



MARINE

ILLUSTRATED

PARTS MANUAL

MODEL MP 6.0L

LEVITATOR

MY 2005

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“TYPICAL VIEWS ARE SHOWN”

ENGINE ROTATION

Engine Rotation is identified as “RH” or “LH” with the engine model number. Rotation always is determined from the flywheel end looking toward the front of the engine. In some instances, propeller shaft rotation may be opposite to that of the engine.

When ordering a replacement engine, production block or parts for the engine, be certain to check engine rotation. **DO NOT rely on propeller rotation in order to determine engine rotation.**

LEFT-HAND ROTATION is STANDARD ROTATION.

(Flywheel turns counterclockwise when viewed from flywheel end of the engine.)

RIGHT-HAND ROTATION is OPPOSITE ROTATION.

(Flywheel turns clockwise when viewed from flywheel end of the engine.)

HOW TO READ THIS PARTS BOOK:

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	RB001005I	Base Engine Assembly, 6.0L	1

①

②

③

④

- ① ITEM NUMBER - This number corresponds with the number in the exploded view on the facing page.
- ② PART NUMBER - This is the designated part number for the particular component or assembly.
- ③ DESCRIPTION - This identifies what the component or assembly is.
- ④ QUANTITY - This refers to the number of pieces used.

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Symbols shown throughout parts list are defined here or on the bottom of the individual parts list page.

- AR = As Required
- OPT = Optional
- NSS = Not Serviced Separately
- NA = Not Available
- OS = Oversize
- US = Undersize
- TBD = To Be Determined
- NI = Not Illustrated

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REPLACEMENT PARTS:



WARNING:

Electrical, ignition and fuel system components on PCM Engines are designed and manufactured to comply with U.S. Coast Guard rules and regulations to minimize risks of fire or explosion.

Use of replacement electrical, ignition and fuel system components which do not comply with these rules and regulations could result in a fire or explosion hazard and should be avoided.

MAINTENANCE ITEM PART NUMBERS:

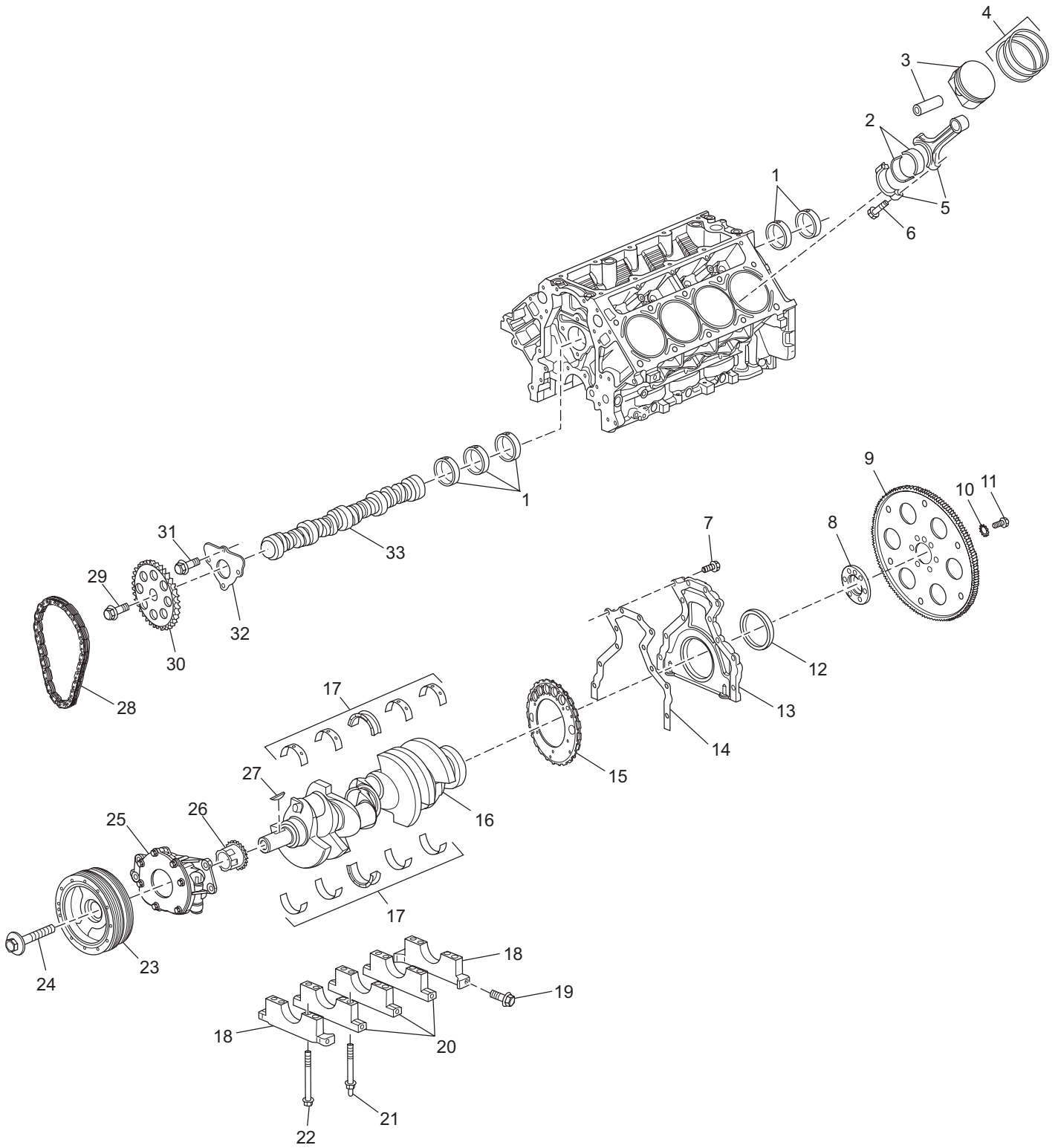
Description	Part Number
Oil Filter	R077015
Fuel Filter (FCC)	RP080026
Spark Plugs	RP030011
Spark Plug Wire Set	TBD
Serpentine Drive Belt	R066032
Thermostat	TBD

MARINE TRANSMISSIONS:

PCM Engines are equipped with PCM or Hurth Transmissions, standard or “V”-drive. If transmission parts are required, contact your dealer or closest PCM Parts Distributor for required parts.

Parts manuals and overhaul manuals are available through PCM Distributors.

CYLINDER BLOCK ASSEMBLY - FIGURE 1

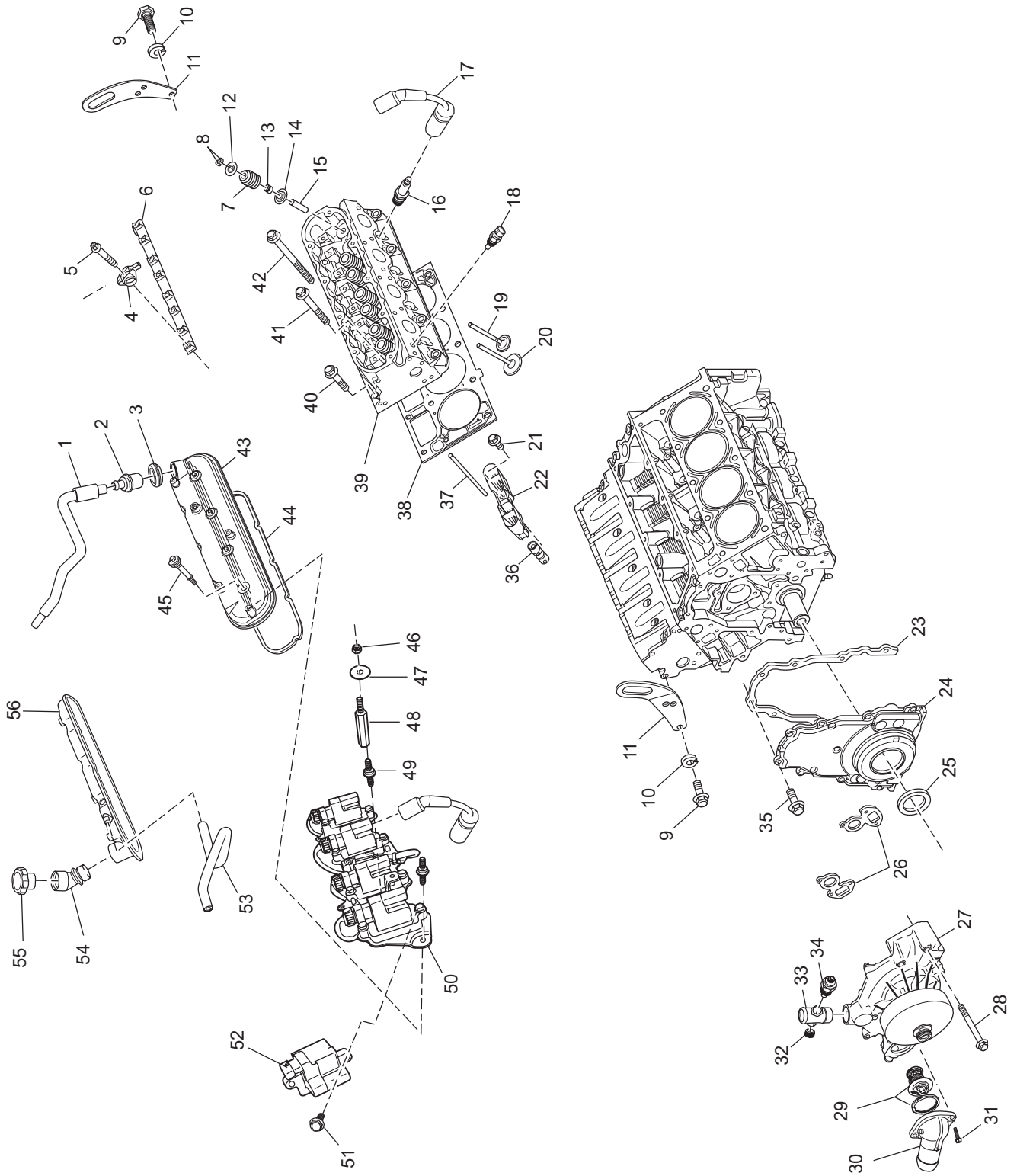


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CYLINDER BLOCK ASSEMBLY - FIGURE 1

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
*	RB001021	Base Engine Assembly	
1	TBD	Bearing Set , camshaft	1
2	R007029	Bearing , connecting rod (STD)	8
3	RA013018	Piston , (STD)	8
4	TBD	Ring Set , piston (STD)	8
5	TBD	Connecting Rod (STD)	8
6	TBD	Bolt , connecting rod cap	16
7	TBD	Bolt , rear engine cover	12
8	R063005	Hub , flywheel	1
9	RA138016A	Flywheel Assembly	1
10	RS2426	Starwasher , flywheel attaching	6
11	R009205	Bolt , flywheel attaching	6
12	R047236	Seal , crankshaft rear oil	1
13	TBD	Cover , rear engine	1
14	TBD	Gasket , rear engine cover	1
15	part of item #14	Reluctor Ring , crankshaft	1
16	TBD	Crankshaft Assembly	1
17	TBD	Bearing Set , crankshaft	1
18	TBD	Cap , crankshaft bearing #1 and #5	2
19	TBD	Bolt , crankshaft bearing cap side	10
20	TBD	Cap , crankshaft bearing #2 - #4	3
21	TBD	Stud , crankshaft bearing cap attaching	
22	TBD	Bolt , crankshaft bearing cap attaching	
23	R064016	Balancer , crankshaft	1
24	TBD	Bolt , crankshaft balancer	1
25	TBD	Oil Pump Assembly	1
26	TBD	Drive , oil pump	1
27	TBD	Key , crankshaft	1
28	TBD	Chain , timing	1
29	TBD	Bolt , camshaft sprocket attaching	1
30	TBD	Sprocket , camshaft	1
31	TBD	Bolt , camshaft retainer attaching	3
32	TBD	Retainer , camshaft	1
33	TBD	Camshaft	1

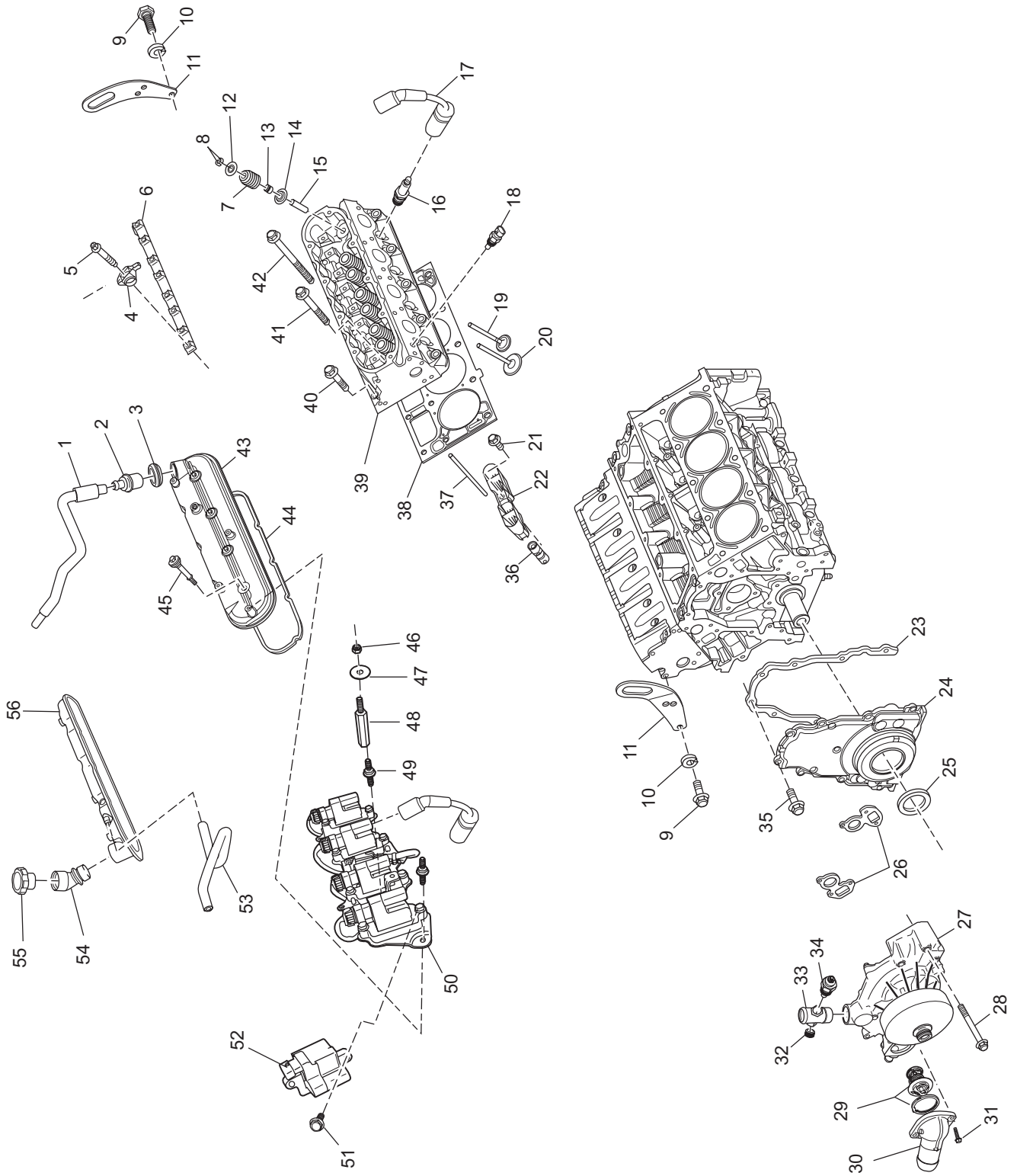
CYLINDER HEAD ASSEMBLY / FRONT COVER - FIGURE 2



CYLINDER HEAD ASSEMBLY / FRONT COVER - FIGURE 2

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	TBD	Hose , PCV valve	1
2	TBD	Valve , positive crankcase ventilation (PCV)	1
3	TBD	Grommet , PCV valve	1
4	TBD	Rocker Arm , valve	16
5	TBD	Bolt , valve rocker arm attaching	16
6	TBD	Guide , valve rocker arm	2
7	TBD	Valve Spring Assembly	16
8	TBD	Retainer , valve stem	32
9	98443025	Bolt , lifting eye attaching	4
10	93940000	Lockwasher , lifting eye attaching bolt	4
11	R042012	Lifting Eye , rear	1
11	R042014	Lifting Eye , front	1
12	TBD	Cap , valve spring	16
13	TBD	Seal , valve stem	16
14	TBD	Rotator , valve	32
15	TBD	Guide , valve stem	16
16	RP030011	Spark Plug	8
17	TBD	Spark Plug Wire Set	1
18	R020046	Engine Coolant Temperature (ECT) Sensor	1
19	TBD	Valve , exhaust (STD)	8
20	TBD	Valve , intake (STD)	8
21	TBD	Bolt , valve lifter retainer attaching	8
22	TBD	Retainer , valve lifter	8
23	RM0280	Gasket , front engine cover	1
24	TBD	Cover , front engine	1
25	R047237	Seal , front engine cover oil	1
26	RM0281	Gasket , water circulating pump	2
27	RK057033A	Water Circulation Pump Assembly	1
28	TBD	Bolt , water circulating pump attaching	4
29	TBD	Thermostat and Seal , (86° C (187° F))	1
30	TBD	Housing , thermostat	1
31	TBD	Bolt , thermostat housing attaching	2
32	RS3551	Plug , water neck	1
33	R024208	Water Neck	1
34	R020002	Switch , coolant temperature	1
35	TBD	Bolt , front engine cover attaching	8

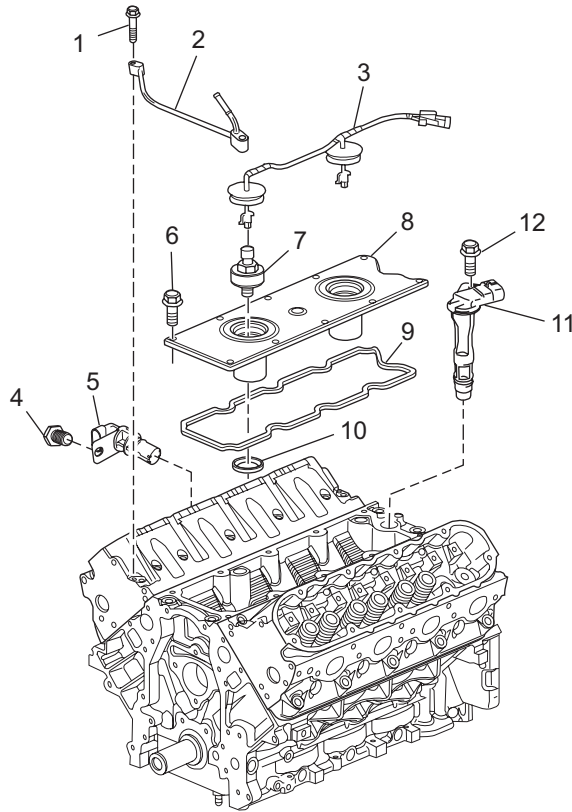
CYLINDER HEAD ASSEMBLY / FRONT COVER - FIGURE 2 (cont'd)



CYLINDER HEAD ASSEMBLY / FRONT COVER - FIGURE 2 (cont'd)

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
36	TBD	Lifter , valve	16
37	TBD	Push Rod	16
38	RM0278	Gasket , Cylinder Head	2
39	R003016	Cylinder Head	2
40	R009208	Bolt , cylinder head (short)	4
41	R009209	Bolt , cylinder head (medium)	10
42	R009207	Bolt , cylinder head (long)	16
43	RA033016	Cover , rocker (LH)	1
44	RM0282	Gasket , rocker cover	2
45	TBD	Bolt , rocker cover attaching	8
46	97224300	Nut , Nylock, engine cover attaching	4
47	92104200	Fender Washer , engine cover attaching	6
48	R095042	Stand-off , engine cover	4
49	TBD	Stud , ignition coil bracket attaching	10
50	TBD	Bracket , ignition coil mounting	2
51	91107075	Bolt , ignition coil attaching	16
52	R117013	Coil , ignition	8
53	TBD	Tube , breather	1
54	R034049	Tube , oil fill	1
55	R034038B	Cap , oil fill tube	1
56	RA033017	Cover , rocker w/Oil Fill (RH)	1

KNOCK SENSORS - FIGURE 3

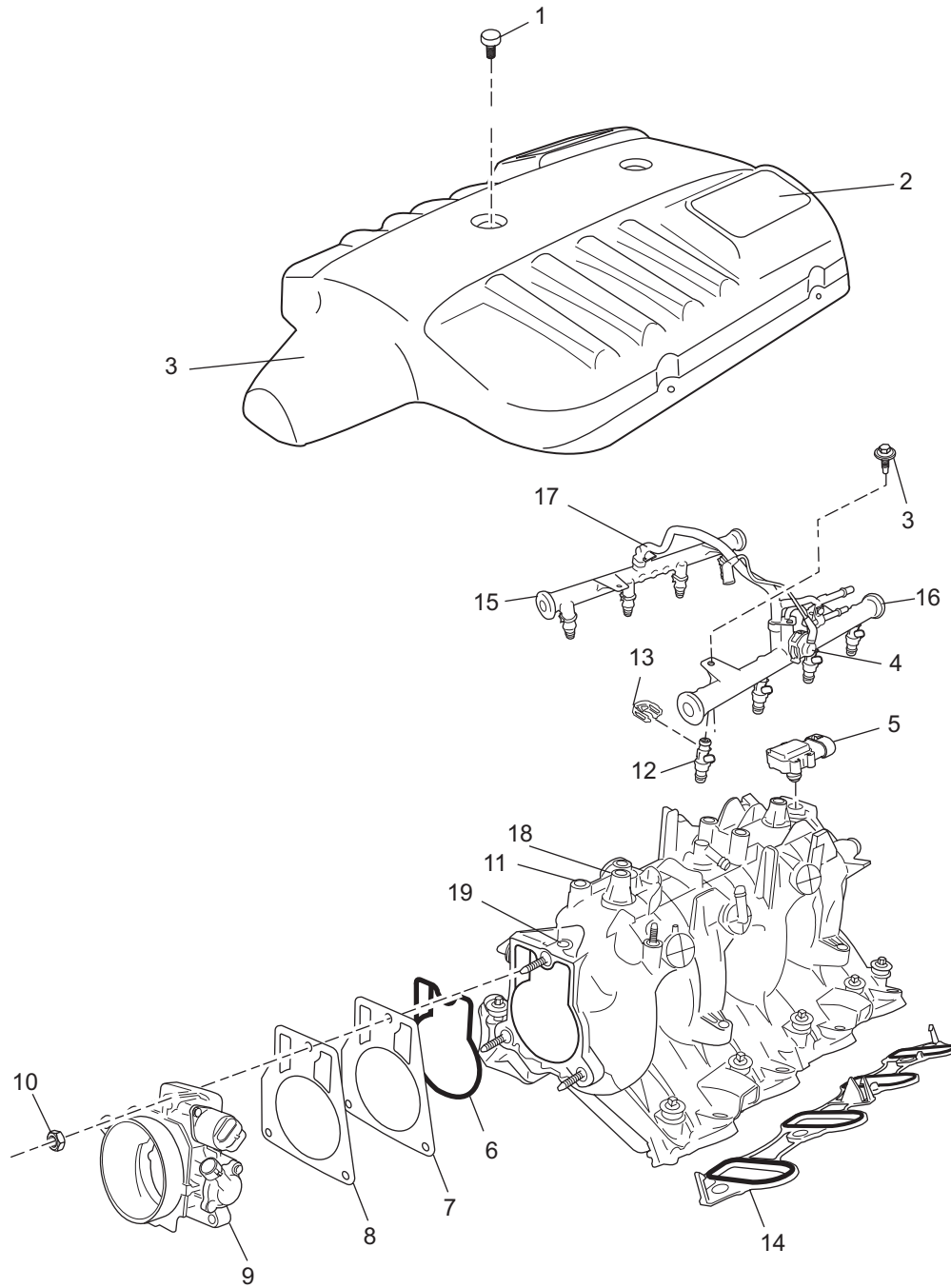


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KNOCK SENSORS - FIGURE 3

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	TBD	Bolt , coolant air bleed pipe attaching	2
2	TBD	Pipe , coolant air bleed	1
3	TBD	Harness , knock sensor	1
4	TBD	Bolt , crankshaft position attaching	1
5	R020044	Sensor , crankshaft position	1
6	TBD	Bolt , valley cover attaching	10
7	R020043	Sensor , knock	2
8	TBD	Cover , valley	1
9	TBD	Gasket , valley cover	1
10	TBD	Seal , knock sensor oil	2
11	R020045	Sensor , camshaft position	1
12	TBD	Bolt , camshaft position attaching	1

INTAKE MANIFOLD COMPONENTS - FIGURE 4

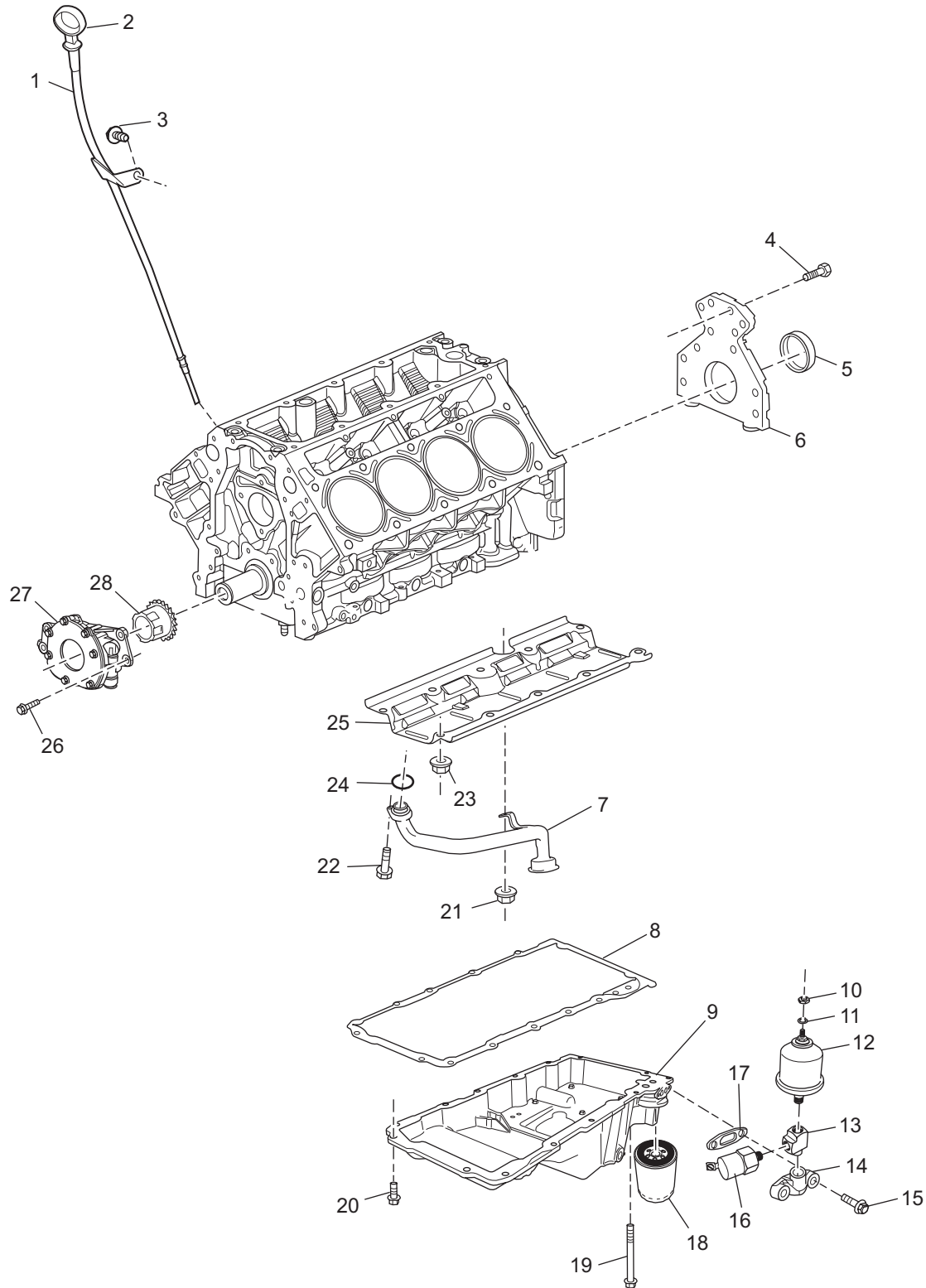


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INTAKE MANIFOLD COMPONENTS - FIGURE 4

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	R175055	Bolt , engine cover attaching	2
2	R143179	Decal , engine cover	2
3	R060068	Cover , engine	1
4	TBD	Bolt , fuel rail attaching	4
5	R020036	Sensor , manifold absolute pressure (MAP)	1
6	TBD	Seal , throttle body	1
7	R062087	Plate , throttle body adapter	1
8	RM0251	Gasket , throttle body	1
9	RA035036B	Throttle Body Assembly	1
10	L00918	Nut , throttle body attaching	3
11	R002025	Intake Manifold	1
12	RA087008	Fuel Injector Assembly	8
13	R127097	Retainer , fuel injector	8
14	RM0277	Gasket Set , intake manifold	1
15	R086003	Fuel Rail , 6.0L, (right)	1
16	R086004A	Fuel Rail , 6.0L, w/o regulator pocket (left)	1
17	RA085103	Fuel Rail , 6.0L, crossover	1
18	R036007	Insert , threaded, intake	8
19	RS3550	Plug , pipe, 1/4" NPT	1

OIL PAN and OIL PUMP ASSEMBLY - FIGURE 5

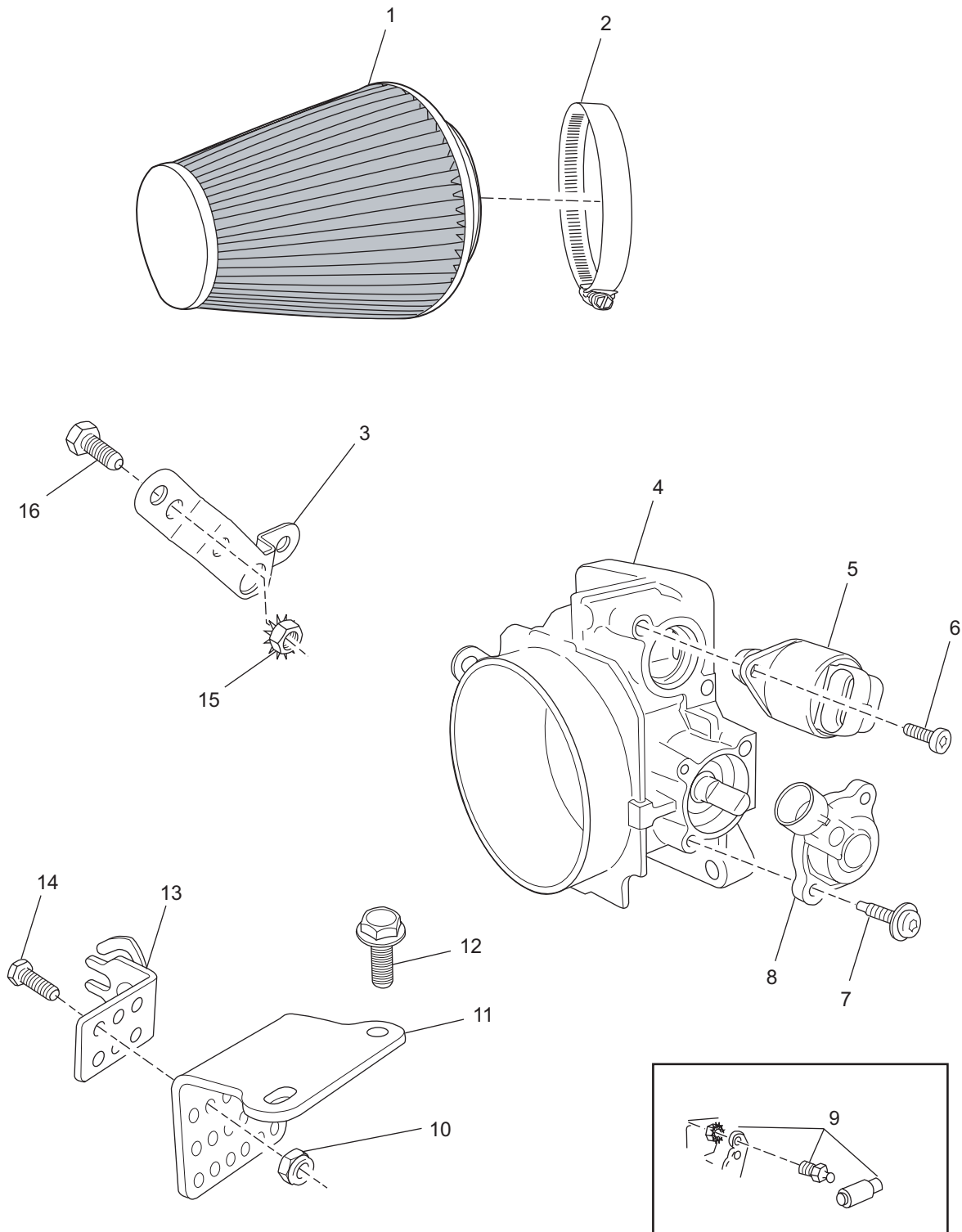


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OIL PAN and OIL PUMP ASSEMBLY - FIGURE 5

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	TBD	Tube , oil dipstick	1
2	TBD	Dipstick , oil level	1
3	TBD	Bolt , oil dipstick tube attaching	1
4	TBD	Bolt , engine rear cover attaching	1
5	R047236	Seal , engine rear cover oil	1
6	TBD	Cover , engine rear	1
7	R074030	Tube , oil pickup	1
8	RM0279	Gasket , oil pan	1
9	R005025	Oil Pan	1
10	RS1540	Nut , sender terminal	1
11	RS2197	Lockwasher , sender terminal	1
12	R020001	Sender , oil pressure	1
13	R024145	Tee , sender attaching	1
14	R079071	Adapter , oil sending unit	1
15	TBD	Bolt , oil sending unit adapter attaching	2
16	R020015A	Switch , oil pressure	1
17	RM0284	Gasket , oil sending unit adapter	1
18	R077015	Filter , oil	1
19	TBD	Bolt , oil pan attaching (long)	2
20	TBD	Bolt , oil pan attaching (short)	12
21	TBD	Nut , oil pickup tube attaching	1
22	TBD	Bolt , oil pickup tube attaching	1
23	TBD	Nut , windage tray attaching	10
24	TBD	O-ring , oil pickup tube	1
25	R012027	Tray , windage	1
26	TBD	Bolt , oil pump attaching	4
27	TBD	Oil Pump Assembly	1
28	TBD	Drive , oil pump	1

THROTTLE BODY and RELATED COMPONENTS - FIGURE 6



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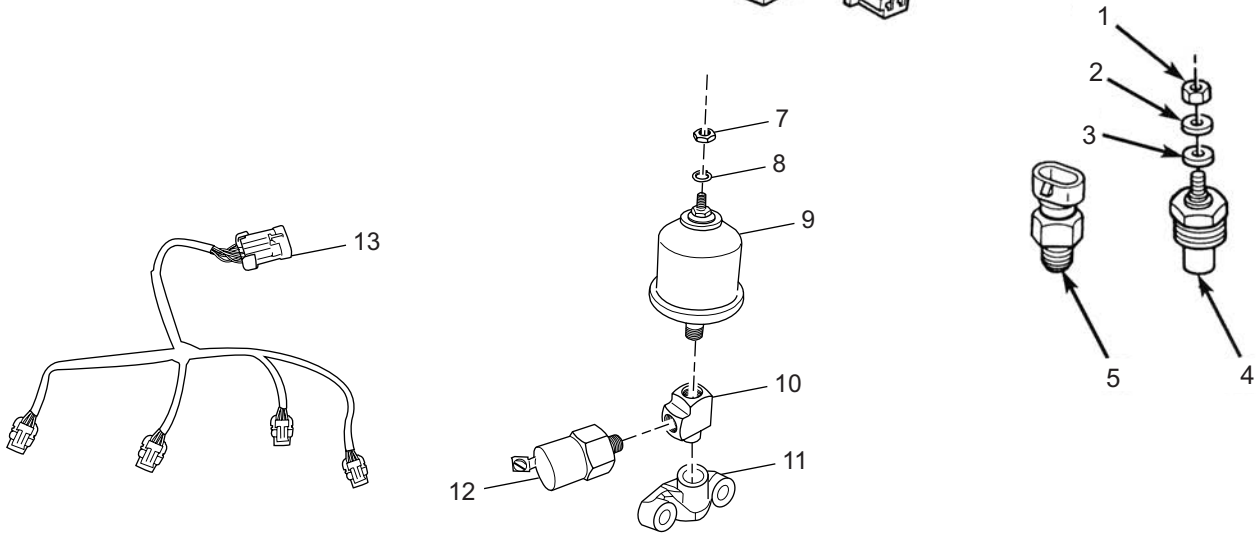
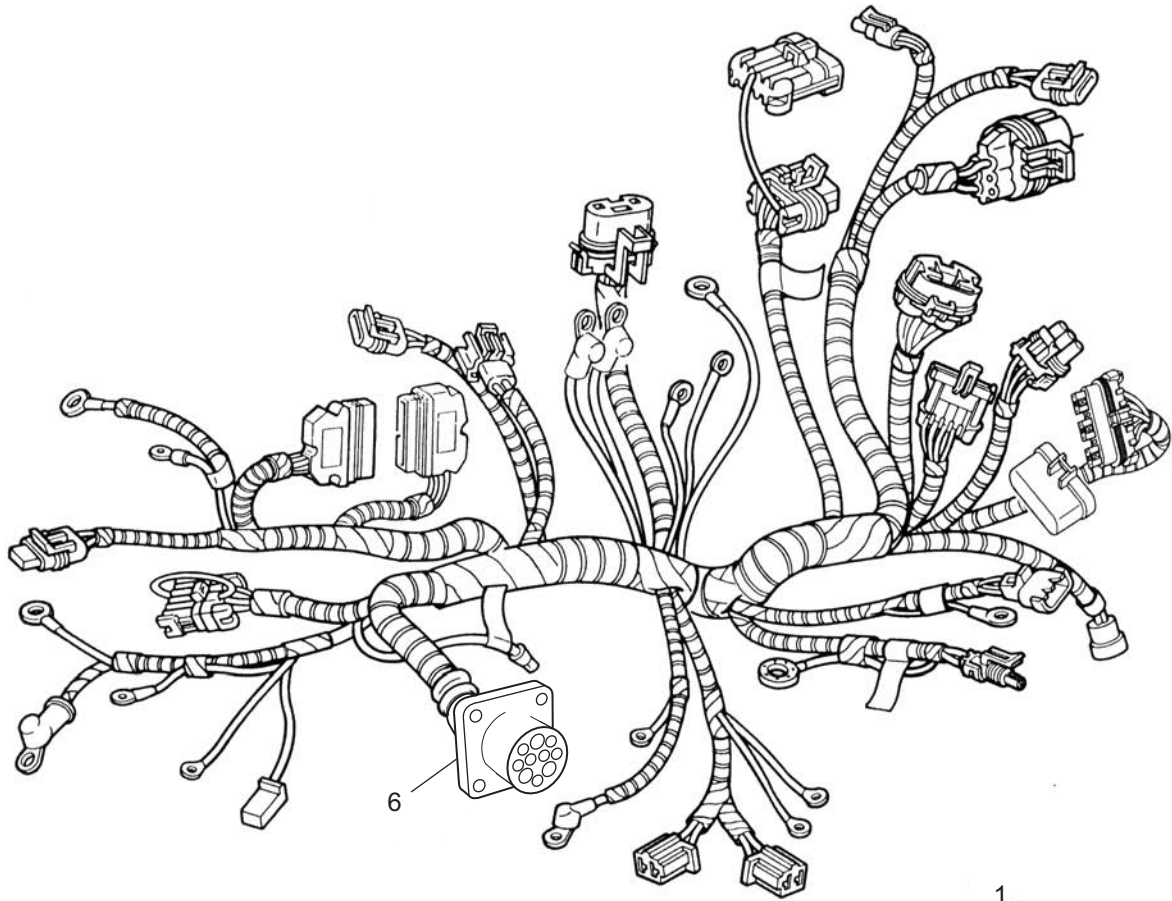
THROTTLE BODY and RELATED COMPONENTS - FIGURE 6

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	R145019	Arrestor , flame	1
2	RS3857	Clamp , flame arrestor	1
3	R081008	Throttle Arm , throttle body	1
4	RA035036B	Throttle Body Assembly	1
5	R084003	Valve , idle air control	1
6	TBD	Screw , IAC valve attaching	2
7	TBD	Screw , TP sensor attaching	2
8	R020041	Sensor , throttle position	1
9	R178003	Ball Joint Assembly , cable attaching	1
10	RS2055	Locking Nut , cable clip mounting bolt	2
11	R090267	Throttle Bracket , intake	1
12	98222018	Bolt , throttle cable brkt attaching	2
13	R090086	Cable Clip , throttle attaching	1
14	RS5122	Bolt , cable clip mounting	2
15	RS1078	Nut , throttle arm attaching	2
16	RS0251	Bolt , throttle arm attaching	2

FUEL CONTROL CELL (FCC) COMPONENTS - FIGURE 7

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	RA080030A	Fuel Control Cell Assembly	1
2	R1210085B	Harness , 1-piece, FCC pass through (1-piece harness does not retro fit for 2-piece harness)	1
2A	7172040	Connector , W/P 2-way Female	1
2B	R012030	Baffle , FCC used w/1-piece harness	1
2C	91620025	Screw , self tapping, baffle/1-piece harness retaining	2
3	R024175	Fitting , 1/4 NPT X SAE	1
4	R024225	Fitting , 1/4 NPT to Hose (return to tank)	1
4A	R024226	Fitting , 3/8 NPT to Hose (to tank)	1
5	R024163	Fitting , 1/4 NPT X SAE (from LPFP)	1
6	R088004	Regulator , fuel pressure (FCC System Only)	1
7	R048070	Retainer , fuel pressure regulator	1
8	R045098B	Hose , 5/16id X 1/2od X 2 1/2	1
9	R127087	Clamp , Oetiker, 5/8	2
10	RA080027	Pump , high pressure fuel	1
11	R080026	Filter , fuel (FCC)	1
NI	RP080026	Kit , FCC filter and O-rings	1
12	R171010	Clamp , FCC	1
13	R128002	Cover , T-bolt end	1
14	R143112A	Decal , FCC	1
15	RS3554	Plug , pipe, hex head, 1/8	1
16A	RA121060	Harness , FCC Feed through	1
16B	RA121061A	Harness , FCC internal	1
17	R024219	Fitting , 1/8 NPT X 5/16 Barb	1
18	R047241	O-Ring , FCC sealing	1
19	RS3550	Plug , pipe, hex socket, 1/4	1
20	R127100	Retainer , fuel line	1
21	RA085090C	Hose Assembly , FCC to fuel rail (inlet)	1
22	90384075	Bolt , FCC attaching	3
23	R090276	Bracket , FCC mounting	1
24	93940000	Lockwasher , FCC mounting bracket	2
25	98443025	Bolt , FCC mounting bracket	2
26	RS1521L	Locking Nut , low-pressure fuel pump	3
27	R096142	Washer , fuel pump mounting	3
28	R094035A	Grommet , mounting bracket	3
29	R090280	Bracket , low-pressure fuel pump mounting	1
30	93940000	Lockwasher , bracket attaching	2
31	98443030	Bolt , bracket attaching	1
32	98443025	Bolt , bracket attaching	1
33	R096141	Washer , fuel pump mounting	3
34	R143174	Decal , pre-filter	1
35	RA077014	Fuel Pre-filter Assembly, 150 micron	1
36	RP077014	Kit , fuel filter and seal	1
37	RA080018	Fuel Pump , low-pressure	1
38	R024192	Fitting , 90 degree	1
39	RA085070A	Hose Assembly , low-pressure pump to FCC	1
NI	R143114	Decal , Warning, fuel leaks	1

WIRING HARNESS ASSEMBLIES and SENDERS - FIGURE 8

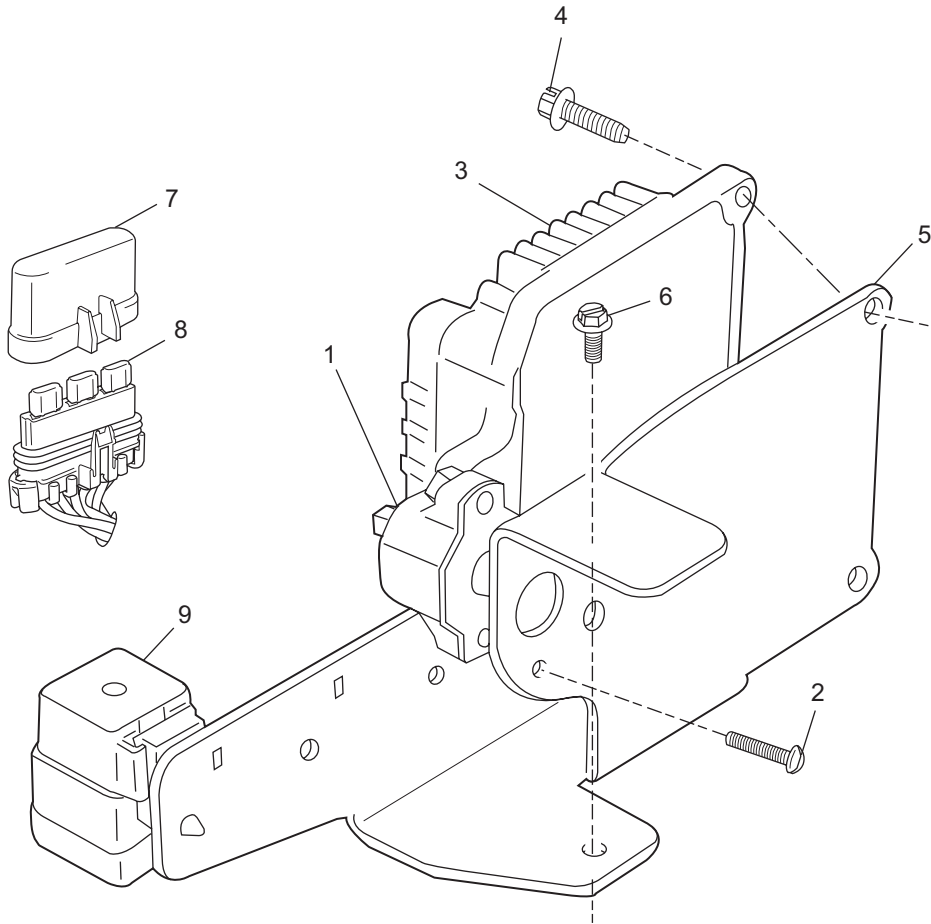


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WIRING HARNESS ASSEMBLIES and SENDERS - FIGURE 8

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	RS1540	Nut , sender terminal	1
2	RS2197	Lockwasher , sender terminal	1
3	RS2746	Washer , sender terminal	1
4	R020002	Sender , temperature	1
5	R020019	Sensor , engine coolant temperature (ECT)	1
6	RA121076C	Engine Wiring Harness Assembly	1
7	RS1540	Nut , sender terminal	1
8	RS2197	Lockwasher , sender terminal	1
9	R020001	Sender , oil pressure	1
10	R024145	Tee , sender attaching	1
11	R079071	Adapter , oil sending unit	1
12	R020015A	Switch , oil pressure	1
13	TBD	Harness , ignition coil	2

ECM and RELAYS - FIGURE 9

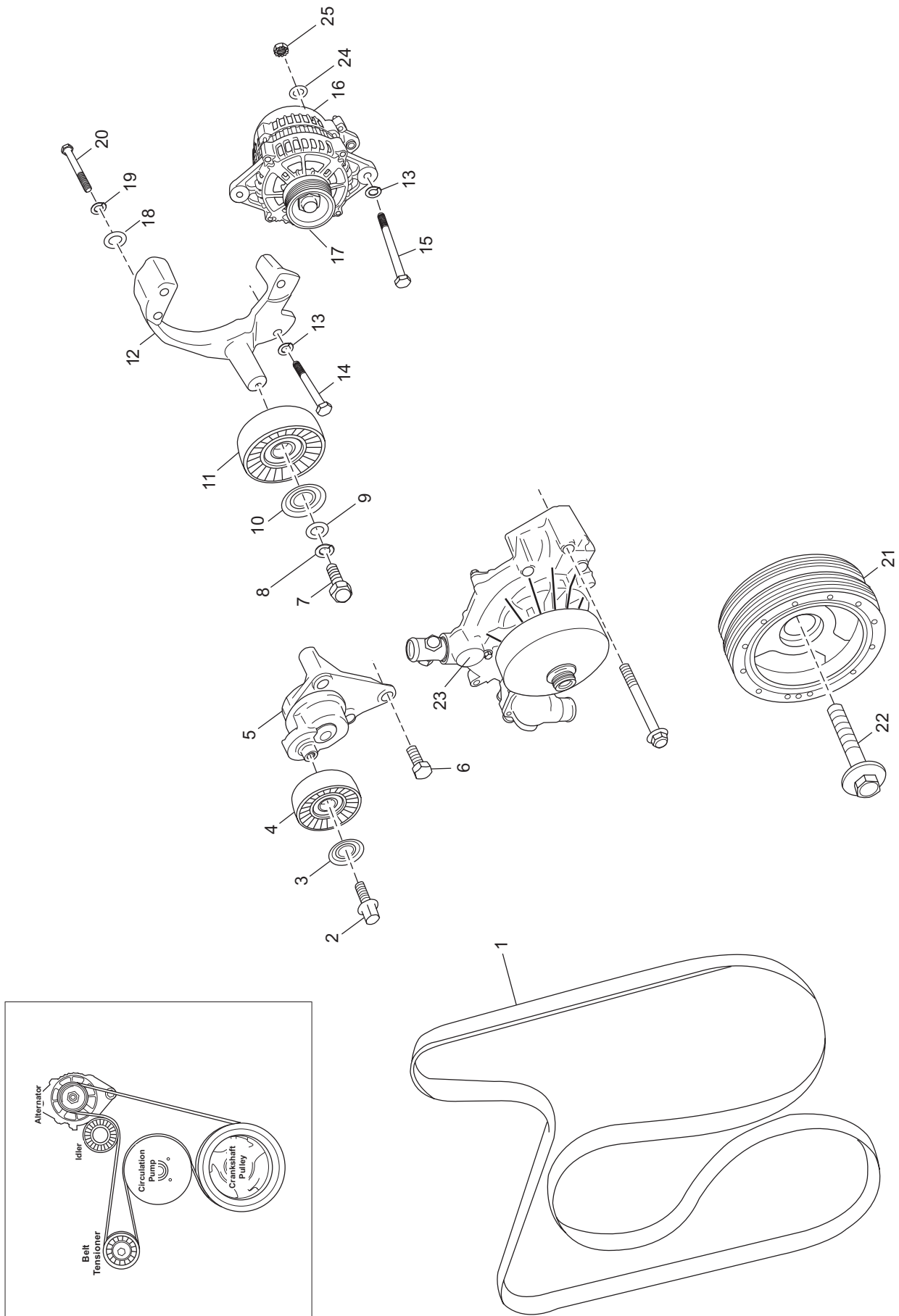


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ECM and RELAYS - FIGURE 9

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	R153006C	Circuit Breaker Assembly (60 amp)	1
2	RS5084	Bolt , circuit breaker mounting	2
3	R116021Y	Engine Control Module cksum - 30218 (760A)	1
4	91107075	Bolt , ECM attaching	3
5	R090325	Bracket , ECM/relay mounting	1
6	TBD	Bolt , bracket attaching	1
7	R126014	Cover , fuse holder	1
8	R153017B	Fuses , 20 amp	3
9	R130011A	Relay , fuel pump, ignition, starter	3

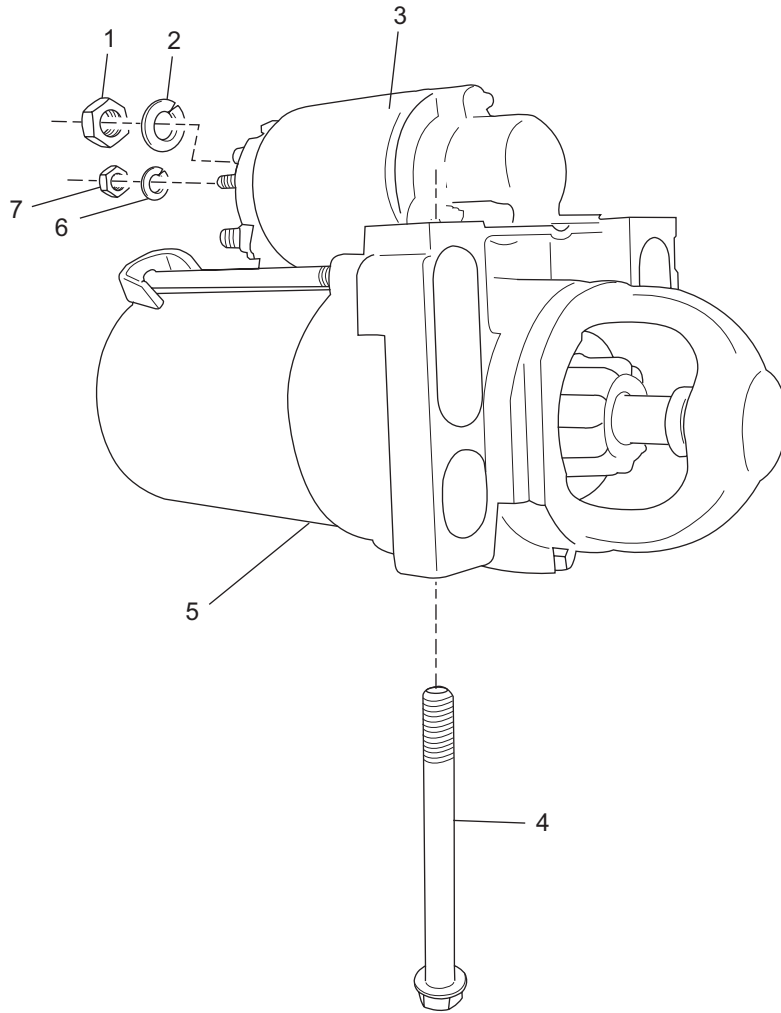
ACCESSORY DRIVE SYSTEM COMPONENTS - FIGURE 10



ACCESSORY DRIVE SYSTEM COMPONENTS - FIGURE 10

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	R066032	Belt , serpentine drive	1
2	part of item #5	Bolt , tensioner pulley attaching	1
3	part of item #5	Washer , tensioner pulley attaching bolt	1
4	part of item #5	Pulley , tensioner	1
5	RA068002	Tensioner , belt	1
6	TBD	Bolt , belt tensioner mounting	3
7	98333025	Bolt , idler pulley attaching	1
8	RS2179	Lockwasher , idler pulley attaching bolt	1
9	92940000	Washer , idler pulley attaching bolt (small)	1
10	R096145	Washer , formed, idler pulley attaching bolt (large)	1
11	R065040	Pulley , idler	1
12	R090269	Bracket , idler pulley mounting / alternator	1
13	93940000	Lockwasher , idler pulley bracket attaching bolt	2
14	98443110	Bolt , idler pulley bracket attaching	1
15	98446070	Bolt , alternator mounting, lower	1
16	RA097007C	Alternator Assembly, 70 Amp	1
17	R065055	Pulley , alternator (70 amp)	1
18	92200000	Flatwasher , alternator mounting	1
19	RS2179	Lockwasher , alternator mounting	1
20	98339070	Bolt , alternator mounting, upper	1
21	R064016	Balancer , crankshaft	1
22	TBD	Bolt , crankshaft balancer	1
23	RA057033	Water Circulation Pump Assembly	1
24	97220060	Nut , alternator wire attaching	2
25	92920000	Flatwasher , alternator wire attaching	2

STARTER ASSEMBLY COMPONENTS - FIGURE 11



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STARTER ASSEMBLY COMPONENTS - FIGURE 11

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	RS7019	Nut , solenoid terminal	1
2	RS2200	Lockwasher , solenoid terminal	1
3	RU0050A	Solenoid , starter	1
4	R009203	Bolt , starter mounting	2
5	RA122019	Starter Motor Assembly	1
6	93003000	Lockwasher , solenoid terminal	2
7	RS7036	Nut , solenoid terminal	2