

2.9000A THROTTLE CONTROLS

PART		TYPES												
FIG	NUMBER	NAME AND DESCRIPTION	5 6 1	5 6 9	5 7 2	5 7 8	5 7 9	5 8 0	5 8 2	5 8 3	5 8 6	5 9 5	6 0 2	6 0 3
		2.9133 - CONTROL ASSY., VERNIER THROTTLE												
		SEE ASSEMBLY BREAKDOWN PAGE A1.												
8B	3292337	CONTROL ASSY., 2,3,4-53			1									
	3292560	CONTROL ASSY., 2,3,4-53				1								
		2.9150 - BRACKET, THROTTLE CONTROL KNOB SHAFT												
		A BRACKET ASSY. INCLUDES BUSHING IN 2.9160.												
	5124829	BRACKET, 2,3,4-53			1	1								
		2.9160 - BUSHING, THROTTLE CONTROL SHAFT BRACKET												
	3222765	BUSHING, 2,3,4-53			1									
		2.9170 - PLATE, THROTTLE CONTROL INDICATOR												
	3292274	PLATE, 2,3,4-53			1	1								
	454813	BOLT, 1/4"-20X7/8" (12.9001)			3	3								
	120380	LOCKWASHER, 1/4" (12.9200)			3	3								
	123179	NUT, 1/4"-20 HEX. (12.9120)			3	3								
		2.9175 - SUPPORT, THROTTLE CONTROL BRACKET												
	5124502	SUPPORT, 2,3,4-53			1	1								
	5128407	SUPPORT, 2,3,4-53			1	1								
	186676	BOLT, 1/4"-20X5/8" (12.9001)			1	1								
	120392	WASHER, 1/4" FLAT (12.9190)			1	1								
	120380	LOCKWASHER, 1/4" (12.9200)			1	1								
	123179	NUT, 1/4"-20 HEX. (12.9120)			1	1								
		2.9280 - ROD AND CLEVIS ASSY., THROTTLE CONTROL												
	5126986	ROD ASSY., 4-53		1										
	5129615	ROD ASSY., 3-53(ACCELERATOR CONTROL)					1							
	5123245	CLAMP, SWIVEL 4-53		1										
	103495	PIN, 5/16" CLEVIS (12.9160)		1										
	103372	PIN, 3/32"X1/2" COTTER (12.9260)		1										
	120380	LOCKWASHER, 1/4" (12.9200)					2							
	103320	LOCKWASHER, 5/16" (12.9200)		1										
	121902	NUT, 1/4"-28 HEX. (12.9120)					2							

2.9000A THROTTLE CONTROLS

PART
FIG . . . NUMBER NAME AND DESCRIPTION

PART NUMBER NAME AND DESCRIPTION		5 6 1	5 6 9	5 7 2	5 7 8	5 7 9	5 8 0	5 8 2	5 8 3	5 8 6	5 9 5	6 0 2	6 0 3
2.9355 - SOLENOID, THROTTLE CONTROL													
5100004	EYE, 6V53 (2.9024)											1	
1996097	SWITCH, PUSH BUTTON 6V53 (7.4115)											1	
100001	BOLT, 1/4"-28X3/4" (12.9001)											2	
181342	BOLT, 5/16"-24X1 3/8" (12.9001)											1	
120392	WASHER, 1/4" FLAT (12.9190)											2	
120380	LOCKWASHER, 1/4" (12.9200)											2	
121902	NUT, 1/4"-28 HEX. (12.9120)											2	
114492	NUT, 1/4"-28 HEX. (12.9120)											1	
114493	NUT, 5/16"-24 HEX. (12.9120)											1	
PROCURE FROM UNITED DELCO.													
2.9357 - BRACKET, THROTTLE CONTROL SOLENOID													
5162846	BRACKET, 6V53											1	
132268	SCREW, 1/4"-20X7/8" FIL. HD.											2	
	(12.9010)												
120380	LOCKWASHER, 1/4" (12.9200)											AR	
2.9360 - SHAFT, THROTTLE CONTROL													
5128417	ROD ASSY., 2,3,4-53		1	1									
5129616	ROD ASSY., 3-53(ACCELERATOR LINKAGE)				1								
5108388	+ ROD, 4-53 (ACCELERATOR LINKAGE)					1							
5118951	JOINT, BALL 5/16"-24 4-53(12.9680)					1							
103372	PIN, 3/32"X1/2" COTTER (12.9250)				3								
103340	WASHER, 5/16" FLAT (12.9190)				3								
120380	LOCKWASHER, 1/4" (12.9200)		2	2									
121902	NUT, 1/4"-28 HEX. (12.9120)		2	2									
OBSELETE.													
2.9390 - LEVER, GOVERNOR CONTROL SHAFT													
3222760	LEVER, 2,3,4-53		1	1									
5158432	LEVER, 6V53 (SHUT-OFF) (2.7170)												
5183802	LEVER, 6V53 (2.7170)											1	
5162848	BRACKET, LEVER 6V53											1	
5110692	SPACER, 2,3,4-53 (3.3060)		1	1									
454813	BOLT, 1/4"-20X7/8" (12.9001)											2	
106276	BOLT, 1/4"-28X1 1/8" (12.9001)		1	1									
120380	LOCKWASHER, 1/4" (12.9200)		1	1								2	
121902	NUT, 1/4"-28 HEX. (12.9120)		1	1									
2.9405 - SPRING, GOVERNOR CONTROL RETRACTING													
5119679	SPRING, 4-53 (2.7210)	1											
5172502	EYE, 4-53 (2.9348)	1											
5126560	CLIP (ACCELERATOR LINKAGE)				1								

2.9000A THROTTLE CONTROLS

PART		TYPES												
..FIG ..	NUMBER	NAME AND DESCRIPTION	5 6 1	5 6 9	5 7 2	5 7 8	5 7 9	5 8 0	5 8 2	5 8 3	5 8 6	5 9 5	6 0 2	6 0 3
		2.9280 - ROD AND CLEVIS ASSY., THROTTLE CONTROL (CONT'D)												
	121917	NUT, 5/16"-24 HEX. (12.9120)		1										
		2.9310 - SHAFT, THROTTLE CONTROL CROSS												
	5129613	STUD, 3-53 (ACCELERATOR IDLER LEVER) (2.9360)				1								
		2.9340 - LEVER, THROTTLE CONTROL CROSS SHAFT												
	5129614	LEVER ASSY., 3-53 (ACCELERATOR IDLER) (2.9300)				1								
		2.9344 - BRACKET, THROTTLE BOOSTER SPRING												
8A	5123878	BRACKET, 2,3,4-53						1			1	1		
	5126155	BRACKET, 6V53											1	
8A	5123879	BRACKET, 4-53												1
	186628	BOLT, 3/8"-16X1 1/2" (12.9001)						1			1	1		1
	189330	BOLT, 3/8"-24X3 3/4" (12.9001)											2	
	103321	LOCKWASHER, 3/8" (12.9200)										1		
		2.9345 - LEVER, THROTTLE BOOSTER												
	5128795	LEVER, 6V53											1	
	180021	BOLT, 1/4"-20X7/8" (12.9001)											1	
	120380	LOCKWASHER, 1/4" (12.9200)											1	
		2.9347 - SPRING, THROTTLE BOOSTER												
8A	5125716	SPRING, 2,3,4,6V53						1					1	
8A	5143344	SPRING, 2,3,4-53									1			1
		2.9348 - EYE, THROTTLE BOOSTER ADJUSTING												
8A	5123762	EYE, 1/4"-20X4" 2,3,4,6V53						1				1	1	1
8A	123179	NUT, 1/4"-20 HEX. (12.9120)						2				2	2	2
		2.9349 - HANGER, THROTTLE BOOSTER SPRING												
8A	5186749	NUT, 5/8"L.2,3,4,6V53(SPRING HANGER)						1				1		1
8A	5171429	NUT, 7/16"L.6V53(SPRING HANGER)											1	
	5171045	BOLT, 5/16"-2 2,3,4,6V53						1				1	1	1

2.9000A THROTTLE CONTROLS

FIG	PART NUMBER	NAME AND DESCRIPTION
	2.9428 - CLIP, GOVERNOR CONTROL WIRE TUBE	
	5155782	CLIP (7.8320)
	5108383 +	BRACKET
	3290569	CLIP (7.8320)
03319 →	123298	BOLT, 1/4"-28X3/8" (12.9001)
	120380	LOCKWASHER, 1/4" (12.9200)
	121902	NUT, 1/4"-28 HEX. (12.9120)
		† OBSOLETE

TYPES									
5 6 1	5 6 9	5 7 2	5 7 8	5 7 9	5 8 0	5 8 2	5 8 3	5 8 6	5 9 5
									6 0 2
									6 0 3
				1			1		1
					1		1	1	1
					1		1	1	1
					1		1	1	1
					1		1	1	1

2.9000A THROTTLE CONTROLS

			TYPES											
FIG	PART NUMBER	NAME AND DESCRIPTION	5 6 1	5 6 9	5 7 2	5 7 8	5 7 9	5 8 0	5 8 2	5 8 3	5 8 6	5 9 5	6 0 2	6 0 3
	2.9405	SPRING, GOVERNOR CONTROL RETRACTING (CONT'D)												
	186618	BOLT, 5/16"-18X5/8" (12.9001)				1								
	120380	LOCKWASHER, 1/4" (12.9200)	1											
	103320	LOCKWASHER, 5/16" (12.9200)				1								
	123179	NUT, 1/4"-20 HEX. (12.9120)	2											
	123197	NUT, 5/16"-18 HEX. (12.9120)				1								
	2.9406	BRACKET, GOVERNOR CONTROL RETRACTING SPRING												
	5126987	BRACKET, 4-53	1											
	132264	SCREW, 1/4"-20X3/4" FIL HD. (12.9010)	2											
	100002	BOLT, 1/4"-28X1" (LEVER STOP) (12.9001)	1											
	120380	LOCKWASHER, 1/4" (12.9200)	1											
	120613	NUT, 1/4"-28 HEX. (12.9120)	1											
	2.9410	LEVER, GOVERNOR CONTROL												
	5173081	LEVER, 2,3,4-53		1	1									
	5123880	LEVER, 2,3,4-53						1				1		
	5123881	LEVER, 4-53												1
179796 →	100021	BOLT, 1/4"-20X7/8" (12.9001)						1				1		1
	106276	BOLT, 1/4"-28X1 1/8" (12.9001)		1	1									
103319 →	120380	LOCKWASHER, 1/4" (12.9200)		1	1			1				1		1
	121902	NUT, 1/4"-28 HEX. (12.9120)		1	1									
	2.9422	WIRE, GOVERNOR CONTROL												
8A	5146239	WIRE ASSY., 2,3,4-53 (90" L)							1	1				
8A	5146238	WIRE ASSY., 2,3,4-53 (57" L)										1		1
	5184255	PLATE, NAME 2,3,4-53								1		1		1
	110730	LOCKWASHER, 3/8" (12.9200)							1	1		1		1
124925 →	122230	NUT, 3/8"-24 HEX. (12.9120)							1	1		1		1
		* WIRE ASSY. LENGTH DETERMINED BY INSTALLATION.												
	2.9426	PIN, GOVERNOR CONTROL WIRE SWIVEL												
8A	5161464	PIN, SWIVEL 2,3,4-53						1		1	1	1		1
	5150941	WASHER, 2,3,4-53 (2.7310)						1		1	1	1		1
	142583	RETAINER, 13/64" SPRING (12.9640)						1		1	1	1		1
8A	132105	SCREW, #10-32X3/8" FIL HD. (12.9010)						1		1	1	1		1

GROUP NOMENCLATURE

1.0000	ENGINE (less major assemblies)
1.1000	Cylinder Block
1.1000A	Air Box Drains
1.2000	Cylinder Head
1.2000A	Engine Lifter Bracket
1.3000	Crankshaft, Oil Seals and stabilizers
1.3000A	Crankshaft Front Cover
1.3000B	Vibration Damper
1.3000C	Crankshaft Pulley
1.3000D	Crankshaft Pulley Belt
1.4000A	Flywheel
1.5000A	Flywheel Housing
1.5000B	Flywheel Housing Adaptor
1.6000	Connecting Rod and Piston
1.7000	Camshaft and Gear Train
1.7000A	Balance Weight Cover
1.7000B	Accessory Drive
1.8000	Valve and Injector Operating Mechanism
1.8000A	Rocker Cover

2.0000	FUEL SYSTEM
2.1000A	Fuel Injector
2.2000	Fuel Pump
2.2000A	Fuel Pump Drain
2.3000A	Fuel Filter
2.4000	Fuel Manifold and/or Connections
2.4000A	Dual Fuel System
2.5000A	Fuel Lines and Fuel Cooler
2.6000A	Fuel Tank
2.7000A	Mechanical Governor
2.8000A	Hydraulic Governor
2.9000	Injector Controls
2.9000A	Throttle Controls

3.0000	AIR SYSTEM
3.1000A	Air Cleaner and/or Adaptor
3.2000A	Air Silencer
3.3000A	Air Inlet Housing
3.4000	Blower
3.4000A	Blower Drive Shaft
3.4000B	Blower End Plate Cover
3.5000A	Turbocharger and Intercooler

4.0000	LUBRICATING SYSTEM
4.1000A	Oil Pump
4.1000B	Oil Distribution System
4.1000C	Oil Pressure Regulator
4.2000A	Oil Filter
4.3000A	Oil Filter Lines
4.4000A	Oil Cooler and Marine Gear Lines
4.5000A	Oil Filler
4.6000A	Dipstick
4.7000A	Oil Pan
4.8000A	Ventilating System

5.0000	COOLING SYSTEM
5.1000	Fresh Water Pump
5.1000A	Fresh Water Pump Cover
5.2000A	Water Outlet Manifold and/or Elbow
5.2000B	Thermostat
5.2000C	Water By-pass Tube
5.3000A	Radiator
5.3000B	Water Connections
5.4000A	Fan
5.4000B	Fan Shroud
5.5000A	Heat Exchanger or Keel Cooling
5.6000A	Raw Water Pump
5.7000A	Water Filter

6.0000	EXHAUST SYSTEM
6.1000A	Exhaust Manifold
6.2000A	Exhaust Muffler and/or Connections

7.0000	ELECTRICAL—INSTRUMENTS
7.1000A	Battery Charging Generator
7.2000A	Battery Cables
7.2000B	Automatic Starting
7.3000A	Starting Motor
7.4000A	Instruments
7.4000B	Tachometer Drive
7.4000C	Shut-off, Alarm and O.S. Governor
7.5000A	Power Generator
7.6000A	Control Cabinet
7.7000A	Wiring Harness
7.8000A	Air Heater
7.10000A	Hydraulic Governor Solenoid

8.0000	POWER TAKE-OFF
8.1000A	Power Take-off and/or Clutch
8.3000A	Torque Converter
8.3000B	Transmission Lines

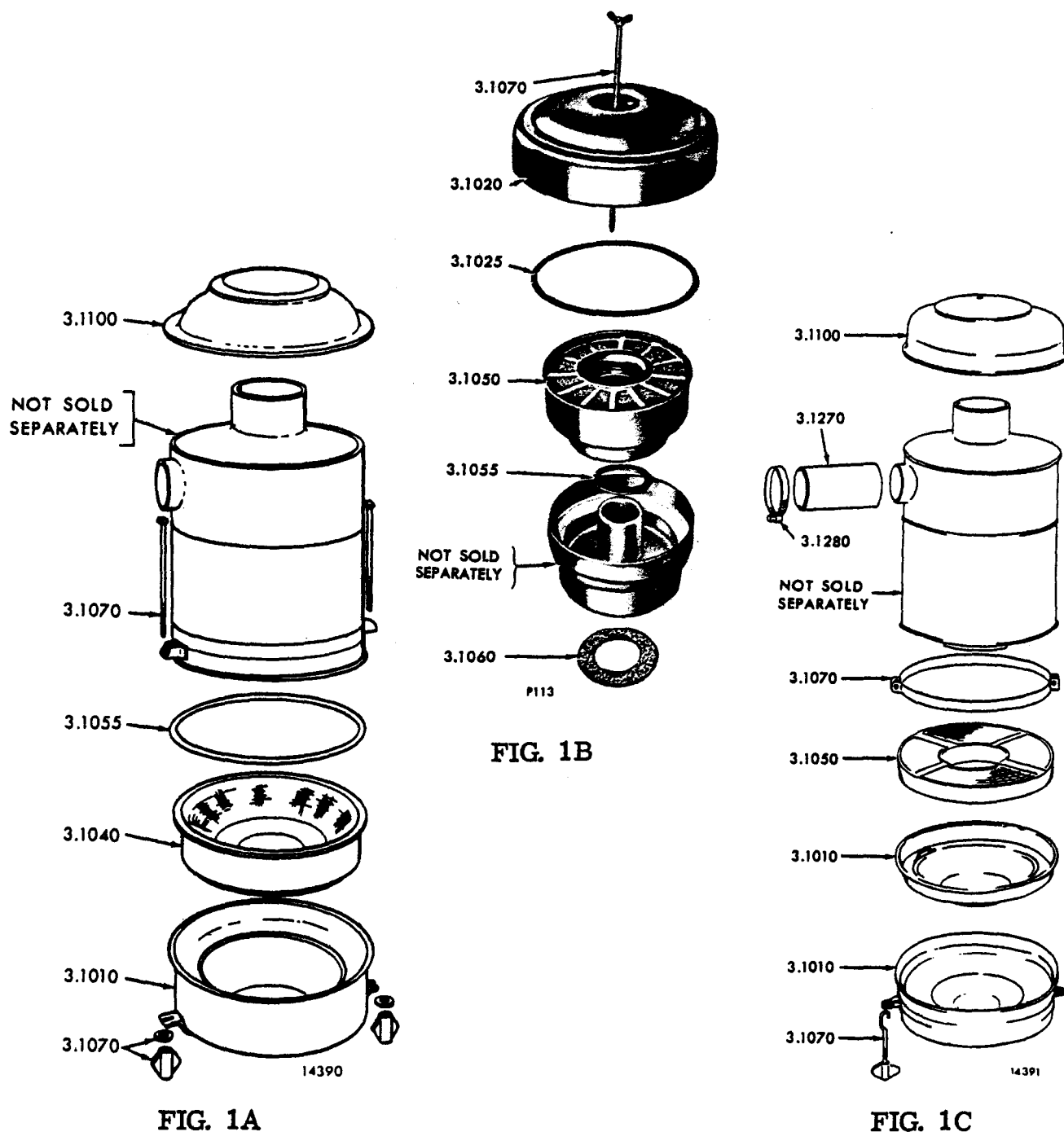
9.0000	TRANSMISSION AND PROPULSION
9.1000A	Hydraulic Marine Gear
9.2000A	Reverse and Reduction Gear (mechanical)
9.3000A	Power Transfer Gear
9.4000	Transmission—Highway
9.7000	Transmission—Off-highway
9.9000	Transmission—Rail Car

10.0000	SHEET METAL
10.1000A	Engine Hood

11.0000	ENGINE MOUNTING
11.1000A	Engine Mounting and Base

12.0000	MISCELLANEOUS
12.2000A	Bilge Pump
12.3000A	Vacuum Pump
12.4000A	Air Compressor
12.5000A	Hydraulic Pump
12.6000A	Gasoline Starter
12.6000B	Air Starter
12.6000C	Cold Weather Starting Aid
12.6000D	Hydraulic Starter
12.6000E	Hydraulic Starter Accessories
12.8000A	Supplies
12.8000B	Fabrication Material
12.8000C	Service Kits

AC DRY AIR CLEANER



AIR CLEANER

53

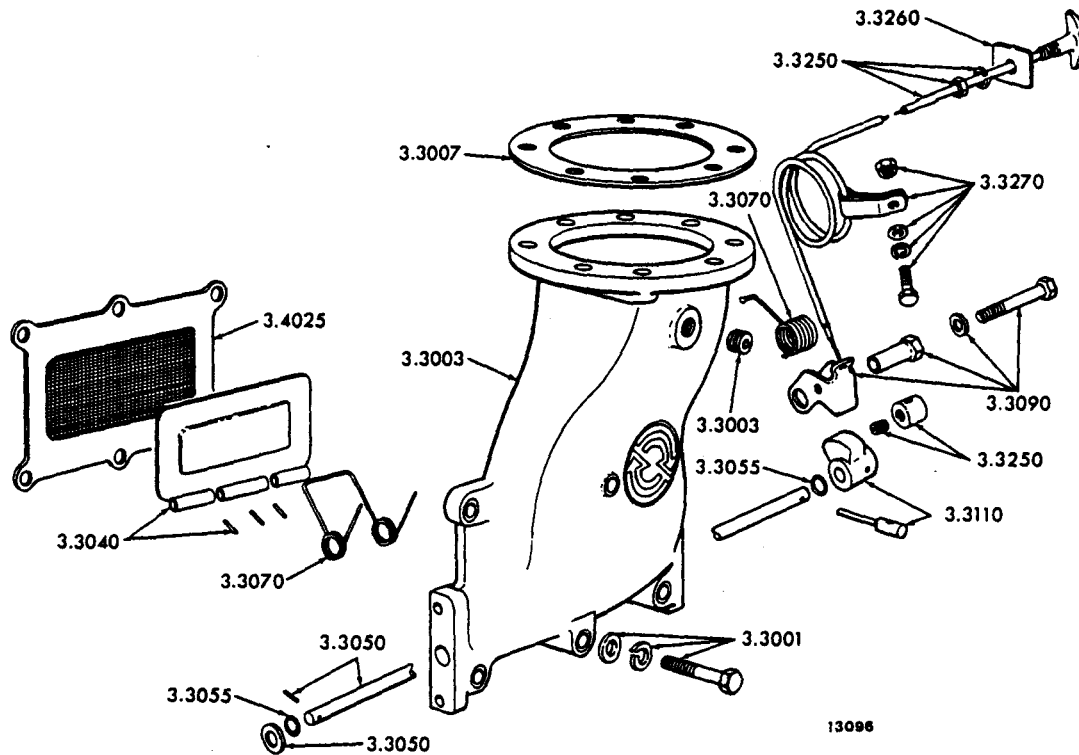


FIG. 3A AIR INLET HOUSING

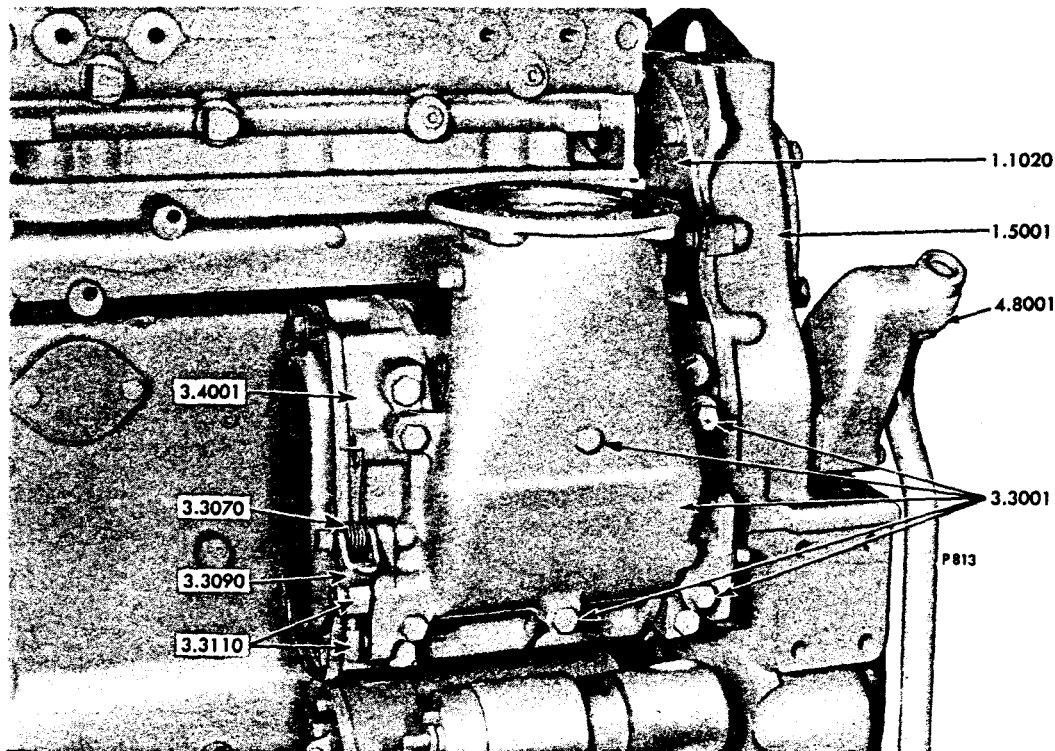


FIG. 3B BLOWER AND AIR INLET HOUSING

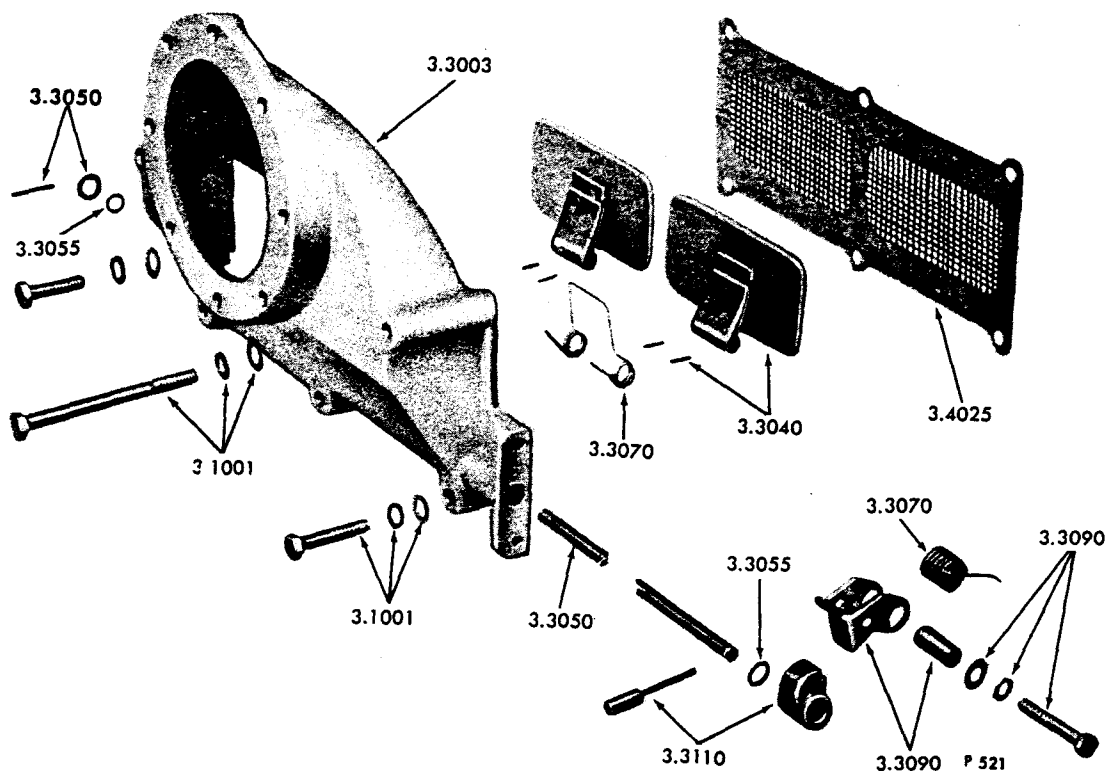


FIG. 3C AIR INLET HOUSING (6V-53)

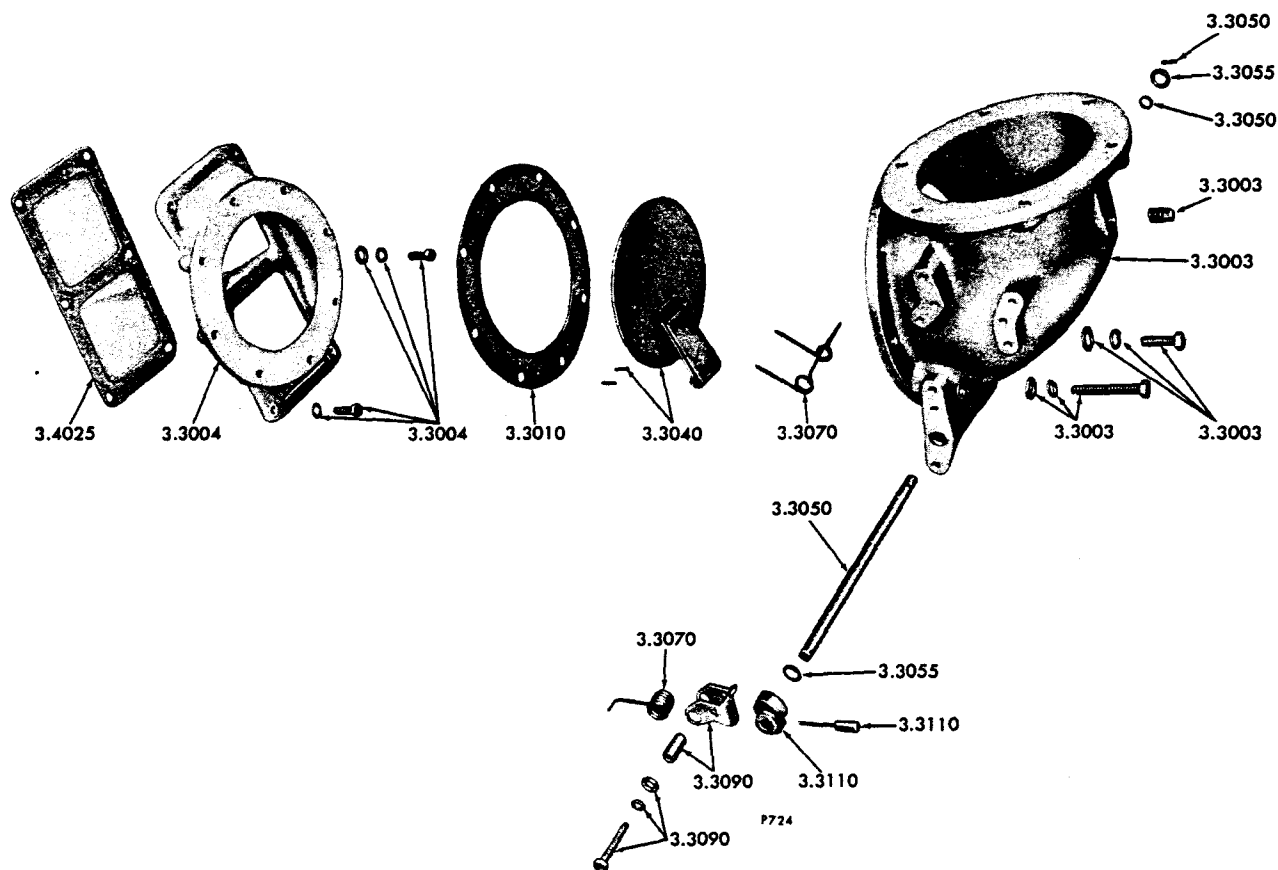


FIG. 3D AIR INLET HOUSING (8V)

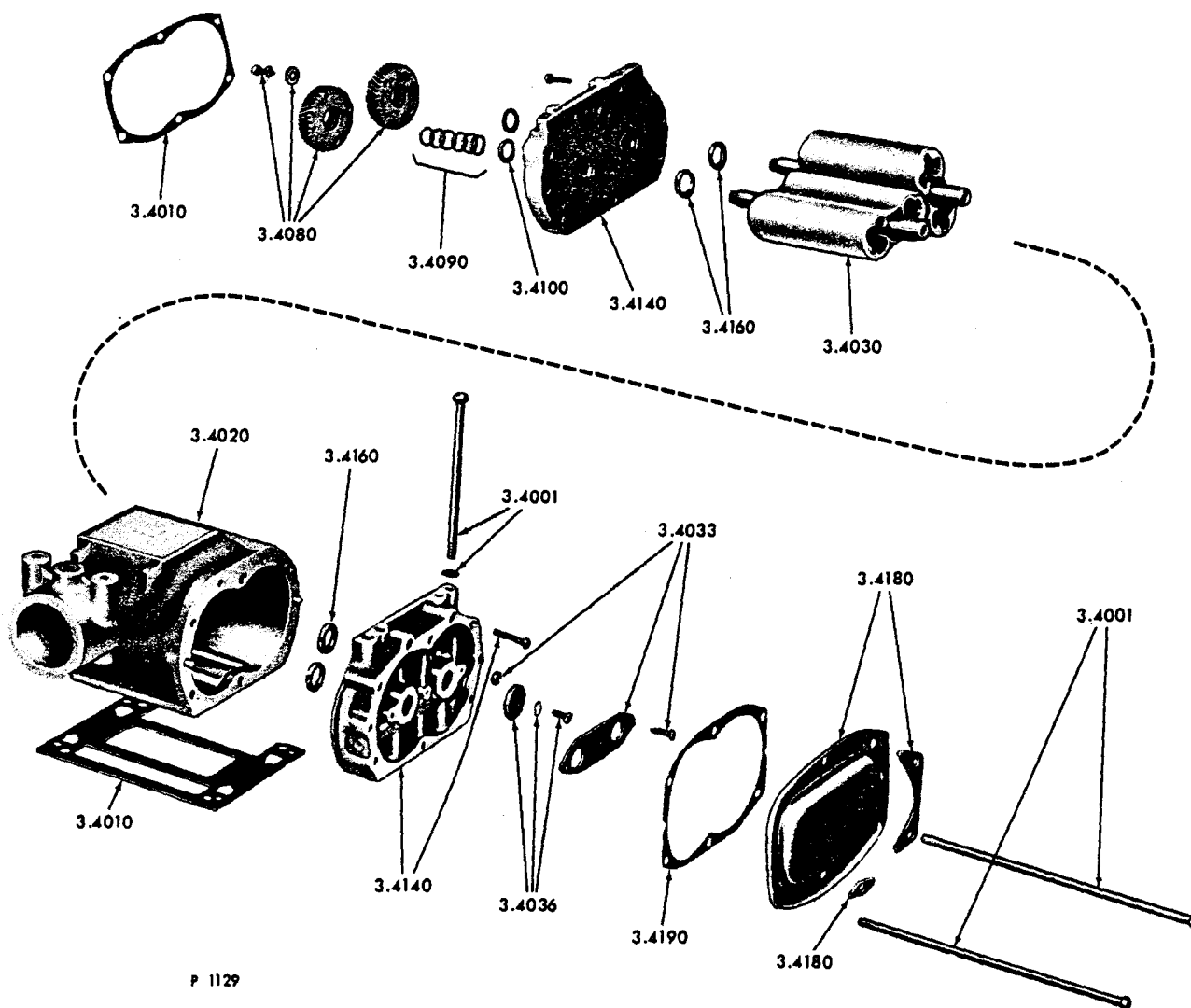


FIG. 3E BLOWER ASSEMBLY (2-Cyl.)

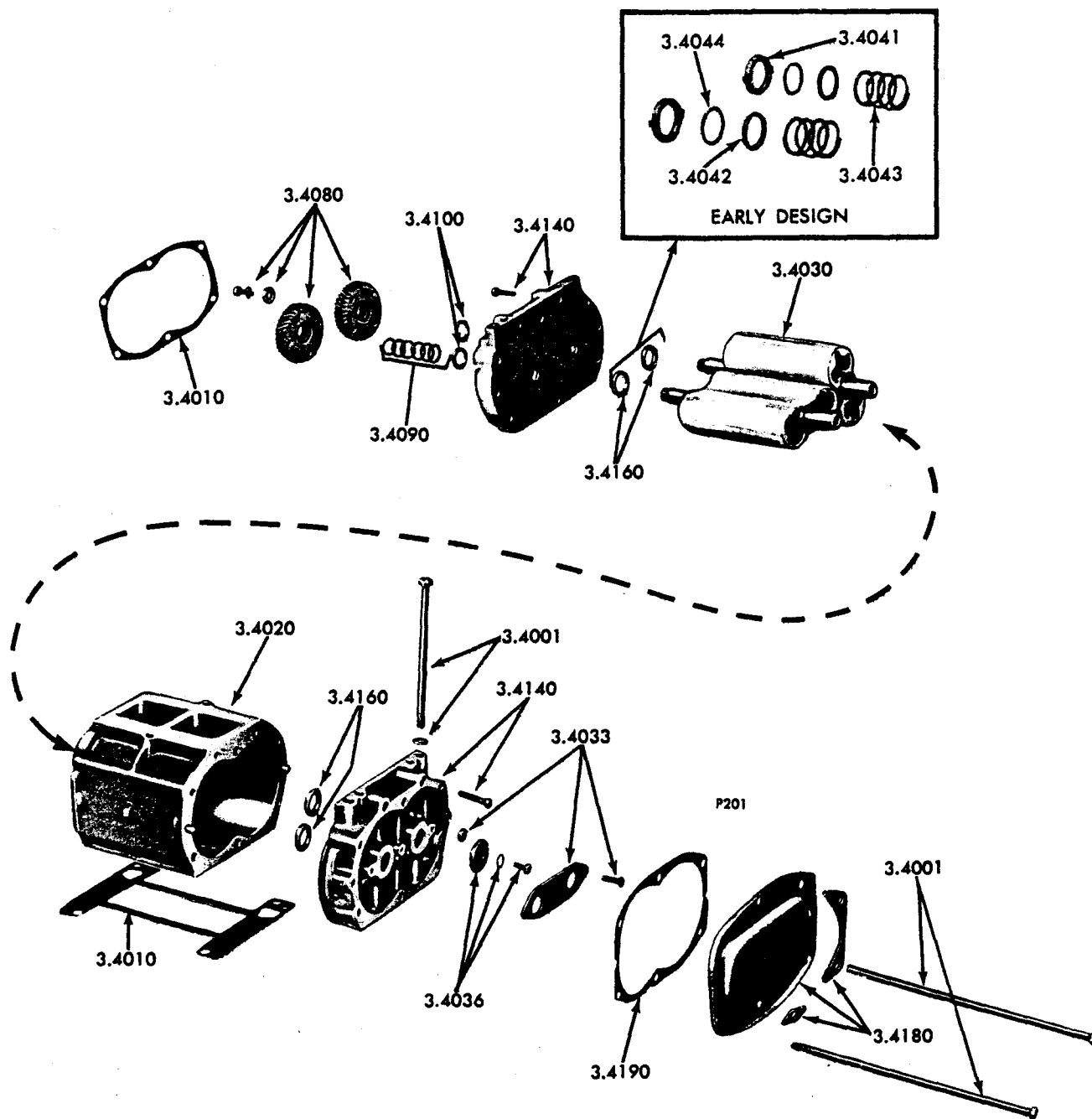


FIG. 4A BLOWER ASSEMBLY (3-CYL.)

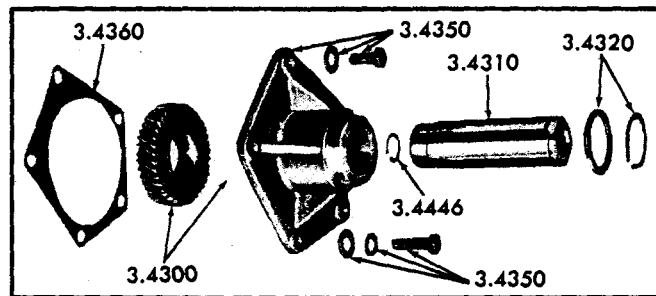


FIG. 4C BLOWER DRIVE

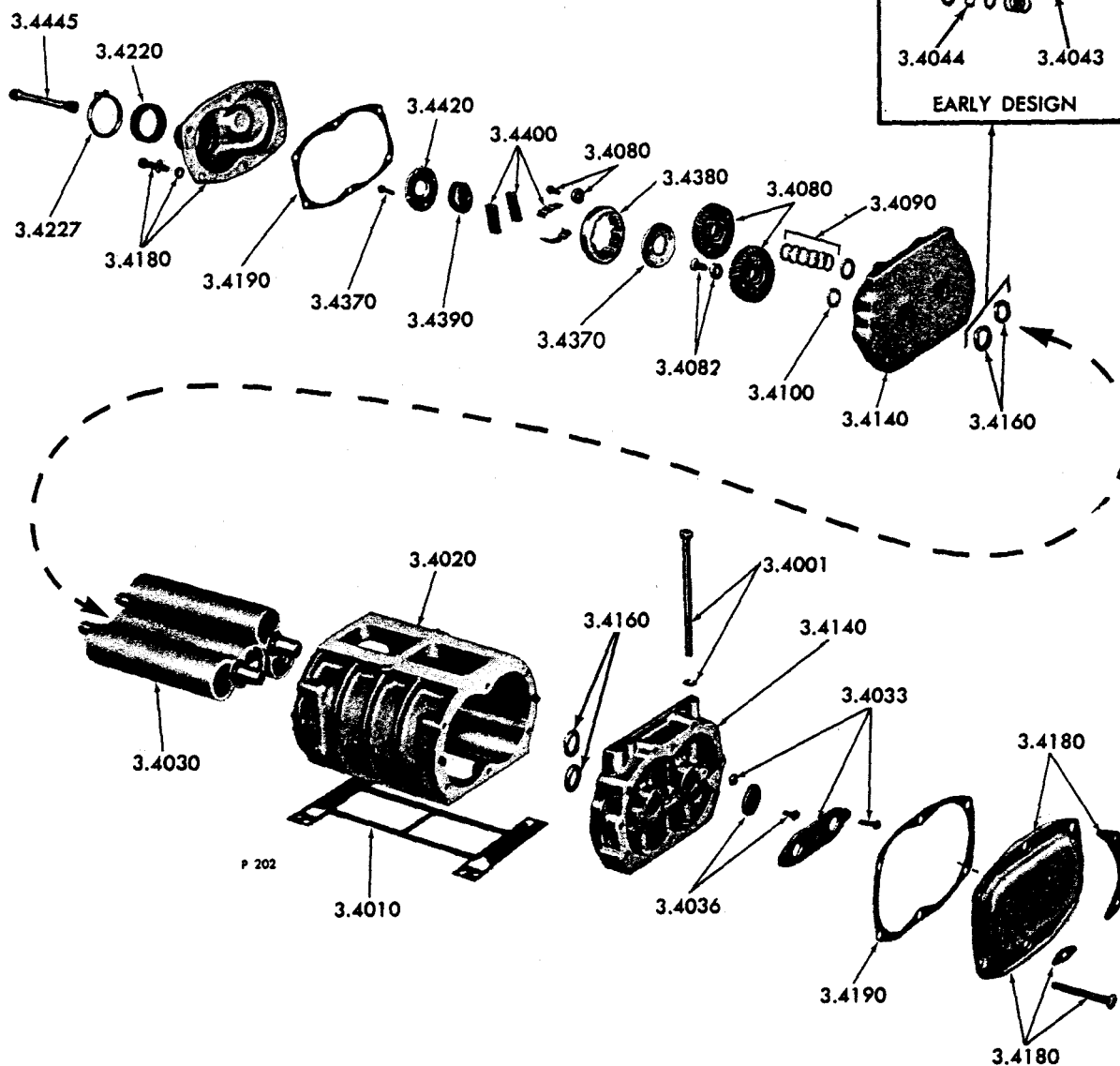


FIG. 4B BLOWER ASSEMBLY (4-Cyl.)

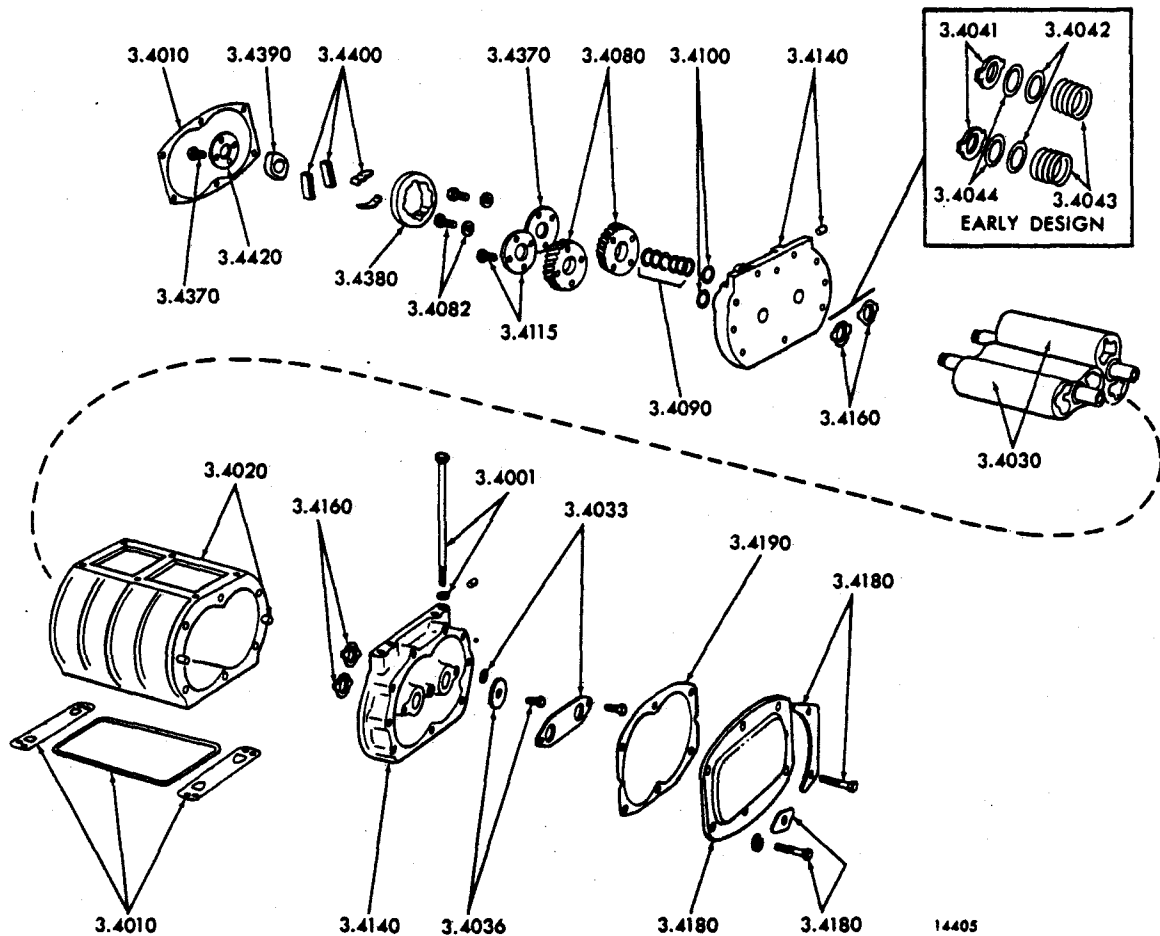


FIG. 4D BLOWER ASSEMBLY (6V)

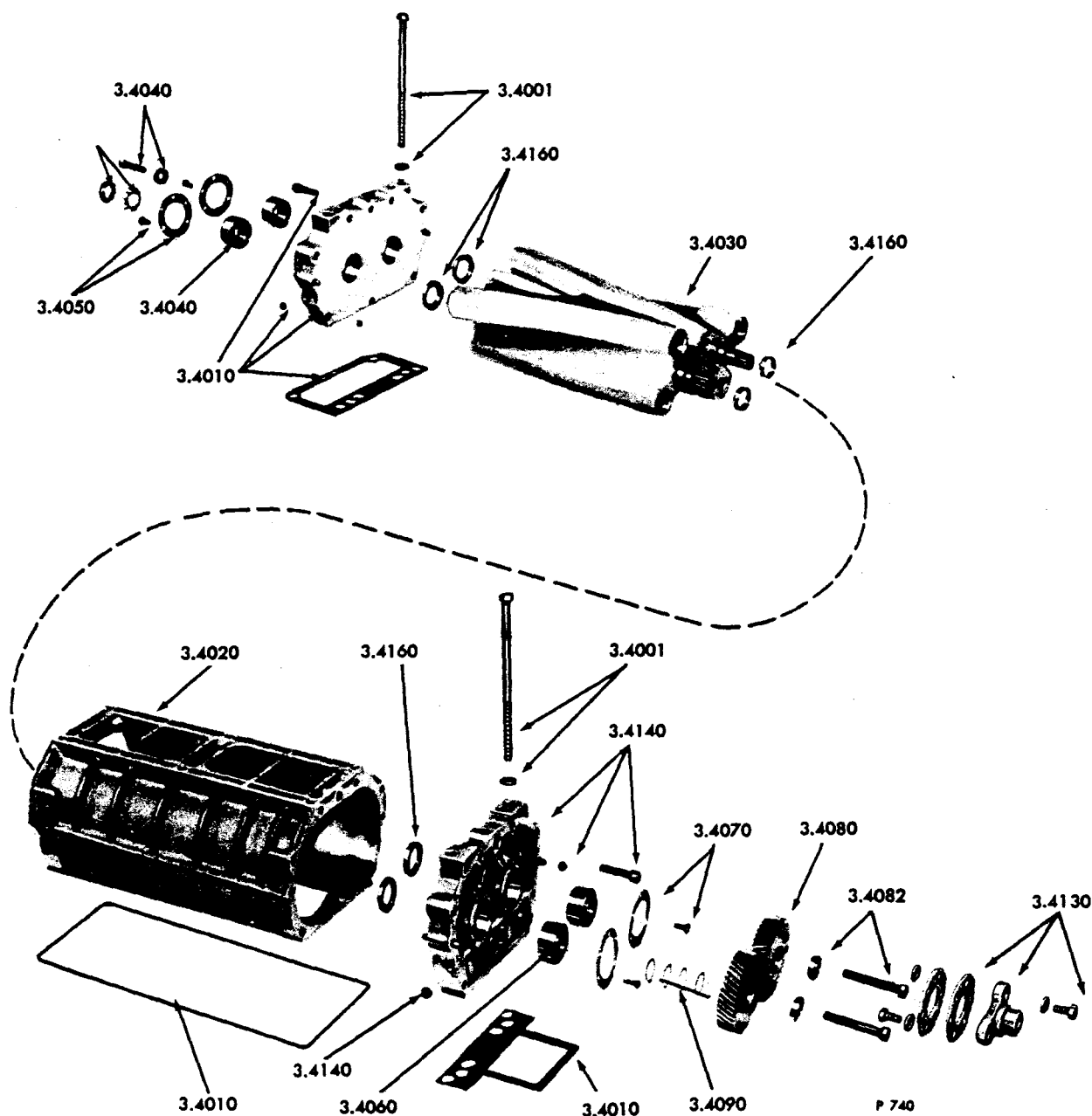


FIG. 4E BLOWER ASSEMBLY (8V)

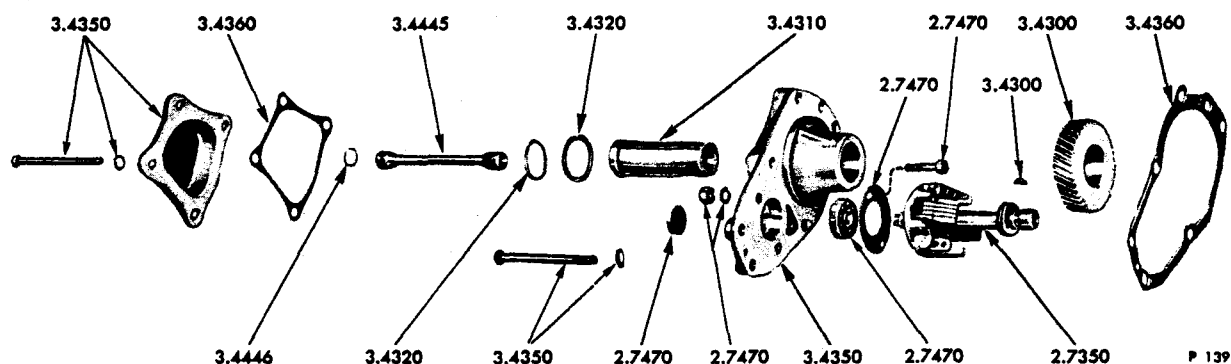


FIG. 4F BLOWER AND GOVERNOR DRIVE (6V)

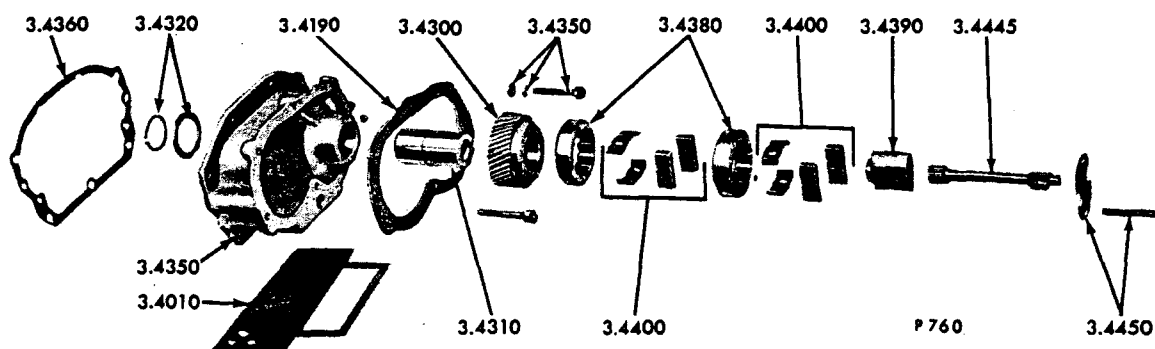


FIG. 4G BLOWER DRIVE (8V)

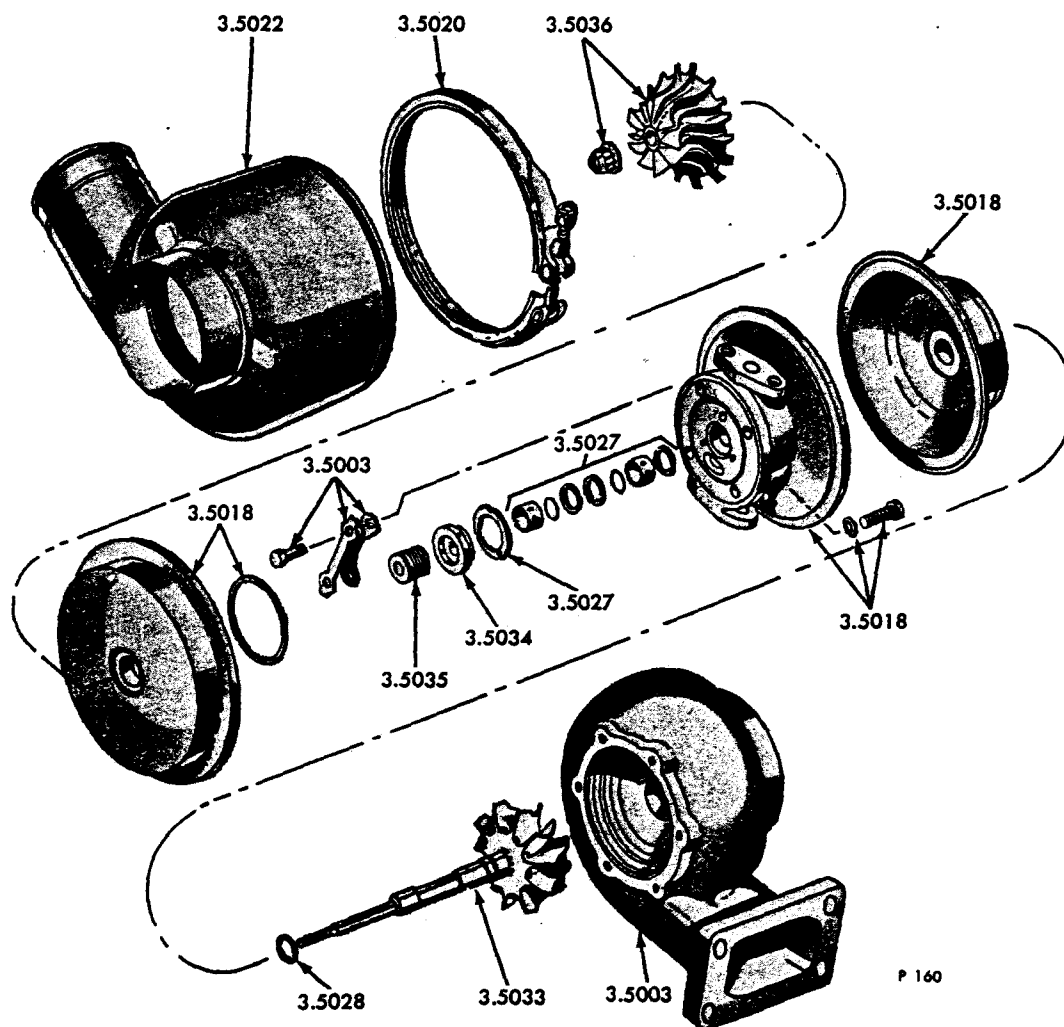


FIG. 5A TURBOCHARGER ASSEMBLY

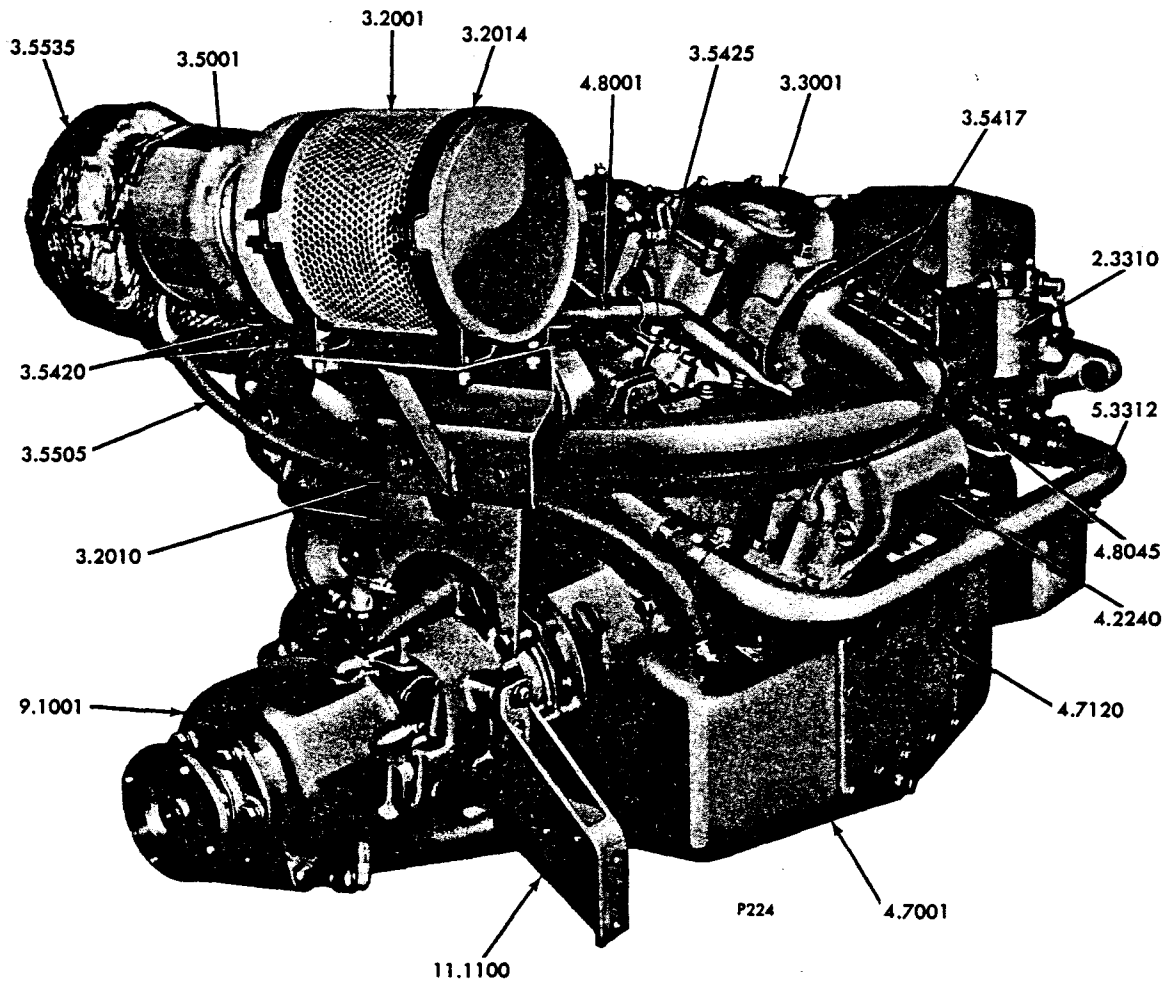


FIG. 10A TYPICAL 4-53 TURBOCHARGED -
INTERCOOLED MARINE UNIT

3.1000A AIR CLEANER AND/OR ADAPTOR

PART			TYPES											
FIG	NUMBER	NAME AND DESCRIPTION	1 3 0	1 4 9	1 5 0	1 5 1	1 5 5	1 9 4	1 9 5	1 9 6	1 9 7	1 9 8	1 9 9	2 0 0
	3.1001	AIR CLEANER ASSY. FOR TYPE 2 USE TYPE 241. SEE ASSEMBLY BREAKDOWN AS SHOWN. WHEN REPLACING AIR CLEANER ASSEMBLY, REFER TO 3.1220, 3.1230 FOR MTG. STRAPS AND BRACKETS.												
1C	5114214	AIR CLEANER ASSY. (12"DIA.) (PAGE B1)	1											
1B	5645456	AIR CLEANER ASSY. (9"DIA.) (PAGE A1)		2										
1A	5113180	AIR CLEANER ASSY. (12"DIA.) (PAGE A1)			1			1						1
1A	5123925 @	AIR CLEANER ASSY. (12"DIA.) (PAGE A1)			1			1						1
1A	5119046 *	AIR CLEANER ASSY. (10" DIA.) (PAGE A1)				1	1						1	
1A	5139240 @	AIR CLEANER ASSY. (10"DIA.) (PAGE C1)				1	1						1	
1C	5188190	AIR CLEANER ASSY. (10" DIA.) (PAGE A1)							1		1			
#	5121347	AIR CLEANER ASSY. (11" DIA.) (PAGE A1) * THRU 3D-2011, 4D-4013. NOT SERVICED. USE SECOND ASSY. SHOWN IN TYPE. @ EFFECTIVE WITH 3D-2012, 4D-4014. # FIG. 10D OF 1.0000.									1		1	
	3.1070	BOLT, AIR CLEANER												
1B	1543022	BOLT (WING)		2										
	3.1075	SEAL, AIR CLEANER BOLT												
	5178779	GASKET		2										
	5178780	RETAINER		2										
	3.1085	ADAPTOR, AIR CLEANER MOUNTING												
	5119217	ADAPTOR												
	5122195	ADAPTOR			1	1	1	1	1	1	1	1	1	
	5123298	ADAPTOR											1	
	5159347	SPACER, 3/4"O.D.X1/2"L (7.1581)							4					
	186629	BOLT, 5/16"-18X1" (12.9001)	4	4	4	4	4	4	4	4	4	4	4	4
	120393	WASHER, 5/16"FLAT (12.9190)	4						4	4	4	4	4	
	103320	LOCKWASHER, 5/16" (12.9200)	4	4	4	4	4	4	4	4	4	4	4	4

3.1000A AIR CLEANER AND/OR ADAPTOR

PART		TYPES												
FIG	NUMBER	NAME AND DESCRIPTION	1 3 0	1 4 9	1 5 0	1 5 1	1 5 5	1 9 4	1 9 5	1 9 6	1 9 7	1 9 8	1 9 9	2 0 0
		3.1087 - GASKET, AIR CLEANER MOUNTING ADAPTOR												
	5124405	GASKET (3.3007)		1	1	1	1	1	1	1	1	1	1	1
		3.1100 - PRE-CLEANER, AIR												
1C	9241663	HOOD ASSY. (4 1/2" PIPE DIA.)			1			1						1
1A	5183230	HOOD ASSY. (3 3/4" PIPE DIA.)				1	1						1	
		3.1220 - STRAP, AIR CLEANER MOUNTING												
	9211154	STRAP (12" DIA. CLEANER)	2											
	5185800	STRAP (12" DIA. CLEANER)			2			2						2
	5183229	STRAP (10" DIA. CLEANER) (3.2014)				2	2		2		2		2	
	186627	BOLT, 3/8"-24X1" (12.9001)								4				
	181374	BOLT, 3/8"-24X1 1/2" (12.9001)								4				
	103321	LOCKWASHER, 3/8" (12.9200)								4	4			
	117049	NUT, 3/8"-24 HEX. (12.9120)								4	4			
		3.1230 - BRACKET, AIR CLEANER MOUNTING												
	5123479	BRACKET							1	1				
	5121466	BOLT (3/8"-24X3 7/8") (12.9001)							3	3				
		3.1250 - SUPPORT, AIR CLEANER MOUNTING BRACKET												
	5123477	SUPPORT							1	1				
	179839	BOLT, 3/8"-16X1" (12.9001)							2	2				
		3.1260 - PIPE, AIR CLEANER TO INLET HSG.												
	5123482	PIPE (4" O.D.X25.60" DEV. L.)							1					
	5123483	PIPE (4" O.D.X28.40" DEV. L.)								1				
		3.1270 - HOSE, AIR INLET PIPE												
	5125281	HOSE (4" I.D.X4 1/2")							2	2				
		* STANDARD LENGTH HOSE; CUT TO LENGTH SHOWN.												
		3.1280 - CLAMP, AIR INLET PIPE HOSE												
	5113246	CLAMP (4 3/4" DIA. HOSE) (12.9660)							4	4				

3.1000A AIR CLEANER AND/OR ADAPTOR

PART		TYPES											
FIG	NUMBER	NAME AND DESCRIPTION	2 0 4	2 0 7	2 1 0 2 1 1	2 1 4	2 1 5	2 1 6	2 1 7	2 1 8	2 1 9	2 2 0	2 2 1
3.1001 - AIR CLEANER ASSY.													
SEE ASSEMBLY BREAKDOWN AS SHOWN. WHEN REPLACING AIR CLEANER ASSEMBLY, REFER TO 3.1220, 3.1230 FOR MTG. STRAPS AND BRACKETS.													
	NPN	AIR CLEANER (CUSTOMER FURNISHED) . . .			AR								
	NPN	AIR CLEANER ASSY. (6" DIA.)				1							
1B	5645456	AIR CLEANER ASSY. (9" DIA.) (PAGE A1)		1									
1A	5113180 *	AIR CLEANER ASSY. (12" DIA.) (PAGE A1)									1		
1A	5123925 @	AIR CLEANER ASSY. (12" DIA.) (PAGE A1)	2										
1A	5119046 *	AIR CLEANER ASSY. (10" DIA.) (PAGE A1)					1						
1A	5139240 @	AIR CLEANER ASSY. (10" DIA.) (PAGE C1)					1						
1C	5188190	AIR CLEANER ASSY. (10" DIA.) (PAGE A1)				1							
&	5121347	AIR CLEANER ASSY. (11" DIA.) (PAGE A1)								1			
	5119045	AIR CLEANER ASSY. (7" DIA.) (PAGE A1) * THRU 3D-2011, 4D-4013. NOT SERVICED. USE SECOND ASSY. SHOWN IN TYPE. @ EFFECTIVE WITH 3D-2012, 4D-4014. & FIG. 10D OF 1.0000. # ASSY. NOT SERVICED; FOR REPLACEMENT CONTACT DDA ENGINEERING DEPT.		1					1			1	1
3.1070 - BOLT, AIR CLEANER													
1B	1543022	BOLT (WING)			1								
3.1075 - SEAL, AIR CLEANER BOLT													
	5178779	GASKET			1								
	5178780	RETAINER			1								
3.1085 - ADAPTOR, AIR CLEANER MOUNTING													
	5122195	ADAPTOR				1	1			1	1		
	5124786	ADAPTOR			1								
	5125221 *	ADAPTOR											1

3.1000A AIR CLEANER AND/OR ADAPTOR

PART			TYPES											
FIG	NUMBER	NAME AND DESCRIPTION	2 0 4	2 0 7	2 1 0	2 1 1 1	2 1 4	2 1 5	2 1 6	2 1 7	2 1 8	2 1 9	2 2 0	2 2 1
	3.1085	ADAPTOR, AIR CLEANER MOUNTING (CONT'D)												
	186625	BOLT, 5/16"-18X7/8" (12.9001)				4								
	186629	BOLT, 5/16"-18X1" (12.9001)					4	4			4	4		4
	179839	BOLT, 3/8"-16X1" (12.9001)		2										
	103320	LOCKWASHER, 5/16" (12.9200)				4	4	4			4	4		4
	103321	LOCKWASHER, 3/8" (12.9200)		2										
		* OBSOLETE												
	179858	BOLT 7/16"-14X1 (12.9001)				4								
	103322	LOCKWASHER, 7/16" (12.9200)				4								
	3.1087	GASKET, AIR CLEANER MOUNTING ADAPTOR												
	5124405	GASKET (3.3007)					1	1			1	1		
	5168203	GASKET (3.3007)												1
	3.1100	PRE-CLEANER, AIR												
1C	9241663	HOOD ASSY. (4 1/2" PIPE DIA.)	2									1		
1A	5183230	HOOD ASSY. (3 3/4" PIPE DIA.)						1						
1A	5119144	HOOD ASSY. (2 1/4" PIPE DIA.)		1						1			1	1
	3.1220	STRAP, AIR CLEANER MOUNTING												
	5185800	STRAP (12" DIA. CLEANER)	4				2					2		
	5183229	STRAP (10" DIA. CLEANER) (3.2014)						2						
	5119142	STRAP (7" DIA. CLEANER)								2			2	2
	5124015	STRAP (11" DIA. CLEANER)									2			
	5177000	SPACER, 3/4" (7.1598)					4							
	117296	SCREW, 5/16"-18X1 1/2" FIL. HD. (12.9010)									2			
	181361	BOLT, 3/8"-24X7/8" (12.9001)						4			4	2		
	186627	BOLT, 3/8"-24X1" (12.9001)										2		
	181377	BOLT, 3/8"-24X1 3/4" (12.9001)					4							
	103341	WASHER, 3/8" FLAT (12.9190)										4		
	103321	LOCKWASHER, 3/8" (12.9200)					4	4			4	4		
	120373	NUT, 5/16"-18 SQ. HD. (12.9150)									2			
	117049	NUT, 3/8"-24 HEX. (12.9120)					4	4			4	4		
	3.1230	BRACKET, AIR CLEANER MOUNTING												
	5125224	BRACKET												1
	5125386	BRACKET					1	1			1	1		
	5125990	BRACKET							1					
	5124746	BRACKET								1				
	5125989	BRACKET											1	
	179835	BOLT, 3/8"-16X5/8" (12.9001)							4	4			4	4

3.1000A AIR CLEANER AND/OR ADAPTOR

PART		TYPES											
FIG	NUMBER	NAME AND DESCRIPTION											
		2 0 4	2 0 7	2 1 0	2 1 1	2 1 4	2 1 5	2 1 6	2 1 7	2 1 8	2 1 9	2 2 0	2 2 1
	3.1230 - BRACKET, AIR CLEANER MOUNTING (CONT'D)												
5121466	BOLT (3/8"-24X3 7/8") (12.9001)					2	2			2	2		
103321	LOCKWASHER, 3/8" (12.9200)							AR 4	AR 4			AR 4	AR 4
123234	NUT, 3/8"-16 HEX. (12.9120) * OBSOLETE												
	3.1250 - SUPPORT, AIR CLEANER MOUNTING BRACKET												
5125385	SUPPORT					1	1			1	1		
5125993	SUPPORT							1					
5125961	SUPPORT								1				
5125994	SUPPORT											1	
5125197	SUPPORT												1
179839	BOLT, 3/8"-16X1" (12.9001)					2	2	2	2		2	2	
186619	BOLT, 3/8"-16X1 1/8" (12.9001)									2			
5135321	BOLT, 3/8"-24X3 11/16" LOCK (12.9001)								2				
186311	BOLT, 3/8"-24X3 3/4" (12.9001)					2	2	2				2	2
103321	LOCKWASHER, 3/8" (12.9200) * OBSOLETE					2	2			2	2		
	3.1260 - PIPE, AIR CLEANER TO INLET HSG.												
5125344	PIPE (4"O.D.X21.90" DEV. L.)					1	1						
5125997	PIPE (2 5/8"O.D.X18.20" DEV. L.)							1					
5124748	PIPE (2 5/8"O.D.X19.88" DEV. L.)								1			1	
5125345	PIPE (4"O.D.X24.32" DEV. L.)									1	1		
5125229	PIPE (DEV. L. 21.62") * OBSOLETE												1
	3.1270 - HOSE, AIR INLET PIPE												
5143360	@ HOSE (3 1/4" I.D.X2")		1						1			1	
5125281	@ HOSE (4" I.D.X4")					2	2			2	2		
5119165	HOSE (2 5/8" I.D.X3 1/2")							1	1			1	1
5124749	HOSE (FORMED)							1					
5112537	HOSE (2 3/4" I.D.X3") (5.3330) @ STANDARD LENGTH HOSE; CUT TO LENGTH SHOWN.												1
	3.1280 - CLAMP, AIR INLET PIPE HOSE												
5113246	CLAMP (4 3/4" DIA. HOSE) (12.9660)					4	4			4	4		
9139813	CLAMP (4" DIA. HOSE) (3.5400)							1	1			1	
5188036	CLAMP, 29/16"-3 1/2" DIA. HOSE		2					3	3			3	4

PART	
FIG ... NUMBER	NAME AND DESCRIPTION
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3.3000A AIR INLET HOUSING

FIG	PART NUMBER	NAME AND DESCRIPTION	TYPES									
			5 3 5	5 4 7	5 5 5	5 7 3	5 7 6	5 9 5	5 9 6	5 9 7	5 9 8	5 9 9
	3.3050	SHAFT, AIR INLET HOUSING SHUTDOWN VALVE										
	5128593	SHAFT			1							
	103341	WASHER, 3/8" FLAT (12.9190)			1							
	3.3055	SEAL, AIR INLET HOUSING SHUTDOWN VALVE SHAFT										
	5182977	SEAL RING (1.2020)			2							
	3.3070	SPRING, AIR INLET HOUSING SHUTDOWN VALVE										
3A,D	5111904	SPRING, VALVE (INTERNAL)			1							
	3.3090	LEVER, AIR INLET HOUSING SHUTDOWN VALVE										
3A,B	5114727	LATCH			1							
	5143836	BUSHING, ECCENTRIC			1							
	179803	BOLT, 1/4"-20X1 3/4" (12.9001)			1							
	120380	LOCKWASHER, 1/4" (12.9200)			1							
	3.3110	LEVER, AIR INLET HOUSING SHUTDOWN RESET										
3A,B	5114974	HANDLE			1							
	5122823	CAM			1							
	273436	PIN, 1/8"X11/16" ROLL (12.9300)			1							
	3.127	CLIP, SHUTDOWN RESET LEVER ROD										
	3290569	CLIP, 1 3/16" L. - 3/8" HOLE							1			
	123298	BOLT 1/4"-28 X 3/8" (12.9001)							1			
	103319	LOCKWASHER 1/4" (12.9200)							1			
	121902	NUT, 1/4"-28 HEX. (12.9120)							1			
	3.3250	WIRE, AIR INLET HOUSING SHUTDOWN										
	5146241	WIRE ASSY. CONTROL 90" LONG							1			
	3796374	GUIDE (2.9468)							1			
	140855	SCREW #8-32 X 5/16" HEX-SOCKET (12.9010)							1			
	120393	WASHER, 11/32" X 11/16" PLAIN (12.9190)							1			
	120392	WASHER, 9/32" X 5/8" PLAIN (12.9190)							1			
	110720	LOCKWASHER 3/8" (12.9200)							1			
	124925	NUT 3/8"-24 (12.9120)							1			
	103361	PIN, 1/16" X 1/2" (CUTTER)							1			
	132105	BOLT 10 32 X 3/8 (12.9010)							1			
	5168374	NUT, AIR SHUT OFF VALVE							1			
	3.3260	PLATE, AIR INLET HOUSING SHUTDOWN CONTROL										
	5186687	PLATE, INSTRUCTION							1			

3.4000 BLOWER

TYPES

PART
..FIG ... NUMBER NAME AND DESCRIPTION

**3.4428 - LEVER ASSY., AIR SHUTDOWN RESET
(CONTD)**

455734 PIN, 1/8"X3/4" (12.9300) 1
273669 PIN, 5/16"X7/16" (12.9200) 1
140881 SCREW, #10-32X5/16" (12.9076) 1
120385 WASHER, 1/4"X9/16" (12.9190) 1
5168374 NUT (3.3090) 1
 + OBSOLETE

3.4430 - WIRE, AIR SHUT-OFF CONTROL

5146238 * WIRE ASSY. (57" LONG) (2.9422) 1 1 1 1
5155782 CLIP, 3/16" TUBE (7.8320) 1 1
181309 BOLT, 1/4"-28X1/2" (12.9001) 1 1 1 1
120380 LOCKWASHER, 1/4" (12.9200) 1 1 1 1
121902 NUT, 1/4"-28 HEX. (12.9120) 1 1 1 1
 * LENGTH DETERMINED BY INSTALLATION.

3.4000 BLOWER

PART
 .FIG . . . NUMBER NAME AND DESCRIPTION

3.4001 - BLOWER ASSY.

A 2 CYLINDER BASIC BLOWER ASSY.
 INCLUDES ITEMS IN 3.4020 AND 3.4030
 THRU 3.4420 EXCEPT 3.4180 AND
 3.4190.
 NOTE: SEE ASSEMBLY BREAKDOWN
 PAGE A1 FOR COMPONENTS OF BASIC
 BLOWER ASSY.

5129050 # @ BLOWER ASM., 2-53 RA,RB (5139301) 1
 5139302 BLOWER ASM., 2-53 RC,RD 1
 5139304 BLOWER ASM., 2-53 R.H. ROT. ENG. 1
 A 3 CYLINDER BLOWER ASSY. INCLUDES
 ITEMS IN 3.4020 AND 3.4030 THRU
 3.4140.

5139306 BLOWER ASM., 3-53 L.H. 1
 5139305 BLOWER ASM., 3-53 R.H. 1
 A 4 CYLINDER BLOWER ASSY. INCLUDES
 ITEMS IN 3.4020 AND 3.4030 THRU
 3.4190 AND 3.4370 THRU 3.4420.

5142882 BLOWER ASM., 4-53 A OR B ENG. 1
~~5142889~~ BLOWER ASM., 4-53 C OR D ENG. 1
 A 6 CYLINDER BLOWER ASSY. INCLUDES
 ITEMS IN 3.4020 AND 3.4030 THRU
 3.4190 AND 3.4370 THRU 3.4420.

4D 5119263 # BLOWER ASM., 6V53 L.H. OR R.H. ROT. 1
 ENG., NON-TURBO. (TYPE 129)

4D 5173773 # BLOWER ASM., 6V53 R.H. TURBO. ENG. 1
 (TYPE 137)
 AN 8 CYLINDER BLOWER ASSY. INCLUDES
 ITEMS IN 3.4020 AND 3.4030 THRU
 3.4163 EXCEPT ITEMS IN 3.4130.

5132818 # BLOWER ASM., 8V53 R.H. ROTATION 1
 ENGINE) (TYPE 183)

103878 PLUG, 1/4" PIPE (12.9550) 1
 4A 186291 BOLT, 3/8"-24X8 1/4" (12.9001) 4
 4A,B 9433110 BOLT, 7/16"-14X6 11/16" (12.9001) 4
 5133773 BOLT, 7/16"-14X6.86" NYLOCK 4
 5136323 BOLT, 7/16"-14X7" NYLOCK 4
 4D 5132923 BOLT (6.68"L) 4
 4E 5133004 BOLT (7.50"L) (12.9001) 4
 4A 5121463 BOLT (8"L) 2
 4A 5121464 BOLT (10 3/16"L) 2
 4A 5116150 BOLT (10 11/16"L) 2
 4A,B,E 5131913 WASHER (7/16") (FLAT) 4
 5150238 WASHER (7/16") 4

TYPES

9 0	9 8	1 0 1	1 0 2	1 0 6	1 1 0	1 1 1	1 1 3	1 1 4	1 1 5	1 1 6
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TYPES

3.4000 BLOWER

PAGE 14 OF 3.4000
SEP., 1977

3.4000 BLOWER

PART			TYPES											
FIG	NUMBER	NAME AND DESCRIPTION	90	95	98	101	102	106	110	111	113	114	115	116
		3.4030 - ROTOR, BLOWER (CONT'D)												
		SHOWN IN PARENTHESES PLUS (2) END PLATES IN 3.4140 AND (4) 5134924 SEALS IN 3.4160.												
		& NOT SERVICED; USE (2) ROTOR ASSYS. SHOWN IN PARENTHESES PLUS END PLATES IN 3.4140 AND (4) SEALS IN 3.4160.												
		% THRU 8D-221. NOT SERVICED, USE KIT 5198298.												
		3.4033 - PLATE, BLOWER ROTOR THRUST												
4D	5134179	PLATE, 2,3,4,6V53	1		1	1	1	1	1	1	1	1	1	1
4A,B,D	5116170	SPACER	3	3	3	3	3	3	3	3	3	3	3	3
4A,B,D	9409062	BOLT, 1/4"-20X1" (12.9001)	3	3	3	3	3	3	3	3	3	3	3	3
		3.4035 - SHAFT, BLOWER ROTOR												
		A SHAFT ASSY. INCLUDES PLUGS IN 3.4037.												
	5134443	SHAFT, ASM., L.H. HELIX ROTOR-FRONT		1										
	5132148	SHAFT, 8V53 R.H. HELIX ROTOR-FRONT		1										
	5132149	SHAFT, 8V53 L.H.-R.H. HELIX ROT. RR.		2										
	142522	PIN, 1/4"X1 3/4" GROOVE (12.9270)		4										
		3.4036 - WASHER, BLOWER ROTOR SHAFT THRUST												
4D	5127077	WASHER (25/64" I.D.)	2	2	2	2	2	2	2	2	2	2	2	2
4D	9409034	BOLT, 3/8"-24X7/8" (12.9001)	2	2	2	2	2	2	2	2	2	2	2	2
		* EFFECTIVE WITH 2D-11470, 3D-891, 4D-1473, USE ALSO WHENEVER REPLACING ROTORS.												
		3.4037 - PLUG, BLOWER ROTOR SHAFT												
	5156280	PLUG, 5/8" CUP		1										
	5126789	PLUG, .696 EXPANSION (12.9330)		1										
		3.4040 - BEARING, BLOWER ROTOR FRONT												
4E	455506	BEARING, 8V53		2										
4E	9409040	BOLT, 3/8"-24X2" HEX. LOCK (RIGHT ROTOR) (1.7630)		1										

3.4000 BLOWER

PART			TYPES											
..FIG ..	NUMBER	NAME AND DESCRIPTION	9 0	9 5	9 8	1 0 1	1 0 2	1 0 6	1 1 0	1 1 1	1 1 3	1 1 4	1 1 5	1 1 6
		3.4040 - BEARING, BLOWER ROTOR FRONT (CONT'D)												
4E	5132147	WASHER, 8V53 R.H. ROTOR (3.4030)		1										
4E	5133809	NUT, 8V53 L.H. ROT. BRG. LOCK		1										
		(3.4050)												
		3.4041 - SEAL, BLOWER ROTOR RETAINER OIL												
4A,B,D	5116169	@ SEAL (PLASTIC)	4		4	4	4	4						
		@ NOT SERVICED, CONVERT TO LIP TYPE												
		SEAL IN 3.4160 PLUS NEW END PLATES												
		IN 3.4140.												
		3.4042 - RETAINER, BLOWER OIL SEAL												
4A,B,D	5180312	* RETAINER	4		4	4	4	4						
		* NOT SERVICED. CONVERT TO LIP TYPE												
		SEAL IN 3.4160 PLUS NEW END PLATES												
		IN 3.4140.												
		3.4043 - SPRING, BLOWER ROTOR OIL SEAL												
4A,B,D	5180311	* SPRING	4		4	4	4	4						
		* NOT SERVICED. CONVERT TO LIP TYPE												
		SEAL IN 3.4160 PLUS NEW END PLATES												
		IN 3.4140.												
		3.4044 - RING, BLOWER ROTOR OIL SEAL												
4A,B,D	5180314	* SEAL RING	4		4	4	4	4						
		* NOT SERVICED, CONVERT TO LIP TYPE												
		SEAL IN 3.4160 PLUS NEW END PLATES												
		IN 3.4140.												
		3.4050 - RETAINER, BLOWER ROTOR FRONT BEARING												
4E	5132802	RETAINER, 8V53 OUTER RACE		2										
4E	9409073	BOLT, 1/4"-20X5/8" HEX. LOCK		6										
		8V53 (12.9001)												
		3.4060 - BEARING, BLOWER ROTOR REAR												
4E	7451486	BEARING-8V53		2										

3.4000 BLOWER

PART		TYPES												
FIG	NUMBER	NAME AND DESCRIPTION	90	95	98	101	102	106	110	111	113	114	115	116
3.4070 - RETAINER, BLOWER ROTOR REAR BEARING														
4E	5132802	RETAINER, 8V53 (3.4050)												
4E	9409073	BOLT, 1/4"-20X5/8" HEX. LOCK 8V53 (12.9001)		2 6										
3.4080 - GEAR, BLOWER ROTOR														
4A,B	5119194	GEAR, R.H. HELIX-2,&3-53					1			1	1	1		1
4A,B	5119195	GEAR, L.H. HELIX-2 & 3-53					1		1	1	1	1		
4A,B,D	5128599	GEAR, R.H. HELIX-6 & 8V53	1		1	1		1					1	X
4A,B,D	5128600	GEAR, L.H. HELIX-6 & 8V53	1		1	1		1					1	1
4A	5121402	GEAR, R.H. HELIX 2-53							1					
4E	5132735	GEAR (L.H. HELIX)		1										
4E	5147095	GEAR, R.H. HELIX-8V53		1										
4A,B	9409018	BOLT, 5/16"-24X7/8" (12.9001)					2		2	2	2	2	1	1
	5121403	WASHER					2		2	2	2	2		
4A,B	5116316	WASHER											1	1
		* NOT SERVICED. REPLACE WITH 5146518 GEAR, PLUS (1) 5146517 HUB, (2) 5146519 PLATE, (3) 5124520 WASHER, (6) 5146520 WASHER AND (2) 9409232 BOLT.												
3.4082 - PILOT, BLOWER DRIVE GEAR														
	5126236 #	PILOT, 4 & 6V53	2		2	2		2					1	1
4E	5132799	PILOT, 8V53		2										
4B	9409018 &	BOLT, 5/16"-24X7/8" (LEFT GEAR) (12.9001)	1										1	1
	9415108 &	BOLT, 5/16"-24X7/8" 12 PT. HEAD (RIGHT GEAR)	1											
	9409023 %	BOLT, 5/16"-24X1 3/4" (LEFT GEAR) (12.9001)	1		1	1		1						
	9420604 %	BOLT, 5/16"-24X1 3/4" (RIGHT BANK) (12.9001)	1		1	1		1						
4E	9409041	BOLT, 3/8"-24X2 1/2" HEX. LOCK (LEFT GEAR)		1										
4E	9421329	BOLT, 3/8"-24X2 1/2" 12 PT. HD. (RIGHT GEAR) (12.9005) # EFFECTIVE WITH 4D-14120, MUST BE USED WITH 5126237 SPACER IN 3.4370. & THRU 6D-4115 NON-TURBO AND 6D-4066 TURBO ENGINE. % EFFECTIVE WITH 6D-4116 NON-TURBO 6D-4067 TURBO.		1										

3.4000 BLOWER

PART
 .FIG . . . NUMBER NAME AND DESCRIPTION

PART			TYPES											
FIG	NUMBER	NAME AND DESCRIPTION	9 0	9 5	9 8	1 0 1	1 0 2	1 0 6	1 1 0	1 1 1	1 1 3	1 1 4	1 1 5	1 1 6
3.4090 - SHIM, BLOWER ROTOR GEAR														
4A,B,D	5116164	SHIM (.002")	AR		AR	AR	AR	AR	AR	AR	AR	AR	AR	AR
4A,B,D	5116165	SHIM (.003")	AR		AR	AR	AR	AR	AR	AR	AR	AR	AR	AR
4A,B,D	5116166	SHIM (.004")	AR		AR	AR	AR	AR	AR	AR	AR	AR	AR	AR
4A,B,D	5116167	SHIM (.005")	AR		AR	AR	AR	AR	AR	AR	AR	AR	AR	AR
4E	5154226	SHIM (.002")		AR										
4E	5154227	SHIM (.005")		AR										
4E	5154228	SHIM (.010")		AR										
3.4100 - SPACER, BLOWER ROTOR GEAR														
4A,B,D	5116168	SPACER	2		2	2	2	2	2	2	2	2	2	2
3.4115 - PLATE, BLOWER ROTOR GOVERNOR DRIVE														
4D	5121336	PLATE, 6V53	1		1	1		1						
4D	9409219	BOLT, 1/4"-28X3/4" (12.9001)	4		4	4		4						
3.4130 - HUB, BLOWER ROTOR GEAR DRIVE														
4G	5132801	% HUB (PLATE)		1										
	5134486	SEAL, 8V53 (PISTON RING TYPE)		1										
	9409232	BOLT, 5/16"-24X5/8" HEX. LOCK (12.9001)		4										
% NOT SERVICED. FOR REPLACEMENT USE 5146517 HUB PLUS (1) 5146518 GEAR, (2) 5146519 PLATE, (6) 5146520 WASHER, (3) 5124520 WASHER AND (2) 9409232 BOLT.														
3.4140 - PLATE, BLOWER HOUSING END														
A PLATE ASSY. INCLUDES PINS, PLUGS AND STRAINER IN 3.4140 AND SEAL IN 3.4160.														
	5119318	+ PLATE, REAR					1							
	5119319	* PLATE, FRONT	1		1	1	1	1						
	5134914	PLATE, 2,3& 4-53 FRONT							1	1	1	1	2	2
	5139299	PLATE, REAR							1	1	1	1		
	5119192	? PLATE, REAR (5134915)	1		1	1		1						
4D	5134915	PLATE ASM., 6V53 REAR	1											
4E	5132982	PLATE ASM., 8V53 FRONT		1										
4E	5132583	PLATE ASM., 8V53 REAR		1										
4E	5150542	PIN, 5/16"X2" DOWEL		4										
	5109389	STRAINER, OIL PASSAGE		2										

3.4000 BLOWER

PART			TYPES											
FIG	NUMBER	NAME AND DESCRIPTION	90	95	98	101	102	106	110	111	113	114	115	116
		3.4140 - PLATE, BLOWER HOUSING END (CONT'D)												
4D	5145009	PLUG, 1/8" PIPE (12.9550)	2	2	2	2	2	2	2	2	2	2	2	2
4D	117297	SCREW, 5/16 -18X1 3/4 FIL. HD. (12.9010)					4		4	4	4	4		
	138244	BOLT, 3/8 -16X1 1/2 HEX. SOC. HD. (12.9027)		2										
	179849	BOLT, 3/8"-16X2 1/2" (12.9001)		2										
	103321	LOCKWASHER, 3/8" (12.9200)		2										
		+ NOT SERVICED, REPLACE WITH (1) 5139299 END PLATE AND (2) 5134924 SEALS IN 3.4160.												
		* NOT SERVICED, REPLACE WITH (1) 5134914 END PLATE FOR INLINE ENGINES AND 5143636 FOR 6-V ENGINES AND (2) SEALS IN 3.4160.												
		? NOT SERVICED; REPLACE WITH END PLATE IN PARENTHESES PLUS (2) SEALS IN 3.4160.												
		3.4160 - SEAL, BLOWER HOUSING END PLATE												
4D	5142266	* SEAL, LIP TYPE-4 & 6V53 TURBO.	4											
4D	5199366	SEAL, LIP TYPE (USED WITH SLEEVE 5199368) 2,3,4 & 6V53	AR											
4D	5142266	* SEAL, LIP TYPE-2,3,4 & 6V53 NON-TURBO.				4			4	4	4	4	4	4
4D	5199367	SEAL (USED WITH SLEEVE 5199368) 2,3,4 & 6V53				AR			AR	AR		AR	AR	
4E	5132909	SEAL, 8V53 FRONT		2										
4E	5134351	SEAL, 8V53 REAR		2										
		* USE WITH NEW COUNTERBORED END PLATES.												
		3.4163 - SPACER, BLOWER ROTOR SHAFT OIL SEAL												
	5199368	SLEEVE (USED WITH 5199366 OR 5199367 SEALS) 2,3,4, & 6V53	AR			AR			AR	AR		AR	AR	
	5134444	SLEEVE, 8V53 REAR		2										
		3.4180 - COVER, BLOWER HOUSING END PLATE												
4A,B,D	5119429	COVER, 2,3,4, & 6V53 FRONT	1		1	1	1	1	1	1	1	1	1	1
4B	5119154	COVER, 4-53 REAR												
4A,B,D	5119394	PLATE, REINFORCEMENT (LARGE)	2		2	2	2	2	2	2	2	2	4	4
4A,B,D	5119395	PLATE, REINFORCEMENT (SMALL)	2		2	2	2	2	2	2	2	2	4	4
4B,D	427588	BOLT, 3/8"-16X2 1/2" (12.9001)	6		6	6		6					12	12

3.4000 BLOWER

PART			TYPES											
FIG	NUMBER	NAME AND DESCRIPTION	9 0	9 5	9 8	1 0 1	1 0 2	1 0 6	1 1 0	1 1 1	1 1 3	1 1 4	1 1 5	1 1 6
	3.4180	COVER, BLOWER HOUSING END PLATE (CONT'D)												
4B,D	103321	LOCKWASHER, 3/8" (12.9200)	6										6	*
	3.4190	GASKET, BLOWER HOUSING END PLATE COVER												
4A,B,D	5119433	GASKET	1		1	1	1	1	1	1	1	1	2	2
	3.4220	SEAL, BLOWER DRIVE COVER												
4B	5180445	SEAL, 4-53											1	1
	3.4227	CLAMP, BLOWER DRIVE COVER SEAL												
4B	451220	CLAMP, 2 1/2" HOSE (12.9660)											1	1
	3.4300	GEAR, BLOWER DRIVE												
4E	5116377	GEAR, L.H. HELIX-L.H. 6V53 ENGS.	1		1	1		1						
4E	5116378	GEAR, L.H. HELIX-R.H. 6V53 ENGS.	1		1	1		1						
4C	5116377	GEAR, L.H. HEL.-6V53RA-RB-LC-LD ENG.											1	*
4C	5116378	GEAR, R.H. HEL.-6V53RC-RD-LA-LB ENG.											1	1
4G	5132778	GEAR, L.H. HEL.-8V53 R.H. ENG.		1										
4G	5132851	GEAR, R.H. HEL.-8V53 L.H. ENG.		1										
4C,F	124546	KEY, 5/32"X5/8" WOODRUFF (12.9350)	1		1	1		1					1	1
		* OBSOLETE												
	3.4310	HUB, BLOWER DRIVE GEAR												
4C	5119284	HUB, 4-53 (SHAFT)											1	1
4F	5116418	HUB, 6V53 (SHAFT)	1		1			1						
4G	5133831	HUB, 8V53 (SHAFT)		1										
	5135841	HUB				1								
		* OBSOLETE.												
	3.4320	WASHER, BLOWER DRIVE GEAR HUB THRUST												
4C,F	5119285	WASHER	1		1	1		1					1	1
4G	5133258	WASHER		1										
4C,F	9411765	RING (RETAINER)	1		1	1		1					1	1
4E	9414847	RING (RETAINER)		1										

3.4000 BLOWER

PART			TYPES											
FIG	NUMBER	NAME AND DESCRIPTION	90	95	98	101	102	106	110	111	113	114	115	116
3.4350 - SUPPORT, BLOWER DRIVE GEAR HUB														
4C	5119175	SUPPORT, 4-53											1	1
4F	5129168	SUPPORT, 6V53	1			1								
4F	5134680	SUPPORT, 6V53			1			1						
4G	5133013	HOUSING, 8V53 (SUPPORT)		1										
	5121343	COVER, 6V53	1		1			1						
	5145009	PLUG, 1/8" PIPE HEX. SOC. HD. (12.9550)		1										
4C	186622	BOLT, 3/8"-16X1 1/4" (12.9001)											2	2
	179849	BOLT, 3/8"-16X2 1/2" (12.9001)		6										
	455373	BOLT, 3/8"-16X4 1/2" HEX. SOC. HD. (12.9027)		1										
4F	186289	BOLT, 3/8"-16X5" (12.9001)	6		6			6						
4C/181360	181361	BOLT, 3/8"-24X7/8" (12.9001)											3	3
	5164294	WASHER (3/8" I.D.X1/8" THICK) (7.1581)	4		4			4						
4C	103341	WASHER, 3/8" FLAT (12.9190)		6									2	2
4C,F	5152148	WASHER (3/8" COPPER) (2.4050)	2		2			2					3	3
4C,F	103321	LOCKWASHER, 3/8" (12.9200)		6									2	2
3.4360 - GASKET, BLOWER DRIVE GEAR HUB SUPPORT														
4C	5116336	GASKET, 4-53 (2.7010)											1	1
	5121359	GASKET, 6V53(SUPT. TO FLYWHL. HSG.)	1		1	1		1						
	5121344	GASKET, 6V-53 (CVR. TO SUPT.)	1		1			1						
	5132873	GASKET, 8V53 (SUPT. TO CYL. BLK. END PLATE)		1										
4G	5132765	GASKET, 8V53 (SUPT. TO BLO. END PLATE) (3.4190)		1										
3.4370 - COUPLING, BLOWER DRIVE														
A COUPLING ASSY. INCLUDES ITEMS IN 3.4380 THRU 3.4400.														
	5119411	COUPLING ASM., 4-53 & 6V53	1		1	1		1					1	1
	5133269	COUPLING ASM., 8V53		1										
	5126237	SPACER (3.4100)	1		1	1		1					1	1
4G	9409228	BOLT, 1/4"-28X2 1/4" (12.9001)		2										
4B	9409221	BOLT, 1/4"-28X1 5/8" (12.9001)	4		4	4		4					4	4
4G	178474	WASHER, 1/4" FLAT (12.9190)		2										
* EFFECTIVE WITH 4D-14120.														
3.4380 - SUPPORT, BLOWER DRIVE COUPLING														
4B,D,G	5119412	SUPPORT, 4-6V-8V53	1	2	1	1		1					1	1

3.4000 BLOWER

PART			TYPES											
..FIG ..	NUMBER	NAME AND DESCRIPTION	9 0	9 5	9 8	1 0 1	1 0 2	1 0 6	1 1 0	1 1 1	1 1 3	1 1 4	1 1 5	1 1 6
3.4390 - CAM, BLOWER DRIVE COUPLING														
4B,D	5180323	CAM	1		1	1		1					1	1
4G	5133302	CAM		1										
3.4400 - SPRING, BLOWER DRIVE COUPLING														
4B,D,G	5196614	SPRING PACK (INCLUDES SPRINGS AND SEATS)	1	2	1	1		1					1	X
	5180322	SPRING												30
3.4420 - RETAINER, BLOWER DRIVE COUPLING														
4B,D	5119466	RETAINER	1		1	1		1					1	1
3.4421 - VALVE, AIR SHUTDOWN														
	5152546	VALVE (3.3040)					1							
	132900	SCREW, #10-32X3/8" RD. HD. SL. (12.9025)					2							
3.4422 - SHAFT, AIR SHUTDOWN VALVE														
	5124934	SHAFT, 7.2" L. 2-53 (3.3050)					1							
	5113633	SPACER (3.3090)					1							
	5139456	SEAL (1/2" I.D.) (2.7140)					2							
	453676	PIN, 1/8"X1" (ROLL) (SPRING RETAINER) (12.9275)					1							
	120394	WASHER, 3/8" FLAT (12.9190)					1							
3.4424 - CAM, AIR SHUTDOWN SHAFT														
	5122623	CAM, 2-53 (3.3063)					1							
	273436	PIN, 1/8"X11/16" RETAINER (12.9300)					1							
3.4426 - SPRING, AIR SHUTDOWN VALVE														
	5121296	SPRING, 2-53 (3.3070)					1							
	5114124	SPRING, 2-53 LATCH (3.3070)					1							
3.4427 - LEVER, AIR SHUTDOWN VALVE														
	5112785	LATCH, 2-53 (3.3090)					1							
	2104066	CLEVIS (2.9400)					1							
	112526	PIN, 1/16"X3/8" (12.9250)					1							
3.4410 - SEAT BLOWER DRIVE COUPLING SPRING														
	5180321	SEAT												2

[illegible]

[illegible]

3E	5134914	PLATE, FRONT
3E	5139299	PLATE, REAR
	5145009	PLUG, 1/8" PIPE (12.9550)
3E	117297	SCREW, 5/16"-18X1 3/4" FIL. HD. (12.9010)

3E 5134924 SEAL (LIP TYPE).....

[illegible]

GROUP NOMENCLATURE

1.0000 ENGINE (less major assemblies)
 1.1000 Cylinder Block
 1.1000A Air Box Drains
 1.2000 Cylinder Head
 1.2000A Engine Lifter Bracket
 1.3000 Crankshaft, Oil Seals and stabilizers
 1.3000A Crankshaft Front Cover
 1.3000B Vibration Damper
 1.3000C Crankshaft Pulley
 1.3000D Crankshaft Pulley Belt
 1.4000A Flywheel
 1.5000A Flywheel Housing
 1.5000B Flywheel Housing Adaptor
 1.6000 Connecting Rod and Piston
 1.7000 Camshaft and Gear Train
 1.7000A Balance Weight Cover
 1.7000B Accessory Drive
 1.8000 Valve and Injector Operating Mechanism
 1.8000A Rocker Cover

2.0000 FUEL SYSTEM
 2.1000A Fuel Injector
 2.2000 Fuel Pump
 2.2000A Fuel Pump Drain
 2.3000A Fuel Filter
 2.4000 Fuel Manifold and/or Connections
 2.4000A Dual Fuel System
 2.5000A Fuel Lines and Fuel Cooler
 2.6000A Fuel Tank
 2.7000A Mechanical Governor
 2.8000A Hydraulic Governor
 2.9000 Injector Controls
 2.9000A Throttle Controls

3.0000 AIR SYSTEM
 3.1000A Air Cleaner and/or Adaptor
 3.2000A Air Silencer
 3.3000A Air Inlet Housing
 3.4000 Blower
 3.4000A Blower Drive Shaft
 3.4000B Blower End Plate Cover
 3.5000A Turbocharger and Intercooler

4.0000 LUBRICATING SYSTEM
 4.1000A Oil Pump
 4.1000B Oil Distribution System
 4.1000C Oil Pressure Regulator
 4.2000A Oil Filter
 4.3000A Oil Filter Lines
 4.4000A Oil Cooler and Marine Gear Lines
 4.5000A Oil Filler
 4.6000A Dipstick
 4.7000A Oil Pan
 4.8000A Ventilating System

5.0000 COOLING SYSTEM
 5.1000 Fresh Water Pump
 5.1000A Fresh Water Pump Cover
 5.2000A Water Outlet Manifold and/or Elbow
 5.2000B Thermostat
 5.2000C Water By-pass Tube
 5.3000A Radiator
 5.3000B Water Connections
 5.4000A Fan
 5.4000B Fan Shroud
 5.5000A Heat Exchanger or Keel Cooling
 5.6000A Raw Water Pump
 5.7000A Water Filter

6.0000 EXHAUST SYSTEM
 6.1000A Exhaust Manifold
 6.2000A Exhaust Muffler and/or Connections

7.0000 ELECTRICAL—INSTRUMENTS
 7.1000A Battery Charging Generator
 7.2000A Battery Cables
 7.2000B Automatic Starting
 7.3000A Starting Motor
 7.4000A Instruments
 7.4000B Tachometer Drive
 7.4000C Shut-off, Alarm and O.S. Governor
 7.5000A Power Generator
 7.6000A Control Cabinet
 7.7000A Wiring Harness
 7.8000A Air Heater
 7.10000A Hydraulic Governor Solenoid

8.0000 POWER TAKE-OFF
 8.1000A Power Take-off and/or Clutch
 8.3000A Torque Converter
 8.3000B Transmission Lines

9.0000 TRANSMISSION AND PROPULSION
 9.1000A Hydraulic Marine Gear
 9.2000A Reverse and Reduction Gear (mechanical)
 9.3000A Power Transfer Gear
 9.4000 Transmission—Highway
 9.7000 Transmission—Off-highway
 9.9000 Transmission—Rail Car

10.0000 SHEET METAL
 10.1000A Engine Hood

11.0000 ENGINE MOUNTING
 11.1000A Engine Mounting and Base

12.0000 MISCELLANEOUS
 12.2000A Bilge Pump
 12.3000A Vacuum Pump
 12.4000A Air Compressor
 12.5000A Hydraulic Pump
 12.6000A Gasoline Starter
 12.6000B Air Starter
 12.6000C Cold Weather Starting Aid
 12.6000D Hydraulic Starter
 12.6000E Hydraulic Starter Accessories
 12.8000A Supplies
 12.8000B Fabrication Material
 12.8000C Service Kits

4

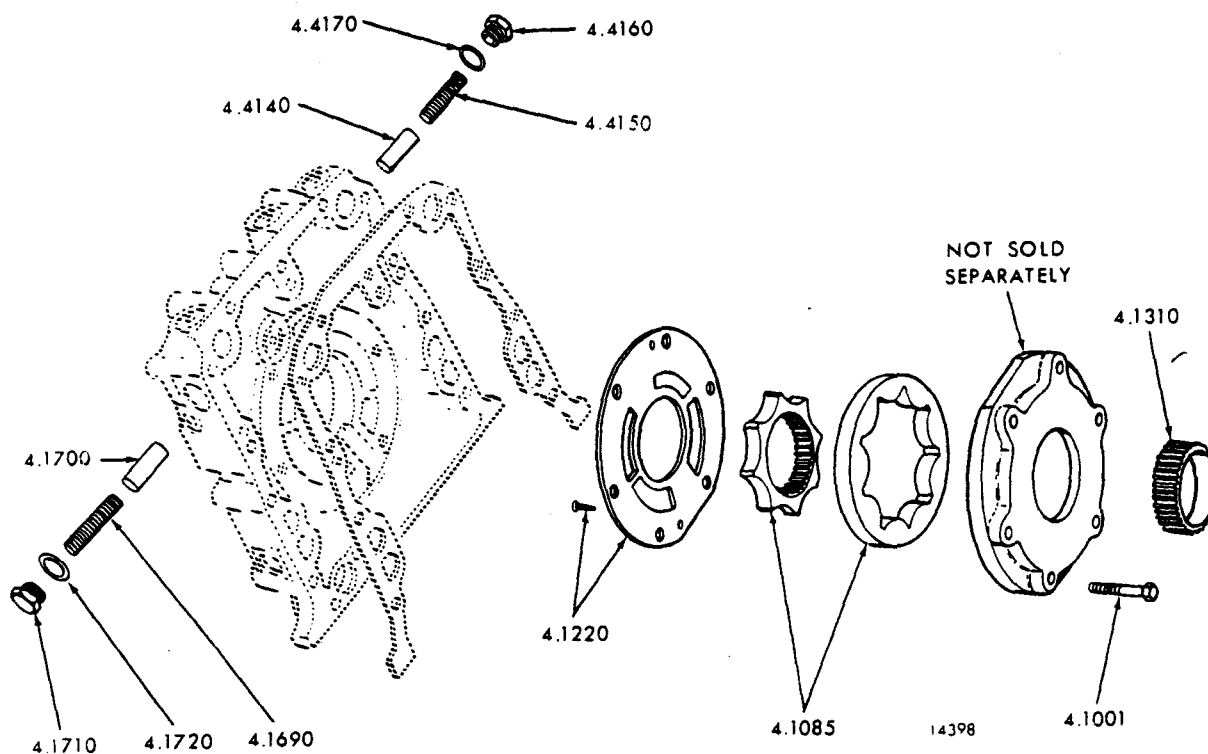


FIG. 1A OIL PUMP AND PRESSURE REGULATOR (In-Line Models)

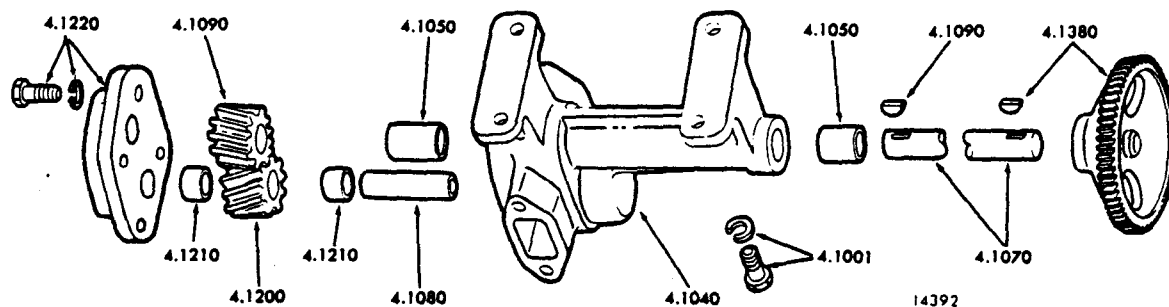


FIG. 1B OIL PUMP (8V)

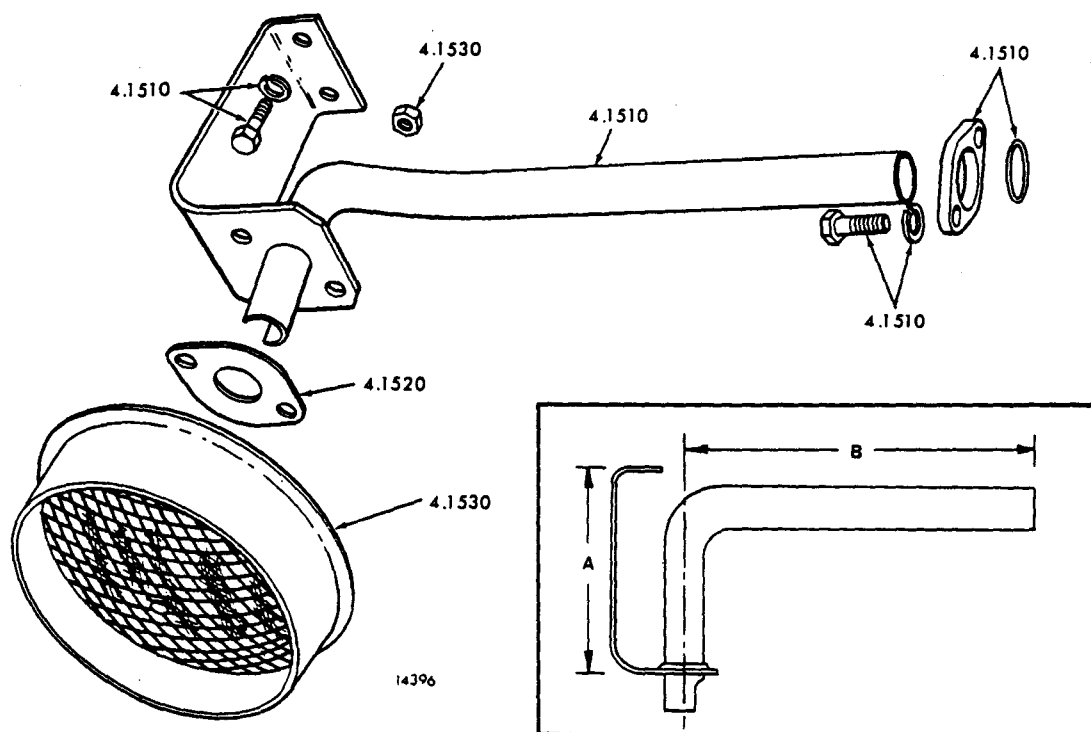


FIG. 2A OIL DISTRIBUTION SYSTEM

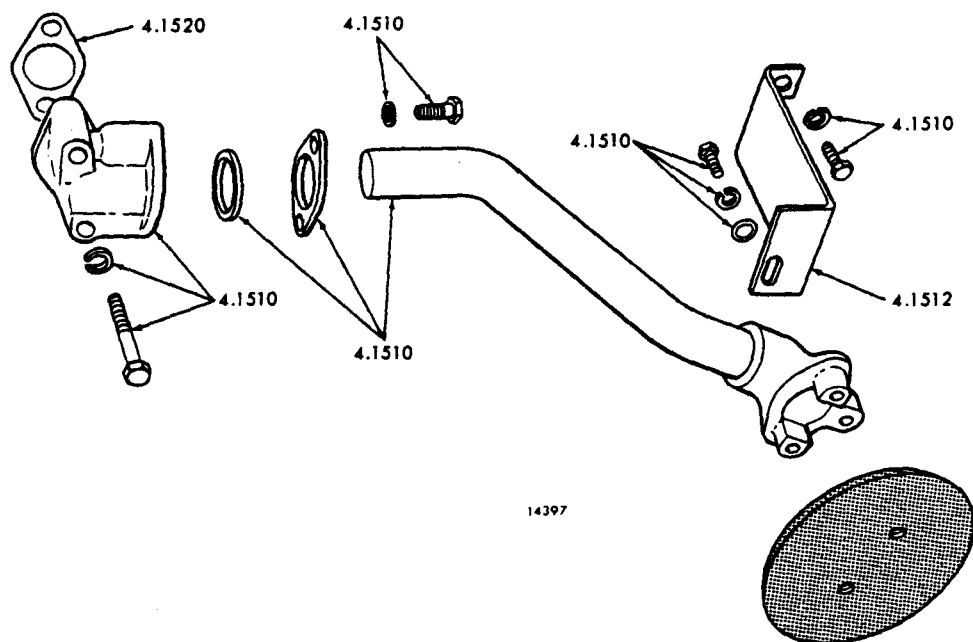


FIG. 2B OIL DISTRIBUTION SYSTEM (8V)

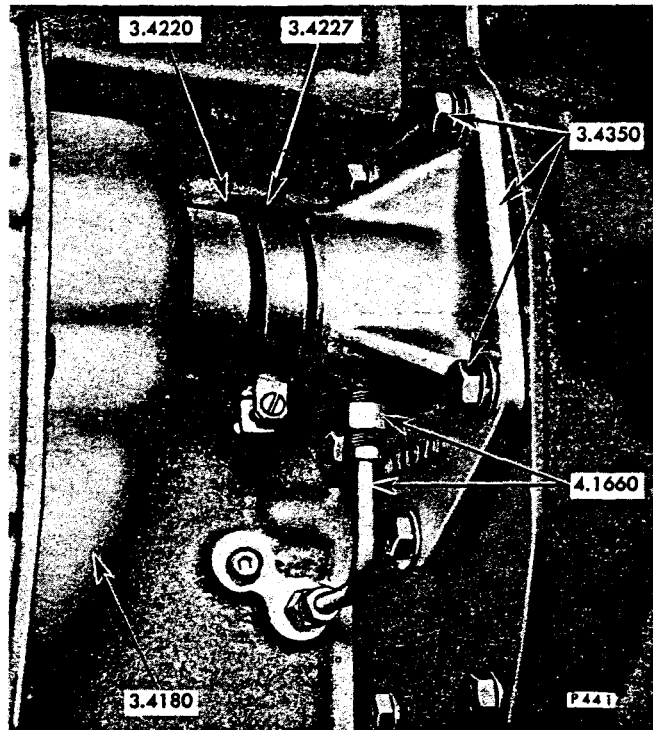
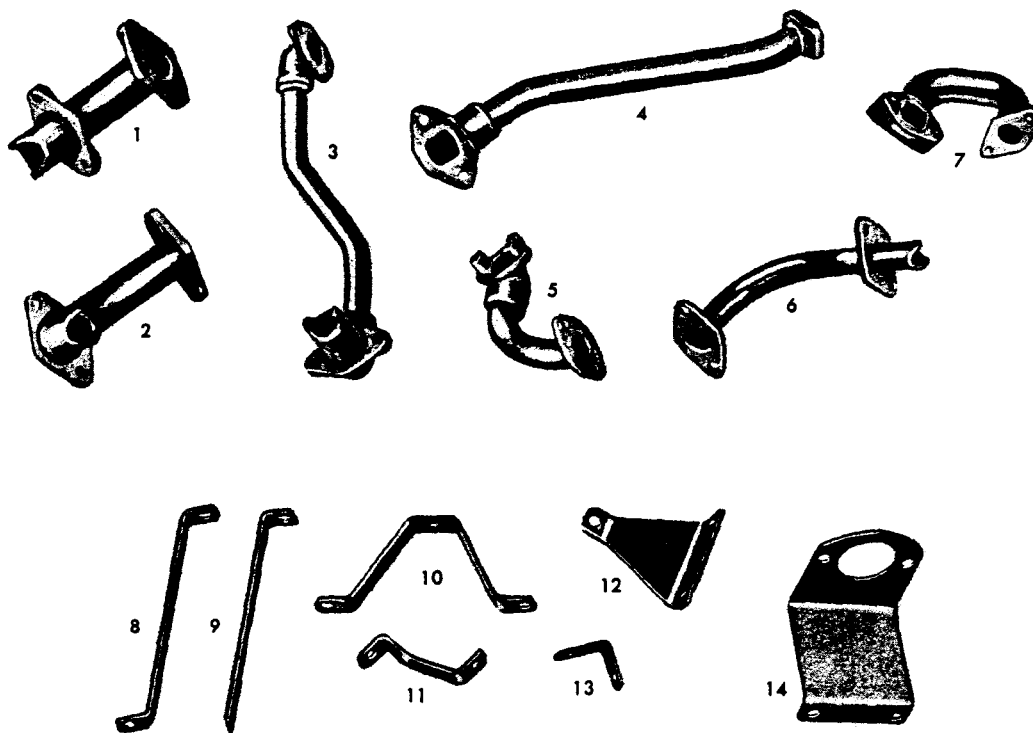


FIG. 2C OIL DISTRIBUTION SYSTEM



P217

FIG. 2D OIL INLET PIPES

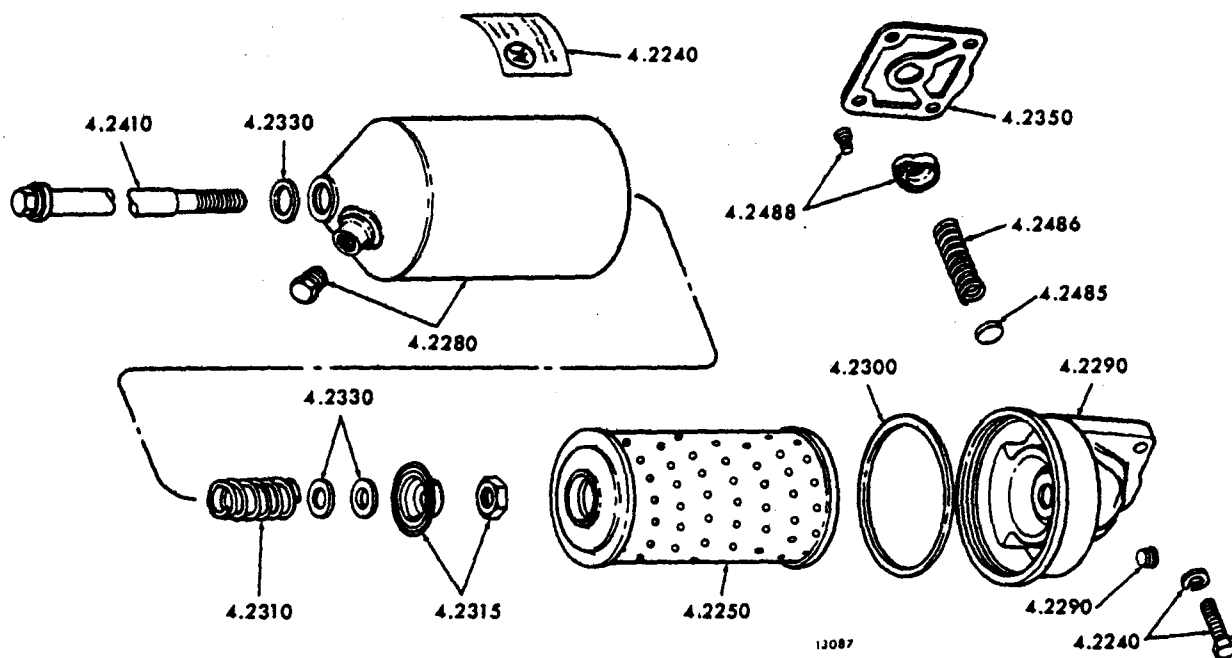


FIG. 3A OIL FILTER

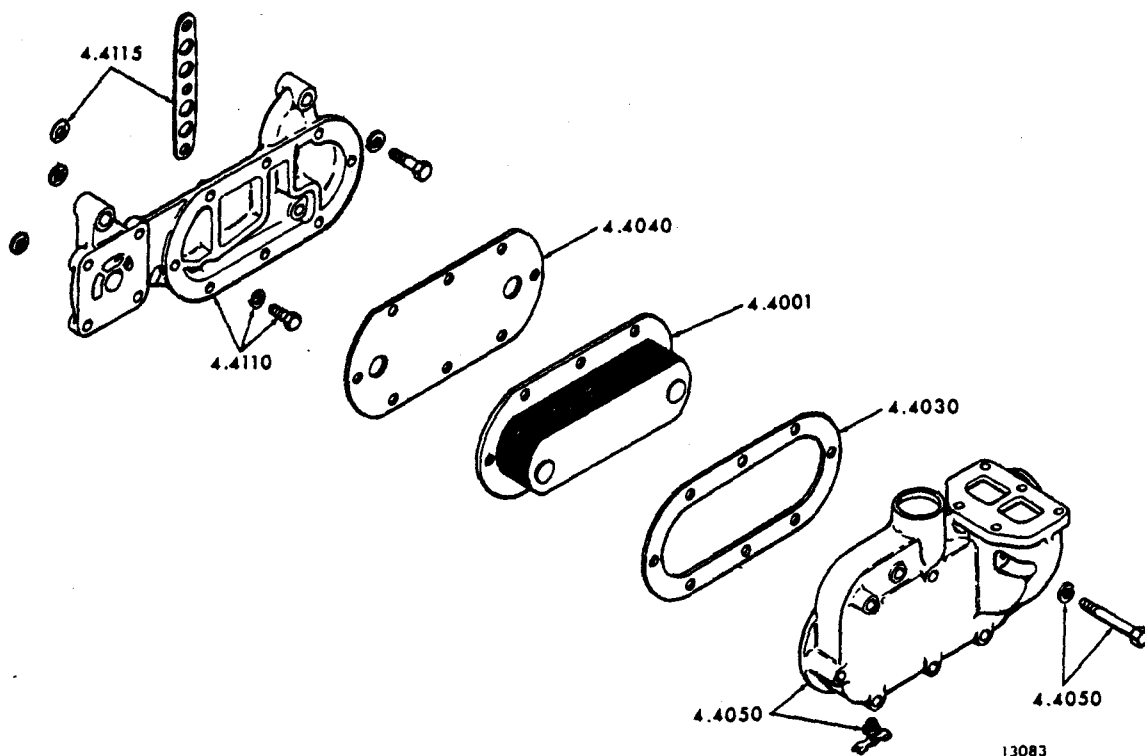


FIG. 4A OIL COOLER

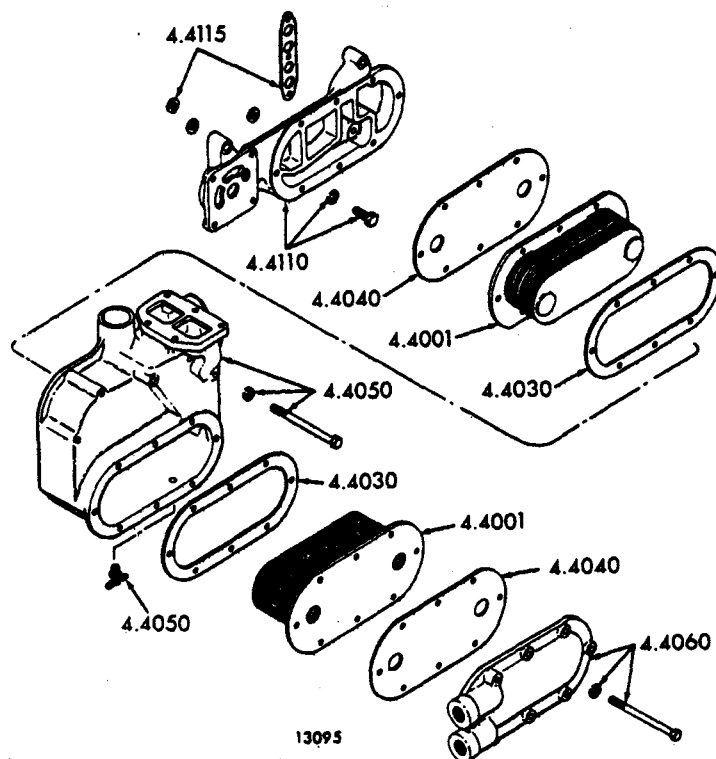


FIG. 4B TORQUE CONVERTER OIL COOLER

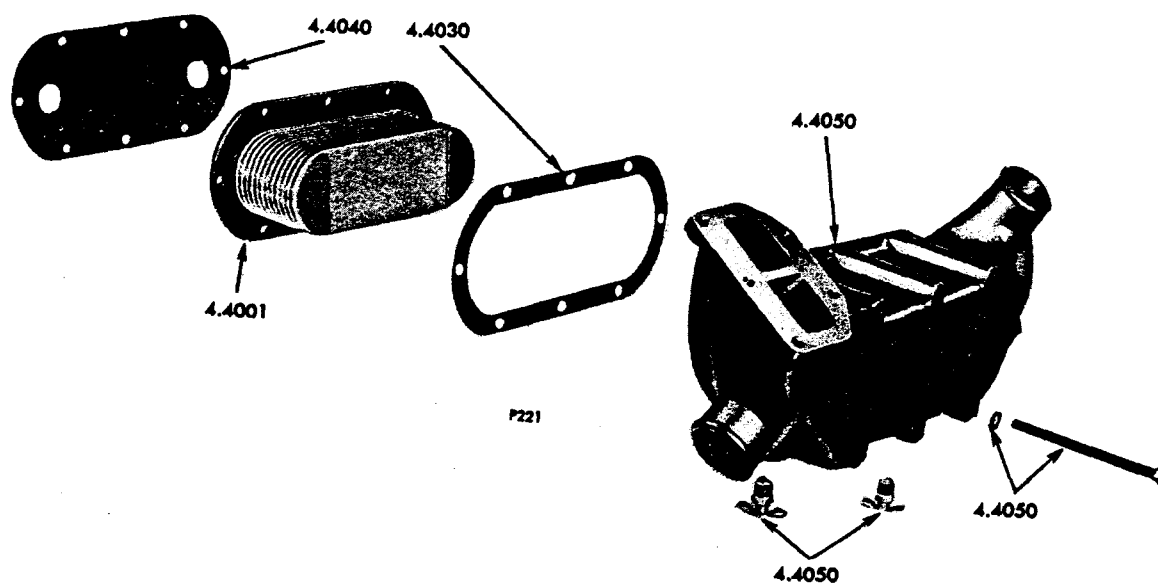


FIG. 4C OIL COOLER

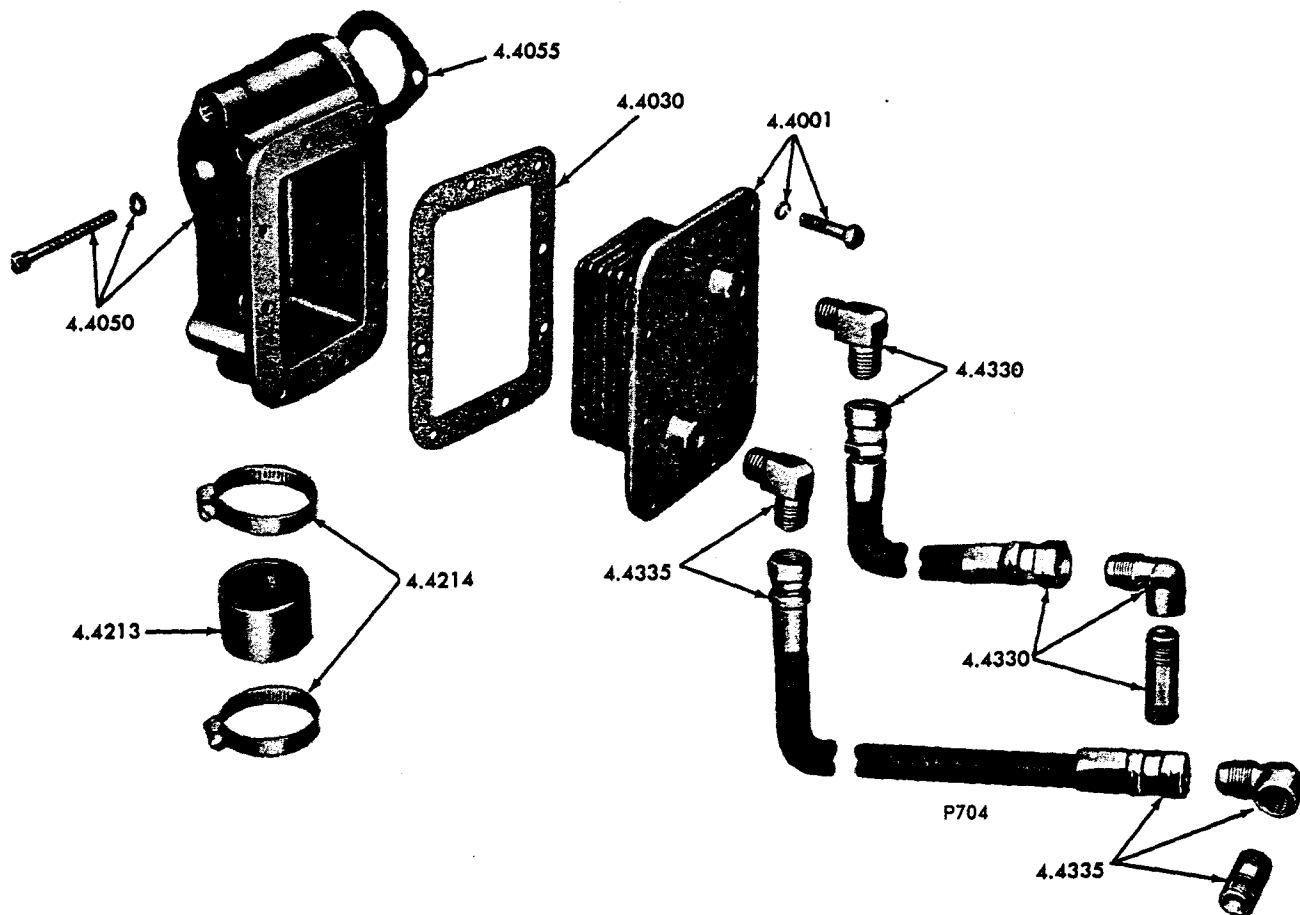


FIG. 4D MARINE GEAR OIL COOLER

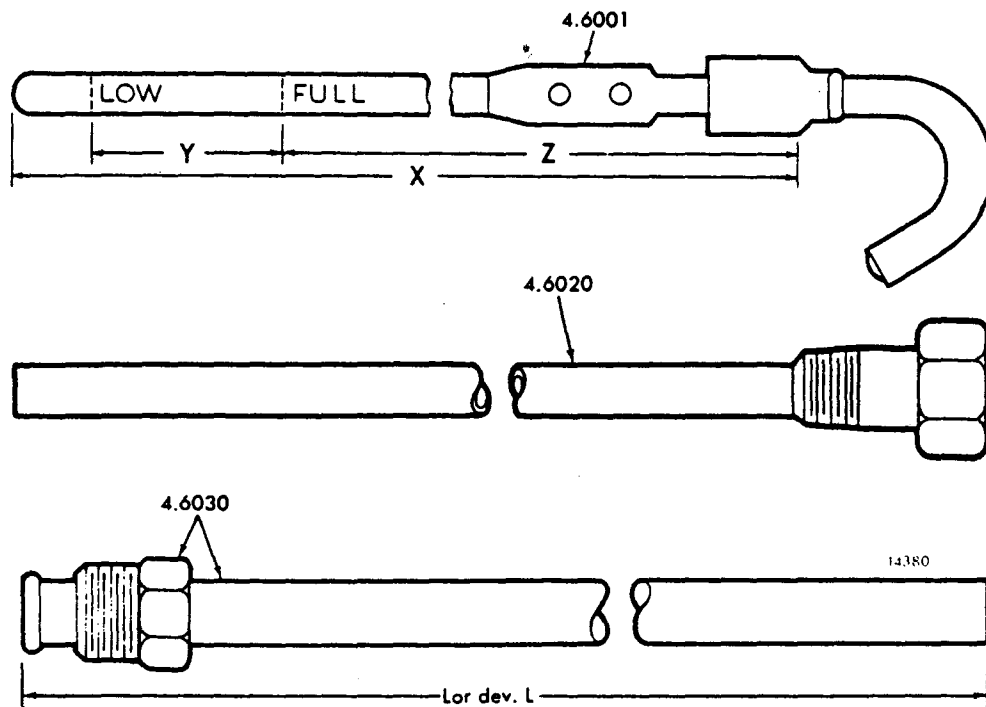


FIG. 6A DIPSTICK

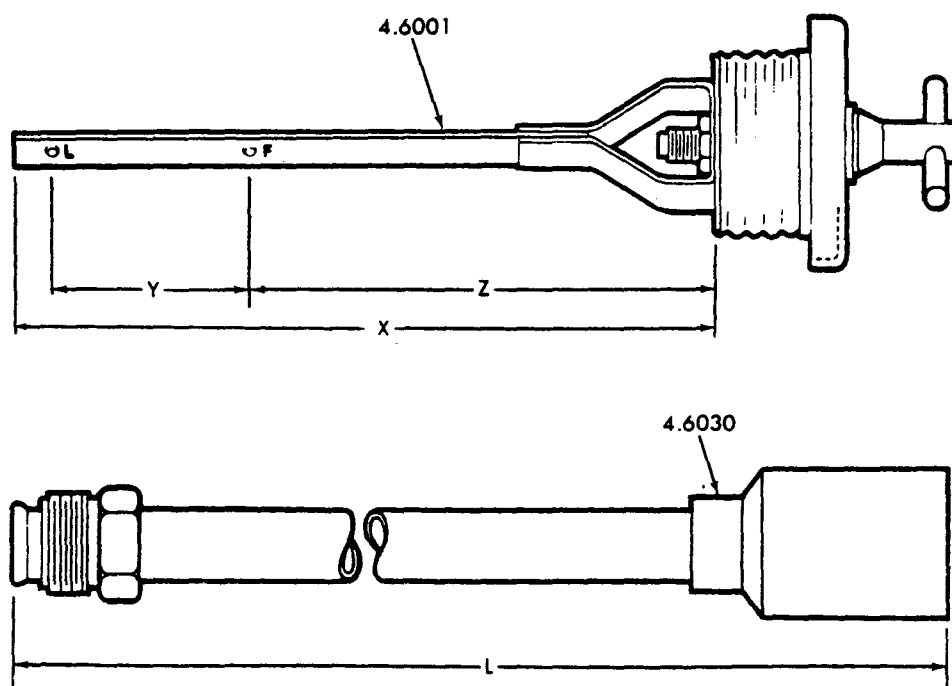


FIG. 6B DIPSTICK

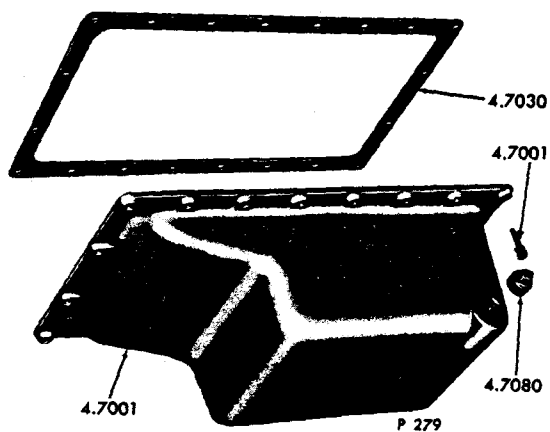


FIG. 7A OIL PAN (CAST)

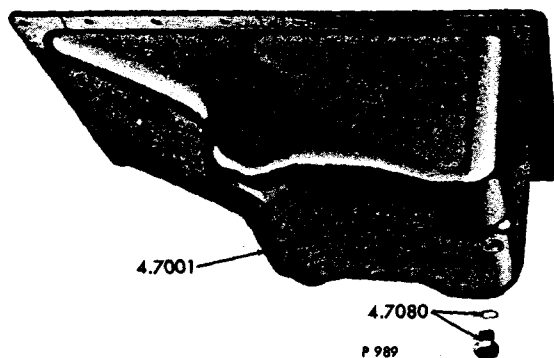


FIG. 7B OIL PAN (STAMPED)

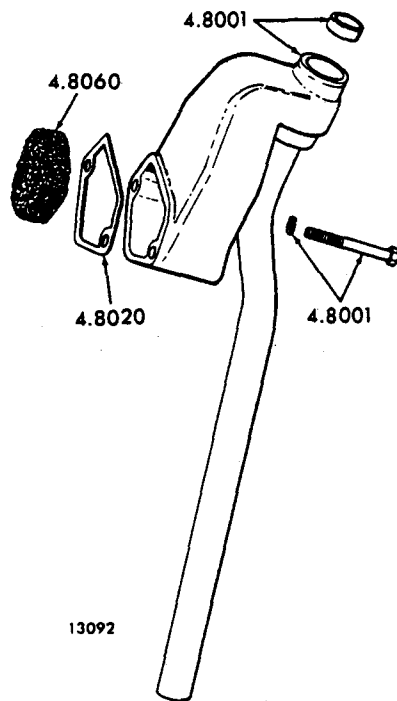


FIG. 8A BREATHER

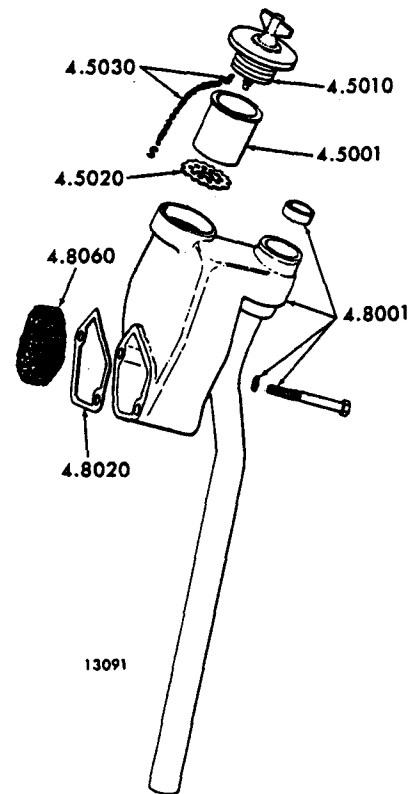


FIG. 8B BREATHER AND OIL FILLER

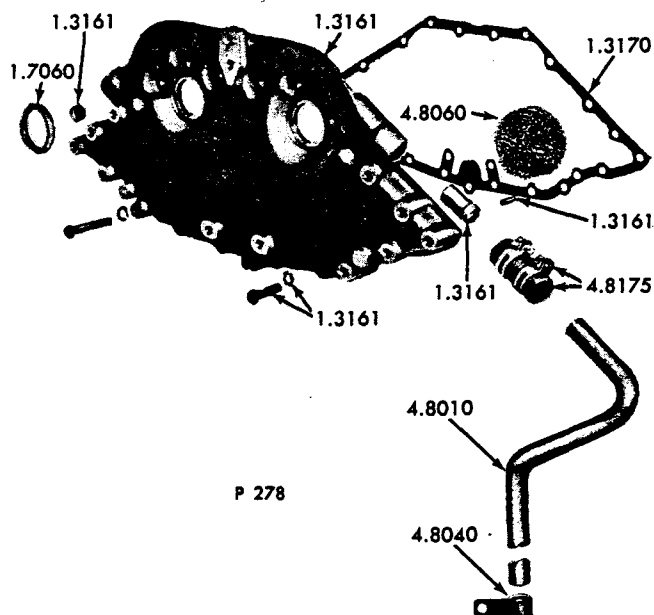


FIG. 8C BREATHER (6V)

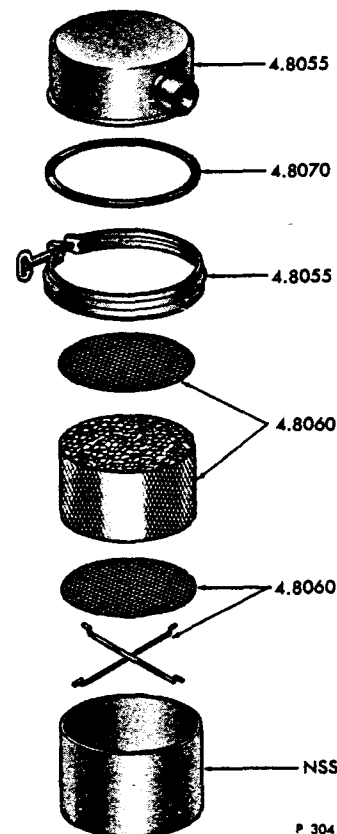


FIG. 8D BREATHER ASSEMBLY

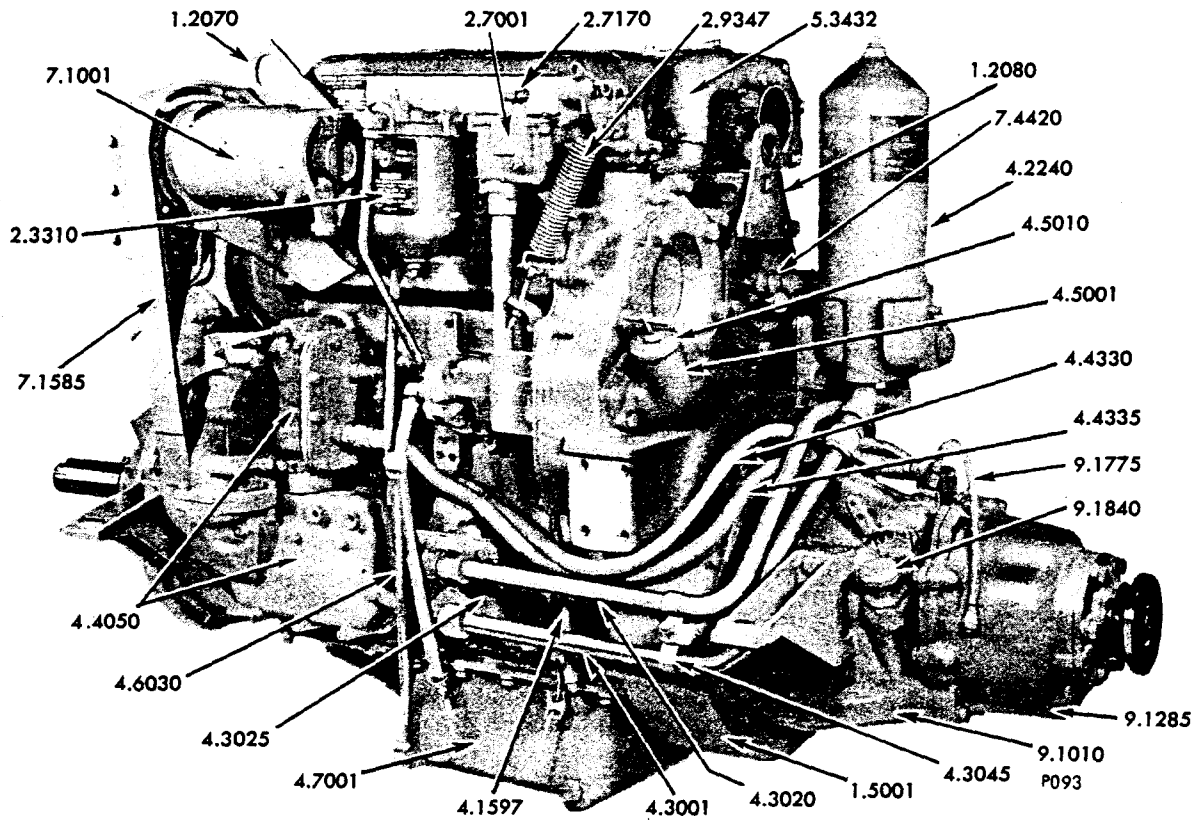


FIG. 10A OIL COOLER AND LINES (In-line engine)

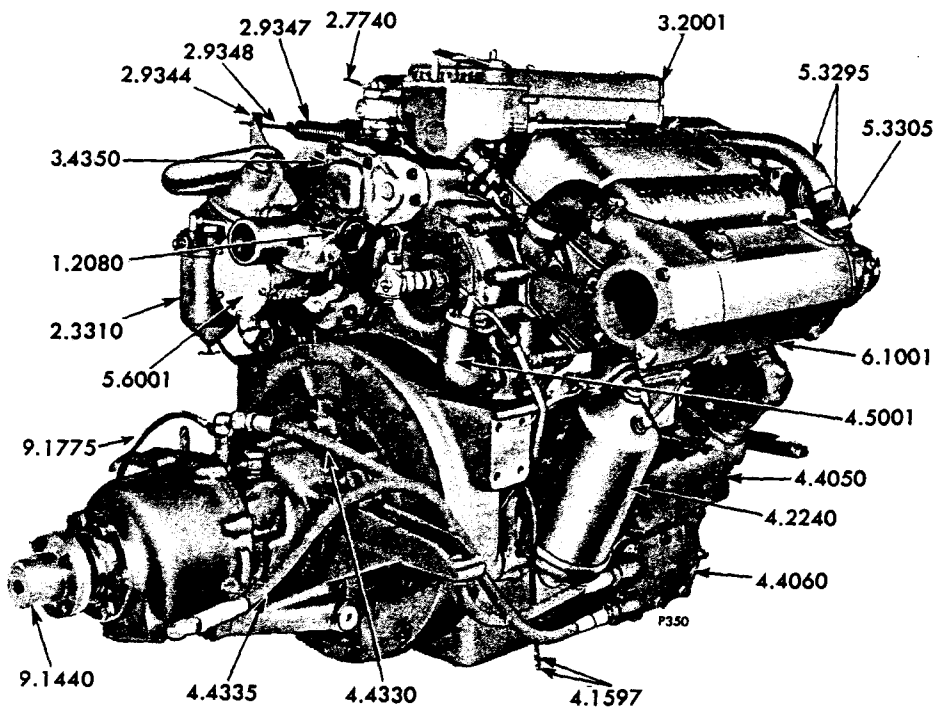


FIG. 10B OIL COOLER AND LINES (V-engine)

4.1000A OIL PUMP

PART		TYPES									
FIG	NUMBER	NAME AND DESCRIPTION									
	4.1001 - PUMP ASSY., OIL	4	5	5	5	7	8	8	9	10	11
	INCLUDES ITEMS IN 4.1040 THRU 4.1220 AND 4.1380.	8	0	1	2	3	7	3	8	6	12
	5135032 PUMP ASSY., 2-53	1				1					
	5116110 PUMP ASSY., 3-53		1								
	5121042 PUMP ASSY., 4-53			1	1						
	5116070 PUMP ASSY., 6V-53				1						
	5132793 # PUMP ASSY., 8V-53					1					
	5134325 & PUMP ASSY., 8V-53						1				
	5141393 PUMP ASSY., 8V-53							1			
	5135295 PUMP ASSY., 8V-53 (SCAVENGING)								1		
	5142731 PUMP ASSY., 3-53									1	
	5142015 PUMP ASSY., 8V-53										1
1A	179822 BOLT, 5/16"-18X1 1/2" (12.9001)	6	6								
1A	193942 BOLT, 5/16"-18X1 5/8" (AA LOCK) (12.9001)		6		6	6					
1A	179826 BOLT, 5/16"-18X2" (12.9001)			6							
	179839 BOLT, 3/8"-16X1" (12.9001)							4	4		4
1B	186619 BOLT, 3/8"-16X1 1/8" (12.9001)						4	4			
1A	272473 BOLT, 3/8"-16X3 7/8" (12.9001)									11	
	103341 WASHER, 3/8" FLAT (12.9190)									11	
1A	103320 LOCKWASHER, 5/16" (12.9200)	6	6	6							
1B	103321 LOCKWASHER, 3/8" (12.9200)					4	4	4	4	11	4
	# NOT SERVICED. CONVERT TO TYPE 83.										
	ALSO INCLUDE (1) 5135339 TUBE, (1) 5126143 SPACER PLUS (2) EACH OF 9408010 BOLT AND 120393 WASHERS & NOT SERVICED. CONVERT TO TYPE 83.										
	4.1003 - OVERHAUL KIT, OIL PUMP										
	5198320 OVERHAUL KIT, 8V-53						AR	AR			
	4.1007 - GASKET, OIL PUMP TO BLOCK										
	5116386 GASKET									1	
	5115454 SEAL (OIL) (1.3040)									1	
	4.1030 - SHIM, OIL PUMP										
	5132921 SHIM (.005")						AR	AR	AR	AR	AR
	4.1040 - BODY, OIL PUMP										
	INCLUDES ITEMS IN 4.1050 AND 4.1080.										
1B	5132787 % BODY ASSY. (5132788)					1	1				
1B	5135767 # BODY ASSY. (5141391)							1			

4.1000A OIL PUMP

PART		TYPES												
FIG	NUMBER	NAME AND DESCRIPTION	4 8	4 9	5 0	5 1	5 2	5 3	7 8	7 9	8 3	9 8	1 0 6	1 1 2
		4.1040 - BODY, OIL PUMP (CONT'D)												
1B	5135298	BODY ASSY.										1		
	5153122	BODY ASSY. (SCAVENGING)										1		1
1B	5141537	BODY ASSY.												1
	179830	BOLT, 5/16"-18X3" (12.9001)										4		4
	103320	LOCKWASHER, 5/16" (12.9200)										4		4
		% NOT SERVICED; USE BODY IN PARENTHESES PLUS (1) 5153310 SHAFT. # NOT SERVICED; USE BODY ASSY. SHOWN IN PARENTHESES AND INCLUDE (1) 5153260 AND (1) 5153617 DRIVEN GEARS.												
		4.1050 - BUSHING, OIL PUMP BODY												
1B	5153147	BUSHING							2	2	2	2		2
	5153154	BUSHING (4.1210)										1		1
		4.1060 - SPACER, OIL PUMP BODY												
	5153257	SPACER										1		1
		4.1070 - SHAFT, OIL PUMP DRIVE												
1B	5132730	SHAFT, 8V-53							1	1				
1B	5134345	SHAFT, 8V-53									1			
1B	5153258	SHAFT, 8V-53										1		1
		4.1080 - SHAFT, OIL PUMP DRIVEN GEAR												
1B	5153310	SHAFT, 8V-53							1	1				
1B	5153146	SHAFT, 8V-53										1		1
1B	5134870	SHAFT, 8V-53									1			
		4.1085 - ROTOR ASSY., OIL PUMP												
		INCLUDES INNER AND OUTER ROTORS WHICH ARE NOT SOLD SEPARATELY.												
1A	5134968	ROTOR SET, 2-53	1					1						
1A	5195714	ROTOR SET, 3-53		1										
1A	5195957	ROTOR SET, 4-53			1		1							
1A	5195687	ROTOR SET, 6V-53				1								

4.1000A OIL PUMP

PART		TYPES												
FIG	NUMBER	NAME AND DESCRIPTION	4 8	4 9	5 0	5 1	5 2	5 3	7 8	7 9	8 3	9 8	1 0 6	1 1 2
4.1090 - GEAR, OIL PUMP DRIVE														
	5142917	GEAR											2	
1B	5132729	GEAR							1	1				
1B	5135929	GEAR									1	1		
	5153260	GEAR (SCAVENGING)										1		
	5153260	GEAR												2
1B	103905	KEY, 1/8"X5/8" WOODRUFF (12.9350)							1	1	1			
1B	103905	KEY, 1/8"X5/8" WOODRUFF (12.9350)										3		3
4.1200 - GEAR, OIL PUMP DRIVEN														
GEAR ASSY. INCLUDES ITEM IN 4.1210.														
	5142919	GEAR											2	
1B	5132770	GEAR ASSY.							1	1	1	1		
	5153617	GEAR ASSY. (SCAVENGING)										1		2
4.1210 - BUSHING, OIL PUMP DRIVEN GEAR														
1B	5166840	BUSHING							2	2	2	2		
	5153154	BUSHING (SCAVENGING)										2		
	5153154	BUSHING (SCAVENGING)												4
4.1220 - COVER, OIL PUMP														
	5142609	COVER											1	
	5142730	COVER											1	
1A	5195685	COVER	1	1	1	1	1	1						
1B	5132769	COVER							1					
1B	5134324	COVER								1				
1A	5153299	COVER ASSY. (INCLUDES BUSHING IN 4.1240)									1			
1A	145067	SCREW, #6X3/8" DRIVE (12.9067)	2	2	2	2	2	2						
1B	186625	BOLT, 5/16"-18X7/8" (12.9001)							4	4				
1B	186624	BOLT, 5/16"-18X1 1/4" (12.9001)									4			
1A	179824	BOLT, 5/16"-18X1 3/4" (12.9001)											1	
1B	179844	BOLT, 3/8"-16X1 5/8" (12.9001)											3	
	179846	BOLT, 3/8"-16X1 7/8" (12.9001)											6	
	103340	WASHER, 5/16" (12.9190)											1	
	103341	WASHER, 3/8" (12.9190)											1	
1B	103320	LOCKWASHER, 5/16" (12.9200)							4	4	4			
1B	103321	LOCKWASHER, 3/8" (12.9200)											3	
4.1227 - PLATE, ENGINE FRONT COVER														
	5142711	PLATE											1	
	179839	BOLT, 3/8"-16X1" (12.9001)											1	
	5131740	BOLT, 3/8"-16X1 1/2" (2.2001)											1	

5 3 M P C E N G I N E S
4.1000A OIL PUMP

DETROIT DIESEL

PART		TYPES												
FIG	NUMBER	NAME AND DESCRIPTION	4 8	4 9	5 0	5 1	5 2	5 3	7 8	7 9	8 3	9 8	1 0 6	1 1 2
	4.1227	PLATE, ENGINE FRONT COVER (CONT'D)												
	103341	WASHER, 3/8" FLAT (12.9190)											1	
	4.1230	BUSHING, OIL PUMP DRIVE SUPPORT												
	5138991	SEAL (LOWER COVER)											1	
	5142712	GASKET (COVER PLATE)											1	
	4.1240	BUSHING, OIL PUMP COVER												
	5153134	BUSHING (4.1210)									1			
	4.1250	VALVE, OIL PUMP RELIEF												
	5177777	VALVE (4.4140)											2	
	4.1260	SPRING, OIL PUMP RELIEF VALVE												
	5126436	SPRING (4.1690)											2	
	4.1270	PLUG, OIL PUMP RELIEF VALVE												
	5113657	PLUG (4.1710)											2	
	4.1280	GASKET, OIL PUMP RELIEF VALVE												
	5177773	GASKET (4.4170)											2	
	4.1310	GEAR, OIL PUMP DRIVE (ON CRANKSHAFT)												
1A	5144375	GEAR	1	1	1	1	1	1						
1A	5142713	GEAR											1	
	4.1380	GEAR, OIL PUMP DRIVE (ON PUMP)												
1B	5132637	GEAR							1	1	1	1		1
1B	103905	KEY, 1/8"X5/8" WOODRUFF (12.9350)							1	1	1	1		1

4.1000B OIL DISTRIBUTION SYSTEM

PART			TYPES											
FIG	NUMBER	NAME AND DESCRIPTION	2 3 9	2 4 2	2 4 6	2 4 9	2 5 0	2 5 2	2 5 4	2 5 7	2 5 8	2 6 1	2 6 3	2 7 5
4.1510 - PIPE, OIL PUMP INLET														
2B	5162917	PIPE,6V53	1										1	
2B	5131572	PIPE,3-53										1		
2D	5132725	PIPE,6V53 (FIGURE 4)												1
2A	5109241	PIPE,4-53 (A-7.32",B-3.86")		1										
2A	5162968	PIPE,4-53 (A-4.48",B-19")			1									
2A	5109092	PIPE,4-53 (A-6.24",B-11.34")				1								
2A	5162967	PIPE,4-53 (A-3.66",B-19")					1							
2A	5125949	PIPE,4-53 (A-5.12",B-15.48")						1						
2A	5130935	PIPE,3-53 (A-7.52",B-5.76")							1					
2A	5131323	PIPE,2-53 (A-5.27",B-7.80")								1				
2A	5131622	PIPE,3-53 (A-6",B-5.76")									1			
2A	5119425	FLANGE		1	1	1	1	1	1	1	1	1		
2B	5126454	FLANGE	1										1	
2B	5126453	ELBOW (SD-161)	1										1	
2A	5127175	SEAL RING		1	1	1	1	1	1	1	1	1		
2B	5126492	SEAL RING	1										1	
2B	186618	BOLT, 5/16"-18X5/8" (12.9001)										3		
2A	179816	BOLT, 5/16"-18X3/4" (12.9001)	3	4	4	4	4	4	4	4	4	2	3	
2B	186625	BOLT, 5/16"-18X7/8" (12.9001)	2										2	
2B	138222	BOLT, 5/16"-18X1" (12.9027)												2
2B	179826	BOLT, 5/16"-18X2" (12.9001)	2										2	
	103340	WASHER, 5/16" FLAT (12.9190)	AR	4	4	4	4	4	4	4	4	AR	AR	AR
2A	103320	LOCKWASHER, 5/16" (12.9200)	AR	AR	AR	AR	AR	AR	AR	4	AR	AR	AR	AR
4.1512 - SUPPORT, OIL PUMP INLET PIPE														
2B	5162916	SUPPORT,6V53	1										1	
2B	5131574	SUPPORT,3-53										1		
	5132709	SUPPORT,6V53												2
	120228	BOLT, 5/16"-18X5/8" (12.9001)												1
	181595	BOLT, 5/16"-24X3/4" (12.9001)												1
	103340	WASHER, 5/16" FLAT (12.9190)												5
	103320	LOCKWASHER, 5/16" (12.9200)												3
	114493	NUT, 5/16"-24 HEX. (12.9120)												2
4.1520 - GASKET, OIL PUMP INLET PIPE														
2A	5175568	GASKET,2,3,4-53 (4.1672)			1		1	1	1	1	1			
2B	5126473	GASKET,6V53	1										1	1
4.1530 - SCREEN, OIL PUMP INLET														
2A	5126456	SCREEN ASSY.		1	1	1	1	1	1	1	1			
	5155830	SCREEN	1									1	1	1
2B	179789	BOLT, 1/4"-20X3/8" (12.9001)	2									2	2	
	180016	BOLT, 1/4"-20X1/2" (12.9001)												2

4.1000B OIL DISTRIBUTION SYSTEM

PART			TYPES											
FIG	NUMBER	NAME AND DESCRIPTION	2 3 9	2 4 2	2 4 6	2 4 9	2 5 0	2 5 2	2 5 4	2 5 7	2 5 8	2 6 1	2 6 3	2 7 5
		4.1530 - SCREEN, OIL PUMP INLET (CONT'D)												
2B	120380	* LOCKWASHER, 1/4" (12.9200)	2									2	2	2
2A	274558	NUT, 5/16"-24 HEX. LOCK (12.9140) * EFFECTIVE WITH 4D-27899.		2	2	2	2	2	2	2	2			
		4.1597 - TUBE, OIL PRESSURE GAGE												
	5118781	HOSE, 3/16" I.D. X 11 3/16" L. (5.1003)			1		1							
	1508350	CONNECTOR, 1/8" RESTRICTED (7.4074)			1		1							
		4.1660 - PIPE, BLOWER DRIVE BEARING OIL												
2C	5119476	TUBE ASSY., 3,4-53 (DEV. L. 7 1/8")	1	1	1	1								
2C	5130938	TUBE ASSY., 4-53 (DEV. L. 5.50")						1						
2C	442321	CONNECTOR, 1/4" INV. FL. TUBE (12.9460)	1	1	1	1	1							
2C	225810	ELBOW, 1/4" INV. FL. TUBE 90 DEG. (12.9480)	1	2	2	2	2							

4.2000A OIL FILTER

PART
..FIG .. NUMBER .. NAME AND DESCRIPTION ..

TYPES

4.2240 - FILTER ASSY., OIL

SEE ASSEMBLY BREAKDOWN
PAGE AS INDICATED BELOW.
FOR TYPES 130 & 134 ALSO SEE OIL
FILTER LINES, 4.3000A, TYPE 98.
FOR TYPE 139 USE TYPE 147.

	1 0 8	1 0 9	1 1 1	1 1 2	1 1 5	1 1 6	1 2 7	1 3 0	1 3 4	1 3 5	1 4 4	1 4 5
5121120 * FILTER ASSY., 3,4-53, 6, 8V53 (9" ELEMENT) (PAGE A1) (5134392)	1									1		1
5121143 * FILTER ASSY., 2,3-53 (6" ELEMENT) (PAGE A1) (5134393)		1										
5570098 + FILTER ASSY., 2-53 (BY-PASS) (S-6) (PAGE A1)			1									
5572941 FILTER ASSY., 2-53 (BY-PASS) (PAGE A1)				1								
5196393 FILTER ASSY., 3-53, 6V53 (9.3650) (PAGE B1)					1							
5122527 * FILTER ASSY., 4-53 (PAGE A1)						1						
5124065 FILTER ASSY., 8V53 (FULL FLOW) (PAGE C1)							1					
5181797 * FILTER ASSY., 4-53, 6, 8V53 (PAGE A1) (5147683)								1			1	
5125025 FILTER ASSY., 2,3-53 (PAGE A1)									1			
5573199 DECAL (4.2280)				1								
5573162 DECAL (4.2280)	1				1	1	1	1	1	1	1	1
5575213 DECAL (4.2280)		1							1			
128003 BUSHING, 1" X 3/4" RED. (12.9570)									AR			
5111798 PLUG, 1" PIPE (12.9550)									AR			
179839 BOLT, 3/8"-16X1" (12.9001)				4	4							
186679 BOLT, 3/8"-16X1 1/4" (12.9001)	4	4				4				4		
186309 BOLT, 3/8"-24X3 1/4" (12.9001)												4
103341 WASHER, 3/8" FLAT (12.9190)	4	4				4				4		
103321 LOCKWASHER, 3/8" (12.9200)	4	4		4	4	4				4		4
117049 NUT, 3/8"-24 HEX. (12.9120)											4	
* NOT SERVICED, COMPONENTS ARE AVAILABLE, FOR REPLACEMENT USE ASSY. NUMBER IN PARENTHESES, PLUS (2) 128003 AND (2) 5111798.												
* NOT SERVICED, COMPONENTS ARE AVAILABLE, FOR REPLACEMENT CONVERT TO TYPE 152 FOR LD ENGINE, TYPE 153 FOR RB ENGINE.												
+ OBSOLETE.												
4.2291 - ADAPTOR, OIL FILTER COVER												
5127268 ADAPTOR, 6, 8V53 (MOUNTING) (CANTED INBOARD 12 DEG.)										1		
186679 BOLT, 3/8"-16X1 1/4" (12.9001)										4		

. TYPES

[illegible]

DETROIT DIESEL

. TYPES

[illegible]

5134456 RETAINER,3-53
160221 SCREW, #12-24X1/2 PAN. HD.
CR/RECESS (12.9025)

4.2000A OIL FILTER

PART
FIG . . . NUMBER NAME AND DESCRIPTION

4.2240 - FILTER ASSY., OIL

SEE ASSEMBLY BREAKDOWN PAGES AS
INDICATED BELOW.

5181797 # FILTER ASSY., 6.8V53 (PAGE A1)
(5147683)
5125384 # FILTER ASSY., 4-53, 6V53 (PAGE B1)
(5147683)
~~5100800~~
~~5134392~~ FILTER ASSY., 4-53, 6.8V53 (PAGE B1)
(5100800) (PAGE C1)
5134406 FILTER ASSY., 4-53 (PAGE B1)
5196393 FILTER ASSY., 6V53 (PAGE B1)
5134393 FILTER ASSY., 2.3-53 (PAGE B1)
(5100757) (PAGE C1)
5137659 # FILTER ASSY., 6V53 (PAGE C1)
(5147683)
5575213 DECAL (4.2280)
5573162 DECAL (4.2280)
179839 BOLT, 3/8"-16X1" (12.9001)
186619 BOLT, 3/8"-16X1 1/8" (12.9001)
186679 BOLT, 3/8"-16X1 1/4" (12.9001)
186612 BOLT, 3/8"-16X1 3/8" (12.9001)
186628 ~~454906~~ BOLT, 3/8"-16X1 1/2" (12.9001)
181370 BOLT, 3/8"-24X1 1/4" (12.9001)
103341 WASHER, 3/8" FLAT (12.9190)
103321 LOCKWASHER, 3/8" (12.9200)
102635 NUT, 3/8"-16 HEX. (12.9120)
117049 NUT, 3/8"-24 HEX. (12.9120)

~~# NOT SERVICED; COMPONENTS ARE
AVAILABLE FOR REPLACEMENT
USE ASSY. NUMBER IN PARENTHESES
PLUS (2) 128003 AND (2) 5111798.
* NOT SERVICED; COMPONENTS ARE
AVAILABLE FOR COMPLETE
REPLACEMENT USE ASSY. NUMBER
IN PARENTHESES.~~

4.2291 - ADAPTOR, OIL FILTER COVER

5108758 ADAPTOR, 3.4-53 (MOUNTING)
5129617 ADAPTOR, 6V53 (MOUNTING)
5127268 ADAPTOR, 6V53 (MOUNTING)
426368 BOLT, 3/8"-16X3/4" HEX. SKT. HD.
(12.9027)
186679 BOLT, 3/8"-16X1 1/4" (12.9001)
454906 BOLT, 3/8"-16X1 1/2" (12.9001)
103341 WASHER, 3/8" FLAT (12.9190)
103321 LOCKWASHER, 3/8" (12.9200)

TYPES									
2	2	2	2	2	2	2	2	2	2
2	2	2	2	2	2	2	2	2	2
1	4	5	6	7	9	2	3	5	8
						1		1	
							1		
	1			1		1		1	1
1									
		1							
			1						
					1				
									1
1	1	1		1	1	1	1	1	1
			4						
4									
	4						4		
				4	4	4			
					4	4	4		
4	4	4	4	4	4	4	4	4	
					4		4		
						1			
								1	
						4			
									4
4								4	
								4	
4								4	

4.2000A OIL FILTER

PART
 .FIG . . . NUMBER NAME AND DESCRIPTION

PART		TYPES										
FIG	NUMBER	NAME AND DESCRIPTION										
		2 2 1	2 2 4	2 2 5	2 2 6	2 2 7	2 2 9	2 3 2	2 3 4	2 3 5	2 3 6	2 3 8
	4.2293 - GASKET, OIL FILTER COVER ADAPTOR											
	5121205 GASKET (MOUNTING ADAPTOR) (4.2350)	1	1		1	1		1			1	
	5128486 GASKET,6V53 (MOUNTING ADAPTOR) (4.2350)		1								1	
	4.2350 - GASKET, OIL FILTER ADAPTOR											
3A	5121205 GASKET,3-53	1										
	4.2388 - HOUSING, OIL FILTER BY-PASS VALVE											
	5134301 HOUSING,3-53									1		
	186679 BOLT, 3/8"-16X1 1/4" (12.9001)									2		
	186283 BOLT, 3/8"-16X3 1/2" (12.9001)									1		
	450517 BOLT, 3/8"-16X3 3/4" (12.9001)									1		
	103321 LOCKWASHER, 3/8" (12.9200)									4		
	4.2389 - GASKET, OIL FILTER BY-PASS HOUSING											
	5123932 GASKET,3-53 (4.2350)									1		
	4.2400 - VALVE, OIL FILTER BY-PASS											
	5133431 VALVE,3-53 (4.2485)									1		
	5134477 SPRING (4.2486)									1		
	5134456 RETAINER (4.2488)									1		
	160221 SCREW, #12-24X1/2" PAN. HD. CR/RECESS (12.9050)									1		
	4.2440 - BRACKET, OIL FILTER MTG.											
	5134768 BRACKET,8V53											1
	5137701 BRACKET,6V53				1							
	5137739 BRACKET,6V53						1					
	5126116 BRACKET,3-53								1			
	5137965 BRACKET,4-53									1		
	5173144 SPACER (13/32"X3/4"X1 13/16") (4.8040)						2					
	180121 BOLT, 3/8"-16X7/8" (12.9001)									2		
	186619 BOLT, 3/8"-16X1 1/8" (12.9001)						2					
	186679 BOLT, 3/8"-16X1 1/4" (12.9001)										3	
	454906 BOLT, 3/8"-16X1 1/2" (12.9001)											
	215510 BOLT, 3/8"-16X5 3/4" (12.9001)			2			1					
	181374 BOLT, 3/8"-24X1 1/2" (12.9001)								1			
	186658 BOLT, 3/8"-24X5 1/2" (12.9001)						1					

4.2000A OIL FILTER

FIG . . . PART . . . NAME AND DESCRIPTION . . .

4.2440 - BRACKET, OIL FILTER MTG.
(CONT'D)

186725 BOLT, 1/2"-13X1 1/2" (12.9001)
 186631 BOLT, 1/2"-13X2 1/4" (12.9001)
 120394 WASHER, 3/8" FLAT (12.9190)
 103321 LOCKWASHER, 3/8" (12.9200)
 103323 LOCKWASHER, 1/2" (12.9200)

4.2470 - SUPPORT, OIL FILTER MOUNTING BRACKET

5137702 SUPPORT, 6V53
 186627 BOLT, 3/8"-24X1" (12.9001)
 179886 BOLT, 1/2"-13X1 5/8" (12.9001)
 103321 LOCKWASHER, 3/8" (12.9200)
 117049 NUT, 3/8"-24 HEX. (12.9120)

TYPES

2	2	2	2	2	2	2	2	2	2
2	2	2	2	2	2	2	2	2	2
1	4	5	6	7	9	2	4	5	8

2
AR

1

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. TYPES

[illegible]

4.4000A OIL COOLER

PART
 .FIG . . . NUMBER NAME AND DESCRIPTION

PART		TYPES											
FIG	NUMBER	NAME AND DESCRIPTION											
		4 0 0	4 0 1	4 0 5	4 1 3	4 1 5	4 2 1	4 2 6	4 2 7	4 3 3	4 3 7	4 4 3	4 4 4
4.4001 - CORE ASSY., OIL COOLER													
	8501323	CORE ASSY.,2-53 (4 PLATE)											
4A	8501328	CORE ASSY.,3-53 (6 PLATE)											
	8502549	CORE ASSY.,3-53 (6 PLATE)											
4A	8502546	CORE ASSY.,4-53,6V53 (8 PLATE)											
	8534392	CORE ASSY.,8V53 (8 PLATE) (CUPRO-NICKLE)											
	8502546	CORE ASSY.,4-53 (8 PLATE)											
4C	8529879	CORE ASSY.,6V53 (10 PLATE)											
4C	8529880	CORE ASSY.,6V53 (14 PLATE)											
4B,C	8514600	CORE ASSY.,4-53,6V53 (12 PLATE)											
4B	8528885	CORE ASSY.,6,8V53 (16 PLATE)											
	8534100	CORE ASSY.,8V53 (16 PLATE)											
	179816	BOLT, 5/16"-18X3/4" (12.9001)											
	5133539	WASHER, 1 3/8"											
	103320	LOCKWASHER, 5/16" (12.9200)											
	5133538	NUT, 1 3/8"-16 HEX.											
	* NOT SERVICED, FOR TYPE 427 CONVERT TO TYPE 437.												
	+ OBSOLETE												
4.4030 - GASKET, OIL COOLER CORE, INNER													
4A,B,C	5150155	GASKET,4-53,6V53											
	5138127	GASKET,8V53											
	5133619	GASKET,6V53											
4.4040 - GASKET, OIL COOLER CORE, OUTER													
4A,B,C	5102506	GASKET 4-53											
	5154215	GASKET,4-53,6V53											
	5134818	GASKET,6V53											
	5133537	GASKET,6V53											
	5135173	GASKET,8V53											
	+ OBSOLETE												
4.4050 - HOUSING, OIL COOLER													
4A	5119451	HOUSING,3-53											
	5132649	HOUSING,6V53											
	5133532	HOUSING,6V53											
4C	5132703	HOUSING,8V53											
	5133339	HOUSING,8V53											
	5119449	HOUSING,2-53											
	5134224	HOUSING,8V53											
	5134813	HOUSING,8V53											
	5135519	HOUSING,6V53											
	5116491	HOUSING,4-53											

4.4000A OIL COOLER

PART
 .FIG . . . NUMBER NAME AND DESCRIPTION

PART			TYPES											
.FIG	NUMBER	NAME AND DESCRIPTION	4 0 0	4 0 1	4 0 5	4 1 3	4 1 5	4 2 1	4 2 6	4 2 7	4 3 3	4 3 7	4 4 3	4 4 4
4.4050 - HOUSING, OIL COOLER (CONT'D)														
4A,C	103647	DRAINCOCK, 1/4" (12.9510)	1	1	1	1	2	1	1	1	1	1	2	1
	5121182	PLUG, 1/4" SOC. HD. (12.9550)					1							
	113177	PLUG, 3/4" SQ. HD. (12.9550)								1		1		
	5145013	PLUG, 3/4" SQ. HD. PIPE (12.9550)											2	
	179828	BOLT, 5/16"-18X2 1/2" (12.9001)							7					
4A	179830	BOLT, 5/16"-18X3" (12.9001)	7	7										
4A	186270	BOLT, 5/16"-18X3 1/2" (12.9001)	1	1					1					
4C	186650	BOLT, 5/16"-18X4 3/4" (12.9001)											8	
	215386	BOLT, 5/16"-18X6" (12.9001)				3	4	6	6		3			
	446597	BOLT, 5/16"-18X6 1/2" (12.9001)					3							
	179839	BOLT, 3/8"-16X1" (12.9001)								2		1		
	186622	BOLT, 3/8"-16X1 1/4" (12.9001)										1		
	103340	WASHER, 5/16" FLAT (12.9190)				3	8							
4A,C	103341	WASHER, 3/8" FLAT (12.9190)								2		2		
	103320	LOCKWASHER, 5/16" (12.9200)	AR	AR	AR	AR	AR	AR	AR	AR	AR	2	AR	
	103321	LOCKWASHER, 3/8" (12.9200)								2		2		
* NOT SERVICED, USE (1) 5144398														
HOUSING AND INCLUDE (1) 5145013 PLUG														
+ OBSOLETE														
4.4055 - GASKET, OIL COOLER HOUSING														
	5115395	GASKET,8V53 (TO RAW WATER PUMP)								1		1		
4.4060 - COVER, OIL COOLER HOUSING														
4B	5188862	COVER,4-53,6,8V53								1				1
	5186603	COVER,6V53				1								
	5133536	COVER,8V53					1							
	5138126 +	COVER,8V53									1			
	5133960	STUD, 5/16"-18-24X9.60"L. (12.9117)				3								
	179822	BOLT, 5/16"-18X1 1/2" (12.9001)				5								
	446597	BOLT, 5/16"-18X6 1/2" (12.9001)									3		8	
	103340	WASHER, 5/16" FLAT (12.9190)				8								
4B	103320	LOCKWASHER, 5/16" (12.9200)					AR			AR	3			8
	114493	NUT, 5/16"-24 HEX. (12.9120)				3								
+ OBSOLETE.														
4.4100 - BRACKET, OIL COOLER HOUSING SUPPORT														
	5134178 +	BRACKET,8V53								1		1		
	5186841	CLAMP								1		1		
+ OBSOLETE.														

4.4000A OIL COOLER

PART			TYPES											
FIG	NUMBER	NAME AND DESCRIPTION	4 0 0	4 0 1	4 0 5	4 1 3	4 1 5	4 2 1	4 2 6	4 2 7	4 3 3	4 3 7	4 4 3	4 4 4
4.4110 - ADAPTOR, OIL COOLER														
4A	5123414	ADAPTOR,3-53												1
4A	5123413	ADAPTOR,3,4-53		1										
4A	5121227	ADAPTOR,2,3-53	1						1					
	5121182	PLUG, 1/4" PIPE SQ. HD. (12.9550)	1											
4A	186622	BOLT, 3/8"-16X1 1/4" (12.9001)		4										
4A	9409215	BOLT, 3/8"-16X1 1/4" (12.9001)	4											
	186622	BOLT, 3/8"-16X1 1/4" (12.9001)											4	
	186612	BOLT, 3/8"-16X1 3/8" (12.9001)							4					
4A	5157244	BOLT, 3/8"-16X1 3/4" (12.9001)		2										
4A	179847	BOLT, 3/8"-16X2" (12.9001)											2	
4A	103341	WASHER, 3/8" FLAT (12.9190)	4											
4A	103321	LOCKWASHER, 3/8" (12.9200)		AR					4				6	
4.4115 - GASKET, OIL COOLER ADAPTOR TO BLOCK														
4A,B	5152904	GASKET,2,3,4-53												
4A,B	5119286	GASKET,3,4-53		3					2				3	
4A,B	5152904	GASKET,3,4-53	2	1										
4A,B	5116416	GASKET,2,3-53 (5.1006)	1						1					
4.4211 - CONNECTION, OIL COOLER WATER INLET TUBE														
	5108605	ELBOW (5.3420)			1									
	5120540	GASKET			1									
	186622	BOLT, 3/8"-16X1 1/4" (12.9001)			2									
	103341	WASHER, 3/8" FLAT (12.9190)			2									
	103321	LOCKWASHER, 3/8" FLAT (12.9200)			2									
4.4242 - FLANGE, OIL COOLER WATER OUTLET														
	5141173	FLANGE,6,8V53				1	1	1			1			
	5138777 #	FLANGE,8V53					1	1			1			
	179819	BOLT, 5/16"-18X1 1/8" (12.9001)				2	2							
	106327	BOLT, 5/16"-18X1 3/8" (12.9001)			2						2			
	103340	WASHER, 5/16" FLAT (12.9190)						2						
	103320	LOCKWASHER, 5/16" (12.9200)			2		2	2			2			
	# NOT SERVICED; USE 5141173 FLANGE AND INCLUDE 5141210 SEAL RING.													
4.4244 - GASKET, OIL COOLER WATER OUTLET FLANGE														
	5141210	SEAL RING,6,8V53				1	1	1			1			
	5138776 *	SEAL RING,8V53					1	1			1			
	* NOT SERVICED; USE 5141210 SEAL													

4.5000A OIL FILLER

. TYPES

4.5020 - STRAINER, OIL FILLER TUBE

8B 5121058 STRAINER,2,3,4-53

5121412 STRAINER

4.5030 - CHAIN, OIL FILLER TUBE

5113825	CHAIN
5198208	CHAIN,3-53,6V53
5198207	CLIP
5146248	HOOK, FILLER CAP

4.5050 - GASKET, OIL FILLER TUBE

5116391 GASKET (1.5060)
5117061 GASKET,2,3,4-53 (1.5040)
5168176 GASKET,4-53 (4.5007)
FIG. 5A OF 1.0000.

[illegible]

DETROIT DIESEL

53 MPC

ENGINES

4.6000A DIPSTICK

PART		TYPES												
FIG	NUMBER	NAME AND DESCRIPTION	1 0 7	1 1 4	1 2 5	1 3 0	1 3 1	1 3 7	1 3 8	1 4 0	1 4 1	1 4 6	1 5 4	1 5 8
4.6001 - DIPSTICK														
6A	5121060	* DIPSTICK,2,3,4-53 (X-13 1/4", Y-15/16", Z-11 7/8")	1											
6A	5121219	@ DIPSTICK,2-53 (X-10 1/2", Y-5/8", Z-9 1/8")		1										
6A	5123938	* DIPSTICK,3-53 (X-13 1/4", Y-1", Z-11 7/32")			1									
6A	5185533	DIPSTICK,3,4-53 (X-17 3/8") (UNMARKED)				1	1							
6A	5109564	+ DIPSTICK,4-53 (X-19", Y-1.09", Z-16.52")						1						
6A	5171148	DIPSTICK,3,4-53 (X-19 7/8", Y-1 1/16", Z-18")							1					
6A	5143409	+ DIPSTICK,6V53 (X-13 1/4", Y-7/8", Z-9")								1				
6A	5125561	# & DIPSTICK,2,4-53 (X-10.50", Y-.62", Z-9.12")									1			1
6A	5109252	* + DIPSTICK,2-53 (X-10", Y-.62", Z-9")									1			
6A	5126946	& DIPSTICK,3-53 (X-7.30", Y-.46", Z-4.90")										1		
6A	5126235	& DIPSTICK,4-53 (X-15.62", Y-.62", Z-13.60")											1	
* NOT SERVICED, USE 5147080.														
@ NOT SERVICED; CONVERT TO TYPE 141.														
+ NOT SERVICED, USE 5146680.														
# THRU 2D-13699 IN TYPE 141.														
& NOT SERVICED, USE 5147185.														
* EFFECTIVE WITH 2D-13700 IN TYPE 141.														
4.6020 - GUIDE, DIPSTICK														
6A	5121062	* ? GUIDE,2,3,4-53 (1 1/8" L.)	1	1				1	1		1			
	5151430	GUIDE,6V53 (1 1/2" L.)								1				
	137408	# * CONNECTOR, 7/16" INV. FL. TUBE (12.9460)									1	1	1	1
* EFFECTIVE WITH 2D-13700 IN TYPE 141.														
? EFFECTIVE WITH 4D-9757.														
# THRU 2D-13699 IN TYPE 141.														
* THRU 4D-9756														
4.6030 - ADAPTOR, DIPSTICK														
	5121061	ADAPTOR,2,3,4-53 (8.50" DEV. L.)	1	1				1						
	5125563	# ADAPTOR,2,4-53 (8.42" L.)									1			
	5109621	* ADAPTOR,2-53 (8.32" L.)									1			

4.5000A OIL FILLER

.FIG	PART NUMBER	NAME AND DESCRIPTION	TYPES									
			8 6	9 1	9 2	9 5	9 7	1 0 7	1 1 2	1 1 3	1 1 7	1 1 8
		4.5030 - CHAIN, OIL FILLER TUBE										
	5113825	CHAIN	1	1	1	1	1	1	1	1		
	5146248	HOO K, FILLER CAP	2	2	2	2	2	2	2	2	2	2
		4.5050 - GASKET, OIL FILLER TUBE										
#	5116391	GASKET (1.5060)				1						
	5120540	GASKET, 6V53 (4.5007)					1	1				
		# FIG. 5A OF 1.0000.										

4.6000A DIPSTICK

TYPES

5173189	BRACKET CLIP (9.1591)
5163503	BRACKET CLIP (4.3050)
5126530	PLUG, ANCHOR (7.7010)
181567	BOLT, 1/4"-28X7/8" (12.9001)
120228	BOLT, 5/16"-18X5/8" (12.9001)
181333	BOLT, 5/16"-24X5/8" (12.9001)
179838	BOLT, 3/8"-16X7/8" (12.9001)
120393	WASHER, 5/16" FLAT (12.9190)
103341	WASHER, 3/8" FLAT (12.9190)
120392	WASHER, 3/8" (12.9190)
120380	LOCKWASHER, 1/4" (12.9200)
103320	LOCKWASHER, 5/16" (12.9200)
103321	LOCKWASHER, 3/8" (12.9200)
102635	NUT, 3/8"-16 HEX. (12.9120)
121902	NUT, 1/2"-28 HEX. (12.9120)

[illegible]

TYPES

PAGE 25 OF 4.6000A
SEP., 1977

4.7000A OIL PAN

PART
..FIG .. NUMBER .. NAME AND DESCRIPTION ..

TYPES

4.7080 - PLUG, OIL PAN DRAIN

PLUGS ARE OPTIONAL WHEN MULTIPLE
QUANTITIES ARE SHOWN IN SAME TYPE.

	3 7 7	3 8 1	4 0 4	4 0 5	4 0 6	4 0 7	4 0 8	4 0 9	4 1 0	4 1 3	4 1 7
7A 5145014 PLUG, 3/8" PIPE (12.9550)			1		1						
7A 5145012 PLUG, 1/2" PIPE SQ. HD. (12.9550)		1				1			2		1
7A 5138621 PLUG, 18 MM. X 1.5 MM. (4.7090)		1									
7A 5142549 PLUG, 3/4" PIPE SQ. SOC. HD. (12.9550)			1	3						2	
7A 5103187 PLUG, 3/4" PIPE HEX. HD. (12.9550)			1		1	1	1	1		3	1

4.7090 - GASKET, OIL PAN DRAIN PLUG

840277 WASHER (18-MM.)

4.7120 - COVER, OIL PAN

5139344 COVER			1		1						
179816 BOLT, 5/16"-18X3/4" (12.9001)			14		14						
103320 LOCKWASHER, 5/16" (12.9200)			14		14						

4.7130 - GASKET, OIL PAN LOWER

5126497 GASKET

53 MPC ENGINES

PART

PART	
FIG	NUMBER NAME AND DESCRIPTION

7A	5137298	@ PAN, 6V-53 CAST
7A	5138951	PAN, 4-53 CAST
7A	5139041	PAN, 4-53 CAST
7A	5132595	PAN, 4-53 CAST
7A	5142663	PAN, 8V-53 CAST
7B	5142768	PAN, 3-53 STAMPED
7B	5142880	PAN, 3-53 STAMPED
7A	5144229	PAN, 3-53 CAST
7B	5144109	PAN, 3-53 STAMPED
	5144140	# PAN ASSY., 4-53 STAMPED
	5133863	BACKET (TO INLET ELBOW)
	452720	INSERT, 7/16"-14X7/8" (12.9118)
	186618	BOLT, 5/16"-18X5/8" (12.9001)
	5148436	BOLT, 5/16"-18X3/4" (W/LW) (4.7120)
	186625	BOLT, 5/16"-18X7/8" (12.9001)
	5148437	BOLT, 5/16"-18X1" (W/LW) (12.9001)
	179819	BOLT, 5/16"-18X1 1/8" (12.9001)
	5148438	BOLT, 5/16"-18X1 1/4" (W/LW) (12.9001)
	186624	BOLT, 5/16"-18X1 1/4" (12.9001)
	5148439	BOLT, 5/16"-18X1 3/8" (W/LW) (12.9001)
	179823	BOLT, 5/16"-18X1 5/8" (12.9001)
	426444	BOLT, 5/16"-18X3 1/4" (12.9001)
	272545	BOLT, 5/16"-18X5 1/4" (12.9001)
	186725	BOLT, 1/2"-13X1 1/2" (12.9001)
	103320	LOCKWASHER, 5/16" (12.9200)
	103329	LOCKWASHER, 1/2" (12.9200)
		@ NOT SERVICED, USE 5146848 AND
		INCLUDE (1) 5119266 GASKET, (22)
		189697 BOLTS AND (2) 5145012 PLUGS
		# INCLUDE ITEMS IN 4.5000A, TYPE 97.
		OBsolete

7A	5198187	GASKET SET, 8V-53
7A	5198080	GASKET SET, 4-53
7A	5198061	GASKET SET, 6V-53
7A	5198295	GASKET SET, 6V-53
7A	5116256	GASKET, 3-53
	5143271	GASKET, 3-53
7A	5116257	GASKET, 4-53

5142765 BAFFLE, OIL PAN
5142764 SEAL, OIL PAN BAFFLE
5142766 SUPPORT, OIL PAN BAFFLE

[illegible]

4.7000A OIL PAN

PART
..FIG .. NUMBER NAME AND DESCRIPTION

		TYPES									
		4 2 1	4 8 2	4 8 7	4 9 2	5 0 7	5 0 8	5 1 0	5 1 4	5 2 8	5 3 0
4.7045 - BAFFLE, OIL PAN (CONT'D)											
186629	BOLT, 5/16"-18X1" (TO SUPPORT) (12.9001)						1				
179816	BOLT, 5/16"-18X3/4" (12.9001)						7				
103320	LOCKWASHER, 5/16" (12.9200)						8				
123197	NUT, 5/16"-18 HEX. (TO SUPPORT) (12.9120)						6				
4.7080 - PLUG, OIL PAN DRAIN											
PLUGS ARE OPTIONAL WHEN MULTIPLE QUANTITIES ARE SHOWN IN SAME TYPE.											
7A	5121182 PLUG, 1/4" PIPE (12.9550)	1	1								
7A	5145014 PLUG, 3/8" PIPE (12.9550)		2	1	1						
7A	5145012 PLUG, 1/2" PIPE SQ. HD. (12.9550)					1		2	1	2	
7A	5142549 PLUG, 3/4" PIPE (12.9550)					2	1			3	1
7A	5178994 PLUG, 3/4" PIPE (MAGNETIC)				1				1		
7A	5103187 PLUG, 3/4" PIPE HEX. HD. (12.9550)	1		1	1						
4.7100 - TUBE, OIL PAN DRAIN											
5122206	* HOSE, #8X21 L. (12.4070) (5129157)		1	1	1						
187396	COUPLING, 3/8" PIPE (12.9580)		1	1	1						
142269	BUSHING, 1/2"X3/8" RED. (12.9570)		1	1	1						
142767	BUSHING, 3/4"X3/8" RED. (12.9570)		1	1	1						
5121825	FITTING, 1/2" HOSE 3/8" P.T. (12.4090)		2	2	2						
111316	ELBOW, 3/8" STREET 90 DEG. (12.9390)		1	1	1						
112304	PLUG, 3/8" PIPE SQ. HD. BRASS (12.9550)		1	1	1						
* NOT SERVICED; STANDARD LENGTH HOSE IN PARENTHESES WILL BE PROVIDED.											
4.7101 - CLIP, OIL PAN DRAIN TUBE											
5151189	CLIP, 3/4 TUBE (4.8040)		1	1	1						
186627	BOLT, 3/8"-24X1" (12.9001)		1	1	1						
103321	LOCKWASHER, 3/8" (12.9200)		1	1	1						
117049	NUT, 3/8"-24 HEX. (12.9120)		1	1	1						
4.7112 - BRACKET, OIL PAN DRAIN TUBE											
5173022	BRACKET (5.5379)		1	1	1						

5 3 M P C E N G I N E S

PART	
FIG	NUMBER NAME AND DESCRIPTION

4 2 1	4 8 6	4 9 2	5 0 7	5 0 8	5 1 0	5 1 4	5 2 8	5 3 0
	1	1	1 1 1					
	14	14	12 2					
	14	14	AR					
	1	1	1					

5126497 GASKET
5125201 GASKET

4.8000A VENTILATING SYSTEM

PART
..FIG ... NUMBER NAME AND DESCRIPTION

		TYPES									
		4	4	4	4	4	4	5	5	5	5
		1	4	5	6	6	7	9	4	5	8
		1	6	6	2	3	3	1	1	7	5
4.8050 - BODY, BREATHER											
	5134318 + BODY, 8V53		1						1		
	5121057 BODY, 3-53	1									
	5114263 BODY, 4-53	1			1	1					
8B	5121057 BODY ASSY., 3-53 (INCLUDES INTEGRAL BREATHING TUBE)	1									
	186647 BOLT, 1/4"-20X1" (12.9001)		3						3		
	179802 BOLT, 1/4"-20X1 5/8" (12.9001)		4						4		
	179828 BOLT, 5/16"-18X2 1/2" (12.9001)	2									
	186619 BOLT, 3/8"-16X1 1/8" (12.9200)				4	4					
	120392 WASHER, 9/32" FLAT (12.9190)		7						7		
	103320 LOCKWASHER, 5/16" (12.9200)	2									
	103321 LOCKWASHER, 3/8" (12.9200)				4	4					
	+ OBSOLETE										
4.8055 - SHELL, BREATHER											
8D	2443795 COVER, 8V53										1
8D	2443793 CLAMP, 8V53										1
4.8057 - GASKET, BREATHER SHELL COVER											
	5179282 GASKET, 8V53 (BETWEEN BREATHER ASSY. AND BODY)				1	1					
4.8060 - FILTER UNIT, BREATHER OIL SEPARATOR											
	5137183 FILTER, 8V53		1						1		
	5104007 FILTER, 3,4-53	1									
	5119481 FILTER, 8V53								1		
8D	5101760 ELEMENT, 8V53										1
8D	5132042 SCREEN, 8V53										1
8D	5131951 RETAINER, 8V53										1
4.8070 - GASKET, BREATHER BODY											
	5132774 GASKET, 8V53		1						1	1	
	5183199 GASKET, 4-53				1	1					
8D	5144038 GASKET, 8V53										1
4.8175 - HOSE, BREATHER EXTENSION PIPE											
	5130140 HOSE (1" I.D.) (FORMED ELBOW)							1		2	
	5112181 HOSE (1 1/2" I.D.X2 3/4" L.)		1						1		
	(5163930) (9.1601)										

4.8000A VENTILATING SYSTEM

PART		TYPES											
FIG	NUMBER	NAME AND DESCRIPTION											
		4 4 1	4 4 6	4 5 6	4 6 2	4 6 3	4 7 3	4 9 1	5 3 3	5 4 1	5 7 7	5 8 5	
4.8175 - HOSE, BREATHER EXTENSION PIPE (CONT'D)													
5130140	HOSE (1" I.D.) (FORMED ELBOW)								1	1			
5114449	HOSE (1" I.D.X5" L) (5118149)						1						
5129064	HOSE (7/8" I.D.) (4.8001)			1									
5121764	HOSE (1 1/4" I.D.X1 3/4" L) (5120022)				1	1							
5145513	HOSE (7/8" X20" L) (4.8005) (5169721)											1	
5145511	HOSE (7/8" X17" L) (5169721)											2	
5145512	HOSE (7/8" X15" L) (5169721)											1	
5142594	HOSE (16" X3 1/2")											2	
5130627	HOSE (1 1/8" X4 5/16") (3.5505)											1	
272857	CLAMP, 1" HOSE, SPRING TYPE (12.9660)								2				
5186840	CLAMP, 1" (12.9660)									6			
111609	CLAMP, 1 3/16" HOSE (12.9660)			2									
2337379	CLAMP, 1 1/2" HOSE (12.9660)	2							2				
5186840	CLAMP, 1 1/2" (12.9660)							1			14		
272859	CLAMP, 1 5/8" (12.9600)				2	2							
5186841	CLAMP, 2 1/2" HOSE (12.9660)						2						
* NOT SERVICED; STANDARD LENGTH HOSE IN PARENTHESES WILL BE PROVIDED.													
4.8183 - BRACKET, BREATHER EXTENSION PIPE													
5145197	PIPE, 8V53											1	
5143815	SUPPORT, 8V53											2	
179839	BOLT, 3/8"-16X1" (12.9001)											2	
103321	LOCKWASHER, 3/8" (12.9200)											2	
4.8190 - TUBE, BREATHER TUBE TO DRAIN TANK													
5145441	PIPE, OIL DRAIN 8V53											2	
5145440	PIPE, 90 DEG. 8V53											2	
5145013	PLUG, 3/4"-14 NPTF (12.9550)											3	
4.8195 - COVER, BREATHER HOLE													
5144203	COVER, 8V53 (TO GOVERNOR)										1		
5124012	ELBOW, 8V53										1		
179796	BOLT, 1/4"-20X7/8" (12.9001)										7	7	
120392	WASHER, 1/4" FLAT (12.9190)										7	7	

GROUP NOMENCLATURE

1.0000 ENGINE (less major assemblies)
 1.1000 Cylinder Block
 1.1000A Air Box Drains
 1.2000 Cylinder Head
 1.2000A Engine Lifter Bracket
 1.3000 Crankshaft, Oil Seals and stabilizers
 1.3000A Crankshaft Front Cover
 1.3000B Vibration Damper
 1.3000C Crankshaft Pulley
 1.3000D Crankshaft Pulley Belt
 1.4000A Flywheel
 1.5000A Flywheel Housing
 1.5000B Flywheel Housing Adaptor
 1.6000 Connecting Rod and Piston
 1.7000 Camshaft and Gear Train
 1.7000A Balance Weight Cover
 1.7000B Accessory Drive
 1.8000 Valve and Injector Operating Mechanism
 1.8000A Rocker Cover

2.0000 FUEL SYSTEM
 2.1000A Fuel Injector
 2.2000 Fuel Pump
 2.2000A Fuel Pump Drain
 2.3000A Fuel Filter
 2.4000 Fuel Manifold and/or Connections
 2.4000A Dual Fuel System
 2.5000A Fuel Lines and Fuel Cooler
 2.6000A Fuel Tank
 2.7000A Mechanical Governor
 2.8000A Hydraulic Governor
 2.9000 Injector Controls
 2.9000A Throttle Controls

3.0000 AIR SYSTEM
 3.1000A Air Cleaner and/or Adaptor
 3.2000A Air Silencer
 3.3000A Air Inlet Housing
 3.4000 Blower
 3.4000A Blower Drive Shaft
 3.4000B Blower End Plate Cover
 3.5000A Turbocharger and Intercooler

4.0000 LUBRICATING SYSTEM
 4.1000A Oil Pump
 4.1000B Oil Distribution System
 4.1000C Oil Pressure Regulator
 4.2000A Oil Filter
 4.3000A Oil Filter Lines
 4.4000A Oil Cooler and Marine Gear Lines
 4.5000A Oil Filler
 4.6000A Dipstick
 4.7000A Oil Pan
 4.8000A Ventilating System

5.0000 COOLING SYSTEM
 5.1000 Fresh Water Pump
 5.1000A Fresh Water Pump Cover
 5.2000A Water Outlet Manifold and/or Elbow
 5.2000B Thermostat
 5.2000C Water By-pass Tube
 5.3000A Radiator
 5.3000B Water Connections
 5.4000A Fan
 5.4000B Fan Shroud
 5.5000A Heat Exchanger or Keel Cooling
 5.6000A Raw Water Pump
 5.7000A Water Filter

6.0000 EXHAUST SYSTEM
 6.1000A Exhaust Manifold
 6.2000A Exhaust Muffler and/or Connections

7.0000 ELECTRICAL—INSTRUMENTS
 7.1000A Battery Charging Generator
 7.2000A Battery Cables
 7.2000B Automatic Starting
 7.3000A Starting Motor
 7.4000A Instruments
 7.4000B Tachometer Drive
 7.4000C Shut-off, Alarm and O.S. Governor
 7.5000A Power Generator
 7.6000A Control Cabinet
 7.7000A Wiring Harness
 7.8000A Air Heater
 7.10000A Hydraulic Governor Solenoid

8.0000 POWER TAKE-OFF
 8.1000A Power Take-off and/or Clutch
 8.3000A Torque Converter
 8.3000B Transmission Lines

9.0000 TRANSMISSION AND PROPULSION
 9.1000A Hydraulic Marine Gear
 9.2000A Reverse and Reduction Gear (mechanical)
 9.3000A Power Transfer Gear
 9.4000 Transmission—Highway
 9.7000 Transmission—Off-highway
 9.9000 Transmission—Rail Car

10.0000 SHEET METAL
 10.1000A Engine Hood

11.0000 ENGINE MOUNTING
 11.1000A Engine Mounting and Base

12.0000 MISCELLANEOUS
 12.2000A Bilge Pump
 12.3000A Vacuum Pump
 12.4000A Air Compressor
 12.5000A Hydraulic Pump
 12.6000A Gasoline Starter
 12.6000B Air Starter
 12.6000C Cold Weather Starting Aid
 12.6000D Hydraulic Starter
 12.6000E Hydraulic Starter Accessories
 12.8000A Supplies
 12.8000B Fabrication Material
 12.8000C Service Kits

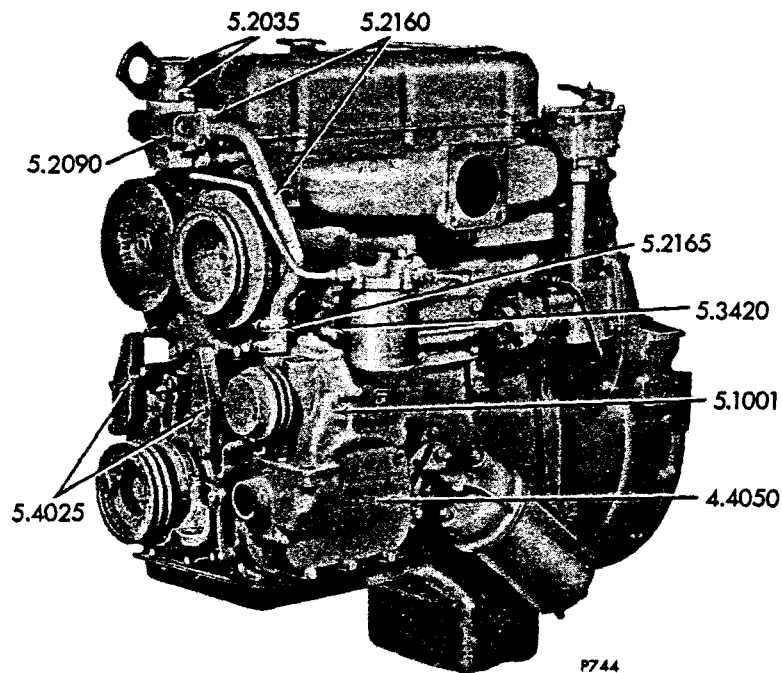


FIG. 1A TYPICAL COOLING SYSTEM (In-line Engine)

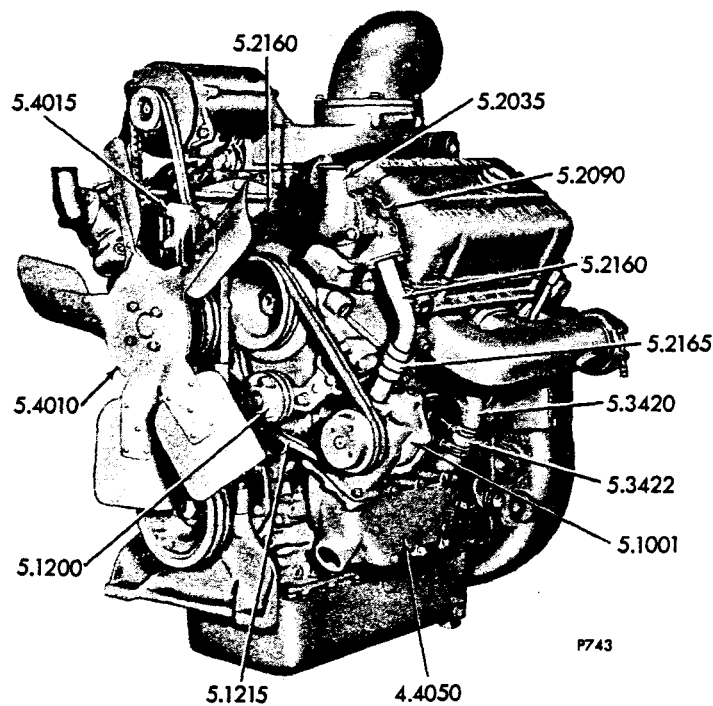


FIG. 1B TYPICAL COOLING SYSTEM (V-Engine)

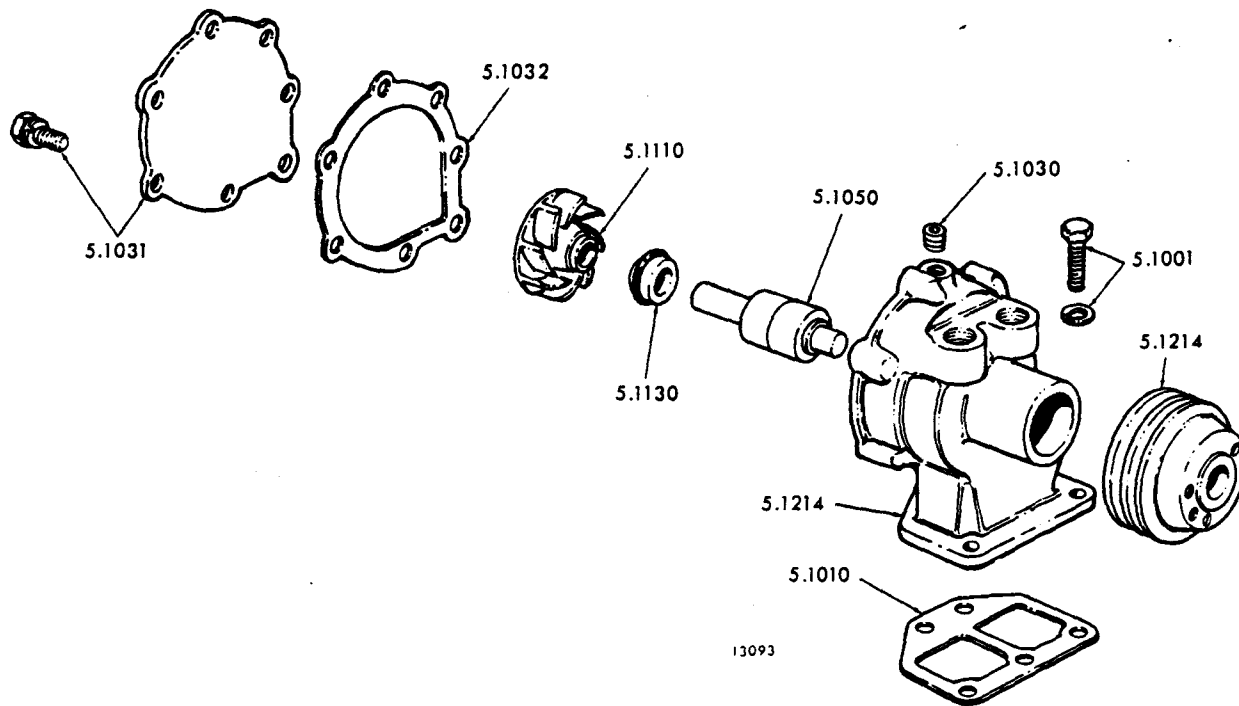


FIG. 2A FRESH WATER PUMP

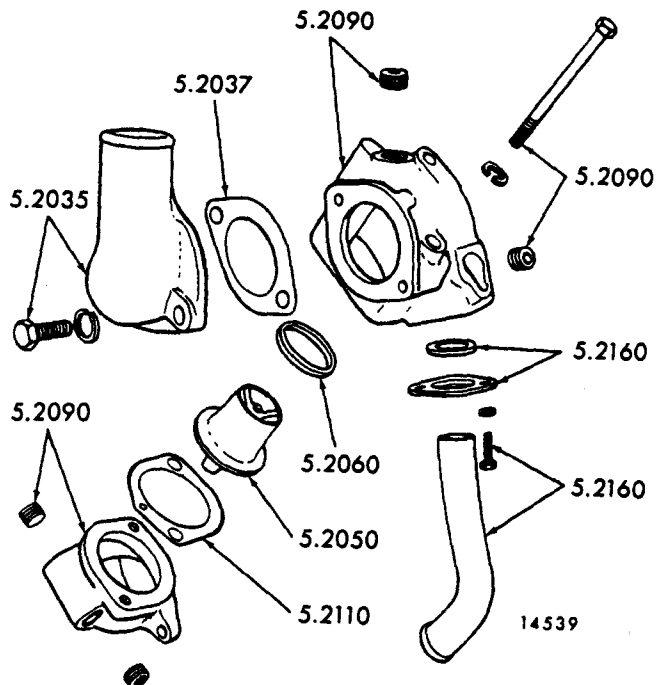


FIG. 3A THERMOSTAT
(V-Models)

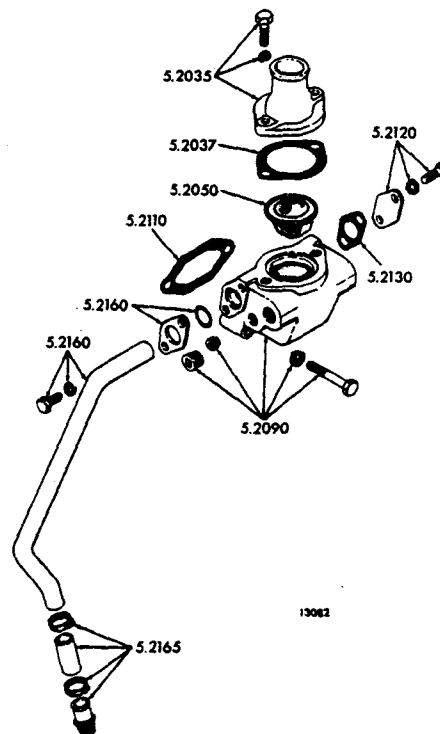


FIG. 3B THERMOSTAT
(In-line Models)

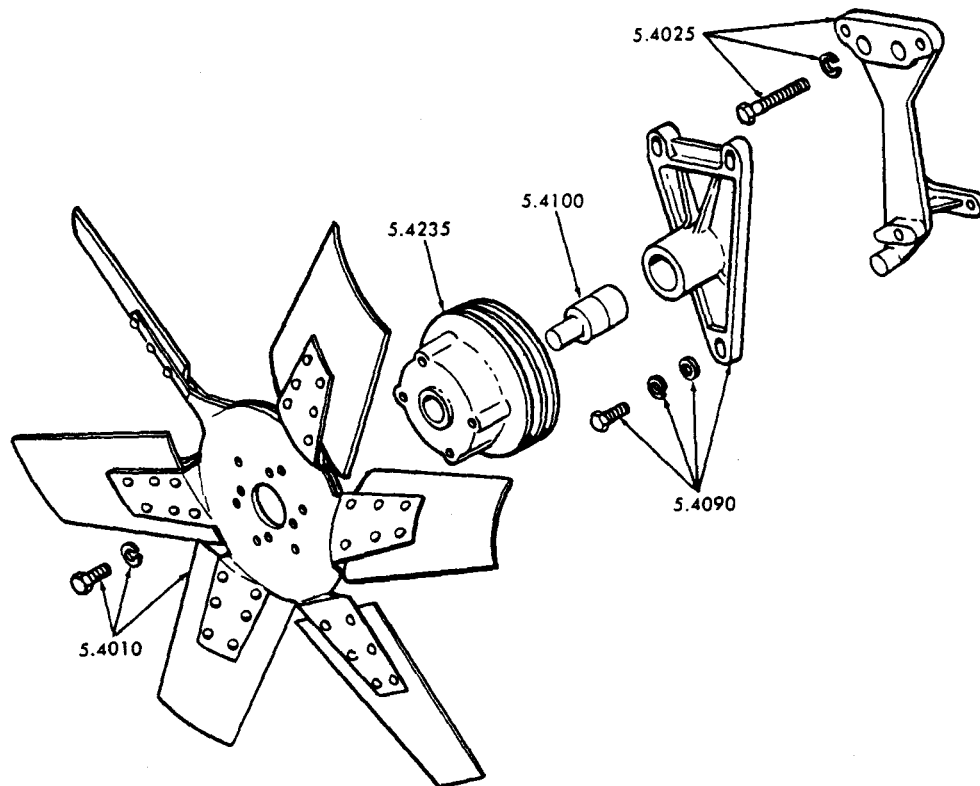


FIG. 4A FAN SHAFT & PULLEY

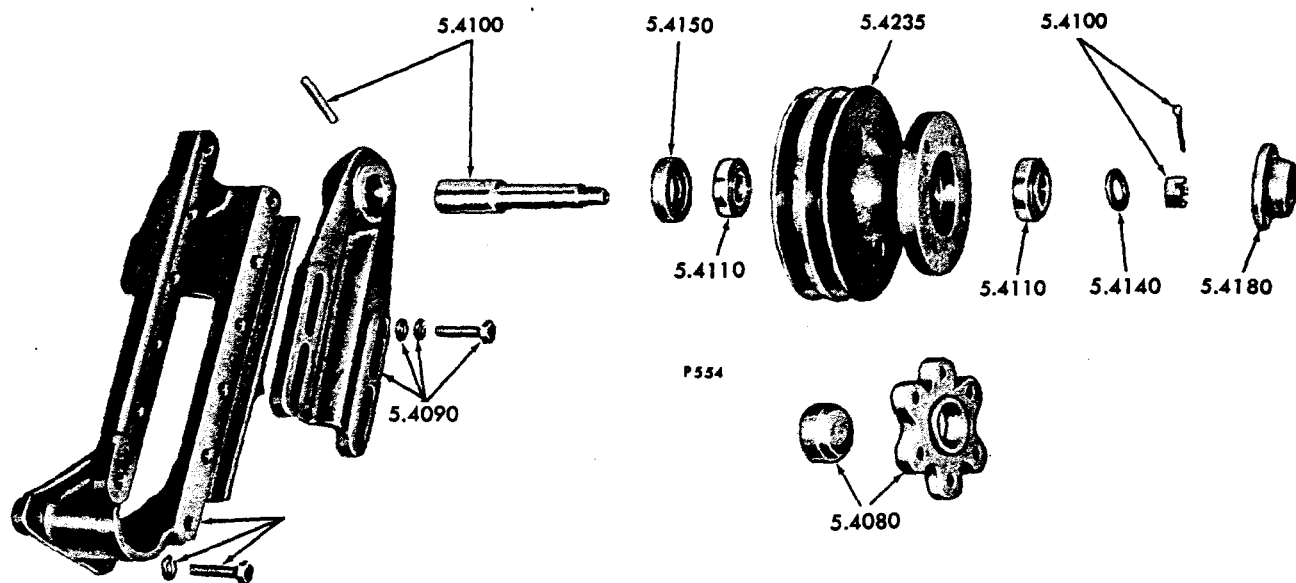


FIG. 4B FAN SHAFT & PULLEY

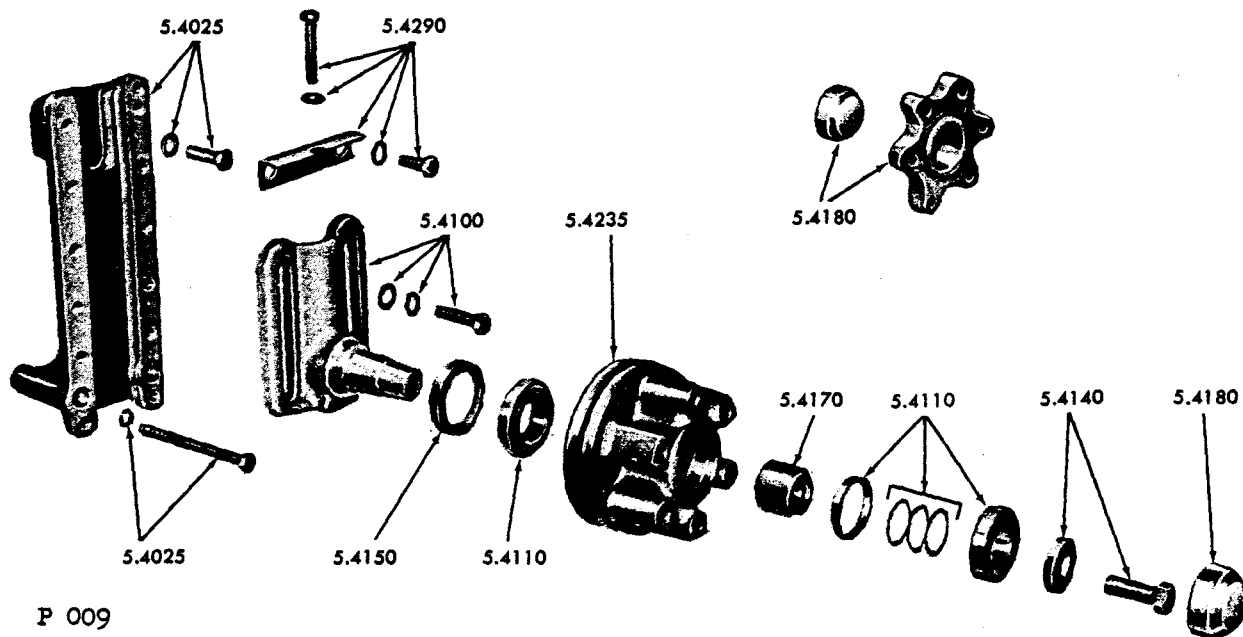


FIG. 4C FAN SHAFT & PULLEY

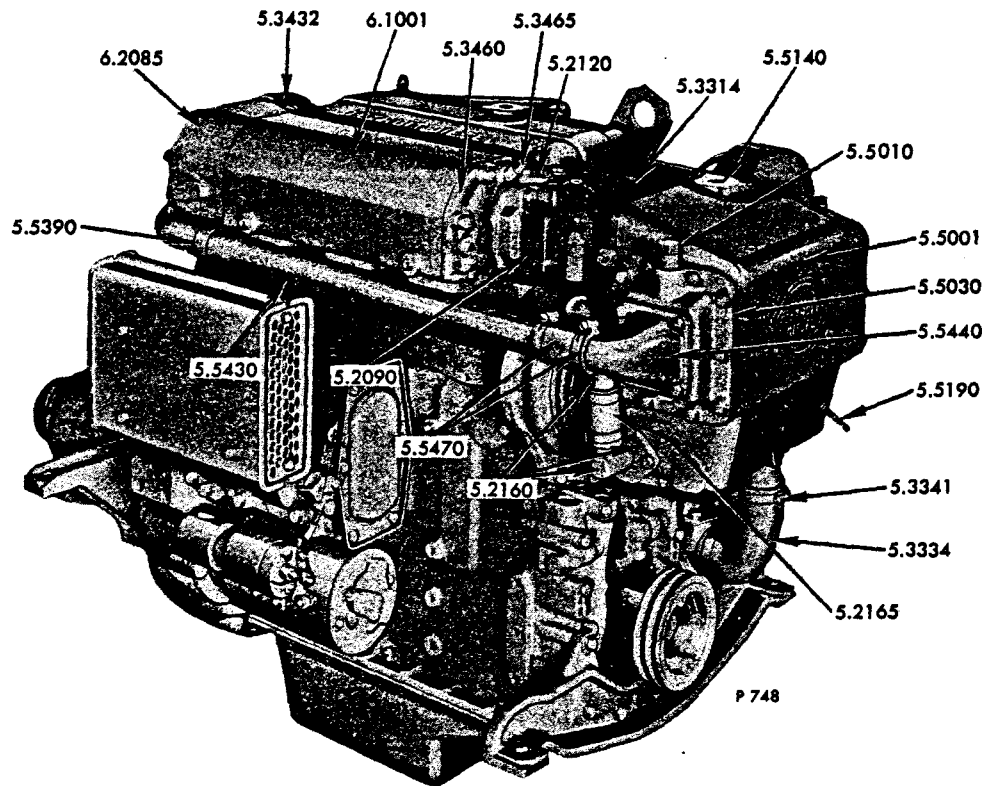


FIG. 5A TYPICAL HEAT EXCHANGER COOLING SYSTEM (In-Line Model)

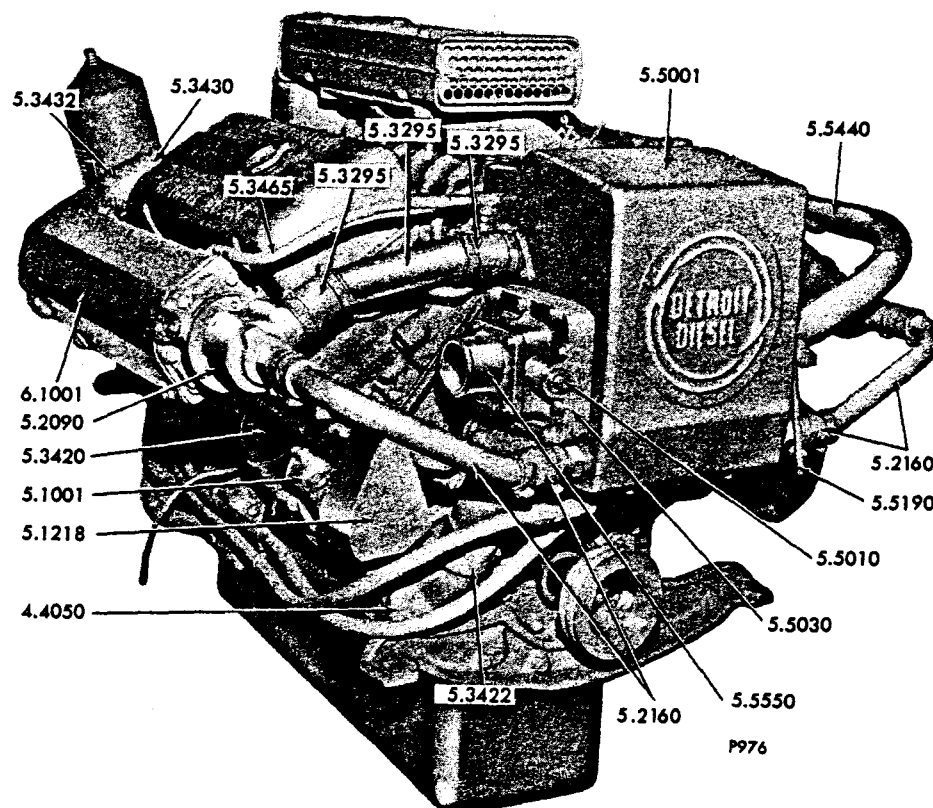


FIG. 5B TYPICAL HEAT EXCHANGER COOLING SYSTEM (V-Model)

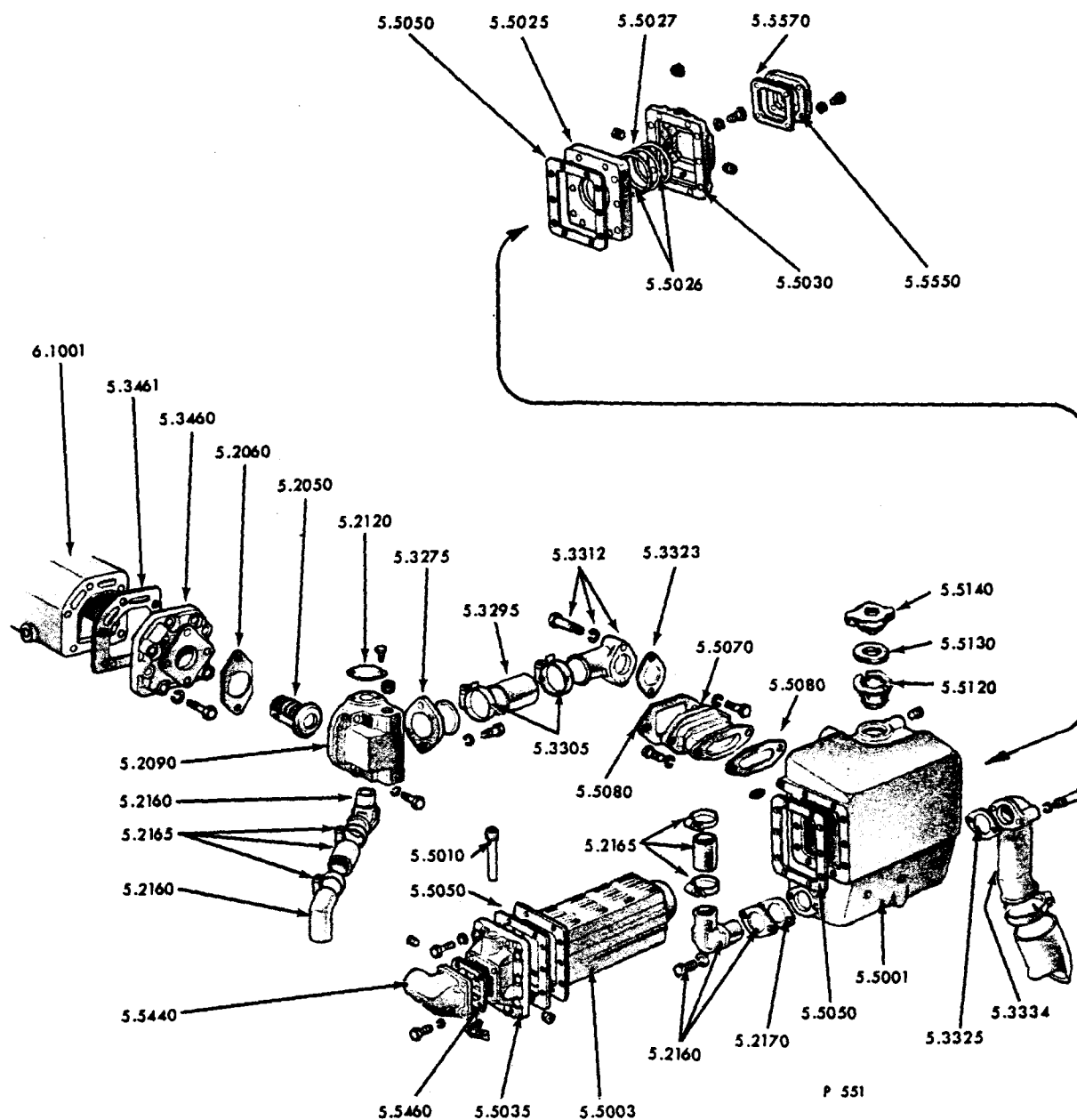


FIG. 6A HEAT EXCHANGER (In-Line Models)

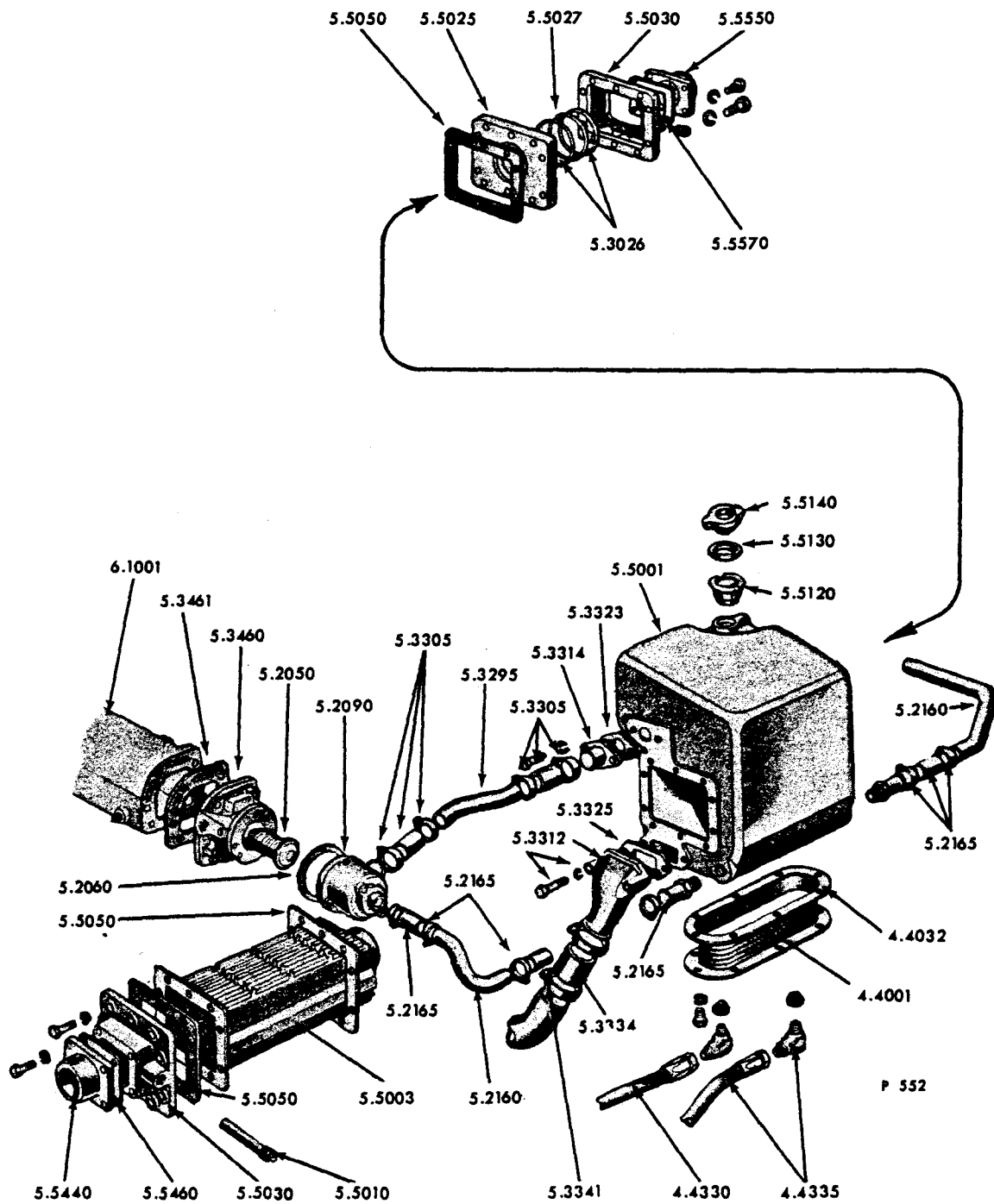


FIG. 6B HEAT EXCHANGER (V-Models)

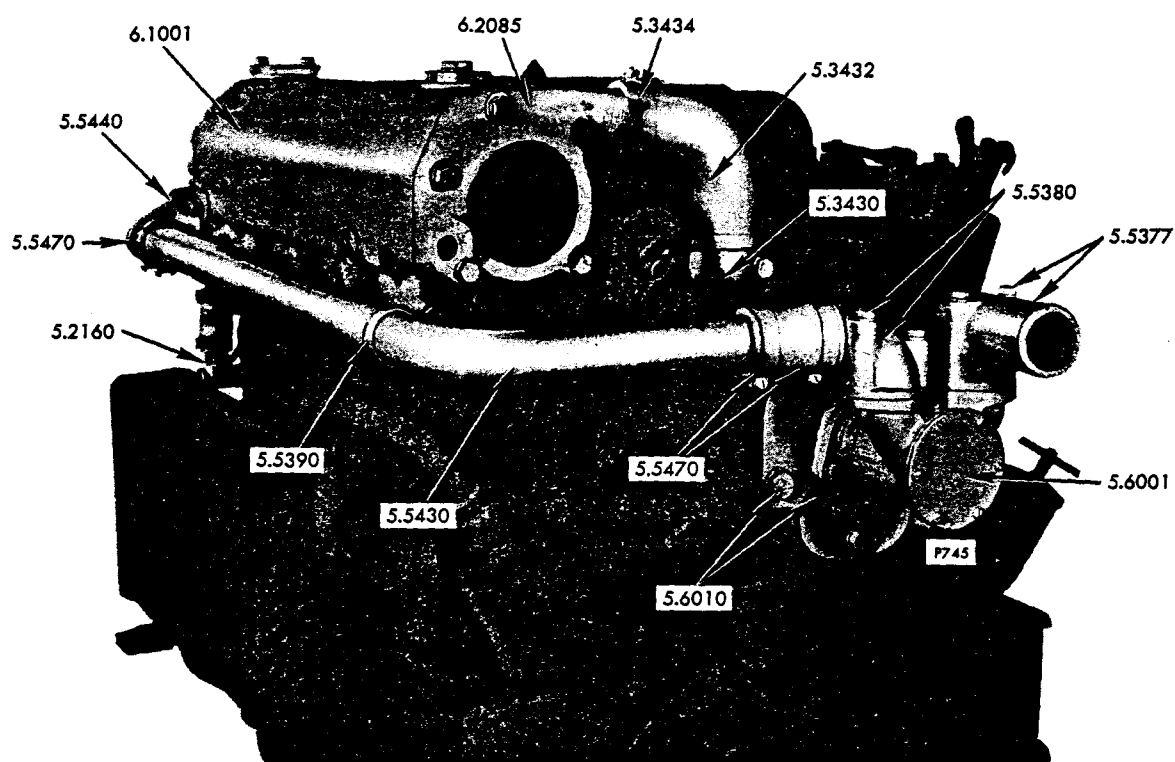


FIG. 7A TYPICAL RAW WATER PUMP INSTALLATION (In-line Engines)

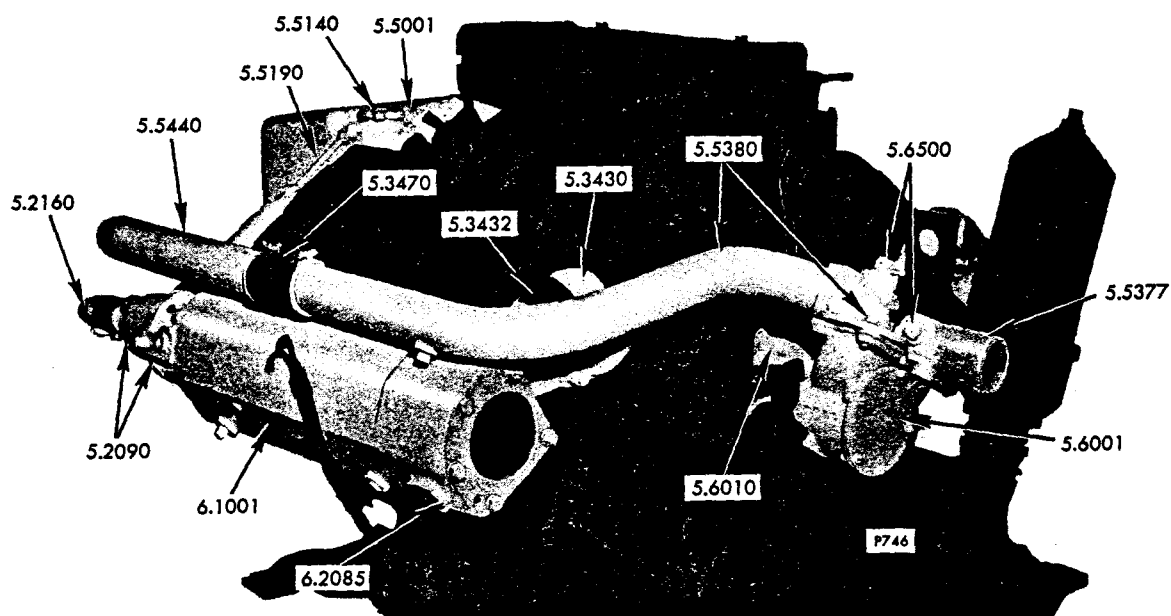


FIG. 7B TYPICAL RAW WATER PUMP INSTALLATION (V-Engines)

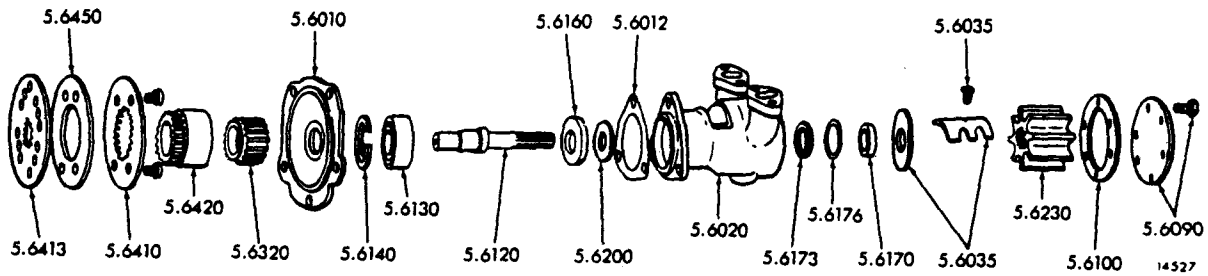


FIG. 8A RAW WATER PUMP (In-line Models)

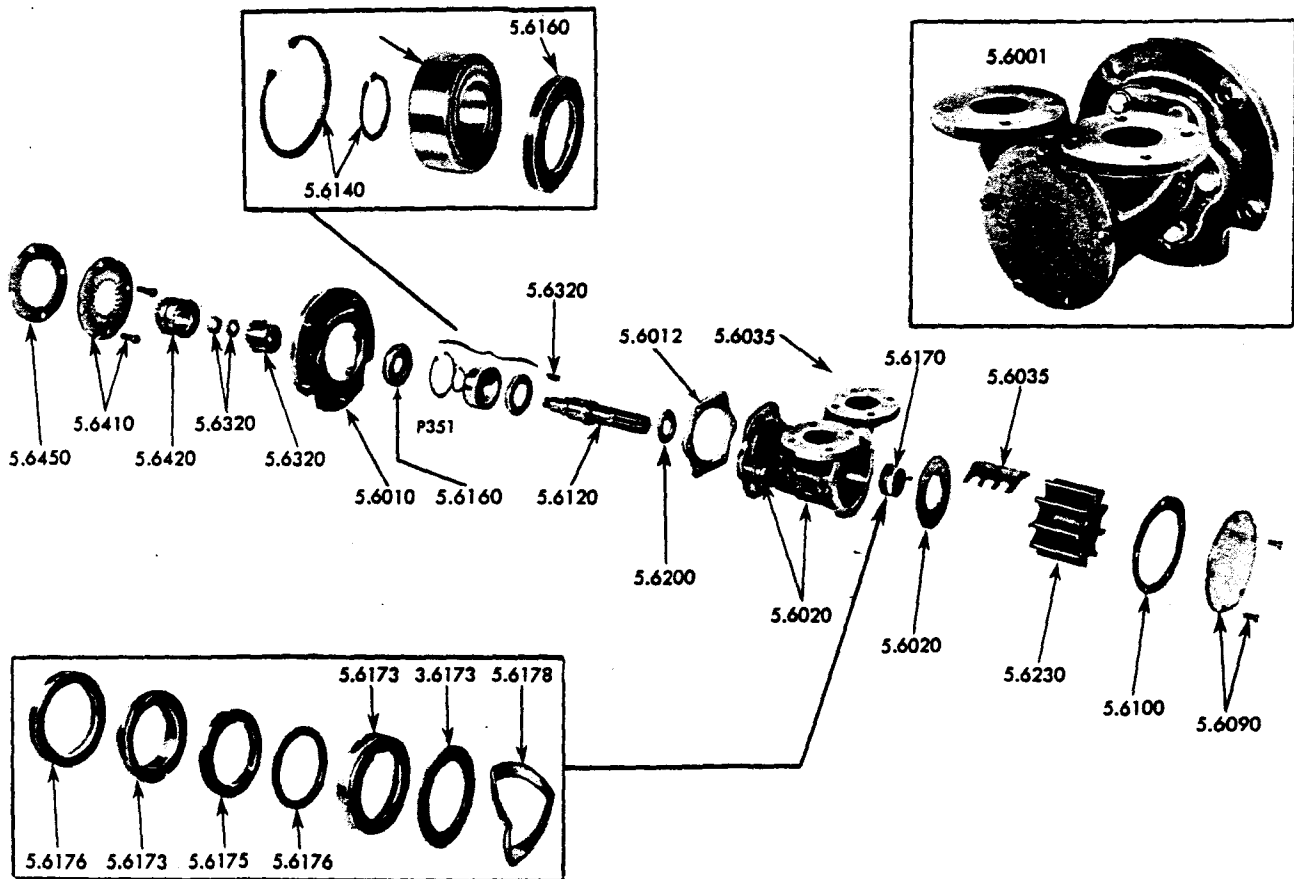


FIG. 8B RAW WATER PUMP (V-Models)

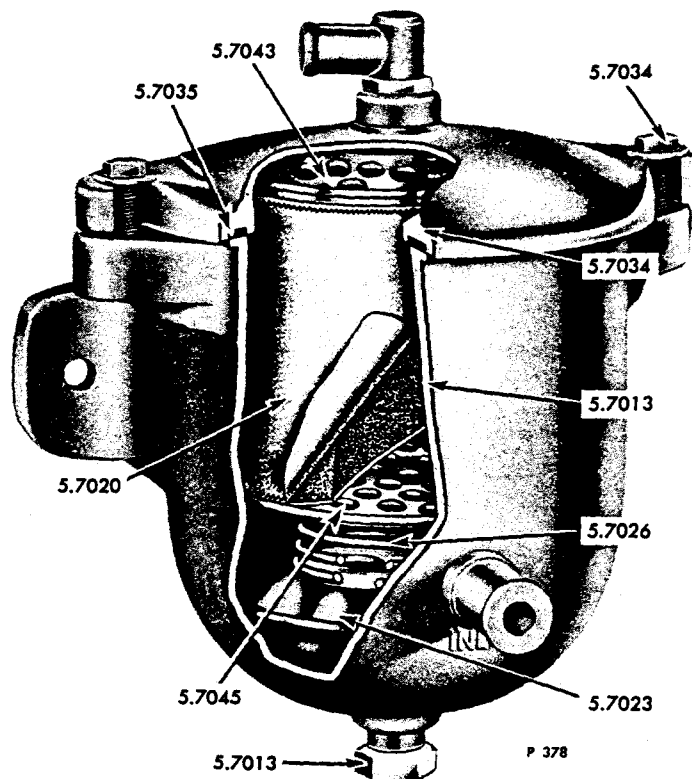


FIG. 9A WATER FILTER (Perry)

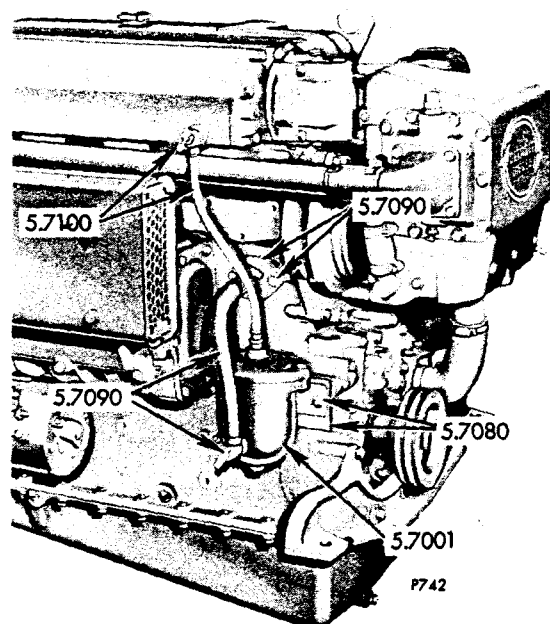


FIG. 9B TYPICAL WATER FILTER INSTALLATION

5.1000 FRESH WATER PUMP

PART			TYPES					
FIG	NUMBER	NAME AND DESCRIPTION	1 6 2	1 6 3	1 6 9	1 8 0	1 9 2	1 9 3
		5.1001 - PUMP ASSY., FRESH WATER						
		SEE ASSEMBLY BREAKDOWN AS INDICATED BELOW.						
1A	5144685	PUMP ASSY., 2,3,4,6,8V53 (L.H. ROTATION) (PAGE C1)	1	1				
1A	5144500	PUMP ASSY., 3-53 (L.H. ROT., ALUM.) (PAGE C1)			1		1	
1A	5148442	PUMP ASSY., 3,4-53 (R.H. ROTATION) (PAGE C1)				1		1
	5144920	BALL, 7/16" RUBBER 3,4,6V53 (DRAIN PLUG) (5.1030)				1		1
	5142549	PLUG, 3/4" PIPE TEF. (12.9550)					1	
	186625	BOLT, 5/16"-18X7/8" (12.9001)	5	5	5	5	4	5
	9421623	BOLT, 5/16"-18X7/8" HEX. SOC. HD. (FRONT INSIDE HOLE) (12.9027)					1	
	103320	LOCKWASHER, 5/16" (12.9200)	AR	AR	AR	AR	AR	AR
	103340	WASHER, 5/16" FLAT (12.9190)				5	4	
	103320	Lockwasher, 5/16" (12.9200)						
		5.1002 - RECONDITIONING KIT, FRESH WATER PUMP						
		INCLUDES ITEMS IN 5.1010, 5.1032, 5.1050, 5.1110 AND 5.1130.						
	5199533	RECONDITIONING KIT, 2,3,4,6,8V53 (L.H. ROTATION)	1	1	1		1	
		5.1010 - GASKET, FRESH WATER PUMP						
2A	5133107	GASKET, 2,3,4,6,8V53	1	1	1	1	1	1
		5.1200 - PULLEY, FRESH WATER PUMP IDLER						
		PULLEY ASSYS. 5139237, 5139405 AND 5148444 INCLUDE PULLEY AND ADJUSTING ARM, WHICH ARE NOT SERVICED SEPARATELY, AND BEARING IN 5.1202. PULLEY ASSY. 5136874 INCLUDES PULLEY, 5131123 SPACER, CAP, 9409060 BOLT, IN 5.1200 PLUS ITEMS IN 5.1201, 5.1202 AND 5.1207.						
1B	5139237	PULLEY ASSY., 2,3,4,6,8V53	1	1				
	5136874	PULLEY ASSY., 2-53			1			
	5148444	PULLEY ASSY., 3,4-53				1		
	5136811 +	PULLEY, 2-53 (2 GROOVES, 5.60" DIA.)			1			