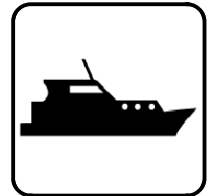


Service Parts

Marine Generator Sets



Models:

11EFOZD/13EOZD

11.5EFOZD/14EOZD

13EFOZD/15EOZD/15.5EOZD

KOHLER[®]
POWER SYSTEMS

ISO 9001
KOHLER
POWER SYSTEMS
NATIONALLY REGISTERED

TP-6271 1/11b

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Introduction

This manual lists service replacement parts for 13EOZD/11EFOZD and 15.5EOZD/13EFOZD generator sets.

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

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

This manual includes the following main sections:

Table of Contents. Lists the sections of the manual.

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

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

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

Kit Sections. List modules and accessories and their parts.

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

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>Oil Pan</i>	<i>Cylinder Head</i>	<i>Intake Manifold</i>	<i>Camshaft & Drive Gear</i>	<i>Turbocharger</i>	<i>Crankshaft & Flywheel</i>	<i>Lub. Oil System</i>	<i>Lub. Oil Line</i>	<i>Cooling Sea Water System</i>
Group No.	1	2	3	5	6	7	8	9	10	12	13
Spec No.	Variation Number										

13EOZD/11EFOZD											
GM33035-GA1	2	2	2	2	2	2	—	2	2	2	2
GM32564-GA1	4	4	3	4	4	3	—	4	3	—	4
GM32564-GA2	4	4	3	4	4	3	—	4	3	—	6
GM32564-GA7	4	6	3	4	4	3	—	4	3	—	8
GM32564-GA8	4	6	3	4	4	3	—	4	3	—	9
GM55349-GA1	6	7	3	6	4	4	—	6	5	—	8
GM55349-GA2	6	7	3	6	4	4	—	6	5	—	9
GM55349-GA7	4	6	3	4	4	3	—	4	3	—	4
GM55349-GA8	4	6	3	4	4	3	—	4	3	—	6
14EOZD/11.5EFOZD & 15EOZD/15.5EOZD/13EFOZD											
GM33035-GA2	3	3	2	3	3	2	2	3	2	3	3
GM32564-GA3	5	5	3	5	5	3	3	5	4	4	5
GM32564-GA4	5	5	3	5	5	3	3	5	4	4	7
GM32564-GA5	5	5	3	5	5	3	3	5	4	4	5
GM32564-GA6	5	5	3	5	5	3	3	5	4	4	7
GM32564-GA9	7	8	4	7	6	5	4	7	6	5	10
GM32564-GA10	7	8	4	7	6	5	4	7	6	5	10
GM32564-GA11	7	8	4	7	6	5	4	7	6	5	10
GM32564-GA12	7	8	4	7	6	5	4	7	6	5	10
GM55349-GA9	7	8	4	7	6	5	4	7	6	5	10
GM55349-GA10	7	8	4	7	6	5	4	7	6	5	10
GM55349-GA11	7	8	4	7	6	5	4	7	6	5	10
GM55349-GA12	7	8	4	7	6	5	4	7	6	5	10

— Not applicable.

Specification Number Index

Group Title		<i>Cooling Fresh Water Pump</i>	<i>Cooling Fresh Water Cooler</i>	<i>Fuel Injection Pump</i>	<i>Fuel Injection Lines</i>	<i>Fuel Line & Filter</i>	<i>Governor</i>	<i>Starting Motor</i>	<i>Gasket Set</i>
Group No.	14	15	16	17	18	19	20	21	
Spec No.	Variation Number								

13EOZD/11EFOZD								
GM33035-GA1	2	2	2	2	2	2	1	2
GM32564-GA1	5	4	4	4	3	—	2	4
GM32564-GA2	6	4	5	4	3	—	3	4
GM32564-GA7	9	4	8	4	3	5	2	6
GM32564-GA8	10	4	8	4	3	6	3	6
GM55349-GA1	11	4	9	6	4	7	2	7
GM55349-GA2	12	4	9	6	4	8	3	7
GM55349-GA7	9	4	8	4	3	5	2	6
GM55349-GA8	10	4	8	4	3	6	3	6
14EOZD/11.5EFOZD & 15EOZD/15.5EOZD/13EFOZD								
GM33035-GA2	4	3	3	3	2	4	1	3
GM32564-GA3	7	5	6	5	3	—	2	5
GM32564-GA4	8	5	7	5	3	—	3	5
GM32564-GA5	7	5	6	5	3	—	2	5
GM32564-GA6	8	5	7	5	3	—	3	5
GM32564-GA9	13	5	10	7	3	7	2	8
GM32564-GA10	14	5	10	7	3	8	3	8
GM32564-GA11	13	5	10	7	3	7	2	8
GM32564-GA12	14	5	10	7	3	8	3	8
GM55349-GA9	13	5	10	7	3	7	2	8
GM55349-GA10	14	5	10	7	3	8	3	8
GM55349-GA11	13	5	10	7	3	7	2	8
GM55349-GA12	14	5	10	7	3	8	3	8

— Not applicable.

Specification Number Index

Group Title														
	<i>Air Intake</i>	<i>Fuel System</i>	<i>Cooling System</i>	<i>Engine</i>	<i>Nameplates and Decals</i>	<i>Skid and Plant Mounting</i>	<i>Generator and Mounting</i>	<i>Controller and Mounting</i>	<i>Controller and Mounting</i>	<i>Literature</i>				
Group No.	101	103	104	105	107	109	201	301	301	701				
Spec No.	Variation Number													

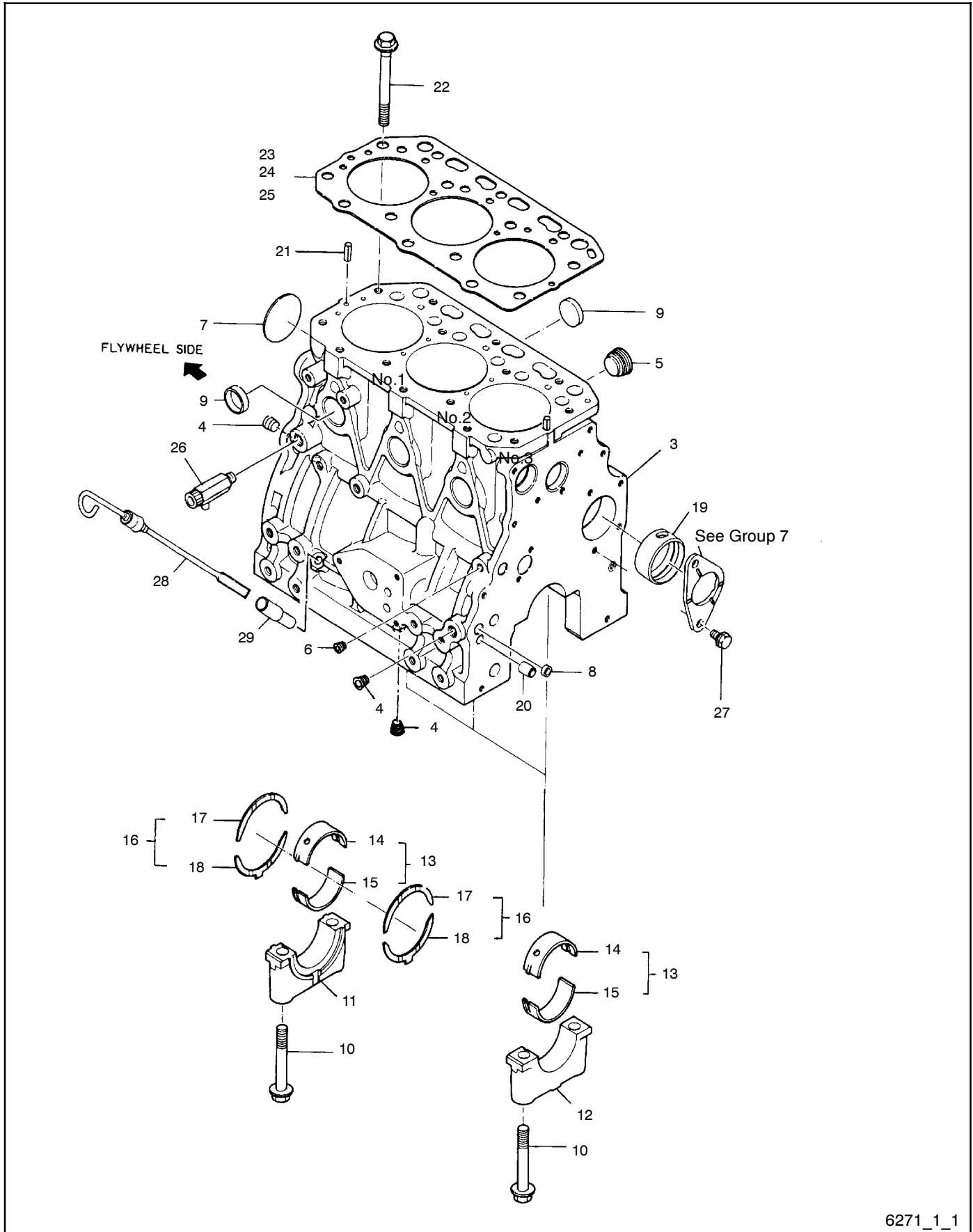
13EOZD/11EFOZD													
GM33035-GA1	35-1	35-2	35-3	35-4	35-6	35-7	35-8	35-10	35-10	56			
GM32564-GA1	64-1	64-2	64-3	64-4	64-6	64-7	64-8	64-10*	64-19	45			
GM32564-GA2	64-1	64-11	64-12	64-13	64-6	64-7	64-8	64-14*	64-18	45			
GM32564-GA7	64-1	64-2	64-3	64-20	64-6	64-7	64-8	—	64-19	45			
GM32564-GA8	64-1	64-11	64-12	64-21	64-6	64-7	64-8	—	64-18	45			
GM55349-GA1	3	4	4	7	4	3	6	—	6	73			
GM55349-GA2	3	5	5	8	4	3	6	—	7	73			
GM55349-GA7	3	4	4	9	4	3	6	—	6	73			
GM55349-GA8	3	5	5	10	4	3	6	—	7	73			
14EOZD/11.5EFOZD & 15EOZD/15.5EOZD/13EFOZD													
GM33035-GA2	—	35-2	35-3	35-5	35-6	35-7	35-9	35-10	35-10	57			
GM32564-GA3	—	64-2	64-3	64-5	64-16	64-7	64-17	64-10*	64-19	46			
GM32564-GA4	—	64-11	64-12	64-15	64-16	64-7	64-17	64-14*	64-18	46			
GM32564-GA5	—	64-2	64-3	64-5	64-6	64-7	64-9	64-10*	64-19	47			
GM32564-GA6	—	64-11	64-12	64-15	64-6	64-7	64-9	64-14*	64-18	47			
GM32564-GA9	—	64-2	64-3	64-23	64-16	64-7	64-17	—	64-19	46			
GM32564-GA10	—	64-11	64-12	64-24	64-16	64-7	64-17	—	64-18	46			
GM32564-GA11	—	64-2	64-3	64-23	64-6	64-7	64-9	—	64-19	47			
GM32564-GA12	—	64-11	64-12	64-24	64-6	64-7	64-9	—	64-18	47			
GM55349-GA3	—	4	4	11	5	3	8	—	6	74			
GM55349-GA4	—	5	5	12	5	3	8	—	7	74			
GM55349-GA5	—	4	4	11	4	3	7	—	6	75			
GM55349-GA6	—	5	5	12	4	3	7	—	7	75			
GM55349-GA9	—	4	4	13	5	3	8	—	6	74			
GM55349-GA10	—	5	5	14	5	3	8	—	7	74			
GM55349-GA11	—	4	4	13	4	3	7	—	6	75			
GM55349-GA12	—	5	5	14	4	3	7	—	7	75			

— Not applicable.

* Units built before approximately April 1, 2007 used variation 65-10 (12-volt applications) or 65-14 (24-volt applications)

Notes

Group 1: Cylinder Block



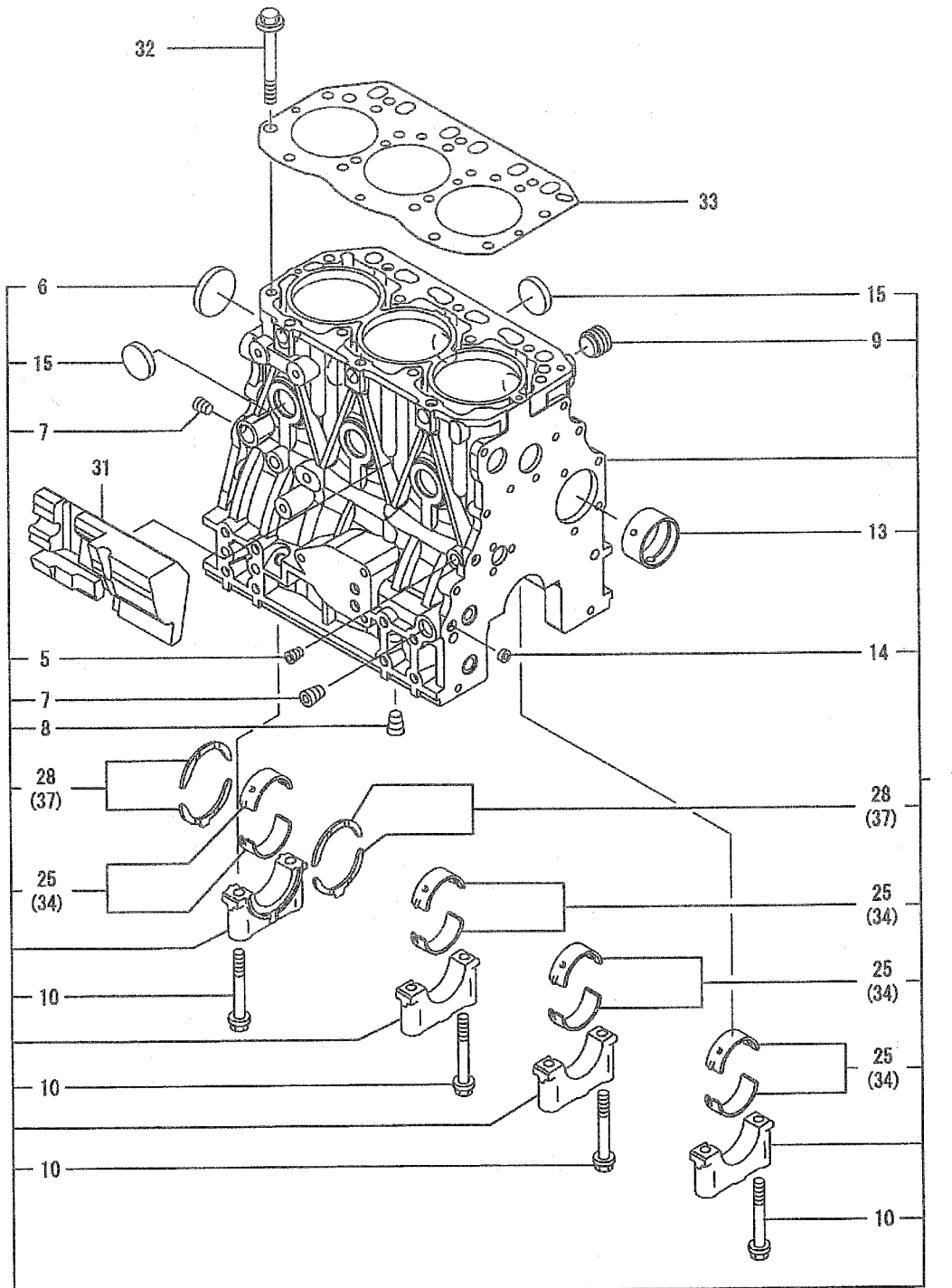
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Group 1: Cylinder Block

Item	Part Number	Description	Quantity	
			Variation Number 2	Variation Number 3
1	GM13338	Block assembly, cylinder (includes items 3-21)	1	
1	GM13341	Block assembly, cylinder (includes items 3-21)		1
2	X	Refer to item 1	1	1
3	X	Block, cylinder	1	1
4	252771	Plug, PT 1/4	3	3
5	252566	Plug	1	1
6	256515	Plug, PT 1/8 screw	1	1
7	225827	Plug 50	1	1
8	252728	Plug 12	2	2
9	252731	Plug 30	8	8
10	252803	Bolt, bearing cap	8	8
11	X	Bearing cap	1	1
12	X	Bearing cap	4	4
13	GM13297	Main bearing (includes items 14 and 15)	4	4
13	256585	Main bearing under size 0.25 (includes items 14 and 15)	4	4
14	X	Main bearing	4	4
15	X	Main bearing	4	4
16	252977	Bearing, thrust (includes items 17 and 18)	2	2
16	256765	Bearing, thrust 0.25 oversize (includes items 17 and 18)	2	2
17	X	Bearing, thrust	2	2
18	X	Bearing, thrust	2	2
19	252933	Bush, camshaft	1	1
20	—	Not used	—	—
21	—	Not used	—	—
22	252797	Stud, cylinder head	14	14
23	GM13296	Gasket, cylinder head	1	
23	GM13304	Gasket, cylinder head		1
24		Refer to item 23	—	—
25		Refer to item 23	—	—
26	252394	Petcock	1	1
27	225818	Bolt, M8 x 14 plated	2	2
28	252951	Dipstick	1	1
29	252759	Guide, dipstick	1	1

X Item not sold separately

Group 1: Cylinder Block, continued

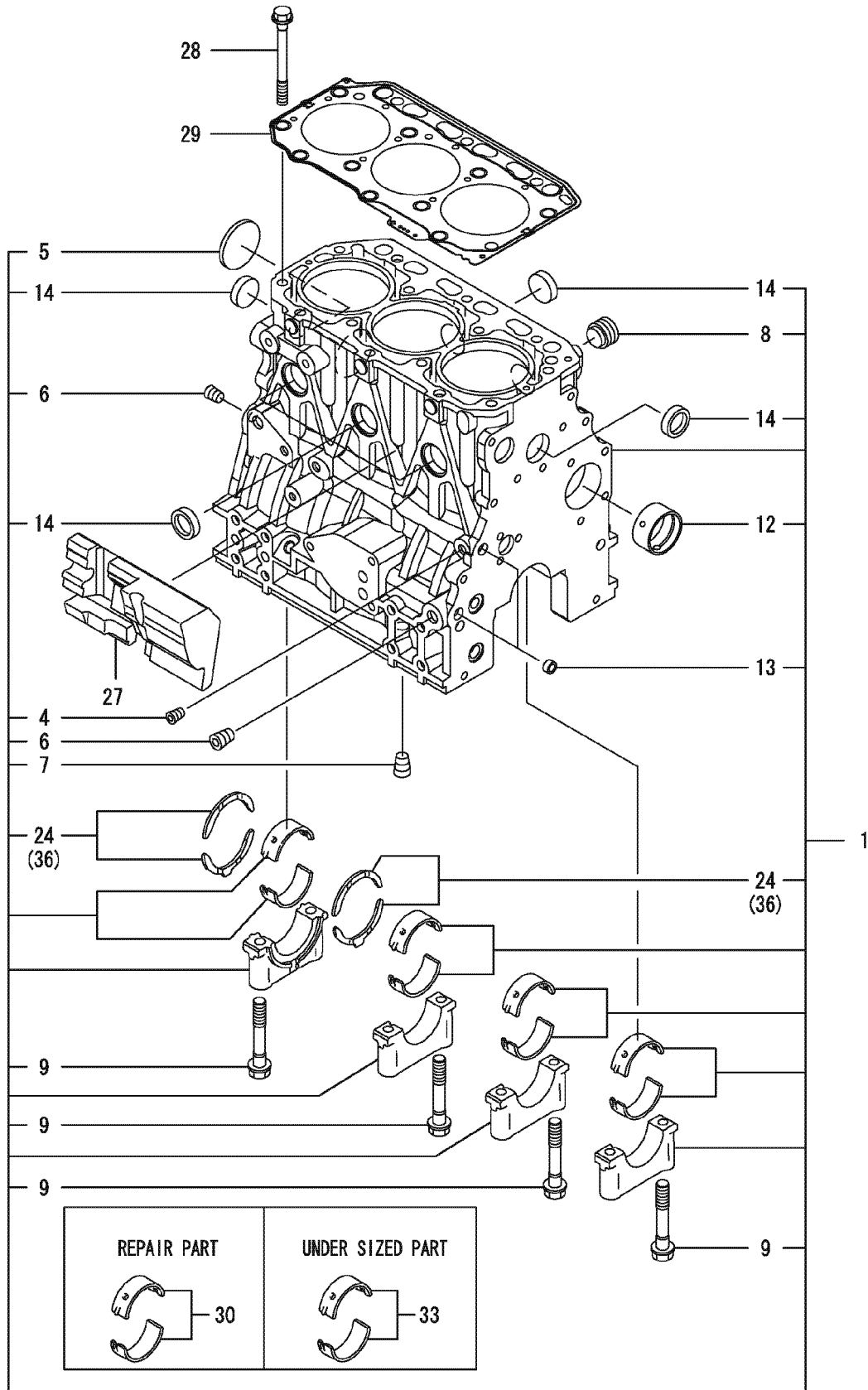


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Group 1: Cylinder Block, continued

Item	Part Number	Description	Quantity		
			Variation Number		
			4	5	6
1	GM35745	Block assembly, cylinder	1	1	1
5	252078	Plug	1	1	1
6	GM35519	Plug 50	1	1	1
7	252771	Plug PT 1/4	2	2	2
8	252771	Plug PT 1/4	1	1	1
9	252566	Plug	1	1	1
10	252803	Bolt	8	8	8
13	252933	Bushing	1	1	1
14	252728	Plug	2	2	2
15	225924	Plug 30	6	6	6
25	GM13297	Main bearing set	4	4	4
28	252977	Thrust bearing	2	2	2
31	GM35523	Spacer	1	1	1
32	252797	Stud, cylinder head	14	14	14
33	GM13296	Gasket, cylinder head	1	1	1
33	GM13304	Gasket, cylinder head	1	1	1
34	256585	Bearing, main (0.25 US)	4	4	4
37	256765	Bearing, thrust (0.25)	1	1	1

Group 1: Cylinder Block, continued

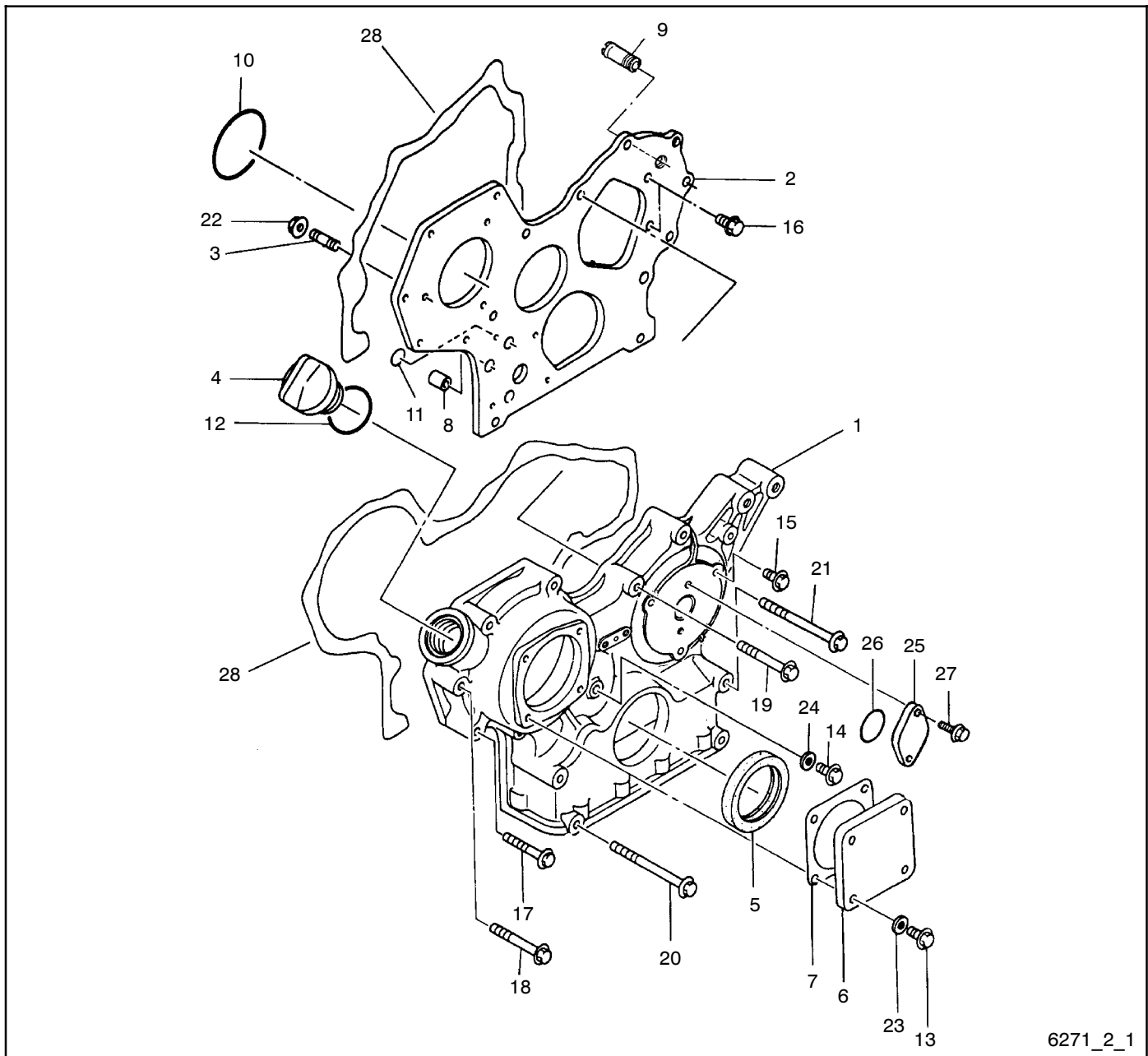


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Group 1: Cylinder Block, continued

Item	Part Number	Description	Quantity
			Variation Number
			7
1	GM35746	Block assembly, cylinder	1
4	252078	Plug	1
5	GM35519	Plug 50	1
6	252771	Plug PT 1/4	2
7	252771	Plug PT 1/4	1
8	252566	Plug	1
9	252803	Bolt	8
12	252933	Bushing	1
13	252728	Plug	2
14	225924	Plug 30	6
24	252977	Thrust bearing	2
27	GM35523	Spacer	1
28	252797	Bolt, cylinder head	14
29	GM13304	Gasket, cylinder head	1
30	GM13297	Main bearing set	4
33	256585	Bearing, main (0.25 US)	4
36	256765	Bearing, thrust (0.25)	1

Group 2: Gear Housing

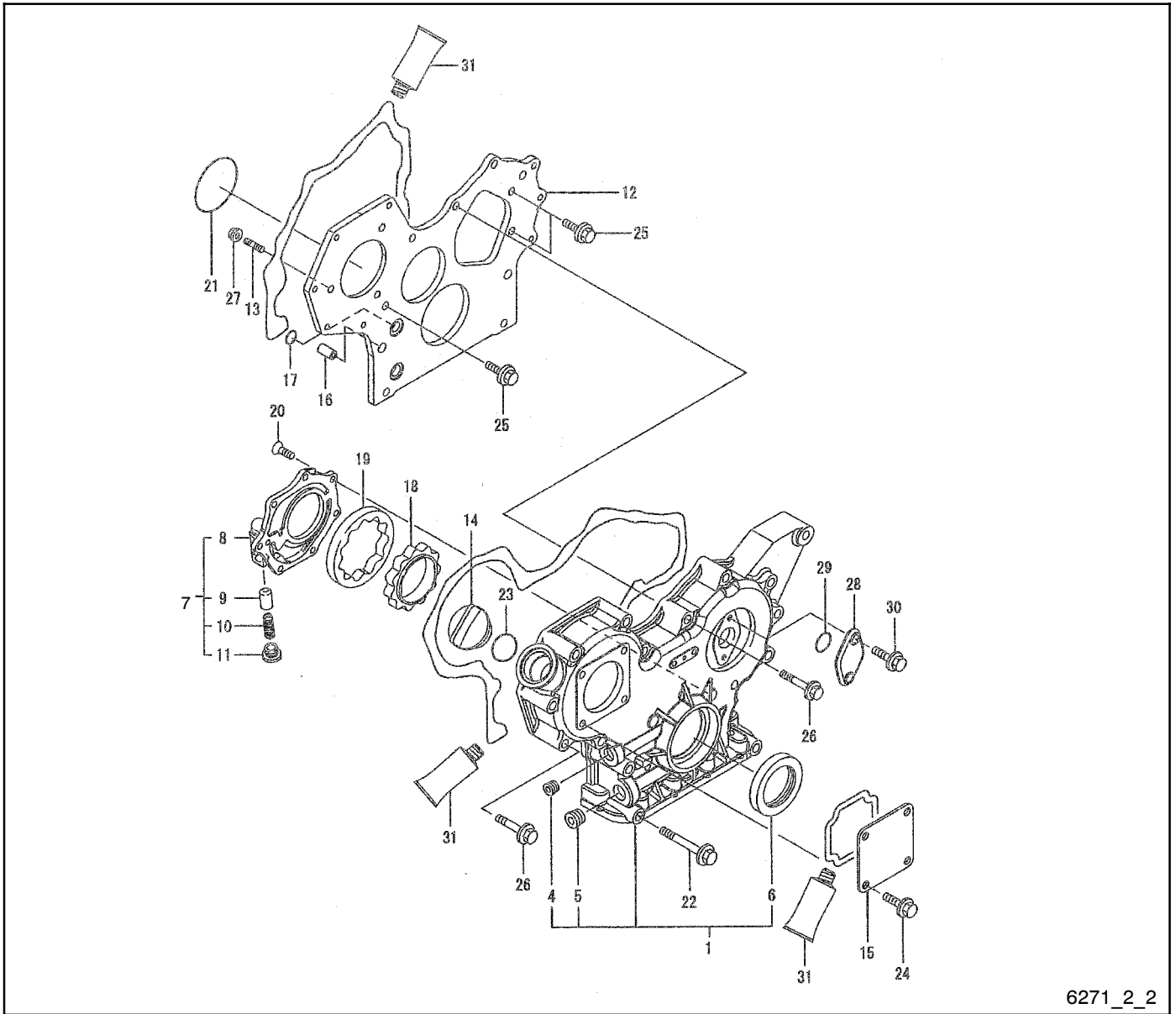


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Item	Part Number	Description	Quantity		Item	Part Number	Description	Quantity	
			Variation 2	Variation 3				Variation 2	Variation 3
1	229799	Housing, gear (includes item 5)	1	1	15	252696	Bolt, M8 x 16 plated	3	3
2	229720	Plate, gear cover	1	1	16	252697	Bolt, M8 x 20 plated	2	2
3	252861	Flange, gear housing	1	1	17	252703	Bolt, M8 x 45 plated	4	4
4	252409	Stud, M8 x 22	3	3	18	252704	Bolt, M8 x 50 plated	2	2
5	250837	Cap, lub. oil supply	1	1	19	256798	Bolt, M8 x 55 plated	3	3
6	252931	Seal, oil	1	1	20	256799	Bolt, M8 x 85 plated	2	2
7	256531	Cover	1	1	21	229500	Bolt, M8 x 90 plated	2	2
8	252085	Gasket	1	1	22	252723	Nut, M8	3	3
9	252932	Pipe, knock	2	2	23	252734	Seal, washer 8	4	4
10	229721	Joint	1	1	24	252734	Seal, washer 8	1	1
11	252764	O-ring, F.I. pump	1	1	25	252750	Cover, blind	1	1
12	250981	O-ring	2	2	26	256796	O-ring	1	1
13	252684	O-ring	1	1	27	252693	Bolt, M6 x 16 plated	2	2
14	252695	Bolt, M8 x 12 plated	4	4	28	252998	Liquid gasket	AR	AR
	252696	Bolt, M8 x 16 plated	1	1					

AR As Required

Group 2: Gear Housing

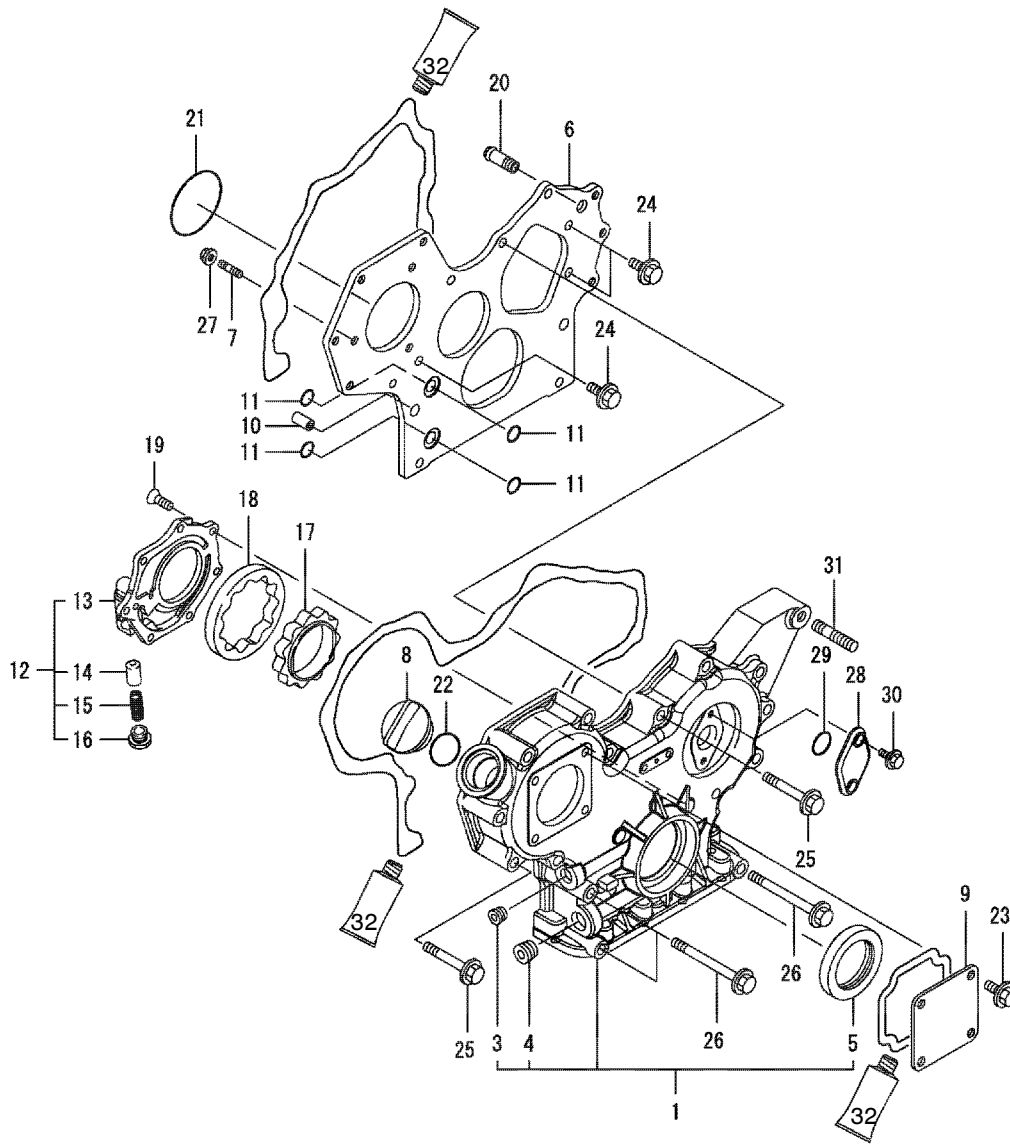


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Item	Part Number	Description	Quantity			
			Variation No.			
			4	5	6	7
1	GM35736	Housing assy., gear	1	1	1	
1	GM69347	Gear case assembly				1
1	225819	Bolt, M8 x 30 (not shown)				1
1	252734	Washer 8, seal (not shown)				1
4	GM35720	Plug, screw	1	1	1	
5	GM35721	Plug	1	1	1	
6	252931	Oil seal	1	1		
6	GM66395	Oil seal			1	1
7	GM35464	Cover assy., pump	1	1	1	
8	GM35463	Cover, lube oil pump	1	1	1	
9	GM35653	Valve, relief	1	1	1	
10	GM35578	Spring	1	1	1	
11	GM35520	Plug	1	1	1	
12	GM35429	Flange, gear case	1		1	
12	GM35551	Plate, gear case		1		
12	GM69326	Flange, gear case				1
13	GM35430	Stud, M8 x 25	3	3	3	3
14	250837	Cap	1	1	1	1
15	GM35515	Cover	1	1		
15	256531	Cover			1	1
16	252932	Knock, pipe	2	2	2	2

Item	Part Number	Description	Quantity			
			Variation No.			
			4	5	6	7
17	GM35421	O-ring	4	4	4	2
18	GM35465	Rotor, inner	1	1	1	
19	GM35466	Rotor, outer	1	1	1	
20	GM35467	Screw, M6 x 16	7	7	7	
21	252764	O-ring, pump	1	1	1	1
22	256799	Bolt, M8 x 85	3	3	3	3
23	252684	O-ring	1	1	1	1
24	252696	Bolt, M8 x 16	4	4	4	4
25	252696	Bolt, M8 x 16	3	3	3	3
26	256798	Bolt, M8 x 55 plated	12	12	12	12
27	GM35732	Nut	3	3	3	3
28	252750	Cover, blind	1	1	1	1
29	256796	O-ring	1	1	1	1
30	252693	Bolt	2	2	2	2
31	GM46206	Liquid Gasket	1	1	1	1
32	GM13815	Stud (not shown)			1	1

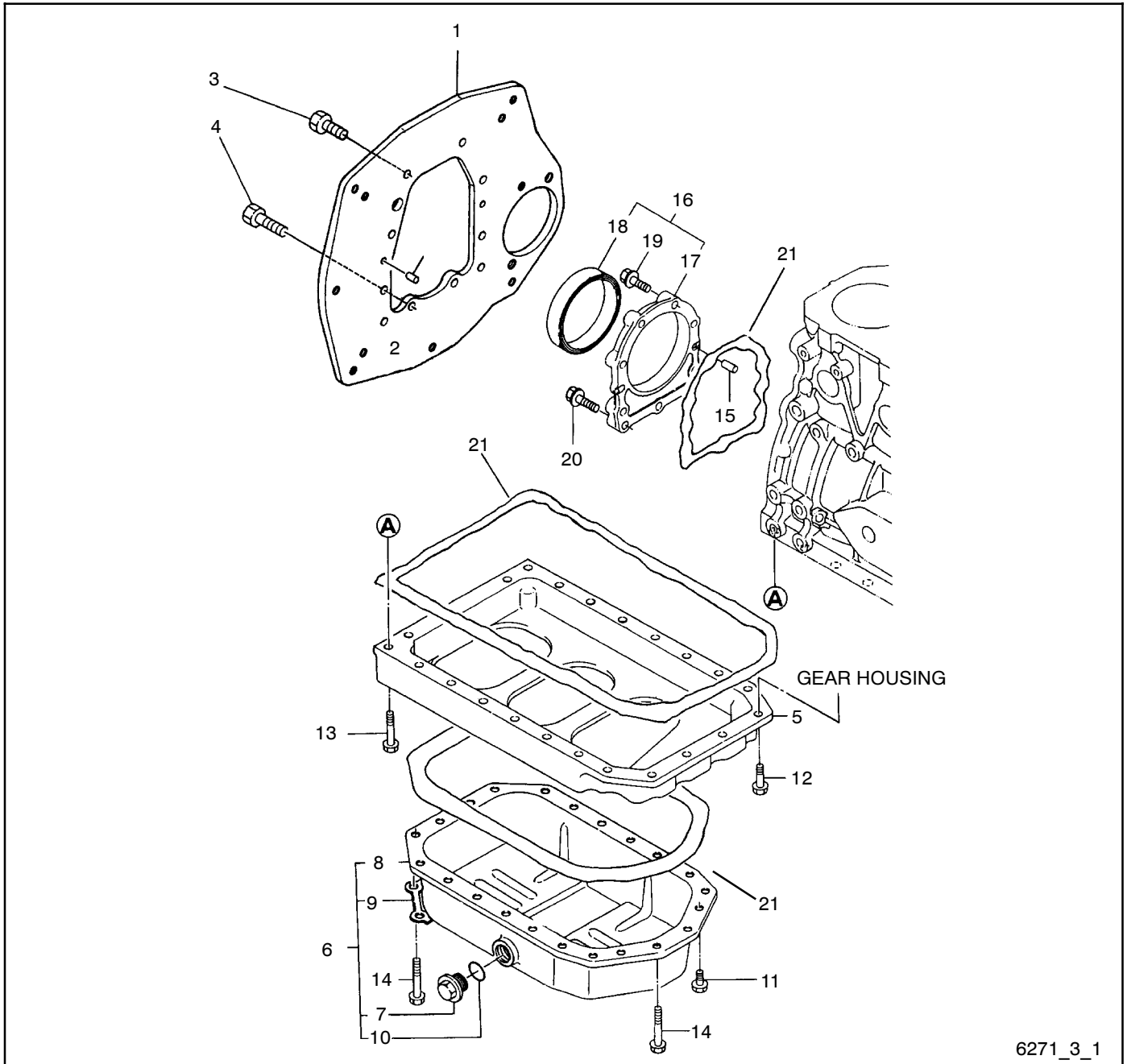
Group 2: Gear Housing, continued



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Item	Part Number	Description	Qty. Var.	Item	Part Number	Description	Qty. Var.
1	GM35736	Housing assy., gear	1	17	GM35465	Rotor, inner	1
3	GM35720	Plug, screw	1	18	GM35466	Rotor, outer	1
4	GM35721	Plug	1	19	GM35467	Screw, M6 x 16	7
5	GM66395	Oil seal	1	20	229721	Joint	1
6	GM35551	Plate, gear case	1	21	252764	O-ring, pump	1
7	GM35430	Stud, M8 x 25	3	22	252684	O-ring	1
8	250837	Cap	1	23	252696	Bolt, M8 x 16	4
9	256531	Cover	1	24	252696	Bolt, M8 x 16	3
10	252932	Knock, pipe	2	25	256798	Bolt, M8 x 55 plated	12
11	GM35421	O-ring	4	26	256799	Bolt, M8 x 85	3
12	GM35464	Cover assy., pump	1	27	GM35732	Nut	3
13	GM35463	Cover, lube oil pump	1	28	252750	Cover, blind	1
14	GM35653	Valve, relief	1	29	256796	O-ring	1
15	GM35578	Spring	1	30	252693	Bolt	2
16	GM35520	Plug	1	31	GM13815	Stud	1
				32	GM46206	Liquid Gasket	1

Group 3: Oil Pan

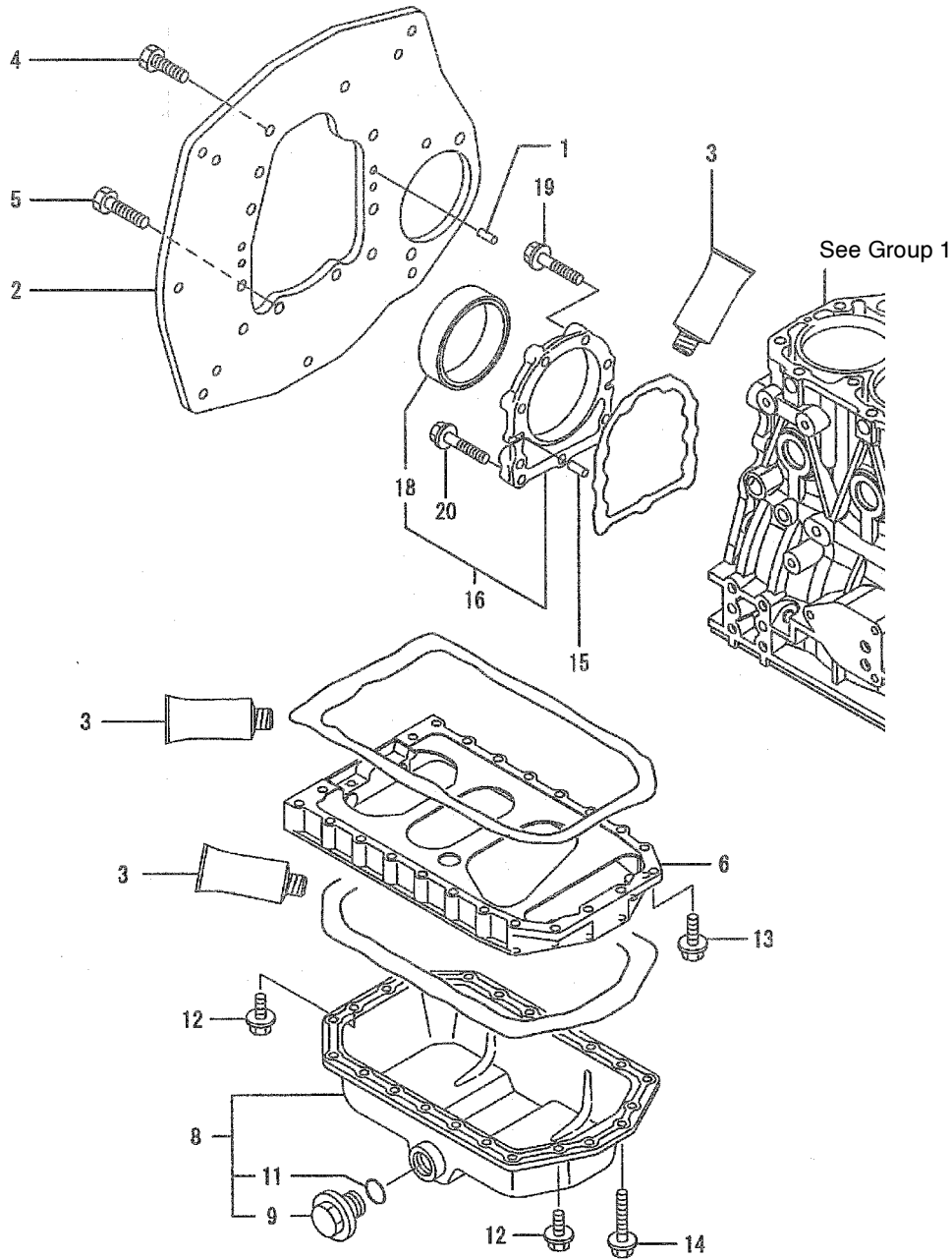


6271_3_1

Item	Part Number	Description	Quantity		Item	Part Number	Description	Quantity	
				Variation Number					Variation Number
1	229114	Back plate	1		12	252696	Bolt, M8 x 16 plated	4	
2	256750	Parallel pin 8 x 20	2		13	252703	Bolt, M8 x 45 plated	20	
3	225923	Bolt, M10 x 20	6		14	252699	Bolt, M8 x 25 plated	2	
4	363210	Bolt, M10 x 25	4		15	256750	Parallel pin 8 x 16	2	
5	256751	Spacer, oil sump	1		16	225866	Case assembly, oil seal (includes item 17 and 18)	1	
6	229729	Sump assembly, lub. oil	1		17	X	Case, oil seal	1	
7	252943	Plug 22	1		18	252930	Seal, oil	1	
8	X	Refer to item 12	1		19	363430	Bolt, M8 x 30	6	
9	—	Not used			20	252701	Bolt, M8 x 35 plated	3	
10	252687	O-ring	1		21	252998	Liquid gasket	AR	
11	252703	Bolt, M8 x 45 plated	20						

X Item not sold separately
AR As Required

Group 3: Oil Pan, continued

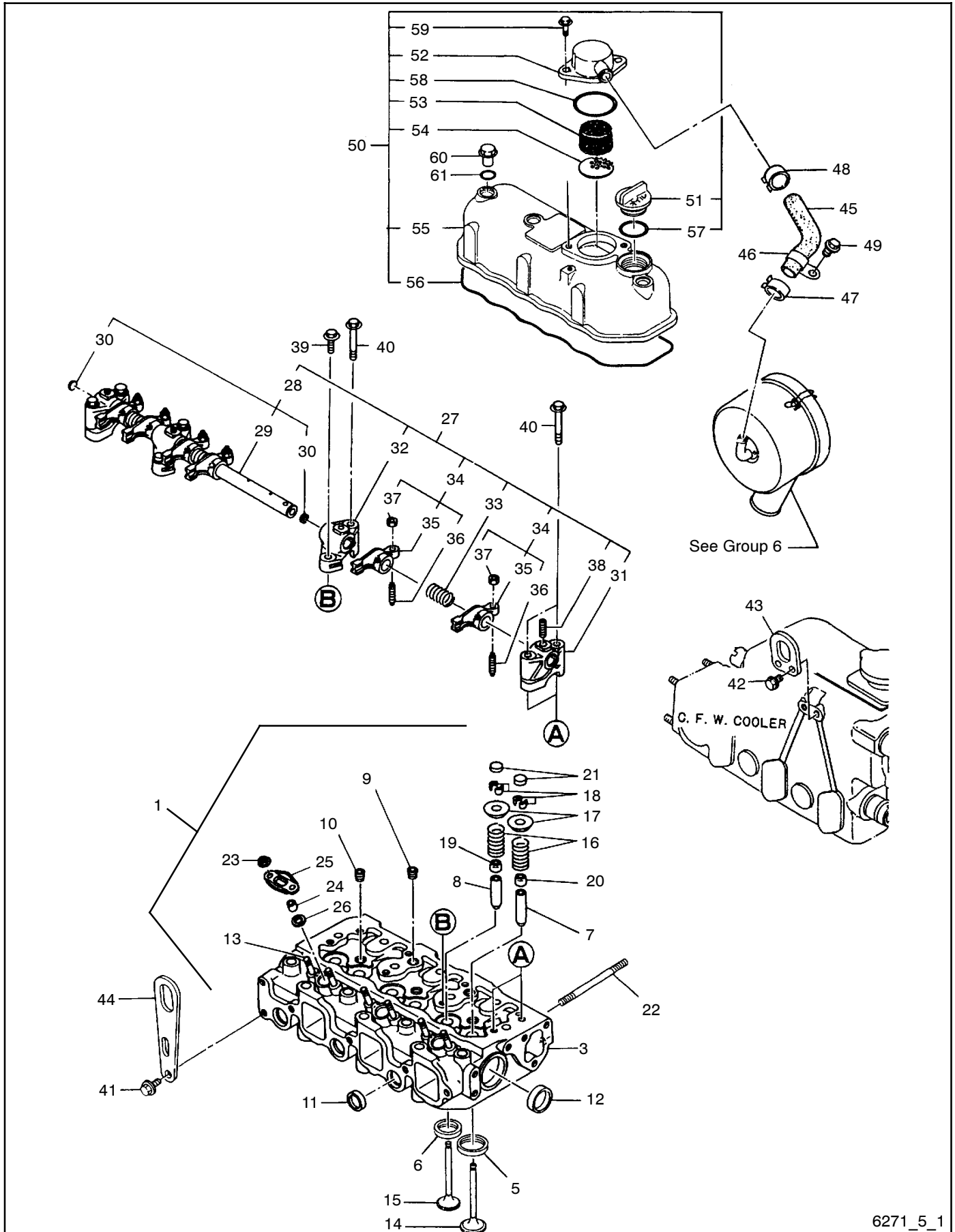


6271_3_2

Item	Part Number	Description	Qty.		Item	Part Number	Description	Qty.	
			3	4				3	4
1	256750	Parallel pin 8 x 16	2	2	12	252696	Bolt, M8 x 16	4	4
2	229114	Mounting flange	1	1	13	252699	Bolt, M8 x 25 plated	2	2
3	GM46206	Liquid Gasket	1	1	14	252703	Bolt, M8 x 45	20	16
4	229505	Bolt, M10 x 20	6	6	14	252704	Bolt, M8 x 50		4
5	252714	Boltn M10 x 25	4	4	15	256750	Parallel pin 8 x 16	2	2
6	256751	Spacer, sump	1	1	16	225866	Case assembly	1	1
8	229729	Sump assembly, lube oil	1	1	18	252930	Rear oil seal	1	1
9	-	See Group 105	1	1	19	363430	Bolt, M8 x 30	6	6
11	-	See Group 105	1	1	20	252701	Bolt, M8 x 35	3	3

Notes

Group 5: Cylinder Head



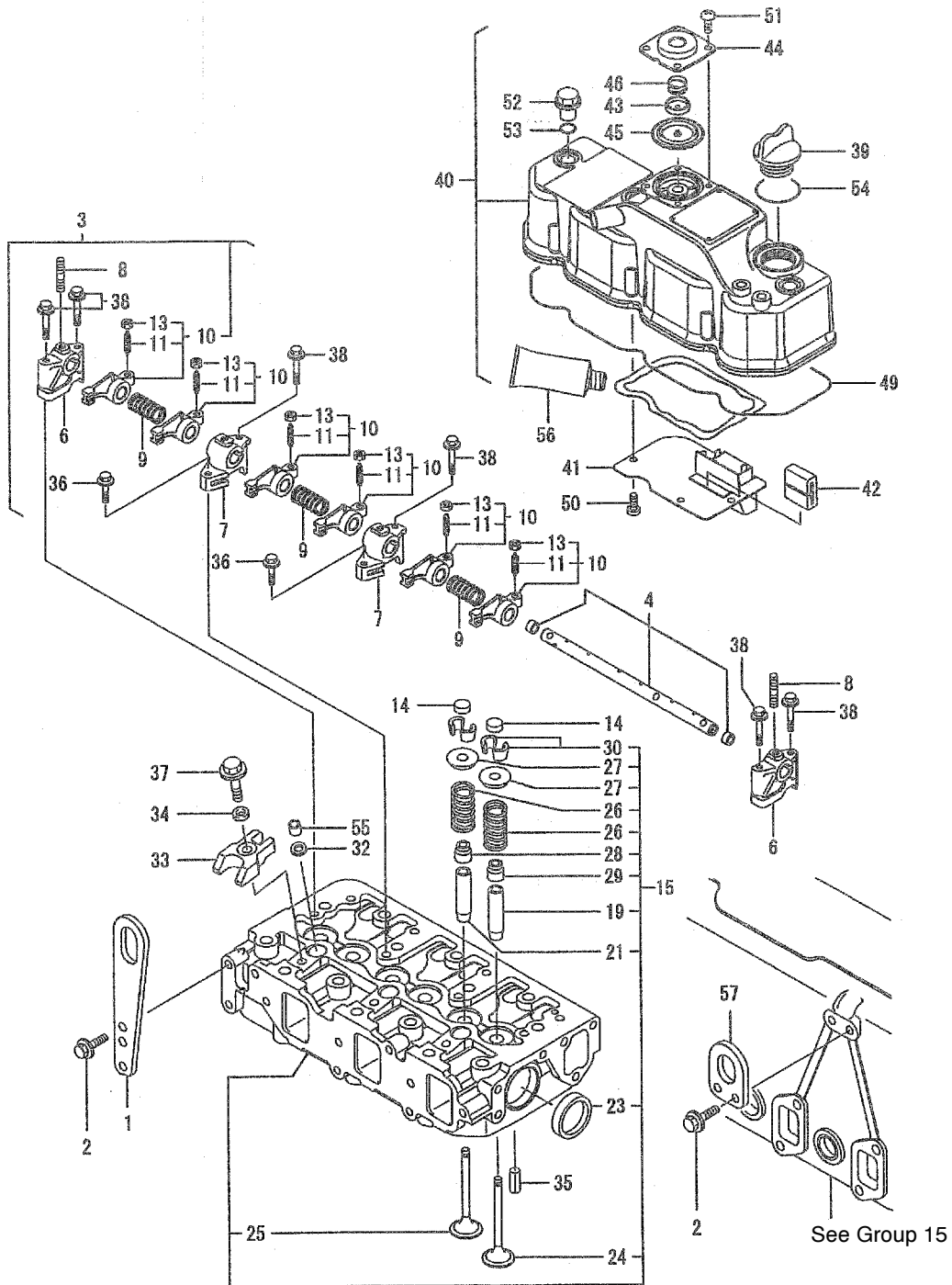
6271_5_1

Group 5: Cylinder Head

Item	Part Number	Description	Quantity	
			Variation Number 2	Variation Number 3
1	GM13298	Head assembly, cylinder (includes items 2-23)	1	
1	GM13337	Head assembly, cylinder (includes items 2-23)		1
2		Refer to item 1	1	1
3	X	Head, cylinder	1	1
3	250963	Spring pin, 6 x 12 (not shown)	1	1
4	—	Not used		
5	252871	Seat, intake valve	3	3
6	252872	Seat, exhaust valve	3	3
7	256736	Guide, intake valve	3	3
8	252811	Guide, exhaust valve	3	3
9	250974	Plug, Pt 1/4	2	2
10	250975	Plug Pt 3/8, screw	3	3
11	252729	Plug 22	3	3
12	252732	Plug 40	2	2
13	252717	Stud, M6 x 20 plated	6	6
14	252778	Valve, intake	3	3
15	252780	Valve, exhaust	3	3
16	252934	Spring, valve	6	6
17	252935	Retainer, spring	6	6
18	363216	Cotter 8	6	6
19	252754	Seal, valve stem	3	3
20	256578	Seal, valve stem	3	3
21	345355	Cap, valve	6	6
22	—	Not used		
23	250989	Nut, M6	8	8
24	252743	Protector, nozzle	3	3
25	252745	Retainer	3	3
26	252744	Seat, nozzle	3	3
27	225867	Shaft, assembly, rocker (includes items 28-38)	1	1
28	256766	Shaft, rocker arm (includes items 29 and 30)	1	1
29	X	Shaft, rocker arm	1	1
30	X	Plug 10	2	2
31	252843	Support, rocker arm	2	2
32	252844	Support, rocker arm	2	2
33	252815	Spring	3	3
34	225869	Arm assembly, rocker (includes items 35-37)	6	6
35	X	Arm, rocker	6	6
36	229844	Screw, valve	6	6
37	252817	Nut, M8	6	6
38	252722	Stud, M8 x 18 plated	3	3
39	252699	Bolt, M8 x 25 plated	2	2
40	252704	Bolt, M8 x 50 plated	6	6
41	252696	Bolt, M8 x 16 plated	1	1
42	252696	Bolt, M8 x 16 plated	1	1
43	256542	Lifter, engine	1	1
44	363110	Lifter, engine	1	1
45	229414	Pipe, breather	1	1
46	—	Not used		
47	GM13316	Clamp 16	1	1
48	229425	Clamp	1	1
49	—	Not used		
50	225868	Bonnet assembly (includes items 51-59)	1	1
51	250837	Cap, lub. oil supply	1	1
52	225773	Cover, breather	1	1
53	252805	Baffle, breather	1	1
54	252806	Plate, shelter	1	1
55	X	Bonnet	1	1
56	256767	Gasket, bonnet	1	1
57	252684	O-ring	1	1
58	225812	O-ring	1	1
59	252696	Bolt, M8 x 16 plated	2	2
60	252470	Knob	3	3
61	250801	O-ring	3	3

X Item not sold separately

Group 5: Cylinder Head, continued

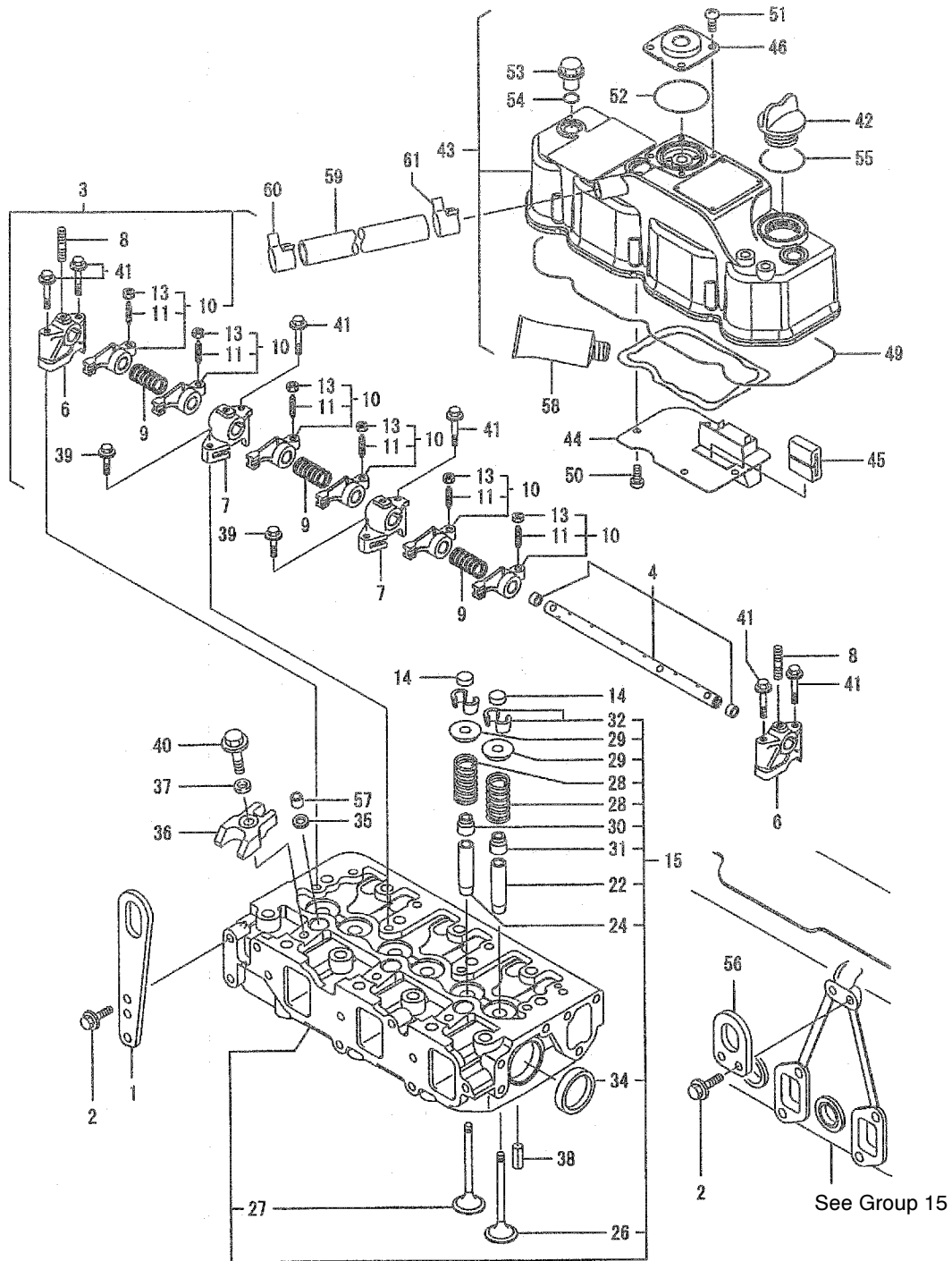


6271_5_2

Group 5: Cylinder Head, continued

Item	Part Number	Description	Quantity
			Variation Number
			4
1	363110	Lifter, engine	1
2	252696	Bolt, M8 x 16	4
3	GM35527	Shaft assembly, rocker	1
4	GM35528	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	GM35531	Arm assembly, rocker	6
11	229844	Valve screw	6
13	252817	Nut, M8	6
14	345355	Cap, valve	6
15	GM35532	Head assembly, cylinder	1
19	256736	Guide, suction valve	3
21	256768	Guide, exhaust valve	3
23	252732	Plug 40	2
24	GM35526	Valve, intake	3
25	252779	Valve, exhaust	3
26	252934	Spring, valve	6
27	252935	Retainer, spring	6
28	252754	Seal, valve stem	3
29	256578	Seal, valve stem	3
30	252737	Cotter	6
32	252744	Seat	3
33	GM35533	Retainer, nozzle	3
34	GM35495	Washer	3
35	250963	Spring pin 6 x 12	2
36	252699	Bolt, M8 x 25 plated	2
37	252701	Bolt, M8 x 35	3
36	252704	Bolt	6
39	250837	Cap	1
40	GM35530	Bonnet assembly, head	1
41	GM35524	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	GM35529	Gasket, bonnet	1
50	363201	Screw, tapping 5 x 10	4
51	363201	Screw, tapping 5 x 10	4
52	252470	Cap nut	3
53	250801	O-ring	3
54	252684	O-ring	1
55	GM35450	Protector, nozzle	3
56	GM46206	Gasket, liquid	1
57	256542	Lifter, engine	1

Group 5: Cylinder Head, continued

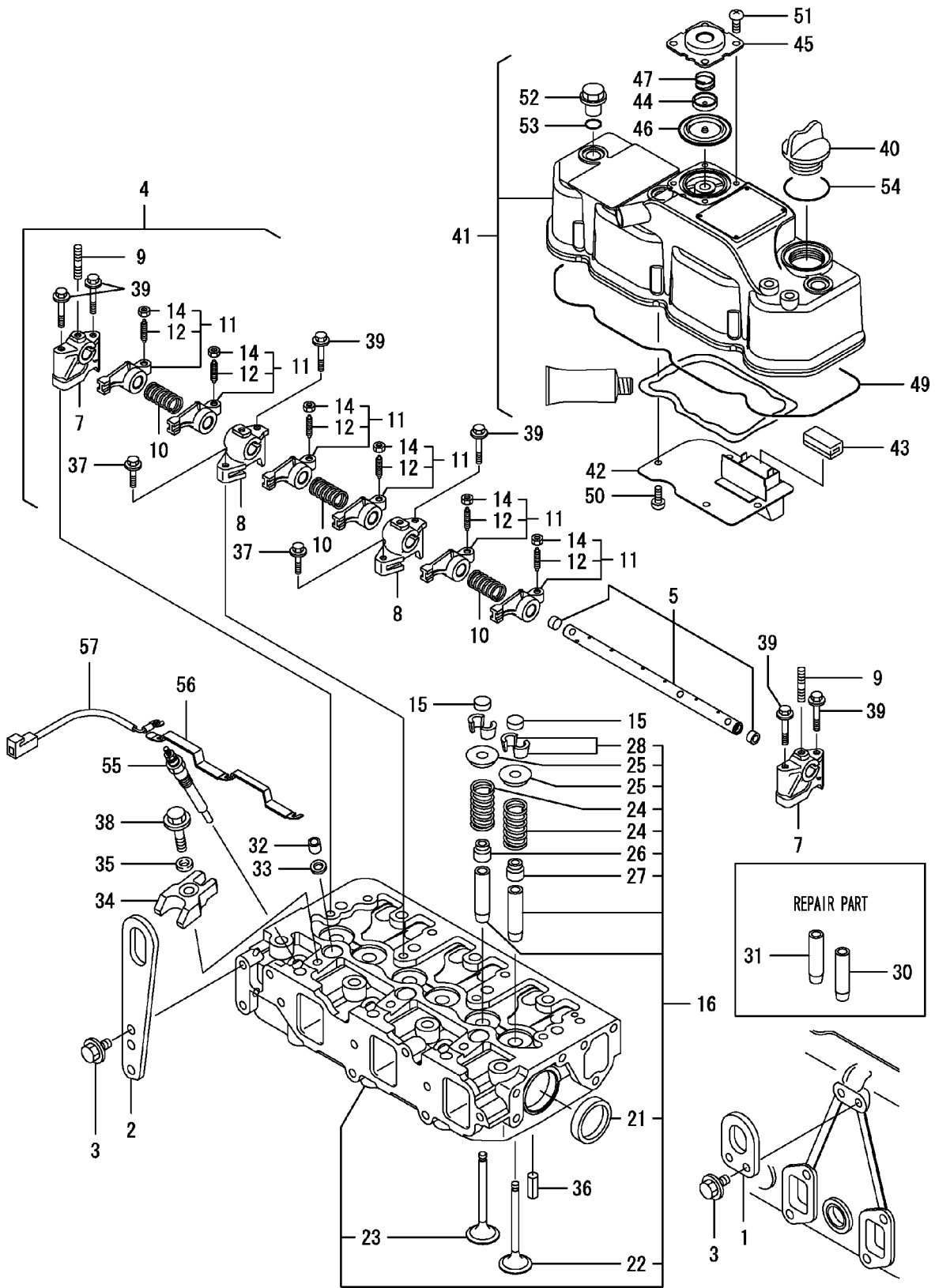


6271_5_3

Group 5: Cylinder Head, continued

Item	Part Number	Description	Quantity	
			Variation 5	Number 7
1	363110	Lifter, engine	1	1
2	252696	Bolt, M8 x 16	4	4
3	GM35527	Shaft assembly, rocker	1	1
4	GM35528	Shaft, rocker arm	1	1
6	GM35442	Support, rocker arm	2	2
7	GM35443	Support, rocker arm	2	2
8	GM35444	Stud	3	3
9	252815	Spring	3	3
10	GM35531	Arm assembly, rocker	6	6
11	229844	Valve screw	6	6
13	252817	Nut, M8	6	6
14	345355	Cap, valve	6	6
15	GM35554	Head assembly, cylinder	1	
15	GM66405	Head assembly, cylinder		1
22	256736	Guide, suction valve	3	3
24	256768	Guide, exhaust valve	3	3
26	GM35526	Valve, intake	3	3
27	252780	Valve, exhaust	3	3
26	252934	Spring, valve	6	6
29	252935	Retainer, spring	6	6
30	252754	Seal, valve stem	3	3
31	256578	Seal, valve stem	3	3
32	252737	Cotter 8	6	6
34	252732	Plug 40	2	2
35	252744	Seat	3	3
36	GM35533	Retainer, nozzle	3	3
37	GM35495	Washer	3	3
36	250963	Spring pin 6 x 12	2	2
39	252699	Bolt, M8 x 25 plated	2	2
40	252701	Bolt, M8 x 35	3	3
41	252704	Bolt, M8 x 50	6	6
42	250837	Cap	1	1
43	GM35553	Bonnet assembly, head	1	1
44	GM35524	Plate, baffle	1	1
45	252805	Baffle	1	1
46	GM35552	Cover, diaphragm	1	1
49	GM35529	Gasket, bonnet	1	1
50	363201	Screw, tapping 5 x 10	4	4
51	363201	Screw, tapping 5 x 10	4	4
52	GM35723	O-ring	1	1
53	252470	Cap nut	3	3
54	250801	O ring	3	3
55	252684	O-ring	1	1
56	256542	Lifter, engine	1	1
57	GM35450	Protector, nozzle	3	3
58	GM46206	Gasket, liquid	1	1
59	229414	Breather pipe	1	1
60	GM13316	Clamp 16	1	1
61	GM35708	Hose clip	1	1

Group 5: Cylinder Head, continued

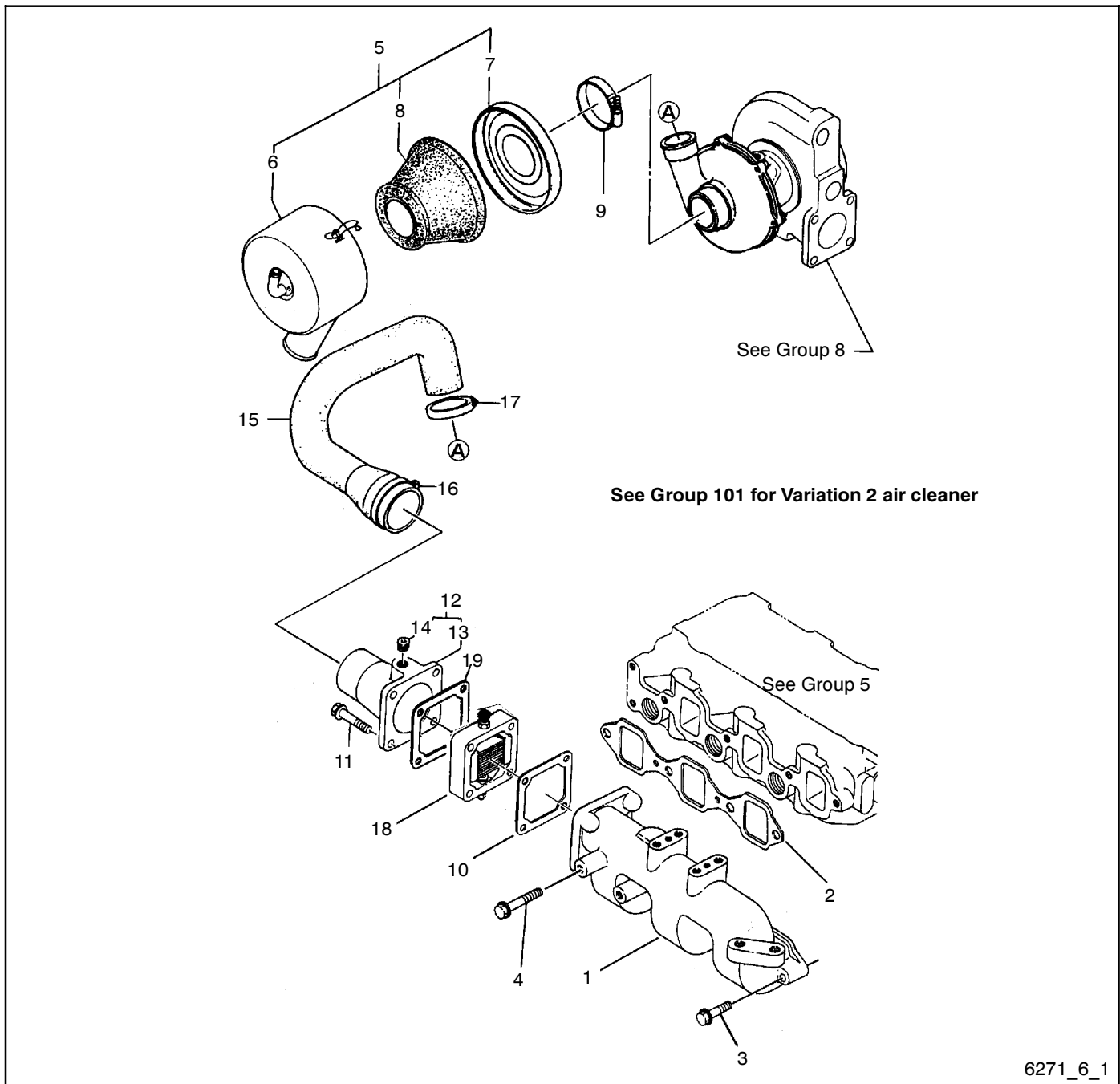


6271_5_4

Group 5: Cylinder Head, continued

Item	Part Number	Description	Quantity
			Variation Number
			6
1	256542	Lifter, engine	1
2	363110	Lifter, engine	1
3	252696	Bolt, M8 x 16	4
4	GM35527	Shaft assembly, rocker	1
5	GM35528	Shaft, rocker arm	1
7	GM35442	Support, rocker arm	2
8	GM35443	Support, rocker arm	2
9	GM35444	Stud	3
10	252815	Spring	3
11	GM35531	Arm assembly, rocker	6
12	229844	Valve screw	6
14	252817	Nut, M8 x p1.0	6
15	256717	Cap, valve	6
16	GM79996	Head assy., cylinder	1
21	252732	Plug 40	2
22	GM69331	Valve, intake	3
23	252779	Valve, exhaust	3
24	252934	Spring, valve	6
25	252935	Retainer, spring	6
26	252754	Seal, valve stem	3
27	256578	Seal, valve stem	3
28	252737	Cotter 8	6
30	256736	Guide, suction valve	3
31	256768	Guide, exhaust valve	3
32	GM35450	Protector, nozzle	3
33	252744	Seat	3
34	GM35533	Retainer, nozzle	3
35	GM35495	Washer	3
36	250963	Spring pin	2
37	252699	Bolt, M8 x 25 Plated	2
38	252701	Bolt, M8 x 35	3
39	252704	Bolt	6
40	250837	Lube oil cap	1
41	GM35530	Bonnet assembly, head	1
42	GM35524	Plate, baffle	1
43	252805	Baffle	1
44	GM35434	Plate, diaphragm	1
45	GM35435	Cover, diaphragm	1
46	GM35436	Diaphragm	1
47	GM35437	Spring, diaphragm	1
49	GM35529	Gasket, bonnet	1
50	363201	Screw, tapping 5 x 10	4
51	363201	Screw, tapping 5 x 10	4
52	252470	Cap nut	3
53	250801	O ring	3
54	252684	O-ring	1
55	GM69335	Plug, glow	3
56	GM79997	Connector, glow plug	1
57	GM69330	Harness, glow plug	1

Group 6: Intake Manifold

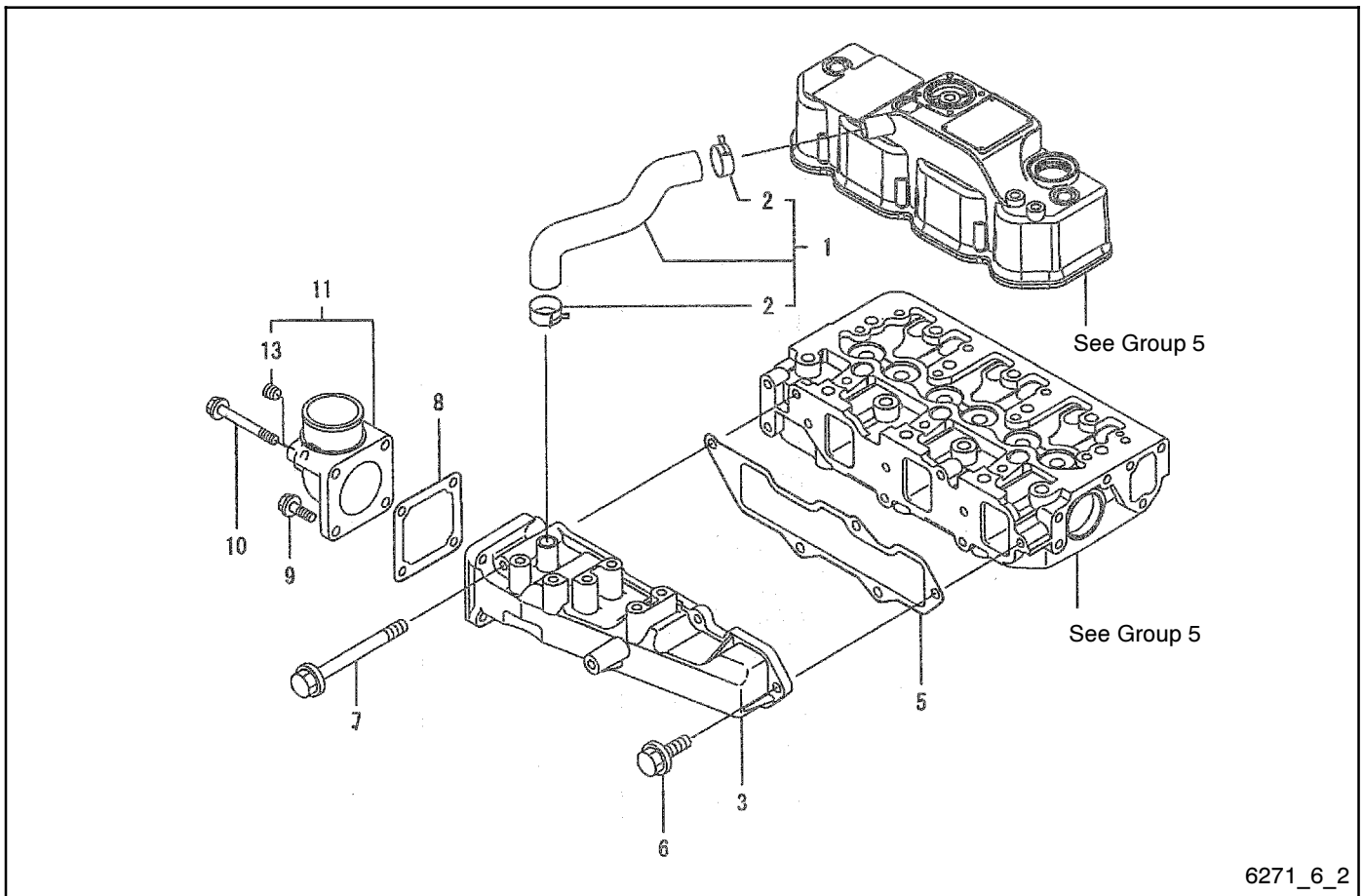


6271_6_1

Item	Part Number	Description	Quantity		Item	Part Number	Description	Quantity	
			Variation No. 2	Variation No. 3				Variation No. 2	Variation No. 3
1	229723	Manifold assembly, intake	1	1	11	252702	Bolt, M8 x 40 plated		4
2	225874	Gasket	1	1	11	252703	Bolt, M8 x 45 plated	4	
3	252699	Bolt, M8 x 25 plated	3	3	12	229429	Joint assembly (includes items 13 & 14)		1
4	252701	Bolt, M8 x 35 plated	1	1	13	X	Joint		1
5	229442	Silencer assembly (includes items 6-8)			13	GM13327	Joint, air heater	1	
6	X	Body, silencer		1	14	256515	Plug, PT 1/8 screw		1
7	229443	Plate, bottom		1	15	256627	Pipe		1
8	250902	Element, cleaner		1	16	229494	Clamp 60		1
9	229493	Clamp 48		1	17	229493	Clamp 48		1
10	229434	Gasket			18	229825	Air heater	1	1
10	229719	Gasket	1	1	19	229434	Gasket	1	1

X Item not sold separately

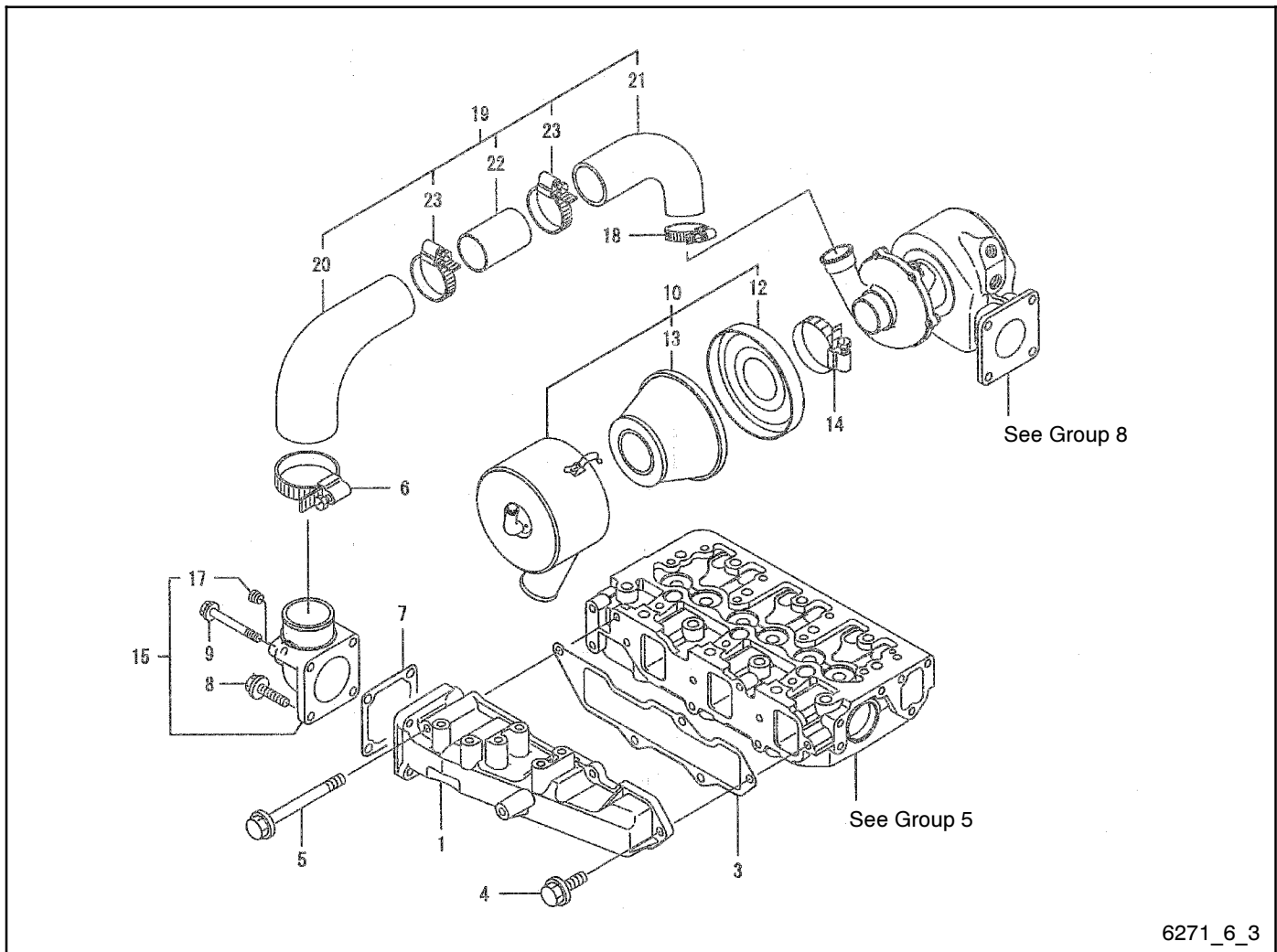
Group 6: Intake Manifold



6271_6_2

Item	Part Number	Description	Quantity
			Variation Number
1	GM35525	Pipe, breather	1
2	229425	Clamp	2
3	GM35534	Manifold, intake	1
5	GM19699	Gasket, intake manifold	1
6	252697	Bolt	4
7	252707	Bolt, M8 x 80 plated	1
8	225778	Gasket	1
9	252697	Bolt	2
10	252706	Bolt	2
11	GM35639	Joint assembly	1
13	GM13812	Plug, PT 1/8, screw	1

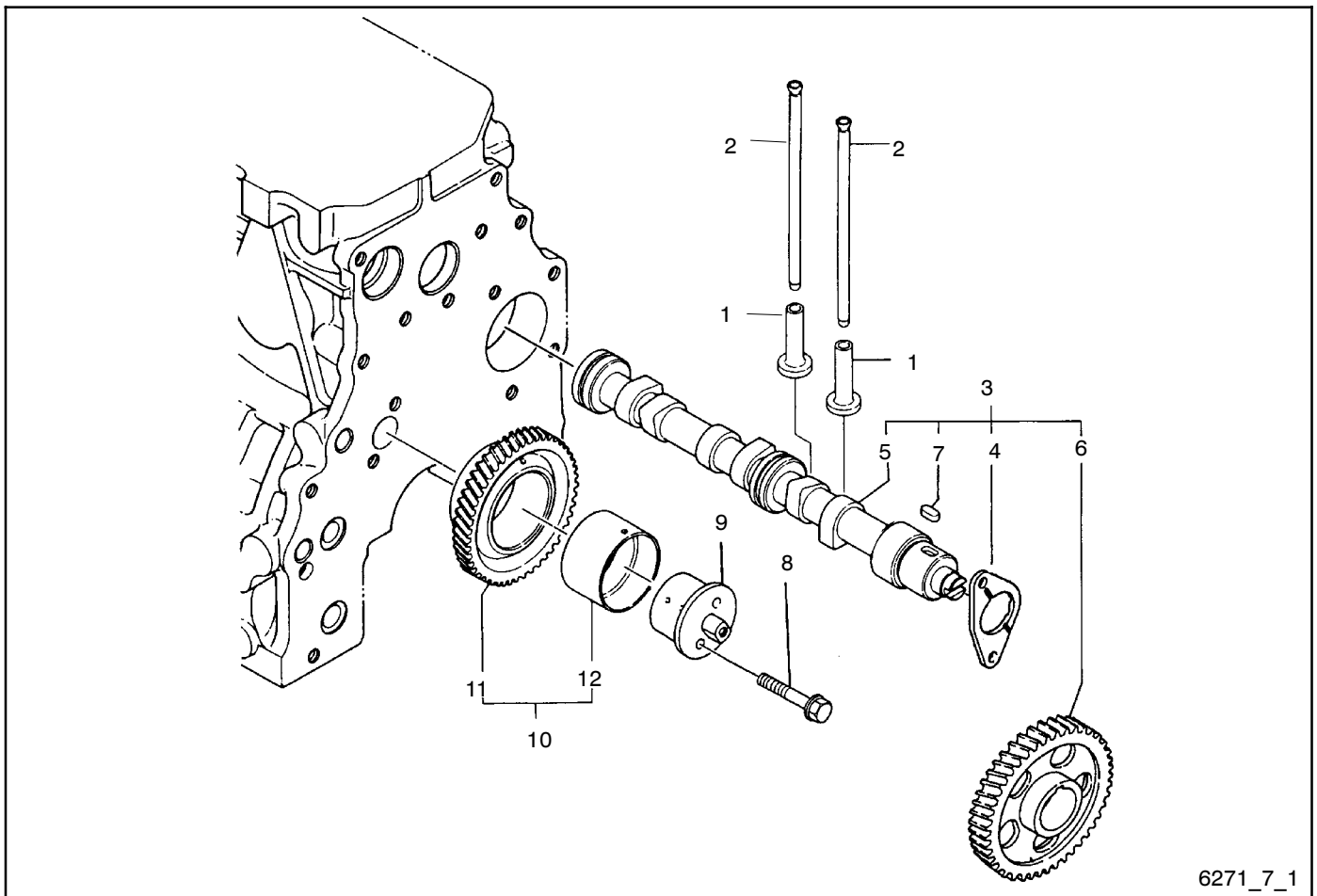
Group 6: Intake Manifold, continued



6271_6_3

Item	Part Number	Description	Quantity	
			Variation Number 5	Variation Number 6
1	GM35555	Manifold, intake	1	1
3	GM19699	Gasket, intake manifold	1	1
4	252697	Bolt, M8 x 20	4	4
5	252707	Bolt, M8 x 80	1	1
6	229494	Clamp 60	1	1
7	225778	Gasket	1	1
8	252697	Bolt, M8 x 20	2	2
9	252706	Bolt, M8 x 65	2	2
10	229442	Silencer assembly	1	1
12	229443	Bottom plate	1	1
13	250902	Element	1	1
14	229493	Clamp 48	1	1
15	GM35639	Joint assembly	1	1
17	GM13812	Plug, PT 1/8, screw	1	1
18	229493	Clamp 48	1	1
19	GM35643	Hose assembly, intake	1	
19	GM80004	Hose assembly, intake		1
20	GM35640	Hose, air intake	1	1
21	GM35641	Hose, air intake	1	1
22	GM35642	Joint	1	1
23	229846	Clamp	2	2

Group 7: Camshaft and Drive Gear

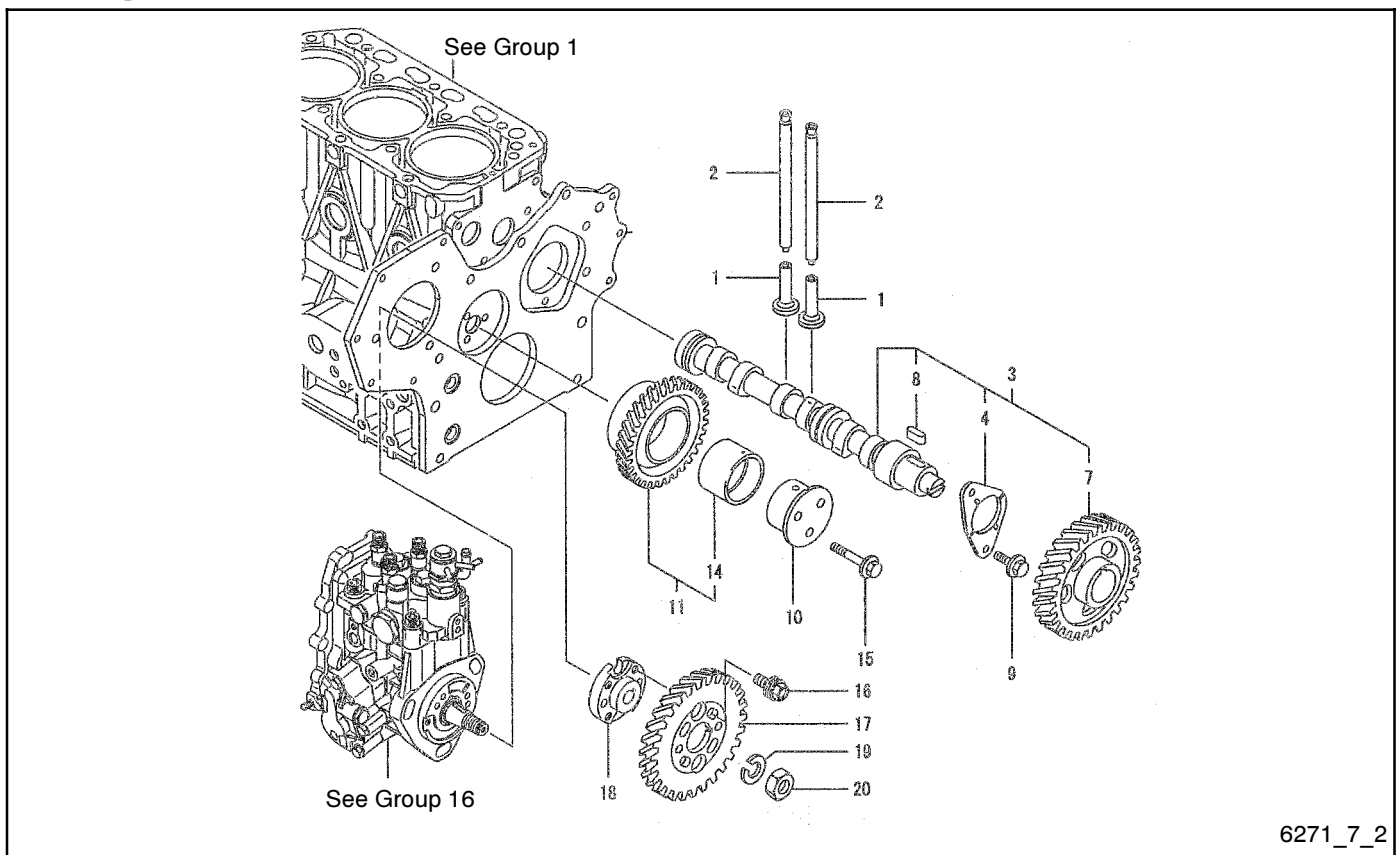


6271_7_1

Item	Part Number	Description	Quantity Variation Number
1	252819	Tappet	6
2	252820	Push rod	6
3	225873	Camshaft assembly (includes item 4-7)	1
4	252804	Bearing, thrust	1
5	X	Camshaft	1
6	256587	Gear, camshaft	1
7	252669	Key	1
8	252703	Bolt, M8 x 45 plated	2
9	252782	Shaft, idle gear	1
10	256590	Gear, idle (includes items 13 and 14)	1
11	X	Gear, idle	1
12	252825	Bus, idle gear	1

X Item not sold separately

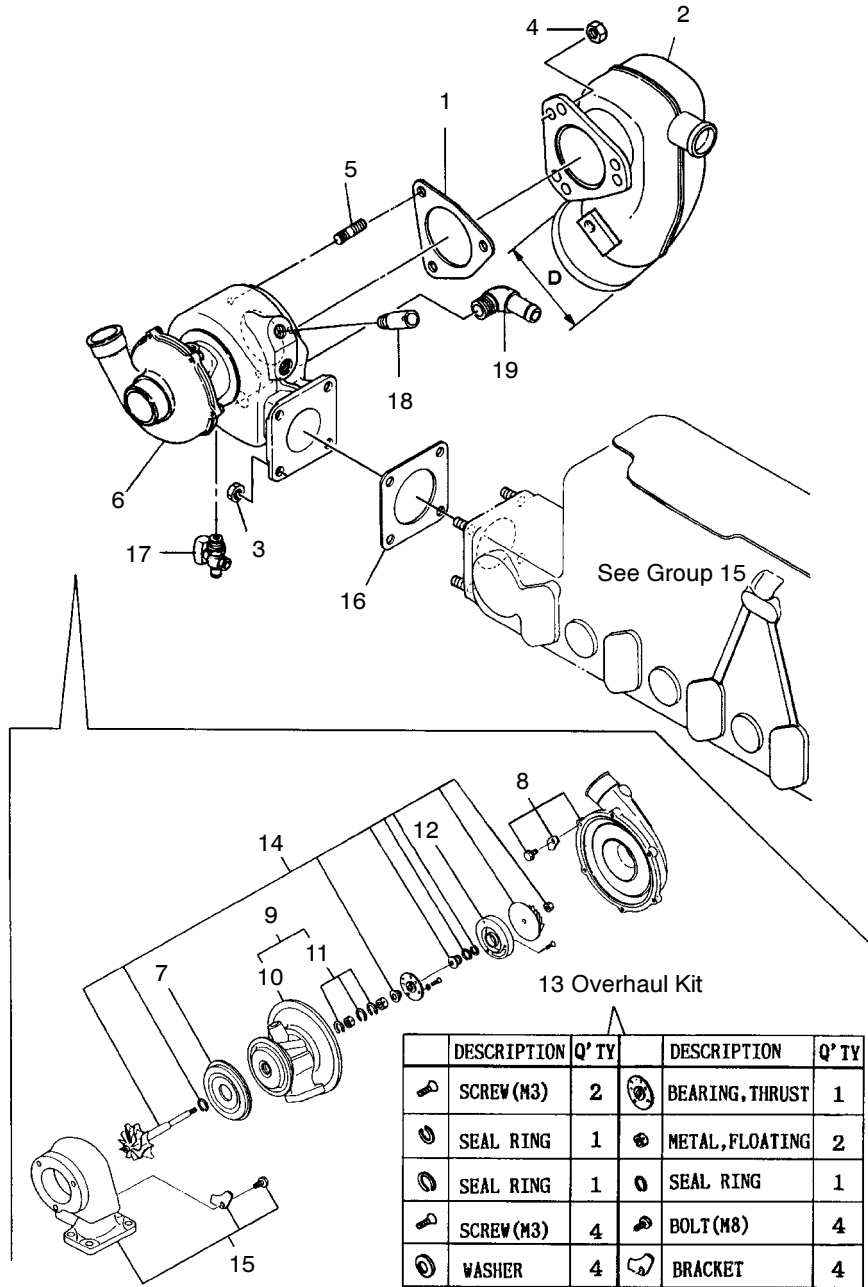
Group 7: Camshaft and Drive Gear, continued



6271_7_2

Item	Part Number	Description	Quantity		
			Variation Number		
			3	4	5
1	252819	Tappet	6	6	6
2	252820	Rod, push	6	6	6
3	GM35535	Camshaft assembly	1	1	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	225818	Bolt, M8 x 14	2	2	2
10	GM35459	Shaft, idle gear	1		1
10	GM69328	Shaft, idle gear		1	
11	GM35461	Gear assembly, idle	1	1	1
14	GM35460	Bush, idle gear	1	1	1
15	252702	Bolt, M8 x 40	3	3	3
16	GM19682	Bolt, gear	4	4	4
17	GM35462	Gear, pump	1	1	1
18	GM35711	Flange	1		
18	-	See Fuel Injection Pump		1	1
19	GM35714	Washer, spring	1		
19	-	See Fuel Injection Pump		1	1
20	GM35734	Nut, lock M14 plated	1		
20	-	See Fuel Injection Pump		1	1

Group 8: Turbocharger



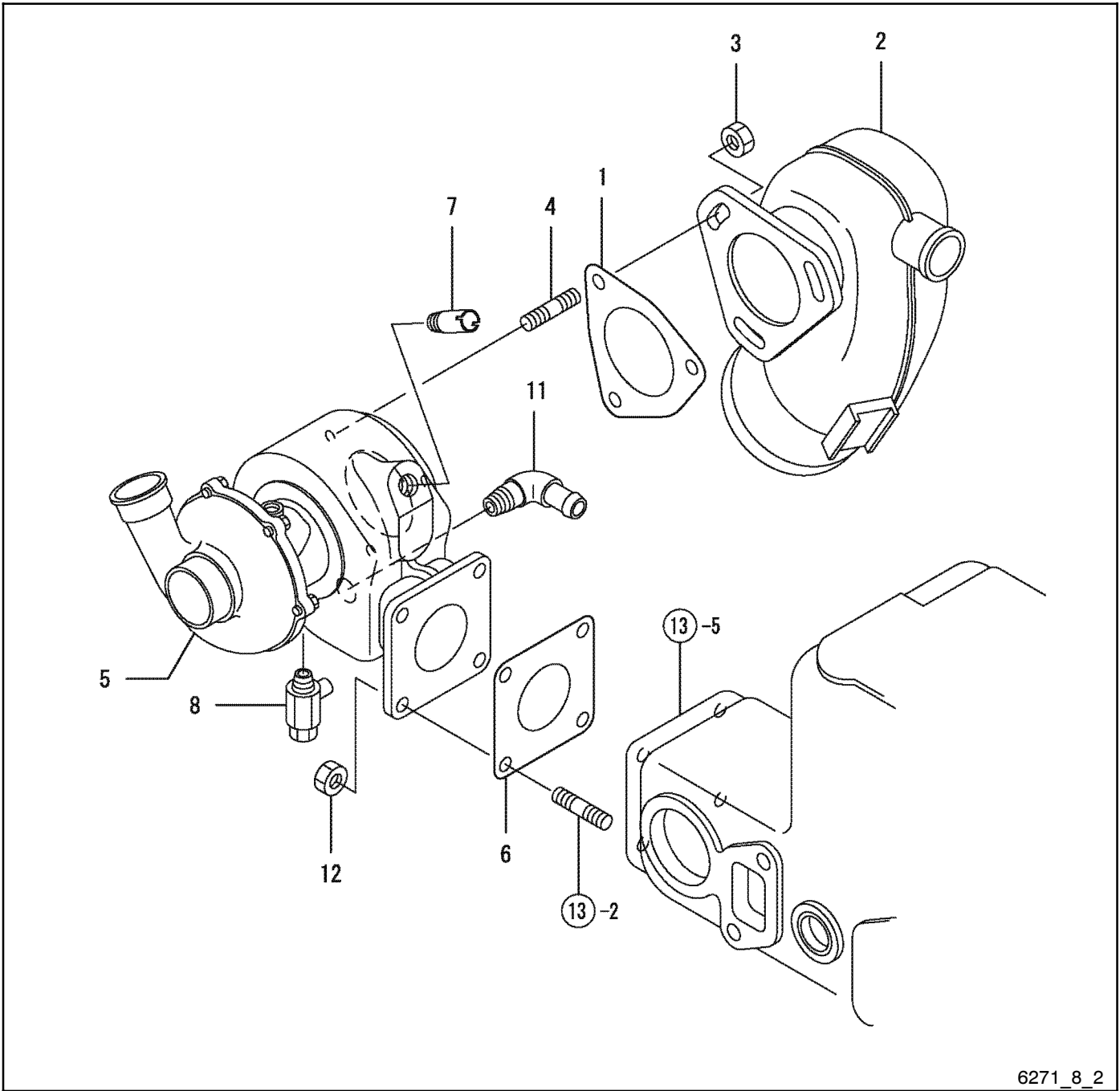
DESCRIPTION	Q' TY	DESCRIPTION	Q' TY
SCREW (M3)	2	BEARING, THRUST	1
SEAL RING	1	METAL, FLOATING	2
SEAL RING	1	SEAL RING	1
SCREW (M3)	4	BOLT (M8)	4
WASHER	4	BRACKET	4

6271_8

Item	Part Number	Description	Quantity		Item	Part Number	Description	Quantity	
			2	3				2	3
1	256653	Gasket	1	1	10	X	Housing, bearing	1	1
2	256651	Elbow, mixing	1	1	11	X	Circlip	3	3
3	229509	Nut, M8	3	3	12	229475	Plate assembly, seal	1	1
4	229509	Nut, M8	4	4	13	229311	Overhaul Kit	1	1
5	256579	Stud	3	3	14	229312	Rotor assembly, turbo	1	1
6	229309	Turbocharger assembly (includes items 7-15)	1	1	15	229737	Housing assembly, turbo	1	1
7	256686	Protector, heat	1	1	16	GM13332	Gasket	1	1
8	229473	Housing assembly, blower	1	1	17	252329	Valve	1	1
9	229424	Housing assembly, bearing (includes items 12 and 13)	1	1	17	GM13330	Valve	1	1
					18	229403	Joint	1	1
					19	229317	Joint	1	1

X Item not sold separately

Group 8: Turbocharger, continued

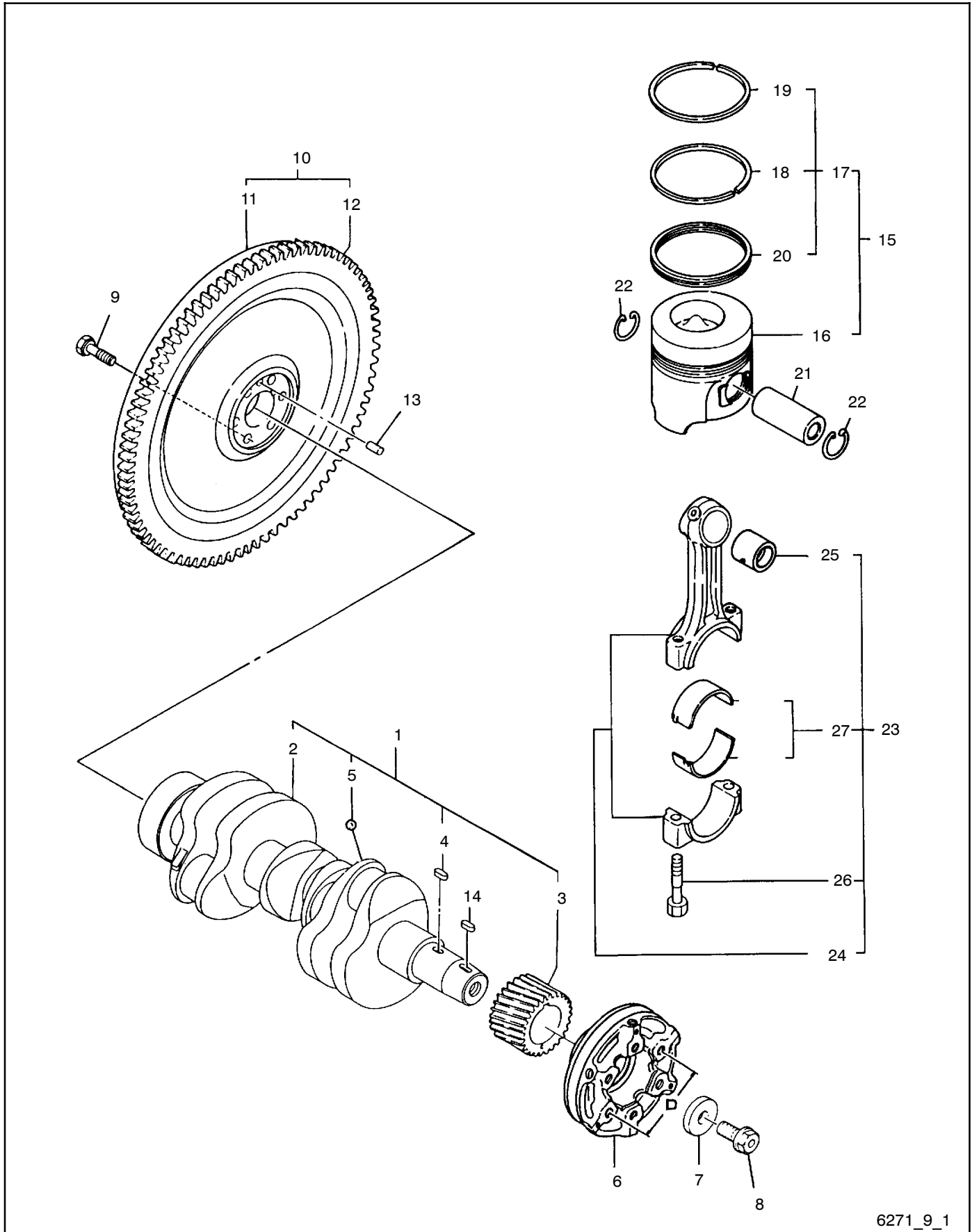


6271_8_2

Item	Part Number	Description	Qty.
			Var. No.
1	256653	Gasket	1
2	256651	Elbow, mixing	1
3	229509	Nut, M8	4
4	256579	Stud	3
5	GM80005	Turbocharger assembly	1
6	GM13332	Gasket	1
7	GM13330	Valve	1
8	229403	Joint	1

Notes

Group 9: Crankshaft and Flywheel



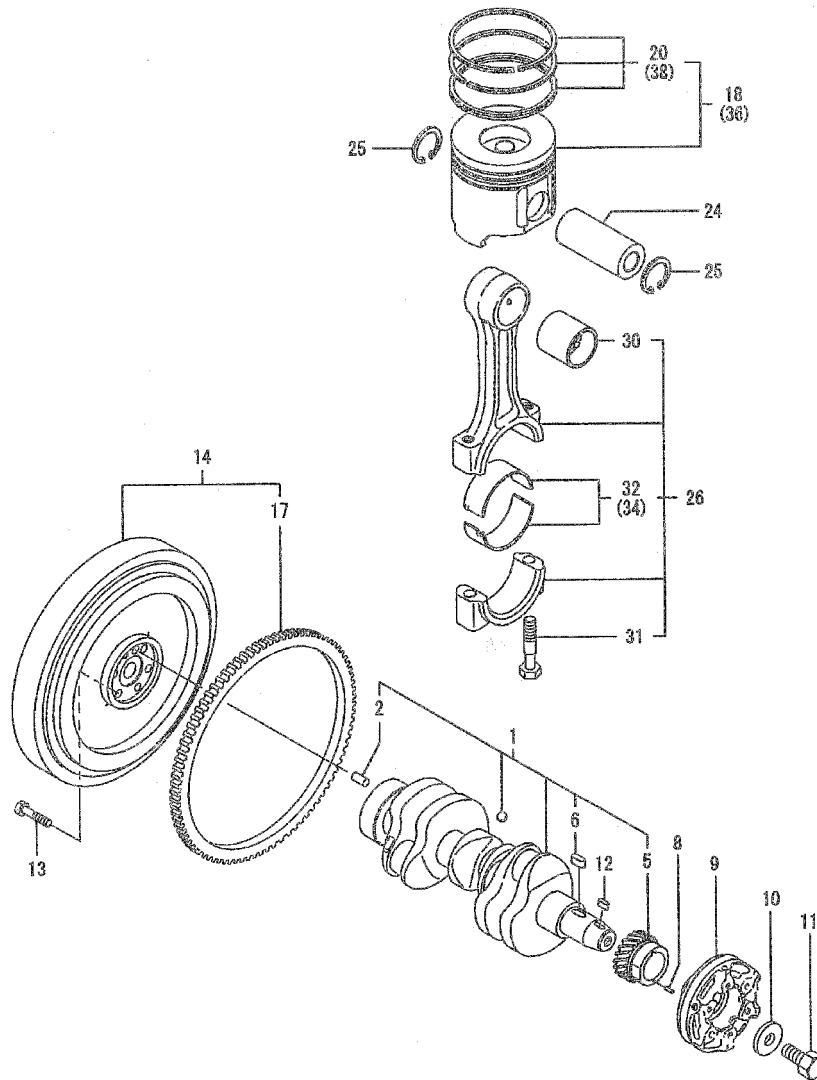
6271_9_1

Group 9: Crankshaft and Flywheel

Item	Part Number	Description	Quantity	
			Variation Number 2	Variation Number 3
1	GM13299	Crankshaft assembly (includes items 2-5)	1	1
2	X	Crankshaft	1	1
3	252821	Gear, crankshaft	1	1
4	252669	Key	1	1
5	X	Ball, steel	3	3
6	229730	V-pulley	1	1
7	252937	Washer	1	1
8	252763	Bolt, V-pulley	1	1
9	252401	Bolt, flywheel	6	6
10	229116	Flywheel assembly (includes items 12 and 13)	1	1
11	X	Flywheel	1	1
12	252774	Gear, ring	1	1
13	256750	Parallel pin 8 x 16	1	1
14	229749	Key 7 x 16	1	1
15	GM13300	Piston w/rings (includes items 16 and 17)	3	
15	363437	Piston w/rings (includes items 16 and 17)		3
15	GM13302	Piston w/rings oversized 0.25 (includes items 16 and 17)	3	
15	363438	Piston w/rings oversized 0.25 (includes items 16 and 17)		3
16	X	Piston	3	3
17	GM13301	Ring Set (includes items 18-20)	3	
17	363439	Ring Set (includes items 18-20)		3
17	GM13303	Ring Set oversized 0.25 (includes items 18-20)	3	
17	GM13305	Ring Set oversized 0.25 (includes items 18-20)		3
18	X	Ring, second	3	3
19	X	Ring, top	3	3
20	X	Ring, oil	3	3
21	363440	Pin, piston	3	3
22	363441	Circlip	8	8
23	252980	Rod assembly, connecting (includes items 24-27)	3	3
24	X	Rod, connecting	3	3
25	252781	Bush, piston pin	3	3
26	250889	Bolt, connecting rod	6	6
27	252979	Bearing, crankpin	3	3
27	256588	Bearing, pin undersized 0.25	3	3

X Item not sold separately

Group 9: Crankshaft and Flywheel, continued

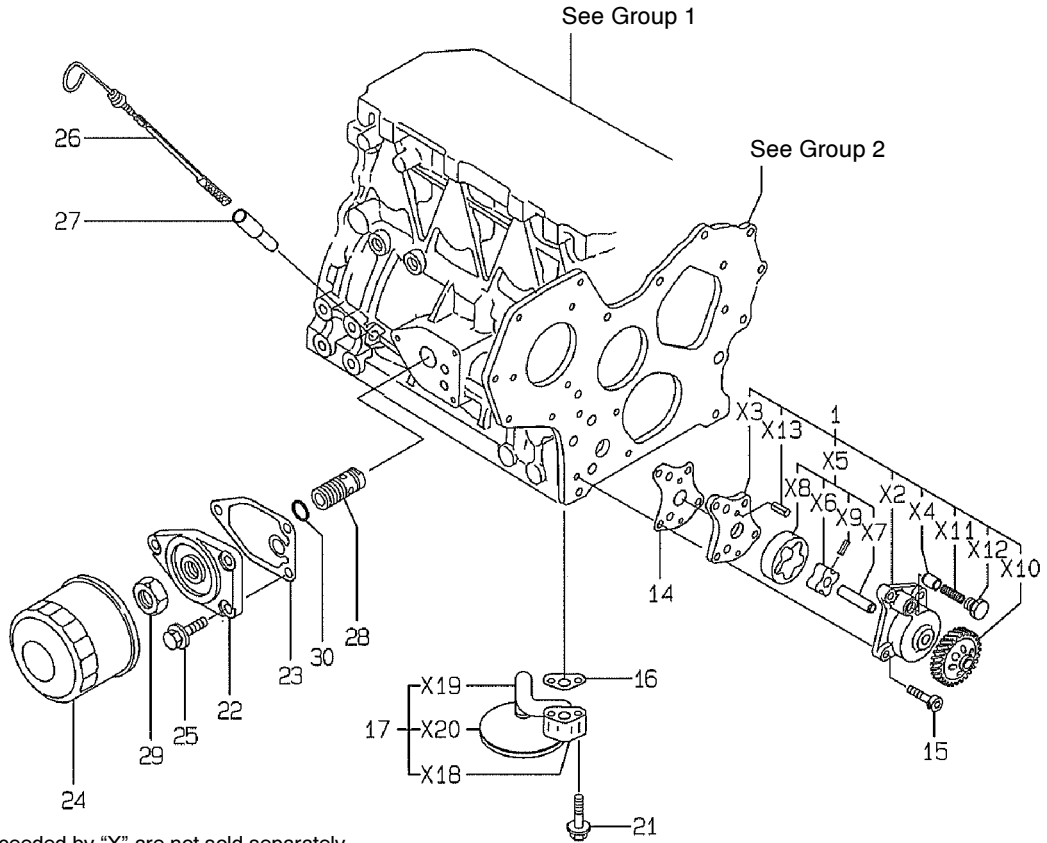


6271_9_2

Item	Part Number	Description	Quantity			
			Variation No.			
			4	5	6	7
1	GM35536	Crankshaft assembly	1	1		1
1	GM79998	Crankshaft assembly			1	
2	256750	Parallel pin 8 x 16	1	1	1	1
5	GM35455	Gear, crankshaft	1	1		1
5	GM69327	Gear, crankshaft			1	
6	252669	Key 7 x 14	1	1	1	1
8	256654	Spring pin	1	1	1	1
9	229730	V-pulley	1	1	1	1
10	252937	Washer	1	1	1	1
11	252763	Bolt, V-pulley	1	1	1	1
12	229749	Key, 7 x 16	1	1	1	1
13	252401	Bolt, flywheel	6	6	6	6
14	229116	Flywheel	1	1	1	1
17	252774	Gear, ring	1	1	1	1
18	GM35537	Piston w/ring		3		
18	GM35545	Piston w/ring	3			
18	GM69332	Piston w/ring			3	
18	GM46217	Piston w/ring				3

Item	Part Number	Description	Quantity			
			Variation No.			
			4	5	6	7
20	GM46218	Ring set		3		3
20	GM35546	Ring set	3		3	
24	363440	Pin, piston	3	3	3	3
25	363441	Clip 26	6	6	6	6
26	252980	Rod assembly, connecting	3	3	3	3
30	256580	Bushing, piston pin	3	3	3	3
31	250889	Rod bolt	6	6	6	6
32	252979	Bearing pin	3	3	3	3
34	256588	Pin, bearing US=0.25	3	3	3	3
36	GM35539	Piston w/ring OS=0.25		3		
36	GM35547	Piston w/ring OS=0.25	3			
36	GM69333	Piston w/ring OS=0.25			3	
36	GM46219	Piston w/ring OS=0.25				3
38	GM35540	Ring set OS=0.25		3		
38	GM35548	Ring set OS=0.25	3			
38	GM46220	Ring set OS=0.25				3

Group 10: Lube Oil System



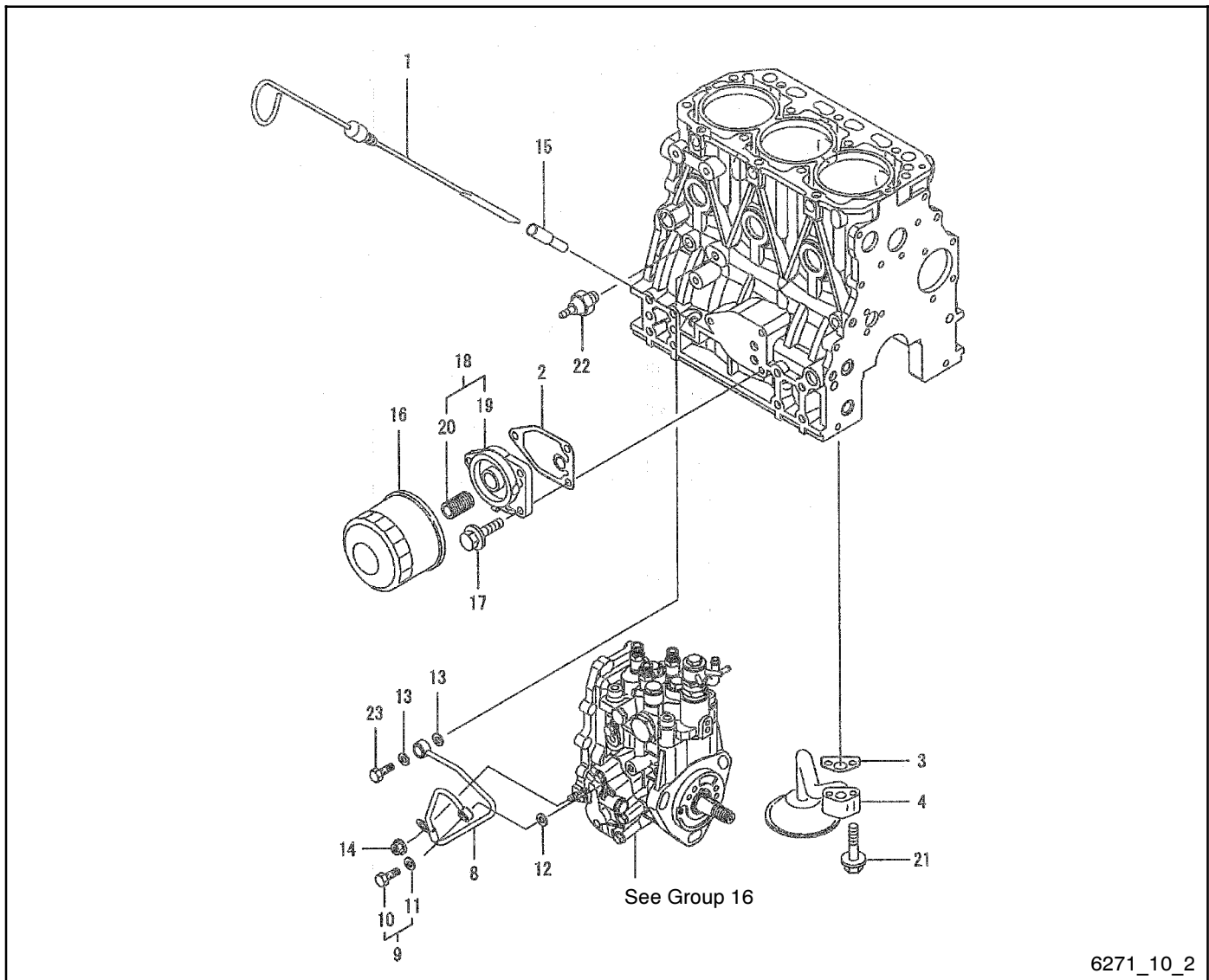
Item numbers preceded by "X" are not sold separately.

6271_10_1

Item	Part Number	Description	Quantity
			Variation Number
1	225412	Pump, lube oil	1
2	X	Body	1
3	X	Cover	1
4	X	Valve	1
5	X	Rotor	1
6	X	Rotor	1
7	X	Shaft	1
8	X	Rotor	1
9	X	Pin	1
10	X	Gear	1
11	X	Spring	1
12	X	Plug	1
13	X	Spring	1
14	252829	Gasket, lub. oil pump	1
15	252724	Bolt, M6 x 25	4
16	225775	Gasket	1
17	252831	Pipe assembly, oil inlet (includes items 6-8)	1
18	X	Cap	1
19	X	Pipe	1
20	X	Flange	1
21	252701	Bolt, M8 x 35 plated	2
22	256591	Bracket, strainer	1
23	225776	Gasket	1
24	GM47465	Filter, oil	1
25	252697	Bolt, M8 x 20 plated	3
26	252951	Dipstick	1
27	252759	Guide, dipstick	1
28	225413	Bolt, lube oil strainer	1
29	252835	Nut	1
30	250981	O-ring	1

X Item not sold separately

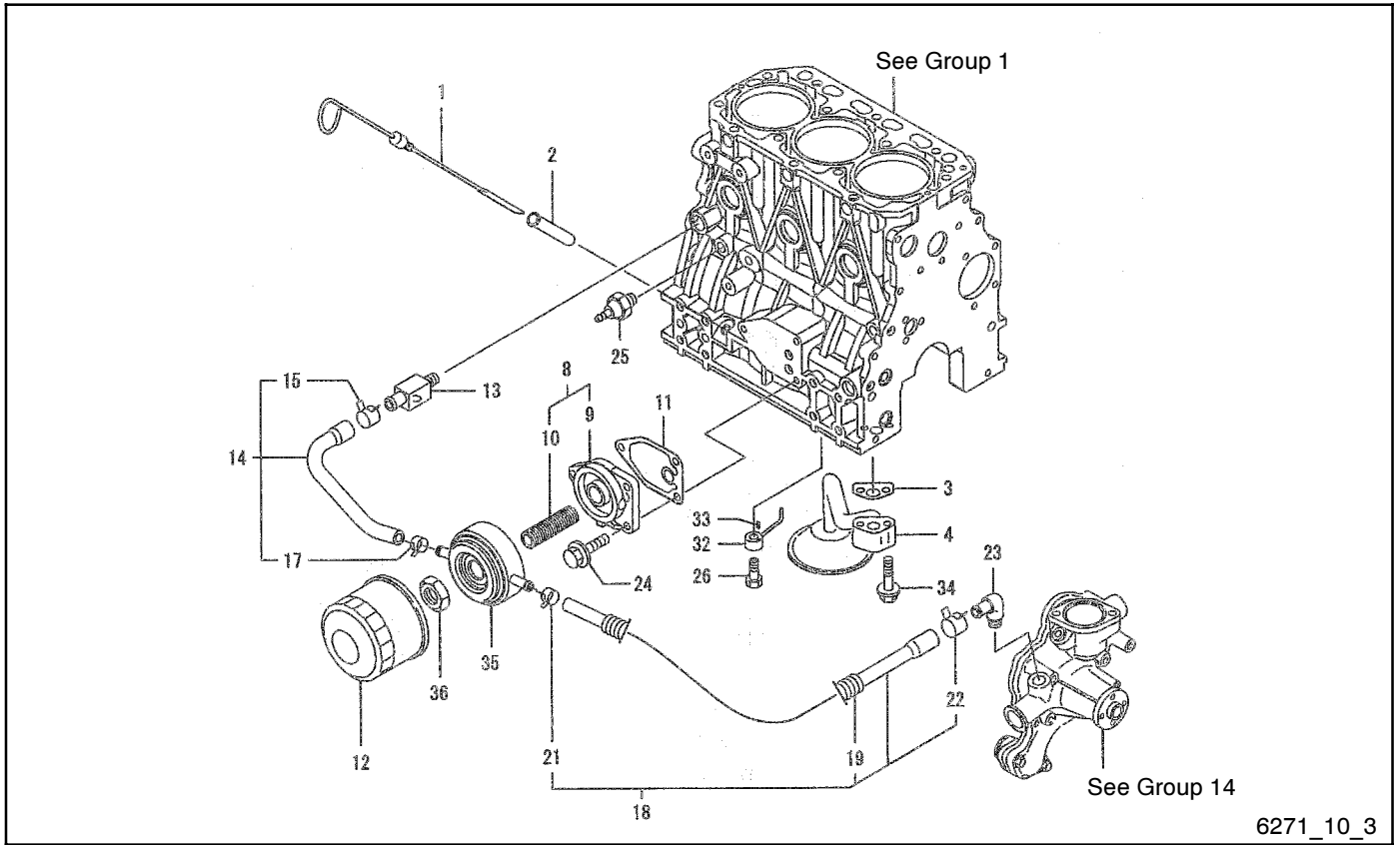
Group 10: Lube Oil System, continued



6271_10_2

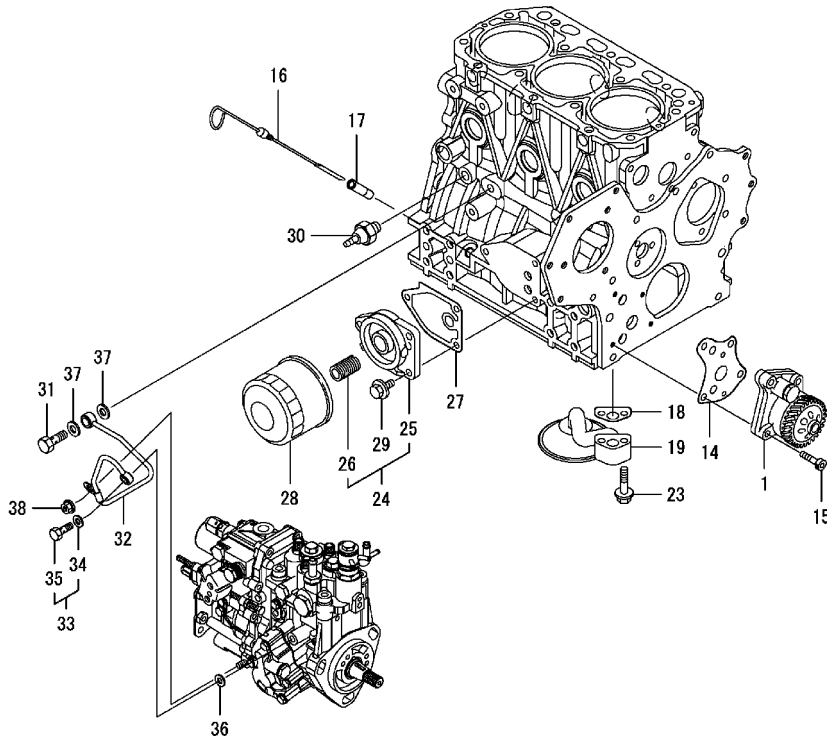
Item	Part Number	Description	Quantity
			Variation Number
			3
1	252951	Dipstick, lube oil	1
2	225776	Gasket	1
3	225775	Gasket	1
4	252831	Pipe, oil inlet	1
8	GM35471	Pipe assembly, oil	1
9	GM35550	Bolt assembly, joint	1
10	252677	Joint bolt	1
11	252734	Washer, seal	1
12	252734	Washer, seal	1
13	363452	Washer, seal	2
14	250989	Nut, M6	1
15	252759	Guide, dipstick	1
16	GM47465	Filter, oil	1
17	252697	Bolt	3
18	GM35469	Bracket assembly, filter	1
19	GM35470	Bracket, filter	1
20	256582	Stud	1
21	252701	Bolt, M8 x 35	2
22	GM35419	Switch, oil pressure	1
23	252084	Bolt	1

Group 10: Lube Oil System, continued



Item	Part Number	Description	Quantity
			Variation Number
1	252951	Dipstick, lube oil	1
2	252759	Guide, dipstick	1
3	225775	Gasket	1
4	252831	Pipe, oil inlet	1
8	GM35556	Bracket assembly, filter	1
9	GM35470	Bracket, filter	1
10	GM35577	Stud	1
11	225776	Gasket	1
12	GM47465	Filter, oil	1
13	GM35557	Joint	1
14	GM35612	Pipe, cooler	1
15	GM35713	Clamp	1
17	GM35716	Clamp	1
18	GM35558	Pipe, cooler	1
19	GM35514	Protector, pipe	1
21	GM35716	Clamp	1
22	GM35717	Clamp	1
23	GM35562	Elbow	1
24	252697	Bolt	3
25	GM35419	Switch, oil pressure	1
26	GM35648	Valve assembly, check	3
32	256649	Nozzle	3
33	256654	Spring pin	3
34	252701	Bolt, M8 x 35	2
35	GM35611	Cooler assembly, oil	1
36	GM35576	Nut, oil cooler	1

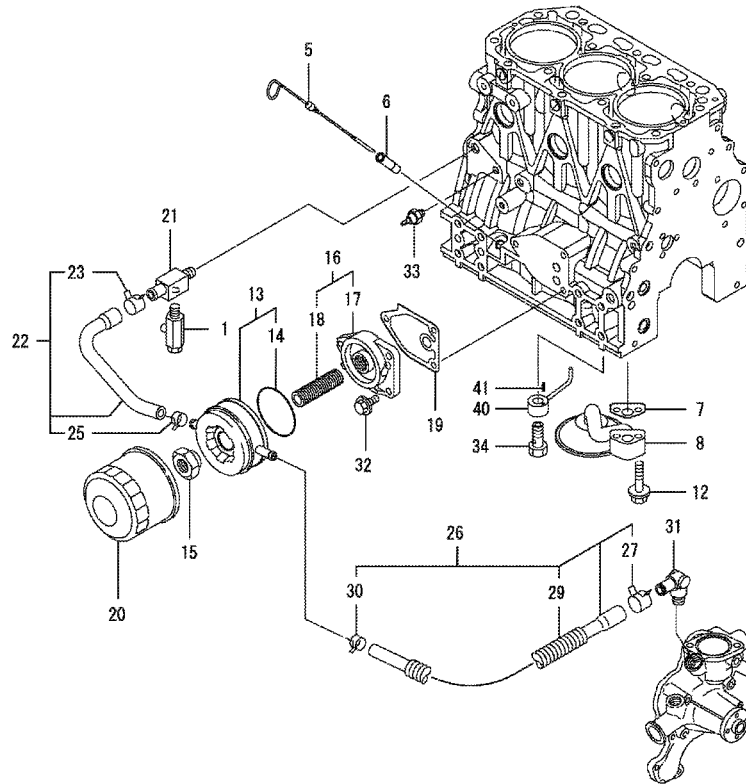
Group 10: Lube Oil System, continued



6271_10_4

Item	Part Number	Description	Quantity
			Variation Number
			5
1	225412	Oil pump assembly	1
14	252829	Gasket	1
15	252724	Bolt	4
16	252951	Dipstick, lube oil	1
17	252759	Guide, dipstick	1
18	GM46221	Gasket	1
19	252831	Pipe, oil inlet	1
23	252701	Bolt, M8 x 35	2
24	GM35469	Bracket assembly, filter	1
25	GM35470	Bracket, filter	1
26	256582	Stud	1
27	225776	Gasket	1
28	GM47465	Filter, oil	1
29	252697	Bolt	3
30	GM35419	Switch, oil pressure	1
31	252084	Bolt	1
32	GM35471	Pipe assembly, oil	1
33	GM35550	Bolt assembly, joint	1
34	252734	Washer 8, seal	1
35	252677	Joint bolt 3	1
36	252734	Washer 8, seal	1
37	363452	Washer, seal 10S	2
38	250989	Nut, M6	1

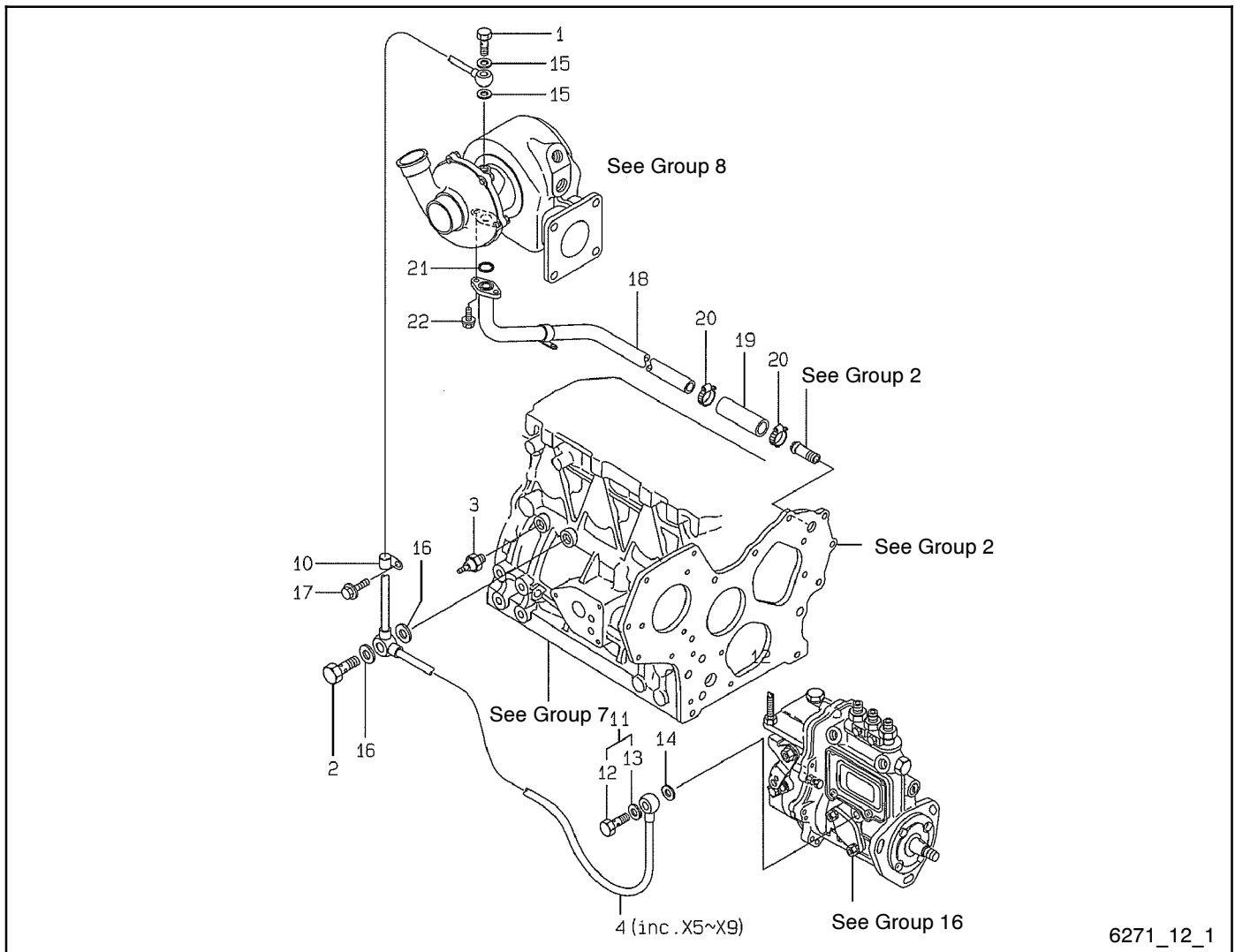
Group 10: Lube Oil System, continued



6271_10_5

Item	Part Number	Description	Quantity
			Variation Number
			6
1	252394	Valve with drain	1
5	252951	Dipstick, lube oil	1
6	252759	Guide, dipstick	1
7	GM46221	Gasket	1
8	252831	Pipe, oil inlet	1
12	252701	Bolt, m8 x 35	2
13	GM35611	Cooler assembly, oil	1
14	GM42700	O-ring	1
15	GM35576	Nut oil cooler	1
16	GM35556	Bracket assembly, filter	1
17	GM35470	Bracket, filter	1
18	GM35577	Stud	1
19	225776	Gasket	1
20	GM47465	Filter, oil	1
21	GM35557	Joint	1
22	GM35612	Pipe, cooler	1
23	GM35713	Clamp	1
25	GM35716	Clamp	1
26	GM35558	Pipe, cooler	1
27	GM35713	Clamp	1
29	GM46222	Protector, pipe	1
30	GM35716	Clamp	1
31	GM52192	Elbow PT3/8	1
32	252697	Bolt	3
33	GM35419	Switch, oil pressure	1
34	GM35648	Valve assembly, check	3
40	256649	Nozzle	3
41	256654	Spring pin	3

Group 12: Lube Oil Line

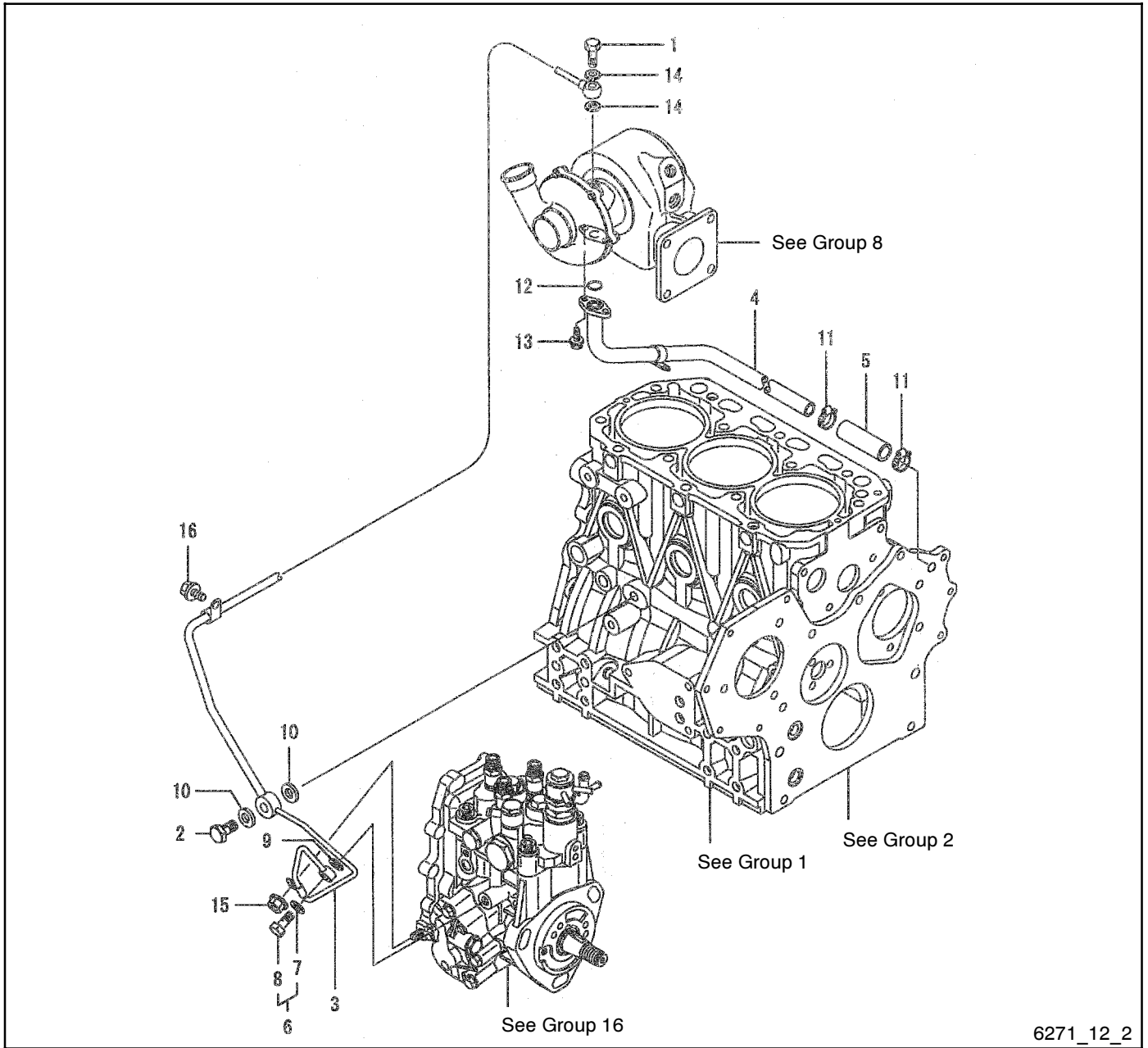


6271_12_1

Item	Part Number	Description	Quantity		Item	Part Number	Description	Quantity	
			2	3				2	3
1	256568	Bolt, pipe joint		1	12	252090	Bolt 8, pipe joint	1	1
2	252084	Bolt, joint 10	1	1	13	252734	Seal washer 8	1	1
3	256530	Switch, oil pressure	1	1	14	252734	Seal washer 8	1	1
4	GM13306	Pipe, lube oil		1	15	250967	Gasket 8, round		2
4	256773	Pipe, lube oil	1		16	250968	Gasket 10, round	2	2
5	X	Joint	1	1	17	252694	Bolt, M8 x 10 plated		1
6	X	Joint	1	1	18	229731	Pipe, return		1
7	X	Pipe	1	1	19	229735	Joint rubber		1
8	X	Pipe, lube oil		1	20	229490	Clamp 22		2
9	X	Joint		1	21	256660	O-ring		1
10	229865	Retainer		1	22	252693	Bolt, M6 x 16 plated		2
11	GM13295	Bolt with seal washer		1					

X Item not sold separately

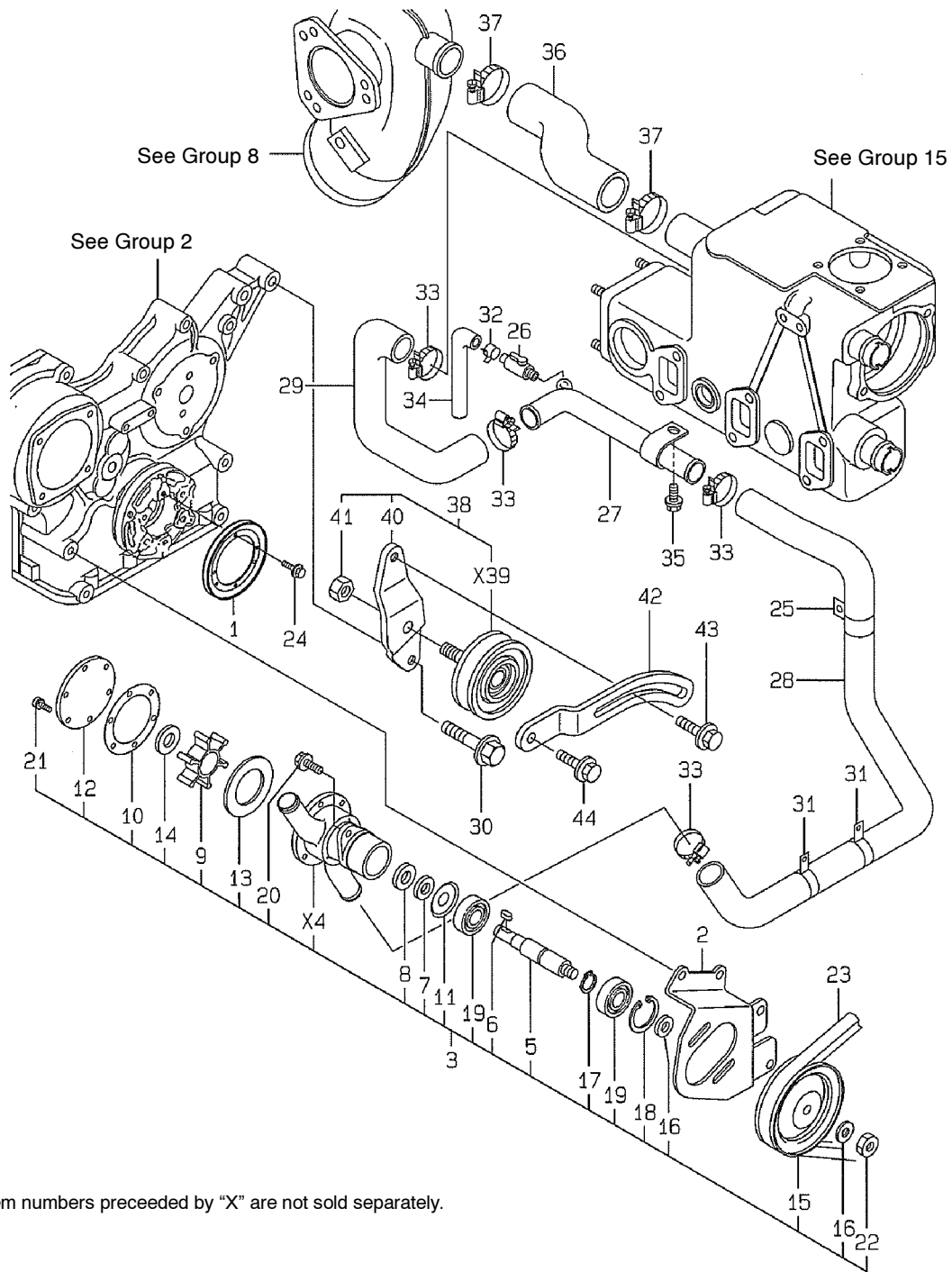
Group 12: Lube Oil Line



6271_12_2

Item	Part Number	Description	Qty.		Item	Part Number	Description	Qty.	
			4	5				4	5
1	256568	Bolt, pipe joint	1	1	9	252734	Washer 8, seal	1	1
2	252084	Bolt, joint M10	1	1	10	363452	Washer, seal	2	2
3	GM35559	Pipe assembly, oil	1	1	11	229490	Clamp 22	2	2
4	229731	Pipe, return	1	1	12	256660	O-ring	1	
5	229735	Joint, rubber	1	1	12	GM46225	O-ring		1
6	GM35550	Bolt assembly, joint	1	1	13	252693	Bolt, M6 x 16	2	2
7	252734	Washer 8, seal	1	1	14	250967	Gasket 8, round	2	2
8	252677	Joint bolt	1	1	15	250989	Nut, M6	1	1
					16	252695	Bolt, M8 x 12	1	1

Group 13: Cooling Seawater System



Item numbers preceded by "X" are not sold separately.

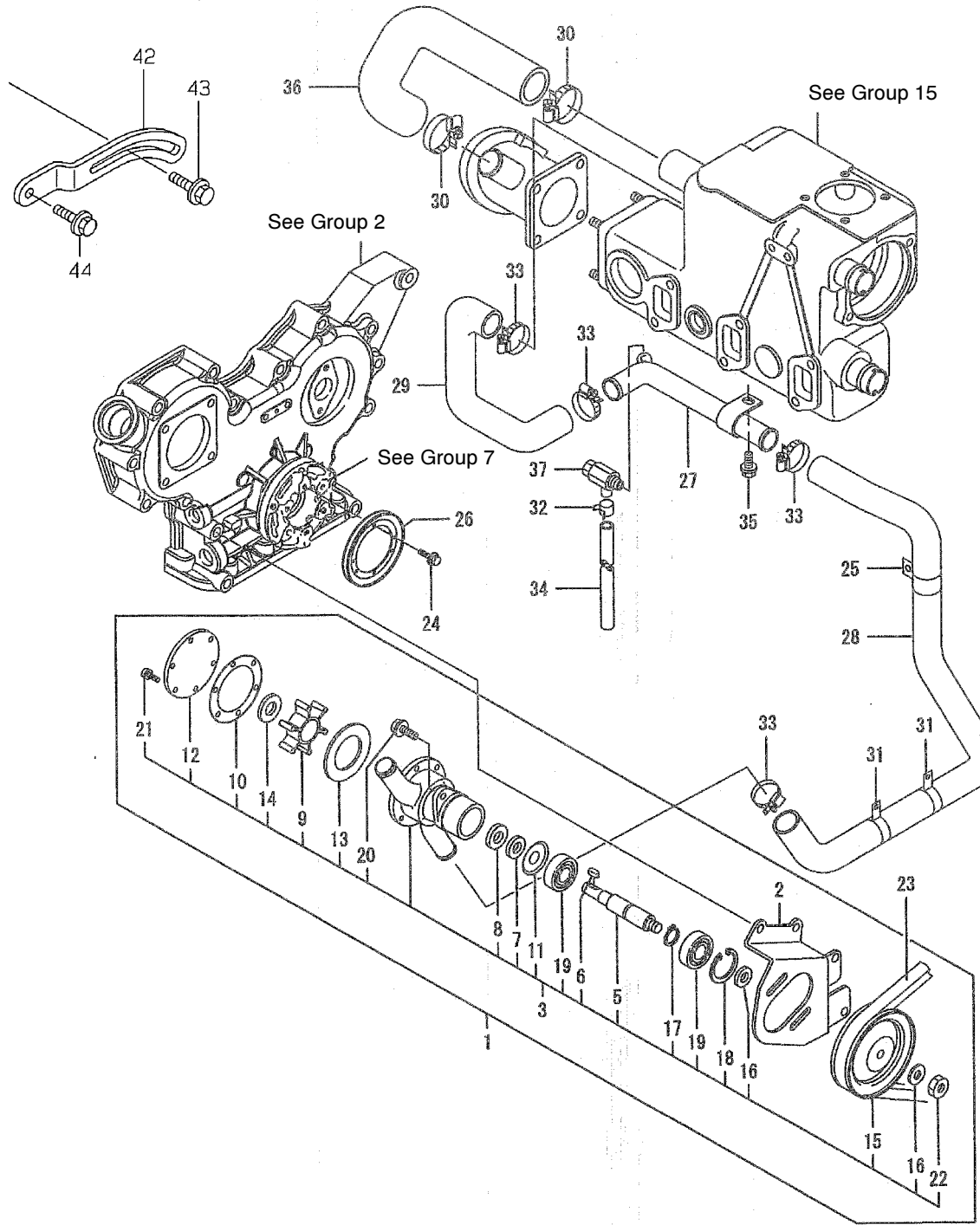
Group 13: Cooling Seawater System

Item	Part Number	Description	Quantity	
			Variation Number 2	Variation Number 3
1	229306	V-pulley	1	1
2	229313	Bracket	1	1
3	256504	Pump assembly, cooling water (Replace with Kit GM59333, Group 104)	1	1
4	X	Body	1	1
5	252437	Shaft, pump*	1	1
6	252473	Key, feather*	1	1
7	252474	Washer, water drip*	1	1
8	250871	Seal, oil*	1	1
9	250872	Impeller* (Impeller kit 229955 includes impeller and item 10)	1	1
10	252475	Gasket*	1	1
11	252438	Cover, bearing*	1	1
12	252439	Cover	1	1
13	229324	Plate*	1	1
14	252690	Seal, oil*	1	1
15	252464	V-pulley, C.W. pump	1	1
16	252466	Washer*	2	2
17	252346	Circlip*	1	1
18	252348	Circlip*	1	1
19	252364	Ball bearing*	2	2
20	229496	Bolt, M8 x 16	2	2
21	229504	Bolt, M4 x 8	6	6
22	229506	Nut, M8	1	1
23	256503	V-belt	1	1
24	229497	Bolt, M6 x 8 plated	3	3
25	229307	Retainer	1	1
26	252329	Petcock PT 1/8	1	1
27	GM13307	Pipe, cooling water	1	1
28	229318	Pipe, cooling water	1	1
29	252902	Pipe, cooling water	1	1
30	229503	Bolt, M10 x 35 plated	1	1
31	229327	Retainer	2	2
32	229409	Clamp	1	1
33	229491	Clamp 35	4	4
34	252350	Pipe	1	1
35	252696	Bolt, M8 x 16 plated	1	1
36	256614	Pipe, cooling water		1
36	252903	Pipe, cooling water	1	
37	229491	Clamp 35	2	2
38	229484	Pulley assembly, tension (includes items 39-41)	1	1
39	X	Pulley	1	1
40	229485	Bracket, pulley	1	1
41	229510	Nut, M10	1	1
42	229426	Adjuster, V-belt	1	1
43	252692	Bolt, M8 x 25	1	1
44	229499	Bolt, M8 x 18 plated	1	1

X Item not sold separately

* Seawater pump repair kit GM28669 includes items 5-11, 13, 14, and 16-19.

Group 13: Cooling Seawater System, continued



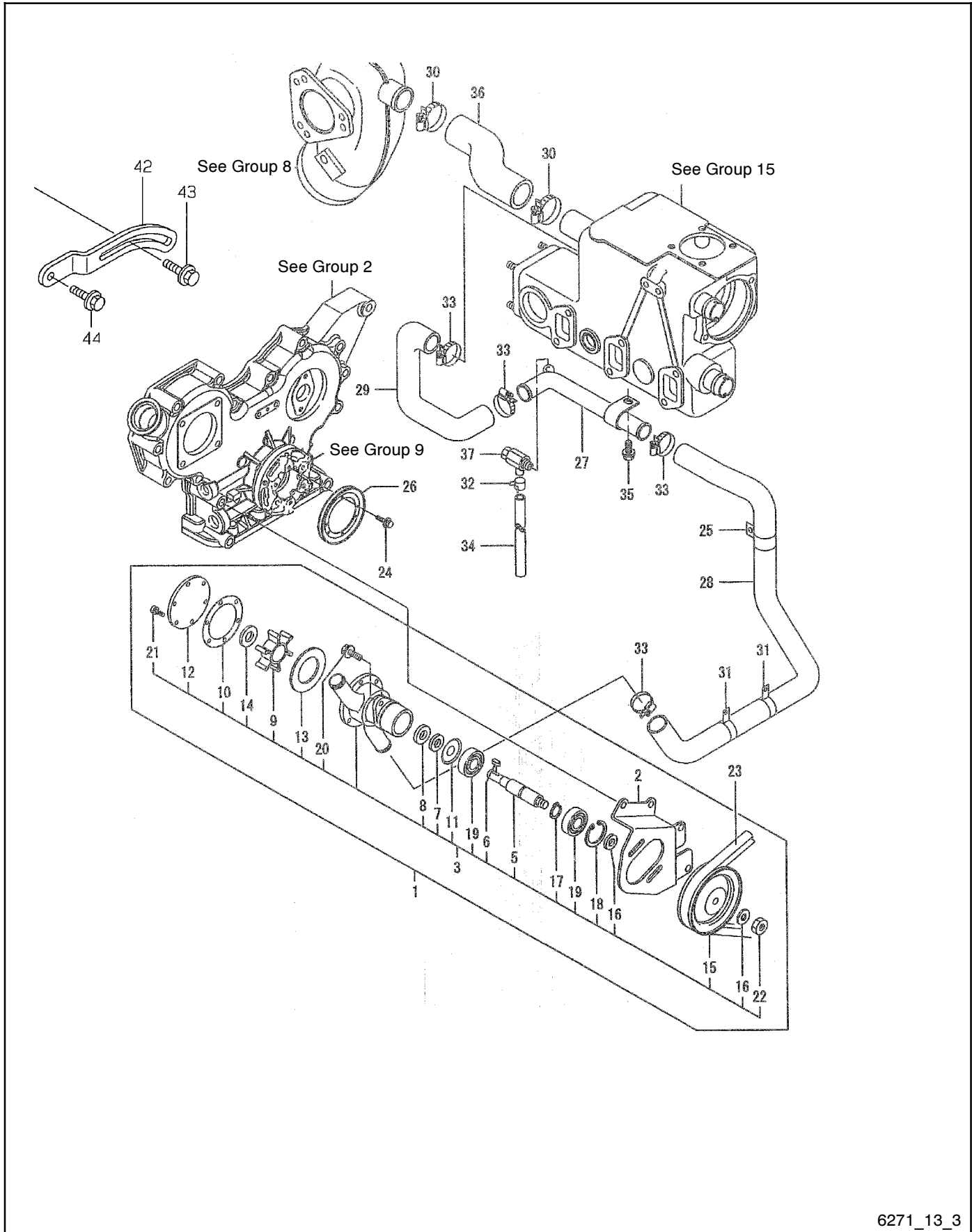
6271_13_2

Group 13: Cooling Seawater System, continued

Item	Part Number	Description	Quantity			
			Variation Number			
			4	6	8	9
1	GM35638	Pump assembly, water (Repace with Kit GM59333, Group 104)	1	1		
1	-	Pump assembly, water (See Group 104)			1	1
2	GM35637	Bracket, water pump	1	1		
3	GM35622	Pump assembly, water (Repace with Kit GM59333, Group 104)	1	1		
5	GM35496	Shaft, impeller	1	1		
6	252473	Key	1	1		
7	252474	Washer	1	1		
8	250871	Seal	1	1		
9	250872	Impeller (Impeller kit 229955 includes impeller and item 10)	1	1		
10	252475	Gasket	1	1		
11	252438	Retainer	1	1		
12	252439	Cover	1	1		
13	229324	Plate	1	1		
14	GM28580	Seal	1	1		
15	252464	V-pulley	1	1		
16	252466	Washer	2	2		
17	252346	Circlip	1	1		
18	252348	Circlip	1	1		
19	252364	Ball bearing	2	2		
20	229496	Bolt, M8 x 16	2	2		
21	229504	Bolt	6	6		
22	GM35623	Nut, lock	1	1		
23	256503	Belt	1	1	1	1
24	229497	Bolt M6 x 8	4	4	4	4
25	229307	Retainer	1	1		
26	229306	V-pulley	1	1	1	1
27	GM13307	Pipe, cooling water	1	1	1	1
28	229318	Pipe, cooling water	1	1	1	1
29	252902	Pipe	1	1	1	1
30	229491	Clamp 35	2	2	2	2
31	229316	Retainer	2	2	2	2
32	229409	Retainer	1	1	1	1
33	229491	Clamp 35	4	4	4	4
34	252350	Pipe	1	1	1	1
35	252696	Bolt, M8 x 16	1	1		
36	252903	Pipe	1	1	1	1
37	GM13330	Valve assembly	1	1	1	1
42	229426	Adjuster, V-belt	1		1	
42	GM46240	Spacer (not shown)			1	1
42	359554	Adjuster, V-belt (24 V models)		1		1
43	#	Bolt	1	1		
43	GM46241	Bolt, adjuster			1	1
44	252703	Bolt	1	1		
44	-	Bolt (See Group 14)			1	1

Common hardware. Procure locally.

Group 13: Cooling Seawater System, continued

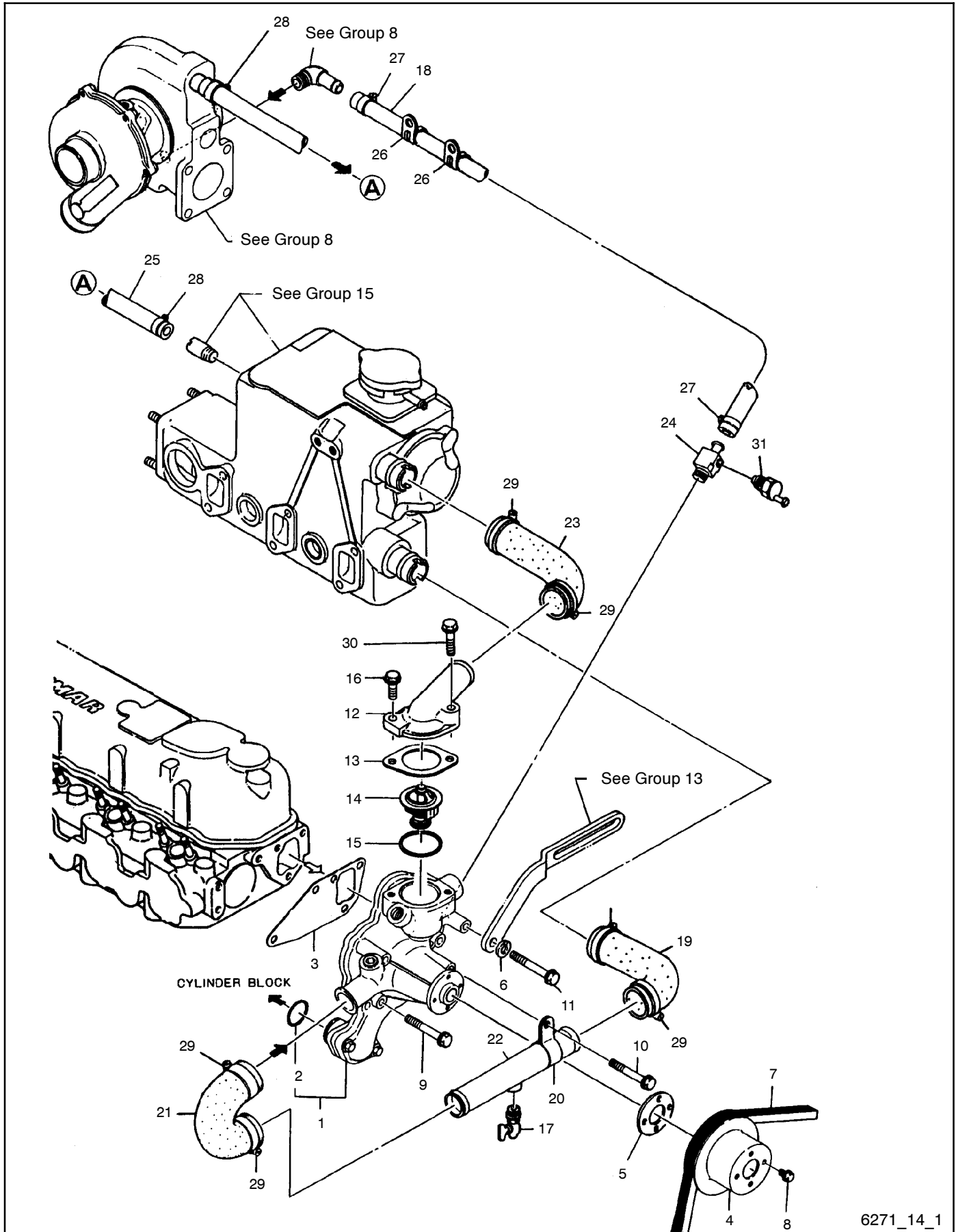


6271_13_3

Group 13: Cooling Seawater System, continued

Item	Part Number	Description	Quantity		
			Variation Number		
			5	7	10
1	GM35638	Pump assembly, water (Replace with Pump Kit GM59333, Group 104)	1	1	
1	-	Pump assembly, water (See Group 104)			1
2	GM35637	Bracket, water pump	1	1	
3	GM35622	Pump assembly, water (Replace with Pump Kit GM59333, Group 104)	1	1	
5	GM35496	Shaft, impeller	1	1	
6	252473	Key	1	1	
7	252474	Washer	1	1	
8	250871	Seal	1	1	
9	250872	Impeller (Impeller kit 229955 includes impeller and item 10)	1	1	
10	252475	Gasket	1	1	
11	252438	Retainer	1	1	
12	252439	Cover	1	1	
13	229324	Plate	1	1	
14	GM28580	Seal	1	1	
15	252464	V-pulley	1	1	
16	252466	Washer	2	2	
17	252346	Circlip	1	1	
18	252348	Circlip	1	1	
19	252364	Ball bearing	2	2	
20	229496	Bolt, M8 x 16	2	2	
21	229504	Bolt	6	6	
22	GM35623	Nut, lock	1	1	
23	256503	Belt	1	1	1
24	229497	Bolt M6 x 8	4	4	4
25	229307	Retainer	1	1	
26	229306	V-pulley	1	1	1
27	GM13307	Pipe, cooling water	1	1	1
28	229318	Pipe, cooling water	1	1	1
29	252902	Pipe	1	1	1
30	229491	Clamp 35	2	2	2
31	229316	Retainer	2	2	2
32	229409	Retainer	1	1	1
33	229491	Clamp 35	4	4	4
34	252350	Pipe	1	1	1
35	252696	Bolt, M8 x 16	1	1	
36	256614	Pipe, cooling water	1	1	1
37	GM13330	Valve assembly	1	1	1
42	229426	Adjuster, V-belt	1		
42	359554	Arm, alternator adjusting (24 V models)		1	1
43	#	Bolt	1	1	1
44	252703	Bolt	1	1	1

Group 14: Cooling Freshwater Pump

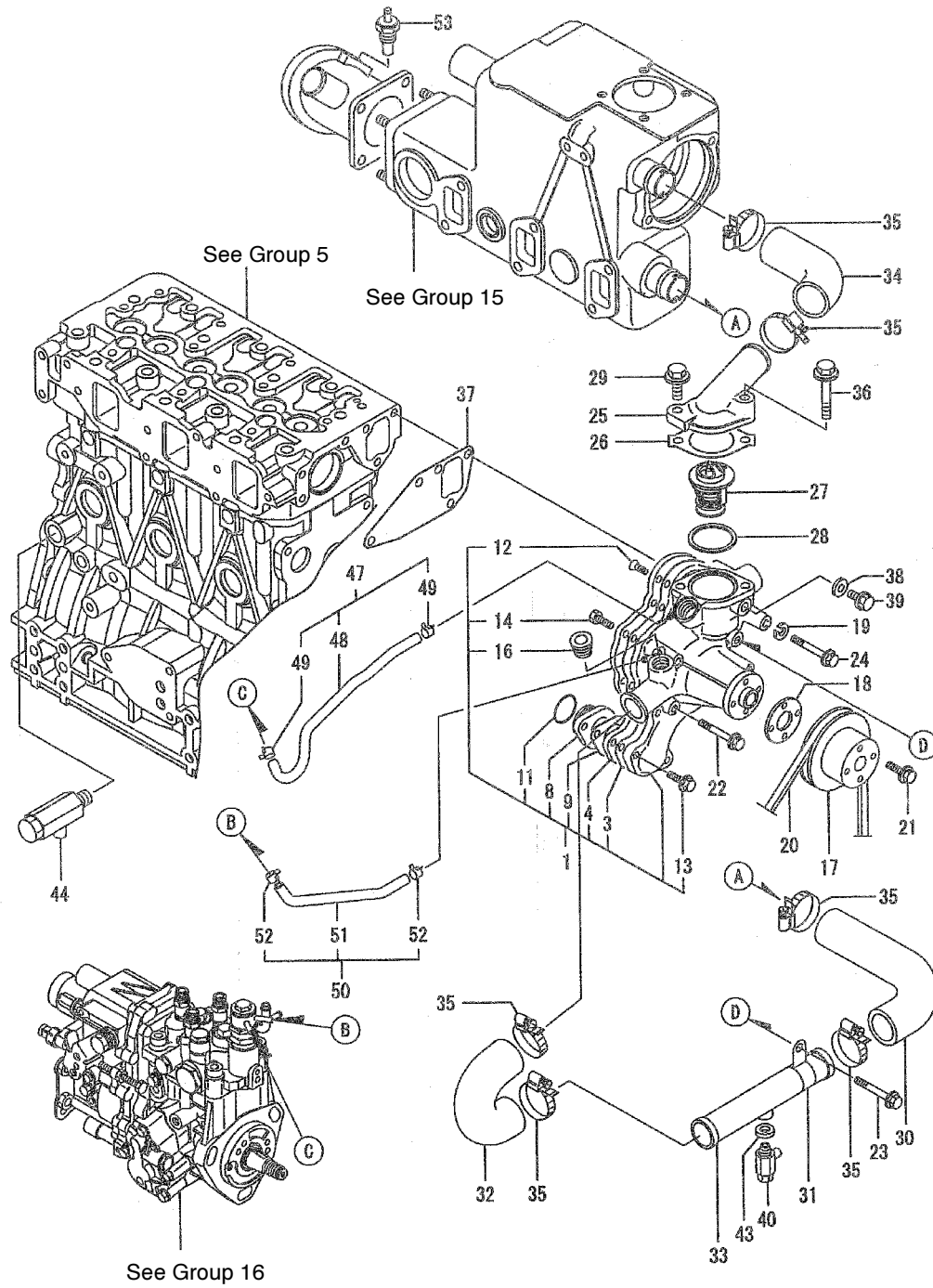


6271_14_1

Group 14: Cooling Freshwater Pump

Item	Part Number	Description	Quantity	
			Variation Number 2	Variation Number 4
1	252879	Pump assembly, cooling pump (includes item 2)	1	1
2	252839	O-ring	1	1
3	252838	Gasket, water pump	1	1
4	252920	V-pulley	1	1
5	252858	Washer	1	1
6	229487	Spring washer	1	1
7	GM11551	Alternator V-belt	1	1
8	229498	Bolt, M6 x 10 plated	4	4
9	256798	Bolt, M8 x 55 plated	2	2
10	256798	Bolt, M8 x 55 plated	1	1
11	252706	Bolt, M8 x 65 plated	1	1
12	252895	Cover, thermostat	1	1
13	249865	Gasket	1	1
14	252896	Thermostat	1	1
15	229433	Gasket	1	1
16	252699	Bolt, M8 x 25 plated	1	1
17	252329	Petcock Pt 1/8		1
17	GM13327	Petcock R1/8	1	
18	GM13313	Pipe		1
19	252890	Joint	1	1
20	252891	Retainer	1	1
21	252892	Joint 28	1	1
22	252893	Pipe, cooling water	1	1
23	225315	Joint	1	1
24	249845	Joint		1
25	249838	Hose, rubber		1
26	249846	Clamp, wire harness		2
27	249843	Clamp		2
28	249839	Clamp		2
29	229492	Clamp	6	6
30	252701	Bolt, M8 x 35 plated	1	1
31	—	See Group 105	1	1

Group 14: Cooling Freshwater Pump, continued

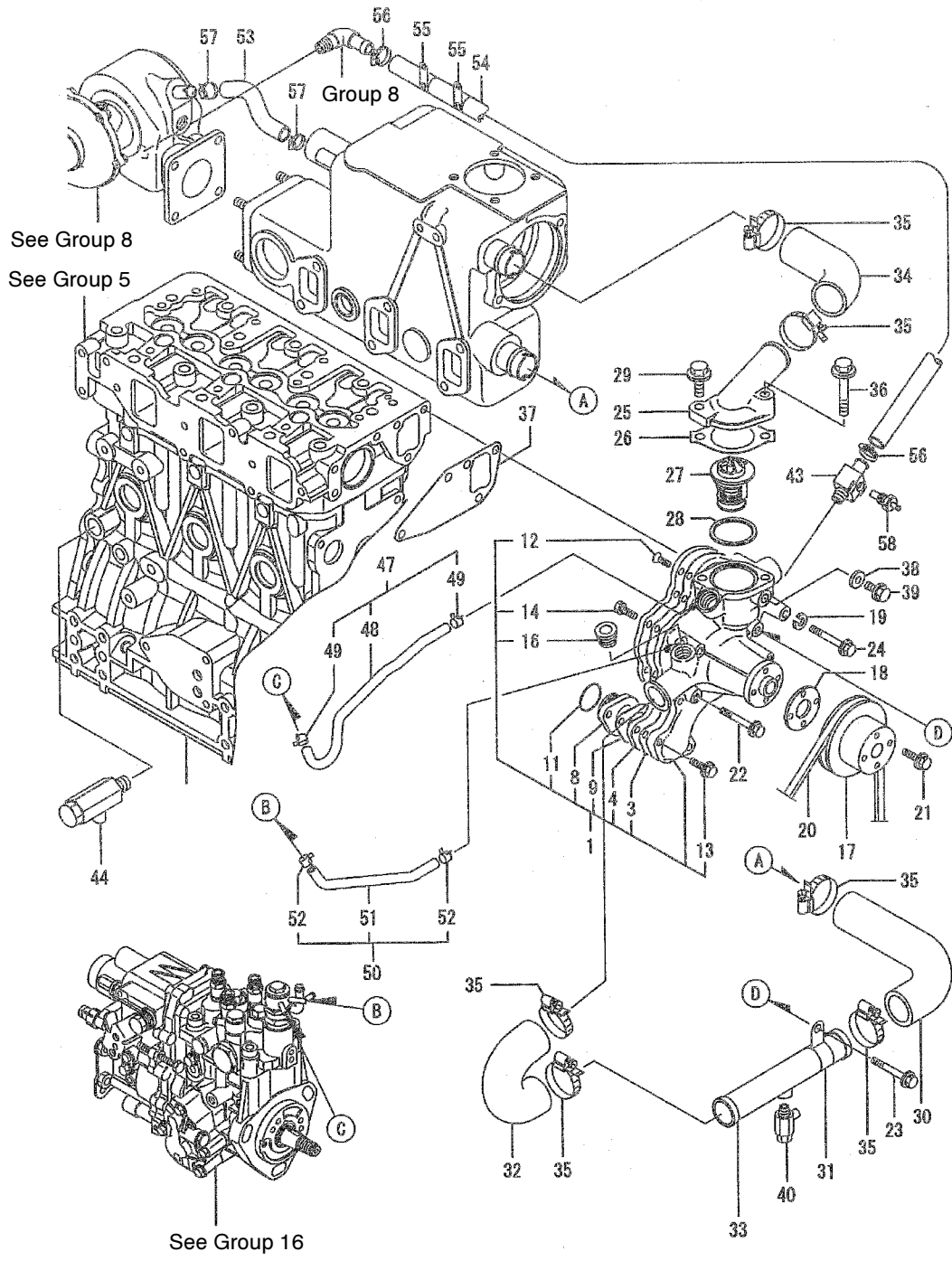


6271_14_2

Group 14: Cooling Freshwater Pump, continued

Item	Part Number	Description	Quantity					
			Variation Number					
			5	6	9	10	11	12
1	GM35568	Pump assembly, water	1	1			1	1
1	GM80006	Pump assembly, water			1	1		
3	GM35563	Packing	1	1	1	1	1	1
4	GM35564	Plate	1	1				
4	GM69336	Plate			1	1	1	1
8	GM35565	Pipe, water pump	1	1	1	1	1	1
9	GM35566	Packing	1	1				
9	GM69346	O-ring			1	1	1	1
11	GM35561	O-ring	1	1	1	1	1	1
12	GM35733	Screw, M6 x 15	3	3	3	3		
12	GM79999	Screw, M6 x 16					3	3
13	225817	Bolt, M6 x 20	2	2	2	2	2	2
14	252709	Bolt	3	3	3	3	3	3
16	GM35704	Plug, drain	2	2	2	2	2	2
17	252920	V-pulley	1	1	1	1	1	1
18	252858	Washer	1	1	1	1	1	1
19	229487	Washer, spring	1	1	1	1	1	1
20	GM11551	V-belt	1		1		1	
20	344829	V-belt, (24 V models)		1		1		1
21	229498	Bolt, M6 x 10 plated	4	4	4	4	4	4
22	256798	Bolt, M8 x 55 plated	2	2			2	2
22	363206	Bolt, M6 X 55			2	2		
23	256798	Bolt, M8 x 55 plated	1	1			1	1
22	363206	Bolt, M6 X 55			1	1		
24	252706	Bolt	1	1			1	1
24	229766	Bolt, M6 X 65			1	1		
25	252895	Cover, thermostat	1	1	1	1	1	1
26	249865	Gasket	1	1	1	1	1	1
27	GM34387	Thermostat	1	1	1	1	1	1
28	229433	Gasket	1	1	1	1	1	1
29	252699	Bolt, M8 x 25 plated	1	1	1	1	1	1
30	252890	Joint	1	1	1	1	1	1
31	252891	Clamp	1	1	1	1	1	1
32	252892	Joint 28	1	1	1	1	1	1
33	252893	Pipe	1	1	1	1	1	1
34	225315	Joint	1	1	1	1	1	1
35	229492	Clamp	6	6	6	6	6	6
36	252701	Bolt, M8 x 35	1	1	1	1	1	1
37	GM35580	Gasket	1	1	1	1	1	1
38	250967	Gasket 8, round	1	1			1	1
39	252695	Bolt, M8 x 12	1	1			1	1
40	GM13330	Valve assembly	1	1	1	1	1	1
43	GM13333	Washer 8, polished	1	1	1	1	1	1
44	256734	Valve	1	1	1	1	1	1
47	GM35569	Pipe, cooling water	1	1			1	1
48	GM35571	Pipe, cooling water	1	1				
49	229411	Clamp	2	2			2	2
50	GM35570	Pipe, cooling water	1	1			1	1
51	GM35572	Pipe, cooling water	1	1				
52	229411	Clamp	4	4	4	4	2	2
53	252095	Switch	1	1	1	1	1	1

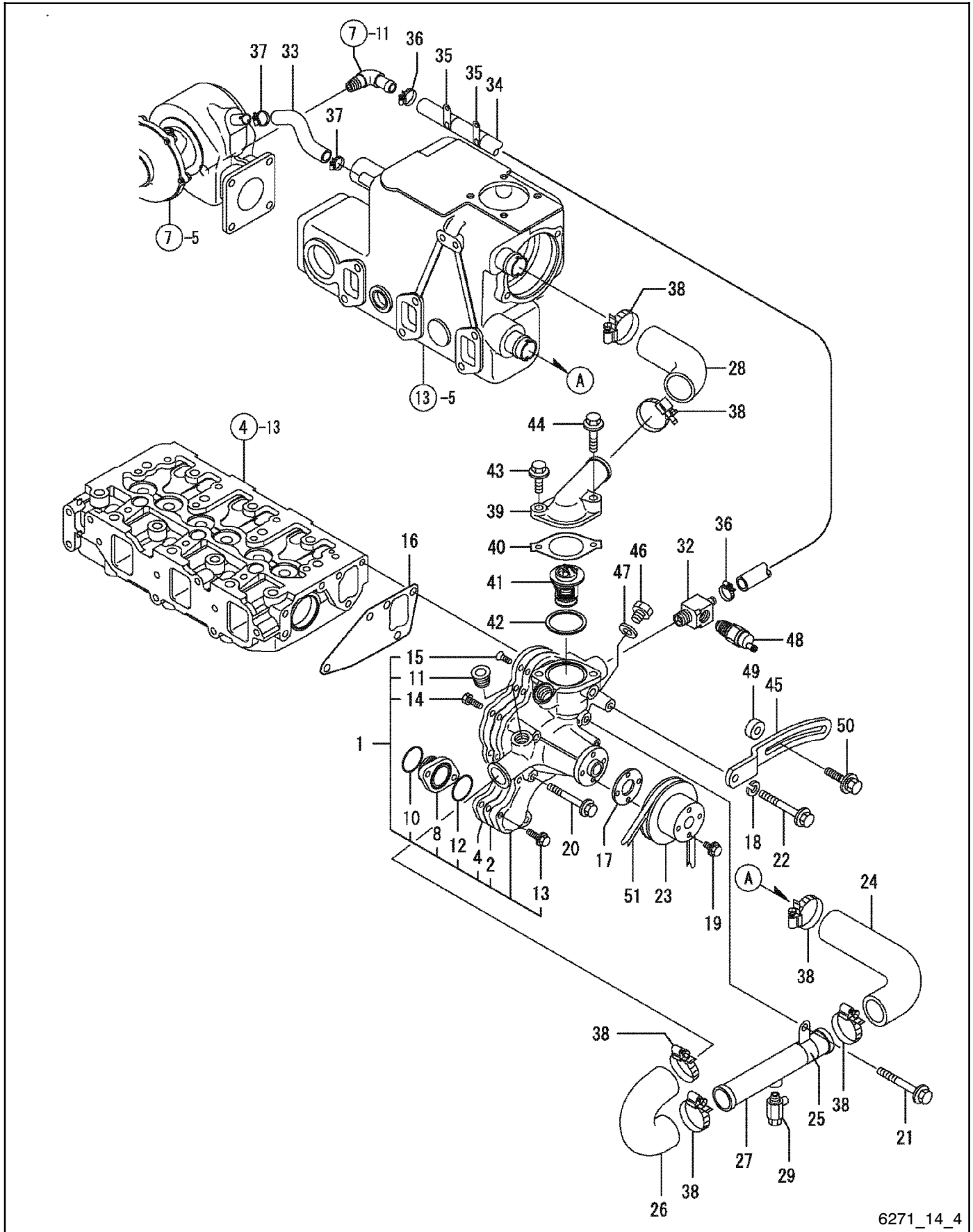
Group 14: Cooling Freshwater Pump, continued



Group 14: Cooling Freshwater Pump, continued

Item	Part Number	Description	Quantity	
			Variation 7	Number 8
1	GM35568	Pump assembly, water	1	1
3	GM35563	Packing	1	1
4	GM35564	Plate	1	1
8	GM35565	Pipe, water pump	1	1
9	GM35566	Packing	1	1
11	GM35561	O-ring	1	1
12	GM35733	Screw, M6 x 15	3	3
13	225817	Bolt, M6 x 20	2	2
14	252709	Bolt	3	3
16	GM35704	Plug, drain	2	2
17	252920	V-pulley	1	1
18	252858	Washer	1	1
19	229487	Washer, spring	1	1
20	GM11551	V-belt	1	
20	344829	V-belt (24 V models)		1
21	229498	Bolt, M6 x 10 plated	4	4
22	256798	Bolt, M8 x 55 plated	2	2
23	256798	Bolt, M8 x 55 plated	1	1
24	252706	Bolt	1	1
25	252895	Cover, thermostat	1	1
26	249865	Gasket	1	1
27	GM34387	Thermostat	1	1
28	229433	Gasket	1	1
29	252699	Bolt, M8 x 25 plated	1	1
30	252890	Joint	1	1
31	252891	Clamp	1	1
32	252892	Joint 28	1	1
33	252893	Pipe	1	1
34	225315	Joint	1	1
35	229492	Clamp	6	6
36	252701	Bolt, M8 x 35	1	1
37	GM35580	Gasket	1	1
38	250967	Gasket 8, round	1	1
39	252695	Bolt, M8 x 12	1	1
40	GM13330	Valve assembly	1	1
43	249845	Tee, pipe	1	1
44	252394	Valve	1	1
47	GM35569	Pipe, cooling water	1	1
46	GM35571	Pipe, cooling water	1	1
49	229411	Clamp	2	2
50	GM35570	Pipe, cooling water	1	1
51	GM35572	Pipe, cooling water	1	1
52	229411	Clamp	4	4
53	249838	Hose	1	1
54	GM13313	Pipe	1	1
55	249846	Strap, hose	2	2
56	249843	Hose clamp	2	2
57	249839	Clamp, hose	2	2
58	252095	Switch	1	1

Group 14: Cooling Freshwater Pump, continued

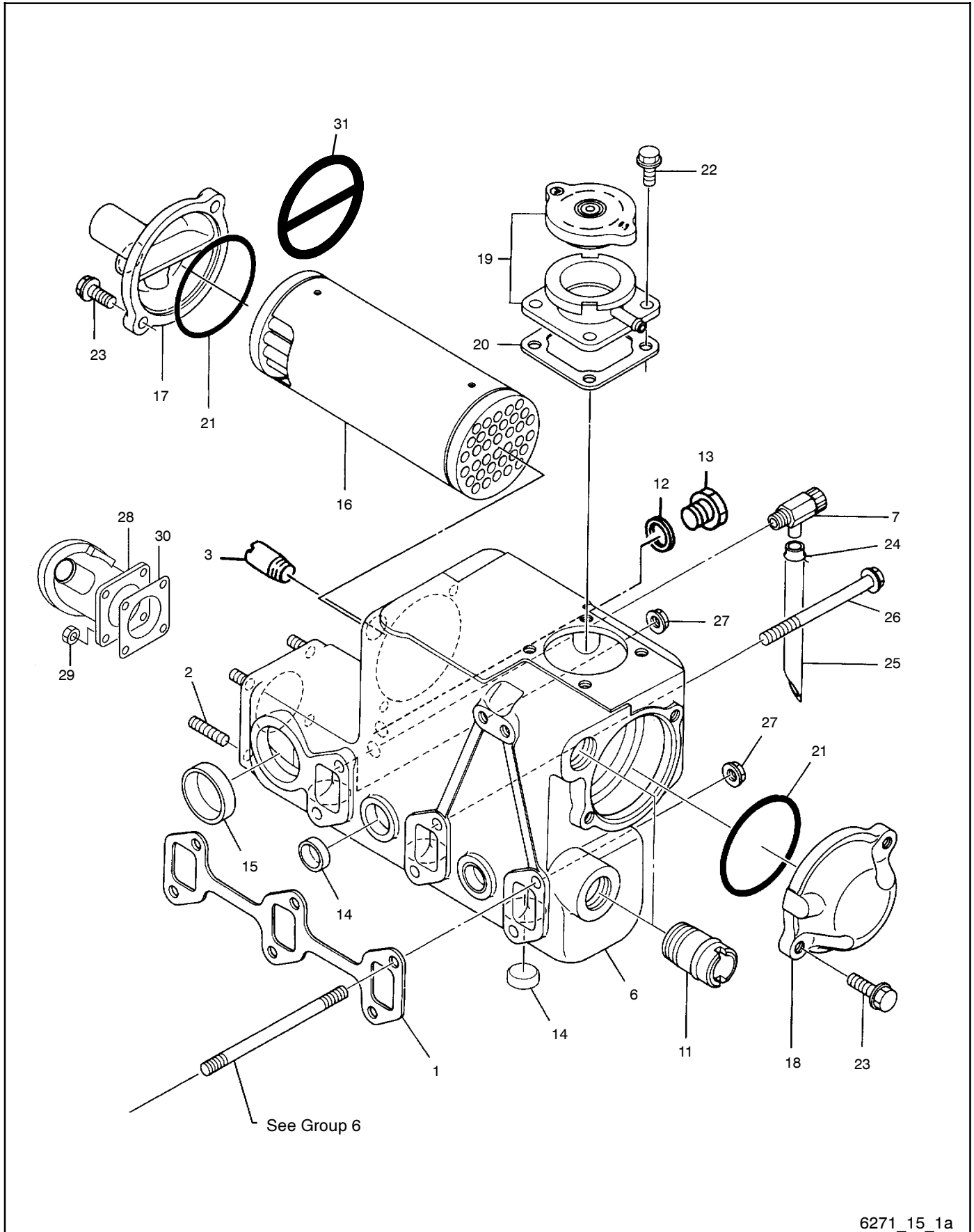


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Group 14: Cooling Freshwater Pump, continued

Item	Part Number	Description	Quantity	
			Variation 13	Number 14
1	GM80006	Pump assembly, water	1	1
2	GM35563	Packing	1	1
4	GM69336	Plate	1	1
8	GM35565	Pipe, water pump	1	1
10	GM35561	O-ring	1	1
11	GM35704	Plug, drain	2	2
12	GM69346	O-ring	1	1
13	225817	Bolt, M6 x 20	2	2
14	252709	Bolt, M6 x 16	3	3
15	GM79999	Screw, M6 x 16	3	3
16	GM35580	Gasket	1	1
17	252858	Washer	1	1
18	229487	Washer, spring	1	1
19	229498	Bolt, M6 x 10	4	4
20	256798	Bolt, M6 x 55	2	2
21	256798	Bolt, M5 x 55	1	1
22	229766	Bolt, M5 x 65	1	1
23	252920	V-pulley	1	1
24	252890	Joint	1	1
25	252891	Clamp	1	1
26	252892	Joint 28	1	1
27	252893	Pipe	1	1
28	225315	Joint	1	1
29	GM13330	Valve assembly	1	1
32	249845	Tee, pipe	1	1
33	249838	Hose	1	1
34	GM13313	Pipe	1	1
35	249846	Strap, hose	2	2
36	249843	Hose clamp	2	2
37	249839	Clamp, hose	2	2
38	229492	Clamp	6	6
39	252895	Cover, thermostat	1	1
40	249865	Gasket	1	1
41	GM34387	Thermostat	1	1
42	229433	Gasket	1	1
43	252699	Bolt, M8 x 25 plated	1	1
44	252701	Bolt, M8 x 35	1	1
45	229426	Adjuster, belt	1	1
46	252757	Plug, M6	1	1
47	252773	Gasket, 16	1	1
48	252095	Switch	1	1
49	GM46240	Spacer	1	1
50	GM46241	Bolt, adjuster	1	1
51	GM11551	V-belt	1	1
51	276141	V-belt (24 V models)		1

Group 15: Cooling Freshwater Cooler



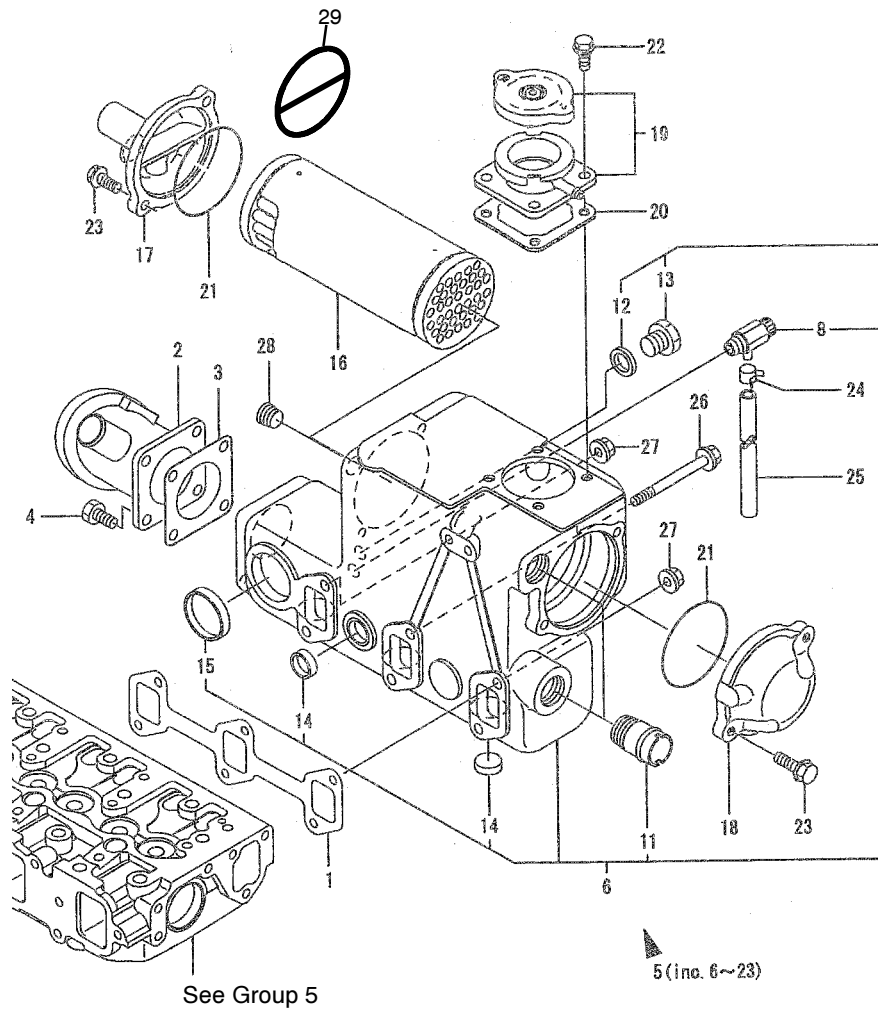
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Group 15: Cooling Freshwater Cooler

Item	Part Number	Description	Quantity	
			Variation Number 2	Variation Number 3
1	256770	Gasket, exhaust manifold	1	1
2	256579	Stud	4	4
3	229403	Joint		1
3	250975	Plug PT3/8, screw	1	
4	229733	Cooler assembly, freshwater (includes items 5-23)	1	1
5	229732	Cooler, freshwater (includes items 6-15)	1	1
6	X	Body, cooler	1	1
7	252394	Petcock (includes items 8-10)	1	1
8	X	O-ring (not shown)	1	1
9	X	Body, petcock (not shown)	1	1
10	X	Valve (not shown)	1	1
11	252472	Joint, pipe	2	2
12	229753	Gasket 17, round	1	1
13	250877	Plug PF 3/8	1	1
14	252730	Plug 28	7	7
15	252732	Plug 40	1	1
16	229725	Core assembly	1	1
17	252887	Cover	1	1
18	256544	Cover	1	1
19	252748	Filler assembly	1	1
20	252749	Gasket, filler	1	1
21	252685	O-ring (also order item 31)	2	2
22	252696	Bolt, M8 x 16 plated	4	4
23	252699	Bolt, M8 x 25 plated	4	4
24	229714	Retainer	1	1
25	252350	Pipe	1	1
26	252708	Bolt, M8 x100 plated	4	4
27	252723	Nut, M8	2	2
28	GM13328	Elbow, water mixing	1	
29	229509	Nut, M8	4	
30	252929	Gasket	1	
31	GM72405	O-ring	1	1

X Item not sold separately

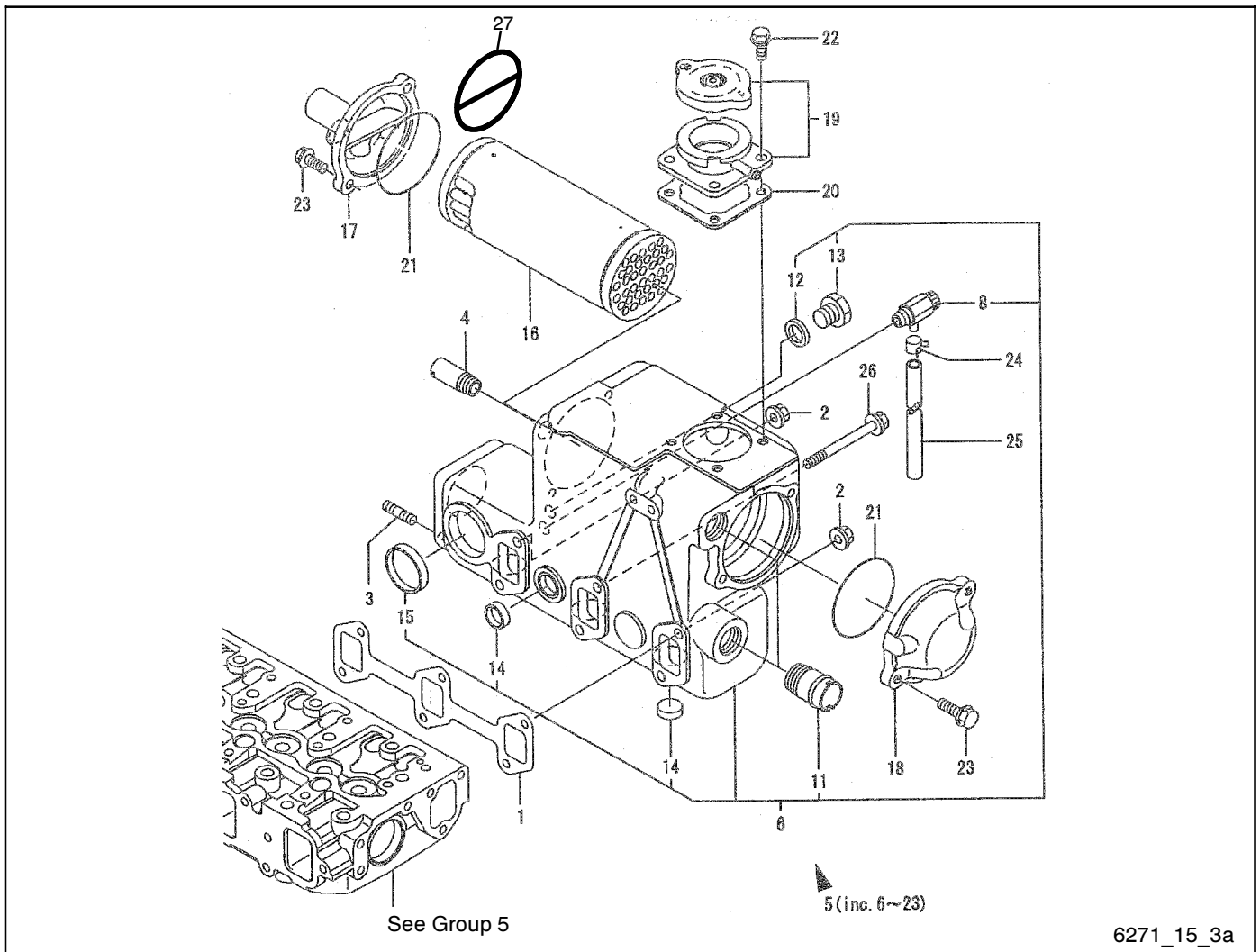
Group 15: Cooling Freshwater Cooler, continued



6271_15_2a

Item	Part Number	Description	Quantity
			Variation Number
			4
1	256770	Gasket, manifold	1
2	GM13328	Elbow, water mixing	1
3	252929	Gasket, square	1
4	GM35727	Bolt, M8 x 20	4
5	229733	Heat exchanger	1
6	229732	Cooler, fresh water	1
8	252394	Valve	1
11	252472	Pipe joint	2
12	229753	Gasket 17, round	1
13	GM35722	Plug, hex.	1
14	252730	Plug 28	7
15	252732	Plug 40	1
16	229725	Core assembly	1
17	252887	Cover	1
18	256544	Cover	1
19	252748	Filler assembly	1
20	252749	Gasket	1
21	252685	O-ring (also order item 29)	2
22	252696	Bolt, M8 x 16	4
23	252699	Bolt, M8 x 25 plated	4
24	229409	Retainer	1
25	252350	Pipe	1
26	252708	Bolt	4
27	GM35732	Nut	2
28	GM35720	Plug, screw	1
29	GM72405	O-ring	1

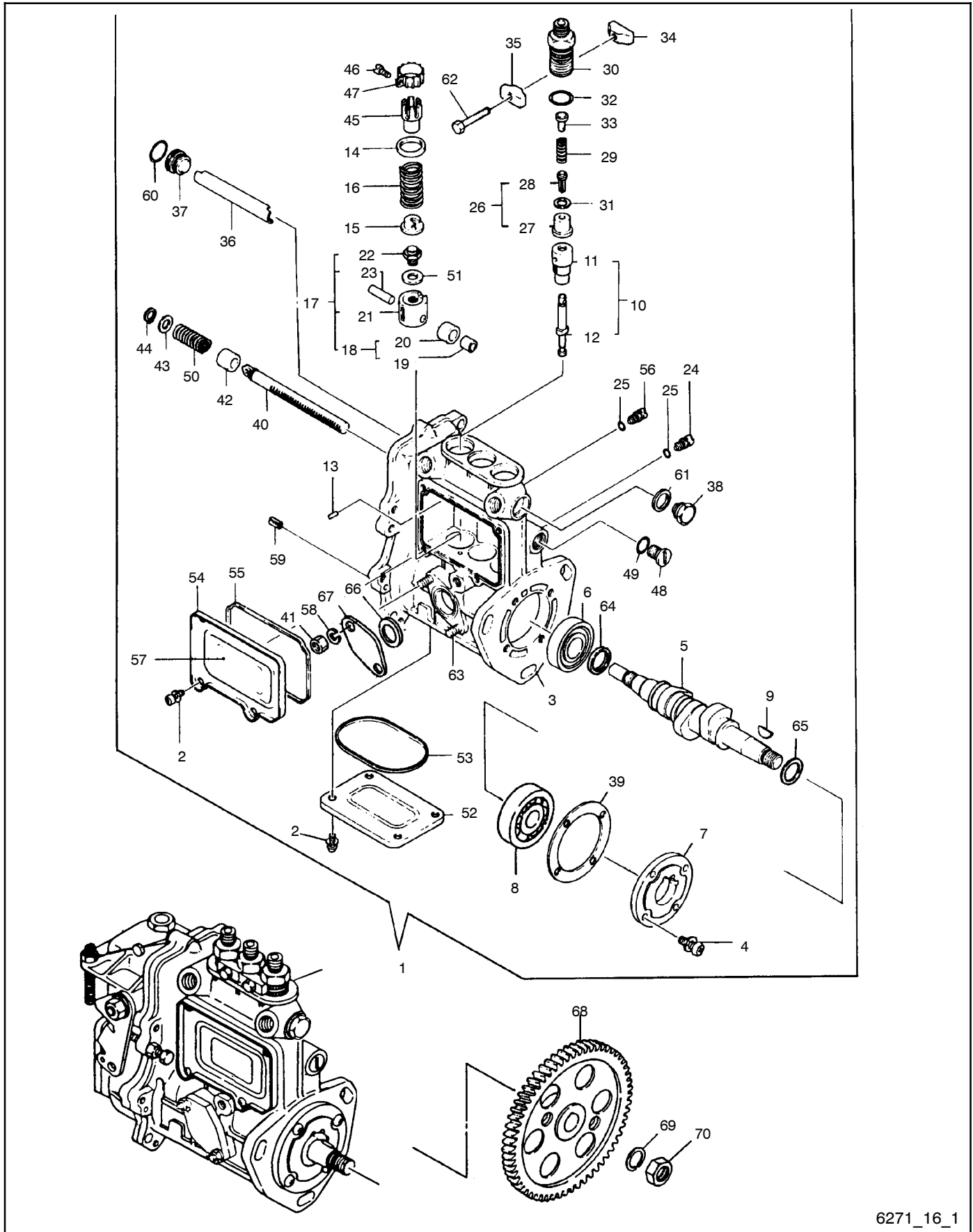
Group 15: Cooling Freshwater Cooler, continued



6271_15_3a

Item	Part Number	Description	Quantity
			Variation Number
			5
1	256770	Gasket, manifold	1
2	GM35732	Nut	2
3	256579	Stud	4
4	229403	Joint	1
5	229733	Heat exchanger	1
6	229732	Cooler, fresh water	1
8	252394	Valve	1
11	252472	Pipe joint	2
12	229753	Gasket 17, round	1
13	GM35722	Plug, hex.	1
14	GM35735	Plug 28	7
15	252732	Plug 40	1
16	229725	Core assembly	1
17	252887	Cover	1
18	256544	Cover	1
19	252748	Filler assembly	1
20	252749	Gasket	1
21	252685	O-ring (also order item 27)	2
22	252696	Bolt, M8 x 16	4
23	GM35726	Bolt, M8 x 25 plated	4
24	229409	Retainer	1
25	252350	Pipe	1
26	252708	Bolt	4
27	GM72405	O-ring	1

Group 16: Fuel Injection Pump



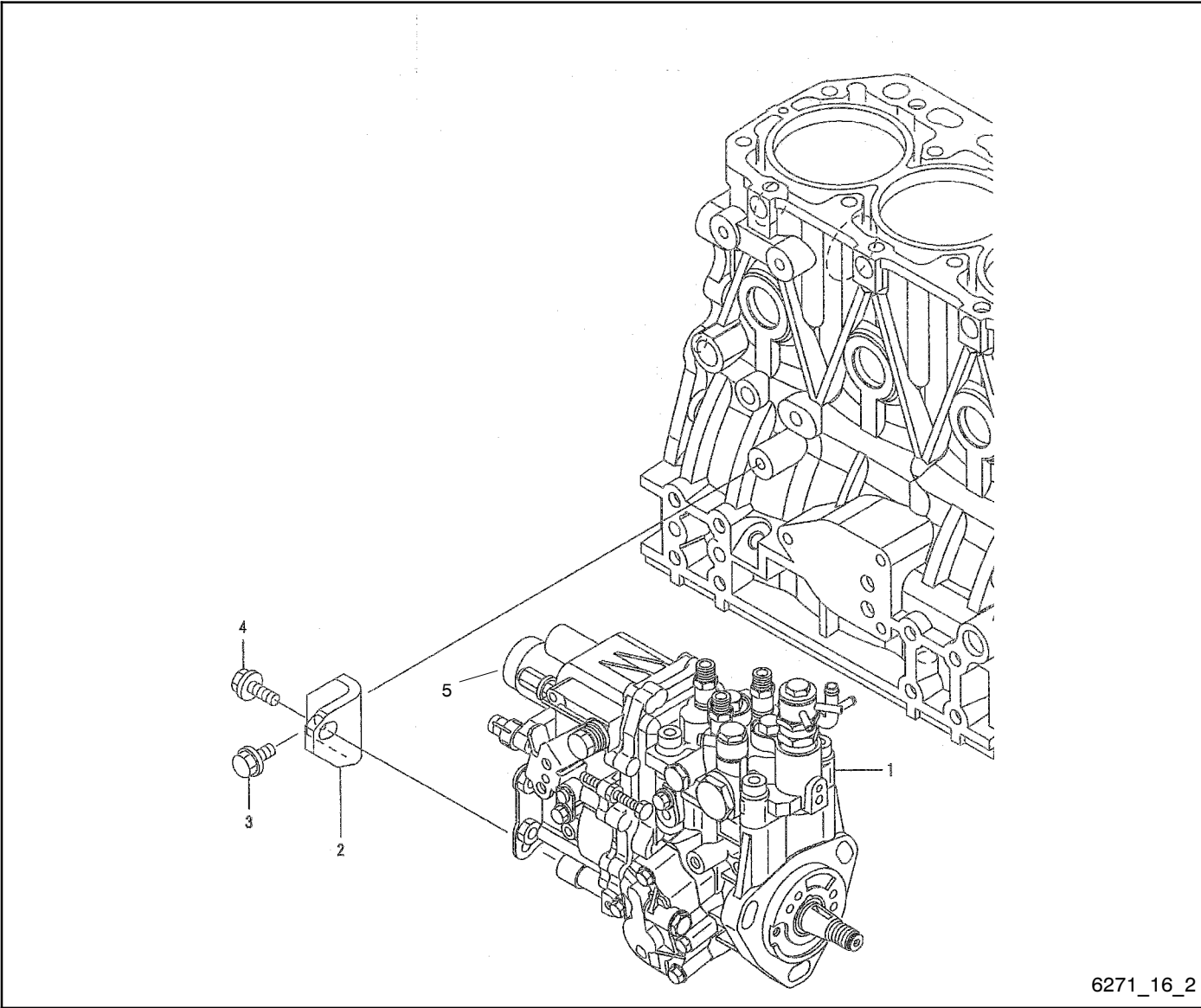
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Group 16: Fuel Injection Pump

Item	Part Number	Description	Quantity	
			Variation 2	Number 3
1	GM13336	Pump, injector (includes items 2-67)	1	
1	GM13339	Pump, injector (includes items 2-67)		1
2	225814	Screw, M5 x 10	8	8
3	X	Body, fuel injector pump	1	1
4	225815	Screw, M6 x 16	4	4
5	256734	Camshaft	1	1
6	256543	Ball bearing, thrust	1	1
7	256535	Retainer, bearing	1	1
8	256556	Ball bearing	1	1
9	256528	Key	1	1
10	256608	Plunger w/barrel (includes items 11 and 12)		3
10	GM13322	Plunger w/barrel (includes items 11 and 12)	3	
11	X	Barrel	3	3
12	X	Plunger	3	3
13	256721	Pin, barrel locking	3	3
14	252589	Retainer	3	3
15	256536	Spring shoe, plunger	3	3
16	252490	Spring, plunger	3	3
17	252848	Tappet assembly (includes item 18-23)	3	3
18	X	Roller assembly (includes items 19 and 20)	3	3
19	X	Roller, inner	3	3
20	X	Roller, outer	3	3
21	X	Guide, roller	3	3
22	X	Bolt, adjusting	3	3
23	X	Pin, roller	3	3
24	256537	Locking, tappet	3	3
25	252849	O-ring	3	3
26	256583	Valve w/seat, delivery (includes items 27 and 28)	3	3
27	X	Seat	3	3
28	X	Valve, delivery	3	3
29	256777	Spring, valve	3	3
30	256724	Valve guard, delivery	3	3
31	250839	Gasket, delivery	3	3
32	250840	O-ring	3	3
33	256725	Stopper, valve	3	3
34	256726	Locking	2	2
35	256727	Locking	2	2
36	225779	Deflector	1	1
37	256778	Check bolt, deflector	1	1
38	256779	Plug	1	1
39	256729	Shim set, adjusting	1	1
40	225780	Rack, control	1	1
41	225824	Nut, 6	2	2
42	256780	Bush, rack	1	1
43	256694	Spacer, aux. spring	1	1
44	256695	Circlip	1	1
45	256696	Pinion, control	3	3
46	256697	Screw, pinion	3	3
47	256698	Pinion	3	3
48	256781	Plug	1	1
49	252850	O-ring	1	1
50	256699	Spring, rack	1	1
51	256700	Shim pack	3	3
52	256782	Cover	1	1
53	256783	Gasket	1	1
54	256784	Cover, side	1	1
55	256785	Gasket	1	1
56	256701	Locking, rack	1	1
57	225791	Label, caution	1	1
58	225804	Spring washer	2	2
59	225808	Spring pin	2	2
60	252686	O-ring	1	1
61	363448	Seal washer	1	1
62	225821	Bolt, M5 x 30 plated	2	2
62	229741	Spring washer	2	2
63	256776	Stud, feed pump	2	2
64	256702	Spacer 3.25 mm	1	1
65	256703	Spacer 1.5 mm	1	1
66	252851	Gasket	1	1
67	256755	Cover, blind	1	1
68	252827	Gear	1	1
69	252666	Washer 12, spring	1	1
70	252725	Nut, M12	1	1

X Item not sold separately

Group 16: Fuel Injection Pump, continued

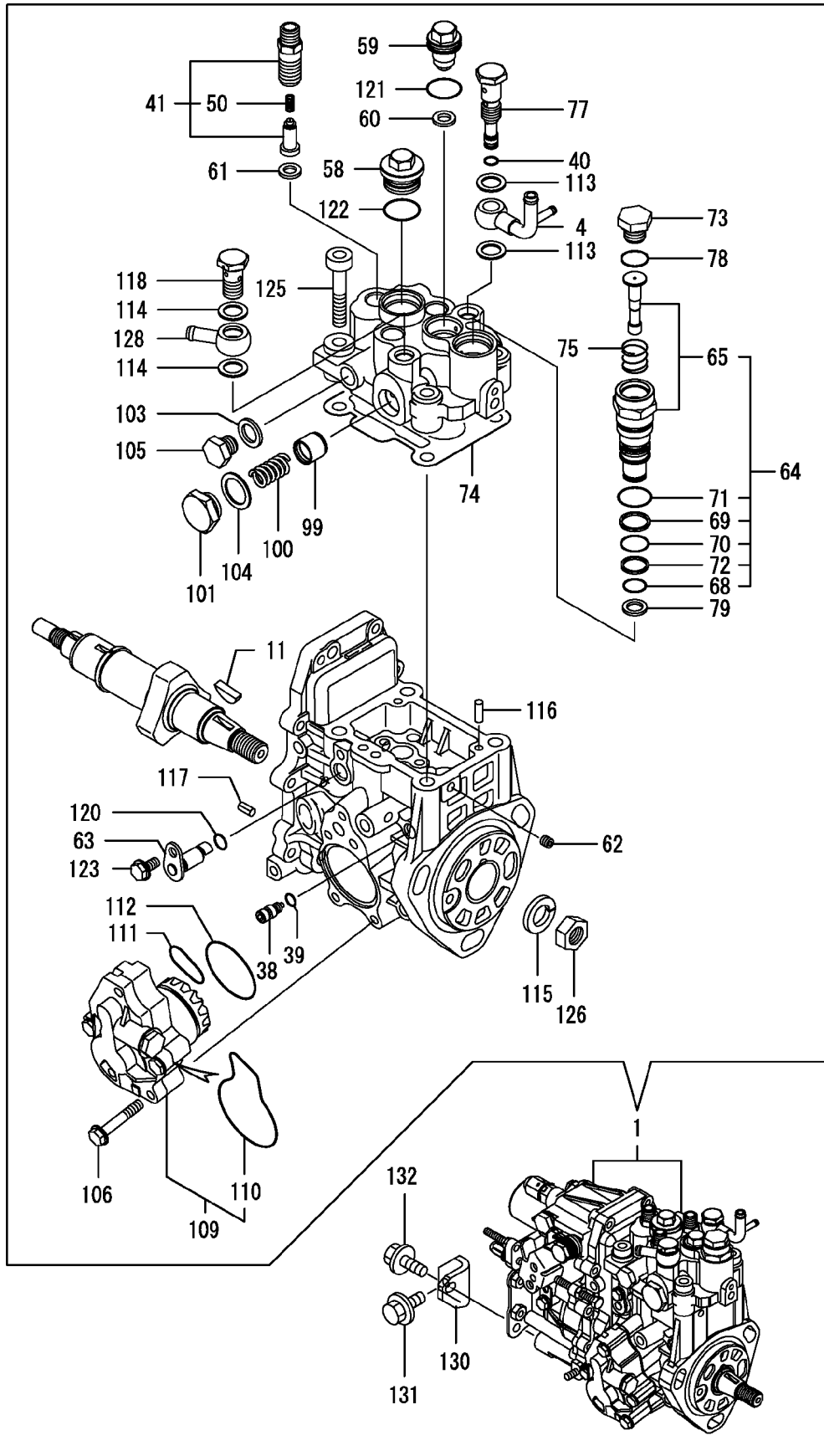


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Group 16: Fuel Injection Pump, continued

Item	Part Number	Description	Quantity			
			Variation Number			
			4	5	6	7
1	GM35751	Injection pump assembly	1	1		
1	GM35747	Injection pump assembly			1	1
2	GM35478	Bracket, pump	1	1	1	1
3	252696	Bolt, M8 x 16	1	1	1	1
4	252697	Bolt	1	1	1	1
5	225461	Solenoid kit, 12 V (includes o-ring)	1		1	
5	344746	Solenoid (24 V models)		1		1

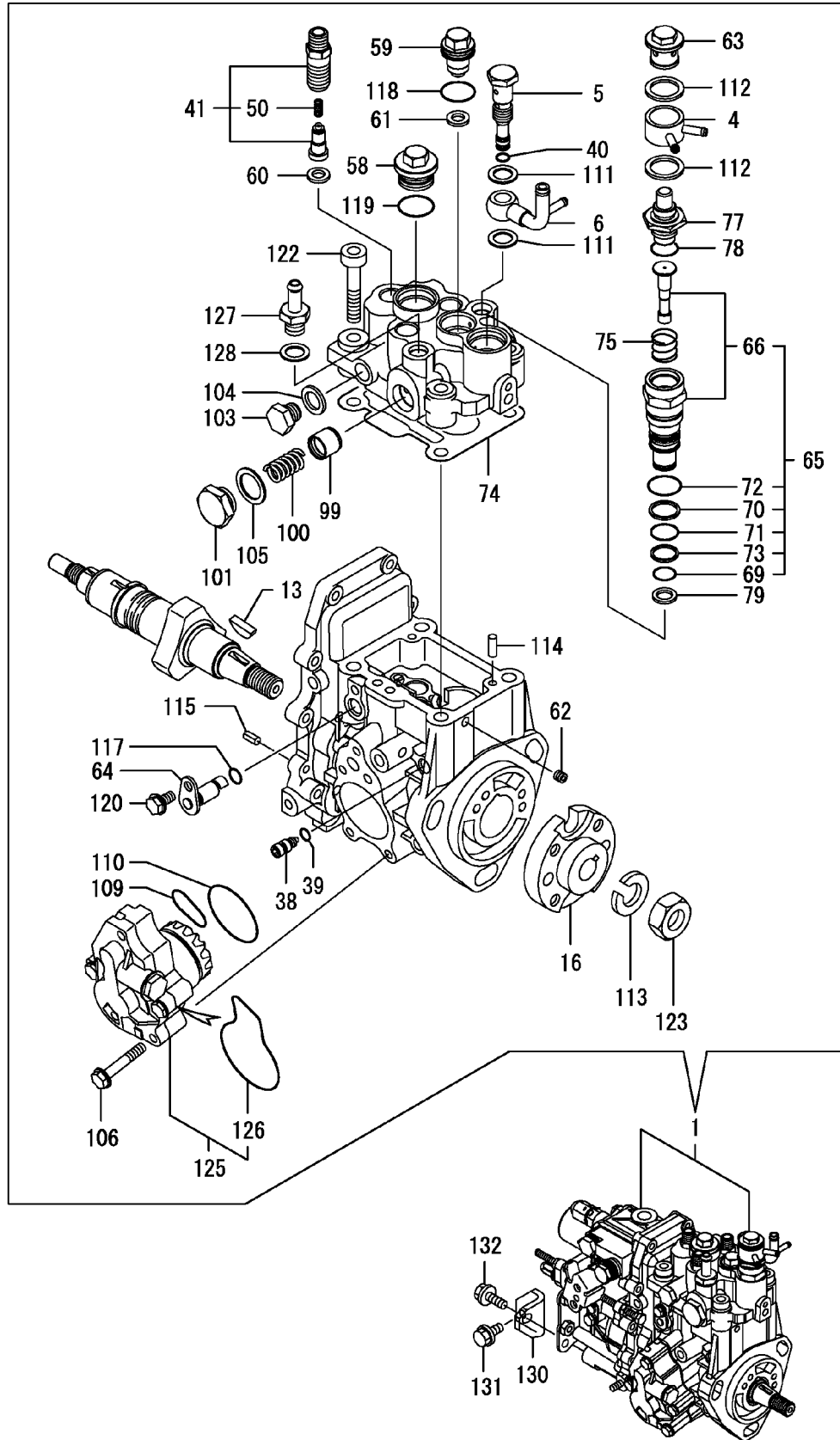
Group 16: Fuel Injection Pump, continued



Group 16: Fuel Injection Pump, continued

Item	Part Number	Description	Quantity
			Variation Number
			8
1	GM80007	Pump assy., injection	1
4	GM42717	Joint	1
11	GM42750	Key, woodruff 4 x 16	1
38	GM42718	Stopper	1
39	GM42719	O-ring	1
40	GM42719	O-ring	1
41	GM69340	Setting, delivery	3
50	GM42721	Spring	3
58	GM42724	Plug	1
59	GM42725	Barrel plug	1
60	GM42726	Packing	1
61	GM42726	Packing	3
62	GM42727	Plug	1
63	GM42729	Lifter	1
64	GM42730	Timer set	1
65	GM42731	Timer component	1
68	GM42732	O-ring	1
69	GM42733	Ring, backup	1
70	GM42734	O-ring	1
71	GM42735	Packing	1
72	GM42736	Ring, backup	1
73	GM79288	Plug, timer	1
74	GM42737	Packing, head	1
75	GM42738	Spring, timer	1
77	GM42740	Joint	1
78	GM42741	O-ring	1
79	GM42742	Packing, timer	1
99	GM42743	Piston	1
100	GM52211	Damper assy.	1
101	GM42745	Plug	1
103	225424	Seal washer	1
104	GM42748	Seal washer	1
105	256518	Plug	1
106	GM42753	Bolt	4
109	GM42746	Pump assy., feed	1
110	GM52212	O-ring	1
111	GM42747	O-ring	1
112	GM42751	O-ring	1
113	225424	Seal washer	2
114	225424	Seal washer	2
115	GM35714	Washer, spring	1
116	GM42749	Parallel pin, 5 x 14	2
117	225808	Pin	2
118	250972	Joint bolt 6	1
120	250800	O-ring	1
121	GM42752	O-ring	1
122	GM42735	Packing	1
123	229498	Bolt, M6 x 10 plated	1
125	GM42754	Bolt, M8 x 45	4
126	GM35734	Nut, lock M14 plated	1
128	GM42755	Joint 12, pipe	1
130	GM35478	Bracket, pump	1
131	252696	Bolt, M8 x 16	1
132	252697	Bolt	1

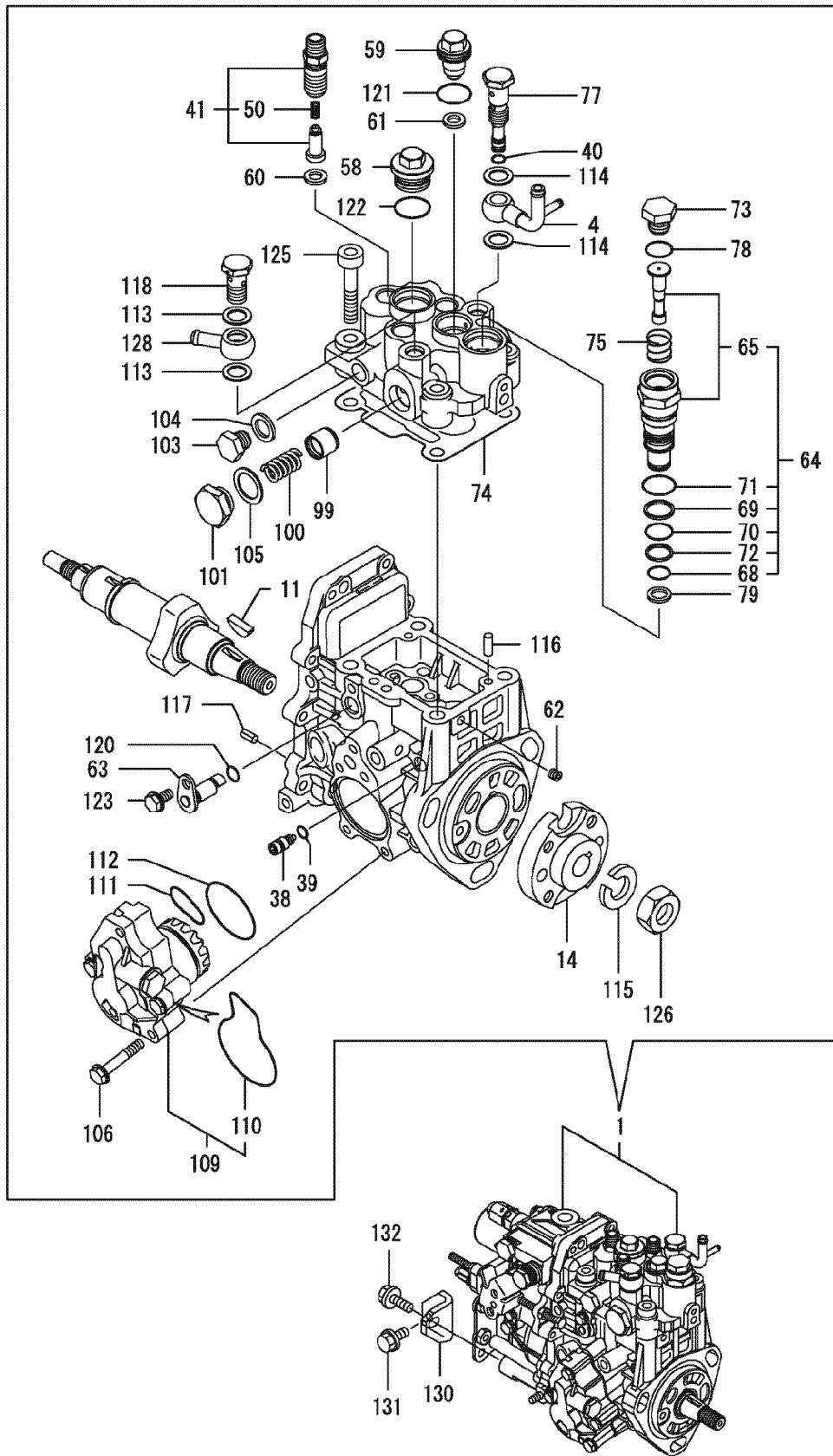
Group 16: Fuel Injection Pump, continued



Group 16: Fuel Injection Pump, continued

Item	Part Number	Description	Quantity
			Variation Number 9
1	GM80000	Pump assy., injection	1
4	GM42723	Joint, cooling water	1
5	GM42740	Joint	1
6	GM42717	Joint	1
13	GM42750	Key, woodruff 4 x 16	1
16	GM35711	Flange	1
38	GM42718	Stopper	1
39	GM42719	O-ring	1
40	GM42719	O-ring	1
41	GM69334	Setting, delivery	3
50	GM42721	Spring	3
58	GM42724	Plug	1
59	GM42725	Barrel plug	1
60	GM42726	Packing	3
61	GM42726	Packing	1
62	GM42727	Plug	1
63	GM42728	Plug, water pump	1
64	GM42729	Lifter	1
65	GM42730	Timer set	1
66	GM42731	Timer component	1
69	GM42732	O-ring	1
70	GM42733	Ring, backup	1
71	GM42734	O-ring	1
72	GM42735	Packing	1
73	GM42736	Ring, backup	1
74	GM42737	Packing, head	1
75	GM42738	Spring, timer	1
77	GM42739	Element, thermo	1
78	GM42741	O-ring	1
79	GM42742	Packing, timer	1
99	GM42743	Piston	1
100	GM52211	Damper assy.	1
101	GM42745	Plug	1
103	GM80001	Plug,M12	1
104	225424	Seal washer	1
105	GM42748	Seal washer	1
106	GM42753	Bolt	4
109	GM42747	O-ring	1
110	GM42751	O-ring	1
111	225424	Seal washer	2
112	GM42748	Seal washer	2
113	GM35714	Washer, spring	1
114	GM42749	Parallel pin, 5 x 14	2
115	225808	Pin	2
117	250800	O-ring	1
118	GM42752	O-ring	1
119	GM42735	Packing	1
120	229498	Bolt, M6 x 10 plated	1
122	GM42754	Bolt, M8 x 45	4
123	GM35734	Nut, lock M14 plated	1
125	GM42746	Pump assy., feed	1
126	GM52212	O-ring	1
127	GM66396	Joint, pipe	1
128	225424	Seal washer	1
130	GM35478	Bracket, pump	1
131	252696	Bolt, M8 x 16	1
132	252697	Bolt	1

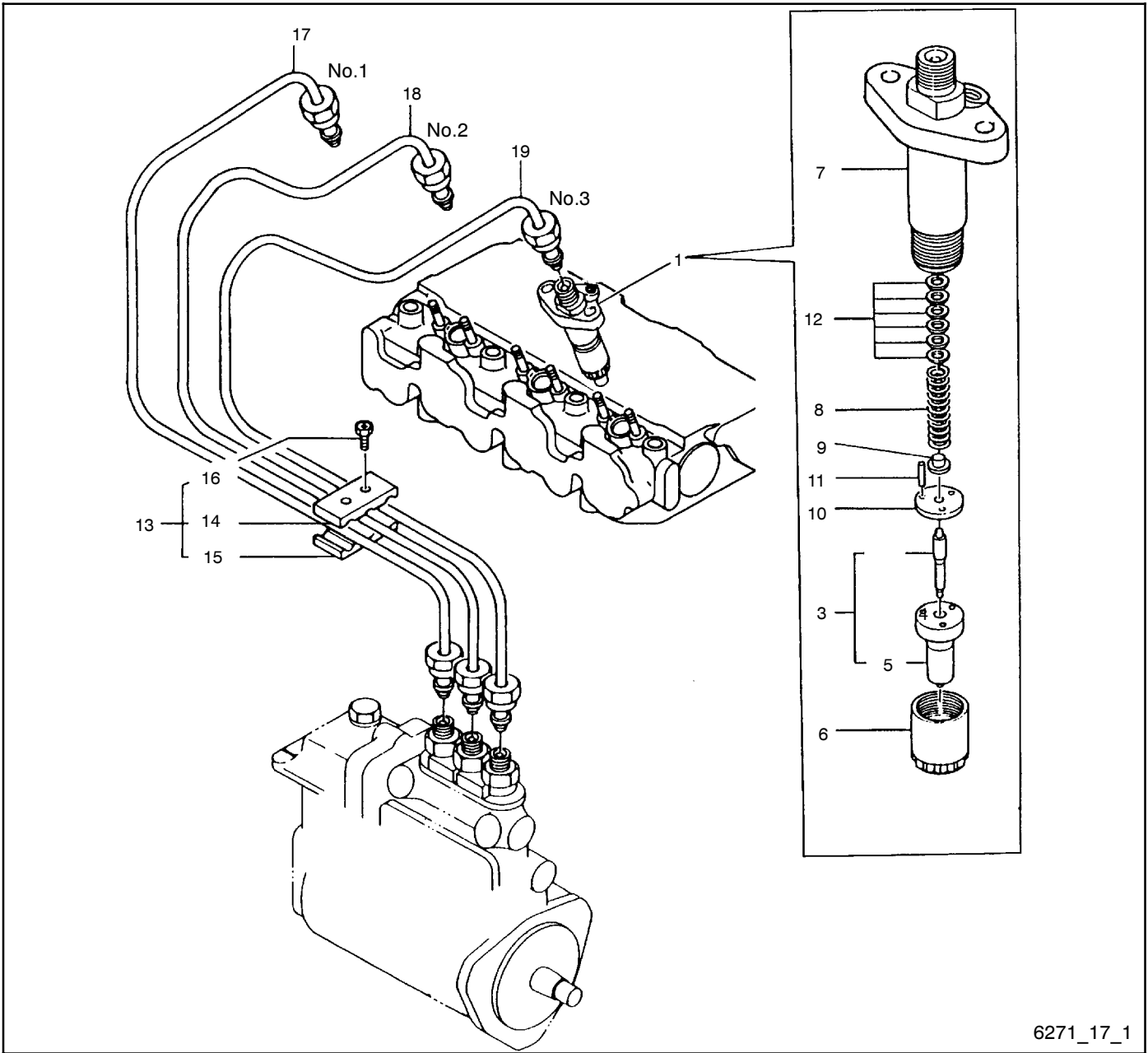
Group 16: Fuel Injection Pump, continued



Group 16: Fuel Injection Pump, continued

Item	Part Number	Description	Quantity
			Variation Number 10
1	GM80008	Injection pump assy.	1
4	GM42717	Joint	1
11	GM42750	Key, woodruff 4 x 16	1
14	GM35711	Flange	1
38	GM42718	Stopper	1
39	GM42719	O-ring	1
40	GM42719	O-ring	1
41	GM69340	Setting, delivery	3
50	GM42721	Spring	3
58	GM42724	Plug	1
59	GM42725	Barrel plug	1
60	GM42726	Packing	3
61	GM42726	Packing	1
62	GM42727	Plug	1
63	GM42729	Lifter	1
64	GM42730	Timer set	1
65	GM42731	Timer component	1
68	GM42732	O-ring	1
69	GM42733	Ring, backup	1
70	GM42734	O-ring	1
71	GM42735	Packing	1
72	GM42736	Ring, backup	1
73	GM79288	Plug, timer	1
74	GM42737	Packing, head	1
75	GM42738	Spring, timer	1
77	GM42740	Joint	1
78	GM42741	O-ring	1
79	GM42742	Packing, timer	1
99	GM42743	Piston	1
100	GM52211	Damper assy.	1
101	GM42745	Plug	1
103	GM80001	Plug, M12	1
104	225424	Seal washer	1
105	GM42748	Seal washer	1
106	GM42753	Bolt	4
109	GM42746	Pump assy., feed	1
110	GM52212	O-ring	1
111	GM42747	O-ring	1
112	GM42751	O-ring	1
113	225424	Seal washer	2
114	225424	Seal washer	2
115	GM35714	Washer, spring	1
116	GM42749	Parallel pin, 5 x 14	2
117	225808	Pin	2
118	250972	Joint bolt	1
120	250800	O-ring	1
121	GM42752	O-ring	1
122	GM42735	Packing	1
123	229498	Bolt, M6 x 10 plated	1
125	GM42754	Bolt, M8 x 45	4
126	GM35734	Nut, lock M14 plated	1
128	GM42755	Joint 12, pipe	1
130	GM35478	Bracket, pump	1
131	252696	Bolt, M8 x 16	1
132	252697	Bolt	1

Group 17: Fuel Injection Lines



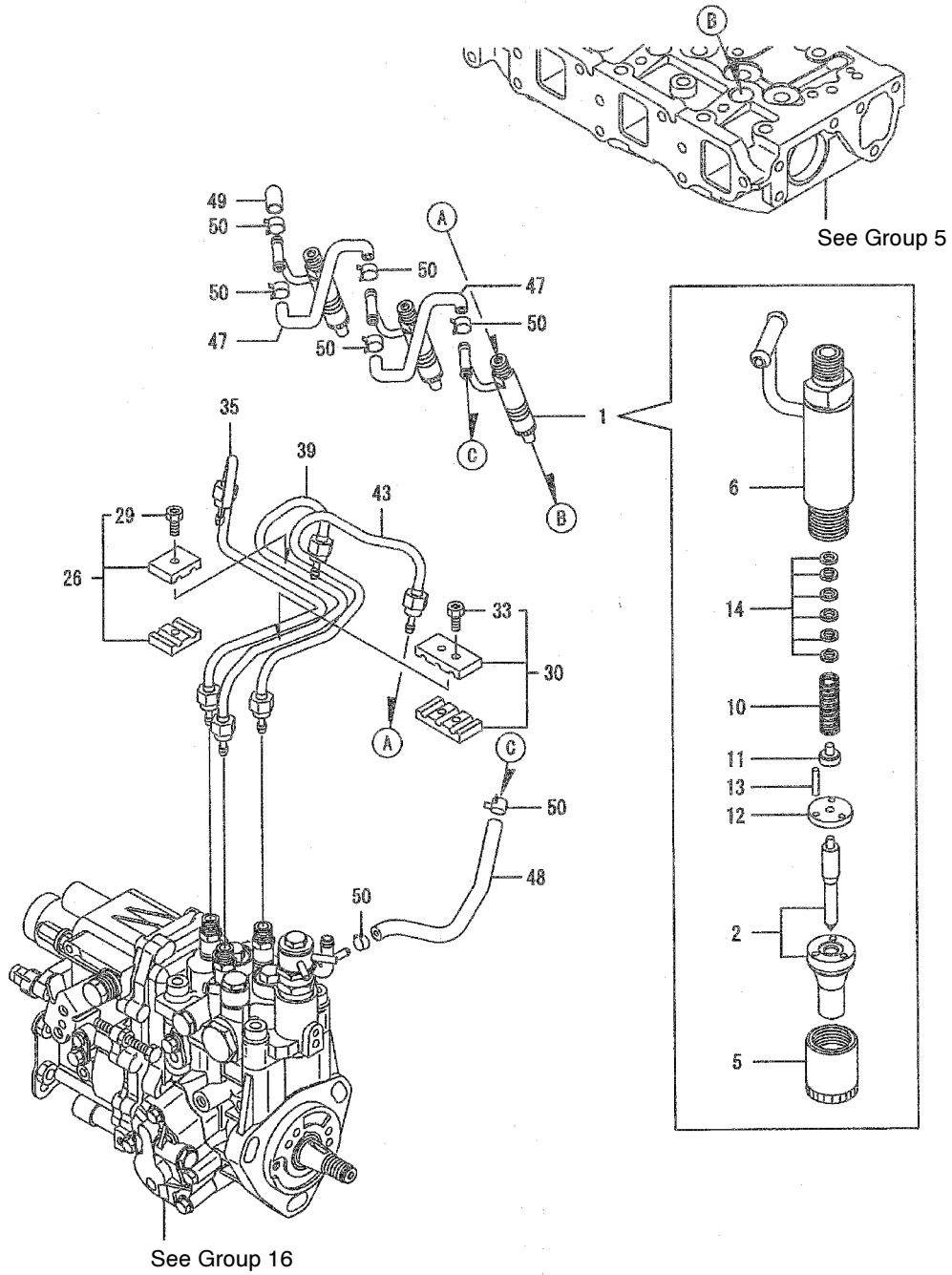
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Group 17: Fuel Injection Lines

Item	Part Number	Description	Quantity	
			Variation No. 2	Variation No. 3
1	224360	Valve assembly, fuel injection (includes items 2-5)	3	
1	229872	Valve assembly, fuel injection (includes items 2-5)		3
3	225004	Nozzle assembly, fuel injection (includes items 4 and 5)	3	
3	229873	Nozzle assembly, fuel injection (includes items 4 and 5)		3
4	X	Valve	3	3
5	X	Body	3	3
6	256520	Nut, nozzle case	3	3
7	256706	Holder	3	3
8	256521	Spring, nozzle	3	3
9	256522	Seat, nozzle spring	3	3
10	256523	Plate, stop	3	3
11	256707	Pin	6	6
12	256524	Shim pack	3	3
13	256774	Retainer (includes items 14 - 16)	1	1
14	X	Clamp, upper	1	1
15	X	Clamp, lower	1	1
16	225777	Bolt, M4 x 12	1	1
16	225418	Bolt, M4 x 12 hex socket	2	2
17	GM13308	Pipe, fuel injection	1	1
18	GM11309	Pipe, fuel injection GM13309	1	1
19	GM13310	Pipe, fuel injection	1	1

X Item not sold separately

Group 17: Fuel Injection Lines, continued

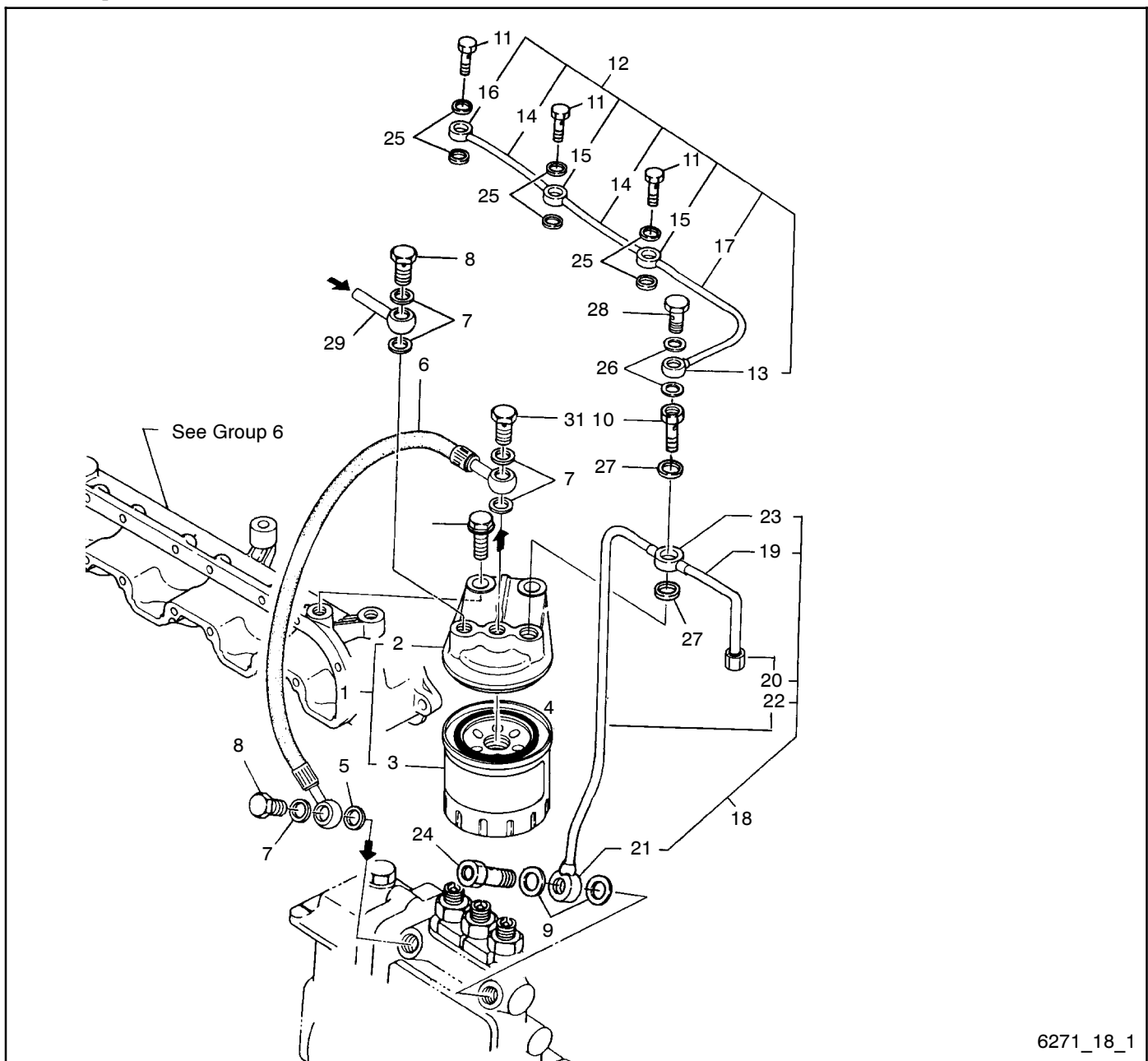


6271_17_2

Group 17: Fuel Injection Lines, continued

Item	Part Number	Description	Quantity			
			Variation Number			
			4	5	6	7
1	GM35749	Valve assembly, injector	3			
1	GM35748	Valve assembly, injector		3		3
1	GM69348	Valve assembly, injector			3	
2	GM35567	Nozzle	3			
2	GM35560	Nozzle		3		3
2	GM69339	Nozzle			3	
5	256520	Nut, nozzle case	3	3	3	3
6	GM35479	Holder assembly, nozzle	3	3	3	3
10	256521	Spring nozzle	3	3	3	3
11	256522	Seat, nozzle spring	3	3	3	3
12	256523	Plate, stop	3	3	3	3
13	256707	Pin	6	6	6	6
14	256524	Shim set	3	3		
14	GM69329	Shim set			3	3
26	225374	Retainer	1	1		
26	256774	Clamp assembly, line			1	1
29	225418	Bolt, M4 x 14 hex. socket	1	1	2	2
30	256774	Clamp assembly, line	1	1	1	1
33	225418	Bolt, M4 x 14 hex. socket	2	2	2	2
35	GM35542	Pipe assembly, injection	1	1	1	1
39	GM35543	Pipe assembly, injection	1	1	1	1
43	GM35544	Pipe assembly, injection	1	1	1	1
47	GM35573	Pipe, fuel oil	2	2	2	2
48	GM35483	Pipe, fuel oil	1	1	1	1
49	GM35574	Cap	1	1	1	1
50	249843	Hose clamp	7	7	7	7

Group 18: Fuel Line and Filter

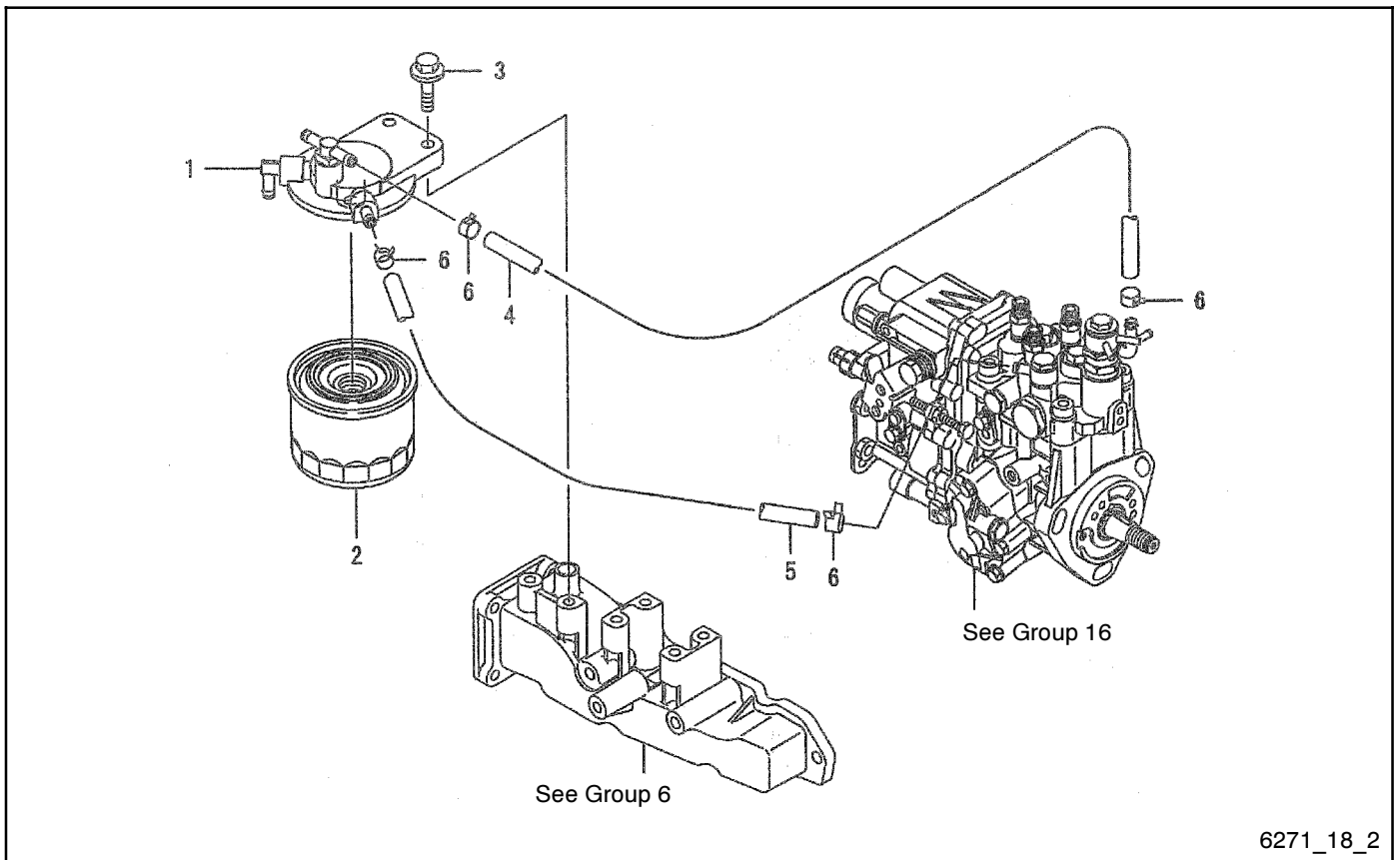


6271_18_1

Item	Part Number	Description	Quantity	Item	Part Number	Description	Quantity
			Var. No. 2				Var. No. 2
1	256609	Filter assembly, fuel (includes item 2 and 3)	1	16	X	Joint, pipe	1
2	X	Body, fuel filter	1	17	X	Pipe, return	1
3	252898	Filter, fuel	1	18	GM13314	Pipe, return (includes items 19-23)	1
4	229768	Bolt, M10 x 30 plated	2	19	X	Pipe	1
5	225424	Gasket	1	20	X	Joint	1
6	229842	Pipe, fuel	1	21	X	Pipe joint	1
7	250969	Gasket 12, round	5	22	X	Pipe, return	1
8	250972	Bolt, M6, joint	2	23	X	Pipe joint	1
9	252739	Gasket	2	24	252792	Valve assembly, check	1
10	225796	Bolt, pipe joint	1	25	252355	Gasket 6, round	6
11	256713	Bolt, pipe joint	3	26	250967	Gasket 8, round	2
12	GM13315	Pipe, fuel return (includes item 13-17)	1	27	252675	Gasket 14, round	2
13	X	Joint	1	28	252677	Bolt, pipe joint	1
14	X	Pipe	3	29	256567	Joint 12, pipe	1
15	X	Joint, pipe	3	31	229552	Bolt, pipe joint	1

X Item not sold separately

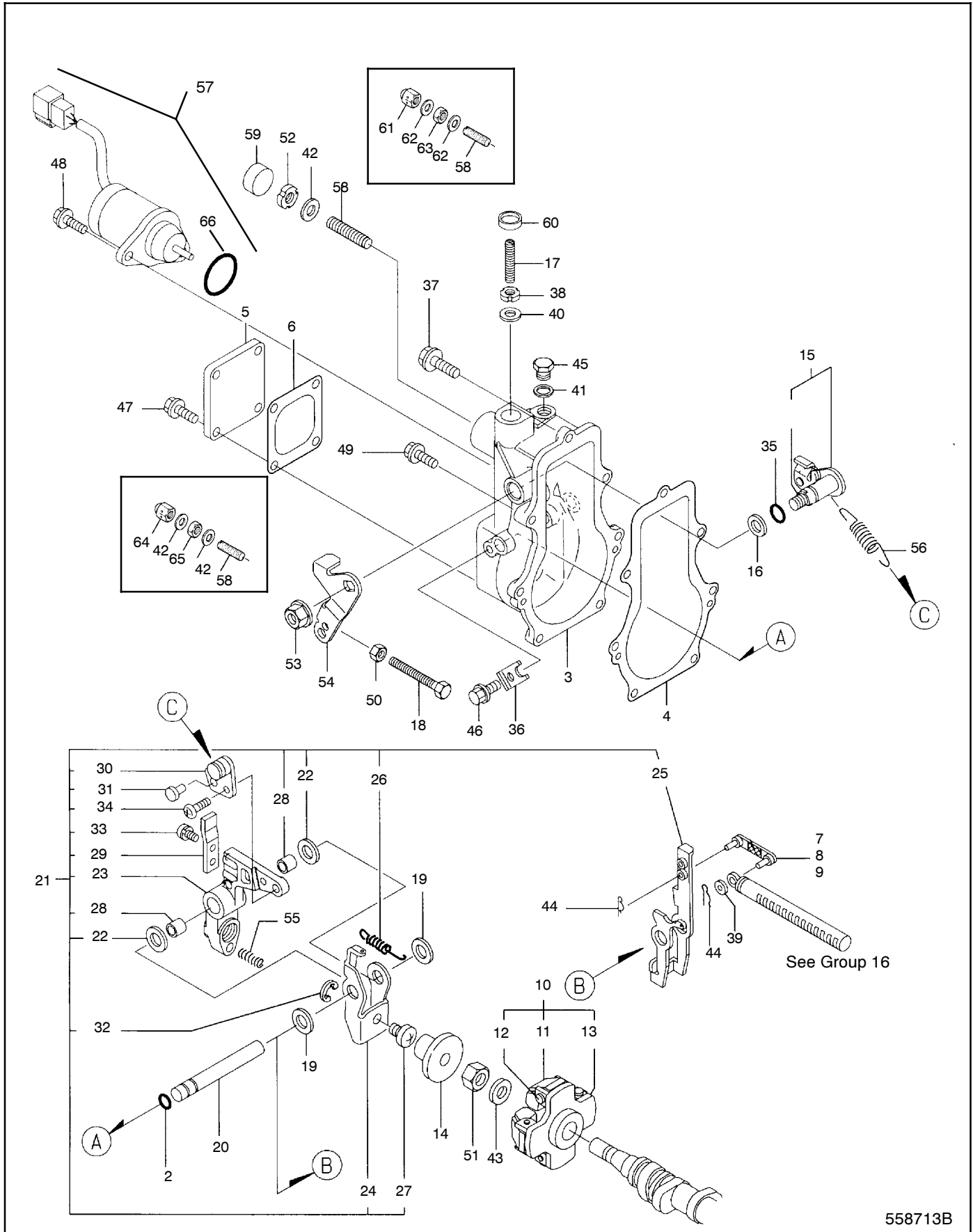
Group 18: Fuel Line and Filter



6271_18_2

Item	Part Number	Description	Quantity	
			Variation 3	Variation 4
1	GM35541	Bracket, filter	1	1
2	GM32359	Filter, fuel	1	1
3	225819	Bolt, M8 x 30 plated	2	2
4	GM35480	Pipe, fuel oil	1	
4	GM80002	Pipe, fuel oil		1
5	GM35481	Pipe, fuel oil	1	1
6	252670	Clamp	4	4

Group 19: Governor



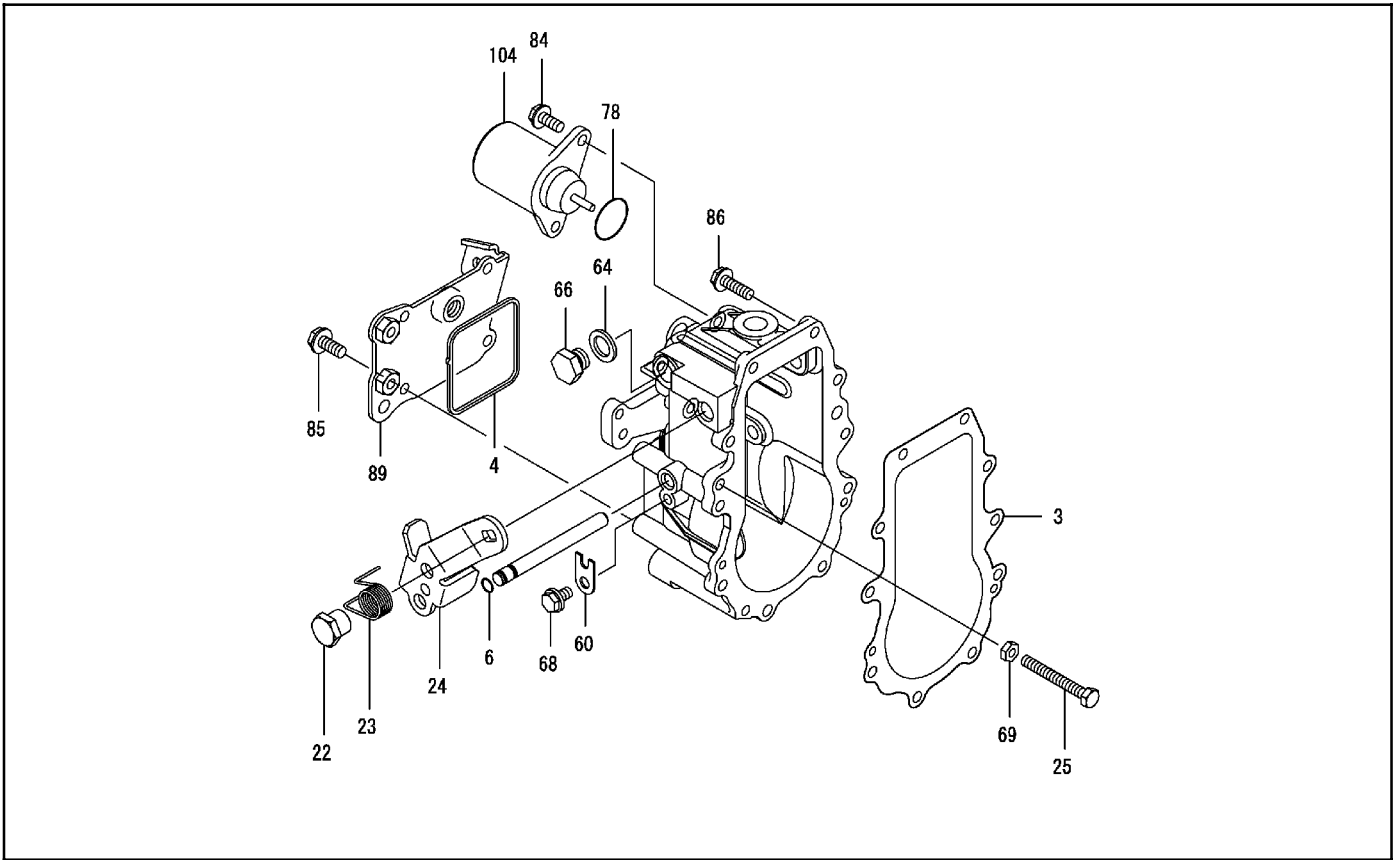
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Group 19: Governor

Item	Part Number	Description	Quantity	
			Variation Number 2	Variation Number 4
1	X	Governor assembly (includes items 2-52)	1	1
2	252849	O-ring	2	2
3	X	Case, governor	1	1
4	225417	Gasket, spacer	1	
4	363449	Gasket, spacer		1
5	225414	Cover	1	1
6	225408	Packing	1	
6	363450	Packing		1
7	256787	Link 30 mm	1	1
8	256558	Link 31 mm	1	1
9	256559	Link 30.5 mm	1	1
10	252974	Weight assembly, gov. (includes items 11-13)	1	1
11	X	Weight	4	4
12	X	Pin, governor weight	4	4
13	X	Support	1	1
14	225781	Sleeve	1	1
15	225409	Shaft assy., control	1	
15	252794	Shaft assy., control		1
16	225782	Spacer, shaft	1	1
17	GM13294	Bolt, revol. limit	1	
17	225784	Bolt, revol. limit		1
18	225784	Bolt, idle limit	1	1
19	229722	Spacer assembly	2	2
20	225415	Shaft, governor lever	1	1
21	225421	Lever assembly, governor (includes items 22-34)	1	1
22	252592	Shim set	2	2
23	X	Lever	1	1
24	X	Lever, governor	1	1
25	X	Lever, governor	1	1
26	225407	Spring	1	1
27	X	Shifter	1	1
28	X	Bush	2	2
29	X	Fitting	1	1
30	X	Hook, tension lever	1	1
31	X	Pin	1	1
32	X	Circlip	1	1
33	X	Screw, M6 x 12	1	1
34	X	Screw, M5 x 10	2	2
35	252856	O-ring	2	2
36	229692	Retainer, shaft	1	1
37	225790	Bolt, washer based	1	
38	225391	Carb nut, high idle	1	
38	225767	Nut, lock		1
39	225803	Washer 4	1	1
40	363451	Seal washer 6	1	1
41	363452	Seal washer 10	2	2
42	225424	Seal washer 12	2	2
43	256704	Washer 12	1	1
44	225809	Snap pin 4	2	
44	225803	Washer 4 (not shown)		2
45	256517	Plug	1	1
46	229498	Bolt, M6 x 10 plated	1	1
47	229498	Bolt, M6 x 10 plated	4	4
48	225818	Bolt, M6 x 14 plated	2	2
49	225817	Bolt, M6 x 20 plated	6	6
50	225825	Nut, lock M6 plated	1	1
51	225826	Nut, lock M12 plated	1	1
52	225390	Carb nut, flow limit	1	1
53	252723	Nut, M8	1	1
54	225800	Lever, control	1	1
55	GM13320	Spring, fuel control	1	1
56	225795	Spring governor	1	1
57	225461	Kit, fuel solenoid (includes item 66)	1	1
58	225785	Bolt, fuel control	1	1
59	225381	Plug 22	1	1
60	225382	Plug 14	1	1
61	225702	Nut, cap		1
62	225423	Seal washer 6		1
63	225825	Nut, lock 6		1
64	225770	Nut, cap		1
65	225826	Nut, lock M2 plated		1
66	225427	O-ring	1	1

X Item not sold separately

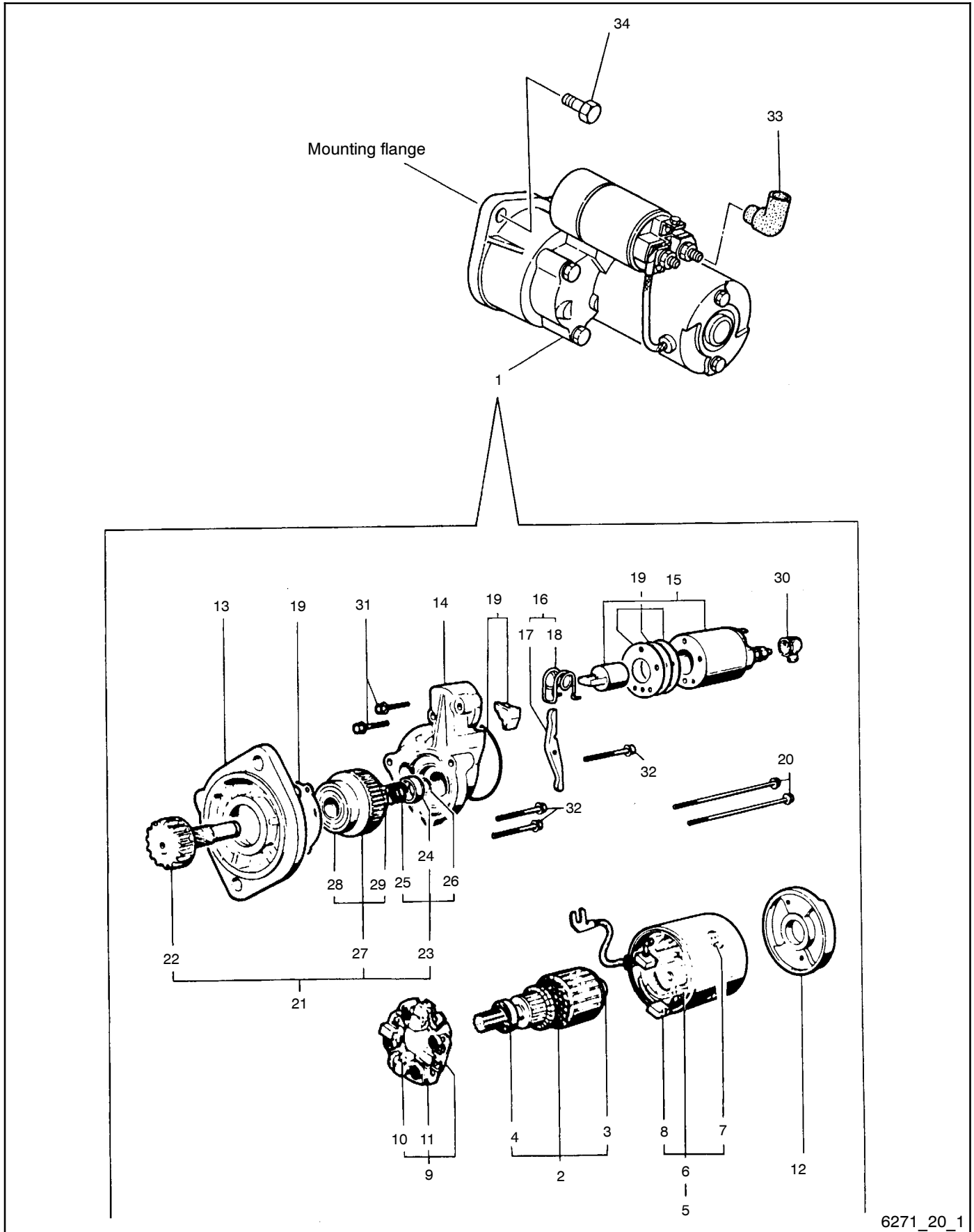
Group 19: Governor



Item	Part Number	Description	Quantity			
			5	6	7	8
3	GM42756	Packing, case	1	1	1	1
4	GM42757	Packing	1	1	1	1
6	252849	O-ring	1	1	1	1
66	256518	Plug,M12 hex.	1	1		
66	GM80001	Plug,M12			1	1
22	GM42758	Nut	1	1	1	1
23	GM42759	Spring	1	1	1	1
24	GM42760	Lever, regulator	1	1	1	1
25	225784	Bolt, idle limit	1	1	1	1
60	229692	Retainer, shaft	1	1	1	1
64	225424	Seal washer	1	1	1	1
68	229498	Bolt, M6 x 10 plated	1	1	1	1
69	225825	Lock nut	1	1	1	1
78	GM52219	O-ring	1	1	1	1
84	225818	Bolt, M6 x 14 plated	2	2	2	2
85	225818	Bolt, M6 x 14 plated	4	4	4	4
86	225817	Bolt, M6 x 20	10	10	10	10
89	GM42763	Cover, case	1	1	1	1
104	225461	Kit, fuel solenoid (includes O-ring)	1		1	
104	GM58632	Solenoid, 24V		1		1

Notes

Group 20: Starting Motor

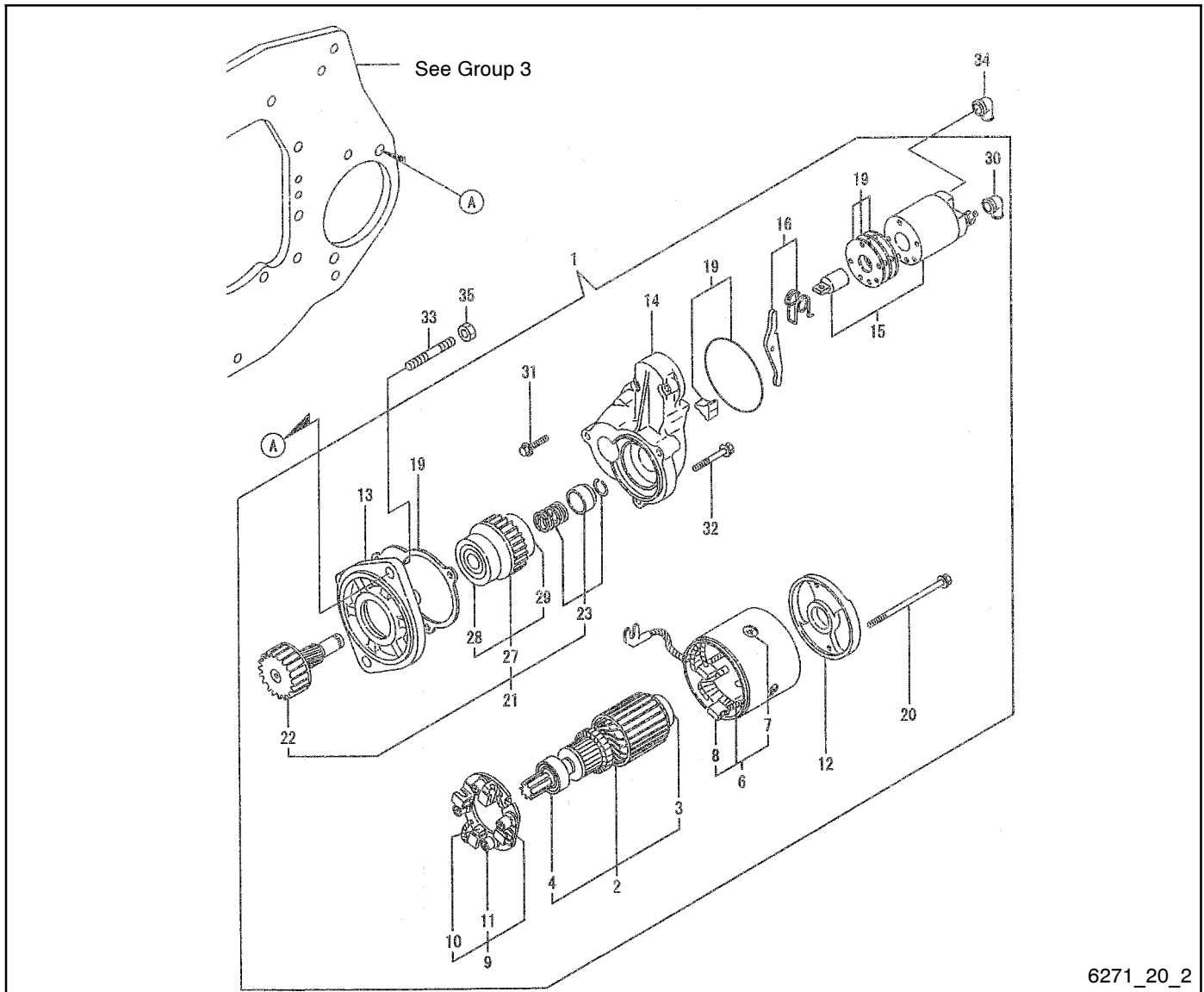


6271_20_1

Group 20: Starting Motor

Item	Part Number	Description	Quantity
			Variation Number
1	225013	Starter (includes items 2- 32)	1
2	225895	Armature assembly (includes items 3 and 4)	1
3	225896	Bearing	1
4	225897	Bearing	1
5	229477	Yoke assembly (includes items 6-8)	1
6	225989	Coil assembly, field	1
7	225899	Screw, pole core set	4
8	225900	Brush (+)	2
9	225901	Holder assembly, brush (includes items 10 and 11)	1
10	225902	Brush	2
11	225903	Spring, brush	4
12	225904	Cover, rear	1
13	225905	Housing assy., gear	1
14	225906	Housing, center	1
15	225907	Switch, magnetic	1
16	225908	Lever set, shift (includes items 17 and 18)	4
17	229478	Lever	1
18	229479	Spring	1
19	225909	Dust cover	1
20	225910	Bolt, through	2
21	225911	Pinion assembly (includes items 22-29)	1
22	225912	Shaft, pinion	1
23	225913	Stopper set, pinion (includes items 24-26)	1
24	229480	Stopper, pinion	1
25	229481	Spring	1
26	229482	Clip, pinion stopper	1
27	225914	Clutch assembly (includes items 28 and 29)	1
28	225915	Ball bearing	1
29	225916	Ball bearing	1
30	225917	Cover, terminal	1
31	225920	Bolt, M6 x 32 plated	2
32	225921	Bolt, M6 x 40 plated	3
33	252481	Cover, terminal	1
34	252713	Bolt, M12 x 30 plated	2

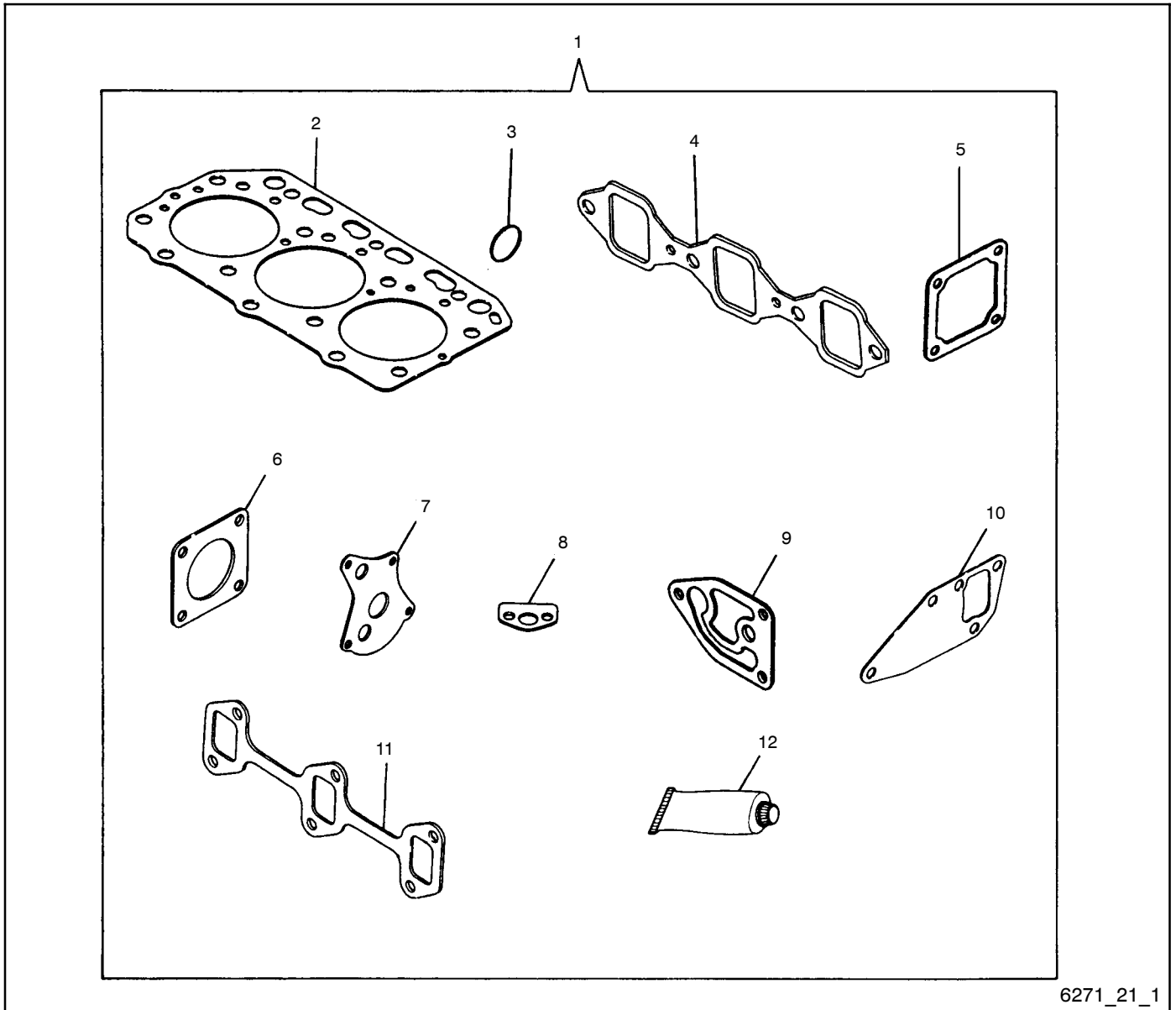
Group 20: Starting Motor, continued



6271_20_2

Item	Part Number	Description	Quantity		Item	Part Number	Description	Quantity	
			2	3				2	3
1	344743-P	Starter	1		16	225908	Shift lever set	1	
1	GM39020	Starter (24 V models)		1	19	225909	Dust cover	1	
2	225895	Armature assembly	1		20	225910	Through bolt	2	
3	GM35772	Ball bearing	1		21	225911	Pinion assembly	1	
4	GM35769	Ball bearing	1		22	225912	Pinion shaft	1	
6	225898	Field coil assembly	1		23	225913	Pinion stopper set	1	
7	225899	Screw	4		27	GM35770	Clutch assembly	1	
8	225900	Brush (+)	2		28	GM35771	Ball bearing	1	
9	225901	Holder assembly	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	

Group 21: Gasket Set

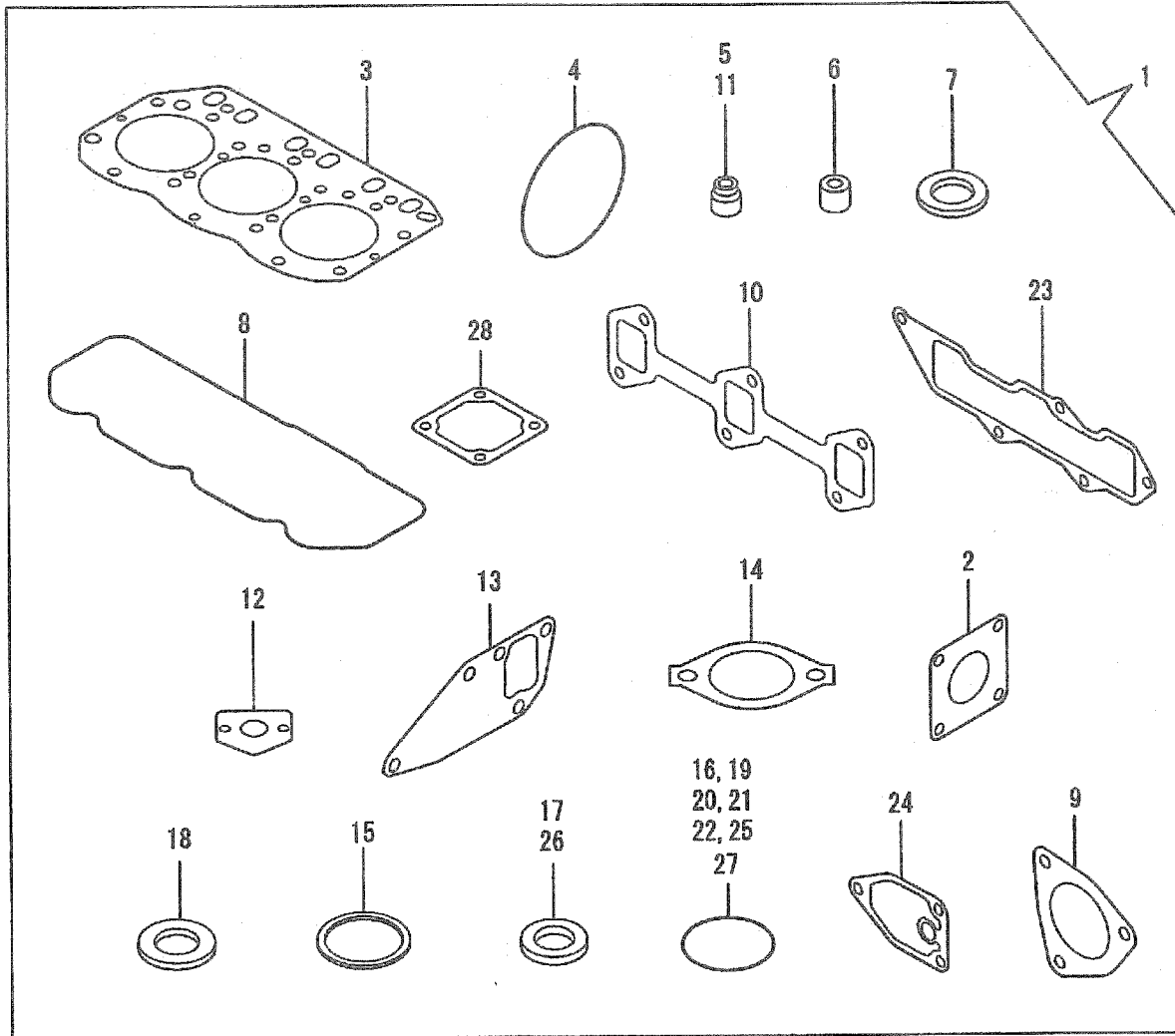


6271_21_1

Item	Part Number	Description	Quantity	
			Variation Number 2	Variation Number 3
1	GM13335	Gasket set (3TNE88)	1	
1	GM13340	Gasket set (3TNE84)		1

Gasket set includes items 2-12 shown in the illustration.

Group 21: Gasket Set, continued



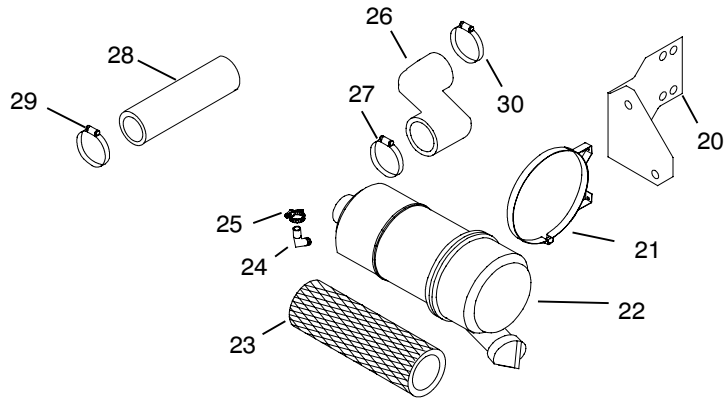
6271_21_2

Item	Part Number	Description	Quantity				
			Variation Number				
			4	5	6	7	8
1	GM35744	Gasket set (3TNV88)	1				
1	GM35750	Gasket set (3TNV84T)		1			
1	GM80009	Gasket set (3TNV88-XKMR)			1		
1	GM80003	Gasket set (3TNV88-BGKM)				1	
1	GM80010	Gasket set (3TNV84T-XKMR)					1

Gasket set includes items 2-27 shown in the illustration.

Group 101: Air Intake

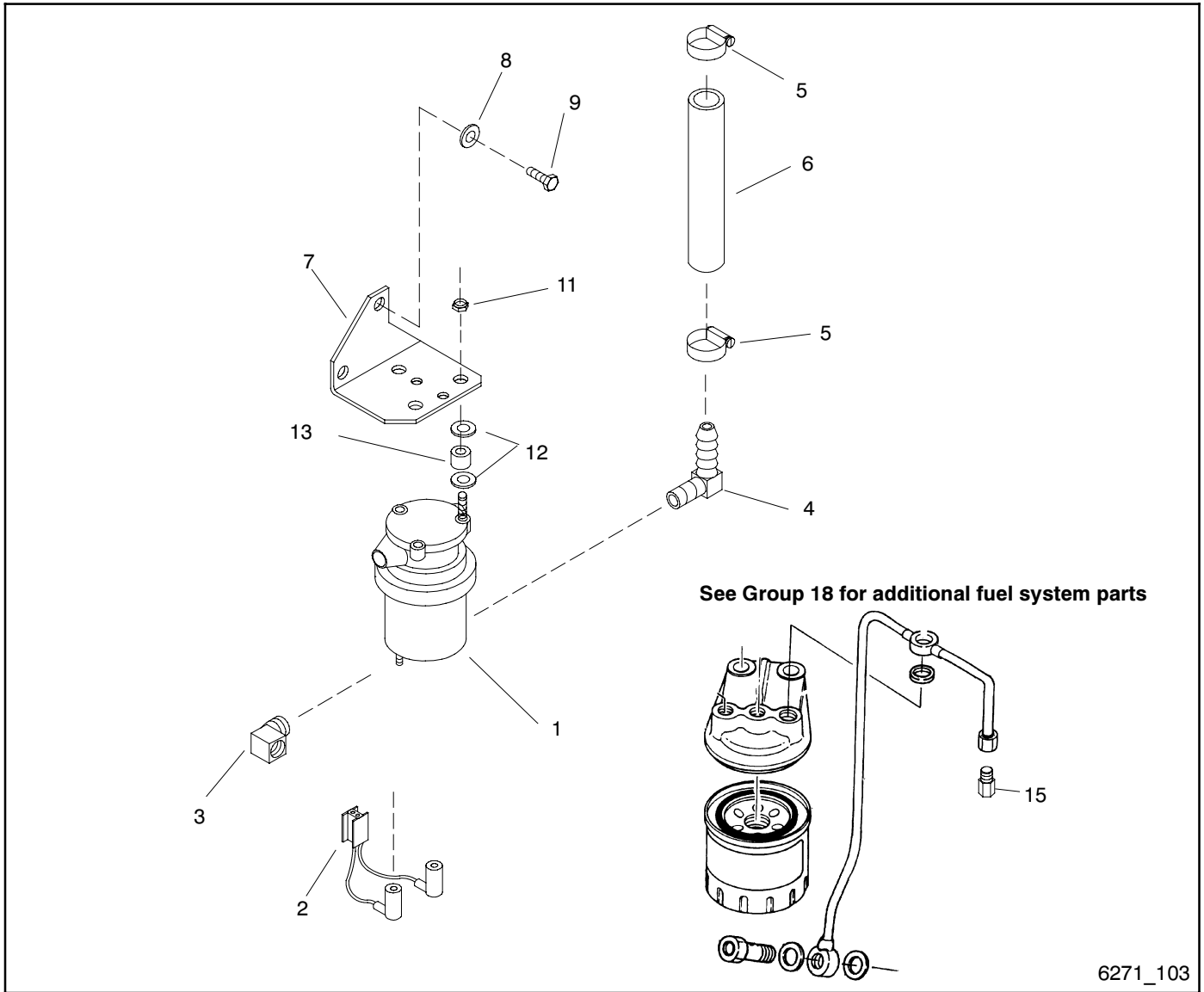
See Group 6 for 15EOZD/15.5EOZD/13EFOZD air cleaner



6271_101

Item	Part Number	Description	Quantity		
			Variation Number		
			35-1	64-1	3
20	GM22513	Bracket, air cleaner	1		
21	GM21380	Mount, air cleaner, 4.77 in. ID	1	1	1
22	GM22512	Air cleaner assembly	1		
22	GM21379	Air cleaner assembly		1	1
23	GM24456	Element, air cleaner	1	1	1
24	X-391-12	Connector, 3/8 in. ID hose	1		
25	X-426-9	Clamp, hose, 0.25/0.70 in.	1		
26	GM22514	Hose, molded, air cleaner	1		
26	GM32662	Hose, air intake		1	1
27	X-426-6	Clamp, hose, 1.56/2.5 in.	1		
27	X-426-16	Clamp, hose, 1.81/2.75 in.		1	
27	X-426-19	Clamp, hose, 1.00/2.00 in.			1
28	X-6292-2	Hose, flexible air	1	1	1
29	X-426-4	Clamp, hose, 1.31/2.25 in.	2	2	
29	X-426-19	Clamp, hose, 1.00/2.00 in.			2
30	X-426-6	Clamp, hose, 1.56/2.5 in.	1	1	
30	X-426-19	Clamp, hose, 1.00/2.00 in.			1

Group 103: Fuel System



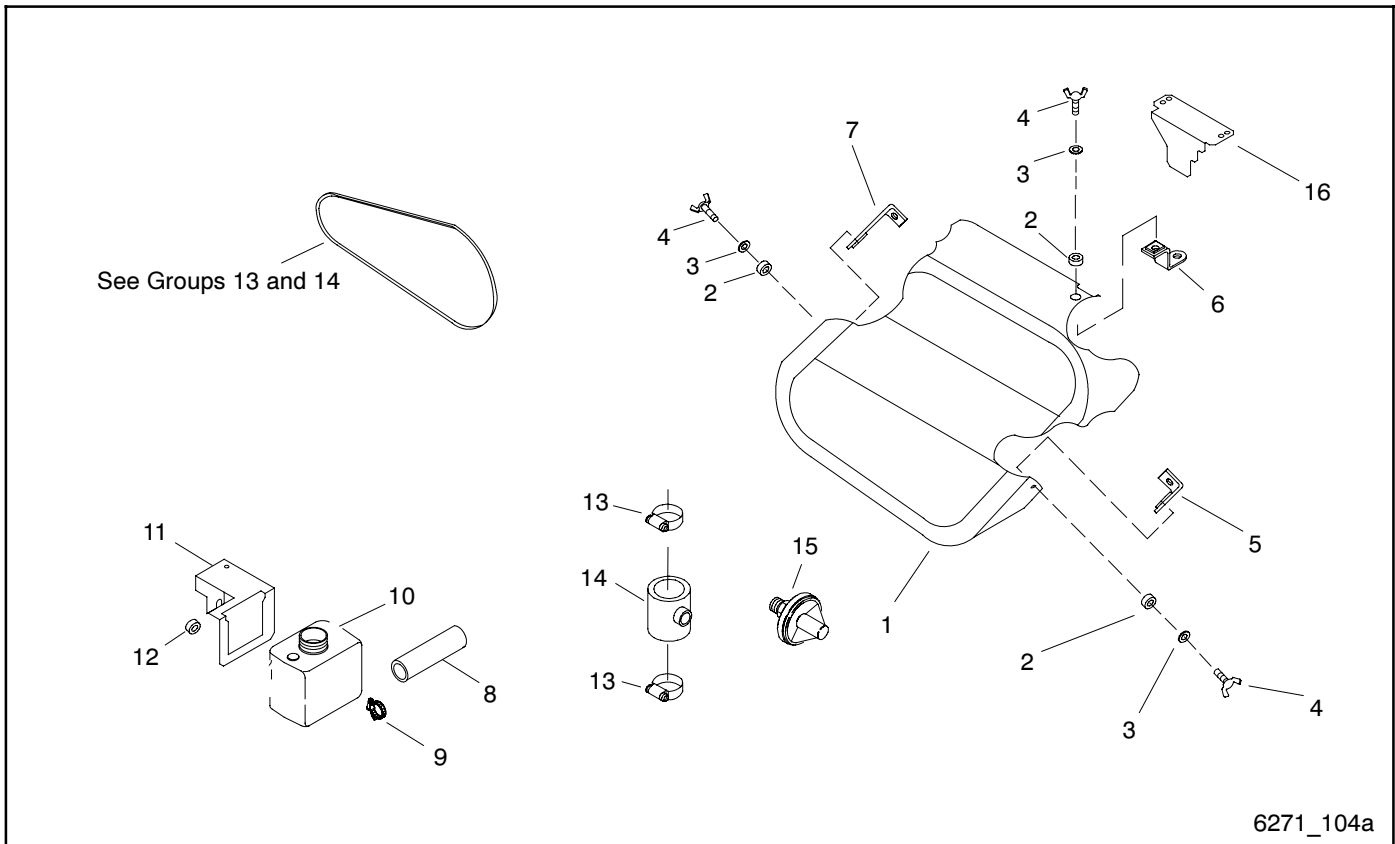
6271_103

Group 103: Fuel System

Item	Part Number	Description	Quantity				
			Variation Number				
			35-2	64-2	64-11	4	5
1	229051	Pump, fuel	1	1		1	
1	344740	Pump, fuel			1		1
2	229168	Lead assembly	1	1	1	1	1
3	X-555-1	Elbow, street 1/4 x 1/4	1	1	1	1	1
4	X-391-20	Connector, hose elbow	1				
4	X-391-25	Connector, 90 deg.		1	1	1	1
5	X-426-9	Clamp, hose	2	2	2	2	2
6	X-386-48	Line, fuel	1				
6	X-386-32	Line, fuel		1	1		
6	X-386-137	Line, fuel				1	1
7	229053	Bracket, fuel pump	1	1	1	1	1
8	M125A-10-80	Washer, plain	2	2	2	2	2
9	M933-10020-60	Screw, hex cap	2	2	2	2	2
11	X-101-25	Nut, lock	3	3	3	3	3
12	X-25-40	Washer, plain	6	6	6	6	6
13	X-284-39	Grommet	3	3	3	3	3
15	229331	Adapter, pipe	1				

Common hardware; procure locally

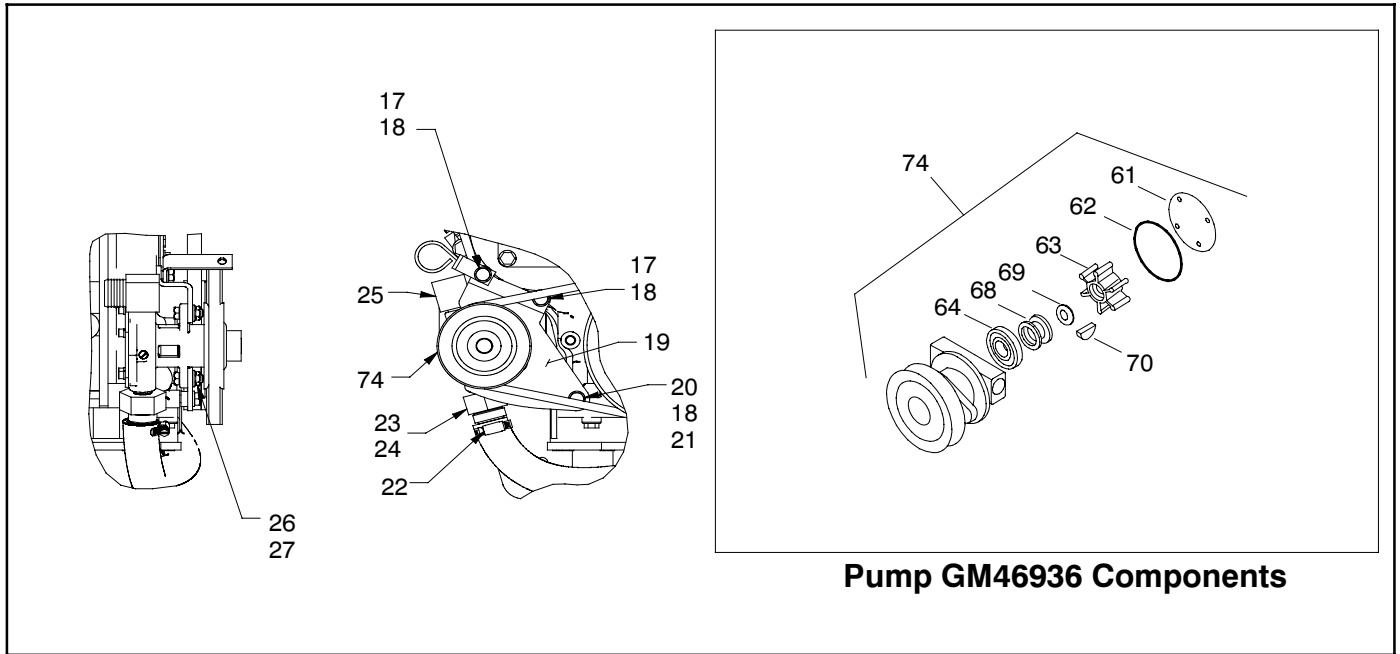
Group 104: Cooling System



Item	Part Number	Description	Quantity				
			Variation Number				
			35-3	64-3	64-12	4	5
1	344320	Guard, belt	1				
1	GM35373	Guard, belt		1	1	1	1
2	X-284-39	Grommet	3	3	3	3	3
3	X-25-40	Washer, plain	3	3	3	3	3
4	229330	Screw, wing	3	3	3	3	3
5	229201	Bracket, belt guard	1				
5	GM35368	Bracket, belt guard		1		1	
5	GM35369	Bracket, belt guard (24 V models)			1		1
6	229199	Bracket, belt guard	1				
6	GM35366	Bracket, belt guard		1		1	
6	GM35367	Bracket, belt guard (24 V models)			1		1
7	229286	Bracket, belt guard	1				
7	GM35372	Bracket, belt guard		1		1	
7	344820	Bracket, belt guard (24 V models)			1		1
8	X-386-34	Line, flex. fuel, 5/16 x 28	1	1	1	1	1
9	X-426-9	Clamp, hose, .25/.70 in.	2	2	2	2	2
10	359037	Bottle, overflow	1	1	1	1	1
11	359039	Bracket, water bottle	1				
11	GM32749	Bracket, water bottle		1	1	1	1
12	X-400-104	Spacer, .344 x .750 x .500	1				
13	X-426-20	Clamp, hose, .63/1.5 in.	2	2	2	2	2
14	GM30882	Tube, seawater	1	1	1	1	1
15	GM30263	Switch, pressure	1	1	1	1	1
16	GM49307	Guard, belt (top)		1	1		

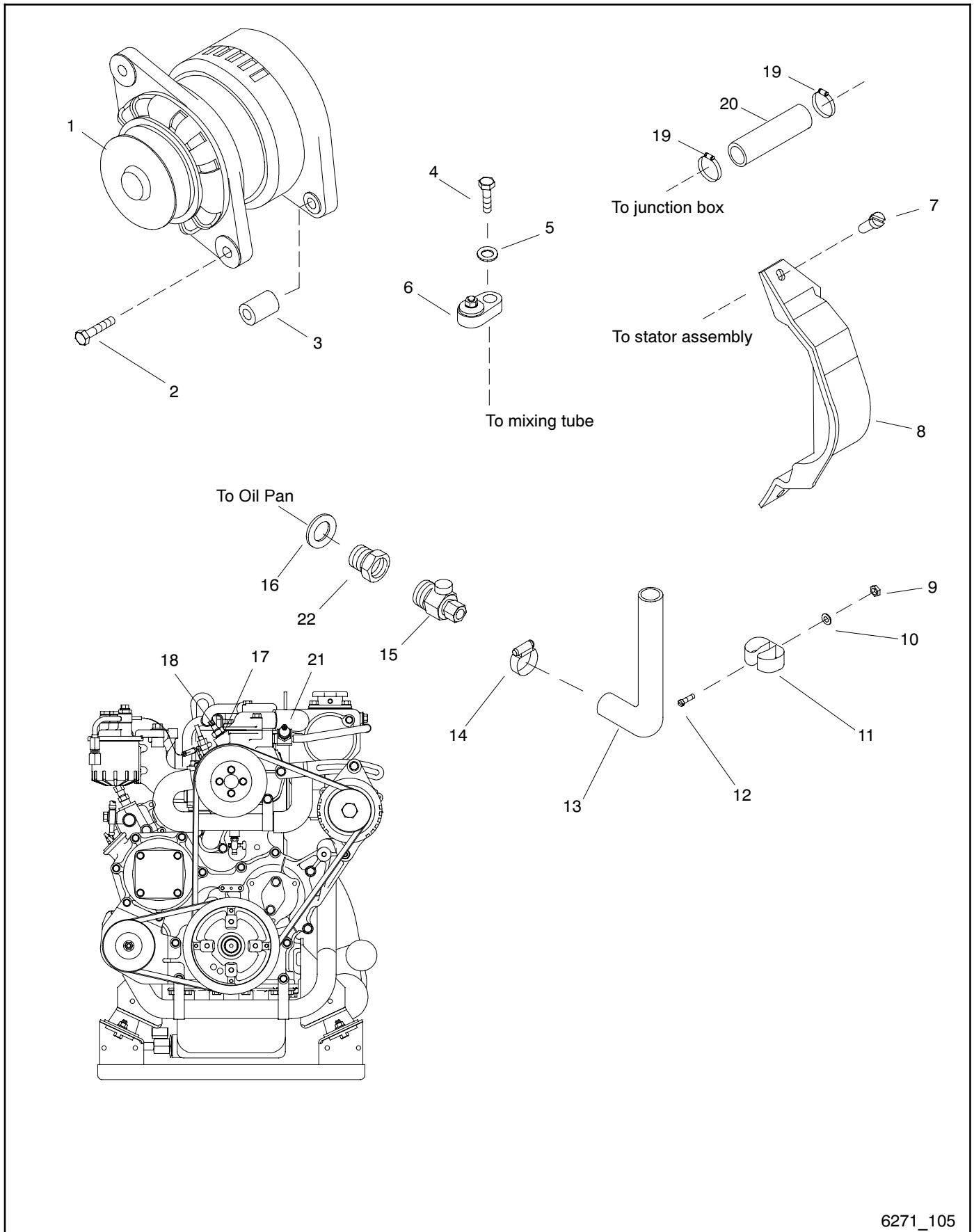
Note: Items 1-7 are removed when an optional sound shield is installed.

Group 104: Cooling System



Item	Part Number	Description	Quantity	
			Variation	Number
			64-3 &	64-12 &
			4	5
17	M931-08060-60	Screw, hex cap	2	2
18	M125A-08-80	Washer, plain, .281 ld x .625 in. OD	3	3
19	GM53017	Bracket, seawater pump	1	1
20	M931-08100-60	Screw, hex cap	1	1
21	X-400-74	Spacer, .344 ID x .625 OD x .25 in.	1	1
22	X-426-12	Clamp, hose	1	1
23	GM58848	Adapter, pipe	1	1
24	X-582-16	Connector, hose	1	1
25	X-391-23	Connector, 90 deg.	1	1
26	X-125-31	Bolt, hex cap	1	1
27	X-6210-7	Nut, flange spirallock, 5/16-18	1	1
61	344306	Plate, cover	1	1
62	344584	Gasket	1	1
63	229826	Kit, impeller (includes gasket)	1	1
64	344043	Bearing, ball	1	1
68	GM16865	Seal	1	1
69	GM22995	Seat, ceramic	1	1
70	GM17702	Key	1	1
74	GM46936	Pump, seawater	1	1
-	GM59333	Kit, seawater pump (includes items 17-21, 23-74)	1	1

Group 105: Engine



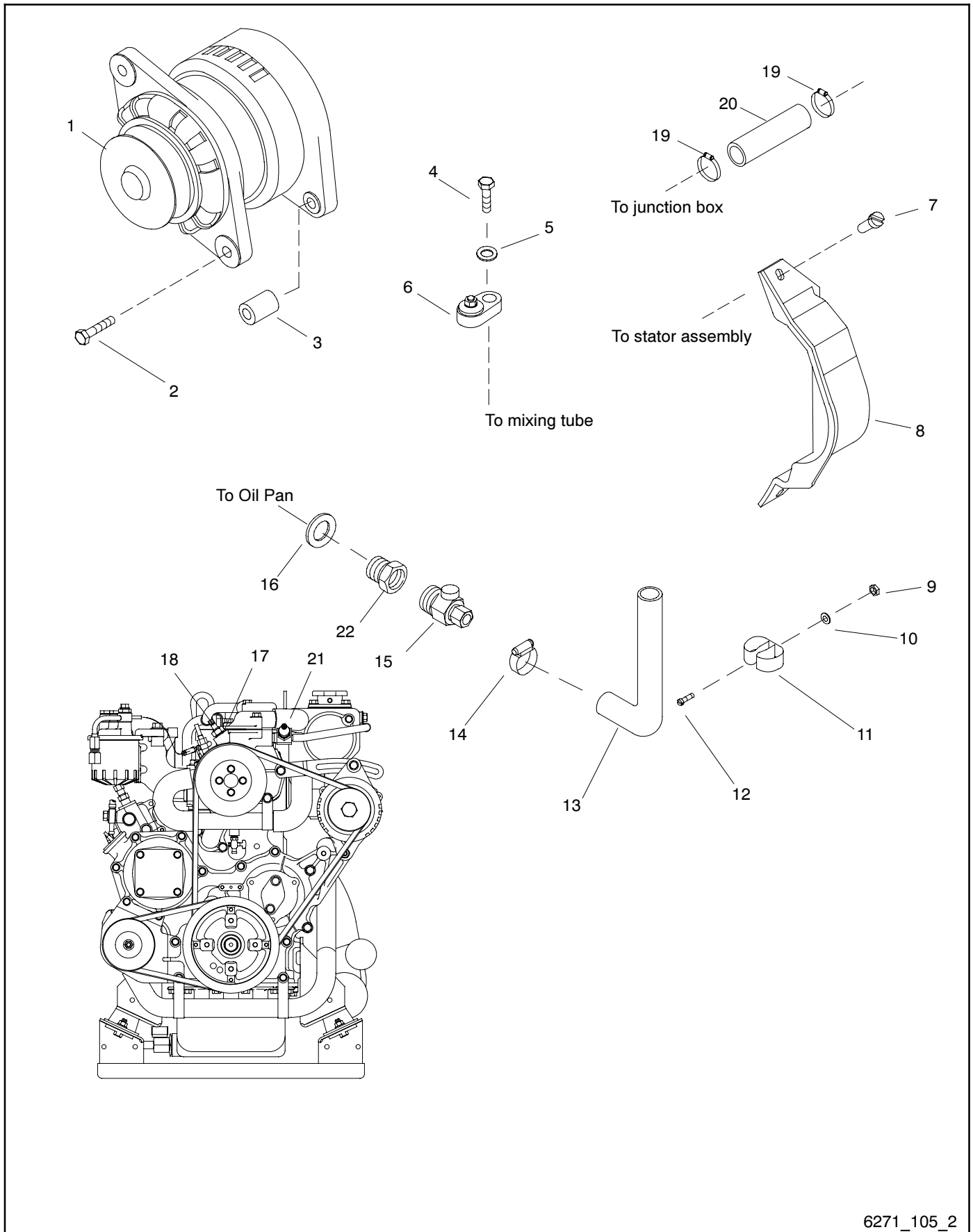
6271_105

Group 105: Engine

Item	Part Number	Description	Quantity									
			Variation Number									
			35-4	35-5	64-4	64-5	64-13	64-15	64-20	64-21	64-23	64-24
1	256924	Alternator, 12 V (see Group 13 for alt. adj. arm)	1	1	1	1			1		1	
1	344742	Alternator, 24 V					1	1		1		1
1	GM65798	Lead, BCA jumper (not shown)					1	1		1		1
1	344815	Guard, alternator fan (not shown)					1	1		1		1
1	GM49310	Guard, alternator (not shown)			1	1			1		1	
2	X-125-22	Bolt, hex cap	1	1	1	1	1	1	1	1		
3	X-400-184	Spacer	1	1								
3	X-400-258	Spacer			1	1			1		1	
3	X-400-260	Spacer					1	1		1		1
4	M933-08016-60	Screw, hex cap	1	1	1	1	1	1	1	1		
5	X-25-44	Washer, .562 x .328 x .062	1	1	1	1	1	1	1	1	1	1
6	249872	Switch, high temp. cutout	1	1	1	1	1	1	1	1	1	1
7	X-67-113	Screw, self tapping	2	2	2	2	2	2	2	2	2	2
8	229113	Guard, generator fan	1	1	1	1	1	1	1	1	1	1
9	X-101-11	Nut, elastic stop 8-32	1	1	1	1	1	1	1	1	1	1
10	X-25-48	Washer, plain	1	1	1	1	1	1	1	1		
11	276959	Clip, hose	1									
11	X-6084-1	Clip, J		1	1	1	1	1	1	1	1	1
12	X-51-15	Screw, RHM 8-32 x 1/2	1	1	1	1	1	1	1	1	1	1
13	X-651-34	Hose	1	1	1	1	1	1	1	1	1	1
14	X-426-18	Clamp, hose, .38/.88 in.	1	1								
14	X-426-9	Clamp, hose, .25/.70 in.			1	1	1	1	1	1	1	1
15	344828	Valve, drain	1	1								
15	359653	Valve, drain			1	1	1	1	1	1	1	1
16	X-25-145	Washer, 1.25 x .875 x .062	1	1	1	1	1	1	1	1	1	1
17	GM30245	Bushing, adapter	1	1								
17	D-228	Bushing, reducing, 1/8 x 3/8 in. NPT			1	1	1	1	1	1	1	1
18	GM28823	Sensor, temperature	1	1	1	1	1	1	1	1	1	1
19	X-426-4	Clamp, hose, 1.31/2.25 in.				1		1			1	1
20	X-6292-2	Hose, flexible air				1		1			1	1
21	A-359582	Engine, Yammar 3TNE88	1									
21	A-359583	Engine, Yanmar 3TNE84T		1								
21	GM29460	Engine, Yanmar 3TNV88M-GKM			1		1					
21	GM55411	Engine, Yanmar 3TNV88-XKMR							1	1		
21	GM29462	Engine, Yanmar 3TNV84T-GKM				1		1				
21	GM58980	Engine, Yanmar 3TNV84T-XKMR									1	1
22	249959	Adapter, bushing			1	1	1	1	1	1	1	1

Note: Item 13 is removed when an optional sound shield is installed. The sound shield parts are listed in the Accessory section of this manual.

Group 105: Engine, continued



6271_105_2

Group 105: Engine, continued

Item	Part Number	Description	Quantity							
			Variation Number							
			7	8	9	10	11	12	13	14
1	256924	Alternator, 12 V (see Group 13 for alt. adjust. arm)	1		1		1		1	
1	344742	Alternator, 24 V		1		1		1		1
1	GM65798	Lead, BCA jumper (not shown)		1		1		1		1
1	GM49310	Guard, alternator 12V (not shown)	1		1		1		1	
1	344815	Guard, alternator (not shown)		1		1		1		1
2	X-125-22	Bolt, hex cap	1	1	1	1	1	1	1	1
3	X-400-258	Spacer	1		1		1		1	
3	X-400-260	Spacer		1		1		1		1
4	M933-08016-60	Screw, hex cap	1	1	1	1	1	1	1	1
5	X-25-44	Washer, .562 x .328 x .062	1	1	1	1	1	1	1	1
6	249872	Switch, high temp. cutout	1	1	1	1	1	1	1	1
7	X-67-113	Screw, self tapping	2	2	2	2	2	2	2	2
8	229113	Guard, generator fan	1	1	1	1	1	1	1	1
9	X-101-11	Nut, elastic stop 8-32	1	1	1	1	1	1	1	1
10	X-25-48	Washer, plain	1	1	1	1	1	1	1	1
11	X-6084-1	Clip, J	1	1	1	1	1	1	1	1
12	X-51-15	Screw, RHM 8-32 x 1/2	1	1	1	1	1	1	1	1
13	X-651-34	Hose, rubber, straight, .375 in. ID	1	1	1	1	1	1	1	1
14	X-426-9	Clamp, hose, .25/.70 in.	1	1	1	1	1	1	1	1
15	359653	Valve, oil drain (3/8-18 npt)	1	1	1	1	1	1	1	1
16	X-25-145	Washer, 1.25 x .875 x .062	1	1	1	1	1	1	1	1
17	D-228	Bushing, reducing, 1/8 x 3/8 in. NPT	1	1	1	1	1	1	1	1
18	GM28823	Sensor, temperature	1	1	1	1	1	1	1	1
19	X-426-4	Clamp, hose, 1.31/2.25 in.					2	2	2	2
20	X-6292-2	Hose, flexible air					1	1	1	1
21	GM51739	Engine, Yammar 3TNV88-BGKM	1	1						
21	GM55411	Engine, Yanmar 3TNV88-XKMR			1	1				
21	GM51740	Engine, Yanmar 3TNV84T-BGKM					1	1		
21	GM58980	Engine, Yanmar 3TNV84T-XKMR							1	1
22	249959	Adapter, bushing	1	1	1	1	1	1	1	1

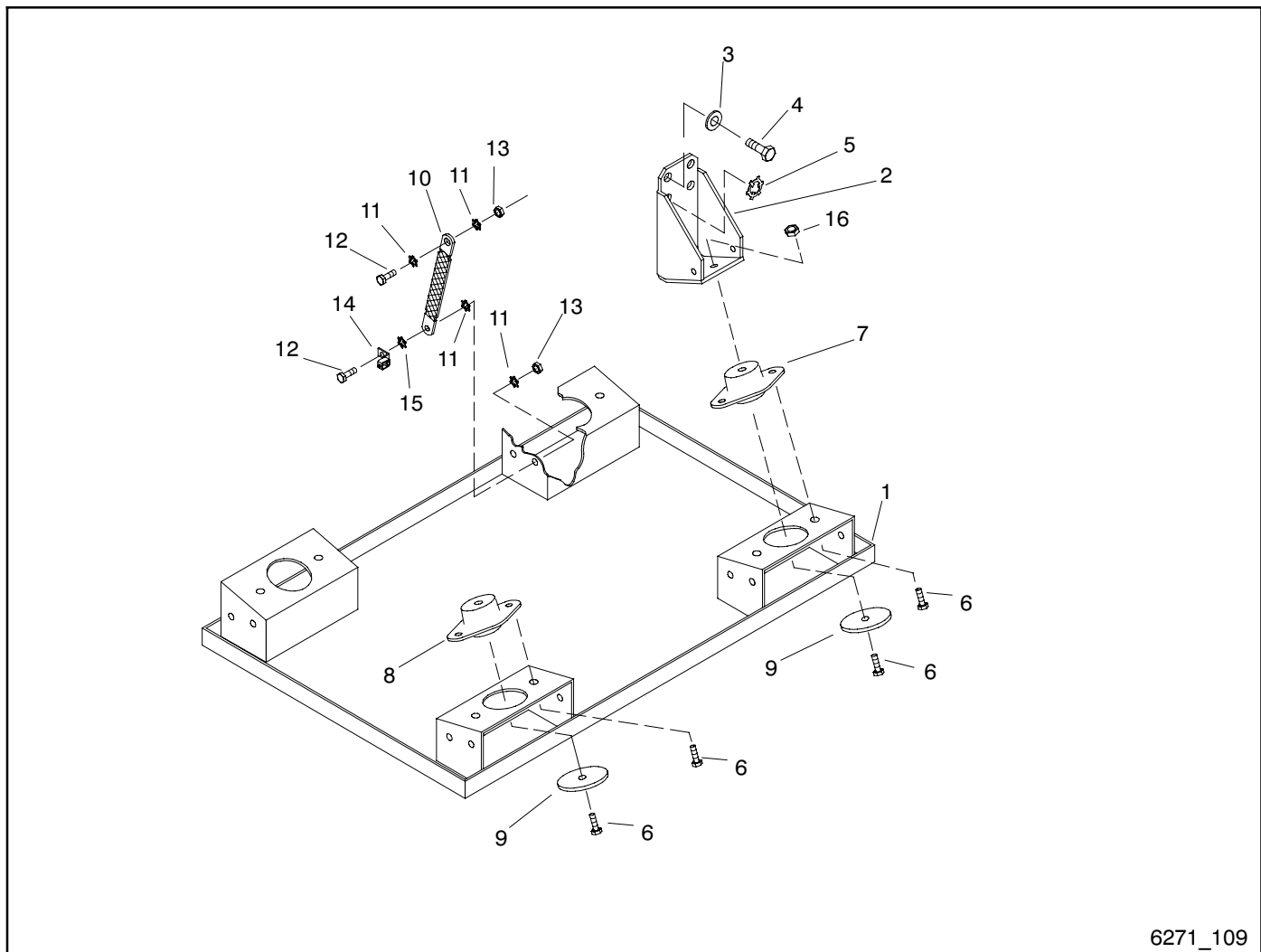
Note: Item 13 is removed when an optional sound shield is installed. The sound shield parts are listed in the Accessory section of this manual.

Group 107: Nameplate and Decals

Item	Part Number	Description	Quantity				
			Variation Number				
			35-6	64-6	64-16	4	5
1	249810	Decal, warning "Hot Coolant"	1	1	1	1	1
2	226917	Decal, negative battery connection	1	1	1	1	1
3	344295	Decal, equipment ground	1	1	1	1	1
4	GM14167	Decal, drain	2	2	2		
4	GM62794	Decal, drain				2	2
5	249808	Decal, warning "Rotating Parts"	1	2	1	1	1
6	224233	Decal, 1-800 number	1	1	1	1	1
7	249809	Decal, warning "Hot Engine"	1	1	1	1	1
8	X-6348-5	Decal, Kohler Logo	1				
8	X-6348-6	Decal, Kohler Logo		1	1		
8	X-6275-4	Decal, Kohler Logo				1	1
9	GM35838	Decal, reconnection 1 phase	1	1		1	
9	229883	Decal, reconnection 3 phase			1		1
10	344486	Decal, CE	1	1	1	1	1
11	246242	Decal, notice "This generator set has been rewired..."	1				
12	238162	Decal, pos. battery connection				1	1
13	294520	Decal, danger high voltage		1	1	1	1

Nameplate and decals are not illustrated.

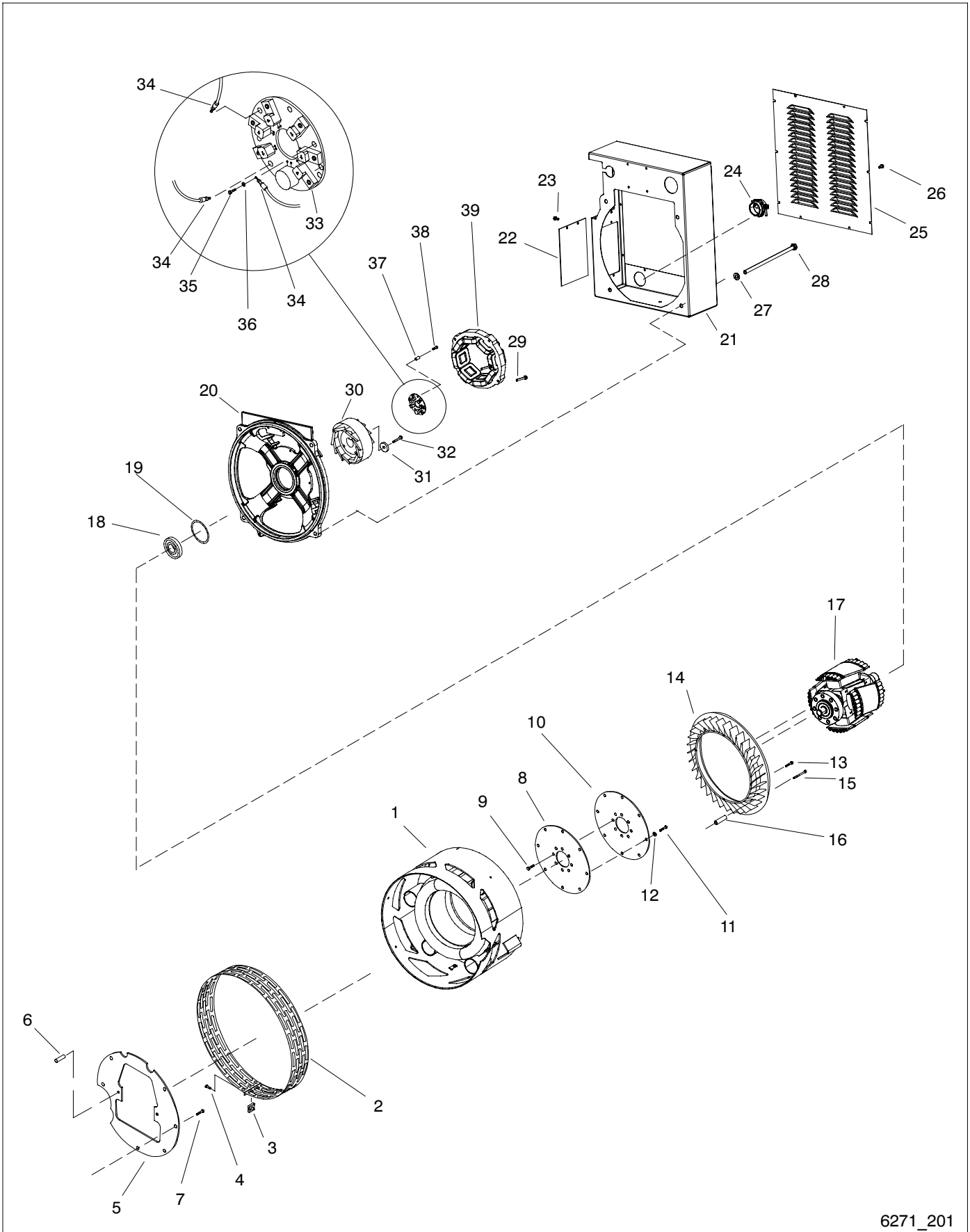
Group 109: Skid and Plant Mounting



6271_109

Item	Part Number	Description	Quantity		
			Variation Number		
			35-7	64-7	3
1	GM31908	Tray	1	1	1
2	GM29465	Support, engine	2	2	2
3	M125A-10-80	Washer, plain	7	7	8
4	M933-10020-60	Screw, hex cap	8	8	8
5	X-22-14	Washer, lock	1	1	
6	M931-08055-60	Screw, hex cap	4	4	4
7	229127	Mount, vibro (engine end)	2	2	2
8	278322	Mount, vibro (generator end)	2	2	2
9	X-25-96	Washer, plain	4	4	4
10	245297	Strap, ground	1		
10	LK-0606-1515	Lead		1	1
11	X-22-12	Washer, shakeproof	4	4	4
12	M933-06025-60	Screw, hex cap	2	2	2
13	M6923-06-80	Nut, hex 6mm	2	2	2
14	X-377-12	Connector, cable	1		
15	X-22-11	Washer, lock 1/4	1		
16	M982-08-80	Nut, hex elastic stop	4	4	4

Group 201: Generator and Mounting



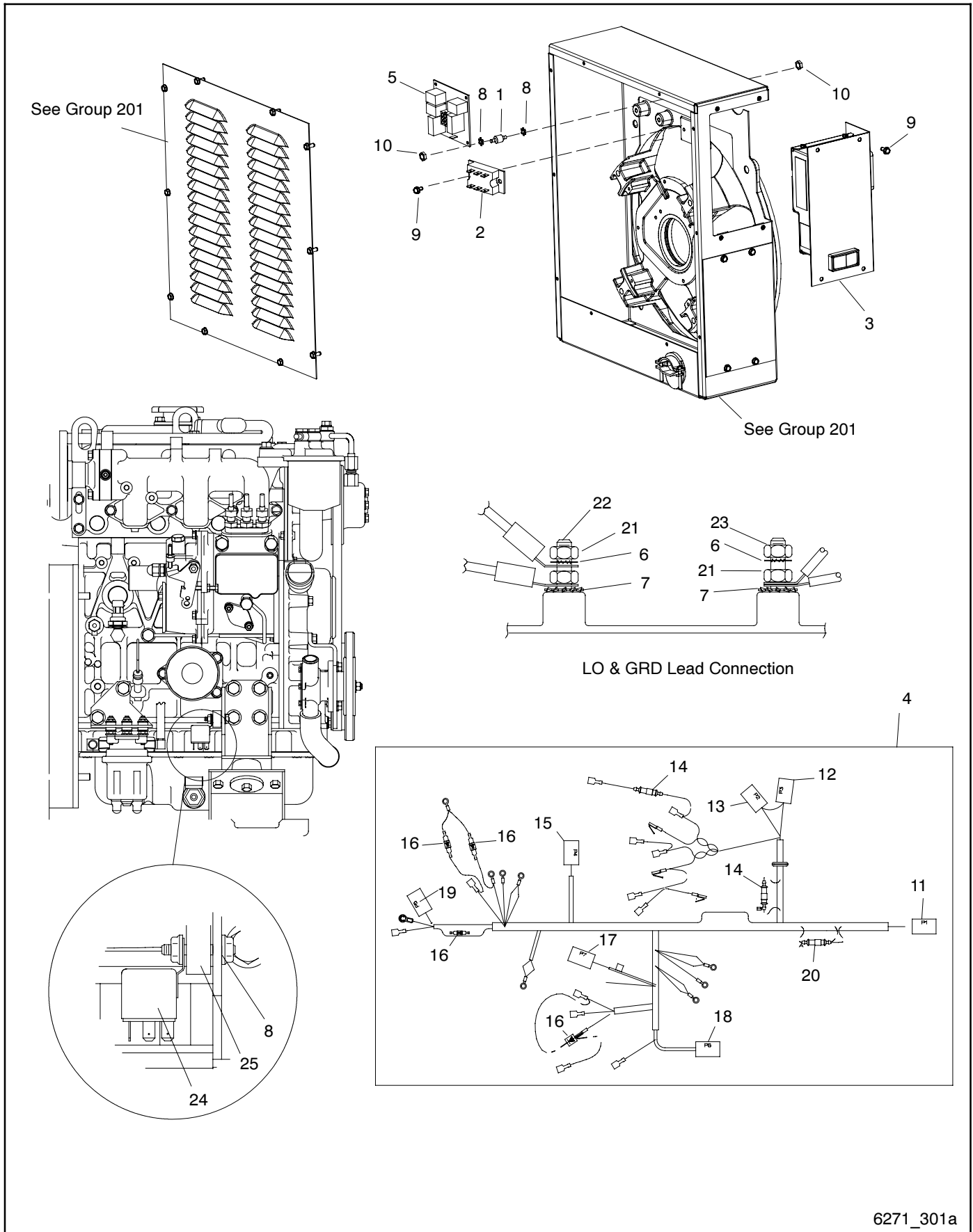
6271_201

Group 201: Generator and Mounting

Item	Part Number	Description	Quantity								
			Variation Number								
			35-8	35-9	64-8	64-9	64-17	6	7	8	
1	GM29283	Stator assembly	1	1	1	1			1	1	
1	GM29788	Stator assembly					1				1
2	229109	Guard, generator fan	1	1	1	1	1	1	1	1	1
3	257442	Clip, speed	1	1	1	1	1	1	1	1	1
4	X-67-125	Screw, tapping, 10-24	1	1	1	1	1	1	1	1	1
5	229097	Plate, locator	1	1	1	1	1	1	1	1	1
6	229356	Pin, knurled	2	2	2	2	2	2	2	2	2
7	M933-10012-60	Screw, M10-1.50	6	6	6	6	6	6	6	6	6
8	257017	Disc, drive	1	1	1	1	1	1	1	1	1
9	X-6238-3	Screw, 3/8-16 x .875	8	8	8	8	8	8	8	8	8
10	257017	Disc, drive	1	1	1	1	1	1	1	1	1
11	M933-08016-60	Screw, HC M8-1.25	8	8	8	8	8	8	8	8	8
12	M125A-08-80	Washer	8	8	8	8	8	8	8	8	8
13	X-6284-1	Screw, M5 x .8 x 10 mm	4	4	4	4	4	4	4	4	4
14	225215	Fan, generator	1	1							
14	225214	Fan, generator			1	1	1	1	1	1	1
15	X-6284-2	Screw, M5 x .8 x 45 mm	4	4	4	4	4	4	4	4	4
16	X-400-189	Spacer	4	4	4	4	4	4	4	4	4
17	GM29683	Rotor assembly (includes item 18)	1		1			1			
17	GM29684	Rotor assembly (includes item 18)		1		1	1			1	1
18	X-758-15	Bearing, ball	1	1	1	1	1	1	1	1	1
19	229110	O-ring	1	1	1	1	1	1	1	1	1
20	GM24810	Bracket, end	1	1	1	1	1	1	1	1	1
21	GM29688	Box, junction	1	1							
21	GM37367	Box, junction			1	1	1	1	1	1	1
22	GM30021	Plate, circuit breaker	1	1	1	1	1	1	1	1	1
23	X-6216-1	Screw, Phillips hex crimp-tite	4	4	4	4	4	4	4	4	4
24	X-6266-1	Connector, cable	1	1	1	1	1	1	1	1	1
25	GM29690	Panel, junction box louver	1	1	1	1	1	1	1	1	1
26	X-6216-1	Screw, Phillips hex crimp-tite	10	10	10	10	10	10	10	10	10
27	X-801-3	Washer, hardened	4	4	3	3	3	3	3	3	3
27	X-22-14	Washer, lock, .172 ID x .333 in. OD			1	1	1	1	1	1	1
28	X-6051-16	Screw, hex head	4	4	4	4	4	4	4	4	4
29	X-97-14	Screw, hex, 10-24	4	4	4	4	4	4	4	4	4
30	344568	Exciter, armature	1	1	1	1	1	1	1	1	1
31	X-25-129	Washer, plain	1	1	1	1	1	1	1	1	1
32	X-6238-3	Screw, 3/8-16 x .875	1	1	1	1	1	1	1	1	1
32	X-22-1	Washer, lock	1	1	1	1	1	1	1	1	1
33	A-229152	Circuit Board, diode board	1	1	1	1	1	1	1	1	1
34	X-283-3	Terminal	3	3	3	3	3	3	3	3	3
35	X-51-8	Screw, 8-32 x .75	5	5	5	5	5	5	5	5	5
36	X-22-7	Washer, lock, .172 ID x .333 in. OD	5	5	5	5	5	5	5	5	5
37	X-712-17	Spacer	3	3	3	3	3	3	3	3	3
38	X-67-135	Screw, tapping, 10-24	3	3	3	3	3	3	3	3	3
39	GM31594	Exciter assembly, field	1	1	1	1	1	1	1	1	1

Note: Item 25 is replaced with a different part when an optional sound shield is installed. The sound shield parts are listed in the Accessory section of this manual.

Group 301: Controller and Mounting



Group 301: Controller and Mounting

Item	Part Number	Description	Quantity						
			Variation Number						
			35-10	64-10	64-14	64-18	64-19	6	7
1	282829	Vibromount	4	4	4	4	4	4	4
2	GM28483	SCR module	1	1	1	1	1	1	1
3	GM34969	Controller assembly, ADC 2100 (kit includes instructions)	1	1	1	1	1	1	1
4	GM29566	Harness, engine, Yanmar 13-32EOZD							
		(serviced with GM50486-S that includes GM50486)							
4	GM50486	Harness, engine, Yanmar 13-32EOZD	1	1	1				
		(used with relay containing an integrated diode)							
5	GM29671	PCB assembly, relay board, 12V	1	1		1	1	1	1
5	GM29778	PCB assembly, relay board, 24V			1	1			1
6	X-22-11	Washer, lock, .262 ID x .469 in. OD	2	2	2	2	2	2	2
7	X-22-12	Washer, lock, .262 ID .743 in. OD	2	2	2	2	2	2	2
8	X-22-20	Washer, lock, .172 ID x .373 in. OD	10	10	10	10	10	8	8
9	X-67-64	Screw, self-tapping	6	6	6	6	6	6	6
10	X-6210-4	Nut, flange whiz, 8-32	8	8	8	8	8	8	8
11	GM28678	Connector, weathertight	1	1	1	1	1	1	1
12	320711	Connector, 9-position	1	1	1	1	1	1	1
13	GM29998	Connector, 6-position, blk, male	1	1	1	1	1	1	1
14	223316	Fuse, 10 A, 250 V	2	2	2	2	2	2	2
15	229989	Connector, receptacle	1	1	1	1	1	1	1
16	233959	Diode, 6 A	4	4	4	4	4	4	4
17	GM15493	Connector, weathertight, 3-position	1	1	1	1	1	1	1
18	292370	Connector, plug, 2-position	1	1	1	1	1	1	1
19	GM29249	Connector	1	1	1	1	1	1	1
20	358337	Fuse, 10 A, 250 V	1	1	1	1	1	1	1
21	M934-06-60	Nut, hex, 6 mm	3						
21	X-6210-2	Nut, flange, spirallock, 1/4-20		3	3	3	3	3	3
22	X-6054-22	Stud, metric	2						
23	M934-06-64	Nut, hex, 6mm	1						
23	X-81-8	Nut, hex 1/4-20		1	1	1	1	1	1
24	259391	Relay, 12 V (use GM49746 and modify harness GM29566)	1	1					
24	GM49746	Relay, 12 VDC (contains integrated diode, used w/harness GM50486)					1	1	
24	272684	Relay (use GM49747 and modify harness GM29566)			1				
24	GM49747	Relay, 24 VDC (contains integrated diode, used w/harness GM50486)				1			1
25	200705	Grommet, round	1	1	1	1	1	1	1

Group 701: Literature

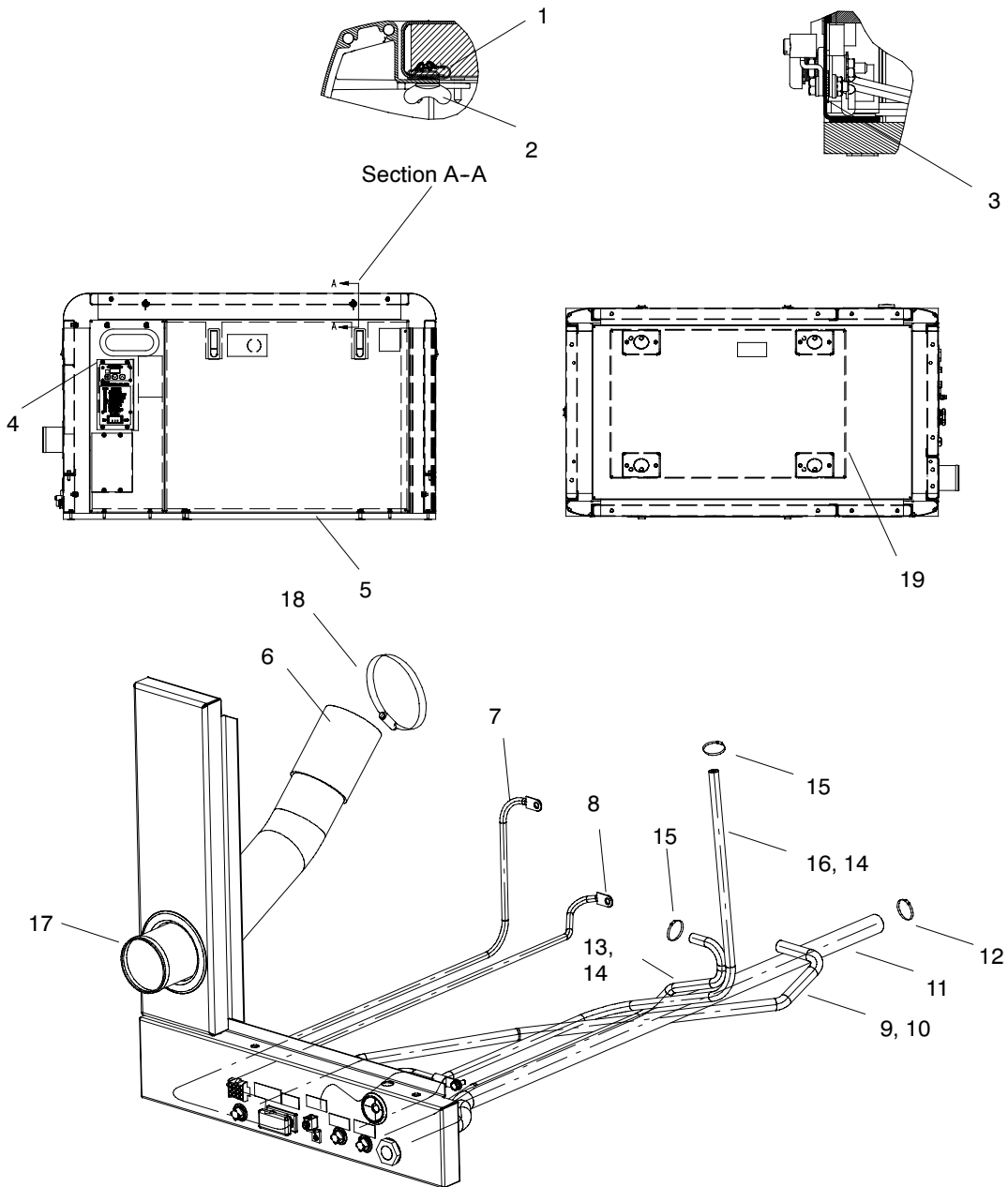
Item	Part Number	Description	Quantity							
			Variation Number							
			45	46	47	56	57	73	74	75
1	TP-6691	Warranty, Marine (32 kw and below)	1	1	1	1	1	1	1	1
2	TP-5620	Safety Precautions, Marine	1	1	1	1	1	1	1	1
3	TP-6252	O/M 8-32EOZD/6.5-27EFOZD	1	1	1	1	1			
3	TP-6710	O/M 9-32EOZD, Marine						1	1	1
4	TP-6253	I/M EOZ/EFOZ/EOZD/EFOZD	1	1	1	1	1			
4	TP-6711	I/M 9-32EOZD, Marine						1	1	1
5	TP-6255	S/M 8-15.5EOZD/6.5-13EFOZD	1	1	1	1	1	1	1	1
6	TP-6271	P/C 13-15.5EOZD/11-13EFOZD	1	1	1	1	1	1	1	1
7	TP-6412	O/M Yanmar TNV Series	1	1	1					
7	TP-6067	O/M Yanmar TNE Series				1	1			
7	TP-6702	O/M Yanmar TNV Series						1	1	1
8	TP-6293	S/M Yanmar TNV Series	1	1	1					
8	TP-5876	S/M Yanmar TNE Series				1	1			
8	TP-6703	S/M Yanmar TNV Series						1	1	1
9	TP-6666	I/M Low Sulfur Fuel Lbl Instr	1	1	1			1	1	1

Paint and Miscellaneous Parts

Item	Part Number	Description
1	221334	White paint, gallon can (Chris Craft White)
1	221335	White paint, spray can (Chris Craft White)
1	GM48126	White paint, spray can (Matterhorn White)

The change from Chris Craft to Matterhorn White was made in production on 1/1/2006; the serial break is #2082007.

Sound Shield

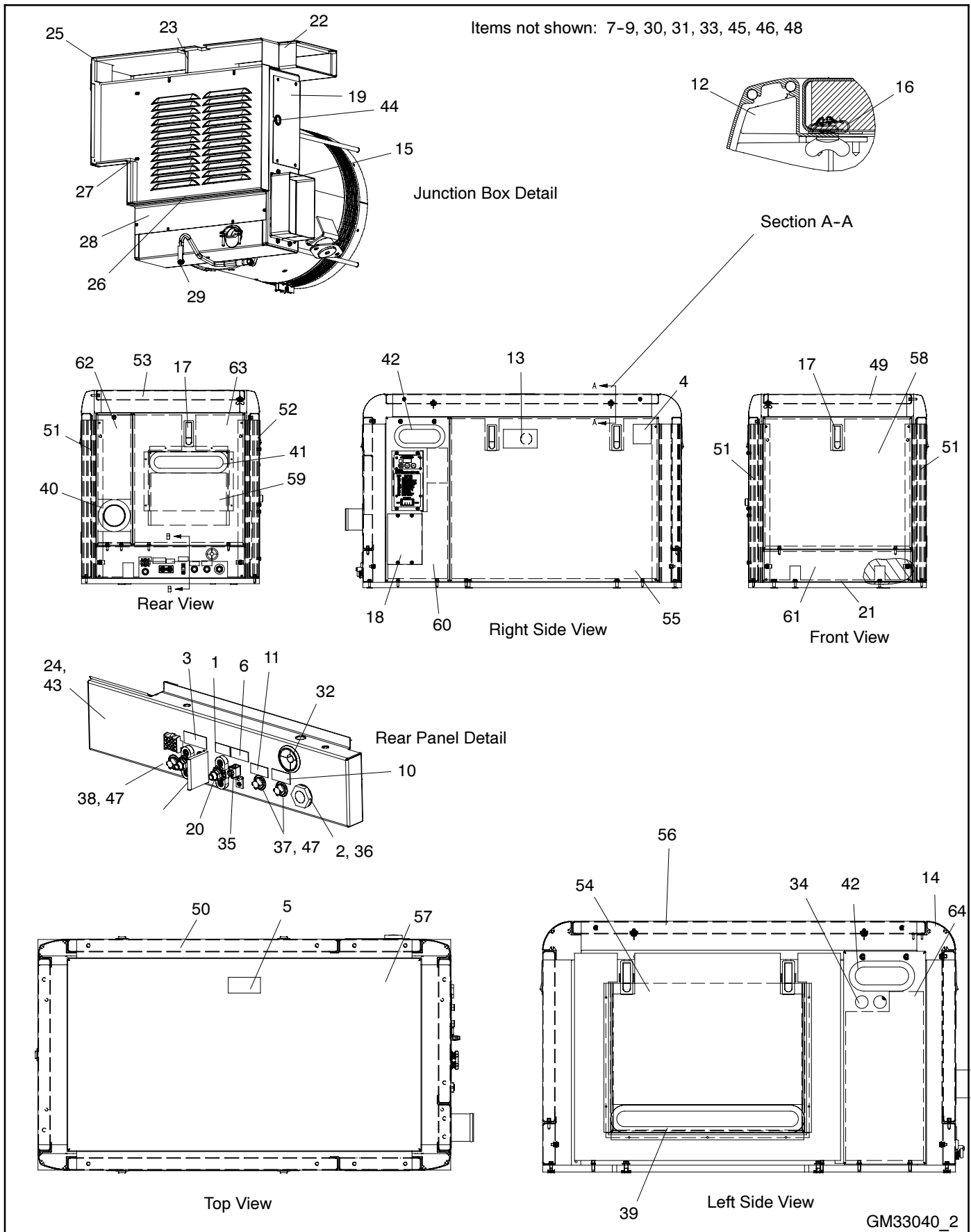


GM33040_1

Sound Shield

Item	Part Number	Description	Quantity					
			Module Number					
			GM32546-KA1	GM32546-KA2	GM33040-KA1	GM33040-KA2	GM58969-KA1	GM58969-KA2
1	GM29918	Retainer	2	2	2	2	2	2
2	GM29920	Stud, wing head	2	2	2	2	2	2
3	X-22-12	Washer, lock, .262 ID x .743 in. OD	1	1	1	1		
4	X-50-15	Screw, pan head 10-24 x 1/2	8	8	8	8	8	8
5	GM31926	Base, sound shield	1	1	1	1		
5	GM58974	Base, sound shield					1	1
6	GM32638	Hose, radiator	1	1	1	1	1	1
7	X-545-173	Cable, battery			1	1		
7	X-545-177	Cable, battery (red)	1	1			1	1
8	X-545-174	Cable, battery (black)	1	1	1	1	1	1
9	X-651-6	Hose, rubber, straight, .375 in. ID	1	1	1	1	1	1
10	X-426-9	Clamp, hose, .25/.70 in.	1	1	1	1	1	1
11	X-6014-117	Hose, wire inserted radiator	1	1	1	1		
11	X-691-37	Hose, oil proof					1	1
12	X-426-8	Clamp, hose, .81/1.75 in.	2	2	2	2		
12	X-426-12	Clamp, hose, .69/1.25 in.					2	2
13	X-386-75	Fuel line, flexible (fuel inlet)			1	1		
13	X-6251-15	Fuel line, flexible (fuel inlet)	1	1				
13	X-6251-29	Fuel line, flexible (fuel inlet)					1	1
13	X-380-4	Connector, hose + vibra seal (not shown)	1	1			1	1
14	X-652-3	Connector, hose + vibra seal			2	2		
15	X-426-9	Clamp, hose, .25/.70 in.	4	4	4	4	4	4
16	X-386-103	Hose (fuel outlet)			1	1		
16	X-6251-14	Hose (fuel outlet)	1	1				
16	X-6251-30	Hose (fuel outlet)					1	1
17	GM32620	Tube, exhaust	1		1			
17	GM32552	Tube, exhaust		1		1		
17	GM58997	Tube, exhaust					1	
17	GM58999	Tube, exhaust						1
18	X-426-5	Clamp, hose, 2.81/3.75 in.	4	4	4	4	4	4
19	X-6047-7	Channel, U	1	1	1	1		
19	X-6047-42	Channel, U (1.50 ft.)					1	1
19	X-6047-45	Channel, U (.38 ft.)					2	2
—	X-25-142	Washer, plain, .281 ID x.625 in. OD	9	9	9	9	5	5
—	X-465-22	Bolt, hex cap	4	4	4	4	4	4
—	X-465-24	Bolt, hex cap	5	5	5	5	1	1
—	X-6278-15	Washer, nylon	2	2	2	2		
—	X-794-5	Screw, drill #8 stainless steel	24	24	24	24	24	24
—	GM64335	Stiffener, sound shield base					2	2

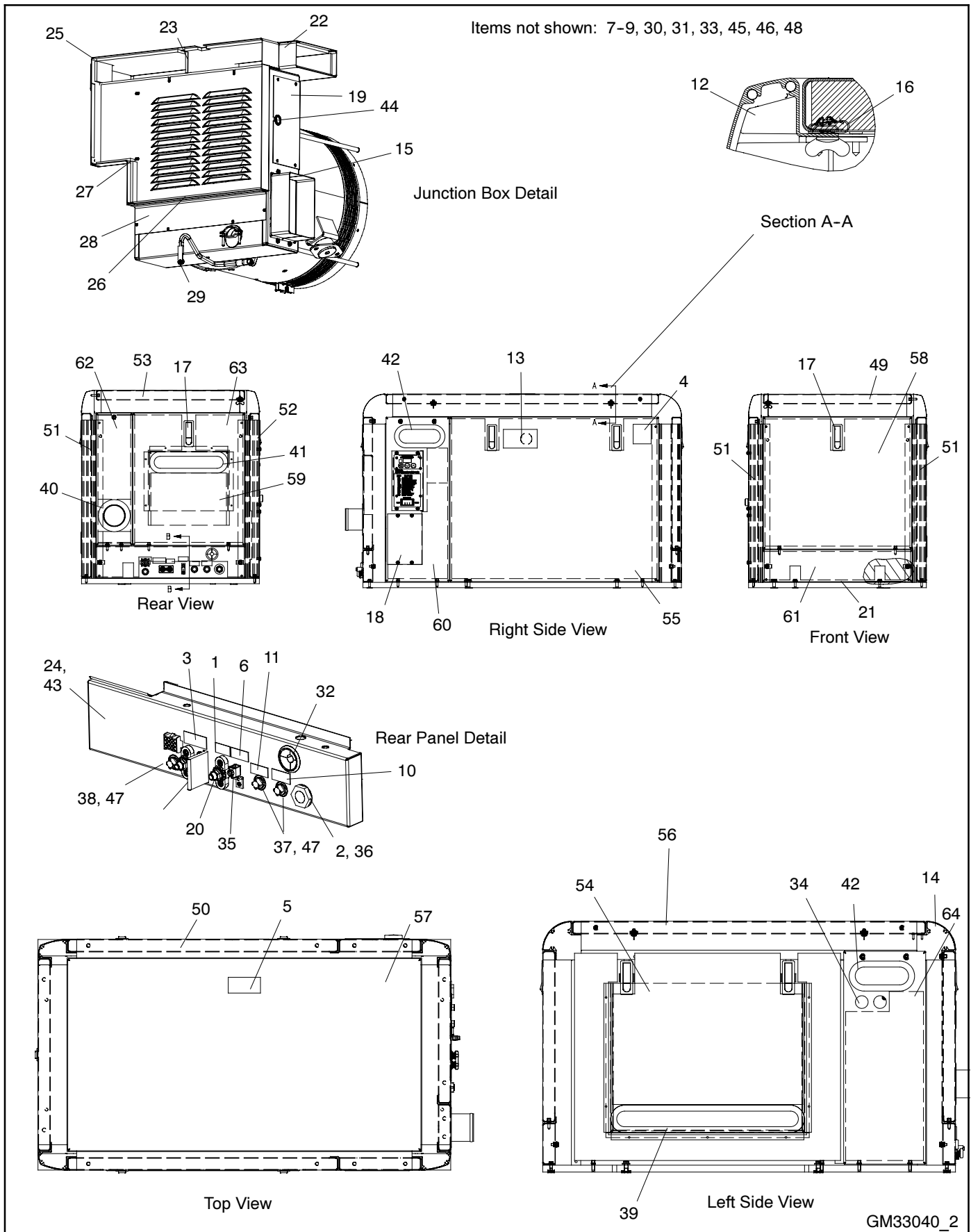
Sound Shield, continued



Sound Shield, continued

Item	Part Number	Description	Quantity					
			Module Number					
			GM32546-KA1	GM32546-KA2	GM33040-KA1	GM33040-KA2	GM58969-KA1	GM58969-KA2
1	226917	Decal, negative battery connect	1	1	1	1	1	1
2	229291	Coupling, bulkhead pipe	1	1	1	1	1	1
3	238162	Decal, positive battery connection	1	1	1	1	1	1
4	249808	Decal, warning rotating parts	1	1	1	1	1	1
5	343165	Decal, caution-not a step	1	1	1	1	1	1
6	344295	Decal, equipment ground	1	1	1	1	1	1
7	344484	Insert, threaded, 1/4-20 in.	21	21	21	21	19	19
8	345283	Pin, threaded, 1/4-20 x 1.18 in.	16	16	16	16	14	14
9	346258	Insert, threaded, #10-24	8	8	8	8	8	8
10	359278	Decal, fuel inlet	1	1	1	1	1	1
11	359279	Decal, fuel return	1	1	1	1	1	1
12	359584	Foam, acoustic insulation	3	3	3	3	4	4
13	GM10148	Decal, warning fire port	1	1	1	1	1	1
14	GM15486	Connector, outside corner	4	4	4	4	4	4
15	GM29899	Frame, circuit breaker	2	2	2	2		
16	GM29919	Clip, speed	2	2	2	2	2	2
17	GM29980	Latch, lockable	6	6	6	6	6	6
18	GM30021	Plate, circuit breaker	1	1	1	1		
19	GM30251	Panel, sound shield ADC lead	1	1	1	1	1	1
20	GM33684	Block, junction	1	1	2	2	1	1
20	GM47785	Block, junction (pos)	1	1				
21	GM30665	Seal, dampening	2	2	2	2	2	2
22	GM30697	Duct, air intake	1	1	1	1		
22	GM63601	Duct, air intake					1	1
22	GM63602	Duct, air intake					1	1
23	GM30699	Baffle, air intake duct	1	1	1	1		
24	GM62878-S	Panel assy., bulkhead connection	1	1	1	1	1	1
25	GM32179	Duct, air intake	1	1	1	1		
25	GM59006	Duct, air intake					1	1
26	GM32688	Duct, junction box	1	1	1	1		
27	GM32689	Duct, junction box (corner)	1	1	1	1		
28	GM32690	Duct, air intake (bottom)	1	1	1	1		
28	GM63172-S	Panel, junction box					1	1
29	LK-0616-1515	Lead	1	1	1	1		
29	LK-0620-1515	Lead					1	1
30	X-22-11	Washer, lock, .262 ID x .469 in. OD	1	1	1	1	1	1
31	X-22-12	Washer, lock, .262 ID x .743 in. OD	1	1	1	1	2	2
32	X-284-44	Grommet, round	1	1	1	1		
32	X-284-32	Grommet, round					1	1
33	X-30-2	Screw, slotted flat machine	1	1	1	1		
34	X-301-35	Button, plug	2	2	2	2	2	2
35	X-377-12	Connector, cable	1	1	1	1		
36	X-582-16	Connector, hose + vibra seal	1	1	1	1		
36	X-582-8	Connector, hose + vibra seal					1	1
37	X-582-38	Connector, hose			2	2		
37	X-582-39	Connector, hose	2	2			2	2
38	X-582-9	Connector, hose + vibra seal	1	1	1	1	1	1
39	X-6047-3	Channel, U	1	1	1	1	1	1
40	X-6047-33	Channel, U	1	1	1	1	1	1
41	X-6047-44	Channel, U	1	1	1	1		
41	X-6047-36	Channel, U					1	1
42	X-6047-7	Channel, U	2	2	2	2		
43	X-6220-3	Clip, speed	4	4	4	4	4	4
44	X-634-25	Bushing, .672 x .875 in. NPT	1	1	1	1	1	1
45	X-67-64	Screw, self-tapping	11	11	11	11		
46	X-71-2	Nut, hex machine screw, 6-32	1	1	1	1		
47	X-75-10	Plug, pipe, 3/8 in. NPT	3	3	3	3		
47	X-75-55	Plug, pipe, 3/8 in. NPT white nylon					3	3
48	X-781-14	Rivet, pop, .187 in.	15	15	15	15	21	21
49	359044	Rail, sound shield	1	1	1	1		
49	GM63169-S	Rail assy., sound shield (front)						
50	GM29319	Rail, sound shield	2	2	2	2		
50	GM63189-S	Rail assy., sound shield (RH)					1	1
50	GM63190-S	Rail assy., sound shield (LH)					1	1
51	GM63166-S	Rail assy., sound shield (upright)	3	3	3	3	3	3
52	GM30643	Rail, sound shield	1	1	1	1		
52	GM63166-S	Rail assy., sound shield (upright)					1	1

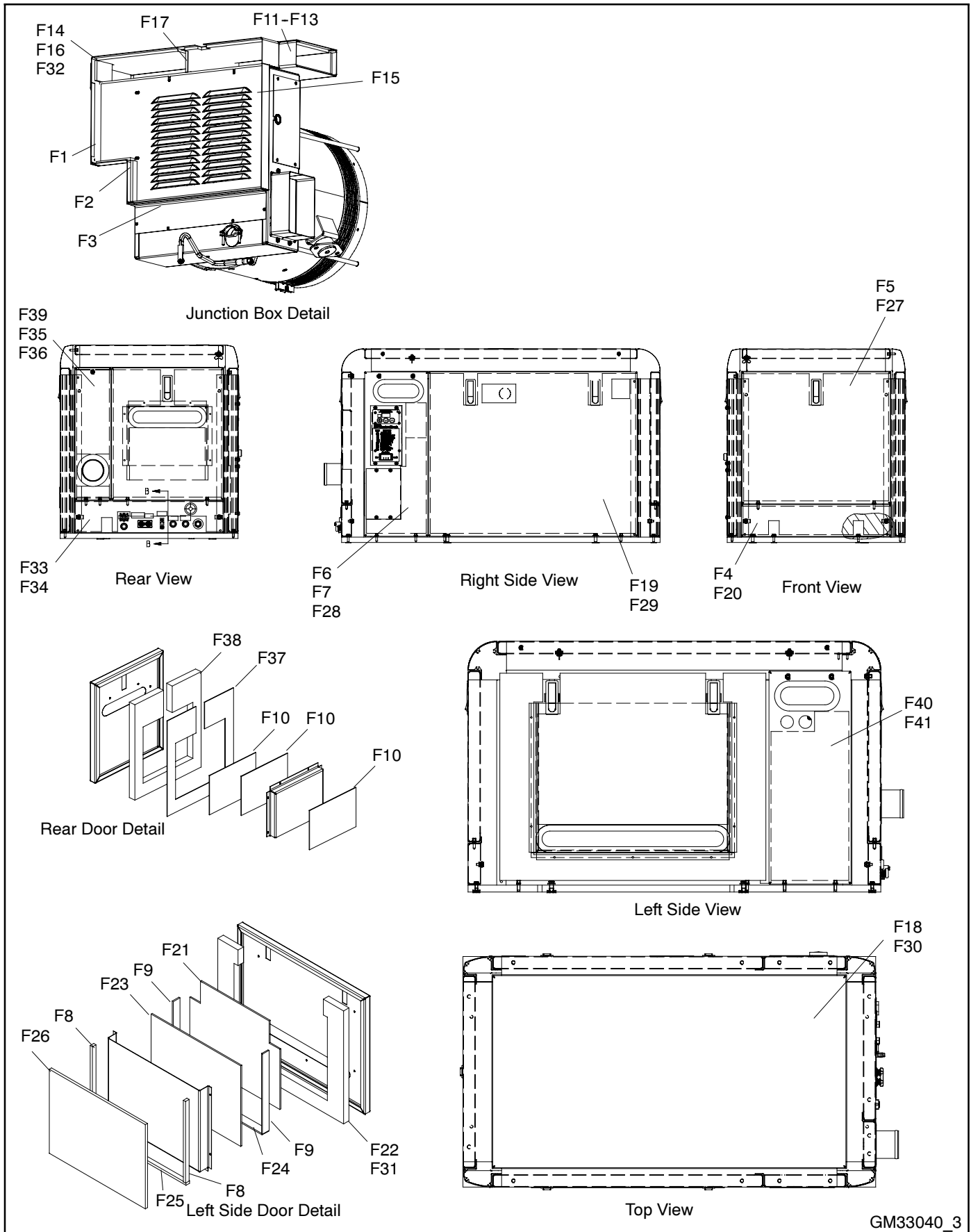
Sound Shield, continued



Sound Shield, continued

Item	Part Number	Description	Quantity					
			Module Number					
			GM32546-KA1	GM32546-KA2	GM33040-KA1	GM33040-KA2	GM58969-KA1	GM58969-KA2
53	GM32568	Rail, sound shield	1	1	1	1		
53	GM63168-S	Rail assy., sound shield (back)					1	1
54	GM25960	Duct, air outlet	1	1	1	1	1	1
55	GM63148-S	Door assy., sound shield (right side)	1	1	1	1	1	1
56	GM29395	Door, sound shield (left side)	1	1	1	1		
56	GM63151-S	Door assy., sound shield (left side)					1	1
57	GM63150-S	Roof assy, sound shield	1	1	1	1	1	1
58	GM29489	Door, sound shield (front)	1	1	1	1		
58	GM63149-S	Door assy., sound shield (front)					1	1
59	GM30723	Duct, air intake	1	1	1	1		
60	GM31188	Panel, sound shield (right side)	1	1	1	1		
60	GM62874-S	Panel assy., sound shield (right side)					1	1
61	GM62877-S	Rail assy., sound shield (front)	1	1	1	1	1	1
62	GM32553	Panel, rear exhaust	1	1	1	1		
62	GM62879-S	Panel assy., rear exhaust					1	1
63	GM32554	Door, sound shield (rear)	1	1	1	1		
63	GM62881-S	Door assy., sound shield (rear)					1	1
64	GM32635	Panel, sound shield (left side)	1	1	1	1		
65	GM33828	Barrier, battery terminal	1	1	1	1	1	1

Sound Shield, continued

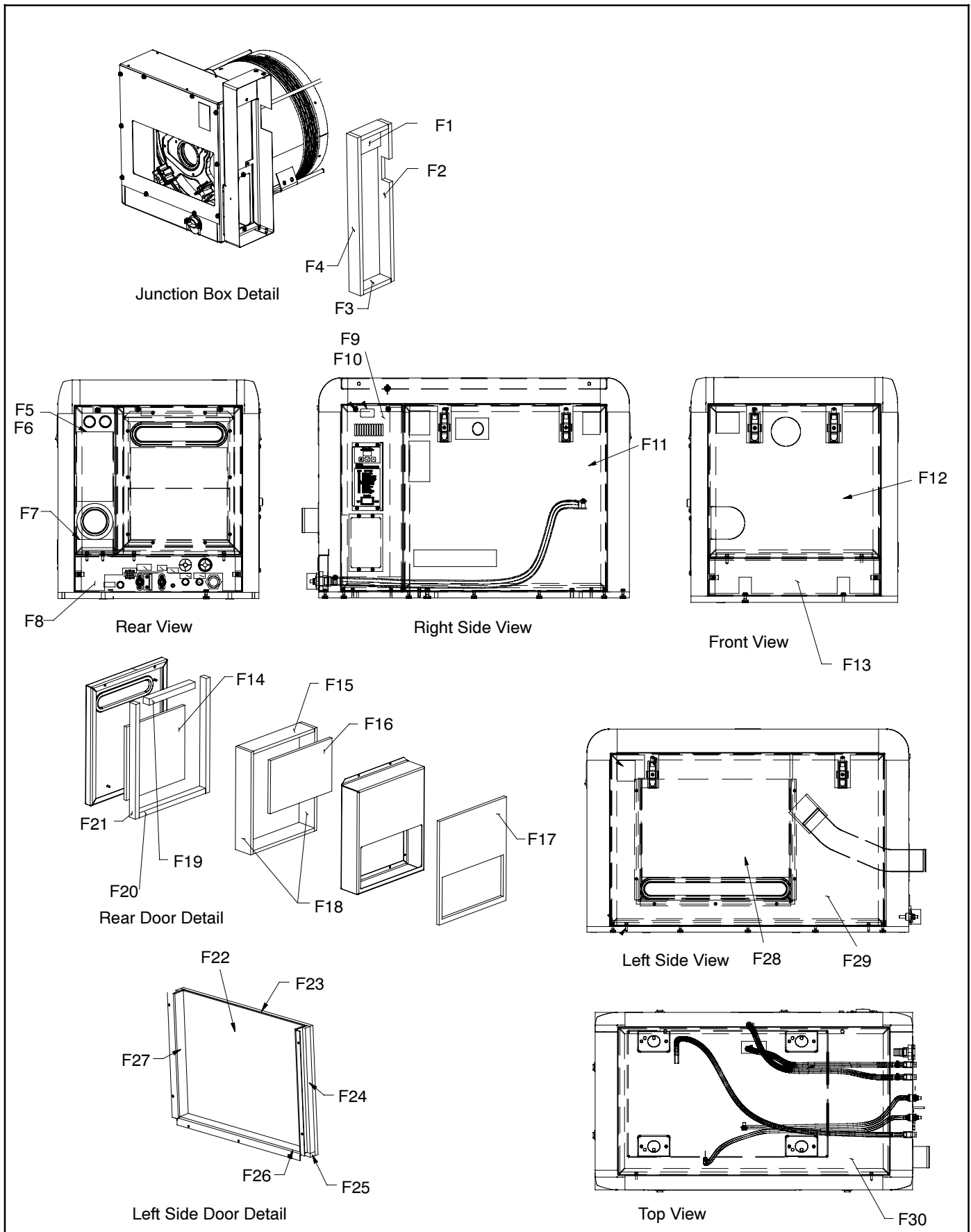


GM33040_3

Sound Shield, continued

Item	Part Number	Description	Quantity			
			Module Number			
			GM32546-KA1	GM32546-KA2	GM33040-KA1	GM33040-KA2
F1	GM29459	Insulation, acoustic foam	1	1	1	1
F2	GM29461	Insulation, acoustic foam	2	2	2	2
F3	GM29463	Insulation, acoustic foam	1	1	1	1
F4	GM30542	Foam, acoustic insulation	1	1	1	1
F5	GM30543	Foam, acoustic insulation	1	1	1	1
F6	GM30547	Foam, acoustic insulation	1	1	1	1
F7	GM30548	Foam, acoustic insulation	1	1	1	1
F8	GM30551	Foam, acoustic insulation	2	2	2	2
F9	GM30557	Foam, acoustic insulation	2	2	2	2
F10	GM30559	Foam, acoustic insulation	3	3	3	3
F11	GM30560	Foam, acoustic insulation	1	1	1	1
F12	GM30561	Foam, acoustic insulation	1	1	1	1
F13	GM30562	Foam, acoustic insulation	2	2	2	2
F14	GM30564	Foam, acoustic insulation	1	1	1	1
F15	GM30866	Foam, acoustic insulation	1	1	1	1
F16	GM30867	Foam, acoustic insulation	2	2	2	2
F17	GM30869	Foam, acoustic insulation	2	2	2	2
F18	GM30885	Foam, acoustic insulation	1	1	1	1
F19	GM30886	Foam, acoustic insulation	1	1	1	1
F20	GM30887	Foam, acoustic insulation	1	1	1	1
F21	GM30898	Foam, acoustic insulation	1	1	1	1
F22	GM30899	Foam, acoustic insulation	1	1	1	1
F23	GM30900	Foam, acoustic insulation	1	1	1	1
F24	GM30901	Foam, acoustic insulation	1	1	1	1
F25	GM30902	Foam, acoustic insulation	1	1	1	1
F26	GM30903	Foam, acoustic insulation	1	1	1	1
F27	GM30910	Foam, acoustic insulation	1	1	1	1
F28	GM30914	Foam, acoustic insulation (barrier)	1	1	1	1
F29	GM30918	Foam, acoustic insulation (barrier)	1	1	1	1
F30	GM30919	Foam, acoustic insulation (barrier)	1	1	1	1
F31	GM30920	Foam, acoustic insulation (barrier)	1	1	1	1
F32	GM32180	Insulation, acoustic foam	1	1	1	1
F33	GM32557	Insulation, acoustic foam	1	1	1	1
F34	GM32558	Insulation, acoustic foam (barrier)	1	1	1	1
F35	GM32559	Insulation, acoustic foam (barrier)	1	1	1	1
F36	GM32560	Insulation, acoustic foam (barrier)	1	1	1	1
F37	GM32561	Insulation, acoustic foam	1	1	1	1
F38	GM32562	Insulation, acoustic foam	1	1	1	1
F39	GM32570	Insulation, acoustic foam	1	1	1	1
F40	GM32636	Insulation, acoustic foam	1	1	1	1
F41	GM32637	Insulation, acoustic foam (barrier)	1	1	1	1

Sound Shield, continued



Sound Shield, continued

Item	Part Number	Description	Quantity	
			Module Number	
			GM58969-KA1	GM58969-KA2
F1	GM58968-37	Foam, Acoustic Insulation	1	1
F2	GM58968-36	Foam, Acoustic Insulation	1	1
F3	GM58968-39	Foam, Acoustic Insulation	2	2
F4	GM58968-38	Foam, Acoustic Insulation	1	1
F5	GM58968-11	Foam, Acoustic Insulation	1	1
F6	GM58968-13	Foam, Acoustic Insulation	1	1
F7	GM58968-12	Foam, Acoustic Insulation	1	1
F8	GM58968-14	Foam, Acoustic Insulation	1	1
F9	GM58968-1	Foam, Acoustic Insulation	1	1
F10	GM58968-2	Foam, Acoustic Insulation	1	1
F11	GM58968-32	Foam, Acoustic Insulation	1	1
F12	GM58968-33	Foam, Acoustic Insulation	1	1
F13	GM58968-17	Foam, Acoustic Insulation	1	1
F14	GM58968-10	Foam, Acoustic Insulation	1	1
F15	GM58968-25	Foam, Acoustic Insulation	2	2
F16	GM58968-23	Foam, Acoustic Insulation	1	1
F17	GM58968-24	Foam, Acoustic Insulation	1	1
F18	GM58968-26	Foam, Acoustic Insulation	2	2
F19	GM58968-22	Foam, Acoustic Insulation	1	1
F20	GM58968-21	Foam, Acoustic Insulation	1	1
F21	GM58968-20	Foam, Acoustic Insulation	2	2
F22	GM58968-30	Foam, Acoustic Insulation	1	1
F23	GM58968-28	Foam, Acoustic Insulation	1	1
F24	GM58968-3	Foam, Acoustic Insulation	2	2
F25	GM58968-27	Foam, Acoustic Insulation	1	1
F26	GM58968-31	Foam, Acoustic Insulation	1	1
F27	GM58968-9	Foam, Acoustic Insulation	2	2
F28	GM58968-29	Foam, Acoustic Insulation	1	1
F29	GM58968-34	Foam, Acoustic Insulation	1	1
F30	GM58968-35	Foam, Acoustic Insulation	1	1

Parts List: Accessories

Qty.	Description	Part No.
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Circuit Breakers

Circuit Breaker Kit		GM30331-KA(KP)12
1	Plate, cover	229208
1	Plate, circuit breaker	GM30023
2	Screw, pan head, 6-32 x 3/16 in.	X-49-21
2	Screw, pan head, 6-32 x 1/4 in.	X-49-25
1	Circuit breaker, 50 A, 1 pole	229917
2	Nut, flange whiz, 6-32	X-6210-3

Circuit Breaker Kit		GM30331-KA(KP)13
1	Plate, circuit breaker	GM30023
4	Screw, pan head, 6-32 x 3/16 in.	X-49-21
1	Circuit breaker, 50 A, 2 pole	249479

Circuit Breaker Kit		GM30331-KA(KP)14
1	Plate, circuit breaker	GM30023
4	Screw, pan head, 6-32 x 3/16 in.	X-49-21
1	Circuit breaker, 60 A, 2 pole	229205

Circuit Breaker Kit		GM30331-KA(KP)16
1	Boot	238915
1	Plate, circuit breaker	GM30023
4	Screw, pan head, 6-32 x 3/16 in.	X-49-21
1	Circuit breaker, 70 A, 2 pole	229397

Circuit Breaker Kit		GM30331-KA(KP)17
1	Plate, cover	229208
1	Boot	238915
1	Plate, circuit breaker	GM30023
2	Screw, pan head, 6-32 x 3/16 in.	X-49-21
2	Screw, pan head, 6-32 x 1/4 in.	X-49-25
1	Circuit breaker, 60 A, 1 pole	359367
2	Nut, flange whiz, 6-32	X-6210-3

Circuit Breaker Kit		GM30331-KA(KP)25
3	Boot	238915
1	Plate, circuit breaker	GM30024
4	Screw, pan head, 6-32 x 3/16 in.	X-49-21
1	Circuit breaker, 50 A, 3 pole	269249

Circuit Breaker Kit		GM30331-KA(KP)26
3	Boot	238915
1	Plate, circuit breaker	GM30024
4	Screw, pan head, 6-32 x 3/16 in.	X-49-21
1	Circuit breaker, 40 A, 3 pole	269252

Circuit Breaker Kit		GM30331-KA(KP)36
3	Boot	238915
1	Plate, circuit breaker	GM30024
6	Screw, Machine	X-49-2
1	Circuit breaker, 40 A, 3 pole	269252
1	Guard, Breaker	GM55463

Qty.	Description	Part No.
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Electrical System

Isolated Ground System, 12 V		GM31865-KA(KP)1
1	Grommet, round	200705
1	Adapter, sender	229323
1	Bus, isolated ground	GM31868
1	Alternator, battery charging	GM31919
1	Bracket, support	GM33029
1	Relay, 12 VDC	GM49746
1	Harness, engine	GM55382
1	Sender, pressure	GM70917-1
1	Cable, battery	X-545-161
1	Cable, battery (black)	X-545-178
2	Stud (metric)	X-6054-23
1	Insulator, standoff	X-6128-35

Isolated Ground System, 12 V		GM31866-KA(KP)1
1	Adapter, sender	229323
1	Vibromount	282829
1	Switch, High Temp. Cut-Out	GM29289
1	Bus, Isolated Ground	GM31868
1	Alternator, Battery Charging	GM31919
1	Bracket, Support	GM33029
1	Tag, Hang Battery Negative	GM35413
1	Guard, Alternator	GM49351
1	Relay, 12 VDC	GM49746
1	Transformer, High Impedence Iso.	GM51484
1	Relay, Cranking, 12V	GM52584
1	Harness, Engine 13-23EOZD Yanmar	GM55381
1	Sender, Pressure, 0-150psi, 1/8-27 NPTF	GM70917-1
1	TT Isolated Ground, 8-32EOZD/6.5-27EFOZD	TT-1407
4	Spacer, .209 ID x .375 OD x .406 in.	X-400-127
1	Spacer, .406 ID x .625 OD x .297 in.(NRP)	X-400-75
1	Cable, Battery	X-545-161
1	Cable, Battery (Black)	X-545-178
2	Stud (Metric)	X-6054-23
5	Isulator, Standoff	X-6128-35

Isolated Ground System, 24 V		GM31866-KA(KP)2
1	Adapter, sender	229323
1	Vibromount	282829
1	Switch, High Temp. Cut-Out	GM29289
1	Bus, Isolated Ground	GM31868
1	Alternator, Battery Charging	GM31919
1	Bracket, Support	GM33029
1	Tag, Hang Battery Negative	GM35413
1	Guard, Alternator	GM49351
1	Relay, 12 VDC	GM49746
1	Transformer, High Impedence Iso.	GM51484
1	Relay, Cranking, 12V	GM52584
1	Harness, Engine 13-23EOZD Yanmar	GM55381
1	Sender, Pressure, 0-150psi, 1/8-27 NPTF	GM70917-1
1	TT Isolated Ground, 8-32EOZD/6.5-27EFOZD	TT-1407
4	Spacer, .209 ID x .375 OD x .406 in.	X-400-127
1	Spacer, .406 ID x .625 OD x .297 in.(NRP)	X-400-75
1	Cable, Battery	X-545-161
1	Cable, Battery (Black)	X-545-178
2	Stud (Metric)	X-6054-23
5	Isulator, Standoff	X-6128-35

Parts List: Accessories

Qty.	Description	Part No.
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Isolated Ground, 12V w/Snd Shd GM31866-KA(KP)3

1	Grommet, round	200705
1	Adapter, sender	229323
1	Switch, High Temp. Cut-Out	GM29289
1	Bus, Isolated Ground	GM31868
1	Alternator, Battery Charging	GM31919
1	Bracket, Support	GM33029
1	Relay, 12 VDC	GM49746
1	Transformer, High Impedence Iso.	GM51484
1	Relay, Cranking, 12V	GM52584
1	Harness, Engine 13-23EOZD Yanmar	GM55381
1	Sender, Pressure, 0-150psi, 1/8-27 NPTF	GM70917-1
1	TT Isolated Ground, 8-32EOZD/6.5-27EFOZD	TT-1407
4	Spacer, .209 ID x .375 OD x .406 in.	X-400-127
1	Spacer, .406 ID x .625 OD x .297 in.(NRP)	X-400-75
1	Cable, Battery	X-545-161
1	Cable, Battery (Black)	X-545-178
1	Cable, Battery (Black)	X-545-179
2	Stud (Metric)	X-6054-23
5	Isulator, Standoff	X-6128-35

Isolated Ground, 24V w/Snd Shd GM31866-KA(KP)

1	Grommet, round	200705
1	Adapter, sender	229323
1	Relay	268371
1	Switch, High Temp. Cut-Out	GM29289
1	Bus, Isolated Ground	GM31868
1	Alternator, Battery Charging 24V (ISO)	GM31920
1	Bracket, Support	GM33029
1	Relay, 24V DC	GM49747
1	Transformer, High Impedence Iso.	GM51484
1	Harness, Engine 13-23EOZD Yanmar	GM55381
1	Sender, Pressure, 0-150psi, 1/8-27 NPTF	GM70917-1
1	TT Isolated Ground, 8-32EOZD/6.5-27EFOZD	TT-1407
4	Spacer, .209 ID x .375 OD x .406 in.	X-400-127
1	Spacer, .406 ID x .625 OD x .297 in.(NRP)	X-400-75
1	Cable, Battery	X-545-161
1	Cable, Battery (Black)	X-545-178
1	Cable, Battery (Black)	X-545-179
2	Stud (Metric)	X-6054-23
5	Isulator, Standoff	X-6128-35

Isolated Standoff GM38314-KA1

2	Nut, Hex 6mm	M934-06-60
2	Stud (Metric)	X-6054-23
1	Isulator, Standoff	X-6128-35

13-20EOZD 12 to 24V Conversion Kit GM60105-KP1

1	Pump, fuel	344740
1	Alternator, battery charging 24V (STD)	344742
1	Guard, alternator fan	344815
1	Bracket, belt guard (RS)	344820
1	Belt, V (46 in.) (B)	344829
1	Arm, alternator adjusting	359554
1	PCB Assy Relay Board 24V	GM29778
1	Bracket, Belt Guard	GM35367
1	Bracket, Belt Guard	GM35369
1	Motor, 24V Starter	GM39020
1	Relay, 24V DC	GM49747
1	Solenoid, Fuel 24VDC	GM58632
1	Lead, BCA Jumper	GM65798
1	Spacer	X-400-260
1	Terminal, flag, female, 16-14 AWG	X-431-37

Harness, 12 in., Pigtail GM32332-KP1

1	Harness, pigtail	GM32324
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Harness, 15 ft., Remote Panel GM32333-KP1

1	Harness, extension	GM30248
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Qty.	Description	Part No.
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Harness, 25 ft., Remote Panel GM32333-KP2

1	Harness, extension	GM32323
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Harness, 100 ft. Remote Panel GM32333-KP4

1	Harness, extension	GM47391
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Harness, Y-Connection GM32333-KP5

1	Harness, Y remote gauge	GM49054
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Harness, Y-Connection GM32333-KP6

1	Harness, Y remote gauge	GM62759
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Oil Pressure Sender GM32112-KA(KP)1

1	Adapter, sender	229323
1	Sensor, pressure	GM70917-1

Preheat Kit, 12 Volt (PA-)229240

1	Washer, shakeproof	X-22-12
2	Washer, plain	X-25-40
1	Screw, HC 1/4-20 x .75	X-465-16
1	Screw, HC 1/4-20 x .50	X-465-2
1	Conduit, convoluted	X-6003-5
2	Nut, whiz lock 1/4-20	X-6210-2
1	Harness, air heater	229233
1	Relay	233442
1	Boot	238915
1	Installation Instructions	TT-897

Preheat Kit, 12 Volt GM32117-KA(KP)4

1	Harness, air heater	229233
1	Relay	233442
1	Boot	238915
1	Heater, air	344903
2	Gasket, air heater	344904
2	Washer, plain	M125A-06-80
4	Washer, plain	M125A-08-80
2	Nut, hex 6 mm	M6923-06-80
2	Screw, hex cap	M931-08040-60
2	Screw, hex cap	M931-08080-60
2	Screw, hex cap	M933-06020-60
1	Washer, lock, .262 ID x .743 in. OD	X-22-12
1	Conduit, convoluted	X-6003-5

Preheat Kit, 24 Volt GM32117-KA(KP)5

1	Harness, air heater	229233
1	Boot	238915
2	Terminal, jumper	249956
1	Relay	344741
2	Heater, air	344903
3	Gasket, air heater	344904
2	Washer, plain	M125A-06-80
4	Washer, plain	M125A-08-80
2	Nut, hex 6 mm	M6923-06-80
2	Screw, hex cap	M931-08060-60
2	Screw, hex cap	M931-08100-60
2	Screw, hex cap	M933-06020-60
1	Washer, lock, .262 ID x .743 in. OD	X-22-12
1	Conduit, convoluted	X-6003-5

Parts List: Accessories, continued

Qty.	Description	Part No.
Preheat Kit, 12 Volt GM32117-KA(KP)8		
1	Harness, air heater	229233
1	Relay	233442
1	Boot	238915
1	Heater, air	344903
2	Gasket, air heater	344904
1	Hose, air heater	GM33014
2	Washer, plain	M125A-06-80
4	Washer, plain	M125A-08-80
2	Nut, hex 6 mm	M6923-06-80
2	Screw, hex cap	M931-08040-60
2	Screw, hex cap	M931-08080-60
2	Screw, hex cap	M933-06020-60
1	Washer, lock, .262 ID x .743 in. OD	X-22-12
1	Conduit, convoluted	X-6003-5

Qty.	Description	Part No.
Preheat Kit, 24 Volt GM32117-KA(KP)9		
1	Harness, air heater	229233
1	Solenoid	344741
1	Boot	238915
2	Heater, air	344903
3	Gasket, air heater	344904
1	Hose, air heater	GM33014
2	Washer, plain	M125A-06-80
4	Washer, plain	M125A-08-80
2	Nut, hex 6 mm	M6923-06-80
2	Screw, hex cap	M931-08060-60
2	Screw, hex cap	M931-08100-60
2	Screw, hex cap	M933-06020-60
1	Washer, lock, .262 ID x .743 in. OD	X-22-12
1	Conduit, convoluted	X-6003-5

Qty.	Description	Part No.
Remote Digital Gauge GM32337-KP1		
1	Decal, waring	249494
1	Gauge, digital	GM30565
1	Harness, remote	GM32325

Qty.	Description	Part No.
Remote Start Panel (12 V) GM32335-KP1		
1	Decal, warning	249494
1	Installation instructions	TT-1245
1	Panel assembly, control (includes *)	GM33848-1
1	*Meter, runtime	238736
1	*Panel, control	GM33847
1	*Switch, rocker	GM33849
1	*Harness, wiring	GM33851
2	*Screw, pan head M3 x 12	M7985A-03012-20
2	*Nut, hex 3 mm	M934-03-50
2	*Washer, lock, .146 ID x .285 in OD	X-22-6

Qty.	Description	Part No.
Remote Start Panel (24 V) GM32335-KP2		
1	Decal, warning	249494
1	Installation instructions	TT-1245
1	Panel assembly, control (includes *)	GM33848-2
1	*Meter, runtime	238736
1	*Panel, control	GM33847
1	*Switch, rocker	GM33850
1	*Harness, wiring	GM33851
2	*Screw, pan head M3 x 12	M7985A-03012-20
2	*Nut, hex 3 mm	M934-03-50
2	*Washer, lock, .146 ID x .285 in OD	X-22-6

Qty.	Description	Part No.
Remote Digital Gauge, 2" Smartcraft GM50822-KP1		
1	Decal, warning	249494
1	Diagram, Accessory Interconnection	GM47635
1	Gauge, Digital CAN 2 Inch	GM50577
1	Harness, Remote Digital CAN Gauge	GM50821
1	TT ADC 2100 Controller Replacement	TT-1364
1	TT 2" Digital Gauge ECD/EGD/EGZD	TT-1450

Qty.	Description	Part No.
Remote Digital Gauge, 3" Smartcraft GM46035-KP1		
1	Decal, warning	249494
1	Gauge, Digital	GM45905
1	Harness, Smartcraft	GM46123
1	Diagram, Accessory Interconnection	GM47635
1	TT ADC 2100 Controller Replacement	TT-1364
1	TT Digital Gauge, 5/7.3ECD & 4/6EFCO	TT-1429

Qty.	Description	Part No.
Ship to Shore Switch PAA-246617		
1	Switch, transfer, 3-pole	A-246617
1	Installation Instructions	TT-535

Qty.	Description	Part No.
High Impedance ACDC Isolation GM51494-KP1		
1	Transformer, High Impedence Iso.	GM51484
1	TT Isolation Transformer, Marine	TT-1465
4	Washer,lock.172 ID x.333 in.OD	X-22-7
4	Spacer, .209 ID x .375 OD x .406 in.	X-400-127
4	Screw, Machine	X-49-5
4	Nut, hex machine screw, 6-32	X-71-2

Miscellaneous Accessories

Qty.	Description	Part No.
ABYC Conversion, 10EOZD GM41041-KA(KP)2		
1	Assembly, Fuel/Water Separator Filter	GM41013
1	Bracket, Fuel/Water Separator	GM41054
1	Bracket, Water Bottle	GM41055
1	Decal, Notice	GM50378
2	Connector, 90 deg. (5/16" id hose)	X-391-25
1	Line, Flex Fuel	X-6251-12
1	Line, Flex Fuel	X-6251-7

Qty.	Description	Part No.
ABYC Conversion, 13-23EOZD GM41041-KA(KP)3		
1	Assembly, Fuel/Water Separator Filter	GM41013
1	Bracket, Fuel/Water Separator	GM41017
1	Decal, Notice	GM50378
1	Connector, hose + Vibra Seal	X-380-4
1	Connector, 90 deg. (5/16" id hose)	X-391-25
1	Line, Flex Fuel	X-6251-11

Qty.	Description	Part No.
Fuel/Water Separator GM31994-KP1		
1	Filter assembly, fuel/water separator	GM32181
1	Element, water separator	GM32182

Qty.	Description	Part No.
Keel Cooling Conversion GM32201-KA(KP)2		
1	Gasket, liquid	252998
1	Cover	256544
1	Gasket	256653
1	Flange, exhaust outlet	GM32186

Qty.	Description	Part No.
Keel Cooling Conversion GM32201-KA(KP)3		
1	O-ring	252685
1	Gasket	252929
1	Cover	256544
1	Flange, exhaust outlet	GM34471

Qty.	Description	Part No.
Keel Cooling Conversion GM32201-KA(KP)4		
1	O-ring	252685
1	Gasket	256653
1	Cover	256544
1	Flange, exhaust outlet	GM32186

Qty.	Description	Part No.
Keel Cooling Conversion GM64625-KP1		
1	Gasket	252929
1	Gasket, liquid	252998
1	Cover	256544
1	Flange, Exhaust Outlet	GM34471

Parts List: Accessories, continued


Qty.	Description	Part No.
Siphon Break PA-229928		
1	Valve, siphon break	GM32985
1	Installation Instructions	TT-1268
Siphon Break PA-229929		
1	Valve, siphon break	GM34688
1	Installation Instructions	TT-1268
Fuel Attachment Block GM33129-KA(KP)1		
1	Fuel block	229835
2	Bolt, hex cap	X-125-29
2	Washer, plain, .344 ID x .687 in. OD	X-25-85
1	Connector, hose	X-380-4
1	Fuel line, flexible	X-386-101
1	Fuel line, flexible	X-386-113
2	Connector, 90 deg. (5/16 in. ID hose)	X-391-25
2	Spacer, .357 ID x .625 OD x .656 in.	X-400-100
4	Clamp, hose, .25/.70 in.	X-426-9
Tray, Stainless Steel GM49018-KA(KP)5		
1	Tray, drip	GM40847

Qty.	Description	Part No.
Sound Shield		
Siphon Break Hose Connection GM63008-KA1		
2	Connector, hose (90 deg elbow)(PVC)	344999
1	Tubing, Clear Flexible Plastic	GM34883
2	Grommet, round	X-284-3
2	Clamp, hose, .69/1.25 in.	X-426-12
1	Valve, Siphon Break Assy (1.00" Hose) (includes *)	GM34688
1	*Valve, duct	328666
1	*Cap, siphon valve	GM32984
1	*Loop, siphon valve loop	GM34687
Siphon Break Hose Connection GM32719-KA(KP)1		
1	Valve, siphon break	GM34688
2	Connector, hose (90 deg. elbow)	344999
1	Hose, molded coolant	GM32639
1	Hose, molded coolant	GM32640
1	Tubing, clear flexible plastic	GM34883
2	Grommet, round	X-284-43
2	Clamp, hose, .75/1.5 in.	X-426-15
1	Clamp, hose, .25/.70 in.	X-426-9
Siphon Break Hose Connection GM32719-KA(KP)2		
1	Valve, siphon break	GM34688
2	Connector, hose (90 deg. elbow)	344999
1	Hose, molded coolant	GM32641
1	Hose, molded coolant	GM33011
1	Tubing, clear flexible plastic	GM34883
2	Grommet, round	X-284-43
2	Clamp, hose, .75/1.5 in.	X-426-15
1	Clamp, hose, .25/.70 in.	X-426-9

Notes

Appendix A Abbreviations

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

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

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

Appendix B Common Hardware Application Guidelines

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

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

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

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

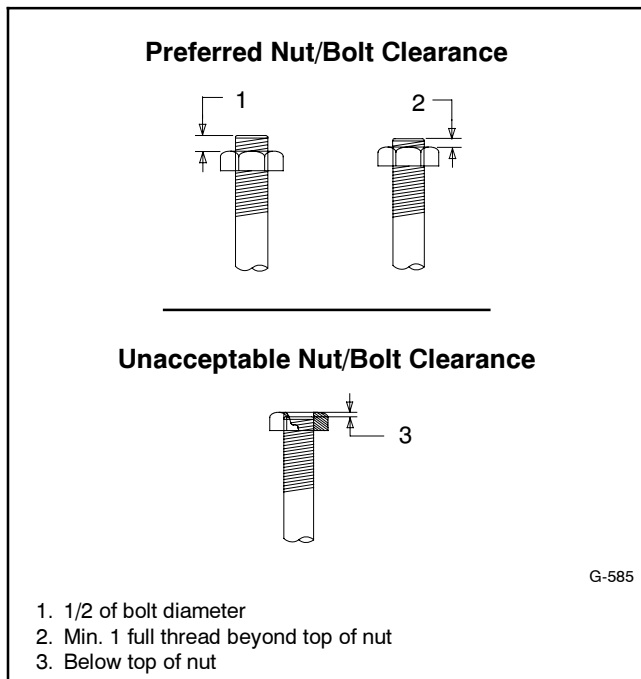


Figure 1 Acceptable Bolt Lengths

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

Steps for common hardware application:

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

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

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

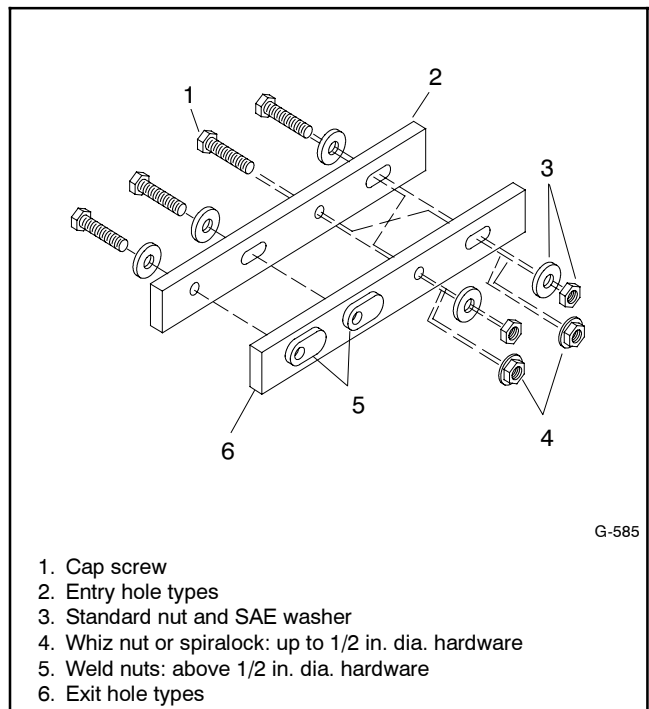


Figure 2 Acceptable Hardware Combinations

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

Appendix C General Torque Specifications















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












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






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

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

Appendix D Common Hardware Identification

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

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

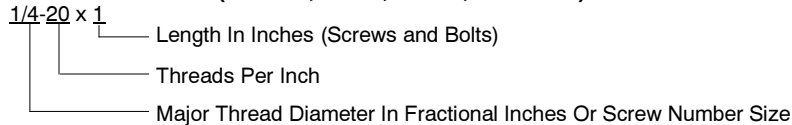
Hardness Grades	
American Standard	
Grade 2	
Grade 5	
Grade 8	
Grade 8/9 (Hex Socket Head)	
Metric	
Number stamped on hardware; 5.8 shown	

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

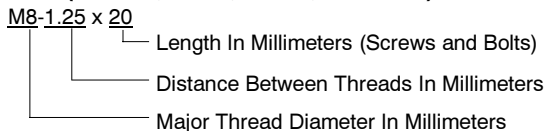
Phillips® screw is a registered trademark of Phillips Screw Company.

Sample Dimensions

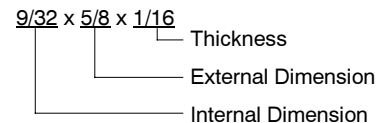
American Standard (Screws, Bolts, Studs, and Nuts)



Metric (Screws, Bolts, Studs, and Nuts)



Plain Washers



Lock Washers



Appendix E Common Hardware List

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

American Standard

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

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

Metric

Hex head bolts are hardness grade 8.8 unless noted.

Part No.	Dimensions	Part No.	Dimensions	Part No.	Dimensions
Hex Head Bolts (Partial Thread)					
M931-05055-60	M5-0.80 x 55	Hex Head Bolts (Partial Thread), continued		Hex Head Bolts (Full Thread), continued	
M931-06040-60	M6-1.00 x 40	M960-16090-60	M16-1.50 x 90	M933-12016-60	M12-1.75 x 16
M931-06055-60	M6-1.00 x 55	M931-16090-60	M16-2.00 x 90	M933-12020-60	M12-1.75 x 20
M931-06060-60	M6-1.00 x 60	M931-16100-60	M16-2.00 x 100	M961-12020-60F	M12-1.50 x 20
M931-06060-SS	M6-1.00 x 60	M931-16100-82	M16-2.00 x 100*	M933-12025-60	M12-1.75 x 25
M931-06070-60	M6-1.00 x 70	M931-16120-60	M16-2.00 x 120	M933-12025-82	M12-1.75 x 25*
M931-06070-SS	M6-1.00 x 70	M931-16150-60	M16-2.00 x 150	M961-12030-60	M12-1.25 x 30
M931-06075-60	M6-1.00 x 75			M933-12030-82	M12-1.75 x 30*
M931-06090-60	M6-1.00 x 90	M931-20065-60	M20-2.50 x 65	M961-12030-82F	M12-1.50 x 30*
M931-06145-60	M6-1.00 x 145	M931-20090-60	M20-2.50 x 90	M933-12030-60	M12-1.75 x 30
M931-06150-60	M6-1.00 x 150	M931-20100-60	M20-2.50 x 100	M933-12035-60	M12-1.75 x 35
		M931-20120-60	M20-2.50 x 120	M961-12040-82	M12-1.25 x 40*
M931-08035-60	M8-1.25 x 35	M931-20140-60	M20-2.50 x 140	M933-12040-60	M12-1.75 x 40
M931-08040-60	M8-1.25 x 40	M931-20160-60	M20-2.50 x 160	M933-12040-82	M12-1.75 x 40*
M931-08045-60	M8-1.25 x 45				
M931-08050-60	M8-1.25 x 50	M931-22090-60	M22-2.50 x 90	M961-14025-60	M14-1.50 x 25
M931-08055-60	M8-1.25 x 55	M931-22120-60	M22-2.50 x 120	M933-14025-60	M14-2.00 x 25
M931-08055-82	M8-1.25 x 55*	M931-22160-60	M22-2.50 x 160	M961-14050-82	M14-1.50 x 50*
M931-08060-60	M8-1.25 x 60				
M931-08070-60	M8-1.25 x 70	M931-24090-60	M24-3.00 x 90	M961-16025-60	M16-1.50 x 25
M931-08070-82	M8-1.25 x 70*	M931-24120-60	M24-3.00 x 120	M933-16025-60	M16-2.00 x 25
M931-08075-60	M8-1.25 x 75	M931-24160-60	M24-3.00 x 160	M961-16030-82	M16-1.50 x 30*
M931-08080-60	M8-1.25 x 80	M931-24200-60	M24-3.00 x 200	M933-16030-82	M16-2.00 x 30*
M931-08090-60	M8-1.25 x 90			M933-16035-60	M16-2.00 x 35
M931-08095-60	M8-1.25 x 95	Hex Head Bolts (Full Thread)		M961-16040-60	M16-1.50 x 40
M931-08100-60	M8-1.25 x 100	M933-04006-60	M4-0.70 x 6	M933-16040-60	M16-2.00 x 40
M931-08110-60	M8-1.25 x 110			M961-16045-82	M16-1.50 x 45*
M931-08120-60	M8-1.25 x 120	M933-05030-60	M5-0.80 x 30	M933-16045-82	M16-2.00 x 45*
M931-08130-60	M8-1.25 x 130	M933-05035-60	M5-0.80 x 35	M933-16050-60	M16-2.00 x 50
M931-08140-60	M8-1.25 x 140	M933-05050-60	M5-0.80 x 50	M933-16050-82	M16-2.00 x 50*
M931-08150-60	M8-1.25 x 150			M933-16060-60	M16-2.00 x 60
M931-08200-60	M8-1.25 x 200	M933-06010-60	M6-1.00 x 10	M933-16070-60	M16-2.00 x 70
		M933-06012-60	M6-1.00 x 12		
M931-10040-82	M10-1.25 x 40*	M933-06014-60	M6-1.00 x 14	M933-18035-60	M18-2.50 x 35
M931-10040-60	M10-1.50 x 40	M933-06016-60	M6-1.00 x 16	M933-18050-60	M18-2.50 x 50
M931-10045-60	M10-1.50 x 45	M933-06020-60	M6-1.00 x 20	M933-18060-60	M18-2.50 x 60
M931-10050-60	M10-1.50 x 50	M933-06025-60	M6-1.00 x 25		
M931-10050-82	M10-1.25 x 50*	M933-06030-60	M6-1.00 x 30	M933-20050-60	M20-2.50 x 50
M931-10055-60	M10-1.50 x 55	M933-06040-60	M6-1.00 x 40	M933-20055-60	M20-2.50 x 55
M931-10060-60	M10-1.50 x 60	M933-06050-60	M6-1.00 x 50		
M931-10065-60	M10-1.50 x 65			M933-24060-60	M24-3.00 x 60
M931-10070-60	M10-1.50 x 70	M933-07025-60	M7-1.00 x 25	M933-24065-60	M24-3.00 x 65
M931-10080-60	M10-1.50 x 80			M933-24070-60	M24-3.00 x 70
M931-10080-82	M10-1.25 x 80*	M933-08010-60	M8-1.25 x 10		
M931-10090-60	M10-1.50 x 90	M933-08012-60	M8-1.25 x 12	Pan Head Machine Screws	
M931-10090-82	M10-1.50 x 90*	M933-08016-60	M8-1.25 x 16	M7985A-03010-20	M3-0.50 x 10
M931-10100-60	M10-1.50 x 100	M933-08020-60	M8-1.25 x 20	M7985A-03012-20	M3-0.50 x 12
M931-10110-60	M10-1.50 x 110	M933-08025-60	M8-1.25 x 25		
M931-10120-60	M10-1.50 x 120	M933-08030-60	M8-1.25 x 30	M7985A-04010-20	M4-0.70 x 10
M931-10130-60	M10-1.50 x 130	M933-08030-82	M8-1.25 x 30*	M7985A-04016-20	M4-0.70 x 16
M931-10140-60	M10-1.50 x 140			M7985A-04020-20	M4-0.70 x 20
M931-10180-60	M10-1.50 x 180	M933-10012-60	M10-1.50 x 12	M7985A-04050-20	M4-0.70 x 50
M931-10235-60	M10-1.50 x 235	M961-10020-60	M10-1.25 x 20	M7985A-04100-20	M4-0.70 x 100
M931-10260-60	M10-1.50 x 260	M933-10020-60	M10-1.50 x 20		
M960-10330-60	M10-1.25 x 330	M933-10025-60	M10-1.50 x 25	M7985A-05010-20	M5-0.80 x 10
		M961-10025-60	M10-1.25 x 25	M7985A-05012-20	M5-0.80 x 12
M931-12045-60	M12-1.75 x 45	M933-10025-82	M10-1.50 x 25*	M7985A-05016-20	M5-0.80 x 16
M960-12050-60	M12-1.25 x 50	M961-10030-60	M10-1.25 x 30	M7985A-05020-20	M5-0.80 x 20
M960-12050-82	M12-1.25 x 50*	M933-10030-60	M10-1.50 x 30	M7985A-05025-20	M5-0.80 x 25
M931-12050-60	M12-1.75 x 50	M933-10030-82	M10-1.50 x 30*	M7985A-05030-20	M5-0.80 x 30
M931-12050-82	M12-1.75 x 50*	M961-10035-60	M10-1.25 x 35	M7985A-05080-20	M5-0.80 x 80
M931-12055-60	M12-1.75 x 55	M933-10035-60	M10-1.50 x 35	M7985A-05100-20	M5-0.80 x 100
M931-12060-60	M12-1.75 x 60	M933-10035-82	M10-1.50 x 35*		
M931-12060-82	M12-1.75 x 60*	M961-10040-60	M10-1.25 x 40	M7985A-06100-20	M6-1.00 x 100
M931-12065-60	M12-1.75 x 65				
M931-12075-60	M12-1.75 x 75			Flat Head Machine Screws	
M931-12080-60	M12-1.75 x 80			M965A-04012-SS	M4-0.70 x 12
M931-12090-60	M12-1.75 x 90				
M931-12100-60	M12-1.75 x 100			M965A-05012-SS	M5-0.80 x 12
M931-12110-60	M12-1.75 x 110			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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