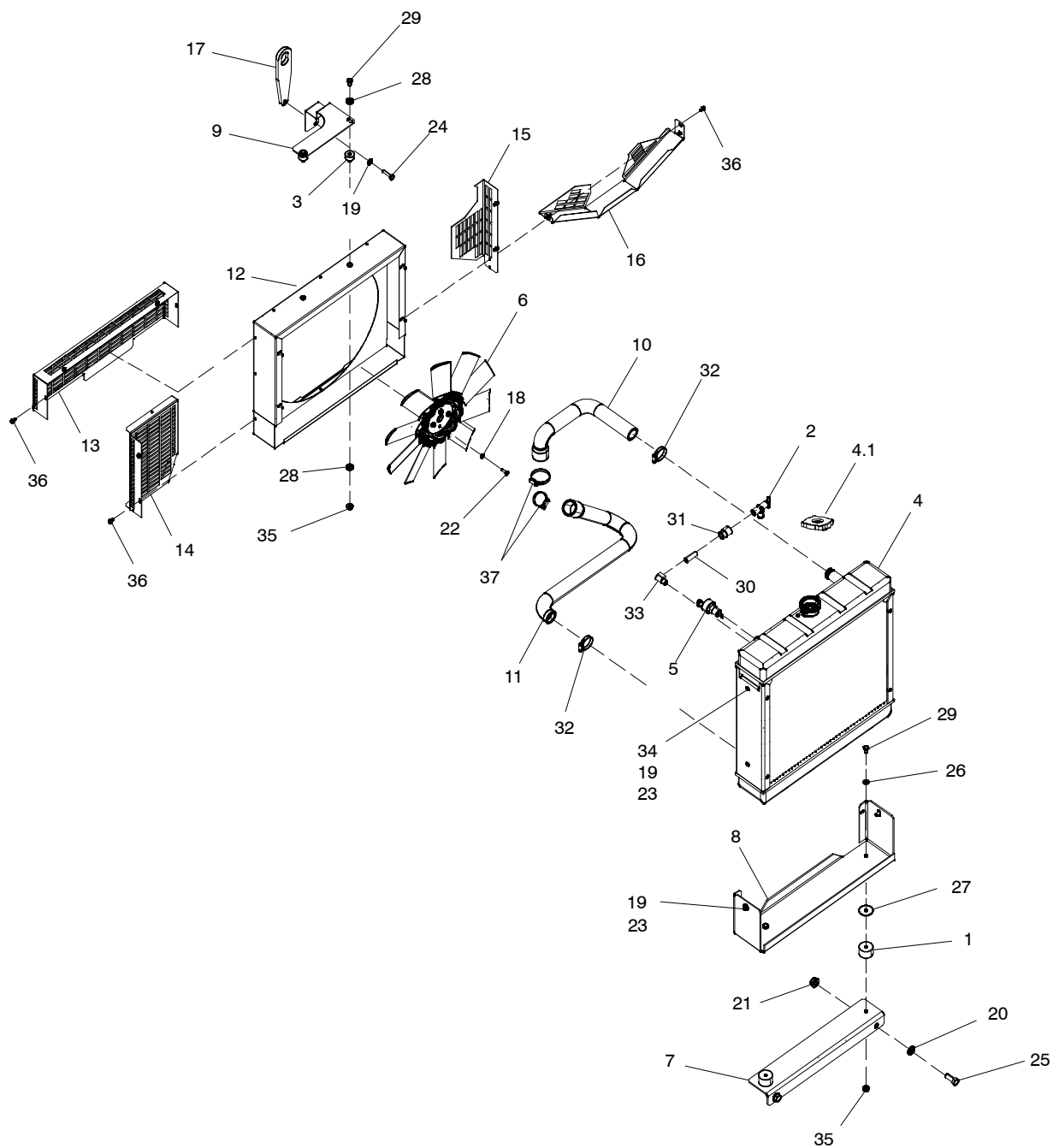
Item	Part Number	Description	Quantity
1	GM14313	Mount, air cleaner (8.32" id)	1
2	GM89828	Tube, Air Intake Ext.	1
3	GM91678	Brkt, Air Cleaner Mtg	1
4	M125A-08-80	Washer, Plain 8.4 ID x 16.0 OD	4
5	M6923-08-80	Nut, Hex 8mm	2
6	M933-08016-60	Screw, hex cap	2
7	M933-08020-60	Screw, Hex cap	2
8	X-426-2	Clamp, hose, 2.31/3.25 in.	1
9	X-426-5	Clamp, hose, 3.56/4.5 in.	1
11	See chart	Air Cleaner Assy	1
11.1	See chart	Element, Air Cleaner	

Use these tables to identify part numbers of items 11 and 11.1

Module	Part Number	
	Item 11	Item 11.1
GM89827-MA1	GM93823	GM93996
GM89827-MA4	GM93824	GM93996

Cooling, Unit Mounted Radiator

(15/20REOZK) GM88199



GM88199-B

Cooling, Unit Mounted Radiator, continued

GM88199

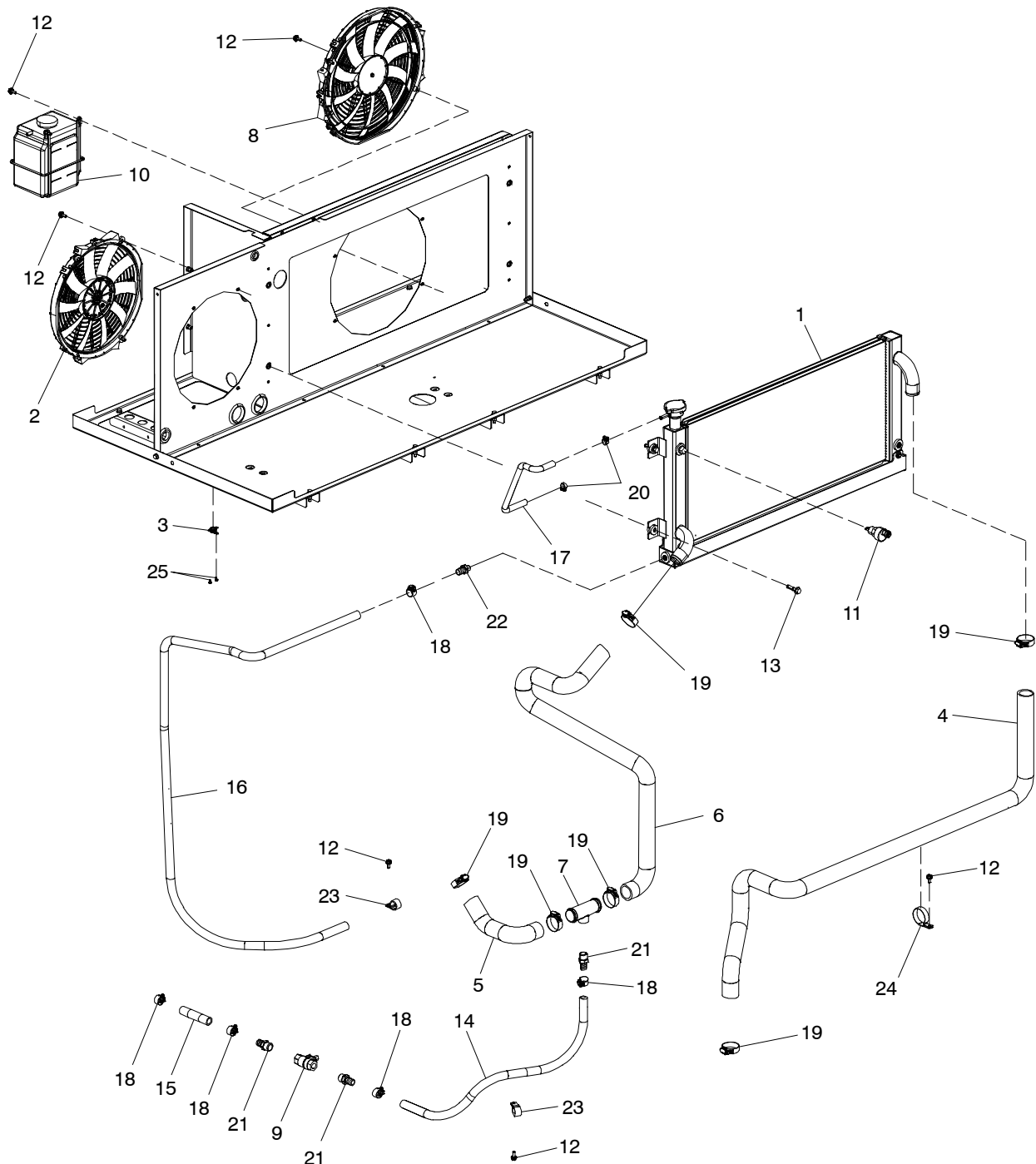
Item	Part Number	Description	Quantity
1	239497	Vibromount	2
2	278788	Valve, drain (3/8"nptf)	1
3	352399	Vibromount	2
4	See chart	Radiator/CAC Assembly	1
4.1	GM54994	Cap, Radiator	1
5	GM66270	Sensor, Low Coolant Level	1
6	See chart	Fan, Pusher	1
7	GM88259	Support, Radiator Cross	1
8	GM88260	Support, Radiator Mtg	1
9	GM88305	Brkt, Radiator Top	1
10	GM88664	Hose, Molded Radiator	1
11	GM88665	Hose, Molded Radiator	1
12	GM89896	Shroud, Fan	1
13	GM90221	Guard, Belt, Top	1
14	See chart	Guard, Belt, RH	1
15	GM90223	Guard, Belt, LH	1
16	GM90224	Guard, Belt, Alt.	1
17	GM90738	Brkt, Lifting, Front KDI	1
18	M125A-06-80	Washer, Plain	8
19	M125A-08-80	Washer, Plain 8.4 ID x 16.0 OD	5
20	M125A-12-80	Washer, Plain	2
21	M6923-12-80	Nut, Hex	2
22	M933-06016-60	Screw, hex cap, M6x16mm, js500 full thrd	8
23	M933-08016-60	Screw, hex cap	3
24	M933-08030-30	Screw, Hex Cap	2
25	M933-12030-60	Screw, Hex Cap	2
26	X-22-5	Washer, Lock, .326 ID x .62 OD	4
27	X-25-122	Washer, plain, .312 ID x 1.5 in. OD	2
28	X-25-37	Washer, plain, .406 ID x .812 in OD	2
29	X-125-33	Bolt, Hex Cap 5/16-18 x 1/2"	4
30	X-220-6	Pipe (1/4"npt x 1.50")	1
31	X-250-2	Coupling, reducer (3/8" x 1/4"npt)	1
32	X-426-19	Clamp, hose, 1.00/2.00 in.	2
33	X-555-1	Elbow, street (90 deg x 1/4"nptf)	1
34	X-672-7	Clamp, insulated, .44 in.	1
35	X-6210-7	Nut, flange spiralock, 5/16-18	4
36	X-6216-1	Screw, Phillips hex crimpitite	12
37	X-426-8	Clamp, hose, .81/1.75 in.	2
38	See chart	Pipe (1/4"npt x 2.50") (not shown)	1

Use these tables to identify part numbers of items 4, 6, 14, and 38.

Module	Model	Part Number			
		Item 4	Item 6	Item 14	Item 38
GM88199-MA1	20 kW	GM52727	GM87955	GM90222	-
GM88199-MA2	15 kW	GM93883	GM87955	GM90222	X-220-14
GM88199-MA3	30 kW	GM94408	GM87955	GM95419	-

Cooling, Unit Mounted Radiator, continued

(20REOZK-C) GM102762



GM102762-A

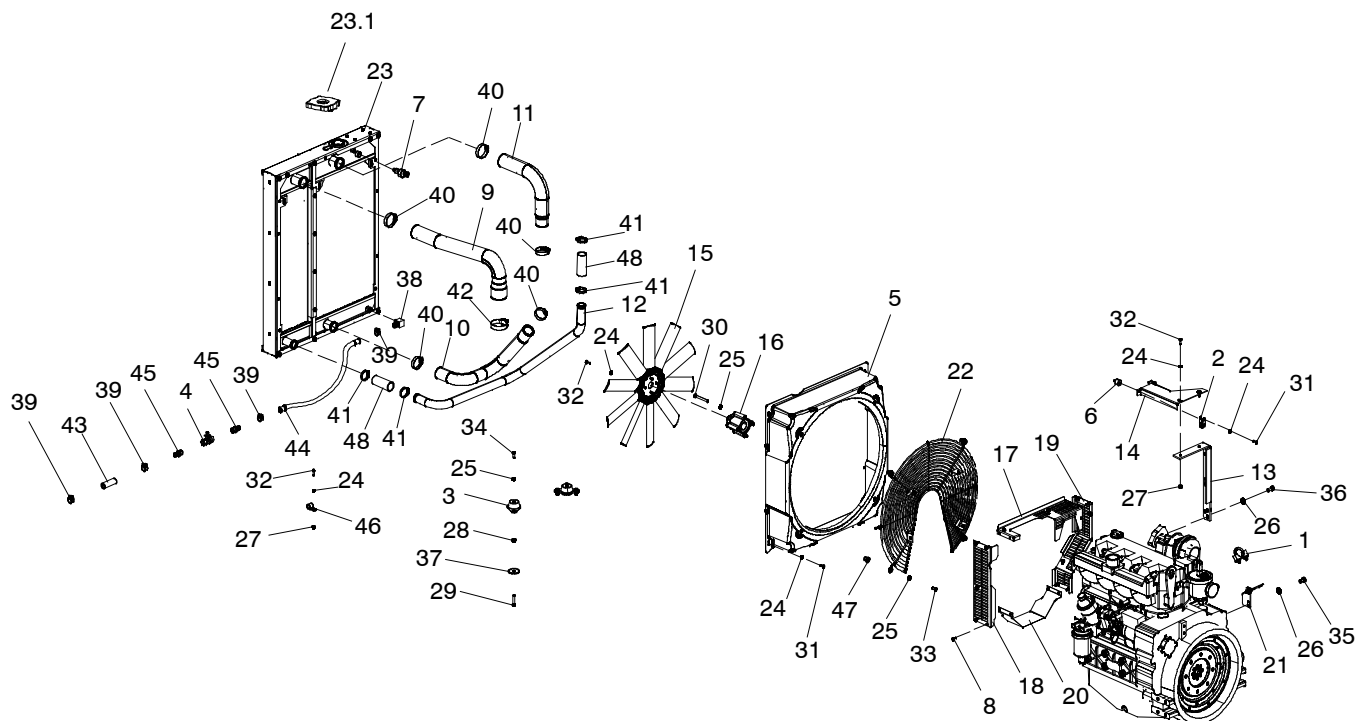
Cooling, Unit Mounted Radiator, continued

GM102762-MA1

Item	Part Number	Description	Quantity
1	GM102527	Radiator, telecom SY1710-010L	1
2	GM102576	Fan, 12 in. 12VDC axial motor	1
3	GM102765	Thermostat, snap action disc	1
4	GM103064	Hose, molded radiator	1
5	GM103065	Hose, molded radiator	1
6	GM103066	Hose, molded radiator	1
7	GM103096	Adapter, in-line fitting	1
8	GM103146	Fan, 14 in. 12VDC axial motor	1
9	GM19670	Valve, shutoff (1/2-14npt)	1
10	GM47692	Bottle, overflow	1
11	GM66270	Sensor, low coolant level	1
12	GM78761-1	Screw	13
13	M6921-08035-SS	Screw, hex	4
14	X-312-15	Hose, (.63 ID)	1
15	X-312-41	Hose, (.63 ID, 4.5 in.)	1
16	X-312-60	Hose, (.63 ID, 88 in.)	1
17	X-386-93	Fuel line, flexible	1
18	X-426-12	Clamp, hose, (.69/1.25 in.)	5
19	X-426-8	Clamp, hose, (.81/1.75 in.)	6
20	X-426-9	Clamp, hose, (.25/.70 in.)	2
21	X-582-1	Connector, hose (5/8 in. x 1/2 in.) brass	3
22	X-582-22	Connector, hose + vibra seal	1
23	X-672-13	Clamp, insulated (.88 in.)	2
24	X-672-17	Clamp, insulated (1.75 in.)	1
25	X-793-3	Rivet, pop (.125 in.)	2

Cooling, Unit Mounted Radiator, continued

(40-60REOZK) GM89480



GM89480-C

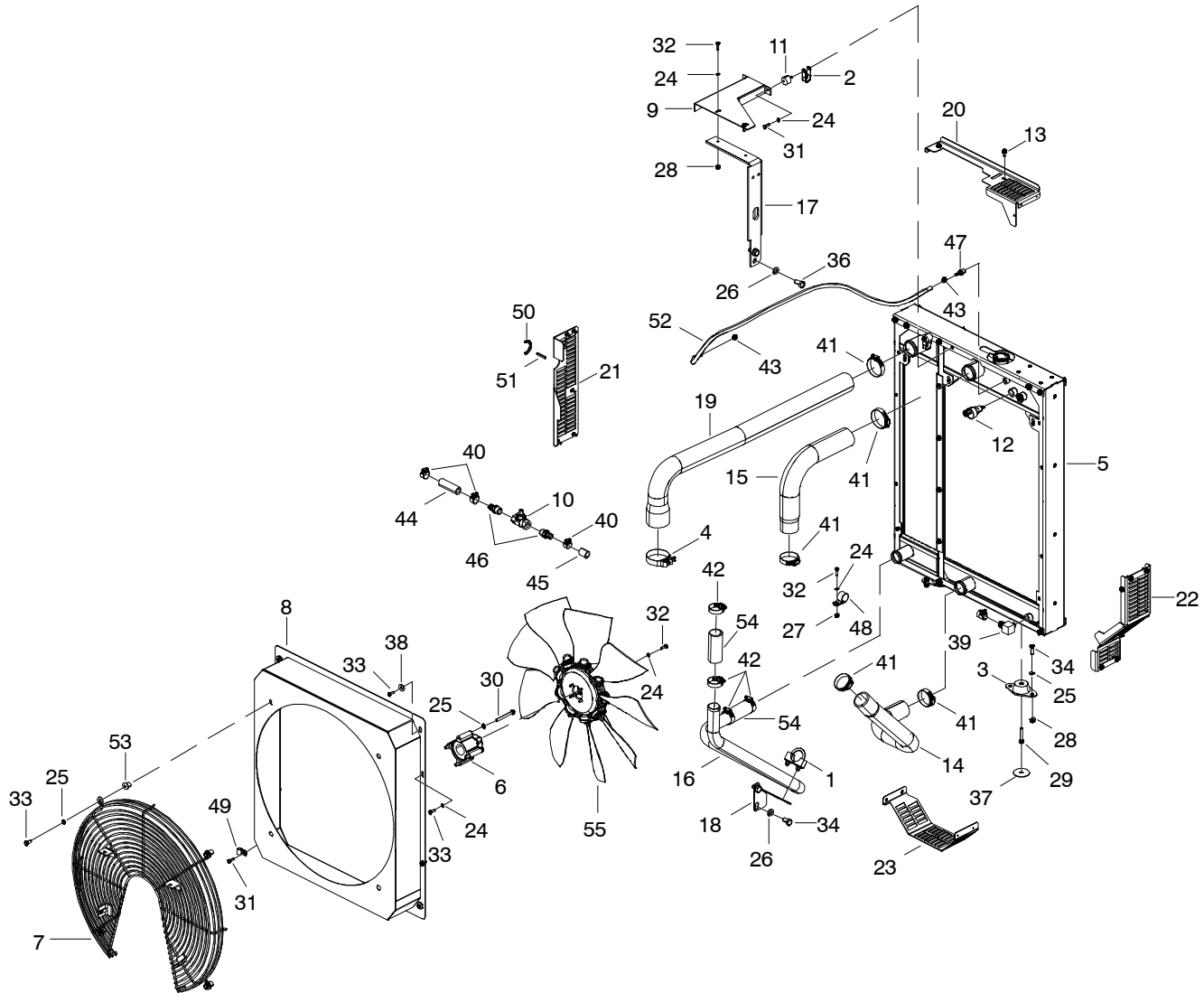
Cooling, Unit Mounted Radiator, continued

GM89480-MA1

Item	Part Number	Description	Quantity
1	237548	Clamp, Muffler	1
2	245297	Strap, ground (5 in.)	2
3	258659	Vibromount	2
4	GM19670	Valve, Shutoff (1/2-14npt)	1
5	GM29772	Shroud, Fan	1
6	GM38784-2	Vibromount, Controller	2
7	GM66270	Sensor, Low Coolant Level	1
8	GM78761-1	Screw, Sheetmetal	13
9	GM89482	Hose, Intake (CAC)	1
10	GM89483	Hose, Radiator Lower	1
11	GM89484	Hose, Radiator Upper	1
12	GM89485	Tube, Turbo (CAC)	1
13	GM89486	Bracket, Radiator Mounting	1
14	GM89487	Support, Radiator Upper	1
15	GM89554	Fan, Pusher, 10 blade, 20 deg	1
16	GM89758	Spacer, Fan, KDI3404	1
17	GM89829	Guard, Belt Top	1
18	GM89830	Guard, Belt (LS)	1
19	GM89831	Guard, Belt (RS)	1
20	GM89832	Guard, Belt Bottom	1
21	GM93406	Brkt, Clamp, CAC Tube	1
22	GM93602	Guard, Wire Fan	1
23	GM93884	Radiator Assy, W/CAC KDI3404TM	1
23.1	GM54994	Cap, Radiator	1
24	M125A-06-80	Washer, Plain	17
25	M125A-08-80	Washer, Plain 8.4 ID x 16.0 OD	12
26	M125A-12-80	Washer, Plain	4
27	M6923-06-80	Nut, Hex 6mm	3
28	M6923-08-80	Nut, Hex 8mm	4
29	M931-08045-60	Screw, Hex Cap	2
30	M931-08080-60	Screw, Hex Cap	4
31	M933-06016-60	Screw, hex cap, M6x16mm, js500 full thrd	10
32	M933-06020-60	Screw, hex cap	7
33	M933-08016-60	Screw, hex cap	4
34	M933-08020-60	Screw, Hex cap	4
35	M933-12020-60	Screw, Hex Cap	2
36	M933-12025-60	Screw, hex cap	2
37	X-25-101	washer, plain, .375 ID x 2 in. OD	2
38	X-391-2	Connector, 90 deg. (5/8" id hose)	1
39	X-426-12	Clamp, hose, .69/1.25 in.	4
40	X-426-16	Clamp, hose, 1.81/2.75 in.	5
41	X-426-19	Clamp, hose, 1.00/2.00 in.	4
42	336228	Clamp, hose, 2.63/2.94 in.	1
43	X-577-37	Hose, rubber, straight, .62 in. ID	1
44	X-577-41	Hose, rubber, straight, .62 in. ID	1
45	X-582-1	Connector, Hose 5/8" x 1/2" MIP Brass	2
46	X-672-31	Clamp, insulated, .75 in.	1
47	X-6365-2	Insert, threaded	4
48	X-6380-6	Hose, Charge Air Cooler	2

Cooling, Unit Mounted Radiator, continued

(40-60REOZK) GM98965-MA1



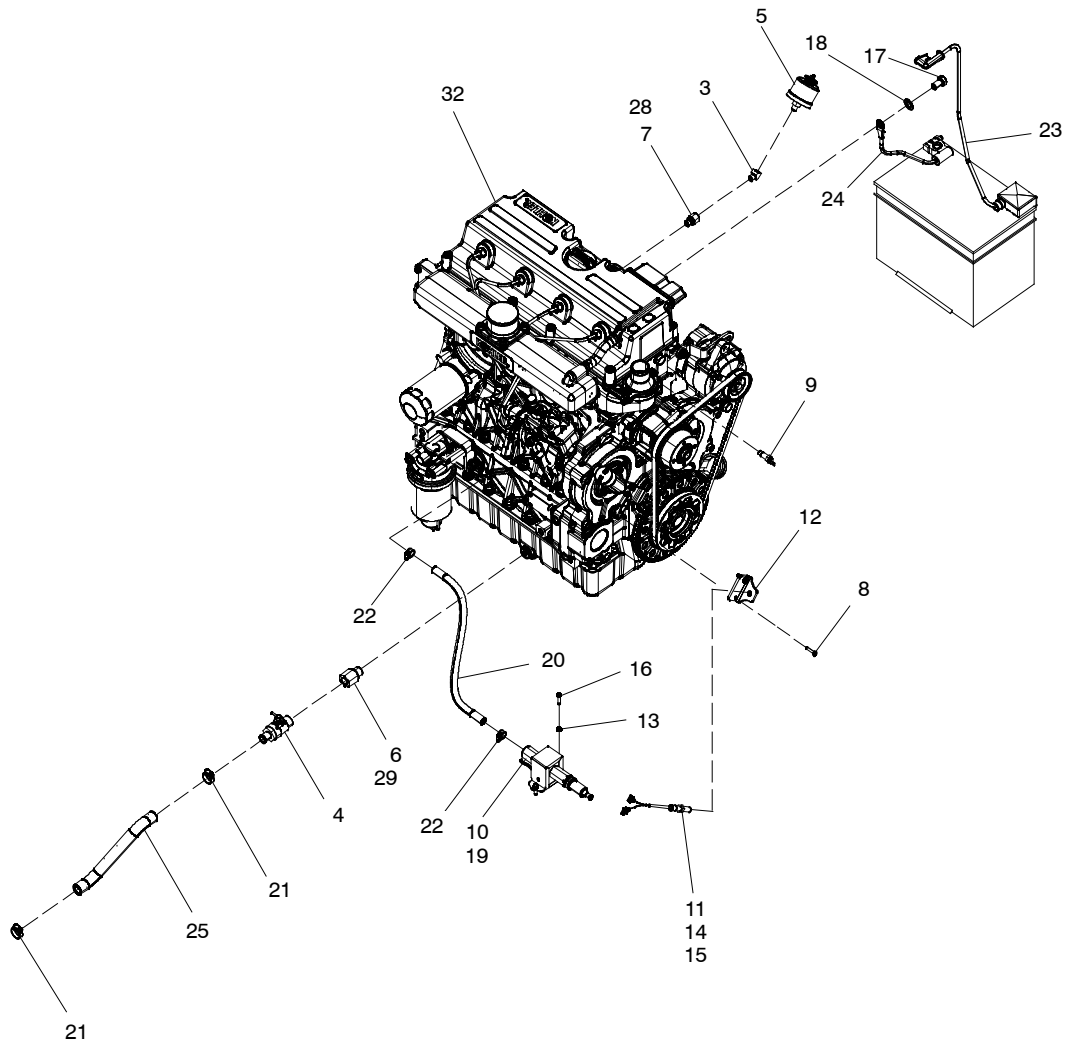
GM98965-A

Cooling, Unit Mounted Radiator, continued

GM98965-MA1

Item	Part Number	Description	Quantity
1	237548	Clamp, muffler	1
2	245297	Strap, ground (5 in.)	2
3	258659	Vibromount	2
4	336228	Clamp, hose, 2.63/2.94 in.	1
5	GM103696	Radiator, 40-60REOZK AQMD	1
6	GM103740	Spacer, fan KDI3404TCR	1
7	GM103750	Guard, wire fan	1
8	GM103795	Shroud, radiator, 40-60REOZK AQMD	1
9	GM104673	Bracket, radiator support	1
10	GM19670	Valve, shutoff (1/2-14 NPT)	1
11	GM38784-2	Vibromount, controller	2
12	GM66270	Sensor, low coolant level	1
13	GM78761-1	Screw, sheet metal M6 x 1.0 x 16mm	13
14	GM89483	Hose, lower radiator	1
15	GM89484	Hose, radiator (upper)	1
16	GM89485	Tube, turbo	1
17	GM89486	Bracket, radiator mounting	1
18	GM93406	Bracket, CAC tube clamp	1
19	GM93846	Hose, charge air	1
20	GM94340	Guard, belt top	1
21	GM94341	Guard, belt (L.S.)	1
22	GM94342	Guard, belt (R.S.)	1
23	GM94343	Guard, belt bottom	1
24	M125A-06-80	Washer, plain 6.4 ID x 12.0 OD	14
25	M125A-08-80	Washer, plain 8.4 ID x 16.0 OD	12
26	M125A-12-80	Washer, plain	4
27	M6923-06-80	Nut, hex 6 mm	3
28	M6923-08-80	Nut, hex 8 mm	4
29	M931-08045-60	Screw, hex cap	2
30	M931-08070-60	Screw, hex cap	4
31	M933-06016-60	Screw, hex cap	10
32	M933-06020-60	Screw, hex cap	7
33	M933-08016-60	Screw, hex cap	4
34	M933-08025-60	Screw, hex cap	4
35	M933-12020-60	Screw, hex cap	2
36	M933-12025-60	Screw, hex cap	2
37	X-25-101	Washer, plain, .375 in. ID x 2 in. OD	2
38	X-25-75	Washer, plain, .344 in. ID x .875 in. OD	3
39	X-391-2	Connector, 90° (5/8 in. ID hose)	1
40	X-426-12	Clamp, hose, .69/1.25 in.	4
41	X-426-16	Clamp, hose, 1.81/2.75 in.	5
42	X-426-19	Clamp, hose, 1/2 in.	4
43	X-426-9	Clamp, hose, .25/.70 in.	2
44	X-577-37	Hose, rubber, straight, .62 in. ID	1
45	X-577-41	Hose	1
46	X-582-1	Connector, hose 5/8 in. x 1/2 in. MIP brass	2
47	X-652-3	Connector, hose + vibra seal 6.4	1
48	X-672-32	Clamp, insulated, 1.06 in.	1
49	X-672-7	Clamp, insulated, .44 in.	1
50	X-6033-3	Grommet	1
51	X-6033-3	Grommet	1
52	X-6359-6	Hose, rubber, straight, .25 in. ID	1
53	X-6365-2	Insert, threaded	4
54	X-6380-6	Hose, charged air cooler	2
55	GM103262	Fan, pusher, 9 blade	1

Engine



Items not shown : 26, 27, 30, 31

GM91475-C

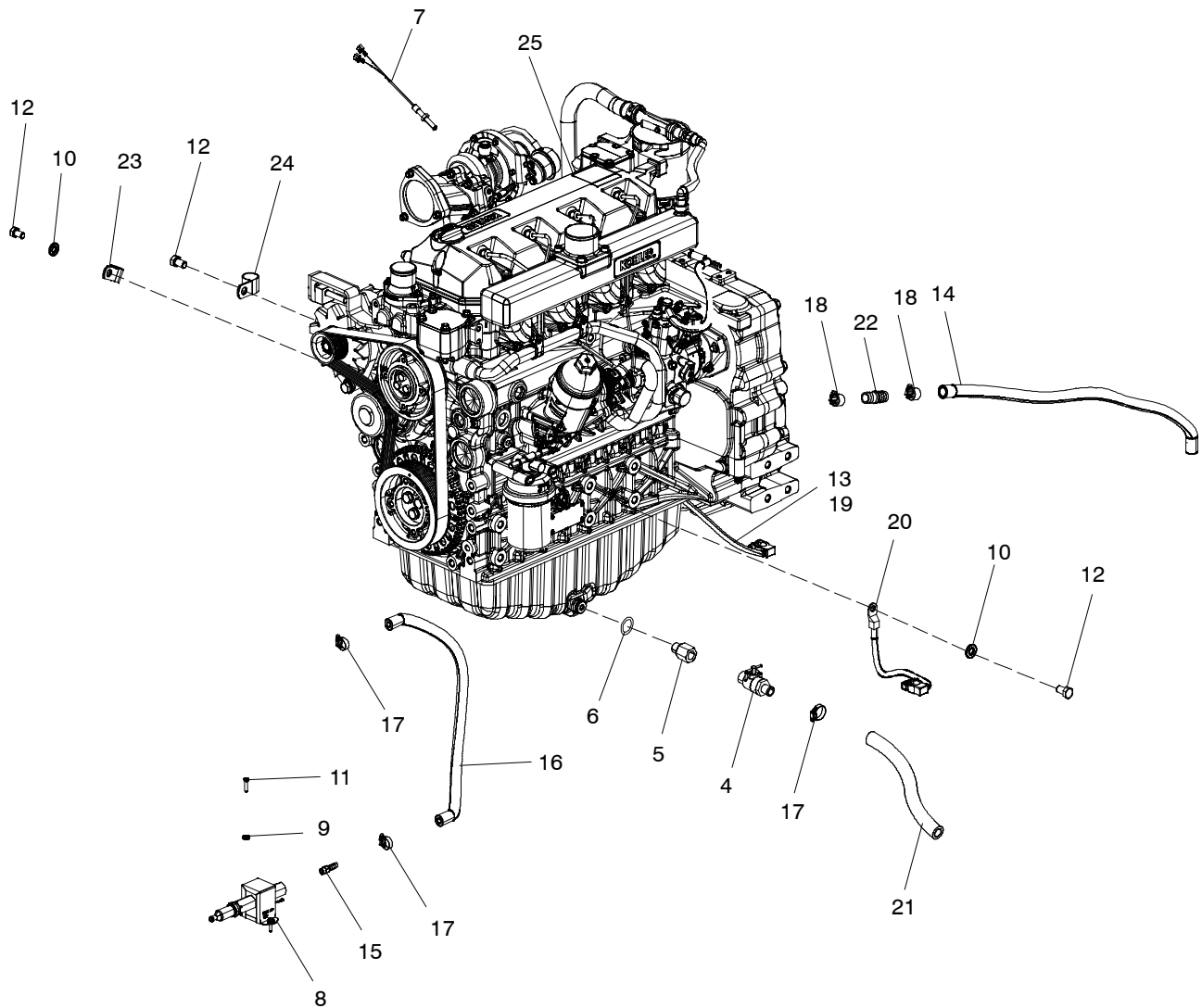
Engine, continued

Item	Part Number	Description	Quantity
3	267428	Fitting, 45 deg. Street Elbow	1
4	272701	Valve, oil drain (1/2-14 nptf)	1
5	343473	Sender, oil pressure	1
6	352360	Adapter, bushing	1
7	365220	Adapter, bushing	1
8	GM78761-1	Screw, Sheetmetal	2
9	GM94527	Sender, Temperature	1
10	GM90305-1	Pump, Electric Fuel Feed 12V	1
11	GM92350	Sensor, Magnetic Pickup	1
12	GM96797	Brkt, Mtg. Magnetic Pickup	1
13	M125A-05-80	Washer, Plain	2
14	M6923-6-80	Nut, Hex 6mm	1
15	M7985A-06020-20	Screw, Pan Head Machine	1
16	M933-05020-60	Screw, Hex Cap	2
17	M933-12020-60	Screw, Hex Cap	1
18	X-22-4	Washer, lock, .521 ID x .884 in. OD	1
19	X-380-5	Connector, hose + Vibra Seal	1
20	X-386-137	Fuel line, flexible	1
21	X-426-10	Clamp, hose, .5/1 in.	2
22	X-426-9	Clamp, hose, .25/.70 in.	4
23	X-545-154	Cable, battery (No.4 x 31.50") RED+	1
24	X-545-237	Cable, Battery	1
25	X-577-52	Hose, rubber, straight, .62 in. ID	1
26	See chart	Decal,Air Intake Restriction	
27	X-672-31	Clamp, insulated, .75 in.	1
28	365498	O-ring, ISO 6149 (9.3mm ID)	1
29	GM11694	O-ring, ISO 6149 (15.3mm ID)	1
30	M933-06016-60	Screw, Hex Cap	2
31	X-25-40	Washer, plain, .281 ID x .625 in.OD	2
32	See chart	Engine, Lombardini	1

Use these tables to identify part numbers of items 26, 32.

Variation	Module	Model	Part Number	
			Item 26	Item 32
1	GM89247-GR1	15 kW	GM94335-1	GM86128-1
2	GM87378-GR1	20 kW	GM94335-2	GM87405-1
3	GM91475-GR1	30 kW	GM94335-3	GM91243-1

Engine, continued



GM91436-B

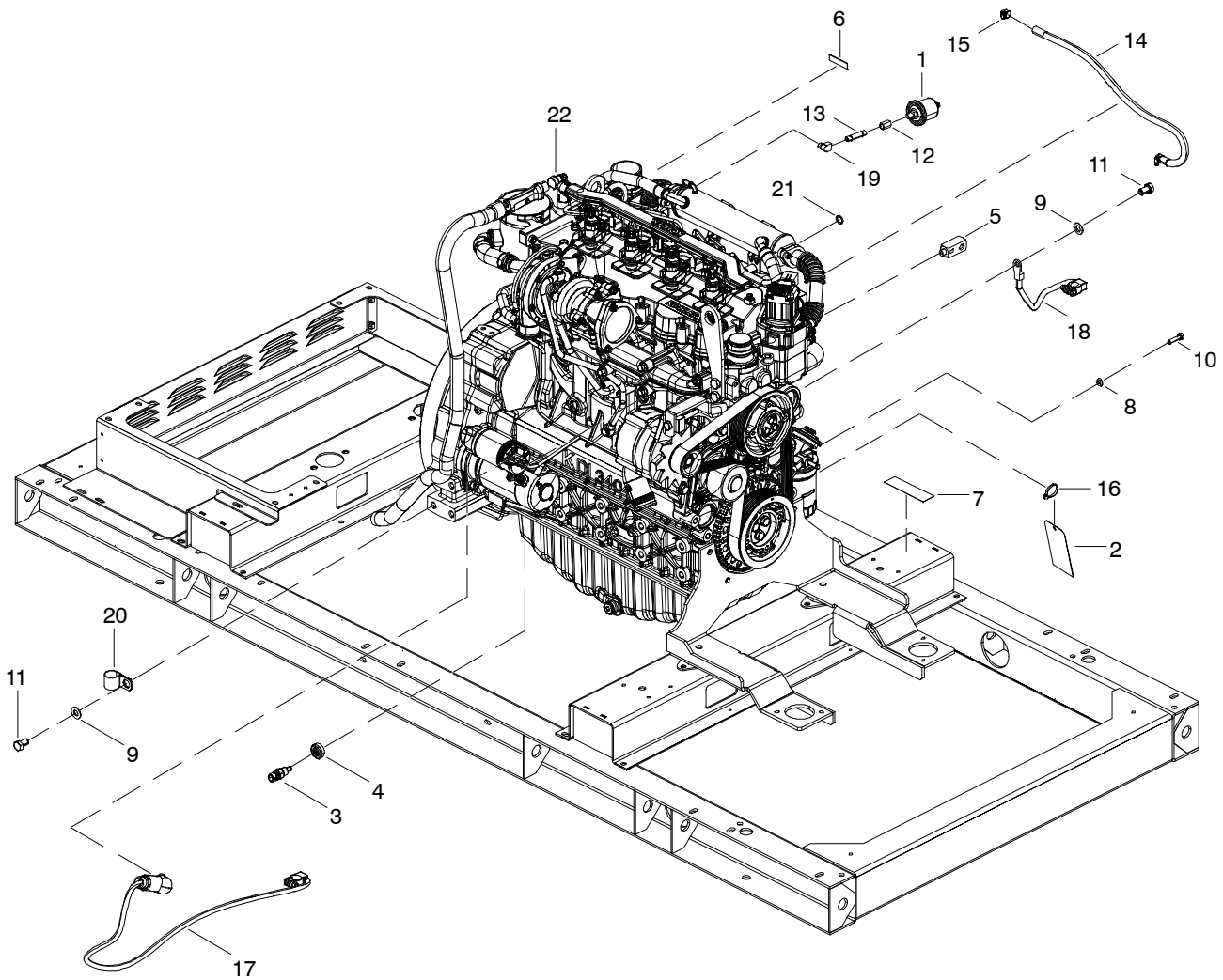
Engine, continued

Item	Part Number	Description	Quantity
4	272701	Valve, oil drain (1/2-14 nptf)	1
5	352360	Adapter, bushing	1
6	GM11694	O-ring, ISO 6149 (15.3mm id)	1
7	GM11708	Pick-up, Magnetic Speed	1
8	GM90305-1	Pump, Electric Fuel Feed 12V	1
9	M125A-06-80	Washer, Plain	3
10	M125A-12-80	Washer, Plain	2
11	M933-06020-60	Screw, hex cap	3
12	M933-12020-60	Screw, Hex Cap	3
13	X-22-10	Washer,lock .391 IDx.681 in. OD	1
14	X-373-16	Hose, 3/4 In. I.D., 36 in.	1
15	X-380-5	Connector, hose + Vibra Seal	1
16	X-386-32	Fuel line, flexible	1
17	X-426-10	Clamp, hose, .5/1 in.	3
18	X-426-15	Clamp, hose, .75/1.5 in.	2
19	X-545-250	Cable, Battery	1
20	X-545-251	Cable, Battery	1
21	X-577-5	Hose, rubber, straight, .62 in. ID	1
22	X-582-42	Fitting, Hose Connector	1
23	X-672-3	Clamp, insulating	1
24	X-672-37	Clamp	1
25	See chart	Engine, KD13404TM	1

Use these tables to identify part numbers of item 25.

Variation	Module	Model	Part Number
			Item 25
4	GM91436-GR1	60 kW	GM86909-1
5	GM91436-GR2	40 kW	GM86909-2
6	GM91436-GR3	50 kW	GM86909-3

Engine, continued



GM98964-B

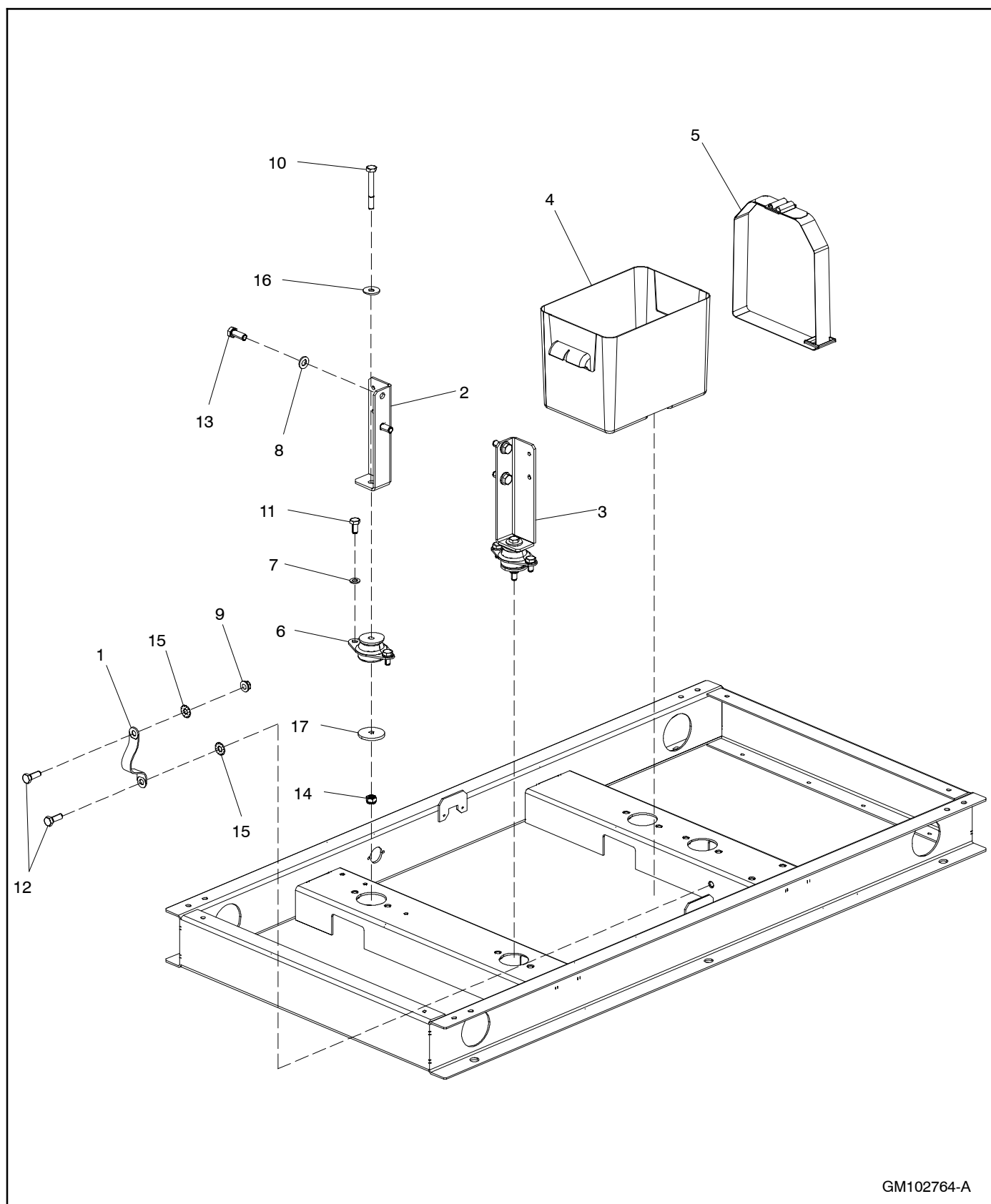
Engine, continued

GM98964-GR1

Item	Part Number	Description	Variation 7 Quantity
1	GM102100	Sender, oil pressure	1
2	GM103261	Taq, instruction	1
3	GM39601	Sensor, coolant temperature	1
4	GM89847	Plug, freeze	1
5	GM91129	Fitting, oil pressure, 45kVA	1
6	GM94335-5	Decal, air intake restriction	1
7	GM95775	Ultra-low sulfur fuel only, decal	1
8	M125A-08-80	Washer, plain 8.4 ID x 16.0 OD	2
9	M125A-12-80	Washer, plain	2
10	M933-08030-60	Screw, hex cap	2
11	M933-12020-60	Screw, hex cap	2
12	X-216-24	Coupling, pipe (1/8 in. NPT)	1
13	X-217-12	Pipe, nipple (1/8 in. NPT x 2.00 in.)	1
14	X-386-113	Fuel line, flexible .312 ID	1
15	X-426-9	Clamp, hose, .25/.70 in.	2
16	X-468-2	Tie, cable	1
17	X-545-250	Cable, battery (no.4) red+	1
18	X-545-251	Cable, battery (no.4) black-	1
19	X-555-2	Elbow, street (90° x 1/8 in. NPTF)	1
20	X-672-38	Clamp	1
21	X-6427-7	Washer, copper	1
22	GM102933-1	Engine, KDI3404TCR 70kWm tier 3	1

Genset/Battery Mounting

GM102764-MA1(20REOZK-C)



GM102764-A

Genset/Battery Mounting, continued

GM102764-MA1

Item	Part Number	Description	Quantity
1	290418	Strap, ground (11 in.)	1
2	GM102432	Support, engine (RH)	1
3	GM102433	Support, engine (LH)	1
4	GM61403	Box, battery	1
5	GM61432	Strap, poly battery	1
6	GM98553	Vibromount	2
7	M125A-10-80	Washer, plain (10.5 in. ID x 20.0 in. OD)	4
8	M125A-12-80	Washer, plain	4
9	M6923-10-80	Nut, hex (10 mm)	1
10	M931-10080-60	Screw, hex cap	2
11	M933-10020-60	Screw, hex cap (M10 x 20mm)	4
12	M933-10030-60	Screw, hex cap (M10 x 30mm)	2
13	M933-12030-60	Screw, hex cap (M12 x 30mm)	4
14	M982-10-80	Nut, hex	2
15	X-22-14	Washer, lock (.391 in. ID x .975 in. OD)	2
16	X-25-38	Washer, plain (.406 in. ID x 1.25 in. OD)	2
17	X-25-96	Washer, plain (.406 in. ID x 2 in. OD)	2

Nameplate and Decals

(15-30REOZK) GM91308-GR1

Item	Part Number	Description	Quantity
1	224233	Decal, 1-800 number	1
2	238402	Decal, caution positive term. only	1
3	249808	Decal, warning rotating parts	1
4	249809	Decal, Caution Hot Engine	1
5	249810	Decal, warning hot coolant	1
6	257438	Decal, danger moving rotor	1
7	257441	Decal, warning lifting eye	1
8	258815	Decal, warning voltage backfeed	1
9	273780	Decal, warning explosion	1
10	343165	Decal, caution-not a step	1
11	362176	Decal, danger	1
12	364116	Decal, caution welding disconnect	2
13	GM15300	Decal, Exhaust Piping	1
14	GM19296	Decal, fuel type	1
15	GM60531	Decal, Control Height	1
16	GM91223	Decal, Reconnection Diagram	1
18	X-6246-13*	Decal, Kohler Power System	1
19	X-6246-24*	Decal, KOHLER POWER SYSTEMS	1
18	X-6348-23	Decal, KohlerPower.com	2
19	GM91124-11	Decal, Kohler Logo	2

Nameplate and Decals

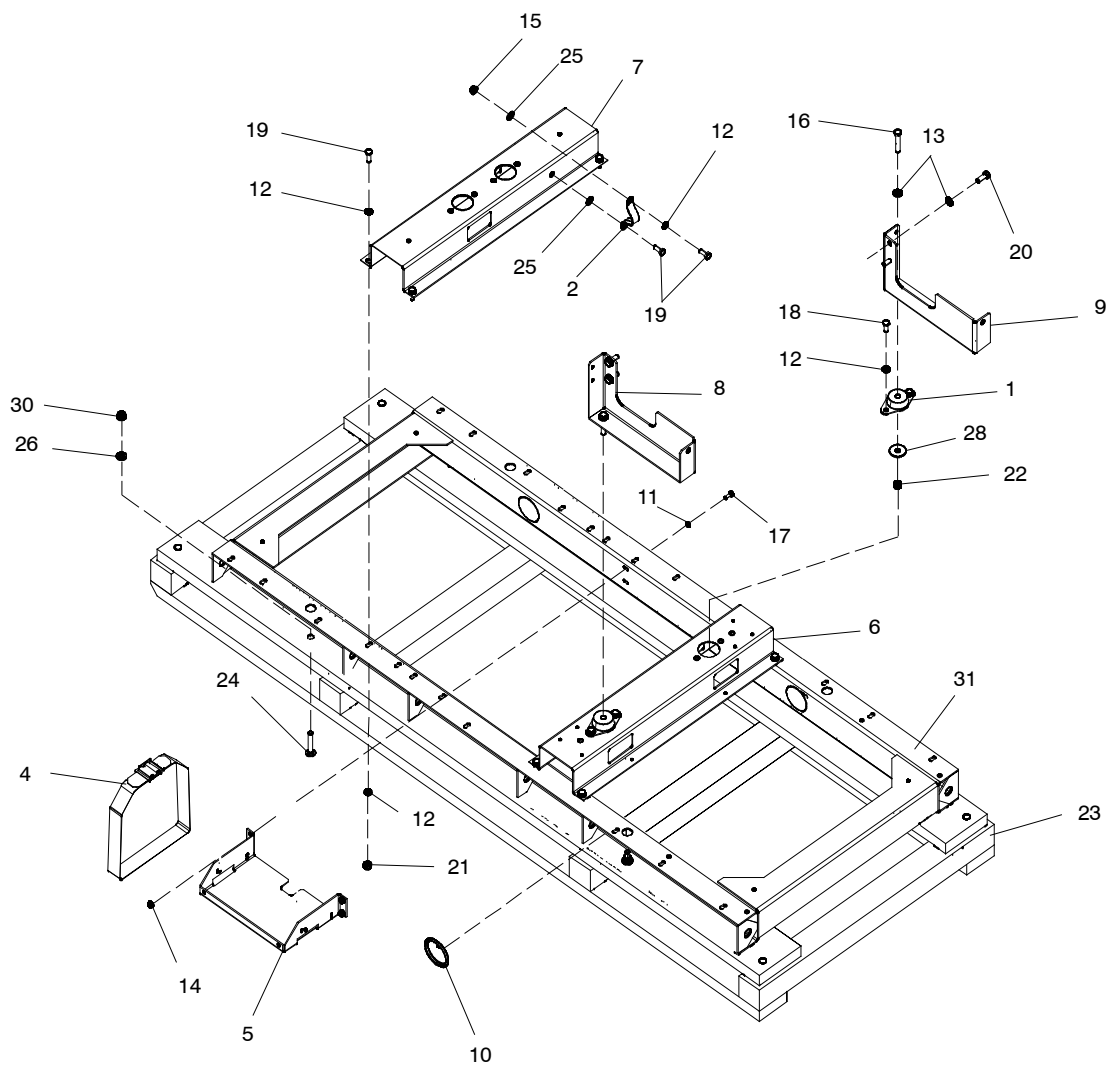
(40-60REOZK) GM79169-GR1

Item	Part Number	Description	Quantity
1	238402	Decal, caution positive term. only	1
2	249808	Decal, warning rotating parts	1
3	249809	Decal, Caution Hot Engine	2
4	249810	Decal, warning hot coolant	1
5	273780	Decal, warning explosion	1
6	343165	Decal, caution-not a step	1
7	364116	Decal, caution welding disconnect	2
9	GM15300	Decal, Exhaust Piping	1
10	GM19296	Decal, fuel type	1
11	224233	Decal, 1-800 number	1
12	257438	Decal, danger moving rotor	3
13	257441	Decal, warning lifting eye	1
14	258815	Decal, warning voltage backfeed	1
15	354518	Tag, Ground	1
16	GM13776	Decal, FRII Reconnection	1
17	GM39683	Tag, Hang	1
18	GM60531	Decal, Control Height	1
19	X-6246-21*	Decal, Kohler Power System	3
20	X-6246-23*	Decal, Kohler Power.Com	2
19	X-6348-23	Decal, KohlerPower.com	2
20	GM91124-11	Decal, Kohler Logo	2

* Before build date of 1/16/2017

Skid

(15-30REOZK) GM87960



GM87960-A

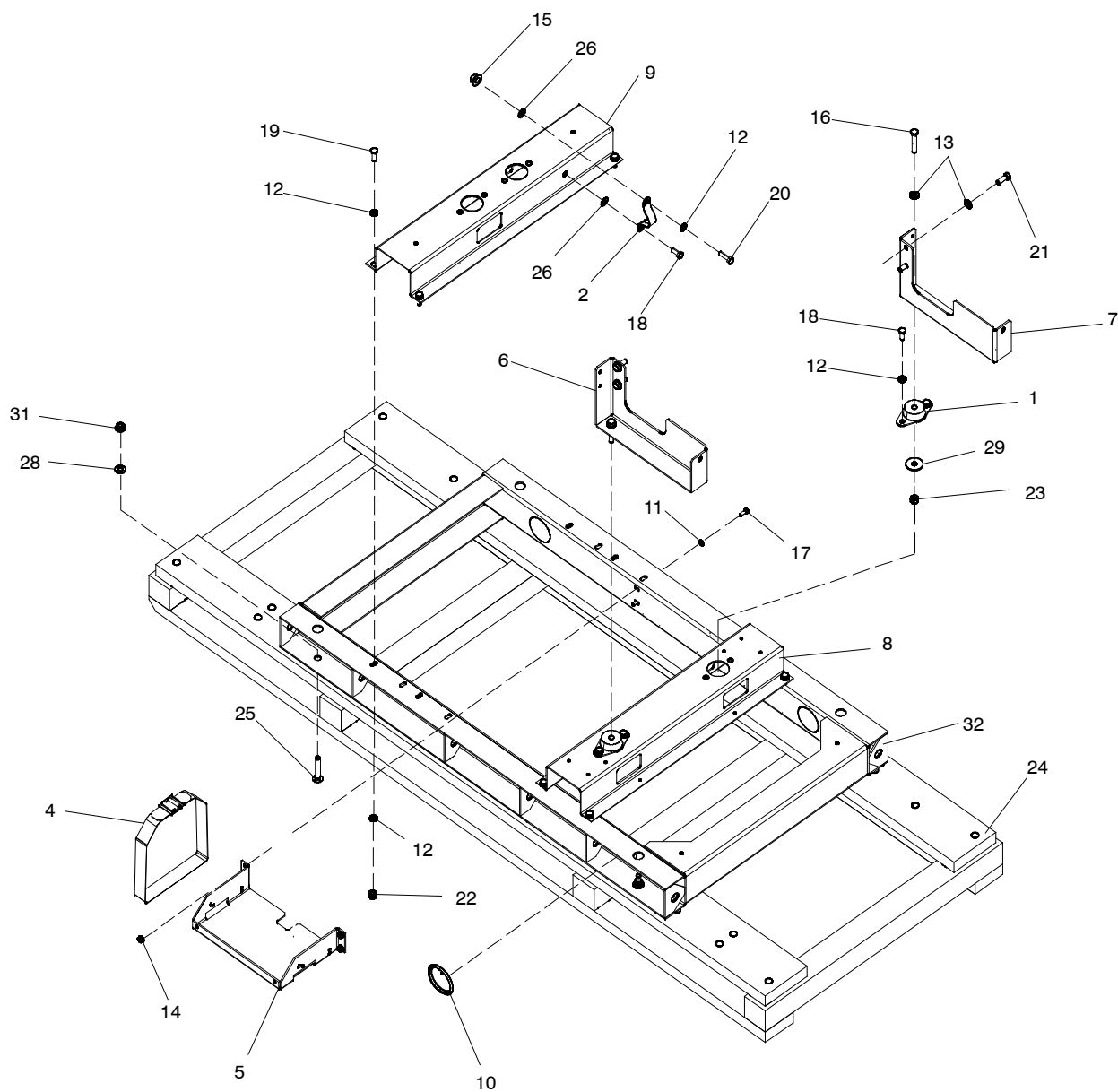
Skid, continued

GM87960-MA1, MA2

Item	Part Number	Description	Quantity
1	GM98553	Mount, Vibro	2
2	290418	Strap, Ground (11 in.)	1
4	GM61432	Strap, Battery	1
5	GM57161	Rack, Battery	1
6	GM87871	Support, Cross Member, Engine	1
7	GM87872	Support, Cross Member, Alternator	1
8	GM88257	Support, Radiator, RH	1
9	GM88258	Support, Radiator, LH	1
10	GM91301	Plug, Plastic, 3 in Dia.	4
11	M125A-08-80	Washer, Plain 8.4 ID x 16.0 OD	4
12	M125A-10-80	Washer, Plain 10.5 ID x 20.0 OD	21
13	M125A-12-80	Washer, Plain	6
14	M6923-08-80	Nut, Hex 8mm	4
15	M6923-10-80	Nut, Hex 10mm	1
16	M931-10065-60	Screw, Hex Cap	2
17	M933-08020-60	Screw, Hex cap	4
18	M933-10025-60	Screw, hex cap, fully thrd M10 x 25mm	4
19	M933-10030-60	Screw, Hex Cap	10
20	M933-12030-60	Screw, Hex Cap	4
21	M982-10-80	Nut, hex elastic stop	8
22	M982-10-80	Nut, hex elastic stop	2
23	PFS-1270	Base, wood	1
24	PNP-2002-30	Bolt, carriage (1/2-13 x 3.00")	4
25	X-22-14	Washer, lock, .391 ID x .975 in. OD	2
26	X-25-26	Washer, Plain	4
28	X-25-96	Washer, plain, .406 IDx2in. OD	2
30	X-6210-12	Nut, flange spiralock, 1/2-13	4
31	GM87870	Skid	1

Skid, continued

(20/30REOZK) GM88412



GM88412-C

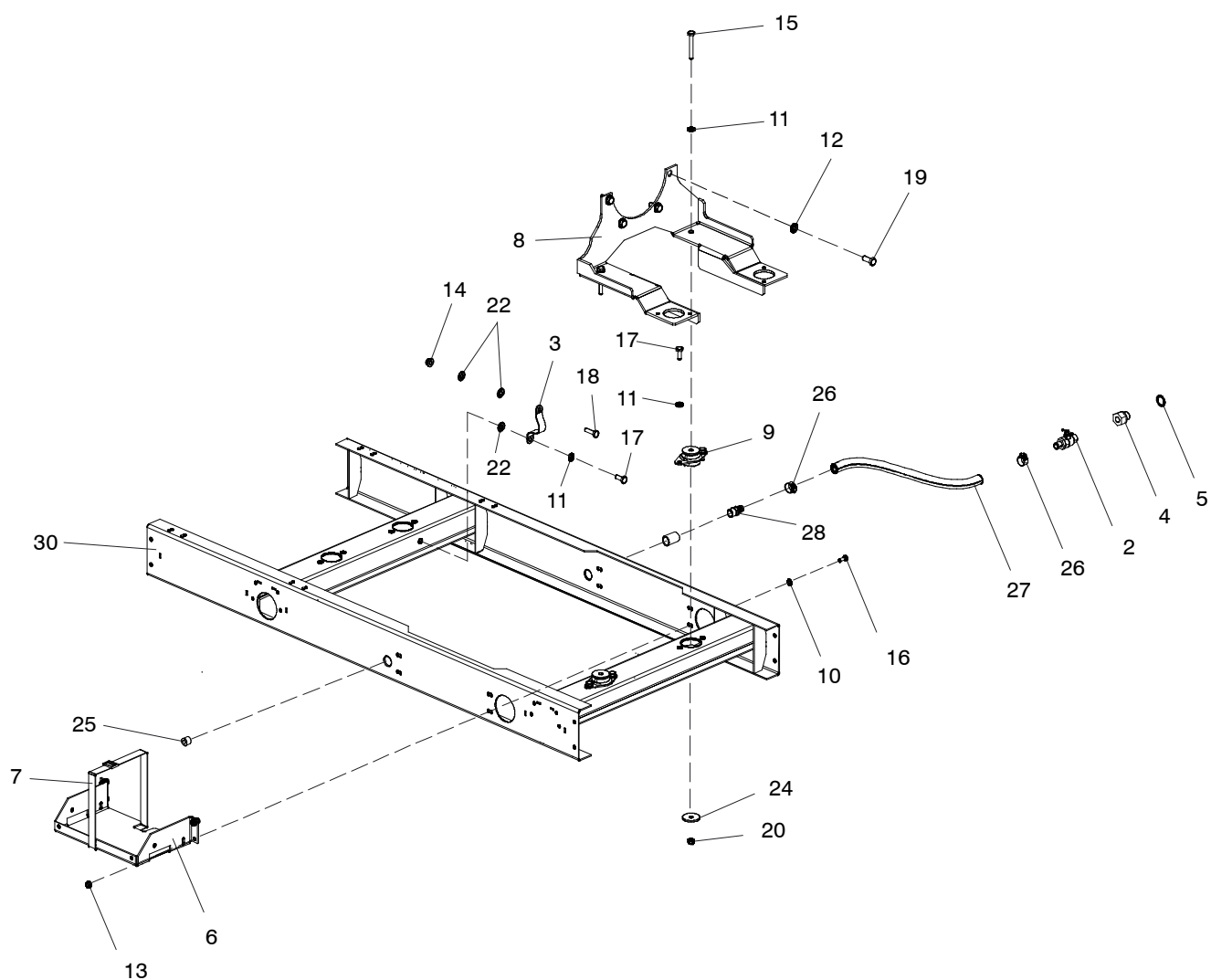
Skid, continued

GM88412-MA1, MA2

Item	Part Number	Description	Quantity
1	GM98553	Mount, Vibro	2
2	290418	Strap, Ground (11 in.)	1
4	GM61432	Strap, Battery	1
5	GM57161	Rack, Battery	1
6	GM88257	Support, Radiator, RH	1
7	GM88258	Support, Radiator, LH	1
8	GM88414	Cross Member, Narrow	1
9	GM88415	Cross Member, Narrow	1
10	GM91301	Plug, Plastic, 3 in Dia.	4
11	M125A-08-80	Washer, Plain 8.4 ID x 16.0 OD	4
12	M125A-10-80	Washer, Plain 10.5 ID x 20.0 OD	21
13	M125A-12-80	Washer, Plain	6
14	M6923-08-80	Nut, Hex 8mm	4
15	M6923-10-80	Nut, Hex 10mm	1
16	M931-10065-60	Screw, Hex Cap	2
17	M933-08020-60	Screw, Hex cap	4
18	M933-10025-60	Screw, hex cap,fully thrd M10 x 25mm	5
19	M933-10030-60	Screw, Hex Cap	8
20	M933-10035-60	Screw, Hex Cap	1
21	M933-12030-60	Screw, Hex Cap	4
22	M982-10-80	Nut, hex elastic stop	8
23	M982-10-80	Nut, hex elastic stop	2
24	PFS-1270	Base, wood	1
25	PNP-2002-30	Bolt, carriage (1/2-13 x 3.00")	4
26	X-22-14	Washer, lock, .391 ID x .975 in. OD	2
28	X-25-85	Washer, plain, .344 ID x .687 in. OD	2
29	X-25-96	Washer,plain,.406 IDx2in.OD	2
31	X-6210-12	Nut, flange spiralock, 1/2-13	4
32	GM88413	Skid, Narrow	1

Skid, continued

(40-60REOZK) GM93971-MA1



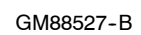
GM93971-B

Skid, continued

GM93971-MA1

Item	Part Number	Description	Quantity
2	272701	Valve, oil drain (1/2-14 nptf)	1
3	290418	Strap, Ground (11 in.)	1
4	GM40116	Adapter Bushing	1
5	GM42443	Washer, Sealing	1
6	GM57161	Rack, Battery	1
7	GM61432	Strap, Poly Battery	1
8	GM92798	Brkt, Engine Mtg, KDI3404	1
9	GM98555	Mount, Vibro	2
10	M125A-08-80	Washer, Plain 8.4 ID x 16.0 OD	4
11	M125A-10-80	Washer, Plain 10.5 ID x 20.0 OD	7
12	M125A-12-80	Washer, Plain	4
13	M6923-08-80	Nut, Hex 8mm	4
14	M6923-10-80	Nut, Hex 10mm	1
15	M931-10070-60	Screw, Hex Cap	2
16	M933-08020-60	Screw, Hex cap	4
17	M933-10025-60	Screw, hex cap, fully thrd M10 x 25mm	5
18	M933-10035-60	Screw, Hex Cap	1
19	M933-12030-60	Screw, Hex Cap	4
20	M982-12-80	Nut, hex elastic stop	2
22	X-22-14	Washer, lock, .391 ID x .975 in. OD	3
24	X-25-96	Washer, plain, .406 IDx2in. OD	2
25	X-75-3	Plug, pipe (1/2" nptf)	1
26	X-426-12	Clamp, hose, .69/1.25 in.	2
27	X-577-24	Hose, rubber, straight, .62 in. ID	1
28	X-582-1	Connector, Hose 5/8" x 1/2" MIP Brass	1
30	GM93972	SKID, 31" (C-LINE)	1

(40-60REOZK) GM88527-MA1



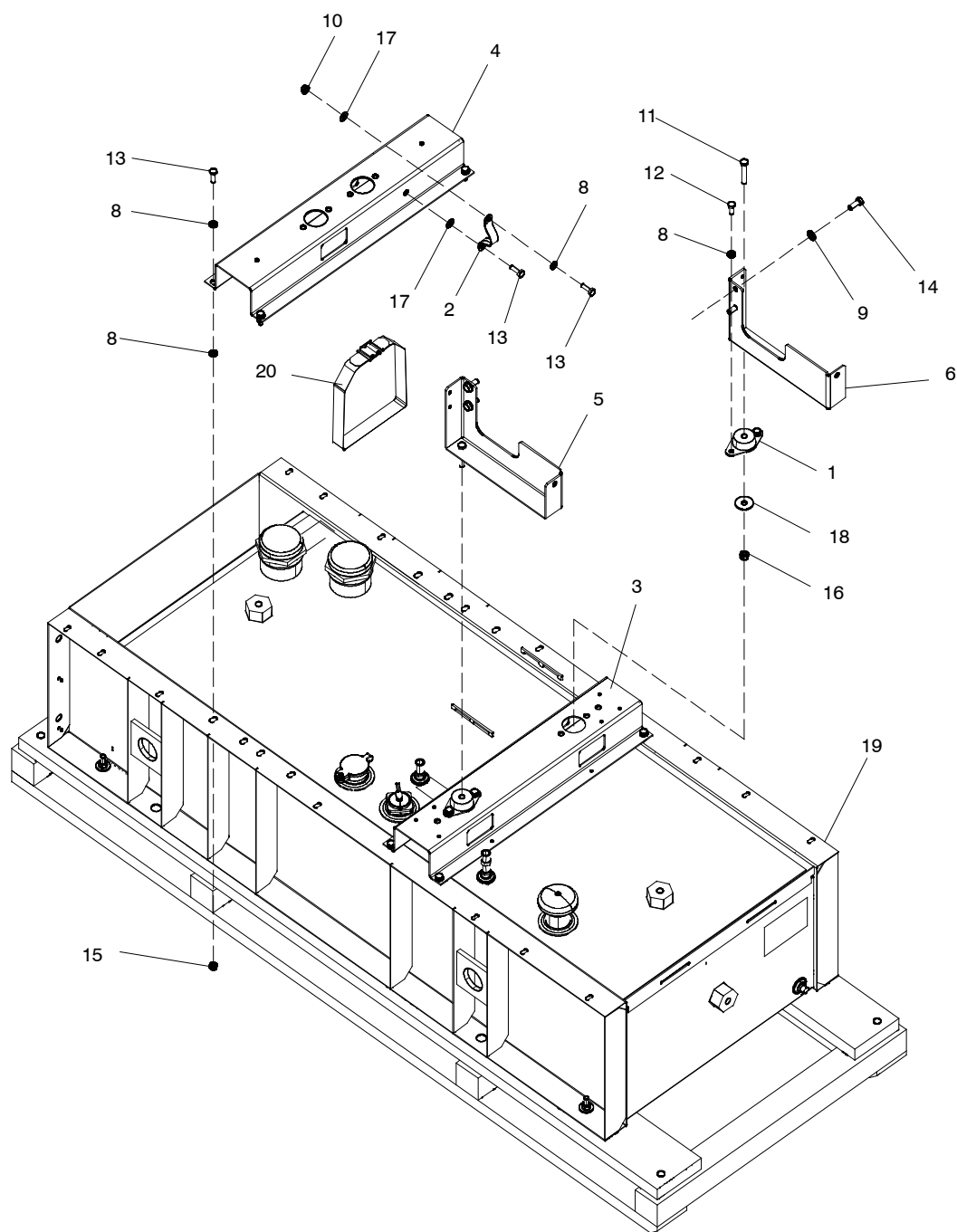
Skid, continued

GM88527-MA1

Item	Part Number	Description	Quantity
1	290418	Strap, Ground (11 in.)	1
2	GM57161	Rack, Battery	1
3	GM61432	Strap, Poly Battery	1
4	GM88529	Crossmember, Engine, KDI3404	1
5	GM88530	Crossmember, Alternator	1
6	GM91301	Plug, Plastic, 3 in Dia.	4
7	GM92798	Brkt, Engine Mtg, KDI3404	1
8	GM98555	Vibromount	2
9	M125A-08-80	Washer, Plain 8.4 ID x 16.0 OD	5
10	M125A-10-80	Washer, Plain 10.5 ID x 20.0 OD	21
11	M125A-12-80	Washer, Plain	4
12	M6923-08-80	Nut, Hex 8mm	4
13	M931-10070-60	Screw, Hex Cap	2
14	M933-08020-60	Screw, Hex cap	6
15	M933-10025-60	Screw, hex cap,fully thrd M10 x 25mm	5
16	M933-10030-60	Screw, Hex Cap	8
17	M933-10035-60	Screw, Hex Cap	1
18	M933-12030-60	Screw, Hex Cap	4
19	M982-10-80	Nut, hex elastic stop	11
22	X-22-14	Washer, lock, .391 ID x .975 in. OD	3
23	X-22-15	Washer,lock,.456 IDx1.058 in. OD	2
24	X-22-16	Washer, lock.326 IDx.883 in. OD	1
26	X-25-96	Washer, plain, .406 IDx2in. OD	2
28	GM60189	Cover, End J-Box	1
29	GM88528	Skid, 40-60kW KDI	1
30	GM93378	Bracket, J-Box Mounting (RS)	1
31	GM93379	Bracket, J-Box Mounting (LS)	1
32	M125A-06-80	Washer, Plain	4
33	M933-06020-60	Screw, hex cap	4

Skid/Tank

(15-30REOZK) GM90278



GM90278-A

Skid/Tank, continued

GM90278

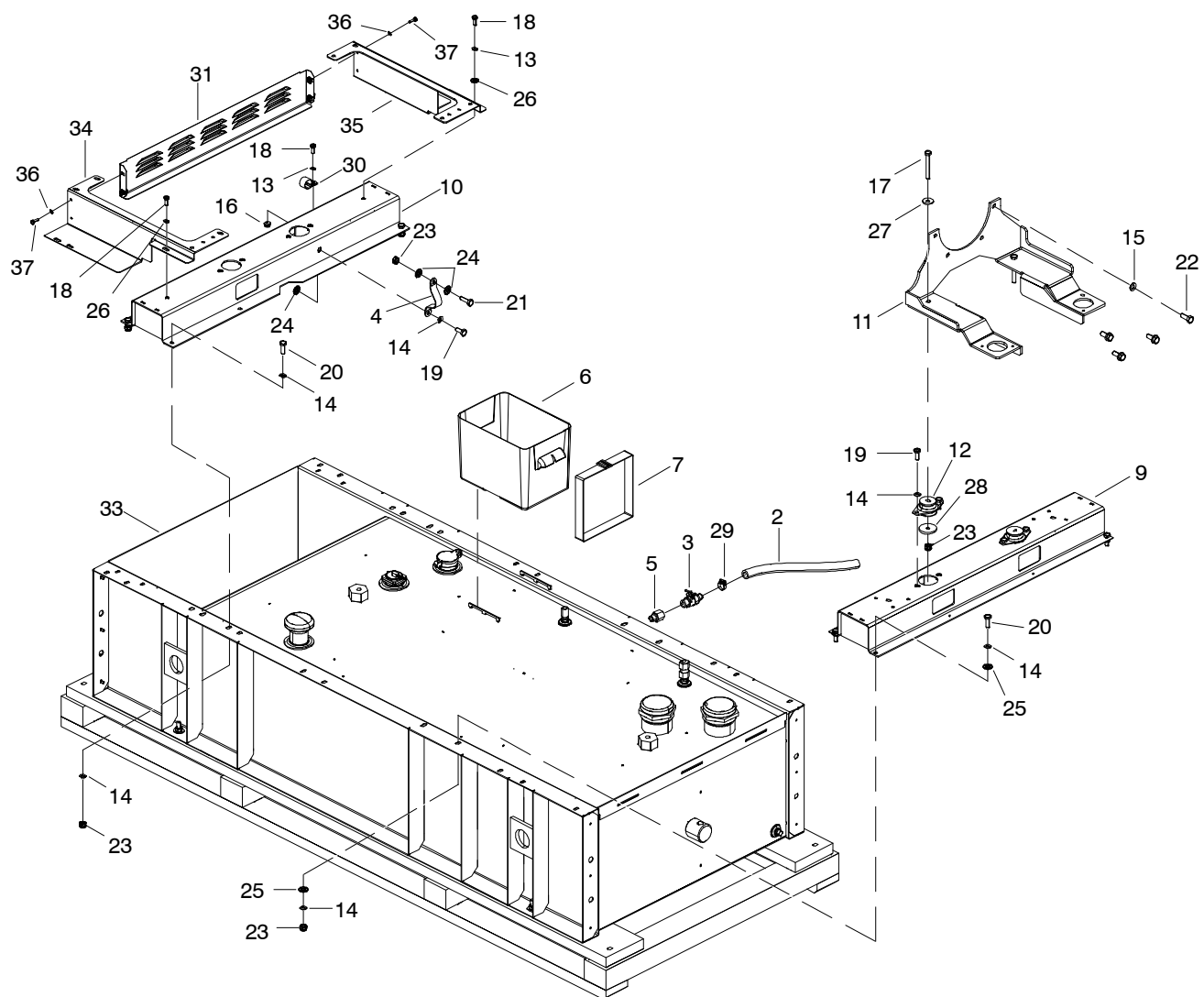
Item	Part Number	Description	Quantity
1	GM98553	Mount, Vibro	2
2	290418	Strap, Ground (11 in.)	1
3	GM87871	Support, Cross Member, Engine	1
4	GM87872	Support, Cross Member, Alternator	1
5	GM88257	Support, Radiator, RH	1
6	GM88258	Support, Radiator, LH	1
8	M125A-10-80	Washer, Plain 10.5 ID x 20.0 OD	21
9	M125A-12-80	Washer, Plain	6
10	M6923-10-80	Nut, Hex 10mm	1
11	M931-10065-60	Screw, Hex Cap	2
12	M933-10025-60	Screw, hex cap, fully thrd M10 x 25mm	4
13	M933-10030-60	Screw, Hex Cap	10
14	M933-12030-60	Screw, Hex Cap	4
15	M982-10-80	Nut, hex elastic stop	8
16	M982-10-80	Nut, hex elastic stop	2
17	X-22-14	Washer, lock, .391 ID x .975 in. OD	2
18	X-25-96	Washer, plain, .406 ID x 2 in. OD	2
19	See chart	Skid tank	1
20	GM61432	Strap, Battery	1
21	See chart	Harness, Fuel Leak Alarm	1

Use this table to identify part number of items 19 and 21.

Module	Part Number	Part Number
	Item 19	Item 21
GM90278-MA1	GM89052-1	GM69380
GM90278-MA2	GM89052-2	GM69380
GM90278-MA3	GM89052-3	GM69380
GM90278-MA4	GM89052-4	GM69380
GM90278-MA5	GM89058-1	GM71451
GM90278-MA6	GM89058-2	GM71451
GM90278-MA7	GM89058-3	GM71451
GM90278-MA8	GM89058-4	GM71451
GM90278-MA9	GM89058-5	GM71451
GM90278-MA10	GM94007-1	GM71451
GM90278-MA11	GM94007-2	GM71451

Skid/Tank, continued

(40-60REOZK) GM93704



Items not shown: 1, 8, 32, 40

GM93704-H

Skid/Tank, continued

GM93704

Item	Part Number	Description	Quantity
1	25465-00062	Hose, rubber	1.17 FT
2	X-577-5	Hose, fuel & oil	1
3	272701	Valve, oil drain (1/2-14 NPTF)	1
4	290418	Strap, ground (8 in.)	1
5	352360	Adapter, bushing	1
6	GM61403	Box, battery	1
7	GM61432	Strap, poly battery	1
8	GM69381	Harness, fuel level	1
9	GM88529	Crossmember, engine	1
10	GM88530	Crossmember, alternator, 4p	1
11	GM92798	Bracket, engine Mtg., kdi3404	1
12	GM98555	Vibromount	2
13	M125A-08-80	Washer, plain 8.4 in. ID x 16.0 in. OD	3
14	M125A-10-80	Washer, plain 10.5 in. ID x 20.0 in. OD	21
15	M125A-12-80	Washer, plain	4
16	M6923-08-80	Nut, hex 8mm	1
17	M931-10080-60	Screw, hex cap	2
18	M933-08020-60	Screw, hex cap	3
19	M933-10025-60	Screw, hex cap	5
20	M933-10030-60	Screw, hex cap	8
21	M933-10035-60	Screw, hex cap	1
22	M933-12030-60	Screw, hex cap	4
23	M982-10-80	Nut, hex elastic stop	11
24	X-22-14	Washer, lock	3
25	X-22-15	Washer, lock	4
26	X-22-16	Washer, lock	1
27	X-25-38	Washer, plain, .406 in. ID x 1.25 in. OD	2
28	X-25-96	Washer, plain, .406 in. ID x 2 in. OD	2
29	X-426-10	Clamp, hose, .5/1 in.	1
30	X-672-32	Clamp, insulated, 1.06 in.	1
31	See chart	Cover, end J-Box	1
32	See chart	Harness	1
33	See chart	Skid/ tank	1
34	See chart	Bracket, J-box mounting (RH)	1
35	See chart	Bracket, J-box mounting (LS)	1
36	See chart	Washer, plain 6.4 ID x 12.0 OD	4
37	See chart	Screw, hex cap	4
40	See chart	Foam, black neoprene blend 1/2 in. x 1/4 in.	2.74 ft

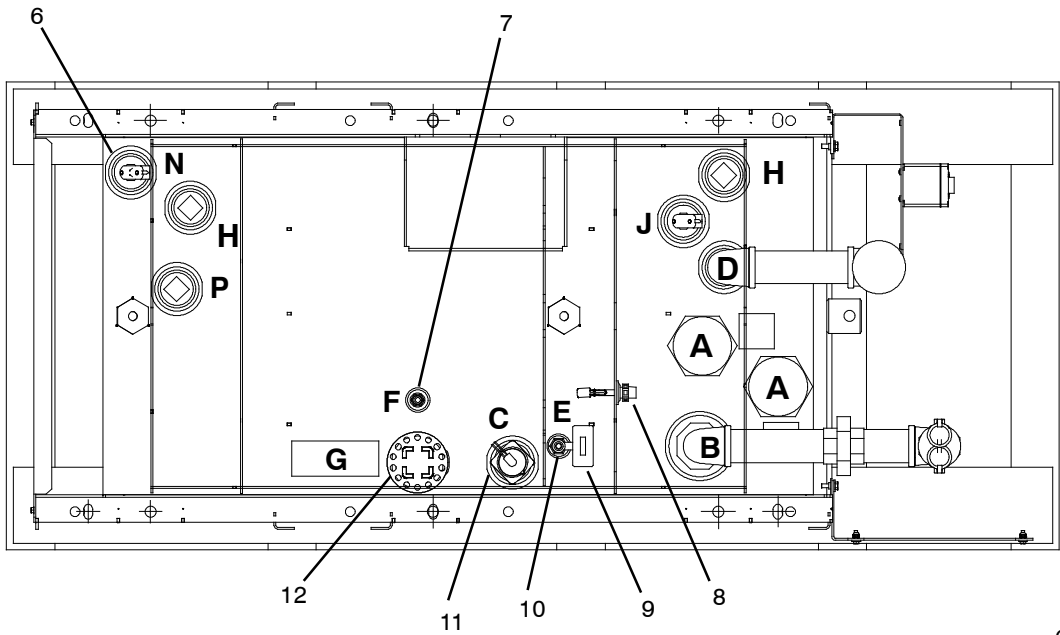
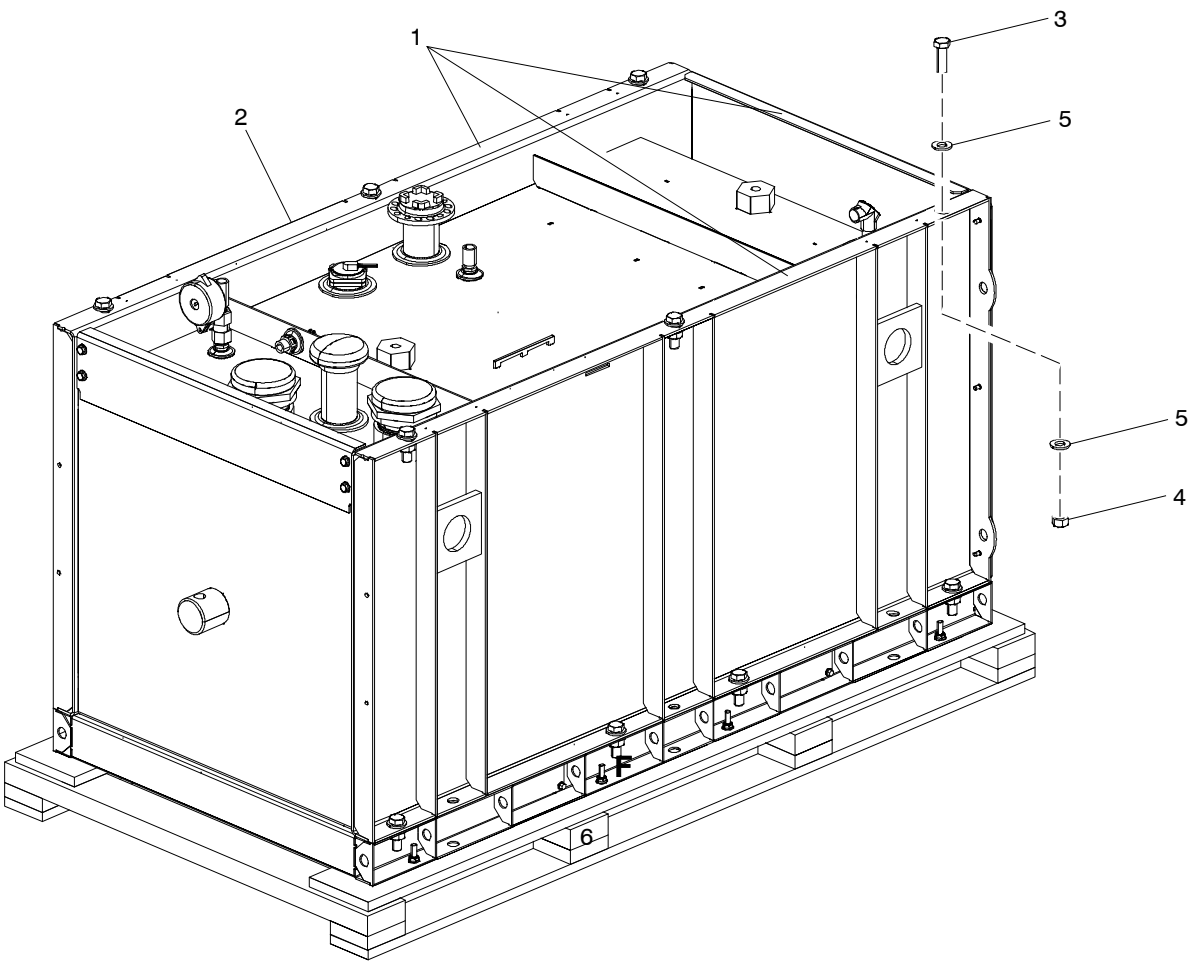
Use this table to identify part number of items 22 and 23.

Module	Part Number				
	Item 31	Item 32	Item 33 (Gal)	Item 34	Item 35
GM93704-MA1	GM60189	GM69380	GM93350-1 (133)	GM93378	GM93379
GM93704-MA2	GM60189	GM69380	GM93350-2 (229)	GM93378	GM93379
GM93704-MA3	GM60189	GM69380	GM93350-3 (275)	GM93378	GM93379
GM93704-MA4	GM60189	GM69380	GM93350-4 (403)	GM93378	GM93379
GM93704-MA5	GM60189	GM71451	GM93355-1 (142)	GM93378	GM93379
GM93704-MA6	GM60189	GM71451	GM93355-2 (237)	GM93378	GM93379
GM93704-MA7	GM60189	GM71451	GM93355-3 (279)	GM93378	GM93379
GM93704-MA8	GM60189	GM71451	GM93355-4 (401)	GM93378	GM93379
GM93704-MA9	GM60189	GM71451	GM93355-5 (535)	GM93378	GM93379

Module	Part Number		
	Item 36	Item 37	Item 40
GM93704-MA1	M125A-06-80	M933-06020-60	-
GM93704-MA2	M125A-06-80	M933-06020-60	-
GM93704-MA3	M125A-06-80	M933-06020-60	-
GM93704-MA4	M125A-06-80	M933-06020-60	-
GM93704-MA5	M125A-06-80	M933-06020-60	19010-08518
GM93704-MA6	M125A-06-80	M933-06020-60	19010-08518
GM93704-MA7	M125A-06-80	M933-06020-60	19010-08518
GM93704-MA8	M125A-06-80	M933-06020-60	19010-08518
GM93704-MA9	M125A-06-80	M933-06020-60	19010-08518

Tank

(20REOZK-C) GM102632-KA1



GM102632-

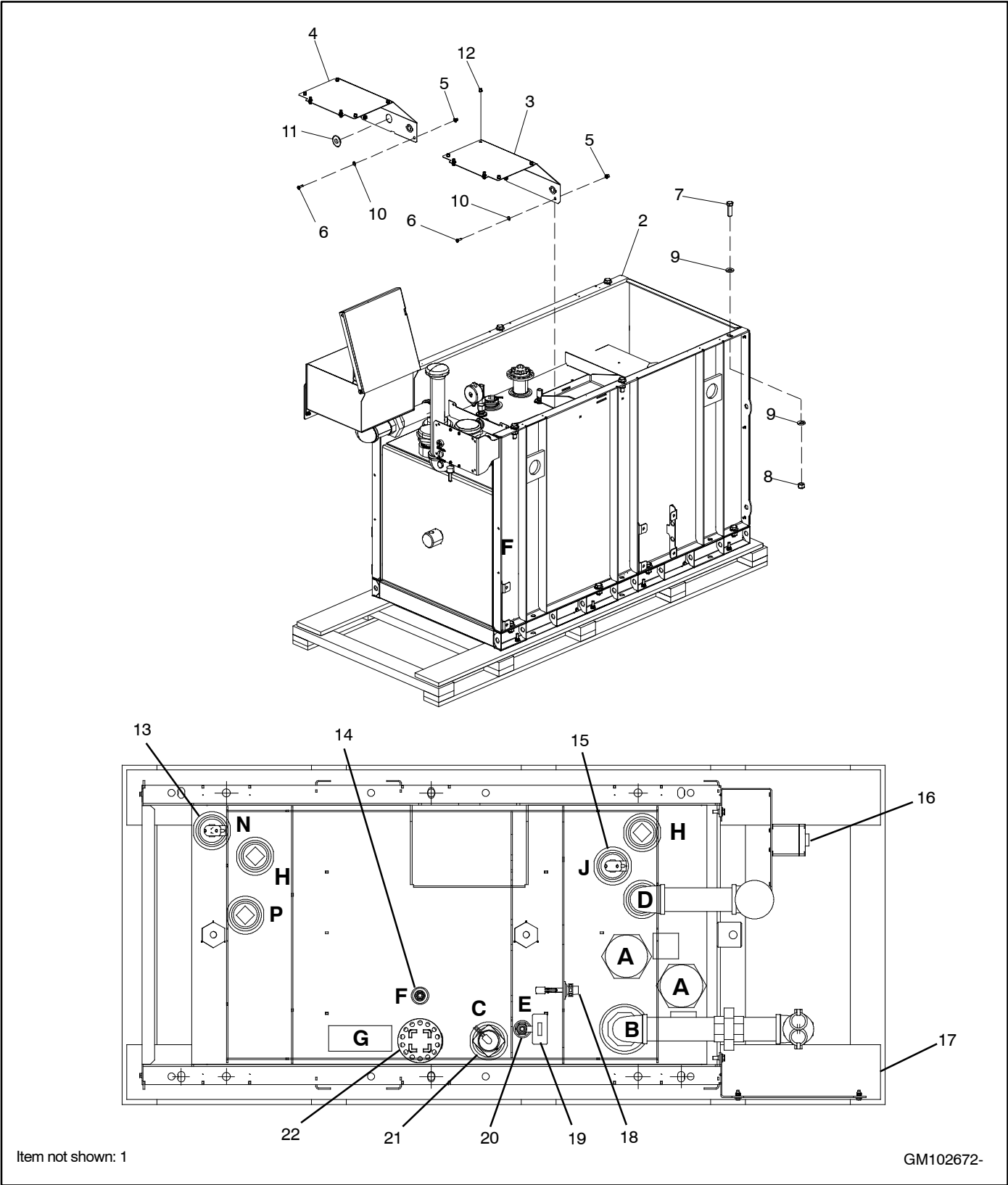
Tank, Continued

GM102632-KA1

Item	Part Number	Description	Quantity
1	SA10897	Foam, neoprene	12
2	GM102374	Tank, 105 gallon	1
3	M933-16050-60	Screw, hex cap	6
4	M934-16-60	Nut, hex	6
5	X-25-15	Washer, plain (.656 ID x 1.312" OD)	12
6	SA21982	Switch, fuel in basin top mtd 2 in. 25h	1
7	GM86153	Tube, dip assy, 3/8 in. ID.	1
8	A-226201	Sensor, leak	1
9	SA27957	Valve, self-closing, fire-safety 3/8 in. NPT	1
10	SA10270	Valve, check (3/8 in. NPT)	1
11	SA24291-18	Gauge, adj. fuel level w/sender, 25h tank	1
12	GM101170	Fuel fill, water tight 2 in. NPT w/riser	1

Tank, Continued

(20REOZK-C) GM102672-KA1



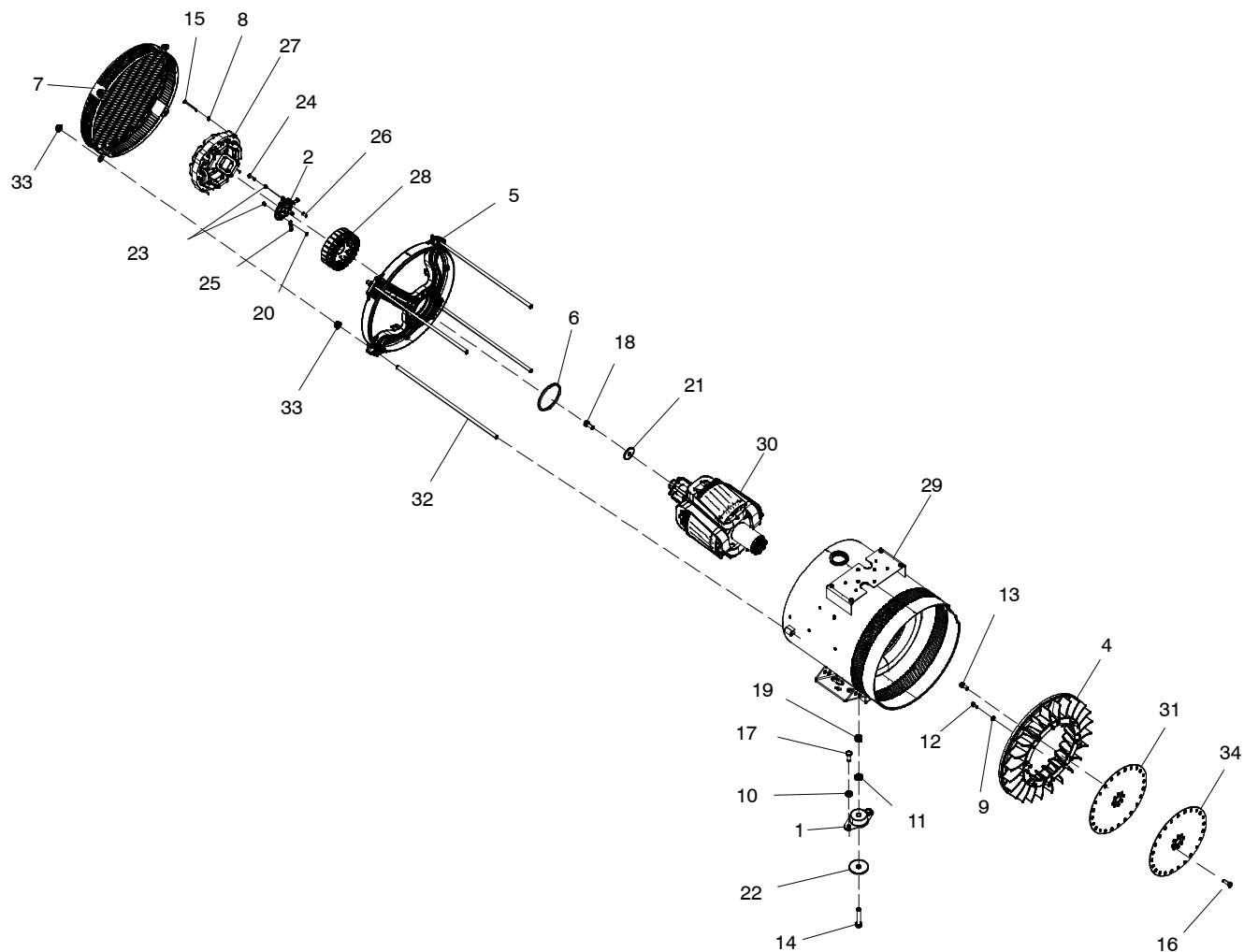
Tank, Continued

GM102672-KA1

Item	Part Number	Description	Quantity
1	SA10897	Foam, neoprene	10
2	GM102669	State tank, 105 Gallon	1
3	GM102759	Panel, tank fitting cover	1
4	GM102914	Panel, tank fitting cover, LDS	1
5	GM11040-7	Insert, threaded (M6 x 1.0 hex)	8
6	M933-06020-60	Screw, hex cap	8
7	M933-16050-60	Screw, hex cap	6
8	M934-16-60	Nut, hex (16mm)	6
9	X-25-15	Washer, plain (.656 in. ID x1.312 in. OD)	12
10	X-25-40	Washer, plain (.281 in. ID x .625 in. OD)	8
11	X-284-42	Grommet, round	1
12	X-301-34	Plug, button	8
13	SA21982	Switch, fuel in basin top mtd 2 in. 25H tank	1
14	GM86153	Tube, dip assy, 3/8 in. ID.	1
15	GM41683	Switch, high fuel level 90%	1
16	GM62600	Box, fuel alarm	1
17	GM102823	Tank, spill/fill, 5 gal 2 in. NPT	1
18	A-226201	Sensor, leak	1
19	SA27957	Valve, self-closing, fire-safety 3/8 in. NPT	1
20	SA10270	Valve, check (3/8 in. NPT)	1
21	SA24291-18	Gauge, adj. fuel level w/sender, 25H tank	1
22	GM101170	Fuel fill, water tight 2 in. NPT w/riser	1

Alternator

GM88320



GM88320-A

Alternator, continued

GM88320

Item	Part Number	Description	Quantity
1	See chart	Mount, Vibro	2
2	A-229152	PCB assembly	1
4	GM87123	Fan, Alternator (4D/4E Lombardini)	1
5	GM87126	Bracket, End (4D/4E)	1
6	GM87132	O-Ring	1
7	GM90261	Guard, Rodent, 4DX	1
8	M125A-05-80	Washer, Plain	4
9	M125A-06-80	Washer, Plain	8
10	M125A-10-80	Washer, Plain 10.5 ID x 20.0 OD	4
11	M125A-12-80	Washer, Plain	2
12	M912-06016-60	Screw, Socket Head Cap	8
13	M912-08020-92	Screw, Socket Head Cap	8
14	M931-12065-60	Screw, Hex Cap	2
15	See chart	Screw, h.c. M5X50	4
16	M933-08025-82	Screw, Hex Cap (Metric)	8
17	M933-10025-60	Screw, hex cap, fully thrd M10 x 25mm	4
18	M933-10025-82	Screw, Hex Cap	1
19	M982-12-80	Nut, hex elastic stop	2
20	X-22-7	Washer, Lock. 172 ID x .333 in. OD	5
21	X-25-129	Washer, plain, .384 ID x 1.628 in. OD	1
22	X-25-140	Washer, plain, .531 ID x 2 in. OD	2
23	X-51-8	Screw, Machine	5
24	X-67-135	Screw, hex washer, thread-forming	3
25	X-283-3	Terminal, ring, male, 16-14 AWG	3
26	X-712-17	Spacer, .312 OD, .56 in.	3
27	See chart	Exciter, Field Assembly	1
28	See chart	Exciter, Armature	1
29	See chart	Stator Assembly	1
30	See chart	Rotor Assembly	1
31	GM87122	Disc, Drive	1
32	See chart	Stud	4
33	See chart	Nut, Hex	4
34	See chart	Disc, Drive	1

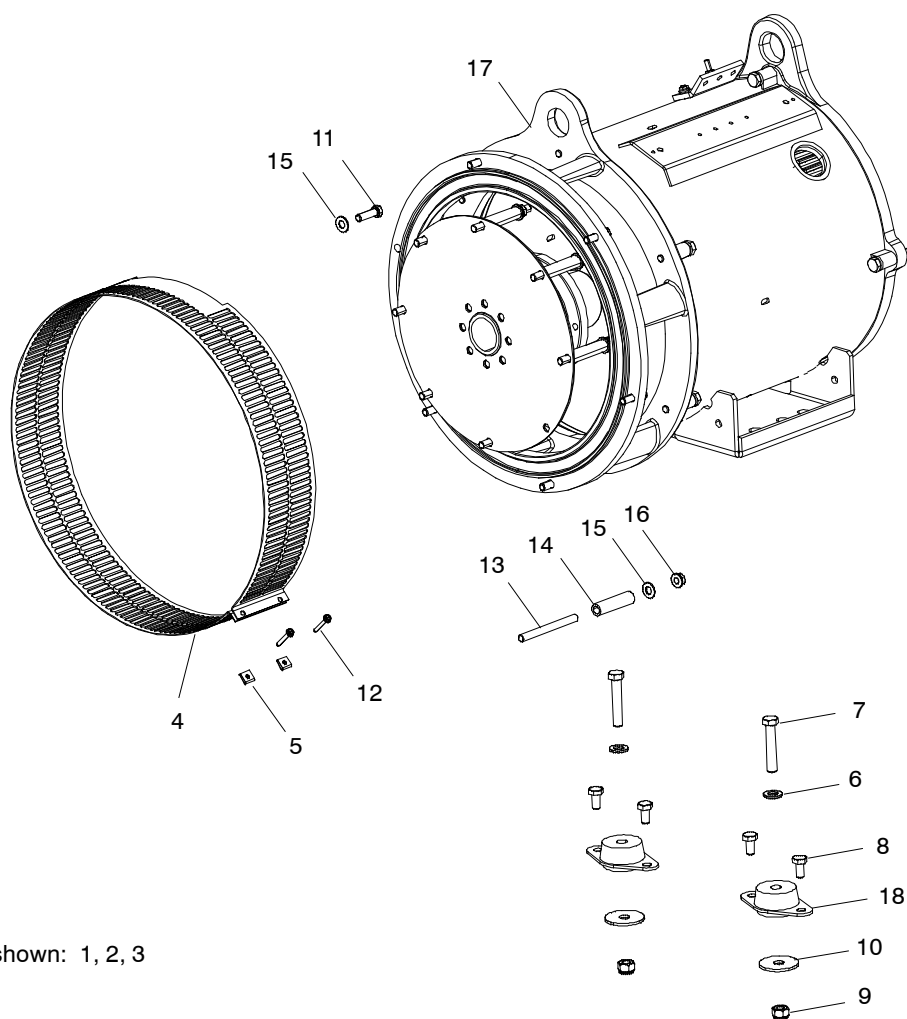
Use these tables to identify part numbers of items 27-34.

Module	Alternator Model	Part Number				
		Item 1	Item 15	Item 27	Item 28	Item 29
GM88320-MA1	4D3.5	324074	M933-05050-60	GC31594	GC344568	GC87110-2
GM88320-MA2	4D5.0	324074	M933-05050-60	GC31594	GC87128	GC87110-3
GM88320-MA3	4D3.1	324074	M933-05050-60	GC31594	GC344568	GC87110-1
GM88320-MA4	4E3.1	324074	M933-05050-60	GC31594	GC344568	GC87112-1
GM88320-MA5	4E3.8, 1 Phase	324074	M933-05050-60	GC31594	GC344568	GC87112-2
GM88320-MA6	4D5.0, 600V	324074	M933-05050-60	GC31594	GC87128	GC87111-3
GM88320-MA7	4D3.8, 600V	324074	M933-05050-60	GC31594	GC344568	GC87111-2
GM88320-MA8	4D3.1, 600V	324074	M933-05050-60	GC31594	GC344568	GC87111-1
GM88320-MA9	4D5.6	324074	M933-05050-60	GC31594	GC87128	GC87110-4
GM88320-MA10	4E5.6, 1 Phase	324074	M933-05050-60	GC31594	GC344568	GC87112-4
GM88320-MA11	4D5.6, 600V	324074	M933-05050-60	GC31594	GC87128	GC87111-4
GM88320-MA12	4D8.3	324075	M931-05070-60	GC87131	GC87129	GC87110-5
GM88320-MA13	4D8.3, 600V	324075	M931-05070-60	GC87131	GC87129	GC87111-5
GM88320-MA14	4E8.3, 1 Phase	324075	M931-05070-60	GC87131	GC87129	GC87112-5

Module	Part Number			
	Item 30	Item 32	Item 33	Item 34
GM88320-MA1	GC87121-2	GM87134-2	M6923-10-80	GM87122
GM88320-MA2	GC87121-3	GM87134-3	M6923-10-80	GM87122
GM88320-MA3	GC87121-1	GM87134-1	M6923-10-80	GM87122
GM88320-MA4	GC87121-1	GM87134-1	M6923-10-80	GM87122
GM88320-MA5	GC87121-2	GM87134-2	M6923-10-80	GM87122
GM88320-MA6	GC87121-3	GM87134-3	M6923-10-80	GM87122
GM88320-MA7	GC87121-2	GM87134-2	M6923-10-80	GM87122
GM88320-MA8	GC87121-1	GM87134-1	M6923-10-80	GM87122
GM88320-MA9	GC87121-4	GM87134-4	M6923-10-80	GM87122
GM88320-MA10	GC87121-4	GM87134-4	M6923-10-80	GM87122
GM88320-MA11	GC87121-4	GM87134-4	M6923-10-80	GM87122
GM88320-MA12	GC87121-5	GM87134-5	M6923-10-80	GM89972
GM88320-MA13	GC87121-5	GM87134-5	M6923-10-80	GM89972
GM88320-MA14	GC87121-5	GM87134-5	M6923-10-80	GM89972

Alternator, continued

4PX Alternator Modules GM95642-



Items not shown: 1, 2, 3

GM95642

Item	Part Number	Description	Qty.
1	X-750-14	Marker, wire L1 (not shown)	1
2	X-750-15	Marker, wire L2 (not shown)	1
3	X-750-16	Marker, wire L3 (not shown)	1
4	257046	Guard, generator fan	1
5	257442	Clip, speed	2
6	M125A-10-80	Washer, plain	2
7	M931-10070-60	Screw, hex cap	2
8	M933-10020-60	Screw, hex cap	4
9	M982-10-80	Nut, hex elastic stop	2
10	X-25-96	Washer, plain	2
11	270158	Bolt, Hex Cap	6
12	X-67-125	Screw, hex washer, thread-forming	2
13	X-352-63	Stud, 3/8-16 x 4 in.	8
14	X-400-132	Spacer, 0.406 ID x 0.625 OD x 2.531 in.	8
15	X-801-3	Washer, hardened, 0.406 ID x 0.812 OD	14
16	X-6210-9	Nut, flange spiralock, 3/8-16	8
17	See chart page 49	Alternator assembly	1
18	See chart page 49	Vibromount	2

Alternator, continued

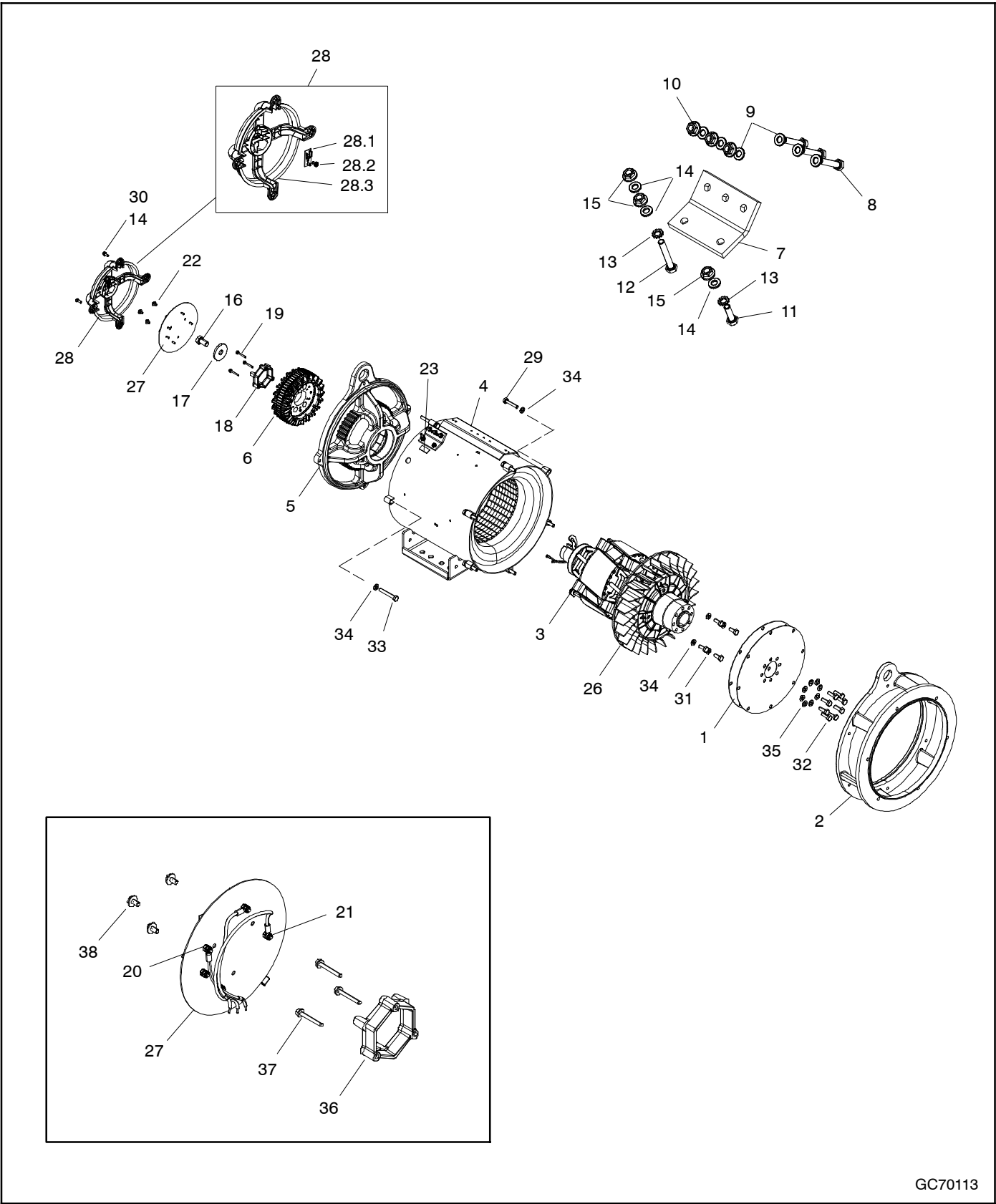
4PX Alternator Modules GM95642- Alternator Module Parts

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

Module No.	Alternator Description	Item 18, Vibromount	Item 17, Alternator Assembly
GM95642-MA1	4P7BX	GM98555	GC70113-20
GM95642-MA2	4P7BX, 600 V	GM98555	GC70113-22
GM95642-MA3	4Q7BX	GM98555	GC70113-24
GM95642-MA4	4P10X	GM98555	GC70113-32
GM95642-MA5	4P10X, 600 V	GM98555	GC70113-35
GM95642-MA6	4Q10X	GM98555	GC70113-38
GM95642-MA7	4P8X	GM98555	GC70113-26
GM95642-MA8	4P8X, 600 V	GM98555	GC70113-28
GM95642-MA9	4Q8X	GM98555	GC70113-30
GM95642-MA10	4P5X	GM98555	GC70113-8
GM95642-MA11	4P5X, 600 V	GM98555	GC70113-10
GM95642-MA12	4Q5X	GM98555	GC70113-12

Alternator, continued

4P_X/4Q_X Alternators GC70113-



GC70113

Alternator, continued

4P_X/4Q_X Alternators GC70113-

Item	Part No.	Description	Qty.
1	See chart	Disc, Drive	2
2	See chart	Adapter, Generator	1
3	See chart	Rotor Assembly	1
4	See chart	Stator Assembly	1
5	See chart	Bracket Assembly, End	1
6	See chart	Exciter Armature, SCR	1
7	See chart	Bus, Ground	1
8	See chart	Screw, Hex Cap	3
9	See chart	Washer, Plain	6
10	See chart	Nut, Hex	3
11	M933-06020-60	Screw, hex cap	1
12	M933-06040-60	Screw, hex cap	1
13	M6797A-06-SS	Washer, Internal & External Tooth	2
14	M125A-06-80	Washer, Plain	7
15	M6923-06-80	Nut, Hex 6mm	3
16	M933-16030-82	Screw, hex cap	1
17	GM70070	Washer, FRX Exciter Mtg	1
18	GM70076	Spacer, FRX Activator	1
19	M7500D-05035-85	Screw, Metric Thread Forming	3
20	M934-04-SS	Nut, Hex (Stainless Steel)	5
21	M985-04-SS	Nut, Hex Elastic Stop	5
22	X-6071-8	Screw, Thread Forming	3
23	344295	Decal, equipment grd	1
26	347697	Fan, Alternator	1
27	-	PCB Assy, Alternator Activator (3-hole) (Order item 39)	1
28	GM74218	Holder Assy, LED Optic Board	1
28.1	GM74198	PCB ASSY, Alt. LED Optic Board	1
28.2	M7500C-05010-83	Screw, Thread Forming Metric	1
28.3	GM74110	Holder, LED Optic Board	1
29	M931-10050-60	Screw, hex cap	6
30	M933-06016-60	Screw, hex cap, M6x16mm, js500 full thrd	4
31	M933-10025-60	Screw, hex cap, fully thrd M10 x 25mm EXP	4
32	M933-10030-82	Screw, hex cap	8
33	M933-10070-60	Screw, Hex Cap	4
34	X-25-93	Washer, plain .406ID x .75in. OD	14
35	X-801-3	Washer, hardened, .406 ID x .812 in. OD	8
36	GM96975	Spacer, FRX Activator (3-Hole)	1
37	M7500D-05035-85	Screw, Metric Thread Forming	3
38	X-6071-8	Screw, Thread Forming	3
39	GM101821-S	Service Kit, FRX Activator Board (for replacing 3-hole activator board on units before alternator serial number 96779)	1

Alternator, continued

4P_X/4Q_X Alternators GC70113-

Alternator Part Number and Mount Type

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

Alternator No.	Assembly				
	Item 1, Drive Disc	Item 2, Adapter	Item 3, Rotor Assy.	Item 4, Stator Assy.	Item 5, End Bracket
GC70113-8	257015	GM32006	GC70100-2	GC70110-2	GM70080-1
GC70113-10	257015	GM32006	GC70100-2	GC70111-2	GM70080-1
GC70113-12	257015	GM32006	GC70100-2	GC70112-2	GM70080-1
GC70113-20	257015	GM32006	GC70100-4	GC70110-4	GM70080-2
GC70113-22	257015	GM32006	GC70100-4	GC70111-4	GM70080-2
GC70113-24	257015	GM32006	GC70100-4	GC70112-4	GM70080-2
GC70113-26	257015	GM32006	GC70100-5	GC70110-5	GM70080-2
GC70113-28	257015	GM32006	GC70100-5	GC70111-5	GM70080-2
GC70113-30	257015	GM32006	GC70100-5	GC70112-5	GM70080-2
GC70113-32	257015	GM32006	GC70100-6	GC70110-6	GM70080-2
GC70113-35	257015	GM32006	GC70100-6	GC70111-6	GM70080-2
GC70113-38	257015	GM32006	GC70100-6	GC70112-6	GM70080-2

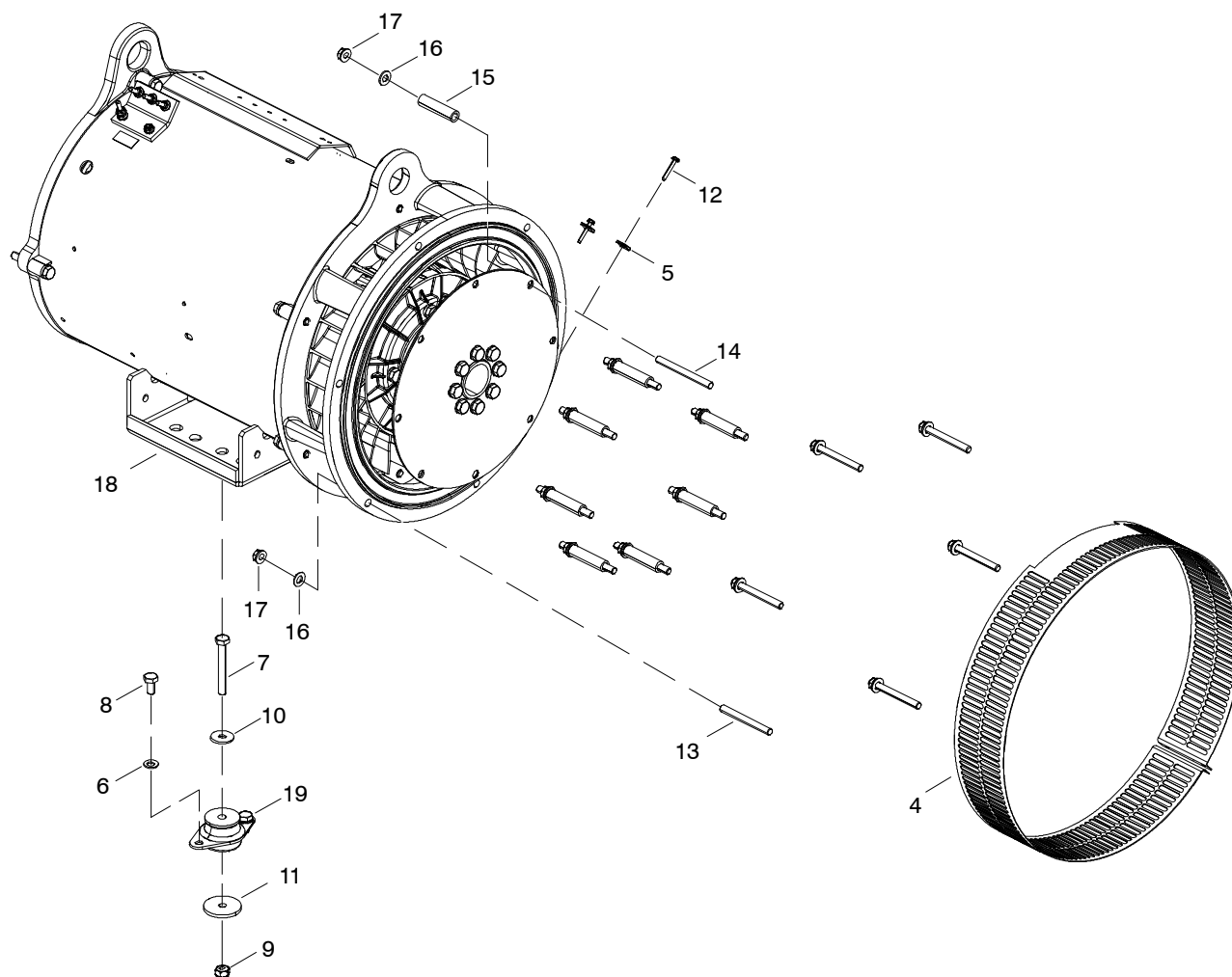
Alternator Part Number and Mount Type

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

Alternator No.	Assembly				
	Item 6, Exciter	Item 7, Ground Bus	Item 8, Screws	Item 9, Washers	Item 10, Nuts
GC70113-8	GC70064-1	257986	M933-06030-60	M125A-06-80	M6923-06-80
GC70113-10	GC70064-1	257986	M933-06030-60	M125A-06-80	M6923-06-80
GC70113-12	GC70064-1	257985	M933-08030-60	M125A-08-80	M6923-08-80
GC70113-20	GC70064-2	257986	M933-06030-60	M125A-06-80	M6923-06-80
GC70113-22	GC70064-2	257986	M933-06030-60	M125A-06-80	M6923-06-80
GC70113-24	GC70064-2	257985	M933-08030-60	M125A-08-80	M6923-08-80
GC70113-26	GC70064-2	257986	M933-06030-60	M125A-06-80	M6923-06-80
GC70113-28	GC70064-2	257986	M933-06030-60	M125A-06-80	M6923-06-80
GC70113-30	GC70064-2	257985	M933-08030-60	M125A-08-80	M6923-08-80
GC70113-32	GC70064-2	257986	M933-06030-60	M125A-06-80	M6923-06-80
GC70113-35	GC70064-2	257986	M933-06030-60	M125A-06-80	M6923-06-80
GC70113-38	GC70064-2	257985	M933-08030-60	M125A-08-80	M6923-08-80

Alternator and Mounting

(40-60REOZK) GM103384



Items not shown: 1, 2, 3

GM103384

Alternator, continued

GM103384

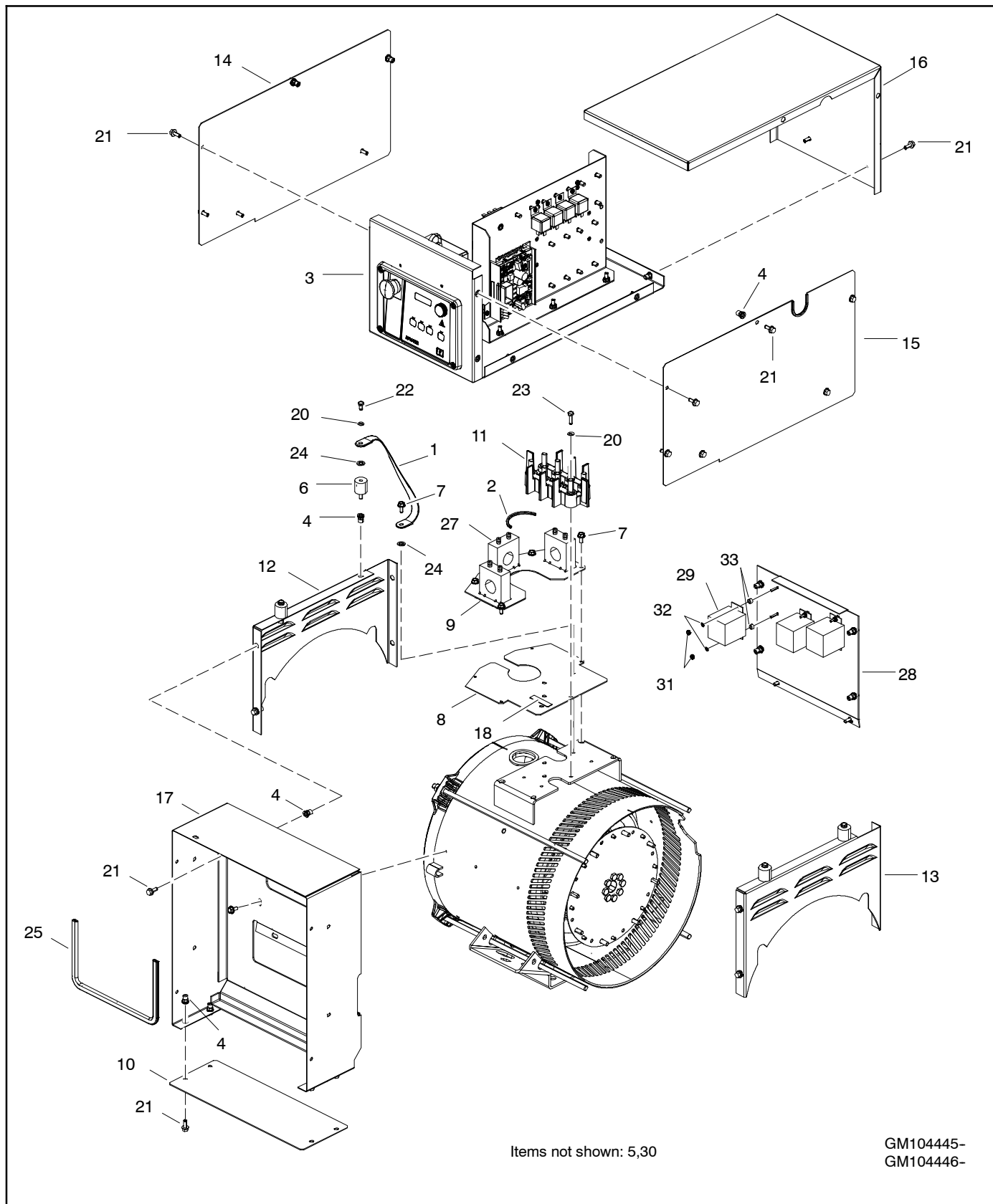
Item	Part No.	Description	Qty.
1	X-750-14	Marker, wire	1
2	X-750-15	Marker, wire	1
3	X-750-16	Marker, wire	1
4	257046	Guard, generator fan	1
5	257442	Clip, speed	2
6	M125A-10-80	Washer, plain 10.5 id x 20.0 OD	4
7	M931-10080-60	Screw, hex cap	2
8	M933-10020-60	Screw, hex cap	4
9	M982-10-80	Nut, hex elastic stop	2
10	X-25-38	Washer, plain, .406 ID x 1.25 in. OD	2
11	X-25-96	Washer, plain, .406 ID x 2 in. OD	2
12	X-67-125	Screw, hex washer, thread-forming	2
13	X-352-121	Stud, 3/8-16 x 3.62 in.	6
14	X-352-63	Stud, 3/8-16 x 4 in.	8
15	X-400-132	Spacer, .406 ID x .625 OD x 2.531 in	8
16	X-801-3	Washer, hardened, .406 ID x .812 in. OD	14
17	X-6210-9	Nut, flange spiralock, 3/8-16	14

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

Module No.	Alternator Description	Item 19, Vibromount	Item 18, Alternator Assembly
GM103384-MA1	4P8X	GM98555	GC70113-26
GM103384-MA2	4P8X, 600 V	GM98555	GC70113-28
GM103384-MA3	4Q8X	GM98555	GC70113-30
GM103384-MA4	4P10X	GM98555	GC70113-32
GM103384-MA5	4P10X, 600 V	GM98555	GC70113-35
GM103384-MA6	4Q10X	GM98555	GC70113-38
GM103384-MA7	4P7BX	GM98555	GC70113-20
GM103384-MA8	4P7BX, 600 V	GM98555	GC70113-22
GM103384-MA9	4Q7BX	GM98555	GC70113-24
GM103384-MA10	4P5X	GM98555	GC70113-8
GM103384-MA11	4P5X, 600 V	GM98555	GC70113-10
GM103384-MA12	4Q5X	GM98555	GC70113-12

Controller

(15-20REOZK) GM104445-, GM104446-



Controller, continued

GM104445-, GM104446-

Item	Part Number	Description	Quantity
1	277839	Strap, ground (11 in.)	1
2	See chart	Gromet, U-Channel	1
3	GM104360	Controller, APM402	1
4	GM11040-7	Insert, threaded M6-1.0	22
5	GM17424	Harness, wiring C.T.	1
6	GM38784-3	Vibromount, controller	4
7	GM78761-1	Screw, sheet metal M6 X 1.0 X16mm	10
8	GM88285	Bracket, CT mounting	1
9	GM88287	Bracket, CT mounting	1
10	GM89912**	Plate, BTM, breaker box	1
11	GM90316	Terminal block	1
12	GM90328**	Panel, Junction box, LH	1
13	GM90329**	Panel, Junction box, RH	1
14	GM90331**	Panel, Control box side, LH	1
15	GM90332**	Panel, Control box side, RH	1
16	GM90336**	Junction box top	1
17	See chart	Box, breaker	1
18	GM93705	Decal, torque rating	1
19	See chart	Weldment, breaker box	1
20	M125A-06-80	Washer, plain 6.4ID X 12.0 OD	6
21	M6921-06016-60	Screw, hex flange M6 X16mm	26
22	M933-06010-60	Screw, hex cap	4
23	M933-06020-60	Screw, hex cap	2
24	X-22-5	Washer, lock	2
25	X-6047-14	Channel, U	1
27	See chart	Transformer, current	
28	See chart	Panel, J-box back	1
29	See chart	Transformer, potential	3
30	See chart	Harness, wiring, 600V	1
31	See chart	Nut, hex 4mm	6
32	See chart	Washer, lock	6
33	See chart	Spacer	6

Use these tables to identify part numbers of items 2, 17, 27-33

Module	Part Number					
	Item 2	Item 17	Item 27	Item 28	Item 29	Item 30
GM104445-MA1	X-6033-17	GM90338**	GM16252 (3)	GM90334**	-	-
GM104445-MA2	X-6033-17	GM90338**	GM16252 (3)	GM91272**	258990	GM95754
GM104445-MA3	X-6033-17	GM90338**	GM16252 (2)	GM90334**	-	-
GM104446-MA1	X-6033-4	-	GM16252 (3)	GM90334**	-	-
GM104446-MA2	X-6033-4	-	GM16252 (3)	GM92365**	258990	-
GM104446-MA3	X-6033-4	-GM89462**	GM16252 (2)	GM90334**	-	-

Module	Part Number		
	Item 31	Item 32	Item 33
GM104445-MA1	-	-	-
GM104445-MA2	M934-04-50	X-22-7	X-400-192
GM104445-MA3	-	-	-
GM104446-MA1	-	-	-
GM104446-MA2	M934-04-50	X-22-7	X-400-192
GM104446-MA3	-	-	-

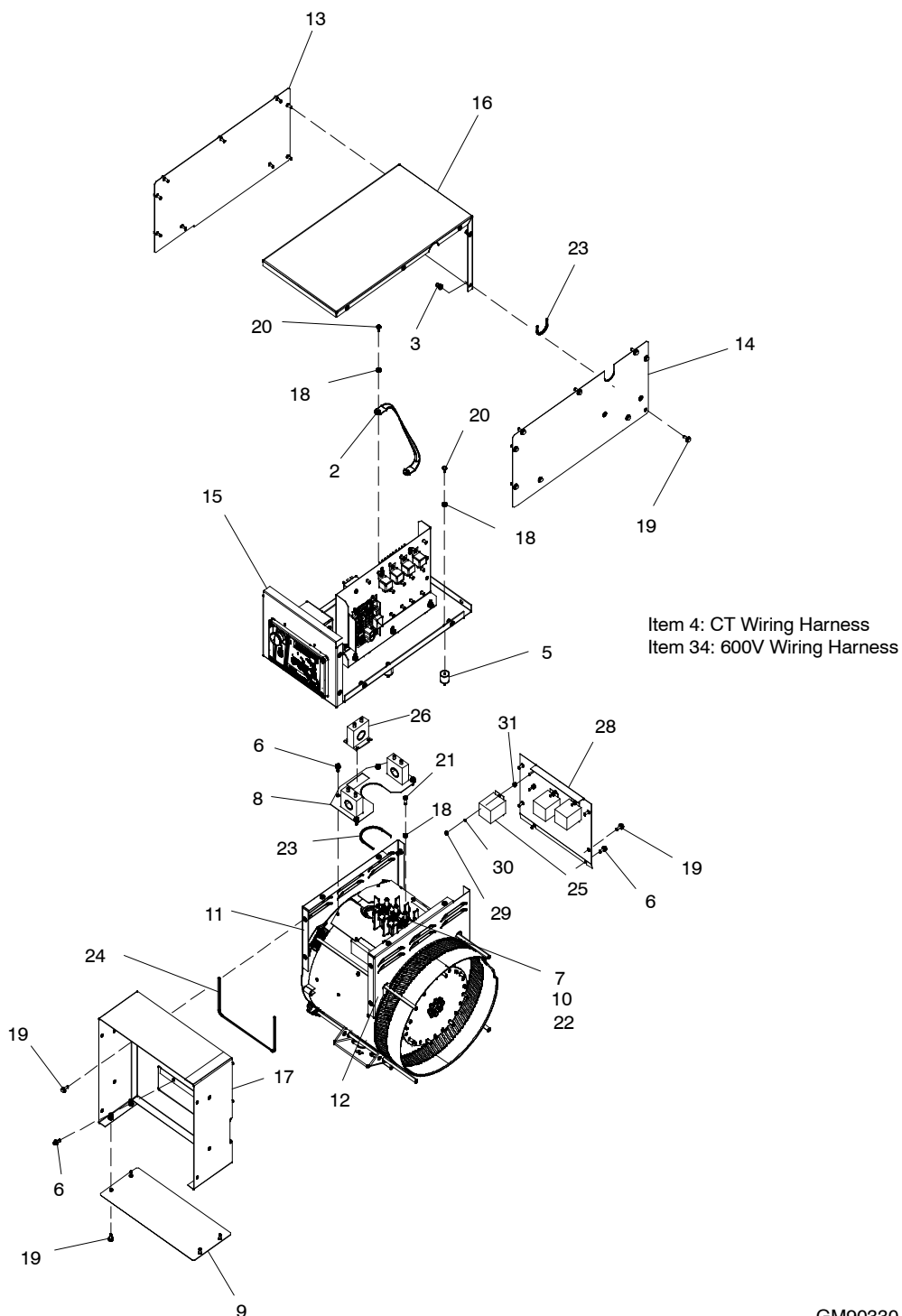
** Use the Module number and chart below to identify the color suffix.

Add a suffix to this color dependent part number before ordering.

Module No.	Color Dependant Parts	
	Part Number Suffix	Part Number Example (item 10)
GM104445-MA1-BLK	-BLK	GM89912-BLK
GM104445-MA2-BLK	-BLK	GM89912-BLK
GM104445-MA3-BLK	-BLK	GM89912-BLK
GM104446-MA1-BLK	-BLK	GM89912-BLK
GM104446-MA2-BLK	-BLK	GM89912-BLK
GM104446-MA3-BLK	-BLK	GM89912-BLK

Controller, continued

(15-30REOZK) GM90330



GM90330-

Controller, continued

GM90330

Item	Part Number	Description	Quantity
2	277839	Strap, ground (11 in.)	1
3	GM11040-7	Insert, Threaded (M6 x 1.0 Hex)	22
4	GM17424	Harness, Wiring Current Transformer	1
5	GM38784-3	Vibromount, Controller	4
6	GM78761-1	Screw, Sheetmetal	10
7	GM88285	Bracket, CT Mounting	1
8	GM88287	Bracket, CT Mounting	1
9	GM89912**	Plate, Btm, Breaker Box	1
10	GM90316	Terminal Block	1
11	GM90328**	Panel, J-Box	1
12	GM90329**	Panel, J-Box	1
13	GM90331**	Panel, Control Box	1
14	GM90332**	Panel, Control Box	1
15	GM90333	Controller Assy	1
16	GM90336**	Panel, Control Box Top	1
17	See chart	Box, Breaker	1
18	M125A-06-80	Washer, Plain	6
19	M6921-06016-60	Screw, Hex Flange M6x16mm fly thrd js500	26
20	M933-06010-60	Screw, hex cap	4
21	M933-06020-60	Screw, hex cap	2
22	X-22-7	Washer, Lock. 172 ID x .333 in. OD	6
23	X-6352-13	Grommet, U-Channel	2
24	X-6352-14	Grommet, U-Channel	1
25	See chart	Transformer, 347 V, 115.6 V	3
26	See chart	Transformer, Current	
28	See chart	Panel, J-Box Back	1
29	See chart	Nut, Hex 4mm	6
30	See chart	Washer, Lock. 172 ID x .333 in. OD	6
31	See chart	Spacer, .209 ID x .375 OD x .219 in.	6
32	GM93397	Decal, UL Label (not shown)	1
33	GM93705	Decal, Torque Rating (not shown)	1
34	See chart	Harness, Wiring 600V (not shown)	1

Use these tables to identify part numbers of items 17, 25-31, 34.

Module	Model	Part Number				
		Item 17	Item 25	Item 26	Item 28	Item 29
GM90330-MA1	4D5.6	GM90338**	-	GM16252 (3)	GM90334**	-
GM90330-MA2	4D5.6, 600 V	GM90338**	258990	GM16252 (3)	GM91272**	M934-04-50
GM90330-MA3	4E5.6, 1 Phase	GM90338**	-	GM16252 (2)	GM90334**	-
GM89461-MA1	4D8.3	GM89462**	-	GM16252 (3)	GM90334**	-
GM89461-MA2	4D8.3, 600 V	GM89462**	258990	GM16252 (3)	GM92365**	M934-04-50
GM89461-MA3	4E8.3, 1 Phase	GM89462**	-	GM16252 (2)	GM90334**	-

Module	Part Number		
	Item 30	Item 31	Item 34
GM90330-MA1	-	-	-
GM90330-MA2	X-22-7	X-400-192	GM95754
GM90330-MA3	-	-	-
GM89461-MA1	-	-	-
GM89461-MA2	X-22-7	X-400-192	GM95754
GM89461-MA3	-	-	-

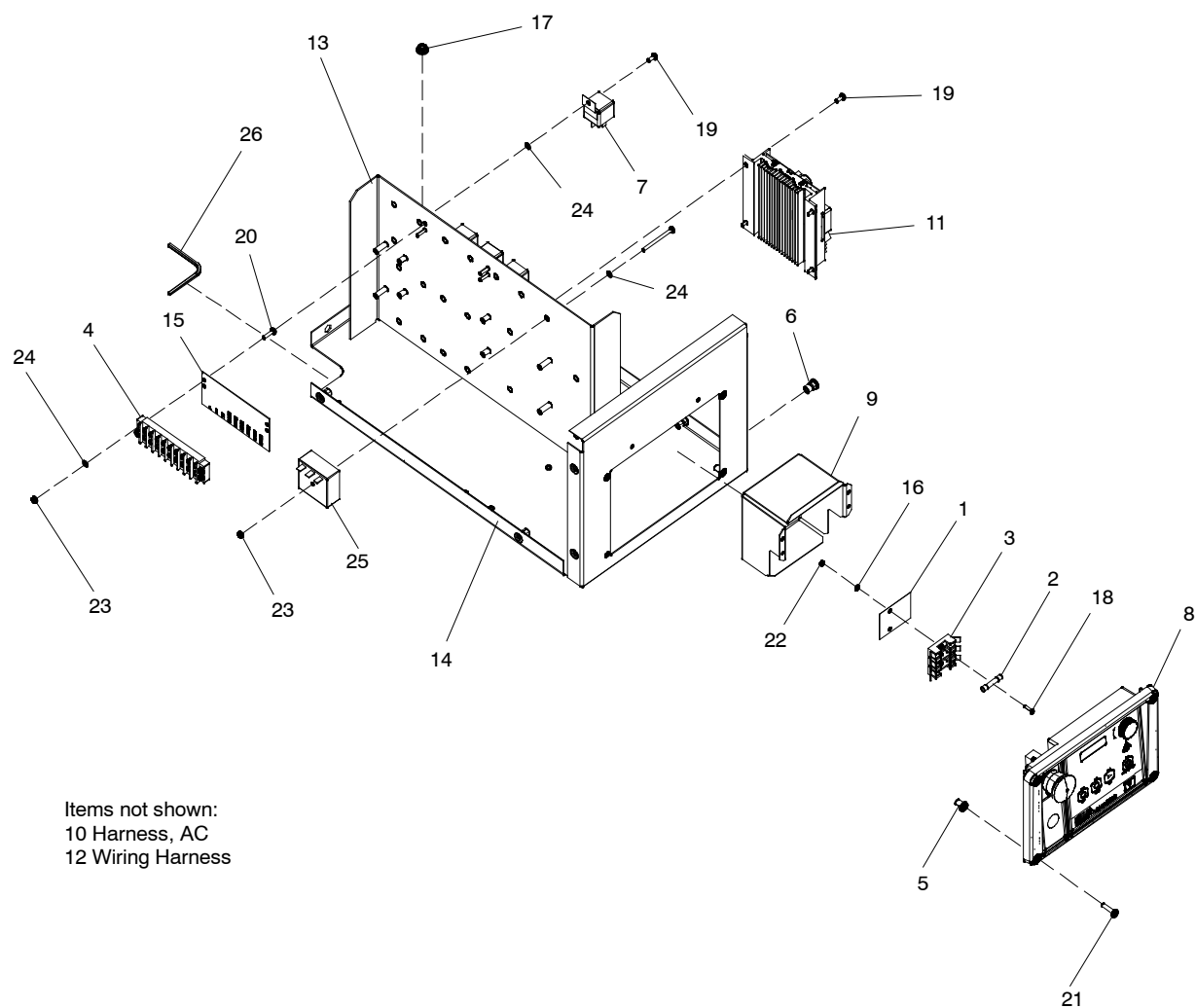
** Use the Module number and chart below to identify the color suffix.

Add a suffix to this color dependent part number before ordering.

Module No.	Color Dependant Parts	
	Part Number Suffix	Part Number (item 16)
GM90330-MA1-BLK	-BLK	GM90338-BLK
GM90330-MA2-BLK	-BLK	GM90338-BLK
GM90330-MA3-BLK	-BLK	GM90338-BLK
GM89461-MA1-BLK	-BLK	GM89462-BLK
GM89461-MA2-BLK	-BLK	GM89462-BLK
GM89461-MA3-BLK	-BLK	GM89462-BLK

Controller, continued

(15-30REOZK) GM90333, GM104360



Controller, continued

GM90333, GM104360

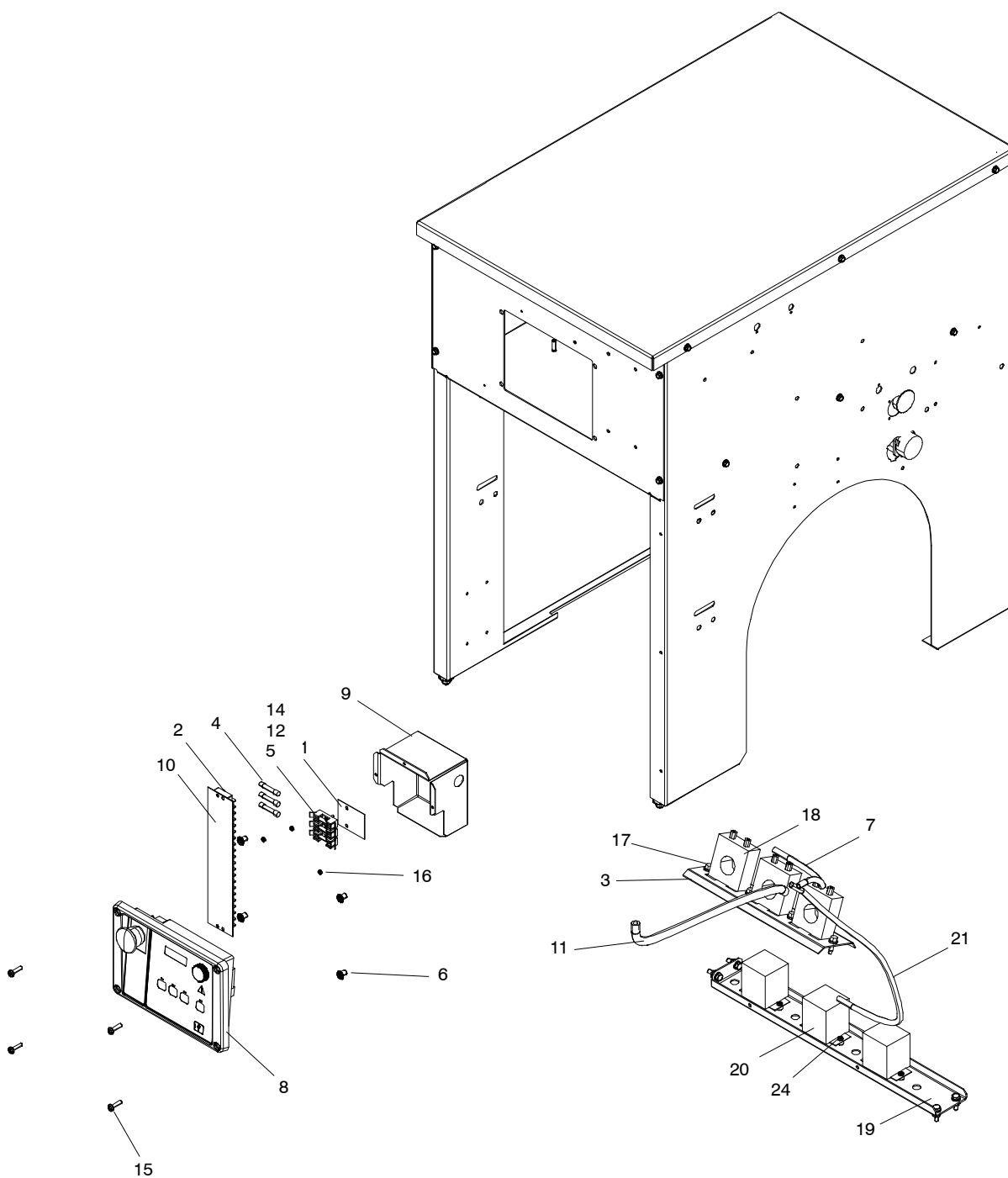
Item	Part Number	Description	Quantity
1	225179	Strip, marker	1
2	291207	Fuse, 1.5 A, 250 V	3
3	292821	Fuse holder	1
4	295313	Terminal block	1
5	GM11040-6	Insert, Threaded, M5-0.8	4
6	GM11040-7	Insert, Threaded (M6 x 1.0 Hex)	12
7	GM49746	Relay, 12 VDC	4
8	See chart	Controller Assy	1
9	GM71802	Cover, Controller	1
10	GM77888	Harness, A/C DEC3000	1
11	GM88453	Board, Assembly 4D Activator	1
12	See chart	Harness, Engine 15-20 kW	1
13	GM88998	Bracket, Mounting (Options)	1
14	GM90335	Panel, Controller Shelf	1
15	GM90344	Strip Marker	1
16	M125A-03-80	Washer, Plain #3 Screw Size	2
17	M6923-06-80	Nut, Hex 6mm	3
18	M7985A-03012-20	Screw, pan head M3X12	2
19	M7985A-04010-20	Screw, Pan Head Machined	8
20	M7985A-04016-20	Screw, Pan Head Machine	4
21	M7985A-05020-20	Screw, Pan Head Machine	4
22	M934-03-50	Nut, Hex 3mm	4
23	M934-04-50	Nut, Hex 4mm	5
24	X-22-7	Washer, Lock. 172 ID x.333 in. OD	9
25	X-6123-62	Relay, Time Delay	1
26	See chart	Grommet, U-Channel	1

Use these tables to identify part numbers of items 8, 12, 26.

Module	Part Number		
	Item 8	Item 12	Item 26
GM90333	GM65741-1	GM88466	X-6352-12
GM104360	GM65741-2	GM97516	X-6352-15

Controller, continued

(40-60REOZK) 4PX/4QX/4RX/4SX Alternators, Decision-Maker 3000, APM402 (GM77389-, GM104374-)



GM75789_E
GM77544_D

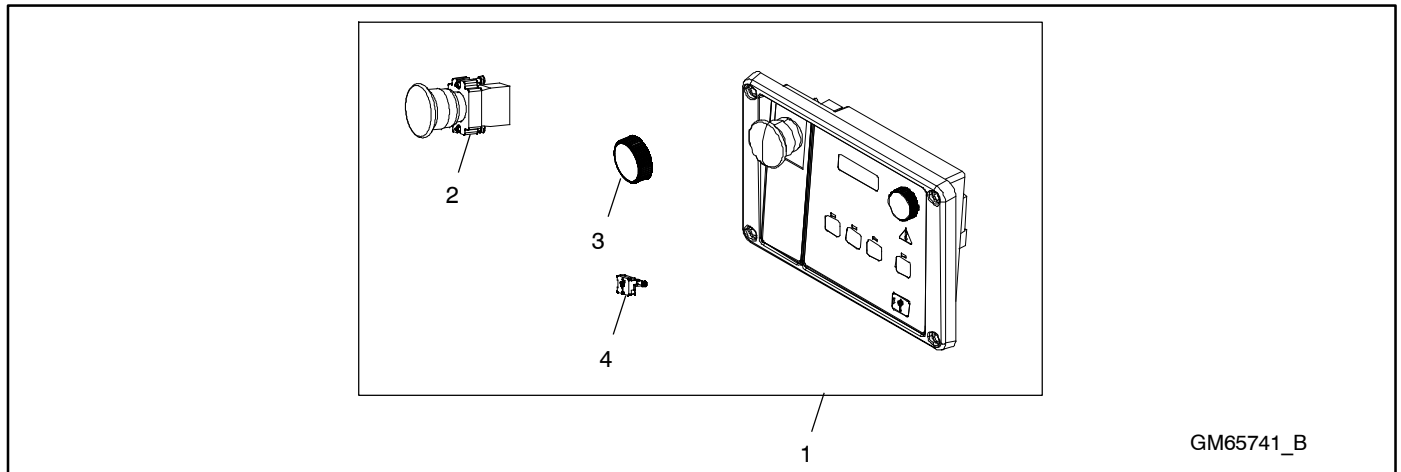
Controller, continued

4PX/4QX/4RX/4SX Alternators, Decision-Maker 3000, APM402 (GM77389-, GM104374-)

Item	Part Number	Description	Qty.
1	225179	Strip, marker	1
2	273769	Terminal block	1
3	276417	Bracket, CT Mounting	1
4	291207	Fuse, 1.5 A, 250 V	3
5	292821	Fuse holder	1
6	GM11040-6	Insert, Threaded, M5-0.8	4
7	GM17424	Harness, Wiring Current Transformer	1
8	See chart	Controller	1
9	GM71802	Cover, Controller	1
10	GM75602	Strip, Marker	1
11	GM77888	Harness, A/C DEC3000	1
12	M125A-03-60	Washer, plain	2
14	M7985A-03012-20	Screw, pan head M3 X 12	2
15	M7985A-05020-20	Screw, Pan Head Machine	4
16	M934-03-50	Nut, Hex 3mm	6
17	X-794-1	Screw, hex wshr hd, drill 1/4-14 x 5/8	4
18	See chart	Transformer, Current	
19	See chart	Bracket, PT mounting	1
20	See chart	Transformer, Potential	
21	See chart	Harness, Wiring	1
24	See chart	Spacer	
-	-	Panel, Controller Face (See Generator Set Parts Manual)	1
-	-	Junction Box (See Generator Set Parts Manual)	1

Use these tables to identify part numbers of items 8, 18-21, 24

Kit No.	Part Number					
	Item 8	Item 18	Item 19	Item 20	Item 21	Item 24
GM77389-MA1	GM75376	GM16252 (3)	GM58692	258990 (3)	GM59009	X-400-145 (6)
GM77389-MA2	GM75376	GM16252 (3)	-	-	-	-
GM77389-MA3	GM75376	GM16257 (3)	-	-	-	-
GM77389-MA4	GM75376	GM16252 (2)	-	-	-	-
GM77389-MA5	GM75376	GM16257 (2)	-	-	-	-
GM77389-MA6	GM75376	GM16257 (2)	-	-	-	-
GM104374-MA1	GM104661	GM16252 (3)	GM58692	258990 (3)	GM59009	X-400-145 (6)
GM104374-MA2	GM104661	GM16252 (3)	-	-	-	-
GM104374-MA3	GM104661	GM16257 (3)	-	-	-	-
GM104374-MA4	GM104661	GM16252 (2)	-	-	-	-
GM104374-MA5	GM104661	GM16257 (2)	-	-	-	-

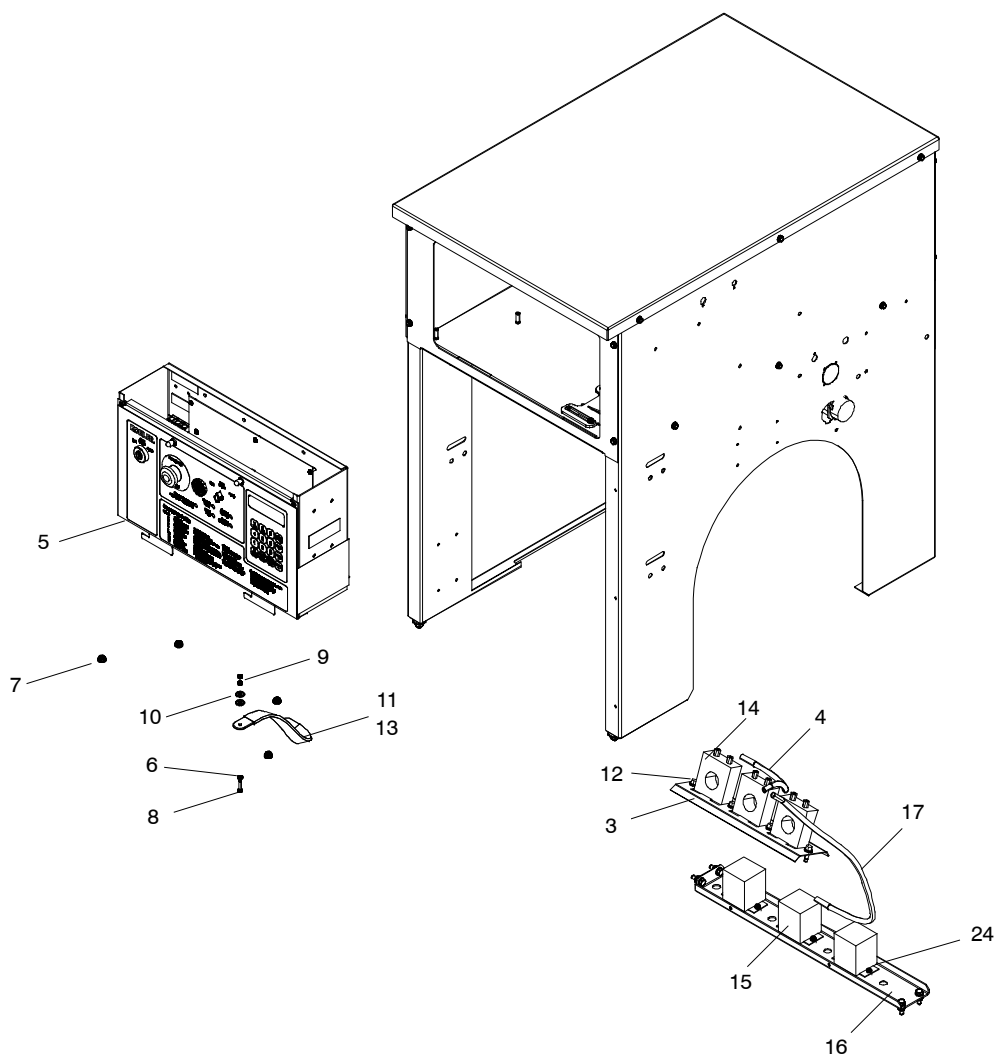


Controller Part Numbers

Item	Description	Part Number
1	Controller, DEC3000 Service Replacement Controller Assembly (ref. GM65741-1)	GM75376
	Controller, APM402 Service Replacement Controller Assembly (ref. GM65741-2)	GM104661
2	Switch, Emergency Stop Pushbutton	292364
3	Knob, Adjustment	GM58147
4	Plug, USB	GM60403
-	Shunt, programming (not shown)	294634
-	Replacement Kit Installation Instructions, DEC3000	TT-1545
-	Replacement Kit Installation Instructions, APM402	TT-1757

Controller, continued

(40-60REOZK) 4PX/4QX Alternators, Decision-Maker 550 (GM77388-)



GM77388_C

Controller, continued

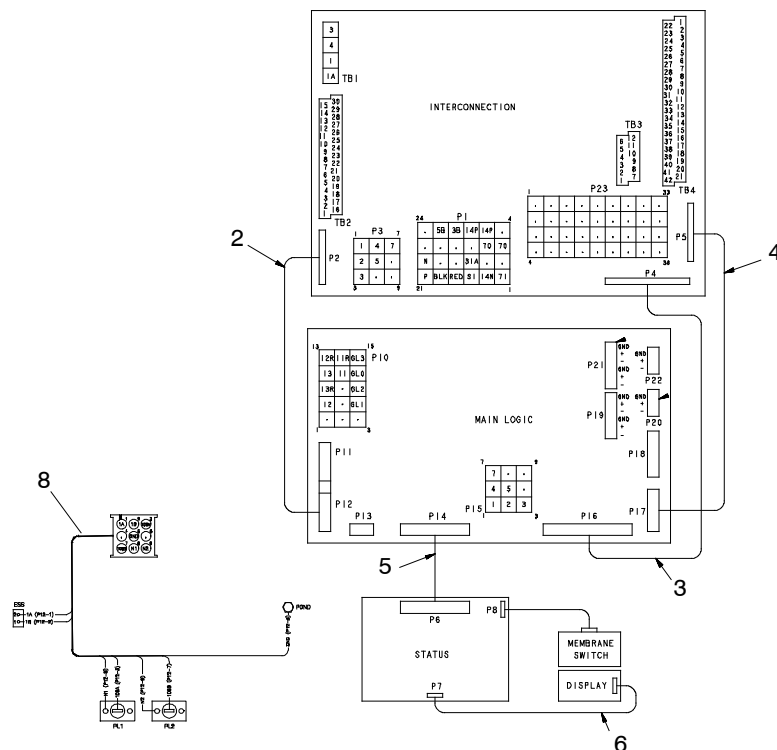
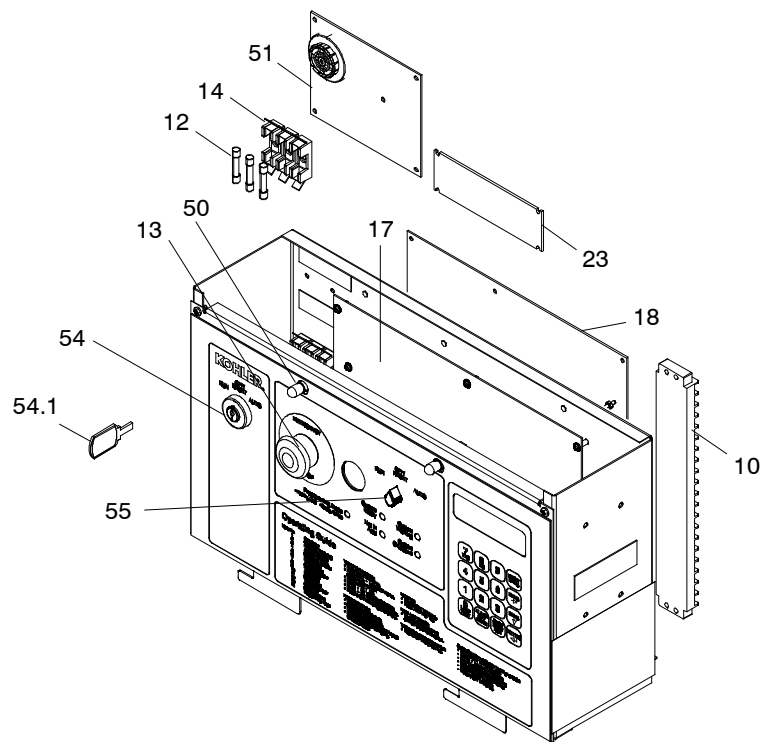
4PX/4QX Alternators, Decision-Maker 550 (GM77388-)

Item	Part Number	Description	Qty.
4	GM17424	Harness, Wiring Current Transformer	1
6	M125A-04-80	Washer, Plain	1
7	M6923-06-80	Nut, Hex 6mm	4
8	M7985A-04020-20	Screw, pan head machine	1
9	M934-04-50	Nut, Hex 4mm	2
10	X-22-50	Washer, lock, .20 ID x .595 in.OD	2
11	X-696-5	Tubing, Vinyl	1
12	X-794-1	Screw, hex wshr hd, drill 1/4-14 x 5/8	4
13	X-6046-2	Strap, ground (32 in.)	1
	-	Panel, Controller Face (See Generator Set Parts Manual)	1
	-	Junction Box (See Generator Set Parts Manual)	1

Kit No.	Part Number						
	Item 3 Bracket, CT mounting	Item 5 Controller Assy.	Item 14 Current Transformer	Item 15 Transformer, Potential	Item 16 Bracket, PT mounting	Item 17 Harness, wiring	Item 24 Spacer
GM77388-MA1	276417	GM75775-3	GM16248 (3)	258990 (3)	GM58692	GM59009	X-400-145 (6)
GM77388-MA2	276417	GM75775-3	GM16249 (3)	258990 (3)	GM58692	GM59009	X-400-145 (6)
GM77388-MA3	276417	GM75775-3	GM16251 (3)	-	-	-	-
GM77388-MA4	276417	GM75775-3	GM16252 (2)	-	-	-	-
GM77388-MA5	276417	GM75775-3	GM16252 (3)	-	-	-	-
GM77388-MA6	276417	GM75775-3	GM16254 (2)	-	-	-	-
GM77388-MA7	276417	GM75775-3	GM16254 (3)	-	-	-	-
GM77388-MA8	276417	GM75775-3	GM16255 (2)	-	-	-	-
GM77388-MA9	276417	GM75775-3	GM16255 (3)	-	-	-	-

Controller, continued

(40-60REOZK) 4PX/4QX Alternators, Decision-Maker 550 (GM77388-)



GM75775_J

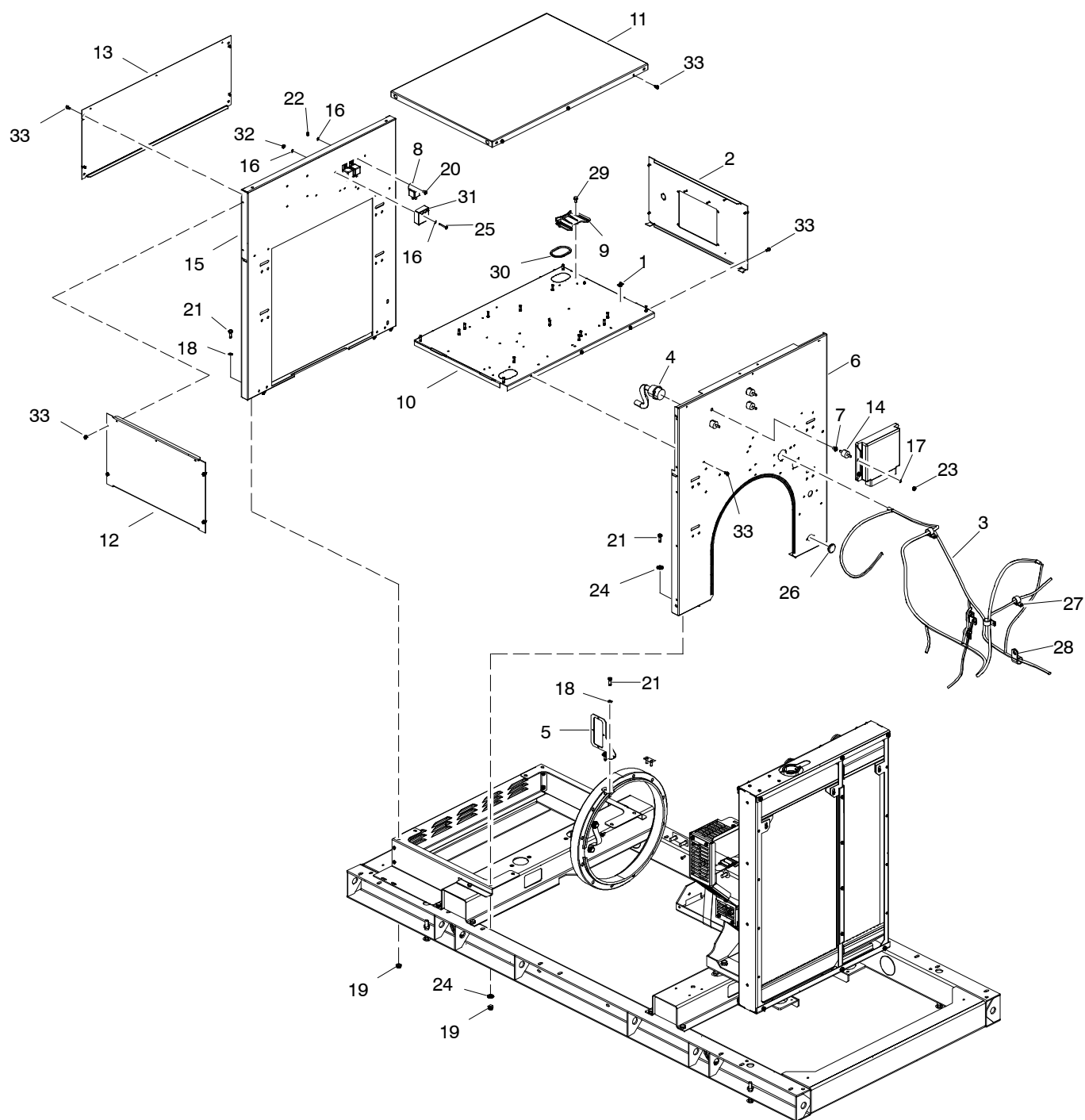
Controller, continued

4PX/4QX Alternators, Decision-Maker 550 (GM77388-)

Controller Part Numbers					
Item	Description	Part Number			
		Controller Without Keyswitch		Controller With Keyswitch	
		12 V	24 V	12 V	24 V
-	Controller assembly	GM75775-1	GM75775-2	GM75775-3	GM75775-4
2	Cable, ribbon, 24-position (P12 on main logic to P2 on interconnection)	GM10118	GM10118	GM10118	GM10118
3	Cable, ribbon, 40-position (P16 on main logic to P4 on interconnection)	GM10119	GM10119	GM10119	GM10119
4	Cable, ribbon, 34-position (P17 on main logic to P5 on interconnection)	GM10120	GM10120	GM10120	GM10120
5	Cable, ribbon, 34-position (display board to P14 on main logic board)	GM10120	GM10120	GM10120	GM10120
6	Cable, ribbon, 16-position (CN1 on display panel to display board)	GM10124	GM10124	GM10124	GM10124
8	Harness, cotroller front panel	GM78717	GM78717	GM78717	GM78717
10	Terminal block	273769	273769	273769	273769
12	Fuse, 1.5 A, 250 V (3)	291207	291207	291207	291207
13	Switch, emergency stop pushbutton	292364	292364	292364	292364
14	Holder, fuse	292821	292821	292821	292821
17	Circuit board, main logic	GM70535	GM70535	GM70535	GM70535
18	Circuit board, interconnection	B-365487	B-365487	B-365487	B-365487
23	Panel, display (kit-service only)	GM13616	GM13616	GM13616	GM13616
50	Lamp, panel (2)	255126	283420	255126	283420
51	Circuit board, display (board with alarm horn)	A-365485	A-365485	GM17398	GM17398
54	Switch, key selector	-	-	GM85980	GM85980
54.1	Key (for switch GM85980)	-	-	GM90546	GM90546
55	Knob, rotary switch	GM10125	GM10125	-	-

Controller, continued

40-60REOZK, APM402, GM105199-



GM105199

Controller, continued

40-60REOZK, APM402, GM105199-MA1

Item	Part Number	Description	Quantity
1	361567	Base, Tie Wrap Snapin	2
2	GM102995	Panel, Controller Mtg W/Key	1
3	GM103072	Harness, Engine KDI3404TCR	1
4	GM103073	Harness J-Box 40-60KW AQMD APM402	1
5	GM103501	Bracket, Connector	1
6	GM103502**	Panel, Junction Box (Front)	1
7	GM11040-7	Insert, Threaded M6-1.0	4
8	GM49746	Relay, 12 VDC	3
9	GM74531	Guard, Rodent	1
10	GM76169	Panel, Junction Box (Shelf)	1
11	GM76170**	Cover, Junction Box (Top)	1
12	GM76173	Cover, Controller (Left)	1
13	GM76175	Cover, Controller (Rear)	1
14	GM91610	Vibromount, Controller	4
15	GM93002	Panel, Junction Box (Rear)	1
16	M125A-05-80	Washer, Plain	5
17	M125A-06-80	Washer, Plain 6.4 ID X 12.0 OD	4
18	M125A-08-80	Washer, Plain 8.4 ID X 16.0 OD	8
19	M6923-08-80	Nut, Hex 8mm	8
20	M7985A-05012-20	Screw, Pan Head Mach.	3
21	M933-08020-60	Screw, Hex Cap	10
22	M934-05-50	Nut, Hex 5mm	3
23	M934-06-60	Nut, Hex 6mm	4
24	X-22-16	Washer, Lock	4
25	X-51-36	Screw, Machine	1
26	X-301-43	Plug, Button, 1.37 (Hole Dia. 1.01)	1
27	X-672-13	Clamp, Insulated, .88 in.	4
28	X-672-3	Clamp, Insulating	2
29	X-794-1	Screw, Drill	2
30	X-6033-5	Grommet	1
31	X-6123-62	Relay, Time Delay	1
32	X-6210-4	Nut, Flange Serrated, 8-32	1
33	X-6216-1	Screw, Phillips Hex Crimpitite	25

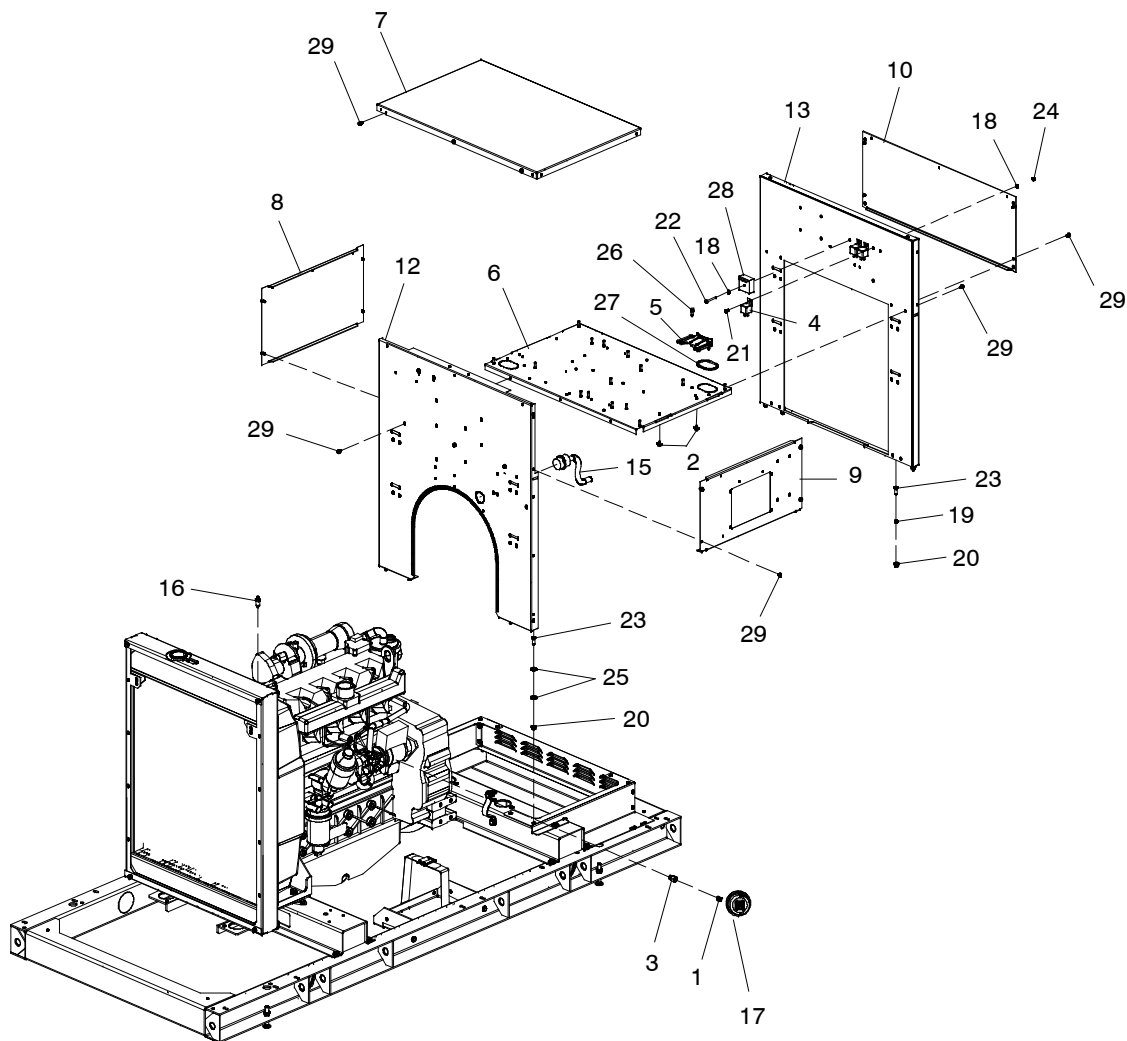
** Use the Module number and chart below to identify the color suffix.

Add a suffix to this color dependent part number before ordering.

Module No.	Color Dependent Parts	
	Part Number Suffix	Part Number Example (item 6)
GM105199-MA1-BLK	-BLK	GM103502-BLK
GM105199-MA1-BLK	-BLK	GM76170-BLK

Controller and Harness

(40-60REOZK, Decision-Maker 3000, APM402) GM89505-MA1, GM104448-MA1



Items Not Shown: 14

GM89505-C

Controller and Harness, continued

GM89505-MA1, GM104448-MA1

Item	Part Number	Description	Quantity
1	267428	Fitting, 45 Street Elbow	1
2	361567	Base, tie wrap snapin	2
3	365220	Adapter, bushing	1
4	GM49746	Relay, 12 VDC	3
5	GM74531	Guard, Rodent	1
6	GM76169	Panel, Junction Box (Shelf)	1
7	GM76170**	Cover, Junction Box (Top)	1
8	GM76173	Cover, Controller (Left)	1
9	GM76174	Panel, J-Box DEC3000 Mnt (Right)	1
10	GM76175	Cover, Controller (Rear)	1
12	GM99266**	Panel, Junction Box (Front)	1
13	GM93002	Panel, Junction Box (Rear)	1
14	GM93578	Engine Harness Dec3000 40-60 kw	1
15	GM93985	Harness, Control Box 50kW APM402	1
16	GM94527	Sender, Temperature	1
17	GM102100	Sender, Oil Pressure, 0-100psi	1
18	M125A-05-80	Washer, Plain	5
19	M125A-08-80	Washer, Plain 8.4 ID x 16.0 OD	6
20	M6923-08-80	Nut, Hex 8mm	8
21	M7985A-05012-20	Screw, pan head mach.	3
23	M933-08020-60	Screw, Hex cap	8
24	M934-05-50	Nut, Hex 5mm	4
25	X-22-16	Washer, lock.326 IDx.883 in. OD	4
26	X-794-1	Screw, hex wshr hd, drill 1/4-14 x 5/8	2
27	X-6033-5	Grommet, u-channel	1
28	X-6123-62	Relay, Time Delay	1
29	X-6216-1	Screw, Phillips hex crimpite	25

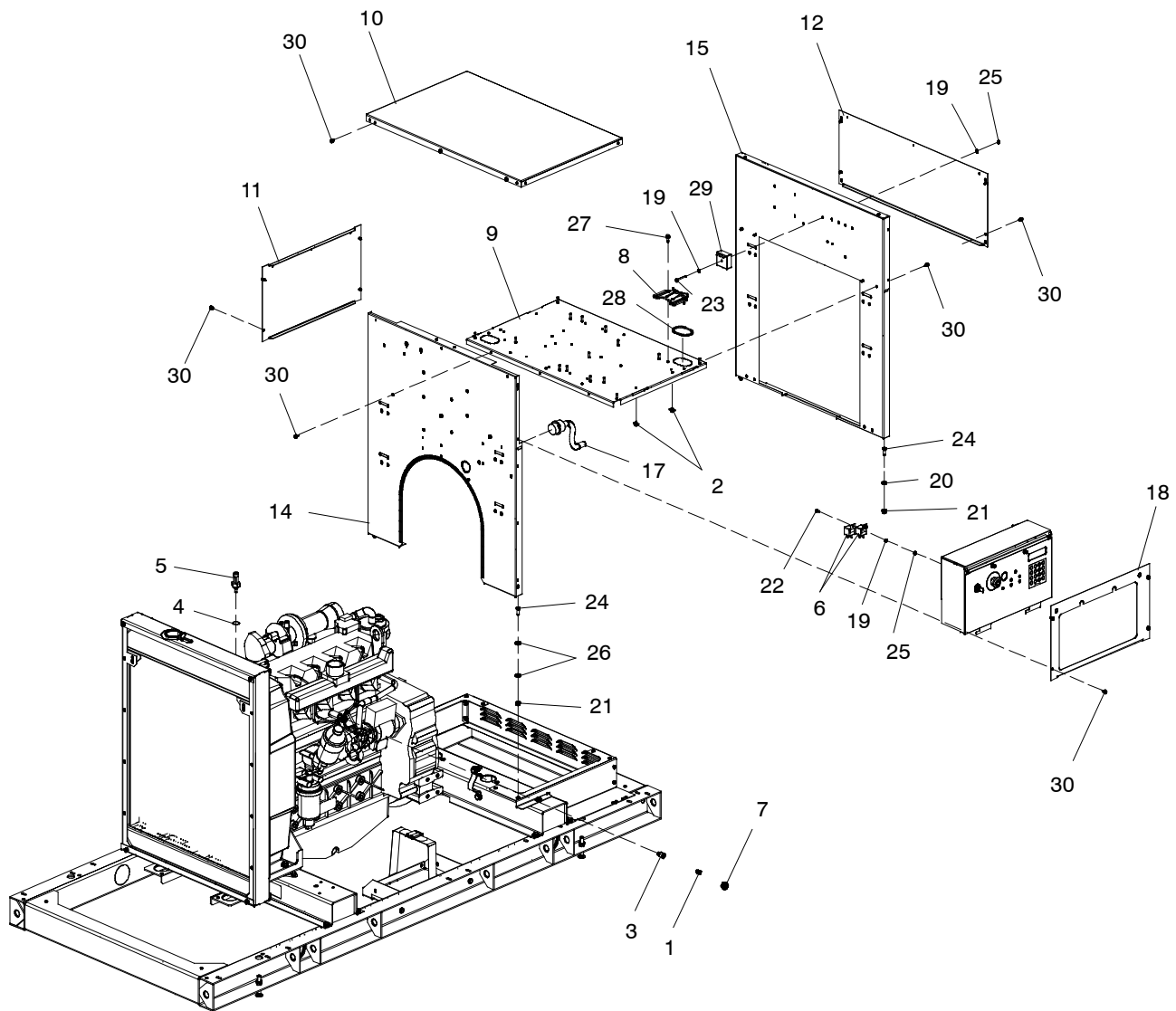
** Use the Module number and chart below to identify the color suffix.

Add a suffix to this color dependent part number before ordering.

Module No.	Color Dependant Parts	
	Part Number Suffix	Part Number Example (item 7)
GM89505-MA1-BLK	-BLK	GM76170-BLK
GM104448-MA1-BLK	-BLK	GM76170-BLK

Controller and Harness, continued

(40-60REOZK, Decision-Maker 550) GM93799



Items Not Shown: 16

GM93799

Controller and Harness, continued

GM93799-MA1

Item	Part Number	Description	Quantity
1	267428	Fitting, 45 Street Elbow	1
2	361567	Base, tie wrap snapin	2
3	365220	Adapter, bushing	1
4	365498	O-ring, ISO 6149 (9.3mm ID)	1
5	GM31045-6	Sensor, Temp., M12-1.50	1
6	GM49746	Relay, 12 VDC	2
7	GM70917-1	Sender, Pressure, 0-150psi, 1/8-27 NPTF	1
8	GM74531	Guard, Rodent	1
9	GM76169	Panel, Junction Box (Shelf)	1
10	GM76170**	Cover, Junction Box (Top)	1
11	GM76173	Cover, Controller (Left)	1
12	GM76175	Cover, Controller (Rear)	1
14	GM99266**	Panel, Junction Box (Front)	1
15	GM93002	Panel, Junction Box (Rear)	1
16	GM93986	Harness, Engine DEC550 40-60 KW	1
17	GM93987	Harness, Control Box DEC550 40-60 KW	1
18	GM95379	Panel, Controller Face, LH	1
19	M125A-05-80	Washer, Plain	4
20	M125A-08-80	Washer, Plain 8.4 ID x 16.0 OD	2
21	M6923-08-80	Nut, Hex 8mm	4
22	M7985A-05012-20	Screw, pan head mach.	2
23	M7985A-05045-20	Screw, Pan Head Machine	1
24	M933-08020-60	Screw, Hex cap	4
25	M934-05-50	Nut, Hex 5mm	3
26	X-22-16	Washer, lock.326 IDx.883 in. OD	4
27	X-794-1	Screw, hex wshr hd, drill 1/4-14 x 5/8	2
28	X-6033-5	Grommet, u-channel	1
29	X-6123-62	Relay, Time Delay	1
30	X-6216-1	Screw, Phillips hex crimpite	25

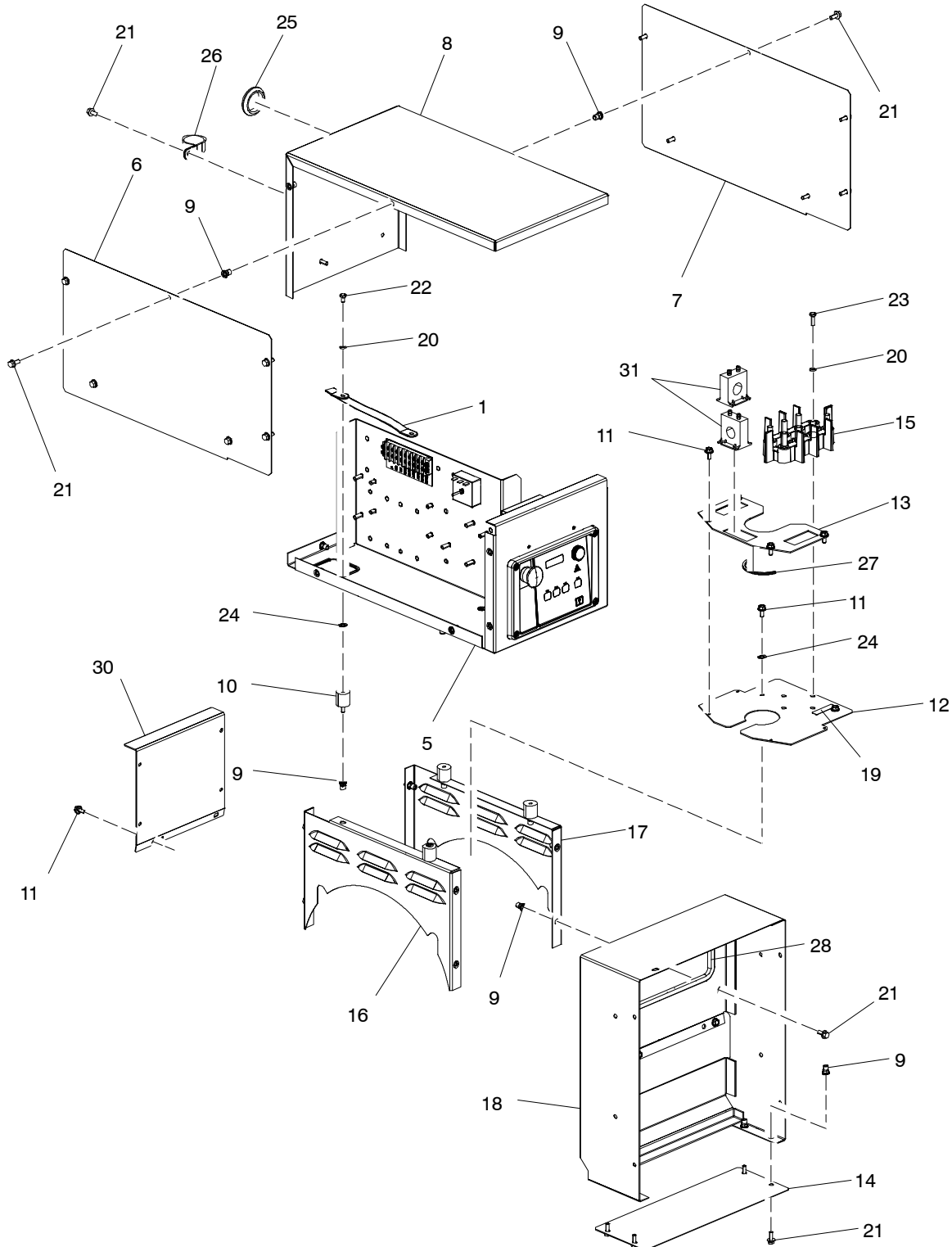
** Use the Module number and chart below to identify the color suffix.

Add a suffix to this color dependent part number before ordering.

Module No.	Color Dependant Parts	
	Part Number Suffix	Part Number Example (item 10)
GM93799-MA1-BLK	-BLK	GM76170-BLK

Controller and Mounting

(20REOZK-C) GM102680-MA1



Items not shown: 2, 3, 4

GM102680

Controller and Mounting, continued

GM102680-MA1, GM105869-MA1

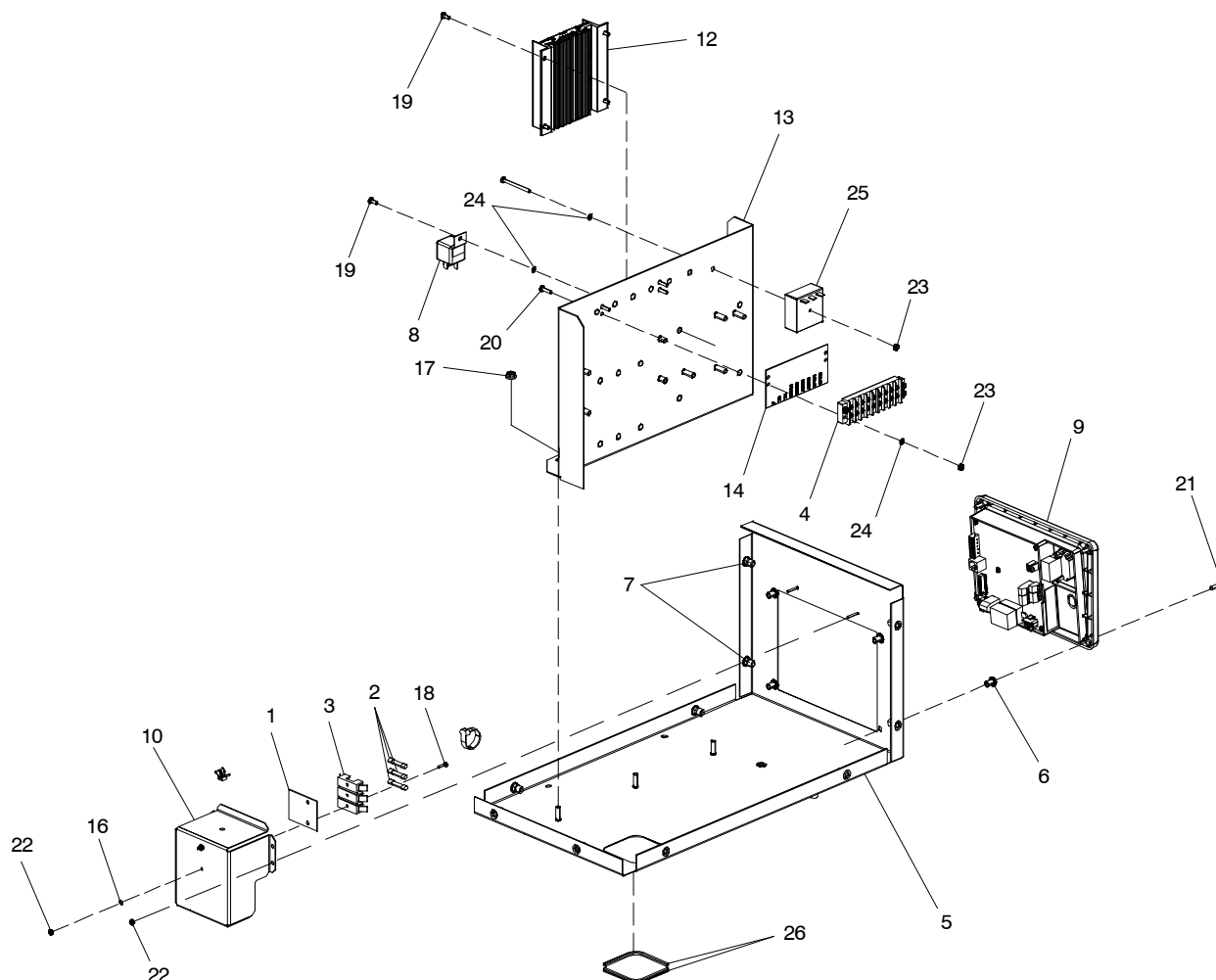
Item	Part Number	Description	Quantity
1	277839	Strap, ground (11 in.)	1
2	ADV-8965	Diagram schematic, 20KW compact telecom	1
3	See chart	Harness, engine 20KW compact telecom	1
4	GM102654	Diagram wiring, 20KW compact telecom	1
5	See chart	Controller assy	1
6	See chart	Panel, control box side (LH)	1
7	See chart	Panel, control box side (RH)	
8	GM103071	Panel, control box top	1
9	GM11040-7	Insert, threaded (M6 x 1.0 hex)	22
10	GM38784-3	Vibromount, controller	4
11	GM78761-1	Screw	10
12	GM88285	Bracket, ct mounting	1
13	GM88287	Bracket, ct mounting	1
14	GM89912	Plate, breaker box	1
15	GM90316	Terminal Block 4D Alt	1
16	GM90328	Panel, junction box, LH	1
17	GM90329	Panel, junction box RH	1
18	GM90338	Box, breaker	1
19	GM93705	Decal, torque rating	1
20	M125A-06-80	Washer, plain	6
21	M6921-06016-60	Screw, hex (M6 x 16mm)	26
22	M933-06010-60	Screw, hex cap (M6 x 10mm)	4
23	M933-06020-60	Screw, hex cap (M6 x 20mm)	2
24	X-22-5	Washer (.326 in. ID x .62 in. OD)	2
25	X-284-4	Grommet, round	1
26	X-672-39	Clamp	1
27	X-6033-17	Grommet, u-channel	1
28	X-6047-14	U-channel	1
29	GM102680-MB	Base group, control and Mounting	1
30	GM102683	Panel, j-box back	1
31	GM16252	Transformer	1

Use these tables to identify part numbers of items 3, 5-7

Module	Part Number			
	Item 3	Item 5	Item 6	Item 7
GM102680-MA1	GM102653	GM102681	GM102687 (1)	GM102688
GM105869-MA1	-	GM105870	GM90331 (2)	-

Controller and Mounting, continued

(20REOZK-C) GM102681



Items not shown: 11, 15

GM102681

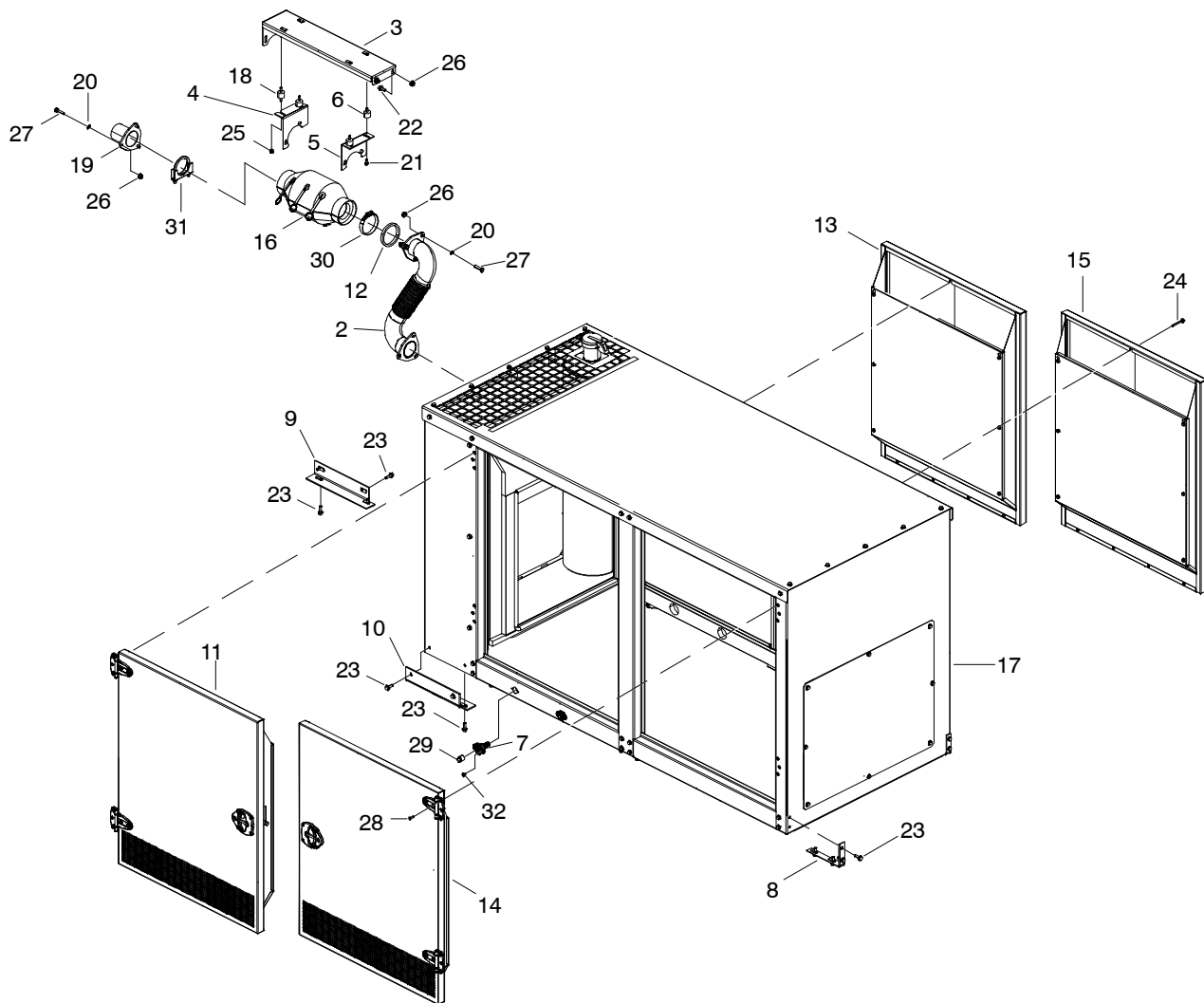
Controller and Mounting, continued

GM102681-MA1

Item	Part Number	Description	Quantity
1	225179	Strip, marker	1
2	291207	Fuse, 1.5 A, 250 V	3
3	292821	Fuse holder	1
4	295313	Terminal block, 9-position, 2-row	1
5	GM102682	Panel, controller shelf	1
6	GM11040-6	Insert, threaded, M5-0.8	4
7	GM11040-7	Insert, threaded (M6 x 1.0 Hex)	12
8	GM49746	Relay, 12 VDC	4
9	GM65741-1	Controller assy, Dec3000	1
10	GM71802	Cover, controller	1
11	GM77888	Harness, a/c Dec3000	1
12	GM88453	Board, assembly 4D Activator	1
13	GM88998	Bracket, mounting (options)	1
14	GM90344	Strip, marker	1
15	GM97516	Harness, wiring 30kW	1
16	M125A-03-80	Washer, plain #3 Screw Size	2
17	M6923-06-80	Nut, Hex 6mm	3
18	M7985A-03012-20	Screw, pan head M3X12	2
19	M7985A-04010-20	Screw, Pan Head Machined	8
20	M7985A-04016-20	Screw, Pan Head Machine	4
21	M7985A-05020-20	Screw, Pan Head Machine	4
22	M934-03-50	Nut, Hex 3Mm	4
23	M934-04-50	Nut, Hex 4Mm	5
24	X-22-7	Washer,Lock (.172 ID x .333 in.OD)	9
25	X-6123-62	Relay, time delay	1
26	X-6352-15	Grommet, U-Channel	2

Enclosures

(40-60REOZK) GM89762-



Items Not Shown: 1

GM89762

Enclosures, continued

GM89762-

Item	Part Number	Description	Quantity
1	GM101167	Decal, assembly	1
2	GM102366	Tube, flex exhaust	1
3	GM104518	Rail, doc mounting	1
4	GM104519	Bracket, doc mounting	1
5	GM104520	Bracket, doc mounting	1
6	GM38784-2	Vibromount, controller	2
7	GM59015	Fitting, bulkhead drain	2
8	GM62590	Bracket, mounting	2
9	GM62593	Bracket, mounting (RH)	1
10	GM62594	Bracket, mounting (LH)	1
11	See chart	Door assy., air intake (RH)	1
12	GM71006	Insulation, exhaust tube	1
13	See chart	Door assy., air intake RH/LH	1
14	See chart	Door assy., air intake (LH)	1
15	See chart	Door assy., air intake RH/LH	1
16	GM88525	Wrap, catalyst	1
17	See chart	Enclosure assy., sound	1
18	GM91610	Vibromount, controller	2
19	GM94517	Adapter, doc to silencer	1
20	M125A-08-80	Washer, plain 8.4 ID x 16.0 OD	6
21	M6921-06016-60	Screw, hex flange M6 x 16 mm fly thrd js500	2
22	M6921-08020-60	Screw, hex flange M8 x 20	2
23	M6921-08025-SS	Screw, hex flange (M8-1.25 x 25 mm)	22
24	M6921-08060-60	Screw, hex flange	2
25	M6923-06-80	Nut, hex 6 mm	2
26	M6923-08-80	Nut, hex 8 mm	8
27	M931-08035-60	Screw, hex cap	6
28	M965A-06020-20	Screw, flat head machine	12
29	X-75-58	Plug, pipe	2
30	X-426-2	Clamp, hose, 2.31/3.25 in.	2
31	X-722-2	Clamp, muffler, 2.62 in.	1
32	X-781-12	Rivet, pop, .187 in. Ss	4

Kit No.	Part Number				
	Item 11	Item 13	Item 14	Item 15	Item 17
GM89762-MA13	GM69170-3	GM80769-3	GM80784-3	GM80865-3	GM89763-1
GM89762-MA14	GM69170-4	GM80769-4	GM80784-4	GM80865-4	GM89763-2
GM89762-MA15	GM69170-5	GM80769-3	GM80784-5	GM80865-3	GM89763-1
GM89762-MA16	GM69170-6	GM80769-4	GM80784-6	GM80865-4	GM89763-2

Enclosures, continued

GM89762-

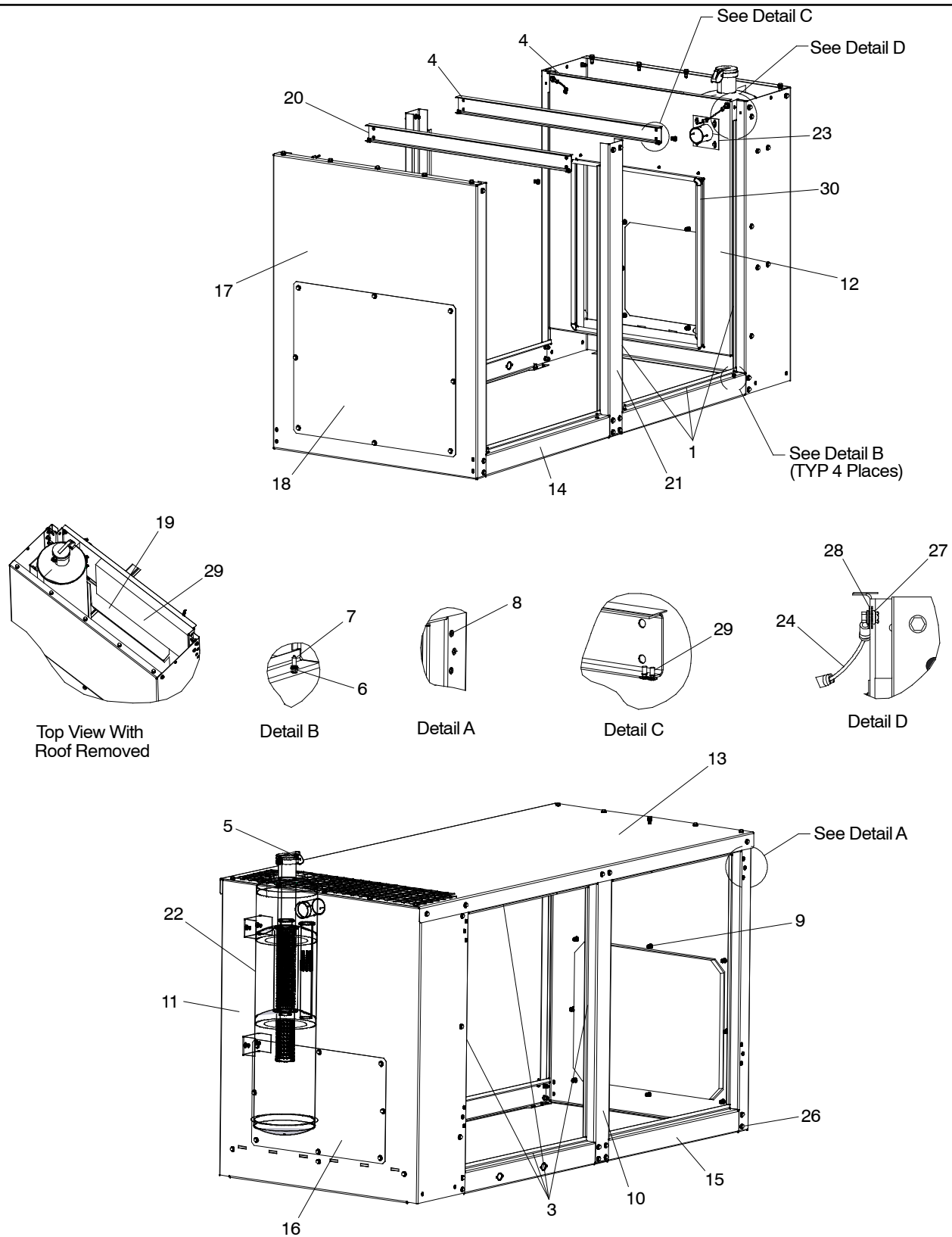
Item	Part Number	Description	Quantity
1	GM101167	Decal, assembly	1
2	GM101861-1	Door assy., air intake RH/LH	1
3	GM101862-1	Door assy., air intake RH/LH	1
4	GM102366	Tube, flex exhaust	1
5	GM104518	Rail, doc mounting	1
6	GM104519	Bracket, doc mounting	1
7	GM104520	Bracket, doc mounting	1
8	GM38784-2	Vibromount, controller	2
9	GM59015	Fitting, bulkhead drain	2
10	GM62590	Bracket, mounting	2
11	GM62593	Bracket, mounting (RH)	1
12	GM62594	Bracket, mounting (LH)	1
13	See chart	Assy. air intake door (RH)	1
14	GM71006	Insulation, exhaust tube	1
15	GM88525	Wrap, catalyst	1
16	See chart	Door assy., air intake (LH)	1
17	GM91610	Vibromount, controller	2
18	GM94310-1	Enclosure assy., alum sound	1
19	GM94517	Adapter, doc to silencer	1
20	M125A-08-80	Washer, plain 8.4 ID x 16.0 OD	6
21	M6921-06016-60	Screw, hex flange M6 x 16 mm fly thrd js500	2
22	M6921-08020-60	Screw, hex flange M8 x 20	2
23	M6921-08025-SS	Screw, hex flange (M8-1.25 x 25 mm)	22
24	M6923-06-80	Nut, hex 6 mm	2
25	M6923-08-80	Nut, hex 8 mm	8
26	M931-08035-60	Screw, hex cap	6
27	See chart	Screw, flat head machine	12
28	X-75-58	Plug, pipe	2
29	X-426-2	Clamp, hose, 2.31/3.25 in.	2
30	X-722-2	Clamp, muffler, 2.62 in.	1
31	X-781-12	Rivet, pop, .187 in. Ss	4

Use this table to identify part number of items 13, 16, and 27.

Kit No.	Part Number		
	Item 13	Item 16	Item 27
GM89762-MA17	GM69201-1	GM89082-1	M965A-06020-20
GM89762-MA18	GM69170-4	GM80769-4	M965A-06020-SS

Enclosures

(40-60REOZK) GM89763-



Items Not Shown: 2, 25

GM989763-G

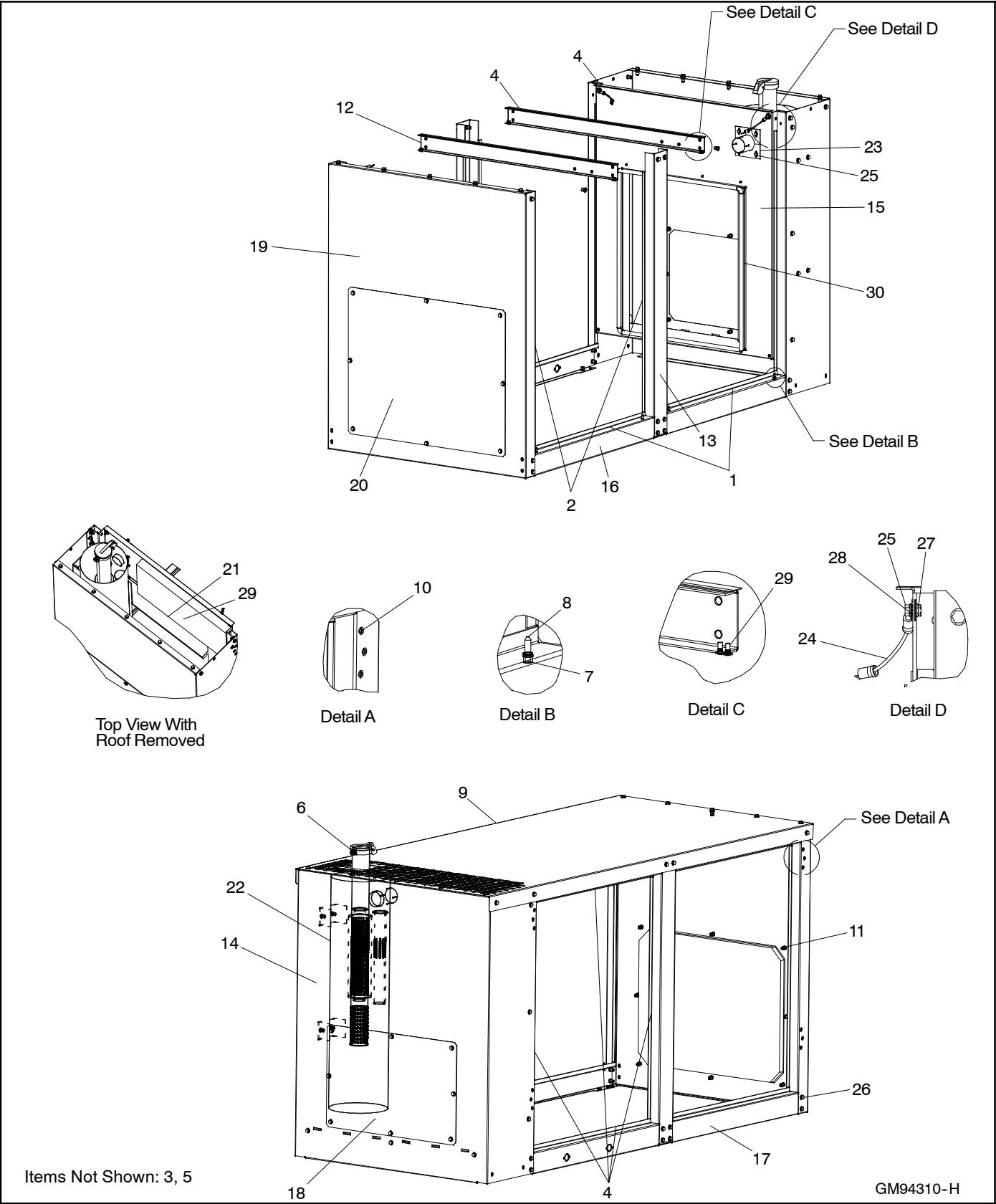
Enclosures, continued

GM89763-

Item	Part Number	Description	Quantity
1	19010-18112	Tape, foam	26 ft.
2	25493-00001	Seal, push-on trim	9 ft.
3	25493-00006	Seal, bulb	26 ft.
4	32000-00110	Tape, bonding	9.6
5	253191	Cap, rain (fits 3.00 in. tube)	1
6	344484	Insert, threaded, 1/4-20 in.	4
7	345283	Pin, threaded (1/4-20 * 1.18 in.)	4
8	GM11040-7	Insert, threaded M6-1.0	16
9	GM11040-9	Insert, threaded M8-1.25	69
10	GM65485	Support, center	1
11	GM89766	Duct, exhaust	1
12	GM89767	Baffle, radiator	1
13	GM89768	Roof, enclosure	1
14	GM93886	Rail, lower frame (RH)	1
15	GM93887	Rail, lower frame (LH)	1
16	GM93960	Panel, plenum access	1
17	GM93993	Panel, rear w/alt access	1
18	GM93994	Plate, alt access	1
19	GM94083	Deflector, rain	1
20	GM95422	Crossbrace, roof	2
21	GM95423	Support, center	1
22	GM95578	Silencer assy.	1
23	GM97060	Plate, cover	2
24	LK-1015-1515	Lead, ground	4
25	M6921-06020-SS	Screw, hex flange (M6-1.0 x 20 mm)	8
26	M6921-08025-SS	Screw, hex flange (M8-1.25 x 25 mm)	65
27	M6923-06-80	Nut, hex 6mm	4
28	X-22-16	Washer, lock	8
29	X-781-12	Rivet, pop, .187 in. SS	12
30	X-6422-5	Seal, push-on trim	2

Enclosures

(40-60REOZK) GM94310-



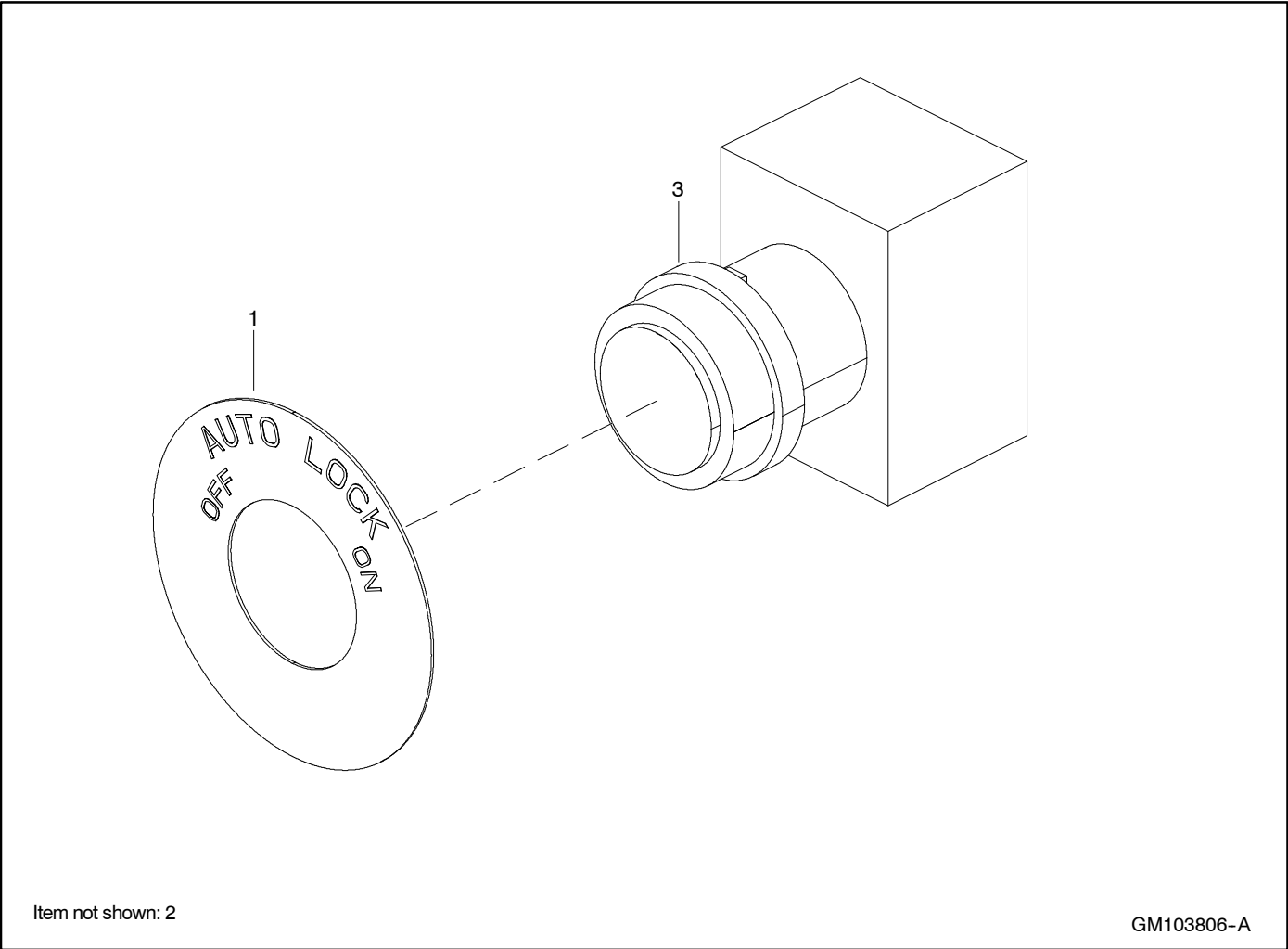
Enclosures, continued

GM94310-

Item	Part Number	Description	Quantity
1	19010-08118	Tape, foam	6 ft.
2	19010-18112	Tape, foam	20 ft.
3	25493-00001	Seal, push-on trim	9 ft.
4	25493-00007	Seal, push on	26 ft.
5	32000-00110	Tape, bonding	9.6
6	253191	Cap, rain (fits 3.00 in. tube)	1
7	344484	Insert, threaded, 1/4-20 in.	4
8	345283	Pin, threaded (1/4-20 * 1.18 in.)	4
9	GM102572	Roof, enclosure	1
10	GM11040-7	Insert, threaded M6-1.0	16
11	GM11040-9	Insert, threaded M8-1.25	69
12	GM94288	Crossbrace, roof	2
13	GM94289	Support, center	2
14	GM94290	Duct, exhaust	1
15	GM94291	Baffle, radiator	1
16	GM94293	Rail, lower frame (RH)	1
17	GM94294	Rail, lower frame (LH)	1
18	GM94295	Panel, plenum access	1
19	GM94296	Panel, rear w/alt access	1
20	GM94297	Plate, alt access	1
21	GM94298	Deflector, rain	1
22	GM95578	Silencer assy.	1
23	GM97061	Plate, cover	2
24	LK-1015-1515	Lead, ground	4
25	M6921-06020-SS	Screw, hex flange (M6-1.0 x 20 mm)	8
26	M6921-08025-SS	Screw, hex flange (M8-1.25 x 25mm)	65
27	M6923-06-80	Nut, hex 6 mm	4
28	X-22-16	Washer, lock	8
29	X-781-12	Rivet, pop, .187 in. SS	12
30	X-6422-5	Seal, push-on trim	2

Manual Key Switch

(40-60REOZK) GM103806-KA1



GM103806-KA1

Item	Part Number	Description	Quantity
1	GM103075	Decal, auto lock on/off	1
2	GM103433	Harness, key switch DEC3000	1
3	GM103805	Switch, key, 2 position	1

Literature

Item	Part Number	Description	Quantity		
			Variation Number		
			14	15	16
1	TP-5374	Warranty 1-Year Limited, Industrial	1	1	1
2	TP-5700	I/M 20-3250kW, Industrial	1	1	1
3	TP-6694	O/M APM402/DEC3000 Controller	1	1	1
4	TP-6878	S/M 10-40 kW with 4D/4E Alternators	1	1	1
5	TP-6896	P/C Kohler KDI 1903/2504 Engine	1	1	1
6	TP-6923	P/C 15-30REOZK, Industrial	1	1	1
7	TP-6924	W/D 15/20REOZK & 30/40REOZK4, Ind.	1	1	1
8	TP-6938	O/M Lom KDI 1903 & 2504 M	1	1	
8	TP-6970	O/M Lom KDI 2504 TM			1
9	TP-6939	S/M Lom KDI 1903 & 2504 M	1	1	
9	TP-6971	S/M Lom KDI 2504 TM			1
10	TP-6356	S/M Controllers, 20-3250 kW, Ind.	1	1	1

Item	Part Number	Description	Quantity		
			Variation Number		
			17	18	19
1	TP-5374	Warranty 1-Year Limited, Industrial	1	1	1
2	TP-5700	I/M 20-3250kW, Industrial	1	1	1
3	TP-6140	O/I/M Cntrlr Setup & Appl, DecMaker550	1	1	1
4	TP-6200	O/M 20-3250 kW, DecMaker550, Ver 2.10+	1	1	1
5	TP-6356	S/M Controllers, 20-3250 kW, Ind.	1	1	1
6	TP-6694	O/M APM402/DEC3000 Controller	1	1	1
7	TP-6783	S/M 20-200.Fst Rspnse X (FR-X) Altr, Ind	1	1	1
8	TP-6923	P/C 15-30REOZK, Industrial	1	1	1
9	TP-6924	W/D 15-30REOZK 30/40REOZK4 125/150REOZJ4	1	1	1
10	TP-6981	P/C Kohler KDI 3404 TM/TCR Engine, Ind.	1	1	1
11	TP-6982	O/M KDI 3404, 40-60REOZK, Ind.	1	1	1

Miscellaneous Kits

Qty.	Description	Part No.
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Cold Weather Package

GM90656-KA1

1	Heater, battery wrap	336814
1	Heater, battery pad	336826
1	Heater, Block, 120V, 700W	GM90190
1	Heater, Manifold KDI2504M	GM90660
2	Gasket, Manifold Heater	GM90673
4	Screw, Socket Head Cap	M912-08045-60

Radiator Duct Flange

GM91224-KA1

2	Flange, Radiator Top	GM91225
2	Flange, Radiator Side	GM91226
4	Washer, Plain	M125A-06-80
4	Screw, hex cap, M6x16mm, js500 full thrd	M933-06016-60
8	Rivet, pop, .187 in. ALUM	X-781-14

Block Heater, 1000W, 120V

GM93867-KA1

2	Valve, Shutoff (1/2-14npt)	GM19670
1	Adapter, bushing (1/2-14npt - M16x1.5)	GM24328
1	Connector, Hose	GM28690
1	Relay, 12 VDC	GM49746
1	Heater, Block, 120V, 1000W	GM83980
1	Heater, Manifold KDI2504M	GM90660
1	Gasket, Manifold Heater	GM90673
1	Brkt, Block Heater Mtg	GM93990
1	Bracket, Fuel Filter	GM93990
1	Switch, Temperature	GM94766
1	Hose, Formed, Block Heater, 63 I.D.	GM95741
1	Pipe, Nipple (1/2" NPT x 2.50")	X-209-3
1	Hose, molded, .62 in. ID, 17 in.	X-312-17
1	Hose, .63 in. ID, 2.5 in.	X-312-3
1	Hose, .63 ID, 12.5 in.	X-312-48
2	Connector, 90 deg. (5/8" id hose)	X-391-19
2	Spacer, .344 ID x .625 OD x .25 in.	X-400-74
8	Clamp, hose, .69/1.25 in.	X-426-12
1	Connector, Hose 5/8" x 1/2" MIP Brass	X-582-1
1	Fitting, Hose Connector, M14, 5/8 Tube	X-582-49
1	Clamp, insulated, 1.06 in.	X-672-32

Battery, 1/12V, 650CCA, Wet

256985

1	Battery, wet charged (12V, 650 CCA)	256984
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Run Relay, 12V

GM89315-KA3

1	Relay	248362
2	Harness, Run Relay	GM75854
3	Diagram, DEC 3000 Accy Interconnection	GM78246
4	Diagram, Accessory Interconnection	GM78247
5	Screw, Pan Head Machined	M7985A-04010-20
6	Washer, Lock.172 ID x.333 in.OD	X-22-7

15 Relay Dry Contact

GM89315-KA5

1	Cable, Patch, 3 Ft. RJ-45	357477
2	Decal, Dry Contact I/O Function	GM101959
3	Diagram, DEC 3000 Accy Interconnection	GM78246
4	Harness, 15 Relay Brd. Power	GM95582
5	PCB Assy, 15 Rly, NO & NC Contact w/ Com	GM97144
6	Screw, Pan Head Machined	M7985A-04010-20
7	Washer, Lock.172 ID x.333 in.OD	X-22-7

Flexible Fuel Lines

GM90288-KA1

1	Fuel line, flexible	GM21201
2	Fuel Line, Flexible, Return	GM91238
3	Clamp, hose, .25/.70 in.	X-426-9
4	Elbow, Male Tube (90 deg) + vibra seal	X-447-9

Qty.	Description	Part No.
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Electronic Governor

GM90661-KA1

1	Actuator, governor	324516
2	Software, Program	GM85972-AA2
3	Governor, Electronic, KDI (unprogrammed)	GM90652
4	Harness, Governor	GM90770
5	Washer, Plain	M125A-06-80
6	Nut, Hex 6mm	M6923-06-80
7	Screw, Hex Cap	M933-06030-60

Block Heater, 700W, 120V

GM95556-KA1

1	Relay, 12 VDC	GM49746
2	Heater, Block, 120V, 700W	GM90190
3	Heater, Manifold KDI2504M	GM90660
4	Switch, Temperature	GM94766
5	Screw, Pan Head Machined	M7985A-04010-20
6	Screw, Socket Head Cap	M912-08035-60
7	Washer, Lock.172 ID x.333 in.OD	X-22-7

Assy Air Cleaner Restriction Ind

GM96296-KA2

1	Gauge, restriction	GM11489
2	Coupling, pipe (1/8"npt)	X-216-24

Battery Charger 12V, 6A

GM96388-KA1

1	Bracket, Battery Charger	GM93706
2	Battery Charger 12V, 6A	GM96383
3	Washer, Plain	M125A-06-80
4	Washer, Plain 10.5 ID x 20.0 OD	M125A-10-80
5	Screw, Pan Head Machine	M7985A-06020-20
6	Screw, hex cap, fully thrd M10 x 25mm	M933-10025-60
7	Nut, Hex 6mm	934-06-60

Aux Contact, H/J/LG/M/P/R/R Frame

GM52345-KA1

1	Auxiliary Contact	GM25990
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Shunt Trip, 12Vdc, H/J/LG Frame

GM52359-KA1

1	Shunt Trip	GM25989-1
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Alarm Switch, H/J/LG/P/R-Frame

GM52657-KA1

1	Auxiliary Contact	GM25990
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LCB, 100A, HDP, Therm Mag, 80%

GM79734-KA1

1	Breaker, Circuit 100A HDP	GM47475-43
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Mtg, LCB H-Frame, 15-125A 3-Pole, 4D

GM90199-KA2

2	Insert, Threaded (Metric) M4 x .7mm	GM11040-1
4	Insert, Threaded (M6 x 1.0 Hex)	GM11040-7
1	Panel, Breaker Mtg	GM88286
1	Lead	GM89218
1	Lead	GM90744
3	Washer, Plain (EXP) 10.5 ID x 20.0 OD	M125A-10-80
4	Screw, Hex Flange M6x16mm fly thrd js500	M6921-06016-60
2	Screw, Pan Head Machine	M7985A-04080-20
3	Nut, Hex 10mm	M934-10-60
3	Washer, Spring, .39 ID x .81 in OD (NRP)	X-6086-6
2	Link, Terminal Block	GM90407

Cover, 4D/4E J-Box H/J LCB

GM90204-KA1-KCB

1	Foam, gasket seal (7/8" tape)	19000 08100
2	Insert, Threaded (M6 x 1.0 Hex)	GM11040-7
3	Panel, Sngl Breaker Frt	GM90205-KCB
4	Screw, Hex Flange M6x16mm	M6921-06016-60

Qty.	Description	Part No.
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Mtg, LCB H-Frame, 15-125A 3-Pole, 4D		GM90199-KB
2	Insert, Threaded (Metric) M4 x .7mm	GM11040-1
4	Insert, Threaded (M6 x 1.0 Hex)	GM11040-7
1	Panel, Breaker Mtg	GM88286
1	Lead	GM89218
1	Lead	GM90744
3	Washer, Plain (EXP) 10.5 ID x 20.0 OD	M125A-10-80
4	Screw, Hex Flange M6x16mm fly thrd js500	M6921-06016-60
2	Screw, Pan Head Machine	M7985A-04080-20
3	Nut, Hex 10mm	M934-10-60
3	Washer, Spring, .39 ID x .81 in OD (NRP)	X-6086-6

Isolated Neutral, 300A 4D KDI		GM97092-KA1
1	Bus, Neutral Ground	GM88667
2	Lead, Neutral	GM89219
3	Washer, Plain 10.5 ID x 20.0 OD	M125A-10-80
4	Screw, Hex Cap	M933-06030-60
5	Nut, Hex 6mm	M934-06-60
6	Nut, Hex 10mm	M934-10-60
7	Washer, Flat .312 ID x .75 OD	X-25-20
8	Bolt, Hex Cap	X-465-16
9	Washer, Spring	X-6086-24
10	Washer, Spring, .39 ID x .81 in OD	X-6086-6
11	Insulator, Standoff 1/4-20 x 1.5 in.	X-6128-3

Vertical Exhaust Outlet Kit		GM103354-KL1
1	Cap, rain (fits 2.00" tube)	276254
2	Clamp, muffler, 1.87 in.	277706
3	Elbow, Exhaust	GM103321

Touch-Up Paint

Gloss and textured paint is available from Aftermarket Parts.

Description	Part Number
Paint, Gloss KCB, 12oz spray can	GM71383
Paint, Gloss KCB, 1 gallon can	GM71387
Paint, Textured KCB, 12oz spray can	GM82834
Paint, Textured KCB, 1 gallon can	GM82835
Paint, Textured Black, 12 oz spray can	GM82836
Paint, Tank touch up	GM82837

Appendix A Abbreviations

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

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

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

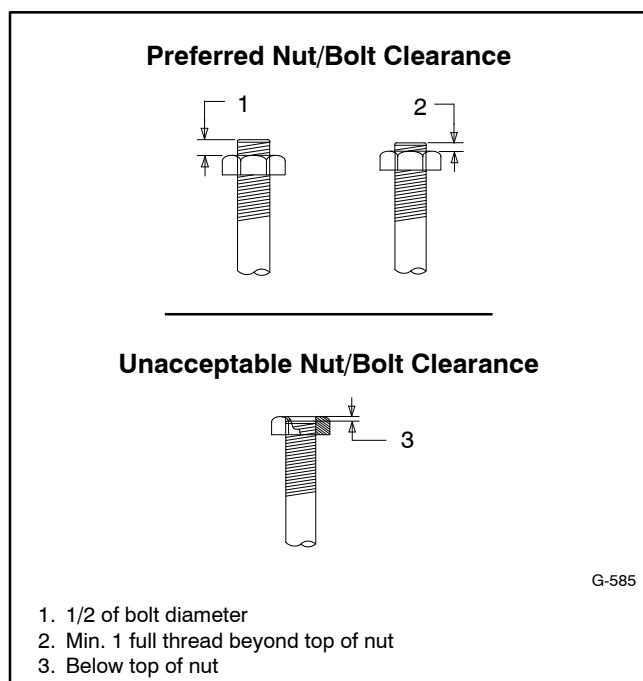


Figure 1 Acceptable Bolt Lengths

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.

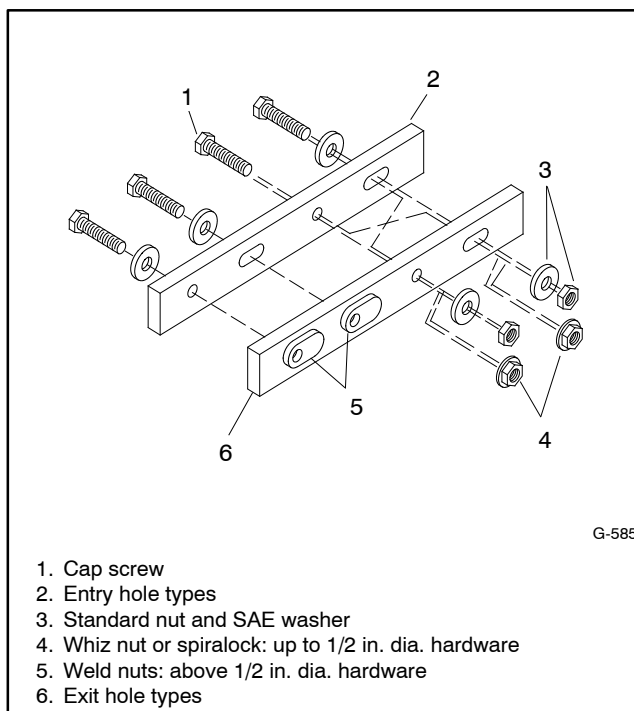


Figure 2 Acceptable Hardware Combinations

Appendix C General Torque Specifications

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

Metric Fasteners Torque Specifications, Measured in Nm (ft. lb.)				
Size (mm)	Assembled into Cast Iron or Steel			Assembled into Aluminum Grade 5.8 or 8.8
	Grade 5.8	Grade 8.8	Grade 10.9	
M6 x 1.00	6.2 (4.6)	9.5 (7)	13.6 (10)	See Note 3
M8 x 1.25	15.0 (11)	23.0 (17)	33.0 (24)	
M8 x 1.00	16.0 (11)	24.0 (18)	34.0 (25)	
M10 x 1.50	30.0 (22)	45.0 (34)	65.0 (48)	
M10 x 1.25	31.0 (23)	47.0 (35)	68.0 (50)	
M12 x 1.75	53.0 (39)	80.0 (59)	115.0 (85)	
M12 x 1.50	56.0 (41)	85.0 (63)	122.0 (90)	
M14 x 2.00	83.0 (61)	126.0 (93)	180.0 (133)	
M14 x 1.50	87.0 (64)	133.0 (98)	190.0 (140)	
M16 x 2.00	127.0 (94)	194.0 (143)	278.0 (205)	
M16 x 1.50	132.0 (97)	201.0 (148)	287.0 (212)	
M18 x 2.50	179.0 (132)	273.0 (201)	390.0 (288)	
M18 x 1.50	189.0 (140)	289.0 (213)	413.0 (305)	

Notes:

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

Appendix D Common Hardware Identification

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

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

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

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

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

Sample Dimensions

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

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

Metric (Screws, Bolts, Studs, and Nuts)

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

Plain Washers

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

Lock Washers

5/8
 — Internal Dimension

Appendix E Common Hardware List

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

American Standard

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

Metric

Hex head bolts are hardness grade 8.8 unless noted.

Part No. Dimensions Hex Head Bolts (Partial Thread)

M931-05055-60	M5-0.80 x 55
M931-06040-60	M6-1.00 x 40
M931-06055-60	M6-1.00 x 55
M931-06060-60	M6-1.00 x 60
M931-06060-SS	M6-1.00 x 60
M931-06070-60	M6-1.00 x 70
M931-06070-SS	M6-1.00 x 70
M931-06075-60	M6-1.00 x 75
M931-06090-60	M6-1.00 x 90
M931-06145-60	M6-1.00 x 145
M931-06150-60	M6-1.00 x 150

M931-08035-60	M8-1.25 x 35
M931-08040-60	M8-1.25 x 40
M931-08045-60	M8-1.25 x 45
M931-08050-60	M8-1.25 x 50
M931-08055-60	M8-1.25 x 55
M931-08055-82	M8-1.25 x 55*
M931-08060-60	M8-1.25 x 60
M931-08070-60	M8-1.25 x 70
M931-08070-82	M8-1.25 x 70*
M931-08075-60	M8-1.25 x 75
M931-08080-60	M8-1.25 x 80
M931-08090-60	M8-1.25 x 90
M931-08095-60	M8-1.25 x 95
M931-08100-60	M8-1.25 x 100
M931-08110-60	M8-1.25 x 110
M931-08120-60	M8-1.25 x 120
M931-08130-60	M8-1.25 x 130
M931-08140-60	M8-1.25 x 140
M931-08150-60	M8-1.25 x 150
M931-08200-60	M8-1.25 x 200

M931-10040-82	M10-1.25 x 40*
M931-10040-60	M10-1.50 x 40
M931-10045-60	M10-1.50 x 45
M931-10050-60	M10-1.50 x 50
M931-10050-82	M10-1.25 x 50*
M931-10055-60	M10-1.50 x 55
M931-10060-60	M10-1.50 x 60
M931-10065-60	M10-1.50 x 65
M931-10070-60	M10-1.50 x 70
M931-10080-60	M10-1.50 x 80
M931-10080-82	M10-1.25 x 80*
M931-10090-60	M10-1.50 x 90
M931-10090-82	M10-1.50 x 90*
M931-10100-60	M10-1.50 x 100
M931-10110-60	M10-1.50 x 110
M931-10120-60	M10-1.50 x 120
M931-10130-60	M10-1.50 x 130
M931-10140-60	M10-1.50 x 140
M931-10180-60	M10-1.50 x 180
M931-10235-60	M10-1.50 x 235
M931-10260-60	M10-1.50 x 260
M960-10330-60	M10-1.25 x 330

M931-12045-60	M12-1.75 x 45
M960-12050-60	M12-1.25 x 50
M960-12050-82	M12-1.25 x 50*
M931-12050-60	M12-1.75 x 50
M931-12050-82	M12-1.75 x 50*
M931-12055-60	M12-1.75 x 55
M931-12060-60	M12-1.75 x 60
M931-12060-82	M12-1.75 x 60*
M931-12065-60	M12-1.75 x 65
M931-12075-60	M12-1.75 x 75
M931-12080-60	M12-1.75 x 80
M931-12090-60	M12-1.75 x 90
M931-12100-60	M12-1.75 x 100
M931-12110-60	M12-1.75 x 110

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

M960-16090-60	M16-1.50 x 90
M931-16090-60	M16-2.00 x 90
M931-16100-60	M16-2.00 x 100
M931-16100-82	M16-2.00 x 100*
M931-16120-60	M16-2.00 x 120
M931-16150-60	M16-2.00 x 150

M931-20065-60	M20-2.50 x 65
M931-20090-60	M20-2.50 x 90
M931-20100-60	M20-2.50 x 100
M931-20120-60	M20-2.50 x 120
M931-20140-60	M20-2.50 x 140
M931-20160-60	M20-2.50 x 160

M931-22090-60	M22-2.50 x 90
M931-22120-60	M22-2.50 x 120
M931-22160-60	M22-2.50 x 160

M931-24090-60	M24-3.00 x 90
M931-24120-60	M24-3.00 x 120
M931-24160-60	M24-3.00 x 160
M931-24200-60	M24-3.00 x 200

Hex Head Bolts (Full Thread)

M933-04006-60	M4-0.70 x 6
M933-05030-60	M5-0.80 x 30
M933-05035-60	M5-0.80 x 35
M933-05050-60	M5-0.80 x 50

M933-06010-60	M6-1.00 x 10
M933-06012-60	M6-1.00 x 12
M933-06014-60	M6-1.00 x 14
M933-06016-60	M6-1.00 x 16
M933-06020-60	M6-1.00 x 20
M933-06025-60	M6-1.00 x 25
M933-06030-60	M6-1.00 x 30
M933-06040-60	M6-1.00 x 40
M933-06050-60	M6-1.00 x 50

M933-07025-60	M7-1.00 x 25
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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
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Flat Head Machine Screws

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

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

Metric, continued

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

Washers

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

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

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