

Service Parts

Commercial Mobile Generator Sets



Model:

4EFRKM

5ERKM

ISO 9001
KOHLER
GENERATORS
INTERNATIONALLY REGISTERED

KOHLER[®]
POWER SYSTEMS

TP-6078 9/01b

Table of Contents

Introduction	1
Numbering System Significance	1
Illustrations	1
How to Find Part Numbers	1
Hardware References	1
Specification Number Index	2
Group 1: Crankshaft	3
Group 2: Crankcase	4
Group 3: Lubrication	5
Group 4: Cylinder Head/Valve/Breather	6
Group 5: Ignition/Charging	7
Group 6: Blower Housing and Baffles	8
Group 7: Starting	9
Group 8: Engine Fuel System	10
Group 9: Engine Controls	11
Group 10: Engine Air Intake/Filtration	12
Group 11: Engine Exhaust	13
Group 103: Fuel System	14
Group 105: Engine	15
Group 107: Nameplate and Decals	15
Group 109: Skid and Plant Mounting	16
Group 116: Exhaust System	17
Group 201: Generator and Mounting	18
Group 301: Controller and Mounting	20
Group 701: Literature	21
Parts List: Accessories	22
Appendix A. Abbreviations	A-1
Appendix B. Common Hardware Application Guidelines	A-3
Appendix C. General Torque Specifications	A-4
Appendix D. Common Hardware Identification	A-5
Appendix E. Common Hardware List	A-6

Introduction

This manual lists service replacement parts for 4EFRKM and 5ERKM generator sets.

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

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

This manual includes the following main sections:

Table of Contents. Lists the sections of the manual.

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

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

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

Kit Sections. List modules and accessories and their parts.

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

x:in:004:002

Numbering System Significance

This manual uses the following numbering systems:

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

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

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

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

x:in:004:003:a

Illustrations

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

x:in:004:004

How to Find Part Numbers

Use the following steps to locate a service replacement part.

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

x:in:004:005

Hardware References

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

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

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

x:in:004:006

Specification Number Index

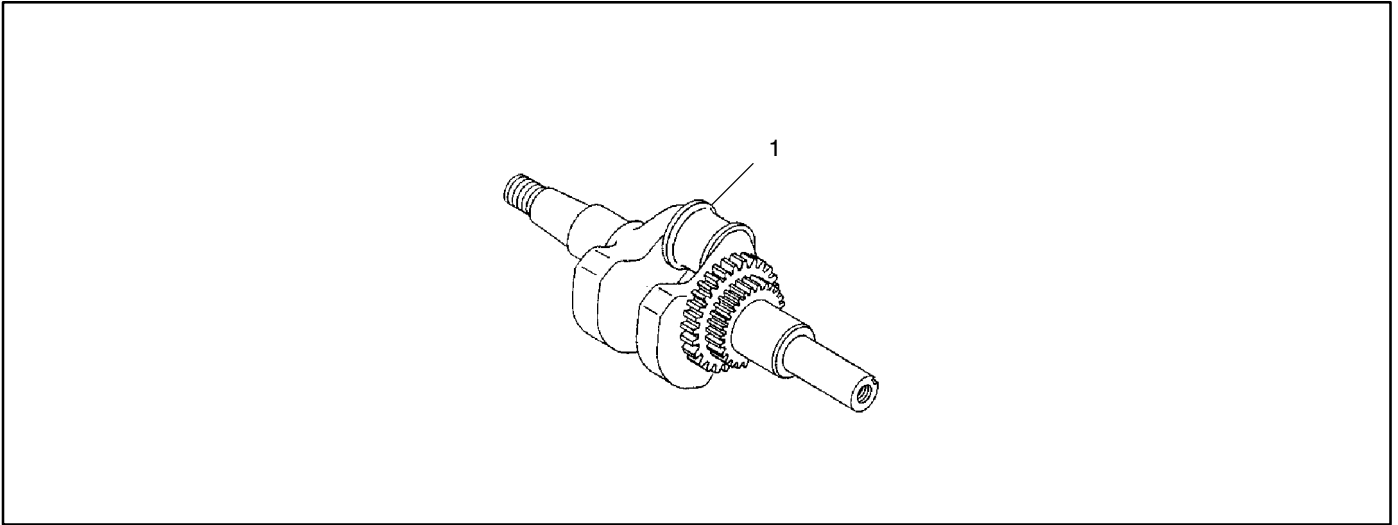
Group Title	<i>Crankshaft</i>	<i>Crankcase</i>	<i>Lubrication</i>	<i>Cylinder Head/Valve/Breather</i>	<i>Ignition/Charging</i>	<i>Blower Housing & Baffles</i>	<i>Starting System</i>	<i>Fuel System</i>	<i>Engine Controls</i>	<i>Air Intake/Filtration</i>	<i>Exhaust System</i>
Group No.	1	2	3	4	5	6	7	8	9	10	11
Spec No.	Variation Number										

4EFRKM/ 5ERKM											
141001	2	23	7	5	14	8	3	21	15	4	7
141002	2	23	7	5	14	8	3	21	15	4	7
GM21003-GA1	2	23	7	5	14	8	3	21	15	4	7
GM21003-GA2	2	23	7	5	14	8	3	21	15	4	7

Group Title	<i>Fuel System</i>	<i>Engine</i>	<i>Nameplates and Decals</i>	<i>Skid and Plant Mounting</i>	<i>Exhaust System</i>	<i>Generator and Mounting</i>	<i>Controller and Mounting</i>	<i>Literature</i>
Group No.	103	105	107	109	116	201	301	701
Spec No.	Variation Number							

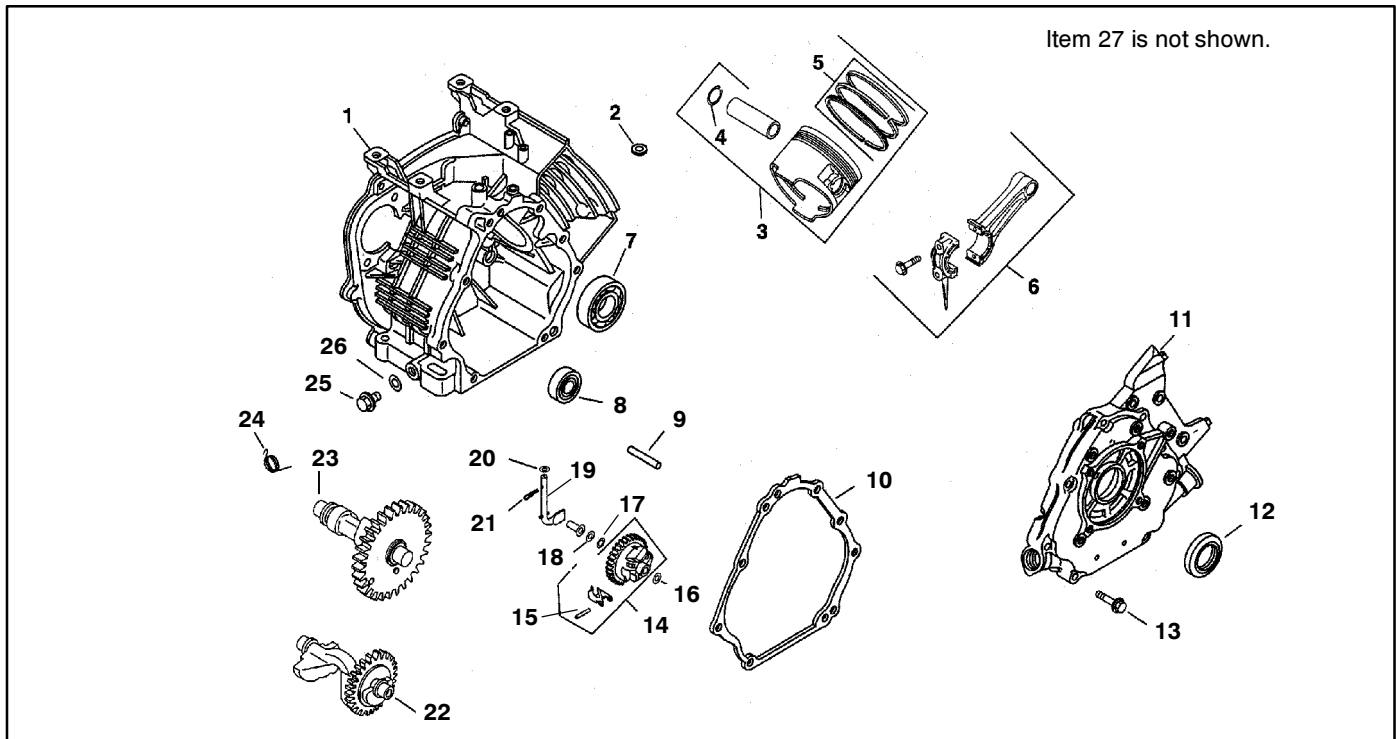
4EFRKM/ 5ERKM											
141001	29	19	62	50	23	103	95	10			
141002	29	19	62	50	23	104	95	10			
GM21003-GA1	GR1	GR2	GR3	GR4	-	GR5	GR6	10			
GM21003-GA2	GR1	GR2	GR3	GR4	-	GR8	GR6	10			

Group 1: Crankshaft



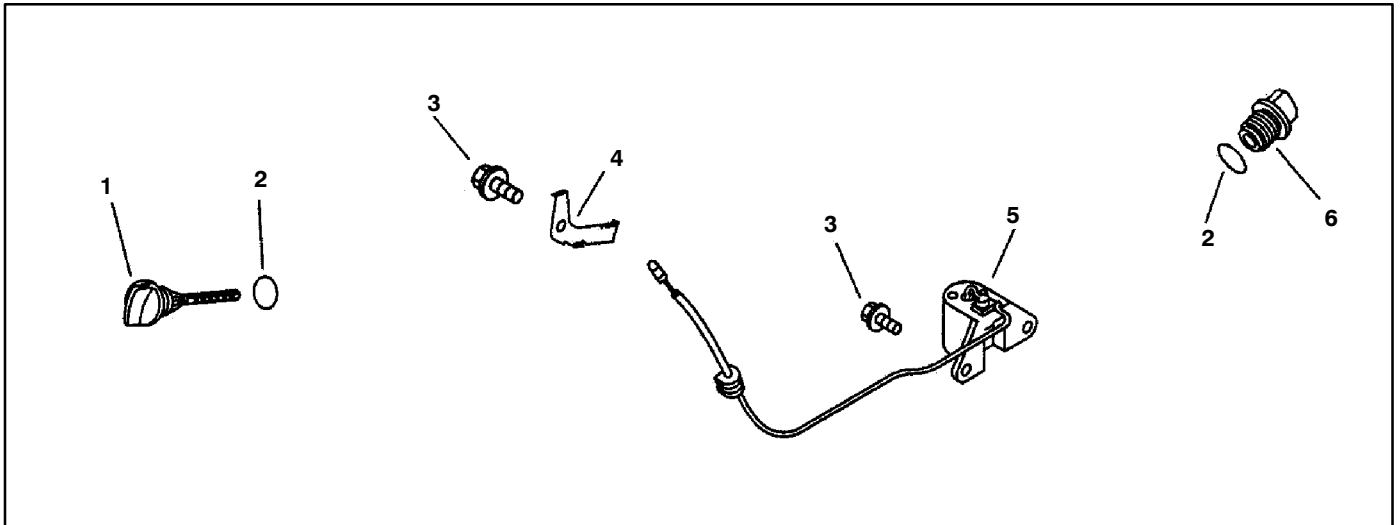
Item	Part Number	Description	Quantity
			Variation Number
1	63 014 03-S	Crankshaft	2
			1

Group 2: Crankcase



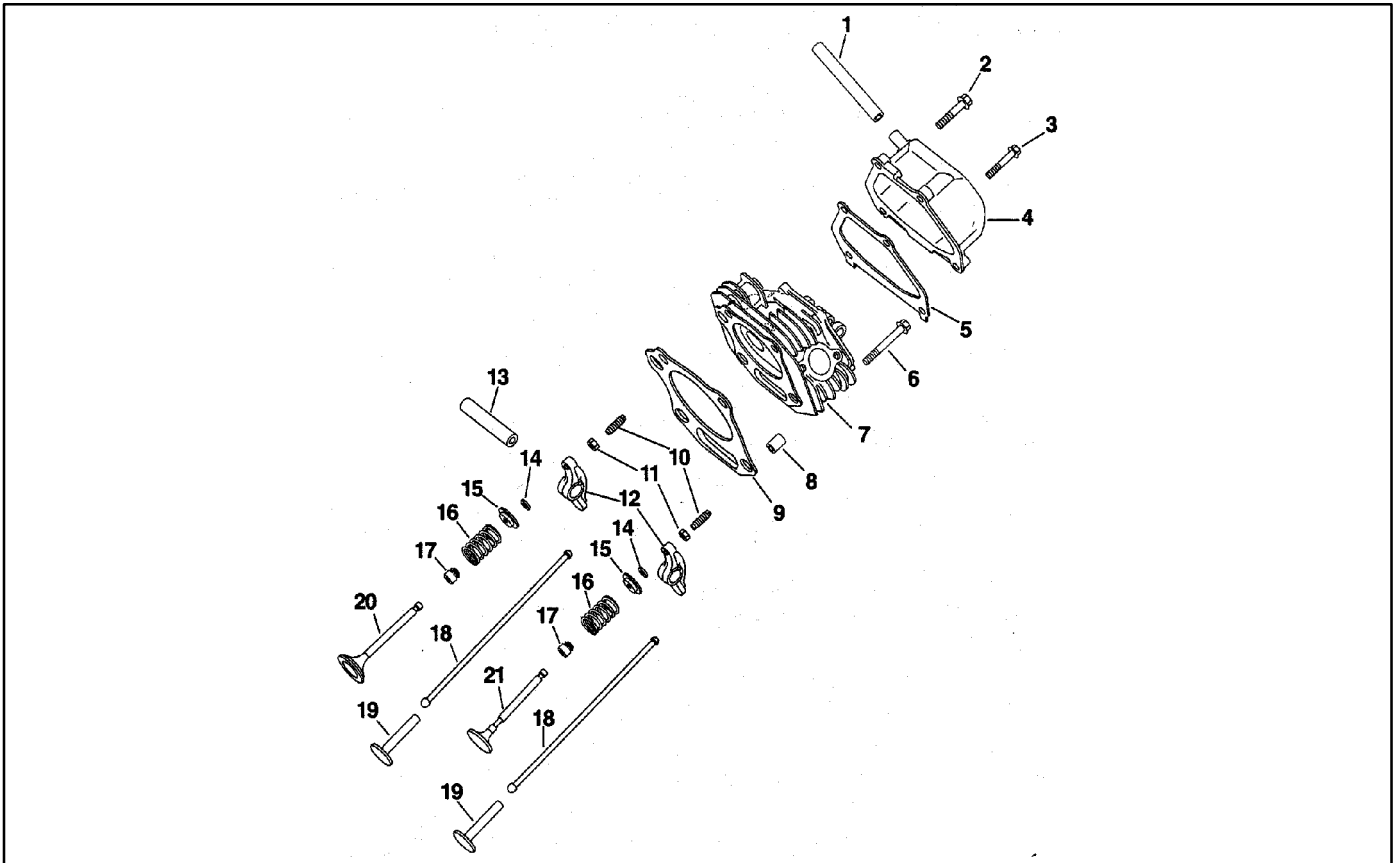
Item	Part Number	Description	Quantity	
			Variation Number	23
1	63 561 15-S	Crankcase		1
2	63 032 03-S	Oil seal		1
3	63 074 01	Piston, standard		1
3	63 074 02	Piston .25mm o/s		1
3	63 074 03	Piston .50mm o/s		1
4	63 018 02	Ring, retainer		2
5	63 108 01	Ring set, standard		1
5	63 108 02	Ring set .25mm o/s		1
5	63 108 03	Ring set .50mm o/s		1
6	63 067 01	Connecting rod		1
7	63 030 01	Bearing		1
8	63 030 08	Bearing, g.r. 1/6		1
9	63 144 03	Shaft, governor		1
10	63 041 07	Gasket, c.p.		1
11	63 009 02	Closure plate		1
12	63 032 02	Oil seal		1
13	63 086 31	Screw, cylinder head		8
14	63 043 08-S	Governor gear assembly		1
15	63 380 12	Void pin, dowel		1
16	63 468 01	Washer		1
17	63 018 01	Snap ring		1
18	63 468 02	Void washer		1
19	63 144 01	Shaft, governor cross		1
20	63 468 03	Washer		2
21	63 154 01	Clip		1
22	63 144 02	Shaft, balance		1
23	63 012 01	Camshaft		1
24	63 089 01	Spring		1
25	63 139 01	Plug, drain		2
26	63 041 01	Gasket		2
27	63 422 01	Shim (not shown)		1

Group 3: Lubrication



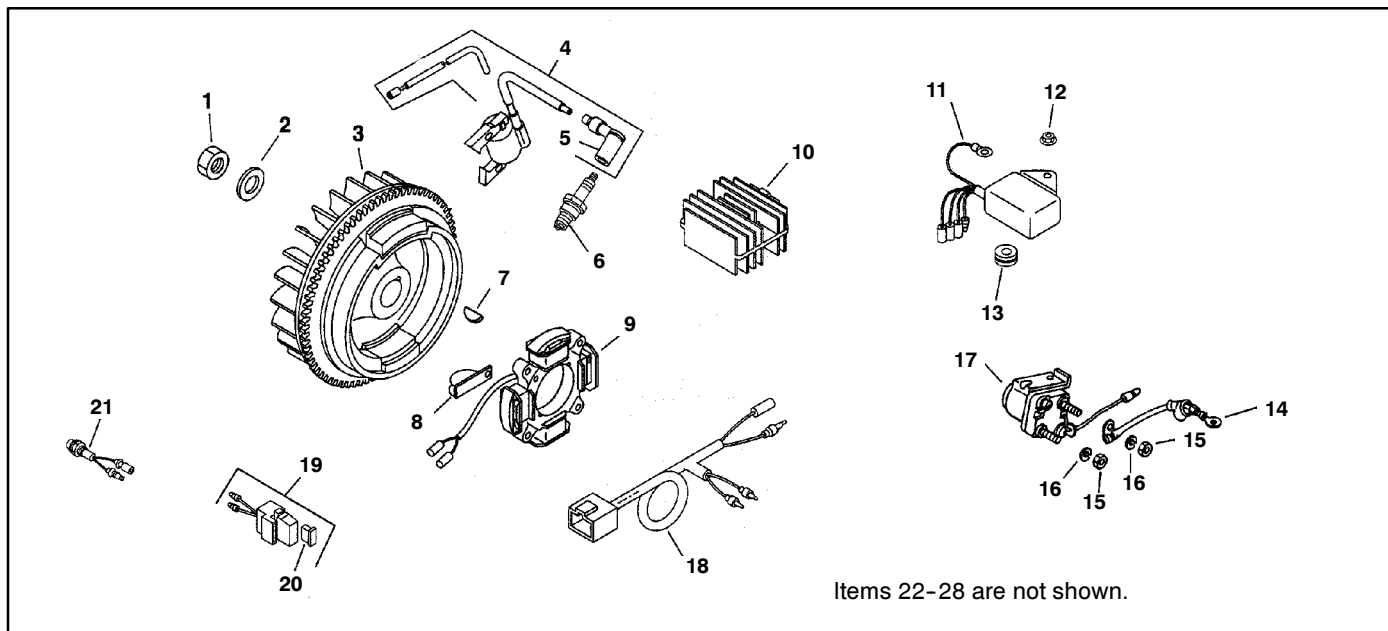
Item	Part Number	Description	Quantity
			Variation Number
1	63 139 03	Plug, oil level	1
2	63 153 01	O-ring, oil plugs	2
3	63 086 14	Screw	3
4	63 237 01	Clamp	1
5	63 099 01	Switch, oil level	1
6	63 139 02	Plug, oil	1

Group 4: Cylinder Head/Valve/Breather



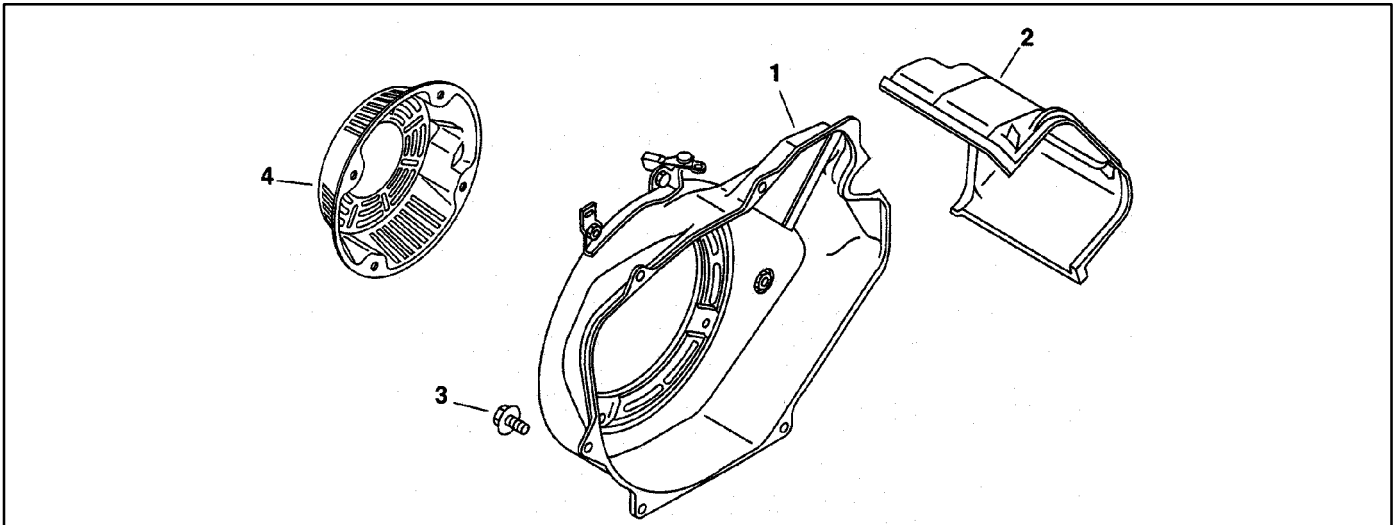
Item	Part Number	Description	Quantity
			Variation Number
1	63 326 01	Hose, breather	1
2	63 086 02	Screw, valve cover	4
3	63 086 02	Screw, valve cover	4
4	63 096 07-S	Valve cover assembly	1
5	63 041 04	Gasket, valve	1
6	63 086 01	Screw, cylinder head	4
7	63 318 01	Cylinder head	1
8	63 380 03	Pin, dowel	2
9	63 041 02	Gasket, cylinder head	1
10	63 086 05	Screw, valve adj	2
11	63 100 02	Nut	2
12	63 186 01	Arm, rocker	2
13	63 144 06	Shaft, rocker arm	1
14	63 462 01	Valve, keeper	2
15	63 173 01	Cap, valve spring	2
16	63 089 05	Spring, valve	2
17	63 032 01	Seal, valve stem	1
18	63 411 01	Push rod	2
19	63 351 01	Lifter, valve	2
20	63 017 01	Valve, intake	1
21	63 016 01	Valve, exhaust	1

Group 5: Ignition/Charging



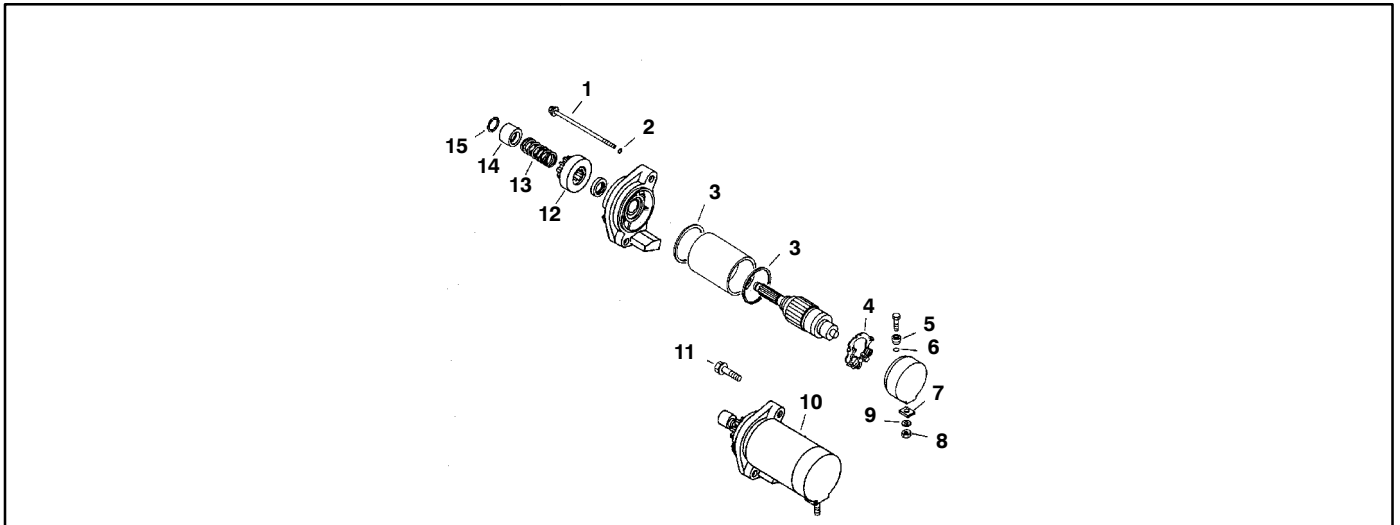
Item	Part Number	Description	Quantity
			Variation Number
1	63 100 03	Nut, exhaust	14
2	63 468 06-S	Washer	1
3	63 025 02-S	Flywheel	1
4	63 584 01	Module, ignition	1
5	63 173 02-S	Cap, spark plug	1
6	63 132 01	Plug, spark	1
7	63 340 02	Key, f.w.	1
8	63 237 04	Clamp	1
9	63 085 01-S	Stator, 10 amp	1
10	63 403 03-S	Regulator/rectifier	1
	63 403 01-S		
11	63 099 03	Oil switch assembly	1
12	63 100 05	Nut	1
13	63 313 02	Grommet	1
14	63 518 03	Lead, starter solenoid	1
15	63 100 10	Nut	4
16	63 468 14	Washer, spring	4
17	63 435 01	Starter relay	1
18	63 518 02	Lead	1
19	63 323 03	Fuse holder	1
20	63 304 02	Fuse	2
21	63 352 01	Oil light	1
22	63 086 14	Screw (not shown)	1
23	63 086 23-S	Screw (not shown)	2
24	63 086 26	Screw, flange (not shown)	3
25	63 086 28	Screw, tapping (not shown)	2
25	63 086 35	Screw, hex flange (not shown)	1
26	63 086 54-S	Screw (not shown)	1
28	63 323 04-S	Fuse holder (not shown)	1

Group 6: Blower Housing and Baffles



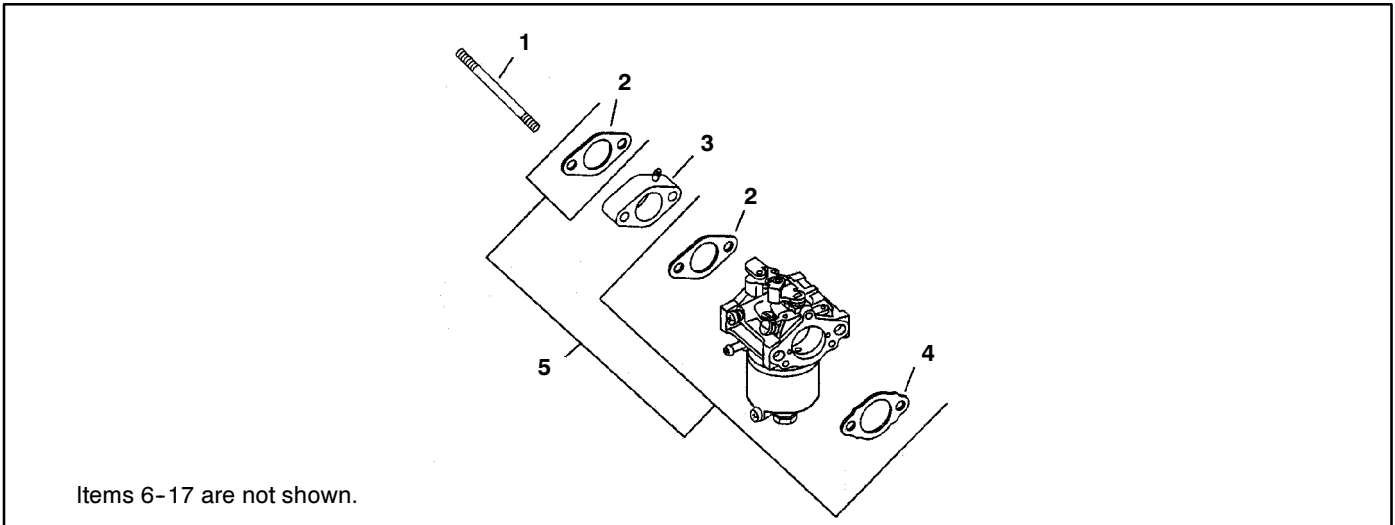
Item	Part Number	Description	Quantity
			Variation Number
			8
1	63 027 03-S	Blower housing	1
2	63 063 01	Baffle, cylinder	1
3	63 086 11	Screw, hex flange	4
3	63 086 14	Screw	6
4	63 096 03	Cover, blower housing	1

Group 7: Starting



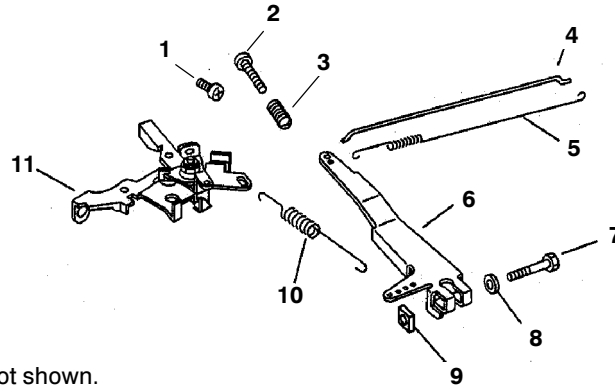
Item	Part Number	Description	Quantity
			Variation Number 3
1	63 086 24	Screw	1
2	63 153 04	O-ring	1
3	63 041 12	Gasket	1
4	63 323 02	Brush holder assembly	1
5	63 158 01	Bushing, terminal	1
6	63 153 03	O-ring	1
7	63 468 12	Washer, plain	1
8	63 100 09	Nut	1
9	63 468 13	Washer	1
10	63 098 01	Starter, electric	1
11	63 086 26	Screw, flange	2
12	63 043 03	Gear assembly, starting	1
13	63 089 11	Spring, return	1
14	63 531 01	Stopper, pinion	1
15	63 141 01	Ring, stop	1

Group 8: Engine Fuel System



Item	Part Number	Description	Quantity	
			Variation Number	21
1	63 072 06-S	Stud, carburetor		2
2	63 041 13	Gasket, intake		2
3	63 164 04-S	Manifold, intake		1
4	63 041 08	Gasket		1
5	63 853 16-S	Kit, carburetor		1
6	63 086 21	Screw (not shown)		2
7	63 086 64-S	Screw, fuel bowl cover (not shown)		2
8	63 086 65-S	Screw (not shown)		1
9	63 096 16-S	Cover, carburetor (not shown)		1
10	63 153 08-S	O-ring (not shown)		1
11	63 173 07-S	Cap, carburetor adjusting (not shown)		1
12	63 313 04-S	Grommet (not shown)		1
13	63 353 04-S	Fuel line (not shown)		1
14	63 435 02-S	Solenoid, fuel shutdown (not shown)		1
15	63 468 10	Washer (not shown)		2
16	63 468 28-S	Washer (not shown)		2
17	63 468 29-S	Washer (not shown)		1

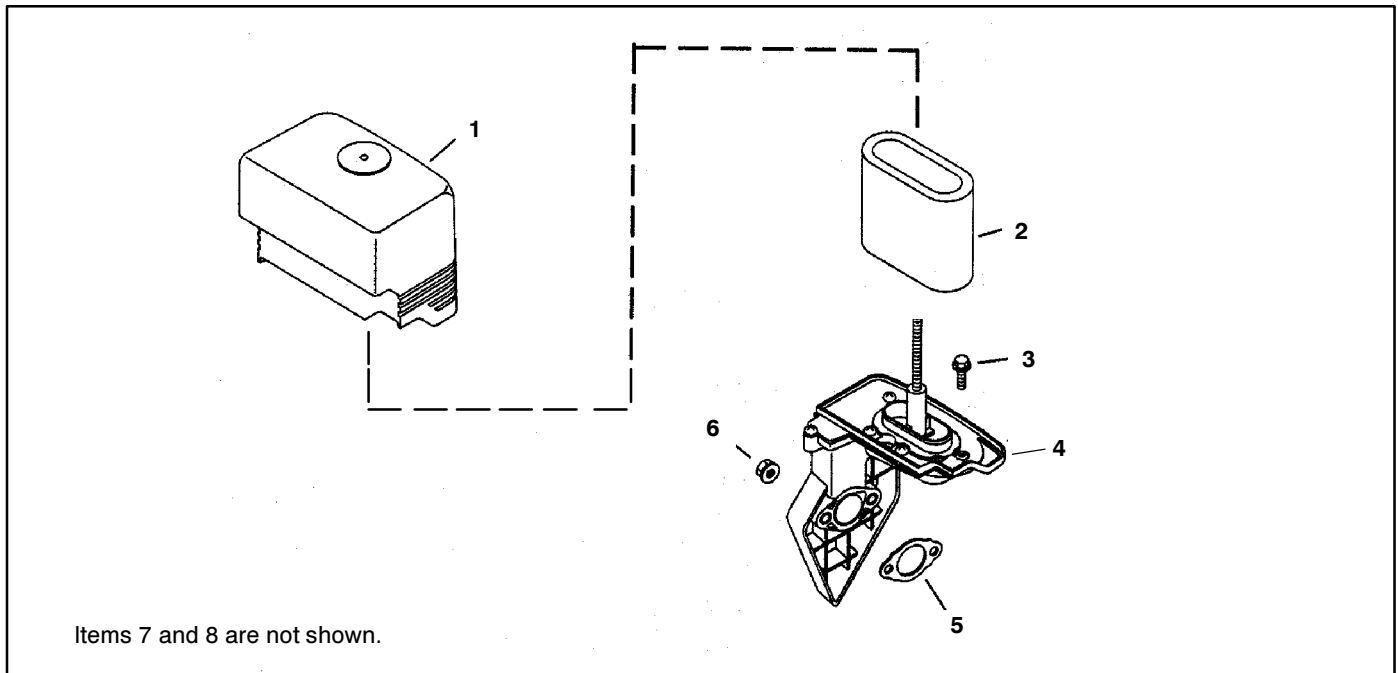
Group 9: Engine Controls



Item 12 is not shown.

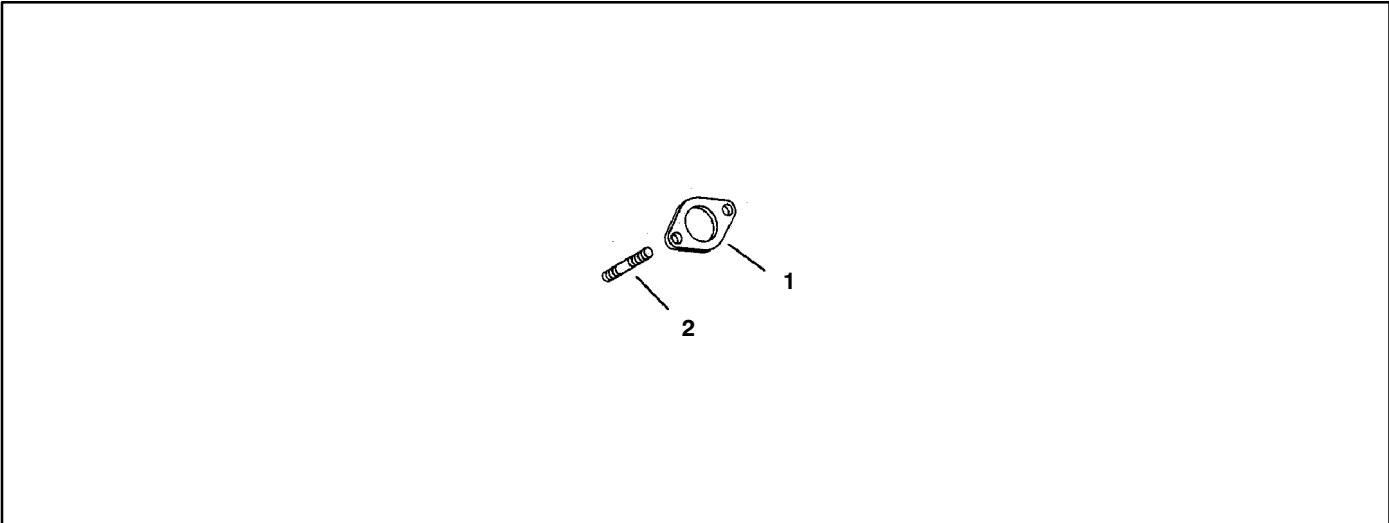
Item	Part Number	Description	Quantity
			Variation Number
			15
1	63 086 14	Screw	1
2	63 086 38-S	Screw, pan head	1
3	63 089 15-S	Spring, compression	1
4	63 079 01	Linkage, throttle	1
5	63 089 02	Spring, linkage	1
6	63 090 07-S	Lever	1
7	63 211 02	Bolt	1
8	63 468 04	Washer	1
9	63 100 01	Nut	1
10	63 089 24-S	Governor spring	1
11	63 090 06-S	Governor lever assy	1
12	63 126 06	Bracket (not shown)	1

Group 10: Engine Air Intake/Filtration



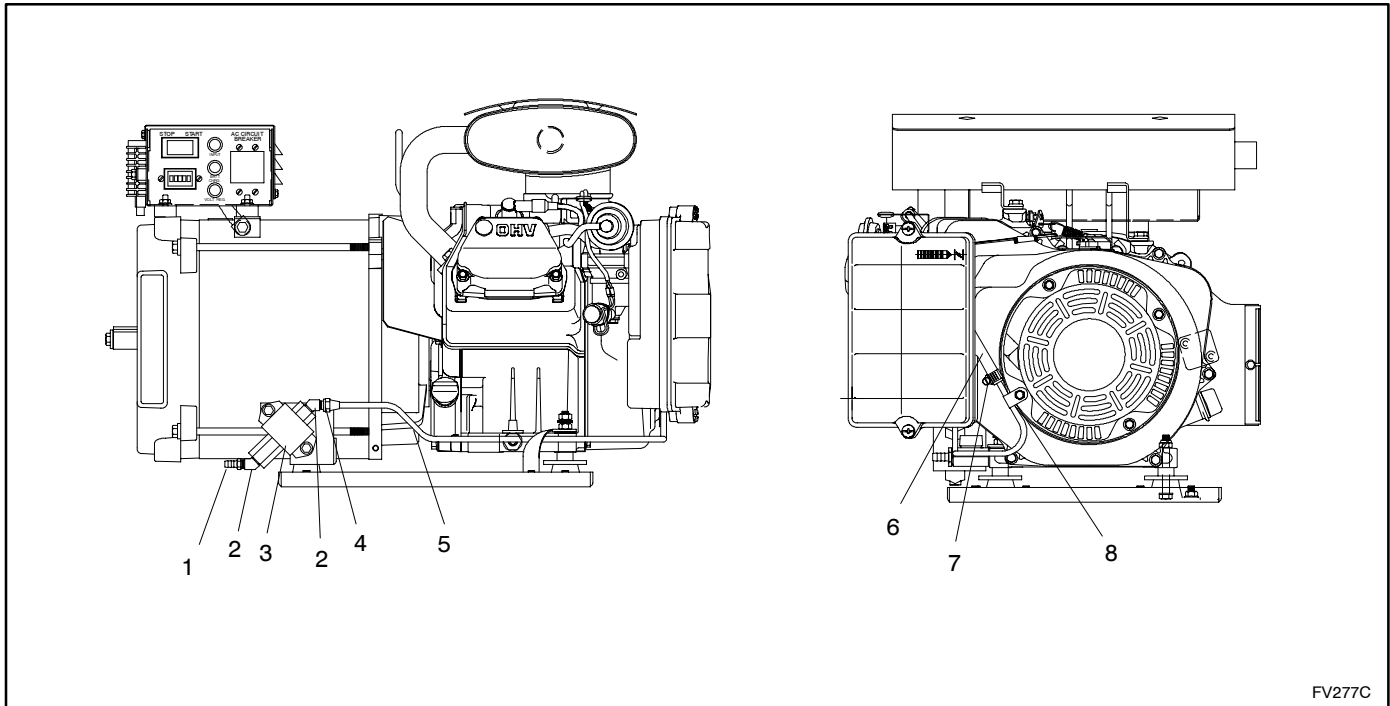
Item	Part Number	Description	Quantity	
			Variation Number	
1	63 096 08-S	Cover, air cleaner	1	4
2	63 083 05-S	Element, foam	1	
3	63 086 35	Screw, hex flange	1	
3	63 086 49-S	Screw	2	
4	63 094 03-S	Base, air cleaner	1	
5	63 041 08	Gasket, air cleaner	1	
6	63 100 17	Nut, air cleaner	2	
7	63 146 03-S	Plate (not shown)	1	
8	63 146 04-S	Plate (not shown)	1	

Group 11: Engine Exhaust



Item	Part Number	Description	Quantity
			Variation Number
1	63 041 06	Gasket, exhaust	1
2	63 072 01-S	Stud	2

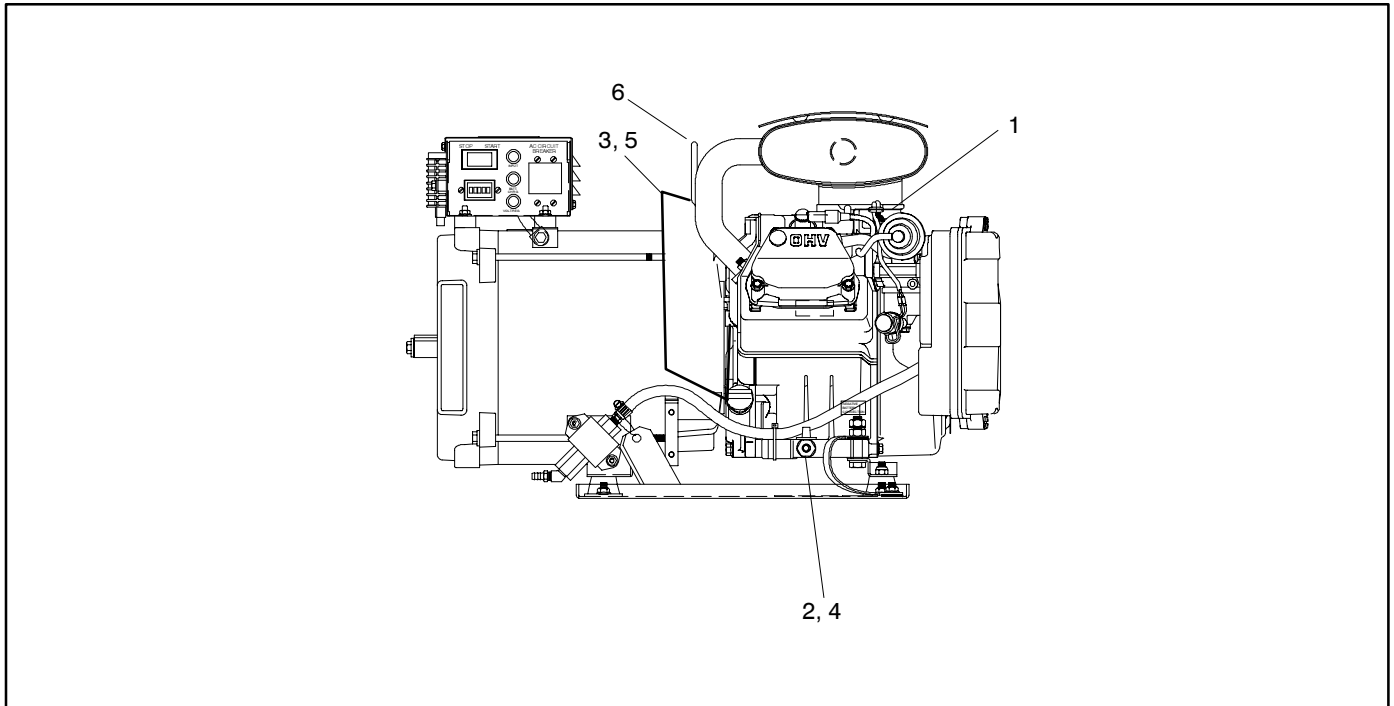
Group 103: Fuel System



FV277C

Item	Part Number	Description	Quantity	
			Variation	
			29	GR1
1	25 326 03	Connector, hose 1/8 x 1/4	2	2
2	267428	Fitting, 45° street elbow	1	1
3	278490	Pump, fuel	1	1
4	X-296-1	Fitting, half union	1	1
5	GM21001	Line, fuel	1	1
6	X-386-19	Line, fuel, flexible	1	1
7	X-426-9	Clamp, hose, .25/.70 in.	2	2
8	X-414-5	Clamp	1	1

Group 105: Engine

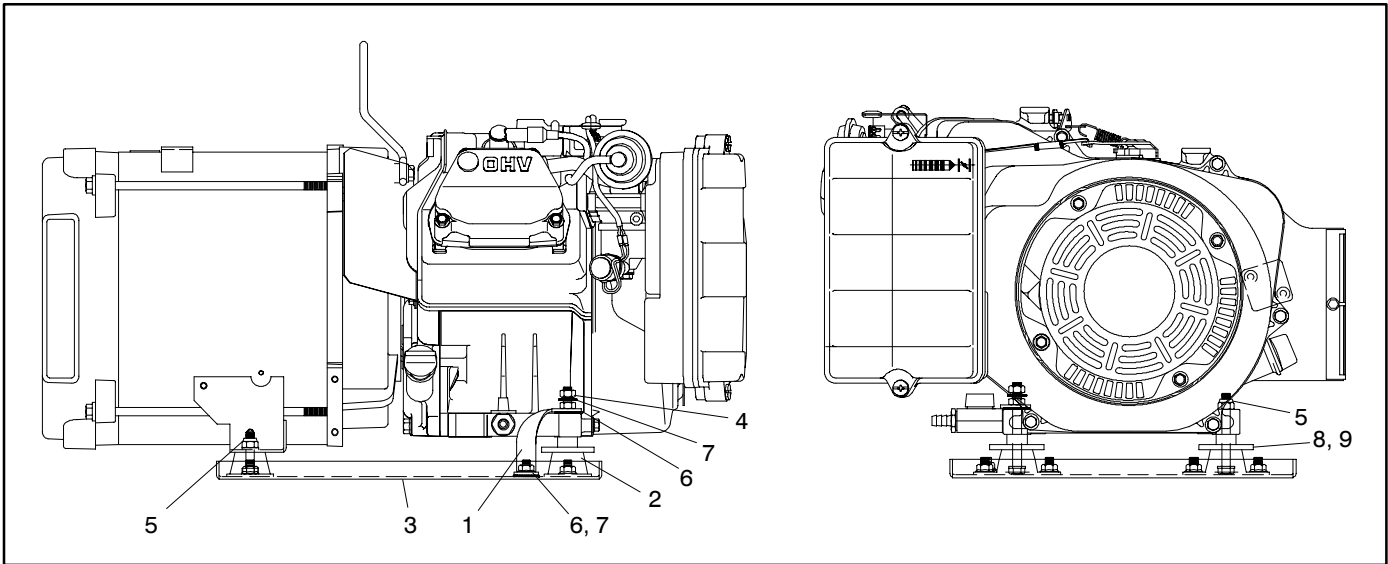


Item	Part Number	Description	Quantity	
			Variation	
			19	GR2
1	PA-941518	Engine assembly, Kohler CS12STG	1	1
2	GM11929	Valve, oil drain	1	1
3	GM13986	Baffle, engine air	1	1
4	276278	Washer, nylon, .511 ID x .906 in. OD	1	1
5	X-67-115	Screw, hex washer, thread-forming	2	2
6	GM11920	Bracket, lifting	1	1

Group 107: Nameplate and Decals

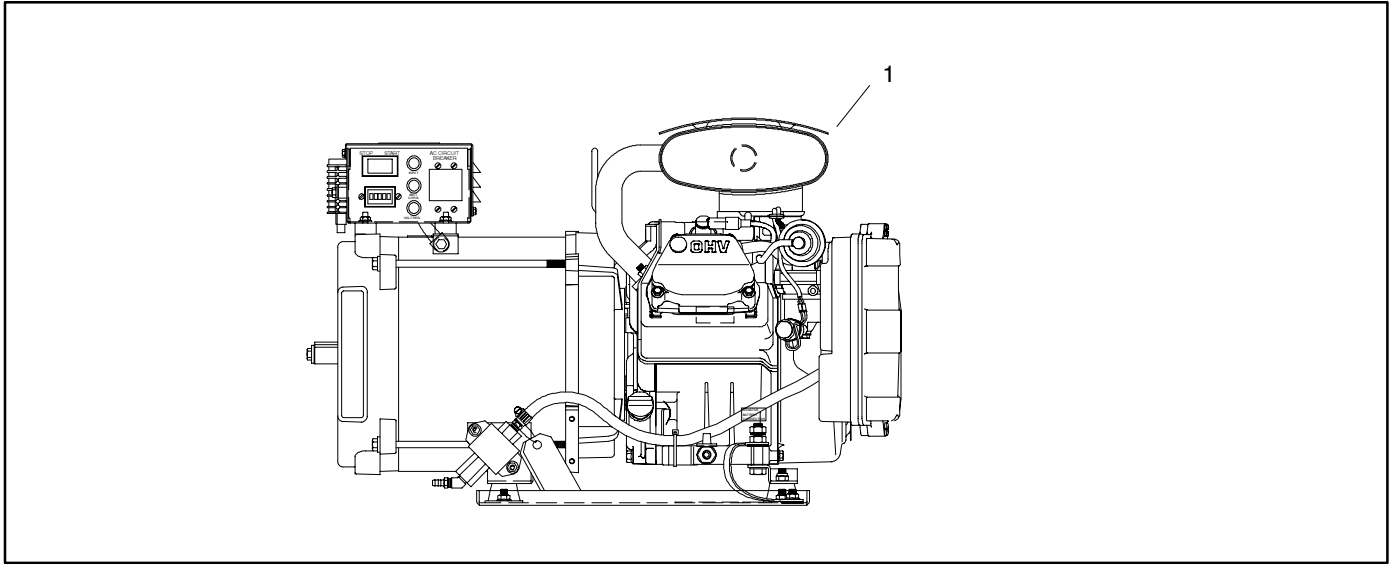
Item	Part Number	Description	Quantity	
			Variation	
			62	GR3
1	X-6246-11	Decal	1	1
2	224233	Decal, 1-800 number	1	1
3	226917	Decal, negative battery connection	1	1
4	229831	Decal, reconnection	1	1
5	238162	Decal, positive battery connection	1	1
6	239796	Decal, warning carbon monoxide	1	1
7	249808	Decal, warning rotating parts	1	1
8	249809	Decal, caution hot engine	1	1
9	344295	Decal, equipment ground	1	1
10	359282	Tag, hang (1/4 in. fuel supply)	1	1
11	359446	Nameplate, model/ratings, Kohler	1	1
12	359629	Tag, hang (notice, inline fuel filter)	1	1
13	GM14167	Decal, drain	1	1

Group 109: Skid and Plant Mounting



Item	Part Number	Description	Quantity	
			50	GR4
1	245297	Strap, ground	1	1
2	359578	Damper, vibration	4	4
3	GM11884	Tray, drip	1	1
4	M934-08-60	Nut, hex	2	2
5	M982-08-80	Nut, hex elastic stop	3	3
6	X-22-16	Washer, lock, .326 ID x .883 in. OD	2	2
7	X-22-5	Washer, lock, .326 ID x .62 in. OD	2	2
8	X-25-96	Washer, plain, .046 ID x 2 in. OD	2	2
9	X-400-41	Spacer, .344 ID x .75 OD x .375 in.	2	2

Group 116: Exhaust System

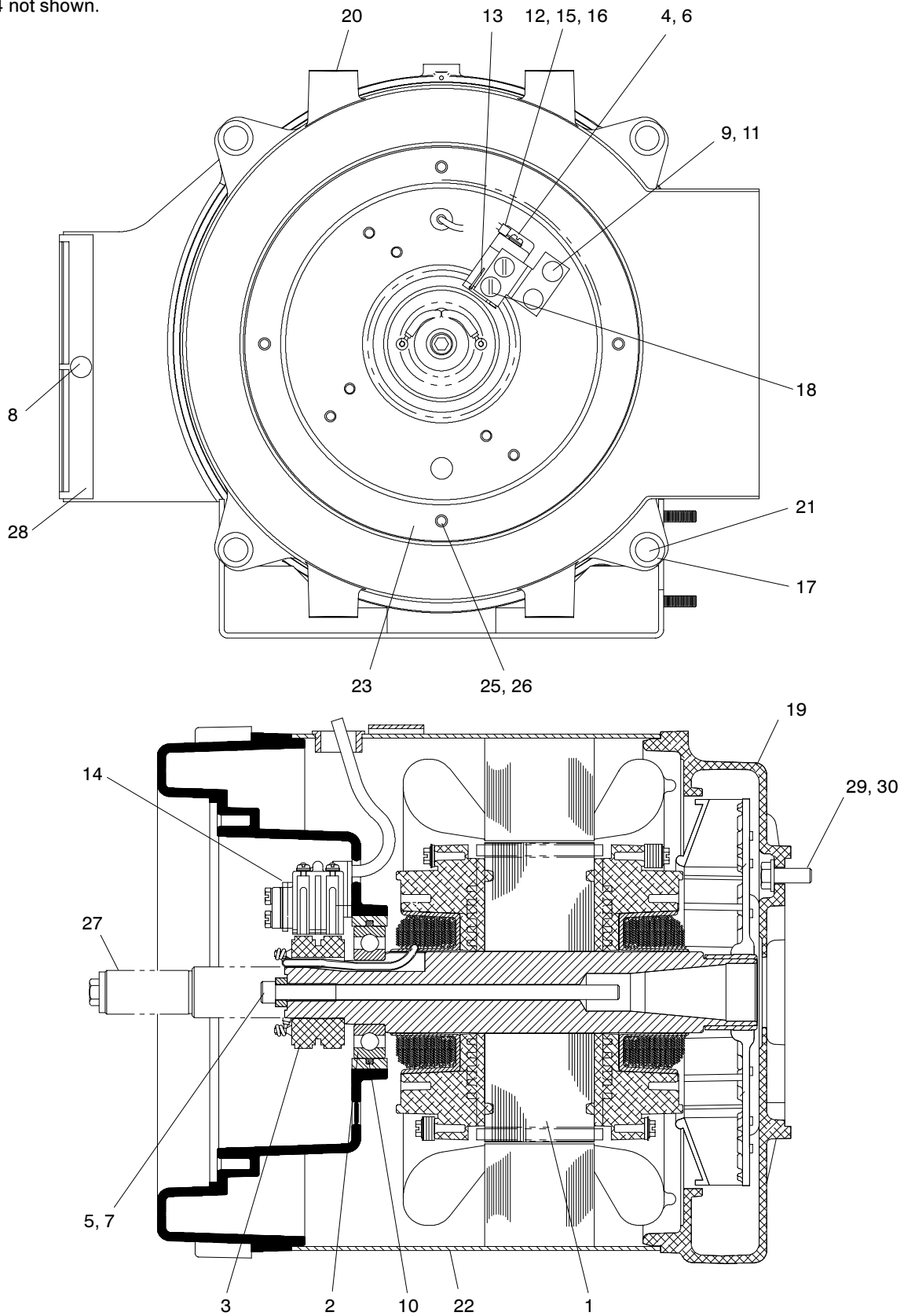


Item	Part Number	Description	Quantity
			Variation
1	GM12554	Muffler, exhaust	1
2	M6921-08020-60	Screw, hex flange (not shown)	4

See Accessories section for parts list of loose exhaust kits.

Group 201: Generator and Mounting

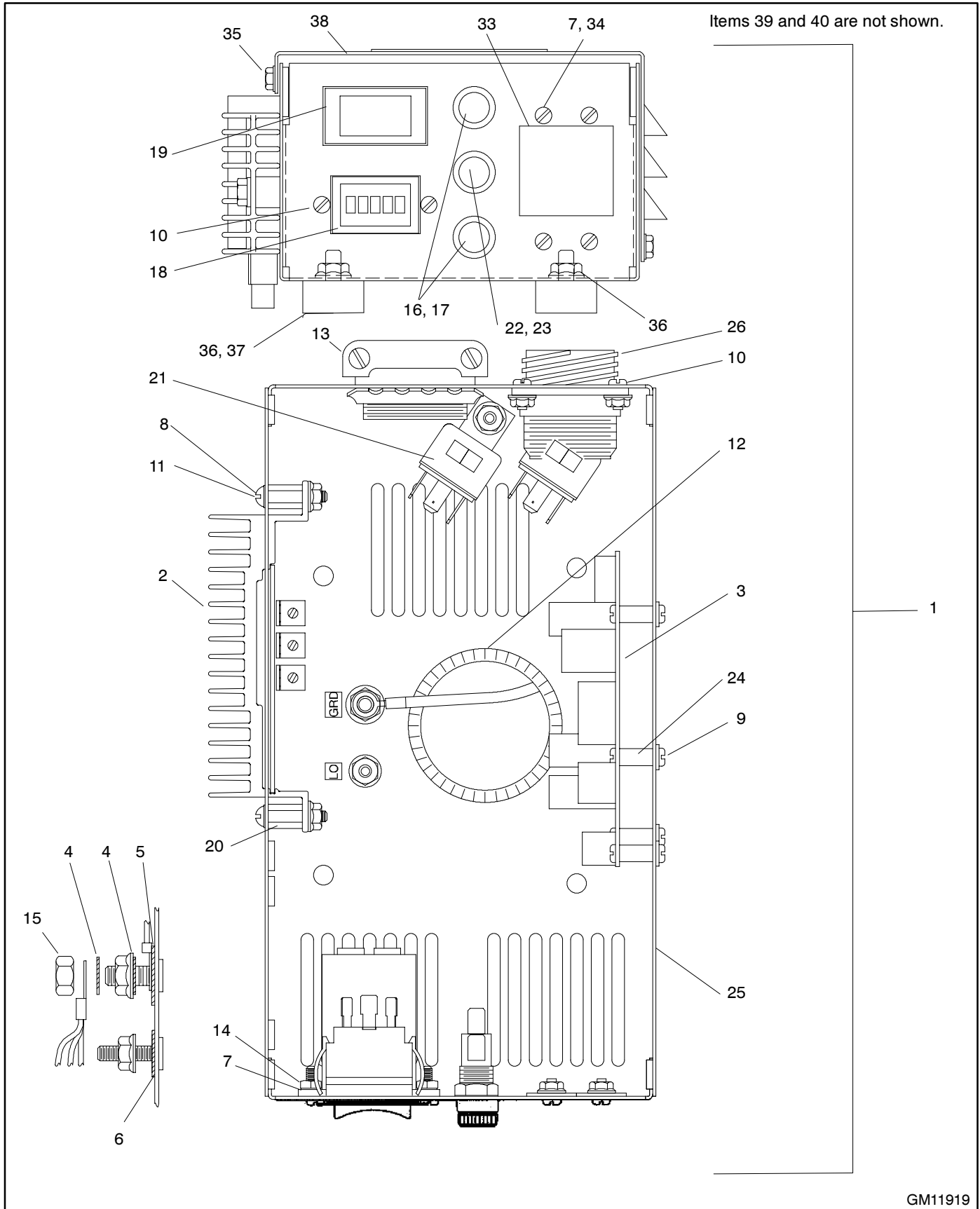
Item 24 not shown.



Group 201: Generator and Mounting

Item	Part Number	Description	Quantity			
			Variation			
			103	104	GR5	GR8
1	GM11899	Rotor assembly	1		1	
1	GM11944	Rotor assembly		1		1
2	X-758-15	Bearing, ball	1	1	1	1
3	359447	Ring, collector	1	1	1	1
4	X-22-6	Washer, lock, .146 ID x .285 in. OD	2	2	2	2
5	X-400-74	Spacer, .344 ID x .625 OD x .25 in.	1		1	
5	X-25-75	Washer, plain, .344 ID x .875 in. OD		1		1
6	X-49-1	Screw, slotted pan head machine	2	2	2	2
7	X-55-50	Screw, hex socket head	1		1	
7	GM11945	Bolt, armature through		1		1
8	X-6216-1	Screw, Phillips hex crimplite	2	2	2	2
9	X-67-113	Screw, hex washer, thread-forming	2	2	2	2
10	229110	O-ring	1	1	1	1
11	229178	Bracket, brush holder	1	1	1	1
12	238150	Spring, stainless steel	2	2	2	2
13	238247	Retainer, wire	1	1	1	1
14	238248	Shim, brush holder	2	2	2	2
15	239247	Brush holder	1	1	1	1
16	239282	Brush	2	2	2	2
17	X-801-4	Washer, hardened, .328 ID x .719 in. OD	4	4	4	4
18	X-97-13	Screw, slotted hex washer head, machine	2	2	2	2
19	GM11482	Adapter, alternator	1	1	1	1
20	GM11876	Bracket, end	1	1	1	1
21	359310	Bolt, 5/16-18 x 9.5 in.	4	4	4	4
22	GM11907-BLK	Stator assembly	1	1	1	1
23	359477	Plate, end bracket	1		1	
23	359566	Plate, pump mounting		1		1
24	X-67-52	Screw, hex washer, thread-forming	1	1	1	1
25	X-465-2	Screw, hex head	2		2	
25	X-55-2	Screw, hex socket head machine		4		4
26	X-25-40	Washer, plain, .281 ID x .625 in. OD	2		2	
27	X-286-6	Key, square		1		1
28	359403-BLK	Guard, fan	1	1	1	1
29	X-125-47	Screw, hex head machine	4	4	4	4
30	X-25-85	Washer, plain, .344 ID x .687 in. OD	4	4	4	4

Group 301: Controller and Mounting



GM11919

Group 301: Controller and Mounting

Item	Part Number	Description	Quantity	
			95	GR6
1	GM11919	Controller assembly	1	1
2	F-278598	PCB assembly (PB3)	1	1
3	GM10516	PCB assembly	1	1
4	X-22-11	Washer, lock, .262 ID x .469 in. OD	2	2
5	X-22-12	Washer, lock, .262 ID x .743 in. OD	1	1
6	X-22-13	Washer, lock, .20 ID x .595 in. OD	1	1
7	X-22-6	Washer, lock, .146 ID x .285 in. OD	6	6
8	X-22-7	Washer, lock, .172 ID x .333 in. OD	4	4
9	X-49-25	Screw, slotted pan head machine	10	10
10	X-49-26	Screw, slotted pan head machine	6	6
11	X-51-5	Screw, slotted round head machine	4	4
12	X-6033-4	Grommet, U-channel	1	1
13	X-6266-1	Connector, cable	1	1
14	X-71-2	Nut, hex machine screw, 6-32	2	2
15	X-81-8	Nut, hex, 1/4-20	1	1
16	223316	Fuse, 10 A, 250 V	2	2
17	238426	Fuse holder, .25 x 1.25 in.	2	2
18	238736	Meter, run time, 10000 hour	1	1
19	249406	Switch, rocker, 1 pole	1	1
20	249986	Spacer	4	4
21	259391	Relay, 12 VDC, .20 A	2	2
22	283645	Fuse, 15 A, 250 V	1	1
23	238426	Fuse holder, .25 x 1.25 in.	1	1
24	287948	Spacer	5	5
25	GM11918	Box, silkscreen	1	1
26	GM12341	Wiring harness, brush connection (includes items 28-32, not shown)	1	1
28	239411	Connector, jack, 4-position	1	1
29	239496	Connector, panel, 22-position	1	1
30	241616	Connector, jack, 6-position	1	1
31	259689	Connector, plug, 9-position	1	1
32	269366	Connector, plug, 15-position	1	1
33	245264-BLK	Plate, cover	1	1
34	X-49-1	Screw, slotted pan head machine	4	4
35	X-67-133	Screw, hex washer, thread-forming	4	4
36	X-22-12	Washer, lock, .262 ID x .743 in. OD	5	5
37	241769	Mount, controller	4	4
38	GM11921	Cover, controller	1	1
39	GM11959	Harness, engine (not shown)	1	1
40	X-6003-33	Conduit, convoluted (over battery charger voltage regulator harness, not shown)	1	1

Group 701: Literature

Item	Part Number	Description	Quantity
			Variation 10
1	TP-6017	Warranty, commercial/recreational mobile	1
2	TP-5251	Safety precautions, commercial/recreational mobile	1
3	TP-6081	O/M 5ERKM/4EFRKM mobile	1
4	TP-6082	I/M 5ERKM/4EFRKM mobile	1
5	TP-6079	S/M 5ERKM/4EFRKM mobile	1
6	TP-2494	O/M Command C Slant	1
7	TP-2503-A	S/MCommand CS Series	1
8	TP-6078	P/C 4EFRKM/5ERKM	1

Parts List: Accessories

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

Circuit Breaker Kits

Circuit Breaker Kit		PA-225640
1	Breaker, circuit 40 amp	X-506-50
1	Plate, cover	229183
1	Decal, notice	246242
1	Installation Instructions	TT-875
4	Screw, slotted pan head machine	X-49-21

Circuit Breaker Kit		PA-229391
1	Breaker, circuit 18 amp	X-506-41
1	Decal, notice	246242
1	Terminal, jumper	249956
1	Installation Instructions	TT-875
4	Screw, slotted pan head machine	X-49-21

Circuit Breaker Kit		PA-344051
1	Breaker, circuit 15 amp	X-506-41
1	Decal, notice	246242
1	Installation Instructions	TT-875
4	Screw, slotted pan head machine	X-49-21

Circuit Breaker Kit		PA-344106
1	Breaker, circuit 22 amp	X-506-57
1	Decal, notice	246242
1	Terminal, jumper	249956
1	Installation Instructions	TT-875
4	Screw, slotted pan head machine	X-49-21

Circuit Breaker Kit		PA-344309
1	Breaker, circuit 22 amp	X-506-57
1	Decal, notice	246242
1	Installation Instructions	TT-875
4	Screw, slotted pan head machine	X-49-21

Circuit Breaker Kit		PA-359286
1	Breaker, circuit 42 amp	X-506-60
1	Plate, cover	229183
1	Decal, notice	246242
1	Installation Instructions	TT-875
4	Screw, slotted pan head machine	X-49-21

Circuit Breaker Kit		PA-359617
1	Breaker, circuit 18 amp	X-506-68
1	Plate, cover	229183
1	Decal, notice	246242
1	Installation Instructions	TT-875
4	Screw, slotted pan head machine	X-49-21

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

Electrical System Accessories

Extension Harness Kit, 15'		PA-249334
1	Strap, wire 5/8	X-526-3
1	Harness, extension	249334

Extension Harness Kit, 25'		PA-249336
1	Strap, wire 5/8	X-526-3
1	Harness, extension	249336

Remote Harness, pigtail 12"		PA-249941
1	Harness, extension	249935

Remote Start Panel Kit		PA-359581
1	Decal, warning	249494
1	Installation Instructions	TT-1245
1	Panel assembly, remote (includes the following)	A-226965
1	Panel, control	226964
1	Harness, wiring	226979
1	Meter, run time, 10,000 hour	238736
1	Switch, rocker, 1-pole	344039
2	Screw, pan head M3 x 12	M7985A-03012-20
2	Nut, hex 3mm	M934-03-50
2	Washer, lock, .146 ID x .285 in. OD	X-22-6

Exhaust System Accessories

Silencer Kit		GM21004-KP1
1	Arrester, spark	278621
1	Silencer, 1.280 in.	278737
1	Strap, muffler	278769
1	Pipe, exhaust	GM21002
1	Bracket, muffler	GM21101
1	Washer, plain	M125A-08-80
1	Nut, hex 8mm	M6923-08-80
1	Screw, hex cap	M933-08030-60
1	Clamp, muffler	X-722-8
1	Screw, slotted hex washer head, machine	X-794-3

Appendix A Abbreviations

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

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

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

Appendix B Common Hardware Application Guidelines

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

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

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

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

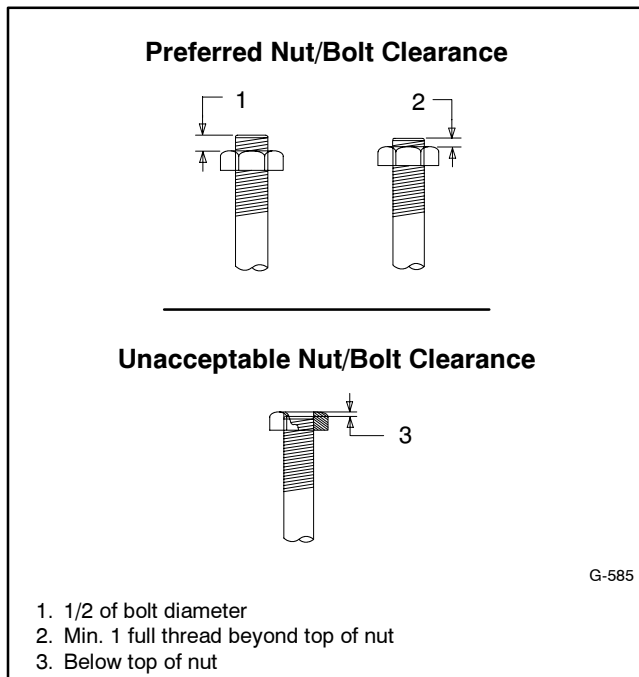


Figure 1 Acceptable Bolt Lengths

Steps for common hardware application:

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

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

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

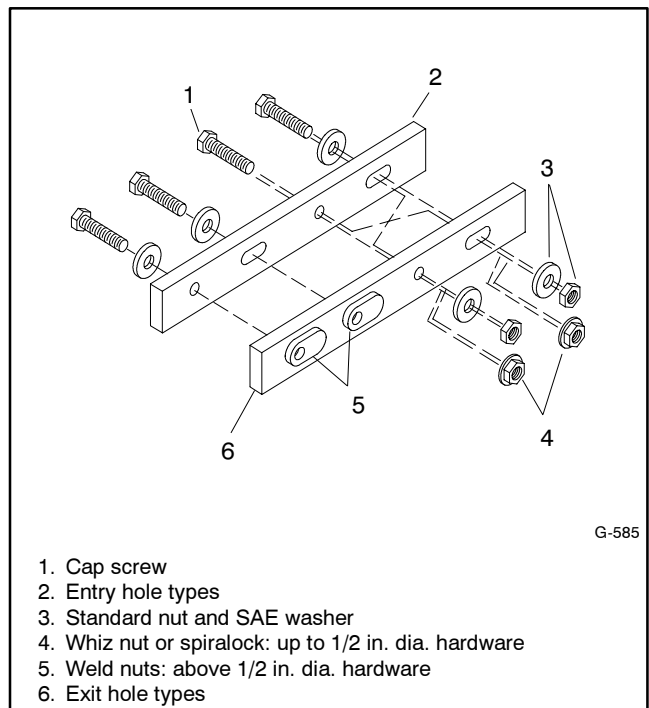


Figure 2 Acceptable Hardware Combinations

Appendix C General Torque Specifications















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












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






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

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

Appendix D Common Hardware Identification

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

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

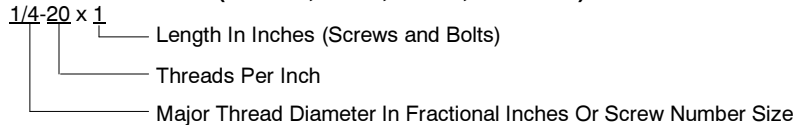
Hardness Grades	
American Standard	
Grade 2	
Grade 5	
Grade 8	
Grade 8/9 (Hex Socket Head)	
Metric	
Number stamped on hardware; 5.8 shown	

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

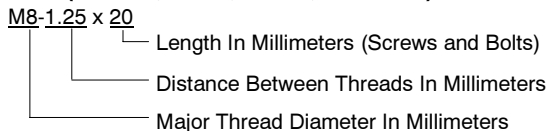
Phillips® screw is a registered trademark of Phillips Screw Company.

Sample Dimensions

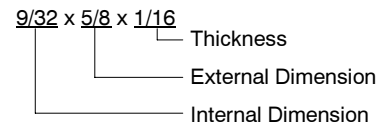
American Standard (Screws, Bolts, Studs, and Nuts)



Metric (Screws, Bolts, Studs, and Nuts)



Plain Washers



Lock Washers



Appendix E Common Hardware List

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

American Standard

Part No.	Dimensions	Part No.	Dimensions	Part No.	Dimensions	Type
Hex Head Bolts (Grade 5)		Hex Head Bolts, cont.		Hex Nuts		
X-465-17	1/4-20 x .38	X-6024-5	7/16-14 x .75	X-6009-1	1-8	Standard
X-465-6	1/4-20 x .50	X-6024-2	7/16-14 x 1.00	X-6210-3	6-32	Whiz
X-465-2	1/4-20 x .62	X-6024-8	7/16-14 x 1.25	X-6210-4	8-32	Whiz
X-465-16	1/4-20 x .75	X-6024-3	7/16-14 x 1.50	X-6210-5	10-24	Whiz
X-465-18	1/4-20 x .88	X-6024-4	7/16-14 x 2.00	X-6210-1	10-32	Whiz
X-465-7	1/4-20 x 1.00	X-6024-11	7/16-14 x 2.75	X-6210-2	1/4-20	Spiralock
X-465-8	1/4-20 x 1.25	X-6024-12	7/16-14 x 6.50	X-6210-6	1/4-28	Spiralock
X-465-9	1/4-20 x 1.50	X-129-15	1/2-13 x .75	X-6210-7	5/16-18	Spiralock
X-465-10	1/4-20 x 1.75	X-129-17	1/2-13 x 1.00	X-6210-8	5/16-24	Spiralock
X-465-11	1/4-20 x 2.00	X-129-18	1/2-13 x 1.25	X-6210-9	3/8-16	Spiralock
X-465-12	1/4-20 x 2.25	X-129-19	1/2-13 x 1.50	X-6210-10	3/8-24	Spiralock
X-465-14	1/4-20 x 2.75	X-129-20	1/2-13 x 1.75	X-6210-11	7/16-14	Spiralock
X-465-21	1/4-20 x 5.00	X-129-21	1/2-13 x 2.00	X-6210-12	1/2-13	Spiralock
X-465-25	1/4-28 x .38	X-129-22	1/2-13 x 2.25	X-6210-15	7/16-20	Spiralock
X-465-20	1/4-28 x 1.00	X-129-23	1/2-13 x 2.50	X-6210-14	1/2-20	Spiralock
X-125-33	5/16-18 x .50	X-129-24	1/2-13 x 2.75	X-85-3	5/8-11	Standard
X-125-23	5/16-18 x .62	X-129-25	1/2-13 x 3.00	X-88-12	3/4-10	Standard
X-125-3	5/16-18 x .75	X-129-27	1/2-13 x 3.50	X-89-2	1/2-20	Standard
X-125-31	5/16-18 x .88	X-129-29	1/2-13 x 4.00			
X-125-5	5/16-18 x 1.00	X-129-30	1/2-13 x 4.50			
X-125-24	5/16-18 x 1.25	X-463-9	1/2-13 x 5.50			
X-125-34	5/16-18 x 1.50	X-129-44	1/2-13 x 6.00			
X-125-25	5/16-18 x 1.75	X-129-51	1/2-20 x .75			
X-125-26	5/16-18 x 2.00	X-129-45	1/2-20 x 1.25			
230578	5/16-18 x 2.25	X-129-52	1/2-20 x 1.50			
X-125-29	5/16-18 x 2.50	X-6021-3	5/8-11 x 1.00			
X-125-27	5/16-18 x 2.75	X-6021-4	5/8-11 x 1.25			
X-125-28	5/16-18 x 3.00	X-6021-2	5/8-11 x 1.50			
X-125-22	5/16-18 x 4.50	X-6021-1	5/8-11 x 1.75			
X-125-32	5/16-18 x 5.00	273049	5/8-11 x 2.00			
X-125-35	5/16-18 x 5.50	X-6021-5	5/8-11 x 2.25			
X-125-36	5/16-18 x 6.00	X-6021-6	5/8-11 x 2.50			
X-125-40	5/16-18 x 6.50	X-6021-7	5/8-11 x 2.75			
X-125-43	5/16-24 x 1.75	X-6021-12	5/8-11 x 3.75			
X-125-44	5/16-24 x 2.50	X-6021-11	5/8-11 x 4.50			
X-125-30	5/16-24 x .75	X-6021-10	5/8-11 x 6.00			
X-125-39	5/16-24 x 2.00	X-6021-9	5/8-18 x 2.50			
X-125-38	5/16-24 x 2.75	X-6239-1	3/4-10 x 1.00			
X-6238-2	3/8-16 x .62	X-6239-8	3/4-10 x 1.25			
X-6238-10	3/8-16 x .75	X-6239-2	3/4-10 x 1.50			
X-6238-3	3/8-16 x .88	X-6239-3	3/4-10 x 2.00			
X-6238-11	3/8-16 x 1.00	X-6239-4	3/4-10 x 2.50			
X-6238-4	3/8-16 x 1.25	X-6239-5	3/4-10 x 3.00			
X-6238-5	3/8-16 x 1.50	X-6239-6	3/4-10 x 3.50			
X-6238-1	3/8-16 x 1.75	X-792-1	1-8 x 2.25			
X-6238-6	3/8-16 x 2.00	X-792-5	1-8 x 3.00			
X-6238-17	3/8-16 x 2.25	X-792-8	1-8 x 5.00			
X-6238-7	3/8-16 x 2.50					
X-6238-8	3/8-16 x 2.75					
X-6238-9	3/8-16 x 3.00					
X-6238-19	3/8-16 x 3.25					
X-6238-12	3/8-16 x 3.50					
X-6238-20	3/8-16 x 3.75					
X-6238-13	3/8-16 x 4.50					
X-6238-18	3/8-16 x 5.50					
X-6238-25	3/8-16 x 6.50					
X-6238-14	3/8-24 x .75					
X-6238-16	3/8-24 x 1.25					
X-6238-21	3/8-24 x 4.00					
X-6238-22	3/8-24 x 4.50					

Washers

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

Metric

Hex head bolts are hardness grade 8.8 unless noted.

Part No.	Dimensions	Part No.	Dimensions	Part No.	Dimensions	Type	
Hex Head Bolts (partial thread)			Hex Head Bolts (full thread)			Hex Nuts	
M931-05055-60	M5-0.80 x 55	M933-04006-60	M4-0.70 x 6	M934-03-50	M3-0.50	Standard	
M931-06040-60	M6-1.00 x 40	M933-05035-60	M5-0.80 x 35	M934-035-50	M3.5-0.50	Standard	
M931-06055-60	M6-1.00 x 55	M933-05050-60	M5-0.80 x 50	M934-04-50	M4-0.70	Standard	
M931-06060-60	M6-1.00 x 60	M933-06010-60	M6-1.00 x 10	M934-05-50	M5-0.80	Standard	
M931-06070-60	M6-1.00 x 70	M933-06014-60	M6-1.00 x 14	M982-05-80	M5-0.80	Elastic Stop	
M931-06070-SS	M6-1.00 x 70	M933-06016-60	M6-1.00 x 16	M934-06-60	M6-1.00	Standard	
M931-06075-60	M6-1.00 x 75	M933-06020-60	M6-1.00 x 20	M934-06-64	M6-1.00	Std. (green)	
M931-06090-60	M6-1.00 x 90	M933-06025-60	M6-1.00 x 25	M6923-06-80	M6-1.00	Spirallock	
M931-06150-60	M6-1.00 x 150	M933-06040-60	M6-1.00 x 40	M982-06-80	M6-1.00	Elastic Stop	
M931-08035-60	M8-1.25 x 35	M933-06050-60	M6-1.00 x 50	M934-08-60	M8-1.25	Standard	
M931-08040-60	M8-1.25 x 40	M933-08012-60	M8-1.25 x 12	M6923-08-80	M8-1.25	Spirallock	
M931-08040-82	M8-1.25 x 40*	M933-08016-60	M8-1.25 x 16	M982-08-80	M8-1.25	Elastic Stop	
M931-08045-60	M8-1.25 x 45	M933-08020-60	M8-1.25 x 20	M934-10-60	M10-1.50	Standard	
M931-08050-60	M8-1.25 x 50	M933-08025-60	M8-1.25 x 25	M934-10-60F	M10-1.25	Standard	
M931-08055-60	M8-1.25 x 55	M933-08030-60	M8-1.25 x 30	M6923-10-80	M10-1.50	Spirallock	
M931-08055-82	M8-1.25 x 55*	M933-08030-82	M8-1.25 x 30*	M6923-10-62	M10-1.50	Spirallock†	
M931-08060-60	M8-1.25 x 60	M933-10012-60	M10-1.50 x 12	M982-10-80	M10-1.50	Elastic Stop	
M931-08070-60	M8-1.25 x 70	M961-10020-60	M10-1.25 x 20	M934-12-60	M12-1.75	Standard	
M931-08070-82	M8-1.25 x 70*	M933-10020-60	M10-1.50 x 20	M934-12-60F	M12-1.25	Standard	
M931-08075-60	M8-1.25 x 75	M933-10025-60	M10-1.50 x 25	M6923-12-80	M12-1.75	Spirallock	
M931-08080-60	M8-1.25 x 80	M961-10030-60	M10-1.25 x 30	M982-12-80	M12-1.75	Elastic Stop	
M931-08090-60	M8-1.25 x 90	M933-10030-60	M10-1.50 x 30	M982-14-80	M14-2.00	Elastic Stop	
M931-08095-60	M8-1.25 x 95	M933-10030-82	M10-1.50 x 30*	M6923-16-80	M16-2.00	Spirallock	
M931-08100-60	M8-1.25 x 100	M961-10035-60	M10-1.25 x 35	M982-16-80	M16-2.00	Elastic Stop	
M931-08120-60	M8-1.25 x 120	M933-10035-60	M10-1.50 x 35	M934-18-80	M18-2.5	Standard	
M931-08130-60	M8-1.25 x 130	M933-12016-60	M12-1.75 x 16	M982-18-80	M18-2.50	Elastic Stop	
M931-08140-60	M8-1.25 x 140	M933-12020-60	M12-1.75 x 20	M934-20-80	M20-2.50	Standard	
M931-10040-82	M10-1.25 x 40*	M933-12025-60	M12-1.75 x 25	M982-20-80	M20-2.50	Elastic Stop	
M931-10040-60	M10-1.50 x 40	M933-12025-82	M12-1.75 x 25*	M934-22-60	M22-2.50	Standard	
M931-10045-60	M10-1.50 x 45	M961-12030-60	M12-1.25 x 30	M934-24-80	M24-3.00	Standard	
M931-10050-60	M10-1.50 x 50	M933-12030-60	M12-1.75 x 30	M982-24-80	M24-3.00	Elastic Stop	
M931-10055-60	M10-1.50 x 55	M933-12035-60	M12-1.75 x 35	M934-30-80	M30-3.50	Standard	
M931-10060-60	M10-1.50 x 60	M961-12040-82	M12-1.25 x 40*	Washers			
M931-10065-60	M10-1.50 x 65	M933-12040-60	M12-1.75 x 40	Part No.	ID	OD	Bolt/ Thick. Screw
M931-10070-60	M10-1.50 x 70	M933-12040-82	M12-1.75 x 40*	M125A-03-80	3.2	7.0	0.5 M3
M931-10080-60	M10-1.50 x 80	M961-14025-60	M14-1.50 x 25	M125A-04-80	4.3	9.0	0.8 M4
M931-10090-60	M10-1.50 x 90	M933-14025-60	M14-2.00 x 25	M125A-05-80	5.3	10.0	1.0 M5
M931-10090-82	M10-1.50 x 90*	M961-16025-60	M16-1.50 x 25	M125A-06-80	6.4	12.0	1.6 M6
M931-10100-60	M10-1.50 x 100	M933-16025-60	M16-2.00 x 25	M125A-08-80	8.4	16.0	1.6 M8
M931-10110-60	M10-1.50 x 110	M961-16030-82	M16-1.50 x 30*	M125A-10-80	10.5	20.0	2.0 M10
M931-10120-60	M10-1.50 x 120	M933-16030-82	M16-2.00 x 30*	M125A-12-80	13.0	24.0	2.5 M12
M931-10130-60	M10-1.50 x 130	M933-16035-60	M16-2.00 x 35	M125A-14-80	15.0	28.0	2.5 M14
M931-10140-60	M10-1.50 x 140	M961-16040-60	M16-1.50 x 40	M125A-16-80	17.0	30.0	3.0 M16
M931-10180-60	M10-1.50 x 180	M933-16040-60	M16-2.00 x 40	M125A-18-80	19.0	34.0	3.0 M18
M931-12045-60	M12-1.75 x 45	M933-16050-60	M16-2.00 x 50	M125A-20-80	21.0	37.0	3.0 M20
M960-12050-60	M12-1.25 x 50	M933-16050-82	M16-2.00 x 50*	M125A-24-80	25.0	44.0	4.0 M24
M960-12050-82	M12-1.25 x 50*	M933-16060-60	M16-2.00 x 60				
M931-12050-60	M12-1.75 x 50	M933-18035-60	M18-2.50 x 35				
M931-12055-60	M12-1.75 x 55	M933-18050-60	M18-2.50 x 50				
M931-12060-60	M12-1.75 x 60	M933-18060-60	M18-2.50 x 60				
M931-12065-60	M12-1.75 x 65	M933-20050-60	M20-2.50 x 50				
M931-12075-60	M12-1.75 x 75	M933-20055-60	M20-2.50 x 55				
M931-12080-60	M12-1.75 x 80	Pan Head Machine Screws					
M931-12090-60	M12-1.75 x 90	M7985A-03010-20	M3-0.50 x 10				
M931-12100-60	M12-1.75 x 100	M7985A-03012-20	M3-0.50 x 12				
M931-12110-60	M12-1.75 x 110	M7985A-04010-20	M4-0.70 x 10				
M960-16090-60	M16-1.50 x 90	M7985A-04020-20	M4-0.70 x 20				
M931-16090-60	M16-2.00 x 90	M7985A-04100-20	M4-0.70 x 100				
M931-16100-60	M16-2.00 x 100	M7985A-05010-20	M5-0.80 x 10				
M931-20065-60	M20-2.50 x 65	M7985A-05012-20	M5-0.80 x 12				
M931-20120-60	M20-2.50 x 120	M7985A-05016-20	M5-0.80 x 16				
M931-20160-60	M20-2.50 x 160	M7985A-05100-20	M5-0.80 x 100				
M931-22090-60	M22-2.50 x 90	M7985A-06100-20	M6-1.00 x 100				
M931-22120-60	M22-2.50 x 120	Flat Head Machine Screws					
M931-22160-60	M22-2.50 x 160	M965A-04012-SS	M4-0.70 x 12				
M931-24090-60	M24-3.00 x 90	M965A-05012-SS	M5-0.80 x 12				
M931-24120-60	M24-3.00 x 120	M965A-05016-20	M5-0.80 x 16				
M931-24160-60	M24-3.00 x 160						

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

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

TP-6078 9/01b

© 2000, 2001 by Kohler Co.. All rights reserved.

KOHLER[®] POWER SYSTEMS

KOHLER CO. Kohler, Wisconsin 53044
Phone 920-565-3381, Web site www.kohlergenerators.com
Fax 920-459-1646 (U.S.A. Sales), Fax 920-459-1614 (International)
For the nearest sales and service outlet in U.S.A. and Canada
Phone 1-800-544-2444