



**MARINE**  
**ILLUSTRATED**  
**PARTS MANUAL**  
**MODEL MP8.1L**  
**2006 MY**

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**Contents:**

Symbols ..... 2

Gasket and Decal Kit Numbers ..... 3

Maintenance Item Part Numbers ..... 3

Cylinder Block Assembly - Figure 1 ..... 4

Cylinder Head Assembly - Figure 2 ..... 8

Intake Manifold Assembly - Figure 3 ..... 10

Oil Pan and Oil Pump Assembly - Figure 4 ..... 12

Mechanical Throttle Body and Related Components - Figure 5 ..... 14

Electronic Throttle Body and Related Components - Figure 6 ..... 16

Remote Oil Filter Components - Figure 7 ..... 18

Remote Oil Filter Components (Model 07-811V-01) - Figure 8 ..... 20

Fuel Control Cell (FCC) Components - Figure 9 ..... 22

Returnless Fuel System Components - Figure 10 (S/N 630207 thru present) ..... 24

Heat Exchanger and Components - Figure 11 ..... 28

Fresh Water Cooling System Components - Figure 12 ..... 30

Exhaust Manifold and Components - Figure 13 ..... 34

Raw Water Cooling Pump - Figure 14 ..... 36

Wiring Harness Assemblies and Senders - Figure 15 ..... 38

ECM and Relays - Figure 16 ..... 40

Accessory Drive System Components - Figure 17 ..... 42

Starter Assembly Components - Figure 18 ..... 44

Engine and Transmission Mounts - Figure 19 ..... 46

Model 07-811V-01, Engine and Transmission Mounts - Figure 20 ..... 48

Bellhousing Assembly - Figure 21 ..... 50

Transmission and Related Parts (Velvet Drive In-Line) - Figure 22 ..... 52

Transmission and Related Parts (Velvet Drive "V"-Drive) - Figure 23 ..... 54

Transmission and Related Parts (Velvet Drive 5000) - Figure 24 ..... 56

Transmission and Related Parts (Hurth Gear) - Figure 25 ..... 58

**“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	RB001018A	AR	Base Engine Assembly, 8.1L Standard, bottom mount starter	25-810-02



- 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.

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

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

=====

**REPLACEMENT PARTS:**



**WARNING:**

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

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

**GASKET AND DECAL KIT NUMBERS:**

Description	Part Number
Complete Engine Overhaul Gasket Set	TBD
Valve Grind Gasket Set	TBD
Oil Pan Gasket Set	RM0263
Intake Manifold Gasket Set	RM0267
On Board Spare Parts Kit, FCC	RK173087-05
On Board Spare Parts Kit, RTNLSS	RK173087A-05

**MAINTENANCE ITEM PART NUMBERS:**

Description	Part Number
Oil Filter	22679
Kit, Transmission Oil Filter (ZF)	RP077011
Fuel Filter, screen and gasket, pre-filter	RP077014
Fuel Filter, FCC	RP080026
Fuel Filter, element, Racor	47047
Spark Plugs	R030009
Spark Plug Wire Set	RK120019
Accessory Drive Belt	R066024A
Impeller Kit	RP061022
Thermostat	R026007
On-Board Spare Parts Kit (w/ FCC Fuel System)	RK173087-05
On-Board Spare Parts Kit (w/ Returnless Fuel System)	RK173087A-05

**CHANGE NOTICE:**

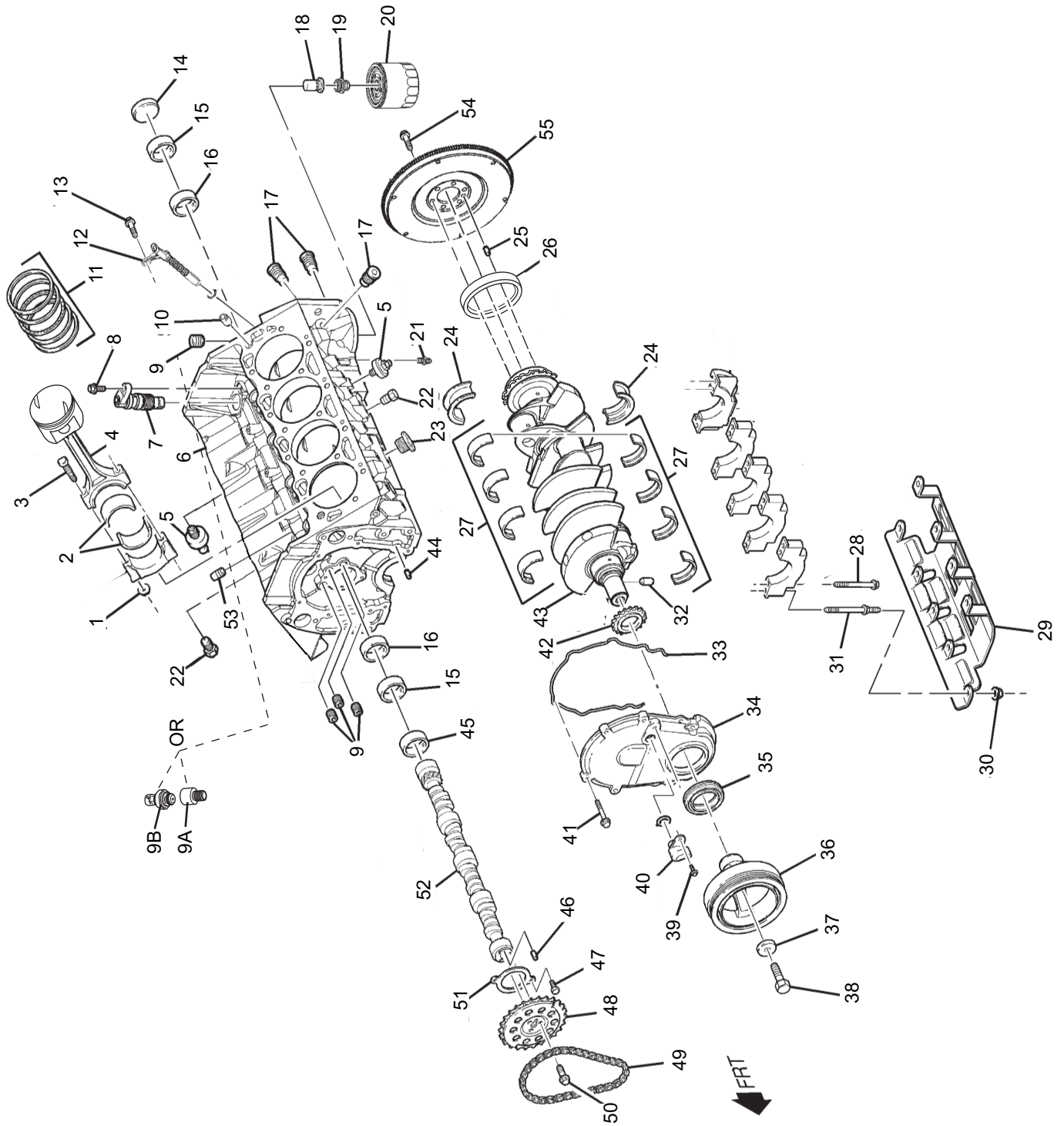
Change Pages	Date Updated
23, 36-37, 42-43, 51	05/07
35	10/07

**MARINE TRANSMISSIONS:**

Crusader Engines are equipped with Velvet Drive or Hurth Transmissions or “V”-drives. If transmission parts are required, contact your dealer or closest Crusader Parts Distributor for required parts.

Parts manuals and overhaul manuals are available through Crusader Distributors.

CYLINDER BLOCK ASSEMBLY - FIGURE 1

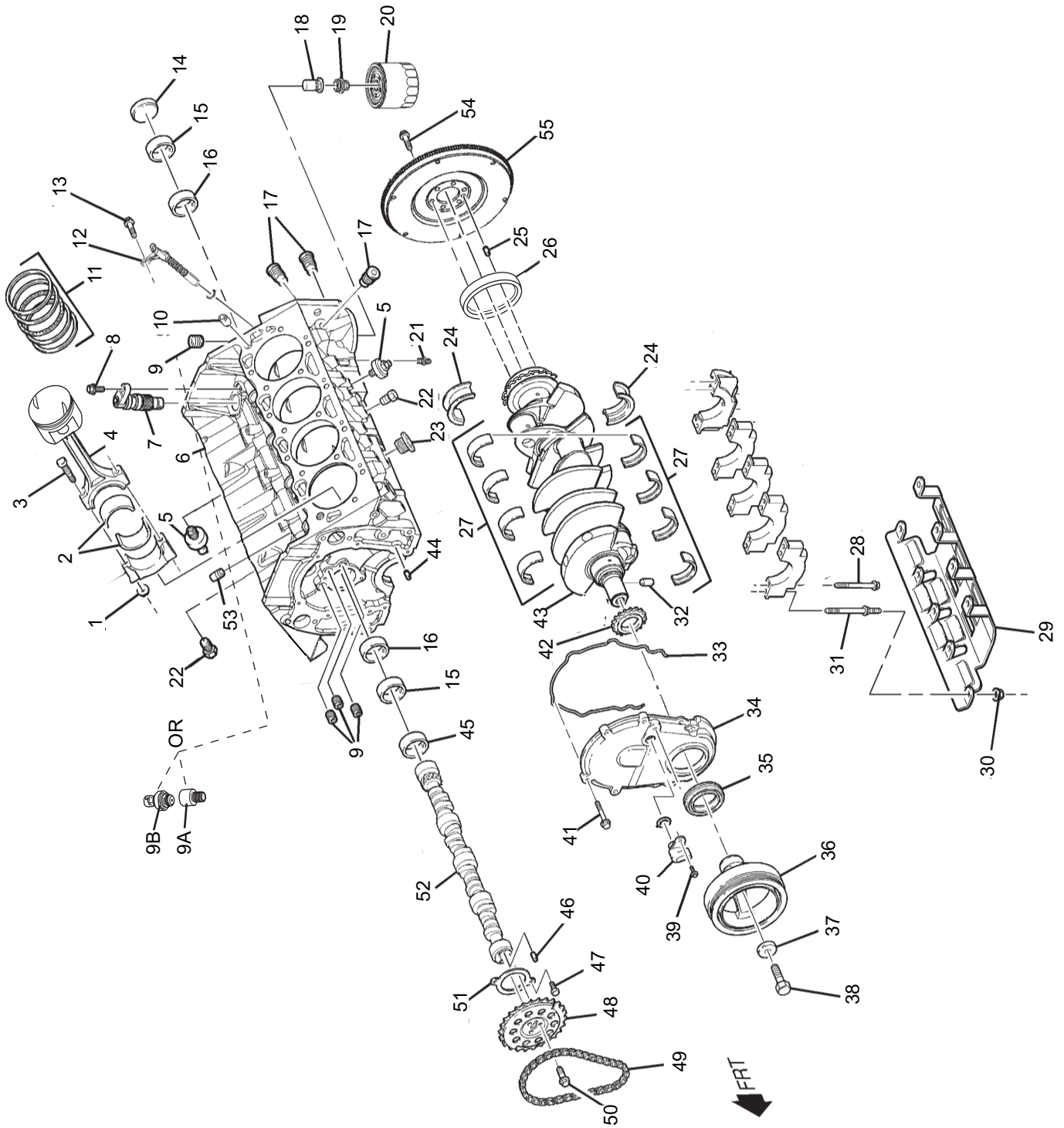


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## CYLINDER BLOCK ASSEMBLY - FIGURE 1

ITEM	PART NO.	QTY.	DESCRIPTION	MODEL ID
*	RB001018	AR	<b>Base Engine Assembly</b> , 8.1L Standard, top mount starter	
*	RB001018A	AR	<b>Base Engine Assembly</b> , 8.1L Standard, bottom mount starter	25-810-02
*	RB001019	AR	<b>Base Engine Assembly</b> , 8.1L H.O., top mount starter	
*	RB001019A	AR	<b>Base Engine Assembly</b> , 8.1L H.O., bottom mount starter	25-811-02
1	R017080	16	<b>Nut</b> , connecting rod cap	
2	R007026	8	<b>Bearing Set</b> , connecting rod (STD)	
3	R009195	16	<b>Bolt</b> , connecting rod cap	
4	RA013015A	4	<b>Piston and Connecting Rod Assembly</b> ,(LH/STD)	
4	RA013015B	4	<b>Piston and Connecting Rod Assembly</b> , (RH/STD)	
5	R020033	2	<b>Sensor</b> , knock	
6	NSS	1	<b>Cylinder Block</b>	
7	RA073001	1	<b>Drive</b> , oil pump	
8	TBD	1	<b>Bolt</b> , oil pump drive	
9	TBD		<b>Plug</b> , oil gallery	
9A	R024223	1	<b>Adapter</b> , oil pressure sensor	07-810V-01
9B	R020048	1	<b>Sensor</b> , oil pressure (CAN-Bus)	07-810V-01
10	R022021	4	<b>Pin</b> , cylinder head locating	
11	R015012	8	<b>Ring Set</b> , piston (STD)	
12	R020034	1	<b>Sensor</b> , crankshaft position	
13	TBD	1	<b>Bolt</b> , crankshaft position sensor	
14	R069065	1	<b>Plug</b> , camshaft	
15	R051039B	2	<b>Bearing</b> , camshaft #2 and #5	
16	R051039A	2	<b>Bearing</b> , camshaft #3 and #4	
17	TBD	4	<b>Plug</b> , engine block oil gallery	
18	TBD	1	<b>Valve</b> , oil bypass	
19	R079048	1	<b>Fitting</b> , oil bypass adapter	
20	R079065	1	<b>Adapter</b> , oil bypass 8.1L	
21	R024183	2	<b>Connector</b> , engine oil cooler hose	
22	R069070	2	<b>Plug</b> , engine block coolant drain hole	
23	TBD	1	<b>Plug</b> , engine block coolant drain hole	
24	R007028	1	<b>Bearing</b> , crankshaft (thrust)	
25	TBD	2	<b>Pin</b> , flywheel locating	
26	R047224	1	<b>Seal</b> , crankshaft rear oil	
27	R007027	4	<b>Bearing</b> , crankshaft (STD)	
28	R009196	10	<b>Bolt</b> , crankshaft bearing cap	
29	R012023	1	<b>Deflector</b> , crankshaft oil	
30	TBD		<b>Nut</b> , crankshaft oil deflector	
31	R031032	9	<b>Stud</b> , crankshaft bearing cap	
32	TBD	1	<b>Pin</b> , crankshaft balancer locating	
33	RM0264	1	<b>Gasket</b> , engine front cover	
34	TBD	1	<b>Cover</b> , engine front cover (includes gasket and seal,	
35	R047225	1	<b>Seal</b> , crankshaft front oil	

CYLINDER BLOCK ASSEMBLY (cont'd) - FIGURE 1



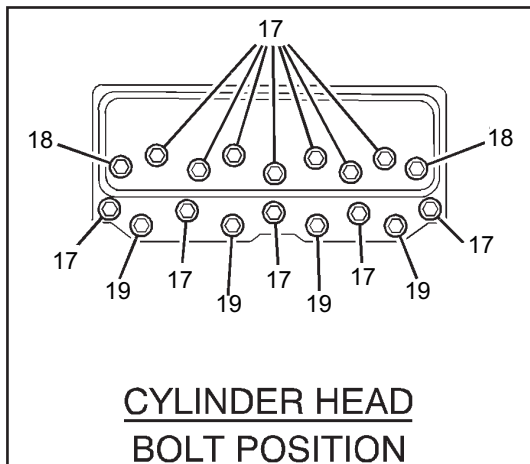
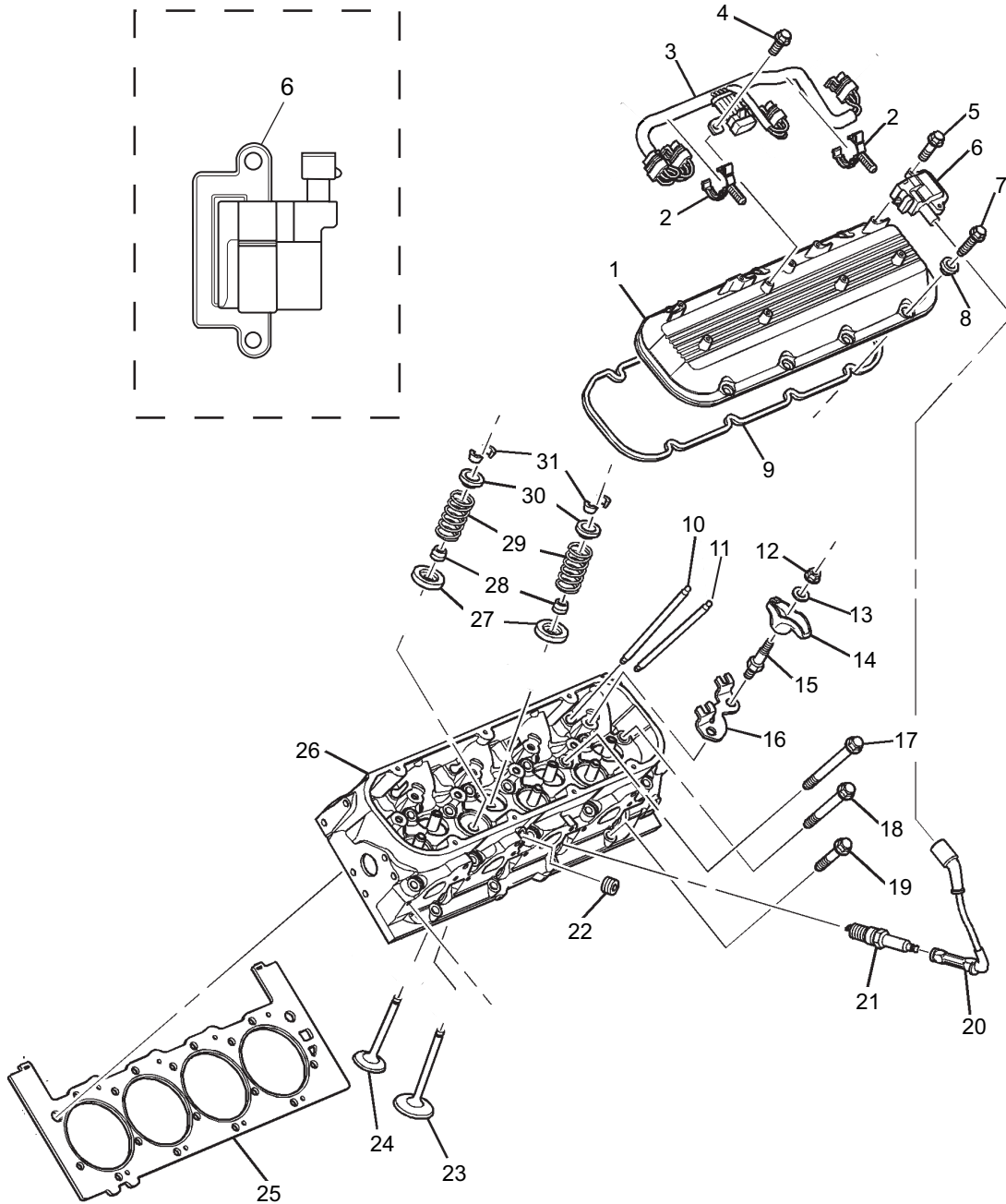
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## CYLINDER BLOCK ASSEMBLY (cont'd) - FIGURE 1

ITEM	PART NO.	QTY.	DESCRIPTION	MODEL ID
36	R064015	1	<b>Balancer</b> , crankshaft	
37	R096146	1	<b>Washer</b> , crankshaft balancer	
38	TBD	1	<b>Bolt</b> , crankshaft balancer	
39	TBD	1	<b>Bolt</b> , camshaft position sensor	
40	R020035A	1	<b>Sensor</b> , camshaft position sensor	
41	TBD	6	<b>Bolt</b> , engine front cover	
42	TBD	1	<b>Sprocket</b> , crankshaft,	
43	R006029	1	<b>Crankshaft</b>	
44	R022022	1	<b>Pin</b> , engine front cover locating	
45	R051039A	1	<b>Bearing</b> , camshaft #1	
46	R022022	1	<b>Pin</b> , camshaft sprocket locating	
47	TBD	2	<b>Bolt</b> , camshaft retaining	
48	R054040	1	<b>Sprocket</b> , camshaft	
49	R055016	1	<b>Chain</b> , camshaft timing	
50	TBD	3	<b>Bolt</b> , camshaft sprocket	
51	R109050	1	<b>Retainer</b> , camshaft	
52	RA050023	1	<b>Camshaft</b> , engine (STD)	
52	RA050024	1	<b>Camshaft</b> , engine (HO)	
53	TBD	3	<b>Plug</b> , engine block oil gallery	
54	TBD	6	<b>Bolt</b> , flywheel to crankshaft	
55	RA138015	1	<b>Flywheel Assembly</b> , (Bottom Mount Starter)	25-810-02, 25-811-02
55	RA138014	1	<b>Flywheel Assembly</b> , (Top Mount Starter)	

CYLINDER HEAD ASSEMBLY - FIGURE 2

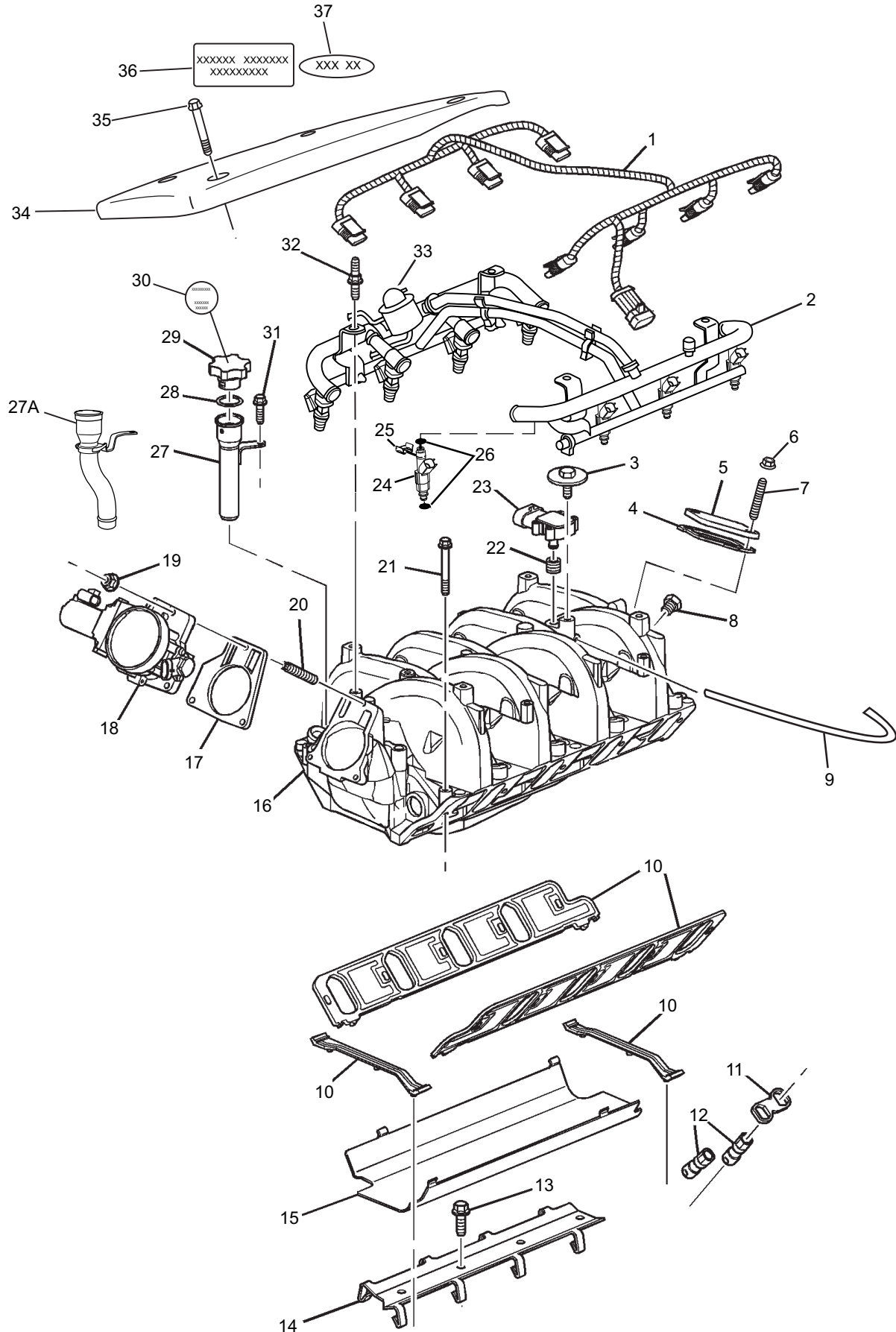


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## CYLINDER HEAD ASSEMBLY - FIGURE 2

ITEM	PART NO.	QTY.	DESCRIPTION	MODEL ID
1	TBD	2	<b>Cover</b> , rocker	
2	R127096	4	<b>Retainer</b> , ignition coil wire harness	
3	R121074A	2	<b>Wire Harness</b> , ignition coils	
4	TBD	2	<b>Bolt</b> , ignition coil wire harness retaining	
5	TBD	16	<b>Bolt</b> , ignition coil retaining	
6	R117013	8	<b>Coil</b> , ignition	
7	R009200	14	<b>Bolt</b> , rocker cover retaining	
8	R094039	14	<b>Grommet</b> , rocker cover retaining	
9	RM0261	2	<b>Gasket</b> , rocker cover	
10	R039021	8	<b>Push Rod</b> , intake	
11	R039022	8	<b>Push Rod</b> , exhaust	
12	R017079	16	<b>Nut</b> , rocker arm attaching	
13	TBD	16	<b>Ball</b> , rocker arm	
14	R038018	16	<b>Rocker Arm</b> , valve	
15	R095039	16	<b>Stud</b> , push rod guide attaching	
16	R037003	8	<b>Guide</b> , pushrod	
17	R009197	24	<b>Bolt</b> , cylinder head to block (long)	
18	R009198	4	<b>Bolt</b> , cylinder head to block (medium)	
19	R009199	8	<b>Bolt</b> , cylinder head to block (short)	
20	RK120019	1	<b>Spark Plug Wire Set</b>	
21	R030009	8	<b>Spark Plug</b>	
22	TBD	2	<b>Plug</b> , pipe (1/2")	
23	R043033	8	<b>Valve</b> , intake (STD)	
24	R043034	8	<b>Valve</b> , exhaust (STD)	
25	RM0262B	1	<b>Gasket</b> , cylinder head (RH)	
25	RM0262A	1	<b>Gasket</b> , cylinder head (LH)	
26	TBD	1	<b>Cylinder Head Assembly (RH)</b>	
26	TBD	1	<b>Cylinder Head Assembly (LH)</b>	
27	R049013	16	<b>Rotator</b> , valve	
28	R047226	16	<b>Seal</b> , valve stem	
29	R046049	16	<b>Valve Spring Assembly</b>	
30	R049014	16	<b>Cap</b> , valve spring	
31	R049010	32	<b>Retainer</b> , valve stem	

INTAKE MANIFOLD ASSEMBLY - FIGURE 3

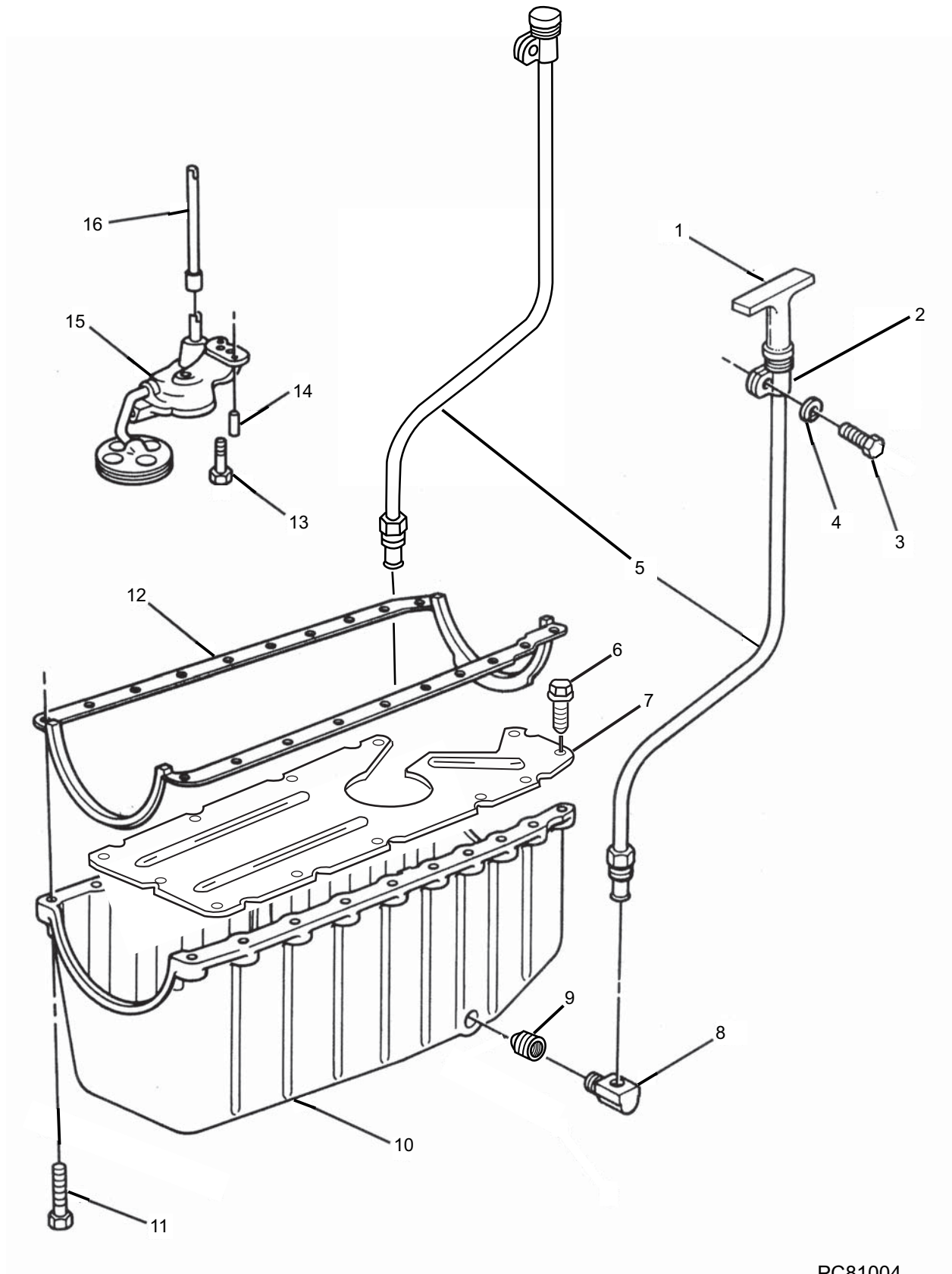


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## INTAKE MANIFOLD ASSEMBLY - FIGURE 3

ITEM	PART NO.	QTY.	DESCRIPTION	MDOEL ID
1	R121075	1	<b>Wire Harness</b> , fuel injectors	
2	RA086001	1	<b>Fuel Rail Assembly</b> , with fuel return line	20-810-01, 20-810-02, 20-810V-01, 25-811-02, 25-810-02, 30-811-01, 50-811-ALL, 50-811V-01, 50-810-ALL, 50-810V-01
2	RA086001A	AR	<b>Fuel Rail Assembly</b> , without fuel return line	
3	TBD	1	<b>Bolt</b> , MAP sensor retaining	
4	RM0265	1	<b>Gasket</b> , EGR blockoff cover	
5	TBD	1	<b>Cover</b> , EGR blockoff	
6	TBD	2	<b>Nut</b> , EGR blockoff cover attaching	
7	TBD	2	<b>Stud</b> , EGR blockoff cover attaching	
8	TBD	1	<b>Plug</b> , intake manifold core hole	
9	20237	1	<b>Hose</b> , fuel pressure regulator vacuum	
10	RM0267	1	<b>Gasket Set</b> , intake manifold	
11	R037004	8	<b>Guide</b> , valve lifter	
12	R040004	16	<b>Lifter</b> , valve	
13	TBD	4	<b>Bolt</b> , valve lifter retainer	
14	R090253	1	<b>Retainer</b> , valve lifter	
15	R012025	1	<b>Guard</b> , oil splash - lifter	
16	TBD	1	<b>Intake Manifold</b>	
17	RM0251	1	<b>Gasket</b> , throttle body mounting	
18	RA035036	1	<b>Throttle Body</b> , mechanical throttle (STD)	
18	RA035036A	1	<b>Throttle Body</b> , mechanical throttle (HO)	
18	RA035041	1	<b>Throttle Body</b> , electronic throttle	07-811V-01
19	49027	3	<b>Nut</b> , throttle body attaching	
20	TBD	3	<b>Stud</b> , throttle body mounting	
21	TBD	10	<b>Bolt</b> , intake manifold to cylinder head	
22	TBD	1	<b>Seal</b> , MAP sensor	
23	R020036	1	<b>MAP Sensor</b>	
24	RA087006	8	<b>Fuel Injector Assembly</b>	
25	R127097	8	<b>Retainer</b> , fuel injector to fuel rail	
26	RK047227	8	<b>O-Ring</b> , kit fuel injector	
27	R034046A	1	<b>Riser</b> , oil fill	
27A	R034046B	1	<b>Riser</b> , oil fill	07-811V-01
28	NSS	1	<b>O-Ring</b> , oil fill riser cap	
29	R034038B	1	<b>Cap</b> , oil fill riser	
30	R143137	1	<b>Decal</b> , oil fill riser cap	
31	TBD	1	<b>Bolt</b> , oil fill riser attaching	
32	TBD	3	<b>Stud</b> , fuel rail assembly attaching	
33	R088001	1	<b>Regulator</b> , fuel pressure	
34	R060057	1	<b>Cover</b> , engine	
35	99225030	4	<b>Bolt</b> , engine cover attaching	
36	R143130	AR	<b>Decal</b> , "CAPTAIN'S CHOICE"	
36	R143130A	AR	<b>Decal</b> , "CRUSADER ENGINES"	
37	R143133	AR	<b>Decal</b> , "8.1 MPI" (red/silver)	
37	R143133A	AR	<b>Decal</b> , "8.1 MPI" (black/silver)	
37	R143134	AR	<b>Decal</b> , "8.1 HO" (red/silver)	

OIL PAN and OIL PUMP ASSEMBLY - FIGURE 4

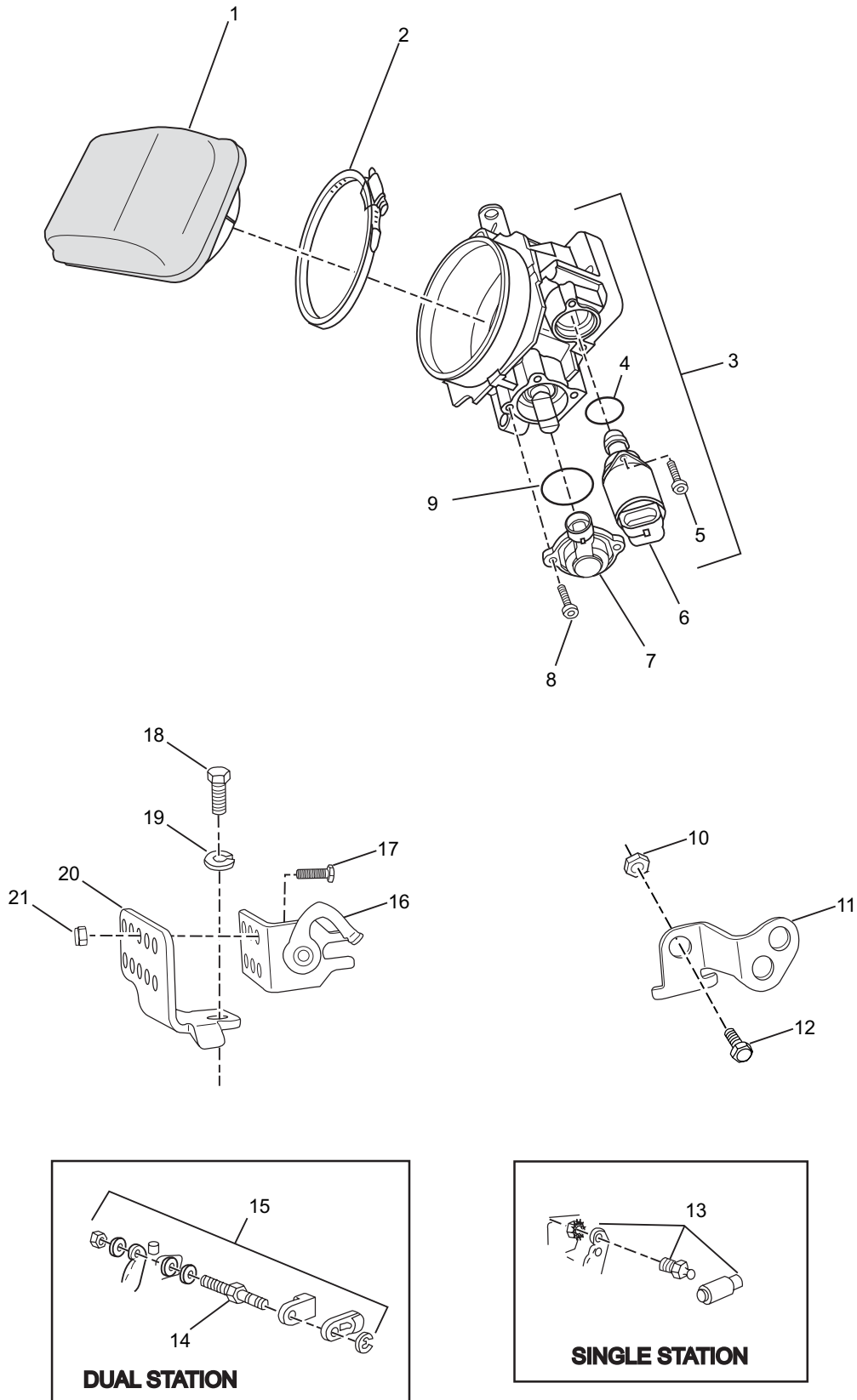


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## OIL PAN and OIL PUMP ASSEMBLY - FIGURE 4

ITEM	PART NO.	QTY	DESCRIPTION	QUANTITY
1	R041068	1	<b>Dipstick</b> , oil level (Level)	
1	R041069	1	<b>Dipstick</b> , oil level (Angled)	
2	R127015	2	<b>Clamp</b> , dipstick tube attaching	
3	98443025	2	<b>Bolt</b> , dipstick tube attaching	
4	93940000	2	<b>Lockwasher</b> , dipstick tube attaching bolt	
5	R041072	2	<b>Dipstick Tube</b>	
6	TBD	12	<b>Bolt</b> , oil pan baffle	
7	R012026	1	<b>Baffle</b> , oil pan	
8	R024017	2	<b>Elbow</b> , dipstick tube to oil pan	
9	R024200	2	<b>Adapter</b> , dipstick elbow to oil pan	
10	R005023	1	<b>Oil Pan</b>	
11	TBD	20	<b>Bolt</b> , oil pan mounting	
12	RM0263	1	<b>Gasket</b> , oil pan	
13	TBD	2	<b>Bolt</b> , oil pump mounting	
14	R022022	1	<b>Pin</b> , dowel - oil pump aligning	
15	RA070017	1	<b>Oil Pump Assembly</b>	
16	R058055	1	<b>Shaft</b> , oil pump to oil drive	
NI	TBD	1	<b>Kit</b> , oil drain	

MECHANICAL THROTTLE BODY and RELATED COMPONENTS - FIGURE 5



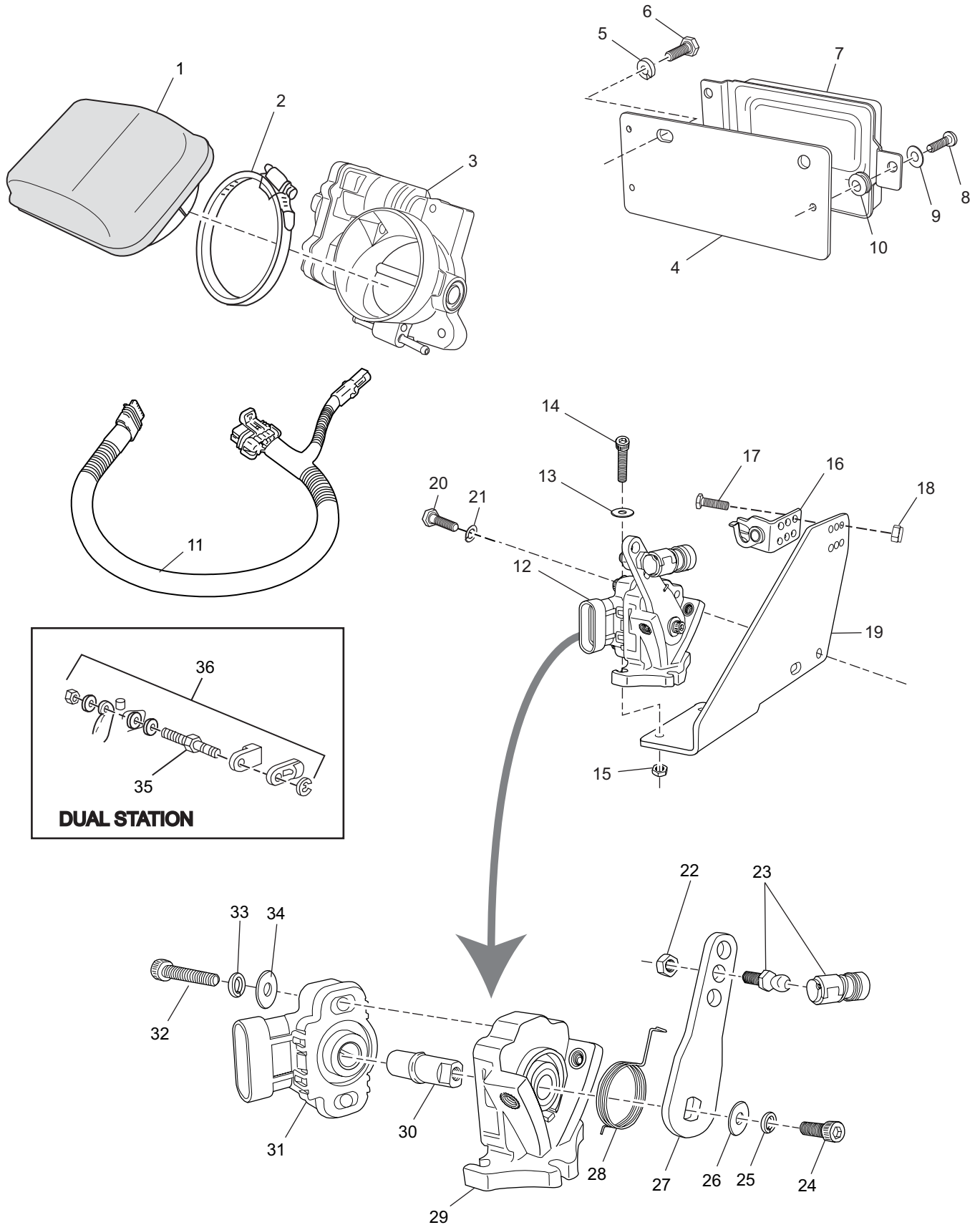
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## MECHANICAL THROTTLE BODY and RELATED COMPONENTS - FIGURE 5

ITEM	PART NO.	QTY	DESCRIPTION	MODEL ID
1	R145021	1	<b>Flame Arrestor</b>	
2	RS3857	1	<b>Clamp</b> , retaining	
3	RA035036	1	<b>Throttle Body Assembly</b> , STD	
3	RA035036A	1	<b>Throttle Body Assembly</b> , HO	
4	TBD	1	<b>O-Ring Seal</b> , idle air control valve	
5	TBD	2	<b>Screw</b> , IAC valve attaching	
6	R084003	1	<b>Valve</b> , idle air control	
7	R020041	1	<b>Sensor</b> , throttle position	
8	TBD	2	<b>Screw</b> , TP sensor attaching	
9	TBD	1	<b>O-Ring Seal</b> , throttle position sensor	
10	RS1078	1	<b>Nut</b> , retaining bolt	
11	R090230	1	<b>Throttle Arm</b> , throttle body	
12	RS0251	1	<b>Bolt</b> , throttle arm retaining	
13	R178014	1	<b>Ball Joint Assembly</b> , cable attaching (single)	
14	22978	1	<b>Pivot Pin</b> , cable attaching (dual)	
15	23235	AR	<b>Cable Attaching Kit</b> , (dual)	
16	R090086	1	<b>Cable Clip</b> , throttle attaching (single)	
17	RS5122	2	<b>Bolt</b> , cable clip mounting	
18	98223016	1	<b>Bolt</b> , bracket mounting	
19	93920000	1	<b>Lockwasher</b> , bracket mounting	
20	R090229	1	<b>Throttle Bracket</b> , intake	
21	RS2055	2	<b>Locking Nut</b> , cable clip mounting bolt	

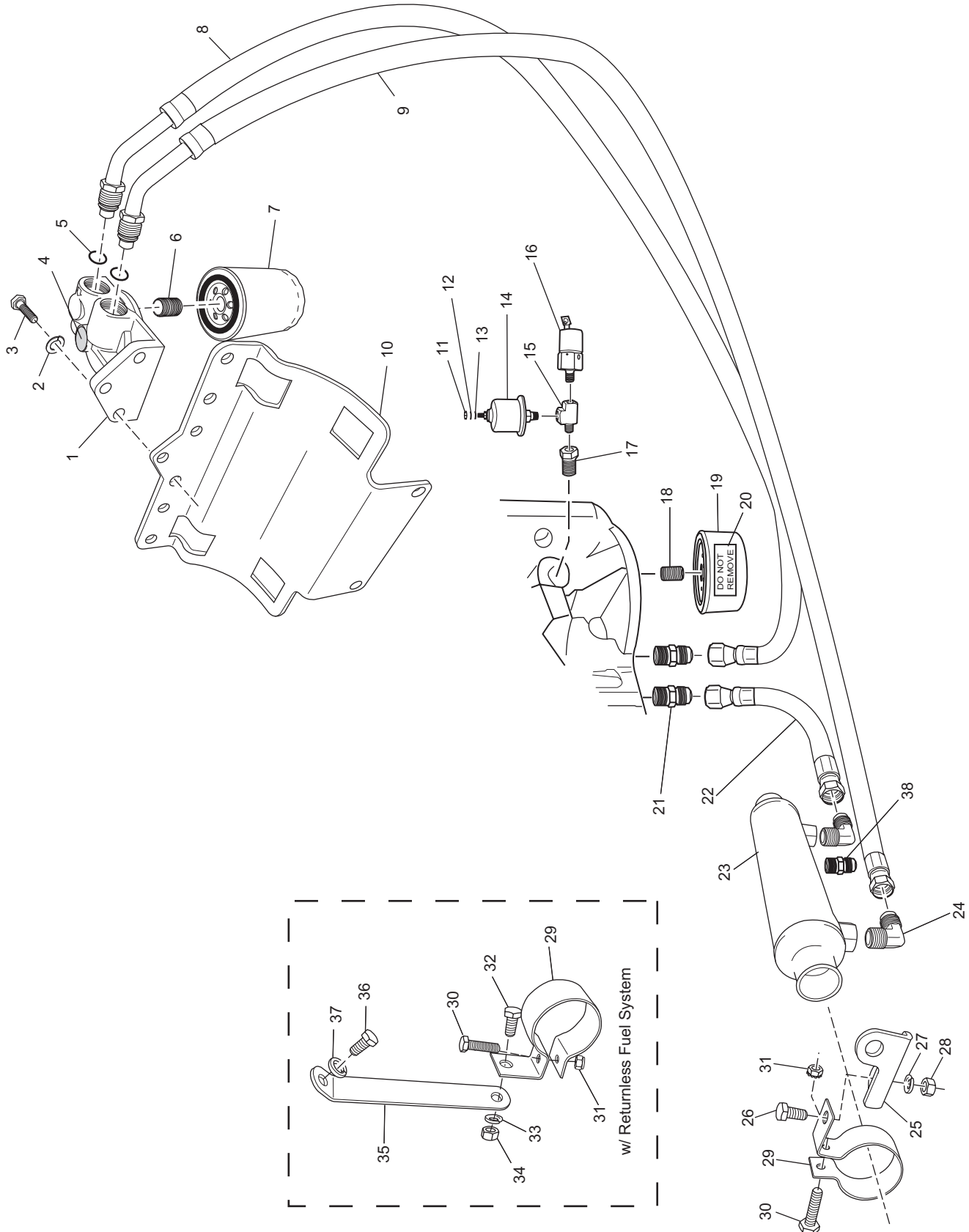
ELECTRONIC THROTTLE BODY and RELATED COMPONENTS - FIGURE 6



## ELECTRONIC THROTTLE BODY and RELATED COMPONENTS - FIGURE 6

ITEM	PART NO.	QTY.	DESCRIPTION	MODEL ID
1	R145021A	1	<b>Flame Arrestor Assembly</b>	07-811V-01
2	RS3857	1	<b>Clamp</b> , flame arrestor	07-811V-01
3	RA035041	1	<b>Throttle Body Assembly</b> , electronic	07-811V-01
4	R090321A	1	<b>Bracket</b> , TAC Module mounting	07-811V-01
5	RS2179	2	<b>Lockwasher</b> , TAC Module mounting bracket attaching	07-811V-01
6	98333020	2	<b>Bolt</b> , TAC Module mounting bracket attaching	07-811V-01
7	R116020	1	<b>Throttle Actuator Control (TAC) Module</b>	07-811V-01
8	91087050	3	<b>Screw</b> , self-tapping, TAC Module attaching	07-811V-01
9	R096142	3	<b>Flatwasher</b> , TAC Module attaching	07-811V-01
10	R094042	3	<b>Grommet</b> , TAC Module attaching	07-811V-01
11	R121086A	1	<b>Harness</b> , TCP Sensor to TAC Module	07-811V-01
12	RA119004	1	<b>Throttle Control Position (TCP) Sensor Assembly</b>	07-811V-01
13	92004000	3	<b>Flatwasher</b> , TCP assembly attaching	07-811V-01
14	91864075	3	<b>Bolt</b> , TCP assembly attaching	07-811V-01
15	RS2052	3	<b>Locking Nut</b> , TCP assembly attaching	07-811V-01
16	R090086	1	<b>Cable Clip</b> , throttle attaching (single station)	07-811V-01
17	RS2055	2	<b>Locking Nut</b> , cable clip attaching bolt	07-811V-01
18	RS5122	2	<b>Bolt</b> , cable clip attaching	07-811V-01
19	R090323	1	<b>Bracket</b> , TCP Assembly mounting	07-811V-01
20	RS0251	2	<b>Bolt</b> , TCP Assembly mounting bracket attaching	07-811V-01
21	RS2178	2	<b>Lockwasher</b> , TCP Assembly mounting bracket attaching	07-811V-01
22	RS1568	1	<b>Nut</b> , ball joint attaching	07-811V-01
23	R178003	1	<b>Ball Joint Assembly</b>	07-811V-01
24	91874050	1	<b>Bolt</b> , TCP Sensor arm attaching	07-811V-01
25	94854500	1	<b>Lock Washer</b> , TCP Sensor arm attaching	07-811V-01
26	94804000	1	<b>Flat Washer</b> , TCP Sensor arm attaching	07-811V-01
27	R081009	1	<b>Arm</b> , TCP Sensor	07-811V-01
28	R046051	1	<b>Spring</b> , TCP Sensor	07-811V-01
29	R109053	1	<b>Plate Assembly</b> , TCP Sensor	07-811V-01
30	R058070	1	<b>Shaft</b> , TCP Sensor	07-811V-01
31	R119004	1	<b>TCP Sensor</b>	07-811V-01
32	91064100	2	<b>Bolt</b> , TCP Sensor attaching	07-811V-01
33	93040000	2	<b>Lock Washer</b> , TCP Sensor attaching	07-811V-01
34	92004000	2	<b>Flat Washer</b> , TCP Sensor attaching	07-811V-01
35	22978	AR	<b>Pivot Pin</b> , cable attaching (dual station)	07-811V-01
36	23235	AR	<b>Cable Attaching Kit</b> , (dual station)	07-811V-01

REMOTE OIL FILTER COMPONENTS - FIGURE 7

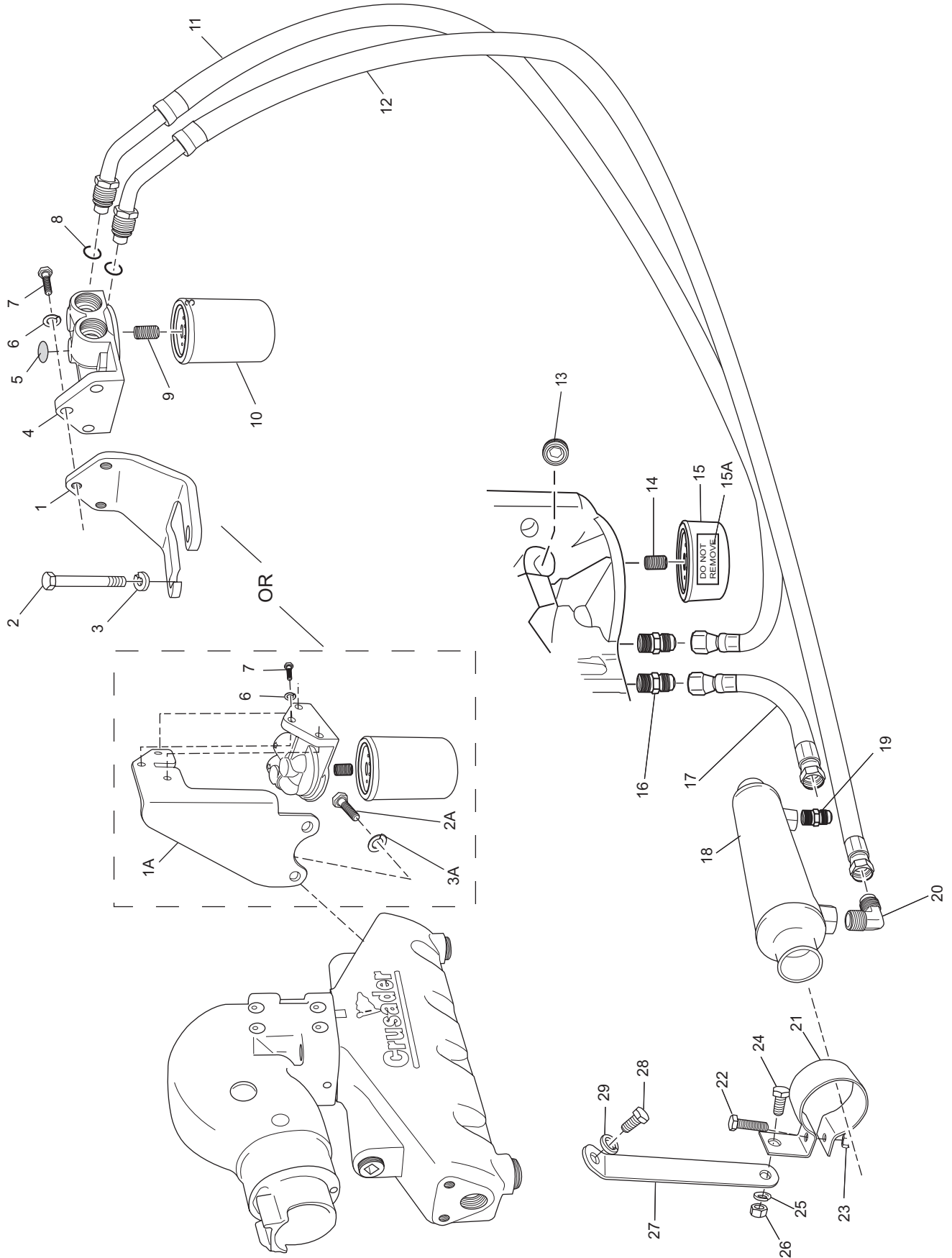


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## REMOTE OIL FILTER COMPONENTS - FIGURE 7

ITEM	PART NO.	QTY.	DESCRIPTION	MODEL ID
1	R079066	1	<b>Oil Filter Header</b>	
2	93930000	3	<b>Lockwasher</b> , header mounting to brkt	
3	98333020	3	<b>Bolt</b> , header mounting to brkt	
4	R143175	1	<b>Decal</b> , "Caution Hot"	
5	R047245	2	<b>O-Ring</b> , oil line	
6	R024203	1	<b>Nipple</b> , header filter adapter	
7	22679	1	<b>Filter</b> , oil	
8	RA045155A	1	<b>Hose Assembly</b> , engine block to filter header	
8	RA045120D	1	<b>Hose Assembly</b> , engine block to filter header	20-810-01, 20-810-02, 20-810V-01, 25-811-02, 25-810-02, 30-811-01, 50-811-(ALL), 50-811V-01, 50-810-(ALL), 50-810V-01
9	RA045155A	1	<b>Hose Assembly</b> , filter header to cooler	
9	RA045120D	1	<b>Hose Assembly</b> , filter header to cooler	20-810-01, 20-810-02, 20-810V-01, 25-811-02, 25-810-02, 30-811-01, 50-811-(ALL), 50-811V-01, 50-810-(ALL), 50-810V-01
10	R090258	1	<b>Bracket</b> , heat exchanger - ROF header mounting	
11	95011000	1	<b>Nut</b> , sender terminal	
12	95300300	1	<b>Lockwasher</b> , sender terminal	
13	92300200	1	<b>Washer</b> , sender terminal	
14	R020001	1	<b>Sender</b> , oil pressure (SS)	
14	727046	AR	<b>Sender</b> , oil pressure (DS)	24-810V-(ALL), 32-811-01
15	R024145	1	<b>Tee</b> , sender attaching	
16	R020015A	1	<b>Switch</b> , oil pressure (SS)	
17	RS3677	1	<b>Adapter</b> , sender attaching tee	
18	R079048	1	<b>Fitting</b> , oil bypass adapter	
19	R079065	1	<b>Adapter</b> , oil bypass	
20	R143135	1	<b>Decal</b> , oil bypass adapter	
21	R024183	2	<b>Fitting</b> , 5/8 SAE X 1/2 NPT, Straight	
22	RA045121A	1	<b>Hose Assembly</b> , cooler to engine block	
23	R147049	1	<b>Cooler</b> , oil	
24	R024184	2	<b>Fitting</b> , 5/8 SAE X 1/2 NPT, 90 degree	
25	R090013A	1	<b>Bracket</b> , oil cooler attaching	
26	RS0302	1	<b>Bolt</b> , oil cooler attaching	
27	RS2180	1	<b>Lockwasher</b> , oil cooler attaching	
28	RS2058	1	<b>Nut</b> , oil cooler attaching	
29	R090010	1	<b>Clamp</b> , oil cooler mounting	
30	RS0256	1	<b>Bolt</b> , oil cooler clamp	
31	RS1028	1	<b>Nut</b> , oil cooler clamp	
32	90318275	1	<b>Bolt</b> , oil cooler clamp to bracket attaching	20-810-01, 20-810-02, 20-810V-01, 25-811-02, 25-810-02, 30-811-01, 50-811-(ALL), 50-811V-01, 50-810-(ALL), 50-810V-01
33	9330000	1	<b>Lockwasher</b> , oil cooler clamp to bracket attaching	same as item# 32
34	95310300	1	<b>Nut</b> , oil cooler clamp to bracket attaching	same as item# 32
35	R090304A	1	<b>Bracket</b> , oil cooler attaching	same as item# 32
36	98443025	1	<b>Bolt</b> , bracket attaching	same as item# 32
37	93940000	1	<b>Lockwasher</b> , bracket attaching	same as item# 32
38	R024183	1	<b>Fitting</b> , 5/8 SAE X 1/2 NPT, Straight	same as item# 32

REMOTE OIL FILTER COMPONENTS (MODEL ID - 07-811V-01) - FIGURE 8

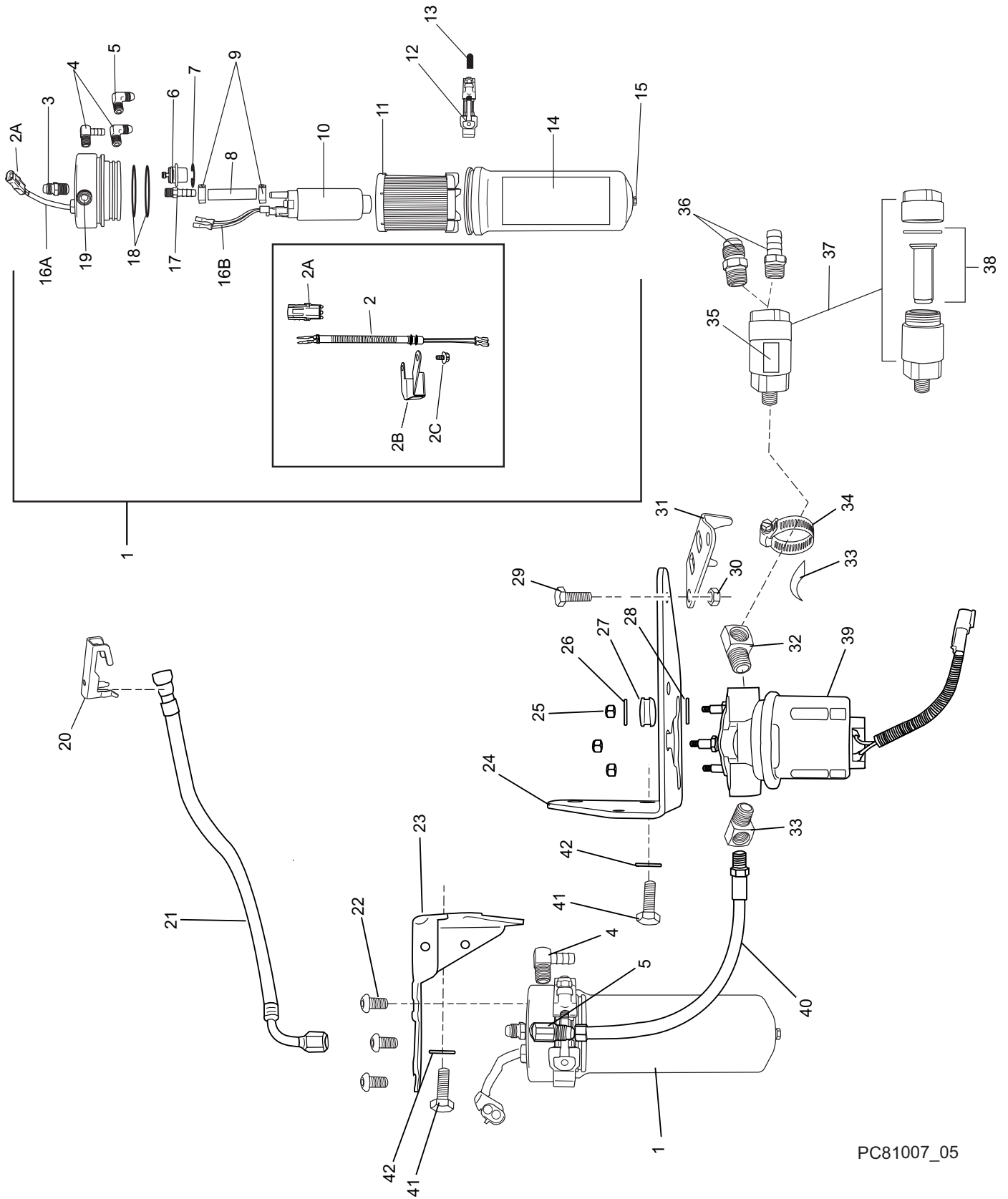


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## REMOTE OIL FILTER COMPONENTS (MODEL ID - 07-811V-01) - FIGURE 8

ITEM	PART NO.	QTY.	DESCRIPTION	MODEL ID
1	R090226	1	<b>Bracket</b> , ROF header mounting	07-811V-01
1A	R090324	1	<b>Bracket</b> , ROF header mounting	07-811V-01
2	90305525	2	<b>Bolt</b> , ROF bracket attaching	07-811V-01
2A	RS0302	2	<b>Bolt</b> , ROF bracket attaching	07-811V-01
3	RS2674	3	<b>Flat Washer</b> , ROF bracket attaching	07-811V-01
3A	RS2180	3	<b>Lock Washer</b> , ROF bracket attaching	07-811V-01
4	R079066	1	<b>Oil Filter Header</b>	07-811V-01
5	R143175	1	<b>Decal</b> , "Caution Hot"	07-811V-01
6	93930000	3	<b>Lockwasher</b> , header mounting to brkt	07-811V-01
7	98333020	3	<b>Bolt</b> , header mounting to brkt	07-811V-01
8	R047245	2	<b>O-Ring</b> , oil line	07-811V-01
9	R024203	1	<b>Nipple</b> , header filter adapter	07-811V-01
10	22679	1	<b>Filter</b> , oil	07-811V-01
11	RA045120B	1	<b>Hose Assembly</b> , engine block to filter header (w/R090226)	07-811V-01
11	RA045120D	1	<b>Hose Assembly</b> , engine block to filter header (w/R090324)	07-811V-01
12	RA045120B	1	<b>Hose Assembly</b> , filter header to cooler (w/R090226)	07-811V-01
12	RA045120D	1	<b>Hose Assembly</b> , filter header to cooler (w/R090324)	07-811V-01
13	TBD	1	<b>Plug</b> , oil galley	07-811V-01
14	R079048	1	<b>Fitting</b> , oil bypass adapter	07-811V-01
15	R079065	1	<b>Adapter</b> , oil bypass	07-811V-01
15A	R143135	1	<b>Decal</b> , oil bypass adapter	07-811V-01
16	R024183	2	<b>Fitting</b> , remote oil filter hose	07-811V-01
17	RA045121A	1	<b>Hose Assembly</b> , cooler to engine block	07-811V-01
18	R147049	1	<b>Cooler</b> , oil	07-811V-01
19	R024183	1	<b>Fitting</b> , 5/8 SAE X 1/2 NPT, straight	07-811V-01
20	R024184	1	<b>Fitting</b> , 5/8 SAE X 1/2 NPT, 90 degree	07-811V-01
21	R090010	1	<b>Clamp</b> , oil cooler	07-811V-01
22	RS0256	1	<b>Bolt</b> , oil cooler clamp	07-811V-01
23	RS2058	1	<b>Nut</b> , oil cooler clamp	07-811V-01
24	90318275	1	<b>Bolt</b> , oil cooler clamp to bracket attaching	07-811V-01
25	9330000	1	<b>Lockwasher</b> , oil cooler clamp to bracket attaching	07-811V-01
26	95310300	1	<b>Nut</b> , oil cooler clamp to bracket attaching	07-811V-01
27	R090233A	1	<b>Bracket</b> , oil cooler attaching	07-811V-01
28	98443025	1	<b>Bolt</b> , bracket attaching	07-811V-01
29	93940000	1	<b>Lockwasher</b> , bracket attaching	07-811V-01

FUEL CONTROL CELL (FCC) COMPONENTS - FIGURE 9



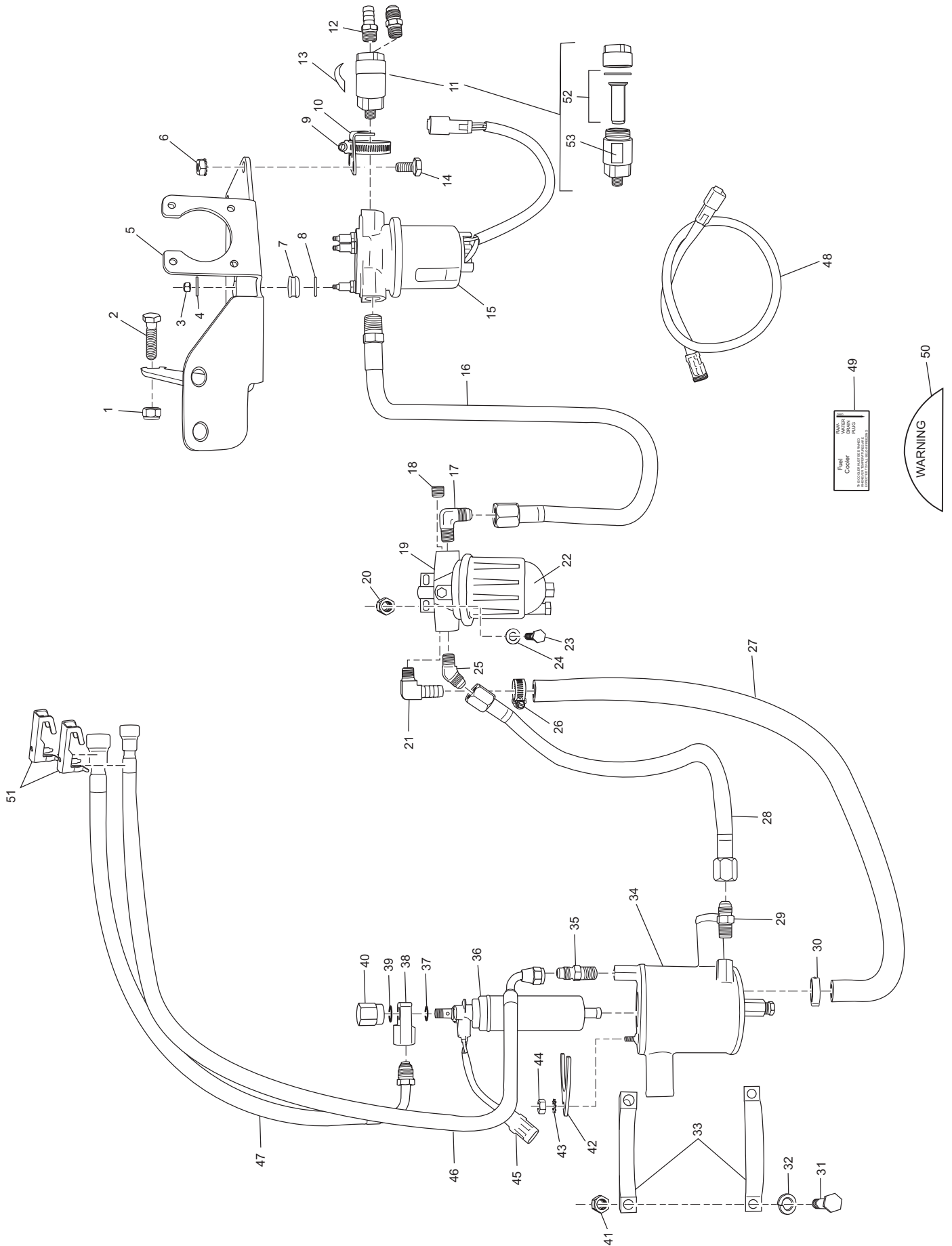
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## FUEL CONTROL CELL (FCC) COMPONENTS - FIGURE 9

ITEM	PART NO.	QTY.	DESCRIPTION	MODEL ID
1	RA080030A	1	<b>Fuel Control Cell Assembly</b>	
2	R121085A	1	<b>Harness</b> , 1-piece, FCC pass through (1-piece harness <b>does not</b> retro fit for 2-piece harness)	
2A	7172040	1	<b>Connector</b> , W/P 2-way Female	
2B	R012030	1	<b>Baffle</b> , FCC used w/1-piece harness	
2C	91620025	2	<b>Screw</b> , self tapping, baffle/1-piece harness retaining	
3	R024175	1	<b>Fitting</b> , 1/4 NPT X SAE	
4	R024225	1	<b>Fitting</b> , 1/4 NPT to Hose (return to tank)	
4	R024224	AR	<b>Fitting</b> , 1/4 NPT to SAE (return to tank)	
5	R024163	1	<b>Fitting</b> , 1/4 NPT X SAE (from LPFP)	
6	R088004	1	<b>Regulator</b> , fuel pressure (FCC System Only)	
7	R048070	1	<b>Retainer</b> , fuel pressure regulator	
8	R045098B	1	<b>Hose</b> , 5/16id X 1/2od X 2 1/2	
9	R127087	2	<b>Clamp</b> , Oetiker, 5/8	
10	RA080027	1	<b>Pump</b> , high pressure fuel	
11	R080026	1	<b>Filter</b> , fuel (FCC)	
NI	RP080026	1	<b>Kit</b> , FCC filter and O-rings	
12	R171010	1	<b>Clamp</b> , FCC	
13	R128002	1	<b>Cover</b> , T-bolt end	
14	R143112A	1	<b>Decal</b> , FCC	
15	RS3554	1	<b>Plug</b> , pipe, hex head, 1/8	
16A	RA121060	1	<b>Harness</b> , FCC Feed through	
16B	RA121061A	1	<b>Harness</b> , FCC internal	
17	R024219	1	<b>Fitting</b> , 1/8 NPT X 5/16 Barb	
18	R047241	1	<b>O-Ring</b> , FCC sealing	
19	RS3550	1	<b>Plug</b> , pipe, hex socket, 1/4	
20	R127100	1	<b>Retainer</b> , fuel line	
21	RA085090	1	<b>Hose Assembly</b> , FCC to fuel rail (inlet)	
22	90384075	3	<b>Bolt</b> , FCC attaching	
23	R090227	1	<b>Bracket</b> , FCC mounting	
24	R090228A	1	<b>Bracket</b> , low-pressure fuel pump mounting	
25	RS1521L	3	<b>Locking Nut</b> , low-pressure fuel pump	
26	R096142	3	<b>Washer</b> , flat, mounting, upper	
27	R094035A	3	<b>Grommet</b> , isolator	
28	R096141	3	<b>Washer</b> , fuel pump mounting, lower	
29	RS0251	2	<b>Bolt</b> , pre-filter bracket attaching	
30	RS1078	2	<b>Nut</b> , w/lockwasher, pre-filter bracket attaching	
31	R090272	1	<b>Bracket</b> , pre-filter mounting	
32	R024192	2	<b>Fitting</b> , 90 degree, LPFP	
33	R094040	1	<b>Isolator</b> , rubber, w/ adhesive	
34	RS3858	1	<b>Clamp</b> , pre-filter 1 1/4"	
35	R143174	1	<b>Decal</b> , pre-filter	
36	30603	AR	<b>Fitting</b> , fuel inlet, pre-filter, 3/8 NPT X 1/2 SAE	
36	R024218	1	<b>Fitting</b> , fuel inlet, pre-filter, 3/8 NPT X 1/2 hose barb	
37	RA077014	1	<b>Fuel Pre-filter Assembly, 150 micron</b>	
38	RP077014	1	<b>Kit</b> , fuel filter and seal	
39	RA080018	1	<b>Fuel Pump</b> , low-pressure	
40	RA085070	1	<b>Hose Assembly</b> , low-pressure pump to FCC	
41	98443025	4	<b>Bolt</b> , FCC/LPFP bracket attaching, block	
42	93940000	4	<b>Lockwasher</b> , FCC/LPFP bracket attaching, block	
NI	R143114	1	<b>Decal</b> , Warning, fuel leaks	

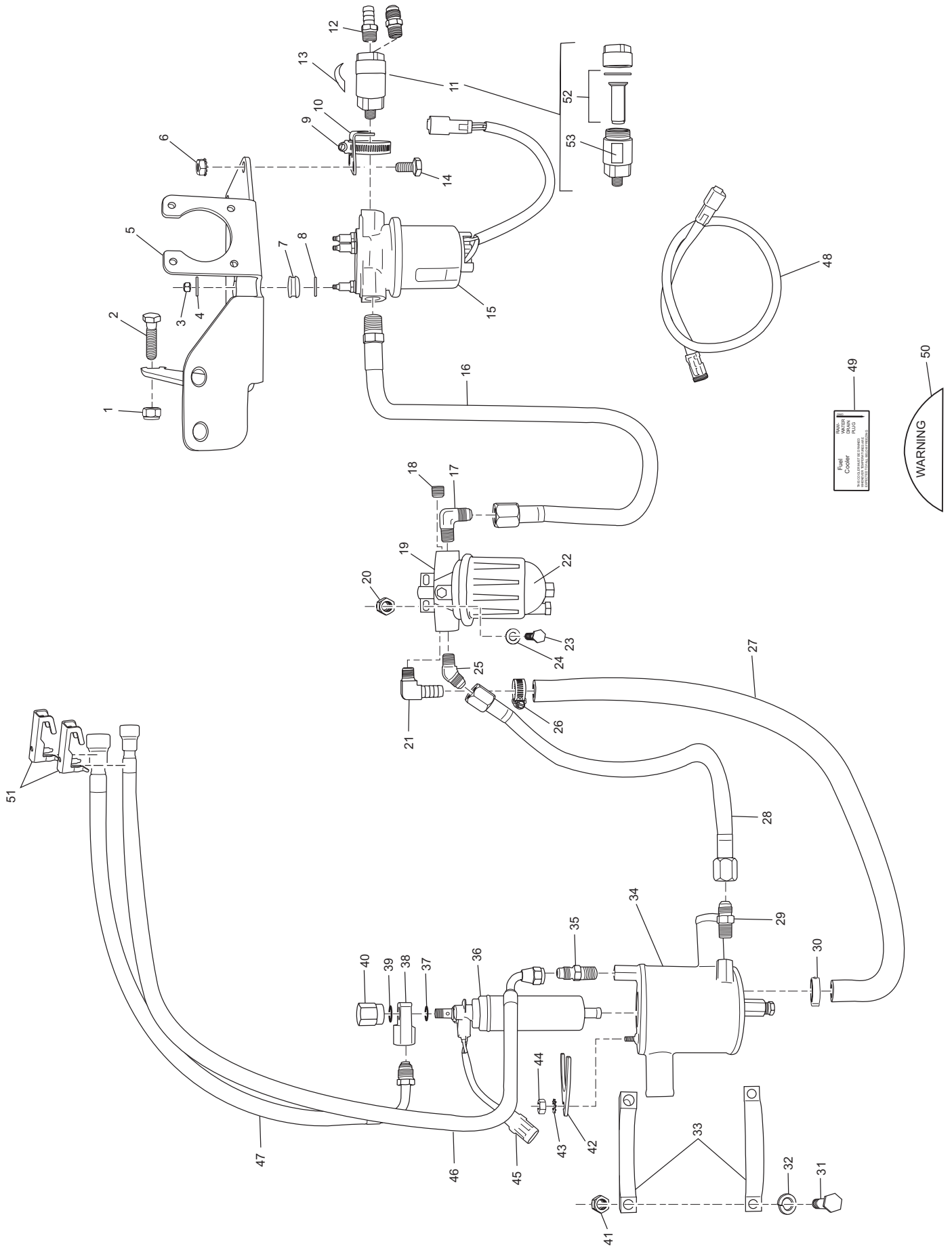
RETURNLESS FUEL SYSTEM COMPONENTS - FIGURE 10 (S/N 630207 thru present)



## RETURNLESS FUEL SYSTEM COMPONENTS - FIGURE 10 (S/N 630207 thru present)

ITEM	PART NO.	QTY.	DESCRIPTION	MODEL ID
				20-810-01, 20-810-02, 20-810V-01, 25-811-02, 25-810-02, 30-811-01, 50-811-(ALL), 50-811V-01, 50-810-(ALL), 50-810V-01
*	RF201007	AR	<b>Kit</b> , retrofit	
1	RS2060	1	<b>Nut</b> , locking	
2	90205125	1	<b>Bolt</b> , bracket mounting	
3	RS1521L	3	<b>Nut</b> , locking	
4	R096142	3	<b>Flatwasher</b> , mounting	
5	R090270	1	<b>Bracket</b> , L.P. pump/racor water separating	
6	RS1078	2	<b>Nut</b> , pre-filter bracket mounting	
7	R094035A	3	<b>Grommet</b> , rubber	
8	R096141	3	<b>Flatwasher</b> , mounting	
9	RS3858	1	<b>Clamp</b> , pre-filter mounting	
10	R090272	1	<b>Bracket</b> , prre-filter mounting	
11	RA077014	1	<b>Pre-Filter</b> , fuel	
12	R024218	1	<b>Fitting</b> , fuel inlet, hose	
12	30603	AR	<b>Fitting</b> , fuel inlet, SAE	
13	R094040	1	<b>Adhesive</b> , rubber strip	
14	RS0251	2	<b>Bolt</b> , pre-filter bracket mounting	
15	RA080018	1	<b>Fuel Pump</b> , low-pressure	
16	RA085070	1	<b>Fuel Line Assembly</b> , L.P. fuel pump to racor filter	
17	R024163	1	<b>Fitting</b> , 90 degree	
18	RS3550	1	<b>Fitting</b> , blockoff	
19	47046	1	<b>Fuel Filter</b> , racor water separating	
20	RS2060	2	<b>Nut</b> , racor filter locking	
21	R024207	1	<b>Fitting</b> , 90 degree	
22	47047	1	<b>Element</b> , racor fuel filter (not shown)	
23	RS0282	2	<b>Bolt</b> , racor filter mounting	
24	92200000	2	<b>Flatwasher</b> , racor filter mounting	
25	R024197	1	<b>Fitting</b> , 45 degree	
26	RS3864	1	<b>Clamp</b> ,	
27	98431	1	<b>Fuel Line Assembly</b> , racor filter to high pressure fuel pump	
NI	47064	1	<b>Conduit</b> , protective (not shown)	
28	RA085071	1	<b>Fuel Line Assembly</b> , fuel cooler to racor filter	
29	R024163A1	1	<b>Fitting</b> , cooler to hose assembly	
30	R127087E	1	<b>Clamp</b> , crimp	
31	90318325	2	<b>Bolt</b> , fuel cooler mounting	
32	RS2180	2	<b>Lockwasher</b> , fuel cooler mounting	
33	23554	1	<b>Retainer</b> , fuel cooler mounting	
34	RA147041A	1	<b>Fuel Cooler Assembly</b>	
35	R024175	1	<b>Fitting</b> , hose assembly to cooler	
36	47039	1	<b>Electric Fuel Pump Assembly</b>	
37	23515	1	<b>O-ring</b> , fuel fitting sealing	
38	98440	1	<b>Fitting</b> , fuel line to fuel pump	
39	23516	1	<b>O-ring</b> , fuel fitting sealing	
40	98442	1	<b>Nut</b> , fitting to fuel pump	

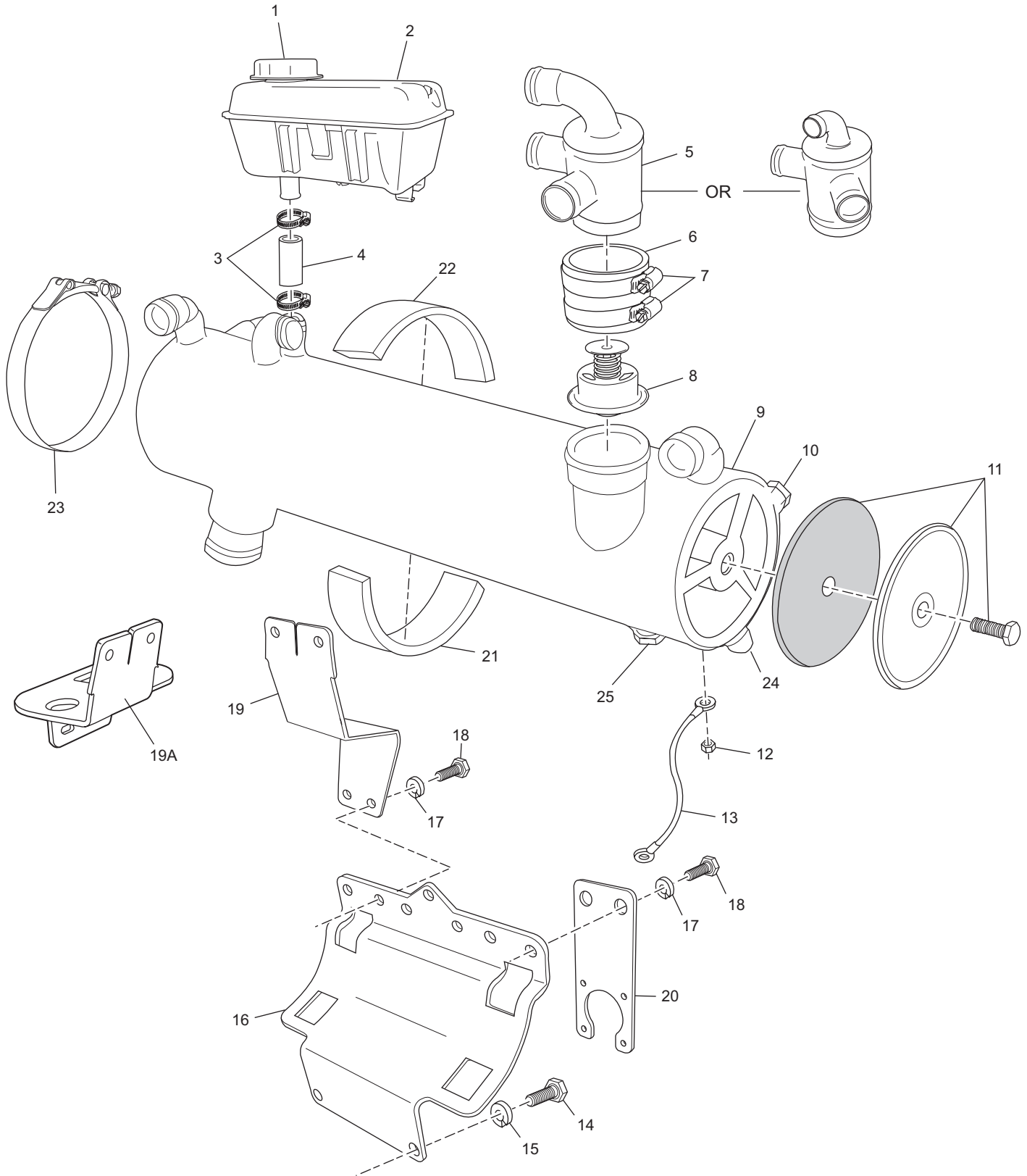
RETURNLESS FUEL SYSTEM COMPONENTS - FIGURE 10 (cont'd) (S/N 630207 thru present)



## RETURNLESS FUEL SYSTEM COMPONENTS - FIGURE 10 (cont'd) (S/N 630207 thru present)

ITEM	PART NO.	QTY	DESCRIPTION	MODEL ID
				20-810-01, 20-810-02, 20-810V-01, 25-811-02, 25-810-02, 30-811-01, 50-811-(ALL), 50-811V-01, 50-810-(ALL), 50-810V-01
41	95310300	2	<b>Locking Nut</b> , fuel cooler mounting	
42	98642	1	<b>Retainer</b> , fuel pump	
43	NSS	1	<b>Starwasher</b> , retaining nut	
44	RS1078	1	<b>Nut</b> , w/lockwasher fuel pump retainer attaching (RS1078 replaces items 43 and 44)	
45	49038	1	<b>Harness</b> , fuel pump	
46	RA085091A	1	<b>Fuel Line Assembly</b> , fuel rail to fuel cooler	
47	RA085098	1	<b>Fuel Line Assembly</b> , fuel pump to fuel rail	
48	R121077	1	<b>Jumper Harness</b> , low-pressure fuel pump	
49	23645	1	<b>Decal</b> , fuel cooler system warning	
50	23649	1	<b>Decal</b> , fuel system warning	
51	R127100	2	<b>Retainer</b> , fuel line	
52	RP077014	1	<b>Kit</b> , service, fuel pre-filter	
53	R143174	1	<b>Decal</b> , pre-filter	

HEAT EXCHANGER and COMPONENTS - FIGURE 11

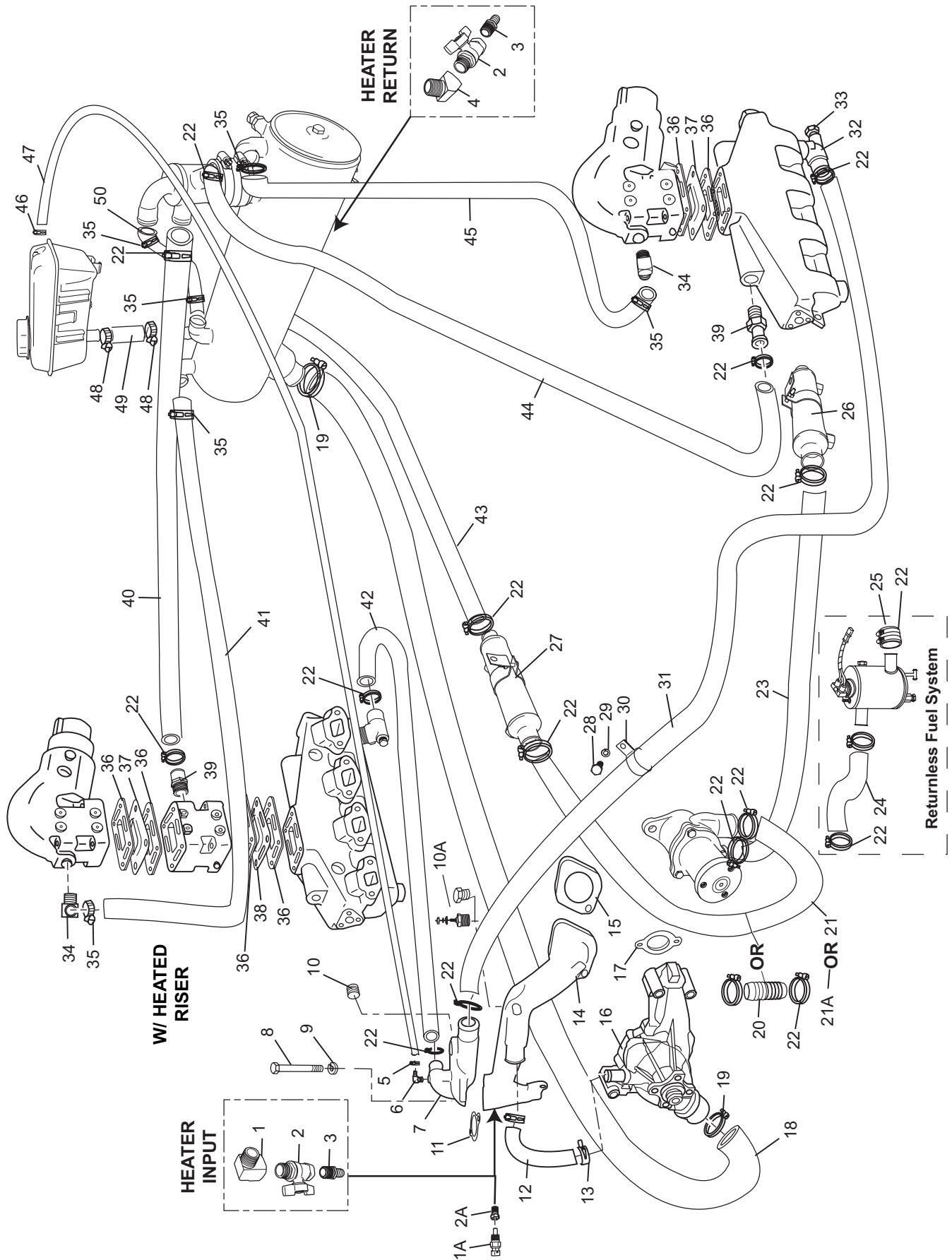


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## HEAT EXCHANGER and COMPONENTS - FIGURE 11

ITEM	PART NO.	QTY	DESCRIPTION	MODEL ID
1	R034045	1	<b>Cap</b> , degas bottle	
2	R146001	1	<b>Bottle</b> , degas	
NI	R143172	AR	<b>Decal</b> , specification, 8.1 STD, FCC	
NI	R143172A	AR	<b>Decal</b> , specification, 8.1 STD, returnless fuel system	
NI	R143173	AR	<b>Decal</b> , specification, 8.1 HO, FCC	
NI	R143173A	AR	<b>Decal</b> , specification, 8.1 HO, returnless fuel system	
NI	R143153	1	<b>Decal</b> , coolant fill	
3	RS3854	2	<b>Clamp</b> , hose	
4	R045153	1	<b>Hose</b> , degas bottle to heat exchanger	
4	R045161	1	<b>Hose</b> , degas bottle to heat exchanger, v-drive	07-811V-01
5	R025027A	1	<b>Housing</b> , thermostat	
5	R025027B	1	<b>Housing</b> , thermostat	07-811V-01
6	R045162	1	<b>Hose</b> , thermostat housing	
7	RS3860	2	<b>Clamp</b> , thermostat housing	
8	R026007	1	<b>Thermostat</b> , 170°F	
9	RA147039B	1	<b>Heat Exchanger Assembly</b>	
10	R168005	1	<b>Anode</b> , sacrificial zinc	
11	23540	AR	<b>End Cap Kit</b> , heat exchanger	
12	RS1078	1	<b>Nut</b> , ground wire stud	
13	R101013	1	<b>Wire</b> , grounding	
14	RS0304	2	<b>Bolt</b> , heat exchanger bracket attaching	
15	RS2180	2	<b>Lockwasher</b> , heat exchanger bracket attaching	
16	R090258	1	<b>Bracket</b> , heat exchanger	
17	RS2179	4	<b>Lockwasher</b> , bracket attaching	
18	98333020	4	<b>Bolt</b> , bracket attaching	
19	R090311	1	<b>Bracket</b> , degas bottle	
19A	R090322	1	<b>Bracket</b> , degas bottle, v-drive	07-811V-01
20	R090291	1	<b>Bracket</b> , 10-pin connector	
21	R094040	2	<b>Isolator</b> , rubber w/adhesive, bottom	
22	R094041	2	<b>Isolator</b> , rubber, top	
23	R171009	2	<b>Clamp</b> , heat exchanger	
24	RS3552	1	<b>Plug</b> , raw water drain (1/4")	
25	RS3557	1	<b>Plug</b> , fresh water drain (3/8")	
NI	23627	1	<b>Decal</b> , Anode	
NI	22847	1	<b>Decal</b> , Caution No Step	
NI	23657	1	<b>Decal</b> , heat exchanger	
NI	R143156	1	<b>Decal</b> , raw water drain	
NI	R143257	1	<b>Decal</b> , fresh water drain	
NI	R143158	1	<b>Decal</b> , "Ultra Low Emmissions"	
NI	R143160-06	1	<b>Decal</b> , Emissions MY '06	

FRESH WATER COOLING SYSTEM COMPONENTS - FIGURE 12

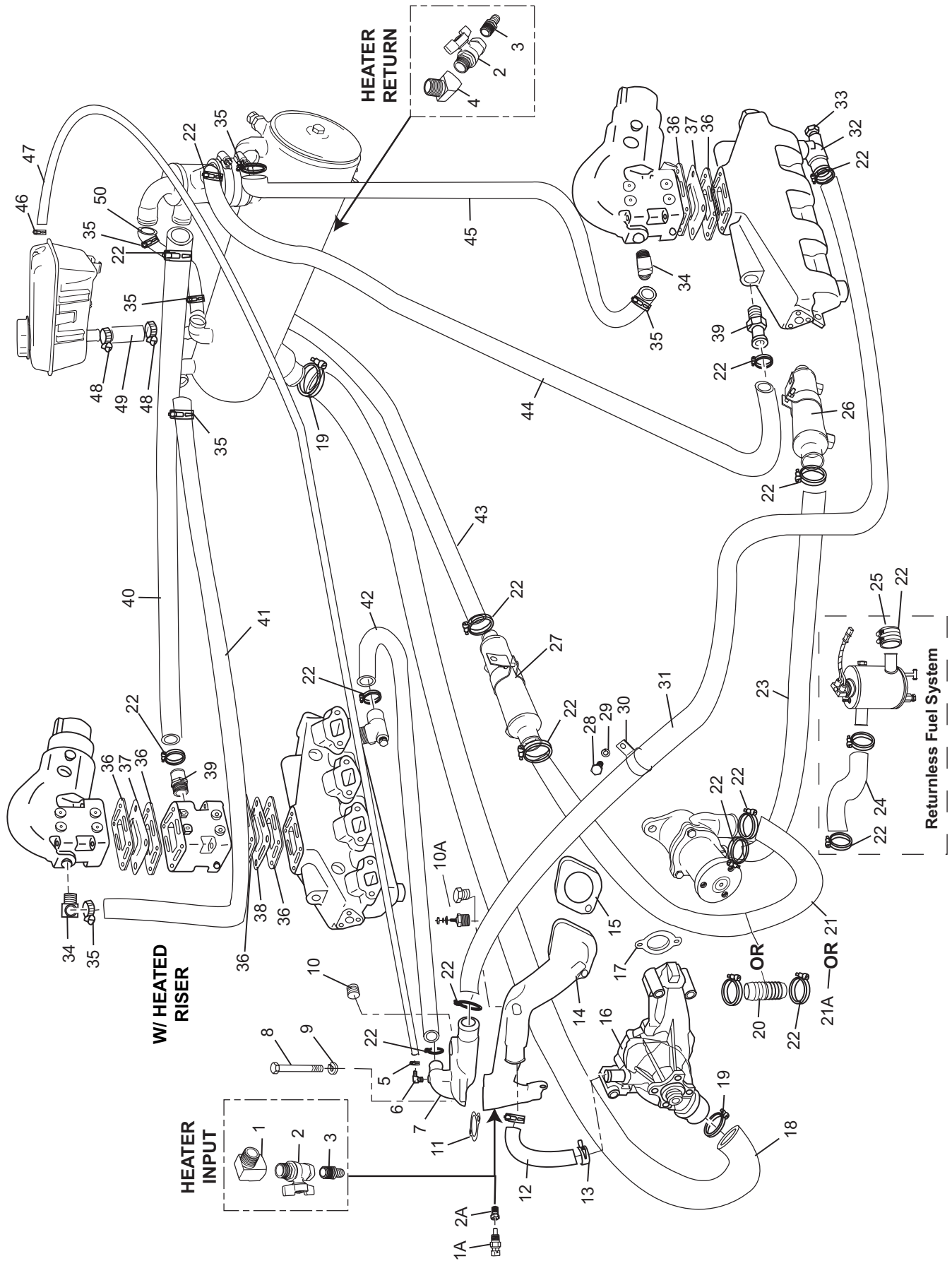




## FRESH WATER COOLING SYSTEM COMPONENTS - FIGURE 12

ITEM	PART NO.	QTY.	DESCRIPTION	MODEL ID
1	R024139	1	<b>Fitting</b> , 90°, heater applications	22-810-01, 22-810-02, 22-810V-01
1A	R020019	1	<b>Sensor</b> , Engine Coolant Temperature	
2	R035039	2	<b>Valve</b> , ball, heater applications	22-810-01, 22-810-02, 22-810V-01
2A	RS3681	1	<b>Bushing</b> , 1/2 NPT X 3/8 NPT	
3	30645	2	<b>Fitting</b> , 5/8" nipple, heater applications	22-810-01, 22-810-02, 22-810V-01
4	R024209	1	<b>Fitting</b> , 45°, heater applications	22-810-01, 22-810-02, 22-810V-01
5	RS3870	1	<b>Clamp</b> , hose	
6	R024055	1	<b>Fitting</b> , fill riser (90 degree)	
7	R025030	1	<b>Housing</b> , coolant distribution	
8	98443045	2	<b>Bolt</b> , distribution housing attaching	
9	93940000	2	<b>Lockwasher</b> , distribution housing attaching	
10	RS3551	1	<b>Plug</b> , distribution housing	
10	R020019	1	<b>Sensor</b> , Engine Coolant Temperature	22-810-01, 22-810-02, 22-810V-01
10A	R020003	1	<b>Sender</b> , temperature (SS)	
10A	727046	AR	<b>Sender</b> , temperature (DS)	24-810V-ALL, 32-811-01
10A	RS3557	1	<b>Plug</b> , water crossover	07-811V-01
11	RM0121	1	<b>Gasket</b> , distribution housing to water crossover	
12	R045116A	1	<b>Hose</b> , circulation pump to water crossover	
13	RS3864	2	<b>Clamp</b> , hose	
14	R025034	1	<b>Water Crossover</b>	
15	RM0268	1	<b>Gasket</b> , water crossover	
16	RA057030	1	<b>Water Pump Assembly</b>	
17	RM0266	2	<b>Gasket</b> , water pump to engine block	
18	R045126A	1	<b>Hose</b> , circulation pump to exchanger	
19	RS3852	2	<b>Clamp</b> , hose (#28)	
20	R024221	1	<b>Fitting</b> , 1 1/4" union	07-811V-01
21	18402	1	<b>Hose</b> , raw water pump to transmission cooler	
21A	R045137	1	<b>Hose</b> , raw water pump to transmission cooler (cut to fit)	07-811V-01
22	RS3858	20	<b>Clamp</b> , hose (#20)	
23	R045171	1	<b>Hose</b> , raw water pump to oil cooler	
24	20865	AR	<b>Hose</b> , bulk, raw water pump to fuel cooler assembly (cut-to-fit)	20-810-01, 20-810-02, 20-810V-01, 25-811-02, 25-810-02, 30-811-01, 50-811-(ALL), 50-811V-01, 50-810-(ALL), 50-810V-01
25	R045136	1	<b>Hose</b> , fuel cooler assembly to oil cooler (cut-to-fit)	20-810-01, 20-810-02, 20-810V-01, 25-811-02, 25-810-02, 30-811-01, 50-811-(ALL), 50-811V-01, 50-810-(ALL), 50-810V-01
26	R1470049	1	<b>Oil Cooler Assembly</b>	
27	R1470006	1	<b>Transmission Cooler Assembly</b>	
28	98223016	1	<b>Bolt</b> , strap clamp attaching	
29	93920000	1	<b>Lockwasher</b> , strap clamp attaching	
30	R090082	1	<b>Clamp</b> , strap	
31	R045131	1	<b>Hose</b> , distribution housing to exhaust manifold (Port)	
32	30624	2	<b>Fitting</b> , exhaust manifold (90 degree)	
33	RS3554	2	<b>Plug</b> , drain	
34	R024006A	2	<b>Fitting</b> , 90 degree	
35	RS3851	6	<b>Clamp</b> , hose (#16)	

FRESH WATER COOLING SYSTEM COMPONENTS - FIGURE 12 (cont'd)



## FRESH WATER COOLING SYSTEM COMPONENTS - FIGURE 12 (cont'd)

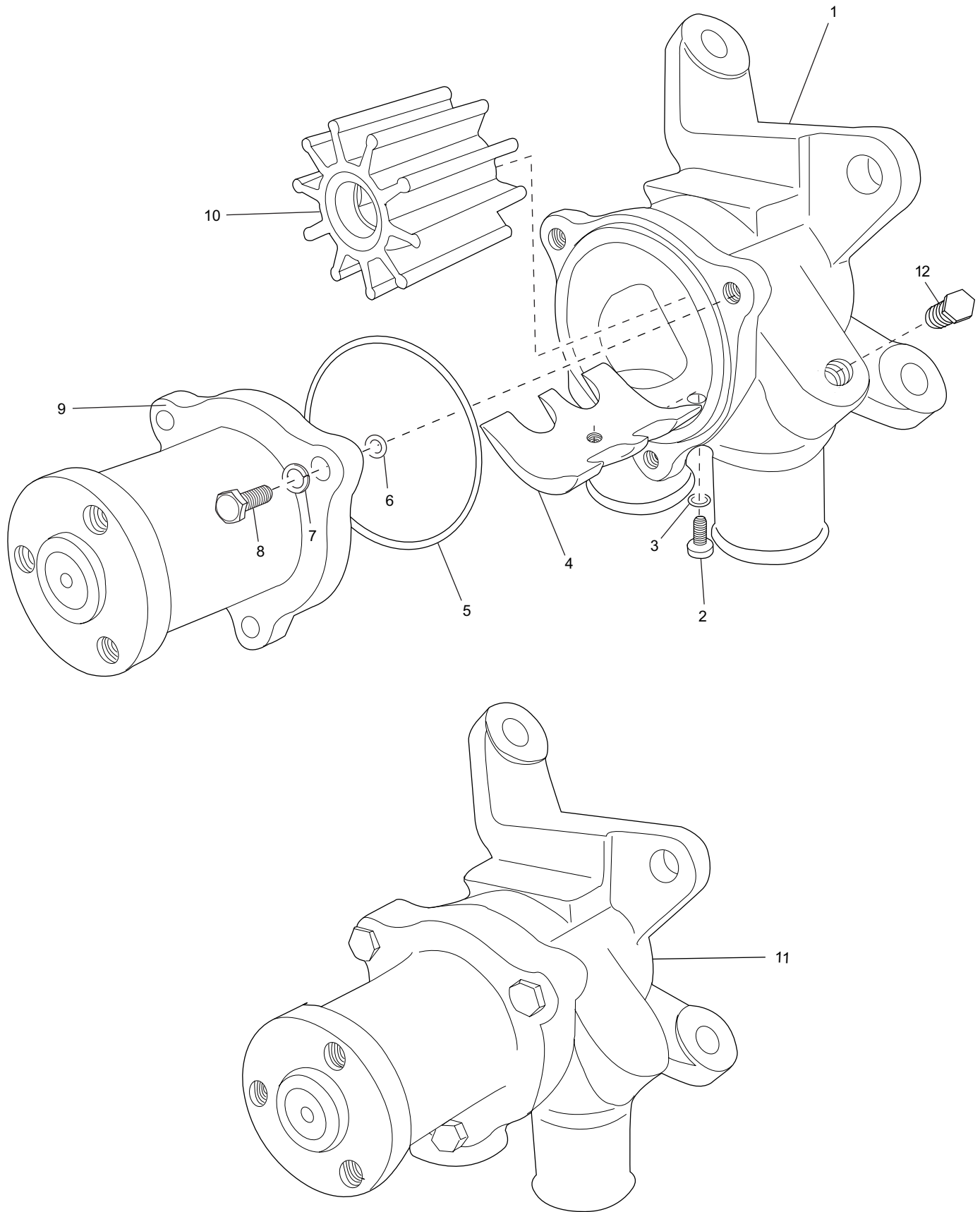
ITEM	PART NO.	QTY.	DESCRIPTION	MODEL ID
36	98127	8	<b>Gasket</b> , elbow to riser / elbow to manifold / riser to manifold	
37	98124	2	<b>Wing Plate</b> , blockoff	
38	98124A	2	<b>Wing Plate</b> , pass thru	
39	97852	2	<b>Fitting</b> , exhaust manifold/riser (1 1/4" hose)	
40	R045167	1	<b>Hose</b> , tstat housing to exhaust manifold (STBD)	
40	18414	1	<b>Hose</b> , tstat housing to 4" riser (STBD)	
41	R045124	1	<b>Hose</b> , heat exchanger to exhaust elbow (STBD)	
41	R045124A	1	<b>Hose</b> , heat exchanger to exhaust elbow (STBD - vdrv)	
42	R045128	1	<b>Hose</b> , distribution housing to exhaust manifold (STBD)	
43	R045123	1	<b>Hose</b> , transmission cooler to exchanger	
44	R045170	1	<b>Hose</b> , tstat housing to exhaust manifold (Port)	
44	R045145A	1	<b>Hose</b> , tstat housing to 4" riser (Port)	
45	R045125	1	<b>Hose</b> , heat exchanger to exhaust elbow (Port)	
45	R045125A	1	<b>Hose</b> , heat exchanger to exhaust elbow (Port - vdrv)	
46	R127087	1	<b>Clamp</b> , Oeticker	
47	R045132	AR	<b>Hose</b> , bulk, degas bottle to distribution housing	
48	RS3854	2	<b>Clamp</b> , hose (#12)	
49	R045153	AR	<b>Hose</b> , bulk, degas bottle to heat exchanger (2")	
50	R045107	AR	<b>Hose</b> , bulk, bypass, tstat housing to heat exchanger (16")	
NI	R128001	AR	<b>Cover</b> , hose clamp end (blue)	



## EXHAUST MANIFOLD and COMPONENTS - FIGURE 13

ITEM	PART NO.	QTY.	DESCRIPTION	MODEL ID
1	98125	2	<b>Exhaust Manifold (Embossed Logo)</b> (MUST use bolt R009206)	
1A	R028021	2	<b>Exhaust Manifold (Picture Frame Logo)</b>	
2	103876	8	<b>Plug</b> , exhaust manifold (1")	
3	30624	2	<b>Fitting</b> , water elbow (90 degree)	
4	RS3552	2	<b>Plug</b> , drain	
5	R009206	16	<b>Shouldered Bolt</b> , manifold (embossed)	
5A	98333035	16	<b>Bolt</b> , manifold (picture frame)	
6	RS2180	16	<b>Lockwasher</b> , manifold bolt (embossed)	
6A	93930000	16	<b>Lockwasher</b> , manifold bolt (picture frame)	
7	RM0294	2	<b>Gasket</b> , manifold to cylinder head	
8	98127	2	<b>Gasket</b> , manifold to exhaust elbow	
9	R029015	2	<b>Exhaust Elbow Assembly</b> ,	
10	RS3556	2	<b>Plug</b> , exhaust elbow (3/4")	
11	RS3554	4	<b>Plug</b> , drain	
12	20827	4	<b>Stud</b> , exhaust elbow attaching (T)	
13	93300000	8	<b>Lockwasher</b> , elbow attaching stud	
14	95300000	4	<b>Nut</b> , elbow attaching stud	
15	90305475	4	<b>Bolt</b> , exhaust elbow attaching (4 3/4")	
*	22818	1	<b>4-Inch Riser Kit</b>	
16	98128	2	<b>Exhaust Riser</b>	
17	RS3556	2	<b>Plug</b> , exhaust riser (3/4")	
18	RS3554	4	<b>Plug</b> , drain	
19	20783	8	<b>Stud</b> , riser mounting (2 3/4")	
20	93300000	8	<b>Lockwasher</b> , riser mounting stud	
21	95300000	8	<b>Nut</b> , riser mounting stud	
22	98127	4	<b>Gasket</b> , riser mounting	
23	R143129	2	<b>Decal</b> , exhaust manifold (picure frame)	
24	R096144	4	<b>Bracket</b> , spark plug wire loom	
25	RS0302	4	<b>Lockwasher</b> , attaching bolt	
26	RS2180	4	<b>Bolt</b> , wire loom attaching	
27	R020047	2	<b>Switch</b> , exhaust temperature	
27	RS3539	2	<b>Plug</b> , exhaust elbow	07-811V-01
<p><b>*NOTE:</b> See Fresh Water Cooling section for parts used on Fresh Water Cooled engines.</p>				

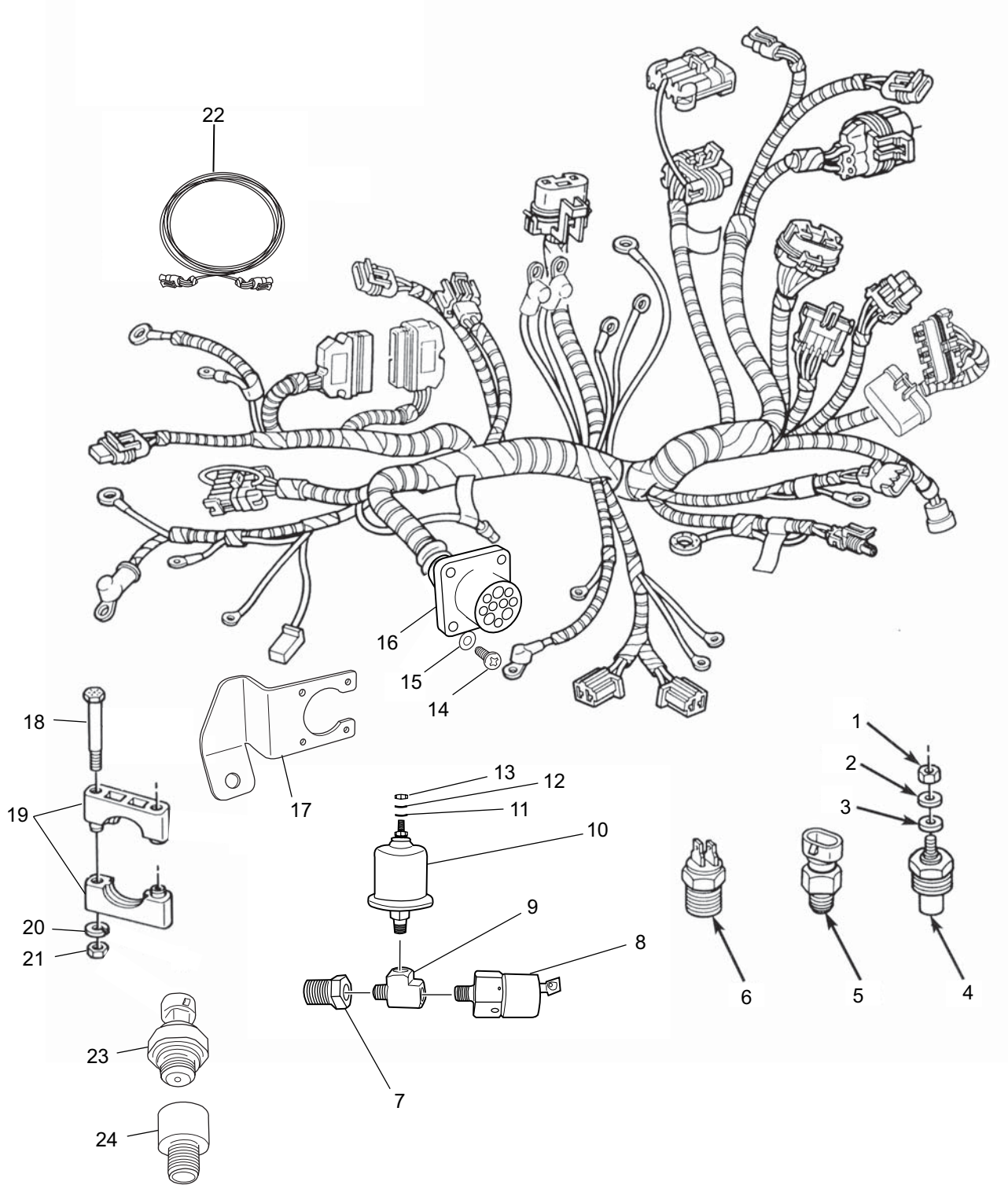
RAW WATER COOLING PUMP - FIGURE 14



## RAW WATER COOLING PUMP - FIGURE 14

ITEM	PART NO.	QTY.	DESCRIPTION	MODEL ID
1	R057035	1	<b>Housing</b> , raw water pump	
2	TBD	1	<b>Bolt</b> , raw water pump cam	
3	TBD	1	<b>Lockwasher</b> , raw water pump cam	
4	R161018	1	<b>Cam</b> , raw water pump	
5	R047242	1	<b>O-ring</b> , bearing housing attaching	
6	R047243	3	<b>O-ring</b> , bearing housing attaching bolt	
7	TBD	3	<b>Lockwasher</b> , bearing housing attaching bolt	
8	TBD	3	<b>Bolt</b> , bearing housing attaching	
9	RA134071	1	<b>Bearing Housing Assembly</b>	
10	RP061022	1	<b>Impeller Kit</b> , (includes O-rings and impeller)	
11	RA057035	1	<b>Raw Water Pump Assembly</b>	
12	RS3554	1	<b>Plug</b> , brass 1/8 NPT	
NI	RF057026/35	AR	<b>Raw Water Pump Retrofit Kit</b> (retrofits this pump system on to a 2004 MY or prior engine)	

WIRING HARNESS ASSEMBLIES and SENDERS - FIGURE 15



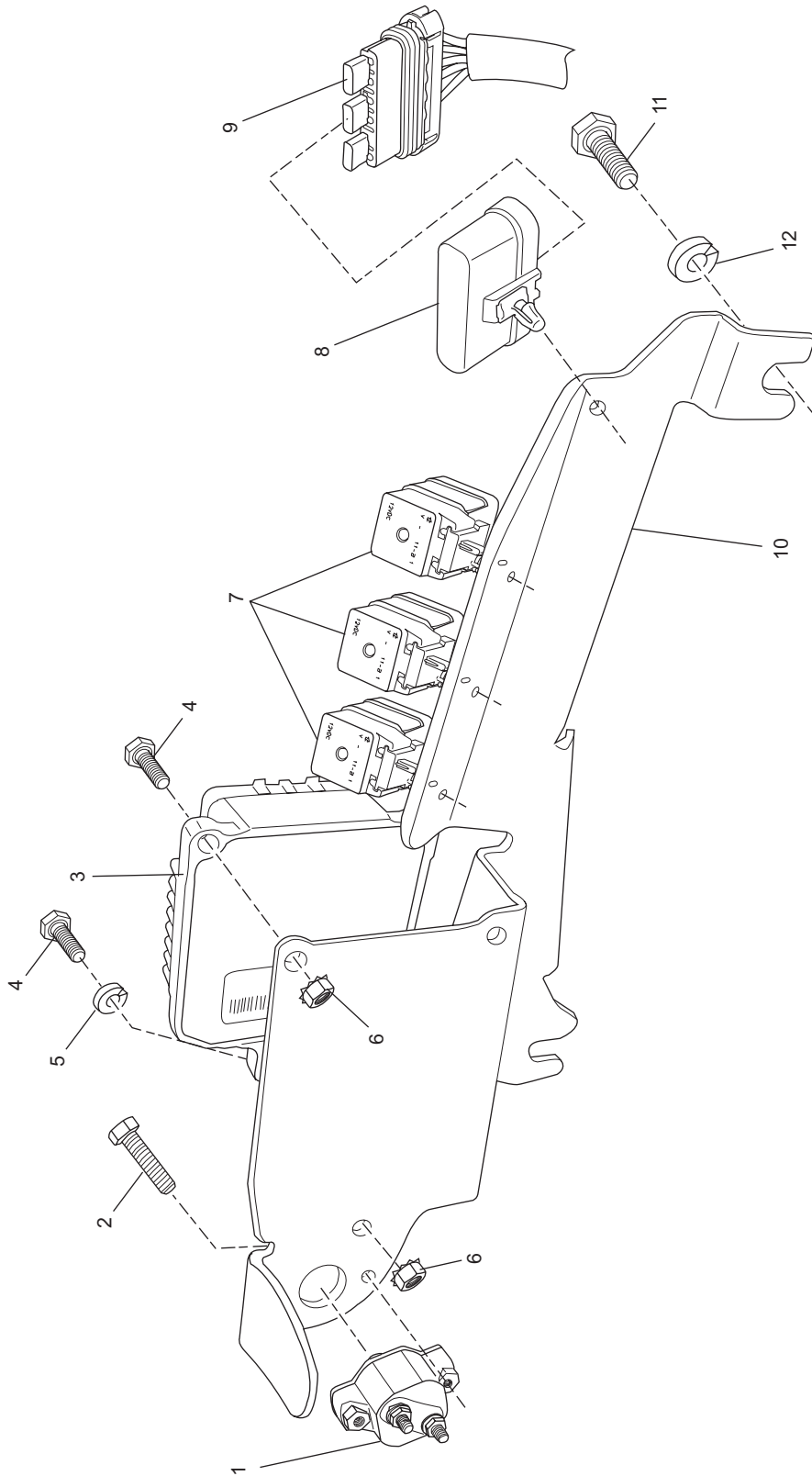
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## WIRING HARNESS ASSEMBLIES and SENDERS - FIGURE 15

ITEM	PART NO.	QTY.	DESCRIPTION	MODEL ID
1	RS1540	1	<b>Nut</b> , sender terminal	
2	RS2197	1	<b>Lockwasher</b> , sender terminal	
3	RS2746	1	<b>Washer</b> , sender terminal	
4	R020003	1	<b>Sender</b> , temperature (SS)	
4	727046	AR	<b>Sender</b> , temperature (DS)	24-810V-ALL, 32-811-01
4	22701	AR	<b>Sender</b> , temperature (SS-VDO)	
4	22703	AR	<b>Sender</b> , temperature (DS-VDO)	
5	R020019	1	<b>Sensor</b> , engine coolant temperature (ECT)	
6	R020037	1	<b>Switch</b> , transmission alarm	
7	RS3677	1	<b>Adapter</b> , sender attaching tee	
8	R020015A	1	<b>Switch</b> , oil pressure (SS)	
9	R024145	1	<b>Tee</b> , sender attaching	
10	R020001	1	<b>Sender</b> , oil pressure (SS)	
10	R020006	AR	<b>Sender</b> , oil pressure (DS)	24-810V-ALL, 32-811-01
10	22702	AR	<b>Sender</b> , oil pressure (SS-VDO)	
10	22704	AR	<b>Sender</b> , oil pressure (DS-VDO)	
11	RS2746	1	<b>Washer</b> , sender terminal	
12	RS2197	1	<b>Lockwasher</b> , sender terminal	
13	RS1540	1	<b>Nut</b> , sender terminal	
14	RS5115	4	<b>Screw</b> , 10-pin attaching	
15	R096142	4	<b>Washer</b> , 10-pin attaching	
16	RA121071B	1	<b>Engine Wiring Harness Assembly</b> (S/N 631660 and above) (10-Pin Boat Harness Connector) (MUST be used with relay, p/n R130011A)	
16	RA121084A	1	<b>Engine Wiring Harness Assembly</b> (MY 2006) (16-Pin Boat Harness Connector) (MUST be used with relay, p/n R130011A)	07-811V-01
17	R090251	1	<b>Bracket</b> , 10-pin attaching (square base)	
18	90105300	1	<b>Bolt</b> , 10-pin clamp attaching (round base)	
19	R127093	1	<b>Clamp</b> , 10-pin attaching (round base)	
20	92100000	1	<b>Lockwasher</b> , 10-pin attaching clamp (round base)	
21	95104300	1	<b>Nut</b> , 10-pin attaching clamp (round base)	
22	RA121072	AR	<b>Harness</b> , slave 3-pin connector (twin applications only)	
22	RA121072A	AR	<b>Harness</b> , slave 4-pin connector (twin applications only)	
22	RA121072B	AR	<b>Harness</b> , slave 3-pin to 4-pin connector (twin applications only)	
23	R020048	1	<b>Sensor</b> , CAN BUS oil pressure	07-811V-01
24	R024223	1	<b>Adapter</b> , CAN BUS oil pressure sensor	07-811V-01
NI	R121086A	1	<b>Harness</b> , TCP-to-TAC	07-811V-01
NI	RA121062D	1	<b>Harness</b> , fuel pump extension	07-811V-01

ECM and RELAYS - FIGURE 16

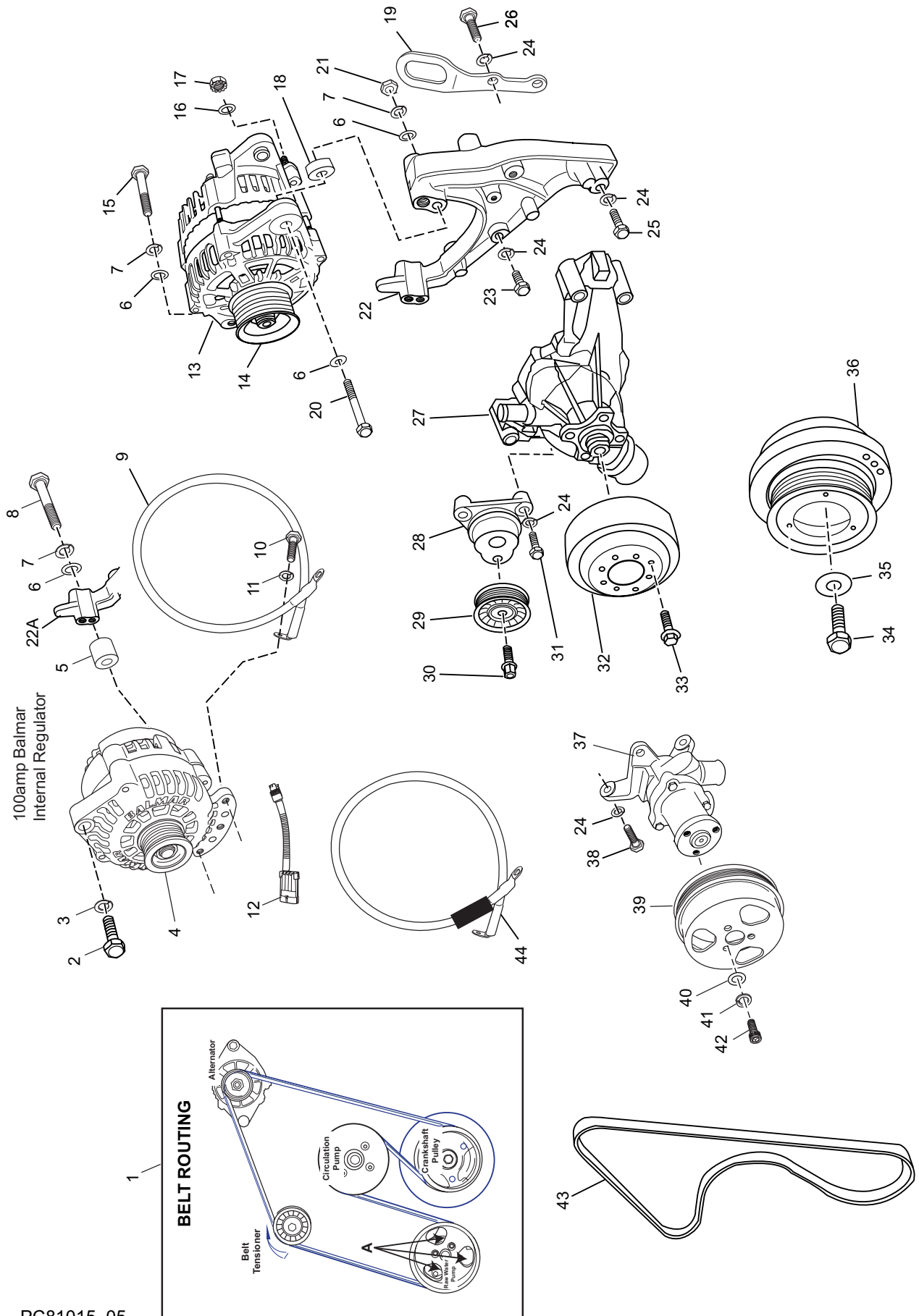


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## ECM and RELAYS - FIGURE 16

ITEM	PART NO.	QTY	DESCRIPTION	MODEL ID
1	R153006C	1	<b>Circuit Breaker (60 amp)</b>	
NI	R143176	1	<b>Decal</b> , Fuse Block	
NI	R143177	1	<b>Decal</b> , Main Circuit Breaker	
2	RS5084	2	<b>Bolt</b> , circuit breaker attaching	
3	R116021R cksum - 26491/ 26197	1	<b>Electronic Control Module (ECM)</b> 10-Pin Boat Harness Connector (STD - S/N 649999 thru present)	
3	R116021S cksum - 38073	1	<b>Electronic Control Module (ECM)</b> 10-Pin Boat Harness Connector (HO - S/N 649999 thru present)	
3	R116021X cksum - 48445	1	<b>Electronic Control Module (ECM)</b> 16-Pin Boat Harness Connector (HO MY 2006)	07-811V-01
4	RS0254	3	<b>Bolt</b> , ECM attaching	
5	92100000	1	<b>Washer</b> , ECM attaching	
6	RS1078	3	<b>Nut</b> , KEPS, ECM mounting	
7	R130011A	3	<b>Relay</b> , fuel pump, ignition, starter	
8	R126014	1	<b>Cover</b> , fuse holder	
9	R153017B	3	<b>Fuses</b> , 20 amp	
10	R090310	1	<b>Bracket</b> , ECM/Relay	
11	98443025	2	<b>Bolt</b> , ECM/Relay bracket attaching	
12	93940000	2	<b>Lockwasher</b> , ECM/Relay bracket attaching	

ACCESSORY DRIVE SYSTEM COMPONENTS - FIGURE 17

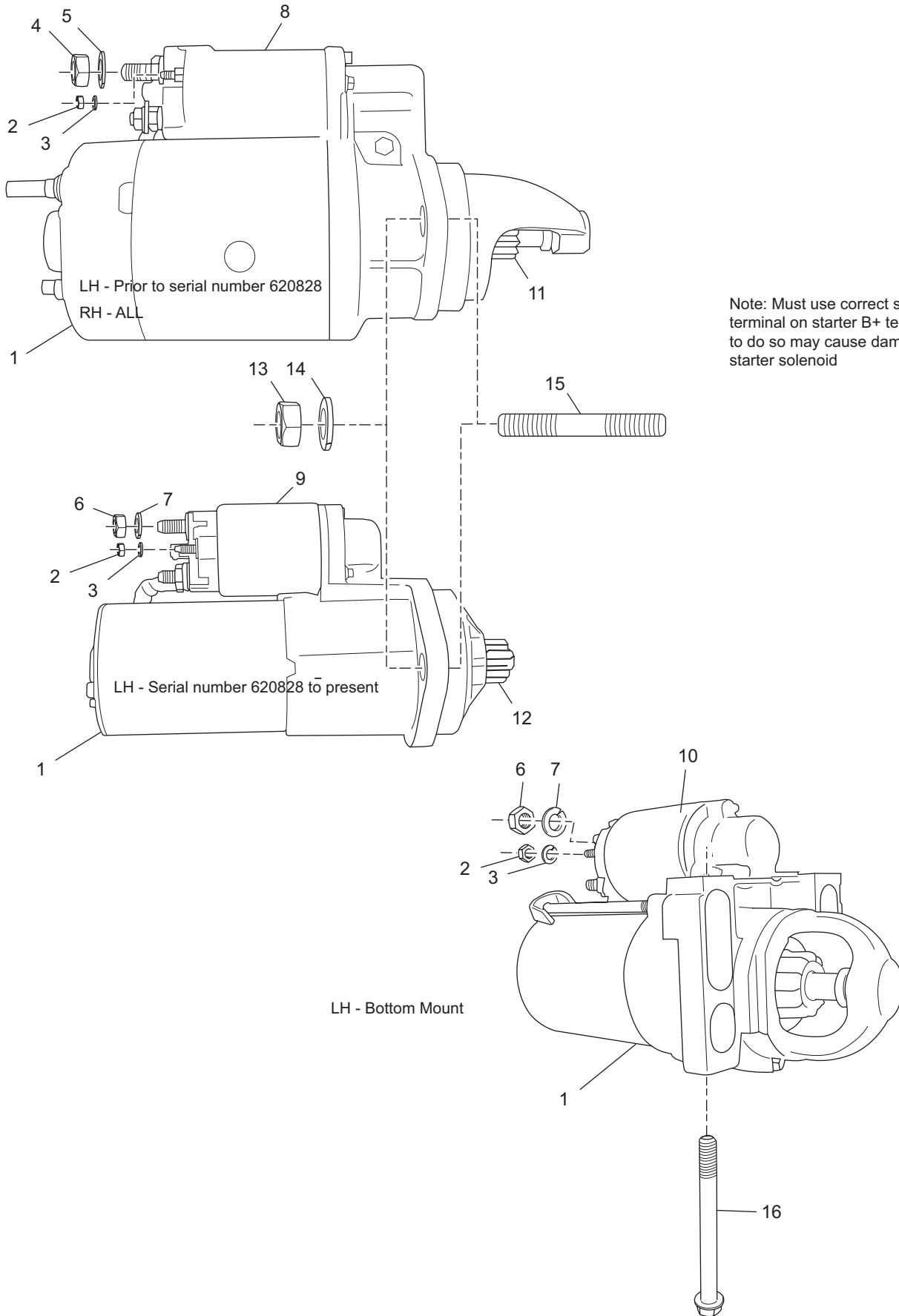


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## ACCESSORY DRIVE SYSTEM COMPONENTS - FIGURE 17

ITEM	PART NO.	QTY.	DESCRIPTION	MODEL ID
1	R143136A	1	<b>Decal</b> , belt routing	
2	90505200	1	<b>Bolt</b> , mounting (100 amp alternator only)	22-810-01, 22-810-02, 22-810-03, 22-810V-01
3	93500000	1	<b>Lockwasher</b> , mounting (100 amp alternator only)	22-810-01, 22-810-02, 22-810-03, 22-810V-01
4	RA097010	1	<b>Alternator Assembly</b> , (100 amp)	22-810-01, 22-810-02, 22-810-03, 22-810V-01
5	R062082	1	<b>Spacer</b> , mounting (100 amp alternator only)	22-810-01, 22-810-02, 22-810-03, 22-810V-01
6	92930000	4	<b>Washer</b> , alternator attaching bolt	
7	93930000	3	<b>Lockwasher</b> , alternator attaching bolt	
8	90205300	1	<b>Bolt</b> , mounting (100 amp alternator only)	22-810-01, 22-810-02, 22-810-03, 22-810V-01
9	R101015	1	<b>Cable</b> , ground	
10	RS0279	1	<b>Bolt</b> , cable attaching (100 amp alternator only)	22-810-01, 22-810-02, 22-810-03, 22-810V-01
11	RS2179	1	<b>Lockwasher</b> , cable attaching (100 amp alternator only)	22-810-01, 22-810-02, 22-810-03, 22-810V-01
12	R121081	1	<b>Harness</b> , jumper, 100 amp alternator	
13	RA097007	1	<b>Alternator Assembly</b> , (70 amp)	
14	R065043	1	<b>Pulley</b> , alternator, 70A	
15	90205300	1	<b>Bolt</b> , alternator attaching (70 amp)	
16	RS2672	2	<b>Washer</b> , cable attaching (70 amp)	
17	97220060	2	<b>Nut</b> , KEPS, cable attaching (70 amp)	
18	R062081	1	<b>Spacer</b> , alternator mounting (70 amp)	
19	R042009	1	<b>Bracket</b> , lift	
20	98333110	1	<b>Bolt</b> , alternator attaching (70 amp)	
21	97330000	1	<b>Nut</b> , alternator mounting	
22	R090225	1	<b>Bracket</b> , alternator mounting (70 amp)	
22A	R090225A	1	<b>Bracket</b> , alternator mounting (100 amp)	22-810-01, 22-810-02, 22-810-03, 22-810V-01
23	L00926	1	<b>Bolt</b> , alternator bracket attaching (short)	
24	93940000	9	<b>Lockwasher</b> , bracket attaching	
25	98449055	1	<b>Bolt</b> , alternator bracket attaching bolt (long)	
26	98443025	2	<b>Bolt</b> , lift bracket attaching	
27	RA057030	1	<b>Water Pump Assembly</b>	
28	RA068001	1	<b>Tensioner</b> , belt	
29	R065057	1	<b>Pulley</b> , belt tensioner	
30	TBD	1	<b>Bolt</b> , tensioner pulley attaching	
31	98449050	2	<b>Bolt</b> , tensioner mounting	
32	R065044	1	<b>Pulley</b> , circulation pump	
33	TBD	4	<b>Bolt</b> , circ. pump pulley attaching	
34	TBD	1	<b>Bolt</b> , crankshaft balancer	
35	TBD	1	<b>Washer</b> , crankshaft balancer	
36	R064015	1	<b>Balancer</b> , crankshaft	
37	RA057035	1	<b>Raw Water Pump Assembly</b>	
38	98443030	3	<b>Bolt</b> , raw water pump mounting	
39	R065056	1	<b>Pulley</b> , raw water pump	
40	92934000	3	<b>Washer</b> , pulley mounting	
41	93934000	3	<b>Lockwasher</b> , pulley mounting	
42	99335016	3	<b>Bolt</b> , pulley pulley attaching	
43	R066024A	1	<b>Belt</b> , accessory drive	
44	R153018A	1	<b>Cable</b> , 100A Fuse Link, Starter to Circuit Breaker	

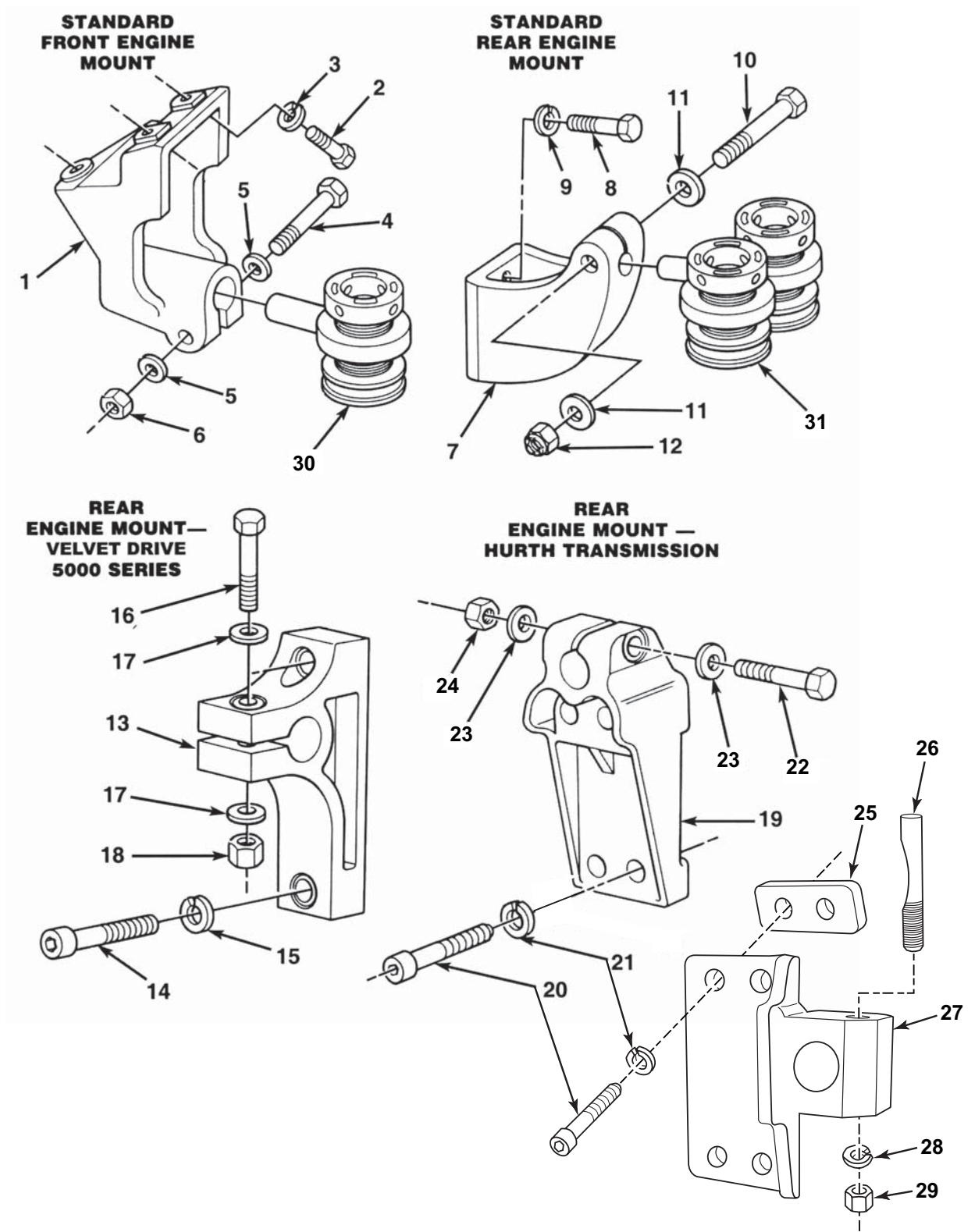
STARTER ASSEMBLY COMPONENTS - FIGURE 18



## STARTER ASSEMBLY COMPONENTS - FIGURE 18

ITEM	PART NO.	QTY.	DESCRIPTION	QUANTITY
1	RA122009	1	<b>Starter Motor Assembly</b> (LH rotation)	
1	RA122015	1	<b>Starter Motor Assembly</b> (LH, bottom mount)	25-811-02, 25-810-02
2	RS7036	1	<b>Nut</b> , solenoid terminal	
3	93003000	1	<b>Lockwasher</b> , solenoid terminal	
4	RS7019	1	<b>Nut</b> , solenoid terminal	
5	RS7081	1	<b>Lockwasher</b> , solenoid terminal	
6	RS7018	1	<b>Nut</b> , solenoid terminal	
7	RS7080	1	<b>Lockwasher</b> , solenoid terminal	
8	RU0050	1	<b>Solenoid Assembly</b> , starter	
9	RU0050B	1	<b>Solenoid Assembly</b> , starter	
10	RU0050A	1	<b>Solenoid</b> , starter (bottom mount)	25-811-02, 25-810-02
11	RU0051	1	<b>Drive Assembly</b> , clutch (LH)	
12	TBD	1	<b>Drive</b> , starter	
13	RS1029	2	<b>Nut</b> , starter mounting	
14	RS2181	2	<b>Lockwasher</b> , starter mounting	
15	R031018	2	<b>Stud</b> , starter mounting	
16	R009203	2	<b>Bolt</b> , starter mounting	25-811-02, 25-810-02

ENGINE and TRANSMISSION MOUNTS - FIGURE 19



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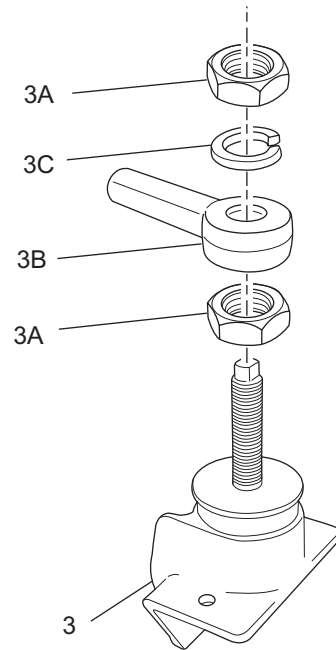
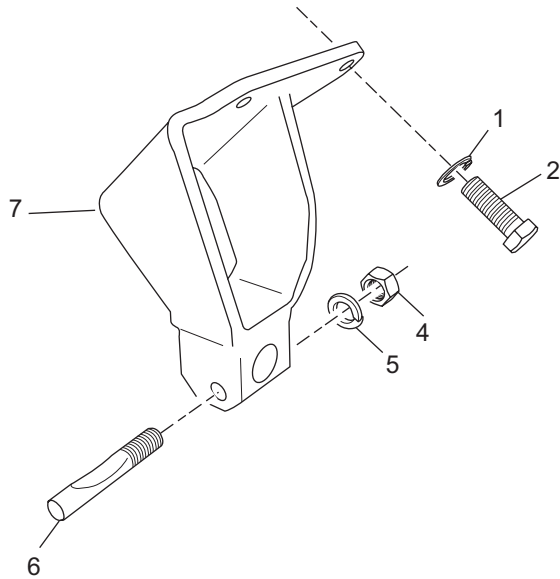


## ENGINE and TRANSMISSION MOUNTS - FIGURE 19

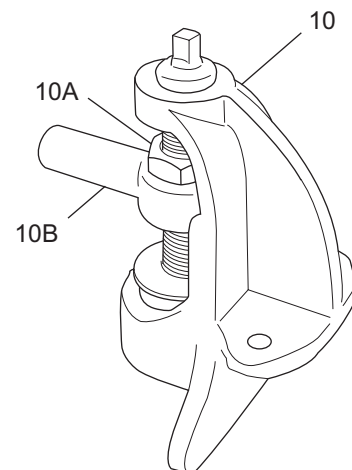
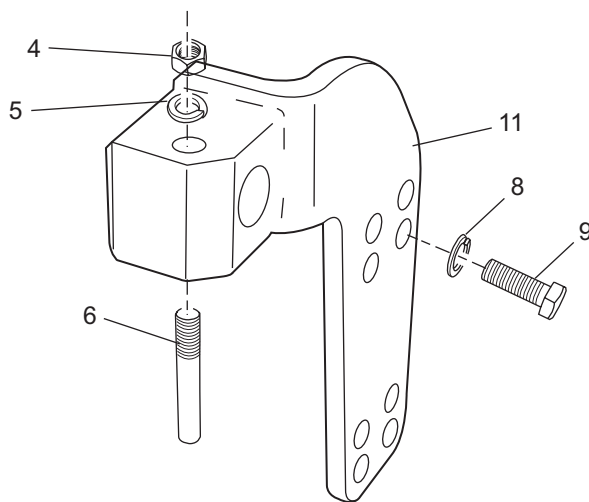
ITEM	PART NO.	QTY.	DESCRIPTION	QUANTITY
			<b>**Standard Front Engine Mount**</b>	
1	97938	2	<b>Bracket</b> , engine mounting (front)	
2	99443030	4	<b>Bolt</b> , socket head (30 mm)	
2	98446030	2	<b>Bolt</b> , hex head (30 mm)	
3	93940000	6	<b>Lockwasher</b> , bracket mounting bolt	
4	90318225	2	<b>Bolt</b> , trunnion shaft (2 1/4")	
5	92300000	4	<b>Washer</b> , trunnion bolt	
6	95310300	2	<b>Nut</b> , trunnion bolt - locking	
			<b>**Standard Rear Engine Mount**</b>	
7	97917	2	<b>Bracket</b> , engine mounting (Rear)	
8	RS0328	4	<b>Bolt</b> , bracket to transmission (1 1/4")	
9	RS2181	4	<b>Lockwasher</b> , bracket mounting bolt	
10	90318325	2	<b>Bolt</b> , trunnion shaft (3 1/4")	
11	92300000	4	<b>Washer</b> , trunnion bolt	
12	95310300	2	<b>Nut</b> , trunnion bolt - locking	
			<b>**Rear Engine Mount - Velvet Drive 5000 Series**</b>	
13	98224	1	<b>Bracket</b> , transmission mounting (Starboard)	
13	98225	1	<b>Bracket</b> , transmission mounting (Port)	
14	RS6336	4	<b>Bolt</b> , bracket to transmission (12 mm x 60 mm)	
15	RS7071	4	<b>Lockwasher</b> (12 mm)	
16	90318325	2	<b>Bolt</b> , trunnion shaft (3 1/4")	
17	92300000	4	<b>Washer</b> , trunnion bolt	
18	95310300	2	<b>Nut</b> , trunnion bolt - locking	
			<b>**Rear Engine Mount - Hurth Transmission**</b>	
19	98077	2	<b>Bracket</b> , engine mounting (rear)	
20	RS6331	4	<b>Bolt</b> , bracket to transmission (12 mm x 35 mm)	
20	RS6336	4	<b>Bolt</b> , bracket to transmission (12 mm x 60 mm)	
21	RS7071	8	<b>Lockwasher</b> (12 mm)	
22	90318325	2	<b>Bolt</b> , trunnion shaft (3 1/4")	
23	92300000	4	<b>Washer</b> , trunnion bolt	
24	95310300	2	<b>Nut</b> , trunnion bolt - locking	
25	R109049	2	<b>Spacer</b> , bracket to transmission	
26	R095020	2	<b>Bolt</b> , trunnion shaft	
27	R090217	1	<b>Bracket</b> , engine mounting (port)	
27	R090218	1	<b>Bracket</b> , engine mounting (starboard)	
28	RS2181	2	<b>Lockwasher</b> , trunnion bolt	
29	RS1529	2	<b>Nut</b> , trunnion bolt - locking	
			<b>**Mount Supports**</b>	
30	97926	2	<b>Mount</b> , engine support (single front)	
31	97905	2	<b>Mount</b> , engine support (dual rear)	

MODEL 07-811V-01 ENGINE and TRANSMISSION MOUNTS - FIGURE 20

OPTIONAL FRONT MOUNT



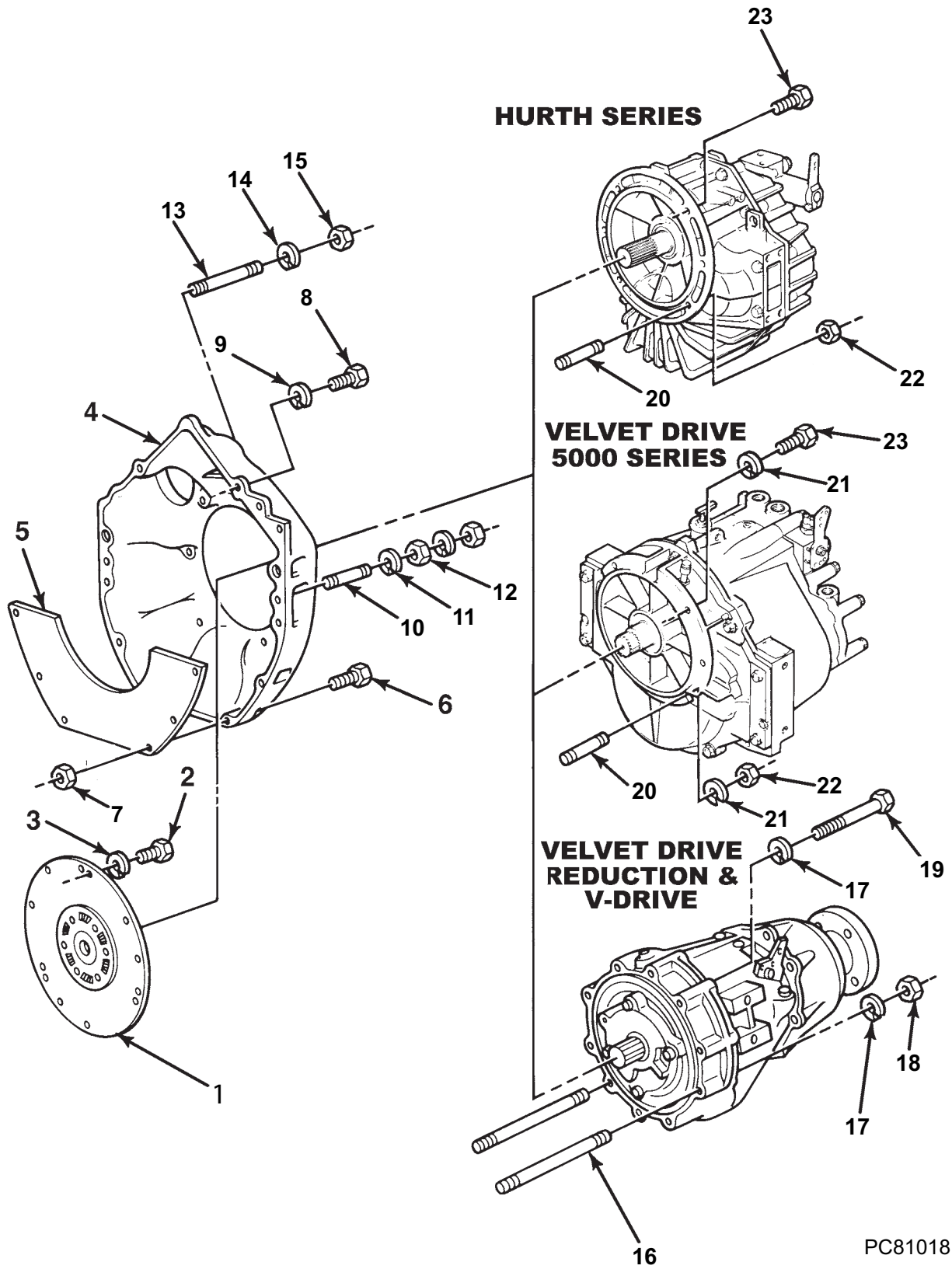
OPTIONAL REAR MOUNT - HURTH GEAR



## MODEL 07-811V-01 ENGINE and TRANSMISSION MOUNTS - FIGURE 20

ITEM	PART NO.	QTY.	DESCRIPTION	QUANTITY
1	RS2180	6	<b>Lockwasher</b> , bracket mounting bolt	07-811V-01
2	RS0305	4	<b>Bolt</b> , socket head	07-811V-01
3	RC091001	2	<b>Trunnion Assembly</b>	07-811V-01
3A	RS1075	4	<b>Nut</b> , adjustment and lock	07-811V-01
3B	R091001	2	<b>Trunnion, long</b>	07-811V-01
3C	RS2186	2	<b>Lockwasher</b> , adjusting nut	07-811V-01
4	RS1529	2	<b>Nut</b> , trunnion bolt - locking	07-811V-01
5	RS2181	2	<b>Lockwasher</b> , trunnion bolt	07-811V-01
6	R095020	2	<b>Bolt</b> , trunnion shaft	07-811V-01
7	R090330	1	<b>Bracket</b> , engine mounting (front, port)	07-811V-01
7	R090331	1	<b>Bracket</b> , engine mounting (front, starboard)	07-811V-01
8	RS7071	8	<b>Lockwasher</b> (12 mm)	07-811V-01
9	RS6336	4	<b>Bolt</b> , bracket to transmission (12 mm x 60 mm)	07-811V-01
10	RA092011	2	<b>Trunnion Assembly, tall</b>	07-811V-01
10A	R091003	2	<b>Trunnion, 2.5"</b>	07-811V-01
10B	RS1075	2	<b>Nut</b> , adjustment and lock	07-811V-01
11	R090328	1	<b>Bracket</b> , engine mounting (rear - port)	07-811V-01
11	R090329	1	<b>Bracket</b> , engine mounting (rear - starboard)	07-811V-01

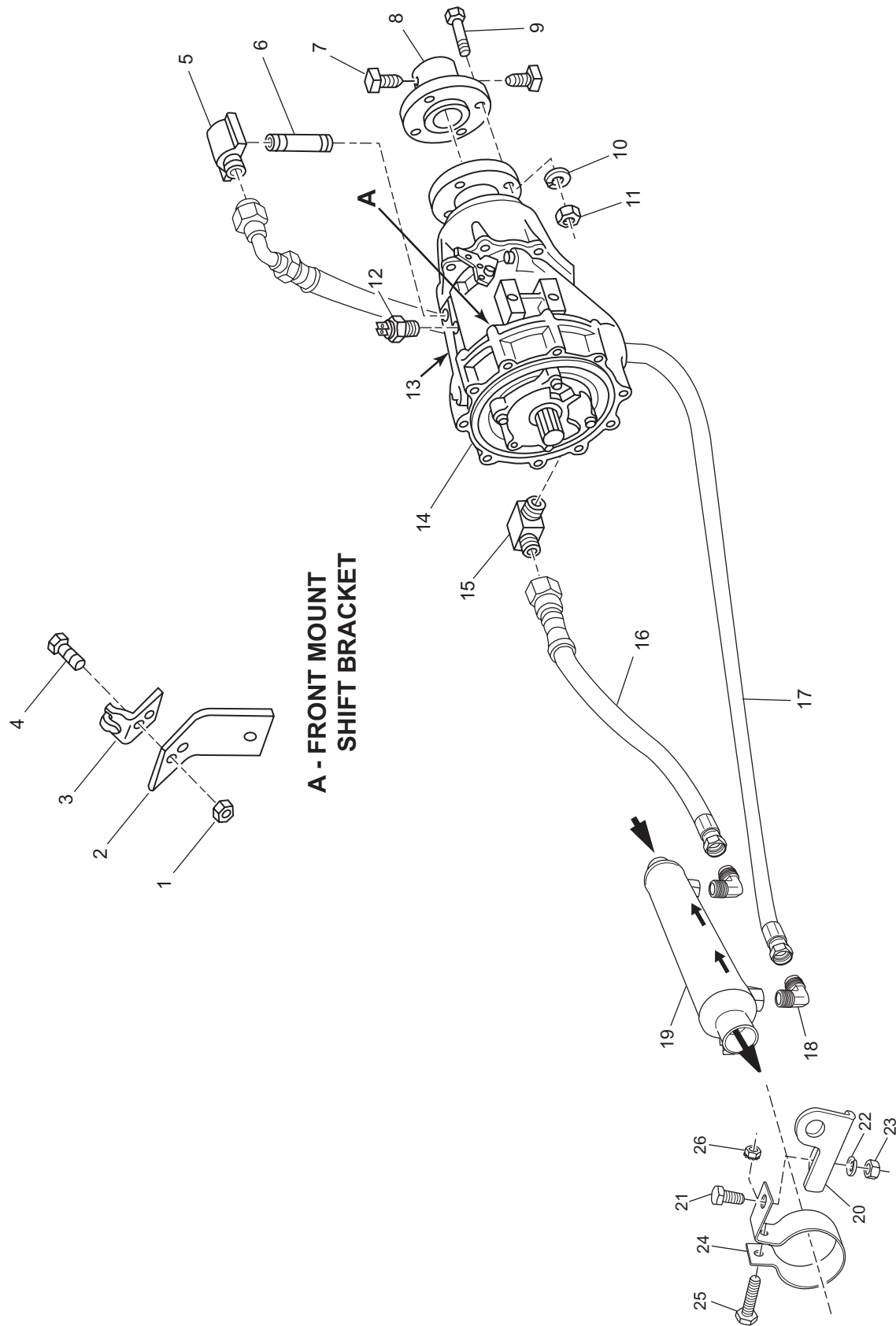
BELL HOUSING ASSEMBLY - FIGURE 21



BELL HOUSING ASSEMBLY - FIGURE 21

ITEM	PART NO.	QTY.	DESCRIPTION	QUANTITY
1	R140018	1	<b>Drive Damper Assembly</b> , (Hurth)	
1	98511	1	<b>Drive Damper Assembly</b> , (Standard Velvet Drive)	
2	98446030	6	<b>Bolt</b> , damper to flywheel (1")	
3	93940000	6	<b>Lockwasher</b> , damper bolt	
4	R142014	1	<b>Bellhousing</b> , flywheel	
5	R019008	1	<b>Cover</b> , bellhousing (use w/top mount starter)	
5	R019008A	1	<b>Cover</b> , bellhousing (use w/bottom mount starter)	25-811-02, 25-810-02
NI	R019010	1	<b>Cover</b> , top mount starter (used w/R019008A)	25-811-02, 25-810-02
NI	RS0327	2	<b>Bolt</b> , dust cover attaching	25-811-02, 25-810-02
NI	RS2181	2	<b>Lockwasher</b> , dust cover attaching	25-811-02, 25-810-02
6	RS0256	5	<b>Bolt</b> , cover to bellhousing (1")	
6	90105125	1	<b>Bolt</b> , cover to bellhousing (1 1/4")	
7	RS1078	6	<b>Nut</b> , cover bolt	
8	98443050	2	<b>Bolt</b> , bellhousing to block	
8	99443030	1	<b>Bolt</b> , SHCS (behind starter)	
9	93940000	2	<b>Lockwasher</b> , bellhousing bolt	
10	R031034	2	<b>Stud</b> , bellhousing mounting	
11	93940000	4	<b>Lockwasher</b> , mounting stud	
12	97440000	4	<b>Nut</b> , mounting stud	
13	R031018	2	<b>Stud</b> , starter mounting (1 5/8")	
14	RS2181	2	<b>Lockwasher</b> , starter mounting stud	
15	RS1029	2	<b>Nut</b> , starter mounting stud	
			<b>**Velvet Drive Reduction &amp; "V"-Drive**</b>	
16	96541	2	<b>Stud</b> , transmission mounting (4")	
17	RS2181	6	<b>Lockwasher</b> , transmission mounting	
18	RS1029	2	<b>Nut</b> , transmission mounting stud	
19	RS0337	4	<b>Bolt</b> , transmission mounting	
			<b>**Velvet Drive 5000 &amp; Hurth Gears**</b>	
20	R031018	2	<b>Stud</b> , transmission mounting (1 5/8")	
21	RS2180	6	<b>Lockwasher</b> , transmission mounting	
22	RS1029	2	<b>Nut</b> , transmission mounting stud	
23	RS0329	4	<b>Bolt</b> , transmission mounting	

TRANSMISSION AND RELATED COMPONENTS (VELVET DRIVE IN-LINE) - FIGURE 22

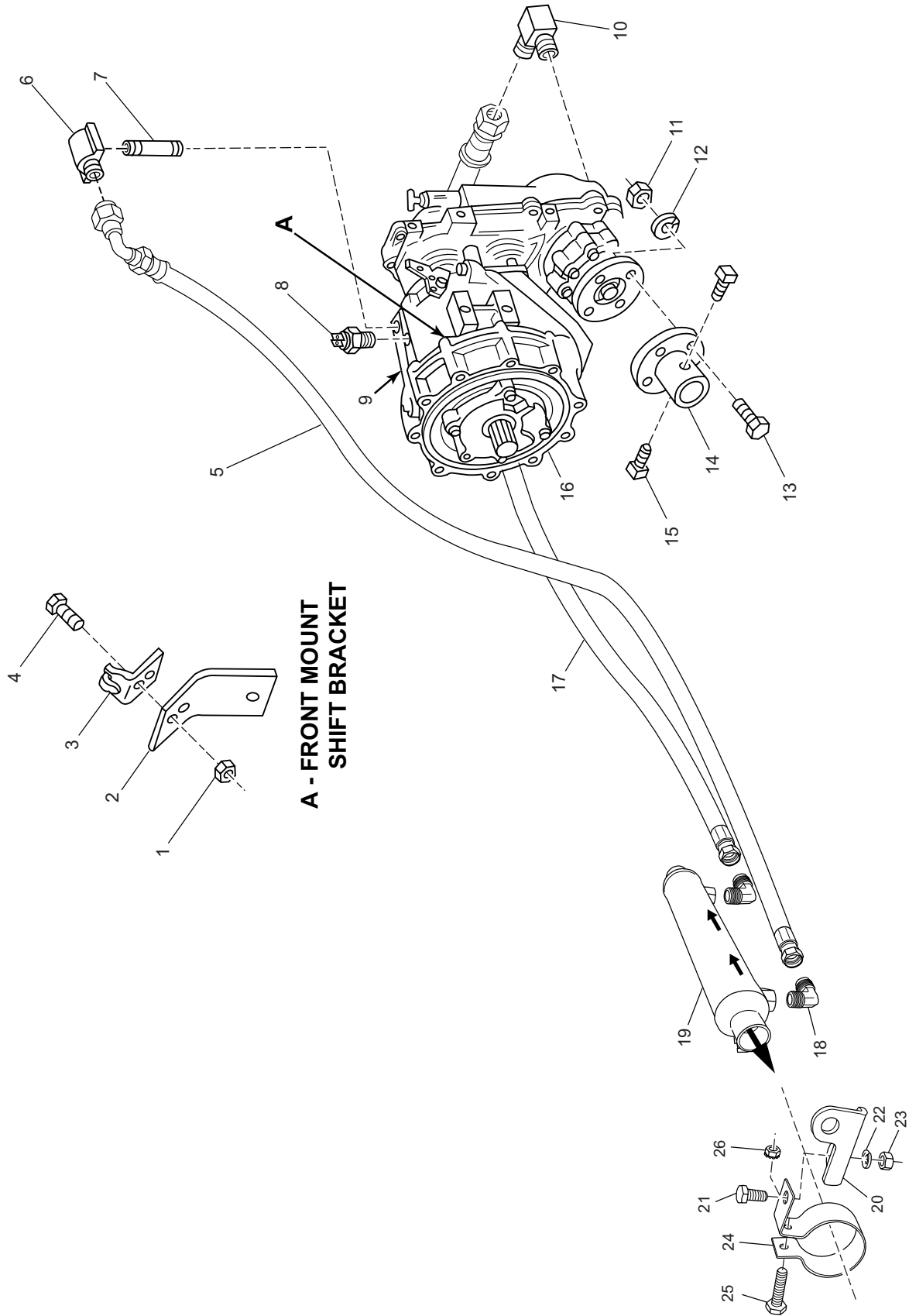


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## TRANSMISSION AND RELATED COMPONENTS (VELVET DRIVE IN-LINE) - FIGURE 22

ITEM	PART NO.	QTY.	DESCRIPTION	QUANTITY
1	RS2055	2	<b>Nut</b> , attaching bolt	
2	96341	1	<b>Shift Bracket</b> (front mount)	
3	R090086	1	<b>Cable Clip</b> , single cable	
N.I.	22232	OPT	<b>Cable Clip</b> , dual cable clip (not shown)	
4	RS5122	2	<b>Bolt</b> , clip attaching (1/2")	
5	R024008	1	<b>Elbow</b> , hose - transmission (90 degree)	
6	RS4674	1	<b>Nipple</b> , pipe (3")	
7	2000090	2	<b>Screw</b> , set - coupler	
8	R148001	OPT	<b>Coupler</b> , prop shaft (1" shaft)	
8	R148002	OPT	<b>Coupler</b> , prop shaft (1 1/8" shaft)	
8	R148003	OPT	<b>Coupler</b> , prop shaft (1 1/4" shaft)	
8	R148004	OPT	<b>Coupler</b> , prop shaft (1 3/8" shaft)	
8	R148005	OPT	<b>Coupler</b> , prop shaft (1 1/2" shaft)	
8	R148007	OPT	<b>Coupler</b> , prop shaft (1 3/4" shaft)	
8	R148008	OPT	<b>Coupler</b> , prop shaft (2" shaft)	
9	22136	4	<b>Bolt</b> , coupling (1 1/2")	
10	RS2181	4	<b>Lockwasher</b> , coupling bolt	
11	RS1529	4	<b>Nut</b> , coupling bolt	
12	R020037	1	<b>Sender</b> , temperature alarm	
13	R153002	1	<b>Switch Kit</b> , neutral start (not shown)	
13A	25542	1	<b>Switch &amp; O-Ring Assembly</b> (not shown)	
14	RA157003	1	<b>Transmission</b> (1:1 Direct Drive)	
14	RA157004	1	<b>Transmission</b> (1.52:1 Reduction)	
14	RA157004A	1	<b>Transmission</b> (1.88:1 Reduction)	
14	RA157004D	1	<b>Transmission</b> (2.57:1 Reduction)	
14	RA157004E	1	<b>Transmission</b> (2.91:1 Reduction)	
15	R024010	1	<b>Elbow</b> , hose - transmission (90 degree)	
16	RA045007P	1	<b>Hose Assembly</b> , transmission to cooler (45")	
17	RA045007T	1	<b>Hose Assembly</b> , transmission to cooler (46")	
18	R024010	2	<b>Fitting</b> , 90 degree	
19	R147006	1	<b>Cooler Assembly</b> , transmission oil	
20	R090013A	1	<b>Bracket</b> , oil cooler attaching	
21	RS0302	1	<b>Bolt</b> , oil cooler attaching	
22	RS2180	1	<b>Lockwasher</b> , oil cooler attaching	
23	RS2058	1	<b>Nut</b> , oil cooler attaching	
24	R090010	1	<b>Clamp</b> , oil cooler mounting	
25	RS0256	1	<b>Bolt</b> , oil cooler clamp	
26	RS1028	1	<b>Nut</b> , oil cooler clamp	

TRANSMISSION AND RELATED COMPONENTS (VELVET DRIVE "V"-DRIVE) - FIGURE 23



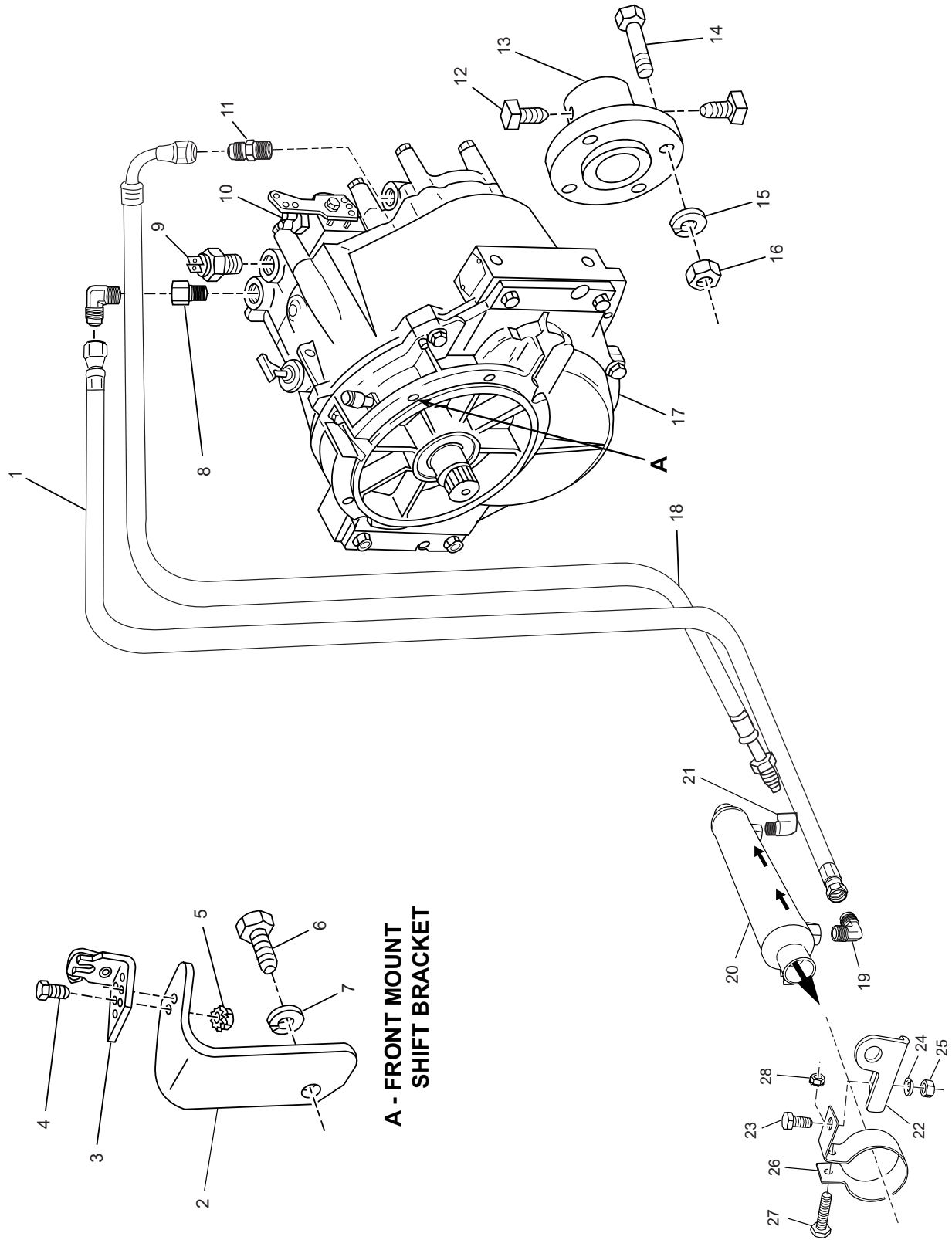
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## TRANSMISSION AND RELATED COMPONENTS (VELVET DRIVE "V"-DRIVE) - FIGURE 23

ITEM	PART NO.	QTY.	DESCRIPTION	QUANTITY
1	RS2055	2	<b>Nut</b> , attaching bolt	
2	96341	1	<b>Shift Bracket</b> (front mount)	
3	R090086	1	<b>Cable Clip</b> , single cable	
3	22232	OPT	<b>Cable Clip</b> , dual cable clip (not shown)	
4	RS5122	2	<b>Bolt</b> , clip attaching (1/2")	
6	RA045007T	1	<b>Hose Assembly</b> , transmission to cooler (46")	
6	R024008	1	<b>Elbow</b> , hose - transmission (90 degree)	
7	RS4674	1	<b>Nipple</b> , pipe (3")	
8	R020037	1	<b>Sender</b> , temperature alarm	
9	R153002	1	<b>Switch Kit</b> , neutral start (not shown)	
N.I.	25542	1	<b>Switch &amp; O-Ring Assembly</b> (not shown)	
10	R024010	1	<b>Elbow</b> , hose - transmission (90 degree)	
11	RS1529	4	<b>Nut</b> , coupling bolt	
12	RS2181	4	<b>Lockwasher</b> , coupling bolt	
13	22136	4	<b>Bolt</b> , coupling (1 1/2")	
14	R148001	OPT	<b>Coupler</b> , prop shaft (1" shaft)	
14	R148002	OPT	<b>Coupler</b> , prop shaft (1 1/8" shaft)	
14	R148003	OPT	<b>Coupler</b> , prop shaft (1 1/4" shaft)	
14	R148004	OPT	<b>Coupler</b> , prop shaft (1 3/8" shaft)	
14	R148005	OPT	<b>Coupler</b> , prop shaft (1 1/2" shaft)	
14	R148007	OPT	<b>Coupler</b> , prop shaft (1 3/4" shaft)	
14	R148008	OPT	<b>Coupler</b> , prop shaft (2" shaft)	
15	2000090	2	<b>Screw</b> , set - coupler	
16	RA156002B	1	<b>Transmission</b> (1.51:1 Reduction)	
16	RA156002D	1	<b>Transmission</b> (1.99:1 Reduction)	
16	RA156002E	1	<b>Transmission</b> (2.49:1 Reduction)	
17	RA045007P	1	<b>Hose Assembly</b> , transmission to cooler (60")	
18	R024010	2	<b>Fitting</b> , 90 degree	
19	R147006	1	<b>Cooler Assembly</b> , transmission oil	
20	R090013A	1	<b>Bracket</b> , oil cooler attaching	
21	RS0302	1	<b>Bolt</b> , oil cooler attaching	
22	RS2180	1	<b>Lockwasher</b> , oil cooler attaching	
23	RS2058	1	<b>Nut</b> , oil cooler attaching	
24	R090010	1	<b>Clamp</b> , oil cooler mounting	
25	RS0256	1	<b>Bolt</b> , oil cooler clamp	
26	RS1028	1	<b>Nut</b> , oil cooler clamp	

TRANSMISSION AND RELATED COMPONENTS (VELVET DRIVE 5000) - FIGURE 24

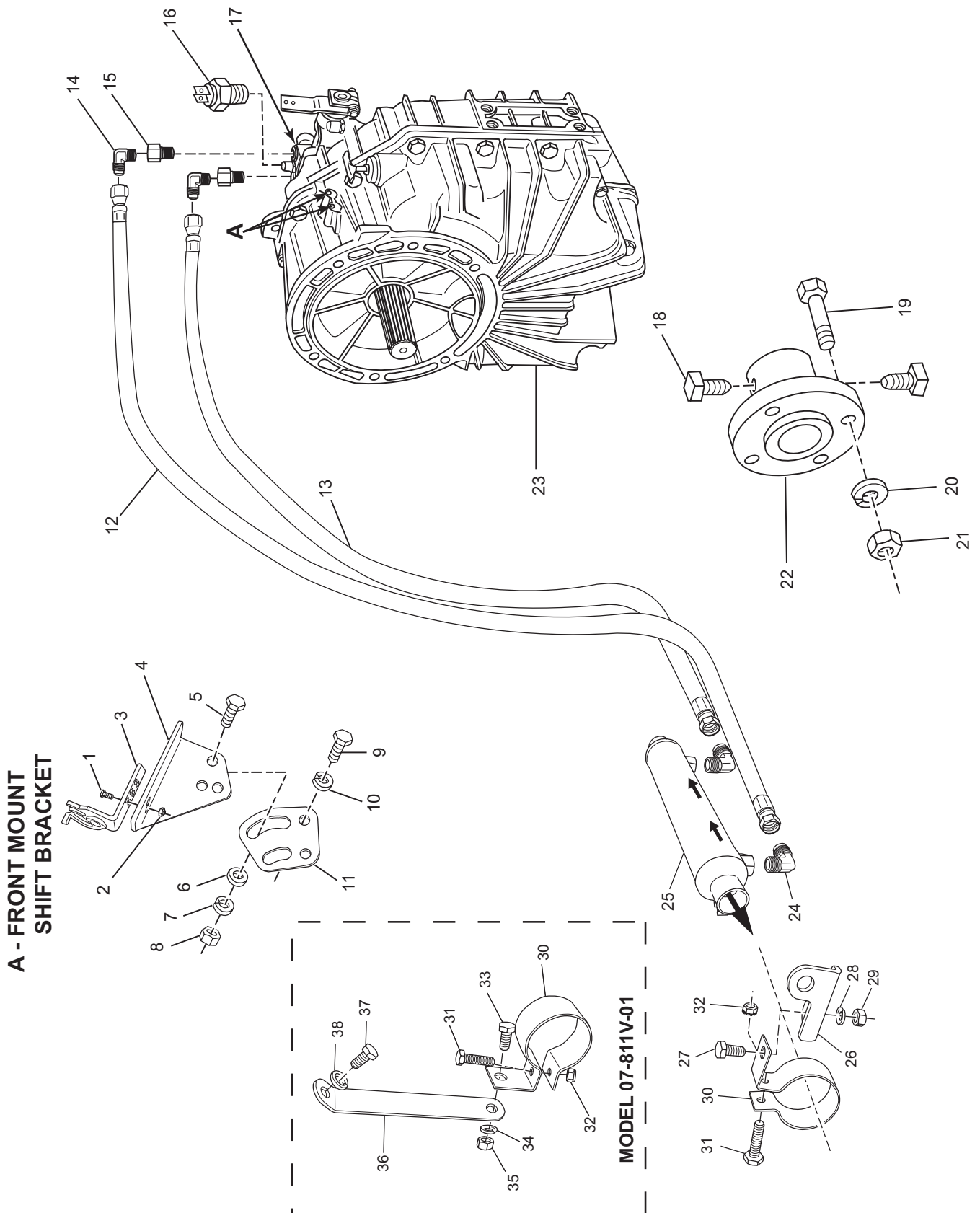


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## TRANSMISSION AND RELATED COMPONENTS (VELVET DRIVE 5000) - FIGURE 24

ITEM	PART NO.	QTY.	DESCRIPTION	QUANTITY
1	RA045007T	1	<b>Hose Assembly</b> , transmission to cooler	
2	98227	1	<b>Shift Bracket</b> , (front entry)	
3	R090086	1	<b>Cable Clip</b> , single cable	
3	22232	OPT	<b>Cable Clip</b> , dual cable clip (not shown)	
4	RS5122	2	<b>Bolt</b> , clip attaching (1/2")	
5	RS2055	2	<b>Nut</b> , attaching bolt	
6	RS0329	2	<b>Bolt</b> , shift bracket attaching	
7	RS2180	2	<b>Washer</b> , shift bracket attaching bolt	
8	R024196	1	<b>Fitting</b> , adapter	
9	R020037	1	<b>Sender</b> , temperature alarm	
10	25542	1	<b>Switch &amp; O-Ring Assembly</b> (not shown)	
11	30603	1	<b>Fitting</b> , adapter	
12	2000090	2	<b>Screw</b> , set - coupler	
13	R148001	OPT	<b>Coupler</b> , prop shaft (1" shaft)	
13	R148002	OPT	<b>Coupler</b> , prop shaft (1 1/8" shaft)	
13	R148003	OPT	<b>Coupler</b> , prop shaft (1 1/4" shaft)	
13	R148004	OPT	<b>Coupler</b> , prop shaft (1 3/8" shaft)	
13	R148005	OPT	<b>Coupler</b> , prop shaft (1 1/2" shaft)	
13	R148007	OPT	<b>Coupler</b> , prop shaft (1 3/4" shaft)	
13	R148008	OPT	<b>Coupler</b> , prop shaft (2" shaft)	
14	22136	4	<b>Bolt</b> , coupling (1 1/2")	
15	RS2181	4	<b>Lockwasher</b> , coupling bolt	
16	RS1529	4	<b>Nut</b> , coupling bolt	
17	RA157020B	1	<b>Transmission</b> (1.50:1 Reduction) Down Angle	
17	RA157020C	1	<b>Transmission</b> (2:1 Reduction) Down Angle	
17	RA157020D	1	<b>Transmission</b> (2.45:1 Reduction) Down Angle	
17	RA157020E	1	<b>Transmission</b> (2.80:1 Reduction) Down Angle	
17	RA156008	1	<b>Transmission</b> (1.25:1 Reduction) V-Drive	
17	RA156008A	1	<b>Transmission</b> (1.50:1 Reduction) V-Drive	
17	RA156008B	1	<b>Transmission</b> (2:1 Reduction) V-Drive	
17	RA156008C	1	<b>Transmission</b> (2.50:1 Reduction) V-Drive	
18	18203	1	<b>Hose Assembly</b> , cooler to transmission	
19	R024010	2	<b>Fitting</b> , 90 degree	
20	R147006	1	<b>Cooler Assembly</b> , transmission oil	
21	137425	1	<b>Fitting</b> , 90 degree	
22	R090013A	1	<b>Bracket</b> , oil cooler attaching	
23	RS0302	1	<b>Bolt</b> , oil cooler attaching	
24	RS2180	1	<b>Lockwasher</b> , oil cooler attaching	
25	RS2058	1	<b>Nut</b> , oil cooler attaching	
26	R090010	1	<b>Clamp</b> , oil cooler mounting	
27	RS0256	1	<b>Bolt</b> , oil cooler clamp	
28	RS1028	1	<b>Nut</b> , oil cooler clamp	

TRANSMISSION AND RELATED COMPONENTS (HURTH GEAR) - FIGURE 25



PC81022\_06

TRANSMISSION AND RELATED COMPONENTS (HURTH GEAR) - FIGURE 25

ITEM	PART NO.	QTY.	DESCRIPTION	QUANTITY
1	RS5122	2	<b>Bolt</b> , cable clip attaching	
2	RS2055	2	<b>Nut</b> , cable clip attaching bolt	
3	R090086	1	<b>Cable Clip</b> , single cable	
3	22232	OPT	<b>Cable Clip</b> , dual cable clip (not shown)	
4	R090202	1	<b>Shift Bracket</b> , cable clip attaching	
5	RS0282	2	<b>Bolt</b> , shift bracket attaching	
6	RS2674	2	<b>Washer</b> , shift bracket attaching bolt	
7	RS2179	2	<b>Lockwasher</b> , attaching bolt	
8	RS1027	2	<b>Nut</b> , shift bracket attaching bolt	
9	RS6531	2	<b>Bolt</b> , shift bracket attaching	
10	93930000	2	<b>Lockwasher</b> , shift bracket attaching bolt	
11	R090235	1	<b>Bracket</b> , shift	
12	RA045007H	1	<b>Hose Assembly</b> , transmission to cooler	
13	RA045007N	1	<b>Hose Assembly</b> , cooler to transmission	
14	R024010	2	<b>Fitting</b> , 90 degree	
15	R024196	2	<b>Fitting</b> , adapter	
16	R020037	1	<b>Sender</b> , temperature alarm	
17	25542	1	<b>Switch &amp; O-Ring Assembly</b> (not shown)	
18	2000090	2	<b>Screw</b> , set - coupler	
19	90418138	4	<b>Bolt</b> , coupling (1 3/8")	
20	RS2181	4	<b>Lockwasher</b> , coupling bolt	
21	RS1529	4	<b>Nut</b> , coupling bolt	
22	R148001	OPT	<b>Coupler</b> , prop shaft (1" shaft)	
22	R148002	OPT	<b>Coupler</b> , prop shaft (1 1/8" shaft)	
22	R148003	OPT	<b>Coupler</b> , prop shaft (1 1/4" shaft)	
22	R148004	OPT	<b>Coupler</b> , prop shaft (1 3/8" shaft)	
22	R148005	OPT	<b>Coupler</b> , prop shaft (1 1/2" shaft)	
22	R148007	OPT	<b>Coupler</b> , prop shaft (1 3/4" shaft)	
22	R148008	OPT	<b>Coupler</b> , prop shaft (2" shaft)	
23	RA157022	1	<b>Transmission 630A</b> (1.22:1 Reduction)	8° Down Angle
23	RA157022A	1	<b>Transmission 630A</b> (1.55:1 Reduction)	
23	RA157022B	1	<b>Transmission 630A</b> (2.00:1 Reduction)	
23	RA157022C	1	<b>Transmission 630A</b> (2.50:1 Reduction)	
23	RA157022D	1	<b>Transmission 630A</b> (2.70:1 Reduction)	
23	RA157023F	1	<b>Transmission 800A</b> (2.85:1 Reduction)	V-Drive
23	RA156009	1	<b>Transmission 630V</b> (1.29:1 Reduction)	
23	RA156009A	1	<b>Transmission 630V</b> (1.50:1 Reduction)	
23	RA156009B	1	<b>Transmission 630V</b> (2.00:1 Reduction)	
23	RA156009C	1	<b>Transmission 630V</b> (2.50:1 Reduction)	
24	R024010	2	<b>Fitting</b> , 90 degree	
25	R147006	1	<b>Cooler Assembly</b> , transmission oil	
26	R090013A	1	<b>Bracket</b> , oil cooler attaching	
27	RS0302	1	<b>Bolt</b> , oil cooler attaching	
28	RS2180	1	<b>Lockwasher</b> , oil cooler attaching	
29	RS2058	1	<b>Nut</b> , oil cooler attaching	
30	R090010	1	<b>Clamp</b> , oil cooler mounting	
31	RS0256	1	<b>Bolt</b> , oil cooler clamp	
32	RS1028	1	<b>Nut</b> , oil cooler clamp	
33	90318275	1	<b>Bolt</b> , oil cooler clamp to bracket attaching	07-811V-01
34	9330000	1	<b>Lockwasher</b> , oil cooler clamp to bracket attaching	07-811V-01
35	95310300	1	<b>Nut</b> , oil cooler clamp to bracket attaching	07-811V-01
36	R090233A	1	<b>Bracket</b> , oil cooler attaching	07-811V-01
37	98443025	1	<b>Bolt</b> , bracket attaching	07-811V-01
38	93940000	1	<b>Lockwasher</b> , bracket attaching	07-811V-01
NI	RP077011	AR	<b>Kit</b> , transmission oil filter (ZF)	