

CRUSADER CHALLENGER SERIES ENGINES

A DIVISION OF  PLEASURECRAFT ENGINE GROUP

MARINE

TM

ILLUSTRATED

PARTS MANUAL

CLEAN EMISSION SYSTEM

MODEL CES 5.7L

SN 730001 thru Present

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HOW TO READ THIS PARTS BOOK:

ITEM	PART NO.	QTY.	DESCRIPTION	MODEL ID
1	RB001005I	1	Base Engine Assembly, 5.7L	



- 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
- NS = Not Shown
- TBD = To Be Determined
- NI = Not Illustrated

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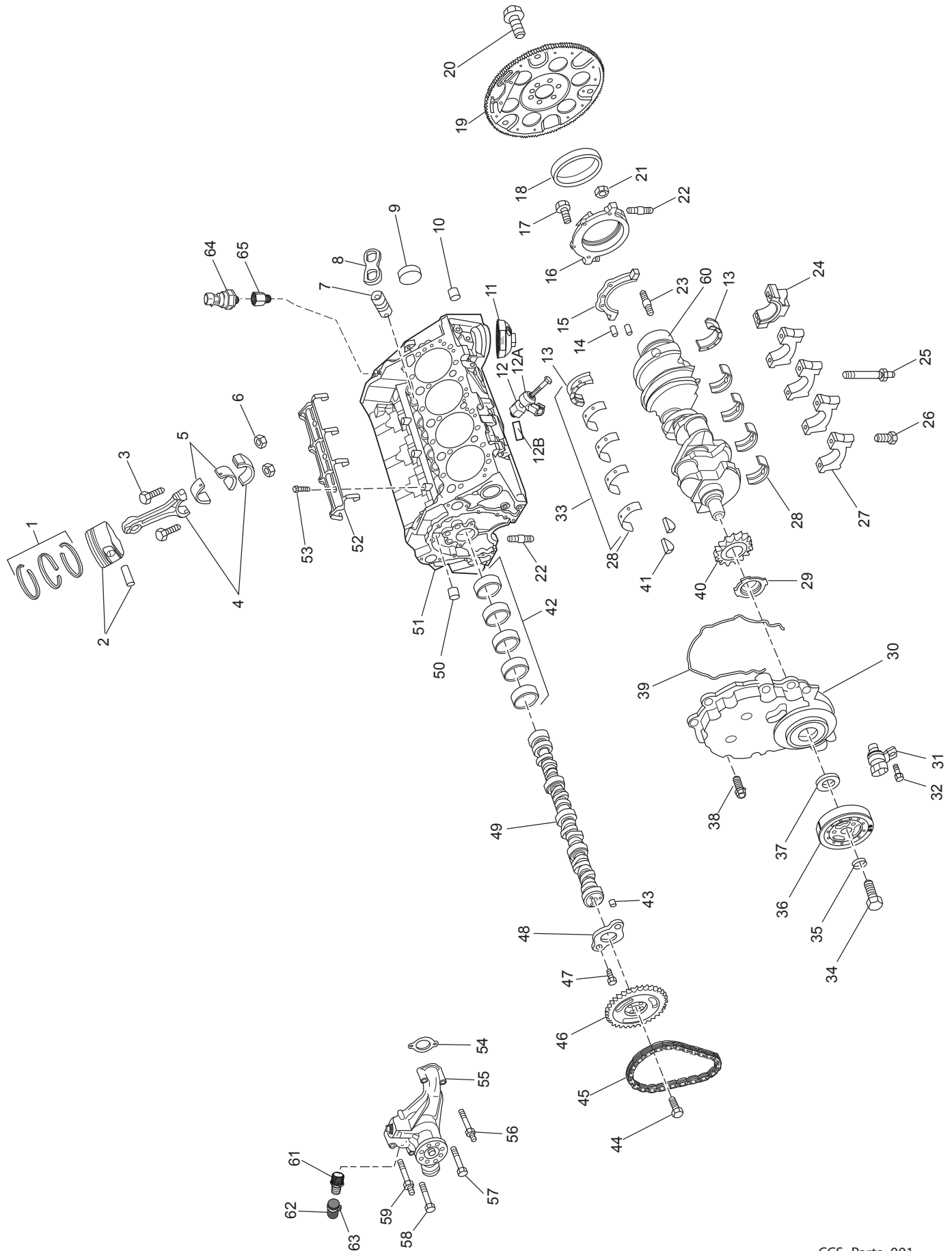
REPLACEMENT PARTS:**WARNING:**

Electrical, ignition and fuel system components on Pleasurecraft Marine 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	22679
Fuel Filter (FCC), Kit (FCC Fuel System Only)	RP080026
Spark Plugs	RP030010
Spark Plug Wire Set, CES	RK120023
Serpentine Belt	R066039
Impeller Kit	RP061018
Oil Drain Kit	RK024179
Fuel/ Water Seperator Element (FCC Fuel System Only)	R077019
Cap and Rotor Kit	RP173098

CYLINDER BLOCK ASSEMBLY - FIGURE 1

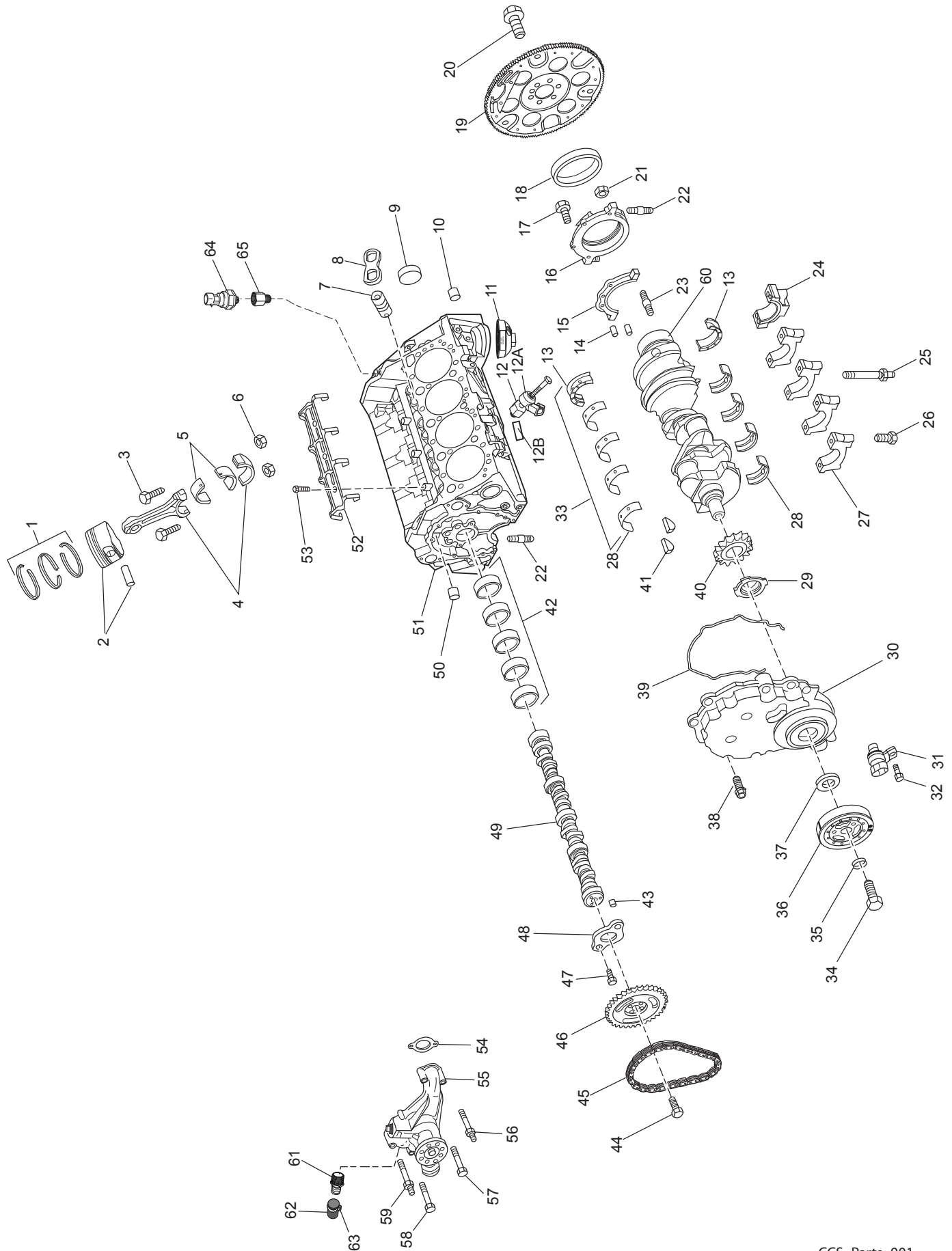


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CYLINDER BLOCK ASSEMBLY - FIGURE 1

ITEM	PART NO.	QTY.	DESCRIPTION	MODEL ID
*	RB001005I		5.7L Base Engine Assembly	
1	R015013	8	Ring Set , piston 5.7L (STD)	
2	RA013016	8	Piston , 5.7L (STD)	
3	7080280	16	Bolt , connecting rod cap	
4	RA011012	8	Connecting Rod (STD)	
5	R007023	8	Bearing Set , connecting rod (STD)	
6	7080050	16	Nut , connecting rod cap	
7	R035038	16	Lifter , valve	
8	R037001	8	Guide , valve lifter	
9	R069064	1	Plug , camshaft	
10	33089		Plug , oil gallery	
11	R079051	1	Adapter , oil bypass	
12	R095043A	2	Adapter , flat response knock sensor	
12A	R020052	2	Sensor , flat response knock (retaining bolt p/o sensor)	
12B	R143156	2	Decal , "Raw Water Drain"	
13	7056180	1	Bearing , crankshaft rear main (STD)	
13	N/A	AR	Bearing , crankshaft rear main (.001 US)	
13	7057180	AR	Bearing , crankshaft rear main (.010 US)	
13	7057190	AR	Bearing , crankshaft rear main (.020 US)	
14	NSS	2	Pin , flywheel locating	
15	707370	1	Gasket , crankshaft rear oil seal housing	
16	R134070	1	Housing , crankshaft rear oil seal	
17	70750250	2	Bolt , crankshaft rear oil seal housing, short	
17	70570260	1	Bolt , crankshaft rear oil seal housing, long	
18	R047173A	1	Seal , crankshaft rear oil	
19	RA138008	AR	Flywheel Assembly (Top Mount Starter)	
19	RA138010	1	Flywheel Assembly (Bottom Mount Starter)	
20	7070480	6	Bolt , flywheel attaching	
21	TBD	2	Nut , crankshaft rear oil seal housing	
22	TBD	2	Stud , crankshaft rear oil seal housing	
23	TBD	2	Stud , crankshaft rear oil seal housing	
24	NSS	1	Cap , crankshaft bearing #5	
25	7050870	5	Stud , crankshaft bearing cap	
26	TBD	5	Bolt , crankshaft bearing cap	
27	NSS	4	Cap , crankshaft bearing #1 - #4	
28	7050670	4	Bearing , crankshaft main (STD)	
28	7057200	AR	Bearing , crankshaft main (.002 US)	
28	7057220	AR	Bearing , crankshaft main (.010 US)	
28	7057230	AR	Bearing , crankshaft main (.020 US)	
29	R056001	1	Ring , crankshaft position sensor retractor	

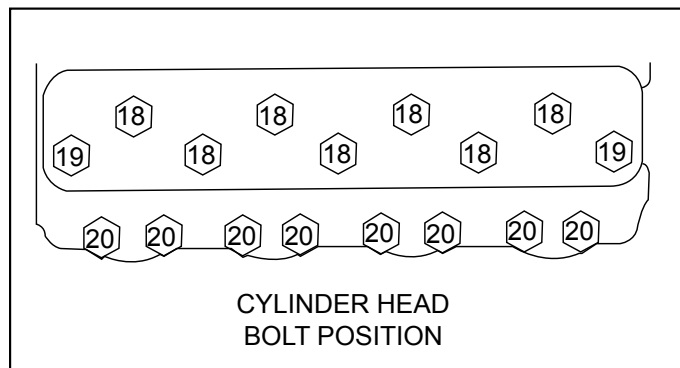
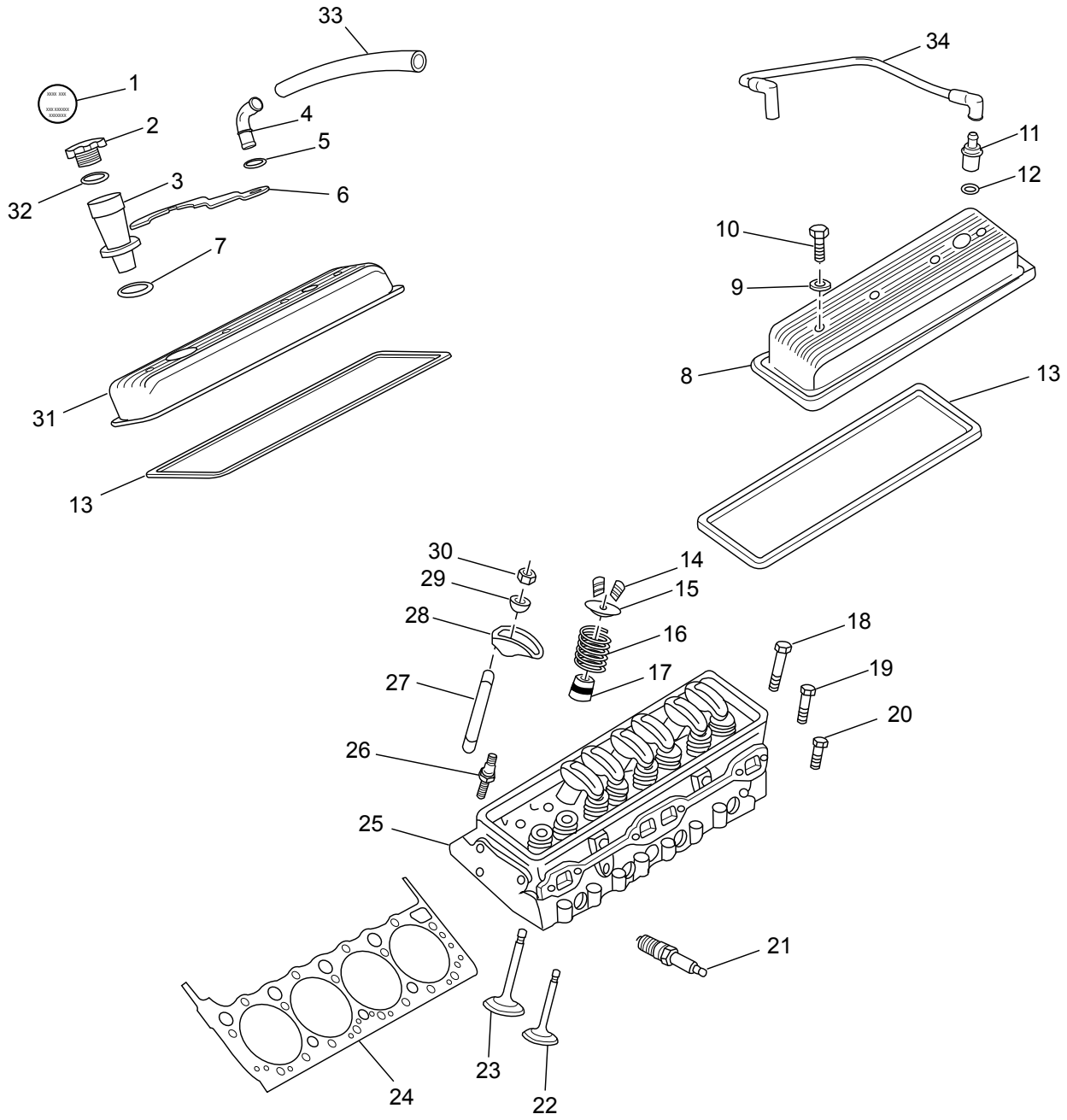
CYLINDER BLOCK ASSEMBLY - FIGURE 1 (cont'd)



CYLINDER BLOCK ASSEMBLY - FIGURE 1 (cont'd)

ITEM	PART NO.	QTY.	DESCRIPTION	MODEL ID
30	R004010A	1	Cover , engine front cover (includes gasket and seal)	
31	R020038	1	Sensor , crankshaft position	
32	NSS	1	Bolt , crankshaft position sensor attaching	
33	RK007020	1	Bearing Set , crankshaft main (STD)	
34	R009091	1	Bolt , crankshaft balancer	
35	R096074	1	Washer , crankshaft balancer bolt	
36	R064010A	1	Balancer , crankshaft - '02 and newer	
37	NSS	1	Seal , crankshaft front oil	
38	R009177	6	Bolt , engine front cover attaching, short	
38	R009176	2	Bolt , engine front cover attaching, long	
39	NSS	1	Gasket , engine front cover	
40	R054024	1	Sprocket , crankshaft	
41	R164024	2	Key , crankshaft balancer	
42	RK051030	1	Bearing Set , camshaft	
42	7050630	1	Cam Bearing #1	
42	7050640	2	Cam Bearing #2 & #5	
42	7050650	2	Cam Bearing #3 & #4	
43	R022022	1	Pin , camshaft sprocket locating	
44	7130030	1	Bolt , camshaft sprocket attaching	
45	R055011	1	Chain , camshaft timing	
46	R054041	1	Sprocket , camshaft	
47	7070700	2	Bolt , camshaft retaining	
48	R109050	1	Retainer , camshaft	
49	RA050021	1	Camshaft , engine	
50	NSS	1	Plug , oil gallery	
51	NSS		Block , engine	
52	R090253A	1	Retainer , valve lifter	
53	RS0279	3	Bolt , valve lifter retainer	
54	RM0203	2	Gasket , water pump to engine block	
55	RA057027	1	Water Pump Assembly	
56	R095026	1	Stud , water pump attaching	
57	RS0307	1	Bolt , water pump attaching	
58	90305275	1	Bolt , water pump attaching	
59	R095026	1	Stud , water pump attaching	
60	R006017A	1	Crankshaft , 350 1996/Later	
61	30645	1	Fitting , 5/8" barb	
62	R128007	1	Cap , 5/8" rubber	
63	R127087F	1	Clamp , 1" oetiker	
64	R020049	1	Sensor , engine oil pressure	
65	R024059	1	Adapter , engine oil pressure sensor	
NI	R069066	8	Plug , Brass, block 1 5/8"	

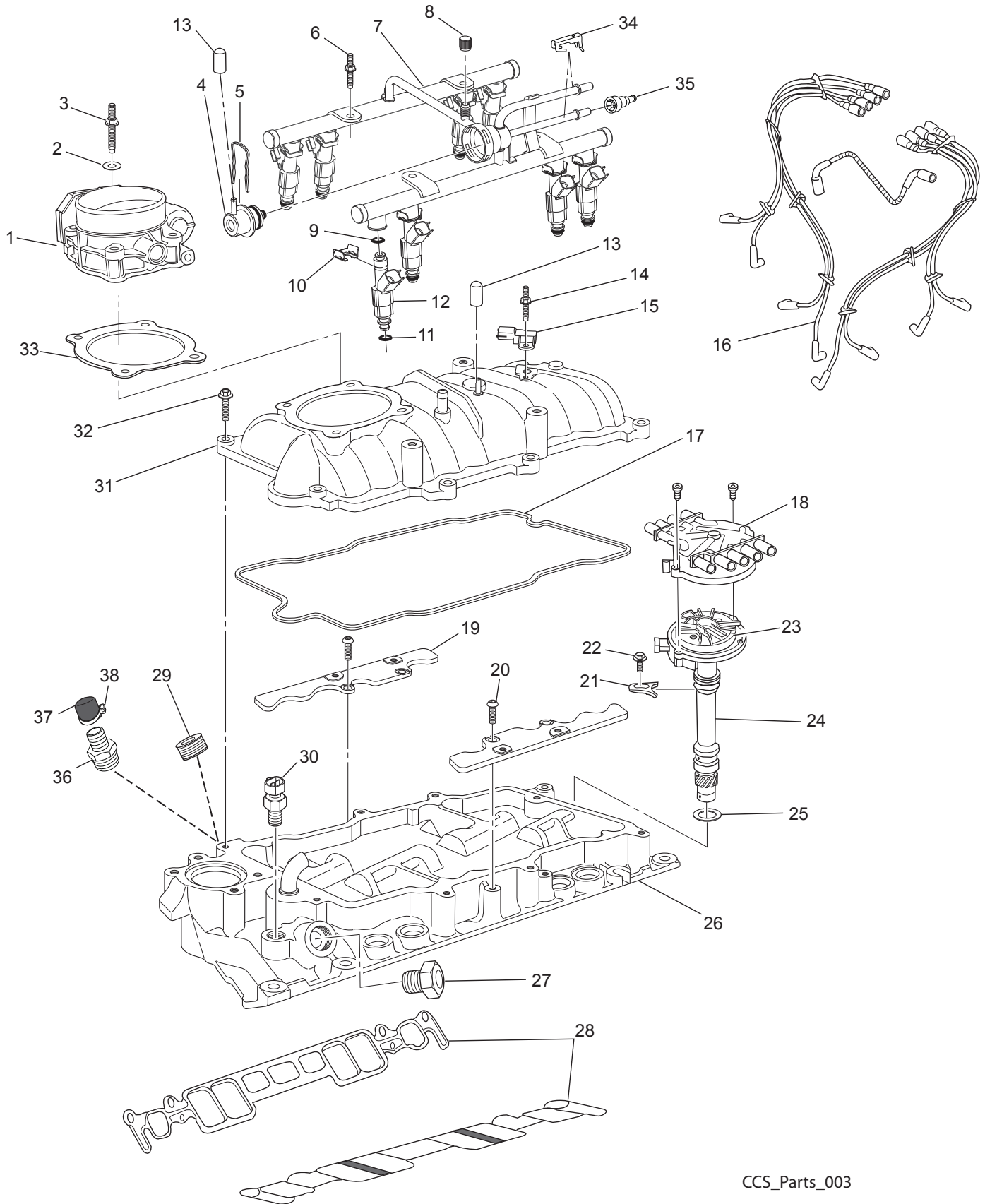
CYLINDER HEAD ASSEMBLY - FIGURE 2



CYLINDER HEAD ASSEMBLY - FIGURE 2

ITEM	PART NO.	QTY.	DESCRIPTION	MODEL ID
1	R143137	1	Decal , oil fill riser cap	
2	R034037	1	Cap , oil fill riser	
3	R034048	1	Riser , oil fill	
4	R024013C	1	Elbow , breather tube	
5	R094002	1	Grommet , breather tube elbow	
6	R127098	1	Retainer , oil fill riser	
7	R047228	1	O-ring , oil fill riser	
8	R033008A	1	Cover , rocker (left side)	
9	98009	8	Washer , rocker cover retaining bolt	
10	7231510	8	Bolt , rocker cover retaining	
11	R035015	1	Valve , positive crankcase ventilation	
12	R094015	1	Grommet , pcv valve	
13	RM0193	2	Gasket , rocker cover	
14	R049012	32	Retainer , valve stem	
15	R049015	16	Cap , valve spring	
16	R046050	16	Valve Spring Assembly	
17	R047238	8	Seal , valve stem (intake)	
17	R047239	8	Seal , valve stem (exhaust)	
18	R009168	14	Bolt , cylinder head to engine block (long)	
19	7057300	4	Bolt , cylinder head to engine block (medium)	
20	7057280	16	Bolt , cylinder head to engine block (short)	
21	R030010	8	Spark Plug	
22	R043035	8	Valve , (intake)	
23	R043036	8	Valve , (exhaust)	
24	RM0195	2	Gasket , cylinder head	
25	R003008B	2	5.7L Cylinder Head Assembly	
26	R095034	16	Stud , valve rocker arm	
26	7230920	AR	Stud , valve rocker arm (.013 OS)	
26	R095035	AR	Stud , valve rocker arm (.033 OS)	
27	R039023	16	Push Rod	
28	R038015	16	Rocker Arm , Assembly w/ball	
29	R038011	16	Ball , rocker arm	
30	R017069	16	Nut , rocker arm attaching	
31	R033008	1	Cover , rocker (right side)	
32	NSS	1	O-Ring , oil fill riser cap	
33	20806	1	Tube , breather	
34	R045176	1	Tube , PCV	

INTAKE MANIFOLD ASSEMBLY - FIGURE 3

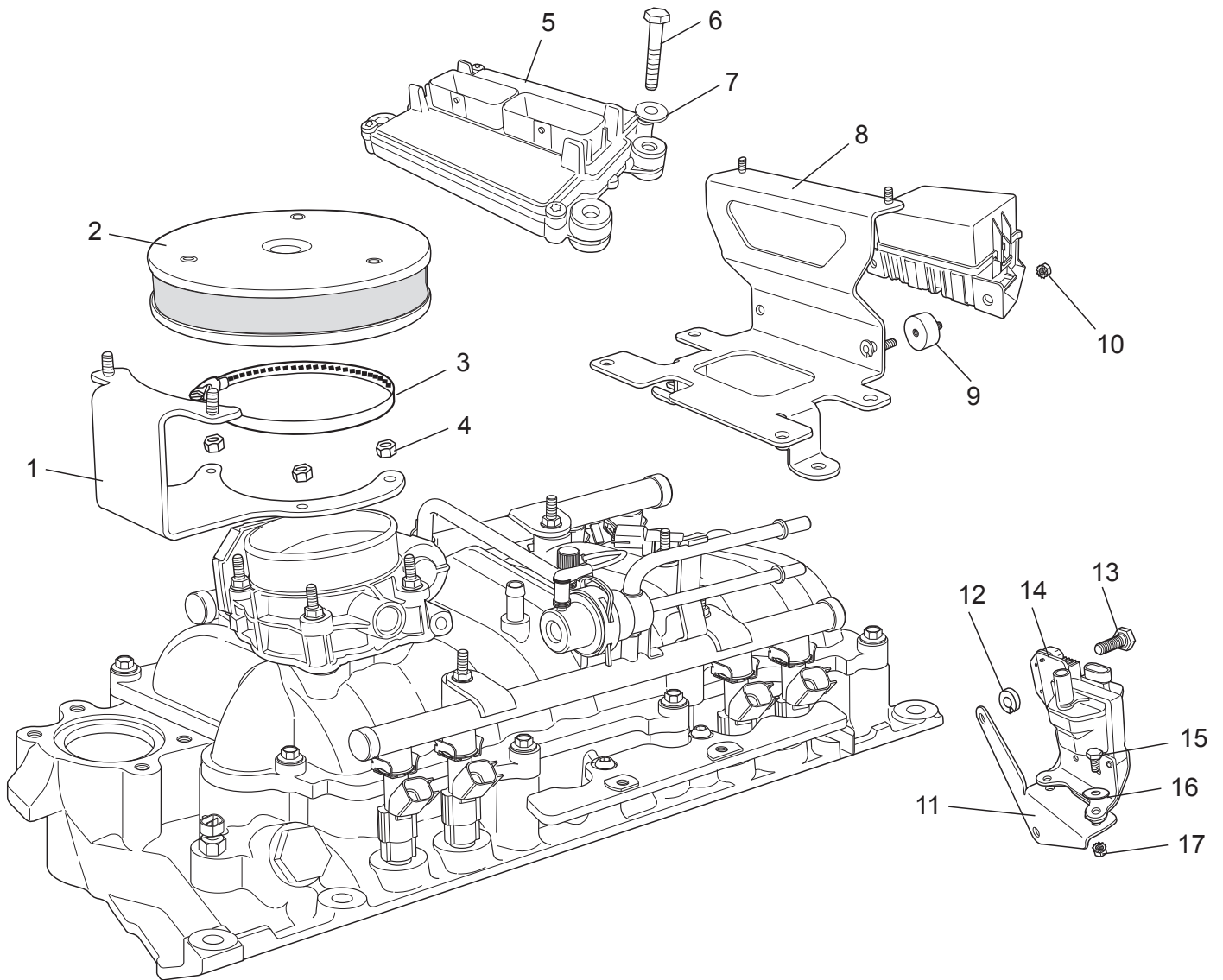


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INTAKE MANIFOLD ASSEMBLY - FIGURE 3

ITEM	PART NO.	QTY.	DESCRIPTION	MODEL ID
1	RA035045	1	Throttle Body Assembly, 4-Bolt - 72mm	
2	NSS	3	Washer , throttle body attaching stud	
3	R095040	3	Stud , throttle body attaching	
4	R088002	1	Regulator , fuel pressure	
5	TBD	1	Retainer , fuel pressure regulator	
6	98222018	1	Bolt , fuel rail attaching	
7	RA086002	1	Fuel Rail Assembly	
8	470806	1	Cap , fuel pressure service port	
9	NSS	8	O-Ring , fuel injector (top)	
10	TBD	8	Clip , fuel injector retaining	
11	NSS	8	O-Ring , fuel injector (bottom)	
12	RA087007	8	Fuel Injector Assembly	
13	R128003	2	Cover , vacuum port	
14	R095041	4	Stud , fuel rail and MAP sensor attaching	
15	R020039	1	Sensor , manifold absolute pressure	
16	RK120023	1	Spark Plug Wire Set	
17	RM0271	1	Gasket , upper intake manifold to lower	
18	RA108009	1	Cap , distributor	
19	NSS	2	Plate , component attaching	
20	NSS	4	Bolt , component attaching plate attaching	
21	R127026A	1	Hold Down , distributor	
22	R009193	1	Bolt , distributor hold down	
23	R103011	1	Rotor , distributor	
24	RA107044	1	Distributor Assembly (LH)	
25	RM0123	1	Gasket , distributor assembly	
26	R002023	1	Intake Manifold , lower	
27	R069069	1	Plug , intake manifold	
28	RM0250	2	Gasket , intake manifold	
29	444705	1	Plug , 1/2" NPT, hex socket, Brass	
30	R020019	1	Sensor , engine coolant temperature	
31	R002024A	1	Intake Manifold , upper	
32	TBD	8	Bolt , upper intake manifold to lower attaching	
33	RM0296	1	Gasket , throttle body to upper manifold	
34	R127100	2	Retainer , fuel line safety	
35	RK085101	AR	Blockoff , fuel return line	12-575xx-XX
36	30645	AR	Fitting , 5/8" barb	
37	R128007	AR	Cap , 5/8" rubber	
38	R127087F	AR	Clamp , 1" oetiker	
NI	R020057	1	Sensor , Cam Position	

INTAKE MANIFOLD COMPONENTS - FIGURE 4

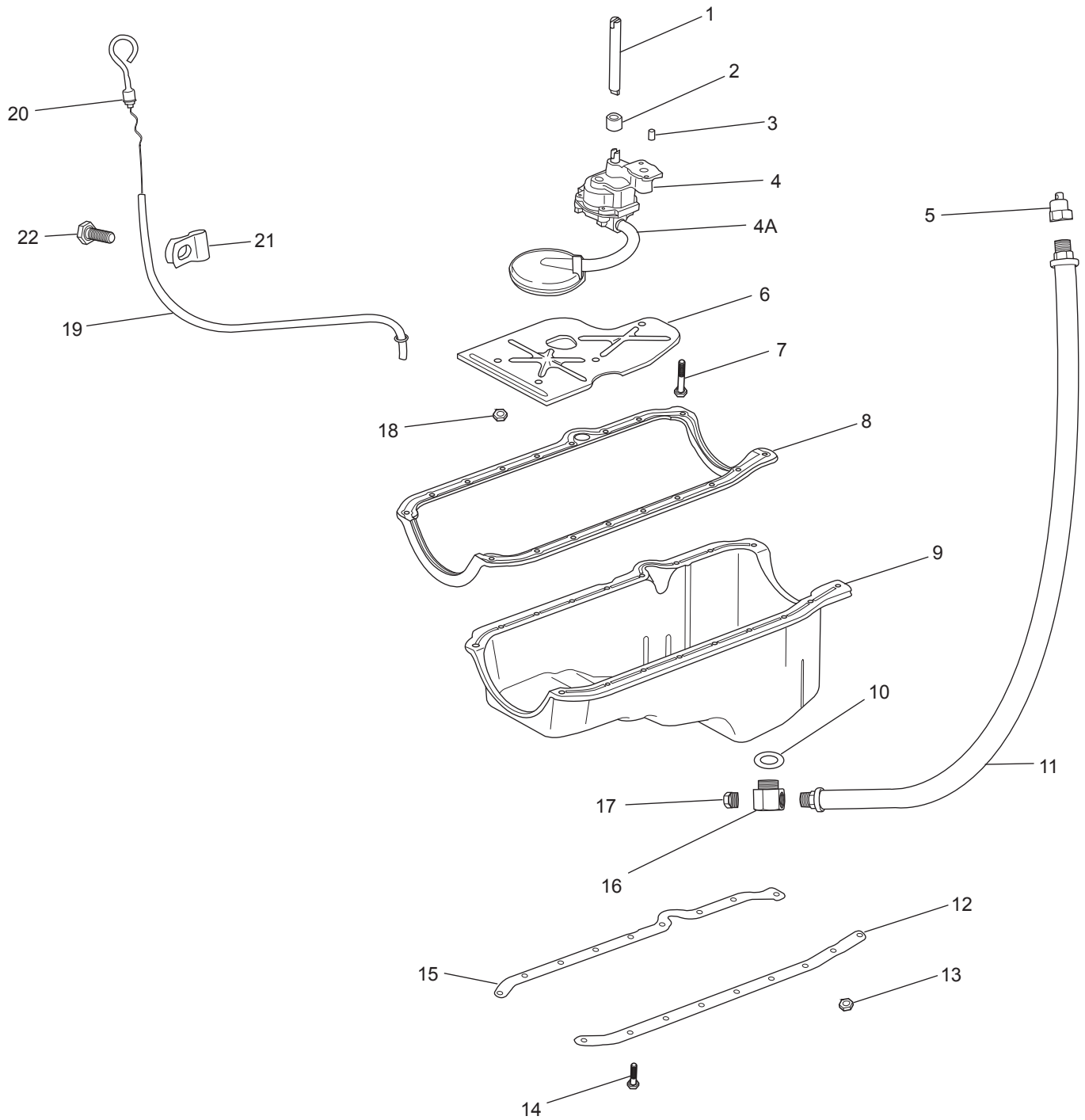


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INTAKE MANIFOLD COMPONENTS - FIGURE 4

ITEM	PART NO.	QTY.	DESCRIPTION	MODEL ID
1	R090358	1	Bracket , engine cover mounting, front	12-575xx-XX
1	R090358A	1	Bracket , engine cover mounting, front	18-575xx-XX
2	R145027A	1	Flame Arrestor	
3	RS3866	1	Clamp , flame arrestor	
4	97224300	3	Nut , Nylock, bracket attaching	
5	R116027	1	Engine Control Module	
6	98224035	4	Bolt , ECM attaching	
7	92924000	4	Flat washer , ECM attaching	
8	R090353A	1	Bracket , ECM mounting	
9	R094044	2	Isolator , fuse block mounting	
10	RS1078	2	Nut , KEPS, Fuse Block attaching	
11	R090357	1	Bracket , ignition coil/module assembly mounting	
12	RS2180	2	Lockwasher , ignition/coil bracket mounting	
13	RS0304	2	Bolt , ignition Coil bracket mounting	
14	RA117011	1	Ignition Coil/Module Assembly	
15	RS0254	2	Bolt , Ignition Coil attaching	
16	92100000	2	Washer , Ignition Coil attaching	
17	RS2058	2	Nut , Ignition Coil attaching	

OIL PAN and OIL PUMP ASSEMBLY - FIGURE 5

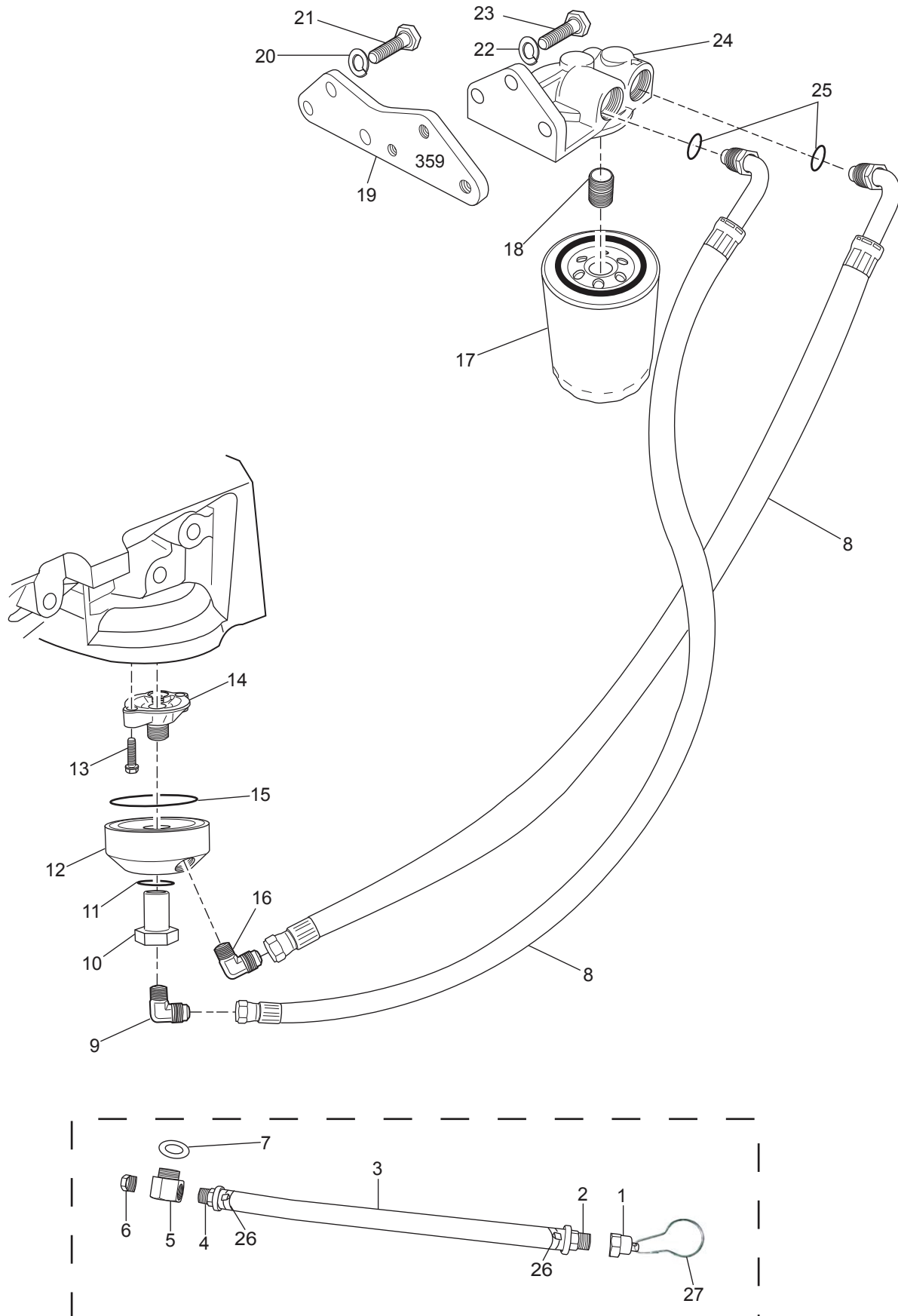


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OIL PAN and OIL PUMP ASSEMBLY - FIGURE 5

ITEM	PART NO.	QTY.	DESCRIPTION	MODEL ID
1	R058054	1	Shaft , oil pump drive	
2	7100270	1	Retainer , oil pump drive shaft	
3	R022022	2	Pin , oil pump locating	
4	RA070010	1	Oil Pump Assembly	
5	R024066A	1	Fitting , oil pan drain hose	
6	R012028	1	Deflector , crankshaft oil	
7	7100250	1	Bolt , oil pump	
8	RM0249	1	Gasket , oil pan	
9	R005011	1	Oil Pan	
10	RM0245	1	Gasket , oil pan drain hose fitting	
11	R045049	1	Hose , oil pan drain	
12	7090440	1	Reinforcement , oil pan (LH)	
13	95200010	4	Nut , oil pan	
14	R009157	14	Bolt , oil pan	
15	7090550	1	Reinforcement , oil pan (RH)	
16	R024179	1	Fitting , oil pan drain hose	
17	RS3552	1	Plug , oil pan drain hose fitting	
18	7050360	5	Nut , crankshaft oil deflector	
19	R041087	1	Tube , oil level dipstick	
20	R041088	1	Dipstick , oil level	
21	R127015	1	Clamp , dipstick tube mounting	
22	RS0304	1	Bolt , dipstick tube mounting clamp	
NI	RK024179	1	Kit , oil drain (includes items 5,10,11,16,17)	

REMOTE OIL FILTER COMPONENTS (MODEL 18-575xx-XX) - FIGURE 6

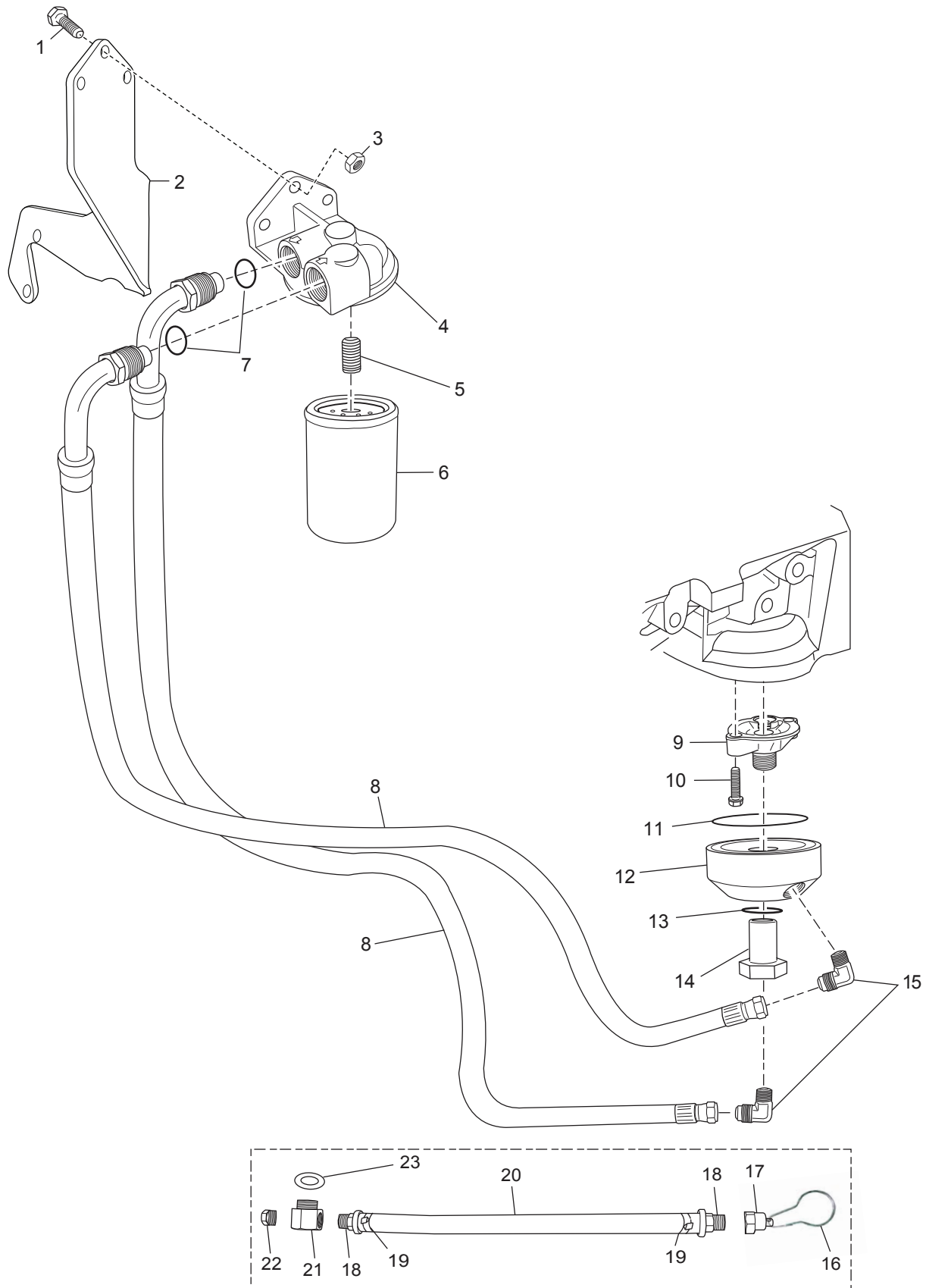


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REMOTE OIL FILTER COMPONENTS (MODEL 18-575xx-XX) - FIGURE 6

ITEM	PART NO.	QTY.	DESCRIPTION	MODEL ID
1	R024066A	1	Cap , oil drain hose	
2	R024061	1	Fitting , oil drain hose	
3	R045049	1	Hose , oil drain	
4	R024061	1	Fitting , oil drain hose	
5	R024179	1	Fitting , oil drain hose	
6	RS3552	1	Plug , oil drain hose fitting	
7	RM0245	1	Gasket , oil drain hose fitting	
8	RA045120F	2	Hose Assembly , remote oil	
9	R024184	1	Fitting , 90 degree	
10	R017073	1	Fitting , oil bypass adapter attaching	
11	R047202	1	O-ring , oil bypass adapter attaching fitting	
12	R079051	1	Adapter , oil bypass	
13	R009089	2	Bolt , oil adapter attaching	
14	RA079028	1	Adapter , oil	
15	R047203	1	O-ring , oil bypass adapter	
16	R024184	1	Fitting , 90 degree	
17	22679	1	Oil Filter	
18	R024203	1	Fitting , oil filter adapter	
19	R090359	1	Bracket , remote oil filter header attaching	
20	93934000	3	Lockwasher , oil filter header bracket mounting bolt	
21	RS0280	3	Bolt , oil filter header bracket mounting	
22	93934000	3	Lockwasher , oil filter header mounting bolt	
23	98333020	3	Bolt , oil filter header mounting	
24	R079066	1	Header , oil filter	
25	R047245	2	O-Ring , oil line	
26	R127087C	2	Clamp , oetiker	
27	R190123	1	Hook , oil drain hose	

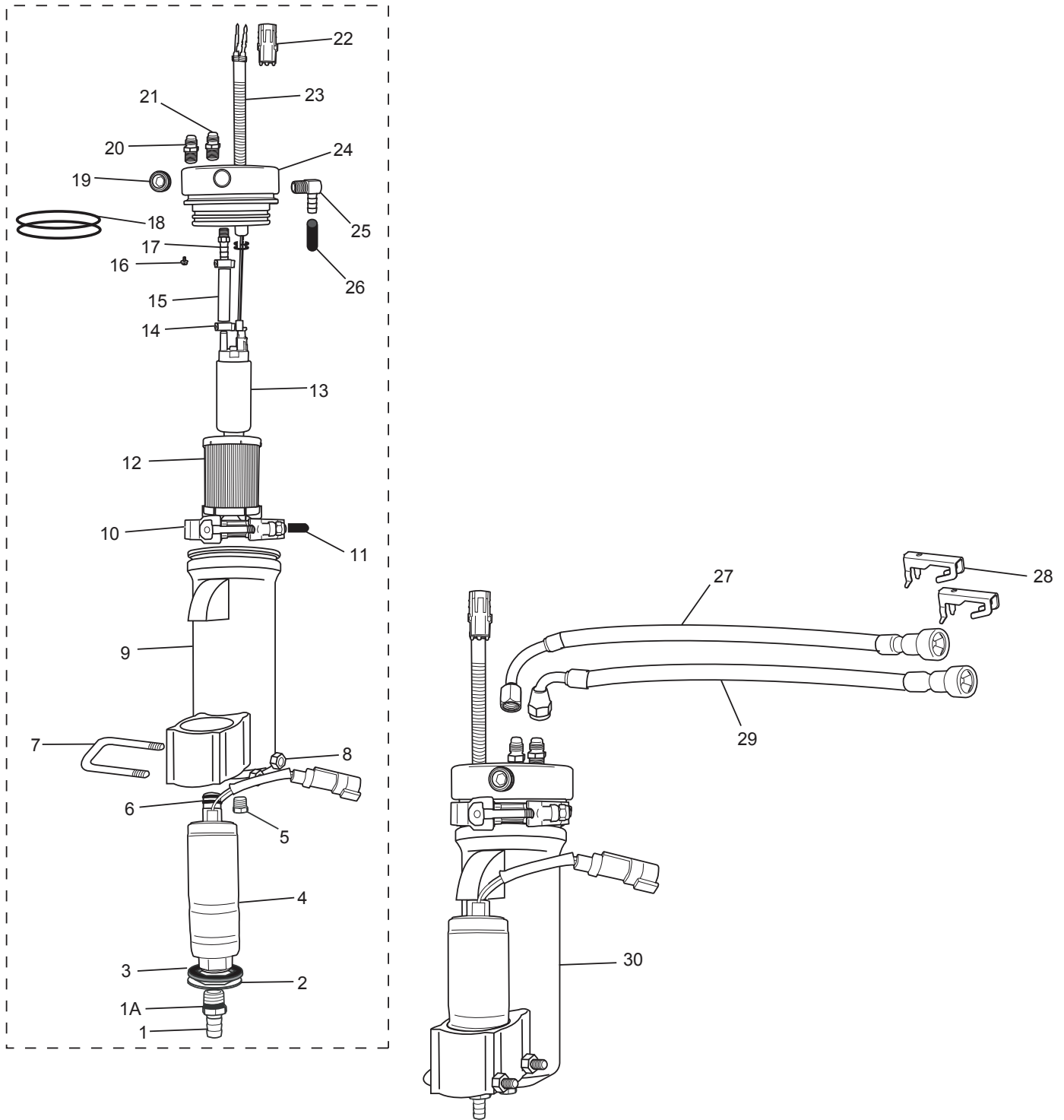
REMOTE OIL FILTER COMPONENTS (MODEL 12-575xx-XX) - FIGURE 7



REMOTE OIL FILTER COMPONENTS (MODEL 12-575xx-XX) - FIGURE 7

ITEM	PART NO.	QTY.	DESCRIPTION	MODEL ID
1	98333025	3	Bolt , oil filter header mounting	
2	R090428	1	Bracket , remote oil filter header attaching	
3	97330410	3	Bolt , oil filter header mounting bolt	
4	R079066	1	Header , oil filter	
5	R024203	1	Fitting , oil filter adapter	
6	22679	1	Oil Filter	
7	R047245	2	O-Ring , oil line	
8	RA045120D	2	Hose Assembly , remote oil	
9	RA079028	1	Adapter , oil	
10	R009089	2	Bolt , oil adapter attaching	
11	R047203	1	O-ring , oil bypass adapter	
12	R079051	1	Adapter , oil bypass	
13	R047202	1	O-ring , oil bypass adapter attaching fitting	
14	R017073	1	Fitting , oil bypass adapter attaching	
15	R024184	2	Fitting , 90 degree	
16	R190123	1	Hook , oil drain hose	
17	R024066A	1	Cap , oil drain hose	
18	R024061	2	Fitting , oil drain hose	
19	R127087C	2	Clamp , oetiker	
20	R045049	1	Hose , oil drain	
21	R024179	1	Fitting , oil drain hose	
22	RS3552	1	Plug , oil drain hose fitting	
23	9RM0245	1	Gasket , oil drain hose fitting	

FUEL CONTROL CELL (FCC) COMPONENTS (MODEL 18-575xx-XX) - FIGURE 8

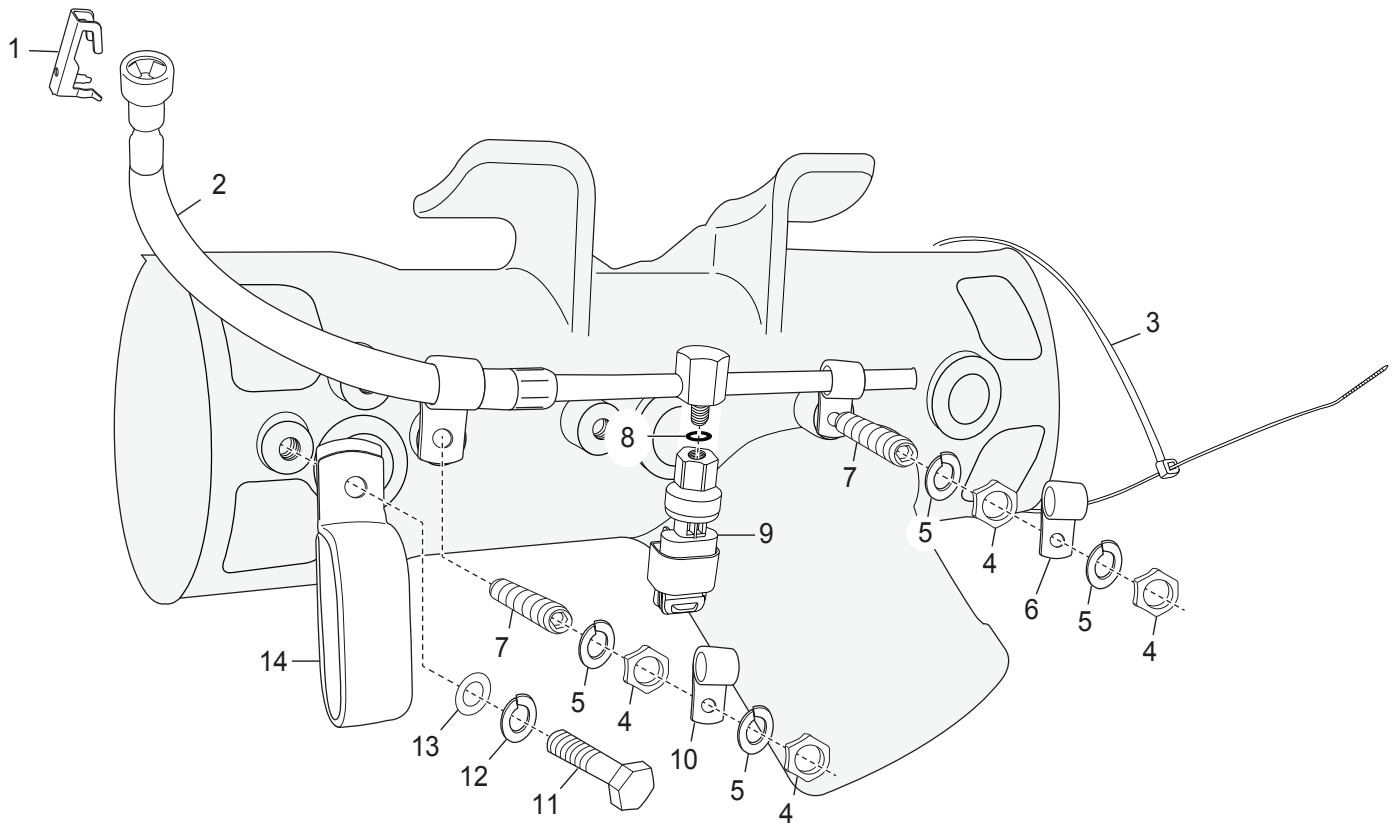


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FUEL CONTROL CELL (FCC) COMPONENTS (MODEL 18-575xx-XX) - FIGURE 8

ITEM	PART NO.	QTY.	DESCRIPTION	MODEL ID
1	R024232	1	Fitting , LPFP to 3/8 Hose barb	
1A	R047251	1	O'Ring , seal	
2	R169064	AR	Shim , LPFP mounting, 11 gage	
2	R169064A	AR	Shim , LPFP mounting, 16 gage	
2	R169064B	AR	Shim , LPFP mounting, 22 gage	
3	R094045	1	Isolator , LPFP mounting	
4	RA080032	1	Fuel Pump , low-pressure	
5	RS3554	1	Plug , FCC drain	
6	R047252	2	O'Ring , LPFP seal	
7	R127102	1	U-Bolt , low pressure fuel pump retaining	
8	95004300	2	Nut , Nylock, low-pressure fuel pump retaining	
9	R089008	1	Canister , FCC w/LPFP mounting	
10	R171010	1	Clamp , FCC bowl-to-head retaining	
11	R128002	1	Cover , FCC clamp T-bolt	
12	R080026	1	Filter , FCC	
13	RA080025A	1	Pump , FCC high pressure fuel	
14	R127087	2	Clamp , Oeticker	
15	R045098B	1	Hose , FCC internal fuel	
16	91620025	1	Screw , self-tapping, 1 piece harness retaining	
17	R024219	1	Fitting , FCC internal	
18	R047241	2	O'Ring , FCC bowl-to-head seal	
19	RS3550	1	Plug , FCC head	
20	R024163A	1	Fitting , FCC head (fuel return line)	
21	R024175	1	Fitting , FCC head (fuel supply line)	
22	7172040	1	Connector , W/P 2-Way Female	
23	R1210085B	1	Harness , 1 piece, FCC high pressure fuel pump	
24	R079069A	1	Head , fuel control cell	
25	R024225	1	Fitting , 90 degree	
26	45343	1	Cap , 3/8" rubber	
27	RA085090A	1	Fuel Line , FCC to fuel rail	
28	R127100	2	Locking Clip , fuel line	
29	RA085091A	1	Fuel Line , fuel rail return	
30	RA080034	1	FCC Assembly	

IN-TANK FUEL SYSTEM COMPONENTS (MODEL 12-575xx-XX) - FIGURE 9



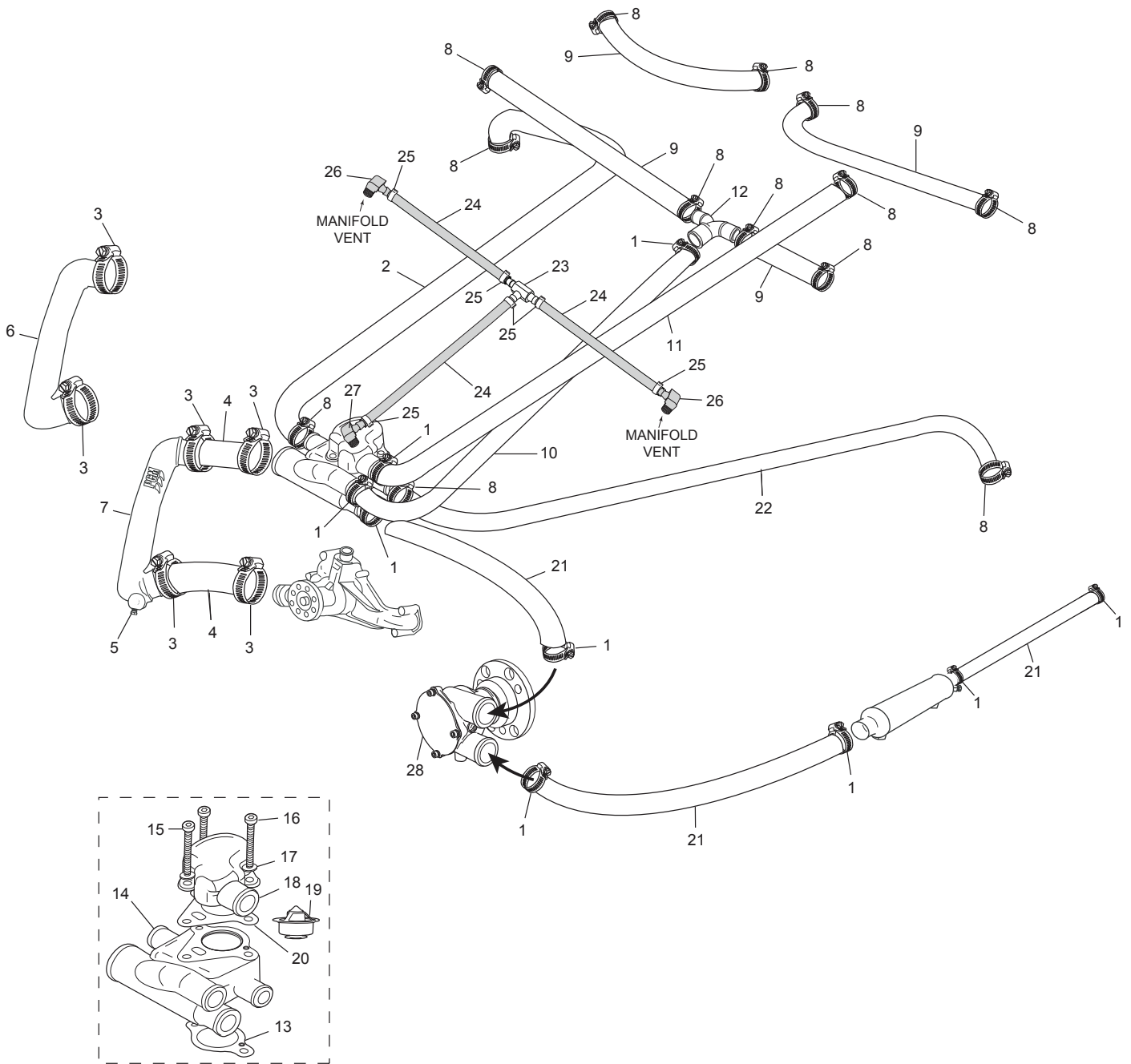
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NOTE: For in-tank fuel system components and fuel line from fuel tank to the engine, consult your boat manufacturer.

IN-TANK FUEL SYSTEM COMPONENTS (MODEL 12-575xx-XX) - FIGURE 9

ITEM	PART NO.	QTY.	DESCRIPTION	MODEL ID
1	R127100	1	Locking Clip , fuel line	
2	RA085105	1	Fuel Line , connection	
3	R127067	1	Strap , fuel line tie	
4	97334000	4	Nut , attaching	
5	93934000	4	Lockwasher , nut attaching	
6	R127065	1	Clamp , fuel line	
7	99335035	2	Stud , fuel line attaching	
8	R047263	1	O-Ring , fuel pressure sensor	
9	R020061	1	Sensor , fuel pressure	
10	R127050	1	Clamp , fuel line	
11	98334014	1	Bolt , retaining	
12	93934000	1	Lockwasher , bolt retaining	
13	92934020	1	Washer , bolt retaining	
14	R127099	1	Clamp , retaining	
<p>NOTE: For in-tank fuel system componets and fuel line from fuel tank to the engine, consult your boat manufacturer.</p>				

COOLING SYSTEM COMPONENTS (xx-575Cx-xx) cont'd - FIGURE 10

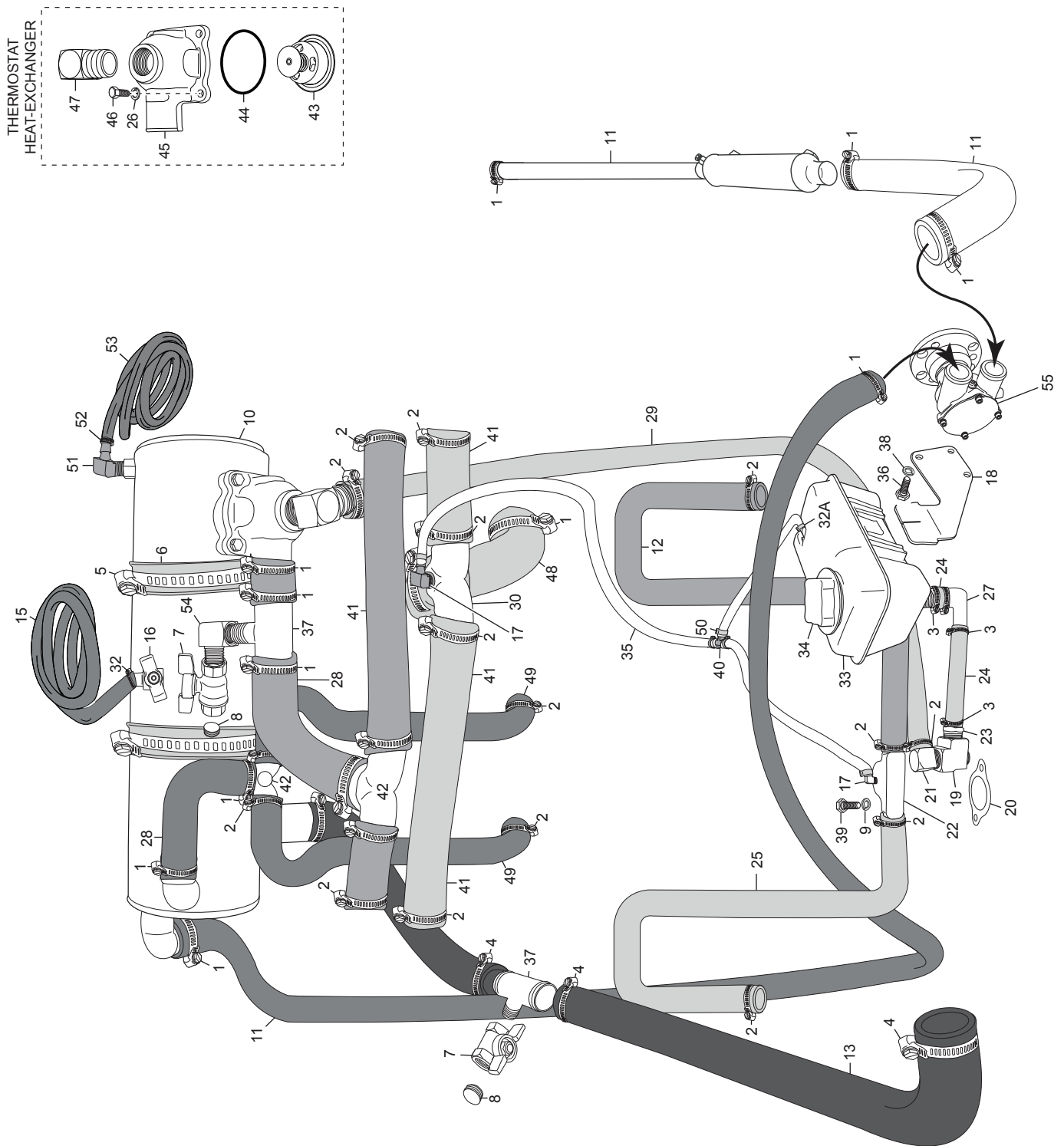


CCS_Parts_012

COOLING SYSTEM COMPONENTS (xx-575Cx-xx) cont'd - FIGURE 10

ITEM	PART NO.	QTY.	DESCRIPTION	MODEL ID
1	RS3858	8	Clamp , #20 hose (1 1/4")	
2	R045187	1	Hose , thermostat housing to starboard manifold	
3	RS3852	AR	Clamp , #28 hose (1 3/4")	
4	R045169A	2	Hose , coolant pipe attaching	18-575VC-xx
5	RS3552	1	Plug , coolant pipe drain	
6	R045048	1	Hose , circulation pump to thermostat housing	12-575Cx-xx
7	R024220A	1	Pipe , circulation pump to thermostat housing	18-575VC-xx
8	RS3851	14	Clamp , #16 hose (1")	
9	R045107	Bulk/ft	Hose , 1" ID	
10	18401	1	Hose , manifold tee to thermostat housing	
11	R045181	1	Hose , thermostat housing to exhaust crossover	
12	R024054D	1	Tee , exhaust cooling system	
13	RM0121	1	Gasket , lower thermostat housing	
14	R025040	1	Housing , lower thermostat	
15	99333025	1	Bolt , thermostat housing attaching	
16	99333070	2	Bolt , thermostat housing attaching	
17	RS2179	3	Lockwasher , thermostat housing attaching	
18	R025041	1	Housing , upper thermostat	
19	R026002	1	Thermostat , 160 degree	
20	RM0290	1	Gasket , upper thermostat housing	
21	20865	Bulk/ft	Hose , wire reinforced (1 1/4" ID)	
22	R045186	1	Hose , thermostat housing to port manifold	
23	R024245	1	Fitting , tee (1/4" barb)	12-575C-xx
24	R045132	Bulk/ft	Hose , 1/4" bulk	12-575C-xx
25	R127087A	6	Clamp , oetiker 1/2"	12-575C-xx
26	R024267	2	Fitting , 90 degree elbow (manifolds)	12-575C-xx
27	R024055	1	Fitting , 90 degree elbow	12-575C-xx
28	RA057023	1	Raw Water Pump Assembly	

COOLING SYSTEM COMPONENTS (xx-575CS-xx) - FIGURE 11

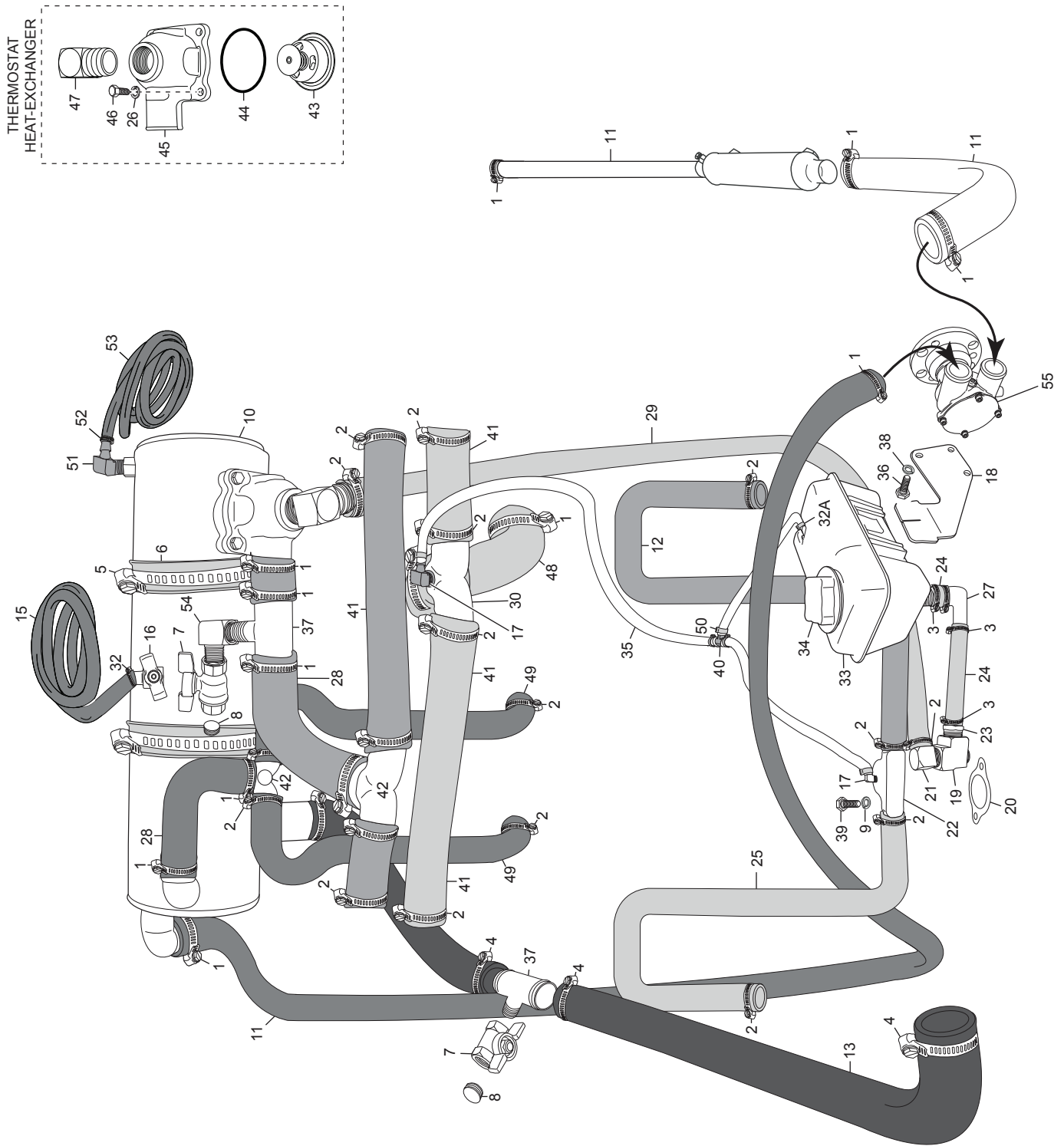


CCS_Parts_010

COOLING SYSTEM COMPONENTS (xx-575CS-xx) - FIGURE 11

ITEM	PART NO.	QTY.	DESCRIPTION	MODEL ID
1	RS3858	13	Clamp , #20 hose (1 1/4")	
2	RS3851	18	Clamp , #16 hose (1")	
3	RS3854	4	Clamp , #12 (7/8")	
4	RS3868	4	Clamp , #24 (1 1/2")	
5	R171009	2	Clamp , heat exchanger attaching	
6	R094052	2	Isolator , heat exchanger bulk (3 ft)	
7	R035039A	2	Valve , ball	
8	444705	2	Plug , brass pipe	
9	RS2179	2	Lockwasher , upper housing attaching	
10	RA147052A	1	Heat Exchanger Assembly	
11	20865	Bulk/ft	Hose , 1 1/4" wire reinforced	
12	R045186	1	Hose , upper housing to port manifold	
13	R045148A	1	Hose , circulation pump to heat exchanger	
15	R045049	Bulk/ft	Hose , heat exchanger bleed	
16	R024244	1	Petcock , heat exchanger bleed	
17	R024055	2	Elbow , 90 degree (1/4" barb)	
18	R090374	1	Bracket , degas bottle mounting	
19	R024248	1	Fitting , 3/4" tee	
20	RM0121	1	Gasket , upper housing	
21	R024246	1	Elbow , 90 degree (3/4" barb)	
22	R025042	1	Housing , upper	
23	R024217	1	Elbow , 90 degree (5/8" barb)	
24	R045153	Bulk/ft	Hose , 3/4" ID	
25	R045187	1	Hose , upper housing to starboard manifold	
26	93920000	4	Lockwasher , thermostat housing attaching	
27	R024013A	1	Elbow , 90 degree	
28	18402	2	Hose , 90 degree formed	
29	20806	Bulk/ft	Hose , 5/8" ID	
30	R024054E	1	Fitting , 1"x1"x1 1/4" tee	
32	RS3870	1	Clamp , SS 5/16"	
32A	R127087	1	Clamp , 5/8" oetiker	
33	R146001	1	Bottle , degas	
34	R034045	1	Cap , degas bottle	
35	R045132	Bulk/ft	Hose , 1/4" ID degas bottle to vent	
36	98334014	3	Bolt , SS degas bottle bracket attaching	
37	R024249A	2	Fitting , ball valve	
38	93934000	3	Lockwasher , SS degas bottle bracket attaching	
39	99333025	2	Bolt , upper housing attaching	
40	R024245	1	Fitting , tee 1/4" barb	

COOLING SYSTEM COMPONENTS (xx-575CS-xx) cont'd - FIGURE 11

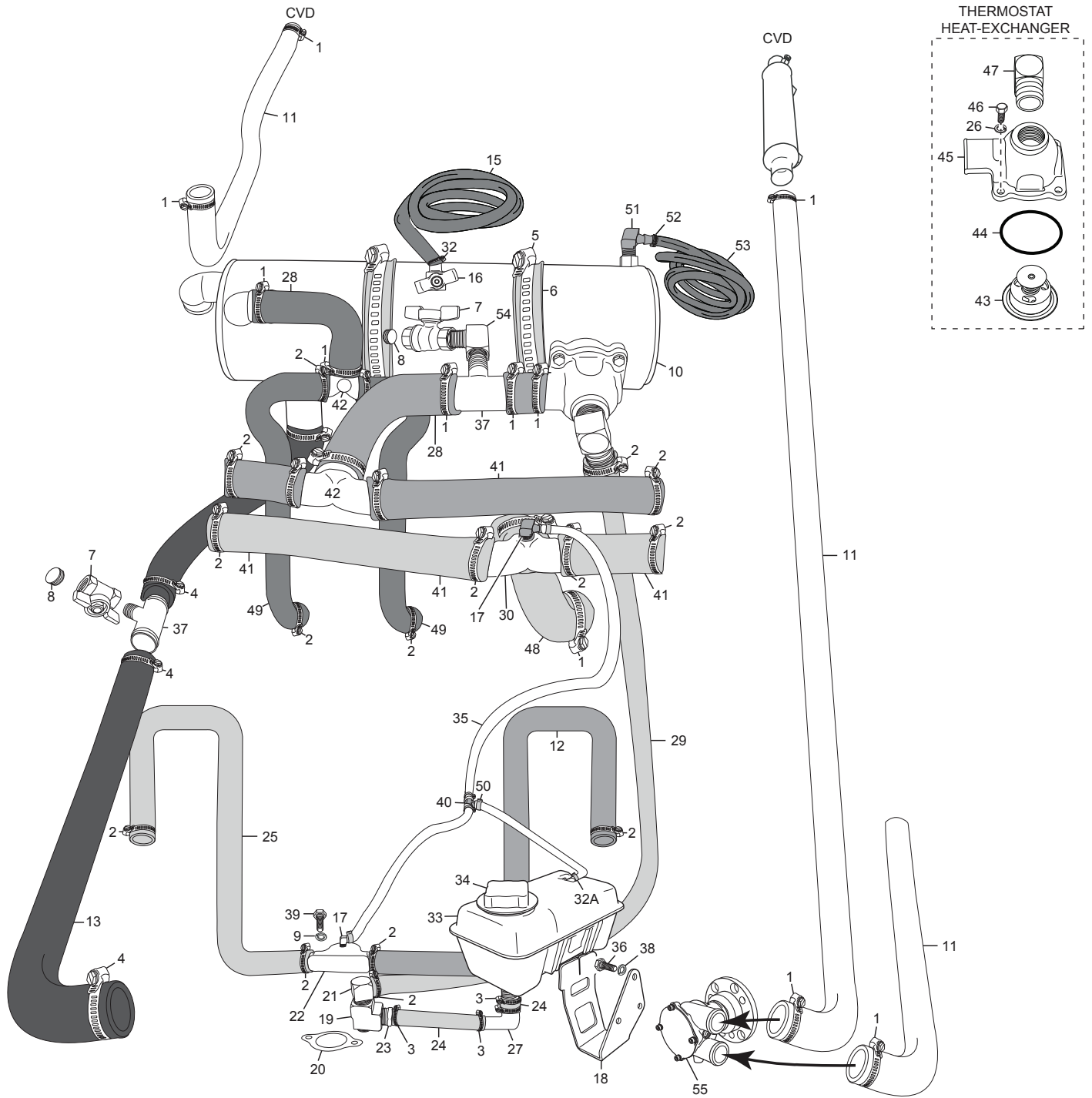


CCS_Parts_010

COOLING SYSTEM COMPONENTS (xx-575CS-xx) cont'd - FIGURE 11

ITEM	PART NO.	QTY.	DESCRIPTION	MODEL ID
41	R045107	Bulk/ft	Hose , 1" ID	
42	R024054D	2	Fitting , 1"x1"x1 1/4" tee	
43	R026007	1	Thermostat , 170 degree	
44	R047256	1	O-Ring , thermostat housing	
45	R025045	1	Housing , thermostat	
46	98223016	4	Bolt , thermostat housing attaching	
47	R024255	1	Fitting , thermostat housing elbow 5/8" barb	
48	R045144A	1	Hose , heat exchanger to exhaust crossover	
49	R045190	2	Hose , raw water outlet	
50	R127087A	5	Clamp , 1/2" oetiker	
51	R024089	1	Elbow , 90 degree 3/8" barb	
52	R127087C	1	Clamp , 23/32" oetiker	
53	R045215	Bulk/ft	Hose , 3/8" clear braided	
54	R024139	1	Elbow , ball valve attaching	
55	RA057023	1	Raw Water Pump Assembly	

COOLING SYSTEM COMPONENTS (xx-575VCS-xx) - FIGURE 12

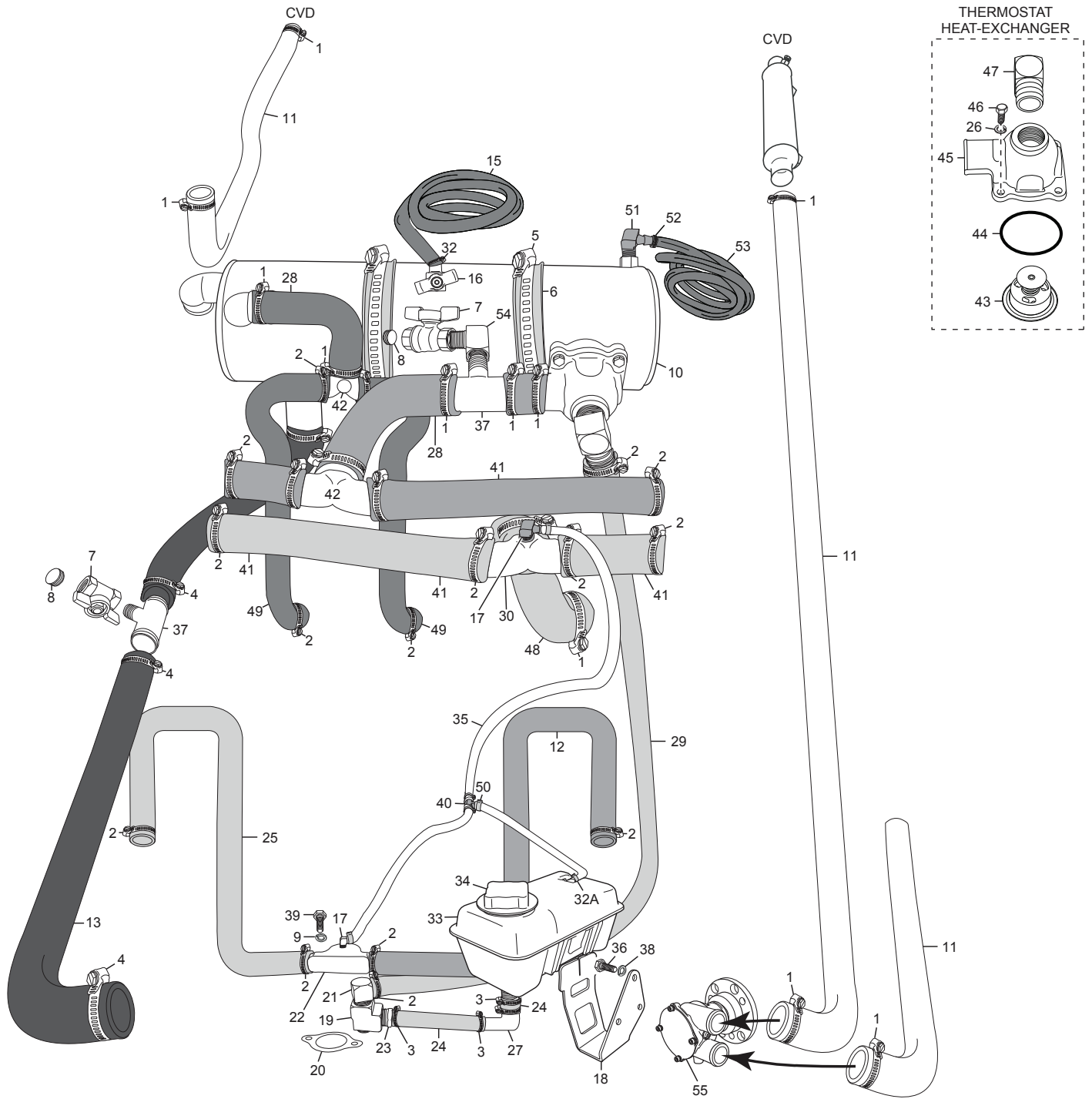


CCS_Parts_011

COOLING SYSTEM COMPONENTS (xx-575VCS-xx) - FIGURE 12

ITEM	PART NO.	QTY.	DESCRIPTION	MODEL ID
1	RS3858	13	Clamp , #20 hose (1 1/4")	
2	RS3851	18	Clamp , #16 hose (1")	
3	RS3854	4	Clamp , #12 (7/8")	
4	RS3868	4	Clamp , #24 (1 1/2")	
5	R171009	2	Clamp , heat exchanger attaching	
6	R094052	2	Isolator , heat exchanger bulk (3 ft)	
7	R035039A	2	Valve , ball	
8	444705	2	Plug , brass pipe	
9	RS2179	2	Lockwasher , upper housing attaching	
10	RA147052A	1	Heat Exchanger Assembly	
11	20865	Bulk/ft	Hose , 1 1/4" wire reinforced	
12	R045186	1	Hose , upper housing to port manifold	
13	R045148A	1	Hose , circulation pump to heat exchanger	
15	R045049	Bulk/ft	Hose , heat exchanger bleed	
16	R024244	1	Petcock , heat exchanger bleed	
17	R024055	2	Elbow , 90 degree (1/4" barb)	
18	R090374	1	Bracket , degas bottle mounting	
19	R024248	1	Fitting , 3/4" tee	
20	RM0121	1	Gasket , upper housing	
21	R024246	1	Elbow , 90 degree (3/4" barb)	
22	R025042	1	Housing , upper	
23	R024217	1	Elbow , 90 degree (5/8" barb)	
24	R045153	Bulk/ft	Hose , 3/4" ID	
25	R045187	1	Hose , upper housing to starboard manifold	
26	93920000	4	Lockwasher , thermostat housing attaching	
27	R024013A	1	Elbow , 90 degree	
28	18402	2	Hose , 90 degree formed	
29	20806	Bulk/ft	Hose , 5/8" ID	
30	R024054E	1	Fitting , 1"x1"x1 1/4" tee	
32	RS3870	1	Clamp , SS 5/16"	
32A	R127087	1	Clamp , 5/8" oetiker	
33	R146001	1	Bottle , degas	
34	R034045	1	Cap , degas bottle	
35	R045132	Bulk/ft	Hose , 1/4" ID degas bottle to vent	
36	98334014	3	Bolt , SS degas bottle bracket attaching	
37	R024249A	2	Fitting , ball valve	
38	93934000	3	Lockwasher , SS degas bottle bracket attaching	
39	99333025	2	Bolt , upper housing attaching	
40	R024245	1	Fitting , tee 1/4" barb	

COOLING SYSTEM COMPONENTS (xx-575VCS-xx) cont'd - FIGURE 12

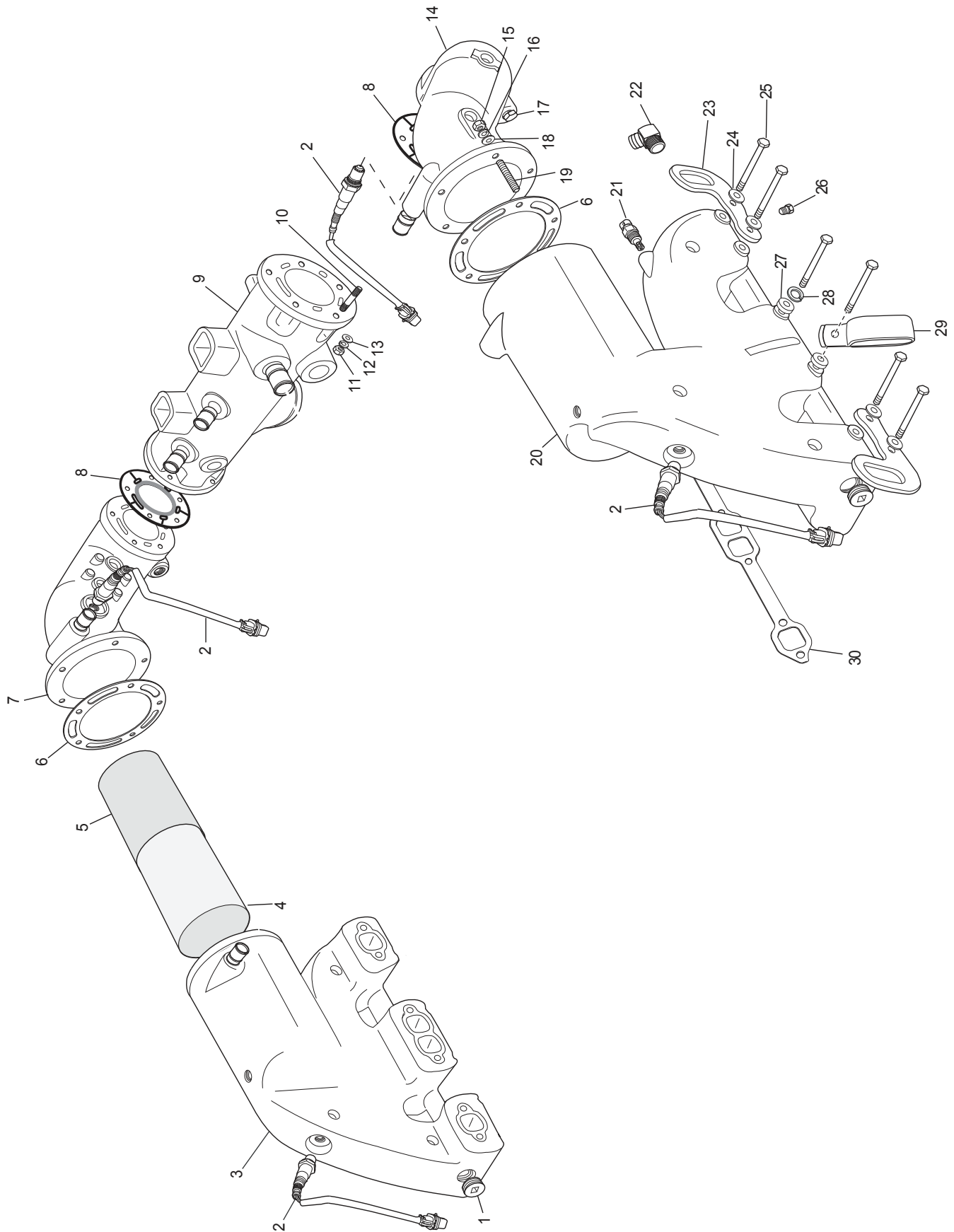


CCS_Parts_011

COOLING SYSTEM COMPONENTS (xx-575VCS-xx) cont'd - FIGURE 12

ITEM	PART NO.	QTY.	DESCRIPTION	MODEL ID
41	R045107	Bulk/ft	Hose , 1" ID	
42	R024054D	2	Fitting , 1"x1"x1 1/4" tee	
43	R026007	1	Thermostat , 170 degree	
44	R047256	1	O-Ring , thermostat housing	
45	R025045	1	Housing , thermostat	
46	98223016	4	Bolt , thermostat housing attaching	
47	R024255	1	Fitting , thermostat housing elbow 5/8" barb	
48	R045144A	1	Hose , heat exchanger to exhaust crossover	
49	R045190	2	Hose , raw water outlet	
50	R127087A	5	Clamp , 1/2" oetiker	
51	R024089	1	Elbow , 90 degree 3/8" barb	
52	R127087C	1	Clamp , 23/32" oetiker	
53	R045215	Bulk/ft	Hose , 3/8" clear braided	
54	R024139	1	Elbow , ball valve attaching	
55	RA057023	1	Raw Water Pump Assembly	

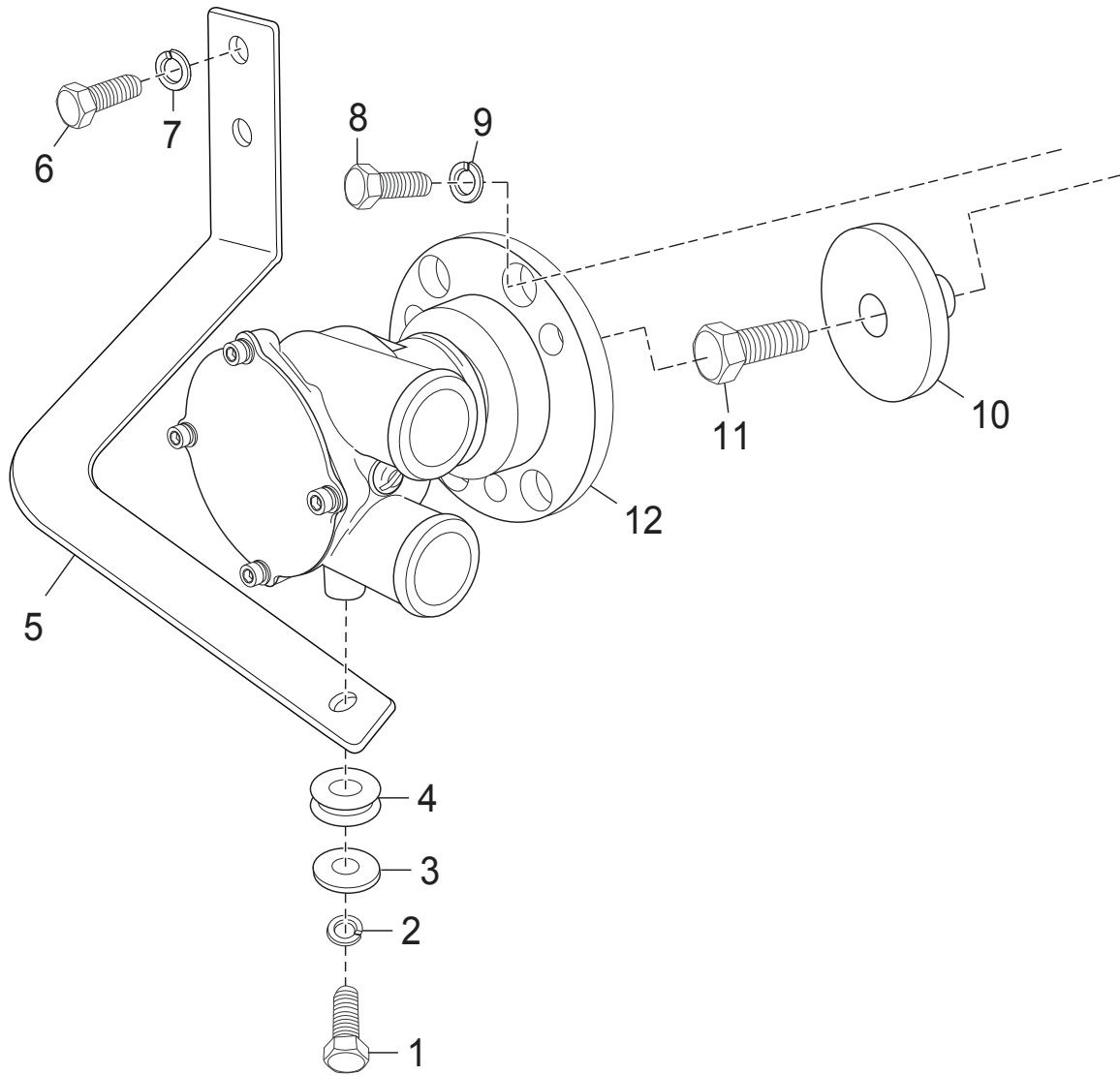
EXHAUST MANIFOLD and COMPONENTS - FIGURE 13



EXHAUST MANIFOLD and COMPONENTS - FIGURE 13

ITEM	PART NO.	QTY.	DESCRIPTION	MODEL ID
1	RS3533	2	Plug , exhaust manifold	
2	R020051	4	Sensor , oxygen sensor	
3	R028026	1	Exhaust Manifold , starboard	
4	R144003A	2	Catalyst , exhaust	
5	RM0291	2	Mesh , catalyst support	
6	RM0285	2	Gasket , exhaust manifold to corner	
7	R133002	1	Corner , starboard exhaust	
8	RM0286	2	Gasket , exhaust corner to crossover (fresh water system)	xx-575CS-xx; xx-575VCS-xx
8	RM0299	2	Gasket , exhaust corner to crossover (raw water system)	xx-575C-xx; xx-575VC-xx
9	R133003	1	Crossover , exhaust	
10	R031045	10	Stud , exhaust crossover attaching	
11	97334000	10	Nut , exhaust crossover attaching	
12	99934000	10	Washer , exhaust crossover attaching	
13	92934020	10	Lockwasher , exhaust crossover attaching	
14	R133001	1	Corner , port exhaust	
15	97334000	10	Nut , exhaust corner attaching	
16	93934000	10	Lockwasher , exhaust corner attaching	
17	RS3557	2	Plug , exhaust crossover	
18	92934020	10	Washer , exhaust corner attaching	
19	R031044	10	Stud , exhaust corner attaching	
20	R028025	1	Exhaust Manifold , port	
21	R020019	2	Sensor , exhaust manifold water temperature	
22	R024006A	2	Fitting , exhaust manifold hose	
23	R042017	4	Eye , lifting	
24	92300001	8	Washer , manifold attaching	
25	90305600	12	Bolt , manifold attaching	
26	RS3552	2	Plug , exhaust manifold	
27	R062092	4	Spacer , manifold attaching	
28	93300000	4	Locwasher , manifold attaching	
29	R127099	2	Clamp , dual #10 hose	
30	RM0287	2	Gasket , exhaust manifold to engine	

RAW WATER COOLING PUMP - FIGURE 14

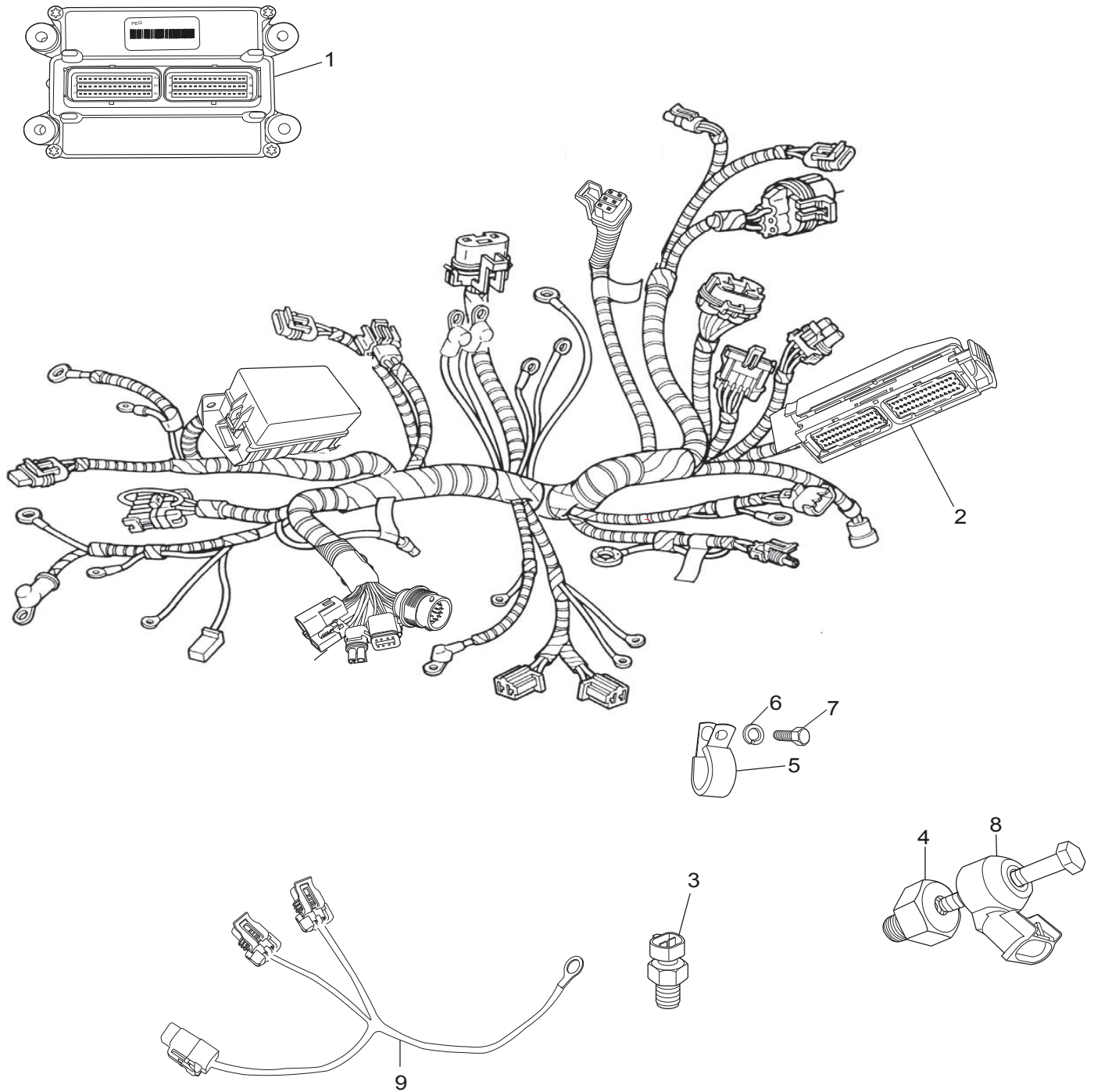


CCS_Parts_014

RAW WATER COOLING PUMP - FIGURE 14

ITEM	PART NO.	QTY.	DESCRIPTION	MODEL ID
1	RS0280	1	Bolt , support bracket to raw water pump attaching	
2	93934000	1	Lockwasher , support bracket to raw water pump attaching	
3	92200000	1	Washer , support bracket to raw water pump attaching	
4	R094038	1	Grommet , isolator	
5	R090177A	1	Bracket , raw water pump support	
6	RS0304	2	Bolt , support bracket to engine attaching	
7	RS2180	2	Lockwasher , support bracket to engine attaching	
8	R009161	4	Bolt , raw water pump attaching	
9	RS2180	4	Lockwasher , raw water pump attaching	
10	R096149	1	Bushing , raw water pump alignment	
11	R009091	1	Bolt , harmonic balancer	
12	RA057023	1	Raw Water Pump Assembly	
NI	RP061018	AR	Imeller Kit , raw water pump	

WIRING HARNESS and ECM - FIGURE 15

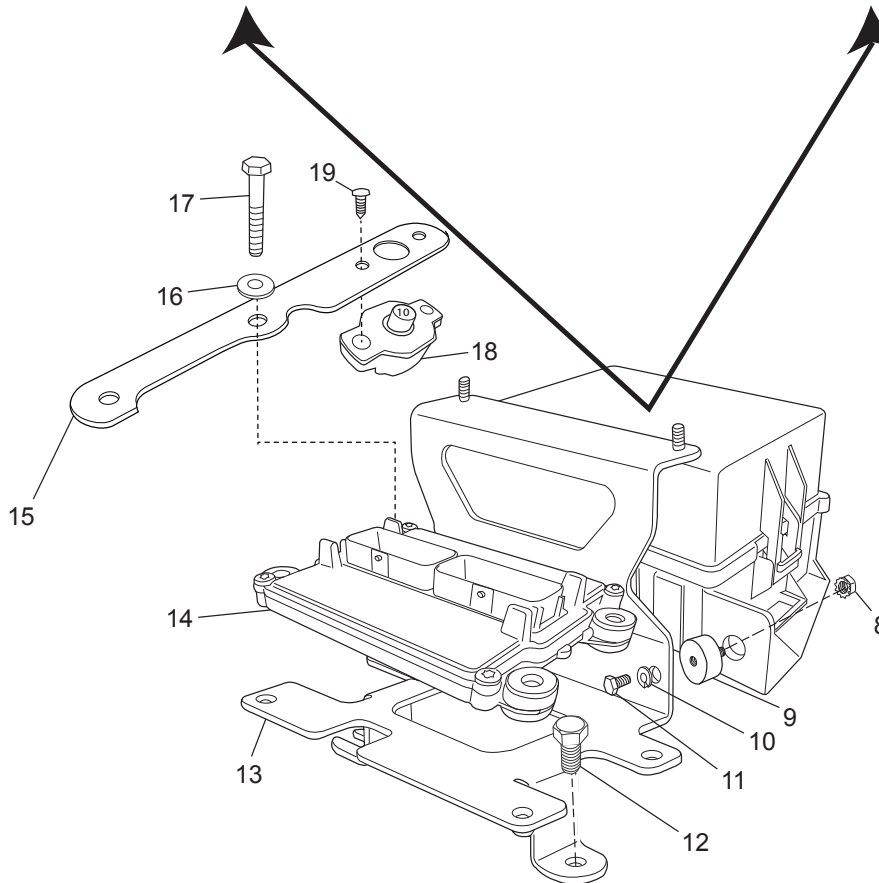
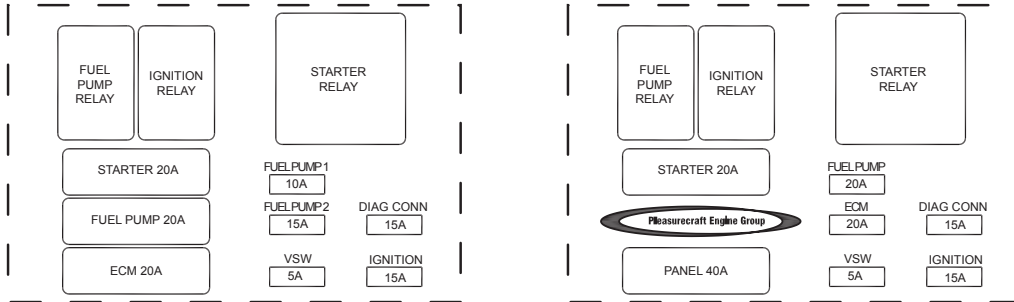
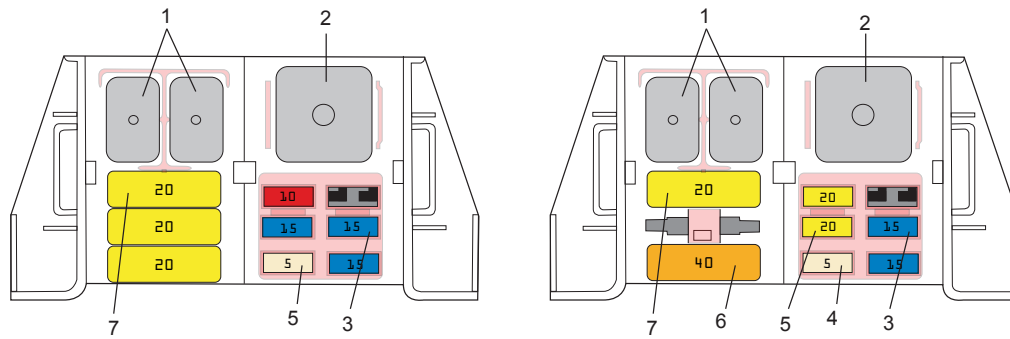


CCS_Parts_015

WIRING HARNESS and ECM - FIGURE 15

ITEM	PART NO.	QTY.	DESCRIPTION	MODEL ID
1	R116027	1	Engine Control Module (must be programmed)	
2	RA121105C	1	Engine Wiring Harness Assembly	18-575-VC-xx
2	RA121119	1	Engine Wiring Harness Assembly	12-575Cxx-xx
3	R020019	3	Sensor , engine coolant temp/exhaust manifold coolant temp	
4	R095043A	2	Adapter , knock sensor	
5	R127039	AR	Clamp , component securing	
6	RS2178	AR	Bolt , attaching	
7	90105075	AR	Bolt , attaching	
8	R020052	2	Sensor , knock	
9	R121117	AR	Harness , electric shift	12-575-CS-xx

ECM and RELAYS - FIGURE 16

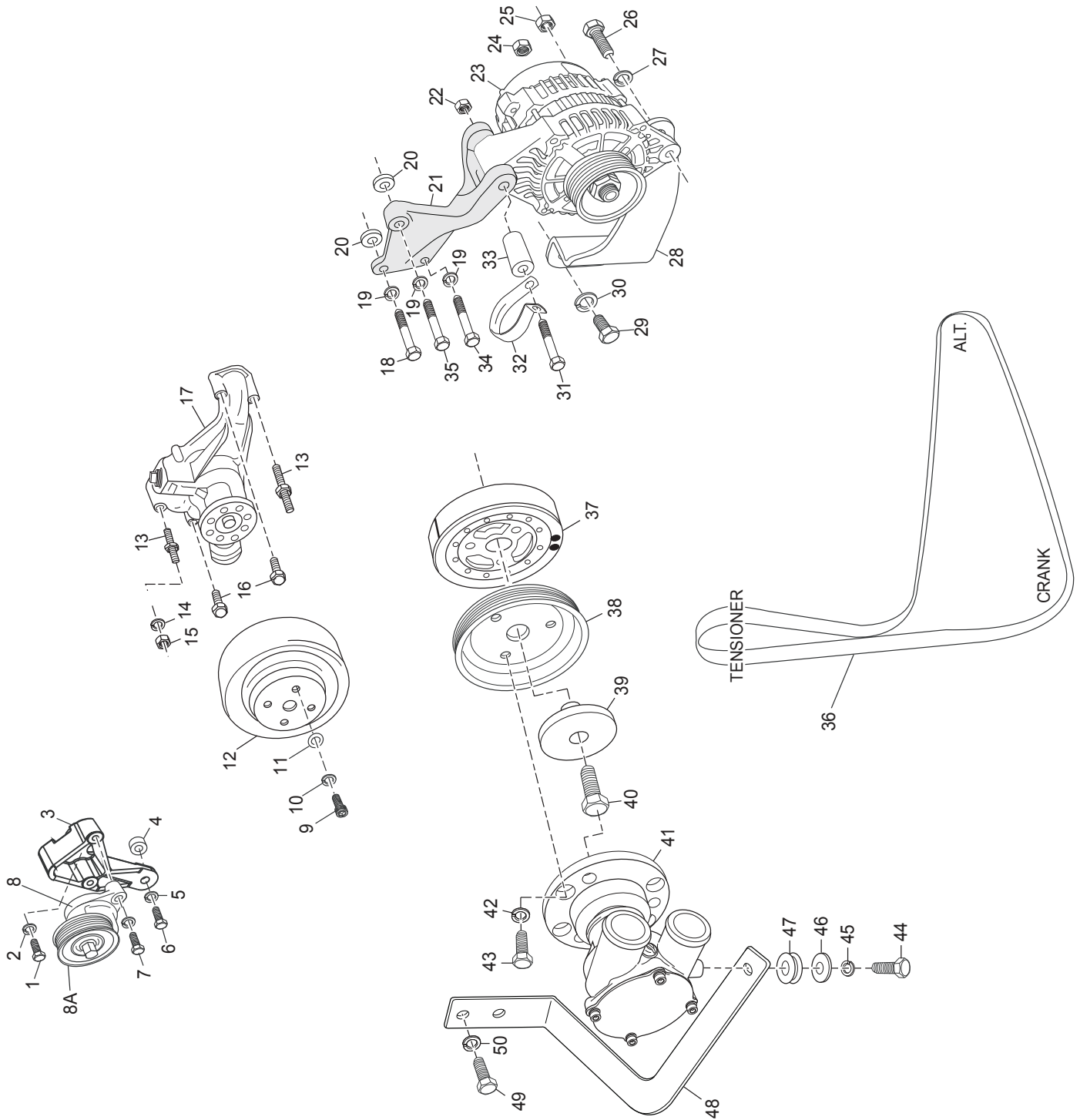


CCS_Parts_016

ECM and RELAYS - FIGURE 16

ITEM	PART NO.	QTY.	DESCRIPTION	MODEL ID
1	R130015	AR	Relay , Fuel Pump and Ignition	
2	R130016	AR	Relay , Starter	
3	R153017A	AR	Fuses , 15 amp	
4	R153017C	AR	Fuse , 5 amp	
5	R153017B	AR	Fuses , 20 amp	
6	R153019F	AR	Fuse , Maxi, 40 Amp	
7	R153019C	AR	Fuse , Maxi, 20 Amp	
8	RS1078	2	Nut , KEPS, Fuse Block attaching	
9	R094044	2	Isolator , fuse block mounting	
10	RS2178	2	Lockwasher , fuse block mounting	
11	RS0251	2	Bolt , fuse block mounting	
12	98222016	2	Bolt , ECM/Fuse block bracket attaching	
13	R090353A	1	Bracket , ECM/Fuse block	
14	R116027	1	Engine Control Module (ECM)	
15	R090429	1	Bracket , circuit breaker	12-575xxx-xx
16	RS2672	4	Washer , ECM attaching	
17	98224035	4	Bolt , ECM attaching	
18	R153017C	1	Circuit Breaker , 10 amp	12-575xxx-xx
19	Part of 18	AR	Screw , circuit breaker attaching	12-575xxx-xx

ACCESSORY DRIVE SYSTEM COMPONENTS - FIGURE 17

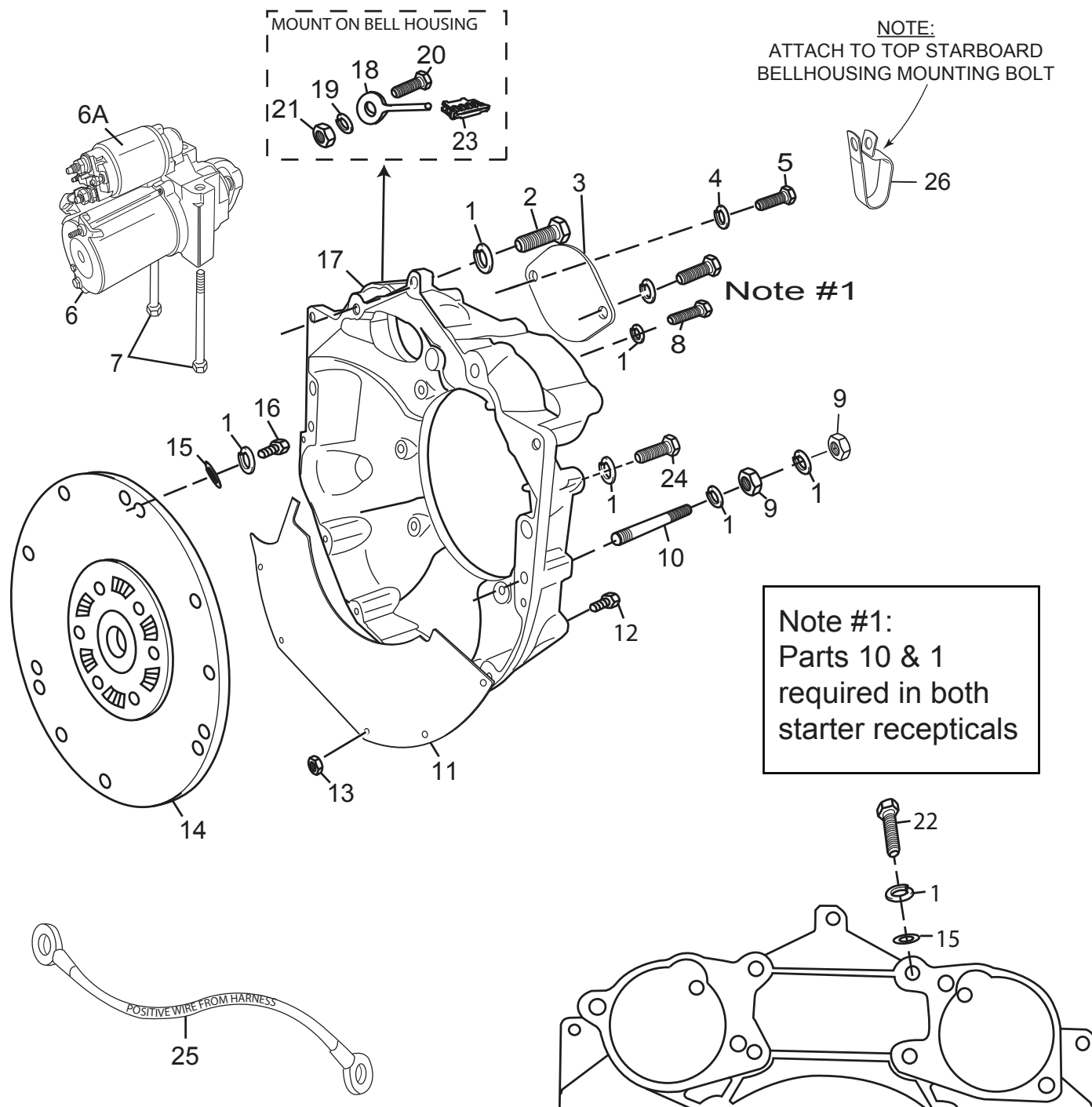


CCS_Parts_017

ACCESSORY DRIVE SYSTEM COMPONENTS - FIGURE 17

ITEM	PART NO.	QTY.	DESCRIPTION	MODEL ID
1	RS0304	1	Bolt , tensioner bracket attaching	
2	RS2180	1	Lockwasher , tensioner bracket attaching	
3	R090287A	1	Bracket , belt tensioner mounting	
4	R062089	1	Spacer , tensioner bracket	
5	RS2180	2	Lockwasher , tensioner bracket attaching	
6	RS0305	1	Bolt , belt tensioner bracket attaching	
7	RS0307	1	Bolt , belt tensioner attaching	
8	RA068001	1	Belt Tensioner Assembly	
8A	R065057	1	Pulley , Belt Tensioner	
9	90274075	4	Bolt , water pump pulley attaching	
10	93934000	4	Lockwasher , water pump pulley attaching bolt	
11	92934000	4	Flatwasher , water pump pulley attaching bolt	
12	R065053A	1	Pulley , water pump	
13	R095026	2	Stud , water pump mounting	
14	RS2179	1	Lockwasher , belt tensioner attaching	
15	RS1527	1	Nut , belt tensioner attaching	
16	90305275	2	Bolt , water pump mounting	
17	RA057027	1	Water Pump Assembly	
18	RS0307	1	Bolt , alternator bracket attaching (1 3/4")	
19	RS2180	3	Lockwasher , alternator bracket attaching	
20	R062092	3	Spacer , alternator bracket attaching	
21	R090075	1	Bracket , alternator	
22	97440300	1	Locknut , alternator attaching	
23	RA097009	1	Alternator Assembly, 100A	
24	97224060	1	Nut , keps, ground cable attaching	
25	97330060	1	Nut , keps, charge cable attaching	
26	98333025	1	Bolt , alternator mounting	
27	RS2179	1	Lockwasher , alternator mounting	
28	R090288	1	Bracket , alternator mounting	
29	RS0304	2	Bolt , alternator mounting	
30	RS2180	2	Lockwasher , alternator mounting	
31	98446130	1	Bolt , alternator mounting	
32	R127104	1	Clamp , hose retaining	
33	R062098C	1	Spacer , hose retaining clamp	
34	RS0306	1	Bolt , alternator attaching (1 1/2")	
35	RS0304	1	Bolt , alternator attaching (2")	
36	R066039	1	Belt , serpentine	
37	R064010A	1	Balancer , crankshaft	
38	R065051	1	Pulley , crankshaft	
39	R096149	1	Bushing , raw water pump alignment	
40	R009091	1	Bolt , crankshaft balancer	
41	RA057023	1	Raw Water Pump Assembly	
42	RS2180	3	Lockwasher , raw water pump attaching	
43	R009161	3	Bolt , raw water pump attaching	
44	RS0280	1	Bolt , raw water pump mounting	
45	93934000	1	Lockwasher , raw water pump mounting	
46	92200000	1	Flatwasher , raw water pump mounting	
47	R094038	1	Grommet , raw water pump mounting	
48	R090177A	1	Bracket , raw water pump mounting	
49	RS0304	2	Bolt , raw water pump mounting bracket attaching	
50	RS2180	2	Lockwasher , raw water pump mounting bracket attaching	

DIRECT DRIVE STARTER ASSEMBLY AND BELLHOUSING COMPONENTS - FIGURE 18

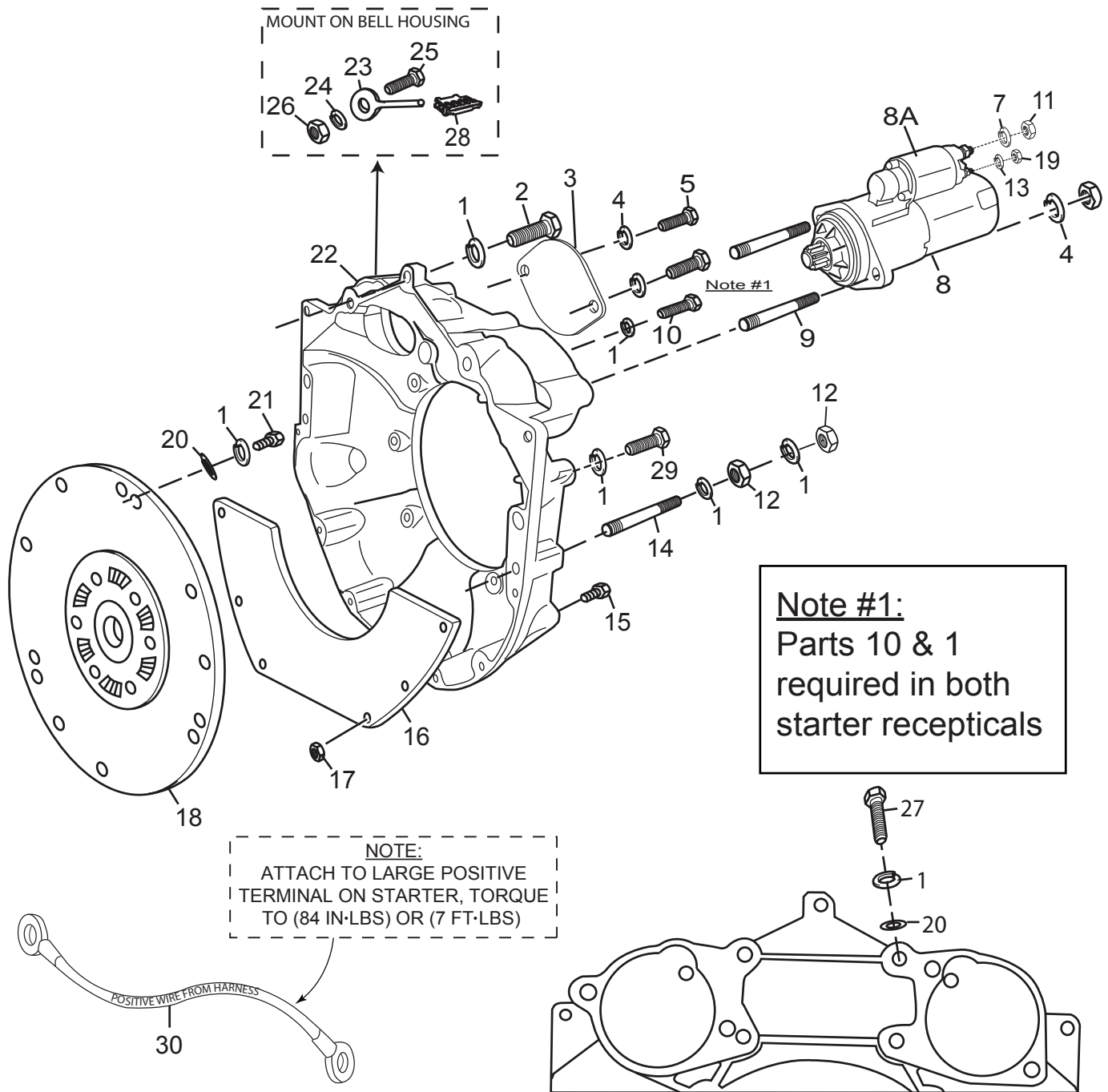


CCS_Parts_018

DIRECT DRIVE STARTER ASSEMBLY AND BELLHOUSING COMPONENTS - FIGURE 18

ITEM	PART NO.	QTY.	DESCRIPTION	MODEL ID
1	RS2180	16	Lockwasher , bellhousing attaching	
2	RS0305	1	Bolt , bellhousing attaching	
3	R019010	2	Cover , dust	
4	RS2181	4	Lockwasher , dust cover attaching	
5	RS0327	4	Bolt , dust cover attaching	
6	RA122015	1	Starter Motor Assembly (bottom mount)	
6A	RU0050B	1	Solenoid , starter	
NI	RS7018	1	Nut , starter solenoid B+ cable attaching	
NI	RS7080	1	Lockwasher , starter solenoid B+ cable attaching	
NI	RS7036	1	Nut , starter solenoid start wire attaching	
NI	93003000	1	Lockwasher , starter solenoid start wire attaching	
7	R009167	2	Bolt , starter mounting	
8	RS0460	2	Bolt , bellhousing attaching	
9	RS1028	4	Nut , bellhousing stud	
10	R031033	2	Stud , bellhousing attaching	
11	R019008A	1	Plate , flywheel cover	
12	RS0256	6	Bolt , flywheel cover plate attaching	
13	95104060	6	Nut , flywheel cover plate attachin	
14	R140023	1	Damper Plate , 80 series transmissions	
15	92300000	7	Flatwasher , attaching	
16	R009092	6	Bolt , damper plate attaching	
17	R142015F	1	Bellhousing	
18	R096144A	2	Stud , retainer clip	
19	RS2179	2	Lockwasher , retainer clip attaching	
20	RS0282	2	Bolt , retainer clip attaching	
21	RS1027	2	Nut , retainer clip attaching	
22	RS0302	1	Bolt , bellhousing attaching	
23	R127090	2	Retainer Clip , spark plug wire	
24	RS0311	2	Bolt , bellhousing attaching	
25	R101018	1	Positive Starter Lead , (1ga. / 24")	12-575XX-XX
26	R127099	1	Strap , component retaining	

VEE DRIVE STARTER ASSEMBLY AND BELLHOUSING COMPONENTS - FIGURE 19



CCS_Parts_019

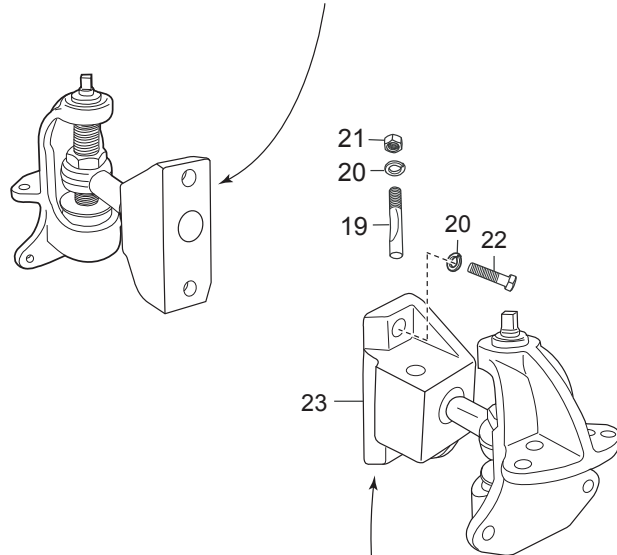
VEE DRIVE STARTER ASSEMBLY AND BELLHOUSING COMPONENTS - FIGURE 19

ITEM	PART NO.	QTY.	DESCRIPTION	MODEL ID
1	RS2180	16	Lockwasher , bellhousing attaching	
2	RS0305	1	Bolt , bellhousing attaching	
3	R019010	1	Cover , dust	
4	RS2181	2	Lockwasher , dust cover attaching	
5	RS0327	2	Bolt , dust cover attaching	
6	RS1029	2	Nut , starter motor attaching	
7	RS7080	1	Lockwasher , starter solenoid B+ cable attaching	
8	RA122009	1	Starter Motor Assembly (top mount)	
8A	RU0050B	1	Solenoid , starter	
9	R031018	2	Stud , starter motor attaching	
10	RS0460	2	Bolt , bellhousing attaching	
11	RS7018	1	Nut , starter solenoid B+ cable attaching	
12	RS1028	4	Nut , bellhousing stud	
13	93003000	1	Lockwasher , starter solenoid start wire attaching	
14	R031033	2	Stud , bellhousing attaching	
15	RS0256	6	Bolt , flywheel cover plate attaching	
16	R019008	1	Plate , flywheel cover	
17	95104060	6	Nut , flywheel cover plate attaching	
18	R140023	1	Damper Plate , 80 series transmissions	
19	RS7036	1	Nut , starter solenoid start wire attaching	
20	92300000	7	Flatwasher , attaching	
21	R009092	6	Bolt , damper plate attaching	
22	R142015F	1	Bellhousing	
23	R096144A	2	Stud , retainer clip	
24	RS2179	2	Lockwasher , retainer clip attaching	
25	RS0282	2	Bolt , retainer clip attaching	
26	RS1027	2	Nut , retainer clip attaching	
27	RS0302	1	Bolt , bellhousing attaching	
28	R127090	2	Retainer Clip , spark plug wire	
29	RS0311	2	Bolt , bellhousing attaching	
30	R101018	1	Positive Starter Lead , (1ga. / 24")	12-575VX-XX

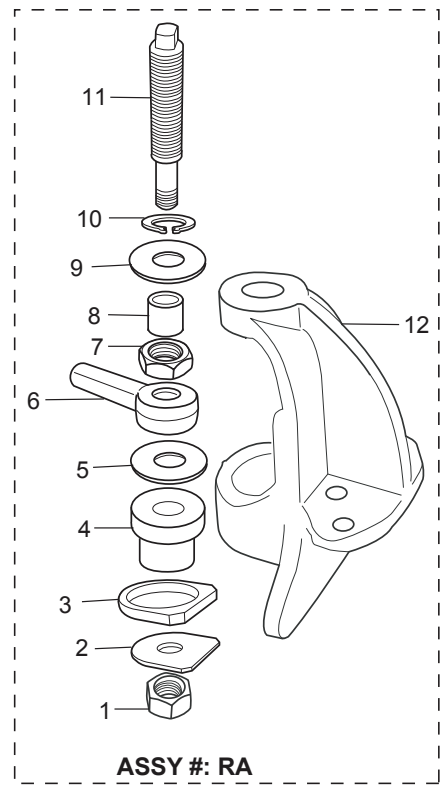
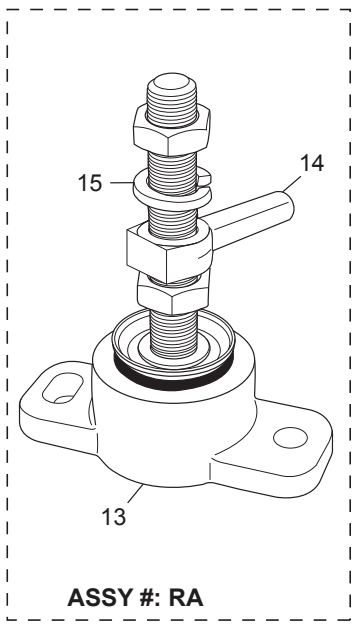
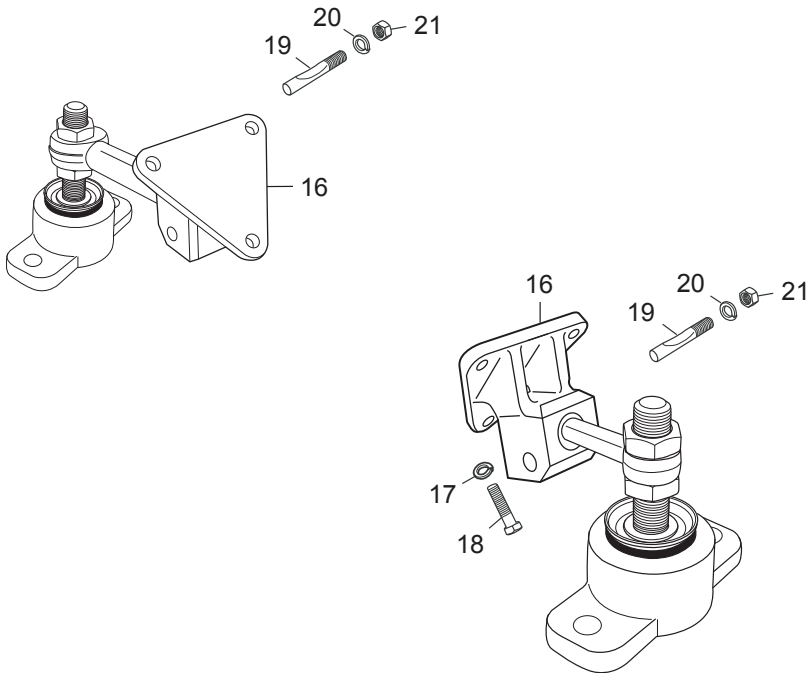
ENGINE and TRANSMISSION MOUNTS (12-575C-XX) - FIGURE 20

NOTE:

(STARTBOARD SIDE) HUMP DOWN,
FACE TOWARDS FRONT OF ENGINE



NOTE:
(PORT SIDE) HUMP DOWN,
FACE TOWARDS REAR OF ENGINE

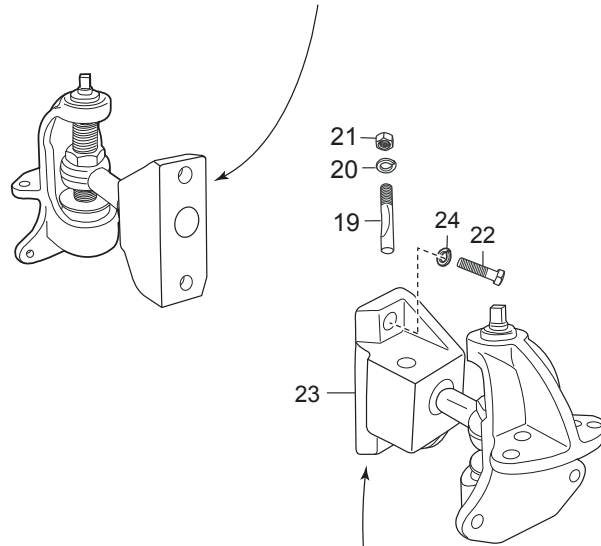


ENGINE and TRANSMISSION MOUNTS (12-575C-XX) - FIGURE 20

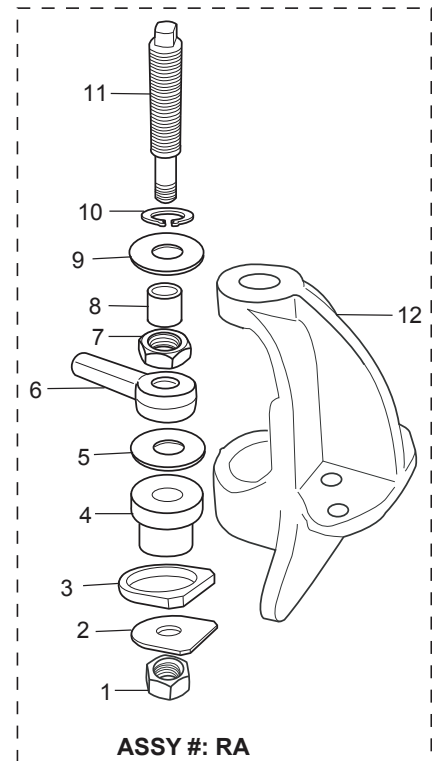
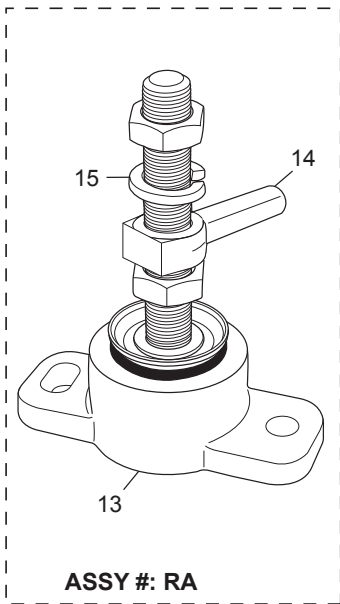
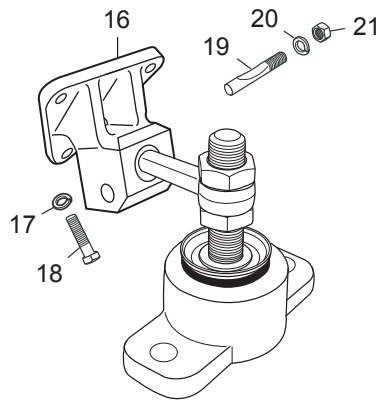
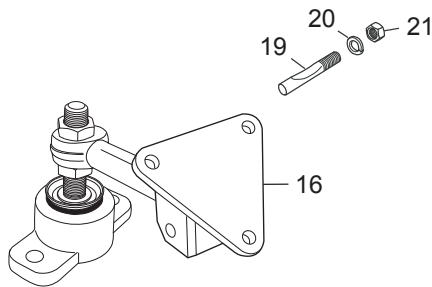
ITEM	PART NO.	QTY.	DESCRIPTION	MODEL ID
1	RS1082	2	Nut , mount lower	
2	R096148	2	Washer , mount lower	
3	R094050	2	Bushing , mount lower	
4	R094017	2	Isolator , mount lower	
5	R096001	2	Washer , mount isolator	
6	R091003	2	Trunnion , mount	
7	RS1577	2	Nut , mount hex jam	
8	R094004	2	Isolator , mount upper	
9	R096150	2	Washer , stainless steel upper isolator	
10	R048120	2	Snap Ring , mount	
11	R095002	2	Stud , mount trunnion	
12	R092003A	2	Body , mount (short back)	
13	RA092017	2	Mount , DF-216 front	
14	R091008	2	Trunnion , front	
15	RS2186	2	Lockwasher , front mount	
16	R090427A	2	Bracket , front mount	
17	RS2180	6	Lockwasher , mount bracket attaching	
18	RS0304	6	Bolt , mount bracket attaching	
19	R095020	4	Wedge Pin , trunnion securing	
20	RS2181	8	Lockwasher , wedge pin / mount bracket attaching	
21	RS1529	4	Nut , wedge pin attaching	
22	RS0328	2	Bolt , mount bracket attaching	
23	R090145	2	Block , rear mount	

ENGINE and TRANSMISSION MOUNTS (12-575CS-XX) - FIGURE 20S

NOTE:
(STARTBOARD SIDE) HUMP DOWN,
FACE TOWARDS FRONT OF ENGINE



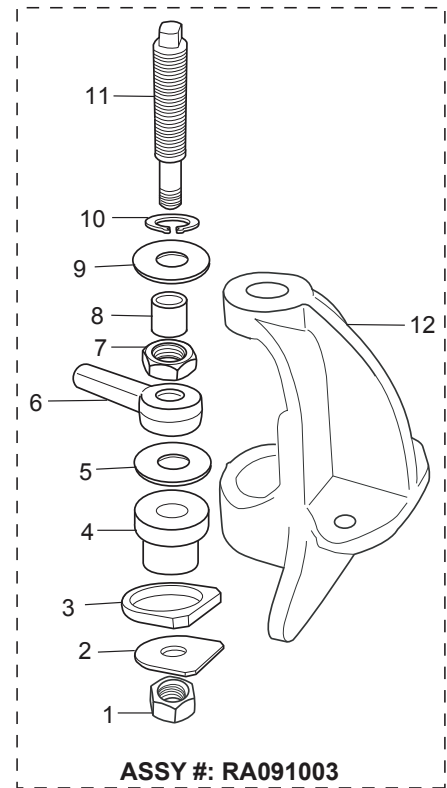
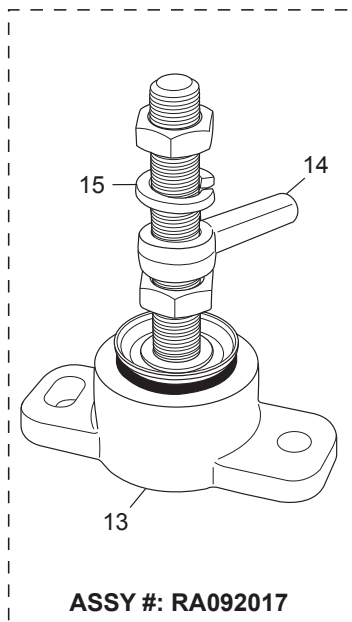
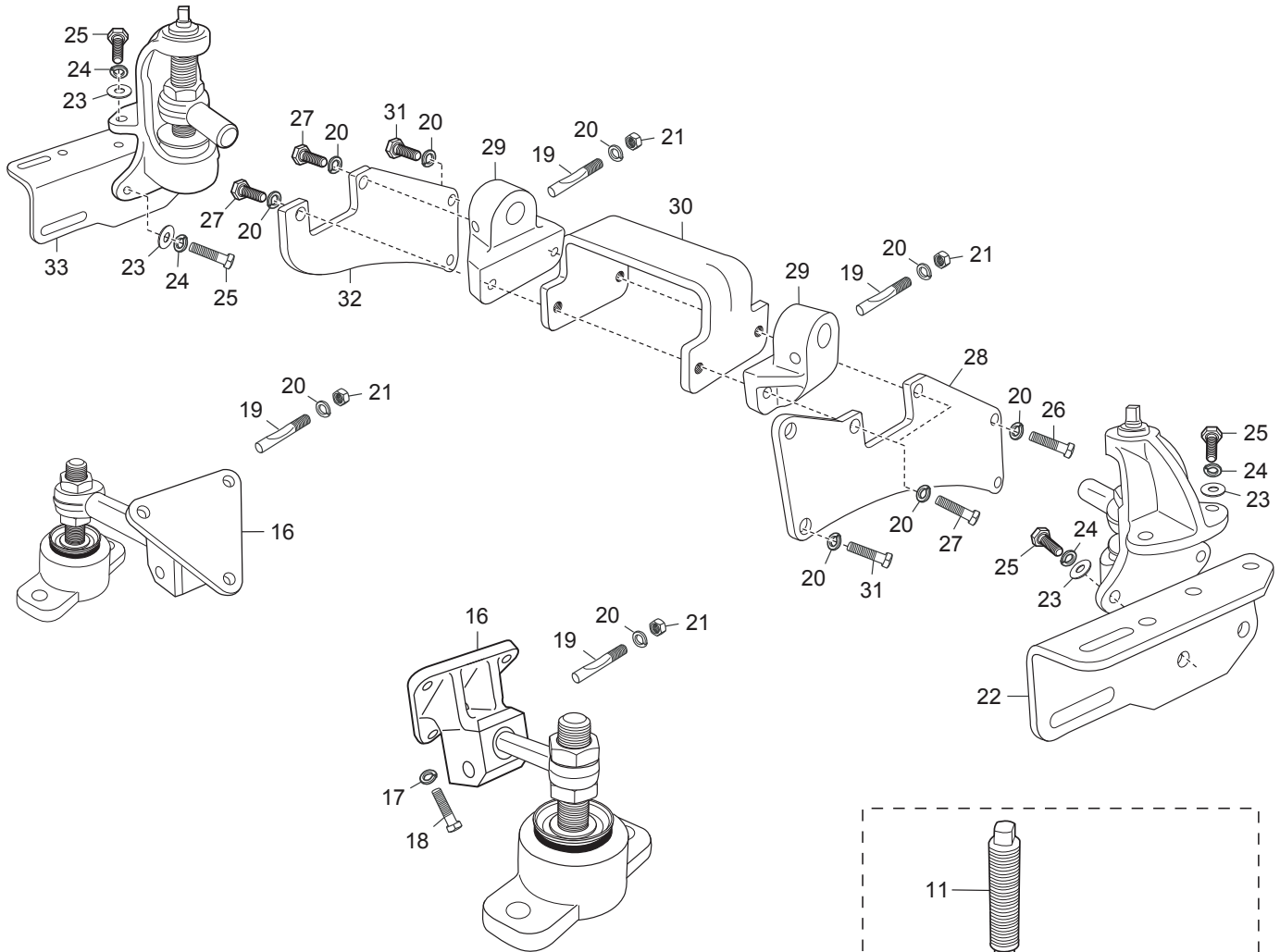
NOTE:
(PORT SIDE) HUMP DOWN,
FACE TOWARDS REAR OF ENGINE



ENGINE and TRANSMISSION MOUNTS (12-575CS-XX) - FIGURE 20S

ITEM	PART NO.	QTY.	DESCRIPTION	MODEL ID
1	95604020	2	Nut , mount lower (stainless steel)	
2	R096148A	2	Washer , mount lower (stainless steel)	
3	R094050	2	Bushing , mount lower	
4	R094017	2	Isolator , mount lower	
5	R096001A	2	Washer , mount isolator (stainless steel)	
6	R091006A	2	Trunnion , mount (stainless steel)	
7	96104050	2	Nut , mount hex jam (stainless steel)	
8	R094004	2	Isolator , mount upper	
9	R096150	2	Washer , stainless steel upper isolator	
10	R048120	2	Snap Ring , mount	
11	R095002	2	Stud , mount trunnion	
12	R092003A	2	Body , mount (short back)	
13	RA092017	2	Mount , DF-216 front	
14	R091008A	2	Trunnion , front (stainless steel)	
15	93704000	2	Lockwasher , front mount (stainless steel)	
16	R090427A	2	Bracket , front mount	
17	RS2180	6	Lockwasher , mount bracket attaching	
18	RS0304	6	Bolt , mount bracket attaching	
19	R095020A	4	Wedge Pin , trunnion securing (stainless steel)	
20	93404000	4	Lockwasher , wedge pin (stainless steel)	
21	95414000	4	Nut , wedge pin attaching (stainless steel)	
22	RS0328	2	Bolt , mount bracket attaching	
23	R090145	2	Block , rear mount	
24	RS2181	4	Lockwasher , mount bracket attaching	

ENGINE and TRANSMISSION MOUNTS (12-575VC-XX) - FIGURE 21

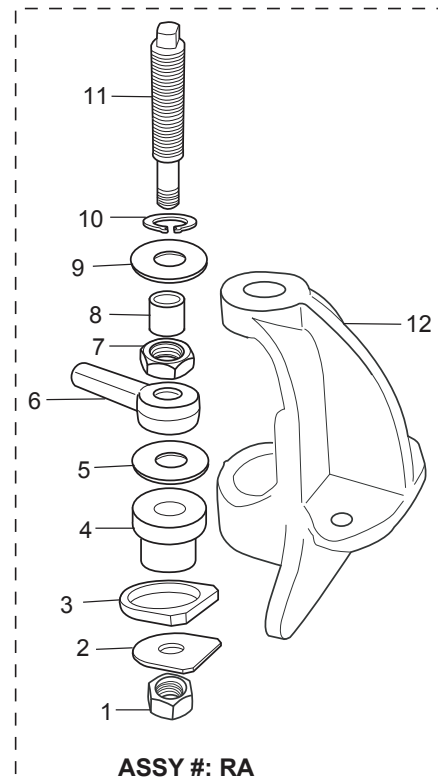
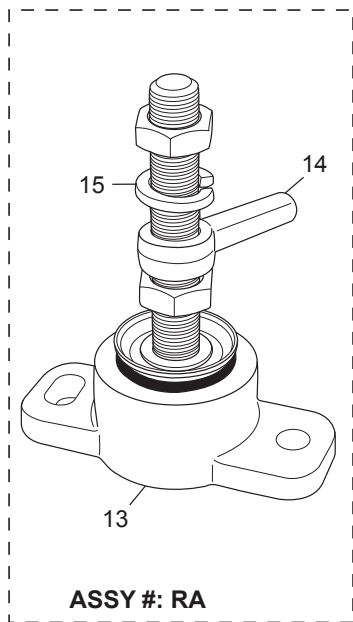
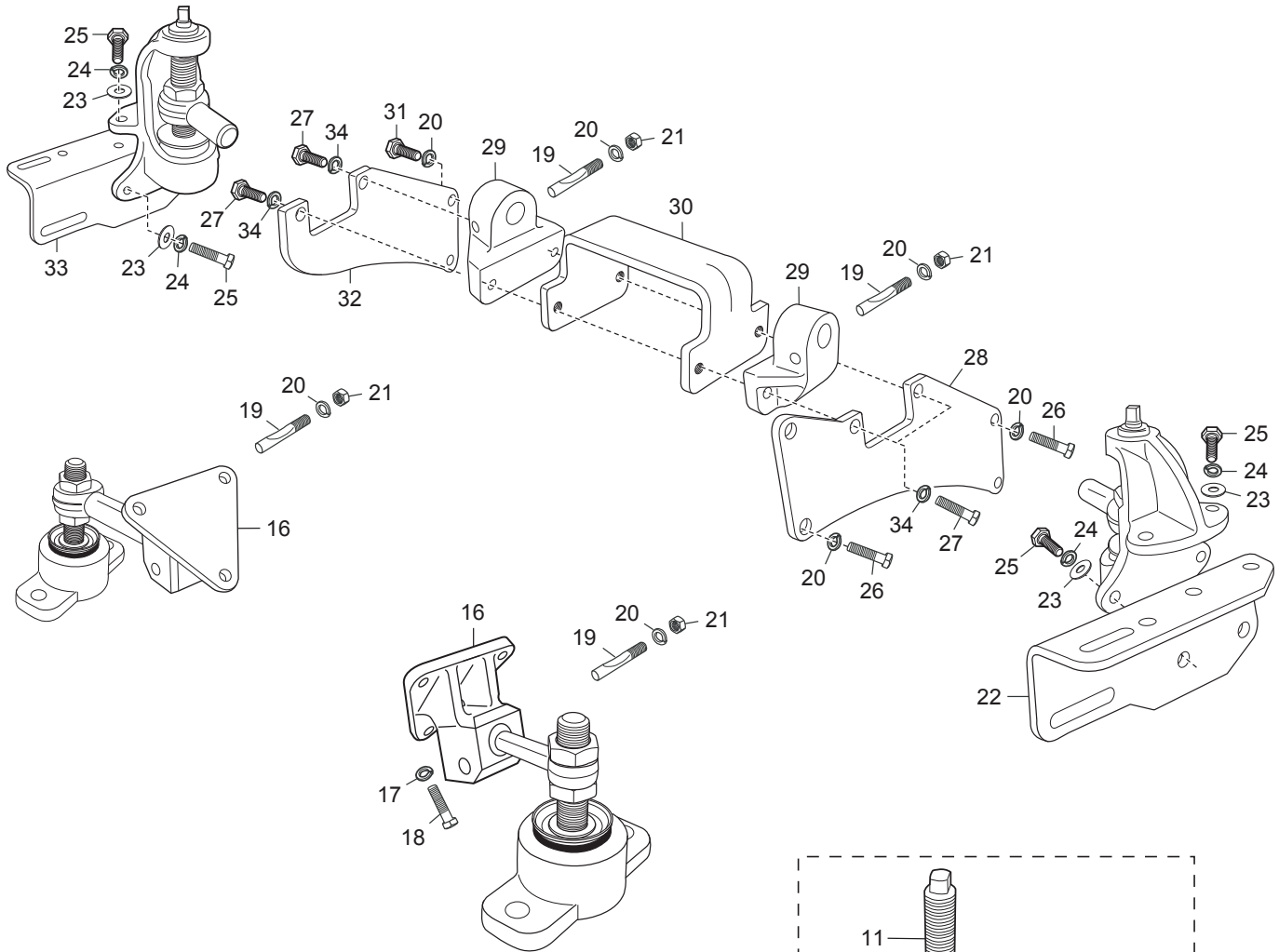


CCS_Parts_021

ENGINE and TRANSMISSION MOUNTS (12-575VC-XX) - FIGURE 21

ITEM	PART NO.	QTY.	DESCRIPTION	MODEL ID
1	RS1082	2	Nut , mount lower	
2	R096148	2	Washer , mount lower	
3	R094050	2	Bushing , mount lower	
4	R094017	2	Isolator , mount lower	
5	R096001	2	Washer , mount isolator	
6	R091003	2	Trunnion , mount	
7	RS1577	2	Nut , mount hex jam	
8	R094004	2	Isolator , mount upper	
9	R096150	2	Washer , stainless steel upper isolator	
10	R048120	2	Snap Ring , mount	
11	R095002	2	Stud , mount trunnion	
12	R092003	2	Body , mount (short back)	
13	RA092017	2	Mount , DF-216 front	
14	R091001	2	Trunnion , front	
15	RS2186	2	Lockwasher , front mount	
16	R090427A	2	Bracket , front mount	
17	RS2180	6	Lockwasher , mount bracket attaching	
18	RS0304	6	Bolt , mount bracket attaching	
19	R095020	4	Wedge Pin , trunnion securing	
20	RS2181	14	Lockwasher , wedge pin / mount bracket attaching	
21	RS1529	4	Nut , wedge pin attaching	
22	R090424	1	Bracket , stringer mount (left)	
23	92944000	8	Flatwasher , mount bracket attaching	
24	93304000	8	Lockwasher , mount bracket attaching	
25	90304100	8	Bolt , mount bracket attaching	
26	RS0328	2	Bolt , support brace attaching	
27	RS0330	4	Bolt , support brace attaching	
28	R109063	1	Brace , support brace attaching (left)	
29	R090205	2	Bracket , mount	
30	R090423	1	Bracket , Vdrive support brace	
31	RS0327	4	Bolt , support brace attaching	
32	R109064	1	Brace , support brace attaching (right)	
33	R090425	1	Bracket , stringer mount (right)	

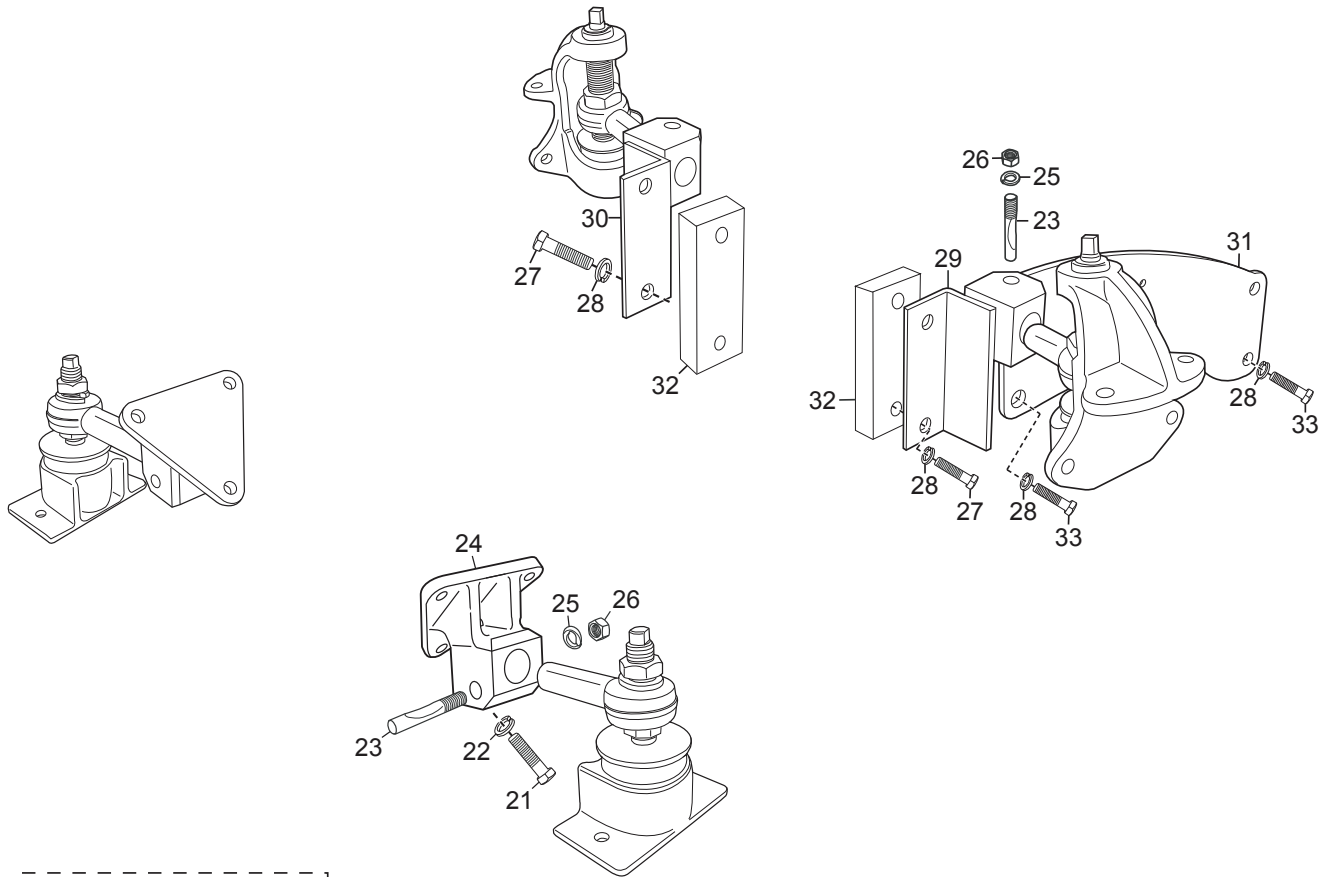
ENGINE and TRANSMISSION MOUNTS (12-575VCS-XX) - FIGURE 21S



ENGINE and TRANSMISSION MOUNTS (12-575VCS-XX) - FIGURE 21S

ITEM	PART NO.	QTY.	DESCRIPTION	MODEL ID
1	95604020	2	Nut , mount lower (stainless steel)	
2	R096148A	2	Washer , mount lower (stainless steel)	
3	R094050	2	Bushing , mount lower	
4	R094017	2	Isolator , mount lower	
5	R096001A	2	Washer , mount isolator (stainless steel)	
6	R091006A	2	Trunnion , mount (stainless steel)	
7	96104050	2	Nut , mount hex jam (stainless steel)	
8	R094004	2	Isolator , mount upper	
9	R096150	2	Washer , stainless steel upper isolator	
10	R048120	2	Snap Ring , mount	
11	R095002	2	Stud , mount trunnion	
12	R092003	2	Body , mount (short back)	
13	RA092017	2	Mount , DF-216 front	
14	R091001A	2	Trunnion , front (stainless steel)	
15	93704000	2	Lockwasher , front mount (stainless steel)	
16	R090427A	2	Bracket , front mount	
17	RS2180	6	Lockwasher , mount bracket attaching	
18	RS0304	6	Bolt , mount bracket attaching	
19	R095020A	4	Wedge Pin , trunnion securing (stainless steel)	
20	93404000	10	Lockwasher , wedge pin/mount bracket attaching (stainless steel)	
21	95414000	4	Nut , wedge pin attaching (stainless steel)	
22	R090424	1	Bracket , stringer mount (left)	
23	92944000	8	Flatwasher , mount bracket attaching (stainless steel)	
24	93304000	8	Lockwasher , mount bracket attaching (stainless steel)	
25	90304100	8	Bolt , mount bracket attaching (stainless steel)	
26	90404125	2	Bolt , support brace attaching (stainless steel)	
27	RS0330	4	Bolt , support brace attaching	
28	R109063	1	Brace , support brace attaching (left)	
29	R090205	2	Bracket , mount	
30	R090423	1	Bracket , Vdrive support brace	
31	90404100	2	Bolt , support brace attaching	
32	R109064	1	Brace , support brace attaching (right)	
33	R090425	1	Bracket , stringer mount (right)	
34	RS2181	4	Lockwasher , mount brace attaching	

ENGINE and TRANSMISSION MOUNTS (18-575VC-XX) - FIGURE 22



ASSY #: RA092016-08 - (STARBOARD ONLY) FRONT MOUNT

ASSY #: RA092016 - (PORT ONLY) FRONT MOUNT

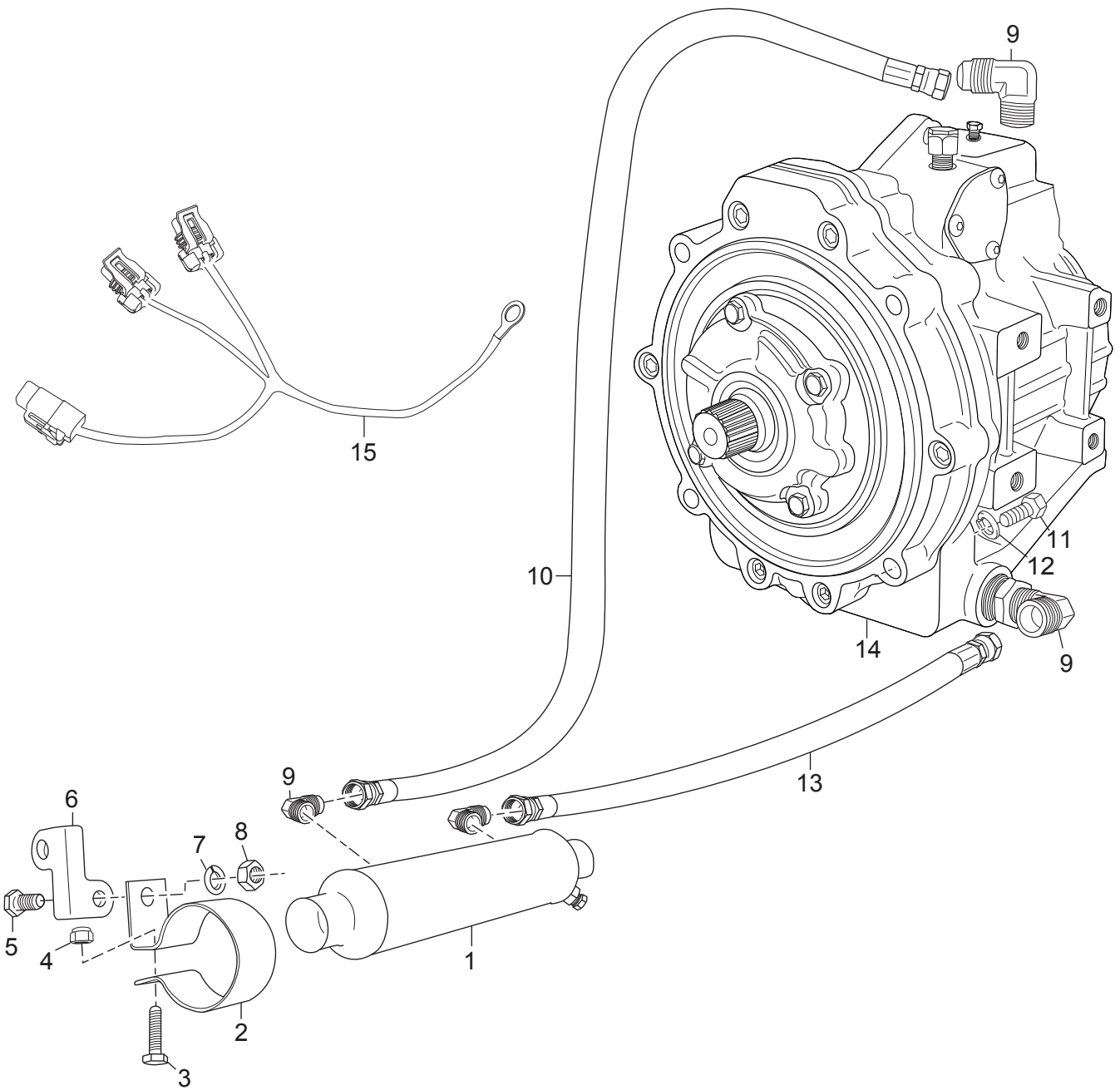
ASSY #: RA091003 - (PORT ONLY) REAR MOUNT

ASSY #: RA092003-10 - (STARBOARD ONLY) REAR MOUNT

ENGINE and TRANSMISSION MOUNTS (18-575VC-XX) - FIGURE 22

ITEM	PART NO.	QTY.	DESCRIPTION	MODEL ID
1	RS1082	2	Nut , mount lower	
2	R096148	2	Washer , mount lower	
2A	R094050	2	Bushing , mount lower	
3	R094017	2	Isolator , mount lower	
4	R096001	2	Washer , mount isolator	
5	R091003	1	Trunnion , mount (port side)	
5A	R091010	1	Trunnion , mount (starboard side)	
6	RS1577	2	Nut , mount hex jam	
7	R094004	2	Isolator , mount upper	
8	R048120	2	Snap Ring , mount	
9	R095002	2	Stud , mount trunnion	
10	R092003	2	Body , mount (short back)	
11	RS1082	2	Nut , mount lower locking	
12	R096001	2	Washer , front mount lower isolator	
13	R092016	2	Body , front mount	
14	R094007	2	Isolator , front mount	
15	R096043	2	Washer , front mount upper isolator	
16	R095001	2	Stud , front trunnion	
17	RS1075	2	Nut , front mount trunnion stud	
18	R091001	1	Trunnion , front (port)	
18A	R091008	1	Trunnion , front (starboard)	
19	RS2186	2	Lockwasher , front mount trunnion stud	
20	RS1075	2	Nut , front mount trunnion stud top	
21	RS0304	6	Bolt , mount bracket attaching	
22	RS2180	6	Lockwasher , mount bracket attaching	
23	R095020	4	Wedge Pin , mount	
24	R090071C	2	Bracket , front mount	
25	RS2181	4	Lockwasher , wedge pin	
26	RS1529	4	Nut , wedge pin	
27	RS0329	4	Bolt , mount bracket attaching	
28	RS2181	8	Lockwasher , mount bracket attaching	
29	R090344	1	Bracket , support (port)	
30	R090343	1	Bracket , support (starboard)	
31	R109054	1	Brace , VDrive	
32	R169065	2	Spacer , 1/2" mount	
33	RS0325	4	Bolt , VDrive brace attaching	
34	R096150	2	Washer , stainless steel upper isolator	

TRANSMISSION AND RELATED COMPONENTS 12-575C-XX / 12-575CS-XX - FIGURE 23

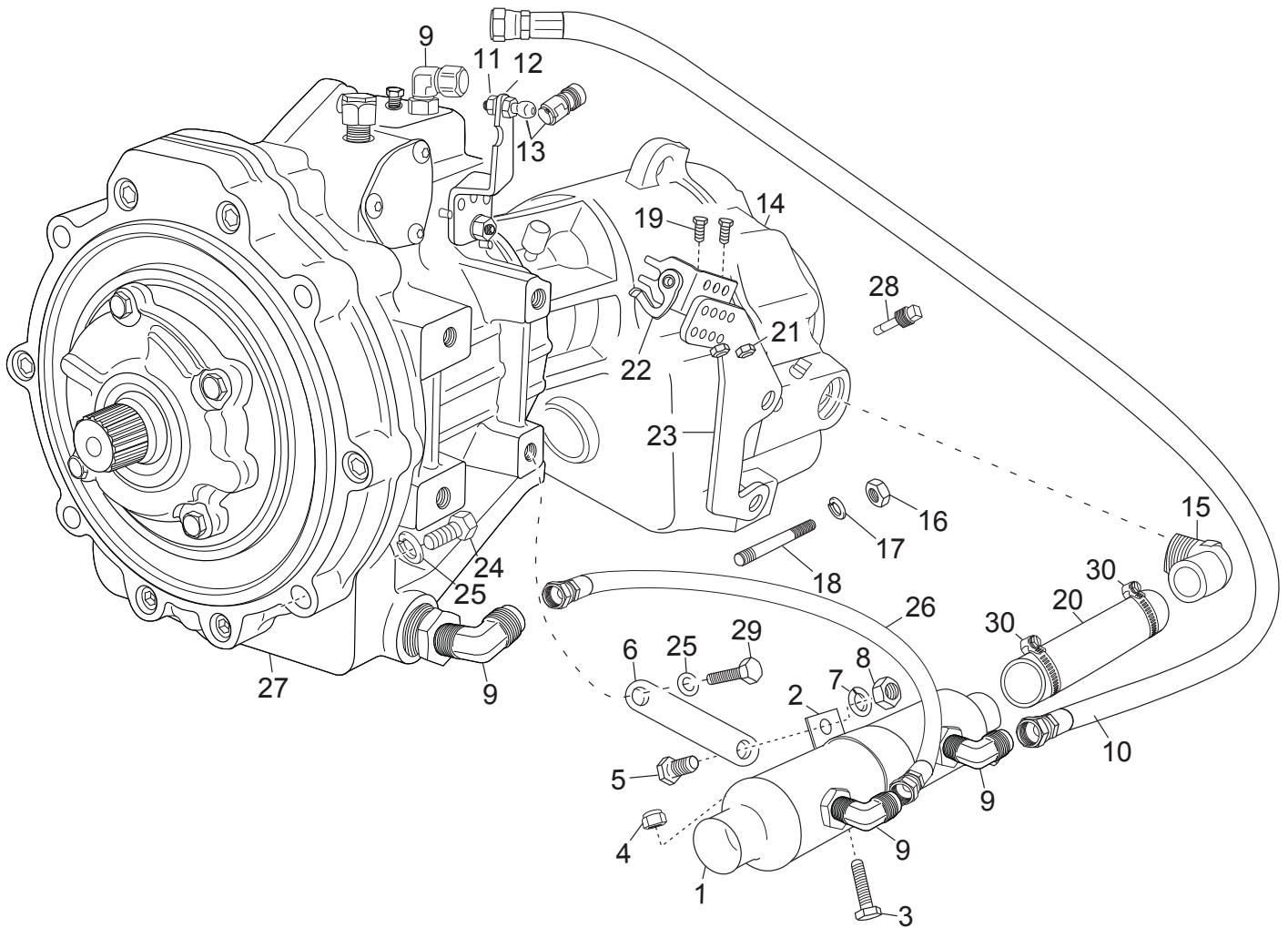


CCS_Parts_023

TRANSMISSION AND RELATED COMPONENTS 12-575C-XX / 12-575CS-XX - FIGURE 23

ITEM	PART NO.	QTY.	DESCRIPTION	MODEL ID
1	R147006	1	Transmission Cooler, 12"	
2	R090010	1	Bracket, transmission cooler	
3	RS0256	1	Bolt, transmission cooler attaching	
4	RS2058	1	Nut, transmission cooler attaching	
5	RS0302	1	Bolt, transmission cooler mounting bracket	
6	R090013A	1	Bracket, transmission cooler mounting	
7	RS2180	1	Lockwasher, transmission cooler mounting bracket	
8	RS1028	1	Nut, transmission cooler mounting bracket	
9	R024010	4	Fitting, 90 degree	
10	RA045007H	1	Hose Assembly, cooler to transmission	
11	RS0337	4	Bolt, transmission attaching	
12	RS2181	4	Lockwasher, transmission attaching	
13	RA045007B	1	Hose Assembly, transmission to cooler	
14	RA157026E	1	Transmission, 1:1 electric	
15	R121117	1	Harness, electric shift	

TRANSMISSION AND RELATED COMPONENTS 12-575VC-XX - FIGURE 24

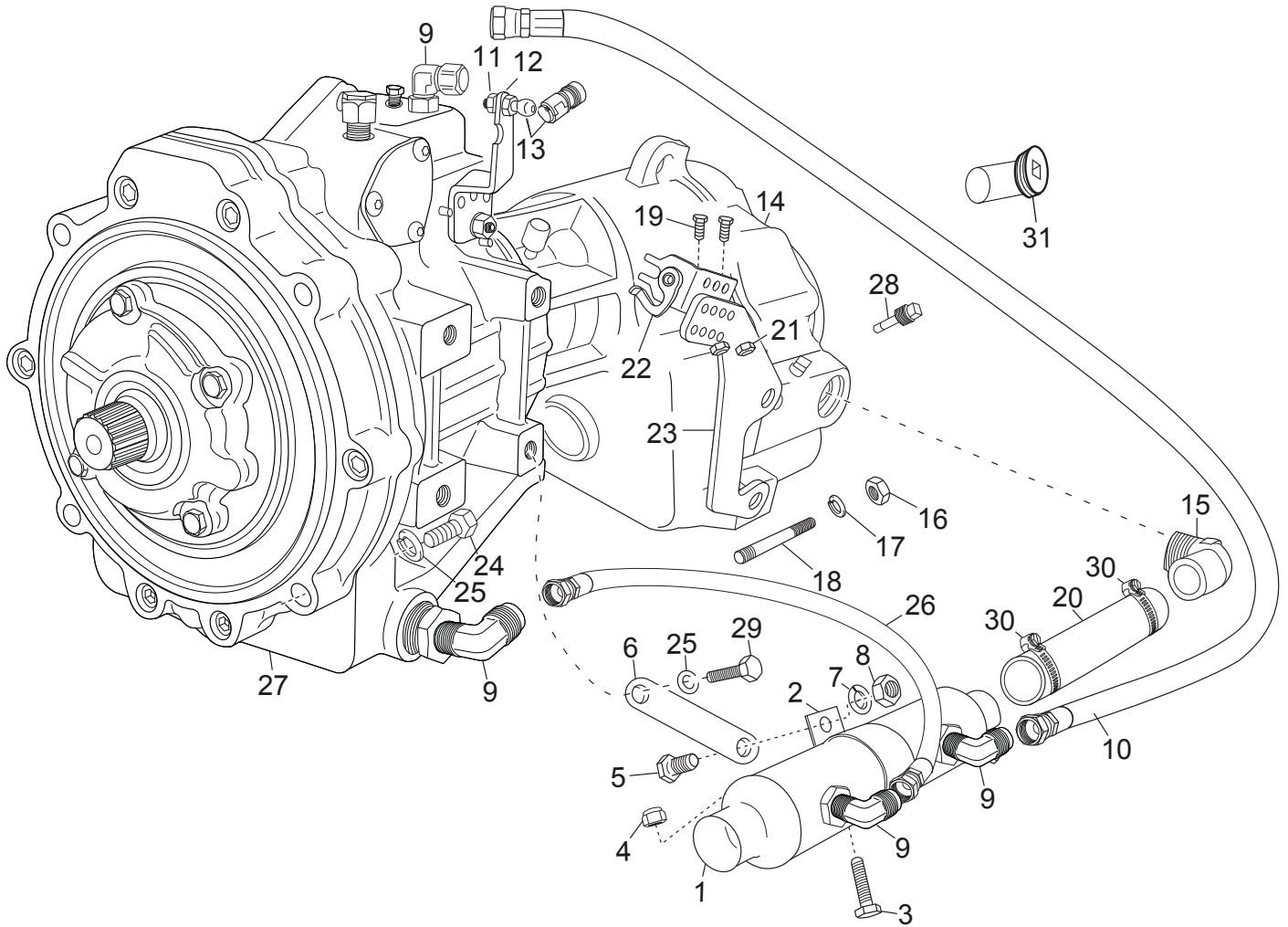


CCS_Parts_024

TRANSMISSION AND RELATED COMPONENTS 12-575VC-XX - FIGURE 24

ITEM	PART NO.	QTY.	DESCRIPTION	MODEL ID
1	R147006	1	Transmission Cooler , 12"	
2	R090010	1	Bracket , transmission cooler	
3	RS0256	1	Bolt , transmission cooler attaching	
4	RS2058	1	Nut , transmission cooler attaching	
5	RS0302	1	Bolt , transmission cooler bracket attaching	
6	R090405	1	Bracket , transmission cooler	
7	RS2180	1	Lockwasher , transmission cooler bracket attaching	
8	RS1028	1	Nut , transmission cooler bracket attaching	
9	R024010	4	Fitting , 90 degree	
10	RA045007B	1	Hose Assembly , transmission to cooler	
11	RS1568	1	Nut , ball joint attaching pinch	
12	R166023A	1	Lever , 80S short throw shift	
13	R178003	1	Ball Joint Assembly , shift cable attaching	
14	RA156013	1	VDrive Assembly , 1.72:1 ratio	
15	R024268	2	Elbow , VDrive 90 degree	
16	RS7026	8	Nut , VDrive attaching	
17	RS2179	8	Lockwasher , VDrive attaching	
18	R031035	8	Stud , VDrive attaching	
19	91014063	2	Screw , shift cable clip attaching	
20	20865	1 ft.	Hose , 1 1/4" ID wire reinforced	
21	95014300	2	Nut , cable clip attaching	
22	R090086	1	Cable Clip , single cable	
23	R090409A	1	Bracket , shift cable (short throw)	
24	RS0337	4	Bolt , transmission attaching	
25	RS2181	5	Nut , transmission attaching / cooler bracket attaching	
26	RA045007C	1	Hose Assembly , cooler to transmission	
27	RA157025	1	Transmission , 1:1 80 Series	
28	R041091	2	Dipstick , VDrive oil level	
29	RS0327	1	Bolt , transmission cooler bracket attaching	
30	RS3858	2	Clamp , hose (#20)	

TRANSMISSION AND RELATED COMPONENTS 12-575VCS-XX - FIGURE 25

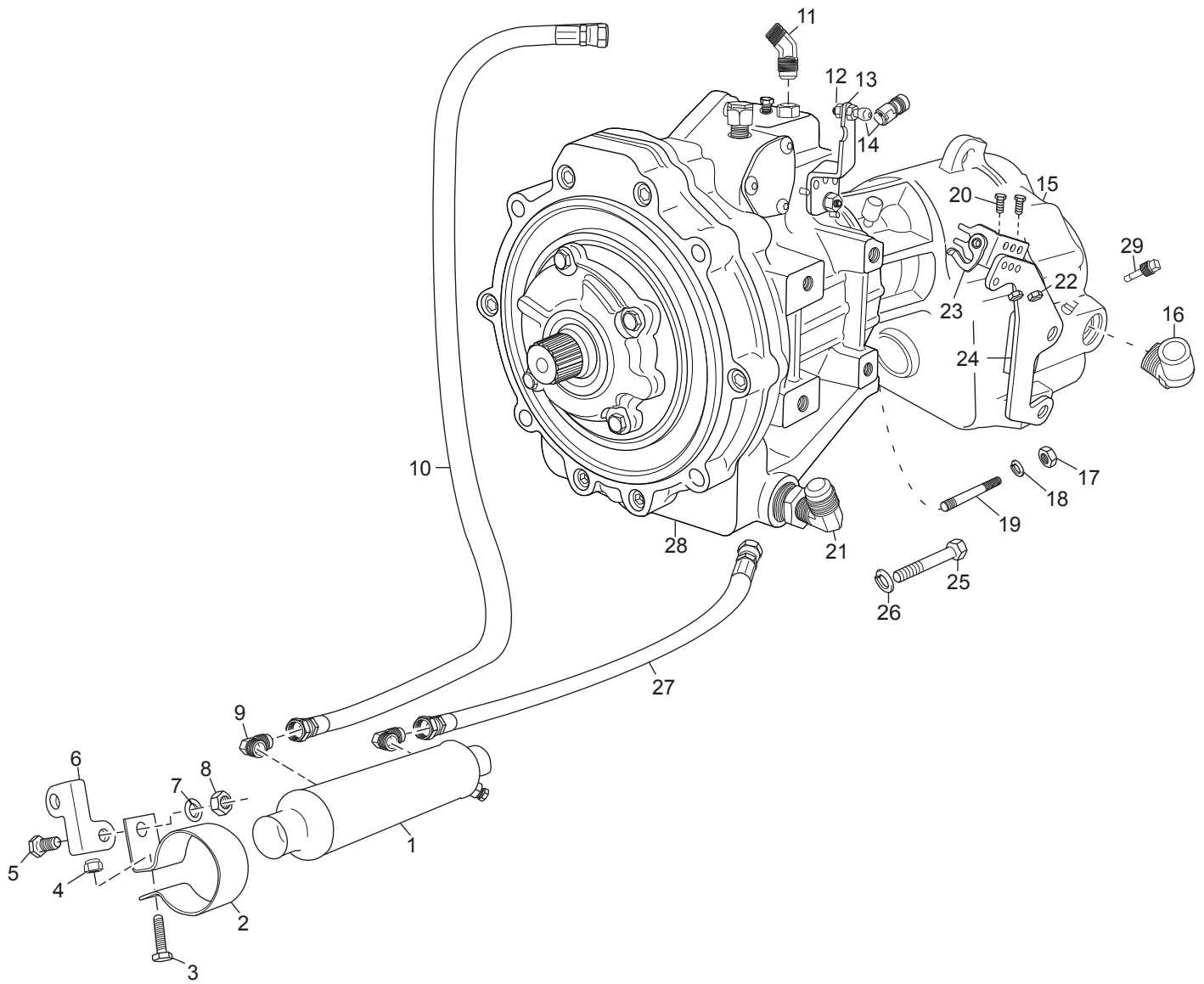


CCS_Parts_025

TRANSMISSION AND RELATED COMPONENTS 12-575VCS-XX - FIGURE 25

ITEM	PART NO.	QTY.	DESCRIPTION	MODEL ID
1	R147006	1	Transmission Cooler , 12"	
2	R090010	1	Bracket , transmission cooler	
3	RS0256	1	Bolt , transmission cooler attaching	
4	RS2058	1	Nut , transmission cooler attaching	
5	RS0302	1	Bolt , transmission cooler bracket attaching	
6	R090405	1	Bracket , transmission cooler	
7	RS2180	1	Lockwasher , transmission cooler bracket attaching	
8	RS1028	1	Nut , transmission cooler bracket attaching	
9	R024010	4	Fitting , 90 degree	
10	RA045007B	1	Hose Assembly , transmission to cooler	
11	RS1568	1	Nut , ball joint attaching pinch	
12	R166023A	1	Lever , 80S short throw shift	
13	R178003	1	Ball Joint Assembly , shift cable attaching	
14	RA156013	1	VDrive Assembly , 1.72:1 ratio	
15	R024268	2	Elbow , VDrive 90 degree	
16	97334000	8	Nut , VDrive attaching (stainless steel)	
17	93934000	8	Lockwasher , VDrive attaching (stainless steel)	
18	R031035	8	Stud , VDrive attaching	
19	91014063	2	Screw , shift cable clip attaching (stainless steel)	
20	20865	1 ft.	Hose , 1 1/4" ID wire reinforced	
21	95014300	2	Nut , cable clip attaching (stainless steel)	
22	R090086A	1	Cable Clip , single cable (stainless steel)	
23	R090409A	1	Bracket , shift cable (short throw)	
24	RS0337	4	Bolt , transmission attaching	
25	93404000	5	Nut , transmission attaching / cooler bracket attaching (stainless steel)	
26	RA045007C	1	Hose Assembly , cooler to transmission	
27	RA157025	1	Transmission , 1:1 80 Series	
28	R041091	2	Dipstick , VDrive oil level	
29	90404100	1	Bolt , transmission cooler bracket attaching (stainless steel)	
30	RS3858	2	Clamp , hose (#20)	
31	R168015	1	Anode , zinc	

TRANSMISSION AND RELATED COMPONENTS 18-575VC-XX - FIGURE 26

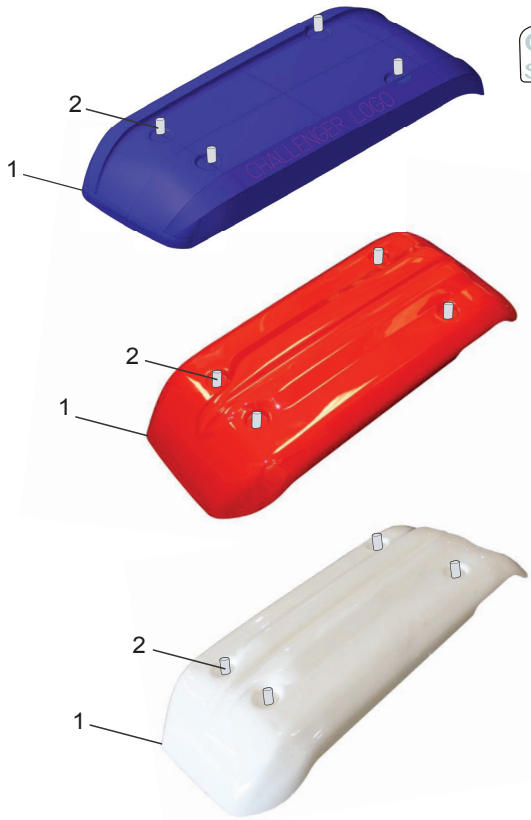


CCS_Parts_026

TRANSMISSION AND RELATED COMPONENTS 18-575VC-XX - FIGURE 26

ITEM	PART NO.	QTY.	DESCRIPTION	MODEL ID
1	R147006	1	Transmission Cooler, 12"	
2	R090010	1	Bracket , transmission cooler	
3	RS0256	1	Bolt , transmission cooler attaching	
4	RS2058	1	Nut , transmission cooler attaching	
5	RS0302	1	Bolt , transmission cooler mounting bracket	
6	R090013A	1	Bracket , transmission cooler mounting	
7	RS2180	1	Lockwasher , transmission cooler mounting bracket	
8	RS1028	1	Nut , transmission cooler mounting bracket	
9	R024010	2	Fitting , 90 degree	
10	RA045007H	1	Hose Assembly , cooler to transmission	
11	R024053	1	Fitting , 45 degree	
12	RS1568	1	Nut , ball joint attaching pinch	
13	R166023A	1	Lever , 80S short throw shift	
14	R178003	1	Ball Joint Assembly , shift cable attaching	
15	RA156011B	1	VDrive Assembly , 1.48.1 ratio	
16	R024268	2	Elbow , VDrive 90 degree	
17	RS7026	8	Nut , VDrive attaching	
18	RS2179	8	Lockwasher , VDrive attaching	
19	R031035	8	Stud , VDrive attaching	
20	91014063	2	Screw , shift cable clip attaching	
21	R024010	1	Fitting , 90 degree	
22	95014300	2	Nut , cable clip attaching	
23	R090086	1	Cable Clip , single cable	
24	R090400A	1	Bracket , shift cable	
25	RS0337	4	Bolt , transmission attaching	
26	RS2181	4	Lockwasher , transmission attaching	
27	RA045007B	1	Hose Assembly , transmission to cooler	
28	RA157025	1	Transmission , 1:1 80 Series	
29	R041091	2	Dipstick , VDrive oil level	

HOODS AND DECALS - FIGURE 27



Fuel Control Cell OPERATOR INSTRUCTIONS

CAUTION: Hazardous fumes may be present. If leakage is present, do not operate engine. Contact service technician immediately.

SERVICE INSTRUCTIONS
Service Kit # R143224

DANGER: Proper installation is a safety issue or death. Service only by a qualified technician. Read/Review all instructions. Run engine & check for fuel leakage after installation, replace element if leakage found. Do not remove fuel control cell during starting or cranking. Ignition or load coil may result in fire. If necessary, use water spraying or alternate methods as determined by manufacturer. Do not use. Replace element at least once a year or when power loss occurs, whichever is first.

To Drain Water: With Engine OFF

1. Disconnect lead wire electrical harness from FCC and LFCD.
2. Remove 1/2 inch screw plug. Drain contents into an approved container.
3. If applicable, remove water filter (optional) and change filter from the container.
4. Rotate counter clockwise (CCW) to the stop position. If necessary, pull the unit to one side to remove.
5. Rotate clockwise (CW) to the stop position. If necessary, pull the unit to one side to remove.
6. Remove the fuel filter element from the suspended pump by pulling downward.
7. Rotate the fuel filter element (if present, wires, etc.).
8. Push on one fuel filter element over the pump.
9. Remove and drain the FCC.
10. Install new O-rings in the same location. Lubricate the O-rings with fuel resistant O-ring lube.
11. Install the fuel control cell.
12. Install the water filter back in the unit.
13. Reconnect the electrical harness.
14. Recheck all wiring and tighten.
15. Reconnect the battery.
16. Run engine and inspect for leaks.

To Replace Element: With Engine OFF

1. Disconnect lead wire electrical harness from FCC and LFCD.
2. Remove 1/2 inch screw plug. Drain contents into an approved container.
3. If applicable, remove water filter (optional) and change filter from the container.
4. Rotate counter clockwise (CCW) to the stop position. If necessary, pull the unit to one side to remove.
5. Rotate clockwise (CW) to the stop position. If necessary, pull the unit to one side to remove.
6. Remove the fuel filter element from the suspended pump by pulling downward.
7. Rotate the fuel filter element (if present, wires, etc.).
8. Push on one fuel filter element over the pump.
9. Remove and drain the FCC.
10. Install new O-rings in the same location. Lubricate the O-rings with fuel resistant O-ring lube.
11. Install the fuel control cell.
12. Install the water filter back in the unit.
13. Reconnect the electrical harness.
14. Recheck all wiring and tighten.
15. Reconnect the battery.
16. Run engine and inspect for leaks.

Out-Of-Season Storage

1. If equipped, remove the fuel control cell and disconnect it from the container.
- Refer to Crusader Maintenance Manual for more information.
- WARNING: DO NOT ATTEMPT TO SERVICE ANY OTHER PARTS ON THIS UNIT.

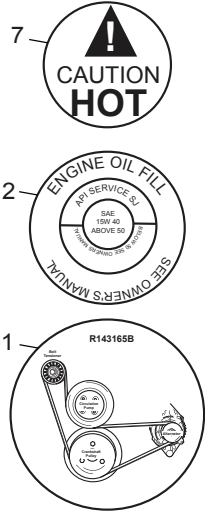
5.7L 350 c.i.d. Multi-port Fuel Injection

Fuel Recommendations
Unleaded 87 Octane (Minimum)
Engine Oil
15W-40 above 50 degrees F
5W-30 below 50 degrees F
Marine Gear Oil Recommendation
Transmission: Dextron II
PSC V-Drive/PSC Gear Oil (P/N R190250)
Electrical Specification
12 volts - Negative Ground
Ignition Timing and Engine Idle
Non-Adjustable
*Cam Retard
14-16 degrees
Spark Plug P/N and Gap
R230010 - 0.060"
Maximum Engine Speed (WOT)
5000-5300 RPM (5200 RPM Preferred)
Maximum Continuous Cruise
4000 RPM
Firing Order
1-8-4-3-6-5-7-2
Fuel Pressure - CHECK UNDER LOAD
59-62 psi @ W.O.T.

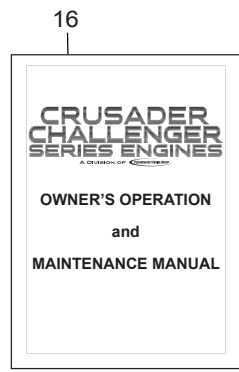
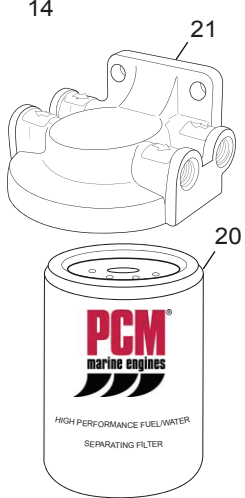
CAUTION: See your owners manual for more information. Do not use a "generic" fuel filter. Use a "high quality" approved fuel filter.

R143224

- 15
- 22 **COOLANT FILL**
- 23 **FRESH WATER DRAIN**
- 24 **SACRIFICIAL ANODE**
- 25 **RAW WATER DRAIN**



BATTERY GROUND



PLEASURECRAFT MARINE ENGINE COMPANY EMISSION CONTROL INFORMATION

THIS WATERCRAFT ENGINE IS CERTIFIED TO OPERATE ON GASOLINE. MINIMUM FUEL REQUIREMENT BY ENGINE: 15W-40 above 50 degrees F. LUBRICANT REQUIREMENT: FOR AMBIENT TEMPERATURES UNDER 50 DEGREE F USE SAE 5W-30 SJ OR NEWER. FOR AMBIENT TEMPERATURES UNDER 30 DEGREE F USE SAE 5W-30 SJ OR NEWER.

THIS MARINE ENGINE COMPLIES WITH U.S. EPA EMISSIONS REGULATIONS FOR 2011. ENGINE FAMILY IDENTIFICATION: 5.7L 350. ENGINE DISPLACEMENT: 5.7 LITER. MAXIMUM ENGINE OUTPUT: 114 HP. EMISSION CONTROL SYSTEM: ME, THE HOSE, ECM. REQUIRED MAINTENANCE: NO OTHER ADJUSTMENTS REQUIRED.

R143224

EMISSION CONTROL INFORMATION

THIS ENGINE IS SOLELY FOR EXPORT AND IS THEREFORE EXEMPT UNDER 40 CFR 1066.235 FROM U.S. EMISSION STANDARDS AND RELATED REQUIREMENTS.

THIS ENGINE MUST BE EXPORTED TO AVOID BEING IN VIOLATION OF ENVIRONMENTAL PROTECTION AGENCY REGULATIONS.

REGULATION OF THIS ENGINE IN A VESSEL THAT IS THEN OFFERED FOR SALE TO AN ULTIMATE PURCHASER IN THE UNITED STATES, OR OTHERWISE IS INTRODUCED INTO U.S. COMMERCE, IS IN VIOLATION OF ENVIRONMENTAL PROTECTION AGENCY REGULATIONS.

R143212



HOODS AND DECALS - FIGURE 27

ITEM	PART NO.	QTY.	DESCRIPTION	MODEL ID
1	R060093	1	Cover , engine (Blue)	18-575VC-XX
1	R060090	1	Cover , engine (Red)	12-575C-XX, 12-575VC-XX
1	R060095	1	Cover , engine (Salt Series - White)	12-575CS-XX, 12-575VCS-XX
2	R017083	4	Nut , engine cover attaching thumb	
3	R143247	1	Decal , engine cover	18-575VC-XX
3	R143237	1	Decal , engine cover	12-575C-XX, 12-575VC-XX, 12-575CS-XX 12-575VCS-XX
4	R143248	1	Decal , "5.7L"	18-575VC-XX
4	R143238	1	Decal , "350"	12-575C-XX, 12-575VC-XX, 12-575CS-XX 12-575VCS-XX
5	R143234	1	Decal , specification	
6	R143236	2	Decal , "Catanium" exhaust manifold	
7	R143175	1	Decal , "caution hot"	
8	R143194	1	Decal , 4-star emissions	
9	R143210-XX	1	Label , EPA emissions	
10	R143183-XX	1	Label , CARB emissions	
11	R143165B	1	Decal , serpentine belt routing	
12	R143137	1	Decal , oil fill cap	
13	R143156	4	Decal , raw water drain	
14	22835	1	Decal , battery ground	
15	R128001C	AR	Cover , hose clamp tip (black)	
16	L510032-XX	1	Manual , owner's operation and maintenance	
17	R143090	1	Decal , "warning flame arrestor"	
18	R143114	1	Decal , fcc fuel leakage warning	
19	R143112D	1	Decal , fcc	
20	R077019	1	Filter , water separator / fuel	
21	R079076	1	Header , fuel filter / water separator	
22	R143153	1	Decal , coolant fill	
23	R143157	5	Decal , fresh water drain	
24	R143155	1	Decal , sacrificial anode	
25	RT0094A	AR	Boeshield , 4 oz can	
26	RT0094	AR	Boeshield , 12 oz can	
NI	RP173017F	AR	Kit , raw water drain plug	12-575C-XX,
NI	RP173017H	AR	Kit , raw water drain plug	18-575VC-XX, 12-575VC-XX
NI	RP173017J	AR	Kit , raw water drain plug	12-575CS-XX