

MARINE

ILLUSTRATED

PARTS MANUAL

MODEL MP 8.1L

LEVITATOR

MY 2004 - 2005

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Contents:

Symbols 2

Gasket and Decal Kit Numbers 3

Maintenance Item Part Numbers 3

Cylinder Block Assembly - Figure 1 4

Cylinder Head Assembly - Figure 2 8

Intake Manifold Assembly - Figure 3 10

Oil Pan and Oil Pump Assembly - Figure 4 12

Throttle Body Assembly and Related Components - Figure 5 14

Oil Filter Components - Figure 6 16

Fuel Control Cell (FCC) Components (thru S/N 455414) - Figure 7 18

Fuel Control Cell (FCC) Components (S/N 455415 and above) - Figure 8 20

Water Pump / Water Crossover Components - Figure 9 22

Wiring Harness Assembly and Senders - Figure 10 24

ECM and Relays - Figure 11 26

Accessory Drive System Components - Figure 12 28

Starter Assembly Components - Figure 13 30

HOW TO READ THIS PARTS BOOK:

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	RB001018	Base Engine Assembly, 8.1L	1

①

②

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- 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.

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

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.

GASKET AND DECAL KIT NUMBERS:

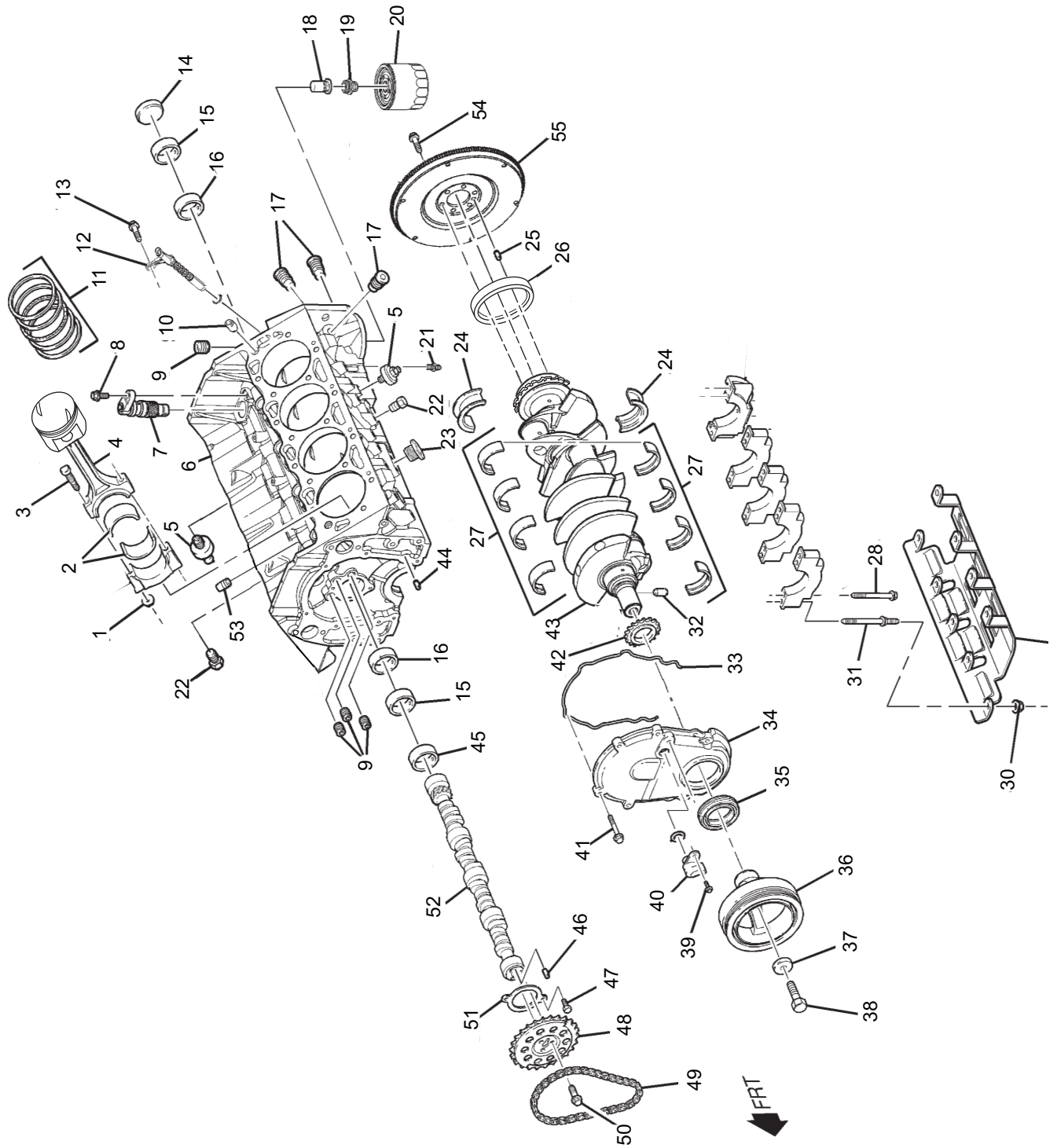
Description	Part Number
Complete Engine Overhaul Gasket Set	TBD
Valve Grind Gasket Set	TBD
Oil Pan Gasket Set	RM0263
Intake Manifold Gasket Set	RM0267

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MAINTENANCE ITEM PART NUMBERS:

Description	Part Number
Oil Filter	R077016
Spark Plug Set (Platinum)	RP030009
Spark Plug Wire Set	RK120019A
Accessory Drive Belt	R066024
Relay, 12V, GM / Fuel Pump, Starter, MEFI	R130011A
Fuse, Spade 20 AMP	R153017B

CYLINDER BLOCK ASSEMBLY - FIGURE 1

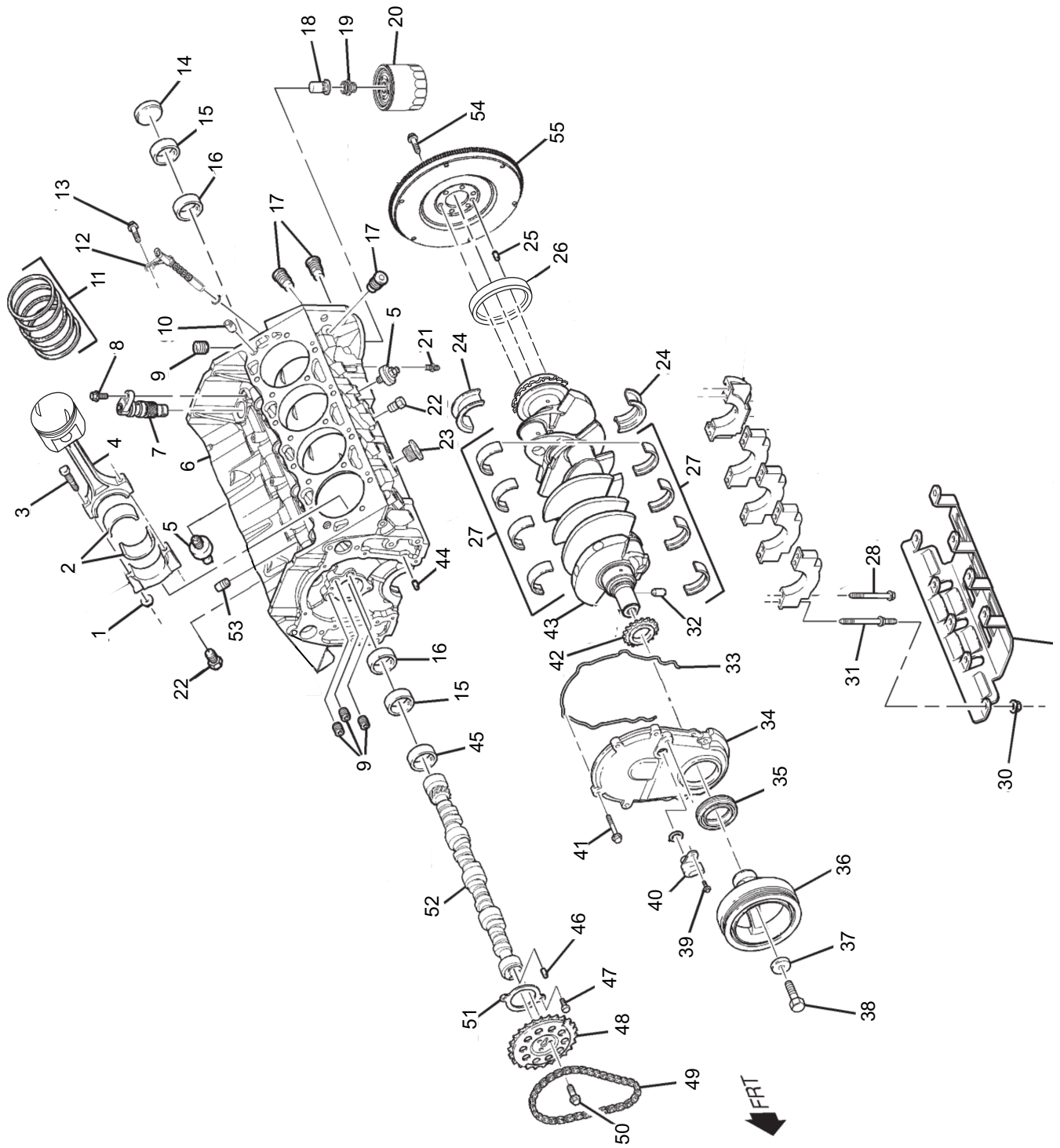


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CYLINDER BLOCK ASSEMBLY - FIGURE 1

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
*	RB001019A	Base Engine Assembly	
1	R017080	Nut , connecting rod cap	16
2	R007026	Bearing Set , connecting rod (STD)	8
3	R009195	Bolt , connecting rod cap	16
4	RA013015A	Piston and Connecting Rod Assembly (LH/STD)	4
4	RA013015B	Piston and Connecting Rod Assembly (RH/STD)	4
5	R020033	Sensor , knock	2
6	NSS	Cylinder Block	
7	RA073001	Drive , oil pump	1
8	TBD	Bolt , oil pump drive	1
9	TBD	Plug , oil gallery	
10	R022021	Pin , cylinder head locating	4
11	R015012	Ring Set , piston (STD)	8
12	R020034	Sensor , crankshaft position	1
13	TBD	Bolt , crankshaft position sensor	1
14	R069065	Plug , camshaft	1
15	R051039B	Bearing , camshaft #2 and #5	2
16	R051039A	Bearing , camshaft #3 and #4	2
17	TBD	Plug , engine block oil gallery	4
18	TBD	Valve , oil bypass	1
19	R079048	Fitting , oil filter	1
20	R077016	Filter , oil	1
21	R024183	Connector , engine oil cooler hose	2
22	R069070	Plug , engine block coolant drain hole	2
23	TBD	Plug , engine block coolant drain hole	1
24	R007028	Bearing , crankshaft (thrust)	1
25	TBD	Pin , flywheel locating	2
26	R047224	Seal , crankshaft rear oil	1
27	R007027	Bearing , crankshaft (STD)	4
28	R009196	Bolt , crankshaft bearing cap	10
29	R012023	Deflector , crankshaft oil	1
30	TBD	Nut , crankshaft oil deflector	
31	R031032	Stud , crankshaft bearing cap	9
32	TBD	Pin , crankshaft balancer locating	1
33	RM0264	Gasket , engine front cover	1
34	R004011	Cover , engine front cover (includes gasket and seal)	1
35	R047225	Seal , crankshaft front oil	1

CYLINDER BLOCK ASSEMBLY - FIGURE 1 (cont'd)

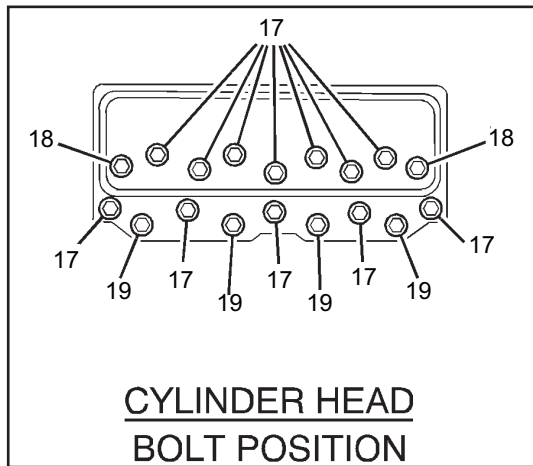
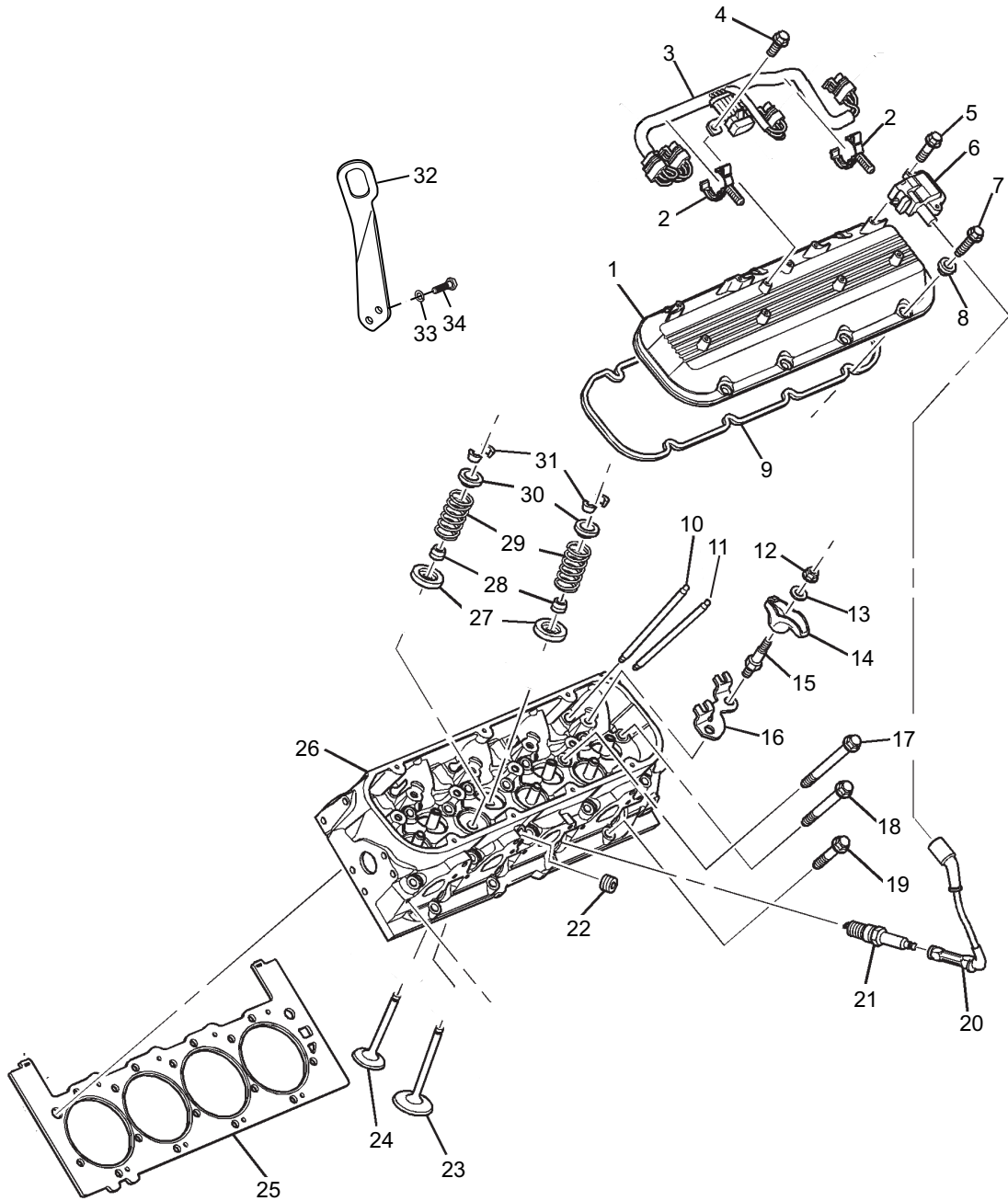


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CYLINDER BLOCK ASSEMBLY - FIGURE 1 (cont'd)

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
36	R064015A	Balancer , crankshaft (HO)	1
37	R096146	Washer , crankshaft balancer	1
38	TBD	Bolt , crankshaft balancer	1
39	TBD	Bolt , camshaft position sensor	1
40	R020035	Sensor , camshaft position sensor	1
41	TBD	Bolt , engine front cover	6
42	R054039	Sprocket , crankshaft	1
43	R006030	Crankshaft (LH HO)	1
44	R022022	Pin , engine front cover locating	1
45	R051039A	Bearing , camshaft #1	1
46	R022022	Pin , camshaft sprocket locating	1
47	TBD	Bolt , camshaft retaining	2
48	R054040	Sprocket , camshaft	1
49	R055016	Chain , camshaft timing	1
50	TBD	Bolt , camshaft sprocket	3
51	R109050	Retainer , camshaft	1
52	RA050024	Camshaft , engine (HO)	1
53	TBD	Plug , engine block oil gallery	3
54	TBD	Bolt , flywheel to crankshaft	6
NI	RS2426	Lockwasher , flywheel to crankshaft	6
55	RA138015A	Flywheel Assembly , (Bottom Mount Starter)	1

CYLINDER HEAD ASSEMBLY - FIGURE 2

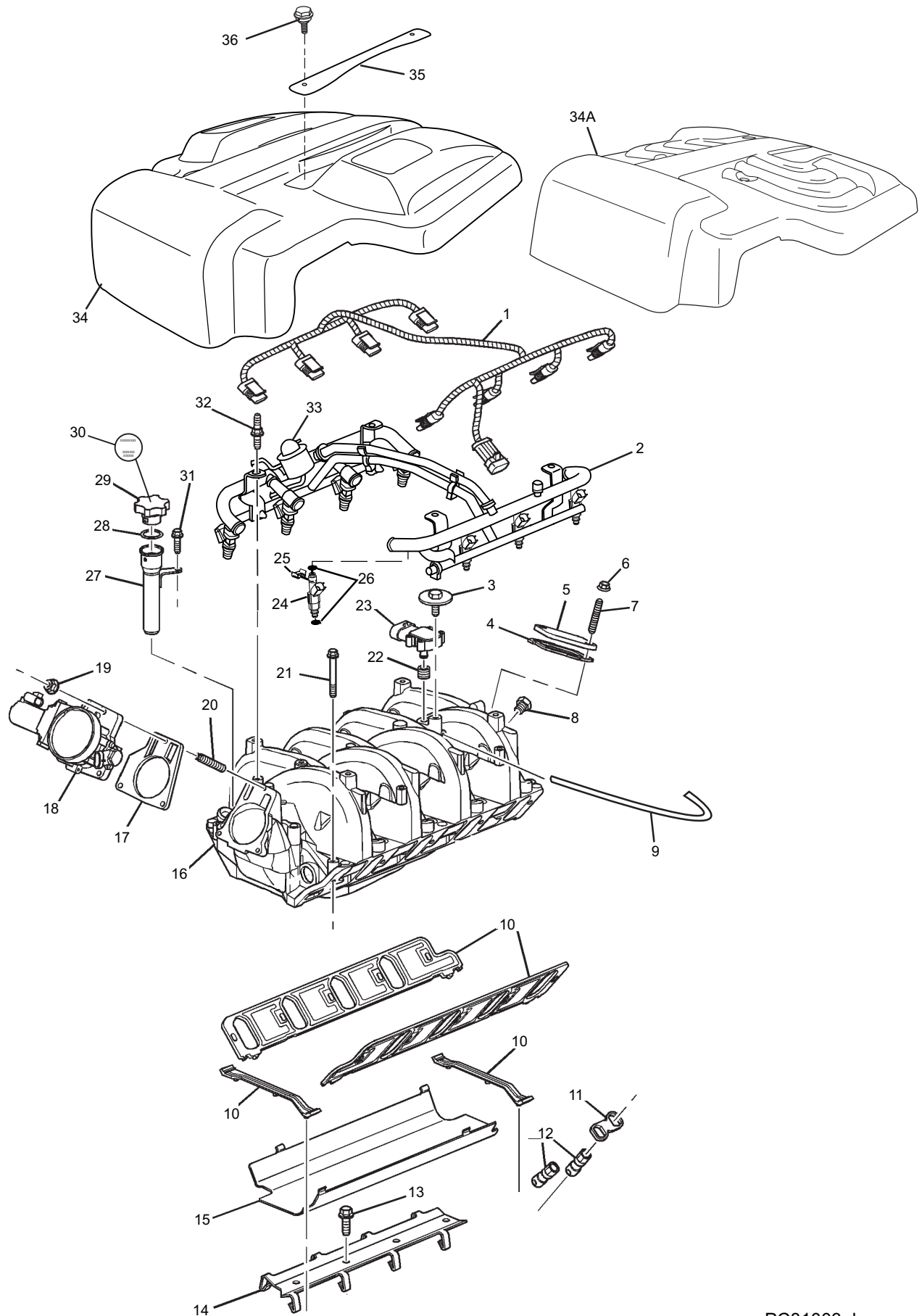


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CYLINDER HEAD ASSEMBLY - FIGURE 2

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	R033013	Cover , rocker	2
2	R127096	Retainer , ignition coil wire harness	4
3	R121074	Wire Harness , ignition coils	2
4	TBD	Bolt , ignition coil wire harness retaining	2
5	TBD	Bolt , ignition coil retaining	16
6	R117013	Coil , ignition	8
7	R009200	Bolt , rocker cover retaining	14
8	R094039	Grommet , rocker cover retaining	14
9	RM0261	Gasket , rocker cover	2
10	R039021	Push Rod , intake	8
11	R039022	Push Rod , exhaust	8
12	R017079	Nut , rocker arm attaching	16
13	TBD	Ball , rocker arm	16
14	R038018	Rocker Arm , valve	16
15	R095039	Stud , push rod guide attaching	16
16	R037003	Guide , pushrod	8
17	R009197	Bolt , cylinder head to block (long)	24
18	R009198	Bolt , cylinder head to block (medium)	4
19	R009199	Bolt , cylinder head to block (short)	8
20	RK120019A	Spark Plug Wire Set	1
21	R030009	Spark Plug	8
22	TBD	Plug , pipe (1/2")	2
23	R043033	Valve , intake	8
24	R043034	Valve , exhaust	8
25	RM0262B	Gasket , cylinder head (RH)	1
25	RM0262A	Gasket , cylinder head (LH)	1
26	R003014	Cylinder Head Assembly (RH)	1
26	R003015	Cylinder Head Assembly (LH)	1
27	R049013	Rotator , valve	16
28	R047226	Seal , valve stem	16
29	R046049	Valve Spring Assembly	16
30	R049014	Cap , valve spring	16
31	R049010	Retainer , valve stem	32
32	R042013	Bracket , lift, rear	1
33	93940000	Lockwasher , lift bracket attaching bolt	2
34	98443025	Bolt , lift bracket attaching	2

INTAKE MANIFOLD ASSEMBLY - FIGURE 3

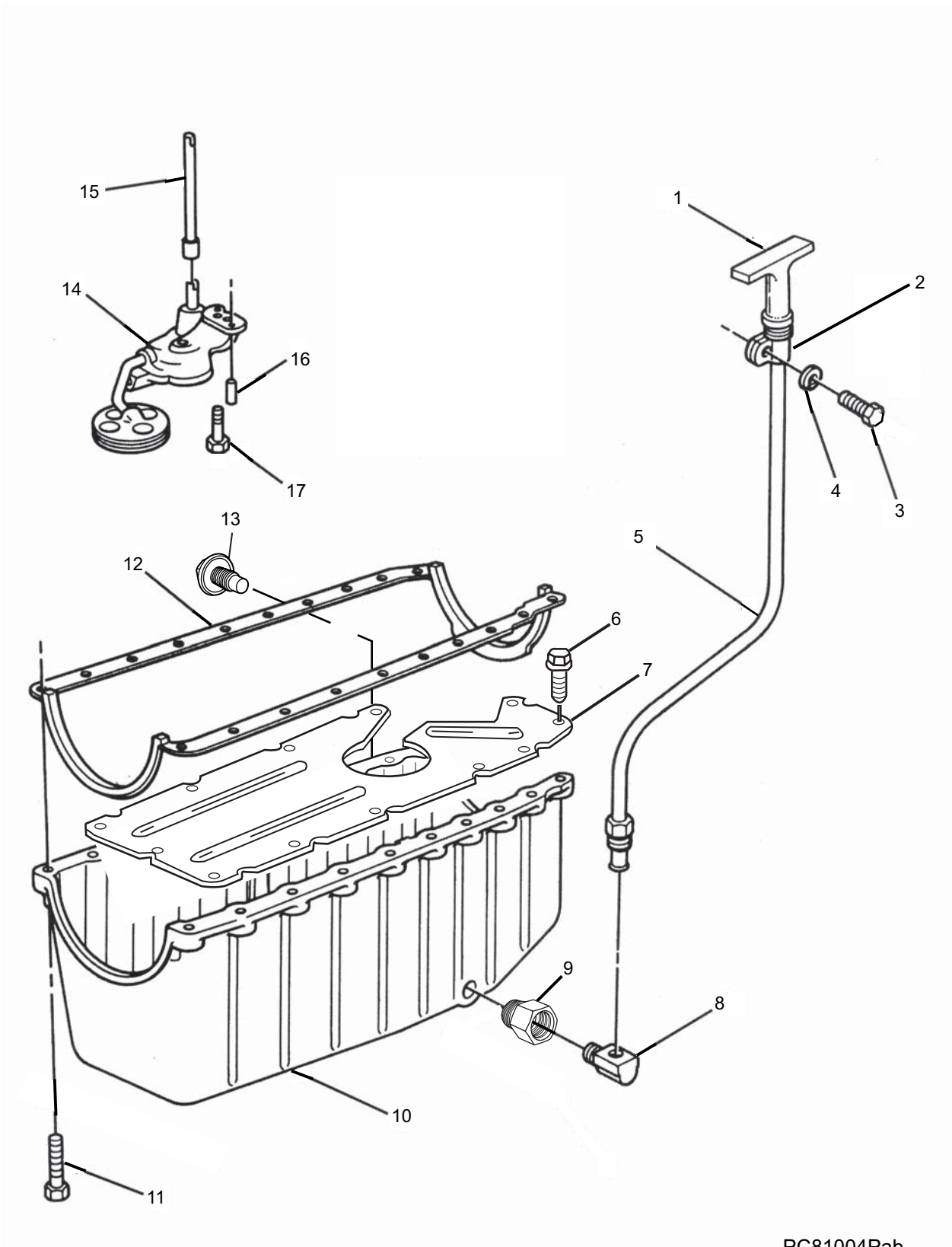


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INTAKE MANIFOLD ASSEMBLY - FIGURE 3

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	R121075	Wire Harness , fuel injectors	1
2	RA086001	Fuel Rail Assembly (thru '04 MY)	1
2	RA086001A	Fuel Rail Assembly , without fuel return line	1
3	TBD	Bolt , MAP sensor retaining	1
4	RM0265	Gasket , EGR blockoff cover	1
5	TBD	Cover , EGR blockoff	1
6	TBD	Nut , EGR blockoff cover attaching	2
7	TBD	Stud , EGR blockoff cover attaching	2
8	TBD	Plug , intake manifold core hole	1
9	20237	Hose , fuel pressure regulator vacuum	1
10	RM0267	Gasket Set , intake manifold	1
11	R037004	Guide , valve lifter	8
12	R040004	Lifter , valve	16
13	TBD	Bolt , valve lifter retainer	4
14	R090253	Retainer , valve lifter	1
15	R012025	Guard , oil splash - lifter	1
16	R002022	Intake Manifold	1
17	RM0251	Gasket , throttle body mounting	1
18	RA035036A	Throttle Body , (HO)	1
19	TBD	Nut , throttle body attaching	3
20	TBD	Stud , throttle body mounting	3
21	R009201	Bolt , intake manifold to cylinder head	10
22	TBD	Seal , MAP sensor	1
23	R020036	MAP Sensor	1
24	RA087006	Fuel Injector Assembly	8
25	R127097	Retainer , fuel injector to fuel rail	8
26	RK047227	O-Ring , kit fuel injector	8
27	R034046A	Riser , oil fill	1
28	NSS	O-Ring , oil fill riser cap	1
29	R034038B	Cap , oil fill riser	1
30	R143137	Decal , oil fill riser cap	1
31	TBD	Bolt , oil fill riser attaching	1
32	TBD	Stud , fuel rail assembly attaching	4
33	R088001	Regulator , fuel pressure	1
34	R060066	Cover , engine (S/N 455225 to present)	1
34A	NA	Cover , engine (thru S/N 455224)	1
35	R109052	Retainer , engine cover	2
36	R009204	Bolt , engine cover attaching	4
NI	R143167	Decal , Levitator	1
NI	R143158	Decal , "Ultra Low Emissions"	1
NI	R143168-04	Decal , Emissions, C.A.R.B., MY '04	1
NI	R143168-05	Decal , Emissions, C.A.R.B., MY '05	1

OIL PAN and OIL PUMP ASSEMBLY - FIGURE 4

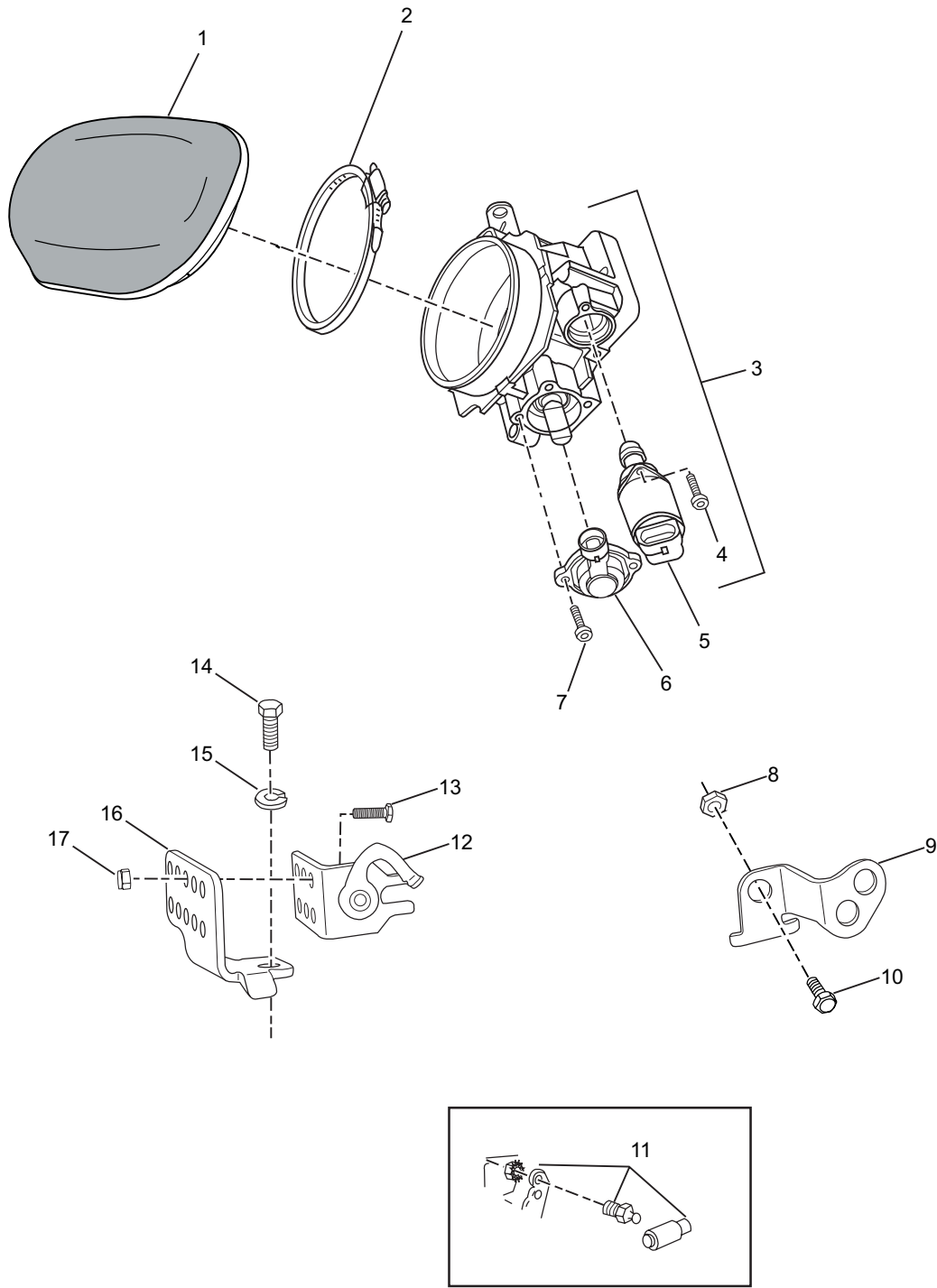


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OIL PAN and OIL PUMP ASSEMBLY - FIGURE 4

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	R041068	Dipstick , oil level	1
2	R127015	Clamp , dipstick tube attaching	2
3	98443025	Bolt , dipstick tube attaching	2
4	93940000	Lockwasher , dipstick tube attaching bolt	2
5	R041083	Dipstick Tube	2
6	TBD	Bolt , oil pan baffle	12
7	R012026	Baffle , oil pan	1
8	R024017	Elbow , dipstick tube to oil pan	2
9	R024200	Adapter , dipstick elbow to oil pan	2
10	R005023	Oil Pan	1
11	TBD	Bolt , oil pan mounting	20
12	RM0263	Gasket , oil pan	1
13	TBD	Plug , oil drain	1
14	RA070017	Oil Pump Assembly	1
15	R058055	Shaft , oil pump to oil drive	1
16	R022022	Pin , dowel - oil pump aligning	1
17	TBD	Bolt , oil pump mounting	2

THROTTLE BODY and RELATED COMPONENTS - FIGURE 5

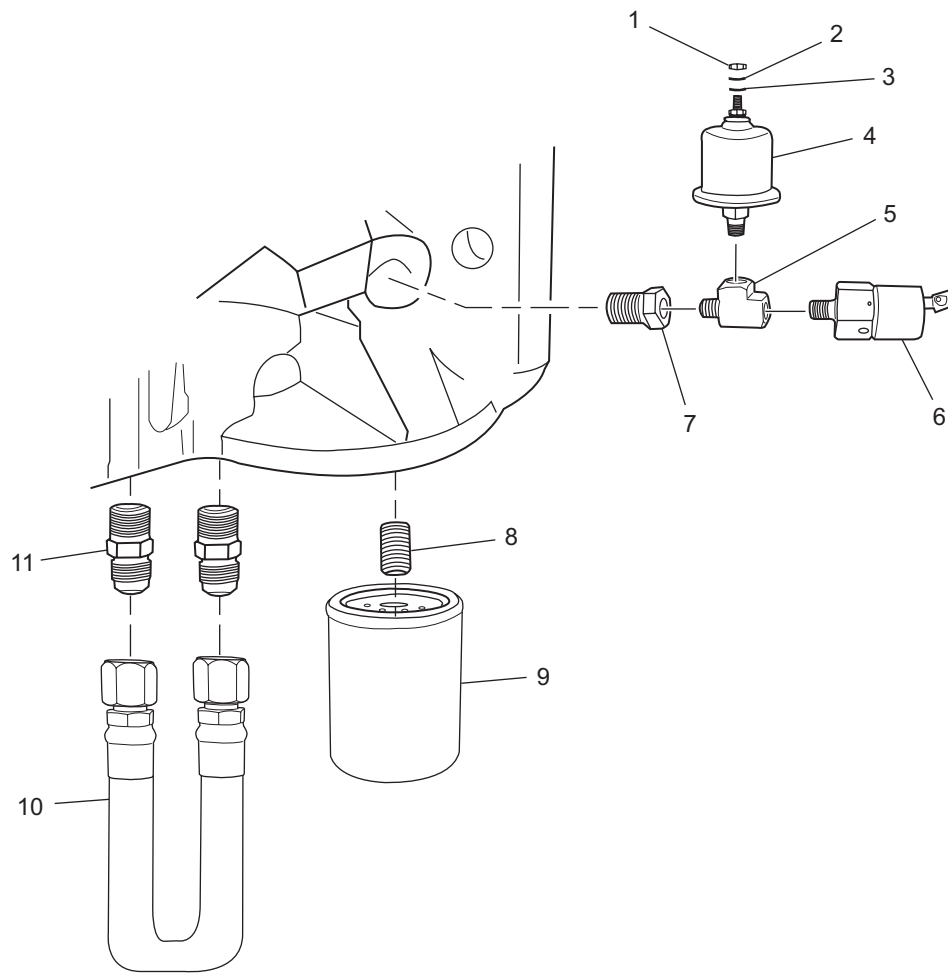


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THROTTLE BODY and RELATED COMPONENTS - FIGURE 5

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	R145021	Flame Arrestor	1
2	RS3857	Clamp , retaining	1
3	RA035036A	Throttle Body Assembly	1
4	TBD	Screw , IAC valve attaching	2
5	49060	Valve , idle air control	1
6	49061	Sensor , throttle position	1
7	TBD	Screw , TP sensor attaching	2
8	RS1078	Nut , retaining bolt	1
9	R090230	Throttle Arm , throttle body	1
10	RS0251	Bolt , throttle arm retaining	1
11	R178014	Ball Joint Assembly , cable attaching	1
12	R090086	Cable Clip , throttle attaching	1
13	RS5122	Bolt , cable clip mounting	2
14	98223016	Bolt , bracket mounting	1
15	93920000	Lockwasher , bracket mounting	1
16	R090229	Throttle Bracket , intake	1
17	RS2055	Locking Nut , cable clip mounting bolt	2

OIL FILTER COMPONENTS - FIGURE 6



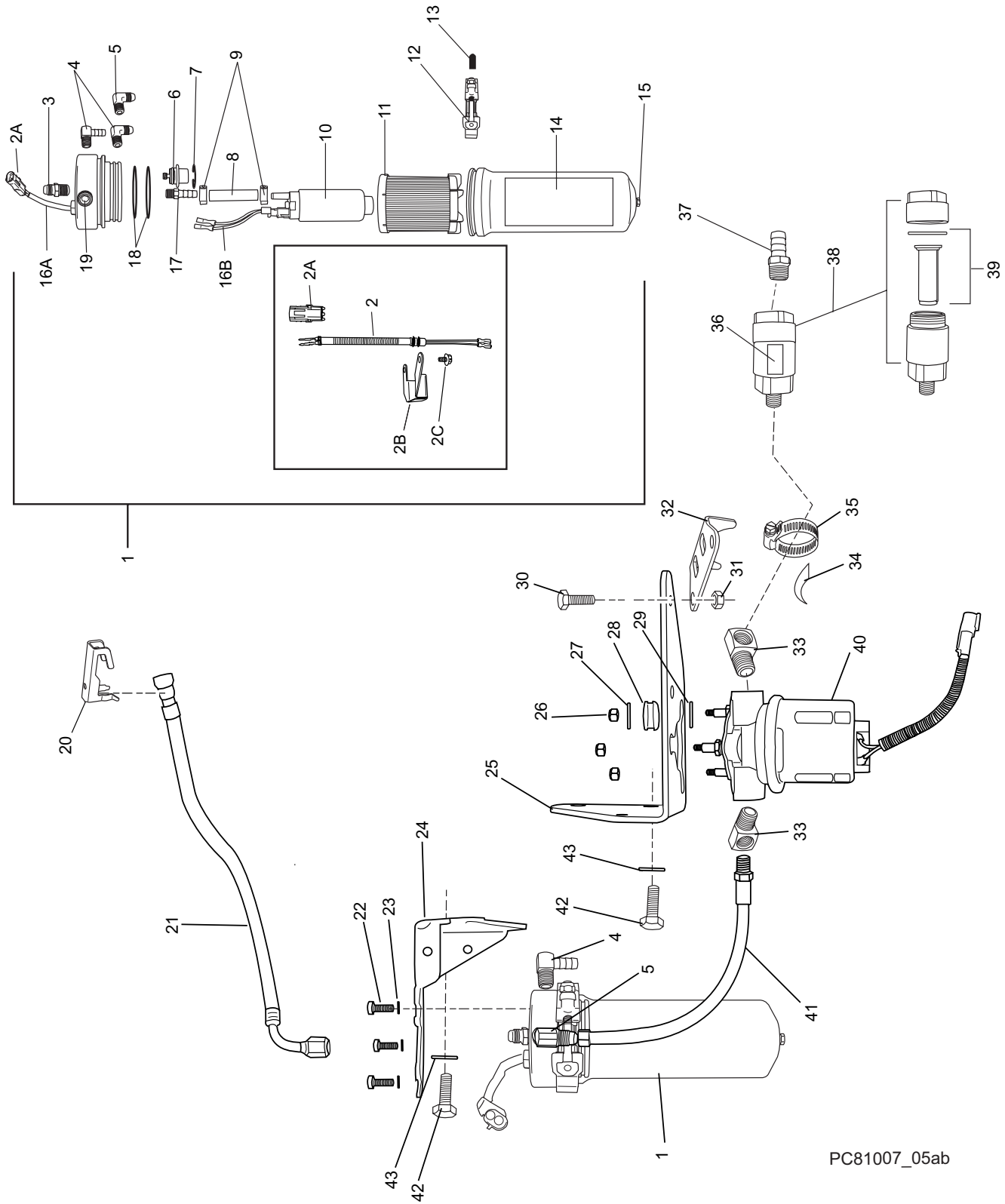
OIL FILTER COMPONENTS - FIGURE 6

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	95011000	Nut , sender terminal	1
2	95300300	Lockwasher , sender terminal	1
3	92300200	Washer , sender terminal	1
4	R020001	Sender , oil pressure	1
5	R024145	Tee , sender attaching	1
6	R020015A	Switch , oil pressure	1
7	RS3677	Adapter , sender attaching tee	1
8	R079065	Nipple , oil filter attaching	1
9	R077016	Filter , oil	1
10	RA045103A	Hose Assembly , oil bypass	1
11	R024183	Fitting , oil bypass hose	2

FUEL CONTROL CELL (FCC) COMPONENTS (thru S/N 455414) - FIGURE 7

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	RA085090	Hose Assembly , FCC to fuel rail (inlet)	1
2	RA085091	Hose Assembly , fuel rail to FCC (return)	1
3	RS0302	Bolt , FCC mounting	3
4	RS2180	Lockwasher , FCC mounting	3
5	R090227	Bracket , FCC mounting	1
6	R090228	Bracket , low-pressure fuel pump mounting	1
7	RS1521L	Locking Nut , fuel pump terminal	3
8	R096141	Washer , fuel pump mounting	3
9	R094035	Grommet , mounting bracket	3
10	R096142	Washer , fuel pump mounting	3
11	R024227	Fitting , 90 degree, 1/4 NPT X 1/2 Hose	2
12	RA080018	Fuel Pump , low-pressure	1
13	RA085070	Hose Assembly , low-pressure pump to FCC	1
14	RA080029	Fuel Control Cell (FCC) Assembly	1
15	R024163	Fitting , 1/4 NPT X SAE (from LPFP)	1
16	RP080026	Fuel Filter , FCC Assembly	1
17	R047214	O'Ring , FCC seal	1
18	RA080027	Fuel Pump , high pressure	1
19	R127087	Clamp , Oetiker	2
20	R045098	Hose , 5/16 I.D. - 1/2 O.D.	1
21	R024175	Fitting , fuel line	1
22	R024163A	Fitting , fuel line	1
23	R035031	Fitting , fuel pressure, Schrader valve	1
24	R127100	Retainer , fuel line	2
25	R024192	Fitting , fuel line	1
26	R024225	Fitting , 90 degree, 1/4 NPT X 3/8 Hose	1
NI	R034041	Cap , Schrader valve	1

FUEL CONTROL CELL (FCC) COMPONENTS (S/N 455415 to Present) - FIGURE 8

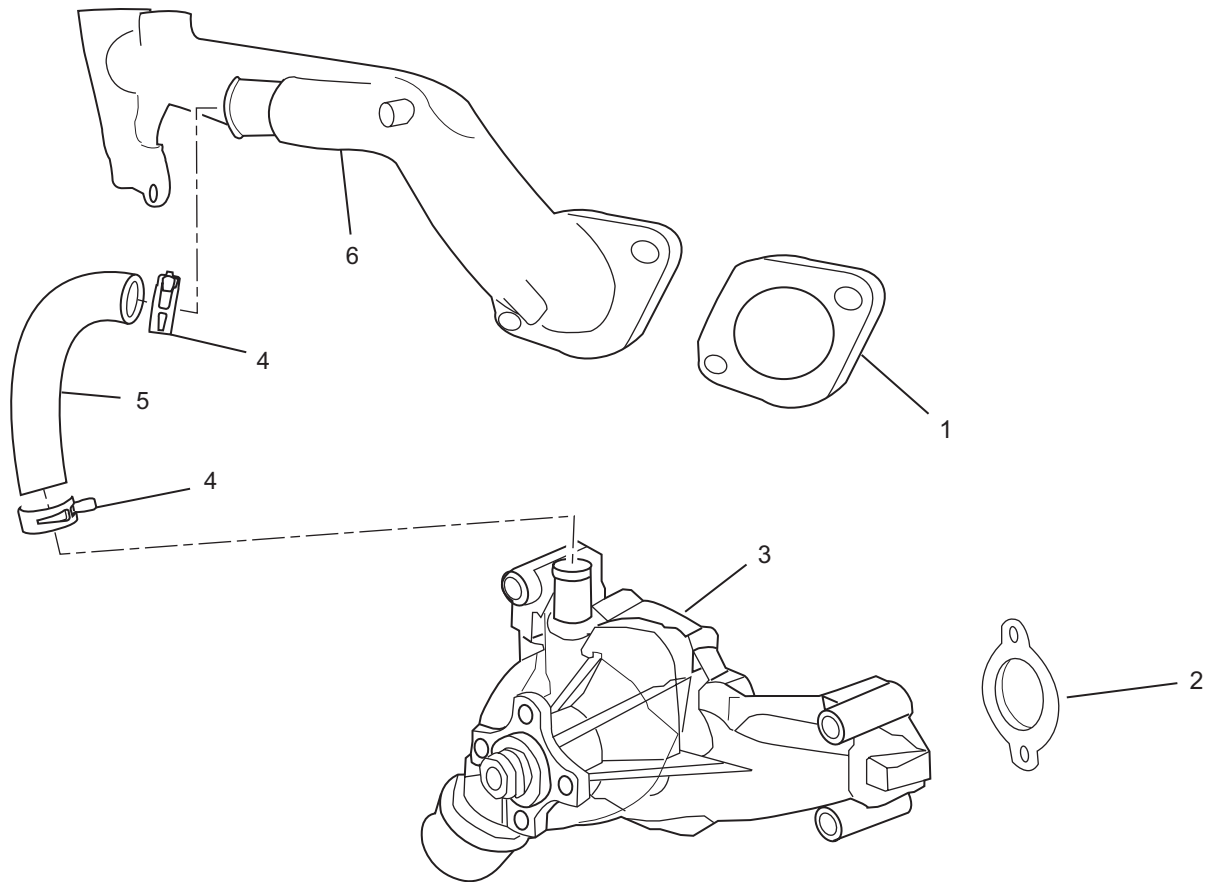


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FUEL CONTROL CELL (FCC) COMPONENTS (S/N 455415 to Present) - FIGURE 8

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 3/8 Hose (return to tank)	1
4	R024224	Fitting , 1/4 NPT to SAE (return to tank)	AR
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	RA085090	Hose Assembly , FCC to fuel rail (inlet)	1
22	RS0302	Bolt , FCC attaching	3
23	RS2180	Lockwasher , FCC attaching	3
24	R090227	Bracket , FCC mounting	1
25	R090228A	Bracket , low-pressure fuel pump mounting	1
26	RS1521L	Locking Nut , low-pressure fuel pump	3
27	R096141	Washer , flat, mounting, upper	3
28	R094035A	Grommet , isolator	3
29	R096142	Washer , fuel pump mounting, lower	3
30	RS0251	Bolt , pre-filter bracket attaching	2
31	RS1078	Nut , w/lockwasher, pre-filter bracket attaching	2
32	R090272	Bracket , pre-filter mounting	1
33	R024192	Fitting , 90 degree, LPFP	2
34	R094040	Isolator , rubber, w/ adhesive	1
35	RS3858	Clamp , pre-filter 1 1/4"	1
36	R143174	Decal , pre-filter	1
37	R024218	Fitting , fuel inlet, pre-filter, 3/8 NPT X 1/2 hose barb	1
38	RA077014	Fuel Pre-filter Assembly, 150 micron	1
39	RP077014	Kit , fuel filter and seal	1
40	RA080018	Fuel Pump , low-pressure	1
41	RA085070	Hose Assembly , low-pressure pump to FCC	1
42	98443025	Bolt , FCC/LPFP bracket attaching, block	4
43	93940000	Lockwasher , FCC/LPFP bracket attaching, block	4
NI	R143114	Decal , Warning, fuel leaks	1

WATER PUMP / WATER CROSSOVER COMPONENTS - FIGURE 9

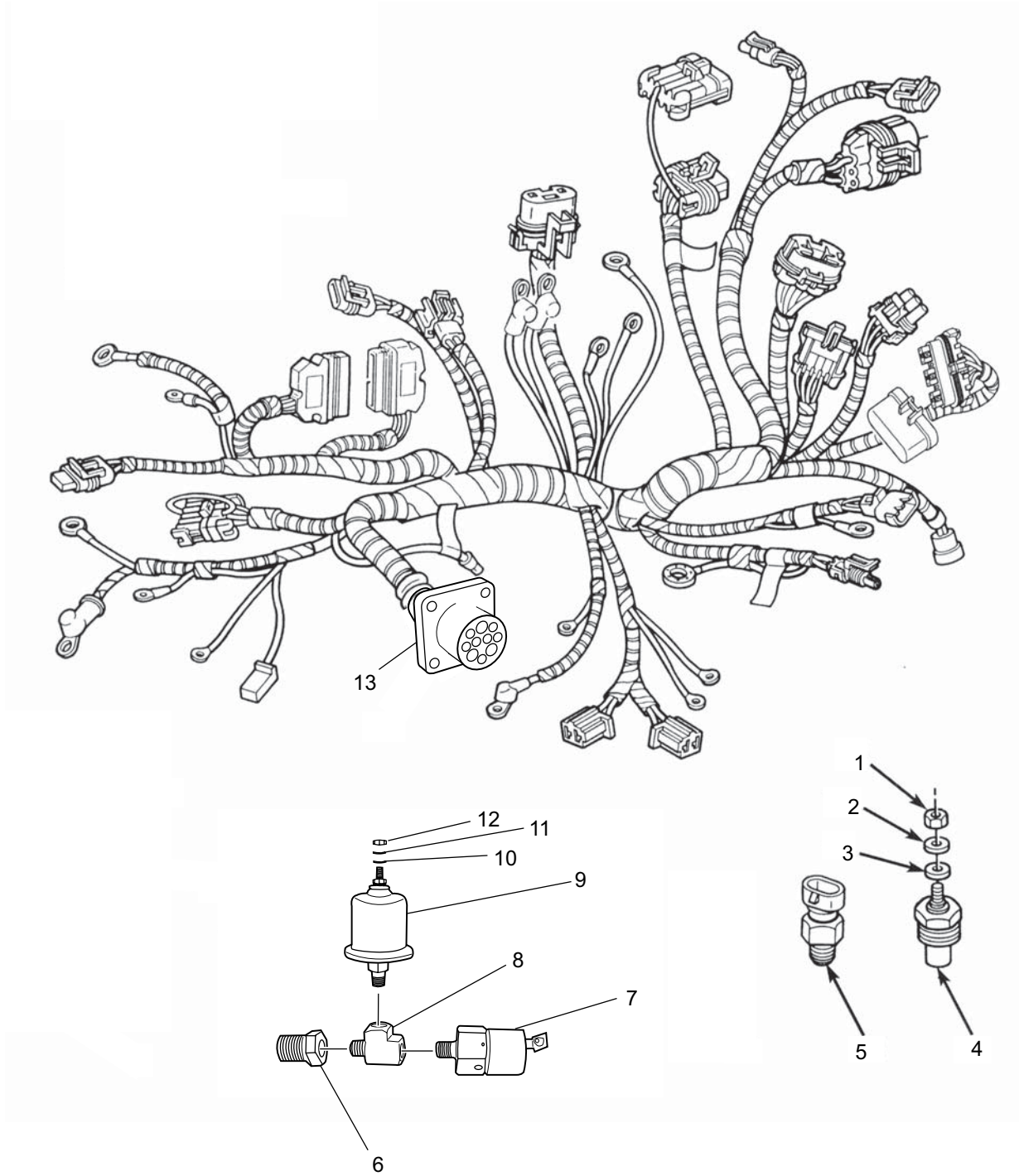


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WATER PUMP / WATER CROSSOVER COMPONENTS - FIGURE 9

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	RM0268	Gasket , water crossover to engine block	2
2	RM0266	Gasket , water pump to engine block	2
3	RA057030	Water Pump Assembly	1
4	RS3864	Clamp , hose	2
5	R045116A	Hose , circulation pump to water crossover	1
6	R025034	Water Crossover	1

WIRING HARNESS ASSEMBLY and SENDERS - FIGURE 10

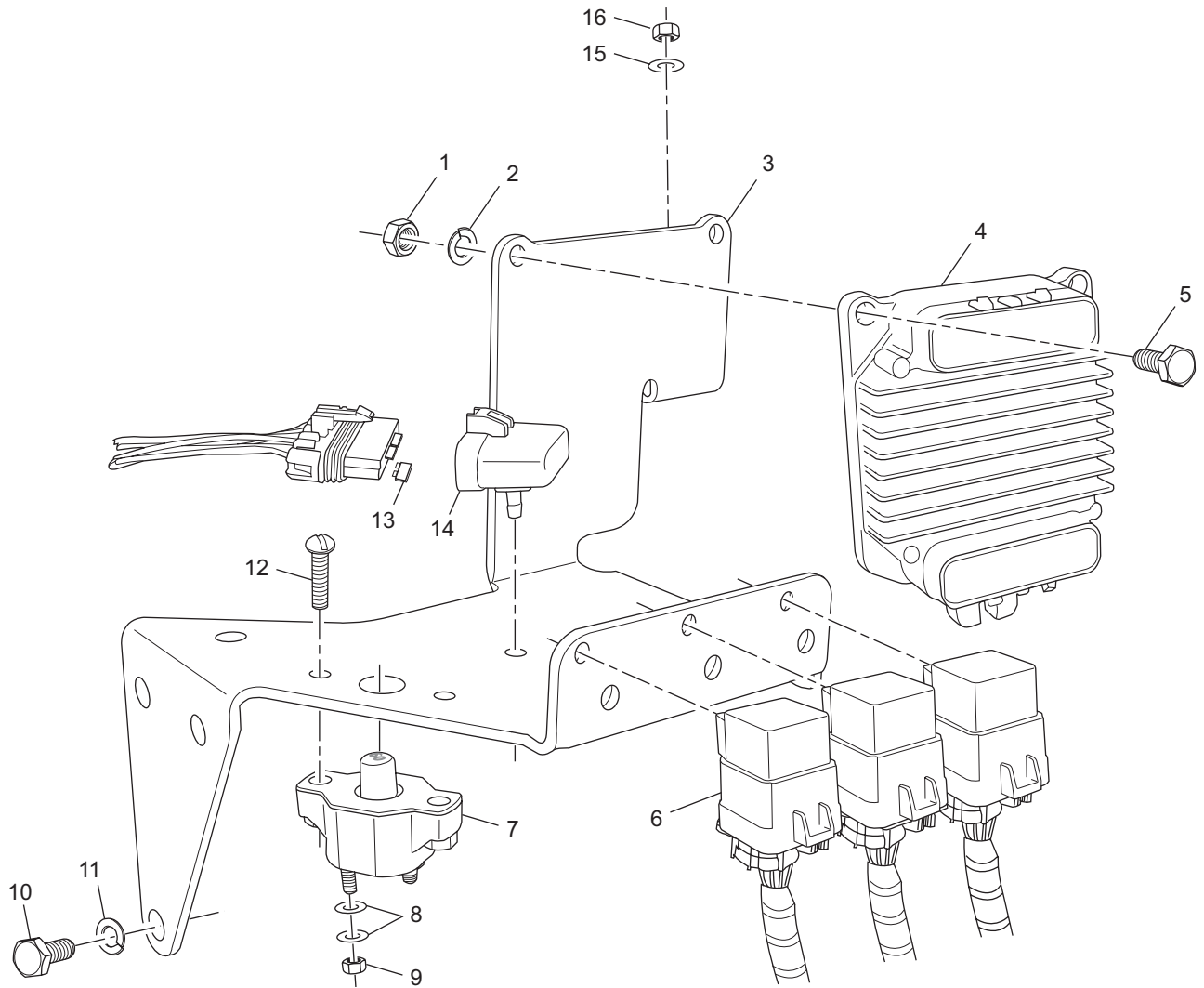


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WIRING HARNESS ASSEMBLY and SENDERS - FIGURE 10

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	RS1540	Nut , sender terminal	1
2	RS2197	Lockwasher , sender terminal	1
3	RS2746	Washer , sender terminal	1
4	R020003	Sender , temperature (SS)	1
5	R020019	Sensor , engine coolant temperature (ECT)	1
7	RS3677	Adapter , sender attaching tee	1
8	R020015A	Switch , oil pressure (SS)	1
9	R024145	Tee , sender attaching	1
10	R020001	Sender , oil pressure (SS)	1
11	RS2746	Washer , sender terminal	1
12	RS2197	Lockwasher , sender terminal	1
13	RS1540	Nut , sender terminal	1
14	RA121071B	Engine Wiring Harness Assembly	1

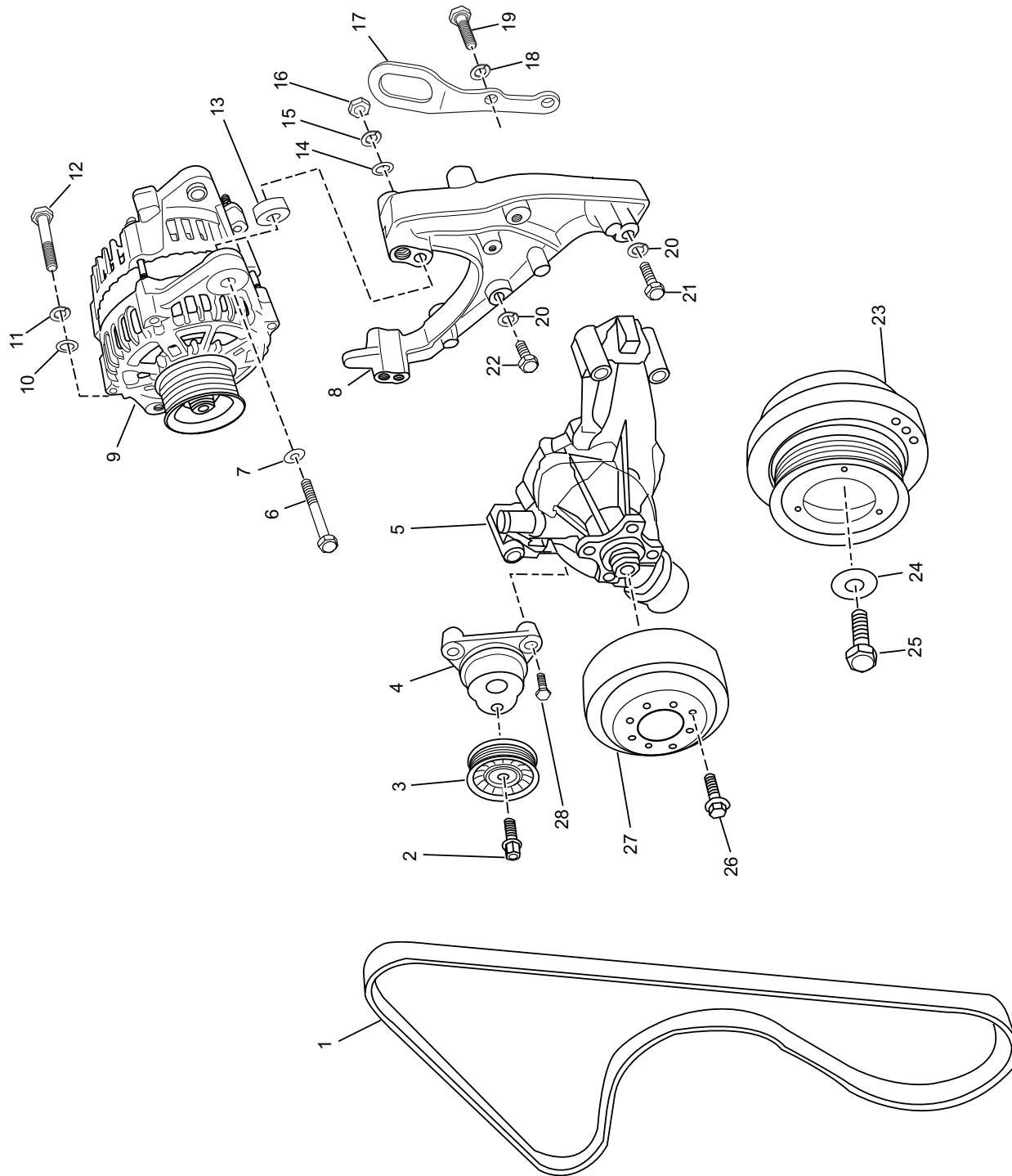
ECM and RELAYS - FIGURE 11



ECM and RELAYS - FIGURE 11

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	RS1078	Nut , ECM mounting	3
2	92100000	Washer , ECM mounting	3
3	R090300	Bracket , ECM/relay mounting	1
4	R116021M	Electronic Control Module (ECM) S/N 445074-455414, cksum 63857 (F971)	1
4	R116021Z	Electronic Control Module (ECM) S/N 455415-present, cksum 37787 (939B)	1
5	RS0254	Bolt , ECM mounting	3
6	R130011A	Relay Assembly , fuel pump and ignition	3
7	R153006C	Circuit Breaker Assembly (60 amp)	1
8	NSS	Washer , circuit breaker terminal	4
9	NSS	Nut , circuit breaker terminal	2
10	L00915	Bolt , ECM/relay mounting bracket attaching	1
11	93940000	Lockwasher , bracket mounting bolt	1
12	RS5084	Screw , circuit breaker mounting	2
13	R153017B	Fuses , 20 amp	3
14	R126014	Cover , fuse holder	1
15	RS2178	Lockwasher , ECM/relay bracket attaching	1
16	97224000	Nut , ECM/relay bracket attaching	1

ACCESSORY DRIVE SYSTEM COMPONENTS - FIGURE 12

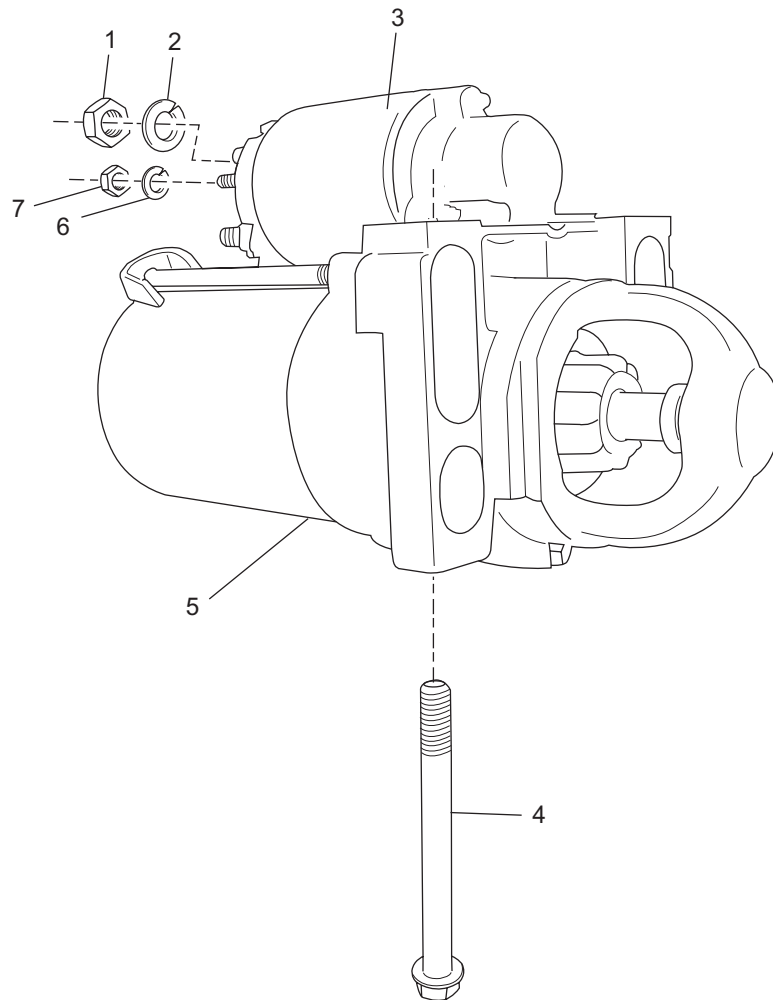


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ACCESSORY DRIVE SYSTEM COMPONENTS - FIGURE 12

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	R066024	Belt , accessory drive	1
2	NSS	Bolt , tensioner attaching	1
3	NSS	Pulley , belt tensioner	1
4	RA068001	Tensioner , belt (includes items #2 and #3)	1
5	RA057030	Water Pump Assembly	1
6	98333110	Bolt , alternator attaching	1
7	92930000	Washer , alternator attaching bolt	1
8	R090225	Bracket , alternator mounting	1
9	RA097007	Alternator Assembly (65 amp)	1
10	92930000	Washer , alternator attaching bolt	1
11	93930000	Lockwasher , alternator attaching bolt	1
12	90205300	Bolt , alternator attaching	1
13	R062081	Spacer , alternator mounting	1
14	92930000	Washer , alternator mounting bolt	1
15	93930000	Lockwasher , alternator mounting bolt	1
16	97330000	Nut , alternator mounting	1
17	R042009	Bracket , lift	1
18	93940000	Lockwasher , lift bracket attaching bolt	2
19	98443025	Bolt , lift bracket attaching	2
20	93940000	Lockwasher , alternator bracket attaching bolt	2
21	98449055	Bolt , alternator bracket attaching bolt (long)	1
22	98449050	Bolt , alternator bracket attaching (short)	1
23	R064015A	Balancer , crankshaft (HO)	1
24	TBD	Washer , crankshaft balancer	1
25	TBD	Bolt , crankshaft balancer	1
26	TBD	Bolt , engine circulating pump pulley mounting	4
27	R065044	Pulley , engine circulating pump	1
28	98443050	Bolt , belt tensioner mounting	2

STARTER ASSEMBLY COMPONENTS - FIGURE 13



PC60P_016
11-8-02

STARTER ASSEMBLY COMPONENTS - FIGURE 13

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	RS7019	Nut , solenoid terminal	1
2	TBD	Lockwasher , solenoid terminal	1
3	RU0050A	Solenoid , starter	1
4	R009203	Bolt , starter mounting	2
5	RA122015	Starter Motor Assembly	1
6	93003000	Lockwasher , solenoid terminal	1
7	RS7036	Nut , solenoid terminal	1