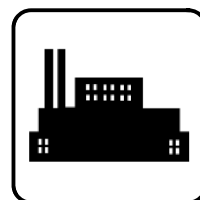


Service Parts

Industrial Generator Sets



Models:

10REOZDC
15REOZDC
20REOZDC

KOHLER[®]
POWER SYSTEMS

9001
KOHLER
POWER SYSTEMS
NATIONALLY REGISTERED

TP-6802 12/11

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Common Replacement Parts

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

Description	Part Number	Quantity On Unit		
		10 kW	15 kW	20 kW
Belt, fan	225022	1	1	1
Element, air cleaner	GM42265	1	1	
Element, air cleaner	GM42266			1
Filter, oil	252834	1		
Filter, oil	GM47465		1	1
Filter, fuel	GM32359	1	1	1
Fuse, 10 A, 250 V	223316	2	2	2
Gasket, thermostat	225006	1	1	1
Gasket, thermostat	249865	1	1	1
Sensor, temperature	GM28823	1	1	1
Thermostat	GM34387	1	1	1

Figure 1 Common Replacement Parts

Introduction

This manual lists service replacement parts for generator sets listed on the front cover.

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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.

Numbering System Significance

This manual uses the following numbering systems:

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

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

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

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

Illustrations

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

How to Find Part Numbers

Use the following steps to locate a service replacement part.

1. Locate the generator set nameplate to **identify the generator set spec number.**

2. Locate a second generator set nameplate listing accessories to **identify installed modules.** On some models the accessory nameplate is mounted inside the generator junction box.

3. **Turn to the Specification Number Index.** The first column lists the generator set spec numbers. The headings identify the groups of parts that make up the generator set.

4. **Identify the group** most likely to include the service part number.

5. **Find the group variation number** at the intersection of the spec number row and the group column. Note the variation number.

6. **Page forward to locate the group** identified in step 4 or find the appropriate page in the Table of Contents.

7. **Find the part on the illustration** and note the item number of the part or **find the part description in the parts list.**

8. Select **the part number that corresponds to your group variation.** The first column lists the illustration item number. Find the variation identified in the Specification Number Index or the module number found on the generator set nameplate in the appropriate column on the right side of the parts list table. Find the quantity used at the intersection of the item number row and the variation column. A blank space at the intersection means the variation/module does not use that part number.

Hardware References

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

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

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

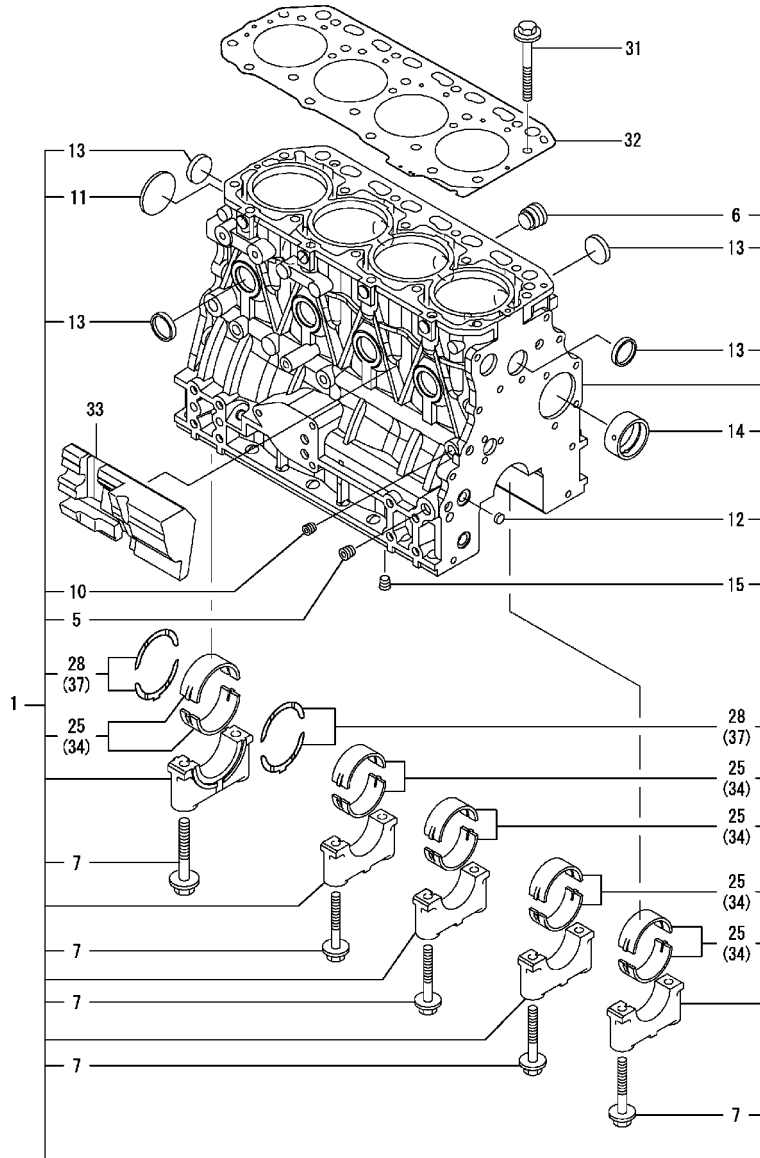
Specification Number Index

Group Title	<i>Cylinder Block</i>	<i>Gear Housing</i>	<i>Mounting Flange & Oil Pan</i>	<i>Cylinder Head</i>	<i>Intake & Exhaust Manifold</i>	<i>Camshaft and Drive Gear</i>	<i>Turbocharger</i>	<i>Crankshaft and Piston</i>	<i>Lub. Oil System</i>	<i>Lub. Oil Line</i>	<i>Cooling Water System</i>	<i>Fuel Injection Pump</i>	<i>Battery Alternator</i>	<i>Fuel Injection Valve</i>
Group No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Spec No.	Variation Number													
10 KW														
GM80904-GA1	3	3	3	3	3	3	-	3	3	-	3	3	3	3
15 KW														
GM80905-GA2	6	6	2	7	6	2	6	2	2	2	2	6	-	2
20 kW														
GM80905-GA1	7	7	1	8	7	1	1	1	1	1	1	7	-	1

Group Title	<i>Fuel Line</i>	<i>Starting Motor</i>	<i>Gasket Set</i>	<i>Air Intake</i>	<i>Fuel System</i>	<i>Cooling System</i>	<i>Engine</i>	<i>Nameplates and Decals</i>	<i>Skid and Plant Mounting</i>	<i>Generator and Mounting</i>	<i>Literature</i>
Group No.	15	16	17	101	103	104	105	107	109	201	701
Spec No.	Variation Number										
10 KW											
GM80904-GA1	3	2	3	3	1	*	1	2	*	*	50
15 KW											
GM80905-GA2	2	2	6	7	1	*	3	2	*	*	51
20 KW											
GM80905-GA1	1	3	7	8	1	*	2	2	*	*	52

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

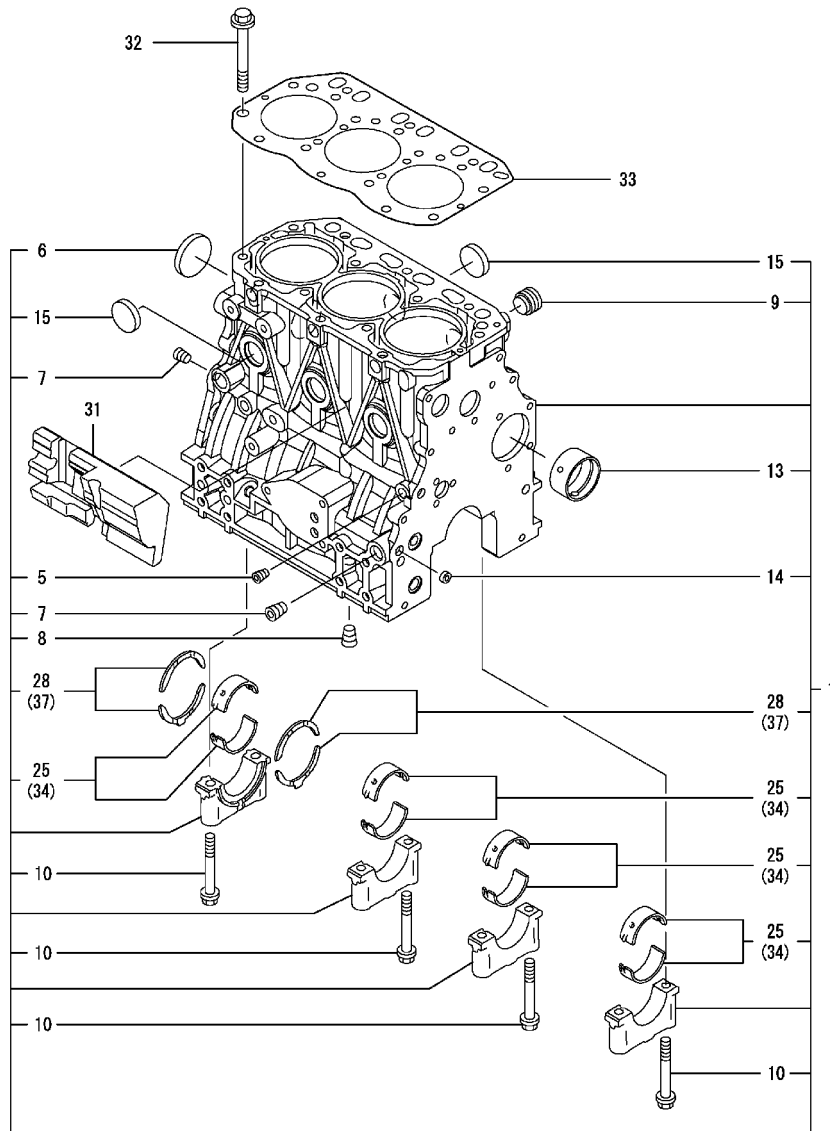
Group 1: Cylinder Block



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Item	Part Number	Description	Quantity		Item	Part Number	Description	Quantity	
			Variation 1	Variation 7				Variation 1	Variation 7
1	GM35753	Block assembly, cylinder (includes items 5-28)	1	1	14	252933	Bush	1	1
5	252771	Plug PT 1/4	2	2	15	252771	Plug PT 1/4	1	1
6	252566	Plug	1	1	25	GM13297	Main bearing set	5	5
7	252803	Bolt	10	10	28	252977	Bearing, thrust	2	2
10	252078	Plug	1	1	31	252797	Stud, cylinder head	18	18
11	GM35519	Plug 50	1	1	32	GM35582	Gasket, head	1	1
12	252728	Plug	2	2	33	GM35523	Spacer	1	1
13	225924	Plug 30	8	8	34	256585	Bearing, main, US = 0.25	5	5
					37	256765	Bearing, thrust, 0.25	1	1

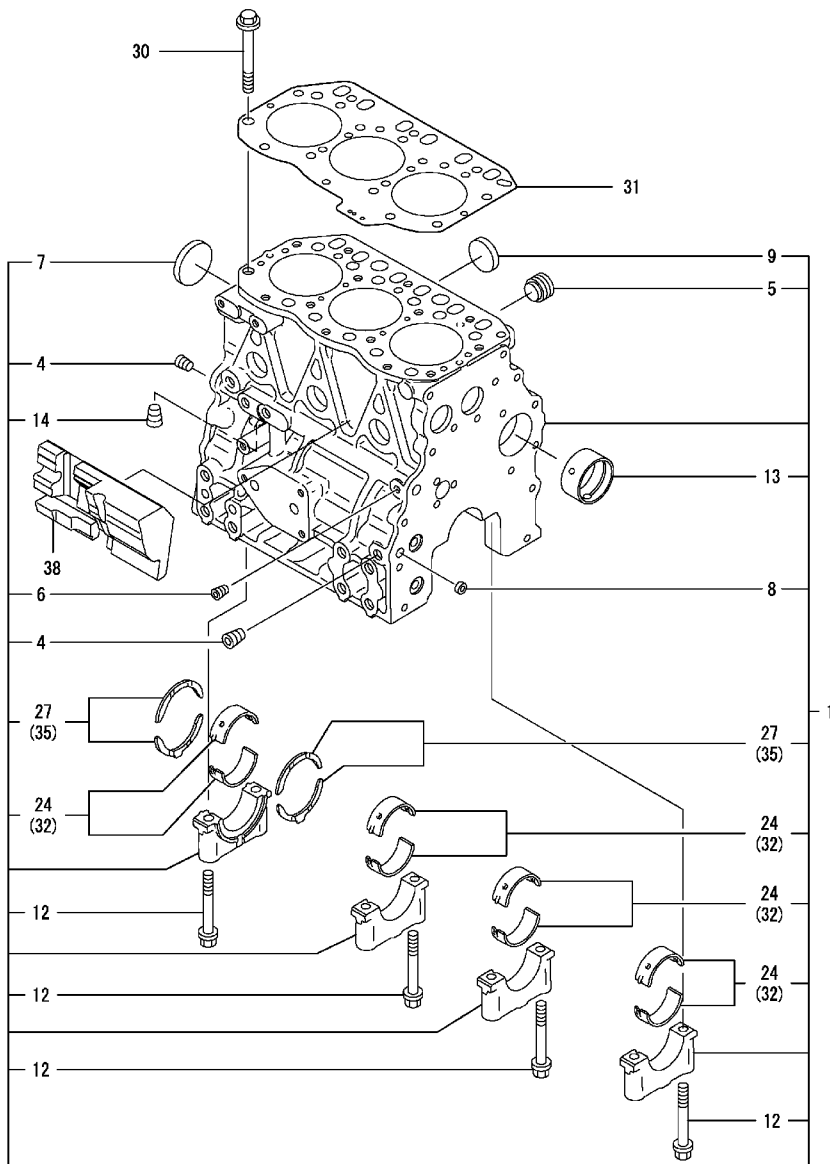
Group 1: Cylinder Block, continued



6388_1_2

Item	Part Number	Description	Quantity		Item	Part Number	Description	Quantity	
			2	6				2	6
1	GM35746	Block assembly, cylinder (includes items 5-28)	1	1	14	252728	Plug	2	2
5	252078	Plug	1	1	15	225924	Plug 30	6	6
6	GM35519	Plug 50	1	1	25	GM13297	Bearing set, main	4	4
7	252771	Plug PT 1/4	2	2	28	252977	Bearing, thrust	2	2
8	252771	Plug PT 1/4	1	1	31	GM35523	Spacer	1	1
9	252566	Plug	1	1	32	252797	Stud, cylinder head	14	14
10	252803	Bolt	8	8	33	GM13304	Gasket, cylinder head	1	1
13	252933	Bush	1	1	34	256585	Bearing, main	4	4
					37	256765	Bearing, thrust	1	1

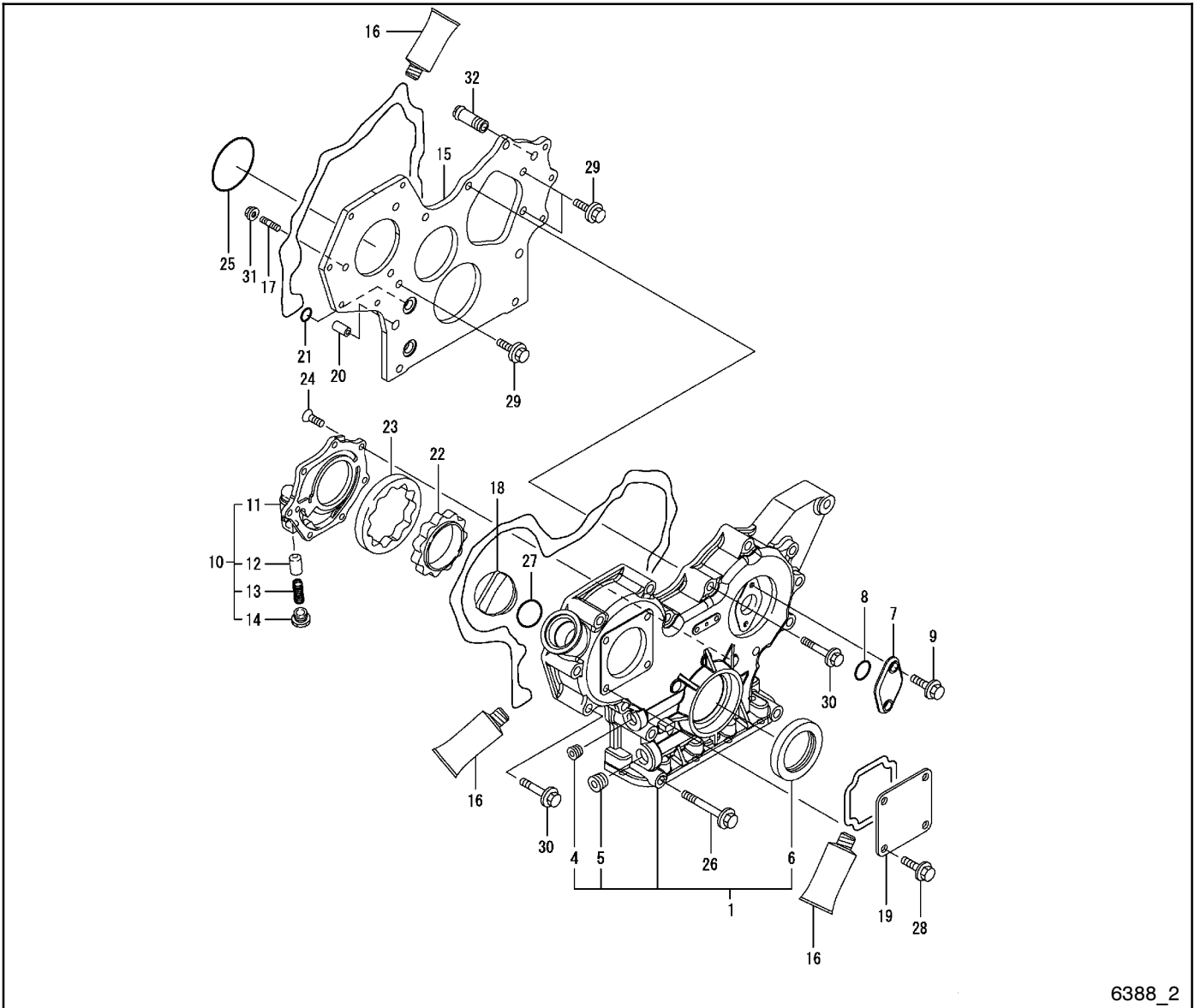
Group 1: Cylinder Block, continued



6388_1_3

Item	Part Number	Description	Quantity
			Variation 3
1	GM35737	Block assembly, cylinder (includes items 4-27)	1
4	252771	Plug PT1/4	2
5	252566	Plug	1
6	252078	Plug	1
7	GM35519	Plug 50	1
8	252728	Plug	2
9	225924	Plug 30	6
12	225703	Bolt	8
13	252933	Bush	1
14	252771	Plug PT1/4	1
24	GM35740	Bearing, main (std)	4
27	229802	Bearing	1
30	225705	Bolt	14
31	GM33836	Gasket, cylinder head	1
32	225709	Bearing, main	4
35	225710	Bearing, thrust	2
38	GM35428	Spacer	1

Group 2: Gear Housing

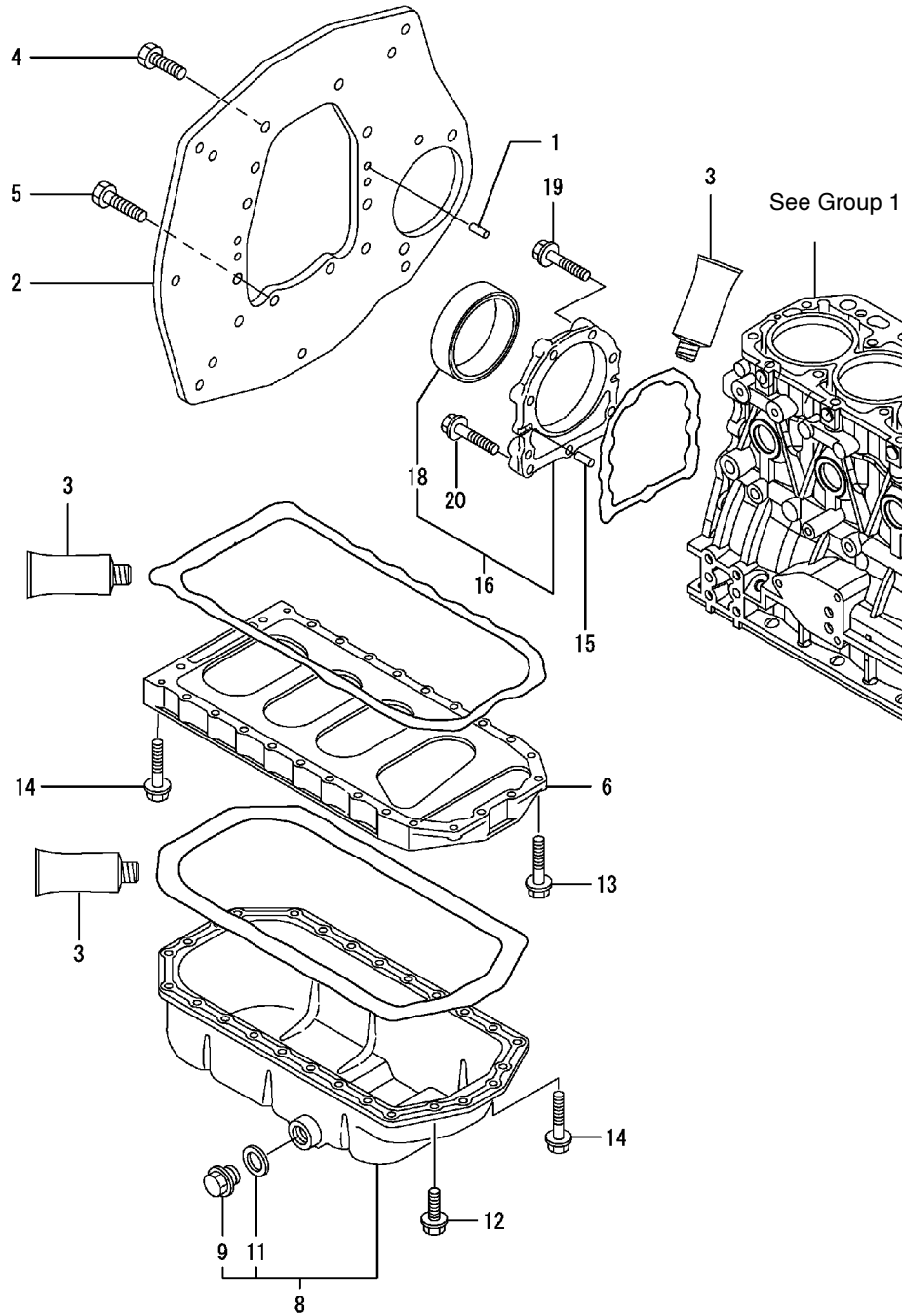


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Group 2: Gear Housing

Item	Part Number	Description	Quantity				
			Variation				
			1	2	3	6	7
1	GM35752	Gear case assembly (includes items 4-6)	1				1
1	GM35736	Gear case assembly (includes items 4-6)		1	1	1	1
4	GM35720	Plug, screw	1	1	1	1	1
5	GM35721	Plug	1	1	1	1	1
6	252931	Oil seal	1	1	1		1
6	GM66395	Oil seal				1	1
7	252750	Cover, blind	1	1	1	1	1
8	256796	O-ring	1	1	1	1	1
9	252693	Bolt	2	2	2	2	2
10	GM35464	Cover assembly, pump (includes items 11-14)	1	1	1	1	1
11	GM35463	Cover, lube oil pump	1	1	1	1	1
12	GM35653	Valve, relief	1	1	1	1	1
13	GM35578	Spring	1	1	1	1	1
14	GM35520	Plug	1	1	1	1	1
15	GM35429	Flange, gear case	1		1		1
15	GM35551	Plate, gear case		1		1	
16	252998	Gasket	1		1		
16	GM46206	Gasket		1		1	1
17	GM35430	Stud, M8 x 25	3	3	3	3	3
18	250837	Cap, lube oil	1	1	1	1	1
19	256531	Cover	1	1	1	1	1
20	252932	Knock, pipe	2	2	2	2	2
21	GM35421	O-ring	4	4	4	4	4
22	GM35609	Rotor, inner	1				1
22	GM35465	Rotor, inner		1	1	1	
23	GM35610	Rotor, outer	1				1
23	GM35466	Rotor, outer		1	1	1	
24	GM35467	Screw, M6 x 16	7	7	7	7	7
25	252764	O-ring, fuel injection pump	1	1	1	1	1
26	GM35522	Bolt, M8 x 85	3	3	3	3	3
27	252684	O-ring	1	1	1	1	1
28	252696	Bolt, M8 x 16	4	4	4	4	4
29	252696	Bolt, M8 x 16	3	3	3	3	3
30	256798	Bolt, M8 x 55, plated	12	12	12	12	12
31	GM35732	Nut	3	3	3	3	3
32	229721	Joint		1		1	

Group 3: Mounting Flange and Oil Pan

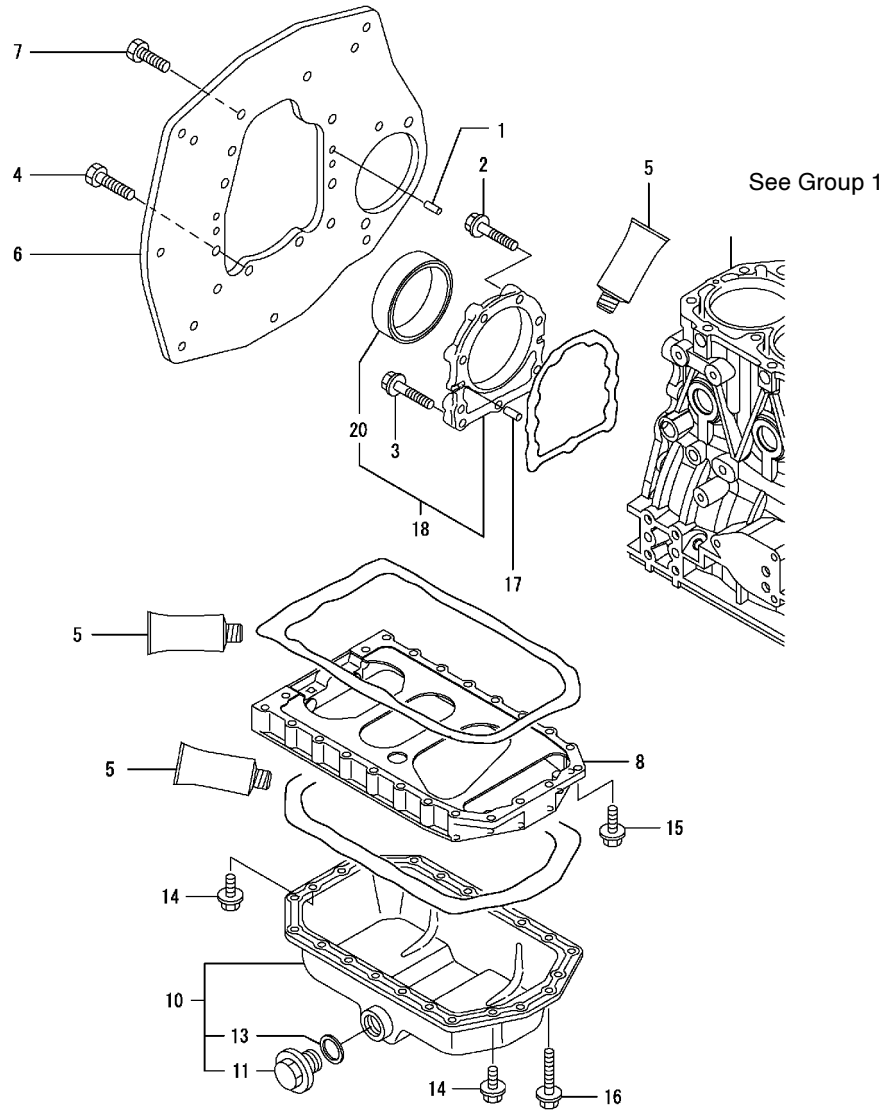


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Group 3: Mounting Flange and Oil Pan

Item	Part Number	Description	Quantity
			Variation 1
1	256750	Parallel pin, 8 x 16	2
2	229114	Mounting flange	1
3	252998	Gasket	1
4	229505	Bolt, M10 x 20	6
5	252714	Bolt	4
6	252862	Spacer, pump	1
8	252983	Lube oil sump assembly (includes items 9-11)	1
9	—	See Group 105 for oil drain parts	1
11	225425	Washer, seal, 22S	1
12	252696	Bolt, M8 x 16	4
13	252699	Bolt, M8 x 25, plated	2
14	252703	Bolt	24
15	256750	Parallel pin, 8 x 16	2
16	225866	Case assembly (includes item 18)	1
18	252930	Oil seal, rear	1
19	363430	Bolt, M8 x 30	6
20	252701	Bolt, M8 x 35	3

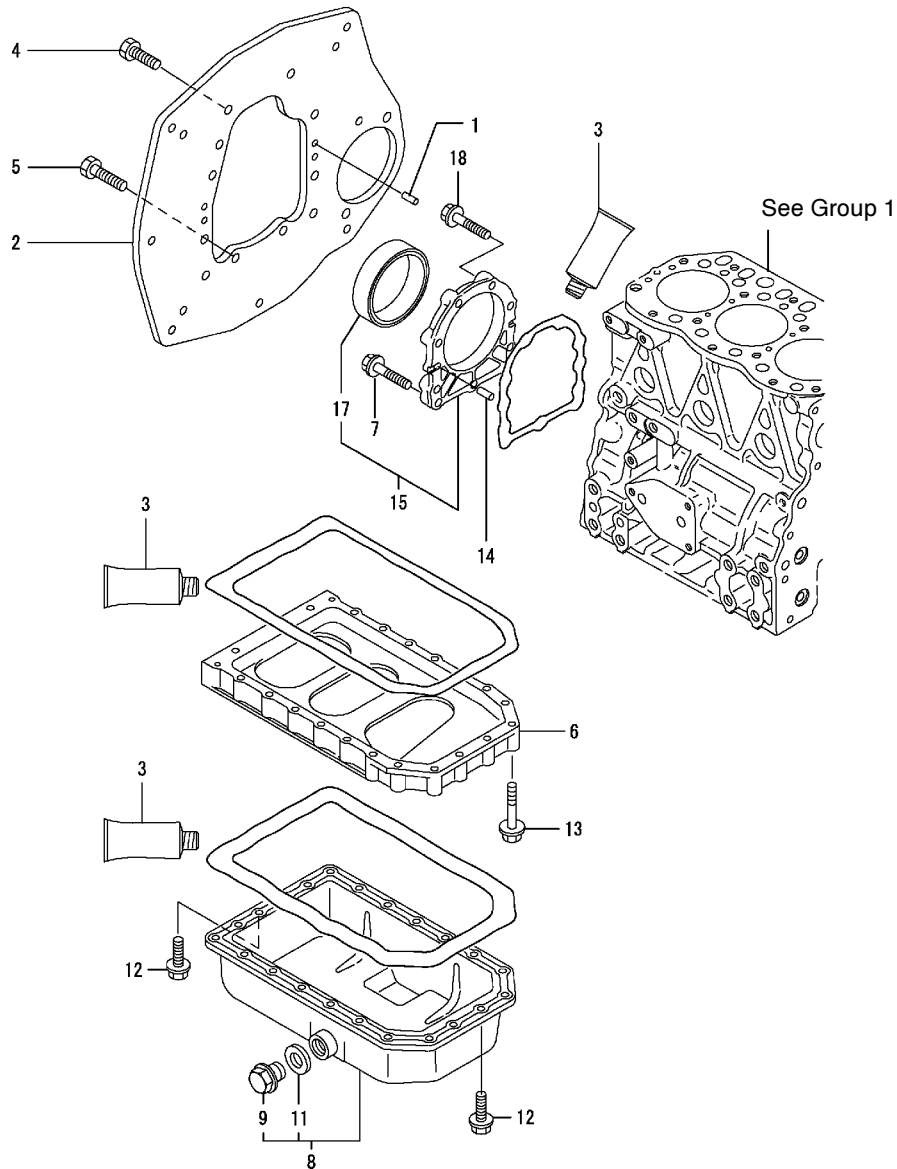
Group 3: Mounting Flange and Oil Pan, continued



6388_3_2

Item	Part Number	Description	Quantity
			Variation 2
1	256750	Parallel pin, 8 x 16	2
2	363430	Bolt, M8 x 30	6
3	252701	Bolt, M8 x 35	3
4	252714	Bolt	4
5	GM46207	Gasket, liquid	1
6	229114	Mounting flange	1
7	229505	Bolt, M10 x 20	6
8	256751	Spacer, sump	1
10	229729	Sump assembly, lube oil (includes items 11-13)	1
11	—	See Group 105 for oil drain parts	1
13	225425	Washer, seal, 22S	1
14	252696	Bolt, M8 x 16	4
15	252699	Bolt, M8 x 25, plated	2
16	252703	Bolt	20
17	256750	Parallel pin, 8 x 16	2
18	225866	Case assembly (includes item 20)	1
20	252930	Oil seal, rear	1

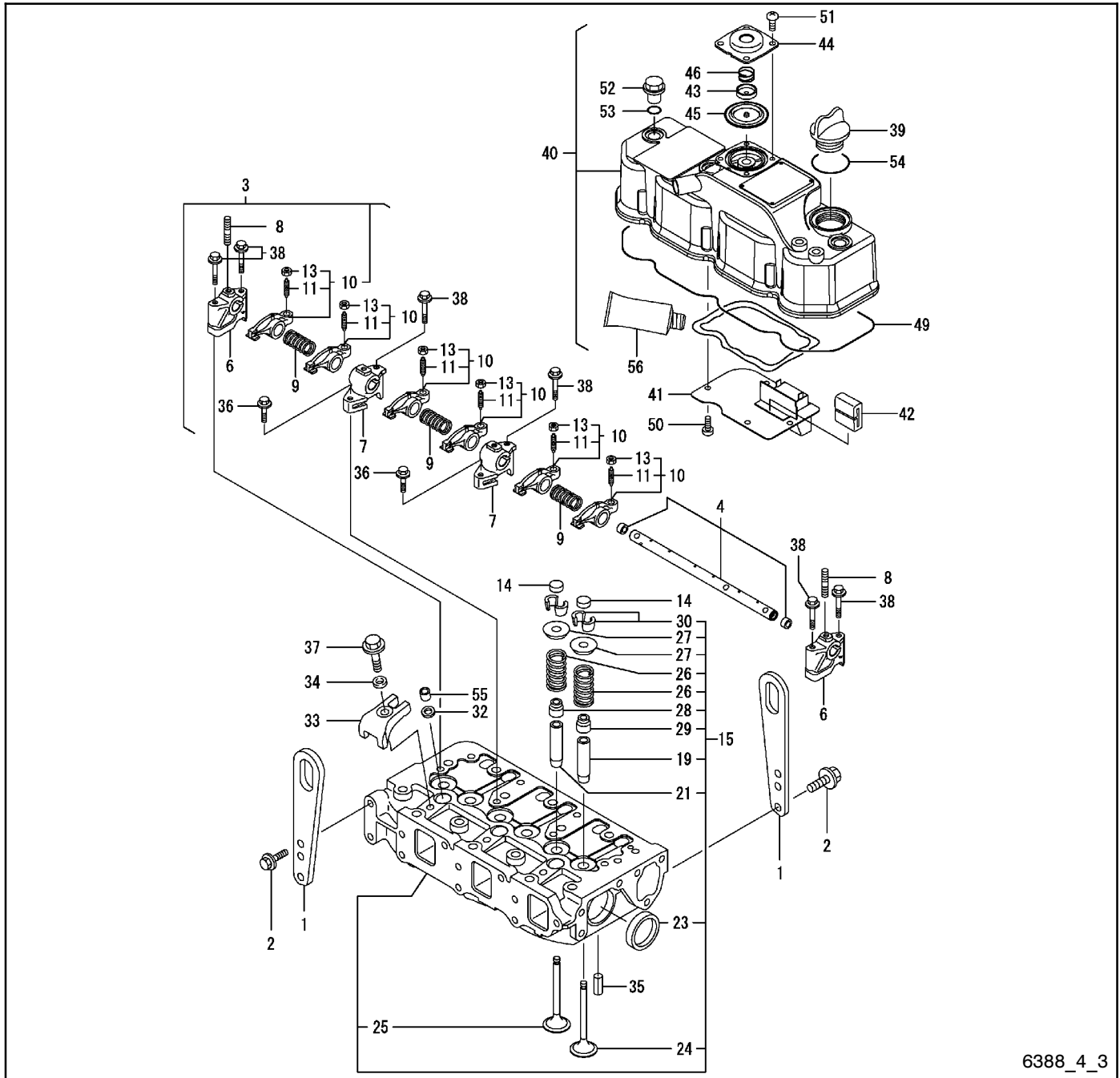
Group 3: Mounting Flange and Oil Pan, continued



6388_3_3

Item	Part Number	Description	Quantity
			Variation 3
1	256750	Parallel pin, 8 x 16	2
2	229114	Mounting flange	1
3	252998	Gasket	1
4	229505	Bolt, M10 x 20	6
5	252714	Bolt	4
6	225706	Spacer, L.O. sump	1
7	252701	Bolt, M8 x 35	3
8	GM35492	Sump assembly, oil (includes items 9-11)	1
9	—	See Group 105 for oil drain parts	1
11	225425	Washer, seal, 22S	1
12	252696	Bolt, M8 x 16	6
13	252703	Bolt	22
14	256750	Parallel pin, 8 x 16	2
15	225866	Case assembly (includes item 17)	1
17	252930	Oil seal, rear	1
18	363430	Bolt, M8 x 30	6

Group 4: Cylinder Head

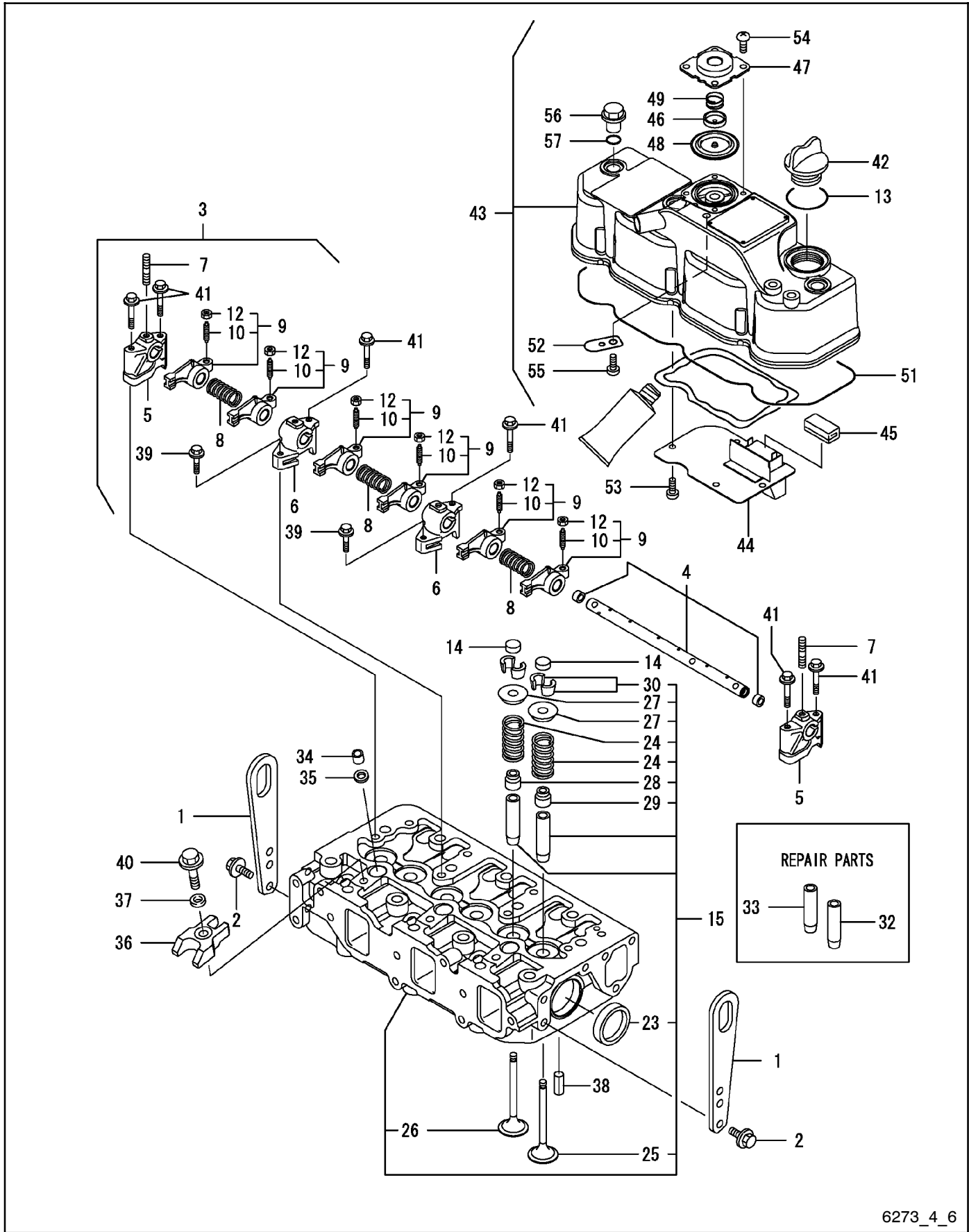


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Group 4: Cylinder Head

Item	Part Number	Description	Quantity
			Variation 3
1	363110	Lifter, engine	2
2	225818	Bolt, M8 x 14	4
3	GM35440	Shaft assembly, rocker (includes items 4-13)	1
4	GM35441	Shaft, rocker arm	1
6	GM35442	Support, rocker arm	2
7	GM35443	Support, rocker arm	2
8	GM35444	Stud	3
9	252815	Spring	3
10	GM35447	Arm assembly, rocker (includes items 11-13)	6
11	229844	Screw, valve	6
13	252817	Nut, M8 x P1.0	6
14	250999	Cap	6
15	GM35448	Head assembly, cylinder (includes items 19-30)	1
19	250835	Valve guide	3
21	GM35449	Guide, valve	3
23	252732	Plug 40	4
24	GM35438	Valve, intake	3
25	GM35439	Valve, exhaust	3
26	225713	Spring, valve	6
27	250882	Retainer	6
28	225766	Seal, valve stem	3
29	250844	Valve seal	3
30	250806	Pin, cotter	6
32	252744	Seat	3
33	GM35451	Retainer, nozzle	3
34	GM35495	Washer	3
35	250963	Spring pin, 6 x 12	2
36	252699	Bolt, M8 x 25, plated	2
37	252703	Bolt	3
38	252704	Bolt	6
39	250837	Lube oil cap	1
40	GM35446	Bonnet assembly, head (includes items 41-51)	1
41	GM35431	Plate, baffle	1
42	252805	Baffle	1
43	GM35434	Plate, diaphragm	1
44	GM35435	Cover, diaphragm	1
45	GM35436	Diaphragm	1
46	GM35437	Spring, diaphragm	1
49	GM35445	Gasket, bonnet	1
50	363201	Screw, tapping, 5 x 10	4
51	363201	Screw, tapping, 5 x 10	4
52	252470	Nut, cap	3
53	250801	O-ring	3
54	252684	O-ring	1
55	GM35450	Protector, nozzle	3
56	252998	Gasket	1

Group 4: Cylinder Head, continued

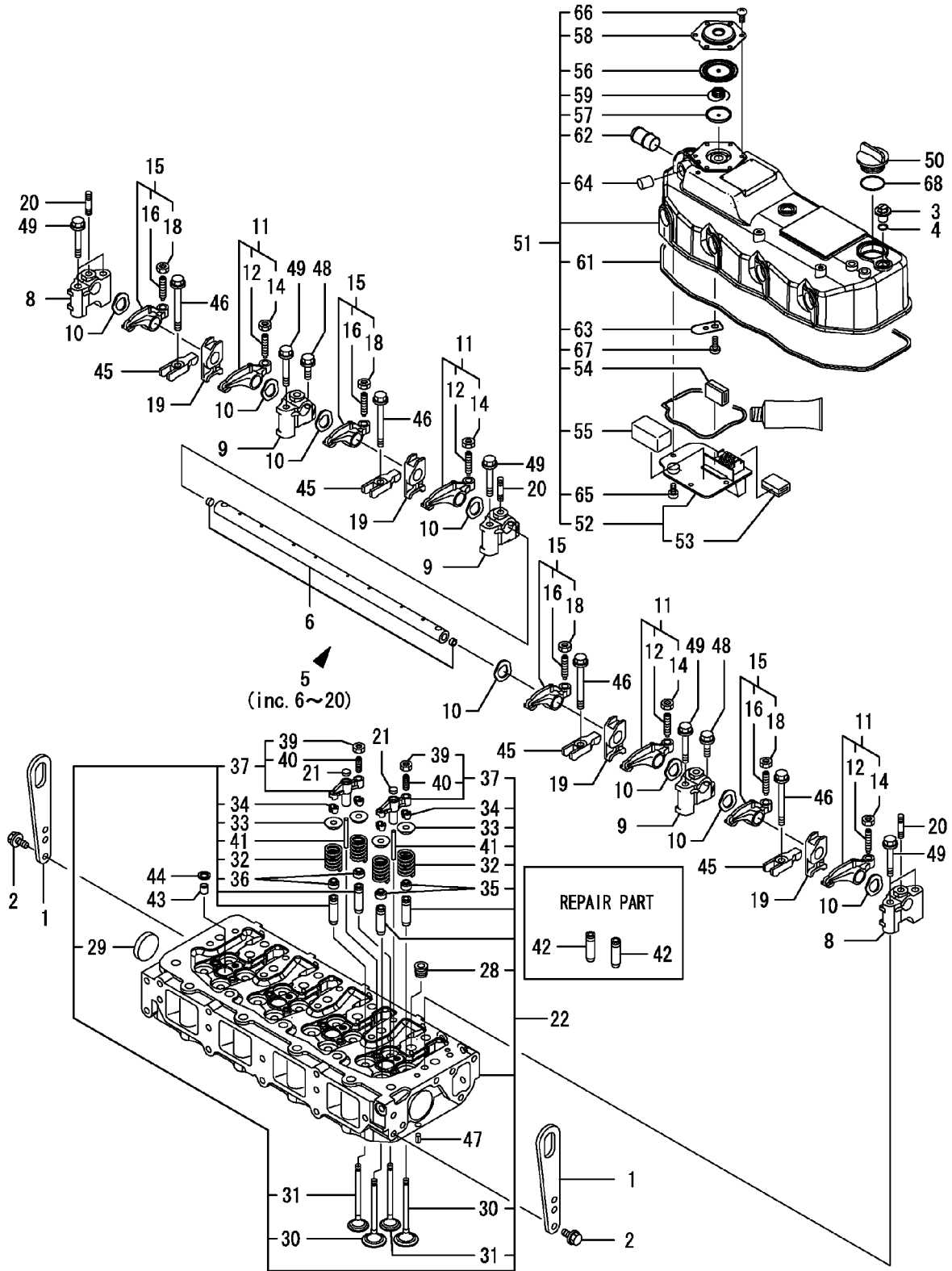


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Group 4: Cylinder Head, continued

Item	Part No.	Description	Quantity
			Variation 7
1	363110	Lifter, engine	2
2	252696	Bolt, M8 x 16	4
3	GM35527	Shaft assembly, rocker	1
4	GM35528	Shaft, rocker arm	1
5	GM35442	Support, rocker arm	2
6	GM35443	Support, rocker arm	2
7	GM35444	Stud	3
8	252815	Spring	3
9	GM35531	Arm assembly, rocker	6
10	229844	Valve screw	6
12	252817	Nut, M8 x P1.0	6
13	252684	O-ring	1
14	345355	Cap, valve	6
15	GM66405	Head assembly, cylinder	1
23	252732	Plug 40	2
24	252934	Spring, valve	6
25	GM35526	Valve, intake	3
26	252780	Valve, exhaust	3
27	252935	Retainer, spring	6
28	252754	Seal, valve stem	3
29	256578	Seal, valve stem	3
30	252737	Cotter 8	6
32	256736	Guide, suction valve	3
33	256768	Guide, exhaust valve	3
34	GM35450	Protector, nozzle	3
35	252744	Seat	3
36	GM35533	Retainer, nozzle	3
37	GM35495	Washer	3
38	250963	Spring pin	2
39	252699	Bolt, M8 x 25 plated	2
40	252701	Bolt, M8 x 35	3
41	252704	Bolt	6
42	250837	Lube oil cap	1
43	GM66404	Bonnet assembly, head	1
44	GM35524	Plate, baffle	1
45	252805	Baffle	1
46	GM35434	Plate, diaphragm	1
47	GM35435	Cover, diaphragm	1
48	GM35436	Diaphragm	1
49	GM35437	Spring, diaphragm	1
51	GM35529	Gasket, bonnet	1
52	GM66403	Spring, plate	1
53	363201	Screw, tapping, 5 x 10	4
54	363201	Screw, tapping, 5 x 10	4
55	363201	Screw, tapping, 5 x 10	1
56	252470	Cap nut	3
57	250801	O-ring	3

Group 4: Cylinder Head, continued

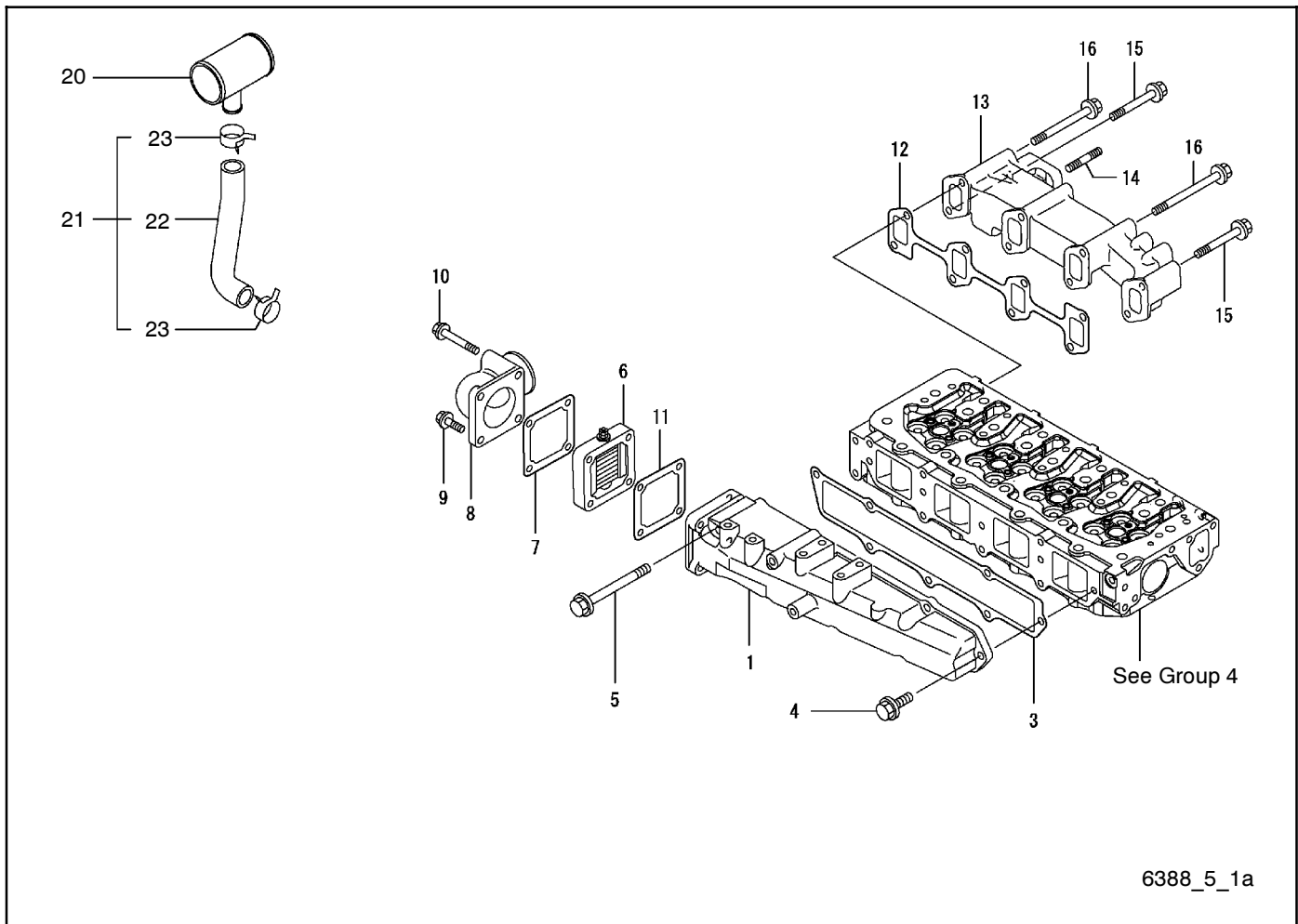


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Group 4: Cylinder Head, continued

Item	Part No.	Description	Quantity
			Variation 8
1	363110	Lifter, engine	2
2	252696	Bolt, M8 x 16	4
3	252470	Cap nut	3
4	250801	O-ring	3
5	GM35588	Shaft assembly, rocker	1
6	GM35589	Shaft	1
8	GM35590	Support, rocker arm	2
9	GM35591	Support, rocker arm	3
10	GM35592	Washer	8
11	GM35595	Arm assembly, rocker	4
12	229844	Valve screw	4
14	252817	Nut, M8 x p1.0	4
15	GM35596	Arm assembly, rocker	4
16	229844	Valve screw	4
18	252817	Nut, M8 x p1.0	4
19	GM35602	Pedestal, retainer	4
20	GM35731	Stud, M8 x 35 plated	3
21	GM35505	Seat, valve bridge	8
22	GM66413	Head assembly, cylinder	1
28	GM35719	Plug, screw	4
29	252732	Plug 40	2
30	GM35584	Valve, intake	8
31	GM35585	Valve, exhaust	8
32	GM35586	Spring, valve	16
33	GM35587	Retainer, spring	16
34	GM35423	Cotter, valve	32
35	GM35424	Seal, valve stem	8
36	GM35425	Seal, valve stem	8
37	GM66421	Bridge, valve	8
39	252817	Nut, M8 x p1.0	8
40	GM35508	Screw, valve bridge	8
41	GM35599	Guide, valve bridge	8
42	GM35426	Guide, valve	16
43	GM35450	Protector, nozzle	4
44	252744	Seat	4
45	GM35601	Retainer, valve	4
46	GM35681	Bolt, retainer	4
47	250963	Spring pin	2
48	252699	Bolt, M8 x 25, plated	3
49	252704	Bolt	7
50	250837	Lube oil cap	1
51	GM66418	Bonnet assembly	1
52	GM35583	Plate, baffle	1
53	GM35432	Baffle, breather	1
54	252805	Baffle	1
55	GM35663	Baffle	1
56	GM35500	Diaphragm, breather	1
57	GM35501	Center plate	1
58	GM35502	Plate, breather	1
59	GM35503	Spring, diaphragm	1
61	GM35593	Packing	1
62	GM66398	Hose	1
63	GM66403	Spring, plate	1
64	GM35422	Plug	1
65	363201	Screw, tapping, 5 x 10	4
66	363201	Screw, tapping, 5 x 10	6
67	363201	Screw, tapping, 5 x 10	1
68	252684	O-ring	1

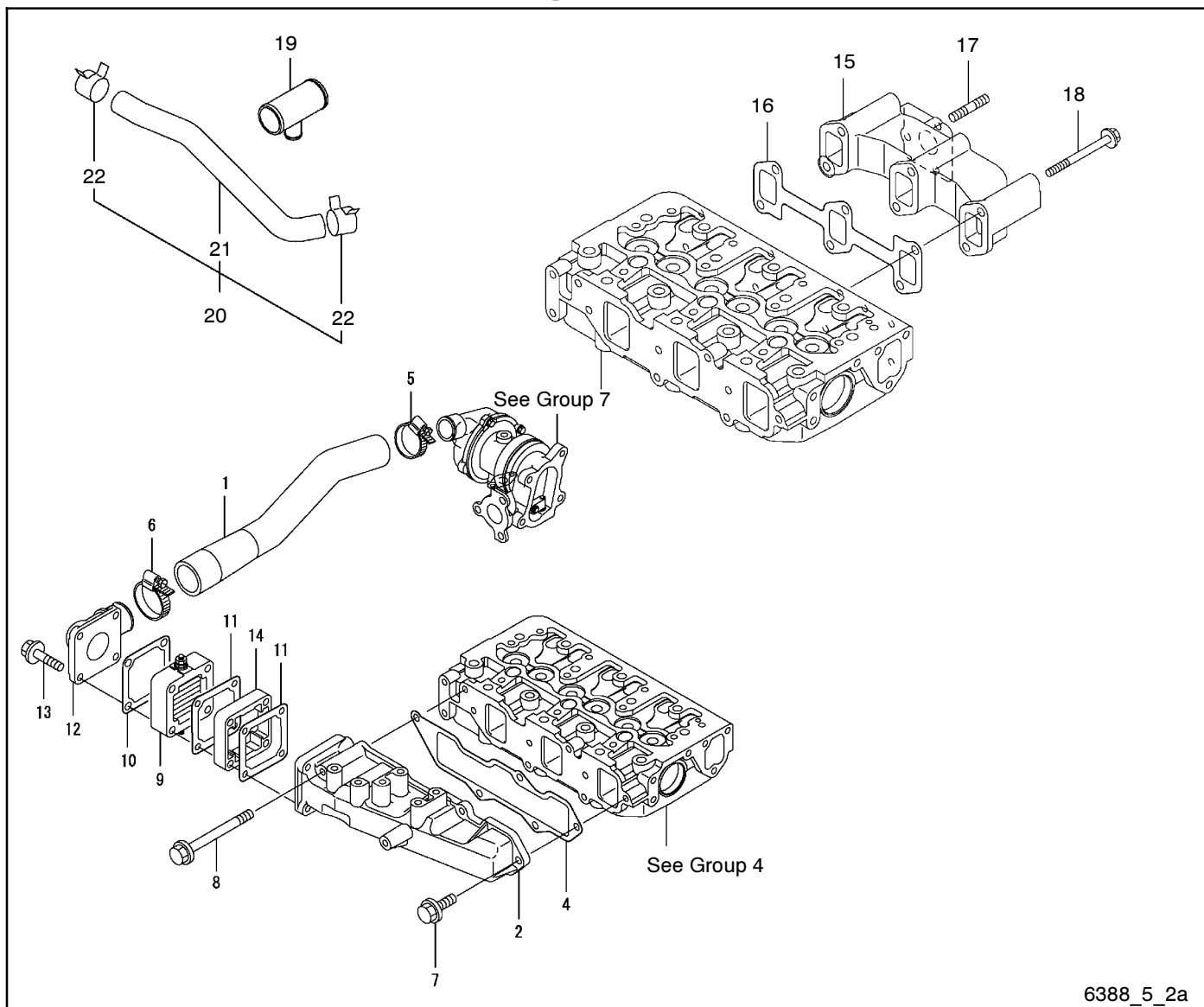
Group 5: Intake and Exhaust Manifold



6388_5_1a

Item	Part Number	Description	Quantity	
			Variation	
			1	7
1	GM35603	Manifold, intake	1	1
3	GM35604	Gasket, manifold	1	1
4	252697	Bolt	5	5
5	252707	Bolt	2	2
6	229825	Heater, air	1	
6	GM40117	Spacer		1
7	344904	Gasket, air heater	1	1
8	GM40118	Elbow, air intake	1	1
9	252702	Bolt	2	2
10	252707	Bolt	2	2
11	225778	Gasket	1	1
12	252916	Gasket	1	1
13	GM42692	Manifold, exhaust	1	1
14	GM42693	Stud, M8 x 20	4	4
15	GM42694	Bolt, M8 x 65	3	3
16	GM42695	Bolt, M8 x 85, plated	5	5
20	GM66410	Joint, breather		1
21	-	See Group 101		1
22	-	See Group 101		1
23	-	See Group 101		2

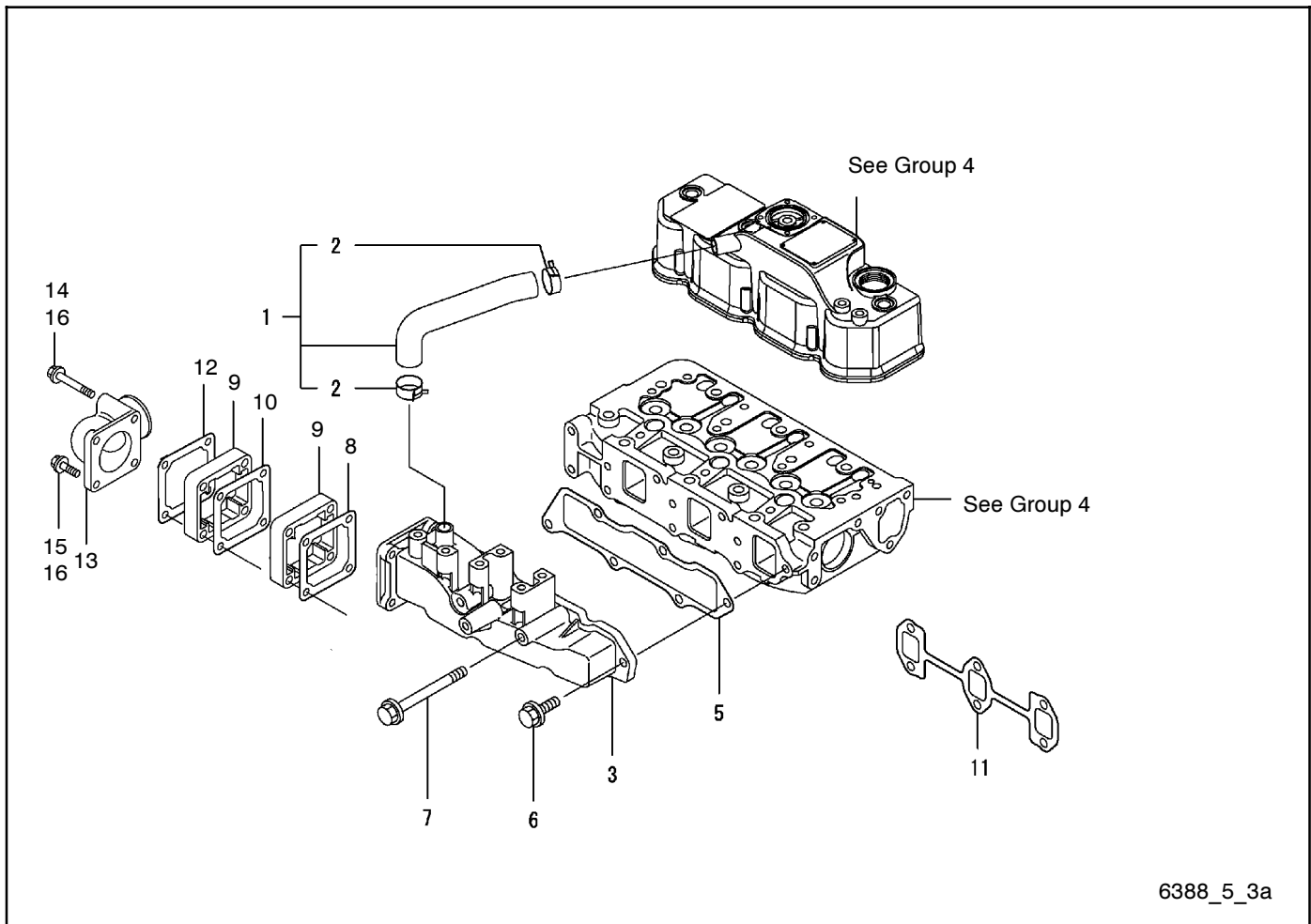
Group 5: Intake and Exhaust Manifold



6388_5_2a

Item	Part Number	Description	Quantity	
			2	6
1	GM46208	Hose, intake	1	1
2	GM35555	Manifold, intake	1	1
4	GM19699	Gasket, intake manifold	1	1
5	229492	Clamp	1	1
6	229494	Clamp 60	1	1
7	252697	Bolt	4	4
8	252707	Bolt	1	1
9	229825	Heater, air	1	1
10	344904	Gasket, air heater	1	1
11	225778	Gasket	2	2
12	GM46209	Elbow	1	1
13	252705	Bolt	4	4
14	GM40117	Spacer	1	1
15	GM46210	Manifold, exhaust	1	1
16	256770	Gasket, manifold	1	1
17	GM46211	Bolt, M8 x 22	3	3
18	GM46212	Bolt, 8 x 80	6	6
19	GM66400	Joint, breather		1
20	-	See Group 101		1
21	-	See Group 101		1
22	-	See Group 101		2

Group 5: Intake and Exhaust Manifold, continued

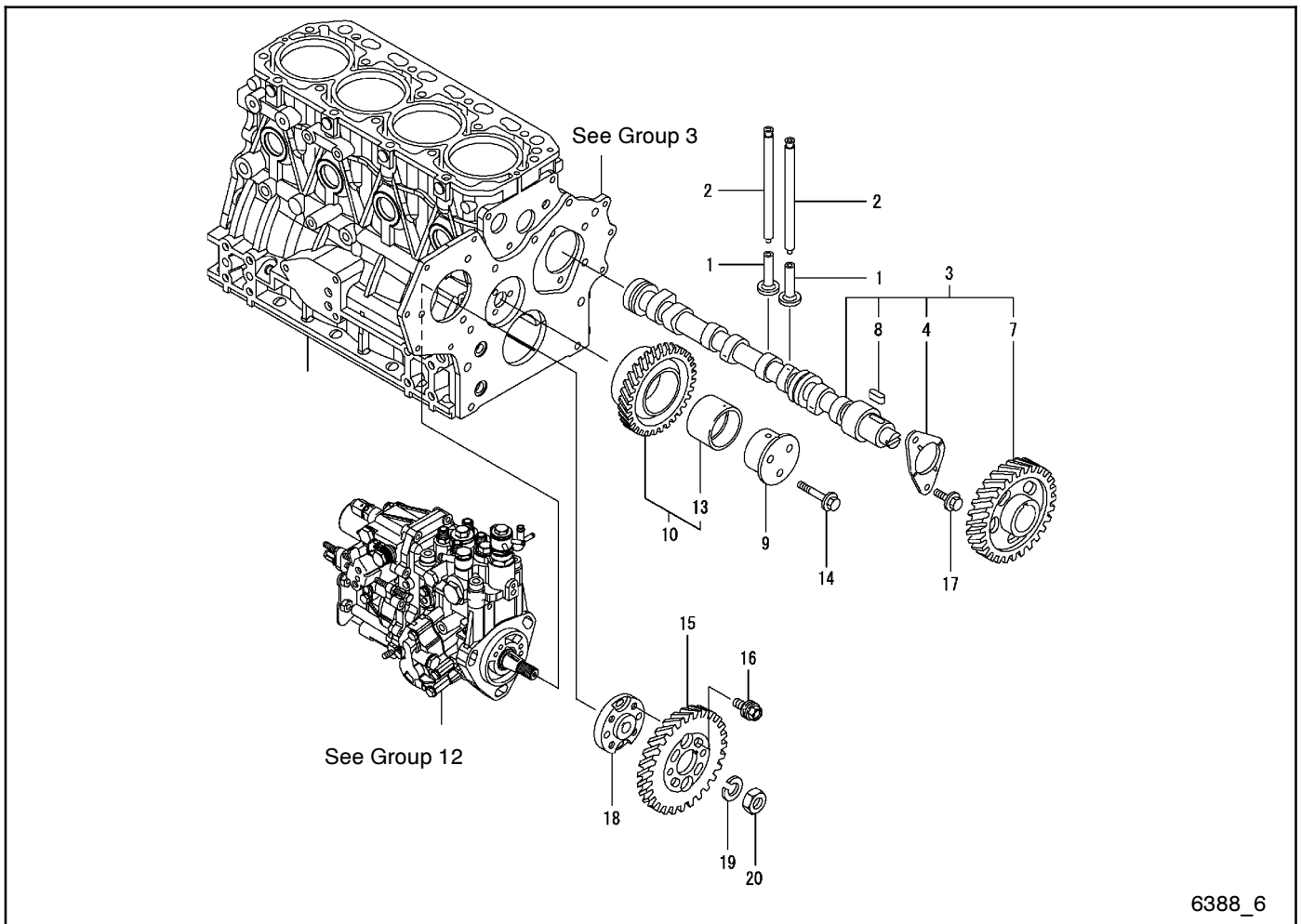


6388_5_3a

Item	Part Number	Description	Quantity
			Variation
			3
1	GM35433	Pipe, breather (includes item 2)	1
2	229425	Clamp	2
3	GM35452	Manifold, intake	1
5	GM33685	Gasket, intake manifold	1
6	252697	Bolt	4
7	252707	Bolt	2
8	225778	Gasket	1
9	GM40117	Spacer	2
10	344904	Gasket	1
11	225717	Gasket, exhaust man	1
12	344904	Gasket	1
13	GM40118	Elbow, air intake	1
14	M931-08100-60	Screw, hex head, M8-1.25 x 100	2
15	M931-08060-60	Screw, hex head, M8-1.25 x 60	2
16	M125A-08-80	Washer, plain (not shown)	4

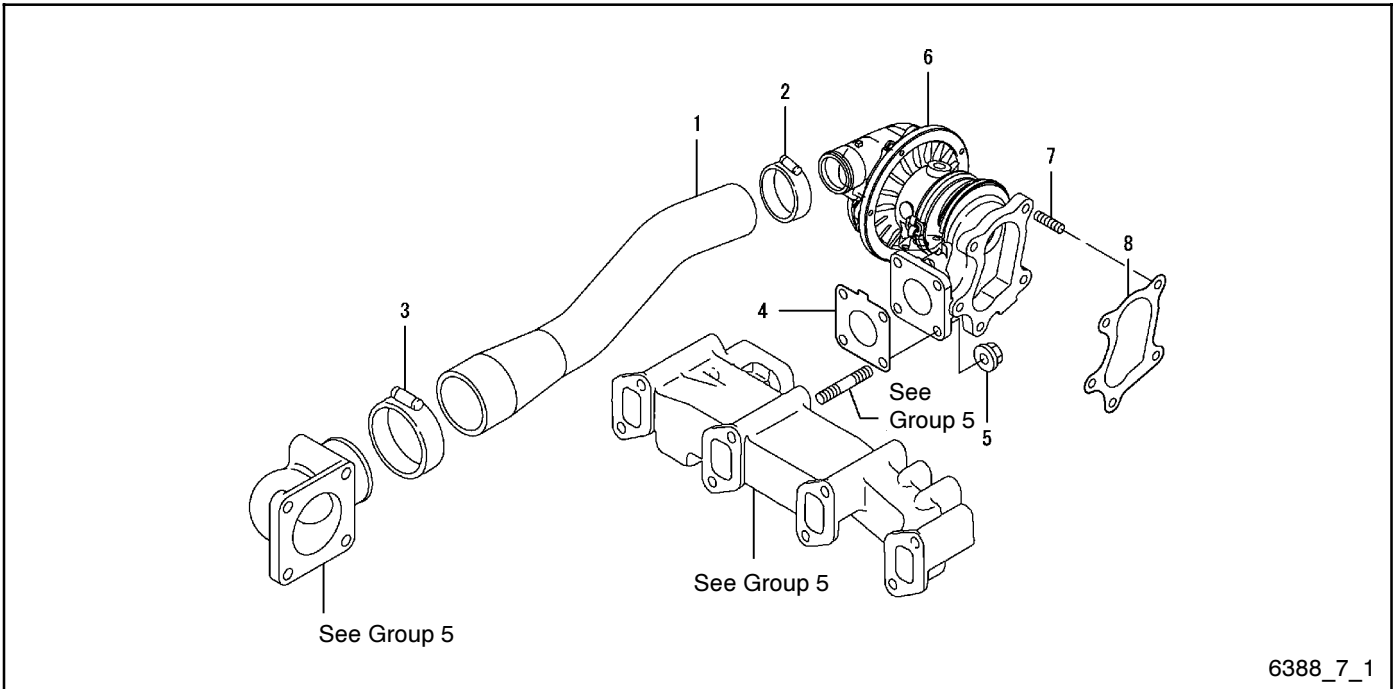
See Group 105: Engine for exhaust manifold part number.

Group 6: Camshaft and Drive Gear



Item	Part Number	Description	Quantity Variation		
			1	2	3
1	252819	Tappet	8	6	6
2	252820	Rod, push	8	6	6
2	255718	Rod, push			6
3	GM35605	Camshaft assembly (includes items 4-8)	1		
3	GM35535	Camshaft assembly (includes items 4-8)		1	
3	GM35453	Camshaft assembly (includes items 4-8)			1
4	252804	Metal, thrust	1	1	1
7	256587	Gear, camshaft	1	1	1
8	252669	Key, 7 x 14	1	1	1
9	GM35459	Shaft, idle gear	1	1	1
10	GM35461	Gear assembly, idle (includes item 13)	1	1	1
13	GM35460	Bush, idle gear	1	1	1
14	252702	Bolt	3	3	3
15	GM35462	Gear, pump	1	1	1
16	GM19682	Bolt, gear	4	4	4
17	225818	Bolt, M8 x 14	2	2	2
18	GM35711	Flange	1	1	1
19	GM35714	Washer, spring	1	1	1
20	GM35734	Nut, lock M14, plated	1	1	1

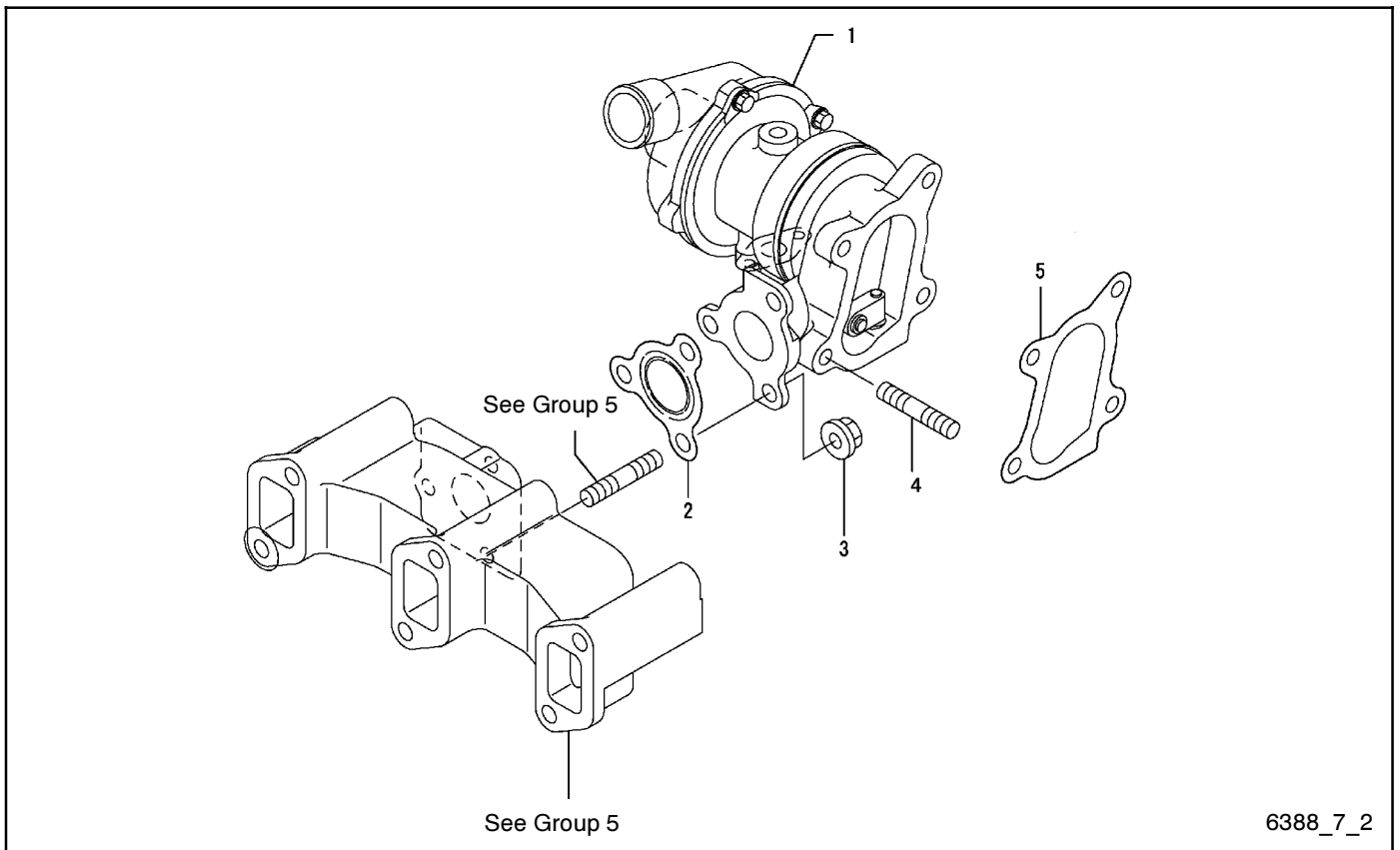
Group 7: Turbocharger



6388_7_1

Item	Part Number	Description	Quantity
			Variation
1	GM42696	Hose, intake	1
2	229846	Clamp	1
3	229494	Clamp 60	1
4	GM42697	Gasket	1
5	GM35732	Nut	4
6	GM42698	Turbocharger	1
7	GM42693	Stud, M8 x 20	5
8	GM42699	Gasket, turbocharger	1

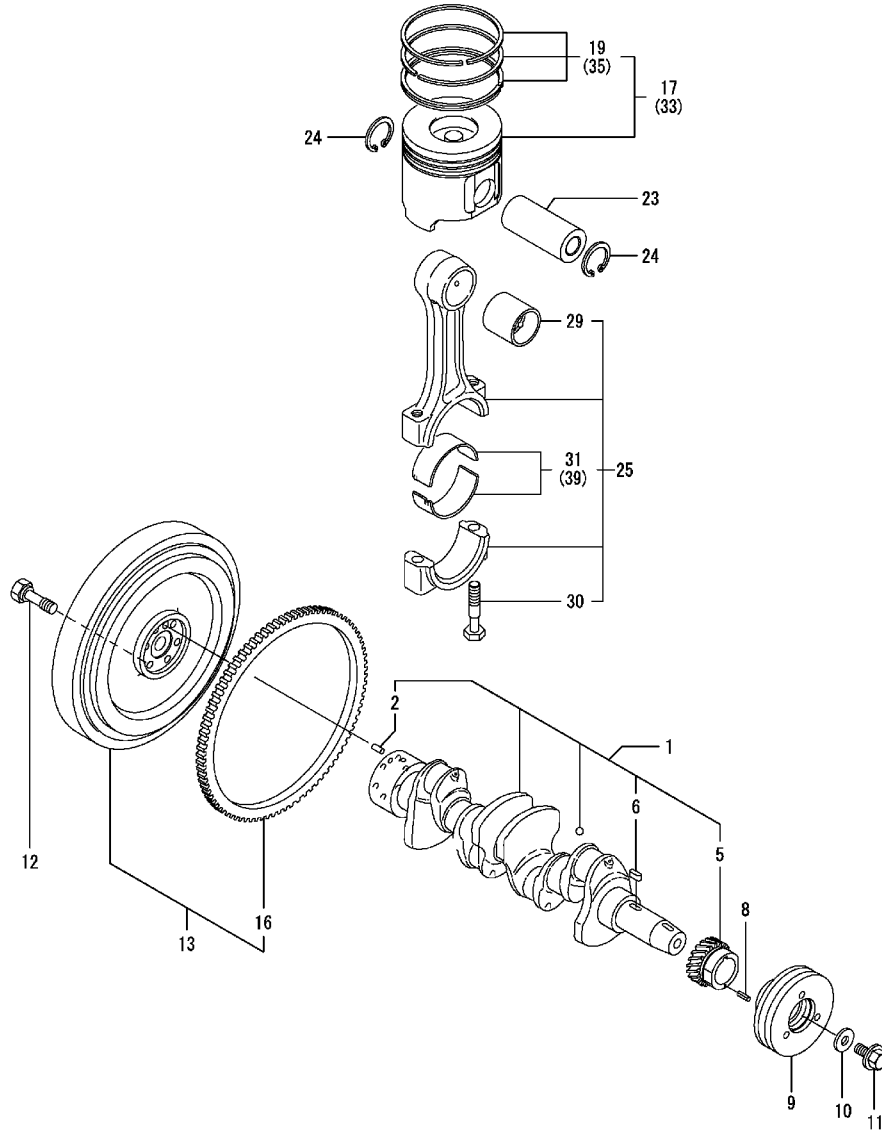
Group 7: Turbocharger



6388_7_2

Item	Part Number	Description	Quantity		
			Variation		
			2	3	6
1	GM46213	Turbocharger	1		1
1	GM52178	Turbocharger		1	
2	256631	Gasket	1		
2	252929	Gasket, square		1	
2	GM66417	Gasket			1
3	GM35732	Nut	3	3	3
4	GM42693	Stud, M8 x 20	4		4
4	GM46211	Bolt, M8 x 22		4	
5	229855	Gasket	1		1
5	GM52175	Gasket		1	

Group 8: Crankshaft and Piston

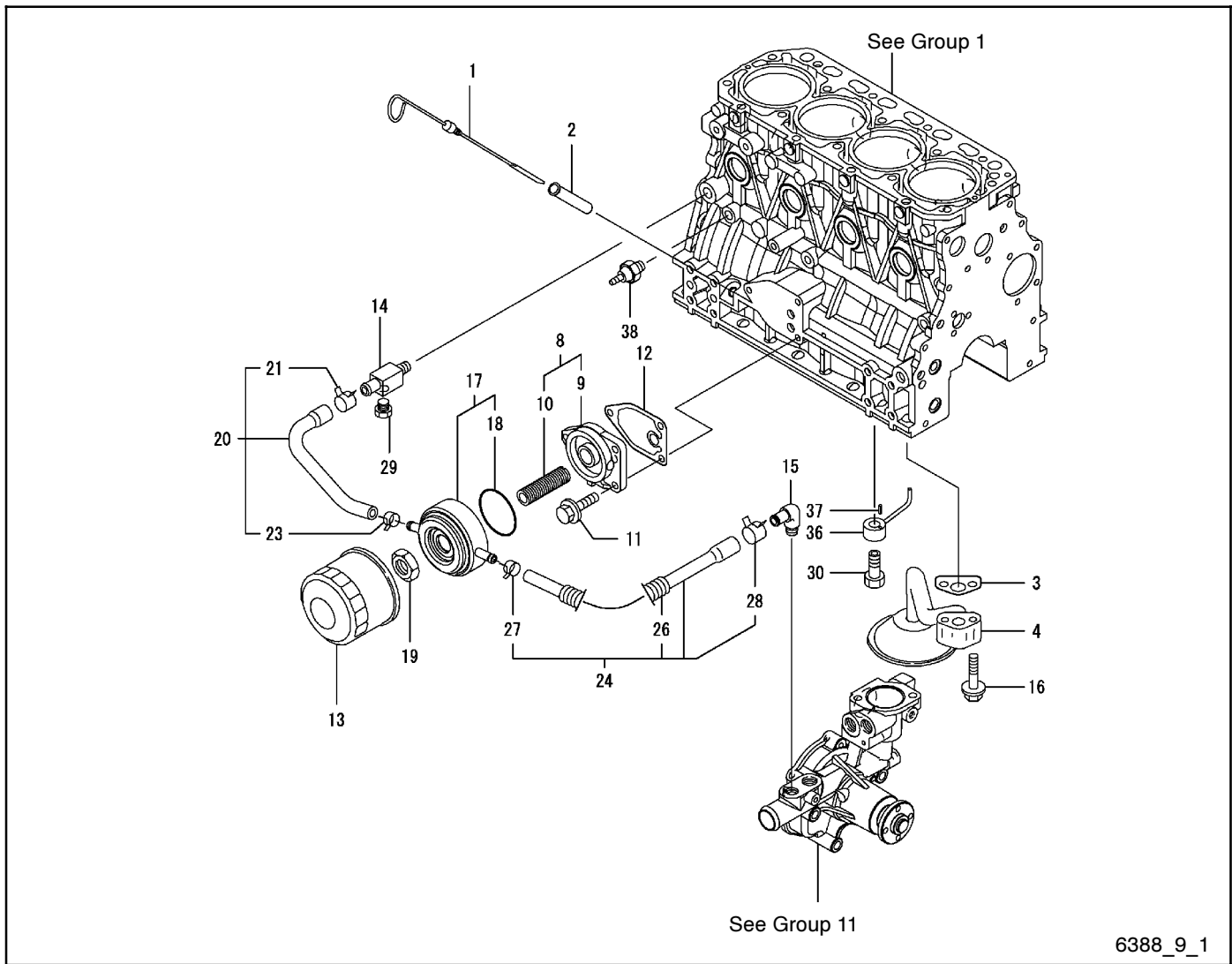


6388_8

Group 8: Crankshaft and Piston

Item	Part Number	Description	Quantity		
			Variation		
			1	2	3
1	GM35606	Crankshaft (includes items 2-6)	1		
1	GM46214	Crankshaft (includes items 2-6)		1	
1	GM35454	Crankshaft (includes items 2-6)			1
2	256750	Parallel pin, 8 x 16	1	1	1
5	GM35455	Gear, crankshaft			1
5	GM46215	Gear, crankshaft	1	1	
6	252669	Key, 7 x 14	1	1	1
8	256654	Spring pin	1	1	1
9	GM35456	V-pulley, crankshaft	1		1
9	GM46216	V-pulley, crankshaft		1	
10	252937	Washer	1	1	1
11	252763	Bolt, V-pulley	1	1	1
12	252401	Bolt, flywheel	6	6	6
13	229117	Flywheel assembly (includes item 16)	1		1
13	229116	Flywheel assembly (includes item 16)		1	
16	252774	Gear, ring	1	1	1
17	GM35607	Piston assembly (includes item 19)	4		
17	GM46217	Piston assembly (includes item 19)		3	
17	GM35457	Piston assembly (includes item 19)			3
19	GM35538	Ring set	4		
19	GM46218	Ring set		3	
19	GM35458	Ring set			3
23	363440	Pin, piston	4	3	
23	225395	Pin, piston			3
24	363441	Clip 26	8	3	
24	229738	Clip			3
25	252980	Connecting rod assembly (includes items 29-31)	4	3	
25	225838	Connecting rod assembly (includes items 29-31)			3
29	256580	Bushing, piston pin	4	3	
29	225726	Bushing, piston pin			3
30	250889	Bolt, rod	8	6	
30	225723	Bolt, rod			6
31	252979	Bearing pin	4	3	
31	225724	Bearing pin			3
33	GM35608	Piston w/ring, OS = 0.25 (includes item 35)	4		
33	GM46219	Piston w/ring, OS = 0.25 (includes item 35)		3	
33	GM35738	Piston w/ring, OS = 0.25 (includes item 35)			3
35	GM35540	Ring set, OS = 0.25	4		
35	GM46220	Ring set, OS = 0.25		3	
35	GM35739	Ring set, OS = 0.25			3
39	256588	Bearing, US = 0.25	4	3	
39	225725	Bearing, US = 0.25			3

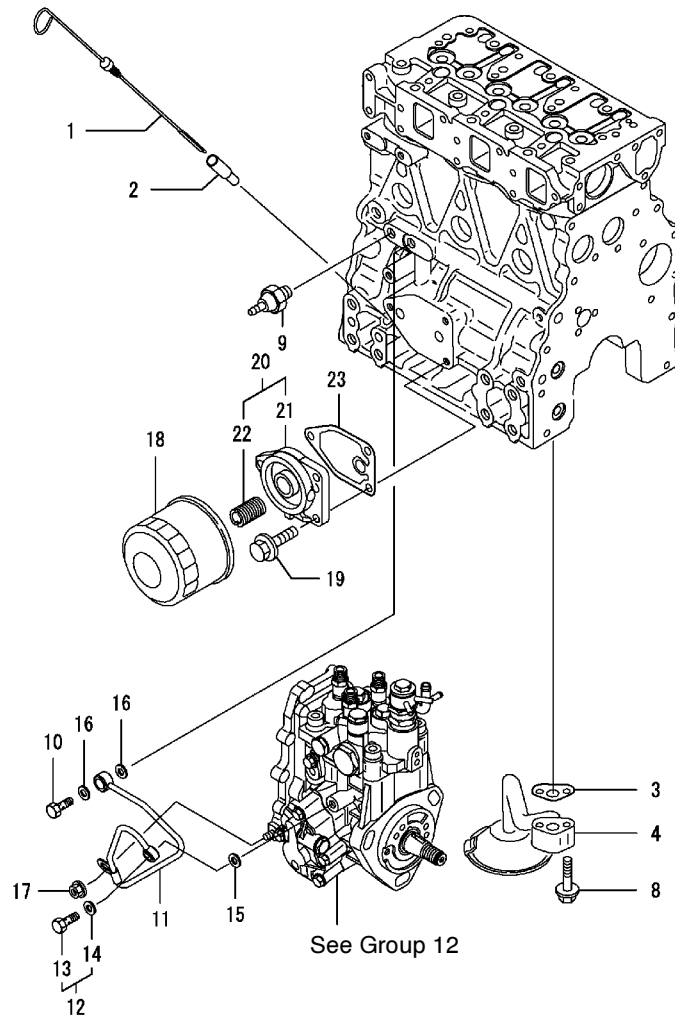
Group 9: Lub. Oil System



6388_9_1

Item	Part Number	Description	Quantity Variation		Item	Part Number	Description	Quantity Variation	
			1	2				1	2
1	GM35549	Dipstick	1	1	18	GM42700	O-ring	1	1
2	252759	Guide, dipstick	1	1	19	GM35576	Nut oil cooler	1	1
3	225775	Gasket	1	1	20	GM35612	Pipe, cooler (includes items 21-23)	1	1
3	GM46221	Gasket	1	1	21	GM35713	Clamp	1	1
4	252831	Pipe, oil inlet	1	1	23	GM35716	Clamp	1	1
8	GM35556	Bracket assembly, filter (includes items 9-10)	1	1	24	GM35613	Pipe, cooler (includes items 26-28)	1	1
9	GM35470	Bracket, filter	1	1	24	GM35558	Pipe, cooler (includes items 26-28)	1	1
10	GM35577	Stud	1	1	26	GM35493	Protector, pipe	1	1
11	252697	Bolt	3	3	26	GM46222	Protector, pipe	1	1
12	225776	Gasket	1	1	27	GM35716	Clamp	1	1
13	GM47465	Filter, oil	1	1	28	GM35717	Clamp	1	1
14	GM35557	Joint	1	1	29	GM42701	Plug, drain	1	1
15	GM35562	Elbow	1	1	30	GM35648	Valve assembly, check	4	3
16	252701	Bolt, M8 x 35	2	2	36	256649	Nozzle	4	3
17	GM35611	Cooler assembly, oil (incl. item 18)	1	1	37	256654	Spring pin	4	3
					38	GM35419	Switch, oil pressure	1	1

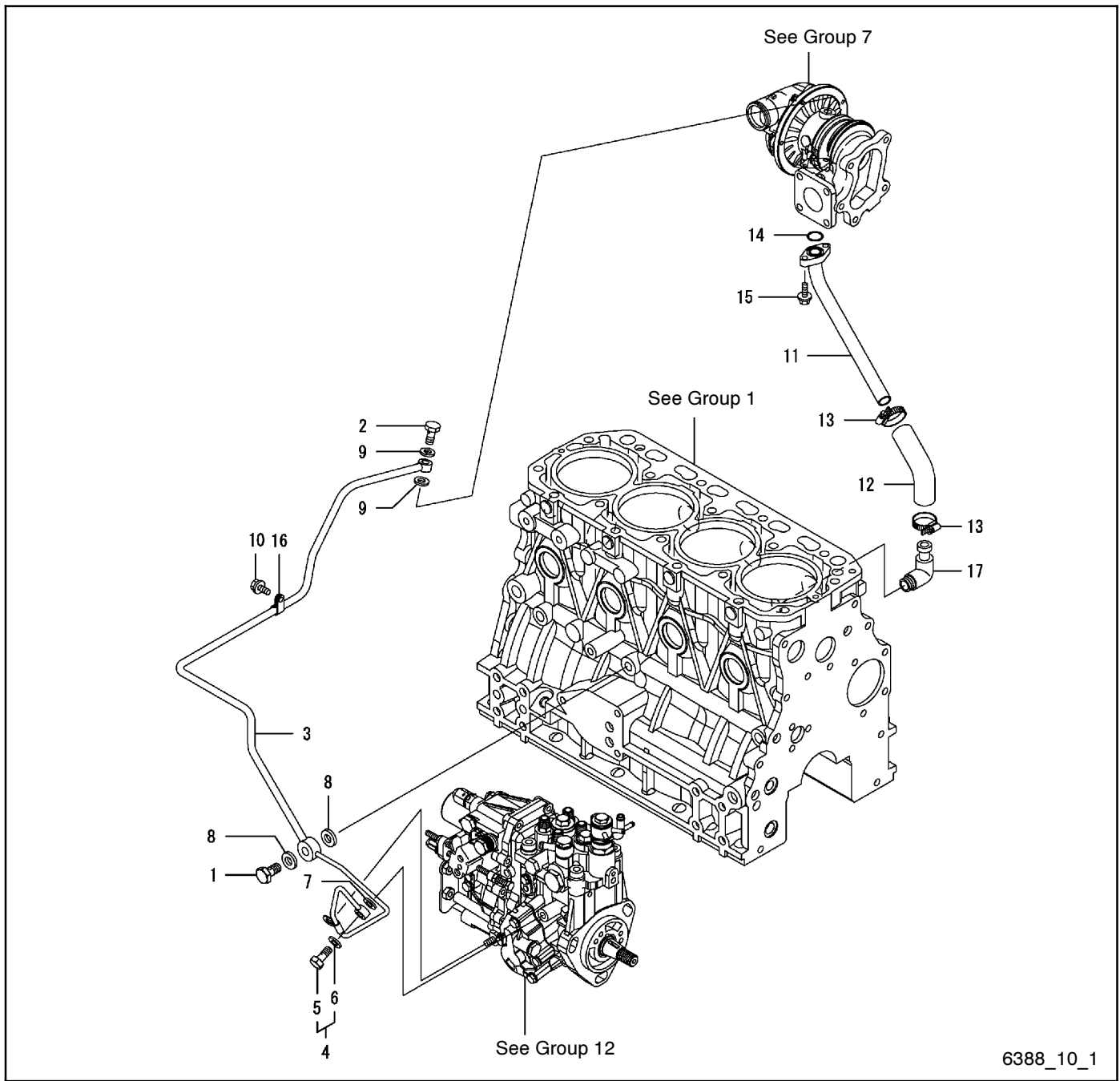
Group 9: Lub. Oil System



6388_9_2

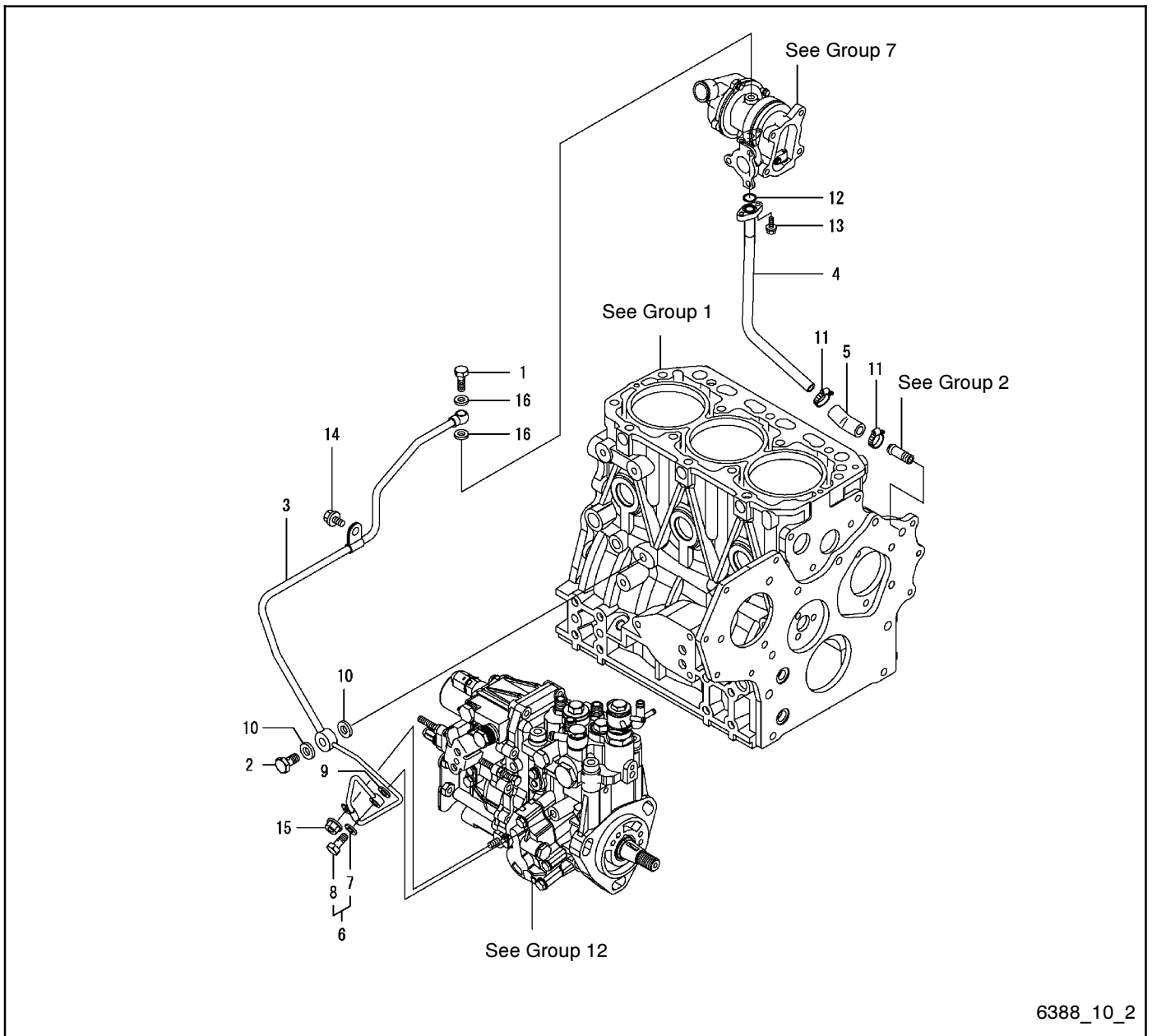
Item	Part Number	Description	Quantity	Item	Part Number	Description	Quantity
			Variation				Variation
1	GM35468	Dipstick	1	14	252734	Washer 8, seal	1
2	252759	Guide, dipstick	1	15	252734	Washer 8, seal	1
3	225775	Gasket	1	16	363452	Washer, seal, 10S	2
4	GM35487	Pipe assembly, oil inlet	1	17	250989	Nut, M6	1
8	252701	Bolt, M8 x 35	2	18	GM47465	Filter, oil	1
9	GM35419	Switch, oil pressure	1	19	252697	Bolt	3
10	252084	Bolt	1	20	GM35469	Bracket assy, filter (includes items 21-22)	1
11	GM35471	Pipe assembly, oil	1	21	GM35470	Bracket, filter	1
12	GM35550	Bolt assy., joint (includes items 13-14)	1	22	256582	Stud	1
13	252677	Joint bolt 3	1	23	225776	Gasket	1

Group 10: Lub. Oil Line



Item	Part Number	Description	Quantity		Item	Part Number	Description	Quantity	
			Variation	1				Variation	1
1	252084	Bolt		1	9	250968	Packing		2
2	256572	Bolt, pipe joint		1	10	252694	Bolt, M8 x 10		1
3	GM42702	Pipe assembly, lube oil		1	11	GM42703	Pipe, lube oil return		1
4	GM13295	Bolt w/seal washer (includes items 5-6)		1	12	GM42704	Joint, lube oil return		1
5	252090	Bolt, pipe joint		1	13	249839	Clamp, hose		2
6	252734	Washer 8, seal		1	14	GM46225	O-ring, 16-D		1
7	252734	Washer 8, seal		1	15	252693	Bolt		2
8	363452	Washer, seal, 10S		2	16	229865	Retainer		1
					17	252462	Elbow		1

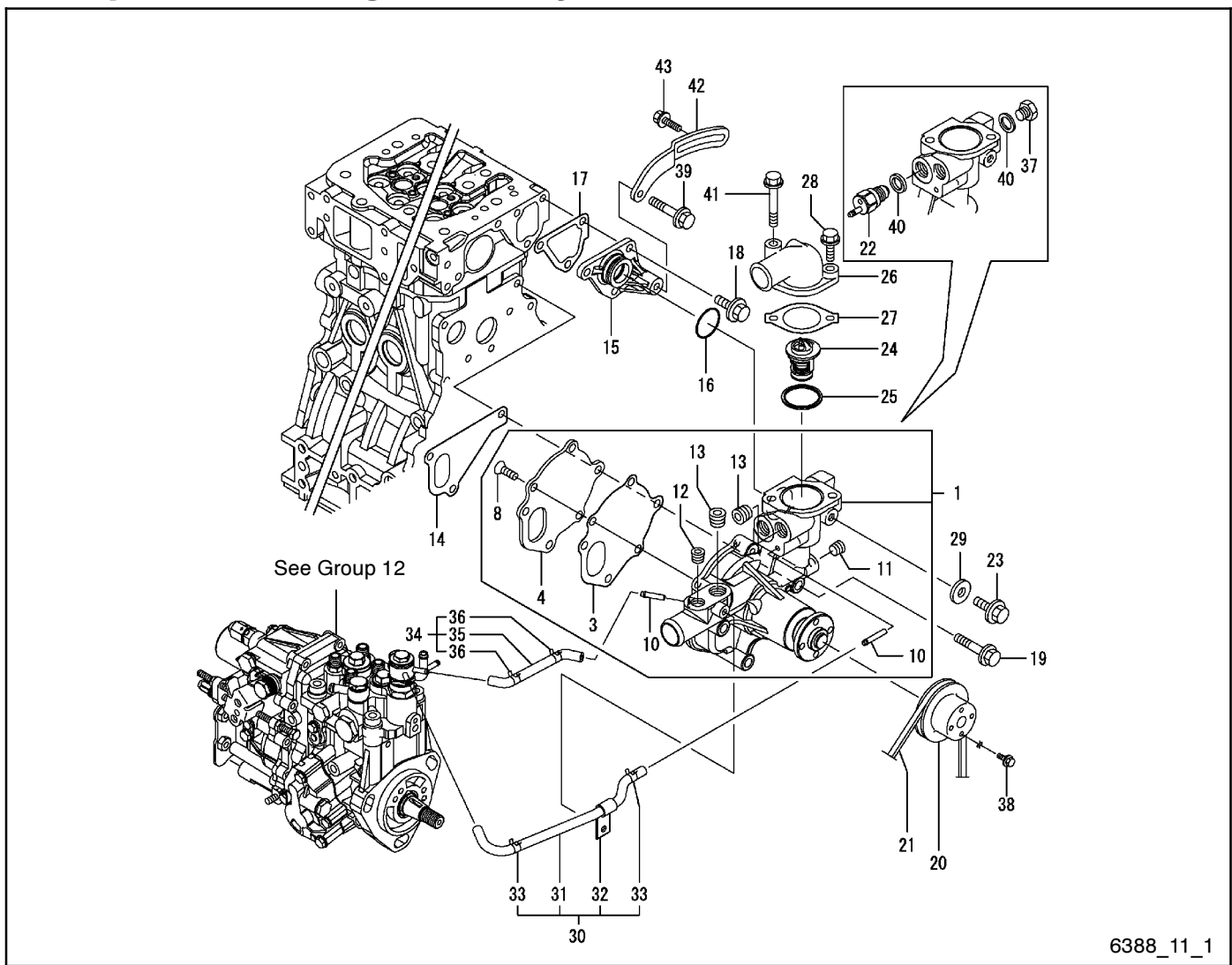
Group 10: Lub. Oil Line



6388_10_2

Item	Part Number	Description	Quantity
			Variation 2
1	256568	Bolt, pipe joint	1
2	252084	Bolt	1
3	GM46223	Pipe assembly, lub. oil	1
4	GM46224	Pipe, lub. return	1
5	229735	Joint, rubber	1
6	GM35550	Bolt assembly, joint (includes items 7-8)	1
7	252734	Washer 8, seal	1
8	252677	Joint bolt 3	1
9	252734	Washer 8, seal	1
10	363452	Washer, seal, 10S	2
11	229490	Clamp 22	2
12	GM46225	O-ring	1
13	252693	Bolt	2
14	252695	Bolt, M8 x 12	1
15	250989	Nut, M6	1
16	250967	Gasket 8, round	2

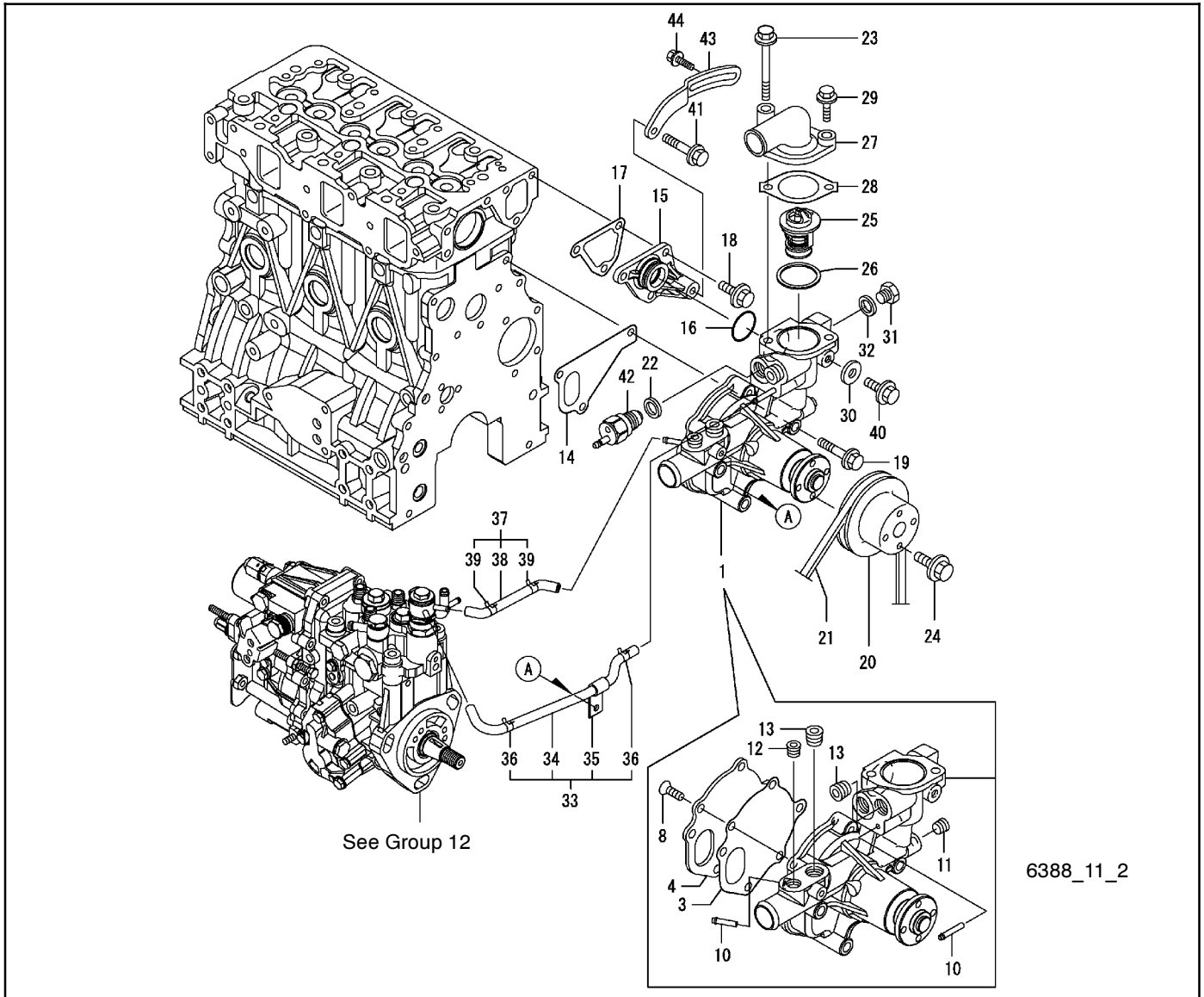
Group 11: Cooling Water System



6388_11_1

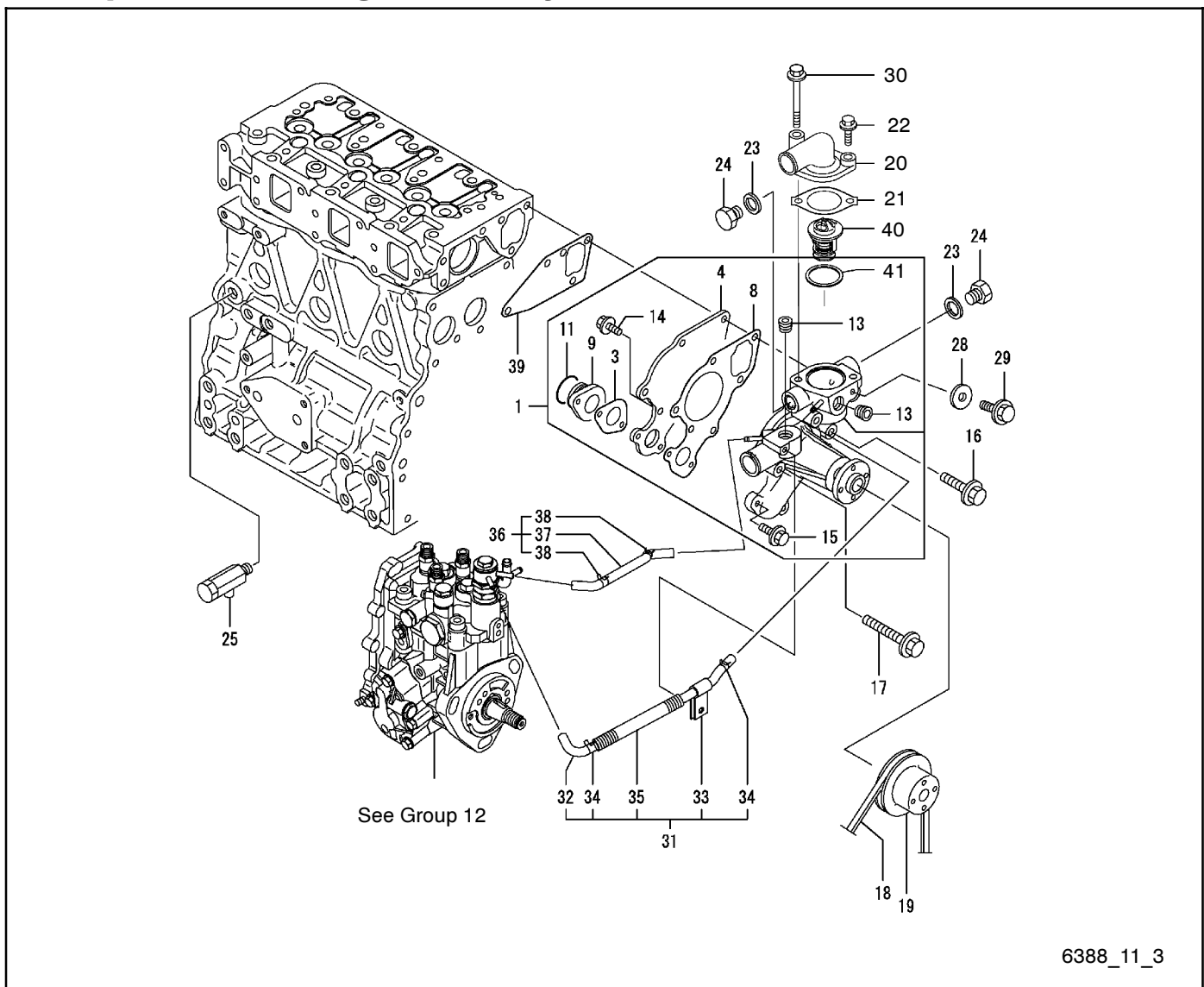
Item	Part Number	Description	Quantity		Item	Part Number	Description	Quantity	
			Variation	1				Variation	1
1	GM42705	Pump assy., water (includes items 3-13)	1	1	25	225006	Gasket	1	1
3	GM42706	Gasket	1	1	26	GM42711	Cover, thermostat	1	1
4	GM42707	Plate	1	1	27	249865	Gasket	1	1
8	GM42708	Screw	3	3	28	252699	Bolt, M8 x 25, plated	1	1
10	GM42709	Joint	2	2	29	250967	Gasket 8, round	1	1
11	GM13812	Plug, PT 1/8, screw	1	1	30	GM42712	Pipe assembly (includes items 31-33)	1	1
12	GM35719	Plug, screw	1	1	31	GM42713	Pipe assembly	1	1
13	GM35704	Plug, drain	2	2	32	GM35477	Clamp	1	1
14	GM19686	Gasket	1	1	33	229411	Clamp	2	2
15	GM42710	Joint	1	1	34	GM42714	Pipe assembly (includes items 35-36)	1	1
16	GM19687	O-ring	1	1	35	GM42715	Pipe, water	1	1
17	252789	Gasket, case	1	1	36	229411	Clamp	2	2
18	252696	Bolt, M8 x 16	3	3	37	252757	Plug, M16	1	1
19	252705	Bolt	3	3	38	225816	Bolt, M6 x 12	4	4
20	252845	V-pulley	1	1	39	252703	Bolt	1	1
21	225022	Belt, fan	1	1	40	252773	Packing 16	2	2
22	—	Switch (see Group 105)	1	1	41	252706	Bolt	1	1
23	252695	Bolt, M8 x 12	1	1	42	GM42716	Adjuster, belt	1	1
24	GM34387	Thermostat	1	1	43	GM35491	Bolt	1	1

Group 11: Cooling Water System



Item	Part Number	Description	Quantity Variation 2	Item	Part Number	Description	Quantity Variation 2
1	GM46226	Pump assy., water (includes items 3-13)	1	26	225006	Gasket	1
3	GM42706	Gasket	1	27	GM42711	Cover, thermostat	1
4	GM42707	Plate	1	28	249865	Gasket	1
8	GM42708	Screw	3	29	252699	Bolt, M8 x 25, plated	1
10	GM42709	Joint	2	30	250967	Gasket 8, round	1
11	GM13812	Plug, PT 1/8, screw	1	31	252757	Plug M16	1
12	GM35719	Plug, screw	1	32	252773	Packing 16	1
13	GM35704	Plug, drain	2	33	GM42712	Pipe assembly (includes items 34-36)	1
14	GM19686	Gasket	1	34	GM42713	Pipe assembly	1
15	GM42710	Joint	1	35	GM35477	Clamp	1
16	GM19687	O-ring	1	36	229411	Clamp	2
17	252789	Gasket, case	1	37	GM42714	Pipe assembly (includes items 38-39)	1
18	252696	Bolt, M8 x 16	3	38	GM42715	Pipe, water	1
19	252705	Bolt	3	39	229411	Clamp	2
20	363446	V-pulley	1	40	252695	Bolt, M8 x 12	1
21	225022	Belt, fan	1	41	252703	Bolt	1
22	252773	Packing 16	1	42	—	Switch (see Group 105)	1
23	252706	Bolt	1	43	GM42716	Adjuster, belt	1
24	225816	Bolt, M6 x 12	4	44	GM35491	Bolt	1
25	GM34387	Thermostat	1				

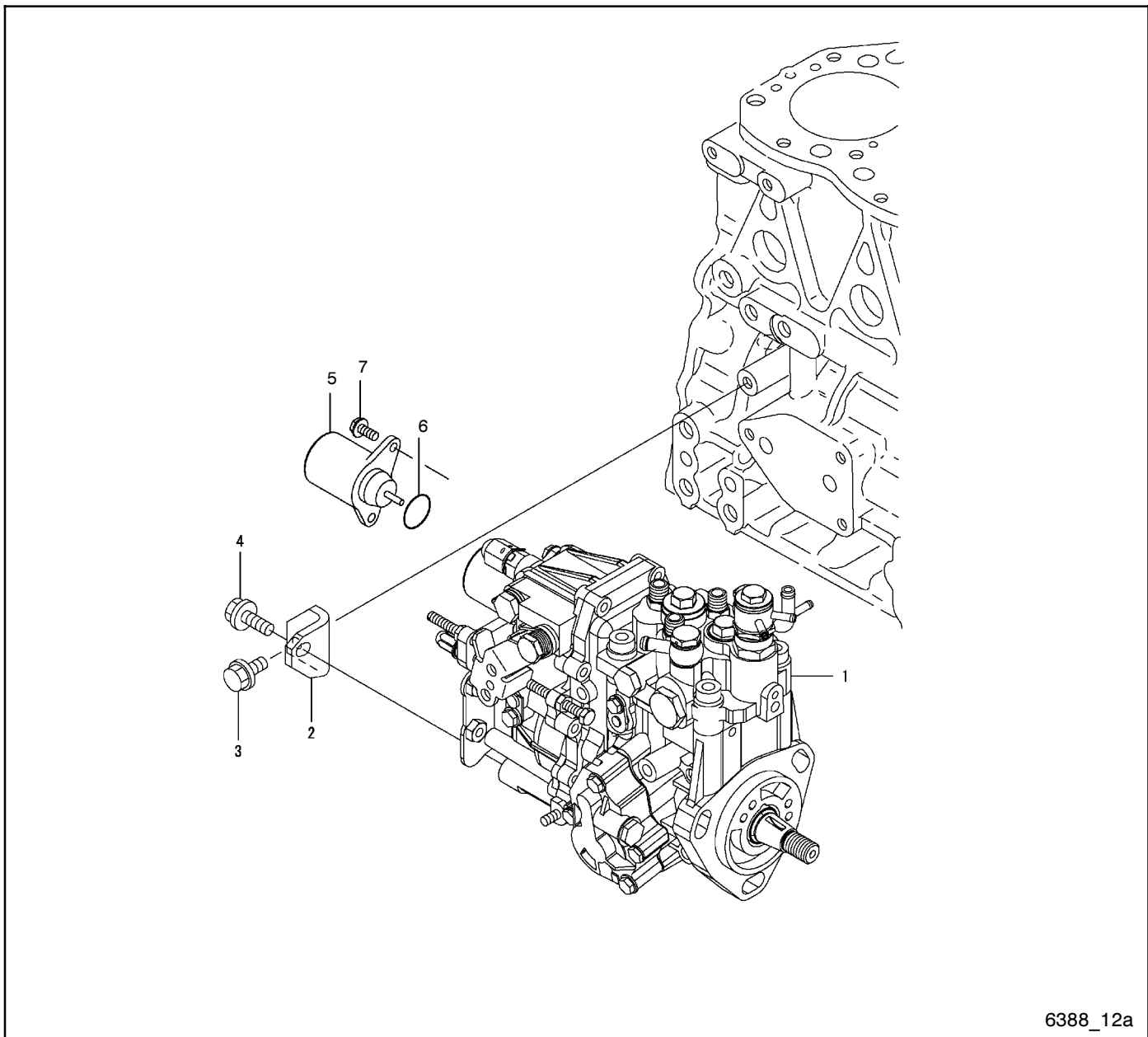
Group 11: Cooling Water System, continued



6388_11_3

Item	Part Number	Description	Quantity Variation	Item	Part Number	Description	Quantity Variation
1	GM35472	Pump assy., water (includes items 3-15)	3	25	256734	Cock assembly	1
3	GM35488	Gasket	1	28	250967	Gasket 8, round	1
4	GM35489	Plate	1	29	252695	Bolt, M8 x 12	1
8	GM29476	Gasket	1	30	252705	Bolt	1
9	GM35490	Pipe, water pump	1	31	GM35473	Pipe assembly (includes items 32-35)	1
11	252839	O-ring	1	32	GM35475	Pipe assembly	1
13	GM35720	Plug, screw	2	33	GM35477	Clamp	1
14	225818	Bolt, M6 x 14, plated	2	34	229411	Clamp	2
15	225817	Bolt, M6 x 20	2	35	GM35482	Tube, corrugated	1
16	252701	Bolt, M8 x 35	1	36	GM35474	Pipe assembly (includes items 37-38)	1
17	256798	Bolt, M8 x 55, plated	3	37	GM35476	Pipe, water	1
18	225022	V-belt	1	38	229411	Clamp	2
19	252845	V-pulley	1	39	GM35580	Gasket	1
20	229408	Cover, thermostat	1	40	GM41963	Thermostat	1
21	249865	Gasket	1	41	GM42264	Gasket, thermostat	1
22	252699	Bolt, M8 x 25, plated	1				
23	252773	Packing 16	2				
24	252757	Plug M16	2				

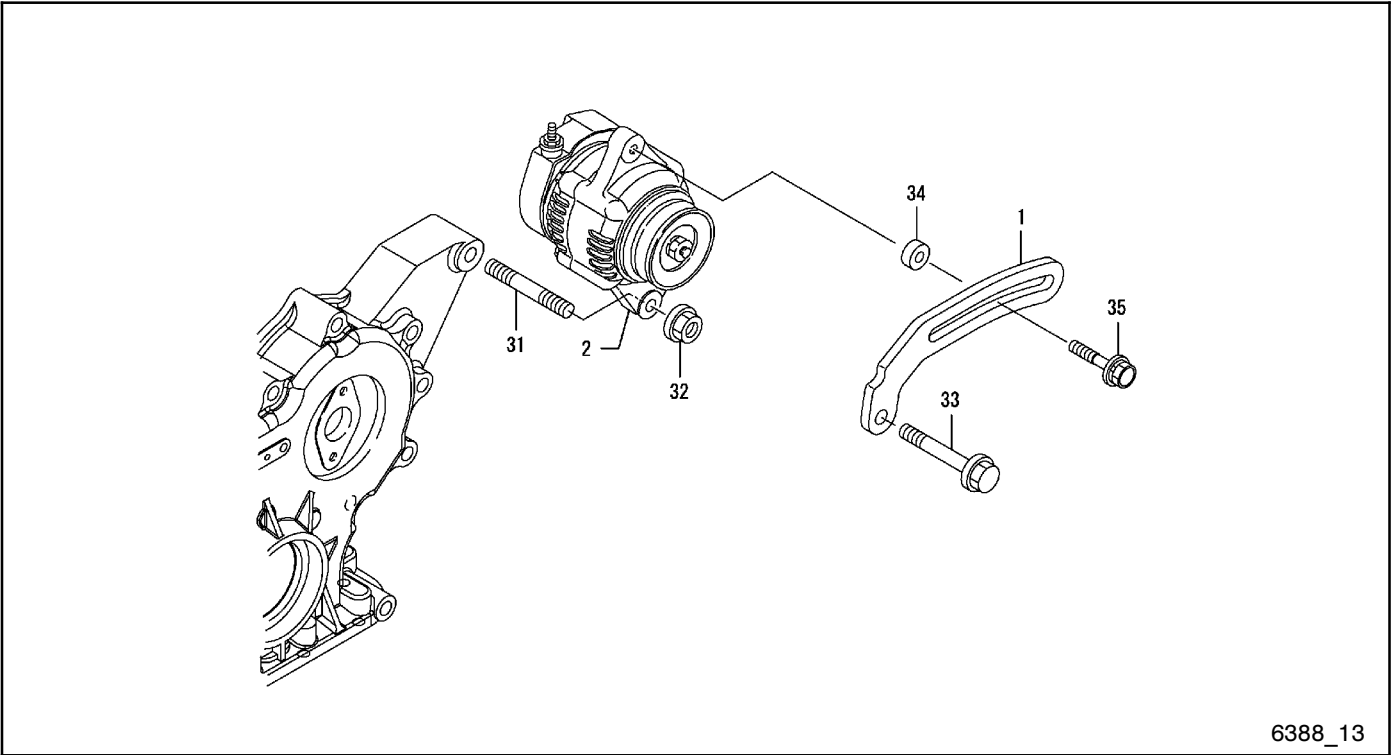
Group 12: Fuel Injection Pump



6388_12a

Item	Part Number	Description	Quantity Variation				
			1	2	3	6	7
1	GM35759	Injection pump assembly	1				
1	GM35747	Injection pump assembly		1			1
1	GM35742	Injection pump assembly			1		
1	GM66500	Injection pump assembly				1	
2	GM35632	Support	1				
2	GM35478	Support		1	1	1	1
3	252696	Bolt, M8 x 16	1	1	1	1	1
4	252697	Bolt	1	1	1	1	1
5	225461	Kit, fuel solenoid (includes item 6)	1	1	1		
5	225388	Solenoid				1	1
6	225427	O-ring	1	1	1		
6	GM52219	O-ring				1	1
7	225818	Bolt, M6 x 14	2	2	2	2	2

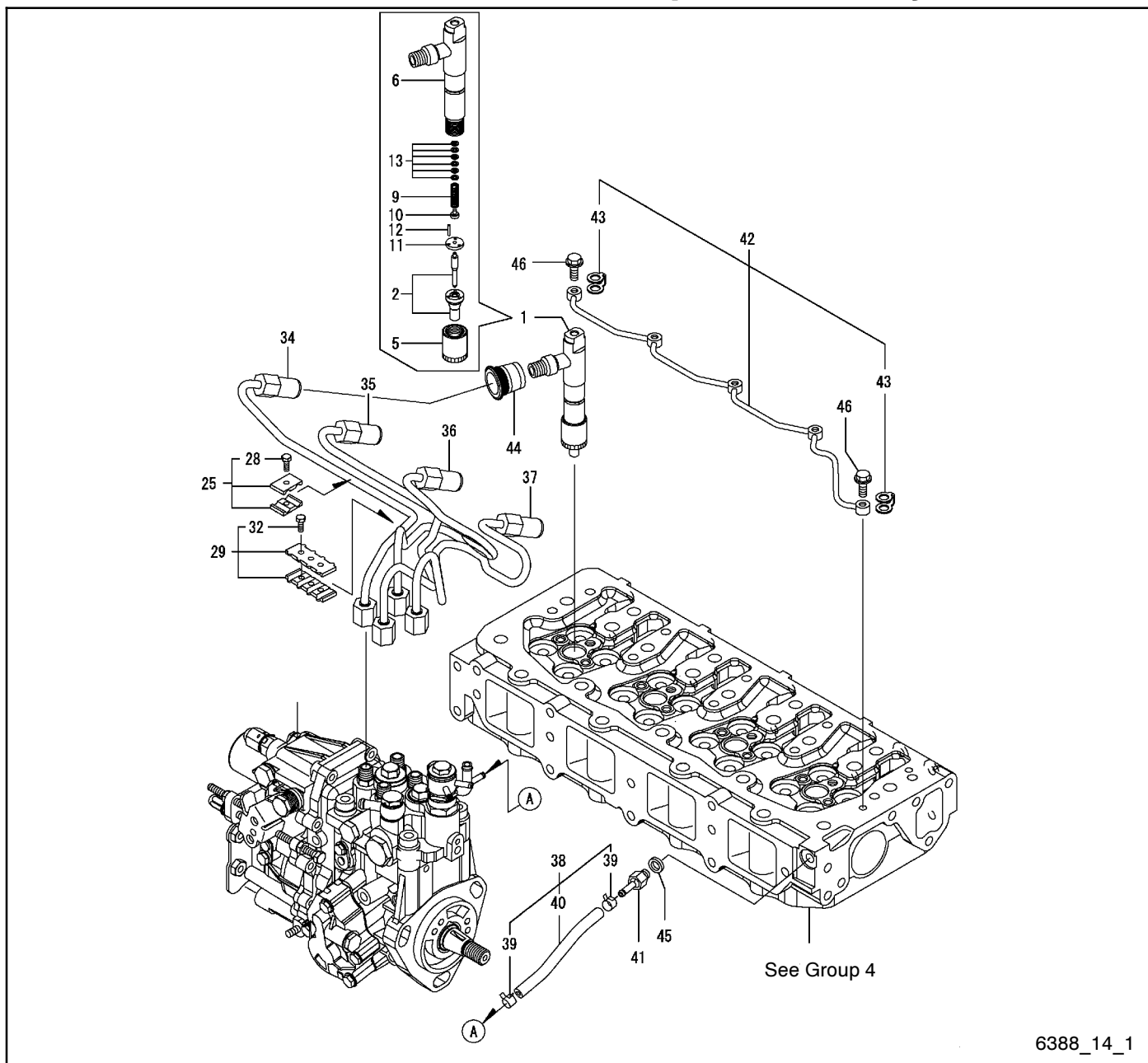
Group 13: Battery Alternator



6388_13

Item	Part Number	Description	Quantity
			Variation
1	229212	Adjuster, belt	1
2	—	Alternator (see Group 105)	1
31	—	Stud (see Group 105)	1
32	—	Nut (see Group 105)	1
33	252703	Bolt	1
34	—	Spacer (see Group 105)	1
35	—	Bolt, adjuster (see Group 105)	1

Group 14: Fuel Injection Valve



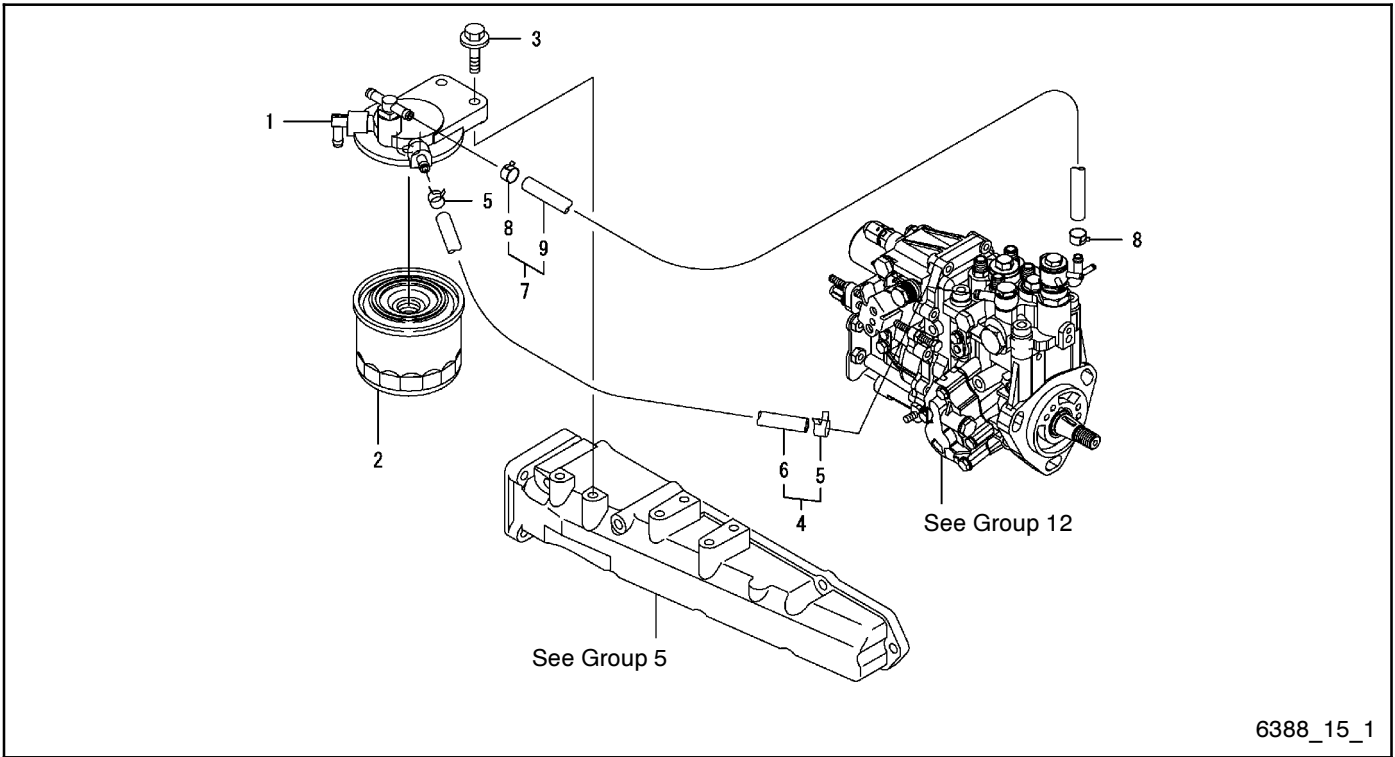
6388_14_1

Item	Part Number	Description	Quantity		Item	Part Number	Description	Quantity	
			1	Variation				1	Variation
1	GM35760	Fuel injector (includes items 2-13)	4		34	GM35616	Pipe assembly, injection	1	
2	GM35645	Nozzle assembly	4		35	GM35617	Pipe assembly, Injection	1	
5	256520	Nut, nozzle case	4		36	GM35618	Pipe assembly, injection	1	
6	GM35614	Holder assembly, nozzle	4		37	GM35619	Pipe assembly, Injection	1	
9	256521	Nozzle, spring	4		38	GM42764	Pipe assy., return (includes items 39-40)	1	
10	256522	Seat, nozzle spring	4		39	229411	Clamp	2	
11	256523	Plate, stop	4		40	GM42765	Pipe, fuel return	1	
12	256707	Pin	8		41	GM35513	Joint, hose	1	
13	256524	Shim set	4		42	GM35615	Pipe assy., return (includes item 43)	1	
25	225374	Retainer (includes item 28)	2		43	GM35512	Packing, fuel return	5	
28	225418	Bolt, M4 x 14 hex socket	2		44	GM35506	Pipe seal	4	
29	256708	Retainer (includes item 32)	1		45	252734	Washer 8, seal	1	
32	225418	Bolt, M4 x 14 hex socket	2		46	GM35511	Joint bolt, M6	5	

Group 14: Fuel Injection Valve, continued

Item	Part Number	Description	Quantity	
			2	3
1	GM35748	Fuel injector (includes items 2-14)	3	
1	GM35743	Fuel injector (includes items 2-14)		3
2	GM35560	Nozzle assembly	3	
2	GM35494	Nozzle assembly		3
5	256520	Nut, nozzle case	3	3
6	GM35479	Holder assembly, nozzle	3	3
10	256521	Nozzle, spring	3	3
11	256522	Seat, nozzle spring	3	3
12	256523	Plate, stop	3	3
13	256707	Pin	6	6
14	256524	Shim set	3	3
26	225374	Retainer (includes item 29)	1	1
29	225418	Bolt, M4 x 14 hex socket	1	1
30	256774	Clamp assembly, line (includes item 33)	1	1
33	225418	Bolt, M4 x 14 hex socket	2	2
35	GM35542	Pipe assembly, injection	1	
35	GM35484	Pipe assembly, injection		1
39	GM35543	Pipe assembly, injection	1	
39	GM35485	Pipe assembly, injection		1
43	GM35544	Pipe assembly, injection	1	
43	GM35486	Pipe assembly, injection		1
48	GM46227	Pipe assembly, return (includes items 49-50)	1	
49	229411	Clamp	2	
49	249843	Clamp		2
50	GM46228	Pipe, fuel return	1	
50	GM35483	Pipe, fuel return		1
51	GM46229	Pipe, fuel return (includes item 52)	2	
51	GM35573	Pipe, fuel oil		2
52	229411	Clamp	4	
52	249843	Clamp		4
54	GM46230	Cap	1	
54	GM35574	Cap		1
55	GM46231	Clamp	1	

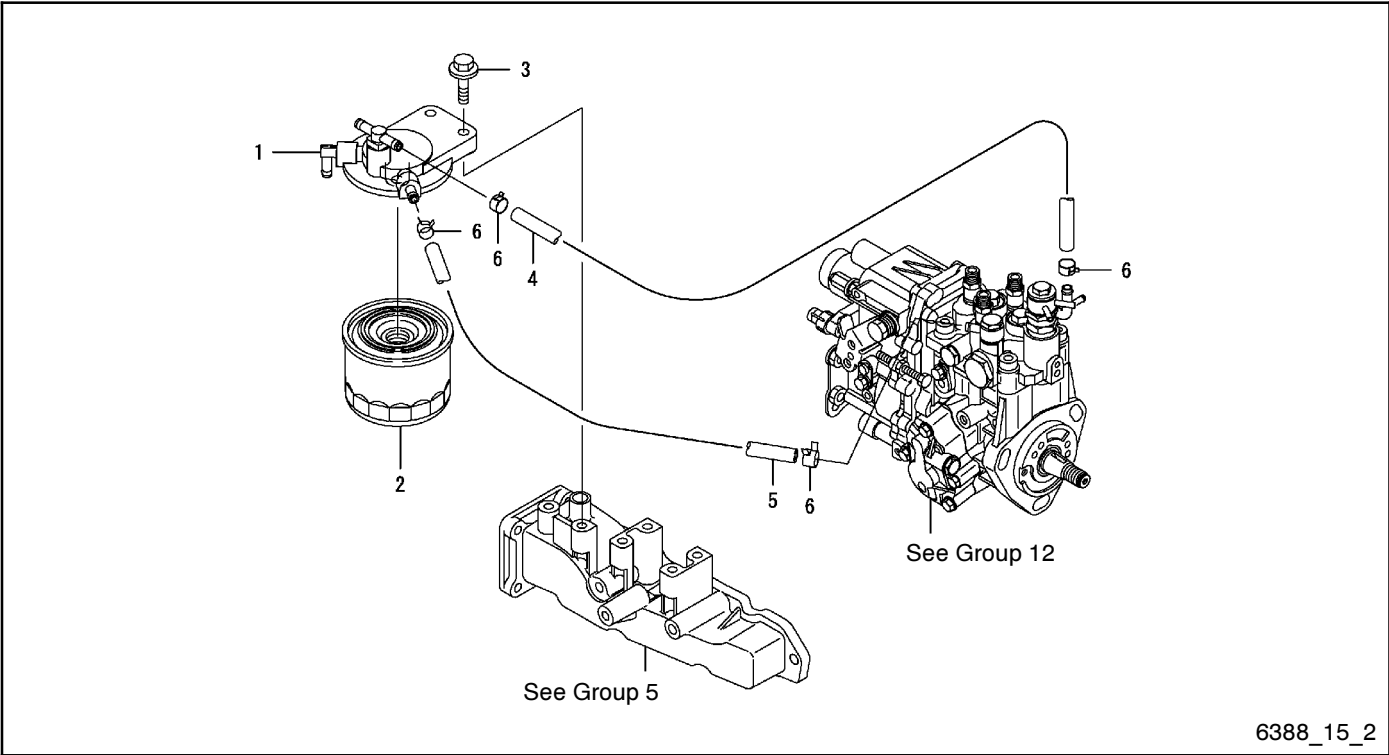
Group 15: Fuel Line



6388_15_1

Item	Part Number	Description	Quantity Variation	
			1	2
1	GM35541	Bracket, filter	1	1
2	GM32359	Filter, fuel	1	1
3	225819	Bolt, M8 x 30, plated	2	2
4	GM42766	Pipe assembly, fuel (includes items 5-6)	1	
4	GM46232	Pipe assembly, fuel (includes items 5-6)		1
5	229716	Clamp 12	2	2
6	363002	Pipe, fuel oil	1	
6	GM46233	Pipe, fuel oil		1
7	GM42767	Pipe assembly, fuel oil (includes items 8-9)	1	
7	GM46234	Pipe assembly, fuel oil (includes items 8-9)		1
8	229716	Clamp 12	2	2
9	GM42768	Pipe, fuel oil	1	
9	GM46235	Pipe, fuel oil		1

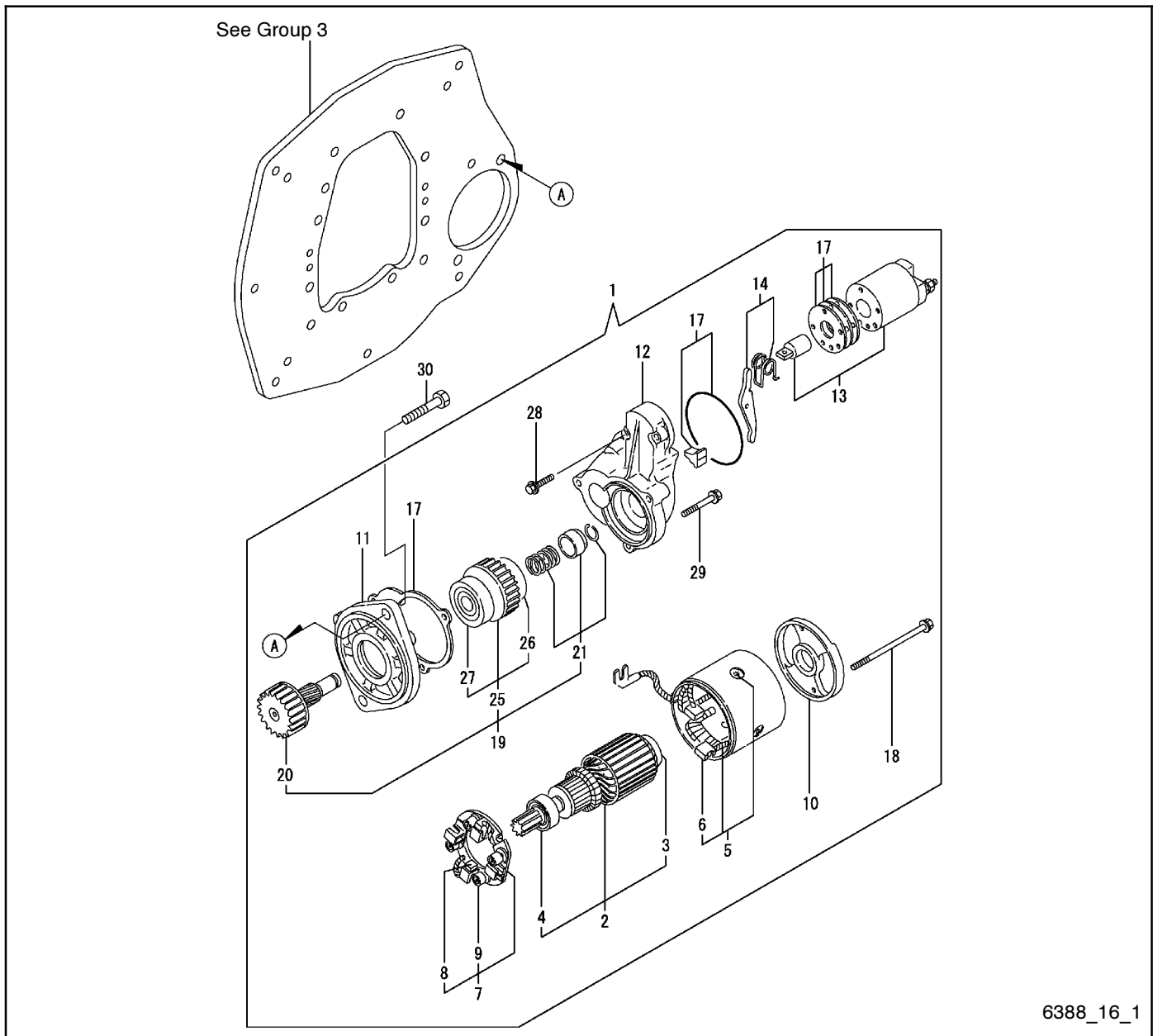
Group 15: Fuel Line



6388_15_2

Item	Part Number	Description	Quantity
			Variation
1	GM35541	Bracket, filter	1
2	GM32359	Filter, fuel	1
3	M933-08025-60	Bolt, M8 x 25	2
3	M125A-08-60	Washer, plain	2
4	X-386-135	Line, flex fuel	1
5	X-386-83	Line, flex fuel	1
6	X-426-9	Clamp	4

Group 16: Starting Motor



6388_16_1

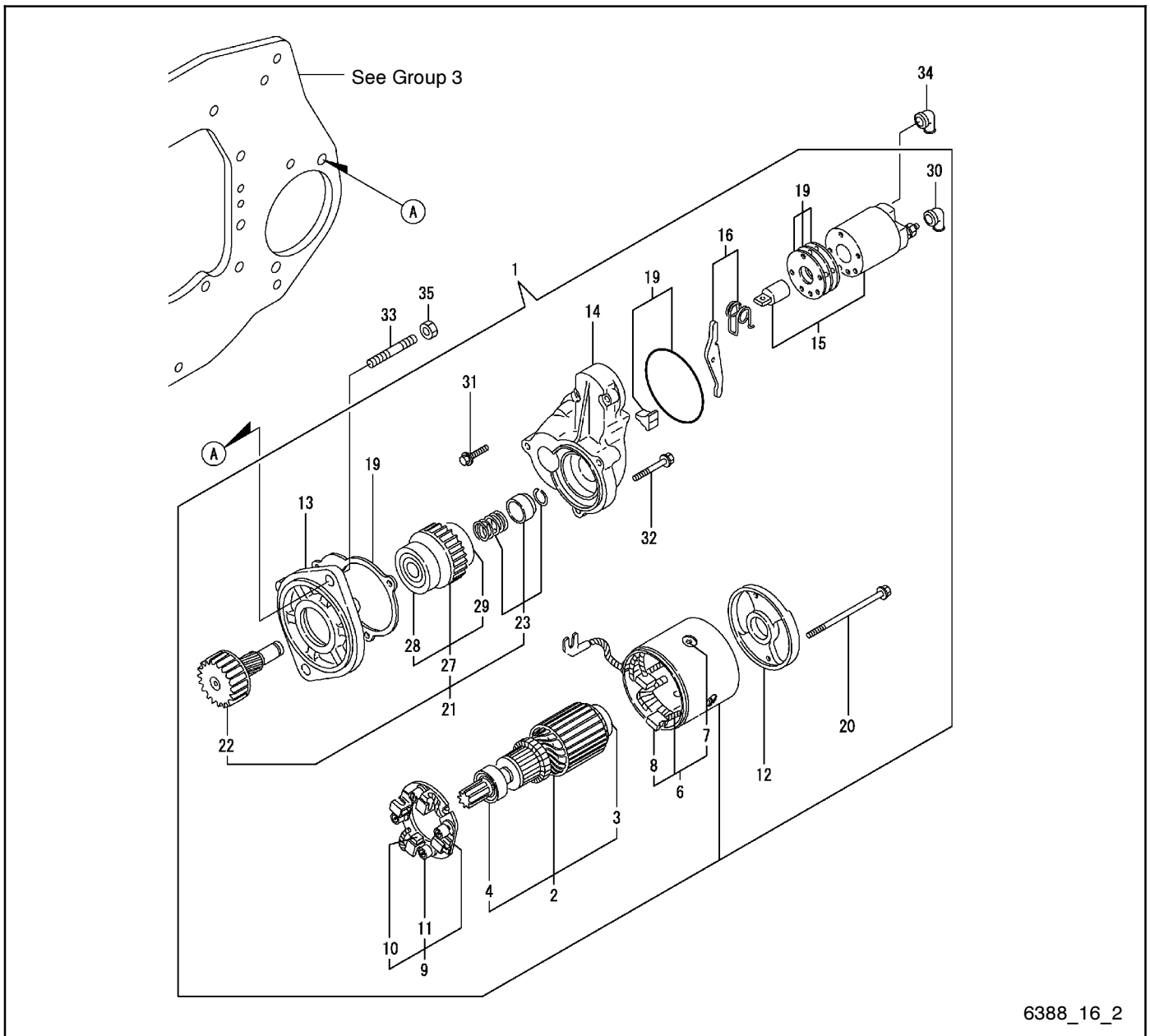
Item	Part Number	Description	Quantity Variation	Item	Part Number	Description	Quantity Variation
1	GM78864	Starter (includes items 2-29)	1	14	225908	Shift lever set	1
2	363155	Armature (includes items 3-4)	1	17	225887	Dust cover kit	1
3	GM35772	Bearing	1	18	363168	Bolt, through	2
4	GM35769	Bearing	1	19	225911	Pinion assy. (includes items 20-21)	1
5	363156	Field coil assembly (includes item 6)	1	20	225912	Pinion shaft	1
6	363157	Brush	2	21	225913	Pinion stopper set	1
7	363159	Holder assembly, brush (includes items 8-9)	1	25	GM35770	Clutch assembly (includes items 26-27)	1
8	363157	Brush	2	26	GM35771	Ball bearing	1
9	225883	Spring	4	27	GM35774	Ball bearing	1
10	363158	Cover, rear	1	28	225920	Bolt	2
11	225905	Gear housing assembly	1	29	225921	Bolt	3
12	-	Center housing	1	30	252712	Bolt	2
13	GM78865	Solenoid	1				

Not Shown:

225899 Screw, pole corer set (4)

225917 Cover, M terminal (1)

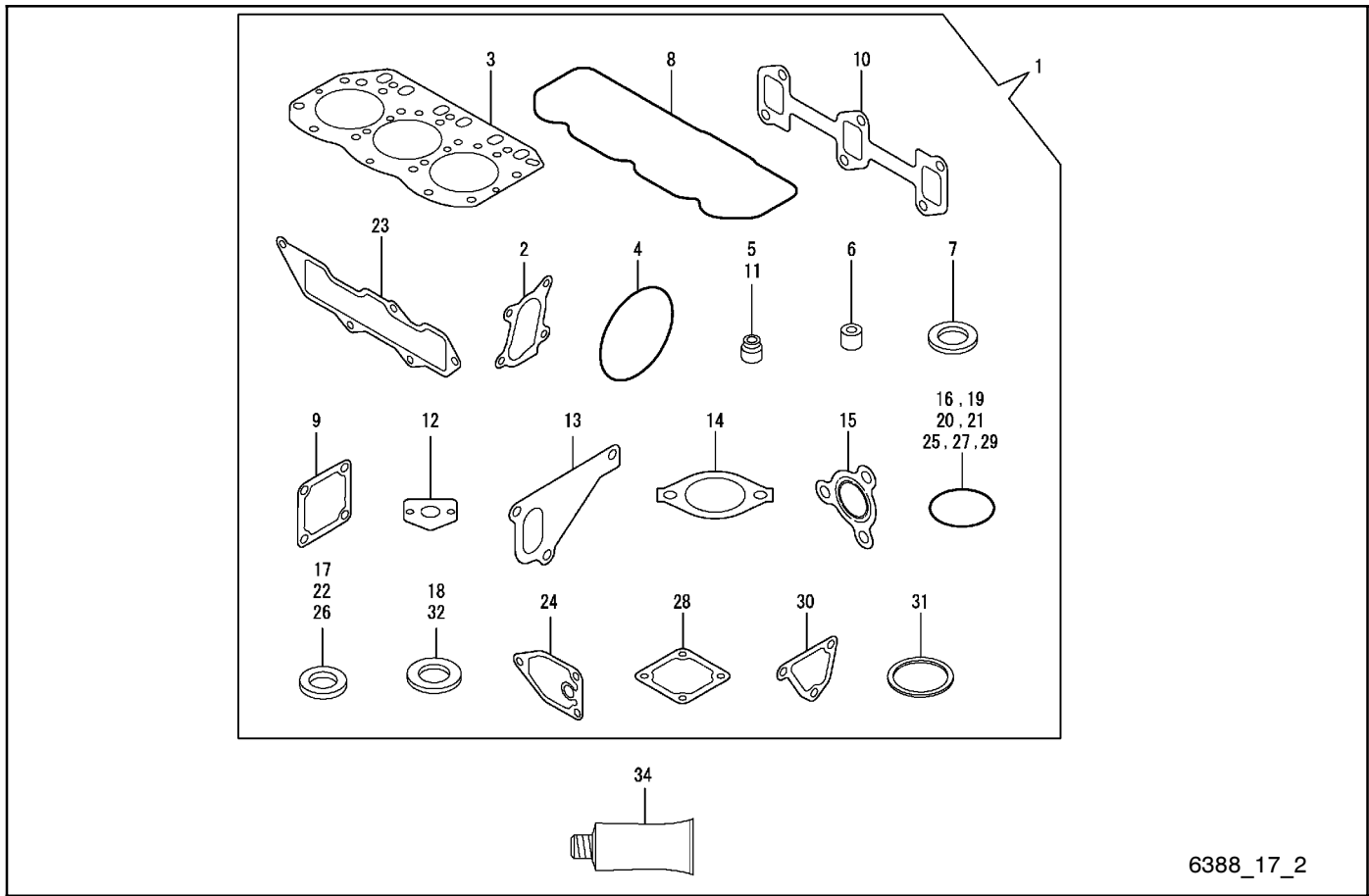
Group 16: Starting Motor



6388_16_2

Item	Part Number	Description	Quantity		Item	Part Number	Description	Quantity	
				Variation 2					Variation 2
1	344743-P	Starter (includes items 2-32)	1		19	225909	Dust cover, non-ASB	1	
2	225895	Armature assy. (includes items 3-8)	1		20	225910	Through bolt	2	
3	GM35772	Ball bearing	1		21	225911	Pinion assy. (includes items 22-23)	1	
4	GM35769	Ball bearing	1		22	225912	Pinion shaft	1	
6	225898	Field coil assy. (includes items 7-8)	1		23	225913	Pinion stopper set	1	
7	225899	Screw	4		27	GM35770	Clutch assy. (includes items 28-29)	1	
8	225900	Brush (+)	2		28	GM35771	Ball bearing	1	
9	225901	Holder assy. (includes items 10-11)	1		29	GM35774	Ball bearing	1	
10	225902	Brush (-)	2		30	225917	Cover	1	
11	225903	Brush spring	4		31	225920	Bolt	2	
12	225904	Rear cover	1		32	225921	Bolt	3	
13	225905	Gear housing assembly	1		33	GM35516	Stud, starter	2	
14	225906	Center housing	1		34	252481	Cover	1	
15	225907	Switch, magnetic	1		35	252725	Nut	2	
16	225908	Shift lever set	1						

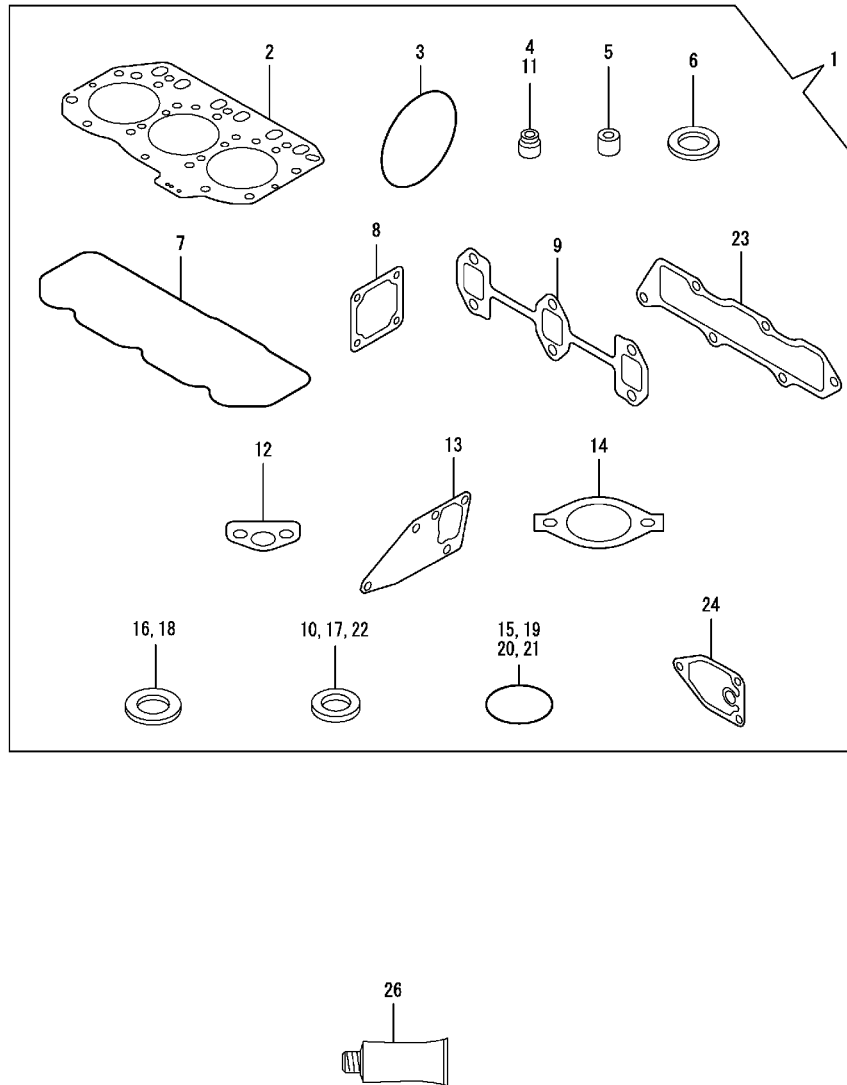
Group 17: Gasket Set



6388_17_2

Item	Part Number	Description	Quantity		Item	Part Number	Description	Quantity	
			2	6				2	6
1	GM46236	Gasket set (includes items 2-32)	1		17	252734	Washer 8, seal	2	2
1	GM66501	Gasket set		1	18	250967	Gasket 8, round	3	3
2	229855	Gasket	1	1	19	250801	O-ring	3	3
3	GM13304	Gasket, cylinder head	1	1	20	252684	O-ring	2	2
4	252764	O-ring, F.I. pump	1	1	21	256796	O-ring	1	1
5	256578	Seal, valve stem	3	3	22	225425	Washer, seal, 22S	1	1
6	GM35450	Protector, nozzle	3	3	23	GM19699	Gasket, intake manifold	1	1
7	252744	Seat	3	3	24	225776	Gasket	1	1
8	GM35529	Gasket, bonnet	1	1	25	GM35421	O-ring	4	4
9	344904	Gasket, air heater	1	1	26	363452	Washer, seal, 10S	2	2
10	256770	Gasket, manifold	1	1	27	GM35723	O-ring	1	1
11	252754	Seal, valve stem	3	3	28	225778	Gasket	2	2
12	GM46221	Gasket	1	1	29	GM19687	O-ring	1	1
13	GM19686	Gasket	1	1	30	252789	Gasket, case	1	1
14	249865	Gasket	1	1	31	225006	Gasket	1	1
15	256631	Gasket	1		32	252773	Packing 16	2	2
15	GM66417	Gasket		1	34	GM46206	Gasket, liquid	1	1
16	GM46225	O-ring	1	1					

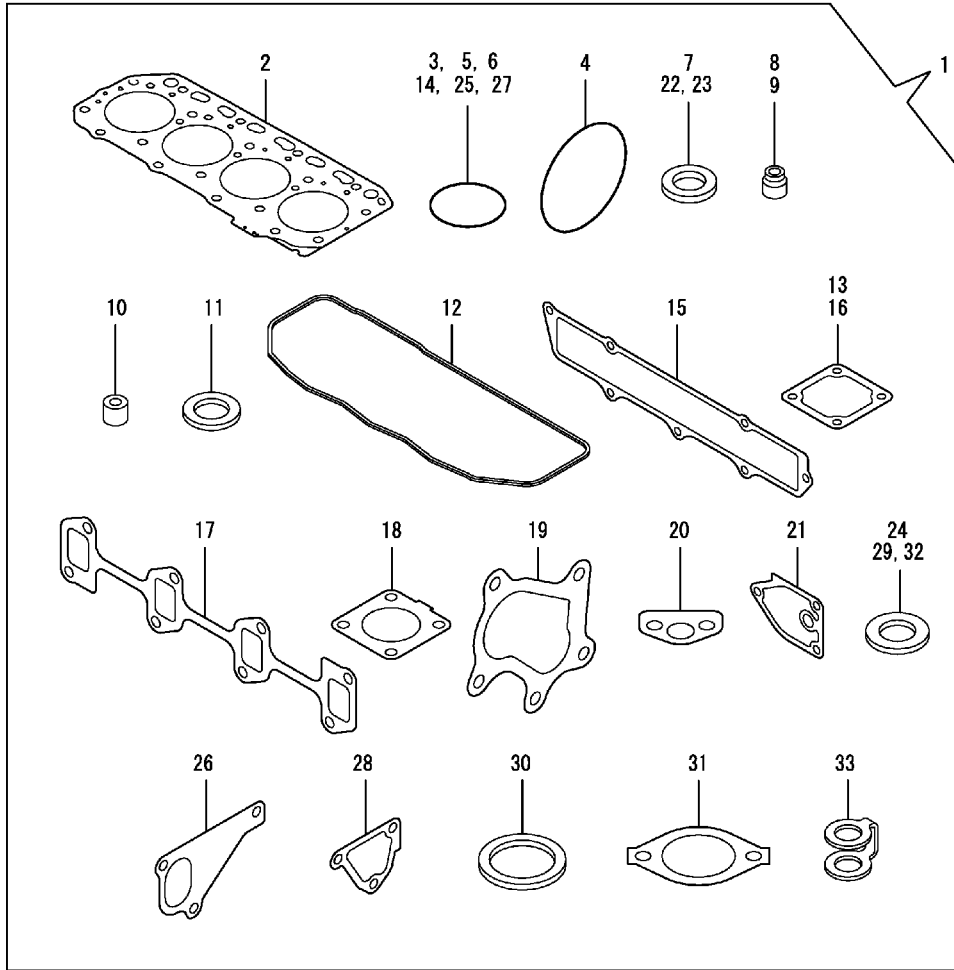
Group 17: Gasket Set



6388_17_3

Item	Part Number	Description	Quantity	Item	Part Number	Description	Quantity
			Variation				Variation
1	GM35741	Gasket set (includes items 2-24)	1	14	249865	Gasket	1
2	GM33836	Gasket, cylinder head	1	15	GM35421	O-ring	4
3	252764	O-ring, F.I. pump	1	16	250967	Gasket 8, round	1
4	250844	Valve seal	3	17	252734	Washer 8, seal	2
5	GM35450	Protector, nozzle	3	18	252773	Packing 16	2
6	252744	Seat	3	19	250801	O-ring	3
7	GM35445	Gasket, bonnet	1	20	252684	O-ring	2
8	225778	Gasket	1	21	256796	O-ring	1
9	225717	Gasket, exhaust man	1	22	363452	Washer, seal, 10S	2
10	225425	Washer, seal, 22S	1	23	GM33685	Gasket, intake manifold	1
11	225766	Seal, valve stem	3	24	225776	Gasket	1
12	225775	Gasket	1	26	252998	Gasket	1
13	GM35580	Gasket	1				

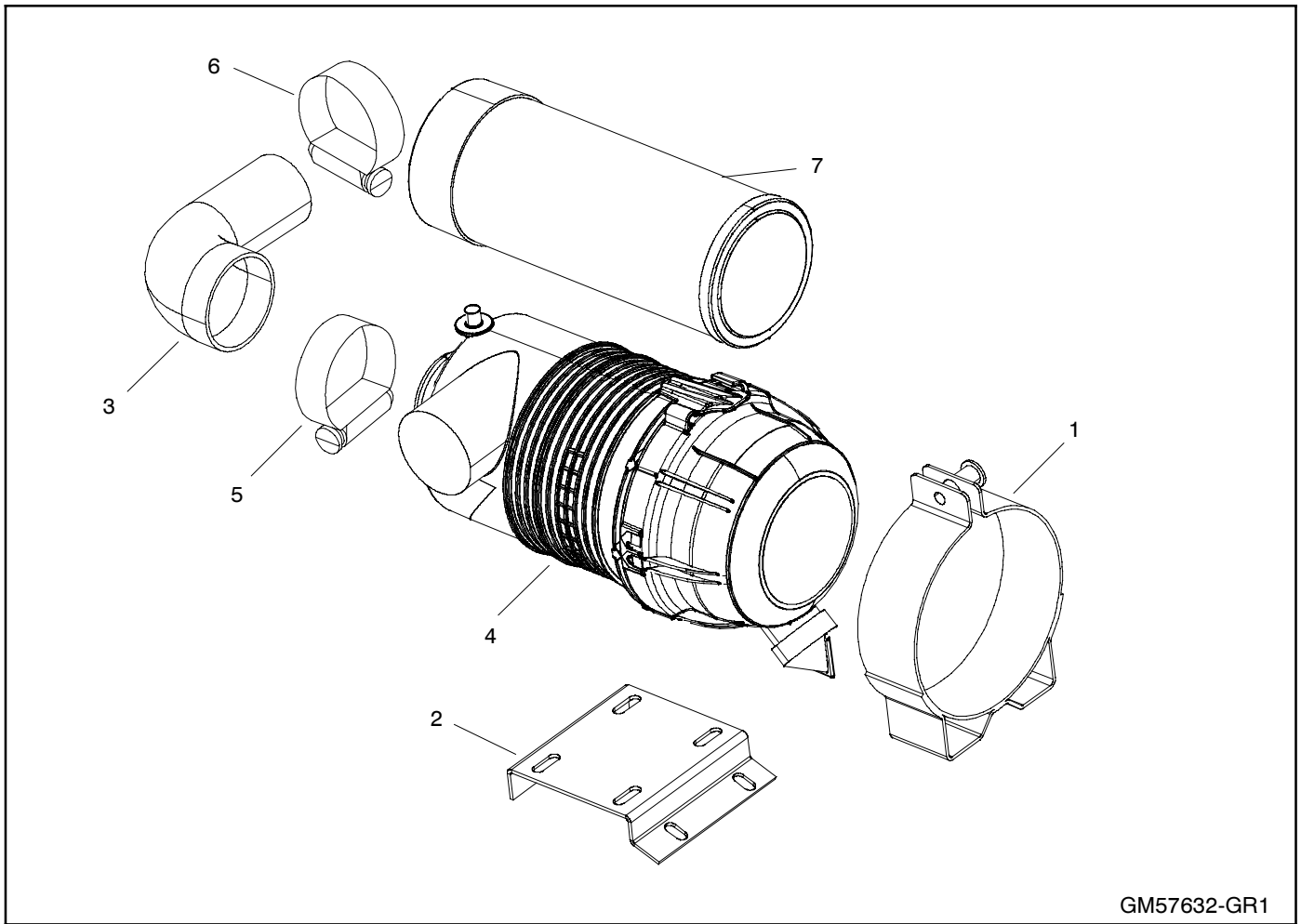
Group 17: Gasket Set, continued



6273_17_6

Item	Part No.	Description	Quantity Variation
1	GM66502	Gasket set (includes items 2-33 in the illustration)	7 1

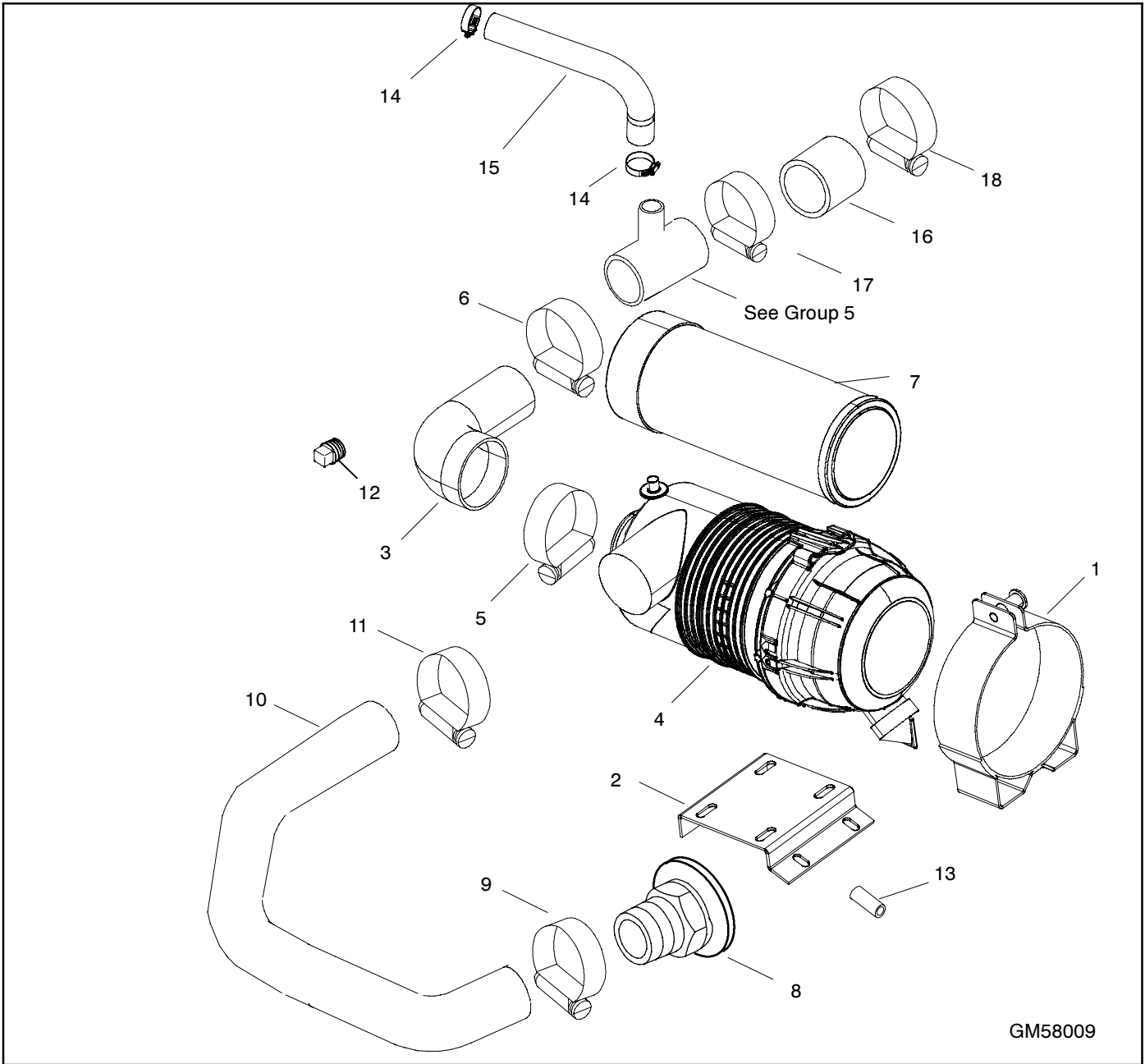
Group 101: Air Intake



GM57632-GR1

Item	Part Number	Description	Quantity
			Variation
1	GM21380	Mount, air cleaner, 4.77 in. ID	1
2	GM40112	Bracket, air cleaner mount	1
3	GM40113	Hose, air intake	1
4	GM39825	Air cleaner assembly	1
5	X-426-16	Clamp, hose, 1.81/2.75 in.	1
6	X-426-6	Clamp, hose, 1.56/2.5 in.	1
7	GM42265	Element, air cleaner	1

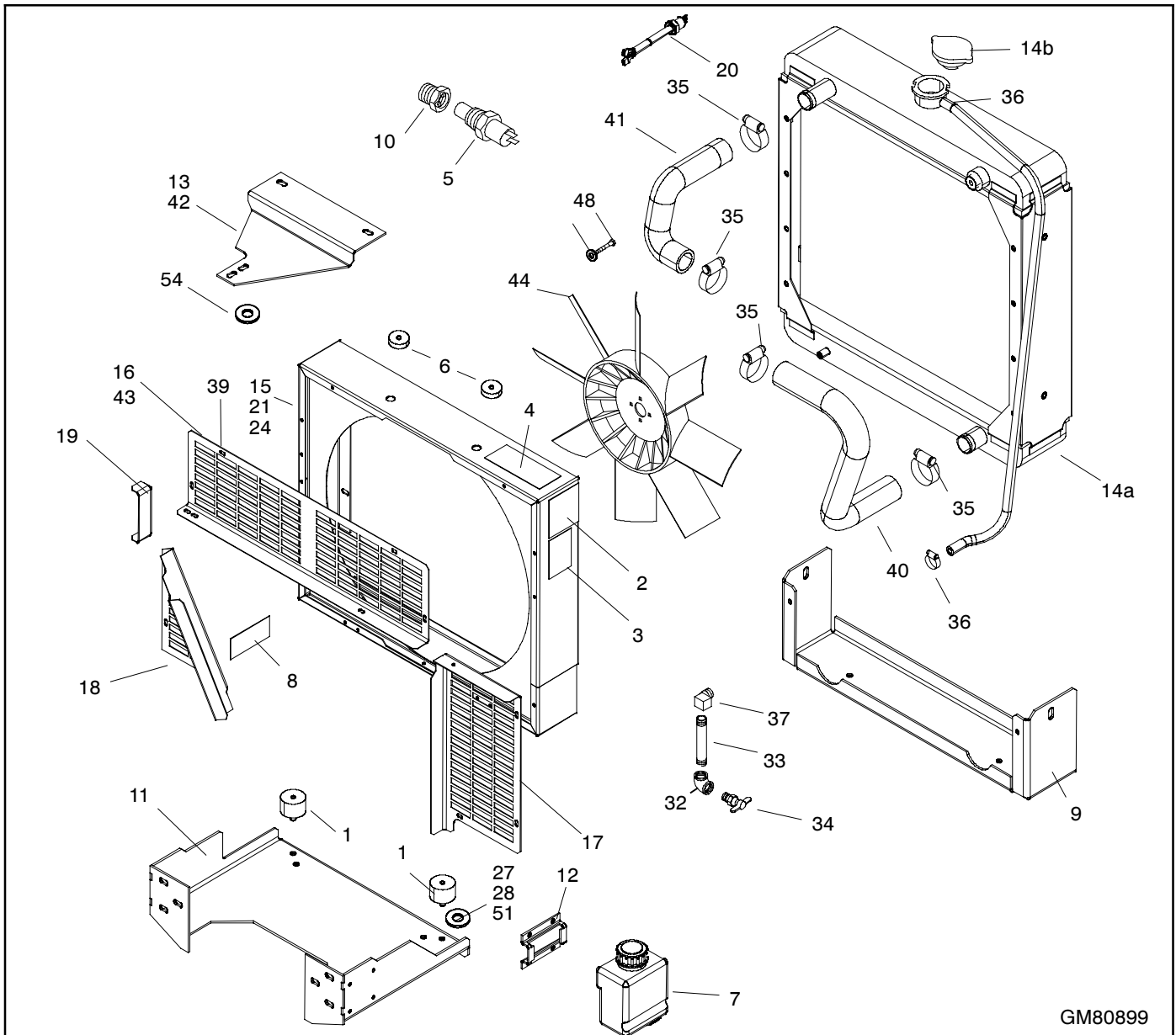
Group 101: Air Intake, continued



Group 101: Air Intake, continued

Item	Part Number	Description	Quantity		Item	Part Number	Description	Quantity	
			Variation 7	Variation 8				Variation 7	Variation 8
1	226956	Mount, air cleaner, 5.72 in. ID		1	7	GM42266	Element, air cleaner		1
1	GM21380	Mount, air cleaner, 4.77 in. ID	1		7	GM42265	Element, air cleaner	1	
2	GM55471	Bracket, air cleaner mount	1	1	12	X-268-7	Cap, pipe, 1/8 in. NPT	1	1
3	GM55469	Hose, elbow	1		14	X-426-12	Clamp, hose, 0.69/1.25 in.	2	2
3	GM55468	Hose, elbow		1	15	GM57567	Hose, CCV molded	1	
4	GM39826	Air cleaner assembly		1	15	GM55470	Hose, CCV molded		1
4	GM39825	Air cleaner assembly	1		16	X-771-1	Hose, straight, 1.38 in.	1	
5	X-426-2	Clamp, hose, 2.31/3.25 in.		1	16	GM23528	Hose		1
5	X-426-16	Clamp, hose, 1.81/2.75 in.	1		17	X-426-19	Clamp, hose, 1/2 in.	1	
6	X-426-19	Clamp, hose, 1/2 in.	1		17	X-426-6	Clamp, hose, 1.56/2.5 in.		1
6	X-426-6	Clamp, hose, 1.56/2.5 in.		1	18	X-426-6	Clamp, hose, 1.56/2.5 in.	1	1

Group 104: Cooling System



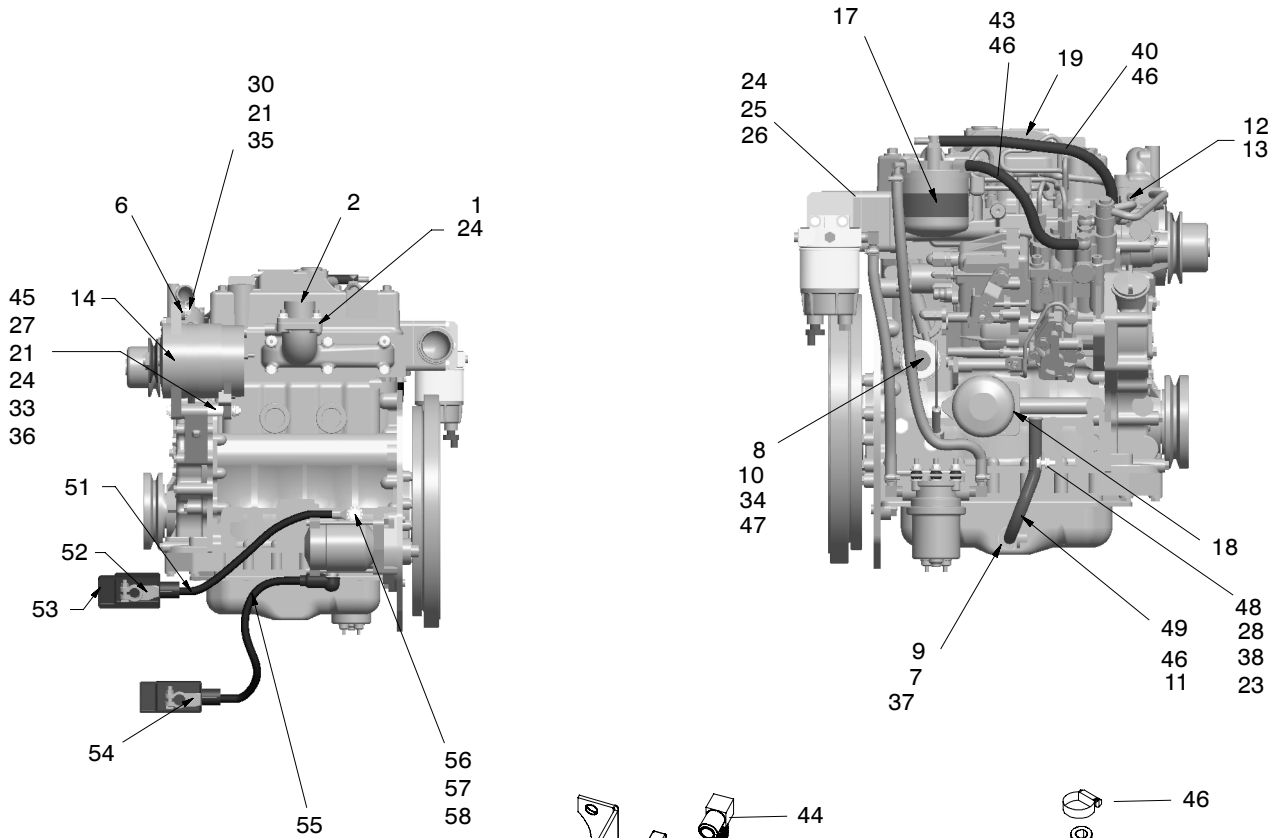
GM80899

Group 104: Cooling System

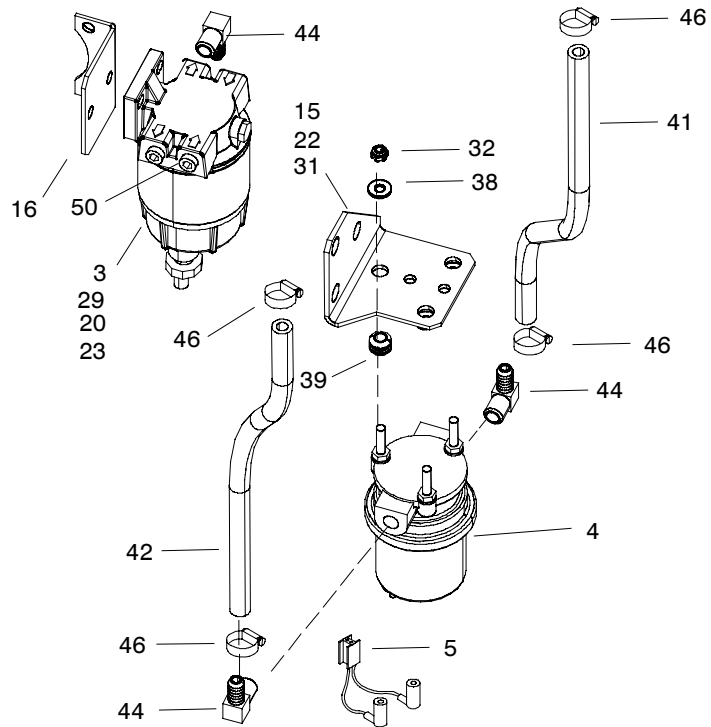
Item	Part Number	Description	Quantity		
			Module		
			GM80899-MA1	GM80899-MA2	GM80899-MA3
1	239497	Vibromount	2	2	2
2	249808	Decal, warning rotating parts	1	1	1
3	249809	Decal, caution hot engine	2	2	2
4	249810	Decal, warning hot coolant	1	1	1
5	274988	Sender, temperature	1	1	1
6	352399	Vibromount	2	2	2
7	359037	Bottle, overflow	1	1	1
8	GM14167	Decal, drain	1	1	1
9	GM28570	Support, radiator	1	1	1
10	GM30245	Bushing, adapter	1	1	1
11	GM39805	Support, radiator	1	1	1
12	GM42194	Bracket, water bottle	1	1	1
13	GM50459	Bracket, radiator support	1	1	1
14a	GM52727	Radiator/CAC Assembly	1	1	1
14b	GM54994	Cap, radiator	1	1	1
15	GM62293	Shroud, fan	1	1	1
16	GM62294	Guard, belt, top	1	1	1
17	GM62295	Guard, belt, right hand	1	1	1
18	GM62296	Guard, belt, left hand	1	1	1
19	GM62297	Guard, alternator	1	1	1
20	GM66270	Sensor, low coolant level	1	1	1
27	X-22-5	Washer, lock, 0.326 ID x 0.62 OD	2	2	2
28	X-25-122	Washer, plain, 0.312 ID x 1.5 in. OD	2	2	2
32	X-215-5	Elbow, pipe, 90 deg. x 1/4 in. NPT	1	1	1
33	X-220-2	Pipe, 1/4 in. NPT x 4 in.	1	1	1
34	X-256-3	Valve, drain, 1/4 in. NPTF	1	1	1
35	X-426-12	Clamp, hose, 0.69/1.25 in.	4	4	4
36	X-426-9	Clamp, hose, 0.25/0.70 in.	2	2	2
37	X-555-1	Elbow, street, 90 deg. x 1/4 in. NPTF	1	1	1
39	X-6216-1	Screw, Phillips hex crimpite	12	12	12
40	GM39808	Hose, lower radiator	1	1	
40	GM42108	Hose, lower radiator			1
41	GM39807	Hose, upper radiator			1
41	GM42531	Hose, upper radiator	1		
41	GM79945	Hose, upper radiator		1	
42	GM42532	Bracket, radiator support (not shown)	1		
43	GM42533	Guard, belt (not shown)	1		
43	GM42533	Guard, belt (not shown)	1		
44	GM62422	Fan, pusher		1	1
44	GM42551	Fan, pusher	1		
45	M125A-06-80	Washer, plain	4	4	4
48	M933-06016-60	Screw, hex cap, M6 x 16 mm	4	4	4
51	X-400-230	Spacer, 0.531 ID x 1 OD x 1 in. (not shown)	2		
54	X-400-104	Spacer, 0.375 ID x 0.75 OD x 0.5 in.		2	

Group 105: Engine

10 kW



Items not shown: 59, 60, 61, 62



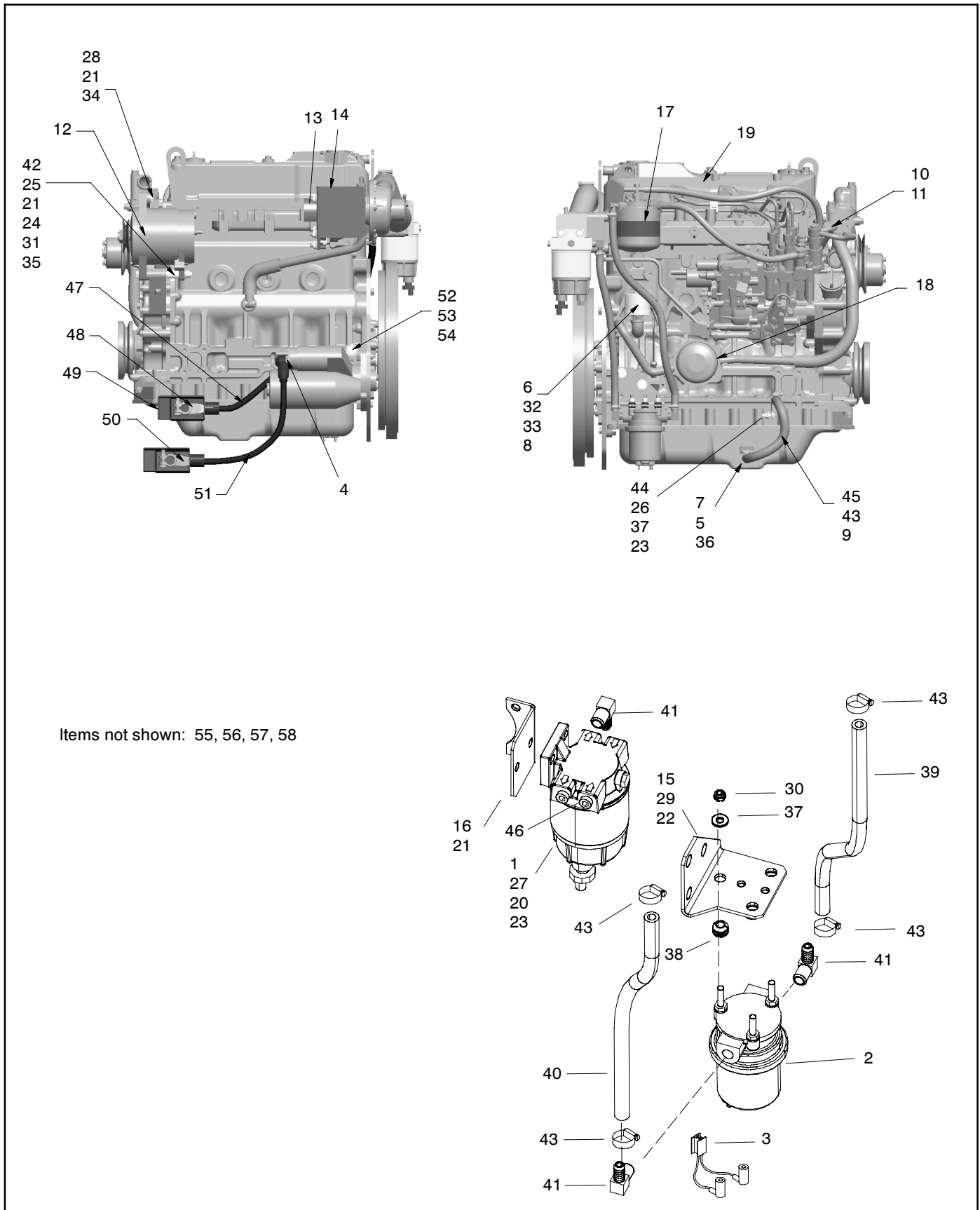
Group 105: Engine

10 kW

Item	Part Number	Description	Quantity
			Variation
			1
1	225222	Gasket, Exhaust	1
2	225264	Flange, exhaust outlet	1
3	225455	Assembly, Fuel Water Separator	1
4	229051	Pump, fuel	1
5	229168	Lead assembly	1
6	229212	Bracket, alternator adjustment	1
7	249959	Adaptor, bushing	1
8	343473	Sender, oil pressure	1
9	359653	Valve, oil drain (3/8-18 npt)	1
10	GM12035	Adapter, Bushing	1
11	GM20547	Plug, Hose (3/8)	1
12	GM28823	Sensor, Temperature	1
13	GM30245	Bushing, Adapter	1
14	GM38884	Alternator, Battery Charging	1
15	GM40102	Bracket, Fuel Pump Mounting	1
16	GM41833	Bracket, Fuel/Water Separator	1
17	GM47656	Decal, Fuel Filter	1
18	GM47657	Decal, Oil Filter	1
19	GM67072	Engine Assy 3TNV82A Tier III	1
20	M125A-06-80	Washer, Plain	2
21	M125A-08-80	Washer, Plain, 8.4 ID x 16.0 OD	8
22	M125A-10-80	Washer, Plain, 10.5 ID x 20.0 OD	2
23	M6923-06-80	Nut, Hex 6mm	3
24	M6923-08-80	Nut, Hex 8mm	5
25	M931-08060-60	Screw, hex head	2
26	M931-08100-60	Screw, hex cap	2
27	M931-08110-60	Screw, Hex Cap	1
28	M933-06020-60	Screw, hex cap	1
29	M933-06025-60	Screw, hex cap	2
30	M933-08025-60	Screw, hex cap	3
31	M933-10020-60	Screw, hex cap	2
32	X-101-25	Nut, hex elastic stop, M6-1	3
33	X-21-1	Washer, lock, .323 ID x .586 in. OD	1
34	X-217-7	Pipe, Nipple (1/8" NPT x 1.00")	1
35	X-22-14	Washer, lock, .391 ID x .975 in. OD	1
36	X-22-16	Washer, lock, .326 ID x .883 in. OD	1
37	X-25-145	Washer, plain, .859 ID x 1.185 in. OD	1
38	X-25-40	Washer, plain, .281 ID x .625 in. OD	7
39	X-284-39	Grommet, Round	3
40	X-386-135	Line, Flex Fuel	1
41	X-386-137	Line, Flex Fuel	1
42	X-386-79	Hose	1
43	X-386-83	Fuel line, flexible	1
44	X-391-25	Connector, 90 deg. (5/16" id hose)	3
45	X-400-184	Spacer, .344 ID x .625 OD x .949 in.	1
46	X-426-9	Clamp, hose, .25/.70 in.	10
47	X-511-12	Coupling, pipe half (1/8" thread)	1
48	X-6084-1	Clip, J	1
49	X-651-13	Hose, rubber, straight, .375 in. ID	1
50	X-75-51	Plug, pipe (1/4" nptf)	1
51	X-545-203	Cable, Battery	1
52	345056	Terminal, battery	1
53	GM20745	Boot, Battery Lug	1
54	345039	Terminal, battery	1
55	X-545-153	Cable, battery (No.2 x 56") RED+	1
56	M933-10020-60	Screw, hex cap	1
57	M125A-10-80	Washer, Plain 10.5 ID x 20.0 OD	1
58	X-22-14	Washer, lock, .391 ID x .975 in. OD	1
59	286316	Bolt, Angle	2
60	324725	Clamp, battery	1
61	X-101-4	Nut, hex elastic stop, 5/16-24	2
62	X-25-44	Washer, Plain.328 ID x .562 OD	2

Group 105: Engine, continued

15/20 kW



Group 105: Engine, continued

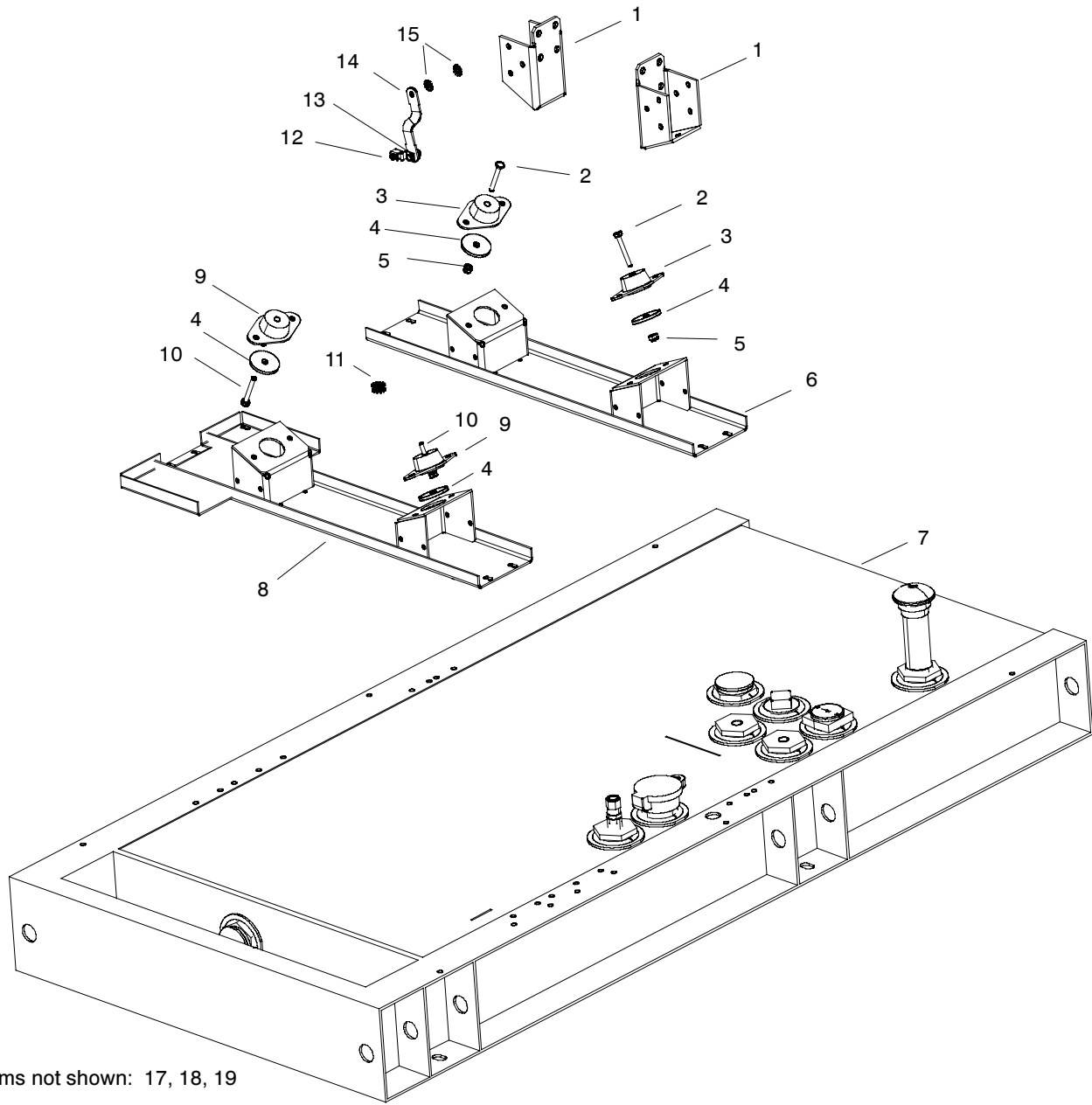
15/20 kW

Item	Part Number	Description	Quantity	
			Variation 2	Variation 3
1	225455	Assembly, Fuel Water Seperator	1	1
2	229051	Pump, fuel	1	1
3	229168	Lead assembly	1	1
4	238582	Terminal, spade, male	1	
5	249959	Adaptor, bushing	1	1
6	343474	Sender, oil pressure	1	1
7	359653	Valve, oil drain (3/8-18 npt)	1	1
8	GM12035	Adapter, Bushing	1	1
9	GM20547	Plug, Hose (3/8)	1	1
10	GM28823	Sensor, Temperature	1	1
11	GM30245	Bushing, Adapter	1	1
12	GM38884	Alternator, Battery Charging	1	1
13	GM39045	Flange, Exhaust Outlet	1	
13	225573	Flange, exhaust		1
14	GM39804	Shield, Heat	1	
15	GM40102	Bracket, Fuel Pump Mounting	1	1
16	GM41833	Bracket, Fuel/Water Separator	1	1
17	GM47656	Decal, Fuel Filter	1	1
18	GM47657	Decal, Oil Filter	1	1
19	GM52001	Engine Assembly, Yanmar 4TNV84T-BGKL	1	
19	GM51744	Engine Assembly, Yanmar 3TNV84T-BGKL		1
20	M125A-06-80	Washer, Plain	2	2
21	M125A-08-80	Washer, Plain, 8.4 ID x 16.0 OD	2	4
22	M125A-10-80	Washer, Plain, 10.5 ID x 20.0 OD	2	2
23	M6923-06-80	Nut, Hex 6mm	3	3
24	M6923-08-80	Nut, Hex 8mm	6	6
25	M931-08110-60	Screw, Hex Cap	1	1
26	M933-06020-60	Screw, hex cap	1	1
27	M933-06025-60	Screw, hex cap	2	2
28	M933-08025-60	Screw, hex cap	1	1
29	M933-10020-60	Screw, hex cap	2	2
30	X-101-25	Nut, hex elastic stop, M6-1	3	3
31	X-21-1	Washer, lock, .323 ID x .586 in. OD	1	1
32	X-215-19	Elbow, pipe (90 deg x 1/8"npt)	1	1
33	X-217-12	Pipe, Nipple (1/8" npt x 2.00")	1	1
34	X-22-14	Washer, lock, .391 ID x .975 in. OD	1	1
35	X-22-16	Washer, lock.326 IDx.883 in.OD	1	1
36	X-25-145	Washer, plain, .859 ID x 1.185 in. OD	1	1
37	X-25-40	Washer, plain, .281 ID x .625 in.OD	7	7
38	X-284-39	Grommet, Round	3	3
39	X-386-137	Line, Flex Fuel	1	1
40	X-386-79	Hose	1	1
41	X-391-25	Connector, 90 deg. (5/16" id hose)	3	3
42	X-400-184	Spacer, .344 ID x .625 OD x .949 in.	1	1
43	X-426-9	Clamp, hose, .25/.70 in.	6	6
44	X-6084-1	Clip, J	1	1
45	X-651-13	Hose, rubber, straight, .375 in. ID	1	1
46	X-75-51	Plug, pipe (1/4" nptf)	1	1
47	X-545-203	Cable, Battery	1	1
48	345056	Terminal, battery	1	1
49	GM20745	Boot, Battery Lug	1	1
50	345039	Terminal, battery	1	1
51	X-545-153	Cable, battery (No.2 x 56") RED+	1	1
52	M933-10020-60	Screw, hex cap	1	1
53	M125A-10-80	Washer, Plain 10.5 ID x 20.0 OD	1	1
54	X-22-14	Washer, lock, .391 ID x .975 in. OD	1	1
55	286316	Bolt, Angle	2	2
56	324725	Clamp, battery	1	1
57	X-101-4	Nut, hex elastic stop, 5/16-24	2	2
58	X-25-44	Washer,Plain.328 ID x .562 OD	2	2

Group 107: Nameplate and Decals

Item	Part Number	Description	Quantity		Item	Part Number	Description	Quantity	
			Variation 1	Variation 1				Variation 1	Variation 1
1	224233	Decal, 1-800 number	1		5	239773	Decal, warning fire or accident haz	1	
2	226917	Decal, negative battery conn	1		6	239796	Decal, warning carbon monoxide	1	
3	226937	Decal, warning	1		7	GM14167	Decal, drain	1	
4	238162	Decal, pos. battery connection	1		8	X-6246-11	Decal	1	

Group 109: Skid and Plant Mounting



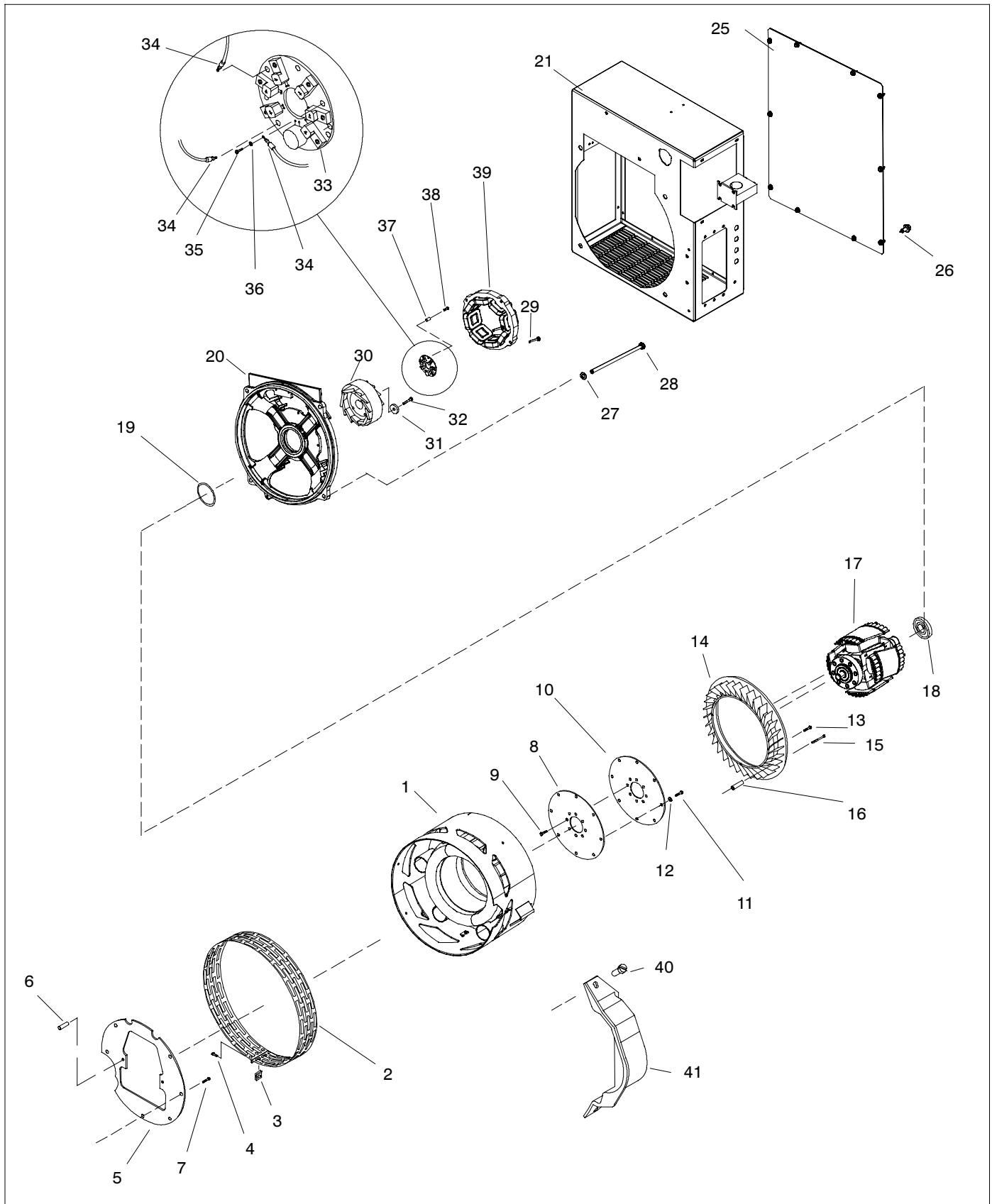
Items not shown: 17, 18, 19

GM39909

Group 109: Skid and Plant Mounting

Item	Part Number	Description	Quantity					
			Module					
			GM58839-MA1	GM58839-MA2	GM58839-MA3	GM58839-MA4	GM58839-MA5	GM58839-MA6
1	GM39817	Bracket, engine mounting	2	2			2	
1	GM40110	Bracket, engine mounting			2	2		2
2	M931-08055-60	Screw, hex cap	2	2	2	2	2	2
3	278322	Vibromount	2	2	2	2	2	2
4	X-25-96	Washer, plain, 0.406 ID x 2 in. OD	4	4	4	4	4	4
5	M982-08-80	Nut, hex elastic stop	4	4	4	4	4	4
6	GM53165	Crossmember	1	1	1	1	1	1
7	GM58845	Tank, subbase, 40 gal.	1		1			
7	GM58846	Tank, subbase, 80 gal.		1		1		
7	GM74861	Skid, 10/15/20KW Yanmar w/o Tank					1	1
7	GM11073	Cover, Skid Hole					4	4
8	GM53166	Crossmember	1	1	1	1	1	1
9	229127	Vibromount	2	2	2	2	2	2
10	M931-08055-60	Screw, hex cap	2	2	2	2	2	2
11	X-22-16	Washer, lock, 0.326 ID x 0.883 in. OD	2	2	2	2	2	2
12	X-377-12	Connector, cable	1	1	1	1	1	1
13	X-22-11	Washer, lock, 0.262 ID x 0.469 OD	1	1	1	1	1	1
14	245297	Strap, ground, 5 in.	1	1	1	1	1	1
15	X-22-12	Washer, lock, 0.262 ID x 0.743 in. OD	4	4	4	4	4	4
16	344295	Decal, equipment ground (not shown)	1	1	1	1	1	1

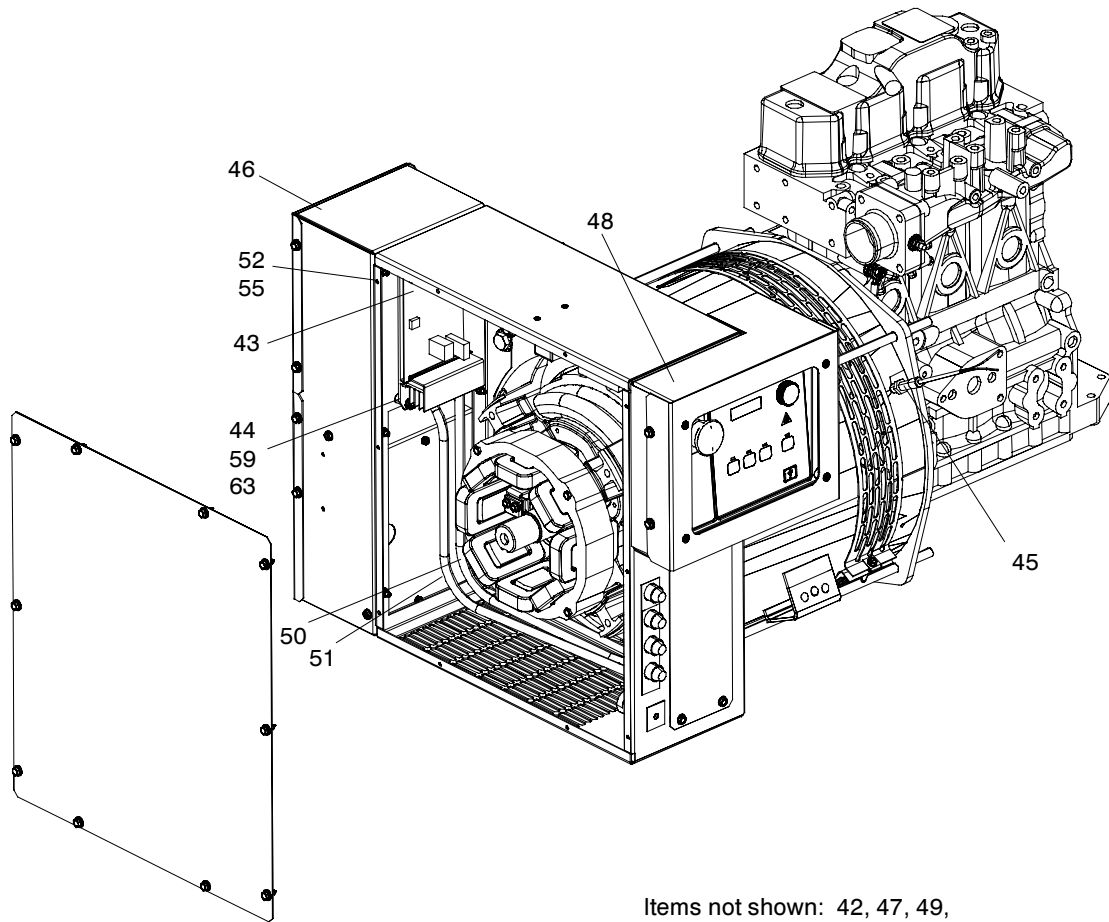
Group 201: Alternator and Mounting



Group 201: Alternator and Mounting

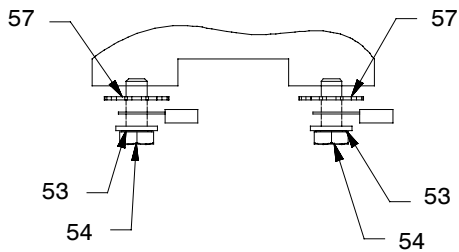
Item	Part Number	Description	Quantity					
			Module					
			GM78570-MA1	GM78570-MA2	GM78570-MA3	GM78570-MA4	GM78570-MA5	GM78570-MA6
1	GM62695	Stator Assembly	1					
1	GM80877	Stator Assembly		1				
1	GM80878	Stator Assembly			1	1		
1	GM62696	Stator Assembly					1	1
2	229109	Guard, generator fan	1	1	1	1	1	1
3	257442	Clip, speed	1	1	1	1	1	1
4	X-67-125	Screw, hex washer, thread-forming	1	1	1	1	1	1
5	229097	Plate, locator	1	1	1	1	1	1
6	229356	Pin, Knurled	2	2	2	2	2	2
7	M933-10012-60	Screw, hex cap	6	6	6	6	6	6
8	257017	Disc, armature drive	1	1	1	1	1	1
9	X-6238-3	Bolt, Hex Cap	8	8	8	8	8	8
10	257017	Disc, armature drive	1	1	1	1	1	1
11	M933-08016-60	Screw, hex cap	8	8	8	8	8	8
12	M125A-08-80	Washer, Plain, 8.4 ID x 16.0 OD	8	8	8	8	8	8
13	X-6284-1	Screw, slotted pan head machine	4	4	4	4	4	4
14	225214	Fan, generator	1	1	1	1	1	1
15	X-6284-2	Screw, slotted pan head machine	4	4	4	4	4	4
16	X-400-189	Spacer, .215 ID x .312 OD x 1.2 in.	4	4	4	4	4	4
17	A-229147	Rotor assembly	1	1				
17	GM39720	Rotor assembly			1		1	
17	GM29686	Rotor assembly				1		1
18	X-758-15	Bearing, ball	1	1	1	1	1	1
19	229110	O-Ring (2.859" id)	1	1	1	1	1	1
20	GM24810	Bracket, End	1	1	1	1	1	1
21	GM80093-1	Box, Junction (See Page 63)	1				1	1
21	GM80093-2	Box, Junction (See Page 63)						1
25	GM80816	Panel, Junction Box	1	1	1	1	1	1
26	X-6216-1	Screw, Phillips hex crimp-tite	10	10	10	10	10	10
27	X-801-3	Washer, hardened, .406 ID x .812 in. OD	3	3	3	3	3	3
28	X-6051-20	Screw, hex head machine	4	4				
28	X-6051-17	Screw, hex head machine			4	4	4	4
29	X-97-15	Screw, hex head machine	4	4				
29	X-97-14	Screw, hex head machine			4	4	4	4
30	344567	Exciter Armature	1	1				
30	344568	Exciter Armature			1	1	1	1
31	X-25-129	Washer, plain, .384 ID x 1.628 in. OD	1	1	1	1	1	1
32	X-6238-3	Bolt, Hex Cap	1	1	1	1	1	1
33	A-229152	PCB assembly	1	1	1	1	1	1
34	X-283-3	Terminal, ring, male, 16-14 AWG	3	3	3	3	3	3
35	X-51-8	Screw, Machine	5	5	5	5	5	5
36	X-22-7	Washer, lock, .172 ID x .333 in. OD	5	5	5	5	5	5
37	X-712-17	Spacer, .312 OD, .56 in.	3	3	3	3	3	3
38	X-67-135	Screw, hex washer, thread-forming	3	3	3	3	3	3
39	GM30341	Field Assembly, Exciter	1	1				
39	GM31594	Field Assembly, Exciter			1	1	1	1
40	X-67-113	Screw, hex washer, thread-forming	2	2	2	2	2	2
41	229113	Guard, Starter	1	1	1	1	1	1

Group 201: Alternator and Mounting, continued

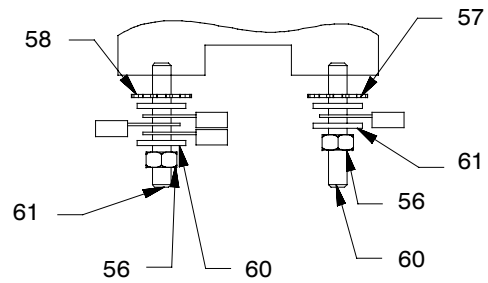


Items not shown: 42, 47, 49,
62, 64-68

End Bracket



Engine Block

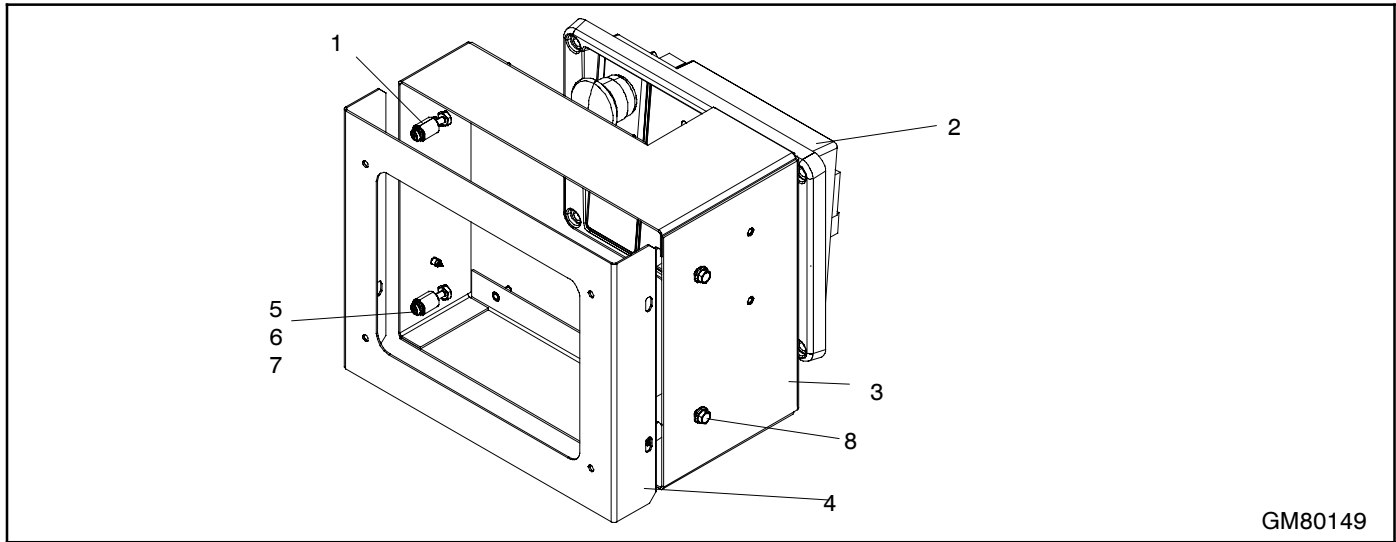


Group 201: Alternator and Mounting, continued

Item	Part Number	Description	Quantity					
			Module					
			GM78570-MA1	GM78570-MA2	GM78570-MA3	GM78570-MA4	GM78570-MA5	GM78570-MA6
42	GM35838	Decal, 4 Wire Reconnection	1					
42	229883	Decal, 12 Wire Reconnection		1				
43	GM84179	Regulator, Wound Field Exciter Isolated	1	1	1	1	1	1
44	GM52576	Vibromount, Controller	4	4	4	4	4	4
45	GM11708	Sensor, Magnetic Pickup	1	1	1	1	1	1
46	GM78568	Box Assembly, Connection (See page 64)	1	1	1	1	1	1
47	GM78593	Harness, Controller 10-20 kW Yanmar	1	1	1	1	1	1
48	GM80149-1	Controller Assembly (See page 62)	1	1	1	1	1	1
49	GM80884	Harness, Engine 10-20 kW Yanmar	1	1	1	1	1	1
50	LB-0650-1515	Lead	1	1	1	1	1	1
51	LB-0652-1515	Lead	1	1	1	1	1	1
52	M125A-04-80	Washer, Plain	10	10	10	10	10	10
53	M125A-06-80	Washer, Plain	2	2	2	2	2	2
54	M933-06016-60	Screw, hex cap, M6x16mm, js500 full thrd	2	2	2	2	2	2
55	M934-04-50	Nut, Hex 4mm	10	10	10	10	10	10
56	M934-06-60	Nut, Hex 6mm	2	2	2	2	2	2
31	X-22-1	Washer, lock	1	1	1	1	1	1
57	X-22-12	Washer, lock, .262 ID x .743 in. OD	4	4	4	4	4	4
58	X-22-14	Washer, lock, .391 ID x .975 in. OD	1	1	1	1	1	1
59	X-22-20	Washer, lock, .172 ID x .373 in. OD	8	8	8	8	8	8
60	X-25-40	Washer, Plain	2	2	2	2	2	2
61	X-6054-22	Stud, Metric 8mm	2	2	2	2	2	2
62	X-6210-2	Nut, flange spirallock, 1/4-20	1	1	1	1	1	1
63	X-6210-4	Nut, flange whiz, 8-32	4	4	4	4	4	4
64	X-750-13	Marker, wire	1	1	1	1	1	1
65	X-750-14	Marker, wire	1	1	1	1	1	1
66	X-750-15	Marker, wire	1	1	1	1	1	1
67	X-750-16	Marker, wire	1	1	1	1	1	1
68	X-750-22	Marker, wire	1	1	1	1	1	1

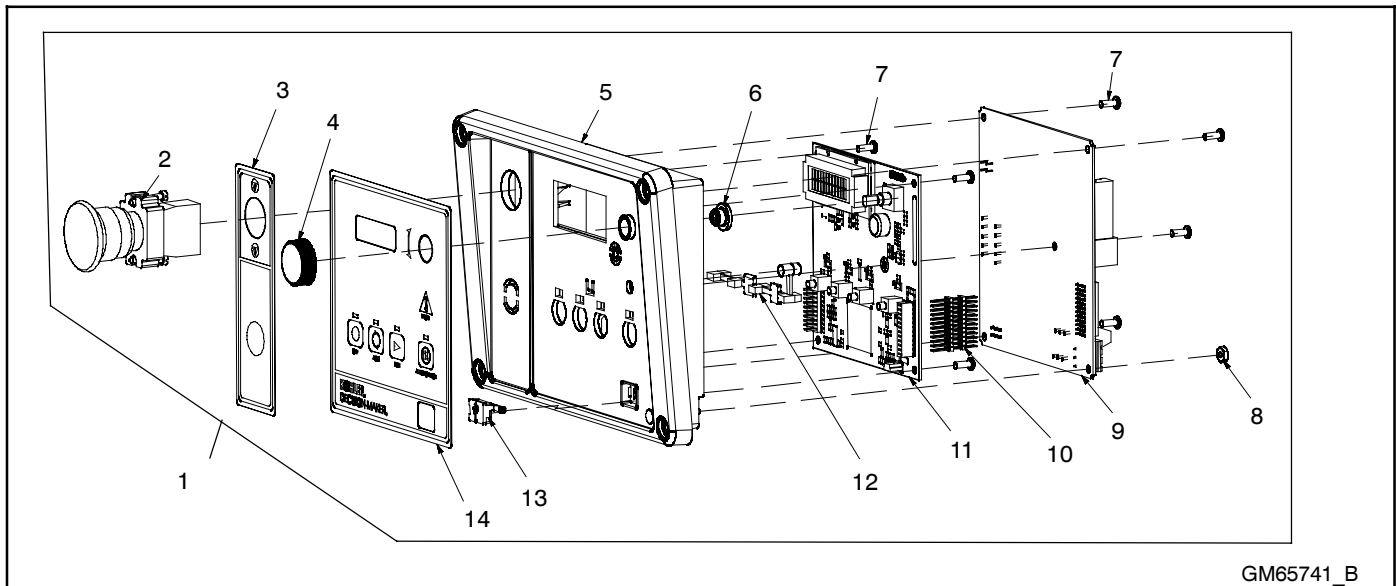
Group 201: Alternator and Mounting, continued

Controller Assembly GM80149-1



GM80149

Item	Part Number	Description	Quantity
			GM80149-1
1	GM52576	Vibromount, Controller	4
2	GM65741-1	Controller Assy, DEC 3000	1
3	GM80133	Box, Controller Mtg	1
4	GM80134	Cover, Controller Box	1
5	X-22-20	Washer, lock, .172 ID x .373 in. OD	8
6	X-51-8	Screw, Machine	4
8	X-6216-1	Screw, Phillips hex crimplite	4
7	X-72-4	Nut, hex machine screw, 8-32	4



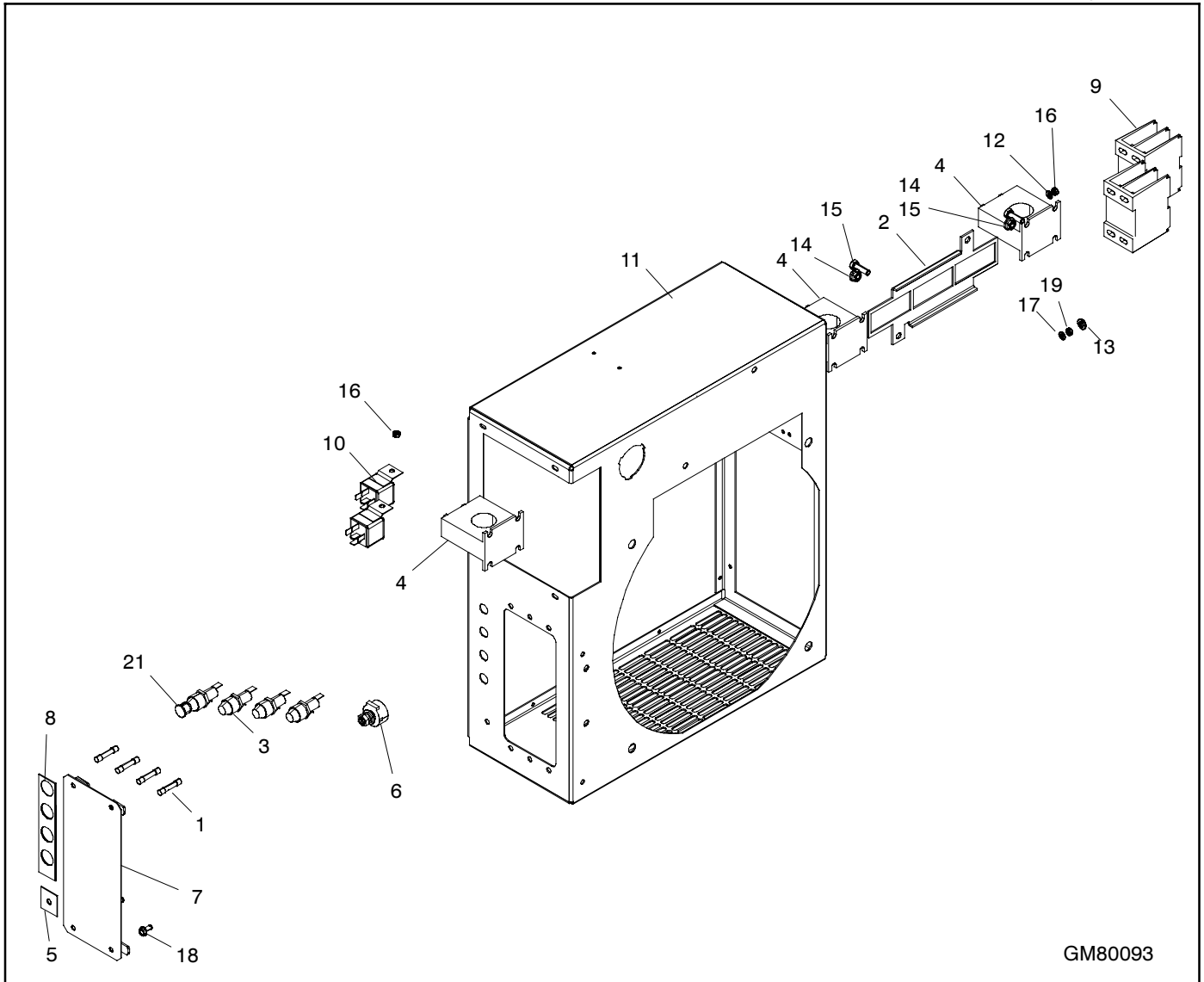
GM65741_B

Item	Description	Part Number
1	Controller, DEC3000 Service Replacement Controller Assembly (ref. GM65741-1)	GM75376
2	Switch, Emergency Stop Pushbutton	292364
3	Overlay, E-Stop	GM62797
4	Knob, Adjustment	GM58147
5	Bezel, Controller (includes item 12)	GM73450
6	Boot, Protective Controller	GM58152
7	Screw, Plastic Tapping	GM23307

Item	Description	Part Number
8	Nut, hex machine screw, 6-32	X-71-2
9	PCB Assy, DEC 3000 Power	GM64345-1
10	Header, PCB Pin, 24 Position	GM58311
11	PCB Assy, DEC 3000 UIF	GM64343-1
12	Light Pipe, DEC 3000	GM63541
13	Plug, USB	GM60403
14	Overlay, Controller	GM63226
-	Replacement Kit Installation Instructions	TT-1545

Group 201: Alternator and Mounting, continued

Junction Box Assembly GM80093-

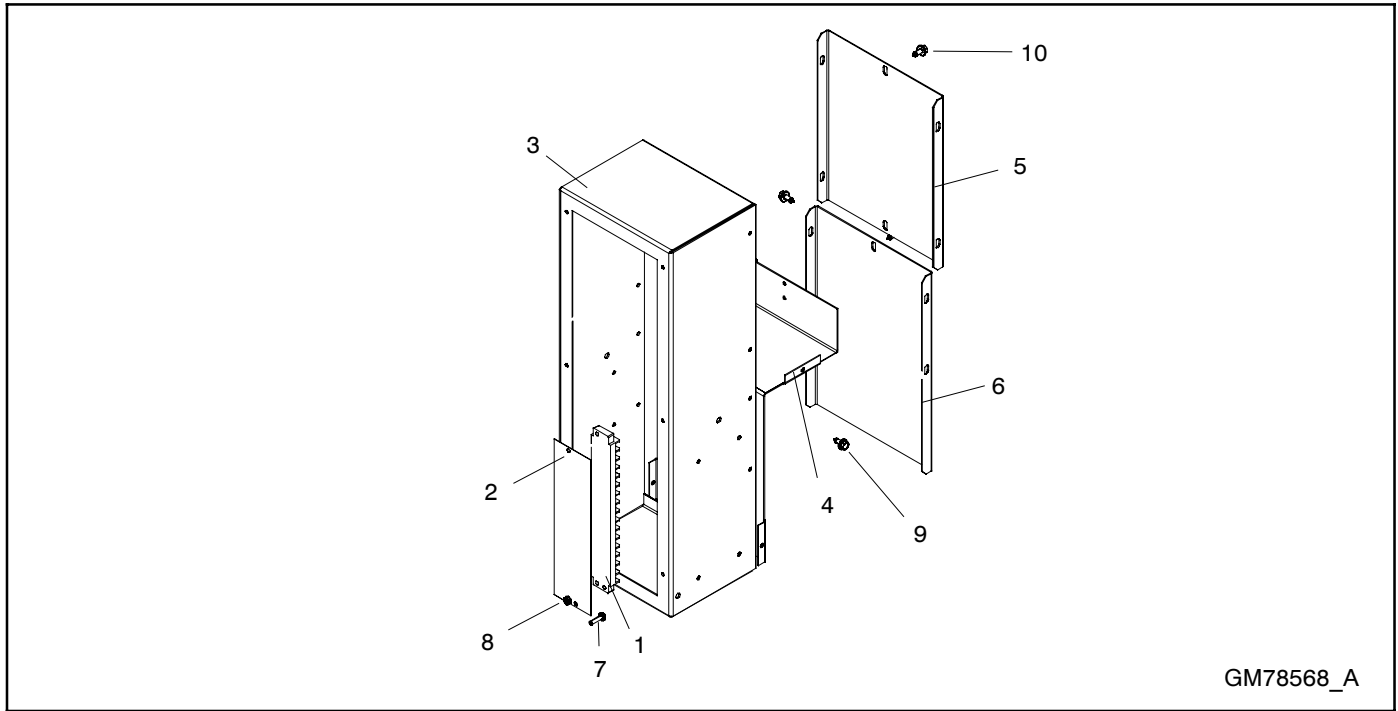


GM80093

Item	Part Number	Description	Quantity	
			GM80093-1	GM80093-2
1	223316	Fuse, 10 A, 250 V	3	4
2	226480	Bracket, CT mounting	1	1
3	238426	Fuse holder, .25 x 1.25 in.	3	4
4	GM16251	Transformer, Current 150A:3 VAC	2	3
5	292361	Decal	1	1
6	A-255041	Potentiometer assembly	1	1
7	GM32853	Cover, Circuit Breaker	1	1
8	GM38522	Decal, Fuse Panel	1	
8	GM80873	Decal, Fuse Panel		1
9	GM48755	Terminal Block, Generator	2	2
10	GM49746	Relay, 12 VDC	2	2
11	GM78569	Box, Junction	1	1
12	M125A-04-80	Washer, Plain	4	4
13	M125A-06-80	Washer, Plain	1	1
14	M6923-06-80	Nut, Hex 6mm	2	2
15	M933-06020-60	Screw, hex cap	2	2
16	M934-04-50	Nut, Hex 4mm	4	4
17	X-22-12	Washer, lock, .262 ID x .743 in. OD	1	1
18	X-67-64	Screw, self-tapping	4	4
19	X-81-8	Nut, hex, 1/4-20	1	1
21	X-301-23	Plug,button	1	

Group 201: Alternator and Mounting, continued

Customer Connection Box GM78568



GM78568_A

Item	Part Number	Description	Quantity
1	241621	Strip, terminal	1
2	352530	Strip, marker	1
3	GM78564	Box, Customer Connection	1
4	GM78565	Panel, Inner	1
5	GM78566	Cover, Top	1
6	GM78567	Cover, Bottom	1
7	M7985A-04016-20	Screw, Pan Head Machine	2
8	M934-04-50	Nut, Hex 4mm	2
9	X-67-155	Screw, Tapping	4
10	X-6216-1	Screw, Phillips hex crimpite	11

Group 701: Literature

Item	Part Number	Description	Quantity		
			Variation		
			50	51	52
1	TP-5374	Warranty 1-Year Limited, Industrial	1	1	1
2	TP-6794	S/M 10-20REOZDC Yanmar	1	1	1
3	TP-6802	P/C 10-20REOZDC	1	1	1
4	TP-6694	O/M DEC3000 Controller	1	1	1
5	TP-6596	O/M Yanmar TNV, 20-40kW (OATNV-G00101)	1	1	1
6	TP-6597	S/M Yanmar TNV, 20-40kW (OBTNV-G00101)	1	1	1
7	TP-6795	I/M 10-20REOZDC Yanmar	1	1	1
8	TP-6356	S/M Controllers, 20-3250 kW, Ind.	1	1	1

Kit List

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

10-20REOZDC			
	10 KW	15 KW	20 KW
Circuit Breakers			
120/208 V, 3 Ph, 4 W, Wye	GM78290-KA15	GM78290-KA17	GM78290-KA17
127/220 V, 3 Ph, 4 W, Wye	GM78290-KA15	GM78290-KA17	GM78290-KA17
120/240 V, 1 Ph, 3 W, Dogleg	GM78290-KA19	GM78290-KA18	GM78290-KA2
120/240 V, 3 Ph, 4 W, Delta	GM78290-KA14	GM78290-KA16	GM78290-KA17
139/240 V, 3 Ph, 4 W, Wye	GM78290-KA14	GM78290-KA16	GM78290-KA17
220/380 V, 3 Ph, 4 W, Wye	GM78290-KA7	GM78290-KA9	GM78290-KA4
227/480 V, 3 Ph, 4 W, Wye	GM78290-KA7	GM78290-KA8	GM78290-KA9
Cooling System			
Remote radiator set-up	GM55138-MA2	GM55138-MA1	GM55138-MA1
Remote radiator, 12 V	GM41790-KP1	GM41790-KP1	GM41790-KP1
Block heater, 1000 W, 110-120 V	GM58835-KA1	GM58835-KA3	GM58835-KA2
Radiator duct flange	GM33819-KA1	GM33819-KA1	GM33819-KA1
Electrical System			
2 Input/5 Output Board, DEC3000	GM81109-KA1	GM81109-KA1	GM81109-KA1
Battery, 12 V, wet	PA-256985	PA-256985	PA-256985
Battery, 12 V, dry	PA-225290	PA-225290	PA-225290
Battery cables (used w/subbase tank)	GM66119-KP1	GM66119-KP1	GM66119-KP1
Battery charger, 12V-6A	GM41829-KP1	GM41829-KP1	GM41829-KP1
Battery charger w/alarms, 12V-10A	PAD-292863	PAD-292863	PAD-292863
Battery charger w/o alarms, 12V-10A	PAD-292862	PAD-292862	PAD-292862
Battery heater	PA-358225	PA-358225	PA-358225
Electronic governor	GM80913-KP1	GM80913-KP1	GM80913-KP1
Preheat kit, 12 V	GM80942-KP1	GM80942-KP1	GM80942-KP1
Remote emergency stop	PA-293906	PA-293906	PA-293906
Run/Common Fault Relay	GM80946-KA1	GM80946-KA1	GM80946-KA1
Enclosures			
Weather enclosure	GM63586-KA3	GM63586-KA5	GM63586-KA1
Sound shield enclosure	GM63586-KA4	GM63586-KA6	GM63586-KA2
Fuel System			
Flex fuel lines	GM62494-KA1	GM62494-KA1	GM62494-KA1
Auxiliary fuel pump	PA-324405	PA-324405	PA-324405
Inner tank leak alarm	GM51382-KA1	GM51382-KA1	GM51382-KA1
Miscellaneous			
Silencer, engine mounted	GM41678-KA2	GM41678-KA3	GM41678-KA1

Parts List: Accessories

Qty.	Description	Part No.
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Circuit Breakers

Circuit Breaker, 100A, 240V, 2 Pole GM78290-KA2

1	Decal, Power Breaker	GM15301
1	Breaker, Circuit (100A)	GM22482
1	Cover, Circuit Breaker	GM32854
1	Bracket, Breaker Mounting	GM80863
1	Block, Terminal 2 Pos. 85Amp	GM62574
2	Lead	LB-0626-1505
2	Nut, Hex 6mm	M6923-06-80
2	Screw, hex cap, M6x16mm, js500 full thrd	M933-06016-60
2	Washer, plain, .281 ID x .625 in.OD	X-25-40
1	Washer, plain, .156 ID x .375 in.OD	X-25-9
1	Screw, Machine	X-49-57
3	Screw, self-tapping	X-67-64
1	Nut, hex machine screw, 4-40	X-74-6
1	Marker, wire	X-750-14
1	Marker, wire	X-750-15

Circuit Breaker, 50A, 480V, 3 Pole GM78290-KA4

3	Boot	238915
1	Circuit breaker, 50 A, 480 V, 3 pole	269249
1	Decal, Power Breaker	GM15301
1	Cover, Circuit Breaker	GM78774
3	Lead	LB-0626-1515
3	Washer, Plain	M125A-06-80
3	Washer, lock.262 IDx.743 in.OD	X-22-12
6	Screw, Machine	X-49-21
3	Nut, flange spirallock, 1/4-20	X-6210-2

Circuit Breaker, 25A, 600V, 3 Pole GM78290-KA7

1	Circuit breaker, 25 A, 600 V, 3 pole	225168
3	Boot	238915
1	Decal, Power Breaker	GM15301
1	Cover, Circuit Breaker	GM78774
3	Lead	LB-0626-1515
3	Washer, Plain	M125A-06-80
3	Washer, lock.262 IDx.743 in.OD	X-22-12
6	Screw, Machine	X-49-21
3	Nut, flange spirallock, 1/4-20	X-6210-2

Circuit Breaker, 30A, 600V, 3 Pole GM78290-KA8

3	Boot	238915
1	Circuit breaker, 25 A, 600 V, 3 pole	225168
1	Decal, Power Breaker	GM15301
1	Cover, Circuit Breaker	GM78774
3	Lead	LB-0626-1515
3	Washer, Plain	M125A-06-80
3	Washer, lock.262 IDx.743 in.OD	X-22-12
6	Screw, Machine	X-49-21
3	Nut, flange spirallock, 1/4-20	X-6210-2

Circuit Breaker, 40A, 600V, 3 Pole GM78290-KA9

3	Boot	238915
1	Circuit breaker, 40 A, 600 V, 3 pole	269252
1	Decal, Power Breaker	GM15301
1	Cover, Circuit Breaker	GM78774
3	Lead	LB-0626-1515
3	Washer, Plain	M125A-06-80
3	Washer, lock.262 IDx.743 in.OD	X-22-12
6	Screw, Machine	X-49-21
3	Nut, flange spirallock, 1/4-20	X-6210-2

Qty.	Description	Part No.
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Circuit Breaker, 40A, 240V, 3 Pole GM78290-KA14

1	Decal, Power Breaker	GM15301
1	Breaker, Circuit (40A)	GM22478
1	Cover, Circuit Breaker	GM42029
3	Lead	LB-0626-1505
6	Washer, lock.146 ID x .285 in.OD	X-22-6
6	Screw, Machine	X-49-2
6	Nut, flange whiz, 6-32	X-6210-3

Circuit Breaker, 50A, 240V, 3 Pole GM78290-KA15

1	Decal, Power Breaker	GM15301
1	Breaker, Circuit (50A)	GM22479
1	Cover, Circuit Breaker	GM42029
3	Lead	LB-0626-1505
6	Washer, lock.146 ID x .285 in.OD	X-22-6
6	Screw, Machine	X-49-2
6	Nut, flange whiz, 6-32	X-6210-3

Circuit Breaker, 60A, 240V, 3 Pole GM78290-KA16

1	Decal, Power Breaker	GM15301
1	Breaker, Circuit (60A)	GM22480
1	Cover, Circuit Breaker	GM42029
3	Lead	LB-0626-1505
6	Washer, lock.146 ID x .285 in.OD	X-22-6
6	Screw, Machine	X-49-2
6	Nut, flange whiz, 6-32	X-6210-3

Circuit Breaker, 80A, 240V, 3 Pole GM78290-KA17

1	Decal, Power Breaker	GM15301
1	Breaker, Circuit (80A)	GM22481
1	Bracket, Breaker Mounting	GM35334
1	Cover, Circuit Breaker	GM42029
3	Lead	LB-0626-1505
2	Nut, Hex 6mm	M6923-06-80
2	Screw, hex cap, M6x16mm, js500 full thrd	M933-06016-60
2	Washer, plain, .281 ID x .625 in.OD	X-25-40
3	Screw, self-tapping	X-67-64

Circuit Breaker, 80A, 240V, 2 Pole GM78290-KA18

1	Decal, Power Breaker	GM15301
1	Breaker, Circuit (80A)	GM22462
1	Cover, Circuit Breaker	GM32854
1	Bracket, Breaker Mounting	GM35334
2	Lead	LB-0626-1505
2	Nut, Hex 6mm	M6923-06-80
2	Screw, hex cap, M6x16mm, js500 full thrd	M933-06016-60
2	Washer, plain, .281 ID x .625 in.OD	X-25-40
3	Screw, self-tapping	X-67-64

Circuit Breaker, 50A, 240V, 2 Pole GM78290-KA19

1	Breaker, Circuit	358384
1	Decal, Power Breaker	GM15301
1	Cover, Circuit Breaker	GM32854
2	Lead	LB-0626-1505
4	Washer, lock.146 ID x .285 in.OD	X-22-6
4	Screw, Machine	X-49-2
4	Nut, flange whiz, 6-32	X-6210-3

Parts List: Accessories, continued

Qty.	Description	Part No.
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Cooling System

Remote Radiator Set-Up

GM55138-MA1

6	Nut, well, 1/4-20	227418
1	Decal, warning rotating parts	249808
2	Decal, Caution Hot Engine	249809
1	Guard, belt	GM38881
1	Cover, belt guard	GM38882
2	Bracket, belt guard	GM38883
1	Bracket, remote radiator mtg.	GM41997

Remote Radiator Set-Up

GM55138-MA2

6	Nut, well, 1/4-20	227418
1	Decal, warning rotating parts	249808
2	Decal, Caution Hot Engine	249809
1	Guard, belt	GM38881
1	Cover, belt guard	GM38882
2	Bracket, belt guard	GM38883
1	Bracket, remote radiator mtg.	GM41996

Remote Radiator, 12V

GM41790-KP1

1	Wiring harness	225682
1	Wiring harness	225683
1	Wiring harness	225684
1	Starter relay	259391
1	Fuse holder, inline	269216
1	Fuse, 15 A	283645
1	Radiator assembly, remote	GM41919
1	Installation instructions	TT-1004

Block Heater, 1000W, 110-120V

GM58835-KA1

1	Hose, lower radiator	GM39808
1	Bushing, reducing, 1/2 x 1 in. NPT	168848
1	Connector, hose, 1.12 in. OD	225250
1	Tag, hang	279047
1	Heater, block	358311
1	Bracket, block heater	GM58915
1	Hose, 0.63 in. ID	X-312-15
1	Hose, 0.63 in. ID	X-312-4
6	Clamp, hose, 0.69/1.25 in.	X-426-12
1	Connector, 90 deg. (5/8" ID hose)	X-391-19

Block Heater, 1000W, 110-120V

GM58835-KA2

1	Hose, lower radiator	GM42108
1	Bushing, reducing, 1/2 x 1 in. NPT	168848
1	Connector, hose, 1.12 in. OD	225250
1	Tag, hang	279047
1	Heater, block	358311
1	Bracket, block heater	GM58915
1	Hose, 0.63 in. ID	X-312-15
1	Hose, 0.63 in. ID	X-312-4
6	Clamp, hose, 0.69/1.25 in.	X-426-12
1	Connector, 90 deg. (5/8" ID hose)	X-391-19

Qty.	Description	Part No.
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Block Heater, 1000W, 110-120V

GM58835-KA3

1	Hose, lower radiator	GM39808
1	Line, Flex Fuel .50" I.D.	X-422-18
1	Bushing, reducing, 1/2 x 1 in. NPT	168848
1	Connector, hose, 1.12 in. OD	225250
1	Tag, hang	279047
1	Heater, block	358311
1	Bracket, block heater	GM58915
1	Hose, 0.63 in. ID	X-312-15
1	Hose, 0.63 in. ID	X-312-4
6	Clamp, hose, 0.69/1.25 in.	X-426-12
1	Connector, 90 deg. (5/8" ID hose)	X-391-19

Radiator Duct Flange

GM33819-KA1

2	Flange, radiator side	GM30500
1	Flange, radiator bottom	GM30501
1	Flange, radiator top	GM30502

Electrical System

2 Input/5 Output Board, DEC3000

GM81109-KA1

1	PLC component, 6 ft. patch cable	357478
4	Vibromount, Controller	GM52576
1	PCB Assy, CAN Remote I/O	GM64494
8	Washer, lock, .172 ID x .373 in.OD	X-22-20
4	Screw, Machine	X-51-8
4	Nut, flange whiz, 8-32	X-6210-4

Battery

PA-225290

1	Battery, dry charged, 12V 650 CCA	225289
1	TT Battery Activation, 6-2800 kW	TT-796

Battery

PA-256985

1	Battery, wet charged, 12V 650 CCA	256984
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Battery Cables

GM47186-KP1

1	Boot, battery lug	GM20748
1	Boot, battery lug	GM33146
1	Cable, battery	X-545-187
1	Cable, battery	X-545-189

Battery Cables (used w/subbase tank)

GM66119-KP1

2	Bolt, Angle	286316
1	Clamp, battery	324725
1	Terminal, battery	345039
1	Terminal, battery	345056
1	Boot, Battery Lug	GM20745
1	Washer, Plain, 10.5 ID x 20.0 OD	M125A-10-80
1	Screw, hex cap	M933-10020-60
2	Nut, hex elastic stop, 5/16-24	X-101-4
1	Washer, lock, .391 ID x .975 in. OD	X-22-14
2	Washer, Plain, .328 ID x .562 OD	X-25-44
1	Cable, battery (No.2 x 56") RED+	X-545-153
1	Cable, Battery	X-545-203

Parts List: Accessories, continued

Qty.	Description	Part No.	Qty.	Description	Part No.
Battery Charger, Float, 12V, 10A			Battery Charger, Float w/Alarms, 12V, 10A		
		PAD-292862			PAD-292863
1	TT Float/Equalize Battery Charger, Ind.	TT-680	1	TT Float/Equalize Battery Charger, Ind.	TT-680
1	Charger assembly, battery (includes the following parts)	D-292862	1	Charger, assembly (includes the following parts)	D-292863
1	PCB assembly, battery charger control	C-262377	1	PCB assembly, battery charger alarm	B-262374
2	Washer, lock, 0.172 ID x 0.595 in. OD	X-22-18	2	Washer, lock, 0.172 ID x 0.595 in. OD	X-22-18
3	Washer, lock, 0.146 ID x 0.53 in. OD	X-22-25	3	Washer, lock, 0.146 ID x 0.53 in. OD	X-22-25
10	Washer, lock, 0.146 ID x 0.285 in. OD	X-22-6	14	Washer, lock, 0.146 ID x 0.285 in. OD	X-22-6
2	Terminal, ring, male, 16-14 AWG	X-283-1	2	Terminal, ring, male, 16-14 AWG	X-283-1
2	Terminal, ring, male, 10-12 AWG	X-283-11	2	Terminal, ring, male, 10-12 AWG	X-283-11
3	Terminal, ring, male, 16-14 AWG	X-283-2	3	Terminal, ring, male, 16-14 AWG	X-283-2
8	Screw, pan head, 6-32 x 1/4	X-49-25	16	Screw, pan head, 6-32 x 1/4	X-49-25
4	Screw, pan head, 6-32 x 1/2	X-49-26	4	Screw, pan head, 6-32 x 1/2	X-49-26
3	Screw, slotted pan head machine	X-49-39	3	Screw, slotted pan head machine	X-49-39
2	Screw, pan head, 6-32 x 3/4	X-49-6	2	Screw, pan head, 6-32 x 3/4	X-49-6
2	Screw, pan head, 10-32 x 1/2	X-50-1	2	Screw, pan head, 10-32 x 1/2	X-50-1
2	Screw, pan head, 10-24 x 3/4	X-50-3	2	Screw, pan head, 10-24 x 3/4	X-50-3
2	Screw, pan head, 8-32 x 3/4	X-51-11	2	Screw, pan head, 8-32 x 3/4	X-51-11
2	Screw, pan head, 8/32 x 1/2	X-51-15	2	Screw, pan head, 8/32 x 1/2	X-51-15
4	Screw, pan head, 1/4-20 x 3/4	X-51-30	4	Screw, pan head, 1/4-20 x 3/4	X-51-30
1	Screw, slotted round head machine	X-51-53	1	Screw, slotted round head machine	X-51-53
2	Tubing, heat shrink	X-6079-2	2	Tubing, heat shrink	X-6079-2
2	Screw, Phillips hex crimpite	X-6216-1	2	Screw, Phillips hex crimpite	X-6216-1
2	Nut, hex machine screw, 6-32	X-71-2	2	Nut, hex machine screw, 6-32	X-71-2
1	Decal, connection	233966	1	Decal, connection	233966
1	Diagram, wiring	233967	1	Diagram, wiring	233967
1	Fuse, 5A, 250V	239298	1	Fuse, 5A, 250V	239298
2	Clip, speed	257442	2	Clip, speed	257442
1	Fuse, 25A, 125V	262389	1	Fuse, 25A, 125V	262389
1	Transformer, 120/240V, 29.5V	262394	1	Transformer, 120/240V, 29.5V	262394
1	Decal, warning connection	262397	1	Decal, warning connection	262397
1	Clip, cable	262399	1	Clip, cable	262399
2	Fuse holder	263156	2	Fuse holder	263156
4	Spacer	287948	8	Spacer	287948
1	Lamp, 120V, 0.33W	291208	1	Lamp, 120V, 0.33W	291208
1	Decal	292387	1	Decal	292387
1	Heatsink	292938	1	Heatsink	292938
1	Strip, terminal	292940	1	Strip, terminal	292940
1	Ammeter, 0-15A, DC	292941	1	Ammeter, 0-15A, DC	292941
1	Voltmeter, 0-25V, DC	292942	1	Voltmeter, 0-25V, DC	292942
1	Module, SCR	292945	1	Module, SCR	292945
1	Resistor, 0.04/0.05 ohm, 35W	292947	1	Resistor, 0.04/0.05 ohm, 35W	292947
1	Fuse, 7A, 250V	292948	1	Fuse, 7A, 250V	292948
1	Wiring harness, 12/24V float chargers	292958	1	Wiring harness, 12/24V float chargers	292958
1	Marker, strip	299090	1	Marker, strip	299090
1	Marker, strip	292962	1	Marker, strip	292962
2	Retainer	295010	2	Retainer	295010
1	Terminal block	295314	1	Terminal block	295314
4	Nut, captive, 6-32	298810	4	Nut, captive, 6-32	298810
1	Box, battery charger	GM39656	1	Box, battery charger	GM39656
1	Door, battery charger, silkscreened	325596	1	Door, battery charger, silkscreened	325596
1	Nameplate, battery charger	325608	1	Nameplate, battery charger	325609
1	Cable tie	X-468-12	1	Cable tie	X-468-12
4	Washer, lock, 0.262 ID x 0.743 in. OD	X-22-12	4	Washer, lock, 0.262 ID x 0.743 in. OD	X-22-12

Parts List: Accessories, continued

Qty.	Description	Part No.
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Battery Charger **GM41829-KP1**
 1 Charger, battery 12V-6A float equalizer GM28341

Battery Heater **PA-358225**
 1 Heater, battery wrap 336814
 1 Heater, battery pad 336825
 1 TT Battery Heater, 8.5-30kW Ind/Res TT-1221

Electronic Governor **GM80913-KP1**
 4 Vibromount 282829
 1 Controller, Governor(NLS)Req Programming GM17644-4
 1 Actuator, Electronic Governor, 12V GM38364
 1 Kit, Governor Programming GM39344
 1 Bracket, Governor Mtg. GM80864
 1 Harness, Electronic Governor GM80940
 8 Washer, lock, .172 ID x .373 in.OD X-22-20
 8 Nut, flange whiz, 8-32 X-6210-4

Preheat Kit, 12 V **GM80942-KP1**
 1 Heater, air 344903
 2 Gasket, Air Heater 344904
 1 Relay, 12 VDC GM49746
 1 Harness, Air Heater GM80941
 2 Washer, plain, .156 ID x .375 in.OD X-25-9
 1 Screw, Machine X-51-12
 1 Screw, Machine X-51-36
 1 Relay, Time Delay 30 Sec. X-6123-57

Remote Emergency Stop Switch **PA-293906**
 1 Switch, emergency stop A-222654
 1 Rod, glass 222655
 1 TT Remote Emergency Stop, 6-1600 kW TT-940

Run/Common Fault Relay **GM80946-KA1**
 1 Relay Assembly, 3PDT, 12VDC 273705
 2 Washer, Plain M125A-04-80
 2 Screw, Pan Head Machined M7985A-04010-20
 2 Nut, Hex 4mm M934-04-50

Qty.	Description	Part No.
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Enclosures

Weather Enclosure **GM63586-KA1**

1 Elbow, exhaust GM42850
 1 Foam, Acoustic Insulation GM63594-4
 1 Cap, vertical exhaust 276126
 1 Clamp, muffler, 1.87 in. 277706
 1 Latch, lockable, black GM31202
 1 Key, latch GM42778
 2 Hinge GM40018
 2 Hinge GM40019
 2 Brace, corner GM41015
 2 Brace, corner GM41050
 1 Latch, cane bolt, RH GM42041
 1 Latch, cane bolt, LH GM42042
 1 Decal, stripes X-6232-3
 1 Decal, stripe X-6232-6
 2 Logo, Kohler X-6276-8
 2 Decal, Kohler Power Systems X-6346-1
 1 Rail, end GM39988
 1 Door GM58061
 1 Door GM58062
 1 Duct, top GM58063
 1 Duct, top GM82165
 1 Duct, side GM58064
 3 Duct, bottom GM58065
 1 Support, front right corner GM58066
 1 Support, rear right corner GM58067
 1 Support, rear left corner GM63588
 2 Rail, side GM58069
 1 Support, front left corner GM63590
 1 Panel, front GM58071
 1 Panel, radiator inner GM58072
 1 Roof GM58073
 1 Door GM63592
 1 Duct, side GM58077
 1 Duct, top GM58132
 1 Duct, side GM58133
 1 Duct, side GM58134
 1 Duct, side GM58135
 1 Panel, rear GM63592
 1 Panel, left GM63593
 2 Brace, door GM58138
 2 Support, roof GM58139
 1 Duct, side GM82163
 1 Duct, side GM82164
 1 Duct, bottom GM82166
 1 Plate, bottom GM58616
 1 Brace, door GM62215

Parts List: Accessories, continued

Qty.	Description	Part No.
Weather Enclosure		
		GM63586-KA2
1	Elbow, exhaust	GM42850
1	Foam, Acoustic Insulation	GM64107
3	Support, Roof	GM58140
1	Cap, vertical exhaust	276126
1	Clamp, muffler, 1.87 in.	277706
1	Latch, lockable, black	GM31202
1	Key, latch	GM42778
2	Hinge	GM40018
2	Hinge	GM40019
2	Brace, corner	GM41015
2	Brace, corner	GM41015
1	Latch, cane bolt, RH	GM42041
1	Latch, cane bolt, LH	GM42042
1	Decal, stripes	X-6232-3
1	Decal, stripe	X-6232-6
2	Logo, Kohler	X-6276-8
2	Decal, Kohler Power Systems	X-6346-1
1	Rail, end	GM39988
1	Door	GM58061
1	Door	GM58062
1	Duct, top	GM58063
1	Duct, top	GM82165
1	Duct, side	GM58064
3	Duct, bottom	GM58065
1	Support, front right corner	GM58066
1	Support, rear right corner	GM58067
1	Support, rear left corner	GM63588
2	Rail, side	GM58069
1	Support, front left corner	GM63590
1	Panel, front	GM58071
1	Panel, radiator inner	GM58072
1	Roof	GM58073
1	Door	GM63592
1	Duct, side	GM58077
1	Duct, top	GM58132
1	Duct, side	GM58133
1	Duct, side	GM58134
1	Duct, side	GM58135
1	Panel, rear	GM63592
1	Panel, left	GM63593
2	Brace, door	GM58138
2	Support, roof	GM58139
1	Duct, side	GM82163
1	Duct, side	GM82164
1	Duct, bottom	GM82166
1	Plate, bottom	GM58616
1	Brace, door	GM62215

Qty.	Description	Part No.
Weather Enclosure		
		GM63586-KA3
1	Elbow, exhaust	GM42849
1	Foam, Acoustic Insulation	GM63594-4
1	Cap, vertical exhaust	276126
1	Clamp, muffler, 1.87 in.	277706
1	Latch, lockable, black	GM31202
1	Key, latch	GM42778
2	Hinge	GM40018
2	Hinge	GM40019
2	Brace, corner	GM41015
2	Brace, corner	GM41015
1	Latch, cane bolt, RH	GM42041
1	Latch, cane bolt, LH	GM42042
1	Decal, stripes	X-6232-3
1	Decal, stripe	X-6232-6
2	Logo, Kohler	X-6276-8
2	Decal, Kohler Power Systems	X-6346-1
1	Rail, end	GM39988
1	Door	GM58061
1	Door	GM58062
1	Duct, top	GM58063
1	Duct, top	GM82165
1	Duct, side	GM58064
3	Duct, bottom	GM58065
1	Support, front right corner	GM58066
1	Support, rear right corner	GM58067
1	Support, rear left corner	GM63588
2	Rail, side	GM58069
1	Support, front left corner	GM63590
1	Panel, front	GM58071
1	Panel, radiator inner	GM58072
1	Roof	GM58073
1	Door	GM63592
1	Duct, side	GM58077
1	Duct, top	GM58132
1	Duct, side	GM58133
1	Duct, side	GM58134
1	Duct, side	GM58135
1	Panel, rear	GM63592
1	Panel, left	GM63593
2	Brace, door	GM58138
2	Support, roof	GM58139
1	Duct, side	GM82163
1	Duct, side	GM82164
1	Duct, bottom	GM82166
1	Plate, bottom	GM58616
1	Brace, door	GM62215

Parts List: Accessories, continued

Qty.	Description	Part No.	Qty.	Description	Part No.
Weather Enclosure GM63586-KA4			Weather Enclosure GM63586-KA5		
1	Elbow, exhaust	GM42849	1	Elbow, exhaust	GM46326
1	Foam, Acoustic Insulation	GM64107	1	Foam, Acoustic Insulation	GM63594-4
3	Support, Roof	GM58140	1	Cap, vertical exhaust	276126
1	Cap, vertical exhaust	276126	1	Clamp, muffler, 1.87 in.	277706
1	Clamp, muffler, 1.87 in.	277706	1	Latch, lockable, black	GM31202
1	Latch, lockable, black	GM31202	1	Key, latch	GM42778
1	Key, latch	GM42778	2	Hinge	GM40018
2	Hinge	GM40018	2	Hinge	GM40019
2	Hinge	GM40019	2	Brace, corner	GM41015
2	Brace, corner	GM41015	2	Brace, corner	GM41050
2	Brace, corner	GM41050	1	Latch, cane bolt, RH	GM42041
1	Latch, cane bolt, RH	GM42041	1	Latch, cane bolt, LH	GM42042
1	Latch, cane bolt, LH	GM42042	1	Decal, stripes	X-6232-3
1	Decal, stripes	X-6232-3	1	Decal, stripe	X-6232-6
1	Decal, stripe	X-6232-6	2	Logo, Kohler	X-6276-8
2	Logo, Kohler	X-6276-8	2	Decal, Kohler Power Systems	X-6346-1
2	Decal, Kohler Power Systems	X-6346-1	1	Rail, end	GM39988
1	Rail, end	GM39988	1	Door	GM58061
1	Door	GM58061	1	Door	GM58062
1	Door	GM58062	1	Duct, top	GM58063
1	Duct, top	GM58063	1	Duct, top	GM82165
1	Duct, top	GM82165	1	Duct, side	GM58064
1	Duct, side	GM58064	3	Duct, bottom	GM58065
3	Duct, bottom	GM58065	1	Support, front right corner	GM58066
1	Support, front right corner	GM58066	1	Support, rear right corner	GM58067
1	Support, rear right corner	GM58067	1	Support, rear left corner	GM63588
1	Support, rear left corner	GM63588	2	Rail, side	GM58069
2	Rail, side	GM58069	1	Support, front left corner	GM63590
1	Support, front left corner	GM63590	1	Panel, front	GM58071
1	Panel, front	GM58071	1	Panel, radiator inner	GM58072
1	Panel, radiator inner	GM58072	1	Roof	GM58073
1	Roof	GM58073	1	Door	GM63592
1	Door	GM63592	1	Duct, side	GM58077
1	Duct, side	GM58077	1	Duct, top	GM58132
1	Duct, top	GM58132	1	Duct, side	GM58133
1	Duct, side	GM58133	1	Duct, side	GM58134
1	Duct, side	GM58134	1	Duct, side	GM58135
1	Duct, side	GM58135	1	Panel, rear	GM63592
1	Panel, rear	GM63592	1	Panel, left	GM63593
1	Panel, left	GM63593	2	Brace, door	GM58138
2	Brace, door	GM58138	2	Support, roof	GM58139
2	Support, roof	GM58139	1	Duct, side	GM82163
1	Duct, side	GM82163	1	Duct, side	GM82164
1	Duct, side	GM82164	1	Duct, bottom	GM82166
1	Duct, bottom	GM82166	1	Plate, bottom	GM58616
1	Plate, bottom	GM58616	1	Brace, door	GM62215
1	Brace, door	GM62215			

Parts List: Accessories, continued


Qty.	Description	Part No.
Weather Enclosure		
		GM63586-KA6
1	Elbow, exhaust	GM46326
1	Foam, Acoustic Insulation	GM64107
3	Support, Roof	GM58140
1	Cap, vertical exhaust	276126
1	Clamp, muffler, 1.87 in.	277706
1	Latch, lockable, black	GM31202
1	Key, latch	GM42778
2	Hinge	GM40018
2	Hinge	GM40019
2	Brace, corner	GM41015
2	Brace, corner	GM41050
1	Latch, cane bolt, RH	GM42041
1	Latch, cane bolt, LH	GM42042
1	Decal, stripes	X-6232-3
1	Decal, stripe	X-6232-6
2	Logo, Kohler	X-6276-8
2	Decal, Kohler Power Systems	X-6346-1
1	Rail, end	GM39988
1	Door	GM58061
1	Door	GM58062
1	Duct, top	GM58063
1	Duct, top	GM82165
1	Duct, side	GM58064
3	Duct, bottom	GM58065
1	Support, front right corner	GM58066
1	Support, rear right corner	GM58067
1	Support, rear left corner	GM63588
2	Rail, side	GM58069
1	Support, front left corner	GM63590
1	Panel, front	GM58071
1	Panel, radiator inner	GM58072
1	Roof	GM58073
1	Door	GM63592
1	Duct, side	GM58077
1	Duct, top	GM58132
1	Duct, side	GM58133
1	Duct, side	GM58134
1	Duct, side	GM58135
1	Panel, rear	GM63592
1	Panel, left	GM63593
2	Brace, door	GM58138
2	Support, roof	GM58139
1	Duct, side	GM82163
1	Duct, side	GM82164
1	Duct, bottom	GM82166
1	Plate, bottom	GM58616
1	Brace, door	GM62215

Qty.	Description	Part No.
Fuel System		
Flex Fuel Lines		
		GM62494-KA1
1	Fuel line, flexible	324481
1	Fuel line, flexible	GM21201
1	Clamp, hose, 0.25/0.70 in.	X-426-9
1	Elbow, male tube (90 deg) + vibra seal	X-447-1
2	Elbow, male tube (90 deg) + vibra seal	X-447-9
Auxiliary Fuel Pump		
		PA-324405
1	Pump, fuel	229051
2	Lead, wire	229056
Inner Tank Leak Alarm		
		GM51382-KA1
1	Sensor, leak	A-226201
Miscellaneous		
Silencer, engine mounted		
		GM41678-KA1
1	Muffler, exhaust	GM41673
1	Gasket, exhaust	225223
1	Flange, exhaust outlet	225265
1	Pipe	X-205-29
1	Fitting, elbow, 90 degree	X-215-21
1	Coupling, pipe	X-216-39
Silencer, engine mounted		
		GM41678-KA2
1	Muffler, exhaust	GM41674
1	Adapter, exhaust	GM42549
2	Gasket, exhaust	225222
Silencer, engine mounted		
		GM41678-KA3
1	Muffler, exhaust	GM41673
1	Gasket, exhaust	225223
1	Flange, exhaust outlet	225265
1	Pipe	X-205-30
1	Fitting, elbow, 90 degree	X-215-21
1	Coupling, pipe	X-216-39

Notes

Appendix A Abbreviations

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

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

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

Appendix B Common Hardware Application Guidelines

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

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

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

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

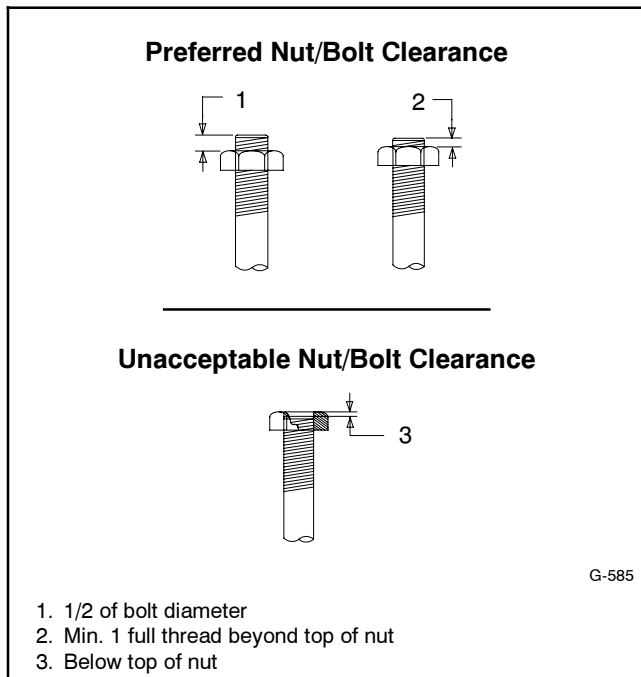


Figure 1 Acceptable Bolt Lengths

Steps for common hardware application:

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

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

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

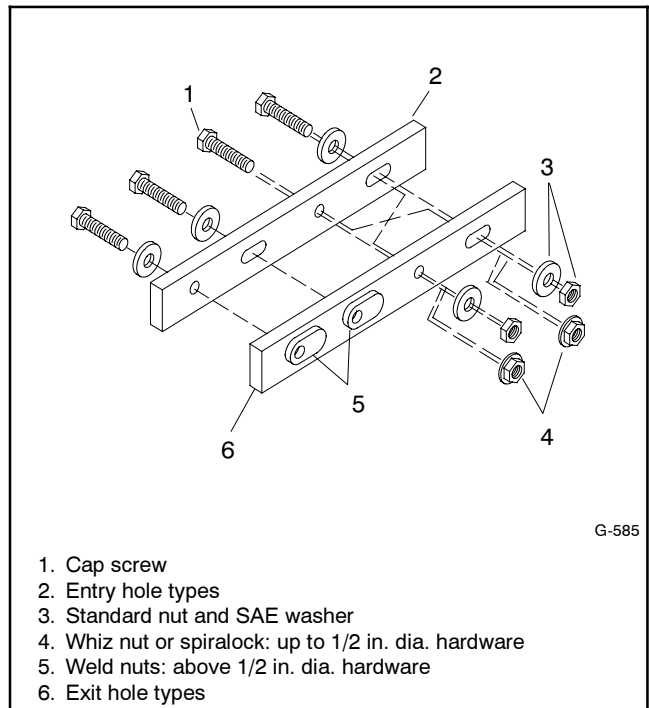


Figure 2 Acceptable Hardware Combinations

Appendix C General Torque Specifications















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












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






Notes:

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

Appendix D Common Hardware Identification

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

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

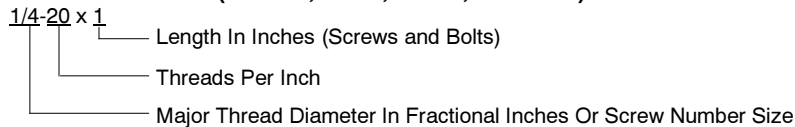
Hardness Grades	
American Standard	
Grade 2	
Grade 5	
Grade 8	
Grade 8/9 (Hex Socket Head)	
Metric	
Number stamped on hardware; 5.8 shown	

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

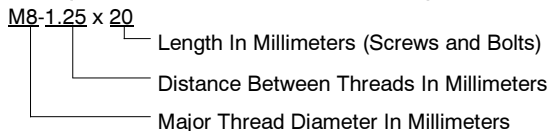
Phillips® screw is a registered trademark of Phillips Screw Company.

Sample Dimensions

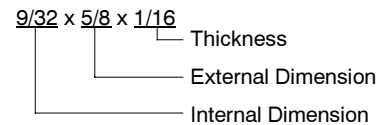
American Standard (Screws, Bolts, Studs, and Nuts)



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 Hex Head Bolts (Grade 5)

X-465-17	1/4-20 x .38
X-465-6	1/4-20 x .50
X-465-2	1/4-20 x .62
X-465-16	1/4-20 x .75
X-465-18	1/4-20 x .88
X-465-7	1/4-20 x 1.00
X-465-8	1/4-20 x 1.25
X-465-9	1/4-20 x 1.50
X-465-10	1/4-20 x 1.75
X-465-11	1/4-20 x 2.00
X-465-12	1/4-20 x 2.25
X-465-14	1/4-20 x 2.75
X-465-21	1/4-20 x 5.00
X-465-25	1/4-28 x .38
X-465-20	1/4-28 x 1.00
X-125-33	5/16-18 x .50
X-125-23	5/16-18 x .62
X-125-3	5/16-18 x .75
X-125-31	5/16-18 x .88
X-125-5	5/16-18 x 1.00
X-125-24	5/16-18 x 1.25
X-125-34	5/16-18 x 1.50
X-125-25	5/16-18 x 1.75
X-125-26	5/16-18 x 2.00
230578	5/16-18 x 2.25
X-125-29	5/16-18 x 2.50
X-125-27	5/16-18 x 2.75
X-125-28	5/16-18 x 3.00
X-125-22	5/16-18 x 4.50
X-125-32	5/16-18 x 5.00
X-125-35	5/16-18 x 5.50
X-125-36	5/16-18 x 6.00
X-125-40	5/16-18 x 6.50
X-125-43	5/16-24 x 1.75
X-125-44	5/16-24 x 2.50
X-125-30	5/16-24 x .75
X-125-39	5/16-24 x 2.00
X-125-38	5/16-24 x 2.75
X-6238-2	3/8-16 x .62
X-6238-10	3/8-16 x .75
X-6238-3	3/8-16 x .88
X-6238-11	3/8-16 x 1.00
X-6238-4	3/8-16 x 1.25
X-6238-5	3/8-16 x 1.50
X-6238-1	3/8-16 x 1.75
X-6238-6	3/8-16 x 2.00
X-6238-17	3/8-16 x 2.25
X-6238-7	3/8-16 x 2.50
X-6238-8	3/8-16 x 2.75
X-6238-9	3/8-16 x 3.00
X-6238-19	3/8-16 x 3.25
X-6238-12	3/8-16 x 3.50
X-6238-20	3/8-16 x 3.75
X-6238-13	3/8-16 x 4.50
X-6238-18	3/8-16 x 5.50
X-6238-25	3/8-16 x 6.50

Part No. Dimensions Hex Head Bolts, cont.

X-6238-14	3/8-24 x .75
X-6238-16	3/8-24 x 1.25
X-6238-21	3/8-24 x 4.00
X-6238-22	3/8-24 x 4.50
X-6024-5	7/16-14 x .75
X-6024-2	7/16-14 x 1.00
X-6024-8	7/16-14 x 1.25
X-6024-3	7/16-14 x 1.50
X-6024-4	7/16-14 x 2.00
X-6024-11	7/16-14 x 2.75
X-6024-12	7/16-14 x 6.50
X-129-15	1/2-13 x .75
X-129-17	1/2-13 x 1.00
X-129-18	1/2-13 x 1.25
X-129-19	1/2-13 x 1.50
X-129-20	1/2-13 x 1.75
X-129-21	1/2-13 x 2.00
X-129-22	1/2-13 x 2.25
X-129-23	1/2-13 x 2.50
X-129-24	1/2-13 x 2.75
X-129-25	1/2-13 x 3.00
X-129-27	1/2-13 x 3.50
X-129-29	1/2-13 x 4.00
X-129-30	1/2-13 x 4.50
X-463-9	1/2-13 x 5.50
X-129-44	1/2-13 x 6.00
X-129-51	1/2-20 x .75
X-129-45	1/2-20 x 1.25
X-129-52	1/2-20 x 1.50
X-6021-3	5/8-11 x 1.00
X-6021-4	5/8-11 x 1.25
X-6021-2	5/8-11 x 1.50
X-6021-1	5/8-11 x 1.75
273049	5/8-11 x 2.00
X-6021-5	5/8-11 x 2.25
X-6021-6	5/8-11 x 2.50
X-6021-7	5/8-11 x 2.75
X-6021-12	5/8-11 x 3.75
X-6021-11	5/8-11 x 4.50
X-6021-10	5/8-11 x 6.00
X-6021-9	5/8-18 x 2.50
X-6239-1	3/4-10 x 1.00
X-6239-8	3/4-10 x 1.25
X-6239-2	3/4-10 x 1.50
X-6239-3	3/4-10 x 2.00
X-6239-4	3/4-10 x 2.50
X-6239-5	3/4-10 x 3.00
X-6239-6	3/4-10 x 3.50
X-792-1	1-8 x 2.25
X-792-5	1-8 x 3.00
X-792-8	1-8 x 5.00

Part No. Dimensions Type

Hex Nuts

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

Washers

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

Metric

Hex head bolts are hardness grade 8.8 unless noted.

Part No. Dimensions Hex Head Bolts (Partial Thread)

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

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

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

Hex Head Bolts (Full Thread)

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

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

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

Pan Head Machine Screws

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

Flat Head Machine Screws

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

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

Metric, continued

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

Washers

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

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

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GM58839-MA3, *57*

GM58839-MA4, *57*

GM58839-MA5, *57*

GM58839-MA6, *57*

GM78570-MA1, *59*

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