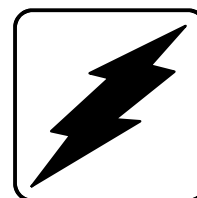


# Service Parts

## Residential/Commercial Generator Sets



Models:

**6ROY/ROZ**  
**10ROY/ROZ**  
**15ROY/ROZ**



**KOHLER**<sup>®</sup>  
POWER SYSTEMS

TP-5556 4/01e

# Table of Contents

Introduction .....	1
Numbering System Significance .....	1
Illustrations .....	1
How to Find Part Numbers .....	1
Hardware References .....	1
Specification Number Index .....	2
Specification Number Index .....	3
Group 1: Cylinder Block .....	4
Group 2: Gear Housing .....	8
Group 3: Flywheel Housing and Oil Pan .....	10
Group 4: Cylinder Head .....	12
Group 5: Intake Manifold .....	16
Group 6: Exhaust Manifold .....	17
Group 7: Camshaft and Drive Gear .....	18
Group 8: Crankshaft, Flywheel, and Pistons .....	20
Group 9: Lube Oil System .....	22
Group 10: Cooling Water System .....	24
Group 12: Fuel Injection Pump .....	26
Group 12: Fuel Injection Pump .....	27
Group 13: Governor .....	30
Group 14: Fuel Injection Lines .....	34
Group 15: Fuel Filter and Fuel Line .....	36
Group 16: Starting Motor .....	38
Group 17: Alternator .....	40
Group 18: Gasket Set .....	42
Group 101: Air Intake .....	43
Group 103: Fuel System .....	44
Group 104: Cooling System .....	46
Group 105: Engine .....	48
Group 107: Nameplate and Decals .....	49
Group 109: Skid and Plant Mounting .....	50
Group 201: Generator and Mounting .....	52
Group 301: Controller and Mounting .....	58
Group 701: Literature .....	60
Kit List .....	62
Control Kit .....	64
Parts List: Accessories .....	69
Appendix A Abbreviations .....	A-1
Appendix B Common Hardware Application Guidelines .....	A-3
Appendix C General Torque Specifications .....	A-4
Appendix D Common Hardware Identification .....	A-5
Appendix E Common Hardware List .....	A-6

# Introduction

This manual lists service replacement parts for 6–15 kW generator sets.

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

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

This manual includes the following main sections:

**Table of Contents.** Lists the sections of the manual.

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

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

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

**Kit Sections.** List modules and accessories and their parts.

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

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## Numbering System Significance

This manual uses the following numbering systems:

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

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

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

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

## Illustrations

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

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## 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.

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## 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.

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# Specification Number Index

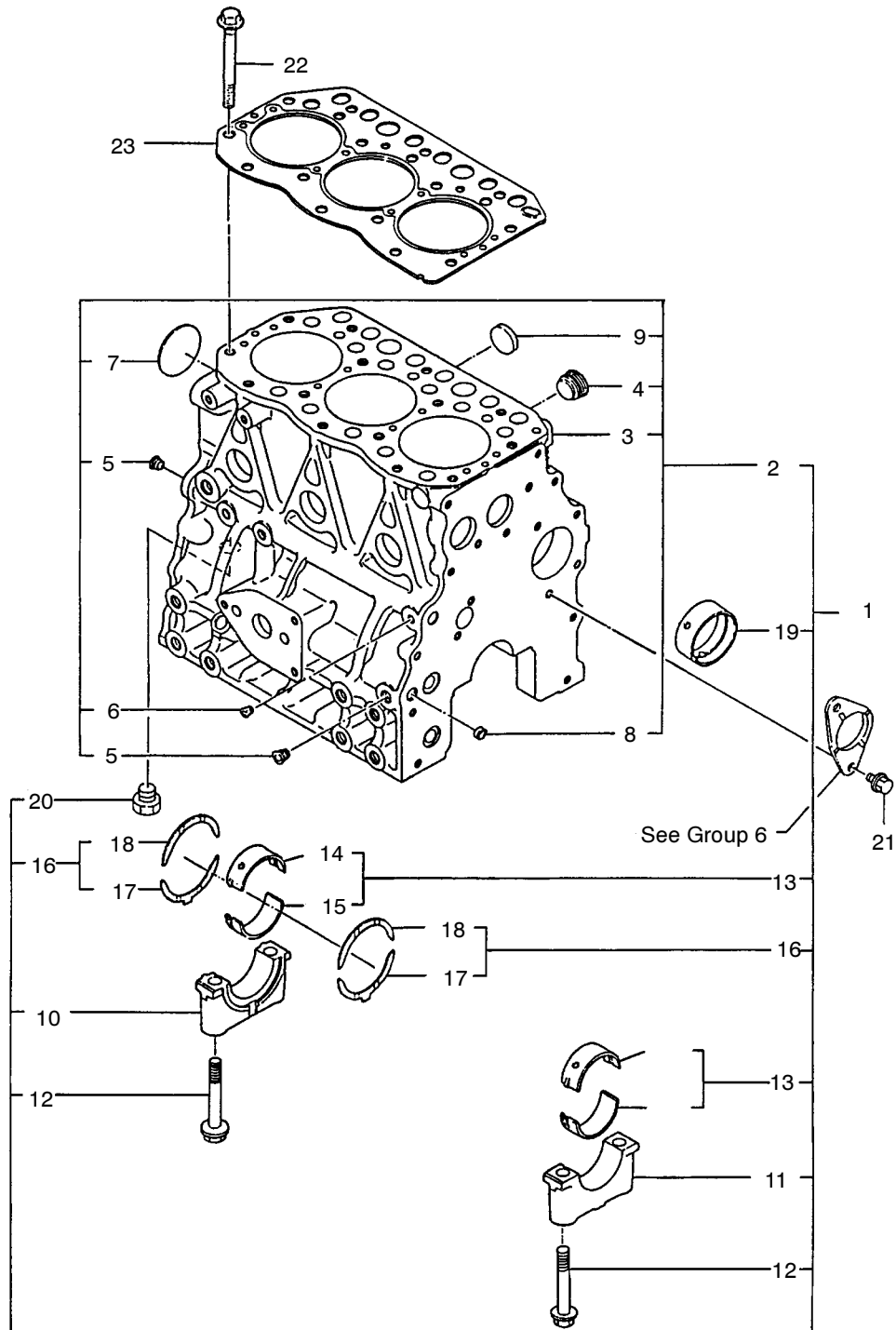
Group Title		<i>Cylinder Block</i>	<i>Gear Housing</i>	<i>Flywheel Housing</i>	<i>Cylinder Head</i>	<i>Intake Manifold</i>	<i>Exhaust Manifold</i>	<i>Camshaft</i>	<i>Crankshaft &amp; Pistons</i>	<i>Lube Oil System</i>	<i>Cooling Water</i>	<i>Thermostat</i>	<i>Fuel Injection Pump</i>	<i>Governor</i>	<i>Fuel Injection Line</i>	<i>Fuel Filter &amp; Line</i>	<i>Starting Motor</i>	<i>Engine Alternator</i>	<i>Gasket Set</i>
Group No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
Spec No.	Variation Number																		
<b>6ROY/ROZ</b>																			
PA-126501	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	
PA-126502	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	
PA-126503	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	
PA-126504	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	
PA-126505	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	
PA-126506	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	
PA-126507	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	
PA-126508	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	
PA-126509	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	
PA-126510	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	
<b>10ROY/ROZ</b>																			
PA-126601	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	
PA-126602	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	
PA-126603	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	
PA-126604	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	
PA-126605	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	
PA-126606	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	
PA-126607	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	
PA-126608	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	
PA-126609	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	
PA-126610	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	
<b>15ROY/ROZ</b>																			
PA-126701	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	
PA-126702	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	
PA-126703	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	
PA-126704	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	
PA-126705	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	
PA-126706	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	
PA-126707	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	
PA-126708	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	
PA-126709	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	
PA-126710	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	

# Specification Number Index

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>Generator and Mounting</i>	<i>Controller and Mounting</i>	<i>Literature</i>
Group No.	101	103	104	105	107	109	201	301	701	
Spec No.	Variation Number									
<b>6ROY/ROZ</b>										
PA-126501	8	10	15	21	14	17	22	27	4	
PA-126502	8	10	*	21	14	17	22	*	4	
PA-126503	8	10	15	21	15	17	23	27	6	
PA-126504	8	10	*	21	15	17	23	*	6	
PA-126505	8	10	*	21	24	17	24	*	4	
PA-126506	12	14	15	27	14	17	22	32	4	
PA-126507	12	14	*	27	14	17	22	*	4	
PA-126508	12	14	15	27	15	17	23	32	6	
PA-126509	12	14	*	27	15	17	23	*	6	
PA-126510	12	14	*	27	24	17	24	*	6	
<b>10ROY/ROZ</b>										
PA-126601	9	11	13	22	16	18	25	27	9	
PA-126602	9	11	*	22	16	18	25	*	9	
PA-126603	9	11	13	22	17	18	26	27	11	
PA-126604	9	11	*	22	17	18	26	*	11	
PA-126605	9	11	*	22	26	18	27	*	9	
PA-126606	13	-	13	28	16	18	25	32	9	
PA-126607	13	-	*	28	16	18	25	*	9	
PA-126608	13	-	13	28	17	18	26	32	11	
PA-126609	13	-	*	28	17	18	26	*	11	
PA-126610	13	-	*	28	26	18	27	*	9	
<b>15ROY/ROZ</b>										
PA-126701	9	12	14	23	18	19	28	28	10	
PA-126702	9	12	*	23	18	19	28	*	10	
PA-126703	9	12	14	23	19	19	29	28	12	
PA-126704	9	12	*	23	19	19	29	*	12	
PA-126705	9	12	*	23	25	19	30	*	10	
PA-126706	13	-	14	29	18	19	28	33	10	
PA-126707	9	-	*	29	18	19	28	*	10	
PA-126708	13	-	14	29	19	19	29	33	12	
PA-126709	9	-	*	29	19	19	29	*	12	
PA-126710	9	-	*	29	25	19	30	*	10	

\* Configured group. Refer to the generator set nameplate for the kit/module number. Turn to the Kit List for parts breakdowns.

# Group 1: Cylinder Block



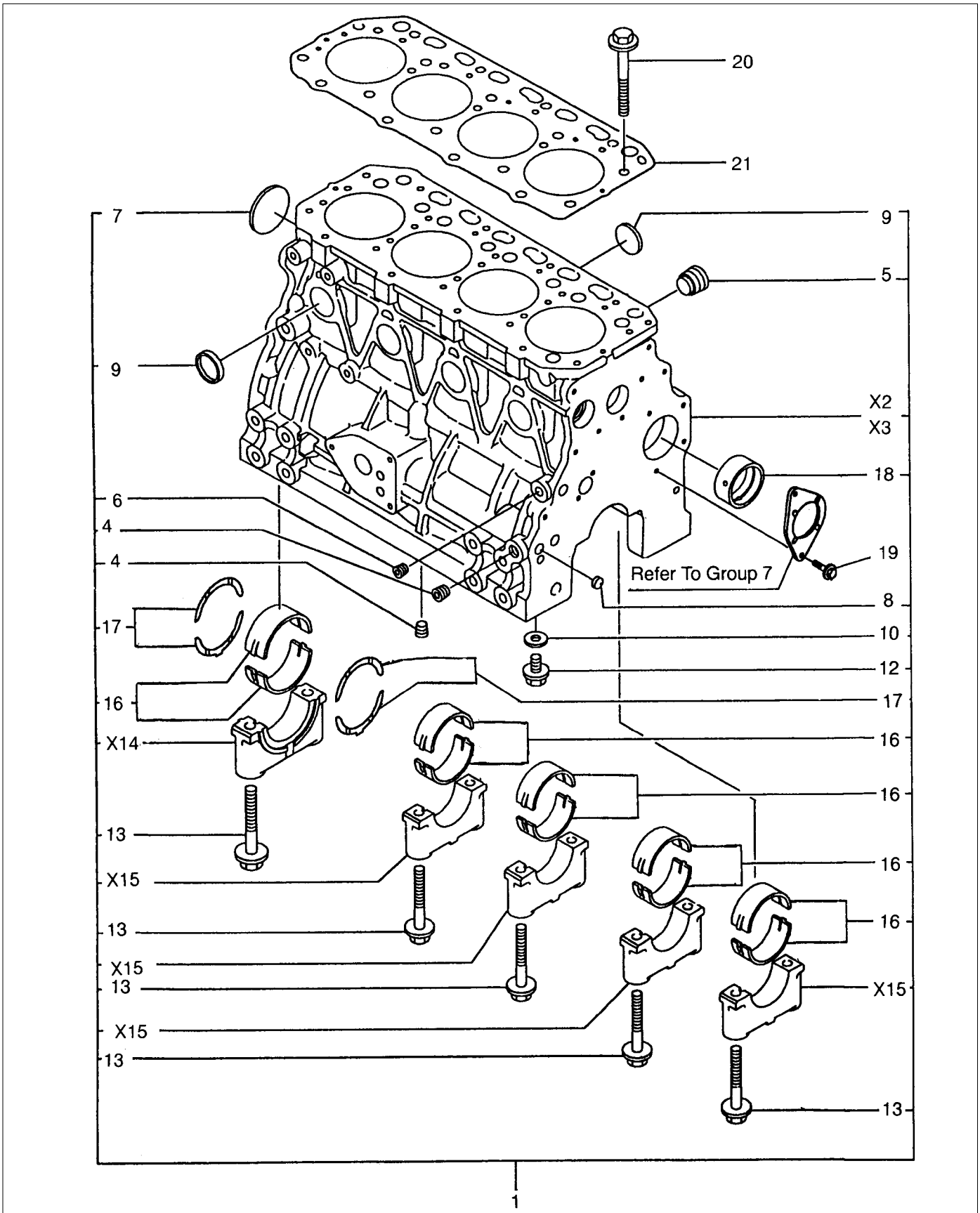
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# Group 1: Cylinder Block

Item	Part Number	Description	Quantity			
			Variation Number			
			21	22	27	28
1	225831	Assembly, cylinder block	1			
1	225928	Assembly, cylinder block		1		
1	225441	Assembly, cylinder block			1	
2	X	Assembly, cylinder block	1	1	1	1
3	X	Block, cylinder	1	1	1	1
4	252566	Plug	1	1	1	1
5	252771	Plug, PT 1/4	2	2	2	3
6	256515	Plug, PT 1/8, screw	1	1	1	1
7	225827	Plug 50	1	1	1	1
8	252728	Plug 12	2	2	2	2
9	252731	Plug 30	6			
9	225924	Plug		6	6	6
10	X	Cap, bearing	1	1	1	1
11	X	Cap, bearing	3	3	3	3
12	225703	Bolt, bearing cap	8		8	
12	252803	Bolt, bearing cap		8		8
13	225832	Bearing, main	4		4	
13	252976	Bearing, main		4		
13	363428	Bearing, main				4
13	225709	Bearing, main, undersize 0.25	4		4	
13	256585	Bearing, main, undersize 0.25		4		
13	256763	Bearing, main, undersize 0.25				4
14	X	Bearing, main	4	4	4	4
15	X	Bearing, main	4	4	4	4
16	225833	Bearing, thrust	2		2	
16	252977	Bearing, thrust		2		2
16	225710	Bearing, thrust, oversize 0.25	2		2	
16	256586	Bearing, thrust, oversize 0.25		2		
16	256765	Bearing, thrust, oversize 0.25				2
17	X	Bearing, thrust	2	2	2	2
18	X	Bearing, thrust	2	2	2	2
19	252933	Bush, camshaft	1	1	1	1
20	256518	Plug 12, hex	2		2	
21	252696	Bolt, M8 x 16, plated	2	2	2	2
22	225705	Bolt, cylinder head	14		14	
22	252797	Bolt, cylinder head		14		14
23	225756	Gasket, cylinder head	1			
23	225875	Gasket, cylinder head		1		
23	225399	Gasket, cylinder head			1	
23	GM13304	Gasket, cylinder head				1

X Item not sold separately

# Group 1: Cylinder Block



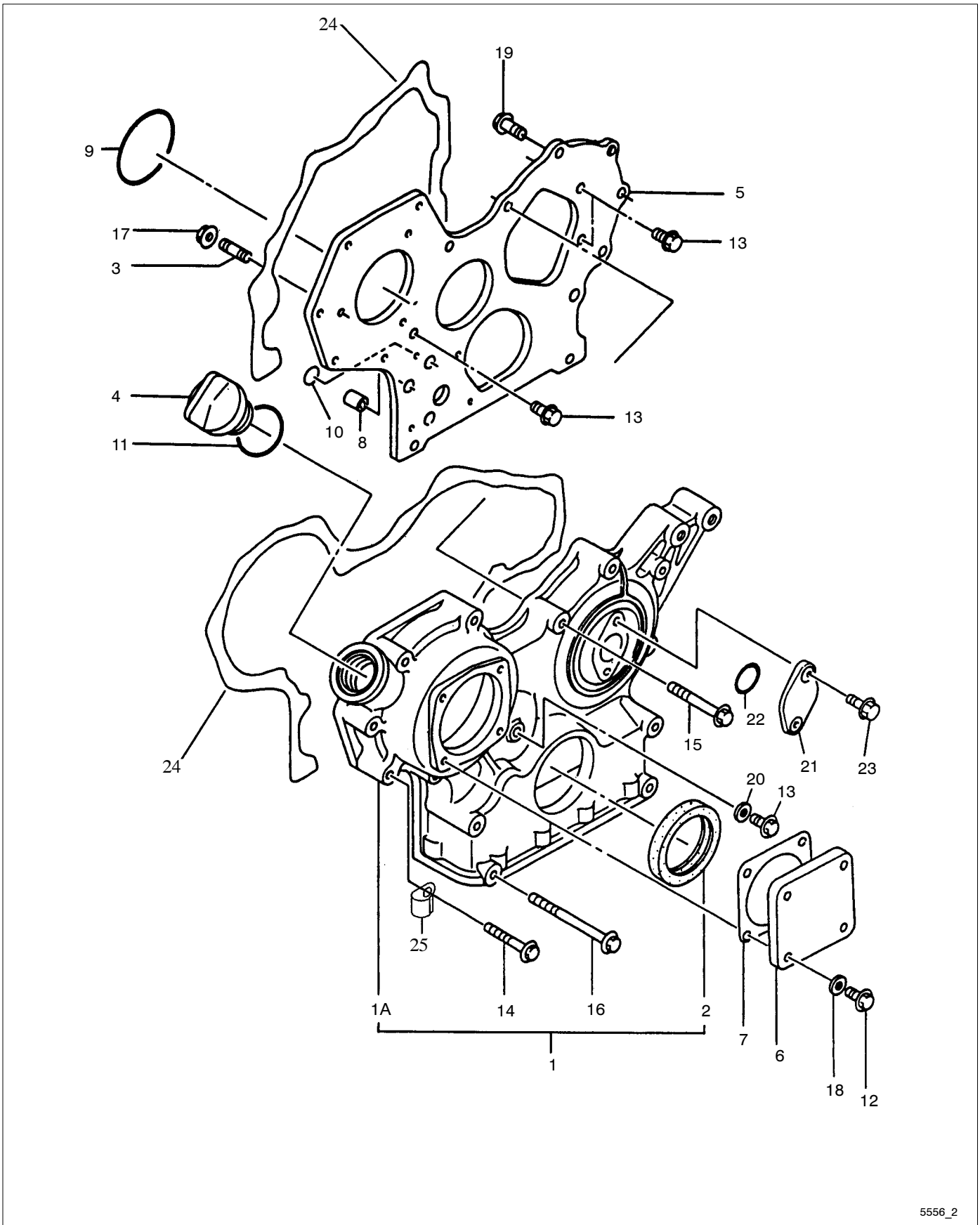


# Group 1: Cylinder Block

Item	Part Number	Description	Quantity	
			Variation Number	
			23	29
1	225931	Assembly, cylinder block (includes items 2-21)	1	
2	363427	Assembly, cylinder block (includes items 2-21)		1
2	X	Assembly, cylinder block	1	1
3	X	Cylinder block	1	1
3	250975	Plug, 3/8 in. (not shown)	1	1
4	252771	Plug, 1/4 in.	3	3
5	252566	Plug	1	1
6	256515	Plug, 1/8 in., screw	1	1
7	252726	Plug, 50 mm	1	1
8	252728	Plug, 12 mm	2	2
9	225924	Plug, 30 mm	8	8
10	250967	Gasket, round	4	
12	252695	Bolt, M8 x 12, plated	4	
13	252803	Bolt, bearing cap	10	10
14	X	Cap, main bearing	1	1
15	X	Cap, bearing	4	4
16	256762	Bearing, main	5	
16	GM13297	Bearing, main		5
16	256763	Bearing, main, undersize 0.25	5	
16	256585	Bearing, main, undersize 0.25		5
17	256764	Bearing, thrust	2	
17	252977	Bearing, thrust		2
17	256765	Bearing, thrust, oversize 0.25	2	2
18	252933	Bushing, camshaft	1	1
19	252696	Bolt, M8 x 16, plated	2	2
20	252797	Stud, cylinder head	18	18
21	225281	Gasket, cylinder head	1	
21	363429	Gasket, cylinder head		1

X Item not sold separately

# Group 2: Gear Housing



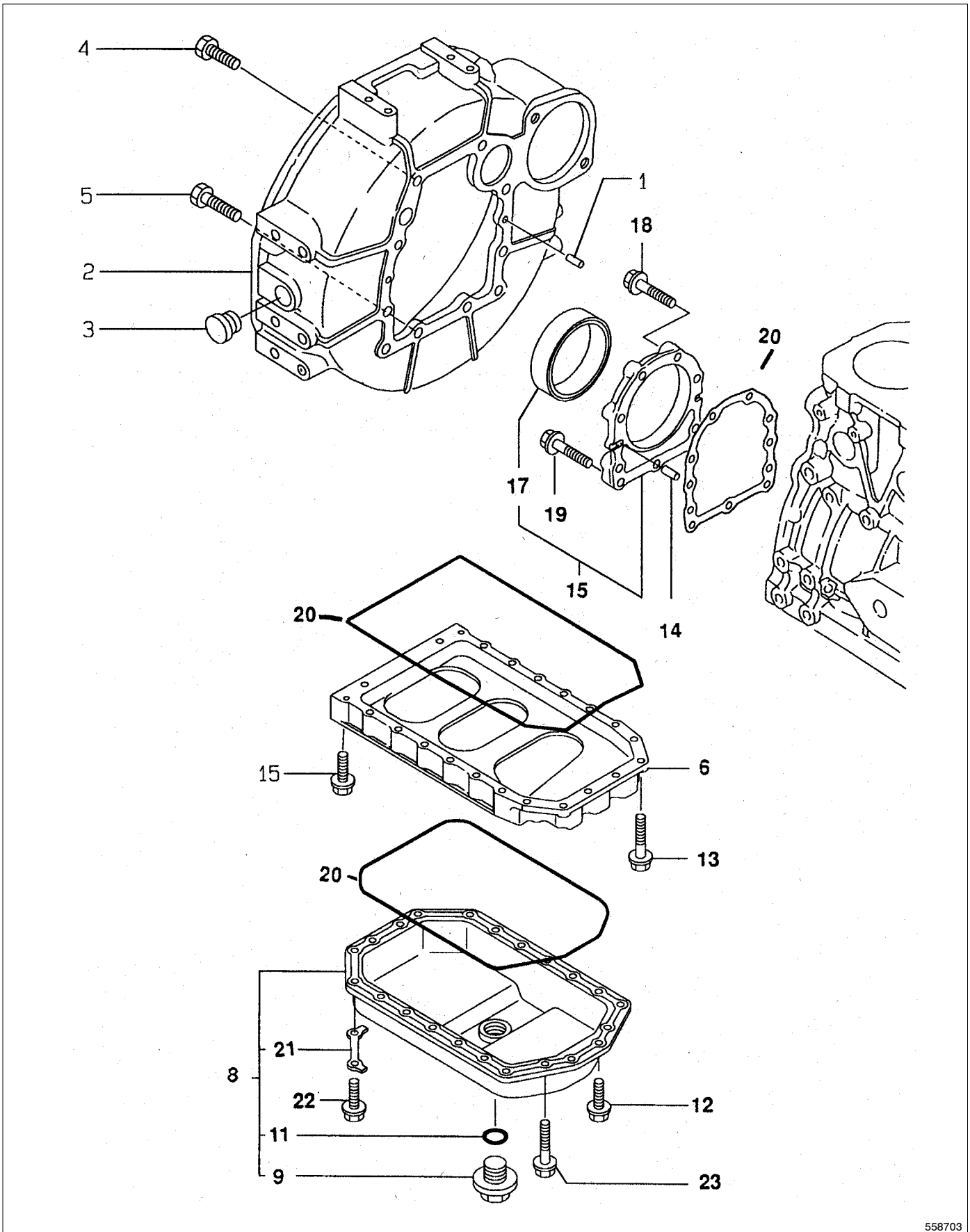
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## Group 2: Gear Housing

Item	Part Number	Description	Quantity					
			Variation Number					
			21	22	23	27	28	29
1	225793	Assembly, gear housing	1	1	1			
1	229799	Assembly, gear housing				1	1	
1	252860	Assembly, gear housing						1
1A	X	Housing, gear	1	1	1	1	1	
2	252931	Seal, oil	1	1	1	1	1	1
3	252409	Stud, M8 x 22	3	3	3	3	3	3
4	250837	Cap, lub. oil supply	1	1	1	1	1	1
5	252861	Flange, gear housing	1	1	1	1	1	1
6	256531	Cover	1	1	1	1	1	1
7	252085	Gasket	1	1	1	1	1	
8	252932	Pipe, knock	2	2	2	2	2	2
9	252764	O-ring, fuel injection pump	1	1	1	1	1	1
10	250981	O-ring	2	2	2	2	2	2
11	252684	O-ring	1	1	1	1	1	1
12	252695	Bolt, M8 x 12, plated	4	4	4	4	4	4
13	252696	Bolt, M8 x 16, plated	4	4	4	4	4	4
14	252703	Bolt, M8 x 45, plated	6	6	6	6	6	6
15	256798	Bolt, M8 x 55, plated	3	3	3	3	3	3
16	256799	Bolt, M8 x 85, plated	4	4	4	4	4	4
17	252723	Nut, M8	3	3	3	3	3	3
18	252734	Seal, washer 8	4	4	4	4	4	4
19	252697	Bolt, M8 x 20, plated	2	2	2	2	2	2
20	252734	Seal, washer 8	1	1	1	1	1	1
21	252750	Cover, blind	1	1	1	1	1	1
22	256796	O-ring	1	1	1	1	1	1
23	225816	Bolt, M6 x 12, plated	2	2	2	2	2	2
24	252998	Liquid gasket	AR	AR	AR	AR	AR	AR
25	252808	Retainer	1	1	1	1	1	1

X Item not sold separately

# Group 3: Flywheel Housing and Oil Pan



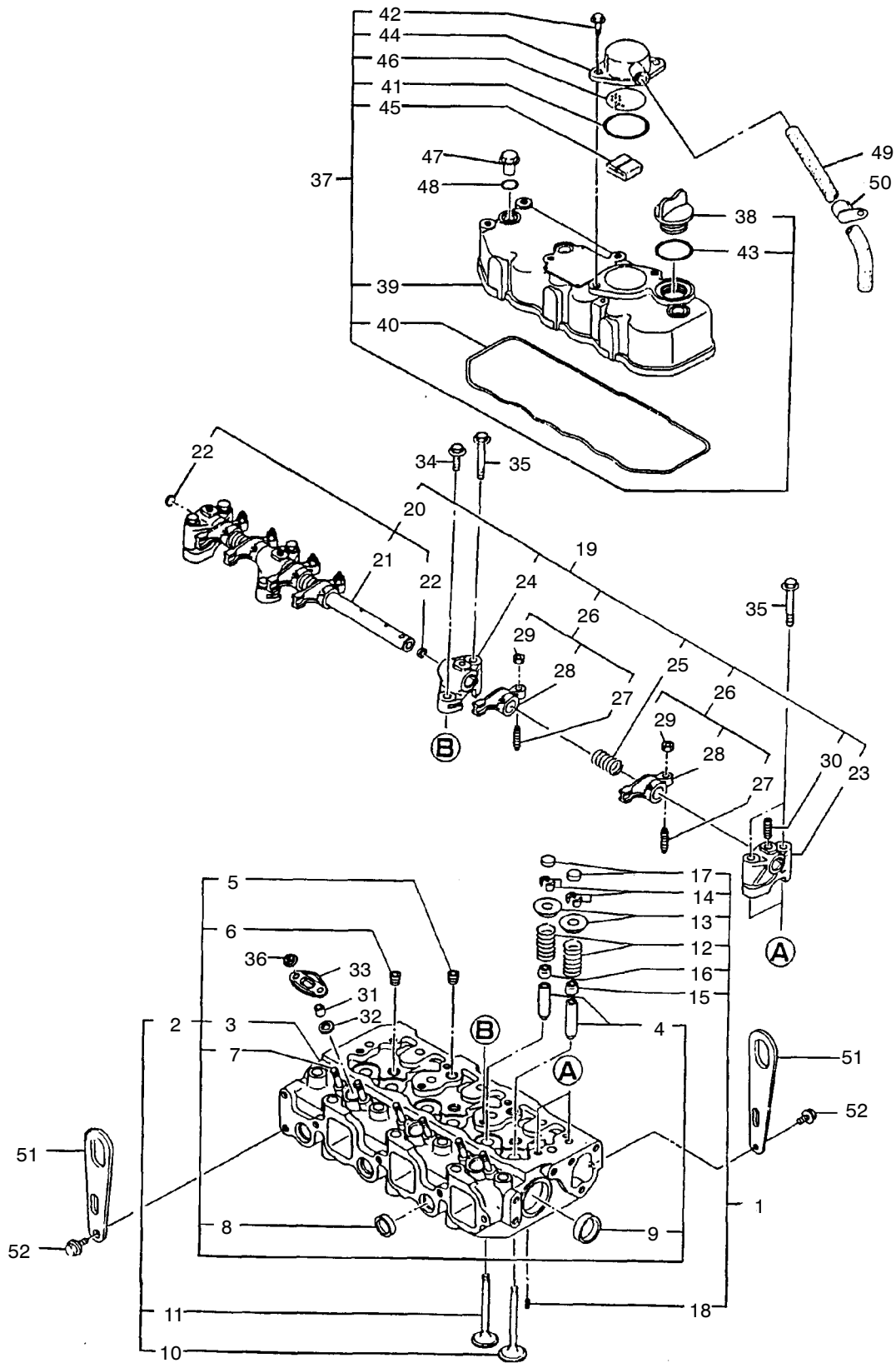
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## Group 3: Flywheel Housing and Oil Pan

Item	Part Number	Description	Quantity					
			Variation Number					
			21	22	23	27	28	29
1	256750	Parallel pin, 8 x 16	2	2	2	2	2	2
2	225760	Housing, flywheel	1	1		1	1	
2	256553	Housing, flywheel			1			1
3	256570	Cap, flywheel cover	1	1	1	1	1	1
4	252714	Bolt, M10 x 25	6	6	6	6	6	6
5	252715	Bolt, M10 x 30	4	4	4	4	4	4
6	225706	Spacer, oil sump	1					
6	256751	Spacer, oil sump		1		1	1	
6	252862	Spacer, oil sump			1			1
8	225708	Assembly, oil sump	1			1		
8	225925	Assembly, oil sump		1			1	
8	252983	Assembly, oil sump			1			1
9	252943	Plug, M22	1	1	1			
9	225386	Plug				1	1	1
11	256796	O-ring	1	1	1			
11	225425	O-ring				1	1	1
12	252696	Bolt, M8 x 16, plated	6	4	4	6		4
12	252703	Bolt, M8 x 45, plated					20	24
13	252703	Bolt, M8 x 45, plated	2			2		
13	252699	Bolt, M8 x 25, plated		2	2		2	2
14	256750	Parallel, pin 8 x 16	2	2	2	2	2	2
15	225755	Assembly, oil seal case	1			1		
15	225866	Assembly, oil seal case		1	1		1	1
17	225707	Seal, oil	1			1		
17	252930	Seal, oil		1	1		1	1
18	225819	Bolt, M8 x 30, plated	6	6	6	6	6	
18	363430	Bolt, M8 x 30, collar head						6
19	252701	Bolt, M8 x 32, plated	3	3	3	3	3	3
20	252998	Gasket, liquid	AR	AR	AR	AR	AR	AR
21	256752	Support, oil sump	1	1		1	1	
22	252703	Bolt, M8 x 45, plated	16	16	16	16	16	
23	252703	Bolt, M8 x 45, plated	4			4		
23	254704	Bolt, M8 x 50, plated		4	4			
23	252696	Bolt, M8 x 16, plated					4	

X Item not sold separately

# Group 4: Cylinder Head



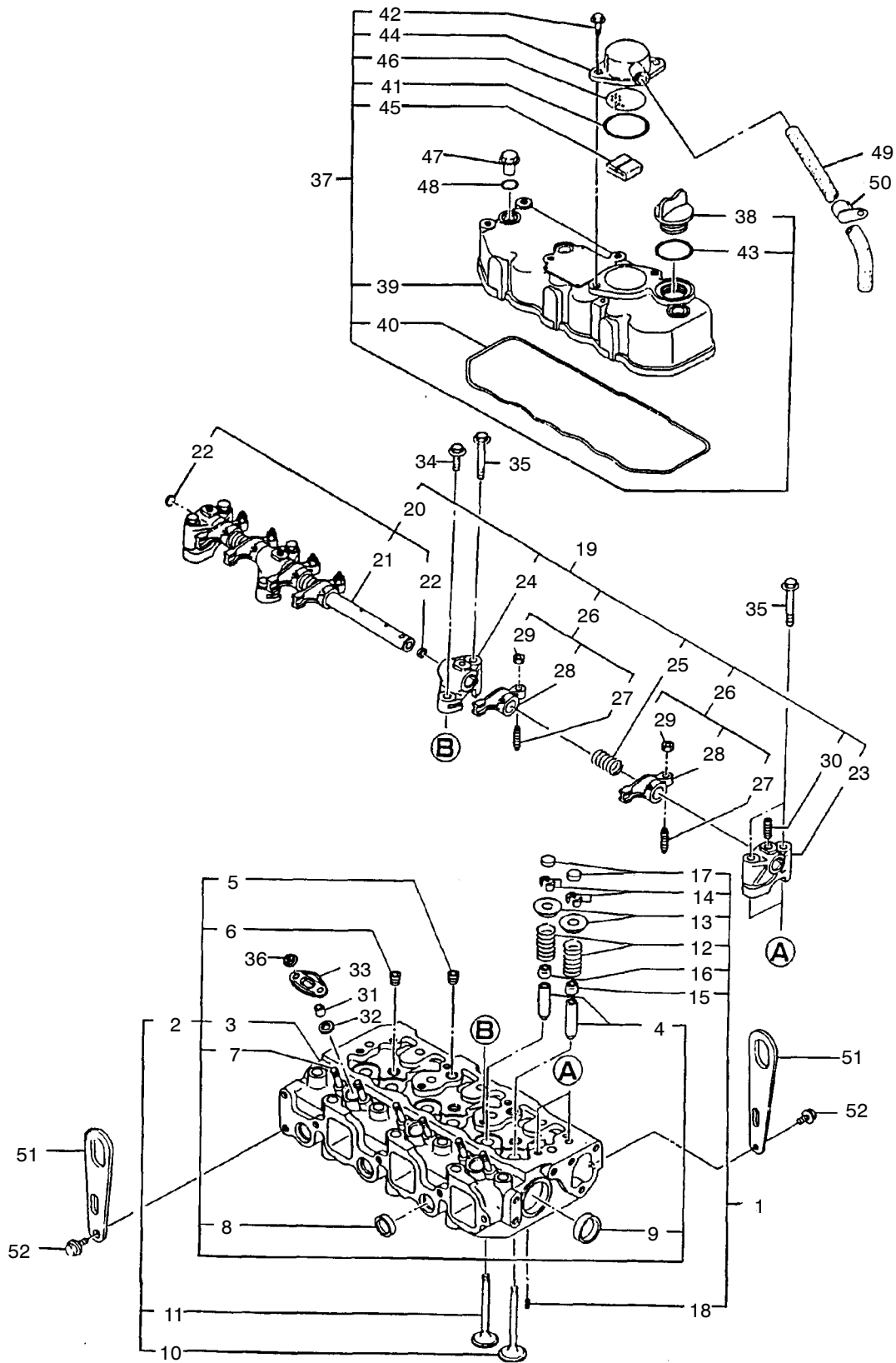
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## Group 4: Cylinder Head

Item	Part Number	Description	Quantity					
			Variation Number					
			21	22	23	27	28	29
1	225840	Assembly, cylinder head (includes items 2-18)	1					
1	256802	Assembly, cylinder head (includes items 2-18)		1				
1	225932	Assembly, cylinder head (includes items 2-18)			1			
1	225392	Assembly, cylinder head (includes items 2-18)				1		
1	GM19697	Assembly, cylinder head (includes items 2-18)					1	
1	GM19679	Assembly, cylinder head (includes items 2-18)						1
2	X	Assembly, cylinder head (includes items 3-9)	1	1	1	1	1	1
3	X	Head, cylinder	1	1	1	1	1	1
4	252400	Guide, valve, intake and exhaust	6			6		
4	252810	Guide, valve, intake		3			3	
4	256571	Guide, valve, intake			4			
4	256736	Guide, valve, intake						4
4	252811	Guide, valve, exhaust		3	4			
4	256168	Guide, valve, exhaust					3	
4	256768	Guide, valve, exhaust						4
5	256825	Plug, pt, 1/4	2	2	3			
6	250975	Plug, pt, 3/8, screw	3	3	4			
7	225822	Stud, M6 x 30, plated	6			6		
7	252717	Stud, M6 x 20, plated		6	8		6	8
8	252729	Plug (22)	3	3	4			
9	252732	Plug (40)	2	2	2	2	2	2
10	225711	Valve, intake	3			3		
10	252778	Valve, intake		3	4		3	4
11	225712	Valve, exhaust	3					
11	229695	Valve, exhaust				3		
11	252779	Valve, exhaust		3	4		3	4
12	225713	Spring, valve	6			6		
12	252934	Spring, valve		6	8		6	8
13	250882	Retainer, spring	6			6		
13	252935	Retainer, spring		6	8		6	8
14	225700	Cotter	6			6		
14	252737	Cotter		6	8			
14	363216	Cotter					6	8
15	225766	Seal, valve stem	3			3		
15	252754	Seal, valve stem		3	4		3	4
16	250844	Seal, valve stem	3			3		
15	256578	Seal, valve stem		3	4		3	4
17	250999	Cap, valve	6			6		
17	<del>256717</del>	Cap, valve <b>345355</b>		6	8		6	8
18	250963	Spring pin, 6 x 12	2	2	2	2	2	2
19	225757	Assembly, rocker support (includes items 20-30)	1					
19	225867	Assembly, rocker support (includes items 20-30)		1			1	
19	252912	Assembly, rocker support (includes items 20-30)			1			
19	229703	Assembly, rocker support (includes items 20-30)				1		
19	229444	Assembly, rocker support (includes items 20-30)						1
20	225714	Shaft, rocker arm (includes items 21 and 22)	1			1		
20	256766	Shaft, rocker arm (includes items 21 and 22)		1			1	
20	225891	Shaft, rocker arm (includes items 21 and 22)			1			1
21	X	Shaft	1	1	1	1	1	1
22	X	Plug	2	2	2	2	2	2
23	252843	Support, rocker arm	2	2	2	2	2	2
24	252844	Support, rocker arm	2	2	3	2	2	2
25	252815	Spring	3	3	4	3	3	5
26	225834	Assembly, rocker arm (includes items 27-29)	6					
26	225869	Assembly, rocker arm (includes items 27-29)		6	4		6	8
26	229803	Assembly, rocker arm (includes items 27-29)				4		
27	225774	Screw, valve	6	6	4			
27	229844	Screw, valve				6	6	8
28	X	Arm, rocker	6	6	6	6	6	8
29	252817	Nut, M8	6	6	4	6	6	8
30	252722	Stud, M8 x 18, plated	3	3	3	3	3	3
30	250804	Nut, lock, M8, plated (not shown)			3			3
31	252743	Protector, nozzle	3	3	4			4
31	225385	Protector, nozzle				3	3	
32	252744	Seat, nozzle	3	3	4	3	3	4
33	252745	Retainer	3	3	4			4

X Item not sold separately

# Group 4: Cylinder Head, continued



558704

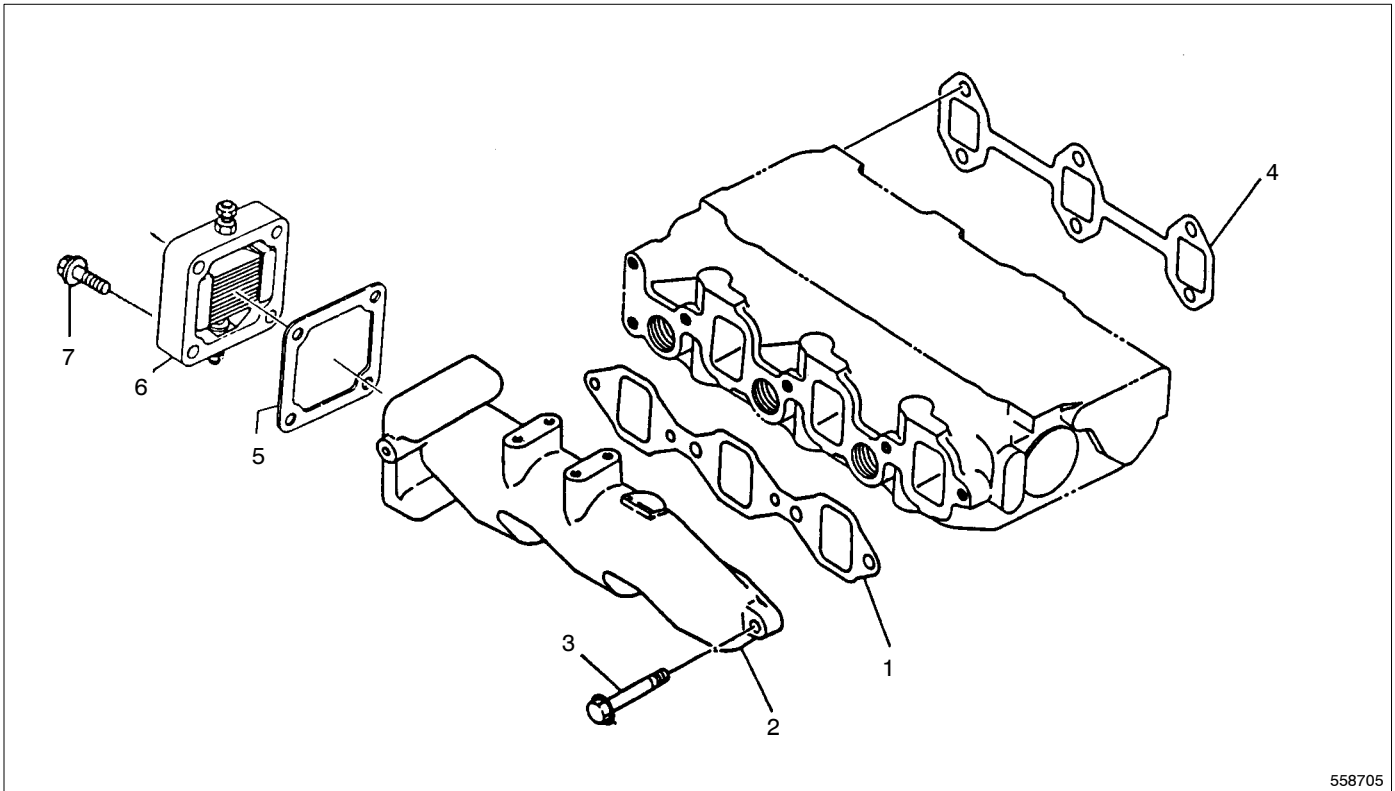


## Group 4: Cylinder Head, continued

Item	Part Number	Description	Quantity					
			Variation Number					
			21	22	23	27	28	29
34	252699	Bolt, M8 x 25, plated	2	2	3	2	2	3
35	252704	Bolt, M8 x 50, plated	6	6	7	6	6	7
36	250989	Nut, M6	6	6	8	6	6	8
37	225715	Assembly, bonnet (includes items 38-46)	1					
37	225868	Assembly, bonnet (includes items 38-46)		1			1	
37	225935	Assembly, bonnet (includes items 38-46)			1			
37	225439	Assembly, bonnet (includes items 38-46)				1		
37	225934	Assembly, bonnet (includes items 38-46)						1
38	250837	Cap, lub. oil supply	1	1	1	1	1	1
39	X	Bonnet	1	1	1	1	1	1
40	225758	Gasket, bonnet	1			1		
40	256767	Gasket, bonnet		1			1	
40	252914	Gasket, bonnet			1			1
41	225812	O-ring	1	1	1	1	1	1
42	252696	Bolt, M8 x 16, plated	2	2	2	2	2	2
43	252684	O-ring	1	1	1	1	1	1
44	225773	Cover, breather	1	1	1	1	1	1
45	252805	Baffle, breather	1	1	1	1	1	1
46	252806	Plate, shelter	1	1	1	1	1	1
47	252470	Knob	3	3	3	3	3	3
48	250801	O-ring	3	3	3	3	3	3
49	252807	Pipe, breather	1	1	1	1	1	1
50	252808	Retainer	1					
51	256532	Lifter, engine	2		2	2	2	2
52	225818	Bolt, M8 x 14, plated	4	4	4	4	4	4

X Item not sold separately

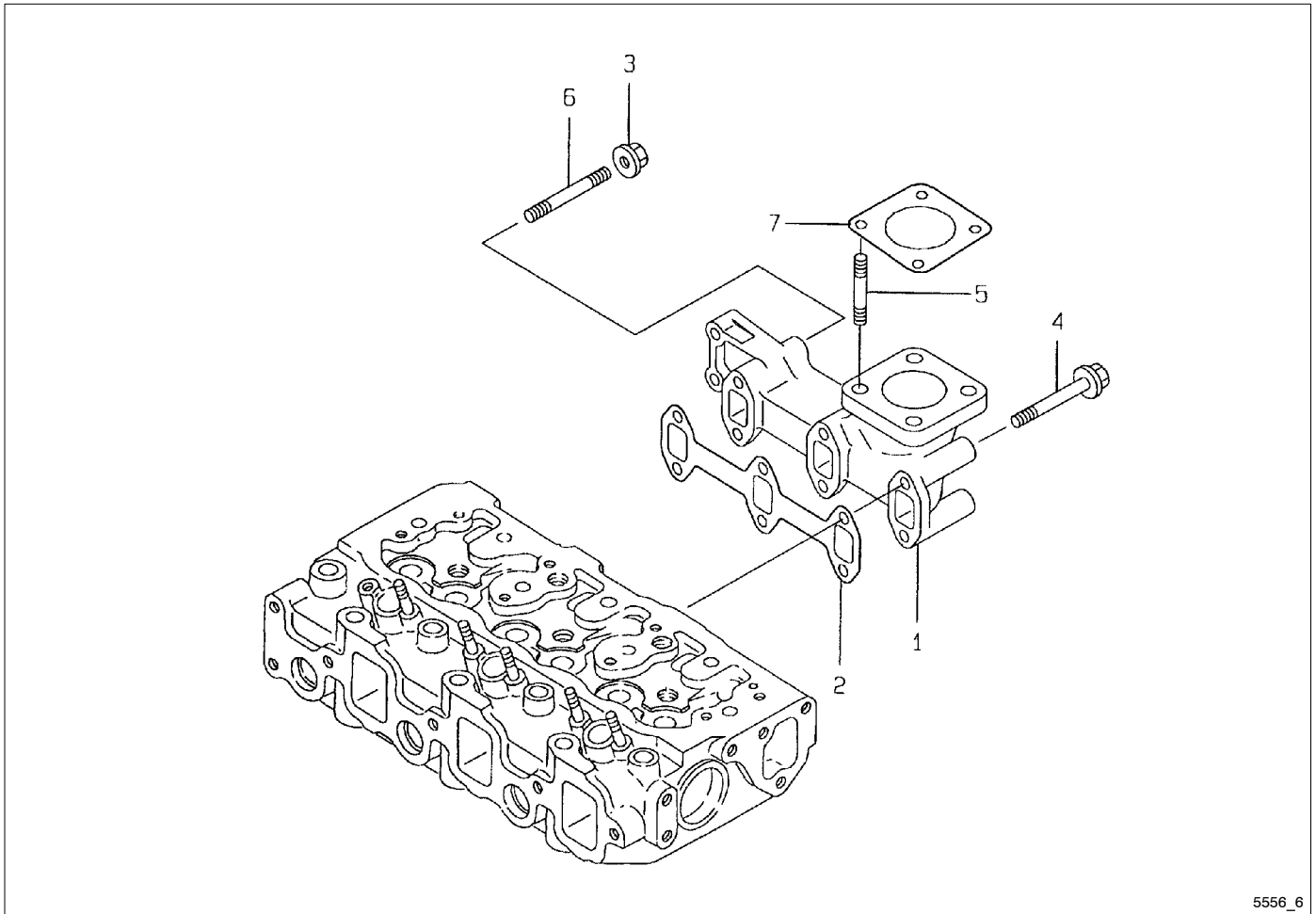
# Group 5: Intake Manifold



558705

Item	Part Number	Description	Quantity					
			Variation Number					
			21	22	23	27	28	29
1	225716	Gasket	1					
1	225874	Gasket		1				
1	225892	Gasket			1			
1	GM19699	Gasket				1	1	
1	252915	Gasket						1
2	225763	Manifold, intake	1					
2	256761	Manifold, intake		1				
2	<del>256718</del>	Manifold, intake <b>GM58674</b>			1			1
2	225393	Manifold, intake				1		
2	GM19698	Manifold, intake					1	
3	252699	Bolt, M8 x 25, plated	4	4			4	
3	252697	Bolt, M8 x 25, plated					4	
3	252707	Bolt, M8 x 80					1	
3	252701	Bolt, M8 x 35, plated			5			5
3	252705	Bolt, M8 x 35, plated				4		
4	225717	Gasket, exhaust manifold	1			1		
4	256770	Gasket, exhaust manifold		1			1	
4	252916	Gasket, exhaust manifold			1			1
5	225778	Gasket, air heater	1	1	1	1	1	1
6	256715	Air heater	1	1	1	1	1	1
7	252701	Bolt, M8 x 35, plated	1	1		1	1	4

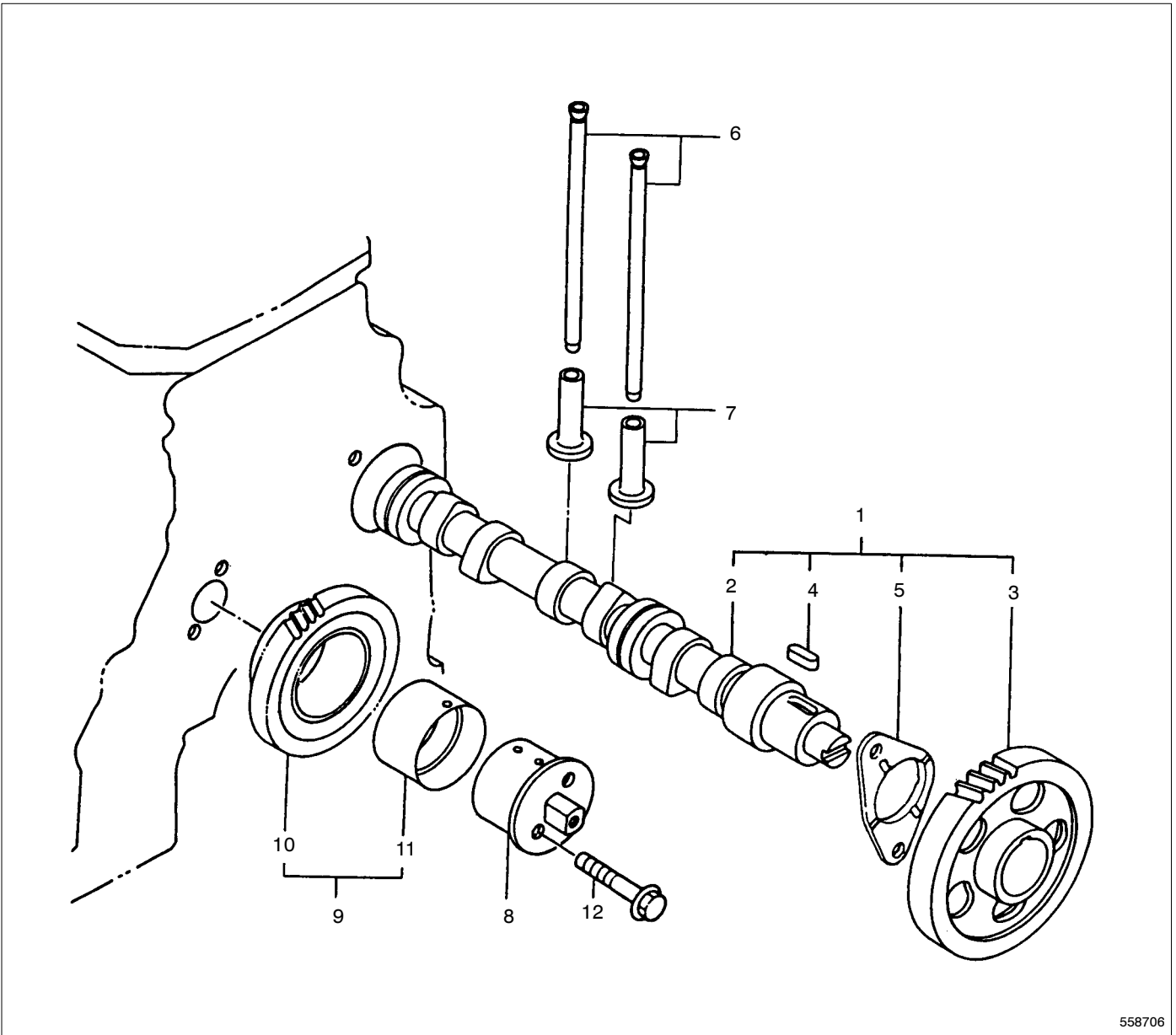
# Group 6: Exhaust Manifold



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Item	Part Number	Description	Quantity					
			Variation Number					
			21	22	23	27	28	29
1	225761	Manifold, exhaust	1					
1	256793	Manifold, exhaust		1				
1	<del>225281</del>	Manifold, exhaust			1			
<b>229848</b>	GM19702	Manifold, exhaust				1		
1	GM19700	Manifold, exhaust					1	
1	229848	Manifold, exhaust						1
2	225717	Gasket, exhaust manifold	1					
2	256770	Gasket, exhaust manifold		1				
2	252916	Gasket, exhaust manifold			1			1
2	GM19703	Gasket, exhaust manifold				1		
2	GM19701	Gasket, exhaust manifold					1	
3	225802	Nut, with washer	2	2	2	2	2	
3	252723	Nut, M8						2
4	252705	Bolt, M8 x 60, plated	4			4		
4	252707	Bolt, M8 x 80, plated		4	6			6
4	252702	Bolt, M8 x 40, plated					4	
5	252719	Stud, M8 x 22, plated	4	4	4	4	4	4
6	225823	Stud, M8 x 60	2					
6	252720	Stud, M8 x 80		2	2			2
6	GM19704	Stud, M8 x 60				2		
6	GM19705	Stud, M8 x 40					2	
7	225769	Gasket	1	1		1	1	
7	225934	Gasket			1			1

# Group 7: Camshaft and Drive Gear



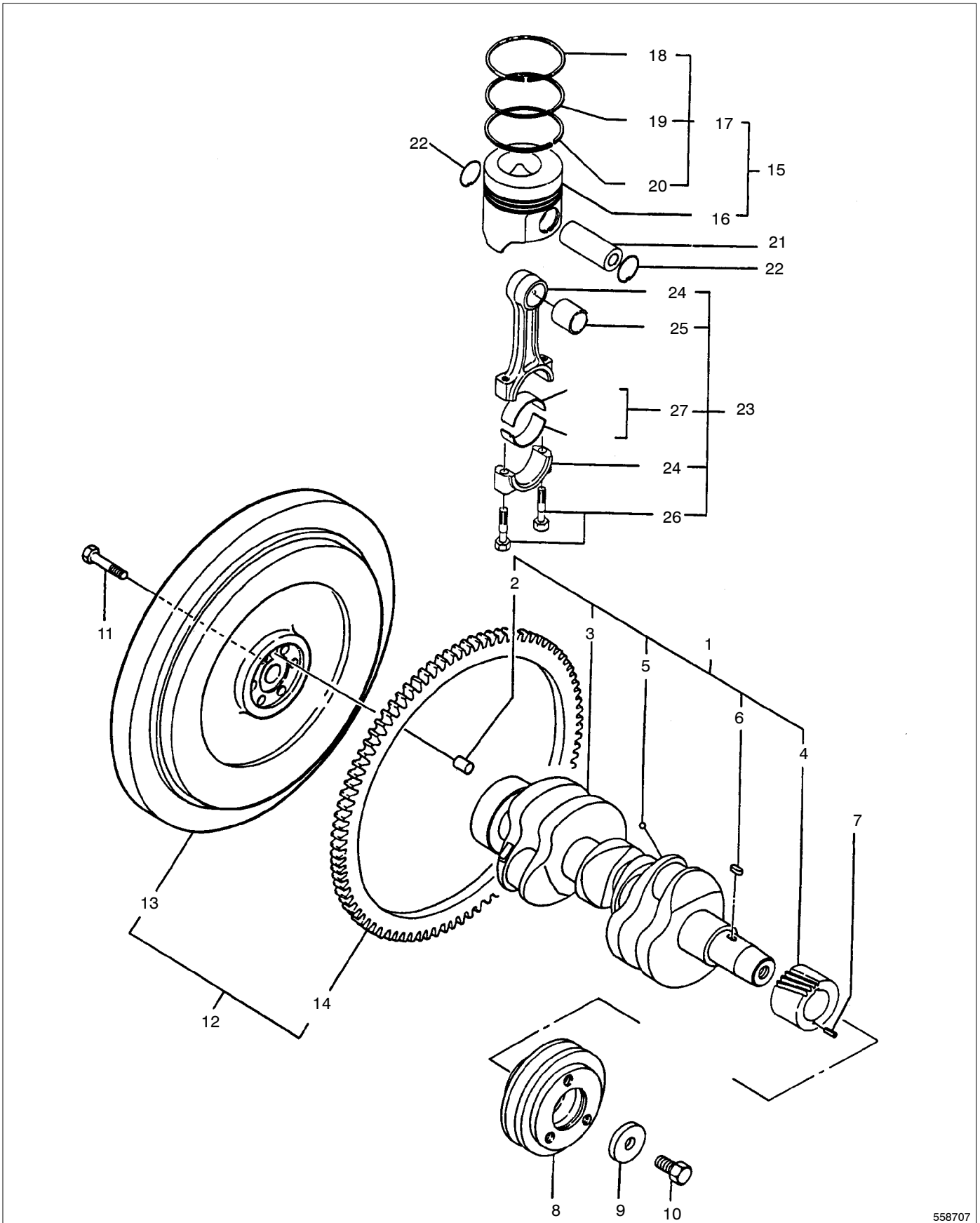
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## Group 7: Camshaft and Drive Gear

Item	Part Number	Description	Quantity					
			Variation Number					
			21	22	23	27	28	29
1	229697	Assembly, camshaft (includes items 2-5)	1			1		
1	225873	Assembly, camshaft (includes items 2-5)		1			1	
1	225930	Assembly, camshaft (includes items 2-5)	1		1	1		1
2	X	Camshaft	1	1	1	1	1	1
3	256587	Gear, camshaft	1	1	1	1	1	1
4	252669	Key	1	1	1	1	1	1
5	252804	Bearing, thrust	1	1	1	1	1	1
6	225718	Rod, push	6			6		
6	252820	Rod, push		6	8		6	8
7	252819	Tappet	6	6	8	6	6	8
8	252782	Shaft, idle gear	1	1	1	1	1	1
9	256590	Gear, idle (includes items 10 and 11)	1	1	1	1	1	1
10	X	Gear, idle	1	1	1	1	1	1
11	256589	Bush, idle gear	1	1	1		1	1
11	252825	Bush, idle gear				1	1	1
12	252703	Bolt, M8 x 45, plated	2	2	2	2	2	2

X Item not sold separately

# Group 8: Crankshaft, Flywheel, and Pistons



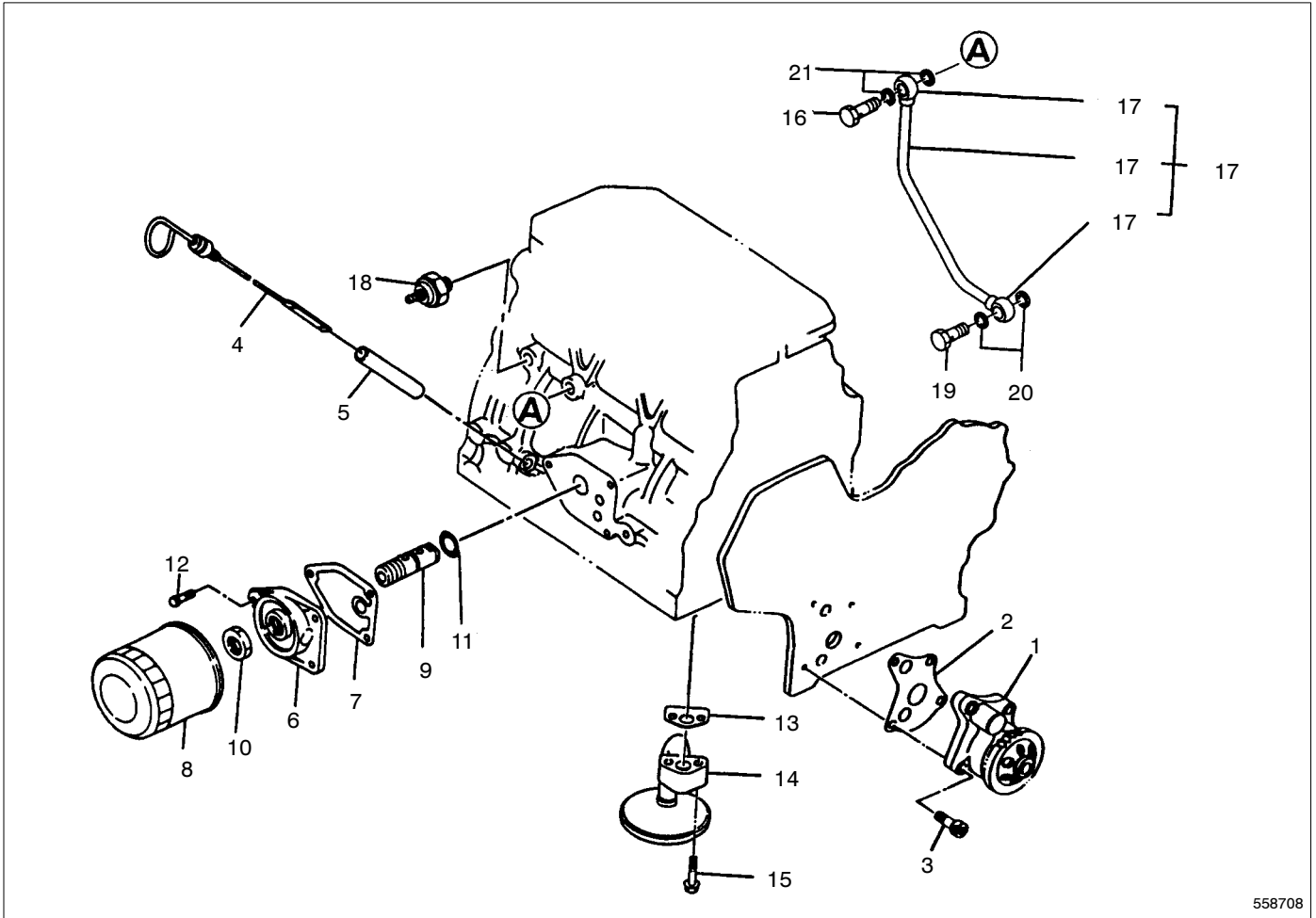
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## Group 8: Crankshaft, Flywheel, and Pistons

Item	Part Number	Description	Quantity					
			Variation Number					
			21	22	23	27	28	29
1	225835	Assembly, crankshaft (includes items 2-6)	1					
1	256803	Assembly, crankshaft (includes items 2-6)		1				
1	252984	Assembly, crankshaft (includes items 2-6)			1			
1	225394	Assembly, crankshaft (includes items 2-6)				1		
1	GM13299	Assembly, crankshaft (includes items 2-6)					1	
1	363436	Assembly, crankshaft (includes items 2-6)						1
2	256750	Pin, parallel, 8 x 16	1	1	1	1	1	1
3	X	Crankshaft	1	1	1	1	1	1
4	252821	Gear, crankshaft	1	1	1	1	1	1
5	X	Ball, steel	3	3	3	3	3	4
6	252669	Key	1	1	1	1	1	1
7	252668	Pin, spring	1	1	1	1	1	1
8	252918	V-pulley	1	1		1	1	1
8	256772	V-pulley			1			
9	252937	Washer	1	1	1	1	1	1
10	252763	Bolt, V-pulley	1	1	1	1	1	1
11	252401	Bolt, flywheel	6	6	6	6	6	6
12	225796	Assembly, flywheel (includes items 13 and 14)	1			1		
12	225876	Assembly, flywheel (includes items 13 and 14)		1			1	
12	252950	Assembly, flywheel (includes items 13 and 14)			1			1
13	X	Flywheel	1	1	1	1	1	1
14	225759	Gear, ring	1	1			1	
14	252774	Gear, ring			1			1
14	363081	Gear, ring				1		
15	225720	Piston with rings (includes items 16 and 17)	3					
15	225871	Piston with rings (includes items 16 and 17)		3	4			
15	225402	Piston with rings (includes items 16 and 17)				3		
15	GM19706	Piston with rings (includes items 16 and 17)					3	
15	GM19683	Piston with rings (includes items 16 and 17)						4
15	225836	Piston with rings, oversize 0.25 (includes items 16 and 17)	3					
15	225926	Piston with rings, oversize 0.25 (includes items 16 and 17)		3	4			
15	225402	Piston with rings, oversize 0.25 (includes items 16 and 17)				3		
15	GM19707	Piston with rings, oversize 0.25 (includes items 16 and 17)					3	
15	GM19685	Piston with rings, oversize 0.25 (includes items 16 and 17)						4
16	X	Piston	3	3	4	3	3	4
17	225839	Ring set (includes items 18-20)				3		
17	225872	Ring set (includes items 18-20)		3	4			
17	225401	Ring set (includes items 18-20)				3		
17	GM19708	Ring set (includes items 18-20)					3	
17	GM19684	Ring set (includes items 18-20)						4
17	223837	Ring set, oversize 0.25 (includes items 18-20)	3					
17	225929	Ring set, oversize 0.25 (includes items 18-20)		3	4			
17	225403	Ring set, oversize 0.25 (includes items 18-20)				3		
17	GM19709	Ring set, oversize 0.25 (includes items 18-20)					3	
17	GM13305	Ring set, oversize 0.25 (includes items 18-20)						4
18	X	Ring, top	3	3	4	3	3	4
19	X	Ring, second	3	3	4	3	3	4
20	X	Ring, oil	3	3	4	3	3	4
21	225721	Pin, piston	3					
21	252822	Pin, piston		3	4			
21	225395	Pin, piston				3		
21	363440	Pin, piston					3	4
22	225722	Circlip	6	6				
22	252751	Circlip			8			
22	229738	Circlip				6		
22	363441	Circlip					6	8
23	225838	Assembly, connecting rod (includes items 24-27)	3			3		
23	252980	Assembly, connecting rod (includes items 24-27)		3	4		3	4
24	X	Rod, connecting	3	3	4	3	3	4
25	225726	Bush, piston pin	3					
25	252781	Bush, piston pin		3	4			4
25	225726	Bush, piston pin				3		
25	256580	Bush, piston pin					3	
26	225723	Bolt, connecting rod	6					
26	250889	Bolt, connecting rod		6	8		6	8
26	225723	Bolt, connecting rod				6		
27	225724	Bearing, crankpin	3			3		
27	252979	Bearing, crankpin		3	4		3	4
27	225725	Bearing, pin, undersize 0.25	3			3		
27	256588	Bearing, pin, undersize 0.25		3	4		3	4

X Item not sold separately

# Group 9: Lube Oil System

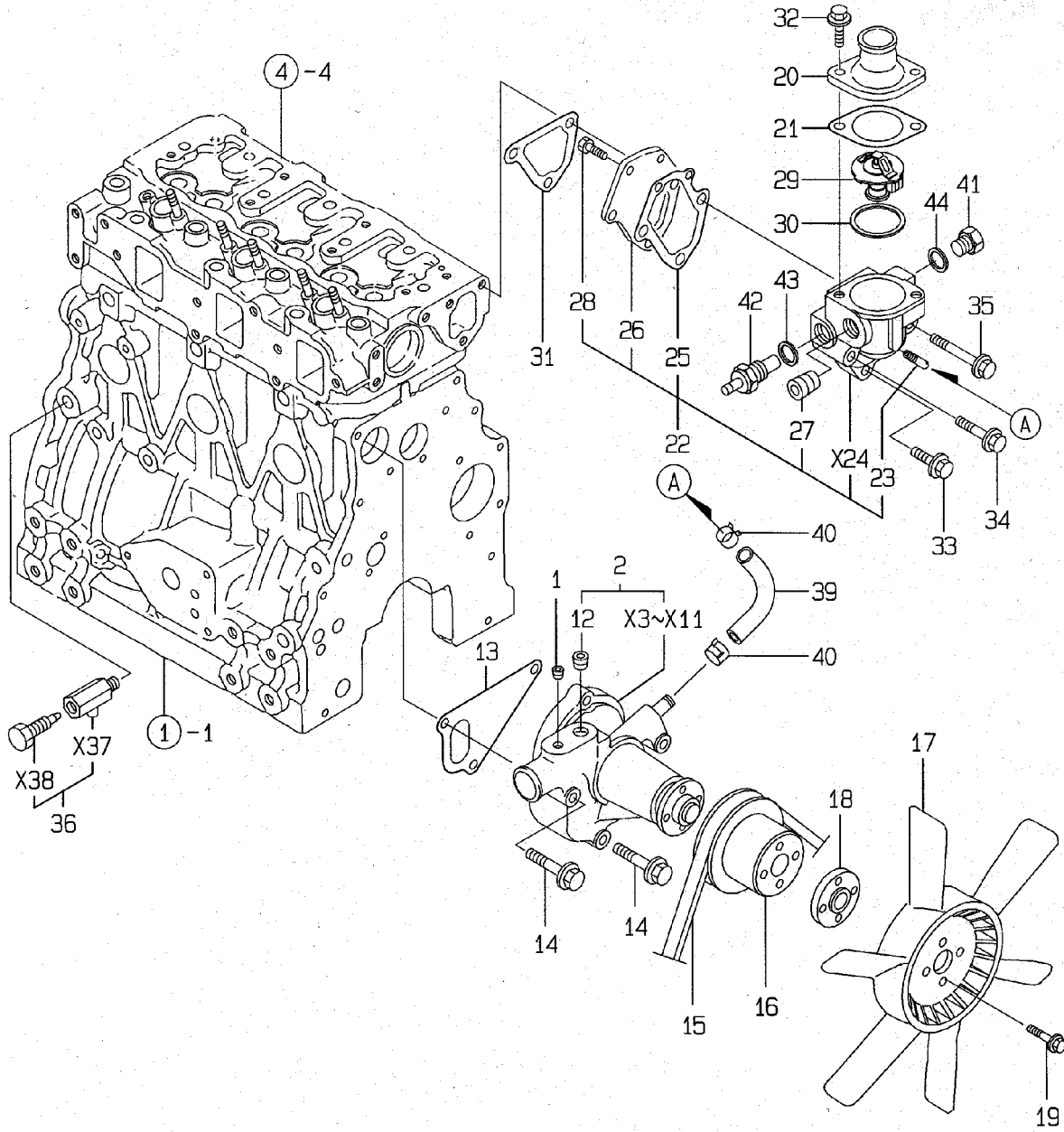




## Group 9: Lube Oil System

Item	Part Number	Description	Quantity					
			Variation Number					
			21	22	23	27	28	29
1	225727	Assembly, oil pump	1					
1	252828	Assembly, oil pump		1	1			
1	225412	Assembly, oil pump				1	1	
1	363442	Assembly, oil pump						1
2	252829	Gasket, oil pump	1	1	1	1	1	
3	252724	Bolt, M6 x 25	4	4	4	4	4	
4	225701	Dipstick	1			1		
4	252951	Dipstick		1	1		1	1
5	252759	Guide, dipstick	1	1	1	1	1	1
6	256591	Bracket, filter	1	1	1	1	1	1
7	225776	Gasket	1	1	1	1	1	1
8	252834	Oil filter	1	1	1	1	1	1
9	252747	Assembly, oil pressure valve	1	1	1			
9	225413	Assembly, oil pressure valve				1	1	1
10	252835	Nut	1	1	1	1	1	1
11	250981	O-ring	1	1	1	1	1	1
12	252697	Bolt, M8 x 20, plated	3	3	3	3	3	3
13	225775	Gasket	1	1	1	1	1	1
14	225728	Pipe, oil inlet	1			1		
14	252831	Pipe, oil inlet		1	1		1	1
15	252701	Bolt, M8 x 35, plated	2	2	2	2	2	2
16	252084	Bolt, joint 10	1	1	1	1	1	1
17	225729	Assembly, lub. oil pipe	1			1		
17	256773	Assembly, lub. oil pipe		1			1	
17	252919	Assembly, lub. oil pipe			1			1
18	256530	Switch, low oil pressure	1	1	1	1	1	1
19	252090	Bolt, 8 pipe joint	1	1	1	1	1	
19	229410	Bolt, 8 pipe joint						1
20	252734	Washer, seal	2	2	2	2		2
20	250967	Gasket, round					2	
21	250968	Gasket, round	2	2	2	2	2	
21	363452	Washer, seal						2

# Group 10: Cooling Water System



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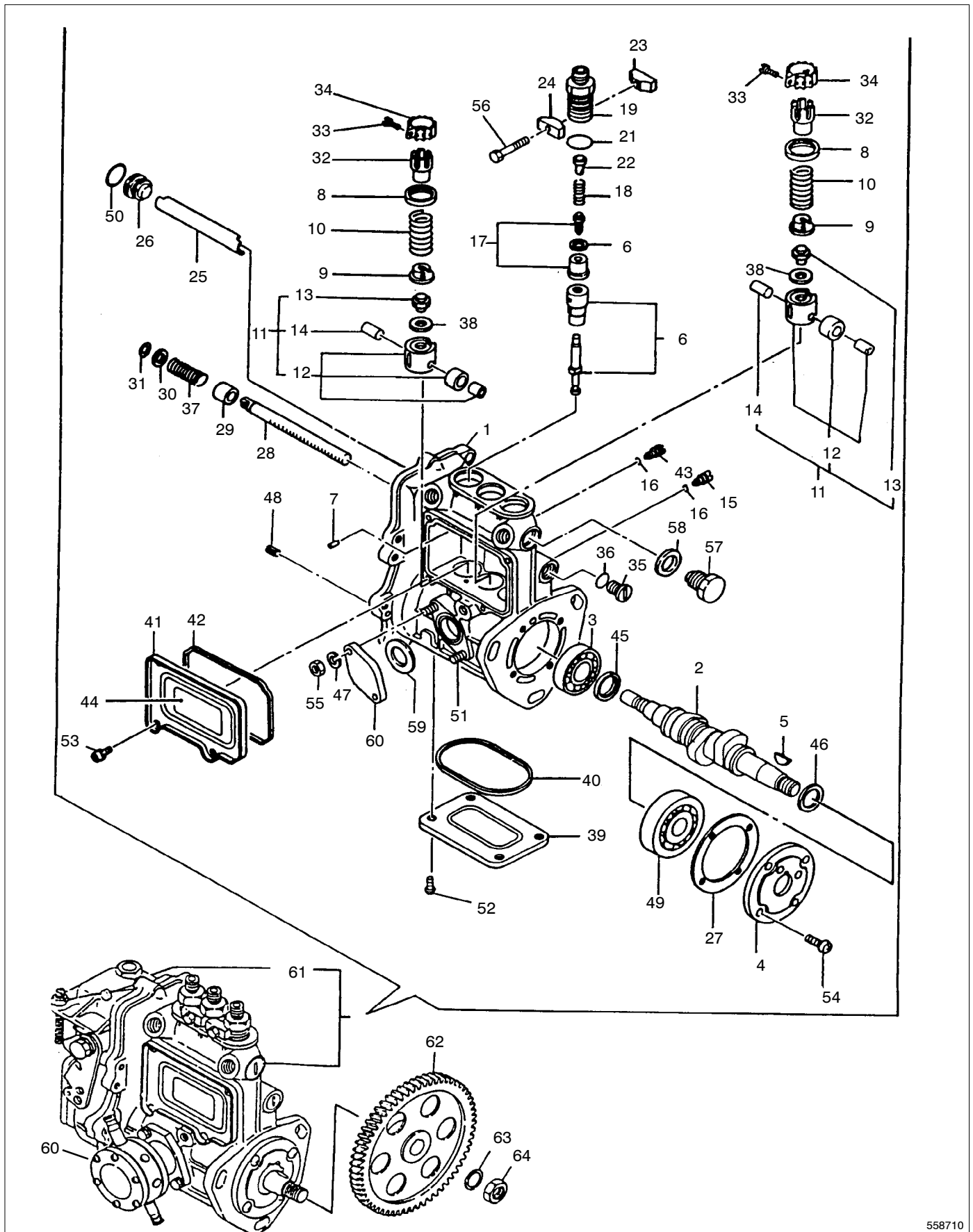
# Group 10: Cooling Water System

Item 2, variation 29: Part no. is 363445 (1 piece assy with T-stat housing)

Item	Part Number	Description	Quantity					
			Variation Number					
			21	22	23	27	28	29
1	256525	Plug, 1/4		1	1		1	
2	225003	Assembly, pump	1			1		
2	252839	O-ring	1			1		
2	252783	Assembly, pump		1	1		1	1
3	X	Body, water pump		1	1		1	1
4	X	Gasket		1	1		1	1
5	X	Plate		1	1		1	1
6	X	Impeller		1	1		1	1
7	X	Bearing		1	1		1	1
8	X	Seat, pulley		1	1		1	1
9	X	Seal, mechanical		1	1		1	1
10	X	Union, water pump		1	1		1	1
11	X	Screw		1	1		1	1
12	250975	Plug, screw, 3/8	2	1	1	2	1	2
13	252838	Gasket, water pump	1			1		
13	252784	Gasket, water pump		1	1		1	1
14	252701	Bolt, M8 x 35, plated	3			3		
14	256798	Bolt, M8 x 55, plated	1			1		
14	252705	Bolt, M8 x 60, plated		3	3		3	3
15	225022	V-belt	1					
15	225005	V-belt		1	1	1		
15	225428	V-belt					1	1
16	252920	V-pulley	1	1	1	1	1	1
17	225771	Fan, cooling	1	1	1	1	1	1
18	225768	Spacer	1	1	1			
18	GM19710	Spacer				1	1	1
19	225813	Bolt, M6 x 25	4	4	4	4	4	4
20	225792	Cover, thermostat	1	1	1			
20	249863	Cover, thermostat				1	1	1
21	249865	Gasket	1	1	1	1	1	1
22	252786	Assembly, thermostat case		1	1		1	1
23	252482	Joint, 1/8		1	1		1	1
24	X	Case, thermostat		1	1		1	1
25	252787	Gasket, cover		1	1		1	1
26	252788	Cover, thermostat case		1	1		1	1
27	250975	Plug, screw, 3/8		1	1		1	1
28	252709	Bolt, M6 x 16, plated		2	2		2	2
29	225007	Thermostat	1	1	1	1	1	
29	252846	Thermostat, 71 deg.						1
30	225006	Gasket	1	1	1	1	1	1
31	252789	Gasket, thermostat case		1	1			
31	363424	Gasket, thermostat case					1	1
32	252697	Bolt, M8 x 20, plated	1	1	1	1	1	1
33	252699	Bolt, M8 x 25, plated		1	1		1	1
34	252704	Bolt, M8 x 50, plated		1	1		1	1
35	252705	Bolt, M8 x 60, plated		1	1		1	1
36	256734	Assembly, drain cock	1	1	1	1	1	1
37	X	Body, drain	1	1	1	1	1	1
38	X	Valve	1	1	1	1	1	1
39	252785	Pipe, cooling water bypass		1	1			
39	GM19711	Pipe, cooling water bypass					1	
40	252670	Clamp		1	1		1	
41	252757	Plug, M16	1	1		1	1	1
42	252752	Sender, thermostat	1	1	1	1	1	1
43	252773	Gasket	1	1	1	1	1	1
44	252773	Gasket	1	1	1	1	1	1

X Item not sold separately

# Group 12: Fuel Injection Pump



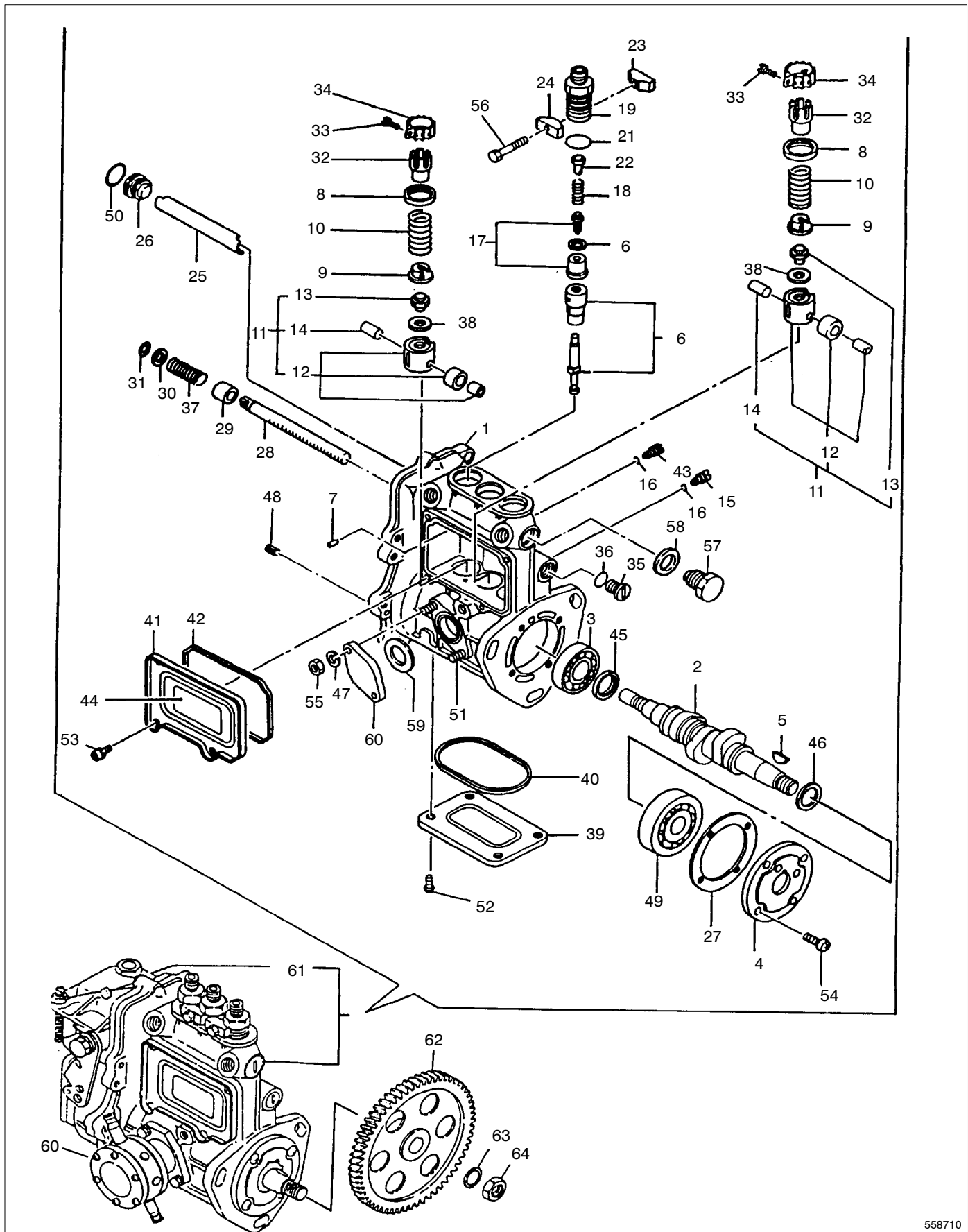
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## Group 12: Fuel Injection Pump

Item	Part Number	Description	Quantity					
			Variation Number					
			21	22	23	27	28	29
1	225841	Assembly, fuel inject. pump, with governor and fuel pump	1					
1	225927	Assembly, fuel inject. pump, with governor		1				
1	225933	Assembly, fuel inject. pump, with governor			1			
1	GM19712	Assembly, fuel inject. pump, with governor and fuel pump				1		
1	GM19713	Assembly, fuel inject. pump, with governor					1	
1	GM19688	Assembly, fuel inject. pump, with governor						1
2	256735	Camshaft	1	1		1	1	
2	252897	Camshaft			1			1
3	256534	Bearing, thrust ball	1	1	1	1	1	1
4	256535	Retainer, bearing	1	1	1	1	1	
4	GM19689	Support						1
4	GM19691	Assembly, flange (not shown)						1
5	256528	Key	1	1	1	1	1	
6	225730	Plunger with barrel	3					
6	252864	Plunger with barrel		3	4			
6	225416	Plunger with barrel				3		
6	GM13322	Plunger with barrel					3	4
7	256721	Pin, barrel locking	3	3	4	3	3	4
8	252589	Retainer	3	3	4	3	3	4
9	256536	Spring shoe, plunger	3	3	4	3	3	4
10	252490	Spring, plunger	3	3	4	3	3	4
11	252848	Assembly, tappet (includes item 12-14)	3	3	4	3	3	4
12	252593	Assembly, roller	3	3	4	3	3	
12	X	Assembly, roller						4
12	X	Roller, inner	3	3	4	3	3	4
12	X	Roller, outer	3	3	4	3	3	4
12	X	Guide, roller	3	3	4	3	3	4
13	256722	Bolt, adjusting	3	3	4	3	3	
13	X	Bolt, adjusting						4
14	229739	Pin, roller	3	3	4	3	3	
14	X	Pin, roller						4
15	256537	Locking, tappet	3	3	4	3	3	4
16	252849	O-ring	3	3	4	3	3	4
17	250849	Valve, delivery, with seat	3	3	4	3	3	
17	256583	Valve, delivery, with seat						4
17	X	Seat	3	3	4	3	3	4
17	X	Valve, delivery	3	3	4	3	3	4
18	256777	Spring, valve	3	3	4	3	3	4
19	256724	Guard, delivery valve	3	3	4	3	3	4
20	250839	Gasket, delivery	3	3	4	3	3	4
21	250840	O-ring	3	3	4	3	3	4
22	256725	Stopper, valve	3	3	4	3	3	4
23	256726	Locking	3	3	4	3	3	2
24	256727	Locking	2	2	2	2	2	2
25	225779	Deflector	1	1		1	1	
25	256728	Deflector			1			1
26	256778	Bolt, deflector check	1	1	1	1	1	1
27	256729	Shim set, adjusting	1	1	1	1	1	1
28	225780	Rack, control	1	1		1	1	
28	256730	Rack, control			1			1
29	256780	Bush, rack	1	1	1	1	1	1
30	256694	Spacer, auxiliary spring	1	1	1	1	1	1
31	256695	Circlip	1	1	1	1	1	1
32	256696	Pinion, control	3	3	4	3	3	4
33	256697	Screw, pinion	3	3	4	3	3	4
34	256698	Pinion	3	3	4	3	3	4
35	256781	Plug	1	1	1	1	1	1
36	252850	O-ring	1	1	1	1	1	1
37	256699	Spring, rack	1	1	1	1	1	1
38	256700	Pack, shim	3	3	4	3	3	4
39	256782	Cover	1	1		1	1	
39	225893	Cover			1			1
40	256783	Gasket	1	1		1	1	
40	252926	Gasket			1			1
41	256784	Cover, side	1	1		1	1	
41	225894	Cover, side			1			1
42	256784	Gasket	1	1		1	1	
42	252927	Gasket	1		1			1

X Item not sold separately

# Group 12: Fuel Injection Pump, continued



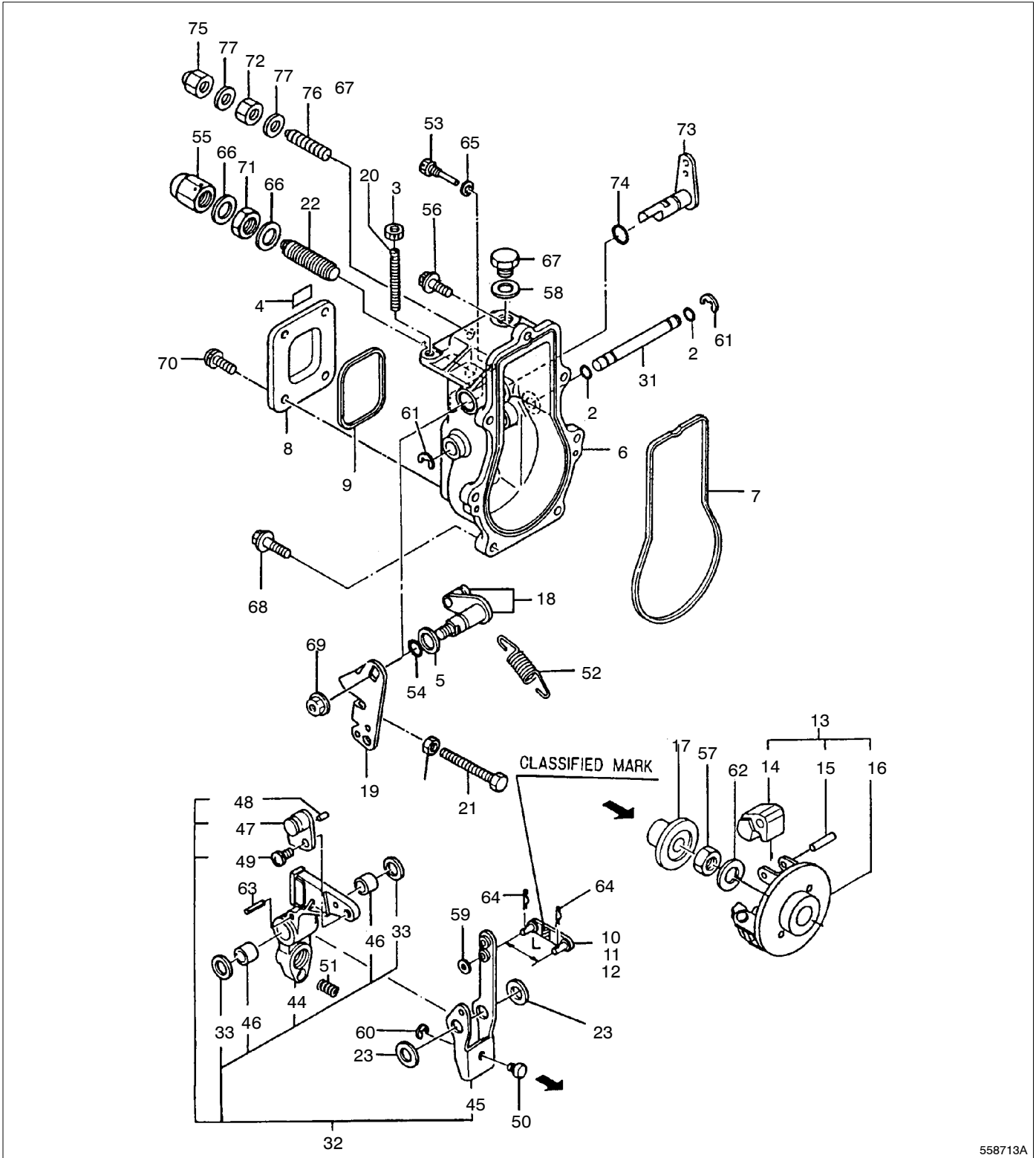
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## Group 12: Fuel Injection Pump, continued

Item	Part Number	Description	Quantity					
			Variation Number					
			21	22	23	27	28	29
43	256701	Locking, rack	1	1	1	1	1	1
44	225791	Label, caution	1	1	1	1	1	1
45	256702	Spacer, 3.25 mm	1	1	1	1	1	1
46	256703	Spacer, 1.5 mm	1	1	1	1	1	1
47	225804	Washer, spring	2	2	2	2	2	2
48	225808	Pin, spring	2	2	2	2	2	2
49	256794	Bearing, ball	1					
49	256556	Bearing, ball		1	1	1	1	1
50	252686	O-ring	1	1	1	1	1	1
51	256776	Stud, feed pump	2	2	2	2	2	2
52	225814	Screw, M5 x 10	4	4	4	4	4	
52	GM19690	Screw, M5 x 12						6
53	225814	Screw, M5 x 10	4	4	4	4	4	
53	GM19690	Screw, M5 x 12						5
54	225815	Screw, M6 x 16	4	4	4	4	4	4
55	225824	Nut, M6	2	2	2	2	2	2
56	225821	Bolt, M5 x 30, plated	2	2	2	2	2	
56	229741	Washer (not shown)				2	2	
57	256779	Plug	1	1	1	1	1	1
58	256663	Washer, seal	1	1	1			
58	363448	Washer, seal				1	1	
59	252851	Gasket	1	1	1	1	1	1
60	256755	Cover, blind		1	1		1	1
60	225023	Pump, fuel feed	1			1		
61	X	Assembly, governor (see Group 13)	1	1	1	1	1	1
62	252827	Gear	1	1	1	1	1	
62	GM19681	Gear						1
62	GM19682	Bolt (not shown)						1
63	252666	Washer 12, spring	1	1	1	1	1	1
64	252725	Nut, M12	1	1	1	1	1	1

X Item not sold separately

# Group 13: Governor



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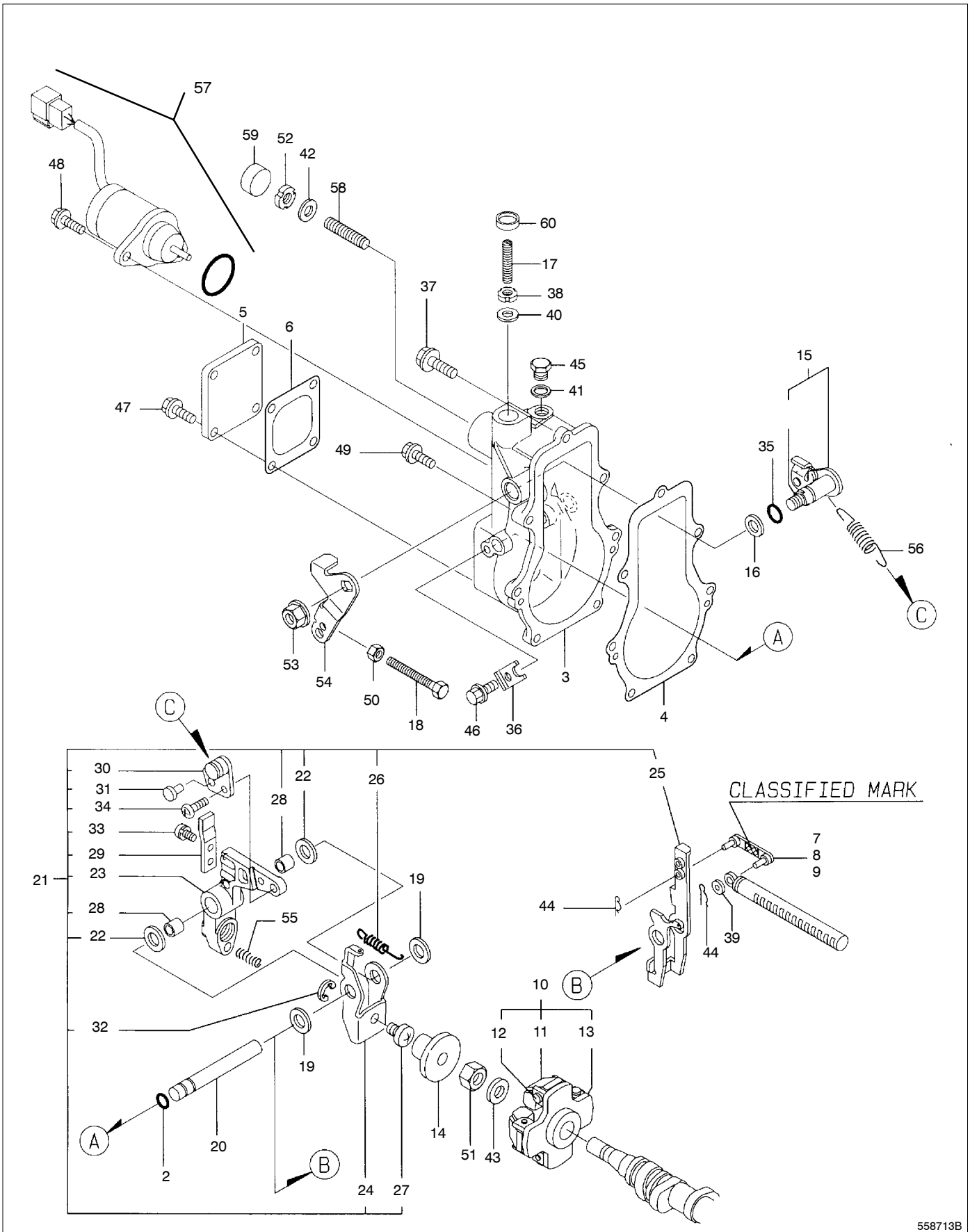


# Group 13: Governor

Item	Part Number	Description	Quantity		
			Variation Number		
			21	22	23
1	X	Assembly, governor (includes items 2-63)	1	1	1
2	252849	O-ring	2	2	2
3	225767	Nut, lock	1	1	1
4	X	Label	1	1	1
5	225782	Spacer, shaft	1	1	1
6	X	Case, governor	1	1	1
7	252853	Gasket, governor case	1	1	1
8	252854	Cover, governor case	1	1	1
9	252855	Gasket, case cover	1	1	1
10	256787	Link, 30 mm	1	1	1
11	256558	Link, 31 mm	1	1	1
12	256559	Link, 30.5 mm	1	1	1
13	252974	Assembly, governor weight (includes items 14-16)	1	1	1
14	X	Weight	4	4	4
15	X	Pin, governor weight	4	4	4
16	X	Support	1	1	1
17	225781	Sleeve	1	1	1
18	252794	Assembly, control shaft	1	1	1
19	225800	Lever, control	1	1	1
20	225783	Bolt, limit	1	1	1
21	225784	Bolt, idle limit	1	1	1
22	225785	Bolt, fuel control	1	1	1
23	225786	Assembly, spacer	2	2	2
31	225787	Shaft, governor lever	1	1	1
32	252795	Assembly, governor lever (includes items 33-49)	1	1	1
33	252592	Shim set	2	2	2
44	X	Lever, tension	1	1	1
45	X	Lever, governor	1	1	1
46	X	Bush	2	2	2
47	X	Hook	1	1	1
48	X	Pin	1	1	1
49	X	Screw, M6 x 12	1	1	1
50	225788	Shifter	1	1	1
51	256732	Spring, fuel control	1	1	1
52	225795	Spring governor	1	1	1
53	225789	Pin, stop lever	1	1	1
54	252856	O-ring	1	1	1
55	225770	Nut, cap	1	1	1
56	225790	Bolt, washer based	1	1	1
57	225826	Nut, lock M12, plated	2	2	2
58	225829	Washer, seal	1	1	1
59	225803	Washer	1	1	1
60	225805	Circlip	1	1	1
61	225806	Circlip	2	2	2
62	256704	Washer	1	1	1
63	225807	Pin, spring	1	1	1
64	225809	Pin, snap	2	2	2
65	250994	Washer, seal, 6	1	1	1
66	252367	Washer, seal, 12	2	2	2
67	256517	Plug	1	1	1
68	225817	Bolt, M6 x 20, plated	6	6	6
69	252723	Nut, M8	1	1	1
70	225814	Screw, M5 x 10	4	4	4
71	225826	Nut, lock M12, plated	1	1	1
72	225825	Nut, lock M6, plated	2	2	2
73	225801	Assembly, stop lever	1	1	1
74	225811	O-ring	1	1	1
75	225702	Nut, cap	1	1	1
76	225783	Bolt, revol. limit	1	1	1
77	228828	Washer, seal, 6	2	2	2

X Item not sold separately

# Group 13: Governor, continued



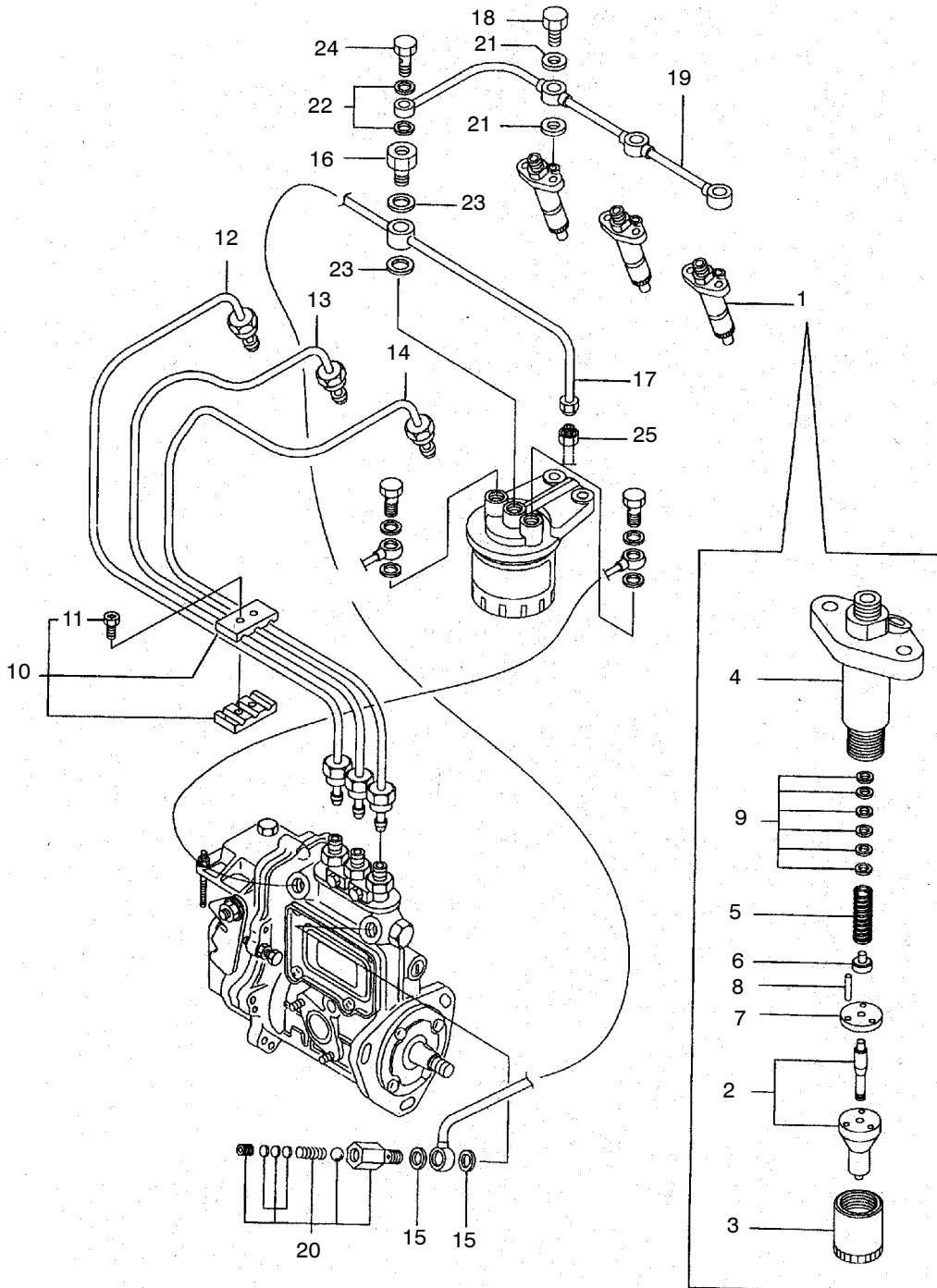
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## Group 13: Governor, continued

Item	Part Number	Description	Quantity		
			Variation Number		
			27	28	29
1	X	Assembly, governor (includes items 2-52)	1	1	1
2	252849	O-ring	2	2	1
3	X	Case, governor	1	1	1
4	225417	Gasket, spacer	1	1	
4	363449	Packing			1
5	225414	Cover	1	1	1
6	225408	Packing	1	1	
6	363450	Packing			1
7	256787	Link, 30 mm	1	1	1
8	256558	Link, 31 mm	1	1	1
9	256559	Link, 30.5 mm	1	1	1
10	252974	Assembly, governor weight (includes items 11-13)	1	1	
10	GM19692	Assembly, weight			1
11	X	Weight	4	4	4
12	X	Pin, governor weight	4	4	4
13	X	Support	1	1	1
14	225781	Sleeve	1	1	1
15	225409	Assembly, control shaft	1	1	
15	252794	Assembly, control shaft			1
16	225782	Spacer, shaft	1	1	1
17	GM13294	Bolt, limit	1	1	1
18	225784	Bolt, idle limit	1	1	1
19	225786	Assembly, spacer	2	2	2
20	225415	Shaft, governor lever	1	1	1
21	225421	Assembly, governor lever (includes items 22-34)	1	1	
21	GM19693	Assembly, governor lever (includes items 22-34)			1
22	252592	Shim set	2	2	2
23	X	Lever	1	1	1
24	X	Lever, governor	1	1	1
25	X	Lever, governor	1	1	1
26	225407	Spring	1	1	
26	GM19694	Spring set			1
27	X	Shifter	1	1	1
28	X	Bush	2	2	1
29	X	Fitting	1	1	1
30	X	Hook, tension lever	1	1	1
31	X	Pin	1	1	1
32	X	Circlip	1	1	1
33	X	Screw, M6 x 12	1	1	1
34	X	Screw, M5 x 10	2	2	2
35	252856	O-ring	2	2	2
36	229692	Retainer, shaft	1	1	1
37	225790	Bolt, washer based	1	1	1
38	225391	Nut, carb, high idle	1	1	
38	225707	Nut, lock			1
39	225803	Washer, 4	1	1	1
40	250994	Washer, seal, 6	1	1	
41	225829	Washer, seal, 10	2	2	
41	363452	Washer, seal, 10			1
42	225424	Washer, seal, 12	2	2	2
43	256704	Washer 12	1	1	1
44	225809	Pin, snap, 4	2	2	2
45	256517	Plug	1	1	1
46	229498	Bolt, M6 x 10, plated	1	1	1
47	229498	Bolt, M6 x 10, plated	4	4	4
48	225818	Bolt, M6 x 14, plated	2	2	2
49	225817	Bolt, M6 x 20, plated	6	6	6
50	225825	Nut, lock, M6, plated	1	1	1
51	225826	Nut, lock, M12, plated	1	1	1
52	225390	Nut, flow limit carb	1	1	
52	225826	Nut, lock, M12, plated			1
53	252723	Nut, M8	1	1	1
54	225800	Lever, control	1	1	1
55	GM13320	Spring, fuel control	1	1	1
56	229870	Spring governor	1		
56	225795	Spring governor		1	1
57	225461	Kit, fuel solenoid (O-ring 225427)	1	1	1
58	225785	Bolt, fuel control	1	1	
58	GM19695	Bolt, fuel control			1
59	225381	Plug, 22	1	1	
59	225710	Nut, cap			1
60	225382	Plug, 14	1	1	

X Item not sold separately

# Group 14: Fuel Injection Lines

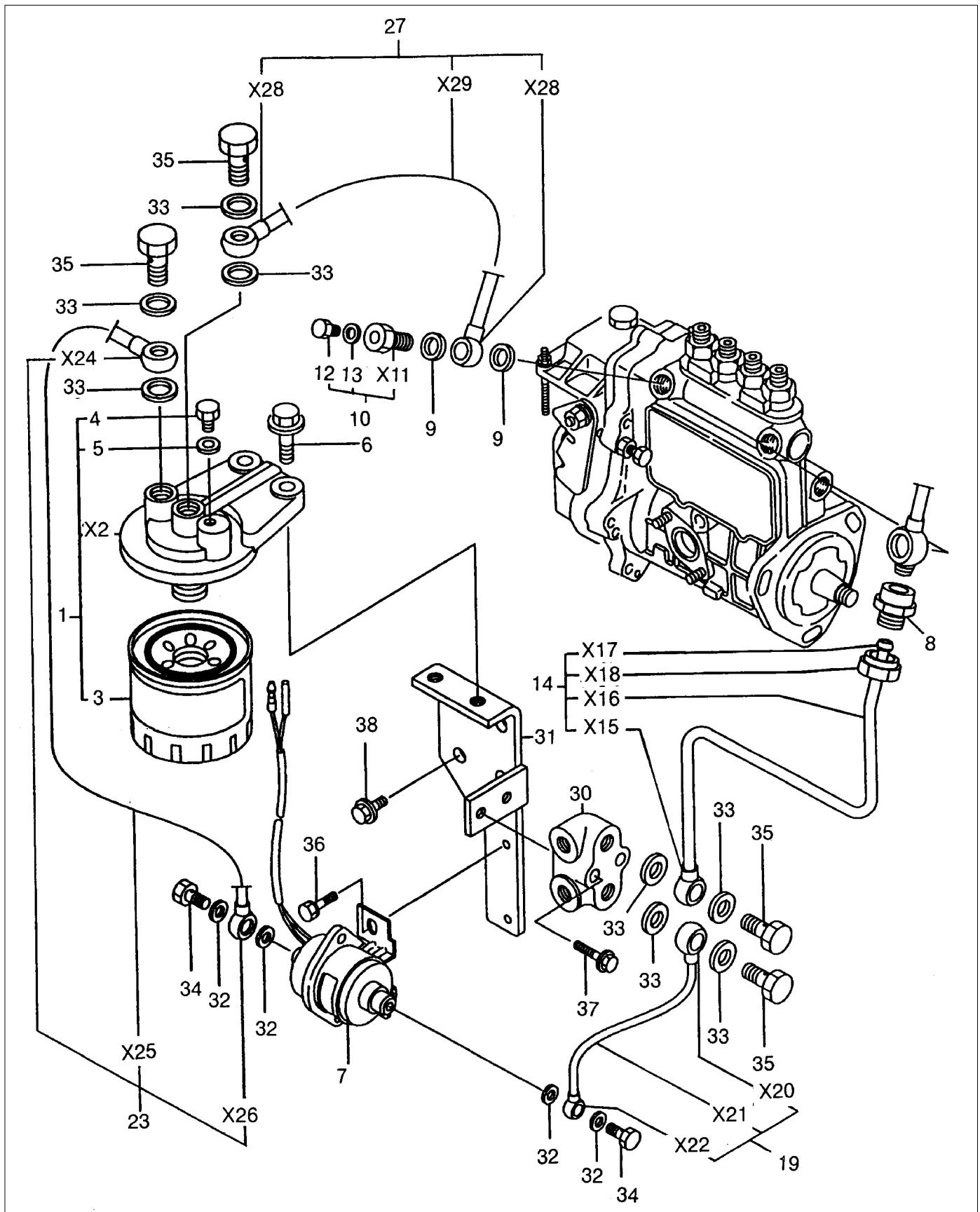


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## Group 14: Fuel Injection Lines

Item	Part Number	Description	Quantity					
			Variation Number					
			21	22	23	27	28	29
1	225024	Assembly, fuel injection valve	3					
1	256800	Assembly, fuel injection valve		3				
1	224360	Assembly, fuel injection valve			4			4
1	GM19714	Assembly, fuel injection valve					3	
1	GM19715	Assembly, fuel injection valve				3		
2	225002	Assembly, fuel injection nozzle	3			3		
2	252746	Assembly, fuel injection nozzle		3				
2	225004	Assembly, fuel injection nozzle			4		3	4
3	256520	Nut, nozzle case	3	3	4	3	3	4
4	256706	Holder	3	3	4	3	3	4
5	256521	Spring, nozzle	3	3	4	3	3	4
6	256522	Seat, nozzle spring	3	3	4	3	3	4
7	256523	Plate, stop	3	3	4	3	3	4
8	256707	Pin	6	6	8	6	6	8
9	256524	Pack, shim	3	3	4	3	3	4
10	256774	Retainer, injection pipe	1	1		1	1	1
10	256708	Retainer, injection pipe			1			
10	225374	Retainer, upper (not shown)				1	1	
10	225418	Bolt, M4 x 14, retainer (not shown)				1	1	
11	225777	Bolt, M4 x 12	2	2	2	2	2	
11	225418	Bolt, M4 x 14				1		2
12	225731	Pipe, fuel injection	1			1		
12	225870	Pipe, fuel injection		1				
12	256709	Pipe, fuel injection			1			1
12	GM19716	Pipe, fuel injection					1	
13	225732	Pipe, fuel injection	1					
13	256757	Pipe, fuel injection		1				
13	256710	Pipe, fuel injection			1			1
13	GM19717	Pipe, fuel injection					1	
13	225397	Pipe, fuel injection				1		
14	225733	Pipe, fuel injection	1			1		
14	256758	Pipe, fuel injection		1				
14	256711	Pipe, fuel injection			1			1
14	256712	Pipe, fuel injection (not shown)			1			1
14	225398	Pipe, fuel injection				1		
14	GM18718	Pipe, fuel injection					1	
15	252739	Gasket	2	2	2	2	2	
15	225424	Washer, seal						2
16	225796	Bolt, pipe joint	1			1		
17	225798	Pipe	1	55		1		
18	256713	Bolt 6, pipe joint	3	3	4	3	3	4
19	225799	Assembly, fuel return pipe	1			1		
19	256791	Assembly, fuel return pipe		1			1	
19	256714	Assembly, fuel return pipe			1			1
20	252792	Assembly, check valve	1	1	1	1	1	1
21	363451	Washer, seal						8
21	252355	Gasket, round	6	6	8	6	6	
22	252675	Gasket	2			2		
23	252675	Gasket, round	2			2		
24	225810	Bolt 3, pipe joint	1			1		
25	225830	Union	1			1		

# Group 15: Fuel Filter and Fuel Line

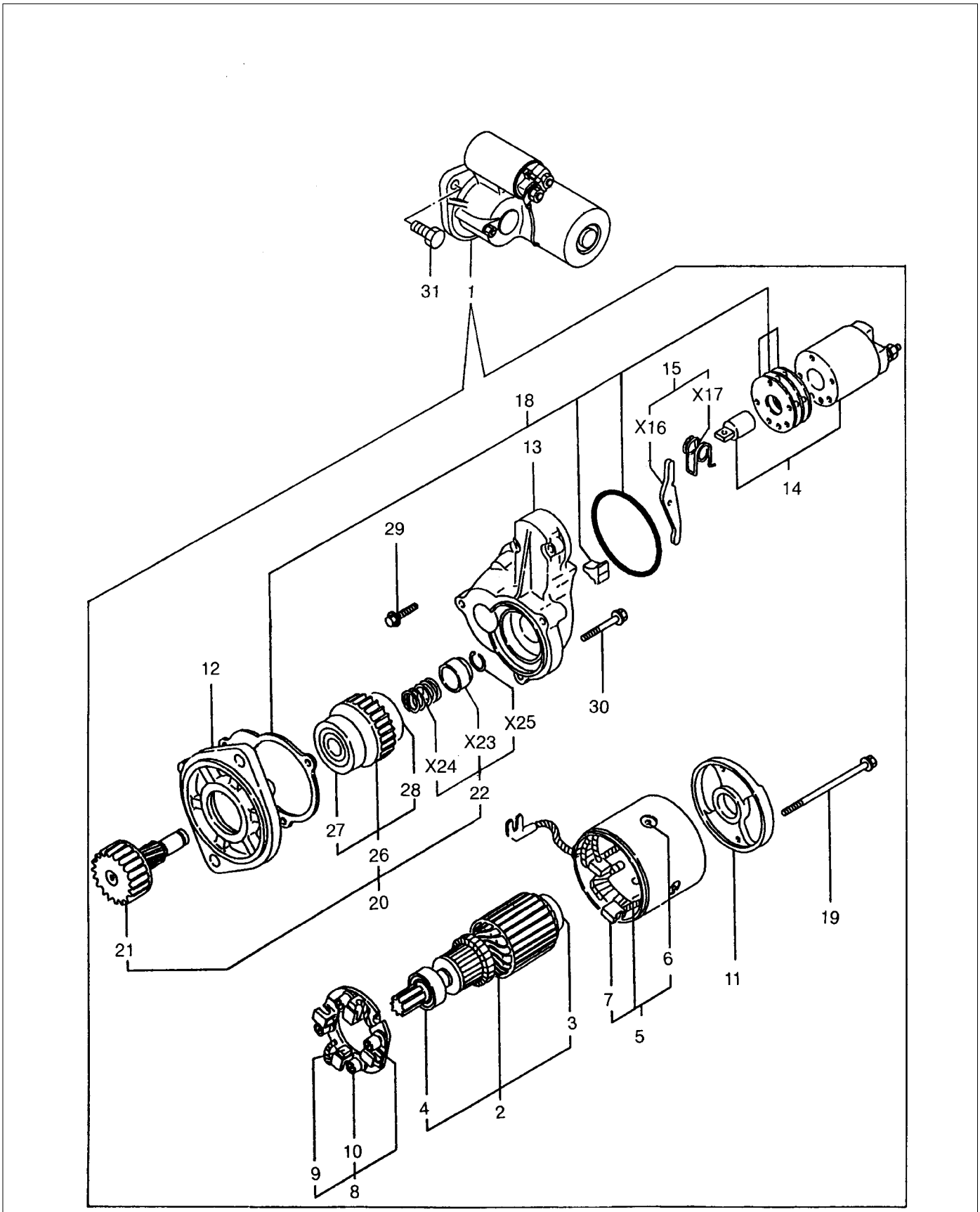


## Group 15: Fuel Filter and Fuel Line

Item	Part Number	Description	Quantity					
			Variation Number					
			21	22	23	27	28	29
1	256609	Assembly, fuel strainer (includes items 2-5)	1			1		
1	256526	Assembly, fuel strainer (includes items 2-5)		1	1		1	1
2	X	Body, strainer	1	1	1	1	1	1
3	252898	Filter, fuel	1			1		
3	225010	Filter, fuel		1	1		1	1
4	252081	Plug		1	1		1	1
5	250994	Washer, seal, 6 mm		1	1			
5	363451	Washer, seal					1	1
6	225820	Bolt, M18 x 30, plated	2			2		
6	225923	Bolt, M10 x 20, plated		2	2		2	2
7	252775	Assembly, fuel feed pump		1	1		1	1
8	252957	Union		1	1		1	1
9	250969	Gasket	1			1		
9	252739	Gasket		2	2		2	2
10	250996	Bolt, with plug and seal (includes items 11-13)		1	1		1	1
10	250972	Bolt, M6 joint	1			1		
11	X	Bolt, joint		1	1		1	1
12	252081	Plug		1	1		1	1
13	250994	Washer, seal, 6 mm		1				
13	363451	Washer, seal			1		1	1
14	256789	Assembly, return pipe (includes items 15-18)		1			1	
14	225889	Assembly, return pipe (includes items 15-18)			1			1
15	X	Joint, pipe		1	1		1	1
16	X	Pipe		1	1		1	1
17	X	Joint		1	1		1	1
18	X	Nut, cap, M8		1	1		1	1
19	252959	Assembly, pipe (includes items 20-22)		1	1		1	1
20	X	Joint, pipe		1	1		1	1
21	X	Pipe		1	1		1	1
22	X	Joint, pipe	1	1	1	1	1	1
23	225765	Assembly, pipe (includes items 24-26)	1			1		
23	252960	Assembly, pipe (includes items 24-26)		1	1		1	1
24	X	Joint, pipe	1	1	1	1	1	1
25	X	Pipe	1	1	1	1	1	1
26	X	Joint, pipe	1	1	1	1	1	1
27	225797	Assembly, pipe (includes items 28 and 29)	1			1		
27	256790	Assembly, pipe (includes items 28 and 29)		1			1	
27	225890	Assembly, pipe (includes items 28 and 29)			1			1
28	X	Joint, pipe	2	2	2	2	2	2
29	X	Pipe	1	1	1	1	1	1
30	225764	Mount, strainer	1					
30	229835	Block, fuel		1	1		1	1
31	225918	Support		1	1			
31	252965	Support				1	1	1
32	252356	Gasket, 8 mm	4	4	4	4	4	4
33	250969	Gasket, 12 mm, round	4	8	8	4	8	8
34	250995	Bolt, joint	2			2		
34	252677	Bolt, joint		2	2		2	2
35	250972	Bolt, M6 joint	2	4	4	2	4	4
36	225919	Bolt, M6 x 14		2	2		2	2
37	252702	Bolt, M8 x 40, plated		2	2		2	2
38	225820	Bolt, M8 x 16, plated	2			2		
38	225922	Bolt, M10 x 16, plated		3	3		3	3

X Item not sold separately

# Group 16: Starting Motor



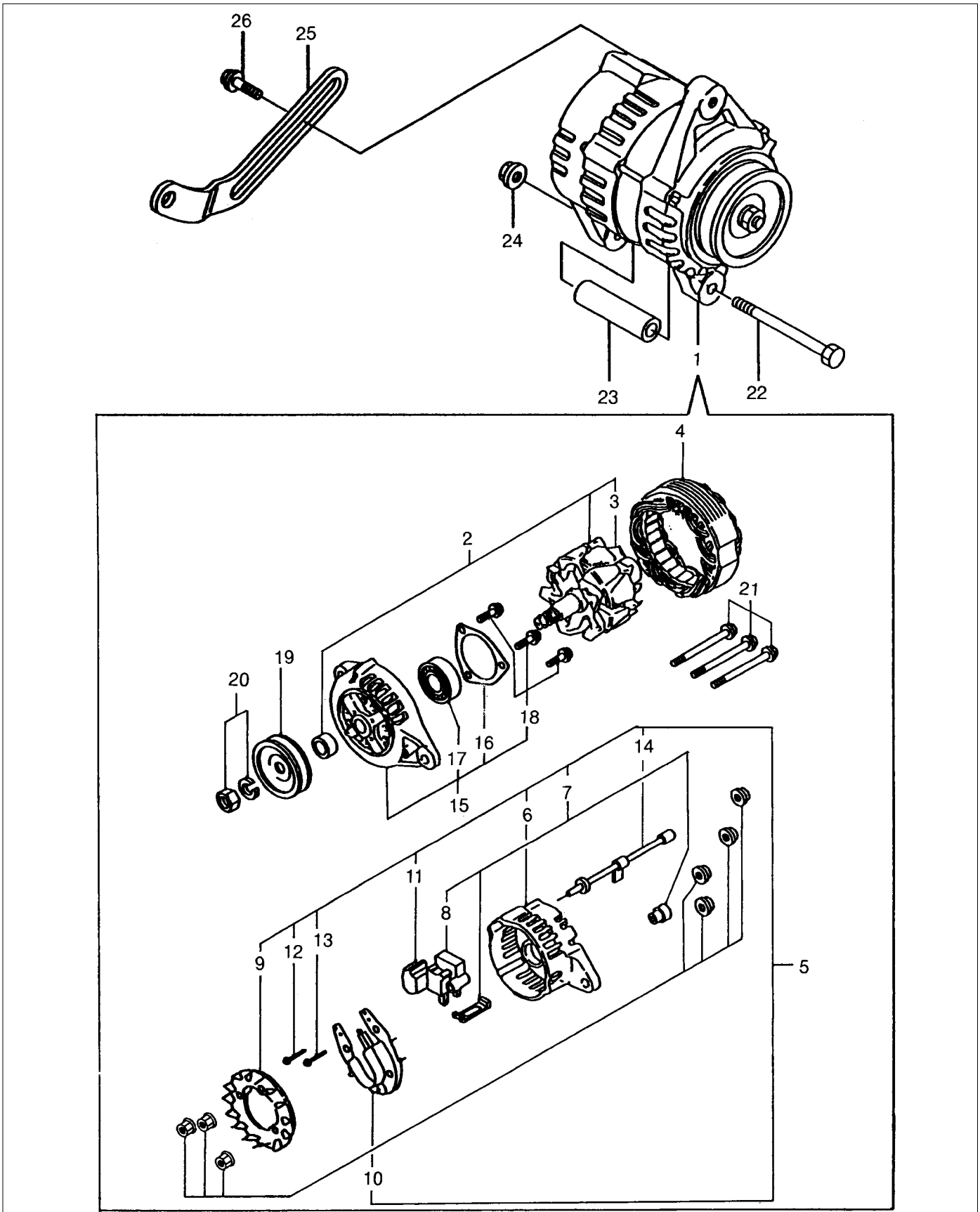


## Group 16: Starting Motor

Item	Part Number	Description	Quantity					
			Variation Number					
			21	22	23	27	28	29
1	225012	Starter (includes items 2-30)	1			1		
1	225013	Starter (includes items 2-30)		1			1	
1	225014	Starter (includes items 2-30)			1			1
2	225855	Assembly, armature (includes items 3 and 4)	1			1		
2	225895	Assembly, armature (includes items 3 and 4)		1			1	
2	225878	Assembly, armature (includes items 3 and 4)			1			1
3	225843	Bearing (1)	1			1		
3	225896	Bearing (1)		1	1		1	1
4	225845	Bearing (2)	1			1		
4	225897	Bearing (2)		1	1		1	1
5	225860	Assembly, field coil (includes items 6 and 7)	1			1		
5	225898	Assembly, field coil (includes items 6 and 7)		1			1	
5	225879	Assembly, field coil (includes items 6 and 7)			1			1
6	225862	Screw, pole core set	4			4		
6	225899	Screw, pole core set		4	4		4	4
7	225850	Brush (+)	2			2		
7	225990	Brush (+)		2			2	
7	225880	Brush (+)			2			2
8	225849	Assembly, brush holder (includes items 9 and 10)	1			1		
8	225901	Assembly, brush holder (includes items 9 and 10)		1			1	
8	225881	Assembly, brush holder (includes items 9 and 10)			1			1
9	225857	Brush (-)	2			2		
9	225902	Brush (-)		2			2	
9	225882	Brush (-)			2			2
10	225864	Spring, brush	4			4		
10	225903	Spring, brush		4			4	
10	225883	Spring, brush			4			4
11	225863	Cover, rear	1			1		
11	225904	Cover, rear		1			1	
11	225884	Cover, rear			1			1
12	225861	Assembly, gear housing	1			1		
12	225905	Assembly, gear housing		1	1		1	1
13	225842	Housing, center	1			1		
13	225906	Housing, center		1			1	
13	225885	Housing, center			1			1
14	225853	Assembly, magnetic switch	1			1		
14	225907	Assembly, magnetic switch		1			1	
14	225886	Assembly, magnetic switch			1			1
15	225858	Shift lever set (includes items 16 and 17)	1			1		
15	225908	Shift level set (includes items 16 and 17)		1	1		1	1
16	X	Lever, shift	1	1	1	1	1	1
17	X	Spring	1	1	1	1	1	1
18	225854	Cover kit, dust	1			1		
18	225909	Cover kit, dust		1			1	
18	225887	Cover kit, dust			1			1
19	225859	Thrubolt	2			2		
19	225910	Thrubolt		2			2	
19	225888	Thrubolt			2			2
20	225844	Assembly, pinion (includes items 21-28)	1			1		
20	225911	Assembly, pinion (includes items 21-28)		1	1		1	1
21	225865	Shaft, pinion	1			1		
21	225912	Shaft, pinion		1	1		1	1
22	225848	Stopper set, pinion (includes items 23-25)	1			1		
22	225913	Stopper set, pinion (includes items 23-25)		1	1		1	1
23	X	Stopper, pinion	1	1	1	1	1	1
24	X	Spring	1	1	1	1	1	1
25	X	Clip, pinion stopper	1	1	1	1	1	1
26	225846	Assembly, clutch (includes items 27 and 28)	1			1		
26	225914	Assembly, clutch (includes items 27 and 28)		1	1		1	1
27	225851	Bearing, ball (3)	1			1		
27	225915	Bearing, ball (3)		1	1		1	1
28	225852	Bearing, ball (4)	1			1		
28	225916	Bearing, ball (4)		1	1		1	1
29	225856	Bolt	2			2		
29	225920	Bolt, M6 x 32, plated		2	2		2	2
30	225847	Bolt	3			3		
30	225921	Bolt, M6 x 40, plated		3	3		3	3
31	252712	Bolt, M12 x 25, plated	2	2	2	2	2	2
32	225917	Cover, terminal (not shown)		1	1		1	1

X Item not sold separately

# Group 17: Alternator

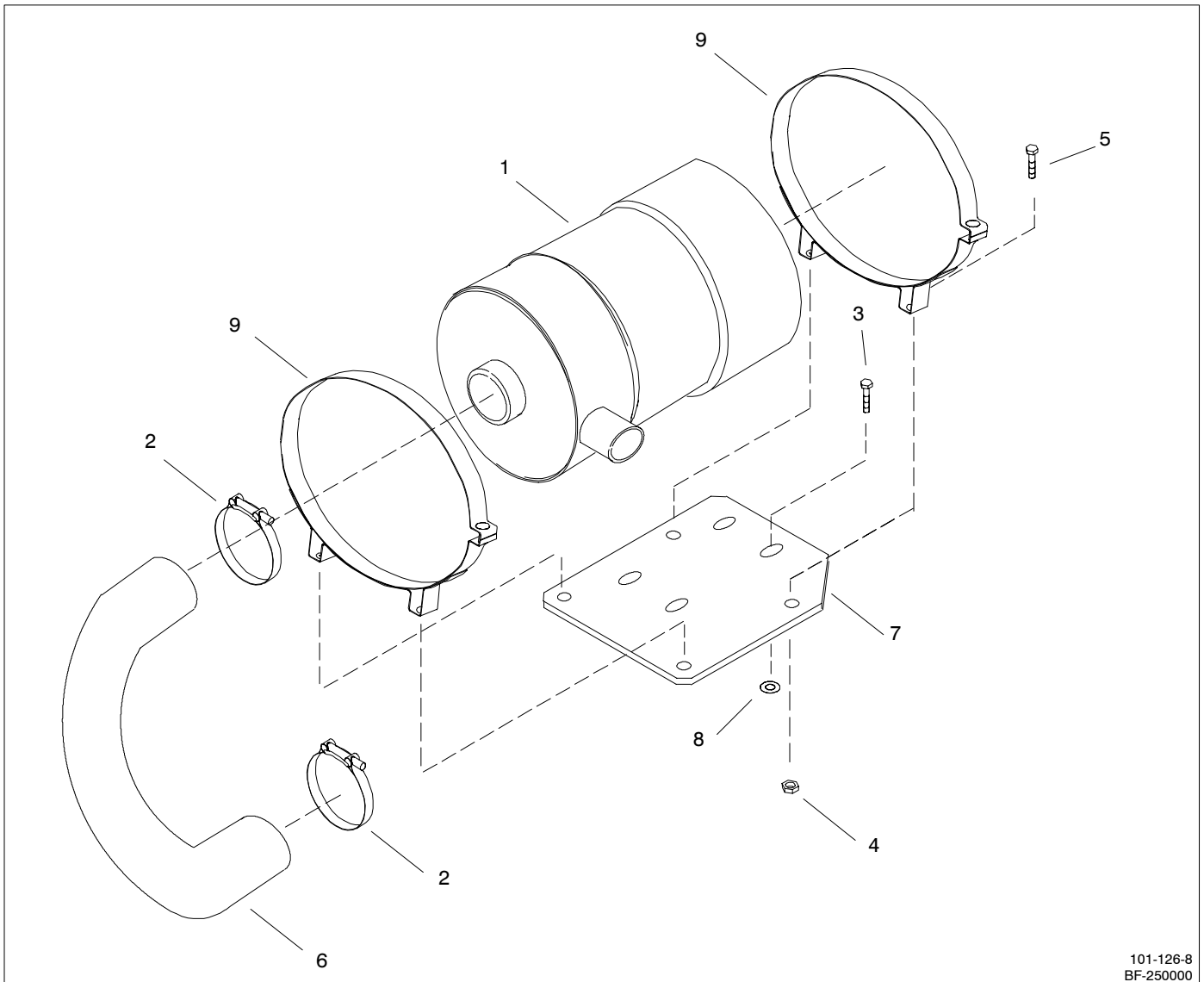


## Group 17: Alternator

Item	Part Number	Description	Quantity					
			Variation Number					
			21	22	23	27	28	29
1	225015	Alternator, 40 amp (includes items 2-21)	1	1	1	1	1	1
2	225736	Assembly, rotor (includes item 3)	1	1	1	1	1	1
3	225750	Bearing, ball	1	1	1	1	1	1
4	225737	Assembly, starter	1	1	1	1	1	1
5	225738	Assembly, rear cover (includes items 6-14)	1	1	1	1	1	1
6	225739	Cover, rear	1	1	1	1	1	1
7	225740	Assembly, regulator brush (includes item 8)	1	1	1	1	1	1
8	225025	Assembly, brush	1	1	1	1	1	1
9	225741	Guide, fan side	1	1	1	1	1	1
10	225742	Assembly, diode	1	1	1	1	1	1
11	225743	Condenser	1	1	1	1	1	1
12	225752	Bolt	1	1	1	1	1	1
13	225753	Bolt	1	1	1	1	1	1
14	225754	Assembly, lead wire	1	1	1	1	1	1
15	225744	Assembly, front cover (includes items 16-18)	1	1	1	1	1	1
16	225745	Retainer, bearing	1	1	1	1	1	1
17	225749	Bearing, ball	1	1	1	1	1	1
18	225751	Screw kit	1	1	1	1	1	1
19	225746	Pulley	1	1	1	1	1	1
20	225747	Assembly, pulley nut	1	1	1	1	1	1
21	225748	Bolt, through	1	1	1	1	1	1
22	225772	Bolt, M8 x 105	1	1	1	1	1	1
23	229874	Spacer	1	1	1	1	1	1
24	252723	Nut, M8	1	1	1	1	1	1
25	225734	Adjuster	1			1		
25	225877	Adjuster		1	1		1	1
26	252692	Bolt, M8 x 25	1	1	1	1	1	1



# Group 101: Air Intake

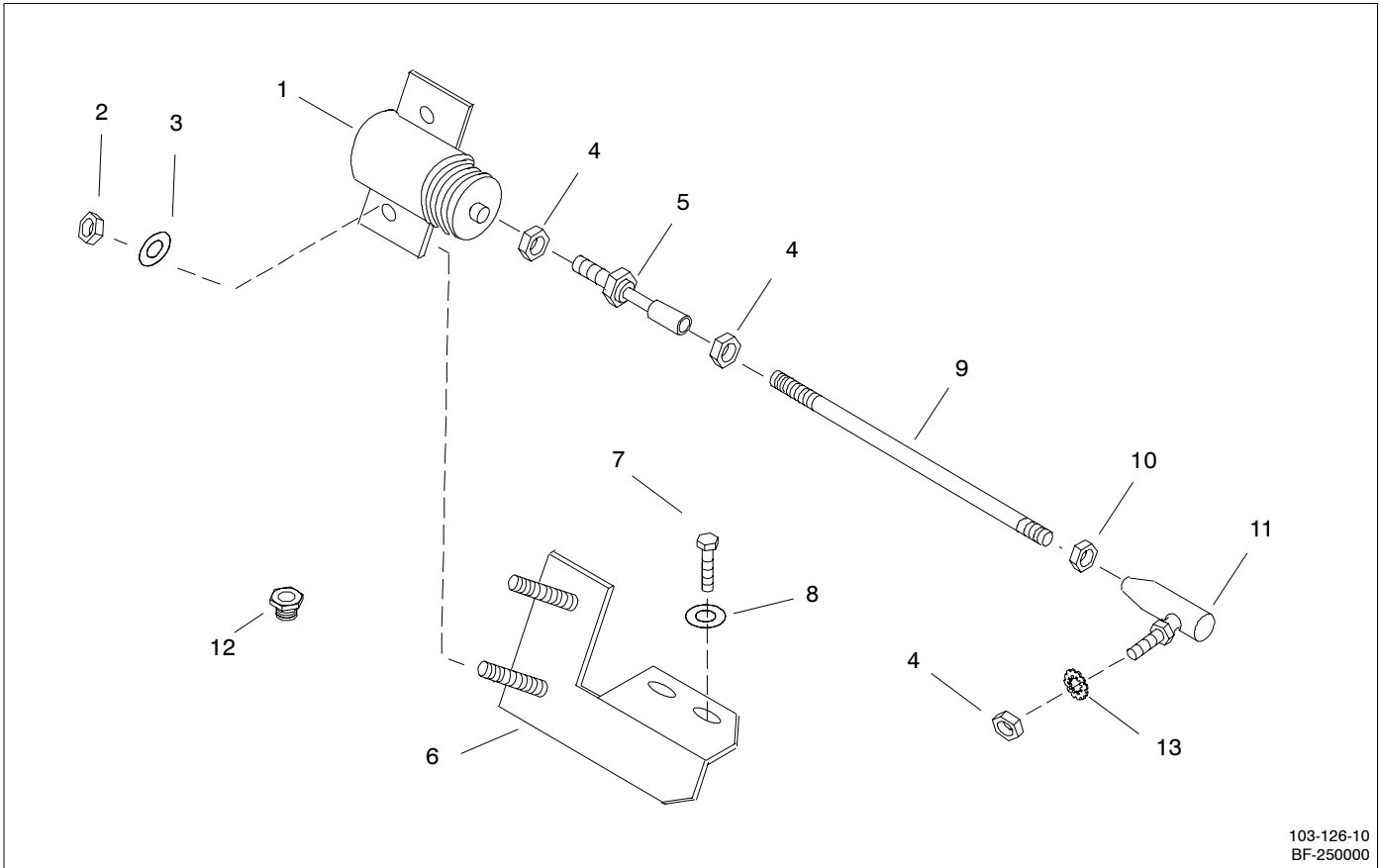


101-126-8  
BF-250000

Item	Part Number	Description	Quantity			
			Variation Number			
			8	9	12	13
1	A-258643	Cleaner, air	1	1	1	1
1	258646	Element, air cleaner (not shown)	1	1	1	1
2	X-426-16	Clamp, hose	2	2	2	2
3	X-6050-8	Screw, HC		4		
3	X-6050-4	Screw, HC	4		4	
3	X-6050-3	Screw, HC				4
4	#	Nut, 1/4-20	4	4	4	4
5	#	Bolt, 1/4-20	4	4	4	4
6	225075	Hose, air intake	4	4		
6	226699	Hose, air intake			4	4
7	225156	Bracket, air cleaner support	1			
7	225068	Bracket, air cleaner support	1	1		
7	226698	Bracket, air cleaner			2	2
8	#	Washer, 5/16	4	4	4	
9	258708	Band, mounting	2	2	2	2
10	280528	Spacer, .406 x .750 x .375 (not shown)	4		4	
10	X-400-74	Spacer, .344 x .625 x .250		4		4

# Common hardware; procure locally.

# Group 103: Fuel System



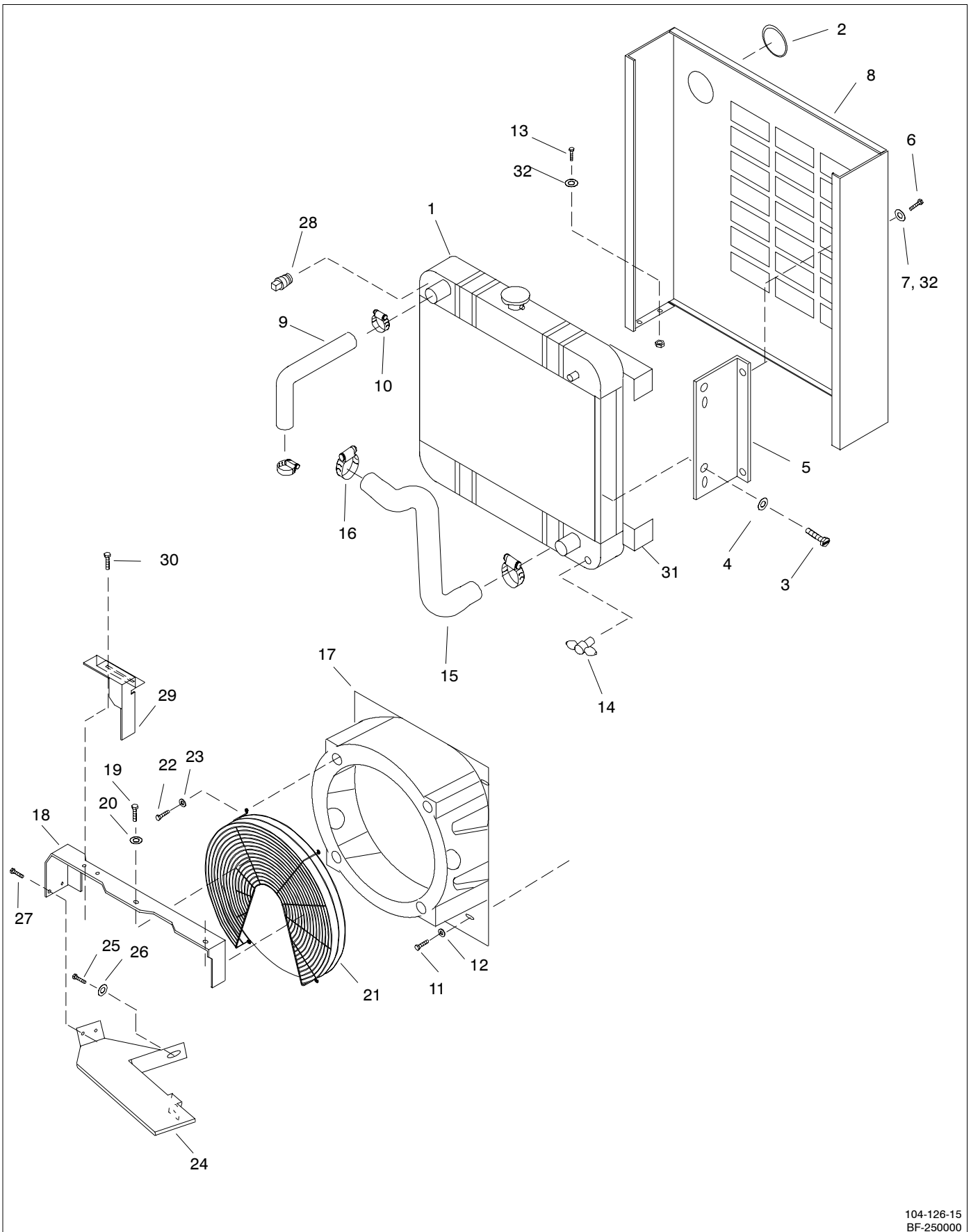
103-126-10  
BF-250000

## Group 103: Fuel System

Item	Part Number	Description	Quantity			
			Variation Number			
			10	11	12	14
1	258628	Solenoid, fuel	1	1	1	
2	#	Nut, 1/4-20	2	2	2	
3	#	Washer, 1/4-20	2	2		
4	X-81-9	Nut, hex	3	3	3	
5	273731	Joint, ball	1	1	1	
6	225121	Bracket, solenoid mounting	1	1	1	
7	X-6051-2	Screw, hex head	2	2	2	
7	X-400-158	Spacer (not shown)			2	
8	X-25-1	Washer, plain	2	2	2	
9	X-352-81	Stud	1			
9	X-352-89	Stud		1		
9	X-352-46	Stud			1	
10	X-81-9	Nut, 1/4-28	1	1	1	
11	273730	Joint, ball	1	1	1	
12	229331	Adapter, pipe				1
13	X-22-11	Washer, lock	1	1	1	

# Common hardware; procure locally.

# Group 104: Cooling System



104-126-15  
BF-250000

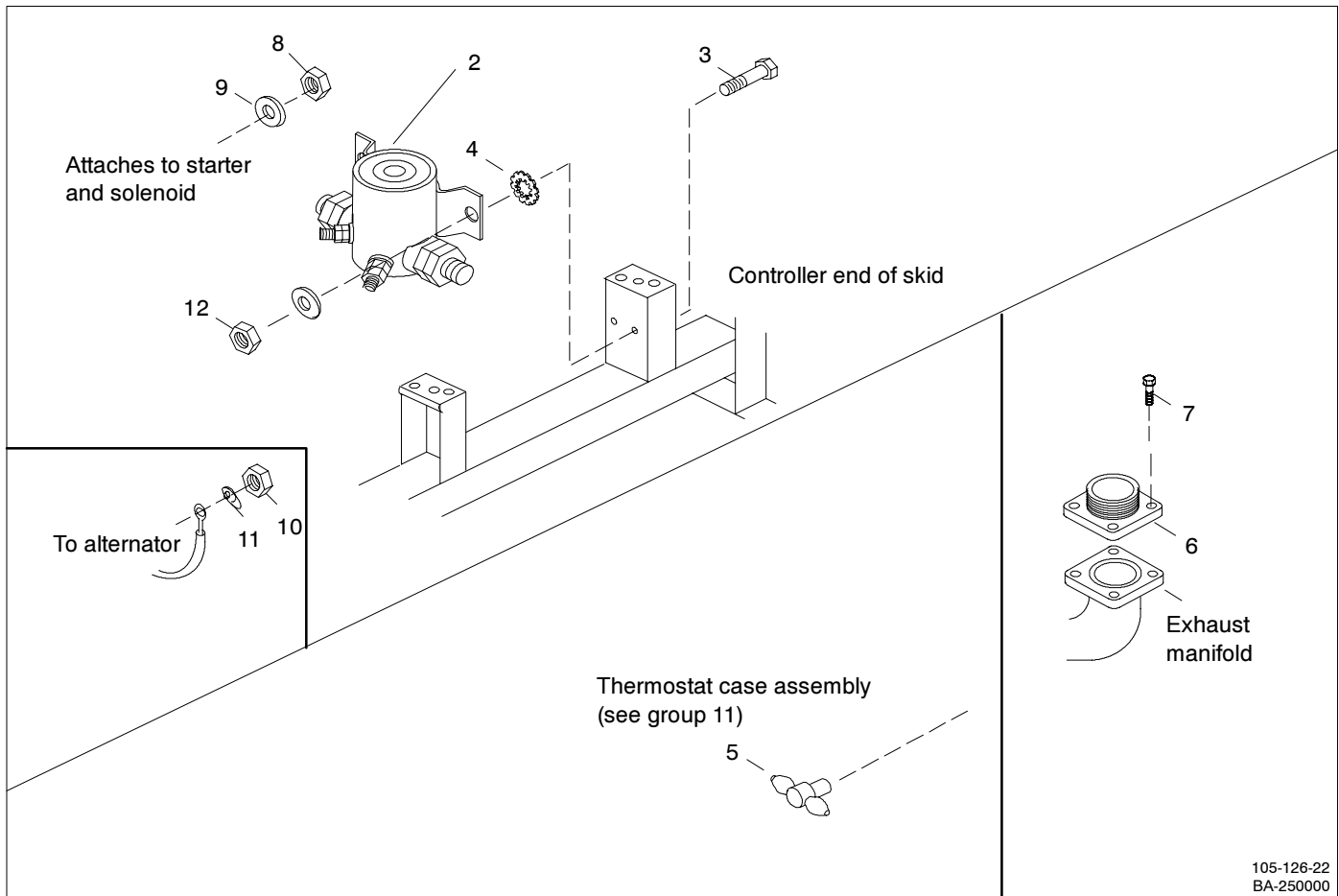


## Group 104: Cooling System

Item	Part Number	Description	Quantity		
			Variation Number		
			13	14	15
1	A-225136	Assembly, radiator	1	1	1
1	258126	Cap, radiator	1	1	1
2	254949	Plug	1	1	1
3	X-123-23	Screw	4	4	4
4	#	Washer, 5/16	4	4	4
5	226538	Support, radiator	2	2	2
6	#	Bolt, 5/16-18	4	4	4
6	X-125-23	Screw	4	4	4
7	#	Washer, 5/16	4	4	4
8	GM13231	Shroud, radiator	1	1	1
9	225061	Hose, radiator	1	1	
9	225171	Hose, radiator			1
10	X-426-8	Clamp, hose, 1 15/16	1	1	1
11	X-465-2	Screw, 1/4-20 x 5/8	4	4	4
12	X-25-73	Washer, plain	4		4
13	#	Hardware, 5/16-18	4		4
14	X-256-3	Valve, drain, 1/4	1	1	1
15	225060	Hose, lower radiator	1	1	1
16	X-426-8	Clamp, hose, 1 15/16	2	2	2
17	225066	Shroud, fan	1	1	1
18	225153	Guard, belt, top	1	1	
18	225260	Guard, belt, top			1
19	X-125-23	Screw	2	2	
19	#	Bolt, 5/16-18			2
20	#	Washer, 5/16	2	2	2
21	225069	Guard, wire fan	1	1	
21	225263	Guard, wire fan			1
22	X-125-5	Screw, 5/16-18 x 1 in.	4	4	4
23	#	Washer, 5/16	4	4	4
24	225154	Guard, belt, bottom	1	1	
24	X-125-3	Screw (not shown)	1	1	
24	#	Washer, 5/16 (not shown)	1	1	
24	225261	Guard, belt, bottom			1
25	X-125-3	Screw, HC	1	1	1
26	#	Washer, 5/16	1	1	1
27	X-6216-1	Screw, Phillips hex	2	2	2
28	X-75-10	Plug, pipe, 3/8	1	1	1
29	225262	Guard, belt			1
30	X-6216-1	Screw, Phillips hex			2
31	226925	Baffle, radiator	2	2	2
32	X-22-16	Washer, lock	12	8	8

# Common hardware; procure locally.

# Group 105: Engine



105-126-22  
BA-250000

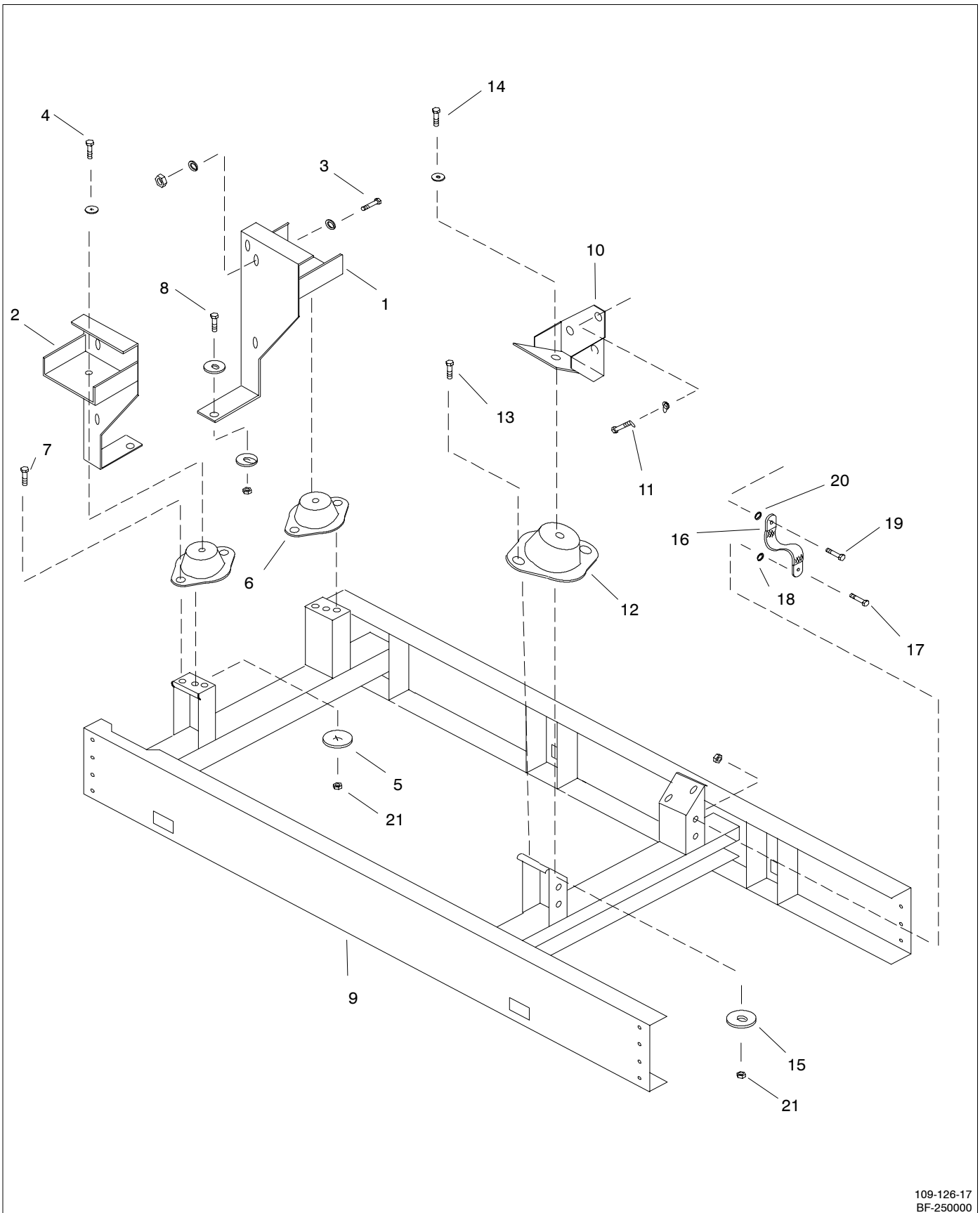
Item	Part Number	Description	Quantity					
			21	22	23	27	28	29
1	A-225050	Assembly, engine, model 3TN75E-RK (not shown)	1					
1	A-225051	Assembly, engine, model 3TN84E-RK (not shown)		1				
1	A-225052	Assembly, engine, model 4TN84E-RK (not shown)			1			
1	A-225341	Assembly, engine, model 3TNE78A (not shown)				1		
1	A-225342	Assembly, engine, model 3TNE84 (not shown)					1	
1	A-225343	Assembly, engine, model 4TNE84 (not shown)						1
2	233442	Relay	1	1	1	1	1	1
3	#	Hardware, 1/4-20	2	2	2	2	2	2
4	X-22-12	Washer, shakeproof	2	2	2	2	2	2
5	X-256-1	Valve, drain, 3/8		1	1		1	1
6	225264	Flange, exhaust outlet	1	1		1	1	
6	225265	Flange, exhaust outlet			1			1
7	X-6053-2	Nut, hex				4	4	4
8	X-6053-2	Nut, hex				1	1	1
9	X-22-5	Washer, lock, 5/16				1	1	1
10	X-6053-6	Nut, hex				1	1	1
11	X-22-13	Washer, lock				1	1	1
12	#	Hardware, 1/4-20						2

# Common hardware; procure locally.

## Group 107: Nameplate and Decals

Item	Part Number	Description	Quantity								
			Variation Number								
			14	15	16	17	18	19	24	25	26
1	238162	Decal, positive battery connection	1	1	1	1	1	1	1	1	1
2	249810	Decal, warning "hot coolant"	1	1	1	1	1	1	1	1	1
3	249809	Decal, caution "hot engine"	1	1	1	1	1	1	1	1	1
4	249808	Decal, warning "rotating parts"	1	1	1	1	1	1	1	1	1
5	224233	Decal, 1-800 number	1	1	1	1	1	1	1	1	1
6	327004	Nameplate	1	1	1	1	1	1	1	1	1
8	257438	Decal, warning "moving parts"	1	1	1	1	1	1	1	1	1
9	X-6247-19	Decal, model	2	2					2		
9	X-6247-17	Decal, model			2	2					2
9	X-6247-18	Decal, model					2	2		2	
10	239796	Decal, warning "carbon monoxide"	1	1	1	1	1	1	1	1	1
11	258815	Decal, warning "hazardous voltage"	1		1		1				
11	259365	Decal, warning "hazardous voltage"		1		1		1	1		1
12	254831	Decal, regulator adjustment		1		1		1	1	1	1
13	255798	Tag, instruction (not shown)							1	1	1
14	255882	Decal, caution "transfer switch connection"							1	1	1
15	343292	Nameplate, CSA							1	1	1
16	Not Available	Nameplate, serial number							1	1	1
17	279958	Decal, warning "hazardous voltage"								1	

# Group 109: Skid and Plant Mounting



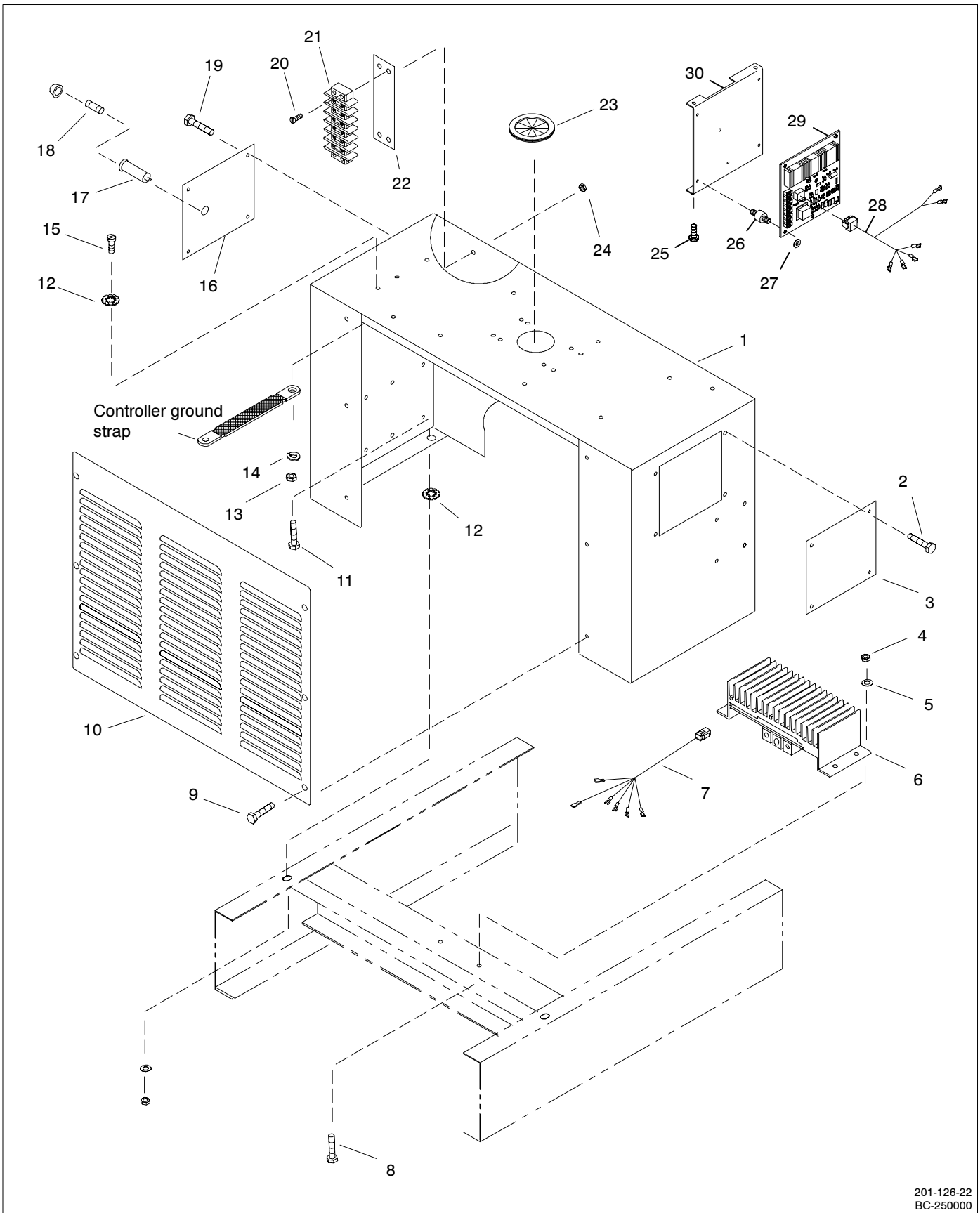
109-126-17  
BF-250000

## Group 109: Skid and Plant Mounting

Item	Part Number	Description	Quantity		
			Variation Number		
			17	18	19
1	225110	Bracket, generator mounting, left	1	1	1
2	225111	Bracket, generator mounting, right	1	1	1
3	#	Hardware, 5/16-18	4	4	4
4	#	Hardware, 5/16-18	2	2	2
5	X-25-96	Washer, plain	2	2	2
6	258659	Vibromount, gen. end, orange	2	2	
6	278322	Vibromount, gen. end, green			2
7	#	Bolt, 5/16-18	4	4	4
7	#	Washer, 5/16 (not shown)	4	4	4
8	#	Hardware, 3/8-16	2	2	2
9	225118	Skid	1		
9	225114	Skid		1	
9	225116	Skid			1
10	225120	Bracket, engine mounting	2		
10	225113	Bracket, engine mounting		2	2
11	X-6052-1	Screw, HC, M12-1.17	6		
11	X-6051-2	Screw, HC		6	6
11	#	Washer, 7/16 (not shown)		6	6
12	229127	Vibromount, engine end	2		
12	225125	Vibromount, engine end, purple		2	
12	226458	Vibromount, engine end			2
13	#	Bolt, 5/16-18		4	4
14	#	Hardware, 5/16-18	2		
14	230578	Screw, HC		2	2
14	#	Nut, 5/16-18		2	2
15	X-25-96	Washer, plain	2	2	2
16	287363	Strap, ground	1		
16	290418	Strap, ground		1	1
17	#	Hardware, 5/16-18	1	1	1
18	X-22-16	Washer, lock 5/16	2		2
19	X-6052-1	Screw, HC, M12-1.17	1		
19	X-6051-2	Screw, HC		1	1
20	X-22-26	Washer, lock, 1/2	1		
20	X-22-14	Washer, shakeproof		1	1
21	X-101-13	Nut, hex elastic stop	4	4	4

# Common hardware; procure locally.

# Group 201: Generator and Mounting



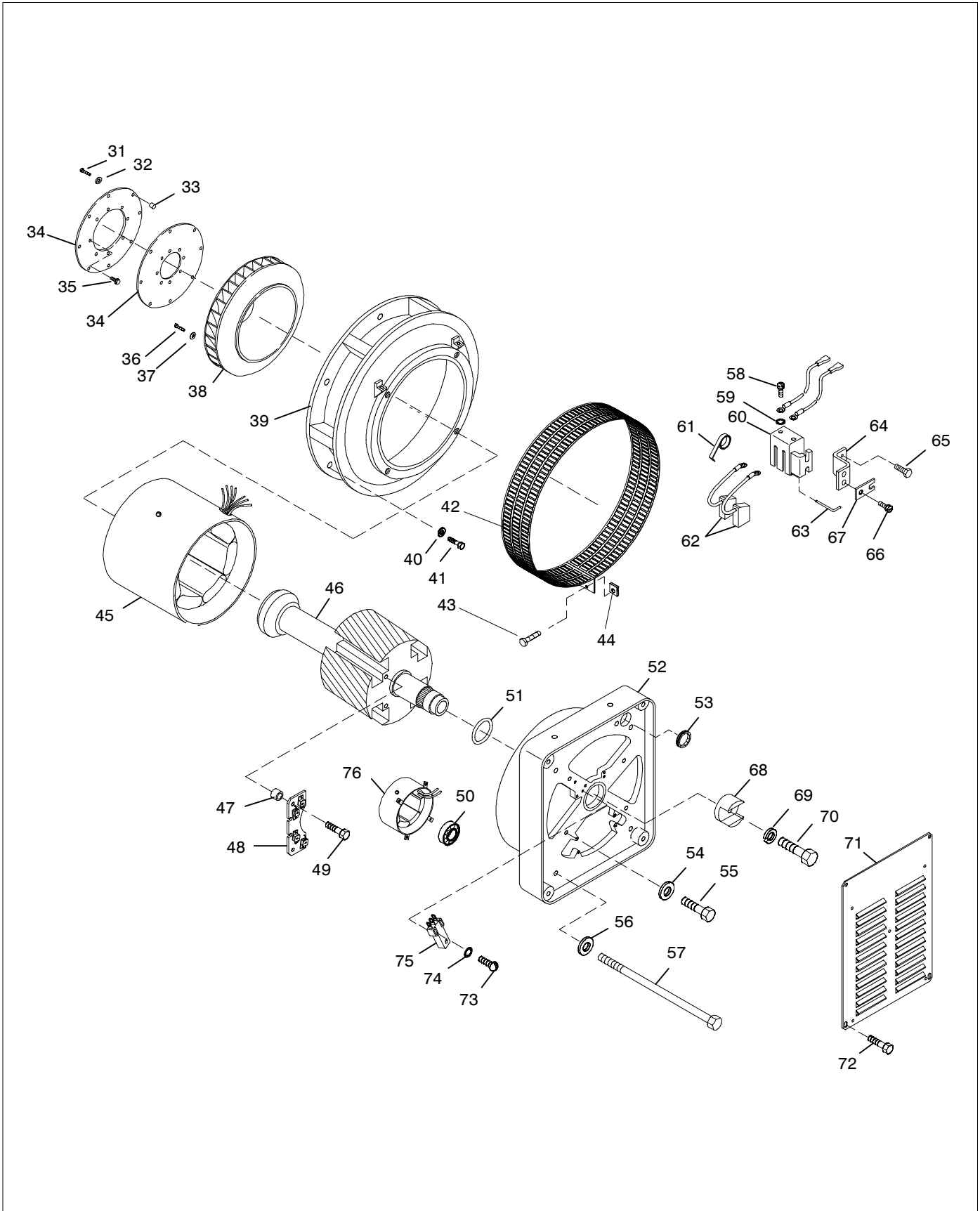
201-126-22  
BC-250000

# Group 201: Generator and Mounting

Item	Part Number	Description	Quantity								
			Variation Number								
			22	23	24	25	26	27	28	29	30
1	225108	Box, junction	1	1	1	1	1	1	1	1	1
2	X-6216-1	Screw, self-tapping	4	4	4	4	4	4	4	4	4
3	254825	Panel, junction box, 3-phase		1	1		1	1		1	1
3	254724	Panel, regulator mtg., 1-phase	1			1			1		
3	X-301-23	Plug, button (not shown)	1			1			1		
4	X-72-4	Nut, hex	4	12	12	4	12	12	4		
5	#	Washer, #8	4			4			4		
6	228605	Voltage regulator, 1-phase	1			1			1		
7	225079	Harness, wiring	1			1			1		
8	X-51-9	Screw, 8-32	4			4			4		
9	X-6216-1	Screw, self-tapping	9	9	9	9	9	9	9	9	9
10	225134	Panel, louver	1	1	1	1	1	1	1	1	1
11	#	Hardware, 1/4-20	4	4	4	4	4	4	4	4	4
12	X-22-12	Washer, shakeproof	5	5	5	5	5	5	5	5	5
13	#	Nut, 1/4-20	2	2	2	2	2	2	2	2	2
14	X-22-11	Washer, lock, 1/4	1	1	1	1	1	1	1	1	1
15	267491	Screw, special	1	1	1	1	1	1	1	1	1
16	254724	Panel, regulator mtg., 1-phase	1			1			1		
16	254825	Panel, junction box, 3-phase		1	1		1	1		1	1
17	238426	Holder, fuse	1			1			1		
18	223316	Fuse, 10 amp	1			1			1		
19	X-6216-1	Screw, self-tapping	4			4			4		
20	X-49-3	Screw, RHM, 6-32 x 7/8	2	2	2	2	2	2	2	2	2
21	254819	Strip, terminal	1	1	1	1	1	1	1	1	1
22	254821	Marker, strip	1	1	1	1	1	1	1	1	1
23	X-6033-2	Grommet, nylon	1	1	1	1	1	1	1	1	1
24	#	Nut, #6-32	2	2	2	2	2	2	2	2	2
25	X-50-13	Screw, RHM, 10-24		4	4		4	4		4	4
26	282829	Vibromount		6	6		6	6		6	6
27	#	Washer, #10		4	4		4	4		4	4
28	225080	Harness, wiring		1	1		1	1		1	1
29	B-258296	Voltage regulator, 3-phase		1	1		1	1		1	1
30	225244	Bracket, regulator mounting		1	1		1	1		1	1

# Common hardware; procure locally.

# Group 201: Generator and Mounting, continued



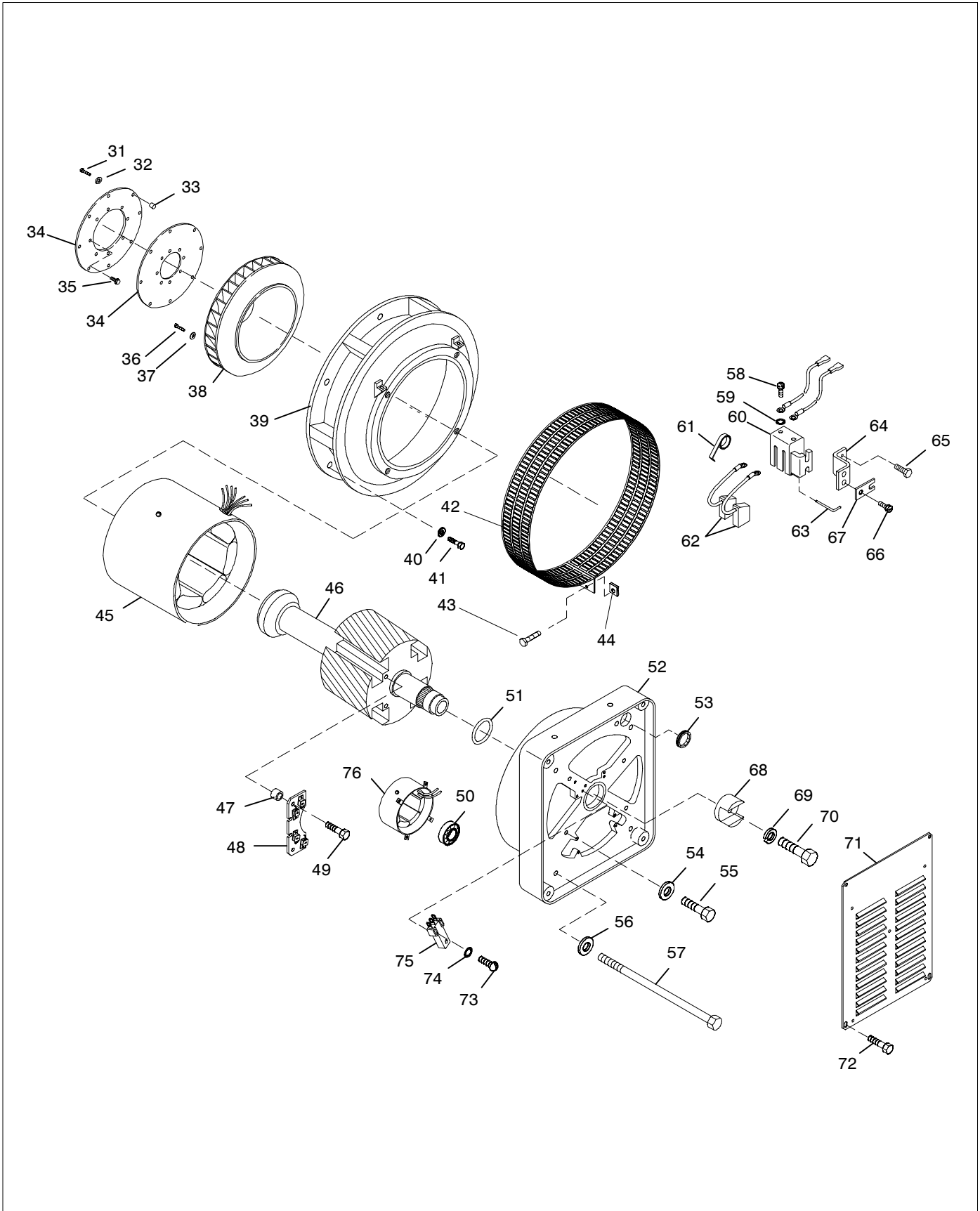


## Group 201: Generator and Mounting, continued

Item	Part Number	Description	Quantity								
			Variation Number								
			22	23	24	25	26	27	28	29	30
31	270956	Screw, hex head cap	8	8	8	8	8	8	8	8	8
32	X-801-3	Washer, hardened	8	8	8	8	8	8	8	8	8
33	X-400-104	Spacer	8	8	8	8	8	8			
33	265693	Spacer							8	8	8
34	257017	Disc, armature drive	2	2	2	2	2	2	2	2	2
35	X-6050-1	Screw, hex head cap	8	8	8	8	8	8			
35	X-6054-6	Stud (not shown)							8	8	8
35	X-6053-2	Nut, hex (not shown)							8	8	8
36	X-6238-11	Screw, hex head cap	4	4	4	4	4	4	4	4	4
37	X-25-93	Washer, plain	4	4	4	4	4	4			
38	239646	Fan, generator	1	1	1	1	1	1			
38	347697	Fan, generator							1	1	1
39	225109	Adapter	1	1	1	1	1	1			
39	239614	Adapter							1	1	1
40	#	Washer, 3/8	4	4	4	4	4	4	4	4	4
41	X-6051-3	Screw, hex head cap	4	4	4	4	4	4			
41	X-6051-1	Screw, hex head cap							6	6	6
42	225135	Guard, generator fan	1	1	1	1	1	1			
42	257046	Guard, generator fan							1	1	1
43	X-67-125	Screw, self-tapping	2	2	2	2	2	2	2	2	2
44	257442	Clip, speed	2	2	2	2	2	2	2	2	2
45	257399	Assembly, stator	1								
45	257394	Assembly, stator		1							
45	257396	Assembly, stator			1						
45	257359	Assembly, stator				1					
45	257395	Assembly, stator					1				
45	257397	Assembly, stator						1			
45	<del>257396</del>	Assembly, stator							1		
45	239629	Assembly, stator								1	
45	254912	Assembly, stator									1
46	A-257388	Assembly, rotor (includes item 50)	1								
46	A-239639	Assembly, rotor (includes items 47-50)		1	1						
46	A-257389	Assembly, rotor (includes item 50)				1					
46	A-239718	Assembly, rotor (includes items 47-50)					1	1			
46	A-257381	Assembly, rotor (includes item 50)							1		
46	A-257382	Assembly, rotor (includes items 47-50)								1	1
46	238284	Insulator (not shown)	1			1			1		
46	238134	Ring, collector (not shown)	1			1			1		
47	X-400-143	Spacer		2	2		2	2		2	2
48	A-239669	Assembly, PCB		1	1		1	1		1	1
49	X-6071-5	Screw, hex washer head, thread-forming		2	2		2	2		2	2
50	X-758-1	Bearing, ball	1			1			1		
51	256466	O-ring	1	1	1	1	1	1	1	1	1
52	257291	Kit, end bracket (bracket 246437 and 256466 O-ring)	1	1	1	1	1	1	1	1	1
53	X-6072-2	Grommet, nylon	1	1	1	1	1	1	1	1	1
54	X-801-2	Washer, hardened		4	4		4	4		4	4
55	#	Bolt, 1/4-20		4	4		4	4		4	4
56	X-801-3	Washer, hardened	4	4	4	4	4	4	4	4	4
57	250774	Bolt, over	4								
57	239619	Bolt, over		4	4				4		
57	239618	Bolt, over				4					
57	239720	Bolt, over					4	4		4	4
58	X-49-1	Screw, round head machine, 6-32	2			2			2		
59	X-22-6	Washer, lock, #6	2			2			2		
60	<del>239247</del> 238247	Holder, brush	1			1			1		
61	238150	Spring	2			2			2		
62	239282	Brush	2			2			2		

# Common hardware; procure locally.

# Group 201: Generator and Mounting, continued

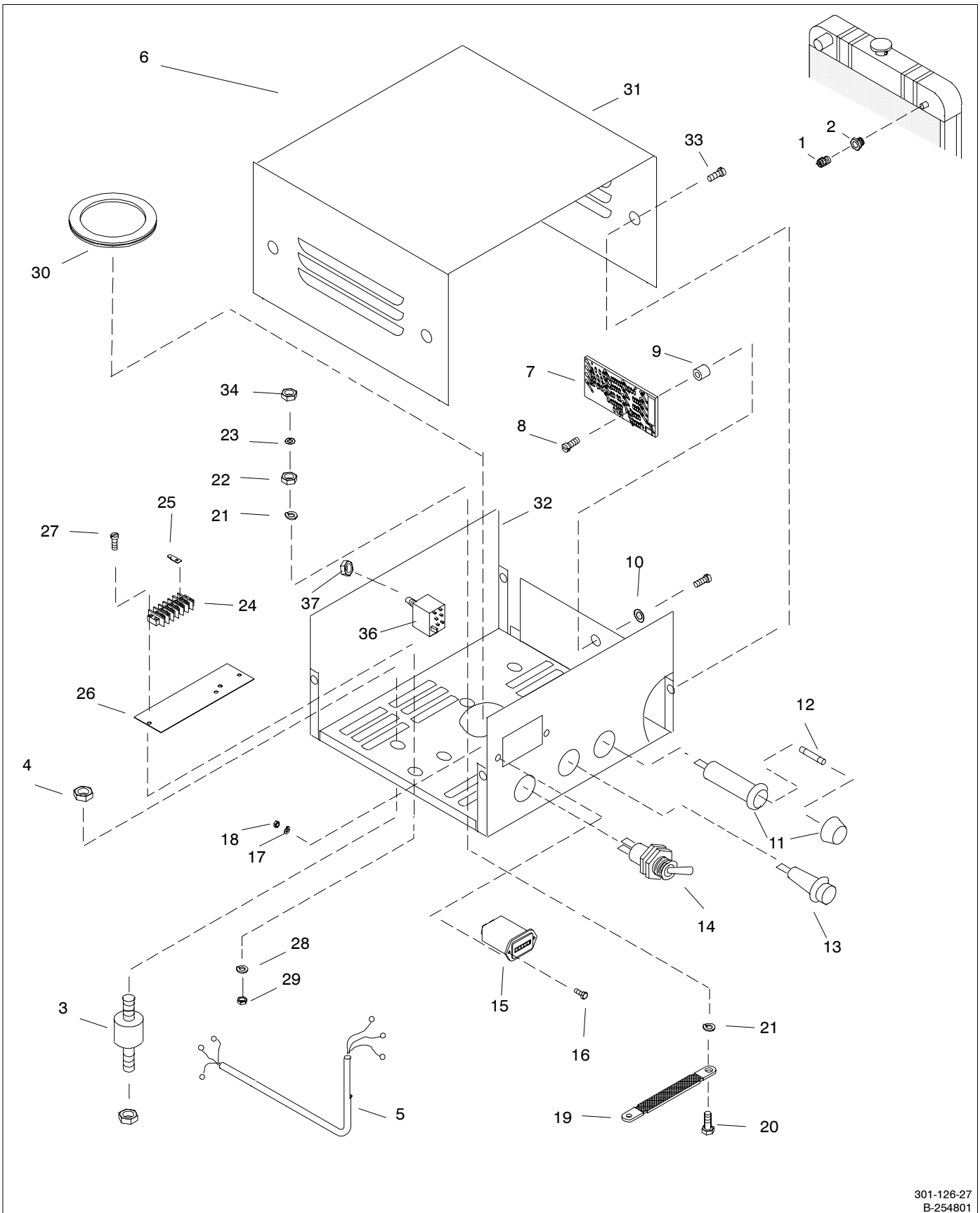


## Group 201: Generator and Mounting, continued

Item	Part Number	Description	Quantity								
			Variation Number								
			22	23	24	25	26	27	28	29	30
63	238247	Retainer, wire	1			1			1		
64	278943	Bracket, brush holder	1			1			1		
65	X-97-13	Screw, hex head cap	2			2			2		
66	X-50-56	Screw, round head machine, 10-32	2			2			2		
67	238248	Shim, brush holder	1			1			1		
68	254904	Actuator, magnetic	1	1	1	1	1	1	1	1	1
69	#	Washer, 1/4	1	1	1	1	1	1	1	1	1
70	X-465-18	Screw, hex head cap	1	1	1	1	1	1	1	1	1
71	250713	Panel, louver	1	1	1	1	1	1	1	1	1
72	X-67-52	Screw, hex head cap, 10-24	4	4	4	4	4	4	4	4	4
73	X-49-35	Screw, round head machine	2	2	2	2	2	2	2	2	2
74	X-22-24	Washer, shakeproof	2	2	2	2	2	2	2	2	2
75	241623	Sensor, ferromagnetic	1	1	1	1	1	1	1	1	1
76	239701	Assembly, field exciter		1	1						
76	239702	Assembly, field exciter					1	1		1	1
77	A-225123	Assembly, end bracket (includes items 51-53, 58-67)	1			1			1		
—	A-257383	Assembly, alternator (includes items 31-39, 45, 46, 47, 77)							1		
—	A-257384	Assembly, alternator (includes items 31-39, 45-49, 51-57, 76)								1	
—	A-257385	Assembly, alternator (includes items 31-39, 45-49, 51-57, 76)									1

# Common hardware; procure locally.

# Group 301: Controller and Mounting



301-126-27  
B-254801

# Group 301: Controller and Mounting

Item	Part Number	Description	Quantity			
			Variation Number			
			27	28	32	33
1	254832	Sensor, low fluid	1	1	1	1
2	X-202-28	Bushing, reducer	1	1	1	1
3	241769	Mount, controller	4	4	4	4
4	#	Nut, 1/4-20	8	8	8	8
5	225150	Harness, engine wiring	1			
5	225082	Harness, engine wiring		1		
5	226702	Harness, engine wiring			1	
5	226700	Harness, engine wiring				1
6	B-254801	Assembly, controller (includes items 7-37)	1	1	1	1
7	F-254717	Assembly, PCB relay	1	1	1	1
8	X-49-25	Screw, round head machine, 6-32	10	10	10	10
9	287948	Spacer, circuit board	5	5	5	5
10	#	Washer, #6	5	5	5	5
11	238426	Holder, fuse	1	1	1	1
12	223316	Fuse, 10 amp	1	1	1	1
13	269373	Lamp	1	1	1	1
14	287812	Switch, toggle	1	1	1	1
15	238736	Meter, hour	1	1	1	1
16	X-49-39	Screw, pan head	2	2	2	2
17	X-22-6	Washer, lock, #6	2	2	2	2
18	X-71-2	Nut, hex	2	2	2	2
19	246083	Strap, ground	1	1	1	1
20	267491	Screw, special	1	1	1	1
21	X-22-12	Washer, shakeproof	2	2	2	2
22	#	Nut, 1/4-20	1	1	1	1
23	X-22-11	Washer, lock, 1/4	1	1	1	1
24	292940	Strip, terminal	1	1	1	1
25	238582	Terminal	4	4	4	4
26	254822	Marker, strip	1	1	1	1
27	X-50-3	Screw, round head machine, 10-24	2	2	2	2
28	#	Washer, #10	2	2	2	2
29	#	Nut, hex, 10-24	2	2	2	2
30	X-6033-6	Grommet, nylon	1	1	1	1
31	254800	Cover, controller	1	1	1	1
32	254823	Box, silkscreened	1	1	1	1
33	X-6216-1	Screw, #10-24	4	4	4	4
34	X-81-8	Nut, hex	1	1	1	1
35	226700	Harness, controller wiring (not shown)	1	1	1	1
36	<del>241726</del>	Relay	1	1	1	1
37	<b>241736</b> #	Nut, #6-32	1	1	1	1

# Common hardware; procure locally.

# Group 701: Literature

Item	Part Number	Description	Quantity					
			Variation Number					
			4	6	9	10	11	12
1	TP-5700	Installation Manual, standby	1	1	1	1	1	1
2	TP-5713	Operation Manual, Yanmar engine	1	1	1	1	1	1
3	TP-5934	Operation Manual, generator set	1	1	1	1	1	1
4	TP-5365	Service Manual, Yanmar engine	1	1	1	1	1	1
5	TP-5555	Service Manual, generator set	1		1	1		
5	TP-5557	Service Manual, generator set		1			1	1
6	TP-5556	Parts Catalog	1	1	1	1	1	1
6	TP-5715	Wiring Diagram Manual	1	1	1	1	1	1

# Notes

# 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.

	6 kW	10 kW	15 kW
<b>Controllers</b>			
5-light remote controller kit, 1- and 3-phase	225188	225188	225190
5-light remote controller kit, 600 V	225189	225189	225191
5-light controller kit, 1-phase	225345	225346	225102
5-light controller kit, 1-phase	225099	225099	
5-light controller kit, 3-phase	225346	225346	225103
5-light controller kit, 3-phase	225100	225100	
5-light controller kit, 600 volt	225347	225347	225104
5-light controller kit, 600 volt	225101	225101	
Remote connection kit, 1-phase	225351	225352	225145
Remote connection kit, 1-phase	225143	225143	
Remote connection kit, 3-phase	225352	225352	225146
Remote connection kit, 3-phase	225144	225144	
Relay controller kit, 1-phase	225355	225355	225098
Relay controller kit, 1-phase	225152	225152	
Relay controller kit, 3-phase	225355	225355	225098
Relay controller kit, 3-phase	225152	225152	
<b>Cooling Systems</b>			
Block heater, 110 to 120 VAC, 90 deg. rise	225450	225450	225451
Block heater, 110 to 120 VAC, 90 deg. rise	225252	225253	225253
Block heater, 190 to 240 VAC, 90 deg. rise	225452	225452	225453
Block heater, 190 to 240 VAC, 90 deg. rise	225254	225255	225255
Coolant system, city water cooling heat exchanger	225226	225221	225221
Coolant system, unit mounted radiator	225227	225147	225148
Radiator cap locking kit	258998	258998	258998
Radiator duct flange	254757	254757	254757
<b>Fuel Systems</b>			
Alarm, inner tank leak		226202 for all models	
Auxiliary fuel pump, diesel	PA-324405	PA-324405	PA-324405
Auxiliary fuel pump, diesel	247076	247076	247076
Control module, electronic, day tank		224877 for all models	
Control module, relay, day tank		224878 for all models	
Flexible fuel lines	225206	225207	225207
Flexible fuel lines for fuel water separator			225288
Fuel tank, subbase, secondary containment, 25 gallon	224470	224839	224845
Fuel tank, subbase, secondary containment, 25 gallon with daytank option	224472	224841	224847
Fuel tank, subbase, secondary containment, 35 gallon	224474	224843	224849
Fuel tank, subbase, closed top diked, 25 gallon	224376	224827	224833
Fuel tank, subbase, closed top diked, 25 gallon with daytank option	224378	334829	NA
Fuel tank, subbase, closed top diked, 35 gallon	224380	22431	224837
Fuel water separator	PA-225237	PA-225238	PA-225238
Harness, 20 ft., fuel tank electronic control module		PA-224885 for all models	
Harness, 40 ft., fuel tank electronic control module		PA-224886 for all models	
Pipe plug, fuel tank, 2 in.		PA-224668 for all models	
Vent, emergency pressure relief		224678 for all models	
<b>Controller Accessories</b>			
Cable, 40 ft. (5-light controller)	PA-254847	PA-254847	PA-254847
Common fault relay (5-light controller only)	225196	225196	225196
Engine gauge kit (relay controller only)	225197	225197	225197
Home standby chime alarm (relay controller only)	PA-292496	PA-292496	PA-292496
Overvoltage protection (5-light controller only)	291746	291746	291746
<b>Exhaust Kits</b>			
Flexible exhaust connection, stainless steel, 12 in.	PA-225198	PA-225198	PA-225198
Silencer and mounting (critical)	225199	225200	225201
Silencer, critical (side in, flange/end out, NPT)	PA-225256	PA-225257	PA-225258



# Kit List, continued

	6 kW	10 kW	15 kW
<b>Enclosure Kits</b>			
Housing, weather	225138	225139	225140
Housing, weather	GM11599-KA1	GM11599-KA2	GM11599-KA3
Rain cap kit	225243	225243	225243
<b>Electrical System Kits</b>			
Battery, 900 CCA at 0 deg. F. min. (wet)		PA-256985 all models	
Battery, 900 CCA at 0 deg. F. min. (dry)		PA-225290 all models	
Battery cables	PA-225245	PA-225245	PA-225245
Battery charger, float type, 12 V, 10 A without alarms		PAD-292863 all models	
<b>Electrical System Kits, continued</b>			
Battery charger, float type, 12 V, 10 A with alarms		PAD-292862 all models	
Battery charger, float type, 12 V, 5 A		GM11849-KP1 all models	
Battery charger, trickle type		PAA-248952 all models	
Battery heater	256908	256908	256908
Battery rack and cables	225166	225166	225166
Customer connection terminal strip kit	PA-256886	PA-256886	PA-256886
Dry contact kit, single relay	PA-256881	PA-256881	PA-256881
Dry contact kit, 10 relay (includes customer connection kit)	PA-256887	PA-256887	PA-256887
Equipment connection, AC	256900	256900	256900
FASTCHECK® (5-light controller only)	PA-272766	PA-272766	PA-272766
Generator heater, reconn. 95 to 240 VAC	256892	256892	256892
Prealarm senders	225194	225194	225194
Run relay, 5 light and relay	273743	273743	273743
Remote annunciator (panel or flush mounted)	PA-293991	PA-293991	PA-293991
Remote annunciator	PA-256471	PA-256471	PA-256471
Remote annunciator, flush mounted	PA-256484	PA-256484	PA-256484
Remote audiovisual alarm panel (5-light controller only)	PA-292856	PA-292856	PA-292856
Remote emergency stop (5-light controller only)	PA-293906	PA-293906	PA-293906
Remote emergency stop (5-light controller only)	PA-292366	PA-292366	PA-292366
<b>Circuit Breaker Kits</b>			
Line circuit breaker, 50 Hz 110/190 V, 3-phase	254730	254732	254733
Line circuit breaker, 50 Hz 110/220 V, 1-phase	225170	254732	254876
Line circuit breaker, 50 Hz 220/380 V, 3-phase	225169	254730	225170
Line circuit breaker, 50 Hz 240/416 V, 3-phase	225169	254729	225170
Line circuit breaker, 50 Hz 220 V, 3-phase	254730	254731	254733
Line circuit breaker, 60 Hz 120/208 V, 3-phase	225170	254732	254876
Line circuit breaker, 60 Hz 120/240 V, 1-phase	225170	254733	254877
Line circuit breaker, 60 Hz 240/416 V, 3-phase	254729	254730	254731
Line circuit breaker, 60 Hz 277/480 V, 3-phase	225169	254729	225170
Line circuit breaker, 60 Hz 347/600 V, 3-phase	225169	254729	254730
Line circuit breaker, 60 Hz 240 V, 3-phase	254730	254732	254733
Load connection kit, 1-phase	254881	254881	254881
Load connection kit, 3-phase	254882	254882	254882
<b>Miscellaneous Kits</b>			
Literature		See Group 701 in group listing	
Oil drain kit	225232	225232	225232
Rodent proofing kit	225231	225231	256901
Skid end cap	225192	225192	225192
Transfer switch, manual with mechanical interlock		PA-320676 all models	
Transfer switch, automatic		PA-320677 all models	
Transfer switch, automatic		PA-320678 all models	
Transfer switch, automatic		PA-320679 all models	
Transfer switch, automatic		PA-320680 all models	
Transfer switch, automatic		PA-320681 all models	
Transfer switch, automatic		PA-320682 all models	
<b>Paint and Miscellaneous Parts</b>			
Paint, Kohler cream beige		All models use 221338 Spray Can, 221337 Gallon, GM19489 Touch-Up	

# Controller Kits

Qty.	Description	Common Parts	5-Light Microprocessor Controller Kit Parts					
			225099	225100	225101	225102	225103	225104
1	Bushing, reducing, 1/8		A-106	A-106	A-106			
1	Assembly, controller		B-225183	B-225183	B-225184	A-326924	A-326924	A-326924
2	Nut, elastic stop, 1/4	X-101-8						
1	Elbow, 7/16-20 x 1/8	X-447-10						
1	Elbow, street, 1/8 x 1/8	X-555-2						
2	Plug, pipe, 1/8	X-75-1						
1	Harness, wiring		225151	225151	225151	225083	225083	225083
1	Bushing, adapter	225127						
1	Bracket, CT mounting	225161						
1	Sender, temperature	255240						
	Transformer, current		254786(2)	254786(3)	254786(3)	259359(2)	259359(3)	259793(3)
1	Sender, oil pressure	264390						
1	Line, flex fuel	265462						
1	Block, oil gauge	267548						
1	Assembly, level switch	273404						

## Microprocessor Controller Kit Parts

Qty.	Description	Common	Kit Number/Unique Parts			
			225188	225189	225190	225191
1	Assembly, controller		B-225183	B-225184	A-326924	A-326925

## 5-Light Microprocessor Controller Kit Parts

Qty.	Description	Common	Kit Number/Unique Parts		
			225345	225346	225347
1	Assembly, controller		B-225183	B-225183	B-225184
1	Bushing, reducing, 1/8	A-106			
2	Nut, elastic stop, 1/4	X-101-8			
2	Elbow, 7/16-20 x 1/8	X-447-10			
1	Elbow, street	X-555-2			
2	Plug, pipe, 1/8	X-75-1			
1	Bushing, adapter	225127			
1	Bracket, CT mounting	225161			
1	Harness, wiring	226703			
3	Transformer, current	254786			
1	Sender, temperature	255240			
1	Sender, oil pressure	264390			
1	Line, flexible fuel	265462			
1	Block, oil gauge	267548			
1	Assembly, level switch	273404			

# Controller Kits

Qty.	Description	Common Parts	Controller Assembly Number/Unique Parts			
			A-225183	A-225184	A-225185	A-225186
1	Assembly, potentiometer	A-254796				
1	Assembly, PCB, 6-light	B-292381				
1	Assembly, PCB, DEC III	G-292806				
1	Washer, lock, #8	X-22-20				
2	Washer, lock, #10	X-22-50				
4	Washer, lock, #6	X-22-6				
3	Washer, lock, #8	X-22-7				
1	Grommet	X-284-31				
1	Spacer	X-400-135				
2	Terminal	X-431-42				
3	Tie, cable nylon	X-468-3				
2	Screw, pan head machine, 6-32	X-49-2				
18	Screw, pan head machine, 6-32	X-49-25				
2	Screw, pan head machine, 6-32	X-49-39				
1	Screw, round head machine, 10-24	X-50-10				
2	Screw, round head machine, 10-24	X-50-3				
1	Screw, pan head machine	X-50-70				
2	Screw, round head machine	X-51-53				
2	Plug, cap, 1/8 in.	X-519-1				
1	Jumper, terminal block	X-6048-2				
2	Tubing, .32 ID	X-6079-2				
9	Screw, Phillips hex crimplite	X-6216-1				
2	Nut, hex	X-6234-6				
2	Screw, thread-forming	X-67-127				
1	Tube, vinyl	X-696-2				
4	Spacer	X-712-9				
1	Tab identification	201620-86				
1	Meter, amps AC		225174	225175	282934	282933
1	Nameplate		225176	225177	225176	225177
1	Strip, marker	225178				
1	Strip, marker	225179				
1	Cover, controller	225181				
1	Box, controller	226598				
1	Plate, hinge	227850				
2	Diode, 6A	233959				
1	Meter, hour	238736				
1	Terminal	238898				
1	Connector, plug 6 position	241617				
1	Relay	241736				
1	Strap, ground	246083				
1	Block, terminal	246115				
1	Voltmeter	253329				
2	Lamp	255126				
1	Meter, volts AC		282814	282815	282814	282815
1	Gauge, oil pressure	282897				
1	Gauge, water temperature	282898				
2	Socket, lamp	284990				
9	Spacer	287948				
3	Fuse, 1.5 A, 250 V	291207				
2	Lamp	291740				
1	Decal	292347				
1	Resistor			292352		292352
1	Decal	292361				
1	Switch, selector		292373	292374	292373	292374
1	Holder, fuse	292821				
4	Bumper	292834				
1	Harness, cable	292836				
1	Meter, frequency	295069				

# Controller Kits, continued

Qty.	Description	Common Parts	Controller Assembly Number/Unique Parts	
			A-326924	A-326925
1	Assembly, potentiometer	A-254796		
1	Assembly, PCB, 6-light	B-292381		
1	Assembly, PCB, DEC III	G-292806		
1	Washer, lock, #8	X-22-20		
2	Washer, lock, #10	X-22-50		
4	Washer, lock, #6	X-22-6		
3	Washer, lock, #8	X-22-7		
1	Grommet	X-284-31		
1	Spacer	X-400-135		
2	Terminal	X-431-42		
3	Tie, cable nylon	X-468-3		
2	Screw, pan head machine, 6-32	X-49-2		
18	Screw, pan head machine, 6-32	X-49-25		
2	Screw, pan head machine, 6-32	X-49-39		
1	Screw, round head machine, 10-24	X-50-10		
2	Screw, round head machine, 10-24	X-50-3		
1	Screw, pan head machine	X-50-70		
2	Screw, round head machine	X-51-53		
2	Plug, cap, 1/8 in.	X-519-1		
1	Jumper, terminal block	X-6048-2		
2	Tubing, .32 ID	X-6079-2		
9	Screw, Phillips hex crimp tite	X-6216-1		
2	Nut, hex	X-6234-6		
2	Screw, thread-forming	X-67-127		
1	Tube, vinyl	X-696-2		
4	Spacer	X-712-9		
1	Tab identification	201620-86		
1	Meter, amps AC		282934	282933
1	Nameplate		225176	225177
1	Strip, marker	225178		
1	Strip, marker	225179		
1	Cover, controller	225181		
1	Box, controller	226598		
1	Plate, hinge	227850		
4	Diode, 6 A	233959		
1	Meter, hour	238736		
1	Terminal	238898		
1	Connector, plug 6 position	241617		
2	Relay	241736		
1	Strap, ground	246083		
1	Block, terminal	246115		
1	Voltmeter	253329		
2	Lamp	255126		
1	Meter, volts AC		282814	282815
1	Gauge, oil pressure	282897		
1	Gauge, water temperature	282898		
2	Socket, lamp	284990		
9	Spacer	287948		
3	Fuse, 1.5 A, 250 V	291207		
2	Lamp	291740		
1	Decal	292347		
1	Resistor			292352
1	Decal	292361		
1	Switch, selector		292373	292374
1	Holder, fuse	292821		
4	Bumper	292834		
1	Harness, cable	292836		
1	Meter, frequency	295069		
4	Nut, hex, 6-32	X-71-2		
4	Nut, hex, 8-32	X-72-4		
1	Harness, wiring	225016		
1	Harness, wiring	225017		
1	Harness, wiring	225018		
1	Relay, 120 V, 15 A	241950		

# Controller Kits, continued

Qty.	Description	Part No.
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## Remote Connection Kit, 1-Phase (installed dummy box)

Qty.	Description	Part No.
1	Bushing, reducing	A-106
1	Assembly, box	A-254848
2	Nut, elastic stop, 1/4	X-101-8
1	Elbow, 7/16-20 x 1/8	X-447-10
1	Elbow, street, 1/8 x 1/8	X-555-2
2	Plug, pipe, 1/8	X-75-1
1	Bushing, adapter	225127
1	Harness, wiring	225151
1	Bracket, CT mounting	225161
2	Transformer, current	254786
1	Sender, temperature	255240
1	Sender, oil pressure gauge	264390
1	Line, flex fuel	265462
1	Block, oil gauge	267548
1	Assembly, level switch	273404

## Remote Connection Kit, 3-Phase, (installed dummy box)

Qty.	Description	Part No.
1	Bushing, reducing	A-106
1	Assembly, box	A-254848
2	Nut, elastic stop	X-101-8
1	Bushing, adaptor	225127
1	Harness, wiring	225151
1	Bracket, mounting	225161
3	Transformer, current	254786
1	Sender, temperature	255240
1	Sender, oil pressure	264390
1	Assembly, level switch	273404

## Remote Connection Kit, 1-Phase, (installed dummy box)

Qty.	Description	Part No.
1	Bushing, reducing	A-106
1	Assembly, box	A-254848
2	Nut, elastic stop	X-101-8
1	Bushing, adaptor	225127
1	Harness, wiring	225083
1	Bracket, mounting	225161
2	Transformer	259359
1	Sender, temperature	255240
1	Sender, oil pressure	264390
1	Assembly, level switch	273404

## Remote Connection Kit, 3-Phase, (installed dummy box)

Qty.	Description	Part No.
1	Bushing, reducing	A-106
1	Assembly, box	A-254848
2	Nut, elastic stop	X-101-8
1	Bushing, adaptor	225127
1	Harness, wiring	225083
1	Bracket, mounting	225161
3	Transformer	259359
1	Sender, temperature	255240
1	Sender, oil pressure	264390
1	Assembly, level switch	273404

Qty.	Description	Part No.
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## Remote Connection Kit, 3-Phase, (installed dummy box)

Qty.	Description	Part No.
1	Bushing, reducing	A-106
1	Assembly, box	A-254848
2	Nut, elastic stop 1/4	X-101-8
1	Elbow, 7/16-20 x 1/8	X-447-10
1	Elbow, street, 1/8 x 1/8	X-555-2
2	Plug, pipe, 1/8	X-75-1
1	Bushing, adapter	225127
1	Bracket, CT mounting	225161
1	Harness, wiring	226703
2	Transformer, current	254786
1	Sender, temperature	255240
1	Sender, oil pressure	264390
1	Line, flex fuel	265462
1	Block, oil gauge	267548
1	Assembly, level switch	273404

## Remote Connection Kit, 3-Phase, (installed dummy box)

Qty.	Description	Part No.
1	Bushing, reducing	A-106
1	Assembly, box	A-254848
2	Nut, elastic stop, 1/4	X-101-8
1	Elbow, 7/16-20 x 1/8	X-447-10
1	Elbow, street, 1/8 x 1/8	X-555-2
2	Plug, pipe, 1/8	X-75-1
1	Bushing, adapter	225127
1	Bracket, CT mounting	225161
1	Harness, wiring	226703
1	Sender, temperature	255240
1	Sender, oil pressure	264390
1	Line, flex fuel	265462
1	Block, oil gauge	267548
1	Assembly, level switch	273404

## Relay Controllers

Qty.	Description	Part No.
1	Assembly, controller	B-254801
1	Assembly, PCB, 0-20 relay	F-254717
1	Washer, lock, 1/4	X-22-11
2	Washer, lock, 1/4	X-22-12
2	Washer, lock, #6	X-22-6
10	Screw, pan head machine, 6-32 x .25	X-49-25
2	Screw, pan head machine, 6-32 x .50	X-49-39
2	Screw, round head machine, 10-24 x 3	X-50-3
1	Grommet, nylon	X-6033-6
4	Screw, hex crimpfitite	X-6216-1
1	Nut, hex, 1/4, 20, green	X-81-8
1	Tab identification "GRD"	201620-152
1	Fuse 10A, 250V, .25 x 1.25	223316
1	Harness, wiring	226594
1	Holder, fuse, .25 x 1.25	238426
4	Terminal	238582
1	Meter, hour	238736
1	Relay	241736
1	Strap, ground	246083
1	Cover, controller	254800
1	Marker, strip	254822
1	Box, silkscreened	254823
1	Screw, special	267491
1	Lamp	269373
1	Switch, toggle	287812
5	Spacer, AL, .25 x .50 6-32	287948
1	Strip, terminal	292940
1	Bushing, reducer	X-202-28
1	Conduit, convoluted	X-6003-8
1	Harness, wiring	226702
4	Mount, controller	241769
1	Sensor, low fluid	254832

# Controller Kits, continued

Qty.	Description	Part No.
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<b>Relay Controller Kit, 1-Phase and 3-Phase</b>		<b>225152</b>
1	Assembly, controller (See Controller group 301, variation 27)	B-254801
1	Bushing, reducing	X-202-28
1	Harness, wiring	225150
4	Mount, controller	241769
1	Sensor, low fluid	254832

Qty.	Description	Part No.
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<b>Relay Controller Kit, 1-Phase and 3-Phase</b>		<b>225098</b>
1	Assembly, controller (See Controller group 301, variation 27)	B-254801
1	Bushing, reducing	X-208-28
1	Harness, wiring	225082
4	Mount, controller	241769
1	Sensor, low fluid	254832

# Parts List: Accessories

Qty.	Description	Part No.
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## Cooling System Kits

### Block Heater, 120 V

**225253**

1	Bracket, block heater	225246
1	Coupling, hose	225250
1	Plug, freeze	226351
1	Hose, molded, .62 in. ID	276206
1	Heater, block	276358
1	Tag, hang	279047
1	Hose, molded, .62 in. ID	X-312-44
1	Hose, molded, .62 in. ID	X-312-51
6	Clamp, hose, .56/1.06 in.	X-426-3
2	Clamp, hose, .81/1.75 in.	X-426-8
1	Connector, hose + vibra seal	X-582-2

### Block Heater, 190-240 V

**225254**

1	Bracket, block heater	225246
1	Coupling, hose	225250
1	Plug, freeze	226351
1	Hose, molded, .62 in. ID	276206
1	Heater, block	276359
1	Tag, hang	279047
1	Hose, molded, .62 in. ID	X-312-24
1	Hose, molded, .62 in. ID	X-312-52
6	Clamp, hose, .5/1 in.	X-426-10
2	Clamp, hose, .81/1.75 in.	X-426-8
1	Connector, hose + vibra seal	X-582-2

### Block Heater, 190-240 V

**225255**

1	Bracket, block heater	225246
1	Coupling, hose	225250
1	Plug, freeze	226351
1	Hose, molded, .62 in. ID	276206
1	Heater, block	276359
1	Tag, hang	279047
1	Hose, molded, .62 in. ID	X-312-44
1	Hose, molded, .62 in. ID	X-312-51
6	Clamp, hose, .5/1 in.	X-426-10
2	Clamp, hose, .81/1.75 in.	X-426-8
1	Connector, hose + vibra seal	X-582-2

### Block Heater, 1500 W, 110-120 V, 1-Phase

**225450**

1	Coupling, hose	225250
1	Bracket, block heater	225499
1	Plug, freeze	226351
1	Tag, hang	279047
1	Heater, block	352945
1	Hose, molded, .62 in. ID	X-312-35
1	Hose, molded, .62 in. ID	X-312-53
4	Clamp, hose, .5/1 in.	X-426-10
2	Clamp, hose, .81/1.75 in.	X-426-8
1	Connector, hose + vibra seal	X-582-2

### Block Heater, 1500 W, 110-120 V, 1-Phase

**225451**

1	Coupling, hose	225250
1	Bracket, block heater	225499
1	Plug, freeze	226351
1	Tag, hang	279047
1	Heater, block	352945
1	Hose, molded, .62 in. ID	X-312-24
1	Hose, molded, .62 in. ID	X-312-35
4	Clamp, hose, .5/1 in.	X-426-10
2	Clamp, hose, .81/1.75 in.	X-426-8
1	Connector, hose + vibra seal	X-582-2
1	Clamp, insulated, 1.06 in.	X-672-30

Qty.	Description	Part No.
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### Block Heater, 1500 W, 190-240 V, 1-Phase

**225452**

1	Coupling, hose	225250
1	Bracket, block heater	225499
1	Plug, freeze	226351
1	Tag, hang	279047
1	Heater, block	352946
1	Hose, molded, .62 in. ID	X-312-35
1	Hose, molded, .62 in. ID	X-312-53
4	Clamp, hose, .5/1 in.	X-426-10
2	Clamp, hose, .81/1.75 in.	X-426-8
1	Connector, hose + vibra seal	X-582-2

### Block Heater, 1500 W, 190-240 V, 1-Phase

**225453**

1	Coupling, hose	225250
1	Bracket, block heater	225499
1	Plug, freeze	226351
1	Tag, hang	279047
1	Heater, block	352946
1	Hose, molded, .62 in. ID	X-312-24
1	Hose, molded, .62 in. ID	X-312-35
4	Clamp, hose, .5/1 in.	X-426-10
2	Clamp, hose, .81/1.75 in.	X-426-8
1	Connector, hose + vibra seal	X-582-2
1	Clamp, insulated, 1.06 in.	X-672-30

### Block Heater, 110-120 V

**225252**

1	Bracket, block heater	225246
1	Coupling, hose	225250
1	Plug, freeze	226351
1	Hose, molded, .62 in. ID	276206
1	Heater, block	276358
1	Tag, hang	279047
1	Hose, molded, .62 in. ID	X-312-24
1	Hose, molded, .62 in. ID	X-312-52
6	Clamp, hose, .5/1 in.	X-426-10
2	Clamp, hose, .81/1.75 in.	X-426-8
1	Connector, hose + vibra seal	X-582-2

### Cooling, City Water, Heat Exchanger

**225221**

1	Hose, upper radiator, 1.10 in. ID	225061
1	Hose, molded, 1.10 in. ID	225211
1	Bracket, tank	225217
1	Guard, belt	225218
1	Tank, expansion	225219
1	Bracket, expansion tank	225220
1	Guard, belt	225964
1	Heat exchanger	256935
1	Cap, pressure	258037
1	Connector, hose	272930
1	Regulator, water temperature	290176
1	Bushing, reducing, 1/8 x 1 in. NPT	AC-1459
2	Bushing, reducing, 1/2 x 3/4 in. NPT	X-202-41
1	Tee, pipe, 1 x 1 x 1 NPT	X-203-2
2	Pipe, 1/2 in. NPT x 1.19 in.	X-209-2
2	Elbow, street, 90 deg. x 1/2 in. NPT	X-211-1
1	Coupling, pipe, 1/8 in. NPT	X-216-24
1	Pipe, 1/8 in. NPT x .75 in.	X-217-6
1	Pipe, 1 in. NPT x 1.50 in.	X-218-24
2	Valve, drain, 1/8 in. NPT	X-256-2
1	Clamp, spring hose, .462/.545 in.	X-309-14
1	Valve, solenoid, 5/8-12	X-350-7
1	Line, flexible fuel	X-386-93
1	Clip, tube, 9/16 x 11/32 in.	X-414-1
6	Clamp, hose, .81/1.75 in.	X-426-8
1	Hose, straight radiator, 1 in. ID	X-6014-63
1	Plug, pipe, 3/8 in. NPT	X-75-10
1	Connector, hose + vibra seal	X-751-1
8	Screw, hex washer head, drill	X-794-1

# Parts List: Accessories, continued

Qty.	Description	Part No.	Qty.	Description	Part No.
<b>Cooling, City Water, Heat Exchanger</b>			<b>Cooling, Unit-Mounted Radiator</b>		
1	Hose, upper radiator, 1.10 in. ID	225226	1	Hose, lower radiator, 1.10 in. ID	225227
1	Hose, molded, 1.10 in. ID	225171	1	Shroud, fan	225060
1	Bracket, tank	225211	1	Hose, upper radiator, 1.10 in. ID	225066
1	Guard, belt	225217	1	Guard, top belt	225171
1	Tank, expansion	225218	1	Guard, bottom belt	225260
1	Bracket, expansion tank	225219	1	Guard, belt	225261
1	Guard, belt	225220	1	Guard, wire fan	225262
1	Heat exchanger	225964	2	Support, radiator	225263
1	Cap, pressure	256935	2	Baffle, radiator	226583
1	Connector, hose	258037	2	Plug	226925
1	Regulator, water temperature	272930	1	Assembly, radiator	254949
1	Bushing, reducing, 1/8 x 1 in. NPT	290176	1	Shroud, radiator	A-225136
2	Bushing, reducing, 1/2 x 3/4 in. NPT	AC-1459	4	Washer, plain, .266 ID x 1 in. OD	GM13231
1	Tee, pipe, 1 x 1 x 1 NPT	X-202-41	4	Valve, drain, 1/4 in. NPT	X-25-73
2	Pipe, 1/2 in. NPT x 1.19 in.	X-203-2	1	Clamp, hose, .81/1.75 in.	X-256-3
2	Elbow, street, 90 deg. x 1/2 in. NPT	X-209-2	4	Screw, Phillips hex crimpitite	X-426-8
1	Coupling, pipe, 1/8 in. NPT	X-211-1	4	Insert, threaded, 5/16-18 in.	X-6216-1
1	Pipe, 1/8 in. NPT x .75 in.	X-216-24			X-6365-1
1	Pipe, 1 in. NPT x 1.50 in.	X-217-6	<b>Radiator Cap Cover With Lock</b>		
2	Valve, drain, 1/8 in. NPT	X-218-24	2	Bracket	258998
1	Clamp, spring hose, .462/.545 in.	X-256-2	1	Cover	258996
1	Valve, solenoid, 5/8-12	X-309-14	1	Lock, pad	258997
1	Line, flexible fuel	X-350-7	6	Rivet, pop, .187 in.	289873
1	Clip, tube, 9/16 x 11/32 in.	X-386-93			X-781-19
6	Clamp, hose, .81/1.75 in.	X-414-1	<b>Radiator Duct Flange</b>		
1	Hose, straight radiator, 1 in. ID	X-426-8	2	Frame, air duct	254755
1	Plug, pipe, 3/8 in. NPT	X-6014-63	2	Frame, air duct	254756
1	Connector, hose + vibra seal	X-75-10	8	Rivet, pop, .187 in.	X-781-11
8	Screw, hex washer head, drill	X-751-1	6	Screw, hex washer head, drill	X-794-1
		X-794-1	<b>Fuel System Kits</b>		
<b>Cooling, Unit-Mounted Radiator</b>			<b>Inner Tank Leak Alarm</b>		
1	Hose, lower radiator, 1.10 in. ID	225147	1	Wiring harness, leak alarm, 20-300 kW	226202
1	Hose, upper radiator, 1.10 in. ID	225060	1	Bracket, leak alarm	226206
1	Shroud, fan	225061	1	Sensor, leak	336505
1	Guard, wire fan	225066	1	Assembly, box	A-226201
1	Guard, top belt	225069	1	Bracket, support	A-224861
1	Guard, bottom belt	225153	1	Insert, threaded	224871
2	Support, radiator	225154	4	Box	225948
2	Baffle, radiator	226583	1	Wiring harness, leak alarm, 6-15 kW	225949
2	Baffle, radiator	226925	1	Vibromount	226200
1	Plug	254949	3	Grommet, round	259919
1	Assembly, radiator	A-225136	1	Screw, hex washer head, drill	X-284-15
1	Shroud, radiator	GM13231	2	Assembly, plate	X-794-2
4	Washer, plain, .266 ID x 1 in. OD	X-25-73	1	Lens, red	A-276799
1	Valve, drain, 1/4 in. NPT	X-256-3	1	Plate, silkscreened	253241
4	Clamp, hose, .81/1.75 in.	X-426-8	4	Screw	276800
2	Screw, Phillips hex crimpitite	X-6216-1	1	Assembly, PCB, audiovisual 1-light annunciator	292828
4	Insert, threaded, 5/16-18 in.	X-6365-1	4	Stud, self-clinching, 8-32 x .875 in.	A-292883
<b>Cooling, Unit-Mounted Radiator</b>			4	Spacer, .25 OD, .5 in.	X-6205-3
1	Hose, lower radiator, 1.10 in. ID	225148			X-712-9
1	Hose, upper radiator, 1.10 in. ID	225060	<b>Auxiliary Fuel Pump, 12 VDC</b>		
1	Shroud, fan	225061	1	Pump, fuel	PA-324405
1	Guard, wire fan	225066	2	Lead, wire	229051
1	Guard, top belt	225069			229056
1	Guard, bottom belt	225153	<b>Daytank Electronic Control Module</b>		
1	Support, radiator	225154	1	Sensor, float	224877
2	Support, radiator	226583	1	Module, power	224814
2	Baffle, radiator	226925	1	Wiring harness, daytank, 80-400 kW	224825
1	Plug	254949	1	Wiring harness, 6-15 kW, 1-phase	224880
1	Assembly, radiator	A-225136	1	Switch, float, 1-pole	224884
1	Shroud, radiator	GM13231	1	Assembly, motor pump	255600
4	Washer, plain, .266 ID x 1 in. OD	X-25-73	1	Connector, 90 deg., 1/2 in. ID hose	A-290024
1	Valve, drain, 1/4 in. NPT	X-256-3	2	Hose	X-391-13
4	Clamp, hose, .81/1.75 in.	X-426-8	1	Clamp, hose, .5/1 in.	X-422-31
2	Screw, Phillips hex crimpitite	X-6216-1			X-426-10
4	Insert, threaded, 5/16-18 in.	X-6365-1			



# Parts List: Accessories, continued

Qty.	Description	Part No.	Qty.	Description	Part No.
<b>Daytank Relay Control Module</b>			<b>224878</b>		
1	Coupling, conduit-elbow	156327	1	Tank, fuel	224377
1	Switch, float	279746	1	Switch, low fuel level	224800
1	Assembly, motor pump	A-290024	1	Gauge, fuel level	354786
2	Connector, 90 deg., 1/2 in. ID hose	X-391-13	1	Wiring harness, alarm plate	226196
1	Hose	X-422-31	1	Bracket, leak alarm	336505
2	Clamp, hose, .5/1 in.	X-426-10	1	Tank, fuel, 6/10/15ROY/ROZ	TT-1041
2	Screw, slotted pan head machine	X-50-3	2	Screw, hex washer head, drill	X-794-2
1	Box, controller	A-274818	1	Assembly, box	A-224862
1	Coupling, conduit elbow	156327	1	Bracket, support	224871
1	Relay, 120 VAC, 15 A	241950	4	Insert, threaded	225948
1	Cover, conduit box	266469	1	Box	225949
1	Box, junction	274883	1	Wiring harness, leak alarm, 6-15 kW	226200
1	Wiring harness, motor	275558	3	Vibromount	259919
1	Wiring harness, engine, 125-180 kW	275559	1	Assembly, plate	A-292497
1	Bracket, relay	279875	1	Lens, red	253241
1	Washer, lock, .146 ID x .53 in. OD	X-22-25	1	Plate, silkscreened	292499
2	Washer, locking, .172 ID x .333 in. OD	X-22-7	4	Screw	292828
2	Screw, slotted pan head machine	X-51-12	1	Assembly, PCB, audiovisual chime alarm	A-292493
1	Coupling, non-metallic	X-567-1	4	Stud, self-clinching, 8-32 x .875 in.	X-6205-3
1	Nut, hex machine screw, 6-32	X-71-2	4	Spacer, .25 OD, .5 in.	X-712-9
<b>Flexible Fuel Lines</b>			<b>225206</b>		
1	Line, flexible fuel	225205	1	Grommet, round	X-284-15
1	Line, flexible fuel	256841	2	Screw, hex washer head, drill	X-794-2
2	Cap, pipe, 1/4 in. NPT	X-268-3	<b>Subbase Fuel Tank, 35 Gallon</b>		
1	Clamp, hose, .25/.70 in.	X-426-9	1	Tank, fuel	224379
1	Elbow, oil line, 90 deg., + vibra seal	X-447-1	1	Switch, low fuel level	224801
1	Elbow, oil line, 90 deg., + vibra seal	X-447-7	1	Gauge, fuel level	354789
<b>Flexible Fuel Lines</b>			<b>225207</b>		
2	Line, flexible fuel	225204	1	Wiring harness, alarm plate	226196
2	Cap, pipe, 1/4 in. NPT	X-268-3	1	Bracket, leak alarm	336505
4	Elbow, oil line, 90 deg., + vibra seal	X-447-7	1	Tank, fuel, 6/10/15ROY/ROZ	TT-1041
<b>Flex. Lines for Fuel/Water Separator</b>			<b>225288</b>		
1	Line, flexible fuel	225204	2	Screw, hex washer head, drill	X-794-2
1	Line, flexible fuel	225205	1	Assembly, box	A-224862
2	Cap, pipe, 1/4 in. NPT	X-268-3	1	Bracket, support	224871
3	Elbow, oil line, 90 deg., + vibra seal	X-447-7	4	Insert, threaded	225948
<b>Subbase Fuel Tank, 25 Gallon</b>			<b>224376</b>		
1	Tank, fuel	224375	1	Box	225949
1	Switch, low fuel level	224800	1	Wiring harness, leak alarm, 6-15 kW	226200
1	Gauge, fuel level	354786	3	Vibromount	259919
1	Wiring harness, alarm plate	226196	1	Assembly, plate	A-292497
1	Bracket, leak alarm	336505	1	Lens, red	253241
1	Tank, fuel, 6/10/15ROY/ROZ	TT-1041	1	Plate, silkscreened	292499
2	Screw, hex washer head, drill	X-794-2	4	Screw	292828
1	Assembly, box	A-224862	1	Assembly, PCB, audiovisual chime alarm	A-292493
1	Bracket, support	224871	4	Stud, self-clinching, 8-32 x .875 in.	X-6205-3
4	Insert, threaded	225948	4	Spacer, .25 OD, .5 in.	X-712-9
1	Box	225949	1	Grommet, round	X-284-15
1	Wiring harness, leak alarm, 6-15 kW	226200	2	Screw, hex washer head, drill	X-794-2
3	Vibromount	259919	<b>Subbase Fuel Tank, 25 Gallon</b>		
1	Assembly, plate	A-292497	1	Tank, fuel	224469
1	Lens, red	253241	1	Switch, low fuel level	224800
1	Plate, silkscreened	292499	1	Gauge, fuel level	354786
4	Screw	292828	1	Wiring harness, alarm plate	226196
1	Assembly, PCB, audiovisual chime alarm	A-292493	1	Bracket, leak alarm	336505
4	Stud, self-clinching, 8-32 x .875 in.	X-6205-3	1	Tank, fuel, 6/10/15ROY/ROZ	TT-1041
4	Spacer, .25 OD, .5 in.	X-712-9	2	Screw, hex washer head, drill	X-794-2
1	Grommet, round	X-284-15	1	Assembly, box	A-224862
2	Screw, hex washer head, drill	X-794-2	1	Bracket, support	224871
			4	Insert, threaded	225948
			1	Box	225949
			1	Wiring harness, leak alarm, 6-15 kW	226200
			3	Vibromount	259919
			1	Assembly, plate	A-292497
			1	Lens, red	253241
			1	Plate, silkscreened	292499
			4	Screw	292828
			1	Assembly, PCB, audiovisual chime alarm	A-292493
			4	Stud, self-clinching, 8-32 x .875 in.	X-6205-3
			4	Spacer, .25 OD, .5 in.	X-712-9
			1	Grommet, round	X-284-15
			2	Screw, hex washer head, drill	X-794-2

# Parts List: Accessories, continued

Qty.	Description	Part No.
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## Subbase Fuel Tank, 25Gallon w/Daytank Option 224472

1	Tank, fuel	224471
1	Switch, low fuel level	224800
1	Gauge, fuel level	354786
1	Wiring harness, alarm plate	226196
1	Bracket, leak alarm	336505
1	Assembly, box	A-224862
1	Bracket, support	224871
4	Insert, threaded	225948
1	Box	225949
1	Wiring harness, leak alarm, 6-15 kW	226200
3	Vibromount	259919
1	Assembly, plate	A-292497
1	Lens, red	253241
1	Plate, silkscreened	292499
4	Screw	292828
1	Assembly, PCB, audiovisual chime alarm	A-292493
4	Stud, self-clinching, 8-32 x .875 in.	X-6205-3
4	Spacer, .25 OD, .5 in.	X-712-9
1	Grommet, round	X-284-15
2	Screw, hex washer head, drill	X-794-2
1	Tank, fuel, 6/10/15ROY/ROZ	TT-1041
2	Screw, hex washer head, drill	X-794-2

## Subbase Fuel Tank, 35 Gallon 224474

1	Tank, fuel	224473
1	Switch, low fuel level	224801
1	Gauge, fuel level	354789
1	Wiring harness, alarm plate	226196
1	Bracket, leak alarm	336505
1	Tank, fuel, 6/10/15ROY/ROZ	TT-1041
2	Screw, hex washer head, drill	X-794-2
1	Assembly, box	A-224862
1	Bracket, support	224871
4	Insert, threaded	225948
1	Box	225949
1	Wiring harness, leak alarm, 6-15 kW	226200
3	Vibromount	259919
1	Assembly, plate	A-292497
1	Lens, red	253241
1	Plate, silkscreened	292499
4	Screw	292828
1	Assembly, PCB, audiovisual chime alarm	A-292493
4	Stud, self-clinching, 8-32 x .875 in.	X-6205-3
4	Spacer, .25 OD, .5 in.	X-712-9
1	Grommet, round	X-284-15
2	Screw, hex washer head, drill	X-794-2

## Subbase Fuel Tank, 25 Gallon 224827

1	Tank, fuel	224826
1	Switch, low fuel level	224800
1	Gauge, fuel level	354786
1	Wiring harness, alarm plate	226196
1	Bracket, leak alarm	336505
1	Tank, fuel, 6/10/15ROY/ROZ	TT-1041
2	Screw, hex washer head, drill	X-794-2
1	Assembly, box	A-224862
1	Bracket, support	224871
4	Insert, threaded	225948
1	Box	225949
1	Wiring harness, leak alarm, 6-15 kW	226200
3	Vibromount	259919
1	Assembly, plate	A-292497
1	Lens, red	253241
1	Plate, silkscreened	292499
4	Screw	292828
1	Assembly, PCB, audiovisual chime alarm	A-292493
4	Stud, self-clinching, 8-32 x .875 in.	X-6205-3
4	Spacer, .25 OD, .5 in.	X-712-9
1	Grommet, round	X-284-15
2	Screw, hex washer head, drill	X-794-2

Qty.	Description	Part No.
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## Subbase Fuel Tank, 25 Gallon w/Daytank Option 224829

1	Tank, fuel	224828
1	Switch, low fuel level	224800
1	Gauge, fuel level	354786
1	Wiring harness, alarm plate	226196
1	Bracket, leak alarm	336505
1	Tank, fuel, 6/10/15ROY/ROZ	TT-1041
1	Screw, hex washer head, drill	X-794-2
2	Assembly, box	A-224862
1	Bracket, support	224871
4	Insert, threaded	225948
1	Box	225949
1	Wiring harness, leak alarm, 6-15 kW	226200
3	Vibromount	259919
1	Assembly, plate	A-292497
1	Lens, red	253241
1	Plate, silkscreened	292499
4	Screw	292828
1	Assembly, PCB, audiovisual chime alarm	A-292493
4	Stud, self-clinching, 8-32 x .875 in.	X-6205-3
4	Spacer, .25 OD, .5 in.	X-712-9
1	Grommet, round	X-284-15
2	Screw, hex washer head, drill	X-794-2

## Subbase Fuel Tank, 35 Gallon 224831

1	Tank, fuel	224830
1	Switch, low fuel level	224801
1	Gauge, fuel level	354789
1	Wiring harness, alarm plate	226196
1	Bracket, leak alarm	336505
1	Tank, fuel, 6/10/15ROY/ROZ	TT-1041
2	Screw, hex washer head, drill	X-794-2
1	Assembly, box	A-224862
1	Bracket, support	224871
4	Insert, threaded	225948
1	Box	225949
1	Wiring harness, leak alarm, 6-15 kW	226200
3	Vibromount	259919
1	Assembly, plate	A-292497
1	Lens, red	253241
1	Plate, silkscreened	292499
4	Screw	292828
1	Assembly, PCB, audiovisual chime alarm	A-292493
4	Stud, self-clinching, 8-32 x .875 in.	X-6205-3
4	Spacer, .25 OD, .5 in.	X-712-9
1	Grommet, round	X-284-15
2	Screw, hex washer head, drill	X-794-2

## Subbase Fuel Tank, 25 Gallon 224833

1	Tank, fuel	224832
1	Switch, low fuel level	224800
1	Gauge, fuel level	354786
1	Wiring harness, alarm plate	226196
1	Bracket, leak alarm	336505
1	Tank, fuel, 6/10/15ROY/ROZ	TT-1041
2	Screw, hex washer head, drill	X-794-2
1	Assembly, box	A-224862
1	Bracket, support	224871
4	Insert, threaded	225948
1	Box	225949
1	Wiring harness, leak alarm, 6-15 kW	226200
3	Vibromount	259919
1	Assembly, plate	A-292497
1	Lens, red	253241
1	Plate, silkscreened	292499
4	Screw	292828
1	Assembly, PCB, audiovisual chime alarm	A-292493
4	Stud, self-clinching, 8-32 x .875 in.	X-6205-3
4	Spacer, .25 OD, .5 in.	X-712-9
1	Grommet, round	X-284-15
2	Screw, hex washer head, drill	X-794-2

# Parts List: Accessories, continued

Qty.	Description	Part No.
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<b>Subbase Fuel Tank, 35 Gallon</b>		<b>224837</b>
1	Tank, fuel	224836
1	Switch, low fuel level	224801
1	Gauge, fuel level	354789
1	Wiring harness, alarm plate	226196
1	Bracket, leak alarm	336505
1	Tank, fuel, 6/10/15ROY/ROZ	TT-1041
2	Screw, hex washer head, drill	X-794-2
1	Assembly, box	A-224862
1	Bracket, support	224871
4	Insert, threaded	225948
1	Box	225949
1	Wiring harness, leak alarm, 6-15 kW	226200
3	Vibromount	259919
1	Assembly, plate	A-292497
1	Lens, red	253241
1	Plate, silkscreened	292499
4	Screw	292828
1	Assembly, PCB, audiovisual chime alarm	A-292493
4	Stud, self-clinching, 8-32 x .875 in.	X-6205-3
4	Spacer, .25 OD, .5 in.	X-712-9
1	Grommet, round	X-284-15
2	Screw, hex washer head, drill	X-794-2

<b>Subbase Fuel Tank, 25 Gallon</b>		<b>224839</b>
1	Tank, fuel	224838
1	Switch, low fuel level	224800
1	Gauge, fuel level	354786
1	Wiring harness, alarm plate	226196
1	Bracket, leak alarm	336505
1	Tank, fuel, 6/10/15ROY/ROZ	TT-1041
2	Screw, hex washer head, drill	X-794-2
1	Assembly, box	A-224862
1	Bracket, support	224871
4	Insert, threaded	225948
1	Box	225949
1	Wiring harness, leak alarm, 6-15 kW	226200
3	Vibromount	259919
1	Assembly, plate	A-292497
1	Lens, red	253241
1	Plate, silkscreened	292499
4	Screw	292828
1	Assembly, PCB, audiovisual chime alarm	A-292493
4	Stud, self-clinching, 8-32 x .875 in.	X-6205-3
4	Spacer, .25 OD, .5 in.	X-712-9
1	Grommet, round	X-284-15
2	Screw, hex washer head, drill	X-794-2

<b>Subbase Fuel Tank, 25Gallon w/Daytank Option</b>		<b>224841</b>
1	Tank, fuel	224840
1	Switch, low fuel level	224800
1	Gauge, fuel level	354786
1	Wiring harness, alarm plate	226196
1	Bracket, leak alarm	336505
1	Tank, fuel, 6/10/15ROY/ROZ	TT-1041
2	Screw, hex washer head, drill	X-794-2
1	Assembly, box	A-224862
1	Bracket, support	224871
4	Insert, threaded	225948
1	Box	225949
1	Wiring harness, leak alarm, 6-15 kW	226200
3	Vibromount	259919
1	Assembly, plate	A-292497
1	Lens, red	253241
1	Plate, silkscreened	292499
4	Screw	292828
1	Assembly, PCB, audiovisual chime alarm	A-292493
4	Stud, self-clinching, 8-32 x .875 in.	X-6205-3
4	Spacer, .25 OD, .5 in.	X-712-9
1	Grommet, round	X-284-15
2	Screw, hex washer head, drill	X-794-2

Qty.	Description	Part No.
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<b>Subbase Fuel Tank, 35 Gallon</b>		<b>224843</b>
1	Tank, fuel	224842
1	Switch, low fuel level	224801
1	Gauge, fuel level	354789
1	Wiring harness, alarm plate	226196
1	Bracket, leak alarm	336505
1	Tank, fuel, 6/10/15ROY/ROZ	TT-1041
2	Screw, hex washer head, drill	X-794-2
1	Assembly, box	A-224862
1	Bracket, support	224871
4	Insert, threaded	225948
1	Box	225949
1	Wiring harness, leak alarm, 6-15 kW	226200
3	Vibromount	259919
1	Assembly, plate	A-292497
1	Lens, red	253241
1	Plate, silkscreened	292499
4	Screw	292828
1	Assembly, PCB, audiovisual chime alarm	A-292493
4	Stud, self-clinching, 8-32 x .875 in.	X-6205-3
4	Spacer, .25 OD, .5 in.	X-712-9
1	Grommet, round	X-284-15
2	Screw, hex washer head, drill	X-794-2

<b>Subbase Fuel Tank, 25 Gallon</b>		<b>224845</b>
1	Tank, fuel	224844
1	Switch, low fuel level	224800
1	Gauge, fuel level	354786
1	Wiring harness, alarm plate	226196
1	Bracket, leak alarm	336505
1	Assembly, box	A-224862
1	Bracket, support	224871
4	Insert, threaded	225948
1	Box	225949
1	Wiring harness, leak alarm, 6-15 kW	226200
3	Vibromount	259919
1	Assembly, plate	A-292497
1	Lens, red	253241
1	Plate, silkscreened	292499
4	Screw	292828
1	Assembly, PCB, audiovisual chime alarm	A-292493
4	Stud, self-clinching, 8-32 x .875 in.	X-6205-3
4	Spacer, .25 OD, .5 in.	X-712-9
1	Grommet, round	X-284-15
2	Screw, hex washer head, drill	X-794-2
1	Tank, fuel, 6/10/15ROY/ROZ	TT-1041
2	Screw, hex washer head, drill	X-794-2

<b>Subbase Fuel Tank, 25 Gallon w/Daytank Option</b>		<b>224847</b>
1	Tank, fuel	224846
1	Switch, low fuel level	224800
1	Gauge, fuel level	354786
1	Wiring harness, alarm plate	226196
1	Bracket, leak alarm	336505
1	Tank, fuel, 6/10/15ROY/ROZ	TT-1041
2	Screw, hex washer head, drill	X-794-2
1	Assembly, box	A-224862
1	Bracket, support	224871
4	Insert, threaded	225948
1	Box	225949
1	Wiring harness, leak alarm, 6-15 kW	226200
3	Vibromount	259919
1	Assembly, plate	A-292497
1	Lens, red	253241
1	Plate, silkscreened	292499
4	Screw	292828
1	Assembly, PCB, audiovisual chime alarm	A-292493
4	Stud, self-clinching, 8-32 x .875 in.	X-6205-3
4	Spacer, .25 OD, .5 in.	X-712-9
1	Grommet, round	X-284-15
2	Screw, hex washer head, drill	X-794-2

# Parts List: Accessories, continued

Qty.	Description	Part No.
<b>Subbase Fuel Tank, 35 Gallon</b>		
1	Tank, fuel	224848
1	Switch, low fuel level	224801
1	Gauge, fuel level	354789
1	Wiring harness, alarm plate	226196
1	Bracket, leak alarm	336505
1	Tank, fuel, 6/10/15ROY/ROZ	TT-1041
2	Screw, hex washer head, drill	X-794-2
1	Assembly, box	A-224862
1	Bracket, support	224871
4	Insert, threaded	225948
1	Box	225949
1	Wiring harness, leak alarm, 6-15 kW	226200
3	Vibromount	259919
1	Assembly, plate	A-292497
1	Lens, red	253241
1	Plate, silkscreened	292499
4	Screw	292828
1	Assembly, PCB, audiovisual chime alarm	A-292493
4	Stud, self-clinching, 8-32 x .875 in.	X-6205-3
4	Spacer, .25 OD, .5 in.	X-712-9
1	Grommet, round	X-284-15
2	Screw, hex washer head, drill	X-794-2
<b>Fuel/Water Separator</b>		
1	Bracket, fuel filter	225239
1	Line, flexible fuel	225248
1	Filter, water separator, 1/4 x 1/4 in.	225455
2	Bolt, hex cap	X-125-3
2	Washer, plain, .281 ID x .625 in. OD	X-25-40
1	Fitting, half union	X-296-6
1	Clamp, hose, .25/.70 in.	X-426-9
2	Nut, flange spirallock, 1/4-20	X-6210-2
2	Nut, flange spirallock, 5/16-18	X-6210-7
2	Plug, pipe, 1/4 in. NPT	X-75-2
<b>Fuel/Water Separator</b>		
1	Line, flexible fuel	225204
1	Bracket, fuel filter	225239
1	Filter, water separator, 1/4 x 1/4 in.	225455
2	Bolt, hex cap	X-125-3
1	Washer, lock, .326 ID x .883 in. OD	X-22-16
1	Fitting, half union	X-296-11
1	Elbow, oil line, 90 deg., + vibra seal	X-447-7
2	Nut, flange spirallock, 1/4-20	X-6210-2
2	Nut, flange spirallock, 5/16-18	X-6210-7
2	Plug, pipe, 1/4 in. NPT	X-75-2
<b>20 ft. Harness</b>		
1	Wiring harness, extension	224882
<b>40 ft. Harness</b>		
1	Wiring harness	224883
<b>2 in. Pipe Plug</b>		
1	Plug, pipe, 2 in. NPT	X-75-44
<b>Emergency Pressure Relief Vent, 2 in.</b>		
1	Vent, pressure relief	224678
<b>Controller Accessories</b>		
<b>Cable, 40 ft. Remote Mounting</b>		
1	Wiring harness, controller, 10-12 kW	254847

Qty.	Description	Part No.
<b>Common Failure Relay</b>		
1	Bracket, mounting	225195
1	Diagram, interconnection	256876
1	Wiring harness	256883
1	Assembly, PCB, I/O fault diode	A-256884
1	Assembly, PCB, 1-relay dry contact	C-294301
7	Washer, locking, .172 ID x .333 in. OD	X-22-7
7	Spacer, .25 OD, .5 in.	X-712-9
7	Nut, hex machine screw, 8-32	X-72-4
2	Screw, slotted hex head machine	X-97-3
<b>Engine Gauge Package, Decision-Maker 1</b>		
1	Diagram, wiring	225084
1	Adapter, bushing	225127
1	Voltmeter, 10-16 V, DC	253329
1	Wiring harness, 10-12 kW Ford	254974
1	Sender, temperature	255240
1	Sender, oil pressure	264390
1	Line, flexible fuel	265462
1	Block, oil gauge	267548
1	Gauge, oil pressure, 0-100 psi	282897
1	Gauge, water temperature, 100-250 deg.	282898
1	Bushing, reducing, 1/8 x 1/4 in. NPT	A-106
1	Elbow, oil line, 90 deg., + vibra seal	X-447-10
1	Fitting, elbow, 1/8 x 1/8 in., street	X-555-2
2	Plug, pipe, 1/8 in. NPT	X-75-1
<b>Chime Alarm</b>		
1	Diagram, interconnection	255828
1	Alarm audiovisual chime	TT-827
1	Assembly, plate	A-292497
1	Lens, red	253241
1	Plate, silkscreened	292499
4	Screw	292828
1	Assembly, PCB, audiovisual chime alarm	A-292493
4	Stud, self-clinching, 8-32 x .875 in.	X-6205-3
4	Spacer, .25 OD, .5 in.	X-712-9
<b>Overvoltage Protection Shutdown</b>		
2	Spacer	292372
1	Assembly, PCB, overvoltage shutdown	G-291739
4	Washer, plain, .203 ID x .5 OD x .04	X-25-11
<b>Exhaust Kits</b>		
<b>Flexible Exhaust Connection. 1.5 in. NPT</b>		
1	Coupling, exhaust	254972
1	Coupling, pipe, 1 1/2 in. NPSC	X-216-21
<b>Silencer, Critical Mounting</b>		
1	Silencer, exhaust, 1.75 in.	225159
1	Gasket, exhaust	225222
1	Hanger, exhaust	256849
4	Screw, hex cap	M933-08020-60
1	Pipe, 1 1/2 in. NPT x 7.50 in.	X-205-19
1	Pipe, 1 1/2 in. NPT x 10.00 in.	X-205-20
2	Fitting, elbow, 45 deg.	X-225-16
1	Spacer, .282 ID x .5 OD x .75 in.	X-400-174
<b>Silencer, Critical, Engine-Mounted</b>		
1	Silencer, exhaust, 2 in.	225158
1	Gasket, exhaust	225222
1	Hanger, exhaust	256849
4	Screw, hex cap	M933-08016-60
1	Pipe, 1 1/2 in. NPT x 7.00	X-205-18
1	Pipe, 1 1/2 in. NPT x 10.00 in.	X-205-20
2	Fitting, elbow, 45 deg.	X-225-16
1	Spacer, .282 ID x .5 OD x .75 in.	X-400-174

# Parts List: Accessories, continued

Qty.	Description	Part No.	Qty.	Description	Part No.
<b>Silencer, Critical, Engine-Mounted</b>			<b>225201</b>		
1	Silencer, exhaust, 2 in.	225157	<b>Weather Housing</b>		
1	Gasket, exhaust	225223	2	Rail, extension	225070
1	Hanger, exhaust	256849	1	Shroud, rear housing	225071
4	Screw, hex cap	M933-08016-60	1	Bracket, housing support, RS	225073
1	Pipe, 1 1/2 in. NPT x 7.00	X-205-18	1	Bracket, housing support, LS	225074
1	Pipe, 1 1/2 in. NPT x 10.00 in.	X-205-20	2	Door, housing	225105
2	Fitting, elbow, 45 deg.	X-225-16	2	Door, housing	225106
1	Spacer, .282 ID x .5 OD x .75 in.	X-400-174	1	Roof, housing	225107
<b>Silencer, Critical, Engine-Mounted</b>			<b>225139</b>		
<b>PA-225256</b>			1	Plug	253268
1	Silencer, exhaust, 1.75 in.	225159	5	Latch	253373
2	Gasket, exhaust	225222	10	Plug, plastic	253723
1	Flange, exhaust outlet	225264	2	Bracket, extension rail	254863
4	Bolt, hex cap	X-125-5	1	Door, rear housing	256455
4	Washer, plain, .344 ID x .687 in. OD	X-25-85	2	Panel, housing	256835
4	Nut, flange spiralock, 5/16-18	X-6210-7	60	Screw, flat countersunk, head machine	295098
<b>Silencer, Critical, Engine-Mounted</b>			<b>225140</b>		
<b>PA-225257</b>			<b>Weather Housing</b>		
1	Silencer, exhaust, 2 in.	225158	1	Shroud, rear housing	225071
2	Gasket, exhaust	225222	1	Bracket, housing support, RS	225073
1	Flange, exhaust outlet	225264	1	Bracket, housing support, LS	225074
4	Bolt, hex cap	X-125-5	2	Door, housing	225105
4	Washer, plain, .344 ID x .687 in. OD	X-25-85	2	Door, housing	225106
4	Nut, flange spiralock, 5/16-18	X-6210-7	1	Roof, housing	225107
<b>Silencer, Critical, Engine-Mounted</b>			<b>225138</b>		
<b>PA-225258</b>			<b>Weather Housing</b>		
1	Silencer, exhaust, 2 in.	225157	1	Shroud, rear housing	225071
2	Gasket, exhaust	225223	1	Bracket, housing support, RS	225073
1	Flange, exhaust outlet	225265	1	Bracket, housing support, LS	225074
4	Bolt, hex cap	X-125-5	2	Door, housing	225105
4	Washer, plain, .344 ID x .687 in. OD	X-25-85	2	Door, housing	225106
4	Nut, flange spiralock, 5/16-18	X-6210-7	1	Roof, housing	225107
<b>Enclosure Kits</b>			1	Bracket, alternator adjustment	229212
<b>Weather Housing</b>			1	Pulley, V	252845
<b>225138</b>			1	Plug	253268
1	Shroud, rear housing	225071	5	Latch	253373
1	Bracket, housing support, RS	225073	10	Plug, plastic	253723
1	Bracket, housing support, LS	225074	1	Door, rear housing	256455
2	Door, housing	225128	2	Panel, housing	256835
2	Door, housing	225129	60	Screw, flat countersunk, head machine	295098
1	Roof, housing	225132	6	Hinge, split	297600
1	Plug	253268	4	Hinge, split	297601
5	Latch	253373	10	Nut, hex elastic stop, 5/16-18	X-101-16
10	Plug, plastic	253723	4	Nut, hex elastic stop, 1/4-20	X-101-8
1	Door, rear housing	256455	4	Washer, plain, .266 ID x 1 in. OD	X-25-73
2	Panel, housing	256835	30	Retainer, nut	X-6204-3
50	Screw, flat countersunk, head machine	295098	10	Screw, Phillips hex crimp tite	X-6216-1
6	Hinge, split	297600	2	Decal, stripes	X-6232-2
4	Hinge, split	297601	2	Decal, Kohler Power System	X-6246-1
10	Nut, hex elastic stop, 5/16-18	X-101-16	4	Screw, hex washer head, drill	X-794-1
4	Nut, hex elastic stop, 1/4-20	X-101-8			
4	Washer, plain, .266 ID x 1 in. OD	X-25-73			
10	Retainer, nut	X-6204-3			
10	Screw, Phillips hex crimp tite	X-6216-1			
2	Decal, stripes	X-6232-1			
2	Decal	X-6246-6			
4	Screw, hex washer head, drill	X-794-1			

# Parts List: Accessories, continued

Qty.	Description	Part No.
<b>Enclosure, Weather</b>		
		<b>GM11599-KA1</b>
2	Door, housing 6 kW Yanmar	GM11595
2	Door, housing 6 kW Yanmar	GM11596
1	Roof, housing	GM13234
2	Decal, stripes	X-6232-1
2	Decal	X-6246-6
2	End cap, skid	225055
2	End cap, skid	225055
1	Bracket, housing support, RS	225073
1	Bracket, housing support, LS	225074
1	Plug	253268
5	Latch	253373
10	Plug, plastic	253723
4	Cover, skid rail	254758
2	Panel, housing	256835
40	Screw, flat countersunk, head machine	295098
6	Hinge, split	297600
4	Hinge, split	297601
20	Insert, threaded, #10-24	346258
1	Door, housing rear	GM11561
1	Shroud, rear housing	GM13233
2	Enclosure, skid	GM16052
10	Nut, hex elastic stop, 5/16-18	X-101-16
4	Nut, hex elastic stop, 1/4-20	X-101-8
4	Washer, plain, .266 ID x 1 in. OD	X-25-73
2	Plug, button	X-301-39
8	Screw, slotted pan head machine	X-50-1
30	Retainer, nut	X-6204-3
8	Screw, Phillips hex crimp-tite	X-6216-1
18	Screw, Phillips hex crimp-tite	X-6216-1
8	Screw, Phillips hex crimp-tite	X-6216-1
8	Screw, Phillips hex crimp-tite	X-6216-1
8	Screw	X-791-1
12	Screw, hex washer head, drill	X-794-1
12	Screw, hex seal washer head, drill	X-794-4

Qty.	Description	Part No.
<b>Enclosure, Weather</b>		
		<b>GM11599-KA2</b>
2	Rail, extension	225070
2	Bracket, extension rail	254863
2	Door, housing 10/15 kW Yanmar	GM11597
2	Door, housing 10/15 kW Yanmar	GM11598
1	Roof, housing	GM13235
8	Nut, hex elastic stop, 5/16-18	X-101-16
2	Decal, stripes	X-6232-2
2	Decal, Kohler Power System	X-6246-1
2	End cap, skid	225055
2	End cap, skid	225055
1	Bracket, housing support, RS	225073
1	Bracket, housing support, LS	225074
1	Plug	253268
5	Latch	253373
10	Plug, plastic	253723
4	Cover, skid rail	254758
2	Panel, housing	256835
40	Screw, flat countersunk, head machine	295098
6	Hinge, split	297600
4	Hinge, split	297601
20	Insert, threaded, #10-24	346258
1	Door, housing rear	GM11561
1	Shroud, rear housing	GM13233
2	Enclosure, skid	GM16052
10	Nut, hex elastic stop, 5/16-18	X-101-16
4	Nut, hex elastic stop, 1/4-20	X-101-8
4	Washer, plain, .266 ID x 1 in. OD	X-25-73
2	Plug, button	X-301-39
8	Screw, slotted pan head machine	X-50-1
30	Retainer, nut	X-6204-3
8	Screw, Phillips hex crimp-tite	X-6216-1
18	Screw, Phillips hex crimp-tite	X-6216-1
8	Screw, Phillips hex crimp-tite	X-6216-1
8	Screw, Phillips hex crimp-tite	X-6216-1
8	Screw	X-791-1
12	Screw, hex washer head, drill	X-794-1
12	Screw, hex seal washer head, drill	X-794-4

# Parts List: Accessories, continued

Qty.	Description	Part No.	Qty.	Description	Part No.
<b>Enclosure, Weather</b>			<b>GM11599-KA3</b>		
1	Bracket, alternator adjustment	229212	1	Module, SCR	292945
1	Pulley, V	252845	1	Harness, wiring, 12/24 V float chargers	292958
2	Door, housing 10/15 kW Yanmar	GM11597	1	Connector, plug, 12-position	241605
2	Door, housing 10/15 kW Yanmar	GM11598	4	Washer, lock, .262 ID x .743 in. OD	X-22-12
1	Roof, housing	GM13235	1	Marker, strip	292961
2	Decal, stripes	X-6232-2	1	Marker, strip	292962
2	Decal, Kohler Power System	X-6246-1	1	Fuse, 7 A, 250 V	292948
2	End cap, skid	225055	1	Block, terminal	295314
2	End cap, skid	225055	4	Nut, captive, 6-32	298810
1	Bracket, housing support, RS	225073	1	Box, battery charger	325593-SD
1	Bracket, housing support, LS	225074	1	Nameplate, battery charger	325608
1	Plug	253268	1	Charger, battery, automatic	TT-680
5	Latch	253373	1	Charger, battery, circuit board	TT-729
10	Plug, plastic	253723	1	Door, silkscreened	325596
4	Cover, skid rail	254758	4	Screw, slotted pan head machine	X-49-26
2	Panel, housing	256835	1	Screw, cross recess round machine	X-51-9
40	Screw, flat countersunk, head machine	295098	4	Screw, slotted pan head machine	X-51-30
6	Hinge, split	297600	2	Screw, cross recess pan head machine	X-51-15
4	Hinge, split	297601	2	Screw, cross recess round machine	X-51-11
20	Insert, threaded, #10-24	346258	2	Screw, slotted pan head machine	X-50-3
1	Door, housing rear	GM11561	2	Screw, Phillips hex crimp tite	X-6216-1
1	Shroud, rear housing	GM13233	2	Retainer	295010
2	Enclosure, skid	GM16052	2	Screw, slotted pan head machine	X-50-1
10	Nut, hex elastic stop, 5/16-18	X-101-16	8	Screw, slotted pan head machine	X-49-25
4	Nut, hex elastic stop, 1/4-20	X-101-8	10	Washer, lock, .146 ID x .285 in. OD	X-22-6
4	Washer, plain .266 ID x 1 in. OD	X-25-73	3	Washer, lock, .146 ID x .53 in. OD	X-22-25
2	Plug, button	X-301-39	2	Washer, lock, .172 ID x .595 in. OD	X-22-18
8	Screw, slotted pan head machine	X-50-1	1	Assembly, PCB, battery charger control	C-262377
30	Retainer, nut	X-6204-3	1	Assembly, battery charger	D-292862
8	Screw, Phillips hex crimp tite	X-6216-1	2	Screw, cross recess pan head machine	X-49-6
18	Screw, Phillips hex crimp tite	X-6216-1	1	Strip, terminal	292940
8	Screw, Phillips hex crimp tite	X-6216-1	3	Screw, slotted pan head machine	X-49-39
8	Screw, Phillips hex crimp tite	X-6216-1	1	Ammeter, 0-15 A, DC	292941
8	Screw	X-791-1	1	Voltmeter, 0-25 V, DC	292942
12	Screw, hex washer head, drill	X-794-1	1	Decal	292387
12	Screw, hex seal washer head, drill	X-794-4	1	Lamp, 120 V, .33 W	291208
<b>Rain Cap</b>			<b>225243</b>		
1	Cap, rain	276254	4	Spacer	287948
<b>Electrical System Kits</b>			<b>PA-256985</b>		
<b>Battery, 12 V, 900 CCA, Wet</b>			<b>PA-256985</b>		
1	Battery, wet charge	256984	2	Holder, fuse	263156
<b>Battery, 12V, 900 CCA, Dry</b>			<b>PA-225290</b>		
1	Battery, dry charge	225289	1	Clip, cable	262399
1	Battery activation	TT-796	1	Transformer, 120/240 V, 29.5 V	262394
<b>Battery Cable</b>			<b>PA-225245</b>		
1	Lead, battery cable, 21 in.	X-545-86	1	Fuse, 25 A, 125 V	262389
1	Lead, battery cable, 16 in.	X-545-87	2	Clip, speed	257442
			<b>Battery Charger, 12 Volt</b>		
			<b>PAD-292862</b>		
			1	Fuse, 5 A, 250 V	239298
			1	Decal, connection	233966
			2	Nut, hex machine screw, 6-32	X-71-2
			1	Decal, warning connection	262397

# Parts List: Accessories, continued

Qty.	Description	Part No.	Qty.	Description	Part No.
<b>Battery Charger, 12 Volt</b>			<b>PAD-292863</b>		
1	Nameplate, battery charger	325609	1	Decal, AC input/DC output, 1.68 x 2.31	291221
1	Fuse, 7 A, 250 V	292948	1	Fuse, 1.5 A, 250 V	291207
1	Harness, wiring, 12/24 V float chargers	292958	1	Lamp, 120 V, .33 W	291208
1	Connector, plug, 12-position	241605	1	Switch, slide, 2-pole	291211
1	Marker, strip	292961	1	Cable, multiconductor	291216
1	Marker, strip	292962	1	Breaker, circuit, 5 A, 12 VDC, 1-pole	291265
2	Retainer	295010	1	Rheostat	291975
1	Block, terminal	295314	1	Box, battery charger	325389
4	Nut, captive, 6-32	298810	2	Nut, hex machine screw, 6-32	X-71-2
1	Charger, automatic battery	TT-680	1	Charger, trickle battery	TT-938
1	Door, silkscreened	325596	4	Spacer, screen	270833
4	Washer, lock, .262 ID x .743 in. OD	X-22-12	1	Switch, slide, 2-pole	291210
1	Ammeter, 0-15 A, DC	292941	2	Coupling, non-metallic	X-567-1
1	Box, battery charger	325593-SD	1	Transformer, 115-230 V	269204
16	Screw, slotted pan head machine	X-49-25	1	Cable, multiconductor	291215
2	Screw, cross recess pan head machine	X-51-15	2	Block, terminal	X-405-2
2	Screw, cross recess round machine	X-51-11	1	Screw, slotted pan head machine	X-49-26
2	Screw, slotted pan head machine	X-50-3	4	Screw, cross recess round machine	X-51-9
2	Screw, slotted pan head machine	X-50-1	4	Screw, thread-cutting	X-67-43
1	Voltmeter, 0-25 V, DC	292942	4	Screw, hex washer head, drill	X-794-2
4	Screw, slotted pan head machine	X-51-30	2	Washer, lock, .146 ID x .53 in. OD	X-22-25
1	Module, SCR	292945	1	Fuse holder, .25 x 1.25 in.	238426
2	Screw, cross recess pan head machine	X-49-6	1	Charger, battery	A-248952
14	Washer, lock, .146 ID x .285 in. OD	X-22-6	1	Cable, multiconductor	246185
3	Washer, lock, .146 ID x .53 in. OD	X-22-25	1	Cover, battery charger	246604-SD
2	Washer, lock, .172 ID x .595 in. OD	X-22-18	1	Ammeter, 0-500 m, DC	269202
1	Assembly, PCB, battery charger control	C-262377	6	Screw, slotted pan head machine	X-51-12
1	Assembly, PCB, battery charger alarm	B-262374	<b>Battery Heater</b>		
1	Assembly, charger	D-292863	1	Heater, battery	<b>256908</b> 255649
3	Screw, slotted pan head machine	X-49-39	1	Heater, battery warmer	258780
2	Holder, fuse	263156	2	Bolt, angle	288446
4	Screw, slotted pan head machine	X-49-26	2	Nut, hex elastic stop, 1/4-20	X-101-8
1	Screw, cross recess round machine	X-51-9	1	Cable tie	X-468-4
1	Decal	292387	2	Screw, slotted round head machine	X-73-14
8	Spacer	287948	<b>Battery Rack and Cables</b>		
1	Strip, terminal	292940	1	Rack, battery	<b>225166</b> 225065
1	Clip, cable	262399	1	Boot	238915
1	Decal, warning connection	262397	1	Decal, warning	273780
1	Transformer, 120/240 V, 29.5 V	262394	1	Clamp, battery	324033
1	Fuse, 25 A, 125 V	262389	2	Bolt, angle	360491
2	Clip, speed	257442	1	Screw, hex cap	M933-10012-60
1	Fuse, 5 A, 250 V	239298	2	Nut, hex elastic stop, 5/16-24	X-101-4
1	Decal, connection	233966	1	Washer, lock, .456 ID x 1.058 in. OD	X-22-15
2	Nut, hex machine screw, 6-32	X-71-2	1	Lead, battery cable, 21 in.	X-545-86
2	Screw, Phillips hex crimpitite	X-6216-1	1	Lead, battery cable, 16 in.	X-545-87
1	Lamp, 120 V, .33 W	291208	<b>Customer Connection Terminal Strip</b>		
<b>Battery Charger, 12 V, Float Equalizer</b>			<b>PA-256886</b>		
1	Battery charger, 12V-6A, float-equalize	GM11849-KP1 GM11849	2	Washer, plain	X-25-48
			4	Screw, hex head	X-6216-1
			2	Nut, hex	X-70-12
			1	Grommet	243319
			1	Box, dry contact	256878
			1	Cover, dry contact	256880
			1	Block, terminal	273769
			1	Strip, terminal	273770
			<b>Dry Contacts, 1 SPDT, 10 A</b>		
			<b>PA-256881</b>		
			1	Bracket, mounting	225195
			1	Assembly, PCB, 1-relay dry contact	C-294301
			1	Contact, dry, 1-relay	TT-950
			4	Washer, locking, .172 ID x .333 in. OD	X-22-7
			2	Nut, flange whiz, 10-24	X-6210-5
			4	Spacer, .25 OD, .5 in.	X-712-9
			4	Nut, hex machine screw, 8-32	X-72-4
			2	Screw, slotted hex head machine	X-97-3
			<b>Dry Contacts, 10 SPDT, 10 A</b>		
			<b>PA-256887</b>		
			1	Diagram, interconnection	255828
			1	Kit, 10 relay dry contact	256887
			1	Contact, dry, 10-relay	TT-951



# Parts List: Accessories, continued

Qty.	Description	Part No.	Qty.	Description	Part No.
<b>Equipment Connection, AC</b>			<b>256900</b>		
2	Screw, 10-24 x 1/2	X-6216-1			
4	Screw, 10-32 x 1/2	X-97-2			
<b>FASTCHECK® and Harness</b>			<b>Remote Annunciator Panel</b>		
2	Clip, alligator	269952	1	Bushing, 1.0 x 1.375 in.	PA-293991
1	Connector, 24-position	295145	1	Bracket, wall mounting	X-634-14
1	Connector, cable	292800	1	Assembly, annunciator panel	253346-BLK
2	Hood, strain relief	287851	1	Assembly, PCB, 16-light annunciator	A-258782
1	Connector	287850	1	Washer, lock, .146 ID x .285 in. OD	A-292885
1	Insulator, rotor	269953	2	Wiring harness, 5-20 kW common fault	X-22-6
1	Wiring harness for FRIL relay circuit	255915	1	Bracket, mounting	256495
1	Decal, FASTCHECK®, 3 x 4 in.	255405	2	Nut, hex machine screw, 6-32	293993
1	Assembly, control	B-291930	4	Screw, slotted pan head machine	X-71-2
1	Insulator, rotor	269954	1	Remote annunciator	X-50-72
1	Cover	254409	1	Washer, plain, .125 ID x .25 in. OD	TT-1023
1	Cap	287874	4	Screw, thread-cutting	X-25-46
1	Nut, dress cap, 1/4-40	269174	1	Cover, dry contact	X-67-43
1	Box	287869	2	Screw, slotted pan head machine	256880
4	Nut, dress, 1/4-40	287873	1	Marker, strip	X-49-26
1	Assembly, PCB, test fast check	B-287848	1	Holder, fuse, 2-pole, 20 amp	256494
<b>Generator Heater, 95-240 V</b>			1	Bushing, .938 x 1.187 in. NPT	343694
2	Heater, strip	256890	1	Box, dry contact	X-634-14
2	Bracket, heater	256891	1	Fuse, 10 A, 250 V	226676
<b>Pre Alarm Senders, NFPA-110</b>			1	Wiring harness, engine, Cummins 6C	223316
1	Bushing, reducing	151226	4	Screw, Phillips hex crimplite	258890
1	Switch, high temperature shutoff	255241	6	Screw, hex washer head, drill	X-6216-1
1	Switch, temperature	255264	1	Panel, front	X-794-2
1	Pipe, 1/8 in. NPT x 1.50 in.	289055	1	Wiring harness, cable	253350-BLK
1	Assembly, pressure switch	328309	1	Decal, 16-light controller, 4.25 x 7.81	293982
1	Tee, pipe, 1/8 x 1/8 x 1/8 NPT	X-203-16	1	Block, terminal	258834
<b>12 V Run Relay</b>			2	Panel, side	258891
1	Diode, 1N4006, 1 A	233868	1	Panel, front annunciator	287798
1	Relay	248362	1	Assembly, contact	293992-BLK
1	Assembly, relay	273705	1	Assembly, PCB, 14-relay, dry contact	A-293983
1	Diagram, interconnection	256876	1	Bushing, .688 x .875 in. NPT	A-320639
2	Screw, slotted pan head machine	X-49-26	1	Decal, marker	X-634-11
1	Diagram, interconnection	328912	1	Remote Annunciator Panel, 16-Light	258832
<b>Remote Alarm</b>			1	Terminal, 5/16 in.	PA-256471
1	Lens, red	253241	1	Terminal, 1/4 in.	X-283-5
1	Assembly, plate	A-292887	1	Assembly, panel	X-283-4
1	Annunciator panel 1-light	TT-639	1	Assembly, annunciator panel	A-256472
1	Plate, silkscreened	292936	1	Terminal, wire, 16-14	A-256782
4	Screw, mounting	292828			
1	Assembly, PCB, audiovisual 1-light annunciator	A-292883	<b>Remote Annunciator Panel, 16-Light</b>		
4	Washer, lock, .172 ID x .333 in. OD	X-22-7	1	Terminal, 1/4 in.	X-283-4
4	Spacer, .25 OD, .5 in.	X-712-9	4	Screw, pan head	X-6286-1
4	Nut, hex machine screw, 8-32	X-72-4	1	Terminal, 5/16 in.	X-283-5
<b>Remote Emergency Stop Switch</b>			1	Box, annunciator	256491
1	Remote emergency stop, 6-1600 kW	TT-940	1	Assembly, annunciator panel	A-256452
1	Rod, glass	222655	1	Assembly, panel	A-256472
1	Switch, emergency stop	A-222654	1	Terminal, wire, 16-14	X-283-32
<b>Emergency Stop Switch, Remote</b>			<b>Remote Alarm</b>		
1	Switch, emergency stop	A-292785	1	Lens, red	253241
1	Panel, silkscreened	292786	1	Assembly, plate	A-292887
1	Switch, emergency	292796	1	Annunciator panel 1-light	TT-639
1	Box, connection	256898	1	Plate, silkscreened	292936
1	Cover, connection box	256899	4	Screw, mounting	292828

# Parts List: Accessories, continued

Qty.	Description	Part No.
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## Circuit Breaker Kits

<b>Line Circuit Breaker, 10A, 3P, 600 V</b>	<b>PA-225169</b>
1 Circuit breaker, 10 A, 600 V, 3-pole	225167
1 Panel, regulator	254726
4 Washer, plain, .156 ID x .375 in. OD	X-25-9
4 Screw, cross recess pan head machine	X-49-2

<b>Line Circuit Breaker, 25 A, 3P, 600 V</b>	<b>PA-225170</b>
1 Circuit breaker, 25 A, 600 V, 3-pole	225168
1 Panel, regulator	254726
4 Washer, plain, .156 ID x .375 in. OD	X-25-9
4 Screw, cross recess pan head machine	X-49-2

<b>Line Circuit Breaker, 15 A, 3P, 600 V</b>	<b>PA-254729</b>
1 Circuit breaker, 15 A, 600 V, 3-pole	250575
1 Panel, regulator	254726
1 Circuit breaker, 10-12RY/RZ	TT-713
4 Washer, plain, .156 ID x .375 in. OD	X-25-9
4 Screw, cross recess pan head machine	X-49-2

<b>Line Circuit Breaker, 20 A, 3P, 600 V</b>	<b>PA-254730</b>
1 Panel, regulator	254726
1 Circuit breaker, 20 A, 600 V, 3-pole	269251
1 Circuit breaker, 10-12RY/RZ	TT-713
4 Washer, plain, .156 ID x .375 in. OD	X-25-9
4 Screw, cross recess pan head machine	X-49-2

<b>Line Circuit Breaker, 30 A, 3P, 600 V</b>	<b>PA-254731</b>
1 Panel, regulator	254726
1 Circuit breaker, 30 A, 600 V, 3-pole	269250
1 Circuit breaker, 10-12RY/RZ	TT-713
4 Washer, plain, .156 ID x .375 in. OD	X-25-9
4 Screw, cross recess pan head machine	X-49-2

<b>Line Circuit Breaker, 40 A, 3P, 600 V</b>	<b>PA-254732</b>
1 Panel, regulator	254726
1 Circuit breaker, 40 A, 600 V, 3-pole	269252
1 Circuit breaker, 10-12RY/RZ	TT-713
4 Washer, plain, .156 ID x .375 in. OD	X-25-9
4 Screw, cross recess pan head machine	X-49-2

<b>Line Circuit Breaker, 50 A, 3P, 600 V</b>	<b>PA-254733</b>
1 Panel, regulator	254726
1 Circuit breaker, 50 A, 600 V, 3-pole	258928
1 Circuit breaker, 10-12RY/RZ	TT-713
4 Washer, plain, .156 ID x .375 in. OD	X-25-9
4 Screw, cross recess pan head machine	X-49-2

<b>Line Circuit Breaker, 60 A, 3P, 600 V</b>	<b>PA-254876</b>
1 Circuit breaker, 60 A, 600 V, 3-pole	253224
1 Panel, regulator	254726
1 Circuit breaker, 10-12RY/RZ	TT-713
4 Washer, plain, .156 ID x .375 in. OD	X-25-9
4 Screw, cross recess pan head machine	X-49-2

<b>Line Circuit Breaker, 70 A, 3P, 600 V</b>	<b>PA-254877</b>
1 Panel, regulator	254726
1 Circuit breaker, 70 A, 600 V, 3-pole	258381
1 Circuit breaker line, FRII	TT-581
4 Washer, plain, .156 ID x .375 in. OD	X-25-9
4 Screw, cross recess pan head machine	X-49-2

<b>Load Connection</b>	<b>254881</b>
2 Insulator, panel	233269
2 Stud, 1/4-20 X 1 in.	237612
2 Washer, lock, .262 ID x .469 in. OD	X-22-11

<b>Load Connection</b>	<b>254882</b>
3 Insulator, panel	233269
3 Stud, 1/4-20 X 1 in.	237612
3 Washer, lock, .262 ID x .469 in. OD	X-22-11

Qty.	Description	Part No.
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## Miscellaneous Kits

<b>Oil Drain Extension with Valve</b>	<b>225232</b>
1 Plug, drain	241062
1 Adapter, bushing	249959
1 Adapter, hose	273729
1 Washer, nylon, .878 ID x 1.132 in. OD	276552
1 Valve, drain, 3/8 in. NPT	278788
1 Washer, plain, .859 ID x 1.185 in. OD	X-25-145
1 Elbow, street, 45 deg. x 3/8 in. NPT	X-274-6
2 Clamp, hose, .5/1 in.	X-426-10
1 Hose, rubber, straight, .62 in. ID	X-577-38
1 Nut, hex jam, 1 1/4	X-80-1

<b>Rodent Guards</b>	<b>225231</b>
1 Screen, fan	225230
1 Screen, louver	256902
5 Washer, plain, .156 ID x .375 in. OD	X-25-9
2 Screw, slotted pan head machine	X-50-7
5 Rivet, pop, .125 in.	X-781-1

<b>Rodent Guards</b>	<b>256901</b>
1 Screen, louver	256902
1 Screen, fan	273972
2 Screw, slotted pan head machine	X-50-7
1 Conduit	X-6003-87
5 Rivet, pop, .125 in.	X-781-1
2 Screw, hex washer head, drill	X-794-2

<b>Skid End Caps</b>	<b>225192</b>
4 Cover, skid rail	254758
2 Enclosure, skid	GM16052
2 Plug, button	X-301-39
8 Screw, slotted pan head machine	X-50-1
8 Screw, hex washer head, drill	X-794-1

<b>Manual Transfer Switch</b>	<b>PA-320676</b>
1 Switch, manual transfer, 2-pole	320669
1 O/M, residential transfer switch	TT-1001

<b>Automatic Transfer Switch</b>	<b>PA-320677</b>
1 Switch, automatic transfer, 2-pole	320670
1 Install residential/light commercial	TT-942
1 Relay	293166
1 Switch, molded-case	296312
1 Lever, transfer	296313
1 Motor, transfer	296314
1 Bracket, walking beam	296315

<b>Automatic Transfer Switch</b>	<b>PA-320678</b>
1 Switch, automatic transfer, 2-pole	320671
1 Install residential/light commercial	TT-942
1 Relay	293166
1 Delay, time	296308
1 Switch, molded-case	296312
1 Lever, transfer	296313
1 Motor, transfer	296314
1 Bracket, walking beam	296315

<b>Automatic Transfer Switch</b>	<b>PA-320679</b>
1 Switch, automatic transfer, 2-pole	320672
1 Install residential/light commercial	TT-942
1 Relay	293166
1 Delay, time	296308
1 Exerciser, plant, no load	296310
1 Switch, molded-case	296312
1 Lever, transfer	296313
1 Motor, transfer	296314
1 Bracket, walking beam	296315

# Parts List: Accessories, continued

Qty.	Description	Part No.
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<b>Automatic Transfer Switch</b>		<b>PA-320680</b>
1	Switch, automatic transfer, 2-pole	320673
1	Install residential/light commercial	TT-942
1	Relay	293166
1	Delay, time	296307
1	Delay, time	296308
1	Delay, time	296309
1	Switch, molded-case	296312
1	Lever, transfer	296313
1	Motor, transfer	296314
1	Bracket, walking beam	296315

<b>Automatic Transfer Switch</b>		<b>PA-320681</b>
1	Switch, automatic transfer, 2-pole	320674
1	Install residential/light commercial	TT-942
1	Relay	293166
1	Delay, time	296307
1	Delay, time	296308
1	Delay, time	296309
1	Exerciser, plant, no load	296310
1	Switch, molded-case	296312
1	Lever, transfer	296313
1	Motor, transfer	296314
1	Bracket, walking beam	296315

Qty.	Description	Part No.
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<b>Automatic Transfer Switch</b>		<b>PA-320682</b>
1	Switch, automatic transfer, 2-pole	320675
1	Install residential/light commercial	TT-942
1	Relay	293166
1	Delay, time	296307
1	Delay, time	296308
1	Delay, time	296309
1	Exerciser, plant	296311
1	Switch, molded-case	296312
1	Lever, transfer	296313
1	Motor, transfer	296314
1	Bracket, walking beam	296315

# Notes

# Appendix A Abbreviations

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

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

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

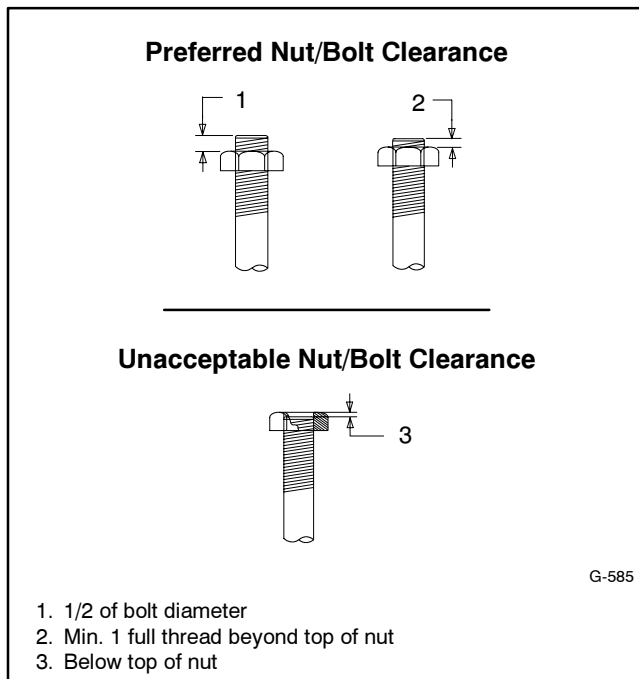
# Appendix B Common Hardware Application Guidelines

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

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

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

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



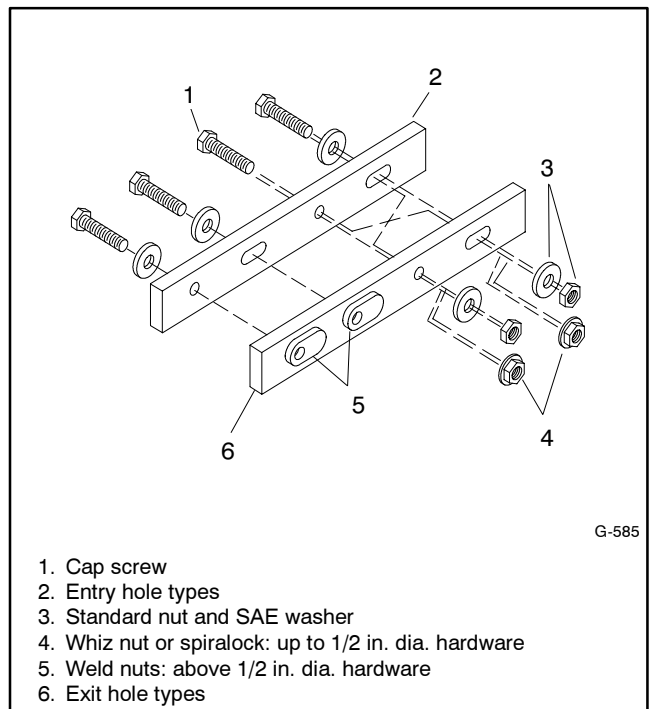
**Figure 1** Acceptable Bolt Lengths

Steps for common hardware application:

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

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

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



**Figure 2** Acceptable Hardware Combinations

# Appendix C General Torque Specifications

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















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











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






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



# Appendix D Common Hardware Identification

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

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

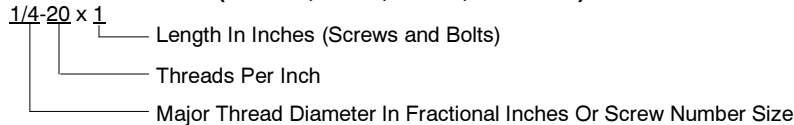
Hardness Grades	
American Standard	
Grade 2	
Grade 5	
Grade 8	
Grade 8/9 (Hex Socket Head)	
Metric	
Number stamped on hardware; 5.8 shown	

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

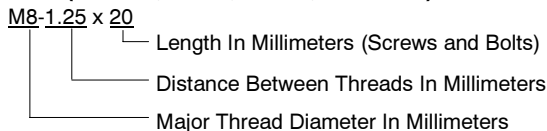
Phillips® screw is a registered trademark of Phillips Screw Company.

## Sample Dimensions

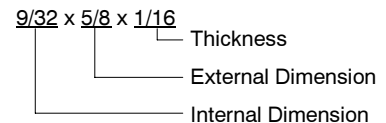
### American Standard (Screws, Bolts, Studs, and Nuts)



### Metric (Screws, Bolts, Studs, and Nuts)



### Plain Washers



### Lock Washers



# Appendix E Common Hardware List

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

## American Standard

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

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

## Metric

Hex head bolts are hardness grade 8.8 unless noted.

Part No.	Dimensions	Part No.	Dimensions	Part No.	Dimensions	Type		
<b>Hex Head Bolts (partial thread)</b>								
M931-05055-60	M5-0.80 x 55	<b>Hex Head Bolts (full thread)</b>						
M931-06040-60	M6-1.00 x 40	M933-04006-60	M4-0.70 x 6	M934-03-50	M3-0.50	Standard		
M931-06055-60	M6-1.00 x 55	M933-05035-60	M5-0.80 x 35	M934-035-50	M3.5-0.50	Standard		
M931-06060-60	M6-1.00 x 60	M933-05050-60	M5-0.80 x 50	M934-04-50	M4-0.70	Standard		
M931-06070-60	M6-1.00 x 70	M933-06010-60	M6-1.00 x 10	M934-05-50	M5-0.80	Standard		
M931-06070-SS	M6-1.00 x 70	M933-06014-60	M6-1.00 x 14	M982-05-80	M5-0.80	Elastic Stop		
M931-06075-60	M6-1.00 x 75	M933-06016-60	M6-1.00 x 16	M934-06-60	M6-1.00	Standard		
M931-06090-60	M6-1.00 x 90	M933-06020-60	M6-1.00 x 20	M934-06-64	M6-1.00	Std. (green)		
M931-06150-60	M6-1.00 x 150	M933-06025-60	M6-1.00 x 25	M6923-06-80	M6-1.00	Spirallock		
M931-08035-60	M8-1.25 x 35	M933-06040-60	M6-1.00 x 40	M982-06-80	M6-1.00	Elastic Stop		
M931-08040-60	M8-1.25 x 40	M933-06050-60	M6-1.00 x 50	M934-08-60	M8-1.25	Standard		
M931-08040-82	M8-1.25 x 40*	M933-08012-60	M8-1.25 x 12	M6923-08-80	M8-1.25	Spirallock		
M931-08045-60	M8-1.25 x 45	M933-08016-60	M8-1.25 x 16	M982-08-80	M8-1.25	Elastic Stop		
M931-08050-60	M8-1.25 x 50	M933-08020-60	M8-1.25 x 20	M934-10-60	M10-1.50	Standard		
M931-08055-60	M8-1.25 x 55	M933-08025-60	M8-1.25 x 25	M934-10-60F	M10-1.25	Standard		
M931-08055-82	M8-1.25 x 55*	M933-08030-60	M8-1.25 x 30	M6923-10-80	M10-1.50	Spirallock		
M931-08060-60	M8-1.25 x 60	M933-08030-82	M8-1.25 x 30*	M6923-10-62	M10-1.50	Spirallock†		
M931-08070-60	M8-1.25 x 70	M933-10012-60	M10-1.50 x 12	M982-10-80	M10-1.50	Elastic Stop		
M931-08070-82	M8-1.25 x 70*	M961-10020-60	M10-1.25 x 20	M934-12-60	M12-1.75	Standard		
M931-08075-60	M8-1.25 x 75	M933-10020-60	M10-1.50 x 20	M934-12-60F	M12-1.25	Standard		
M931-08080-60	M8-1.25 x 80	M933-10025-60	M10-1.50 x 25	M6923-12-80	M12-1.75	Spirallock		
M931-08090-60	M8-1.25 x 90	M961-10030-60	M10-1.25 x 30	M982-12-80	M12-1.75	Elastic Stop		
M931-08095-60	M8-1.25 x 95	M933-10030-60	M10-1.50 x 30	M982-14-80	M14-2.00	Elastic Stop		
M931-08100-60	M8-1.25 x 100	M933-10030-82	M10-1.50 x 30*	M6923-16-80	M16-2.00	Spirallock		
M931-08120-60	M8-1.25 x 120	M961-10035-60	M10-1.25 x 35	M982-16-80	M16-2.00	Elastic Stop		
M931-08130-60	M8-1.25 x 130	M933-10035-60	M10-1.50 x 35	M934-18-80	M18-2.5	Standard		
M931-08140-60	M8-1.25 x 140	M933-12016-60	M12-1.75 x 16	M982-18-80	M18-2.50	Elastic Stop		
M931-10040-82	M10-1.25 x 40*	M933-12020-60	M12-1.75 x 20	M934-20-80	M20-2.50	Standard		
M931-10040-60	M10-1.50 x 40	M933-12025-60	M12-1.75 x 25	M982-20-80	M20-2.50	Elastic Stop		
M931-10045-60	M10-1.50 x 45	M933-12025-82	M12-1.75 x 25*	M934-22-60	M22-2.50	Standard		
M931-10050-60	M10-1.50 x 50	M961-12030-60	M12-1.25 x 30	M934-24-80	M24-3.00	Standard		
M931-10055-60	M10-1.50 x 55	M933-12030-60	M12-1.75 x 30	M982-24-80	M24-3.00	Elastic Stop		
M931-10060-60	M10-1.50 x 60	M933-12035-60	M12-1.75 x 35	M934-30-80	M30-3.50	Standard		
M931-10065-60	M10-1.50 x 65	M961-12040-82	M12-1.25 x 40*	<b>Washers</b>				
M931-10070-60	M10-1.50 x 70	M933-12040-60	M12-1.75 x 40	<b>Part No.</b>	<b>ID</b>	<b>OD</b>	<b>Bolt/ Thick. Screw</b>	
M931-10080-60	M10-1.50 x 80	M933-12040-82	M12-1.75 x 40*	M125A-03-80	3.2	7.0	0.5 M3	
M931-10090-60	M10-1.50 x 90	M961-14025-60	M14-1.50 x 25	M125A-04-80	4.3	9.0	0.8 M4	
M931-10090-82	M10-1.50 x 90*	M933-14025-60	M14-2.00 x 25	M125A-05-80	5.3	10.0	1.0 M5	
M931-10100-60	M10-1.50 x 100	M961-16025-60	M16-1.50 x 25	M125A-06-80	6.4	12.0	1.6 M6	
M931-10110-60	M10-1.50 x 110	M933-16025-60	M16-2.00 x 25	M125A-08-80	8.4	16.0	1.6 M8	
M931-10120-60	M10-1.50 x 120	M961-16030-82	M16-1.50 x 30*	M125A-10-80	10.5	20.0	2.0 M10	
M931-10130-60	M10-1.50 x 130	M933-16030-82	M16-2.00 x 30*	M125A-12-80	13.0	24.0	2.5 M12	
M931-10140-60	M10-1.50 x 140	M933-16035-60	M16-2.00 x 35	M125A-14-80	15.0	28.0	2.5 M14	
M931-10180-60	M10-1.50 x 180	M961-16040-60	M16-1.50 x 40	M125A-16-80	17.0	30.0	3.0 M16	
M931-12045-60	M12-1.75 x 45	M933-16040-60	M16-2.00 x 40	M125A-18-80	19.0	34.0	3.0 M18	
M960-12050-60	M12-1.25 x 50	M933-16050-60	M16-2.00 x 50	M125A-20-80	21.0	37.0	3.0 M20	
M960-12050-82	M12-1.25 x 50*	M933-16050-82	M16-2.00 x 50*	M125A-24-80	25.0	44.0	4.0 M24	
M931-12050-60	M12-1.75 x 50	M933-16060-60	M16-2.00 x 60					
M931-12055-60	M12-1.75 x 55	M933-18035-60	M18-2.50 x 35					
M931-12060-60	M12-1.75 x 60	M933-18050-60	M18-2.50 x 50					
M931-12065-60	M12-1.75 x 65	M933-18060-60	M18-2.50 x 60					
M931-12075-60	M12-1.75 x 75	M933-20050-60	M20-2.50 x 50					
M931-12080-60	M12-1.75 x 80	M933-20055-60	M20-2.50 x 55					
M931-12090-60	M12-1.75 x 90	<b>Pan Head Machine Screws</b>						
M931-12100-60	M12-1.75 x 100	M7985A-03010-20	M3-0.50 x 10	* This metric hex bolt's hardness is grade 10.9.				
M931-12110-60	M12-1.75 x 110	M7985A-03012-20	M3-0.50 x 12	† This metric hex nut's hardness is grade 8.				
M960-16090-60	M16-1.50 x 90	M7985A-04010-20	M4-0.70 x 10					
M931-16090-60	M16-2.00 x 90	M7985A-04020-20	M4-0.70 x 20					
M931-16100-60	M16-2.00 x 100	M7985A-04100-20	M4-0.70 x 100					
M931-20065-60	M20-2.50 x 65	M7985A-05010-20	M5-0.80 x 10					
M931-20120-60	M20-2.50 x 120	M7985A-05012-20	M5-0.80 x 12					
M931-20160-60	M20-2.50 x 160	M7985A-05016-20	M5-0.80 x 16					
M931-22090-60	M22-2.50 x 90	M7985A-05100-20	M5-0.80 x 100					
M931-22120-60	M22-2.50 x 120	M7985A-06100-20	M6-1.00 x 100					
M931-22160-60	M22-2.50 x 160	<b>Flat Head Machine Screws</b>						
M931-24090-60	M24-3.00 x 90	M965A-04012-SS	M4-0.70 x 12					
M931-24120-60	M24-3.00 x 120	M965A-05012-SS	M5-0.80 x 12					
M931-24160-60	M24-3.00 x 160	M965A-05016-20	M5-0.80 x 16					

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