

Service Parts

Commercial/Recreational Mobile Generator Sets



Models:

6EFOR/EFORZ

7.5EOR/EORZ

9EFOR/EFORZ

10EOR/EORZ

KOHLER[®]
POWER SYSTEMS

ISO 9001
KOHLER
POWER SYSTEMS
NATIONALLY REGISTERED

TP-6072 4/02a

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Introduction

This manual lists service replacement parts for 7.5 to 10 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.

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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.

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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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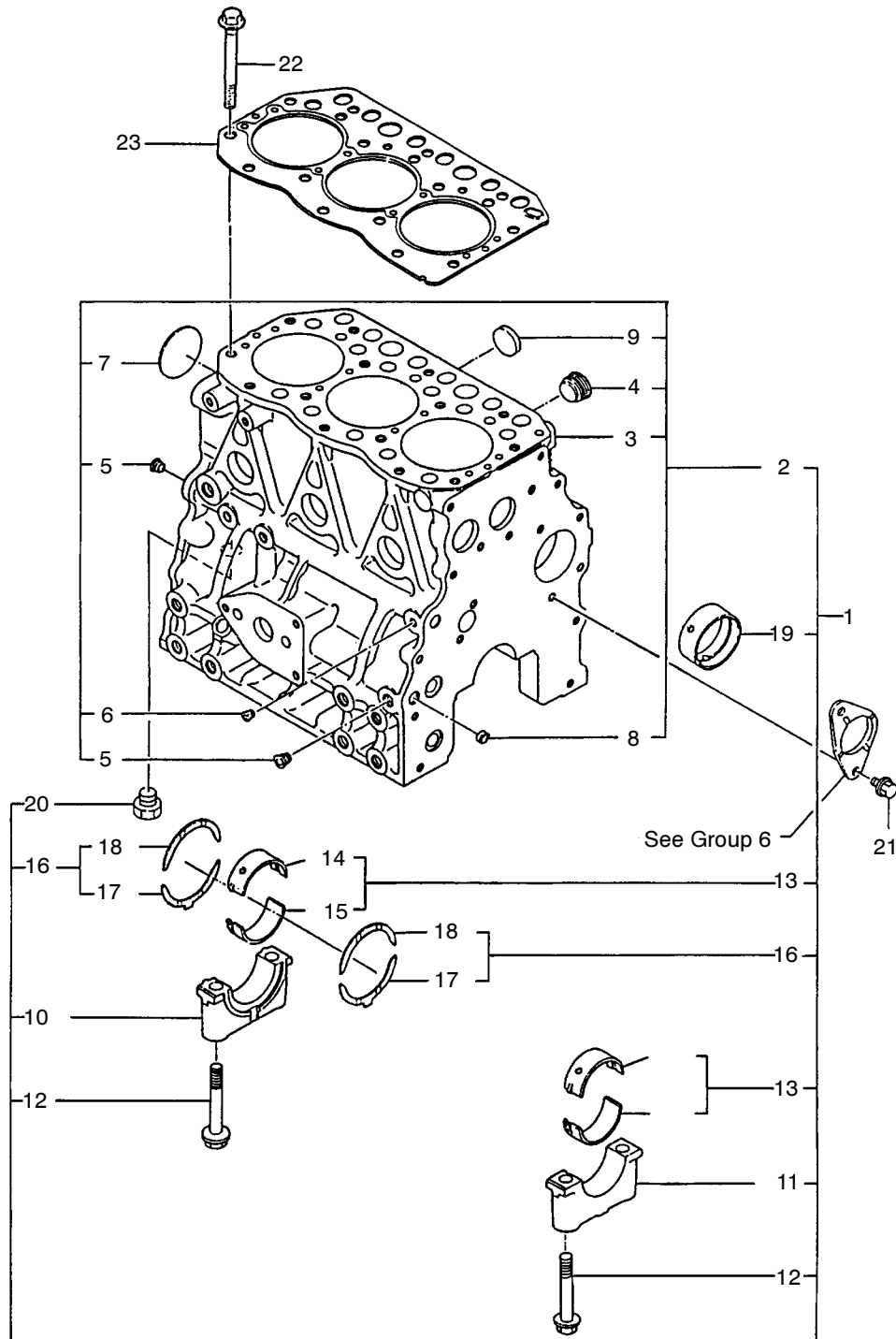
Specification Number Index

Group Title	<i>Cylinder Block</i>	<i>Gear Housing</i>	<i>Flywheel Housing & Oil Sump</i>	<i>Cylinder Head</i>	<i>Intake Manifold</i>	<i>Camshaft</i>	<i>Crankshaft, Flywheel, & Pistons</i>	<i>Lube Oil System</i>	<i>Cooling Water System</i>	<i>Fuel Injection Pump</i>	<i>Fuel Injection Lines</i>	<i>Fuel Line & Filter</i>	<i>Governor</i>
Group No.	1	2	3	4	5	6	7	8	9	10	11	12	13
Spec No.	Variation Number												
7.5EOR/ 6EFOR													
135334	1	1	1	1	1	1	1	1	1	1	1	1	1
135336	1	1	1	1	1	1	1	1	1	1	1	1	1
GM21378-SA1	1	1	1	1	1	1	1	1	1	1	1	1	1
7.5EORZ/ 6EFORZ													
135337	1	1	1	1	1	1	1	1	1	1	1	1	1
10EOR/ 9EFOR													
135338	2	2	2	2	2	2	2	2	2	2	2	2	2
135340	2	2	2	2	2	2	2	2	2	2	2	2	2
10EORZ/ 9EFORZ													
135341	2	2	2	2	2	2	2	2	2	2	2	2	2

Specification Number Index

Group Title		<i>Starting Motor</i>	<i>Gasket Set</i>	<i>Air Intake</i>	<i>Fuel System</i>	<i>Cooling System</i>	<i>Engine and Exhaust</i>	<i>Nameplate and Decals</i>	<i>Skid and Plant Mounting</i>	<i>Generator and Mounting</i>	<i>Controller and Mounting</i>	<i>Literature</i>
Group No.	14	15	101	103	104	105	107	109	201	301	701	
Spec No.	Variation Number											
7.5EOR/ 6EFOR												
135334	1	1	19	19	25	34	40	25	51	38	15	
135336	1	1	19	19	26	34	41	25	51	38	15	
GM21378-SA1	1	1	GR1	19	26	GR2 GR3	47	25	51	38	22	
7.5EORZ/ 6EFORZ												
135337	1	1	19	19	26	34	41	25	52	38	15	
10EOR/ 9EFOR												
135338	2	2	20	20	27	35	40	26	53	39	16	
135340	2	2	20	20	28	35	41	26	53	39	16	
10EORZ/ 9EFORZ												
135341	2	2	20	20	28	35	41	26	54	39	16	

Group 1: Cylinder Block



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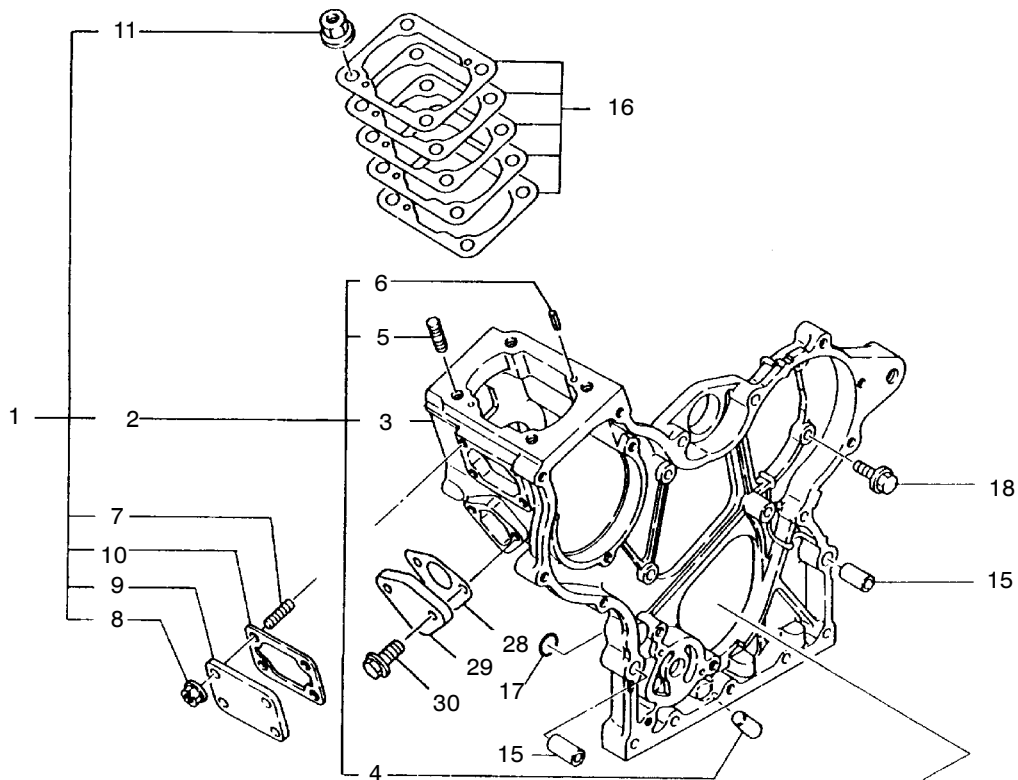
Group 1: Cylinder Block

Item	Part Number	Description	Quantity	
			Variation Number	
			1	2
1	363225	Block assembly, cylinder (includes items 2-20)	1	
1	GM13811	Block assembly, cylinder (includes items 2-20)		1
2	X	Block assembly, cylinder	1	1
3	X	Block, cylinder	1	1
4	252566	Plug		1
5	363018	Plug	1	
5	252771	Plug, PT 1/4		2
6	256515	Plug, PT 1/8, screw	1	
6	GM13812	Plug, PT 1/8, screw	1	1
7	363214	Plug 45	1	
7	225827	Plug 50		1
8	252728	Plug 12	2	2
9	252731	Plug 30	6	
9	225924	Plug 30		6
10	X	Bearing cap	1	1
11	X	Bearing cap	3	3
12	225703	Bolt, bearing cap	8	8
13	363218	Main bearing	4	
13	225832	Main bearing		4
13	363219	Main bearing undersize 0.25	4	
13	225709	Main bearing undersize 0.25		4
14	X	Main bearing	4	4
15	X	Main bearing	4	4
16	363220	Bearing, thrust	2	
16	225833	Bearing, thrust		2
16	225710	Bearing, thrust 0.25 oversize		2
17	X	Bearing, thrust	2	2
18	X	Bearing, thrust	2	2
19	363060	Bush, camshaft	1	
19	252933	Bush, camshaft		1
20	252771	Plug, PT 1/4	1	1
21	225818	Bolt, M8 x 14 plated	2	2
22	363025	Bolt, cylinder head	14	
22	225705	Bolt, cylinder head		14
23	363052	Gasket, cylinder head	1	
23	GM13813	Gasket, cylinder head		1

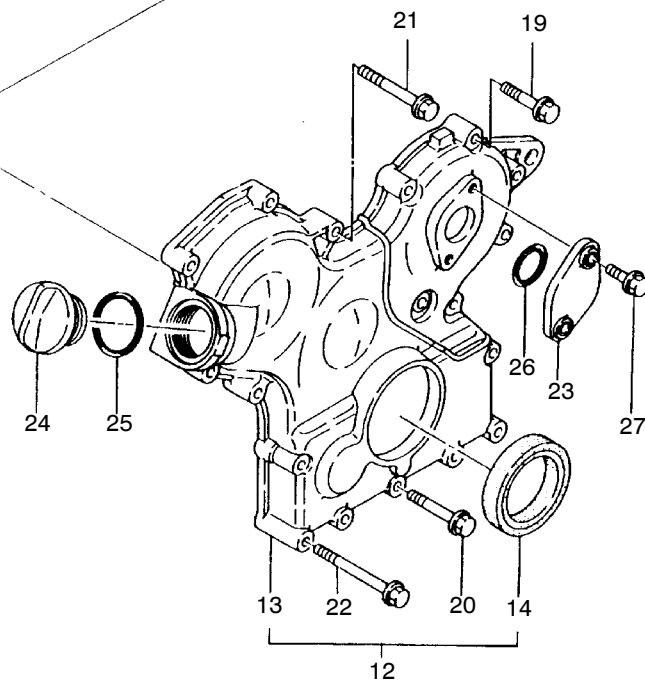
X Item not sold separately

Group 2: Gear Housing

Variation 1



Item 31 not shown.



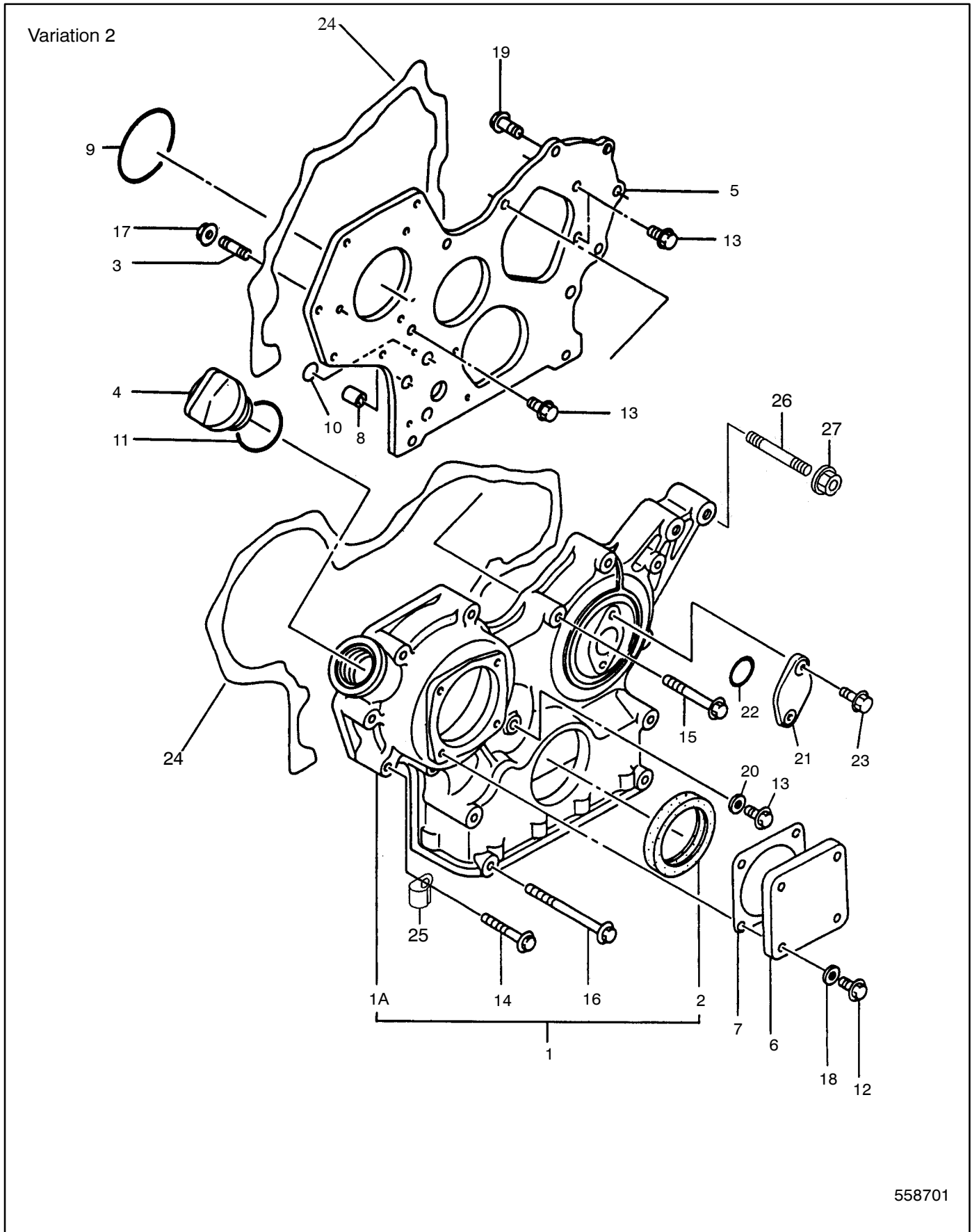
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Group 2: Gear Housing

Item	Part Number	Description	Quantity
			Variation Number 1
1	363024	Housing assembly, gear	1
2	363023	Housing, gear	1
3	X	Housing	1
4	363066	Plug	1
5	252409	Stud, M8 x 22	4
6	252668	Spring pin	2
7	229670	Stud, M6 x 12	4
8	250989	Nut, M6	4
9	229668	Cover	1
10	229669	Gasket	1
11	225802	Nut w/washer	4
12	363024	Cover assembly (includes items 13 and 14)	1
13	X	Cover, gear housing	1
14	229634	Seal, oil	1
15	229674	Pipe, knock	2
16	363053	Shim set	1
17	250801	O-ring	2
18	252693	Bolt, M6 x 16 plated	7
19	229763	Bolt, M6 x 30 plated	8
20	363207	Bolt, M6 x 60 plated	3
21	363207	Bolt, M6 x 60 plated	1
22	363208	Bolt, M6 x 80 plated	6
23	252750	Cover, blind	1
24	250837	Cap, lub. oil supply	1
25	252684	O-ring	1
26	256796	O-ring	1
27	229760	Bolt, M6 x 18 plated	2
28	252061	Gasket	1
29	229711	Cover, blind	1
30	252693	Bolt, M6 x 16 plated	2
31	252998	Gasket, liquid	1

X Item not sold separately

Group 2: Gear Housing



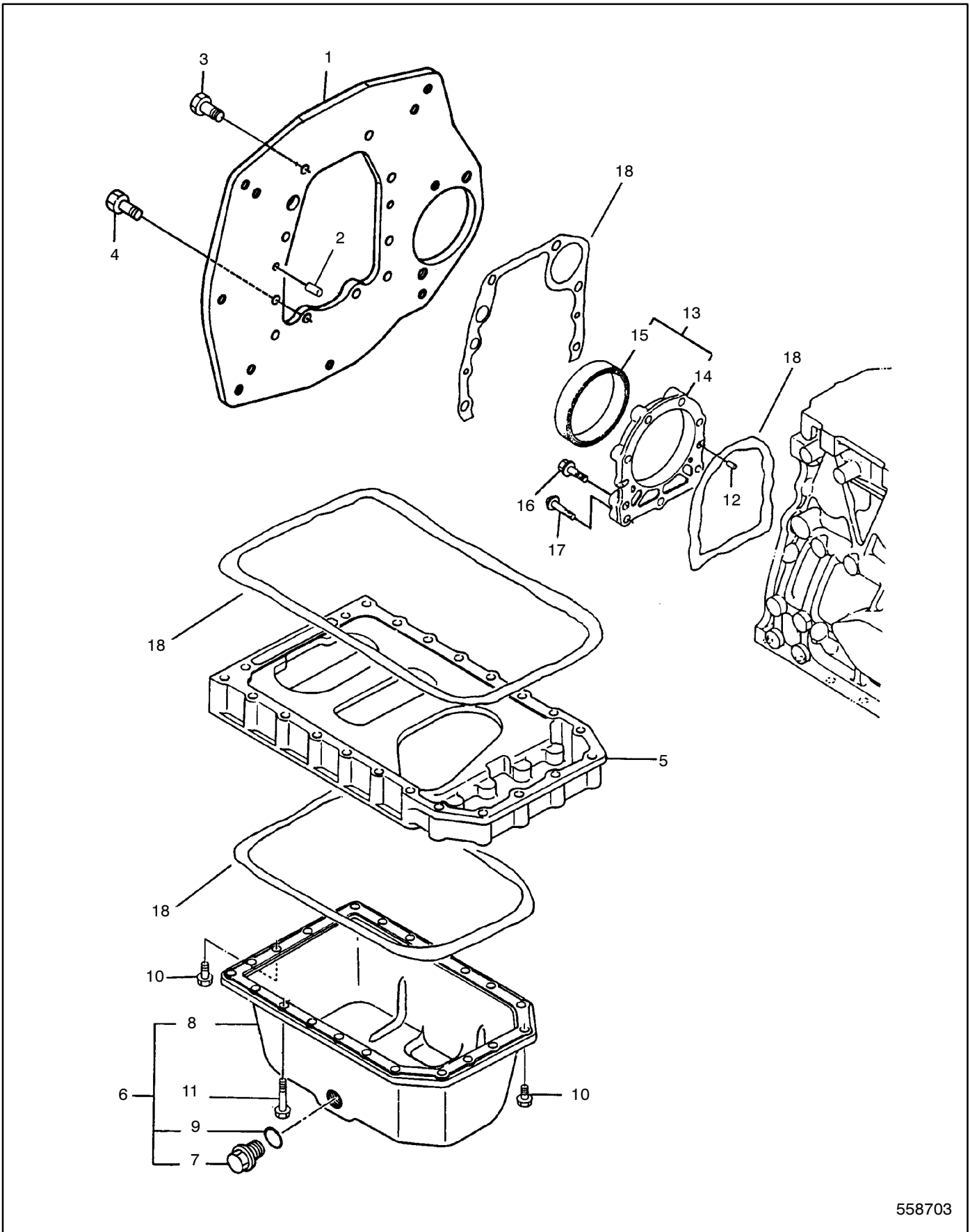
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Group 2: Gear Housing

Item	Part Number	Description	Quantity
			Variation Number
			2
1	229799	Housing assembly, gear	1
1A	X	Housing, gear	1
2	229634	Seal, oil	1
2	252931	Seal, oil	1
3	252409	Stud, M8 x 22	3
4	250837	Cap, lube oil supply	1
5	252861	Flange, gear housing	1
6	256531	Cover	1
7	252085	Gasket	1
8	252932	Pipe, knock	2
9	252764	O-ring, fuel injection pump	1
10	250981	O-ring	2
11	252684	O-ring	1
12	252695	Bolt, M8 x 12 plated	4
13	252696	Bolt, M8 x 16 plated	4
14	252703	Bolt, M8 x 45 plated	6
15	256798	Bolt, M8 x 55 plated	3
16	256799	Bolt, M8 x 85 plated	4
17	252723	Nut, M8	3
18	252734	Seal, washer 8	4
19	252697	Bolt, M8 x 20 plated	2
20	252734	Seal, washer 8	1
21	252750	Cover, blind	1
22	256796	O-ring	1
23	252693	Bolt, M6 x 16 plated	2
24	252998	Liquid gasket	AR
25	252808	Retainer	1
26	252756	Stud	1
26	GM13815	Stud	1
27	229772	Nut, M10	1

X Item not sold separately

Group 3: Flywheel Housing & Oil Sump



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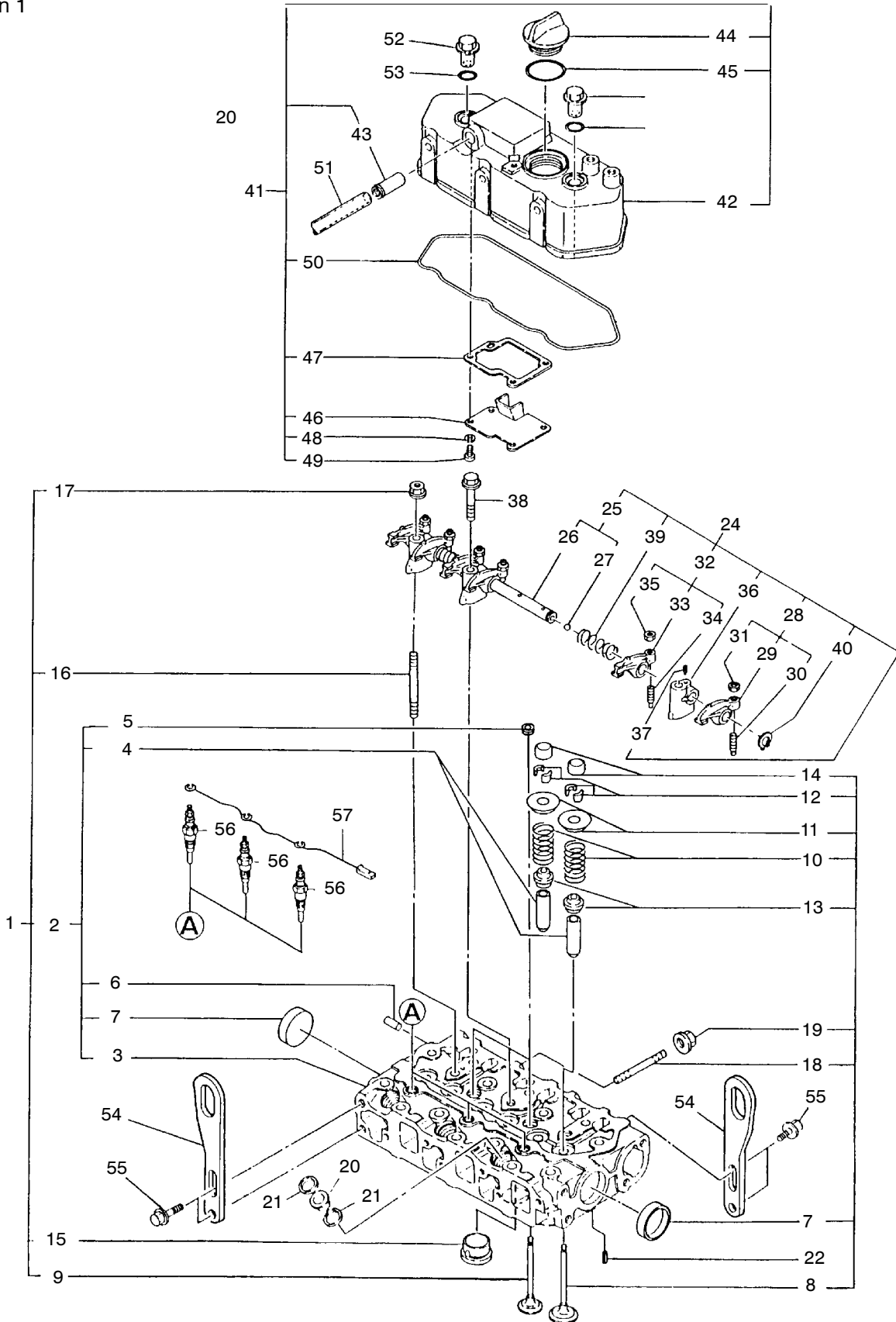
Group 3: Flywheel Housing & Oil Sump

Item	Part Number	Description	Quantity	
			Variation Number	
			1	2
1	229288	Back plate	1	
1	229114	Back plate		1
2	256750	Parallel pin, 8 x 16	2	2
3	229505	Bolt, M10 x 20	6	6
4	252714	Bolt, M10 x 25	3	4
5	363019	Spacer, oil sump	1	
5	225706	Spacer, oil sump		1
6	363227	Sump assembly, lube oil (includes items 7-9)	1	
6	229694	Sump assembly, lube oil (includes items 7-9)		1
7	225386	Plug 22	1	1
8	X	Refer to item 6	1	1
9	225425	Seal, washer 22S	1	1
10	225816	Bolt, M6 x 12	3	
10	252696	Bolt, M8 x 16 plated		6
11	229764	Bolt, M6 x 45 plated	20	
11	252703	Bolt, M8 x 45 plated		22
12	363026	Parallel pin	2	
12	256750	Parallel pin, 8 x 16		2
13	229671	Case assembly, oil seal (includes items 14 and 15)	1	
13	225755	Case assembly, oil seal (includes items 14 and 15)		1
14	229672	Case, oil seal	1	
14	229702	Case, oil seal		1
15	250836	Seal, oil	1	
15	225707	Seal, oil		1
16	229761	Bolt, M6 x 22 plated	10	
16	363430	Bolt, M8 x 30 plated		6
17	252701	Bolt, M8 x 35 plated		3
18	252998	Liquid gasket	AR	AR

X Item not sold separately

Group 4: Cylinder Head

Variation 1



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Group 4: Cylinder Head

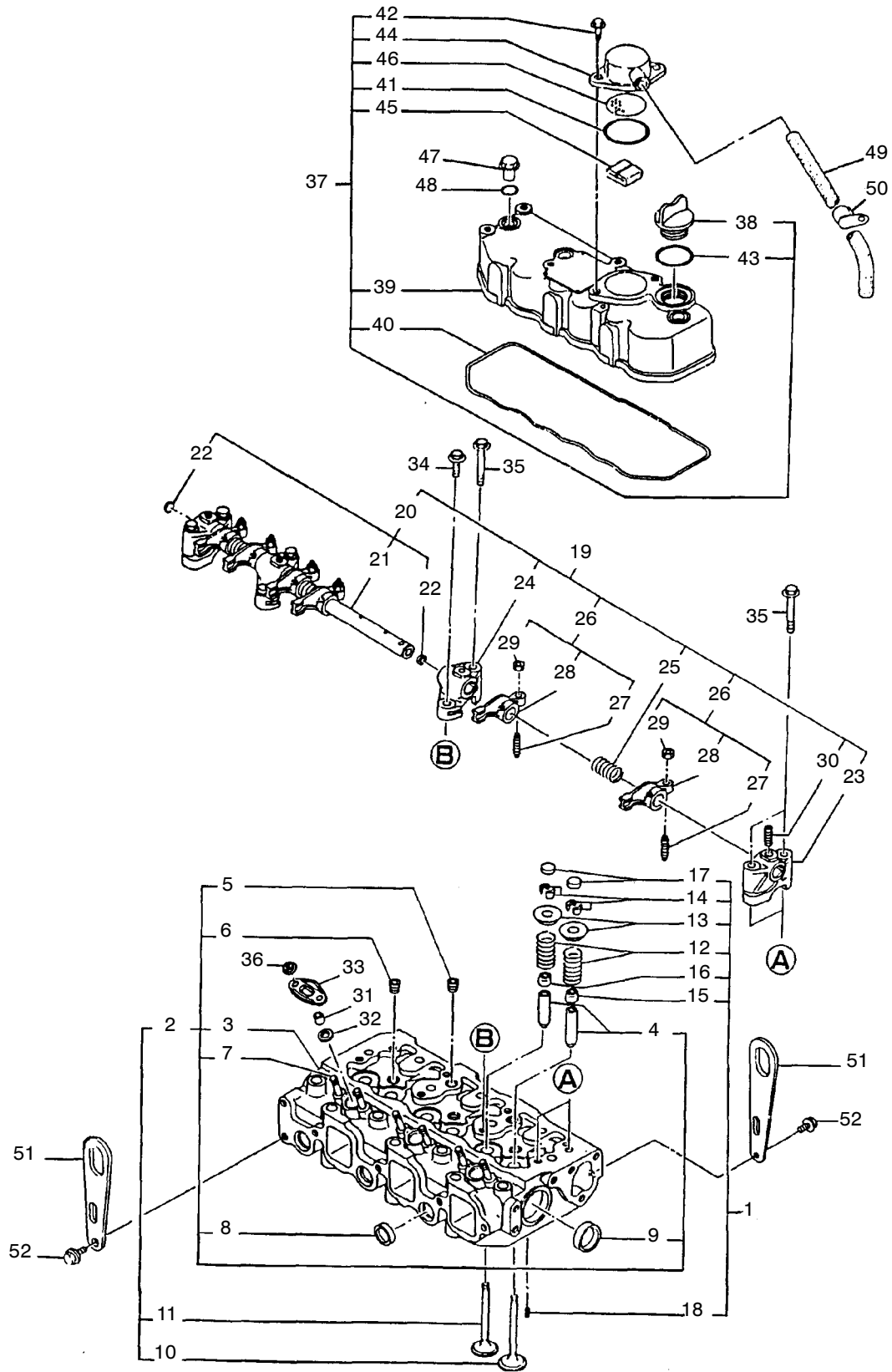
Item	Part Number	Description	Quantity
			Variation Number
			1
1	363226	Head assembly, cylinder (includes items 2-18)	1
2	X	Head assembly, cylinder (includes items 3-9)	1
3	X	Head, cylinder	1
4	250835	Guide, valve	6
5	250974	Plug, Pt 1/4	2
6	229777	Plug, 5 x 8	1
7	252732	Plug 40	2
8	363054	Valve, intake	3
9	363029	Valve, exhaust	3
10	225713	Spring, valve	6
11	363031	Retainer, spring	6
12	225700	Cotter	6
13	250844	Seal, valve stem (exhaust)	3
14	250999	Cap, valve	6
15	X	Plug, hot	3
16	229637	Stud	2
17	252723	Nut, M8	2
18		Not Used	2
19		Not Used	2
20	229623	Protector, nozzle	3
21	229624	Gasket, nozzle	6
22	250963	Spring pin, 6 x 12	2
23		See item 4	1
24	363074	Support assembly, rocker (includes items 20-30)	1
25	363032	Shaft, rocker arm (includes items 21 and 22)	1
26	X	Shaft	1
27	X	Ball	2
28	363229	Arm assembly, rocker (includes items 27-29)	6
29	X	Arm, intake valve	3
30	229844	Screw, valve	6
31	225825	Nut, M6	6
32	363022	Arm assembly, rocker (includes items 33-35)	6
33	X	Arm, intake valve	3
34	229844	Screw, valve	6
35	225825	Nut, M6	6
36	363033	Support, rocker arm	3
37	363213	Screw, M5 x 16	1
38	252703	Bolt, M8 x 45 plated	1
39	363034	Spring	2
40	252345	Circlip	2
41	363065	Bonnet assembly (includes items 38-46)	1
42	X	Bonnet	1
43	225380	Joint	1
44	250837	Cap, lube oil supply	1
45		Not Used	1
46	363027	Plate, shelter	1
47	363028	Gasket	1
48		Not Used	4
49	363201	Screw, 5 x 10, tapping	4
50	363035	Gasket, bonnet	1
51	See Group 105	Hose, breather	1
52	252470	Knob	3
53	250801	O-ring	3
54	363015	Lifter, engine	1
55	225818	Bolt, M8 x 14 plated	4
56	252940	Plug, glow	3
57	229663	Connector, glow plug	1

225766 Seal (intake)

X Item not sold separately

Group 4: Cylinder Head

Variation 2



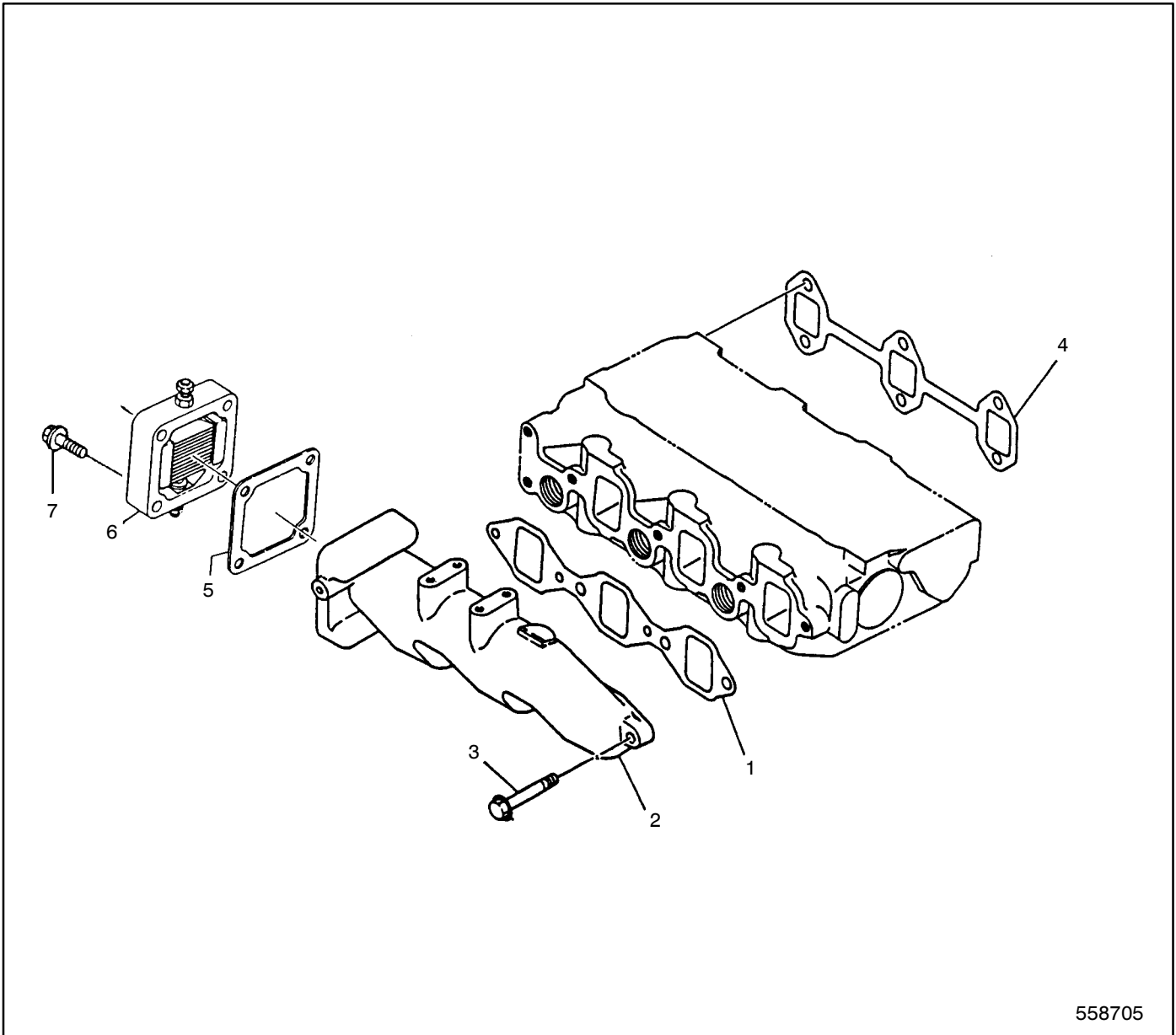
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Group 4: Cylinder Head

Item	Part Number	Description	Quantity
			Variation Number
			2
1	225392	Head assembly, cylinder (includes items 2-18)	1
2	X	Head assembly, cylinder (includes items 3-9)	1
3	X	Head, cylinder	1
4	250835	Guide, valve	6
5	256825	Plug, Pt 1/4	2
6	250975	Plug, Pt 3/8, screw	3
7	225822	Stud, M6 x 30 plated	6
8	252729	Plug 22	3
9	252732	Plug 40	2
10	225711	Valve, intake	3
11	229695	Valve, exhaust	3
12	225713	Spring, valve	6
13	250882	Retainer, spring	6
14	250806	Cotter 7	6
15	225766	Seal, valve stem	3
16	250844	Seal, valve stem	3
17	250999	Cap, valve	6
18	250963	Spring pin, 6 x 12	2
19	229703	Support assembly, rocker (includes items 20-30)	1
20	225714	Shaft, rocker arm (includes items 21 and 22)	1
21	X	Shaft	1
22	229511	Plug 10	2
23	252843	Support, rocker arm	2
24	252844	Support, rocker arm	2
25	252815	Spring	3
26	229803	Arm assembly, rocker (includes items 27-29)	6
27	229844	Screw, valve	6
28	X	Arm, rocker	6
29	252817	Nut, M8	6
30	252722	Stud, M8 x 18 plated	3
31	252743	Protector, nozzle	3
32	252744	Seat, nozzle	3
33	252745	Retainer	3
34	252699	Bolt, M8 x 25 plated	2
35	252704	Bolt, M8 x 50 plated	6
36	250989	Nut, M6	6
37	225439	Bonnet assembly (includes items 38-46)	1
38	250837	Cap, lube oil supply	1
39	229696	Bonnet	1
40	225758	Gasket, bonnet	1
41	225812	O-ring	1
42	252696	Bolt, M8 x 16 plated	2
43	252684	O-ring	1
44	225773	Cover, breather	1
45	252805	Baffle, breather	1
46	252806	Plate, shelter	1
47	252470	Knob	3
48	250801	O-ring	3
49	229414	Pipe, breather	1
50	229425	Clamp	1
51	256532	Lifter, engine	1
52	225818	Bolt, M8 x 14 plated	4

X Item not sold separately

Group 5: Intake Manifold

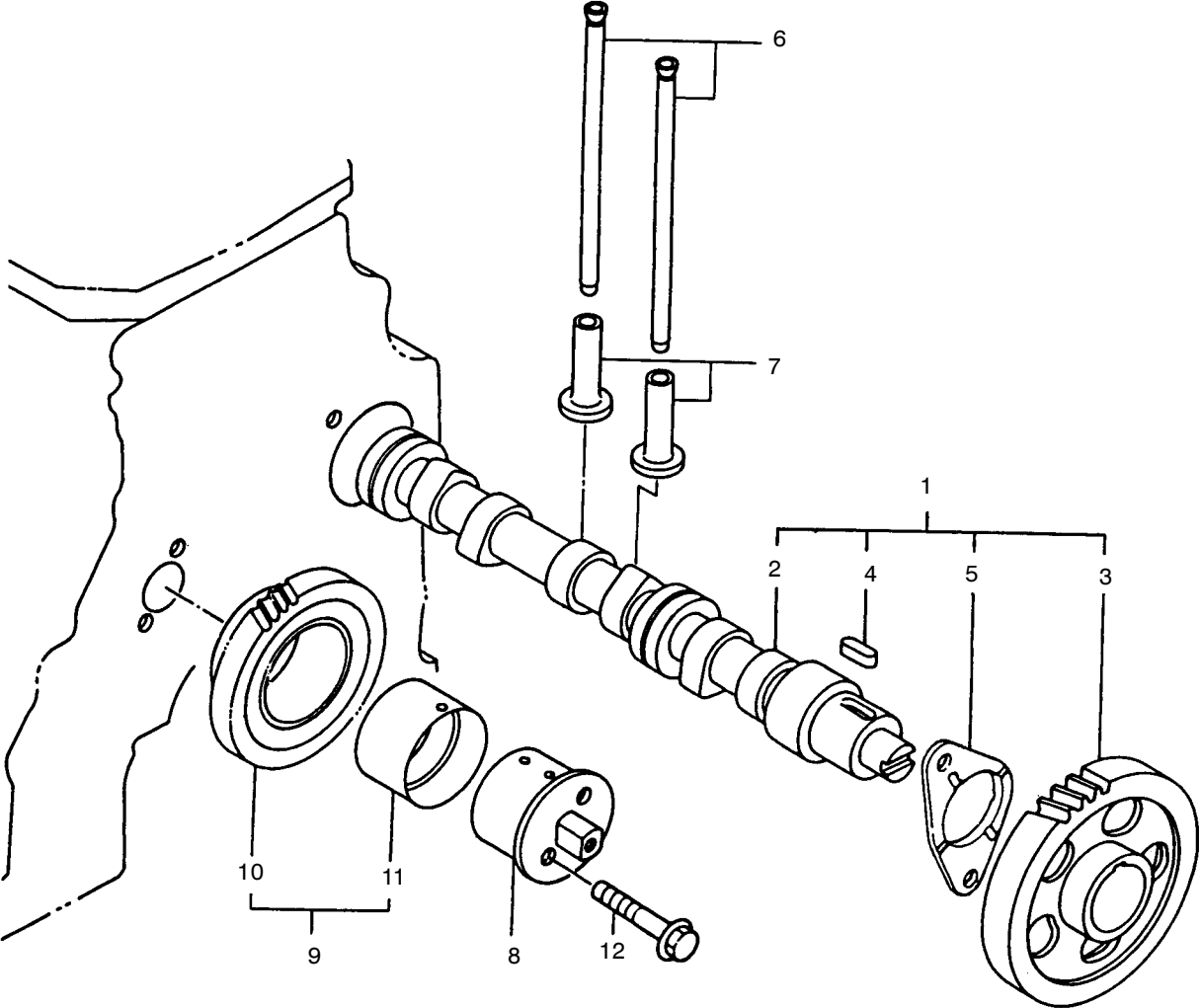


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Item	Part Number	Description	Quantity	
			Variation Number 1	Variation Number 2
1	363036	Gasket	1	
1	225716	Gasket		1
2	363063	Manifold, intake	1	
2	225393	Manifold, intake		1
3	225817	Bolt, M6 x 20	6	
3	252699	Bolt, M8 x 25 plated		3
4	363037	Gasket, exhaust manifold	1	
4	225717	Gasket, exhaust manifold		1
5	229719	Gasket, air heater		1
6	256760	Air heater		1
7	252701	Bolt, M8 x 35 plated		1

Group 6: Camshaft

Variation 1

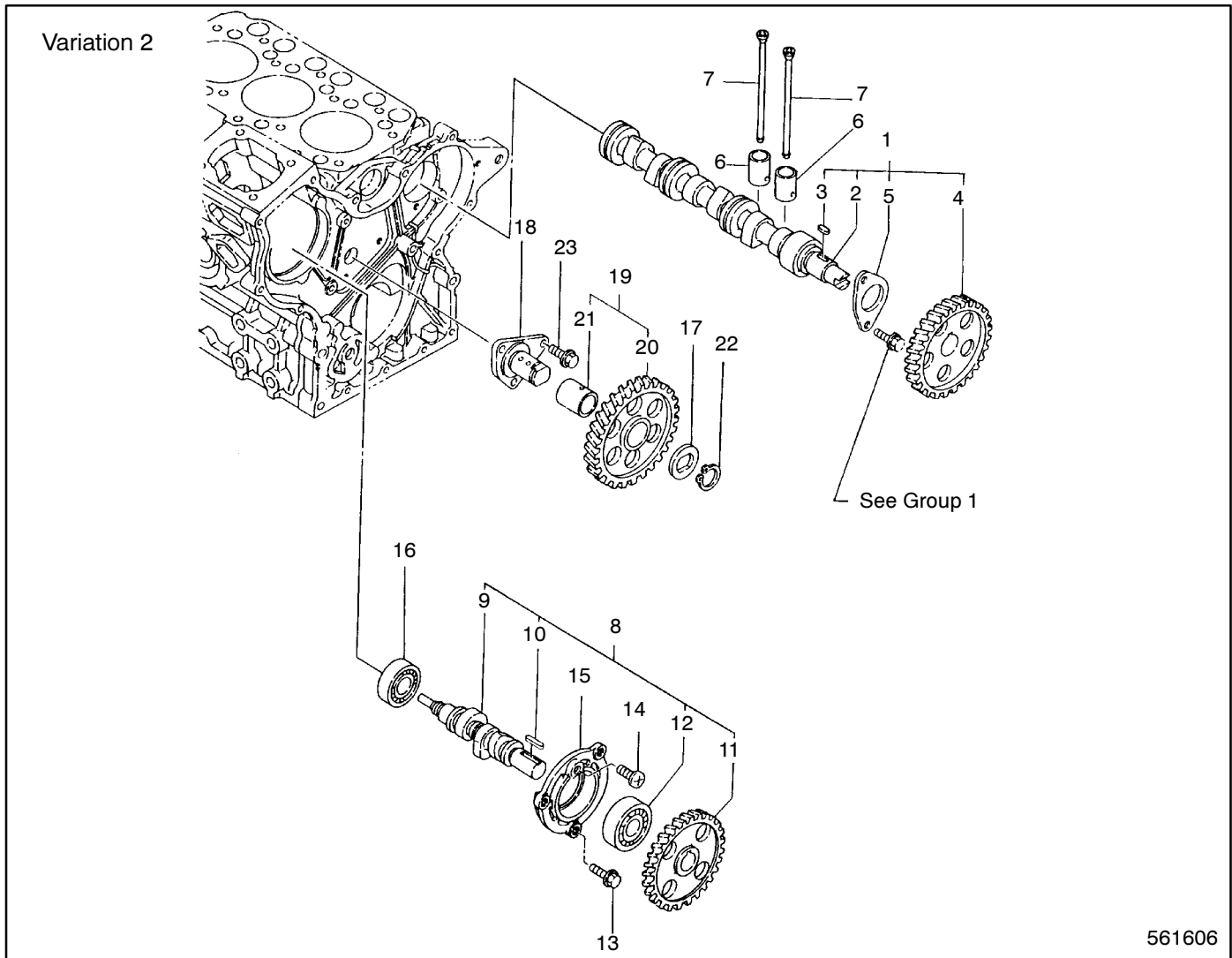


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Item	Part Number	Description	Quantity
			Variation Number
1	229697	Camshaft assembly (includes item 2-5)	1
2	X	Camshaft	1
3	256587	Gear, camshaft	1
4	252669	Key	1
5	252804	Bearing, thrust	1
6	225718	Rod, push	6
7	252819	Tappet	6
8	252782	Shaft, idle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

X Item not sold separately

Group 6: Camshaft



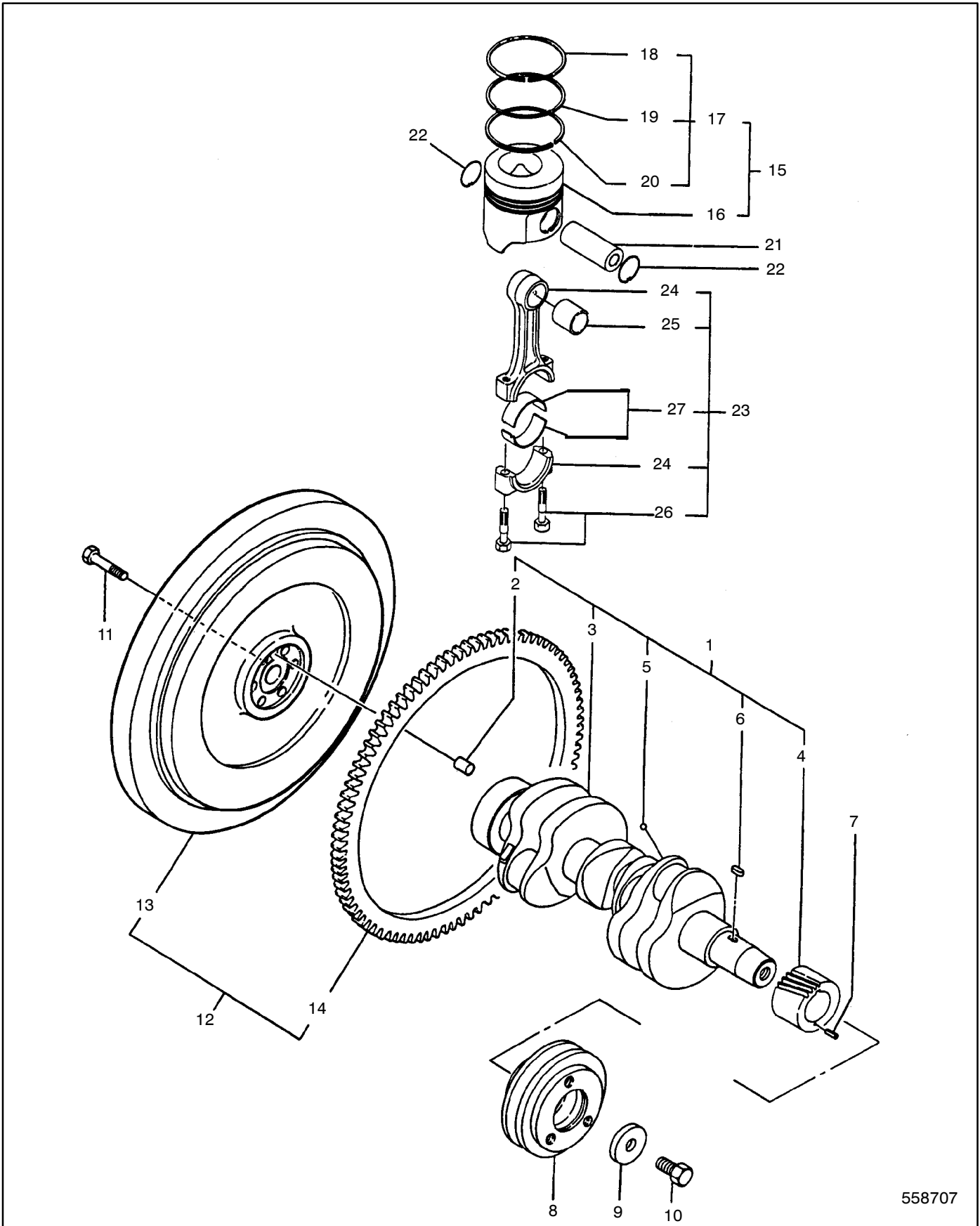
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Item	Part Number	Description	Quantity
			Variation Number
1	363061	Camshaft assembly (includes item 2-5)	1
2	X	Camshaft	1
3	229748	Key	1
4	363038	Gear, camshaft	1
5	229636	Bearing, thrust	1
6	363039	Tappet	6
7	363040	Rod, push	6
8	363228	Camshaft assembly, fuel injection pump (includes items 9-12)	1
9	X	Camshaft, fuel injection pump	1
10	229748	Key	1
11	X	Gear, fuel injection pump	1
12	229755	Ball bearing	1
13	252693	Bolt, M6 x 16	3
14	229776	Screw, M8 x 10	1
15	229673	Bearing	1
16	229754	Ball bearing	1
17	229675	Retainer, idle gear	1
18	229676	Shaft, idle gear	1
19	363042	Gear with bushing, idle	1
20	X	Gear, idle	1
21	229640	Bushing, idle gear	1
22	229742	Circlip	1
23	225819	Bolt, M6 x 12 plated	3

X Item not sold separately

Notes

Group 7: Crankshaft, Flywheel, & Pistons



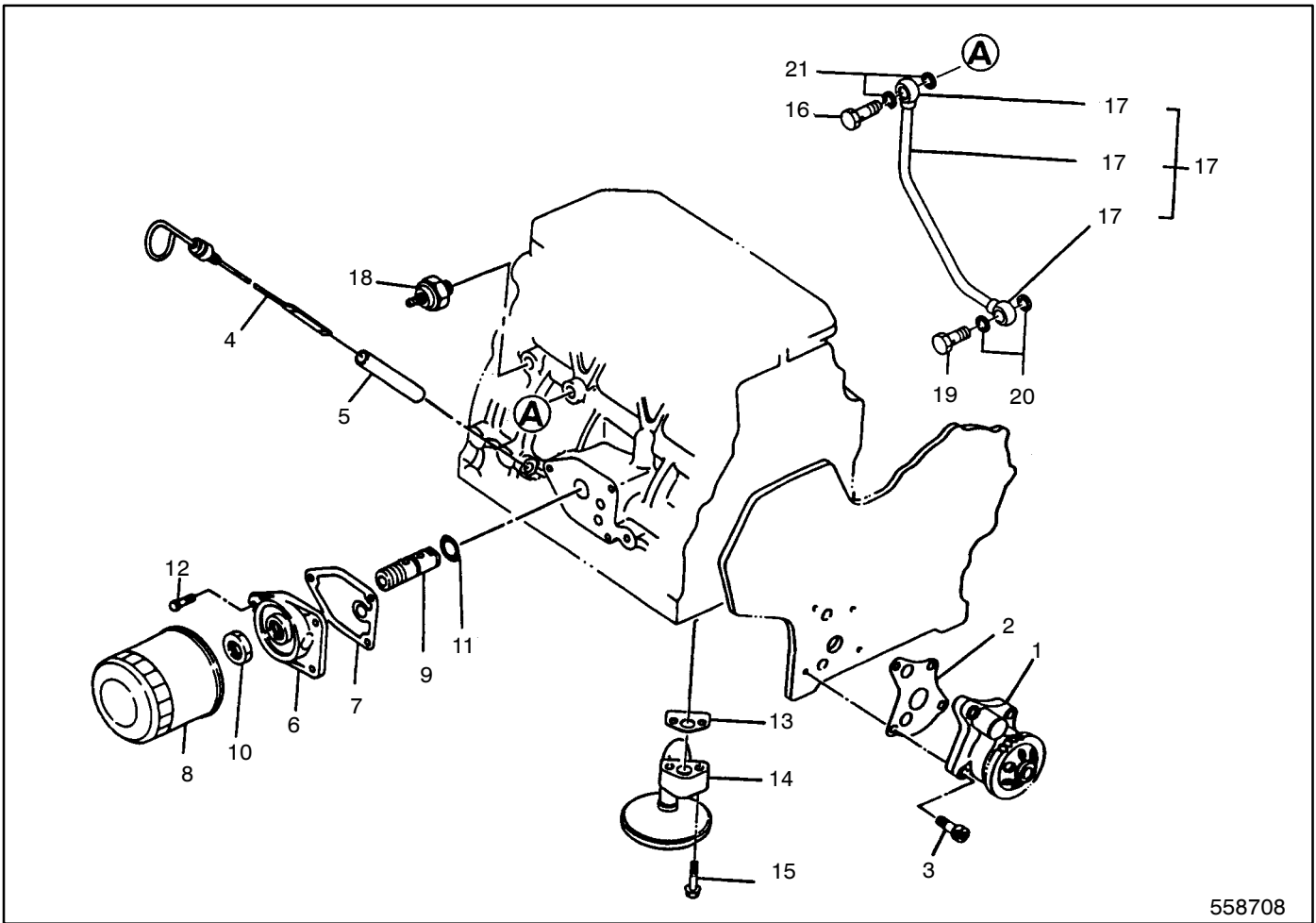
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Group 7: Crankshaft, Flywheel, & Pistons

Item	Part Number	Description	Quantity	
			Variation Number	
			1	2
1	225394	Crankshaft assembly (includes items 2-6)		1
1	363055	Crankshaft assembly (includes items 2-6)	1	
2	256750	Parallel pin, 8 x 16	1	1
3	X	Crankshaft	1	1
4	252821	Gear, crankshaft		1
4	363062	Gear, crankshaft	1	
5	X	Ball, steel	3	3
6	252669	Key		1
6	229748	Key	1	
7	252668	Spring pin		1
8	252918	V-pulley		1
8	363021	V-pulley	1	
9	252937	Washer		1
9	229639	Washer	1	
10	252763	Bolt, V-pulley		1
10	229748	Bolt, V-pulley	1	
11	252401	Bolt, flywheel		6
11	229638	Bolt, flywheel	5	6
12	229115	Flywheel assembly (includes items 13 and 14)		1
12	229620	Flywheel assembly (includes items 13 and 14)	1	
13	X	Flywheel		1
14	252774	Gear, ring		1
14	229705	Gear, ring	1	
15	GM13816	Piston w/rings (includes items 16 and 17)		3
15	363056	Piston w/rings (includes items 16 and 17)	3	
15	GM13818	Piston w/rings (oversized 0.25) (includes items 16 and 17)		3
15	363058	Piston w/rings (oversized 0.25) (includes items 16 and 17)	3	
16	X	Piston	3	3
17	GM13817	Ring set (includes items 18-20)		3
17	363057	Ring set (includes items 18-20)	3	
17	GM13819	Ring set (oversized 0.25) (includes items 18-20)		3
17	363059	Ring set (oversized 0.25) (includes items 18-20)	3	
18	X	Ring, top	3	3
19	X	Ring, second	3	3
20	X	Ring, oil	3	3
21	225395	Pin, piston		3
21	363003	Pin, piston	3	
22	229738	Circlip		6
22	363199	Circlip	6	
23	225838	Rod assembly, connecting (includes items 24-27)		3
23	363221	Rod assembly, connecting (includes items 24-27)	3	
24	X	Rod, connecting	3	3
25	225726	Bush, piston pin		3
25	363041	Bush, piston pin	3	
26	225723	Bolt, connecting rod		6
26	250820	Bolt, connecting rod	6	
27	225724	Bearing, crankpin		3
27	363222	Bearing, crankpin	3	
27	225725	Bearing, pin (undersized 0.25)		3
27	363223	Bearing, pin (undersized 0.25)	3	

X Item not sold separately

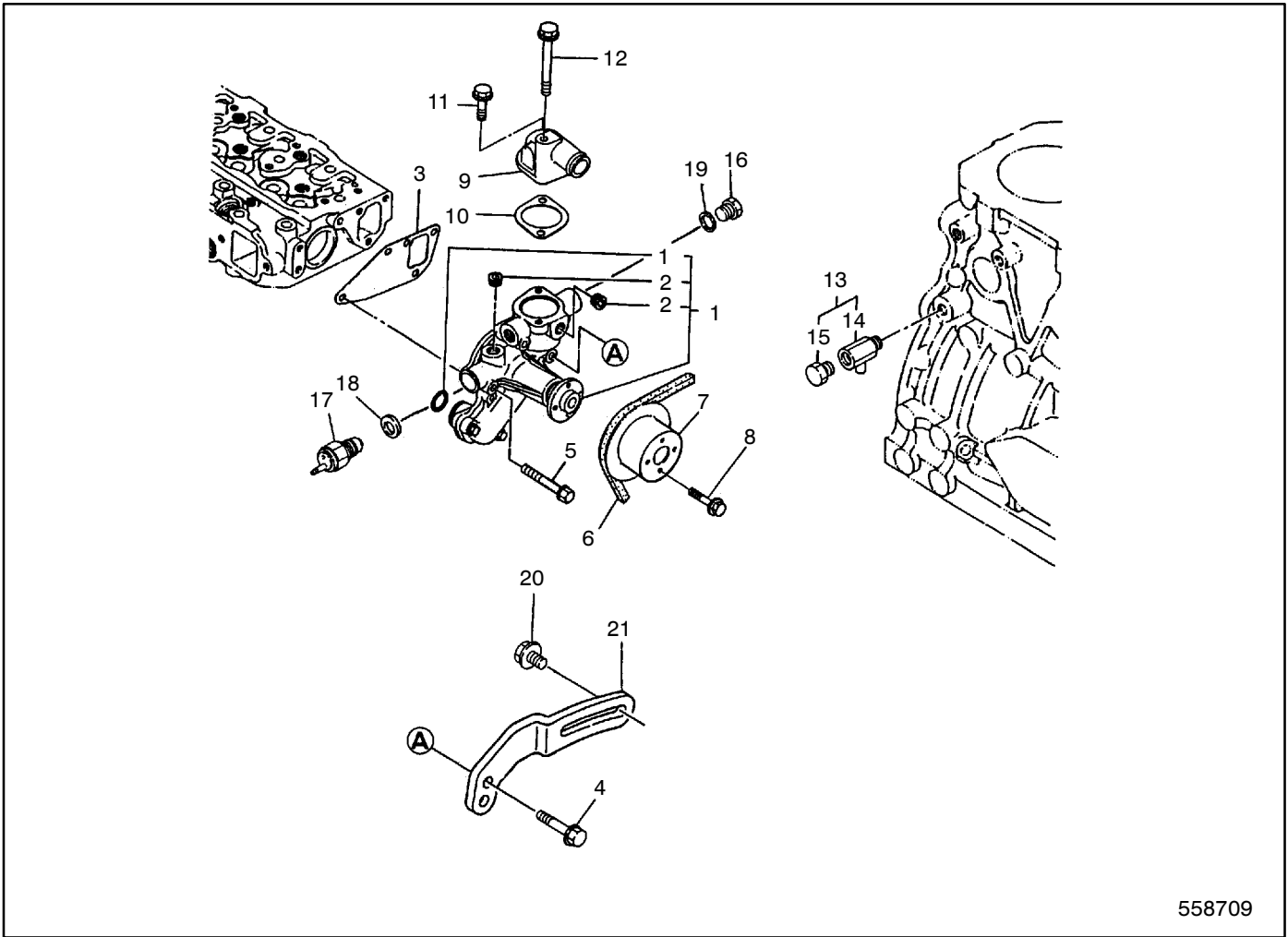
Group 8: Lube Oil System



Group 8: Lube Oil System

Item	Part Number	Description	Quantity	
			Variation Number	
			1	2
1	225412	Pump assembly, oil		1
1	363067	Pump assembly, oil	1	
2	252829	Gasket, oil pump		1
2	229677	Gasket, oil pump	1	
3	252724	Bolt, M6 x 25		4
3	229773	Bolt, M6 x 20	3	
4	225701	Dipstick	1	1
5	252759	Guide, dipstick	1	1
6	256591	Bracket, filter		1
6	363068	Bracket, filter	1	
7	225776	Gasket		1
7	363069	Gasket	1	
8	229841	Oil filter		1
8	229678	Oil filter	1	
9	225413	Valve assembly, oil pressure		1
9	363070	Valve assembly, oil pressure	1	
10	252835	Nut	1	1
11	250981	O-ring	1	1
12	252697	Bolt, M8 x 20 plated	2	3
13	225775	Gasket		1
13	363014	O-ring	1	
14	229698	Pipe, oil inlet		1
14	363020	Pipe, oil inlet	1	
15	252701	Bolt, M8 x 35 plated		2
15	229498	Bolt, M6 x 12 plated	2	
16	252084	Joint bolt 10		1
17	225729	Pipe assembly, lube oil		1
18	256530	Switch, low oil pressure		1
18	363083	Switch, low oil pressure	1	
19	229410	Bolt, 8 pipe joint		1
20	252734	Seal washer		2
21	250968	Gasket, 10 round		2

Group 9: Cooling Water System



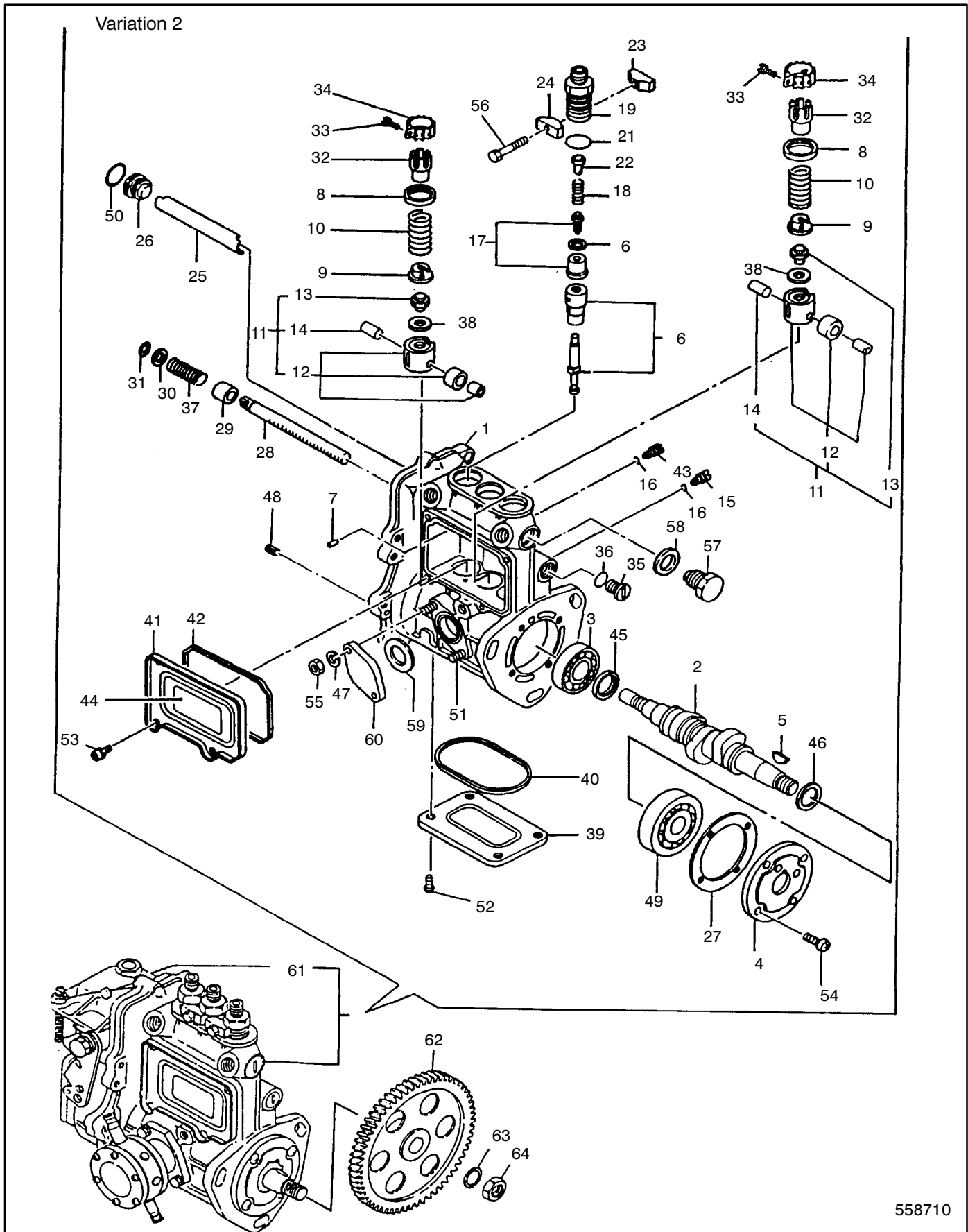
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Group 9: Cooling Water System

Item	Part Number	Description	Quantity	
			Variation Number	
			1	2
1	225003	Pump assembly, cooling pump (includes item 2)		1
1	363071	Pump assembly, cooling pump (includes item 2)	1	
1	252839	O-ring		1
1	363044	O-ring	1	
1	250876	Impeller (not shown)		1
2	250975	Plug, Pt 3/8, screw	1	2
3	252838	Gasket, water pump		1
3	363043	Gasket, water pump	1	
4	252701	Bolt, M8 x 35 plated		1
4	252706	Bolt, M8 x 65 plated	1	
5	256798	Bolt, M8 x 55 plated		3
5	252703	Bolt, M8 x 45 plated	3	3
6	225428	V-belt		1
6	363064	V-belt	1	
7	252845	V-pulley		1
7	363072	V-pulley	1	
8	225919	Bolt, M6 x 14		4
9	229706	Cover, thermostat		1
9	229408	Cover, thermostat	1	
10	GM10849	Gasket	1	1
11	252699	Bolt, M8 x 25 plated		1
11	363209	Bolt, M8 x 65 plated	1	
12	252706	Bolt, M8 x 65 plated	1	1
13	225704	Drain cock assembly		1
14	X	Body		1
15	X	Valve		1
16	252757	Plug, M16	1	1
17	229782	Sender		1
17	252095	Sender	1	
18	252773	Gasket	1	1
19	252773	Gasket	1	1
20	252692	Bolt, M8 x 25	1	1
21	229693	Adjuster, belt	1	
21	229212-BLK	Adjuster, belt		1

X Item not sold separately

Group 10: Fuel Injection Pump



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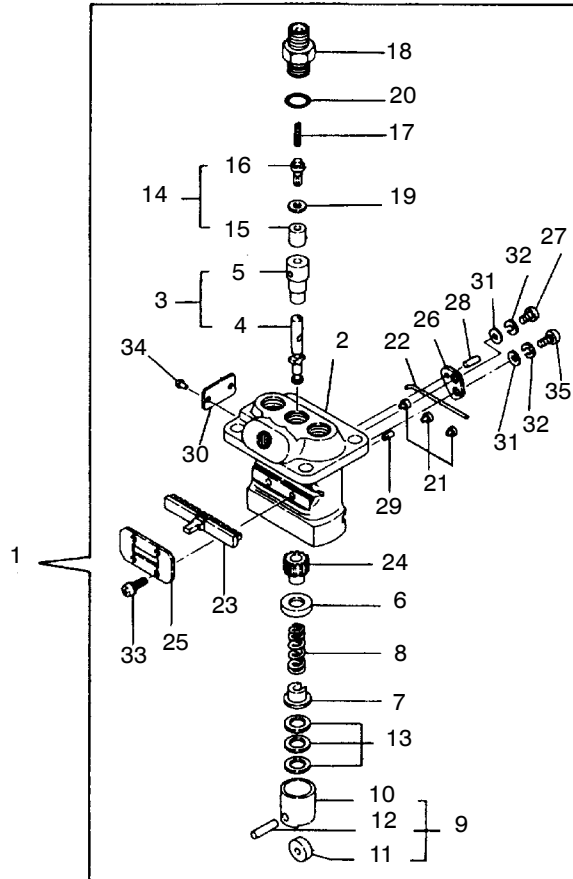
Group 10: Fuel Injection Pump

Item	Part Number	Description	Quantity
			Variation Number 2
1	GM13820	Pump assembly, fuel injection w/governor (includes items 2-61)	1
2	256735	Camshaft	1
3	256543	Ball bearing, thrust	1
4	256535	Retainer, bearing	1
5	256528	Key	1
6	225416	Plunger w/barrel	3
7	256721	Pin, barrel locking	3
8	252589	Retainer	3
9	256536	Spring shoe, plunger	3
10	252490	Spring, plunger	3
11	252848	Tappet assembly (includes item 12-14)	3
12	252593	Roller assembly	3
12	X	Roller, inner	3
12	X	Roller, outer	3
12	X	Guide, roller	3
13	256722	Bolt, adjusting	3
14	229739	Pin, roller	3
15	256537	Locking, tappet	3
16	252849	O-ring	3
17	256583	Valve w/seat, delivery	3
17	X	Seat	3
17	X	Valve, delivery	3
18	256777	Spring, valve	3
19	256724	Valve guard, delivery	3
20	250839	Gasket, delivery	3
21	250840	O-ring	3
22	256725	Stopper, valve	3
23	256726	Locking	3
24	256727	Locking	2
24	229741	Spring washer 5 mm	2
25	256728	Deflector	1
26	256778	Check bolt, deflector	1
27	256729	Shim set, adjusting	1
28	256730	Rack, control	1
29	256780	Bush, rack	1
30	256694	Spacer, auxilliary spring	1
31	256695	Circlip	1
32	256696	Pinion, control	3
33	256697	Screw, pinion	3
34	256698	Pinion	3
35	256781	Plug	1
36	252850	O-ring	1
37	256699	Spring, rack	1
38	256700	Shim pack	3
39	256782	Cover	1
40	252926	Gasket	1
41	225893	Cover, side	1
42	252927	Gasket	1
43	256701	Locking, rack	1
44	225791	Label, caution	1
45	256702	Spacer, 3.25 mm	1
46	256703	Spacer, 1.5 mm	1
47	225804	Spring washer	2
48	225808	Spring pin	2
49	256794	Ball bearing	1
50	252686	O-ring	1
51	256776	Stud, feed pump	2
52	225814	Screw, M5 x 10	4
53	225814	Screw, M5 x 10	4
54	225815	Screw, M6 x 16	4
55	252725	Nut, M6	2
56	225821	Bolt, M5 x 30 plated	2
57	256779	Plug	1
58	256663	Seal washer	1
59	252851	Gasket	1
60	256755	Cover, blind	1
61	X	Governor assembly (see Group 13)	1
62	252827	Gear	1
63	252666	Washer 12, spring	1
64	252725	Nut, M12	1

X Item not sold separately

Group 10: Fuel Injection Pump

Variation 1

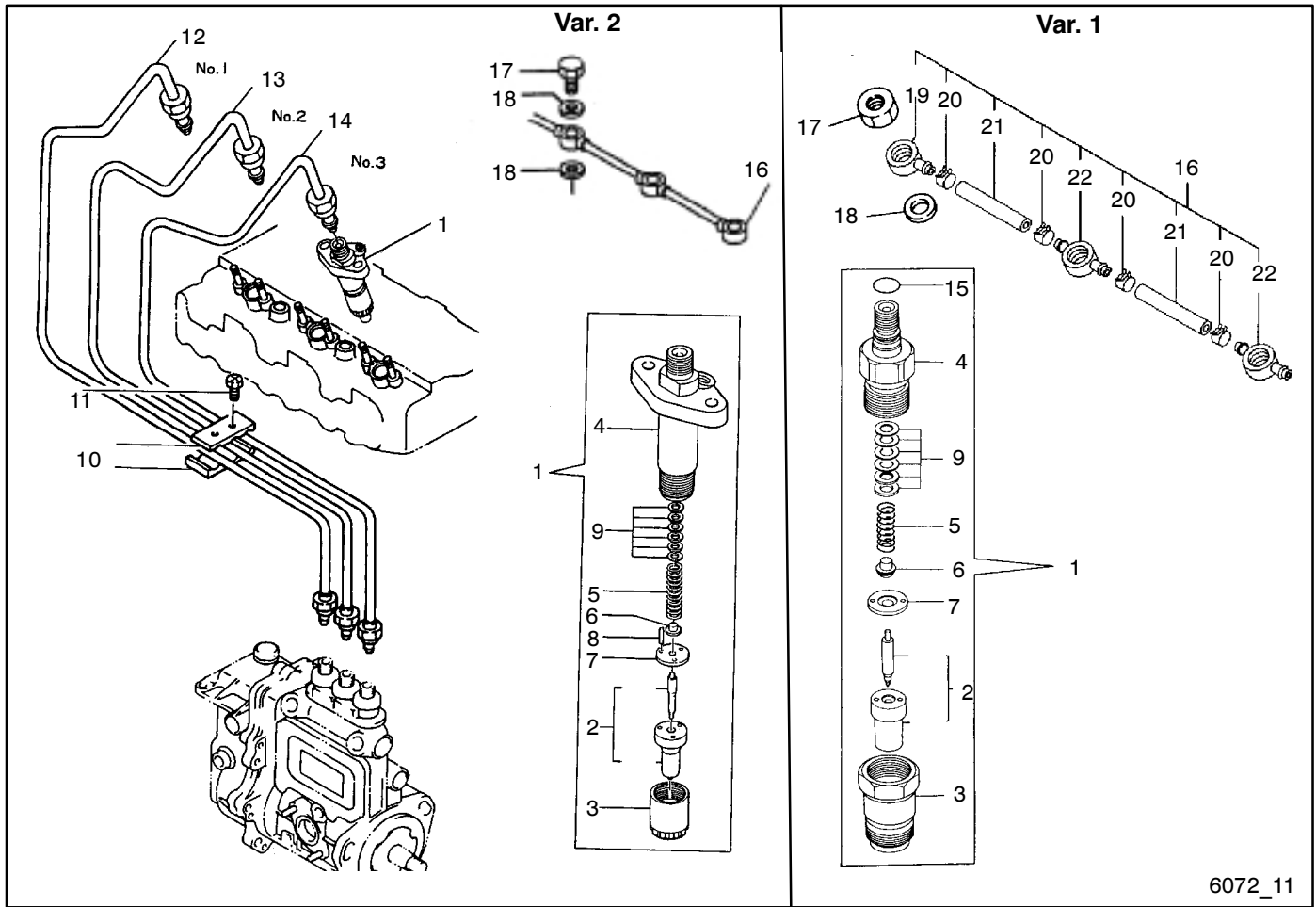


Group 10: Fuel Injection Pump

Item	Part Number	Description	Quantity
			Variation Number
			1
1	363224	Pump assembly, fuel pump (includes items 2-35)	1
2	X	Body, fuel injection pump	1
3	363045	Plunger w/barrel	3
4	X	Barrel, plunger	3
5	X	Plunger	3
6	229642	Retainer	3
7	229643	Retainer	3
8	229644	Spring, plunger	3
9	229656	Tappet assembly (includes items 10-12)	3
10	X	Guide, roller	3
11	X	Roller	3
12	X	Pin, roller	3
13	229645	Shim pack	3
14	363046	Valve w/seat, delivery	3
15	X	Seat	3
16	X	Valve, delivery	3
17	229555	Spring, valve	3
18	229646	Holder, delivery valve	3
19	229647	Gasket, delivery	3
20	229648	O-ring	3
21	229649	Guide, plunger	3
22	229650	Pin	2
23	229680	Rack	2
24	229651	Pinion	1
25	363073	Retainer, rack	1
26	229652	Plate	1
27	229653	Screw	2
28	229654	Pin	2
29	229655	Pin	1
30	X	Label, caution	1
31	229740	Washer	2
32	363197	Spring washer	2
33	229759	Screw, M4 x 8	2
34	X	Rivet	4
35	229775	Screw, M4 x 10	2

X Item not sold separately

Group 11: Fuel Injection Lines



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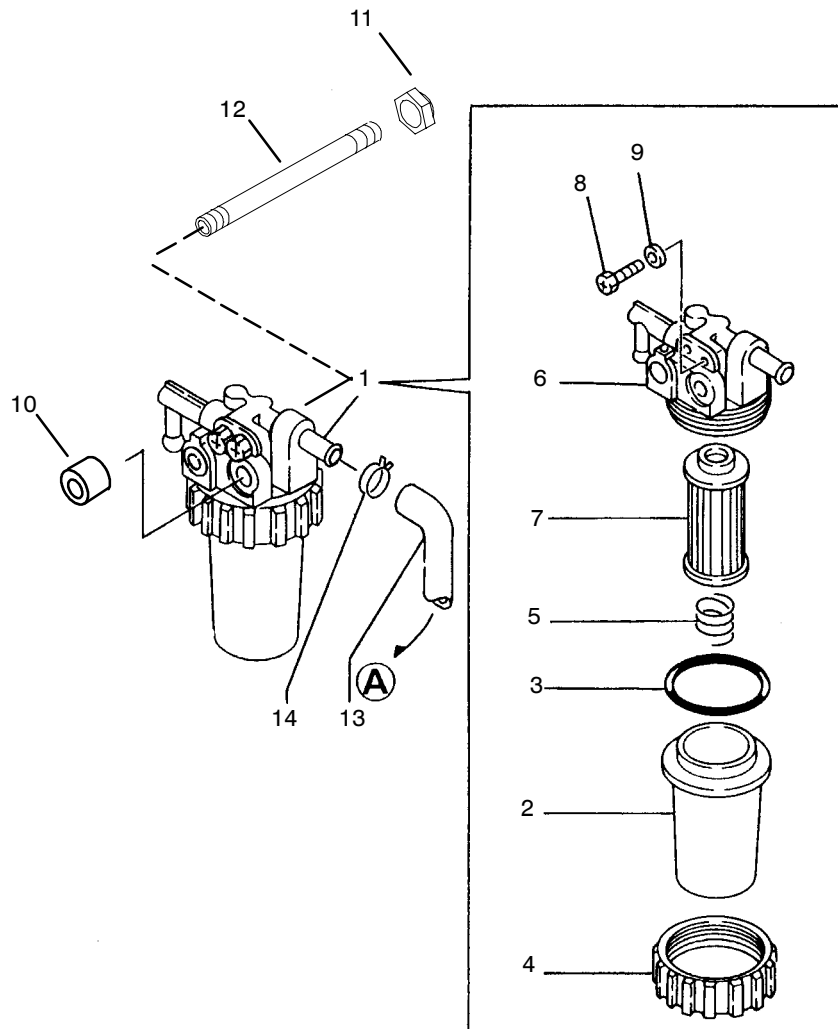
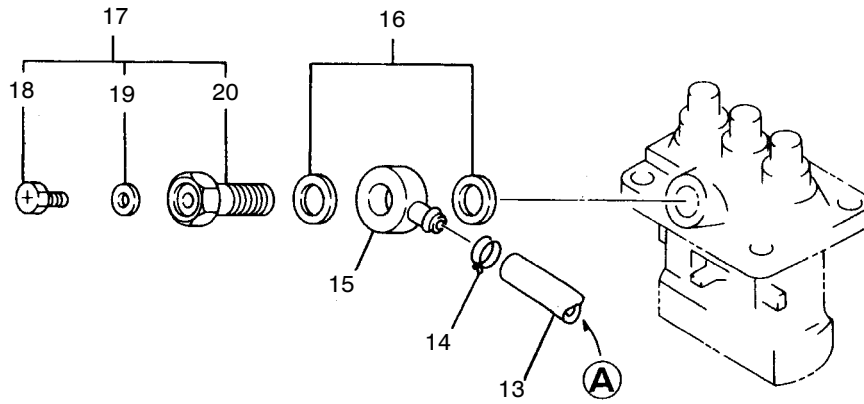
Group 11: Fuel Injection Lines

Item	Part Number	Description	Quantity	
			Variation Number	
			1	2
1	256800	Valve assembly, fuel injection (includes items 2-9)		3
1	363217	Valve assembly, fuel injection (includes items 2-9, 15)	3	
2	252746	Nozzle assembly, fuel injection		3
2	229657	Nozzle assembly, fuel injection	3	
2	X	Valve	3	3
2	X	Body	3	3
3	256520	Nut, nozzle case		3
3	229658	Nut, nozzle case	3	
4	256706	Holder		3
4	229659	Holder	3	
5	256521	Spring, nozzle		3
5	29660	Spring, nozzle	3	
6	256522	Seat, nozzle spring	3	3
7	256523	Plate, stop	3	3
8	256707	Pin		6
9	256524	Shim pack	3	3
10	256774	Retainer	1	1
10	X	Clamp, upper	1	1
10	X	Clamp, lower	1	1
11	225418	Bolt, M4 x 14	2	2
12	225396	Pipe, fuel injection		1
12	363048	Pipe, fuel injection	1	
13	225397	Pipe, fuel injection		1
13	363049	Pipe, fuel injection	1	
14	225398	Pipe, fuel injection		1
14	363050	Pipe, fuel injection	1	
15	252856	O-ring	3	
16	363047	Pipe assembly, fuel	1	
16	225405	Pipe assembly, fuel		1
17	229662	Nut	3	
17	256713	Bolt, pipe joint		3
18	252675	Gasket, round	3	
18	363451	Seal washer 6		6
19	363016	Joint	1	
20	225411	Clamp	4	
21	363001	Pipe	2	
22	363017	Joint	2	

X Item not sold separately

Group 12: Fuel Line and Filter

Variation 1



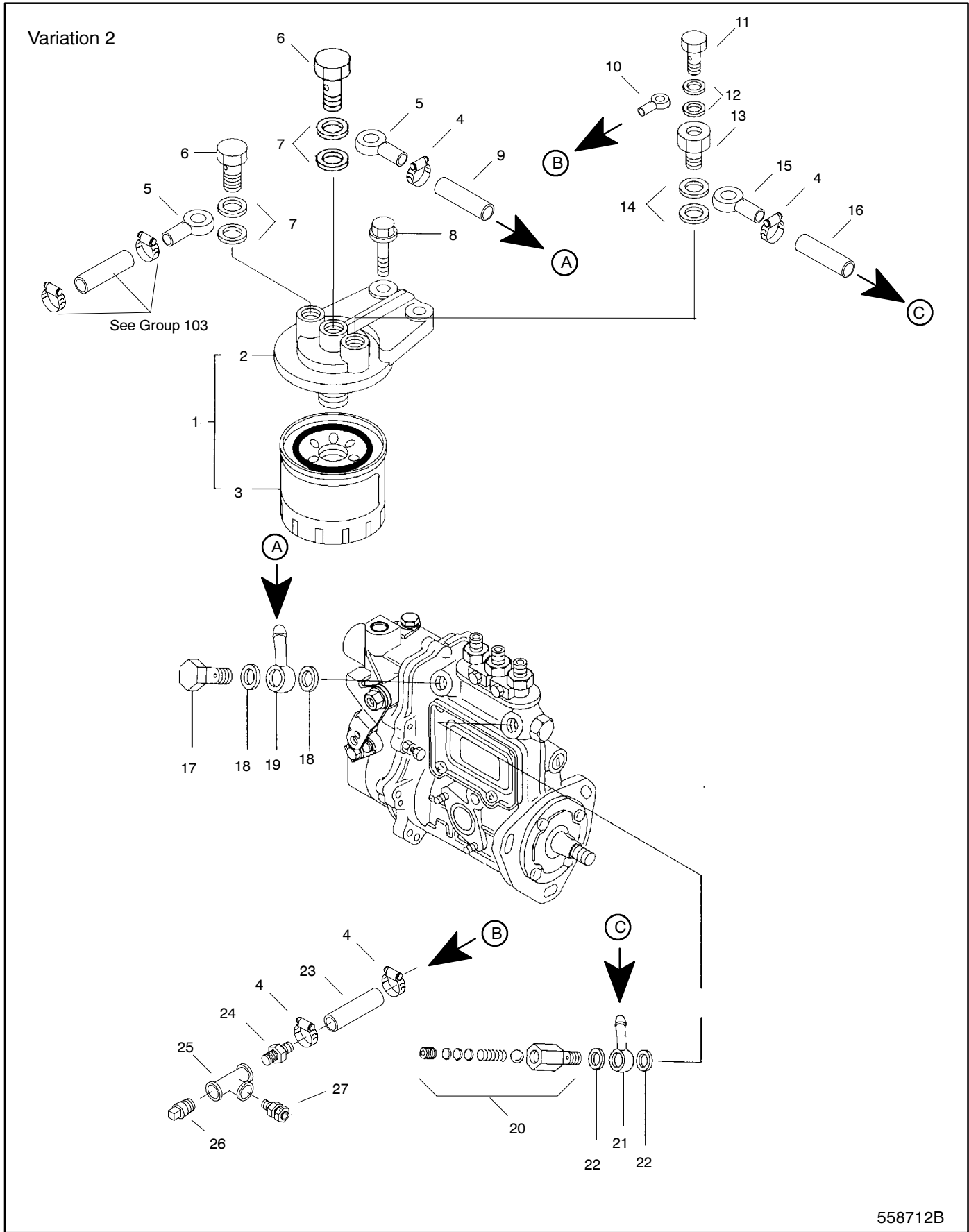
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Group 12: Fuel Line and Filter

Item	Part Number	Description	Quantity
			Variation Number
			1
1	229565	Filter assembly, fuel	1
2	229709	Cup, filter	1
3	229550	O-ring	1
4	250821	Ring, retaining	1
5	229708	Spring	1
6	X	Body	1
7	229715	Element, fuel	1
8	252369	Plug	2
9	252360	Gasket, nylon	2
10	X-400-104	Spacer, .375 ID x .750 OD x .500 in.	1
11	M934-08-60	Nut, hex	1
12	229887	Stud, M8	1
13	X-386-74	Fuel line, flexible	1
13	X-672-7	Clamp, insulating (not shown)	1
14	X-429-9	Clamp, hose, .25/.70 in.	2
15	X-6288-1	Fitting, union, banjo	1
16	252739	Gasket	2
17	250996	Bolt, w/plug & seal	1
18	252081	Plug	1
19	225423	Seal washer	1
20	X	Bolt, joint	1

X Item not sold separately

Group 12: Fuel Line and Filter, continued



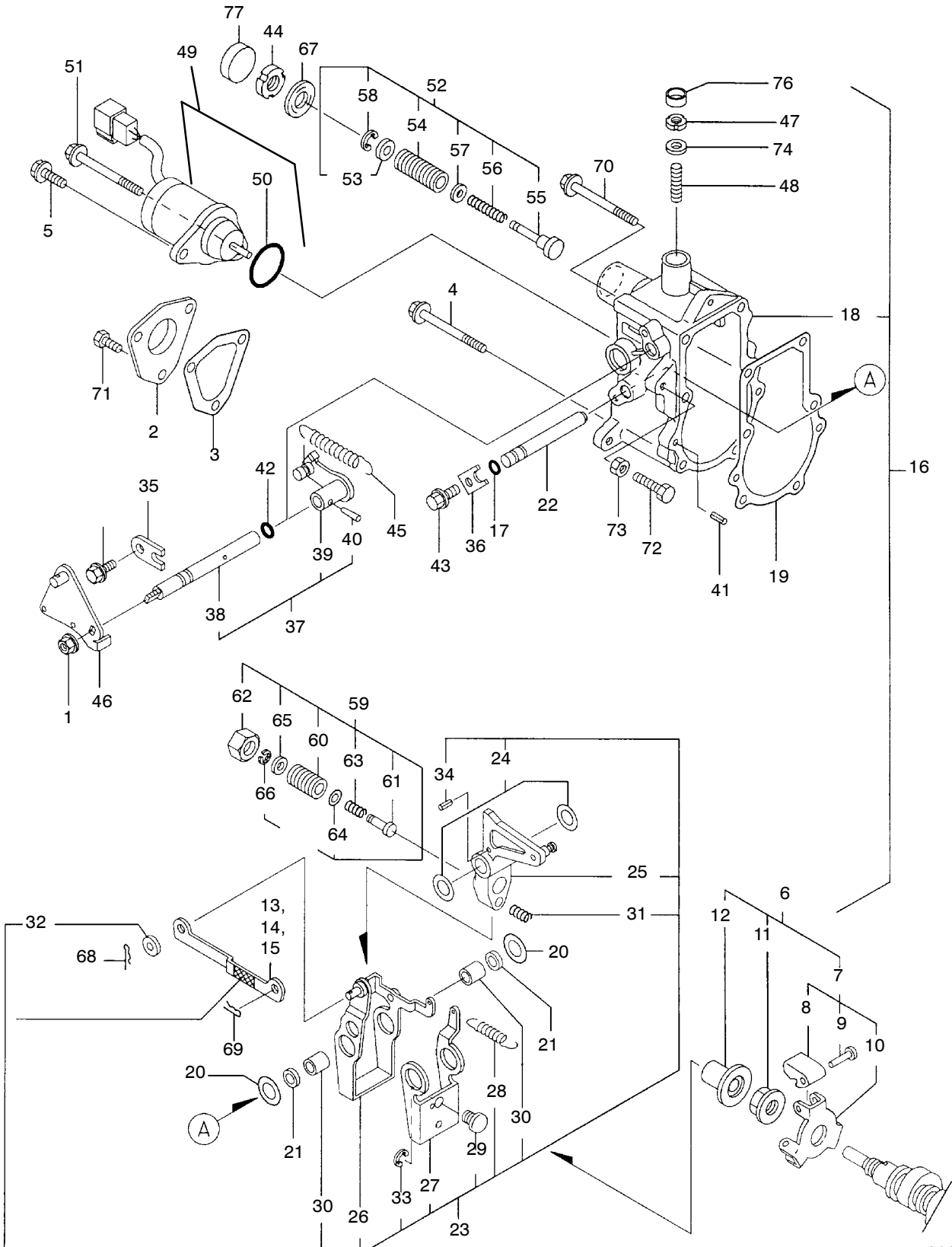
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Group 12: Fuel Line & Filter, continued

Item	Part Number	Description	Quantity
			Variation Number 2
1	256609	Filter assembly, fuel	1
2	225422	Body, fuel filter	1
3	225021	Filter, fuel	1
4	X-426-9	Clamp, hose	6
5	X-6288-1	Union, banjo	2
6	250972	Joint bolt 6	2
7	250969	Gasket 12, round	4
8	225820	Bolt, M10 x 30 plated	2
9	X-386-14	Line, flexible fuel 1/4 x 9"	1
10	X-6288-3	Union, banjo	1
11	225810	Joint bolt 3	1
12	252356	Gasket 8	2
13	225796	Bolt, pipe joint	1
14	252675	Gasket 14, round	2
15	X-6288-2	Union, banjo	1
16	X-386-99	Line, flexible fuel	1
17	229552	Bolt, pipe joint	1
18	225424	Seal washer	2
19	256569	Joint 12, pipe	1
20	252792	Valve assembly, check	1
21	256567	Joint	1
22	225424	Seal washer	2
23	X-386-74	Line, flexible fuel	1
24	X-380-1	Connector, hose 1/8	1
25	X-203-10	Tee, pipe	1
26	X-75-2	Plug, pipe	1
26	X-509-1	Adapter, pipe 1/4 x 1/8 (not shown)	1
27	D-244	Connector, compression	1

Group 13: Governor

Variation 1



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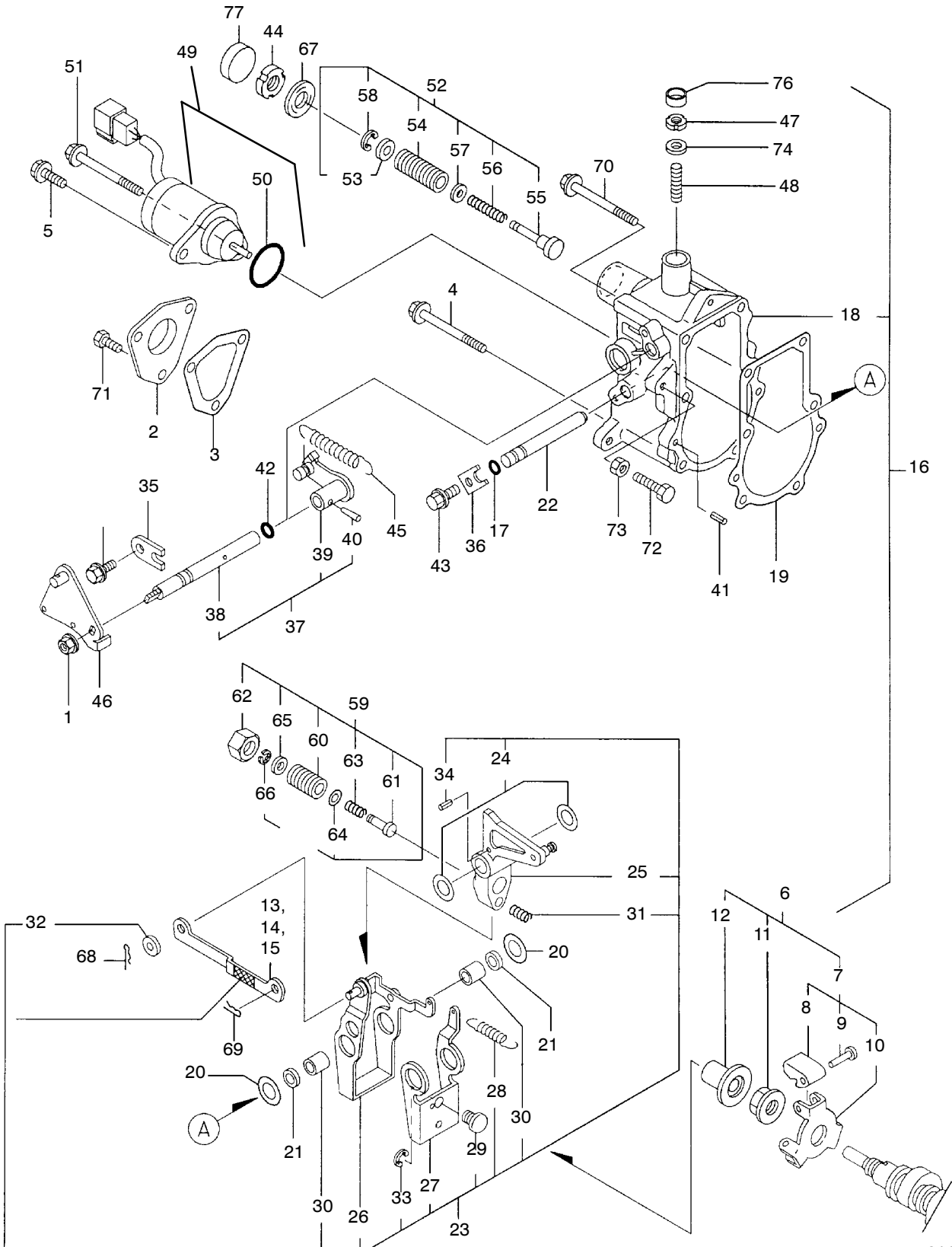
Group 13: Governor

Item	Part Number	Description	Quantity
			Variation Number
			1
1	225802	Nut, with washer 8 mm	1
2	229683	Cover, governor case	1
3	229626	Gasket	1
4	225429	Bolt, M6 x 75	3
4	363194	Washer, 6 (not shown)	3
5	252384	Bolt, M6 x 16	1
6	229627	Driving set, governor (includes items 7-12)	1
7	229628	Weight assembly, governor (includes items 8-10)	1
8	X	Weight, governor	3
9	X	Pin, governor weight	3
10	X	Support, governor weight	1
11	229687	Nut, governor weight	1
12	229688	Sleeve, governor	1
13	229684	Link, L=88.8 (no color)	1
14	229685	Link, L=88.6 (white)	1
15	229686	Link, L=89.0	1
16	225384	Case assembly, governor (includes items 17-43)	1
17	252849	O-ring	1
18	X	Case, governor	1
19	229682	Gasket	1
20	229689	Shim set	1
21	229722	Spacer assembly	1
22		Shaft, governor lever	1
23	225359	Lever assembly, governor (includes items 24-34)	1
24	252592	Shim set	2
25	X	Lever, tension	1
26	X	Governor lever	1
27	X	Governor lever	1
28	225360	Spring, lever	1
29	225378	Shifter, PTO	1
30	X	Needle bearing	2
31	225389	Spring, starting	1
32	225803	Washer	1
33	225805	Circlip	1
34	229745	Spring pin, 3 x 14	1
35	229691	Retainer, shaft	1
36	229692	Retainer, shaft	1
37	225372	Shaft assembly, regulator (includes items 38-40)	1
38	X	Shaft, regulator	1
39	X	Lever, regulator	1
40	X	Taper pin, 3 x 16	1
41	252668	Spring pin, 4 x 10	2
42	229757	O-ring	1
43	229498	Bolt, M6 x 10	2
44	225390	Carb nut, limit	1
45	363075	Spring, regulator	1
46	229665	Lever, regulator	1
47	225391	Carb nut, high idle	1
48	229712	Screw, adjustment	1
49	225461	Solenoid kit (includes item 50)	1
50	225427	O-ring	1
51	225430	Bolt, M6 x 95	1

X Item not sold separately

Group 13: Governor, continued

Variation 1



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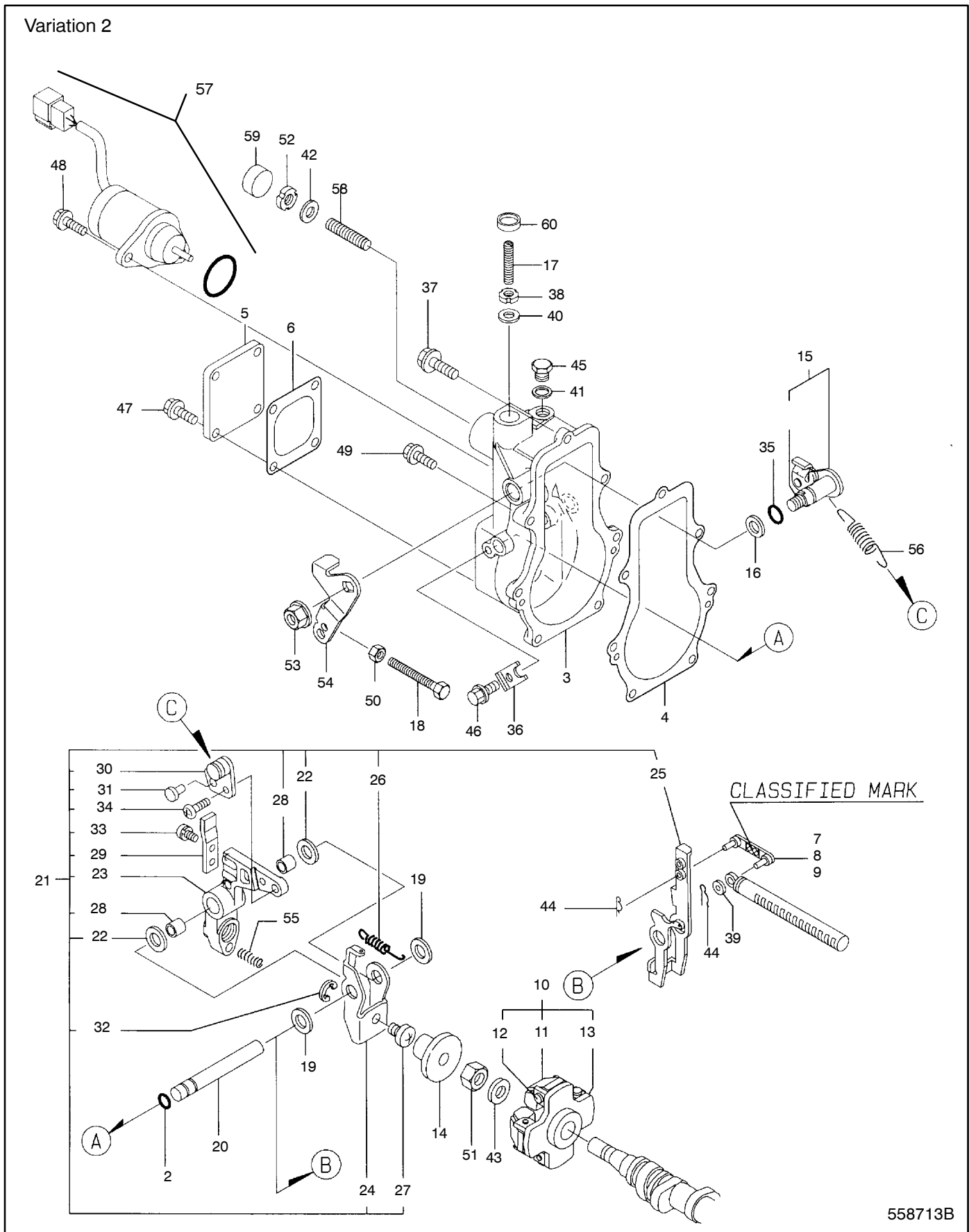
Group 13: Governor, continued

Item	Part Number	Description	Quantity
			Variation Number 1
52	225377	Fuel limiter	1
53	X	Shim set	1
54	X	Body	1
55	X	Pin	1
56	X	Spring, controller	1
57	X	Shim set	1
58	X	Circlip	1
59	225379	Angleich assembly (includes items 60-66)	1
60	X	Case, angleich	1
61	X	Shifter	1
62	X	Nut	1
63	X	Spring	1
64	X	Shim set	1
65	X	Washer	1
66	X	Circlip	1
67	225424	Seal washer 12S	1
68	229746	Snap pin 4	1
69	229747	Snap pin 6	1
70	229767	Bolt, M6 x 70	2
71	229769	Bolt, M5 x 10	3
72	229770	Bolt, M6 x 30	1
73	225825	Lock nut, M6	1
74	225423	Seal washer 6	1
75	X	Plug 14	1
76	225382	Plug 14	1
77	225381	Plug 22	1

X Item not sold separately

Group 13: Governor, continued

Variation 2



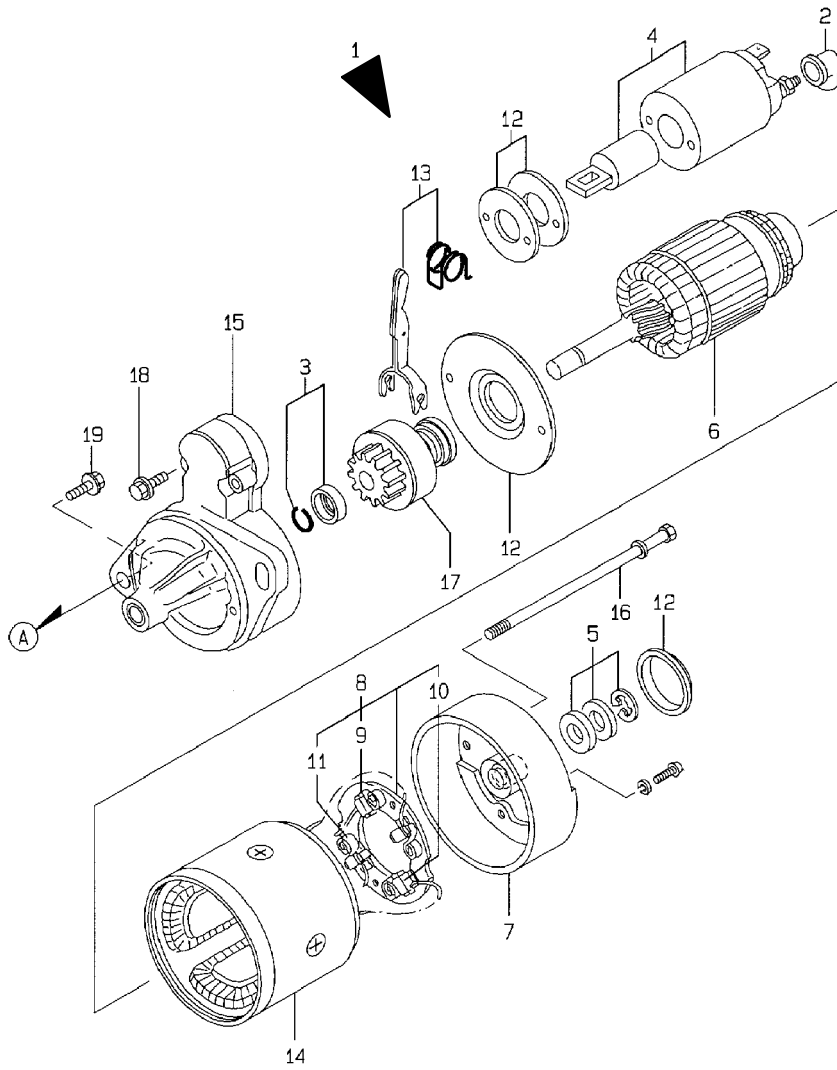
Group 13: Governor, continued

Item	Part Number	Description	Quantity
			Variation Number 2
1	X	Governor assembly (includes items 2-52)	1
2	252849	O-ring	2
3	X	Case, governor	1
4	225417	Gasket, spacer	1
5	225414	Cover	1
6	225408	Packing	1
7	256787	Link 30 mm	1
8	256558	Link 31 mm	1
9	256559	Link 30.5 mm	1
10	252974	Weight assembly, governor (includes items 11-13)	1
11	X	Weight	4
12	X	Pin, governor weight	4
13	X	Support	1
14	225781	Sleeve	1
15	225409	Shaft assembly, control	1
16	225782	Spacer, shaft	1
17	225410	Bolt, limit	1
18	225784	Bolt, idle limit	1
19	225786	Spacer assembly	2
20	225415	Shaft, governor lever	1
21	225421	Lever assembly, governor (includes items 22-34)	1
22	252592	Shim set	2
23	X	Lever	1
24	X	Lever, governor	1
25	X	Lever, governor	1
26	225407	Spring	1
27	X	Shifter	1
28	X	Bush	2
29	X	Fitting	1
30	X	Hook, tension lever	1
31	X	Pin	1
32	X	Circlip	1
33	X	Screw, M6 x 12	1
34	X	Screw, M5 x 10	2
35	252856	O-ring	2
36	229692	Retainer, shaft	1
37	225790	Bolt, washer based	1
38	225391	Carb nut, high idle	1
39	225803	Washer 4	1
40	250994	Seal washer 6	1
41	225829	Seal washer 10	2
42	225424	Seal washer 12	2
43	256704	Washer 12	1
44	225809	Snap pin 4	2
45	256517	Plug	1
46	229498	Bolt, M6 x 10 plated	1
47	229498	Bolt, M6 x 10 plated	4
48	225818	Bolt, M6 x 14 plated	2
49	225817	Bolt, M6 x 20 plated	6
50	225825	Nut, lock M6 plated	1
51	225826	Nut, lock M12 plated	1
52	225390	Carb nut, flow limit	1
53	252723	Nut, M8	1
54	225800	Lever, control	1
55	GM13320	Spring, fuel control	1
56	225795	Spring governor	1
57	225461	Kit, fuel solenoid (O-ring 225427)	1
58	225785	Bolt, fuel control	1
59	225381	Plug 22	1
60	225382	Plug 14	1

X Item not sold separately

Group 14: Starting Motor

Variation 1

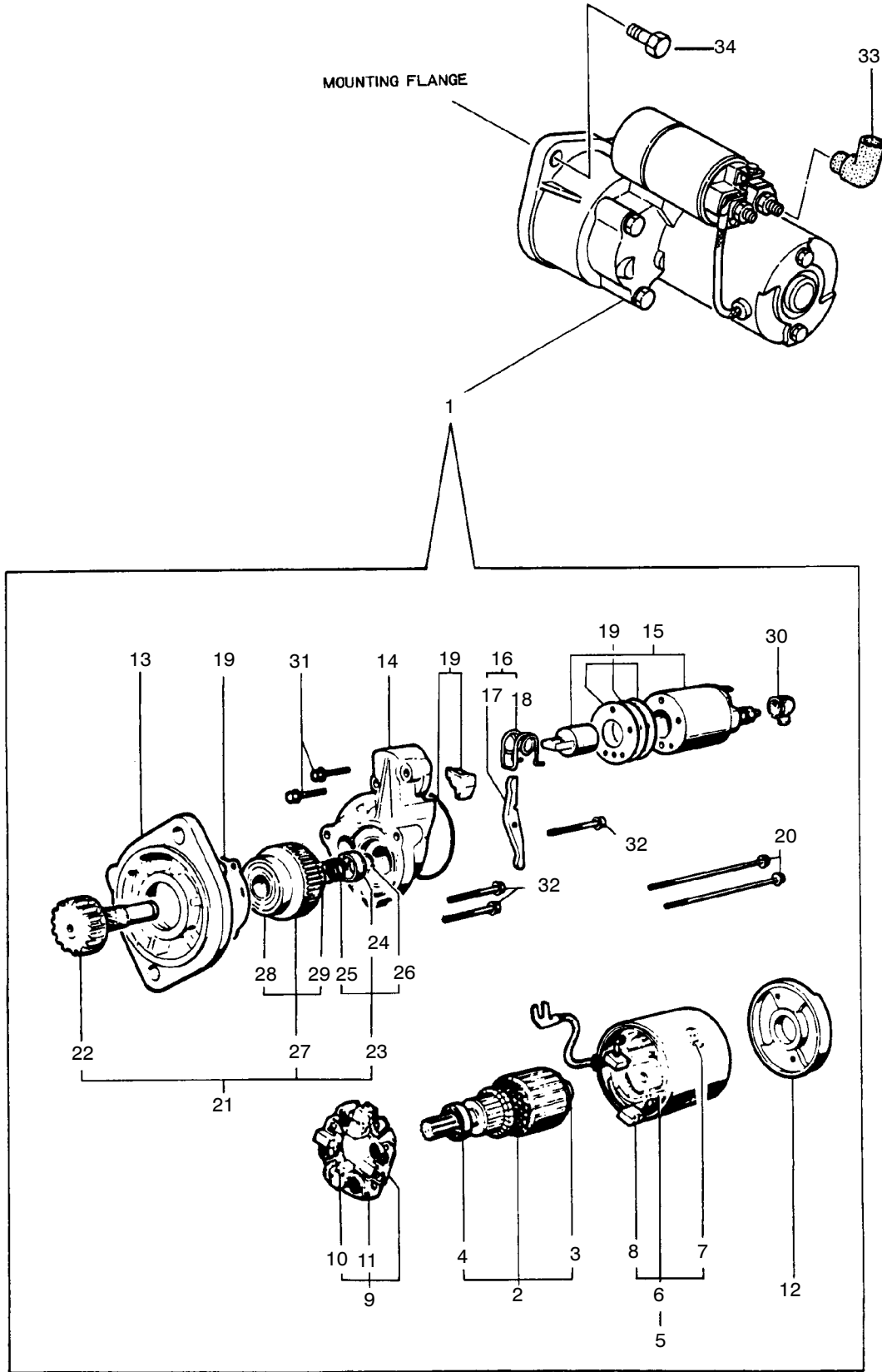


Group 14: Starting Motor

Item	Part Number	Description	Quantity
			Variation Number
			1
1	229704	Starter (includes items 3-18)	1
2	252481	Cover, terminal	1
3	252630	Stopper set, pinion	1
4	229965	Switch, magnetic	1
5	252631	Washer set, thrust	1
6	363004	Armature	1
7	229817	Cover assembly, rear	1
8	229824	Holder assembly, brush	1
9	229822	Brush (-)	1
10	250868	Brush (+)	2
11	229823	Spring, brush	3
12	229821	Cover kit, dust	1
13	229820	Lever set, shift	1
14	229819	Coil assembly, field	1
15	252627	Cover	1
16	225859	Through bolt	2
17	363079	Pinion	1
18	229818	Bolt	2
19	229768	Bolt, M10 x 30 plated	1

Group 14: Starting Motor, continued

Variation 2



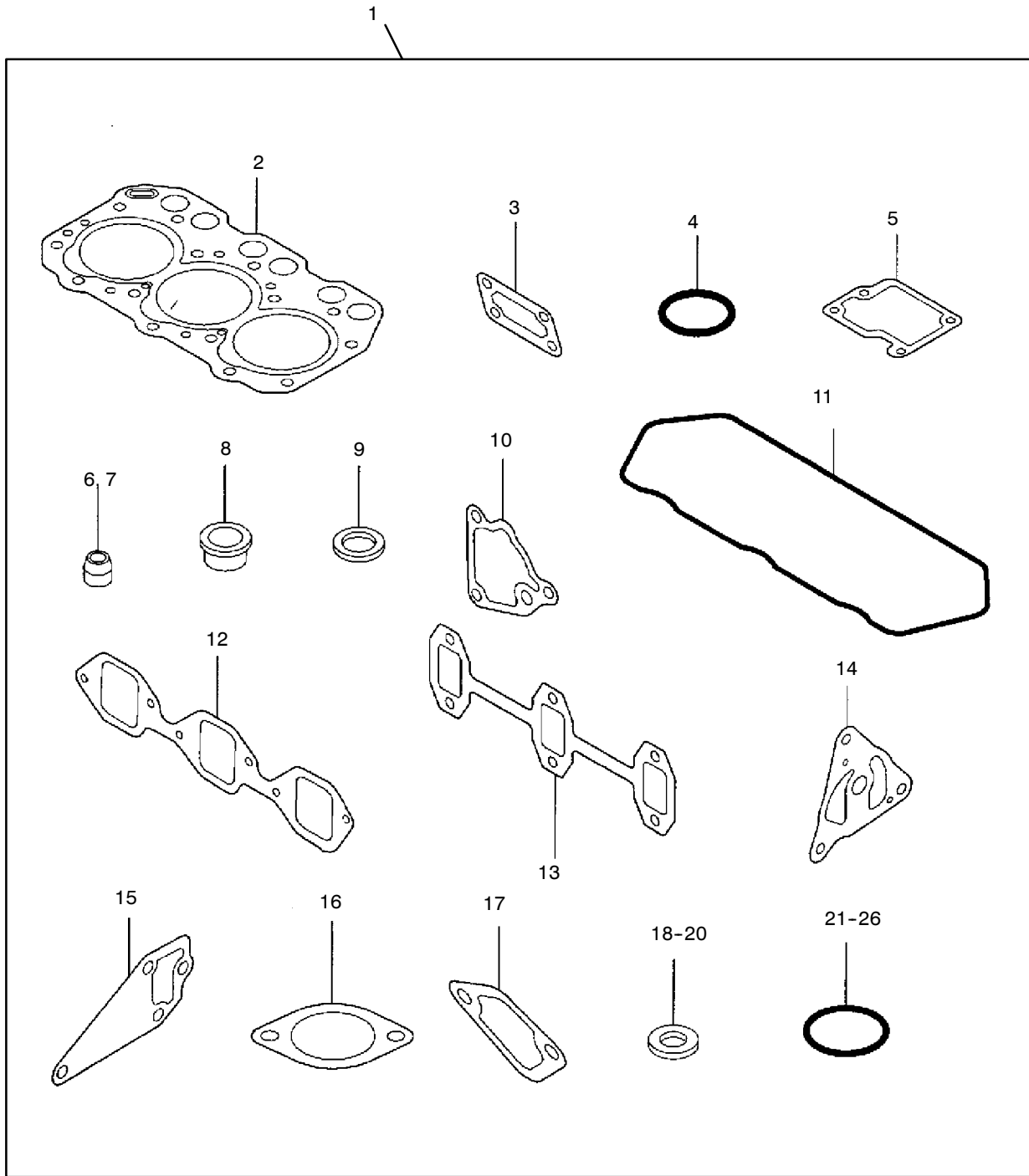
558714

Group 14: Starting Motor, continued

Item	Part Number	Description	Quantity
			Variation Number 2
1	225013	Starter (includes items 2-32)	1
2	225895	Armature assembly (includes items 3 and 4)	1
3	225896	Bearing	1
4	225897	Bearing	1
5	229477	Yoke assembly (includes items 6-8)	1
6	225989	Coil assembly, field	1
7	225899	Screw, pole core set	4
8	225900	Brush (+)	2
9	225901	Holder assembly, brush (includes items 10 and 11)	1
10	225902	Brush (-)	2
11	225903	Spring, brush	4
12	225904	Cover, rear	1
13	225905	Housing assembly, gear	1
14	225906	Housing, center	1
15	225907	Switch, magnetic	1
16	225908	Lever set, shift (includes items 17 and 18)	4
17	229478	Lever	1
18	229479	Spring	1
19	225909	Dust cover	1
20	225910	Bolt, through	2
21	225911	Pinion assembly (includes items 22-29)	1
22	225912	Shaft, pinion	1
23	225913	Stopper set, pinion (includes items 24-26)	1
24	229480	Stopper, pinion	1
25	229481	Spring	1
26	229482	Clip, pinion stopper	1
27	225914	Clutch assembly (includes items 28 and 29)	1
28	225915	Ball bearing	1
29	225916	Ball bearing	1
30	225917	Cover, terminal	1
31	225920	Bolt, M6 x 32 plated	2
32	225481	Bolt, M6 x 40 plated	3
33	252481	Cover, terminal	1
34	252712	Bolt, M12 x 25 plated	2

Group 15: Gasket Set

Variation 1



Item 27 not shown.

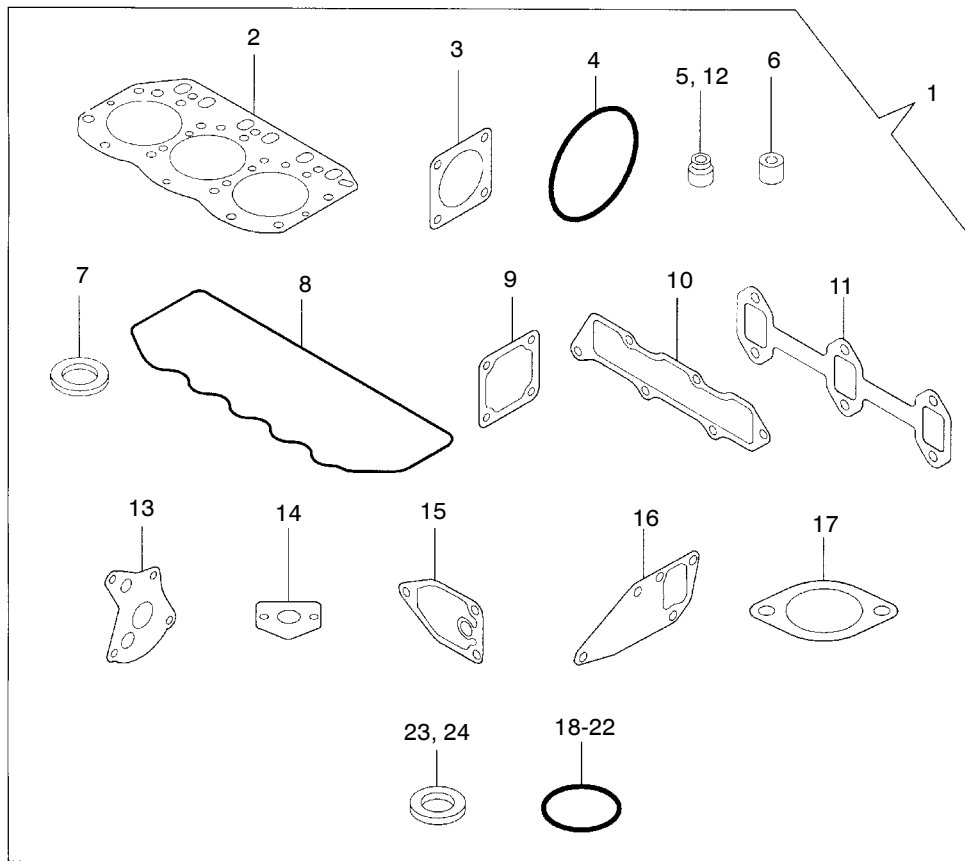
Group 15: Gasket Set

Item	Part Number	Description	Quantity
			Variation Number
			1
1	363230	Gasket set (includes items 2-26)	1
2	363052	Gasket, cylinder head	1
3	229669	Gasket	1
4	252684	O-ring	1
5	363028	Gasket	1
6	250844	Seal, valve stem	3
7	225766	Seal, valve stem	3
8	229623	Protector, nozzle	3
9	229624	Gasket, nozzle	6
10	363069	Gasket	1
11	363035	Gasket, valve cover	1
12	363036	Gasket	1
13	363037	Gasket, exhaust manifold	1
14	229677	Gasket, oil pump	1
15	363043	Gasket, water pump	1
16	225420	Gasket	1
17	252061	Gasket	1
18	252773	Gasket 16	2
19	252739	Gasket 12	2
20	252675	Gasket 14, round	3
21	250801	O-ring	4
22	252856	O-ring	3
23	256796	O-ring	1
24	252687	O-ring	1
25	250981	O-ring	1
26	363014	O-ring	1
27	252998	Gasket, liquid	1

Group 15: Gasket Set, continued

Variation 2

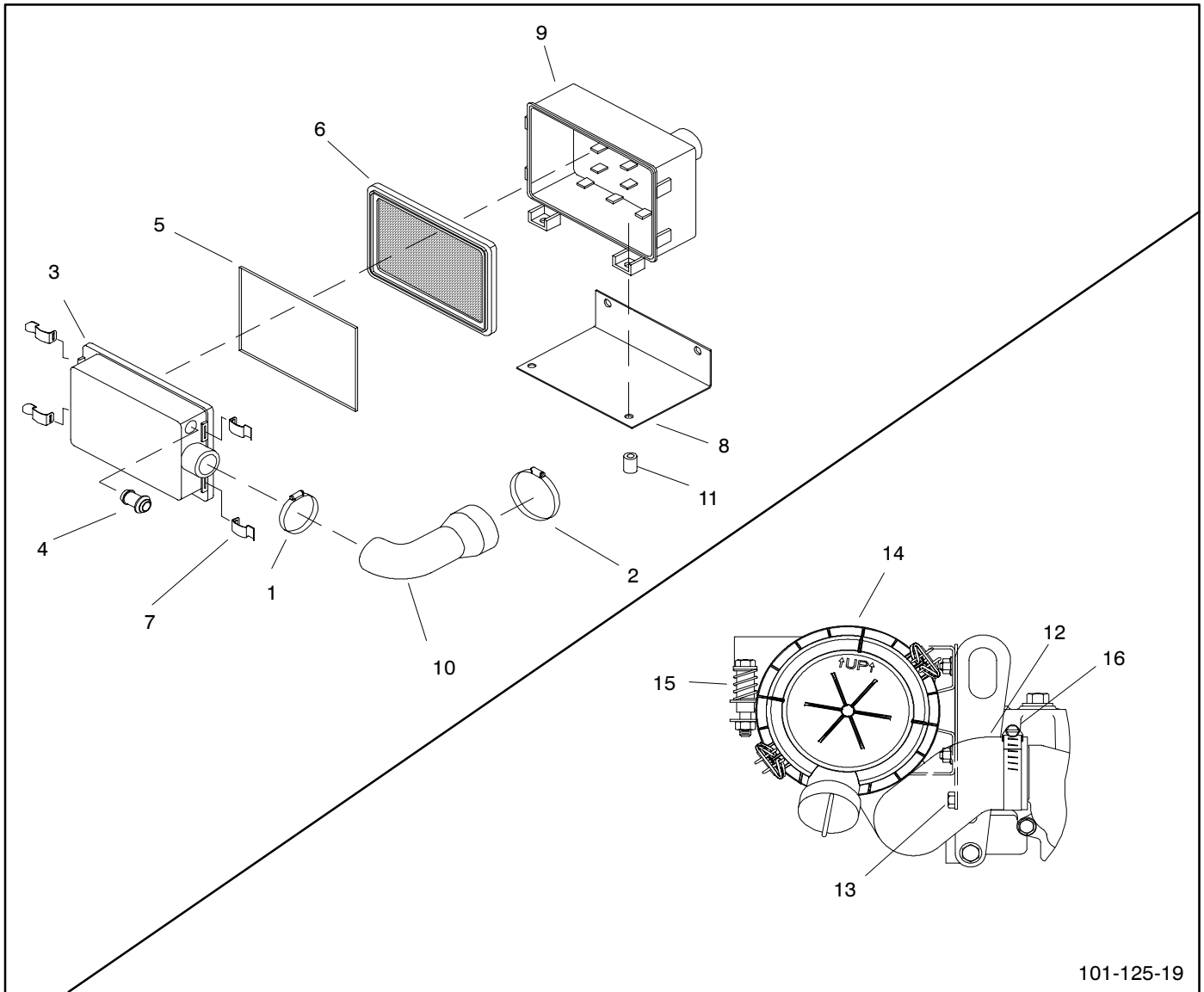
Item not shown: 25



558715B

Item	Part Number	Description	Quantity
			Variation Number 2
1	GM13821	Gasket set, 3TNE82A engine	1
2	GM13813	Gasket, cylinder head	1
3	252085	Gasket	1
4	252764	O-ring, fuel injection pump	1
5	225766	Seal, valve stem	3
6	225385	Protector, nozzle	3
7	252744	Seat, nozzle	3
8	225758	Gasket, valve cover	1
9	229719	Gasket, air heater	1
10	225716	Gasket, intake manifold	1
11	225717	Gasket, exhaust manifold	1
12	250844	Seal, valve stem	3
13	252829	Gasket, oil pump	1
14	225775	Gasket	1
15	225776	Gasket	1
16	252838	Gasket, water pump	1
17	249865	Gasket	1
18	250801	O-ring, 1A P 12.0	3
19	250981	O-ring, 1A P 16.0	3
20	252684	O-ring, 1A P 32.0	1
21	256796	O-ring, 1A P 50.0	1
22	256796	O-ring, 1A P 24.0	1
23	250968	Gasket 10, round	2
24	250969	Gasket 12, round	4
25	252998	Gasket, liquid (not shown)	1

Group 101: Air Intake



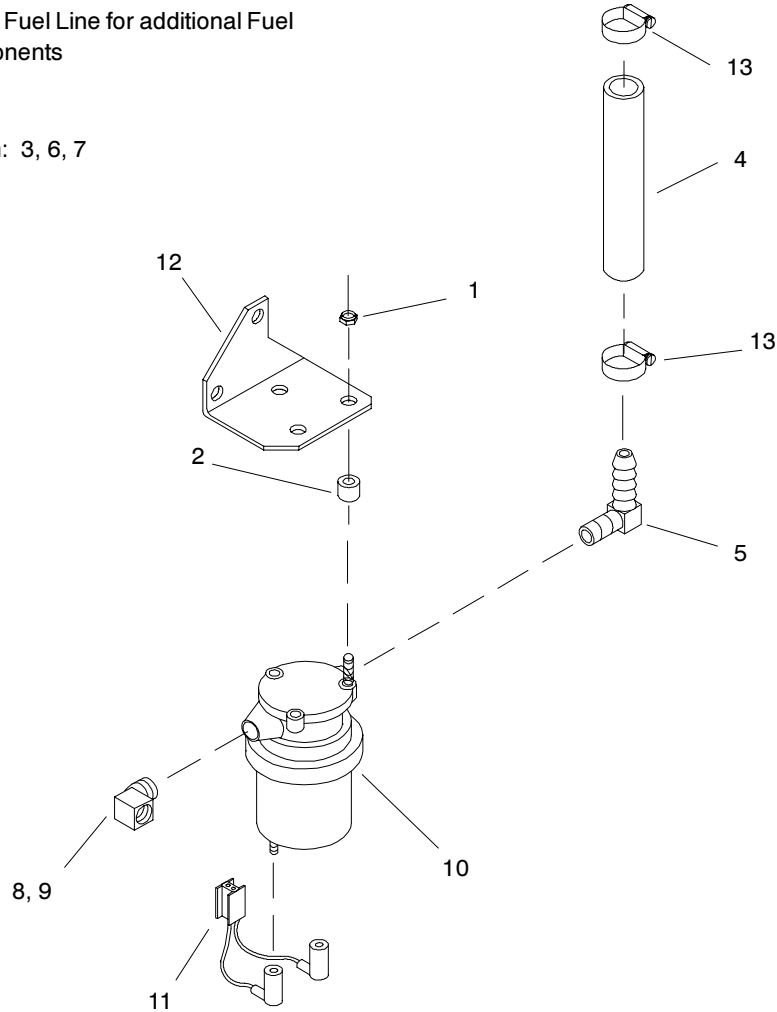
101-125-19

Item	Part Number	Description	Quantity		
			19	20	GR1
1	X-426-19	Clamp, hose, 1/2 in.	1		
1	X-426-4	Clamp, hose, 1.31/2.25 in.		1	
2	X-426-6	Clamp, hose, 1.56/2.5 in.	1	1	
3	227463	Cover, plastic	1	1	
4	278805	Adapter, nylon hose	1	1	
5	278857	Filter, filter	1	1	
6	278858	Element, air cleaner	1	1	
7	278862	Clip, air cleaner	4	4	
8	344898-BLK	Bracket, air cleaner mounting	1		
8	229387-BLK	Bracket, air cleaner mounting		1	
9	344899	Base, air cleaner	1		
9	278855	Base, air cleaner		1	
10	344900	Hose, molded air intake (1.75"/1.29" ID)	1		
10	344224	Hose, molded air intake (1.29" ID)		1	
11	X-400-28	Spacer, .282 ID x .5 OD x .531 in.		1	
12	GM21382	Hose, molded air			1
13	GM21381	Bracket, air cleaner			1
14	GM21379	Cleaner assembly, air			1
15	GM21380	Mount, air cleaner			1
16	X-426-6	Clamp, hose, 1.56/2.5 in.			2

Group 103: Fuel System

See Group 12, Fuel Line for additional Fuel System components

Items not shown: 3, 6, 7



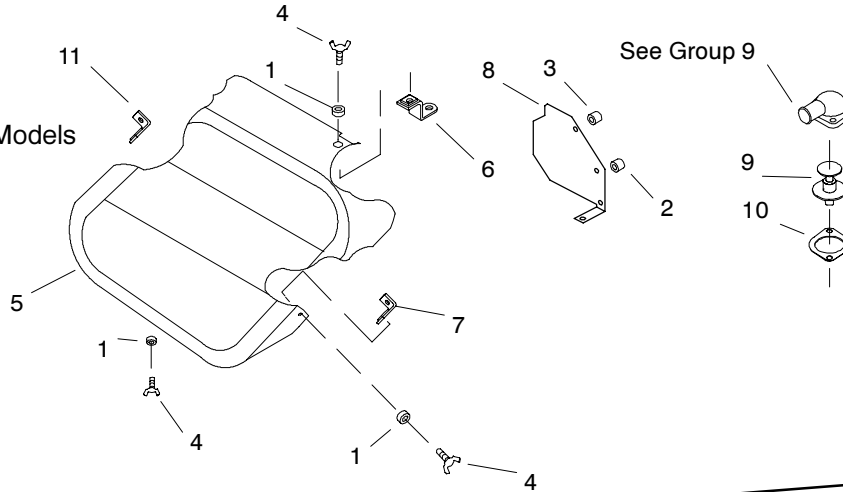
103-125-19

Item	Part Number	Description	Quantity	
			19	20
1	X-101-25	Nut, hex elastic stop, M6-1	3	3
2	X-284-29	Grommet, round	3	3
3	X-382-1	Fitting, elbow, compression	1	
4	X-386-6	Fuel line, flexible	1	
4	X-386-62	Fuel line, flexible		1
5	X-391-20	Fitting, hose connector 90°	1	1
6	X-509-1	Adapter, pipe, 1/4 x 8 in.	1	
7	X-519-10	Plug, cap 1/4 in.	1	
8	X-555-1	Fitting, elbow 1/4 x 1/4 street	1	1
9	X-75-2	Plug, pipe	1	1
10	229051	Pump, fuel	1	1
11	229168	Lead assembly	1	1
12	229290-BLK	Bracket, fuel pump	1	
12	GM10463	Bracket, fuel pump		1
13	X-426-9	Clamp, hose, .25/.70 in.	4	8

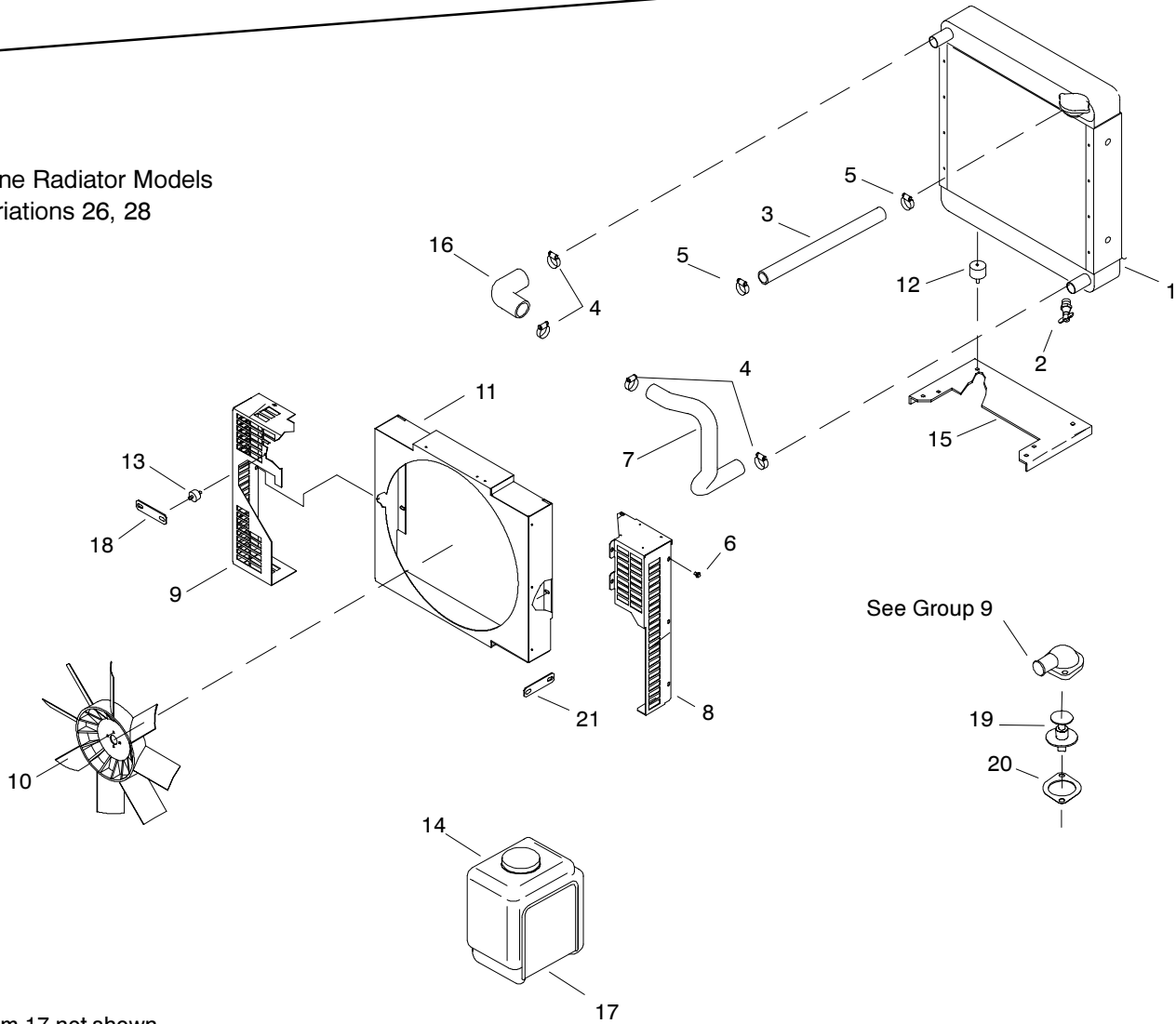
Notes

Group 104: Cooling System

Remote Radiator Models
Variations 25, 27



Inline Radiator Models
Variations 26, 28



Item 17 not shown.

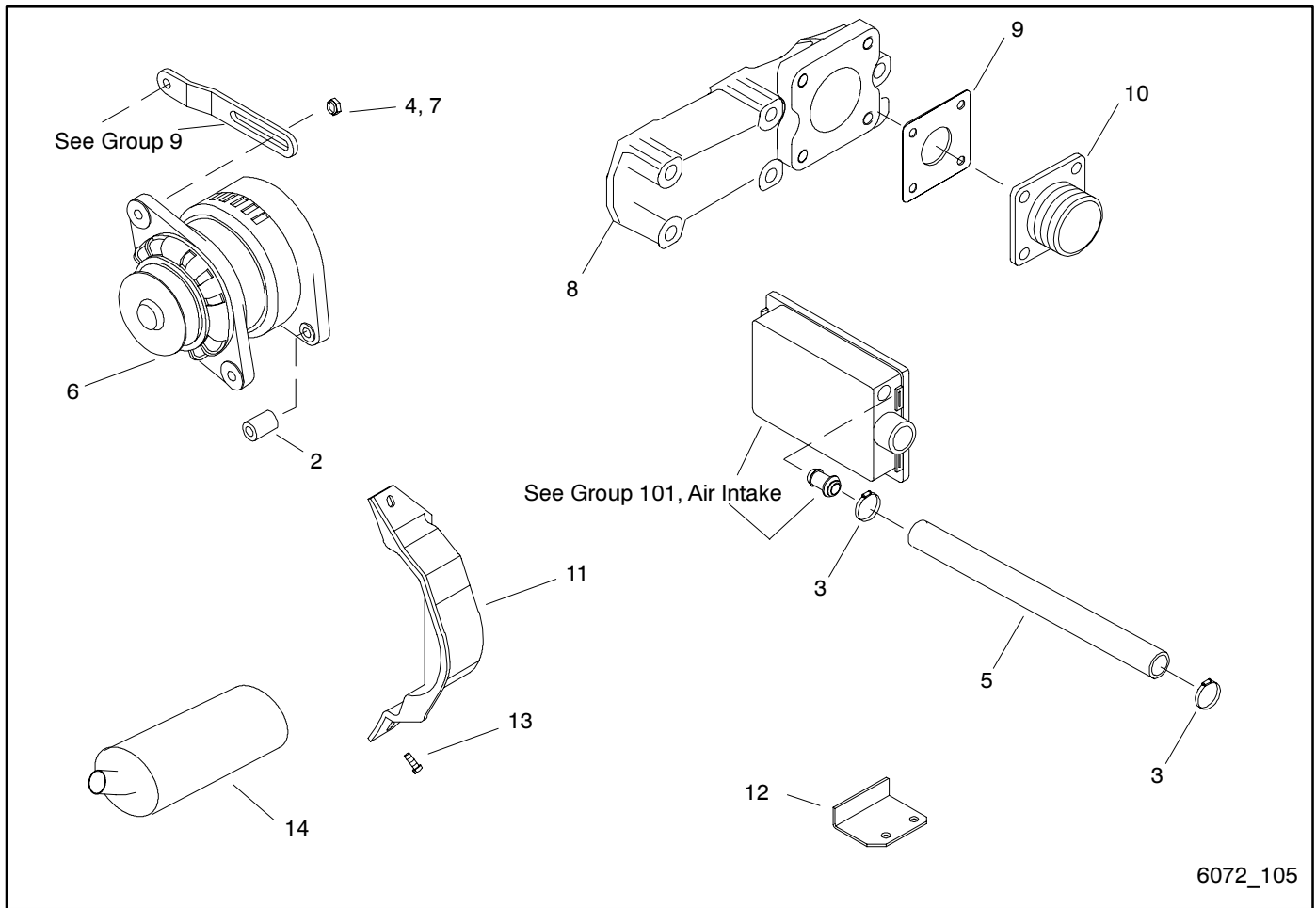
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Group 104: Cooling System

Item	Part Number	Description	Quantity	
			Variation Number	
			25	27
1	X-284-39	Grommet, round	3	3
2	X-400-142	Spacer, .260 ID x .5 OD x .188 in.	1	
3	X-400-226	Spacer, .282 ID x .5 OD x 1.102 in.	1	
4	229330	Screw, wing	3	3
5	344878	Guard, belt	1	
5	344319	Guard, belt		1
6	344893-BLK	Bracket, belt guard (top)	1	
6	229067-BLK	Bracket, belt guard		1
7	344894-BLK	Bracket, belt guard (LH)	1	
7	229069-BLK	Bracket, belt guard		1
8	GM10496	Guard, belt	1	
8	GM10464	Guard, belt		1
9	GM10844	Thermostat	1	
9	225007	Thermostat		1
10	GM10849	Gasket, thermostat housing	1	1
11	229068-BLK	Bracket, belt guard		1

Item	Part Number	Description	Quantity	
			Variation Number	
			26	28
1	A-225965	Radiator	1	1
2	X-256-3	Valve, drain, 1/4 in. NPT	1	1
3	X-386-113	Fuel line, flexible	1	1
4	X-426-8	Clamp, hose, .81/1.75 in.	4	4
5	X-426-9	Clamp, hose, .25/.70 in.	2	2
6	X-6216-1	Screw, Phillips hex crimp-tite	8	8
7	GM10498	Hose, molded, lower radiator	1	
7	GM10466	Hose, molded, lower radiator		1
8	GM10501	Guard, belt (RH)	1	
8	GM10469	Guard, belt (RH)		1
9	GM10502	Guard, belt (LH)	1	
9	GM10470	Guard, belt (LH)		1
10	GM10504	Fan, sucker	1	
10	GM10472	Fan, sucker		1
11	GM10500	Shroud, fan	1	
11	GM10468	Shroud, fan		1
12	352399	Vibromount	2	2
13	241769	Mount, controller	1	2
14	359037	Bottle, overflow	1	1
15	GM10499	Support, radiator	1	
15	GM10467	Support, radiator		1
16	GM10497	Hose, molded, upper radiator	1	
16	GM10465	Hose, molded, upper radiator		1
17	359036-BLK	Bracket, water bottle	1	
17	359038-BLK	Bracket, water bottle		1
17	X-400-74	Spacer, .344 ID x .625 OD x .25 in.		2
18	GM10505	Bracket, belt guard	1	
18	GM10473	Bracket, belt guard		1
19	GM10844	Thermostat	1	
19	225007	Thermostat		1
20	GM10849	Gasket, thermostat housing	1	1
21	225593	Bracket, shroud support		1

Group 105: Engine & Exhaust



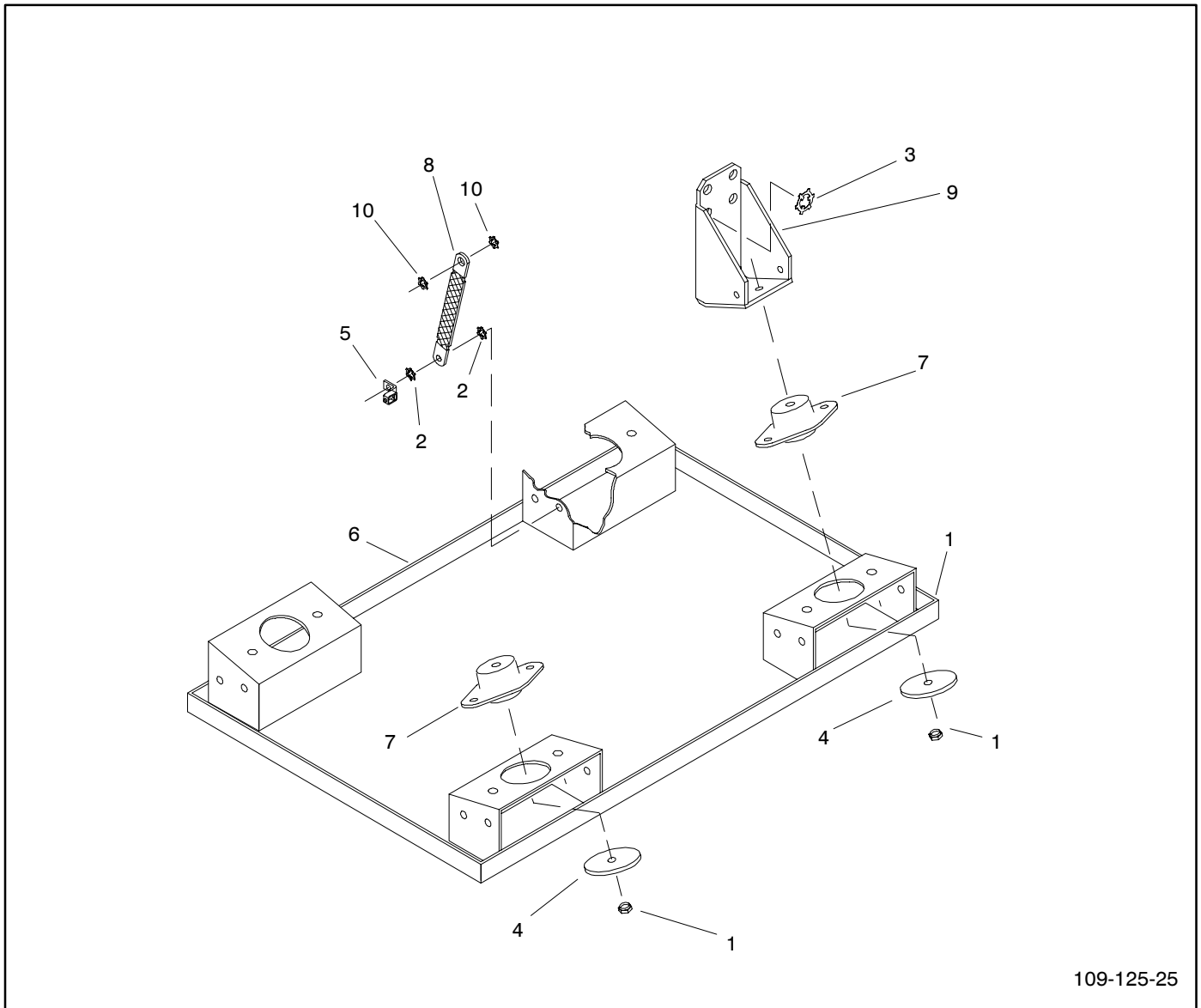
Group 105: Engine & Exhaust

Item	Part Number	Description	Quantity			
			Variation Number			
			34	35	GR2	GR3
1	A-344896-BLK	Engine assembly (3TNE74C)	1		1	
1	A-359553-BLK	Engine assembly (3TNE82AC)		1		
2	X-400-228	Spacer, .344 ID x .625 OD x 1.141 in.	1			
2	X-400-184	Spacer, .344 ID x .625 OD x .949 in.		1	1	
3	X-426-10	Clamp, hose, .5/1 in.	2			
4	M934-05-50	Nut, hex 5 mm	1		1	
5	X-6242-4	Hose	1			
5	See Group 4	Hose		1		
6	256924	Alternator	1	1	1	
7	M934-06-60	Nut, hex 6 mm	1	1	1	
8	GM10512	Manifold, exhaust	1		1	
8	GM10487	Manifold, exhaust		1		
9	225222	Gasket, exhaust	1	1		1
10	225264	Flange, exhaust outlet	1	1		
11	229113	Guard, generator fan		1		
12	344225-BLK	Bracket, fuel		1		
13	X-67-113	Screw, hex washer, thread-forming		2		
14	GM21383	Muffler, exhaust				1

Group 107: Nameplate and Decals

Item	Part Number	Description	Quantity		
			Variation Number		
			40	41	47
1	224233	Decal, 1-800 number	1	1	1
2	344295	Decal, equipment ground	1	1	1
3	226937	Decal, warning	1	1	1
4	238162	Marker, adhesive	1	1	1
5	239771	Decal, warning	1	1	
6	239773	Decal, warning	1	1	1
7	239796	Decal, warning	1	1	1
8	249808	Decal, warning	1	1	1
9	249809	Decal, caution hot engine	1	1	1
10	320596	Decal	1	1	1
11	327004	Nameplate, model/ratings, Kohler	1		1
11	359446	Nameplate, model/ratings, Kohler		1	
12	226917	Decal, negative battery connection	1	1	1
13	225165	Decal, CSA	1	1	1
14	249810	Decal, warning		1	1
15	344284	Decal, water drain		1	
16	344285	Decal, oil drain		1	
17	258815	Decal, warning voltage backfeed	1		1
18	227990	Decal, US testing	1		1
19	249810	Decal, warning hot coolant		1	
20	GM14167	Decal, drain		2	2

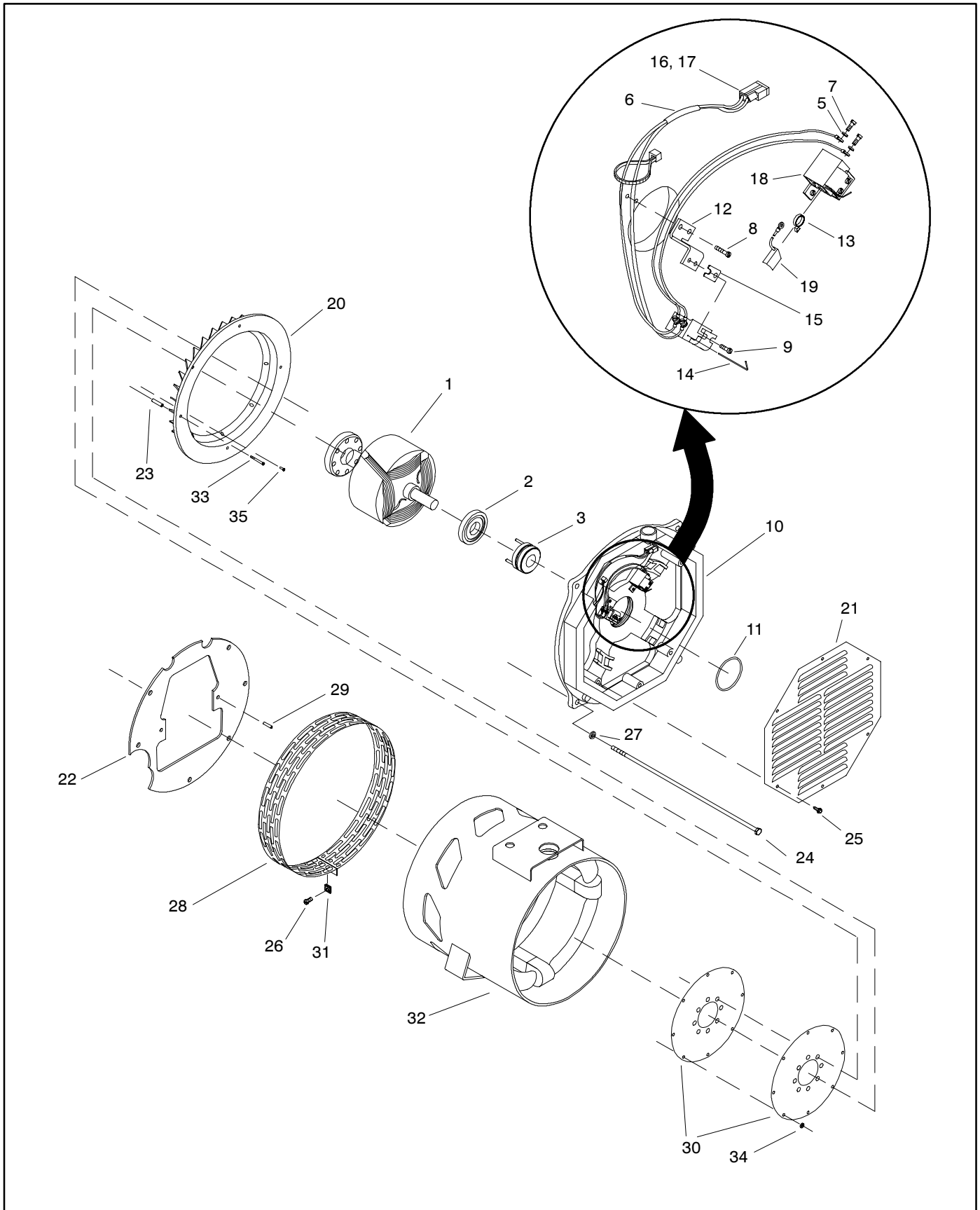
Group 109: Skid and Plant Mounting



109-125-25

Item	Part Number	Description	Quantity	
			25	26
1	M982-08-80	Nut, hex elastic stop	4	4
2	X-22-12	Washer, lock, .262 ID x .743 in. OD	2	2
3	X-22-14	Washer, lock, .391 ID x .975 in. OD	1	
3	X-22-26	Washer, lock, .521 ID x 1.24 in. OD		1
4	X-25-96	Washer, plain, .406 ID x 2 in. OD	4	4
5	X-377-11	Connector, cable	1	1
6	GM10506	Skid	1	
6	GM10474	Skid		1
7	225124	Vibromount	2	
7	278322	Vibromount	2	4
8	245297	Strap, ground	1	1
9	GM10507	Support, engine	2	
9	GM10475	Support, engine		2
10	X-22-16	Washer, lock, .326 ID x .883 in. OD	2	2

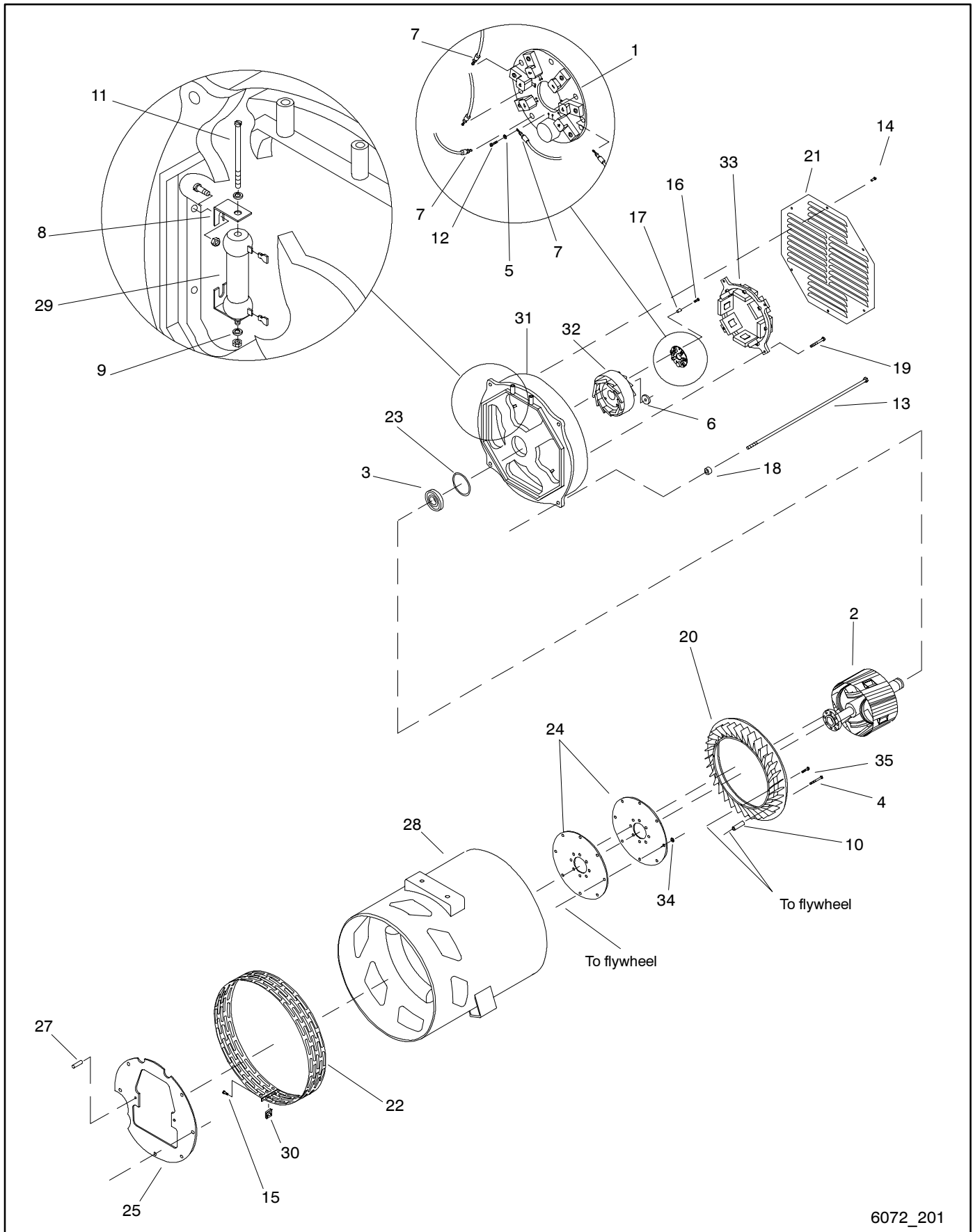
Group 201: Generator and Mounting



Group 201: Generator and Mounting

Item	Part Number	Description	Quantity	
			Variation Number	
			51	53
1	GM10484	Rotor assembly	1	
1	GM10485	Rotor assembly		1
2	X-758-15	Bearing, ball	1	1
3	359447	Ring, collector	1	1
4	A-363529	Bracket assembly, end (includes items 5-19)	1	1
5	X-22-6	Washer, lock, .146 ID x .285 in. OD	4	4
6	X-415-4	Sleeve, insulating	1	1
7	X-49-1	Screw, slotted pan head machine	4	4
8	X-67-113	Screw, hex washer, thread-forming	4	4
9	X-97-13	Screw, slotted hex washer head, machine	4	4
10	225531	End bracket	1	1
11	229110	O-ring	1	1
12	229178	Bracket, brush holder	2	2
13	238150	Spring, stainless steel	4	4
14	238247	Retainer, wire	2	2
15	238248	Shim, brush holder	2	2
16	292370	Connector, plug, 2-position	1	1
17	292371	Connector, jack, 2-position	1	1
18	239247	Brush holder	2	2
19	239282	Brush	4	4
20	225215	Fan, generator	1	1
21	225545	Panel, end bracket	1	1
22	229349	Plate, locator	1	
22	229097	Plate, locator		1
23	X-400-189	Spacer, .215 ID x .312 OD x 1.2 in.	4	4
24	X-6051-14	Screw, hex head machine	2	
24	X-6051-20	Screw, hex head machine	2	
24	X-6051-16	Screw, hex head machine		4
25	X-67-113	Screw, hex washer, thread-forming	6	6
26	X-67-125	Screw, hex washer, thread-forming	1	1
27	X-801-3	Washer, hardened, .406 ID x .812 in. OD	4	4
28	229109-BLK	Guard, generator fan	1	1
29	229356	Pin, knurled	2	2
30	229347	Disk, drive	2	
30	229346	Disk, fan locator	1	
30	229389	Disk, drive	1	
30	257017	Disk, drive		2
31	257442	Clip, speed	1	1
32	GM10510	Stator assembly	1	
32	GM10478	Stator assembly		1
33	X-101-9	Nut, hex elastic stop, 10-24	4	
33	X-6284-2	Screw, slotted pan head machine		4
34	X-801-4	Washer, hardened, .328 ID x .719 in. OD	6	8
35	X-6284-1	Screw, slotted pan head machine		4

Group 201: Generator and Mounting, continued

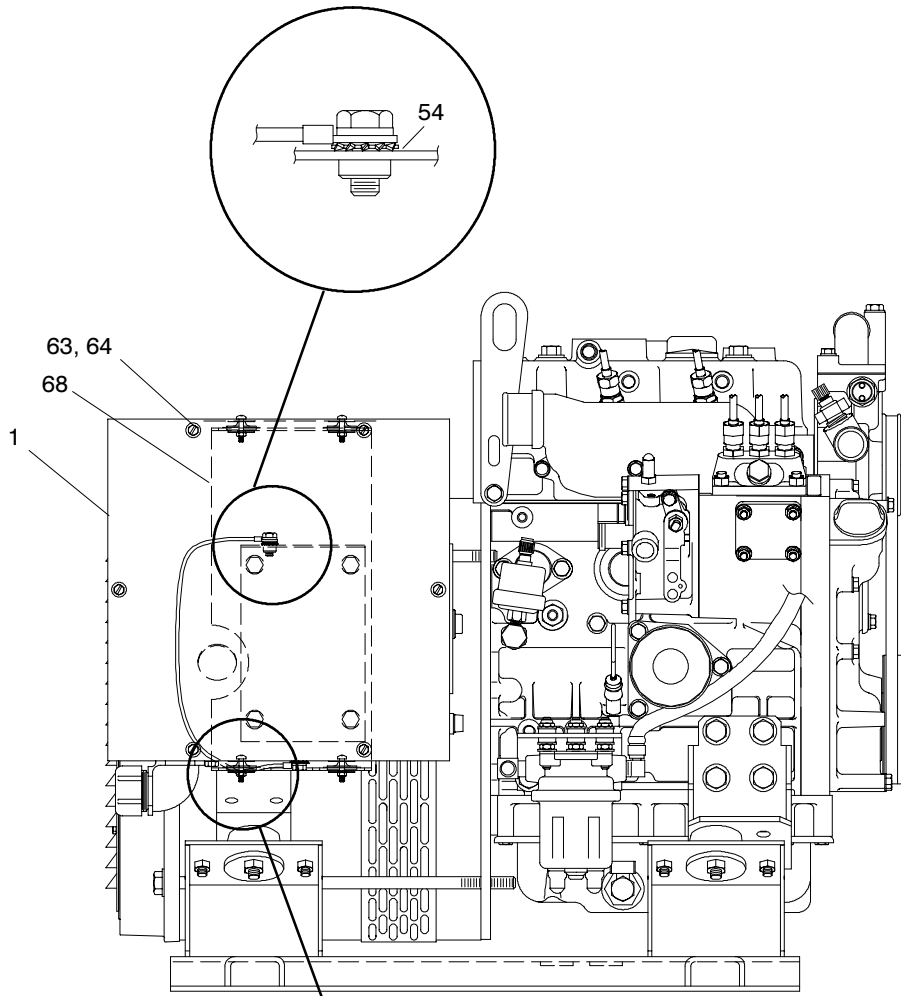


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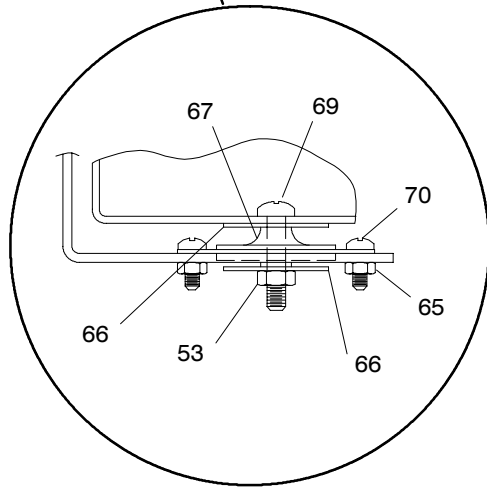
Group 201: Generator and Mounting, continued

Item	Part Number	Description	Quantity	
			Variation Number	
			52	54
1	A-229152	PCB assembly	1	1
2	A-229837	Rotor assembly	1	
2	A-229147	Rotor assembly		1
3	X-758-15	Bearing, ball	1	1
4	X-101-9	Nut, hex elastic stop, 10-24	4	
4	X-6284-2	Screw, slotted pan head machine		4
5	X-22-7	Washer, lock, .172 ID x .333 in. OD	5	5
6	X-25-129	Washer, plain, .384 ID x 1.628 in. OD	1	1
7	X-283-2	Terminal, ring, male, 16-14 AWG	3	3
8	X-363-1	Bracket, resistor mounting	2	2
9	X-364-4	Washer, resistor, .53 ID x .3 in. OD	2	2
10	X-400-189	Spacer, .215 ID x .312 OD x 1.2 in.	4	4
11	X-51-46	Screw, slotted pan head machine	1	1
12	X-51-8	Screw, slotted pan head machine	5	5
13	X-6051-14	Screw, hex head machine	2	
13	X-6051-20	Screw, hex head machine	2	
13	X-6051-16	Screw, hex head machine		4
14	X-67-113	Screw, hex washer, thread-forming	6	6
15	X-67-125	Screw, hex washer, thread-forming	1	1
16	X-67-135	Screw, hex washer, thread-forming	3	3
17	X-712-17	Spacer, .312 OD, .56 in.	3	3
18	X-801-3	Washer, hardened, .406 ID x .812 in. OD	4	4
19	X-97-15	Screw, hex head machine	4	4
20	225215	Fan, generator	1	1
21	225545	Panel, end bracket	1	1
22	229109-BLK	Guard, generator fan	1	1
23	229110	O-ring	1	1
24	229346	Disk, fan locator	1	
24	229347	Disk, drive	2	
24	257017	Disk, drive		2
24	229389	Disk, drive	1	
25	229349	Plate, locator	1	
25	229097	Plate, locator		1
27	229356	Pin, knurled	2	2
28	GM10510	Stator assembly	1	
28	GM10478	Stator assembly		1
29	229877	Resistor assembly	1	
29	229350	Resistor assembly		1
30	257442	Clip, speed	1	1
31	344566	End bracket	1	1
32	344567	Exciter field	1	1
33	344569	Exciter field assembly	1	1
34	X-801-4	Washer, hardened, .328 ID x .719 in. OD	6	6
35	X-6284-1	Screw, slotted pan head machine		4

Group 301: Controller and Mounting



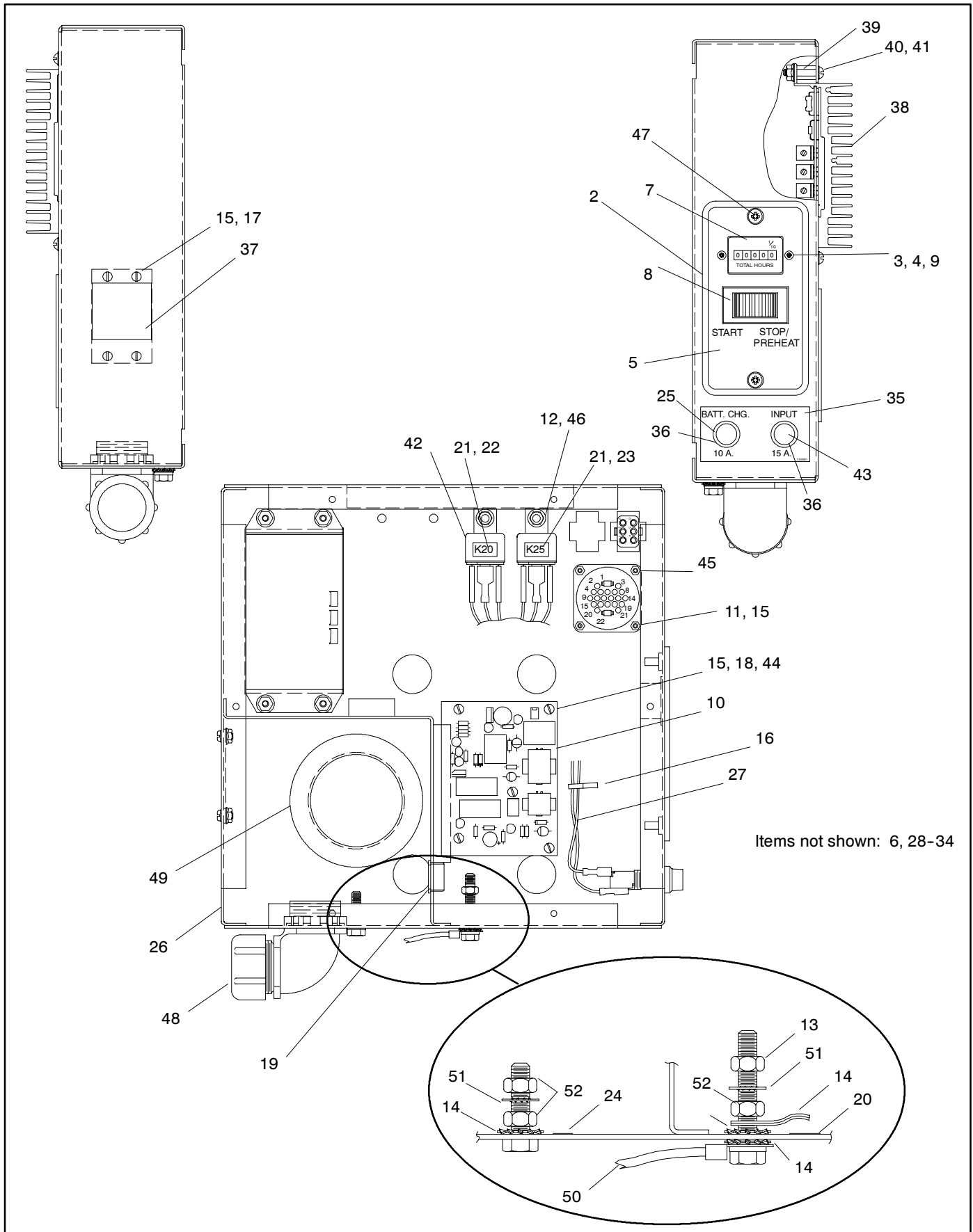
Items not shown: 55-62



Group 301: Controller and Mounting

Item	Part Number	Description	Quantity	
			38	39
1	GM10483	Controller assembly (includes items 2-52)	1	1
2	A-226965	Panel assembly, control (includes item 3-9)	1	1
3	M934-03-50	Nut, hex 3 mm	2	2
4	X-22-6	Washer, lock, .146 ID x .285 in. OD	2	2
5	226964	Panel, control	1	1
6	226979	Harness, wiring (not shown)	1	1
7	238736	Meter, run time, 10000 hour	1	1
8	344039	Switch, rocker, 1 pole	1	1
9	M7985A-03012-20	Screw, pan head M3 x 12	2	2
10	H-239563	PCB assembly, lopcon with time delay	1	1
11	M934-03-50	Nut, hex 3 mm	4	4
12	M934-05-50	Nut, hex 5 mm	2	2
13	M934-06-64	Nut, hex 6 mm	1	1
14	X-22-12	Washer, lock, .262 ID x .743 in. OD	3	3
15	X-22-6	Washer, lock, .146 ID x .285 in. OD	13	13
16	X-468-3	Cable tie, nylon	1	1
17	X-49-1	Screw, slotted pan head machine	4	4
18	X-49-25	Screw, slotted pan head machine	10	10
19	X-634-9	Bushing, .625 x .750 in. NPT	1	1
20	201620-152	Tab, identification "GRD"	1	1
21	201620-26	Tab, identification "K"	2	2
22	201620-46	Tab, identification "20"	1	1
23	201620-51	Tab, identification "25"	1	1
24	201620-94	Tab, identification	1	1
25	223316	Fuse, 10 A, 250 V	1	1
26	GM10481	Box, controller	1	1
27	GM10482	Harness, controller (includes items 28-34, not shown)	1	1
28	226935	Fuse, 8 A, 250 V	1	1
29	233959	Diode, 6 A	3	3
30	239496	Connector, panel, 22-position	1	1
31	241616	Connector, jack, 6-position	2	2
32	259689	Connector, plug, 9-position	1	1
33	322557	Fuse holder, inline	1	1
34	269366	Connector, plug, 15-position	1	1
35	226981	Decal, controller	1	1
36	238426	Fuse holder, .25 x 1.25 in.	2	2
37	245264-BLK	Plate, cover	1	1
38	G-278598	PCB assembly (PB3)	1	1
39	249986	Spacer	4	4
40	X-22-7	Washer, lock, .172 ID x .333 in. OD	4	4
41	X-51-5	Screw, slotted round head machine	4	4
42	259391	Relay, 12 VDC, .20 A	2	2
43	283645	Fuse, 15 A, 250 V	1	1
44	287948	Spacer	5	5
45	M7985A-03012-20	Screw, pan head M3 x 12	4	4
46	M7985A-05010-20	Screw, pan head M5 x 10	2	2
47	M965A-05016-20	Screw, pan head M5 x 16	2	2
48	X-6027-13	Coupling, conduit	1	1
49	X-6047-14	Channel, U	1	1
50	LK-1216-1515	Lead	1	1
51	X-22-11	Washer, lock, .262 ID x .469 in. OD	2	2
52	M934-06-60	Nut, hex 6 mm	3	3
53	M934-04-50	Nut, hex 4 mm	4	4
54	X-22-12	Washer, lock, .262 ID x .743 in. OD	1	1
55	GM13222	Harness, wiring (includes items 56-62, not shown)	1	1
56	233959	Diode, 6 A	1	1
57	239493	Connector, plug, 22-position	1	1
58	239494	Clamp, cable, .703 in.	1	1
59	241616	Connector, jack, 6-position	1	1
60	290262	Boot	1	1
61	292370	Connector, plug, 2-position	2	2
62	292371	Connector, jack, 2-position	1	1
63	GM10495	Cover, controller	1	1
64	X-67-52	Screw, hex washer, thread-forming	6	6
65	M934-03-50	Nut, hex 3 mm	8	8
66	X-25-157	Washer	8	8
67	254333	Vibromount	4	4
68	GM10480	Bracket, controller mounting	1	1
69	M7985A-04020-20	Screw, pan head machine	4	4
70	M7985A-03010-20	Screw, pan head M3 x 10	8	8

Group 301: Controller and Mounting, continued



Group 301: Controller and Mounting, continued

Item	Part Number	Description	Quantity	
			Variation Number	
			38	39
1	GM10483	Controller assembly (includes items 2-52)	1	1
2	A-226965	Panel assembly, control (includes item 3-9)	1	1
3	M934-03-50	Nut, hex 3 mm	2	2
4	X-22-6	Washer, lock, .146 ID x .285 in. OD	2	2
5	226964	Panel, control	1	1
6	226979	Harness, wiring (not shown)	1	1
7	238736	Meter, run time, 10000 hour	1	1
8	344039	Switch, rocker, 1 pole	1	1
9	M7985A-03012-20	Screw, pan head M3 x 12	2	2
10	H-239563	PCB assembly, lopcon with time delay	1	1
11	M934-03-50	Nut, hex 3 mm	4	4
12	M934-05-50	Nut, hex 5 mm	2	2
13	M934-06-64	Nut, hex 6 mm	1	1
14	X-22-12	Washer, lock, .262 ID x .743 in. OD	3	3
15	X-22-6	Washer, lock, .146 ID x .285 in. OD	13	13
16	X-468-3	Cable tie, nylon	1	1
17	X-49-1	Screw, slotted pan head machine	4	4
18	X-49-25	Screw, slotted pan head machine	10	10
19	X-634-9	Bushing, .625 x .750 in. NPT	1	1
20	201620-152	Tab, identification "GRD"	1	1
21	201620-26	Tab, identification "K"	2	2
22	201620-46	Tab, identification "20"	1	1
23	201620-51	Tab, identification "25"	1	1
24	201620-94	Tab, identification	1	1
25	223316	Fuse, 10 A, 250 V	1	1
26	GM10481	Box, controller	1	1
27	GM10482	Harness, controller (includes items 28-34, not shown)	1	1
28	226935	Fuse, 8 A, 250 V	1	1
29	233959	Diode, 6 A	3	3
30	239496	Connector, panel, 22-position	1	1
31	241616	Connector, jack, 6-position	2	2
32	259689	Connector, plug, 9-position	1	1
33	322557	Fuse holder, inline	1	1
34	269366	Connector, plug, 15-position	1	1
35	226981	Decal, controller	1	1
36	238426	Fuse holder, .25 x 1.25 in.	2	2
37	245264-BLK	Plate, cover	1	1
38	F-278598	PCB assembly (PB3)	1	1
39	249986	Spacer	4	4
40	X-22-7	Washer, lock, .172 ID x .333 in. OD	4	4
41	X-51-5	Screw, slotted round head machine	4	4
42	259391	Relay, 12 VDC, .20 A	2	2
43	283645	Fuse, 15 A, 250 V	1	1
44	287948	Spacer	5	5
45	M7985A-03012-20	Screw, pan head M3 x 12	4	4
46	M7985A-05010-20	Screw, pan head M5 x 10	2	2
47	M965A-05016-20	Screw, pan head M5 x 16	2	2
48	X-6027-13	Coupling, conduit	1	1
49	X-6047-14	Channel, U	1	1
50	LK-1216-1515	Lead	1	1
51	X-22-11	Washer, lock, .262 ID x .469 in. OD	2	2
52	M934-06-60	Nut, hex 6 mm	3	3
53	M934-04-50	Nut, hex 4 mm	4	4
54	X-22-12	Washer, lock, .262 ID x .743 in. OD	1	1
55	GM13222	Harness, wiring (includes items 56-62, not shown)	1	1
56	233959	Diode, 6 A	1	1
57	239493	Connector, plug, 22-position	1	1
58	239494	Clamp, cable, .703 in.	1	1
59	241616	Connector, jack, 6-position	1	1
60	290262	Boot	1	1
61	292370	Connector, plug, 2-position	2	2
62	292371	Connector, jack, 2-position	1	1
63	GM10495	Cover, controller	1	1
64	X-67-52	Screw, hex washer, thread-forming	6	6
65	M934-03-50	Nut, hex 3 mm	8	8
66	X-25-157	Washer	8	8
67	254333	Vibromount	4	4
68	GM10480	Bracket, controller mounting	1	1
69	M7985A-04020-20	Screw, pan head machine	4	4
70	M7985A-03010-20	Screw, pan head M3 x 10	8	8

Group 701: Literature

Item	Part Number	Description	Quantity				
			Variation Number				
			15	16	19	20	22
1	TP-5251	Safety Precautions	1	1	1	1	1
2	TP-5876	Service Manual, Yanmar TNE74 Series	1	1	1	1	1
3	TP-5968	Operation Manual, Yanmar TNE Series	1	1	1		1
3	TP-6067	Operation Manual, Yanmar TNE-E Series				1	
4	TP-6017	Warranty Commercial/Recreational Mobile	1	1	1	1	1
5	TP-6061	Operation Manual, 7.5-20EOR/EORZ, Mobile	1	1	1	1	1
6	TP-6062	Installation Manual, 7.5-20EOR/EORZ, Mobile	1	1	1	1	1
7	TP-6072	Parts Catalog, 7.5/10EOR/EORZ	1	1	1	1	1
8	TP-6073	Service Manual, 7.5-20EOR/EORZ, Mobile	1	1	1	1	1

Parts List: Accessories

Qty.	Description	Part No.
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Block Heaters

Block Heater, 1000 W, 110-120 V

GM11439-KP1

1	Coupling, hose	225250
1	Tag, hang	279047
1	Heater, block	352945
1	Bracket, block heater	GM10511
1	Hose, molded coolant	GM11434
1	Hose, molded coolant	GM11435
1	Plug, freeze	GM11451
1	Hose, molded lower radiator	GM11453
1	Hose, molded lower radiator	GM11454
4	Washer, plain	M125-6-80
2	Nut, hex 6mm	M6923-06-80
2	Nut, hex	M6923-12-80
4	Screw, hex cap	M933-06016-60
2	Screw, hex cap	M933-06025-60
2	Screw, hex cap	M933-12025-60
4	Clamp, hose, .5/1 in.	X-426-10
2	Clamp, hose, .81/1.75 in.	X-426-8
1	Cable tie	X-468-1
1	Coupling, hose	X-582-2
2	Clamp, insulating	X-672-3
1	Installation Instructions	TT-1275

Block Heater, 1000 W, 110-120 V

GM11440-KP1

1	Coupling, hose	225250
1	Tag, hang	279047
1	Heater, block	352945
1	Bracket, block heater	GM10511
1	Hose, molded coolant	GM11436
1	Hose, molded coolant	GM11437
1	Hose, molded lower radiator	GM11455
1	Hose, molded lower radiator	GM11456
4	Washer, plain	M125-6-80
2	Nut, hex 6mm	M6923-06-80
2	Nut, hex	M6923-12-80
4	Screw, hex cap	M933-06016-60
2	Screw, hex cap	M933-06025-60
2	Screw, hex cap	M933-12025-60
4	Clamp, hose, .5/1 in.	X-426-10
2	Clamp, hose, .81/1.75 in.	X-426-8
1	Cable Tie	X-468-1
1	Coupling, hose	X-582-15
2	Clamp, insulating	X-672-3
1	Installation Instructions	TT-1275

Circuit Breaker Kits

Circuit Breaker Kit

PA-225639

1	Breaker, circuit 30 amp	X-506-49
1	Plate, cover	229183
1	Decal, notice	246242
1	Installation Instructions	TT-875

Circuit Breaker Kit

PA-225641

1	Breaker, circuit 60 amp	X-506-51
1	Plate, cover	229183
1	Decal, notice	246242
1	Installation Instructions	TT-875

Qty.	Description	Part No.
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Circuit Breaker Kit

PA-225642

1	Breaker, circuit 80 amp	X-506-52
1	Plate, cover	229183
1	Decal, notice	246242
1	Installation Instructions	TT-875

Circuit Breaker Kit

PA-229186

1	Breaker, circuit 70 amp	X-506-48
1	Plate, cover	229183
1	Decal, notice	246242
1	Installation Instructions	TT-875

Circuit Breaker Kit

PA-229392

1	Breaker, circuit 35 amp	X-506-42
1	Decal, notice	246242
1	Installation Instructions	TT-875

Circuit Breaker Kit

PA-229393

1	Breaker, circuit 42 amp	X-506-43
1	Terminal, jumper	249956
1	Installation Instructions	TT-875

Circuit Breaker Kit

PA-229394

1	Breaker, circuit 42 amp	X-506-36
1	Decal, notice	246242
1	Terminal, jumper	249956
1	Installation Instructions	TT-875

Circuit Breaker Kit

PA-229542

1	Breaker, circuit 50 amp	X-506-38
1	Decal, notice	246242
1	Terminal, jumper	249956
1	Installation Instructions	TT-875

Circuit Breaker Kit

PA-229543

1	Breaker, circuit 33 amp	X-506-39
1	Decal, notice	246242
1	Terminal, jumper	249956
1	Installation Instructions	TT-875

Circuit Breaker Kit

PA-344052

1	Breaker, circuit 30 amp	X-506-36
1	Decal, notice	246242
1	Installation Instructions	TT-875

Circuit Breaker Kit

PA-344053

1	Breaker, circuit 50 amp	X-506-38
1	Decal, notice	246242
1	Installation Instructions	TT-875

Circuit Breaker Kit

PA-344054

1	Breaker, circuit 42 amp	X-506-43
1	Decal, notice	246242
1	Installation Instructions	TT-875

Circuit Breaker Kit

PA-359286

1	Breaker, circuit 42 amp	X-506-60
1	Plate, cover	229183
1	Decal, notice	246242
1	Installation Instructions	TT-875

Parts List: Accessories, continued

Qty.	Description	Part No.
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Circuit Breaker Kit		PA-359555
1	Breaker, circuit	X-506-69
1	Plate, cover	229183
1	Decal, notice	246242
1	Installation Instructions	TT-875

Cooling System Accessories

Pusher Fan		GM10932-KA1(KP1)
1	Fan, pusher	GM10503
1	Fan, sucker	GM10504

Pusher Fan		GM10933-KA1(KP1)
1	Fan, pusher	GM10471
1	Fan, sucker	GM10472

Remote Radiator w/12 VDC Suction Fan		PA-225299
1	Wiring harness	225682
1	Wiring harness	225683
1	Wiring harness, 10 kW Bell South	225684
1	Relay, 12 VDC, .20 A	259391
1	Fuse holder, inline	269216
1	Fuse, 15A, 250 V	283645
1	Radiator assembly	A-225668
1	Cap, pressure	225550
1	Shroud, fan	225665
1	Bracket, radiator mounting	225666
1	Bracket, radiator mounting	225667
1	Radiator assembly	A-225515
1	Fan assembly, suction	A-225659
2	Washer, plain .266 ID x 1" OD	X-25-73
2	Grommet	X-284-35
4	Screw, slotted pan head machine	X-50-3
1	Plug, pipe 1/2	X-75-3
1	Installation Instructions	TT-1005
2	Insulink, 22-18 gauge, insulated	X-367-3
1	Terminal, fast-on, female, 18-22 AWG	X-431-25
1	Screw, slotted pan head machine	X-50-1
1	Nut, flange whiz, 10-32	X-6210-1

Remote Radiator w/12 VDC Suction Fan		PA-225300
1	Wiring harness	225682
1	Wiring harness	225683
1	Wiring harness, 10 kW Bell South	225684
1	Relay, 12 VDC, .20 A	259391
1	Fuse holder, inline	269216
1	Fuse, 15A, 250 V	283645
1	Radiator assembly	A-225664
1	Shroud, fan	225663
1	Radiator assembly	A-225067
1	Cap, radiator	224368
1	Fan assembly, suction	A-225659
1	Valve, drain, 1/4 in. NPT	X-256-3
4	Screw, slotted pan head machine	X-50-7
1	Plug, pipe 1/2	X-75-31
1	Installation Instructions	TT-1005
2	Insulink, 22-18 gauge, insulated	X-367-3
1	Terminal, fast-on, female, 18-22 AWG	X-431-25
1	Screw, slotted pan head machine	X-50-1
1	Nut, flange whiz, 10-32	X-6210-1

Qty.	Description	Part No.
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Electrical System Accessories

Senders		PA-229354
1	Adapter, sender	229323
1	Sender, water temperature	249348
1	Switch, pressure sender	267408
1	Installation Instructions	TT-896

Senders		GM10973-KP1
1	Adapter, sender	225307
1	Sender, oil pressure	344305
1	Sender, temperature	GM10843
1	Installation Instructions	TT-896

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

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

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

Remote Start & 2-Meter Panel (12 volt)		PA-344040
1	Installation Instructions	TT-1072
1	Decal, warning	249494
1	Cable tie, nylon	X-468-3
1	Panel assembly, control (includes the following)	A-344033
1	Switch, rocker	344039
1	Harness, wiring	344031
1	Panel	344029
1	Gauge, oil pressure	344036
1	Gauge, water temperature	344035

Remote Start & 4-Meter Panel (12 volt)		PA-344041
1	Installation Instructions	TT-1073
1	Decal, warning	249494
1	Panel assembly, control (includes the following)	A-344034
1	Switch, rocker	344039
1	Harness, wiring	344032
1	Panel	344030
1	Gauge, oil pressure	344036
1	Gauge, water temperature	344035
1	Voltmeter	344037
1	Hourmeter	344038

Remote Start Panel Kit		PA-359581
1	Decal, warning	249494
1	Panel assembly, remote (includes the following)	A-226965
1	Panel, control	226964
1	Harness, wiring	226979
1	Meter, run time, 10,000 hour	238736
1	Switch, rocker, 1-pole	249406
1	Installation Instructions	TT-1245

Parts List: Accessories, continued

Qty.	Description	Part No.
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Fuel System Accessories

Fuel/Water Separator		GM11457-KP1
1	Filter, water separator, 1/4 x 1/4 in.	225455
1	Bracket, separator filter	225605
4	Washer, plain	M125-6-80
2	Nut, hex 6mm	M6923-06-80
2	Screw, hex cap	M933-06016-60
2	Screw, hex cap	M933-06025-60
1	Fuel line, flexible	X-386-14
2	Fitting, hose connector 90 degree	X-391-20
2	Clamp, hose, .25/.70 in.	X-426-9
1	Fitting, hose	X-652-3
1	Installation Instructions	TT-1274

Fuel/Water Separator		GM11475-KP1
1	Filter, water separator, 1/4 x 1/4 in.	225455
1	Bracket, separator filter	GM11474
2	Washer, plain	M125-6-80
2	Nut, hex 6mm	M6923-06-80
2	Screw, hex cap	M933-06025-60
2	Screw, hex cap	M933-08020-60
1	Fuel line, flexible	X-386-6
2	Fitting, hose connector 90 degree	X-391-20
2	Clamp, hose, .25/.70 in.	X-426-9
1	Fitting, hose	X-652-3
1	Installation Instructions	TT-1274

Qty.	Description	Part No.
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Miscellaneous Accessories

Oil Drain		GM10928-KP1
1	Valve, oil drain	344828
1	Washer, plain	M125A-06-80
1	Nut, hex 6mm	M6923-06-80
1	Screw, hex cap	M933-06016-60
1	Washer, plain, .859 ID x 1.185 in. OD	X-25-145
1	Clamp, hose, .25/.70 in.	X-426-9
1	Clip, J	X-6084-1
1	Hose, rubber, straight, .375 in. ID	X-651-34
1	Installation Instructions	TT-1276

Rain Cap		PA-225243
1	Cap, rain	276254

Open Unit Accessories

Silencer		PA-225321
1	Silencer, exhaust, 1.625 in.	225316
1	Adapter, exhaust	X-570-22

Spark Arrestor		PA-225323
1	Arrestor, spark	225319
1	Coupling	225320
1	Clamp, muffler, 1.87 in.	277706
1	Clamp, muffler, 1.75 in.	X-722-4

Flexible Exhaust		PA-225607
1	Fitting, elbow, 90 degree	151771
1	Coupling, exhaust	254972

Exhaust Installation		PA-225627
1	Fitting, elbow, 90 degree	151771
1	Nipple, pipe, 1 1/2 x 2 1/2 in.	155029

Paint

Paint		
1	Paint, Kohler Cream Beige, spray can	221338
1	Paint, Kohler Cream Beige, gallon can	221337
1	Paint, Kohler Cream Beige, touch-up	GM19489

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 ₂ 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 ¹⁰ bytes)

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

Appendix B Common Hardware Application Guidelines

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

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

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

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

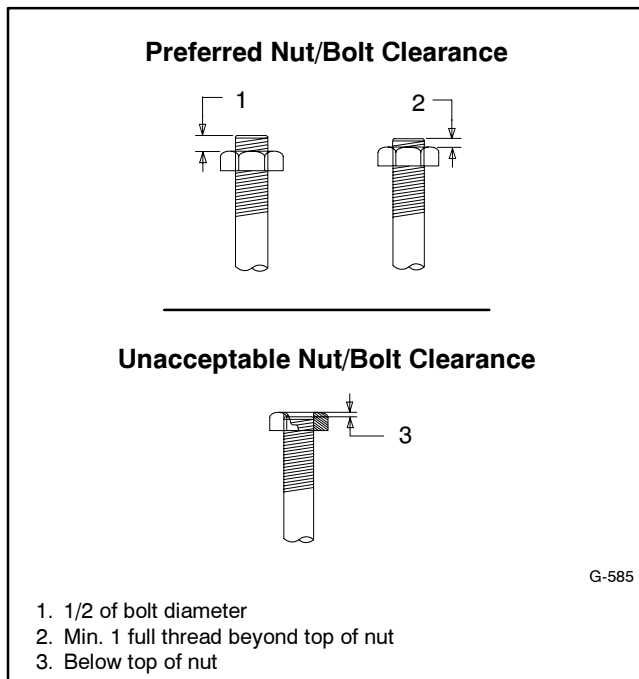


Figure 1 Acceptable Bolt Lengths

1. 1/2 of bolt diameter
2. Min. 1 full thread beyond top of nut
3. Below top of nut

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.

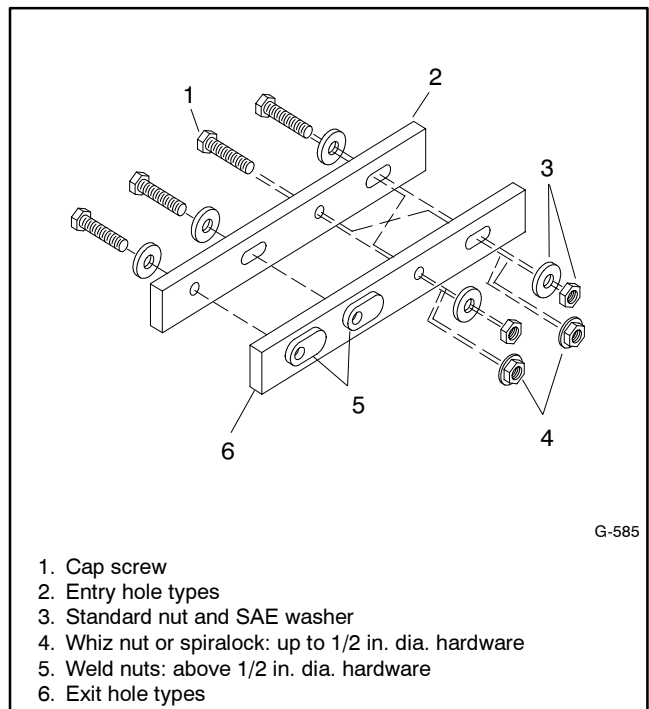


Figure 2 Acceptable Hardware Combinations

1. Cap screw
2. Entry hole types
3. Standard nut and SAE washer
4. Whiz nut or spirallock: up to 1/2 in. dia. hardware
5. Weld nuts: above 1/2 in. dia. hardware
6. Exit hole types

Appendix C General Torque Specifications















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












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






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

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

Appendix D Common Hardware Identification

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

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

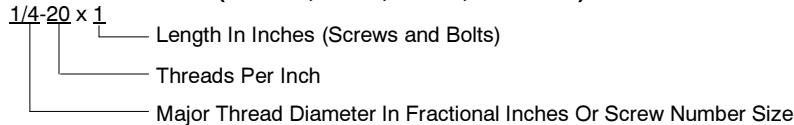
Hardness Grades	
American Standard	
Grade 2	
Grade 5	
Grade 8	
Grade 8/9 (Hex Socket Head)	
Metric	
Number stamped on hardware; 5.8 shown	

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

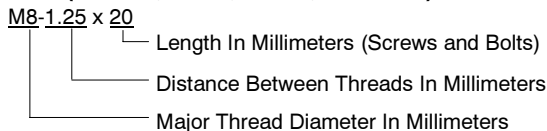
Phillips® screw is a registered trademark of Phillips Screw Company.

Sample Dimensions

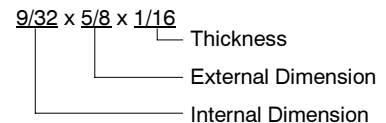
American Standard (Screws, Bolts, Studs, and Nuts)



Metric (Screws, Bolts, Studs, and Nuts)



Plain Washers



Lock Washers



Appendix E Common Hardware List

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

American Standard

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

Washers

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

Metric

Hex head bolts are hardness grade 8.8 unless noted.

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

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