

Service Parts

Engine



Model:

**Volvo TAD1640GE
TAD1641GE
TAD1642GE
TWD1643GE**

Generator Model:

450REOZVB
500REOZVB/C
550/600REOZV/B

KOHLER®

Power Systems



TP-6348 12/14g

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Notes

Introduction

This manual lists service replacement parts for TAD1640GE/1641GE/1642GE and TWD1643GE engines.

Information in this publication represents data available at the time of print. The generator set manufacturer 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 and illustrations.

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

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

Appendices. Includes 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 21-2 is the Cylinder Head 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. **Turn to the Specification Number Index.** The first column lists the generator set spec numbers. The headings identify the groups of parts that make up the generator set.
3. **Identify the group** most likely to include the service part number.
4. **Find the group variation number** at the intersection of the spec number row and the group column. Note the variation number.
5. **Page forward to locate the group** identified in step 3 or find the appropriate page in the Table of Contents.
6. **Find the part on the illustration** and note the item number of the part or **find the part description in the parts list**.
7. 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.

Specification Number Index

Group Title															
	<i>Cylinder Head</i>	<i>Valve Mechanism</i>	<i>Valve Cover</i>	<i>Cylinder Block</i>	<i>Flywheel Housing</i>	<i>Adapter Flywheel</i>	<i>Timing Gear</i>	<i>Camshaft</i>	<i>Crank Mechanism</i>	<i>Engine Mounting</i>	<i>Lubricating System</i>	<i>Oil Filter</i>	<i>Fuel System</i>	<i>Fuel Pump</i>	
Group No.	21-1	21-2	21-3	21-4	21-5	21-6	21-7	21-8	21-9	21-10	22-1	22-2	23-1	23-2	
	Variation Number														

Spec No.														
450REOVZB (TAD1640GE)														
GM36226-GA1	1	1	1	1	1	1	1	1	1	1	1	1	2	1
GM36226-GA4	1	1	1	1	1	1	1	1	1	1	1	1	2	1
500REOVZB/C (TAD1641GE) & 550REOVZB (TAD1642GE)														
GM36226-GA2	1	1	1	1	1	1	1	1	2	1	1	1	2	1
GM36226-GA3	1	1	1	1	1	1	1	1	2	1	1	1	2	1
GM36226-GA5	1	1	1	1	1	1	1	1	2	1	1	1	2	1
GM80027-GA1	1	1	1	1	1	1	1	1	2	1	1	1	2	1
GM80027-GA2	1	1	1	1	1	1	1	1	2	1	1	1	2	1
550/600REOVZ & 600REOVZB (TWD1643GE)														
GM59244-GA1	2	2	1	2	1	1	1	2	3	1	1	1	2	1
GM59244-GA2	2	2	1	2	1	1	1	2	3	1	1	1	2	1
GM78621-GA1	2	2	1	2	1	1	1	2	3	1	1	1	2	1

Group Title															
	<i>Fuel Filter, Components</i>	<i>Unit Injector</i>	<i>Fuel Cleaner/W. Separator</i>	<i>Intake and Exhaust Manifold</i>	<i>Heat Shield for Exhaust</i>	<i>Turbocharger</i>	<i>Crankhouse Ventilation</i>	<i>Air Filter</i>	<i>Oil Cooler</i>	<i>Belt Guard</i>	<i>Radiator Connection</i>	<i>Radiator and Fan</i>	<i>Expansion Tank</i>	<i>Water Pump and Filter</i>	
Group No.	23-3	23-4	23-5	25-1	25-2	25-3	25-4	25-5	26-1	26-2	26-3	26-4	26-5	26-6	
	Variation Number														

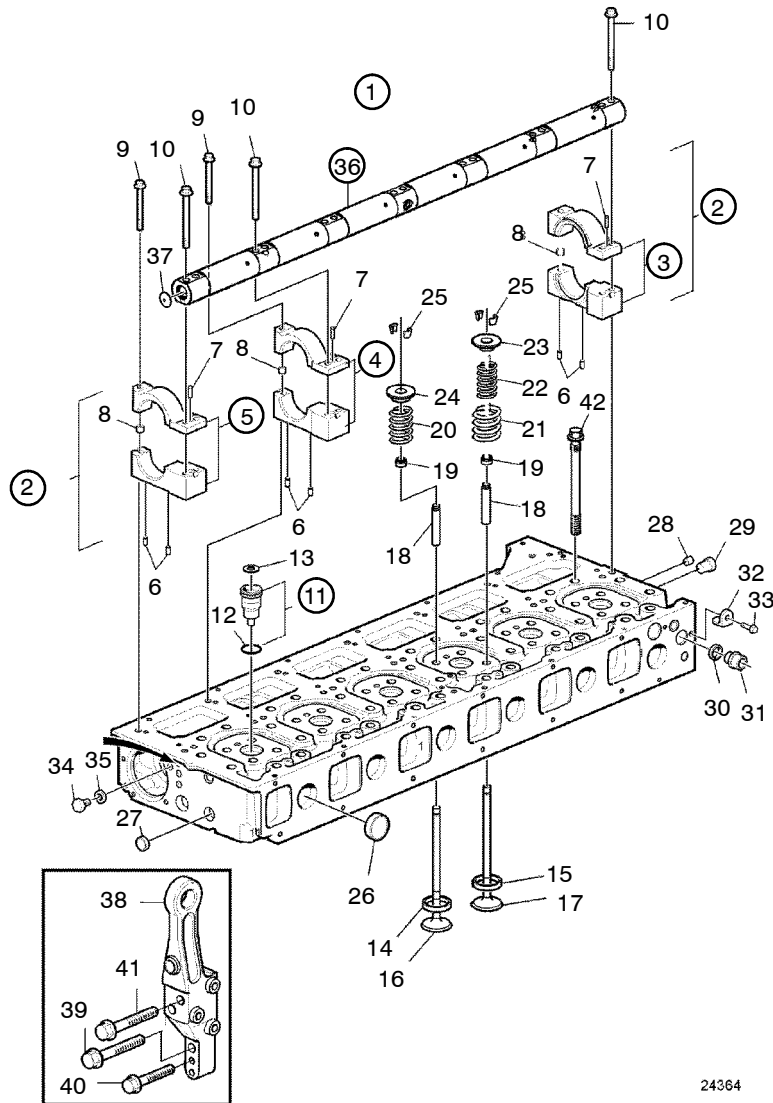
Spec No.														
450REOVZB (TAD1640GE)														
GM36226-GA1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
GM36226-GA4	1	1	1	1	1	1	1	1	1	1	1	1	1	1
500REOVZB/C (TAD1641GE) & 550REOVZB (TAD1642GE)														
GM36226-GA2	1	2	1	1	1	2	1	1	1	1	1	2	1	1
GM36226-GA3	1	2	1	1	1	2	1	1	1	1	1	2	1	1
GM36226-GA5	1	2	1	1	1	2	1	1	1	1	1	2	1	1
GM80027-GA1	1	2	1	1	1	2	1	1	1	1	1	2	1	1
GM80027-GA2	1	2	1	1	1	2	1	1	1	1	1	2	1	1
550/600REOVZ & 600REOVZB (TWD1643GE)														
GM59244-GA1	1	3	1	2	—	3	1	2	2	2	2	3	2	2
GM59244-GA2	1	3	1	2	—	3	1	2	2	2	2	3	2	2
GM78621-GA1	1	3	1	2	—	3	1	2	2	2	2	3	2	2

Specification Number Index, continued

Group Title	Belt Tensioner Aftercooler Alternator Starter Motor Starter Motor Components Control Unit and Connector Electrical System Contacts and Sensors Contacts/Sensors, Analog Electrical Material Repair Kits										
	Group No.	26-7	26-8	30-1	30-2	30-3	30-4	30-5	30-6	30-7	30-8
	Variation Number										
Spec No.											
450REOZVB (TAD1640GE)											
GM36226-GA1	1	—	1	1	1	1	1	1	1	1	1
GM36226-GA4	1	—	1	1	1	1	1	1	1	1	1
500REOZVB/C (TAD1641GE) & 550REOZVB (TAD1642GE)											
GM36226-GA2	1	—	1	1	1	1	1	1	1	1	1
GM36226-GA3	1	—	1	1	1	1	1	1	1	1	1
GM36226-GA5	1	—	1	1	1	1	1	1	1	1	1
GM80027-GA1	1	—	1	1	1	1	1	1	1	1	1
GM80027-GA2	1	—	1	1	1	1	1	1	1	1	1
550/600REOZV & 600REOZVB (TWD1643GE)											
GM59244-GA1	2	1	2	1	1	2	2	2	—	1	2
GM59244-GA2	2	1	2	1	1	2	2	2	—	1	2
GM78621-GA1	2	1	2	1	1	2	2	2	—	1	2

Group 21-1: Cylinder Head

Engine TAD1640GE, TAD1641GE, TAD1642GE with serial number 2016010024 and before



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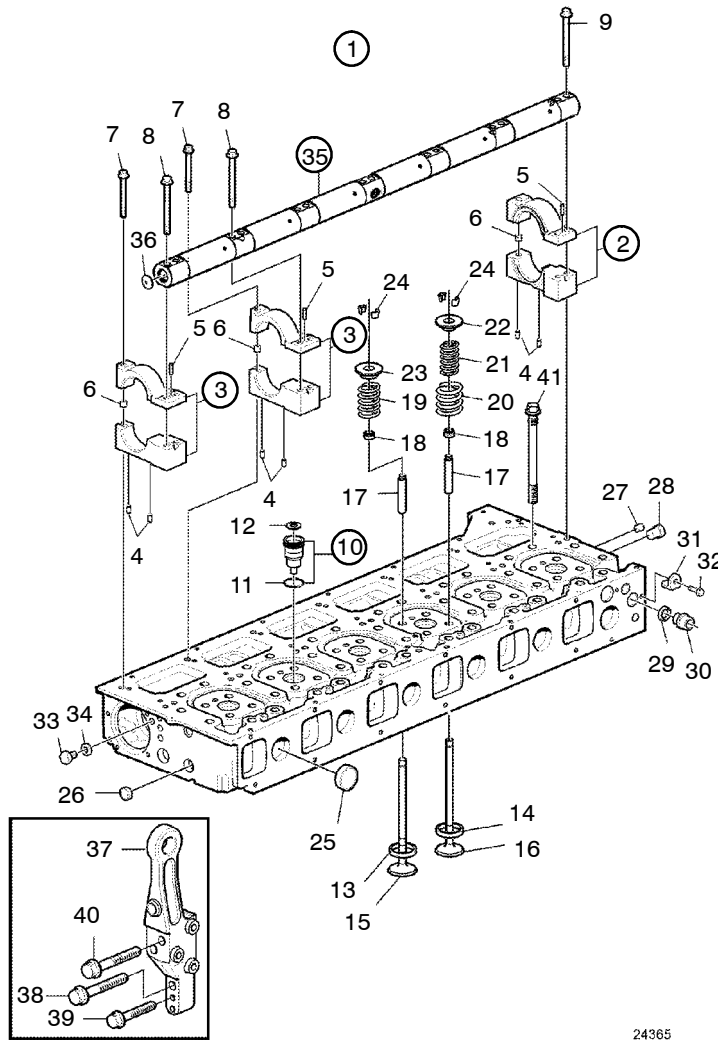
Item	Part Number	Description	Qty. Var. 1	Item	Part Number	Description	Qty. Var. 1
1	GM41339	Cylinder head (includes items 2-34)	1	22	GM41449	Valve spring	12
2	GM41305	Bearing housing, set (includes items 3-5)*	1	23	GM41541	Valve spring washer	12
3	GM41302	Bearing housing (includes items 6-8)*	1	24	GM41540	Valve spring washer	12
4	GM41303	Bearing housing (includes items 6-8)*	5	25	GM41454	Valve collet	48
5	GM41304	Bearing housing (includes items 6-8)*	1	26	GM41415	Cap plug	12
6	GM26467	Pin	14	27	GM41445	Cap plug	4
7	GM41266	Pin	7	28	GM26682	Plug	1
8	GM27715	Sleeve	7	29	GM41494	Cap plug	1
9	#	Flange screw	7	30	GM27726	Sealing ring	1
10	GM41534	Screw	14	31	GM27718	Plug	1
11	GM41593	Sealing kit, fuel injector	6	32	GM27719	Brace, lock	1
12	GM27901	O-ring	6	33	#	Flange screw	1
13	TBD	Washer	6	34	GM26669	Plug	1
14	GM41412	Valve seat	12	35	GM27454	Gasket	1
15	GM41446	Valve seat	12	38	—	Contact Kohler for part number	1
16	GM41588	Inlet valve	12	36	GM41427	Rocker arm shaft	1
17	GM41508	Exhaust valve	12	37	GM27591	Expansion plug	2
18	GM41555	Valve guide	24	39	#	Screw	1
19	GM41447	Valve stem seal	24	40	#	Flange screw	1
20	GM41431	Valve spring	12	41	#	Screw	2
21	GM41448	Valve spring	12	42	GM27722	Screw	38

Common hardware; procure locally.

* When replacing one or more bearing houses the first time, all of the bearing houses must be replaced. Then, each be replace separately.

Group 21-1: Cylinder Head

Engine TAD1640GE, TAD1641GE, TAD1642GE with serial number 2016010025 and after
Engine TWD1643GE



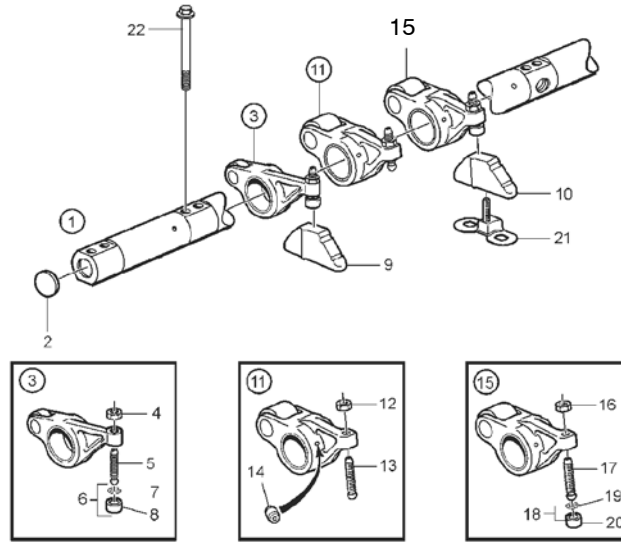
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Item	Part Number	Description	Quantity		Item	Part Number	Description	Quantity	
			Variation 1	Variation 2				Variation 1	Variation 2
1	GM65855	Cylinder head (includes 2-34)	1	1	23	GM41540	Valve spring washer	12	12
2	GM65965	Bearing housing	1	1	24	GM41454	Valve collet	48	48
3	GM65966	Bearing housing	6	6	25	GM65982	Cap plug (D=29mm)	16	16
4	GM26467	Pin	14	14	25	GM65984	Cap plug (D=50mm)	6	6
5	GM41266	Pin	6	6	26	GM65983	Cap plug (D=40mm)	6	6
6	GM27715	Sleeve	7	7	27	GM26682	Plug	1	1
7	#	Flange screw	7	7	28	GM41494	Plug	1	1
8	GM41534	Screw	12	12	29	GM27726	Ring, sealing	2	2
9	#	Flange screw	1	1	30	GM65973	Plug	2	2
10	GM25536	Copper sleeve kit, fuel injector	6	6	31	GM27719	Brace, lock	2	2
11	GM27901	O-ring	6	6	32	GM51651	Screw, flange	2	2
12	TBD	Washer	6	6	33	GM65823	Plug (M10)	1	1
13	GM65958	Valve seat	12	12	33	GM26669	Plug (M12)	1	1
14	GM65953	Valve seat	12	12	34	GM27454	Gasket (M12)	1	1
15	GM65967	Inlet valve	12	12	34	GM26370	Gasket (M10)	1	1
16	GM41508	Exhaust valve	12	12	35	GM65981	Rocker arm shaft	1	1
17	GM41555	Valve guide	24	24	36	GM27591	Expansion plug	2	2
18	GM65980	Valve stem seal	24	24	37	-	Lifting eye	1	1
19	GM41431	Valve spring	12	12	38	#	Screw	1	1
20	GM41448	Valve spring	12	12	39	#	Flange screw	1	1
21	GM41449	Valve spring	12	12	40	#	Screw	2	2
22	GM41541	Valve spring washer	12	12	41	GM27722	Screw	38	38

Common hardware; procure locally.

Group 21-2: Valve Mechanism



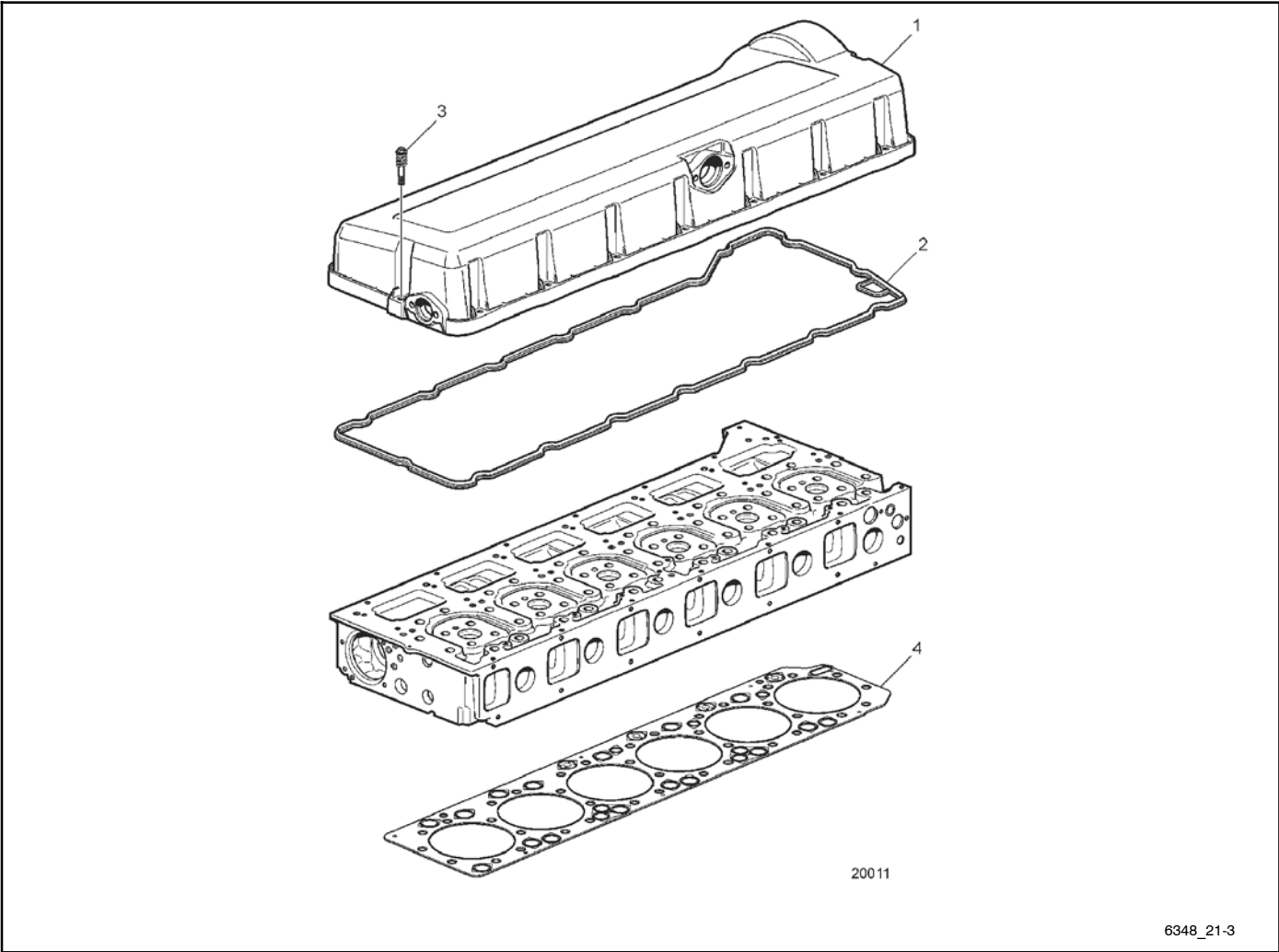
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Item	Part Number	Description	Quantity	
			Variation 1	Variation 2
1	GM41427	Rocker arm shaft (includes item 2) (serial number 2016010024 and before)	1	
1	GM65981	Rocker arm shaft (serial number 2016010025 and after)	1	
1	GM65981	Rocker arm shaft		1
2	GM27591	Expansion plug	2	2
3	GM41584	Rocker arm (includes items 4-8) (serial number 2016010024 and before)	6	
3	GM78736	Rocker arm (serial number 2016010025 and after)	6	
3	GM63624	Rocker arm		6
4	#	Nut	1	1
5	—	Not sold separately	1	1
6	GM41473	Ball socket (includes items 7-8)	1	1
7	GM41258	O-ring	1	1
8	—	Not sold separately	1	1
9	TBD	Yoke, intake	6	6
10	GM41546	Yoke, exhaust	6	6
11	GM41585	Rocker arm (includes item 12-14)	6	6
12	GM41298	Nut	1	1
13	—	Not sold separately	1	1
14	GM28104	Nozzle	1	1
15	GM41586	Rocker arm (includes item 16-20)	6	6
16	#	Nut	1	1
17	—	Not sold separately	1	1
18	GM41473	Ball socket (includes items 19-20)	1	1
19	GM41258	O-ring	1	1
20	—	Not sold separately	1	1
21	GM41548	Guide pin	12	12
22	GM41534	Screw	14	14

Common hardware; procure locally.

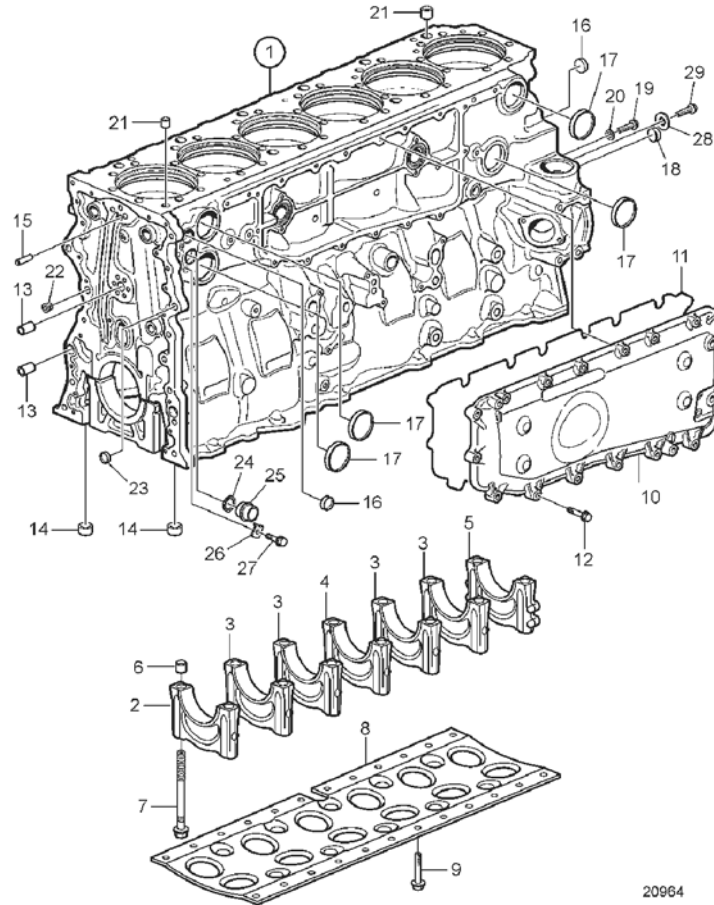
Group 21-3: Valve Cover



Item	Part Number	Description	Quantity
			Variation 1
1	GM41558	Valve cover	1
2	GM41429	Sealing strip	1
3	GM41479	Flange screw	17
4	GM41559	Gasket (serial number 2016010024 and before)	1
4	GM63992	Gasket (serial number 2016010025 and after)	1

Group 21-4: Cylinder Block

Engine TAD1640GE, TAD1641GE, TAD1642GE with serial number 2016010024 and before



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Item	Part Number	Description	Quantity
			Variation 1
1	GM41516	Cylinder block (includes items 2-7)	1
2	—	Not sold separately	1
3	—	Not sold separately	4
4	—	Not sold separately	1
5	—	Not sold separately	1
6	—	Not sold separately	14
7	#	Flange screw	14
8	GM41481	Frame	1
9	#	Flange screw	13
10	GM41565	Cover	1
11	GM41417	Sealing strip	1
12	#	Flange screw	16
13	GM41425	Guide sleeve	2
14	GM27041	Guide sleeve, cylinder block	2
15	GM26659	Pin	1
16	GM27718	Plug	2
17	GM41451	Cap plug	4
18	GM41553	Plug	2
19	#	Flange screw, M8 x 16 mm	2
20	#	Washer	2
21	GM41489	Guide sleeve	2
22	GM41531	Plug	1
23	GM41553	Plug	1
24	GM27147	Sealing ring	1
25	GM41461	Plug	1
26	GM27719	Brace, lock	1
27	#	Flange screw	1
28	#	Washer	1
29	#	Flange screw	1

Common hardware; procure locally.

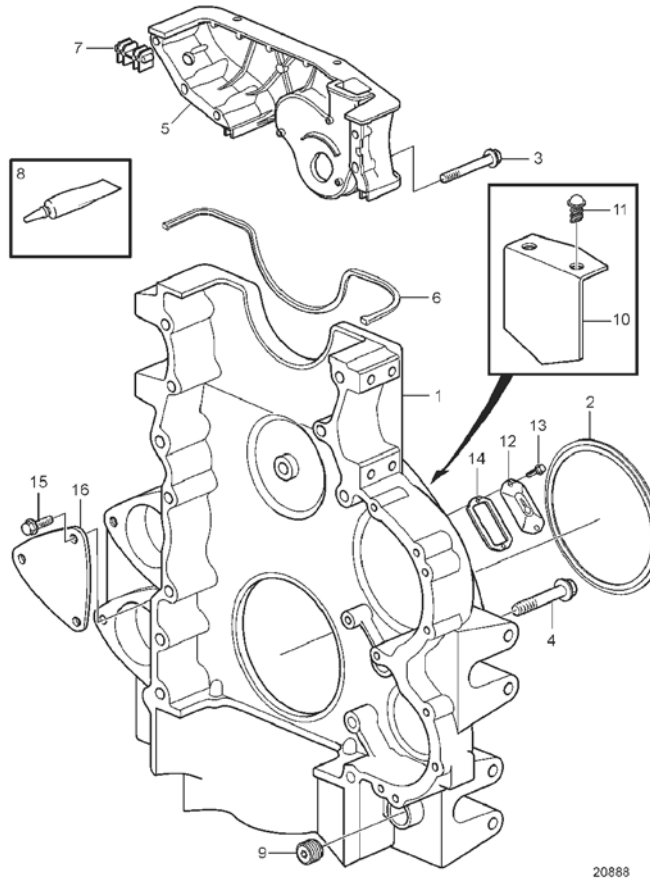
**Engine TAD1640GE, TAD1641GE, TAD1642GE with serial number 2016010025 and after
Engine TWD1643GE**



Common hardware; procure locally.

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Group 21-5: Flywheel Housing



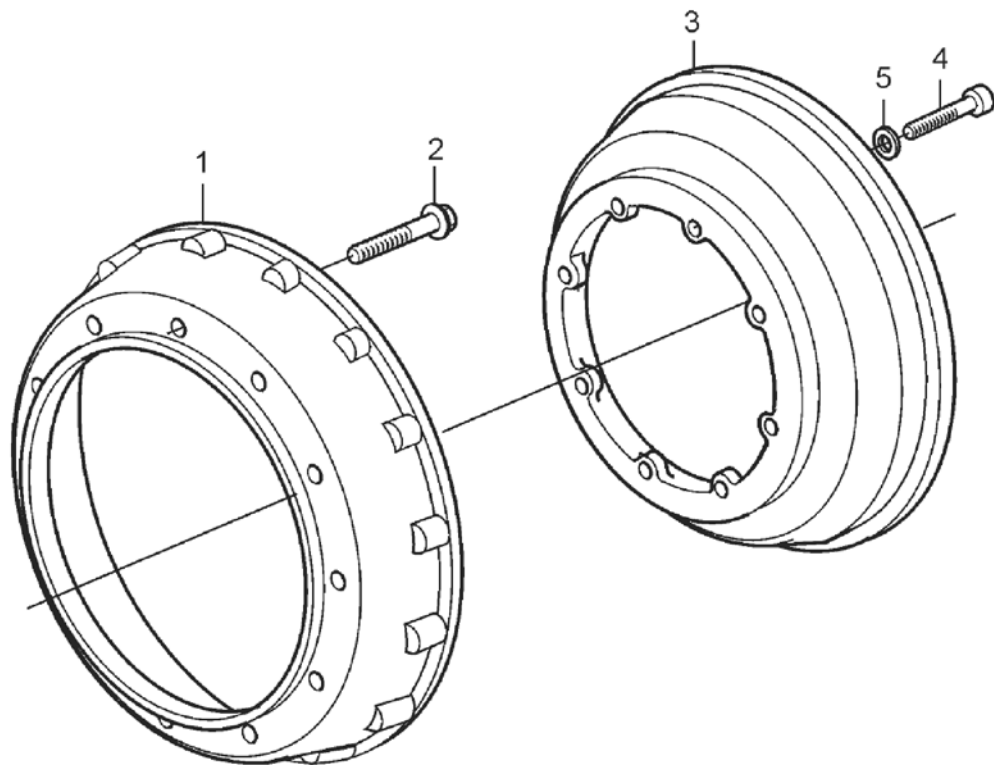
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Item	Part Number	Description	Quantity
			Variation 1
1	GM41365	Flywheel housing	1
2	GM27046	Sealing ring	1
3	#	Flange screw, 40 mm	4
3	#	Flange screw	1
4	GM26674	Flange screw, M10 x 90 mm	5
4	#	Flange screw, M14 x 90 mm	6
4	#	Flange screw, M14 x 100 mm	1
5	GM41532	Timing gear cover	1
6	GM41423	Sealing strip	1
7	GM41561	Seal	2
8	GM25529	Sealant, 304 ml	AR
8	GM26698	Sealant, 20 g	AR
9	GM26486	Plug	1
10	GM41242	Setting indicator	1
11	GM41253	Drive screw	2
12	GM28111	Cover	1
13	#	Flange screw	2
14	GM28117	Gasket	1
15	#	Screw	7
16	GM26930	Cover	1

AR As Required

Common hardware; procure locally.

Group 21-6: Adapter Flywheel



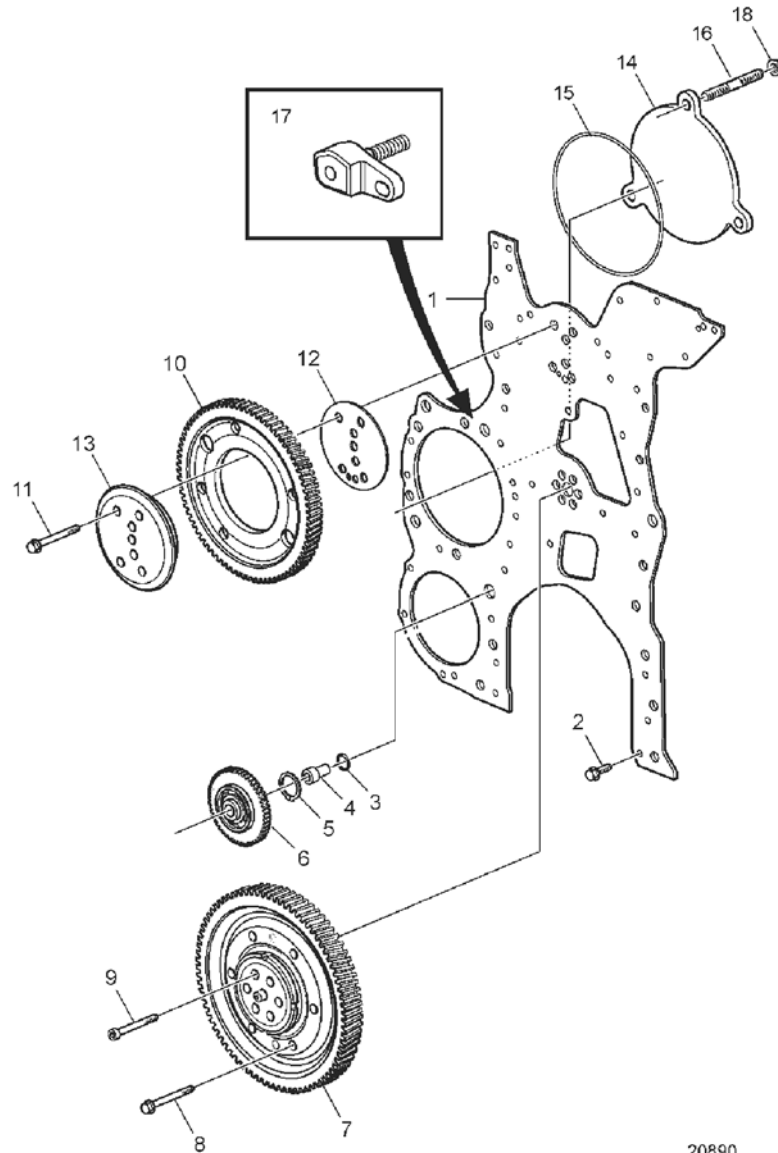
20889

6348_21-6

Item	Part Number	Description	Quantity
			Variation 1
1	GM41358	Adapter, flywheel casing	1
2	#	Flange screw	12
3	GM41357	Adapter, flywheel	1
4	#	Screw	8
5	#	Washer	8

Common hardware; procure locally.

Group 21-7: Timing Gear



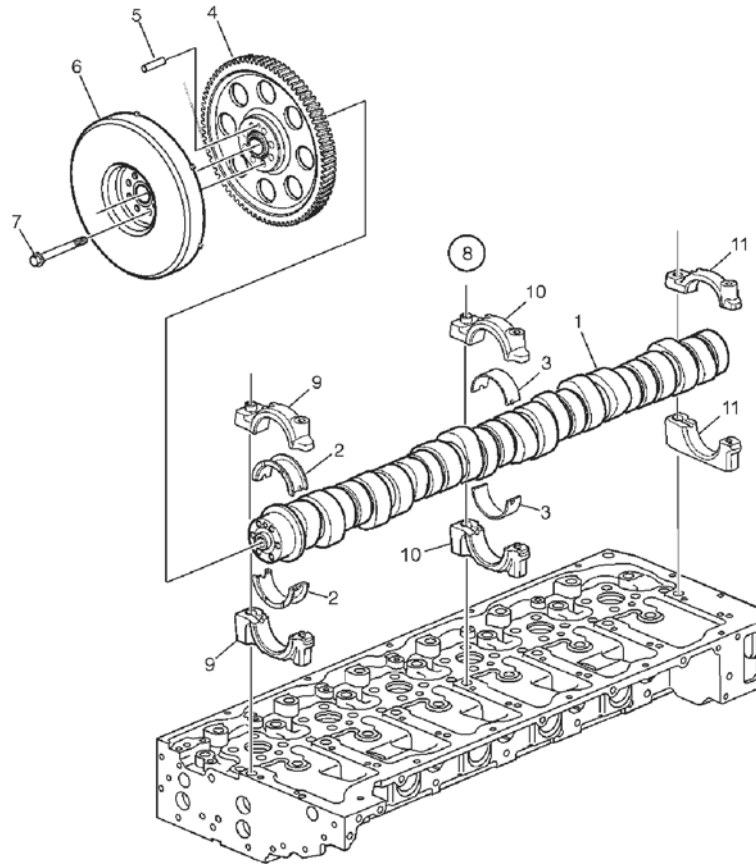
20890

6348_21-7

Item	Part Number	Description	Quantity
			Variation
1	GM41520	Plate	1
2	#	Flange screw	26
3	GM27473	O-ring	1
4	GM41549	Idler gear	1
5	GM41254	Lock ring	1
6	#	Screw	1
7	GM41490	Idler gear	1
8	GM26510	Screw	6
9	GM41487	Hex socket screw	6
10	GM41422	Idler gear	1
11	GM41483	Screw	6
12	GM41450	Thrust washer	1
13	GM41514	Hub	1
14	GM41329	Cover	1
15	GM41263	O-ring	1
16	GM41271	Stud	2
17	GM41533	Anchorage	1
18	#	Flange nut	3

Common hardware; procure locally.

Group 21-8: Camshaft



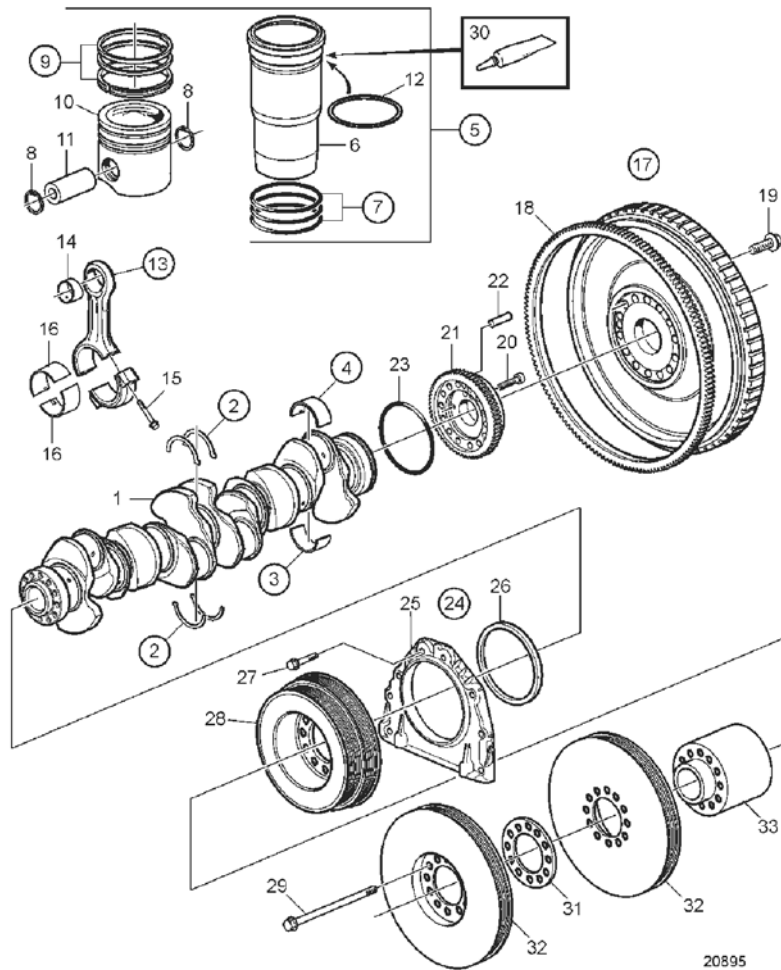
20012

6348_21-8

Item	Part Number	Description	Quantity	
			Variation 1	Variation 2
1	GM41375	Camshaft (engine serial number 2016010024 and before)	1	
1	GM62392	Camshaft (serial number 2016010025 and after)	1	
1	GM65849	Camshaft		1
2	GM41499	Bearing shell kit, standard (engine serial number 2016010024 and before)	1	
2	GM62393	Bearing shell kit, standard (serial number 2016010025 and after)	1	
2	GM62393	Bearing shell kit, std rear		1
2	GM41500	Bearing shell kit, 0.25 mm OS	1	
2	GM41501	Bearing shell kit, 0.50 mm OS	1	
2	GM41502	Bearing shell kit, 0.75 mm OS	1	
3	GM27028	Bearing shell kit, camshaft (engine serial number 2016010024 and before)	6	
3	GM62394	Bearing shell kit, camshaft (serial number 2016010025 and after)	6	
3	GM62394	Bearing shell kit, camshaft std cylinder 2-6		6
3	GM41230	Bearing shell kit, 0.25 mm OS	6	
3	GM41231	Bearing shell kit, 0.50 mm OS	6	
3	GM41232	Bearing shell kit, 0.75 mm OS	6	
4	GM41439	Gear	1	1
5	GM41267	Pin	1	1
6	GM41474	Vibration damper	1	1
7	GM41441	Flange screw	8	8
8	GM41305	Bearing housing* (includes items 9-11)	1	1
9	GM41302	Bearing housing, rear	1	1
10	GM41303	Bearing housing, No. 2-6	5	1
11	GM41304	Bearing housing, front	1	1

* When replacing one or more bearing houses the first time, all of the bearing houses must be replaced. Then each bearing house can be replaced separate.

Group 21-9: Crank Mechanism



20895

6348_21-9

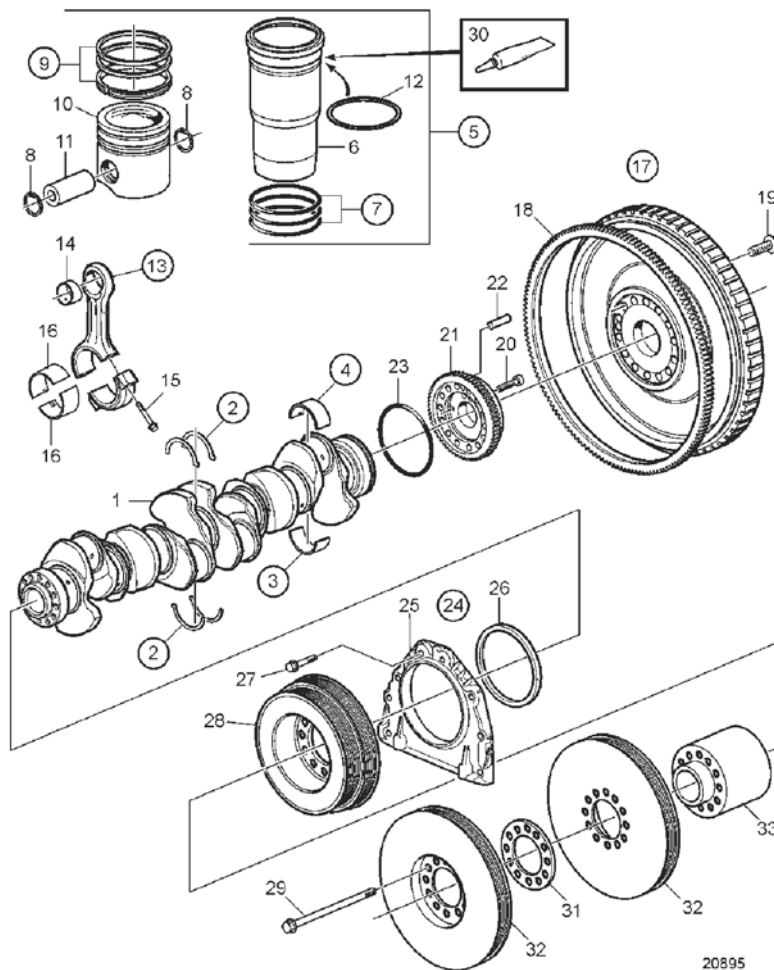
Group 21-9: Crank Mechanism, continued

Item	Part Number	Description	Quantity	
			Variation	
			1	2
1	GM41435	Crankshaft	1	1
2	GM27007	Washer kit, thrust, standard	1	1
2	GM27008	Washer kit, thrust, 0.10 mm OS	1	1
2	GM27009	Washer kit, thrust, 0.20 mm OS	1	1
2	GM27010	Washer kit, thrust, 0.30 mm OS	1	1
3	GM41562	Main bearing kit, standard	7	7
3	GM41572	Main bearing kit, 0.25 mm OS	7	7
3	GM41573	Main bearing kit, 0.50 mm OS	7	7
3	GM41574	Main bearing kit, 0.75 mm OS	7	7
3	GM41575	Main bearing kit, 1.00 mm OS	7	7
3	GM41576	Main bearing kit, 1.25 mm OS	7	7
4	GM41563	Main bearing kit, standard (bearing No. 7)	7	7
4	GM41577	Main bearing kit, 0.25 mm OS (bearing No. 7)	7	7
4	GM41578	Main bearing kit, 0.50 mm OS (bearing No. 7)	7	7
4	GM41579	Main bearing kit, 0.75 mm OS (bearing No. 7)	7	7
4	GM41580	Main bearing kit, 1.00 mm OS (bearing No. 7)	7	7
4	GM41581	Main bearing kit, 1.25 mm OS (bearing No. 7)	7	7
5	GM41331	Cylinder liner kit (includes items 6-11)	6	
5	GM41332	Cylinder liner kit (includes items 6-11)		6
6	—	Not sold separately	6	6
7	GM41515	Sealing ring kit, cylinder liner	6	6
8	GM41259	Retaining ring	12	12
9	GM41330	Piston ring kit	6	6
10	—	Not sold separately	6	6
11	GM41432	Gudgeon pin	6	6
12	GM41521	Shim, 0.2 mm thick	AR	AR
12	GM41522	Shim, 0.3 mm thick	AR	AR
12	GM41523	Shim, 0.5 mm thick	AR	AR
13	GM41433	Connecting rod (includes items 14-15)	6	6
14	GM41434	Bushing	6	6
15	GM41428	Screw	24	24
16	GM41566	Big end bearing kit, standard	6	6
16	GM41567	Big end bearing kit, 0.25mm OS	6	6
16	GM41568	Big end bearing kit, 0.50mm OS	6	6
16	GM41569	Big end bearing kit, 0.75mm OS	6	6
16	GM41570	Big end bearing kit, 1.00mm OS	6	6
16	GM41571	Big end bearing kit, 1.25mm OS	6	6
17	GM41388	Flywheel (includes items 18)	1	1
18	GM26845	Ring, gear	1	1
19	GM41299	Flange screw	12	12
20	#	Flange screw	2	2
21	GM41485	Gear	1	1
22	GM41268	Pin	1	1
23	GM41292	O-ring	1	1
24	GM41511	Cover (includes items 25-26)	1	1
25	—	Not sold separately	1	1
26	GM41296	Crankshaft seal	1	1
27	#	Flange screw	8	8
28	GM41557	Vibration damper	1	1
29	#	Flange screw (grade 8.8)(engine serial number 2016033875 and before)	12	12
29	#	Flange screw (grade 10.9) (serial number 2016033876 and after)	12	12
30	GM25529	Sealant, 304 ml	AR	AR
30	GM26698	Sealant, 20 g	AR	AR
31	GM41396	Spacer	1	1
32	GM41308	Vibration damper	2	2
33	GM41397	Adapter	1	1

AR As Required

Common hardware; procure locally.

Group 21-9: Crank Mechanism, continued

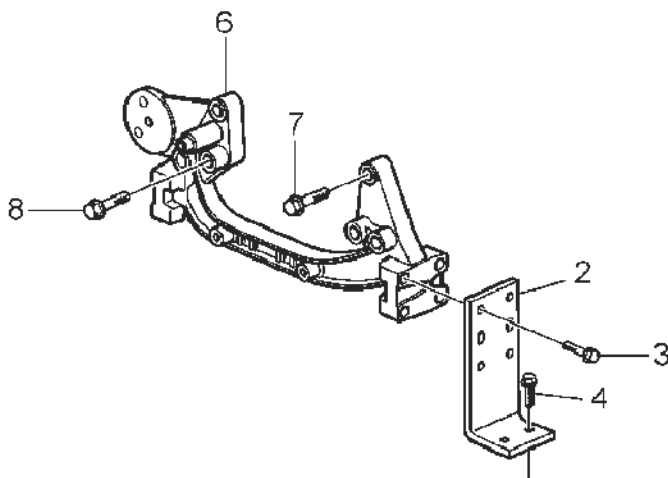


6348_21-9

Item	Part Number	Description	Qty. Var 3	Item	Part Number	Description	Qty. Var 3
1	GM41435	Crankshaft	1	14	GM41434	Bushing	6
2	GM27007	Washer kit, thrust, standard	1	15	GM41428	Screw	24
2	GM27008	Washer kit, thrust, 0.10 mm OS	1	16	GM41566	Big end bearing kit, std	6
2	GM27009	Washer kit, thrust, 0.20 mm OS	1	16	GM41567	Big end bearing kit, OS = 0.25mm	6
2	GM27010	Washer kit, thrust, 0.30 mm OS	1	16	GM41568	Big end bearing kit, OS = 0.50mm	6
3	GM41562	Main bearing kit, std.	6	16	GM41570	Big end bearing kit, OS = 1.00mm	6
3	GM41572	Main bearing kit, OS = 0.25mm	7	17	GM41388	Flywheel	1
3	GM41573	Main bearing kit, OS = 0.50mm	7	18	GM26845	Gear ring	1
3	GM41574	Main bearing kit, OS = 0.75mm	7	19	GM41299	Flange screw	12
3	GM41575	Main bearing kit, OS = 1.00mm	7	20	#	Flange screw	2
4	GM41563	Main bearing kit, std.	7	21	GM41485	Gear	1
4	GM41577	Main bearing kit, OS = 0.25mm	7	22	GM41268	Pin	1
4	GM41578	Main bearing kit, OS = 0.50mm	7	23	GM41292	O-ring	1
4	GM41580	Main bearing kit, OS = 1.00mm	7	24	GM41511	Cover	1
5	GM65845	Cylinder liner kit	6	25	—	Not sold separately	1
6	—	Not sold separately	6	26	GM41296	Crankshaft seal	1
7	GM41515	Sealing ring kit, cylinder liner	6	27	#	Flange screw	8
8	GM41259	Retaining ring	12	28	GM65874	Pulley	1
9	GM41330	Piston ring kit	6	29	#	Flange screw	12
10	—	Not sold separately	6	30	GM25529	Sealant	X
11	GM41432	Gudgeon pin	6	30	GM26698	Sealant	X
12	GM41521	Shim, TH = 0.2 mm	X	31	GM41396	Spacer	1
12	GM41522	Shim, TH = 0.3 mm	X	32	GM41308	Vibration damper	2
12	GM41523	Shim, TH = 0.5 mm	X	33	GM41397	Adapter	1
13	GM65863	Connecting rod	6				

Common hardware; procure locally.

Group 21-10: Engine Mounting

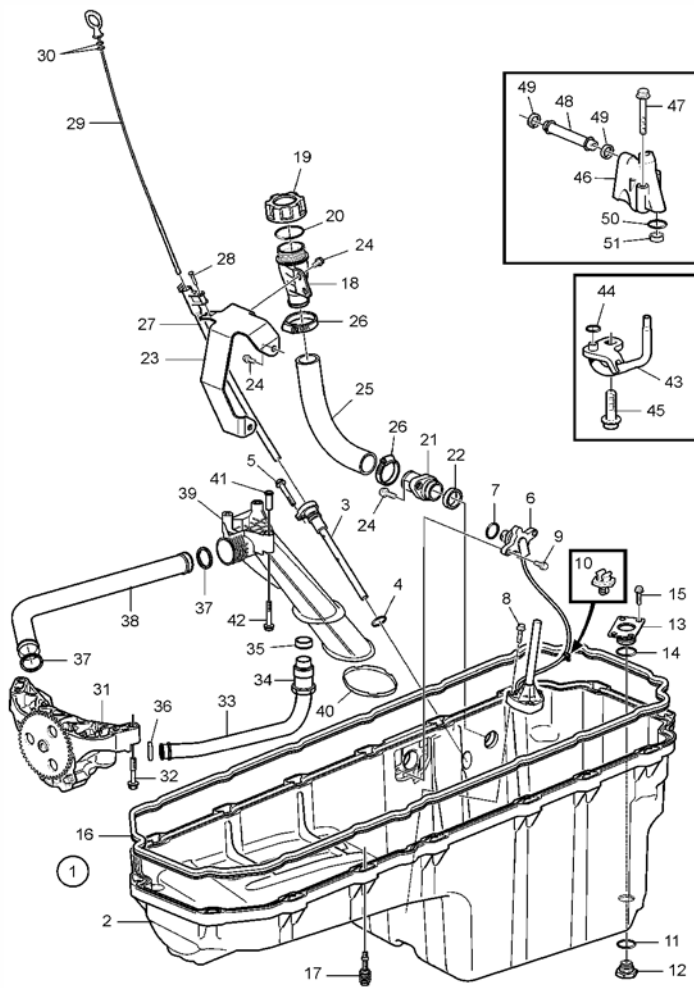


6348_21-10

Item	Part Number	Description	Quantity
			Variation 1
2	GM41360	Engine bracket	4
3	#	Flange screw	16
6	GM41363	Engine anchorage	1
7	#	Flange screw, L = 70 mm	1
8	#	Flange screw	5

Common hardware; procure locally.

Group 22-1: Lubricating System



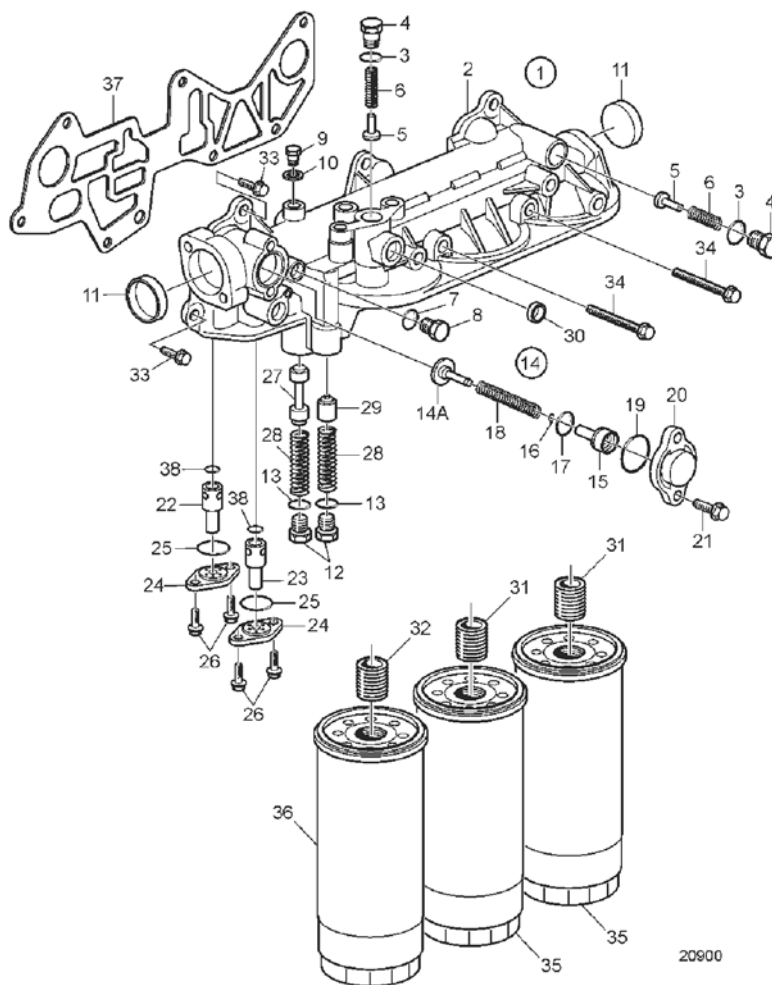
6348_22-1a

Group 22-1: Lubricating System, continued

Item	Part Number	Description	Quantity
			Variation 1
1	GM41420	Oil pan	1
2	—	Not sold separately	1
3	GM65962	Tube	1
4	GM27473	O-ring	1
5	GM27449	Screw, flange	1
6	GM41583	Sensor	1
7	GM41257	O-ring	1
8	#	Screw	3
9	#	Flange screw	2
10	GM65957	Clip	2
11	GM41564	Gasket	1
12	GM27469	Plug	1
13	GM65972	Retainer	1
14	GM65955	O-ring	1
15	GM47077	Screw, flange	4
16	GM41421	Sealing strip	1
17	GM41479	Flange screw	16
18	GM41491	Oil filler pipe	1
19	GM27828	Oil filler cap	1
20	GM28230	Gasket	1
21	GM65949	Connection pipe	1
22	GM27047	Sealing ring	1
23	GM41367	Bracket	1
24	GM58220	Screw, M8-16	6
25	GM28065	Hose	1
26	GM27440	Clamp, hose	2
27	GM41366	Pipe	1
28	GM41286	Six point socket screw	1
29	GM41368	Dipstick	1
30	GM27470	O-ring	2
31	GM41544	Oil pump	1
32	GM27734	Screw	4
33	GM57957	Pipe, oil feed	1
34	—	Not sold separately	1
35	GM41291	Ferrule	1
36	GM27644	Ring, sealing	1
37	GM27047	Sealing ring	2
38	GM41543	Connecting pipe	1
39	GM41539	Oil strainer	1
40	GM65945	Strainer	1
41	GM65952	Spacer sleeve	1
42	#	Flange screw	3
43	GM41408	Jet	6
44	GM65821	O-ring	6
45	GM47077	Screw, flange	6
46	GM65951	Intermediate section	1
47	GM41300	Flange screw	2
48	GM65954	Outlet pipe	1
49	GM27842	Ring, sealing	2
50	GM27813	Ring, sealing	1
51	GM65971	Spacer sleeve	1

Common hardware; procure locally.

Group 22-2: Oil Filter Housing and Oil Filter



6348_22-2

Item	Part Number	Description	Qty. Var. 1
1	GM41419	Oil filter housing (includes items 2-32)	1
2	—	Not sold separately	1
3	GM26649	Gasket	2
4	GM26513	Plug	2
5	GM26497	Valve	2
6	GM26482	Spring	2
7	GM26372	Gasket	2
8	GM26672	Plug	2
9	GM26669	Plug	1
10	GM27454	Gasket	1
11	GM41275	Plug	2
12	GM41462	Plug	2
13	GM26650	Gasket	2
14	GM41301	Delivery valve (includes items 14A-18)	1
14A	—	Not sold separately	1
15	—	Not sold separately	1
16	GM27513	Ring, snap	1
17	GM41287	O-ring	1
18	—	Not sold separately	1

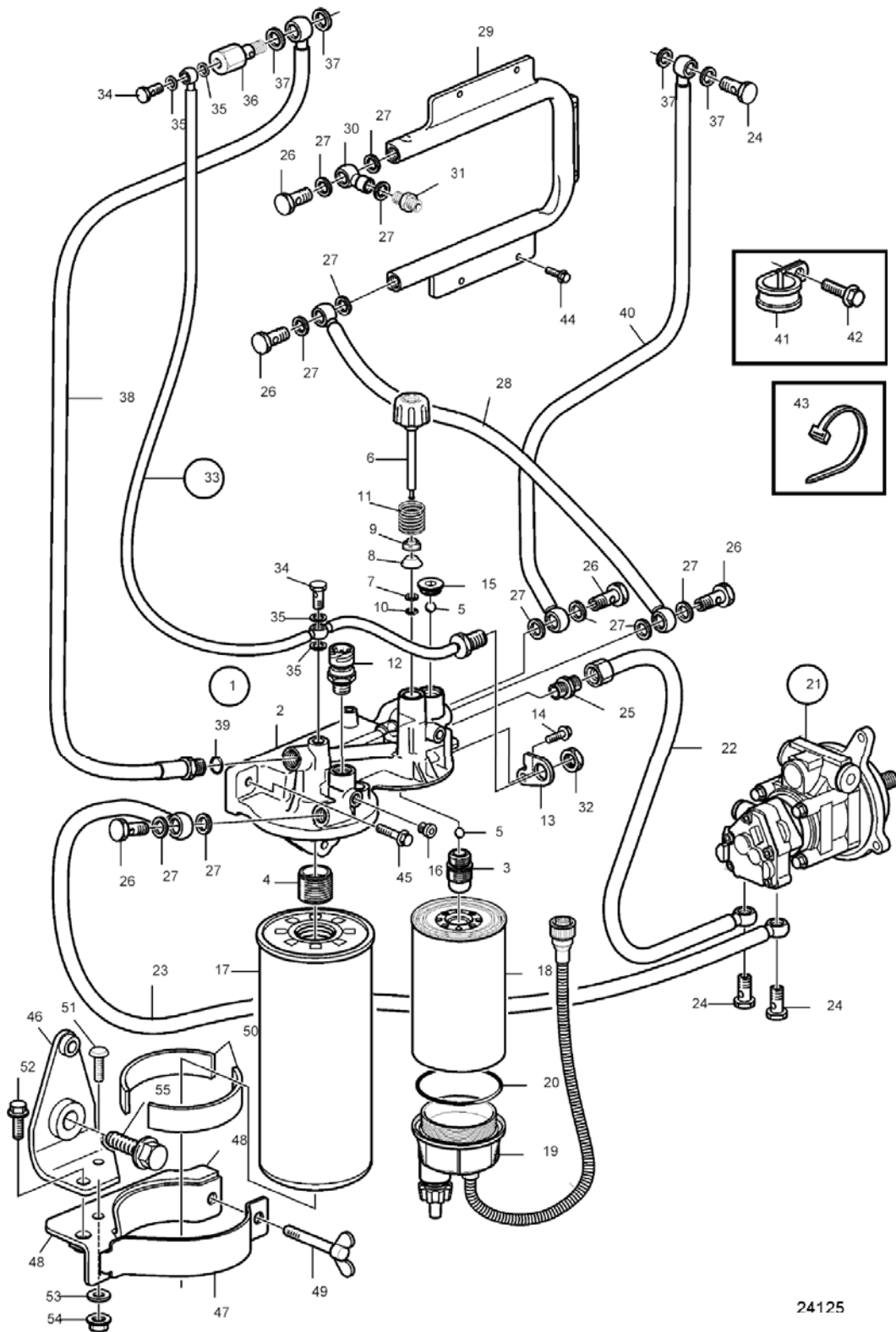
Item	Part Number	Description	Qty. Var. 1
19	GM26653	O-ring	1
20	GM41306	Cover	1
21	GM27455	Screw	2
22	GM41359	Reduction valve	1
23	GM27145	Valve, reducing	1
24	GM26519	Cover	2
25	GM26653	O-ring	2
26	#	Flange screw	4
27	GM41472	Piston	1
28	GM41482	Spring	2
29	GM41471	Valve cone	1
30	GM26644	Cap plug	1
31	GM26481	Nipple	2
32	GM26492	Nipple	1
33	GM27445	Flange screw	5
34	#	Screw	2
35	GM25508	Oil filter	2
36	GM25506	Oil filter	1
37	GM41538	Gasket	1
38	GM26491	Sealing ring	2

Common hardware; procure locally.

Notes

Group 23-1: Fuel System

Engine TAD1640GE, TAD1641GE, TAD1642GE, TWD1643GE with serial number to 2016008440



24125

24125

Group 23-1: Fuel System, continued

Engine TAD1640GE, TAD1641GE, TAD1642GE, TWD1643GE with serial number to 2016008440

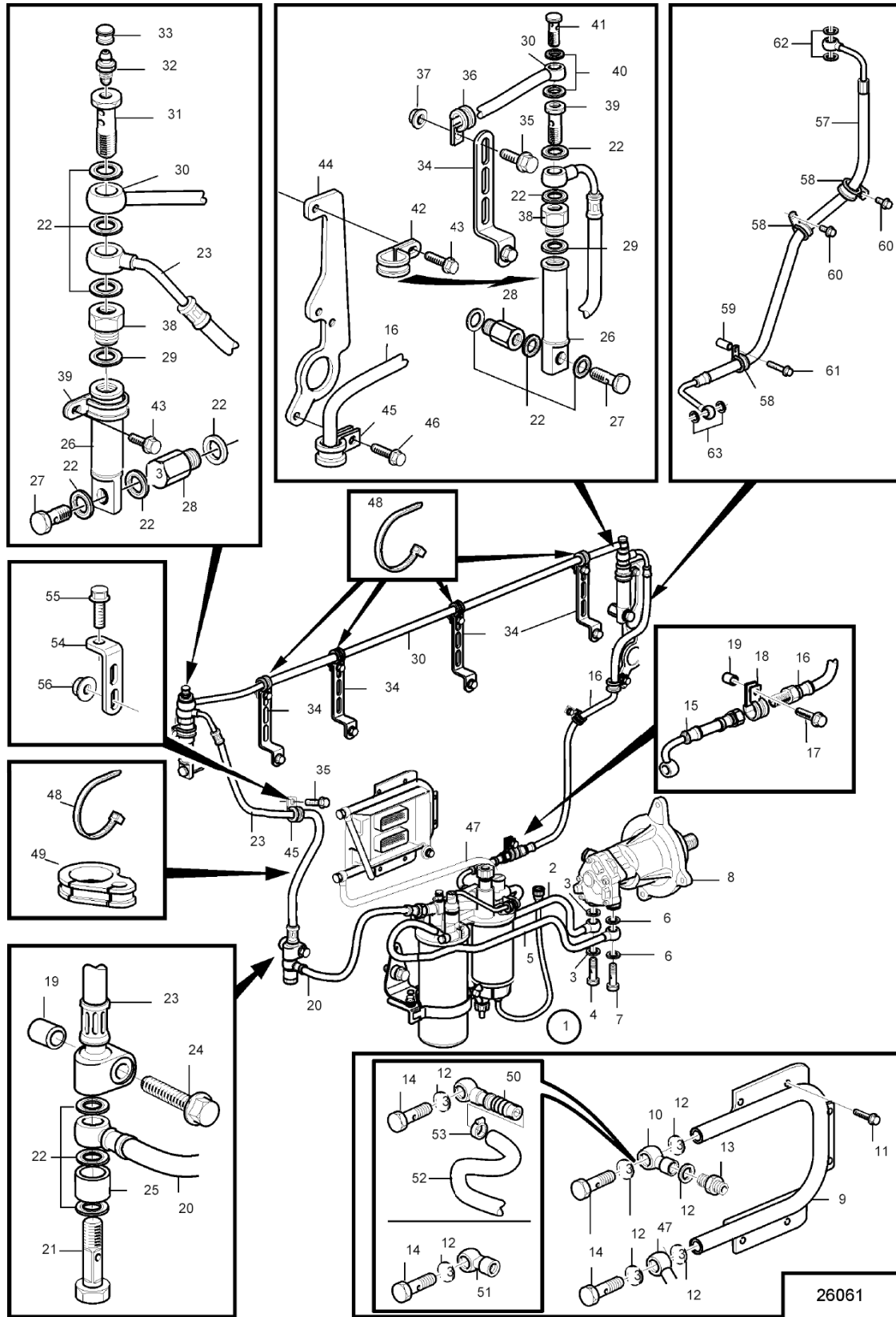
Item	Part Number	Description	Quantity
			Variation 2
1	GM41503	Fuel filter housing (includes 2-16)	1
2	X	Housing	1
3	X	Nipple	1
4	X	Nipple	1
5	GM41530	Ball	2
6	X	Pump shaft	1
7	X	Washer	1
8	X	Pump element	1
9	X	Support ring	1
10	X	O-ring	1
11	X	Spring	1
12	-	Pressure sensor (See Group 30-6)	1
13	X	Bracket	1
14	#	Flange screw	1
15	GM65968	Plug	1
16	X	Plug	1
17	GM41469	Fuel filter	1
18	GM41512	Fuel filter	1
19	GM41484	Bowl	1
20	GM27548	O-ring	1
21	-	Fuel pump (See Group 23-2)	1
22	GM65978	Fuel pipe	1
23	GM41464	Fuel pipe	1
24	GM41255	Hollow screw	3
25	GM41260	Nipple	1
26	GM26379	Screw, hollow	5
27	GM26686	Gasket	11
28	GM41517	Fuel pipe	1
29	GM41554	Fuel pipe	1
30	GM41229	Banjo nipple	1
31	GM27422	Nipple	1
32	#	Hexagon nut	1
33	GM41402	Fuel pipe	1
34	GM26911	Screw, hollow	2
35	GM27454	Gasket	4
36	GM41476	Overflow valve	1
37	GM26371	Gasket	4
38	GM41519	Fuel pipe	1
39	GM26693	O-ring	1
40	GM41535	Fuel pipe	1
41	GM26655	Clamp	9
42	GM58220	Screw, M8 x 16mm	9
43	GM26652	Clamp, strip	6
44	#	Flange screw, M6 x 16mm	9
45	#	Flange screw, M8 x 30mm	2
46	GM65865	Bracket	1
47	-	Bracket	1
48	-	Bracket	1
49	GM65827	Wing screw	1
50	-	Rubber cloth	1
51	-	Screw	1
52	GM65817	Screw	1
53	#	Washer	1
54	#	Flange lock nut	1
55	#	Flange screw	1

Common hardware; procure locally.

X Part not sold separately.

Group 23-1: Fuel System

Engine TAD1640GE, TAD1641GE, TAD1642GE, TWD1643GE with serial number from 2016008441 to 2016045622



Contact factory for parts if the rear riser on the generator set is shown below.



26061

Group 23-1: Fuel System, continued

Engine TAD1640GE, TAD1641GE, TAD1642GE, TWD1643GE with serial number from 2016008441 to 2016045622

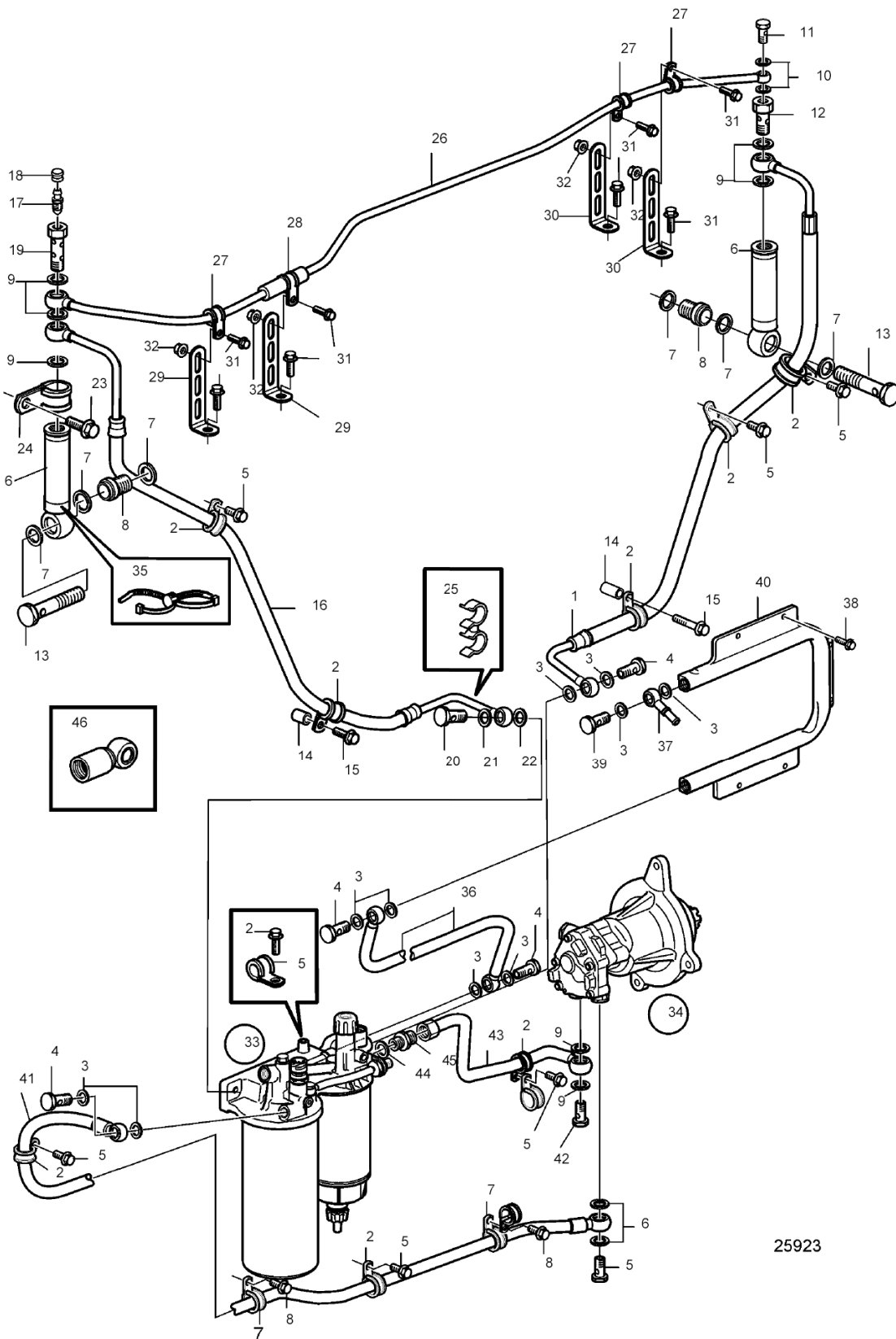
Item	Part Number	Description	Quantity
			Variation 2
1	-	Filter housing (See Group 23-3)	1
2	GM65978	Fuel pipe (includes items 3, 4)	1
3	GM58205	Gasket, M16	2
4	GM58172	Screw, banjo, M16	1
5	GM65979	Fuel pipe (includes items 6,7)	1
6	GM58205	Gasket, M16	2
7	GM58172	Screw, banjo, M16	1
8	-	Fuel pump (See Group 23-2)	1
9	GM41554	Fuel pipe	1
10	GM41229	Banjo nipple	1
11	#	Flange screw	6
12	GM58204	Gasket, M14	5
13	GM27422	Nipple	1
14	GM26379	Screw, hollow	2
15	GM58200	Fuel hose	1
16	GM58196	Fuel hose	1
17	GM58179	Screw, M8-35	1
18	GM27700	Clamp	1
19	GM41235	Spacer sleeve	2
20	GM58199	Fuel hose	1
21	GM58209	Overflow valve screw	1
22	GM58205	Gasket, M16	14
23	GM58195	Fuel hose	1
24	GM58186	Screw, M8-60	1
25	GM58188	Spacer, valve	1
26	GM85678	Riser	2
27	GM26383	Screw, hollow	1
28	GM58197	Spacer, long length, 40 mm (1 1/2 in.)	1
29	GM85668	Gasket	2
30	GM58190	Fuel hose	1
31	GM58211	Hollow screw	1
32	GM58224	Nipple, air vent	1
33	GM26559	Protecting cover	1
34	GM27225	Bracket (TAD1640/41/42GE Only)	4
35	GM58220	Screw, M8-16	2
36	GM58181	Clamp, hose, 9 mm (3/8 in.)	4
37	GM30148	Flange nut	4
38	GM85656	Reduction nipple	2
39	GM85663	Hollow screw	1
40	GM58203	Gasket, M10	2
41	GM26911	Screw, hollow	1
42	GM58184	Clamp, hose 29 mm (1 1/8 in.)	1
43	GM58220	Screw, M8-16	1
44	GM58210	Bracket, rear riser	1
45	GM26655	Clamp	
46	GM27449	Screw, flange	2
47	GM41517	Fuel pipe	1
48	GM26652	Clamp, strip (TWD1643GE Only)	
49	GM85664	Retainer	1
50	GM85662	Banjo nipple (TAD1640/41/42GE Only)	1
51	GM85660	Banjo nipple (TAD1640/41/42GE Only)	1
52	GM85650	Fuel hose (3/8") (TAD1640/41/42GE Only)	
53	GM85661	Hose clamp (TAD1640/41/42GE Only)	
54	GM27540	Bracket (TWD1643GE Only)	1
55	#	Flange screw (TWD1643GE Only)	1
56	GM30148	Flange nut (TWD1643GE Only)	1
57	GM79623*	Fuel Hose	1
58	GM26655*	Clamp	5
59	GM41240*	Sleeve	1
60	GM58220*	Screw, M8-16	4
61	GM79624*	Flange Screw	1
62	GM58205*	Gasket, M16	2
63	GM58204*	Gasket, M14	2

Common hardware; procure locally.

* Install items when fuel filter housing GM58194 is changed to housing GM79621. Items are included in Housing Kit GM79627.

Group 23-1: Fuel System

Engine TWD1643GE with serial number to 2016045623



25923

Group 23-1: Fuel System, continued

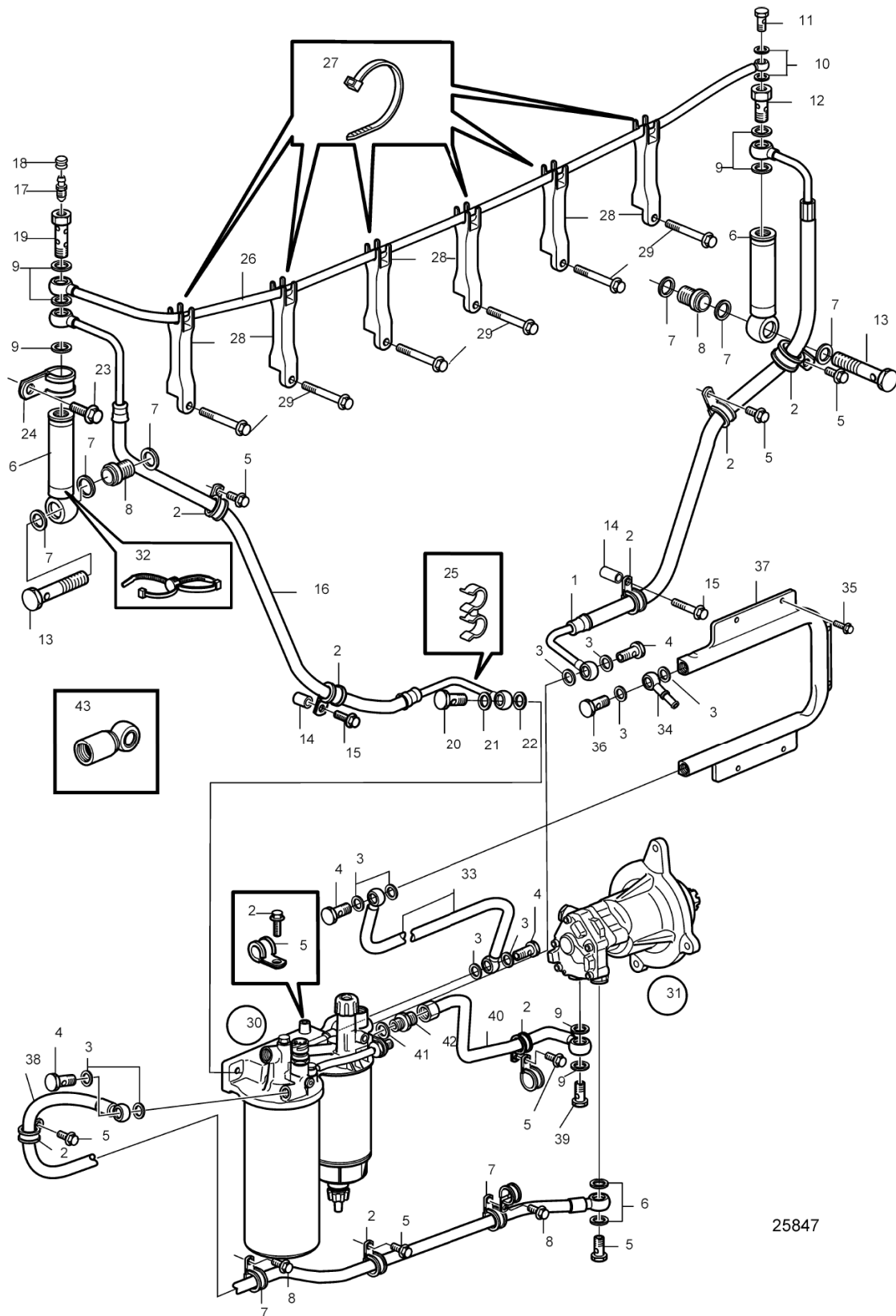
Engine TWD1643GE with serial number to 2016045623

Item	Part Number	Description	Quantity
			Variation 2
1	GM79623	Fuel Hose	1
2	GM26655	Clamp	9
3	GM58204	Gasket, M14	10
4	GM58174	Screw, banjo, M14	3
5	GM58220	Screw, M8-16	9
6	GM85678	Riser	2
7	GM85668	Gasket	4
8	GM85672	Spacer tube	1
9	GM58205	Gasket, M16	11
10	GM58203	Gasket, M10	2
11	GM26911	Screw, hollow	1
12	GM85673	Hollow screw	1
13	GM85674	Hollow screw	1
14	GM41235	Spacer sleeve	2
14	GM58175	Spacer, screw M8	2
15	GM58179	Screw, M8-35	1
16	GM85675	Fuel hose	1
17	GM58224	Nipple, air vent	1
18	GM26559	Protecting cover	1
19	GM58211	Hollow screw	1
20	GM85671	Overflow valve	1
21	GM85654	Gasket	1
22	GM26372	Gasket	1
23	GM85651	Shim	1
24	GM85655	Clamp	1
25	GM41307	Retainer	1
25	GM58212	Plastic retainer	1
26	GM85677	Fuel hose	1
27	GM26654	Clamp	3
28	GM26655	Clamp	1
29	GM85652	Bracket	2
30	GM85653	Bracket	2
31	GM58220	Screw, M8-16	8
32	GM30148	Flange nut	4
33	GM79621	Fuel filter housing (See Group 23-3 for components)	1
34	GM78730	Pump, Tandem	1
35	GM85666	Retainer	1
36	GM85676	Fuel pipe	1
37	GM85662	Banjo nipple	1
38	#	Flange screw	6
39	GM26379	Screw, hollow	1
40	GM41554	Fuel pipe	1
41	GM65979	Fuel pipe	1
42	GM58172	Screw, banjo, M16	2
43	GM65978	Fuel pipe	1
44	GM85659	Gasket	1
45	GM41260	Nipple	1
46	-	not used	1

Common hardware; procure locally.

Group 23-1: Fuel System

Engine TAD1640GE, TAD1641GE, TAD1642GE, TWD1643GE with serial number 2016045623 and after



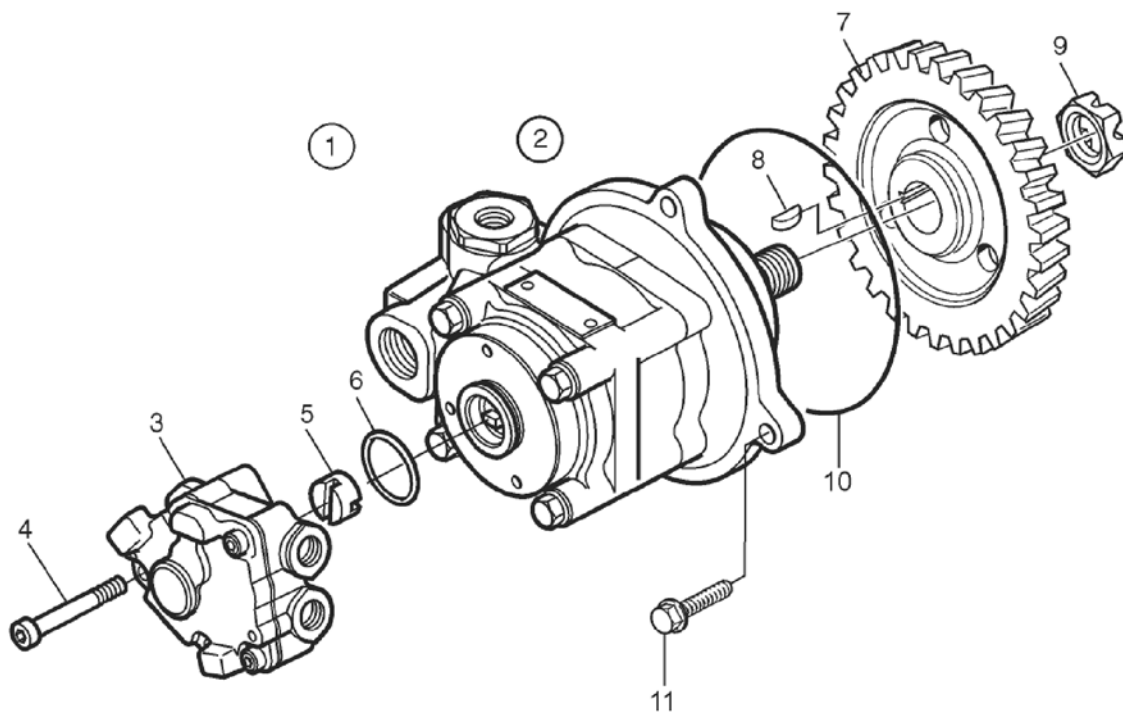
Group 23-1: Fuel System, continued

View 2 Engine TAD1640GE, TAD1641GE, TAD1642GE, TWD1643GE with serial number 2016045623 and after

Item	Part Number	Description	Quantity
			Variation 2
1	GM79623	Fuel Hose	1
2	GM26655	Clamp	9
3	GM58204	Gasket, M14	10
4	GM58174	Screw, banjo, M14	3
5	GM58220	Screw, M8-16	9
6	GM85678	Riser	2
7	GM85668	Gasket	4
8	GM85672	Spacer tube	1
9	GM58205	Gasket, M16	11
10	GM58203	Gasket, M10	2
11	GM26911	Screw, hollow	1
12	GM85673	Hollow screw	1
13	GM85674	Hollow screw	1
14	GM41235	Spacer sleeve	2
14	GM58175	Spacer, screw M8	2
15	GM58179	Screw, M8-35	1
16	GM85675	Fuel hose	1
17	GM58224	Nipple, air vent	1
18	GM26559	Protecting cover	1
19	GM58211	Hollow screw	1
20	GM85671	Overflow valve	1
21	GM85654	Gasket	1
22	GM26372	Gasket	1
23	GM85651	Shim	1
24	GM85655	Clamp	1
25	GM41307	Retainer	1
25	GM58212	Plastic retainer	1
26	GM85677	Fuel hose	1
27	GM26652	Clamp, strip	6
28	GM85670	Bracket	6
29	#	Flange screw	6
30	GM79621	Fuel filter housing (See Group 23-3 for components)	1
31	GM78730	Pump, Tandem	1
32	GM85666	Retainer	1
33	GM85676	Fuel pipe	1
34	GM85662	Banjo nipple	1
35	#	Flange screw	6
36	GM26379	Screw, hollow	1
37	GM41554	Fuel pipe	1
38	GM65979	Fuel pipe	1
39	GM58172	Screw, banjo, M16	2
40	GM65978	Fuel pipe	1
41	GM85659	Gasket	1
42	GM41260	Nipple	1
43	-	not used	1

Common hardware; procure locally.

Group 23-2: Fuel Pump



6348_23-2

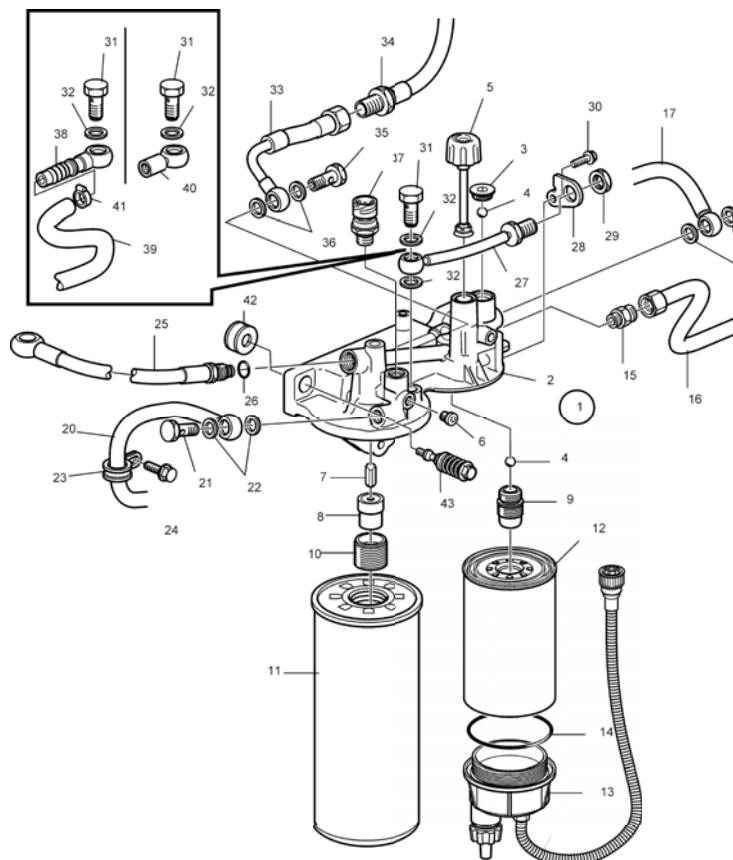
Group 23-2: Fuel Pump, continued

Item	Part Number	Description	Quantity
			Variation 1
1	GM41486	Pump (with servo pump)	1
2	GM41398	Fuel pump (without servo pump, includes items 3-9)	1
3	GM41590	Fuel pump	1
4	GM41592	Screw	1
5	GM41591	Companion flange	1
6	GM41589	O-ring	1
7	GM41437	Gear	1
8	GM41294	Key	1
9	GM41459	Lock nut	1
10	GM41289	O-ring	1
11	#	Flange screw	3

Common hardware; procure locally.

Group 23-3: Fuel Filter, Components

Engine with serial number to 2016045622



25375

Group 23-3: Fuel Filter, Components, continued

Engine with serial number to 2016045622

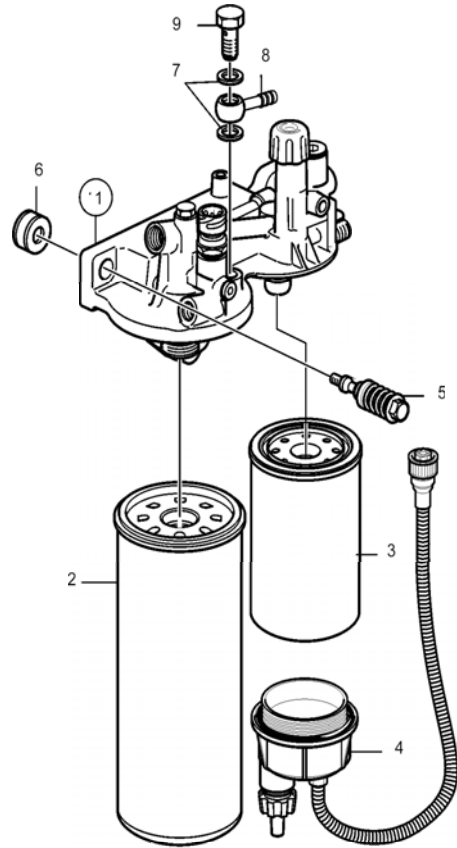
Item	Part Number	Description	Quantity
			Variation 1
1	GM58194	Fuel filter housing assy. (includes items 2-10) Replace with Kit GM79627. Kit includes housing assy. GM79621 and items 57-62 on page 28	1
1	GM79621	Fuel Filter Housing assy.	1
2	X	Fuel filter housing	1
3	GM65968	Plug	1
4	GM85665	Ball	2
5	X	Pump shaft	1
6	X	Plug	1
7	X	Valve	1
8	X	Sleeve	1
9	X	Nipple	1
10	X	Nipple	1
11	GM41469	Fuel filter	1
12	GM41512	Fuel filter	1
13	GM41484	Bowl	1
14	GM27548	O-ring	1
15	GM41260	Nipple	1
16	GM65978	Fuel pipe	1
17	GM41517	Fuel pipe	1
18	GM26379	Screw, hollow	1
19	GM26686	Gasket	2
20	GM65979	Fuel pipe	1
21	GM58172	Screw, banjo, M16	1
22	GM58205	Gasket, M16	2
23	GM26655	Clamp	1
24	GM27445	Screw, flange	1
25	GM58199	Fuel line	1
26	GM26693	O-ring	1
27	GM58202	Fuel line, M16	1
28	-	Bracket	1
29	#	Hexagon nut	1
30	#	Flange screw	1
31	GM58208	Deaerating valve	1
32	GM58204	Gasket, M14	2
33	GM58200	Fuel line	1
34	GM58196	Fuel line	1
35	GM58174	Screw, banjo, M14	1
36	GM58204	Gasket, M14	2
37	GM85667	Pressure sensor	1
38	GM85657	Banjo nipple	1
39	GM85650	Fuel hose (3/8")	1
40	GM85658	Banjo nipple	1
41	GM65813	Hose clamp	1
42	GM85669	Rubber element	3
43	#	Flange screw	3

Common hardware; procure locally.

X Part not sold separately.

Group 23-3: Fuel Filter, Components

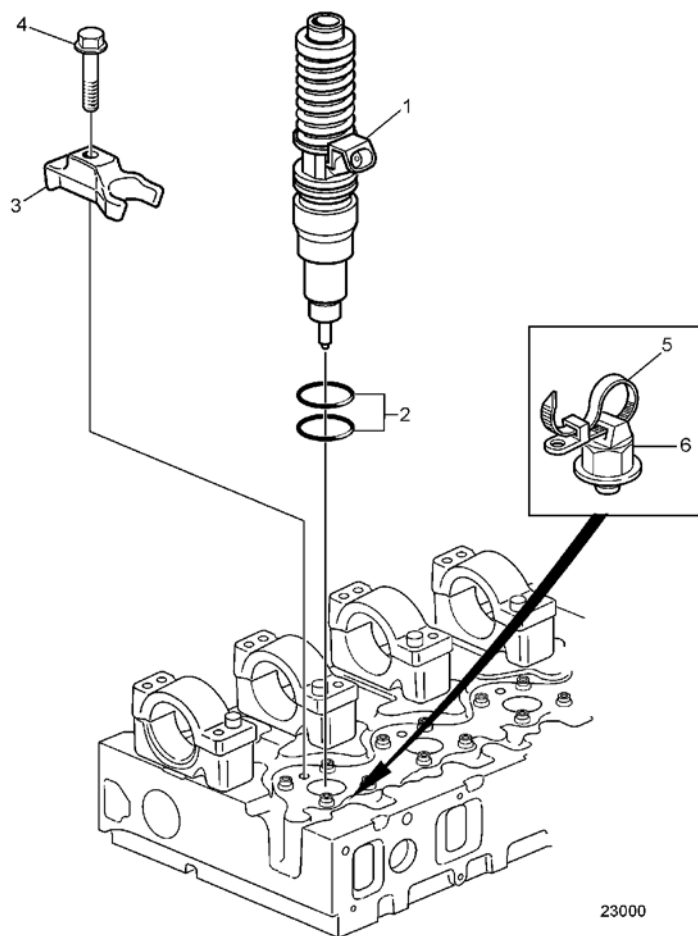
Engine with serial number 2016045623 and after



25574

Item	Part Number	Description	Quantity
			Variation 1
1	GM79621	Fuel Filter Housing	1
2	GM41469	Fuel filter	1
3	GM41512	Fuel filter	1
4	GM41484	Bowl	1
5	#	Flange screw	3
6	GM85669	Rubber element	3
7	GM58204	Gasket, M14	2
8	GM85657	Banjo nipple	1
9	GM58208	Deaerating valve	1

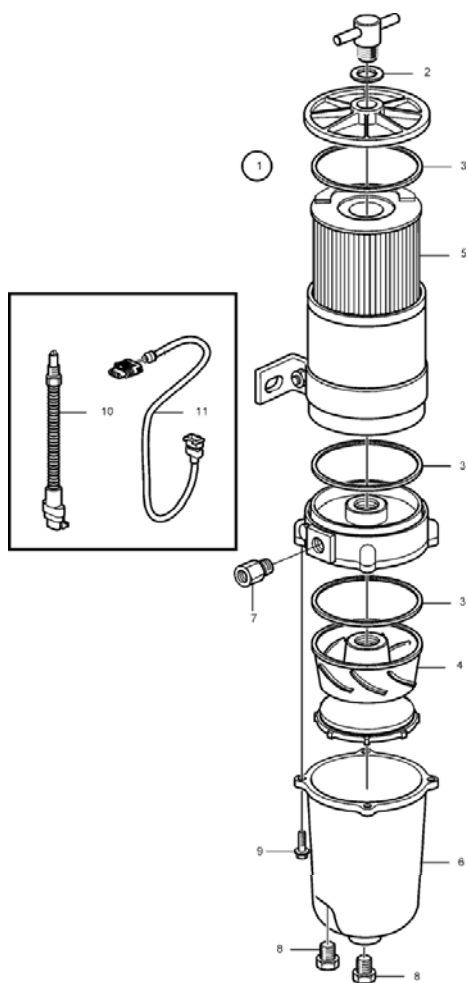
Group 23-4: Unit Injector



6348_23-4a

Item	Part Number	Description	Quantity		
			Variation		
1	2	3	1	2	3
1	GM41341	Unit injector (includes item 2)	6		
1	GM41340	Unit injector (includes item 2)		6	
1	GM65858	Unit injector (includes item 2)			6
2	GM27036	Ring kit, sealing	6	6	6
3	GM41470	Fork	6	6	6
4	GM41441	Flange screw	6	6	6
5	GM65826	Strip clamp (for cable to unit injectors)	1	1	1
6	GM41440	Retainer (for cable to unit injectors)	1	1	1

Group 23-5: Fuel Cleaner/Water Separator

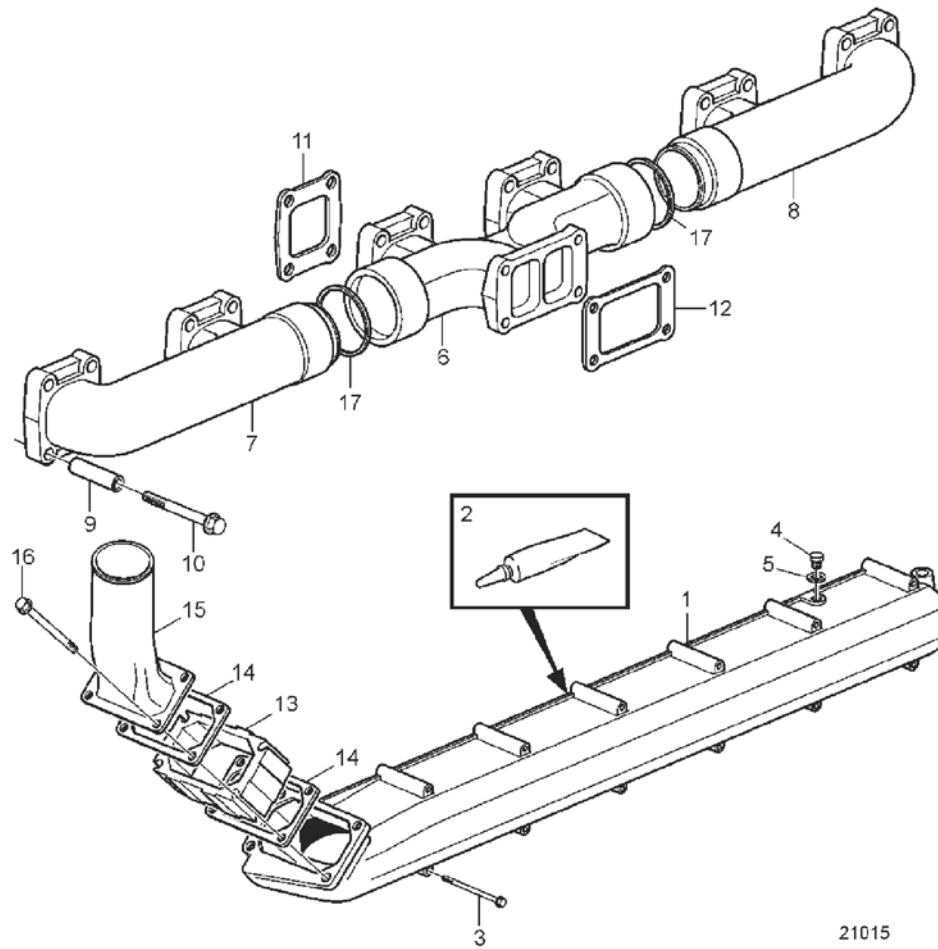


25322

Item	Part Number	Description	Quantity
			Variation
1	GM41354	Fuel filter	1
2	GM85679	O-ring	1
3	GM41239	Gasket	3
4	GM41356	Turbine	1
5	GM41355	Fuel filter insert (10 micron)	1
5	GM79401	Filter insert (30 micron)	1
6	GM41241	Bowl	1
7	GM41238	Nipple	2
8	GM41269	Plug	1
9	#	Hexagon screw	4
10	GM85680	Sensor	1
11	-	Harness	1

Common hardware; procure locally.

Group 25-1: Intake and Exhaust Manifold



21015

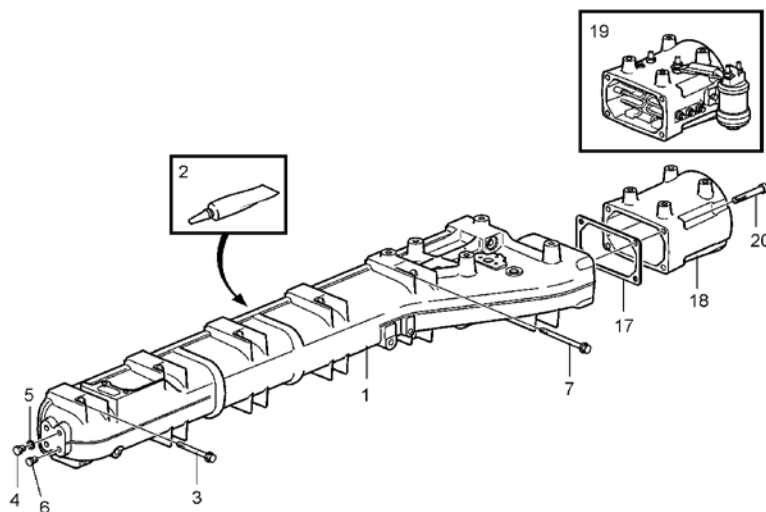
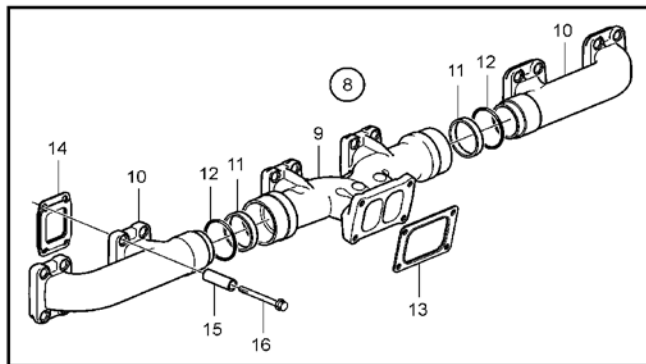
6348_25-1

Item	Part Number	Description	Quantity
			Variation
1	GM41560	Inlet pipe	1
2	GM25529	Sealant, 304 ml	AR
2	GM26698	Sealant, 10 g	AR
3	#	Screw	12
4	GM26669	Plug	1
5	GM27454	Gasket	1
6	GM41455	Exhaust manifold	1
7	GM41456	Exhaust manifold	2
8	GM41457	Exhaust manifold	1
9	GM27717	Sleeve, spacer	24
10	GM26674	Flange screw, M10 x 90 mm	24
11	GM41430	Gasket	6
12	GM27139	Gasket	1
13	GM27840	Intermediate section	1
14	GM27158	Gasket	2
15	GM41394	Charge air pipe	1
16	#	Screw	4
17	GM41458	Sealing ring	2

AR As Required

Common hardware; procure locally.

Group 25-1: Intake and Exhaust Manifold, continued

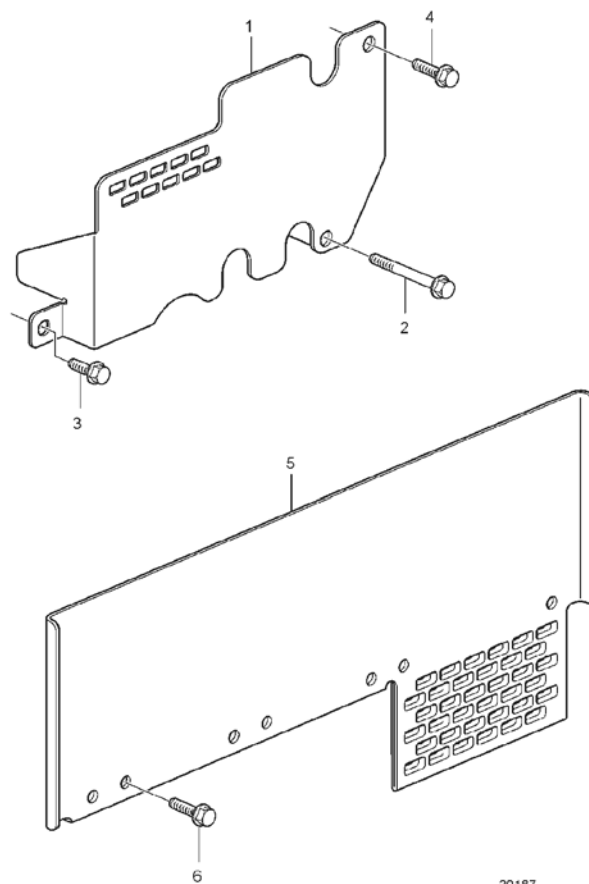


6348_25-1_2

Item	Part Number	Description	Quantity
			Variation
1	GM65939	Inlet pipe	1
2	GM25529	Sealant	X
2	GM26698	Sealant	X
3	#	Screw	8
4	GM26669	Plug	1
5	GM27454	Gasket	1
6	GM27190	Plug	1
7	#	Screw	4
8	GM65947	Exhaust manifold	1
9	—	Not sold separately	1
10	—	Not sold separately	2
11	GM65975	Sealing ring	2
12	—	Not sold separately	2
13	GM27139	Gasket	1
14	GM41430	Gasket	6
15	GM27717	Sleeve, spacer	24
16	GM26674	Screw	24
17	GM27158	Gasket	1
18	GM65864	Adapter	1
19	—	Not used	1
20	#	Screw	4

Common hardware; procure locally.

Group 25-2: Heat Shield for Exhaust Manifold



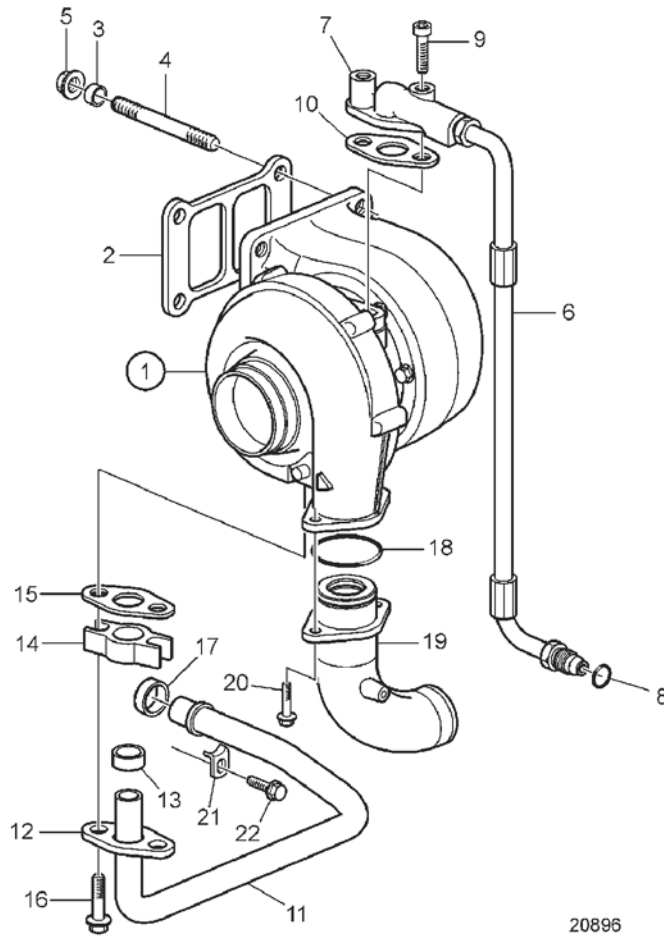
20187

6348_25-2

Item	Part Number	Description	Quantity
			Variation
1	GM41383	Heat shield	1
2	#	Screw	1
3	#	Screw	1
4	#	Flange screw	1
5	GM41371	Heat shield	1
6	#	Screw	3

Common hardware; procure locally.

Group 25-3: Turbocharger



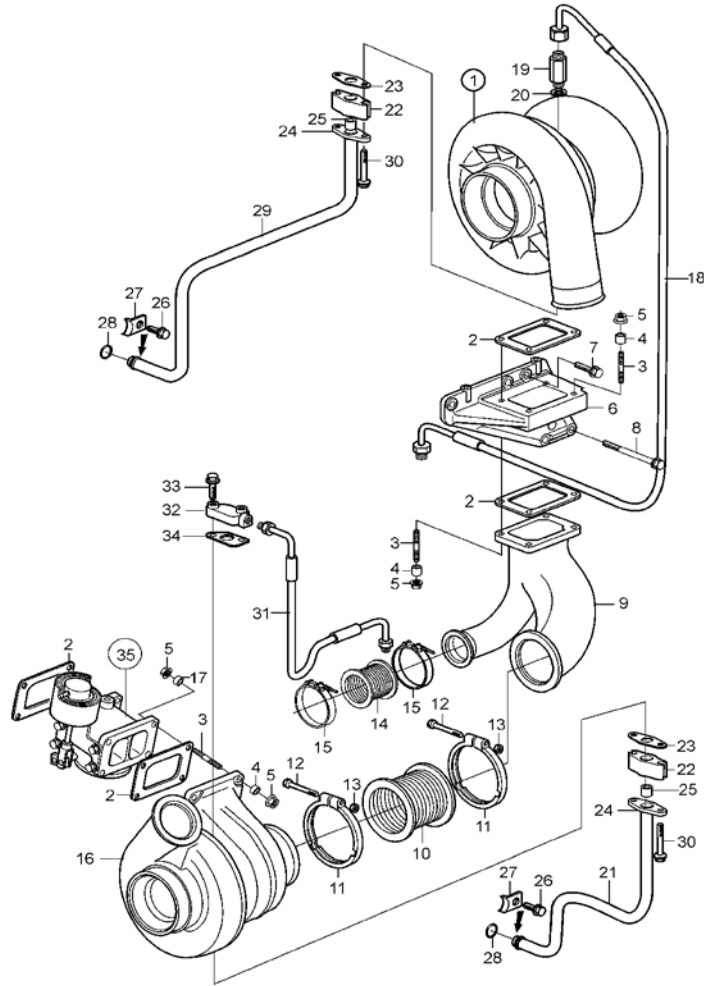
20896

6348_25-3

Item	Part Number	Description	Quantity	
			Variation	
			1	2
1	GM41337	Turbocharger	1	
1	GM41338	Turbocharger		1
2	GM27139	Gasket	1	1
3	GM27163	Sleeve, spacer	4	4
4	GM26695	Stud, 58 mm	4	4
5	GM41295	Nut	4	4
6	GM41386	Oil hose (includes items 7-8)	1	1
7	GM26822	Flange	1	1
8	GM26693	O-ring	1	1
9	#	Flange screw	2	2
10	GM26445	Gasket	1	1
11	GM41369	Return pipe	1	1
12	GM27124	Flange	1	1
13	GM27125	Sealing ring	1	1
14	GM28143	Connector	1	1
15	GM41234	Gasket	1	1
16	#	Flange screw	2	2
17	GM27728	Sealing ring	1	1
18	GM27467	O-ring	1	1
19	GM41393	Connecting pipe	1	1
20	#	Flange screw	2	2
21	GM27719	Brace, lock	1	1
22	#	Flange screw	1	1

Common hardware; procure locally.

Group 25-3: Turbocharger, continued

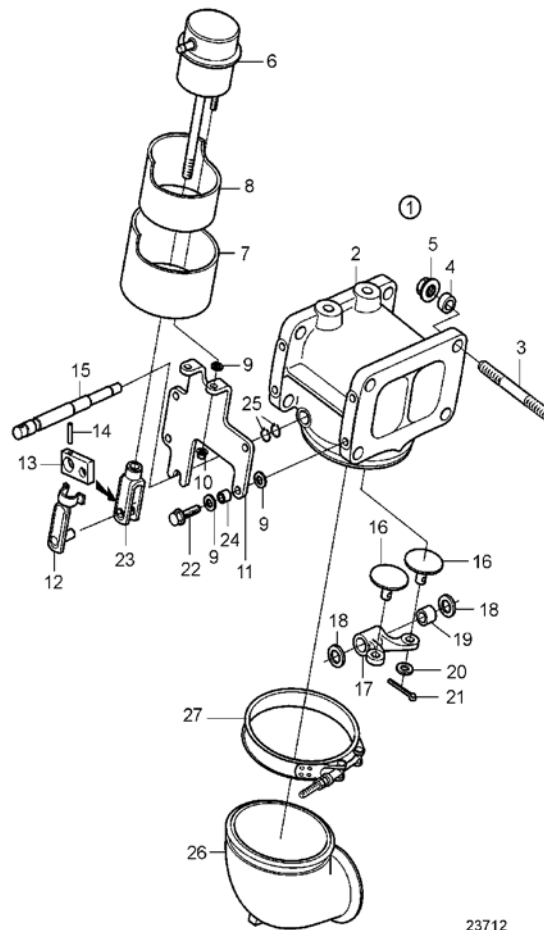


6348_25-3_2

Item	Part Number	Description	Qty. Var. 3	Item	Part Number	Description	Qty. Var. 3
1	GM65857	Turbocharger	1	19	GM65894	Nipple	1
2	GM27139	Gasket	4	20	GM26372	Gasket	1
3	GM26695	Stud	12	21	GM65840	Oil return pipe	1
4	GM27163	Sleeve, spacer	12	22	GM28143	Connector	2
5	GM27568	Nut	16	23	GM41234	Gasket	2
6	GM65899	Bracket	1	24	GM27124	Flange	2
7	#	Flange screw	3	25	GM27125	Ring, sealing	2
8	#	Flange screw	2	26	GM58220	Screw, M8-16	2
9	GM65903	Exhaust manifold	1	27	GM27719	Brace, lock	2
10	GM65878	Exhaust bellows	1	28	GM27728	Ring, sealing	2
11	GM34562	Clamp	2	29	GM65884	Oil return pipe	1
12	#	Flange screw	2	30	#	Flange screw	4
13	#	Lock nut	2	31	GM65938	Oil hose	1
14	GM65880	Exhaust bellows	1	32	GM26822	Flange	1
15	GM65933	Clamp	2	33	GM58179	Screw, M8-35	2
16	GM65856	Turbocharger	1	34	GM26445	Gasket	1
17	GM26496	Sleeve, spacer	4	35	—	Valve (see Group 25-3b for components)	1
18	GM65890	Pressure hose	1				

Common hardware; procure locally.

Group 25-3b: Turbocharger Wastegate



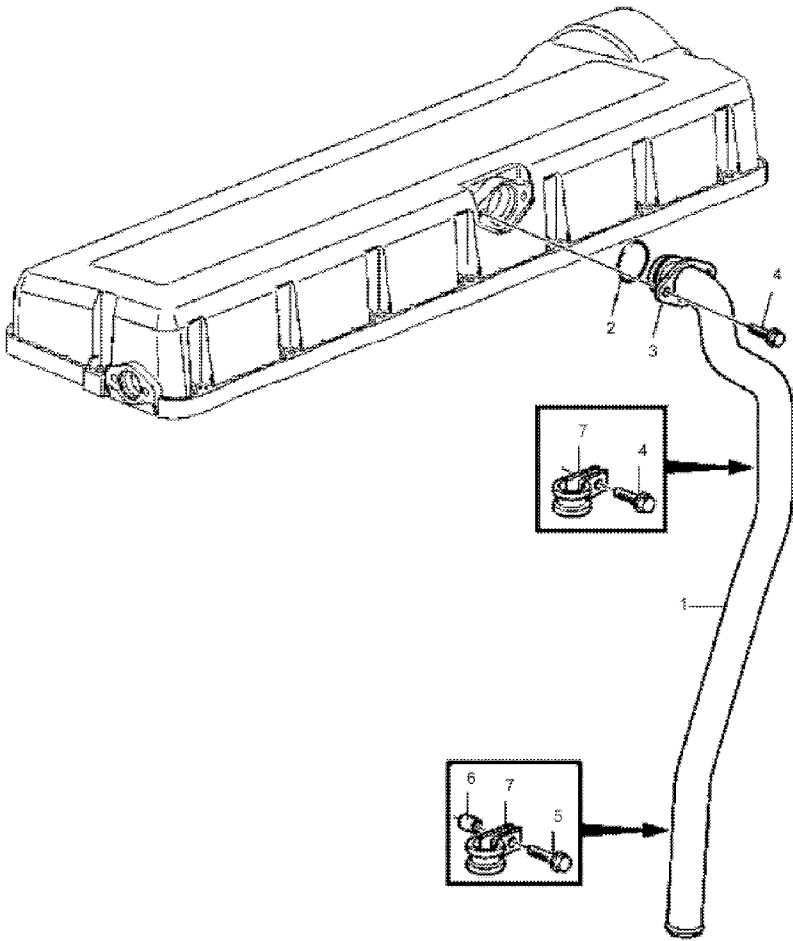
23712

6348_25-3_3

Item	Part Number	Description	Quantity
			Variation
1	GM65866	Valve	1
2	—	Not sold separately	1
3	GM26695	Stud, 58mm	4
4	GM26496	Sleeve, spacer	4
5	GM27568	Nut	4
6	GM65877	Actuator	1
7	—	Not sold separately	1
8	—	Not sold separately	1
9	#	Washer	10
10	#	Flange nut	2
11	—	Not sold separately	1
12	GM65828	Fork	1
13	—	Not sold separately	1
14	—	Not sold separately	1
15	—	Not sold separately	1
16	—	Not sold separately	2
17	—	Not sold separately	1
18	#	Washer	2
19	—	Not sold separately	1
20	#	Washer	2
21	GM65824	Cotter pin	2
22	GM27455	Screw	4
23	GM65830	Bolt	1
24	GM65831	Spacer sleeve	4
25	GM65829	Shoulder ring	1
26	—	Not sold separately	1
27	GM65934	Clamp	1

Common hardware; procure locally.

Group 25-4: Crankhouse Ventilation

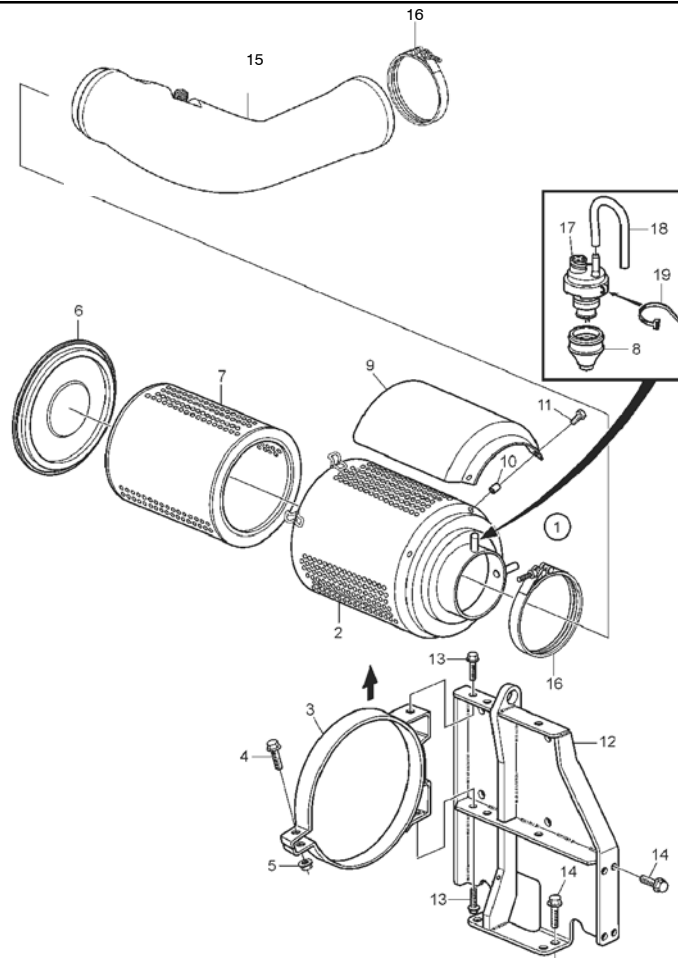


6348_25-4a

Item	Part Number	Description	Quantity
			Variation 1
1	GM41252	Pipe	1
2	GM41582	Sealing ring	1
3	GM41513	Flange	1
4	GM58220	Flange screw	3
5	#	Screw	1
6	GM27193	Sleeve	1
7	GM41256	Clamp	2

Common hardware; procure locally.

Group 25-5: Air Filter



20037

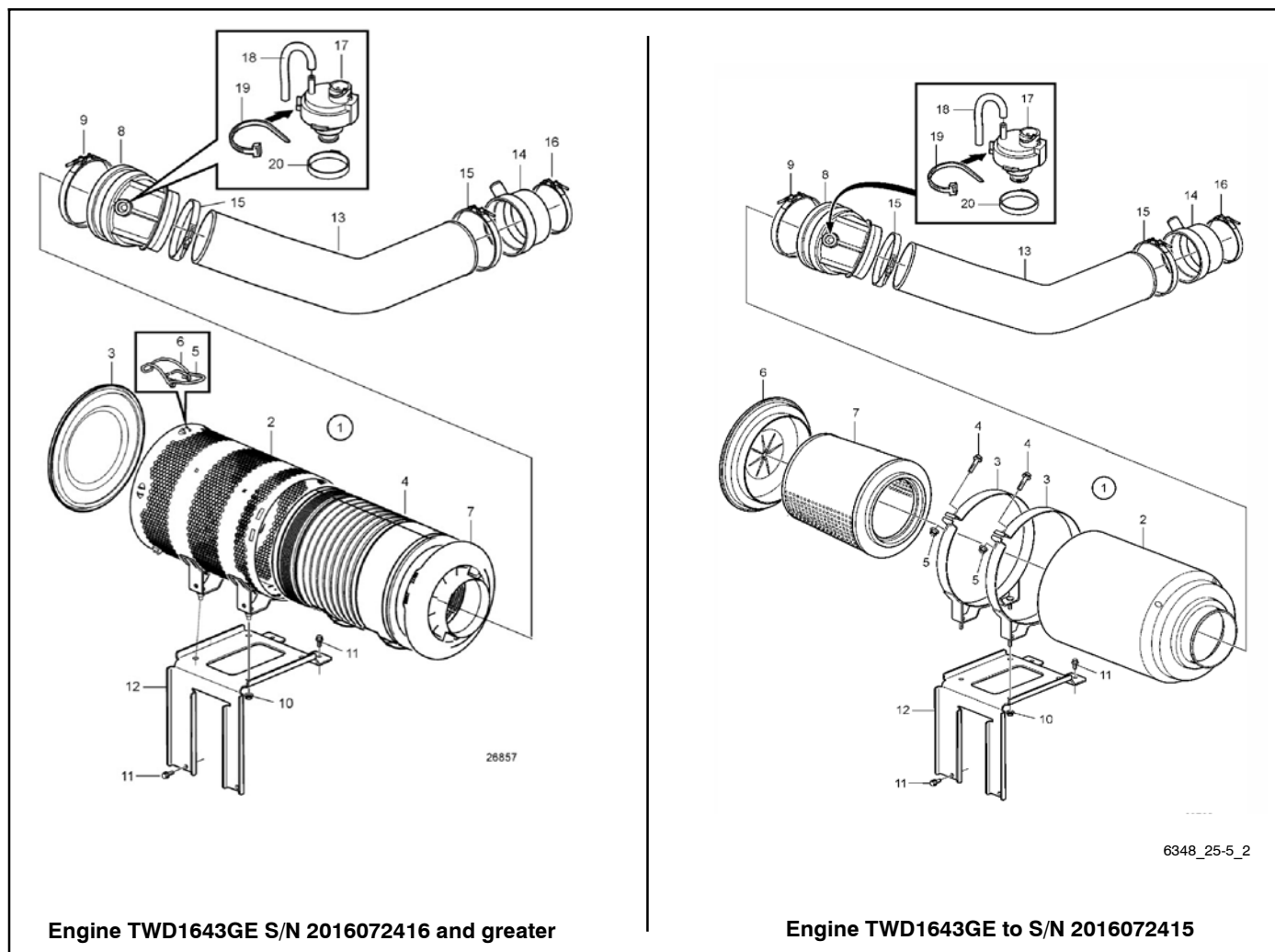
6348_25-5

Item	Part Number	Description	Quantity
			Variation
1	GM41407	Air filter (includes items 2-7)	1
2	—	Not sold separately	1
3	—	Not sold separately (includes items 4-5)	2
4	—	Not sold separately	2
5	—	Not sold separately	2
6	—	Not sold separately	1
7	GM25540	Insert, air filter	1
8	GM41406	Adapter	1
9	GM28056	Cap, rain	1
10	GM27412	Nut, rivet	4
11	GM27455	Screw	4
12	GM41362	Bracket	1
13	#	Flange screw	4
14	#	Screw	10
15	GM41395	Connecting pipe	1
16	GM27822	Hose clamp	2
17	GM41552	Sensor	1
18	GM41265	Rubber hose, L = 150 mm	AR
19	GM41262	Strip clamp	AR
	X-6214-10	Cap (not shown)	1
	X-426-8	Clamp, hose, .81/1.75 in. (not shown)	1

AR As Required

Common hardware; procure locally.

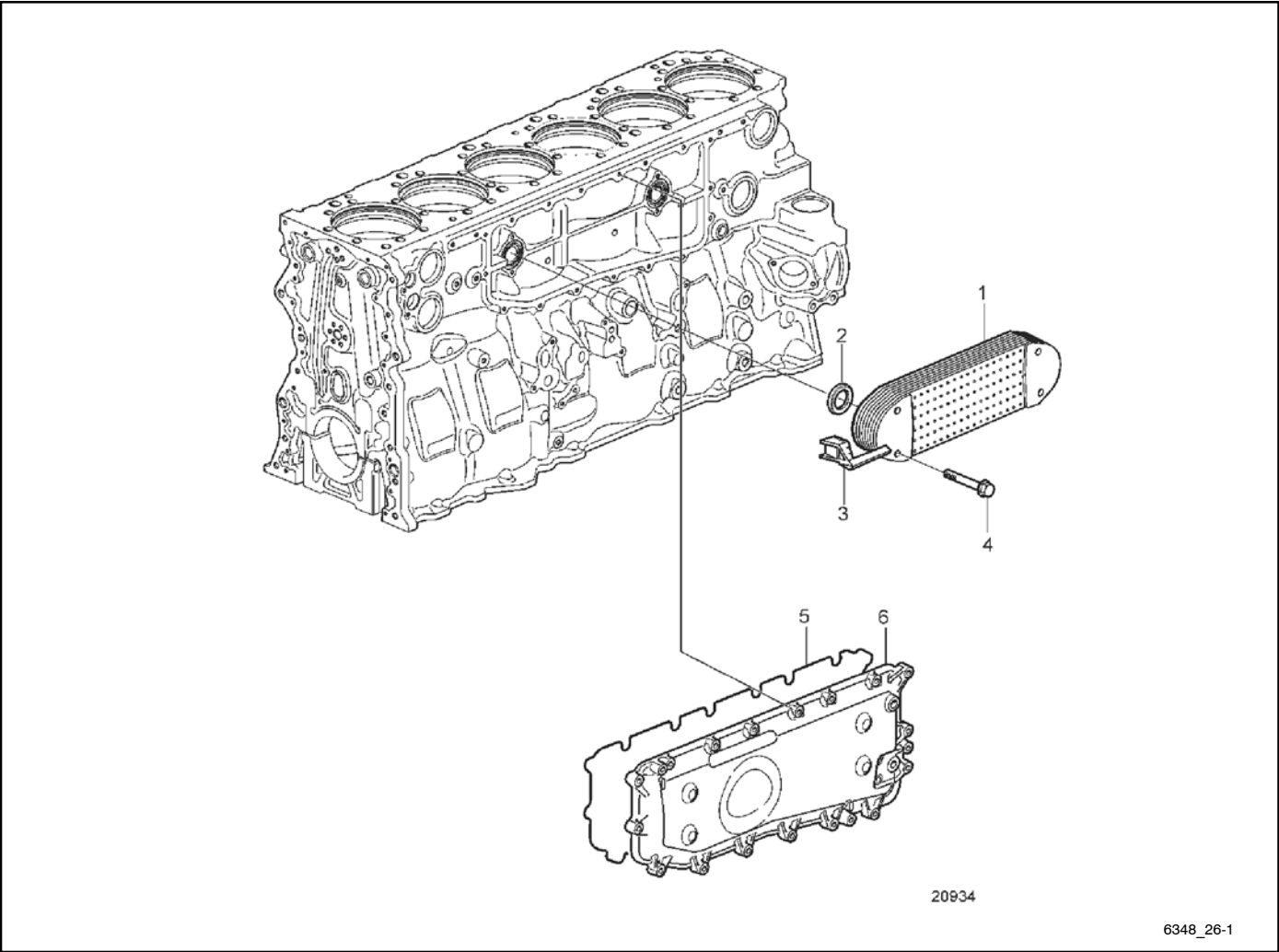
Group 25-5: Air Filter, continued



Item	Part Number	Description	Qty.
			Var. 2
1	GM65879	Air filter kit (includes items 2-7)	1
2	—	Not sold separately	1
3	TBD	Filter cover	1
4	GM100190	Air filter	1
5	TBD	Tension lock	5
6	TBD	Tension lock	5
7	TBD	Outlet flange	1
8	GM65911	Connection pipe	1
9	GM65943	Hose clamp	2
10	GM27568	Nut	4
11	GM58220	Screw, M8-16	4
12	GM65900	Bracket	1
13	GM65946	Connection pipe	1
14	GM65836	Rubber collar	1
15	GM27822	Clamp, hose	2
16	GM65833	Hose clamp	1
17	GM41552	Sensor	1
18	GM41265	Rubber hose, L = 150 mm	X
19	GM41262	Strip clamp	X
20	GM27440	Clamp, hose	1

Item	Part Number	Description	Qty.
			Var. 2
1	—	Air filter kit (order GM65879)	1
2	—	Not sold separately	1
3	—	Not sold separately	2
4	—	Not sold separately	2
5	—	Not sold separately	2
6	—	Not sold separately	1
7	GM25540	Insert, air filter	1
8	GM65911	Connection pipe	1
9	GM65943	Hose clamp	2
10	GM27568	Nut	4
11	GM58220	Screw, M8-16	4
12	GM65900	Bracket	1
13	GM65946	Connection pipe	1
14	GM65836	Rubber collar	1
15	GM27822	Clamp, hose	2
16	GM65833	Hose clamp	1
17	GM41552	Sensor	1
18	GM41265	Rubber hose, L = 150 mm	X
19	GM41262	Strip clamp	X
20	GM27440	Clamp, hose	1

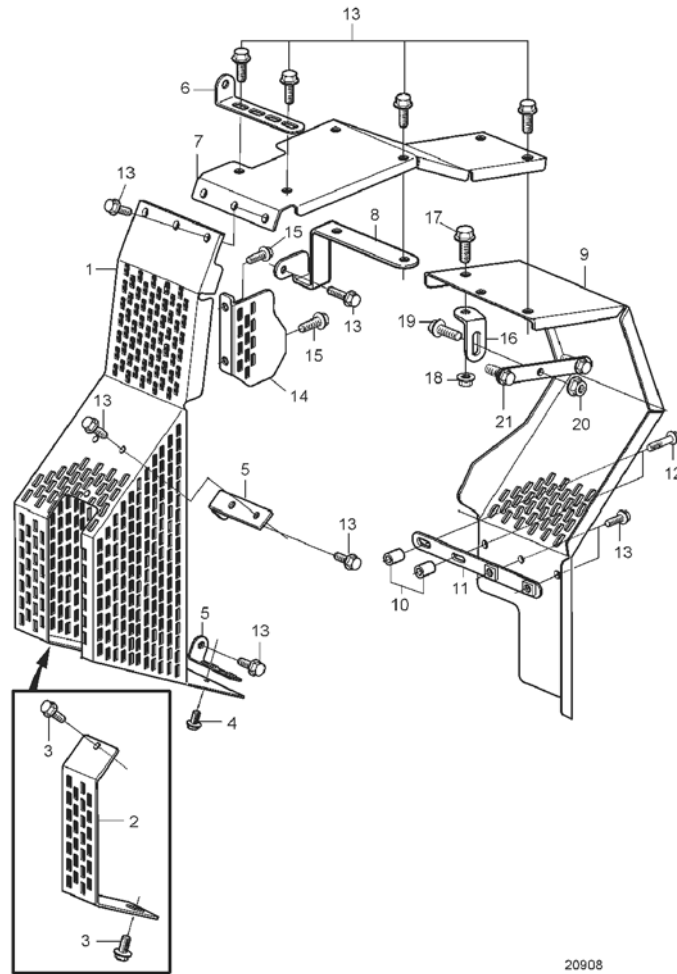
Group 26-1: Oil Cooler



Item	Part Number	Description	Quantity	
			Variation	
			1	2
1	GM41297	Oil cooler (before serial number 2016010024)	1	
1	GM65956	Oil cooler (serial number 2016010025 and after	1	1
2	GM41542	Sealing ring	2	2
3	GM41452	Seal	2	2
4	#	Flange screw	4	4
5	—	See Group 21-4	1	1
6	—	See Group 21-4	1	1

Common hardware; procure locally.

Group 26-2: Belt Guard



20908

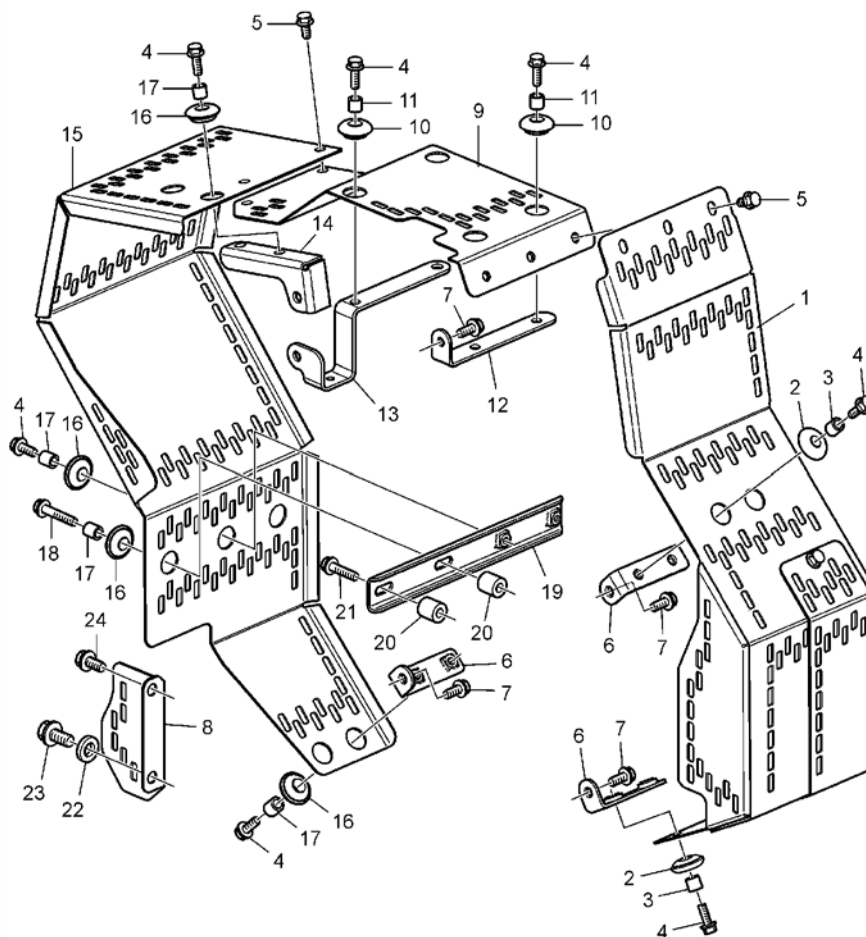
6348_26-2

Item	Part Number	Description	Quantity
			Variation
1	GM41377	Belt protector (includes items 2-3)	1
2	GM41409	Belt protector	1
3	#	Flange screw	2
4	GM27449	Flange screw, M8 x 20 mm	1
5	GM28041	Bracket	2
6	GM41273	Bracket	1
7	GM41353	Belt protector	1
8	GM41410	Bracket	1
9	GM41352	Belt protector	1
10	GM41235	Spacer sleeve	2
11	GM41381	Bracket	1
12	#	Flange screw, M8 x 35 mm	2
13	#	Flange screw, M8 x 12 mm	15
14	GM41382	Belt protector	1
15	#	Screw, L = 20mm	2
16	GM27056	Bracket	1
17	GM27449	Flange screw, M8 x 20 mm	1
18	#	Flange nut	1
19	#	Flange screw	1
20	#	Flange nut	1
21	—	See Group 30-1	1

Common hardware; procure locally.

Group 26-2: Belt Guard

Engine TWD1643GE to S/N 2016080035



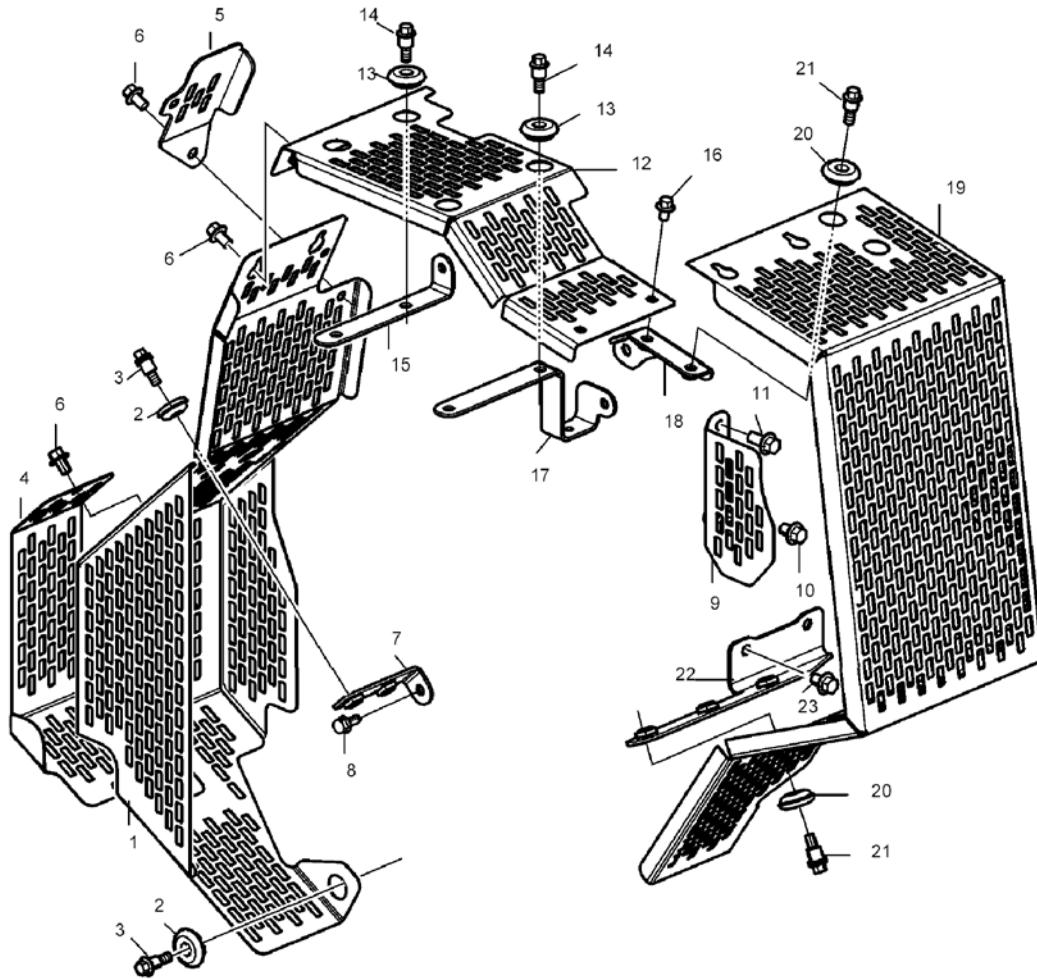
6348_26-2_2

Item	Part Number	Description	Quantity
			Variation
1	GM65896	Belt protector	1
2	GM65930	Rubber seal	4
3	GM65873	Spacer	4
4	GM27449	Screw, flange	10
5	GM51651	Screw, flange	8
6	GM28041	Bracket	3
7	GM58220	Screw, M8-16	4
8	GM41382	Belt protector	1
9	GM65897	Belt protector	1
10	GM65930	Rubber seal	4
11	GM65873	Spacer	4
12	GM65912	Bracket	1
13	GM41410	Bracket	1
14	GM65871	Bracket	1
15	GM65898	Belt protector	1
16	GM65930	Rubber seal	7
17	GM65873	Spacer	7
18	#	Flange screw	1
19	GM65870	Bracket	1
20	GM58175	Spacer, screw M8	2
21	GM58179	Screw, M8-35	2
22	GM65812	Sleeve	1
23	#	Screw	1
24	#	Flange screw	1

Common hardware; procure locally.

Group 26-2: Belt Guard

Engine TWD1643GE S/N 2016080036 and greater



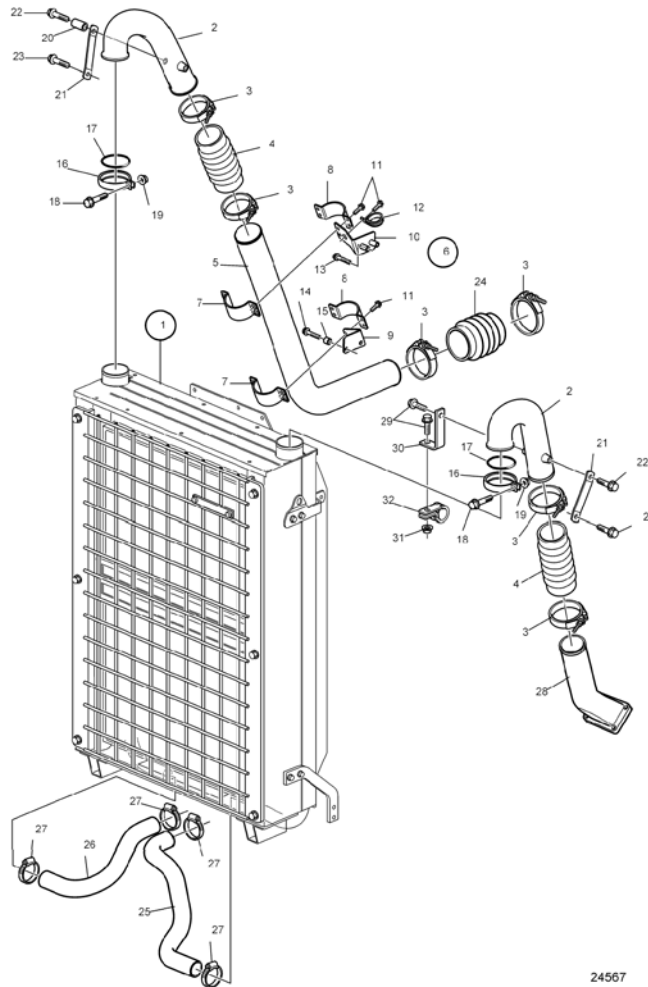
6348_27468

Item	Part Number	Description	Qty.
			Var. 2
1	GM95238	Protecting screen	1
2	GM95196	Rubber bushing	3
3	GM95241	Shoulder screw	3
4	GM95226	Cover	1
5	GM95242	Protecting screen	1
6	#	Flange screw	4
7	GM28041	Bracket	1
8	#	Flange screw	1
9	GM41382	Belt Protector	1
10	#	Flange screw	1
11	#	Flange screw	1
12	GM95308	Protecting screen	1

Item	Part Number	Description	Qty.
			Var. 2
13	GM95196	Rubber bushing	4
14	GM95241	Shoulder screw	4
15	GM65912	Bracket	1
16	#	Flange screw	4
17	GM41410	Bracket	1
18	GM95243	Bracket	1
19	GM95314	Protecting screen	1
20	GM95196	Rubber bushing	6
21	GM95241	Shoulder screw	6
22	GM95316	Bracket	1
23	#	Flange screw	2

Group 26-3: Radiator Connection

Engine TAD1640,1641,1642GE to S/N 2016079647



24567

6348_26-3

Item	Part Number	Description	Qty. Var. 1	Item	Part Number	Description	Qty. Var. 1
1	-	Radiator (see Group 26-4)	1	17	GM41264	O-ring	2
2	GM41373	Connecting pipe	2	18	#	Flange screw	2
3	GM27816	Clamp, Hose	6	19	#	Flange lock nut	2
4	GM41374	Hose	2	20	GM41240	Sleeve	2
5	GM41401	Charge air pipe	1	21	GM41403	Bracket	2
6	GM53116	Kit, Bracket	1	22	#	Flange screw	1
7	GM95193	Bracket	2	23	#	Flange screw	2
8	GM95192	Bracket	2	24	GM41400	Hose	1
9	GM95194	Bracket	1	25	GM41350	Hose, Radiator	1
10	GM95195	Bracket	1			(Engine serial number to 2016028724)	1
11	#	Flange screw	8	25	GM78727	Hose, Radiator	1
12	GM41256	Clamp	1			(Engine serial number 2016028725-2016079647)	1
13	#	Flange screw	2	26	GM41349	Hose, Radiator	1
14	#	Flange screw	2			(Engine serial number to 2016028724)	1
15	GM27854	Sleeve, spacer	2	26	GM78726	Hose, Radiator	1
16	GM34562	Clamp	2			(Engine serial number 2016028725-2016079647)	1
				27	GM26642	Clamp	4
				28	#	Charge air pipe	1
				29	#	Flange screw	2
				30	GM27538	Bracket	1
				31	#	Flange nut	1
				32	GM41270	Clamp	1

Common hardware; procure locally.

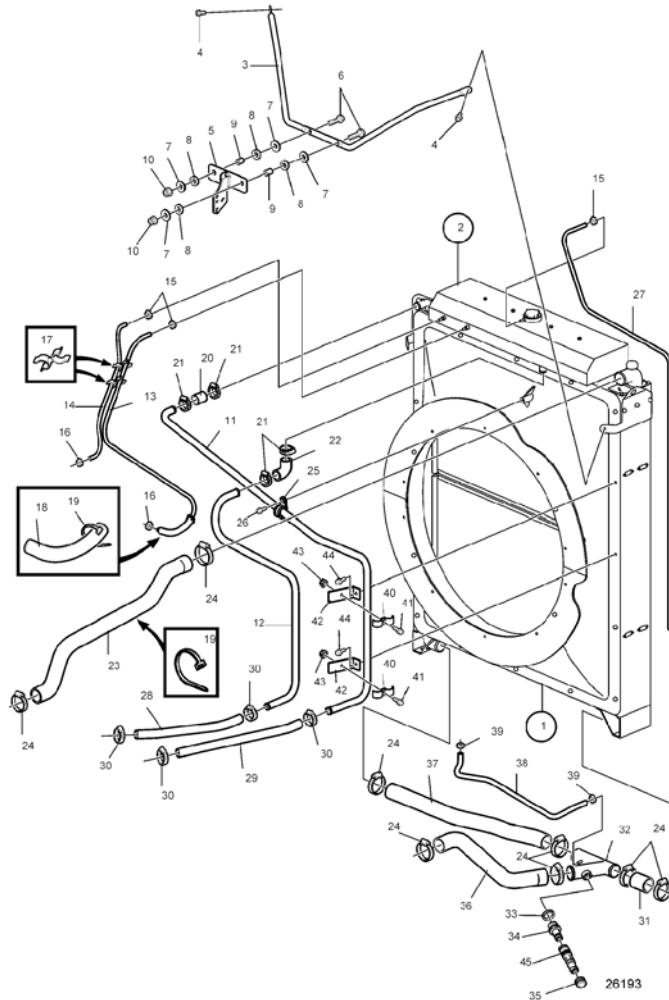
Engine TAD1640,1641,1642GE S/N 2016079648 and greater



Item	Part Number	Description	Qty.
			Var. 1
18	GM95303	Bracket	1
19	#	Flange screw	2
20	GM58213	Radiator support mtg. Bracket	1
20	GM58215	Radiator support mtg. Bracket	1
21	#	Flange screw	3
22	#	Flange nut	2
23	GM58214	Washer, for radiator stay	4
24	GM26616	Bushing, rubber	4
25	#	Flange screw	2
26	GM26417	Bushing	2
27	#	Flange screw	2
28	GM95297	Bracket	1
29	#	Cable tie	1
30	GM95246	Hose	1
31	GM41264	O-ring	2
32	GM95187	Stay	1
33	GM95245	Connection pipe	1
34	GM41374	Hose	2

Group 26-3: Radiator Connection

Engine TWD1643GE to S/N 2016076784



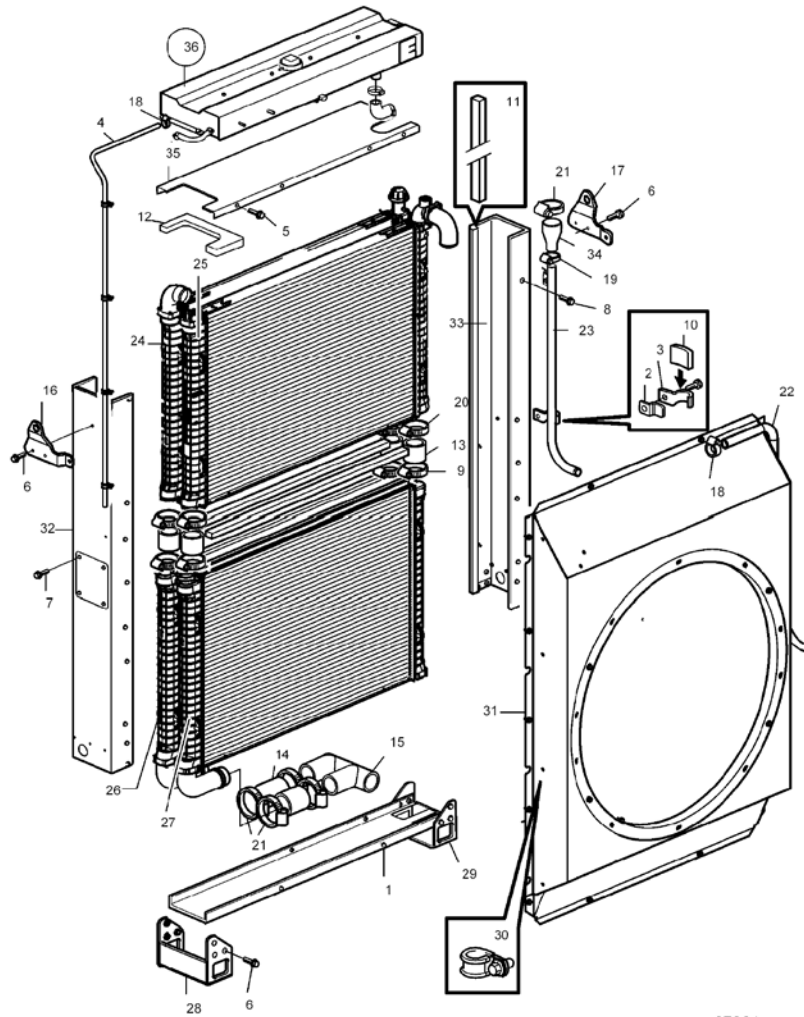
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Item	Part Number	Description	Qty. Var.	Item	Part Number	Description	Qty. Var.
1	-	Radiator	1	24	GM65816	Hose clamp	8
2	-	Expansion tank	1	25	GM65820	Clamo	1
3	GM65859	Stay	1	26	#	Flange screw	1
4	#	Flange screw	2	27	GM26387	Hose	1
5	GM58213	Radiator support mtg. Bracket	1	28	GM95229	Hose (SN-2016064436)	1
5	GM58215	Radiator support mtg. Bracket	1	28	GM27498	Hose	1
6	GM58218	Screw, flange M16	2	29	GM27498	Hose	1
7	GM58214	Washer, for radiator stay	4	30	GM27440	Clamp, Hose	4
8	GM26616	Bushing, rubber	4	31	GM65921	Hose	1
9	GM26417	Bushing	2	32	GM65923	Hose	1
10	GM58219	Nut, flange M16	2	33	GM27520	Gasket	1
11	GM65907	Water pipe	1	34	GM27839	Nipple	1
12	GM65908	Water pipe	1	35	GM27153	Cap, protective	1
13	GM27437	Hose L=2200mm	1	36	GM65838	Hose	1
14	GM26637	Hose L=1000mm	1	37	GM65922	Hose	1
15	GM85661	Hose clamp	3	38	GM27437	Hose (SN-2016064436)	1
16	GM65813	Clamp	2	38	GM27207	Cap	1
17	GM65835	Retainer	1	39	GM65814	Hose clamp	2
18	GM65959	Heat shield	1	40	GM65883	Fitting	2
19	GM26652	Clamp, strip	1	41	#	Flange screw	2
20	GM65843	Hose	1	42	GM65909	Bracket	2
21	GM95181	Hose clamp	4	43	#	Flange nut	2
22	GM65910	Hose	1	44	#	Flange screw	2
23	GM65837	Hose	1	45	GM95188	Draining nipple, kit	1

Common hardware; procure locally.

Group 26-3: Radiator Connection

Engine TWD1643GE S/N 2016076785 - 2016080035



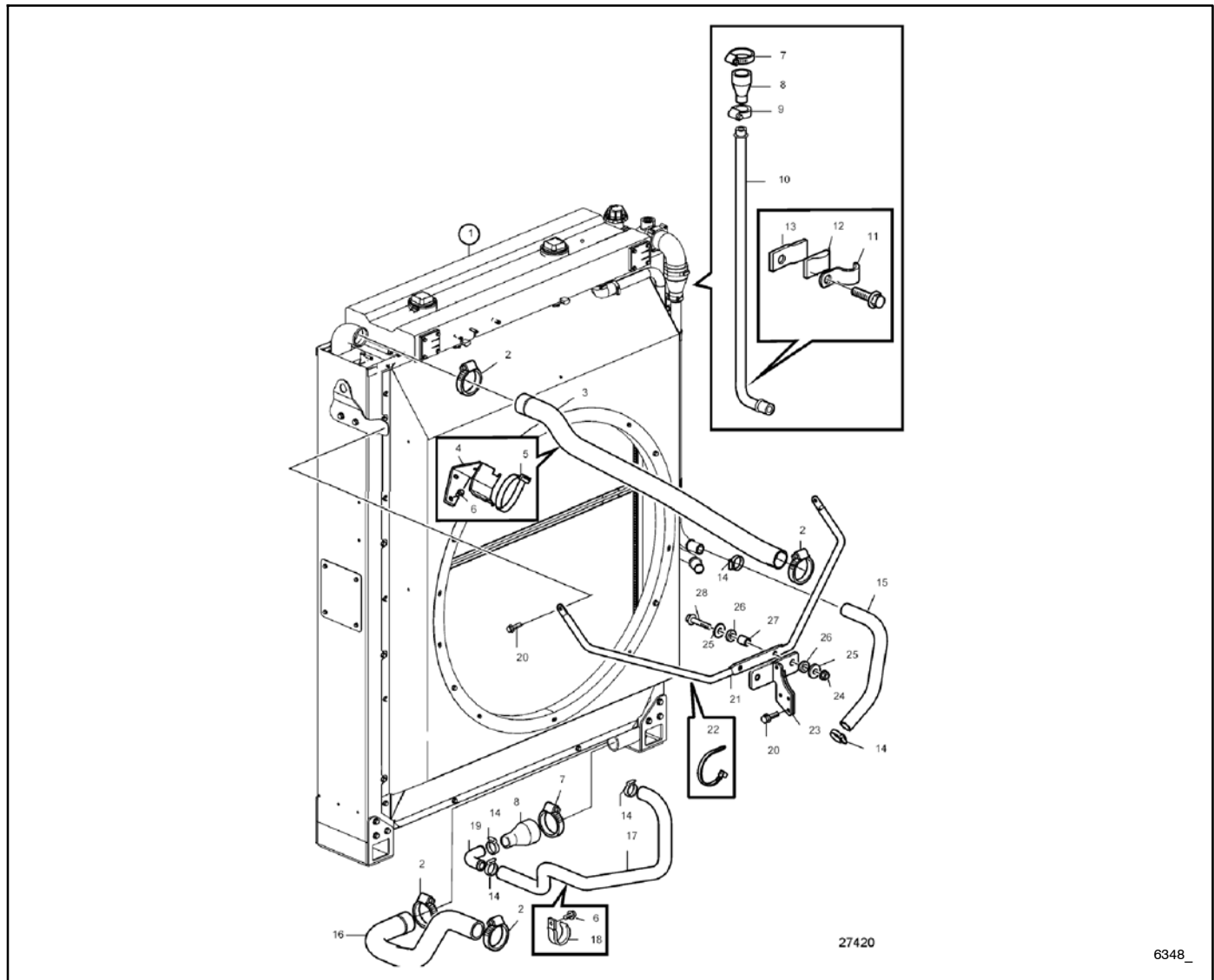
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Item	Part Number	Description	Qty. Var. 2
1	GM95265	Frame	1
2	GM95267	Bracket	4
3	GM95266	Bracket	4
4	GM27437	Hose	1
5	#	Flange screw	4
6	#	Flange screw	16
7	#	Flange screw	8
8	#	Flange screw	42
9	GM95269	Sealing	2
10	GM95254	Sealing	4
11	GM95254	Sealing	2
12	GM95270	Sealing	1
13	GM95258	Hose	3
14	GM95271	Hose	3
15	GM95275	Connector	1
16	GM95276	Bracket	1
17	GM95277	Bracket	1
18	GM26638	Clamp, Hose	1

Item	Part Number	Description	Qty. Var. 2
19	GM95486	Hose clamp	1
20	#	Hose clamp	6
21	GM95173	Hose clamp	5
22	GM95279	Pipe	1
23	GM95278	Pipe	1
24	GM95280	Radiator	1
25	GM95281	Radiator	1
26	GM95282	Radiator	1
27	GM95283	Radiator	1
28	GM95284	Bracket	1
29	GM95285	Bracket	1
30	GM95482	Clamp	4
31	GM95286	Cover	1
32	GM95287	Frame	1
33	GM95288	Frame	1
34	GM95291	Hose	1
35	GM95289	Frame	1
36	-	Expansion tank (See Group 26-5)	1

Group 26-3: Radiator and Charge Air Cooler Connection

Engine TWD1643GE S/N 2016080036 and greater

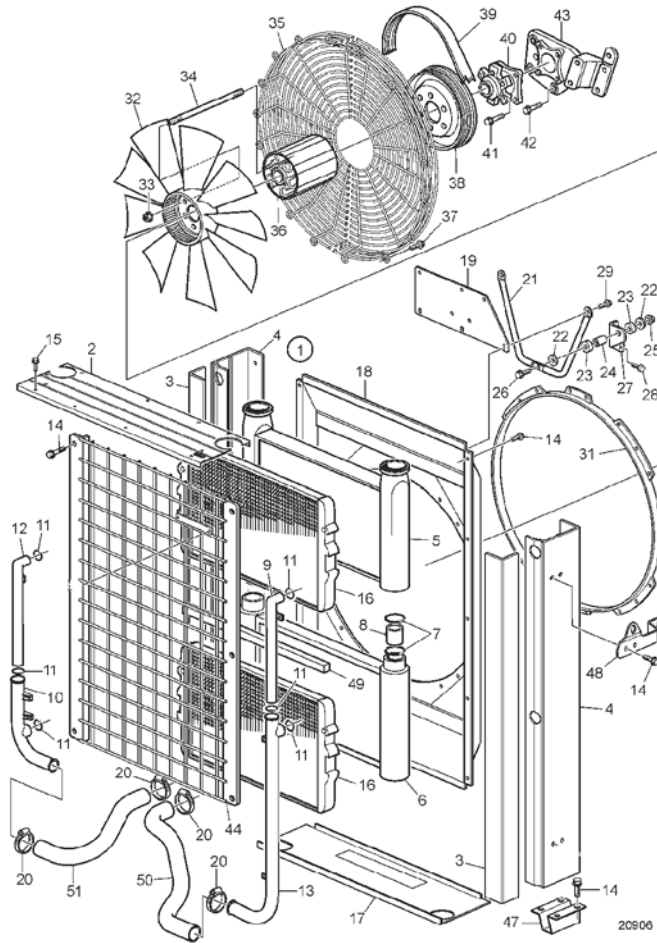


Item	Part Number	Description	Qty. Var. 2
1	-	Radiator (See Group 26-4)	1
2	GM95183	Hose clamp	4
3	GM95249	Hose	1
4	GM95293	Bracket	1
5	#	Cable tie	1
6	#	Flange screw	3
7	GM95173	Hose clamp	2
8	GM95291	Hose	2
9	GM95486	Hose clamp	5
10	GM95278	Pipe	1
11	GM95267	Bracket	2
12	GM95254	Sealing	2
13	GM95266	Bracket	2
14	GM79411	Hose clamp	4

Item	Part Number	Description	Qty. Var. 2
15	GM95317	Hose	1
16	GM95309	Hose	1
17	GM95341	Cooling hose	1
18	GM95338	Hook	1
19	GM95319	Riser	1
20	#	Flange screw	5
21	GM95290	Stay	1
22	#	Cable tie	4
23	GM58213	Radiator support mtg. Bracket	1
24	GM58215	Radiator support mtg. Bracket	1
25	#	Flange nut	2
26	GM58214	Washer, for radiator stay	4
27	GM26616	Bushing, rubber	4
28	GM26417	Bushing	2
	#	Flange screw	2

Group 26-4: Radiator and Fan

Engine TAD1640,1641,1642GE to S/N 2016028724



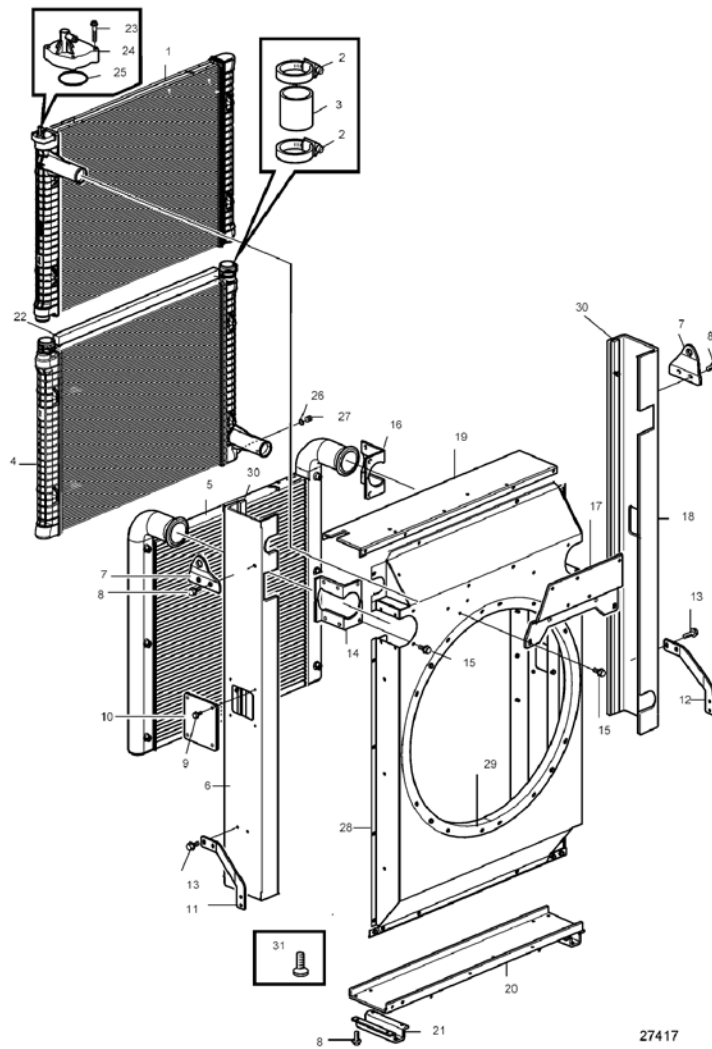
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Item	Part Number	Description	Qty.		Item	Part Number	Description	Qty.	
			1	2				1	2
1	—	Not sold separately (incl. items 2-19)	1	1	27	GM41251	Bracket	1	1
2	GM41321	Frame	1	1	28	#	Screw	3	3
3	GM41325	Frame	2	2	29	GM27452	Screw	2	2
4	GM41319	Frame	1	1	31	GM26900	Ring, fan	1	1
5	GM41389	Charge air cooler	1	1	32	GM28042	Fan	1	1
6	GM41312	Charge air cooler	1	1	33	GM27569	Nut, flange lock	6	6
7	GM41314	O-ring	8	8	34	GM41228	Stud	6	6
8	GM41313	Intermediate pipe	2	2	35	GM27236	Protector, Fan	2	2
9	GM41315	Pipe	1	1	36	GM41378	Fan hub	1	1
10	GM41317	Pipe	1	1	37	#	Screw	12	12
11	GM41311	O-ring	6	6	38	GM41379	Pulley	1	
12	GM41316	Pipe	1	1	38	GM52473	Pulley		1
13	GM41318	Pipe	1	1	39	GM41361	Belt (engine serial no. before 9184)	1	
14	#	Flange screw	18	18	39	GM52474	Belt (engine serial no. 9184 and after)	1	
15	GM41322	Screw	22	22	39	GM51834	Belt		1
16	GM41390	Radiator	2	2	40	GM78733	Fan hub	1	1
17	GM41320	Frame	1	1	41	#	Flange screw	4	4
18	GM41391	Fan shroud	1	1	42	#	Flange screw	5	5
19	GM41323	Bracket	1	1	43	GM41380	Bracket	1	1
20	GM26642	Clamp	4	4	44	GM41372	Radiator protector	1	1
21	GM41250	Stay	1	1	47	GM41326	Anchorage	1	1
22	#	Washer	2	2	48	GM41385	Bracket, left	1	1
23	GM26616	Bushing, rubber	2	2	48	GM41384	Bracket, right	1	1
24	GM26417	Bushing	1	1	49	GM41324	Sealing strip	4	4
25	#	Flange nut	1	1	50	GM41350	Radiator hose	1	1
26	#	Flange screw	1	1	51	GM41349	Radiator hose	1	1

Common hardware; procure locally.

Group 26-4: Radiator and Charge Air Cooler

Engine TAD1640,1641,1642GE S/N SN2016079648-



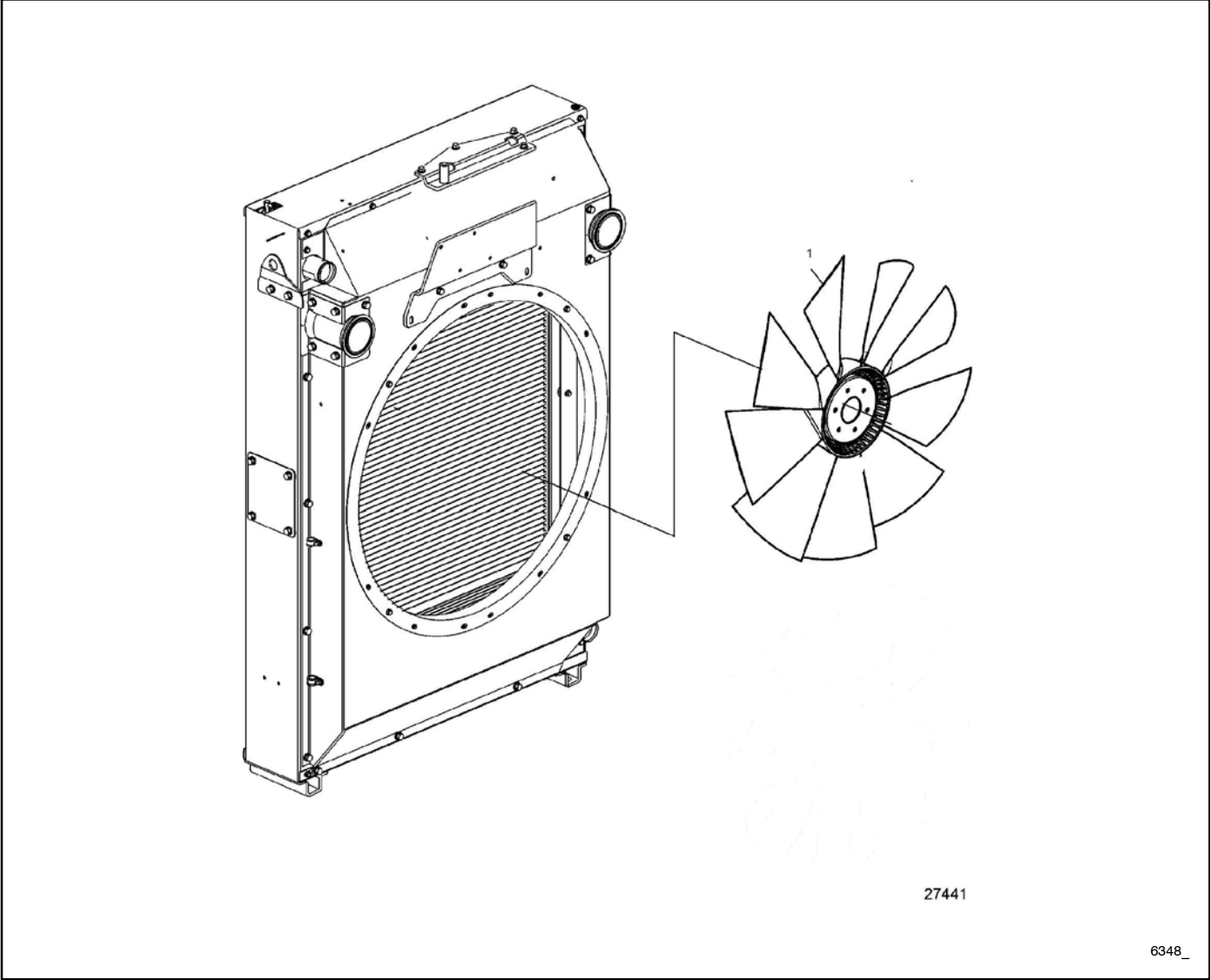
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Item	Part Number	Description	Qty.	
			Var. 1	Var. 2
1	GM95261	Radiator	1	1
2	#	Hose clamp	4	4
3	GM95258	Hose	2	2
4	GM95260	Radiator	1	1
5	GM95250	Intercooler	1	1
6	GM95257	Frame	1	1
7	GM95259	Bracket	2	2
8	#	Flange screw	8	8
9	GM95296	Plate	2	2
10	#	Flange screw	8	8
11	GM41346	Bracket, right	1	1
12	GM41345	Bracket, left	1	1
13	#	Flange screw	4	4
14	GM95252	Bracket	2	2
15	#	Flange screw	56	56

Item	Part Number	Description	Qty.	
			Var. 1	Var. 2
16	GM95251	Bracket	2	2
17	GM95300	Bracket	1	1
18	GM95256	Frame	1	1
19	GM95264	Frame	1	1
20	GM95255	Frame	1	1
21	GM95262	Bracket	2	2
22	GM95253	Sealing	1	1
23	#	Flange screw	4	4
24	GM95327	Plate	1	1
25	GM95322	Sealing ring	1	1
26	GM95330	Sealing ring	1	1
27	GM95329	Plug	1	1
28	GM95263	Cover	1	1
29	GM95335	Fan ring	1	1
30	GM95320	Sealing	2	2
31	GM95342	Allen head sunk scre	4	4

Group 26-4: Fan

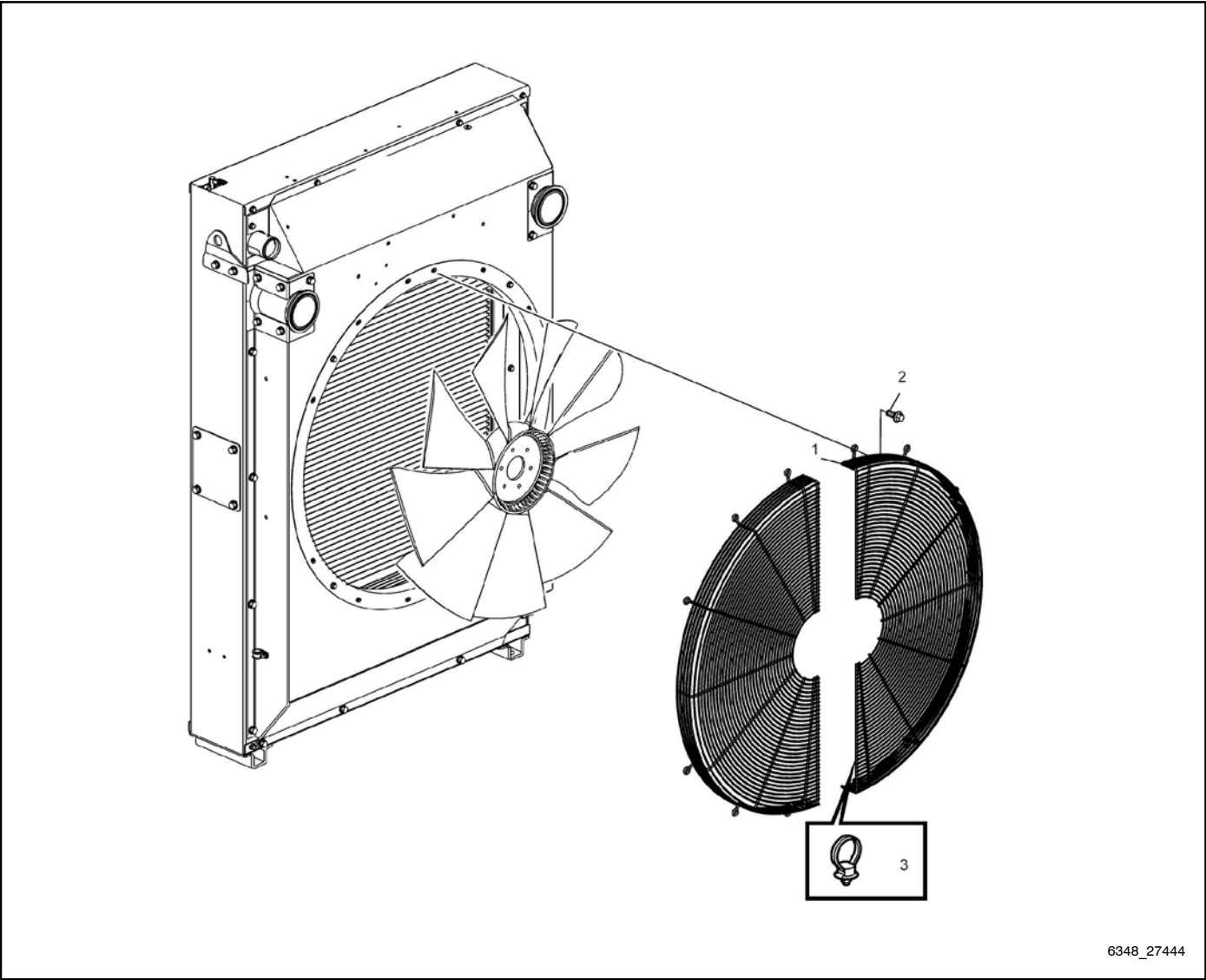
Engine TAD1640,1641,1642GE S/N SN2016079648-



Item	Part Number	Description	Qty.	
			Var. 1	Var. 2
1	GM28042	Fan	1	1

Group 26-4: Fan Shroud

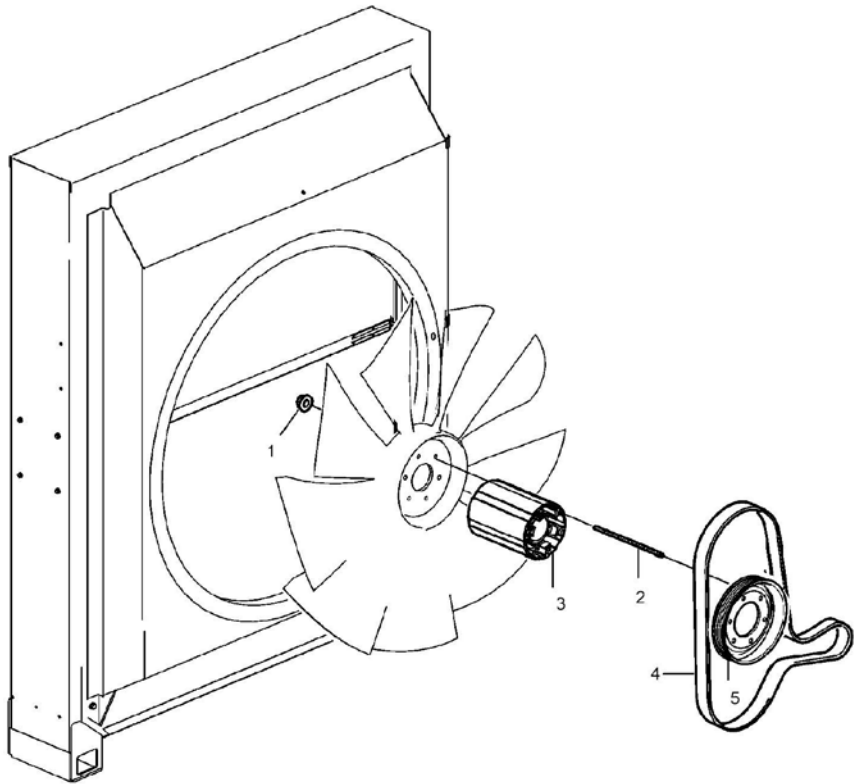
Engine TAD1640,1641,1642GE S/N SN2016079648-



Item	Part Number	Description	Qty.	
			Var. 1	Var. 2
1	GM27236	Protector, Fan	2	2
2	#	Flange screw	12	12
3	#	Cable tie	8	8

Group 26-4: Fan Drive

Engine TAD1640,1641,1642GE S/N SN2016079648-

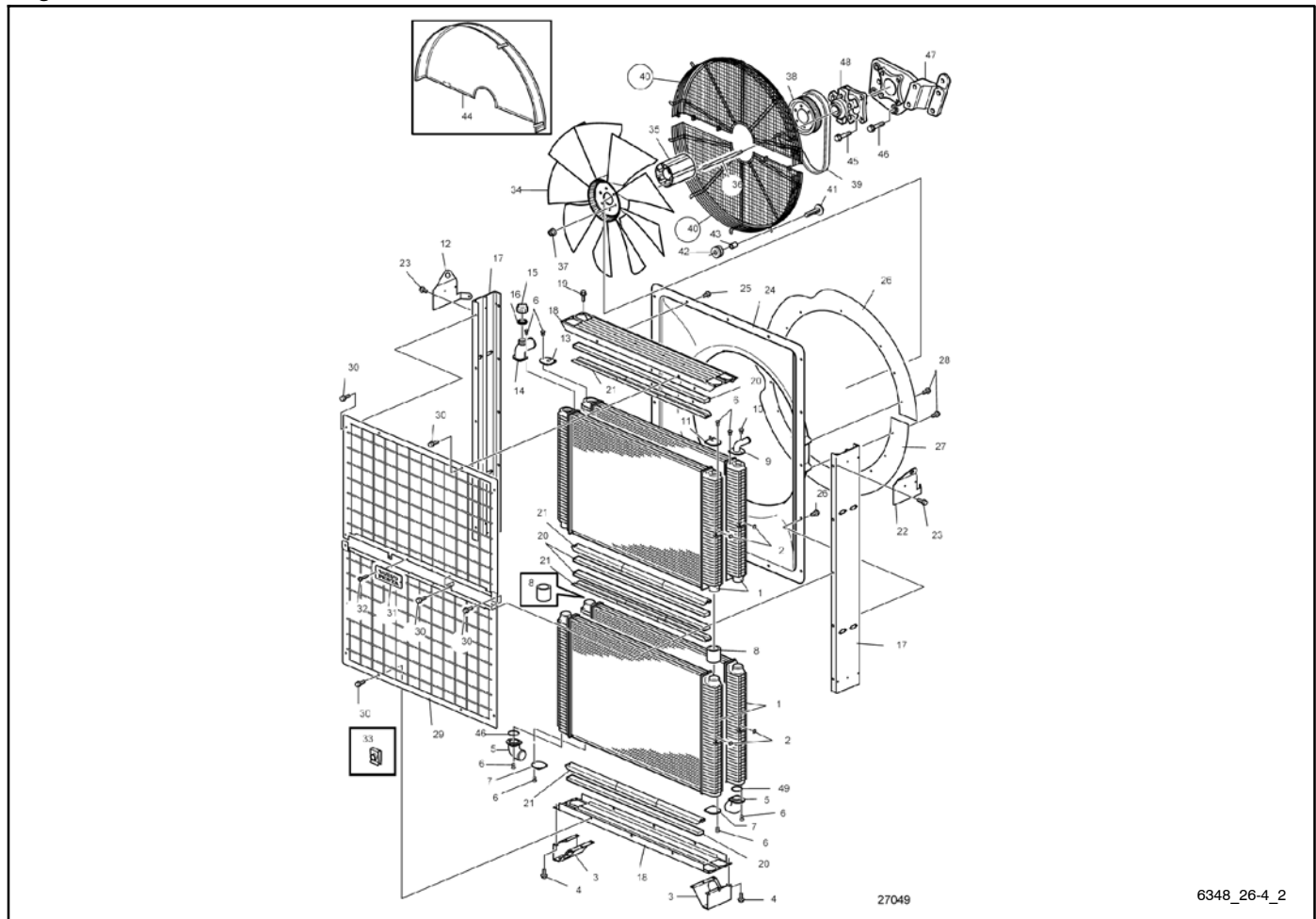


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Item	Part Number	Description	Qty.	
			Var. 1	Var. 2
1	#	Flange nut	6	6
2	GM41228	Stud	6	6
3	GM41378	Fan hub	1	1
4	GM51834	Fan belt		1
4	GM52474	Belt, drive	1	
5	GM52473	Pulley		1
5	GM41379	Pulley	1	

Group 26-4: Radiator and Fan

Engine TWD1643GE to S/N 2016076784

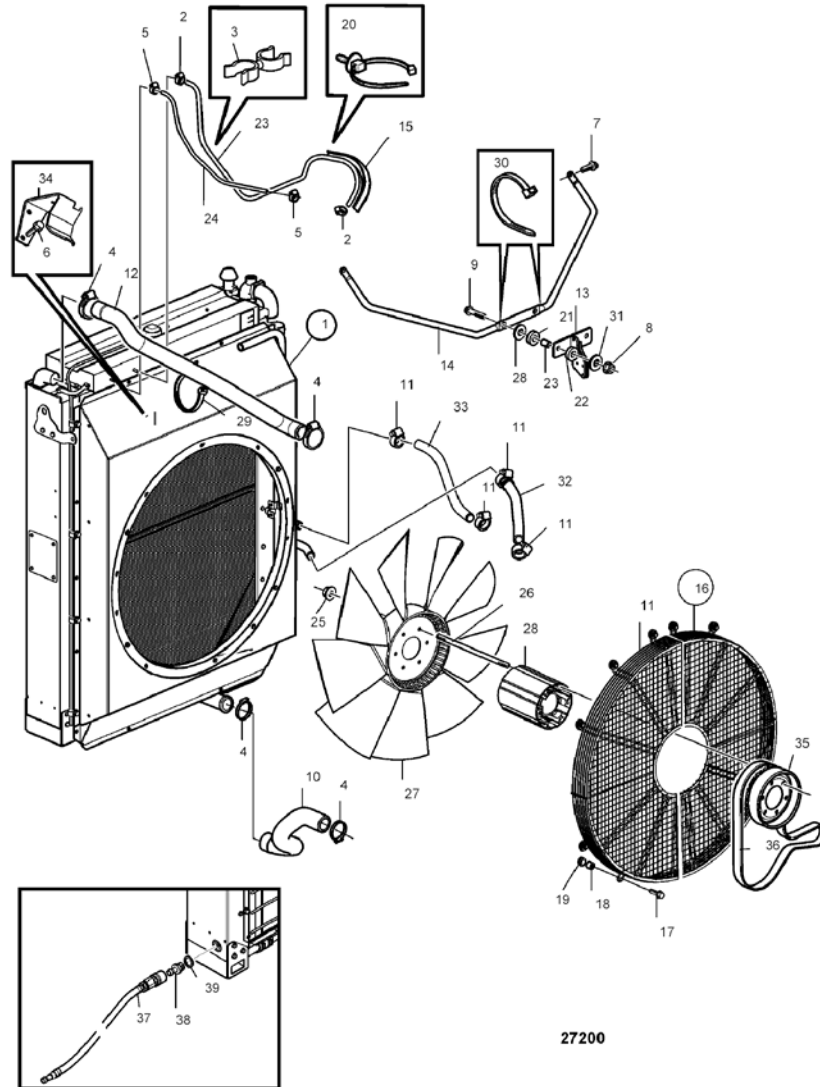


Item	Part Number	Description	Qty. Var.	Item	Part Number	Description	Qty. Var.
1	GM65929	Radiator	4	26	GM65940	Fan ring	1
2	GM65852	Rubber damper	16	27	GM65941	Fan ring	1
3	GM65937	Anchorage	2	28	#	Flange screw	14
4	GM27449	Screw, flange	12	29	GM95197	Radiator grille	2
5	GM65916	Hose connection	2	30	GM58220	Screw, M8-16	12
6	#	Hex. socket screw	40	31	X	Emblem	1
7	GM65918	Cover	1	32	#	Cross recessed sunk	2
8	GM65921	Hose	2	33	GM65888	Clip	1
9	GM65917	Hose connection	1	34	GM65869	Fan	1
10	GM65926	Plug	1	35	GM95221	Fan hub	1
11	GM65920	Cover	1	36	GM95176	Stud	6
12	GM65927	Bracket	1	37	GM27568	Nut	6
13	GM65920	Cover	1	38	GM52473	Pulley	1
14	GM65919	Hose connection	1	39	GM65913	Drive belt	1
15	GM95237	Filler cap	1	40	GM95236	Fan guard	2
16	GM95240	Gasket	1	41	#	Flange screw	10
17	GM65924	Frame	2	42	GM95235	Rubber damper	10
18	GM65925	Anchorage, Upper	1	43	GM95478	Spacer sleeve	10
18	GM95186	Frame profile, Lower	1	44	GM95299	Air filter	2
19	GM27449	Screw, flange	20	45	GM58221	Screw, flange M10-35	4
20	GM65892	Gasket	8	46	GM27734	Screw	5
21		Frame	8	47	GM41380	Bracket	1
22	GM65928	Bracket	1	48	GM78733	Fan Hub	1
23	GM58220	Screw, M8-16	6	49	GM27577	O-ring	2
24	GM65839	Fan shroud	1				
25	GM51651	Screw, flange	16				

Common hardware; procure locally.

Group 26-4: Radiator and Fan

Engine TWD1643GE S/N 2016076785 - 2016080035



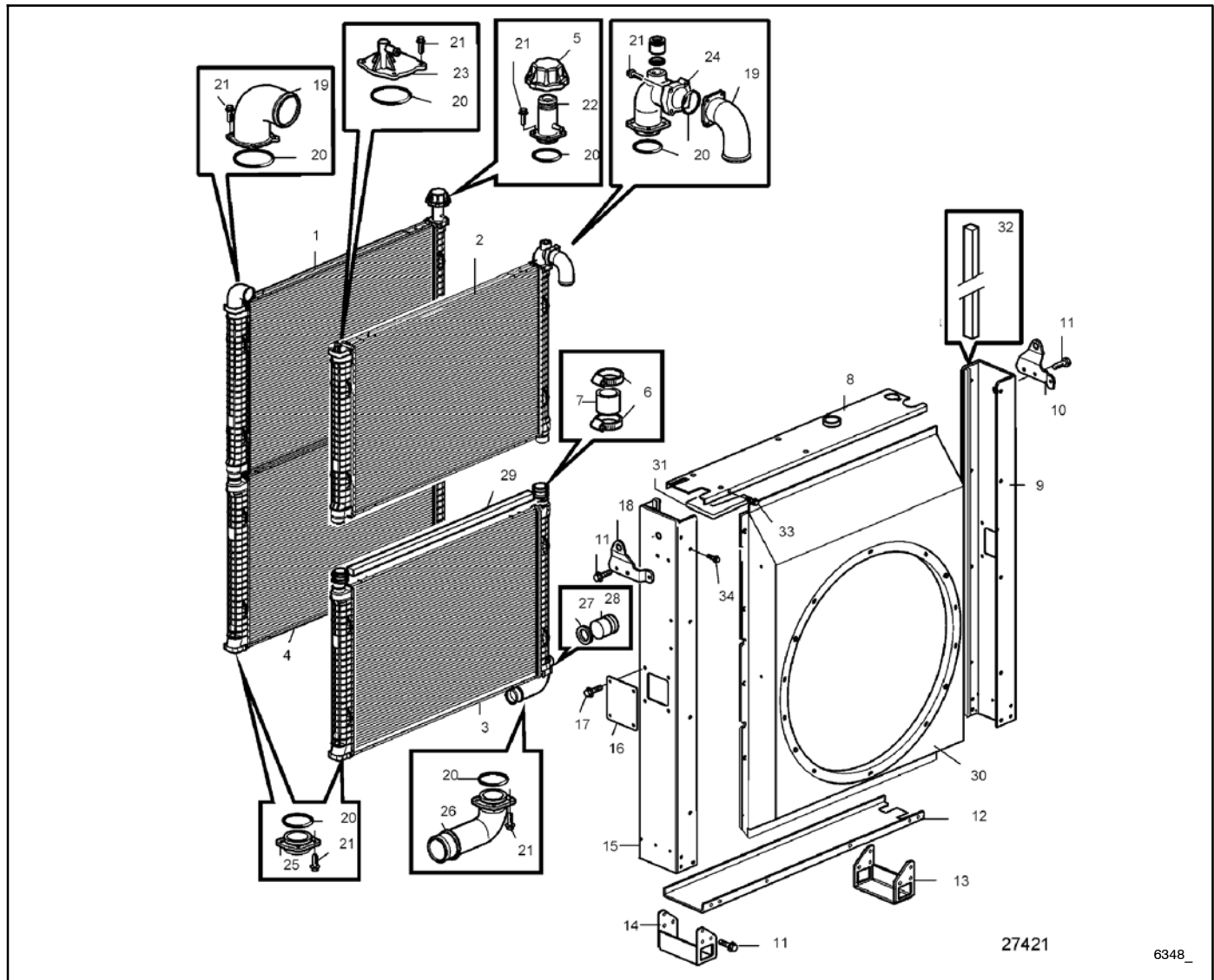
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Item	Part Number	Description	Qty. Var. 3	Item	Part Number	Description	Qty. Var. 3
1	-	Cooling Package	1	19	GM95478	Spacer sleeve	10
2	GM26638	Clamp, Hose	3	20	#	Cable tie	1
3	GM95199	Retainer	6	21	GM26616	Bushing, rubber	4
4	GM95183	Hose clamp	4	22	GM26417	Bushing	2
5	GM95182	Hose clamp	2	23	GM95179	Rubber hose L=1570mm	1
6	#	Flange screw	6	24	GM26637	Hose L=770mm	1
7	#	Flange screw	2	25	#	Flange nut	6
8	#	Flange nut	2	26	GM95176	Stud	6
9	#	Flange screw	2	27	GM65869	Fan	1
10	GM95248	Hose	1	28	GM95221	Fan hub	1
11	GM79411	Hose clamp	4	29	#	Cable tie	1
12	GM95249	Hose	1	30	#	Cable tie	4
13	GM58213	Radiator support mtg. Bracket	1	31	GM58214	Washer, for radiator stay	4
14	GM95290	Stay	1	32	GM27498	Hose L=475mm	1
15	GM65959	Heat shield	1	33	GM27498	Hose L=650mm	1
16	GM95236	Fan guard	2	34	GM95293	Bracket	1
17	#	Flange screw	10	35	GM52473	Pulley	1
18	GM95235	Rubber damper	10	36	GM65913	Drive belt	1
				37	GM95200	Drain hose	1
				38	GM27839	Nipple	1
				39	GM41290	Gasket	1

Group 26-4: Radiator and Charge Air Cooler

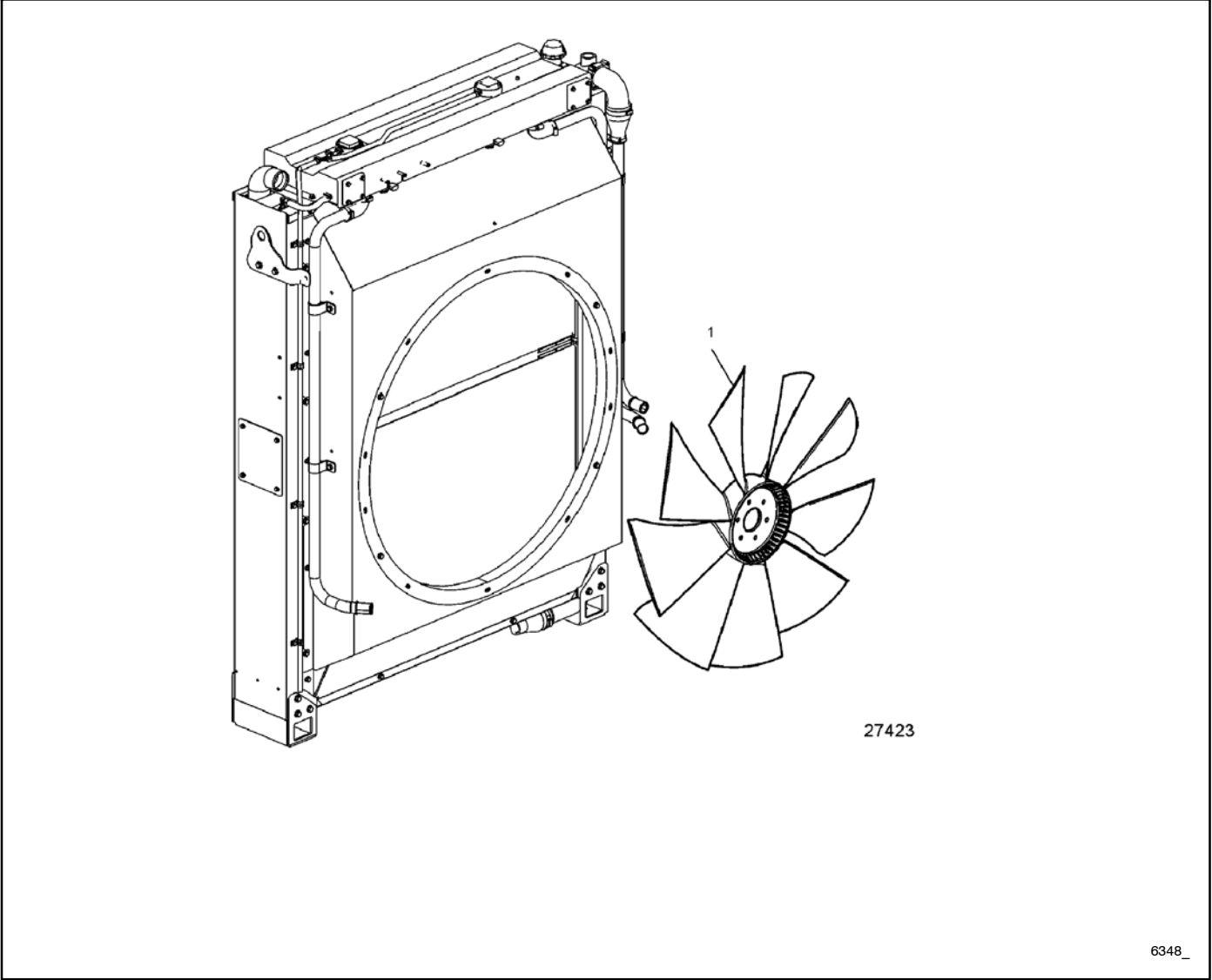
Engine TWD1643GE S/N 2016080036 and greater



Item	Part Number	Description	Qty. Var. 3	Item	Part Number	Description	Qty. Var. 3
1	GM95280	Radiator	1	18	GM95276	Bracket	1
2	GM95281	Radiator	1	19	GM95323	Pipe	2
3	GM95282	Radiator	1	20	GM95322	Sealing ring	9
4	GM95283	Radiator	1	21	#	Flange screw	36
5	GM95321	Filler cap	1	22	GM95324	Plate	1
6	#	Hose clamp	6	23	GM95327	Plate	1
7	GM95258	Hose	3	24	GM95328	Pipe	1
8	GM95289	Frame	1	25	GM95326	Tank	2
9	GM95288	Frame	1	26	GM95325	Hose connection	2
10	GM95277	Bracket	1	27	GM95330	Sealing ring	2
11	#	Flange screw	16	28	GM95329	Plug	2
12	GM95265	Frame	1	29	GM95269	Sealing	2
13	GM95285	Bracket	1	30	GM95286	Cover	1
14	GM95284	Bracket	1	31	GM95270	Sealing	1
15	GM95287	Frame	1	32	GM95254	Sealing	2
16	GM95296	Plate	2	33	#	Flange screw	4
17	#	Flange screw	8	34	#	Flange screw	44

Group 26-4: Fan

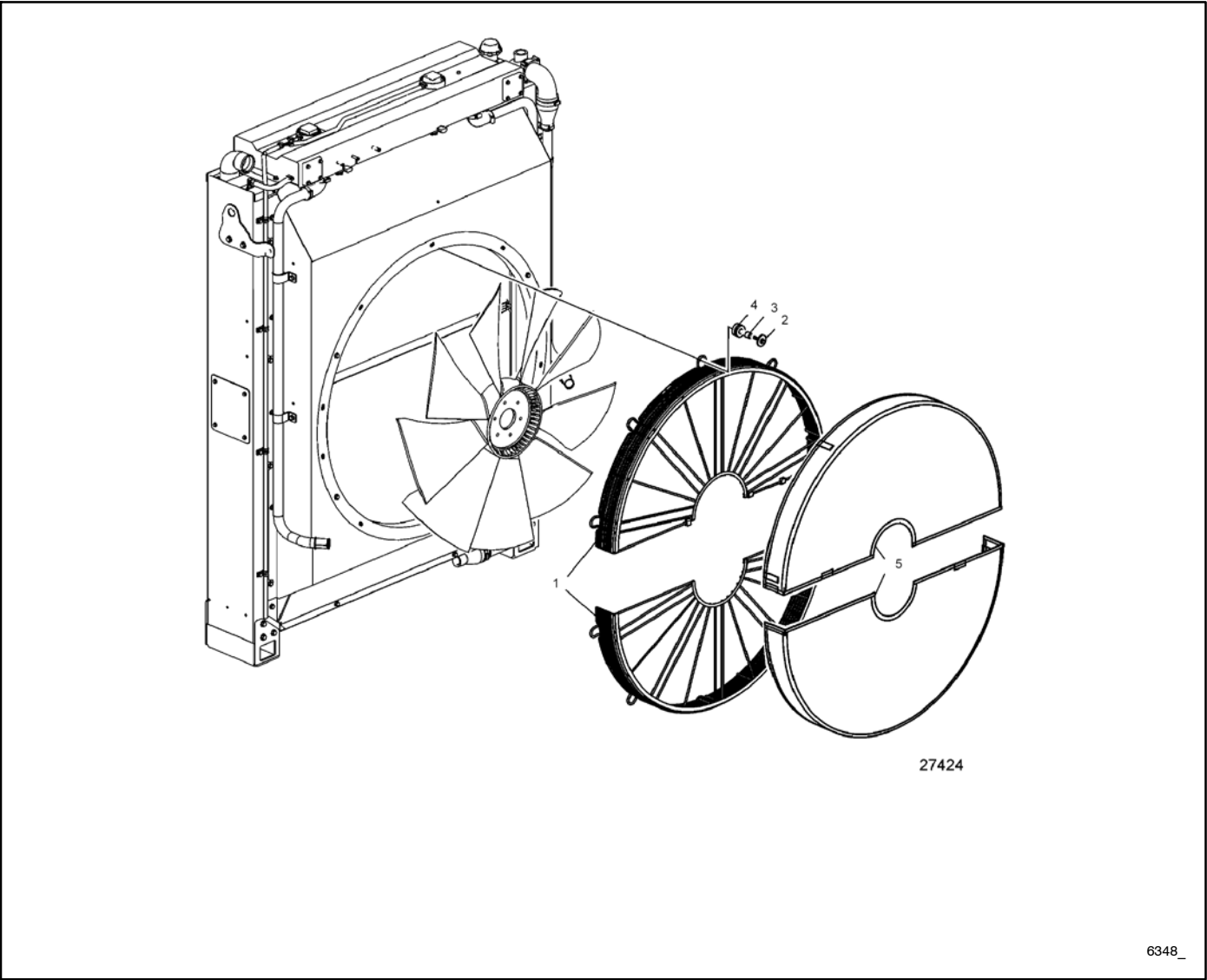
Engine TWD1643GE S/N 2016080036 and greater



Item	Part Number	Description	Qty.
			Var. 3
1	GM65869	Fan	1

Group 26-4: Fan Shroud

Engine TWD1643GE S/N 2016080036 and greater

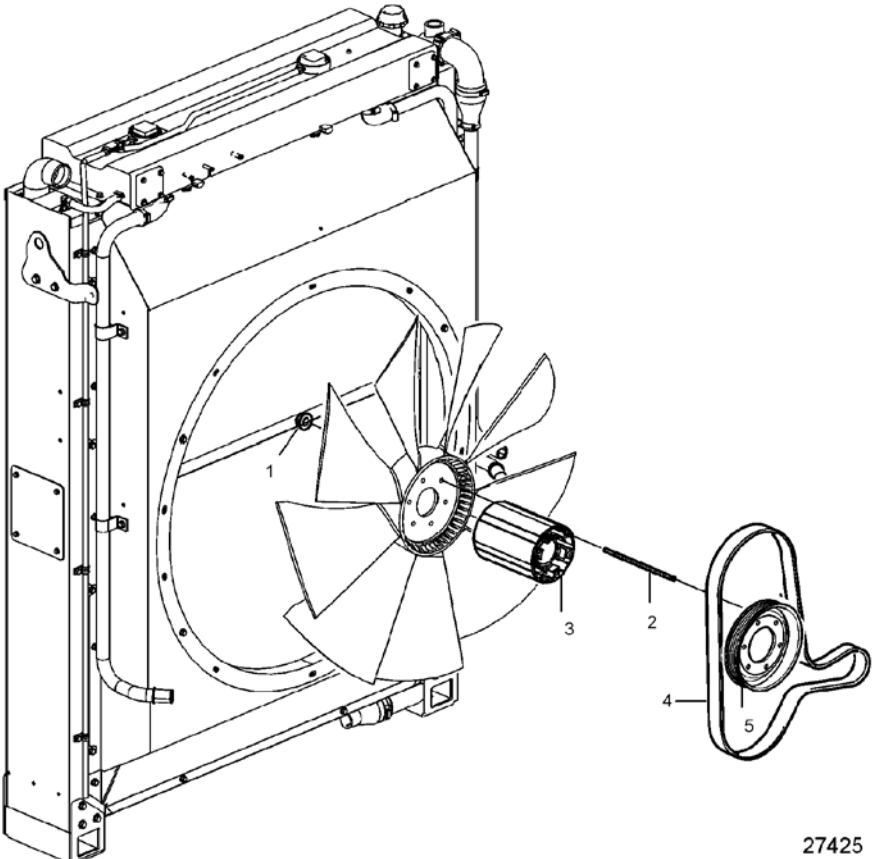


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Item	Part Number	Description	Qty.
1	GM95236	Fan guard	2
2	#	Flange screw	10
3	GM95235	Rubber damper	10
4	GM95478	Spacer sleeve	10
5	GM95299	Air filter	2

Group 26-4: Fan Drive

Engine TWD1643GE S/N 2016080036 and greater

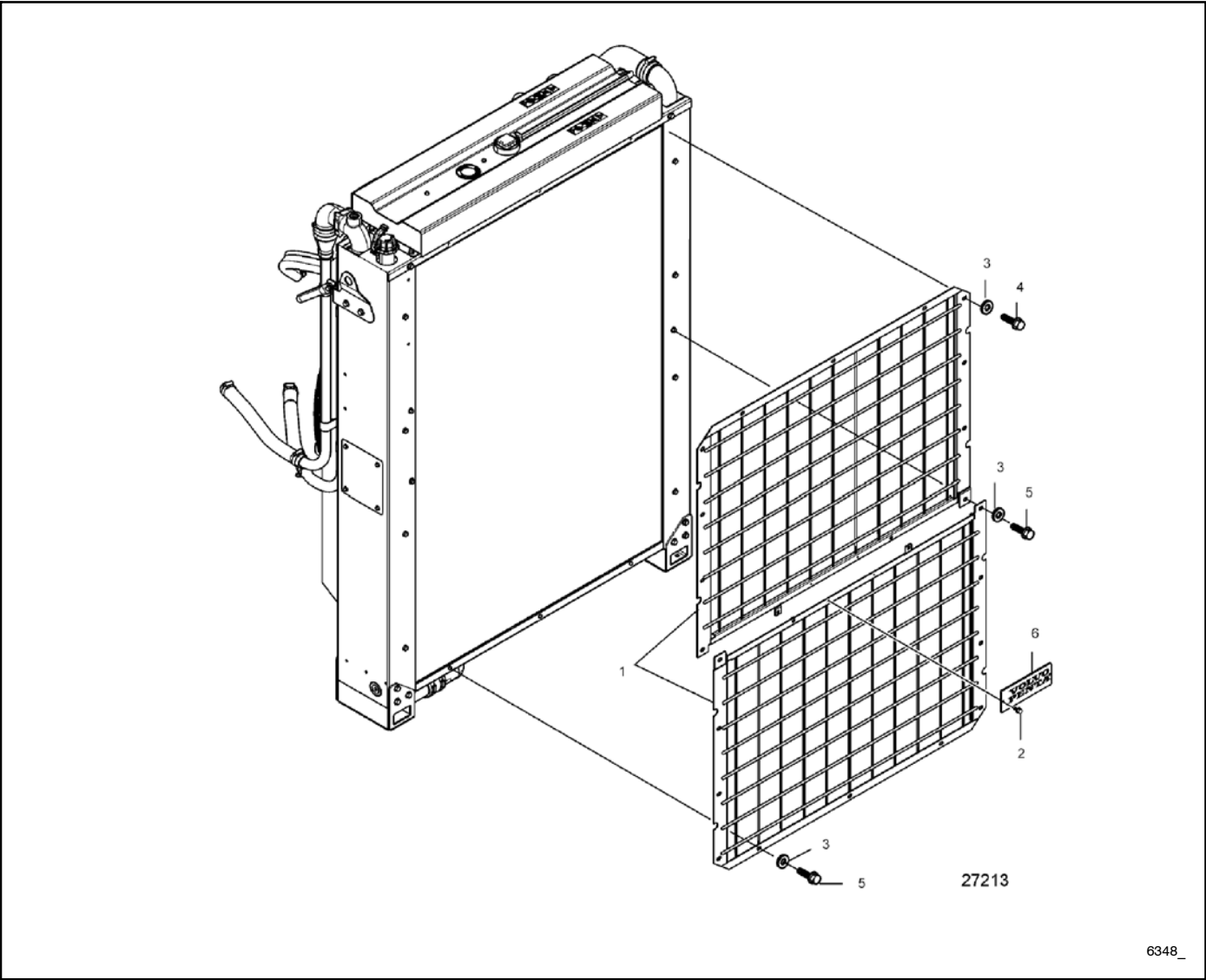


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Item	Part Number	Description	Qty.
			Var. 3
1	#	Flange nut	6
2	GM95176	Stud	6
3	GM95221	Fan hub	1
4	GM65913	Drive belt	1
5	GM52473	Pulley	1

Group 26-4: Radiator Grill

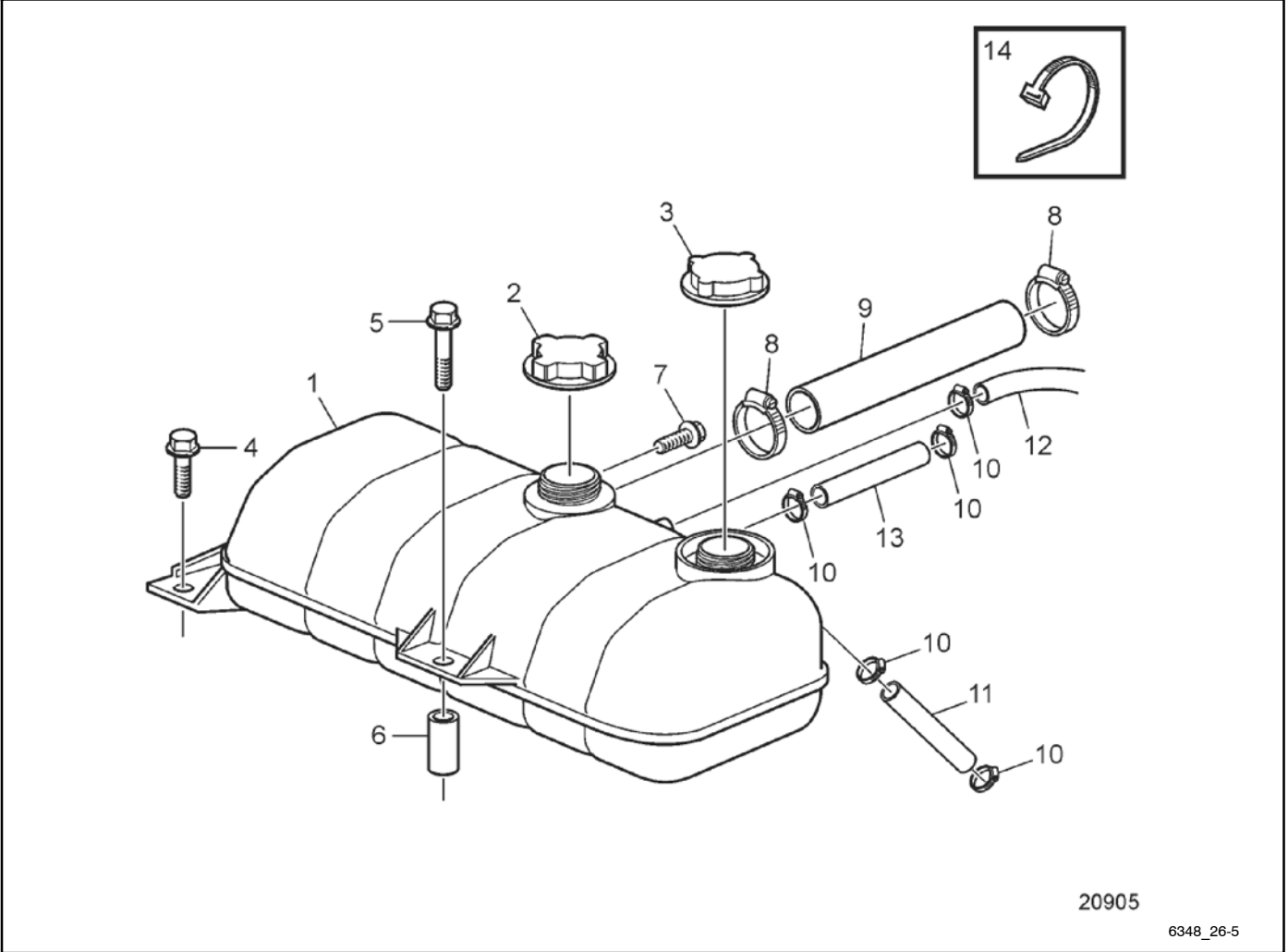
Engine TWD1643GE S/N 2016076785 and greater



Item	Part Number	Description	Qty.
			Var. 2
1	GM95247	Radiator grille	2
2	#	Cross recessed sunk	2
3	#	Washer	20
4	#	Flange screw	17
5	#	Flange screw	5
6	X	Emblem	1

Group 26-5: Expansion Tank

Engine TAD1640,1641,1642GE to S/N 2016079647

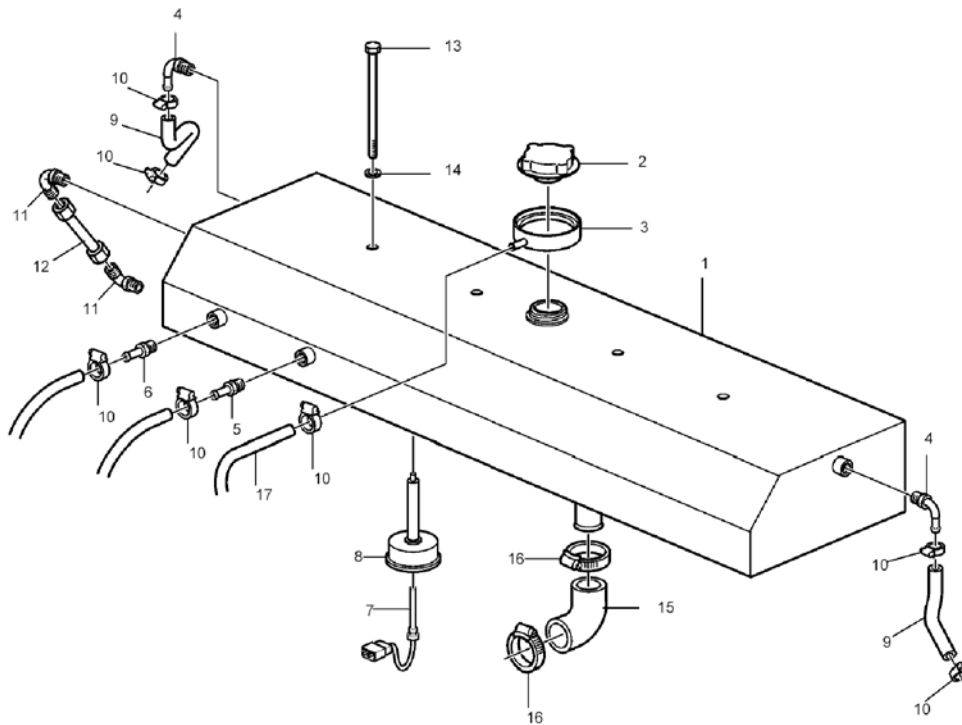


Item	Part Number	Description	Quantity
			Variation 1
1	GM28148	Tank, expansion	1
2	GM27823	Cap, filler	1
3	GM27821	Cap, pressure	1
4	#	Flange screw	1
5	#	Flange screw	1
6	GM28055	Sleeve, spacer	1
7	#	Screw	3
8	GM27440	Hose clamp	2
9	GM27498	Hose	AR
10	GM26638	Hose clamp	5
11	GM27437	Hose	AR
12	GM27437	Hose	AR
13	GM27437	Hose	AR
14	GM26652	Strip clamp	AR

AR As Required
Common hardware; procure locally.

Group 26-5: Expansion Tank

Engine TWD1643GE to S/N 2016076784



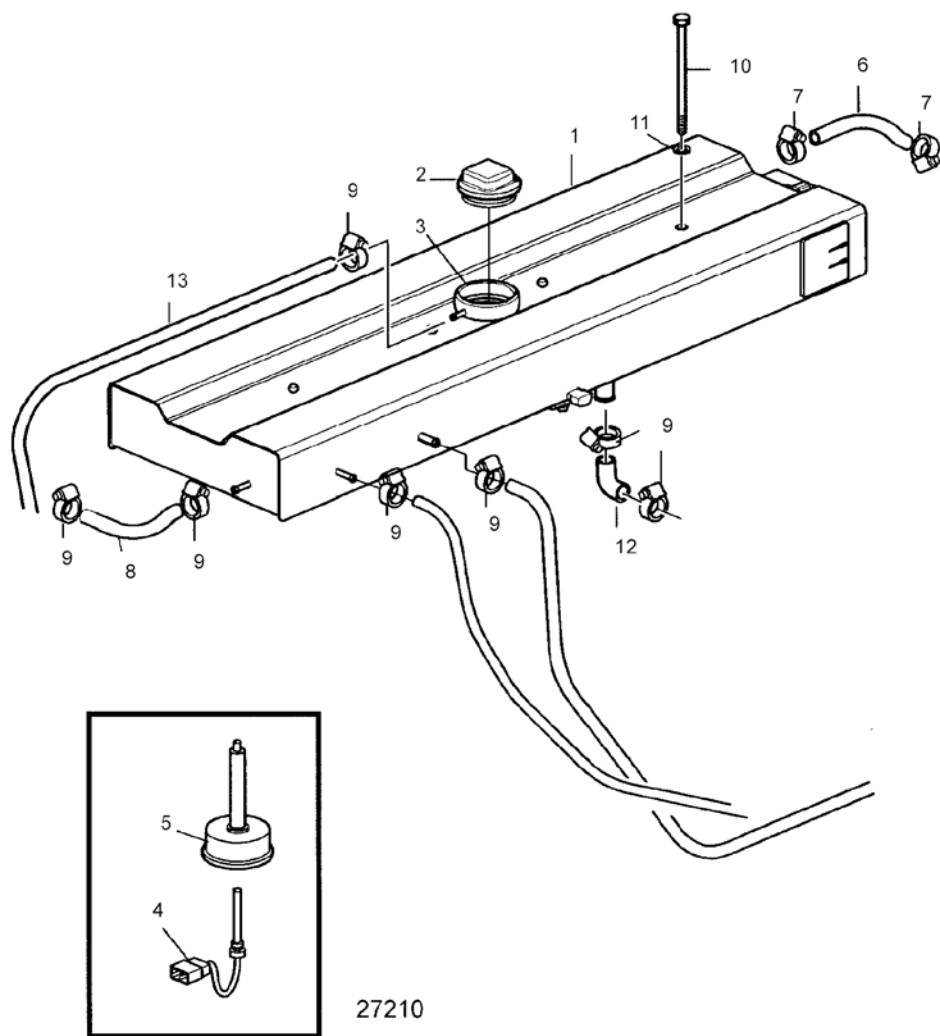
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Item	Part Number	Description	Quantity
			Variation 2
1	GM65902	Expansion tank	1
2	GM27821	Cap, pressure	1
3	GM65872	Rubber collar	1
4	GM65853	Nipple	2
5	GM65851	Nipple	1
6	GM65850	Nipple	1
7	GM28135	Sensor, level	1
8	GM65931	Retainer	1
9	GM26637	Hose	1
10	GM65814	Hose clamp	7
11	GM65854	Nipple	2
12	GM65844	Tube	1
13	#	Flange screw	4
14	GM30149	Washer	4
15	GM65910	Hose	1
16	GM65815	Hose clamp	2
17	GM26387	Hose	1

Common hardware; procure locally.

Group 26-5: Expansion Tank

Engine TWD1643GE S/N 2016076785 - 2016080035

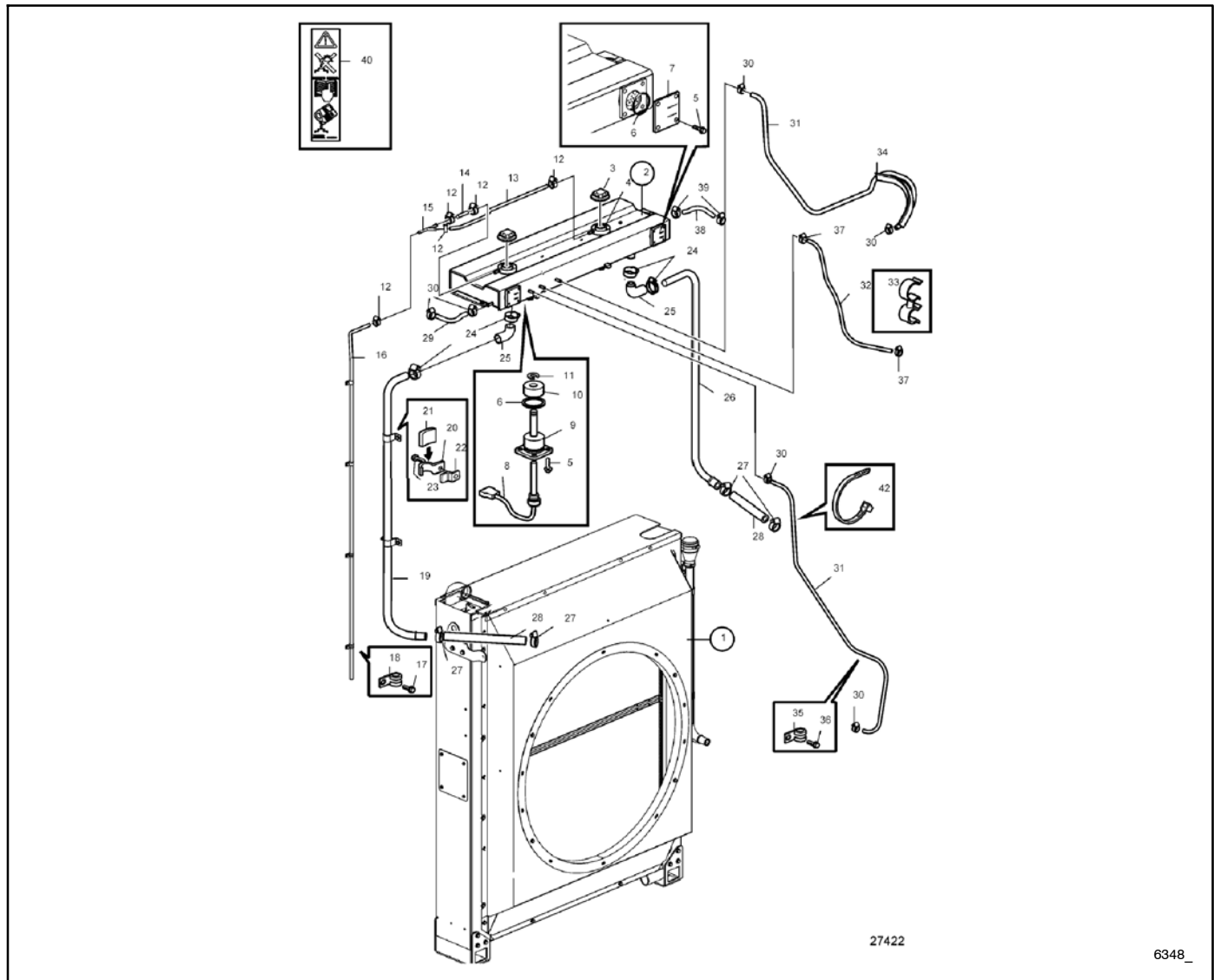


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Item	Part Number	Description	Qty.
			Var. 2
1	GM95268	Expansion tank	1
2	GM27821	Cap, pressure	1
3	GM65872	Rubber collar	1
4	GM78743	Sensor	1
5	GM65931	Retainer	1
6	GM95273	Hose	1
7	GM95485	Hose clamp	2
8	GM95274	Hose	1
9	GM95485	Hose clamp	5
10	#	Flange screw	4
11	GM30149	Washer	4
12	GM95272	Hose	1
13	GM26387	Hose	

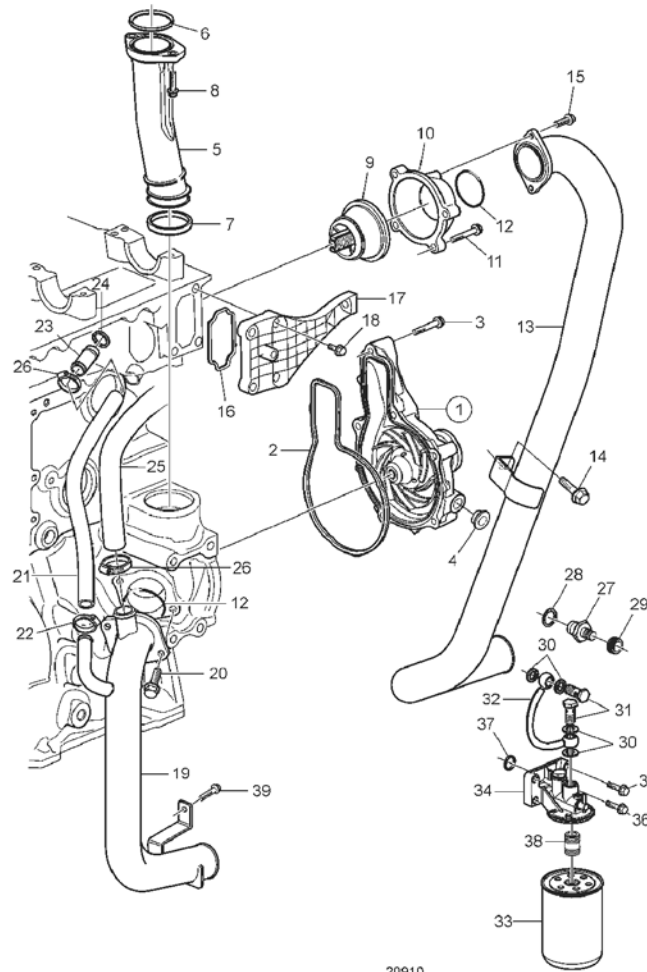
Group 26-5: Expansion Tank

Engine TWD1643GE S/N 2016080036 and greater



Item	Part Number	Description	Qty. Var. 2	Item	Part Number	Description	Qty. Var. 2
1	-	Radiator	1	21	GM95254	Sealing	4
2	GM95307	Expansion tank	1	22	GM95266	Bracket	4
3	GM27821	Cap, pressure	2	23	#	Flange screw	4
4	GM65872	Rubber collar	2	24	GM95486	Hose clamp	4
5	#	Flange screw	16	25	GM95272	Hose	2
6	GM95332	Sealing ring	4	26	GM95279	Pipe	1
7	GM95333	Level sight glass	2	27	GM79411	Hose clamp	4
8	GM78743	Sensor	2	28	GM27498	Hose L=447mm	2
9	GM95331	Cover	2	29	GM95274	Hose	1
10	GM95185	Float	2	30	GM26638	Clamp, Hose	6
11	GM95334	Lock ring	2	31	GM95179	Rubber hose L=1570mm	2
12	GM26638	Clamp, Hose	5	32	GM26637	Hose L=770mm	1
13	GM95343	Draining hose	1	33	GM65835	Retainer	1
14	GM95179	Rubber hose L=50mm	1	34	GM65959	Heat shield	1
15	GM95339	Hose connection	1	35	GM95482	Clamp	1
16	GM95179	Rubber hose L=1800mm	1	36	#	Flange screw	1
17	#	Flange screw	4	37	GM95182	Hose clamp	2
18	GM95482	Clamp	4	38	GM95273	Hose	1
19	GM95336	Pipe	1	39	GM95485	Hose clamp	2
20	GM95267	Bracket	4	40	GM95191	Warning decal	1

Group 26-6: Water Pump, Thermostat, and Water Filter



20910

6348_26-6

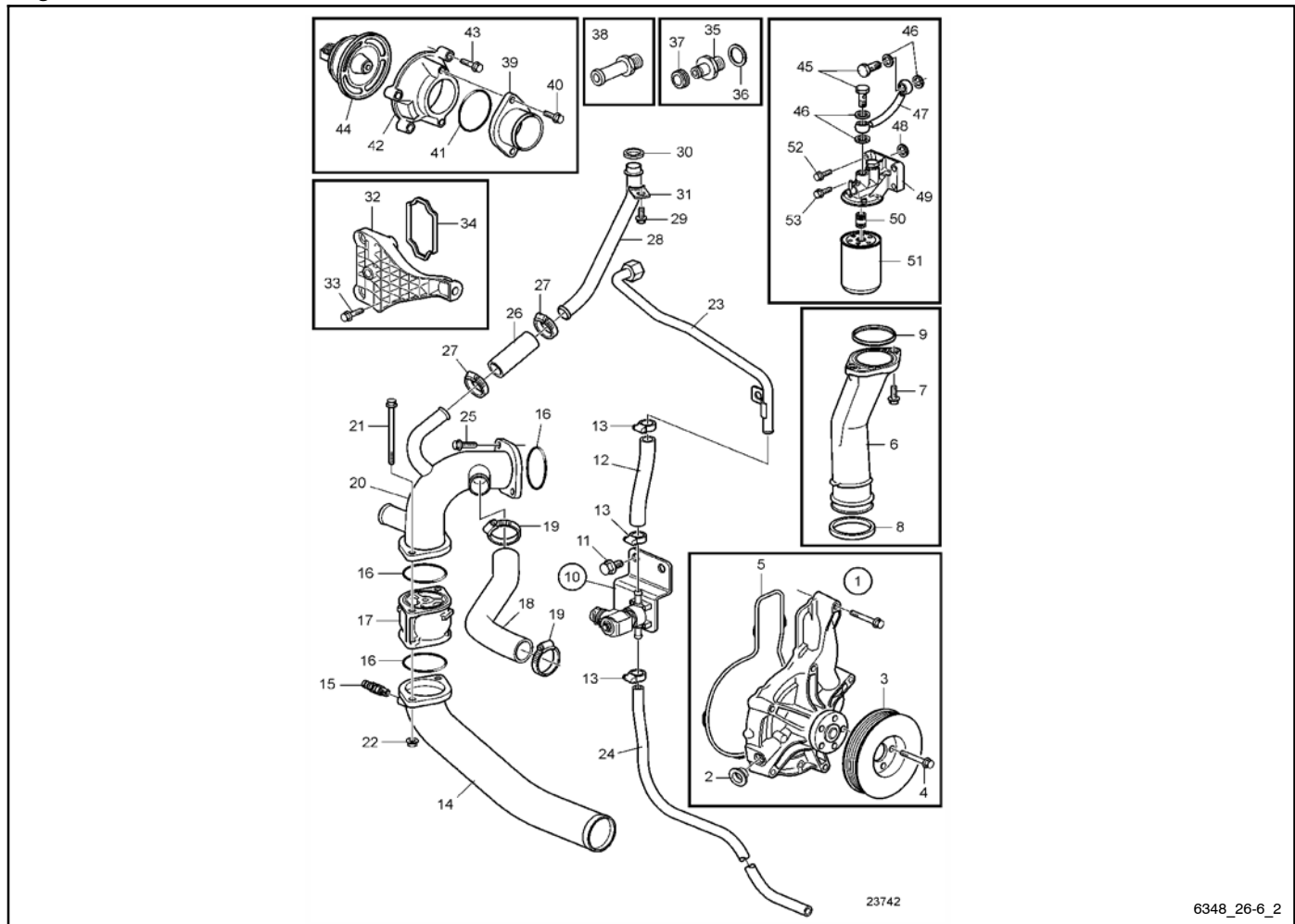
Item	Part Number	Description	Qty. Var.
1	GM41477	Circulation pump	1
2	GM41418	Sealing ring	1
3	#	Screw	6
4	—	Not sold separately	1
5	GM41436	Connecting pipe	1
6	GM41463	Sealing ring	1
7	GM41233	Sealing ring	1
8	GM27449	Flange screw, M8 x 20 mm	4
9	GM41551	Thermostat	1
10	GM65875	Thermostat cover	1
11	GM27449	Flange screw, M8 x 20 mm	4
12	GM27577	Sealing ring	2
13	GM41351	Coolant pipe	1
14	#	Screw	1
15	GM27445	Flange screw	2
16	GM41426	Sealing ring	1
17	GM41438	Cover	1
18	#	Flange screw	4
19	GM41392	Coolant pipe	1
20	GM27445	Flange screw	2
21	GM41282	Rubber hose	AR
22	GM41272	Hose clamp	2
23	GM41399	Pipe	1
24	GM27726	Sealing ring	1
25	GM27498	Hose	AR
26	GM41272	Hose clamp	2
27	GM27839	Nipple	1
28	GM41290	Gasket	1
29	GM27153	Cap, protective	1
30	GM26686	Gasket	4
31	GM26379	Hollow screw	2
32	GM41475	Pipe	1
33	GM25533	Coolant filter	1
34	GM41478	Bracket	1
35	GM26657	Screw, self threading	3
36	#	Screw	1
37	GM26491	Sealing ring	1
38	GM27836	Nipple	1
39	GM27449	Flange screw, M8 x 20 mm	1

AR As Required

Common hardware; procure locally.

Group 26-6: Water Pump, Thermostat, and Water Filter

Engine TWD1643GE to S/N 2016064436

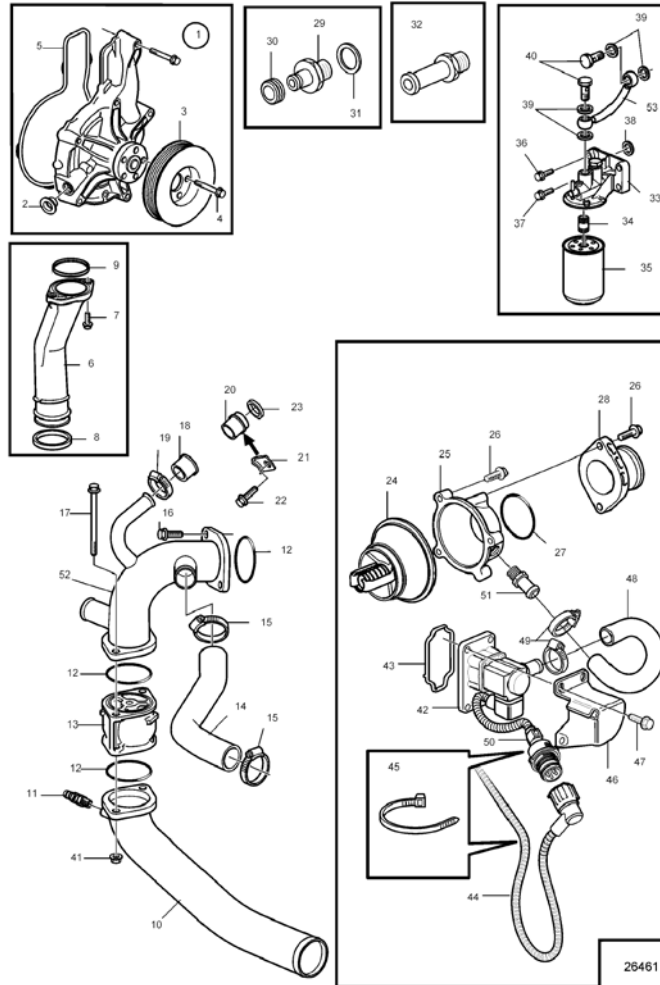


Item	Part Number	Description	Qty. Var. 2	Item	Part Number	Description	Qty. Var. 2
1	GM51649	Pump, circulation	1	28	GM65889	Coolant pipe	1
2	GM27207	Cap	1	29	GM58220	Screw, M8-16	1
3	GM51650	Pulley	1	30	GM27719	Brace, lock	1
4	GM51651	Screw, flange	5	31	GM27726	Ring, sealing	1
5	GM41418	Sealing ring	1	32	GM65963	Cover	1
6	GM41436	Connection pipe	1	33	GM27445	Screw, flange	4
7	GM27449	Screw, flange	2	34	GM41426	Sealing ring	1
8	GM41233	Sealing ring	1	35	GM27839	Nipple	1
9	GM41463	Gasket	1	36	GM41290	Gasket	1
10	GM65936	Valve	1	37	GM27153	Cap, protective	1
11	#	Screw	2	38	GM65825	Nipple	1
12	GM65818	Hose	X	39	GM28097	Pipe, coolant	1
13	GM26638	Clamp, hose	3	40	GM27445	Screw, flange	2
14	GM65893	Coolant pipe	1	41	GM27577	O-ring	1
15	GM27547	Tap	1	42	GM65875	Cover	1
16	GM27577	O-ring	3	43	#	Flange screw	4
17	GM65914	Overflow valve	1	44	GM41551	Thermostat	1
18	GM27498	Hose	X	45	GM26379	Screw, hollow	2
19	GM27440	Clamp, hose	2	46	GM26686	Gasket	4
20	GM65882	Coolant pipe	1	47	GM65964	Pipe	1
21	#	Screw	2	48	GM26491	Ring, sealing	1
22	GM30148	Tool, cylinder head leakage test	2	49	GM41478	Bracket	1
23	GM65942	Tube	1	50	GM27836	Nipple	1
24	GM65818	Hose	X	51	GM25533	Coolant filter	1
25	GM27445	Screw, flange	2	52	#	Flange screw	3
26	GM41282	Rubber hose	X	53	#	Screw	1
27	GM41272	Hose clamp	2				

Common hardware; procure locally.

Notes

Engine TWD1643GE S/N 2016064437 - 2016080035



Group 26-6: Water Pump and Thermostat, continued

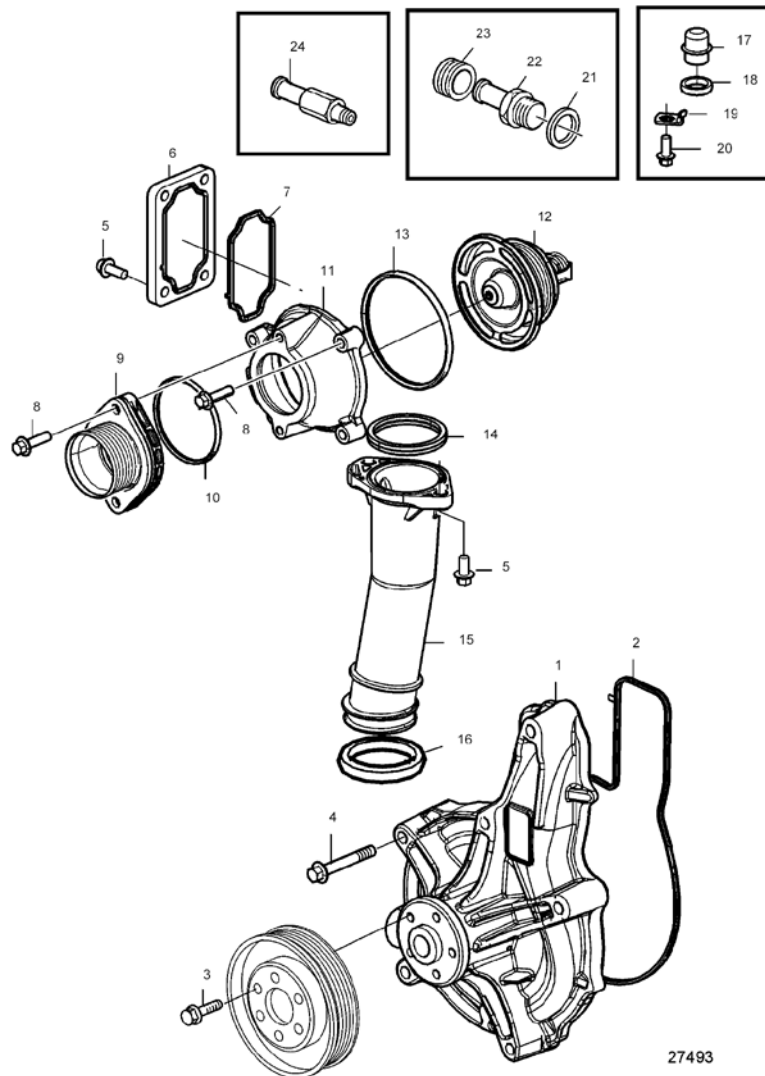
Engine TWD1643GE S/N 2016064437 - 2016080035

Item	Part Number	Description	Qty. Var. 2
1	GM95224	Pump unit	1
2	GM27207	Cap	1
3	GM51650	Pulley	1
4	#	Flange screw	5
5	GM41418	Ring, Sealing	1
6	GM41436	Pipe, Connecting	1
7	#	Flange screw	2
8	GM41233	Ring, Sealing	1
9	GM95211	Gasket	1
10	GM65893	Coolant pipe	1
11	GM27547	Tap	1
12	GM27577	O-ring	3
13	GM95218	Overflow valve	1
14	GM27498	Hose	1
15	GM79411	Hose clamp	2
16	#	Flange screw	2
17	#	Flange screw	2
18	GM79409	Plastic plug	1
19	GM41272	Hose clamp	1
20	GM65973	Plug	1
21	GM27719	Brace, lock	1
22	#	Flange screw	1
23	GM27726	Ring, sealing	1
24	GM95219	Thermostat	1
25	GM95239	Cover	1

Item	Part Number	Description	Qty. Var. 2
26	#	Flange screw	5
27	GM27577	O-ring	1
28	GM95234	Coolant pipe	1
29	GM27839	Nipple	1
30	GM27153	Cap, protective	1
31	GM41290	Gasket	1
32	GM65825	Nipple	1
33	GM41478	Bracket	1
34	GM27836	Nipple	1
35	GM25533	Filter, Coolant	1
36	#	Flange screw	3
37	#	Flange screw	1
38	GM26491	Ring, sealing	1
39	GM26686	Gasket	4
40	GM26379	Screw, hollow	2
41	#	Flange nut	2
42	GM95231	By-pass valve	1
43	GM41426	Sealing ring	1
44		Connecting cable	1
45	GM26652	Clamp, strip	1
46	GM95232	Heat shield	1
47	#	Flange screw	4
48	GM95228	Cooling hose	1
49	GM79410	Hose clamp	2
50	GM95230	Wiring harness	1
51		Hose nipple (Obsolete part)	1
52	GM65882	Coolant pipe	1
53	GM65964	Pipe	1

Group 26-6: Water Pump and Thermostat

Engine TWD1643GE S/N 2016080036 and greater



27493

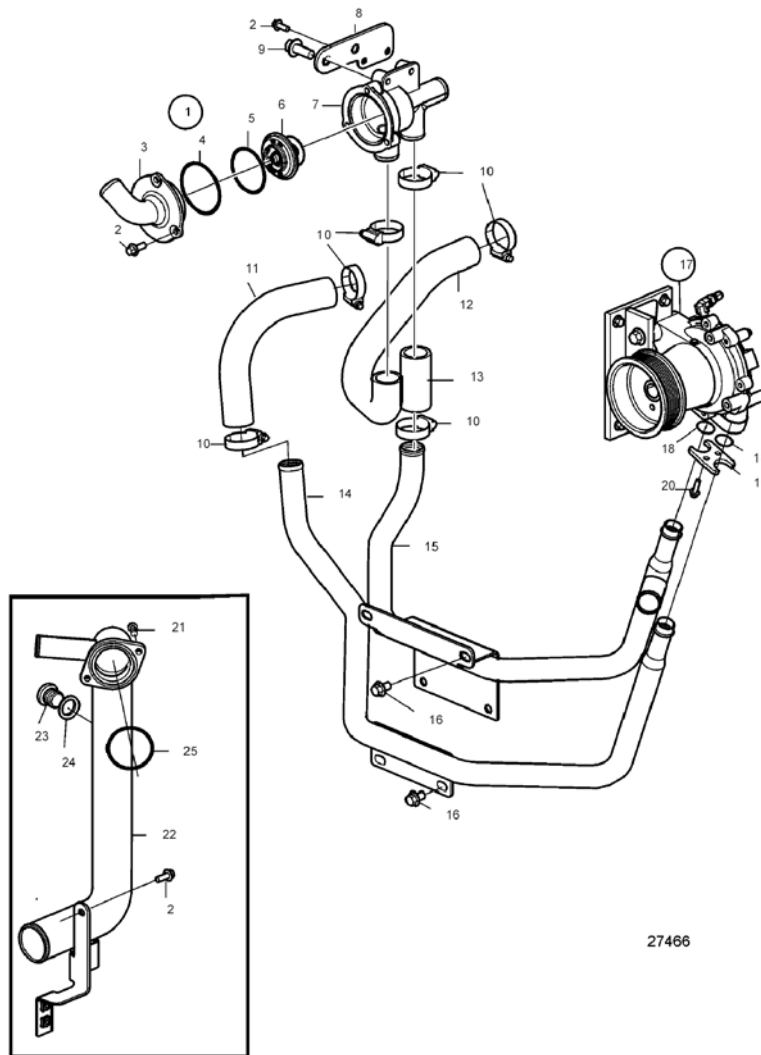
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Item	Part Number	Description	Qty. Var. 2
1	GM51649	Pump, Circulation	1
2	GM95214	Rubber moulding	1
3	#	Flange screw	5
4	#	Flange screw	6
5	#	Flange screw	6
6	GM95209	Cover	1
7	GM41426	Sealing ring	1
8	#	Flange screw	6
9	GM95234	Coolant pipe	1
10	GM27577	O-ring	1
11	GM65875	Cover	1
12	GM95219	Thermostat	1

Item	Part Number	Description	Qty. Var. 2
13	GM95225	Sealing ring	1
14	GM41463	Ring, Sealing	1
15	GM95223	Connection pipe	1
16	GM41233	Ring, Sealing	1
17	GM65973	Plug	1
18	GM27726	Ring, sealing	1
19	GM27719	Brace, lock	1
20	#	Flange screw	1
21	GM95479	Nipple	1
22	GM27839	Nipple	1
23	GM27153	Cap, protective	1
24	GM95180	Hose nipple	1

Group 26-6: Water Pump and Thermostat, continued

Engine TWD1643GE S/N 2016080036 and greater



27466

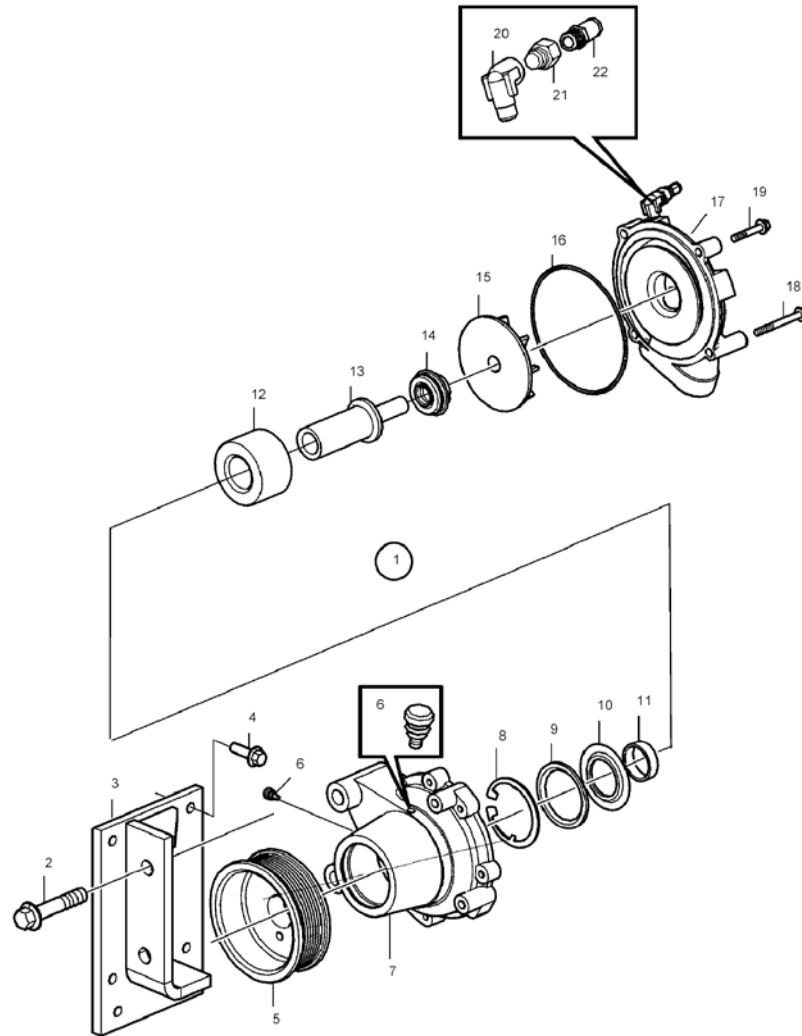
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Item	Part Number	Description	Qty. Var. 2
1	GM95313	Thermostat assy (includes items 2-7)	1
2	#	Flange screw	6
3	X	End Cover	1
4	GM95480	O-ring	1
5	GM95175	O-ring	1
6	GM95306	Thermostat	1
7	X	Thermostat housing	1
8	GM95312	Bracket	1
9	#	Flange screw	2
10	GM79411	Hose clamp	6
11	GM95337	Hose	1
12	GM95340	Cooling hose	1
13	GM27498	Hose	1

Item	Part Number	Description	Qty. Var. 2
14	GM95311	Coolant pipe	1
15	GM95310	Coolant pipe	1
16	#	Flange screw	4
17	GM95315	Water pump	1
18	GM95208	Sealing ring	2
19	GM95207	Lock washer	1
20	#	Flange screw	2
21	#	Flange screw	6
22	GM95301	Coolant pipe	1
23	GM95483	Plug	2
24	GM26686	Gasket	2
25	GM27577	O-ring	1

Group 26-6: Water Pump for Dual Cooling Circuit

Engine TWD1643GE S/N 2016080036 and greater

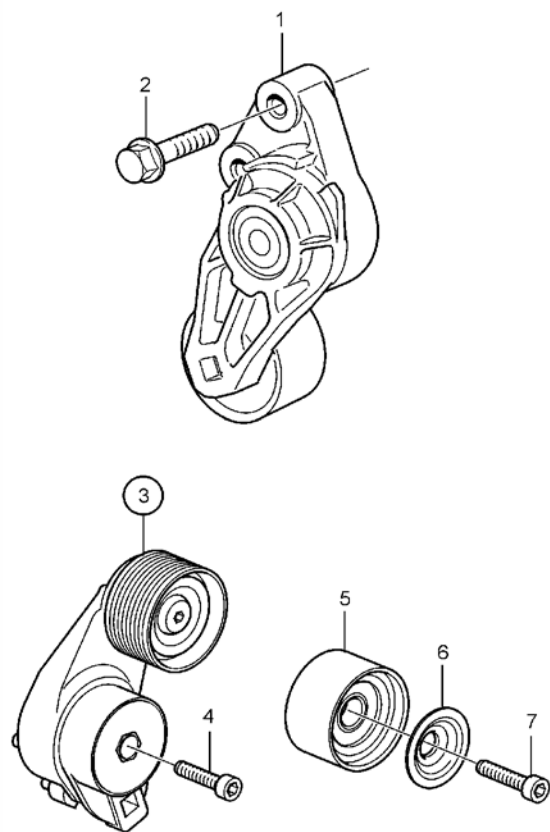


27494

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Item	Part Number	Description	Qty. Var. 2
1	GM95315	Water pump	1
2	#	Flange screw	2
3	GM95318	Bracket	1
4	#	Flange screw	4
5	GM95189	Pulley	1
6	GM95201	Plastic plug	2
7	X	Housing	1
8	GM95202	Snap ring	1
9	GM95203	Spacer ring	1
10	GM95484	Shield	1
11	GM95205	Spacer ring	1
12	GM95184	Ball bearing	1
13	GM95206	Shaft	1
14	GM27835	Ring, sealing	1
15	GM95204	Impeller	1
16	GM95177	O-ring	1
17	X	Pump housing	1
18	#	Flange screw	2
19	#	Flange screw	2
20	GM26373	Nipple, elbow	1
21	GM95479	Nipple	1
22	GM95481	Nipple	1

Group 26-7: Belt Tensioner

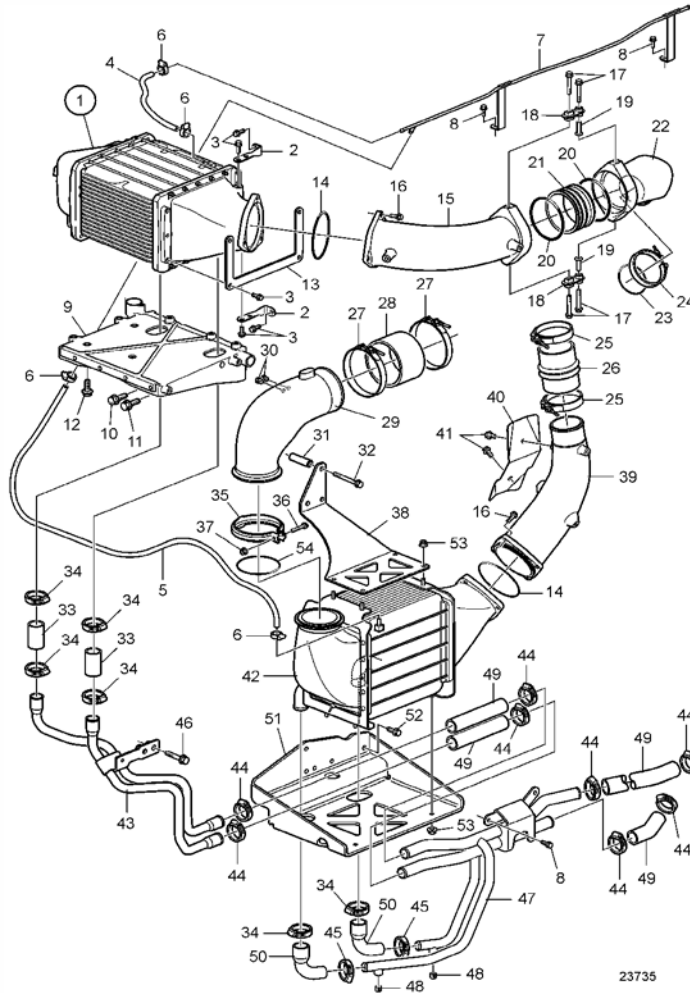


23823

6348_26-7a

Item	Part Number	Description	Quantity	
			Variation 1	Variation 2
1	GM41453	Belt tensioner	1	
2	GM27734	Screw	2	
3	GM65950	Belt tensioner	1	1
4	GM65822	Screw	1	1
5	GM52970	Idler gear	1	
5	GM65974	Pulley		1
6	GM52969	Cover	1	
6	GM65944	Dust cover		1
7	GM65817	Screw	1	1

Group 26-8: Aftercooler



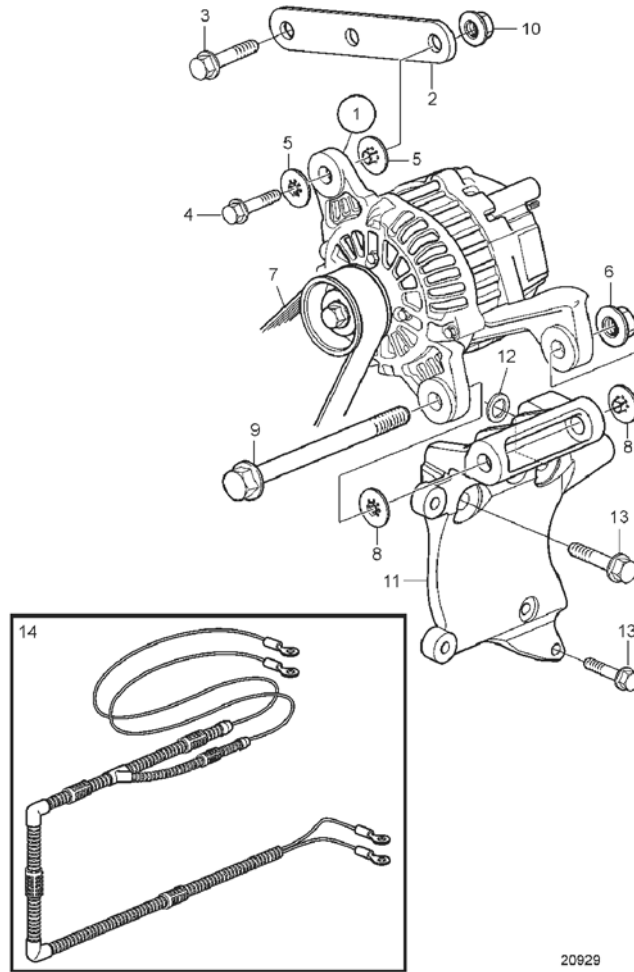
23735

6348_26-8

Item	Part Number	Description	Qty. Var. 1	Item	Part Number	Description	Qty. Var. 1
1	GM65935	Intercooler	1	28	GM65881	Hose connection	1
2		Bracket	2	29	GM65867	Connection pipe	1
3	GM27449	Screw, flange	8	30	GM27190	Plug	2
4	#	Hose	X	31		Spacer	3
5	#	Hose	X	32	GM26674	Screw	3
6	GM65813	Clamp	4	33		Hose	X
7		Tube	1	34	GM27440	Clamp, hose	6
8	GM58220	Screw, M8-16	4	35	GM65834	Clamp	1
9		Bracket	1	36	#	Flange screw	1
10	GM26675	Screw	2	37	#	Lock nut	1
11	#	Flange screw	4	38		Bracket	1
12	#	Flange screw	4	39	GM65876	Connection pipe	1
13		Bracket	1	40		Heat shield	1
14	GM27466	O-ring	2	41	GM51651	Screw, flange	2
15	GM65842	Connection pipe	1	42	GM65868	Intercooler	1
16	GM27445	Screw, flange	7	43	GM65885	Coolant pipe	1
17	#	Flange screw	4	44	GM26640	Clamp, hose	6
18	GM65906	Link arm	2	45	GM27440	Clamp, hose	2
19	GM65905	Sleeve	2	46	#	Flange screw	2
20	GM65862	O-ring	2	47	GM65886	Coolant pipe	1
21	GM65860	Connector	1	48	GM26683	Plug	2
22	GM65841	Connection pipe	1	49		Hose	X
23	GM27115	O-Ring	1	50	GM65887	Hose	2
24	GM65934	Clamp	1	51		Bracket	1
25	GM26611	Clamp, hose	2	52	#	Screw	3
26	GM26610	Hose	1	53	#	Flange nut	8
27	GM65832	Hose clamp	2	54	GM26691	O-ring	1

Common hardware; procure locally.

Group 30-1: Alternator



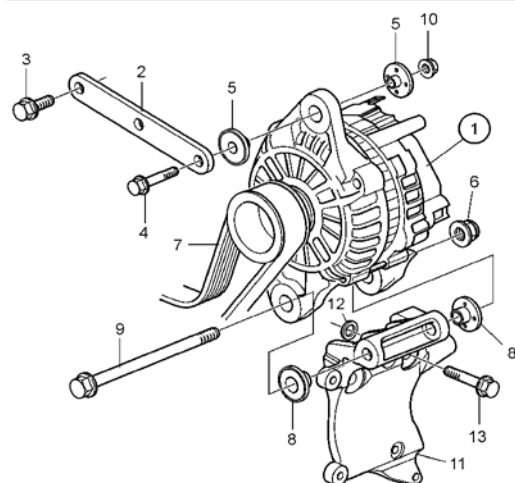
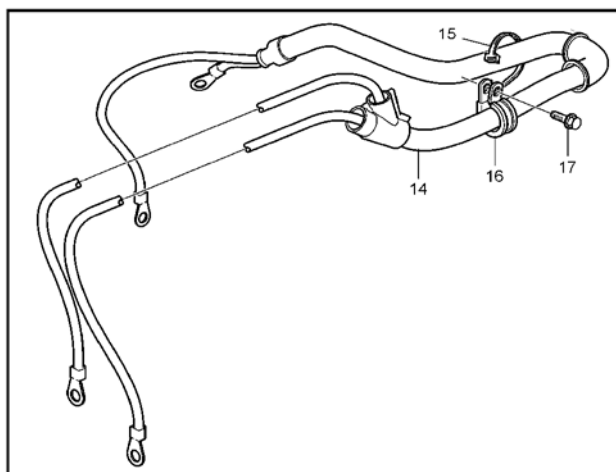
20929

6348_30-1

Item	Part Number	Description	Quantity
			Variation
1	GM41342	Alternator	1
2	GM41370	Bracket	1
3	#	Flange screw	1
4	#	Screw	1
5	GM41328	Insulating bushing	2
6	#	Lock nut	1
7	GM41468	Belt	1
8	GM41327	Insulating bushing	2
9	#	Flange screw	1
10	#	Flange lock nut	1
11	GM41405	Bracket (includes item 12)	1
12	GM26821	Sealing ring	1
13	#	Flange screw	4
14	GM41249	Cable harness	1

Common hardware; procure locally.

Group 30-1: Alternator, continued



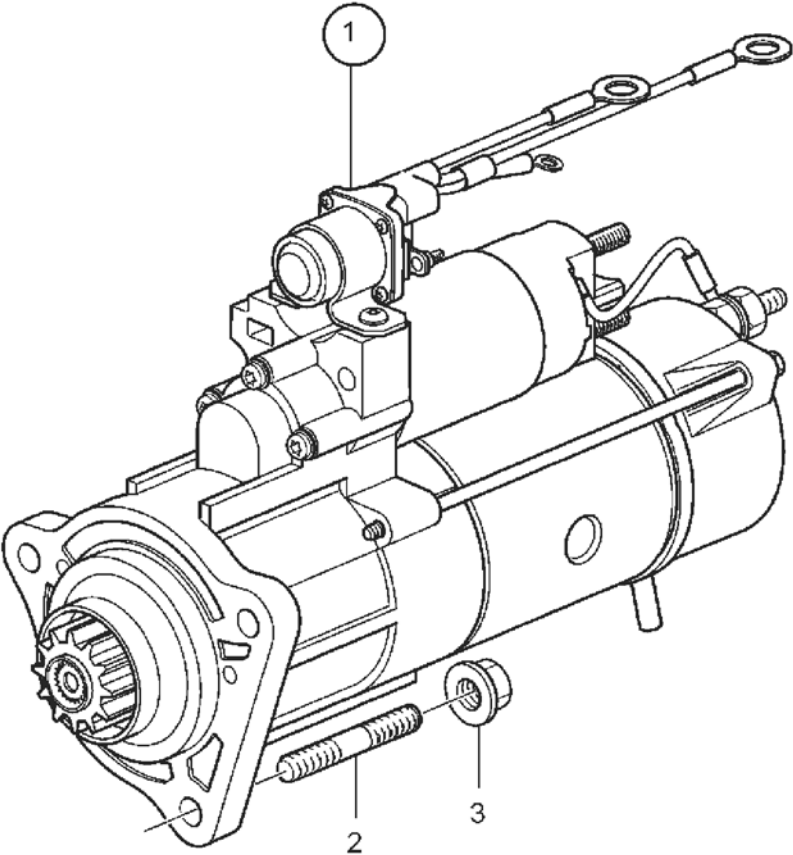
23739

6348_30-1_2

Item	Part Number	Description	Quantity
			Variation
1	GM41342	Alternator	1
2	GM41370	Bracket	1
3	#	Flange screw	1
4	#	Screw	1
5	GM41328	Insulating bushing	2
6	#	Lock nut	1
7	GM41468	Belt	1
8	GM41327	Insulating bushing	2
9	#	Flange screw	1
10	#	Flange lock nut	1
11	GM41405	Bracket	1
12	GM26821	Ring, sealing	1
13	GM58221	Screw, flange M10-35	4
14	GM65915	Wiring harness	1
15	GM26652	Clamp, strip	4
16	GM65819	Clamp	1
17	GM58220	Screw, M8-16	1

Common hardware; procure locally.

Group 30-2: Starter Motor



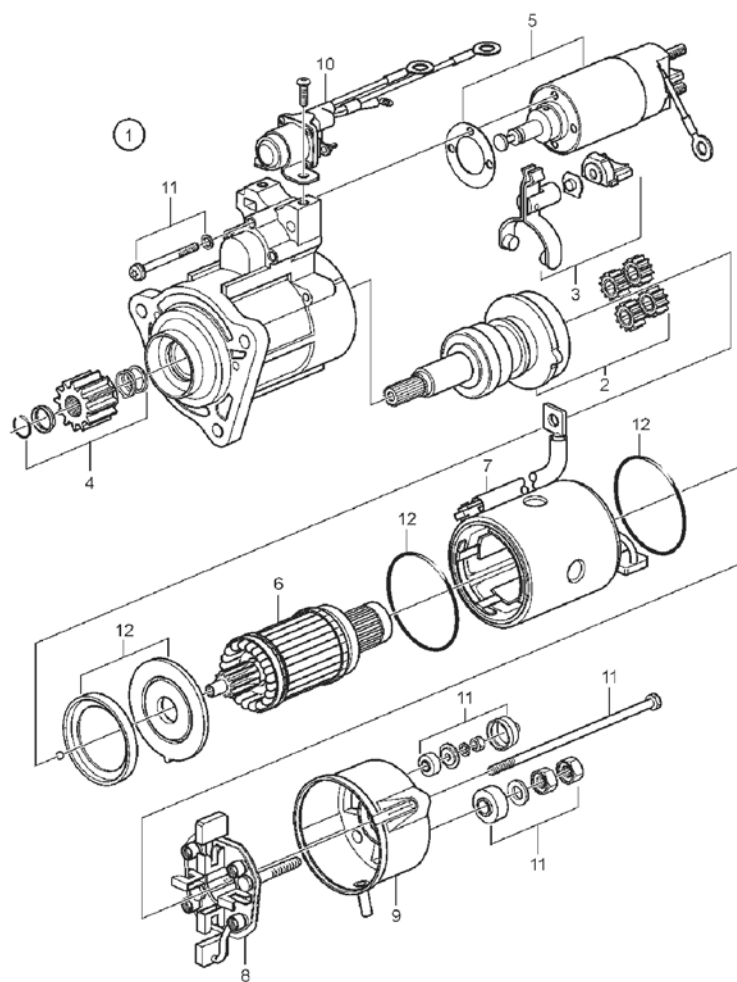
20127

6348_30-2

Item	Part Number	Description	Quantity
			Variation 1
1	GM41343	Starter motor	1
2	GM26665	Stud	3
3	#	Nut	3

Common hardware; procure locally.

Group 30-3: Starter Motor Components

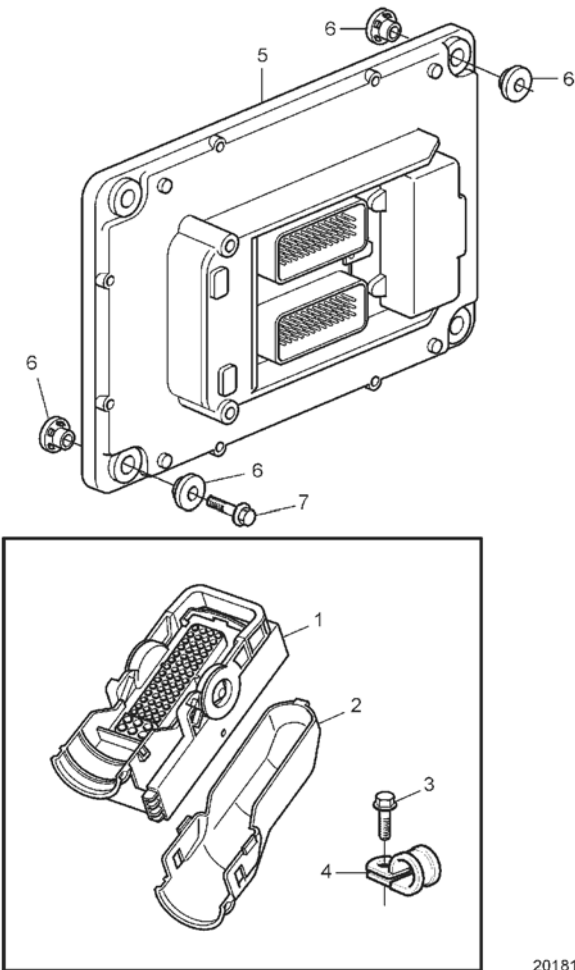


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6348_30-3

Item	Part Number	Description	Quantity
1	GM41343	Starter motor (includes items 2-12)	1
2	—	Not sold separately	1
3	—	Not sold separately	1
4	GM41244	Starter pinion	1
5	GM41246	Solenoid	1
6	—	Not sold separately	1
7	—	Not sold separately	1
8	GM41245	Carbon brush retainer	1
9	—	Not sold separately	1
10	GM60395	Relay	1
11	GM41248	Screw kit	1
12	GM41247	Gasket kit	1

Group 30-4: Control Unit and Connector



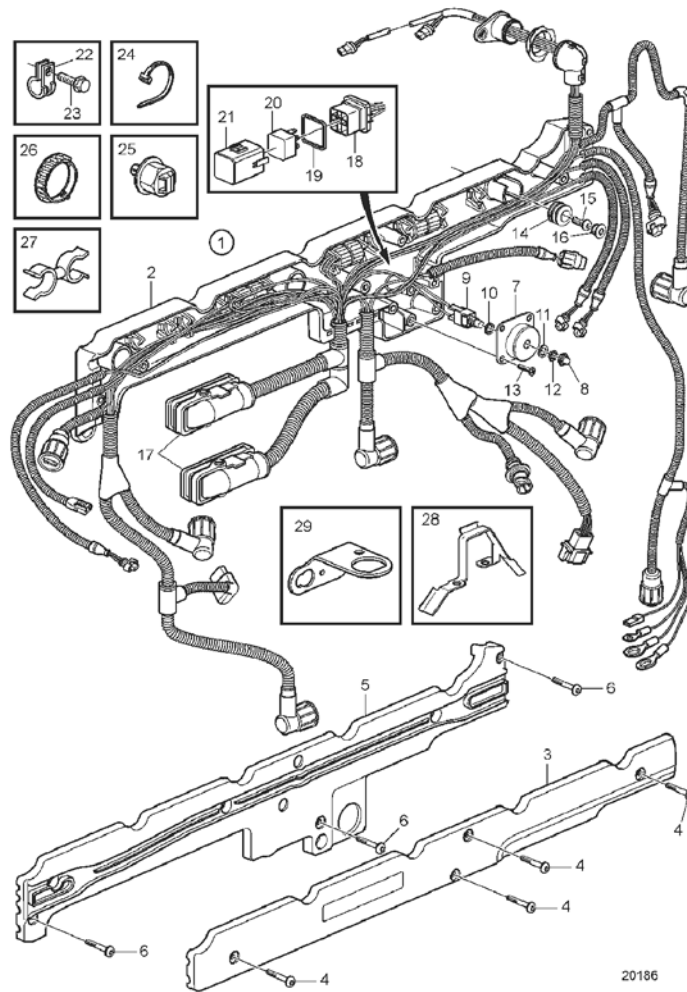
20181

6348_30-4

Item	Part Number	Description	Quantity	
			Variation 1	Variation 2
1	GM41465	Housing, black	1	1
1	GM41466	Housing, grey	1	1
2	GM41467	Cover	1	1
3	GM27480	Clamp	2	2
4	#	Flange screw	2	2
5	GM41587	Control unit	1	
5	GM94349	Control unit		1
6	GM27880	Rubber cushion	4	4
7	#	Flange screw	4	4

Common hardware; procure locally.

Group 30-5: Electrical System



20186

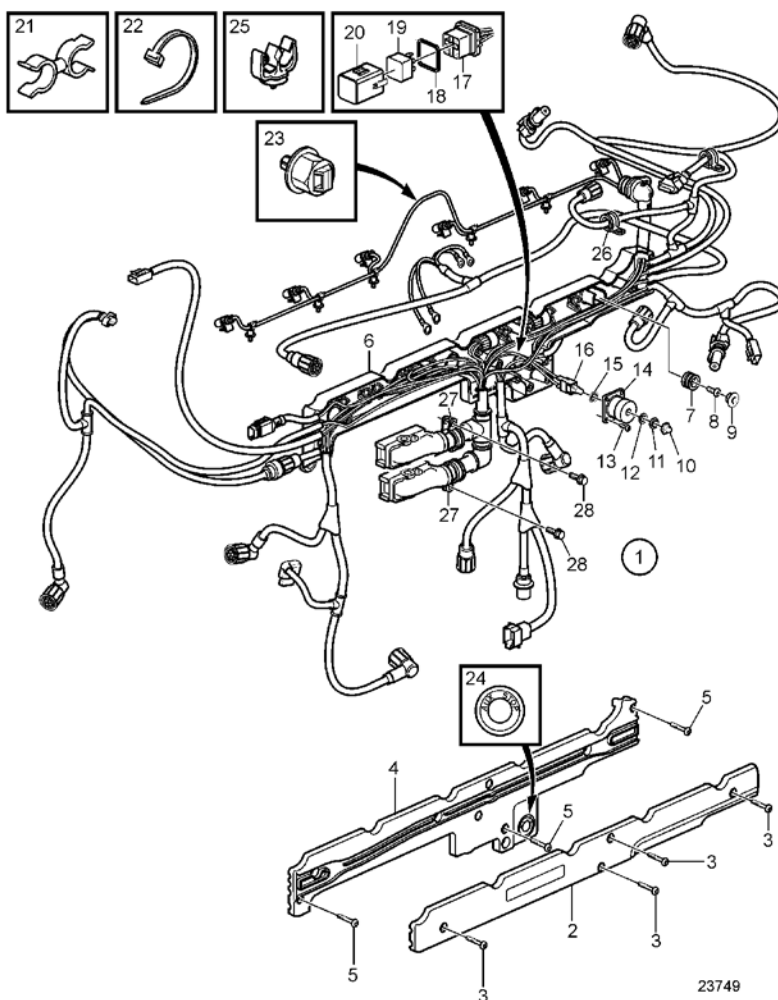
6348_30-5

Item	Part Number	Description	Qty. Var.	Item	Part Number	Description	Qty. Var.
1	GM41344	Cable harness (includes items 2-21)	1	17	—	See Group 30-4	2
2	GM41442	Box	1	18	GM41309	Lower section (includes item 19)	1
3	GM41444	Cover (includes item 4)	1	19	—	Not sold separately	1
4	GM41413	Screw	4	20	GM41460	Relay	1
5	GM41443	Box	1	21	GM41310	Box	1
6	GM41413	Screw	3	22	GM27480	Clamp	1
7	GM41404	Cover	1	22	GM26654	Clamp	2
8	GM27200	Button	1	23	#	Flange screw, M8 x 16 mm	AR
9	GM27373	Switch	1	24	GM26652	Strip clamp	AR
10	—	Not sold separately	1	24	#	Tie straps, D = 35 mm	AR
11	—	Not sold separately	1	25	GM41440	Retainer	AR
12	—	Not sold separately	1	26	GM41411	Attaching ring	1
13	GM27563	Screw	4	27	GM41307	Retainer	2
14	GM27601	Rubber cushion	5	28	GM41556	Bracket	1
15	GM27600	Plug	5	29	GM41414	Bracket	1
16	GM41283	Six point socket screw	5				

AR As Required

Common hardware; procure locally.

Group 30-5: Electrical System, continued

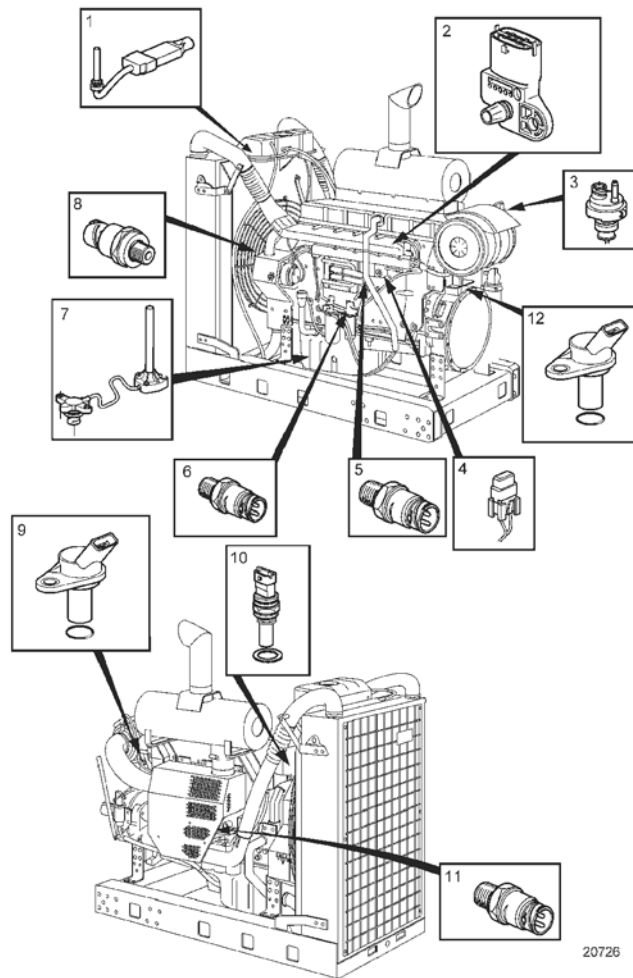


23749

6348_30-5_2

Item	Part Number	Description	Quantity
			Variation
1	GM65901	Cable harness	1
2	—	Not sold separately	1
3	GM41413	Screw	4
4	—	Not sold separately	1
5	GM41413	Screw	3
6	—	Not sold separately	1
7	GM27601	Cushion, rubber	5
8	GM41283	Six point socket screw	5
9	GM27600	Plug	5
10	GM27200	Button	1
11	—	Not sold separately	1
12	—	Not sold separately	1
13	GM27563	Screw	4
14	GM41404	Cover	1
15	—	Not sold separately	1
16	GM27373	Switch	1
17	GM41309	Lower section	1
18	—	Not sold separately	1
19	GM41460	Relay	1
20	GM41310	Box	1
21	GM58212	Plastic retainer	2
22	GM26652	Clamp, strip	X
23	GM41440	Retainer	X
24	GM65861	Decal	1
25	GM65948	Clamp	4
26	GM26654	Clamp	X
27	GM27480	Clamp	2
28	GM58220	Screw, M8-16	2

Group 30-6: Contacts and Sensors

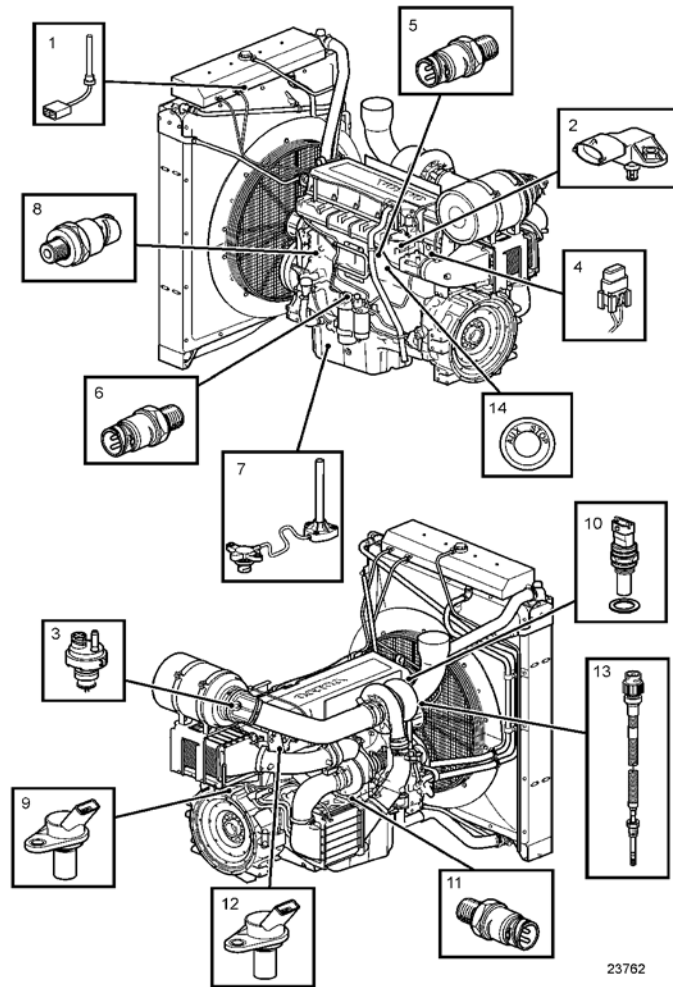


20726

6348_30-6

Item	Part Number	Description	Quantity
			Variation
1	GM28135	Sensor, level	1
2	GM41524	Sensor, pressure/temperature	1
3	—	See Group 25-5	1
4	GM27559	Fuse	1
5	GM41488	Pressure sensor	1
6	GM41488	Pressure sensor	1
7	GM41583	Sensor	1
8	GM41495	Pressure sensor, crankcase pressure	1
9	GM41510	Tachometer sensor	1
10	GM41509	Temperature sensor, coolant temp	1
11	GM41243	Pressure monitor, piston cooling	1
12	GM41510	Tachometer sensor	1

Group 30-6: Contacts and Sensors, continued

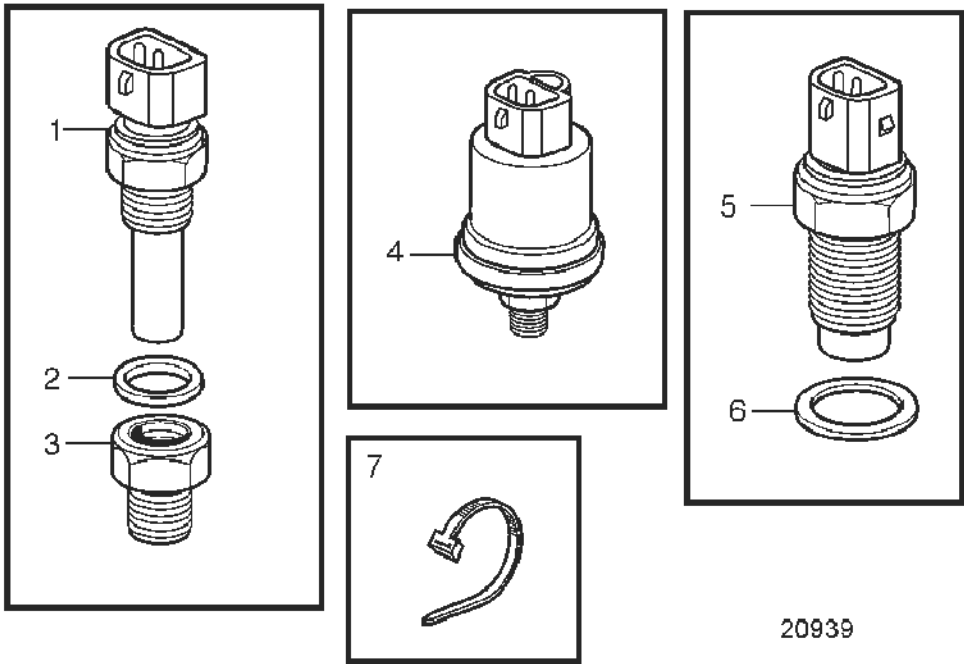


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6348_30-6_2

Item	Part Number	Description	Quantity
			Variation 2
1	GM28135	Sensor, level	1
2	GM65895	Sender, charge pressure/temperature	1
3	—	See Group 25-5	1
4	GM27559	Fuse	1
5	GM41488	Sensor, pressure (oil pressure/temperature)	1
6	GM41488	Sensor, pressure (fuel pressure)	1
7	GM41583	Sensor	1
8	GM41495	Pressure sensor, crankcase pressure	1
9	GM41510	Tachometer sensor	1
10	GM41509	Temperature sensor, coolant temperature	1
11	GM41243	Pressure monitor, piston cooling	1
12	GM41510	Tachometer sensor	1
13	GM65977	Temperature sensor, exhaust	1
14	GM65861	Decal	1

Group 30-7: Contacts and Sensors, Analog

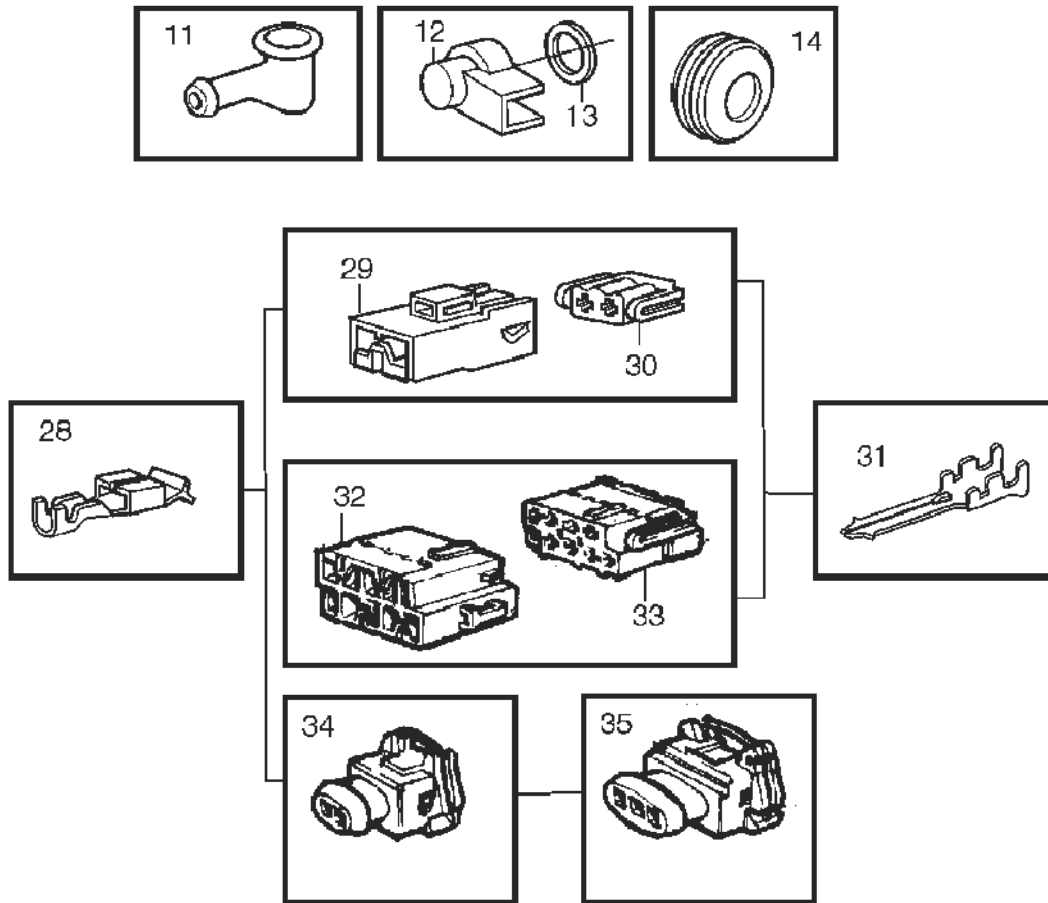


6348_30-7

Item	Part Number	Description	Quantity
			Variation
1	GM27276	Temperature sensor, coolant water	1
2	GM26372	Gasket	1
3	GM28079	Nipple, reducing	1
4	GM27351	Sensor, pressure	1
5	GM27206	Sensor, tachometer	1
6	#	Washer	1
7	GM26652	Strip clamp	AR

AR As Required
Common hardware; procure locally.

Group 30-8: Electrical Material



6348_30-8

Item	Part Number	Description	Quantity
			Variation 1
11	GM41236	Protective hat	AR
12	GM41293	Protective hat	AR
13	#	Washer	AR
14	GM27418	Grommet, cable	AR
28	GM41284	Cable terminal	AR
29	GM41277	Housing, natural	AR
29	GM41279	Housing, grey	AR
30	GM41276	Housing, natural	AR
30	GM41278	Housing, grey	AR
31	GM41285	Cable terminal	AR
32	GM41281	Housing	AR
33	GM41280	Housing	AR
34	GM41288	Contact, 2-pole	AR
35	GM41274	Housing, 3-pole	AR

AR As Required

Common hardware; procure locally.

Group 99-1: Repair Kits

Item	Part Number	Description	Quantity	
			Variation	
			1	2
1	GM41331	Cylinder liner kit	6	
1	GM65845	Cylinder liner kit		6
2	GM41332	Cylinder liner kit	6	
3	GM41330	Piston ring kit	6	6
4	GM41515	Sealing ring kit, cylinder liner	6	6
5	GM41593	Sealing kit, fuel injector	1	
5	GM25536	Copper sleeve kit, fuel injector		1
6	GM41335	Sealing kit, decarbonizing	1	
6	GM65846	Sealing ring kit, decarbonizing		1
7	GM41333	Gasket kit, inlet	1	
7	GM65848	Gasket kit, inlet, exhaust pipe		1
8	GM41334	Gasket kit, connection turbo	1	
8	GM65847	Gasket kit, connection, turbo		1
9	GM41336	Gasket kit, reconditioning	1	1

Repair kit items are not illustrated.

Appendix A Common Hardware Identification

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

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

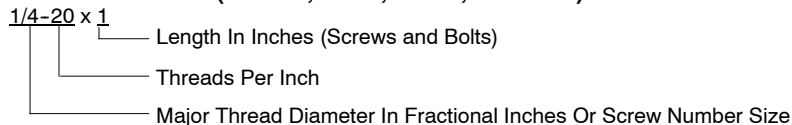
Hardness Grades	
American Standard	
Grade 2	
Grade 5	
Grade 8	
Grade 8/9 (Hex Socket Head)	
Metric	
Number stamped on hardware; 5.8 shown	

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

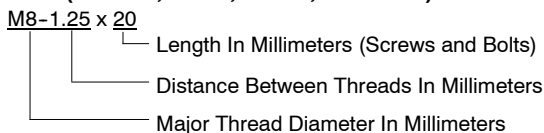
Phillips® screw is a registered trademark of Phillips Screw Company.

Sample Dimensions

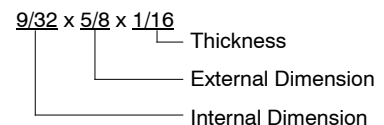
American Standard (Screws, Bolts, Studs, and Nuts)



Metric (Screws, Bolts, Studs, and Nuts)



Plain Washers



Lock Washers



Appendix B Common Hardware List

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

American Standard

Part No. Dimensions Hex Head Bolts (Grade 5)

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

Part No. Dimensions Hex Head Bolts, cont.

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

Part No. Dimensions Type

Hex Nuts

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

Washers

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

Metric

Hex head bolts are hardness grade 8.8 unless noted.

Part No. Dimensions Hex Head Bolts (Partial Thread)

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

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

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

Hex Head Bolts (Full Thread)

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

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

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

Pan Head Machine Screws

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

Flat Head Machine Screws

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

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

Metric, continued

Part No.	Dimensions	Type
Hex Nuts		
M934-03-50	M3-0.50	Standard
M934-04-50	M4-0.70	Standard
M934-04-B	M4-0.70	Brass
M934-05-50	M5-0.80	Standard
M934-06-60	M6-1.00	Standard
M934-06-64	M6-1.00	Std. (green)
M6923-06-80	M6-1.00	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.

TP-6348 12/14g

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KOHLER CO. Kohler, Wisconsin 53044
Phone 920-457-4441, Fax 920-459-1646
For the nearest sales and service outlet in the
US and Canada, phone 1-800-544-2444
KohlerPower.com

Kohler Power Systems
Asia Pacific Headquarters
7 Jurong Pier Road
Singapore 619159
Phone (65) 6264-6422, Fax (65) 6264-6455