

Service Parts

Engine

Engine Model:

General Motors 3.0 L Powertrain

Generator Models:

25/30RZGB

25/30GSGB

G30U

Table of Contents

Description	Page
Introduction	3
Number System Significance	3
Illustrations	3
How to Find Part Numbers	3
Hardware References	3
Specification Number Index	5
Group 1: Engine Block/Lower End	6
Group 2: Engine Head/Upper End	8
Group 3: Engine Trim Parts	10
Group 4: Flywheel	12
Group 5: Starter	13
Group 6: Alternator, Pulley, and Belt	14
Group 7: Exhaust System	16
Group 8: Engine Mounting	17
Group 9: Fuel System, Natural Gas/LP Gas	18
Group 10: Wiring Harness	19
Appendix A. Common Hardware List	21

Introduction

This manual lists service replacement parts for 25/30RZGB, 25/30GSGB, and G30U generator set 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, illustrations, and hardware.

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

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

Numbering System Significance

This manual uses the following numbering systems:

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

Group Number. A unique number representing a parts group needed to assemble a generator set function. For example, Group 4 is the Flywheel 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.

Hardware References

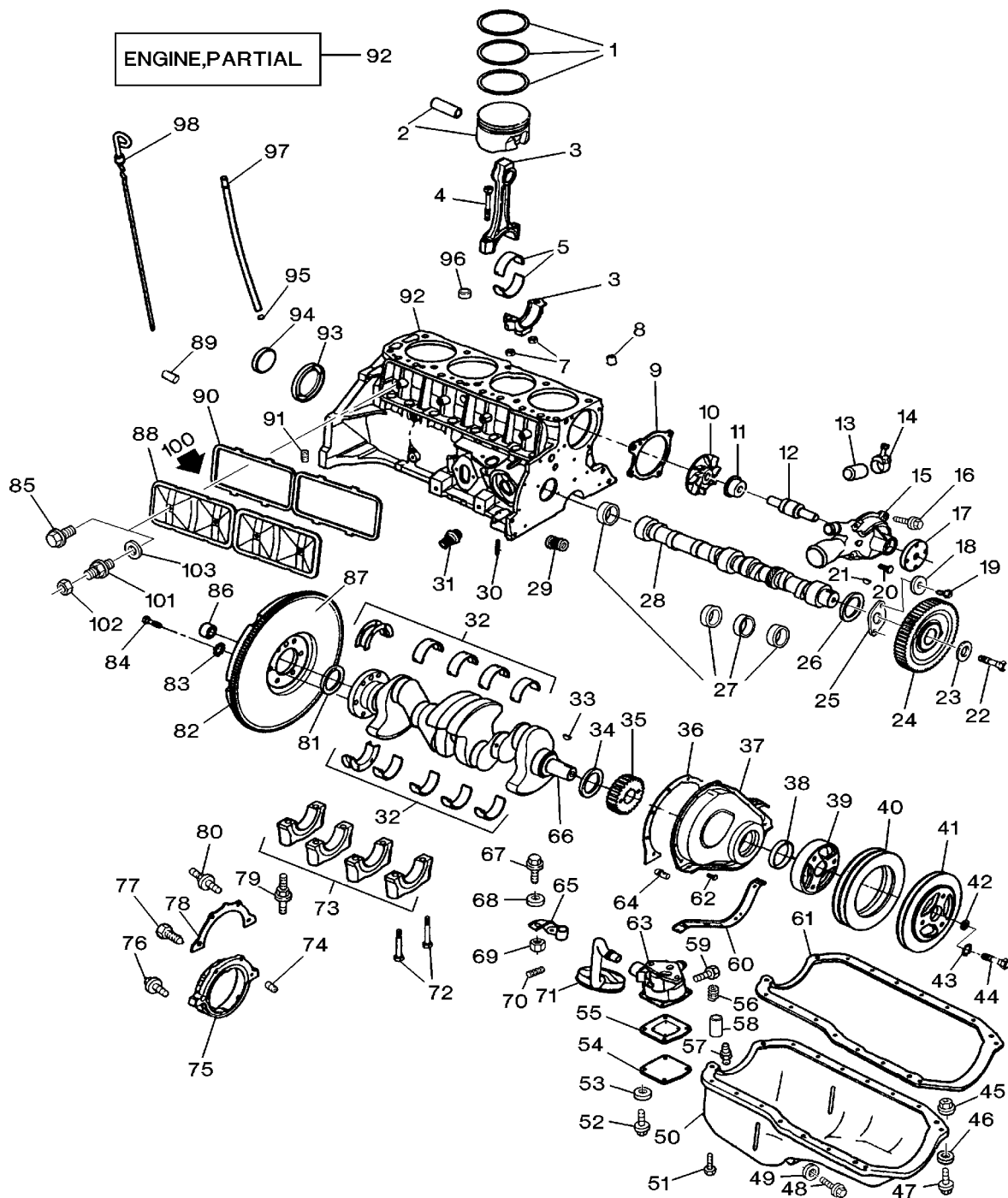
When replacing hardware, do not substitute inferior grade hardware. Replacement hardware grade should be equal to or better than the grade of the manufacturer's original hardware. Use the Common Hardware List in the appendix to identify the common hardware hardness.

Notes

Specification Number Index

Engine Group Title	Engine Block/Lower End Engine Head/Upper End Engine Trim Parts Flywheel Starter Alternator, Pulley, and Belt Intake and Exhaust System Engine Mounting Fuel System Wiring Harness									
	Group No.	1	2	3	4	5	6	7	8	9
Spec No.	Variation Number									
30RZGB or 30GSGB or G30U										
GM22316-GA1(S)	1	1	1	1	1	1	1	1	1	1
GM22316-GA4(F)(S)	1	1	1	1	1	1	1	1	1	1
GM22316-GA6	1	1	1	1	1	1	1	1	1	1
GM22316-GA8	1	1	1	1	1	1	1	1	1	3
GM22316-GA10	1	1	1	1	1	1	1	1	1	3
25RZGB or 25GSGB										
GM22316-GA5(S)	1	1	1	1	1	1	1	1	1	2
GM22316-GA9	1	1	1	1	1	1	1	1	1	4

Group 1: Engine Block/Lower End



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Group 1: Engine Block/Lower End

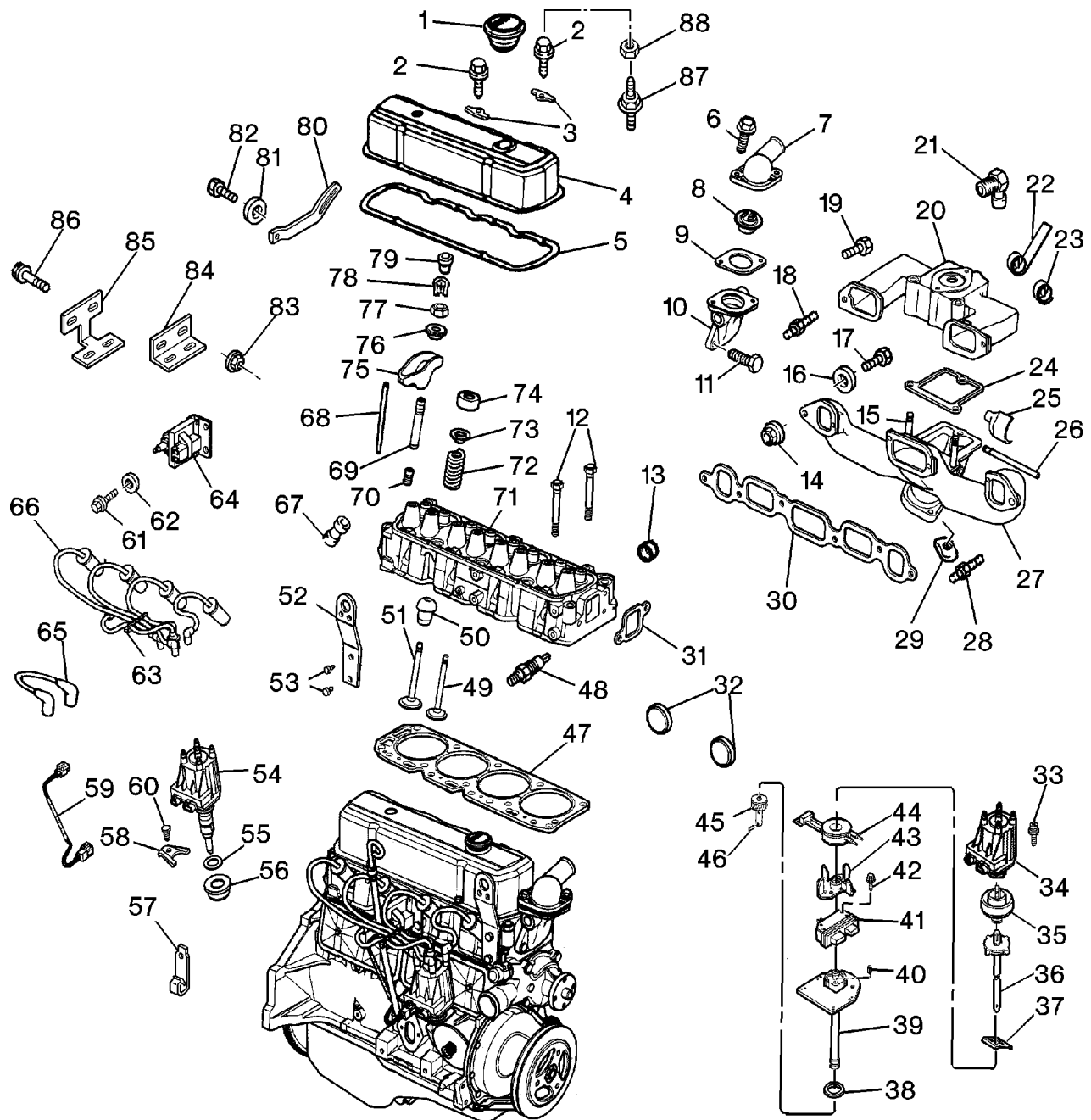
Item	Part Number	Description	Qty.	Item	Part Number	Description	Qty.
			Var. 1				Var. 1
1	GM38999	Ring kit, piston (standard)	4	49	GM38988	Gasket, oil pan drain (part of item 50)	1
1	GM38987	Ring kit, piston, 0.030 OS	4	50	GM39003	Pan, oil (includes items 48, 49)	1
2	GM39005	Piston w/pin, hi-limit	4	51	GM16601	Bolt, oil pan, 1/4-20 x 1/2	12
2	GM39004	Piston w/pin (standard)	4	51	GM16596	Bolt, oil pan, 1/4-20 x 5/8	2
2	GM39006	Piston w/pin, 0.020 OS	4	51	GM16528	Bolt, oil pan, 5/16-18 x 5/8	2
3	GM16363	Rod, connecting	4	52	#	Screw, round head slotted machine, 1/4-20 x 3/4 in.	4
4	GM16546	Bolt, connecting rod	8	53	#	Washer, oil pump cover spring lock	4
5	GM38977	Bearing kit, connecting rod	4	54	GM38914	Cover, oil pump	1
7	GM16586	Nut, connecting rod	8	55	GM38912	Gasket, oil pump cover	1
8	GM38892	Bearing, oil pump drive shaft	1	56	—	Not used	1
9	—	Gasket, water pump (see Group 3)	1	57	—	Not used	1
10	—	Not sold separately as a service part		58	—	Not used	1
11	—	Not sold separately as a service part		59	GM16594	Bolt, oil pump	3
12	—	Not sold separately as a service part		60	—	Not used	
13	—	Cap, water outlet (see Group 3)	1	61	GM38992	Gasket, oil pan	1
14	—	Clamp, 11/16 in. min.-1 5/16 in. (see Group 3)	1	62	GM16595	Bolt, engine front cover, 1/4-20 x 1/2	6
15	—	Pump kit, water (see Group 3)	1	62	GM16601	Bolt, engine front cover, 1/4-20 x 1/2, 1/8 thread	12
16	—	Bolt, water pump (see Group 3)		63	GM38989	Pump, oil	1
17	—	Not sold separately as a service part		64	GM38924	Nozzle	1
18	GM38966	Washer (camshaft thrust bearing)	AR	65	GM38927	Bracket, oil pump screen (part of item 71)	1
19	GM16601	Bolt, camshaft thrust bearing	3	66	GM39014	Crankshaft	1
20	—	Bolt, water pump (see Group 3)	2	67	GM38938	Bolt, oil pump screen bracket, 1/4-20 x 3/4	AR
21	GM16539	Key, camshaft gear	2	68	GM38902	Washer, oil pump suc pipe bracket, 1/4 x 1/2 x 1/16	AR
22	—	Not used		70	GM16549	Not used	1
23	—	Not used		69	—	Not used	
24	GM38908	Gear, camshaft	1	71	GM38909	Screen, oil pump (part of item 63)	1
25	GM38978	Plate kit, camshaft (includes item 26)	1	72	GM38923	Bolt, crankshaft bearing cap	10
26	—	Not used		73	—	Not sold separately as a service part	
27	GM38982	Bearing, camshaft	3	74	GM16599	Pin, crankshaft oil seal	1
28	GM38906	Camshaft	1	75	GM38985	Housing, crankshaft rear oil seal	1
29	GM19023	Valve, oil filter bypass	1	76	GM38994	Bolt, crankshaft rear oil seal housing	AR
30	GM16547	Pin, cylinder head locator	8	77	GM38993	Bolt, crankshaft rear oil seal housing	AR
31	GM18892	Fitting, oil filter	1	78	GM38981	Gasket, crankshaft rear oil seal housing	1
32	GM38945	Bearing kit, crankshaft, #5, 0.001 US	1	79	—	Not used	
32	GM38969	Bearing kit, crankshaft (#1, 2, 3, 4, 0.001 US)	4	80	GM16502	Stud, crankshaft rear oil seal	2
32	GM38970	Bearing kit, crankshaft (#1, 2, 3, 4, 0.010 US)	4	81	GM38946	Seal, crankshaft rear oil	1
32	GM38971	Bearing kit, crankshaft (#1, 2, 3, 4, 0.020 US)	4	82	GM16545	Gear, flywheel ring	1
32	GM38972	Bearing kit, crankshaft (#1, 2, 3, 4, 0.030 US)	4	83	—	Not used	
32	GM38968	Bearing kit, crankshaft (#1, 2, 3, 4, standard)	4	84	GM38896	Bolt, flywheel	6
32	GM38967	Bearing kit, crankshaft (#5, standard)	1	85	GM38917	Bolt, valve push rod cover	4
33	GM16539	Key, woodruff	1	86	—	Not used	
34	GM38955	Seal, crankshaft front oil	1	87	GM39002	Flywheel	1
35	GM38905	Gear, crankshaft	1	88	GM39007	Cover, valve push rod	1
36	GM38991	Gasket, engine front cover	1	89	GM38899	Pin	2
37	GM38974	Sealer, engine front cover (10 ML)	AR	90	GM38975	Sealer, valve push rod cover, 3.35 oz. tube	AR
37	GM38930	Cover, engine front	1	91	GM16510	Plug, engine block oil galley	1
38	—	Not sold separately as a service part		92	GM39013	Engine, 3.0 L partial (includes block, piston, crank, rr seal)	1
39	—	Not sold separately as a service part		93	GM16397	Plug, camshaft rear bearing hole	AR
40	—	Not sold separately as a service part		94	GM38919	Plug, engine block core hole	AR
41	—	Not used	1	95	—	Not used	
42	—	Not used		96	GM38922	Plug, engine block oil galley	1
43	—	Not used	6	97	—	Tube, dipstick(see Group 3)	1
43	—	Not used		98	—	Dipstick (see Group 3)	1
44	—	Not used		100	GM38976	Sealer, valve push rod cover, black	AR
45	GM38973	Nut, oil pan	AR	101	GM38893	Stud, valve push rod cover	1
46	#	Washer, oil pan	AR	102	GM38895	Nut, valve push rod cover	AR
47	GM16601	Bolt, oil pan	AR	103	GM38903	Washer, valve cover push rod	3
48	GM38926	Plug, oil pan drain (part of item 50)	1				

AR As Required

Common hardware; procure locally.

"Not used" in the part description means the part is not used in this application.

Group 2: Engine Head/Upper End



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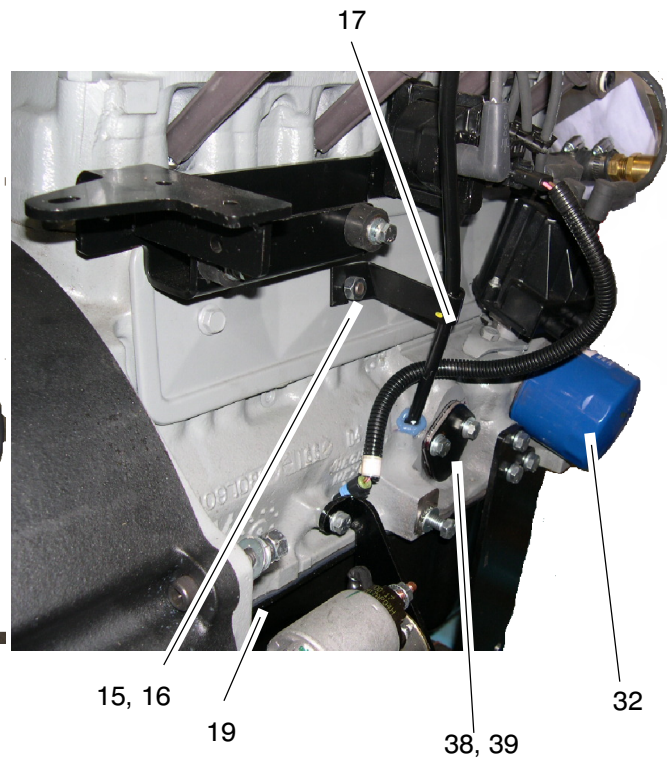
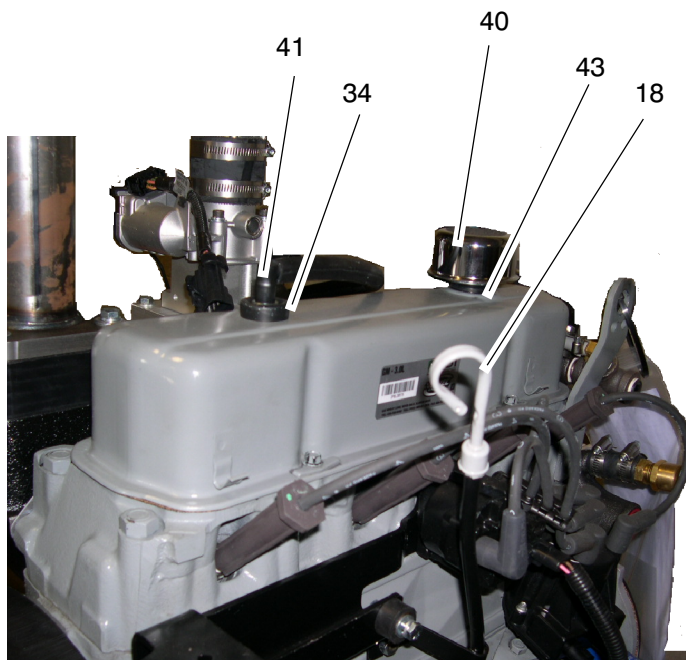
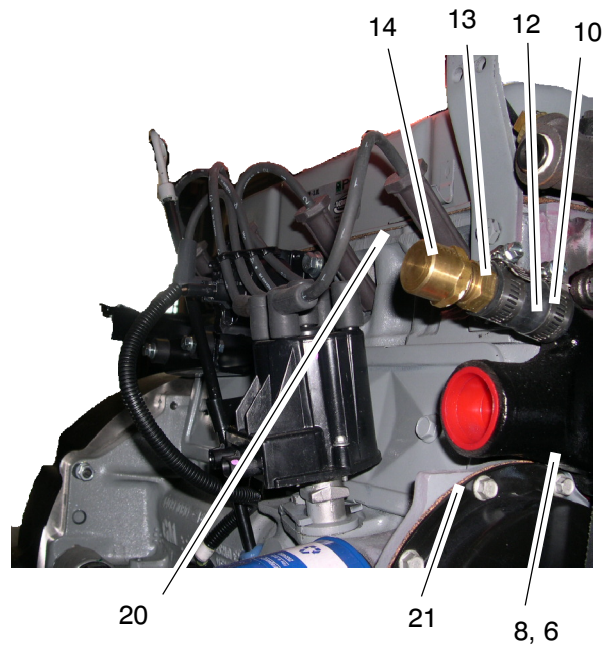
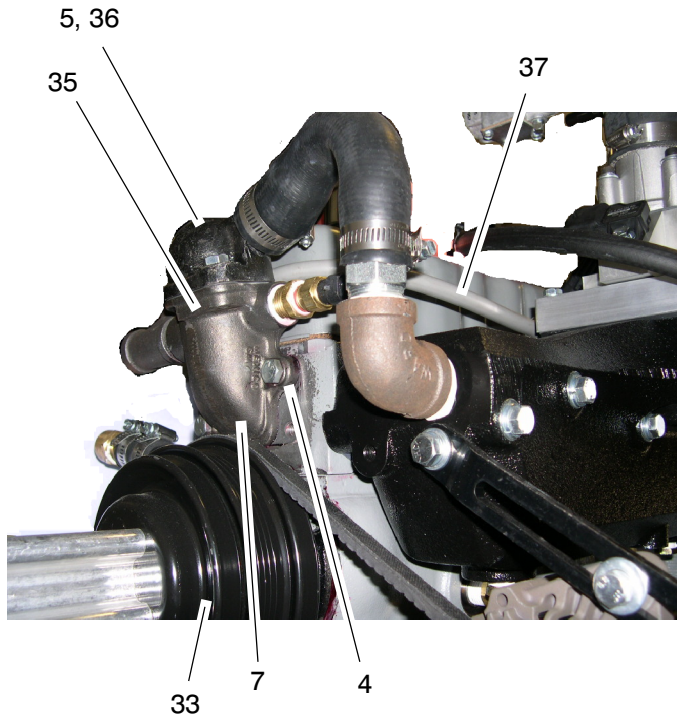
Group 2: Engine Head/Upper End

Item	Part Number	Description	Qty.	Item	Part Number	Description	Qty.
			Var. 1				Var. 1
1	GM38948	Cap, oil fill	1	44	GM16413	Coil, distributor pick up (part of item 54)	1
2	GM16595	Bolt, valve rocker arm cover	6	45	GM38959	Gear, distributor shaft (part of item 54)	1
3	GM38925	Reinforcement, valve rocker arm cover	AR	46	GM38935	Pin, distributor gear (part of item 54)	1
4	GM38907	Cover, valve rocker arm (includes item 57)	1	47	GM38995	Gasket, cylinder head	1
5	—	Gasket, valve rocker arm cover (see Group 3)	AR	48	GM38998	Spark plug	4
6	—	Bolt, engine coolant thermostat housing (see Group 3)	3	49	GM38984	Valve, exhaust	4
7	—	Outlet, water (see Group 3)	1	50	—	Not sold separately as a service part	
8	—	Thermostat, engine coolant (see Group 3)	1	51	GM38929	Valve, intake	4
9	—	Gasket, water outlet (see Group 3)	1	52	GM38934	Bracket, engine lift front	1
10	—	Housing, engine coolant thermostat (see Group 3)	1	53	GM38942	Bolt, engine lift front bracket	8
11	—	Bolt, engine coolant thermostat housing (see Group 3)	3	53	GM38937	Bolt, engine lift front bracket	2
12	GM38952	Bolt, cylinder head	AR	54	GM38897	Distributor	1
13	GM38920	Plug, cylinder head core hole	2	55	GM38949	Gasket, distributor	1
14	GM38891	Nut, exhaust manifold	8	56	GM38913	Washer, distributor	1
15	GM38921	Stud, intake manifold	2	57	GM38943	Clip, engine wiring harness	2
16	—	Not used		58	GM38894	Clamp, distributor	1
17	GM38936	Bolt, exhaust manifold	3	59	—	Wire, ignition coil (see Group 3)	1
18	—	Stud, exhaust manifold (see Group 3)	1	60	GM38936	Bolt, distributor clamp	3
19	—	Bolt, intake manifold (see Group 3)	AR	61	GM16597	Bolt, ignition coil	2
20	—	Manifold, intake (see Group 3)	1	62	—	Not used	
21	—	Fitting, intake manifold vac (see Group 3)	1	63	—	Retainer, spark plug wire (see Group 3)	1
22	—	Not used	1	64	GM38898	Coil, ignition	1
23	—	Not used	1	65	GM39011	Wire, ignition coil	1
24	GM38951	Gasket, exhaust manifold	1	66	—	Harness, spark plug wire (see Group 3)	1
25	—	Not used	2	67	GM38931	Lifter, valve	8
26	—	Not sold separately as a service part		68	GM39001	Rod, valve push (includes item 50)	8
27	GM38904	Manifold, exhaust (includes item 26)	1	69	GM38918	Stud, valve rocker arm ball, 0.003 in. OS	8
28	GM38986	Stud, exhaust pipe	2	69	GM16584	Stud, valve rocker arm ball, 0.013 in. OS	8
28	GM39008	Stud, exhaust pipe	2	70	GM38953	Seal, valve stem oil (O-ring type)	8
29	GM38915	Clamp, intake and exhaust manifold	4	71	GM38980	Head, cylinder	1
30	GM38979	Gasket, intake manifold	1	72	GM38910	Spring, valve	8
31	—	Gasket, engine coolant thermostat housing	1	73	GM38944	Cap, valve spring	8
32	—	Not used		74	GM16342	Shield, valve stem oil	12
33	GM16407	Bolt, distributor cap (part of item 54)	2	75	GM38932	Arm kit, valve rocker (w/ball)	8
34	GM38963	Cap, distributor (part of item 54)	1	76	GM39009	Ball, valve rocker arm	8
35	GM38956	Rotor, distributor (part of item 54)	1	77	GM16493	Nut, valve rocker arm	8
36	GM38957	Shaft, distributor (part of item 54)	1	78	GM16529	Key, valve stem	16
37	GM38965	Retainer, distributor ignition pick up coil (part of item 54)	1	79	GM16501	Rotator, valve	4
38	GM38964	Seal, distributor housing oil (O-ring) (part of item 54)	1	80	—	Arm, adjustment (see Group 3)	
39	GM38958	Housing, distributor (part of item 54)	1	81	—	Not used	
40	GM16543	Pin, distributor (part of item 54)	1	82	—	Not used	
41	GM16418	Module, distributor ignition contact (part of item 54)	1	83	—	Not used	
43	GM38962	Pole piece, distributor pick up (part of item 54)	1	84	GM38961	Bracket, ignition coil top	1
				85	GM38960	Bracket, ignition coil bottom	1
				86	—	Not used	
				87	GM38893	Stud, valve push rod cover	1
				88	GM38895	Nut, valve push rod cover	1

AR As Required

"Not used" in the part description means the part is not used in this application.

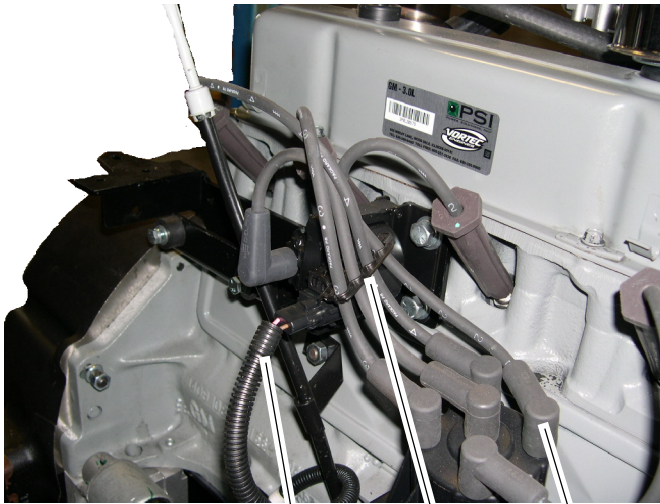
Group 3: Engine Trim Parts



Items not shown: 1-3, 26-31, 44-46.

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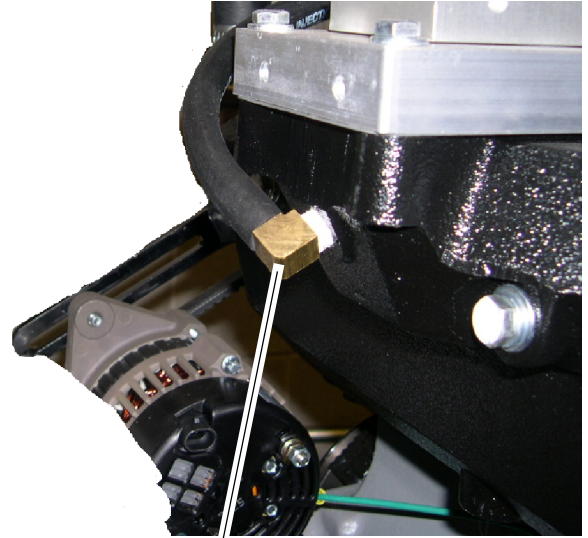
Group 3: Engine Trim Parts



22

23

24



42

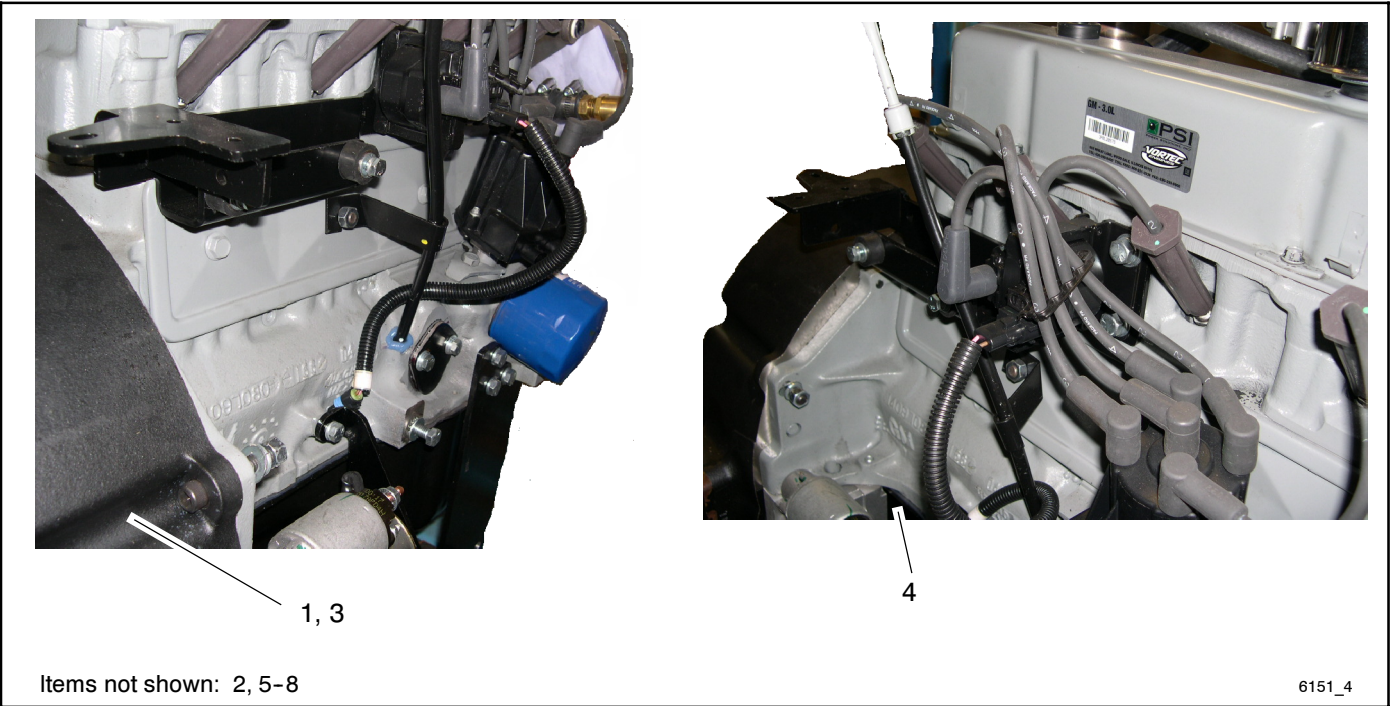
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Item	Part Number	Description	Qty. Var. 1
1	GM16116	Adapter, freeze plug, 1/2 in. NPT (not shown)	2
2	GM16118	Plug, 1/2 in. NPT, brass (not shown)	2
3	GM38890	Adapter, freeze plug, 3/8 in. NPT (not shown)	2
4	GM38950	Gasket, engine coolant thermostat housing	1
5	GM38996	Outlet, water	1
6	GM38947	Gasket, water pump	1
7	GM38911	Housing, engine coolant thermostat	1
8	GM39000	Pump kit, water	1
9	GM38939	Fitting, 3/8 MPT plug, hex	1
10	GM28893	Clamp, hose, 1 1/4 in.	2
11	GM24342	Fitting	2
12	GM38940	Hose, water heater, 3/4 in. ID rubber, 2 in.	1
13	GM38941	Fitting, 1/2 MPT x 3/4 hose	1
14	GM38948	Fitting, 1/2 in. FPT brass cap	1
15	GM38954	Nut, dipstick	1
16	GM38916	Stud, dipstick	1
17	GM39012	Tube, dipstick	1
18	GM38983	Dipstick	1
19	GM38992	Gasket, oil pan	1
20	GM38991	Gasket, engine front cover	1
21	GM38990	Gasket, valve rocker arm cover	1
22	GM38997	Wire, coil wiring	1
23	GM38901	Retainer, spark plug wire	1
24	GM39010	Harness, spark plug wire	1
25	—	Camshaft (see Group 1)	1

Item	Part Number	Description	Qty. Var. 1
26	#	Washer, flat, 5/16 USS (not shown)	1
27	#	Washer, flat, 5/16 (not shown)	2
28	#	Bolt, 5/16-24 x 3/4 hex head, grade 5 (not shown)	2
29	#	Bolt, 3/8-16 x 1 1/4 hex head, grade 5 (not shown)	1
30	#	Washer, lock 3/8 (not shown)	1
31	—	Label, Emission Control 3.0L	1
32	GM16703	Filter, oil	1
33	GM39415	Pulley, fan	1
34	GM39416	Grommet, 3.0L valve cover	1
35	GM16536	Gasket, water outlet	1
36	GM16537	Thermostat, engine cooling	1
37	GM39417	Hose, heater, 3/8 in. ID, rubber, 19 in.	1
38	GM39418	Cover, fuel pump	1
39	GM39419	Gasket, fuel pump cover	1
40	GM28891	Cap, oil fill	1
41	GM28896	Valve, PCV	1
42	GM38928	Fitting, intake manifold vac	1
43	GM39420	Grommet, oil breather	1
44	#	Washer, lock 5/16 (not shown)	2
45	#	Washer, flat 5/16 (not shown)	2
46	#	Bolt, 5/16-18 x 3/4 hex head, grade 5 (not shown)	2

Common hardware; procure locally.

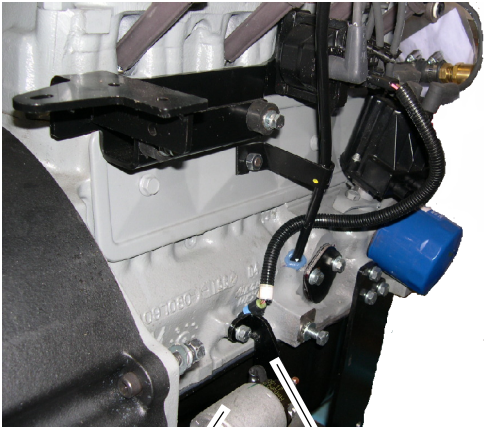
Group 4: Flywheel



Item	Part Number	Description	Qty.
			Var. 1
1	GM16136	Adapter, flywheel	1
2	#	Screw, cap, 3/8-16 x 2 socket head grade 8 (not shown)	4
3	GM16135	Housing, flywheel	1
4	GM16189	Plate, starter	1
5	GM28960	Washer, flat SAE (not shown)	4
6	GM24188	Washer, lock, 1/4 in. (not shown)	4
7	#	Bolt, 3/8-16 x 1 1/4 socket head, grade 5 (not shown)	6
8	#	Bolt, 1/4-20 x 1/2 in. (not shown)	4

Common hardware; procure locally.

Group 5: Starter



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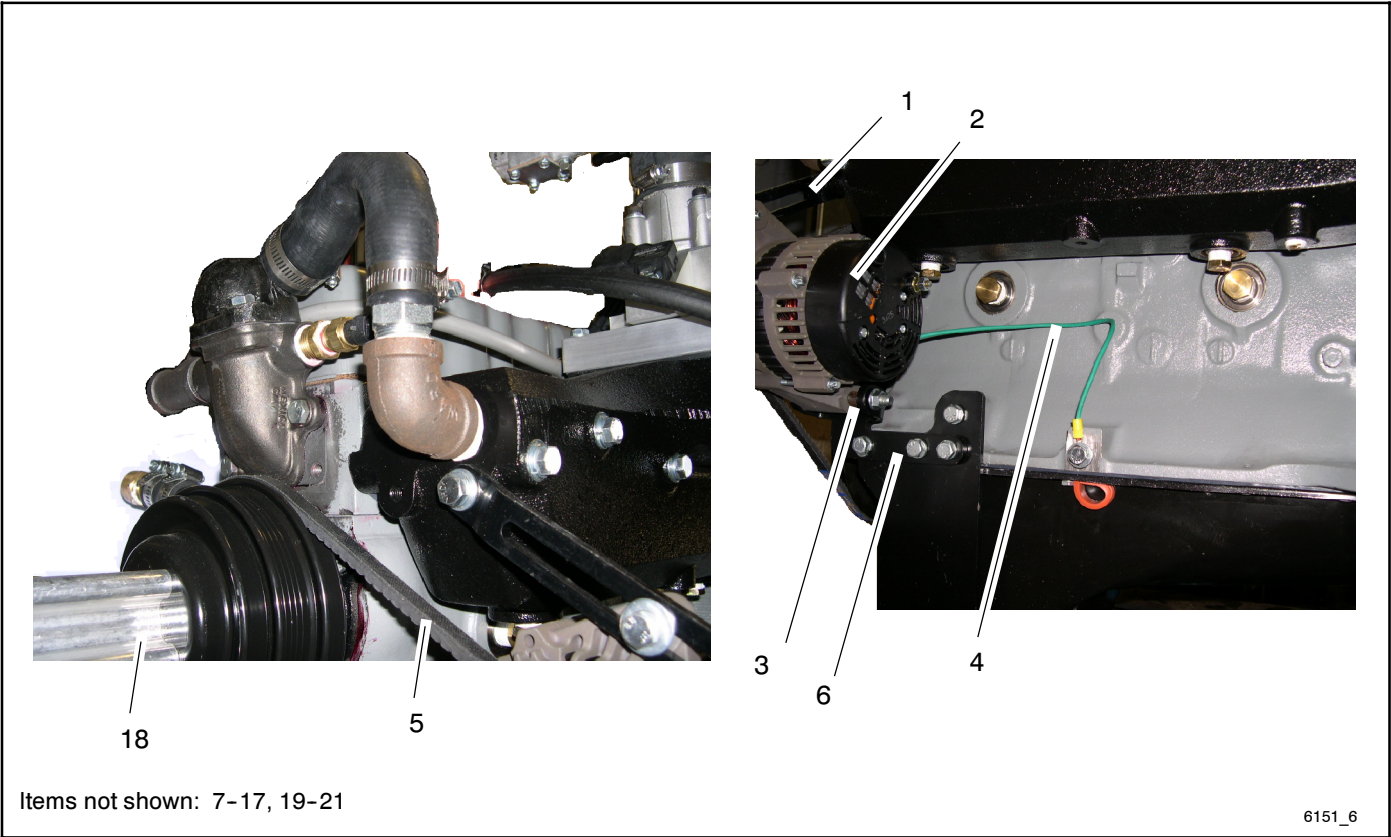
Items not shown: 4-11

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Item	Part Number	Description	Qty.
			Var. 1
1	GM16178	Starter	1
2	GM16190	Bolt, starter, 4 in.	2
3	GM39421	Bracket, starter	1
4	#	Nut, M5-0.80 (not shown)	1
5	#	Washer, lock M5 (not shown)	1
6	#	Nut, flanged M8-1.25 (not shown)	1
7	#	Bolt, 5/16-18 x 3/4 head head grade 5 (not shown)	1
8	#	Washer, flat #10 (not shown)	2
9	#	Washer, lock #10 (not shown)	2
10	#	Washer, flat, 5/16 in. (hardened) (not shown)	1
11	#	Nut, 10-24 (not shown)	2

Common hardware; procure locally.

Group 6: Alternator and Fan Pulley

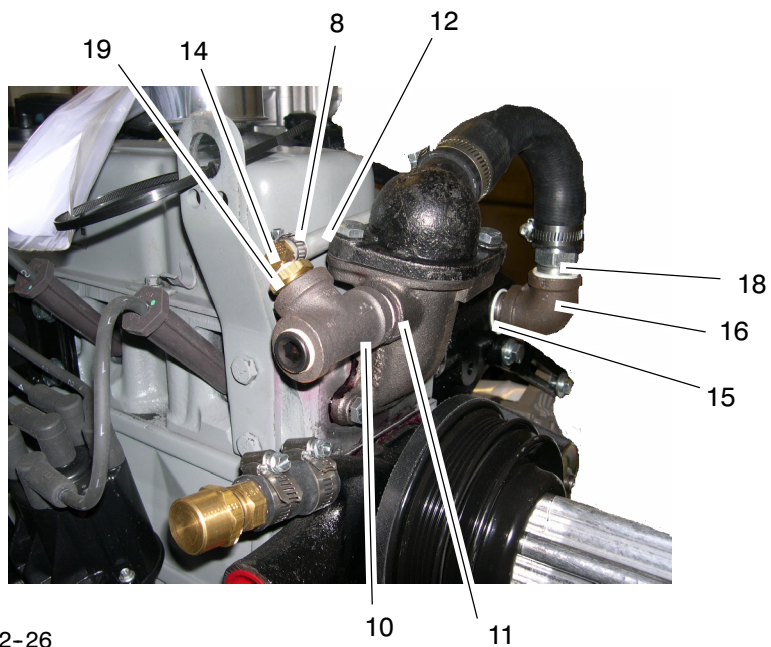
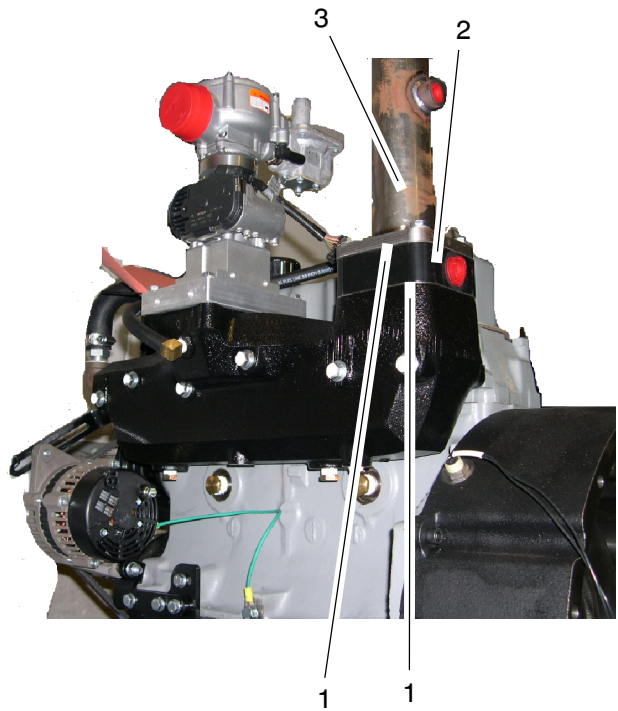
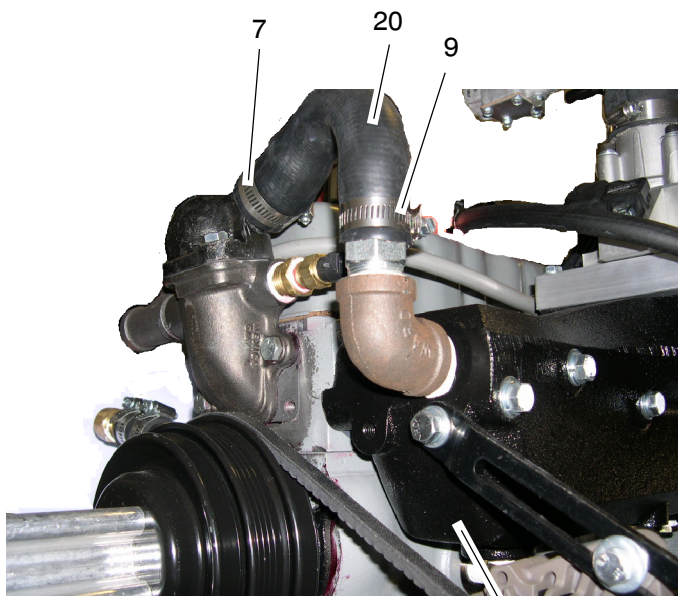


Group 6: Alternator and Fan Pulley

Item	Part Number	Description	Qty.
			Var. 1
1	GM39425	Strap, alternator	1
2	GM39426	Alternator, 7SI	1
3	GM39427	Sleeve, alternator (spacer)	1
4	GM39213	Wire, ground	1
5	GM39428	Belt, alternator	1
6	GM39429	Bracket, alternator	1
7	#	Bolt, head head, M8-1.25 x 30 (not shown)	1
8	#	Washer, flat, 5/16 USS (not shown)	1
9	#	Washer, lock, 5/16 (not shown)	1
10	#	Bolt, 3/8-16 x 3/4 hex head, grade 5 (not shown)	1
11	#	Bolt, 3/8-16 x 1 hex head, grade 5 (not shown)	1
12	#	Washer, lock, 3/8 (not shown)	1
13	#	Washer, flat, 3/8 SAE (not shown)	2
14	#	Nut, flanged, 3/8-24 (not shown)	1
15	#	Bolt, 3/8-24 x 4 hex head, grade 5 (not shown)	1
16	#	Washer, flat, 3/8 in. (hardened) (not shown)	1
17	#	Washer, star, 3/8 in. (not shown)	1
18	GM39435	Spacer, fan	1
19	#	Washer, lock, 5/16 (not shown)	4
20	#	Washer, flat, 5/16 (not shown)	16
21	#	Bolt, 5/16-24 x 5 hex head, grade 5 (not shown)	4

Common hardware; procure locally.

Group 7: Intake and Exhaust System



Items not shown: 4-6, 13, 22-26

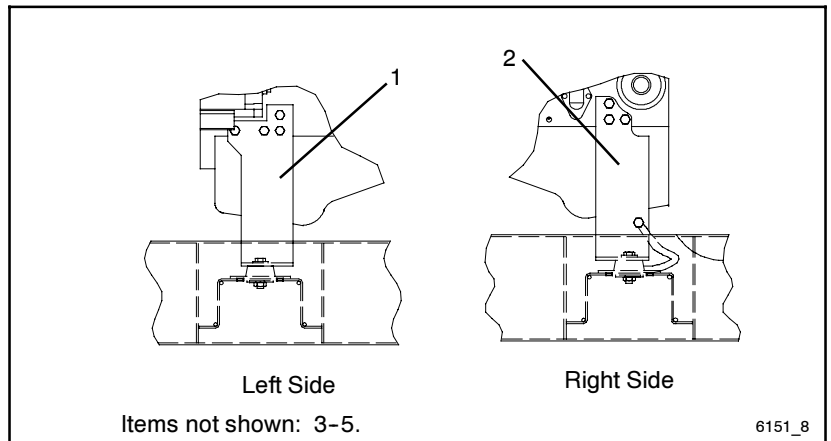
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Group 7: Intake and Exhaust System

Item	Part Number	Description	Qty.
			Var. 1
1	GM39436	Gasket exhaust	2
2	GM39437	Adapter, exhaust	1
3	GM39438	Pipe, exhaust	1
4	#	Washer, flat, 5/16 USS (not shown)	4
5	#	Washer, lock, 5/16 (not shown)	4
6	#	Bolt, 5/16-18 x 2 1/2 hex head, grade 5 (not shown)	4
7	GM39439	Clamp, hose, S-20 1 1/2 in.	1
8	GM28892	Clamp, 3/8 in. (M4)	2
9	GM28895	Clamp, hose, 13/16-1 1/2 in.	1
10	GM28956	Tee, fitting, 1/2 x 1/2 x 1/2 in. pipe blk.	1
11	GM28957	Pipe, closed nippler, 1/2 in.	1
12	GM28916	Hose, pushlock, 1/4 in. ID x 1/2 in OD, 11 in.	1
13	GM39440	Fitting, 1/8 x1/8, pipe adapter (not shown)	1
14	GM39441	Fitting, 1/8 MPT x 1/4 elbow	2
15	GM16206	Pipe, closed nipple, 3/4 in.	1
16	GM16212	Pipe, 3/4 in. fitting elbow, 90 deg.	1
17	GM39442	Gasket, intake manifold	1
18	GM39443	Fitting, 3/4 NPT x 1 in.	1
19	GM39444	Bushing, reducer, 1/2 to 1/8	1
20	GM39445	Hose, molded, 1 1/4 x 1	1
21	GM38933	Manifold, intake	1
22	#	Washer, lock, 3/8 (not shown)	6
23	#	Washer, flat, 3/8 SAE (not shown)	6
24	#	Plug, 1/2 in. NPT, steel (not shown)	1
25	#	Bolt, 3/8-16 x 5 1/4 hex head, grade 5 (not shown)	5
26	#	Bolt, 3/8-16 x 6 1/4 in. hex head, grade 5 (not shown)	1

Common hardware; procure locally.

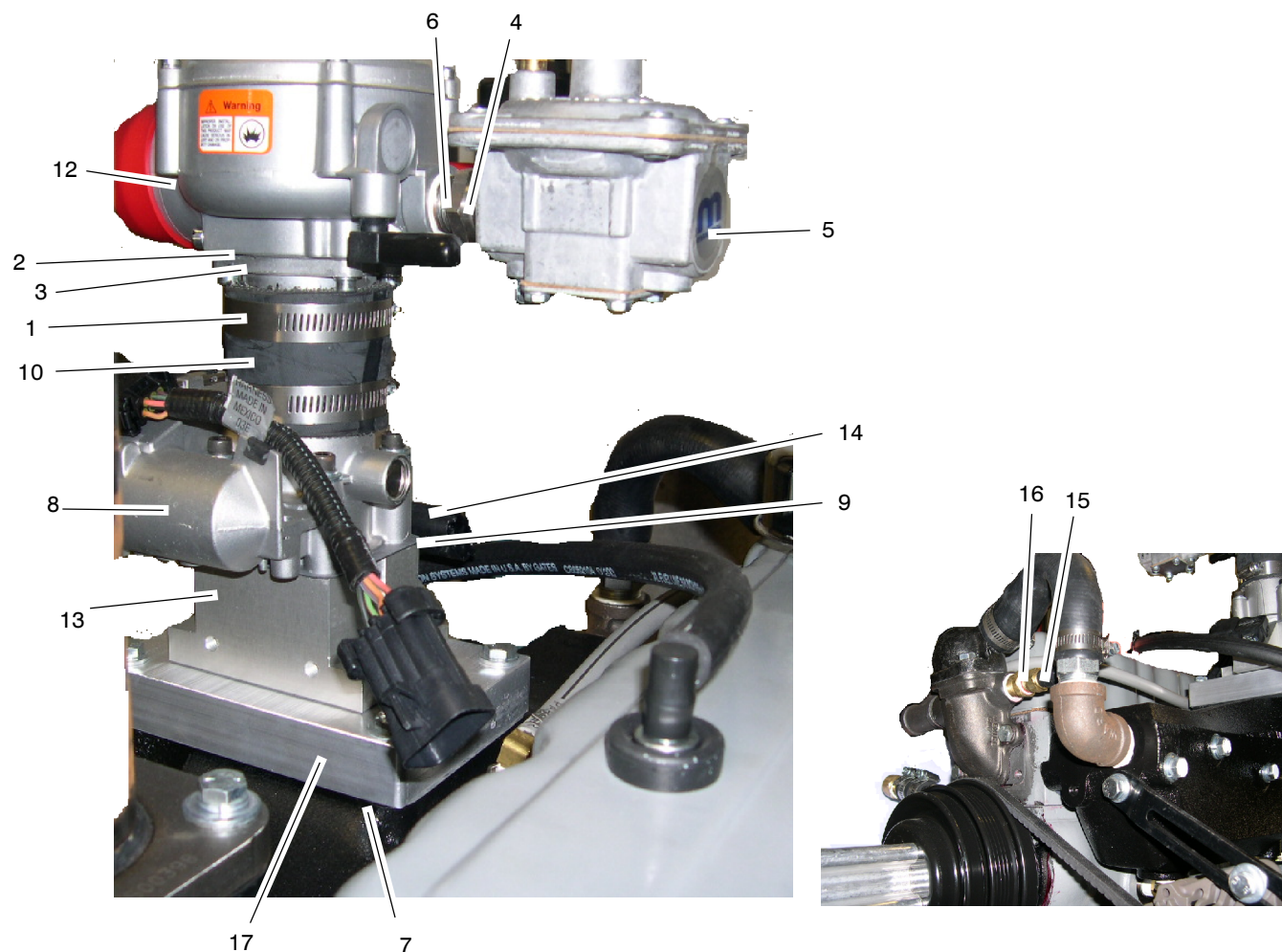
Group 8: Engine Mounting



Item	Part Number	Description	Qty.
			Var. 1
1	GM39446	Mount, front left	1
2	GM39447	Mount, front right	1
3	#	Bolt, 3/8-16 x 1 hex head, grade 5 (not shown)	4
4	#	Bolt, 3/8-16 x 1 1/4 hex head, grade 5 (not shown)	2
5	#	Washer, lock, 3/8 (not shown)	6

Common hardware; procure locally.

Group 9: Fuel System, Natural Gas/LP Gas



Items not shown: 11, 18-26

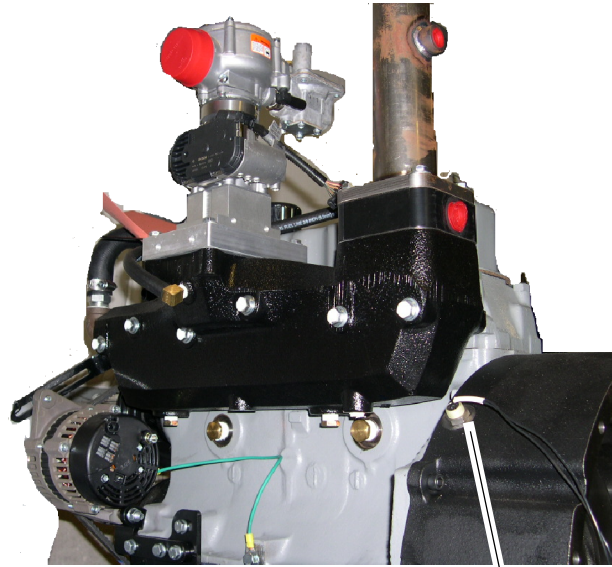
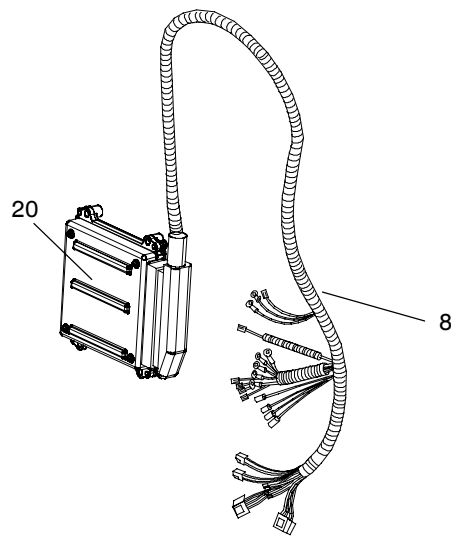
6151_9

Item	Part Number	Description	Qty. Var.
1	GM38900	Clamp, hose S-32, 2 1/4 in.	2
2	GM16150	Gasket, carburetor	1
3	GM39224	Adapter, carburetor AH, 2 1/16 in. hose	1
4	GM24341	Fitting	1
5	GM16171	Regulator, fuel 3/4 in. NPT	1
6	GM28957	Pipe, closed nippler, 1/2 in.	1
7	GM39430	Gasket, intake cover	1
8	GM39222	Throttle body, Bosch, 40 mm	1
9	GM28360	Gasket, Bosch TB	1
10	GM39431	Hose, intake, 2 in. ID x 2 in.	1
11	GM39432	Bracket, regulator (not shown)	1
12	GM39226	Mixer	1
13	GM39433	Adapter, manifold to Bosch	1
14	GM39227	Sensor, T-map	1
15	GM29608	Sensor, coolant	1

Item	Part Number	Description	Qty. Var.
16	GM16213	Bushing, reducing, 3/4 in.-1/2 in.	1
17	GM39434	Adapter, intake man. cover	1
18	#	Washer, flat SAE (not shown)	5
19	#	Washer, lock, 1/4 in. (not shown)	5
20	#	Washer, flat 5/16 (not shown)	4
21	#	Bolt, 5/16-18 x 1 1/2 hex head, grade 5 (not shown)	4
22	#	Bolt, 3/8-16 x 1 hex head, grade 5 (not shown)	2
23	#	Washer, flat 3/8 SAE (not shown)	2
24	#	Bolt, 1/4-20 x 1/2 in. (not shown)	1
25	#	Screw, M6-1.0 x 50 mm lg socket head (not shown)	4
26	#	Bolt, 3/8-16 x 1/2 socket head (not shown)	2

Common hardware; procure locally.

Group 10: Wiring Harness



Items not shown: 1-4, 6, 7, 12-19

5
9, 10, 11

6151_10

Item	Part Number	Description	Quantity Variation			
			1	2	3	4
1	GM39422	Plug, connector (not shown)	4	4	4	4
2	GM39423	Connector, O2 sensor (not shown)	1	1	1	1
3	GM39424	Lock, O2 connector (not shown)	1	1	1	1
4	GM39448	Clamp, wrap around, 1/4 in. ID (not shown)	1	1	1	1
5	GM39449	Sensor, mag. speed, 5/8-18	1	1	1	1
6	GM29604	Isolator, relay box (not shown)	2	2	2	2
7	GM39450	Clamp, 3/4 in. steel tube (not shown)	1	1	1	1
8	GM39451	Harness, main	1	1	1	1
9	GM39452	Connector, mag. pickup	1	1	1	1
10	GM39453	Terminal, mag. pickup	2	2	2	2
11	GM39454	Seal, mag. pickup	2	2	2	2
12	GM39455	Clamp, 7/8 steel tube (not shown)	1	1	1	1
13	#	Washer, flat, 1/4 in. SAE (not shown)	10	10	10	10
14	#	Washer, lock, 1/4 in. (not shown)	4	4	4	4
15	#	Bolt, 1/4-20 x 1 hex head grade 5 (not shown)	2	2	2	2
16	#	Bolt, 3/8-16 x 3/4 hex head grade 5 (not shown)	1	1	1	1
17	#	Washer, flat, 3/8 SAE (not shown)	1	1	1	1
18	#	Bolt, 1/4-20 x 1/2 in. (not shown)	2	2	2	2
19	#	Washer, star, 3/8 in. (not shown)	1	1	1	1
20	GM39456	ECU control module (30 kW)	1			
20	GM53100	ECU control module (25 kW)		1		
20	GM84803	ECU control module (30 kW)			1	
20	GM84804	ECU control module (25 kW)				1

Common hardware; procure locally.

Notes

Appendix A 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.

Notes

