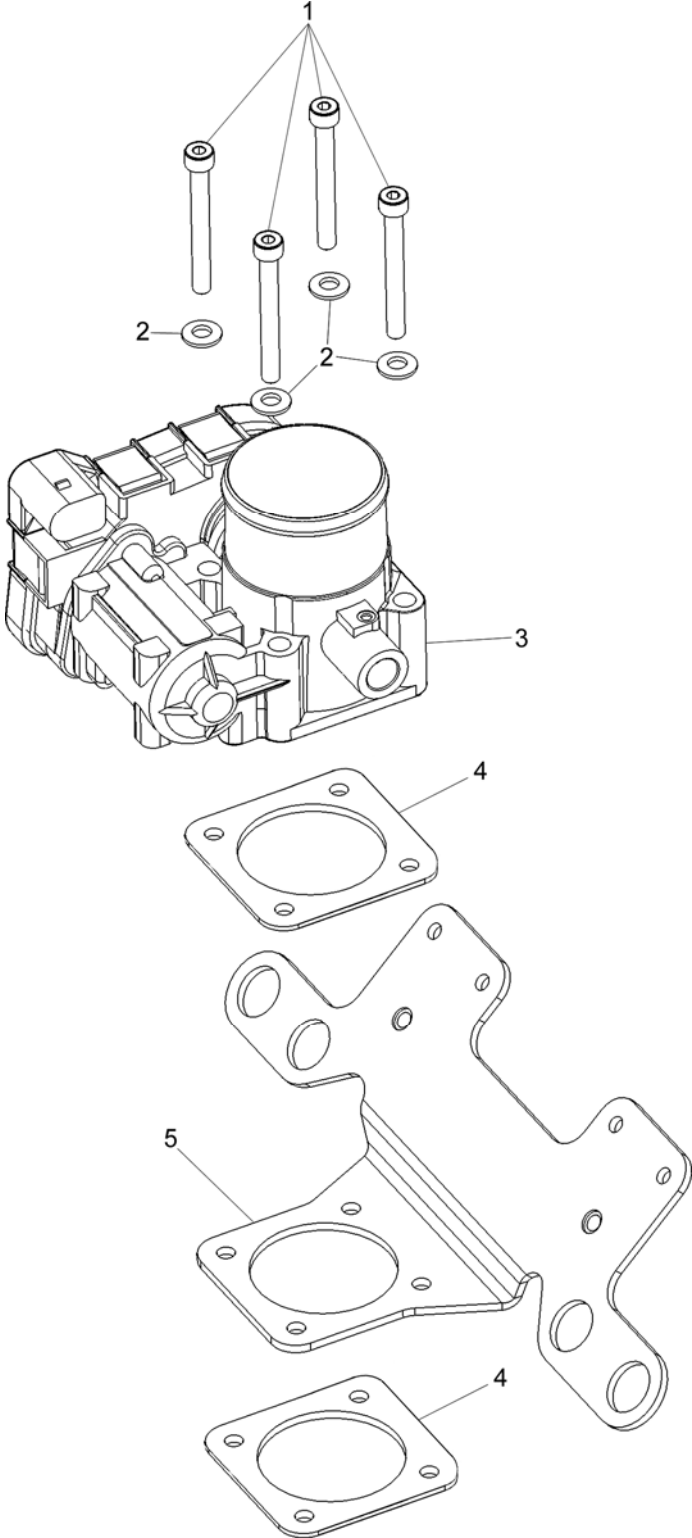


# LPG Parts Diagram

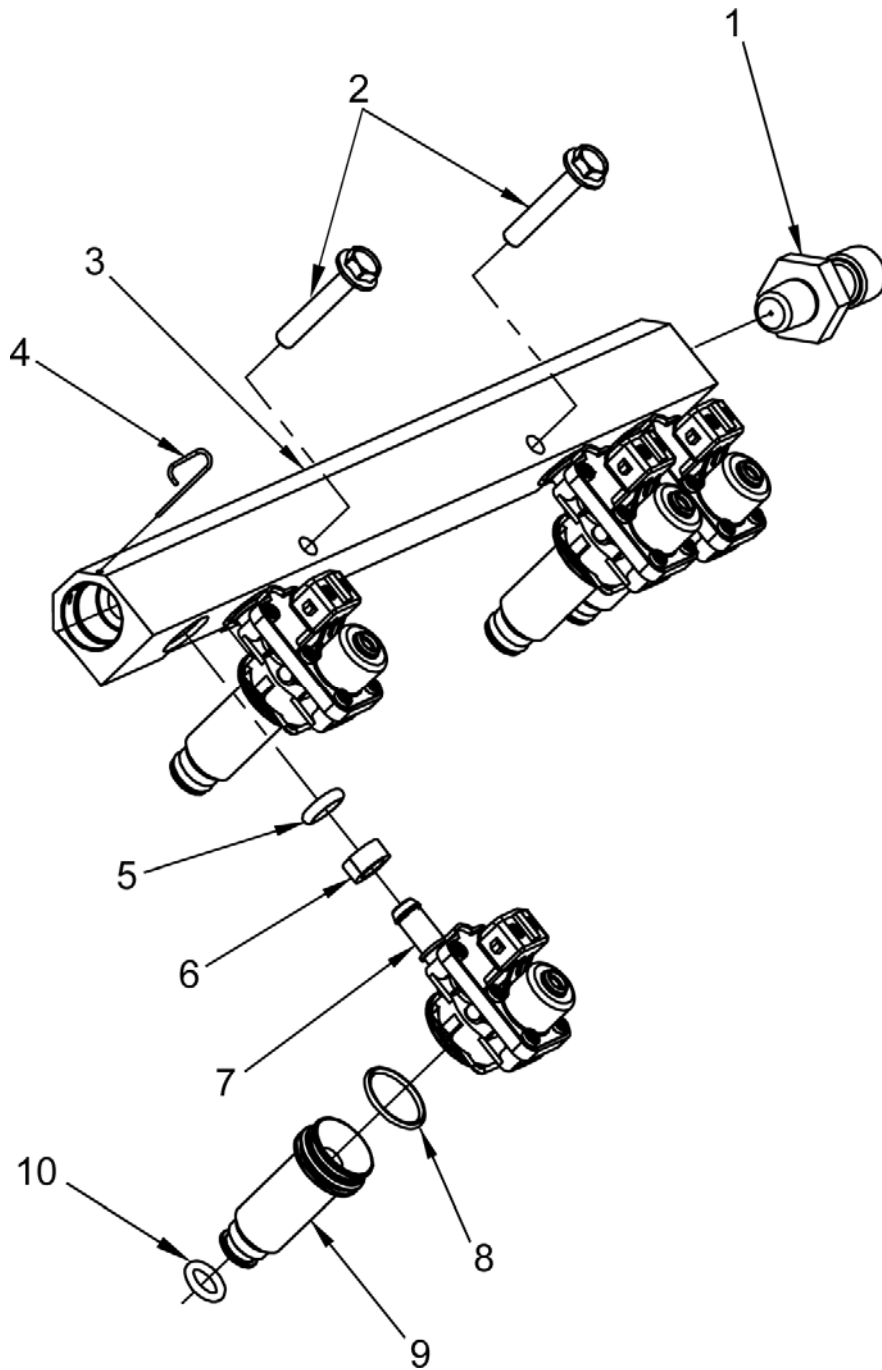
THROTTLE BODY ASSEMBLY



## MIXER AND THROTTLE BODY ASSEMBLY

Item #	Description	Qty	IMPCO Part Number
1	Screw, Hex Sck Cap	4	S1-30295-0655
2	Washers, Conical Spring 6mm	4	W1-31039-006
3	Throttle Body	1	A7-324
4	Gasket, Throttle Body	2	A7-245
5	Bracket, Fuel Rail Mount	1	B4-51980-001

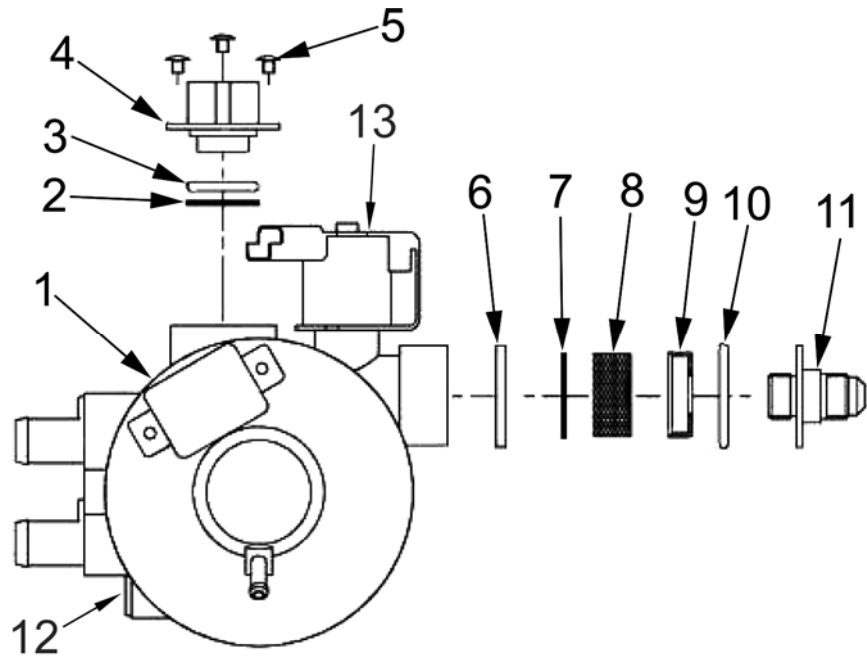
# FUEL RAIL & INJECTORS



## FUEL RAIL & INJECTORS

Item #	Description	Qty	IMPCO Part Number
1	Sensor, Fuel Rail Pressure	1	A7-473
2	Screw, Hex Flange M6-1.0 x 35 mm	2	P1-30559
3	Fuel Rail, 3.0L	1	R8-51549-001
4	Pin, Retaining	1	P1-30559
5	O-Ring, Inlet	4	A7-657
6	Spacer, O-ring	4	A7-656
7	Injector, LPG/CNG	4	A7-654
8	O-ring, Adapter	4	A7-655
9	Adapter, Fuel Injector	4	A4-51981-001
10	O-ring, FKM-75 .362 ID	4	GMN-033

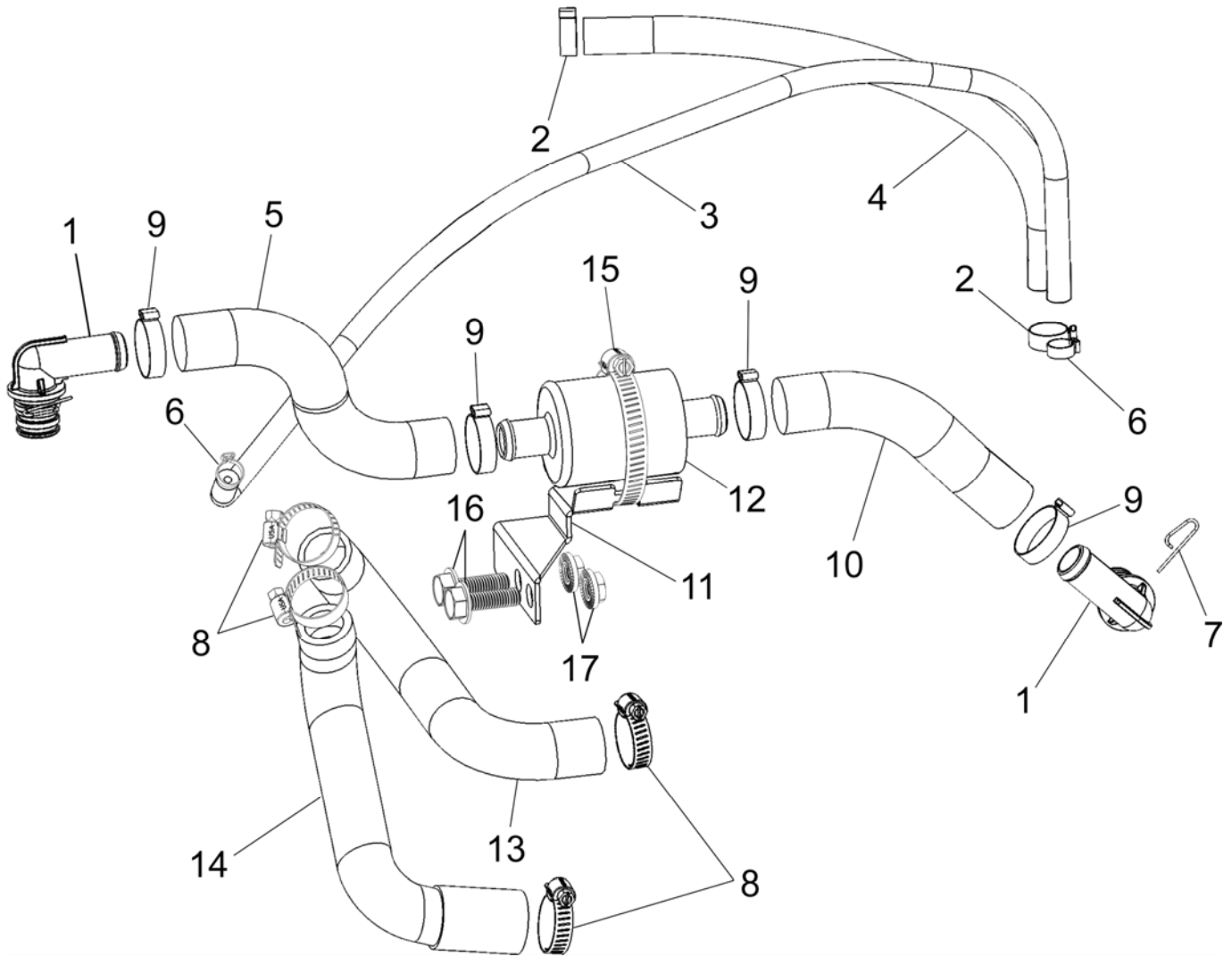
# REGULATOR ASSEMBLY



## REGULATOR ASSEMBLY

Item #	Description	Qty	IMPCO Part Number
1	Regulator Assy (Fully Assembled with all parts)	1	A7-434
	Filter Kit (Includes 2, 6, 7, 8, 9)	1	A7-170
	Outlet Fitting Service Kit (Includes 3 & 4)	1	A7-172
5	Screw Kit (Includes 3 screws)	1	A7-176
	Inlet Fitting w/O-Ring (Includes 10 & 11)	1	A7-171
12	Drain Plug & O-ring Kit (Includes 12 & O-ring)	1	A7-173
13	Lock-Off Assembly	1	A7-175

# HOSE ASSEMBLIES COOLANT/VACUUM/FUEL

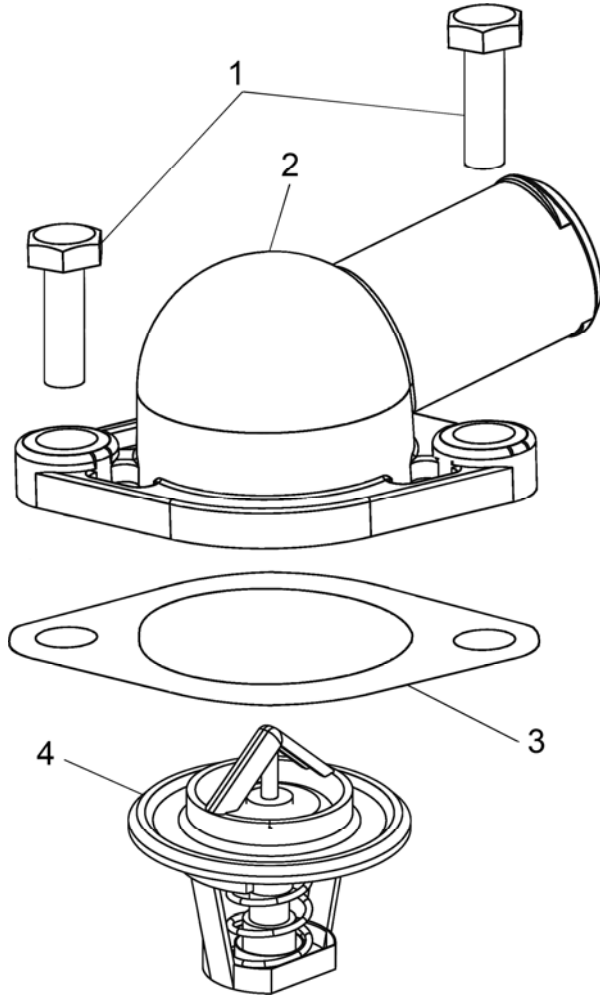




## HOSE ASSEMBLIES COOLANT/VACUUM/FUEL

Item #	Description	Qty	IMPCO Part Number
1	Fitting, Port	1	AF4-50733-001
2	Clamp, Oetiker	2	C1-51552-07-170
3	Hose, Vacuum	1	H1-19231-001
4	Hose 3/8" ID Fuel/Oil	1	H1-19231-004
5	Hose, 5/8" Fuel/Oil	1	H1-19231-006
6	Clamp, Ear Oetiker	2	C2-51552-05-113
7	Pin, Retaining	1	P1-30559
8	Clamp, Worm Drive	4	0130845
9	Clamp, Oetiker	4	C1-51552-07-256
10	Hose, 5/8" ID Fuel/Oil	1	H1-19231-006
11	Bracket, Vapor Filter	1	A10-167
12	Filter, LPG Vapor	1	A8-367
13	Hose, Formed Gate	1	H1-50599-001
14	Hose, Formed Gate	1	
15	Clamp, Worm Drive	1	A10-169
16	Bolt, M8 x 1.25 x 25	2	1510113
17	Nut, Hex	2	97330010

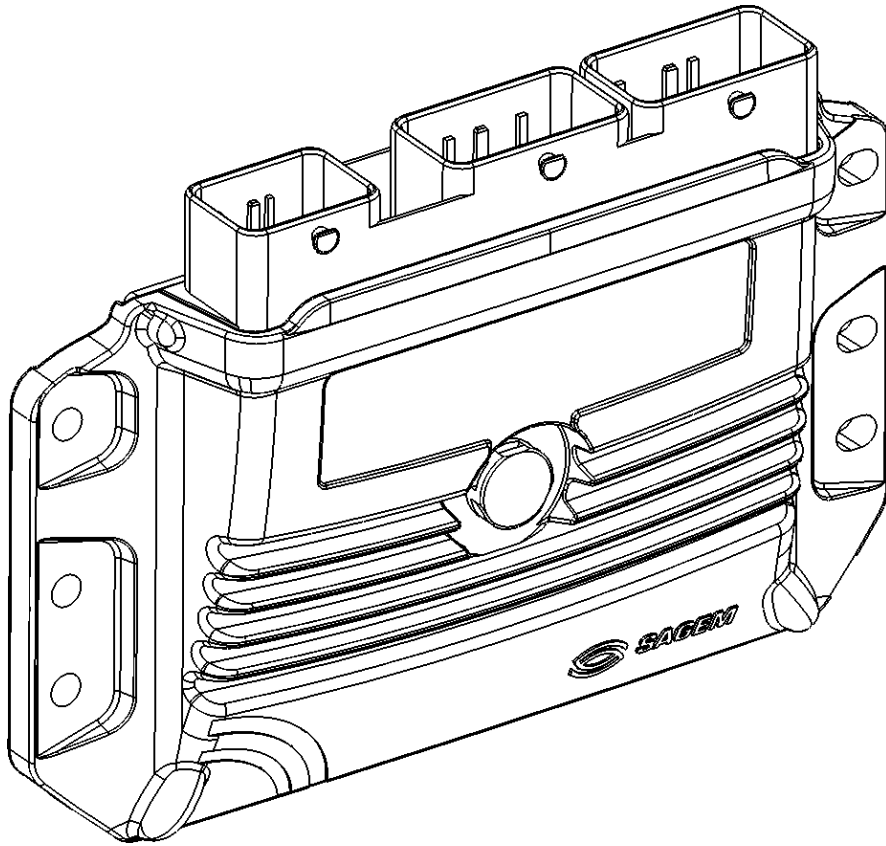
# THERMOSTAT & HOUSING



## THERMOSTAT & HOUSING

Item #	Description	Qty	Part Number	GM Part Number
1	Bolt	2	90328100	09424320
2	Thermostat Housing	1	7142071	14096853
3	Gasket, Thermostat Housing	1	7140310	10105135
4	Thermostat	1	7140340	10220957

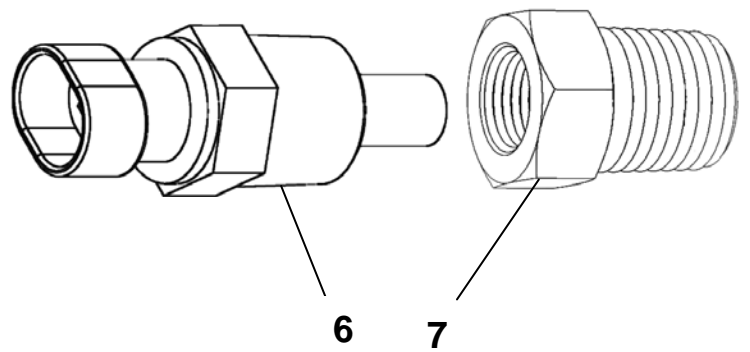
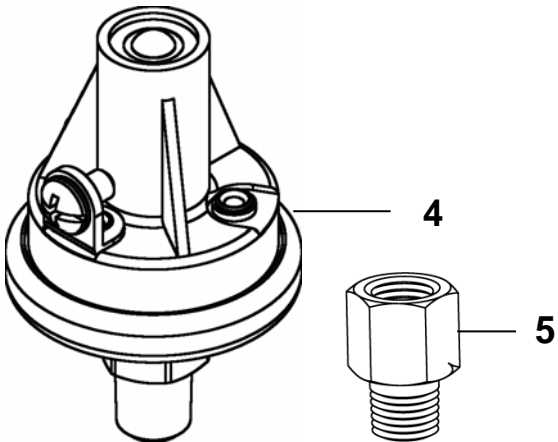
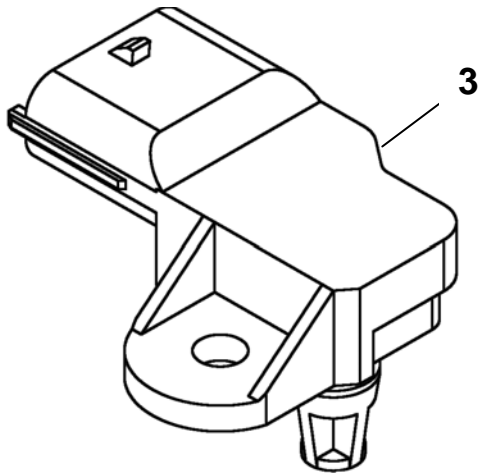
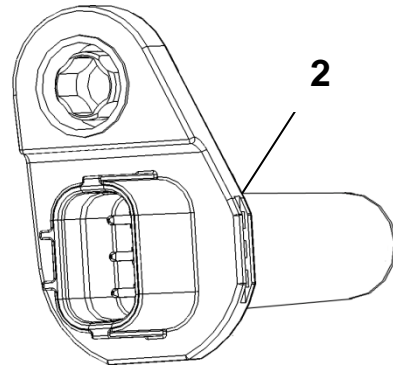
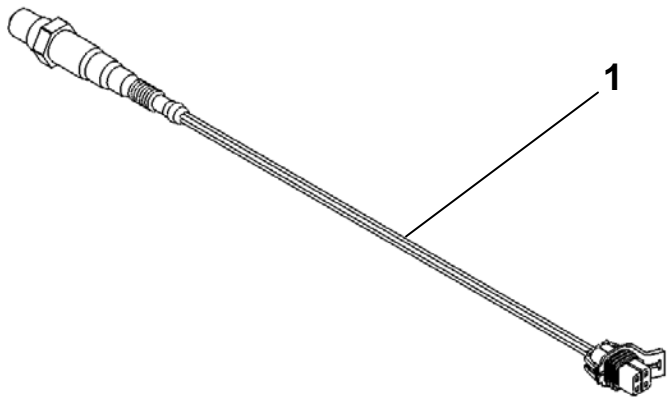
## ENGINE CONTROL MODULE



## ENGINE CONTROL MODULE

Item #	Description	Qty	IMPCO Part Number
1	ECM, Liugong	1	A11-173

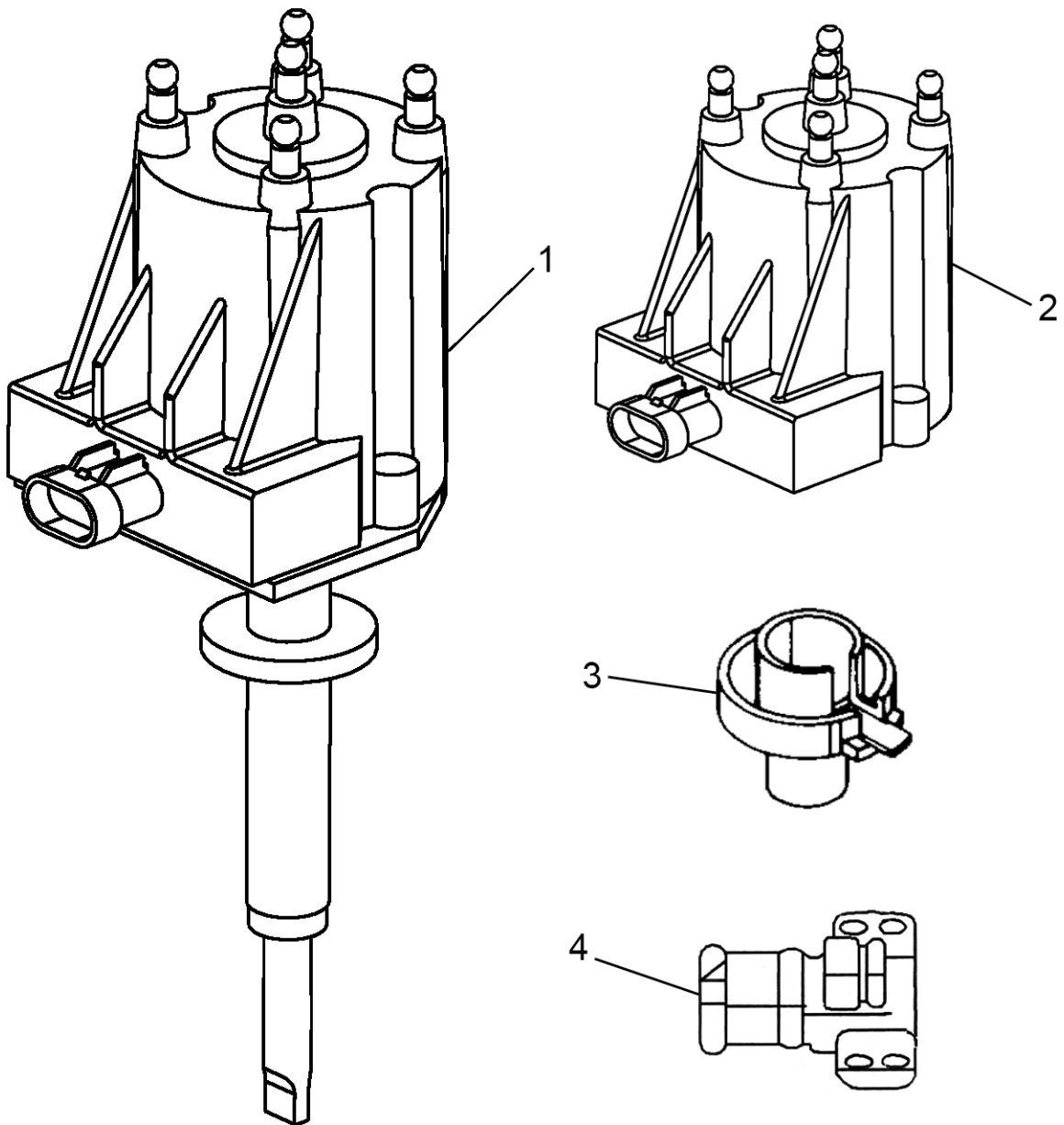
# SENSORS



## SENSORS

Item #	Description	Qty. Used	IMPCO Part Number	GM Part Number
1	HEGO	1	S8-50328-001	
2	Crank Sensor	1	S8-51822-001	12567712
3	Sensor, TMAP	1	E1466001	
4	Oil Pressure Switch	1	S10-50352-001	
5	Adapter, Oil Pressure Switch	1	7242360	
6	Coolant Temp Switch	1	7144790	
7	Adapter, Coolant Switch	1	7176570-06	

# DISTRIBUTOR

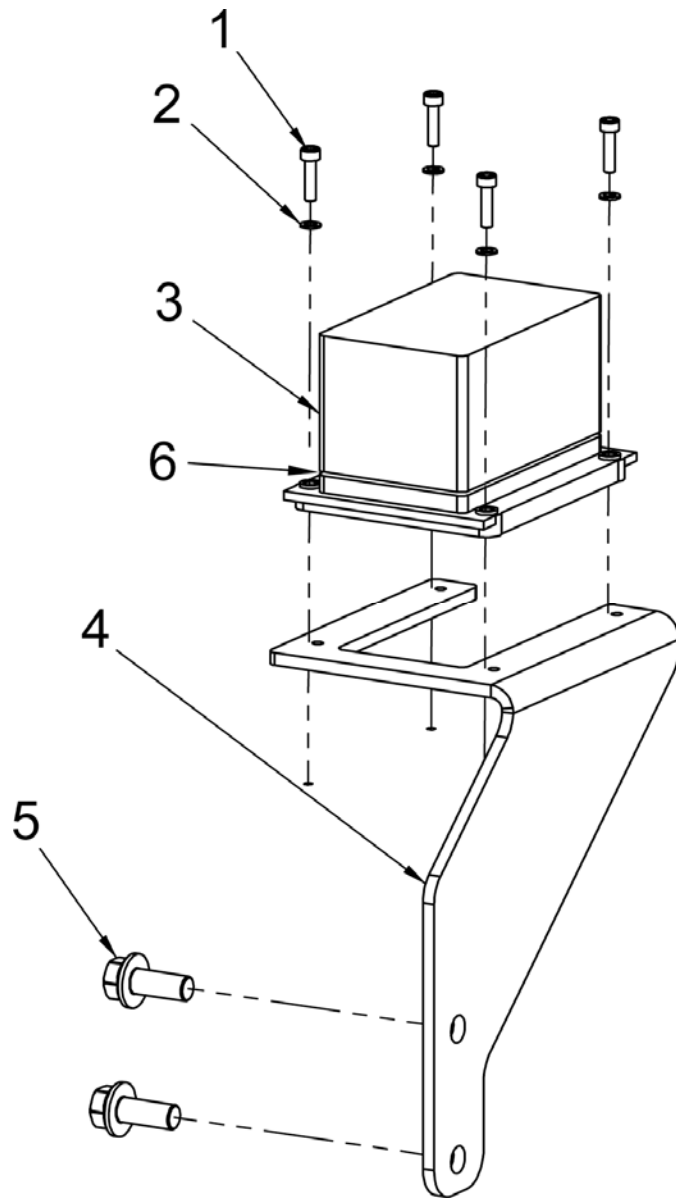




## DISTRIBUTOR

<b>Item #</b>	<b>Description</b>	<b>Qty.</b>	<b>Part Number</b>	<b>GM Part Number</b>
1	Distributor	1	93442429	93442429
2	Distributor Cap	1	89060454	89060454
3	Rotor	1	7241620	10467546
4	Module/Sensor	1	7245370	10485432

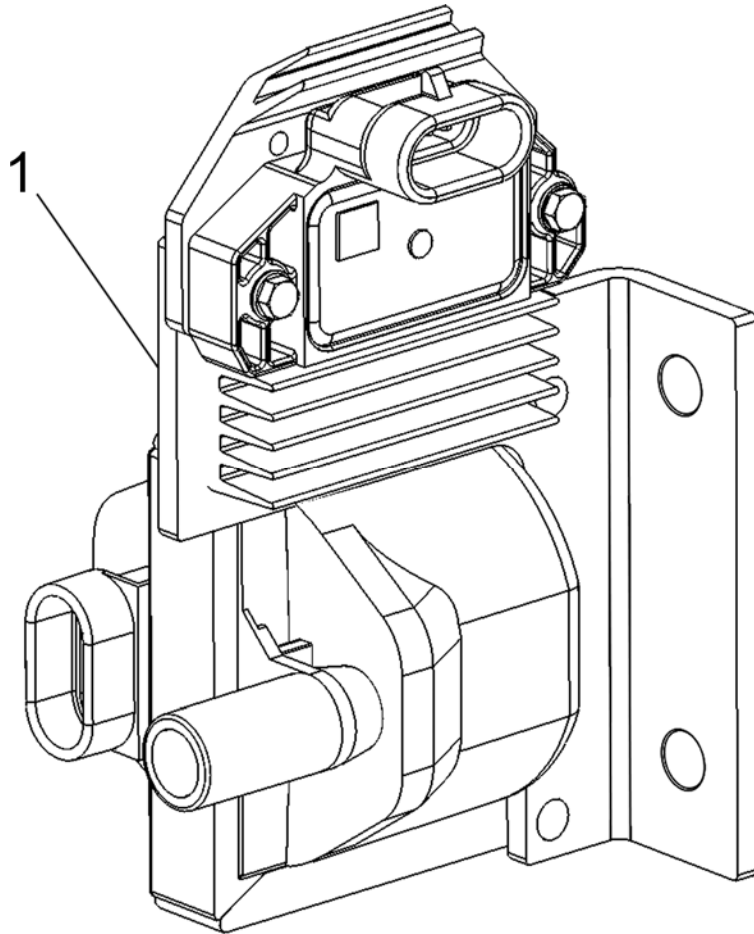
# FUSE BOX & BRACKET



## FUSE BOX & BRACKET

Item #	Description	Qty.	Part Number
1	Screw, Hex M4 x 16mm	4	S1-30295-0416
2	Washer, Split Lock M4	4	W1-1988-003
3	Fuse Box Cover	1	C1-52520-001
4	Bracket, ECM	1	B4-51789-001
5	Screw, Hex Flange	2	90325088
6	Seal, Fuse Box	1	S3-52522-001

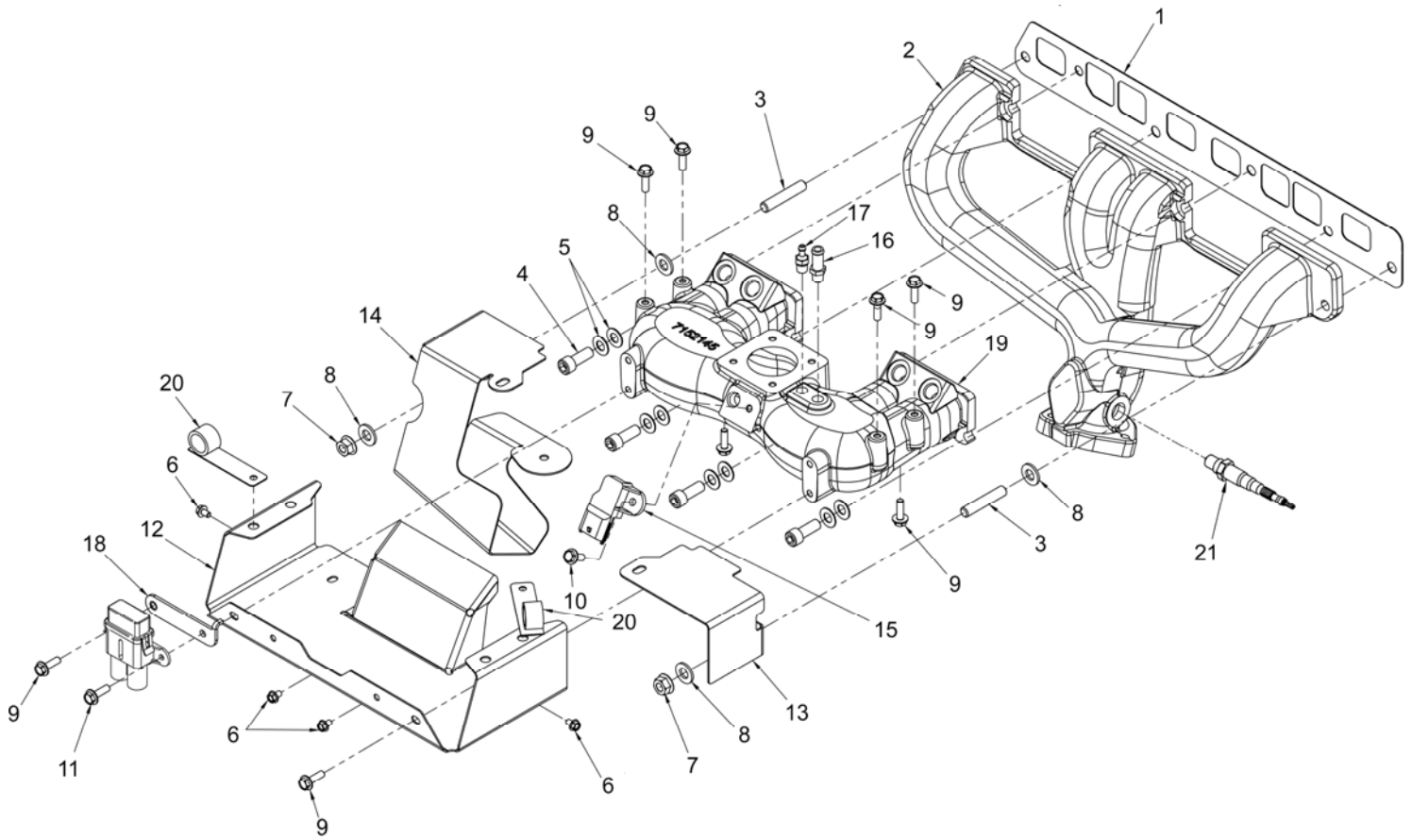
# IGNITION COIL



## IGNITION COIL

Item #	Description	Qty.	Part Number
1	Coil, Ignition	1	7245530

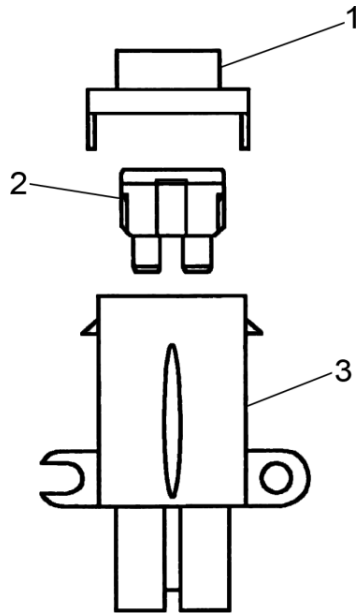
# MANIFOLDS



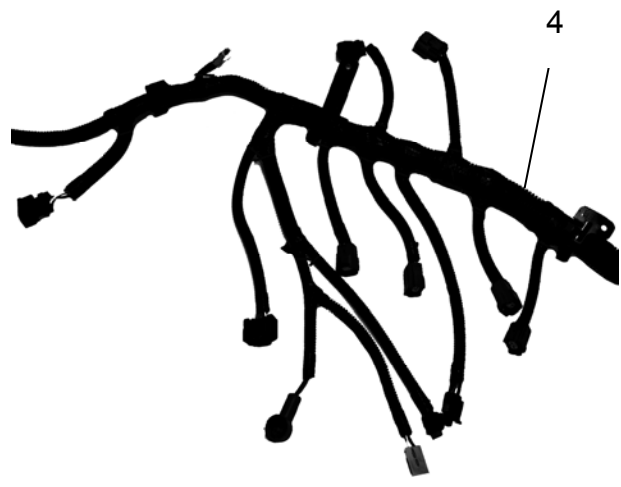
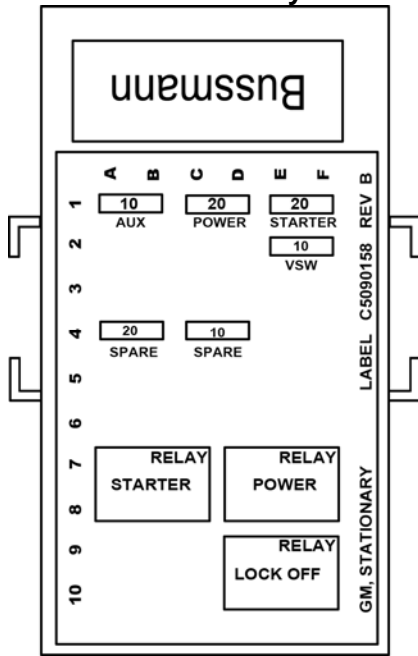
## MANIFOLDS

Item #	Description	Qty.	Part Number
1	Gasket, Int/Ext	1	7152170
2	Manifold, Exhaust GM 3.0L	1	7152150
3	Stud, 3/8-16 x 2"	2	S3-50596-001
4	Bolt, Socket Head 3/8 x 16 Grade 8	4	90368100
5	Washer, Belleville 3/8"	8	W1-50595-037
6	Screw, Hex Flange M5-0.8 8x8	4	S1-50237-20-0508
7	Nut, Serrated	2	N1-30876-037
8	Washer, 3/8 Type A Hard	4	92300101
9	Screw, Hex Flange M6 x 12mm	8	S1-30871-02-0612
10	Screw, Hex Flange M6-1.0x x 16mm	3	S1-30871-02-0616
11	Screw Hex Flange M6-1.0 x 12mm	5	S1-50237-02-0620
12	Shield, Heat-GM 3.0L 2 Piece	1	7152160
13	Heat Shield, RB Exhaust	1	G4-50067-001
14	Heat Shield, Alternator 3.0L	1	G4-50068-001
15	TMAP Sensor	1	E1466001
16	Fitting, 1/8 NPT 3/8 Hose Brass	1	2H-103B
17	Fitting, 1/8 NPT .19 ID Hose	1	F4-4
18	Bracket, Maxifuse Mount	1	B4-51889-001
19	Gasket, Exhaust Flange	1	7152175
20	Strap, Cnvt Cdt 13mm	2	S17-51979-001
21	Sensor, O2	1	S8-50328-001

# WIRE HARNESS/FUSES/FUSE BOX COVER



Fuse Box Layout

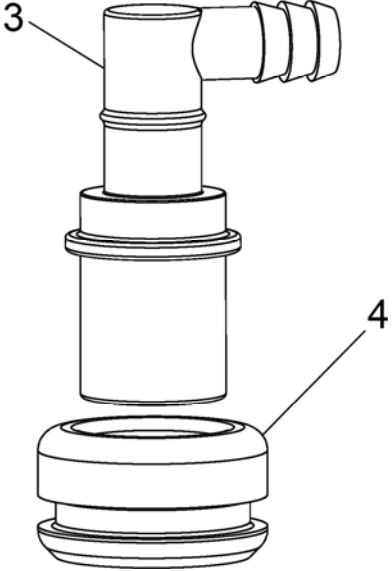
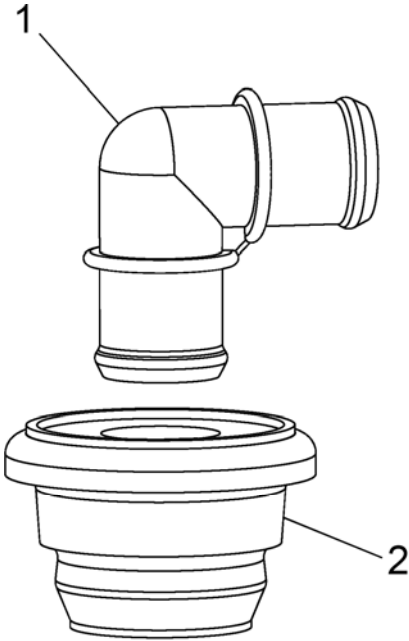




## WIRE HARNESS/FUSES/FUSE BOX COVER

Item #	Description	Qty	Part Number	Manufacturer Part Number
1	Cover	1		Littelfuse 1520007Z
2	Fuse 70A	1	1054112	Littelfuse 299070
3	Fuse Holder	1		Littelfuse 1520004Z
4	Wire Harness, 4 Cyl	1	AW-50727-001	
Auxiliary	10A Minifuse	1	914584	Littelfuse 297010
Power Fuse	20A Minifuse	1	7381270	Littelfuse 297020
Starter Fuse	20A Minifuse	1	7381270	Littelfuse 297020
VSW	10A Minifuse	1	914584	Littelfuse 297010
Starter Relay	Starter Relay	1	885014	3011CCR1U0112VDC
Power Relay	Power Relay	1	885014	3011CCR1U0112VDC
Shut Off Valve Relay	Lock Off	1	885014	3011CCR1U0112VDC

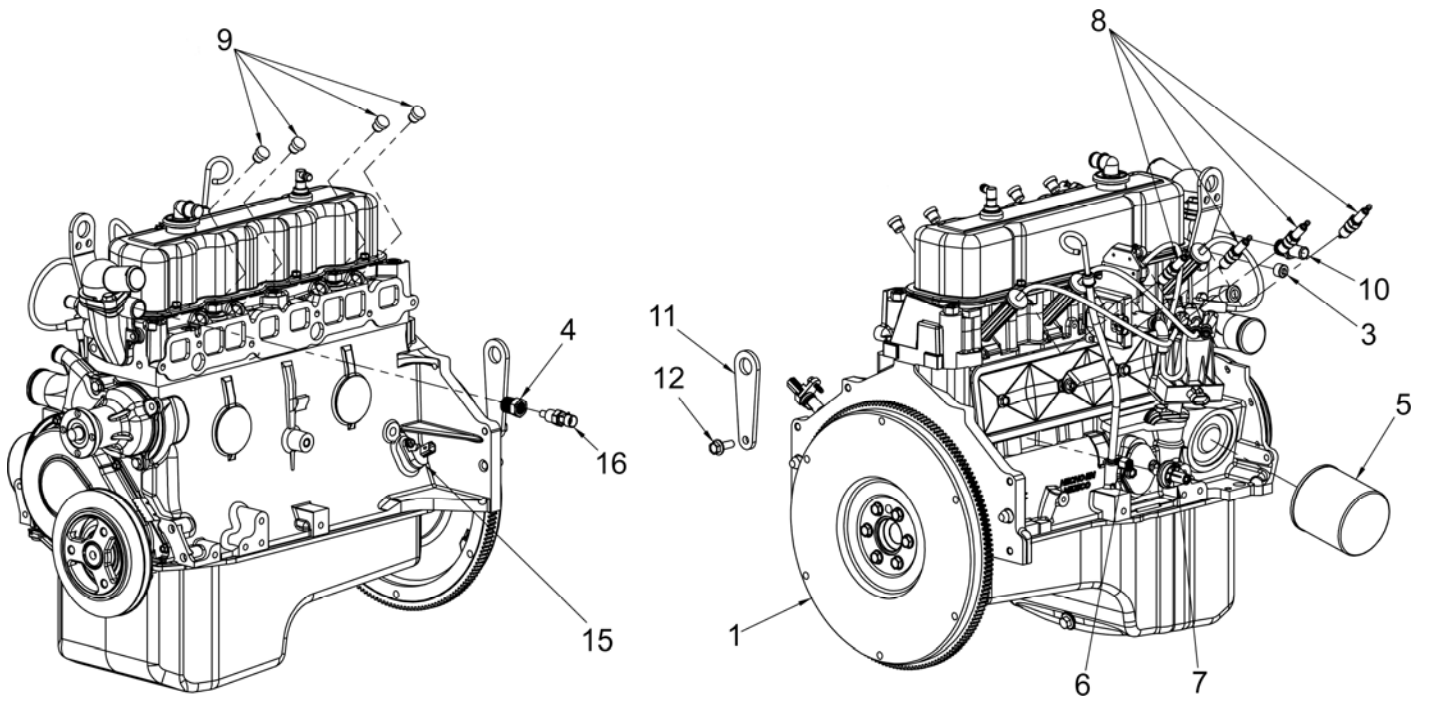
# PCV VENT & VALVE



## PCV VENT & VALVE

Item #	Description	Qty	Part Number	GM Part Number
1	Vent, Elbow	1	F4-51936-001	06487779
2	Grommet oil filter cap	1	G3-51937-001	14050440
3	PCV	1	V3-51806-001	06487779
4	Grommet, PCV Valve	1	7120140	14001875

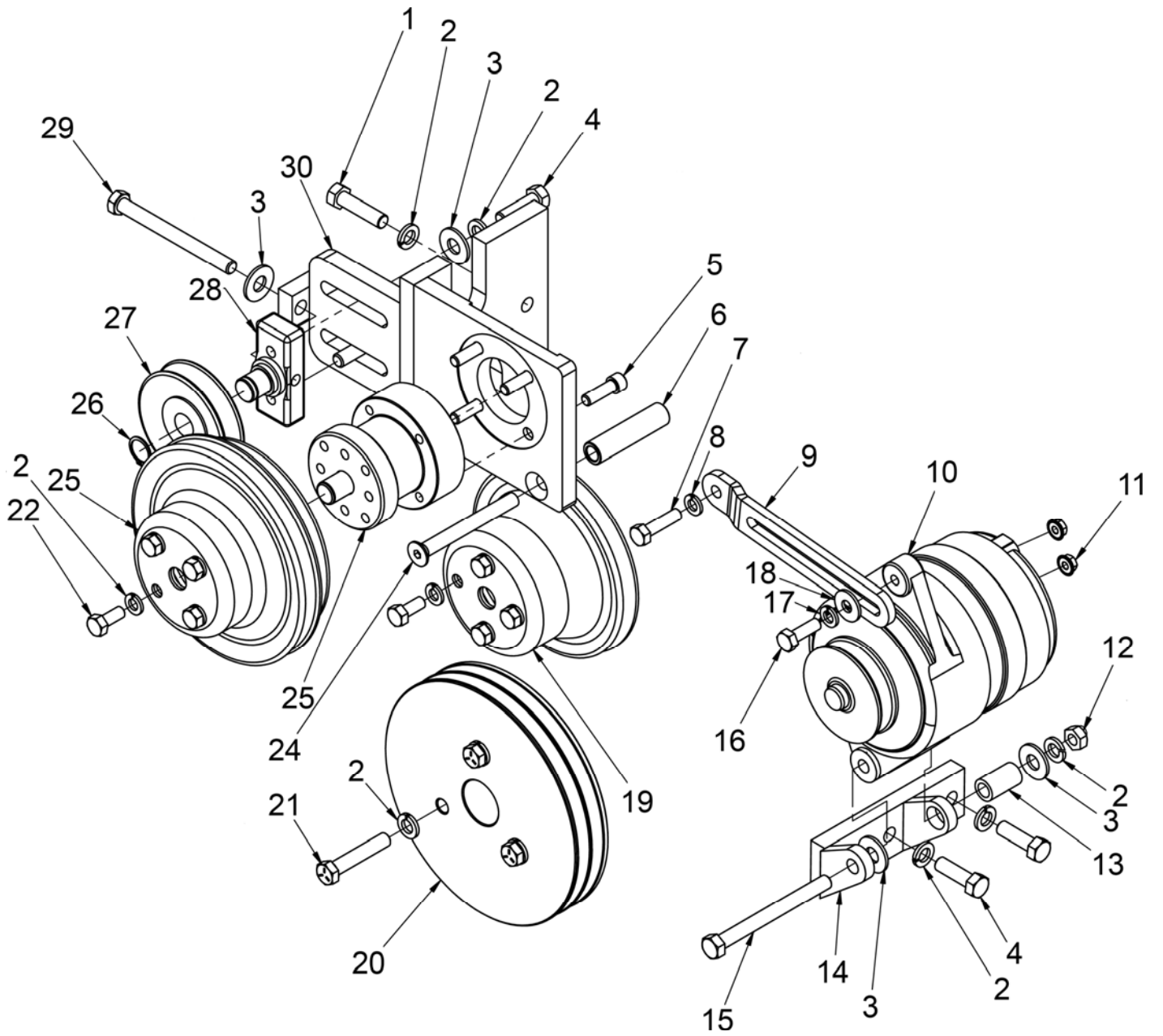
# MISCELLANEOUS ENGINE



## MISCELLANEOUS ENGINE

Item #	Description	Qty	Part Number
1	Engine, MY 2011-2010GM 3.0L	1	7044670
2	Sensor, Crank	1	S8-51822-001
3	Plug, 3/8" NPT Socket Head Brass	1	P3-12
4	Fitting, Pipe Thread Reducer	1	7176570-06
5	Oil Filter PF454	1	7110851
6	Plug 1/2-14 NPT	1	7242360
7	Switch, Oil Pressure	1	S10-50352-001
8	Spark Plug, R44LTS	4	E10-50075
9	Plug, 14mm Fuel Rail Port	4	P3-50597-001
10	Fitting, 1/2NPT 5/8 NIP Brass	1	F4-17920
11	Strap, Lifting Eye	1	7010130
12	Screw, Hex Flange 3/8-16 x 1	1	90325100

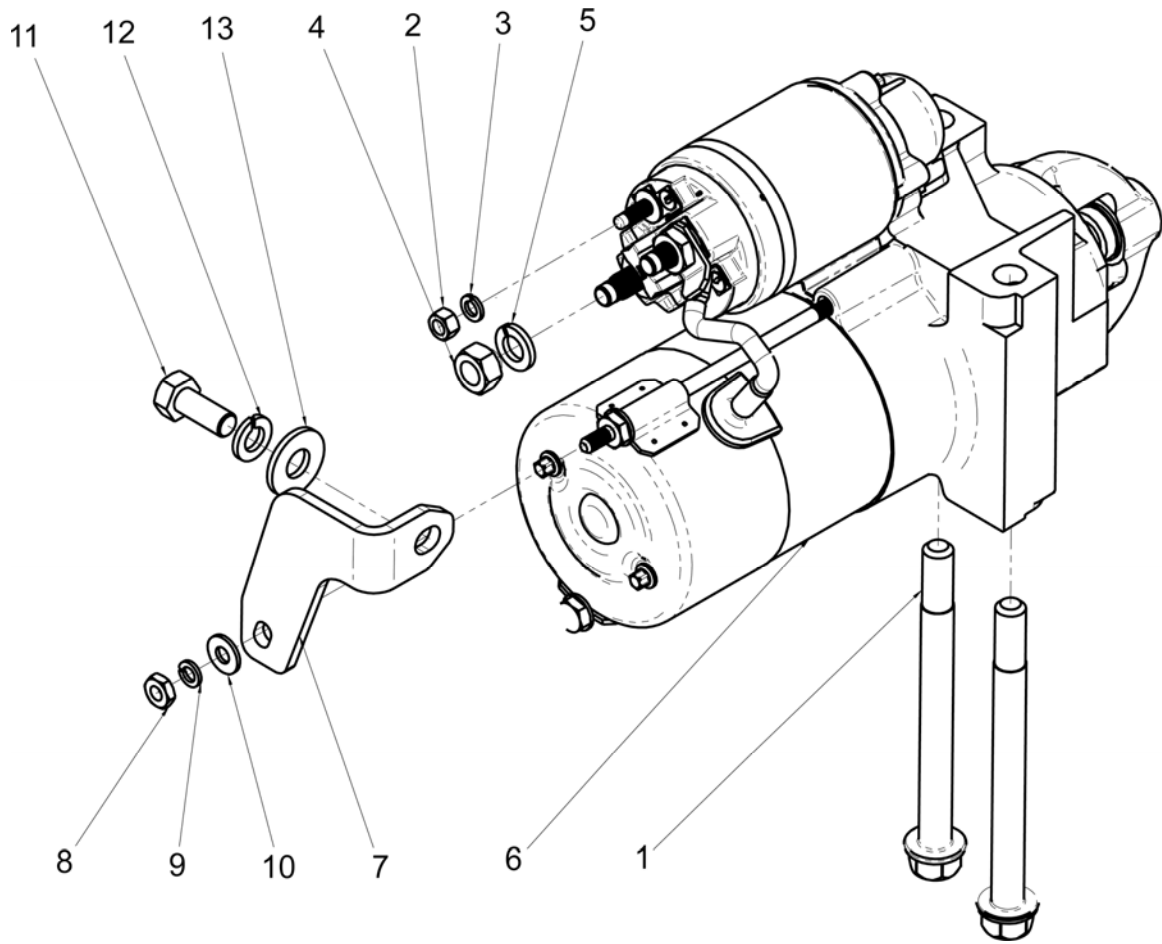
# ALTERNATOR



## ALTERNATOR

Item #	Description	Qty	Part Number
1	3/8"-16x1-1/2" Bolt Hx GR5	2	90305150
2	Washer, Lock 3/8"	15	93300000
3	Washer, Flat 3/8"	5	92300000
4	3/8-16x1 1/4" bolt Hx Gr5	2	90305125
5	5/16-18x1" Bolt Sched Grd 8	4	90268100
6	Sapcer, Fan Mount 3.0L	1	7143890
7	5/16-18x1 1/4" Bit Hx Gr5	1	90205125
8	Washer, Lock, M8	1	93200000
9	Bracket, Alternator	1	7144570
10	Alternator, 7SI	1	7244700
11	Nut, Hex Flange Serrated M5 x 1.0	2	N1-30876-M06
12	Nut, 3/8"-16 Grade 5	1	95300000
13	Spacer, Alternator Brkt	1	7244570
14	Bracket, Alt Lower	1	7244560
15	Bolt, Hex 3/8-16 x 4" Grade 5	1	90305400
16	Bolt, M8-1.25 Hx Head Grd 10.9	1	98333025
17	Washer, Lock, Med, M8, Zn	1	93930000
18	Washer, Flat Heavy 5/6"	1	92200020
19	Pulley, Water Pump	1	7144040
20	Pulley, Crankshaf	1	7071620
21	3/8-24x2" bolt Hx Gr5	1	90315200
22	5/16"-18 x 3/4" Grade 5	8	90215075
23	3/8-16x3-1/2 Blt Sched Gr5	1	7144160
24	ASM Fan Hub 3.0L	1	7144220
25	Pulley Twin Belt	1	7144130
26	Ring Retaining OD 0.669	1	7144030
27	Pully ASM P/B Boos Pump Idler	1	7030110
28	Bracket Tensioner	1	7144000
29	Pulley, Water Pump-Mod	1	7144040
30	Bracket Fan Tensioner MTG	1	7143881

# STARTER


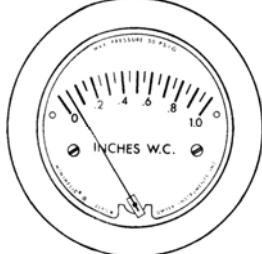

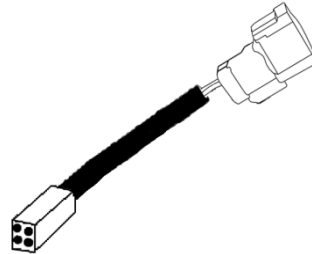
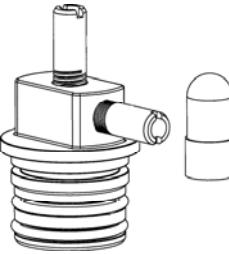
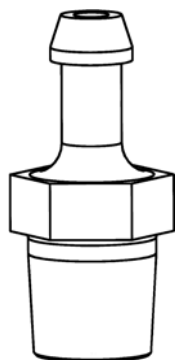
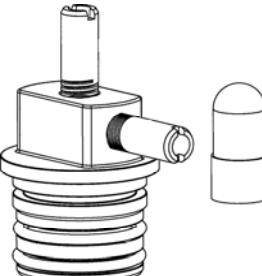

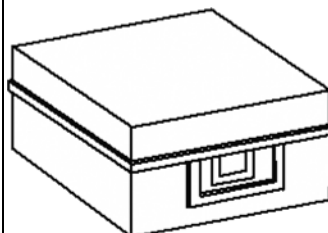
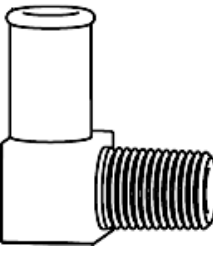
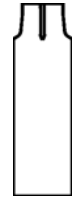

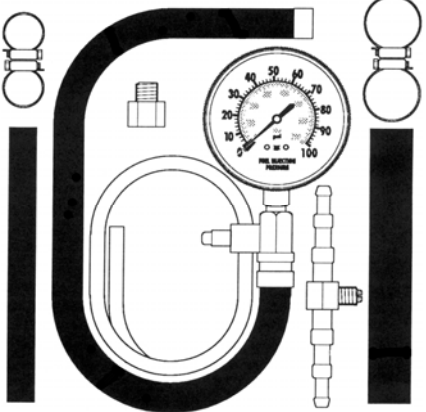
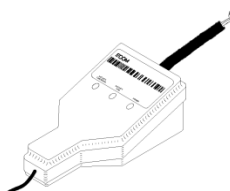


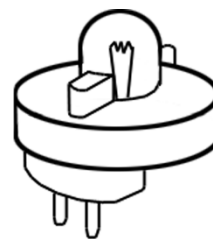
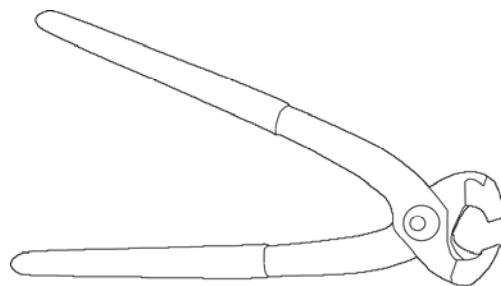


## STARTER

Item #	Description	Qty	Part Number
1	Bolt	2	7242530
2	Nut Hex M5 x 0.8 Brass	1	97111000
3	Washer, Lock Bronze	1	93003000
4	Nut, Hex M8 x 1.25 Brass	1	97331000
5	Washer, lock med M8 Zn	1	93930000
6	Starter Motor	1	7244520
7	Bracket, Starter 2kW 3.0L	1	B4-52110-001
8	Nut Hex #10-24	1	95000000
9	Washer, Lock #10 Med	1	93000000
10	Washer Flat #10	1	92000000
11	5/16-18 3/4" Bolt Hex Gr5	1	9205075
12	Washer, Loc, Med 5/16	1	93200000
13	Washer, flat, SAE, 5/16"	1	92200000

## TOOL KIT & ACCESSORIES

				
1	2	3	4	5
				
6	7	8	9	10
				
11	12	13		14



Standard Oetiker Pliers, IMPCO P/N 1410037 and Injector Test Lamp OTC-6023 (not included in any IMPCO ITK kit)

## TOOL KIT, IMPCO P/N ITK-4

Item #	Description	Qty. Used	IMPCO Part Number
1	Test Kit Gauge 0-5 PSI (2-5205)	1	TG-005
2	Test Kit-Gage 0-10" WC (2-5010)	1	TG-010
3	Hose, 3/16" Id Vacuum, Bulk	1.5'	H1-11
4	Harness, Adapter Gen 2 DLC to Gen 1 DLC	1	E1557400
5	Fitting Assembly, Test Cap (System II LPR Secondary Pressure Test Adapter)	1	AF4-31105
6	Fitting, 1/8 NPT 3/16Hs Nip Brass	2	F4-4
7	Assembly, Fitting Test Cap 3/4	1	AF4-50254-002
8	Pin, Retainer	10	P1-30559
9	Case, Metal, 14.25 x 9 x 4.25	1	C9-50724-001
10	Fitting, 1/8 NPT 1/4Hs EI Nylon	2	F4-8
11	Tool, 20IPR Torx-Plus Bit	1	T7-50172
12	Fitting, 1/4 UNF, 1/4 HS Vac Nip	1	F4-2
13	Gauge, Test Fuel System	1	TG-31119-001
14	ASM, CAN Dongle (ECOM Cable)	1	E2046002

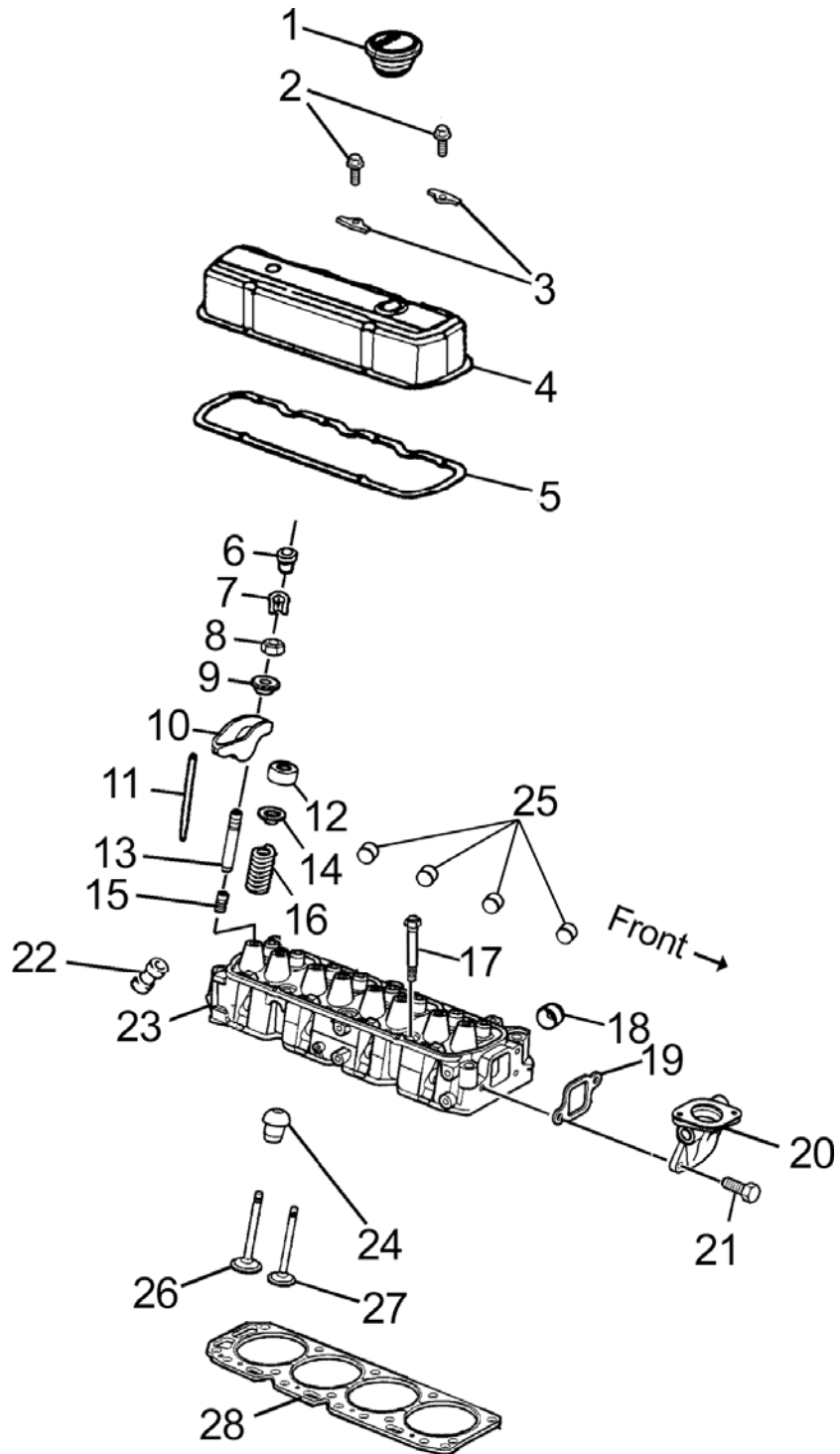
The follow parts manual includes GM Service parts and their GM part numbers for the 3.0L 2011 engine. The IMPCO part number for the complete service block is:

## **3.0L (GM Engine Code BL3)**

**7044670**



### 3.0L UPPER



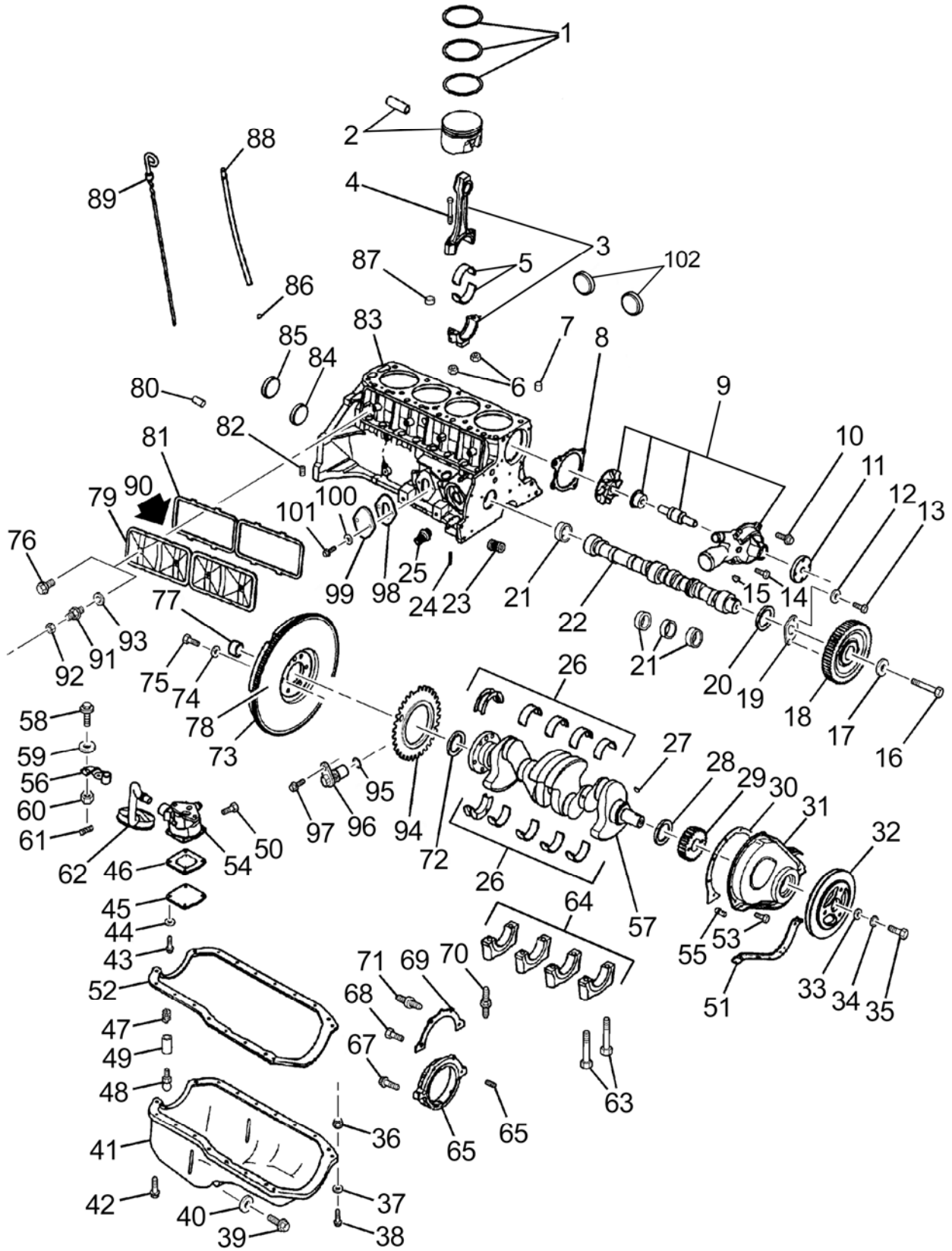
### 3.0L UPPER

Item #	Description	Qty	Part Number
1	Cap, Oil	1	93802366
2	Bolt, Vlv	5	09439930
3	Reinforcement, Vlv Rkr Arm Cvr	5	03877670
4	Cover, Vlv Rkr Arm	1	02770089
5	Gasket, Vlv Rkr Arm Cvr	1	14096154
6	Rotator, Vlv	4	14042575
7	Key, Vlv Stem	16	24503856
8	Nut, Vlv Rkr Arm	8	12557390
9	Ball, Vlv Rkr Arm	8	93427660
10	Arm Kit, Vlv Rkr w/Ball	8	05723551
11	Rod, Vlv Push	8	93414888
12	Shield, Vlv Stem Oil	12	10007818
13	Stud, Vlv	8	03814692
14	Cap, Vlv Sprg	8	10038209
15	Seal, Vlv Stem Oil	8	10214034
16	Spring, Vlv	8	94666172
17	Bolt, Cyl Hd	10	10166832
18	Plug, Cyl Hd Core Hole	2	03826506
19	Gasket, Eng Cool Therm Hsg	1	10140501
20	Housing, Eng Cool Therm	1	93442430
21	Bolt, Eng Cool Therm Hsg	3	09424320
22	Lifter, Vlv	8	05232720
23	Head, Cyl Cmpl w/Valves, Springs, Re- tainers & Seals	1	93442423
24	Insert, Vlv Push Rod	8	NSS
25	Plug, Inj Hole	4	P3-50597-001*
26	Valve, Int	4	14075641
27	Valve, Exh	4	94665131
28	Gasket, Cyl HD	1	14096660

AR=As Required; NSS=Not Sold Separately; NA=Not Available

\*IMPCO Part Number

# 3.0L LOWER





### 3.0L LOWER

Item #	Description	Qty	Part Number
1	Ring Kit (STD)	4	88894219
	Ring Kit (0.020" O.S.)		12361570
	Ring Kit (0.030" O.S.)		14089026
2	Piston (w/Pin)(STD)	4	93442974
	Piston (w/Pin)(0.020" O.S.)		93419821
3	Rod Connecting (Includes 4 & 6)	4	10108688
4	Bolt, Connecting Rod (Part of 3)	8	00461372
5	Bearing Kit, Connecting Rod (STD)	4	12493123
	Bearing Kit, Connecting Rod (O.S. 0.001")		12493124
6	Nut, Conn Rod (Part of 3)	1	00326312
7	Bearing, Oil Pmp Drive	8	03866766
8	Gasket W/Pmp	1	10101256
9	Pump, Water	1	88894247
10	Bolt, W/Pmp	1	09442184
11	Hub, Fan W/Pmp (Part of 9)	1	NSS
12	Washer, 6.3mm ID	3	11503663
13	Bolt, Cm/Shaft	3	09442895
14	Bolt, W/Pmp 5/16"	2	09440366
15	Key, Cm/Shft	2	00106751
16	Bolt, CM/Shaft	2	09442008
17	Washer, CM/Shf	1	10101744
18	Gear, CM/Shf	1	02771369
19	Plate Kit, CM/Shf	1	12508079
20	Ring, CM/Shf	1	00549631
21	Bearing, CM/Shf	4	14002525
22	Camshaft, Eng	1	02770015
23	Valve, Oil Filter	1	25013759
24	Pin, Cyl HD	8	00585927
25	Fitting, Oil Fltr	1	03853870
26	Bearing Kit, Cr/Shf (#1,2,3,4)(0.001" U.S.)	4	12329955
	Bearing Kit, Cr/Shf (#1,2,3,4)(STD)		12329954
	Bearing Kit, Cr/Shf (#5)(0.001" U.S.)		10048778
	Bearing Kit, Cr/Shf (#5)(STD)		12329774
27	Key, Woodruff #9	1	00106751
28	Seal, Cr/Shft Frt Oil	1	12577710
29	Gear, Cr/Shf	1	02768986
30	Gasket, Front Engine Cvr	1	14096156
31	Cover, Eng Frt	1	03992251
32	Balancer, Cr/Shf	1	03826280

AR=As Required; NSS=Not Sold Separately; NA=Not Available

Item #	Description	Qty	Part Number
33	Seal, Absorber, Cr/Shf	1	NSS
34	Washer, External Tooth	1	00136857
35	Bolt, Cr/Shf Balancer	1	10126796
36	Nut, Oil Pan	10	12338130
37	Washer	10	09439510
38	Bolt, Oil Pan (1/4-20 x 1/2, 1/8 THD)	10	09442895
39	Plug, Oil Pan Drn	1	See IMPCO Catalog
40	Gasket, Oil Pan Drn Plug	1	See IMPCO Catalog
41	Pan, Oil	1	93419740
42	Bolt, Oil Pan (1/4-20 x 1/2, 1/8 THD)	14	09440033
43	Screw, RD HD Slotted	4	00133043
44	Washer	4	09439510
45	Cover, O/Pmp	1	03792507
46	Gasket O/Pmp Cover	1	03789970
47	Spring, Oil Pressure Rlf Vlv	1	03814903
48	Plug, Oil Press Rlf Vlv	1	03930824
49	Valve, Oil Pressure Rlf	1	03829433
50	Bolt, O/Pmp	3	09424877
51	Reinforcement, Eng Frt Cvr (Incl w/31)	1	NSS
52	Gasket, Oil Pan	1	14096637
53	Bolt, Eng Frt Cvr	12	09442895
54	Pump, Oil	1	14091485
55	Nozzle, Cm/Shf Gr Lub	1	03875950
56	Bracket, O/Pmp	1	03970417
57	Crankshaft	1	93442002
58	Bolt, Hex 1/4-20 x 3/4	1	09425113
59	Washer, Flat	1	11609328
60	Nut, O/Pmp	1	09442946
61	Pin, Oil Press Flf Vlv	1	12551790
62	Screen, O/Pmp (Part of 54)	1	02778192
63	Bolt, Cr/Shf Brg Cap	8	03872781
64	Cap, Cr/Shf Brg	4	03970194
65	Pin, Cr/Shf RR Oil Seal	1	09441003
66	Housing, Cr/Shf RR Oil Seal (Incl 71 & 72)	1	14088556
67	Bolt, Cr/Shf Oil Seal	2	14096659
68	Bolt, Cr/Shf RR Oil Seal Hsg	2	14096658
69	Gasket, Cr/Shf RR Oil Seal Hsg	1	12555771
70	Stud, Cr/Shf Brg Cap	1	03852870
71	Stud, Cr/Shf RR Oil Seal (Part of 66)	2	14080362
72	Seal, Cr/Shf (Part of 66)	1	10088158

AR=As Required; NSS=Not Sold Separately; NA=Not Available

Item #	Description	Qty	Part Number
73	Gear, Flywhl Ring (Part of 78)	1	03991408
74	Washer, Flywhl	1	00136857
75	Bolt, Flywhl (7/16"-20 x 31/32)	6	00839756
76	Bolt, Vlv Push Rod Cvr	4	03814350
77	Bearing, Clu Pilot	1	14061685
78	Flywheel, Eng (Includes 73)	1	93419731
79	Cover	1	93423830
80	Pin, Trans Loc (5/8 x 1 3/16)	2	01453658
81	Gasket, Vlv Push Rod Cvr	1	12378521
82	Plug, Eng Blk Oil Gal	1	14090911
83	Engine Block	1	NSS
84	Plug, CM/Shf	1	110241154
85	Plug, Eng Blk Core Hole	AR	03826505
86	Plug, Oil	1	NSS
87	Plug, Eng Blk Oil	1	03835577
88	Tube, Oil Lvl	1	93434708
89	Indicator, Oil Lvl	1	14025224
90	Sealer, Vlv Push Rod Cvr	AR	12346286
91	Stud, Vlv Push Rod Cvr	4	00352169
92	Nut, Vlv Push Rod Cvr	4	00451399
93	Washer, Vlv Push Rod Cvr	4	02436163
94	Ring, Cr/Shf Psn Sen Reluctor	1	NSS
95	Seal, Cr/Shf Psn Sen Conn	1	NSS
96	Sensor, Cr/Shf Posn	1	12567712
97	Bolt, Cr/Shf Posn Sen	1	11588712
98	Gasket, F/Pmp	1	93802517
99	Cover, F/Pmp OPG	1	93439184
100	Washer, F/Pmp MT	2	02436162
101	Bolt, F/Pmp	2	09424877
102	Plug, Eng Blk Core Hole	2	88891749

AR=As Required; NSS=Not Sold Separately; NA=Not Available