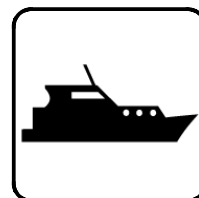


Service Parts

Marine Generator Sets



Models:

350/500EOZCS
300/450EFOZCS

KOHLER®



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Group 1- 60- 1: Protective Casing, Front	58	Group 201: Alternator and Mounting	146
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Introduction

This manual lists service replacement parts for 350EOZCS/300EFOZCS & 500EOZCS/450EFOZCS generator sets.

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 identifies the groups of parts that make up the generator set. The heading lists the generator set spec numbers.
4. **Identify the group** most likely to include the service part number.
5. **Find the group variation number** at the intersection of the group row and the spec number 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, 350EOZCS/300EFOZCS

Description	Variation			
	Specification Number			
	GM105546-GA9	GM105546-GA10	GM105546-GA11	GM105546-GA12
Group 00-23-1: Maintenance Kit, Basic Kit	GM109535	GM109535	GM109535	GM109535
Group 01-01-1: Cylinder Head	GM109538	GM109538	GM109538	GM109538
Group 01-01-2: Rocker cover	GM109537	GM109538	GM109539	GM109540
Group 01-05-1: Cylinder Block	GM109545	GM109545	GM109545	GM109545
Group 01-05-2: Flywheel Housing, Timing Gear Plate	GM109544	GM109544	GM109544	GM109544
Group 01-05-3: Oil Sump, Low, Ladder Frame	GM109542	GM109542	GM109542	GM109542
Group 01-05-4: Front Cover	GM109541	GM109541	GM109541	GM109541
Group 01-05-5: Crankcase Ventilation, Closed	GM109543	GM109543	GM109543	GM109543
Group 01-10-1: Crank Mechanism	GM109553	GM109553	GM109553	GM109553
Group 01-10-2: Piston	GM109554	GM109554	GM109554	GM109554
Group 01-15-1: Timing gear	GM109557	GM109557	GM109557	GM109557
Group 01-20-1: Oil Pump	GM109561	GM109561	GM109561	GM109561
Group 01-20-2: Oil Filter Unit	GM109563	GM109563	-	-
Group 01-20-2: Reversible Oil Filter	-	-	GM109565	GM109565
Group 01-20-3: Oil Cooler	GM109559	GM109559	GM109559	GM109559
Group 01-20-4: Lubrication, Turbocharger	GM109564	GM109564	GM109564	GM109564
Group 01-20-5: Oil Filler, Dipstick	GM109560	GM109560	GM109560	GM109560
Group 01-20-6: Centrifugal Oil Cleaner	GM109562	GM109562	GM109562	GM109562
Group 01-25-1: Exhaust Manifold, Water Cooled	GM109573	GM109573	GM109573	GM109573
Group 01-30-1: Turbocharger	GM109575	GM109575	GM109575	GM109575
Group 01-40-1: Intake Manifold	GM109577	GM109577	GM109577	GM109577
Group 01-45-1: Air Cleaner, Turbocharger	GM109579	GM109579	GM109579	GM109579
Group 01-50-1: Engine Suspension, Rear	GM109581	GM109581	GM109581	GM109581
Group 01-50-2: Engine Suspension, Front	GM109582	GM109582	GM109582	GM109582
Group 01-60-1: Protective Casing, Front	GM109586	GM109586	GM109586	GM109586
Group 01-60-2: Labels, Decals	GM109585	GM109585	GM109585	GM109585
Group 01-60-3: Insulation, Turbocharger	GM109587	GM109587	GM109587	GM109587
Group 01-60-4: Protective Casing, Catwalk	GM109588	GM109588	GM109588	GM109588
Group 01-99-1: Repair Kit, Oil Mist Separator, Crankcase Ventilation	GM109593	GM109593	GM109593	GM109593
Group 01-99-2: Gasket Kit, Cylinder Head	GM109595	GM109595	GM109595	GM109595
Group 01-99-4: Repair Kit, Piston and Cylinder Liner	GM109596	GM109596	GM109596	GM109596
Group 01-99-5: Shim, Cylinder Liner	GM109594	GM109594	GM109594	GM109594
Group 02-01-1: Heat Exchanger	GM109602	-	GM109602	-
Group 02-01-2: Expansion Tank	GM109601	GM109601	GM109601	GM109601
Group 02-05-1: Charge Air Cooler	-	GM109606	-	GM109606
Group 02-05-2: Charge Air Pipe	-	GM109605	-	GM109605
Group 02-15-1: Thermostat Housing, Heat Exchanger	GM109609	-	GM109609	-
Group 02-15-2: Thermostat Housing, Keel Cooling	-	GM109610	-	GM109610
Group 02-25-1: Coolant Pump	GM109613	GM109613	GM109613	GM109613
Group 02-25-2: Sea Water Pump	GM109614	GM109614	GM109614	GM109614
Group 02-30-1: Bleed Pipe, Engine, Heat Exchanger	GM109621	-	GM109621	-
Group 02-30-2: Cooling, Heat Exchanger	GM109624	-	GM109624	-
Group 02-30-3: Cooling, Heat Exchanger	GM109625	-	GM109625	-
Group 02-30-4: Flange Pipe, Engine	GM109620	GM109620	GM109620	GM109620
Group 02-30-5: Bleed Pipe, Engine, Keel Cooling	-	GM109622	-	GM109622
Group 02-30-6: Cooling, Keel cooling	-	GM109623	-	GM109623
Group 02-35-1: Belt transmission, Coolant pump	GM109632	GM109632	GM109632	GM109632
Group 02-40-1: Connection Cable, Auxiliary Heater, Engine	GM109634	GM109634	GM109634	GM109634
Group 02-40-2: Auxiliary Heater, Engine, Immersion Heater, Thermostat	GM109635	GM109635	GM109635	GM109635
Group 03-01-1: Feed Pump	GM109639	GM109639	GM109639	GM109639
Group 03-01-2: Feed Pump, Drive	GM109638	GM109638	GM109638	GM109638
Group 03-01-3: Unit Injector	GM109637	GM109637	GM109637	GM109637
Group 03-05-1: Fuel Filter, Filter Head	-	-	GM109642	GM109642
Group 03-05-1: Fuel Filter, Filter Head	GM109643	GM109643	-	-
Group 03-05-2: Fuel Filter Unit, Fuel Pipes, Fuel Manifold	GM109644	GM109644	-	-
Group 03-05-2: Fuel Filter Unit, Fuel Pipes, Fuel Manifold	-	-	GM109645	GM109645
Group 03-25-1: Connection Tubes	GM109650	GM109650	GM109650	GM109650
Group 03-99-1: Repair Kit, Unit Injector	GM109652	GM109652	GM109652	GM109652
Group 13-15-1: Mounting, Hydraulic Pump, Without	GM109653	GM109653	GM109653	GM109653
Group 16-05-1: Alternator, Mounting	GM109658	GM109658	GM109658	GM109658
Group 16-05-2: Alternator	GM109659	GM109659	GM109659	GM109659
Group 16-10-1: Starter Motor	GM109661	GM109661	GM109661	GM109661
Group 16-15-1: EMS, Electronic Control Unit	GM109662	GM109662	GM109662	GM109662

Specification Number Index, 350EOZCS/300EFOZCS

Description	Variation			
	Specification Number			
	GM105546-GA9	GM105546-GA10	GM105546-GA11	GM105546-GA12
Group 16- 30- 1: Cable Routing, Engine	GM109664	GM109664	GM109664	GM109664
Group 16- 45- 1: EMS, Injection System	GM109667	GM109667	GM109667	GM109667
Group 101: Air Intake	GM106063- MA1	GM106063- MA1	GM106063- MA1	GM106063- MA1
Group 105: Engine	GM105665-GR1	GM105665-GR2	GM105665-GR3	GM105665-GR4
Group 107: Nameplate and Decals	GM104993- GR2	GM104993- GR2	GM104993- GR2	GM104993- GR2
Group 109: Skid and Plant Mounting	GM104929- MA1	GM104929- MA1	GM104929- MA1	GM104929- MA1
Group 201: Alternator and Mounting	*	*	*	*
Group 301: Controller and Mounting	*	*	*	*
Group 701: Literature	701- 197- 31	701- 197- 31	701- 197- 31	701- 197- 31

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

Specification Number Index, 500EOZCS/450EFOZCS

Description	Variation			
	Specification Number			
	GM105546-GA1	GM105546-GA2	GM105546-GA3	GM105546-GA4
Group 00- 23- 1: Maintenance Kit, Basic Kit	GM109536	GM109536	GM109535	GM109535
Group 01- 01- 1: Cylinder Head	GM109540	GM109540	GM109540	GM109540
Group 01- 01- 2: Rocker Cover	GM109539	GM109539	GM109539	GM109539
Group 01- 05- 1: Cylinder Block	GM109546	GM109546	GM109546	GM109546
Group 01- 05- 2: Flywheel Housing	GM109549	GM109549	GM109549	GM109549
Group 01- 05- 2: Timing Gear Casing, Front	GM109552	GM109552	GM109552	GM109552
Group 01- 05- 3: Oil Sump, Low	GM109551	GM109551	GM109551	GM109551
Group 01- 05- 3: Ladder Frame	GM109547	GM109547	GM109547	GM109547
Group 01- 05- 4: Front Cover	GM109548	GM109548	GM109548	GM109548
Group 01- 05- 5: Crankcase Ventilation, Closed	GM109550	GM109550	GM109550	GM109550
Group 01- 10- 1: Crank Mechanism	GM109555	GM109555	GM109555	GM109555
Group 01- 10- 2: Piston	GM109556	GM109556	GM109556	GM109556
Group 01- 15- 1: Timing Gear	GM109558	GM109558	GM109558	GM109558
Group 01- 20- 1: Oil Pump	GM109572	GM109572	GM109572	GM109572
Group 01- 20- 2: Oil Filter	GM109570	GM109570	-	-
Group 01- 20- 2: Reversible Oil Filter	-	-	GM109571	GM109571
Group 01- 20- 3: Oil Cooler	GM109566	GM109566	GM109566	GM109566
Group 01- 20- 4: Lubrication, Turbocharger	GM109568	GM109568	GM109568	GM109568
Group 01- 20- 5: Dipstick, Front	GM109567	GM109567	GM109567	GM109567
Group 01- 20- 6: Centrifugal Oil Cleaner	GM109569	GM109569	GM109569	GM109569
Group 01- 25- 1: Exhaust Manifold	GM109574	GM109574	GM109574	GM109574
Group 01- 30- 1: Turbocharger	GM109576	GM109576	GM109576	GM109576
Group 01- 40- 1: Intake Manifold	GM109578	GM109578	GM109578	GM109578
Group 01- 45- 1: Air Cleaner, Turbocharger	GM109580	GM109580	GM109580	GM109580
Group 01- 50- 1: Engine Suspension, Rear, Fixed Low Suspension	GM109584	GM109584	GM109584	GM109584
Group 01- 50- 2: Engine Suspension, Front, Fixed Low Suspension	GM109583	GM109583	GM109583	GM109583
Group 01- 60- 1: Protective Casing, Front	GM109592	GM109592	GM109592	GM109592
Group 01- 60- 2: Labels, Decals	GM109589	GM109589	GM109589	GM109589
Group 01- 60- 3: Insulation, Protection Cover, Turbocharger	GM109590	GM109590	GM109590	GM109590
Group 01- 60- 4: Protective Casing, Catwalk	GM109591	GM109591	GM109591	GM109591
Group 01- 99- 1: Repair Kit, Oil Mist Separator, Crankcase Ventilation	GM109598	GM109598	GM109598	GM109598
Group 01- 99- 2: Gasket Kit, Cylinder Head	GM109597	GM109597	GM109597	GM109597
Group 01- 99- 4: Repair Kit, Piston And Cylinder Liner	GM109600	GM109600	GM109600	GM109600
Group 01- 99- 4: Repair Kit, Oil Pump	GM109599	GM109599	GM109599	GM109599
Group 01- 99- 5: Shim, Cylinder Liner	GM109594	GM109594	GM109594	GM109594
Group 02- 01- 1: Heat Exchanger	GM109604	-	GM109604	-
Group 02- 01- 2: Expansion Tank	GM109603	GM109603	GM109603	GM109603
Group 02- 05- 1: Charge Air Cooler	GM109608	GM109608	GM109608	GM109608
Group 02- 05- 2: Charge Air Pipe	GM109607	GM109607	GM109607	GM109607
Group 02- 15- 1: Thermostat Housing, Heat Exchanger	GM109611	-	GM109611	-
Group 02- 15- 1: Thermostat Housing, Keel Cooling	-	GM109612	-	GM109612
Group 02- 25- 1: Coolant Pump	GM109615	GM109615	GM109615	GM109615
Group 02- 25- 2: Sea Water Pump, Heat Exchanger	GM109617	-	GM109617	-
Group 02- 25- 2: Sea Water Pump, Keel Cooling	-	GM109618	-	GM109618
Group 02- 25- 3: Coolant Pump, Mounting	GM109616	GM109616	GM109616	GM109616
Group 02- 30- 1: Bleed Pipe, Engine, Heat Exchanger	GM109626	-	GM109626	-
Group 02- 30- 1: Bleed Pipe, Engine, Keel Cooling	-	GM109627	-	GM109627
Group 02- 30- 2: Pipes And Hoses, Heat Exchanger	GM109619	-	GM109619	-
Group 02- 30- 2: Pipes And Hoses, Heat Exchanger	GM109628	-	GM109628	-
Group 02- 30- 2: Pipes and Hoses, Keel Cooling	-	GM109629	-	GM109629
Group 02- 30- 2: Pipes And Hoses, Heat Exchanger	GM109630	-	GM109630	-
Group 02- 30- 5: Pipes and Hoses, Keel Cooling	-	GM109631	-	GM109631
Group 02- 35- 1: Belt Transmission, Coolant Pump	GM109633	GM109633	GM109633	GM109633
Group 02- 40- 1: Connection Cable, Auxiliary Heater, Engine	GM109634	GM109634	GM109634	GM109634
Group 02- 40- 2: Auxiliary Heater, Engine, Immersion Heater, Thermostat	GM109636	GM109636	GM109636	GM109636
Group 03- 01- 1: Feed Pump	GM109640	GM109640	GM109640	GM109640
Group 03- 01- 3: Unit Injector	GM109641	GM109641	GM109641	GM109641

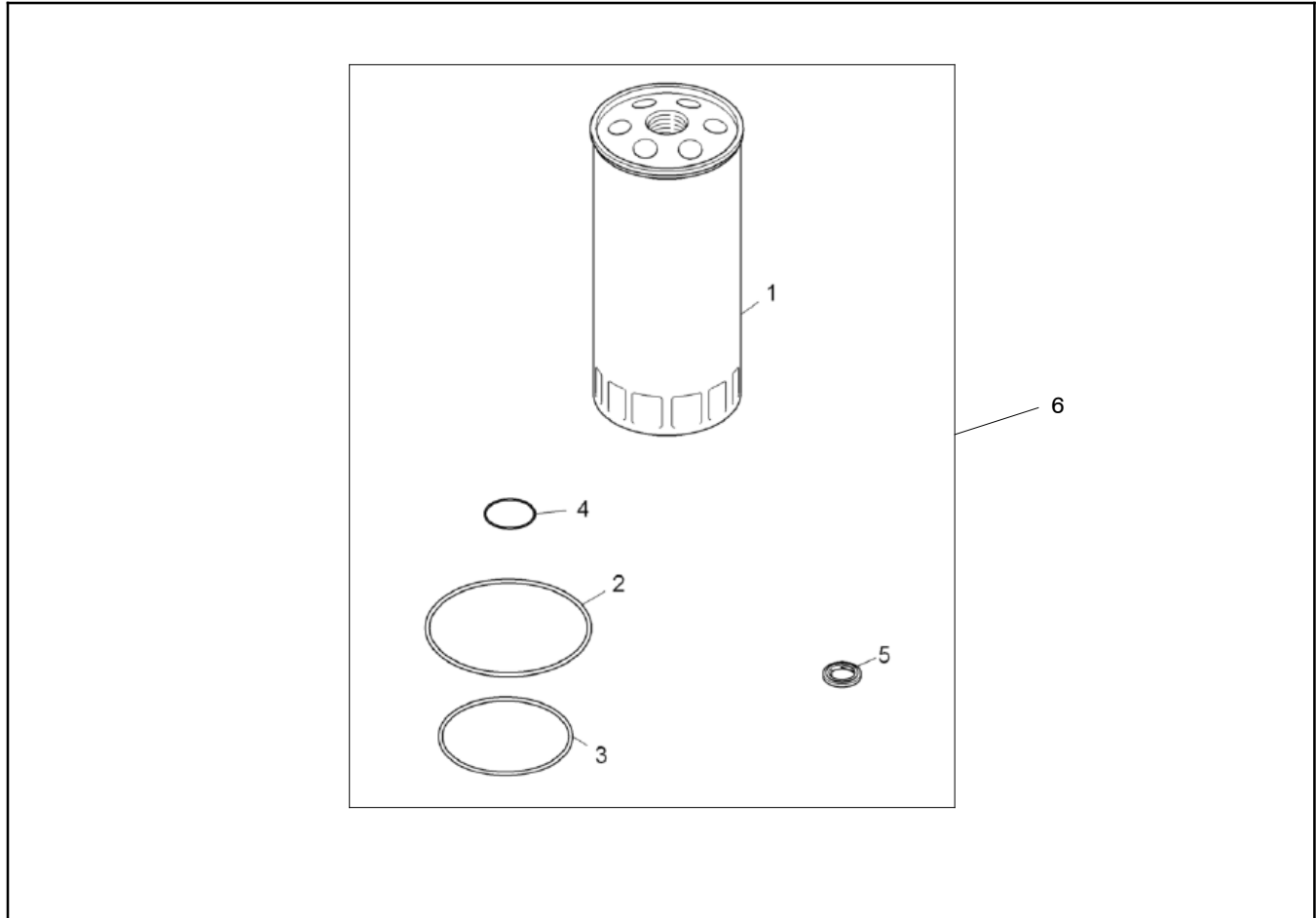
Specification Number Index, 500EOZCS/450EFOZCS

Description	Variation			
	Specification Number			
	GM105546-GA1	GM105546-GA2	GM105546-GA3	GM105546-GA4
Group 03- 05- 1: Fuel Filter, Filter Head	GM109646	GM109646	-	-
Group 03- 05- 1: Fuel Filter, Filter Head, Duplex Fuel Filter	-	-	GM109649	GM109649
Group 03- 05- 2: Fuel Pipe, Fuel Filter Unit, Duplex Fuel Filter	-	-	GM109647	GM109647
Group 03- 05- 2: Fuel Pipe, Fuel Filter Unit	GM109648	GM109648	-	-
Group 03- 25- 1: Connection Tubes	GM109651	GM109651	GM109651	GM109651
Group 03- 99- 1: Repair Kit, Unit Injector	GM109652	GM109652	GM109652	GM109652
Group 16- 01- 1: Junction Box, Main Supply Box	GM109654	GM109654	GM109654	GM109654
Group 16- 01- 2: Junction Box, Coordinator	GM109655	GM109655	GM109655	GM109655
Group 16- 05- 1: Alternator, Mounting	GM109660	GM109660	GM109660	GM109660
Group 16- 05- 2: Alternator	GM109659	GM109659	GM109659	GM109659
Group 16- 10- 1: Starter Motor	GM109661	GM109661	GM109661	GM109661
Group 16- 15- 1: EMS, Electronic Control Unit	GM109663	GM109663	GM109663	GM109663
Group 16- 30- 1: Cable Routing, Engine	GM109665	GM109665	GM109665	GM109665
Group 16- 45- 1: EMS, Injection System	GM109669	GM109669	GM109669	GM109669
Group 16- 45- 2: Cable Harness, Junction Box	GM109666	GM109666	GM109666	GM109666
Group 101: Air Intake	GM106063- MA2	GM106063- MA2	GM106063- MA2	GM106063- MA2
Group 105: Engine	GM104928-GR1	GM104928-GR2	GM104928-GR3	GM104928-GR4
Group 107: Nameplate and Decals	GM104993- GR1	GM104993- GR1	GM104993- GR1	GM104993- GR1
Group 109: Skid and Plant Mounting	GM104929- MA2	GM104929- MA2	GM104929- MA2	GM104929- MA2
Group 201: Alternator and Mounting	*	*	*	*
Group 301: Controller and Mounting	*	*	*	*
Group 701: Literature	701- 197- 32	701- 197- 32	701- 197- 32	701- 197- 32

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

Group 00-23-1: Maintenance Kit, Basic Kit

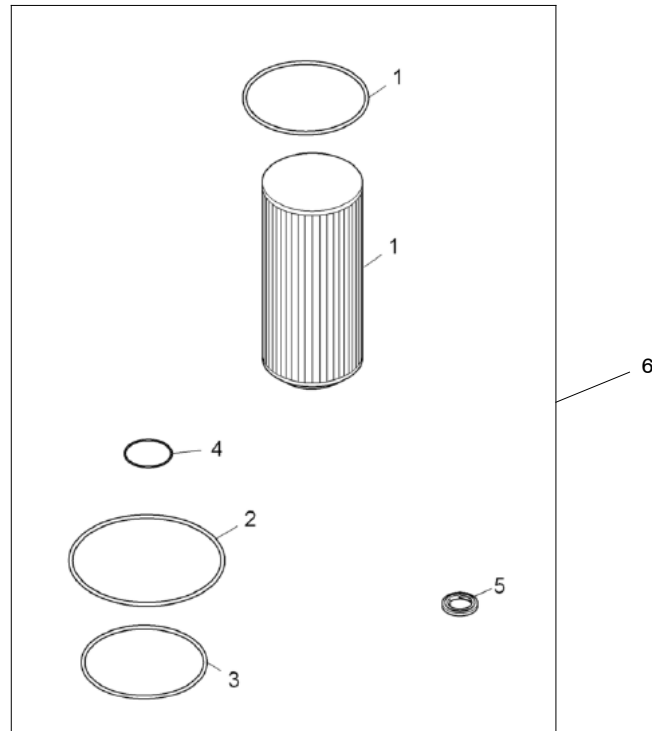
GM109535



Item	Part No.	Description	Qty	Remarks
1	GM67211	Oil filter	1	See Group 1-20-2, Variation GM109563
2	GM67253	Centerfugal O ring	1	See Group 1-20-6, Variation GM109562
3	GM67254	O- ring	1	See Group 1-20-6, Variation GM109562
4	GM76948	O- ring	1	See Group 1-20-6, Variation GM109562
5	GM109036	Sealing Washer	1	See Group 1-05-3, Variation GM109542
6	GM107937	Maintenance Kit, Oil Filter	1	Includes items 1- 5
-	GM107936	Paper Insert	1	See Group 1-20-6, Variation GM109562

Group 00-23-1: Maintenance Kit, Basic Kit

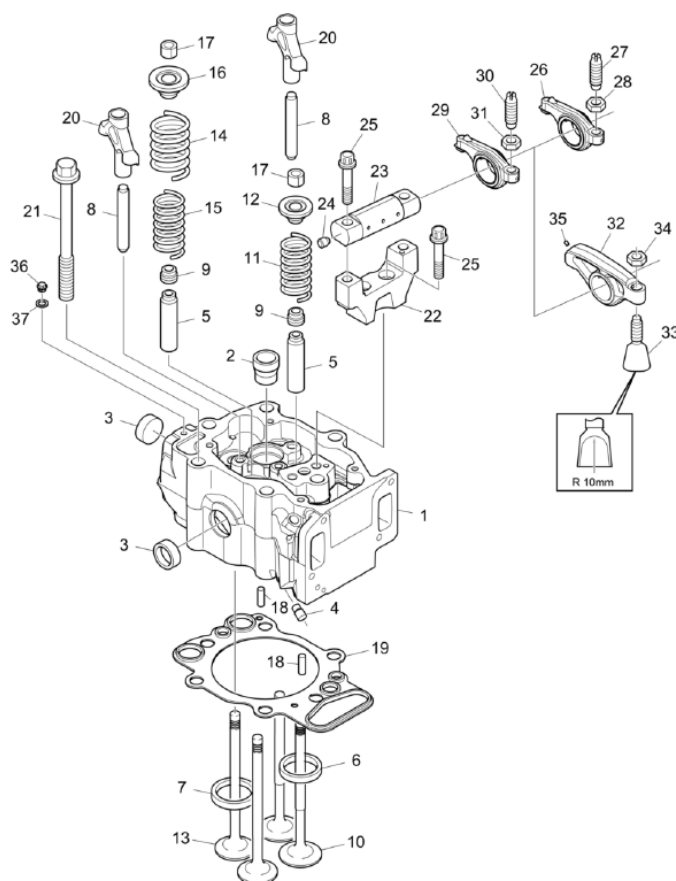
GM109536



Item	Part No.	Description	Qty	Remarks
1	GM67265	Oil filter kit	1	See Group 1-20-6, Variation GM109570
2	GM67253	Centrifugal O ring	1	See Group 1-20-6, Variation GM109569
3	GM67254	O- ring	1	See Group 1-20-6, Variation GM109569
4	GM76948	O- ring	1	See Group 1-20-6, Variation GM109569
5	GM109036	Sealing Washer	1	See Group 1-05-3, Variation GM109551
6	GM107940	Maintenance Kit, Oil Filter	1	Includes items 1-5
-	GM107936	Paper Insert	1	See Group 1-20-2, Variation GM109569

Group 1-01-1: Cylinder Head

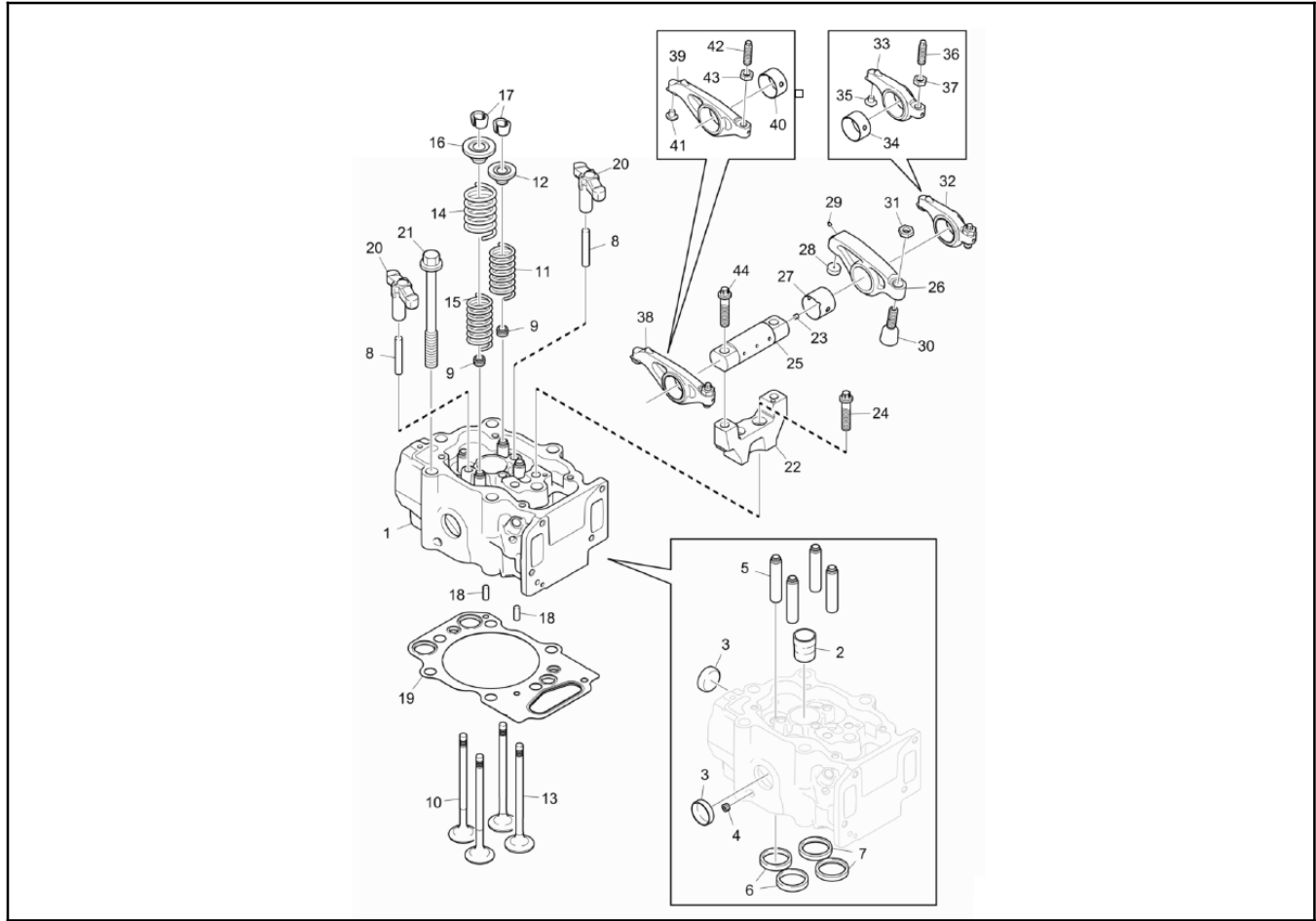
GM109538



Item	Part No.	Description	Qty.	Item	Part No.	Description	Qty.
1	GM108160	Cylinder Head (includes items 2- 17)	1	26	GM78366	Rocker arm (includes items 27- 28)	1
2	GM76276	Sleeve	1	27	GM76506	Adjusting screw, M10	1
3	GM109003	Core Plug	2	28	GM108154	Hexagon Nut	1
4	GM108462	Rivet	3	29	GM78365	Rocker arm (includes items 30- 31)	1
5	GM108662	Valve Guide	4	30	GM76506	Adjusting screw, M10	1
6	GM108916	Valve Seat Intake, STD	2	31	GM108154	Hexagon Nut	1
7	GM108745	Valve Seat Exhaust, STD	2	32	GM76603	Rocker Arm (includes items 33- 35)	1
	GM108746	Valve Seat Exhaust, OSZ	2	33	GM76856	Adjusting screw	1
8	GM76827	Pin	2	34	GM108259	Hexagon Nut	1
9	GM108936	Valve Stem Seal	4	35	GM108378	Rivet Plug	1
10	GM108601	Intake Valve	2	36	GM77007	Screw plug, M8x1x6	1
11	GM76595	Valve spring	2	37	GM108992	Seal	1
12	GM108417	Valve Spring Collar	2				
13	GM108740	Exhaust Valve	2				
14	GM76597	Valve spring	2				
15	GM76596	Valve spring	2				
16	GM109052	Valve Spring Collar	2				
17	GM108394	Split Collet	8				
18	GM76978	Pin, 8 x 20	2				
19	GM108612	Cylinder Head Gasket	1				
20	GM76842	Valve bridge	2				
21	GM108933	Screw	6				
22	GM76514	Bearing bracket	1				
23	GM76600	Shaft (includes item 24)	1				
24	GM76437	Rivet plug	1				
25	GM76515	Tight-fit screw	4				

Group 1-01- 1: Cylinder Head

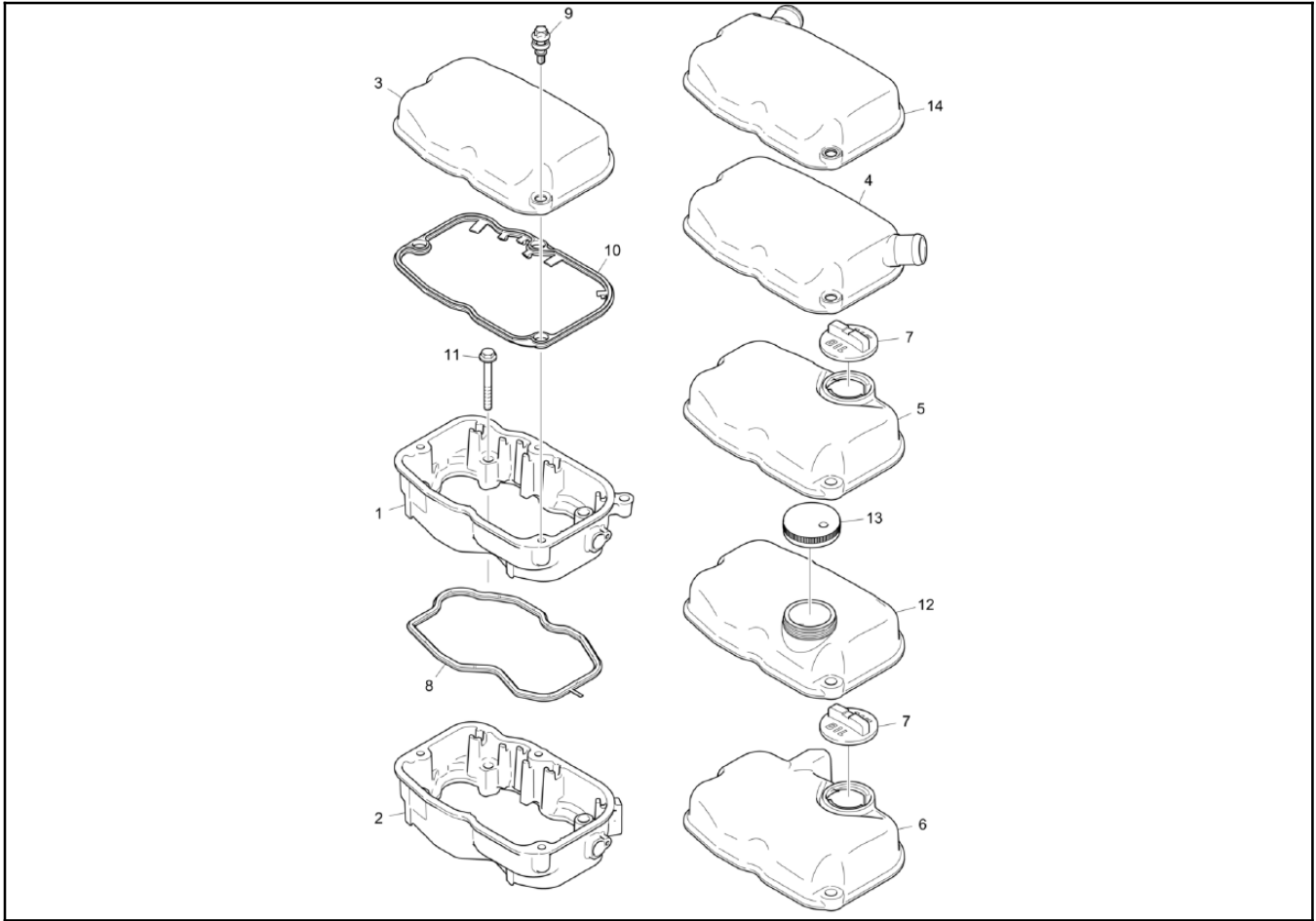
GM109540



Item	Part No.	Description	Qty.	Item	Part No.	Description	Qty.
1	GM108161	Cylinder Head (includes items 2- 17)	1	24	GM76515	Tight- fit screw	2
2	GM76276	Sleeve	1	25	GM76538	Shaft (includes item 24)	1
	GM108155	Thread- Locking Fluid	1	26	GM76603	Rocker Arm (includes items 27- 31)	1
3	GM109003	Core Plug	2	29	GM108378	Rivet Plug	1
	GM108155	Thread- Locking Fluid	1	30	GM76856	Adjusting screw	1
4	GM108462	Rivet	3	31	GM108259	Hexagon Nut	1
5	GM108662	Valve Guide	4	32	GM76445	Rocker arm (includes items 33- 37)	1
6	GM108916	Valve Seat Intake, STD	2	36	GM76506	Adjusting screw, M10	1
	GM108917	Valve Seat Intake, OSZ	2	37	GM108154	Hexagon Nut	1
7	GM108745	Valve Seat Intake, STD	2	38	GM76446	Rocker arm (includes items 39- 43)	1
	GM108746	Valve Seat Intake, OSZ	1	42	GM76506	Adjusting screw, M10	1
8	GM76827	Pin	2	43	GM108154	Hexagon Nut	1
9	GM108936	Valve Stem Seal	4	44	GM76515	Tight- fit screw	2
10	GM108601	Intake Valve	2				
11	GM76595	Valve spring	2				
12	GM108417	Valve Spring Collar	2				
13	GM108740	Exhaust Valve	2				
14	GM76597	Valve spring	2				
15	GM76596	Valve spring	2				
16	GM109052	Valve Spring Collar	2				
17	GM108394	Split Collet	8				
18	GM76978	Pin, 8x20	2				
19	GM108612	Cylinder Head Gasket	1				
20	GM76842	Valve bridge	8				
21	GM108933	Screw	6				
22	GM76514	Bearing bracket	1				
23	GM76437	Rivet plug	1				

Group 1-01-2: Rocker Cover

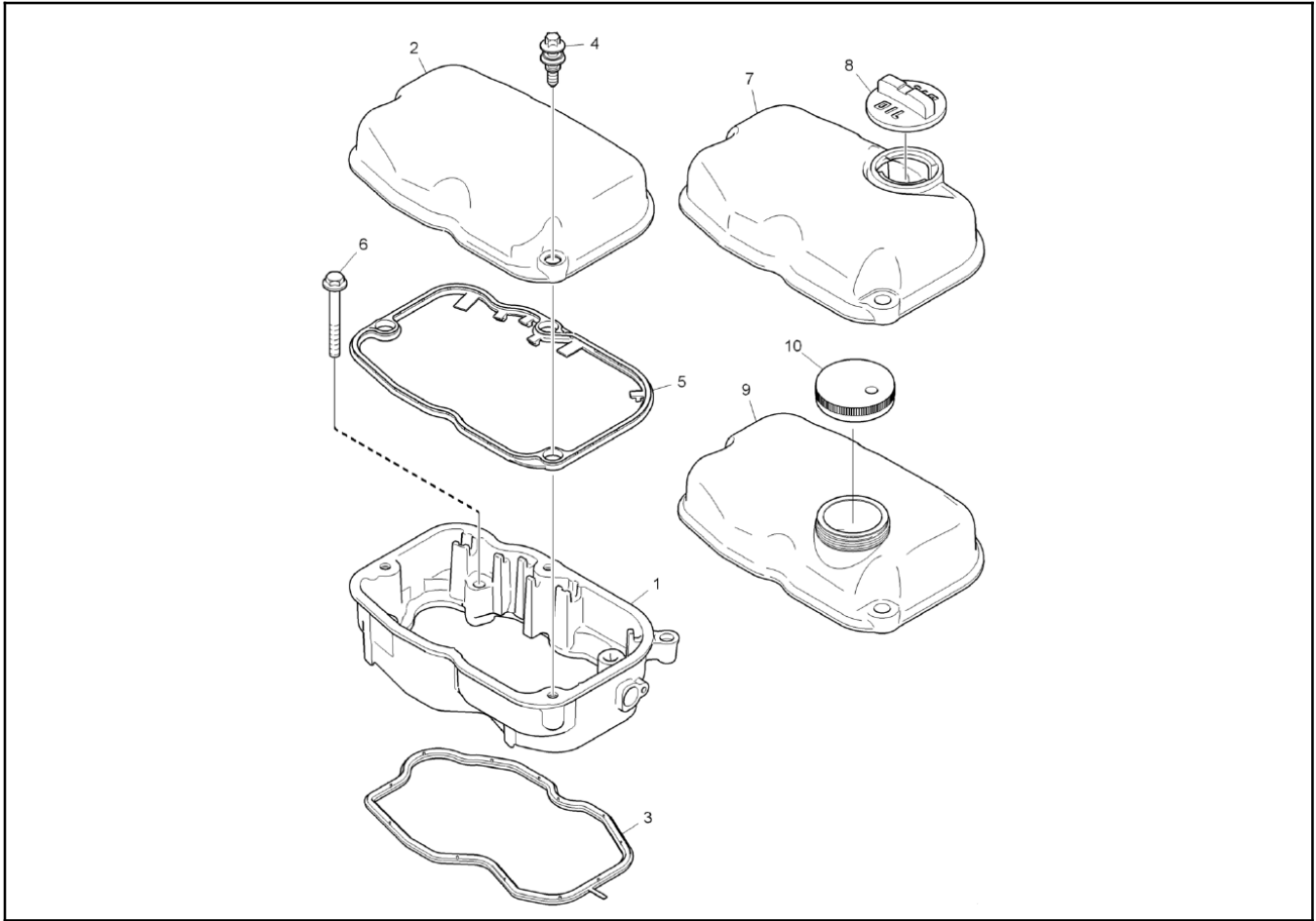
GM109537



Item	Part No.	Description	Qty.
1	GM108648	Rocker Cover	1
2	GM108650	Rocker Cover	1
3	GM76521	Rocker cover	1
4	GM109072	Valve Cover	1
5	GM76854	Rocker cover	1
6	GM108594	Rocker Cover	1
7	GM67210	Filler cap	1
8	GM76464	Rocker cover gasket	1
9	GM108364	Flange Screw	1
10	GM67232	Rocker Cover Gasket	1
11	GM108218	Flange Screw	1
12	GM108801	Rocker Cover	1
13	GM108735	Cover	1
14	GM108438	Rocker Cover	1

Group 1-01-2: Rocker Cover

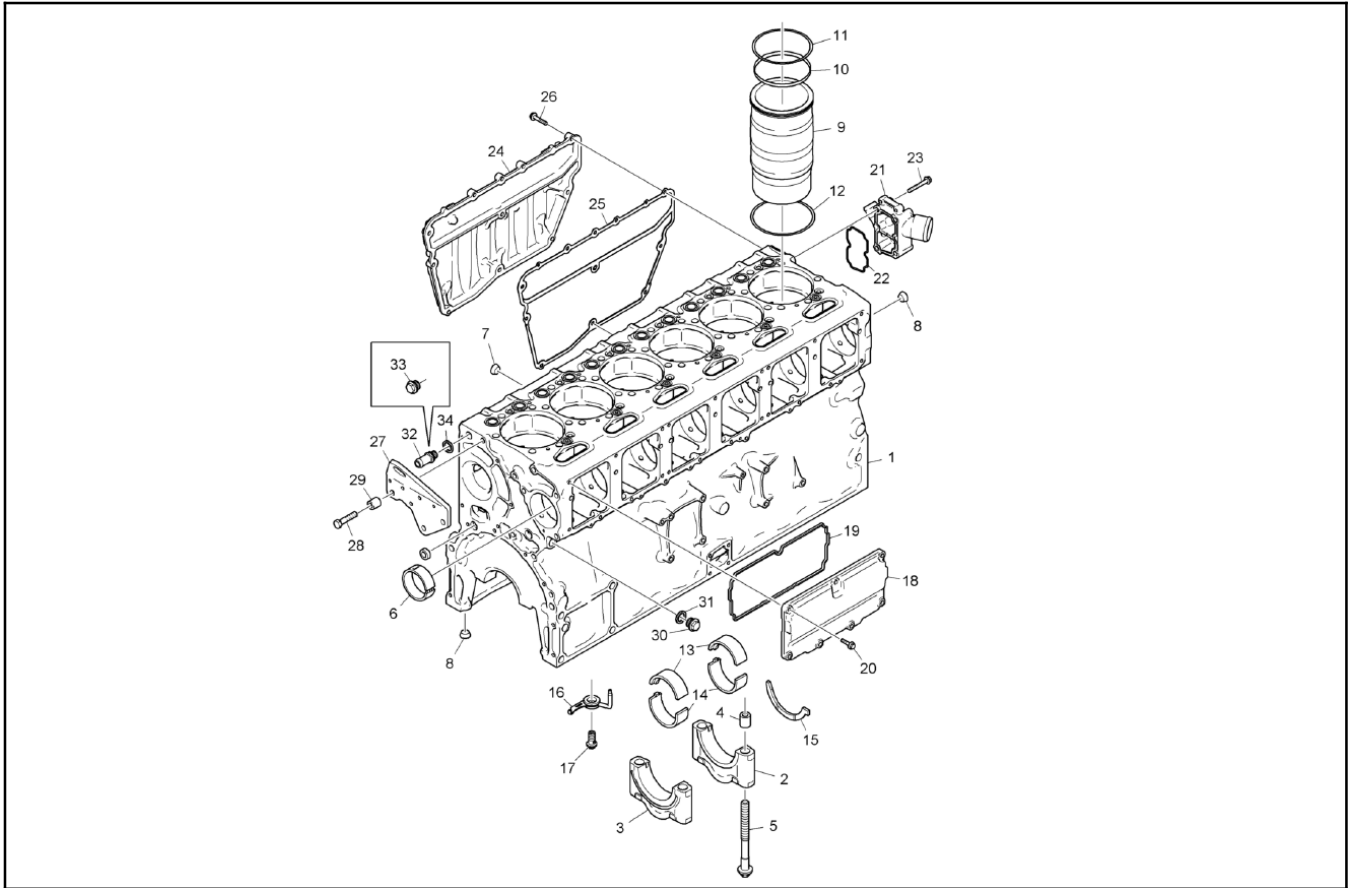
GM109539



Item	Part No.	Description	Qty.
1	GM108648	Rocker Cover	8
2	GM76521	Rocker cover	1
3	GM76464	Rocker cover gasket	8
4	GM108364	Flange Screw	18
5	GM67232	Rocker Cover Gasket	8
6	GM108218	Flange Screw	32
7	GM76854	Rocker cover	1
8	GM67210	Filler cap	1
9	GM108801	Rocker Cover	1
10	GM108735	Cover	1
	GM108991	Label	1
	GM109038	Label	1

Group 1-05- 1: Cylinder Block

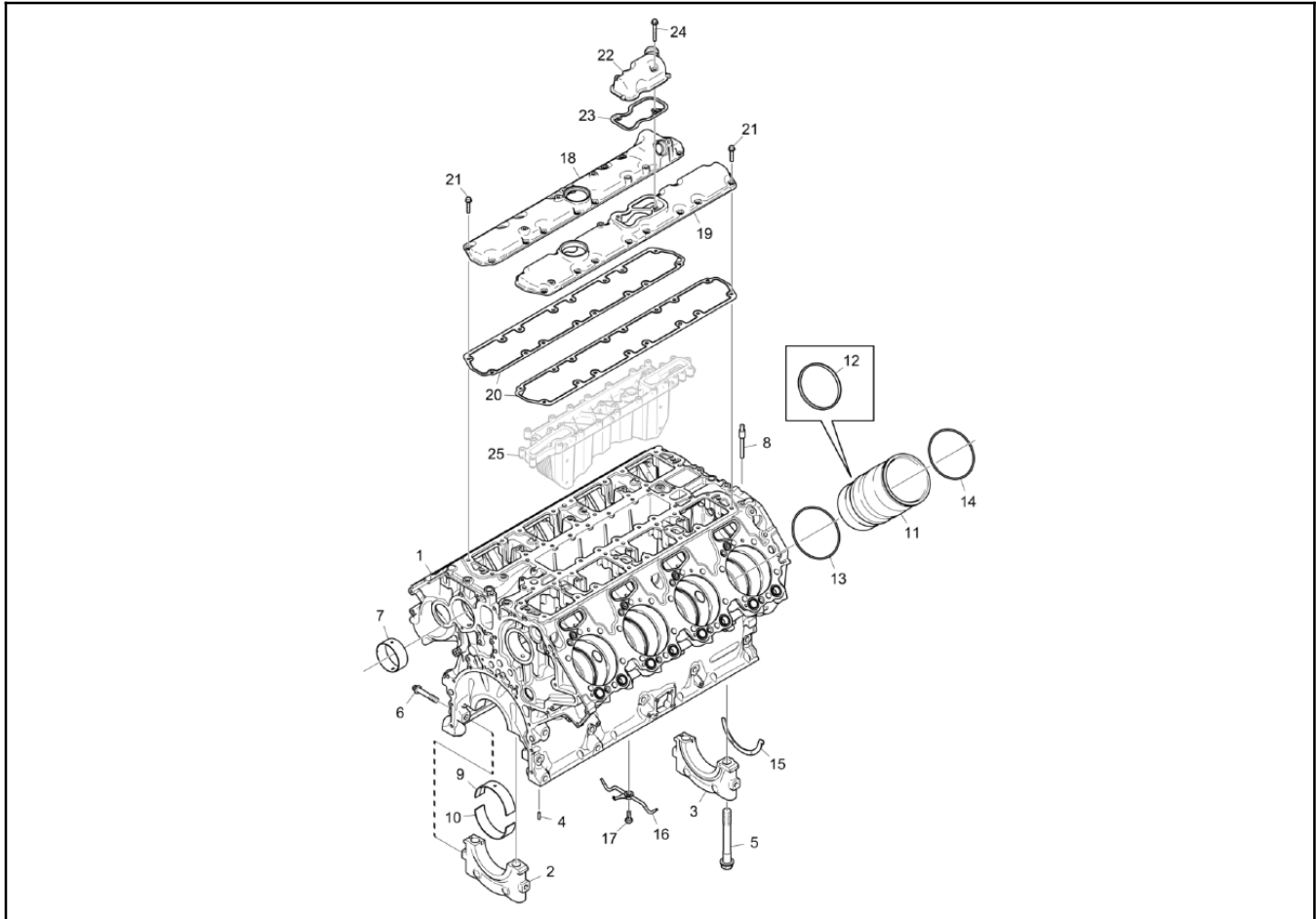
GM109545



Item	Part No.	Description	Qty.	Item	Part No.	Description	Qty.
1	GM109017	Cylinder Block (includes items 2- 8)	1	22	GM108505	Gasket	1
4	GM76219	Guide	14	23	GM108219	Flange Screw	4
5	GM108697	Screw	14	24	GM108668	Cover	1
6	GM76368	Bearing bush	7	25	GM108825	Gasket	1
7	GM109003	Core Plug	2	26	GM108214	Flange Screw	14
8	GM76295	Core plug	5	27	GM108546	Lifting Eye	1
9	GM108952	Cylinder Liner	6	28	GM108375	Screw	3
10	GM109071	Cylinder Liner (OSZ- 1)	6	29	GM108913	Spacing Sleeve	3
11	GM108531	Scraper Ring	6	30	GM77012	Screw plug, M18x1.5x9	1
12	GM109010	O- Ring	6		GM108130	Hose Union	1
13/	GM76715	O- ring	6		GM108122	Plug	1
14	GM108674	Glycerol	1		GM108272	Hose Clamp	1
	GM76794	Bearing std.	7	31	GM108975	Seal	1
	GM76790	Bearing, US - 0.25	7	32	GM108450	Hose Union	1
	GM76791	Bearing, US - 0.50	7	33	GM77012	Screw plug, M18x1.5x9	1
	GM76792	Bearing, US - 0.75	7	34	GM108975	Seal	1
	GM76793	Bearing, US - 1.00	7				
15	GM76258	Thrust bearing	4				
	GM108682	Thrust Bearing, OS +0.16	4				
	GM76450	Thrust bearing, OS +0.26	4				
	GM76451	Thrust bearing, OS +0.56	4				
	GM76452	Thrust bearing, OS +1.02	4				
16	GM108886	Nozzle	6				
17	GM76610	Banjo screw, M10	1				
18	GM109023	Side Cover (includes item 19)	3				
19	GM109024	Gasket	1				
20	GM108311	Flange Screw	21				
21	-	Flange pipe (See Group 02- 30-)	1				

Group 1-05- 1: Cylinder Block

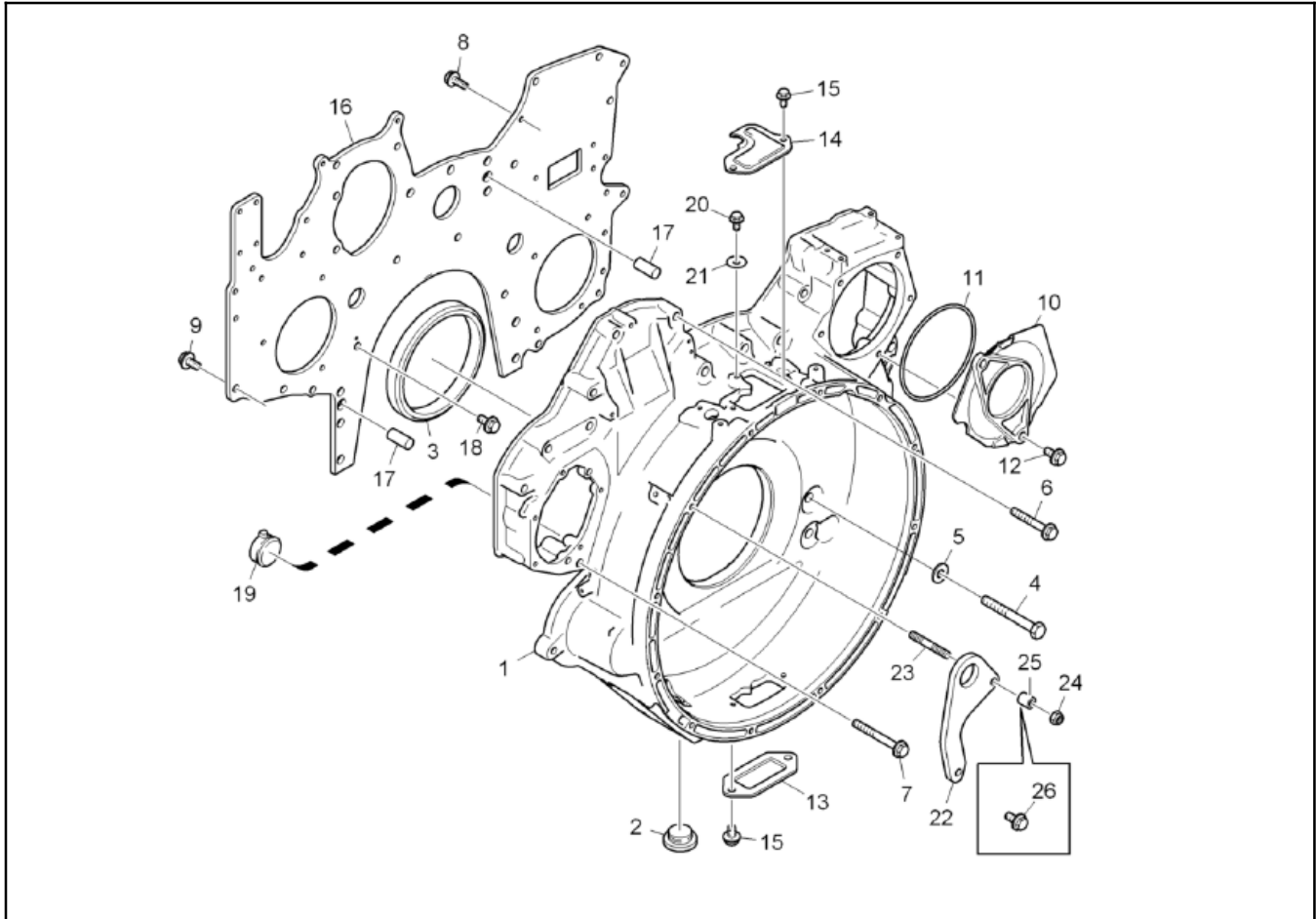
GM109546



Item	Part No.	Description	Qty.	Item	Part No.	Description	Qty.
1	GM109082	Cylinder Block (includes items 2- 10)	1	23	GM108651	Gasket	1
4	GM76978	Pin, 8x20	5	24	GM108219	Flange Screw	2
5	GM108448	Screw	10				
6	GM108449	Screw	10				
7	GM76384	Bearing bush	10				
8	GM76438	Rivet plug	1				
9/10	GM108678	Bearing	5				
11	GM108952	Cylinder Liner	8				
	GM109071	Cylinder Liner (OSZ- 1)	8				
12	GM108531	Scraper Ring	8				
13	GM76715	O- ring	8				
14	GM109010	O- Ring	8				
15	GM108674	Glycerol	1				
	GM108658	Thrust Bearing	4				
	GM108683	Thrust Bearing, USZ- 0.16	4				
	GM108684	Thrust Bearing, USZ- 0.26	4				
	GM108685	Thrust Bearing, USZ- 0.52	4				
	GM108686	Thrust Bearing, USZ- 1.02	4				
16	GM108407	Piston Cooling Nozzle	4				
17	GM108836	Banjo Screw	4				
18	GM109012	Cover	1				
	GM108218	Flange Screw, M8x50	2				
	GM108219	Flange Screw, M8x60	2				
19	GM109013	Cover	1				
20	GM109058	Gasket	2				
21	GM108216	Flange Screw	32				
22	GM108609	Cover	1				

Group 1-05-2: Flywheel Housing

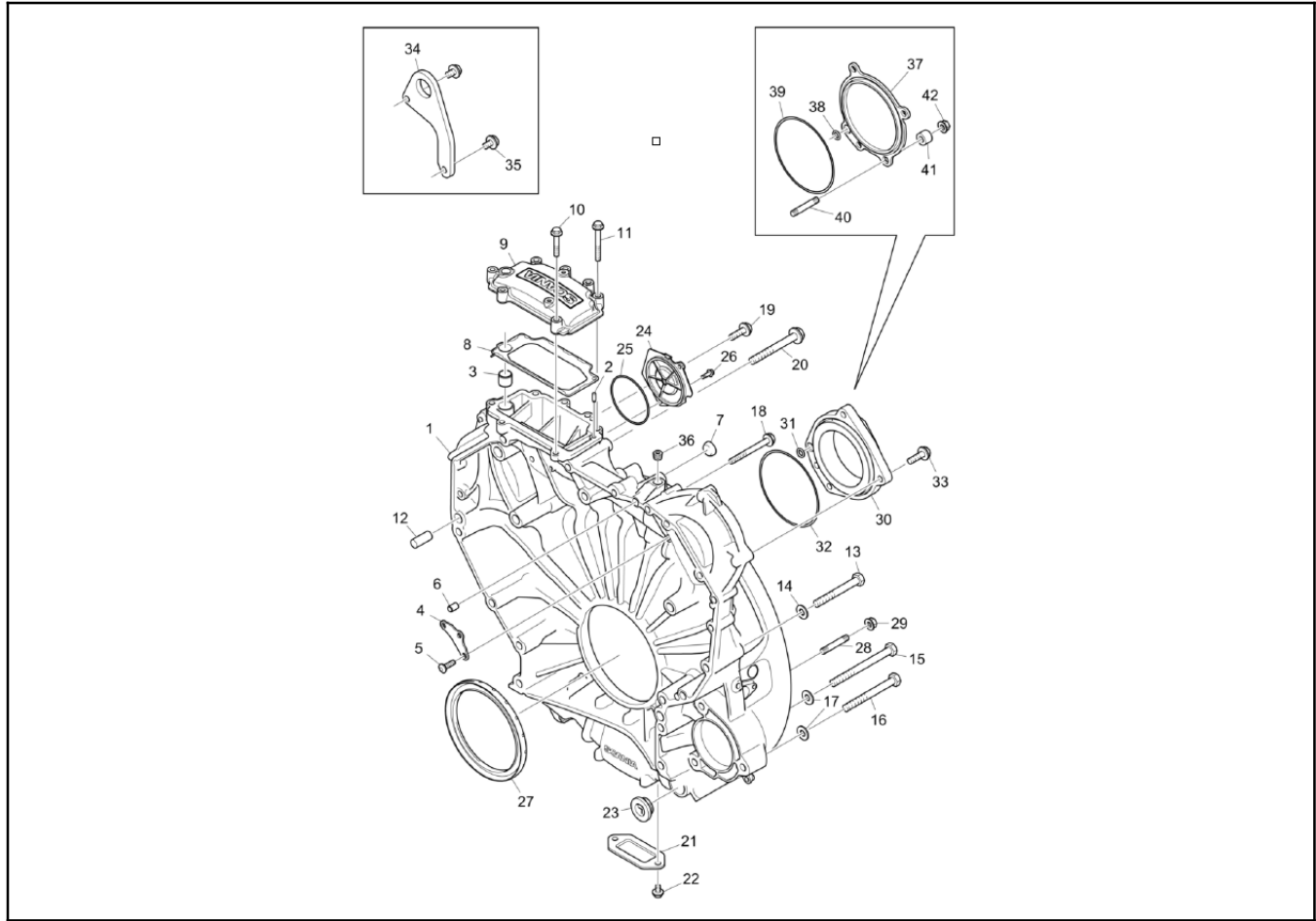
GM109544



Item	Part No.	Description	Qty.	Item	Part No.	Description	Qty.
1	GM109053	Flywheel Housing	1	25	GM108188	Washer	4
2	GM76389	Cover	2		GM108829	Plug	1
3	GM108503	Seal	1		GM76991	O- ring	1
4	GM108253	Hexagon Screw	9		GM108208	Flange Screw	1
5	GM76233	Washer, 13x28	9		GM108302	Plug	2
6	GM108232	Flange Screw	12				
7	GM108234	Screw	1				
8	GM108227	Flange Screw	6				
9	GM108230	Flange Screw	1				
10	GM108610	Cover	1				
11	GM76439	O- ring	1				
12	GM108227	Flange Screw	2				
13	GM76680	Cover	1				
14	GM108847	Cover	1				
15	GM108212	Flange Screw	1				
16	GM108879	Timing Gear Plate	1				
17	GM76981	Pin, 6x35	2				
18	GM108293	Flange Screw	6				
19	GM76460	Plug	1				
	GM108302	Plug (Plastic)	2				
20	GM108212	Flange Screw	1				
21	GM76218	Washer	1				
22	GM76270	Lifting eye	2				
23	GM76972	Stud, M10x60	12				
24	GM108268	Lock Nut	12				

Group 1-05-2: Flywheel Housing

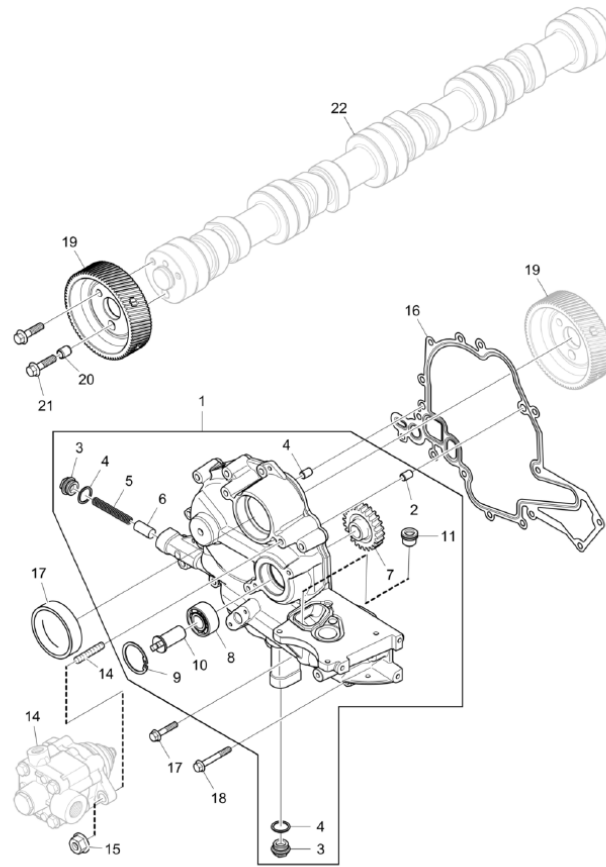
GM109549



Item	Part No.	Description	Qty.	Item	Part No.	Description	Qty.
1	GM108908	Flywheel Housing (includes items 2- 7)	1	27	GM108503	Seal	1
2	GM108178	Dowel	1	28	GM76972	Stud, M10x60	12
3	GM76219	Guide	1	29	GM108268	Lock Nut	12
4	GM108751	Cover Plate	1	30	GM108472	Flange	1
5	GM108413	Screw	3	31	GM108605	O- Ring	1
6	GM76241	Guide sleeve	1	32	GM108652	O- Ring	1
7	GM108242	Screw Plug	1	33	GM108228	Flange Screw	1
7	GM77064	Silicone paste	1	34	GM76270	Lifting eye	2
8	GM108621	Gasket	1	35	GM108227	Flange Screw	4
9	GM108937	Cover	1	36	GM108302	Plug	1
10	GM108216	Flange Screw	2	37	GM108461	Cover	1
11	GM108219	Flange Screw	5	38	GM108605	O- Ring	1
12	GM76981	Pin, 6x35	2	39	GM108652	O- Ring	1
13	GM108253	Hexagon Screw	10	40	GM108172	Stud	3
14	GM76233	Washer, 13x28	10	41	GM108291	Spacing Sleeve	3
15	GM108269	Screw	2	42	GM108262	Flange Nut	3
16	GM108254	Screw	1				
17	GM76233	Washer, 13x28	3				
18	GM108232	Flange Screw	6				
19	GM108229	Screw	2				
20	GM108294	Flange Screw	1				
21	GM76680	Cover	1				
22	GM108212	Flange Screw	2				
23	GM76389	Cover	1				
24	GM108610	Cover	1				
25	GM76439	O- ring	1				
26	GM108227	Flange Screw	2				

Group 1-05-2: Timing Gear Casing, Front

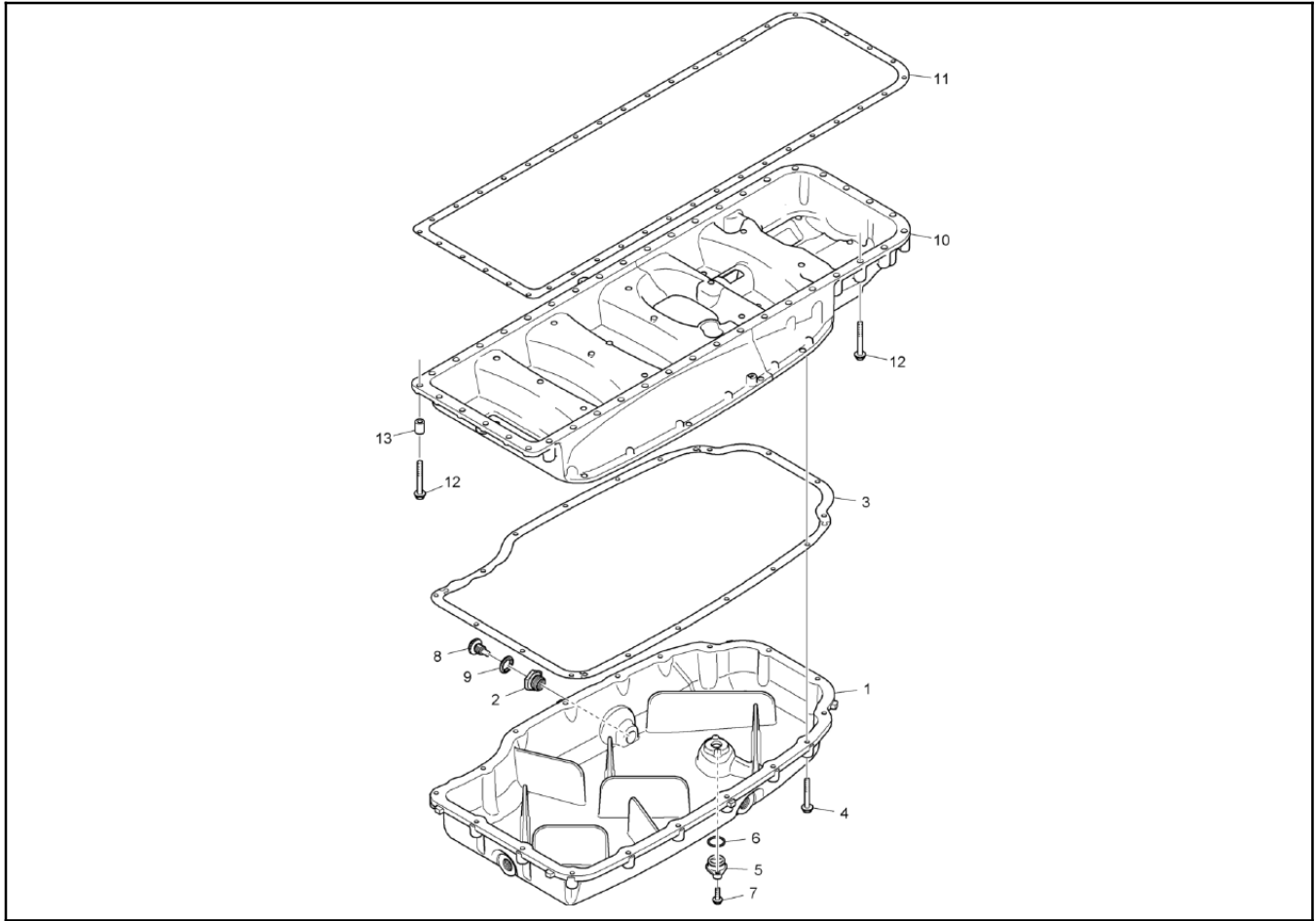
GM109552



Item	Part No.	Description	Qty.
1	GM109045	Cover (includes items 2- 11)	1
2	GM76241	Guide sleeve	2
3	GM108198	Screw Plug	2
4	GM108976	Seal	2
5	GM76911	Spring	1
6	GM76889	Piston	1
7	GM108641	Gear	1
8	GM76220	Ball bearing	1
9	GM76988	Retaining ring	1
10	GM76277	Shaft	1
11	GM76374	Overflow valve	1
12	GM108171	Stud	2
13	GM108262	Flange Nut	2
15	GM108806	Core Plug	1
16	GM108630	Gasket	1
17	GM108216	Flange Screw	6
18	GM108219	Flange Screw	9
19	GM108713	Gear	1
20	GM76910	Guide sleeve	1
21	GM81458	Screw, Flange Head	3

Group 1-05-3: Oil Sump, Low, Ladder Frame

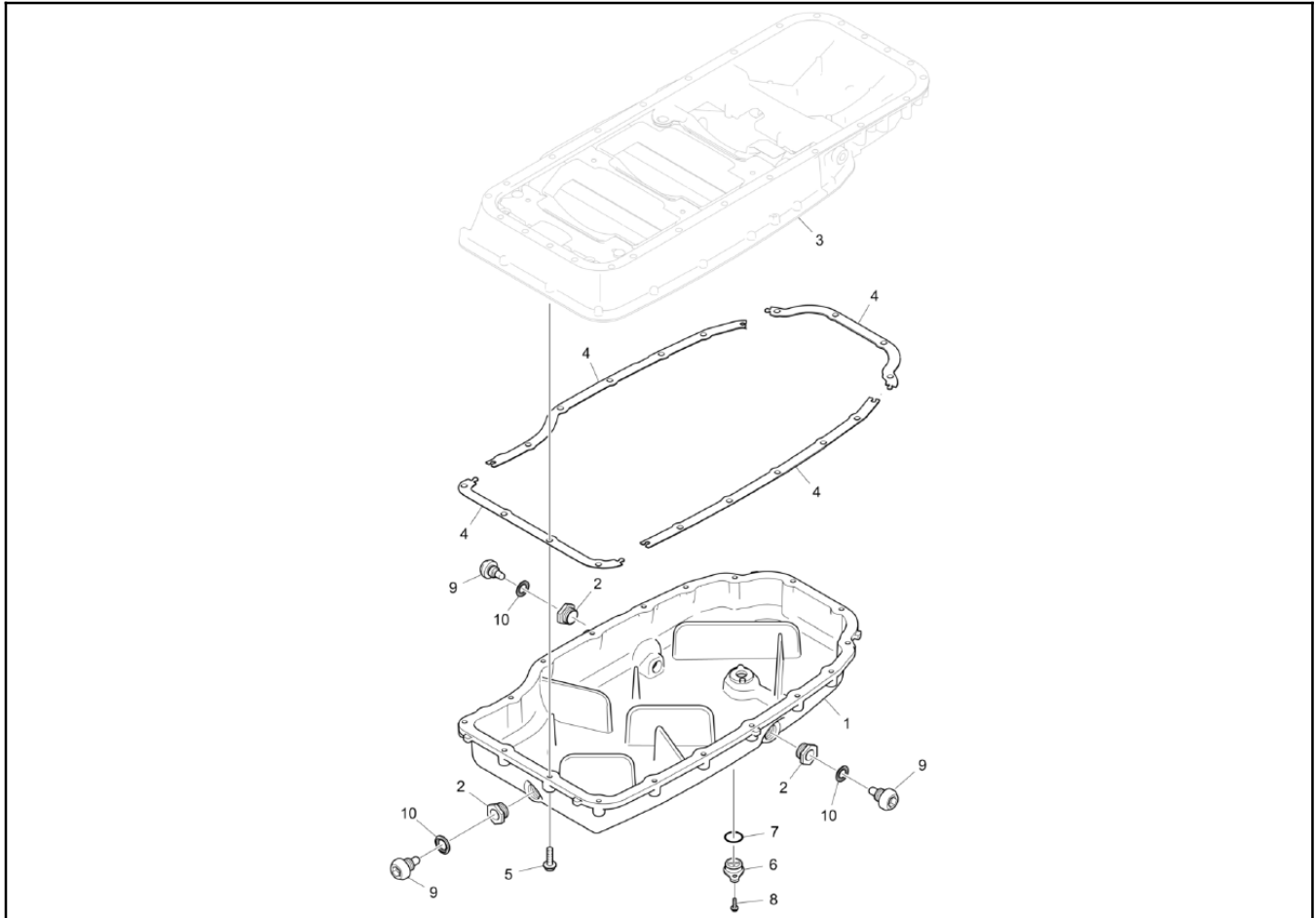
GM109542



Item	Part No.	Description	Qty	Remark
1	GM108733	Oil Sump (includes item 2)	1	
2	GM76834	Reducing union	3	
3	GM108949	Gasket	1	
4	GM109177	Screw	18	
5	GM108451	Plug	1	
6	GM76937	O- ring	1	
7	GM108209	Flange Screw	2	
8	GM76435	Magnetic plug	3	
9	GM109036	Sealing Washer	3	Part of Group 00- 23- 1: Maintenance Kit, Basic Kit (Variation GM109535)
10	GM108915	Ladder Frame	1	
11	GM108608	Gasket	1	
	GM109178	Sealing Washer	22	
12	GM108530	Flange Screw	42	
13	GM108136	Spacing Sleeve	6	

Group 1-05-3: Oil Sump, Low

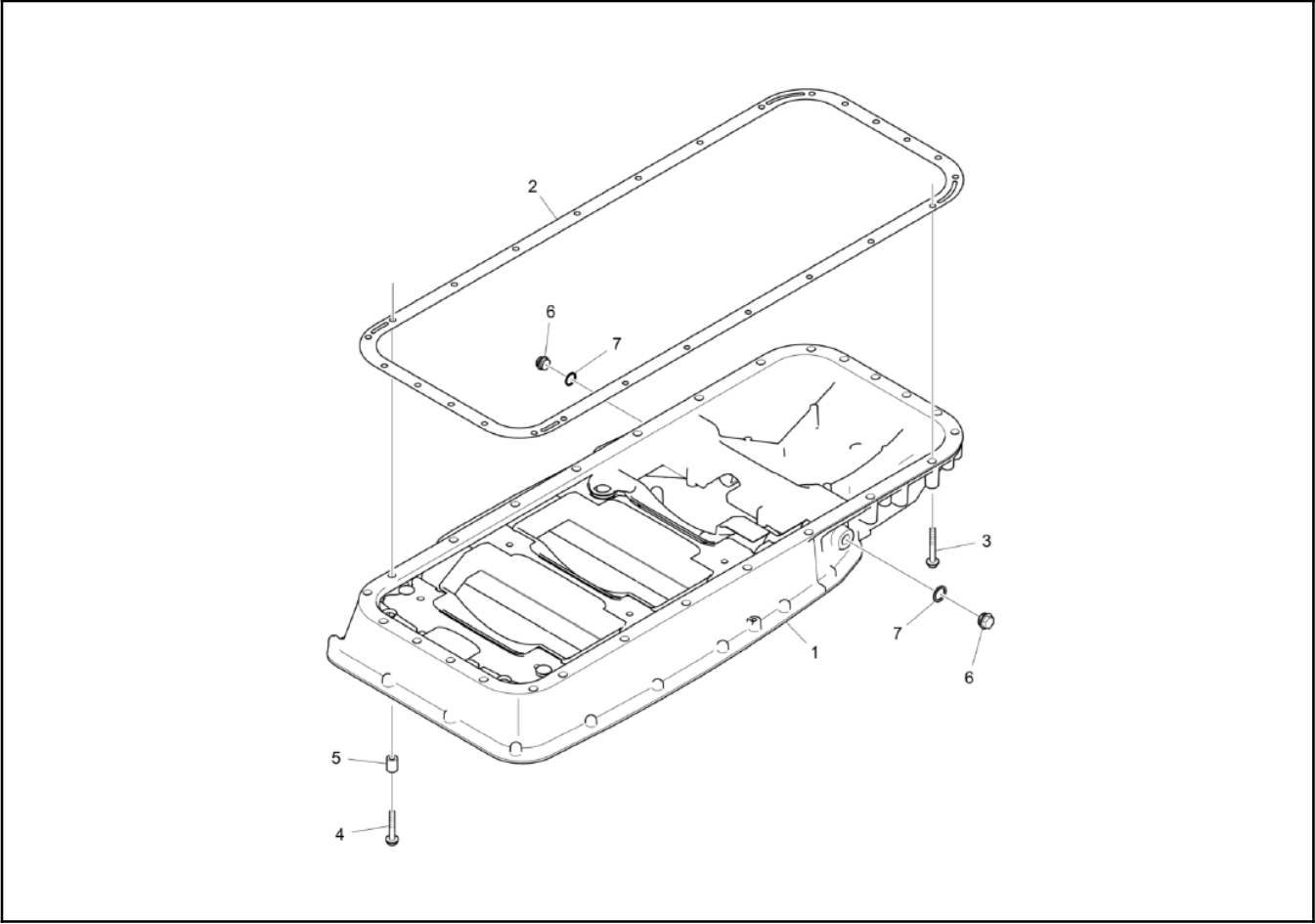
GM109551



Item	Part No.	Description	Qty	Remark
1	GM108733	Oil Sump (includes item 2)	1	
2	GM76834	Reducing union	3	
	GM108155	Thread-Locking Fluid	1	
4	GM108949	Gasket	1	
5	GM108665	Flange Screw	18	
6	GM108451	Plug	1	
7	GM76937	O- ring	1	
8	GM108209	Flange Screw	2	
9	GM76435	Magnetic plug	3	
10	GM109036	Sealing Washer	3	Part of Group 00- 23- 1: Maintenance Kit, Basic Kit (Variation GM109536)

Group 1-05-3: Ladder Frame

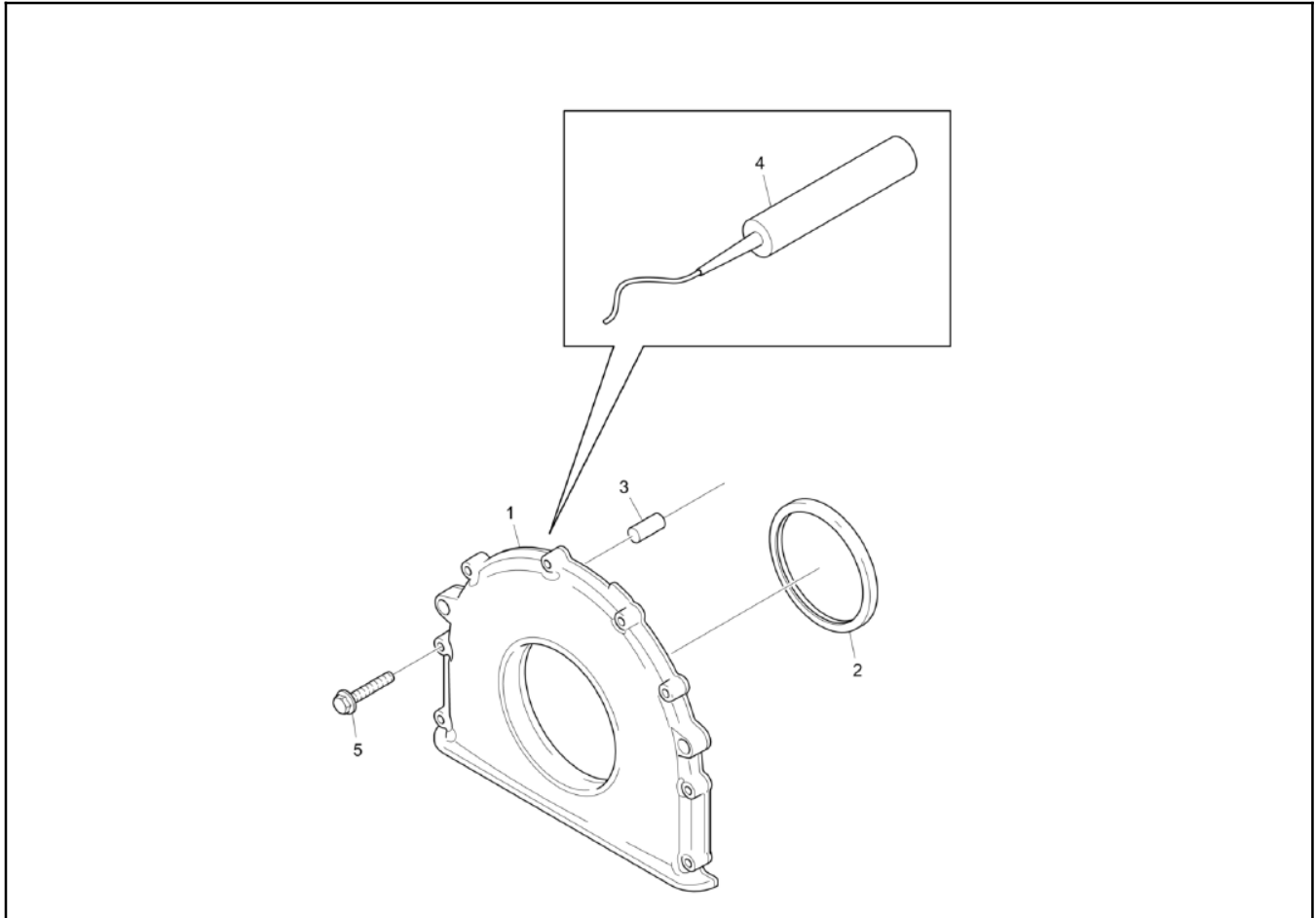
GM109547



Item	Part No.	Description	Qty.
1	GM109002	Ladder Frame	1
2	GM109022	Gasket	1
	GM77064	Silicone paste	1
3	GM108530	Flange Screw	25
4	GM108665	Flange Screw	1
5	GM108136	Spacing Sleeve	1
6	GM77014	Screw plug, M26x1.5x9	2
7	GM108977	Seal	2

Group 1 - 05- 4: Front Cover

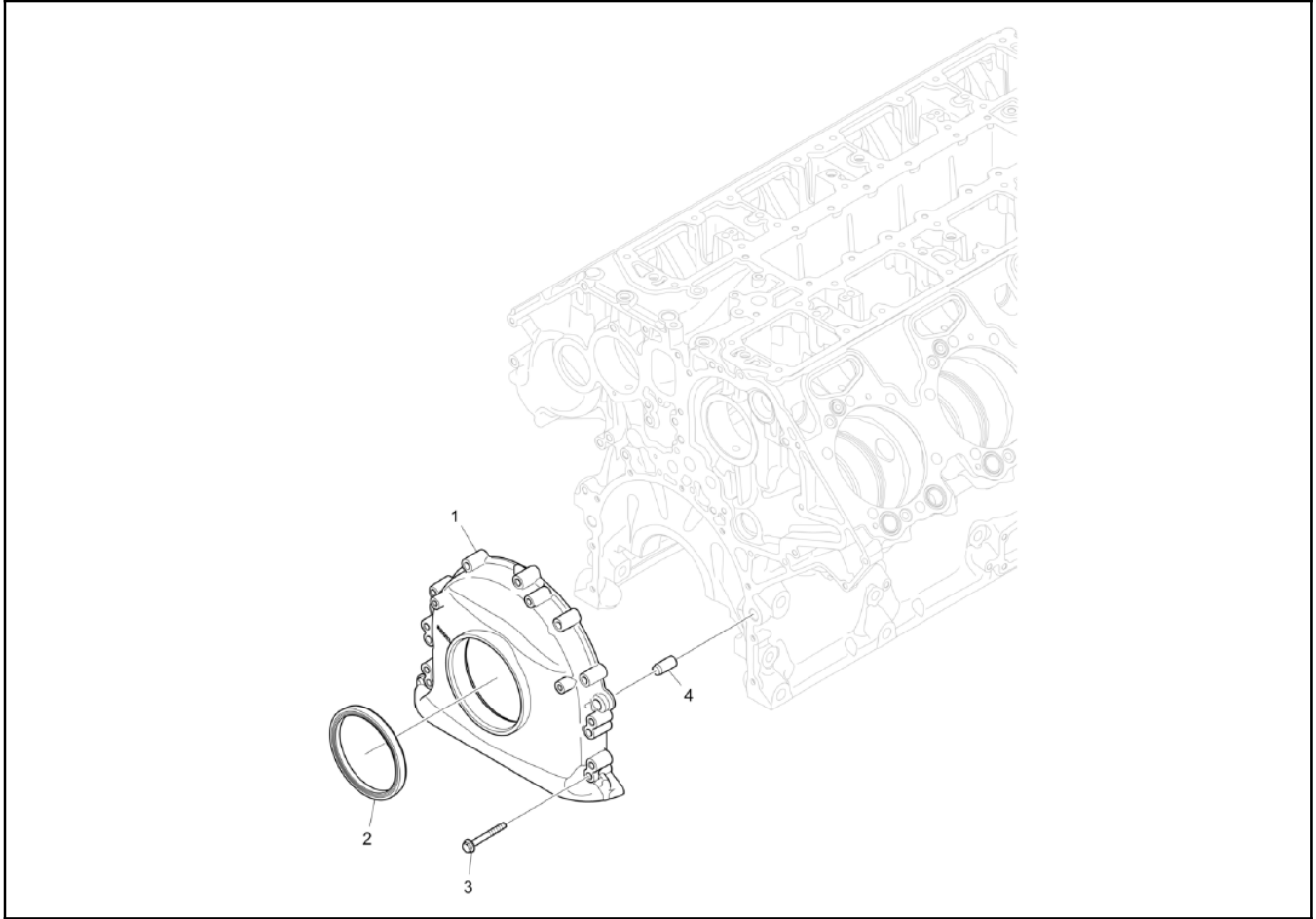
GM109541



Item	Part No.	Description	Qty.
1	GM109006	Front Cover (includes item 2)	1
2	GM108414	Seal	1
3	GM76981	Pin, 6x35	2
4	GM77064	Silicone paste	1

Group 1 - 05- 4: Front Cover

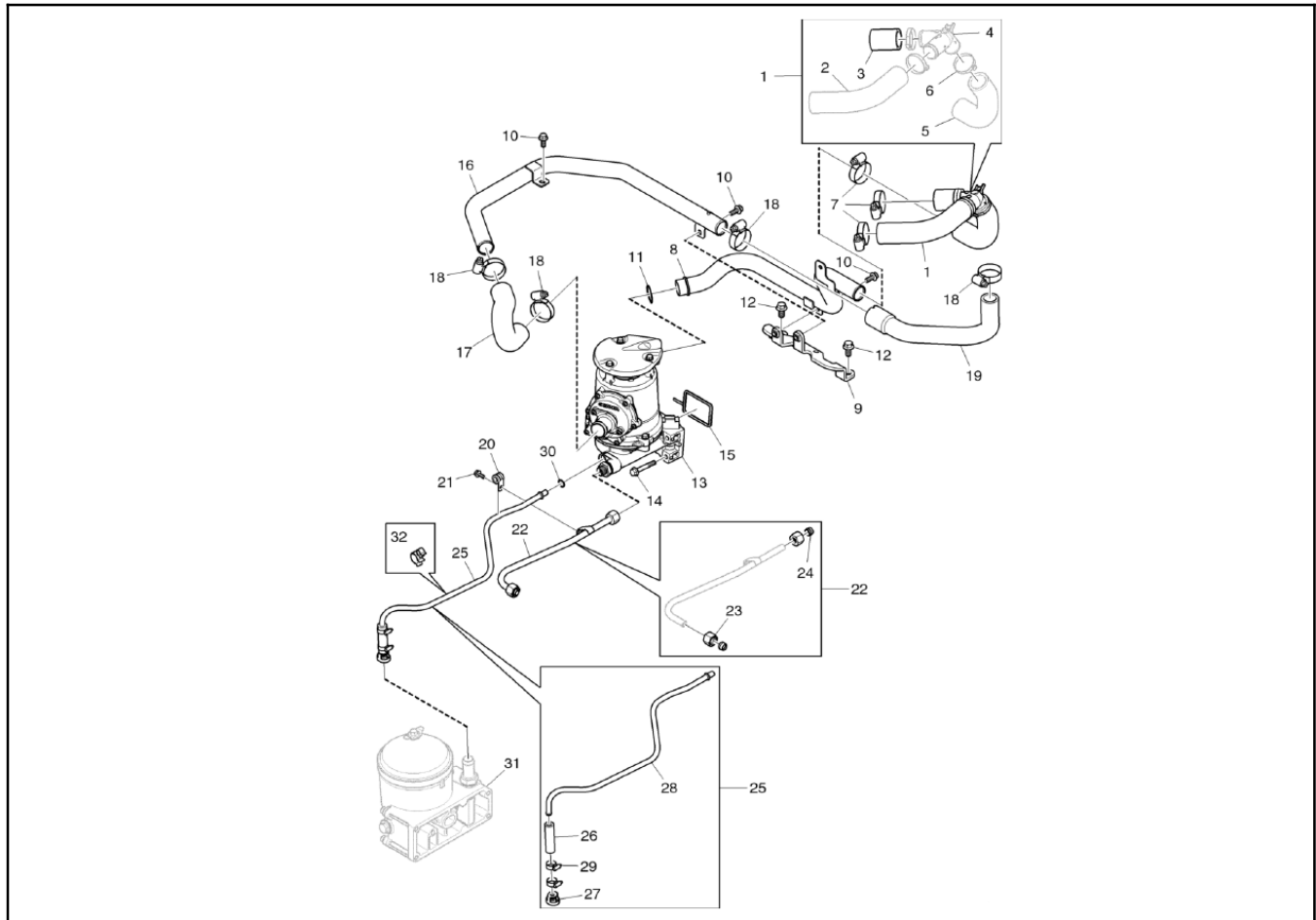
GM109548



Item	Part No.	Description	Qty.
1	GM108706	Front Cover (includes item 2)	1
2	GM76322	Shaft seal	1
	GM77064	Silicone paste	1
3	GM108218	Flange Screw	9
4	GM76981	Pin, 6x35	2

Group 1 - 05- 5: Crankcase Ventilation, Closed

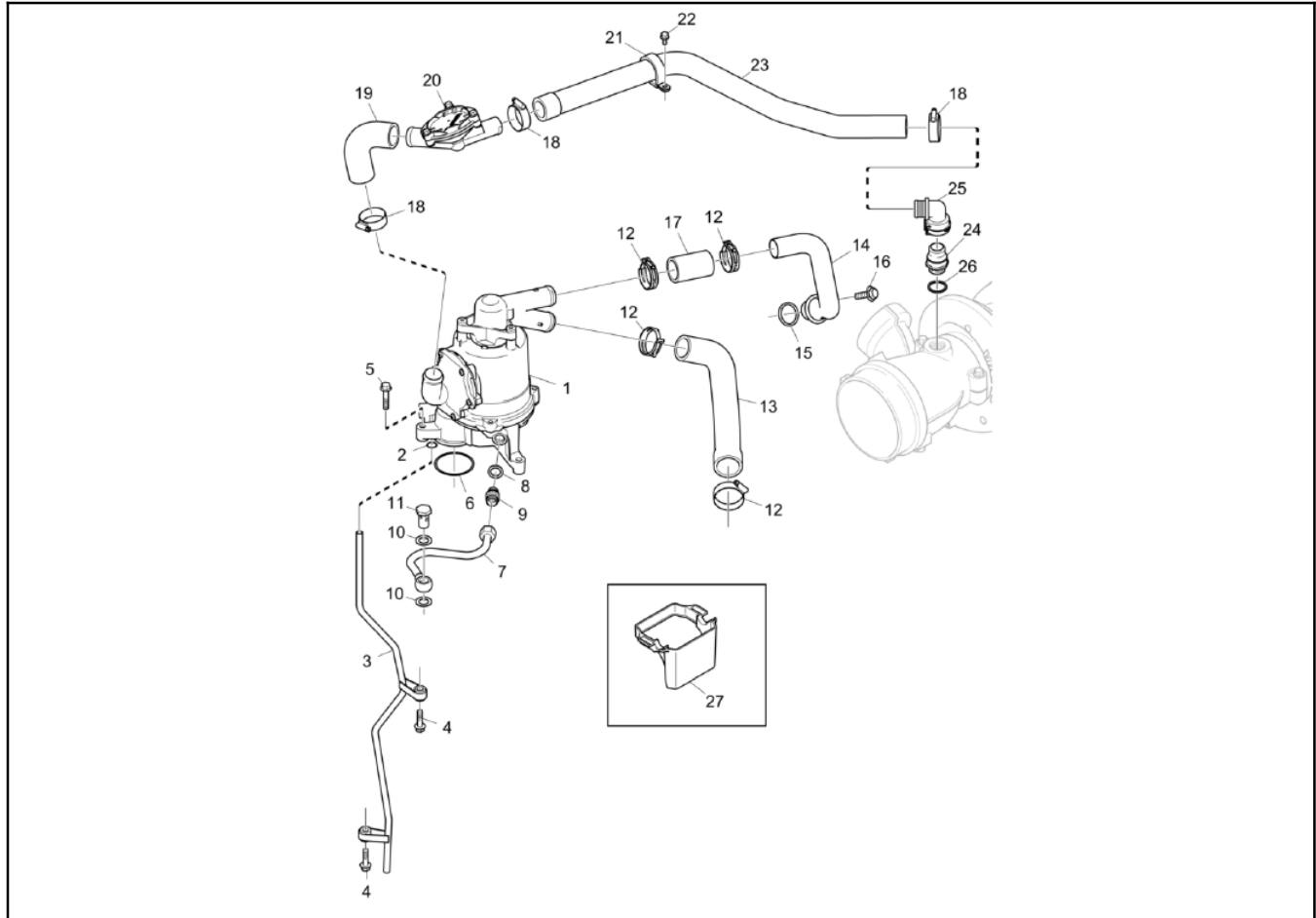
GM109543



Item	Part No.	Description	Qty.
1	GM108625	Hose (includes items 2- 6)	1
7	GM108273	Hose Clamp	3
8	GM108842	Pipe	1
9	GM108846	Bracket	1
10	GM108212	Flange Screw	3
11	GM108425	O- Ring	1
12	GM108224	Flange Screw	2
13	GM108855	Oil Mist Separator	1
14	GM108454	Flange Screw	4
15	GM108467	Gasket	1
16	GM108547	Pipe	1
17	GM108632	Hose	1
18	GM108273	Hose Clamp	4
19	GM108659	Hose	1
20	GM108246	Clamp	1
21	GM108208	Flange Screw	1
22	GM108548	Lubrication Pipe	1
23	GM77059	Union nut	2
24	GM77048	Ferrule	2
25	GM108736	Oil Pipe (includes items 26- 29)	1
26	GM108545	Hose	1
27	GM108602	Harness- To- Component Connector	1
29	GM108271	Hose Clamp	2
30	GM76683	O- ring	1
32	GM108852	Clamp	1

Group 1-05-5: Crankcase Ventilation, Closed

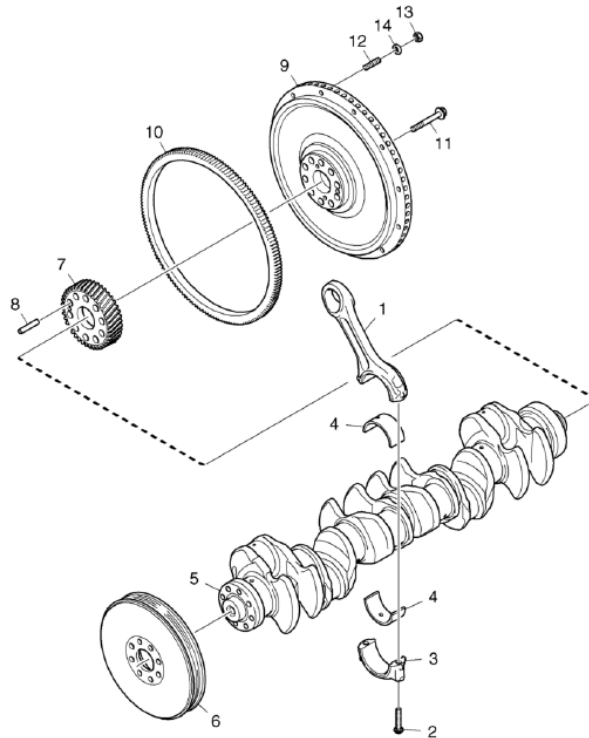
GM109550



Item	Part No.	Description	Qty.	Item	Part No.	Description	Qty.
1	GM108593	Oil Mist Separator	1	22	GM108207	Screw	1
	GM108539	Repair Kit	1	23	GM108858	Hose	1
	GM108541	Elbow Union	1	24	GM108365	Straight Union	1
	GM108397	O- Ring	1	25	GM108366	Elbow Union	1
	GM108240	Union	1	26	GM77025	Gasket	1
	GM108973	Seal	1	27	GM108591	Cover	1
2	GM76683	O- ring	1				
3	GM108758	Drain Pipe	1				
4	GM108212	Flange Screw	2				
5	GM108216	Flange Screw	3				
6	GM108391	O- Ring	1				
7	GM108667	Pipe	1				
	GM108244	Ferrule	1				
	GM108248	Union Nut	1				
8	GM108973	Seal	1				
9	GM108240	Union	1				
10	GM108995	Seal	2				
11	GM108201	Banjo Screw	1				
12	GM108273	Hose Clamp	5				
13	GM108628	Hose	1				
14	GM108762	Pipe	1				
15	GM108425	O- Ring	1				
16	GM108212	Flange Screw	1				
17	GM108537	Hose	1				
18	GM108273	Hose Clamp	2				
19	GM108128	Hose	1				
20	GM108515	Valve Housing	1				
21	GM76982	Clamp	1				

Group 1-10-1: Crank Mechanism

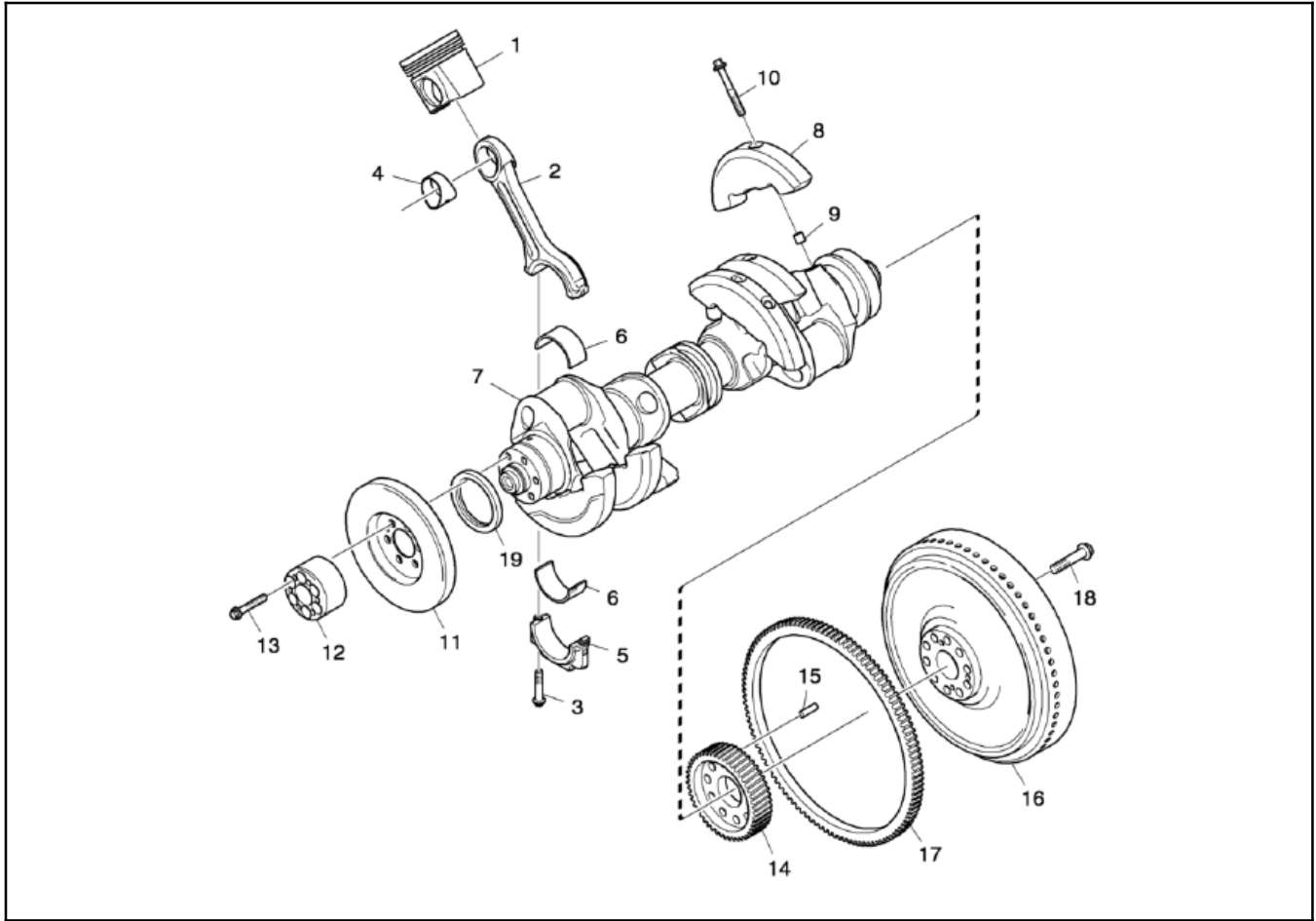
GM109553



Item	Part No.	Description	Qty.
1	GM108156	Connecting Rod (includes items 2, 3)	6
2	GM76716	Screw	2
4	GM108389	Bearing Shell, STD	12
	GM108488	Bearing Shell, USZ- 0.25	12
	GM108489	Bearing Shell, USZ- 0.50	12
	GM108490	Bearing Shell, USZ- 0.75	12
	GM108491	Bearing Shell, USZ- 1.00	12
5	GM108912	Crankshaft	1
6	GM108888	Crankshaft Damper	1
7	GM108816	Gear (includes item 8)	1
8	GM76980	Pin, 12x40	1
9	GM108853	Flywheel (includes item 10)	1
10	GM108421	External Ring Gear	1
11	GM108763	Screw	10
	GM108464	Bush	1
	GM108179	Snap Ring	1
	GM108155	Thread-Locking Fluid	1
12	GM108468	Stud	8
13	GM108264	Lock Nut	8
14	GM108188	Washer	8

Group 1-10-1: Crank Mechanism

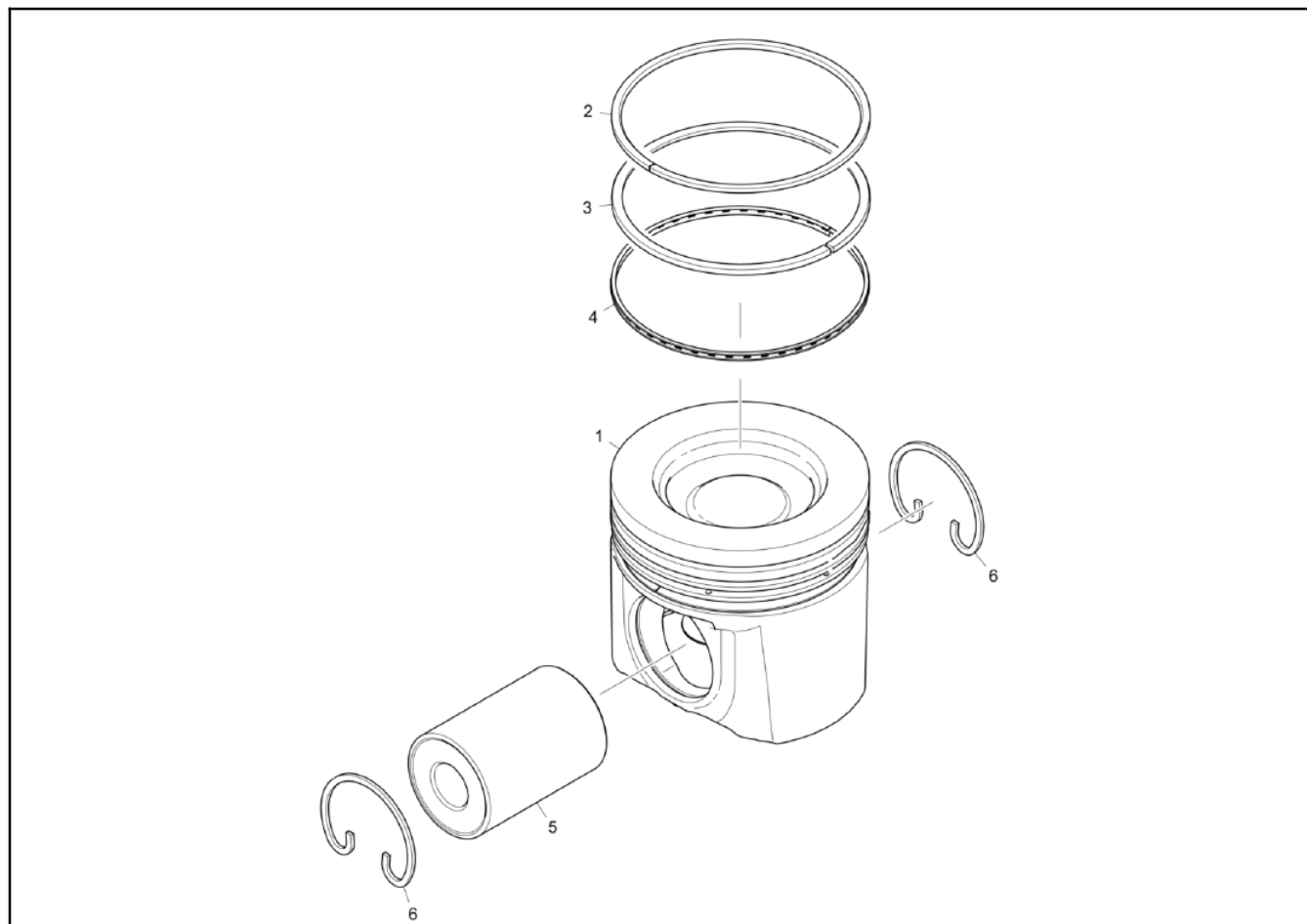
GM109555



Item	Part No.	Description	Qty.
2	GM108891	Connecting Rod (includes items 3- 5)	8
3	GM76716	Screw	24
6	GM108452	Bearing Shell, STD	16
	GM108580	Bearing Shell, USZ- 0.25	16
	GM108581	Bearing Shell, USZ- 0.50	16
	GM108582	Bearing Shell, USZ- 0.75	16
	GM108583	Bearing Shell, USZ- 1.00	16
7	GM108880	Crankshaft (includes items 8- 10)	1
9	GM76958	Sleeve	12
10	GM108864	Screw	12
11	GM108504	Torsion Damper	1
12	GM108592	Driver	1
13	GM108300	Screw	6
14	GM108816	Gear (includes item 15)	1
15	GM76980	Pin, 12x40	1
16	GM108853	Flywheel (includes item 17)	1
17	GM108421	External Ring Gear	1
18	GM108763	Screw	10
19	GM76322	Shaft seal	1

Group 1- 10- 2: Piston

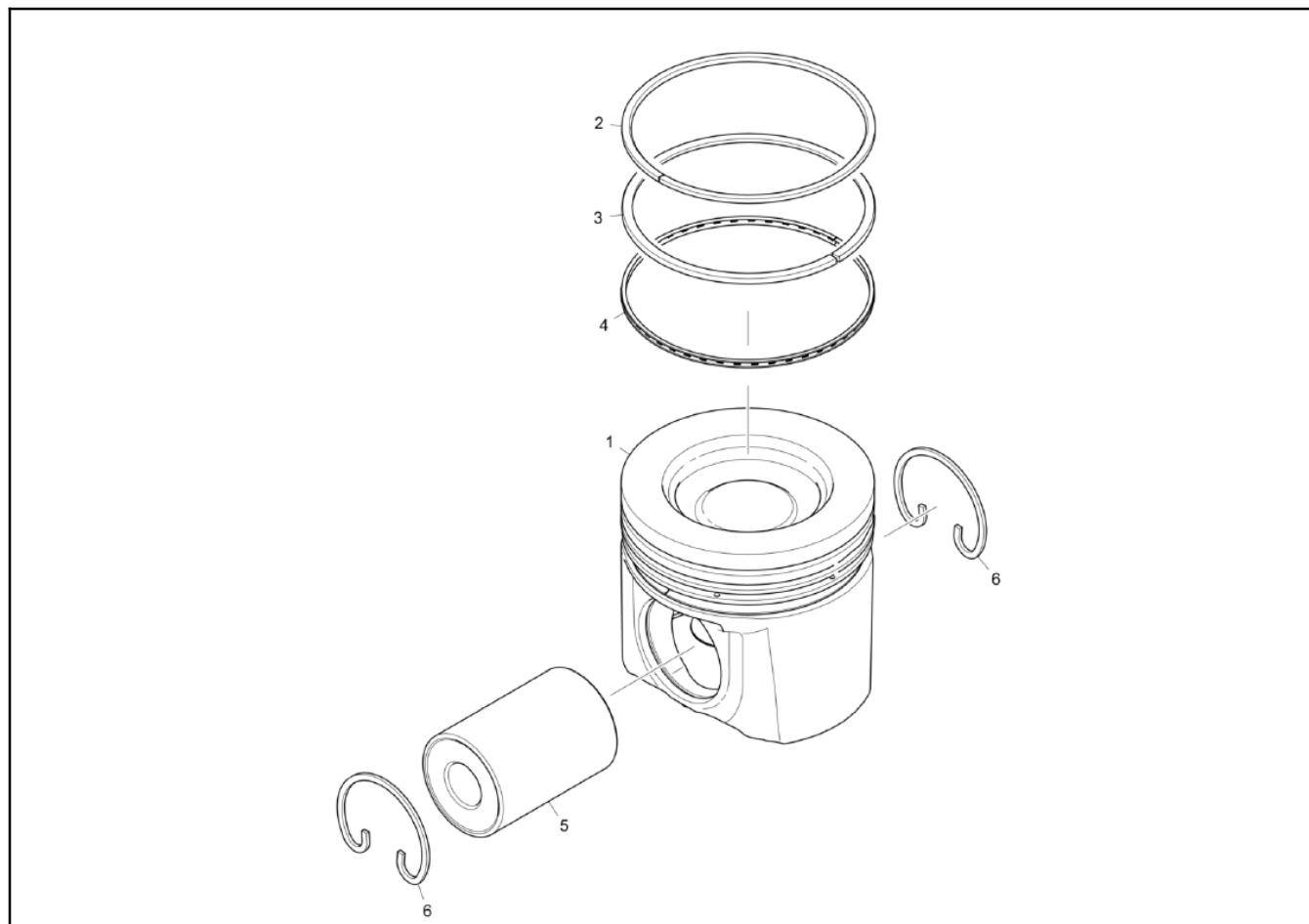
GM109554



Item	Part No.	Description	Qty.
1	GM109074	Piston (includes items 2- 6)	6
	GM109067	Piston Ring Kit (includes items 2- 4)	1
2	GM108970	Compression Ring	1
3	GM108737	Compression Ring	1
4	GM108738	Oil Scraper Ring	1
5	GM109061	Gudgeon Pin	1
6	GM108947	Retaining Ring	2

Group 1- 10- 2: Piston

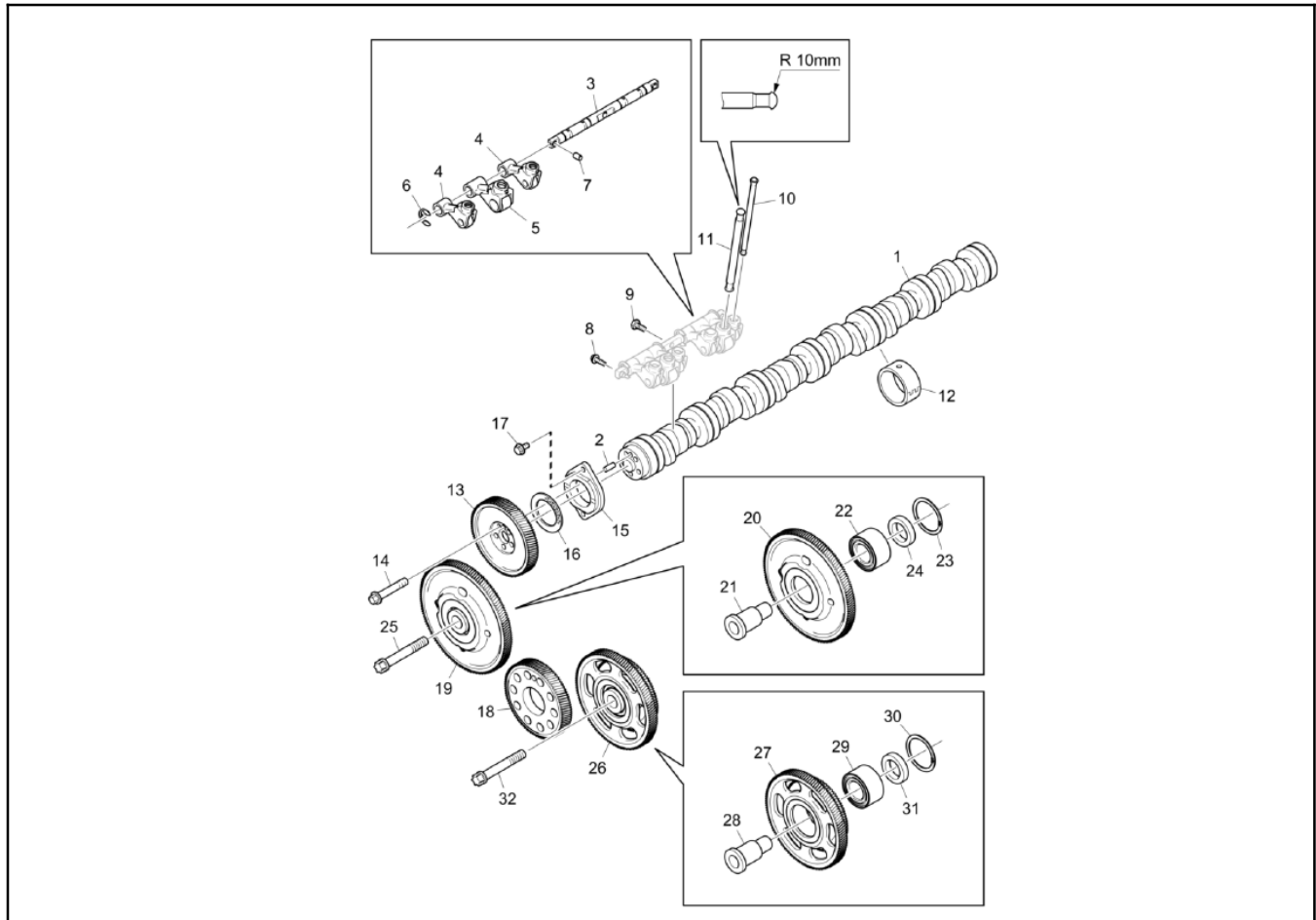
GM109556



Item	Part No.	Description	Qty.
1	GM109075	Piston (includes items 2- 6)	8
	GM109067	Piston Ring Kit (includes items 2- 4)	1
2	GM108970	Compression Ring	1
3	GM108737	Compression Ring	1
4	GM108738	Oil Scraper Ring	1
5	GM109041	Retaining Ring	2
6	GM109061	Gudgeon Pin	1

Group 1-15-1: Timing Gear

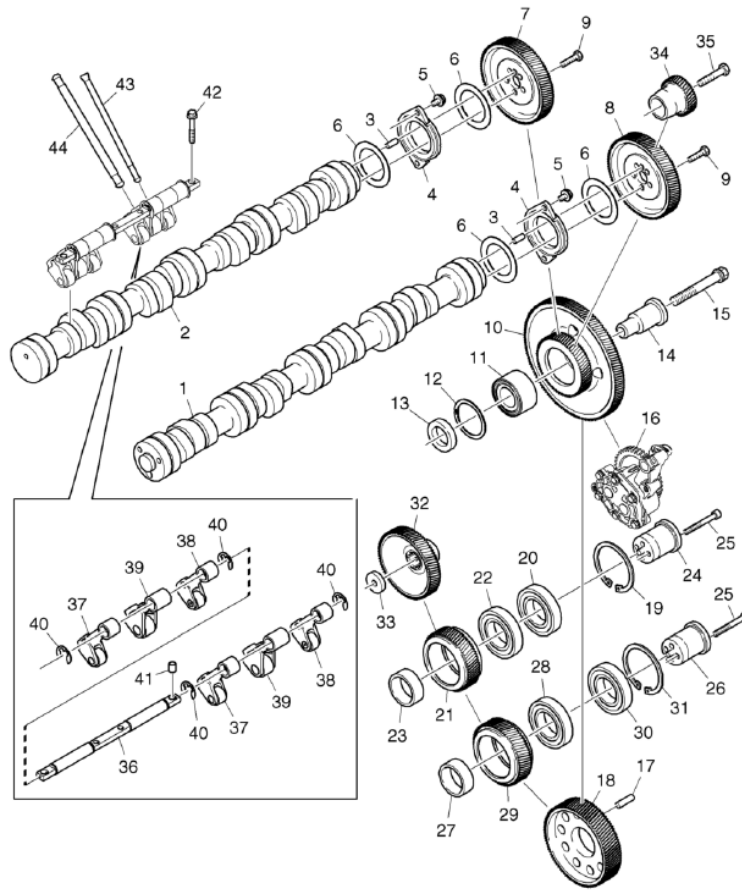
GM109557



Item	Part No.	Description	Qty.	Item	Part No.	Description	Qty.
1	GM76604	Camshaft	1	27	GM108470	Intermediate Gear	1
2	GM76979	Pin, 10x25	1	28	GM76273	Shaft	1
	GM109046	Roller Tappet Shaft (includes items 3- 7)	3	29	GM81447	Bearing	1
4	GM108607	Roller Tappet	4	30	GM76989	Snap ring	1
5	GM76646	Roller tappet	2	31	GM76263	Spacing sleeve	1
	GM76375	Snap ring	1	32	GM108289	Screw	1
6	GM76323	Retaining ring	4				
7	GM76241	Guide sleeve	2				
8	GM108311	Flange Screw	6				
9	GM108526	Screw	3				
10	GM108681	Pushrod	12				
11	GM108595	Pushrod	6				
13	GM109011	Gear	1				
14	GM108153	Hexagon Screw	5				
15	GM76299	Guide flange	1				
16	GM76393	Thrust washer	1				
17	GM108293	Flange Screw	2				
19	GM108512	Intermediate Gear (includes items 20- 24)	1				
20	GM76330	Gear	1				
21	GM76273	Shaft	1				
22	GM81447	Bearing	1				
23	GM76989	Snap ring	1				
24	GM76263	Spacing sleeve	1				
25	GM108289	Screw	1				
26	GM108693	Intermediate Gear (includes items 27- 31)	1				

Group 1-15-1: Timing Gear

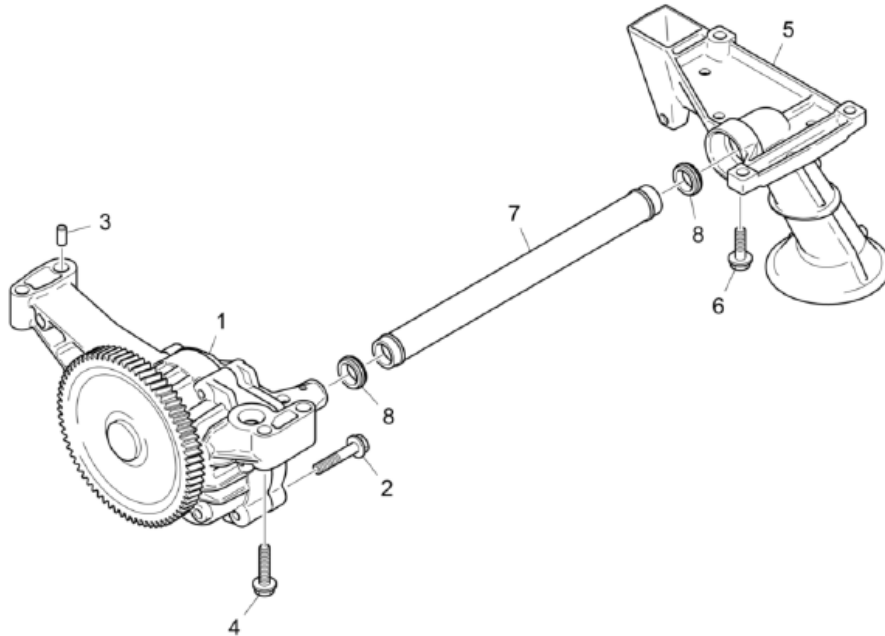
GM109558



Item	Part No.	Description	Qty.	Item	Part No.	Description	Qty.
1	GM109009	Camshaft	1	25	GM108194	Hexagon Socket Screw	8
2	GM76544	Camshaft RH	1		GM76422	PTO drive gear assy. (includes items 26-31)	1
3	GM76979	Pin, 10x25	2	26	GM76419	Shaft journal	1
4	GM76570	Guide flange	2	27	GM76416	Spacing sleeve	1
5	GM108293	Flange Screw	4	28	GM76300	Ball bearing	1
6	GM76393	Thrust washer	4	29	GM76418	Gear	1
7	GM109011	Gear	1	30	GM76305	Ball bearing	1
8	GM109011	Gear	1	31	GM76990	Snap ring	1
9	GM108153	Hexagon Screw	10	32	GM108307	Gear	1
	GM108512	Intermediate Gear	1	33	GM108151	Washer	1
10	GM76330	Gear	1	34	GM108722	Compressor Gear	1
11	GM81447	Bearing	1	35	GM108705	Screw	1
12	GM76989	Snap ring	1	36	GM76804	Shaft (includes items 36-41)	4
13	GM76263	Spacing sleeve	1	37	GM76805	Roller tappet	2
14	GM76273	Shaft	1	38	GM76803	Roller tappet	2
15	GM108289	Screw	1	39	GM76583	Roller tappet	2
17	GM76980	Pin, 12x40	1	40	GM77006	E-clip	4
18	GM108816	Gear	1	41	GM108861	Guide Sleeve	2
	GM76421	PTO drive gear (includes items 19-24)	1	42	GM108432	Screw	16
19	GM76990	Snap ring	1	43	GM108800	Pushrod	16
20	GM76305	Ball bearing	1	44	GM76492	Pushrod	8
21	GM76417	Gear	1				
22	GM76300	Ball bearing	1				
23	GM76416	Spacing sleeve	1				
24	GM76419	Shaft journal	1				

Group 1-20- 1: Oil Pump

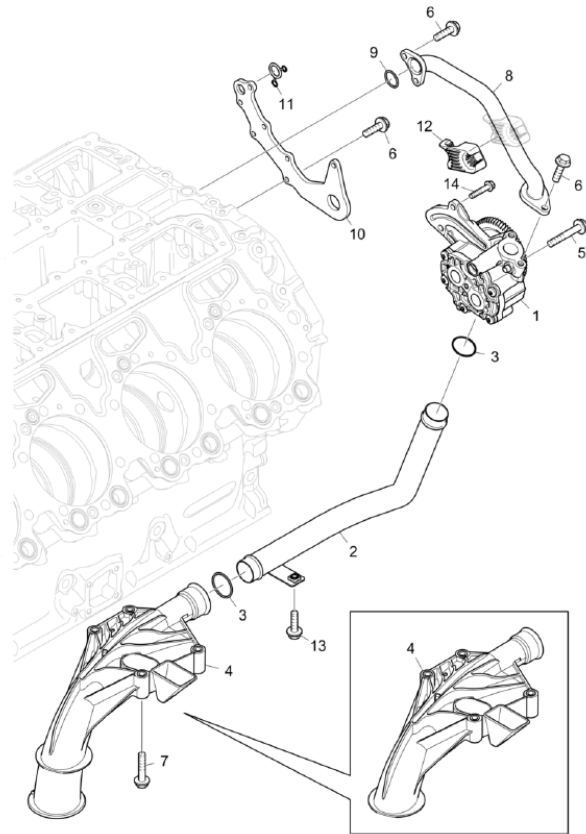
GM109561



Item	Part No.	Description	Qty.
1	GM108834	Oil Pump (includes items 2- 3)	1
2	GM108217	Flange Screw	6
3	GM76241	Guide sleeve	4
4	GM108530	Flange Screw	4
5	GM108689	Suction Pipe	1
6	GM108214	Flange Screw	1
7	GM108687	Pipe	1
8	GM76937	O- ring	2

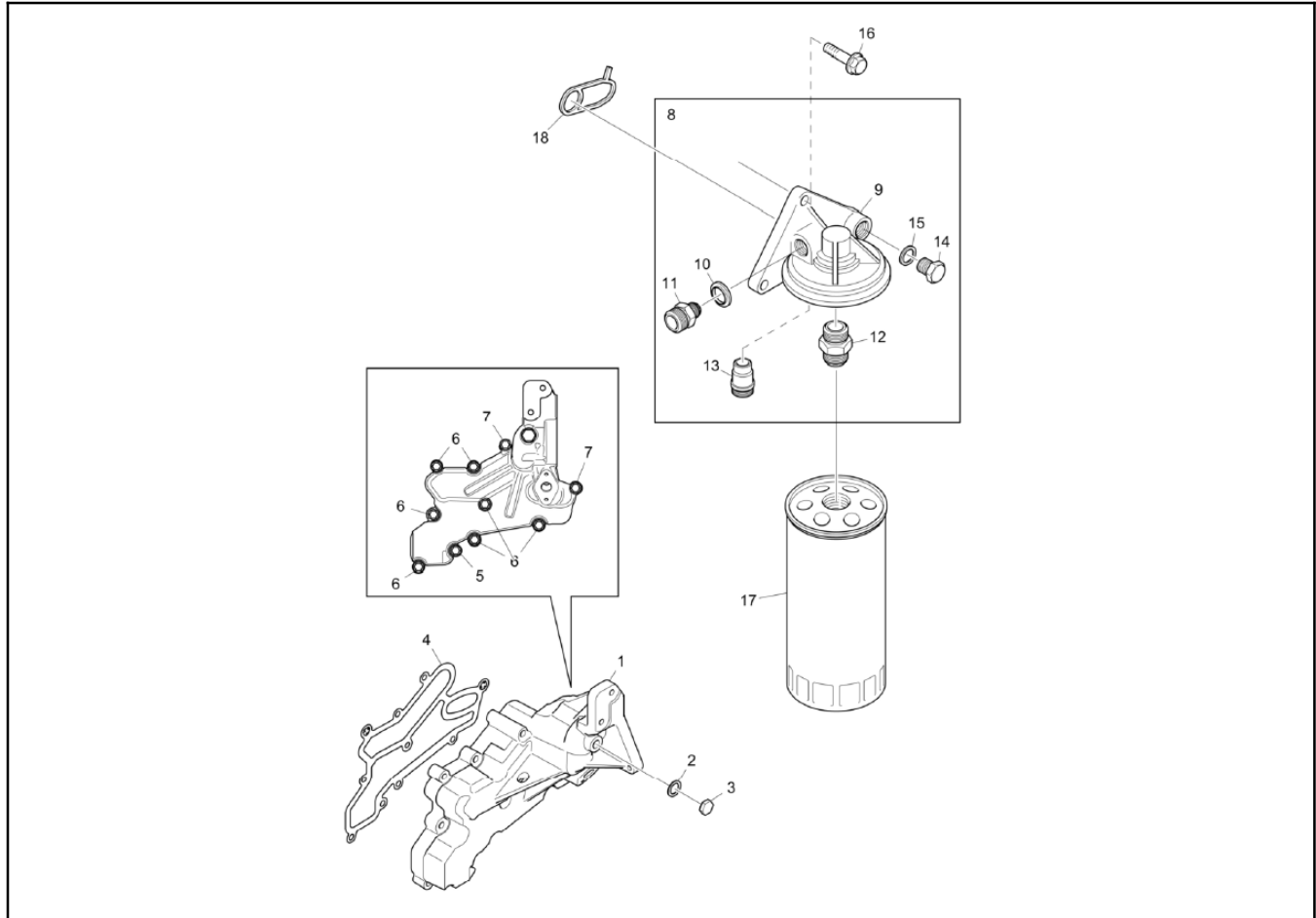
Group 1-20- 1: Oil Pump

GM109572



Item	Part No.	Description	Qty.
1	GM109066	Oil Pump	1
2	GM108796	Suction Pipe (includes item 3)	1
3	GM108285	O- Ring	2
4	GM108860	Suction Pipe	1
5	GM108219	Flange Screw	4
6	GM108214	Flange Screw	11
7	GM108216	Flange Screw	4
8	GM108692	Oil Pipe	1
9	GM108397	O- Ring	1
10	GM108524	Cover Plate	1
11	GM108827	Gasket	1
12	GM108894	Damping Element	1
13	GM108212	Flange Screw	1
14	GM108216	Flange Screw	1

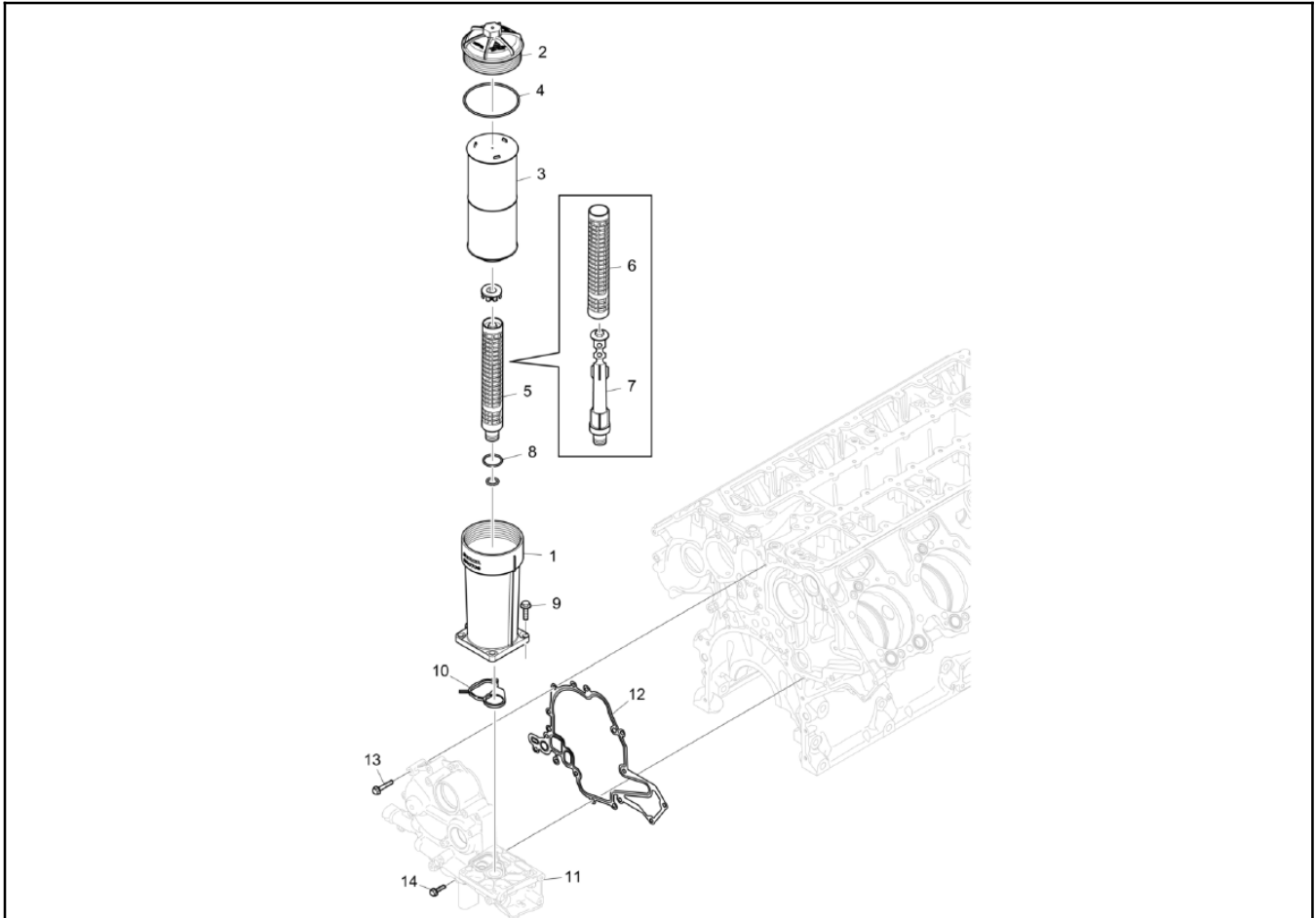
GM109563



Item	Part No.	Description	Qty	Remark
1	GM108551	Adapter	1	
2	GM77010	Screw plug, M14x1.5x9	1	
3	GM108973	Seal	1	
4	GM108543	Gasket	1	
5	GM108223	Flange Screw	1	
6	GM108216	Flange Screw	7	
7	GM108221	Flange Screw	2	Includes items 9- 14
8	GM108550	Filter Head	1	
10	GM108973	Seal	1	
11	GM108494	Union	1	
12	GM76540	Union	1	
13	GM76374	Overflow valve	1	
14	GM77011	Screw plug, M16x1.5x9	1	
15	GM108974	Seal	1	
16	GM108214	Flange Screw	3	Part of Group 00- 23- 1: Maintenance Kit, Basic (Variation GM109535)
17	GM67211	Oil filter	1	
18	GM76502	Gasket	1	

Group 1-20-2: Oil Filter

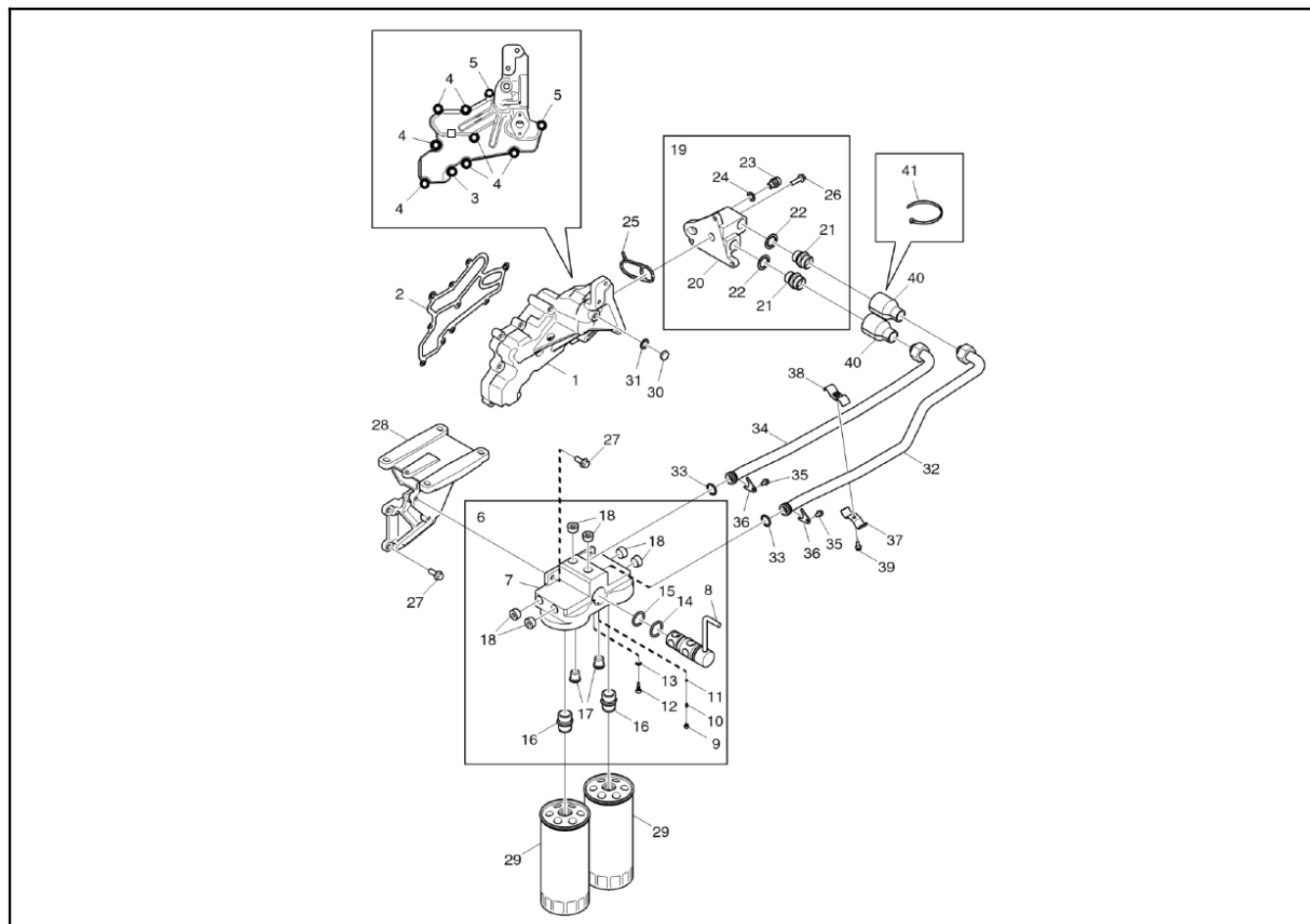
GM109570



Item	Part No.	Description	Qty	Remark
	GM76537	Filter housing (includes items 1- 8)	1	
2	GM76415	Cover	1	
	GM67265	Oil filter kit (includes items 3- 4)	1	Part of Group 1- 20- 2: Oil Filter (Variation GM109563)
4	GM76925	O- ring	1	Part of Group 1- 20- 2: Oil Filter (Variation GM109563)
5	GM76430	Tube	1	
8	GM108391	O- Ring	1	
9	GM108214	Flange Screw	4	
10	GM76572	Gasket	1	
12	GM108630	Gasket	1	
13	GM108219	Flange Screw	8	
14	GM108216	Flange Screw	7	

Group 1-20-2: Reversible Oil Filter

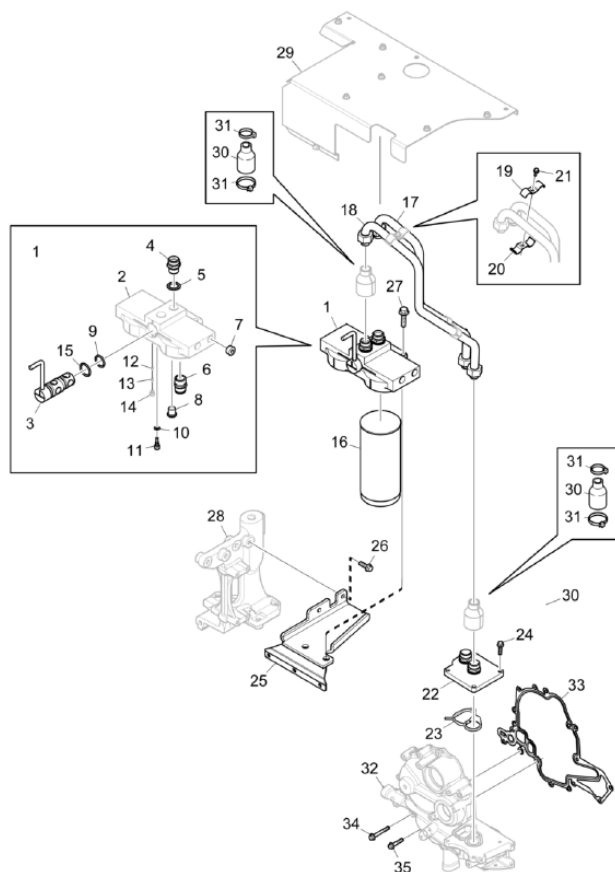
GM109565



Item	Part No.	Description	Qty.	Item	Part No.	Description	Qty.
1	GM108551	Adapter	1	34	GM108899	Pipe	1
2	GM108543	Gasket	1	35	GM108206	Flange Screw	2
3	GM108223	Flange Screw	1	36	GM108897	Washer	2
4	GM108216	Flange Screw	7	37	GM108862	Clamp	1
5	GM108221	Flange Screw	2	38	GM108893	Clamp	1
6	GM108981	Filter Head (includes items 7- 18)	1	39	GM108208	Flange Screw	1
8	GM108856	Tap	1	40	GM108896	Protective Cap	2
12	GM108756	Set Screw	1	41	GM108266	Cable Tie	4
13	GM108134	Gasket	1	* Part of Group 00- 23- 1: Maintenance Kit, Basic Kit (Variation GM109535)			
14	GM108425	O- Ring	1				
15	GM108463	O- Ring	1				
16	GM76540	Union	2				
17	GM76374	Overflow valve	2				
18	GM108243	Screw Plug	6				
19	GM108985	Bracket (includes items 20- 24)	1				
22	GM108977	Seal	2				
23	GM108494	Union	1				
24	GM108973	Seal	1				
25	GM76502	Gasket	1				
26	GM108214	Flange Screw	3				
27	GM108226	Flange Screw	6				
28	GM109032	Bracket	1				
29*	GM67211	Oil filter	2				
30	GM77010	Screw plug, M14x1.5x9	1				
31	GM108973	Seal	1				
32	GM108898	Pipe	1				
33	GM76936	O- ring	2				

Group 1-20-2: Reversible Oil Filter

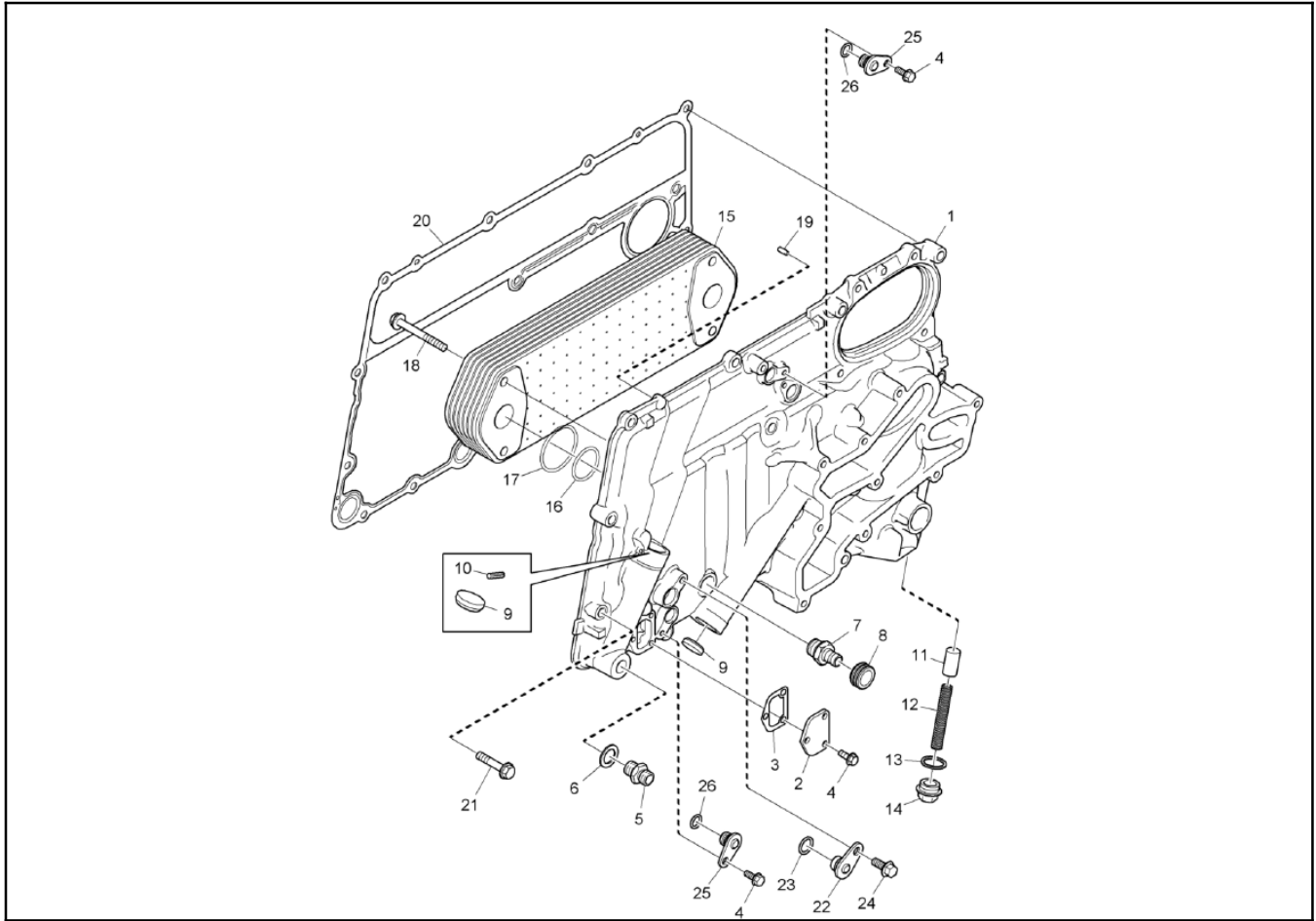
GM109571



Item	Part No.	Description	Qty	Remark
1	GM109195	Filter Head (includes items 2- 15)	1	
3	GM108856	Tap	1	
4	GM77042	Straight union	2	
5	GM108977	Seal	2	
6	GM76540	Union	2	
7	GM108243	Screw Plug	4	
8	GM76374	Overflow valve	2	
9	GM108463	O- Ring	1	
10	GM108134	Gasket	1	
11	GM108756	Set Screw	1	
15	GM108425	O- Ring	1	
16	GM67211	Oil filter	2	Part of Group 00- 23- 01: Maintenance Kit, Basic Kit (Variation GM109535)
17	GM109196	Pipe	1	
18	GM109197	Pipe	1	
19	GM108862	Clamp	2	
20	GM108893	Clamp	2	
21	GM108208	Flange Screw	2	
22	GM109198	Bracket	1	
23	GM76572	Gasket	1	
24	GM108214	Flange Screw	4	
25	GM109199	Bracket	1	
26	GM108227	Flange Screw	2	
27	GM108255	Flange Screw	2	
30	GM108896	Protective Cap	4	
31	GM108266	Cable Tie	8	
33	GM108630	Gasket	1	
34	GM108219	Flange Screw	8	
35	GM108216	Flange Screw	7	

Group 1-20-3: Oil Cooler

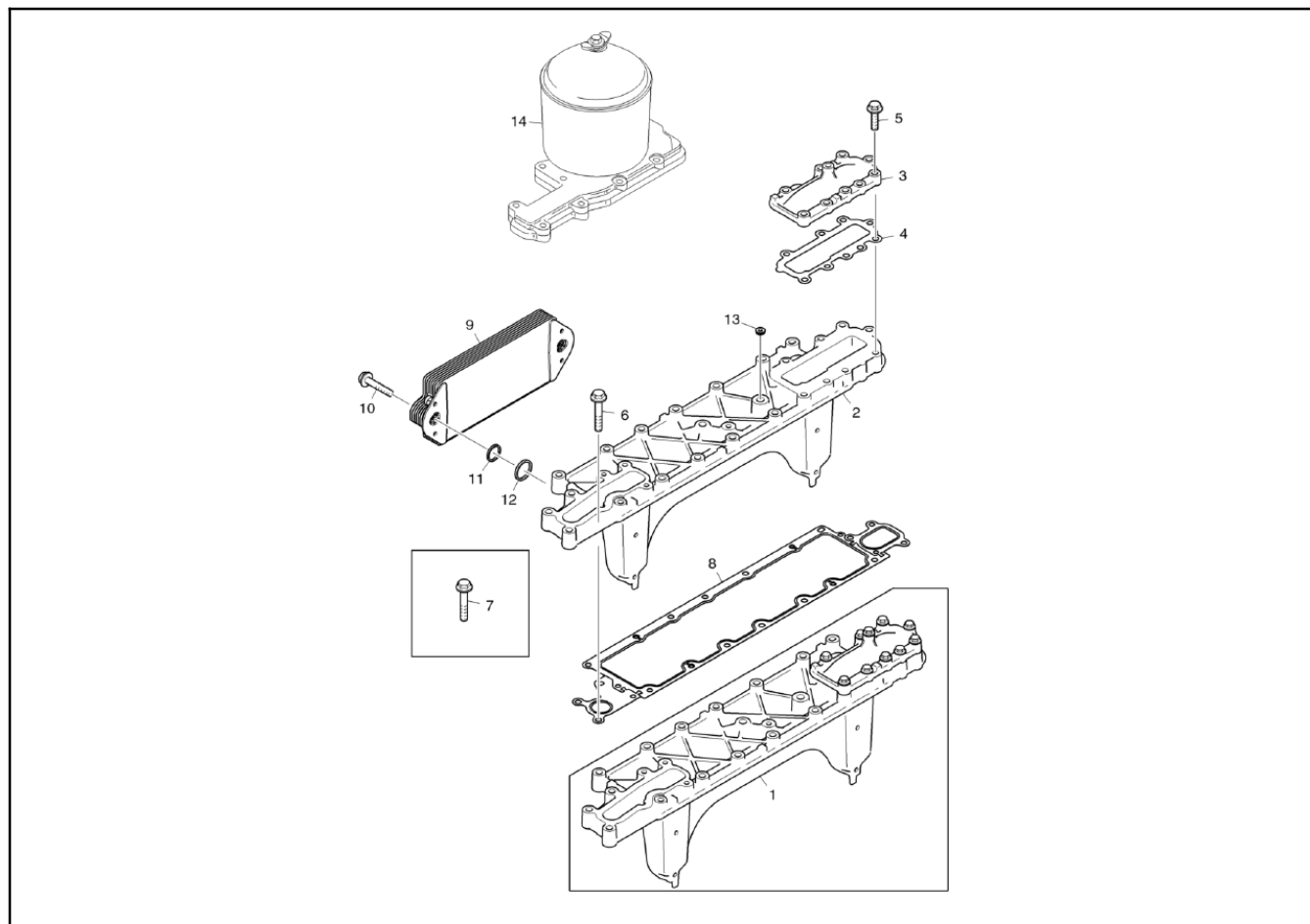
GM109559



Item	Part No.	Description	Qty.
1	GM108900	Cover (includes items 2- 14)	1
2	GM76945	Cover	1
3	GM76321	Gasket	1
4	GM108208	Flange Screw	5
5	GM77041	Straight union	1
6	GM108974	Seal	1
7	GM76742	Union	1
8	GM76257	Protection sleeve	1
9	GM77003	Plug	2
10	GM108180	Pin	1
11	GM76889	Piston	1
12	GM76911	Spring	1
13	GM77024	Gasket	1
14	GM77013	Screw plug, M22x1.5x9	1
15	GM108385	Oil Cooler	1
16	GM76507	Gasket	2
17	GM76508	Gasket	2
18	GM108764	Screw	4
19	GM108178	Dowel	2
20	GM108824	Gasket	1
21	GM108663	Flange Screw	14
22	GM108603	Plug	1
23	GM76370	O- ring	1
24	GM108212	Flange Screw	1
25	GM108513	Plug	2
26	GM76957	O- ring	2

Group 1-20-3: Oil Cooler

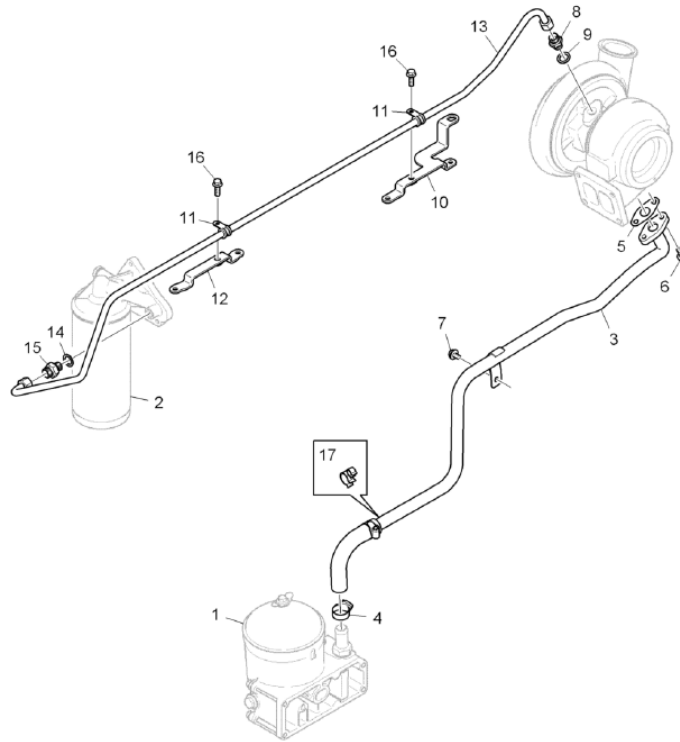
GM109566



Item	Part No.	Description	Qty.
1	GM108835	Oil Cooler Cover (includes items 2- 5)	1
3	GM108523	Cover	1
4	GM108631	Gasket	1
5	GM108214	Flange Screw	4
6	GM108216	Flange Screw	12
7	GM108219	Flange Screw	5
8	GM108953	Gasket	1
9	GM108688	Oil Cooler	1
10	GM108216	Flange Screw	4
11	GM76507	Gasket	2
12	GM76508	Gasket	2
13	GM77043	Screw plug	1
	GM108522	Holder	1
	GM76957	O- ring	1
	GM108208	Flange Screw	1
	GM77043	Screw plug	1

Group 1-20-4: Lubrication, Turbocharger

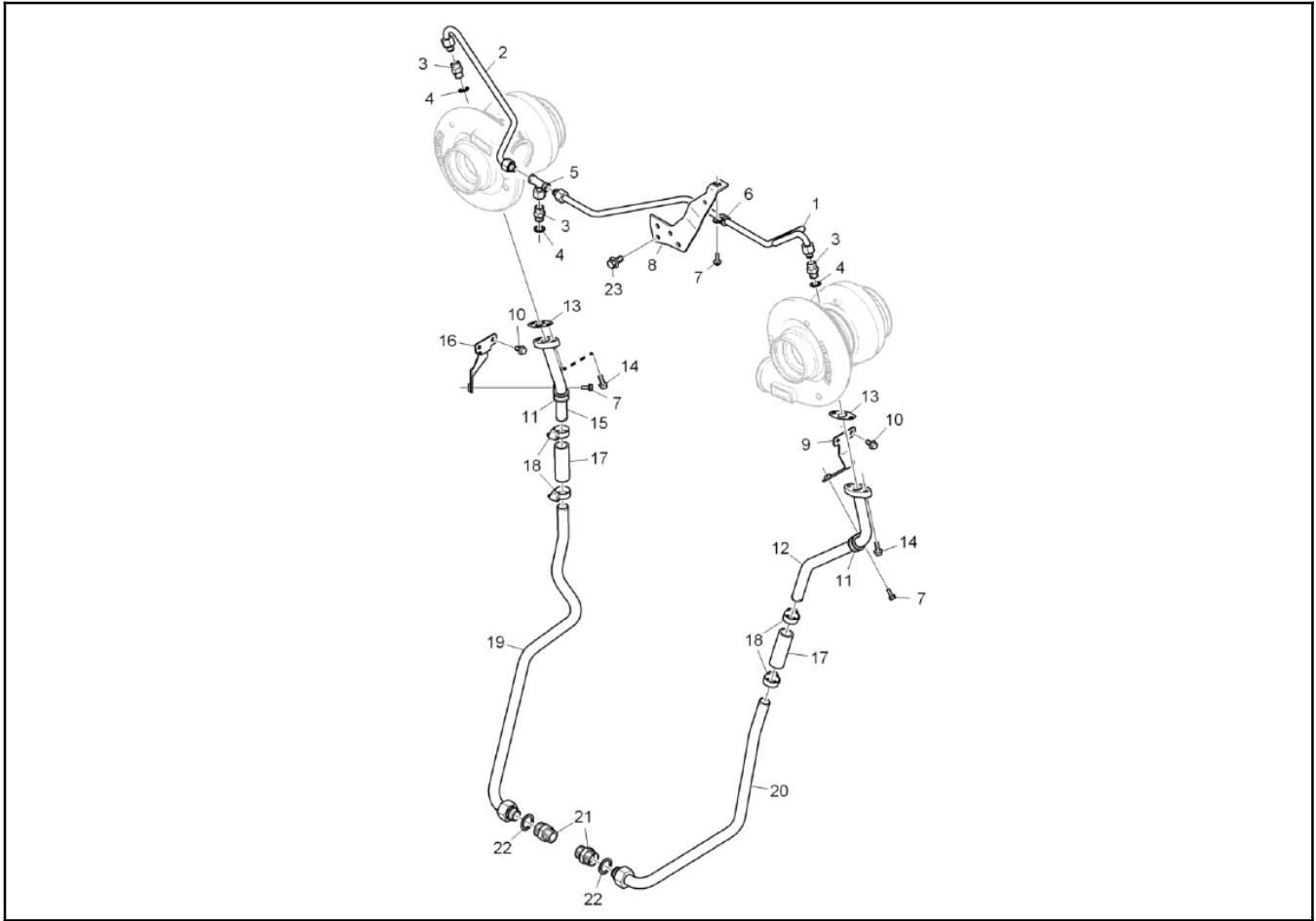
GM109564



Item	Part No.	Description	Qty.
3	GM108946	Lubrication Oil Return Pipe	1
	GM76308	Hose	1
	GM108819	Hose Clamp	1
4	GM108278	Hose Clamp	1
5	GM108585	Gasket	1
6	GM108213	Flange Screw	2
7	GM108256	Flange Screw	5
8	GM108494	Union	1
9	GM108973	Seal	1
10	GM109078	Bracket	1
	GM108211	Flange Screw	2
11	GM76907	Clamp	2
12	GM108727	Bracket	1
	GM108211	Flange Screw	2
13	GM108857	Lubrication Pipe	1
	GM77048	Ferrule	2
	GM77059	Union nut	2
14	GM76490	Gasket	1
15	GM77041	Straight union	1
16	GM108212	Flange Screw	2
17	GM108852	Clamp	1

Group 1-20-4: Lubrication, Turbocharger

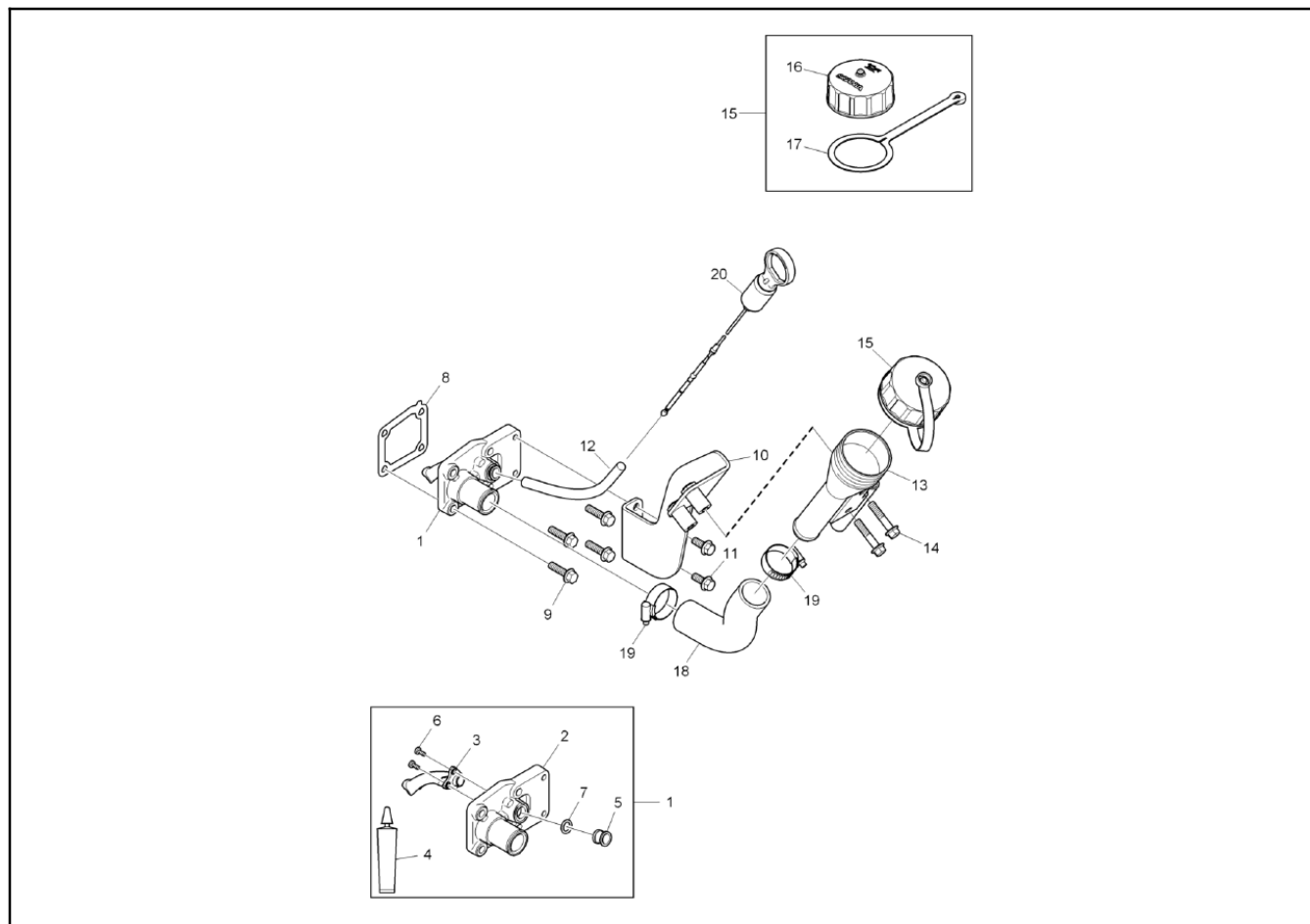
GM109568



Item	Part No.	Description	Qty.
1	GM108837	Pipe	1
2	GM108485	Pipe	1
3	GM77041	Straight union	3
4	GM76490	Gasket	3
5	GM76949	T- union	1
6	GM77052	Clamp	1
7	GM108208	Flange Screw	3
8	GM108833	Bracket	1
9	GM108967	Bracket	1
10	GM108211	Flange Screw	4
11	GM108132	Clamp	2
12	GM108487	Pipe	1
13	GM108585	Gasket	2
14	GM108212	Flange Screw	4
15	GM108486	Pipe	1
16	GM108922	Bracket	1
17	GM108372	Hose	2
18	GM108278	Hose Clamp	4
19	GM108646	Pipe	1
20	GM108647	Pipe	1
21	GM77042	Straight union	2
22	GM109004	Seal	2
23	GM108224	Flange Screw	2

Group 1-20-5: Oil Filler, Dipstick

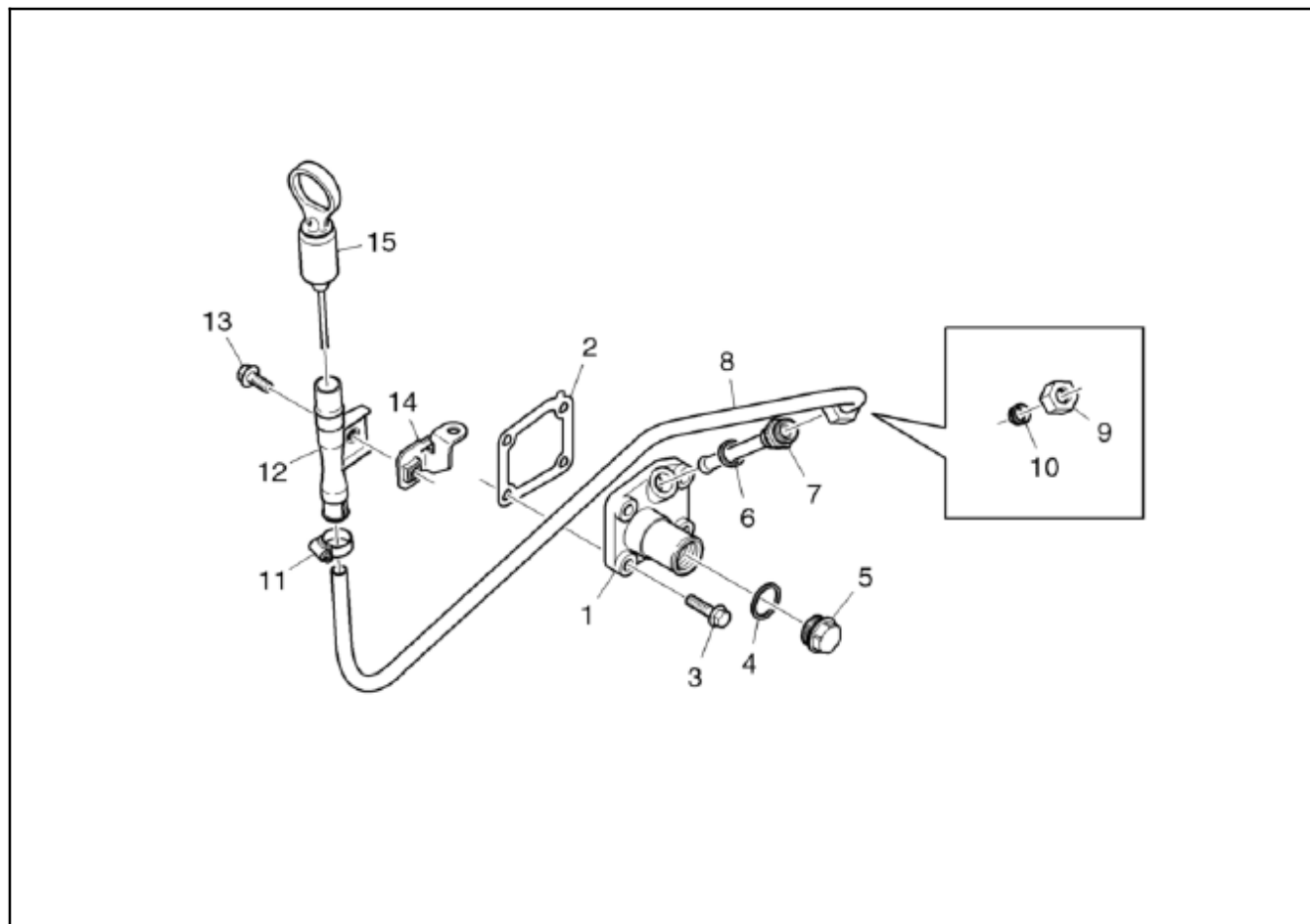
GM109560



Item	Part No.	Description	Qty.
1	GM108895	Flange Pipe (includes items 2- 7)	1
4	GM108155	Thread- Locking Fluid	1
6	GM108588	Thread Forming Screw	2
7	GM108453	O- Ring	1
8	GM76567	Gasket	1
9	GM108214	Flange Screw	4
10	GM108761	Bracket	1
11	GM108212	Flange Screw	2
12	GM77050	Pipe	1
13	GM108368	Oil Filler Pipe	1
14	GM108216	Flange Screw	2
15	-	Cover Assy (includes items 16- 17)	1
16	GM108427	Cover	1
17	GM109080	Retaining Strap	1
18	GM108774	Hose	1
19	GM108273	Hose Clamp	2
20	GM108773	Oil Dipstick	1

Group 1 - 20- 5: Dipstick, Front

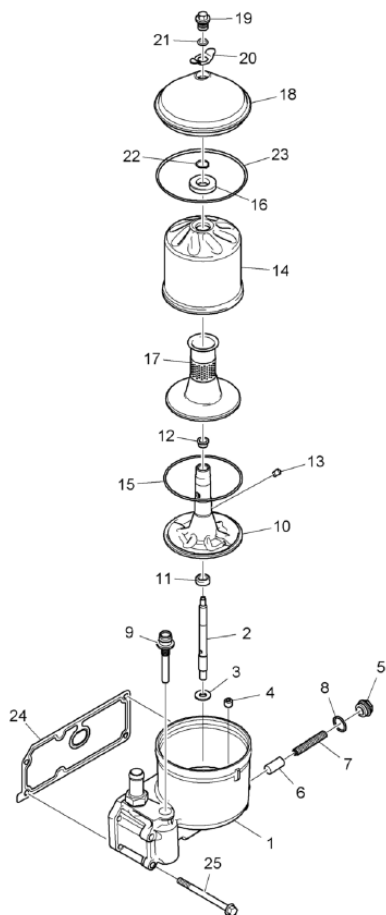
GM109567



Item	Part No.	Description	Qty.
1	GM108371	Flange Pipe	1
2	GM76567	Gasket	1
3	GM108214	Flange Screw	4
4	GM78378	Gasket, 24.3x28.9	1
5	GM108199	Screw Plug	1
6	GM77022	Gasket	1
7	GM76468	Straight union	1
8	GM108525	Pipe (includes items 9- 10)	1
9	GM77059	Union nut	1
10	GM77048	Ferrule	1
11	GM108271	Hose Clamp	1
12	GM109055	Connector	1
13	GM108212	Flange Screw	1
14	GM108719	Bracket	1
15	GM108428	Oil Dipstick (L=1230 mm)	1
15	GM109081	Oil Dipstick (L=1215 mm)	1

Group 1-20-6: Centrifugal Oil Cleaner

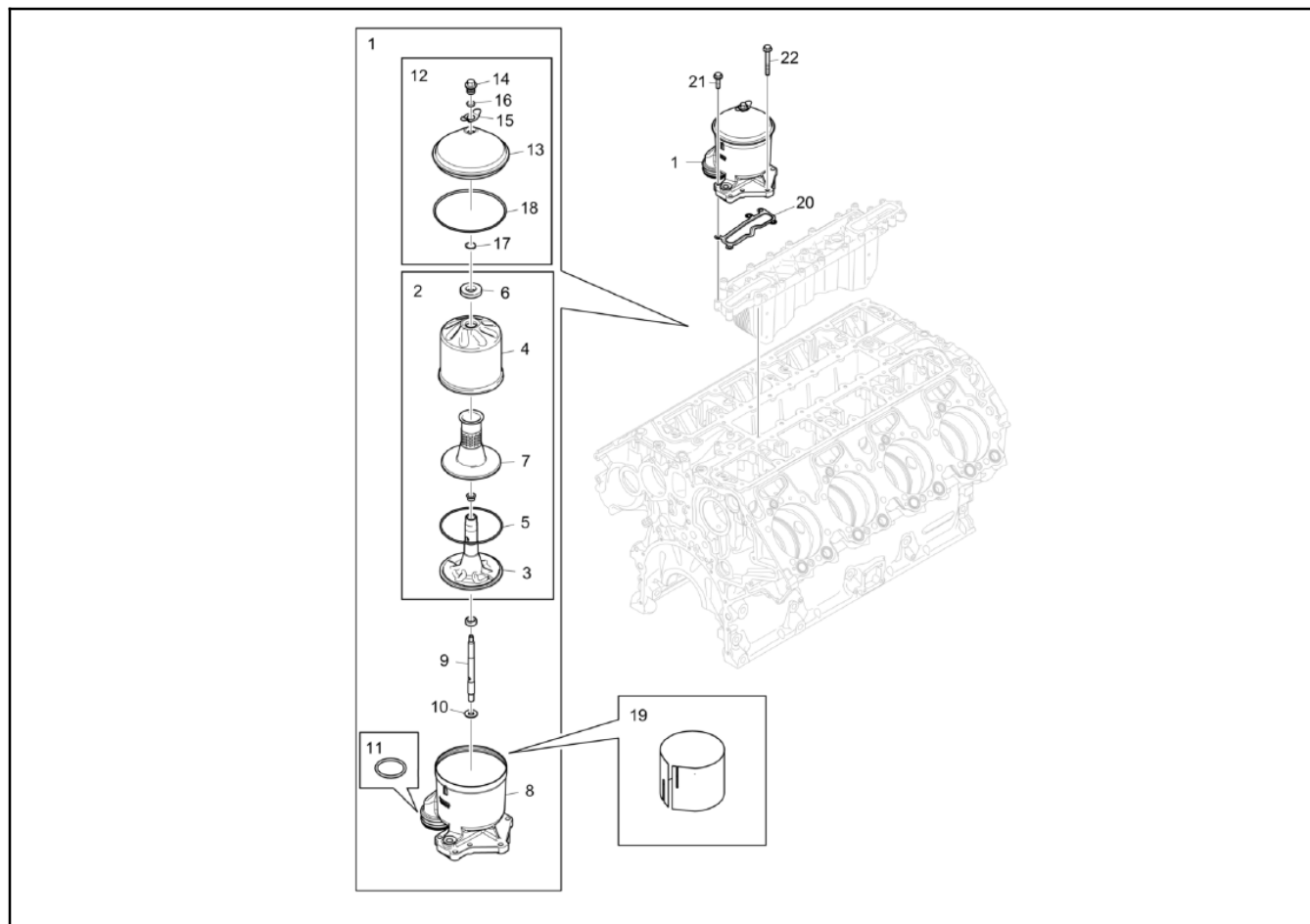
GM109562



Item	Part No.	Description	Qty	Remark
1	GM108997	Centrifugal Oil Cleaner	1	Includes items 2- 23
2	GM108998	Shaft	1	
3	GM76881	Washer	1	
4	GM77043	Screw plug	1	
5	GM108514	Plug	1	
6	GM76889	Piston	1	
7	GM76832	Spring	1	
8	GM77024	Gasket	1	
9	GM108511	Connecting Pipe	1	
	GM76494	Rotor assy	1	Includes items 10- 17
	GM76495	Rotor	1	Includes items 10- 13
14	GM76496	Cover	1	
15	GM67254	O- ring	1	Part of Group 00- 23- 01: Maintenance Kit, Basic Kit (Variation GM109535)
16	GM76497	Nut	1	
17	GM76498	Strainer	1	
18	GM76946	Cover	1	
19	GM108152	Lock Nut	1	
20	GM76947	Washer	1	
21	GM76948	O- ring	1	Part of Group 00- 23- 01: Maintenance Kit, Basic Kit (Variation GM109535)
22	GM76987	Snap ring	1	
23	GM67253	Centerfugal O- ring	1	Part of Group 00- 23- 01: Maintenance Kit, Basic Kit (Variation GM109535)
	GM107936	Paper Insert	1	
24	GM76530	Gasket	1	
25	GM108223	Flange Screw	4	

Group 1-20-6: Centrifugal Oil Cleaner

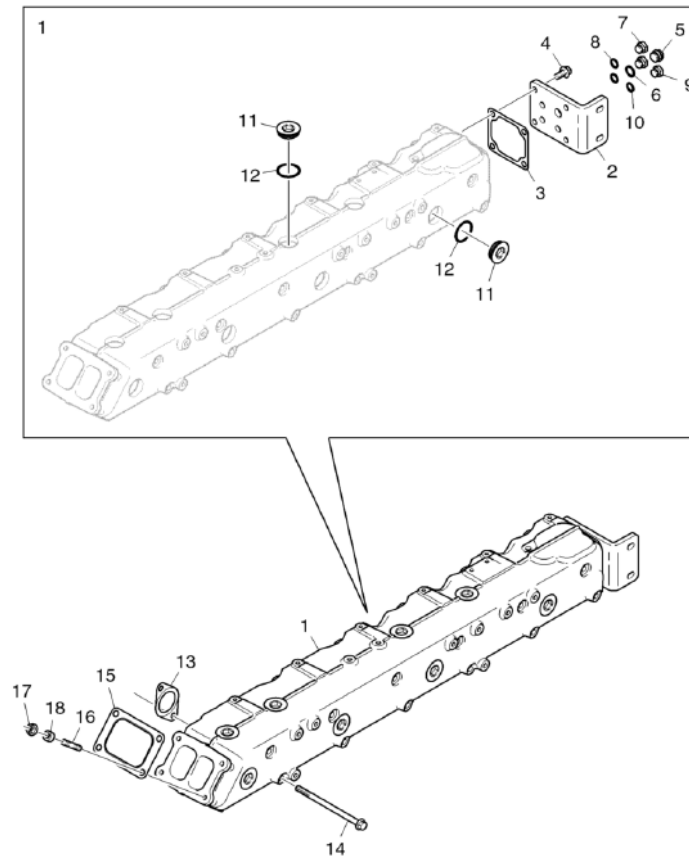
GM109569



Item	Part No.	Description	Qty	Remark
1	GM108999	Centrifugal Oil Cleaner	1	Includes items 2- 18
2	GM76494	Rotor assy	1	Includes items 3- 7
3	GM76495	Rotor (includes items 17- 20)	1	
4	GM76496	Cover	1	
5	GM67254	O- ring	1	Part of Group 00- 23- 01: Maintenance Kit, Basic Kit (Variation GM109535/GM109536)
6	GM76497	Nut	1	
7	GM76498	Strainer	1	
9	GM108998	Shaft	1	
10	GM76881	Washer	1	
11	GM108391	O- Ring	1	
13	GM76946	Cover	1	
14	GM108152	Lock Nut	1	
15	GM76947	Washer	1	
16	GM76948	O- ring	1	Part of Group 00- 23- 01: Maintenance Kit, Basic Kit (Variation GM109535/GM109536)
17	GM76987	Snap ring	1	
18	GM67253	Centerfugal O- ring	1	Part of Group 00- 23- 01: Maintenance Kit, Basic Kit (Variation GM109535/GM109536)
19	GM107936	Paper Insert	1	
20	GM108629	Gasket	1	
21	GM108214	Flange Screw	3	
22	GM108219	Flange Screw	3	

Group 1-25- 1: Exhaust Manifold, Water Cooled

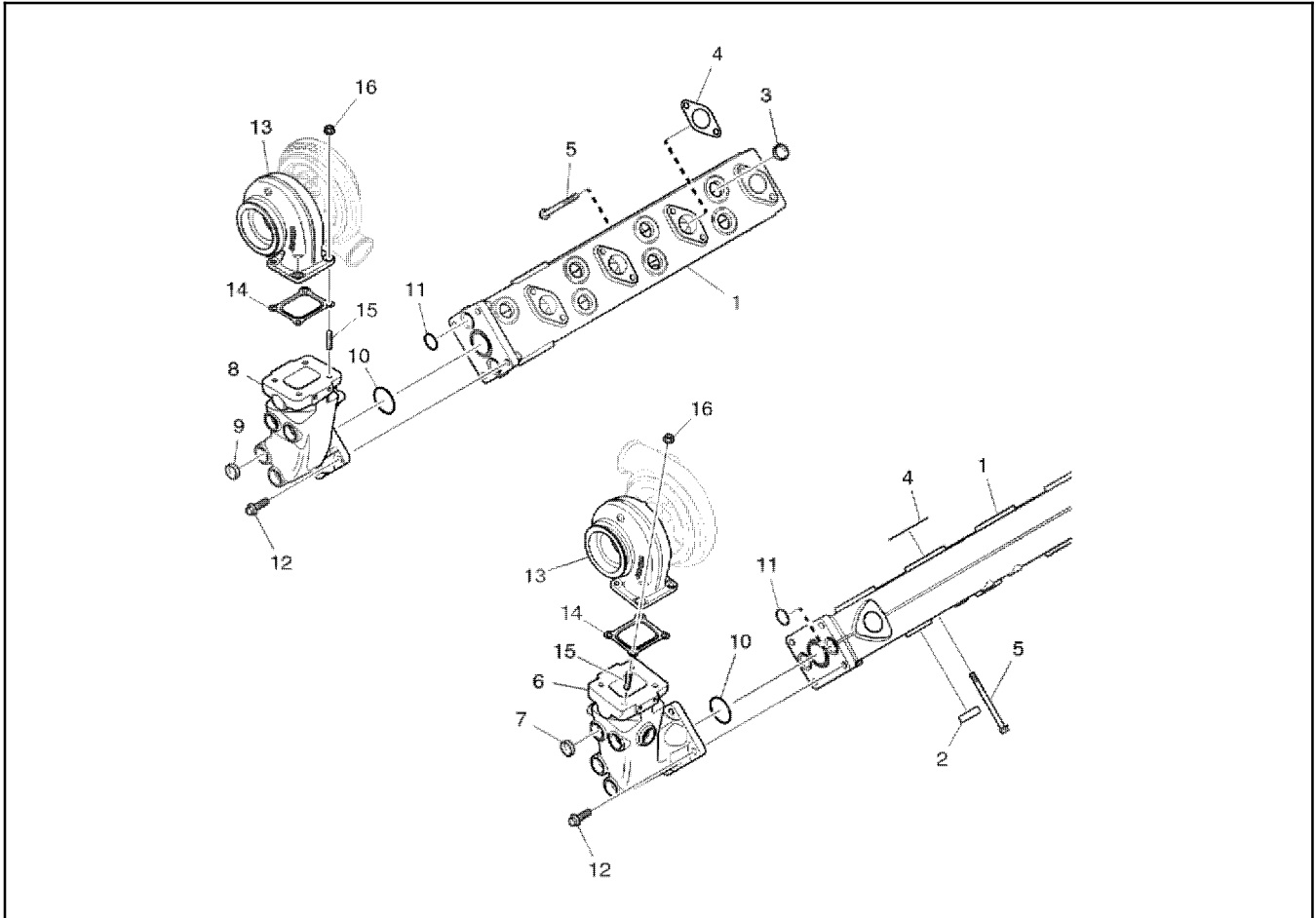
GM109573



Item	Part No.	Description	Qty.
1	GM108854	Exhaust Manifold (includes items 2- 12)	1
2	GM108624	Cover	1
3	GM76338	Gasket	1
4	GM108226	Flange Screw	4
5	GM77012	Screw plug, M18x1.5x9	2
6	GM108975	Seal	2
7	GM77010	Screw plug, M14x1.5x9	1
8	GM108973	Seal	1
9	GM76235	Plug	1
10	GM108976	Seal	1
11	GM108286	Screw Plug	14
12	GM108135	Gasket	14
13	GM108817	Gasket	6
14	GM108295	Flange Screw	12
15	GM108849	Gasket	1
16	GM108170	Stud	4
17	GM108308	Flange Nut	4
18	GM108129	Spacing Washer	4

Group 1-25- 1: Exhaust Manifold

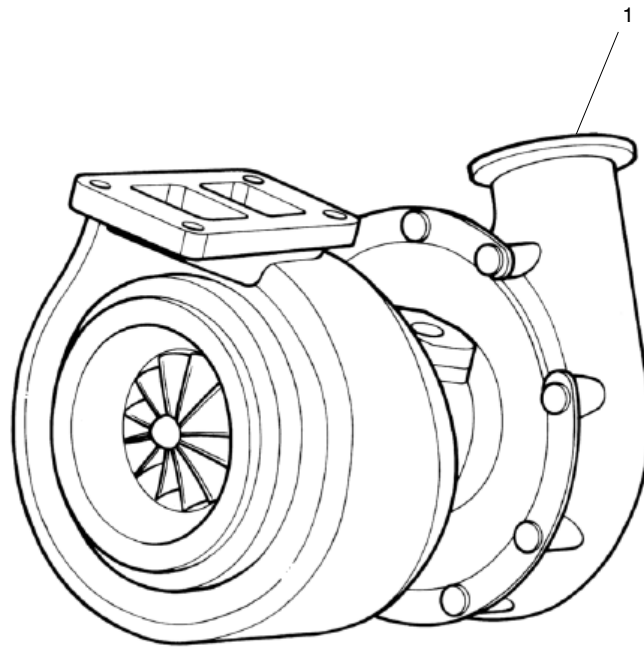
GM109574



Item	Part No.	Description	Qty.
1	GM108484	Exhaust Manifold (includes items 2- 3)	2
2	GM77005	Core plug	6
3	GM77004	Core plug	7
4	GM76216	Gasket, Exhaust manifold	8
5	GM108636	Screw	16
	GM108187	Washer	16
6	GM109018	Exhaust Manifold (includes item 7)	1
7	GM77004	Core plug	5
8	GM109019	Exhaust Manifold (includes item 9)	1
9	GM77004	Core plug	4
10	GM76509	Gasket	2
11	GM76995	O- ring	4
12	GM108255	Flange Screw	8
14	GM108849	Gasket	2
15	GM108369	Stud	8
16	GM108308	Flange Nut	8

Group 1-30-1: Turbocharger

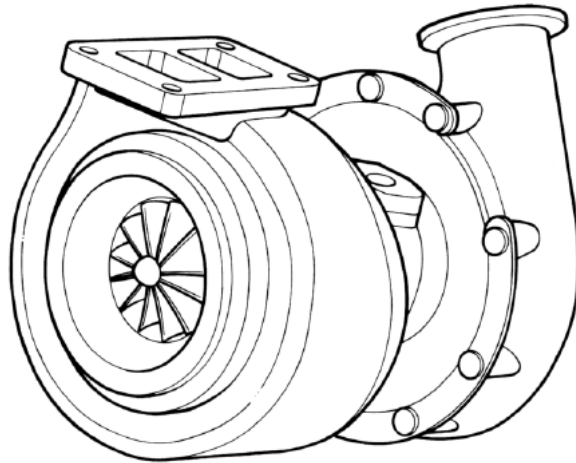
GM109575



Item	Part No.	Description	Qty.
1	GM108163	Turbocharger	1

Group 1 - 30- 1: Turbocharger

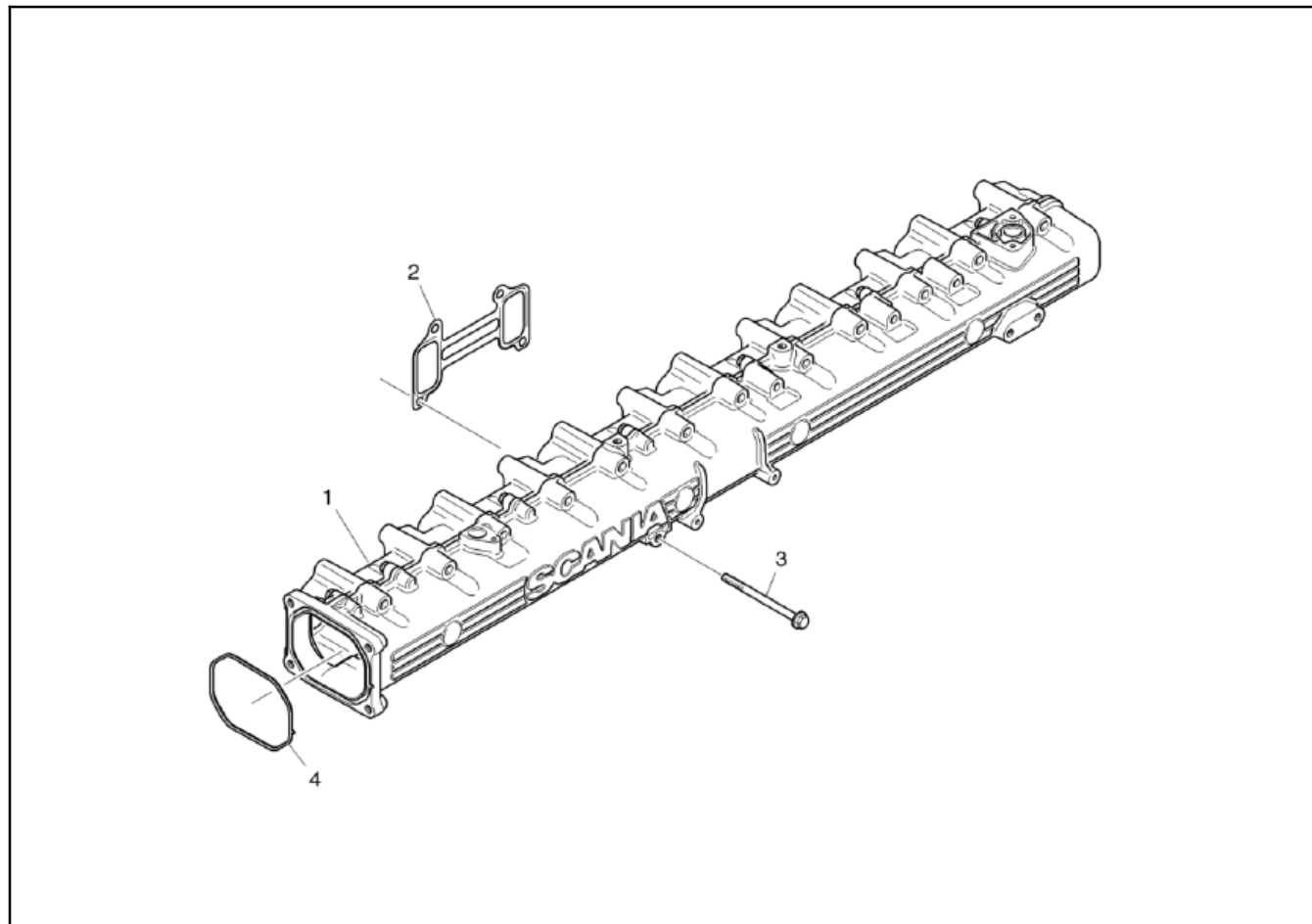
GM109576



Item	Part No.	Description	Qty.
	GM108157	Turbocharger, RH	1
	GM108158	Turbocharger, LH	1

Group 1-40- 1: Intake Manifold

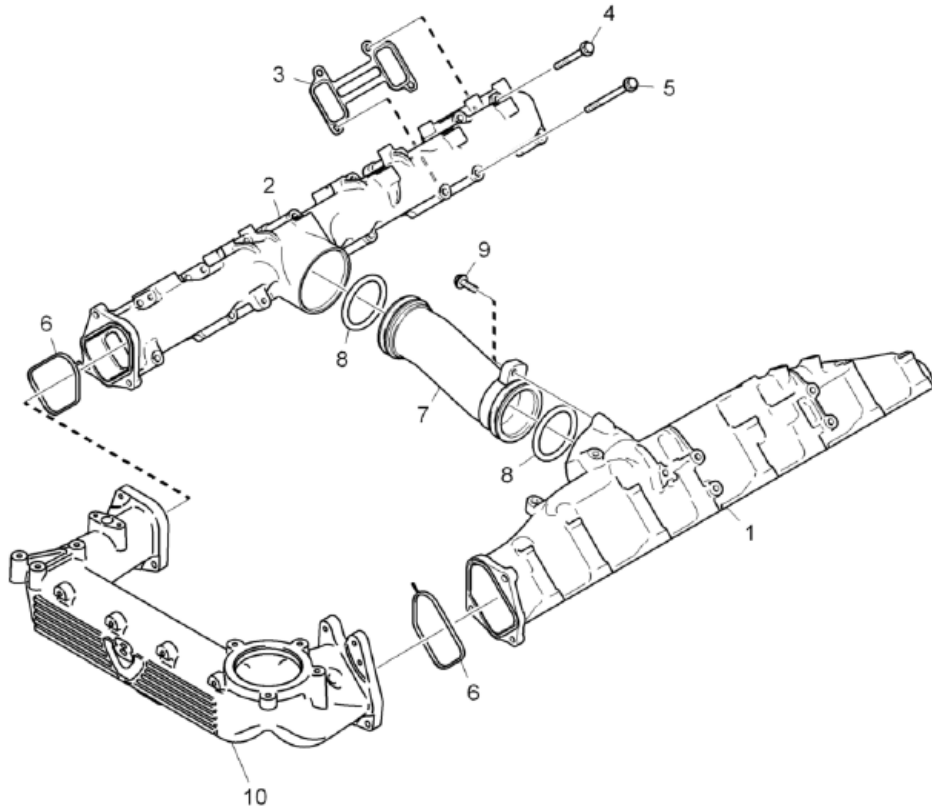
GM109577



Item	Part No.	Description	Qty.
1	GM108392	Intake Manifold	1
	GM108237	Screw	1
2	GM76590	Gasket	6
3	GM108223	Flange Screw	24
4	GM108309	Sealing Ring	1

Group 1-40- 1: Intake Manifold

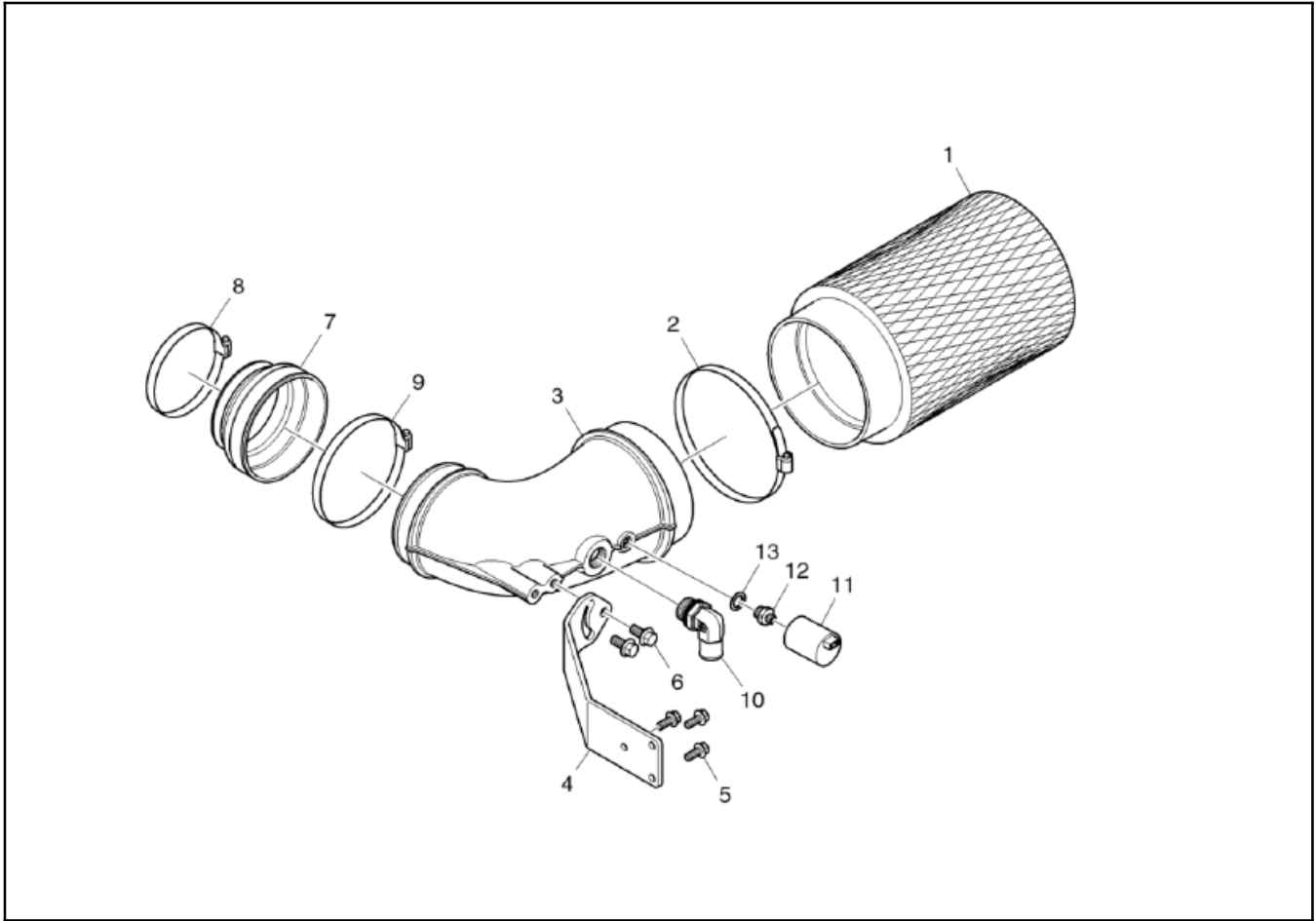
GM109578



Item	Part No.	Description	Qty.
1	GM108521	Intake Manifold (LH)	1
2	GM108520	Intake Manifold (RH)	1
3	GM108907	Gasket	8
4	GM108220	Flange Screw	4
5	GM108223	Flange Screw	28
6	GM108516	Seal	2
7	GM108519	Connecting Pipe	1
8	GM109087	O- Ring	2
	GM108696	Grease	1
9	GM108214	Flange Screw	1
10	GM109042	Charge Air Pipe	1
11	GM108214	Flange Screw	6

Group 1 - 45- 1: Air Cleaner, Turbocharger

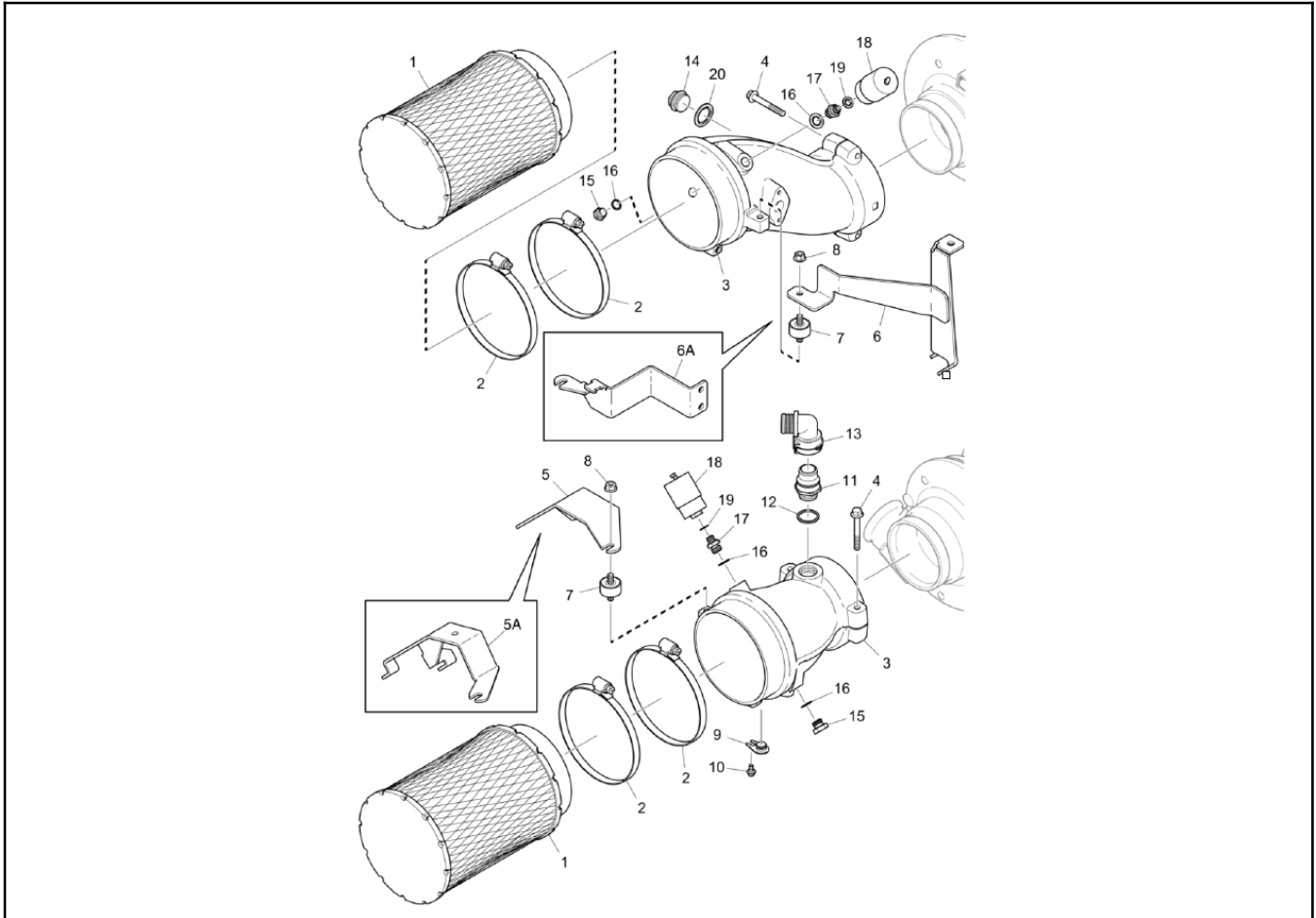
GM109579



Item	Part No.	Description	Qty.
1	GM67237	USE GM60578	1
2	GM108277	Hose Clamp	1
3	GM108604	Air Pipe	1
4	GM108929	Bracket	1
5	GM108212	Flange Screw	3
6	GM108225	Screw	2
7	GM108741	Hose	1
8	GM108275	Hose Clamp	1
9	GM108276	Hose Clamp	1
10	GM108549	Elbow Union	1
11	GM108672	Pressure Switch	1
12	GM108742	Reducing Union	1
13	GM108973	Seal	1

Group 1-45-1: Air Cleaner, Turbocharger

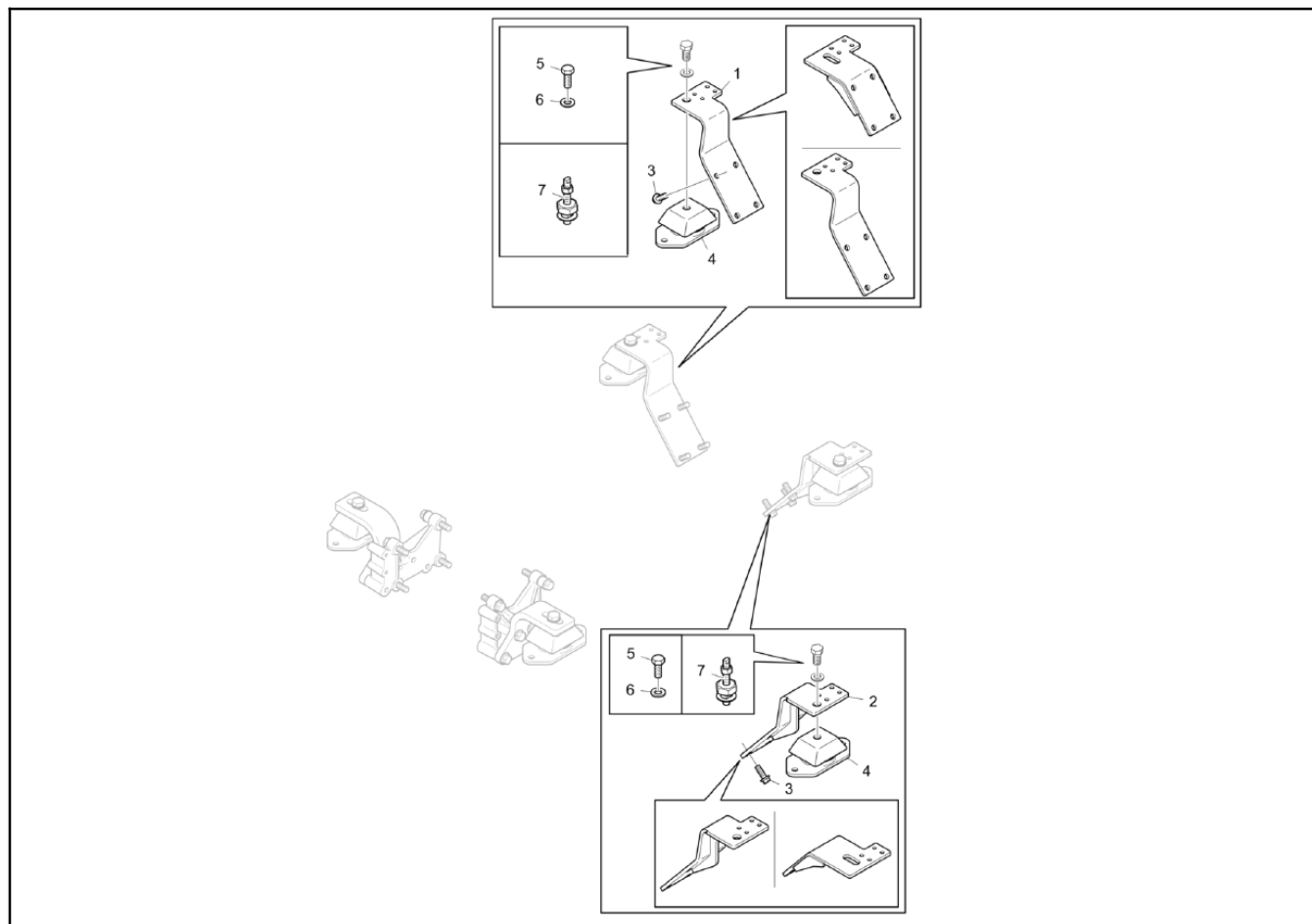
GM109580



Item	Part No.	Description	Qty.
1	GM67237	USE GM60578	2
2	GM108277	Hose Clamp	4
3	GM109001	Flange	2
4	GM108530	Flange Screw	4
5	GM108480	Bracket	1
5A	GM109068	Bracket	1
6	GM109007	Bracket	1
6A	GM109069	Bracket	1
7	GM108495	Damper	2
8	GM108261	Flange Nut	2
9	GM76441	Plug	1
	GM81450	O- ring	1
10	GM108206	Flange Screw	1
11	GM108365	Straight Union	1
12	GM77025	Gasket	1
13	GM108366	Elbow Union	1
14	GM77014	Screw plug, M26x1.5x9	1
15	GM77010	Screw plug, M14x1.5x9	2
16	GM77021	Gasket	4
17	GM76922	Union	2
18	GM76466	Pressure indicator	2
19	GM77019	Gasket	2
20	GM108977	Seal	1

Group 1-50- 1: Engine Suspension, Rear

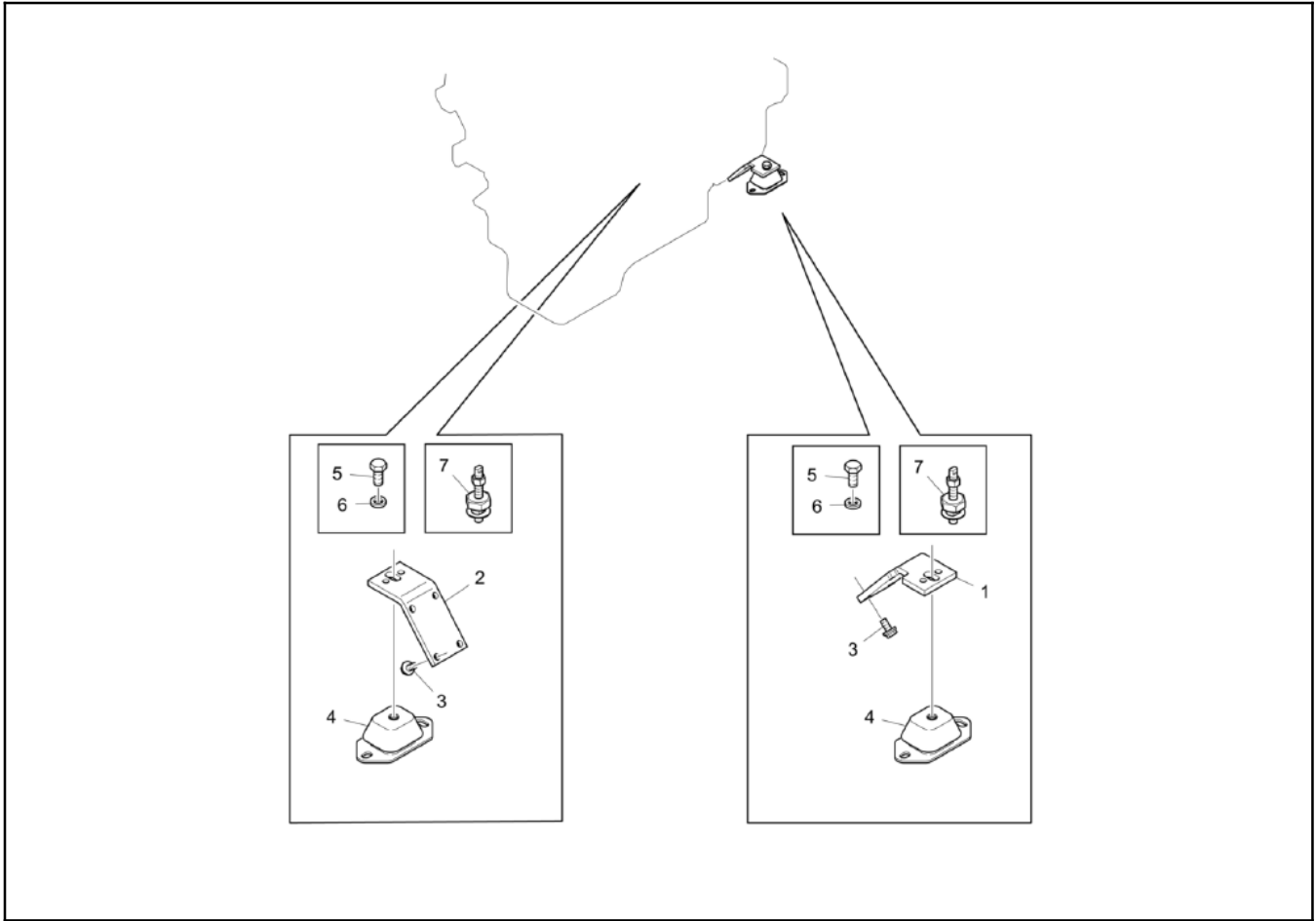
GM109581



Item	Part No.	Description	Qty.
1	GM108797	Engine Bracket	1
2	GM108798	Engine Bracket	1
3	GM108235	Screw	8
4	-	Insulator (not used)	-
5	GM108173	Hexagon Screw	2
6	GM108175	Washer	2
7	GM108986	Adjusting Screw	2

Group 1-50- 1: Engine Suspension, Rear

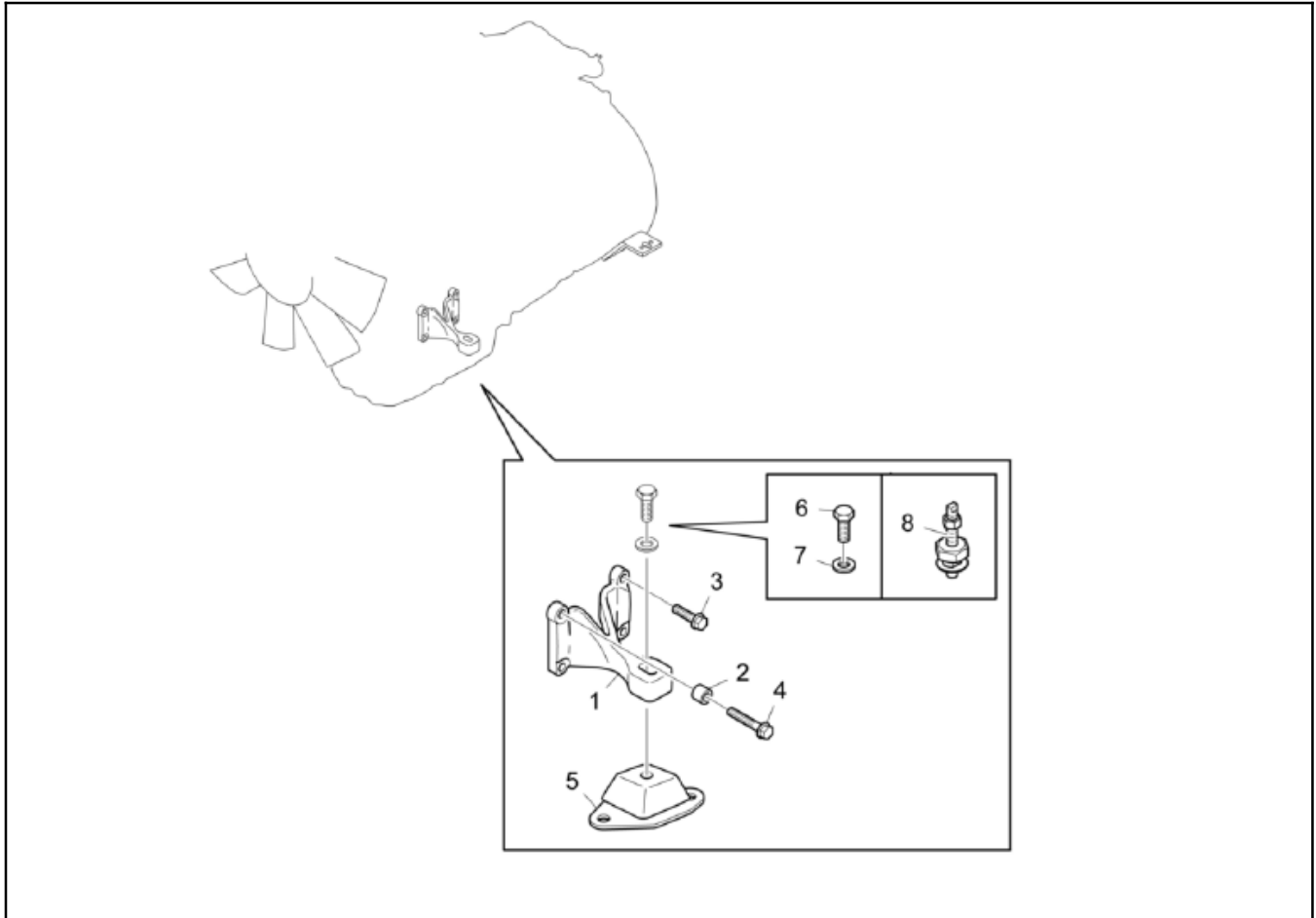
GM109584



Item	Part No.	Description	Qty	Remark
1	GM108730	Engine Bracket	1	
2	GM76340	Engine bracket	1	
3	GM108235	Screw	8	
4	GM108649	Insulator	2	See skid and mounting
5	GM108173	Hexagon Screw	2	See skid and mounting
6	GM108175	Washer	2	See skid and mounting
7	GM108986	Adjusting Screw	2	See skid and mounting

Group 1-50-2: Engine Suspension, Front

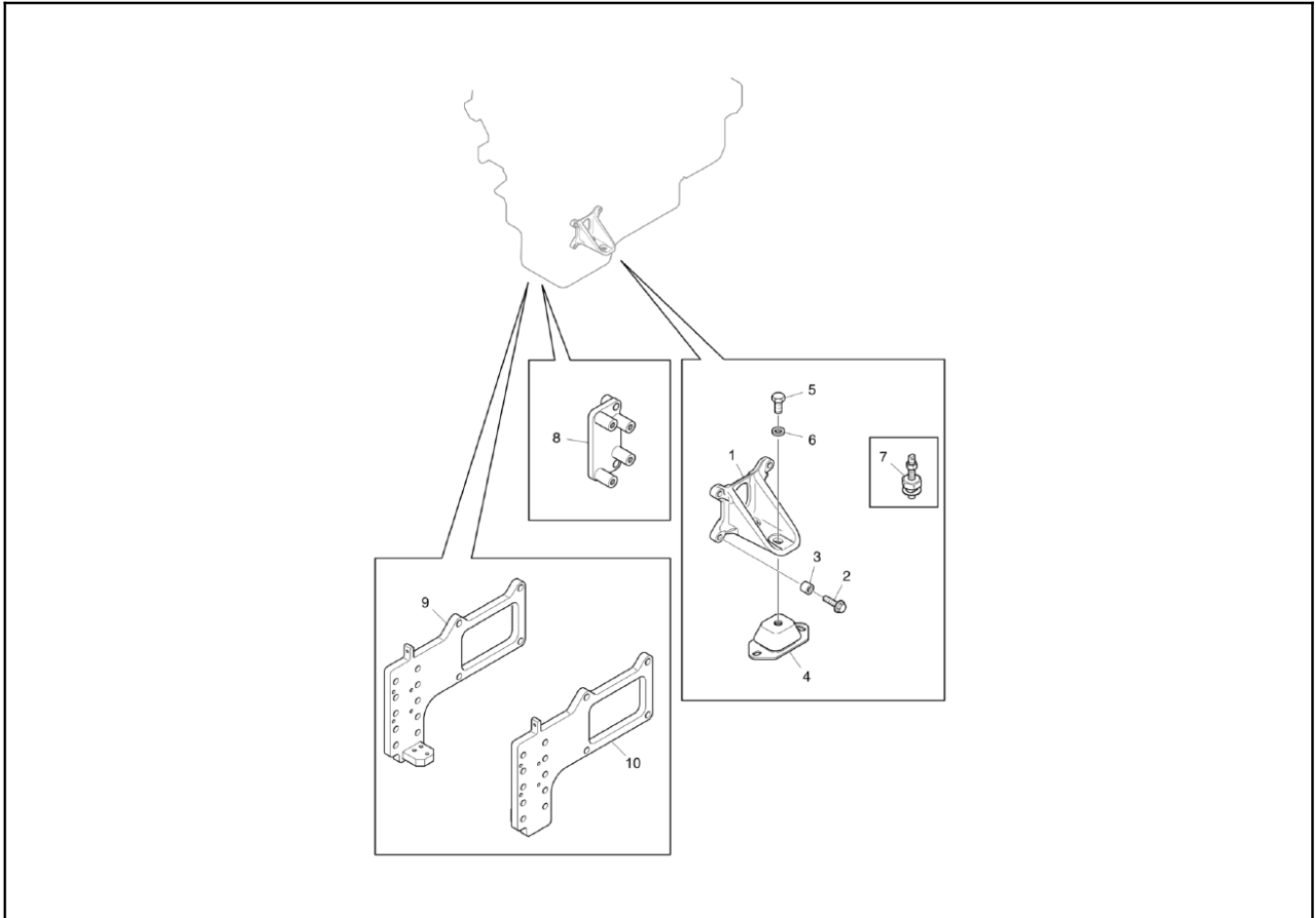
GM109582



Item	Part No.	Description	Qty.
1	GM108910	Engine Bracket	2
2	GM108447	Spacer	4
3	GM108284	Screw	4
4	GM108540	Flange Screw	4
6	GM108415	Flange Screw	2
7	GM108175	Washer	2
8	GM108986	Adjusting Screw	2

Group 1-50-2: Engine Suspension, Front

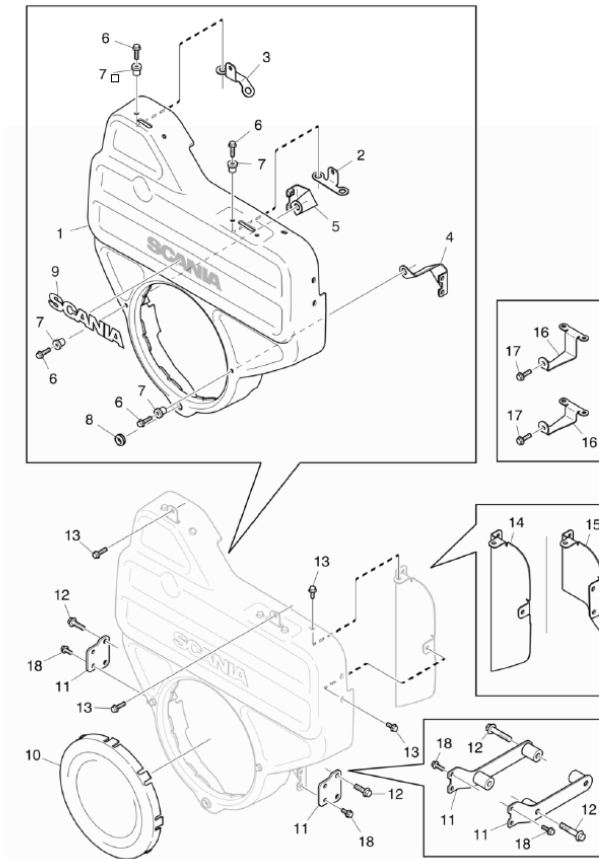
GM109583



Item	Part No.	Description	Qty	Remark
1	GM108731	Engine Bracket	2	
2	GM108540	Flange Screw	8	
3	GM108447	Spacer	8	
4	GM108649	Insulator	2	See skid and mounting
5	GM108173	Hexagon Screw	2	See skid and mounting
6	GM108175	Washer	2	See skid and mounting
7	GM108986	Adjusting Screw	2	See skid and mounting
8	GM109085	Bracket	1	
9	GM109088	Engine Bracket	1	
10	GM109084	Engine Bracket	1	

Group 1-60- 1: Protective Casing, Front

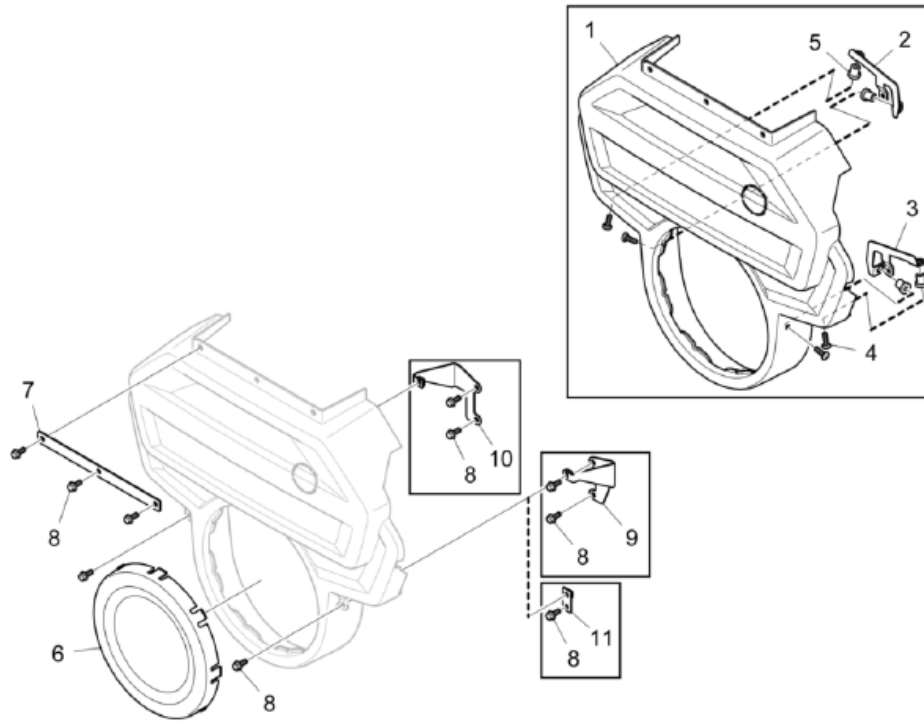
GM109586



Item	Part No.	Description	Qty.
	GM108570	Protection Cover (includes items 1- 9)	1
2	GM108572	Bracket	1
3	GM108571	Bracket	1
4	GM108770	Bracket	1
5	GM108769	Bracket	1
6	GM108214	Flange Screw	6
7	GM108644	Shock Absorber	6
8	GM108195	Bush	1
9	GM108838	Label	1
10	GM108715	Cover	1
11	GM108914	Bracket LH	1
11	GM108911	Bracket RH	1
12	GM108214	Flange Screw	4
13	GM108211	Flange Screw	1
14	-	Protection Cover (not used)	1
15	GM109070	Protection Cover	1
16	GM108771	Bracket	1
17	GM108214	Flange Screw	1
18	GM108213	Flange Screw	4

Group 1- 60- 1: Protective Casing, Front

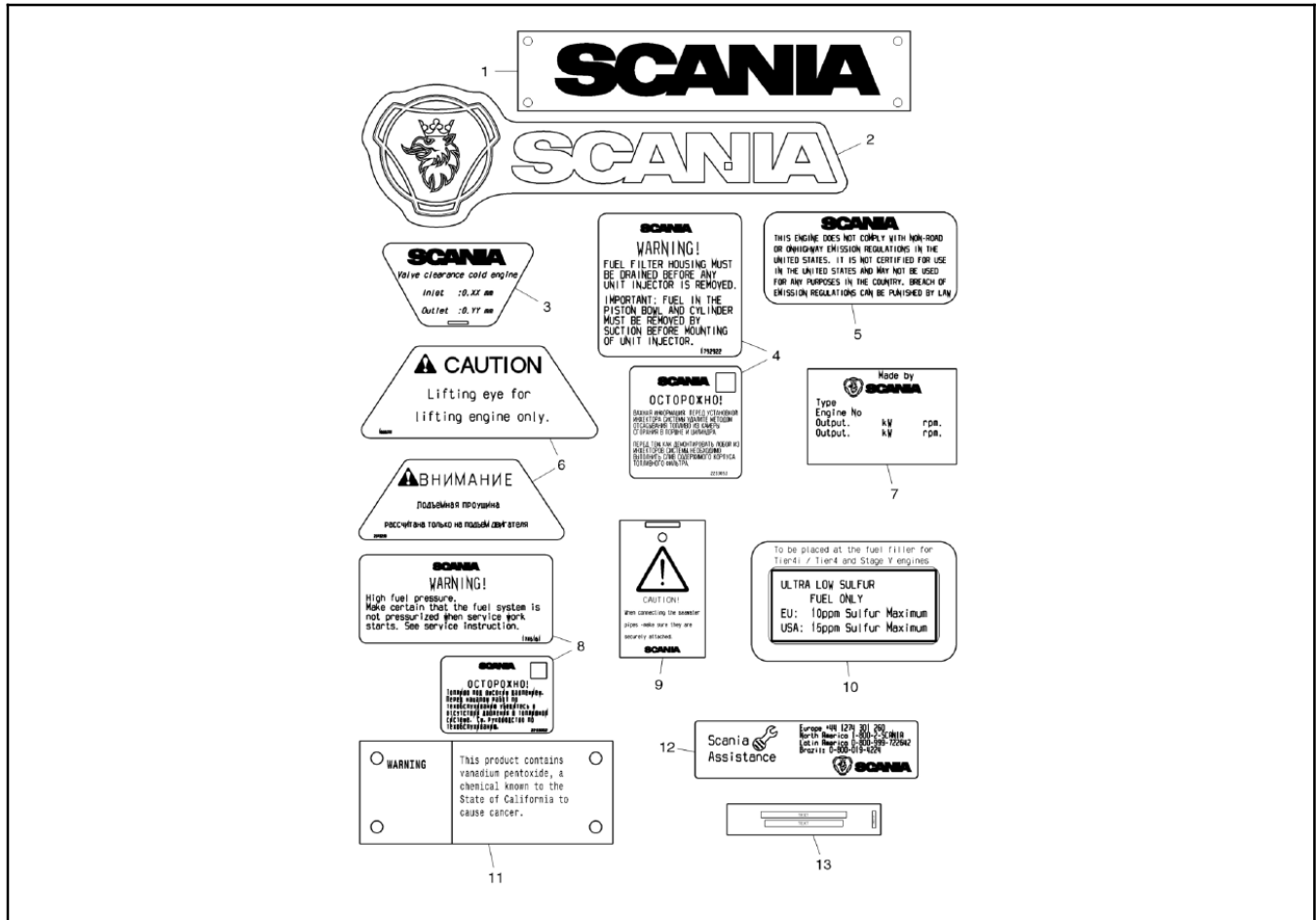
GM109592



Item	Part No.	Description	Qty.
	GM109020	Protection Cover (includes items 2- 5)	1
2	GM108716	Bracket	1
3	GM108717	Bracket	1
4	GM108186	Crosshead Screw	4
5	GM108644	Shock Absorber	4
6	GM108715	Cover	1
7	GM109021	Sensing Strip	1
8	GM108212	Flange Screw	1
9	GM108818	Bracket	1
10	GM109039	Bracket	1
11	GM108724	Bracket	1

Group 1-60-2: Labels, Decals

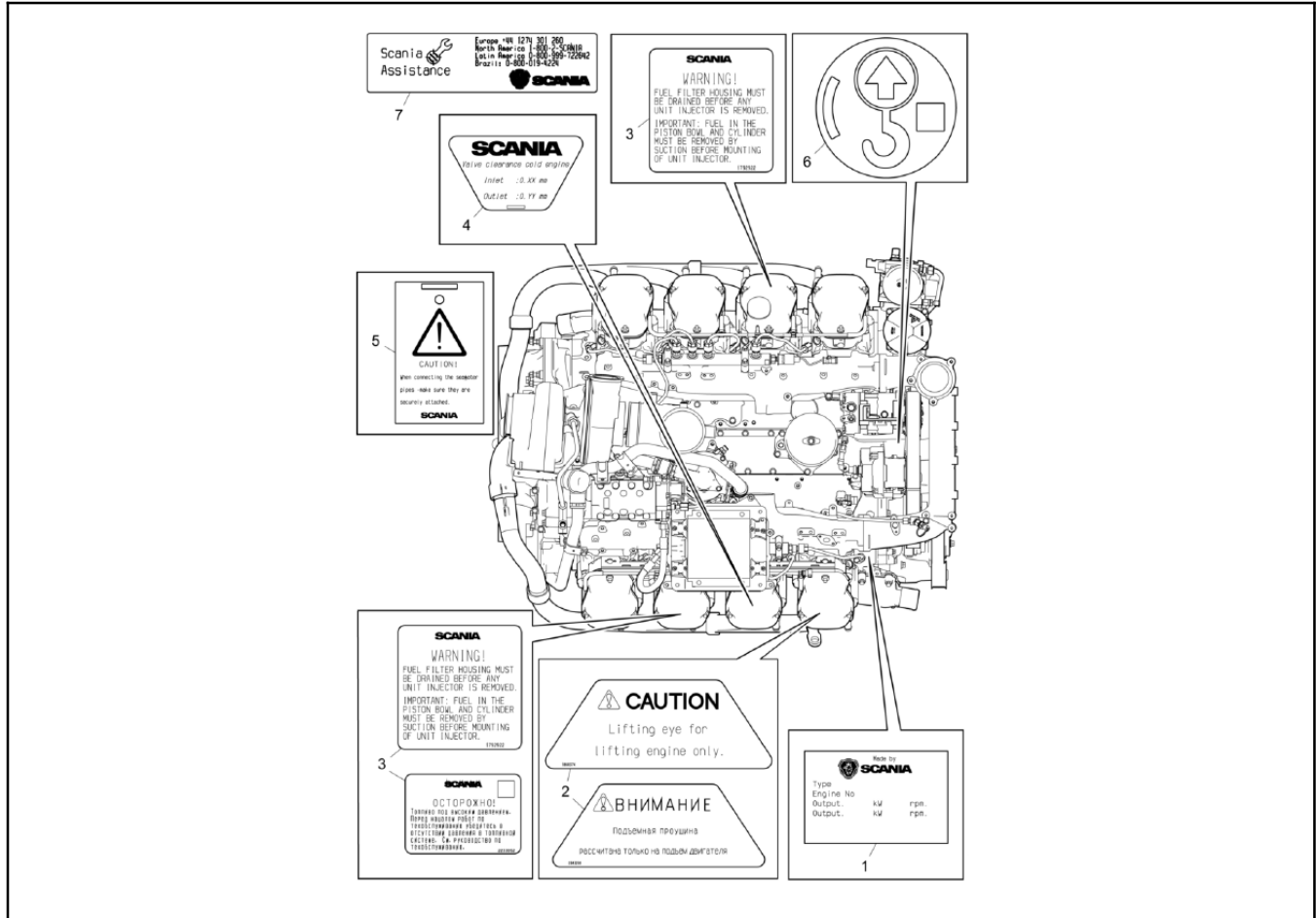
GM109585



Item	Part No.	Description	Qty.
1	GM108280	Plate	1
3	GM76307	Instruction plate	1
4	GM76820	Plate	1
5	GM108386	Plate	1
6	GM78364	Warning plate	1
8	GM108456	Warning Plate	1
9	GM108303	Plate	2
10	GM108930	Label	1
12	GM108942	Plate	1
13	GM109064	Label	1

Group 1- 60- 2: Labels, Decals

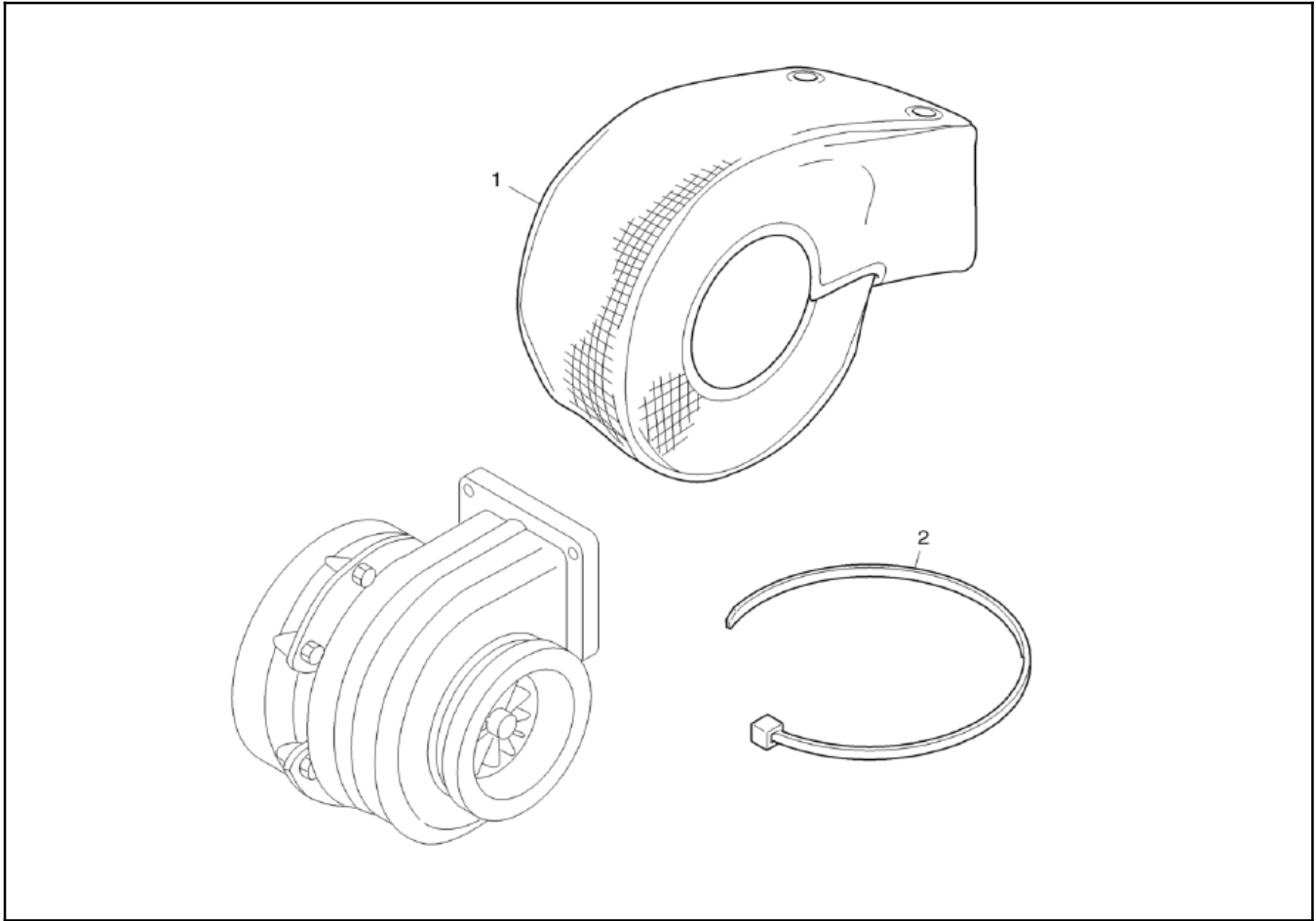
GM109589



Item	Part No.	Description	Qty.
1	GM109008	Plate	1
2	GM78364	Warning plate	1
3	GM76820	Plate	1
4	GM76307	Instruction plate	1
5	GM108303	Plate	1
6	GM108941	Label	1
7	GM108942	Plate	1

Group 1-60-3: Insulation, Turbocharger

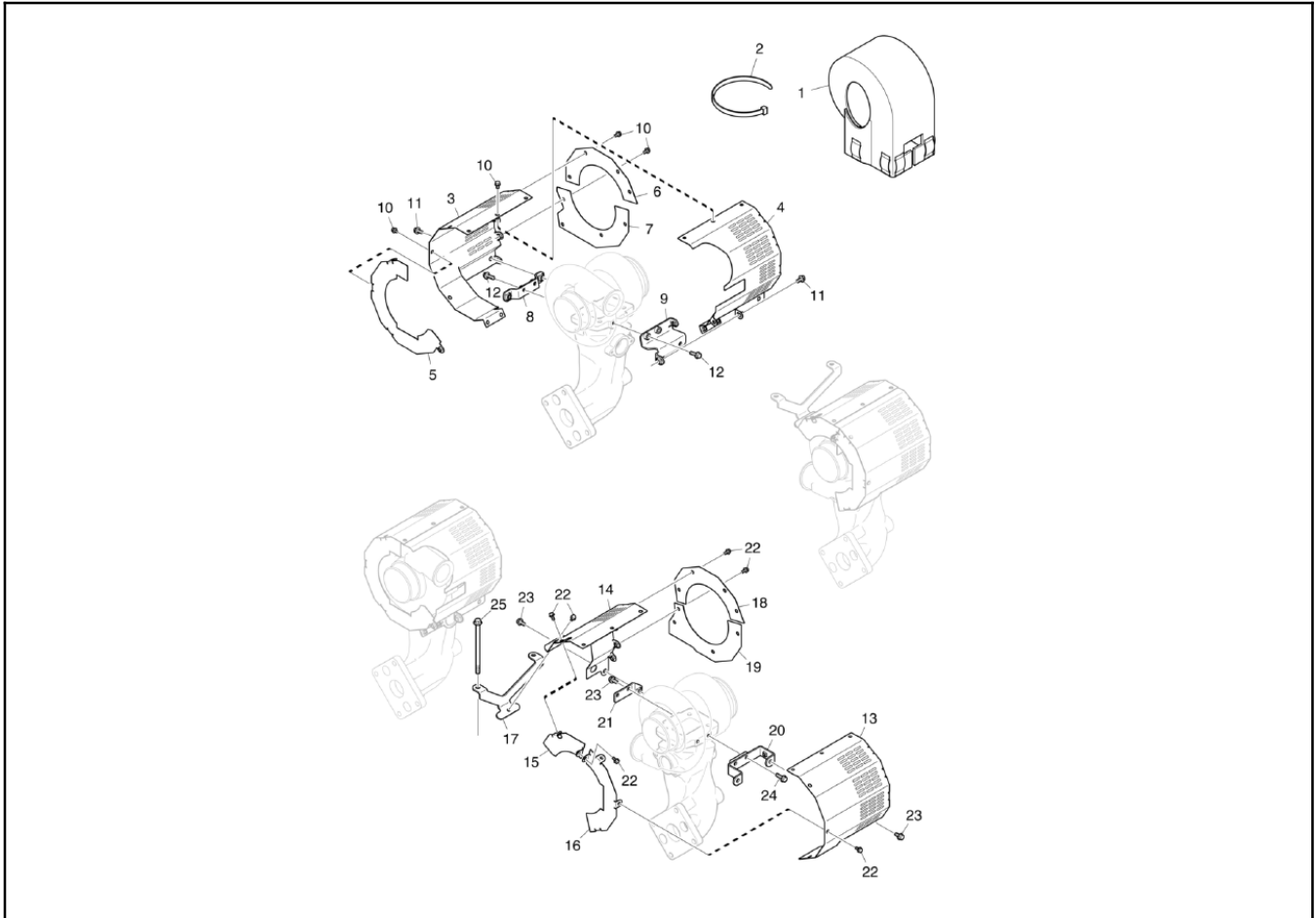
GM109587



Item	Part No.	Description	Qty.
1	GM108768	Insulation	1
2	GM108436	Cable Tie	1

Group 1- 60- 3: Insulation, Turbocharger

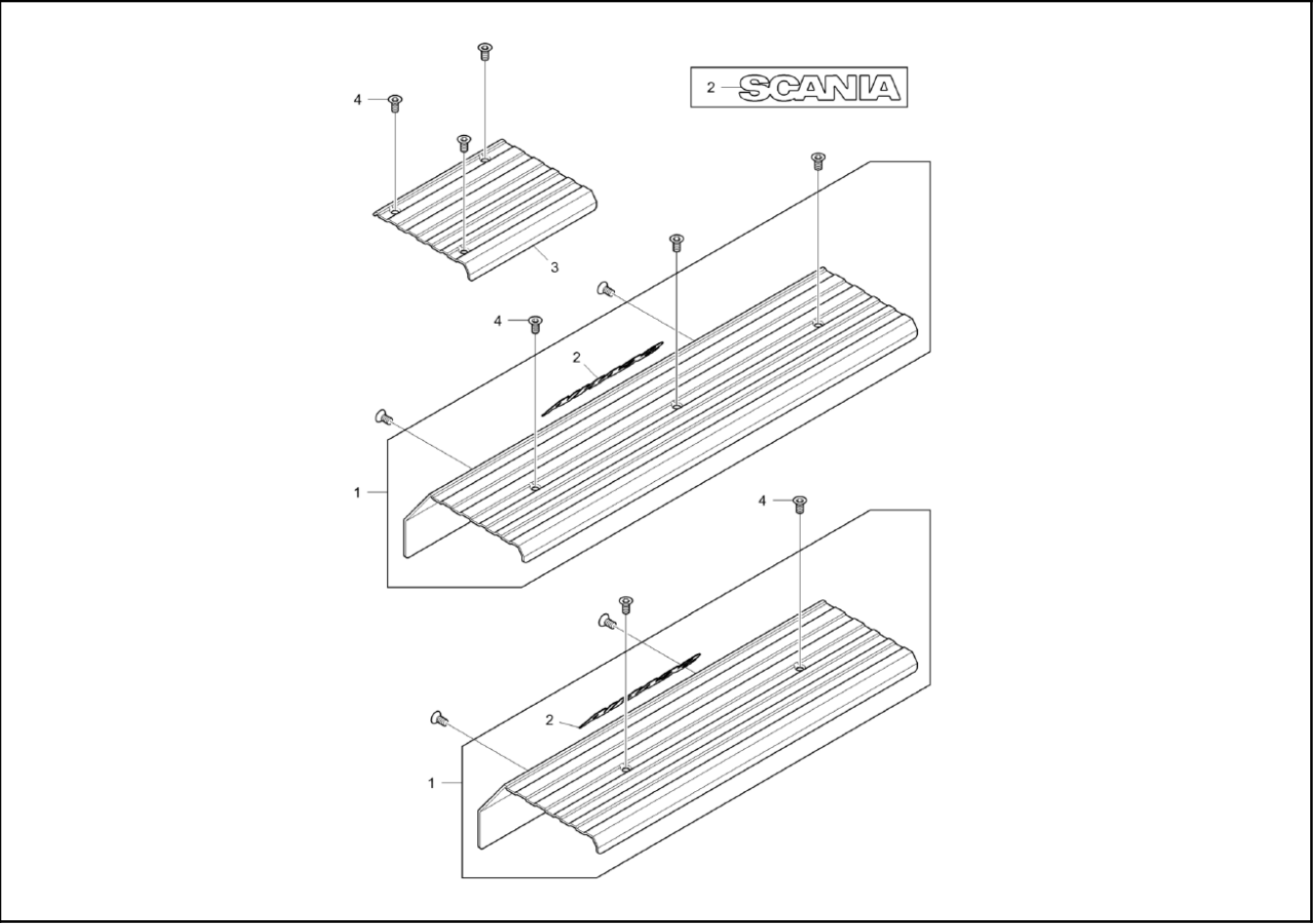
GM109590



Item	Part No.	Description	Qty.
1	GM108890	Insulation	2
2	GM108436	Cable Tie	2
3	GM108954	Protective Plate	1
4	GM108960	Protective Plate	1
5	GM108955	Protective Plate	1
6	GM108956	Protective Plate	1
7	GM108957	Protective Plate	1
8	GM108925	Bracket	1
9	GM108926	Bracket	1
10	GM108206	Flange Screw	1
11	GM108238	Self- Tapping Screw	1
12	GM108239	Flange Screw	1
13	GM108958	Protective Plate	1
14	GM108959	Protective Plate	1
15	GM108962	Protective Plate	1
16	GM108961	Protective Plate	1
17	GM108968	Bracket	1
18	GM108963	Protective Plate	1
19	GM108964	Protective Plate	1
20	GM108965	Bracket	1
21	GM108966	Bracket	1
22	GM108206	Flange Screw	1
23	GM108238	Self- Tapping Screw	1
24	GM108239	Flange Screw	1
25	GM108297	Screw	2

Group 1-60-4: Protective Casing, Catwalk

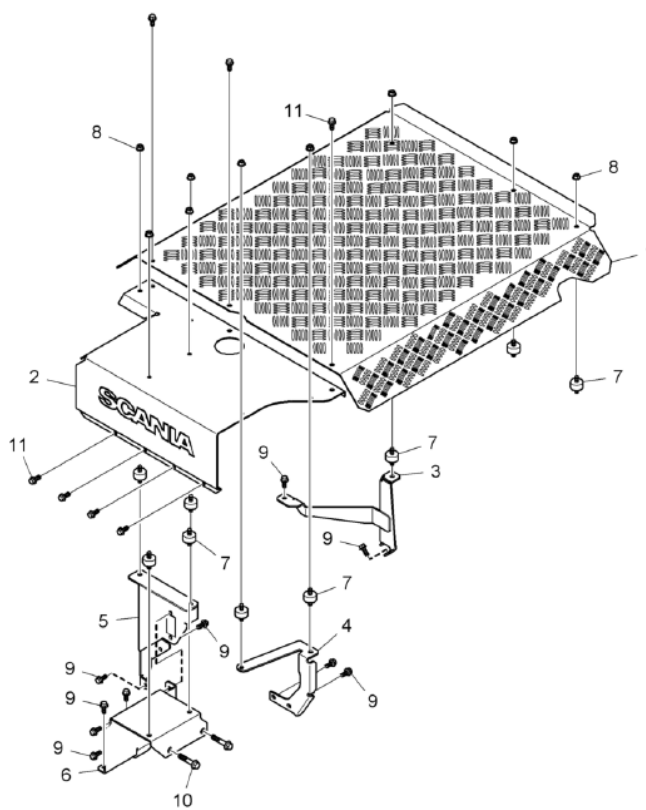
GM109588



Item	Part No.	Description	Qty.
1	GM108927	Catwalk	1
2	GM108821	Label	1
3	GM108928	Catwalk	1
4	GM108181	Screw	1

Group 1-60-4: Protective Casing, Catwalk

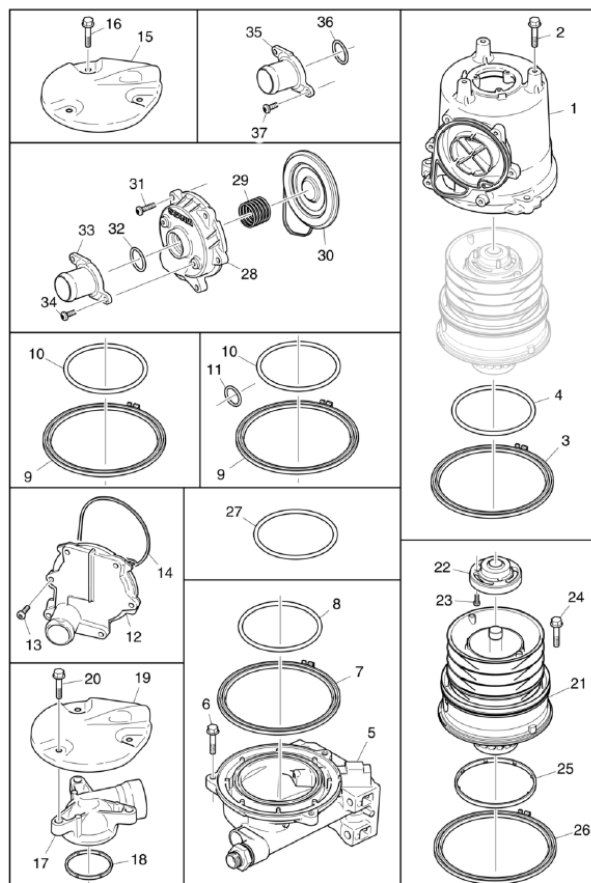
GM109591



Item	Part No.	Description	Qty.
1	GM108718	Catwalk	1
2	GM108710	Cover Plate	1
3	GM109007	Bracket	1
4	GM108709	Bracket	1
5	GM108940	Bracket	1
6	GM108822	Bracket	1
7	GM108495	Damper	1
8	GM108261	Flange Nut	1
9	GM108212	Flange Screw	1
10	GM108231	Flange Screw	2
11	GM108211	Flange Screw	1

Group 1-99-1: Repair Kit, Oil Mist Separator, Crankcase Ventilation

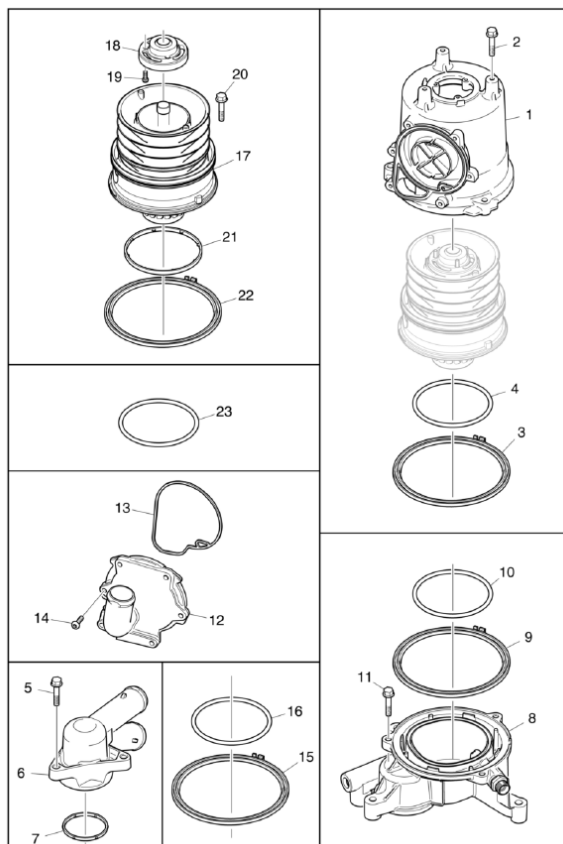
GM109593



Item	Part No.	Description	Qty.
	GM108574	Repair Kit (includes items 1- 4)	1
	GM108577	Repair Kit (includes items 5- 8)	1
	GM108579	Repair Kit (includes items 9- 10)	1
	GM108578	Repair Kit (includes items 9- 11)	1
	GM108901	Repair Kit (includes items 5- 16)	1
	GM108903	Repair Kit (includes items 17- 20)	1
	GM108902	Repair Kit (includes items 21- 26)	1
	GM108904	Repair Kit (includes item 27)	1
	GM108575	Repair Kit (includes items 28- 34)	1
	GM108576	Repair Kit (includes items 35- 37)	1

Group 1-99- 1: Repair Kit, Oil Mist Separator, Crankcase Ventilation

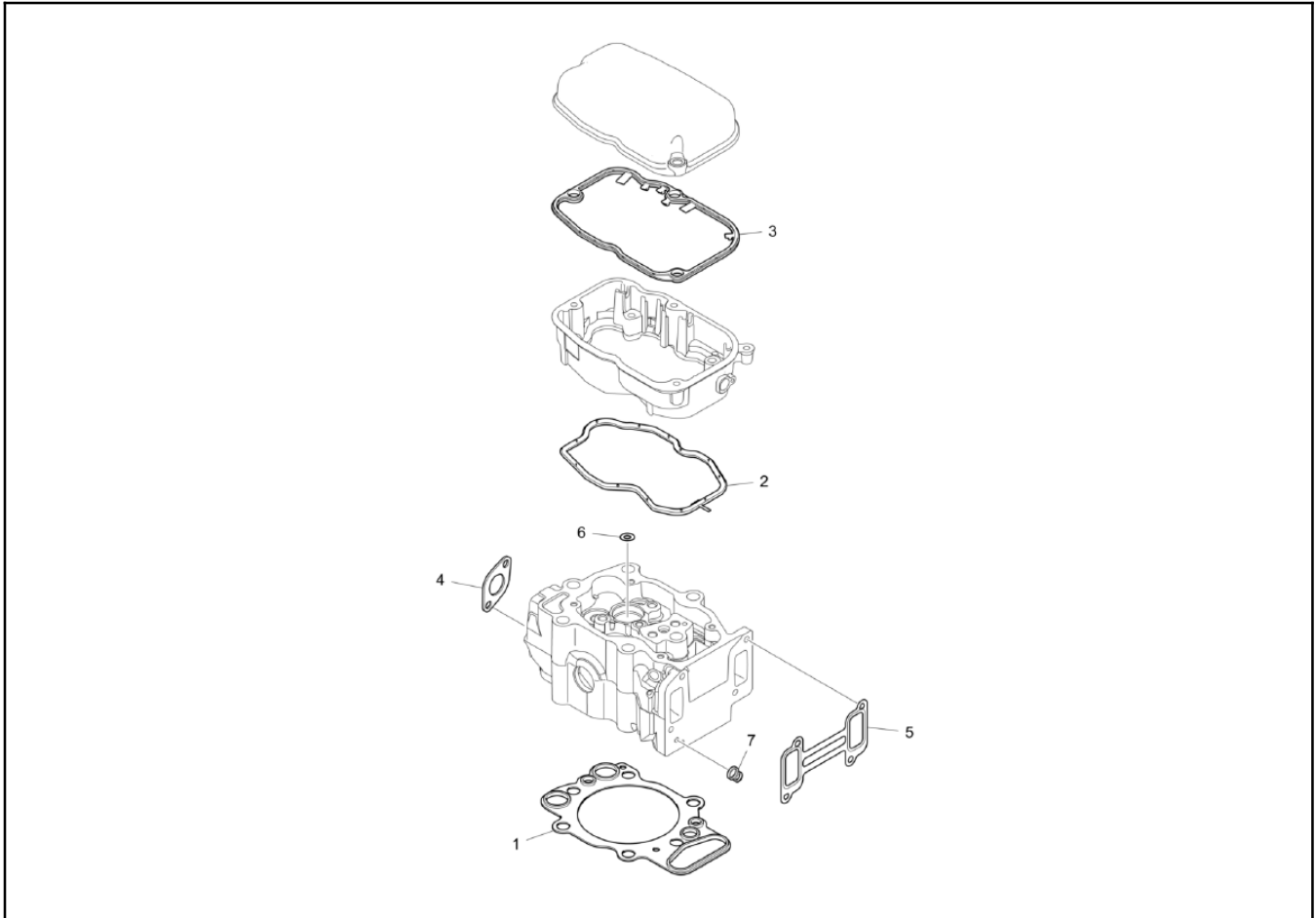
GM109598



Item	Part No.	Description	Qty.
	GM108574	Repair Kit (includes items 1- 4)	1
	GM108616	Repair Kit (includes items 5- 7)	1
	GM108615	Repair Kit (includes items 8- 11)	1
	GM108617	Repair Kit (includes items 12- 14)	1
	GM108579	Repair Kit (includes items 15- 16)	1
	GM108902	Repair Kit (includes items 17- 22)	1
	GM108904	Repair Kit (includes items 23)	1

Group 1 - 99- 2: Gasket Kit, Cylinder Head

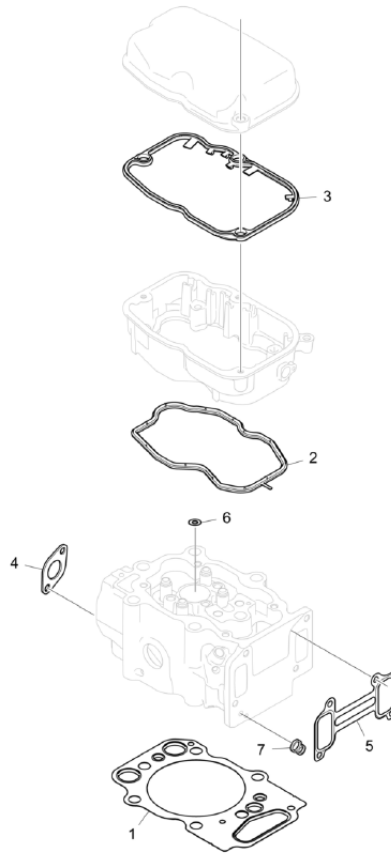
GM109595



Item	Part No.	Description	Qty.
	GM109000	Gasket Kit (includes items 1-7)	1
1	GM108612	Cylinder Head Gasket	1
2	GM76464	Rocker cover gasket	1
3	GM67232	Rocker Cover Gasket	1
4	GM108817	Gasket	1
5	GM76590	Gasket	1
6	GM108752	Gasket	1
7	GM108721	Gasket	1

Group 1 - 99- 2: Gasket Kit, Cylinder Head

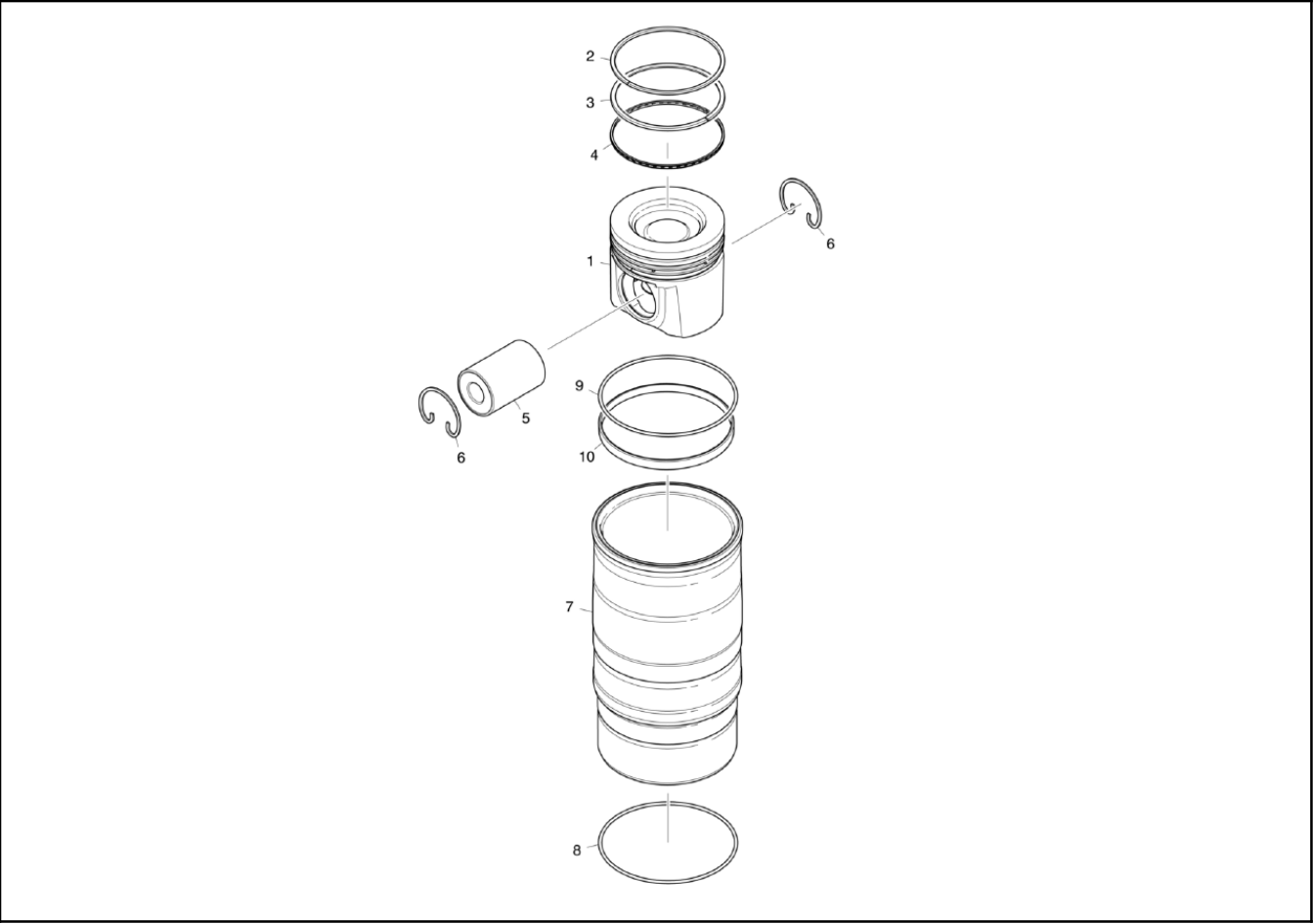
GM109597



Item	Part No.	Description	Qty.
	GM109077	Gasket Kit (includes items 1 - 7)	1
1	GM108612	Cylinder Head Gasket	1
2	GM76464	Rocker cover gasket	1
3	GM67232	Rocker Cover Gasket	1
4	GM108817	Gasket	1
5	GM108907	Gasket	1
6	GM108752	Gasket	1
7	GM108721	Gasket	1

Group 1 - 99- 4: Repair Kit, Piston And Cylinder Liner

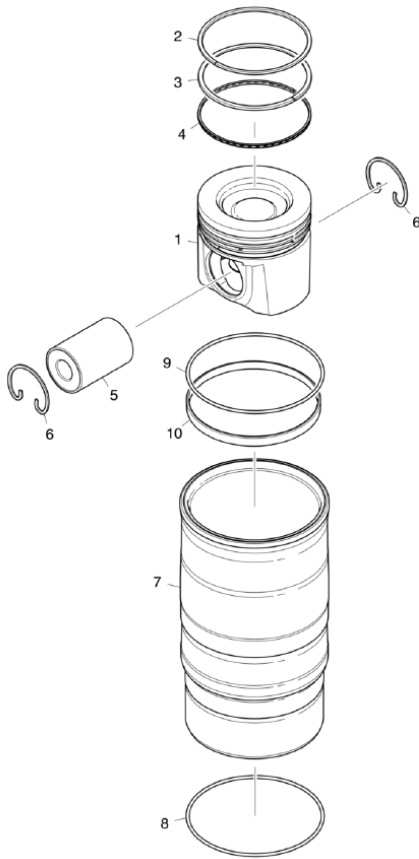
GM109596



Item	Part No.	Description	Qty.
1	GM109073	Cylinder Liner Kit (includes items 1- 10)	1
	GM109074	Piston (includes items 2- 6)	1
	GM109067	Piston Ring Kit (includes items 2- 4)	1
2	GM108970	Compression Ring	1
3	GM108737	Compression Ring	1
4	GM108738	Oil Scraper Ring	1
5	GM109061	Gudgeon Pin	1
6	GM109041	Retaining Ring	2
7	GM108952	Cylinder Liner	1
8	GM109010	O- Ring	1
9	GM76715	O- ring	1
10	GM108531	Scraper Ring	1
	GM108674	Glycerol	1

Group 1 - 99- 4: Repair Kit, Piston And Cylinder Liner

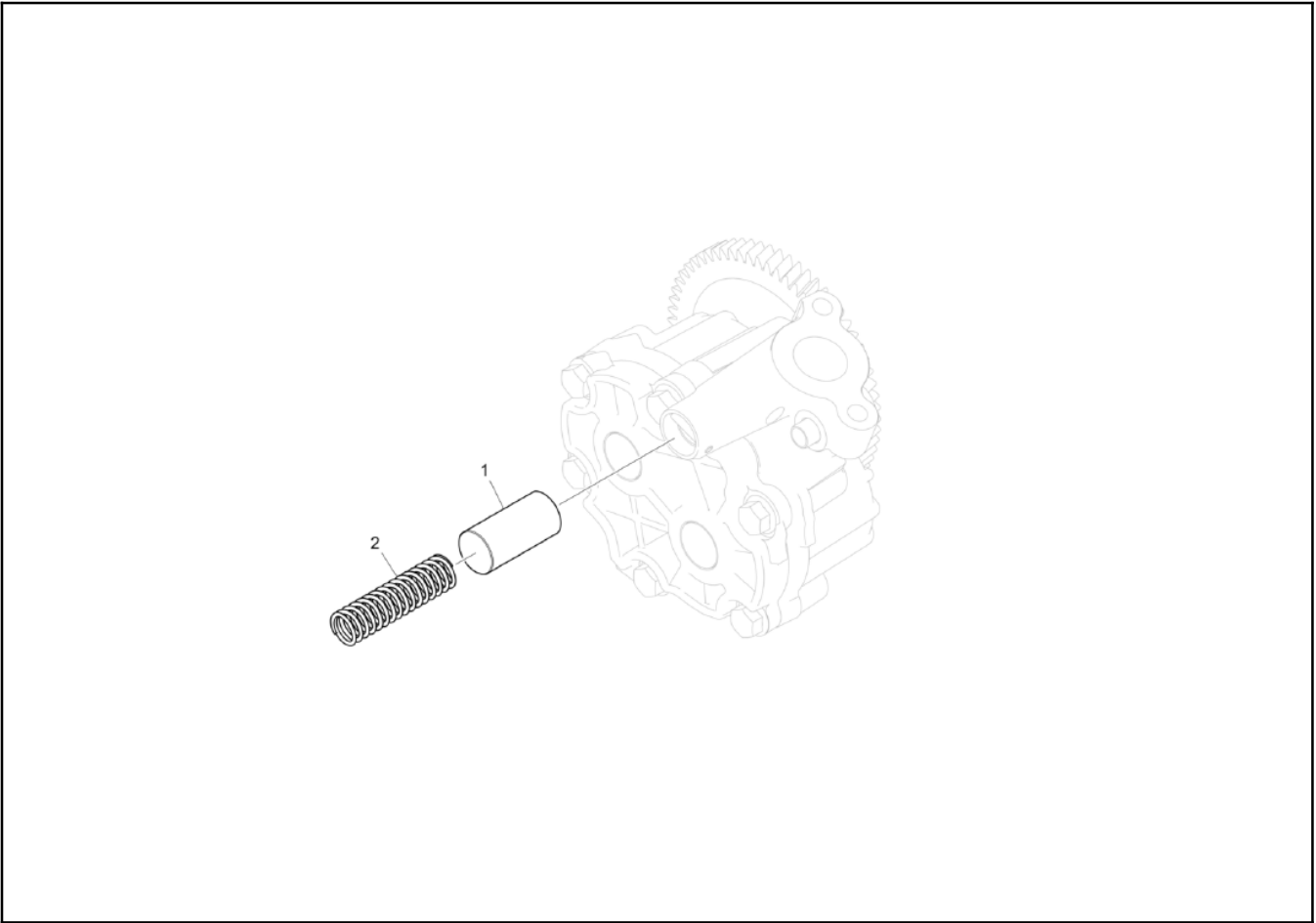
GM109600



Item	Part No.	Description	Qty.
1	GM109076	Cylinder Liner Kit (includes items 1- 9)	8
	GM109075	Piston (includes items 2- 6)	1
	GM109067	Piston Ring Kit (includes items 2- 4)	1
2	GM108970	Compression Ring	1
3	GM108737	Compression Ring	1
4	GM108738	Oil Scraper Ring	1
5	GM109041	Retaining Ring	2
6	GM109061	Gudgeon Pin	1
7	GM108952	Cylinder Liner	1
8	GM109010	O- Ring	1
9	GM76715	O- ring	1
10	GM108531	Scraper Ring	1
	GM108674	Glycerol	1

Group 1 - 99- 4: Repair Kit, Oil Pump

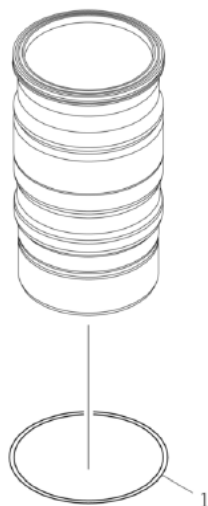
GM109599



Item	Part No.	Description	Qty.
	GM108611	Repair Kit (includes items 1-2)	8

Group 1 - 99- 5: Shim, Cylinder Liner

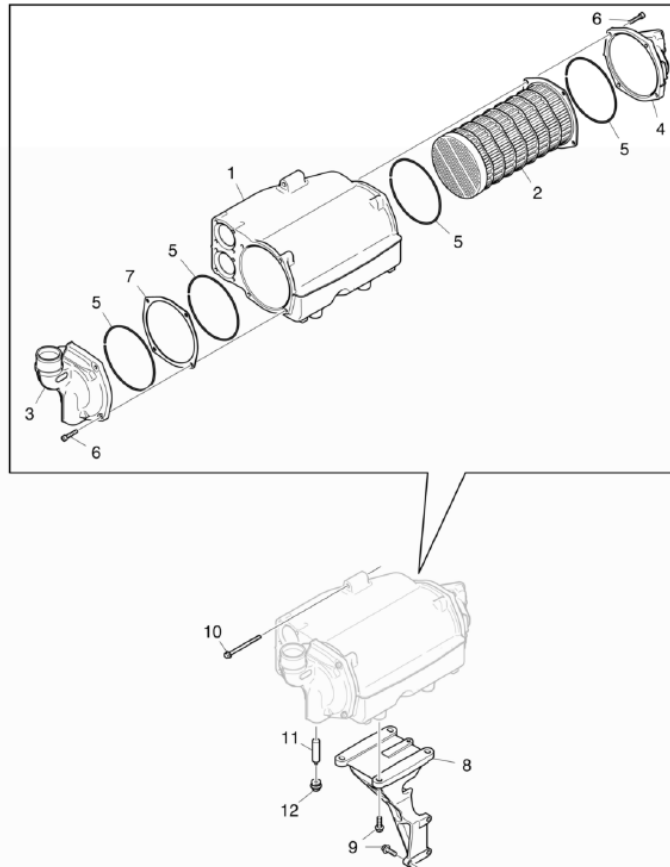
GM109594



Item	Part No.	Description	Qty.
1	GM76860	Shim, TH 0.2 mm	1
1	GM76861	Shim, TH 0.3 mm	1
1	GM76862	Shim, TH 0.4 mm	1

Group 2-01- 1: Heat Exchanger

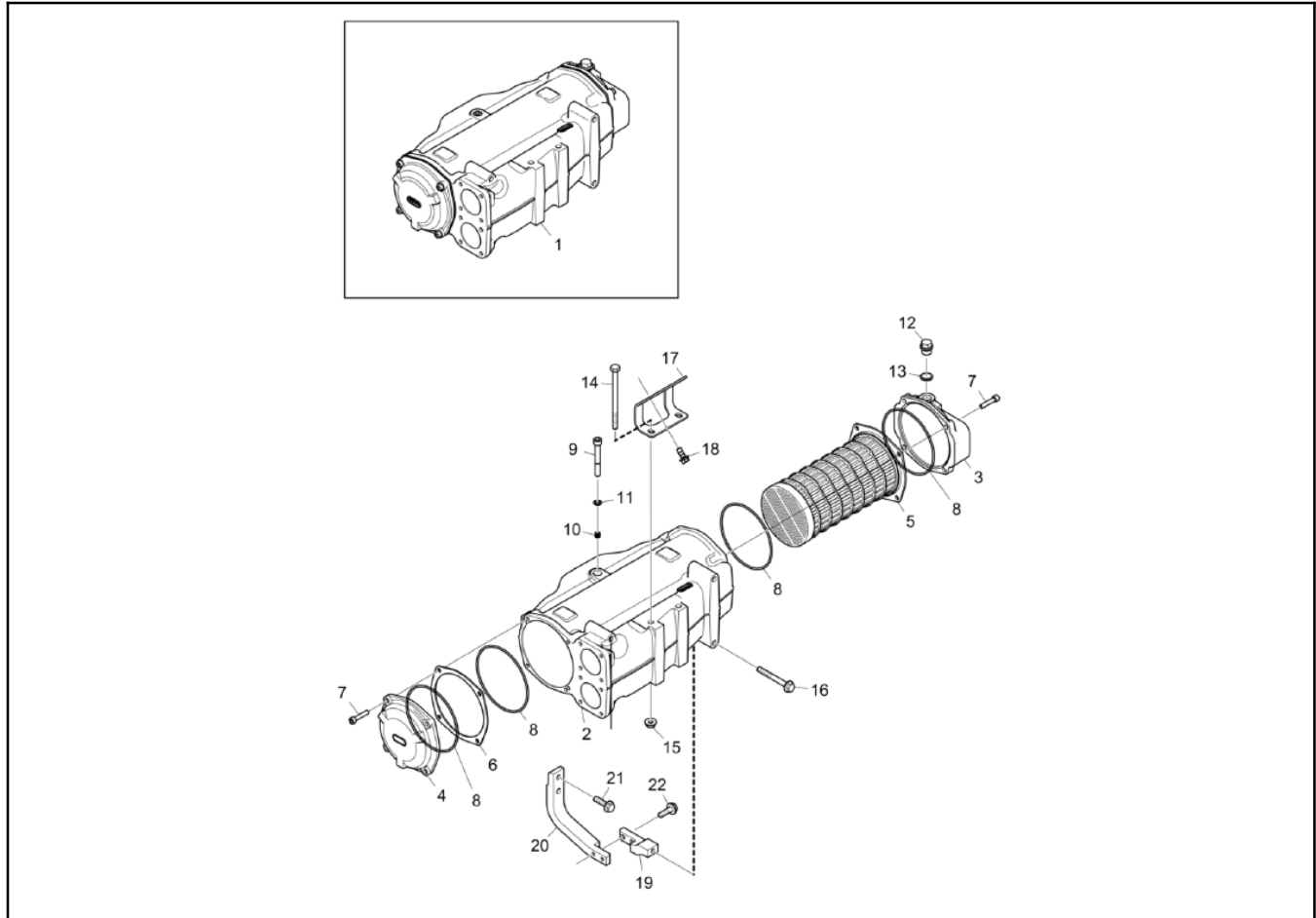
GM109602



Item	Part No.	Description	Qty.
	GM108555	Heat Exchanger (includes items 1- 7)	1
1	GM108782	Housing	1
2	GM108779	Cooler Core	1
3	GM108781	Cover	1
4	GM108780	Cover	1
5	GM108457	O- Ring	1
6	GM108469	Hexagon Socket Screw	1
7	GM108775	Spacer	1
8	GM108982	Bracket	1
9	GM108227	Flange Screw	7
10	GM108270	Flange Screw	1
11	GM67215	Anode	1
12	GM76235	Plug	1

Group 2-01- 1: Heat Exchanger

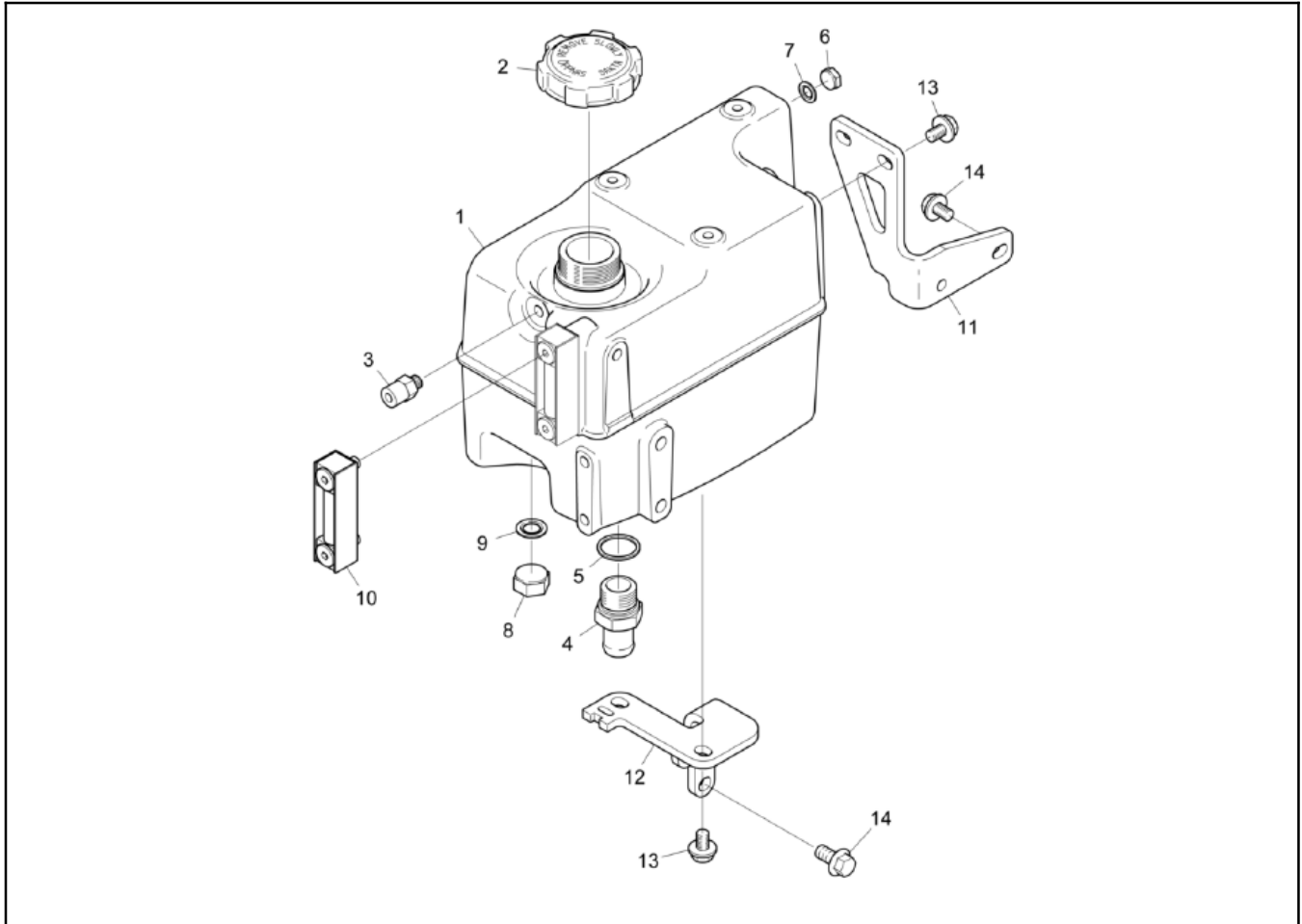
GM109604



Item	Part No.	Description	Qty.
1	GM108479	Heat Exchanger (includes items 2- 13)	1
2	GM108868	Shell Plate	1
3	GM108869	Cover	1
4	GM108870	Cover	1
5	GM108871	Heater Element	1
6	GM108872	Spacer	1
7	GM108469	Hexagon Socket Screw	8
8	GM108873	O- Ring	4
9	GM108874	Screw	1
10	GM108875	Screw	1
11	GM108876	Seal	1
12	GM108877	Plug	2
13	GM108878	Gasket	2
14	GM108297	Screw	2
15	GM108262	Flange Nut	2
16	GM108233	Flange Screw	2
17	GM108708	Bracket	1
18	GM108224	Flange Screw	2
19	GM108476	Bracket	4
20	GM108508	Bracket	4
21	GM108229	Screw	2
22	GM108214	Flange Screw	2

Group 2-01-2: Expansion Tank

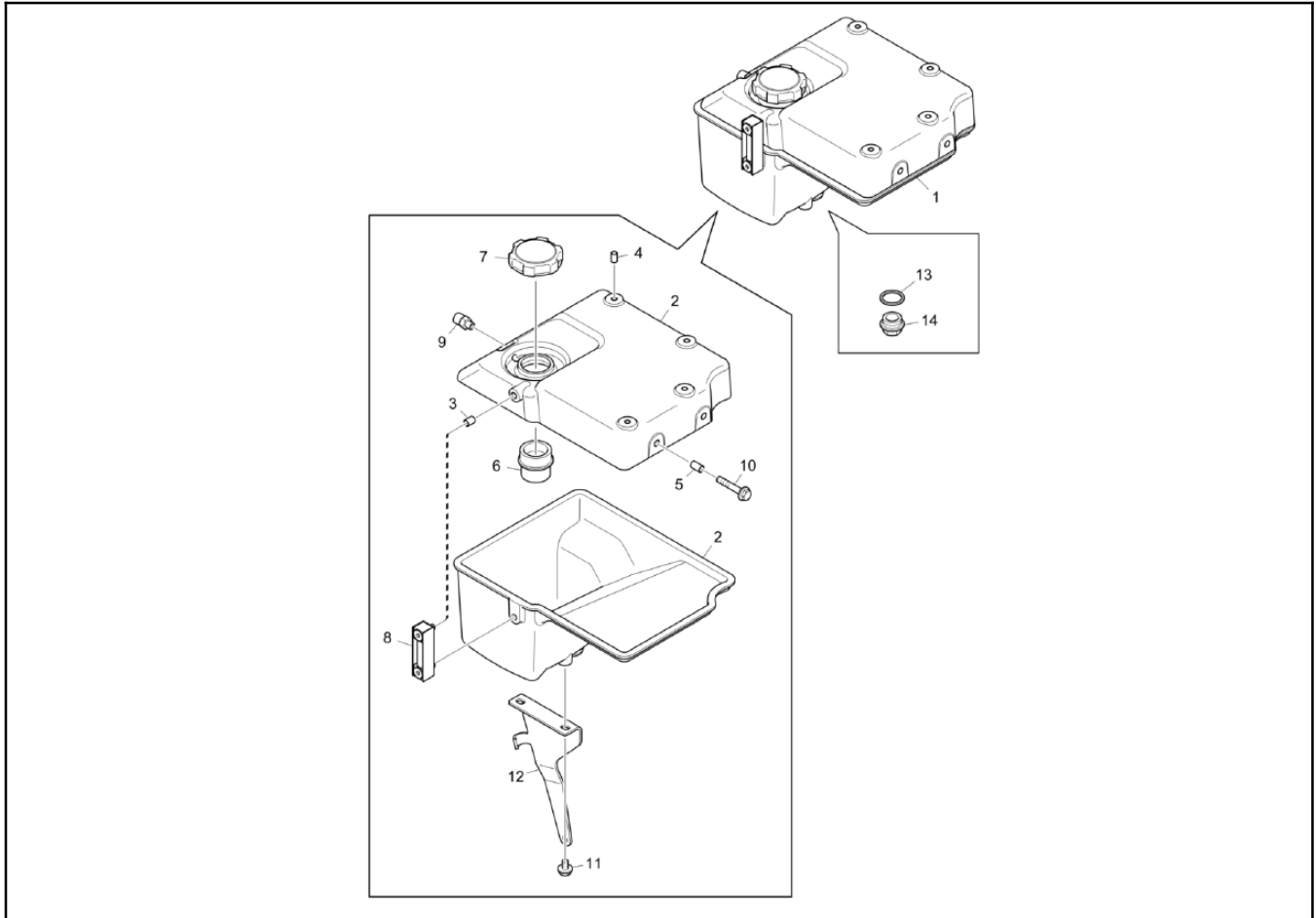
GM109601



Item	Part No.	Description	Qty.
1	GM108931	Expansion Tank (includes items 2- 10)	1
2	GM109065	Pressure Cap	1
3	GM108807	Quick Release Coupling	1
4	GM108535	Union	1
5	GM108978	Seal	1
6	GM77009	Screw plug, M12x1.5x9	1
7	GM108972	Seal	1
8	GM77012	Screw plug, M18x1.5x9	1
9	GM108975	Seal	1
10	GM109031	Level Marker	1
11	GM108558	Bracket	1
12	GM108559	Bracket	1
13	GM108226	Flange Screw	6
14	GM108224	Flange Screw	4

Group 2-01-2: Expansion Tank

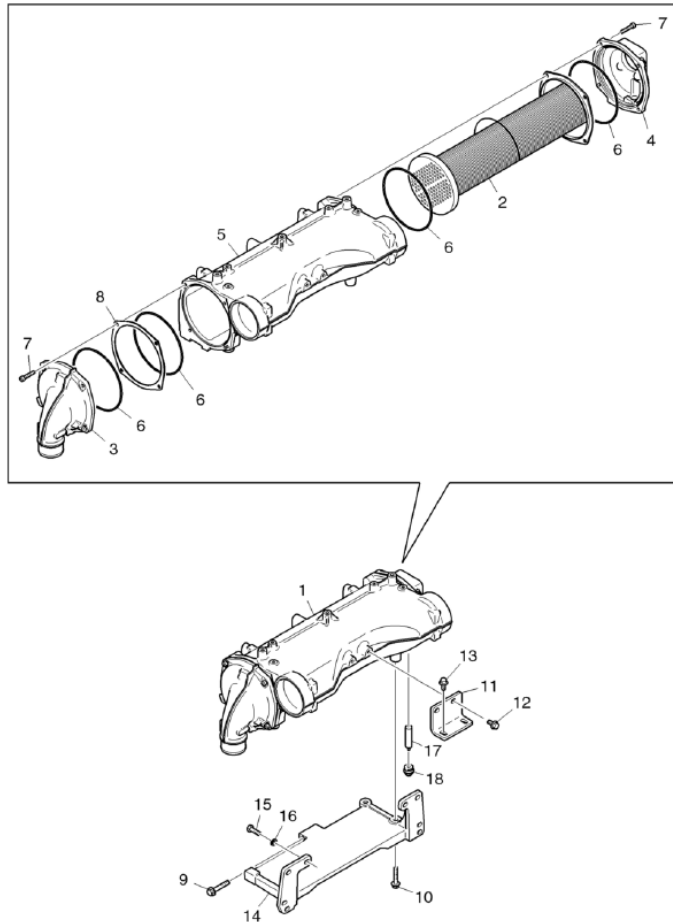
GM109603



Item	Part No.	Description	Qty.
1	GM109050	Expansion Tank (includes items 2- 9)	1
3	GM108191	Thread Insert	2
4	GM108190	Thread Insert	4
5	GM108192	Thread Insert	4
7	GM109065	Pressure Cap	1
8	GM109031	Level Marker	1
9	GM108395	Insert Connection	1
10	GM108231	Flange Screw	2
11	GM108224	Flange Screw	2
12	GM108538	Bracket	1
13	GM108975	Seal	1
14	GM77012	Screw plug, M18x1.5x9	1

Group 2-05-1: Charge Air Cooler

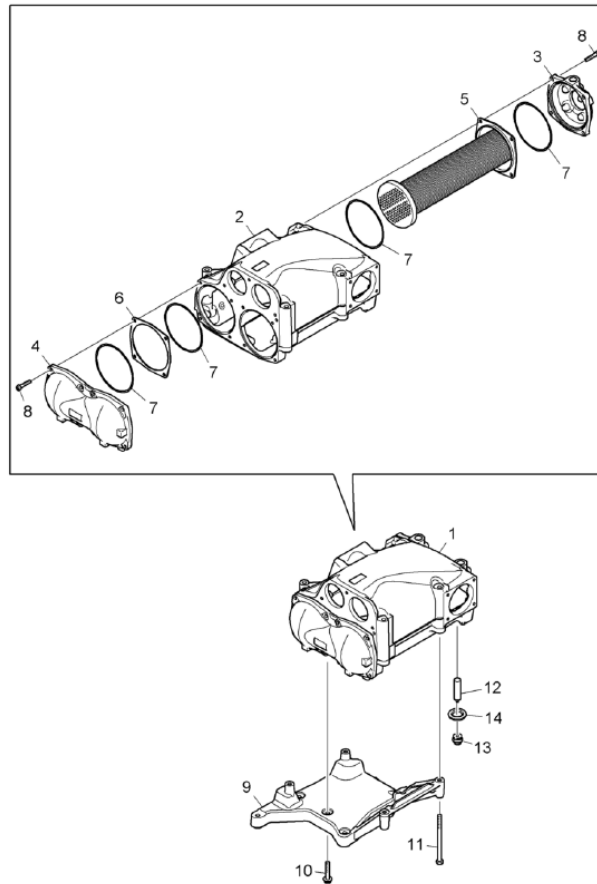
GM109606



Item	Part No.	Description	Qty.
1	GM109043	Charge Air Cooler (includes items 2- 8)	1
2	GM109044	Cooler Core	1
3	GM108776	Cover	1
4	GM108777	Cover	1
5	GM108778	Housing	1
6	GM108457	O- Ring	4
7	GM108469	Hexagon Socket Screw	8
8	GM108775	Spacer	1
9	GM108231	Flange Screw	1
10	GM108218	Flange Screw	2
11	GM108815	Bracket	1
12	GM108212	Flange Screw	2
13	GM108224	Flange Screw	2
14	GM108554	Bracket	1
15	GM108252	Hexagon Screw	6
16	GM108187	Washer	6
17	GM67215	Anode	1
18	GM76235	Plug	1

Group 2-05-1: Charge Air Cooler

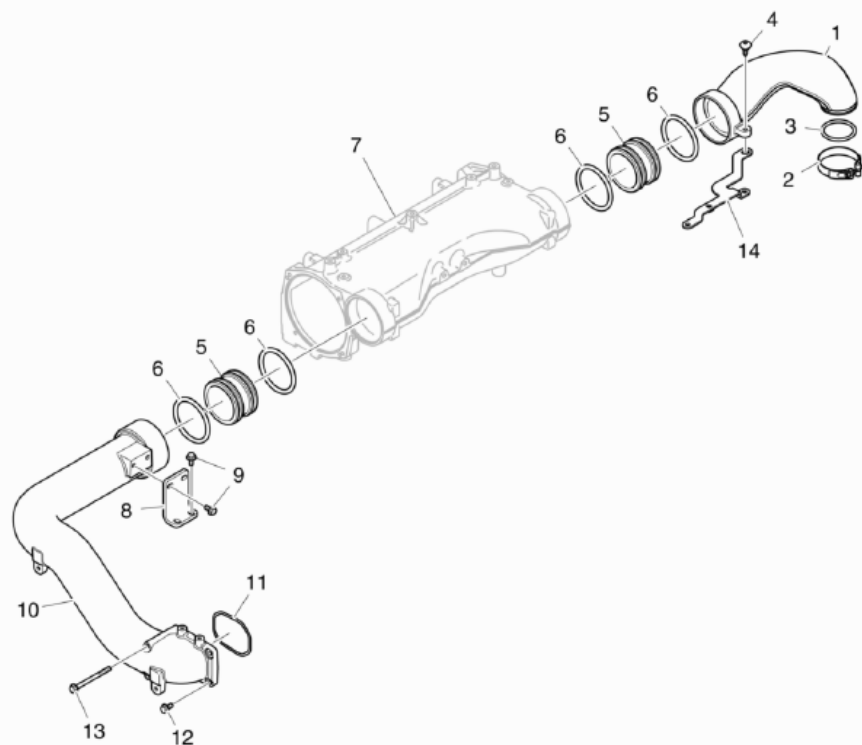
GM109608



Item	Part No.	Description	Qty	Remark
1	GM109179	Charge Air Cooler (includes items 2- 8)	1	For engine with keel - cooling
2	GM108865	Housing	1	
3	GM109181	Cover	2	
4	GM109182	Cover	1	
5	GM108948	Cooler Core	2	
6	GM108287	Flange	2	
7	GM108299	O- Ring	8	
8	GM108469	Hexagon Socket Screw	16	
1	GM108979	Charge Air Cooler (includes items 2- 8)	1	For engine with heat exchanger
2	GM108865	Housing	1	
3	GM108866	Cover	2	
4	GM108867	Cover	1	
5	GM108948	Cooler Core	2	
6	GM108287	Flange	2	
7	GM108299	O- Ring	8	
8	GM108469	Hexagon Socket Screw	16	
9	GM108478	Bracket	1	
10	GM108231	Flange Screw	4	
11	GM108297	Screw	4	
12	GM67215	Anode	2	For engine with heat exchanger
13	GM76235	Plug	2	For engine with heat exchanger
14	GM108976	Seal	2	For engine with heat exchanger

Group 2- 05- 2: Charge Air Pipe

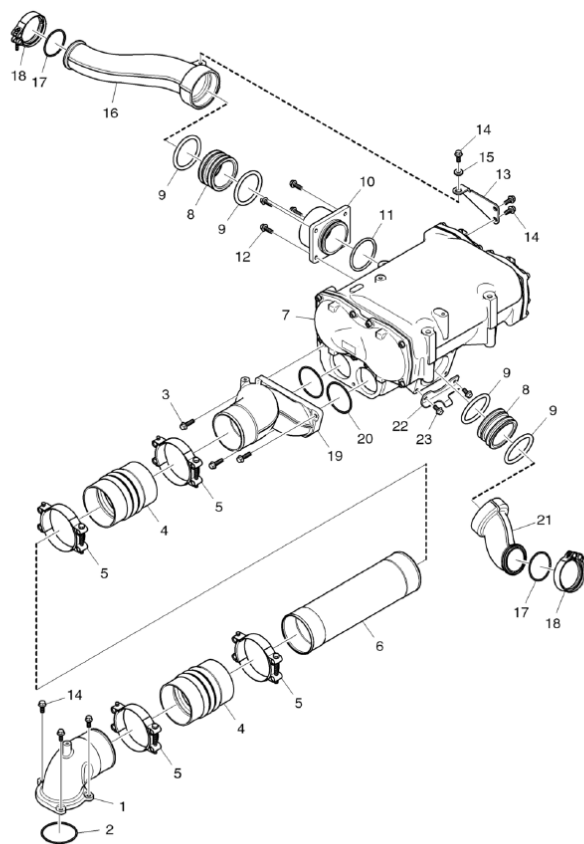
GM109605



Item	Part No.	Description	Qty.
1	GM108565	Charge Air Pipe	1
2	GM108376	V- Clamp	1
3	GM76240	O- ring	1
4	GM108401	Shoulder Screw	1
5	GM108566	Junction Pipe	2
6	GM108567	O- Ring	2
8	GM108569	Bracket	1
9	GM108212	Flange Screw	4
10	GM108568	Charge Air Pipe	1
11	GM108309	Sealing Ring	1
12	GM108214	Flange Screw	2
13	GM108223	Flange Screw	2
14	GM109078	Bracket	1

Group 2-05-2: Charge Air Pipe

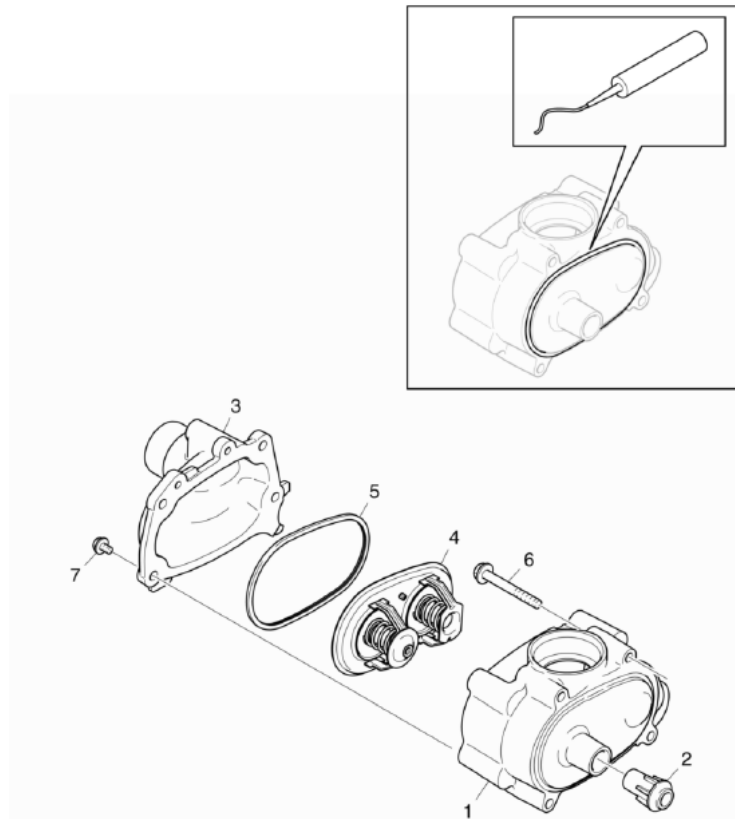
GM109607



Item	Part No.	Description	Qty.
1	GM109048	Charge Air Pipe	1
2	GM108290	O- Ring	1
3	GM108214	Flange Screw	6
4	GM108400	Hose	2
5	GM108398	Hose Clamp	4
6	GM108481	Charge Air Cooler Pipe	1
8	GM108533	Jointing Sleeve	2
9	GM109087	O- Ring	4
10	GM108510	Flange	1
11	GM108399	O- Ring	1
12	GM108213	Flange Screw	4
13	GM108534	Bracket	1
14	GM108212	Flange Screw	3
15	GM108802	Spacing Sleeve	1
16	GM108483	Charge Air Pipe	1
17	GM76240	O- ring	2
18	GM108376	V- Clamp	2
19	GM109047	Charge Air Pipe	1
20	GM108527	O- Ring	1
21	GM108482	Charge Air Pipe	1
22	GM108732	Bracket	1
23	GM108211	Flange Screw	2

Group 2- 15- 1: Thermostat Housing, Heat Exchanger

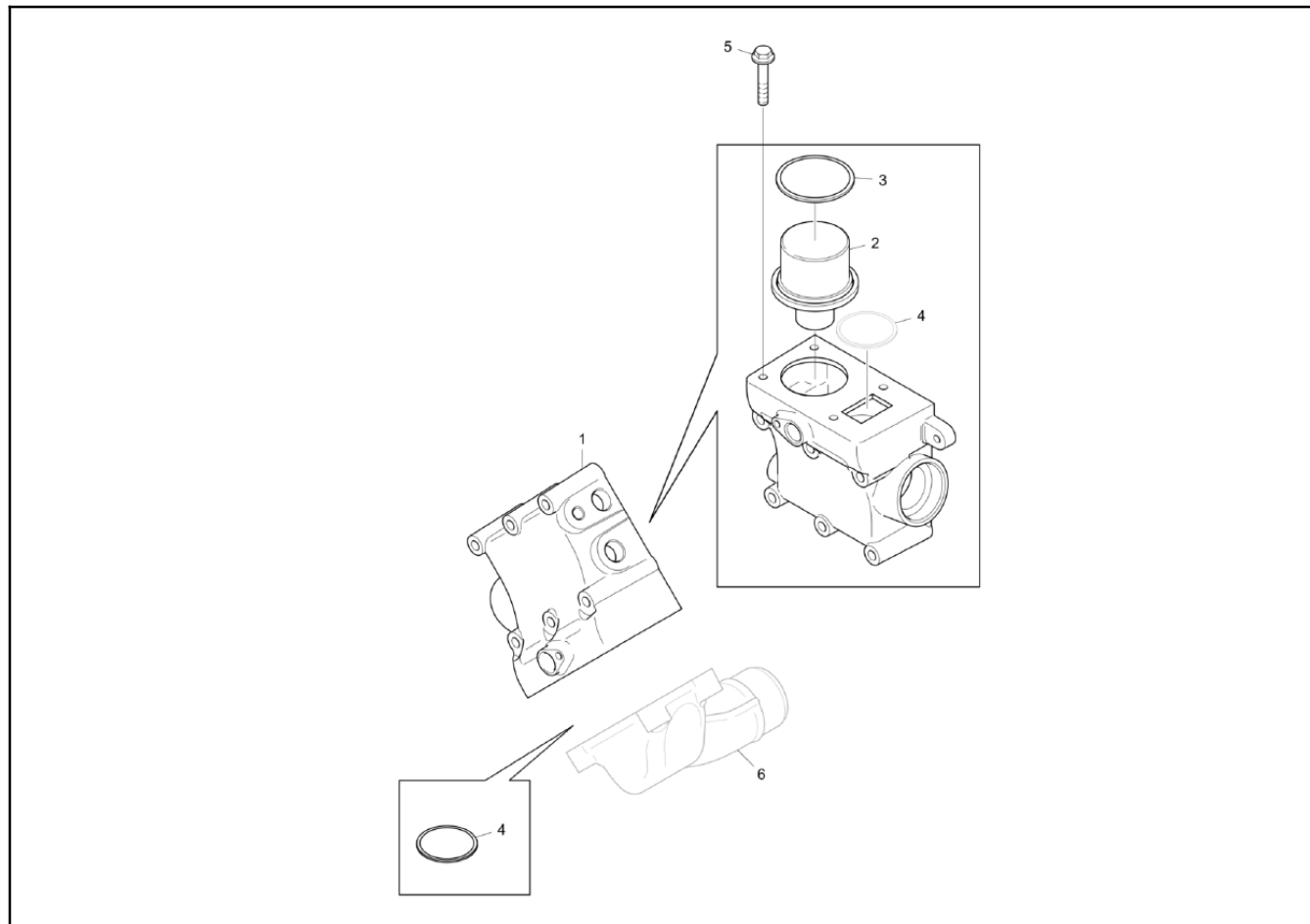
GM109609



Item	Part No.	Description	Qty.
1	GM108983	Thermostat Housing (includes item 2)	1
2	GM108804	Seal	1
	GM77064	Silicone paste	1
3	GM108556	Thermostat Housing Cover	1
4	GM109086	Thermostat	1
5	GM108429	Gasket	1
6	GM108219	Flange Screw	4
7	GM108212	Flange Screw	4

Group 2- 15- 1: Thermostat housing, Heat Exchanger

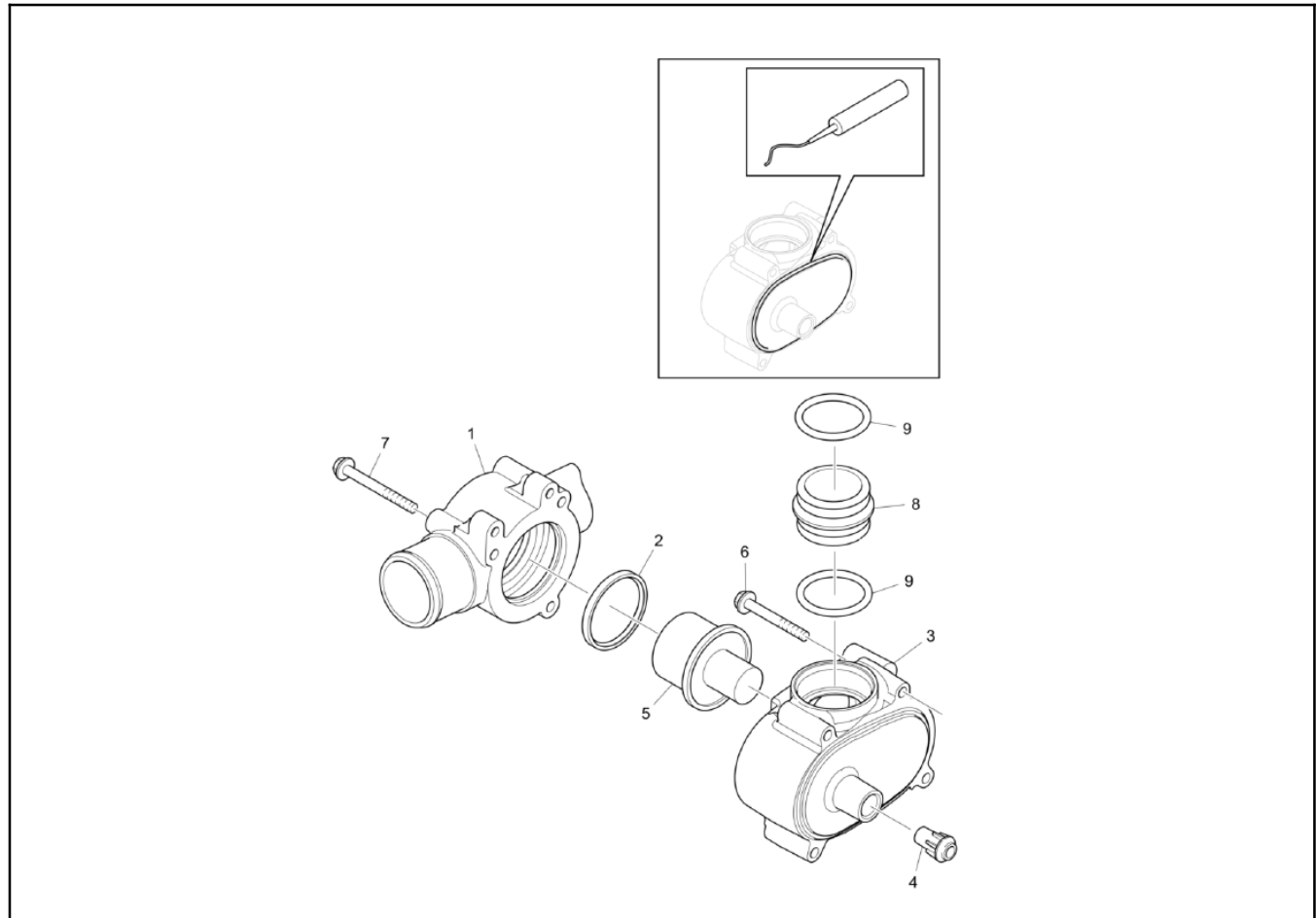
GM109611



Item	Part No.	Description	Qty.
1	GM108851	Flange LH	1
1	GM108850	Flange RH	1
2	GM109026	Thermostat	2
3	GM108124	Gasket	2
4	GM76508	Gasket	2
5	GM108219	Flange Screw	8

Group 02- 15- 2: Thermostat Housing, Keel Cooling

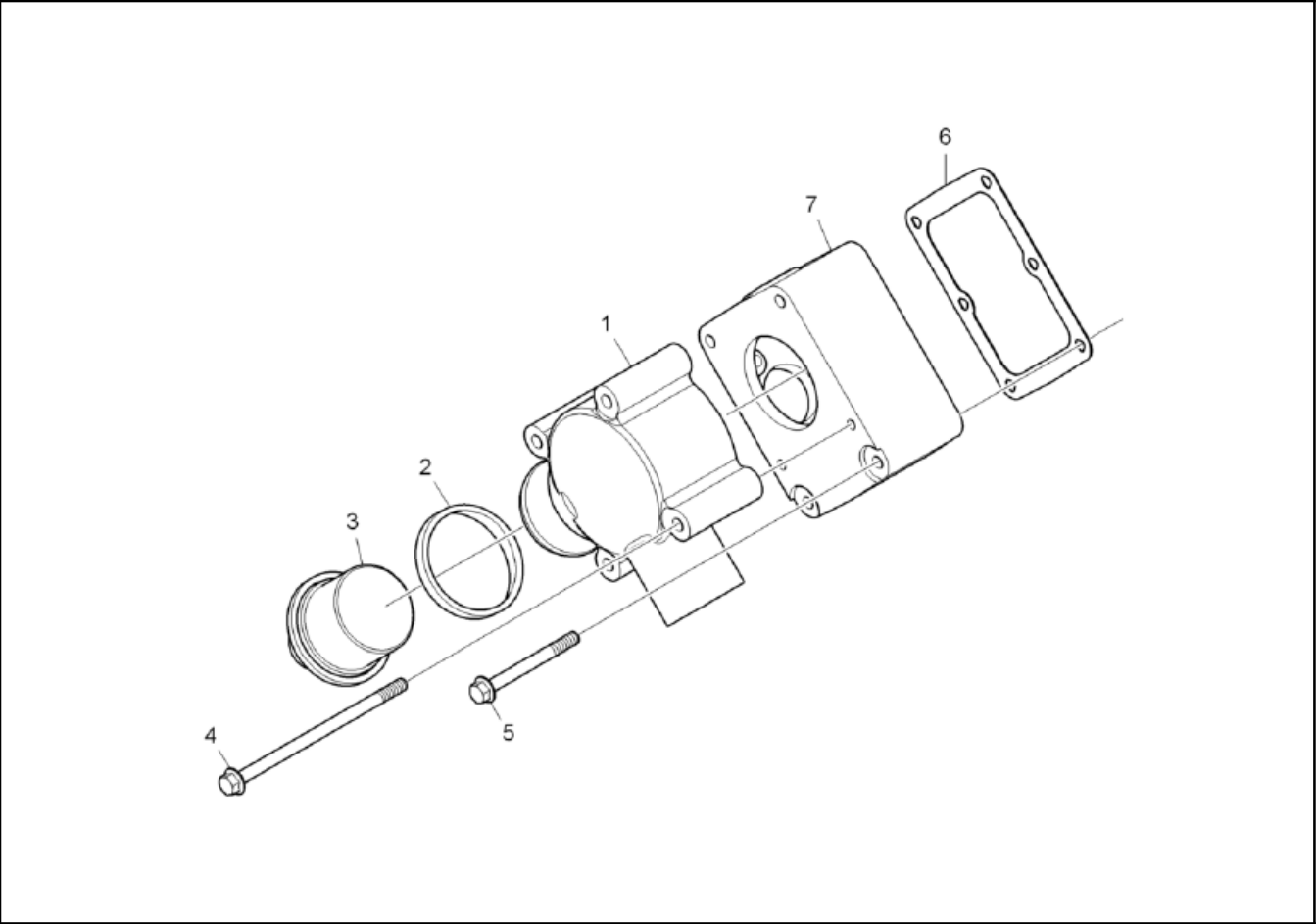
GM109610



Item	Part No.	Description	Qty.
1	GM109200	Thermostat Housing (includes item 2)	1
2	GM108124	Gasket	1
3	GM109201	Flange (includes item 4)	1
4	GM108804	Seal	1
	GM77064	Silicone paste	1
5	GM109203	Thermostat	1
6	GM108219	Flange Screw	4
7	GM108221	Flange Screw	3
8	GM76334	Pipe	1
9	GM76985	O- ring	2

Group 02- 15- 2: Thermostat Housing, Keel Cooling

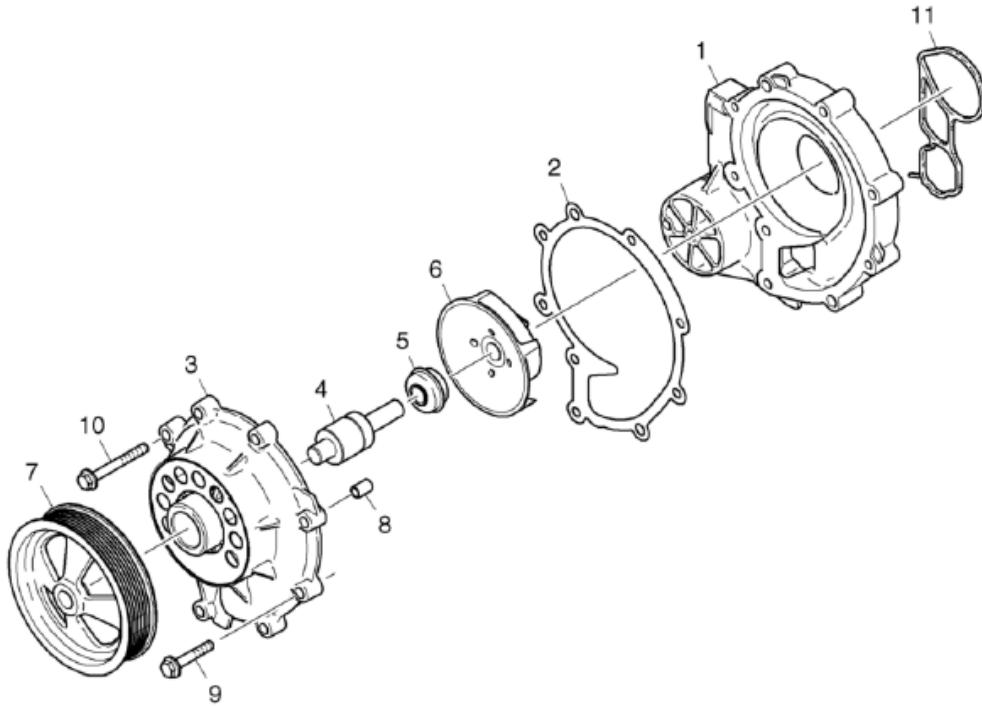
GM109612



Item	Part No.	Description	Qty.
1	GM109217	Thermostat Housing (includes item 2)	1
2	GM108124	Gasket	1
3	GM109203	Thermostat	1
4	GM109218	Flange Screw	2
5	GM108221	Flange Screw	4
6	GM76557	Gasket	1
7	GM109219	Flange	1

Group 2-25- 1: Coolant Pump

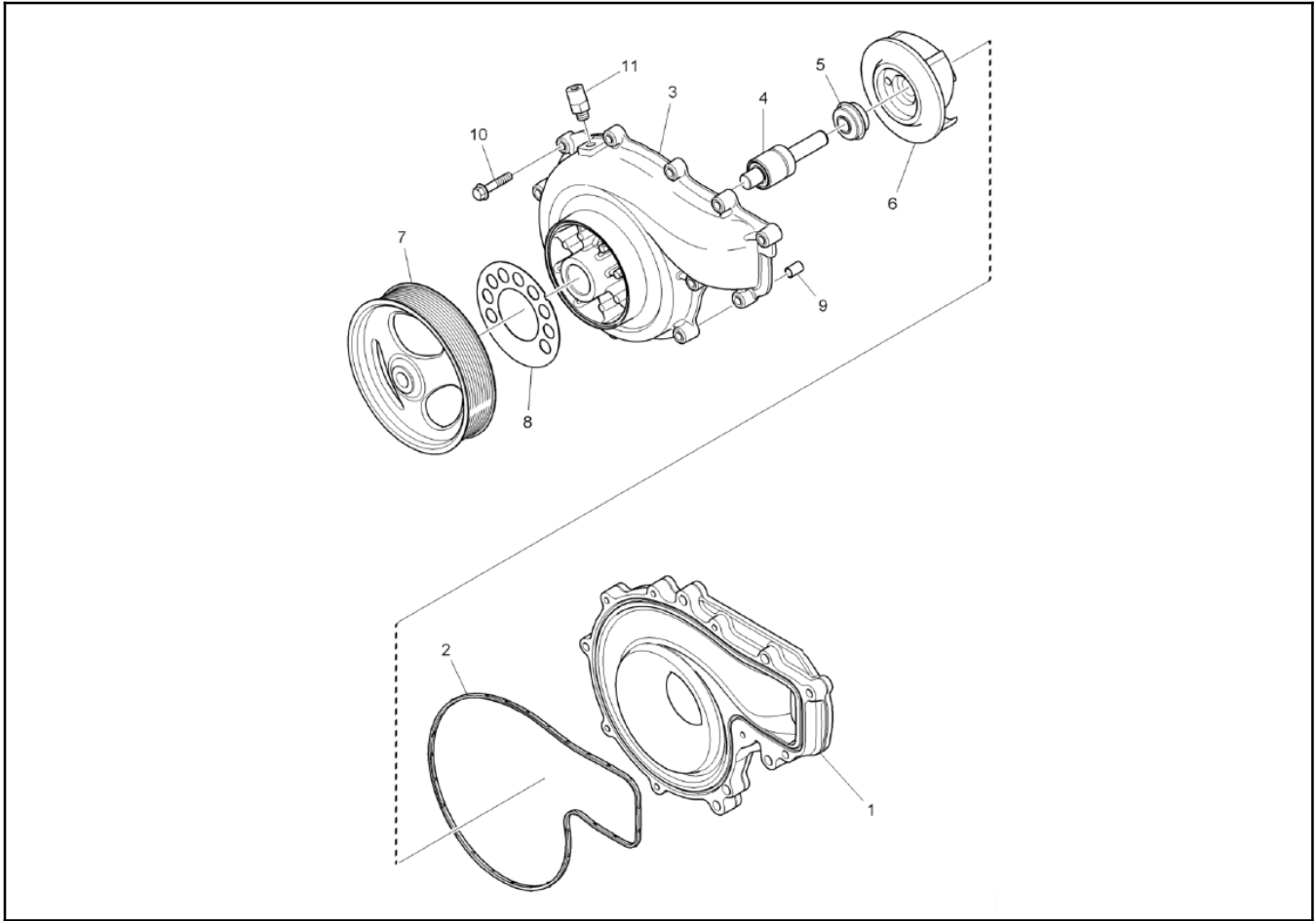
GM109613



Item	Part No.	Description	Qty.
1	GM108168	Coolant Pump (includes items 2- 9)	1
2	GM108848	Gasket	1
8	GM76241	Guide sleeve	2
9	GM108182	Screw	3
10	GM108217	Flange Screw	6
11	GM108597	Seal	1

Group 2-25- 1: Coolant Pump

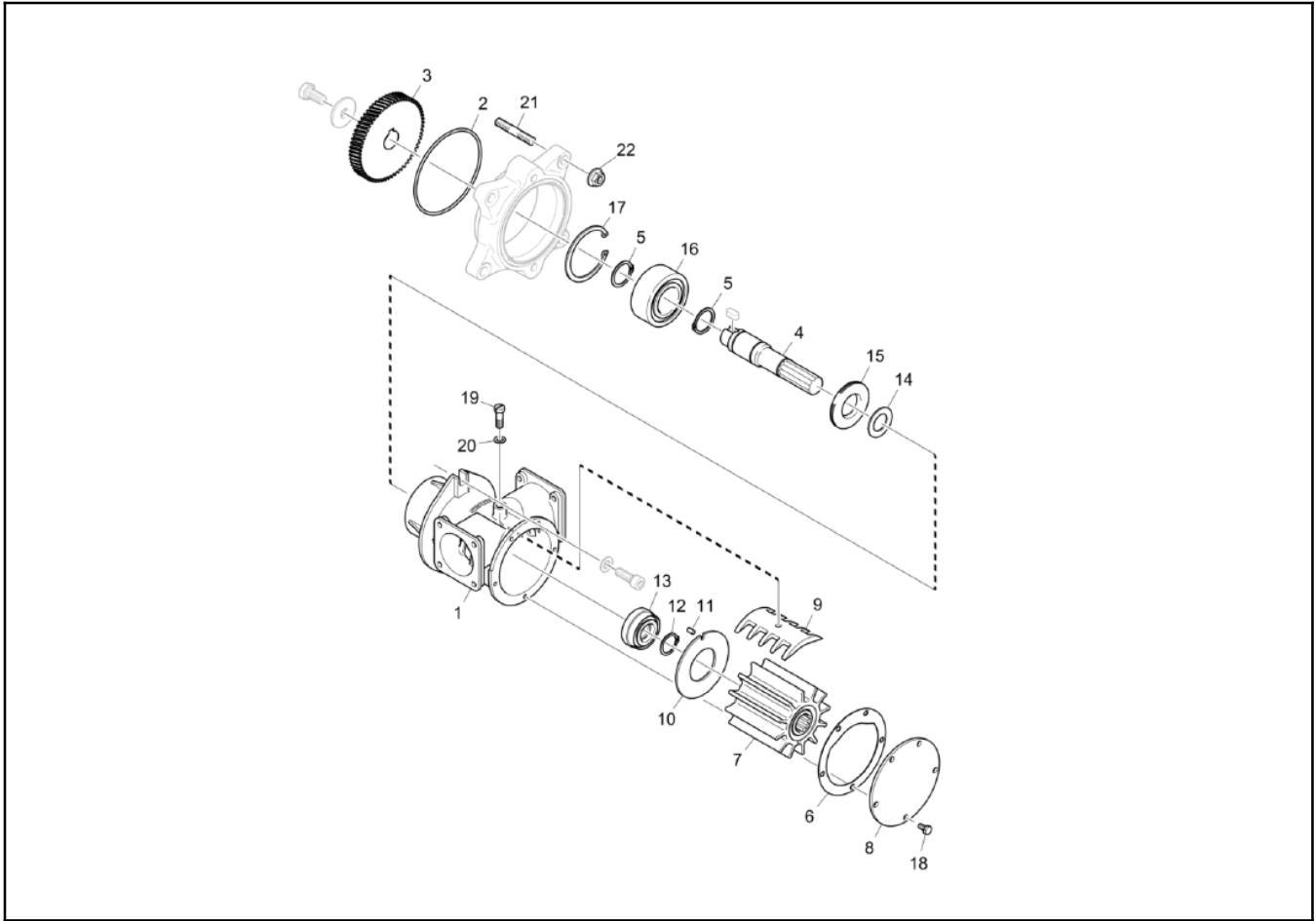
GM109615



Item	Part No.	Description	Qty.
	GM108164	Coolant Pump (includes items 2- 9)	1
2	GM108599	Seal	1
9	GM76241	Guide sleeve	2
10	GM108216	Flange Screw	7
11	GM108395	Insert Connection	1

Group 2- 25- 2: Sea Water Pump

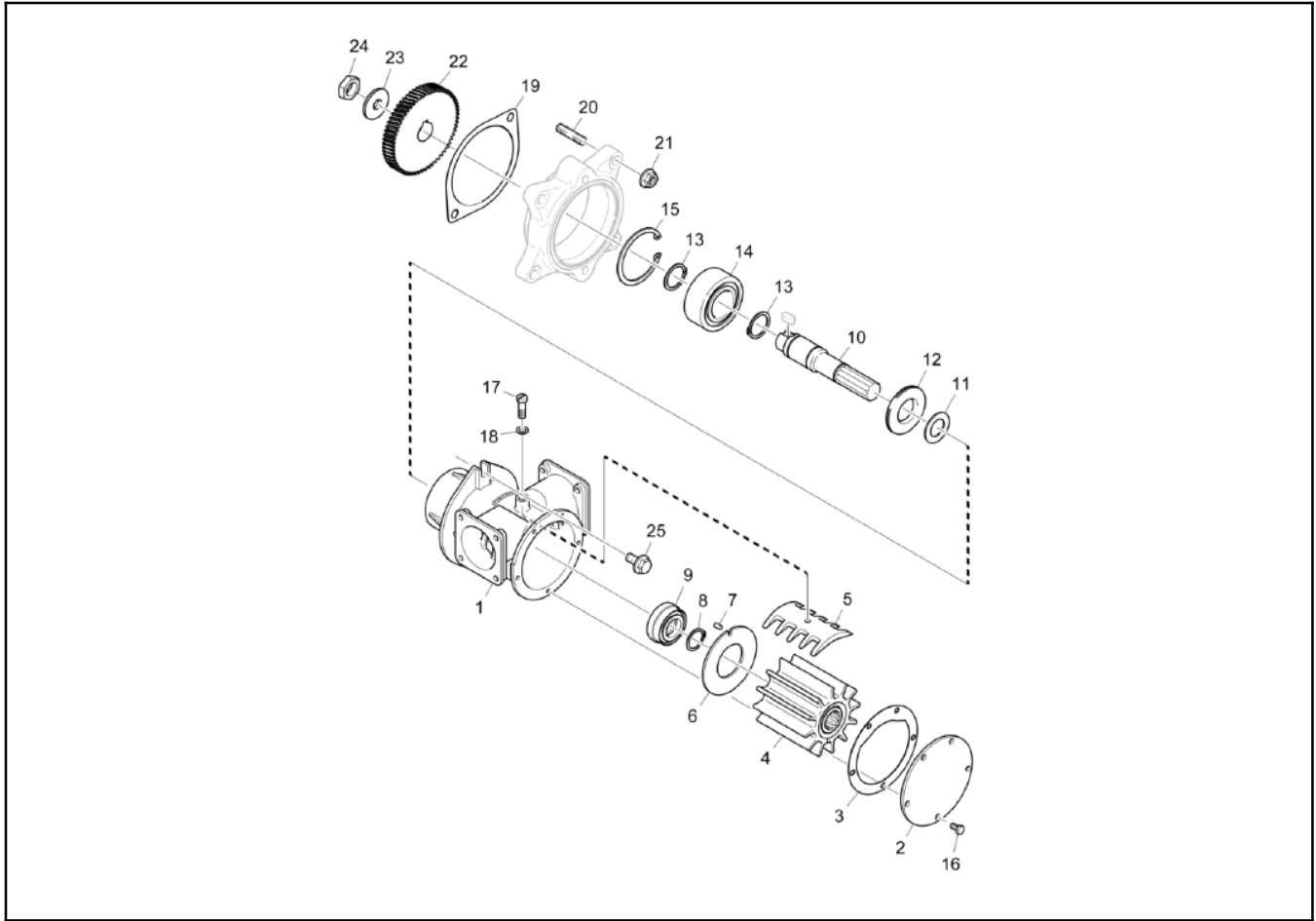
GM109614



Item	Part No.	Description	Qty.
	GM108661	Sea Water Pump (includes items 1- 18)	1
1	GM76209	Pump housing	1
2	GM76925	O- ring	1
3	GM108677	Gear	1
	GM106505	Repair Kit, Seawater Impeller (includes items 6- 7)	1
	GM108987	Repair Kit (includes items 6, 8- 14, 19, 20)	1
	GM108988	Repair Kit (includes items 14- 17)	1
	GM108990	Repair Kit (includes item 18)	1
21	GM108492	Stud	4
22	GM108262	Flange Nut	4

Group 2-25-2: Seawater Pump

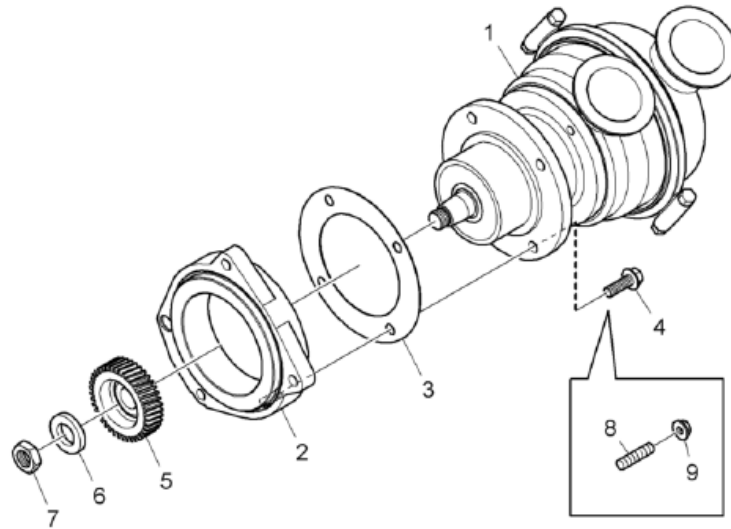
GM109617



Item	Part No.	Description	Qty.
1	GM67255	Sea water pump assy. (includes items 1- 16)	1
	GM76209	Pump housing	1
	GM106505	Repair Kit, Seawater Impeller (includes items 3- 4)	1
	GM109025	Repair Kit (includes item 3)	1
	GM106506	Kit, Pump Repair (includes items 2, 3, 5-9, 11, 17, 18)	1
	GM108989	Repair Kit (includes items 10- 15)	1
	GM108990	Repair Kit (includes item 16)	1
19	GM67220	Sea water pump gasket	1
20	GM76971	Stud, M10x45	2
21	GM108262	Flange Nut	2
22	GM108627	Gear	1
23	GM76655	Separator insert	1
24	GM108249	Hexagon Nut	1
25	GM108227	Flange Screw	2

Group 02-25-2: Sea Water Pump, Keel Cooling

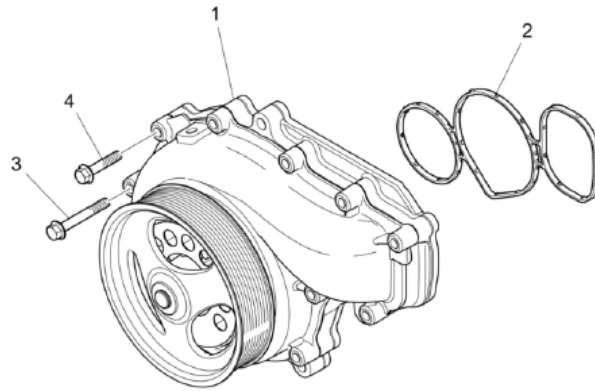
GM109618



Item	Part No.	Description	Qty.
1	GM109220	Sea Water Pump	1
3	GM109222	Gasket	1
4	GM108227	Flange Screw	4
5	GM108627	Gear	1
6	GM76655	Separator insert	1
7	GM108249	Hexagon Nut	1
8	GM108369	Stud	4
9	GM108262	Flange Nut	4

Group 2-25-3: Coolant Pump, Mounting

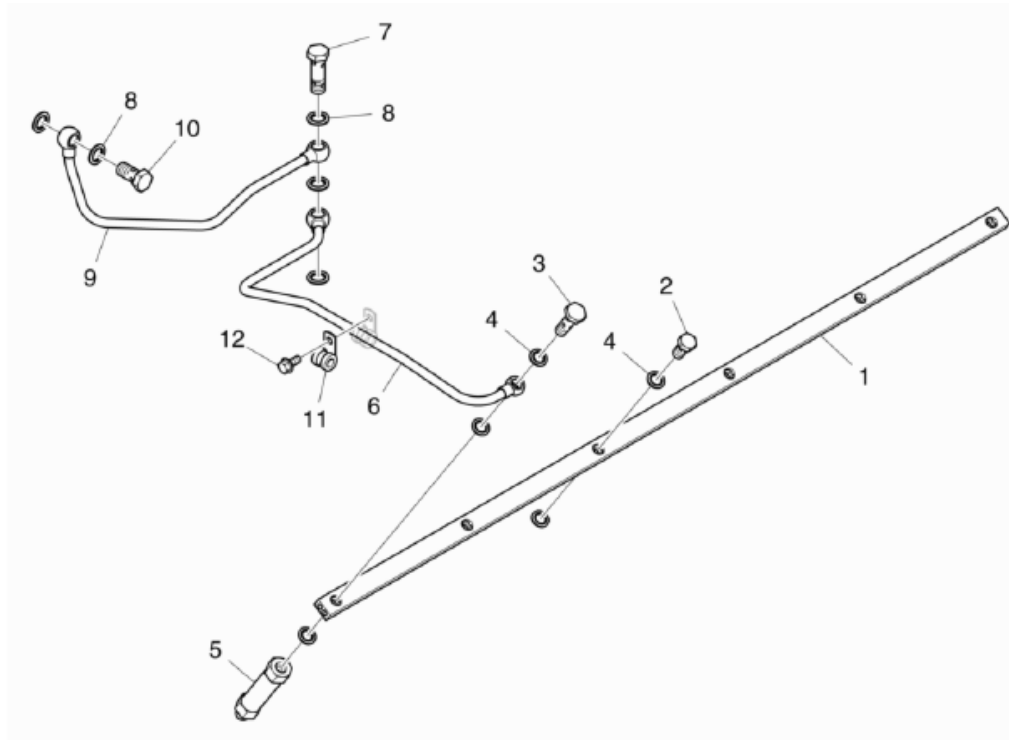
GM109616



Item	Part No.	Description	Qty.
2	GM108598	Gasket	1
3	GM108219	Flange Screw	4
4	GM108229	Screw	3

Group 2- 30- 1: Bleed Pipe, Engine, Heat Exchanger

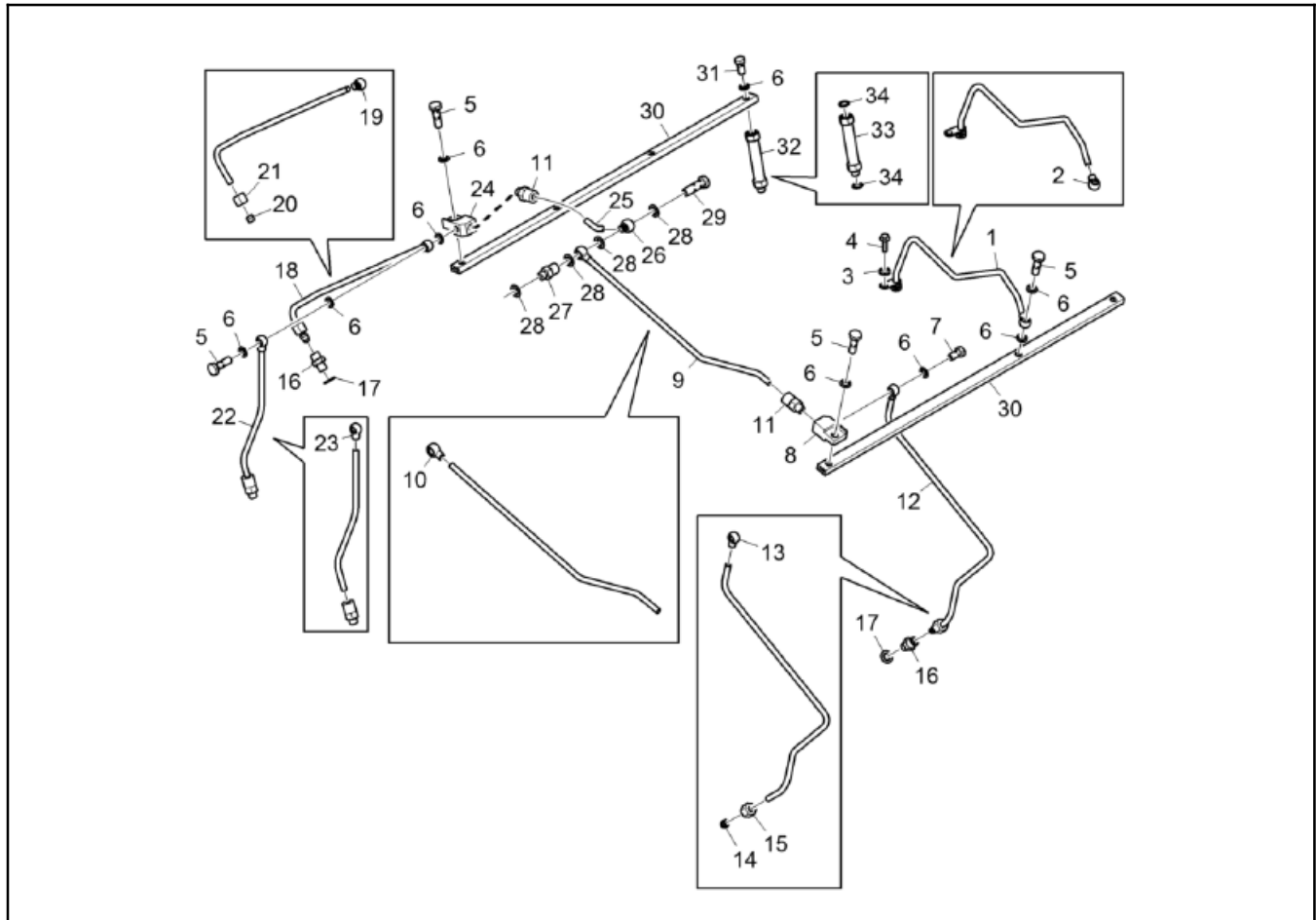
GM109621



Item	Part No.	Description	Qty.
1	GM108536	Pipe	1
2	GM77015	Banjo screw, M10x1	5
3	GM76894	Banjo screw	1
4	GM108993	Seal	13
5	GM76571	Connector	6
6	GM108728	Pipe	1
	GM108202	Banjo Union	2
7	GM108466	Banjo Screw	1
8	GM108994	Seal	5
9	GM108729	Pipe	1
	GM108202	Banjo Union	1
10	GM108200	Banjo Screw	1
11	GM77051	Clamp	1
12	GM108207	Screw	1

Group 2-30-1: Bleed Pipe, Engine, Heat Exchanger

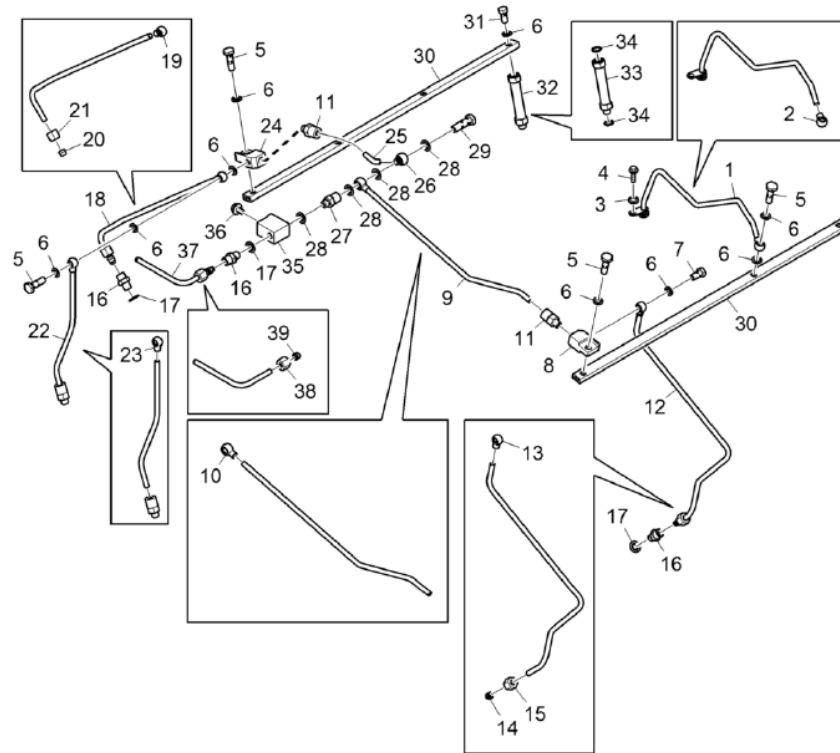
GM109626



Item	Part No.	Description	Qty.	Item	Part No.	Description	Qty.
1	GM108795	Pipe (includes item 2)	1	32	GM108788	Union (includes items 33- 34)	8
3	GM76957	O- ring	1	34	GM108362	Insert Connection	2
4	GM108208	Flange Screw	1				
5	GM76894	Banjo screw	4				
6	GM108993	Seal	16				
7	GM77015	Banjo screw, M10x1	1				
8	GM108787	Flange	1				
9	GM108794	Pipe (includes item 10)	1				
10	GM108202	Banjo Union	1				
11	GM108395	Insert Connection	2				
12	GM108790	Pipe (includes items 13- 15)	1				
14	GM77047	Ferrule	1				
15	GM77058	Union nut	1				
16	GM77040	Straight union	2				
17	GM108972	Seal	2				
18	GM108791	Pipe (includes items 19- 21)	1				
20	GM77047	Ferrule	1				
21	GM77058	Union nut	1				
22	GM108792	Pipe (includes item 23)	1				
24	GM108787	Flange	1				
25	GM108793	Pipe (includes item 26)	1				
26	GM108202	Banjo Union	1				
27	GM108789	Union	1				
28	GM108994	Seal	4				
29	GM108466	Banjo Screw	1				
30	GM108786	Pipe	2				
31	GM77015	Banjo screw, M10x1	5				

Group 02- 30- 1: Bleed Pipe, Engine, Keel Cooling

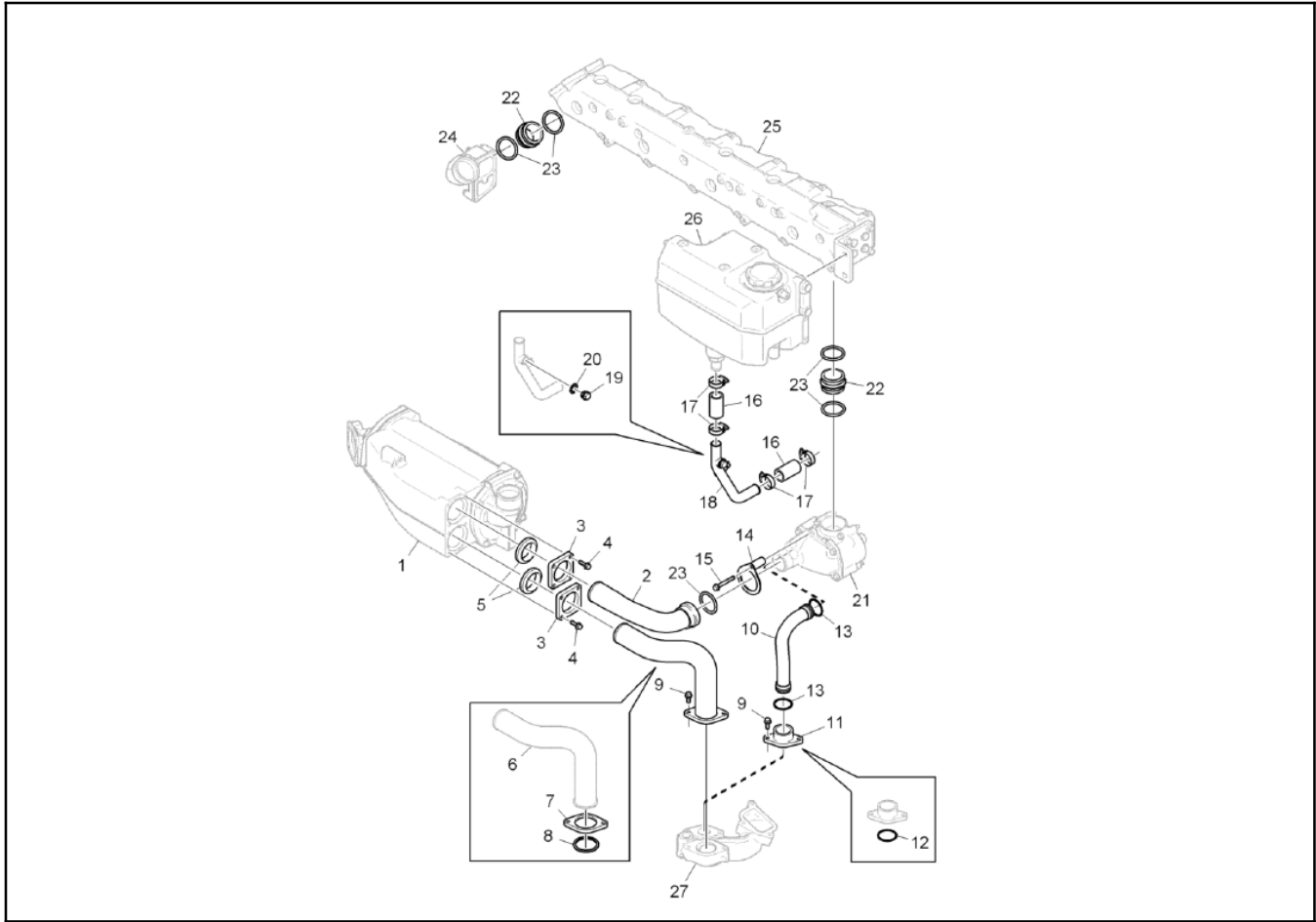
GM109627



Item	Part No.	Description	Qty.	Item	Part No.	Description	Qty.
1	GM108795	Pipe (includes item 2)	1	34	GM108362	Insert Connection	2
3	GM76957	O- ring	1	35	GM109241	Flange	1
4	GM108208	Flange Screw	1	36	GM108211	Flange Screw	1
5	GM76894	Banjo screw	4	37	GM109242	Pipe (includes items 38- 39)	1
6	GM108993	Seal	16	38	GM77058	Union nut	1
7	GM77015	Banjo screw, M10x1	1	39	GM77047	Ferrule	1
8	GM108787	Flange	1				
9	GM108794	Pipe (includes item 10)	1				
10	GM108202	Banjo Union	1				
11	GM108395	Insert Connection	2				
12	GM108790	Pipe (includes items 13- 15)	1				
14	GM77047	Ferrule	1				
15	GM77058	Union nut	1				
16	GM77040	Straight union	3				
17	GM108972	Seal	3				
18	GM108791	Pipe (includes items 19- 21)	1				
20	GM77047	Ferrule	1				
21	GM77058	Union nut	1				
22	GM108792	Pipe (includes items 23)	1				
24	GM108787	Flange	1				
25	GM108793	Pipe (includes items 26)	1				
26	GM108202	Banjo Union	1				
27	GM108789	Union	1				
28	GM108994	Seal	4				
29	GM108466	Banjo Screw	1				
30	GM108786	Pipe	2				
31	GM77015	Banjo screw, M10x1	5				
32	GM108788	Union (includes items 33- 34)	8				

Group 2- 30- 2: Cooling, Heat Exchanger

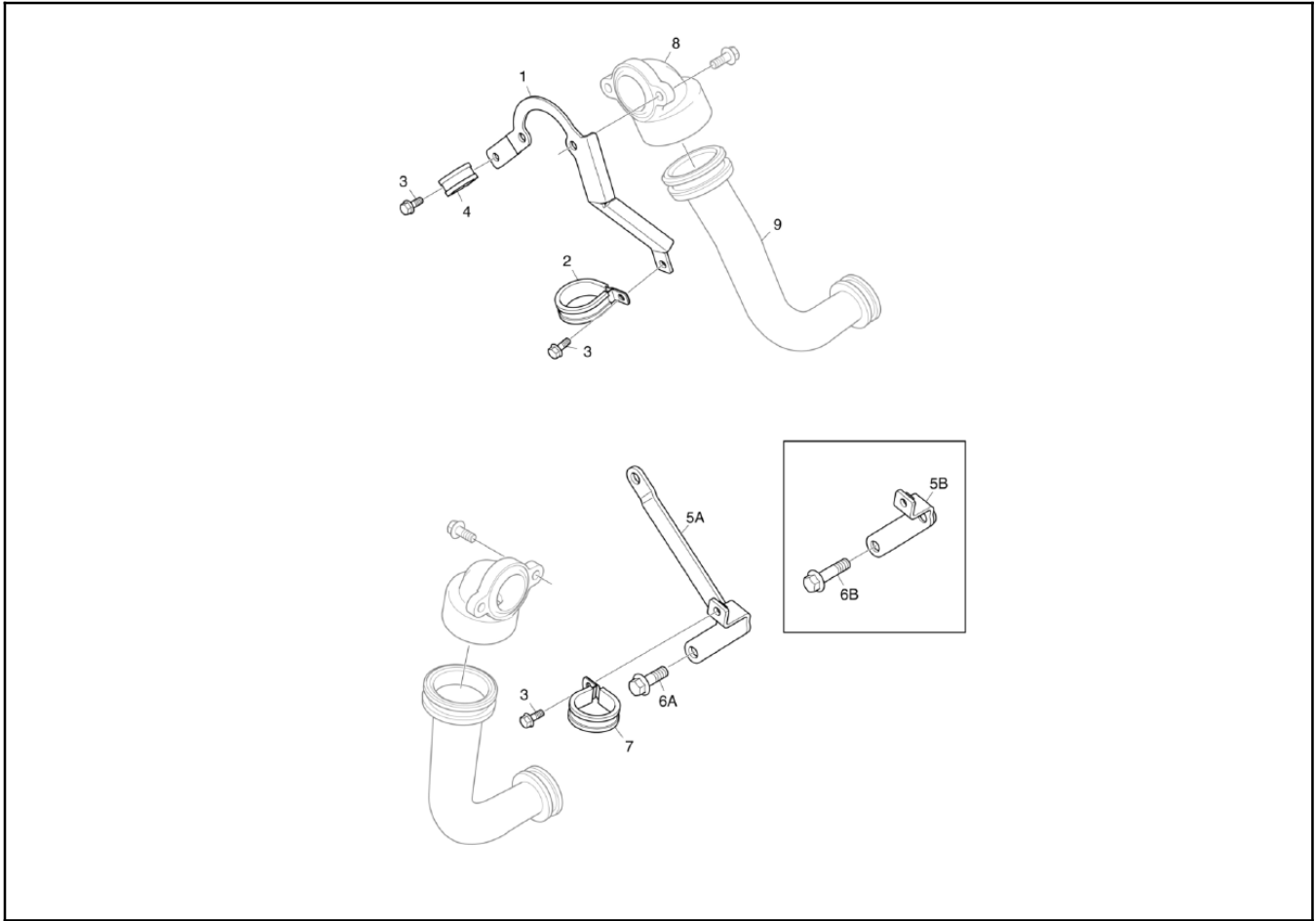
GM109624



Item	Part No.	Description	Qty.
2	GM108561	Water Pipe	1
3	GM76197	Flange	2
4	GM108213	Flange Screw	8
5	GM76954	Ring	2
6	GM108562	Water Pipe (includes items 7-8)	1
8	GM108560	Seal	1
9	GM108213	Flange Screw	4
10	GM108596	Water Pipe	1
11	GM108767	Flange (includes item 12)	1
12	GM108363	O- Ring	1
13	GM76995	O- ring	2
14	GM108600	Bracket	1
15	GM108219	Flange Screw	1
16	GM108564	Hose	2
17	GM108278	Hose Clamp	4
18	GM108563	Water Pipe (includes items 19-20)	1
19	GM77012	Screw plug, M18x1.5x9	1
20	GM108975	Seal	1
22	GM76334	Pipe	2
23	GM76985	O- ring	4

Group 2-30-2: Pipes and Hoses, Heat Exchanger

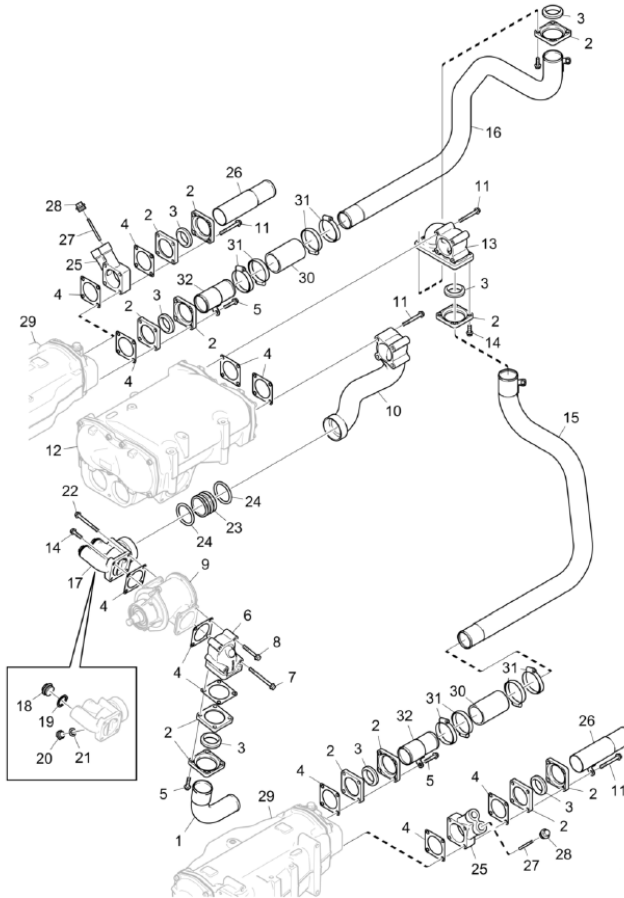
GM109619



Item	Part No.	Description	Qty.
1	GM109060	Bracket	1
2	GM76982	Clamp	1
3	GM108208	Flange Screw	3
4	GM77054	Clamp	1
5A	GM109059	Bracket	1
6A	GM108227	Flange Screw	2
7	GM76982	Clamp	1

Group 2-30-2: Pipes and Hoses, Heat Exchanger

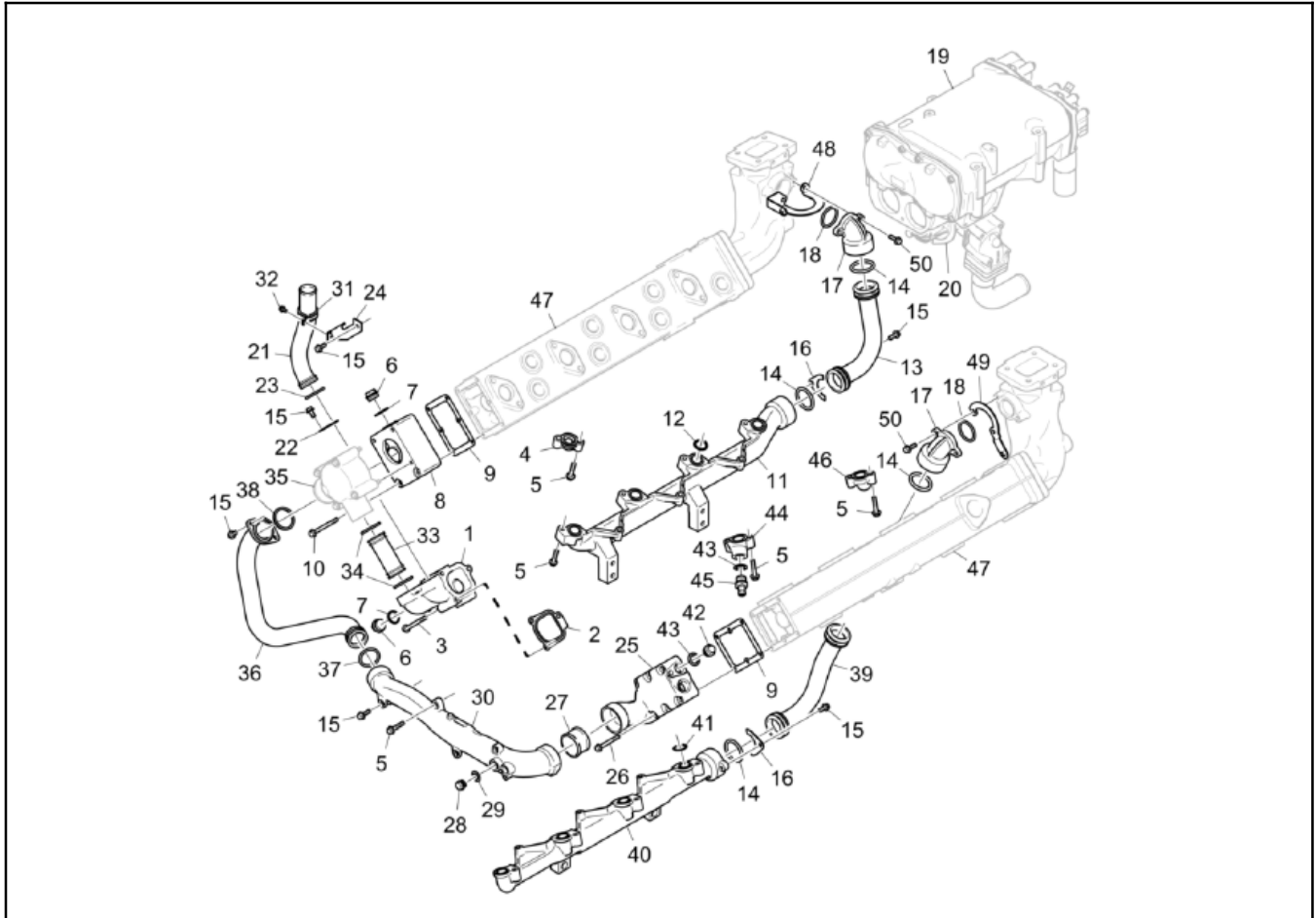
GM109628



Item	Part No.	Description	Qty.	Item	Part No.	Description	Qty.
1	GM109005	Pipe	1	31	GM108279	Hose Clamp	8
2	GM76197	Flange	12	32	GM108969	Water Pipe	2
3	GM76954	Ring	7				
4	GM67257	Sea water pump flange gaskets	11				
5	GM108216	Flange Screw	12				
6	GM108614	Flange Pipe	1				
7	GM108222	Screw	2				
8	GM108218	Flange Screw	2				
10	GM108785	Water Pipe	1				
11	GM108220	Flange Screw	16				
13	GM108477	Flange	1				
14	GM108214	Flange Screw	10				
15	GM108951	Water Pipe	1				
16	GM108950	Water Pipe	1				
17	GM108832	Flange (includes items 18-21)	1				
18	GM108204	Plug	2				
19	GM108978	Seal	2				
20	GM108203	Plug	1				
21	GM108974	Seal	1				
22	GM108221	Flange Screw	2				
23	GM108766	Junction Pipe	1				
24	GM76996	O- ring	2				
25	GM76708	Flange	2				
26	GM76228	Tube	2				
27	GM67214	Sacrificial anode	4				
28	GM76235	Plug	4				
30	GM108690	Hose	2				

Group 02-30-2: Pipes and Hoses, Keel Cooling

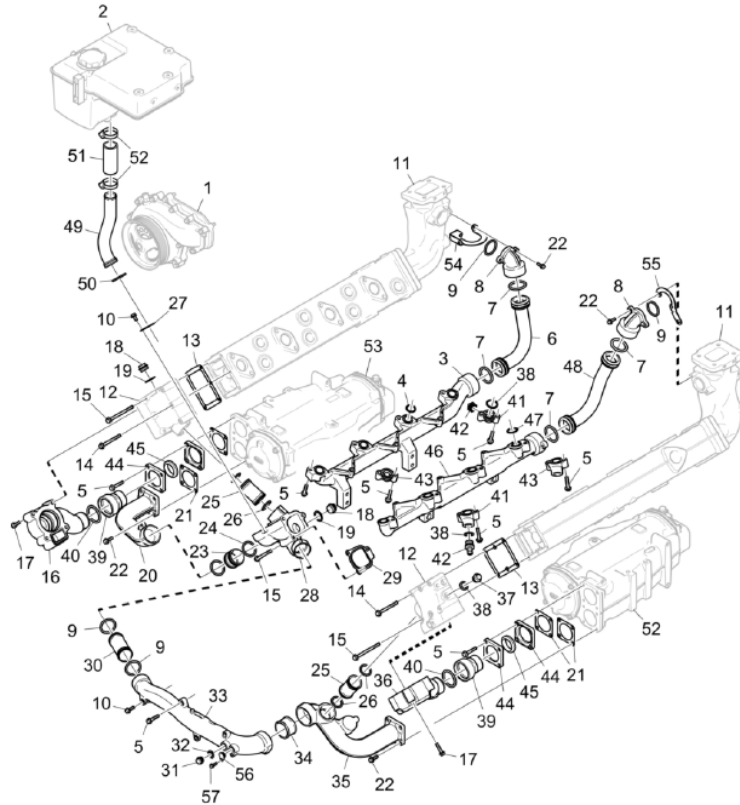
GM109629



Item	Part No.	Description	Qty.	Item	Part No.	Description	Qty.
1	GM109223	Flange	1	31	GM76982	Clamp	1
2	GM108586	Gasket	1	32	GM108206	Flange Screw	1
3	GM108222	Screw	3	33	GM109228	Junction Pipe	1
4	GM108906	Cover	1	34	GM76944	O- ring	2
5	GM108216	Flange Screw	21	36	GM109229	Water Pipe	1
6	GM77014	Screw plug, M26x1.5x9	2	37	GM108633	O- Ring	1
7	GM108977	Seal	2	38	GM67217	Intercooler Thermostat gasket	1
8	GM109219	Flange	1	39	GM108475	Water Pipe	1
9	GM76557	Gasket	2	40	GM109015	Water Pipe	1
10	GM108221	Flange Screw	2	41	GM108839	Seal	4
11	GM109016	Water Pipe (includes item 12)	1	42	GM76235	Plug	2
12	GM108839	Seal	4	43	GM108976	Seal	3
13	GM108474	Water Pipe	1	44	GM109230	Flange Pipe	1
14	GM76985	O- ring	4	45	GM76742	Union	1
15	GM108212	Flange Screw	8	46	GM108906	Cover	1
16	GM109224	Lock Washer	2	48	GM108967	Bracket	1
17	GM109014	Flange	2	49	GM108922	Bracket	1
18	GM76984	O- ring	2	50	GM108213	Flange Screw	4
21	GM108473	Static Line Pipe	1				
22	GM108411	Lock Washer	1				
23	GM76260	O- ring	1				
24	GM109225	Bracket	1				
25	GM109226	Flange	1				
26	GM109227	Screw	6				
27	GM108635	Connecting Pipe	1				
28	GM77012	Screw plug, M18x1.5x9	1				
29	GM108975	Seal	1				
30	GM108932	Pipe	1				

Group 2-30-2: Bleed Pipe

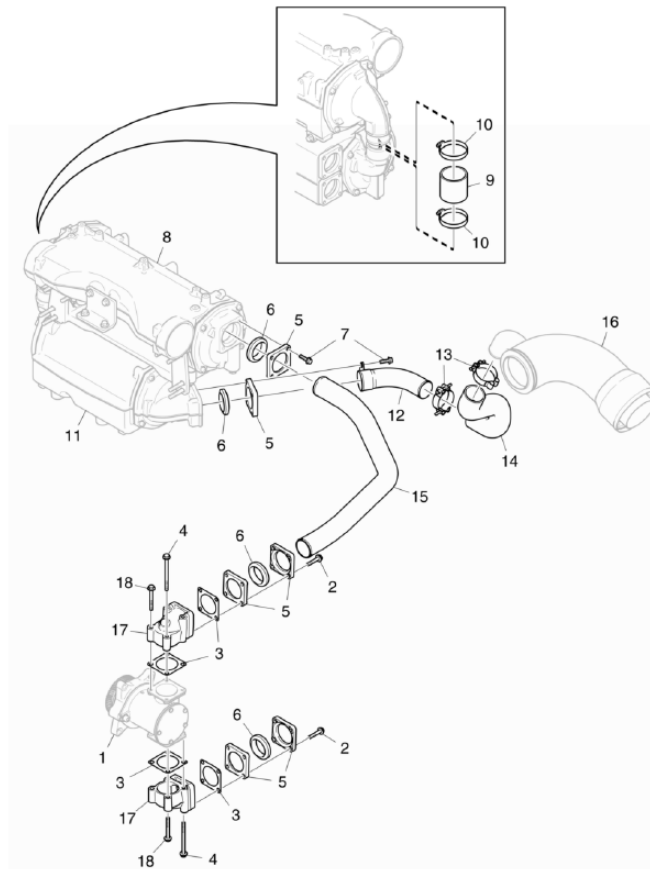
GM109630



Item	Part No.	Description	Qty.	Item	Part No.	Description	Qty.
3	GM109016	Water Pipe (includes item 4)	1	36	GM109063	Thermostat Housing	1
4	GM108839	Seal	4	37	GM108124	Gasket	1
5	GM108216	Flange Screw	31	38	GM76235	Plug	2
6	GM108474	Water Pipe	1	39	GM108528	Junction Pipe	2
7	GM76985	O- ring	4	40	GM76996	O- ring	2
8	GM109014	Flange	2	41	GM108518	Flange Pipe	2
9	GM76984	O- ring	4	42	GM76849	Union	2
10	GM108212	Flange Screw	3	43	GM108906	Cover	2
13	GM76557	Gasket	2	44	GM76197	Flange	2
14	GM108220	Flange Screw	9	45	GM76954	Ring	2
15	GM108222	Screw	6	46	GM109015	Water Pipe	1
16	GM109062	Thermostat Housing	1	47	GM108839	Seal	4
	GM108124	Gasket	1	48	GM108475	Water Pipe	1
17	GM108215	Flange Screw	8	49	GM108473	Static Line Pipe	1
18	GM77014	Screw plug, M26x1.5x9	3	50	GM76260	O- ring	1
19	GM108977	Seal	3	51	GM108445	Hose	1
20	GM108493	Pipe	1	52	GM108274	Hose Clamp	2
21	GM67257	Sea water pump flange gaskets	4	54	GM108967	Bracket	1
22	GM108213	Flange Screw	12	55	GM108922	Bracket	1
23	GM108507	Junction Pipe	1	56	GM76441	Plug	1
24	GM108197	O- Ring	2	57	GM108207	Screw	1
25	GM108828	Junction Pipe	2		GM77042	Straight union	2
26	GM108633	O- Ring	2		GM108131	Hose Union	2
27	GM108411	Lock Washer	1		GM108977	Seal	2
28	GM108626	Flange	1				
29	GM108586	Gasket	1				
30	GM108506	Junction Pipe	1				
31	GM77012	Screw plug, M18x1.5x9	1				
32	GM108975	Seal	1				
33	GM108932	Pipe	1				
34	GM108635	Connecting Pipe	1				
35	GM108622	Pipe	1				

Group 2- 30- 3: Cooling, Heat Exchanger

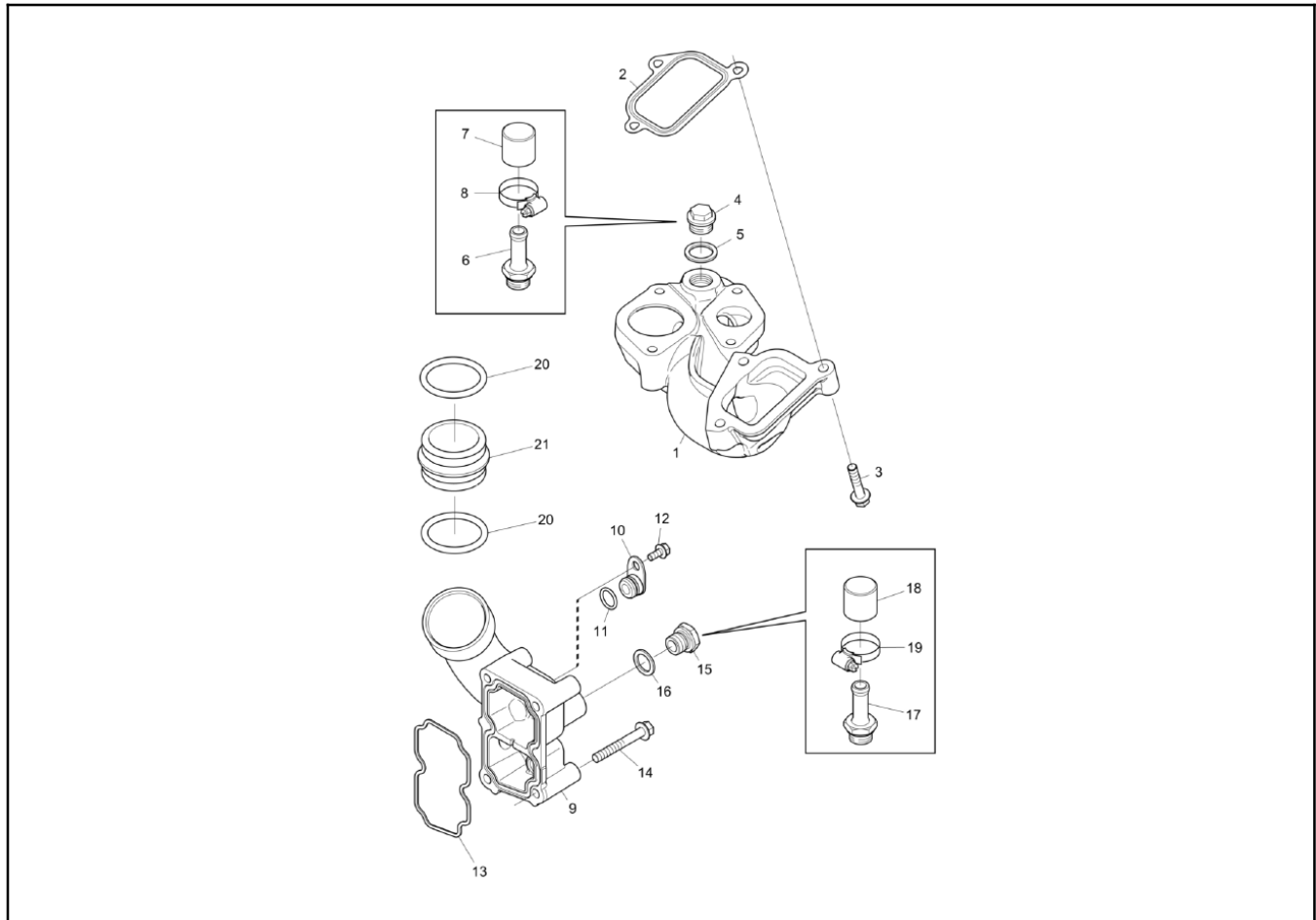
GM109625



Item	Part No.	Description	Qty.
2	GM108216	Flange Screw	8
3	GM67257	Sea water pump flange gaskets	4
4	GM108222	Screw	4
5	GM76197	Flange	6
6	GM76954	Ring	4
7	GM108213	Flange Screw	8
9	GM108905	Hose	1
10	GM108840	Hose Clamp	2
12	GM108552	Water Pipe	1
13	GM108498	Hose Clamp	2
14	GM108553	Hose	1
15	GM108939	Pipe	1
17	GM108614	Flange Pipe	2
18	GM108218	Flange Screw	4

Group 2- 30- 4: Charge Air Cooler, Thermostat

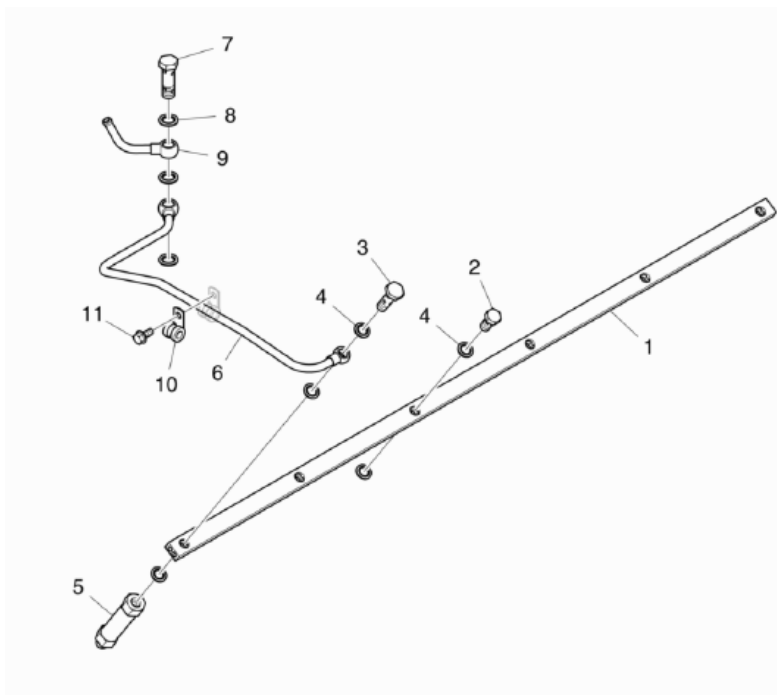
GM109620



Item	Part No.	Description	Qty.
1	GM108557	Flange Pipe	1
2	GM108430	Gasket	1
3	GM108216	Flange Screw	3
4	GM77013	Screw plug, M22x1.5x9	1
5	GM108976	Seal	1
6	GM108517	Union	1
7	GM108122	Plug	1
8	GM108272	Hose Clamp	1
9	GM108938	Flange Pipe	1
10	GM76441	Plug	1
11	GM81450	O- ring	1
12	GM77036	Self- tapping screw, M6x16	1
13	GM108505	Gasket	1
13	GM76287	Gasket	1
14	GM108219	Flange Screw	4
15	GM77013	Screw plug, M22x1.5x9	1
16	GM108976	Seal	1
17	GM108517	Union	1
18	GM108122	Plug	1
19	GM108272	Hose Clamp	1
20	GM76985	O- ring	2
21	GM76334	Pipe	1

Group 02- 30- 5: Bleed Pipe, Engine, Keel Cooling

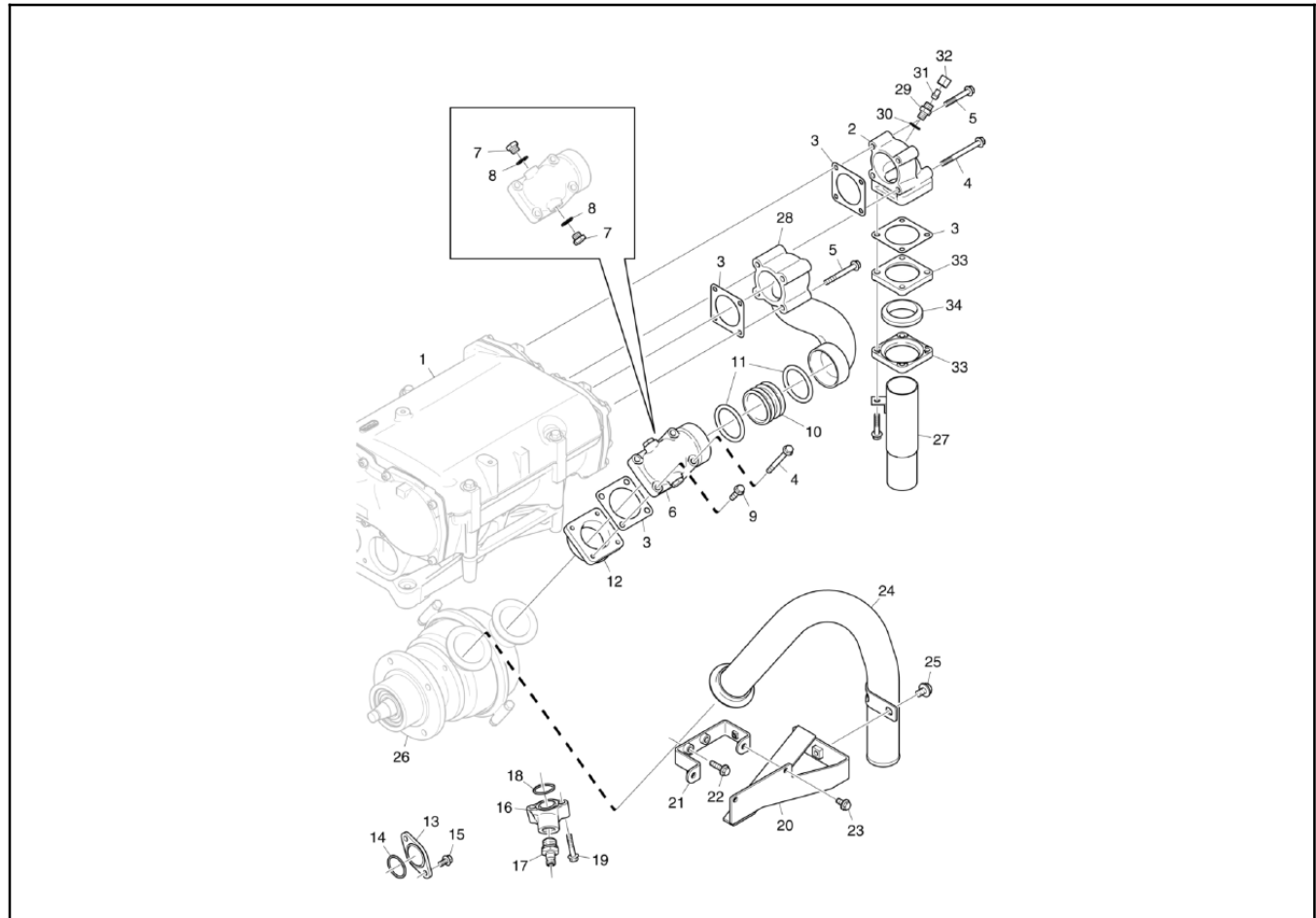
GM109622



Item	Part No.	Description	Qty.
1	GM108536	Pipe	1
2	GM77015	Banjo screw, M10x1	5
3	GM76894	Banjo screw	1
4	GM108993	Seal	13
5	GM76571	Connector	6
6	GM108728	Pipe	1
	GM108202	Banjo Union	1
7	GM108466	Banjo Screw	1
8	GM108994	Seal	3
9	GM109204	Pipe	1
10	GM77051	Clamp	1
11	GM108207	Screw	1

Group 02-30-5: Pipes and Hoses, Keel Cooling

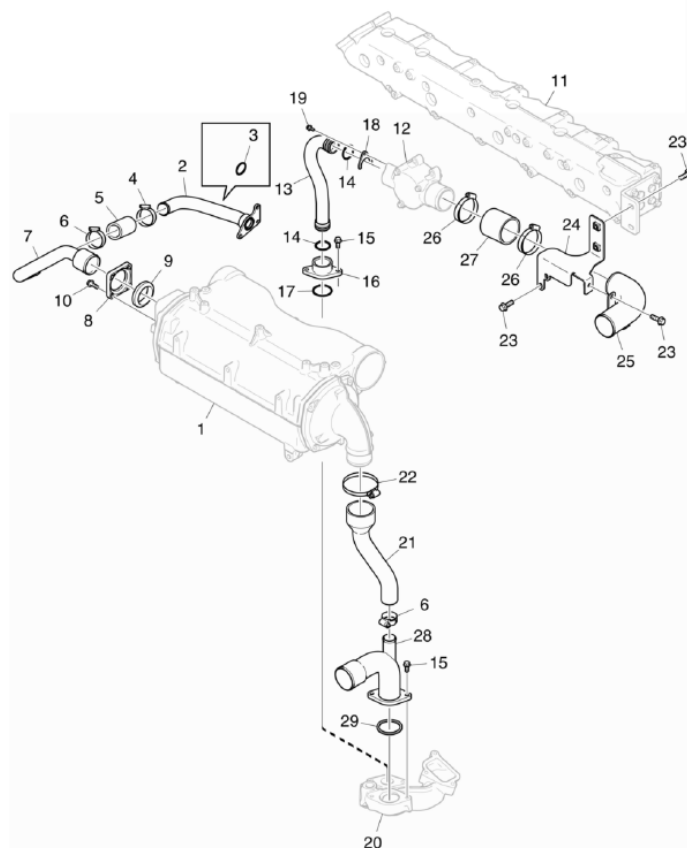
GM109631



Item	Part No.	Description	Qty.	Item	Part No.	Description	Qty.
2	GM109231	Flange Pipe	1	31	GM109239	Plug	1
3	GM67257	Sea water pump flange gaskets	5	32	GM109240	Union Nut	1
4	GM108221	Flange Screw	4	33	GM76197	Flange	2
5	GM108218	Flange Screw	2	34	GM76954	Ring	1
6	GM108832	Flange (includes items 7-8)	1				
7	GM108203	Plug	2				
8	GM108973	Seal	2				
9	GM108214	Flange Screw	2				
10	GM108766	Junction Pipe	1				
11	GM76996	O- ring	2				
12	GM109232	Flange	1				
13	GM109233	Seal	1				
14	GM76260	O- ring	1				
15	GM108212	Flange Screw	2				
16	GM109230	Flange Pipe	1				
17	GM76742	Union (includes item 18)	1				
19	GM108216	Flange Screw	6				
20	GM109234	Bracket	1				
21	GM108965	Bracket	1				
22	GM108213	Flange Screw	2				
23	GM108211	Flange Screw	2				
24	GM109235	Pipe	1				
25	GM108224	Flange Screw	1				
27	GM76228	Tube	1				
27	GM109236	Water Pipe	1				
28	GM109237	Water Pipe	1				
29	GM109238	Straight Union	1				
30	GM108972	Seal	1				

Group 02- 30- 6: Cooling, Keel cooling

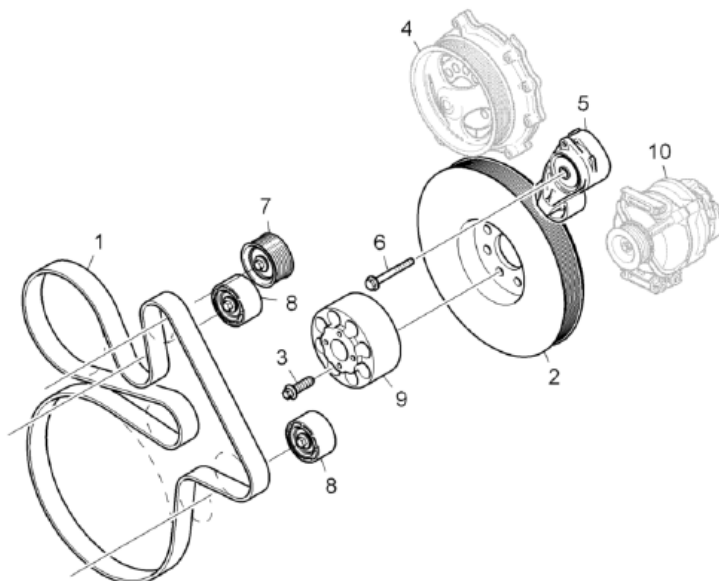
GM109623



Item	Part No.	Description	Qty.
2	GM109205	Flange Pipe (includes item 3)	1
3	GM76937	O- ring	1
4	GM109206	Hose Clamp	1
5	GM109207	Hose	1
6	GM109206	Hose Clamp	2
7	GM109208	Water Pipe	1
8	GM76197	Flange	1
9	GM76954	Ring	1
10	GM108213	Flange Screw	4
13	GM109209	Water Pipe	1
14	GM76995	O- ring	2
15	GM108213	Flange Screw	4
16	GM108767	Flange (includes item 17)	1
17	GM109210	O- Ring	1
18	GM109211	Bracket	1
19	GM108208	Flange Screw	1
21	GM109212	Hose	1
22	GM109213	Hose Clamp	1
23	GM108227	Flange Screw	5
24	GM109214	Bracket	1
25	GM109215	Pipe	1
26	GM108279	Hose Clamp	2
27	GM108905	Hose	1
28	GM109216	Water Pipe	1
29	GM108560	Seal	1

Group 2-35-1: Belt Transmission, Coolant Pump

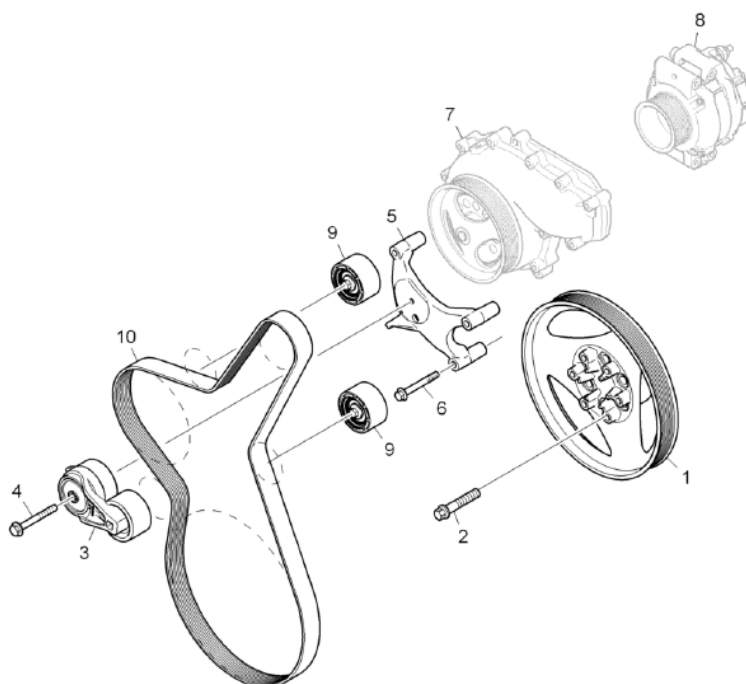
GM109632



Item	Part No.	Description	Qty.
1	GM107935	V- belt (L=2630 mm)	1
3	GM108532	Screw	8
5	GM108924	Belt Tensioner	1
6	GM108233	Flange Screw	1
7	GM108844	Idler Roller	1
8	GM108843	Idler Roller	2
9	GM108638	Shaft Journal	1

Group 2- 35- 1: Belt Transmission, Coolant Pump

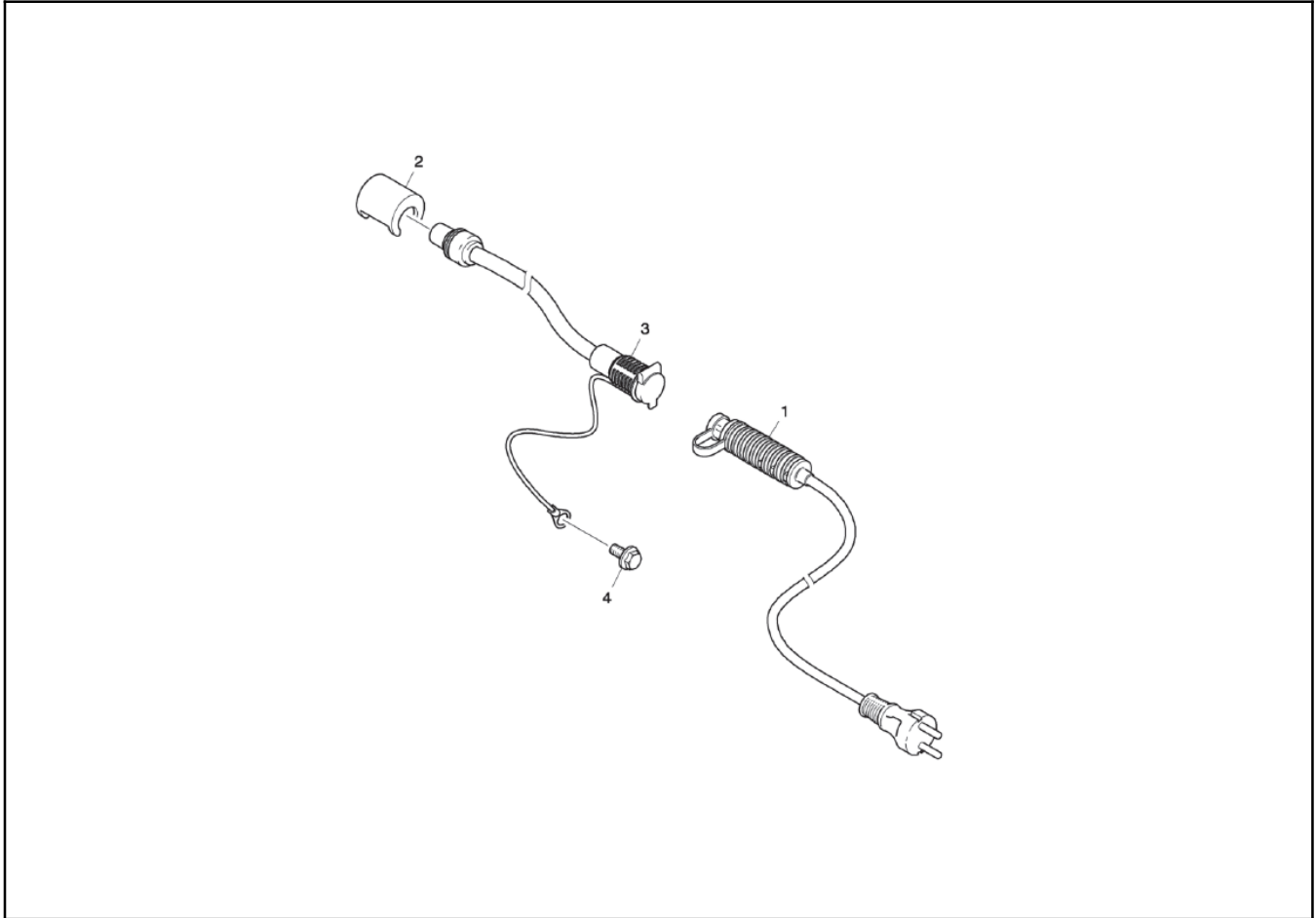
GM109633



Item	Part No.	Description	Qty.
1	GM108980	Pulley	1
2	GM108300	Screw	6
3	GM108923	Belt Tensioner	1
4	GM108233	Flange Screw	1
5	GM108637	Bracket	1
6	GM108233	Flange Screw	3
9	GM108843	Idler Roller	2
10	GM107939	V- belt (L=2035 mm)	1

Group 2-40-1: Connection Cable, Auxiliary Heater, Engine

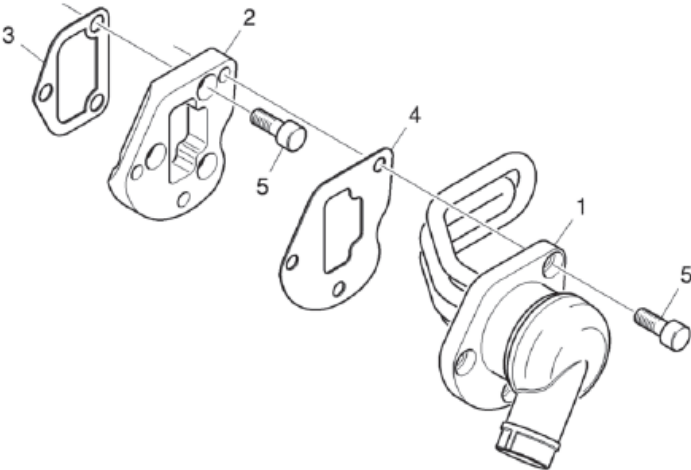
GM109634



Item	Part No.	Description	Qty	Remark
1	GM108613	Mounting Kit	1	230V, includes items below
	GM108606	Mounting Kit Bag	1	
	GM108367	Connection Cable	1	
	GM108444	Clamp	1	
2	GM108444	Clamp	1	115V, includes items below
3	GM108441	Input Cable (L=1500 mm)	1	
	GM108370	Input Cable (L=750 mm Option)	1	
	GM108747	Mounting Kit	1	
1	GM108606	Mounting Kit Bag	1	
	GM108749	Connection Cable	1	
	GM108444	Clamp	1	
	GM108748	Input Cable	1	
4	GM108236	Self- Tapping Screw	1	

Group 02-40-2: Auxiliary Heater, Engine, Immersion Heater, Thermostat

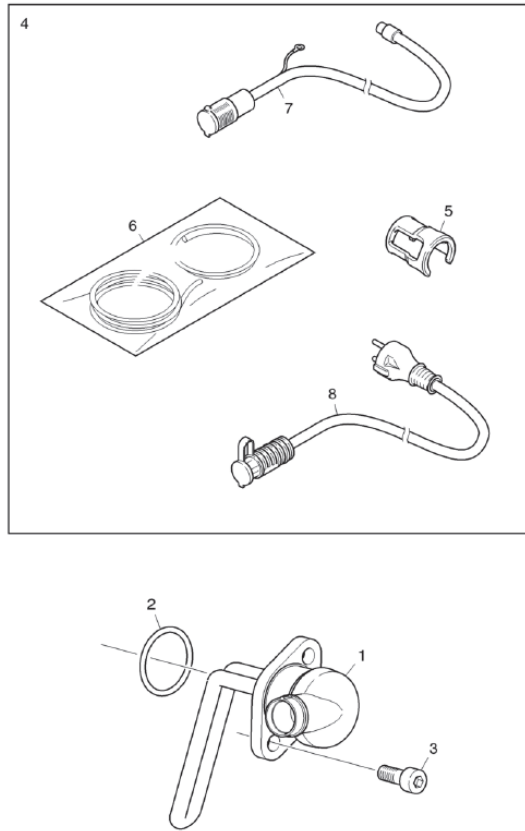
GM109635



Item	Part No.	Description	Qty.
1	GM105474	Block Heater, 550W/230V	1
2	GM109098	Adapter Plate	1
3	GM76321	Gasket	1
4	GM109099	Gasket	1
5	GM109100	M6 x 16 Screw	6

Group 02-40-2: Auxiliary Heater, Engine, Immersion Heater, Thermostat

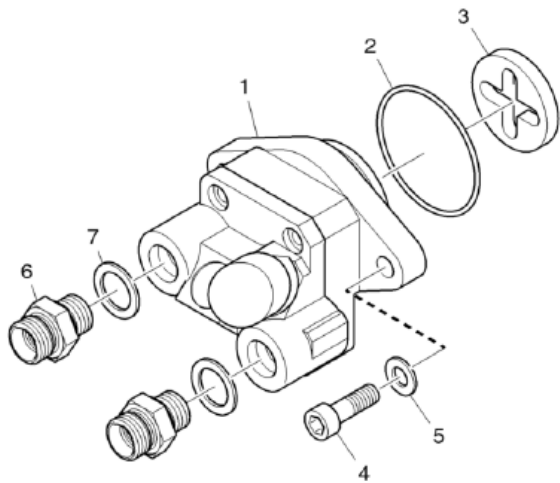
GM109636



Item	Part No.	Description	Qty.
1	GM106976	Block Heater, 550W/230V	1
2	GM109101	O- Ring Diameter 32 x 3 x 38	1
3	GM109102	M8 x 20 Hexagon Socket Screw	2
4	GM108613	Mounting Kit, 230V (includes items 5- 8)	1
5	GM108444	Clamp	1
6	GM108606	Mounting Kit	1
7	GM108441	Input Cable	1
8	GM108367	Connection Cable	1
4	GM108747	Mounting Kit, 115V (includes items 5- 8)	1
5	GM108444	Clamp	1
6	GM108606	Mounting Kit	1
7	GM108748	Input Cable	1
8	GM108749	Connection Cable	1

Group 3-01-1: Feed Pump

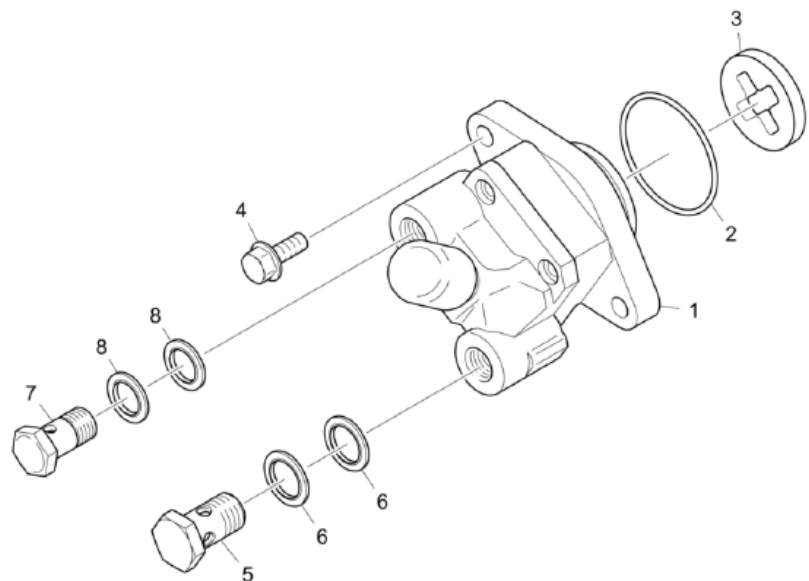
GM109639



Item	Part No.	Description	Qty.
1	GM67240	Fuel feed pump (includes pump and O- ring)	1
	GM76420	Hand pump	1
2	GM76984	O- ring	1
3	GM76743	Coupling sleeve	1
4	GM108270	Flange Screw	2
5	GM108174	Washer	2
6	GM77041	Straight union	2
7	GM108974	Seal	2

Group 3-01-1: Feed Pump

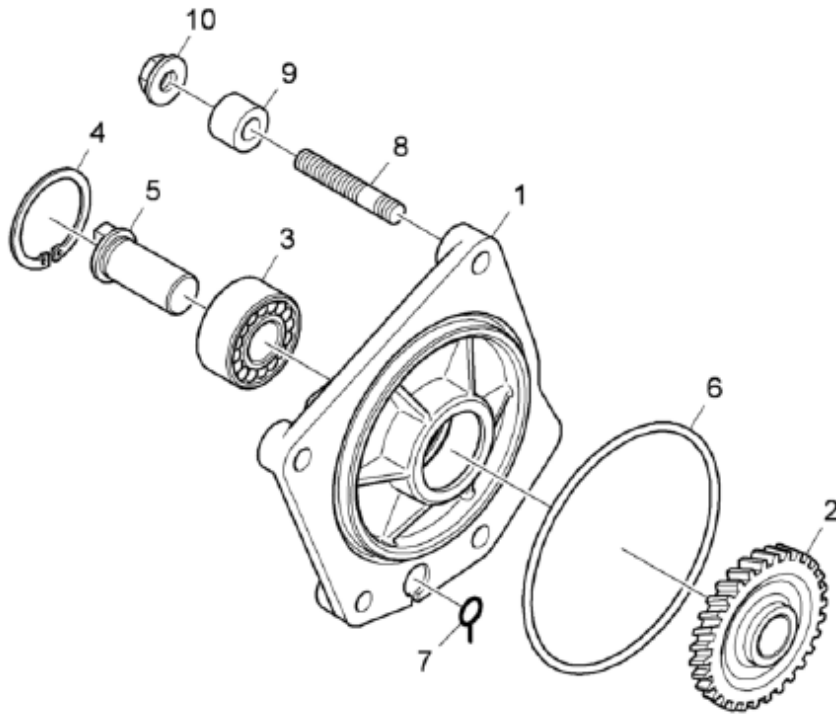
GM109640



Item	Part No.	Description	Qty.
1	GM108165	Feed Pump	1
2	GM76984	O- ring	1
3	GM76743	Coupling sleeve	1
4	GM108214	Flange Screw	2
5	GM77016	Banjo screw, M16x1.5	1
6	GM108996	Seal	2
7	GM108201	Banjo Screw	1
8	GM108995	Seal	2

Group 3-01-2: Feed Pump, Drive

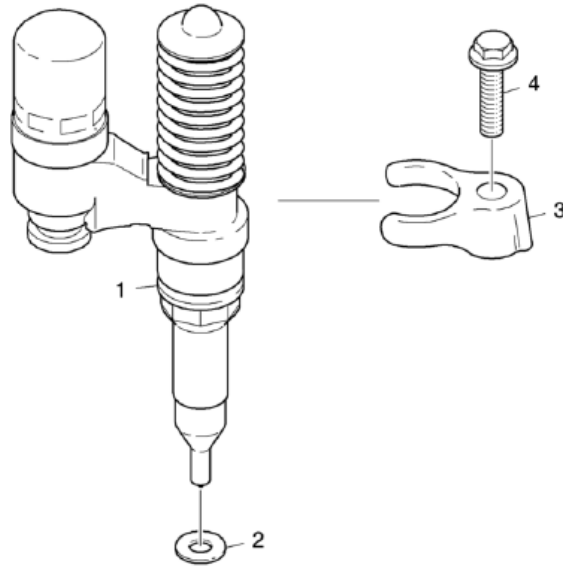
GM109638



Item	Part No.	Description	Qty.
	GM108784	Flange assy (includes items 2- 5)	1
2	GM76278	Gear	1
3	GM76220	Ball bearing	1
4	GM76988	Retaining ring	1
5	GM76277	Shaft	1
6	GM76925	O- ring	1
7	GM108605	O- Ring	1
8	GM108492	Stud	3
9	GM108304	Spacing Sleeve	3
10	GM108262	Flange Nut	3

Group 3-01-3: Unit Injector

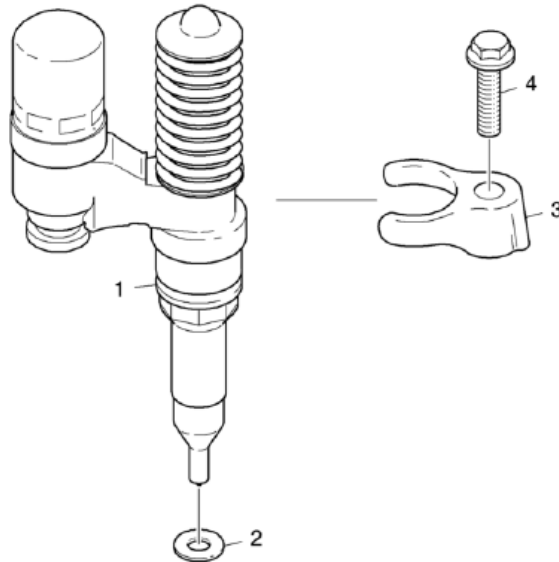
GM109637



Item	Part No.	Description	Qty.
1	GM108166	Unit Injector (includes nozzle)	6
	GM108437	Injection Nozzle	1
2	GM108752	Gasket	6
3	GM108892	Clamp	6
4	GM108424	Screw	6

Group 3-01-3: Unit Injector

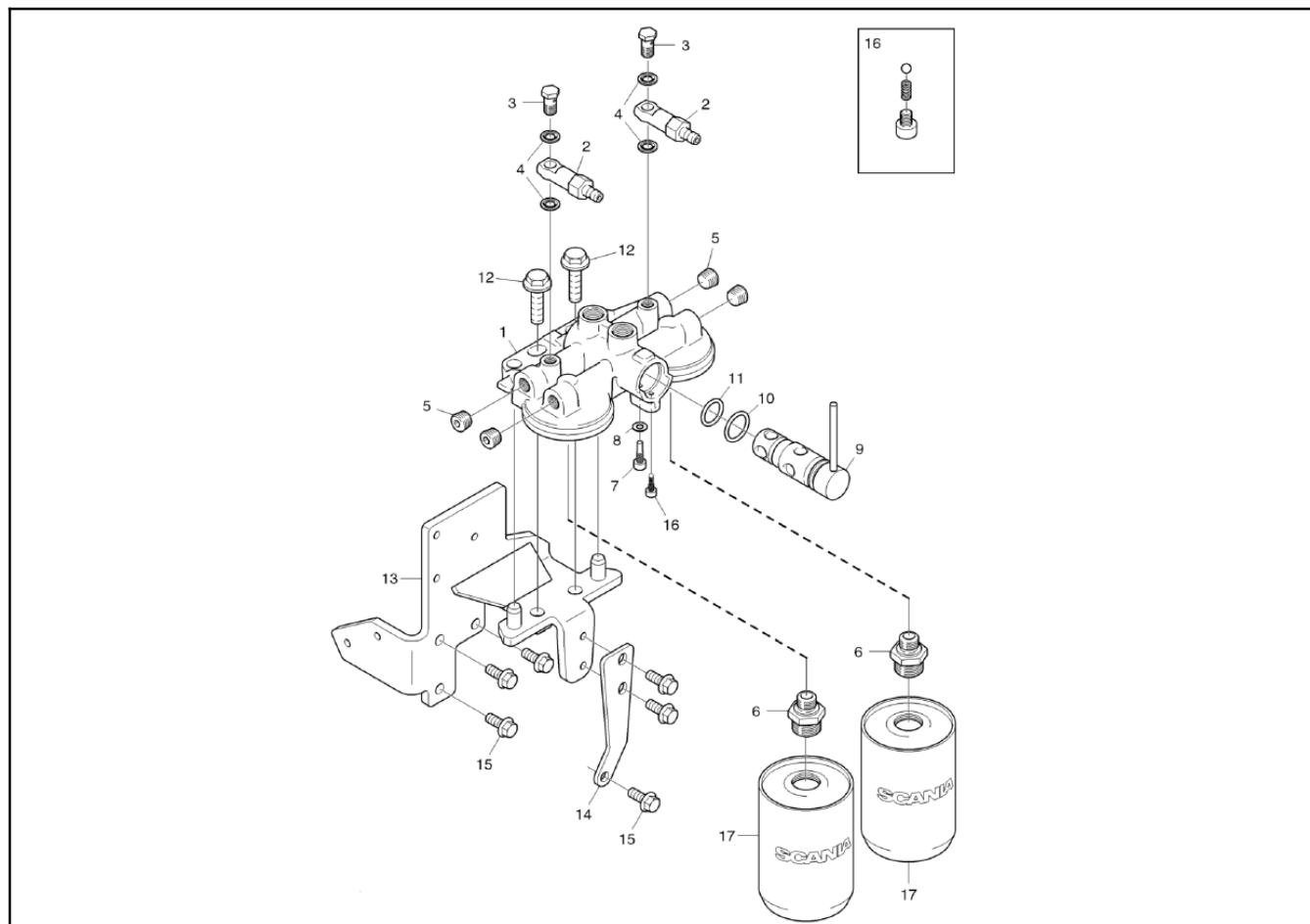
GM109641



Item	Part No.	Description	Qty.
1	GM108166	Unit Injector (includes nozzle)	8
	GM108437	Injection Nozzle	1
2	GM108752	Gasket	8
3	GM108892	Clamp	8
4	GM108424	Screw	8

Group 3-05-1: Fuel Filter, Filter Head

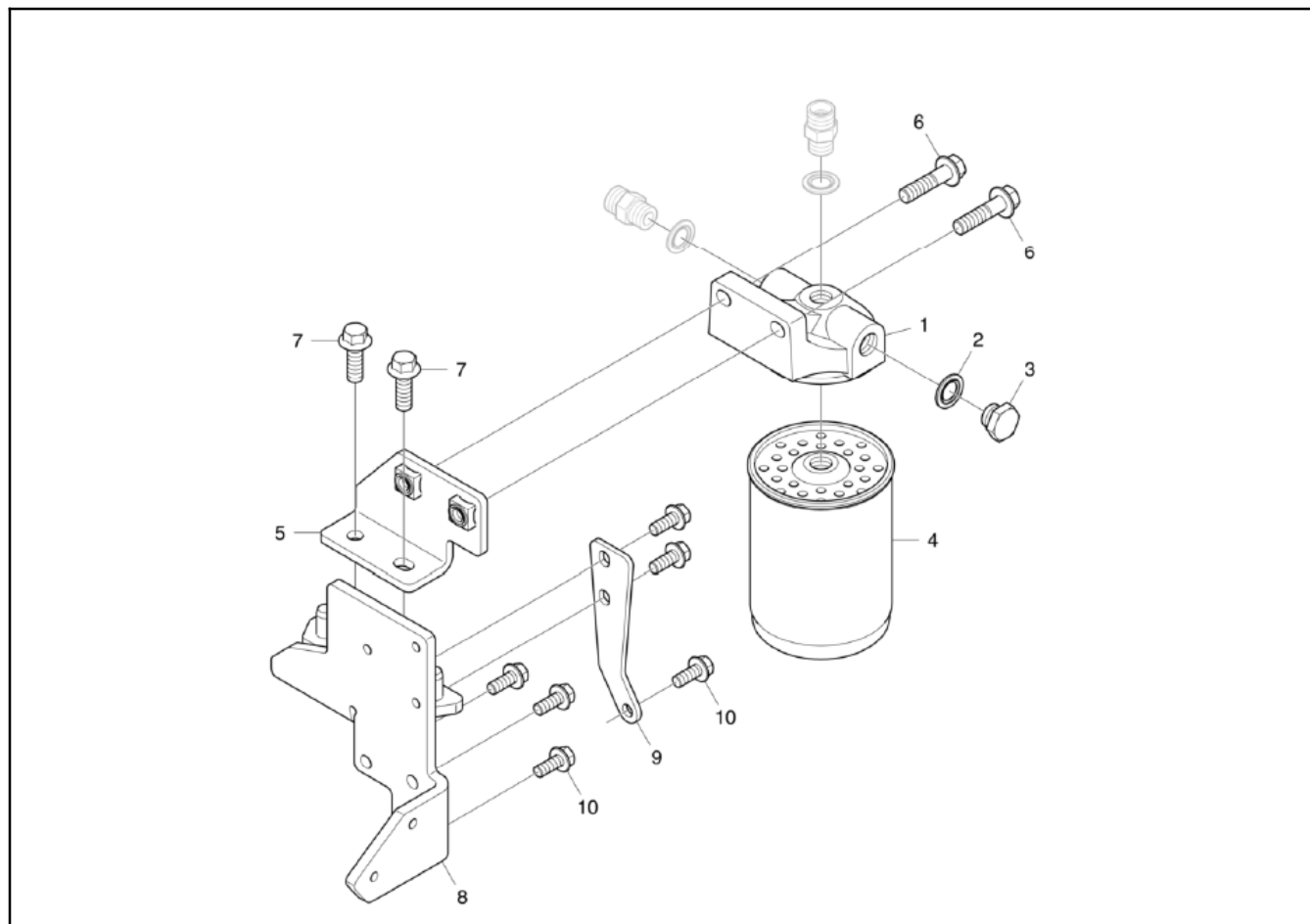
GM109642



Item	Part No.	Description	Qty.
1	GM108757	Filter Head (includes items 2- 11)	1
2	GM108412	Bleed Nipple	2
3	GM77015	Banjo screw, M10x1	2
4	GM108993	Seal	4
5	GM108242	Screw Plug	4
6	GM108310	Straight Union	2
7	GM108756	Set Screw	1
8	GM108134	Gasket	1
9	GM108755	Fuel Cock	1
10	GM76936	O- ring	1
11	GM76956	O- ring	1
12	GM108229	Screw	2
13	GM109040	Bracket	1
14	GM109054	Bracket	1
15	GM108212	Flange Screw	6
16	GM108820	Repair Kit	1
17	GM67251	Fuel filter	2

Group 3-05- 1: Fuel Filter, Filter Head

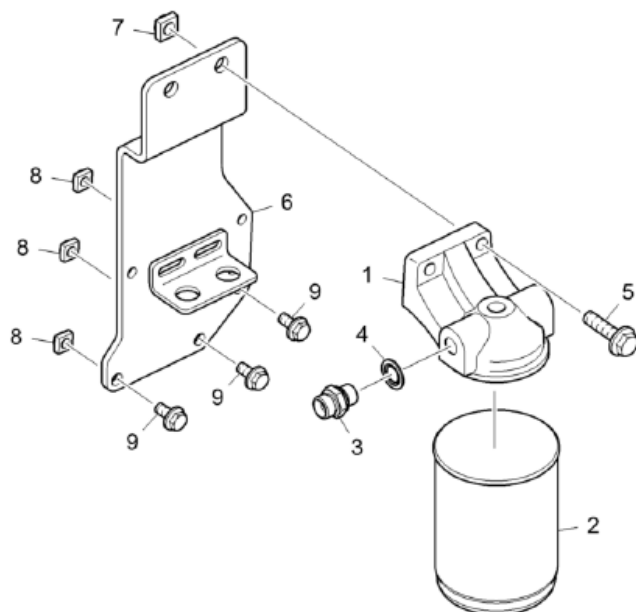
GM109643



Item	Part No.	Description	Qty.
1	GM76272	Filter head	1
2	GM108974	Seal	1
3	GM77011	Screw plug, M16x1.5x9	1
4	GM67251	Fuel filter	1
5	GM108759	Bracket	1
6	GM108229	Screw	2
7	GM108227	Flange Screw	2
8	GM109040	Bracket	1
9	GM109054	Bracket	1
10	GM108212	Flange Screw	6

Group 3-05- 1: Fuel Filter, Filter Head

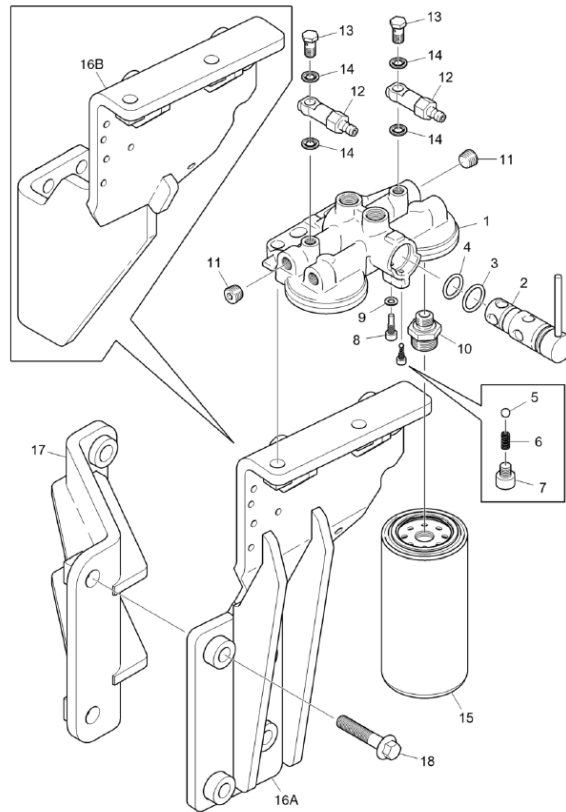
GM109646



Item	Part No.	Description	Qty.
1	GM76272	Filter head	1
2	GM67251	Fuel filter	1
3	GM108974	Seal	1
4	GM77039	Straight union	1
5	GM108229	Screw	2
6	GM108934	Bracket	1
7	GM108177	Weld Nut	2
8	GM108176	Weld Nut	3
9	GM108213	Flange Screw	3

Group 03- 05- 1: Fuel Filter, Filter Head, Duplex Fuel Filter

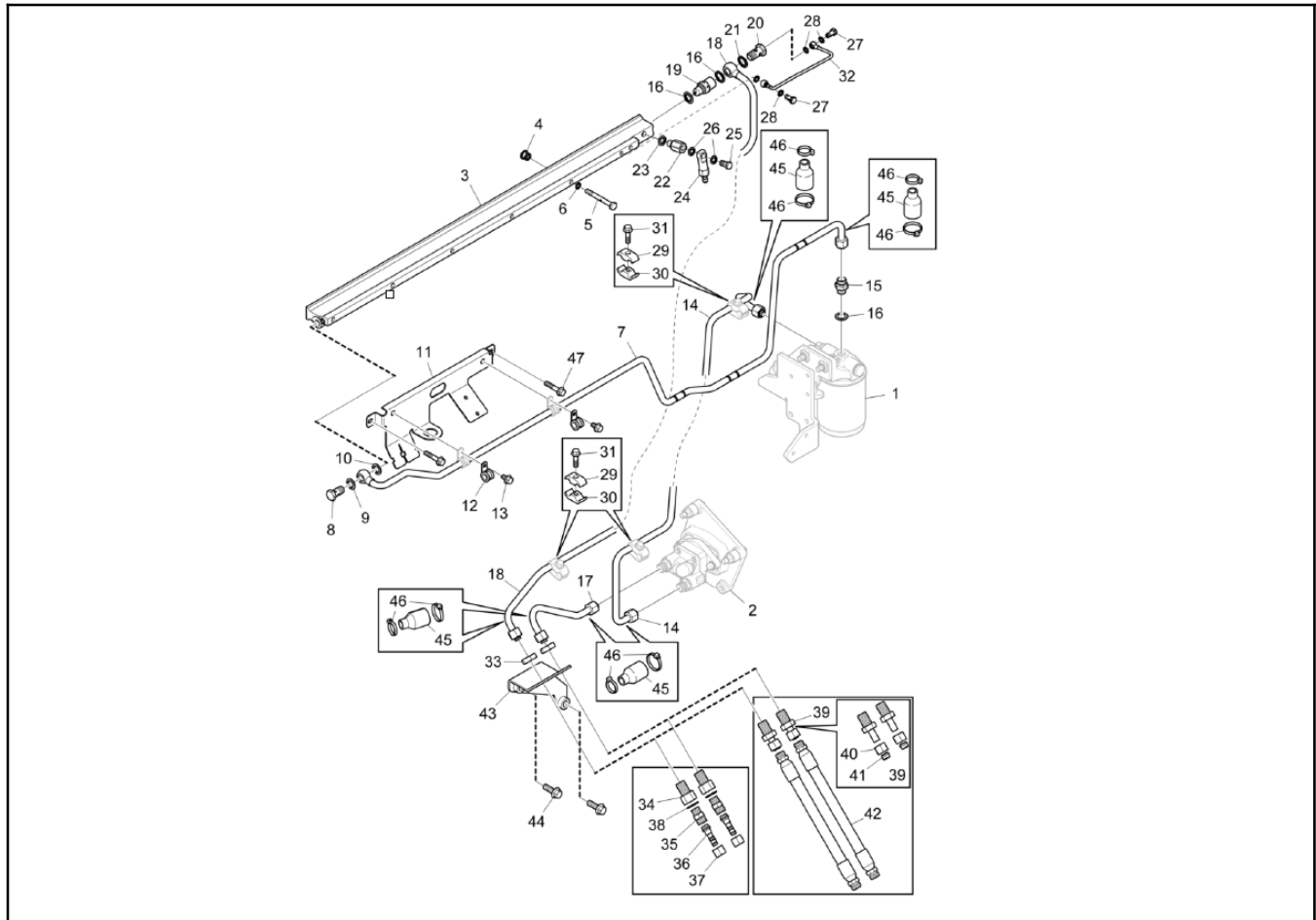
GM109649



Item	Part No.	Description	Qty.
	GM109184	Filter Head (includes items 1- 14)	1
2	GM109185	Fuel Cock	1
3	GM76936	O- ring	1
4	GM76956	O- ring	1
	GM108820	Repair Kit (includes items 5- 7)	1
8	GM108756	Set Screw	1
9	GM108134	Gasket	1
10	GM109186	Union	2
11	GM108242	Screw Plug	4
12	GM108412	Bleed Nipple	2
13	GM77015	Banjo screw, M10x1	2
14	GM108993	Seal	4
15	GM109187	Fuel Filter	2
16A	GM109188	Bracket	1
16B	GM109189	Bracket	1
	GM109190	Spacing Sleeve	4
17	GM109191	Bracket	1
18	GM109192	Flange Screw	2

Group 3-05-2: Fuel Filter Unit, Fuel Pipes, Fuel Manifold

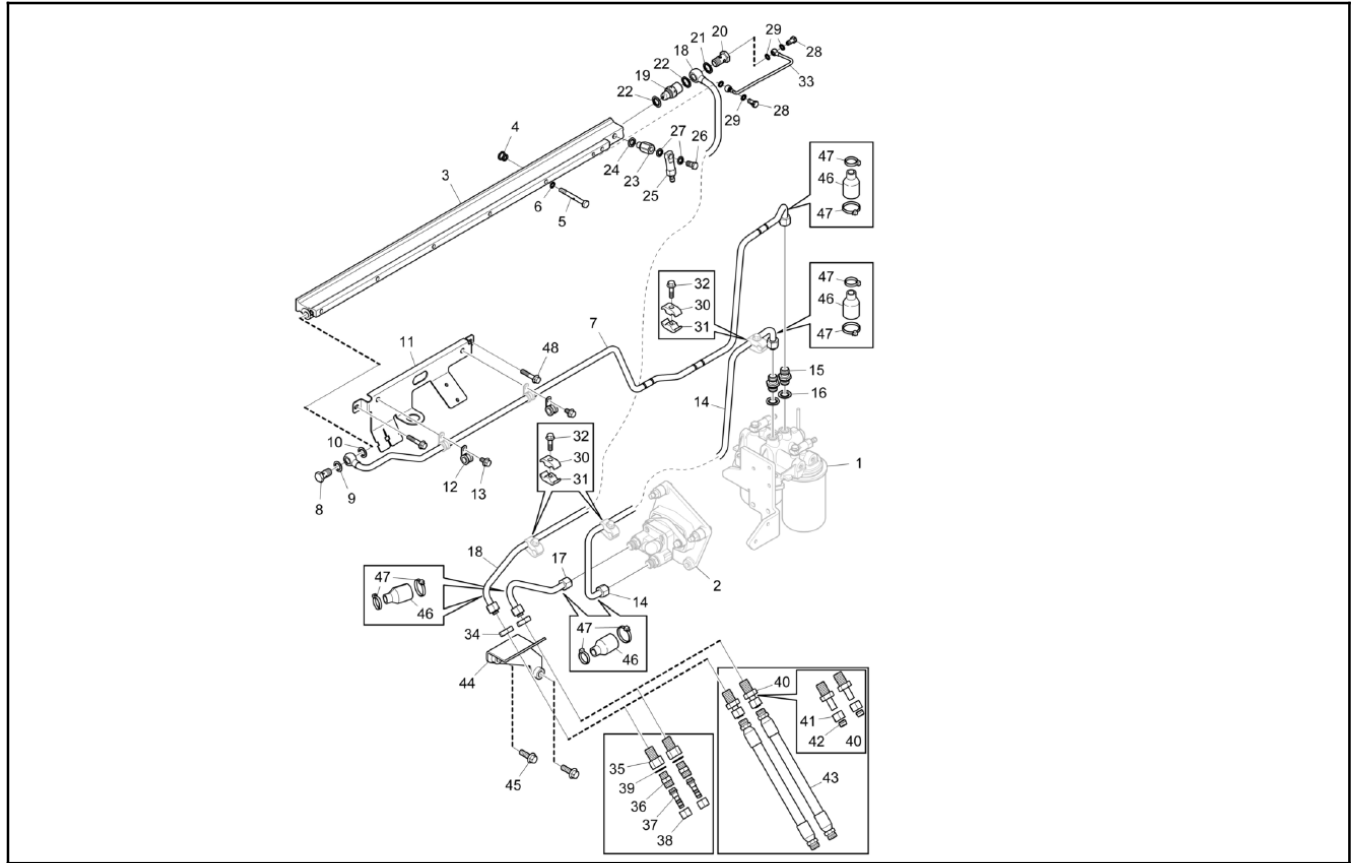
GM109644



Item	Part No.	Description	Qty.	Item	Part No.	Description	Qty.
3	GM108754	Fuel Manifold	1	22	GM108725	Straight Reducing Union	1
4	GM108721	Gasket	6	23	GM108972	Seal	1
5	GM76659	Banjo screw	6	24	GM108412	Bleed Nipple	1
6	GM108992	Seal	6	25	GM77015	Banjo screw, M10x1	1
7	GM109057	Fuel Pipe	1	26	GM108993	Seal	2
	GM77059	Union nut	1	27	GM76682	Banjo screw	2
	GM77048	Ferrule	1	28	GM108992	Seal	4
8	GM108201	Banjo Screw	1	29	GM108458	Clamp	3
9	GM108995	Seal	1	30	GM108459	Clamp	3
10	GM108973	Seal	1	31	GM108214	Flange Screw	3
11	GM108765	Bracket	1	32	GM108726	Fuel Pipe	1
12	GM76907	Clamp	2		GM77017	Union	2
13	GM108212	Flange Screw	2	33	GM108249	Hexagon Nut	2
14	GM108882	Fuel Pipe	1	34	GM108465	Lead- In Union	2
	GM77059	Union nut	2	35	GM77041	Straight union	2
	GM77048	Ferrule	1	36	GM76355	Hose union	2
15	GM77041	Straight union	2	37	GM77059	Union nut	2
16	GM108974	Seal	2	38	GM108974	Seal	6
17	GM108883	Fuel Pipe	1	39	GM108760	Lead- In Union	2
	GM77059	Union nut	1	40	GM77059	Union nut	2
	GM77048	Ferrule	1	41	GM77048	Ferrule	2
18	GM108884	Fuel Pipe	1	42	GM76675	Hose assy	2
	GM77018	Banjo union	1	43	GM108885	Bracket	1
	GM77059	Union nut	1	44	GM108227	Flange Screw	2
	GM77048	Ferrule	2	45	GM108750	Protective Cap	6
19	GM108645	Overflow Valve	1	46	GM108266	Cable Tie	1
20	GM76531	Banjo screw	1	47	GM108216	Flange Screw	2
21	GM108996	Seal	1				

Group 3-05-2: Fuel Filter Unit, Fuel Pipes, Fuel Manifold

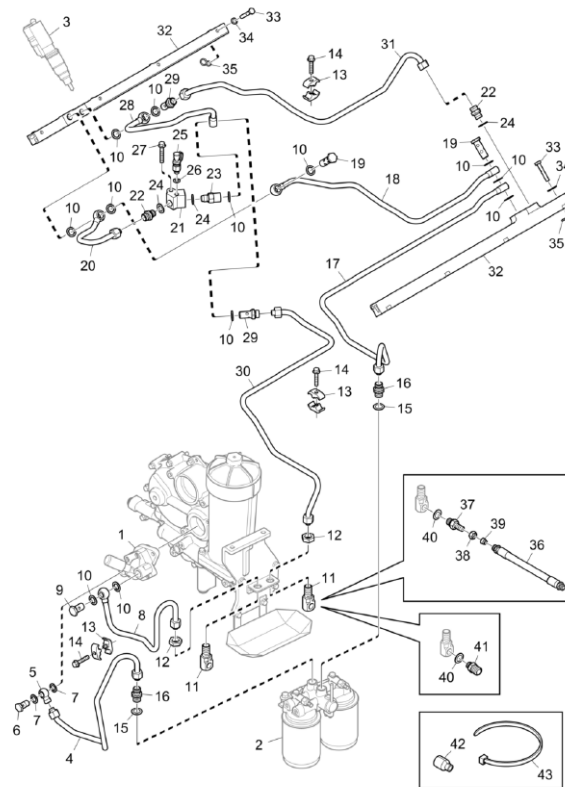
GM109645



Item	Part No.	Description	Qty.	Item	Part No.	Description	Qty.
3	GM108754	Fuel Manifold	1	24	GM108972	Seal	1
4	GM108721	Gasket	6	25	GM108412	Bleed Nipple	1
5	GM76659	Banjo screw	6	26	GM77015	Banjo screw, M10x1	1
6	GM108992	Seal	6	27	GM108993	Seal	2
7	GM109056	Fuel Pipe	1	28	GM76682	Banjo screw	2
7	GM77059	Union nut	1	29	GM108992	Seal	4
7	GM77048	Ferrule	1	30	GM108458	Clamp	3
8	GM108201	Banjo Screw	1	31	GM108459	Clamp	3
9	GM108995	Seal	1	32	GM108214	Flange Screw	3
10	GM108973	Seal	1	33	GM77017	Union	2
11	GM108765	Bracket	1	33	GM108726	Fuel Pipe	1
11	GM109035	Bracket (IMO Tier III)	1	34	GM108249	Hexagon Nut	2
12	GM76907	Clamp	2	35	GM108465	Lead- In Union	2
13	GM108212	Flange Screw	2	36	GM77041	Straight union	2
14	GM108889	Fuel Pipe	1	37	GM76355	Hose union	2
14	GM77059	Union nut	2	38	GM77059	Union nut	2
14	GM77048	Ferrule	2	39	GM108974	Seal	3
15	GM76274	Straight union	2	40	GM108760	Lead- In Union	2
16	GM108975	Seal	5	41	GM77059	Union nut	1
17	GM108883	Fuel Pipe	1	42	GM77048	Ferrule	1
17	GM77059	Union nut	2	43	GM76675	Hose assy	2
17	GM77048	Ferrule	2	44	GM108885	Bracket	1
18	GM108884	Fuel Pipe	1	45	GM108227	Flange Screw	2
18	GM77018	Banjo union	1	46	GM108750	Protective Cap	6
18	GM77059	Union nut	1	47	GM108266	Cable Tie	1
18	GM77048	Ferrule	1	48	GM108216	Flange Screw	2
19	GM108645	Overflow Valve	1				
20	GM76531	Banjo screw	1				
21	GM108996	Seal	1				
22	GM108974	Seal	2				
23	GM108725	Straight Reducing Union	1				

Group 03- 05- 2: Fuel Pipe, Fuel Filter Unit, Duplex Fuel Filter

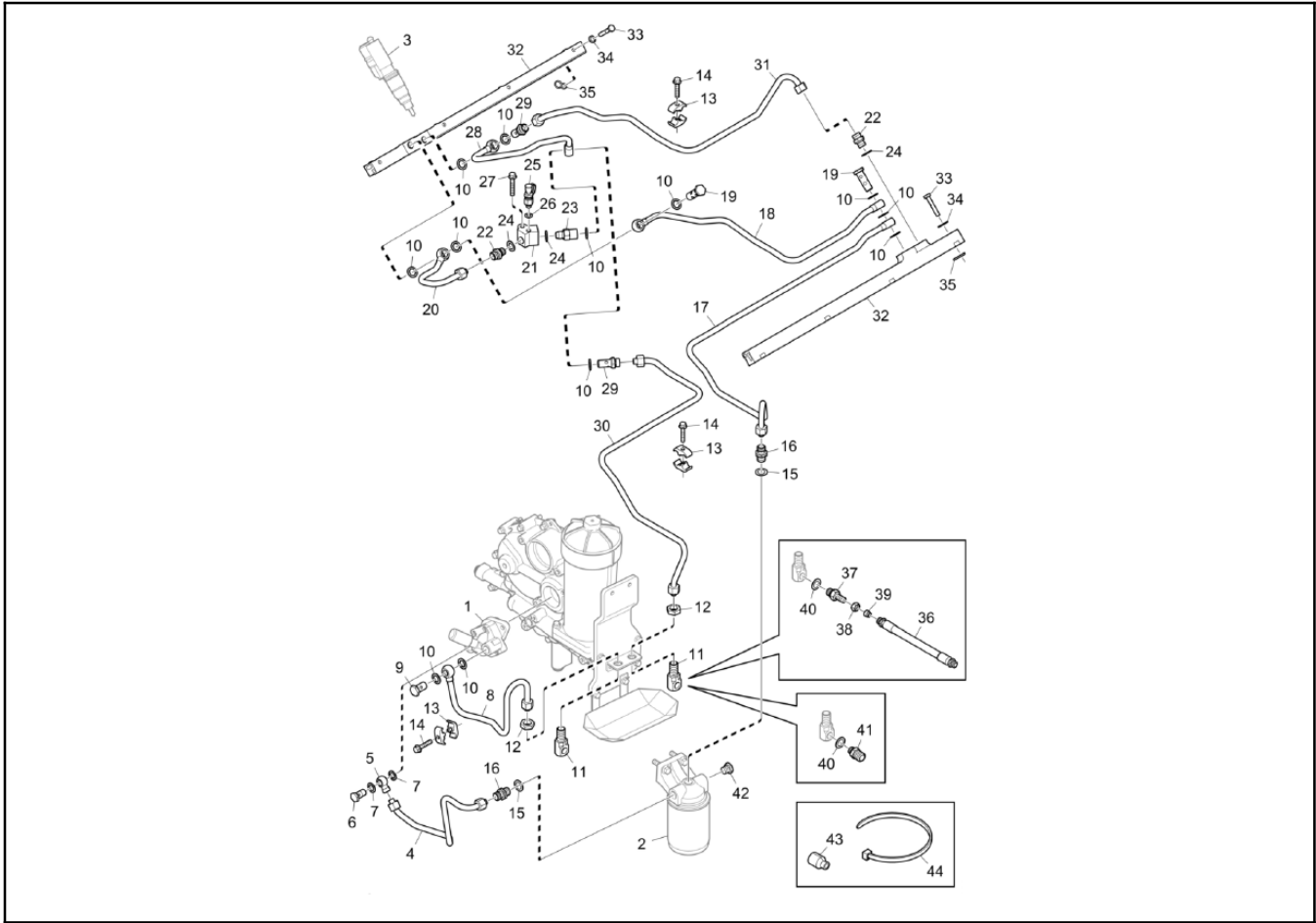
GM109647



Item	Part No.	Description	Qty.	Item	Part No.	Description	Qty.
4	GM109193	Fuel Pipe	1	30	GM108657	Fuel Pipes	1
5	GM108288	Banjo Union	1	31	GM108656	Fuel Pipes	1
6	GM108201	Banjo Screw	1	32	GM108618	Fuel Manifold	2
7	GM108995	Seal	2	33	GM108589	Banjo Screw	8
8	GM108694	Fuel Pipes	1	34	GM108992	Seal	8
9	GM77016	Banjo screw, M16x1.5	1	35	GM108721	Gasket	8
10	GM108996	Seal	12	36	GM76675	Hose assy	2
11	GM108634	Lead- In Union	2	37	GM108830	Lead- In Union	2
12	GM108249	Hexagon Nut	2	38	GM77059	Union nut	1
13	GM108458	Clamp	6	39	GM77048	Ferrule	1
14	GM108216	Flange Screw	3	40	GM108974	Seal	4
15	GM108975	Seal	2	41	GM76355	Hose union	2
16	GM76274	Straight union	2	42	GM108750	Protective Cap	1
17	GM109194	Fuel Pipe	1	43	GM108266	Cable Tie	1
18	GM108654	Fuel Pipes	1				
19	GM108471	Banjo Screw	2				
20	GM108655	Fuel Pipes	1				
21	GM108664	Manifold Fitting	1				
22	GM77039	Straight union	2				
23	GM108645	Overflow Valve	1				
24	GM108974	Seal	3				
25	GM76413	Bleed nipple	1				
26	GM108971	Seal	1				
27	GM108218	Flange Screw	1				
28	GM108808	Fuel Pipe	1				
29	GM108653	Banjo Screw	2				

Group 03-05-2: Fuel Pipe, Fuel Filter Unit

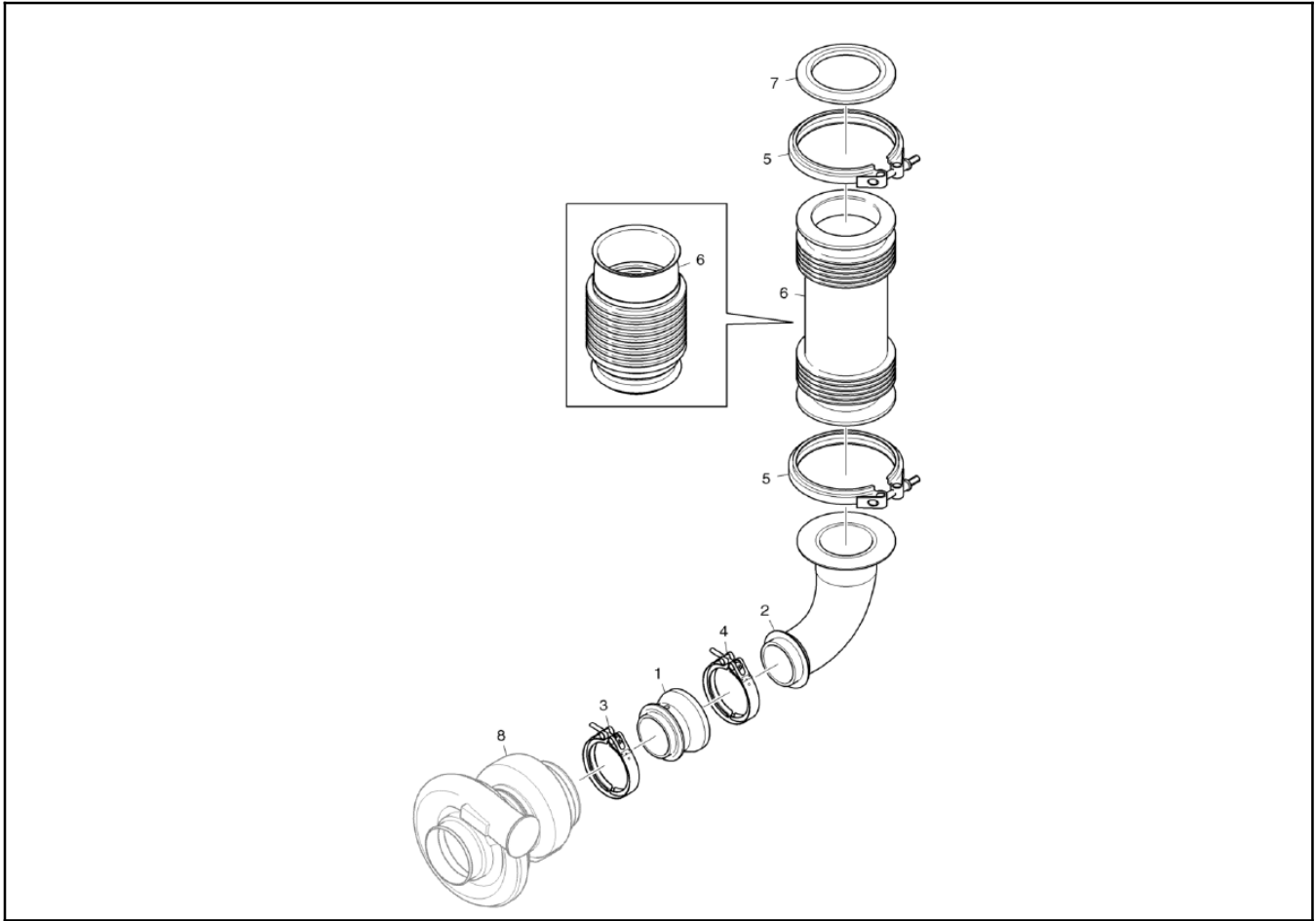
GM109648



Item	Part No.	Description	Qty.	Item	Part No.	Description	Qty.
4	GM108695	Fuel Pipes	1	32	GM108618	Fuel Manifold	2
5	GM108288	Banjo Union	1	33	GM108589	Banjo Screw	8
6	GM108201	Banjo Screw	1	34	GM108992	Seal	8
7	GM108995	Seal	2	35	GM108721	Gasket	8
8	GM108694	Fuel Pipes	1	36	GM76675	Hose assy	2
9	GM77016	Banjo screw, M16x1.5	1	37	GM108830	Lead- In Union	2
10	GM108996	Seal	12	38	GM77059	Union nut	1
11	GM108634	Lead- In Union	2	39	GM77048	Ferrule	1
12	GM108249	Hexagon Nut	2	40	GM108974	Seal	5
13	GM108458	Clamp	6	41	GM76355	Hose union	2
14	GM108216	Flange Screw	3	42	GM77011	Screw plug, M16x1.5x9	1
15	GM108974	Seal	2	43	GM108750	Protective Cap	1
16	GM77039	Straight union	2	44	GM108266	Cable Tie	1
17	GM108845	Fuel Pipe	1				
18	GM108654	Fuel Pipes	1				
19	GM108471	Banjo Screw	2				
20	GM108655	Fuel Pipes	1				
21	GM108664	Manifold Fitting	1				
22	GM77039	Straight union	2				
23	GM108645	Overflow Valve	1				
24	GM108974	Seal	3				
25	GM76413	Bleed nipple	1				
26	GM108971	Seal	1				
27	GM108218	Flange Screw	1				
28	GM108808	Fuel Pipe	1				
29	GM108653	Banjo Screw	2				
30	GM108657	Fuel Pipes	1				
31	GM108656	Fuel Pipes	1				

Group 03-25- 1: Connection Tubes

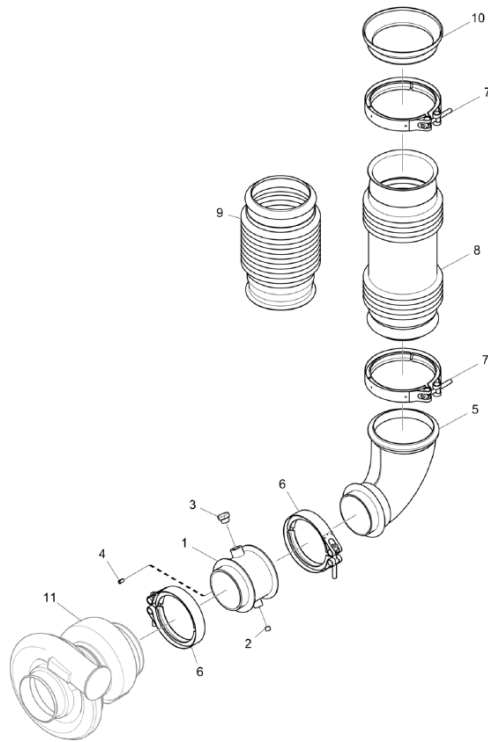
GM109650



Item	Part No.	Description	Qty.
1	GM109033	Flange	1
	GM108241	Screw Plug	1
2	GM109034	Exhaust Pipe	1
3	GM108373	V- Clamp	1
4	GM108373	V- Clamp	1
5	GM108544	V- Clamp	1

Group 03- 25- 1: Connection Tubes

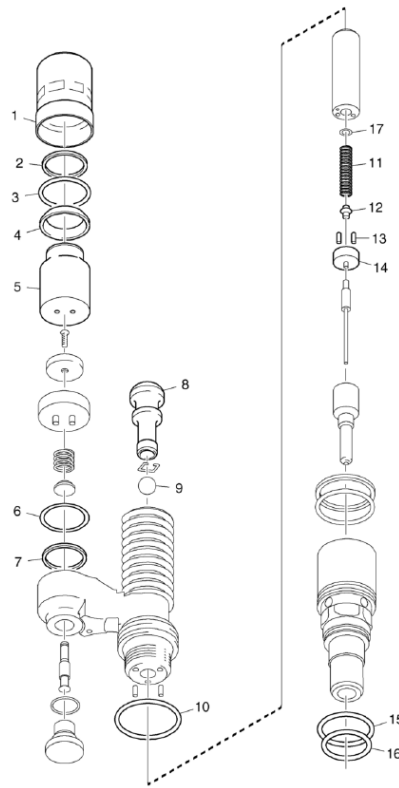
GM109651



Item	Part No.	Description	Qty.
1	GM109033	Flange	2
2	GM108241	Screw Plug	1
3	GM77011	Screw plug, M16x1.5x9	1
4	GM108121	Pin	1
5	GM109034	Exhaust Pipe	2
6	GM108373	V- Clamp	1
7	GM108544	V- Clamp	1

Group 03- 99- 1: Repair Kit, Unit Injector

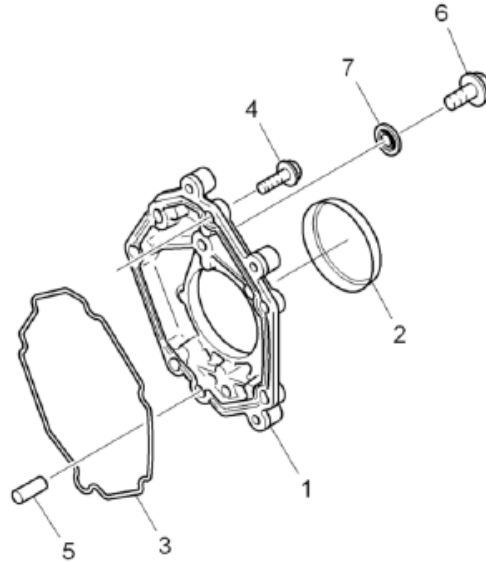
GM109652



Item	Part No.	Description	Qty.	Item	Part No.	Description	Qty.
	GM108446	Repair Kit (incl. items 2, 3, 6, 7)	1		GM108333	Shim, TH=1.42 mm	1
	GM67223	Unit injector O- ring kit (incl. items 10, 15- 16)	1		GM108334	Shim, TH=1.44 mm	1
	GM108696	Grease	1		GM108335	Shim, TH=1.46 mm	1
	GM108497	Repair Kit (incl. items 11- 13)	1		GM108336	Shim, TH=1.48 mm	1
	GM108496	Stop (incl. items 13, 14)	1		GM108337	Shim, TH=1.50 mm	1
	GM108377	Pushrod (incl. items 8, 9)	1		GM108338	Shim, TH=1.52 mm	1
	GM108500	Repair Kit (incl. items 2, 3, 7)	1		GM108339	Shim, TH=1.54 mm	1
	GM108501	Repair Kit (incl. items 1, 4)	1		GM108340	Shim, TH=1.56 mm	1
17	GM108312	Shim, TH=1.00 mm	1		GM108341	Shim, TH=1.58 mm	1
	GM108313	Shim, TH=1.02 mm	1		GM108342	Shim, TH=1.60 mm	1
	GM108314	Shim, TH=1.04 mm	1		GM108343	Shim, TH=1.62 mm	1
	GM108315	Shim, TH=1.06 mm	1		GM108344	Shim, TH=1.64 mm	1
	GM108316	Shim, TH=1.08 mm	1		GM108345	Shim, TH=1.66 mm	1
	GM108317	Shim, TH=1.10 mm	1		GM108346	Shim, TH=1.68 mm	1
	GM108318	Shim, TH=1.12 mm	1		GM108347	Shim, TH=1.70 mm	1
	GM108319	Shim, TH=1.14 mm	1		GM108348	Shim, TH=1.72 mm	1
	GM108320	Shim, TH=1.16 mm	1		GM108349	Shim, TH=1.74 mm	1
	GM108321	Shim, TH=1.18 mm	1		GM108350	Shim, TH=1.76 mm	1
	GM108322	Shim, TH=1.20 mm	1		GM108351	Shim, TH=1.78 mm	1
	GM108323	Shim, TH=1.22 mm	1		GM108352	Shim, TH=1.80 mm	1
	GM108324	Shim, TH=1.24 mm	1		GM108353	Shim, TH=1.82 mm	1
	GM108325	Shim, TH=1.26 mm	1		GM108354	Shim, TH=1.84 mm	1
	GM108326	Shim, TH=1.28 mm	1		GM108355	Shim, TH=1.86 mm	1
	GM108327	Shim, TH=1.30 mm	1		GM108356	Shim, TH=1.88 mm	1
	GM108328	Shim, TH=1.32 mm	1		GM108357	Shim, TH=1.90 mm	1
	GM108329	Shim, TH=1.34 mm	1		GM108358	Shim, TH=1.92 mm	1
	GM108330	Shim, TH=1.36 mm	1		GM108359	Shim, TH=1.94 mm	1
	GM108331	Shim, TH=1.38 mm	1		GM108360	Shim, TH=1.96 mm	1
	GM108332	Shim, TH=1.40 mm	1		GM108361	Shim, TH=1.98 mm	1

Group 13- 15- 1: Mounting, Hydraulic Pump

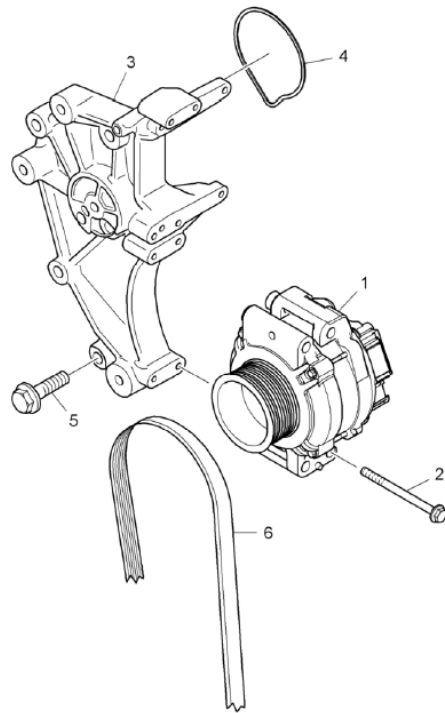
GM109653



Item	Part No.	Description	Qty.
1	GM76594	Flange	1
2	GM108806	Core Plug	1
3	GM108390	Gasket	1
4	GM108388	Flange Screw	5
5	GM76979	Pin, 10x25	2
6	GM108224	Flange Screw	2
7	GM108972	Seal	2
	GM108155	Thread- Locking Fluid	1

Group 16-05-1: Alternator, Mounting

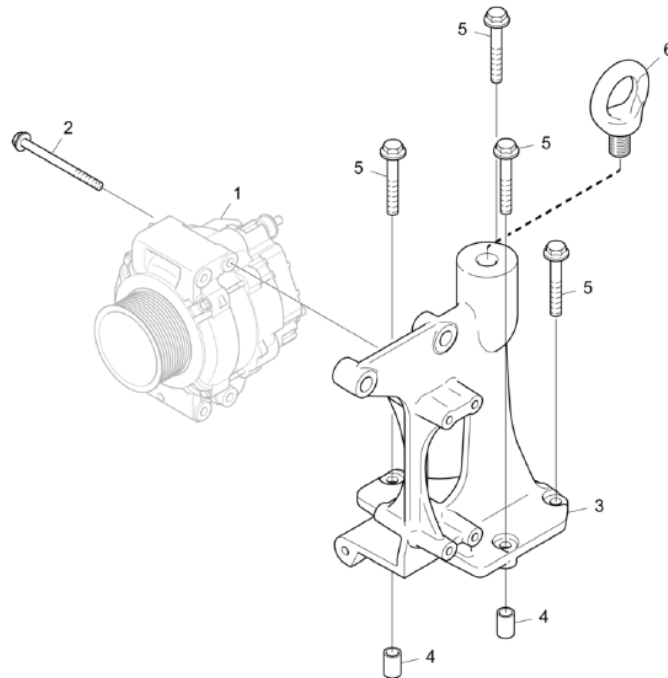
GM109658



Item	Part No.	Description	Qty.
2	GM108270	Flange Screw	4
3	GM108660	Bracket	1
4	GM108499	Gasket	1
5	GM108256	Flange Screw	5

Group 16-05-1: Alternator, Mounting

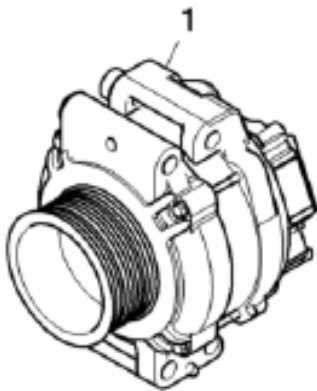
GM109660



Item	Part No.	Description	Qty.
2	GM108270	Flange Screw	4
3	GM108984	Bracket	1
4	GM76910	Guide sleeve	2
5	GM108432	Screw	4
6	GM109051	Lifting Eye	1

Group 16-05-2: Alternator

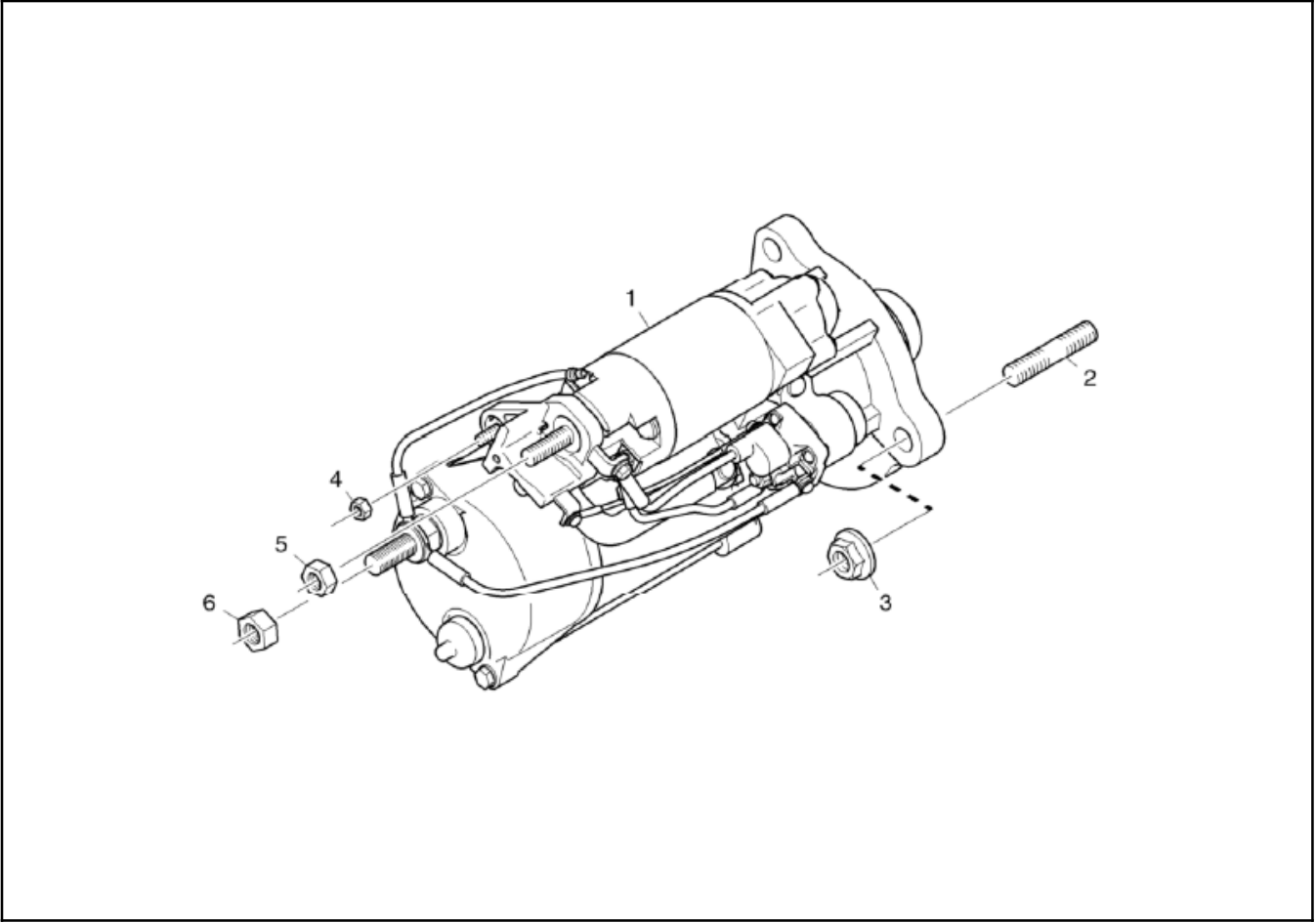
GM109659



Item	Part No.	Description	Qty.
1	GM108159	Alternator	1
	GM108270	Flange Screw, M8X110	1
	GM108305	Flange Screw, M8x130	1
	GM108809	Screw	1
	GM108945	Nut Kit	1
	GM108810	Cover assy (includes screws fr bearing and holder)	1
	GM108811	Screw	4
	GM108812	Bearing fr	1
	GM108813	Holder	1
	GM109049	Bracket	1
	GM109028	Rotor (includes rear bearing)	1
	GM108814	Bearing rear	1

Group 16- 10- 1: Starter Motor

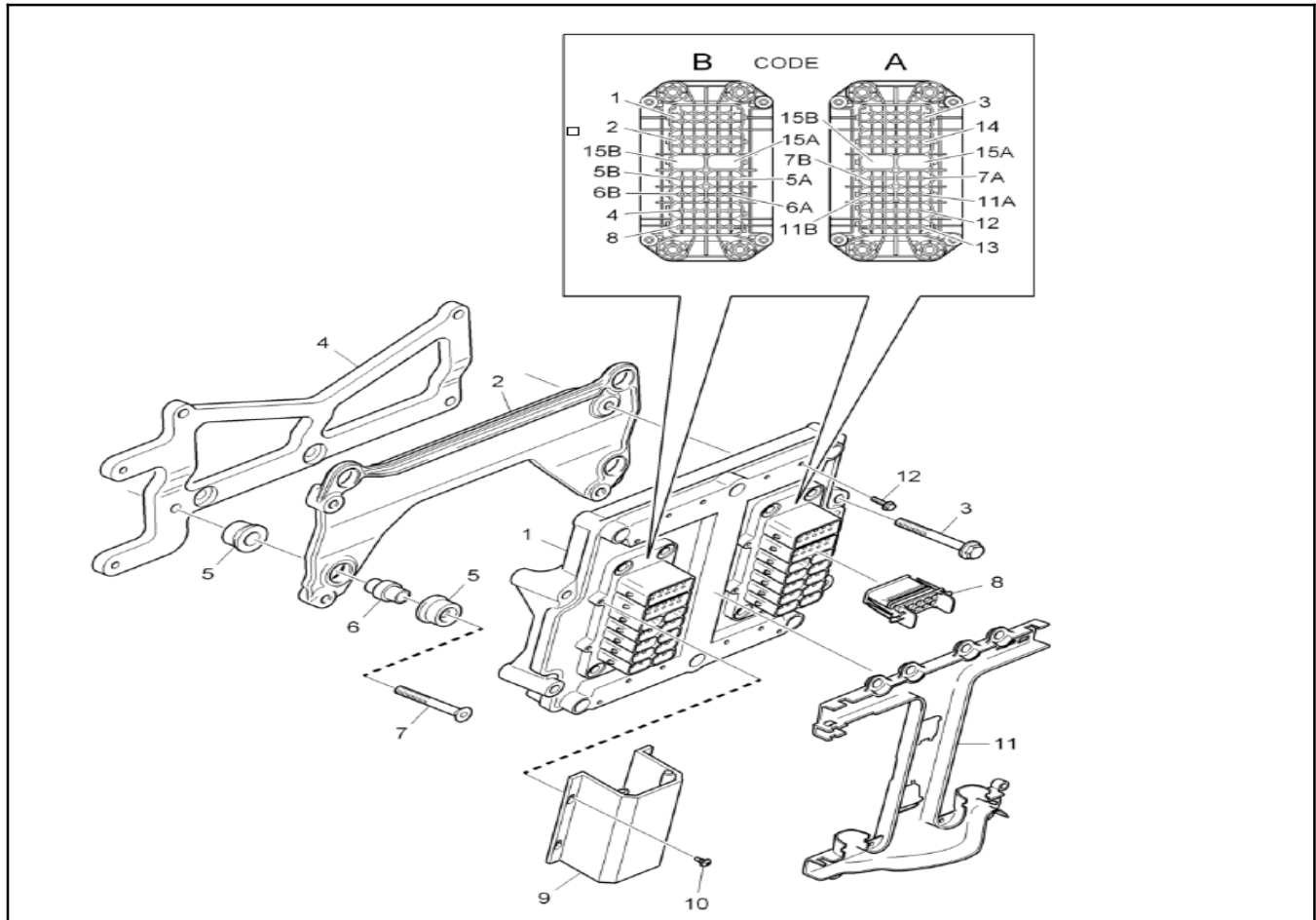
GM109661



Item	Part No.	Description	Qty.
1	GM108162	Starter Motor	1
2	GM76973	Stud, M12X60	3
3	GM108263	Flange Nut	3
4	GM108189	Lock Nut	1
5	GM108260	Hexagon Nut	1
6	GM108258	Hexagon Nut	1

Group 16- 15- 1: EMS, Electronic Control Unit

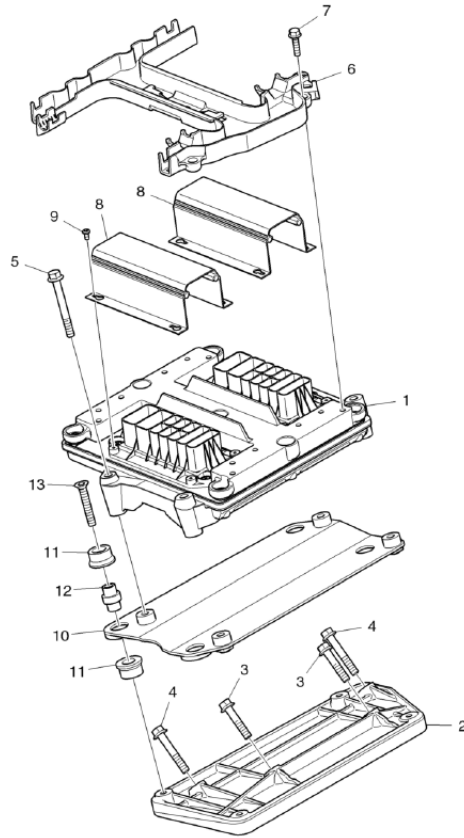
GM109662



Item	Part No.	Description	Qty.
1	GM76702	ECU	1
2	GM108418	Adapter Plate	1
3	GM108219	Flange Screw	4
4	GM108723	Bracket	1
	GM108680	Repair Kit (includes items 5, 6)	1
7	GM108184	Screw	1
8	GM76427	Contact housing 2- pol	1
	GM76428	Contact housing 5- pol	1
	GM76638	Contact housing 10- pol	1
9	GM76671	Cover	2
10	GM108185	Screw	8
11	GM76513	Duct	1
12	GM108209	Flange Screw	8
	GM108266	Cable Tie	8
	GM108265	Cable Tie	4
	GM108267	Cable Tie	3
	GM108679	Repair Kit	1
	GM108184	Screw	4

Group 16-15-1: EMS, Electronic Control Unit

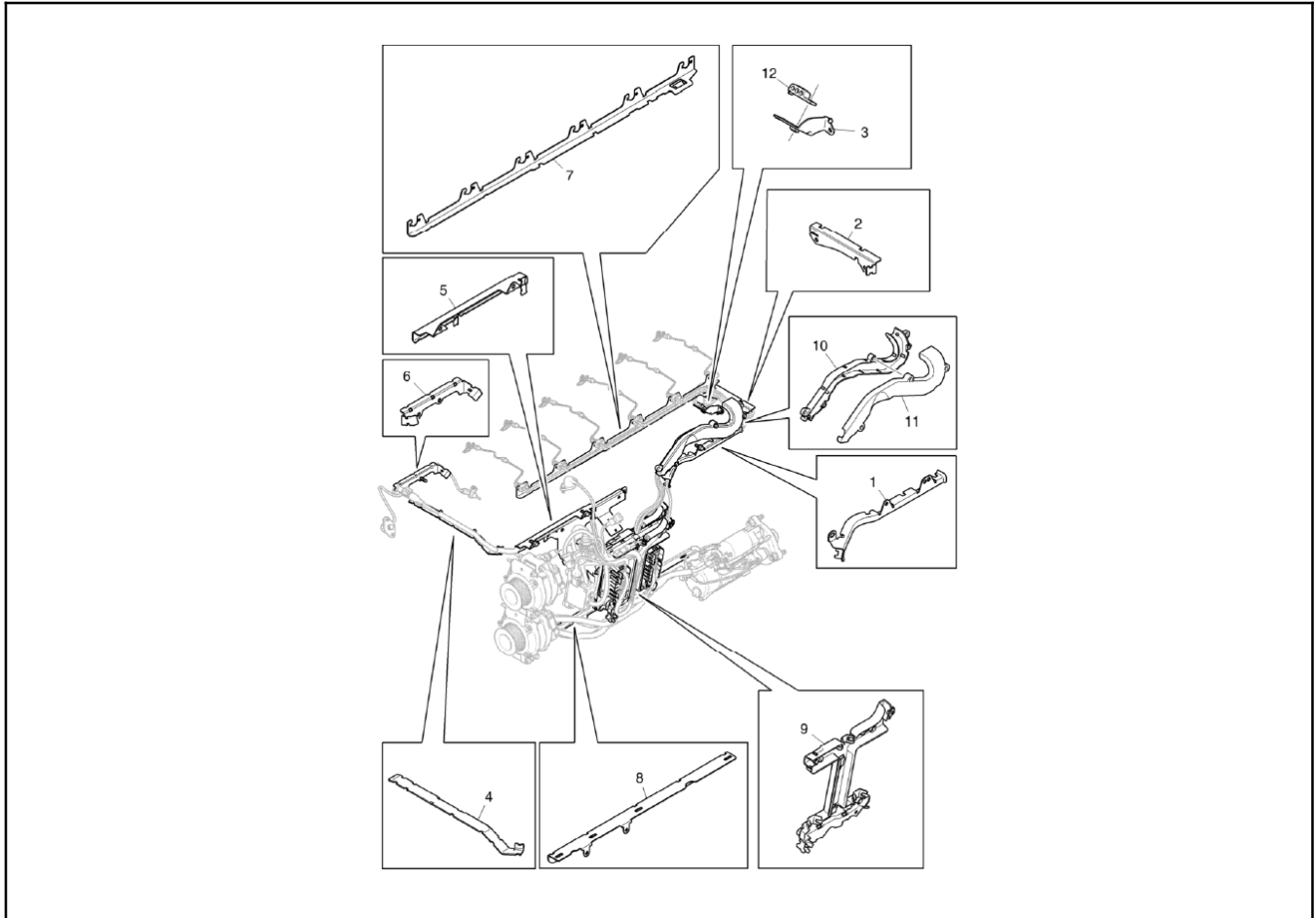
GM109663



Item	Part No.	Description	Qty.
1	GM76702	ECU	1
2	GM108590	Bracket	1
3	GM108216	Flange Screw	2
4	GM108218	Flange Screw	2
5	GM108220	Flange Screw	4
6	GM108410	Duct	1
7	GM108210	Flange Screw	8
8	GM76671	Cover	2
9	GM108185	Screw	8
10	GM108803	Bracket	1
	GM108680	Repair Kit (includes items 11, 12)	4
13	GM108183	Screw	4

Group 16-30-1: Cable Routing, Engine

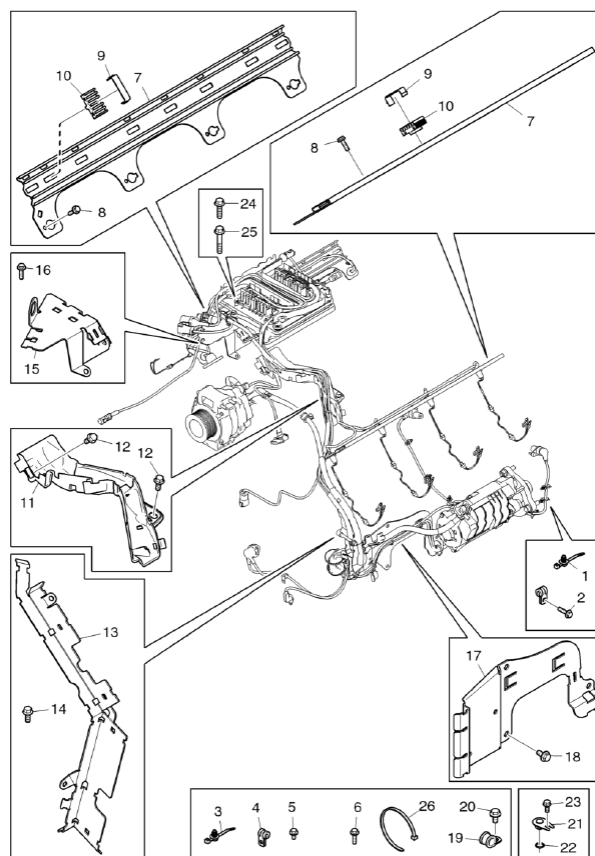
GM109664



Item	Part No.	Description	Qty.
1	GM108396	Duct	1
2	GM108714	Cable Duct	1
3	GM108573	Duct	1
4	GM108805	Cable Duct	1
5	GM108587	Duct	1
6	GM108712	Cable Duct	1
7	GM108404	Duct	1
9	GM76513	Duct	1
10	GM108419	Duct	1
11	GM108420	Casing	1
12	GM108306	Clamp	1
	GM108211	Flange Screw, M8x16	1
	GM108212	Flange Screw, M8x20	1
	GM108213	Flange Screw, M8x25	1
	GM108208	Flange Screw, M6x16	1
	GM108266	Cable Tie (L=185x4.6 mm)	1
	GM108265	Cable Tie (L=100x2.4 mm)	1

Group 16-30-1: Cable Routing, Engine

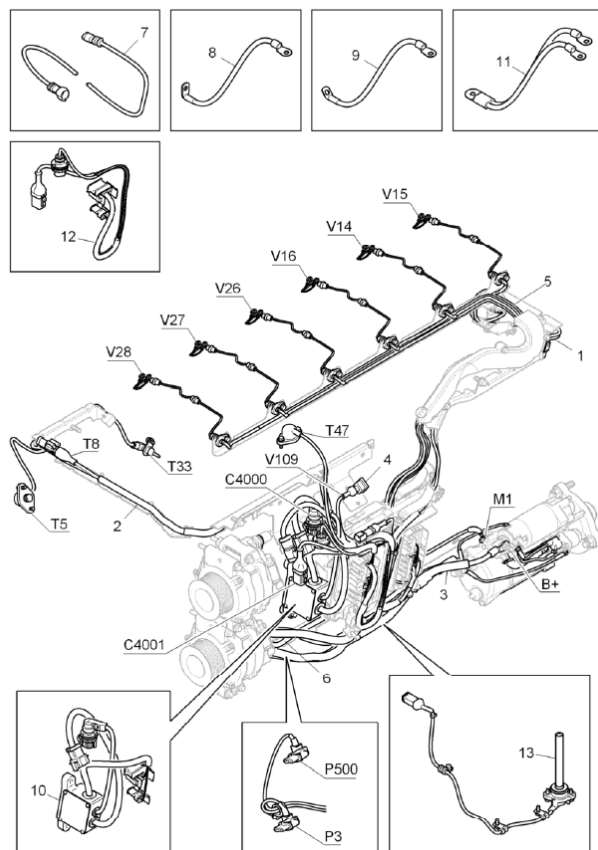
GM109665



Item	Part No.	Description	Qty.	Item	Part No.	Description	Qty.
1	GM108384	Clamp	9	24	GM108214	Flange Screw	1
2	GM108208	Flange Screw	2	25	GM108217	Flange Screw	1
3	GM108384	Clamp	1	26	GM108265	Cable Tie (L=100x2.4 mm)	1
4	GM108245	Clamp	1	26	GM108266	Cable Tie (L=185x4.6 mm)	1
5	GM108208	Flange Screw	1	26	GM108267	Cable Tie (L=380x7.6 mm)	1
	GM108206	Flange Screw (Engine with HE)	1				
6	GM108208	Flange Screw	2				
7	GM76608	Duct	2				
8	GM108208	Flange Screw	8				
9	GM76510	Clamp	12				
10	GM76387	Bush	12				
11	GM108673	Duct	1				
12	GM108212	Flange Screw	2				
	GM108384	Clamp (Alternator cable)	1				
13	GM108799	Cable Duct	1				
14	GM108212	Flange Screw	1				
15	GM108711	Bracket	1				
16	GM108212	Flange Screw	3				
17	GM108753	Cable Duct	1				
18	GM108212	Flange Screw	3				
	GM76907	Clamp (Speed Sensor Under Starter)	2				
	GM108212	Flange Screw	2				
19	GM108245	Clamp	1				
20	GM108208	Flange Screw	1				
21	GM76441	Plug	1				
22	GM81450	O- ring	1				
23	GM108208	Flange Screw	1				

Group 16-45-1: EMS, Injection System

GM109667



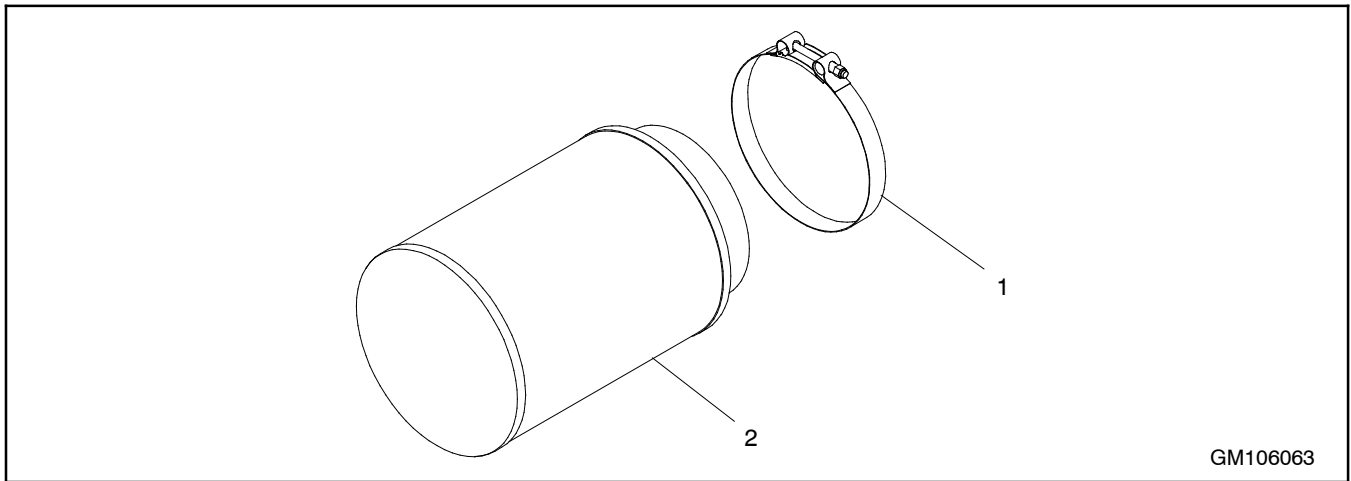
Item	Part No.	Description	Qty.	Item	Part No.	Description	Qty.
1	GM108700	Cable Harness	1	9	GM108416	Cable Terminal	1
	GM67226	Rotational speed sensor, T74	1		GM108666	Cable Harness	1
	GM67227	Rotational speed sensor, T75	1		GM108150	Protection Hose	1
2	GM108919	Cable Harness	1	10	GM108283	Shrinking Tubing	1
	GM108460	Level Monitor	1		GM108247	Cable Terminal, Ring	1
	GM108975	Seal	1		GM108720	Surge Voltage Protection	1
	GM108881	Repair Kit, T74	1	11	GM108423	Ground Connection	1
	GM76957	O- ring	1		GM108224	Flange Screw	1
	GM109079	Repair Kit, Oil Pressure/Temp.	1	12	GM108823	Cable Harness	1
	GM108743	Coolant Temperature Sensor	1		GM108670	Plug	1
	GM108542	Oil Pressure Sensor	1		GM76427	Contact housing	1
	GM108841	Repair Kit, Coolant Temp. Sensor	1		GM76427	Contact housing	1
	GM108743	Coolant Temperature Sensor	1		GM76428	Contact housing	1
3	GM108282	Jointing Sleeve	2				
	GM108698	Cable Harness	1				
	GM108669	Plug	1				
4	GM108691	Plug	1				
	GM108920	Cable Harness	1				
5	GM109027	Cable Harness	1				
	GM76607	Repair kit, V14- V28 Kit	1				
	GM108699	Cable Harness	1				
7	GM108406	Cable Harness	1				
8	GM108584	Cable Harness	1				
	GM108141	Protection Hose	1				
	GM108283	Shrinking Tubing	1				

GM109669



Item	Part No.	Description	Qty.
1	GM108783	Cable Harness, Cyl. 1- 4	1
1	GM108863	Cable Harness, Cyl. 5- 8	1
2	GM108620	Cable Harness, Speed	1
3	GM108887	Cable Harness, Sensor T47	1
	GM76441	Plug	1
	GM81450	O- ring	1
	GM108208	Flange Screw	1
4	GM108619	Cable Harness	1
	GM109079	Repair Kit	1
5	GM108701	Cable Harness	1
6	GM108675	Cable Harness	1
7	GM108671	Cable Harness	1
8	GM108702	Cable	1
	GM108502	Junction Block	1
	GM108704	Cable	1
9	GM108702	Cable	1
	GM108374	Rubber Cover	1
9	GM108703	Cable	1
	GM108374	Rubber Cover	1
10	GM108406	Cable Harness	1
	GM108975	Seal	1
11	GM108460	Level Monitor	1
12	GM108720	Surge Voltage Protection	1
	GM108669	Plug	1
	GM108691	Plug	1
	GM76427	Contact housing	1
	GM76428	Contact housing	1

Group 101: Air Intake



GM106063- MA1

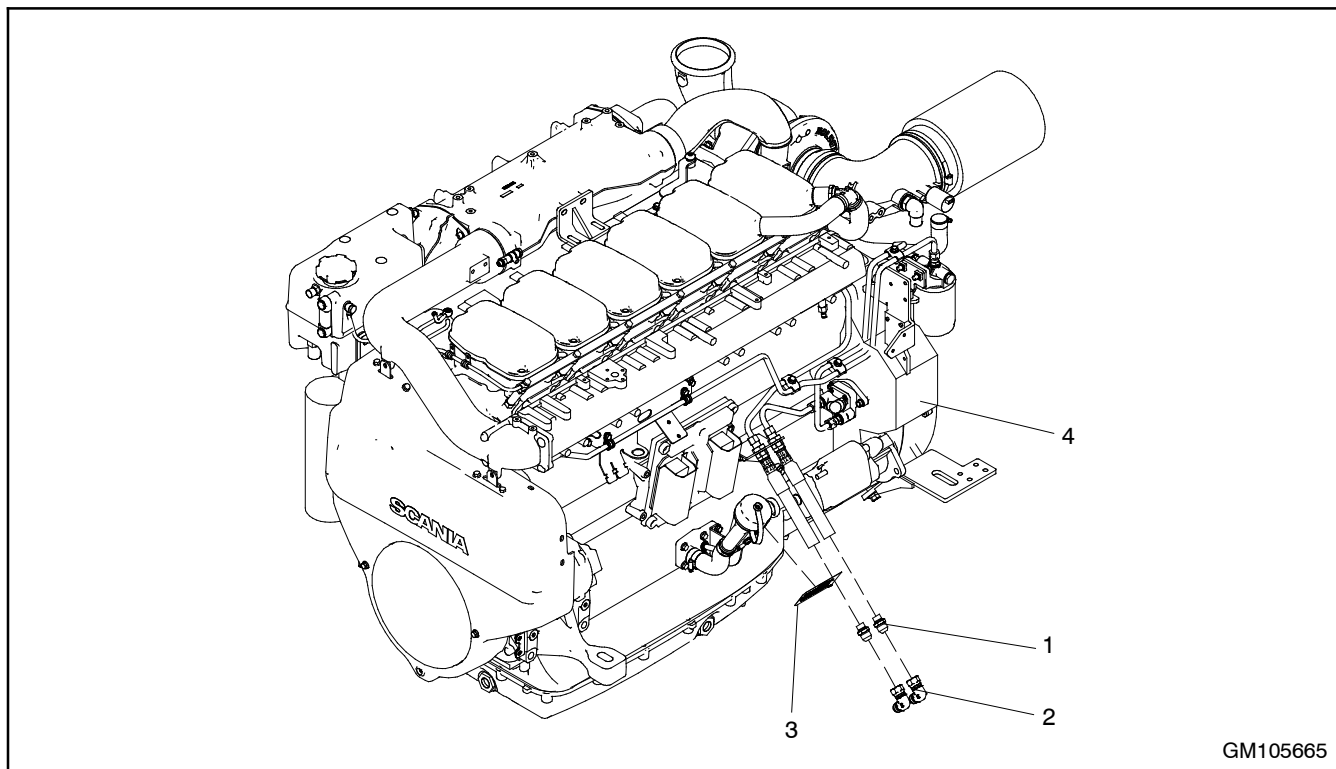
Item	Part Number	Description	Quantity
1	254013	Clamp, hose, 6.25/6.56 in.	1
2	GM106264	Air Filter	1

GM106063- MA2

Item	Part Number	Description	Quantity
1	254013	Clamp, hose, 6.25/6.56 in.	2
2	GM106264	Air Filter	2

Group 105: Engine

300/350 kW



GM105665

Variation GM105665-

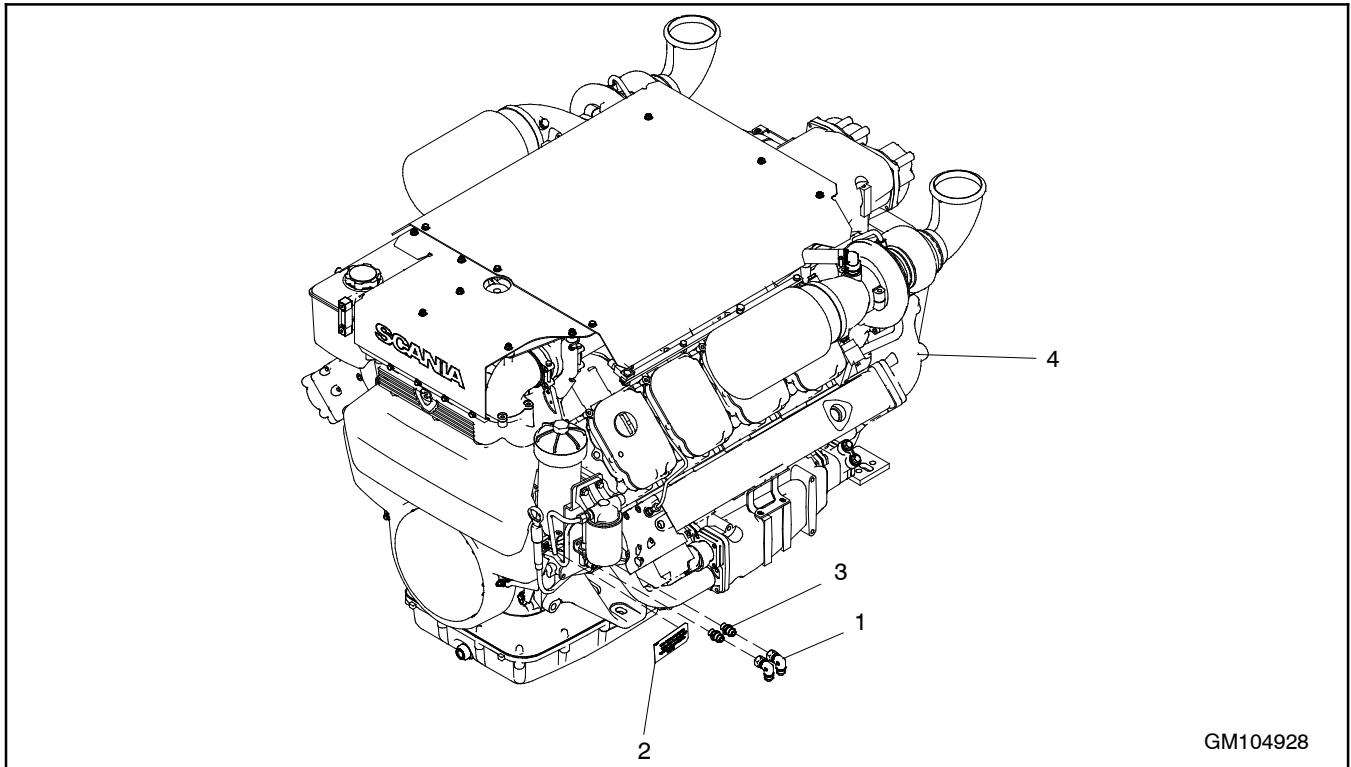
Item	Part Number	Description	Quantity
1	11802004705	Adapter, M16 - 5/8 in.	2
2	11802003402	JIC Adaptor F/M, Swivel, 5/8 in. size	2
3	GM109326	Tag, Instruction	1
4	See Chart	See chart	1

Use this table to identify part number of item 4.

Kit No.	Description	Part Number
		Item 4, Engine
GM105665- GR1	Engine, DI13- 74M 24V HE	GM104627
GM105665- GR2	Engine, DI13- 75M 24V Keel	GM105653
GM105665- GR3	Engine, DI13- 74M 24V HE Dplx Flt	GM105655
GM105665- GR4	Engine, DI13- 75M 24V Keel Dplx Flt	GM105657

Group 105: Engine

450/500 kW



GM104928

GM104928-

Item	Part Number	Description	Quantity
1	11802003402	JIC Adaptor F/M, Swivel, 5/8 in. Size	2
2	GM109326	Tag, Instruction	1
3	11802004705	Adapter, M16 - 5/8 in.	2
4	See Chart	See chart	1

Use this table to identify part number of item 4.

Kit No.	Description	Part Number
		Item 4, Engine
GM104928- GR1	Engine, DI16- 74M 24V HE	GM104628
GM104928- GR2	Engine, DI16- 75M 24V Keel	801163
GM104928- GR3	Engine, DI16- 74M 24V HE Dplx Flt	GM105656
GM104928- GR4	Engine, DI16- 75M 24V Keel Dplx Flt	GM105658

Group 107: Nameplate and Decals

GM104993- GR2

Item	Part Number	Description	Quantity
1	GM107114	Nameplate, Kohler	2
2	249809	Decal, Caution Hot Engine	1
3	226917	Decal, negative battery conn	1
4	238162	Decal, pos. battery connection	1
5	344486	Decal, CE	1
6	359278	Decal, Fuel Inlet	1
7	359279	Decal, Fuel Return	1
9	GM105895	Decal, Two-Way Oil Valve	1
10	GM107361	Decal, Danger, High Voltage	1
11	GM107363	Decal, Danger, Rotating Parts	2
12	GM107365	Decal, Warning, Carbon Monoxide	1
13	GM107367	Decal, Warning, Hot Coolant	1
14	GM13680	Nameplate, Overlay 500 per roll	1
15	GM62217	Nameplate, 5 in. Tall, Blank	1
16	GM91124-12	Decal, Kohler Logo	1

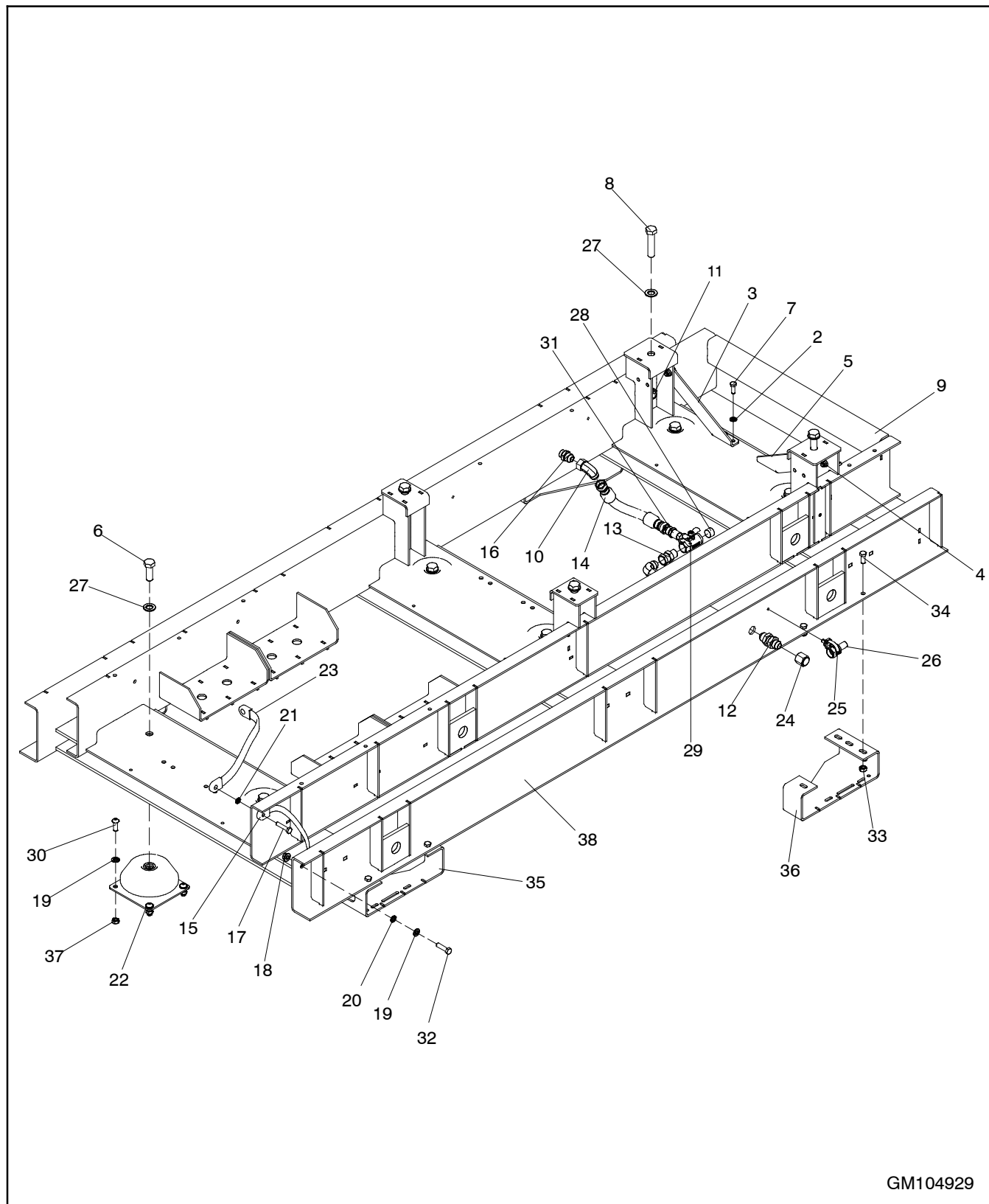
GM104993- GR1

Item	Part Number	Description	Quantity
1	GM107114	Nameplate, Kohler	1
2	GM107366	Decal, Caution Hot Surface	2
3	GM14167	Decal, Drain	1
4	226917	Decal, negative battery conn	1
5	238162	Decal, pos. battery connection	1
6	344486	Decal, CE	1
7	359278	Decal, Fuel Inlet	1
8	359279	Decal, Fuel Return	1
10	GM105895	Decal, Two-Way Oil Valve	1
11	GM107361	Decal, Danger, High Voltage	1
12	GM107363	Decal, Danger, Rotating Parts	2
13	GM107365	Decal, Warning, Carbon Monoxide	1
14	GM107367	Decal, Warning, Hot Coolant	1
15	GM13680	Nameplate, Overlay 500 per roll	1
16	GM62217	Nameplate, 5 in. Tall, Blank	1
17	GM91124- 12	Decal, Kohler Logo	1

Notes

Group 109: Skid and Mounting

GM104929- MA1



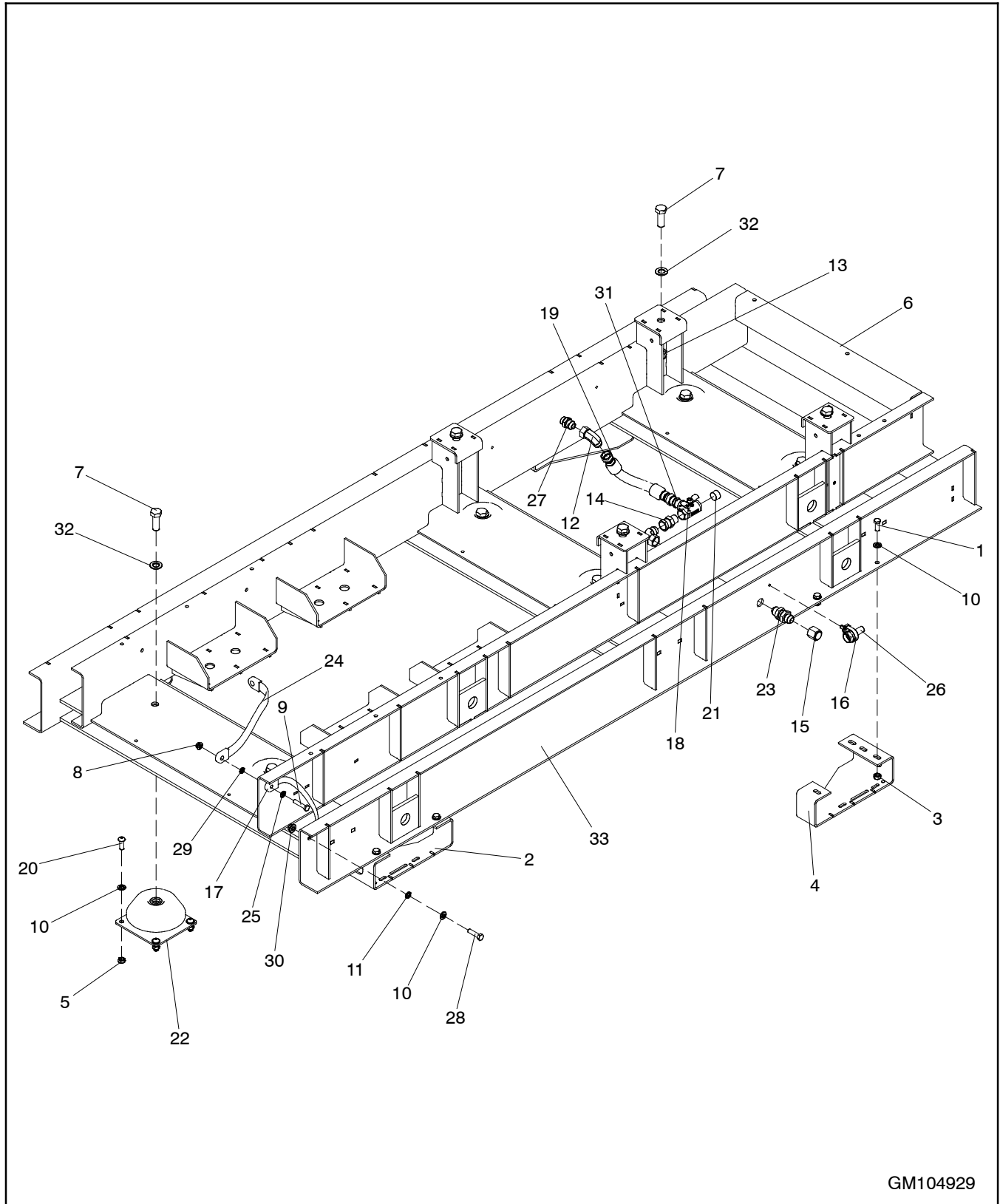
GM104929

Group 109: Skid and Mounting

Item	Part Number	Description	Quantity
2	M125A-10-80	Washer, Plain 10.5 ID x 20.0 OD	9
3	GM109502	Bracket, Front Left Pedestal	1
4	M6923-10-80	Nut, Hex 10 mm	5
5	GM109501	Bracket, Front Right Pedestal	1
6	M933-20055-60	Screw, Hex cap M20 x 55	8
7	M933-10030-60	Screw, Hex cap M10 x 30	8
8	M931-20090-60	Screw, Hex cap M20 x 90	2
9	GM104920	Skid, Upper	1
10	11802000301	Elbow, Swivel Nut 3/4 in., Brass	2
11	M982-20-80	Nut, Hex elastic stop	4
12	11802002703	Bulkhead Union, JIC 12- 12, Brass	1
13	11802001701	Adapter, F/M, 3/4 JIC- 3/4 NPT, Brass	1
14	11810005102	Hose: F18- 10B- 330- AF8- 06- 12- 06- 12	1
15	GM21085	Strap, ground (16 in.)	1
16	11802004704	Adapter, M24- 3/4 in.	1
17	M933-10050-60	Screw, Hex cap M10 x 50	1
18	M6923-12-80	Nut, Hex	1
19	M125A-12-80	Washer, Plain	33
20	M6797A-12-80	Washer, Lock	2
21	M6797A-10-SS	Washer, Lock	2
22	31303025302	Mount, Vibro, High ISO, BRB180, 50SH	6
23	11607000100	Strap, Ground	1
24	11802002902	Cap 12JIC, Brass	1
25	11613000101	Tie, Cable, 13W x 20- 100 mm dia.	1
26	X- 653- 6	Fitting, swivel (3/4 in. hose ID)	1
27	M125A-20-80	Washer, Plain	10
28	X-75-49	Plug, pipe (3/4 in. NPTF) Sq. Key head	1
29	GM105464	Tee Valve	1
30	M7380-12035-83	Screw, Button Head Cap	24
31	11802001001	Adapter, Male 3/4 JIC - 3/4 NPT, Brass	1
32	M931-12045-60	Screw, Hex cap M12 x 45	1
33	M934-12-60	Nut, Hex 12 mm	8
34	M933-12030-60	Screw, Hex cap M12 x 30	8
35	31309004908	Elevation Plate Front Left/Back Right	2
36	31309004808	Elevation Plate Back Left/Front Right	2
37	X-6213-12	Nut, Weld M12- 1.75	24
38	GM104921	Skid, Lower	1

Group 109: Skid and Mounting, continued

GM104929- MA2



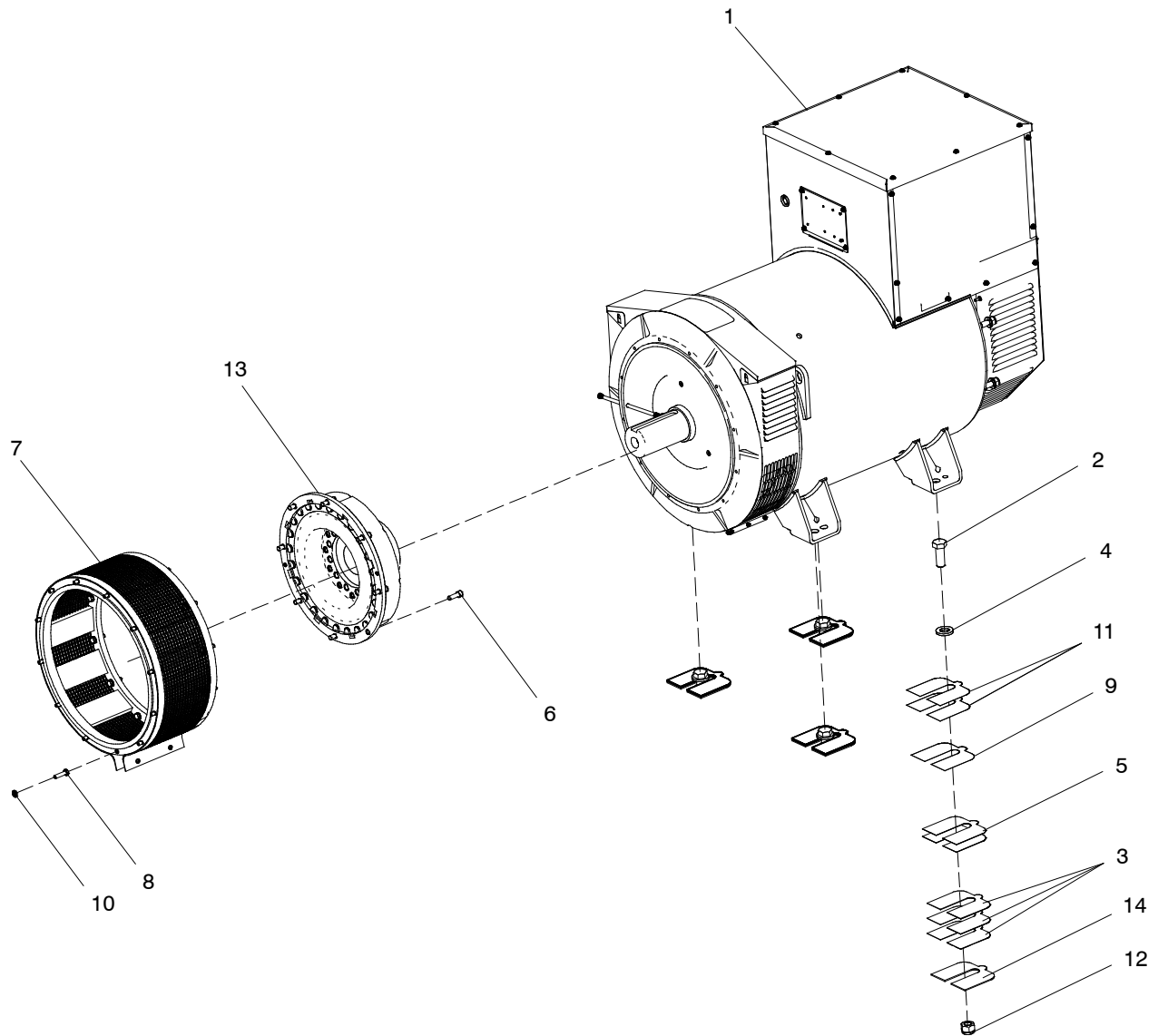
GM104929

Group 109: Skid and Plant, continued

Item	Part Number	Description	Quantity
1	M933-12030-60	Screw, Hex cap M12 x 30	8
2	31309004908	Elevation Plate Front Left/Back Right	2
3	M934-12-60	Nut, Hex 12 mm	8
4	31309004808	Elevation Plate Back Left/Front Right	2
5	X-6213-12	Nut, Weld M12- 1.75	24
6	GM104922	Skid, Upper	1
7	M933-20055-60	Screw, Hex cap M20 x 55	10
8	M6923-10-80	Nut, Hex 10 mm	1
9	M933-10050-60	Screw, Hex cap M10 x 50	1
10	M125A-12-80	Washer, Plain	33
11	M6797A-12-80	Washer, Lock	2
12	11802000301	Elbow, Swivel Nut 3/4 in., Brass	2
13	M982-20-80	Nut, hex elastic stop	4
14	11802001701	Adapter, F/M, 3/4 JIC- 3/4 NPT, Brass	1
15	11802002902	Cap 12 JIC, Brass	1
16	11613000101	Tie, Cable, 13W x 20- 100 mm Dia.	1
17	GM21085	Strap, ground (16 in.)	1
18	GM105464	Tee Valve	1
19	11810005102	Hose: F18- 10B- 330- AF8- 06- 12- 06- 12	1
20	M7380-12035-83	Screw, Button head cap	24
21	X-75-49	Plug, pipe (3/4 in. NPTF) Sq. key head	1
22	31303025302	Mount, Vibro, High ISO, BRB180, 50SH	6
23	11802002703	Bulkhead Union, JIC 12- 12, Brass	1
24	11607000100	Strap, Ground	1
25	M125A-10-80	Washer, Plain 10.5 ID x 20.0 OD	1
26	X-653-6	Fitting, swivel (3/4 in. hose ID)	1
27	11802004704	Adapter, M24 - 3/4 in.	1
28	M931-12045-60	Screw, Hex cap M12 x 45	1
29	M6797A-10-SS	Washer, Lock	2
30	M6923-12-80	Nut, Hex	1
31	11802001001	Adapter, Male 3/4 JIC - 3/4 NPT, Brass	1
32	M125A-20-80	Washer, Plain	10
33	GM104923	Skid, Lower	1

Group 201: Alternator and Mounting

300/350kW



GM104930- MA1

Group 201: Alternator and Mounting

GM104930-

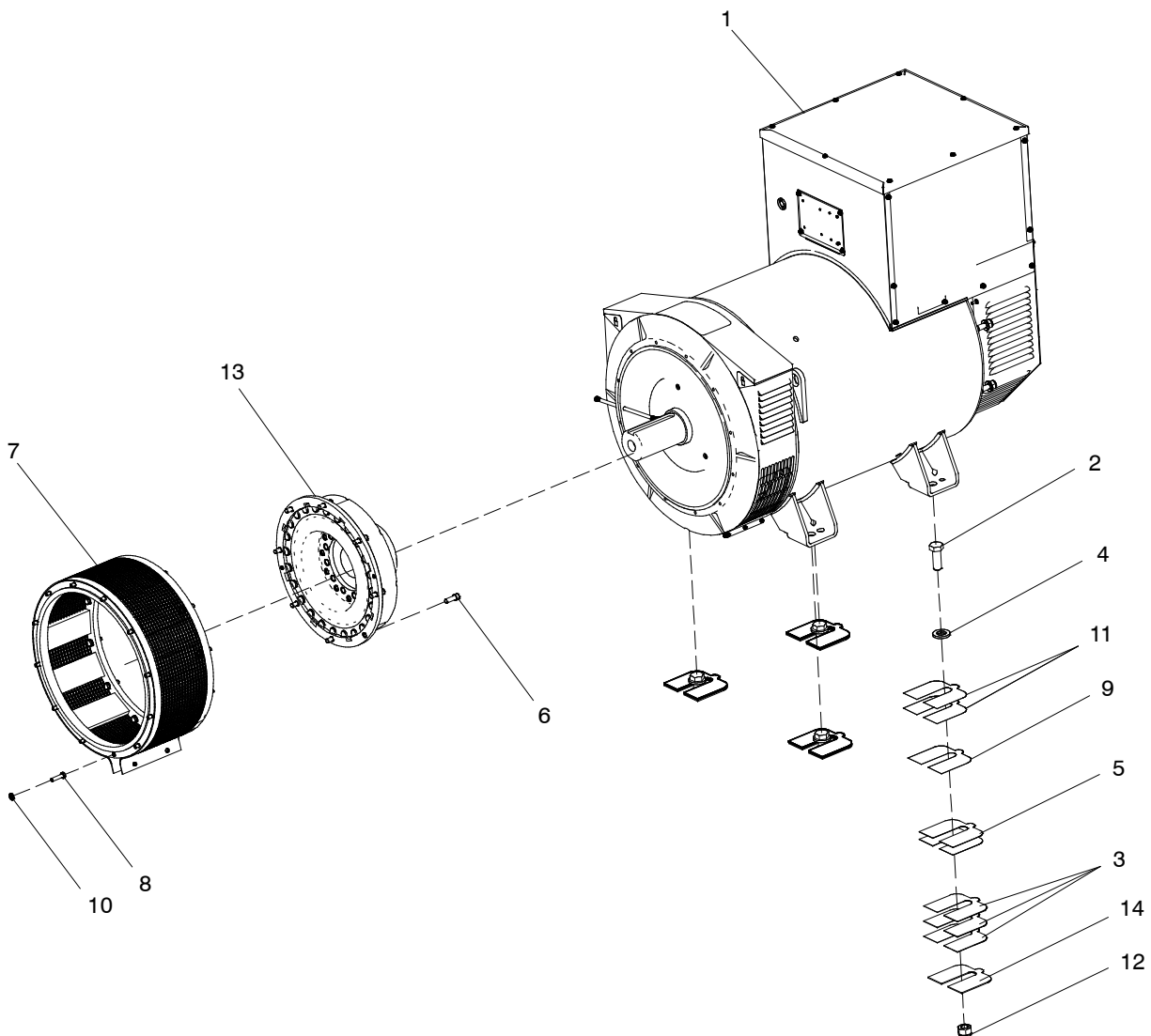
Item	Part Number	Description	Quantity
1	See Chart	Alternator assembly	1
2	M933-24065-60	Screw, hex cap M24 x 65	4
3	GM105216-4	Shim	12
4	X- 801- 10	Washer, hardened, 1.062 ID x 2 in. OD	4
5	GM105216-3	Shim	8
6	M912-12035-92	Screw, socket head cap	8
7	GM104925	Housing, Bell SAE1	1
8	M931-10040-60	Screw, hex cap M10 x 40	24
9	GM105216-2	Shim	4
10	M125A-10-80	Washer, Plain 10.5 ID x 20.0 OD	24
11	GM105216-1	Shim	8
12	M982-24-60	Nut, hex elastic stop	4
13	GM104924	Coupling, Flexible	1
14	GM105216-5	Shim	4

Use this table to identify part number of item 1.

Kit No.	Description	Part Number (Qty) Item 1
GM104930- MA1	Alt Assy, Eco40- 3S, 110/220V 50 Hz Delta	GM104783- 1 (1)
GM104930- MA3	Alt Assy, Eco40- 3S, 277/480V 60Hz	GM104783- 3 (1)
GM104930- MA5	Alt Assy, Eco40- 3S, 120/240V 60Hz Delta	GM104783- 5 (1)
GM104930- MA7	Alt Assy, Eco40- 3S, 220/380V 50Hz	GM104783- 7 (1)
GM104930- MA9	Alt Assy, Eco40- 3S, 230/400V 50Hz	GM104783- 9 (1)
GM104930- MA11	Alt Assy, Eco40- 3S, 240/415V 50Hz	GM104783- 11 (1)
GM104930- MA13	Alt Assy, Eco40- 3S, 220/380V 60Hz	GM104783- 13 (1)
GM104930- MA15	Alt Assy, Eco40- 3S, 110/190V 50Hz	GM104783- 15 (1)
GM104930- MA17	Alt Assy, Eco40- 3S, 127/220V 60Hz	GM104783- 17 (1)
GM104930- MA19	Alt Assy, Eco40- 3S, 120/208V 60Hz	GM104783- 19 (1)
GM104930- MA21	Alt Assy, Eco40- 3S, 139/240V 60Hz	GM104783- 21 (1)

Group 201: Alternator and Mounting, continued

450/500 kW



GM104930- MA2

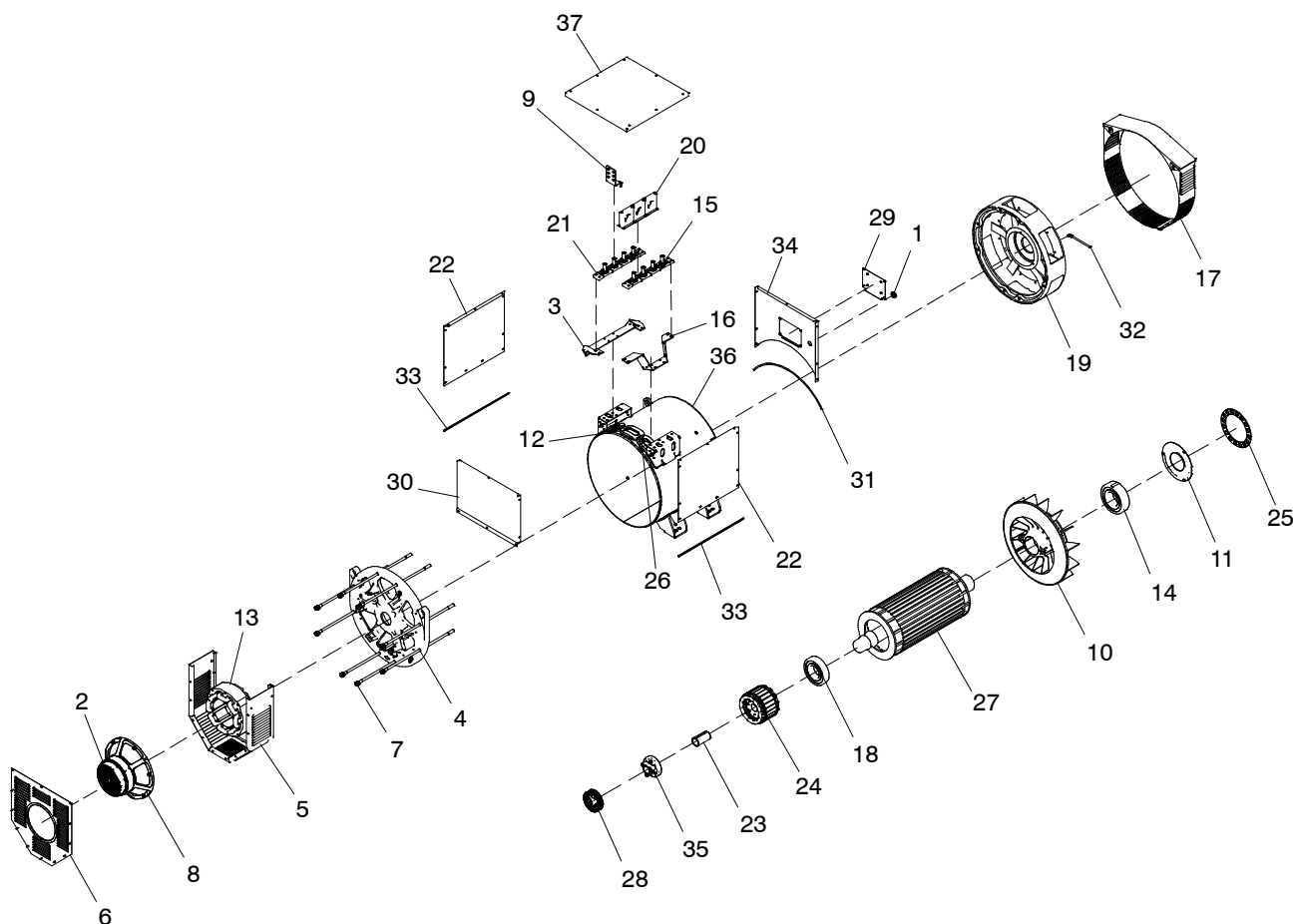
Group 201: Alternator and Mounting, continued

Item	Part Number	Description	Quantity
1	See Chart	Alternator assembly	1
2	M933-24065-60	Screw, hex cap M24 x 65	4
3	GM105216-4	Shim	12
4	X-801-10	Washer, hardened, 1.062 ID x 2 in. OD	4
5	GM105216-3	Shim	8
6	M912-12035-92	Screw, socket head cap	8
7	GM104925	Housing, Bell SAE1	1
8	M931-10040-60	Screw, hex cap M10 x 40	24
9	GM105216-2	Shim	4
10	M125A-10-80	Washer, Plain 10.5 ID x 20.0 OD	24
11	GM105216-1	Shim	8
12	M982-24-60	Nut, hex elastic stop	4
13	GM104924	Coupling, Flexible	1
14	GM105216-5	Shim	4

Use this table to identify part number of item 1.

Kit No.	Description	Part Number (Qty) Item 1
GM104930-MA2	Alt Assy, Eco40-2L, 110/220V 50Hz Delta	GM104783-2
GM104930-MA4	Alt Assy, ECO40-2L, 380-480V	GM104783-4
GM104930-MA6	Alt Assy, ECO40-2L, 120/240V 60Hz Delta	GM104783-6
GM104930-MA8	Alt Assy, Eco40-2L, 220/380V 50Hz	GM104783-8
GM104930-MA10	Alt Assy, Eco40-2L, 230/400V 50Hz	GM104783-10
GM104930-MA12	Alt Assy, Eco40-2L, 240/415V 50Hz	GM104783-12
GM104930-MA14	Alt Assy, Eco40-2L, 220/380V 60Hz	GM104783-14
GM104930-MA16	Alt Assy, Eco40-2L, 110/190V 50Hz	GM104783-16
GM104930-MA18	Alt Assy, Eco40-2L, 127/220V 60Hz	GM104783-18
GM104930-MA20	Alt Assy, Eco40-2L, 120/208V 60Hz	GM104783-20
GM104930-MA22	Alt Assy, Eco40-2L, 139/240V 60Hz	GM104783-22

Group 201: Alternator and Mounting, continued



GM104783-

Group 201: Alternator and Mounting, continued

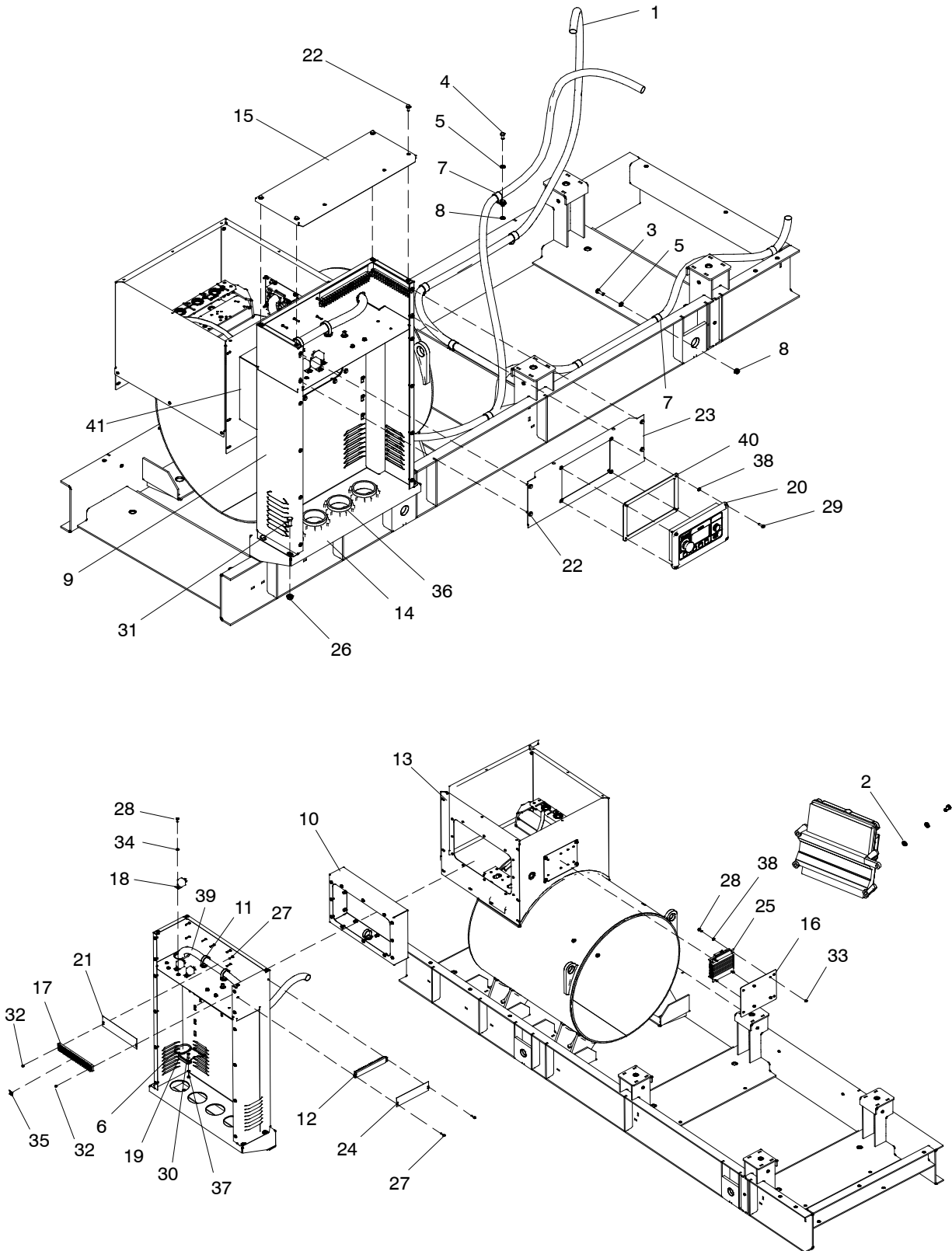
Item	Part Number	Description	Quantity
1	330430725	Cable grommet DG21	1
2	230430141	Rear Lid	1
3	330430762	Support bracket left	1
4	330430476	Non drive end bracket	1
5	330430769	Rear case	1
6	230430140	Rear Side Grid	1
7	See chart	Cover stay bolt	8
8	230430139	PMG Kit	1
9	See chart	Additional Busbar Anti-rotation	1
10	230430125	Fan ECO40B	1
11	230430127	Ring Retainer	1
12	230430055	Cable grommet	1
13	230430121	Exciter stator H- 70 12P	1
14	330430526	Front Bearing	1
15	230430006	Terminal board 40B with 4 studs W1, UL	1
16	330430775	Support bracket right	1
17	230430128	Protection Screen B14	1
18	330430485	Rear bearing	1
19	230430120	Drive end bracket	1
20	See chart	Protection CT	3
21	230430007	Terminal board 40B with 4 studs W2, UL	1
22	330430794	Terminal board side panel	2
23	230430030	Taper securing ring for exciter armature	1
24	See chart	Exciter armature H- 70 12P.	1
25	330430484	Disc locking ring	1
26	330430726	Cable grommet	2
27	See chart	Rotor assy	1
28	330430486	Rotating diode assy T 18/A	1
29	330430773	Regulator holding panel	1
30	330430791	Terminal board rear panel	1
31	330430786	Rubber profile UL EPDM+SP dim 15.6X8.4mm	1
32	230430129	Greasing pipe	1
33	330430785	Rubber profile EPDM dim 8.5X5.5mm	2
34	330430789	Terminal board front panel	1
35	230430029	Securing ring exciter armature	1
36	See chart	Frame and stator	1
37	330430799	Terminal box lid	1

Use this table to identify part numbers of items 7, 9, 20, 24, 27, 36.

Kit No.	Part Number (Qty)					
	Item 7	Item 9	Item 20	Item 24	Item 27	Item 36
GM104783- 1	230430126	230430138	GM109937	230430122	230430124	230430119
GM104783- 2	230430045	230430138	GM109938	330430744	230430123	230430118
GM104783- 3	230430126	-	GM24898	230430122	230430124	230430119
GM104783- 4	230430045	-	GM66775	330430744	230430123	230430118
GM104783- 5	230430126	230430138	GM109937	230430122	230430124	230430119
GM104783- 6	230430045	230430138	GM109938	330430744	230430123	230430118
GM104783- 7	230430126	-	GM24898	230430122	230430124	230430119
GM104783- 8	230430045	-	GM66775	330430744	230430123	230430118
GM104783- 9	230430126	-	GM24898	230430122	230430124	230430119
GM104783- 10	230430045	-	GM66775	330430744	230430123	230430118
GM104783- 11	230430126	-	GM24898	230430122	230430124	230430119
GM104783- 12	230430045	-	GM66775	330430744	230430123	230430118
GM104783- 13	230430126	-	GM24898	230430122	230430124	230430119
GM104783- 14	230430045	-	GM66775	330430744	230430123	230430118
GM104783- 15	230430126	230430138	GM109937	230430122	230430124	230430119
GM104783- 16	230430045	-	GM109938	330430744	230430123	230430118
GM104783- 17	230430126	230430138	GM109937	230430122	230430124	230430119
GM104783- 18	230430045	230430138	GM109938	330430744	230430123	230430118
GM104783- 19	230430126	230430138	GM109937	230430122	230430124	230430119
GM104783- 20	230430045	230430138	GM109938	330430744	230430123	230430118
GM104783- 21	230430126	230430138	GM109937	230430122	230430124	230430119
GM104783- 22	230430045	230430138	GM109938	330430744	230430123	230430118

Group 301: Controller and Mounting

300/350kW



GM104931-MA2

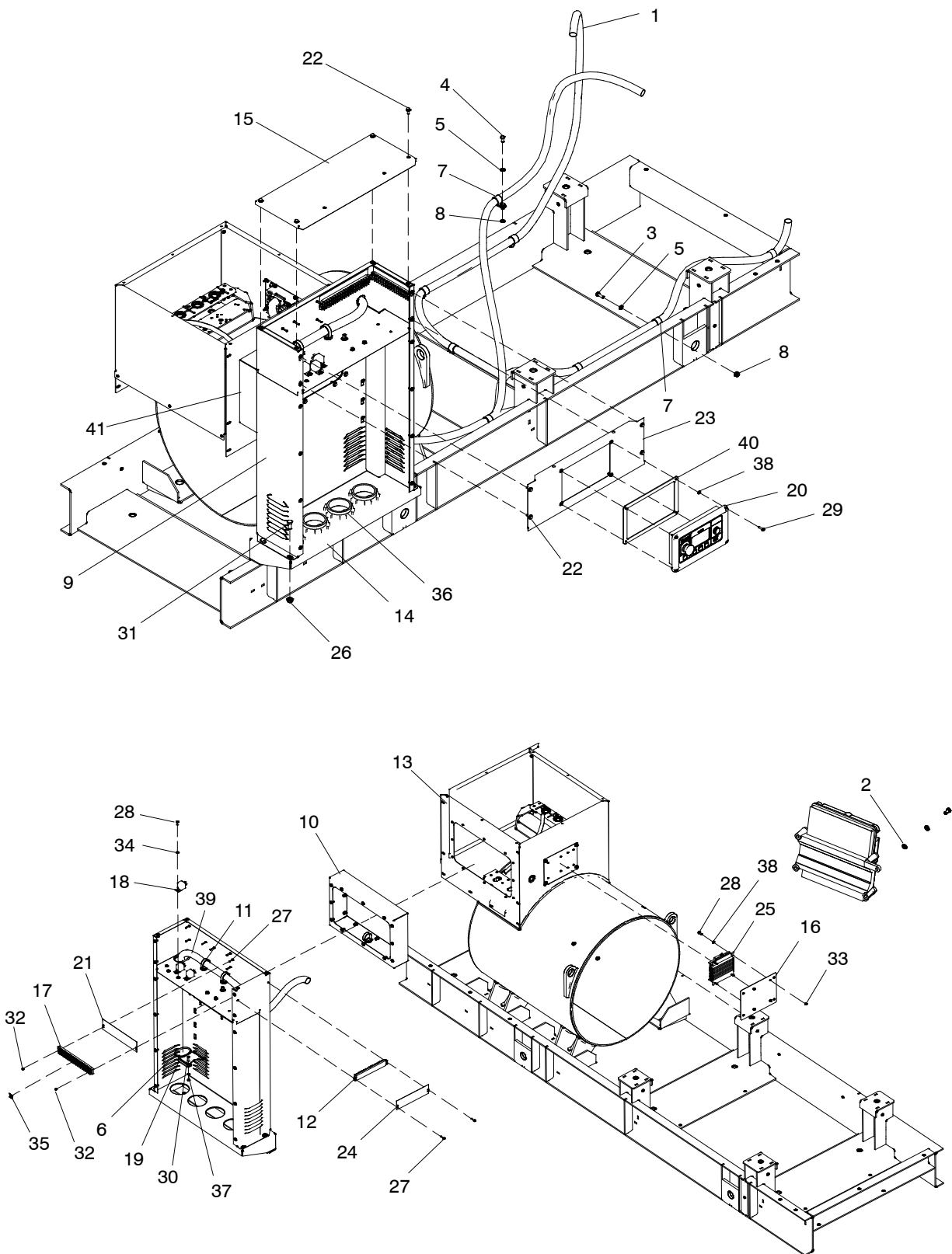
Group 301: Controller and Mounting

GM104931- MA2

Item	Part Number	Description	Quantity
1	GM105384	Harness, Engine; Scania DI13 DEC3500	1
2	M6797A-08-SS	Washer, Lock (M8 Stainless)	1
3	M933-08025-60	Screw, hex cap M8 x 25	7
4	M933-08016-60	Screw, hex cap M8 x 16	1
5	M125A-08-80	Washer, Plain 8.4 ID x 16.0 OD	8
6	23369 00101	Grommet, Nylon	1
7	X-672-32	Clamp, insulated, 1.06 in.	8
8	M6923-08-80	Nut, Hex 8mm	7
9	GM104848-S	Box, Power	1
10	GM104913-S	Duct, Transition	1
11	11613000101	Tie, cable, fir tree, 13W x 20- 100 mm DIA	4
12	241621	Strip, terminal	1
13	GM104825	Panel, J- Box Side	1
14	GM104847	Support, Power Box	1
15	GM104849	Cover, Power Box	1
16	GM105448	Panel, 4D Activator Board	1
17	273769	Terminal Block, 20- Position, 2- Row	1
18	GM49747	Relay, 24V DC	3
19	GM74531	Guard, Rodent	1
20	GM92086	Dec3500 controller assy	1
21	GM87761	Strip, Marker	1
22	M6921-06016-60	Screw, Hex Flange M6 x 16 mm fly thrd js 500	32
23	GM105019-S	Controller Panel	1
24	GM87762	Strip, Marker	1
25	GM88453	Board, Assembly 4D activator	1
26	M6923-10-80	Nut, Hex 10 mm	9
27	M7985A-04020-20	Screw, pan head mach.	4
28	M7985A-05016-20	Screw, Pan Head Machine	9
29	M7985A-05020-20	Screw, Pan Head Machine	4
30	M933-05020-60	Screw, Hex Cap M5 x 20	2
31	M933-10025-60	Screw, Hex Cap M10 x 25	9
32	M934-04-50	Nut, Hex 4 mm	4
33	M934-05-50	Nut, Hex 5 mm	6
34	X-22-9	Washer, lock.20 ID x.373 in. OD	5
35	X-6073-2	Jumper	1
36	X-6266-3	Conn. Cable	4
37	M6797A-05-80	Washer, Lock	4
38	M125A-05-80	Washer, Plain	8
39	GM105388	Harness, Control, Scania DI13 DI16 Dec3500	1
40	GM88990	Gasket, Controller Cover	1
41	19010 08112	Neoprene, closed cell (3/4 in. W x 1/8 in. T)	1

Group 301: Controller and Mounting, continued

450/500kW



GM104931- MA1

Group 301: Controller and Mounting, continued

GM104931- MA1

Item	Part Number	Description	Quantity
1	GM105386	Harness, Engine; Scania DI16 DEC3500	1
2	M6797A-08-SS	Washer, Lock (M8 Stainless)	1
3	M933-08025-60	Screw, hex cap M8 x 25	7
4	M933-08016-60	Screw, hex cap M8 x 16	1
5	M125A-08-80	Washer, Plain 8.4 ID x 16.0 OD	8
6	23369 00101	Grommet, Nylon	1
7	X-672-32	Clamp, insulated, 1.06 in.	8
8	M6923-08-80	Nut, Hex 8 mm	7
9	GM104848-S	Box, Power	1
10	GM104913-S	Duct, Transition	1
11	11613000101	Tie, cable, fir tree, 13W x 20- 100 mm DIA	4
12	241621	Strip, terminal	1
13	GM104825	Panel, J- Box Side	1
14	GM104847	Support, Power Box	1
15	GM104849	Cover, Power Box	1
16	GM105448	Panel, 4D Activator Board	1
17	273769	Terminal Block, 20- Position, 2- Row	1
18	GM49747	Relay, 24V DC	3
19	GM74531	Guard, Rodent	1
20	GM92086	Dec3500 controller assy	1
21	GM87761	Strip, Marker	1
22	M6921-06016-60	Screw, Hex Flange M6x16mm fly thrd js 500	32
23	GM105019-S	Controller Panel	1
24	GM87762	Strip, Marker	1
25	GM88453	Board, Assembly 4D activator	1
26	M6923-10-80	Nut, Hex 10mm	9
27	M7985A-04020-20	Screw, pan head mach.	4
28	M7985A-05016-20	Screw, Pan Head Machine	9
29	M7985A-05020-20	Screw, Pan Head Machine	4
30	M933-05020-60	Screw, Hex Cap M5 x 20	2
31	M933-10025-60	Screw, Hex Cap M10 x 25	9
32	M934-04-50	Nut, Hex 4mm	4
33	M934-05-50	Nut, Hex 5mm	6
34	X-22-9	Washer, lock.20 ID x.373 in. OD	5
35	X-6073-2	Jumper	1
36	X-6266-3	Conn. Cable	4
37	M6797A-05-80	Washer, Lock	4
38	M125A-05-80	Washer, Plain	8
39	GM105388	Harness, Control, Scania DI13 DI16 Dec3500	1
40	GM88990	Gasket, Controller Cover	1
41	19010 08112	Neoprene, closed cell (3/4 in. W x 1/8 in.T)	1

Group 701: Literature

Variation 701- 197- 31

Item	Part Number	Description	Quantity
1	G12- 202	Brochure, Sea Spares	1
2	G12- 276	Brochure, Carbon Monoxide	1
3	G14- 21	Service Points, Americas & Carribbean	1
4	G14- 22	Service Pts, Atlantic, Medit & Pers Gulf	1
5	G14- 23	Service Points, Asia, Aust & New Zealand	1
6	G2- 198	S/S, 350EOZCS/300EFOZCS, 3Ph, Dsl Marine	1
7	GM77998	Tag, Warranty Registration	1
8	PLS- 2058	Polybag, Ziplock	1
9	TP- 5620	Safety Precautions, Marine	1
10	TP- 6692	Warranty, Marine (33 kW & Above)	1
11	TP- 6701	O/M SiteTech Software	1
11	TP- 6701- F	O/M SiteTech Software, French	1
12	TP- 7126	O/M 350- 500EOZCS/300- 450EFOZCS, Marine	1
13	TP- 7127	I/M 350- 500EOZCS/300- 450EFOZCS, Marine	1
14	TP- 7128	S/M 350- 500EOZCS/300- 450EFOZCS Marine	1
15	TP- 7129	P/C 350- 500EOZCS/300- 450EFOZCS Marine	1
16	TP- 7132	O/M Scania DI13 Engine, Marine	1
17	TP- 7133	S/M Scania DI13 Engine	1
18	TP- 7140	O/S/M MeccAlte Alt, 300- 500 kW Marine	1

Variation 701- 197- 32

Item	Part Number	Description	Quantity
1	G12- 202	Brochure, Sea Spares	1
2	G12- 276	Brochure, Carbon Monoxide	1
3	G14- 21	Service Points, Americas & Carribbean	1
4	G14- 22	Service Pts, Atlantic, Medit & Pers Gulf	1
5	G14- 23	Service Points, Asia, Aust & New Zealand	1
6	G2- 199	S/S, 500EOZCS/450EFOZCS, 3Ph, Dsl Marine	1
7	GM77998	Tag, Warranty Registration	1
8	PLS- 2058	Polybag, Ziplock	1
9	TP- 5620	Safety Precautions, Marine	1
10	TP- 6692	Warranty, Marine (33 kW & Above)	1
11	TP- 6701	O/M SiteTech Software	1
11	TP- 6701- F	O/M SiteTech Software, French	1
12	TP- 7126	O/M 350- 500EOZCS/300- 450EFOZCS, Marine	1
13	TP- 7127	I/M 350- 500EOZCS/300- 450EFOZCS, Marine	1
14	TP- 7128	S/M 350- 500EOZCS/300- 450EFOZCS Marine	1
15	TP- 7129	P/C 350- 500EOZCS/300- 450EFOZCS Marine	1
16	TP- 7134	O/M Scania DI16 Engine, Marine	1
17	TP- 7135	S/M Scania DI16 Engine	1
18	TP- 7140	O/S/M MeccAlte Alt, 300- 500 kW Marine	1

Parts List: Accessories

Qty.	Description	Part No.
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Remote Controller Mounting, DEC3500, 40', Open Units GM96985- KA1- G49

1	Gasket, Controller Cover	GM88990
1	Panel, Remote PCB Mounting	GM96382- G49
1	Pcb Assy, Dec3500 Interconnect Board	GM96419
1	Harness, Remote Controller	GM96428
8	Nut, Hex Machine Screw, 8- 32 (NRP)	X- 70- 12
16	Spacer, .25 Od, .375 In. (NRP)	X- 712- 13

Generator Heater 10210000101- KA1

1	Heater, Generator, 85- 150 kW	10210000301
2	Screw, Hex Flnge M6x16 mm fly thrd js500 M6921- 06016- 60	

Run Relay, 24V 273744

2	Screw, Machine	X- 49- 26
1	Relay Assembly, 3PDT, 24VDC	273706
2	Washer, plain, .156 ID x .375 in.OD	X- 25- 9
2	Nut, flange whiz, 6- 32	X- 6210- 3

Dry Contact, 15 Relay GM93966- KA2

1	Diagram, Interconnect Dec3500	GM88254
1	PCB Assy, 15 Relay Dry Contact w/ Com	GM92483
6	Nut, hex elastic stop, 8- 32	X- 101- 11
6	Spacer	X- 400- 254

Line Circuit Breaker GM104868- KA1

1	Tie, Cable, Fir Tree, 13W x 20- 100mm Dia	11613000101
4	Foam, Black Neoprene Blend 1/2"x1/4"	19010 08518
4	Bus, Load	GM104838
1	Panel, Power Box (NS- Frame)	GM104850
1	Bracket, Circuit Breaker Mounting	GM104867
1	Bus, LineGM	105390
1	Bus, Line	GM105391
1	Bus, Line	GM105392
1	Bus, Line	GM105393
1	Bus, Line	GM105394
1	Bus, Line	GM105395
1	Security Cover	GM105414
2	Bus, Load	GM105571
1	Harness, Breaker,Scania DI13 D16 DEC3500	GM105638
1	Bracket, Latch	GM105862
4	Barrier, Phase	GM106966
1	Auxiliary Contact	GM25990
2	Relay, 24V DC	GM49747
1	Latch, Compression	GM51992
1	Key, Compression Latch	(#1004)GM51993
1	Bracket, Padlock	GM57166
6	Washer, Plain (10.5 ID, 20 OD)	M125A- 10- 80
14	Screw, Hex Flnge M6x16mm fly thrd js500 M6921- 06016- 60	
2	Screw, Pan Head Machine	M7985A- 05016- 20
3	Screw, hex cap	M933- 10012- 60
3	Screw, Hex Cap	M933- 10030- 60
4	Washer, lock, .20 ID x .595 in. OD	X- 22- 13
2	Washer, lock.20 ID x.373 in. OD	X- 22- 9
1	Cable Tie (expense)	X- 468- 2
6	Washer, spring, .46 ID x .875 in. OD	X- 6086- 20
3	Washer, Spring, .803 ID X 1.57 OD	X- 6086- 26
3	Insulator, Standoff	X- 6128- 36
10	Nut, flange whiz, 10- 32	X- 6210- 1
1	Breaker, Circuit 800A 3P EO NS	GM93734- 1

Qty.	Description	Part No.
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Line Circuit Breaker GM104868- KA2

1	Tie, Cable, Fir Tree, 13W x 20- 100mm Dia	11613000101
4	Foam, Black Neoprene Blend 1/2"x1/4"	19010 08518
4	Bus, Load	GM104838
1	Panel, Power Box (NS- Frame)	GM104850
1	Bracket, Circuit Breaker Mounting	GM104867
1	Bus, LineGM	105390
1	Bus, Line	GM105391
1	Bus, Line	GM105392
1	Bus, Line	GM105393
1	Bus, Line	GM105394
1	Bus, Line	GM105395
1	Security Cover	GM105414
2	Bus, Load	GM105571
1	Harness, Breaker,Scania DI13 D16 DEC3500	GM105638
1	Bracket, Latch	GM105862
4	Barrier, Phase	GM106966
1	Auxiliary Contact	GM25990
2	Relay, 24V DC	GM49747
1	Latch, Compression	GM51992
1	Key, Compression Latch	(#1004)GM51993
1	Bracket, Padlock	GM57166
6	Washer, Plain (10.5 ID, 20 OD)	M125A- 10- 80
14	Screw, Hex Flnge M6x16mm fly thrd js500 M6921- 06016- 60	
2	Screw, Pan Head Machine	M7985A- 05016- 20
3	Screw, hex cap	M933- 10012- 60
3	Screw, Hex Cap	M933- 10030- 60
4	Washer, lock, .20 ID x .595 in. OD	X- 22- 13
2	Washer, lock.20 ID x.373 in.OD	X- 22- 9
1	Cable Tie (expense)	X- 468- 2
6	Washer, spring, .46 ID x .875 in. OD	X- 6086- 20
3	Washer, Spring, .803 ID X 1.57 OD	X- 6086- 26
3	Insulator, Standoff	X- 6128- 36
10	Nut, flange whiz, 10- 32	X- 6210- 1
1	Breaker, Circuit 1000A 3P EO NS	GM93734- 2

Line Circuit Breaker GM104868- KA3

1	Tie, Cable, Fir Tree, 13W x 20- 100mm Dia	11613000101
4	Foam, Black Neoprene Blend 1/2"x1/4"	19010 08518
4	Bus, Load	GM104838
1	Panel, Power Box (NS- Frame)	GM104850
1	Bracket, Circuit Breaker Mounting	GM104867
1	Bus, Line GM	105390
1	Bus, Line	GM105391
1	Bus, Line	GM105392
1	Bus, Line	GM105393
1	Bus, Line	GM105394
1	Bus, Line	GM105395
1	Security Cover	GM105414
2	Bus, Load	GM105571
1	Harness, Breaker,Scania DI13 D16 DEC3500	GM105638
1	Bracket, Latch	GM105862
4	Barrier, Phase	GM106966
1	Auxiliary Contact	GM25990
2	Relay, 24V DC	GM49747
1	Latch, Compression	GM51992
1	Key, Compression Latch	(#1004)GM51993
1	Bracket, Padlock	GM57166
6	Washer, Plain (10.5 ID, 20 OD)	M125A- 10- 80
14	Screw, Hex Flnge M6x16mm fly thrd js500 M6921- 06016- 60	
2	Screw, Pan Head Machine	M7985A- 05016- 20
3	Screw, hex cap	M933- 10012- 60
3	Screw, Hex Cap	M933- 10030- 60
4	Washer, lock, .20 ID x .595 in. OD	X- 22- 13
2	Washer, lock.20 ID x.373 in.OD	X- 22- 9
1	Cable Tie (expense)	X- 468- 2
6	Washer, spring, .46 ID x .875 in. OD	X- 6086- 20
3	Washer, Spring, .803 ID X 1.57 OD	X- 6086- 26
3	Insulator, Standoff	X- 6128- 36
10	Nut, flange whiz, 10- 32	X- 6210- 1
1	Breaker, Circuit 1250A 3P EO NS	GM93734- 3

Qty.	Description	Part No.
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Line Circuit Breaker GM104868- KA4

1	Tie, Cable, Fir Tree, 13W x 20- 100mm Dia	11613000101
4	Foam, Black Neoprene Blend 1/2"x1/4"	19010 08518
4	Bus, Load	GM104838
1	Panel, Power Box (NS- Frame)	GM104850
1	Bracket, Circuit Breaker Mounting	GM104867
1	Bus, LineGM	105390
1	Bus, Line	GM105391
1	Bus, Line	GM105392
1	Bus, Line	GM105393
1	Bus, Line	GM105394
1	Bus, Line	GM105395
1	Security Cover	GM105414
2	Bus, Load	GM105571
1	Harness, Breaker,Scania DI13 D16 DEC3500	GM105638
1	Bracket, Latch	GM105862
4	Barrier, Phase	GM106966
1	Auxiliary Contact	GM25990
2	Relay, 24V DC	GM49747
1	Latch, Compression	GM51992
1	Key, Compression Latch	(#1004)GM51993
1	Bracket, Padlock	GM57166
6	Washer, Plain (10.5 ID, 20 OD)	M125A- 10- 80
14	Screw, Hex Flnge M6x16mm fly thrd js500	M6921- 06016- 60
2	Screw, Pan Head Machine	M7985A- 05016- 20
3	Screw, hex cap	M933- 10012- 60
3	Screw, Hex Cap	M933- 10030- 60
4	Washer, lock, .20 ID x .595 in. OD	X- 22- 13
2	Washer, lock.20 ID x.373 in.OD	X- 22- 9
1	Cable Tie (expense)	X- 468- 2
6	Washer, spring, .46 ID x .875 in. OD	X- 6086- 20
3	Washer, Spring, .803 ID X 1.57 OD	X- 6086- 26
3	Insulator, Standoff	X- 6128- 36
10	Nut, flange whiz, 10- 32	X- 6210- 1
1	Breaker, Circuit 1250A 3P EO NS	GM93734- 4

Bus, Load Kit

1	Bracket, Circuit Breaker Mounting	GM104867
1	Bus Load Kit	GM105577
2	Bus, Load	GM105578
2	Bus, Load	GM105596
1	Bus, Load	GM105597
1	Bus, Load	GM105598
1	Panel, Power Box (NS- Frame)	GM105945
12	Washer, Plain (10.5 ID, 20 OD)	M125A- 10- 80
14	Screw, Hex Flnge M6x16mm fly thrd js500	M6921- 06016- 60
6	Screw, hex cap	M933- 10012- 60
6	Screw, Hex Cap (Expense)	M933- 10030- 60
12	Washer, spring, .46 ID x .875 in. OD	X- 6086- 20
3	Washer, Spring, .803 ID X 1.57 OD	X- 6086- 26
6	Insulator, Standoff	X- 6128- 36

Bus, Neutral Kit

1	Bus, Neutral	GM105401
1	Bus, Neutral	GM105403
4	Washer, Plain (10.5 ID, 20 OD)	M125A- 10- 80
2	Washer, Plain	M125A- 20- 80
1	Screw, Hex Cap	M931- 20065- 60
2	Screw, hex cap	M933- 10012- 60
2	Screw, Hex Cap	M933- 10030- 60
1	Nut, hex	M934- 20- 80
4	Washer, spring, .46 ID x .875 in. OD	X- 6086- 20
3	Washer, Spring, .803 ID X 1.57 OD	X- 6086- 26
2	Insulator, Standoff	X- 6128- 36

Qty.	Description	Part No.
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Bus, Neutral Kit

1	Bus, Neutral	GM107043
1	Bus, Neutral	GM107044
4	Lead, 4/0, 10, L0	GM107160
12	Washer, Plain (10.5 ID, 20 OD)	M125A- 10- 80
2	Washer, Plain	M125A- 12- 80
1	Screw, hex cap	M931- 12060- 60
2	Screw, hex cap	M933- 10012- 60
2	Screw, Hex Cap	M933- 10030- 60
4	Screw, Hex Cap	M933- 10035- 60
4	Nut, Hex 10mm	M934- 10- 60
1	Nut, Hex 12mm	M934- 12- 60
1	Cable tie	X- 468- 4
12	Washer, spring, .46 ID x .875 in. OD	X- 6086- 20
1	Washer, Spring, .803 ID X 1.57 OD	X- 6086- 26
1	Washer, spring, .515 IDx1.06in.OD	X- 6086- 5
2	Insulator, Standoff	X- 6128- 36

Oil Level Indicator (Low/High)

1	Gauge, oil level	227257
4	Mount, controller	241769
1	Adapter, Male 1/2 JIC - 1/2 NPT, Brass	11802000901
1	Bracket, Oil Level Indicator Mtg	GM105412
1	Adapter, Jic - Npt	GM105413
1	Hose:F18- 8B- 500- AF8- 68- 08- 68- 08	GM105475
1	Washer, Plain 8.4 ID x 16.0 OD	M125A- 08- 80
2	Washer, Plain (10.5 ID, 20 OD)	M125A- 10- 80
2	Nut, Hex 10mm	M6923- 10- 80
1	Screw, Hex Cap	M933- 08025- 60
2	Screw, hex cap,fully thrd M10 x 25mm	M933- 10025- 60
1	Elbow, Street (90 Deg X ½ in. NPTf)	X- 211- 3
4	Washer, lock.262 IDx.743 in.OD	X- 22- 12
1	Connector, 90 deg. (¼ in. id hose)	X- 391- 1
2	Clamp, hose, 1.00/2.00 in.	X- 426- 19
2	Clamp, hose, .25/.70 in.	X- 426- 9
1	Coupling, non- metallic	X- 567- 1
4	Nut, flange spirallock, 1/4- 20	X- 6210- 2
2	Clamp, Insulated, 1.06 In.	X- 672- 32
1	Tube, Vent Line	GM107200
1	Line, Flex Fuel	X- 386- 133
1	Plug, Pipe (3/4 in. NPTF) Sq. Key head	X- 75- 49

Oil Level Indicator (Low/High)

1	Gauge, oil level	227257
4	Mount, controller	241769
1	Adapter, Male 1/2 JIC - 1/2 NPT, Brass	11802000901
1	Bracket, Oil Level Indicator Mtg	GM105412
1	Adapter, Jic - Npt	GM105413
1	Hose:F18- 8B- 500- AF8- 68- 08- 68- 08	GM105475
1	Washer, Plain 8.4 ID x 16.0 OD	M125A- 08- 80
2	Washer, Plain (10.5 ID, 20 OD)	M125A- 10- 80
2	Nut, Hex 10mm	M6923- 10- 80
1	Screw, Hex Cap	M933- 08025- 60
2	Screw, hex cap,fully thrd M10 x 25mm	M933- 10025- 60
1	Elbow, Street (90 Deg X ½ in. NPTf)	X- 211- 3
4	Washer, lock.262 IDx.743 in.OD	X- 22- 12
1	Connector, 90 deg. (¼ in. id hose)	X- 391- 1
2	Clamp, hose, 1.00/2.00 in.	X- 426- 19
2	Clamp, hose, .25/.70 in.	X- 426- 9
1	Coupling, non- metallic	X- 567- 1
4	Nut, flange spirallock, 1/4- 20	X- 6210- 2
2	Clamp, Insulated, 1.06 In.	X- 672- 32
1	Tube, Vent Line	GM107177
1	Line, Flex Fuel	X- 386- 133
1	Plug, Pipe (3/4 in. NPTF) Sq. Key head	X- 75- 49

Qty.	Description	Part No.
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Wet Exhaust Elbow

GM105958- KA1

1	Elbow, Wet Exhaust Di13	GM107019
1	Hose, Wet Exhaust Di13	GM107020
1	Switch, Pressure	GM77653
1	Decal, Caution	GM93648
1	Sender, Temperature	GM93708
1	Washer, Plain 8.4 ID x 16.0 OD	M125A- 08- 80
1	Screw, Hex Cap	M933- 08025- 60
4	Clamp, hose, 1.81/2.75 in.	X- 426- 16
1	Clamp, Insulated, 1.06 In.	X- 672- 32

Wet Exhaust Elbow

GM105958- KA2

2	Elbow, Wet Exhaust DI16	GM106988
1	Tube, Wet Exhaust	GM106989
1	Tube, Wet Exhaust	GM106990
2	Switch, Pressure	GM77653
1	Decal, Caution	GM93648
2	Sender, Temperature	GM93708
2	Hose, radiator, straight, 2 in. ID	X- 281- 31
8	Clamp, hose, 2.31/3.25 in.	X- 426- 2
2	Cable tie (GM- NRP)	X- 468- 5
2	Plug, pipe (1/8 in. nptf)	X- 75- 4

Open Unit Guards

GM106823- KA1

2	Mount, Air Cleaner/Exhaust (7.75 in. id)	354953
11.86	Neoprene, closed cell (3/4 in. W x 1/8 in. T)	19010 08112
1.91	Foam, Neoprene Blend	19010 08114
0.1	Sealant, Dow RTV 732	32200 00198
1	RAIN SHIELD, AIR FILTER	GM106724
4	Nut, Hex 8mm	M6923- 08- 80
4	Screw, hex cap	M933- 08016- 60

Open Unit Guards

GM106823- KA2

4	Mount, Air Cleaner/Exhaust (7.75 in. id)	354953
11.86	Neoprene, closed cell (3/4 in. W x 1/8 in. T)	19010 08112
1.91	Foam, Neoprene Blend	19010 08114
0.1	Sealant, Dow RTV 732	32200 00198
2	RAIN SHIELD, AIR FILTER	GM106724
8	Nut, Hex 8mm	M6923- 08- 80
8	Screw, hex cap	M933- 08016- 60

Appendix A Abbreviations

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

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

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

Appendix B Common Hardware Application Guidelines

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

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

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

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

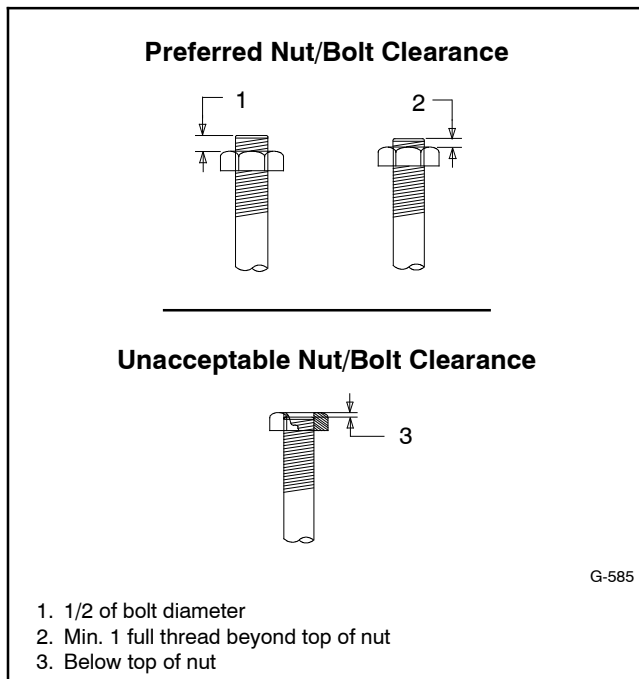


Figure 1 Acceptable Bolt Lengths

Steps for common hardware application:

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

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

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

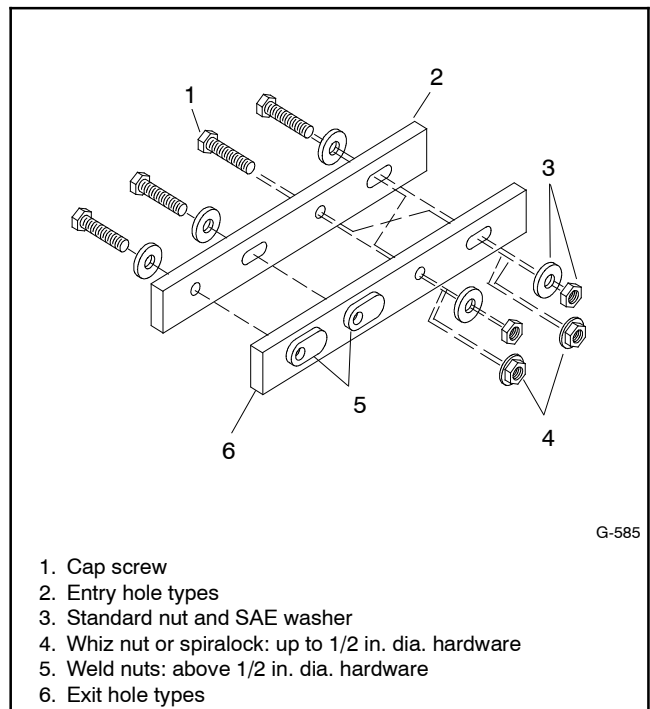


Figure 2 Acceptable Hardware Combinations

Appendix C General Torque Specifications

American Standard Fasteners Torque Specifications						
Size	Assembled into Cast Iron or Steel					Assembled into Aluminum
	Grade 2		Grade 5		Grade 8	
8-32	2.0 Nm	(18 in. lb.)	3.1 Nm	(27 in. lb.)	-	See Note 3
10-24	3.2 Nm	(28 in. lb.)	4.9 Nm	(43 in. lb.)	-	
10-32	3.6 Nm	(32 in. lb.)	5.5 Nm	(49 in. lb.)	-	
12-24	5.0 Nm	(44 in. lb.)	7.7 Nm	(68 in. lb.)	-	
1/4-20	7.6 Nm	(67 in. lb.)	11.6 Nm	(103 in. lb.)	16.5 Nm	(146 in. lb.)
1/4-28	8.6 Nm	(76 in. lb.)	13.2 Nm	(117 in. lb.)	18.8 Nm	(166 in. lb.)
5/16-18	15.5 Nm	(137 in. lb.)	24.0 Nm	(212 in. lb.)	33.9 Nm	(300 in. lb.)
5/16-24	17.1 Nm	(151 in. lb.)	26.4 Nm	(234 in. lb.)	40 Nm	(28 ft. lb.)
3/8-16	27 Nm	(243 in. lb.)	42 Nm	(31 ft. lb.)	60 Nm	(44 ft. lb.)
3/8-24	31 Nm	(274 in. lb.)	47 Nm	(35 ft. lb.)	68 Nm	(50 ft. lb.)
7/16-14	43 Nm	(32 ft. lb.)	68 Nm	(50 ft. lb.)	96 Nm	(71 ft. lb.)
7/16-20	49 Nm	(36 ft. lb.)	76 Nm	(56 ft. lb.)	107 Nm	(79 ft. lb.)
1/2-13	66 Nm	(49 ft. lb.)	103 Nm	(76 ft. lb.)	146 Nm	(108 ft. lb.)
1/2-20	75 Nm	(55 ft. lb.)	117 Nm	(86 ft. lb.)	164 Nm	(121 ft. lb.)
9/16-12	96 Nm	(71 ft. lb.)	149 Nm	(110 ft. lb.)	210 Nm	(155 ft. lb.)
9/16-18	107 Nm	(79 ft. lb.)	165 Nm	(122 ft. lb.)	235 Nm	(173 ft. lb.)
5/8-11	133 Nm	(98 ft. lb.)	206 Nm	(152 ft. lb.)	290 Nm	(214 ft. lb.)
5/8-18	150 Nm	(111 ft. lb.)	232 Nm	(171 ft. lb.)	328 Nm	(242 ft. lb.)
3/4-10	-		365 Nm	(269 ft. lb.)	515 Nm	(380 ft. lb.)
3/4-16	-		405 Nm	(299 ft. lb.)	572 Nm	(422 ft. lb.)
1-8	-		881 Nm	(650 ft. lb.)	1245 Nm	(918 ft. lb.)
1-12	-		961 Nm	(709 ft. lb.)	1357 Nm	(1001 ft. lb.)

Metric Fasteners Torque Specifications, Measured in Nm (ft. lb.)						
Size (mm)	Assembled into Cast Iron or Steel					Assembled into Aluminum
	Grade 5.8	Grade 8.8	Grade 10.9	Grade 12.9		
Mxxx-04xxx-xx	1.9 (1.4)	2.9 (2.1)	4.3 (3.2)	4.3 (3.2)		See Note 3
Mxxx-05xxx-xx	3.8 (2.8)	5.8 (4.3)	8.5 (6.3)	8.5 (6.3)		
Mxxx-06xxx-xx	6.5 (4.8)	10.4 (7.7)	14.7 (11)	17.6 (13)		
Mxxx-08xxx-xx	16 (12)	25 (17)	36 (26)	43 (31)		
Mxxx-08xxx-xxF	17 (13)	27 (20)	38 (28)	46 (34)		
Mxxx-10xxx-xx	31 (23)	50 (37)	70 (52)	85 (62)		
Mxxx-10xxx-xxF	33 (24)	53 (39)	74 (55)	89 (66)		
Mxxx-12xxx-xx	55 (40)	87 (64)	123 (91)	147 (109)		
Mxxx-12xxx-xxF	60 (44)	95 (70)	134 (99)	161 (119)		
Mxxx-14xxx-xx	87 (64)	135 (103)	196 (145)	236 (174)		
Mxxx-14xxx-xxF	94 (69)	151 (111)	212 (156)	254 (188)		
Mxxx-16xxx-xx	135 (100)	217 (160)	305 (225)	365 (270)		
Mxxx-16xxx-xxF	145 (107)	231 (171)	325 (240)	390 (288)		
Mxxx-18xxx-xx	187 (138)	299 (221)	421 (310)	505 (373)		
Mxxx-18xxx-xxF	210 (155)	336 (248)	473 (349)	567 (419)		
Mxxx-20xxx-xx	264 (195)	423 (312)	595 (439)	714 (526)		
Mxxx-20xxx-xxF	293 (216)	469 (346)	660 (487)	792 (584)		
Mxxx-22xxx-xx	360 (266)	576 (425)	811 (598)	973 (718)		
Mxxx-22xxx-xxF	396 (292)	633 (467)	890 (657)	1068 (788)		
Mxxx-24xxx-xx	457 (337)	731 (539)	1028 (758)	1233 (910)		
Mxxx-24xxx-xxF	498 (367)	797 (588)	1121 (827)	1345 (992)		
Mxxx-27xxx-xx	-	1072 (790)	1507 (1112)	1809 (1334)		
Mxxx-27xxx-xxF	-	1156 (853)	1626 (1199)	1952 (1439)		
Mxxx-30xxx-xx	-	1453 (1072)	2043 (1507)	2452 (1809)		

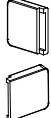
Notes:

1. The torque values above are general guidelines. Always use the torque values specified in the service manuals and/or assembly drawings when they differ from the above torque values.
2. The torque values above are based on new plated threads. Increase torque values by 15% if non-plated threads are used.
3. At minimum, hardware threaded into aluminum must have two diameters of thread engagement. Hardware threaded into steel and cast iron must have 1.25 diameters of thread.
4. Torque values are calculated as equivalent stress loading on American hardware with an approximate preload of 75% of proof strength and a friction coefficient of 0.2.

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	

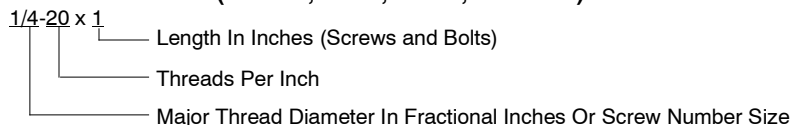
Hardness Grades	
American Standard	
Grade 2	
Grade 5	
Grade 8	
Grade 8/9 (Hex Socket Head)	
Metric	
Number stamped on hardware; 5.8 shown	
Hose Clamp Covers	
Black, EPDM rubber used on worm gear clamps	

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

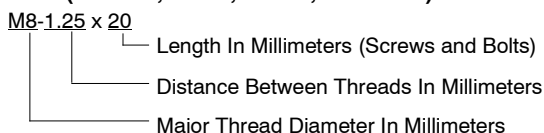
Phillips® screw is a registered trademark of Phillips Screw Company.

Sample Dimensions

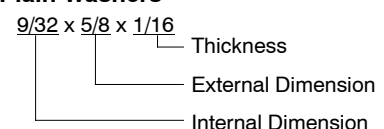
American Standard (Screws, Bolts, Studs, and Nuts)



Metric (Screws, Bolts, Studs, and Nuts)



Plain Washers



Lock Washers



Appendix E Common Hardware List

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

American Standard

Part No. Dimensions Hex Head Bolts (Grade 5)

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

Part No. Dimensions Hex Head Bolts, cont.

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

Part No. Dimensions Type

Hex Nuts

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

Washers

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

Hose Clamp Covers

Part No.	Clamp Size
GM102674-1	13 mm (1/2 in.)
GM102674-2	8 mm (5/16 in.)

Metric

Hex head bolts are hardness grade 8.8 unless noted.

Part No. Dimensions Hex Head Bolts (Partial Thread)

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

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

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

Hex Head Bolts (Full Thread)

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

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

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

Pan Head Machine Screws

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

Flat Head Machine Screws

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

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

Metric, continued

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

Washers

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

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

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