



MARINE

ILLUSTRATED TM

PARTS MANUAL

MODEL XX-601XX-XX

CLEAN EMISSION SYSTEM

SN 506548 thru Present



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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 NO.	QTY.	DESCRIPTION	MODEL ID
1	RB001005I	1	Base Engine Assembly, 6.0L	

①

②

③

④

⑤

- 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 QUANTITY - This refers to the number of pieces used.
- ④ DESCRIPTION - This identifies what the component or assembly is.
- ⑤ MODEL ID - This identifies a component or assembly that is unique to a specific engine model.

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.

MAINTENANCE ITEM PART NUMBERS:

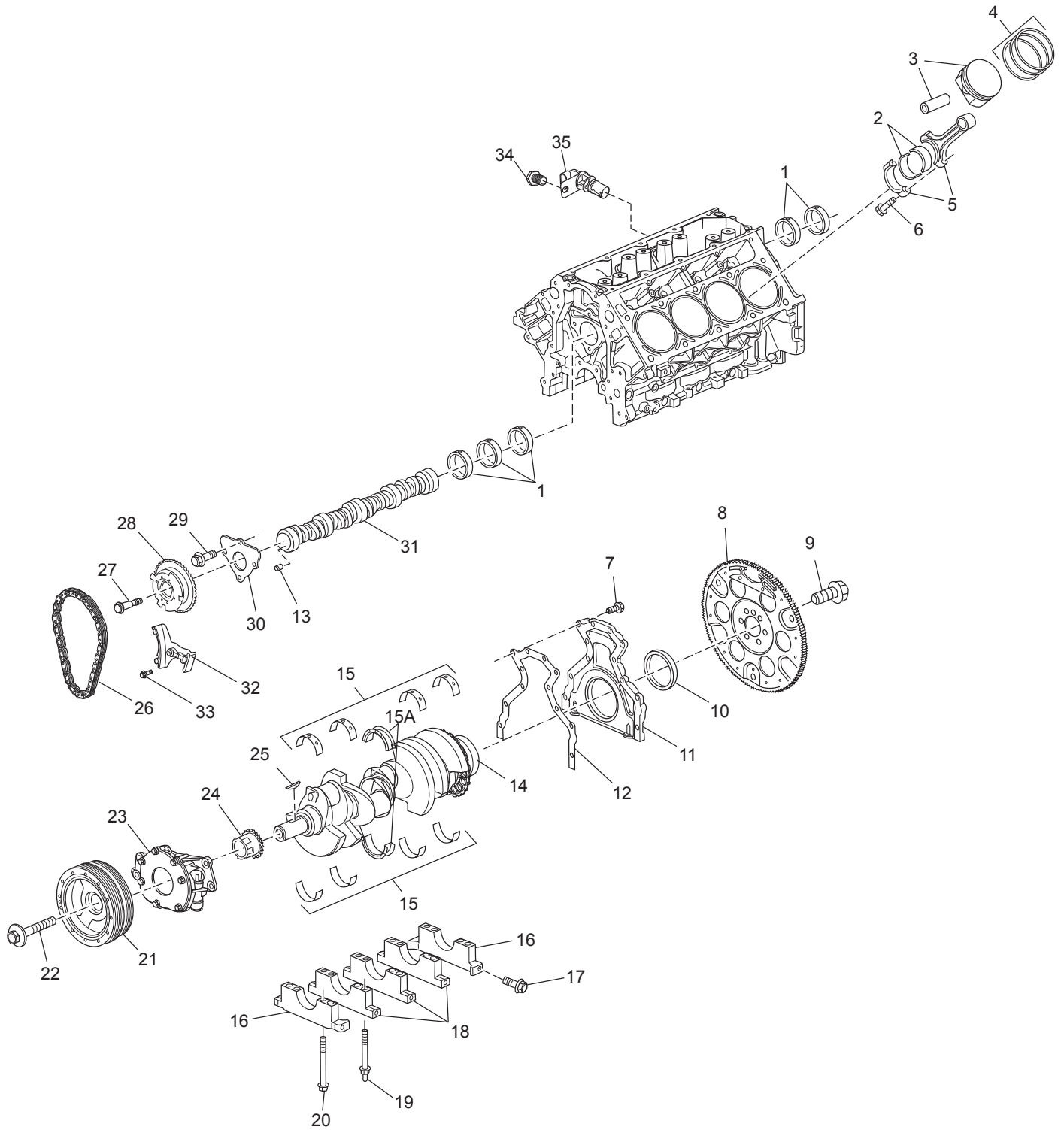
Description	Part Number
Oil Filter	R077001
Kit, Transmission Oil Filter (ZF)	RP077011
Fuel Filter (FCC)	RP080026
Fuel Water Separator	R077019
Spark Plugs	RP030011
Spark Plug Wire Set	RK120022
Spark Plug Wire Set, CES engines	RK120021B
Serpentine Drive Belt	R066033
Raw Water Pump Impeller Kit	RP061022
Thermostat	R026002
Thermostat, CES engines	R026007A

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

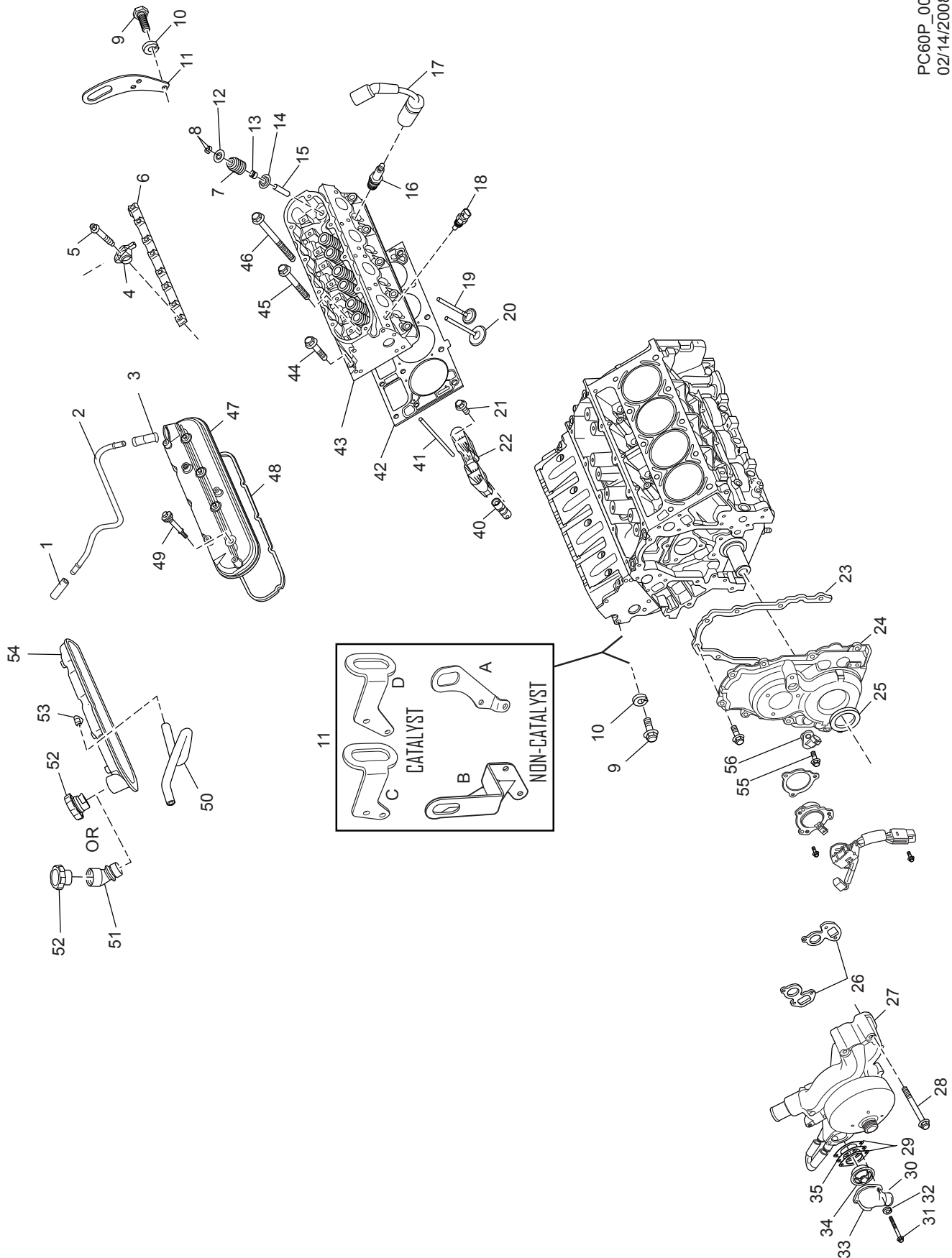


CYLINDER BLOCK ASSEMBLY - FIGURE 1

ITEM	PART NO.	QTY.	DESCRIPTION	MODEL ID
*	RB001022		Base Engine Assembly , (STD)	
1	TBD	1	Bearing Set , camshaft	
2	R007029	8	Bearing , for one connecting rod (STD)	
3	RA013019	8	Piston w/Pin , (STD)	
4	R015015	8	Ring Set , piston (STD)	
5	RA011013	8	Connecting Rod (STD)	
6	TBD	16	Bolt , connecting rod cap	
7	TBD	12	Bolt , rear engine cover	
8	RA138016	1	Flywheel Assembly , bottom mount starter	
8	RA138017	1	Flywheel Assembly , top mount starter	
9	R009205	6	Bolt , flywheel attaching	
10	R047236	1	Seal , crankshaft rear oil	
11	TBD	1	Cover , rear engine	
12	TBD	1	Gasket , rear engine cover	
13	p/o item #14	1	Reluctor Ring , crankshaft	
14	TBD	1	Crankshaft Assembly	
15	R007030	4	Bearings , crankshaft	
15A	R007031	1	Bearing , crankshaft	
16	TBD	2	Cap , crankshaft bearing #1 and #5	
17	TBD	10	Bolt , crankshaft bearing cap side	
18	TBD	3	Cap , crankshaft bearing #2 - #4	
19	TBD		Stud , crankshaft bearing cap attaching	
20	TBD		Bolt , crankshaft bearing cap attaching	
21	R064016	1	Balancer , crankshaft	
22	R009202	1	Bolt , crankshaft balancer	
23	TBD	1	Oil Pump Assembly	
24	R054042	1	Drive , oil pump	
25	TBD	1	Key , crankshaft	
26	R055017	1	Chain , timing	
27	TBD	1	Valve , camshaft position actuator solenoid	
28	R054044	1	Actuator , camshaft position	
29	RA159004	3	Bolt , camshaft retainer attaching	
30	TBD	1	Retainer , camshaft/phaser	
31	RA050027	1	Camshaft , (STD - ZR409)	
31	RA050028	1	Camshaft , (HO - ZR450)	
32	TBD	1	Tensioner Kit , includes items 32, 33, 26 (GM 12626407)	
33	TBD	1	Bolt , camshaft tensioner retainer (GM 11515758)	
34	TBD	1	Bolt , crankshaft position sensor attaching	
35	R020054	1	Sensor , crankshaft position	

CYLINDER HEAD ASSEMBLY / FRONT COVER - FIGURE 2

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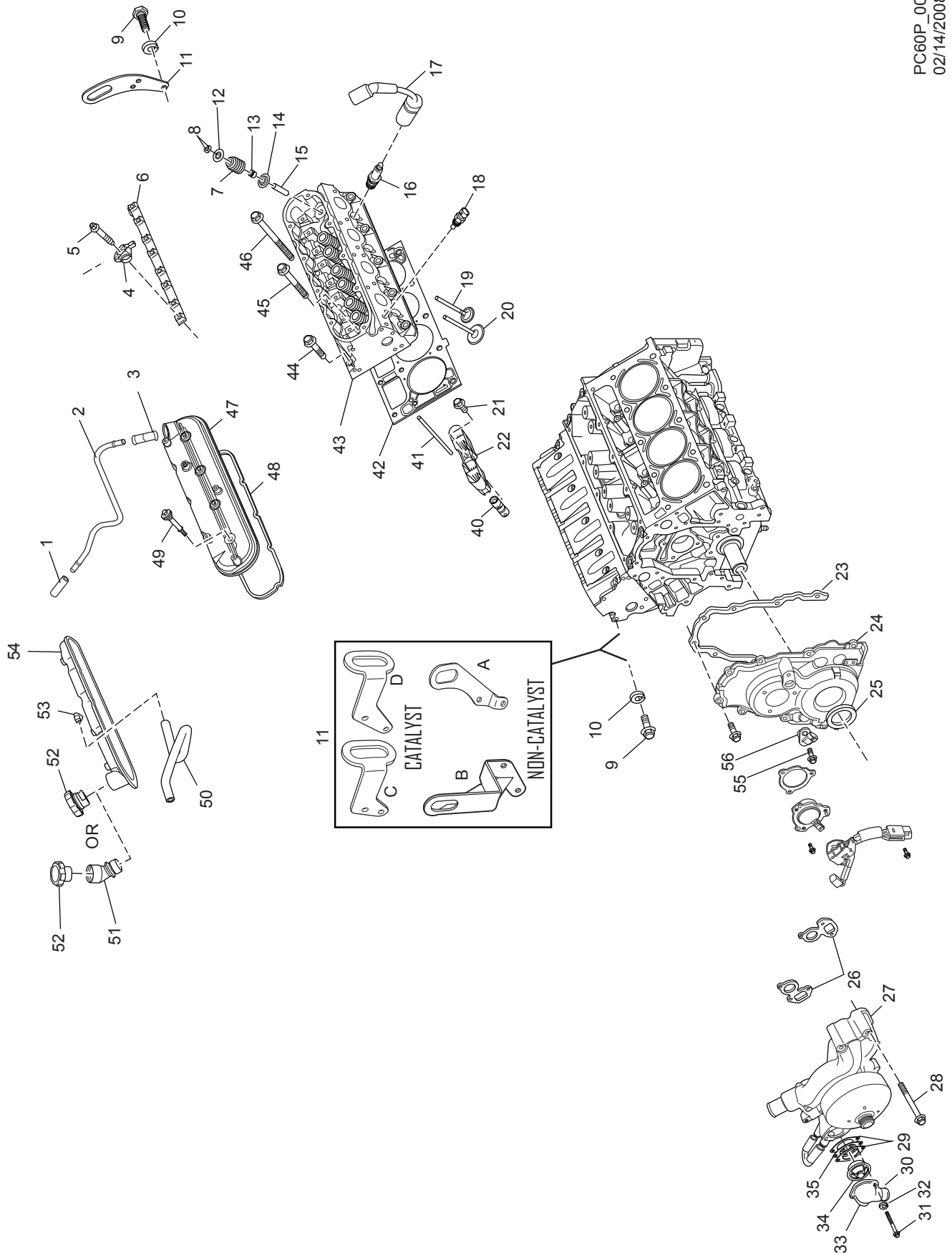


CYLINDER HEAD ASSEMBLY / FRONT COVER - FIGURE 2

ITEM	PART NO.	QTY.	DESCRIPTION	MODEL ID
1	TBD	1	Hose , PCV valve (GM 12597774)	
2	NSS	1	Valve , positive crankcase ventilation (PCV)	
3	TBD	1	Grommet , PCV valve	
4	TBD	16	Rocker Arm , valve	
5	TBD	16	Bolt , valve rocker arm attaching	
6	R037006	2	Guide , valve rocker arm	
7	R046052	16	Valve Spring Assembly	
8	TBD	32	Retainer , valve stem	
9	98443025	4	Bolt , lifting eye attaching	
10	93940000	4	Lockwasher , lifting eye attaching bolt	
11A	R042012	1	Lifting Eye , rear,	
11B	R042016	1	Lifting Eye , front	
11C	R042018	2	Lifting Eye , CES engine	xx-601Cx-xx
11D	R042019	2	Lifting Eye , CES engine	xx-601Cx-xx
12	R049015	16	Cap , valve spring	
13	R047239	16	Seal , intake valve stem	
13	R047240	16	Seal , exhaust valve stem	
14	TBD	32	Rotator , valve	
15	TBD	16	Guide , valve stem	
16	RP030011	8	Spark Plug	
17	RK120022	1	Spark Plug Wire Set	
17	RK120021B	1	Spark Plug Wire Set	xx-601Cx-xx
18	R020046	1	Engine Coolant Temperature (ECT) Sensor	
19	R043040	8	Valve , exhaust (STD)	
20	R043039	8	Valve , intake (STD)	
21	TBD	8	Bolt , valve lifter retainer attaching	
22	R037005	8	Retainer , valve lifter	
23	RM0280	1	Gasket , front engine cover	
24	TBD	1	Cover , front engine	
25	R047237	1	Seal , front engine cover oil	
26	RM0281	2	Gasket , water circulating pump	
27	RK057036	1	Water Circulation Pump Assembly	
28	TBD	4	Bolt , water circulating pump attaching	
29	RM0275	2	Gasket , thermostat housing	
30	R025036	1	Housing , thermostat	
31	98223035	2	Bolt , thermostat housing attaching	
32	93920000	2	Lockwasher , thermostat housing attaching	
33	RS3533A	1	Plug , thermostat housing	
34	R026002	1	Thermostat , (160° F)	
35	R109051	1	Plate , thermostat retainer	
36	RS3551	1	Plug , water neck	
37	R024208	1	Water Neck	
38	RS3551	1	Plug , water neck	
39	TBD	8	Bolt , front engine cover attaching	

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

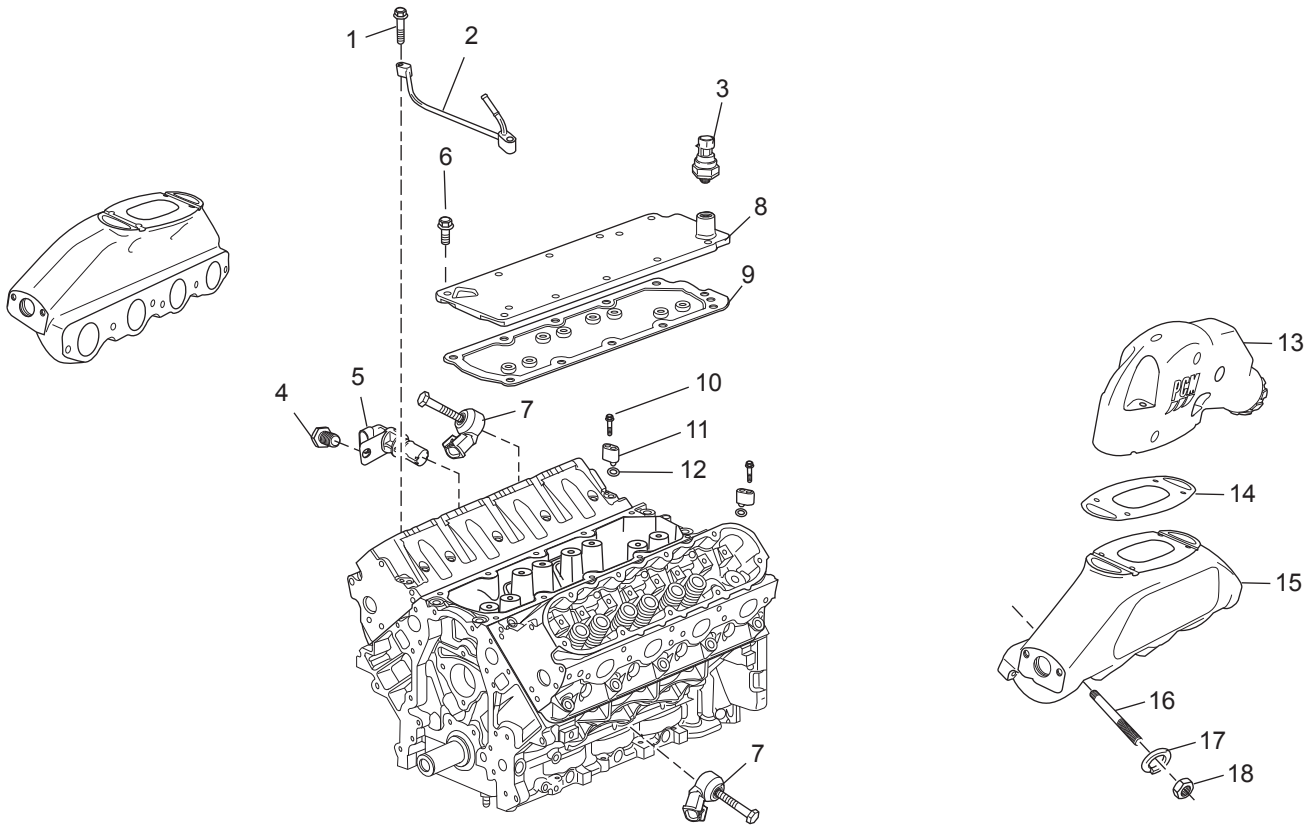
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CYLINDER HEAD ASSEMBLY / FRONT COVER - FIGURE 2 (cont'd)

ITEM	PART NO.	QTY.	DESCRIPTION	MODEL ID
40	R040007	16	Lifter , valve	
41	R039024	16	Push Rod	
42	RM0298	2	Gasket , Cylinder Head	
43	R003017	2	Cylinder Head	
44	R009208	4	Bolt , cylinder head (short)	
45	R009209	10	Bolt , cylinder head (medium)	
46	R009215	16	Bolt , cylinder head (long)	
47	RA033016	1	Cover , rocker (LH)	
47	RA033016A	1	Cover , rocker (LH with straight push on hose barb)	
48	RM0282	2	Gasket , rocker cover	
49	R009210	8	Bolt , rocker cover attaching	
50	R045191	1	Tube , breather	
50	TBD	1	Tube , breather, SN 485697 and higher	
51	R034049	1	Tube , oil fill	
52	R034038B	1	Cap , oil fill tube	
53	TBD	1	Fitting , breather tube	
54	RA033017	1	Cover , rocker w/Oil Fill (RH)	
55	TBD	1	Bolt , camshaft position sensor attaching	
56	R020053	1	Sensor , camshaft position	

EXHAUST MANIFOLD / KNOCK SENSORS - FIGURE 3

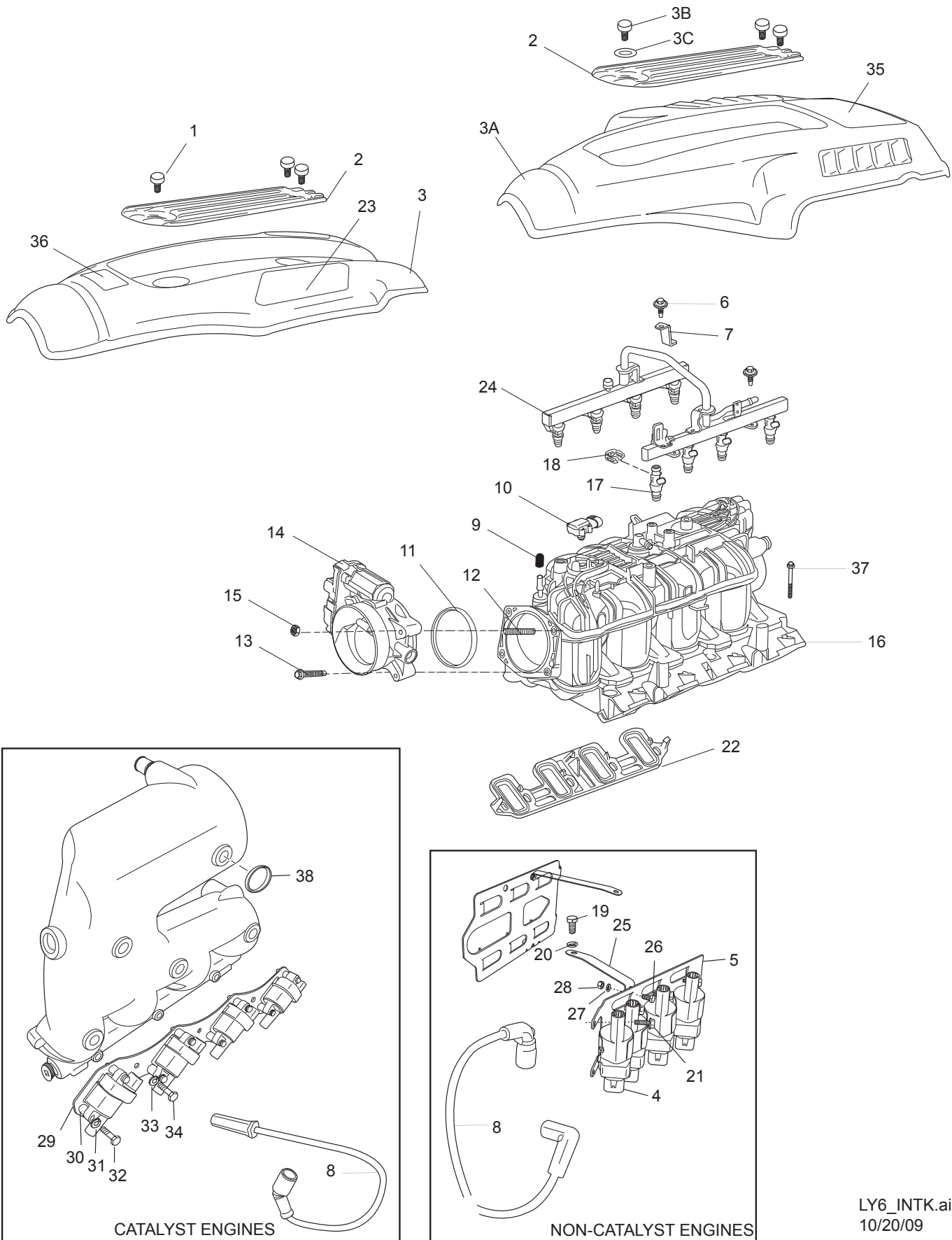


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EXHAUST MANIFOLD / KNOCK SENSORS - FIGURE 3

ITEM	PART NO.	QTY.	DESCRIPTION	MODEL ID
1	TBD	2	Bolt , coolant air bleed pipe attaching	
2	RA085104	1	Pipe , coolant air bleed	
3	R020060	1	Sensor , oil pressure	
4	TBD	1	Bolt , crankshaft position attaching	
5	R020054	1	Sensor , crankshaft position	
6	TBD	10	Bolt , valley cover attaching (GM 11518075)	
7	R020052	2	Sensor , knock	
8	TBD	1	Cover , valley (GM 12598832)	
9	TBD	1	Gasket , valley cover (GM 12610141)	
10	TBD	2	Bolt ,	
11	TBD	2	Block-off ,	
12	TBD	2	Seal , (GM 12610160)	
13	R029016	2	Elbow , exhaust	
14	RM0274	2	Gasket , exhaust elbow to manifold	
15	R028023	2	Manifold , exhaust	
16	R031035	12	Stud , exhaust manifold attaching	
17	93930000	12	Lockwasher , exhaust manifold stud attaching	
18	97330000	12	Nut , exhaust manifold stud attaching	
19	RS3539	2	Plug , exhaust elbow	
19	R020047	2	Switch , exhaust temperature (optional)	

INTAKE MANIFOLD COMPONENTS - FIGURE 4

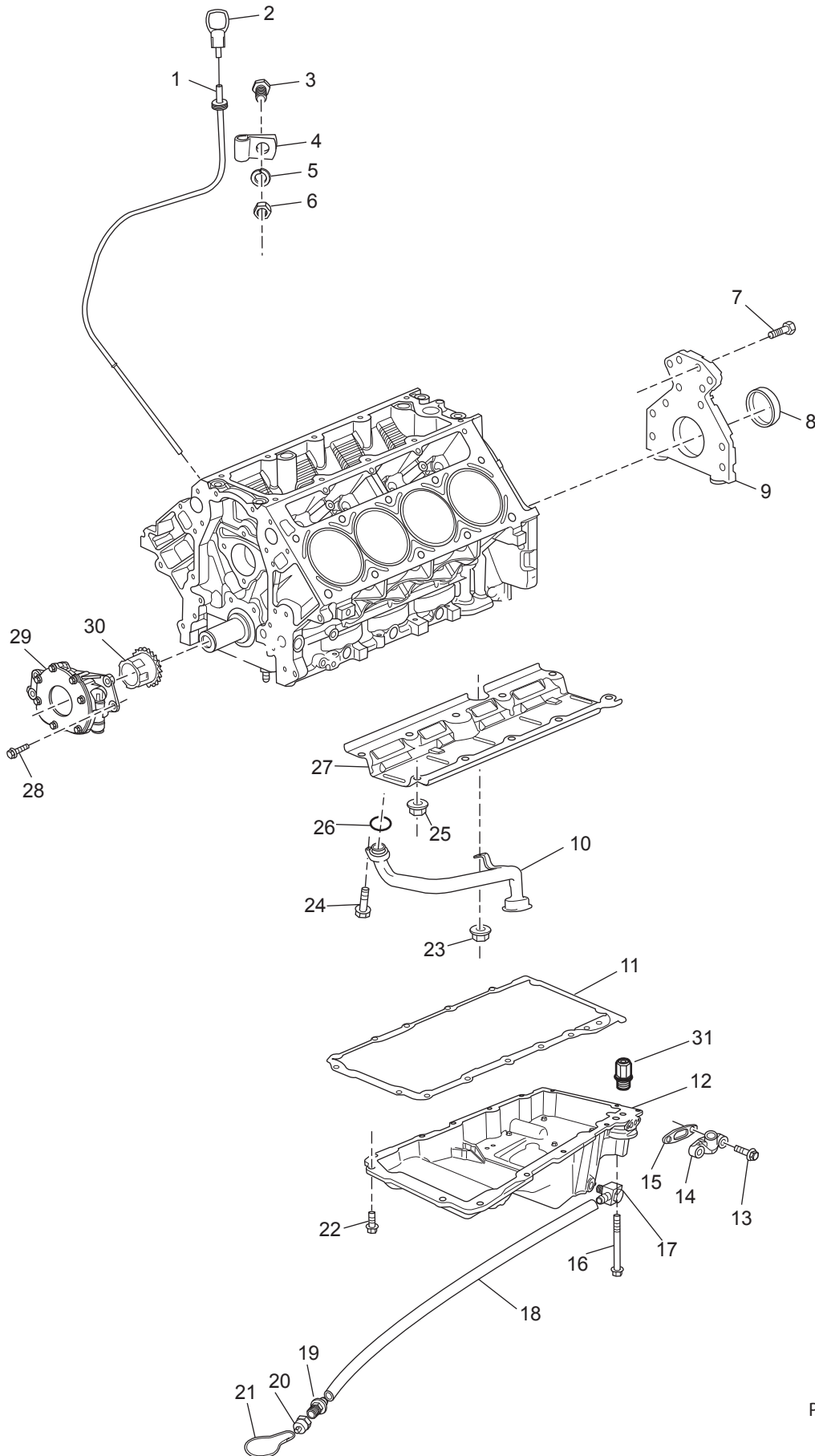


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INTAKE MANIFOLD COMPONENTS - FIGURE 4

ITEM	PART NO.	QTY.	DESCRIPTION	MODEL ID
1	R175055A	3	Bolt , engine cover attaching	
2	R060074	1	Insert , engine cover	
2	R060077	1	Insert , engine cover, CES engines	xx-601Cx-xx
3	R060073	1	Cover , engine	
3A	R060076	1	Cover , engine, CES engines	xx-601Cx-xx
3A	R060089	1	Cover , engine, CES engines	xx-601Cx-xx
3B	R175055A	3	Bolt , engine cover attaching	xx-601Cx-xx
3C	92106000	3	Washer , M6 rubber	xx-601Cx-xx
4	R117014	8	Coil , ignition	
5	R090339	1	Bracket , ignition coil mounting (port)	
5	R090346	1	Bracket , ignition coil mounting (stbd)	
6	98222018	2	Bolt , fuel rail attaching	
6	RS6256	2	Bolt , fuel rail attaching/coil bracket attaching	
6	93924000	2	Lockwasher , fuel rail attaching/coil bracket attaching	
7	R090268	2	Bracket , support	
8	RK120022	1	Spark Plug Wire Set	
8	RK120021B	1	Spark Plug Wire Set	xx-601Cx-xx
9	R128004	1	Cap , vacuum	
10	R020036	1	Sensor , manifold absolute pressure (MAP)	
10	R020055	1	Sensor , manifold absolute pressure (MAP) SN 485697 and higher	
11	TBD	1	Seal , throttle body	
12	TBD	2	Stud , throttle body attaching, upper	
13	TBD	2	Bolt , throttle body attaching, lower	
14	RA035044	1	Throttle Body Assembly	
15	L00918	2	Nut , throttle body attaching	
16	TBD	1	Intake Manifold	
16	TBD	1	Intake Manifold, SN 485697 and higher	
17	RA087009	8	Fuel Injector Assembly	
17	RA087010	8	Fuel Injector Assembly, SN 485697 and higher	
NI	RK047253	1	Kit , O'Ring 6.0L fuel injector	
NI	TBD	1	Kit , O'Ring 6.0L fuel injector, SN 485697 and higher	
18	R127097	8	Retainer , fuel injector to rail	
19	98223016	2	Bolt , coil bracket attaching	
20	93920000	2	Lockwasher , coil bracket attaching	
21	91107075	16	Bolt , ignition coil attaching	
22	RM0297	1	Gasket Set , intake manifold	
23	TBD	2	Decal , engine cover, side - ZR409	
24	TBD	1	Fuel Rail , assembly	
25	R090337	1	Bracket , support, coil bracket (port)	
25	R090338	1	Bracket , support, coil bracket (stbd)	
26	RS0251	2	Bolt , support bracket attaching	
27	93920000	2	Lockwasher , support bracket attaching	
28	95104060	2	Nut , support bracket attaching	
29	R090365	2	Bracket , ignition coil mounting CES engines	xx-601Cx-xx
29	R090365A	2	Bracket , ignition coil mounting CES engines	xx-601Cx-xx
30	R062094	16	Spacer , ignition coil mounting CES engines	xx-601Cx-xx
31	93920000	16	Lockwasher , ignition coil mounting CES engines	xx-601Cx-xx
32	98223045	16	Bolt , ignition coil mounting CES engines	xx-601Cx-xx
33	93934000	6	Lockwasher , coil bracket mounting CES engines	xx-601Cx-xx
34	99335014	6	Bolt , coil bracket mounting CES engines	xx-601Cx-xx
34	99335016	6	Bolt , coil bracket mounting CES engines	xx-601Cx-xx
35	R143197	1	Decal , engine cover, ZR409, CES engines	xx-601Cx-xx
35	R143209	1	Decal , engine cover, ZR450, CES engines	xx-603Cx-xx
36	R143189	1	Decal , engine cover, front, PCM	
37	TBD	10	Bolt , intake manifold mounting	
38	RS3661		Freeze Plug , manifold	

OIL PAN and OIL PUMP ASSEMBLY - FIGURE 5

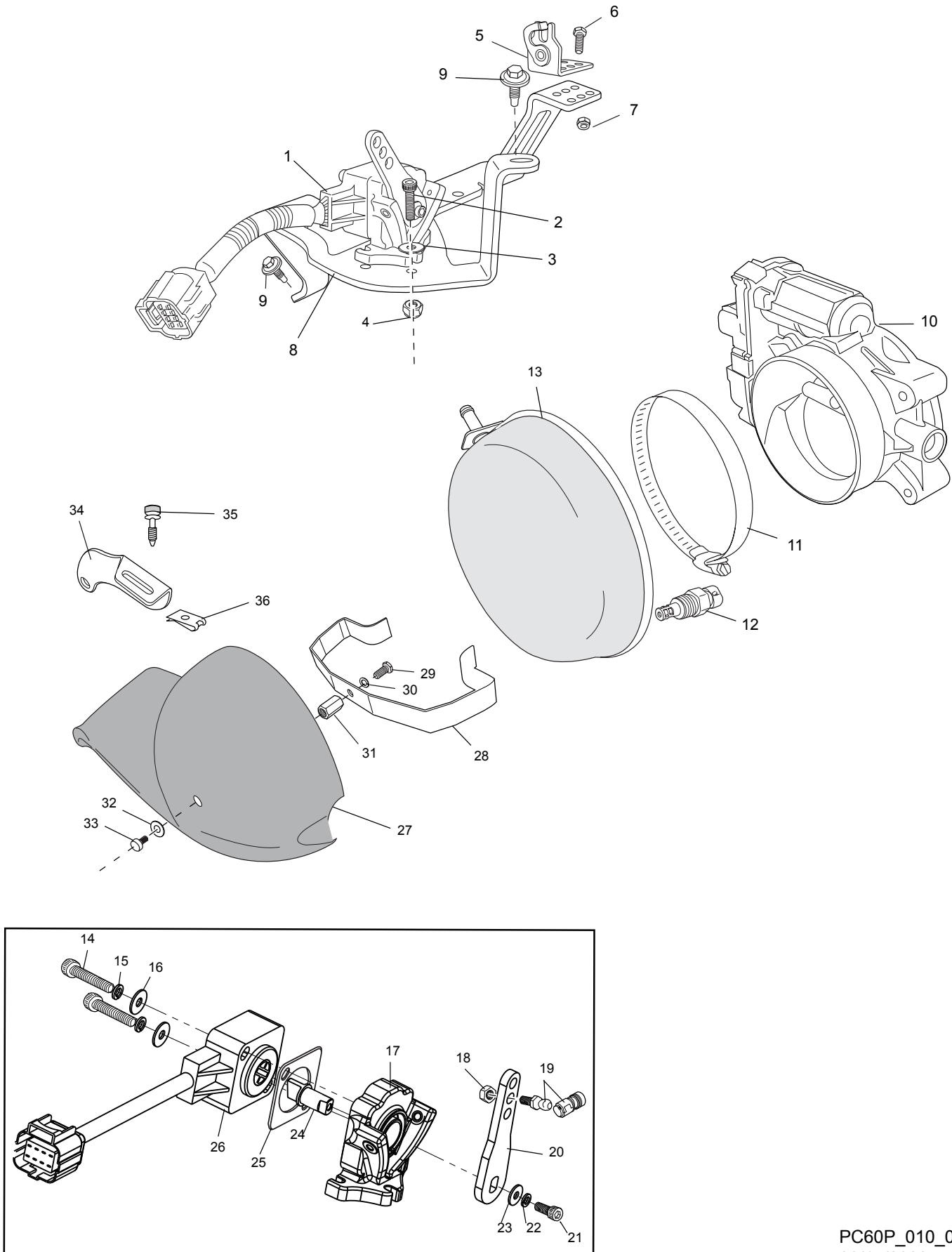


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OIL PAN and OIL PUMP ASSEMBLY - FIGURE 5

ITEM	PART NO.	QTY.	DESCRIPTION	MODEL ID
1	R041094	1	Tube , oil dipstick	
1	R041095	1	Tube , oil dipstick CES engine	xx-601Cx-xx
2	R041092	1	Dipstick , oil level	
2	R041092	1	Dipstick , oil level CES engine	xx-601Cx-xx
3	RS0302	1	Bolt , oil dipstick tube attaching	
4	R127015	1	Clamp , oil dipstick tube attaching	
4	R127065	1	Clamp , oil dipstick tube attaching CES engine	
5	RS2180	1	Lockwasher , oil dipstick tube attaching	
6	RS1028	1	Nut , oil dipstick tube attaching	
7	TBD	1	Bolt , engine rear cover attaching	
8	R047236	1	Seal , engine rear cover oil	
9	TBD	1	Cover , engine rear	
10	R074030	1	Tube , oil pickup	
11	RM0279	1	Gasket , oil pan	
12	R005025	1	Oil Pan	
13	TBD	2	Bolt , oil sending unit adapter attaching	
14	R079071	1	Adapter , oil sending unit	
15	RM0284	1	Gasket , oil sending unit adapter	
16	TBD	2	Bolt , oil pan attaching (long)	
17	R024213	1	Fitting , oil drain	
18	R045049	AR	Hose , oil drain	
19	R024061	1	Fitting , oil drain	
20	R024066A	1	Cap , oil drain	
21	R190123	1	Hook , oil drain hose	
22	TBD	12	Bolt , oil pan attaching (short)	
23	TBD	1	Nut , oil pickup tube attaching	
24	TBD	1	Bolt , oil pickup tube attaching	
25	TBD	10	Nut , windage tray attaching	
26	TBD	1	O-ring , oil pickup tube	
27	R012027	1	Tray , windage	
28	TBD	4	Bolt , oil pump attaching	
29	RA070018	1	Oil Pump Assembly	
30	TBD	1	Drive , oil pump	
31	TBD	1	Check Valve , oil pressure	

THROTTLE BODY and RELATED COMPONENTS - FIGURE 6



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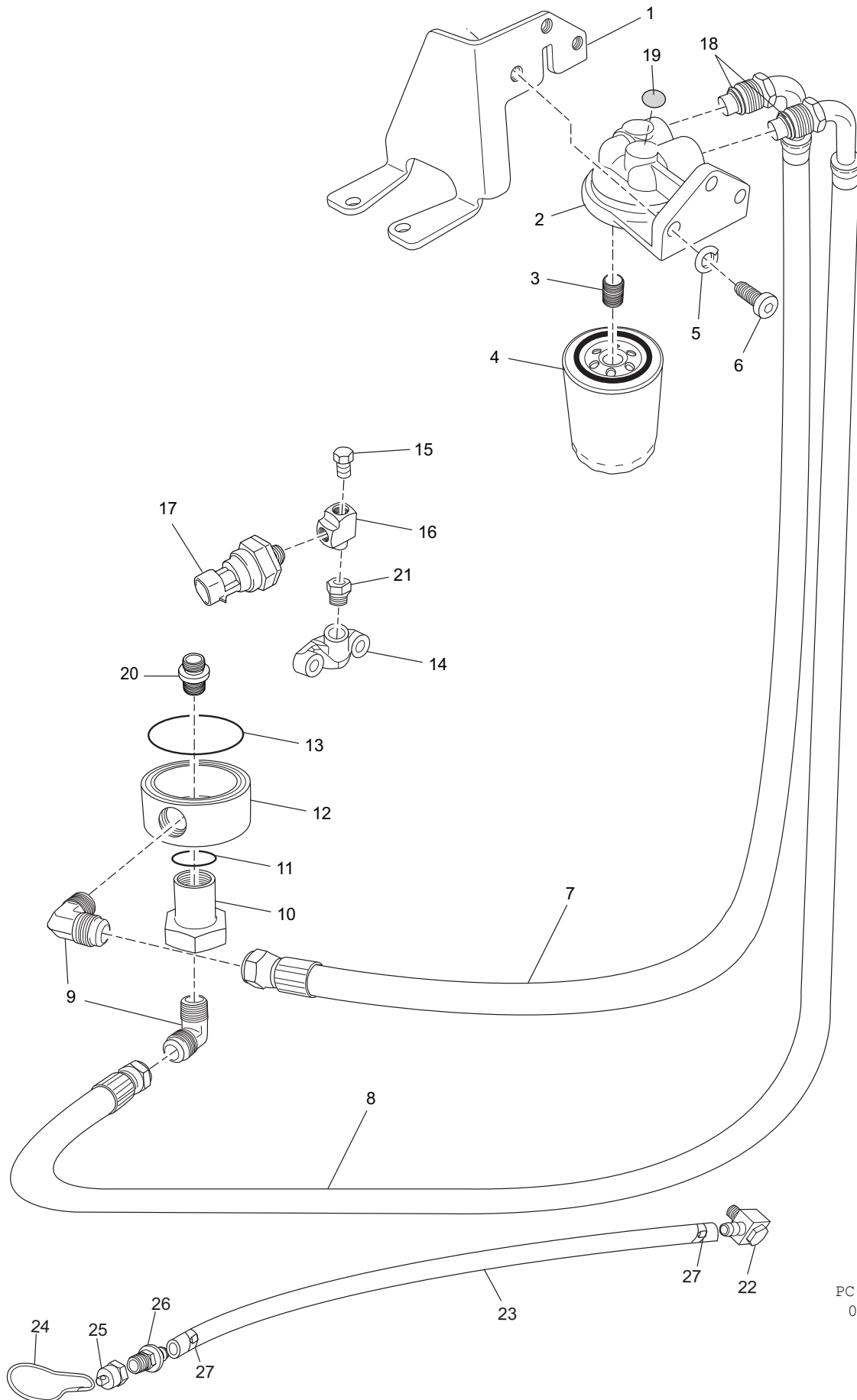
THROTTLE BODY and RELATED COMPONENTS - FIGURE 6

ITEM	PART NO.	QTY.	DESCRIPTION	MODEL ID
1	RA119005	1	Throttle Control Position (TCP) Sensor Assembly	
1	R119005A	1	Throttle Control Position (TCP) Sensor Assembly (LIVORSI)	
2	91864075	3	Bolt , TCP Sensor Assembly attaching	
3	92004000	3	Washer , flat, TCP Sensor Assembly attaching	
4	RS2052	3	Nut , TCP Sensor Assembly attaching	
5	R090086	1	Cable Clip , throttle	
6	RS5122	2	Bolt , cable clip attaching	
7	RS2050	2	Nut , cable clip attaching	
8	R090345	1	Bracket , TCP Assembly/Throttle Clip	
9	98222018	1	Bolt , TCP/Throttle Clip bracket attaching	
10	RA035044	1	Throttle Body Assembly	
11	RS3857	1	Clamp , flame arrestor	
12	R020032	1	Air Temp Sensor	
13	R145028	1	Arrestor , flame	
14	91064125	2	Bolt , TCP Sensor attaching	
15	93040000	2	Lock Washer , TCP Sensor attaching	
16	92004000	2	Flat Washer , TCP Sensor attaching	
17	R109053A	1	Plate Assembly , TCP Sensor	
18	RS1568	1	Nut , ball joint attaching	
19	R178003	1	Ball Joint Assembly	
20	R081009	1	Arm , TCP Sensor	
21	91864050	1	Bolt , TCP Sensor arm attaching	
22	94854500	1	Lock Washer , TCP Sensor arm attaching	
23	94004200	1	Flat Washer , TCP Sensor arm attaching	
24	R058071	1	Shaft , TCP Sensor	
25	R062090	1	Spacer , TCP support	
26	R119005	1	TCP Sensor	
27	R060069A	1	Cover , flame arrestor	
28	R090342	1	Bracket , flame arrestor cover, upper	
29	RS6502	1	Bolt , cover mount attaching, upper (use removable locktite)	
30	93920000	1	Lockwasher , cover mount attaching, upper	
31	R017082	1	Coupling , nut cover mount, upper	
32	R096143	1	Washer , cover attaching, upper	
33	R175055	1	Bolt , cover attaching, upper (use removable locktite)	
34	R090340	1	Bracket , cover flame arrestor, lower	
35	R175057	2	Screw , bellt guard retaining	
36	R017084	2	Nut , Clip-on	

REMOTE OIL FILTER COMPONENTS (STANDARD DRIVE) - FIGURE 7

ITEM	PART NO.	QTY.	DESCRIPTION	MODEL ID
1	99333020	3	Bolt , oil filter header mounting	
2	RS2179	3	Lockwasher , oil filter header mounting	
3	R079066	1	Oil Filter Header	
4	R090275	1	Bracket , oil filter header mounting	
5	R020049	1	Sender , oil pressure	
6	R024145	1	Tee , sender attaching	
7	RS3554	1	Plug , oil pressure sensor tee	
8	R079071	1	Adapter , oil sending unit	
9	R047240	1	O-ring , oil bypass adapter	
10	R079067	1	Adapter , oil bypass	
11	R047202	1	O-ring , oil bypass adapter attaching fitting	
12	R079068	1	Nut , oil bypass adapter attaching	
12	R079075	1	Nut , oil bypass adapter attaching SN 485676 and higher	
13	R024184	1	Fitting , 90 degree	
14	R045120D	1	Hose Assembly , filter header to bypass adapter	
15	R045120D	1	Hose Assembly , bypass adapter to filter header	
16	R024148	1	Fitting , straight	
17	R077001	1	Filter , oil	
18	R024203	1	Nipple , header filter adapter	
19	R047245	2	O-Ring , oil line	
20	R143175	1	Decal , "CAUTION HOT"	
21	R079074	1	Adapter , engine to oil bypass	
21	TBD	1	Adapter , engine to oil bypass SN485676 and higher	
22	RS3676	1	Bushing , oil sending unit	
23	R024213	1	Banjo , Fitting	
24	R045049	2FT	Hose , Oil resistant line	
25	R190123	1	Hook , oil drain hose end	
26	R024066A	1	Cap , pipe w/slot	
27	R024061	1	Connector , hose	
28	R127087C	2	Clamp oetiker	

REMOTE OIL FILTER COMPONENTS ("V" - DRIVE) - FIGURE 8

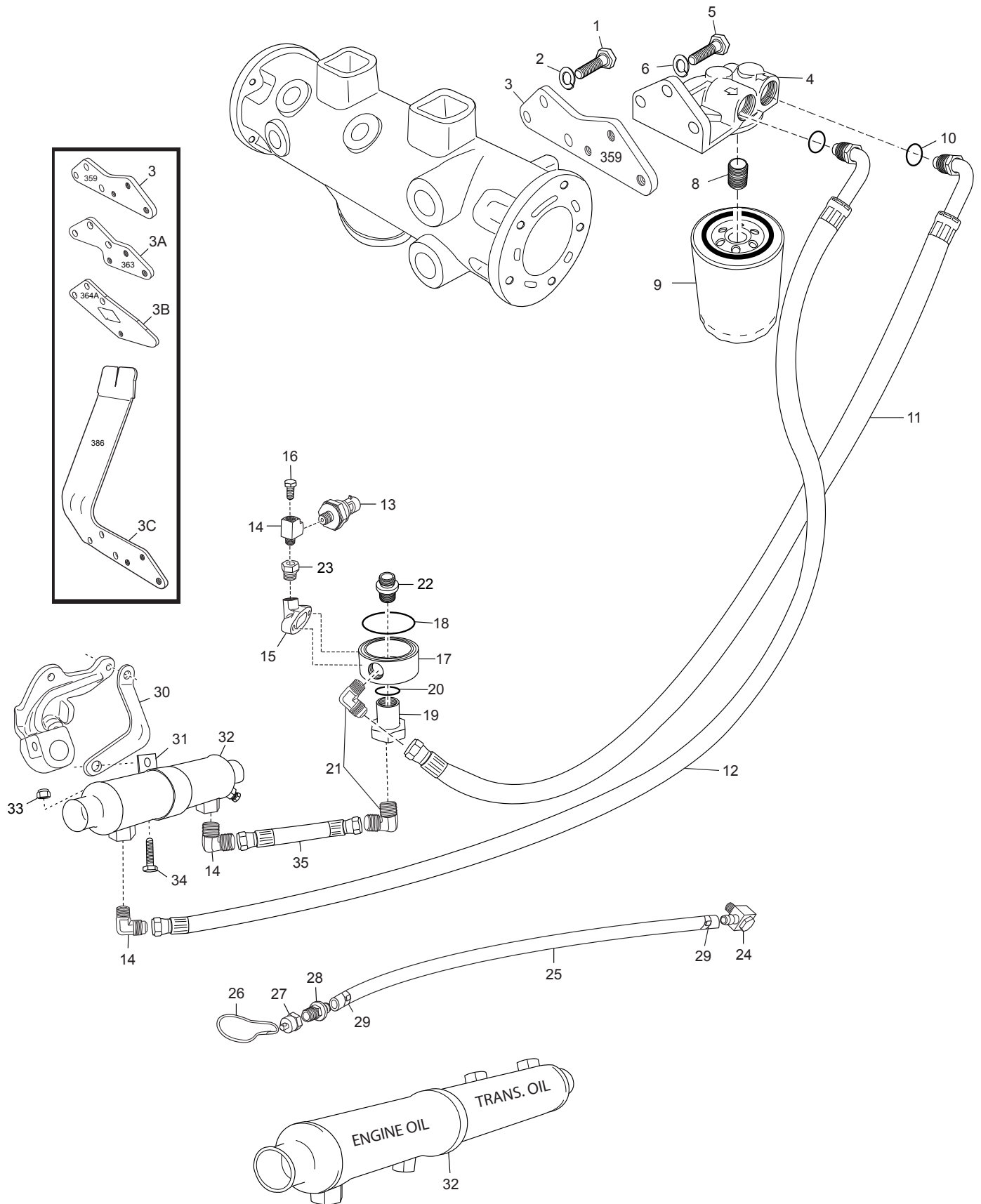


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REMOTE OIL FILTER COMPONENTS ("V" - DRIVE) - FIGURE 8

ITEM	PART NO.	QTY.	DESCRIPTION	MODEL ID
1	R090275	1	Bracket , oil filter header mounting	
2	R079066	1	Oil Filter Header	
3	R024203	1	Nipple , header filter adapter	
4	R077001	1	Filter , oil	
5	RS2179	3	Lockwasher , oil filter header mounting	
6	99333020	3	Bolt , oil filter header mounting	
7	RA045120	1	Hose Assembly , bypass adapter to filter header	
8	RA045120	1	Hose Assembly , filter header to bypass adapter	
9	R024184	2	Fitting , 90 degree	
10	R079068	1	Nut , oil bypass adapter attaching	
10	R079075	1	Nut , oil bypass adapter attaching SN 485676 and higher	
11	R047202	1	O-ring , oil bypass adapter attaching fitting	
12	R079067	1	Adapter , oil bypass	
13	R047240	1	O-ring , oil bypass adapter	
14	R079071	1	Adapter , oil sending unit	
15	RS3554	1	Plug , oil pressure sensor tee	
16	R024145	1	Tee , sender attaching	
17	R020049	1	Sender , oil pressure	
18	R047245	2	O-Ring , oil line	
19	R143175	1	Decal , "CAUTION HOT"	
20	R079074	1	Adapter , engine to oil bypass	
20	TBD	1	Adapter , engine to oil bypass SN485676 and higher	
21	RS3676	1	Bushing , oil sending unit	
22	R024213	1	Banjo , Fitting	
23	R045049	2FT	Hose , Oil resistant line	
24	R190123	1	Hook , oil drain hose end	
25	R024066A	1	Cap , pipe w/slot	
26	R024061	1	Connector , hose	
27	R127087C	2	Clamp oetiker	

CES REMOTE OIL FILTER COMPONENTS - FIGURE 9

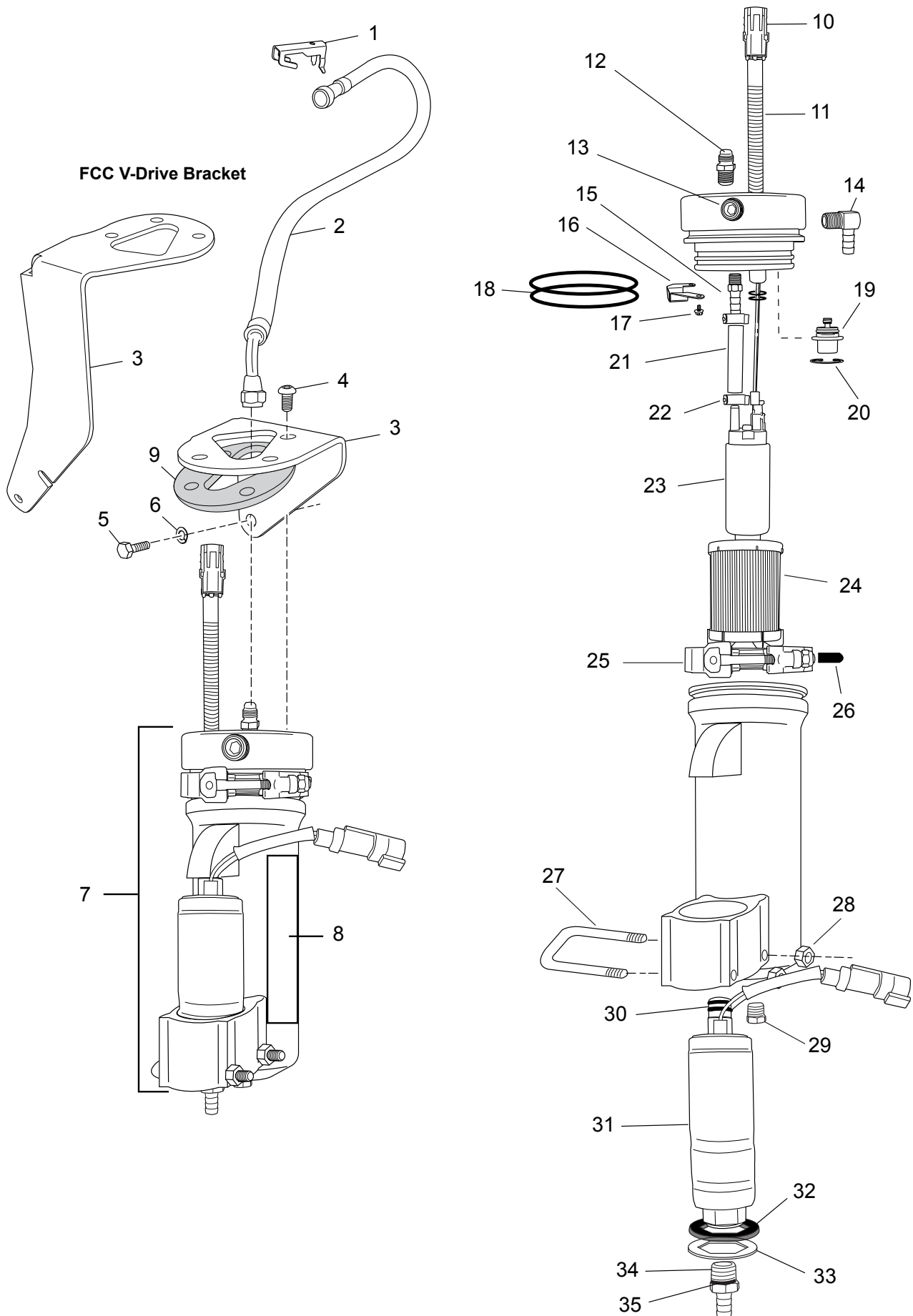


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CES REMOTE OIL FILTER COMPONENTS - FIGURE 9

ITEM	PART NO.	QTY.	DESCRIPTION	MODEL ID
1	RS0280	3	Bolt , oil filter header mounting bracket attaching	05-6xxCV-xx
2	RS2179	3	Lockwasher , attaching bolt	
3	R090359	1	Bracket , oil filter header mounting	
3A	R090363	AR	Bracket , oil filter header mounting	
3B	R090364A	AR	Bracket , oil filter header mounting	
3C	R090386	AR	Bracket , oil filter header mounting	
4	R079066	1	Oil Filter Header	
5	98333020	3	Bolt , oil filter header mounting	
6	RS2179	3	Lockwasher , oil filter header mounting bolt	
7	R143175	1	Decal , "Hot", oil header	
8	R024203	1	Nipple , header filter adapter	
9	R077001	1	Filter , oil	
10	R047245	2	O-Ring , oil line	
11	RA045120E	1	Hose Assembly , filter header to bypass adapter	
12	RA045120	1	Hose Assembly , bypass adapter to filter header	
13	R020049	1	Sender , oil pressure	
14	R024145	1	Tee , sender attaching	
15	R079071	1	Adapter , oil sending unit	
16	RS3554	1	Plug , oil pressure tee	
17	R079067	1	Adapter , oil bypass	
18	R047202	1	O-ring , oil bypass adapter attaching fitting	
19	R079068	1	Nut , oil bypass adapter attaching	
19	R079075	1	Nut , oil bypass adapter attaching SN 485676 and higher	
20	R047240	1	O-ring , oil bypass adapter	
21	R024184	4	Fitting , 90 degree	
22	R079074	1	Adapter , engine to oil bypass	
22	TBD	1	Adapter , engine to oil bypass SN485676 and higher	
23	RS3676	1	Bushing , oil sending unit	
24	R024213	1	Banjo , Fitting	
25	R045049	2FT	Hose , Oil resistant line	
26	R190123	1	Hook , oil drain hose end	
27	R024066A	1	Cap , pipe w/slot	
28	R024061	1	Connector , hose	
29	R127087C	2	Clamp oetiker	
30	R090404	1	Bracket , oil cooler to engine	
31	R090010	1	Bracket , oil cooler	
32	R147049	1	Oil cooler , engine	
32	R147056	1	Cooler, tandem engine oil & transmission oil	
33	RS2058	1	Nut , oil cooler bracket	
34	RS0256	1	Bolt, oil cooler bracket	
35	RA045103D	1	Hose Assembly, engine cooler to bypass adaptor	

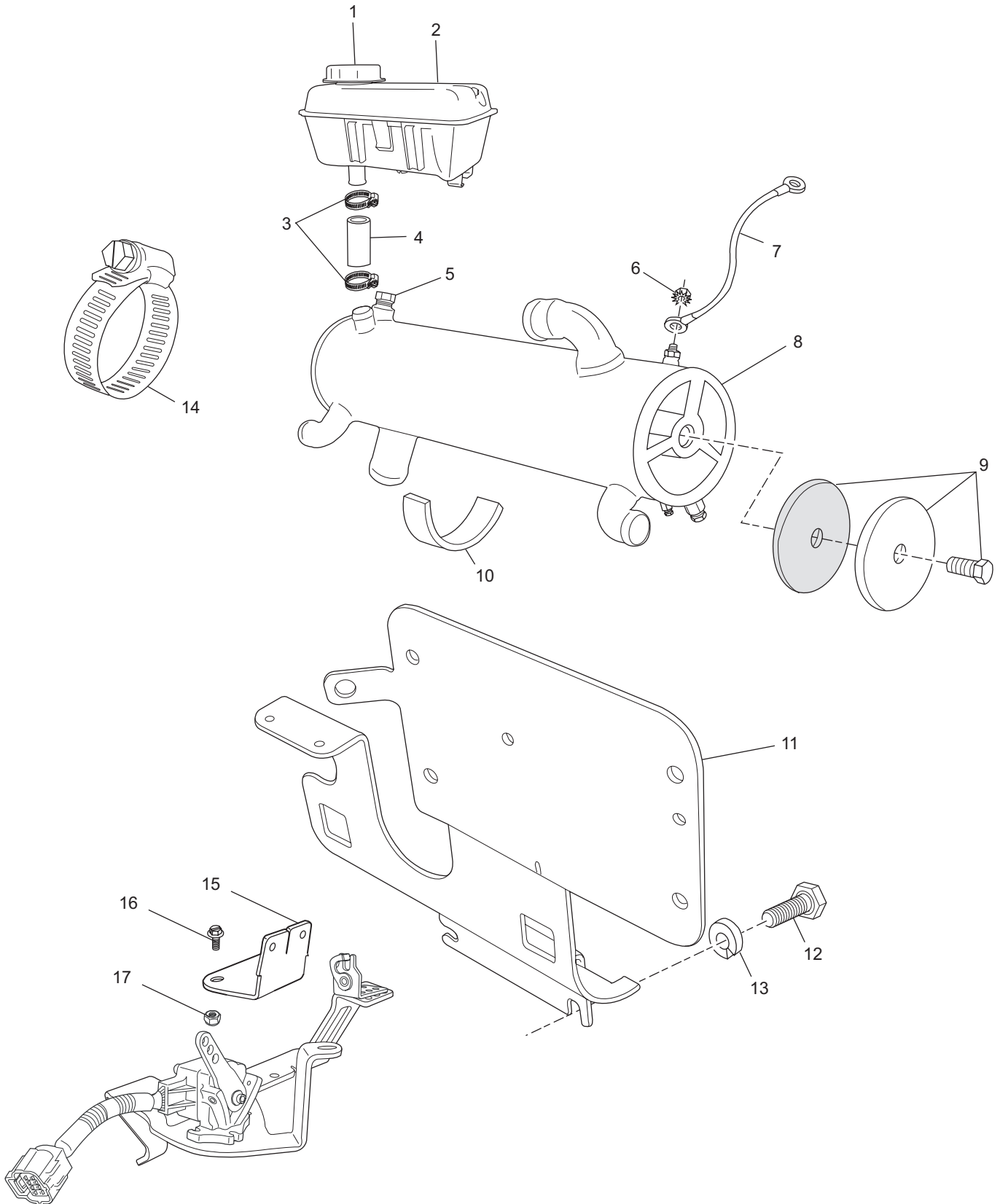
FUEL CONTROL CELL (FCC) COMPONENTS - FIGURE 10



FUEL CONTROL CELL (FCC) COMPONENTS - FIGURE 10

ITEM	PART NO.	QTY.	DESCRIPTION	MODEL ID
1	R127100	2	Locking Clip , fuel line	
2	RA085090E	1	Hose Assembly , FCC to fuel rail (inlet)	xx-601V-xx
3	R090276	1	Bracket , FCC mounting	
3	R090277A	1	Bracket , FCC mounting	xx-601V-xx
4	90384075	3	Bolt , FCC mounting	
4	90384100	3	Bolt , FCC mounting	
5	98443025	2	Bolt , FCC mounting bracket	
6	93940000	2	Lockwasher , FCC mounting bracket	
7	RA080035	1	FCC Assembly	
8	R143112C	1	Decal , FCC	
9	R062091	1	Spacer , FCC insulator	
10	7172040	1	Connector , W/P 2-Way Female	
11	R1210085A	1	Harness , 1 piece, FCC high pressure fuel pump	
12	R024175	1	Fitting , FCC head (fuel supply line)	
13	RS3550	1	Plug , FCC head	
14	R024225	1	Fitting , 90 degree	
15	R024219	1	Fitting , FCC internal	
16	R012030	1	Baffle , fuel	
17	91620025	2	Screw , self-tapping, baffle/harness retaining	
18	R047241	2	O'Ring , FCC bowl-to-head seal	
19	R088004	1	Regulator , fuel pressure	
20	R048070	1	Retainer , fuel pressure regulator	
21	R045098B	1	Hose , FCC internal fuel	
22	R127087	2	Clamp , Oeticker	
23	RA080027	1	Pump , FCC high pressure fuel	
24	R080026	1	Filter , FCC	
25	R171010	1	Clamp , FCC bowl-to-head retaining	
26	R128002	1	Cover , FCC clamp T-bolt	
27	R127102	1	U-Bolt , low pressure fuel pump retaining	
28	95004300	2	Nut , Nylock, low-pressure fuel pump retaining	
29	RS3554	1	Plug , FCC drain	
30	R047252	2	O'Ring , LPFP seal	
31	RA080032A	1	Fuel Pump , low-pressure	
32	R094045	1	Isolator , LPFP mounting	
33	R169064	AR	Shim , LPFP mounting, 11 gage	
33	R169064A	AR	Shim , LPFP mounting, 16 gage	
33	R169064B	AR	Shim , LPFP mounting, 22 gage	
34	R024232	1	Fitting , LPFP to 3/8 Hose barb	
35	R047251	1	O'Ring , seal (p/o item 31)	
NI	R143114	1	Decal , Warning, fuel leaks	
NI	RP080026	1	Kit, Filter and O-Rings , FCC	

HEAT EXCHANGER and COMPONENTS - FIGURE 11

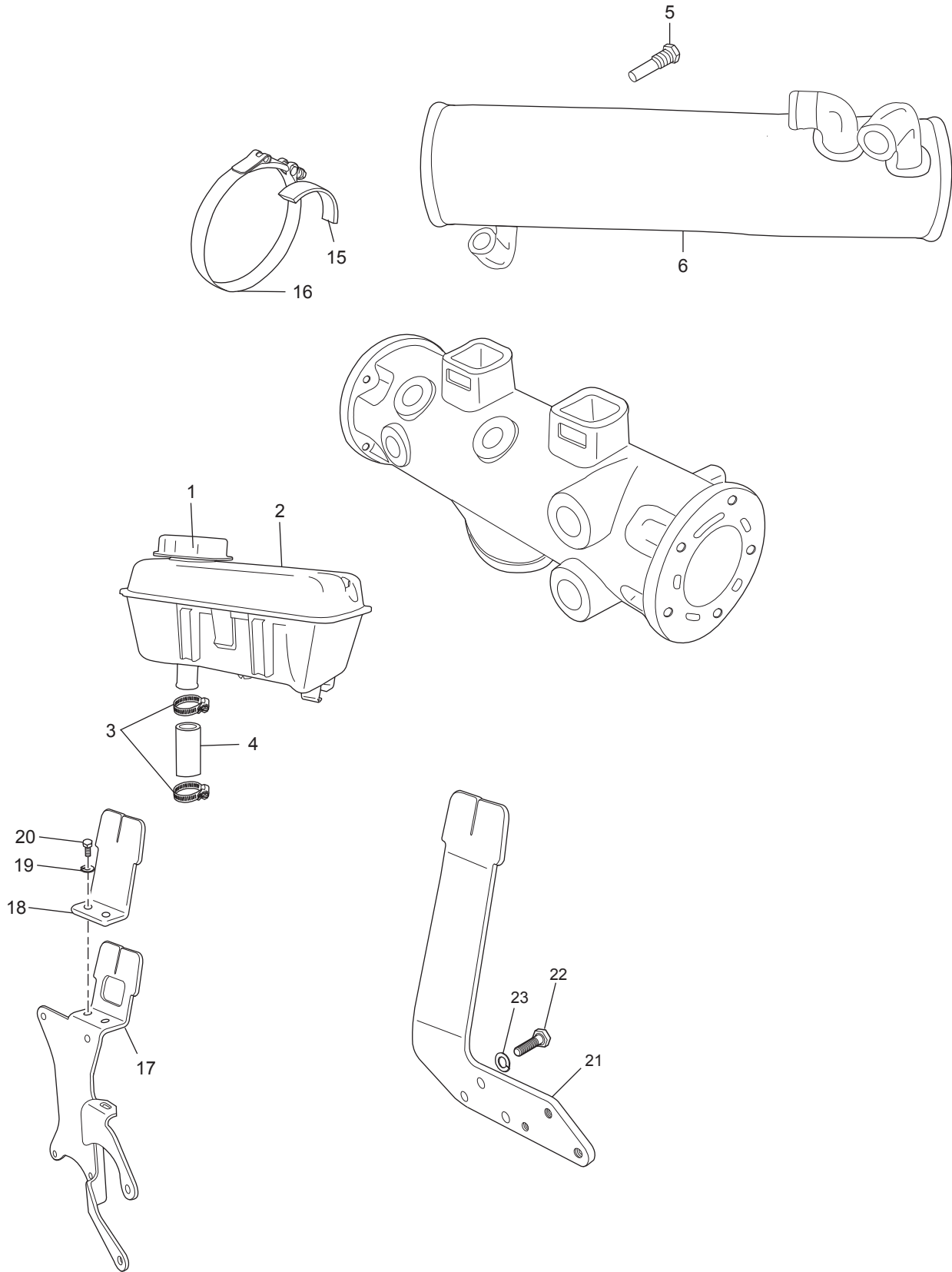


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HEAT EXCHANGER and COMPONENTS - FIGURE 11

ITEM	PART NO.	QTY.	DESCRIPTION	MODEL ID
1	R034045	1	Cap , degas bottle	
2	R146001	1	Bottle , degas	
NI	TBD	1	Decal , 6.0L specification	
NI	R143153	1	Decal , coolant fill	
3	RS3872	2	Clamp , hose	
4	R045161	1	Hose , degas bottle to heat exchanger	
5	R168008	AR	Anode , sacrificial zinc	
6	RS1078	1	Nut , ground wire stud	
7	R101013	1	Wire , grounding	
8	RA147047	1	Heat Exchanger Assembly	
9	R034009	AR	End Cap , exchanger	
10	R094040	2	Isolator , rubber	
11	R090279B	1	Bracket , heat exchanger	
12	RS0304	2	Bolt , heat exchanger bracket attaching	
13	RS2380	2	Lockwasher , mounting bolt	
14	RS3857	2	Clamp , exchanger mounting	
15	R090274A	1	Bracket , degas bottle mounting	
16	TBD	2	Bolt , degas bottle bracket attaching	
17	TBD	2	Nut , degas bottle bracket attaching	
NI	R143155	1	Decal , Protective Anode	
NI	R143156	1	Decal , Raw Water Drain	
NI	R143157	1	Decal , Fresh Water Drain	

CES HEAT EXCHANGER and COMPONENTS - FIGURE 12

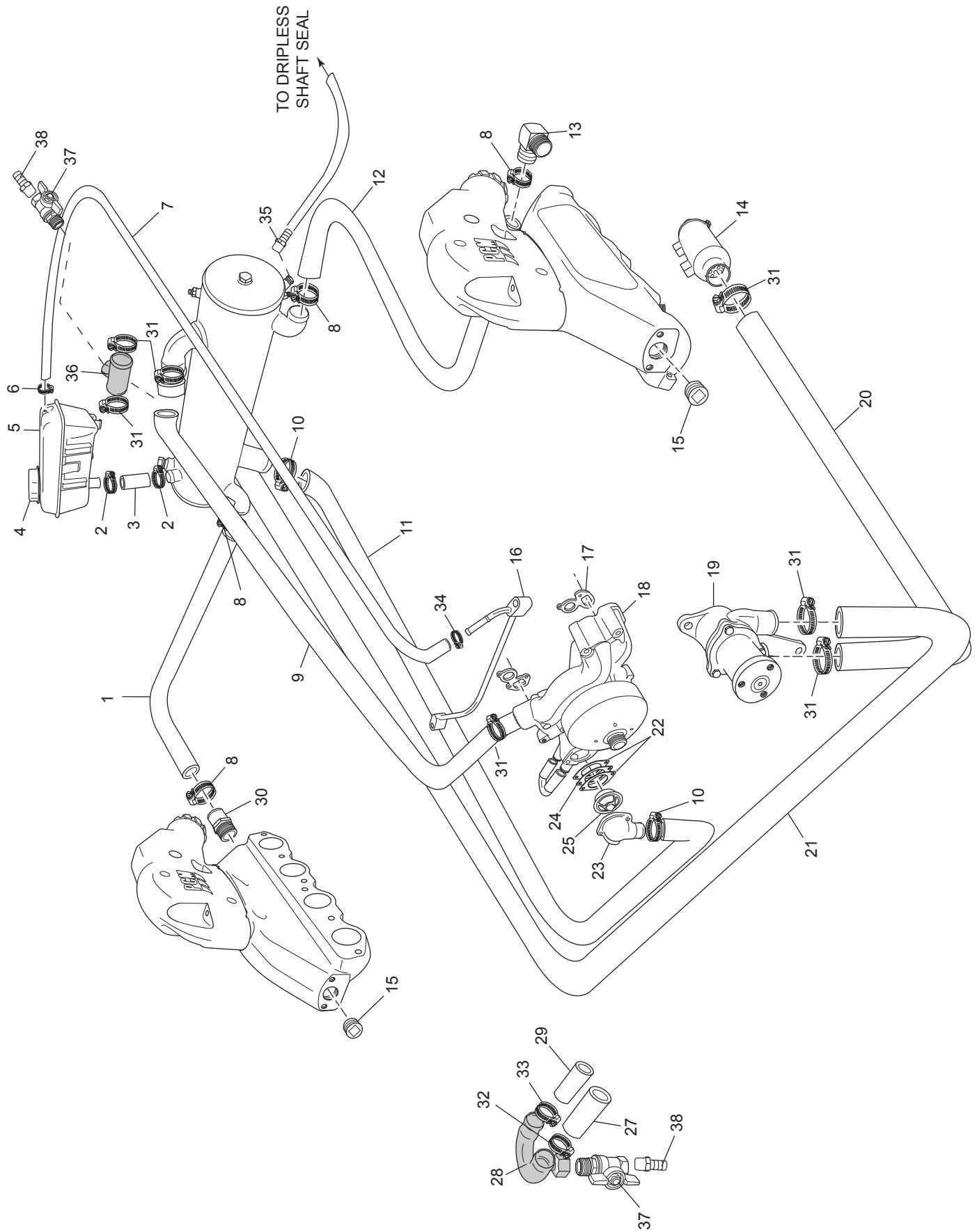


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CES HEAT EXCHANGER and COMPONENTS - FIGURE 12

ITEM	PART NO.	QTY.	DESCRIPTION	MODEL ID
1	R034045	1	Cap , degas bottle	
2	R146001	1	Bottle , degas	
NI	TBD	1	Decal , 6.0L specification	
NI	R143153	1	Decal , coolant fill	
3	RS3872	2	Clamp , hose	
4	TBD	1	Hose , degas bottle to heat exchanger	
5	R168008	AR	Anode , sacrificial zinc	
6	RA147053	1	Heat Exchanger Assembly , (Half System)	
15	R094052	2	Isolator , rubber	
16	RS3857	2	Clamp , exchanger mounting	
17	R090362	1	Bracket , ECM/Low mount degas	
18	R090385	1	Bracket , degas bottle fill location/high mount	
19	93934000	2	Lockwasher , high mount degas bracket attaching	
20	98334016	2	Bolt , high mount degas bracket attaching	
21	R090386	1	Bracket , rear mount degas bottle bracket	
22	98334014	3	Bolt , rear mount degas bottle bracket attaching	
23	RS2179	3	Lockwasher , rear mount degas bottle bracket attaching	
NI	R143155	1	Decal , Protective Anode	
NI	R143156	1	Decal , Raw Water Drain	
NI	R143157	1	Decal , Fresh Water Drain	
NI	R143183-08	1	Decal , 6.0 Emission MY '08	
NI	R143194	1	Decal , "Super Ultra Low Emission"	

FRESH WATER COOLING SYSTEM COMPONENTS - FIGURE 13

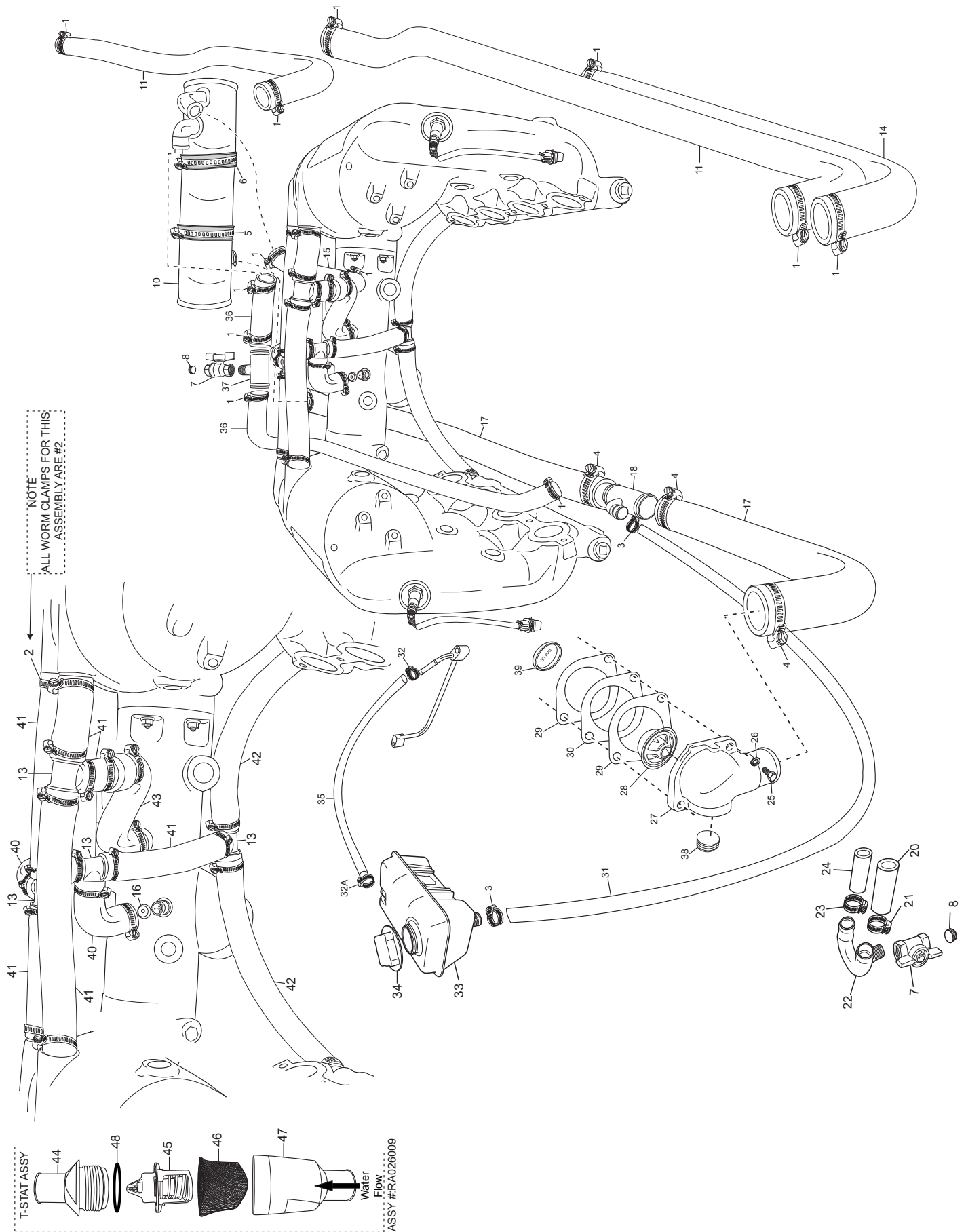


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FRESH WATER COOLING SYSTEM COMPONENTS - FIGURE 13

ITEM	PART NO.	QTY.	DESCRIPTION	MODEL ID
1	R045151	1	Hose , exchanger to exhaust manifold (Starboard STD)	
2	RS3872	2	Clamp , hose	
3	R045161	1	Hose , degas bottle to heat exchanger	
4	R034045	1	Cap , degas bottle	
5	R146001	1	Bottle , degas	
6	R127087	1	Clamp , hose (5/8" - degas bottle)	
7	R045132	1	Hose , coolant air bleed to bottle	
8	RS3851	4	Clamp , hose (1")	
9	R045149A	1	Hose , circ. pump to heat exchanger	
10	RS3868	2	Clamp , hose (1 1/2")	
11	R045148	1	Hose , exchanger to thermostat housing	
12	R045150	1	Hose , exchanger to exhaust manifold (Port STD)	
13	R024006A	1	Fitting , 90 degree	
14	R147014	1	Cooler , transmission oil	
15	113186	2	Plug , manifold	
16	RA085104	1	Tube , coolant air bleed	
17	RM0281	2	Gasket , water pump to engine block	
18	RK057036	1	Water Circulation Pump Assembly	
19	RA057032	1	Raw Water Pump	
20	18401	1	Hose , oil cooler to raw water pump (cut-to-fit)	
21	R045147	1	Hose , raw water pump to exchanger	
22	RM0275	2	Gasket , thermostat housing	
23	R025036	1	Thermostat Housing	
24	R109051	1	Plate , thermostat retainer	
25	R026002	1	Thermostat , (160 degree)	
26	R024208	1	Water Neck	
26A	RS3551	2	Plug , water neck	
27	R045153	1	Hose , coolant bypass fitting (3/4" bulk)	
28	R024210A	1	Bypass , coolant, U-Tube, 1/2" NPTF	
28	R024210B	1	Bypass , coolant, U-Tube, 1/2" NPTM, SN 485870 and higher	
29	R045086	1	Hose , coolant bypass fitting (5/8" bulk)	
30	R024073	1	Fitting , manifold straight	
31	RS3858	10	Clamp , hose (1 1/4")	
32	R127087G	2	Clamp , hose (1 1/16" oetiker)	
33	R127087F	2	Clamp , hose (1" oetiker)	
34	R127084	1	Clamp , hose (vent tube)	
35	R024234	AR	Fitting , 3/8 NPT x 5/16 hose	
36	R024249	1	Tee , 1 1/4 to 1/2 NPTF	
36	R024249A	1	Tee , 1 1/4 to 1/2 NPTM, SN 485870 and higher	
37	R035039	2	Ball Valve , 1/2 NPTM X1/2NPTF	
37	R035039A	2	Ball Valve , 1/2 NPTF X1/2NPTF, SN 485870 and higher	
38	30645	AR	Fitting , 1/2 NPT x 5/8 hose	
NI	444705	AR	Plug , 1/2 NPT, soc	
NI	RF035039A	AR	Heater Retrofit Kit , includes items 28, 36, 37	

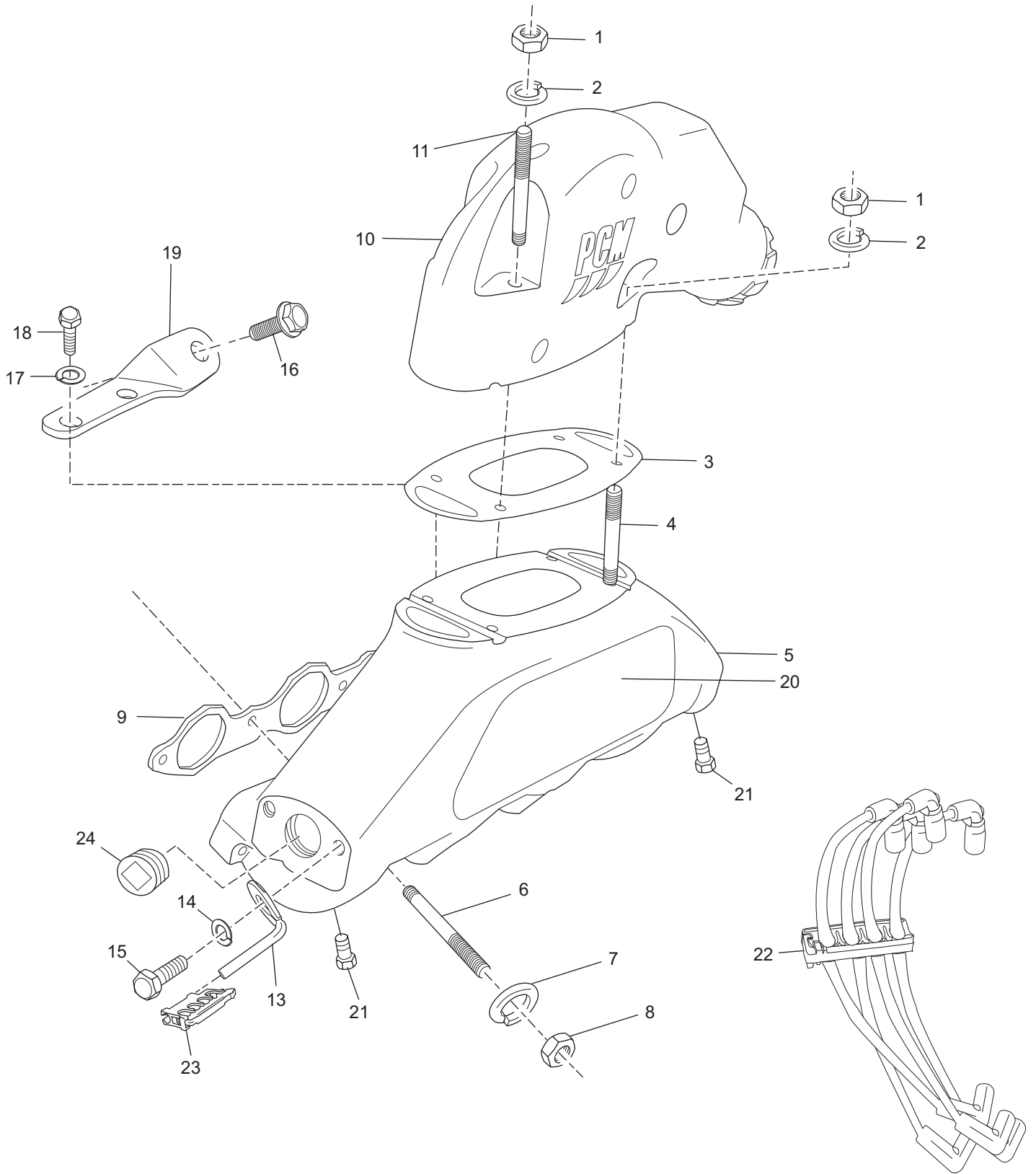
CES FRESH WATER COOLING SYSTEM COMPONENTS - FIGURE 14



CES FRESH WATER COOLING SYSTEM COMPONENTS - FIGURE 14

ITEM	PART NO.	QTY.	DESCRIPTION	MODEL ID
1	RS3858	12	CLAMP , HOSE #20	
2	RS3851	22	CLAMP , HOSE #16	
3	RS3854	2	CLAMP , HOSE #12	
4	RS3868	4	CLAMP , HOSE #24	
5	RS3857	2	CLAMP , HOSE #64	
6	R094052	2	ISOLATOR , H.E. ATTACHING	
7	R035039A	2	VALVE , BALL	
8	444705	2	PIPE , PLUG	
10	RA147053	1	HEAT EXCHANGER	
11	20865	8FT	HOSE , WIRE REINFORCED	
13	R024028C	4	FITTING , TEE	
14	R045152B	1	HOSE , COOLER/RWP	
15	R045197	1	HOSE , HEAT EXCHANGER TO CROSSOVER	
16	R012031	1	ORIFICE TUBE	
17	R045080	1	HOSE	
18	R024250	1	FITTING , TEE	
20	R045153	1	HOSE , SOFT	
21	R127087G	2	CLAMP , OETIKER HOSE TO U-TUBE	
22	R024210B	1	U-TUBE , CIRCULATION PUMP	
23	R127087F	2	CLAMP , OETIKER HOSE TO U-TUBE	
24	20806	1	HOSE	
25	98223035	2	BOLT , THERMOSTAT HOUSING	
26	93920000	2	LOCKWASHER , THERMOSTAT HOUSING	
27	R025036	1	HOUSING , THERMOERSTAT	
28	R026002	1	THERMOSTAT , 160 DEGREE	
29	RM0275	2	GASKET , THERMOSTAT HOUSING	
30	R109051	1	PLATE , THERMOSTAT RETENTION	
31	R045153	1	HOSE	
32	RS3870	1	CLAMP , DEGAS HOSE TO VENT	
32A	R127087	1	CLAMP , HOSE TO DEGAS VENT	
33	R146001	1	BOTTLE , DEGAS	
34	R034045	1	CAP , DEGAS BOTTLE	
35	R045132	1	HOSE , BOTTLE TO VENT	
36	R045198	1	HOSE , CIRC PUMP/H.E. TO TEE	
37	R024249A	1	FITTING , TEE TO HEATER BALL VALVE	
38	RS3533A	1	PIPE PLUG , TO THERMOSTAT HOUSING	
39	R069073	1	CAP PLUG , TO ENGINE THROUGH THERMOSTAT HOUSING	
40	R045151	2	HOSE , MANIFOLDS TO CROSS-OVER	
41	RO45107	4FT	HOSE , SOFT	
42	20866	4FT	HOSE , WIRE REINFORCED	
43	R045203	1	HOSE , CROSS-OVER TO FWC THERMOSTAT	
44	R025047A	1	HOUSING , THERMOSTAT-OUTLET	
45	R026009A	1	THERMOSTAT , 143^, DRILLED	
46	R074031	1	STRAINER , FWC THERMOSTAT	
47	R025046A	1	HOUSING , THERMOSTAT-INLET	
48	R047260	1	O'RING , FWC THERMOSTAT HOUSING	

EXHAUST MANIFOLD and COMPONENTS - FIGURE 15

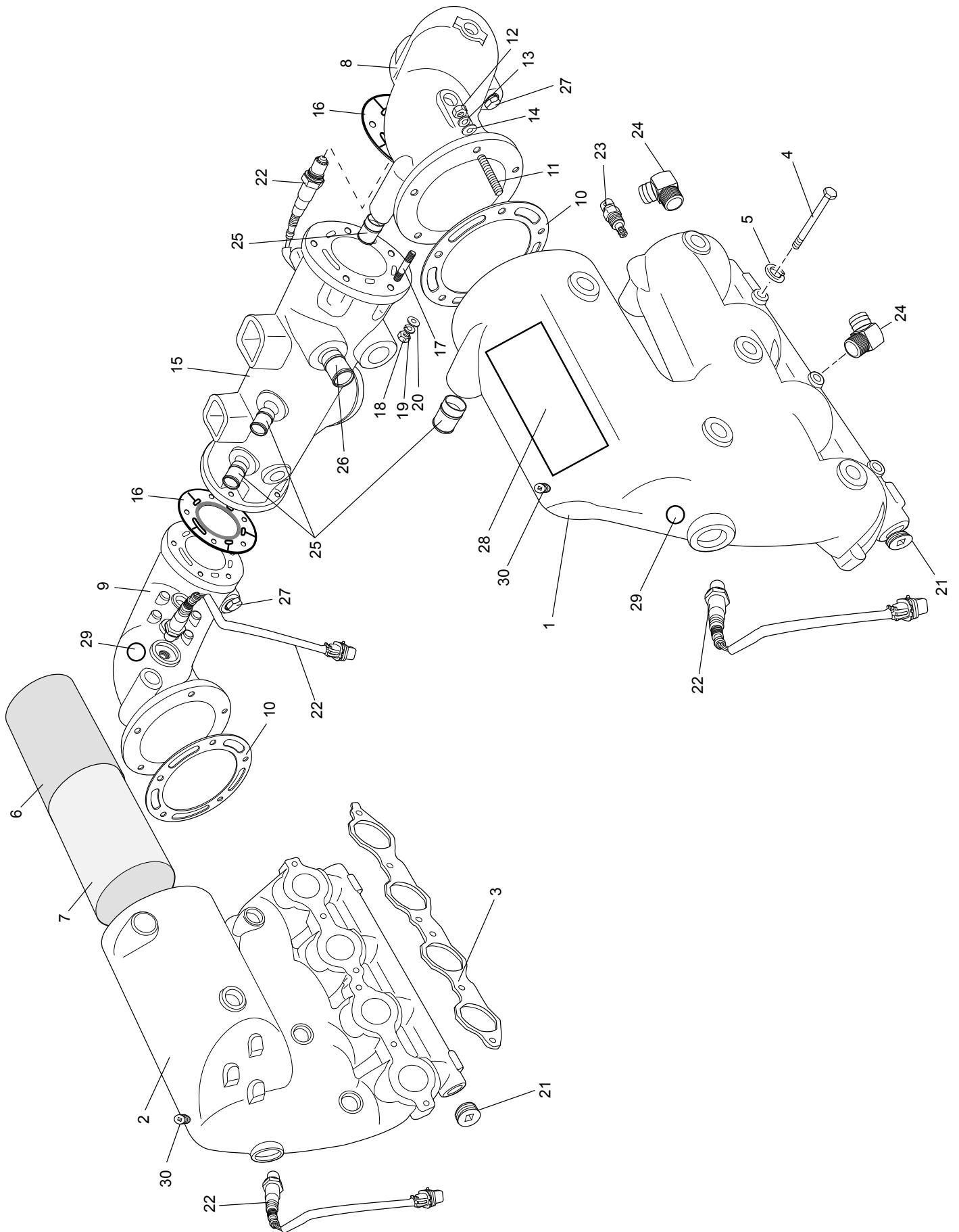


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EXHAUST MANIFOLD and COMPONENTS - FIGURE 15

ITEM	PART NO.	QTY.	DESCRIPTION	MODEL ID
1	95310000	8	Nut , exhaust elbow attaching	
2	93300000	8	Lockwasher , exhaust elbow attaching	
3	RM0274	2	Gasket , manifold to exhaust elbow	
4	R031036	4	Stud , exhaust elbow attaching (short)	
4	R031039	AR	Stud , exhaust elbow attaching w/4" riser (short)	
5	R028023	2	Exhaust Manifold Assembly	
6	R031035	12	Stud , manifold to cylinder head attaching	
7	RS2179	12	Lockwasher , manifold to cylinder head attaching	
8	RS7026	12	Nut , manifold to cylinder head attaching	
9	RM0276A	2	Gasket , manifold to cylinder head	
10	R029016	2	Exhaust Elbow Assembly	
11	R031037	4	Stud , exhaust elbow attaching (long)	
11	R031040	AR	Stud , exhaust elbow attaching w/4" riser (long)	
NI	RS3539	2	Plug , exhaust elbow	
13	R096144	2	Retainer , spark plug wire clip	
14	922200020	2	Washer , retainer attaching	
15	RS0280	2	Bolt , retainer attaching	
16	98222018	2	Bolt , bracket attaching	
17	93920000	4	Lockwasher , bracket attaching	
18	90165063	4	Bolt , bracket attaching	
19	R090305	2	Bracket , manifold support	
20	R143002K	2	Decal , exhaust manifold, 6.0L	
21	RS3557	4	Plug , Hex Head, Brass 3/8" NPT	
22	R127062	2	Separator , ignition wire	
23	R127090	2	Retainer , plug wire	
24	RS3533	2	Plug , exhaust manifolds	
			*NOTE: See Fresh Water Cooling section for parts used on Fresh Water Cooled engines.	

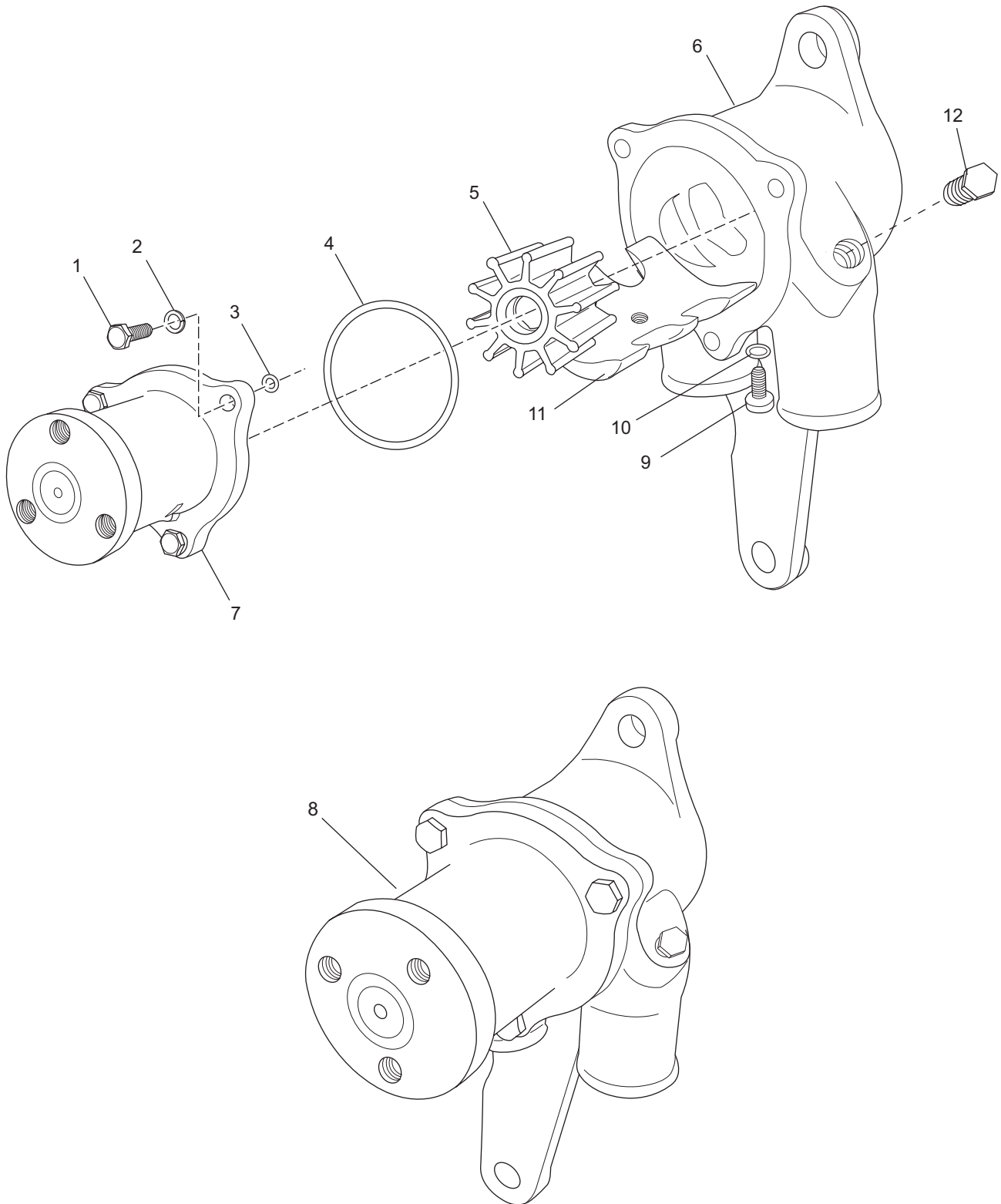
CES EXHAUST MANIFOLD and COMPONENTS - FIGURE 16



CES EXHAUST MANIFOLD and COMPONENTS - FIGURE 16

ITEM	PART NO.	QTY.	DESCRIPTION	MODEL ID
1	R028027	1	Exhaust Manifold Assembly - Port	
2	R028028	1	Exhaust Manifold Assembly - Starboard	
3	RM0276A	2	Gasket , manifold to cylinder head	
4	98334040	12	Bolt , manifold to cylinder head attaching	
5	93934000	12	Lockwasher , manifold to cylinder head attaching	
6	R144003A	2	Catalyst	
7	RM0291	2	Mesh , catalyst support	
8	R133001	1	Exhaust Corner - Port	
9	R133002	1	Exhaust Corner - Starboard	
10	RM0285	2	Gasket , manifold to corner	
11	R031044	10	Stud , exhaust manifold to corner attaching	
12	97334000	10	Nut , corner to manifold attaching	
13	93934000	10	Lock Washer , corner to manifold attaching	
14	92934020	10	Flat Washer , corner to manifold attaching	
15	R133003	1	Exhaust Crossover	
16	RM0299	2	Gasket , corner to crossover	
17	R031045	10	Stud , exhaust corner to crossover attaching	
18	97334000	10	Nut , crossover to corner attaching	
19	93934000	10	Lock Washer , crossover to corner attaching	
20	92934020	10	Flat Washer , crossover to corner attaching	
21	RS3533	2	Plug , exhaust manifold	
22	R020051	4	Sensor , Oxygen	
23	R020019	2	Sensor , Exhaust Manifold Water Temperature	
24	R024006A	2	Fitting , 90 degree	
25	R024239	6	Fitting , 1" hose	
26	R024240	1	Fitting , 1.25" hose	
27	RS3557	2	Plug , exhaust corner	
28	R143195	2	Decal , "Catanium", each exhaust manifold	
28	R143195A	2	Decal , "Catanium", each exhaust manifold model year 2014	
29	R143175	4	Decal , "HOT", each Oxygen Sensor	
30	RS3539	2	Plug , cooling system bleeder	
30	RS3550	2	Plug , cooling system bleeder	

RAW WATER COOLING PUMP - FIGURE 17

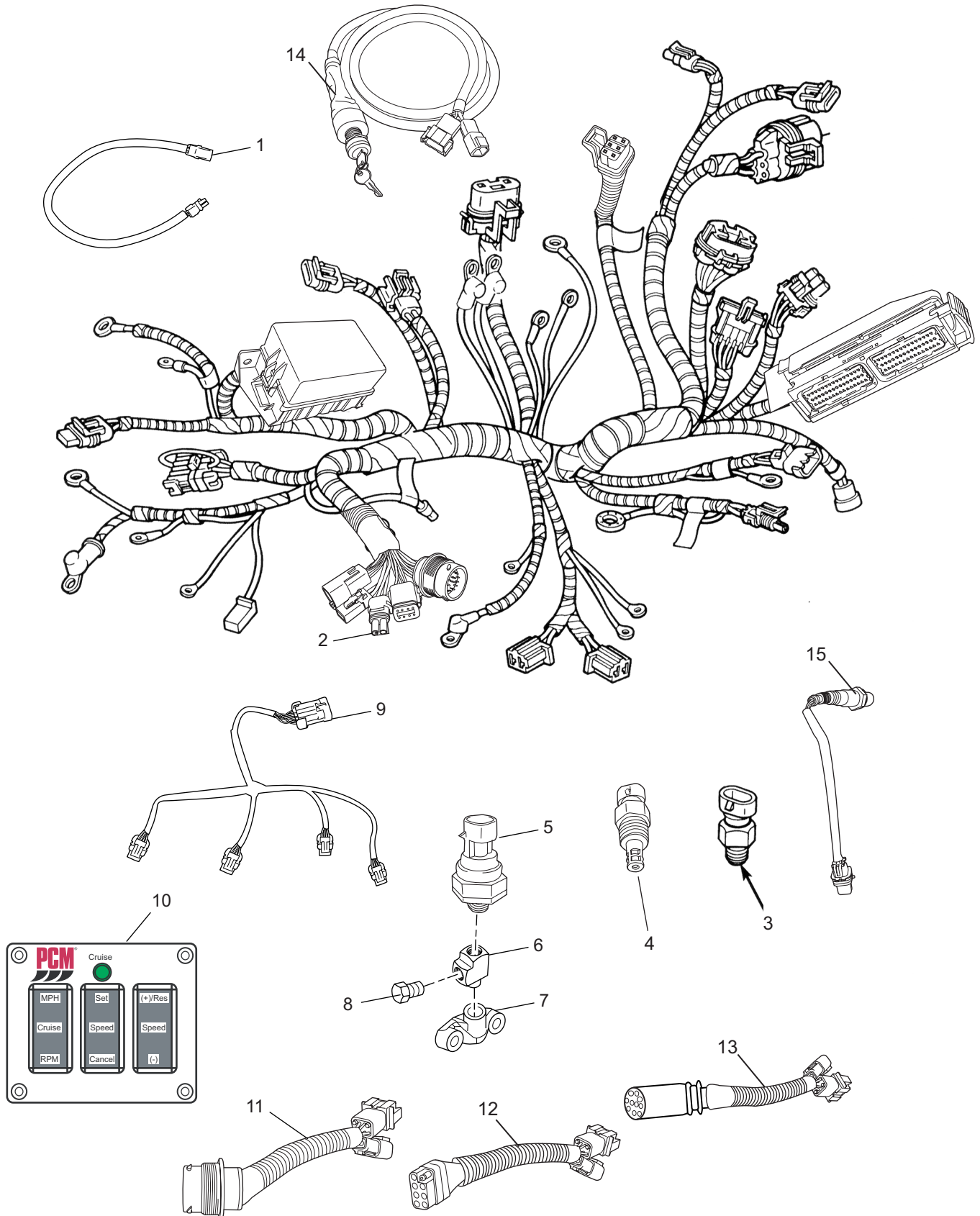


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RAW WATER COOLING PUMP - FIGURE 17

ITEM	PART NO.	QTY.	DESCRIPTION	MODEL ID
1	98224020	3	Bolt , bearing housing attaching	
2	93924000	3	Lockwasher , bearing housing attaching bolt	
3	R047243	3	O-ring , bearing housing attaching bolt	
4	R047242	1	O-ring , bearing housing attaching	
5	RP061022	1	Impeller Kit (includes O-rings and impeller)	
6	R057032	1	Housing , raw water pump	
7	RA134071	1	Bearing Housing Assembly	
8	RA057032	1	Raw Water Pump Assembly	
9	R175056	1	Bolt , raw water pump cam	
10	R047254	1	O-ring , raw water pump cam	
11	R161018	1	Cam , raw water pump	
12	RS3554	1	Plug , brass 1/8 NPT	

WIRING HARNESS ASSEMBLIES and SENDERS - FIGURE 18

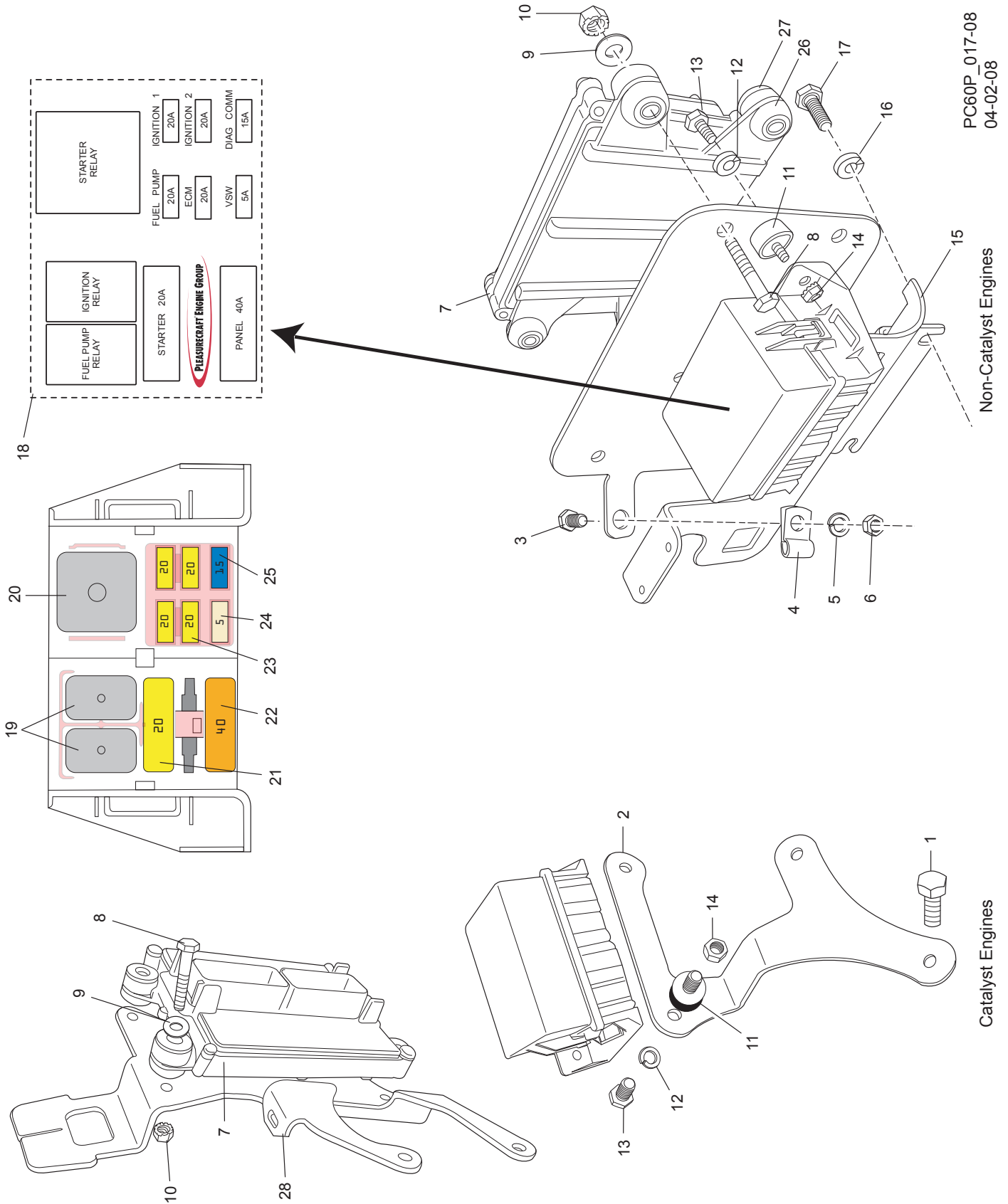


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WIRING HARNESS ASSEMBLIES and SENDERS - FIGURE 18

ITEM	PART NO.	QTY.	DESCRIPTION	MODEL ID
1	R121078	AR	Harness , FCC ("V" - Drive)	
2	RA121099	1	Engine Wiring Harness Assembly	xx-601X-xx
2	RA121099A	1	Engine Wiring Harness Assembly (CES engines)	xx-601XC-xx
2	RA121106	1	Engine Wiring Harness Assembly SN 485697 and higher w/Auto-Start	xx-601X-xx
2	RA121106A	1	Engine Wiring Harness Assembly w/Auto-Start (Used with LINC Display)	02-601X-xx
2	RA121106B	1	Engine Wiring Harness Assembly	
2	RA121107	1	Engine Wiring Harness Assembly (CES engines) SN 485760 and higher - w/Auto-Start	xx-601XC-xx
2	RA121107A	1	Engine Wiring Harness Assembly (CES engines) w/Auto-Start (Used with LINC Display)	02-601X-xx
2	RA121107B	1	Engine Wiring Harness Assembly	
2	RA121107C	1	Engine Wiring Harness Assembly	
3	R020046	1	Sensor , engine coolant temperature (ECT)	
3	R020019	2	Sensor , engine coolant temperature (EMWT)	xx-601XC-xx
4	R020032	1	Sensor , inlet air	
5	R020049	1	Sender , oil pressure	
6	R024145	1	Tee , sender attaching	
7	R079071	1	Adapter , oil sending unit	
8	RS3554	1	Plug , oil pressure sensor tee	
9	R121101A	2	Harness , ignition coil	
10	RA152008	AR	Panel , switch (Speed Control)	
11	RA121098	AR	Harness , Adapter to 14-pin boat harness	
12	RA121094	AR	Harness , Adapter to 8-pin (female) boat harness	
NI	RA121094A	AR	Harness , Adapter to 8-pin (male) boat harness	
13	RA121093	AR	Harness , Adapter to 10-pin boat harness	
NI	RA121093A	AR	Harness , Adapter to 10-pin boat harness, w/VDO sensor leads	
NI	RA121091B	AR	Harness , Speed Control (14 foot)	
NI	RA121092	AR	Harness , Engine to Dash, Un-Terminated (25 foot)	
NI	RA121092C	AR	Harness , Engine to Dash, Un-Term., w/VDO sensor leads(25 ft)	
14	RT0091	AR	Harness , Test w/Key Switch	
15	R020051	4	Sensor , O2	xx-601XC-xx

ECM and RELAYS - FIGURE 19

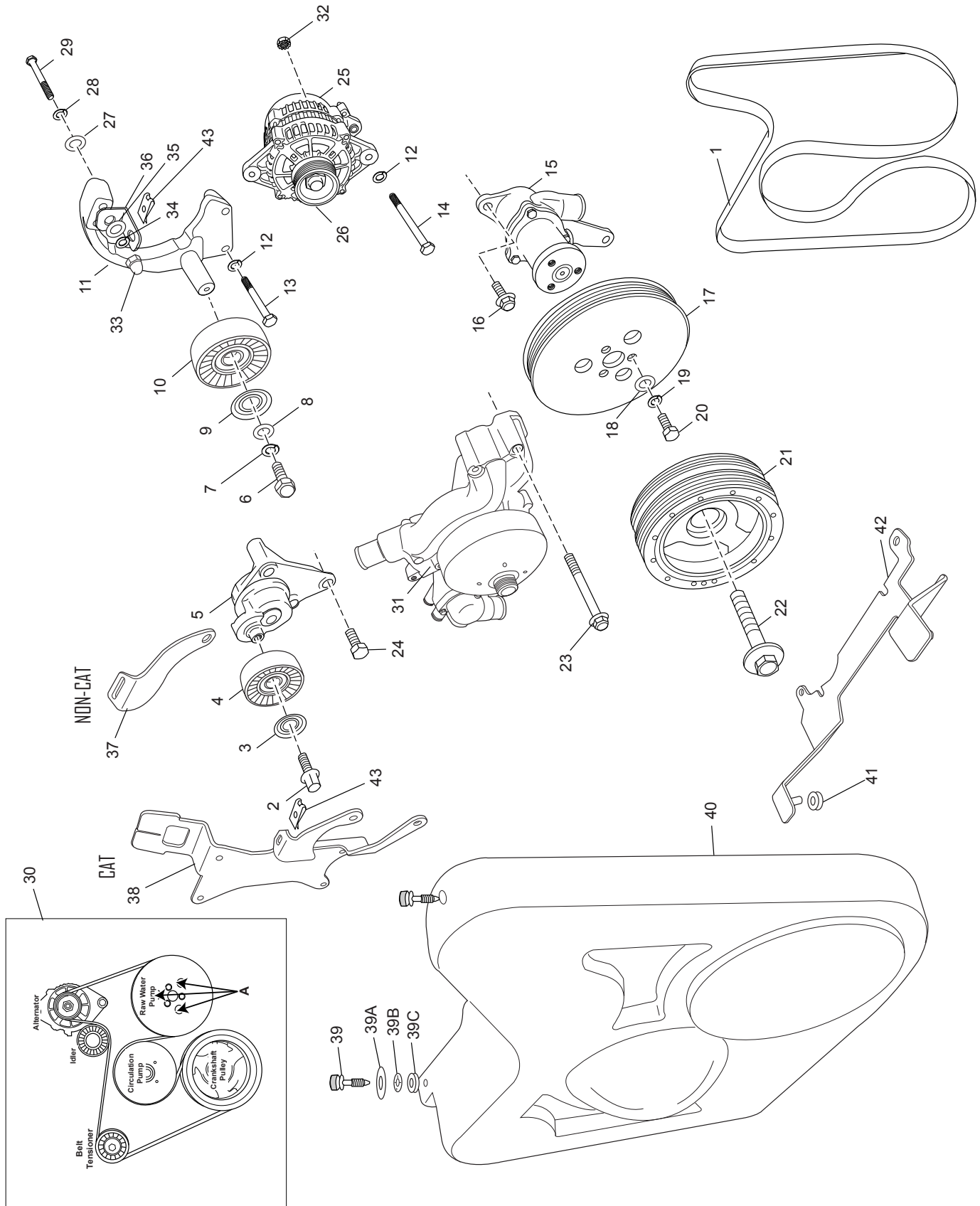


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ECM and RELAYS - FIGURE 19

ITEM	PART NO.	QTY.	DESCRIPTION	MODEL ID
1	98222016	2	Bolt , fuse box bracket attaching	xx-601C-xx, xx-601VC-xx
2	R090361A	1	Bracket , fuse box CES	xx-601C-xx, xx-601VC-xx
3	RS0302	1	Bolt , oil dipstick tube attaching	
4	R127015	1	Clamp , oil dipstick tube attaching	
5	RS2180	1	Lockwasher , oil dipstick tube attaching	
6	RS1028	1	Nut , oil dipstick tube attaching	
7	R116024 -	1	Engine Control Module Direct Drive	xx-601-xx
7	R116024 -	1	Engine Control Module V-Drive	xx-601V-xx
7	R116024 -	1	Engine Control Module Direct Drive -Auto-Start, SN 485697 and higher	xx-601-xx
7	R116024 -	1	Engine Control Module V-Drive - Auto-Start, SN 485697 and higher	xx-601V-xx
7	R116024 -	1	Engine Control Module Direct Drive	xx-601C-xx
7	R116024 -	1	Engine Control Module V-Drive	xx-601VC-xx
7	R116024 -	1	Engine Control Module Direct Drive - Auto-Start, SN 485760 and higher	xx-601C-xx
7	R116024 -	1	Engine Control Module V-Drive - Auto Start, SN 485760 and higher	xx-601VC-xx
7	R116027	1	Engine Control Module	
8	98223035	4	Bolt , ECM attaching	
9	RS2672	4	Flat washer , ECM attaching	
10	97220060	4	Nut , KEPS, ECM attaching	
11	R094044	2	Isolator , fuse block mounting	
12	RS2178	2	Lockwasher , Isolator attaching	
13	RS0251	2	Bolt , Isolator attaching	
14	95104060	2	Nut , KEPS, Fuse Block attaching	
15	R090279A	1	Bracket , ECM/Heat Exchanger mounting	
16	RS2180	2	Lockwasher , ECM bracket attaching bolt	
17	RS0304	2	Bolt , ECM bracket attaching	
18	TBD	1	Decal , main fuse box	
19	R130015	2	Relay , Fuel Pump and Ignition	
20	R130016	1	Relay , Starter	
21	R153019C	1	Fuse , Starter, 20 Amp	
22	R153019F	1	Fuse , Panel, 40 Amp	
23	R153017B	4	Fuse , 20 amp	
24	R153017A	1	Fuse , 15 amp	
25	R153017C	1	Fuse , 5 amp	
26	R094046	4	Isolator , ECM Mounting	
27	R176025	4	Sleeve , ECM Isolator Retaining	
28	R090362	1	Bracket , ECM mounting	xx-601C-xx, xx-601VC-xx

ACCESSORY DRIVE SYSTEM COMPONENTS - FIGURE 20



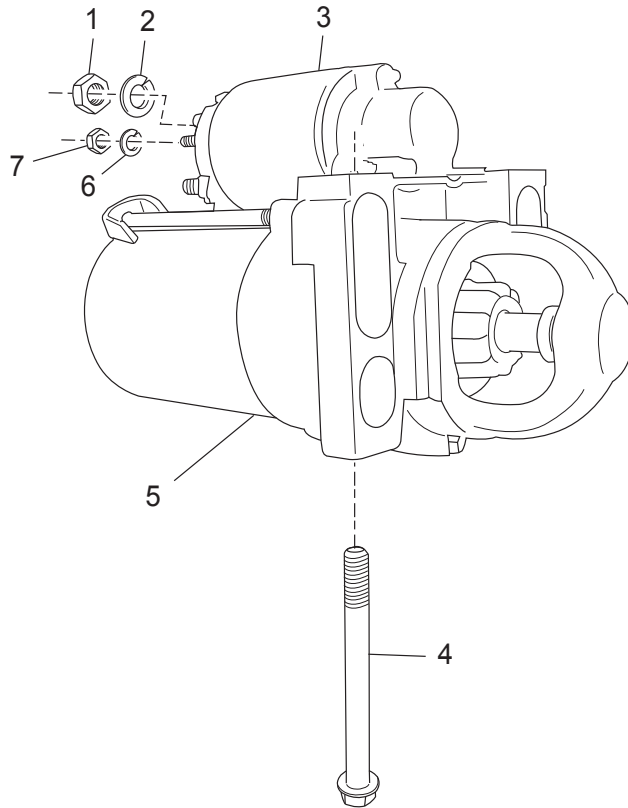
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ACCESSORY DRIVE SYSTEM COMPONENTS - FIGURE 20

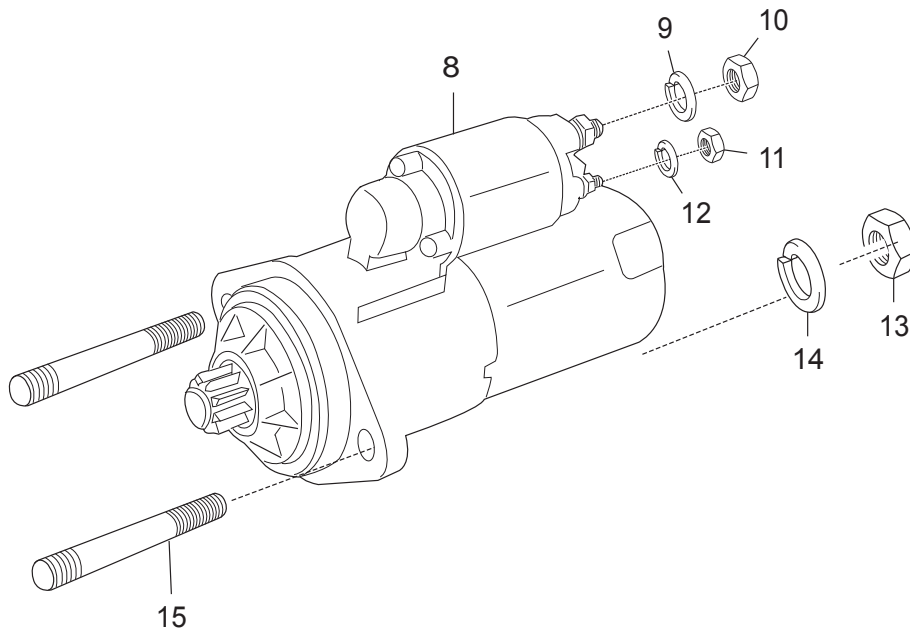
ITEM	PART NO.	QTY.	DESCRIPTION	MODEL ID
1	R066033A	1	Belt , serpentine drive	
2	p/o item #5	1	Bolt , tensioner pulley attaching	
3	p/o item #5	1	Washer , tensioner pulley attaching bolt	
4	p/o item #5	1	Pulley , tensioner	
5	RA068002	1	Tensioner , belt	
6	98333025	1	Bolt , idler pulley attaching	
7	RS2179	1	Lockwasher , idler pulley attaching bolt	
8	92940000	1	Washer , idler pulley attaching bolt (small)	
9	R096145	1	Washer , formed, idler pulley attaching bolt (large)	
10	R065040	1	Pulley , idler	
11	R090335	1	Bracket , idler pulley mounting / alternator	
12	93940000	2	Lockwasher , idler pulley bracket attaching bolt	
13	98443110	1	Bolt , idler pulley bracket attaching	
14	98446070	1	Bolt , alternator mounting, lower	
15	RA057032	1	Raw Water Pump Assembly	
16	98442030	2	Bolt , raw water pump mounting	
17	R065050	1	Pulley , raw water pump	
18	92934000	3	Flat Washer , raw water pump pulley attaching	
19	93934000	3	Lockwasher , raw water pump pulley attaching bolt	
20	99335016	3	Bolt , raw water pump pulley attaching	
21	R064016	1	Balancer , crankshaft	
22	TBD	1	Bolt , crankshaft balancer	
23	TBD	4	Bolt , water circulation pump attaching	
24	TBD	3	Bolt , belt tensioner mounting	
25	RA097009	1	Alternator Assembly, 100 Amp	
NI	RF097009C	AR	Retro Fit Kit, 70 to 100 Amp Alternator	
26	TBD	1	Pulley , alternator (100 amp)	
27	92200000	1	Flatwasher , alternator mounting	
28	RS2179	1	Lockwasher , alternator mounting	
29	98339070	1	Bolt , alternator mounting, upper	
30	R143147A	1	Decal , belt routing	
31	RK057036	1	Water Circulation Pump Assembly	
32	97330060	1	Nut , KEPS, Alternator Positive Post, 100A	
NI	R101016	1	Wire , Ground, alternator 100A	
NI	R153018D	1	Wire , Charge, 100A Fuse Link - alternator to starter	
33	97334030	1	Nut , belt guard bracket attaching	
34	93934000	1	Lockwasher , belt guard bracket attaching	
35	RS2179	1	Washer , flat, belt guard bracket attaching	
36	R090366	1	Bracket , belt guard, upper port	
37	R090340	1	Bracket , belt guard, upper starboard	
38	R090362	1	Bracket , ECM/Degas bolt/belt guard upper starboard	xx-601Cx-xx
NI	R062095	1	Spacer , used w/R090362 thru SN 485211	xx-601Cx-xx
39	R175058	2	Screw , belt guard retaining	
39A	92104200	2	Washer , 1/4" fender	
39B	R048118	2	Washer , belt guard retaining	
39C	R094048	2	Grommet , belt guard retaining	
40	R060078	3	Cover , Belt guard	
41	R094048	2	Grommet , belt guard retaining	
42	R090367	1	Bracket , front cover, lower	
43	R017084	2	Nut , Clip-on	

STARTER ASSEMBLY COMPONENTS - FIGURE 21

Bottom Mount Starter Application



Top Mount Starter Application
(Standard Rotation)
1 O'clock / 11 O'clock Position's



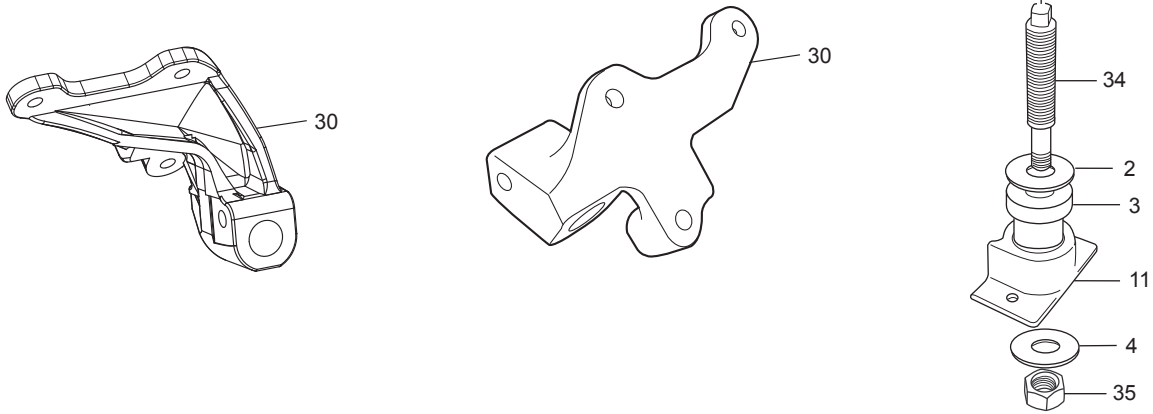
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STARTER ASSEMBLY COMPONENTS - FIGURE 21

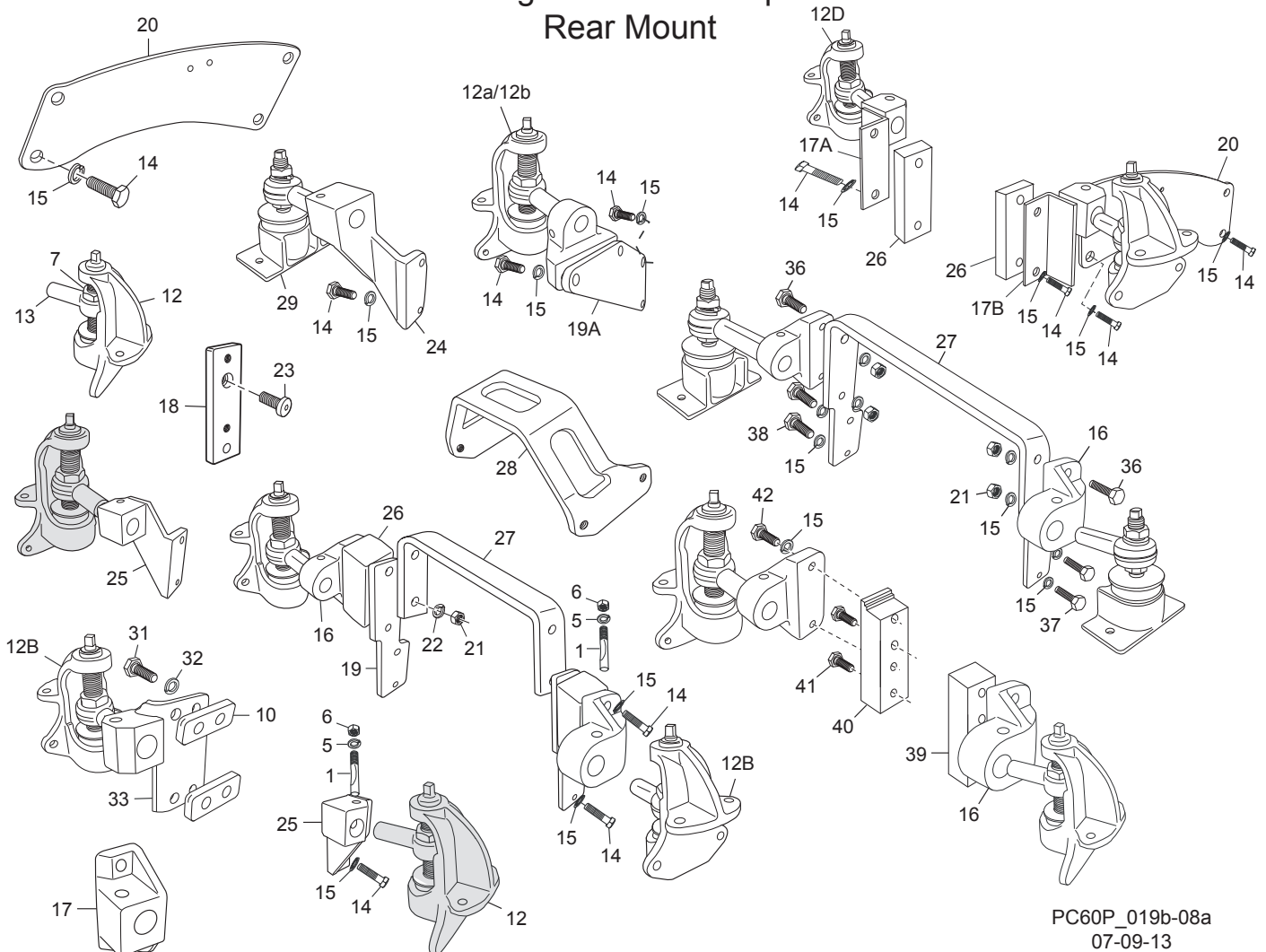
ITEM	PART NO.	QTY.	DESCRIPTION	MODEL ID
1	RS7019	1	Nut , solenoid terminal	1
2	RS2200	1	Lockwasher , solenoid terminal	1
3	RU0050A	1	Solenoid , starter	1
4	R009203	2	Bolt , starter mounting	2
5	RA122019	1	Starter Motor Assembly	1
6	93003000	2	Lockwasher , solenoid terminal	2
7	RS7036	2	Nut , solenoid terminal	2
8	RA122009	1	Starter Motor Assembly	
9	RS7080	2	Lockwasher , solenoid terminal	
10	RS7018	2	Nut , solenoid terminal	
11	RS7036	2	Nut , solenoid terminal	
12	93003000	2	Lockwasher , solenoid terminal	
13	RS1029	2	Nut , Starter Mounting	
14	RS2181	2	Lockwasher , starter mounting	
15	R031018	2	Stud , starter, mounting	

ENGINE and TRANSMISSION MOUNTS - FIGURE 22

Engine Mount Group
Front Mount



Engine Mount Group
Rear Mount



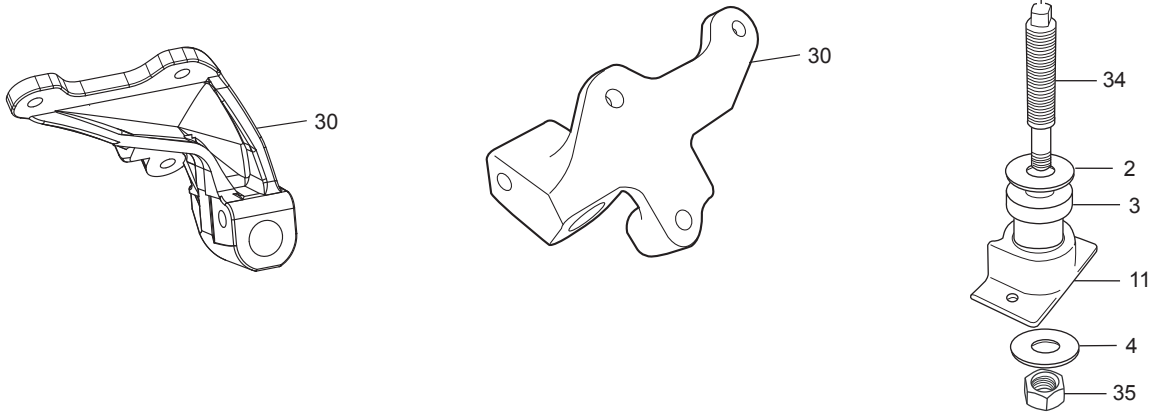
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ENGINE and TRANSMISSION MOUNTS - FIGURE 22

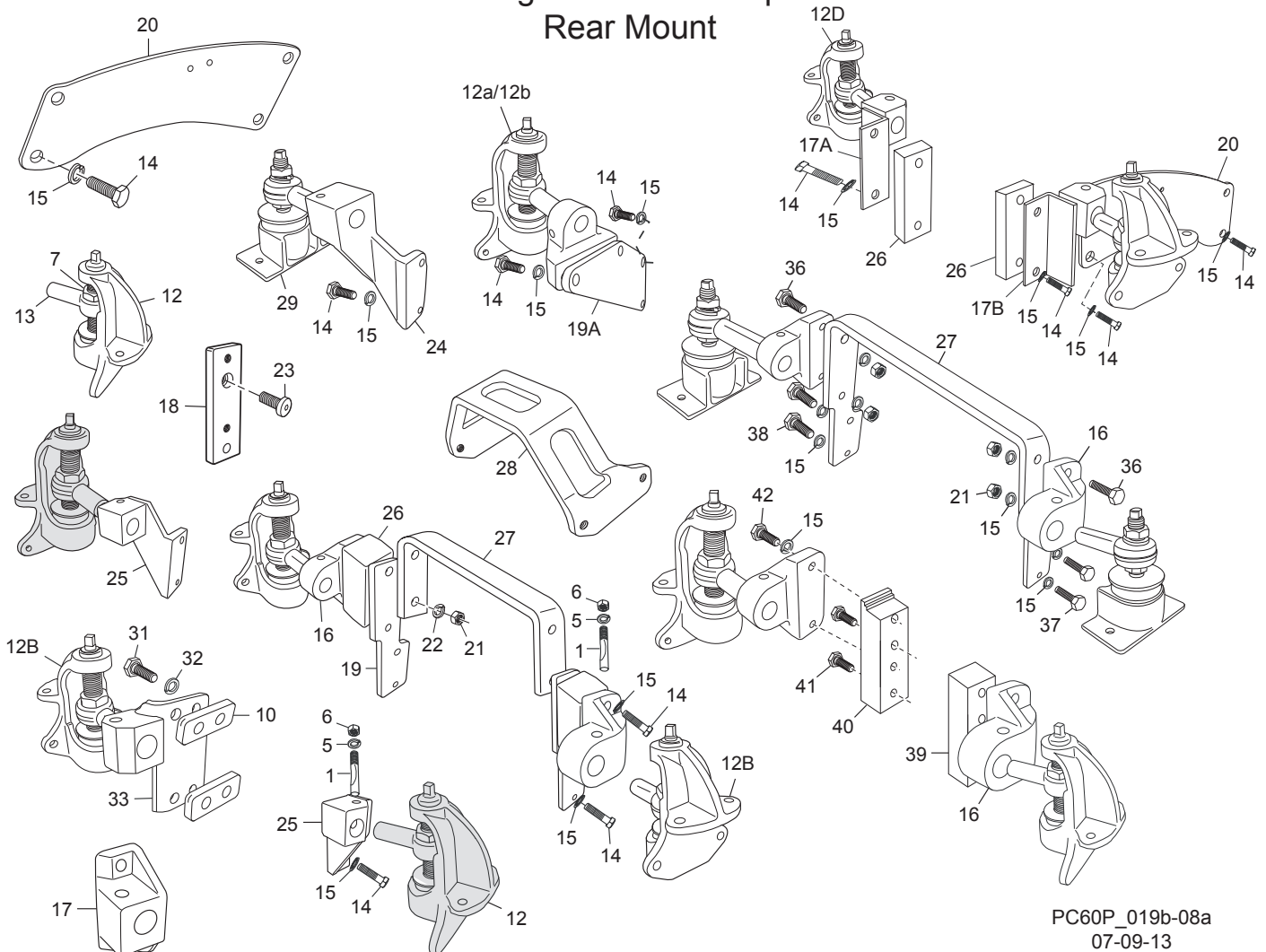
ITEM	PART NO.	QTY.	DESCRIPTION	MODEL ID
1	R095020	2	Bolt , trunnion clamp	
2	R096043	1 per	Washer , front mount isolator top	
3	R094007	1 per	Isolator , front mount	
4	R096001	1 per	Washer , front mount isolator lower	
5	RS2181	2	Lockwasher , trunnion clamp bolt	
6	RS1529	2	Nut , trunnion clamp bolt	
7	RS1075	4	Nut , adjustment and lock	
8	RS2186	2	Lockwasher , adjusting nut	
9	R091001	2	Trunnion , long	
9	R091007	2	Trunnion , short	
9	R091008	AR	Trunnion , exlong front	
10	R109049	4	Spacer , Transmission mount Hurth Gear	
11	RA092016	1	Trunnion Assembly	
11A	RA092016-08	AR	Trunnion Assembly , Starboard only	15-60xVx-xx
12	RA092011	2	Trunnion Assembly , tall (1.23:1 STD / V-drive) Used with item #17 - R090145 mount	04-6xxV-xx
12a	RA092011A	2	Trunnion Assembly , tall (1.23:1 STD / V-drive) Used with item #16 - R090205 mount	
12b	RA091003	2	Trunnion Assembly , short (1.0:1 STD) Used with item #17 - R090145 mount	04-6xxV-xx, 05-6xxV-xx
12c	RA091006	2	Trunnion Assembly , short (1.0:1 STD) Used with item #16 - R090205 mount	
12D	RA092003-10		Trunnion Assembly , Starboard only	15-60xVx-xx
13	R091003	2	Trunnion , 2.5" (use with R090145)	
13	R091006	2	Trunnion , 2.125" (use with R090205)	
13	R091010	AR	Trunnion , exlong rear	
14	RS0325	4	Bolt , brace plate attachment	
14	RS0327	4	Bolt , rear mount attaching (R109054, R090318/318A-lower)	
14	RS0328	4	Bolt , rear mount attaching (R090145, R090350/351/354/355)	
14	RS0329	4	Bolt , rear mount attaching (R090205)	
14	RS0330	4	Bolt , rear mount attaching (R090318A, upper)	
14	RS0334	4	Bolt , rear mount attaching (R090318, upper)	
15	RS2181	4	Lockwasher , rear mount attaching bolt	
16	R090205	1	Mount , rear	
17	R090145	1	Mount , rear	
17A	R090343	1	Mount , rear, port	15-6xxV-02
17B	R090344	1	Mount , rear, starboard	15-6xxV-02
NI	97905	2	Mount , engine support (dual rear)	03-6xxV-01, 03-6xxV-02
NI	93940000	6	Lockwasher , engine mount attaching bolt (item #18)	
NI	98443030	4	Bolt , engine mount attaching, upper (item #18)	
NI	98449055	2	Bolt , engine mount attaching, lower (item #18)	
18	R169062	AR	Shim , Mount, rear	03-6xx-01
19	R090318	2	Mount , PCM V-DRV (use with RA092016, item 11)	
20	R109054	2	Plate , brace, PCM V-DRV used when there is no mount	15-6xxV-02
21	RS1029	4	Nut , rear mount attaching (R090318)	
22	RS2181	4	Lockwasher , rear mount attaching (R090318)	
23	90465100	2	Bolt , shim mount attaching (R169062)	
24	R090354	1	Mount , rear, transmission, PCM V-DRV, port	
24	R090355	1	Mount , rear, transmission, PCM V-DRV, starboard	

ENGINE and TRANSMISSION MOUNTS - FIGURE 22

Engine Mount Group
Front Mount



Engine Mount Group
Rear Mount

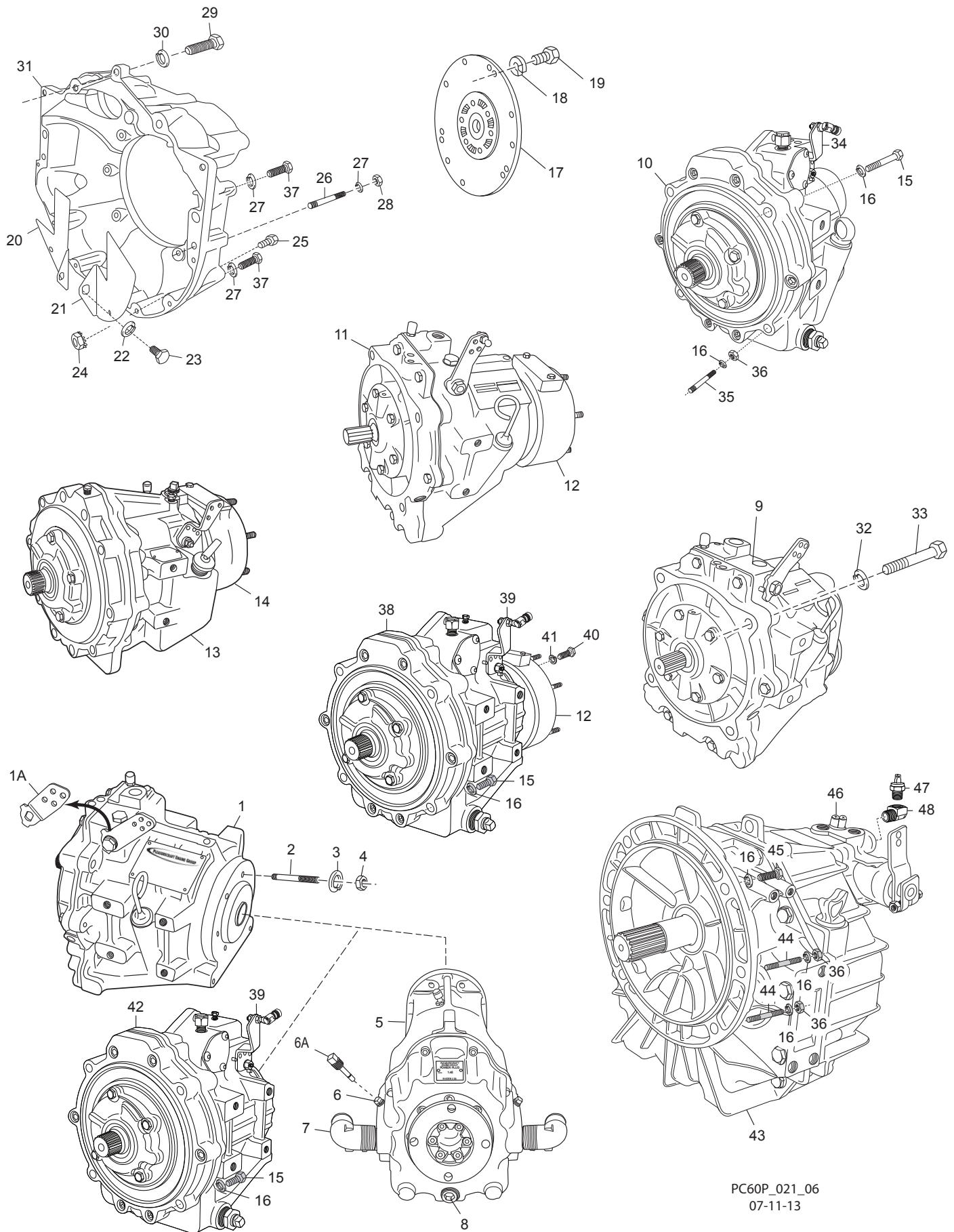


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ENGINE and TRANSMISSION MOUNTS - FIGURE 22

ITEM	PART NO.	QTY.	DESCRIPTION	MODEL ID
25	R090350	1	Mount , rear, transmission, PCM V-DRV, port	04-6xxV-xx
25	R090351	1	Mount , rear, transmission, PCM V-DRV, starboard	04-6xxV-xx
26	R169063	2	Spacer , Mount, rear, 2"	04-6xxV-xx
26	R169065	2	Shim , 1/2" mount spacer	
27	R090371	1	Bracket , PCM VDRV mount support	04-6xxV-xx, 10-5xxV-xx
27	R090371A	1	Bracket , CVD mount support	
28	R090370	1	Bracket , PCM VDRV mount support	
29	RA092016	2	Trunnion Assembly, with R091001 trunnion	
30	R090293	1	Mount , engine front (port) 1.23:1	
30	R090294	1	Mount , engine front (starboard) 1.23:1	
30	R090302	1	Mount , engine front (port) 1.0:1	
30	R090303	1	Mount , engine front (starboard) 1.0:1	
31	RS6331	8	Bolt , Rear mount Hurth Gear	
32	RS7071	8	Lockwasher , rear mount Hurth Gear	
33	R090217	1	Mount , Hurth gear starboard	
33	R090218	1	Mount , Hurth gear port	
34	R095001	1 per	Stud , trunnion front	
35	RS1082	1 per	Nut , lock	
36	RS0330	4	Bolt , rear mount attachment	
37	RS0328	6	Bolt , rear mount attachment	
38	RS0327	2	Bolt , rear mount attachment	
39	R169063C	AR	Spacer , rear mount 1.82" thick	10-602-xx, 10-602C-xx
40	R169063D	1	Spacer , rear mount, knotted (starboard) 1.82" thick	10-602-xx
41	90465225	4	Bolt , rear mount attachment	
42	RS0330	4	Bolt , rear mount attachment	

BELL HOUSING ASSEMBLY - FIGURE 23

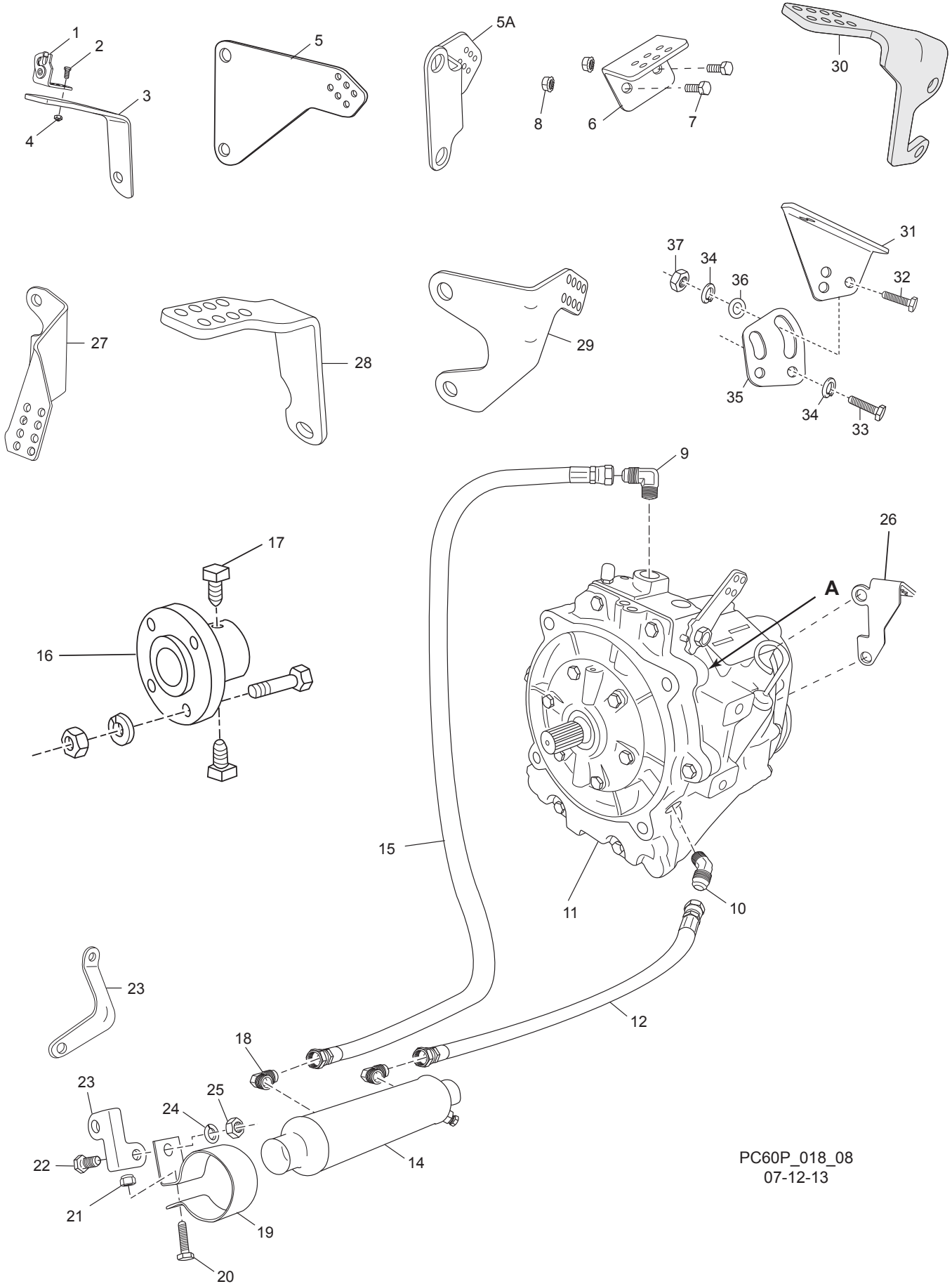


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BELL HOUSING ASSEMBLY - FIGURE 23

ITEM	PART NO.	QTY.	DESCRIPTION	MODEL ID	
1	RA157015	AR	Transmission Assembly , IRM40S, PCM to PCM V-DRV	XX-5XXV-XX	
1A	R166020	AR	Bracket , Shift Cable, IRM40S		
2	R031035	8	Stud , PCM V-DRV to transmission attaching		
3	RS2179	8	Lockwasher , PCM V-DRV to transmission attaching		
4	RS7026	8	Nut , PCM V-DRV to transmission attaching		
5	RA156011B	AR	PCM Power-Plus V-Drive Assembly , 1.48:1		
5	RA156012	1	PCM Power-Plus V-Drive Assembly , 2.00:1		
NI	R190250	AR	Gear Lube , synthetic SAE 50, PCM V-DRV		
6	R041091	2	Plug , brass, oil fill/drain, PCM V-DRV		
6A	R041091	2	Dipstick , oil fill/drain, PCM V-DRV		
7	97854	2	Fitting , brass elbow 90°, PCM V-DRV		
8	RS3633	1	Plug , brass, raw water drain, 1/2" square socket		
9	RA157017	AR	Transmission Assembly , IRM40A, 1.23:1 PCM		
10	RA157027	1	Gear , PCM 1.23:1 80A (Green Serial Tag)		
11	RA157016	AR	Transmission Assembly , IRM40I, 1.0:1 PCM		
12	R079056	AR	Adapter , V-Drive, PCM to Walter		
NI	RM0293	AR	Gasket , V-Drive, PCM to Walter		
13	RA157001	AR	Transmission Assembly , 1.0:1 Warner (71C)		
13	RA157003	AR	Transmission Assembly , 1.0:1 Warner (72C)		
13	RA157001A	AR	Transmission Assembly , (71C w/v-drive adapter)		
14	R079072	AR	Adapter , V-Drive, Warner to Walter		
15	RS0337	AR	Bolt , gear to engine		
16	RS2181	AR	Lockwasher , Gear		
17	98511	1	Plate , damper (Warner Transmissions, 6.0/8.1L)		Direct Drive & Vee Drive Applications Direct Drive & Vee Drive Applications
17	R140020	1	Plate , damper (PCM 40 series transmission)		
17	R140021	1	Plate , damper (PCM 80 series transmission)		
18	93940000	4	Lockwasher , damper plate attaching bolt		
19	98446030	4	Bolt , damper plate attaching		
20	R019011A	1	Cover , dust, (stbd) (use w/top mount starter)		
20	R019011	1	Cover , dust (stbd) (use w/bottom mount starter)		
21	R019012	1	Cover , dust (port)		
22	93920000	2	Lockwasher , dust cover attaching		
23	RS6503	2	Bolt , dust cover attaching		
24	RS1078	2	Nut , dust cover attaching		
25	RS0256	2	Bolt , dust cover attaching		
26	R031034	2	Stud , bellhousing attaching		
27	93940000	AR	Lockwasher , bellhousing attaching		
28	97440000	2	Nut , bellhousing attaching		
29	98443050	3	Bolt , bellhousing attaching		
30	93940000	3	Lockwasher , bellhousing attaching		
31	R142015E	1	Bellhousing , top or bottom mount starter		
NI	R019010	1	Cover , dust, top mount starter (used w/R019008A)		
NI	RS0327	2	Bolt , dust cover attaching		
NI	RS2181	2	Lockwasher , dust cover attaching		
			** PCM **		
32	RS2180	4	Lockwasher , transmission attaching bolt		
33	RS0329	4	Bolt , transmission attaching		
34	R166024	1	Lever , shifter 80A		
35	96541	1	Stud , gear attachment		
36	RS1029	AR	Nut , gear attachment		
37	98446075	4	Bolt , bell housing bosses		
38	RA157026	1	Gear , PCM 1:1 80I (Green Serial Tag)		
39	R166023	1	Lever , Shift 80I & 80S		
40	98333025	6	Bolt , walter adaptor attachment		
41	93934000	6	Lockwasher		
42	RA157025	1	Gear , PCM 1:1 80S (Green Serial Tag)		
42	RA157028	1	Gear , PCM 1:1 80S HO (Red Serial Tag)		
43	RA157021	1	Gear , Hurth 450A, 1.25:1		
43	RA157021A	1	Gear , Hurth 450A, 1.50:1		
44	R031018	AR	Stud , transmission mounting (1 5/8")		
45	RS0328	2	Bolt , Gear to engine attachment		
46	R153011	1	Switch , neutral safety		
47	R020037	1	Sender , gear oil temp		
48	30646	1	Elbow , oil temp sender attachment		

TRANSMISSION AND RELATED COMPONENTS (STANDARD DRIVE) - FIGURE 24

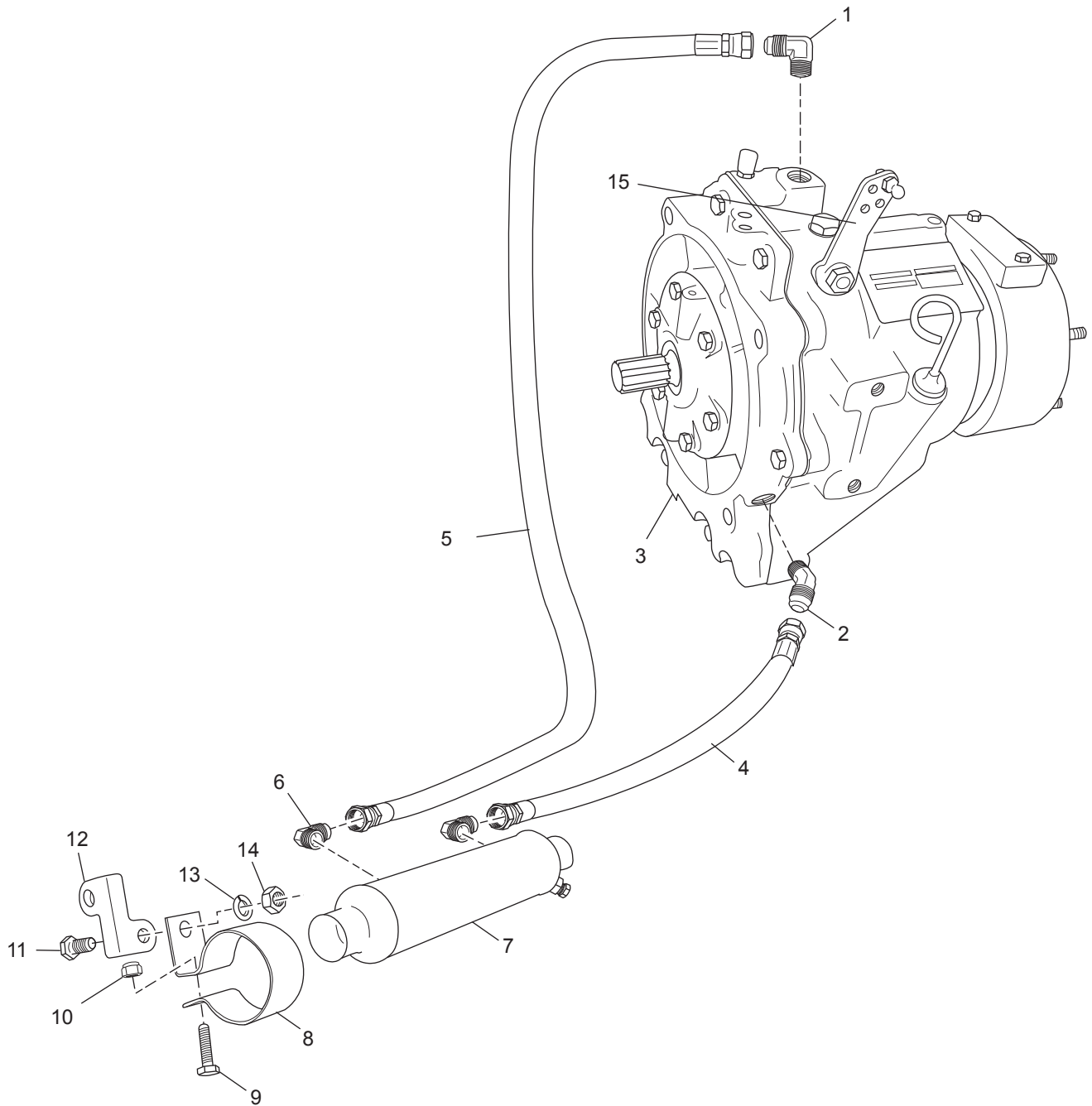


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TRANSMISSION AND RELATED COMPONENTS (STANDARD DRIVE) - FIGURE 24

ITEM	PART NO.	QTY.	DESCRIPTION	MODEL ID
1	R090086	1	Cable Clip , single cable	
2	RS5122	2	Bolt , cable clip attaching	
3	R090143A	1	Bracket , shift	
4	RS2055	2	Nut , cable clip attaching bolt	
5	R090319	1	Bracket , shift (PCM V-DRV)	
5A	R090319A	1	Bracket , shift (PCM V-DRV) SN 474384 and higher	
6	R090348	1	Bracket , shift (PCM V-DRV, attaches to R109054)	
7	RS5124	2	Bolt , bracket attaching	
8	RS1078	2	Nut , KEPS, bracket attaching bolt	
9	R024010	1	Fitting , 90 degree	
10	R024053	1	Fitting , 45 degree	
11	RA157017	1	Transmission , 1.23:1	
11	RA157016	AR	Transmission , 1.0:1	
12	RA045007S	1	Hose Assembly , cooler to transmission	
13	R024010	2	Fitting , 90 degree	
14	R147014	1	Transmission Cooler Assembly	
15	RA045007T	1	Hose Assembly , transmission to cooler	
16	R148010	OPT	Coupler , prop shaft (4" X 1" shaft)	
16	R148011	OPT	Coupler , prop shaft (4" X 1 1/8" shaft)	
17	2000090	2	Screw , set - coupler	
18	R024010	2	Fitting , 90 degree	
19	R090010	1	Clamp , cooler assembly mounting	
20	RS0256	1	Bolt , cooler attaching	
21	RS1078	1	Nut , cooler attaching	
22	RS0302	1	Bolt , cooler clamp attaching	
23	R090013A	1	Bracket , cooler mounting	
23	R090404	1	Bracket , cooler mounting	
24	RS2180	1	Lockwasher , cooler clamp attaching bolt	
25	RS1028	1	Nut , oil cooler clamp attaching bolt	
26	R090352	1	Bracket , shift, rear entry	
27	R090414	1	Bracket , shift cable 80A	
28	R090407	1	Bracket , shift cable 80I (with out Walters Vee Drive)	
29	R090408	1	Bracket , shift cable 80I (with Walters Vee Drive)	
30	R090400	1	Bracket , shift cable 80S	Except 10-60xVx-xx
30	R090409	1	Bracket , shift cable 80S	10-60xVx-xx
31	R090202	1	Bracket , shift cable 450A Gear	
32	RS0282	2	Bolt , bracket to gear attachment	
33	98333025	2	Bolt , bracket adjustable attachment	
34	RS2179	4	Washer , bracket adjustable attachment	
35	R090235	1	Bracket , transmission adjustable	
36	RS2674	2	Washer , flat	
37	RS1027	2	Nut , shift bracket attachment	

TRANSMISSION AND RELATED COMPONENTS (1.0:1 "V" - DRIVE) - FIGURE 25



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TRANSMISSION AND RELATED COMPONENTS (1.0:1 "V" - DRIVE) - FIGURE 25

ITEM	PART NO.	QTY.	DESCRIPTION	MODEL ID
1	R024010	1	Fitting , 90 degree	
2	R024010	1	Fitting , 90 degree	
3	RA157016	1	Transmission , 1.0:1, (w/R079056 Adapter)	
4	RA045007S	1	Hose Assembly , cooler to transmission	
5	RA045007T	1	Hose Assembly , transmission to cooler	
6	R024010	2	Fitting , 90 degree	
7	R147014	1	Cooler Assembly , transmission	
8	R090010	1	Clamp , cooler assembly mounting	
9	RS0254	1	Bolt , cooler attaching	
10	RS1078	1	Nut , cooler attaching	
11	RS0302	1	Bolt , cooler clamp attaching	
12	R090013A	1	Bracket , cooler mounting	
13	RS2180	1	Lockwasher , cooler clamp attaching bolt	
14	RS1028	1	Nut , oil cooler clamp attaching bolt	
15	R166020	1	Shift Bracket Arm	