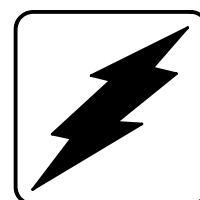


Service Parts

Commercial/Residential Generator Sets



Models:

17/22RY

KOHLER®
POWER SYSTEMS

ISO 9001
KOHLER
GENERATORS
INTERNATIONALLY REGISTERED

TP-6007 10/06e

Common Replacement Parts

Figure 1 identifies common replacement parts for your generator set. Refer to the groups on the following pages for a complete list of maintenance and service parts.

Description	Part Number	Quantity On Specification			
		1105xx	GM13954-GAx	GM17789-GAx	GM20595-GAx
Belt, V, 34 in.	254782	1	1	1	
Belt, V, 35.5 in.	358249				1
Element, air cleaner	254772	1			
Element, air cleaner	258423		1	1	1
Filter, oil	326817	1	1	1	1
Fuse, 5 amp	358336	1			
Fuse, 10 amp (generator)	358337	1			
Fuse, 10 amp (controller)	223316	1			
Hose, upper radiator	226318	1	1	1	
Hose, upper radiator	GM13995				1
Hose, lower radiator	358162	1	1	1	
Hose, lower radiator	GM13994				1
Spark plug	224703	4	4	4	4
Thermostat	276162-S	1	1	1	1

Figure 1 Common Replacement Parts

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Notes

Introduction

This manual lists service replacement parts for 17/22RY 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

Engine Parts

Group Title	<i>Gaskets and Seals</i>	<i>Cylinder Block</i>	<i>Cylinder Head and Valves</i>	<i>Front Cover Assembly</i>	<i>Camshaft and Valve Control</i>	<i>Crankshaft and Piston</i>	<i>Flywheel and Clutch</i>	<i>Oil Pump and Oil Pan</i>	<i>Fan and Water Pump</i>	<i>Intake/Exhaust Manifold</i>	<i>Ignition Module and Plugs</i>
Group No.	1	2	3	4	5	6	7	8	9	10	12
Spec No.	VARIATION NUMBER										

17RY											
PA-110564	2	2	2	1	2	1	1	1	1	1	1
PA-110565	2	2	2	1	2	1	1	1	1	1	1
PA-110570	2	2	2	1	2	1	1	1	1	1	1
PA-110571	2	2	2	1	2	1	1	1	1	1	1
PA-110572	2	2	2	1	2	1	1	1	1	1	1
PA-110576	2	2	2	1	2	1	1	1	1	1	1
GM13954-GA1	2	2	2	1	2	1	1	1	1	1	1
GM13954-GA2	2	2	2	1	2	1	1	1	1	1	1
GM17789-GA1	2	2	2	1	2	1	1	1	1	1	1
GM17789-GA2	2	2	2	1	2	1	1	1	1	1	1
GM20595-GA1	2	2	2	1	2	1	1	1	1	1	1
22RY											
PA-110566	2	2	2	1	2	1	1	1	1	1	1
PA-110567	2	2	2	1	2	1	1	1	1	1	1
PA-110573	2	2	2	1	2	1	1	1	1	1	1
PA-110574	2	2	2	1	2	1	1	1	1	1	1
PA-110575	2	2	2	1	2	1	1	1	1	1	1
PA-110577	2	2	2	1	2	1	1	1	1	1	1
GM13954-GA3	2	2	2	1	2	1	1	1	1	1	1
GM13954-GA4	2	2	2	1	2	1	1	1	1	1	1
GM17789-GA3	2	2	2	1	2	1	1	1	1	1	1
GM17789-GA4	2	2	2	1	2	1	1	1	1	1	1
GM20595-GA2	2	2	2	1	2	1	1	1	1	1	1

Specification Number Index

Generator Set Parts

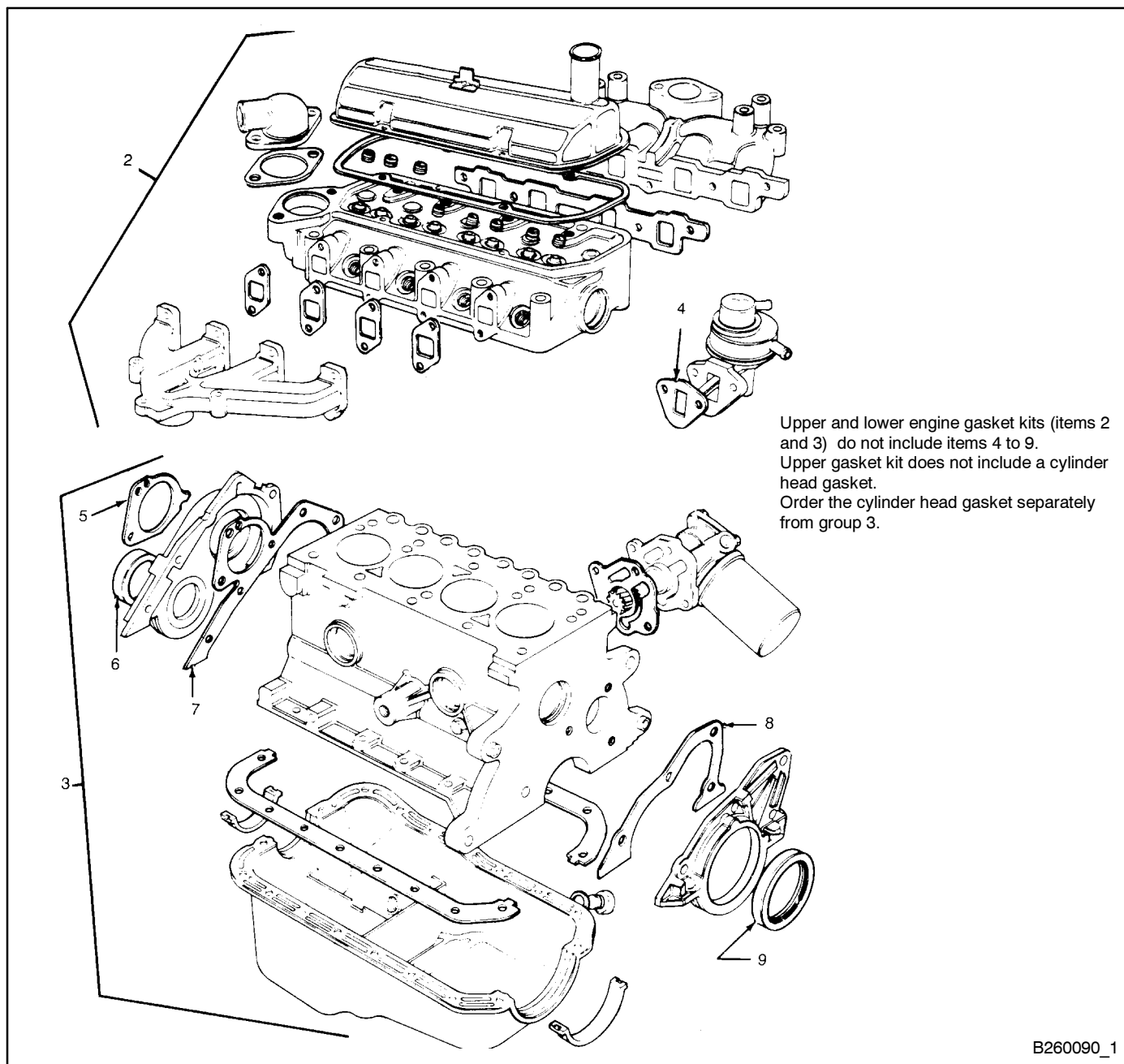
Group Title	<i>Air Intake</i>	<i>Fuel System</i>	<i>Cooling System</i>	<i>Engine</i>	<i>Nameplates and Decals</i>	<i>Skid and Plant Mounting</i>	<i>Exhaust System</i>	<i>Generator and Mounting</i>	<i>Controller and Mounting</i>	<i>Housing and Mounting</i>	<i>Literature</i>	<i>Block Heater</i>
Group No.	101	103	104	105	107	109	116	201	301	501	701	911
Spec No.	VARIATION NUMBER											

17RY												
PA-110564	3	19	20	35	60	17	1	35	28	1	12	—
PA-110565	3	19	20	35	61	17	1	36	29	1	12	—
PA-110570	3	19	20	35	60	17	—	*	*	2	12	—
PA-110571	3	19	20	35	62	17	1	35	28	1	12	1
PA-110572	3	19	20	35	62	17	1	35	28	1	12	1
PA-110576	3	19	20	35	64	17	—	*	*	2	16	—
GM13954-GA1	9	21	20	38	60	17	—	*	*	2	16	—
GM13954-GA2	9	21	20	38	64	17	—	*	*	2	16	—
GM17789-GA1	GR2	GR3	GR4	GR1	GR6	GR5	—	*	*		16	—
GM17789-GA2	GR2	GR3	GR4	GR1	GR8	GR5	—	*	*		16	—
GM20595-GA1	GR2	GR3	5-GR4	5-GR1	5-GR6	5-GR5	—	*	*		16	—
22RY												
PA-110566	3	19	20	35	57	17	1	37	28	1	12	—
PA-110567	3	19	20	35	59	17	1	38	29	1	12	—
PA-110573	3	19	20	35	57	17	—	*	*	2	12	—
PA-110574	3	19	20	35	63	17	1	37	28	1	12	1
PA-110575	3	19	20	35	63	17	1	37	28	1	12	1
PA-110577	3	19	20	35	65	17	—	*	*	2	17	—
GM13954-GA3	9	21	20	38	57	17	—	*	*	2	17	—
GM13954-GA4	9	21	20	38	65	17	—	*	*	2	17	—
GM17789-GA3	GR2	GR3	GR4	GR1	GR7	GR5	—	*	*	—	17	—
GM17789-GA4	GR2	GR3	GR4	GR1	GR9	GR5	—	*	*	—	17	—
GM20595-GA2	GR2	GR3	5-GR4	5-GR1	5-GR7	5-GR5	—	*	*	—	17	—

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

— Not applicable.

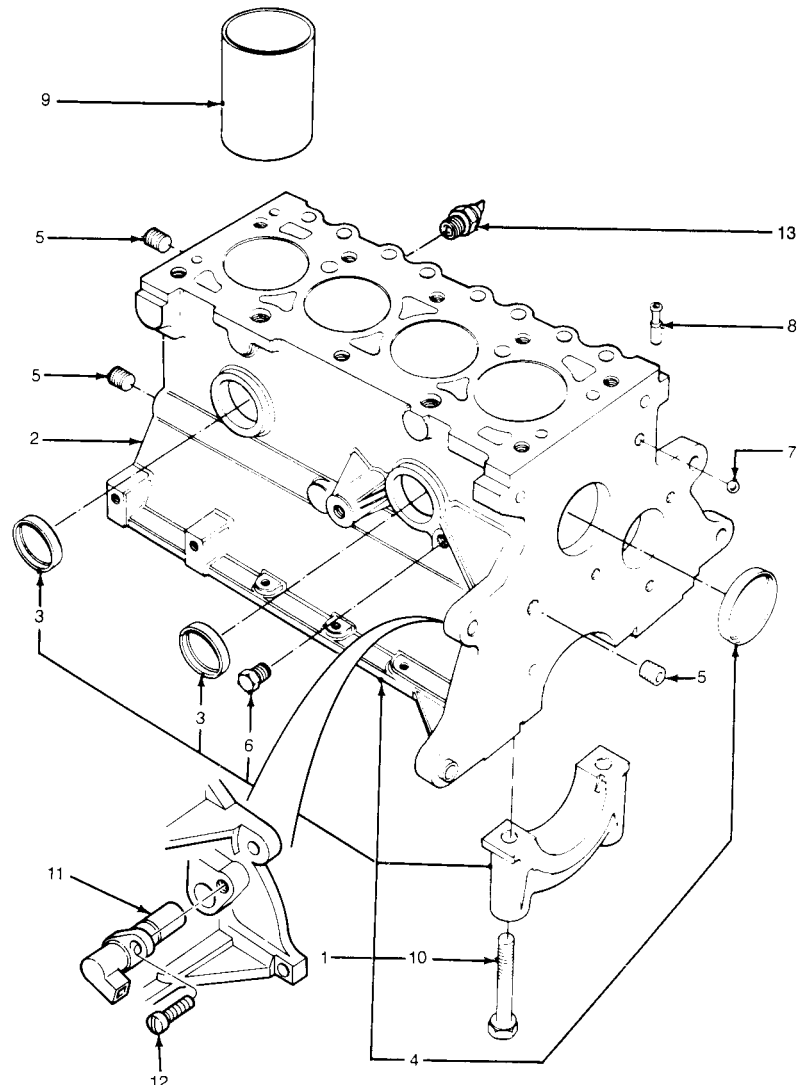
Group 1: Gaskets and Seals



B260090_1

Item	Part Number	Description	Quantity	
			Variation No.	
			1	2
1	—	Engine gasket kit, complete (not available)	1	
1	224705	Engine gasket kit, complete		1
2	224707	Engine gasket kit, upper	1	1
3	224704	Engine gasket kit, lower	1	
3	279145	Engine gasket kit, lower		1
4	246058	Gasket, fuel pump	1	1
5	224773	Gasket, water pump	1	1
6	279112	Seal, front cover	1	1
7	224722	Gasket, front cover	1	1
8	224748	Gasket, rear retainer	1	
8	224749	Gasket, rear retainer		1
9	224782	Seal, crankshaft rear	1	
9	276192	Seal, crankshaft rear		1

Group 2: Cylinder Block

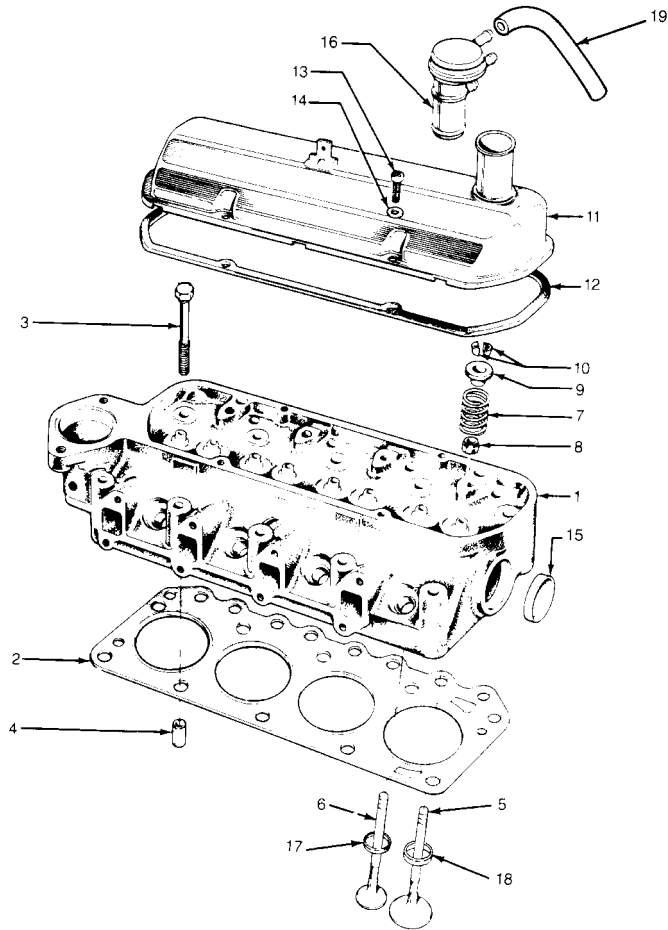


B260090_2

Item	Part Number	Description	Quantity	
			Variation No. 1	Variation No. 2
1	276194	Block, cylinder, basic	1	
1	224718	Block, cylinder, basic		1
2	276195	Block, cylinder (includes crank, pistons, rings, etc.)	1	
2	224720	Block, cylinder (includes crank, pistons, rings, etc.)		1
3	279188	Plug, 41.6 mm	2	2
4	279187	Plug, 51 mm	1	1
5	#	Plug, 1/4 in. NPT	3	3
6	#	Plug, 1/4 in. NPT	1	1
7	279214	Plug, ball (oil gallery)	1	1
8	279193	Adapter	1	1
9	224726	Liner, cylinder	4	
9	224727	Liner, cylinder		4
10	279173	Bolt, main bearing cap	10	10
11	224716	Transducer (speed sensor)	1	1
12	#	Screw, M6 x 14 mm	1	1
13	276456	Switch, oil pressure	1	1

Common hardware; procure locally.

Group 3: Cylinder Head and Valves

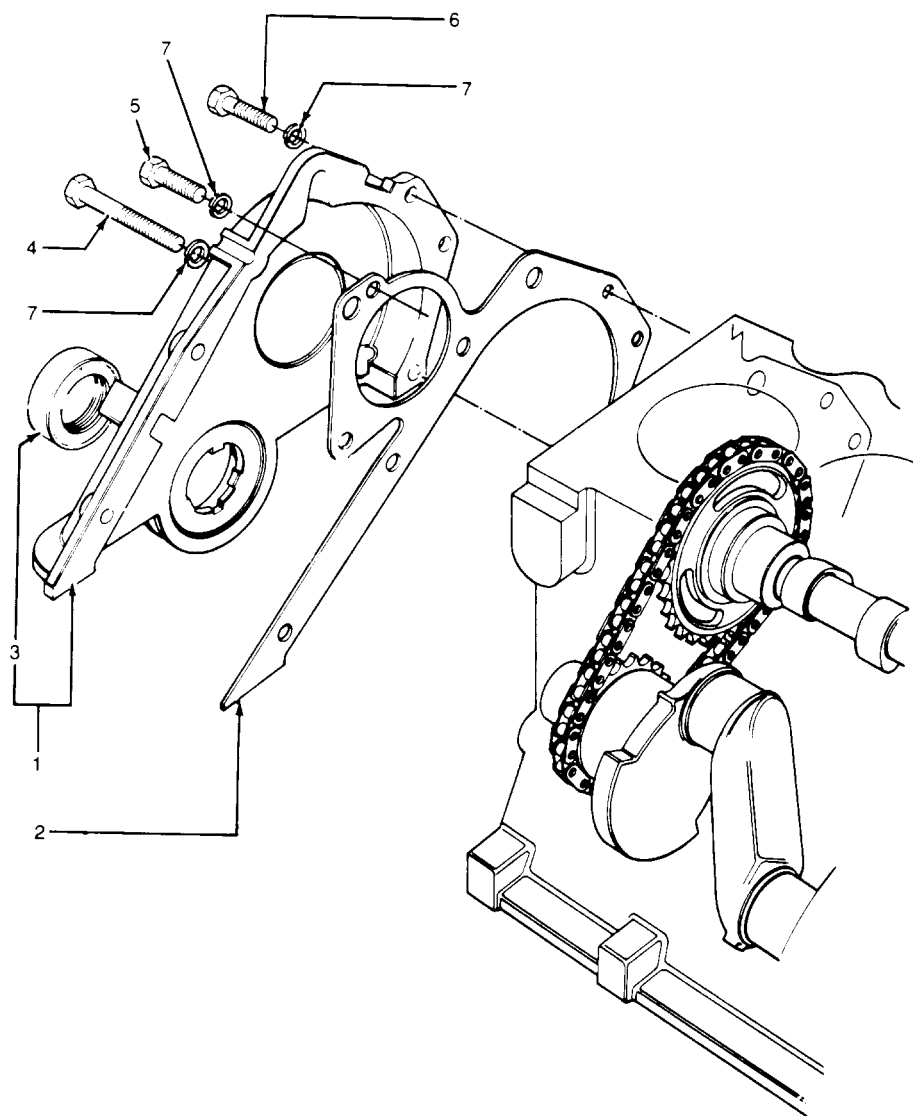


B260090_3

Item	Part Number	Description	Quantity	
			Variation No. 1	Variation No. 2
1	GM24858	Cylinder head assembly	1	
1	224723	Cylinder head assembly		1
2	224724	Gasket, cylinder head	1	
2	224725	Gasket, cylinder head		1
3	224731	Bolt, cylinder head	10	10
4	224791	Dowel, cylinder head to block	2	2
5	224755	Valve, intake, standard	4	
5	224757	Valve, intake, standard		4
5	224756	Valve, intake, 0.4 oversized	4	
5	224758	Valve, intake, 0.4 oversized		4
6	224754	Valve, exhaust, standard	4	4
6	224753	Valve, exhaust, 0.4 oversized	4	4
7	224759	Spring, valve	8	8
8	224709	Seal, valve stem	8	8
9	224770	Retainer	8	8
10	224708	Lock, valve spring	16	16
11	224762	Cover, rocker arm	1	1
12	279084	Gasket, rocker arm cover	1	1
13	224789	Screw, rocker cover/head	4	4
14	#	Washer, flat, 6 mm	4	4
15	279188	Plug, 41.6 mm	1	1
16	279115	Cap, oil breather	1	1
17	224730	Insert, exhaust valve seat	4	4
18	224728	Insert, intake valve seat	4	
18	224729	Insert, intake valve seat		4
19	224794	Hose, PCV	1	1

Common hardware; procure locally.

Group 4: Front Cover Assembly

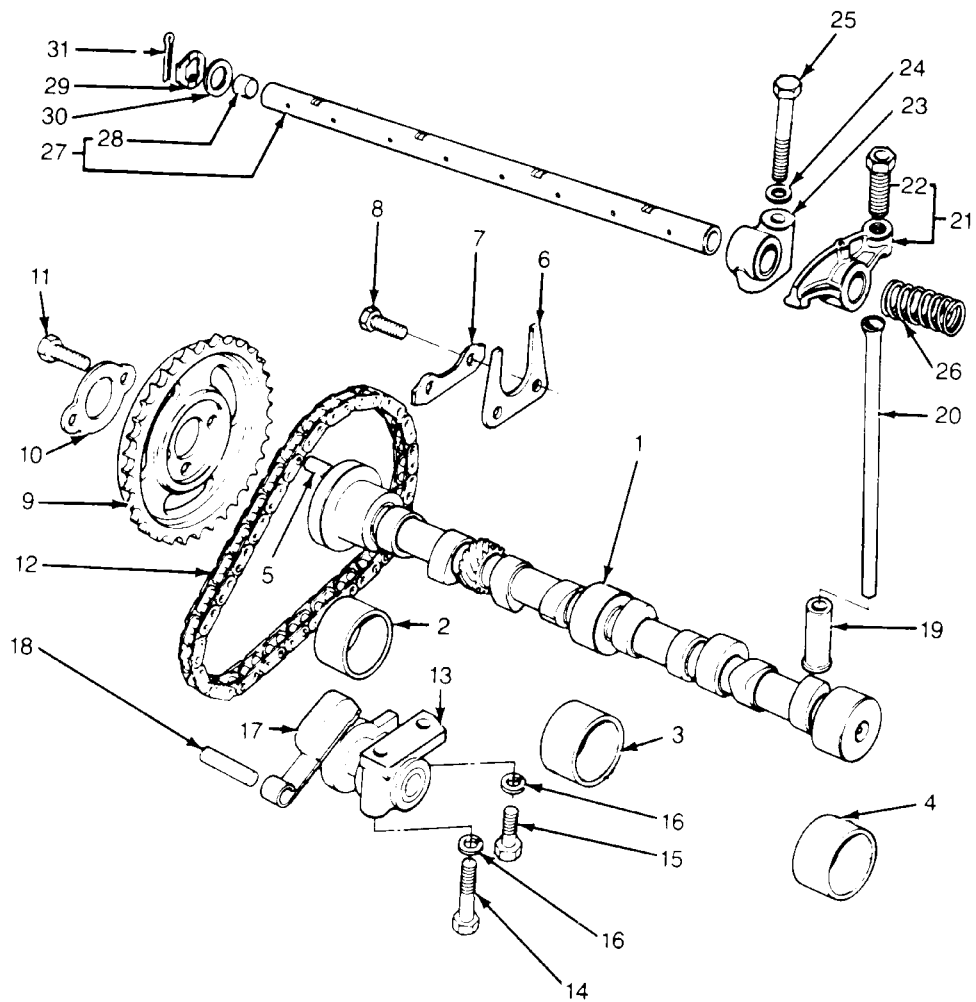


B260090_4

Item	Part Number	Description	Quantity
			Variation No.
1	224721	Cover and seal assembly	1
2	224722	Gasket, front cover	1
3	279111	Seal, front cover	1
4	#	Bolt, M6 x 45	1
5	#	Bolt, M6 x 40	3
6	#	Bolt, M6 x 18	4
7	#	Washer, split lock	8

Common hardware; procure locally.

Group 5: Camshaft and Valve Control



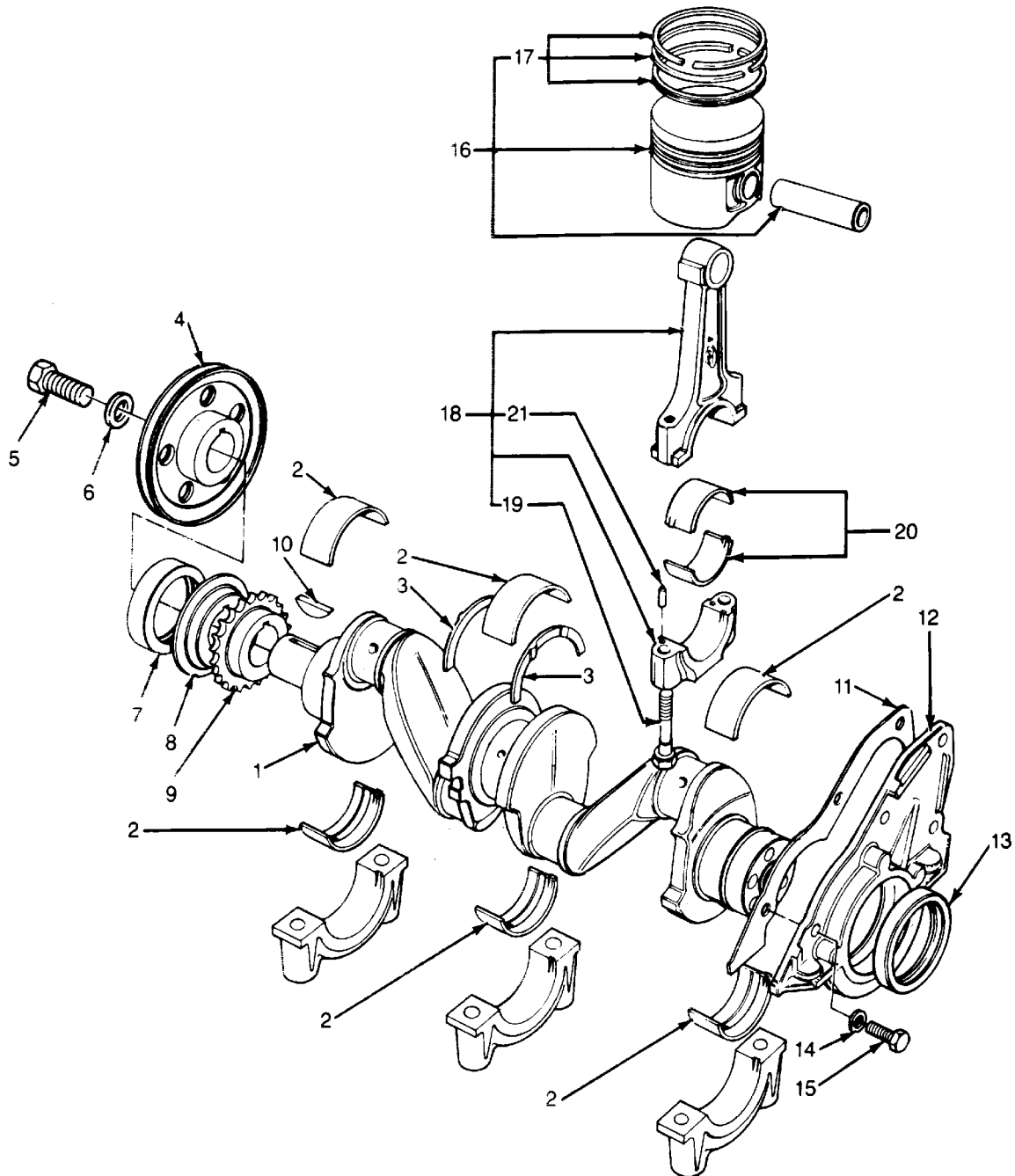
B260090_5

Group 5: Camshaft and Valve Control

Item	Part Number	Description	Quantity	
			Variation No.	
			1	2
1	224739	Camshaft	1	
1	224740	Camshaft		1
2	279155	Bearing, standard ID, standard OD	1	1
2	279156	Bearing, standard ID, 0.02 OD	1	1
3	279157	Bearing, standard ID, standard OD	1	1
3	279158	Bearing, standard ID, 0.02 OD	1	1
4	279157	Bearing, standard ID, standard OD	1	1
4	279158	Bearing, standard ID, 0.02 OD	1	1
5	279152	Pin, dowel	1	1
6	279160	Plate, thrust	1	1
7	279153	Retainer	1	1
8	#	Bolt, M6 x 16	2	2
9	279067	Sprocket, camshaft	1	1
10	279154	Retainer	1	1
11	#	Bolt, M8 x 16	2	2
12	279159	Chain	1	1
13	279171	Tensioner	1	1
14	#	Bolt, M6 x 55	1	1
15	#	Bolt, M6 x 16	1	1
16	#	Washer, 1/4 split lock	2	2
17	279092	Arm, tensioner	1	1
18	279172	Pin	1	1
19	224752	Tappet, standard	8	8
20	224761	Rod, push valve	8	8
21	224760	Arm, valve rocker, right with screw	4	4
21	224771	Arm, valve rocker, left with screw	4	4
22	279163	Screw, self-locking	8	8
23	279081	Support, rocker arm shaft	4	4
24	#	Washer, B10 x 20 x 2.5	4	4
25	224788	Bolt, rocker support	4	4
26	279164	Spring, locating	3	3
27	279091	Rocker arm shaft assembly	1	1
28	279170	Plug, rocker arm shaft, 11 mm	2	2
29	279085	Washer, spring	2	2
30	279048	Washer, flat	2	2
31	279055	Pin, cotter, 2.3 mm	2	2

Common hardware; procure locally.

Group 6: Crankshaft and Piston



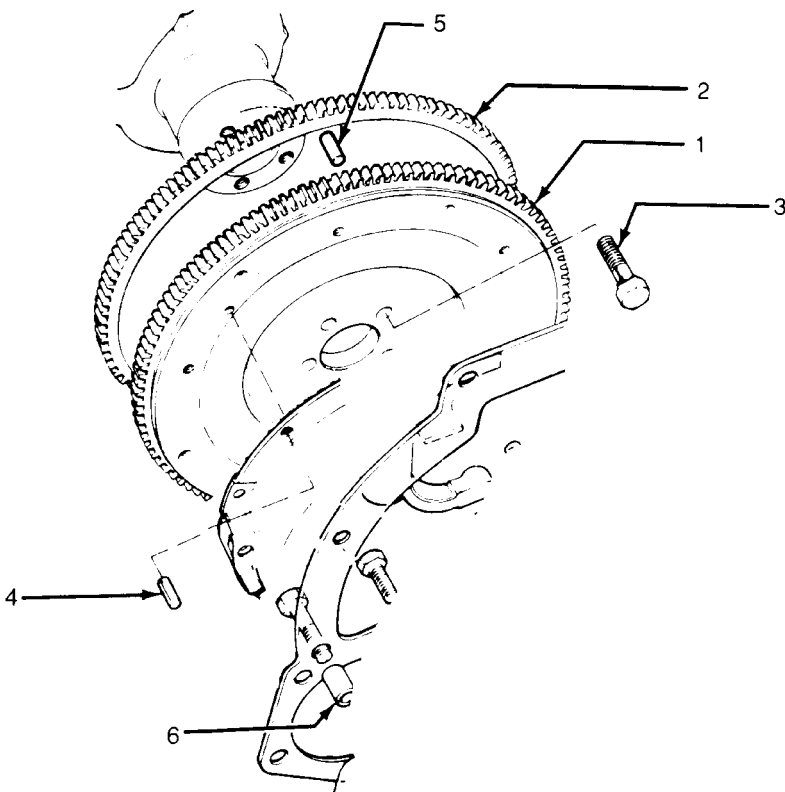
B260090_6

Group 6: Crankshaft and Piston

Item	Part Number	Description	Quantity	
			Variation No.	
			1	2
1	224742	Crankshaft assembly	1	1
2	224743	Main bearing, upper half, standard OD, standard ID	5	5
2	276193	Main bearing, lower half, standard OD, standard ID	5	5
2	224744	Main bearing, standard OD, 0.005 undersized ID	5	5
2	224745	Main bearing, standard OD, 0.01 undersized ID	5	5
2	224746	Main bearing, standard OD, 0.02 undersized ID	5	5
2	224747	Main bearing, standard OD, 0.03 undersized ID	5	5
3	224768	Washer, main bearing, standard	2	2
3	224769	Washer, main bearing, 0.015 oversized	2	2
4	224701	Pulley, crankshaft	1	1
5	#	Bolt, pulley/crankshaft	1	1
6	#	Washer, pulley/crankshaft, B12	1	1
7	279112	Seal, timing cover	1	1
8	279189	Slinger, oil	1	1
9	279161	Sprocket	1	1
10	279169	Key, woodruff	1	1
11	224749	Gasket, rear retainer	1	1
12	279142	Rear retainer assembly	1	1
13	276192	Seal, crankshaft rear	1	1
14	#	Washer, lock, B8	4	4
15	#	Bolt, M8 x 20	4	4
16	224735	Piston assembly, standard	4	
16	224732	Piston assembly, standard		4
16	224736	Piston assembly, 0.02 oversized	4	
16	224733	Piston assembly, 0.02 oversized		4
16	224737	Piston assembly, 0.04 oversized	4	
16	224734	Piston assembly, 0.04 oversized		4
17	276437	Ring set, standard	4	
17	276434	Ring set, standard		4
17	276438	Ring set, 0.02 oversized	4	
17	276435	Ring set, 0.02 oversized		4
17	276439	Ring set, 0.04 oversized	4	
17	276436	Ring set, 0.04 oversized		4
18	276440	Connecting rod assembly	4	
19	224738	Bolt, connecting rod	8	8
20	276441	Bearing, connecting rod, standard	8	8
20	276442	Bearing, connecting rod, 0.001 undersized	8	8
20	276443	Bearing, connecting rod, 0.02 undersized	8	8
20	276444	Bearing, connecting rod, 0.03 undersized	8	8
21	276445	Pin, connecting rod	8	8

Common hardware; procure locally.

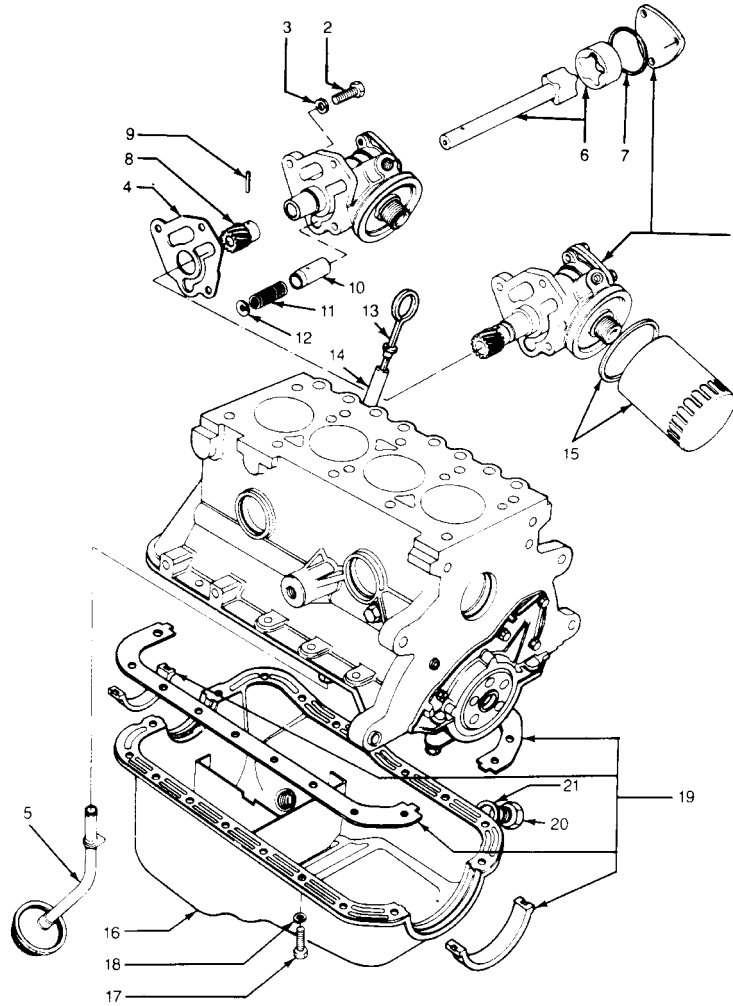
Group 7: Flywheel and Clutch



B260090_7

Item	Part Number	Description	Quantity
			Variation No.
1	224751	Flywheel and ring gear assembly	1
2	279190	Gear, ring	1
3	224780	Bolt, M10 x 22.5	6
4	224779	Dowel	3
5	224792	Dowel, flywheel and crankshaft	1
6	279053	Dowel	2

Group 8: Oil Pump and Pan

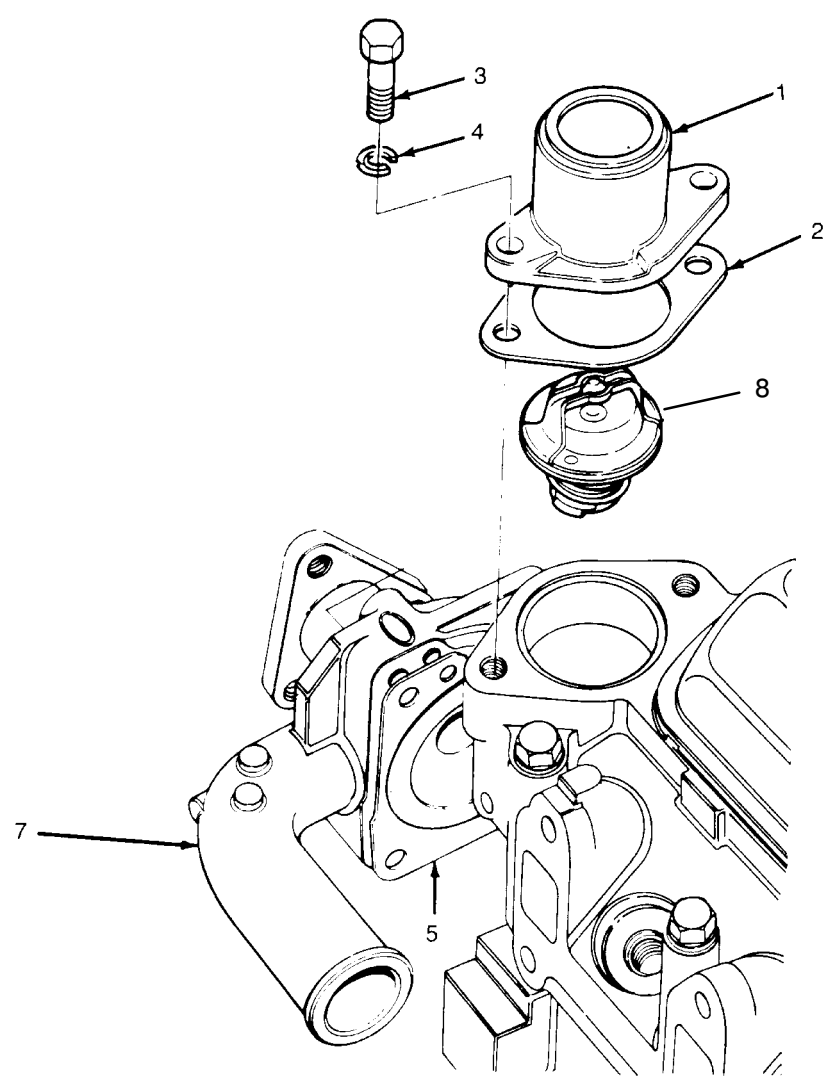


B260090_8

Item	Part Number	Description	Quantity
			Variation No.
1	279191	Pump, oil	1
2	244790	Bolt	3
3	224787	Washer, lock, B8	3
4	224764	Gasket, oil pump	1
5	224763	Oil pickup tube assembly	1
6	279178	Rotor and shaft	1
7	279050	Seal, cover plate	1
8	279165	Gear, oil pump	1
9	279060	Pin, drive gear	1
10	279168	Plunger, oil pump	1
11	279167	Spring	1
12	279166	Plug	1
13	244766	Indicator, oil level	1
14	224767	Tube, oil level	1
15	326817	Filter, oil	1
16	279141	Pan, oil	1
17	#	Bolt, oil pan, M6 x 14	18
18	#	Washer, lock, 1/4	18
19	279145	Kit, oil pan gasket	1
20	224784	Plug, oil drain	1
21	224785	Gasket, oil drain plug	1

Common hardware; procure locally.

Group 9: Fan and Water Pump



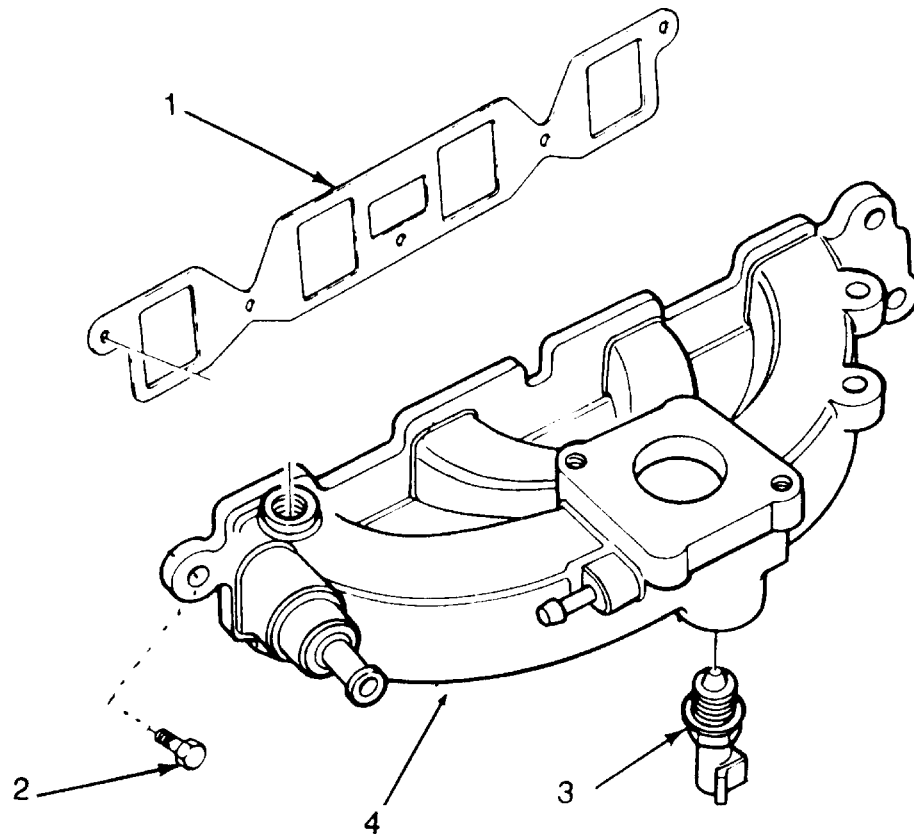
Additional cooling system components are listed in Group 104, Cooling System.

B260090_9

Item	Part Number	Description	Quantity	
			Variation No.	
			1	2
1	224700	Connection, water outlet, vertical	1	1
2	229963	Gasket, water outlet	1	1
3	#	Bolt, M8 x 20	2	2
4	#	Washer, lock, B8	2	2
5	224773	Gasket, water pump	1	1
6	#	Bolt, M6 x 50	3	3
7	224363	Pump, water service kit	1	
7	224772	Pump, water		1
8	276162-S	Thermostat	1	1

Common hardware; procure locally.

Group 10: Intake Manifold



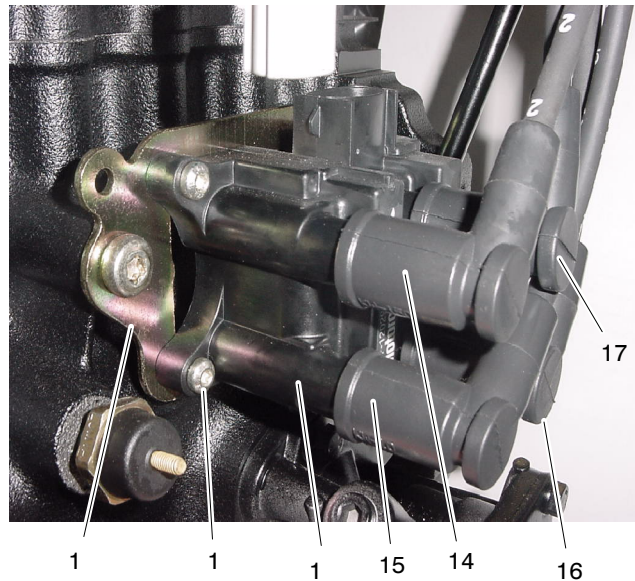
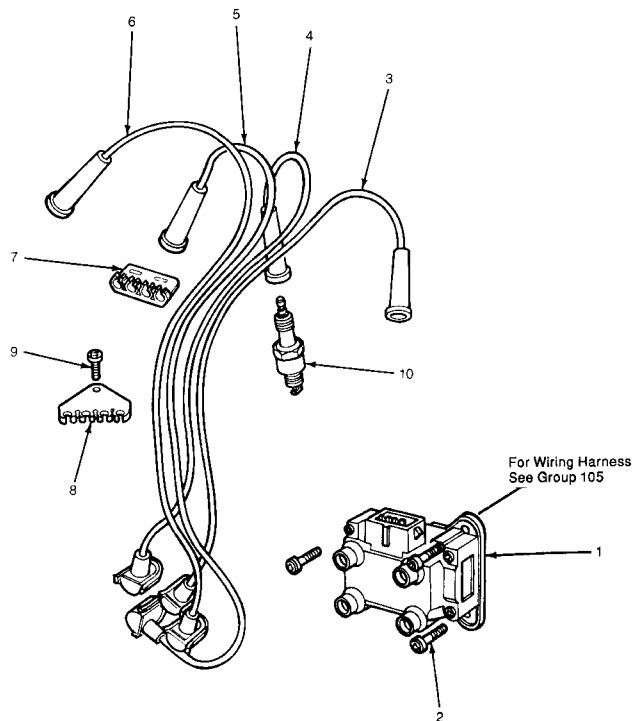
See Group 101 and Group 104 for additional manifold components.

B260090_10

Item	Part Number	Description	Quantity
			Variation No.
1	246067	Gasket, intake manifold	1
2	#	Bolt, M8 x 25	6
3	224786	Sensor, water temperature	1
4	276466	Manifold, intake, gas only	1
		See Group 101 for gasoline intake manifold	

Common hardware; procure locally.

Group 12: Ignition Module and Spark Plugs



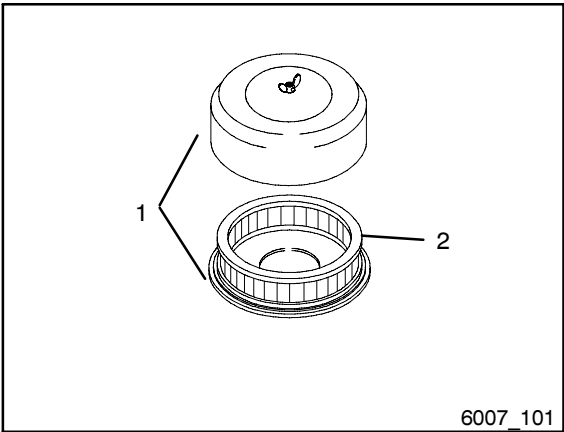
See Group 105 Engine for additional ignition components.

B260090_12a

Item	Part Number	Description	Quantity
			Variation No.
1	224710	Coil and bracket assembly (engine built before August/September 1998)	1
1	GM23701	Coil assembly, ignition (engine built date later than August/September 1998)	1
1	GM23702	Bracket, mounting (engine built date later than August/September 1998)	1
1	GM23703	Screw, M5 x 16 (attaches coil to bracket) (engine built date later than August/September 1998)	4
2	#	Screw, M8 x 14	3
3	224713	Wire, spark plug #1 (engine built before August/September 1998)	1
3	GM23706	Wire, spark plug #1 (engine built date later than August/September 1998)	1
4	224711	Wire, spark plug #2 (engine built before August/September 1998)	1
4	GM23704	Wire, spark plug #2 (engine built date later than August/September 1998)	1
5	224712	Wire, spark plug #3 (engine built before August/September 1998)	1
5	GM23705	Wire, spark plug #3 (engine built date later than August/September 1998)	1
6	224714	Wire, spark plug #4 (engine built before August/September 1998)	1
6	GM23707	Wire, spark plug #4 (engine built date later than August/September 1998)	1
7	224793	Separator, ignition wire	1
8	224715	Separator, ignition wire	1
9	#	Screw, M4 x 10	1
10	224703	Spark plug	4

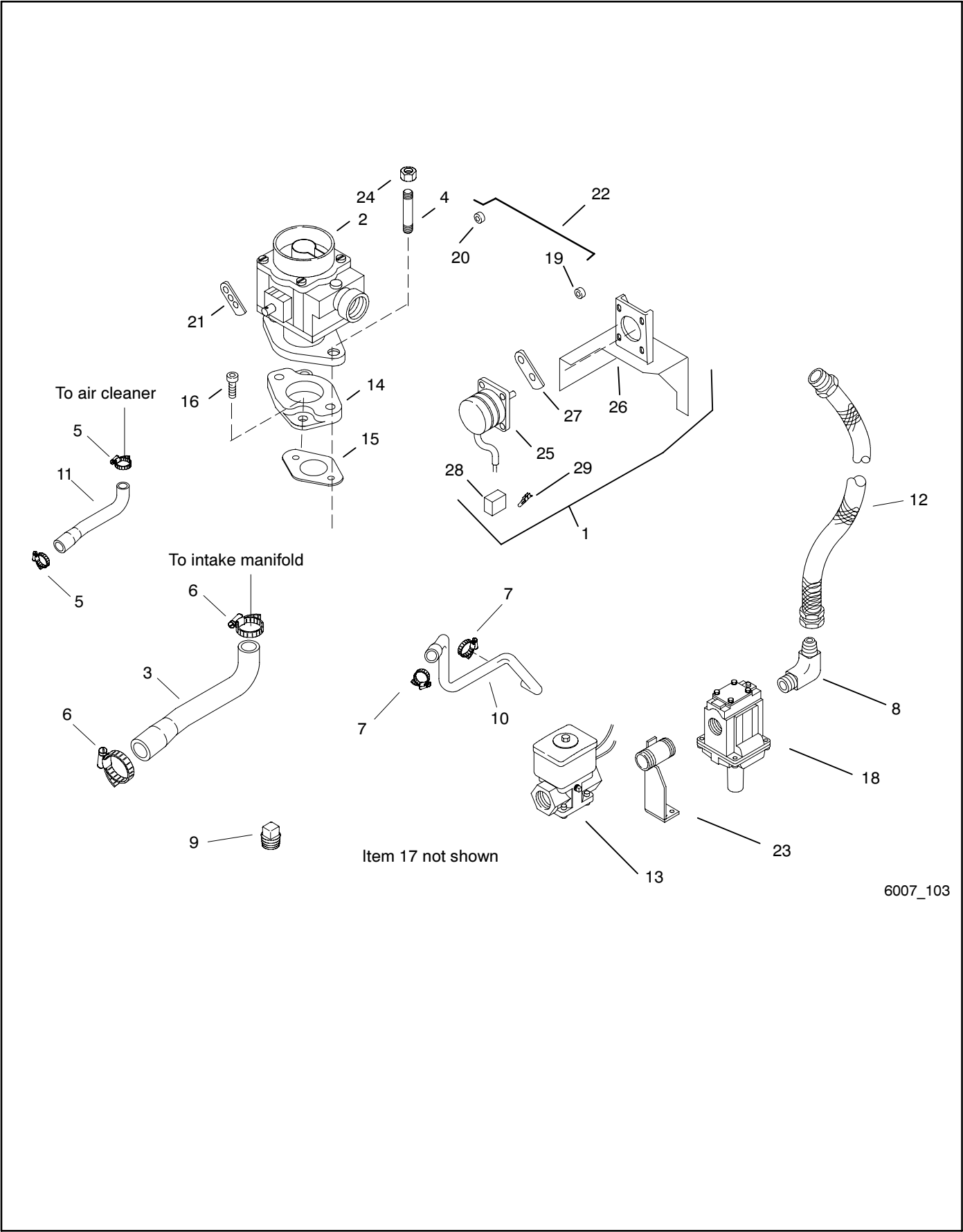
Common hardware; procure locally.

Group 101: Air Intake



Item	Part Number	Description	Quantity		
			Variation No.		
			3	9	GR2
1	A-254767	Cleaner assembly, air	1		
1	A-358368	Cleaner assembly, air		1	1
2	254772	Element, air cleaner	1		
2	258423	Element, air cleaner		1	1

Group 103: Fuel System



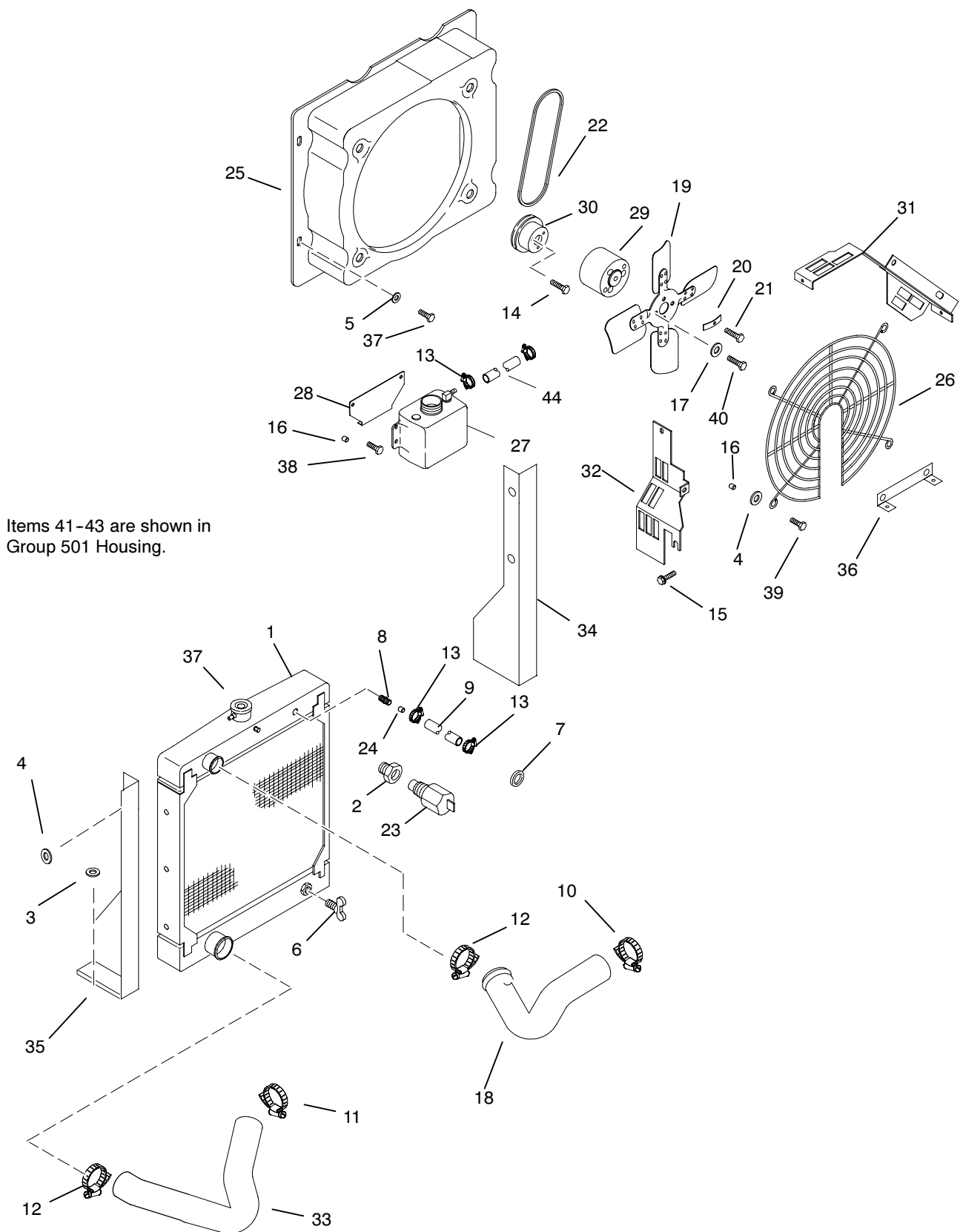
6007_103

Group 103: Fuel System

Item	Part Number	Description	Quantity		
			Variation No.		
			19	21	GR3
1	A-358157	Governor assembly	1	1	1
2	A-358228	Carburetor assembly	1		
2	A-358379	Carburetor assembly		1	1
3	X-312-18	Hose	1	1	1
4	X-352-37	Stud	2	2	2
5	X-426-10	Clamp, hose	2	2	2
6	X-426-3	Clamp, hose, 1/2 x 1 13/32 in.	2	2	2
7	X-426-9	Clamp, hose	2	2	2
8	X-447-16	Elbow, oil line	1	1	1
9	X-75-51	Plug, pipe	1	1	1
10	226362	Hose, molded	1	1	1
11	226363	Hose, molded	1	1	1
12	226378	Line, flexible fuel	1	1	1
13	254859	Valve assembly, gas	1	1	1
14	256947	Adapter, carburetor	1	1	1
15	256948	Gasket, intake manifold	1	1	1
16	256957	Screw, socket head	2	2	2
17	258558	Tag, instruction	1	1	1
18	291259	Regulator, pressure	1	1	1
19	337358	Bushing	1	1	1
20	337359	Bushing	1	1	1
21	358156	Lever, carburetor	1	1	1
22	358229	Linkage, throttle	1	1	1
23	358230	Bracket, fuel valve	1	1	1
24	#	Nut, 5/16-18	2	2	2
25	358155	Actuator, rotary	1	1	1
26	358159	Bracket, governor mounting	1	1	1
27	358358	Coupling, stepper motor	1	1	1
28	239549	Connector, jack, 6-position	1	1	1
29	239516	Terminal, pin, male, 18-26 AWG	6	6	6

Common hardware; procure locally.

Group 104: Cooling System

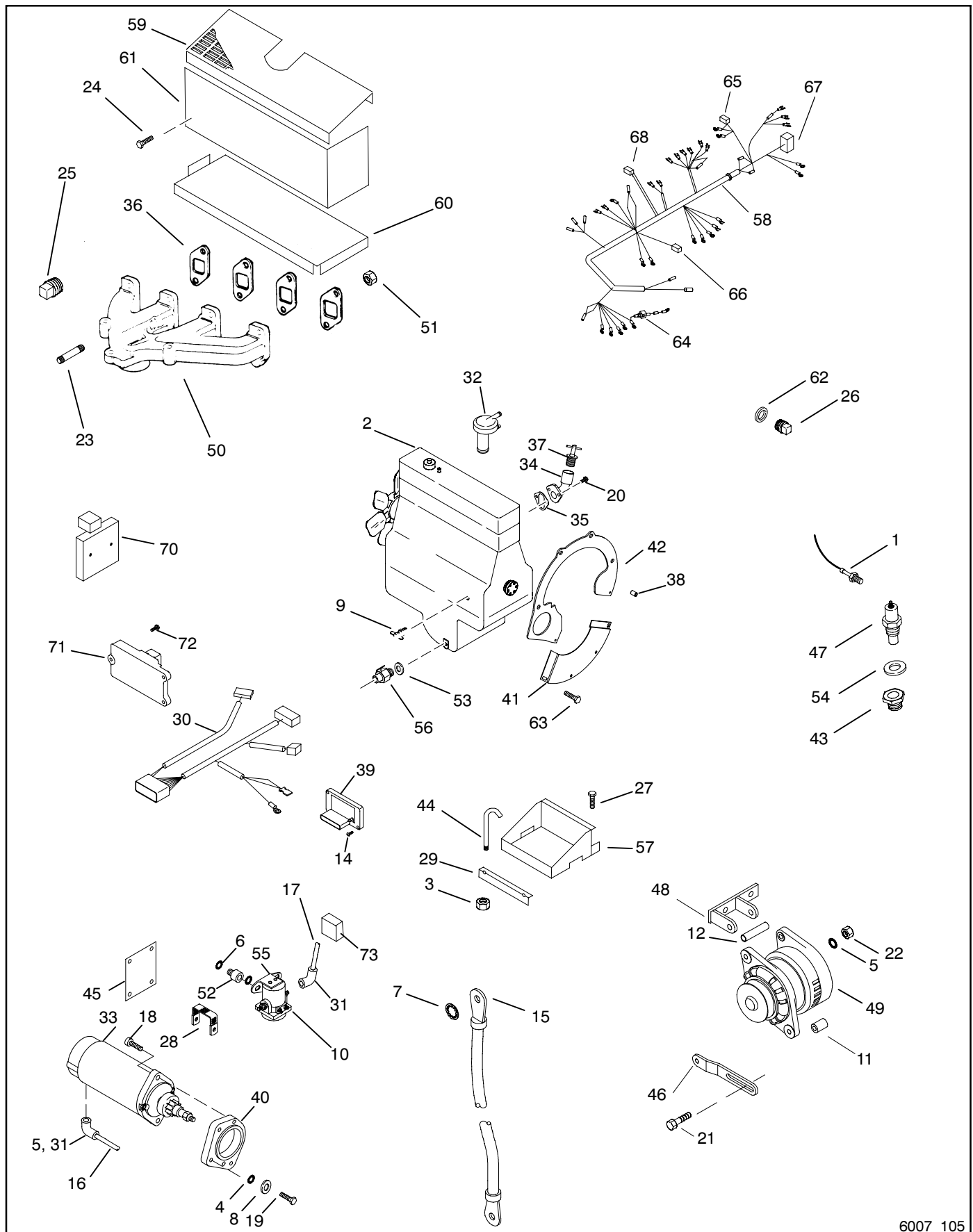


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Group 104: Cooling System

Item	Part Number	Description	Quantity		
			Variation No.		
			20	GR4	5-GR4
1	A-254774	Radiator assembly	1	1	
1	GM13997	Radiator assembly			1
2	X-202-28	Bushing, reducer, 3/8 in.	1	1	
3	X-22-12	Washer, lock, 1/4 in., interior/exterior tooth	1	1	
4	X-22-16	Washer, lock, 5/16 in., interior/exterior tooth	3	3	11
5	X-25-73	Washer, plain	4	4	
5	X-25-75	Washer, plain, .344 ld			4
6	X-256-3	Valve, drain, 1/4 in.	1	1	1
6	X-555-1	Fitting, elbow 1/4 x 1/4 street (not shown)	1	1	1
7	X-284-2	Grommet, 1 5/8 in.	1	1	1
8	X-380-5	Connector, hose	1	1	1
9	X-386-95	Line, fuel	1	1	
9	X-386-135	Line, fuel			1
10	X-426-4	Clamp, hose, 1.375 x 2.1 in.	1	1	1
11	X-426-6	Clamp, hose, 1 9/16 x 2 1/2 in.	1	1	
11	X-426-4	Clamp, hose, 1.375 x 2.1 in.			1
12	X-426-8	Clamp, hose, 1 15/16 x 1 3/16	2	2	
12	X-426-4	Clamp, hose, 1.375 x 2.1 in.			2
13	X-426-9	Clamp, hose	3	3	4
14	M912-06045-92	Screw, slotted hex cap	3	3	3
15	X-6216-1	Screw, hex head	3	3	3
16	X-6365-1	Insert, threaded	6	6	6
17	X-801-2	Washer, hardened	2	2	2
18	226318	Hose, molded	1	1	
18	GM13995	Hose, molded, 1.25 in. ID			1
19	226651	Fan, pusher	1	1	
19	GM13993	Fan, cooling			1
20	254764	Strap	1	1	1
21	254766	Screw, socket hex cap	1	1	1
22	254782	Belt, V	1	1	
22	358249	Belt, V, 35.5 in.			1
23	254832	Sensor, low fluid	1	1	1
24	254922	Valve	1	1	1
25	256925	Shroud, fan	1	1	
25	GM13998	Shroud, fan			1
26	256946	Guard, fan	1	1	1
27	256971	Bottle, overflow	1	1	1
28	256972	Bracket, water bottle	1	1	1
29	260088	Spacer, fan	1	1	
29	GM13999	Spacer, fan			1
30	260091	Pulley, water pump	1	1	
30	358167	Pulley			1
31	358160	Guard, belt, left	1	1	1
32	358161	Guard, belt, right	1	1	1
33	358162	Hose, lower radiator	1	1	
33	GM13994	Hose, lower radiator, 1.25 in. ID			1
34	358164	Support, radiator, right	1	1	
35	358165	Support, radiator, left	1	1	
36	358294	Bracket, belt guard	1	1	1
37	226734	Cap, radiator	1	1	
37	GM39997	Cap, radiator			1
38	X-125-5	Bolt, hex head	4	4	4
39	X-125-23	Bolt, hex head	4	4	4
40	X-465-8	Bolt, hex head	2	2	2
41	358215	Panel, radiator end housing (not shown)		1	
41	GM19361	Panel, radiator end housing (not shown)			1
42	320828	Insert, threaded, 1/4-20 in. (not shown)		4	4
43	358326	Cover, radiator (not shown)		1	1
44	X-6242-17	Line, flex fuel			1

Group 105: Engine

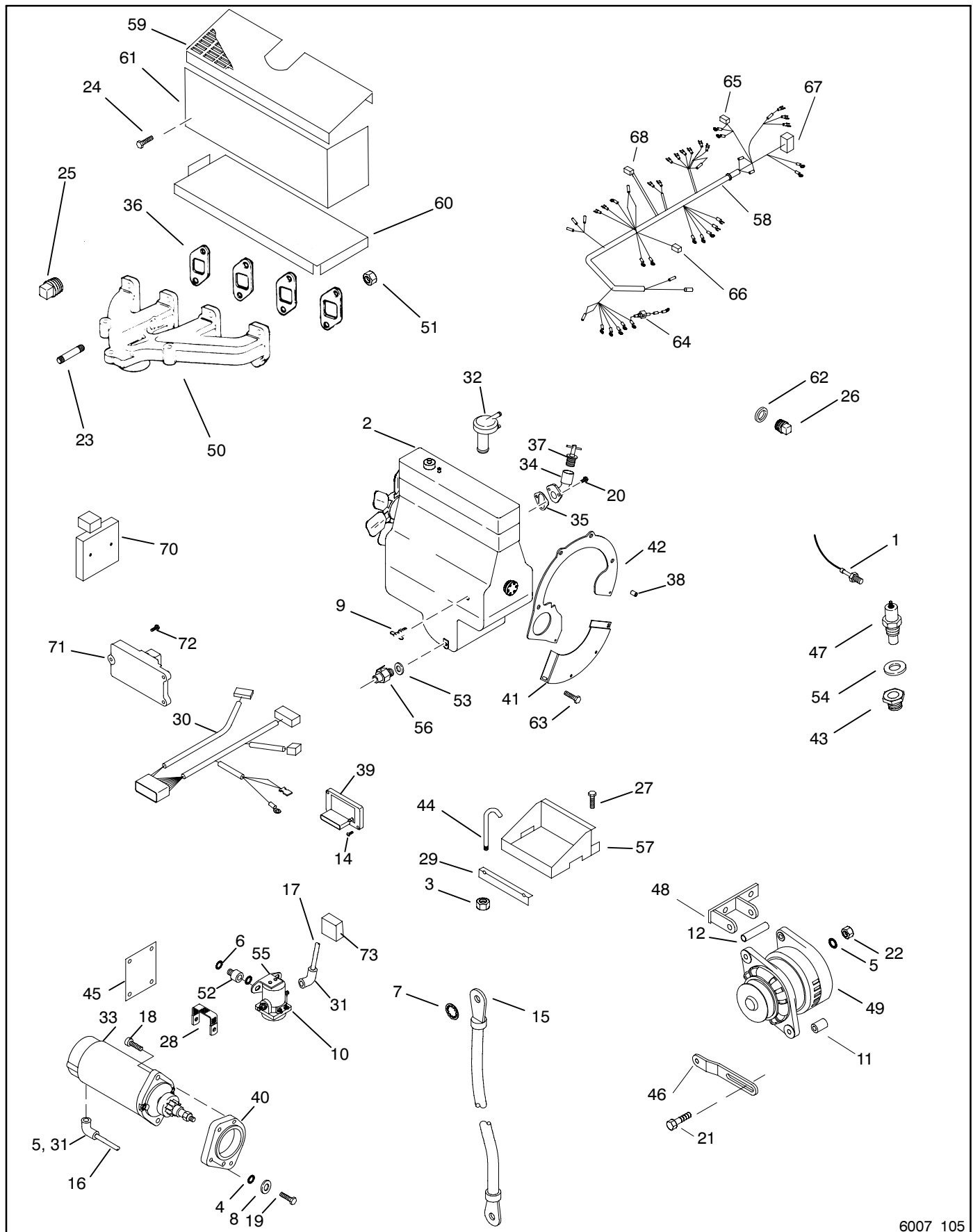


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Group 105: Engine

Item	Part Number	Description	Quantity			
			Variation No.			
			35	38	GR1	5-GR1
1	A-358309	Sensor assembly, magnetic	1	1	1	1
2	B-260090	Engine assembly	1	1		
2	C-260090	Engine assembly			1	1
3	X-101-4	Nut	2	2	2	2
4	X-22-1	Washer, lock	3	3	3	3
5	X-22-11	Washer, lock, 1/4 in. interior tooth	2	2	2	2
6	X-22-12	Washer, lock, 1/4 in. interior/exterior tooth	4	4	4	10
7	X-22-14	Washer, lock, 3/8 in. interior/exterior tooth	1	1	1	1
8	X-25-28	Washer, plain	3	3	3	3
9	X-256-2	Valve, drain, 1/8 in.	1	1	1	1
10	X-283-9	Terminal	1	1	1	
11	X-400-177	Spacer	1	1	1	1
12	X-400-183	Spacer	1	1	1	1
13	X-465-7	Screw, hex cap	1	1	1	1
14	X-50-3	Screw, round head machine, 10-24 x 3/4 in.	2	2		
15	X-545-46	Cable, battery	1	1	1	1
16	X-545-77	Cable, battery	1	1	1	1
17	X-545-96	Cable, battery	1	1	1	1
18	X-55-27	Screw, socket head	2	2	2	2
19	X-55-45	Screw, 3/8-16 x 3 in.	3	3	3	3
20	M933-08020-60	Screw, hex head cap	2	2	2	2
21	M933-08025-60	Screw, hex head cap	1	1	1	1
22	M934-06-60	Nut, hex, 6mm	1	1	1	1
23	X-6054-1	Stud	2	2	2	2
24	X-6216-1	Screw, hex head	6	6	6	6
25	X-75-2	Plug, pipe	1	1	1	1
26	X-75-54	Plug, pipe, brass	1	1	1	1
27	X-794-1	Screw, drill hex	2	2	2	2
28	223033	Strap, ground, 3/8 x 5 in.	1	1	1	1
29	226809	Clamp, battery	1	1	1	1
30	226884	Harness, wiring	1	1		
30	GM17770	Harness, wiring			1	1
31	238915	Boot	2	2	2	2
32	246054	Cap assembly, oil fill	1	1	1	1
33	246056	Starter	1	1	1	1
34	246057	Tube, oil fill	1	1	1	1
35	246058	Gasket, fuel pump	1	1	1	1
36	246060	Gasket, exhaust manifold	4	4	4	4
37	246063	Cap, oil fill tube	1	1	1	1
38	246064	Pin, dowel	2	2	2	2
39	GM17891	Kit, ignition module	1	1		
40	249371	Spacer, starter	1	1	1	1
41	249384-BLK	Guard, adapter	1	1	1	1
42	249889-BLK	Plate, rear engine support	1	1	1	1
43	249959	Adapter	1	1		
44	254674	Bolt, angle	2	2	2	2
45	254780	Bracket, solenoid	1	1	1	1
46	254784-BLK	Arm, alternator adjustment	1	1	1	1

Group 105: Engine, continued



6007_105

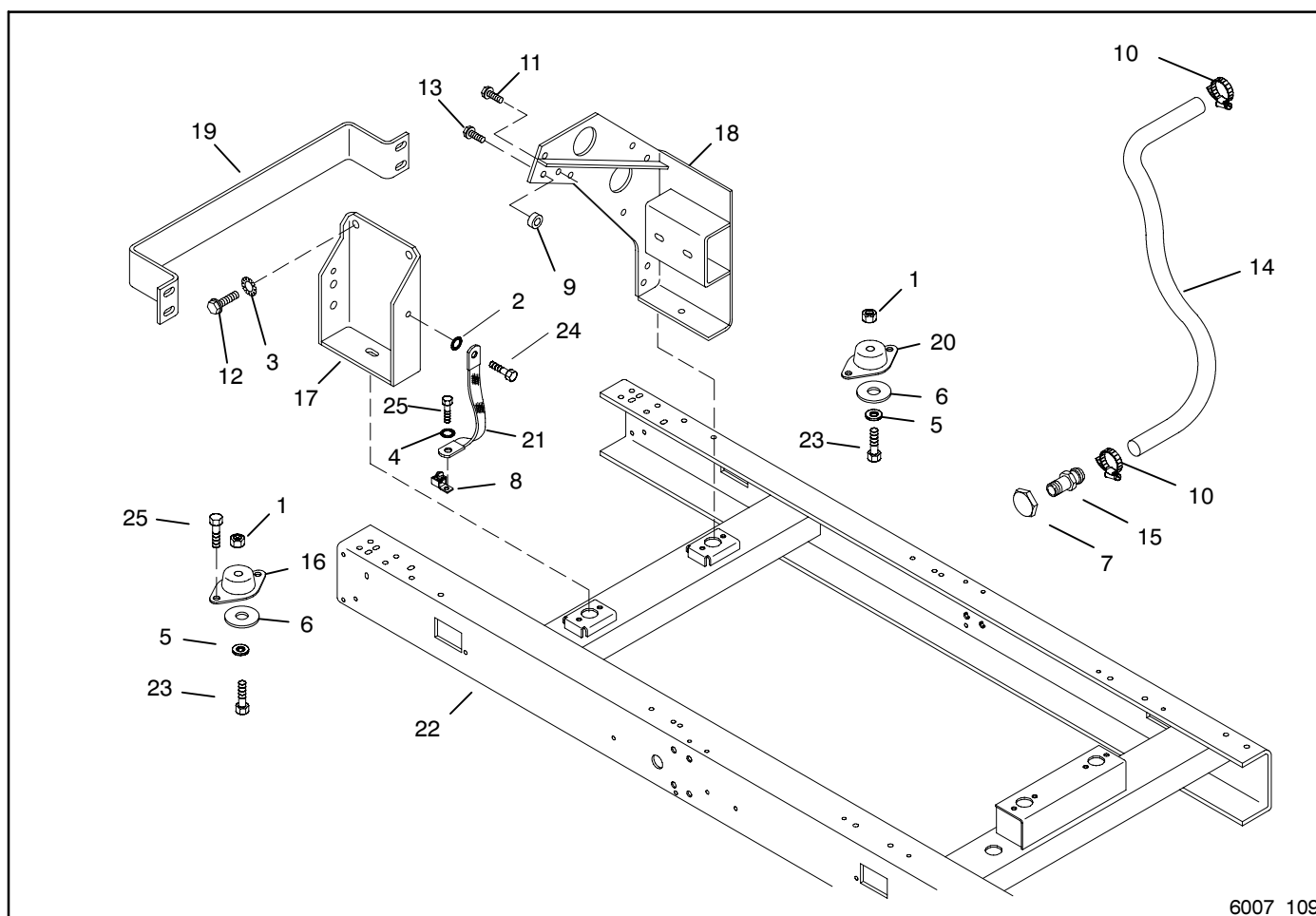
Group 105: Engine, continued

Item	Part Number	Description	Quantity			
			Variation No.			
			35	38	GR1	5-GR1
47	255241	Switch, high temperature	1	1		
47	GM22525	Switch, high temp. shutoff			1	1
48	256923	Bracket, alternator	1	1	1	1
49	256924	Alternator	1	1	1	1
50	256932	Manifold, exhaust	1	1	1	1
51	256965	Nut, hex	8	8	8	8
52	259632	Bumper	2	2	2	2
53	276317	Washer, nylon	1	1	1	1
54	276552	Washer, nylon	1	1		
55	291891	Solenoid, starter	1	1	1	1
56	344826	Valve, oil drain	1	1	1	1
57	358231	Rack, battery	1	1	1	1
58	358232	Harness, wiring	1			
58	GM13854	Harness, wiring		1	1	1
59	358246	Duct, exhaust manifold, upper	1	1	1	1
60	358247	Duct, exhaust manifold, lower	1	1	1	1
61	358248	Duct, exhaust manifold, front	1	1	1	1
62	358310	Plug, freeze	1	1	1	1
63	X-465-16	Screw, hex cap	4	4	4	4
64	233959	Diode, 6 A , 100 V	2	2	2	2
65	241605	Connector, 12-position	1	1	1	1
66	269190	Connector, 6-position	1	1	1	1
67	269366	Connector, 15-position	1	1	1	1
68	292370	Connector, 2-position	1	1	1	1
70	GM17771	Manifold, air pressure module			1	1
71	GM17769	Control assembly, ignition			1	1
72	X-50-56	Screw, slotted pan head machine			2	2
73	GM20744	Boot, battery lug			1	
73	GM20748	Boot, battery lug				1

Group 107: Nameplate and Decals

Item	Part Number	Description	Quantity													
			Variation No.													
			57	59	60	61	62	63	64	65	GR6	GR7	GR8	5-GR6	5-GR7	GR9
1	X-6348-2	Decal, Kohler Power Systems	1		1				1	1	1	1	1	1	1	1
2	X-6275-3	Logo, Kohler		1		1	1	1								
3	X-6428-2	Decal, 22 kW	2	2				2		2		2			2	2
4	X-6428-1	Decal, 17 kW			2	2	2		2		2		2	2		
5	224233	Decal, 1-800 number	1	1	1	1	1	1	1	1	1	1	1	1	1	1
6	229831	Decal, reconnection	1		1		1	1	1	1	1	1	1			1
7	239796	Decal, warning carbon monoxide	1	1	1	1	1	1	1	1	1	1	1	1	1	1
8	249808	Decal, warning rotating parts	1	1	1	1	1	1	1	1	1	1	1	1	1	1
9	249809	Decal, caution hot engine	1	1	1	1	1	1	1	1	1	1	1	1	1	1
10	249810	Decal, warning hot coolant	1	1	1	1	1	1	1	1		1	1	1	1	1
11	254831	Decal, regulator adjustment		1		1										
12	255882	Decal, caution standby service					1	1	1	1			1	1	1	1
13	257438	Decal, danger moving rotor	1	1	1	1	1	1	1	1	1	1	1	1	1	1
14	258815	Decal, warning hazardous voltage	1	1	1	1	1	1	1	1	1	1	1	1	1	1
15	259365	Decal generator connections			1	1										
16	GM14167	Decal, drain	2	2	2	2	2	2	2	2	2	2	2	2	2	2
17	GM20577	Decal, fuel type									1	1	1	1	1	1
18	290435	Decal equipment ground	1	1	1	1	1	1	1	1	1	1	1	1	1	1
19	327004	Nameplate	1	1	1	1	1	1	1	1	1	1	1			1
20	358312	Decal, CSA notice					1	1	1	1			1			1
21	358313	Nameplate, CSA					1	1	1	1			1	1	1	1
22	273780	Decal, warning explosion	1	1	1	1	1	1	1	1	1	1	1	1	1	1
23	GM15300	Decal, exhaust piping												1	1	
24	255798	Tag, instruction mounting surface												1	1	

Group 109: Skid and Plant Mounting

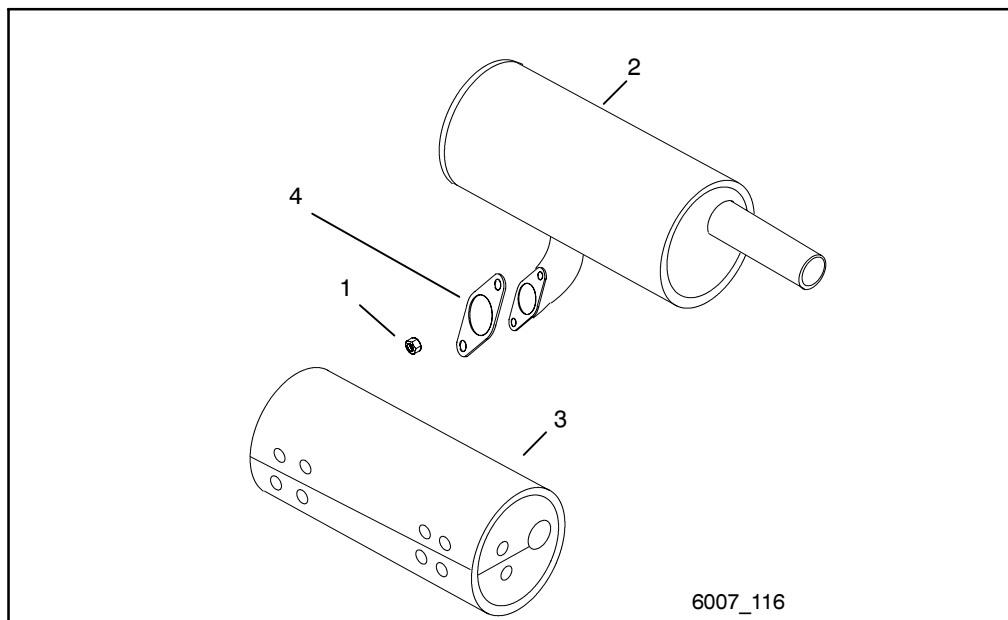


6007_109

Group 109: Skid and Plant Mounting

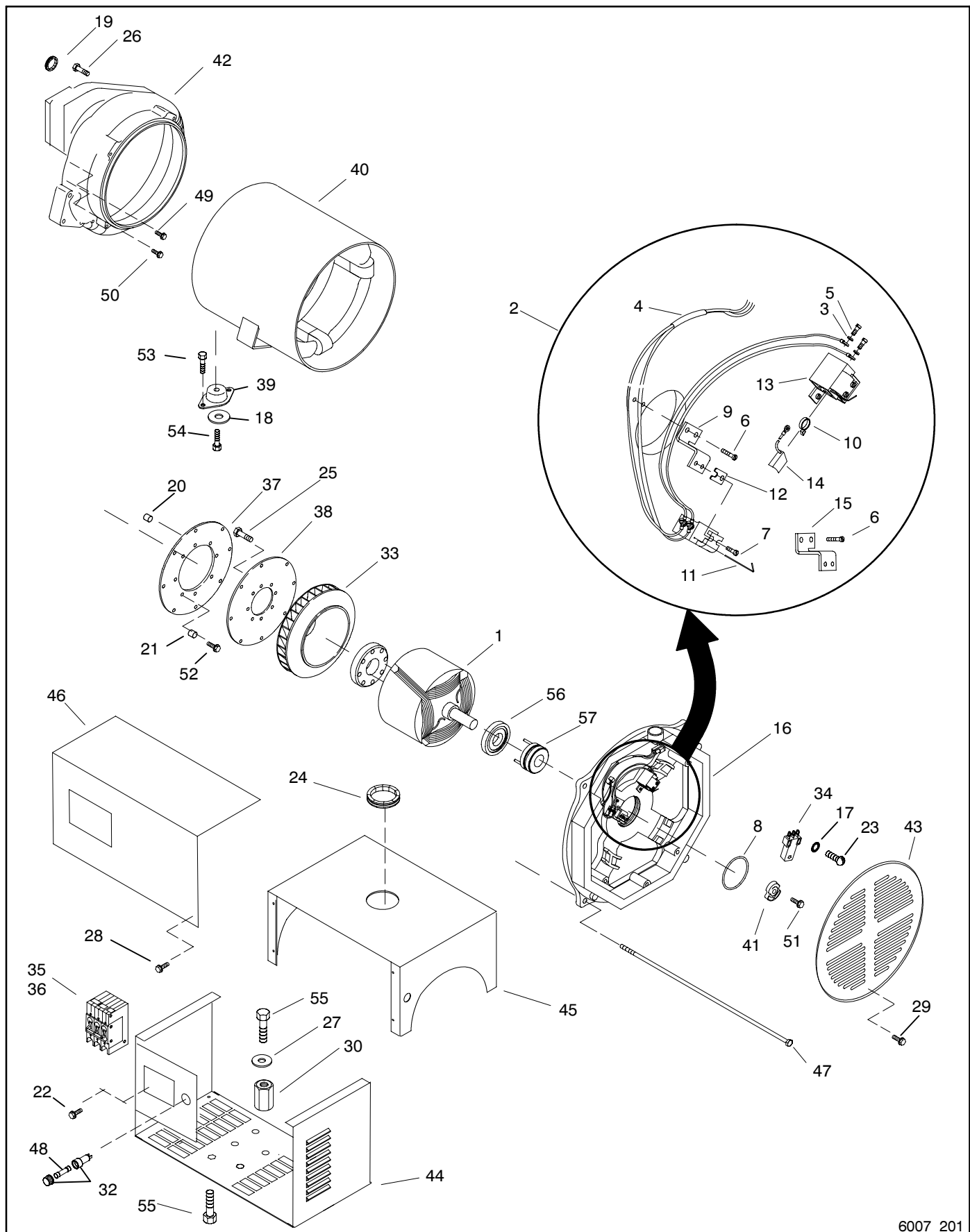
Item	Part Number	Description	Quantity		
			Variation No.		
			17	GR5	5-GR5
1	X-101-16	Nut, elastic stop, 5/16-18	2	2	2
2	X-22-12	Washer, lock, 1/4 in. interior/exterior tooth	1	1	1
3	X-22-14	Washer, lock, 3/8 in. interior/exterior tooth	2	2	2
4	X-22-16	Washer, lock, 5/16 in. interior/exterior tooth	1	1	1
5	X-25-20	Washer, plain	2	2	2
6	X-25-96	Washer, plain	2	2	2
7	GM20547	Plug, hose		1	
7	X-268-3	Cap, pipe	1		1
8	X-377-11	Connector, cable	1	1	1
9	X-400-37	Spacer	3	3	3
10	X-426-9	Clamp, hose, .25/.70 in.	2		2
10	X-309-17	Clamp, spring hose, .583/.668 in.		2	
11	M931-10040-60	Screw, hex cap	1	1	1
12	M933-10025-60	Screw, hex head cap	2	2	2
13	M931-10050-60	Screw, hex head cap	2	2	2
14	X-651-3	Hose, rubber, 3/8 x 18 in.	1	1	1
15	X-652-1	Fitting, hose	1		1
16	229127	Vibromount	1	1	1
17	249991-BLK	Support, engine	1	1	1
18	254714-BLK	Support, right engine	1	1	1
19	254775-BLK	Stiffener, engine support	1	1	1
20	258659	Vibromount	1	1	1
21	290418	Strap, ground	1	1	1
22	358158	Skid	1	1	
22	GM18097	Skid			1
23	230578	Screw, hex cap	2	2	2
24	X-465-16	Screw, hex cap	1	1	1
25	X-125-3	Screw, hex cap	5	5	5

Group 116: Exhaust



Item	Part Number	Description	Quantity
			Variation No.
1	M6923-10-62	Nut, hex, 10mm	2
2	358233	Muffler, exhaust	1
3	358234	Insulator, muffler	1
4	358235	Gasket, exhaust	1

Group 201: Generator and Mounting

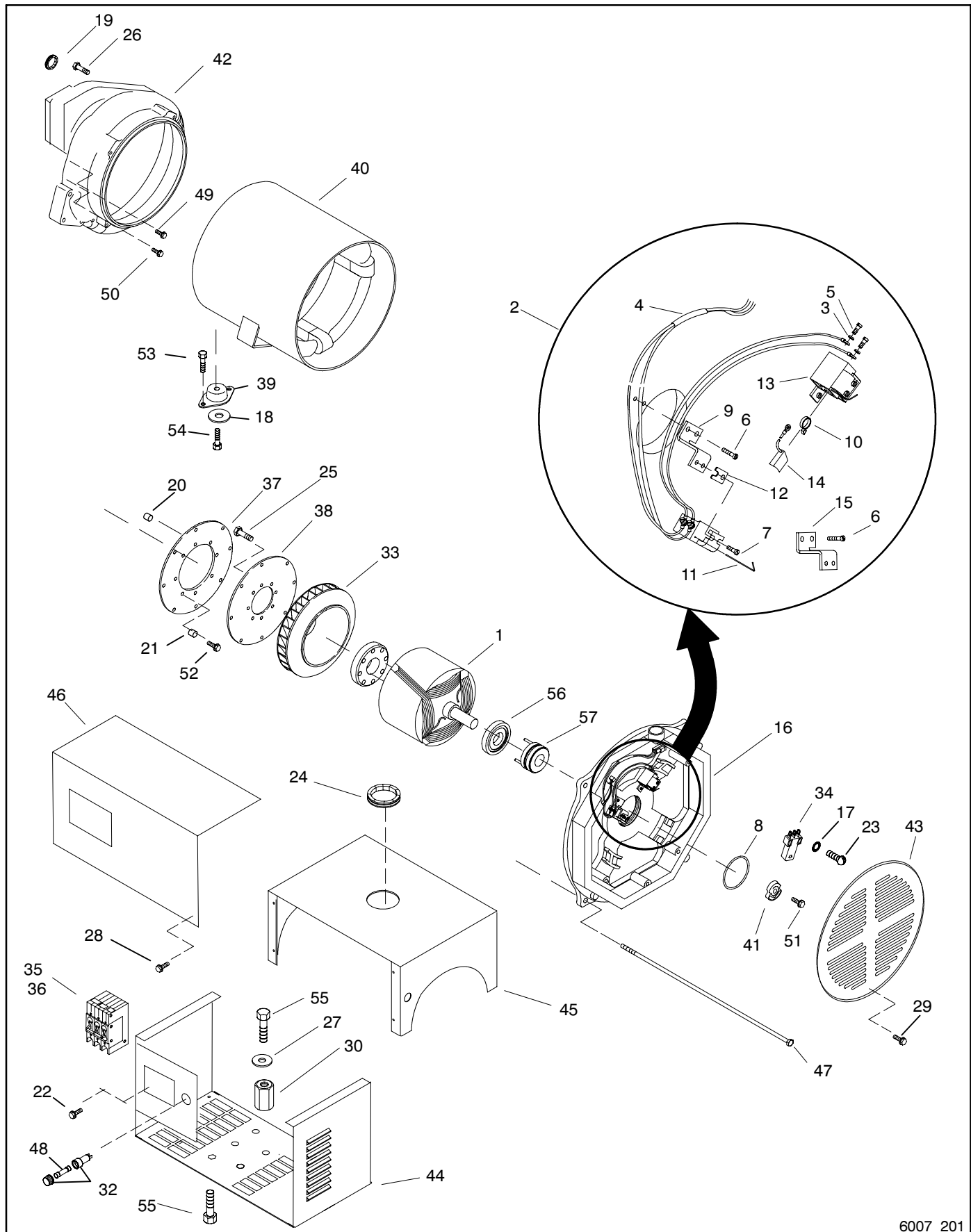


6007_201

Group 201: Generator and Mounting

Item	Part Number	Description	Quantity							
			Variation/Module No.							
			35	36	37	38	358319	358320	358321	358322
1	A-358036	Rotor assembly	1	1			1	1		
1	A-358037	Rotor assembly			1	1			1	1
2	A-358190	Bracket assembly, end (includes items 3-16)	1	1	1	1	1	1	1	1
3	X-22-6	Washer, lock, #6 interior star	4	4	4	4	4	4	4	4
4	X-415-2	Sleeve, insulating, 12 in.	1	1	1	1	1	1	1	1
5	X-49-1	Screw, round head machine, 6-32 x .312 in.	4	4	4	4	4	4	4	4
6	X-67-133	Screw, self-tapping	6	6	6	6	6	6	6	6
7	X-97-13	Screw, hex head machine	4	4	4	4	4	4	4	4
8	229110	O-ring	1	1	1	1	1	1	1	1
9	229178	Bracket, brush holder	2	2	2	2	2	2	2	2
10	238150	Spring	4	4	4	4	4	4	4	4
11	238247	Retainer, wire	2	2	2	2	2	2	2	2
12	238248	Shim, brush holder	2	2	2	2	2	2	2	2
13	239247	Holder, brush	2	2	2	2	2	2	2	2
14	239282	Brush	4	4	4	4	4	4	4	4
15	358071	Bracket, sensor mount	1	1	1	1	1	1	1	1
16	358149	Bracket, end	1	1	1	1	1	1	1	1
17	X-22-24	Washer, lock, #4 interior star	2	2	2	2	2	2	2	2
18	X-25-96	Washer, plain	2	2	2	2	2	2	2	2
19	X-301-43	Plug, button	2	2	2	2	2	2	2	2
20	X-400-156	Spacer	8	8	8	8	8	8	8	8
21	X-400-31	Spacer, 1/20 x 9/32 x 1/4 in.	8	8	8	8	8	8	8	8
22	X-49-2	Screw pan head machine, 6-32 x 0.375 in.	4	4	4	4	4	4	4	4
23	X-49-35	Screw, pan head machine, 4-40 x 7/8 in.	2	2	2	2	2	2	2	2
24	X-6033-11	Grommet, nylon	1	1	1	1	1	1	1	1
25	X-6050-8	Screw, hex head cap	6	6	6	6	6	6	6	6
26	X-6051-33	Screw, hex cap, M10 x 1.5 x 7	2	2	2	2	2	2	2	2
27	X-6086-13	Washer, spring	1	4	1	4	1	4	1	4
28	X-6216-1	Screw, hex head	6	6	6	6	6	6	6	6
29	X-67-133	Screw, self-tapping	4	4	4	4	4	4	4	4
30	233269	Insulator, panel	1	4	1	4		3		3
31	238248	Shim, brush holder	1	1	1	1	1	1	1	1
32	238426	Holder, fuse, 0.25 x 1.25	1	1	1	1	1	1	1	1
33	239646	Fan, generator	1	1	1	1	1	1	1	1
34	241623	Sensor, ferromagnetic	1	1	1	1	1	1	1	1
35	253225	Breaker, circuit	1	1			1	1		
35	253226	Breaker, circuit			1				1	
36	358170	Plate, cover				1				1
37	256872	Disc, armature drive	1	1	1	1	1	1	1	1
38	256873	Disc, armature drive	1	1	1	1	1	1	1	1
39	278322	Vibromount	2	2	2	2	2	2	2	2
40	358019	Stator assembly	1				1			
40	GM22422	Stator assembly		1				1		
40	358020	Stator assembly			1				1	
40	GM22423	Stator assembly				1				1
41	358066	Actuator, magnetic	1	1	1	1	1	1	1	1
42	358148	Adapter, alternator	1	1	1	1	1	1	1	1
43	358150	Cover, end bracket	1	1	1	1	1	1	1	1
44	358163	Box, junction	1	1	1	1	1	1	1	1
45	358169	Box, junction	1	1	1	1	1	1	1	1
46	358172	Cover, junction box	1	1	1	1	1	1	1	1
47	358188	Bolt, over	4	4	4	4	4	4	4	4
48	358336	Fuse, 5-amp	1		1					
48	358337	Fuse, 10-amp		1		1	1	1	1	1
49	X-6238-5	Screw, hex cap	2	2	2	2	2	2	2	2
50	X-6238-6	Screw, hex cap	2	2	2	2	2	2	2	2
51	X-6238-3	Screw, hex cap	1	1	1	1	1	1	1	1
52	X-465-16	Screw, hex cap	8	8	8	8	8	8	8	8
53	X-125-3	Screw, hex cap	4	4	4	4	4	4	4	4
54	230578	Screw, hex cap	2	2	2	2	2	2	2	2
55	X-465-17	Screw, hex cap	2	8	2	8	2	8	2	8
56	X-758-15	Bearing, ball	1	1	1	1	1	1	1	1
57	238134	Ring collector	1	1	1	1	1	1	1	1

Group 201: Generator and Mounting, continued

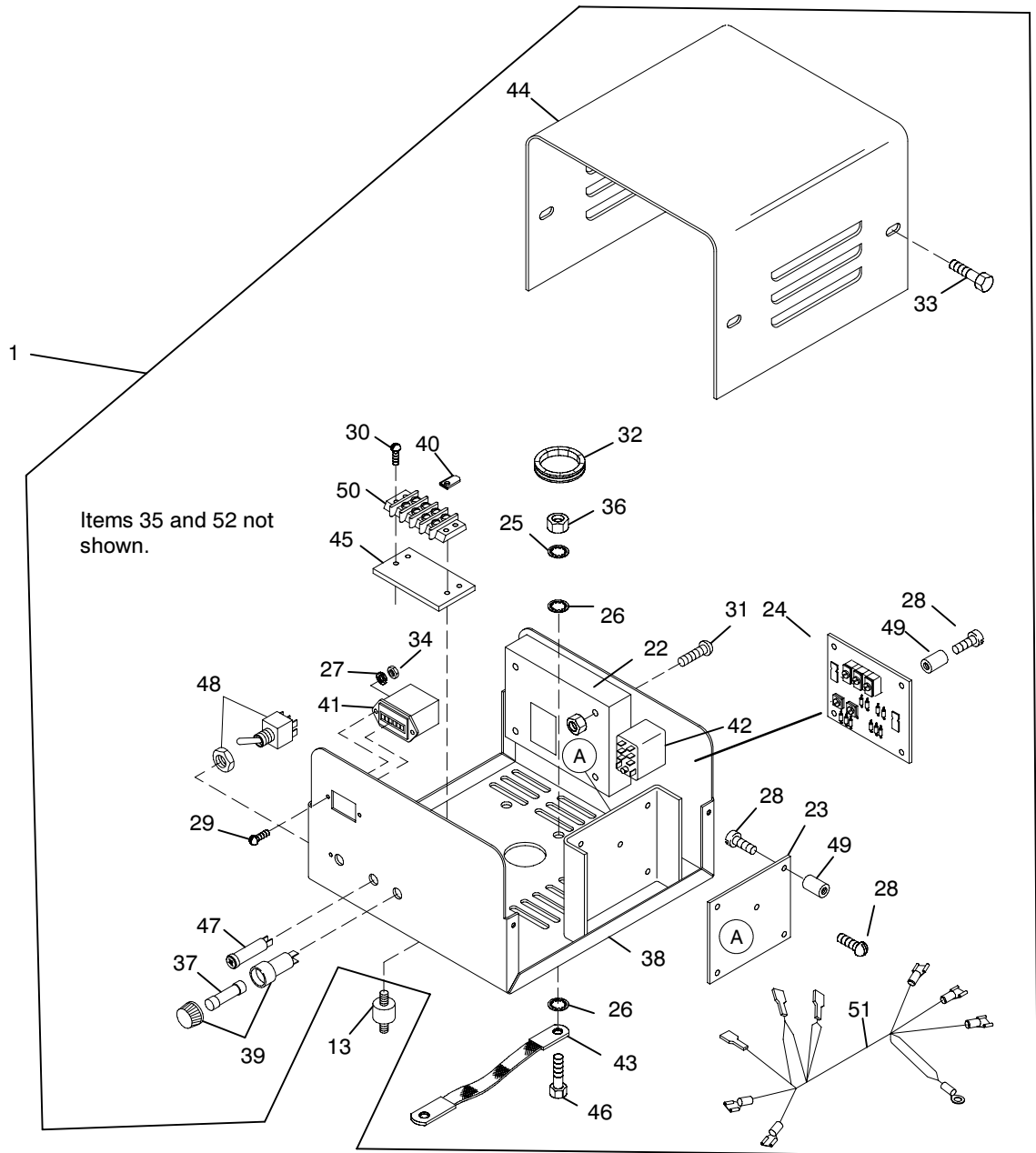


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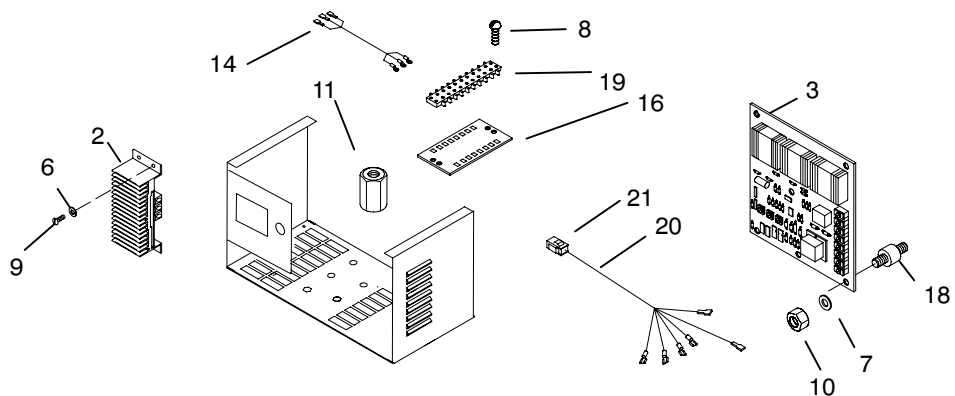
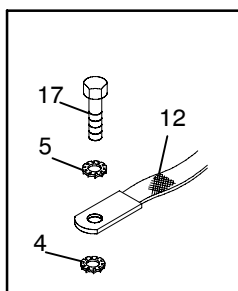
Group 201: Generator and Mounting, continued

Item	Part Number	Description	Quantity			
			Module No.			
			GM19352-MA1	GM19352-MA2	GM19352-MA3	GM19352-MA4
1	A-358036	Rotor assembly	1	1		
1	A-358037	Rotor assembly			1	1
2	A-358190	Bracket assembly, end (includes items 3-16)	1	1	1	1
3	X-22-6	Washer, lock, #6 interior star	4	4	4	4
4	X-415-2	Sleeve, insulating, 12 in.	1	1	1	1
5	X-49-1	Screw, round head machine, 6-32 x .312 in.	4	4	4	4
6	X-67-133	Screw, self-tapping	6	6	6	6
7	X-97-13	Screw, hex head machine	4	4	4	4
8	229110	O-ring	1	1	1	1
9	229178	Bracket, brush holder	2	2	2	2
10	238150	Spring	4	4	4	4
11	238247	Retainer, wire	2	2	2	2
12	238248	Shim, brush holder	2	2	2	2
13	239247	Holder, brush	2	2	2	2
14	239282	Brush	4	4	4	4
15	358071	Bracket, sensor mount	1	1	1	1
16	358149	Bracket, end	1	1	1	1
17	X-22-24	Washer, lock, #4 interior star	2	2	2	2
18	X-25-96	Washer, plain	2	2	2	2
19	X-301-43	Plug, button	2	2	2	2
20	X-400-156	Spacer	8	8	8	8
21	X-400-31	Spacer, 1/20 x 9/32 x 1/4 in.	8	8	8	8
22	X-49-2	Screw pan head machine, 6-32 x 0.375 in.	4	4	4	4
23	X-49-35	Screw, pan head machine, 4-40 x 7/8 in.	2	2	2	2
24	X-6033-11	Grommet, nylon	1	1	1	1
25	X-6050-8	Screw, hex head cap	6	6	6	6
26	X-6051-33	Screw, hex cap, M10 x 1.5 x 7	2	2	2	2
27	X-6086-13	Washer, spring	1	4	1	4
28	X-6216-1	Screw, hex head	6	6	6	6
29	X-67-133	Screw, self-tapping	4	4	4	4
30	233269	Insulator, panel		3		3
31	238248	Shim, brush holder	1	1	1	1
32	238426	Holder, fuse, 0.25 x 1.25	1	1	1	1
33	239646	Fan, generator	1	1	1	1
34	241623	Sensor, ferromagnetic	1	1	1	1
35	—	Breaker, circuit (see kit no. in accessory section)	1	1	1	1
36	GM22421	Plate, cover	1	1	1	1
37	256872	Disc, armature drive	1	1	1	1
38	256873	Disc, armature drive	1	1	1	1
39	278322	Vibromount	2	2	2	2
40	358019	Stator assembly	1			
40	GM22422	Stator assembly		1		
40	358020	Stator assembly			1	
40	GM22423	Stator assembly				1
41	358066	Actuator, magnetic	1	1	1	1
42	358148	Adapter, alternator	1	1	1	1
43	358150	Cover, end bracket	1	1	1	1
44	GM22419	Box, junction	1	1	1	1
44	GM22417	Bracket, breaker mounting (not shown)	1	1	1	1
45	358169	Box, junction	1	1	1	1
46	GM22420	Cover, junction box	1	1	1	1
47	358188	Bolt, over	4	4	4	4
48	358336	Fuse, 5-amp				
48	358337	Fuse, 10-amp	1	1	1	1
49	X-6238-5	Screw, hex cap	2	2	2	2
50	X-6238-6	Screw, hex cap	2	2	2	2
51	X-6238-3	Screw, hex cap	1	1	1	1
52	X-465-16	Screw, hex cap	8	8	8	8
53	X-125-3	Screw, hex cap	4	4	4	4
54	230578	Screw, hex cap	2	2	2	2
55	X-465-17	Screw, hex cap	2	8	2	8
56	X-758-15	Bearing, ball	1	1	1	1
57	238134	Ring collector	1	1	1	1

Group 301: Controller and Mounting



Equipment ground detail

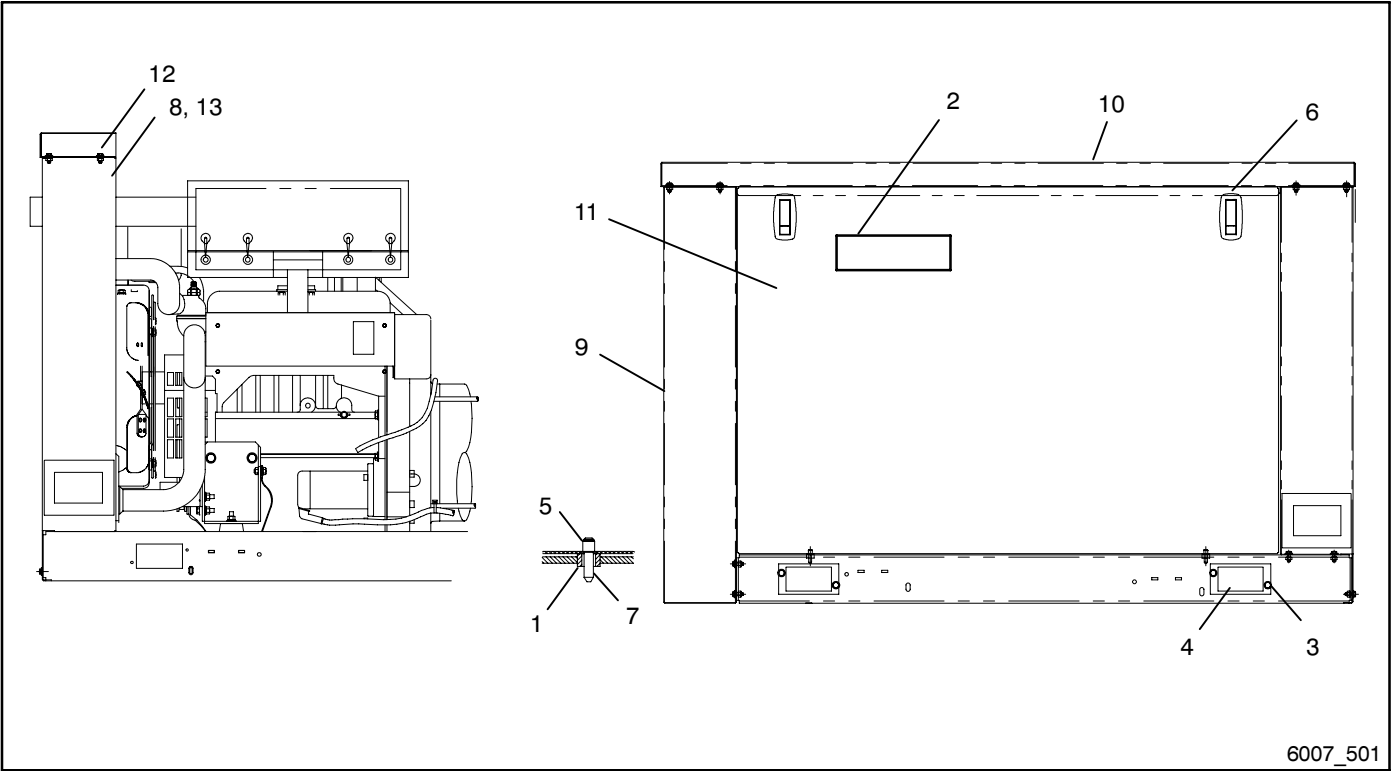


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Group 301: Controller and Mounting

Item	Part Number	Description	Quantity					
			Variation /Module No.					
			28	29	358273	358274	GM13859-MA1	GM13859-MA2
1	A-358242	Controller assembly	1	1	1	1		
1	GM13850	Controller assembly					1	1
2	F-278598	PCB assembly, PB3E	1		1		1	
3	B-258296	PCB assembly, PBV		1		1		1
4	X-22-11	Washer, lock, 1/4 in. interior tooth	1	1	1	1	1	1
5	X-22-12	Washer, lock, 1/4 in. interior/exterior tooth	2	2	2	2	2	2
6	X-22-9	Washer, lock, #10 interior tooth	4		4		4	
7	X-25-65	Washer, plain		10		10		
7	X-22-7	Washer, lock, .172 ID x .333 in. OD						10
8	X-49-3	Screw, round head machine, 6-32 x 7/8 in.	2	2	2	2	2	2
9	X-50-8	Screw, round head machine, 10-24 x 5/8 in.	4		4		4	
10	X-72-4	Nut, hex, 8-32 zinc plated		10		10		10
11	233269	Insulator, panel		4		4		
12	230857	Strap, ground	1		1		1	1
13	241769	Mount, controller	4	4	4	4	4	4
14	254815	Harness, wiring, AC sensing	1		1		1	
15	254819	Strip, terminal		1		1		1
16	254821	Marker, strip	1	1	1	1	1	1
17	267491	Screw, special	1	1	1	1	1	1
18	282829	Vibromount		5		5		
19	295313	Block, terminal	1	1	1	1	1	1
20	358254	Harness, wiring, regulator	1		1		1	
20	358280	Harness, wiring, regulator		1		1		1
21	269190	Connector, 6-pin	1		1		1	
21	254852	Connector, 12-pin		1		1		1
22	A-358279	Governor assembly, electronic	1	1	1	1	1	1
23	B-358095	PCB assembly, relay control	1	1	1	1		
23	GM12535	PCB assembly, relay control w/flashing relay					1	1
24	C-284507	PCB assembly, cyclic crank	1	1	1	1		
25	X-22-11	Washer, lock, 1/4 in. interior tooth	1	1	1	1	1	1
26	X-22-12	Washer, lock, 1/4 in. interior/exterior tooth	2	2	2	2	2	2
27	X-22-6	Washer, lock, #6 interior star	2	2	2	2	2	2
28	X-49-25	Screw pan head machine, 6-32 x 0.25 in.	18	18	18	18	10	10
29	X-49-39	Screw, pan head machine, 6-32 x 0.50 in.	2	2	2	2	2	2
30	X-50-3	Screw, round head machine, 10-24 x 3/4 in.	2	2	2	2	2	2
31	X-51-36	Screw, round head machine, 8-32 x 1 3/8 in.	4	4	4	4	4	4
32	X-6033-6	Grommet, nylon	1	1	1	1	1	1
33	X-6216-1	Screw, hex head	4	4	4	4	4	4
34	X-71-2	Nut, hex, 6-32 zinc	2	2	2	2	2	2
35	X-748-21	Tubing, 1 in., .25 ID	1	1	1	1		
36	X-81-8	Nut, hex, 1/4-20, green	1	1	1	1	1	1
37	223316	Fuse, 10 A, 250 V	1	1	1	1	1	1
38	226442	Box, silkscreened	1	1	1			
38	GM13849	Box, silkscreened				1	1	1
39	238426	Holder, fuse, 0.25 x 1.25	1	1	1	1	1	1
40	238582	Terminal	4	4	4	4	4	4
41	238736	Hourmeter	1	1	1	1	1	1
42	241736	Relay	1	1	1	1		
43	246083	Strap, ground	1	1	1	1		
43	LK-1216-1515	Lead					1	1
44	254800	Cover, controller	1	1	1	1	1	1
45	254822	Marker, strip	1	1	1	1	1	1
46	267491	Screw, special	1	1	1	1	1	1
47	269373	Lamp	1	1	1	1	1	1
48	287812	Switch, toggle	1	1	1	1	1	1
49	287948	Spacer, 0.25 x 0.50 x 6-32	9	9	9	9	5	5
50	292940	Strip, terminal	1	1	1	1	1	1
51	358315	Harness, wiring	1	1	1	1		
51	GM13851	Harness, wiring					1	1
52	229831	Decal, reconnection (not shown)					1	1

Group 501: Housing



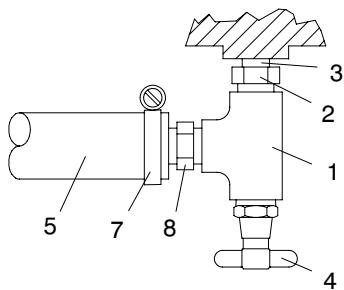
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Item	Part Number	Description	Quantity	
			Variation No.	
			1	2
1	X-284-45	Grommet	4	
2	X-6348-2	Decal	2	
3	X-794-1	Screw, drill hex	8	
4	254758	Cover, skid rail	4	
5	320828	Insert, threaded	4	
6	358386	Latch, sound shield	4	
7	345283	Pin, threaded	4	
8	358215	Panel, housing, radiator end	1	1
9	358216	Panel, housing, generator end	1	
10	358217	Roof, housing	1	
11	GM10922	Door, housing	2	
12	358326	Cover, radiator		1
13	320828	Insert, threaded, 1/4-20 in.		4

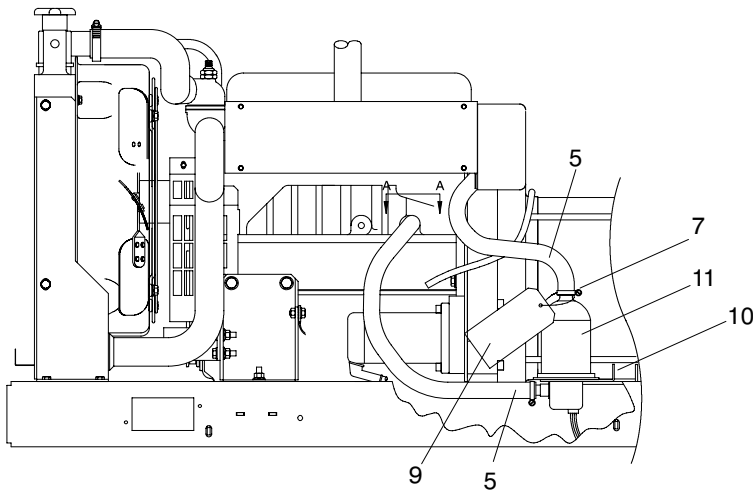
Group 701: Literature

Item	Part Number	Description	Quantity		
			Variation No.		
			12	16	17
1	TP-5346	Service Manual, Ford VSG-411/413	1	1	1
2	TP-5374	Warranty, 1-Year Limited	1	1	1
3	TP-5398	Operation Manual, Ford VSG-411/413	1	1	1
4	TP-5700	Installation Manual, Industrial	1	1	1
5	TP-5716	Wiring Diagrams, 10-18RY/RZ Ford	1	1	1
6	TP-5762	Warranty, California Emission	1	1	1
7	TP-5847	Service Manual, 10-18RY/RZ Industrial	1	1	1
8	TP-6007	Parts Catalog, 17/22RY	1	1	1
9	TP-5870	Operation Manual, 10-18RY/RZ Industrial	1	1	1
10	TP-6111	Warranty, 3-Year Extended		1	1

Group 911: Block Heater



Item 6 not shown.



H-358000-A

Item	Part Number	Description	Quantity
			Variation No.
1	X-203-16	Tee, pipe, 1/8 in.	1
2	X-202-27	Bushing, reducer, 1/8 x 14 in.	1
3	X-217-7	Nipple, pipe, 1 x 1/8 in.	1
4	X-256-3	Valve, drain, 1/4 in.	1
5	X-312-18	Hose	2
6	X-391-19	Connector, hose elbow	1
7	X-426-10	Clamp, hose	4
8	X-582-22	Connector, hose	1
9	279047	Tag, hang	1
10	326219	Bracket, block heater	1
11	358311	Heater, block	1

Kit List

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

	17 kW	22 kW
Controllers		
With gauges and meters, 4-lead units	358275	358275
With gauges and meters, 4-lead units	GM13859-MA3	GM13859-MA3
With gauges and meters, 12-lead units	358276	358276
With gauges and meters, 12-lead units	GM13859-MA4	GM13859-MA4
Optional Kits		
Battery, wet charged, 12 V	324553	324553
Battery, dry charged, 12 V	324554	324554
Battery charger, trickle	PAA-248952	PAA-248952
Battery charger, equalize/float	PAD-292862	PAD-292862
Battery charger with alarms, equalize/float	PAD-292863	PAD-292863
Battery charger, float 12 V, 6 A	GM11849-KP1	GM11849-KP1
Battery charger, float 12 V, 6 A	GM28569-KP1	GM28569-KP1
Breaker, line circuit 20-amp	358305	358305
Breaker, line circuit 20-amp	GM22494-KA1	GM22494-KA1
Breaker, line circuit 25-amp	358292	358292
Breaker, line circuit 25-amp	GM22494-KA2	GM22494-KA2
Breaker, line circuit 30-amp	358293	358293
Breaker, line circuit 30-amp	GM22494-KA3	GM22494-KA3
Breaker, line circuit 40-amp	358295	358295
Breaker, line circuit 40-amp	GM22494-KA4	GM22494-KA4
Breaker, line circuit 50-amp	358297	358297
Breaker, line circuit 50-amp	GM22494-KA5	GM22494-KA5
Breaker, line circuit 60-amp	358299	358299
Breaker, line circuit 60-amp	GM22494-KA6	GM22494-KA6
Breaker, line circuit 80-amp	358302	358302
Breaker, line circuit 80-amp, 480 V	GM22494-KA7	GM22494-KA7
Breaker, line circuit 80-amp, 120/240 V	GM22494-KA9	GM22494-KA9
Breaker, line circuit 100-amp	358304	358304
Breaker, line circuit 100-amp	GM22494-KA8	GM22494-KA8
Connector, flexible exhaust	PA-324093	PA-324093
Duct flange, radiator	358291	358291
Duct flange, radiator	GM19363-KP1	GM19363-KP1
Exhaust elbow with flexible connector	358330	358330
Exhaust elbow and guard	GM10672-KP1	GM10672-KP1
Fuel line, flexible	226663	358296
Guard, rodent	358300	358300
Heater, battery	358225	358225
Heater, block 110/120 V	358314	358314
Heater, block 190/240 V	358328	358328
Housing, weather, loose	358301	358301
Housing, weather (with loose exhaust elbow)	GM12220-KA1	GM12220-KA1
Housing, weather (with loose exhaust elbow)	GM12220-KA1	GM12220-KA1
Housing, weather	GM20580-KA1	GM20580-KA1
Literature, general maintenance	PA-276825	PA-276825
Literature, overhaul	PA-276806	PA-276806
Literature, production	GM11076-KP	PA-327323
Rain cap for silencer	358381	225243
Relay, common fault, 1-phase	—	358372
Relay, common fault, 3-phase	—	358373
Relay, run	273743	273743
Silencer, residential	358329	358329
Silencer, industrial, side in, end out	PA-324065	PA-324065
Silencer, critical, side in, end out	PA-324064	PA-324064
Silencer, industrial, end in, end out	PA-324067	PA-324067
Silencer, critical, end in, end out	PA-324066	PA-324066
Sound attenuator	GM13784-KP1	GM13784-KP1
Sound shield	GM10629-KP1	GM10629-KP1
Strainer, natural gas	PA-290275	PA-290275
Transfer switch, manual with mechanical interlock	PA-320676	PA-320676
Paint and Miscellaneous Parts		
Paint, Kohler Cream Beige	All models use 221338 spray can, 221337 gallon	

Kit Part Lists

Qty.	Description	Part No.
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Decision-Maker 1™, with Gauges and Meters (4-Lead Units)

358275

1	Bushing, reducing, 1/8 x 1/4 in.	A-106
1	Tee, pipe, 1/4 in.	A-110
1	PCB assembly, PB3E	F-278598
1	Nipple, pipe, 1/4 x 1 1/2 in.	X-220-6
1	Bracket, CT mounting	226481
2	Transformer	259359
1	Sender, oil pressure gauge	264390
1	Cover, controller	336602
1	Panel, mounting	358173
1	Harness, wiring	358232
1	Harness, wiring	358254
1	Harness, wiring	358282
1	Switch, sensor	358308
1	Controller assembly (includes all the following)	A-358260
1	Potentiometer assembly	A-255041
1	Governor assembly, electronic	A-358279
1	PCB assembly, relay control	B-358095
1	PCB assembly, cyclic crank	C-284507
1	Washer, lock, 1/4 in., interior tooth	X-22-11
2	Washer, lock, 1/4 in., interior/exterior tooth	X-22-12
4	Washer, lock #6, interior star	X-22-6
1	Grommet	X-284-31
1	Terminal	X-431-42
2	Screw, pan head machine, 6-32 x 0.375 in.	X-49-2
18	Screw, pan head machine, 6-32 x 0.25 in.	X-49-25
2	Screw, pan head machine, 6-32 x 0.50 in.	X-49-39
4	Screw, round head machine, 8-32 x 1 3/8 in.	X-51-36
2	Screw, round head machine	X-51-53
4	Plug, cap 1/8 in.	X-519-1
1	Tubing, 1 x 0.3 in. ID	X-6079-2
1	Tubing, 1 x 0.46 in. ID	X-6081-3
2	Screw, thread-forming	X-67-127
2	Nut, hex, 6-32 zinc	X-71-2
1	Tubing, 1 x 0.25 in. ID	X-748-21
1	Nut, hex 1/4-20, green	X-81-8
1	Tab identification	201620-152
1	Fuse, 10 A, 250 V	223316
1	Strip, marker	225178
1	Strip, marker	225179
1	Gauge, water temperature	226716
1	Holder, fuse, 0.25 x 1.25	238426
1	Hourmeter	238736
1	Relay	241736
1	Strap, ground	246083
1	Block, terminal	246115
1	Voltmeter	253329
1	Screw, special	267491
1	Lamp	269373
1	Voltmeter, AC	282814
1	Gauge, oil pressure	282897
1	Ammeter, AC	282934
1	Switch, toggle	287812
9	Spacer, 0.25 x 0.50 x 6-32 in.	287948
3	Fuse, 1.5 A, 250 V	291207
2	Lamp	291740
1	Switch, selector	292373
1	Holder, fuse	292821
4	Bumper	292834
1	Meter, frequency	295069
1	Box, silkscreen controller	358332
1	Harness, controller wiring	358333

Qty.	Description	Part No.
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Decision-Maker 1™, with Gauges and Meters (4-Lead Units)

GM13859-MA3

1	Bushing, reducing, 1/8 x 1/4 in.	A-106
1	Tee, pipe, 1/4 in.	A-110
1	PCB assembly, PB3E	F-278598
1	Nipple, pipe, 1/4 x 1 1/2 in.	X-220-6
1	Bracket, CT mounting	226481
2	Transformer	259359
1	Sender, oil pressure gauge	264390
1	Strap, ground	230857
1	Decal, reconnection	229831
1	Screw, hex head machine, special thread	267491
1	Cover, controller	336602
1	Panel, mounting	358173
1	Harness, wiring	254815
1	Harness, wiring	358254
1	Harness, wiring	358282
1	Switch, sensor	358308
1	Controller assembly (includes all the following)	GM13852
1	Potentiometer assembly	A-255041
1	Governor assembly, electronic	A-358279
1	PCB assembly, relay control with flashing relay	GM12535
1	Washer, lock, 1/4 in., interior tooth	X-22-11
2	Washer, lock, 1/4 in., interior/exterior tooth	X-22-12
4	Washer, lock #6, interior star	X-22-6
1	Grommet	X-284-31
2	Screw, pan head machine, 6-32 x 0.375 in.	X-49-2
10	Screw, pan head machine, 6-32 x 0.25 in.	X-49-25
2	Screw, pan head machine, 6-32 x 0.50 in.	X-49-39
4	Screw, round head machine, 8-32 x 1 3/8 in.	X-51-36
2	Screw, round head machine	X-51-53
4	Plug, cap, 1/8 in.	X-519-1
1	Tubing, 1 x 0.3 in. ID	X-6079-2
2	Screw, thread-forming	X-67-127
2	Nut, hex, 6-32 zinc	X-71-2
1	Nut, hex 1/4-20, green	X-81-8
1	Tab identification	201620-152
1	Fuse, 10 A, 250 V	223316
1	Strip, marker	225178
1	Strip, marker	225179
1	Gauge, water temperature	226716
1	Holder, fuse, 0.25 x 1.25	238426
1	Hourmeter	238736
1	Strap, ground	246083
1	Block, terminal	246115
1	Voltmeter	253329
1	Screw, special	267491
1	Lamp	269373
1	Voltmeter, AC	282814
1	Gauge, oil pressure	282897
1	Ammeter, AC	282934
1	Switch, toggle	287812
9	Spacer, 0.25 x 0.50 x 6-32 in.	287948
3	Fuse, 1.5 A, 250 V	291207
2	Lamp	291740
1	Switch, selector	292373
1	Holder, fuse	292821
4	Bumper	292834
1	Meter, frequency	295069
1	Box, silkscreen controller	GM13847
1	Harness, controller wiring	GM13853

Kit Part Lists, continued

Qty.	Description	Part No.
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Decision-Maker 1™, with Gauges and Meters (12-Lead Units)

358276

1	Bushing, reducing, 1/8 x 1/4 in.	A-106
1	Tee, pipe, 1/4 in.	A-110
1	Nipple, pipe, 1/4 x 1 1/2 in.	X-220-6
1	Bracket, CT mounting	225161
2	Transformer	259359
1	Sender, oil pressure gauge	264390
1	Cover, controller	336602
1	Panel, mounting	358173
1	Harness, wiring	358280
1	Harness, wiring	358283
1	Switch, sensor	358308
1	Controller assembly (includes all the following)	A-358260
1	Potentiometer assembly	A-255041
1	Governor assembly, electronic	A-358279
1	PCB assembly, relay control	B-358095
1	PCB assembly, cyclic crank	C-284507
1	Washer, lock, 1/4 in., interior tooth	X-22-11
2	Washer, lock, 1/4 in., interior/exterior tooth	X-22-12
4	Washer, lock, #6, interior star	X-22-6
1	Grommet	X-284-31
1	Terminal	X-431-42
2	Screw, pan head machine, 6-32 x 0.375 in.	X-49-2
18	Screw, pan head machine, 6-32 x 0.25 in.	X-49-25
2	Screw, pan head machine, 6-32 x 0.50 in.	X-49-39
4	Screw, round head machine, 8-32 x 1 3/8 in.	X-51-36
2	Screw, round head machine	X-51-53
4	Plug, cap, 1/8 in.	X-519-1
1	Tubing, 1 x 0.3 in. ID	X-6079-2
1	Tubing, 1 x 0.46 in. ID	X-6081-3
2	Screw, thread-forming	X-67-127
2	Nut, hex, 6-32 zinc	X-71-2
1	Tubing, 1 x 0.25 in. ID	X-748-21
1	Nut, hex, 1/4-20, green	X-81-8
1	Tab identification	201620-152
1	Fuse, 10 A, 250 V	223316
1	Strip, marker	225178
1	Strip, marker	225179
1	Gauge, water temperature	226716
1	Holder, fuse, 0.25 x 1.25 in.	238426
1	Hourmeter	238736
1	Relay	241736
1	Strap, ground	246083
1	Block, terminal	246115
1	Voltmeter	253329
1	Screw, special	267491
1	Lamp	269373
1	Voltmeter, AC	282814
1	Gauge, oil pressure	282897
1	Ammeter, AC	282934
1	Switch, toggle	287812
9	Spacer, 0.25 x 0.50 x 6-32 in.	287948
3	Fuse, 1.5 A, 250 V	291207
2	Lamp	291740
1	Switch, selector	292373
1	Holder, fuse	292821
4	Bumper	292834
1	Meter, frequency	295069
1	Box, silkscreen controller	358332
1	Harness, controller wiring	358333

Qty.	Description	Part No.
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Decision-Maker 1™, with Gauges and Meters (12-Lead Units)

GM13859-MA4

1	Bushing, reducing, 1/8 x 1/4 in.	A-106
1	Tee, pipe, 1/4 in.	A-110
1	Nipple, pipe, 1/4 x 1 1/2 in.	X-220-6
1	Bracket, CT mounting	225161
2	Transformer	259359
1	Sender, oil pressure gauge	264390
1	Cover, controller	336602
1	Panel, mounting	358173
1	Harness, wiring	358280
1	Harness, wiring	358283
1	Switch, sensor	358308
1	PCB assembly, voltage regulator PBV	B-258296
5	Vibromount	282829
1	Strap, ground	230857
1	Decal	259365
1	Decal, regulator adjustment	254831
1	Screw, hex head machine, special thread	267491
1	Controller assembly (includes all the following)	GM13252
1	Potentiometer assembly	A-255041
1	Governor assembly, electronic	A-358279
1	PCB assembly, relay control with flashing relay	GM12535
1	Washer, lock, 1/4 in., interior tooth	X-22-11
2	Washer, lock, 1/4 in., interior/exterior tooth	X-22-12
4	Washer, lock #6, interior star	X-22-6
1	Grommet	X-284-31
2	Screw, pan head machine, 6-32 x 0.375 in.	X-49-2
10	Screw, pan head machine, 6-32 x 0.25 in.	X-49-25
2	Screw, pan head machine, 6-32 x 0.50 in.	X-49-39
4	Screw, round head machine, 8-32 x 1 3/8 in.	X-51-36
2	Screw, round head machine	X-51-53
4	Plug, cap, 1/8 in.	X-519-1
1	Tubing, 1 x 0.3 in. ID	X-6079-2
2	Screw, thread-forming	X-67-127
2	Nut, hex, 6-32 zinc	X-71-2
1	Nut, hex, 1/4-20, green	X-81-8
1	Tab identification	201620-152
1	Fuse, 10 A, 250 V	223316
1	Strip, marker	225178
1	Strip, marker	225179
1	Gauge, water temperature	226716
1	Holder, fuse, 0.25 x 1.25	238426
1	Hourmeter	238736
1	Strap, ground	246083
1	Block, terminal	246115
1	Voltmeter	253329
1	Screw, special	267491
1	Lamp	269373
1	Voltmeter, AC	282814
1	Gauge, oil pressure	282897
1	Ammeter, AC	282934
1	Switch, toggle	287812
9	Spacer, 0.25 x 0.50 x 6-32 in.	287948
3	Fuse, 1.5 A, 250 V	291207
2	Lamp	291740
1	Switch, selector	292373
1	Holder, fuse	292821
4	Bumper	292834
1	Meter, frequency	295069
1	Box, silkscreen controller	GM13847
1	Harness, controller wiring	GM13853

Kit Part Lists, continued

Qty.	Description	Part No.
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Optional Accessories

Battery, 12 V (Wet Storage) 324553

1	Battery	324368
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Battery, 12 V (Dry Charged) 324554

1	Battery	324367
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Battery Charger, Float, 12 V, 6 A GM11849-KP1

1	Battery charger, 12 V, 6A, float-equalize	GM11849
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Battery Charger, Float, 12 V, 6 A GM28569-KP1

1	Battery charger, 12 V, 6A, float-equalize	GM28341
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Battery Charger, Trickle Charger PAA-248952

1	Installation Instructions	TT-938
1	Battery charger assembly	A-248952
	Includes the following:	
1	Terminal	X-283-8
2	Block, terminal	X-405-2
1	Terminal, female	X-431-27
9	Terminal, female	X-431-28
2	Connector, nonmetallic	X-567-1
4	Screw, drill	X-794-2
1	Holder, fuse	238426
1	Cord, power	246185
1	Cover, battery charger	246604
1	Ammeter, DC	269202
1	Transformer	269204
4	Spacer, screen	270833
1	Fuse, 1.5 A	291207
1	Lamp	291208
1	Resistor	291209
1	Switch, <i>high/low</i> slide	291210
1	Switch, <i>12/24 volt</i> slide	291211
1	Rectifier, silicon	291212
1	Resistor	291213
1	Cable, positive	291215
1	Cable, negative	291216
1	Nameplate, part no.	291221
1	Breaker, circuit	291265
1	Rheostat	291975
1	Box, battery charger	325389

Qty.	Description	Part No.
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Battery Charger, Equalize/Float

PAD-292862

1	Installation Instructions	TT-680
1	Installation Instructions, Circuit Board	TT-729
1	Battery charger assembly	D-292862
	Includes the following:	
1	PCB assembly, 12 V	C-262377
2	Terminal, ring, 4-6 screw	X-283-1
2	Terminal, ring, 8-10 screw	X-283-11
3	Terminal, ring, 6-8 screw	X-283-2
2	Tubing, heat shrink	X-6081-3
1	Decal, connection	233966
1	Fuse, 5-amp	239298
2	Clip, speed	257442
1	Fuse, 25-amp	262389
2	Holder, fuse	263156
1	Transformer	262394
1	Decal, warning	262397
1	Clip, cable	262399
2	Holder, fuse	263156
4	Spacer, circuit board	287948
1	Lamp	291208
1	Decal, explosion	292387
1	Sink, heat	292938
1	Strip, terminal	292940
1	Ammeter, DC	292941
1	Voltmeter, DC	292942
1	Module, SCR	292945
1	Resistor, power	292947
1	Fuse, 7-amp	292948
1	Harness, wiring	292958
1	Marker, strip	292961
1	Marker, strip	292962
2	Retainer	295010
1	Block, terminal	295314
4	Nut, captive	298810
1	Box, battery charger	325593
1	Door, silkscreen	325596
1	Nameplate	325609

Kit Part Lists, continued

Qty.	Description	Part No.
Battery Charger, Equalize/Float (with Alarms)		
		PAD-292863
1	Installation Instructions	TT-680
1	Installation Instructions, Circuit Board	TT-729
1	Battery charger assembly	D-292863
	Includes the following:	
1	PCB assembly, 12 V, charger low alarm	B-262374
1	PCB assembly, 12 V	C-262377
2	Terminal, ring, 4-6 screw	X-283-1
2	Terminal, ring, 8-10 screw	X-283-11
3	Terminal, ring, 6-8 screw	X-283-2
2	Tubing, heat shrink	X-6081-3
1	Decal, connection	233966
1	Fuse, 5-amp	239298
2	Clip, speed	257442
1	Fuse, 25-amp	262389
1	Transformer	262394
1	Decal, warning	262397
1	Clip, cable	262399
2	Holder, fuse	263156
4	Spacer, circuit board	287948
1	Lamp	291208
1	Decal, explosion	292387
1	Sink, heat	292938
1	Strip, terminal	292940
1	Ammeter, DC	292941
1	Voltmeter, DC	292942
1	Module, SCR	292945
1	Resistor, power	292947
1	Fuse, 7-amp	292948
1	Harness, wiring	292958
1	Marker, strip	292961
1	Marker, strip	292962
1	Retainer	295010
1	Block, terminal	295314
4	Nut, captive	298810
1	Box, battery charger	325593
1	Door, silkscreen	325596
1	Nameplate	325609
Breaker, Line Circuit, 20 A		
		358305
1	Breaker, circuit	269251
Breaker, Line Circuit, 25 A		
		358292
1	Breaker, circuit	255168
Breaker, Line Circuit, 30 A		
		358293
1	Breaker, circuit	269250
Breaker, Line Circuit, 40 A		
		358295
1	Breaker, circuit	269252
Breaker, Line Circuit, 50 A		
		358297
1	Breaker, circuit	258928
Breaker, Line Circuit, 60 A		
		358299
1	Breaker, circuit	253224
Breaker, Line Circuit, 80 A		
		358302
1	Breaker, circuit	253225

Qty.	Description	Part No.
Breaker, Line Circuit, 100 A		
		358304
1	Breaker, circuit	253226
Breaker, Line Circuit, 20 A		
		GM22494-KA1
1	Breaker, circuit	269251
1	Decal, power breaker	GM15301
1	Bracket, breaker mounting	GM22418
1	Cover, junction box	GM23688
Breaker, Line Circuit, 25 A		
		GM22494-KA2
1	Breaker, circuit	255168
1	Decal, power breaker	GM15301
1	Bracket, breaker mounting	GM22418
1	Cover, junction box	GM23688
Breaker, Line Circuit, 30 A		
		GM22494-KA3
1	Breaker, circuit	269250
1	Decal, power breaker	GM15301
1	Bracket, breaker mounting	GM22418
1	Cover, junction box	GM23688
Breaker, Line Circuit, 40 A		
		GM22494-KA4
1	Breaker, circuit	269252
1	Decal, power breaker	GM15301
1	Bracket, breaker mounting	GM22418
1	Cover, junction box	GM23688
Breaker, Line Circuit, 50 A		
		GM22494-KA5
1	Breaker, circuit	258928
1	Decal, power breaker	GM15301
1	Bracket, breaker mounting	GM22418
1	Cover, junction box	GM23688
Breaker, Line Circuit, 60 A		
		GM22494-KA6
1	Breaker, circuit	253224
1	Decal, power breaker	GM15301
1	Bracket, breaker mounting	GM22418
1	Cover, junction box	GM23688
Breaker, Line Circuit, 80 A, 480 V		
		GM22494-KA7
1	Breaker, circuit	253225
1	Decal, power breaker	GM15301
1	Bracket, breaker mounting	GM22418
1	Cover, junction box	GM23688
Breaker, Line Circuit, 100 A, 120/240V		
		GM22494-KA8
1	Breaker, circuit	GM22482
1	Decal, power breaker	GM15301
Breaker, Line Circuit, 80 A, 120/240V		
		GM22494-KA9
1	Breaker, circuit	GM24462
1	Decal, power breaker	GM15301
Connector, Flexible Exhaust (with Housing)		
		PA-324093
1	Clamp, muffler, 2.12 in.	X-722-5
1	Adapter, flexible exhaust	324089

Kit Part Lists, continued

Qty.	Description	Part No.
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Duct Flange, Radiator 358291

16	Rivet, pop	X-781-11
2	Frame, air duct, side	GM14000
2	Frame, air duct, top	GM14001

Duct Flange, Radiator GM19363-KP1

20	Rivet, pop	X-781-11
2	Frame, air duct, side	358289
2	Frame, air duct, top	358290

Exhaust Elbow (without Housing) 358330

2	Nut, hex	X-6053-11
1	Clamp, muffler, 2.12 in.	X-722-5
1	Adapter, flexible exhaust	324089
1	Gasket, exhaust	358235
1	Pipe, exhaust	358334

Exhaust Elbow and Guard GM10672-KP1

1	Elbow, exhaust tube	GM10670
1	Guard, exhaust	GM10793
7	Screw, hex washer, thread-forming	X-67-133
1	Clamp, muffler, 2.12 in.	X-722-5

Fuel Line, Flexible 226663

1	Line, flexible fuel	326268
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Fuel Line, Flexible (Gas) 358296

1	Bushing, reducing, 3/4 x 1/2 in.	153659
1	Line, flexible fuel	326268

Guard, Rodent 358300

3	Screw, hex head	X-6216-1
1	Screen, adapter	358203

Heater, Battery 120 VAC 358225

1	Heater, battery wrap	336814
1	Heater, battery pad	336825

Heater, Block, 110/120 VAC 358314

1	Tee, pipe, 1/4 in.	A-110
1	Bushing, reducer, 1/8 in.	X-202-27
1	Nipple, pipe, 1 x 1/8 in.	X-217-7
1	Valve, drain, 1/4 in.	X-256-3
1	Hose	X-312-17
1	Hose	X-312-18
1	Connector, hose elbow	X-391-19
4	Clamp, hose	X-426-10
1	Connector, hose	X-582-22
1	Tag, hang	279047
1	Bracket, block heater	326219
1	Heater, block	358311

Qty.	Description	Part No.
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Heater, Block, 190/240 VAC 358328

1	Tee, pipe, 1/4 in.	A-110
1	Bushing, reducer, 1/8 in.	X-202-27
1	Nipple, pipe, 1 x 1/8 in.	X-217-7
1	Valve, drain, 1/4 in.	X-256-3
1	Hose	X-312-17
1	Hose	X-312-18
1	Connector, hose elbow	X-391-19
4	Clamp, hose	X-426-10
1	Connector, hose	X-582-22
1	Tag, hang	279047
1	Bracket, block heater	326219
1	Heater, block	358327

Housing, Weather 358301

See Group 501 for parts list.

Housing, Weather (with Loose Elbow) GM12220-KA1

See Group 501: Housing variation 1 and Exhaust elbow and guard kit GM10672-KP1 for parts list.

Housing, Weather GM20580-KA1

4	Cover, skid rail	254758
4	Insert, threaded, 1/4-20 in.	320828
4	Pin, threaded, 1/4-20, 1.18 in.	345283
1	Tube, exhaust elbow, 2.00 in. OD	GM10670
1	Decal, Rainproof Enclosure	GM15299
4	Latch, lockable, black	GM31202
4	Grommet	X-284-45
2	Decal	X-6348-2
1	Clamp, muffler, 2.12 in.	X-722-5
1	Roof, housing	GM23322
1	Guard, exhaust	GM10793
1	Panel, housing end, generator	GM20582
1	Panel, housing inner, generator	GM20583
1	Duct, door, right hand	GM20585
1	Duct, door, left hand upper	GM20586
1	Duct, door, left hand lower	GM20587
2	Door, housing, generator	GM31237

Literature, General Maintenance PA-276825

1	Owners Manual, Ford VSG-411/413	TP-5398
1	Wiring Diagram Manual, Ford 10-18RY/RZ	TP-5716
1	Parts Catalog, 17/22RY	TP-6007
1	Owners Manual, 10-18RY/RZ, Industrial	TP-5870

Literature, Overhaul PA-276806

1	Service Manual, Ford VSG-411/413	TP-5346
1	Owners Manual, Ford VSG-411/413	TP-5398
1	Installation Manual, Industrial	TP-5700
1	Wiring Diagram Manual, Ford 10-18RY/RZ	TP-5716
1	Service Manual, 10-18RY/RZ Industrial	TP-5847
1	Parts Catalog, 17/22RY	TP-6007
1	Owners Manual, 10-18RY/RZ Industrial	TP-5870

Literature, General Maintenance PA-327323

1	Warranty	TP-5374
1	Owners Manual, Ford VSG-411/413	TP-5398
1	Wiring Diagram Manual, Ford 10-18RY/RZ	TP-5716
1	Warranty, California Emission	TP-5762
1	Owners Manual, 10-18RY/RZ Industrial	TP-5870

Kit Part Lists, continued

Qty.	Description	Part No.
Rain Cap for Silencer (Engine-Mounted)		225243
1	Cap, rain	276254
Rain Cap for Silencer (Engine-mounted)		358381
1	Clamp, U	X-722-5
1	Cap, rain	276254
1	Connector, pipe	358380
Relay, Common Fault, 1-Phase		358372
1	Relay, 12 VDC, .20 A	259391
1	Harness, fault relay kit	358375
1	Screw, slotted pan head machine	X-50-1
Relay, Common Fault, 3-Phase		358373
1	Relay, 12 VDC, .20 A	259391
1	Harness, fault relay kit	358375
1	Screw, slotted pan head machine	X-50-1
Relay, Run		273743
1	Installation Instructions	TT-700
1	Relay assembly	273705
Silencer, Residential (Engine-mounted)		358329
2	Nut, hex	X-6053-11
1	Muffler, exhaust	358233
1	Insulator	358234
1	Gasket, exhaust	358235
Silencer, Industrial, 2 in., NPT SIEO		PA-324065
1	Silencer, industrial	276256
Silencer, Critical, 2 in., NPT SIEO		PA-324064
1	Silencer, critical	276257
Silencer, Industrial, 2 in., NPT EIEO		PA-324067
1	Silencer, industrial	280157
Silencer, Critical, 2 in., NPT EIEO		PA-324066
1	Silencer, critical	290494
Sound Attenuator		GM13784-KP1
12	Insert, threaded 1/4-20 in.	320828
1	Elbow, exhaust tube	GM10670
4	Bracket, screen	GM13790
1	Cover, louver	GM13791
2	Foam, acoustic insulation	GM13792
1	Foam, acoustic insulation	GM13793
1	Foam, acoustic insulation	GM13794
1	Foam, acoustic insulation	GM13795
2	Screen, air inlet guard	GM13796
2	Panel, sound attenuated front	GM13802
2	Panel, sound attenuated side, right hand	GM13803
2	Panel, sound attenuated side, left hand	GM13804
2	Baffle, sound attenuated	GM13805
2	Panel, sound attenuated roof	GM13806
1	Sound attenuator, 17/22RY	TT-1279
36	Washer, plain, .281 ID x .625 in. OD	X-25-40
36	Bolt, hex cap	X-465-2
12	Nut, flange spiralock, 1/4-20	X-6210-2
20	Clip, panel fastener	X-6340-2
1	Clamp, muffler, 2.12 in.	X-722-5

Qty.	Description	Part No.
Sound Shield		GM10629-KP1
1	Sound shield enclosure kit, 17/22RY	TT-1263
10	Washer, plain, .438 ID x 1 in. OD	X-25-1
1	Sound enclosure assembly	GM10678
Includes the following:		
8	Washer, fiber, .25 ID x .71 in. OD	222889
12	Gusset, corner	276902
2	Strip, roof panel	276909
2	Latch, key locking	276918
28	Insert, threaded, 1/4-20 in.	344484
4	Pin, threaded	345283
1	Channel, drain, right side	358398
1	Channel, drain, left side	358399
4	Channel, end	358400
4	Support, corner	358401
1	Channel, air intake, right side	GM19294
1	Channel, air intake, left side	GM19295
4	Insert, threaded	GM14020
4	Support, roof	358404
1	Panel, roof	358405
1	Panel, inner	358407
2	Baffle, outer	358408
2	Support, baffle	358409
2	Door, front and rear	358410
2	Panel, side	358411
4	Brace	358412
2	Door	358413
1	Panel, roof	358414
1	Panel, roof	358418
2	Baffle, inner	GM10259
2	Panel, inner side	GM10261
1	Baffle, inner panel	GM10263
2	Support, inner panel baffle	GM10264
1	Elbow, muffler	GM10641
3	Decal, Kohler Generator, black	GM14197-1
8	Washer, plain, .281 ID x .625 in. OD	X-25-142
8	Bolt, hex cap	X-465-36
1	Clamp, muffler, 2.12 in.	X-722-5
132	Rivet, pop, .187 in.	X-781-15
2	Screw, hex washer head, drill	X-794-1
1	Insulation assembly (includes the following)	GM17202
4	Insulation, acoustic, 41.75 x 8.25 in., channel, end	222679
2	Insulation, acoustic foam, channel, drain	358420
4	Insulation, acoustic foam, support, corner	358421
2	Insulation, acoustic foam, channel, air intake	358422
2	Insulation, acoustic foam, panel, roof	358423
2	Insulation, acoustic foam, panel, inner side	358424
2	Insulation, acoustic foam, outer baffle	358425
2	Insulation, acoustic foam, door, front and rear	358426
2	Insulation, acoustic foam, panel, side	358427
2	Insulation, acoustic foam, door	358428
2	Insulation, acoustic foam, inner baffle	GM10260
1	Insulation, acoustic foam	GM10265

Strainer, Natural Gas		PA-290275
1	Strainer, gas	292485

Notes

Appendix A Abbreviations

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

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

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

Appendix B Common Hardware Application Guidelines

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

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

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

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

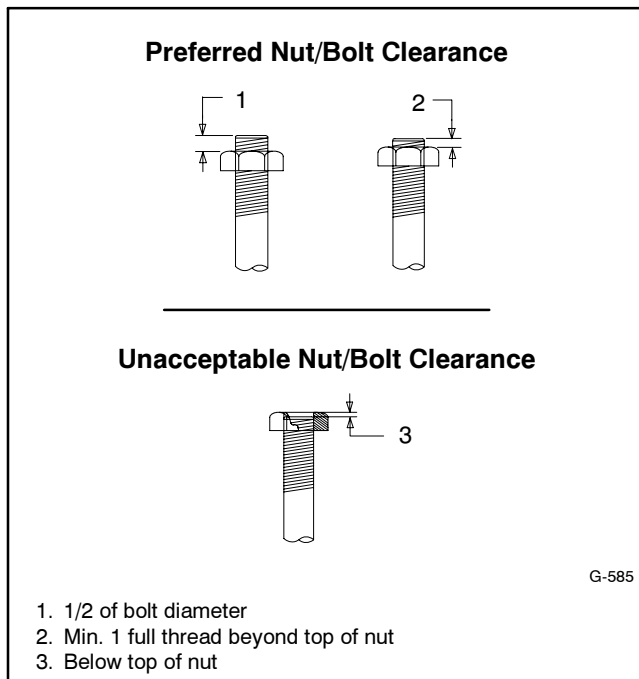


Figure 1 Acceptable Bolt Lengths

Steps for common hardware application:

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

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

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

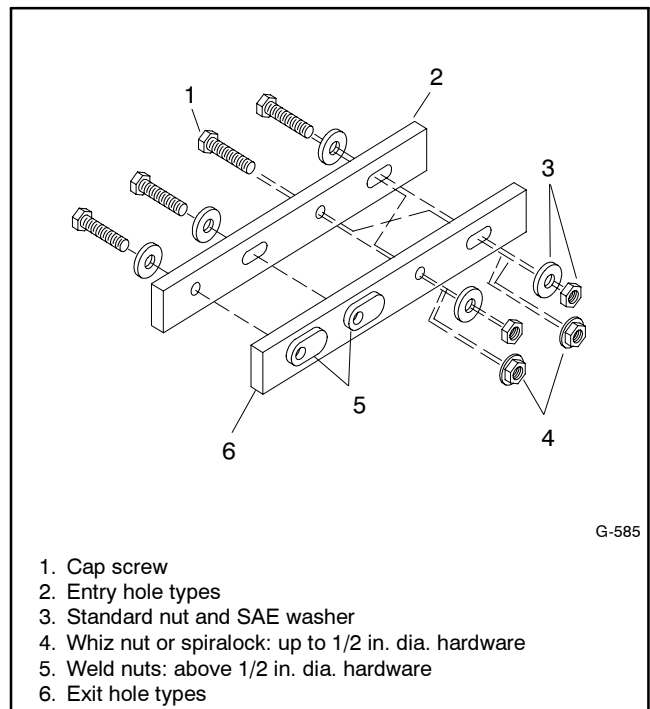


Figure 2 Acceptable Hardware Combinations

Appendix C General Torque Specifications

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

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

Notes:

1. 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 Hex Head Bolts (Grade 5)

X-465-17	1/4-20 x .38
X-465-6	1/4-20 x .50
X-465-2	1/4-20 x .62
X-465-16	1/4-20 x .75
X-465-18	1/4-20 x .88
X-465-7	1/4-20 x 1.00
X-465-8	1/4-20 x 1.25
X-465-9	1/4-20 x 1.50
X-465-10	1/4-20 x 1.75
X-465-11	1/4-20 x 2.00
X-465-12	1/4-20 x 2.25
X-465-14	1/4-20 x 2.75
X-465-21	1/4-20 x 5.00
X-465-25	1/4-28 x .38
X-465-20	1/4-28 x 1.00
X-125-33	5/16-18 x .50
X-125-23	5/16-18 x .62
X-125-3	5/16-18 x .75
X-125-31	5/16-18 x .88
X-125-5	5/16-18 x 1.00
X-125-24	5/16-18 x 1.25
X-125-34	5/16-18 x 1.50
X-125-25	5/16-18 x 1.75
X-125-26	5/16-18 x 2.00
230578	5/16-18 x 2.25
X-125-29	5/16-18 x 2.50
X-125-27	5/16-18 x 2.75
X-125-28	5/16-18 x 3.00
X-125-22	5/16-18 x 4.50
X-125-32	5/16-18 x 5.00
X-125-35	5/16-18 x 5.50
X-125-36	5/16-18 x 6.00
X-125-40	5/16-18 x 6.50
X-125-43	5/16-24 x 1.75
X-125-44	5/16-24 x 2.50
X-125-30	5/16-24 x .75
X-125-39	5/16-24 x 2.00
X-125-38	5/16-24 x 2.75
X-6238-2	3/8-16 x .62
X-6238-10	3/8-16 x .75
X-6238-3	3/8-16 x .88
X-6238-11	3/8-16 x 1.00
X-6238-4	3/8-16 x 1.25
X-6238-5	3/8-16 x 1.50
X-6238-1	3/8-16 x 1.75
X-6238-6	3/8-16 x 2.00
X-6238-17	3/8-16 x 2.25
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

Part No. Dimensions Hex Head Bolts, cont.

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
X-6024-5	7/16-14 x .75
X-6024-2	7/16-14 x 1.00
X-6024-8	7/16-14 x 1.25
X-6024-3	7/16-14 x 1.50
X-6024-4	7/16-14 x 2.00
X-6024-11	7/16-14 x 2.75
X-6024-12	7/16-14 x 6.50
X-129-15	1/2-13 x .75
X-129-17	1/2-13 x 1.00
X-129-18	1/2-13 x 1.25
X-129-19	1/2-13 x 1.50
X-129-20	1/2-13 x 1.75
X-129-21	1/2-13 x 2.00
X-129-22	1/2-13 x 2.25
X-129-23	1/2-13 x 2.50
X-129-24	1/2-13 x 2.75
X-129-25	1/2-13 x 3.00
X-129-27	1/2-13 x 3.50
X-129-29	1/2-13 x 4.00
X-129-30	1/2-13 x 4.50
X-463-9	1/2-13 x 5.50
X-129-44	1/2-13 x 6.00
X-129-51	1/2-20 x .75
X-129-45	1/2-20 x 1.25
X-129-52	1/2-20 x 1.50
X-6021-3	5/8-11 x 1.00
X-6021-4	5/8-11 x 1.25
X-6021-2	5/8-11 x 1.50
X-6021-1	5/8-11 x 1.75
273049	5/8-11 x 2.00
X-6021-5	5/8-11 x 2.25
X-6021-6	5/8-11 x 2.50
X-6021-7	5/8-11 x 2.75
X-6021-12	5/8-11 x 3.75
X-6021-11	5/8-11 x 4.50
X-6021-10	5/8-11 x 6.00
X-6021-9	5/8-18 x 2.50
X-6239-1	3/4-10 x 1.00
X-6239-8	3/4-10 x 1.25
X-6239-2	3/4-10 x 1.50
X-6239-3	3/4-10 x 2.00
X-6239-4	3/4-10 x 2.50
X-6239-5	3/4-10 x 3.00
X-6239-6	3/4-10 x 3.50
X-792-1	1-8 x 2.25
X-792-5	1-8 x 3.00
X-792-8	1-8 x 5.00

Part No. Dimensions Type

Hex Nuts

X-6009-1	1-8	Standard
X-6210-3	6-32	Whiz
X-6210-4	8-32	Whiz
X-6210-5	10-24	Whiz
X-6210-1	10-32	Whiz
X-6210-2	1/4-20	Spiralock
X-6210-6	1/4-28	Spiralock
X-6210-7	5/16-18	Spiralock
X-6210-8	5/16-24	Spiralock
X-6210-9	3/8-16	Spiralock
X-6210-10	3/8-24	Spiralock
X-6210-11	7/16-14	Spiralock
X-6210-12	1/2-13	Spiralock
X-6210-15	7/16-20	Spiralock
X-6210-14	1/2-20	Spiralock
X-85-3	5/8-11	Standard
X-88-12	3/4-10	Standard
X-89-2	1/2-20	Standard

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 Hex Head Bolts (Partial Thread)

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

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

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

Hex Head Bolts (Full Thread)

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

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

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

Pan Head Machine Screws

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

Flat Head Machine Screws

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

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

Metric, continued

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

Washers

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

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

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Notes

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