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FIGURE A

1A	6500101	Long Block Complete, 6.5. Comes w/ cylinder heads, valve covers, oil pump, steel oil pan, pistons for turbocharger	1
	6252001	6.5L Oil Filter Bypass Valve (Not Shown)	1
	6252002	6.5L Lube Cooler Bypass Valve (Not Shown)	1
	6252003	Plug, Req'd for Above (Not Shown)	1
	2340377	Overhaul Gasket Kit, 6.5, (Not Shown)	1
	6500503	Cylinder Head Gasket, 6.5 (Not Shown)	2
2A	6250102	Connector	1
3A	6250103	Oil Pump Drive Assembly	1
4A	6250104	Oil Pump Drive Gasket	1
5A	6250105	Oil Pump Drive Clamp	1
6A	6250106	Bolt, 10mm x 1.5 x 25mm	1
7A	6250107	Front End Cover Pin (Not Shown)	2
	6250108	Pin Dowel, 5/8x1 3/16" Flywheel Housing Locator	2
7.1A	6250127	Block Heater (all 97 MY & later) (Not Shown)	1
	6250117	Block Heater Cord (all 97 MY & later) (Not Shown)	1
	6250120	Plug, Freeze - Engine Block (Not Shown)	5
8A	2335515	Oil Pan	1
	6500405	Seal, Square for Groove in Oil Pan	5ft
	6250405	Oil Pan Gasket (Not Shown)	1
	2338464	Freeze Plug, 9/16" (Not Shown)	1
9A	6500119	Oil Pan Seal, 6.5	1
	6200119	Oil Pan Seal, 6.2	1
10A	2338412	SS Hex Head Capscrew, 6mm x 1 x 25mm	22
	2338415	Flatwasher, SS, 6mm (Not Shown)	22
11A	2338413	SS Hex Head Capscrew, 8mm x 1.25 x 80mm	2
	2338444	Flatwasher, SS, 8mm (Not Shown)	2
12A	3921989	6.2 Oil Pan Plug Washer, Nylon, 3/8"	2
13A	6500113	6.5 Oil Pan Drain Plug, 3/8" NPT	2
	P0103-6-6	6.5 Fitting for Oil Drain Kit	opt
	2340011	Plug, Brass 1/2" NPT Turbo Oil Drain for Oil Pan (6.2/6.5)	1
	3921988	6.2 Oil Pan Drain Plug	2
14A	2332300	Oil Pan Tray	1
15A	2338414	SS Hex Head Capscrew, 1/4 x 20 x 1/2" GR5	6

Note Concerning Block: Standard manufacturing procedure is to line bore block and main bearing caps as a unit. Bearing caps are NOT interchangeable.

Cylinder Block and Pan

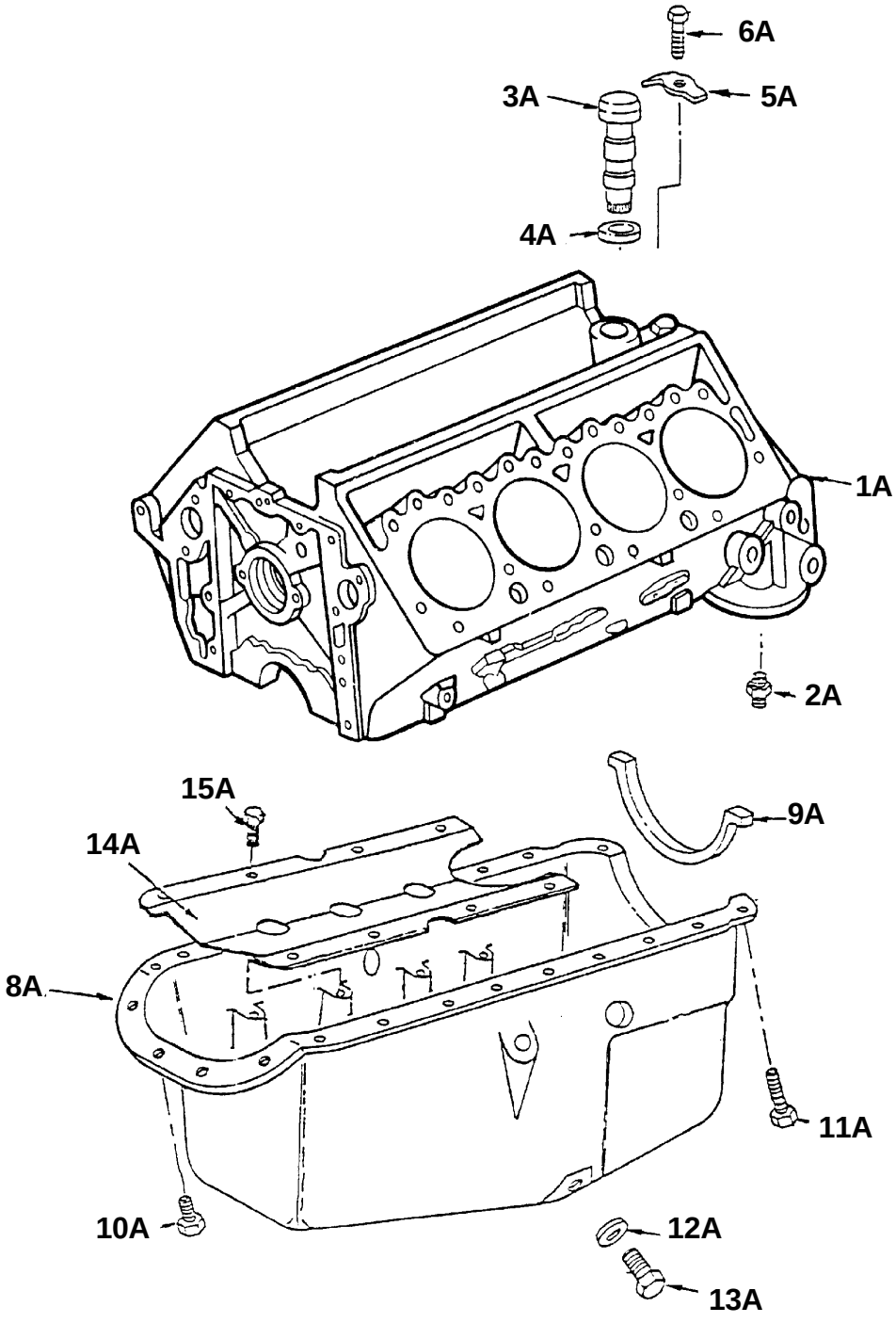


Figure A

FIGURE B

1B	6250201	Connecting Rod Ass'y with Bolts & Nuts	1
2B	6250202	Nut, Connecting Rod	16
	6250212	Bolt, Connecting Rod	16
3B	6250203	Rod Bearing Shells (Std)	16
	6250213	Rod Bearing Shells (.026 O.S.) Set of 2	8
4B	6500204	Piston and Pin Ass'y (Turbo 18:1)	8
	6500214	Piston and Pin Ass'y (.020 O.S. Turbo 18:1)	8
	6500214A	Piston, Pin and Rings Ass'y (.020 O.S. Turbo 18:1)	8
	6500215	Piston and Pin Ass'y (.030 O.S. Turbo 18:1)	8
	6500215A	Piston, Pin and Rings Ass'y (.030 O.S. Turbo 18:1)	8
	6500224	Piston and Pin Ass'y (NA 21.3:1)	8
	6500234	Piston and Pin Ass'y (O.S. NA 21.3:1)	8
5B	6250205	Piston Pin Retainer	16
6B	6500206	Ring Set (Std 6.5)	8
	6500216	Ring Set (.020 O.S., 6.5)	8
	6500217	Ring Set (.030 O.S., 6.5)	8

Figure C

1C	6500301	Sprocket, Crankshaft	1
2C	6250302	Key 3/16" x 3/4"	1
3C	Bearings per Chart		

Location			MY 1997 Bearings		
#1 #2 #4	#3	#5	Upper	Lower	Size
X			6252331	6251341	STANDARD
X			6252332	6251342	.013 U.S.
X			6252333	6251343	.026 U.S.
	X		6252334	6251344	STANDARD
	X		6252335	6251345	.013 U.S.
	X		6252336	6251346	.026 U.S.
		X	6252337	6251347	STANDARD
		X	6252338	6251348	.013 U.S.
		X	6252339	6251349	.026 U.S.

4C	6500303	Forged Steel Crankshaft, 6.5	1
	6500304	Crankshaft, 6.5	1
	6200304	Crankshaft, 6.2	1
5C	6500305	Rear Crank Seals, 6.5	1
	6200305	Rear Crank Seals, 6.2	1
	6250305	Front Crank seal (Not Shown)	1
6C	6250306	Bolt, Crank Main Bearing Cap (Outboard, old style)	10
	6250316	Bolt, Crank Main Bearing Cap (Inboard)	10
	6250326	Bolt, Crank Main Bearing Cap, 10mm (Outboard)	10

Pistons and Crankshaft

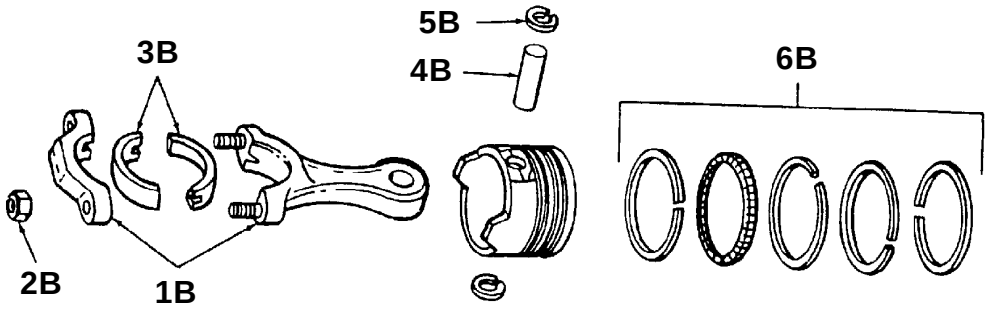


Figure B

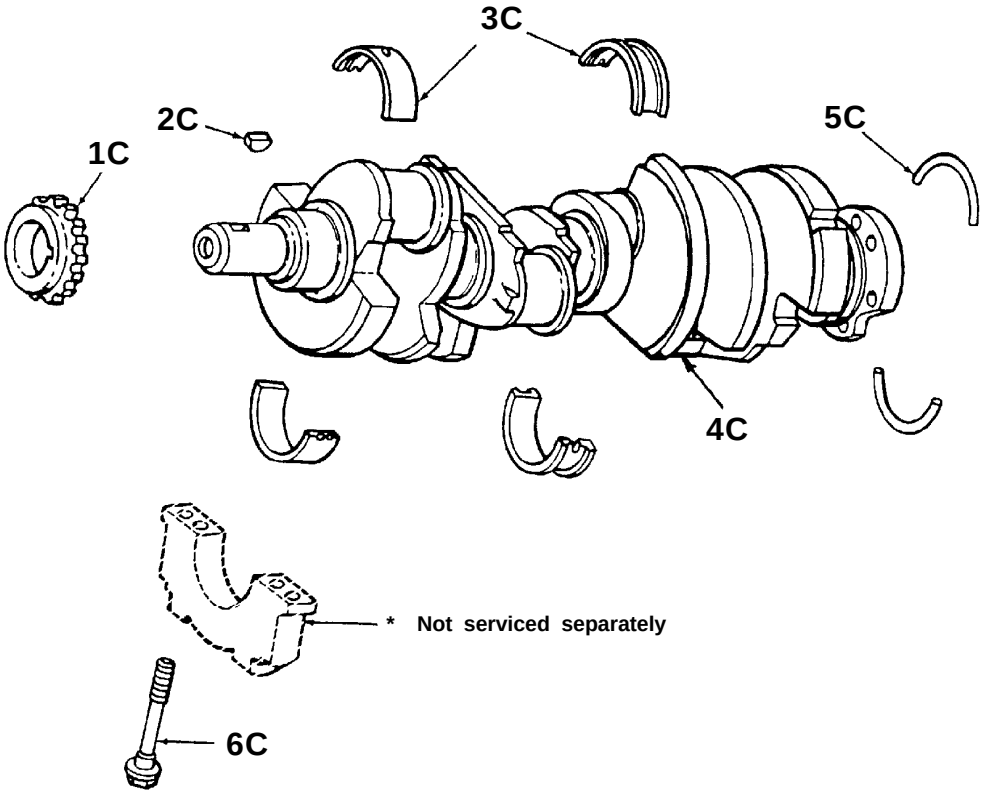


Figure C

Figure D

1D	6250401	Valve Cover (Std)	1
	6500411	Valve Cover (CDR Valve) (Not Shown)	1
	6500421	CDR Valve (Not Shown)	1
	6500431	Grommet (Not Shown)	1
	2340319	Dual Vent Kit (Not Shown)	1
	2335000	Valve Cover Gasket (Not Shown)	1
2D	6250402	Washer-Headed Bolt	4
3D	6250403	Stud, Valve Cover	12

Figure E

1E	6500501	Cylinder Head Ass'y (6.5 Marine Turbo)	2
	6500511	Cylinder Head Ass'y (6.5 NA)	2
	6500521	*Prechamber (6.5 Turbo)(Not Shown)	8
	6500531	*Prechamber (6.5 NA)(Not Shown)	8
	6250501	*Plug, cylinder Head (Not Shown)	8
		* These are part of the Cylinder Head Ass'y	
2E	6250502	Plug, Cylinder Head Water jacket (Not Shown)	2
3E	6500503	Head Gasket (6.5)	2
	6200503	Head Gasket (6.2)	2
	6500504	Head Gasket Kit (6.5)	2
4E	6250504	Cylinder Head Bolts, 12mm x 1.75 x 97mm w/ seal	34
5E	6500505	Bolt, 10mm x 1.5 x 20mm	2
6E	6500506	Stud, Waterhole Cover	2
7E	6250507	Cover, Cylinder Head Water Hole (w/o Boss)	2
8E	6250508	Gasket, Water Hole Cover	4

Lifting Brackets (Not Shown)

2331207	Strap, Front Lifting	1
	Stud, 10mm x 1.5 x 20mm + Nut + 20mm	1
	Stud, 10mm x 1.5 x 20mm + Nut + 30.5mm	1
2331206	Strap, Rear Lifting	1
6250511	Bolt, 10mm x 1.5 x 20mm	2

Valve Cover and Cylinder Head

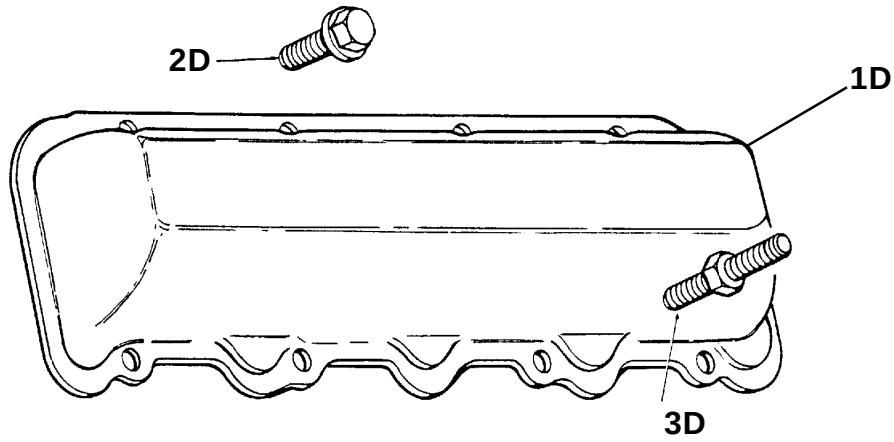


Figure D

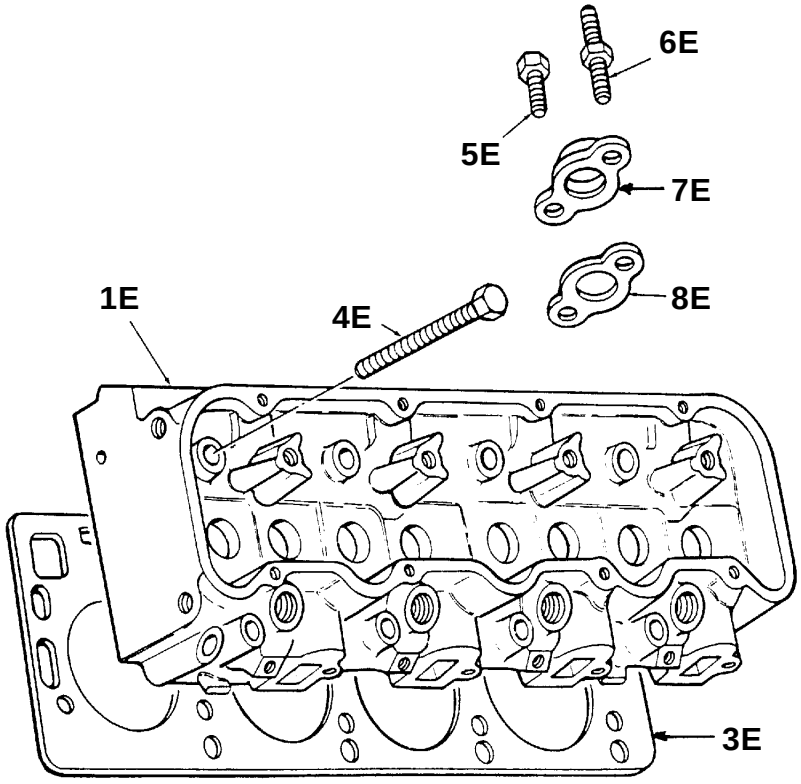


Figure E

Figure F

1-5F	6250600	Shaft Assembly	4
1F	6250601	Shaft (Only)	4
2F	6250602	Retainer, Rocker Shaft Bolt	8
3F	6250603	Bolt, Rocker Shaft	8
4F	6250604	Rocker Arm	16
5F	6250605	Retainer, Rocker Arm (Plastic)	16
6F	6250606	Push Rod	16
7F	6250607	Clamp Assembly w/ Bolt	4
8F	6250608	Guide, Hydraulic Valve Lifter	8
9F	6250609	Hydraulic Valve Lifter	16
10F	6250610	Valve Keepers (Intake & Exhaust)	32
11F	6250611	Cap, Inlet Valve Spring	8
	6250621	Rotator Assembly, Exhaust Valve	8
12F	6250612	Shield, Valve Stem Oil (Intake & Exhaust) (Not Shown)	16
13F	6250613	Seal, Valve Stem Oil (Intake, O-ring Style)	8
	6250623	Seal, Valve Stem Oil (Exhaust, Cap Style)	8
14F	6250614	Valve Spring (Intake & Exhaust)	16
15F	6250615	Shim, Valve Spring (Intake & Exhaust)	16
16F	6250616	Valve, Exhaust (Std.)	8
	6250626	Valve, Exhaust (0.089mm O.S.)	AR
	6250636	Valve, Intake (Std.)	8
	6250646	Valve, Intake (0.089mm O.S.)	AR

Rocker and Valve Assembly

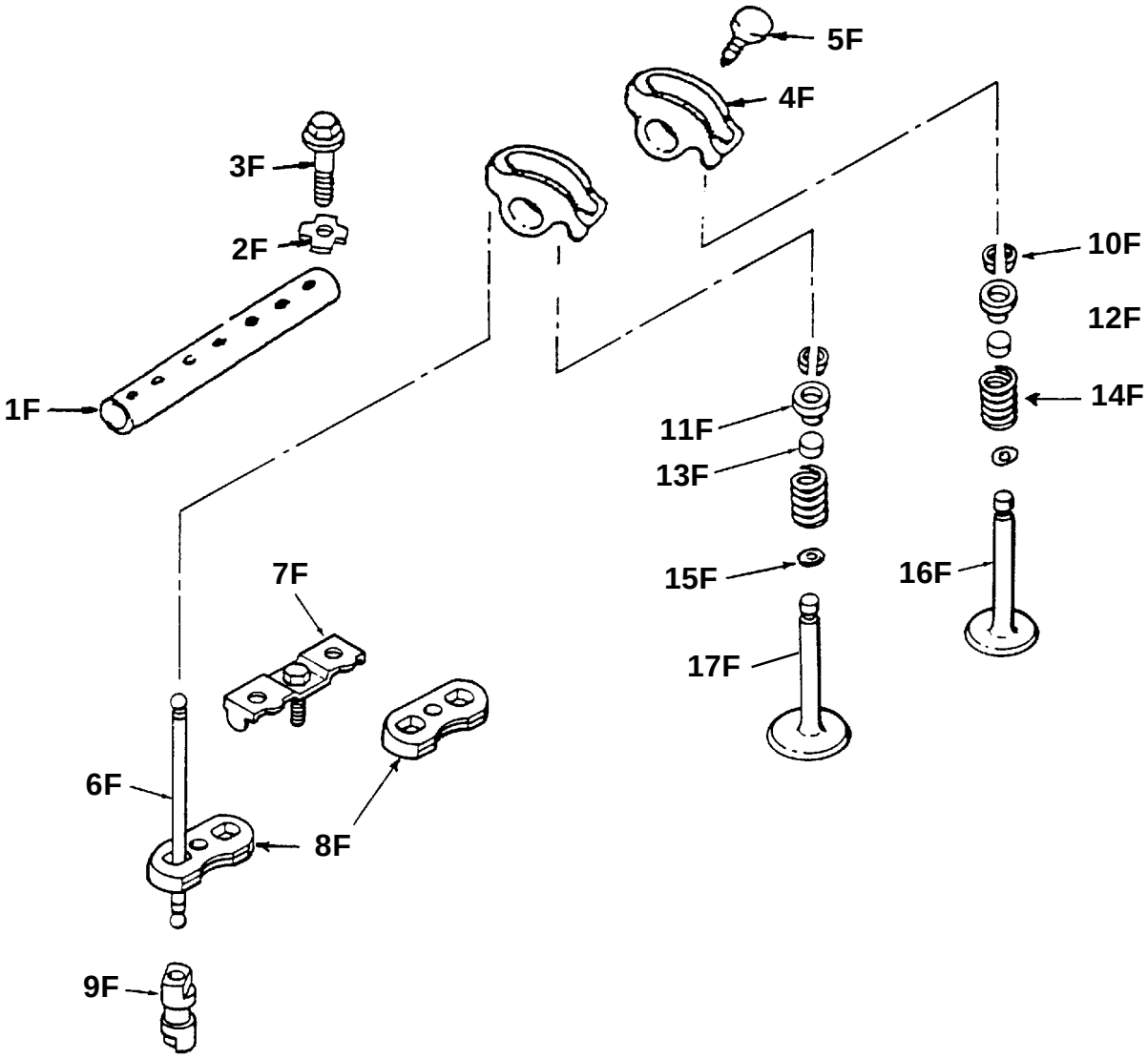
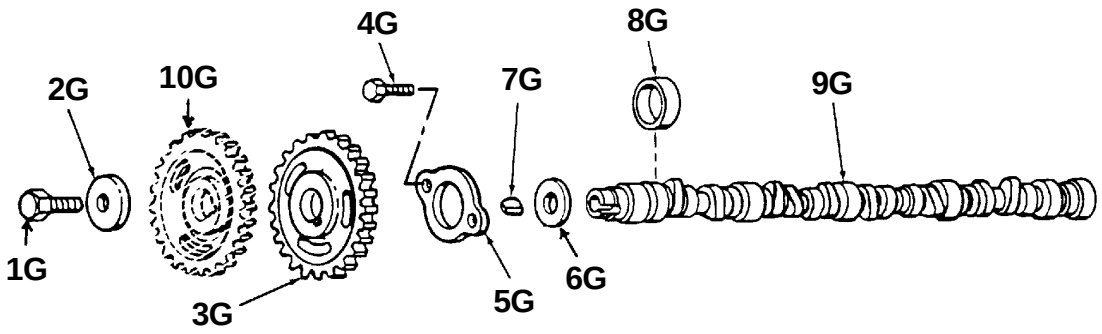


Figure F

Figure G

1G	6250701	Bolt, Camshaft End	1
2G	6250702	Washer, Camshaft	1
3G	6250703	Sprocket, Camshaft	1
4G	6250704	Bolt, 8mm x 1.25 x 16mm	2
5G	6250705	Thrust Bearing, Camshaft	1
6G	6250706	Ring, Camshaft Sprocket Spacer	1
7G	6250302	Key, Woodruff, 3/16" x 3/4"	2
8G	6250708	Bearing, Camshaft #1	1
	6250718	Bearing, Camshaft #2	1
	6250728	Bearing, Camshaft #3	1
	6250738	Bearing, Camshaft #4	1
	6250748	Bearing, Camshaft #5	1
9G	6250709	Camshaft	1
10G	6250710	Gear, Fuel Pump Drive	1
11G	6500301	Sprocket, Crankshaft (6.5)	1
	6200301	Sprocket, Crankshaft (6.2)	1
12G	6250712	Chain Timing	1

Camshaft, Timing Chain & Gears



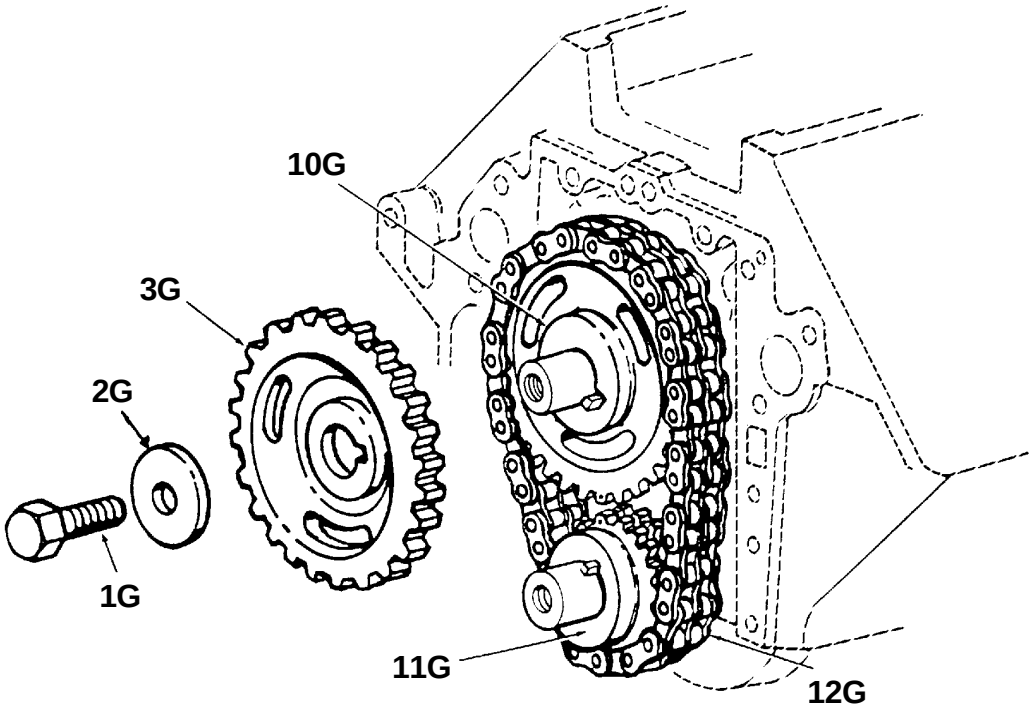


Figure G

Figure H

1H	6250801	Cover, Timing Gear	1
	6250811	Cover, Timing Gear (MY 1997 & later)	1
2H	6250802	Bolt, 10mm x 1.5 x 30mm	3
3H	6250813	Bolt, 10mm x 1.5 x 55mm	4
4H	6250804	Baffle, Crankcase Vent (6.2 only)	1
5H	6250805	Nut for Crankcase Baffle (6.2 only)	1
6H	6500806	Damper, Crankshaft Torsional (6.5)	1
	6200806	Damper, Crankshaft Torsional (6.2)	1
7H	6250807	Bolt, Crankshaft Damper	1
8H	6250808	Washer, Crankshaft Damper	1
	6250302	Key, Woodruff 3/16" x 3/4" (Not Shown)	1
	6250819	Timing Indicator (Not Shown)	1
	6250829	Bolt, Indicator (Not Shown)	2
	6250810	Plug, Front Cover, Crank Possion Sen. (Not Shown)	1

Timing Cover and Damper

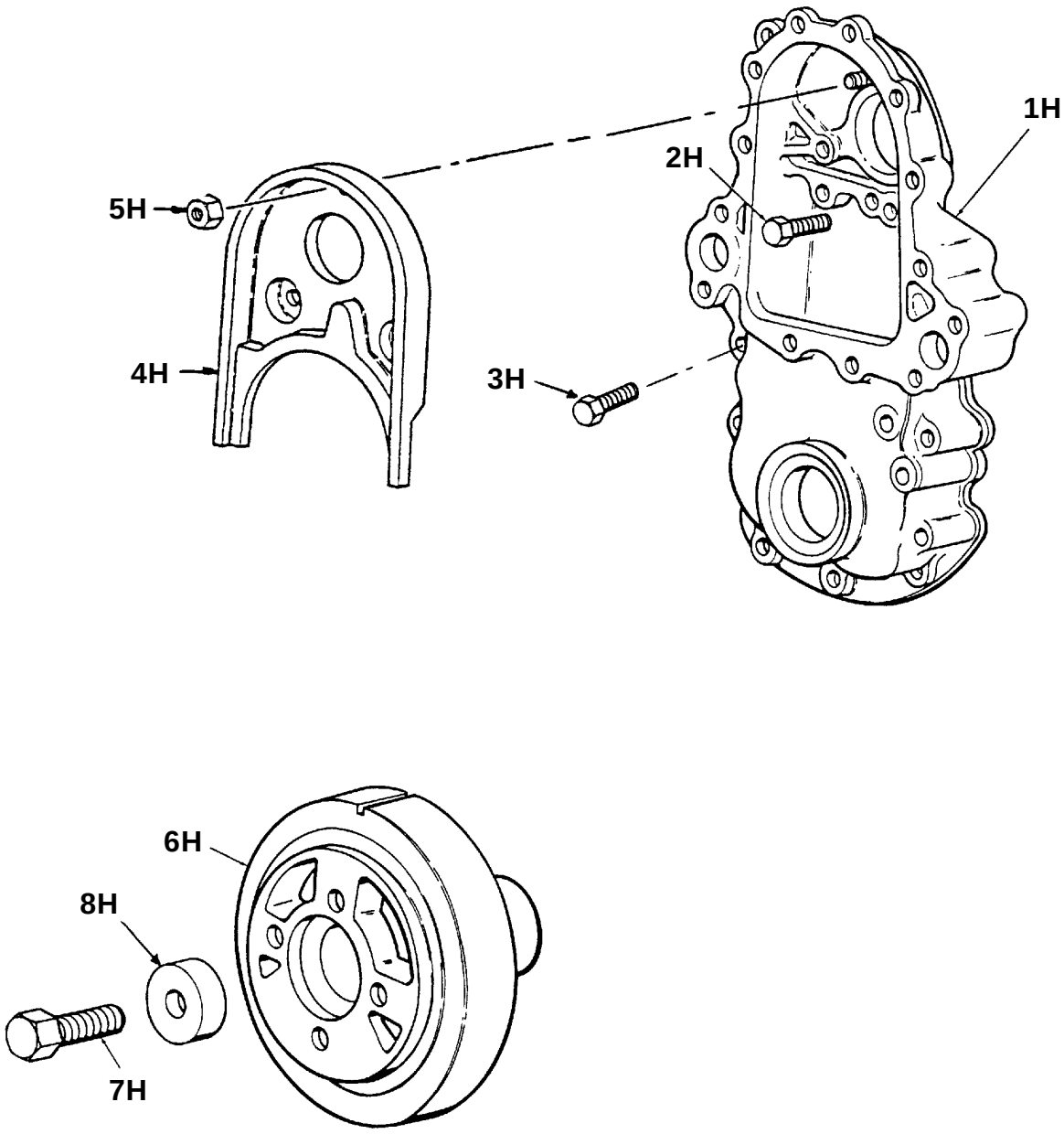
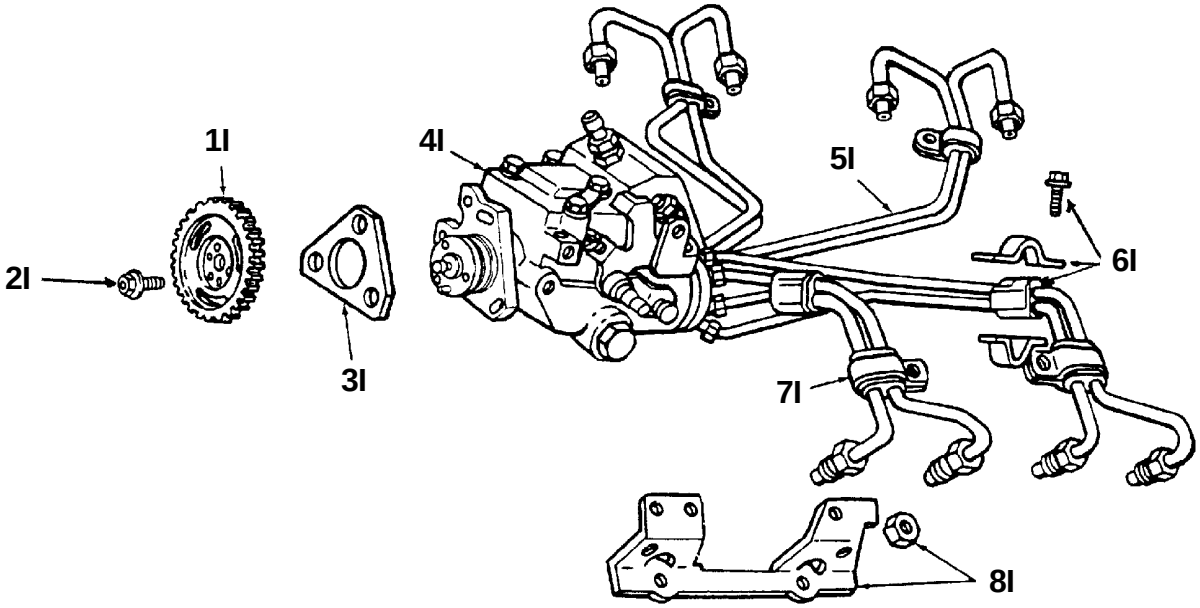


Figure H

Figure I

1I	6250901	Gear, Driven Fuel Injection Pump	1
2I	6250902	Bolt, 8mm x 1.25 x 20mm	3
3I	6250903	Gasket, Fuel Pump Drive	1
4I	2348340	Fuel Injection Pump (NA) - 160hp	1
	2340265	Fuel Injection Pump--Turbo Engines, DB2	1
	2340263	Fuel Injection Pump - Turbo Engine, DB2 340hp	1
	2340282	Fuel Shut Off Soleniod - Injection Pump	1
	2340283	Cold Advance Solenoid - Injection Pump	1
	6250904	Stud, Upper 10mm x 1.5 x 45.5mm	1
	6250914	Stud, Lower 10mm x 1.5 x 52mm	2
	6250924	Nut, 10mm	3
5I	6250915	Fuel Pipe for Cylinder #1	1
	6250925	Fuel Pipe for Cylinder #2	1
	6250935	Fuel Pipe for Cylinder #3	1
	6250945	Fuel Pipe for Cylinder #4	1
	6250955	Fuel Pipe for Cylinder #5	1
	6250965	Fuel Pipe for Cylinder #6	1
	6250975	Fuel Pipe for Cylinder #7	1
	6250985	Fuel Pipe for Cylinder #8	1
6I	6500906	Clip, Fuel Line	8
7I	6250907	Clip, Offset Bolt Hole (On Fuel Line Bracket)	4
	6250917	Clamp, Centered Screw Hole (Near Back of Pump) (Not Shown)	4
	6250927	Insert, Short Rubber	4
	6250937	Screw, Washer Headed, Self-Drilling	4
8I	6250908	Bracket, Fuel Line (Right Side) (Not Shown)	1
	6250918	Bracket, Fuel Line (Left Side)	1
	6250928	Nuts for Brackets	4
9I	6250909	Pipe Adaptor, Injection Pump Inlet	1
10I	2338462	Clamp, SS Worm-Gear, #4	1
11I	6250911	Hose, Fuel & Oil-Resistant, .25" ID x 5"	1
	2327001	Coupling, 3/8" to 1/4" (Not Shown)	1

Fuel Injection Pump, Lines and Fittings



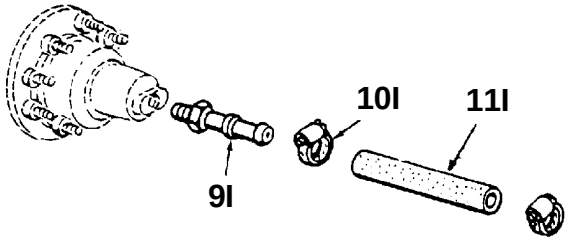


Figure I

Figure J

1J	6251001	Cap, Injection Nozzle	2
2J	6251002	Clamp, Fuel Drain Back Hose	18
3J	6501003	Nozzle, Injector - Turbo Engines, 6.5	8
	6501003R	Nozzle, Injector Rebuilt - Turbo Engines, 6.5	8
	6201003	Nozzle, Injector - Turbo Engines, 6.2	8
	6501013	Nozzle, Injector - NA Engines	8
4J	6251004	Gasket, Injector Nozzle Seat	8
5J	6251005	Hose, Fuel Drain Back - Short with Clamps	7
	6251025	Hose, Fuel Drain Back - Long with Clamps	1
6J	6251006	Pipe, Fuel Drain Back	1
7J	6251007	Clip, Fuel Drain Back, Right Head	1
8J	6251008	Clip, Fuel Drain Back, Left Head	1
9J	6251009	Clip, Fuel Drain Back, Top Center	1
10J	6251010	Bolt, Washer-Headed, 10mm x 1.5 x 20mm	2
11J	6251011	Hose, Fuel drain Back, From Governor	1
12J	6251012	Clamp, Fuel Return Line	2
13J	R900	Racor 900 With Electric Priming Pump	1
	6250386	Racor 900 (Opt., Not shown)	1
	R2040TMOR	Element, Racor 900, 10 Micron (Not Shown)	AR
	6250370	Electric Fuel Pump for 500, 900 (Opt., Not shown)	AR
	6501014	Fuel Line, Lift Pump to Injection Pump (Not Shown) Used on engines without secondary fuel filter ass'y	1
		Items below are for optional secondary fuel filter ass'y.	
14J	2327000	Secondary Fuel Filter Element	1
15J	6251015	Head, Secondary Fuel Filter Adaptor	1
16J	2338611	3/8" Fuel Line Ass'y, Filter Pump to Filter Head	1
17J	2338463	Bushing, Fuel Line Adaptor	1
18J	2338612	1/4" Fuel Line Ass'y, Filter Head to Inj. Pump	1
19J	2338420	SS Hex Head Capscrew, 3/8-16 x 3/4"	2
20J	2338459	SS Lockwasher, 10mm	2
21J	2338419	SS Hex Head Capscrew, 10mm x 1.5 x 20mm	2
22J	2338455	SS Lockwasher, 10mm	2
	2338459	SS Flatwasher, 10mm	2
23J	2331208	Fuel Filter Bracket	1

Fuel Nozzles, Lines and Filters

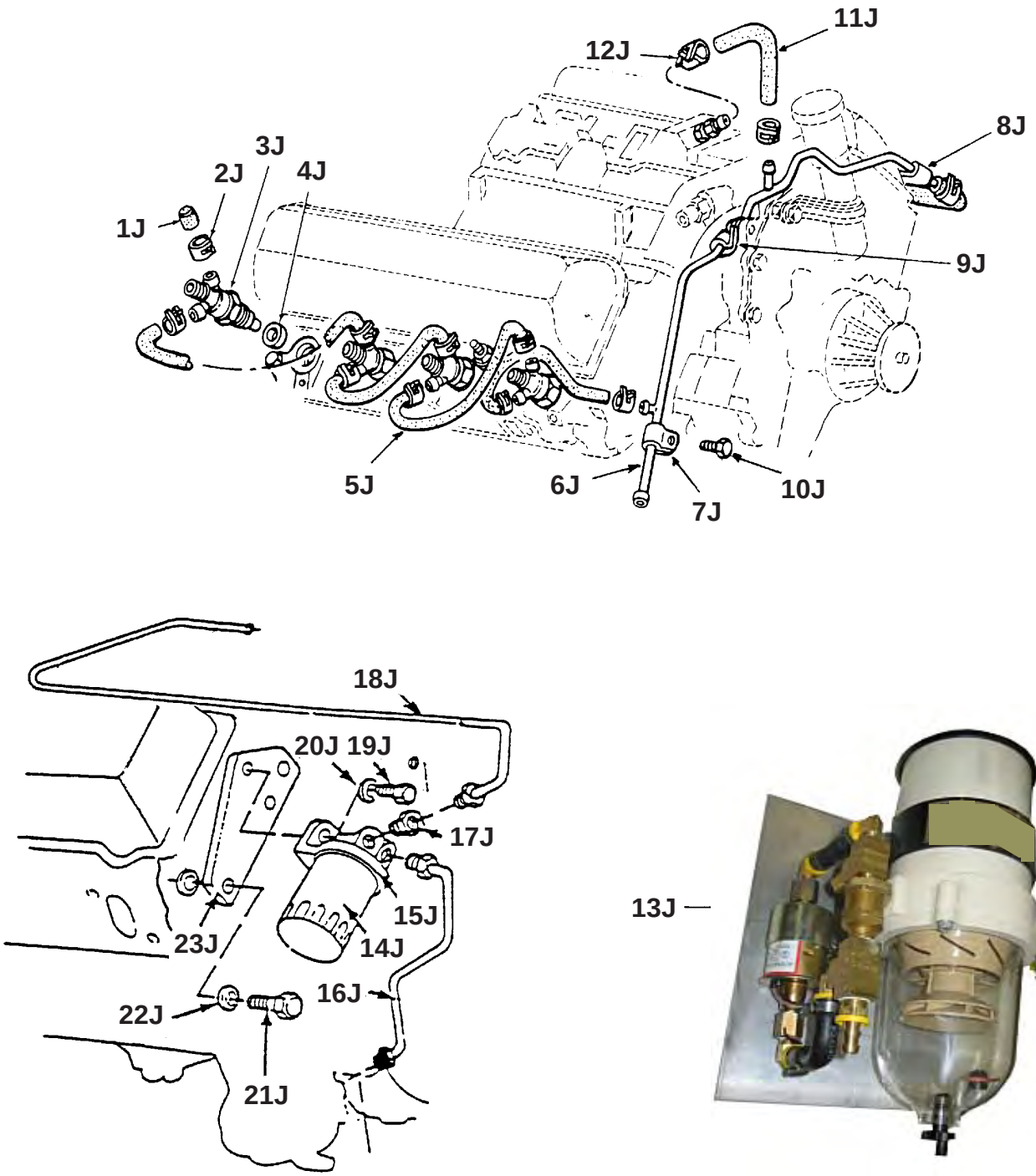


Figure J

Figure K

1K	6251101	Fuel Pump Assembly	1
	6251111	Push Rod, Fuel Pump (Not Shown)	1
2K	6251112	Washer-headed Bolt w/ Lock Washer	1
3K	6251103	Gasket, Fuel Pump	1
4K	6251104	Plate, Fuel Pump Spacer	1
5K	6251105	Bolt, Fuel Pump Spacer	2
6K	6251106	Gasket, Fuel Pump Spacer	1

Figure L

1L	6501201	Manifold, Air Inlet, 6.5	1
	6251201	Manifold, Air Inlet, 6.2	1
	6251211	Freeze Plug, Brass 1", 6.2 (Not Shown)	1
2L	6251202	Bolt, 10mm x 1.5 x 30mm	3
	2338428	Bolt, 10mm x 1.5 x 60mm (6.2L Only)	1
	2338459	Washer, 10mm (6.2L Only)	1
3L	6251203	Stud, Short	8
	6251213	Stud, Long (6.2L requires 4 and 1 bolt, See 2L)	5
4L	6251204	Gasket, Intake Manifold	2
5L	2335520	Air Intake Adaptor, 6.5	1
	6501706	Air Intake Adaptor Gasket, 6.5	1
	2335506	Air Intake Adaptor, 6.2 (No Gasket Required)	1
6L	2340211	SS Hex Capscrew, 8mm x 1.25 x30mm, 6.5	6
	2338409	SS Hex Capscrew, 8mm x 1.25 x25mm, 6.2	2
	2338444	SS Flatwasher, 8mm, 6.2 (Not Shown)	2
7L	2337301	Hose, Aftercooler to Intake Adaptor, Formed	1
8L	2338437	Clamp, SS, #52, Worm-Gear	2
9L	2337003	Air Cleaner Ass'y, NA (Not shown)	1

Fuel Pump and Intake Manifold

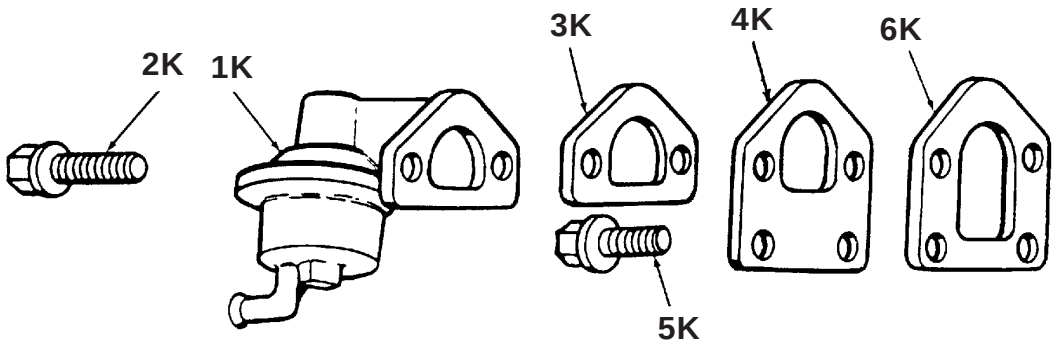


Figure K

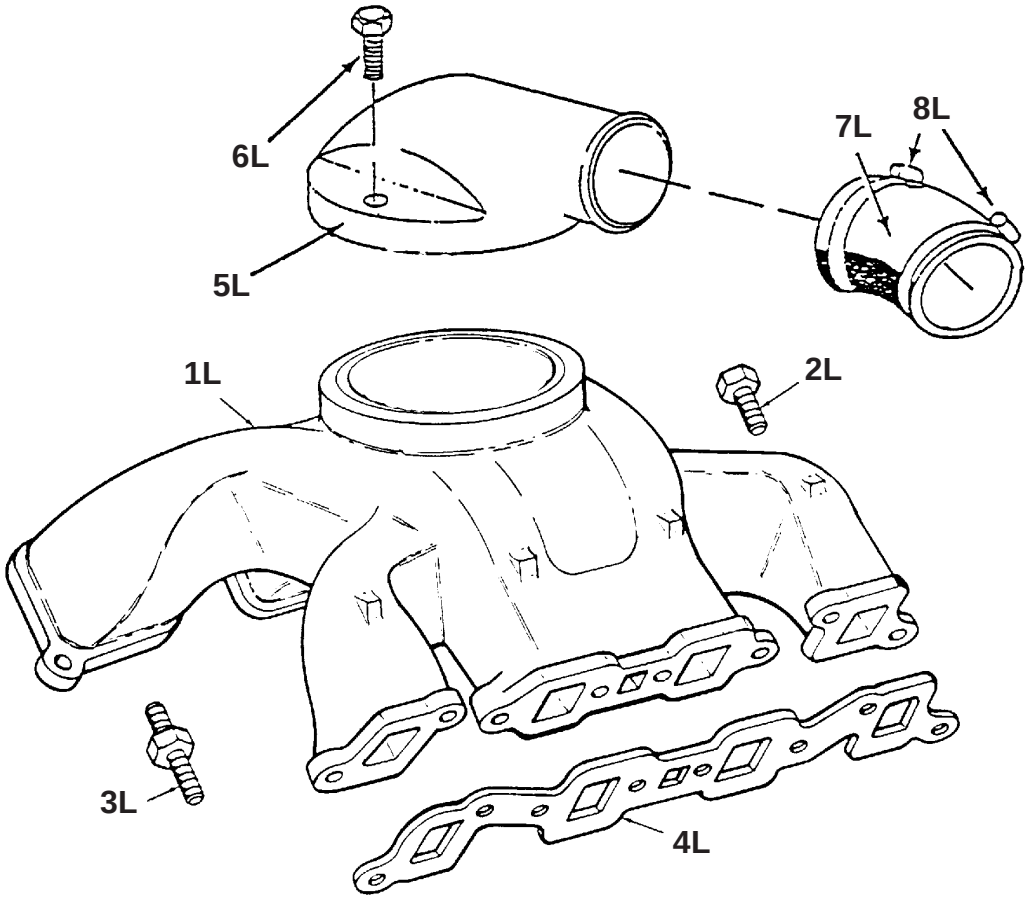


Figure L

Figure M

1M	6251301	Cap, Oil filler Tube	1
2M	6251312	Tube Ass'y, Oil Fill w/ Vent	1
3M	2338406	SS Hex Head Capscrew 3/8-16 x 1/2"	2
	2338443	SS Lockwasher, 3/8" (Not Shown)	2
4M	6251304	Grommet, Filler Tube	1
5M	6251305	Shaft, Oil Pump Drive	1
	6251315	Retainer, Oil Pump Drive Shaft (Not Shown)	1
6M	6251326	Oil Pump Ass'y & Screen, 6.5	1
	6251306	Oil Pump Ass'y & Screen, 6.2	1
	6251316	Bolt, Hex Head, 11mm x 1.5 x 66mm (Not Shown)	1
7M	6251307	Dipstick, Oil Level (X =535mm, Y=474mm, Z=17mm)	1
8M	2330107	Tube Ass'y for Dipstick	1
9M	4990012	O-ring, Dipstick Tube to Block 3/8 x 1/2 x 1/16"	1
10M	2338414	SS Hex Head Capscrew 1/4-20 x 1/2"	1
11M	2338458	SS Lockwasher, 1/4"	1
	2338450	SS Flat Washer, 1/4" (Not shown)	1
12M	2328600	Remote Oil Filter Adaptor (Mounts on Block)	1
	6438385	O-Ring, Oil Filter Adaptor	1
	6438386	Seal, Oil Filter Adaptor (Repalces 6438385 after s/n 2143)	1
	P48F-8-8	Fittings for Adaptor	2
13M	2328601	Remote-Mount Oil Filter Head	1
14M	6438384	Oil Filter	1
15M	2340179	Oil Filter Line (90 degree fitting)	1
	2340180	Oil Filter Line (straight fitting)	1
	6250382	Oil Pressure Sender, Single Station (std)(Not Shown)	1
	6250383	Oil Pressure Sender, Dual Station (opt)(Not Shown)	1
	2340132	Oli Pressure Alarm Switch-10 psi (Not Shown)	1

Lube Oil System

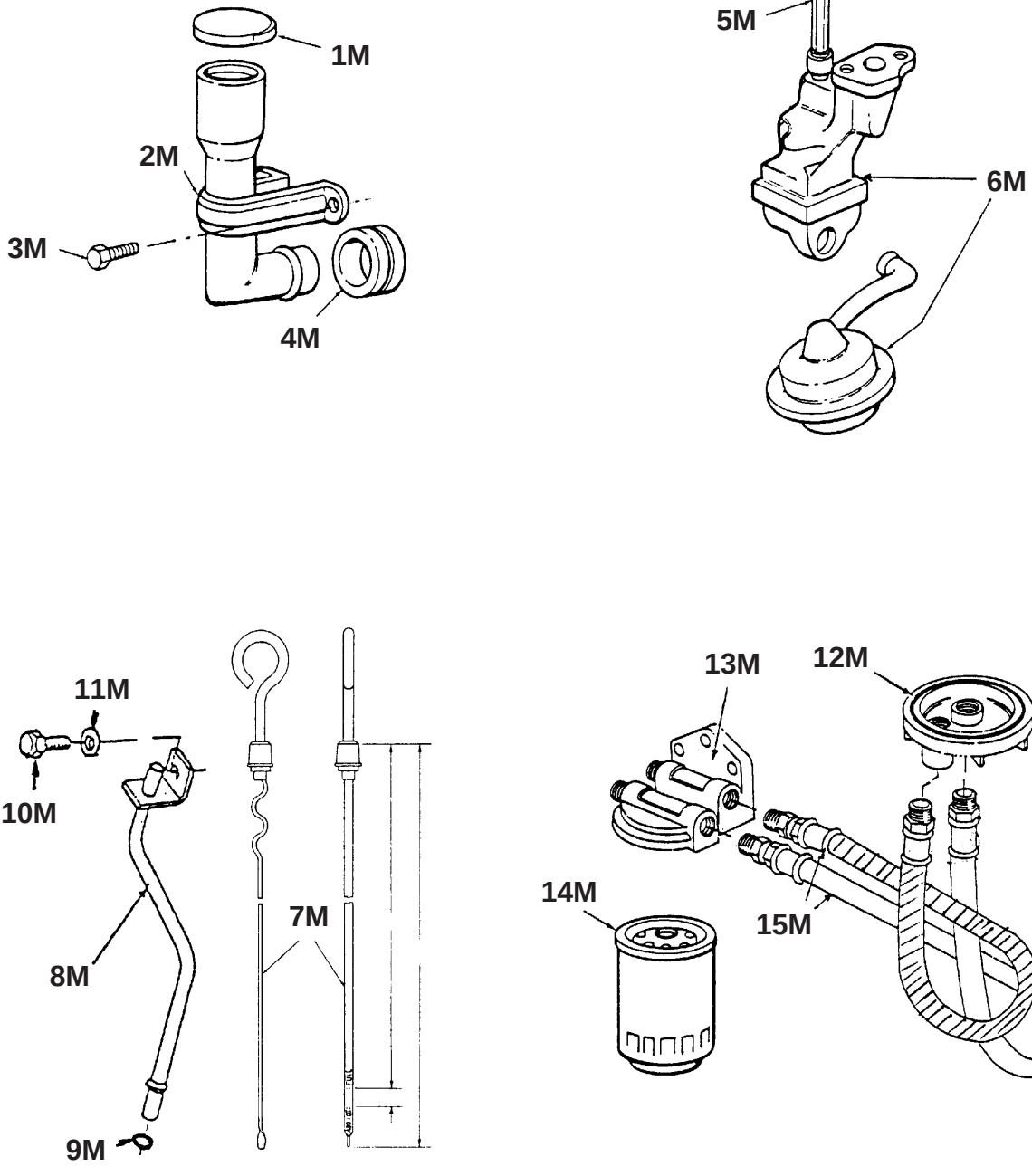


Figure M

Figure N

1N	2338888	Flywheel Ass'y, w/ Ring Gear *(Std. Rear Starter)	1
	2326425*	Ring Gear (avail as separate replacement part)	1
		* Available Only Thru Peninsular	
	6251401	Flywheel Ass'y, w/ Ring Gear (Front Starter)	1 (opt)
	6251411	Ring Gear (Front Starter)	1 (opt)
2N	6251402	Flywheel Bolts	6
3N	2325800	Damper Plate Bolts, 3/8-16 x 7/8" Gr5	6
4N	2340061	4-Stage Damper Plate (Std.)	1
	2340060	Centaflex Drive Plate (Not Shown)	1 (opt)
	838653	Bolts for Centaplex Plate	6 (opt)
	2340064	Starter Shim Plate (Not Shown) (Not Used w/ 4-Stage Damper Plate)	1 (opt)
5N	2335514	Flywheel Housing	1
6N	2339100	SS Hex Head Capscrew, 10mm x 70mm (97& later)	5
	2340043	SS Hex Head Capscrew, 3/8-16 x 2.75" (96 & pre)	5
	2338459	SS Lockwasher, 10mm (Not Shown)	5
7N	2336400	Flywheel Housing Shield	1
8N	2338414	SS Hex Head Capscrew, 1/4-20 x 1/2"	4
	2338458	SS Lockwasher, 1/4" (Not Shown)	4
9N	2322401	Lower Starter Hole Cover (Std.)	1
10N	2338473	SS Socket Head Screw, 10mm x 1.5 x 30mm	1
11N	2338455	SS Lockwasher, 10mm	1
12N	2322400	Upper Starter Hole Cover	1(opt)
13N	2338406	SS Hex Head Capscrew, 3/8-16 x 1/2"	3 (opt)
	2338443	SS Lockwasher, 3/8" (Not Shown)	3 (opt)
		* The following are needed to install Hurth Transmission:	
	2338442	SS Hex Head Capscrew, 7/16-14 x 1.25"	4
	2340145	Stud, 7/16-3/4 x 7/16-1/2 Gr5, 1.5" O.A.	2
	2340017	SS Lockwasher, 7/16"	4
	2340084	SS, Nylok Nuts, 7/16-20"	2
	2327410	Dipstick, ZF for tube w/ 60 Degree Bend	1
	2327411	Tube, Dipstick w/ 60 Degree Bend to Clear Starter	1
		* The following are needed to install Borg-Warner Transmission:	
	2340025	SS Hex Head Capscrew, 7/16-14 x 3.5"	6
	2340017	SS Lockwasher, 7/16"	6

Flywheel and Damper Plates

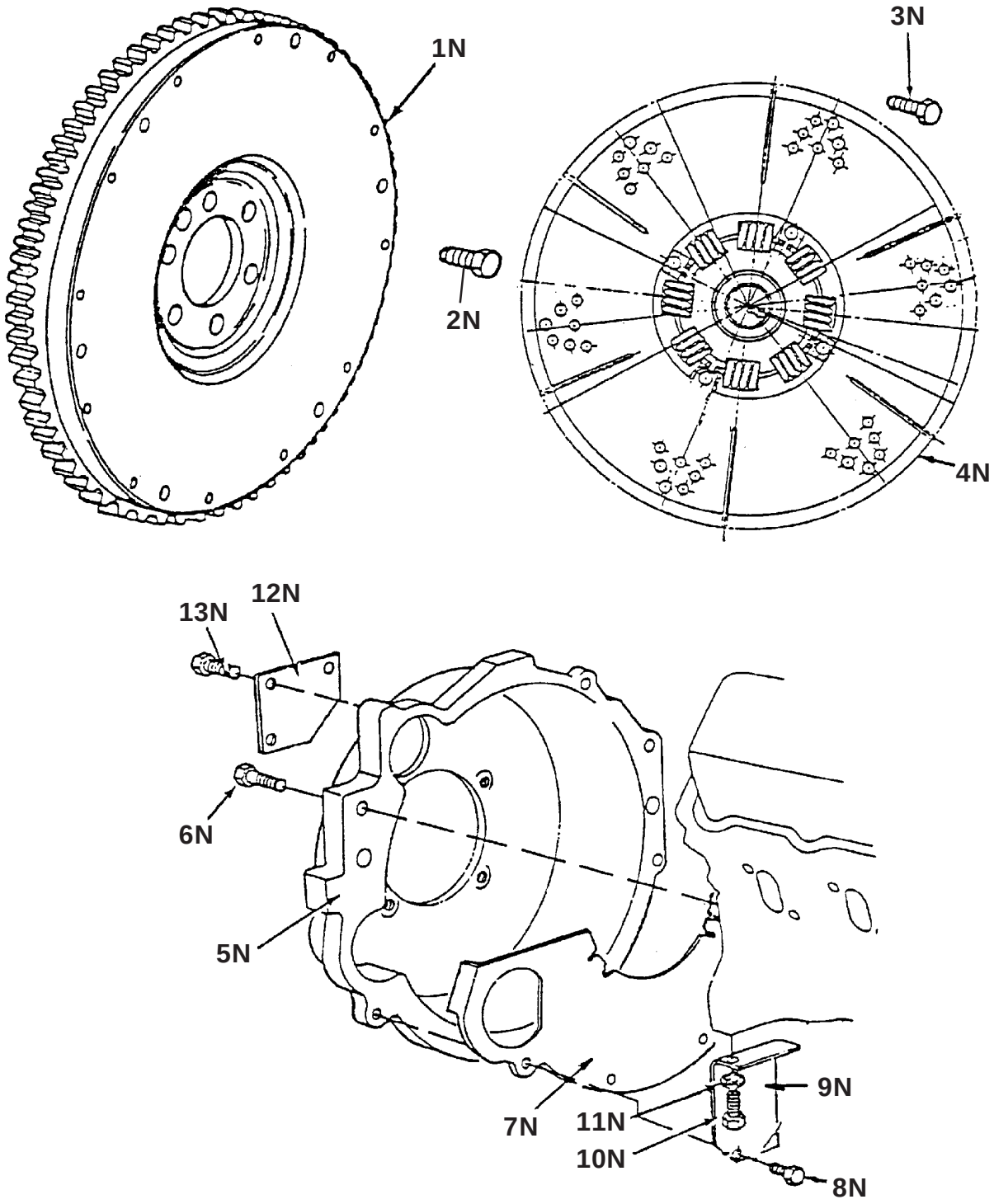
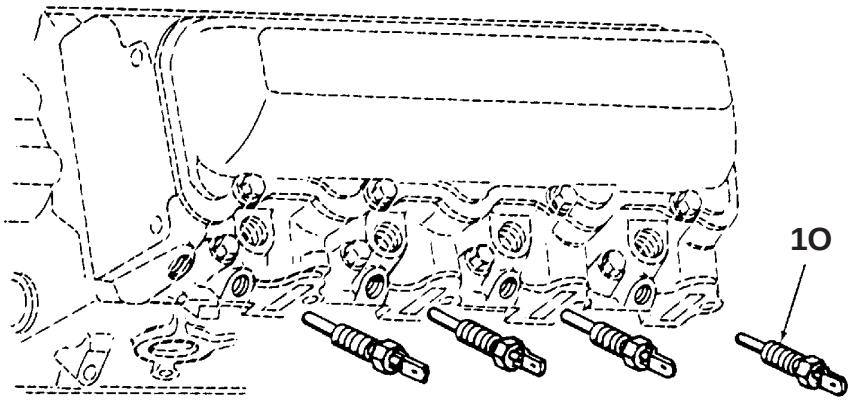


Figure N

Figure O

1O	6251502		Glow Plug	8
	2337953		Glow Plug Timer Kit, Current Engines (Not Shown)	1
	2337952	*	Glow Plug Timer (Not Shown)	1
	2340160A	*	Solenoid, Glow Plugs (Not Shown)	1
	2340326	*	Switch, Glow Plugs (Not Shown)	1
		*	All components of the glow Plug Timmer Kit	
2O	2337950		Glow Plug Controller (Service Part Only)	1
	2337949		Wire Connector For Glow Plug Controller	1
3O	2337951		Grommet, Glow Plug Contoller	2

Glow Plugs



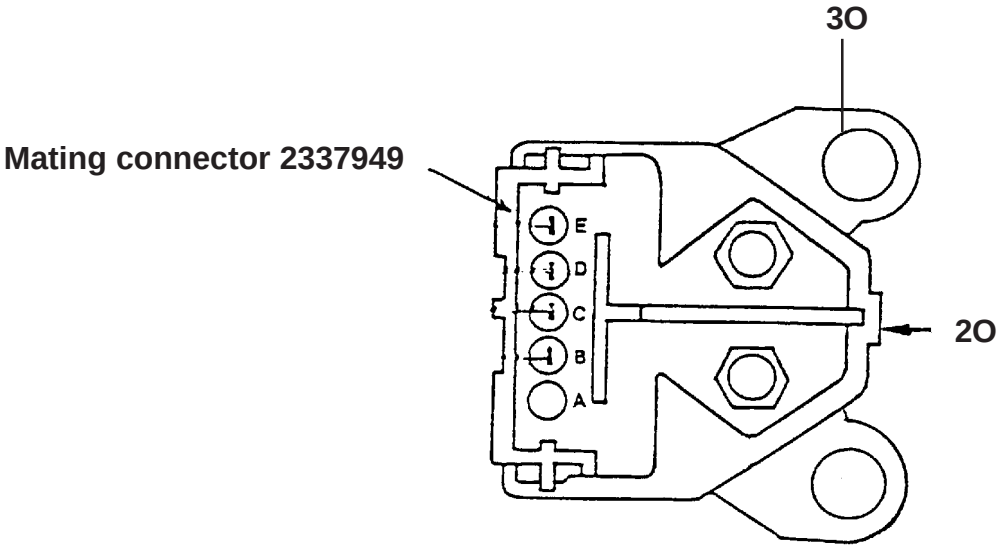


Figure O

Figure P

1P	2340150	Starter, Rear Mount Gear Reduction-Std.	1
	2340160A	Solenoid (for Old Style Prestolite starter)	1
2P	2338404	SS Hex Head Capscrew 3/8-16 x 1 1/4"	2
	2338443	SS Lockwasher, 3/8 (Not Shown)	2
3P	2338467	Brass Hex Nut, 5mm x .8	1
4P	2338685	Brass Hex Nut, 10mm x .8	1
5P	6251605	Starter, Front Mount (Optional)	1
6P	6251606	Bolts, Mounting, Front Mount Starter	2

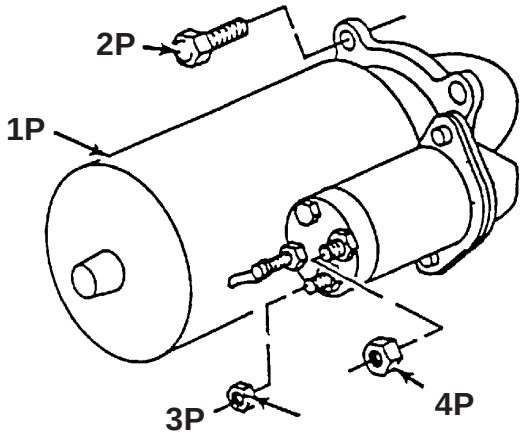
Note: Standard Rear Mount Starter and Optional Front Mount Starter use different ring gears. See page 21, 1N.

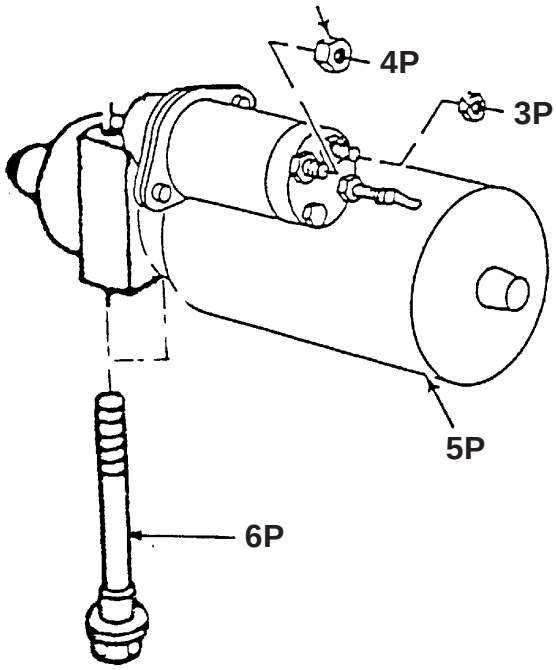
7P	2328603	Alternator, 51 Amp.	1
	2340155	Alternator, 90 Amp.	1
8P	2340106	Adaptor, Mounting (Not shown)	1

See page 33 for alternator pulley, mounting brackets, bolts, etc.

Starter and Alternator

Upper rear starter





Lower rear starter

Alternator

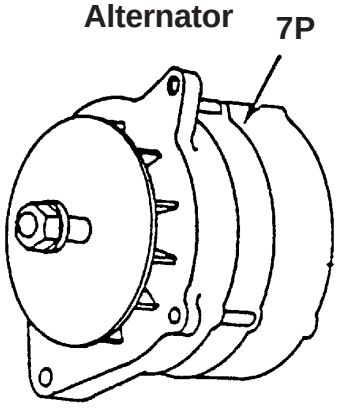


Figure P

Figure Q

2336320	Breaker, 20 amp.	1
2337907	Soft Start Relay	1
5173135	Mounting Bracket, Soft Start Relay & Breaker	1
2340044	SS Hex Head Capscrew 1/4-20 x 3/4"	3
2338471	SS Hex Nut , 1/4"-20	3
2338450	SS Flat Washer, 1/4"	3
2338458	SS Lockwasher, 1/4"	3
2337952	Glow Plug Timer (See pg. 23) (Current Engines)	1
2337950	Glow Plug Controller (See pg. 23) (Older Engines)	1
6251502	Glow Plug (See pg. 23)	8
6251701	140^{o} F Cold Advance Temp. Switch	1
6250381	Oil Pressure Sender for 80 lb gauge (Single Station/Panel Installation-Standard)	1
6250382	Oil Pressure Sender for 100 lb gauge (Single Station/Panel Installation-Standard)	1
6250383	Oil Pressure Sender (Dual Station/Panel Installation-Opt.)	1
6250384	Water Temp. Sender (Single Station/Panel Installation-Standard)	1
6250385	Water Temp. Sender (Dual Station/Panel Installation-Opt.)	1
2337910	Engine Speed Sensor for Digital Techometer	1 (opt)
2337926	Wiring Harness, Basic Engine with Digital Tach	1 (opt)
2337916	Wiring Harness, Basic Engine with GP Timer	1
2337906	Wiring Harness, Basic Engine with GP Controller	1
2337901	Harness, 18' Extension	1
2337905	Harness, 12' Extension	1 (opt)
2337903	Harness, 18" Pigtail - Female End (new style plug)	1 (opt)
2337903	Harness, 18" Pigtail - Male End (new style plug)	1 (opt)
2340023	Y-Harness, 24" Dual Panel	1
2340200	Instrument Panel (See pg. 29)	1
2340132	Oil Pressure Alarm Switch-10 psi (Not Shown)	1
2340133	Water Temp. Alarm Switch-210^{o} (Not Shown)	1

ENGINE WIRING DIAGRAM

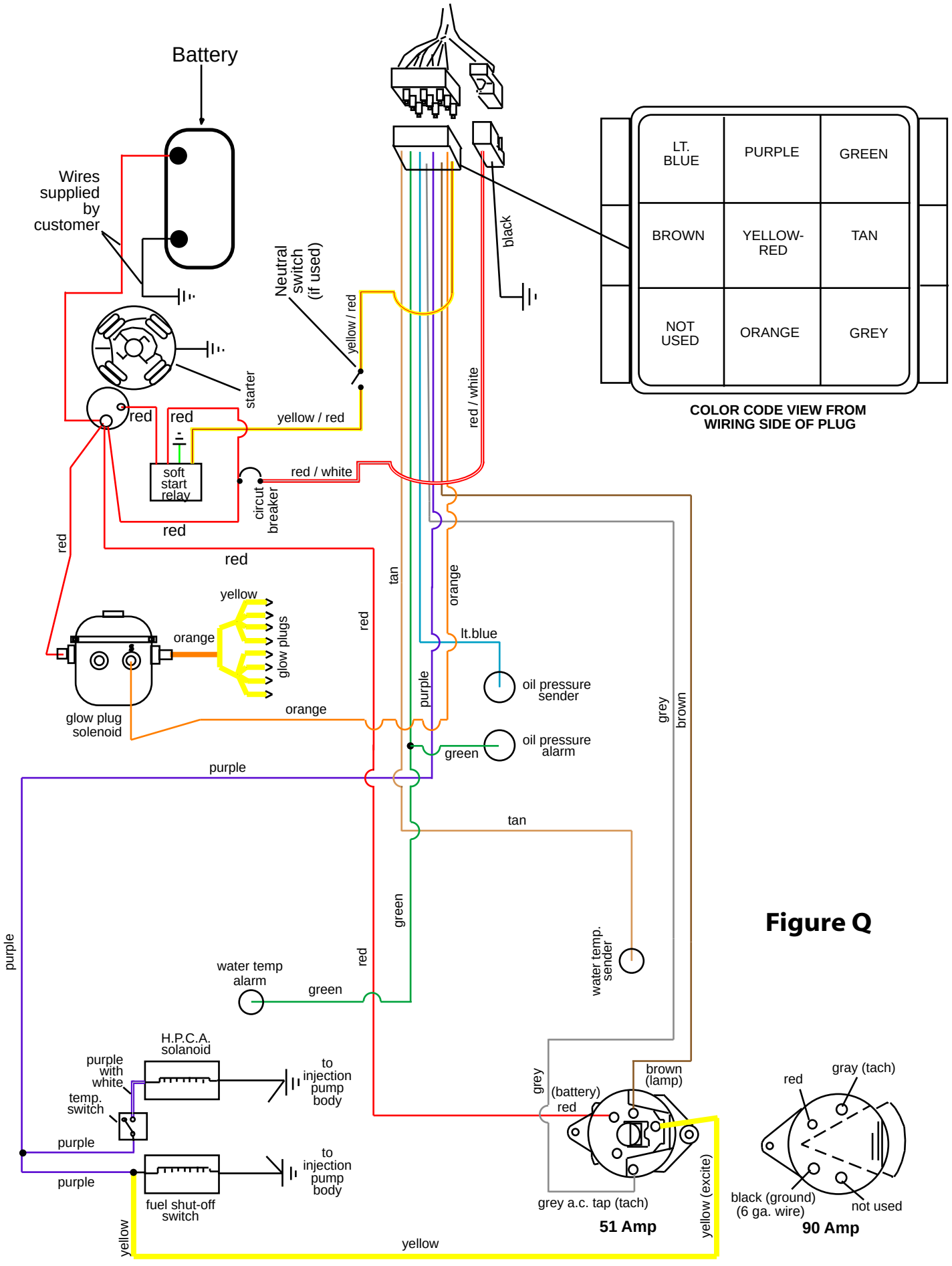


Figure Q

Figure R

Dual engine applications require two panels.

1R	2340200	Instrument Panel Assembly Consists of the following components:	1
2R	2340220	Blank Panel	1
3R	2340203	Gauge, Water Temperature, 100-240° F.	1
4R	2340202	Gauge, Oil Pressure, 0-100 psi	1
	2340212	Gauge, Oil Pressure, 0-80 psi	1
5R	2340201	Tachometer, 0-4000 rpm	1
	2340214	Digital Tachometer with Hour Meter (Not Shown)	1 (opt)
6R	2340204	Voltmeter, 12V DC	1
7R	2340205	Ignition Switch w/ Key	1
8R	2340207	Indicator Light, Amber	1
9R	2340208	Indicator Light, Red	1
10R	2340206	Toggle Switch, Lights	1
11R	2340209	15 Amp Circuit Breaker	1
12R	2340326	Switch, Glow Plug Timer (3-way)	1
	2340210	Nine-Position Plug (Not Shown)	1
	2340215	Alarm Buzzer (Not Shown)	1
		Optional Gauges (Not Shown):	
	2340217	Speedometer, (0-60 mph)	1 (opt)
	2340218	Fuel Gauge	1 (opt)
	2340219	Oil Temperature Gauge	1 (opt)

Instrument Panel

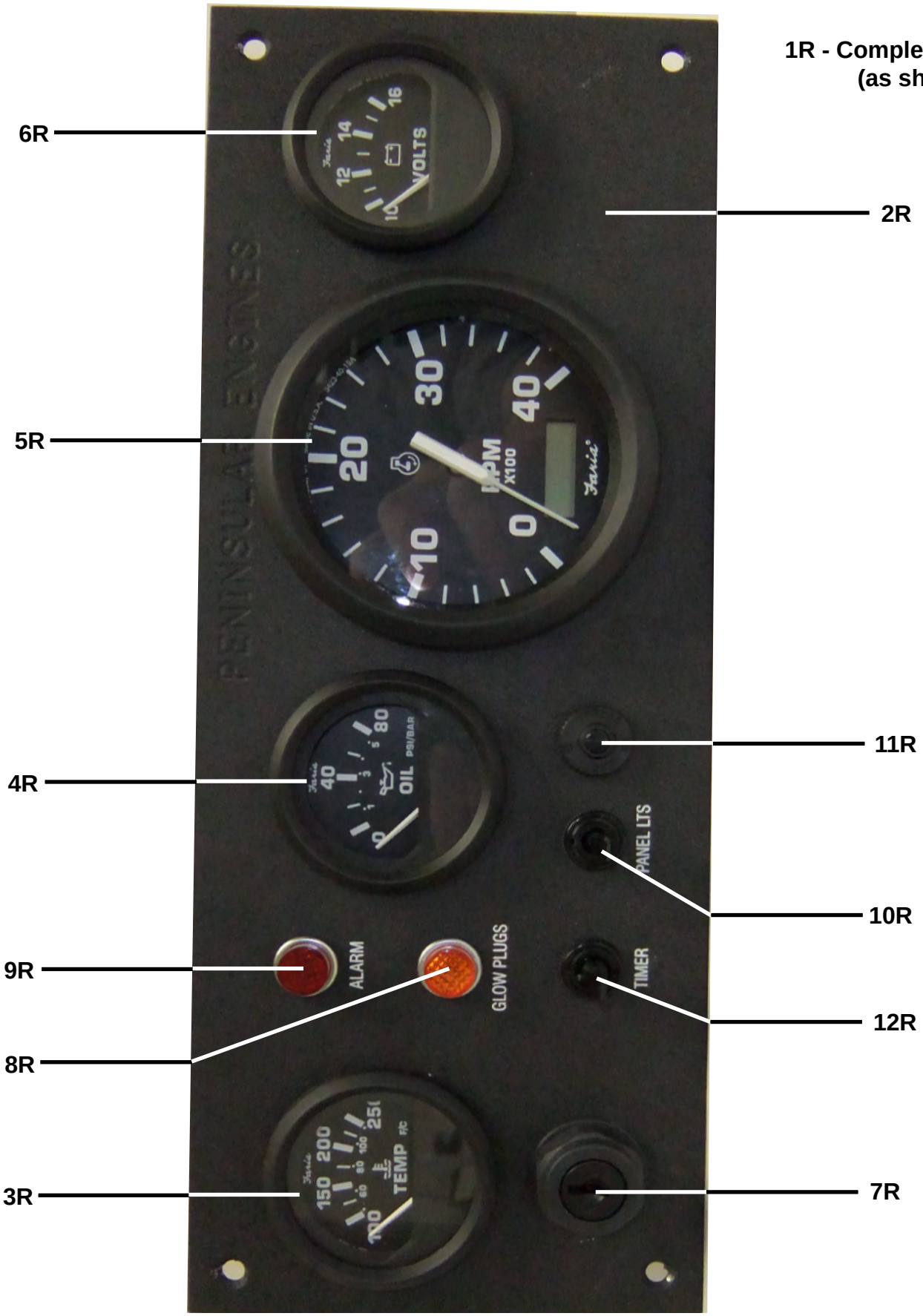
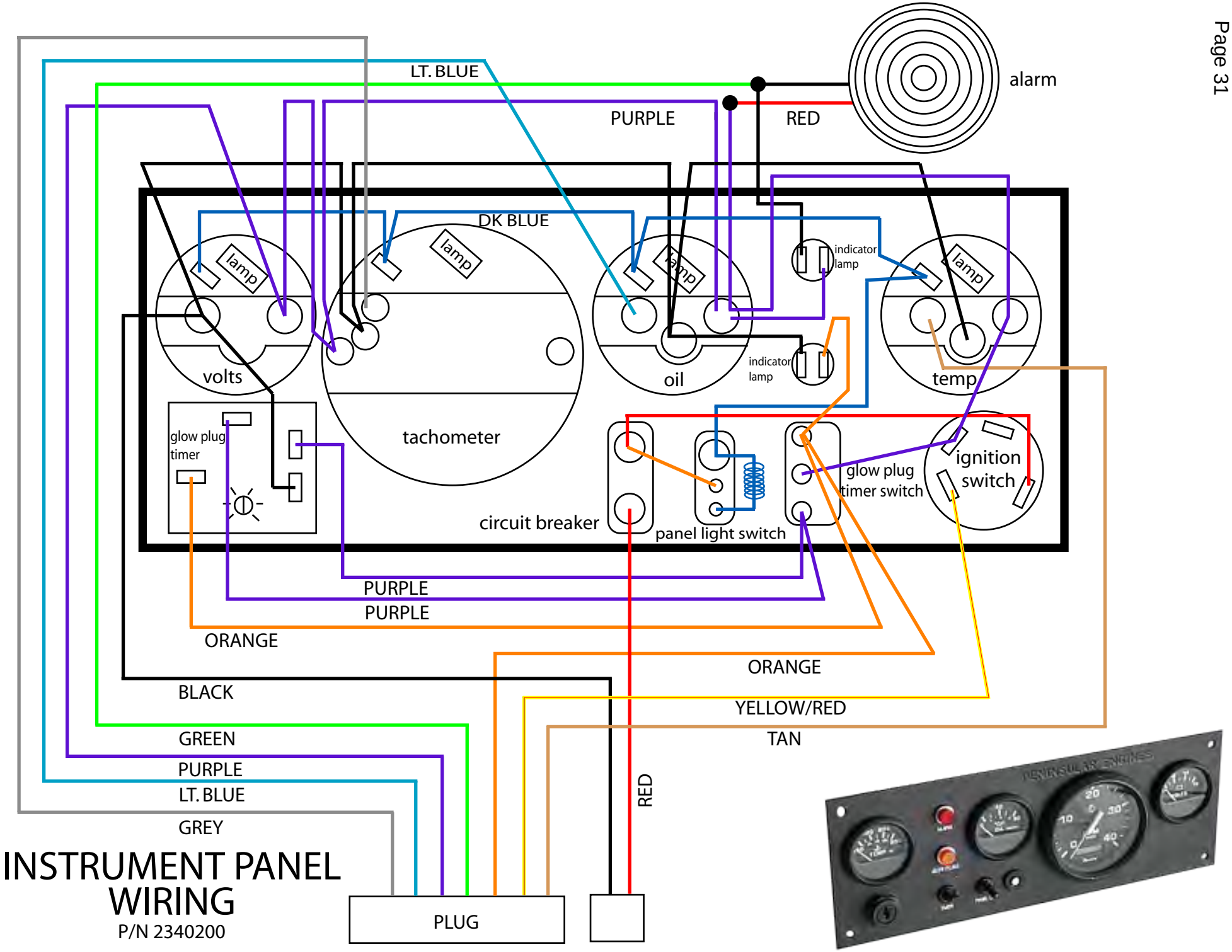


Figure R

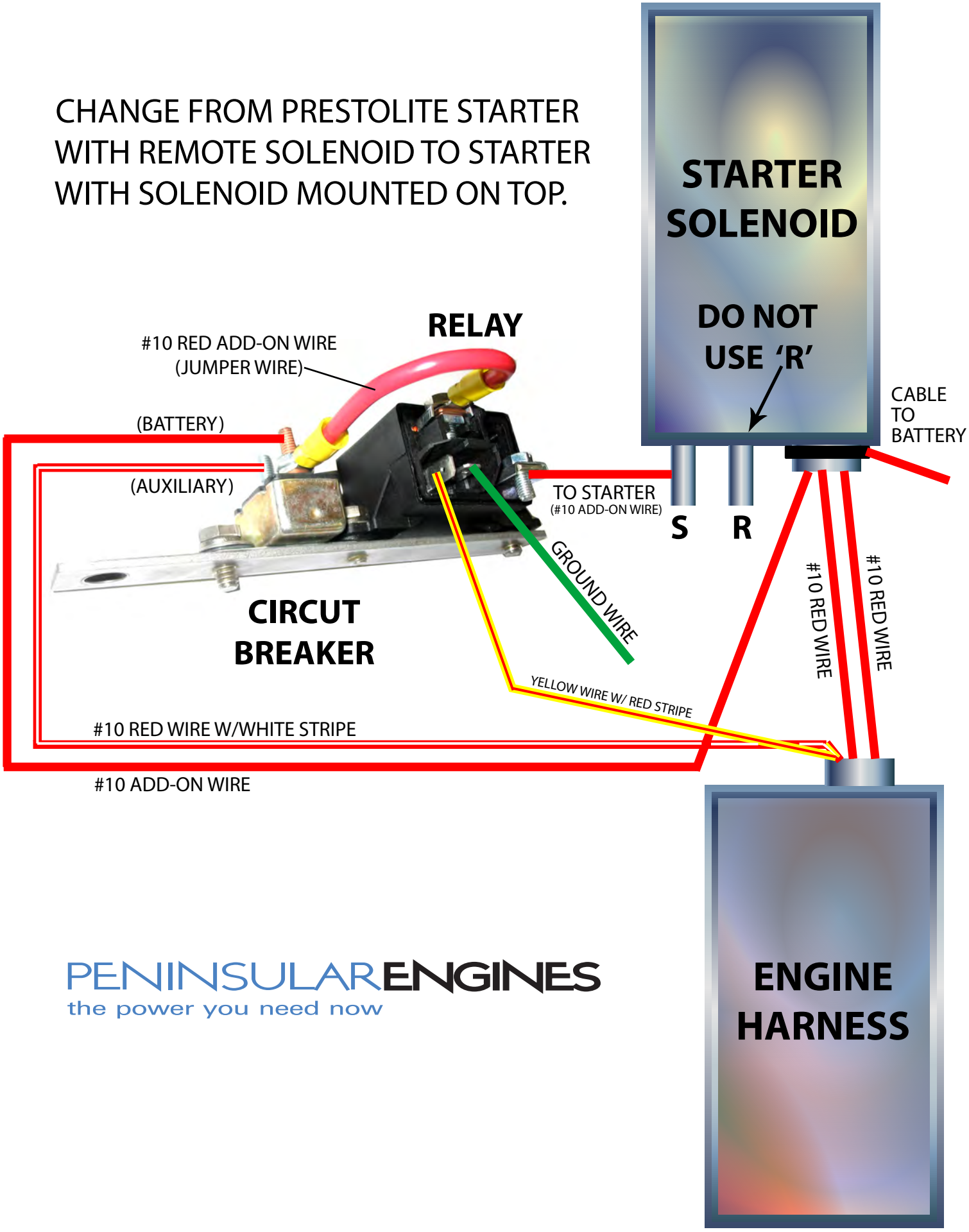


INSTRUMENT PANEL WIRING

P/N 2340200

SOFT START RELAY WIRING

CHANGE FROM PRESTOLITE STARTER WITH REMOTE SOLENOID TO STARTER WITH SOLENOID MOUNTED ON TOP.



PENINSULARENGINES
the power you need now

	2340128		Jabsco Pump (2001 & later)	1
	2340103		Jabsco Service Kit (Includes Items with *)	1
	2340123		Jabsco Impeller Kit (Impeller and Gasket only)	1

Jabsco Figure 1

1	2327101		Screw, End Cover	6
2	2327102		End Cover	1
3	2327103	*	Gasket	1
4	2327104	*	Impeller	1
5	2327105		Cam	1
6	2327106		Screw, Cam	1
7	2327107		Wearplate	1
8	2327108	*	Seal Assembly (Complete)	1
9	2327109		Seal Spacer	1
10	2327110		Shaft	1
11	2327111		Bearing, Inner Seal	1
12	2327112		Ball Bearing	1
13	2327113		Retainer Ring, Bearing/Shaft	1
14	2327114		Retainer Ring, Bearing/Housing	1
15	2327115		Outer Bearing Seal	1
16	2327116		Body	1
17	2327117		Key	1

	2340129A		Complete Johnson Pump Assembly (Pre 2001)	1
	2340129		Johnson Pump Only (Pre 2001)	1
	2340101		Johnson Service Kit (Includes Items with *)	1

Johnson Figure 2

1	2340118		Body	1
2	2340119		End Cover	1
3	2320123	*	Impeller	1
4	2340120		Cam	1
5	2340121		Shaft	1
6	2340122	*	Gasket	1
7		*	Rubber Insert (Not Serviced Separately)	1
8	2327312	*	End Cover Screw	6
9	2340124	*	Lip Seal	2
10	2340125		O-ring	1
11	2327309		Ball Bearing	2
12	2340126		Retaining Clip	1
13	2340127		Cam Screw	1
14	2320128		Washer	1

The following parts are required for mounting pumps.

2330730		Sea Water Pump Bracket (Needed for both the Jabsco and Johnson pumps, Not used for the turnaround Johnson Pump)	1
2340146		Sea Water Pump Bracket (Johnson, used w/ 2330730)	AR
2340259		Sea Water Pump Bracket, Turnaround (Johnson)	AR
2340078		SS Hex Head Capscrew, 5/16-18 x 3/4"	3
2340049		SS Lockwasher, 5/16"	3
2338425		SS Hex Head Capscrew, 3/8-16 x 7/8"	2
2338443		SS Lockwasher, 3/8"	2
2338422		SS Flat Washer, 3/8"	2
2340147		Drive Key, 3/16 x 1"	1
2338435		SS Roll Pin	1

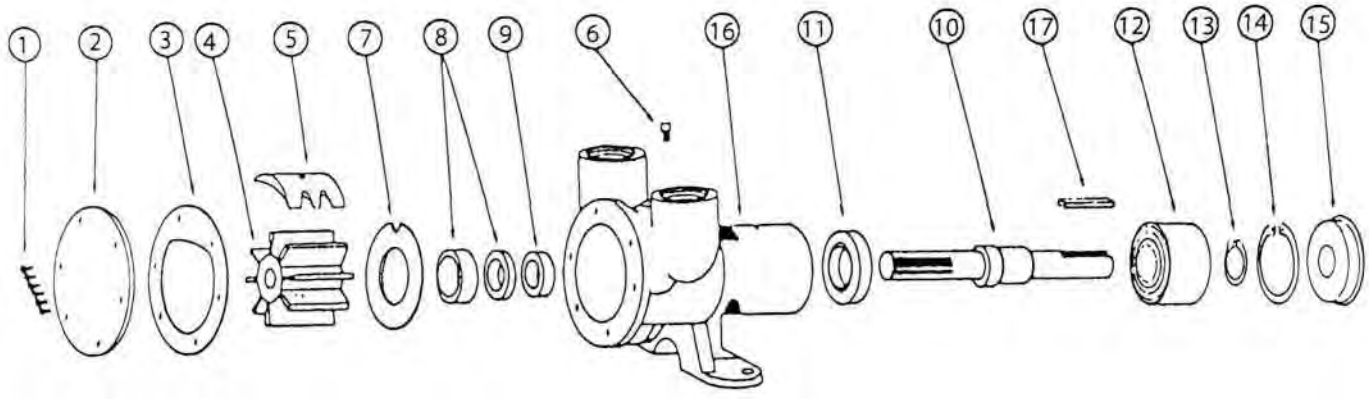


Figure 1

Jabsco Pump

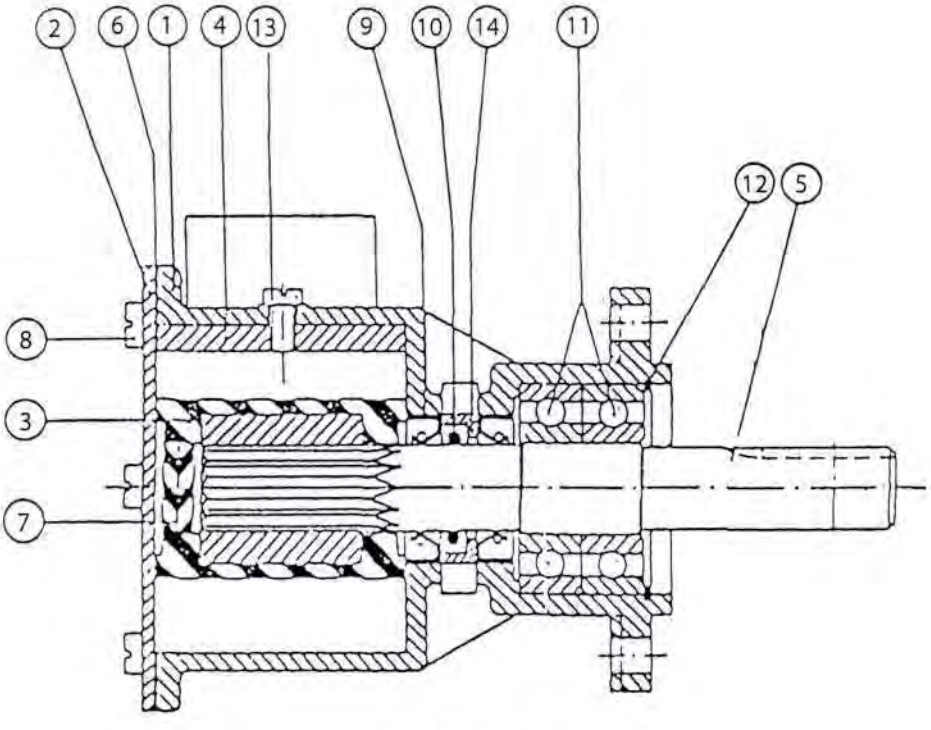


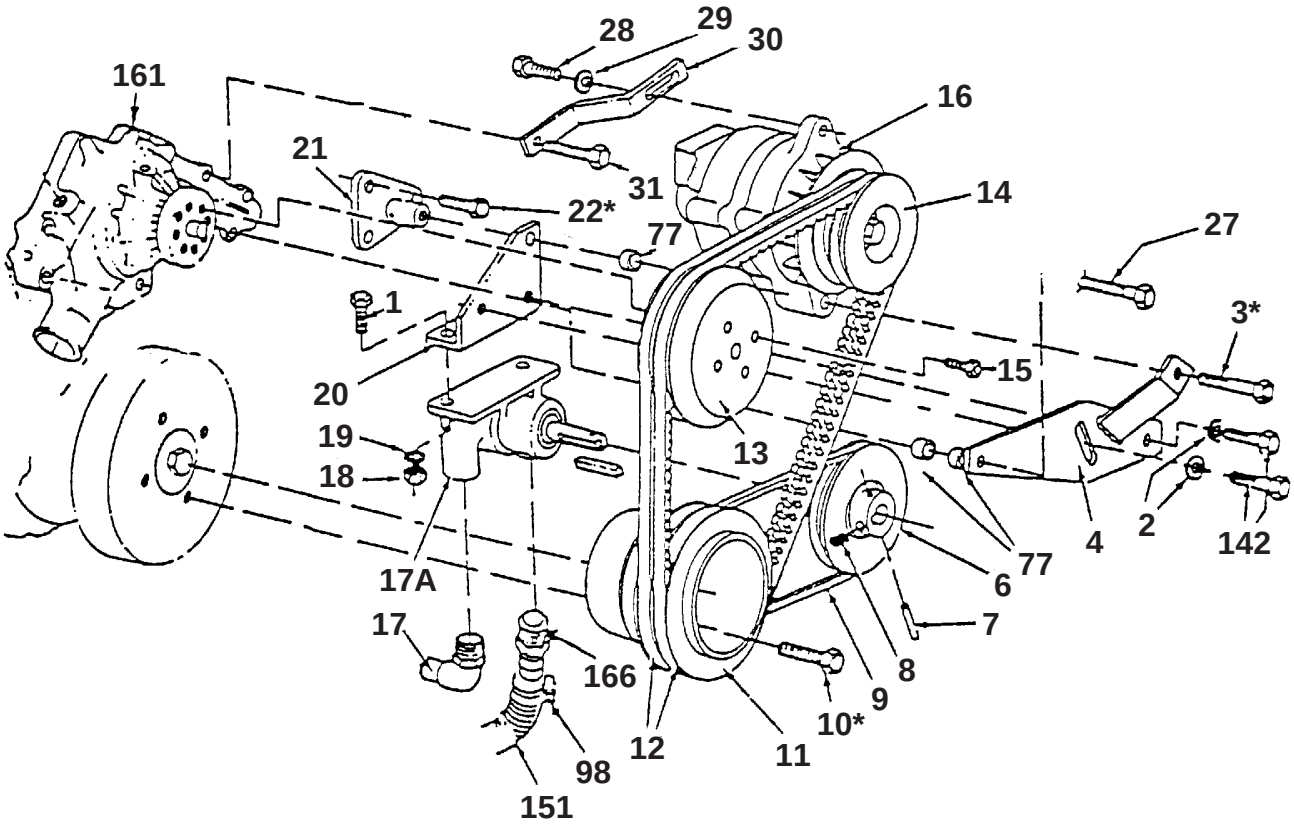
Figure 2

Johnson Pump

Pulleys and Belts

1	2338426	SS Hex Head Capscrew, 3/8-16 x 7/8"	2
2	2338455	SS Lockwasher, 10mm	2
3	2340162	Hex Head Caspcrew, Gr 8, 1/2-13 x 3.25"	1
	* 2340161	SS Lockwasher, 1/2"	1
4	2330208	Alternator & Water Pump Bracket	1
	2340187	Alt. & Water Pump Bracket (Turnaround-Jabsco)	AR
	2340189	Alt. & Water Pump Bracket (Turnaround-Johnson)	AR
6	2335516	Sea Water Pump Pulley	1
7	2338435	SS Roll Pin, 1/8 x 1.5"	1
8	2338445	SS Allenhead Cup Point Setscrew, 1/4-20 x 3/8"	1
9	2336100	Belt, Seawater Pump	1
	2336102	Belt, Seawater Pump, Turnaround	1
10	2338428	SS Hex Head Capscrew, 10mm x 1.5 x 60mm	4
	* 2338455	SS Lockwasher, 10mm (Not shown)	4
11	2335512	Crankshaft Pulley	1
12	2336101	Belt Set, Matched Pair, Engine Water Pump & Alternator	1
13	2335513	Engine Water Pump Pulley	1
14	2334002	Alternator Pulley	1
15	2338427	SS Hex Head Capscrew, 8mm x 1.25 x 20mm	4
16	2328603	Alternator, 51 Amp	1
	2340155	Alternator, 90 Amp	1
17	2338439	Brass Hose Barb, 1"NPT x 1.25" Hose x Straight	1
17A	*******	Sea Water Pump (see pp31-34 for part #s)	
19	2338443	SS Lockwasher, 3/8"	2
20	2330730	Sea Water Pump Bracket (Needed for both the Jabsco and Johnson pumps, Not used for the turnaround Johnson Pump)	1
	2340146	Sea Water Pump Bracket (Johnson, used w/ 2330730)	AR
	2340259	Sea Water Pump Bracket, Turnaround (Johnson)	AR
21	2330201	Alternator Mounting Bracket	1
22	2330209	SS Hex Head Capscrew, 3/8-16 x2"	3
	* 2338443	SS Lockwasher, 3/8" (Not shown)	3
	* 2338459	SS Flat Washer (Not Shown)	3
27	2338460	SS Hex Head Capscrew, 10mm x 1.5 x 130mm	1
28	2338425	SS Hex Head Capscrew, 5/16-18 x 7/8"	1
	2340049	SS Lockwasher, 5/16" (Not Shown)	1
29	2338479	SS Flat Washer, 5/16"	1
30	2331200	Alternator Adjusting Strap	1
31	2338402	SS Hex Head Capscrew, 10mm x 1.5 x 120mm	1
77	2340106	Spacer, Alternator/Water Pump Bracket 3/4" (As required)	1
98	2338446	SS Worm-Gear Hose Clamp, #20	2
142	2338426	SS Hex Head Capscrew, 3/8-16 x 7/8"	2
151	513109	Hose, Wire-Reinforced, 1.25" I.D. x 9"	1
161	6253316	Engine Water Pump	1
166	2340135	Brass Hose Barb, 1" NPT x 1.5" Hose x Straight	1

Pulleys and Belts

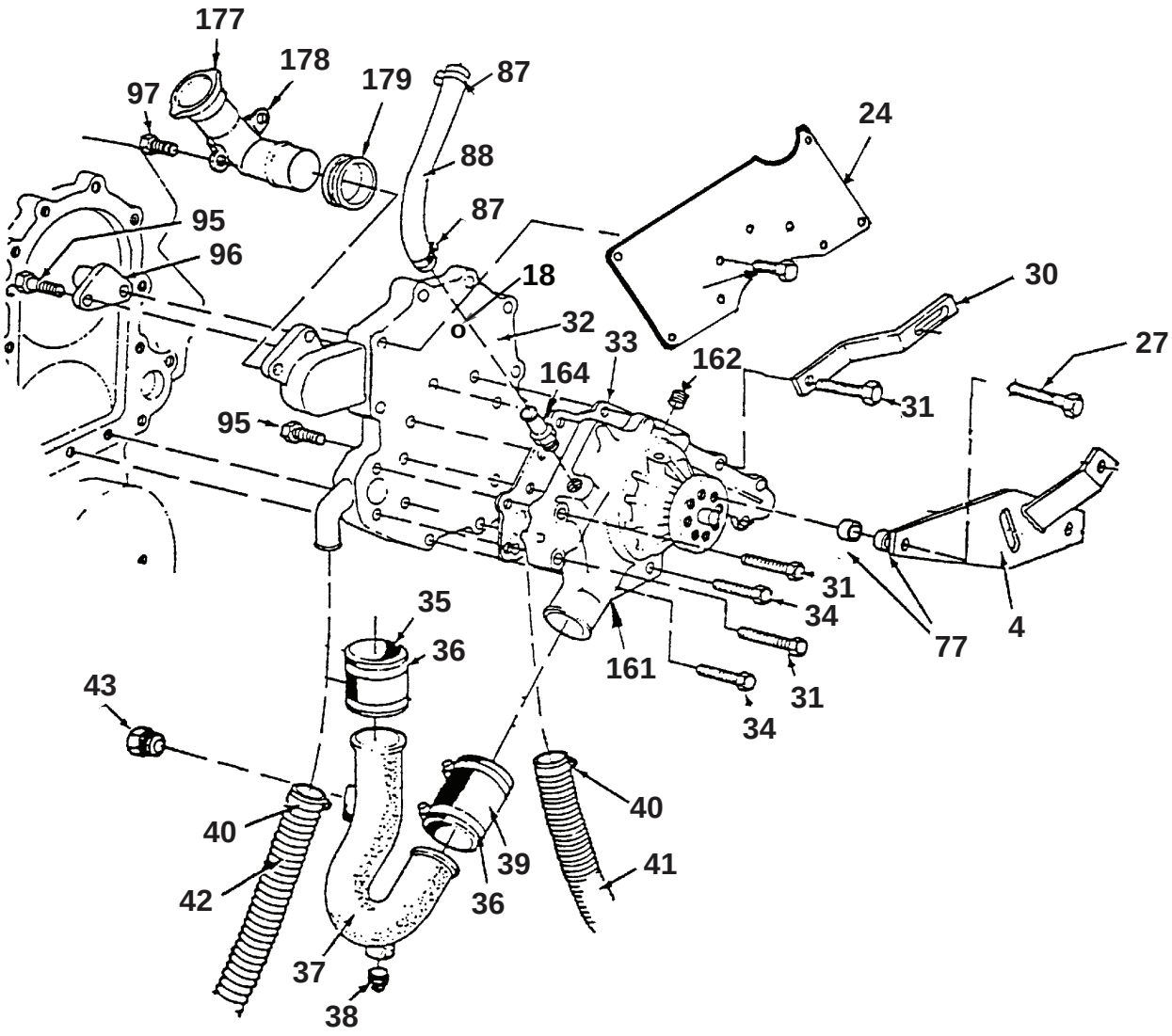


NOTE: Bolts marked with an asterisk (*) require lockwashers and/or flatwashers that are NOT SHOWN.
See parts list on opposing page.

Engine Water Pump

4	2330208	Alternator & Waterpump Bracket	1
	2340187	Alt. & Water Pump Bracket (Turnaround-Jabsco)	AR
	2340189	Alt. & Water Pump Bracket (Turnaround-Johnson)	AR
18	2338613A	Grommet, Injection Pump Access	1
23	2338407	SS Hex Head Capscrew, 8mm x 1.25 x 50mm	6
24	2340170	Heat Exchanger Mounting Bracket, Raised HE (std)	1
	2340172	Heat Exchanger Mounting Bracket, Lowered HE	1
27	2338460	SS Hex Head Capscrew, 10mm x 1.5 x 140mm	1
30	2331200	Alternator Adjusting Strap	1
31	2338402	SS Hex Head Capscrew, 10mm x 1.5 x 120mm	3
32	2335504	Water Pump Spacer	1
33	6253503	Water Pump Gasket	1
34	2338408	SS Hex Head Capscrew, 8mm x 1.25 x 70mm	2
35	2337300	Coolant Hose, 2.125" I.D.x 5.5", Raised HE (std)	1
	2337302	Coolant Hose, 2.125" I.D.x 3", Lowered HE	1
36	2338447	SS Worm-Gear Hose Clamp, #36	4
37	2335519	Water Pump Inlet Pipe	1
38	P218P-4	Brass Pipe Plug, 1/4" NPT	1
39	2337303	Coolant Hose, 2.125" I.D.x 4"	1
40	2338433	SS Worm-Gear Hose Clamp, #16	4
41	512311	Hose, Wire-Reinforced, 1" x 11"	1
	512317	Older Engine Set up had 1" x 17" Hose	
42	512312	Hose, Wire-Reinforced, 1" x 12"	1
	512313	Older Engine Set up had 1" x 13" Hose	
43	P125HBL-6-8	Hose Barb, Brass (used with manifold vent)	1
	2340011	Brass Plug (without manifold vent)	1
57	2338403	SS Hex Head Capscrew, 10mm x 1.5 x 110mm	1
77	2340106	Spacer, Alternator/Water Pump Bracket 3/4" (As required)	1
87	2338416	SS Worm-Gear Hose Clamp, #10	2
88	513018	Hose, Wire-Reinforced, 5/8" ID x 18"	1
95	2338409	SS Hex Head Capscrew, 8mm x 1.25 x 25mm	7
96	2330202	Fuel Pump Preload	1
97	2338406	SS Hex Head Capscrew, 3/8-16 x 1/2"	2
	* 2338443	SS Lockwasher, 3/8" (Not Shown)	2
135	P125HBL-6-8	Brass Hose Barb, (98 and later)	1
	2340011	Brass Pipe Plug, 1/2", (pre 98)	1
161	6253316	Engine Fresh Water Pump	1
162	445751	Steel Pipe Plug, 1/2"	1
164	P68HB-10-8	Brass Hose Barb, 1/2"NPT x 5/8" x Straight	1
177	6251301	Oil Fill Cap	1
178	6251312	Oil Filler Tube, Vented	1
179	6251304	Grommet, Oil Fill Tube	1

Engine Water Pump

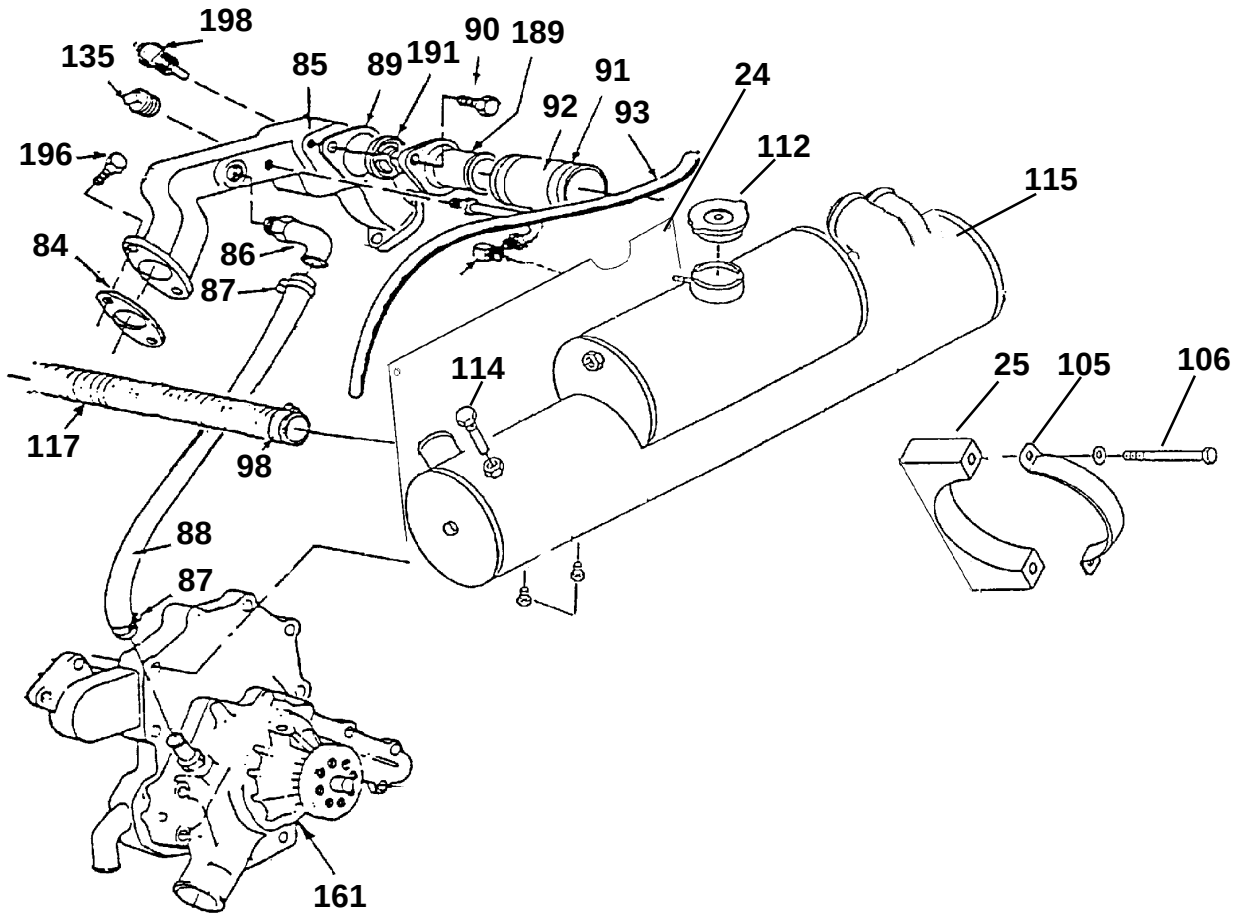


NOTE: Bolts marked with an asterisk (*) require lockwashers and/or flatwashers that are NOT SHOWN.
See parts list on opposing page.

Heat Exchanger & Thermostat

23		2338407	SS Hex Head Capscrew, 8mm x 1.25 x 50mm	6
24		2340170	Raised Heat Exchanger Mounting Bracket (std)	1
		2340172	Lowered 2-1/2" Heat Exchanger Mounting Bracket (opt)	1
		2340312	Expansion Tank (req. w/ Lowered Heat Exchanger)	1
		2340313	Cap, Expansion Tank	1
25		2340173	Heat Exchanger Rubber Mount	2
105		2340174	Heat Exchanger Mount Strap	2
106		2340175	H. E. Mounting Bolts, 3/8-16 x 4" SS	4
	*	2338443	SS Lockwasher, 3/8"	4
	*	2338405	SS Nut, 3/8"-16	4
84		6250508	Gasket, Water Hole Cover	2
85		2335505	Thermostat Manifold	1
86		P269HB-10-8	Brass Hose Barb, 1/2" NPT x 5/8" Hose x 90°T	1
87		2338416	SS Worm-Gear Hose Clamp, # 10	2
88		513018	Hose, Wire-Reinforced, 5/8" ID x 18"	1
89		6253708	Thermostat Gasket	1
90		2338401	SS Hex Head Capscrew, 10mm x 1.25 x 25mm	2
	*	2338455	SS Lockwasher, 10mm	2
91		2338482	SS Worm-Gear Hose Clamp, # 28	2
92		2340256	"S" Hose, Thermostat Outlet, 1-7/8" ID x 6.5" (S Hose used with Raised Heat Exchanger)	1
		2340254	Coolant Hose, Thermostat Outlet, 1-7/8" ID x 6.5"	1
93		2337304	Hose, Heat-Exchanger Overflow, 5/16" ID x 24"	1
98		2338446	SS Worm-Gear Hose Clamp, # 20	4
112		2338601	Heat Exchanger Fill Cap	1
114		2340157	Zinc Plug, 1/2" NPT	1
115		2340153	Heat Exchanger Ass'y, 5" Standard	1
		2340154	Heat Exchanger Ass'y, 5" Cupronickel (Opt)	1
117		2340255	"S" Hose, Heat Exchanger Outlet (S Hose used with Raised Heat Exchanger)	1
		5131105	Hose, Wire Reinforced, 1.25" ID X 10-1/2"	1
		513112	Hose, Wire Reinforced, 1.25" ID X 12" (older engines)	1
135		2340011	Pipe Plug, Brass, 1/2" NPT	2
		2338441A	Plug, Countersunk, 1" Pipe (for behind thermostat)	1
161		6253316	Engine Water Pump	1
188		2337211	Vent Hose Ass'y (HE to Turbo Ex Housing, Raised HE)	1
		2337201	Vent Hose Ass'y (HE to Thermostat Manifold, Lowered HE)	1
189		6253718	Thermostat Housing Outlet	1
190		P149F-4-2	Elbow, Brass, 1/8" NPT x #4 Flare	1
191		6253719	Thermostat, 160° TF Standard Marine	1
		6253729	Thermostat, 190° TF Standard Marine	1
196		1635490	Hex Flange Head Capscrew, 10mm x 1.5 x 30mm	4
198		2340133	Water Temperature Alarm Switch, 210°	1
		2340195	Heat Exchanger End Cap Rubber Gasket (Not Shown)	2
		2340408A	Remote Thermostat Kit w/ Bypass (for Add-On) * items included	1
	*	2340408	Remote Thermostat w/ Bypass (Replacement) (Not Shown)	1
	*	5130040	Hose, Wire Reinforced, 5/8" (Not Shown)	18"
	*	5130010	Hose, Wire Reinforced, 1-1/4" (Not Shown)	15"
	*	2338446	SS Worm-Gear Hose Clamp, #20 (Not Shown)	2
	*	2338417	SS Worm-Gear Hose Clamp, #12 (Not Shown)	2
	*	B4503-10-08-FG	Hose Barb, 1/2" NPT x 5/8" Hose x 45° (Not Shown)	1
		2340290	Kit for Cabin Heat (Not Shown) ** items included	1
	**	2340291	Valve, Ball, Cabin Heat (Not Shown)	2
	**	2340292	Nipple, 3" x 1/2", Cabin Heat (Not Shown)	1
	**	2340293	Nipple, 1/2" x Close, Cabin Heat (Not Shown)	1
	**	2340294	Tee, 1/2" Street, Cabin Heat (Not Shown)	1
	**	2340295	Elbow, 1/2" 90° Street, Cabin Heat (Not Shown)	1
	**	2340296	Elbow, 1/2" 45° Street, Cabin Heat (Not Shown)	1
	**	P68HB-10-8	Brass Hose Barb (Not Shown)	2

Heat Exchanger and Thermostat

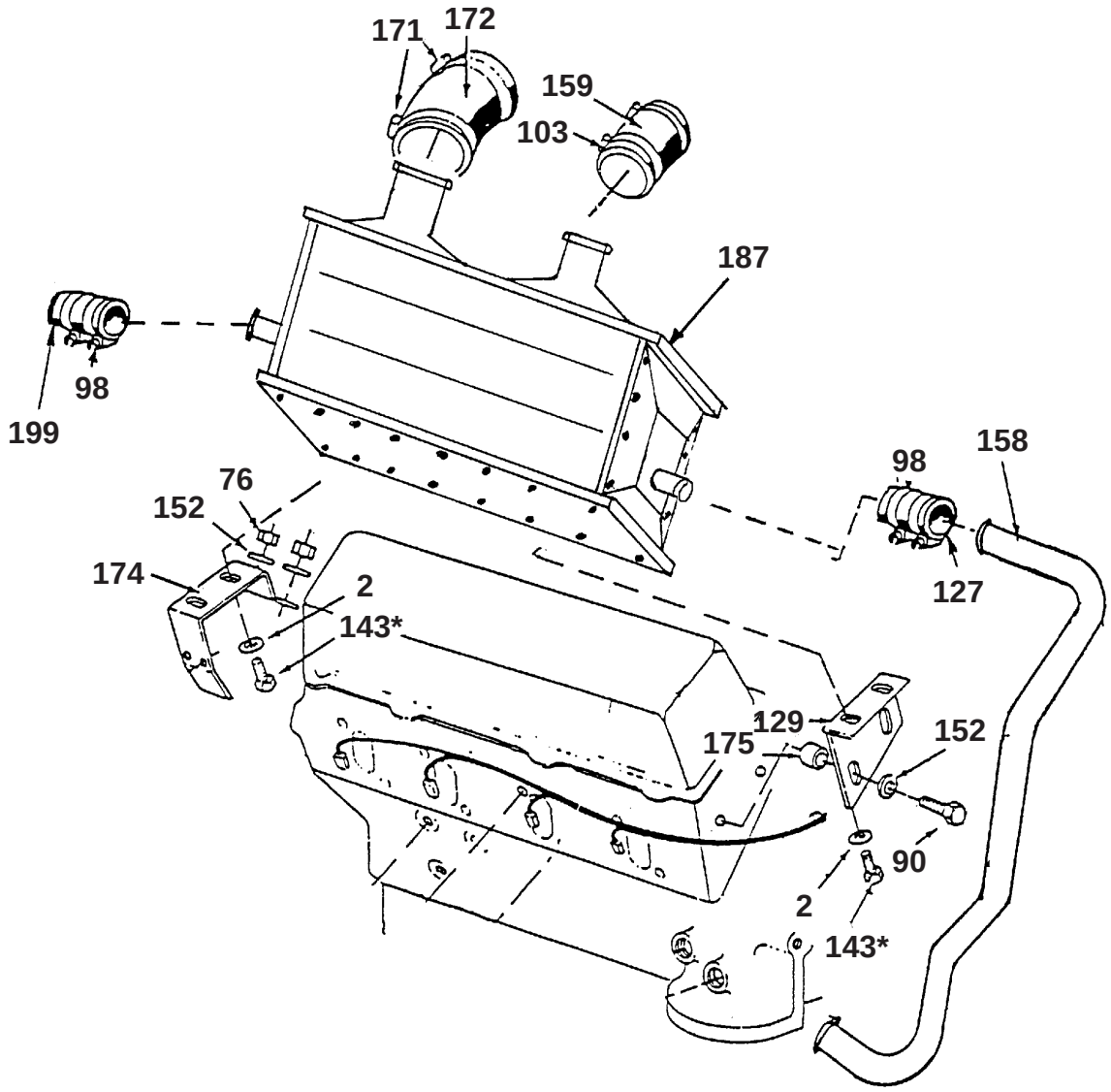


NOTE: Bolts marked with an asterisk (*) require lockwashers and/or flatwashers that are NOT SHOWN.
See parts list on opposing page.

Aftercooler

2		2338459	SS Flat Washer, 10mm	6
76		2338430	SS Nut, 10mm x 1.5	2
90		2338401	SS Hex Head Capscrew, 10mm x 1.5 x 25mm	2
	*	2338455	SS Lockwasher, 10mm	2
98		2338446	SS Worm-Gear Hose Clamp, #20	4
103		2338421	SS Worm-Gear Hose Clamp, #40	2
199		5131105	Hose, Wire-Reinforced, 1.25" ID x 10-1/2"	1
		513112	Hose, Wire-Reinforced, 1.25" ID x 12" (older engines)	1
127		513103	Hose, 3-Ply Connector, 1.25" ID	1
129		2331153	Rear Bracket, Aftercooler	1
143		2338420	SS Hex Head Capscrew, 3/8"-16 x 3/4"	4
	*	2338443	SS Lock Washer, 3/8"	4
152		2338459	SS Flat Washer, 10mm	4
158		2340115	Tube, Eng. Oil Cooler to Aftercooler, 1.25" Diam.	1
159		2338705	Formed Hose, Aftercooler Inlet	1
171		2338437	SS Worm-Gear Hose Clamp, #52	2
172		2337301	Formed Hose, Aftercooler to Intake	1
174		2331600	Front Bracket, Aftercooler	1
175		2334854	Spacer, Aftercooler Bracket	1
187		2340171	Aftercooler Assembly	1
		2340171T	Aftercooler Assembly, Twin Turbo	1
		2340301	U-Pipe (for 220hp Engines w/o Aftercooler)	1
		2340302	Hump Hose to connect 2340301, U-Pipe	1
		2340169	Aftercooler Gasket Set (2340171)	1

Aftercooler

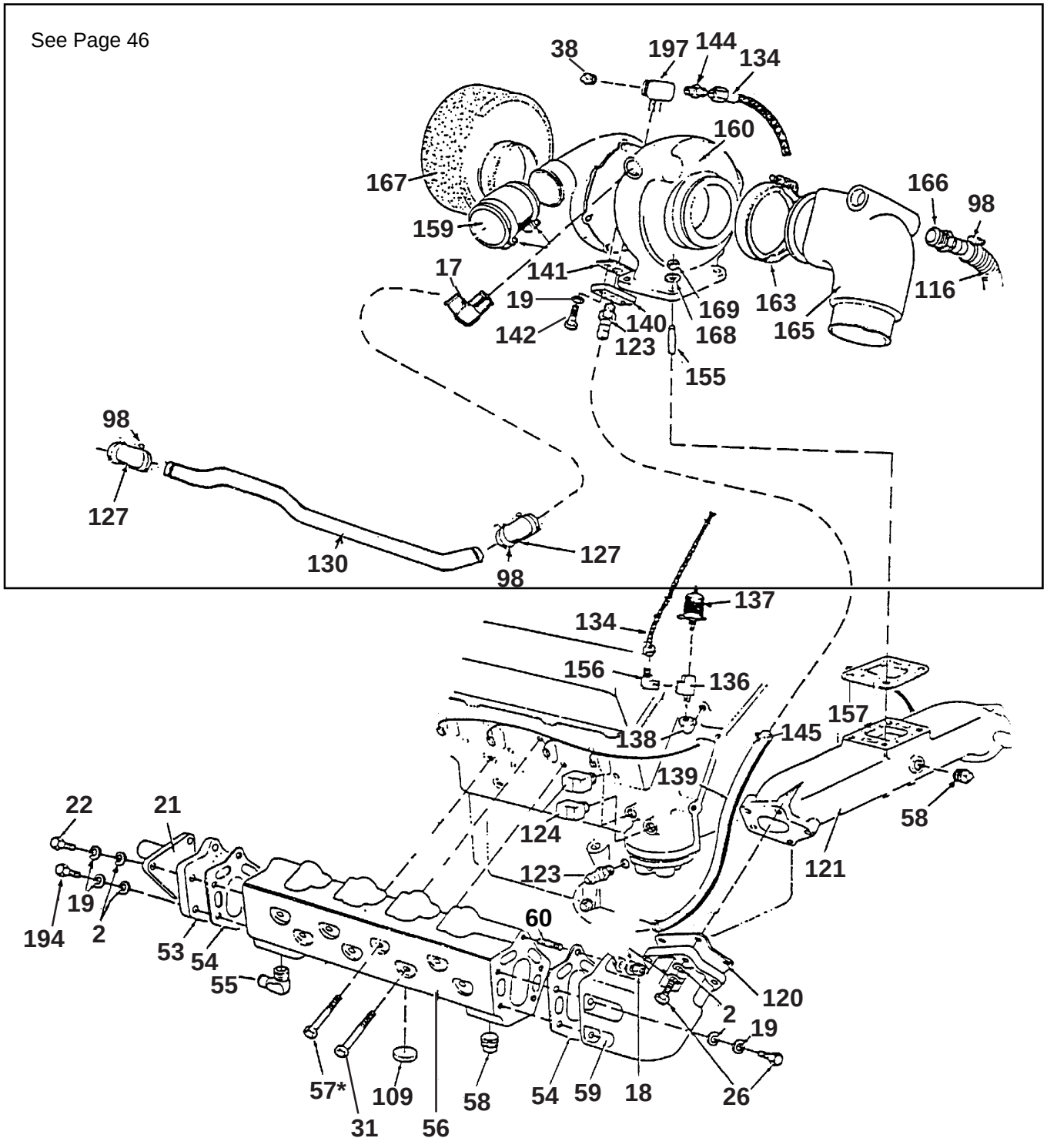


NOTE: Bolts marked with an asterisk (*) require lockwashers and/or flatwashers that are NOT SHOWN.
See parts list on opposing page.

Exhaust System

2	2338459		SS Flat Washer, 10mm	34
18	2338405		SS Hex Nut, 3/8"-16	2
19	2338443		SS Lockwasher, 3/8"	32
21	2330201		Alternator Mounting Bracket	1
22	2330209		SS Hex Head Capscrew, 3/8-16 x 2"	3
26	2338404		SS Hex Head Capscrew, 3/8-16 x 1.25"	18
31	2338402		SS Hex Head Capscrew, 10mm x 1.25 x120mm	8
53	2335501		End Cap, Exhaust Manifold	2
54	2336902		Gasket, End Cap	4
	2340030		Hose, Vent Ass'y - Left End Cap to "J" Pipe (Not Shown)	1
	5140050	*	Hose, 7520-6	7"
	P125HBL-6-8	*	Hose Barb, Brass	1
	P129HB-6-4	*	Hose Barb, Brass 90^{o}	1
	2338481	*	Clamp, SS Worm Gear #5	2
			* Items Included in Hose, Vent Ass'y #2340030	
55	2338440		Hose Barb, 1" NPT x 1" Hose x 90^{o} T	2
56	2335500		Manifold, Exhaust	2
57	2338403		SS Hex Head Capscrew, 10mm x 1.5 x110mm	8
	* 2338455		SS Lockwasher, 10mm	8
58	2338441		Plug, 1" NPT Brass Pipe	3
59	2335529		Riser, Exhaust Manifold	2
60	2340104		SS Stud, 3/8"-16 x 1.75"	2
109	2336701		Plug, Brass Expansion Cup, 1.25"	2
120	2336903		Gasket, Exhaust Riser to Crossover	2
121	2335530		Crossover, Exhaust Manifold	1
123	P68HB-12-8		Hose Barb, Brass 1/2" NPT x 3/4" Hose, Straight (oil pan)	1
	2340011		Pipe Plug, Brass, 1/2" NPT (w/using rear eng block drain)	1
124	2340003		Elbow, Brass, 1/2" NPT x #10 Flare x 90^{o} (oil cooler)	2
134	2337203		Oil Line Ass'y, 1/4" x 12" w/ # 5 Swivels	1
136	P2225P-4		Tee, Brass Pipe, 1/4" NPT	1
137	6250382		Sender, Oil Pressure, Single Station (Std)	1
	6250383		Sender, Oil Pressure, Dual Station (Opt)	1
	P209P-4-2		Bushing, Brass Reducer, 1/4" x 1/8" NPT (Not shown)	1
138	P2202P-4-4		Elbow, Brass Street, 1/4" NPT x 90^{o} T	1
139	2336909		Silicone Turbo Drain Hose, 3/4" X 5" (w/ rear oil drain)	1
	2336908		Oil Drain Plate (mounts to engine block)(Not Shown)	1
	11504595		Bolt, Oil Drain Plate	2
	2336911		Gasket, Oil Drain Plate	1
	512230		Hose, Wire -Reinforced, 3/4" x 32"	1
145	2338417		SS Worm-Gear Hose Clamp, # 12	2
156	P149F-5-4		Elbow, Brass, 1/4" NPT x #5 Flare x 90^{o} T	1
157	2336907		Gasket, Exhaust Outlet	1
194	2338424		SS Hex Head Capscrew, 3/8"-16 x 1.75"	7

Exhaust System

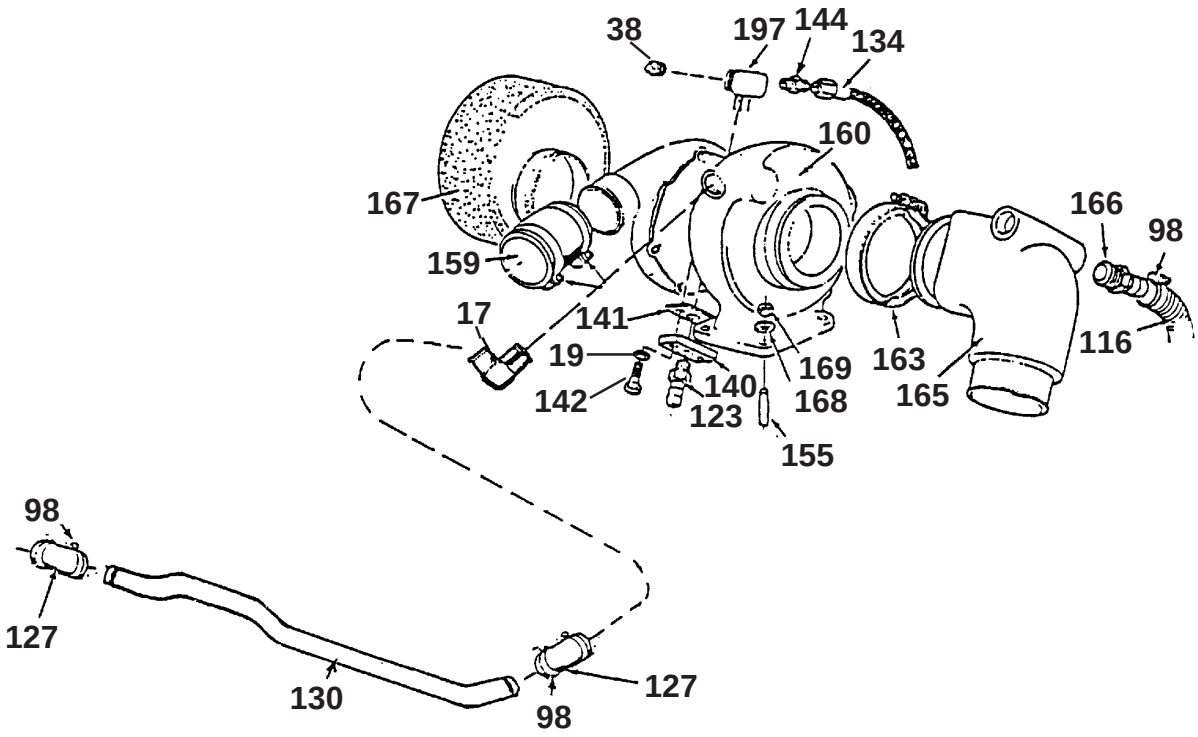


NOTE: Bolts marked with an asterisk (*) require lockwashers and/or flatwashers that are NOT SHOWN.
See parts list on opposing page.

Exhaust System Continued

17	2338438		Hose Barb, 1" NPT x 1.25" Hose x 90° T	1
19	2338443		SS Lockwasher, 3/8"	32
38	2340132		Oil Pressure Alarm Switch, 10 psi	1
98	2338446		SS Worm-Gear Hose Clamp, # 20	4
	2340408		Remote Thermostat w/ Bypass (Replacement)	1
	2340408A		Remote Thermostat w/ Bypass Kit (for Add-On)	1
116	513120		Hose, Wire-Reinforced, 1.25" ID x 18"	1
123	P68HB-12-8		Hose Barb, Brass, 1/2" NPT x 3/4" Hose, Straight	2
127	513103		Hose, 3-Ply Connector, 1.25" ID x 3"	1
	513123		Hose, Wire-Reinforced, 1.25" ID x 23"	1
130	2340114		Tube, 1.25" Diam., Brass, Heat Exch. To Turbo	1
	2340111		Tube, Brass, Heat Exch. To Turbo used w/remote Themostat	Opt.
134	2337203		Oil Line Ass'y, 1/4" x 12" w/ # 5 Swivels	1
140	6E043		Plate, Oil Outlet	1
141	2336906		Gasket, Oil Drain	1
142	2338426		SS Hex Head Capscrew, 3/8-16 x 7/8"	2
144	P48F-5-4		Connector, Brass Straight, 1/4" NPT x #5 Flare	1
155	8927270		Stud, Turbo, 3/8"-16 x 3/8-24 x 1.5"	4
159	2338705		Hose, Formed, After Cooler Inlet	1
160	6250340		Turbocharger Assembly, Complete	1
	6250371	*	Turbo Cartridge	1
	6250398	*	Turbo Exhaust Housing	1
	2338478	*	Bolt, 5/16"-18 X 1/2" SS	4
	2340049	*	Lockwasher, 5/16" SS	4
	2338479	*	Flatwasher, 5/16" SS	4
	2335535	*	Turbo Compressor Housing	1
	2338478	*	Bolt, 5/16"-18 X 1/2" SS	6
	2340049	*	Lockwasher, 5/16" SS	6
	2338479	*	Flatwasher, 5/16" SS	6
163	6250399		Clamp, V-Band, Turbo Exhaust	1
165			See Page 47 Exhaust Elbows	
166	2338438		Hose Barb, 1" NPT x 1.25" Hose x 90° T (Stn)	1
	2338439		Hose Barb, 1" NPT x 1.25" Hose x Straight (Opt)	1
	2338441		Plug, 1" NPT Brass Pipe (Not Shown)	1
	P218P-4		Brass Pipe Plug, 1/4" NPT (Not Shown)	1
167	2337001		Air Cleaner Ass'y w/ Vent<98 (Includes Foam Element)	1
	2337002		Air Cleaner Ass'y >97 (Includes Foam Element)	1
	2317002		Air Cleaner Foam Element	1
168	2338459		Turbo Washer	4
169	2340087		Turbo Locknut, 3/8"-24	4
197	P2225P-4		Tee, Brass Pipe, 1/4" NPT	1

Exhaust System



NOTE: Bolts marked with an asterisk (*) require lockwashers and/or flatwashers that are NOT SHOWN.
See parts list on opposing page.

Exhaust Elbows

1	2335533	Exhaust Discharge Elbow, 4" (220 hp Engines)	1
2	2335033	Cast Aluminum, 90^{o} T - 5" Cuff (310 hp Engines)(Std)	1
3	2335034	Exhaust Discharge Elbow, 6" (340 hp Engines) (Opt)	1
4	2335033S	Cast Aluminum, 90^{o} T - 5" Cuff (shortend for Transom)(Opt)	1
	2335532	Cast Aluminum, 90^{o} T - 4" Cuff (shortend for Transom)(Opt)	1
5	2335035	Cast Aluminum, 45^{o} T - 5" Cuff (310 hp Engines)(Opt)	1
6	2335518	4" Exhaust Elbow (NA Engines/Non-Turbo)	1

EXHAUST ELBOWS



1



2



3



4



5

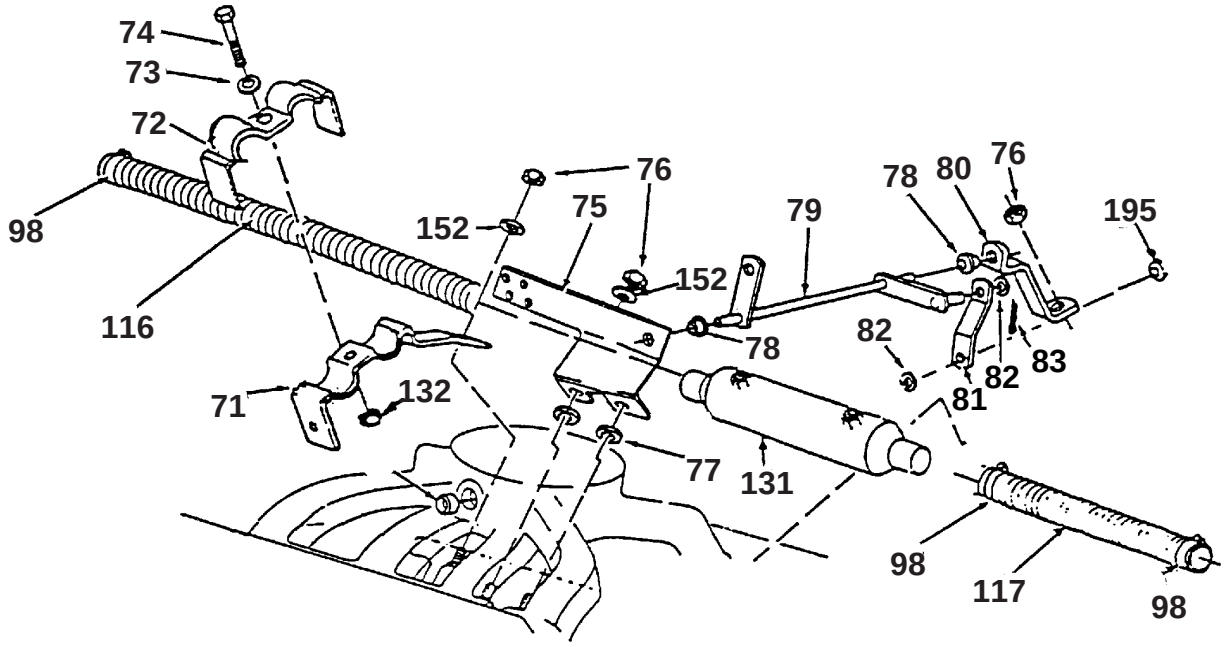


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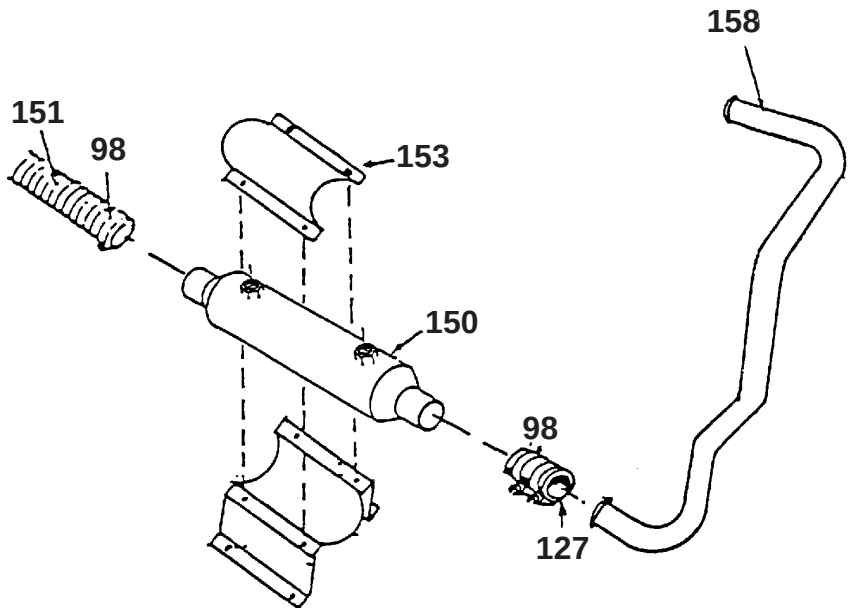
Oil Cooler & Throttle Linkage

70	6251211	Brass Freeze Plug, 1" (6.2 Only)	1
71	2340267	Transmission Cooler Bracket for 2-1/2 inch Cooler	2
	2340275	Transmission Cooler Bracket for 3 inch Cooler	2
75	2331731	Throttle Bracket, Right Side, Formed	1
76	2338430	SS Hex Nut, 10mm x 1.5	3
78	2336775	Nylon Flanged Bushing	2
79	2330204	Throttle Linkage Ass'y	1
80	2331201	Throttle Bracket, Left Side	1
81	2331100	Connector Link	1
82	2338450	SS Flat Washer, 1/4"	3
83	49011	Cotter Pin, 3/32" x 1/2"	1
98	2338446	SS Worm-Gear Hose Clamp, #20	7
116	513118	Hose, Wire-Reinforced, 1.25" ID x 18"	1
117	513112	Hose, Wire-Reinforced, 1.25" ID x 12"	1
127	2340134	Hose, 3-Ply Connector, 1.25" ID x 3"	1
131	2337018	Transmission Oil Cooler, 2.5"	1
	P149F-8-8	Fitting for Transmission Oil Cooler	2
150	2337016	Oil Cooler, Engine, 3"	1
	2340003	Fittings for Oil Cooler	4
	2340181	8.5" Oil Cooler Hose	1
	2340182	9.5" Oil Cooler Hose	1
151	513109	Hose, Wire-Reinforced, 1.25" ID x 9"	1
	513118	Hose, Wire-Reinforced, 1.25" ID x 18", Turnaround Pump	
152	2338459	SS Flat Washer, 10mm	3
153	2340018	Mounting Bracket, Engine Oil Cooler, Top	1
	2340019	Mounting Bracket, Engine Oil Cooler, Bottom	1
		(Hardware for Mounting Brackets)	
	* 2340040	SS Hex Nut, 5/16-18	4
	* 2340049	SS Lockwasher, 5/16"	8
	2340078	SS Hex Head Capscrew, 5/16-18 x 3/4"	8
158	2340115	Tube, Engine Oil Cooler to Aftercooler, 1.25"	1
195	2338331	Linkage clip	1

Oil Cooler and Throttle Linkage



Stb. side of engine



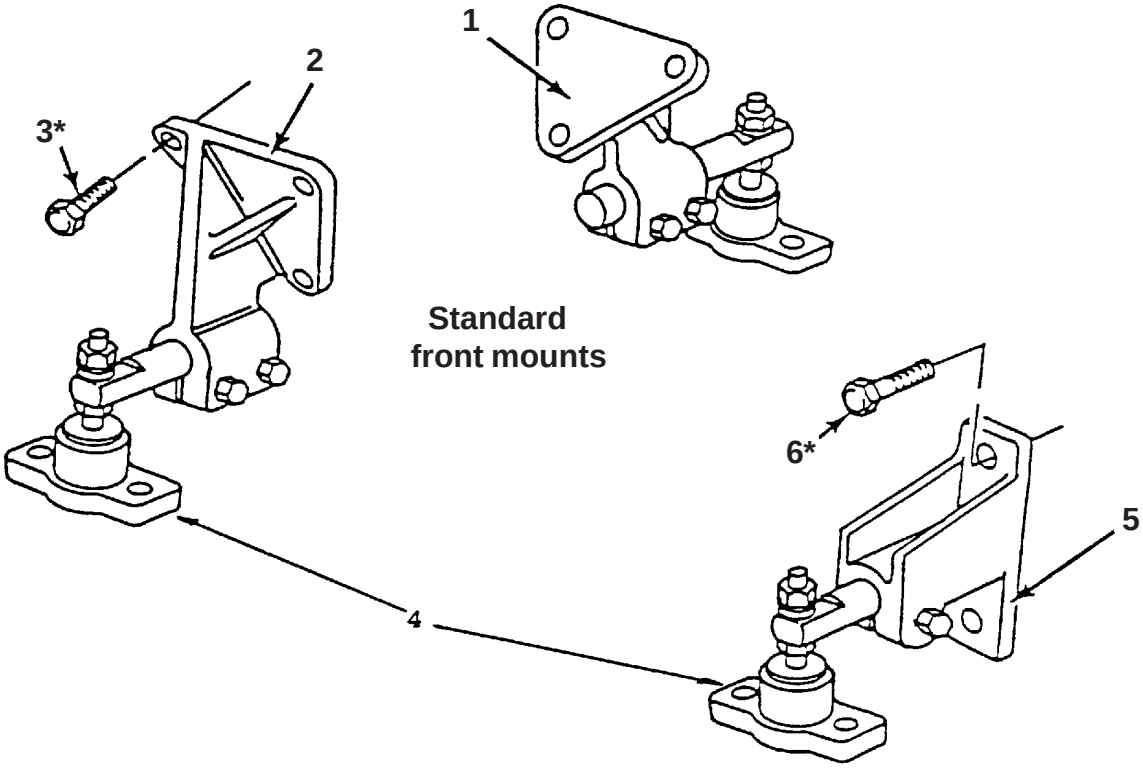
Port Side of Engine

NOTE: Bolts marked with an asterisk (*) require lockwashers and/or flatwashers that are NOT SHOWN.
See parts list on opposing page.

Mounts, Engine & Transmission

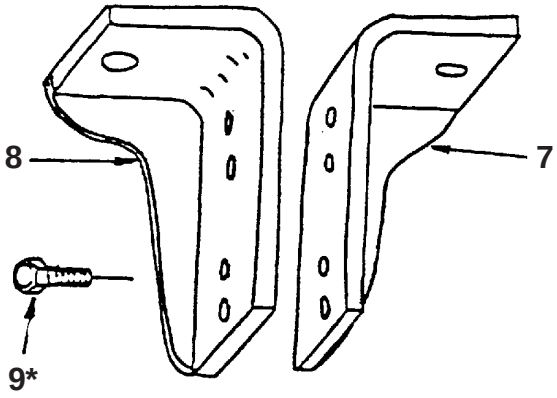
		Front Mounts	
1	2328604	Mount, Front Right Mount w/ Shaft (Std)	1
2	2328606	Mount, Front Left Mount w/ Shaft (Std)	1
		(Above Mounts Include:)	
	2340113	Shaft, Knurled	1
	2338423	SS Capscrew, 3/8-16 x 2.75" - Gr 8	4
	2338443	SS Lockwasher, 3/8"	4
	2338405	SS Hex Nut, 3/8-16	4
3	2340026	SS Capscrew 10mm x 30mm	6
	* 2338455	Lockwasher, 10mm	6
	2338404	SS Capscrew, 3/8-16 x 1.25" (older engines)	6
	* 2338443	SS Lockwasher, 3/8" (older engines)	6
4	2328607	Dual-Flex Vibration Mounts (Std)	4
		Rear Mounts	
5	2328605	Mounts, Rear, for use w/ Borg Warner (Std)	2
		(Above Items Each Include:)	
	2340113	Shaft, Knurled	1
	2338423	Capscrew, 3/8-16 x 2.75" - Gr 8	1
	2338459	SS Flat Washer, 10mm	1
	2338418	Lockwasher, 3/8" Gr 8	1
	2338411	Hex Nut, 3/8-16 Gr 8	1
6	2338442	SS Capscrew, 7/16-14 x 1.25"	4
	* 2340017	SS Lockwasher, 7/16"	4
		Optional Rear Mounts	
7	2338449	Mount, Right Rear (w/ Twin Disc Gears)	1
8	2338448	Mount, Left Rear (w/ Twin Disc Gears)	1
9	2338442	SS Capscrew, 7/16-14 x 1.25" (Twin Disc)	4
	* 2340017	SS Lockwasher, 7/16" (Twin Disc)	4
7	2340144	Mount, Right Rear (w/ Hurth Gears)	1
8	2340143	Mount, Left Rear (w/ Hurth Gears)	1
9	2340054	SS Hex Head Capscrew, 12mm x 30mm	4
	* 2340028	SS Lockwasher, 12mm	4
7	2340035	Mount, Right Rear, 4^{o} Angle for Borg-Warner	1
8	2340034	Mount, Left Rear, 4^{o} Angle for Borg-Warner	1
9	2338472	SS Hex Head capscrew, 7/16-14 x 1"	4
	* 2340017	SS Lockwasher, 7/16"	4
	2340142	Mount, Rear Aluminum, for use with remote-mounted Marine Gear (Not Shown)	1
7	2328609	Borg-Warner 5000 Right Mount (Not shown)	1
8	2328610	Borg-Warner 5000 Left Mount (Not shown)	1
7	2340001	Mount, Right Rear (w/ ZF IRM220 Gear)	1
8	2340002	Mount, Left Rear (w/ ZF IRM220 Gear)	1

Mounts, Engine and Transmission



Standard front mounts

Standard rear mounts



Optional rear mounts

NOTE: The Optional Rear Mounts shown here are for illustration only. Actual mounts may differ in apearance.

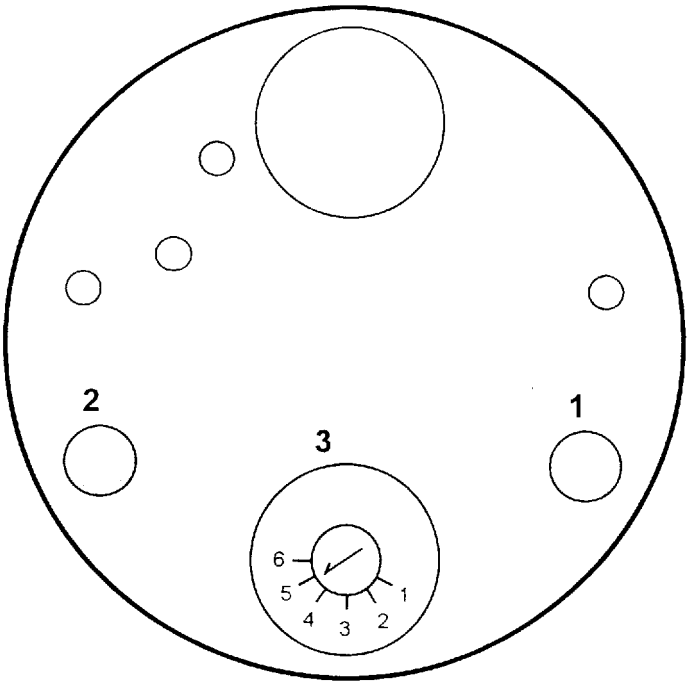
NOTE: Bolts marked with an asterisk (*) require lockwashers and/or flatwashers that are NOT SHOWN. See parts list on opposing page.

DRESS PARTS

The following are buffed standard parts which may be used, optionally, to enhance the appearance of the PENINSULAR 400. The quantity of each part needed to dress up an engine is shown in parentheses.

Standard Part #	Description	Dress Up Part #:	Quantity:
2335505	Thermostat Manifold, Buffed	2335005	(1)
6253718	Thermostat Outlet, Buffed	2335006	(1)
2335512	Pulley, Crankshaft, Buffed	2335012	(1)
2335513	Pulley, Engine Water Pump, Buffed	2335013	(1)
2334002	Pulley, Alternator, Buffed	2335015	(1)
2335516	Pulley, Sea Water Pump, Buffed	2335016	(1)
2335519	Engine Water Pump Pipe, Buffed	2335019	(1)
2335520	Air Intake Adaptor, Buffed 6.5	2335020	(1)
2335506	Air Intake Adaptor, Buffed 6.2	2335011	(1)

FARIA TACHOMETER ADJUSTMENT



1. Low end adjustment. - set at factory.

2. High end adjustment. - use 5/64 allen wrench to adjust.

3. Adjustment dial. - should be set at "5" prior to calibrating.

Engine Specifications

General Data

Type	90-degree V8 diesel	
Displacement	6.5L	400 cu. in.
Bore	103mm	4.055 in.
Stroke	97mm	3.818 in.
Compression Ratio	21.3:1 (160HP) 19.0:1 (205 HP) 18.0:1 (225 and higher)	
Firing Order	1-8-7-2-6-5-4-3	
Oil Pressure (at idle, hot)	69kPa	10psi
Oil Pressure (at 2000 RPM)	276 to 310kPa	40-45psi

Cylinder Bore

Diameter	102.974 to 103.000 mm	4.0541 to 4.0552 in
Out-of-Round Limit Taper	0.02mm	0.0008 in.
Limit (Thrust Side)	0.02mm	0.0008 in.

Piston

Clearance (Bores 1 to 6)	0.094 to 0.120 mm	0.0037 to 0.0047 in
Clearance (Bores 7 and 8)	0.107 to 0.133mm	0.0042 to 0.0052 in

Piston Ring

Top Compression Ring:		
Ring End Gap	0.26 to 0.51 mm	0.010 to 0.020 in.
2nd Compression Ring:		
Ring Side Clearance	0.039 to 0.079 mm	0.0015 to 0.0031 in
Ring End Gap	0.75 to 1.00 mm	0.030 to 0.039 in.
Oil Control Ring:		
Ring Side Clearance	0.040 to 0.090 mm	0.0016 to 0.0035 in
Ring End Gap	0.25 to 0.51 mm	0.0098 to 0.0236 in

Piston Pin

Diameter	30.9961 to 31.0039 mm	1.2203 to 1.2206 in
Clearance	0.0101 to 0.0309 mm	0.0003 to 0.0012 in

Crankshaft

Main Journal		
Diameter (#1 to #4)	74.914 to 74.941 mm	2.9494 to 2.9504 in
Diameter (#5)	74.912 to 74.936 mm	2.9492 to 2.9502 in
Taper Limit	0.005mm	0.0002 in.
Out-of-Round Limit	0.005mm	0.0002 in
Main Bearing Clearance:		
#1 to #4	0.045 to 0.083 mm	0.0018 to 0.0033 in
#5	0.055 to 0.093 mm	0.0022 to 0.0037 in
Crankshaft End-Play	0.10 to 0.25 mm	0.0039 to 0.0098 in

Crankshaft (continued)

Crankpin:		
Diameter	60.913 to 60.939 mm	2.3981 to 2.3992 in.
Taper Limit	0.005 mm	0.0002 in.
Out-of-Round Limit	0.005 mm	0.0002 in.
Rod Bearing Clearance Rod	0.045 to 0.100 mm	0.0018 to 0.0039 in.
Side Clearance	0.17 to 0.63 mm	0.0067 to 0.0248 in.

Camshaft

Lobe lift:		
Intake	7.133 mm	0.281 in.
Exhaust	7.133 mm	0.281 in.
Journal Diameter:		
#1 to #4	54.970 to 55.025 mm	2.1643 to 2.1663 in.
#5	54.970 to 51.025 mm	2.1643 to 2.0089 in.
Clearance:		
#1 to #4	0.025 to 0.118 mm	0.0010 to 0.0046 in.
#5 Camshaft	0.020 to 0.113 mm	0.0008 to 0.0044 in.
End-Play	0.051 to 0.305 mm	0.0020 to 0.0120 in.

Valve System

Lifter Type Rocker	Hydraulic Roller	
Arm Ratio Valve	1.5 to 1 Not Adjustable	
Lash Face Angle	45 degrees	
Seat Angle Seat	46 degrees	
Runout Limit Seat	0.05mm	0.002 in.
Width:		
Intake	0.89 to 1.53 mm	0.035 to 0.060 in.
Exhaust	1.57 to 2.36 mm	0.062 to 0.093 in.
Valve Face:		
Recession into Deck	0.863 to 1.218 mm	0.034 to 0.048 in.
Stem Clearance:		
Intake	0.026 to 0.069 mm	0.0010 to 0.0027 in.
Exhaust	0.026 to 0.069 mm	0.0010 to 0.0027 in.
Valve Spring:		
Pressure (Closed)	356 Nat 46.0 mm	392 pounds at 1.81 in.
Pressure (Open)	1025 Nat 35.3 mm	1130 pounds at 1.39 in.
Installed Height	46 mm	1.81 in.
Timing Chain Free-Play:		
New	12.7mm	0.500 in.
Used	20.3mm	0.800 in.
Hydraulic Lifter Diameter	23.39 to 23.41 mm	0.923 to 0.9217 in.
Lifter Bore Diameter	23.45 to 23.47 mm	0.923 to 0.924 in.
Lifter to Bore Clearance Limit	0.11 mm	0.0043 in.

Cylinder Head

Head/Case Deck Warpage Limits:		
Overall Length	0.15mm	0.006 in.
Transverse Width	0.08mm	0.003 in.
Pre-Combustion Chamber Fit Limits:		
Protrusion From Deck	0.051 mm	0.002 in.
Procession Into Deck	0 mm	0.0 in.

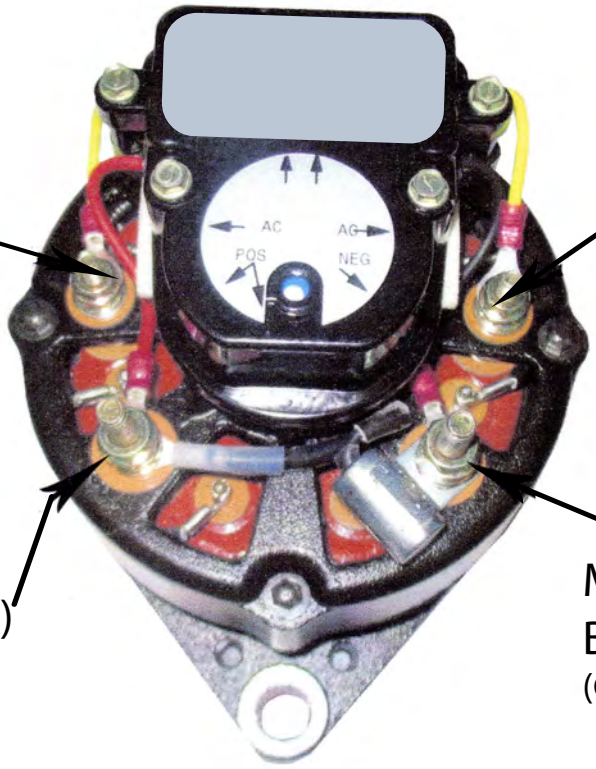
Torque Specifications

Fastener	Torque	
	N-m	**Lb-Ft**
Camshaft sprocket bolt (pump drive gear)	75-90	55-66
Camshaft thrust plate Connecting rod nuts	18-27	13-20
Connecting rod nuts	60-70	44-52
Crankshaft pulley bolts	34-48	25-35
Cylinder head bolts		
First torque (to seat gasket)	27	20
Second torque	68	50
Final torque	Additional 90^{o}-95^{o}	Additional 90^{o}-95^{o}
Cylinder head temperature switch	19-27	13-20
Cylinder head coolant passage plate bolts/studs	34-50	25-37
Exhaust manifold bolts/studs	36-49	27-36
Front cover to block bolts	34-50	25.-37
Fuel filter mounting bolts	34-50	25-37
Fuel injection pump bracket bolts	18-27	13-20
Fuel injection drive gear bolts	18-27	13-20
Fuel injection pump mounting bolts	34-50	25-37
Fuel return line bracket nuts	18-27	13-20
Fuel injection line fitting nuts (at pump)	24-36	18-27
Fuel injection line fitting nuts (at nozzles)	27-39	19-29
Fuel supply line fittings at lift pump	24-26	17-19
Flywheel mounting bolts	80-95	60-70
Fast idle/cold advance temperature switch	10-12	7-9
Glow plugs	11-16	8-12

Torque Specifications (continued)

Fastener	Torque	
	N-m	**Lb-Ft**
Intake manifold bolts/studs	34-50	25-37
Lifting bracket bolts/studs	45-60	33-44
Main bearing cap bolts (inner)	141-160	104-118
Main bearing cap bolts (outer)		
12mm	126-145	93-107
10mm	34-50	25-37
Nozzles	60-80	44-60
Oil fill tube bolts	18-27	13-20
Oil filter fitting	34-50	25-37
Oil pan bolts (except two at rear)	6-14	4-10
Oil pan rear bolts	18-27	13-20
Oil pump drive clamp bolt	34-50	25-37
Oil pump mounting bolt	80-100	60-74
Rocker arm cover bolts/studs	18-35	13-25
Rocker arm shaft bolts	50-60	37-44
Thermostat cover bolt/studs	34.-50	25-37
Torsional damper bolt	270	200
Valve lifter guide clamp bolt	18-35	13-25
Water crossover mounting bolts/studs	34-50	25-37
Water pump to plate bolts	27-34	20-25
Water pump to front cover bolts/studs	18-27	13-20
Water pump/front cover to cylinder case bolt/studs	34-50	25-37
Turbocharger drain tube plate	16-20	12-15
Turbocharger mounting nuts	45-52	33-38

ALTERNATOR WIRING



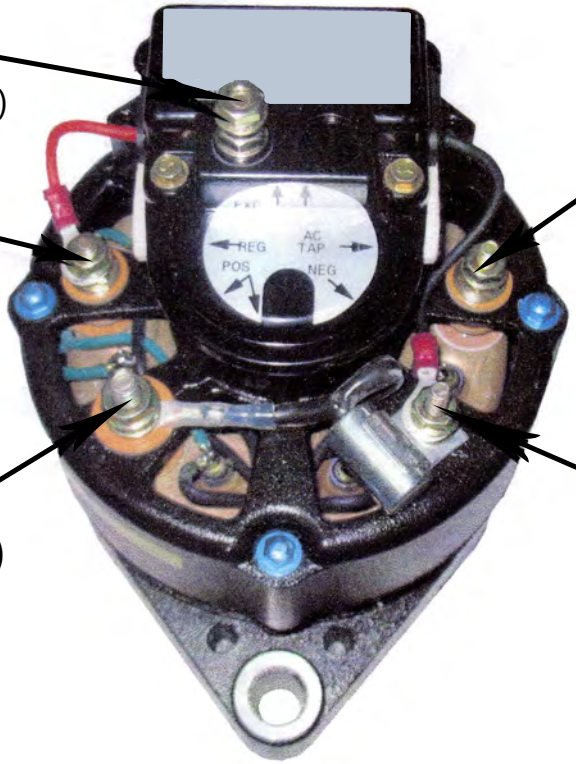
GREY WIRE
(A.C. - 1/2 Voltage
Output Connect
To Tach.)

NOT USED

RED WIRE (power)
(12 Volt Connection)

MAKE UP GROUND
BLACK WIRE #4 GAUGE
(Ground Must Be Connected)

90 AMP Alternator Wiring



YELLOW WIRE
(Ignition To Key Switch)

BROWN WIRE

GREY WIRE
(A.C. - 1/2 Voltage
Output Connect
To Tach.)

RED WIRE (power)
(12 Volt Connection)

NOT USED

51 AMP Alternator Wiring