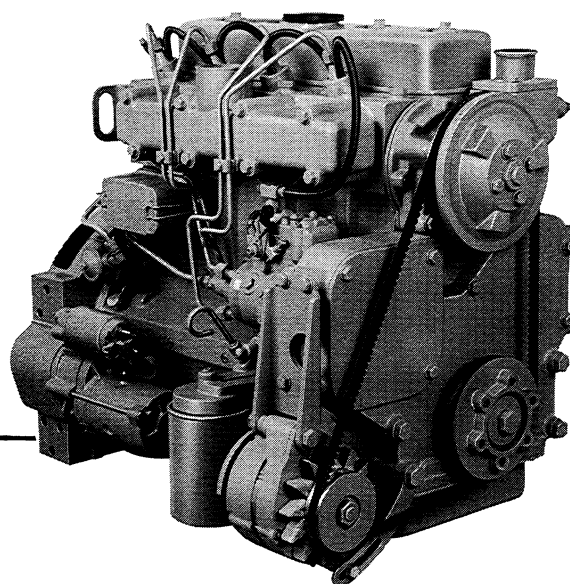


Onan

Parts Manual

L423D-I
L423D-P
Engine
Diesel



934-0250

7-87

(SPEC A-C — INDUSTRIAL ENGINE)

(SPEC A and C — POWER UNIT)

Replaces

3-86 (Spec A-C — Industrial Engine)

(Spec A — Power Unit)

Printed in U.S.A.

Important Safety Precautions

Read and observe these safety precautions when using or working on electric generators, engines and related equipment. Also read and follow the literature provided with the equipment.

Proper operation and maintenance are critical to performance and safety. Electricity, fuel, exhaust, moving parts and batteries present hazards that can cause severe personal injury or death.

FUEL, ENGINE OIL, AND FUMES ARE FLAMMABLE AND TOXIC

Fire, explosion, and personal injury can result from improper practices.

- Used engine oil, and benzene and lead, found in some gasoline, have been identified by government agencies as causing cancer or reproductive toxicity. When checking, draining or adding fuel or oil, do not ingest, breathe the fumes, or contact gasoline or used oil.
- Do not fill tanks with engine running. Do not smoke around the area. Wipe up oil or fuel spills. Do not leave rags in engine compartment or on equipment. Keep this and surrounding area clean.
- Inspect fuel system before each operation and periodically while running.
- Equip fuel supply with a positive fuel shutoff.
- Do not store or transport equipment with fuel in tank.
- Keep an ABC-rated fire extinguisher available near equipment and adjacent areas for use on all types of fires except alcohol.
- Unless provided with equipment or noted otherwise in installation manual, fuel lines must be copper or steel, secured, free of leaks and separated or shielded from electrical wiring.
- Use approved, non-conductive flexible fuel hose for fuel connections. Do not use copper tubing as a flexible connection. It will work-harden and break.

EXHAUST GAS IS DEADLY

- Engine exhaust contains carbon monoxide (CO), an odorless, invisible, poisonous gas. Learn the symptoms of CO poisoning.
- Never sleep in a vessel, vehicle, or room with a genset or engine running unless the area is equipped with an operating CO detector with an audible alarm.
- Each time the engine or genset is started, or at least every day, thoroughly inspect the exhaust system. Shut down the unit and repair leaks immediately.

- Warning: Engine exhaust is known to the State of California to cause cancer, birth defects and other reproductive harm.

Make sure exhaust is properly ventilated.

- Vessel bilge must have an operating power exhaust.
- Vehicle exhaust system must extend beyond vehicle perimeter and not near windows, doors or vents.
- Do not use engine or genset cooling air to heat an area.
- Do not operate engine/genset in enclosed area without ample fresh air ventilation.
- Expel exhaust away from enclosed, sheltered, or occupied areas.
- Make sure exhaust system components are securely fastened and not warped.

MOVING PARTS CAN CAUSE SEVERE PERSONAL INJURY OR DEATH

- Do not remove any guards or covers with the equipment running.
- Keep hands, clothing, hair, and jewelry away from moving parts.
- Before performing any maintenance, disconnect battery (negative [–] cable first) to prevent accidental starting.
- Make sure fasteners and joints are secure. Tighten supports and clamps, keep guards in position over fans, drive belts, etc.
- If adjustments must be made while equipment is running, use extreme caution around hot manifolds and moving parts, etc. Wear safety glasses and protective clothing.

BATTERY GAS IS EXPLOSIVE

- Wear safety glasses and do not smoke while servicing batteries.
- Always disconnect battery negative (–) lead first and reconnect it last. Make sure you connect battery correctly. A direct short across battery terminals can cause an explosion. Do not smoke while servicing batteries. Hydrogen gas given off during charging is explosive.
- Do not disconnect or connect battery cables if fuel vapors are present. Ventilate the area thoroughly.

DO NOT OPERATE IN FLAMMABLE AND EXPLOSIVE ENVIRONMENTS

Flammable vapor can be ignited by equipment operation or cause a diesel engine to overspeed and become difficult to stop, resulting in possible fire, explosion, severe personal injury and death. **Do not operate diesel equipment where a flammable vapor environment can be created by fuel spill, leak, etc., unless equipped with an automatic safety device to block the air intake and stop the engine.**

HOT COOLANT CAN CAUSE SEVERE PERSONAL INJURY

- Hot coolant is under pressure. Do not loosen the coolant pressure cap while the engine is hot. Let the engine cool before opening the pressure cap.

ELECTRICAL SHOCK CAN CAUSE SEVERE PERSONAL INJURY OR DEATH

- Do not service control panel or engine with unit running. High voltages are present. Work that must be done while unit is running should be done only by qualified service personnel.
- Do not connect the generator set to the public utility or to any other electrical power system. Electrocutation can occur at a remote site where line or equipment repairs are being made. An approved transfer switch must be used if more than one power source is connected.
- Disconnect starting battery (negative [-] cable first) before removing protective shields or touching electrical equipment. Use insulative mats placed on dry wood platforms. Do not wear jewelry, damp clothing or allow skin surface to be damp when handling electrical equipment.
- Use insulated tools. Do not tamper with interlocks.
- Follow all applicable state and local electrical codes. Have all electrical installations performed by a qualified licensed electrician. Tag open switches to avoid accidental closure.
- With transfer switches, keep cabinet closed and locked. Only authorized personnel should have cabinet or operational keys. Due to serious shock hazard from high voltages within cabinet, all service and adjustments must be performed by an electrician or authorized service representative.

If the cabinet must be opened for any reason:

1. Move genset operation switch or Stop/Auto/Handcrank switch (whichever applies) to Stop.
2. Disconnect genset batteries (negative [-] lead first).
3. Remove AC power to automatic transfer switch. If instructions require otherwise, use extreme caution due to shock hazard.

MEDIUM VOLTAGE GENERATOR SETS (601V TO 15kV)

- Medium voltage acts differently than low voltage. Special equipment and training are required to work on or around medium voltage equipment. Operation and maintenance must be done only by persons trained and qualified to work on such devices. Improper use or procedures will result in severe personal injury or death.
- Do not work on energized equipment. Unauthorized personnel must not be permitted near energized equipment. Induced voltage remains even after equipment is disconnected from the power source. Plan maintenance with authorized personnel so equipment can be de-energized and safely grounded.

GENERAL SAFETY PRECAUTIONS

- Do not work on equipment when mentally or physically fatigued or after consuming alcohol or drugs.
- Carefully follow all applicable local, state and federal codes.
- Never step on equipment (as when entering or leaving the engine compartment). It can stress and break unit components, possibly resulting in dangerous operating conditions from leaking fuel, leaking exhaust fumes, etc.
- Keep equipment and area clean. Oil, grease, dirt, or stowed gear can cause fire or damage equipment by restricting airflow.
- Equipment owners and operators are solely responsible for operating equipment safely. Contact your authorized Onan/Cummins dealer or distributor for more information.

KEEP THIS DOCUMENT NEAR EQUIPMENT FOR EASY REFERENCE.

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INTRODUCTION

To assist your Onan Dealer in giving you prompt and efficient replacement parts service, a Sales Option Code plate is part of your Onan Nameplate and lists Sales Option Code numbers that identify factory installed parts unique to your engine. Corresponding Code Numbers are listed at the top of each parts group and are used to determine correct replacement parts. For early built Industrial Engines that do not have the rocker cover mounted nameplate and early built Power Units that do not have the radiator shroud mounted nameplate, refer to the table at the rear of this manual.

This parts manual is divided into two sections each of which is controlled by a separate nameplate. The Industrial Engine Section includes service replacement parts for Sales Option Code numbers listed on the rocker cover nameplate. The Power Unit Section includes service replacement parts for Sales Option Code numbers listed on the radiator shroud nameplate. Only the Power Units have the second shroud mounted nameplate. When ordering replacement parts for a Power Unit the model and specification number from both nameplates must be provided.

The diagonal line (/) in the model and specification number separates engine characteristics from the specification number and letter. The specification letter on each nameplate may advance (A to B, B to C, etc.) independently of each other with major manufacturing changes. This letter designation, when used in the Part Description, also applies when ordering replacement parts. Left (non-accessory) and right (accessory) sides are determined by facing the rear or drive end (Flywheel) of the engine.

Listed below are Sales Option Code Modifier numbers that may appear on your Onan Nameplate. These code numbers have no direct service replaceable parts and only modify another related Sales Option Code number by identifying a distinctive feature(s). Parts that differ as a result of the modifier are identified in the parts description for that part.

- 15AJ (Fuel System for #2 Diesel Fuel)
- 15AK (Fuel System for Jet A or JP-5 Fuel)
- 15AL (Fuel System for JP-4 Fuel)
- 15AU (Bosch Injection Pump in place of Stanadyne Injection Pump)
- 23CB (No Belts)
- 23CC (No Belts or Alternator Pulley)
- 23CD (Double Pulley and Belts to Replace Single)
- 23CE (Single Pulley and Belts to Replace Double)
- 31AG (12 Volt System)
- 31AH (24 Volt System)
- 31AJ (32 Volt System)
- 35AJ (Fuel Solenoid - Energized to Run)
- 35AK (Fuel Solenoid - Energized to Run, Manual Override)
- 35AL (Fuel Solenoid - Energized to Shut Off, Manual Override)
- 45AA (Auxilliary Gear Drive)
- 45AT (Two Groove Crankshaft Pulley to Replace Single)
- 47 (Literature and Shipping Hardware)
(Alpha letters after the number 47 are variable depending on model)
(Sales Code 47 is not a modifier, however, there are no service replaceable parts)

This section contains replacement parts for the Industrial Engine as listed by Sales Option Code number on the rocker cover nameplate.

Engine

Model No.

Serial No.

Rated RPM:

Static Timing BTDC

Lube Oil Capacity

Fuel Diesel Firing Order

Valve Lash

Onan Corporation Minneapolis Minnesota 55432 U.S.A.

For handy reference, insert your rocker cover nameplate and Sales Option Code information in the spaces above.

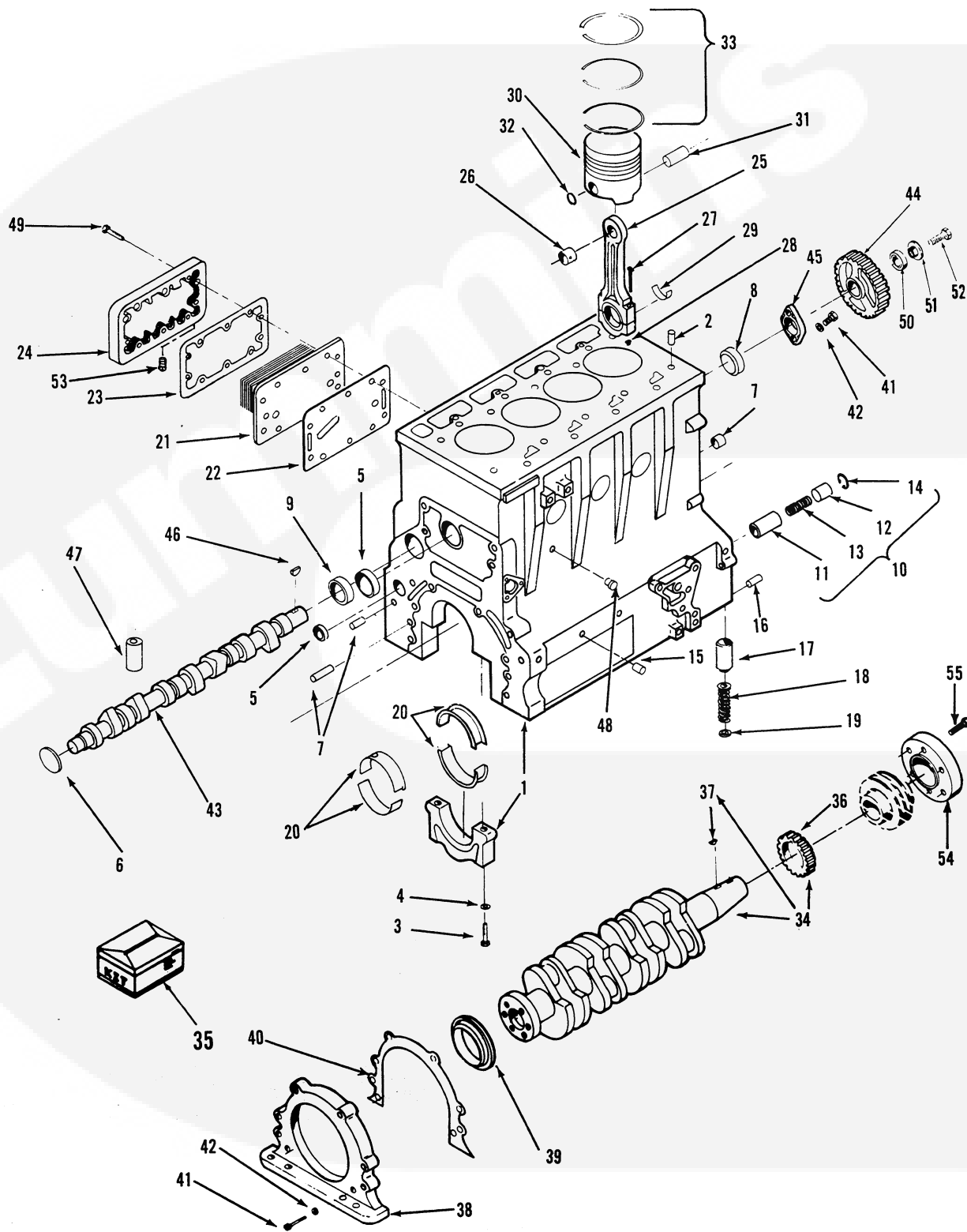
CYLINDER BLOCK

Code 11AA (Low Speed Variable to 2600 RPM)

Code 11AB (Premium High Speed Variable to 3600 RPM)

Code 11AC (Low Speed Generator Application - 1500 and 1800 RPM)

Code 11 AE (Premium High Speed Generator Application - 3000 and 3600 RPM)



XC-1063

CYLINDER BLOCK

Code 11AA (Low Speed Variable to 2600 RPM)
 Code 11AB (Premium High Speed Variable to 3600 RPM)
 Code 11AC (Low Speed Generator Application - 1500 and 1800 RPM)
 Code 11 AE (Premium High Speed Generator Application - 3000 and 3600 RPM)

5100-0708
 5100-0709
 5100-0715
 5100-0722

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	BLOCK ASSEMBLY, CYLINDER (Includes Parts Marked *)			25	114-0313	4	Rod Assembly, Connecting (Includes Finished Bearing, Bolts and Nuts)
			Code 11AA and 11AC	26	114-0316	4	Bushing, Connecting Rod (Semi-Finished)
	110-3198	1	Spec A	27	114-0315	8	Bolt, Connecting Rod
	110-3290	1	Begin Spec B	28	114-0318	8	Nut, Connecting Rod
			Code 11AB and 11AE	29	BEARING, CONNECTING ROD (Half)		
	110-3196	1	Spec A		114-0319	8	Standard
	110-3291	1	Begin Spec B		114-0319-01	8	0.25 MM Undersize
2	110-2978	2	*Pin, Cylinder Head Alignment		114-0319-02	8	0.50 MM Undersize
3	720-1801	10	*Screw, Cap - Hex Head - Special		114-0319-03	8	0.75 MM Undersize
4	740-1801	10	*Washer, Flat - Special	30	PISTON AND PIN KIT (Includes Retaining Rings)		
5	PLUG, CUP				112-0201	4	Standard
	517-0141	4	*50.8 MM Stainless Steel		112-0202	4	0.25 MM Oversize
	517-0144	2	*12.7 MM Steel		112-0203	4	0.50 MM Oversize
	517-0146	1	*31.75 MM Stainless Steel		112-0204	4	0.75 MM Oversize
	517-0250	1	54.37 MM Stainless Steel (Oversize)		112-0205	4	1.0 MM Oversize
6	517-0140	1	*Plug, Welch (57.15 MM) - Steel	31	112-0165	4	Pin, Piston
7	PIN, ALIGNMENT			32	518-0409	8	Ring, Retaining - Piston Pin
	775-0074	2	* 8 MM x 20 MM	33	RING KIT, PISTON		
	775-0089	2	*10 MM x 20 MM		113-0233	4	Standard
	775-0078	2	* 8 MM x 40 MM		113-0234	4	0.25 MM Oversize
8	101-0511	1	*Bearing, Camshaft - Front		113-0235	4	0.50 MM Oversize
9	101-0471	4	*Bearing, Camshaft - Intermediate and Rear		113-0236	4	0.75 MM Oversize
10	123-1613	1	*Valve Assembly, Pressure Relief (Includes Parts Marked +)		113-0237	4	1.0 MM Oversize
			- Code 11AB, 11AE	34	104-1508	1	Crankshaft and Gear (Includes Key)
11	123-1515	1	+Body, Relief Valve	35	168-0170	1	Kit, Gasket - Lower End
			- Code 11AB, 11AE	36	104-1138	1	Gear, Crankshaft
12	123-1514	1	+Piston, Relief Valve	37	515-0245	1	Key, Woodruff (Special)
			- Code 11AB, 11AE	38	101-0584	1	Plate, Rear Seal
13	123-1508	1	+Spring, Relief Valve	39	509-0203	1	Seal, Oil - Rear (Includes Wear Sleeve)
			- Code 11AB, 11AE	40	101-0600	1	Gasket, Rear Seal Plate
14	518-0410	1	+Ring, Retaining	41	718-1037	8	Screw, Cap - Hex Head (M8 x 25 MM)
			- Code 11AB, 11AE	42	740-1006	8	Washer, Flat (M8)
15	PLUG, PIPE			43	105-0517	1	Camshaft
	502-0153	1	*Brass (1/4") Early Models	44	GEAR CAMSHAFT		
	505-0274	4	*Steel (1/8")		105-0515	1	For Engines Without Front PTO
16	516-2102	1	*Pin, Regulator Valve Spring		105-0552	1	For Engines With Front PTO
17	123-1514	1	*Piston, Regulator Valve	45	105-0534	1	Retainer, Camshaft
18	123-1511	1	*Spring, Regulator Valve	46	515-0245	1	Key, Camshaft Gear
19	740-1004	1	*Washer, Flat (M6)	47	115-0275	8	Tappet
20	BEARING KIT, MAIN (Includes Upper and Lower Bearing Half)			48	FITTING (3/8")		
			Front		504-0028	1	*Valve, Coolant Drain
	101-0689	1	Standard				- Code 11AA, 11AC
	101-0690	1	0.25 MM Undersize		502-0775	1	*Plug, Pipe - Code 11AB, 11AE
	101-0691	1	0.50 MM Undersize	49	725-1054	10	Screw, Socket Head (M8 x 40 MM)
	101-0692	1	0.75 MM Undersize				- Code 11AB, 11AE
			Center	50	510-0140	1	Bearing, Ball - Camshaft - Engines With Front PTO
	101-0681	1	Standard	51	105-0569	1	Retainer, Camshaft Bearing
	101-0682	1	0.25 MM Undersize				- Engines With Front PTO
	101-0683	1	0.50 MM Undersize	52	720-1039	1	Screw, Cap - Hex Head (M8 x 35 MM) - Engines With Front PTO
	101-0684	1	0.75 MM Undersize				Valve, Coolant Drain
			Intermediate (Except Center)	53	504-0028	1	- Code 11AB, 11AE
	101-0685	2	Standard	54	104-1551	1	Damper, Crankshaft Pulley (3600 RPM Generator Application) Code 11AE
	101-0686	2	0.25 MM Undersize				Screw, Cap - Hex Head (M10 x 25 MM) (3600 RPM Generator Application)
	101-0687	2	0.50 MM Undersize				- Code 11AE
	101-0688	2	0.75 MM Undersize				
			Rear				
	101-0677	1	Standard				
	101-0678	1	0.25 MM Undersize				
	101-0679	1	0.50 MM Undersize				
	101-0680	1	0.75 MM Undersize				
21	102-1020	1	Cooler, Oil - Code 11AB, 11AE	55	720-1054	6	Screw, Cap - Hex Head (M10 x 25 MM) (3600 RPM Generator Application)
22	102-0973	1	Gasket, Oil Cooler				- Code 11AE
			- Code 11AB, 11AE				
23	102-0975	1	Gasket, Oil Cooler Cover				
			- Code 11AB, 11AE				
24	102-0980	1	Cover, Oil Cooler				
			- Code 11AB, 11AE				

* - Parts Included in Cylinder Block Assemblies.
 + - Parts Included in 123-1613 Pressure Relief Valve Assembly.

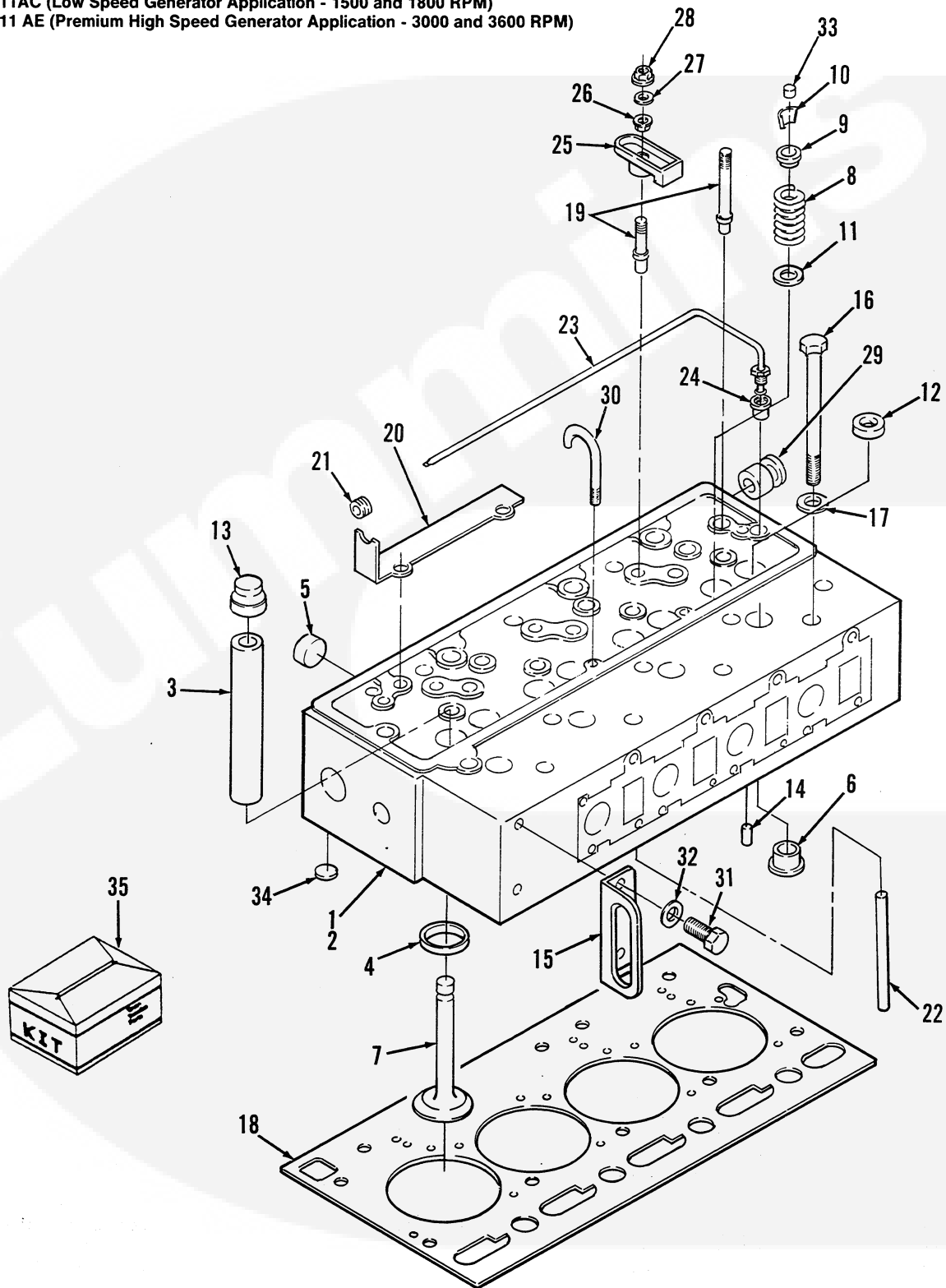
CYLINDER HEAD

Code 11AA (Low Speed Variable to 2600 RPM)

Code 11AB (Premium High Speed Variable to 3600 RPM)

Code 11AC (Low Speed Generator Application - 1500 and 1800 RPM)

Code 11 AE (Premium High Speed Generator Application - 3000 and 3600 RPM)



CYLINDER HEAD

Code 11AA (Low Speed Variable to 2600 RPM)

Code 11AB (Premium High Speed Variable to 3600 RPM)

Code 11AC (Low Speed Generator Application - 1500 and 1800 RPM)

Code 11 AE (Premium High Speed Generator Application - 3000 and 3600 RPM)

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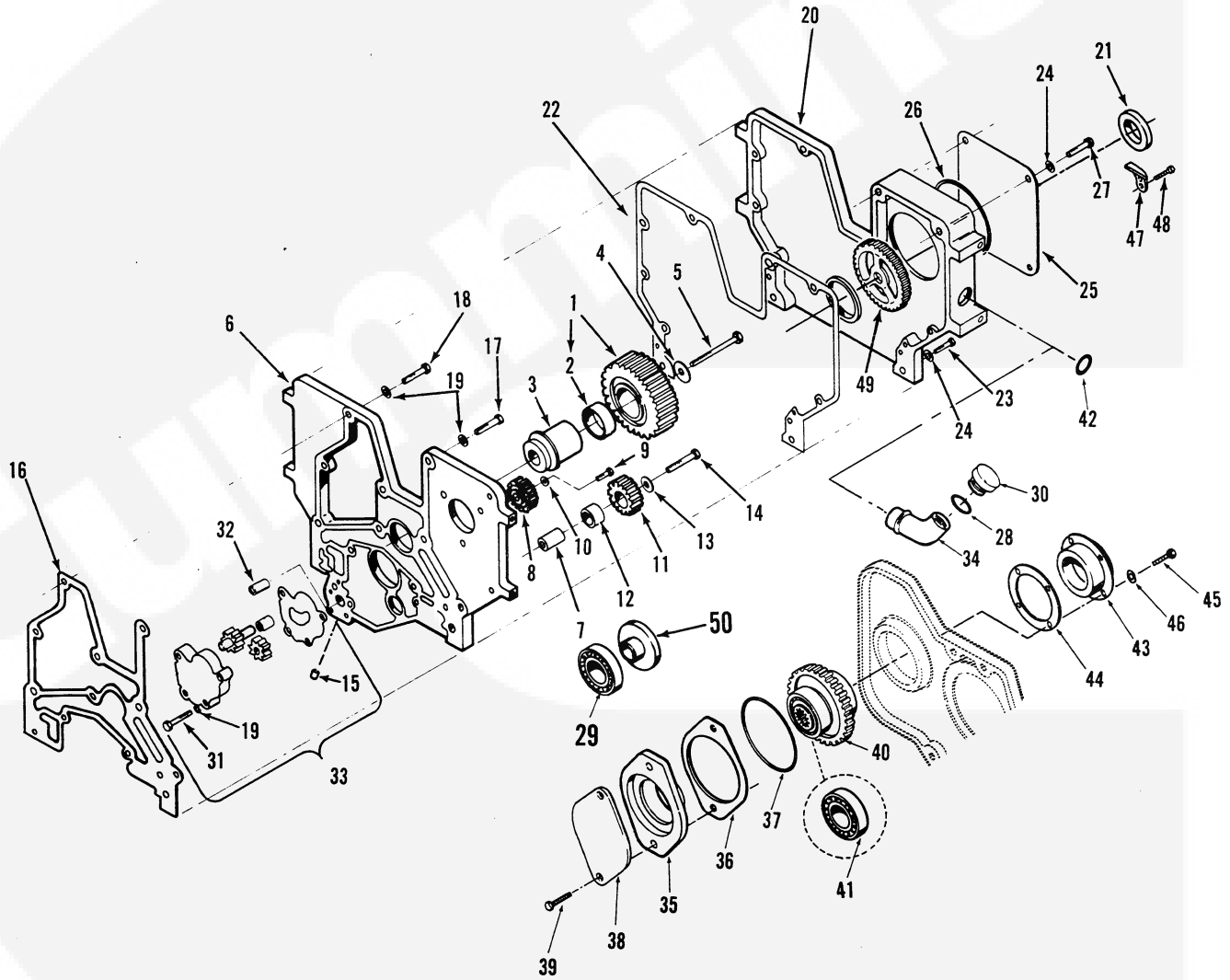
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5100-0916

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	110-3201	1	Head Assembly, Cylinder (Includes Guides, Seats, Cup Plugs, Valves, Springs, Breather Tubes, Spacers, Water Pump Adapter, Retainers, Collets, Wear Plates, Sleeves and Seals)	11	PLATE, VALVE SPRING WEAR		
					110-2991	8	Spec A and B
					110-2991	4	Begin Spec C (Exhaust)
2	110-3285	1	Head, Cylinder (Includes Seats, Sleeves, Spacers, Cup Plugs, Water Pump Adapter and Guides)	12	110-3432	4	Spacer, Valve Spring (Intake) Begin Spec C
3	GUIDE, VALVE (Semi-Finished)			13	110-3228	8	Seal Assembly, Valve Stem
	110-3495	4	Intake (Std.)	14	110-2979	4	Sleeve, Sealing
	110-3496	4	Exhaust (Std.)	15	403-1875	2	Bracket, Lifting - Engines Without Code 23BM, 19AB
4	SEAT, VALVE			16	720-1802	18	Screw, Cap - Hex Head (M12 x 130 MM)
	110-2839	4	Intake Spec A and B (Std.) Not Original Equipment Begin Spec C - Code 11AB, 11AE (Not Original Equipment for Code 11AA, 11AC)	17	740-1801	14	Washer, Flat (M12)
	110-3226-01	4	Standard	18	110-3012	1	Gasket, Cylinder Head
	110-3226-02	4	.25 MM Oversize	19	STUD, ROCKER ARM		
	110-3226-03	4	.50 MM Oversize		115-0204	4	Short
	110-2781-01	4	Exhaust Standard		115-0270	4	Long
	110-2781-02	4	.25 MM Oversize	20	115-0313	2	Guide, Push Rod
	110-2781-03	4	.50 MM Oversize	21	508-0228	2	Grommet
5	PLUG, CUP			22	115-0253	8	Pushrod
	517-0142	7	38.1 MM	23	120-0919	1	Tube, Rocker Arm Oil
	517-0146	4	31.75 MM	24	502-0003	1	Connector, Inverted Male
	517-0162	4	19.05 MM	25	115-0316	8	Arm, Rocker
6	PLUG, HOT (Swirl)			26	115-0202	8	Ball, Rocker Arm
	110-3039	4	Spec A and B Code 11AA and 11AB	27	526-2119	8	Washer, Flat
	110-3137	4	Code 11AC Begin Spec C	28	115-0315	8	Locknut, Rocker Arm
	110-3137	4	Code 11AA and 11AC	29	ADAPTER, WATER PUMP		
	110-3039	4	Code 11AB and 11AE		110-3045	1	Standard
7	VALVE				110-3490	1	0.5 MM Oversize
	110-3066	4	Intake	30	123-1536	2	Tube, Breather
	110-2840	4	Exhaust	31	718-1053	4	Screw, Cap - Hex Head (M10 x 20 MM) Engines Without Code 23 BM, 19AB
8	110-3300	8	Spring, Valve	32	740-1008	4	Washer, Flat (M10) Engines Without Code 23 BM, 19AB
9	110-3015	8	Retainer, Valve Spring	33	110-3245	8	Cap, Valve Stem (Not Used on Some Early Models)
10	110-2752	16	Collet, Valve Lock	34	517-0167	1	Plug, Cup (22.6 MM) Code 11AA and 11AC
				35	168-0159	1	Kit, Gasket - Valve Grind

GEARCASE

Code 11AA (Low Speed Variable to 2600 RPM)
Code 11AB (Premium High Speed Variable to 3600 RPM)
Code 11AC (Low Speed Generator Application - 1500 and 1800 RPM)
Code 11AE (Premium High Speed Generator Application - 3000 and 3600 RPM)



XC-1062

GEARCASE

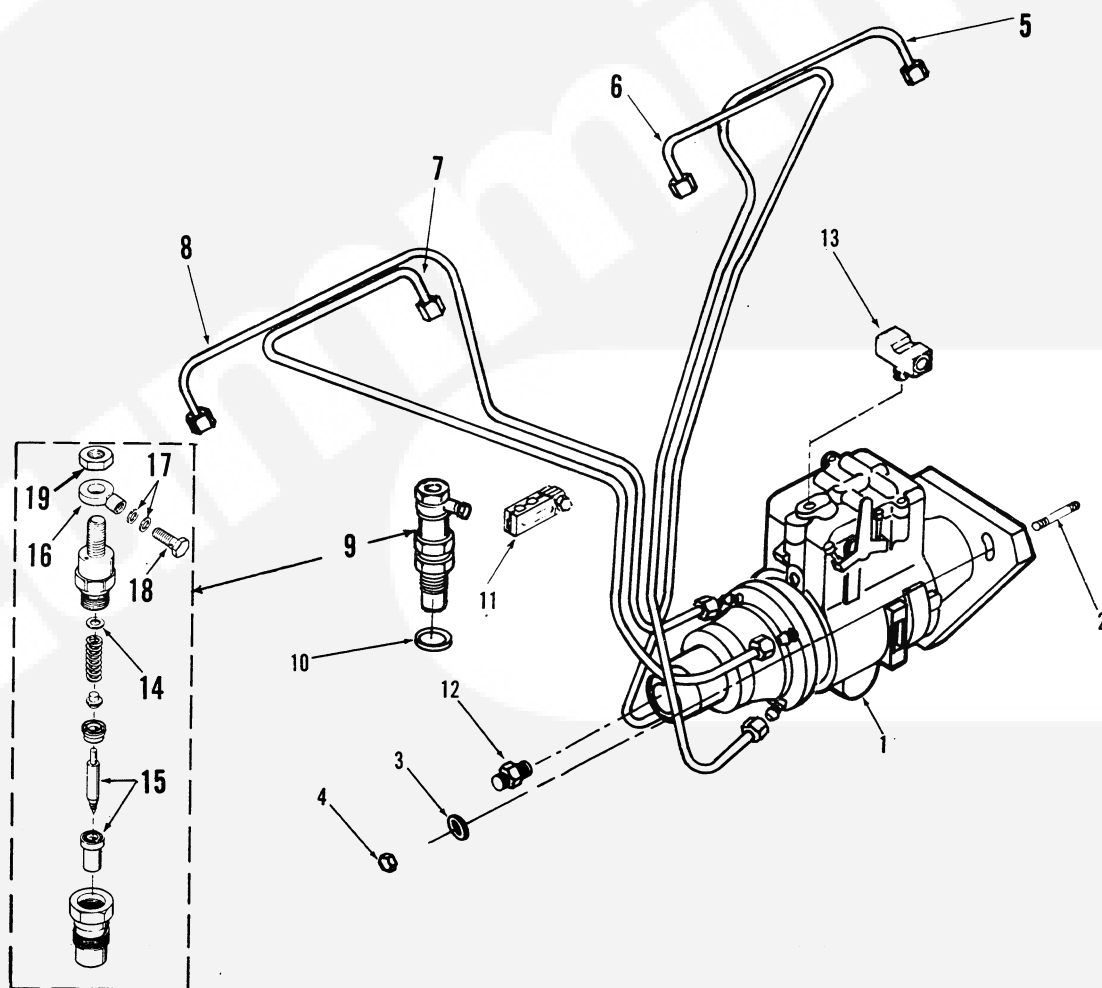
Code 11AA (Low Speed Variable to 2600 RPM)
 Code 11AB (Premium High Speed Variable to 3600 RPM)
 Code 11AC (Low Speed Generator Application - 1500 and 1800 RPM)
 Code 11AE (Premium High Speed Generator Application - 3000 and 3600 RPM)

5100-0727
 5100-0728
 5100-0866

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	GEAR, IDLER			23	SCREW, CAP - HEX HEAD		
	105-0513	1	Engines Without Front PTO (Includes Finished Bearing)		718-1046	2	M8 × 70 MM
	105-0555	1	Engines With Front PTO		718-1043	5	M8 × 55 MM
2	105-0519	1	Bearing, Idler Gear (Semi-Finished) - Engines Without Front PTO		718-1085	4	M12 × 85 MM (Engines Without Code 41AA, 41AB and 41AH)
3	SHAFT, IDLER GEAR			24	WASHER, FLAT		
	105-0508	1	Engines Without Front PTO		740-1006	4	M8
	105-0572	1	Engines With Front PTO		740-1010	4	M12
4	526-2127	1	Washer, Flat (M10) - Engines Without Front PTO	25	COVER, INJECTION PUMP GEAR		
5	718-1064	1	Screw, Cap - Hex Head (M10 × 75 MM)		103-0618	1	Spec A
6	BACKPLATE, GEARCASE				103-0735	1	Begin Spec B
			Engines Without Front PTO	26	509-0263	1	Seal, O-Ring
	103-0600	1	Spec A	27	SCREW, CAP - HEX HEAD		
	103-0716	1	Begin Spec B		718-1048	1	M8 × 80 MM
	103-0725	1	Engines With Front PTO		718-1044	2	M8 × 60 MM
7	120-0983	1	Shaft, Oil Pump Idler Gear		718-1036	1	M8 × 20 MM
8	120-0885	1	Gear, Oil Pump Drive	28	509-0142	1	Seal, O-Ring - Oil Fill Cap - Engines With Code 17AM
9	718-1035	1	Screw, Cap - Hex Head (M8 × 16 MM)	29	510-0139	1	Bearing, Idler Gear - Engines With Front PTO
10	526-2106	1	Washer, Flat	30	123-1647	1	Cap - Oil Fill (Engines With Code 17AM)
11	120-1063	1	Gear, Oil Pump Idler (Includes Finished Bearing)	31	718-1041	2	Screw, Cap - Hex Head (M8 × 45 MM)
12	120-1041	1	Bearing, Oil Pump Idler Gear (Semi-Finished)	32	120-0979	1	Bearing, Oil Pump Drive Shaft
13	526-2107	1	Washer, Flat	33	120-1015	1	Pump Kit, Oil (Includes Drive Shaft Bearing)
14	718-1035	1	Screw, Cap - Hex Head (M8 × 16 MM)	34	123-1558	1	Tube, Oil Fill - Engines With Code 17AM
15	725-1802	1	Screw, Hex Socket Set (M16 × 16 MM)	35	121-0038	1	Adapter, Hyd. Pump - Engines With Front PTO
16	GASKET, GEARCASE BACKPLATE			36	121-0039	1	Gasket, Adapter - Engines With Front PTO
	103-0612	1	Spec A	37	509-0175	1	Seal, O-Ring - Engines With Front PTO
	103-0733	1	Begin Spec B	38	121-0040	1	Cover, Adapter - Engines With Front PTO
17	SCREW, CAP - HEX HEAD			39	718-1075	2	Screw, Cap - Hex Head - Engines With Front PTO
	718-1037	1	M8 × 25 MM	40	105-0571	1	Gear Assembly, Front PTO (Includes Bearings)
	718-1039	1	M8 × 35 MM	41	510-0141	2	Bearing, Front PTO Gear
18	725-1801	2	Screw, Low Socket Head Cap (M8 × 16 MM)	42	517-0188	1	Plug, Cup - Engines Without Code 17AM
19	740-1006	7	Washer, Flat (M8)	43	101-0710	1	Support, Camshaft Bearing - Engines With Front PTO
20	GEARCASE (Includes Oil Seal)			44	101-0711	1	Gasket, Support - Engines With Front PTO
			Engines Without Front PTO Without Side Oil Fill (Includes Cup Plug)	45	718-1037	4	Screw, Cap - Hex Head (M8 × 25 MM) Engines With Front PTO
	103-0739	1	Spec A	46	740-1006	4	Washer, Flat (M8) Engines With Front PTO
	103-0744	1	Begin Spec B With Side Oil Fill (Includes Oil Fill Tube)	47	103-0750	1	Plate, Timing - Use Began During Spec B - Engines Without Code 23BK
	103-0740	1	Spec A	48	815-0578	2	Screw, Cap - Hex Head (M6 × 12.5 MM) Use Began During Spec B - Engines Without Code 23BK
	103-0746	1	Begin Spec B	49	147-0427	1	Gear, Injection Pump
	103-0745	1	Engines With Front PTO (Includes Cup Plug)	50	105-0556	1	Retainer, Idler Gear - Engines With Front PTO
21	509-0191	1	Seal, Oil (Includes Wear Sleeve)				
22	GASKET, GEARCASE						
			Engines Without Front PTO				
	103-0614	1	Spec A				
	103-0731	1	Begin Spec B				
	103-0723	1	Engines With Front PTO				

FUEL INJECTION

Code 13AA (2600-2400 RPM Variable)
 Code 13AB (3600-3200 RPM Variable, 12 Volt)
 Code 13AB (3600 RPM Variable, ETSO, Manual Override, 24 Volt)
 Code 13AC (1800 RPM Fixed)
 Code 13AD (3000 RPM Fixed)
 Code 13AE (1500 RPM Fixed)
 Code 13AF (3600-3200 RPM Variable, Jet A Fuel)
 Code 13AJ (3000-2800 RPM Variable)
 Code 13AK (2600-2400 RPM Variable)
 Code 13AP (3600 RPM Fixed)
 Code 13BE (1800 RPM Variable, Mobile Application)



FS-1262

FUEL INJECTION

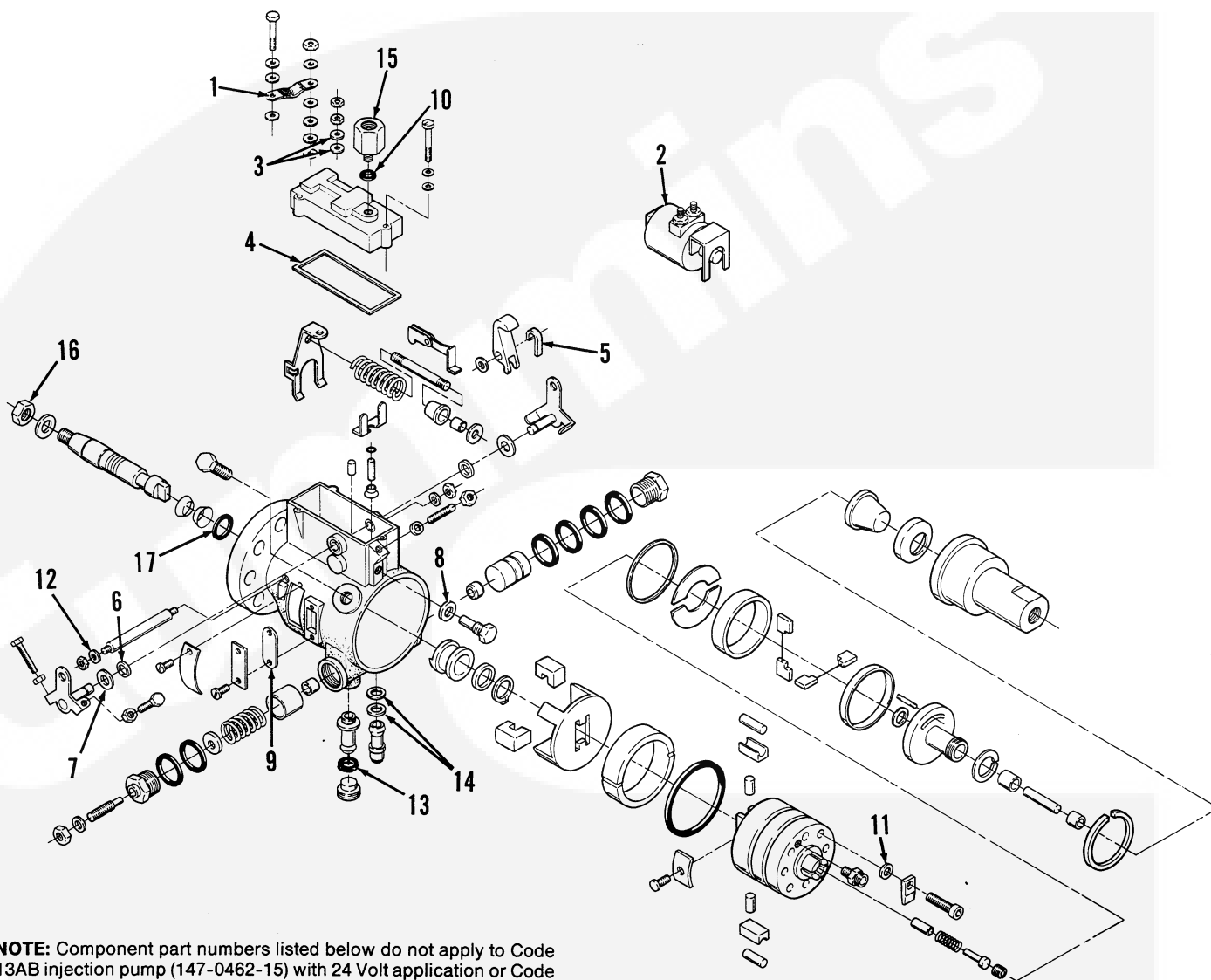
Code 13AA (2600-2400 RPM Variable)	5100-0164
Code 13AB (3600-3200 RPM Variable, 12 Volt)	5100-0735
Code 13AB (3600 RPM Variable, ETSO, Manual Override, 24 Volt)	5100-0743
Code 13AC (1800 RPM Fixed)	5100-0930
Code 13AD (3000 RPM Fixed)	5100-0951
Code 13AE (1500 RPM Fixed)	5100-1081
Code 13AF (3600-3200 RPM Variable, Jet A Fuel)	
Code 13AJ (3000-2800 RPM Variable)	
Code 13AK (2600-2400 RPM Variable)	
Code 13AP (3600 RPM Fixed)	
Code 13BE (1800 RPM Variable, Mobile Application)	

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	PUMP, FUEL INJECTION (See Separate Group for Components)			14	WASHER, INJECTION NOZZLE SHIM		
			Code 13AA, 13AK	147-0617	As Req.	0.80 MM	
	147-0462-03	1	Jet A Fuel Not Required	147-0618	As Req.	0.84 MM	
	147-0462-13	1	Jet A Fuel Required	147-0619	As Req.	0.88 MM	
			Code 13AB	147-0620	As Req.	0.92 MM	
	147-0462-01	1	12 Volt	147-0621	As Req.	0.96 MM	
	147-0462-15	1	24 Volt	147-0622	As Req.	1.00 MM	
			Code 13AC, Energize to Run	147-0623	As Req.	1.04 MM	
	147-0462-05	1	12 Volt	147-0624	As Req.	1.08 MM	
	147-0462-09	1	24 Volt	147-0625	As Req.	1.12 MM	
	147-0462-10	1	32 Volt	147-0626	As Req.	1.16 MM	
	147-0462-08	1	Code 13AD, Code 13AP	147-0627	As Req.	1.20 MM	
			Code 13AE, Energize to Run	147-0628	As Req.	1.24 MM	
	147-0462-06	1	12 Volt	147-0629	As Req.	1.28 MM	
	147-0462-11	1	24 Volt	147-0630	As Req.	1.32 MM	
	147-0462-12	1	32 Volt	147-0631	As Req.	1.36 MM	
	147-0462-07	1	Code 13AF	147-0632	As Req.	1.40 MM	
	147-0462-02	1	Code 13AJ	147-0633	As Req.	1.44 MM	
	147-0462-17	1	Code 13BE	147-0634	As Req.	1.48 MM	
2	520-2403	3	Stud, Injection Pump (M8)	147-0635	As Req.	1.52 MM	
3	526-2106	3	Washer, Flat (M8)	147-0636	As Req.	1.56 MM	
4	750-1006	3	Nut, Hex (M8)	147-0637	As Req.	1.60 MM	
5	LINE, FUEL INJECTION (No. 1)			147-0638	As Req.	1.64 MM	
	149-1748	1	Spec A	147-0639	As Req.	1.68 MM	
	147-0675	1	Begin Spec B	147-0640	As Req.	1.72 MM	
6	LINE, FUEL INJECTION (No. 2)			147-0641	As Req.	1.76 MM	
	149-1749	1	Spec A	147-0642	As Req.	1.80 MM	
	147-0676	1	Begin Spec B	147-0643	As Req.	1.84 MM	
7	LINE, FUEL INJECTION (No. 3)			147-0644	As Req.	1.88 MM	
	149-1750	1	Spec A	147-0645	As Req.	1.92 MM	
	147-0677	1	Begin Spec B	147-0646	As Req.	1.96 MM	
8	LINE, FUEL INJECTION (No. 4)			15	147-0647	4	Tip, Nozzle
	149-1751	1	Spec A	16	147-0766	4	Banjo
	147-0678	1	Begin Spec B	17	147-0767	8	Washer
9	INJECTOR, FUEL (Includes Seal)			18	147-0765	4	Screw, Hollow
	147-0562	4	Use With Flexible Leak Off Lines	19	147-0780	4	Nut, Hex (M19) Used With 147-0700 Fuel Injector
	147-0700	4	Use With Metal Leak Off Lines				
10	147-0436	4	Seal, Injector				
11	CLAMP, FUEL LINE (Begin Spec B)						
	147-0680	2	Clamps Two Lines				
	147-0679	1	Clamps Four Lines				
12	502-0733	1	Connector				
13	502-0057	1	Tee, Pipe - Special				

FUEL INJECTION PUMP COMPONENTS

Code 13AA (2600-2400 RPM Variable)
 Code 13AB (3600-3200 RPM Variable, 12 Volt)
 Code 13AB (3600 RPM Variable, ETSO, Manual Override, 24 Volt)
 Code 13AC (1800 RPM Fixed)
 Code 13AD (3000 RPM Fixed)
 Code 13AE (1500 RPM Fixed)

Code 13AF (3600-3200 RPM Variable, Jet A Fuel)
 Code 13AJ (3000-2800 RPM Variable)
 Code 13AK (2600-2400 RPM Variable)
 Code 13AP (3600 RPM Fixed)
 Code 13BE (1800 RPM Variable, Mobile Application)



NOTE: Component part numbers listed below do not apply to Code 13AB injection pump (147-0462-15) with 24 Volt application or Code 13BE injection pump (147-0462-17). Component part numbers for these pumps were not available at time of printing.

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
	PUMP, FUEL INJECTION (See Fuel Injection Group)		
1	147-0592	1	Strap, Terminal Grounding
2	SOLENOID AND FRAME KIT		
	147-0593	1	All Codes Except 13AC and 13AE
			Code 13AC and 13AE, Energize to Run
	147-0593	1	12 Volt
	147-0703	1	24 Volt
	147-0704	1	32 Volt
3	147-0591	2	Washer, Terminal Insulating
4	147-0590	1	Gasket, Governor Cover
5	147-0589	1	Clip, Shaft Retaining
6	147-0588	2	Seal, Throttle Shaft

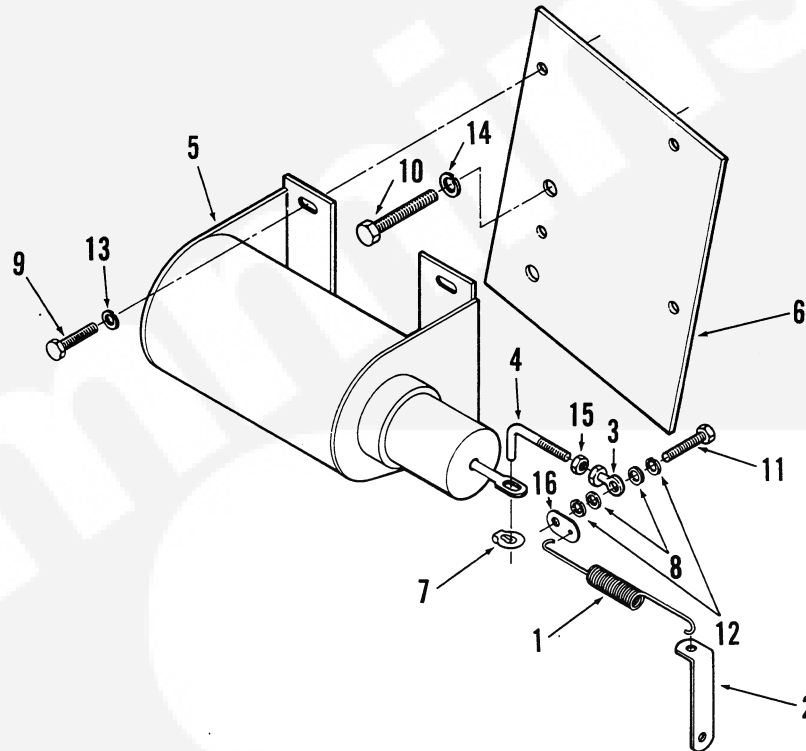
REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
7	147-0587	2	Washer, Throttle Shaft Seal
8	147-0586	1	Washer, Guide Stud
9	147-0585	1	Gasket, Timing Line Cover
10	147-0584	1	Seal, Return Line Connector
11	147-0583	1	Seal, Locking Plate
12	147-0582	2	Seal, Pivot Shaft
13	147-0581	1	Seal, Advance Screw Hole Plug
14	147-0580	2	Seal, Head Locating Screws
15	147-0579	1	Connector, Return Line
16	147-0578	1	Nut, Drive Shaft
17	509-0265	1	Seal, Pilot Tube

NOTE: For component parts not listed contact manufacturer shown on nameplate.

SOLENOID

Code 13BF (Two Speed)

5100-1055



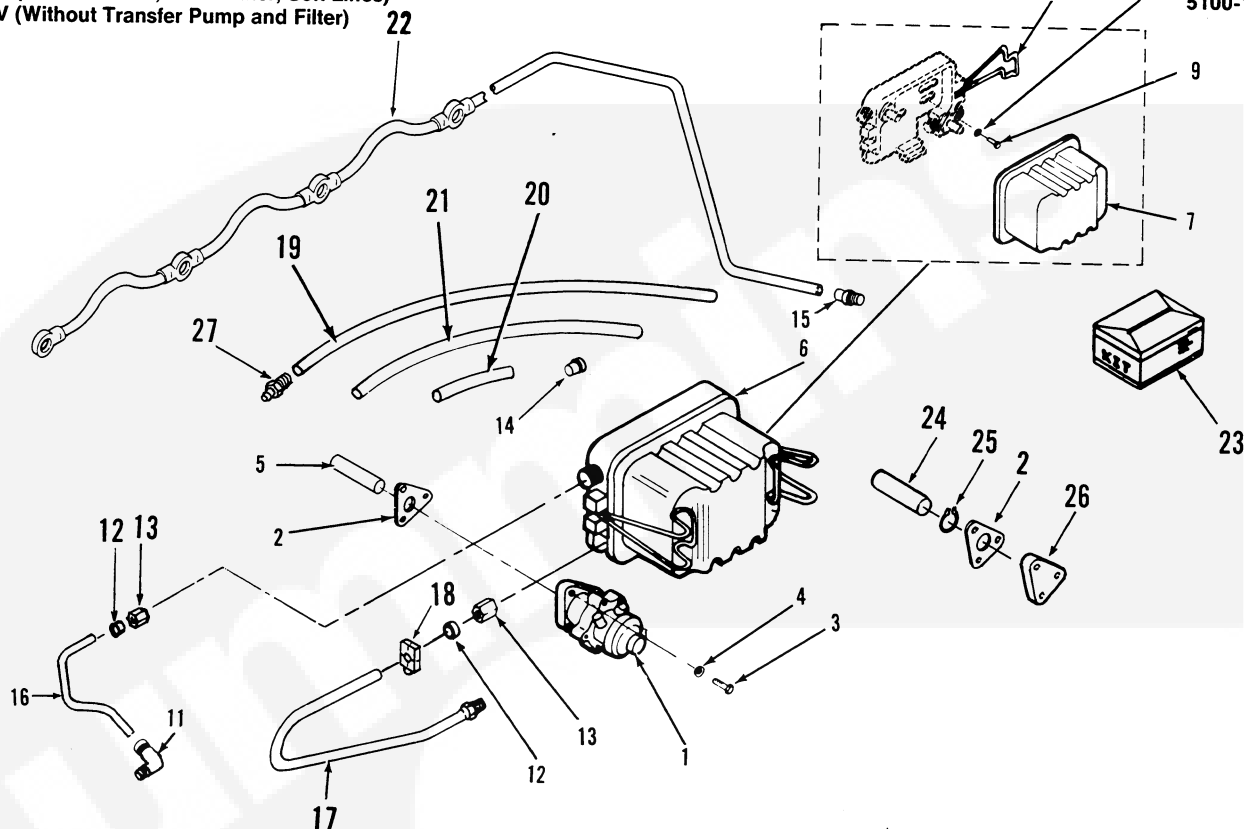
ES-1657

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	150-2056	1	Spring, Throttle Return
2	150-2057	1	Bracket, Spring
3	150-2120	1	End, Rod
4	150-2142	1	Linkage
5	307-2515	1	Solenoid
6	307-2516	1	Bracket, Mounting
7	518-0052	1	Clip, Rod End
8	526-0015	2	Washer, Flat (1/4")
9	800-2029	4	Screw, Cap - Hex Head (M6 x 12 MM)
10	800-2085	2	Screw, Cap - Hex Head (M10 x 20 MM)
11	800-0007	1	Screw, Cap - Hex Head (1/4-20 x 1")
12	850-0040	2	Washer, Lock-Spring (1/4")
13	850-2006	4	Washer, Lock-Spring (M6)
14	850-2010	2	Washer, Lock-Spring (M10)
15	115-0025	1	Nut, Hex (1/4-28)
16	150-2143	1	Bracket, Spring

FUEL SYSTEM

Code 15AA (Low Pressure, Metal Filter, Soft Lines)
 Code 15AC (Without Transfer Pump)
 Code 15AH (Low Pressure, Metal Filter and Lines)
 Code 15AP (Low Pressure, Metal Filter, Soft Lines)
 Code 15AV (Without Transfer Pump and Filter)

5100-0017
 5100-0142
 5100-0299
 5100-1095



FS-1260

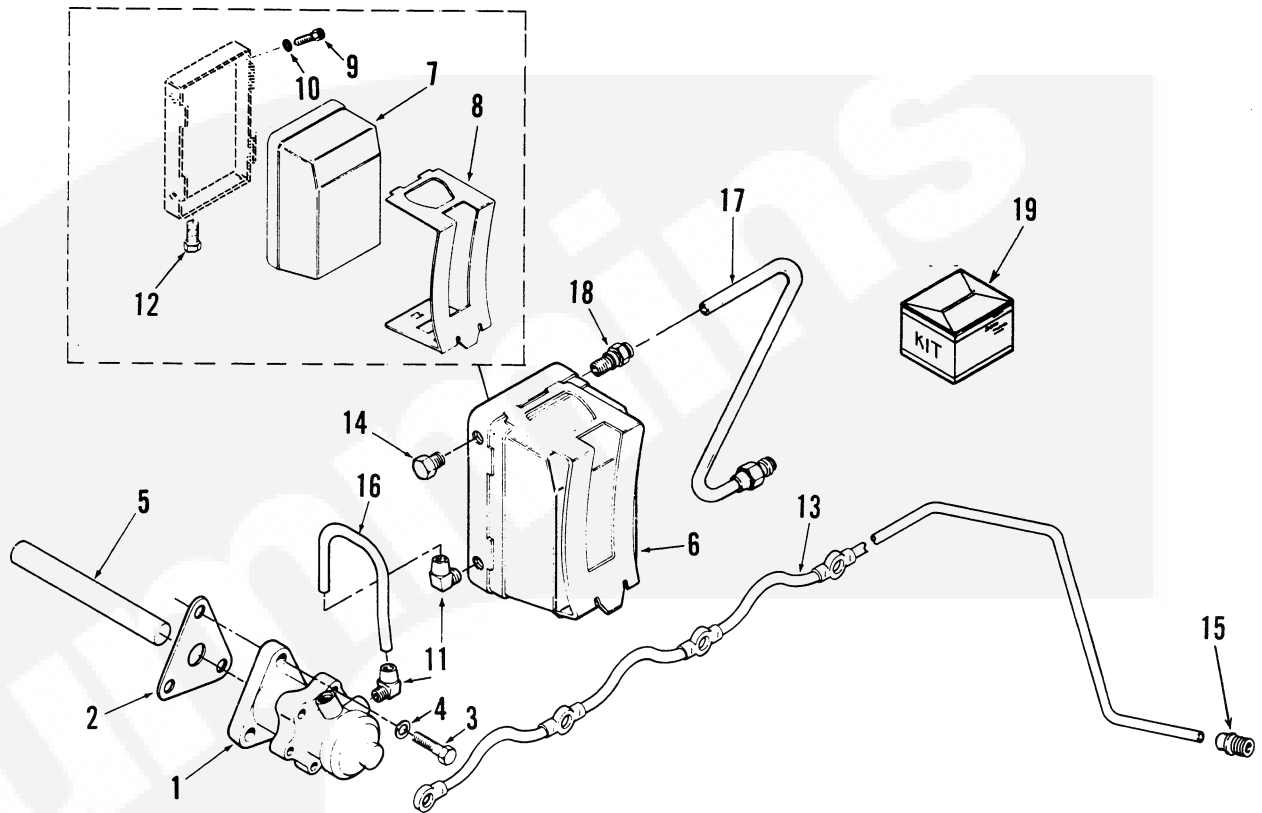
REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	149-2067	1	Pump Kit, Fuel Transfer (Includes Mounting Gasket) Code 15AA, 15AH, 15AP
2	149-1728	1	Gasket, Mounting
3	SCREW, CAP - HEX HEAD 718-1021	3	M6 x 20 MM - Code 15AA, 15AH, 15AP
	718-1020	3	M6 x 16 MM - Code 15AC, 15AV
4	740-1004	3	Washer, Flat (M6)
5	149-1732	1	Rod, Push - Code 15AA, 15AH, 15AP
6	149-1759	1	Filter Assembly (Includes Filter, Base, Clips and Grommet) Code 15AA, 15AC, 15AH, 15AP
7	149-1758	1	Filter, Fuel - Code 15AA, 15AC, 15AH, 15AP
8	149-1771	2	Clip, Fuel Filter - Code 15AA, 15AC, 15AH, 15AP
9	725-1074	2	Screw, Cap - Socket Head (M10 x 20 MM) - Code 15AA, 15AC, 15AH, 15AP
10	740-1008	2	Washer, Flat (M10) Code 15AA, 15AC, 15AH, 15AP
11	502-0774	1	Elbow, Fuel Pump Outlet (Includes Sleeve and Nut) - Code 15AA, 15AH, 15AP
12	SLEEVE, FLARELESS LINE 502-0768	2	Code 15AA, 15AH, 15AP
	502-0768	1	Code 15AC
13	NUT, FLARELESS LINE 502-0769	2	Code 15AA, 15AH, 15AP
	502-0769	1	Code 15AC

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
14	502-0736	1	Plug - Code 15AA, 15AC, 15AP, 15AV
15	502-0830	1	Connector, Male - Flareless Tube (Includes Sleeve and Nut) - Code 15AH
16	149-1772	1	Line, Fuel - Code 15AA, 15AH, 15AP
17	149-1793	1	Line, Fuel - Code 15AA, 15AC, 15AH, 15AP
18	149-1800	1	Grommet, Fuel Line - Code 15AA, 15AC, 15AH, 15AP
19	503-1055	1	Line, Fuel Return (Flexible) 380 MM Long - Code 15AA, 15AC, 15AP, 15AV
20	503-1054	1	Line, Fuel Return (Flexible) 25 MM Long - Code 15AA, 15AC, 15AP, 15AV
21	503-1053	3	Line, Fuel Return (Flexible) 180 MM Long - Code 15AA, 15AC, 15AP, 15AV
22	147-0664	1	Tube, Nozzle Leak Off - Code 15AH
23	149-2069	1	Repair Package - Fuel Pump - Code 15AA, 15AH, 15AP
24	149-1744	1	Plug, Push Rod - Code 15AC, 15AV
25	518-0413	1	Ring, Retaining - Code 15AC, 15AV
26	149-1745	1	Plate, Fuel Pump Opening in Cylinder Block - Code 15AC, 15AV
27	502-0738	1	Connector, Male - Barbed - Code 15AA, 15AC, 15AP

FUEL SYSTEM

Code 15AG (Low Pressure, Metal Filter and Lines, with Drain)

5100-0576



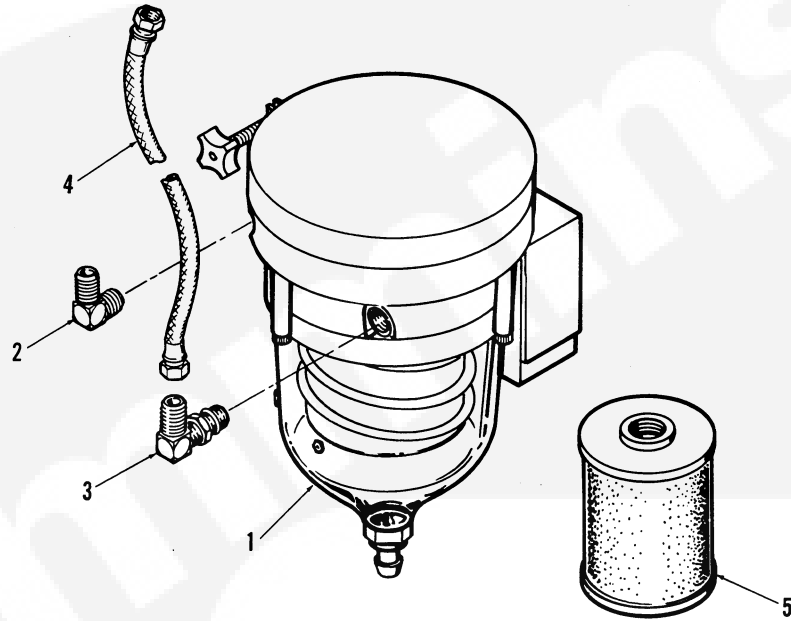
XFS-1555-1

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	149-2067	1	Pump Kit, Transfer (Includes Mounting Gasket)
2	149-1728	1	Gasket, Fuel Transfer Pump
3	718-1021	3	Screw, Cap - Hex Head (M6 x 20 MM)
4	740-1004	3	Washer, Flat (M6)
5	149-1732	1	Pushrod, Fuel Transfer Pump
6	149-1803	1	Filter Assembly (Includes Filter, Base, and Clamp)
7	149-1802	1	Filter, Fuel
8	149-1801	1	Clamp, Fuel Filter
9	725-1074	2	Screw, Cap - Socket Head (M10 x 20 MM)
10	740-1008	2	Washer, Flat (M10)
11	502-0774	2	Elbow, Flareless Tube Fitting (Includes Sleeve and Nut)
12	502-0028	1	Plug, Filter Drain (1/8")
13	147-0664	1	Tube, Nozzle Leak Off
14	502-0153	2	Plug (1/4")
15	502-0830	1	Connector, Male (Includes Sleeve and Nut)
16	149-1797	1	Line, Fuel
17	149-1980	1	Line, Fuel
18	502-0773	1	Connector, Flareless (Includes Sleeve and Nut)
19	149-2069	1	Repair Package - Transfer Pump

WATER SEPARATOR

Code 15AD

5100-0339



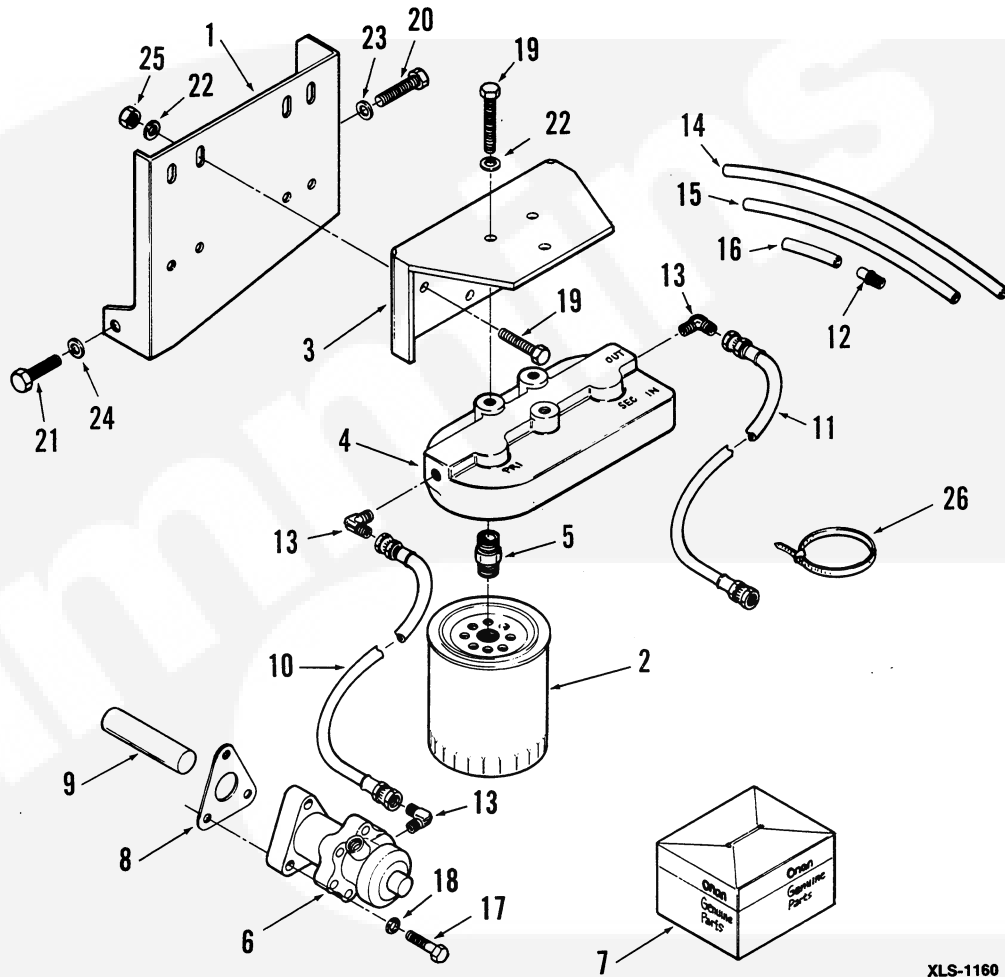
FS-1500

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	149-1866	1	Separator, Water
2	502-0041	1	Elbow, Inverted Male
3	502-0840	1	Elbow, O-Ring Boss
4	501-0450	1	Line, Flexible - Fuel
5	149-1865	1	Element, Water Separator

FUEL SYSTEM

Code 15AW (Low Pressure, Dual Element)

5100-1054



XLS-1160

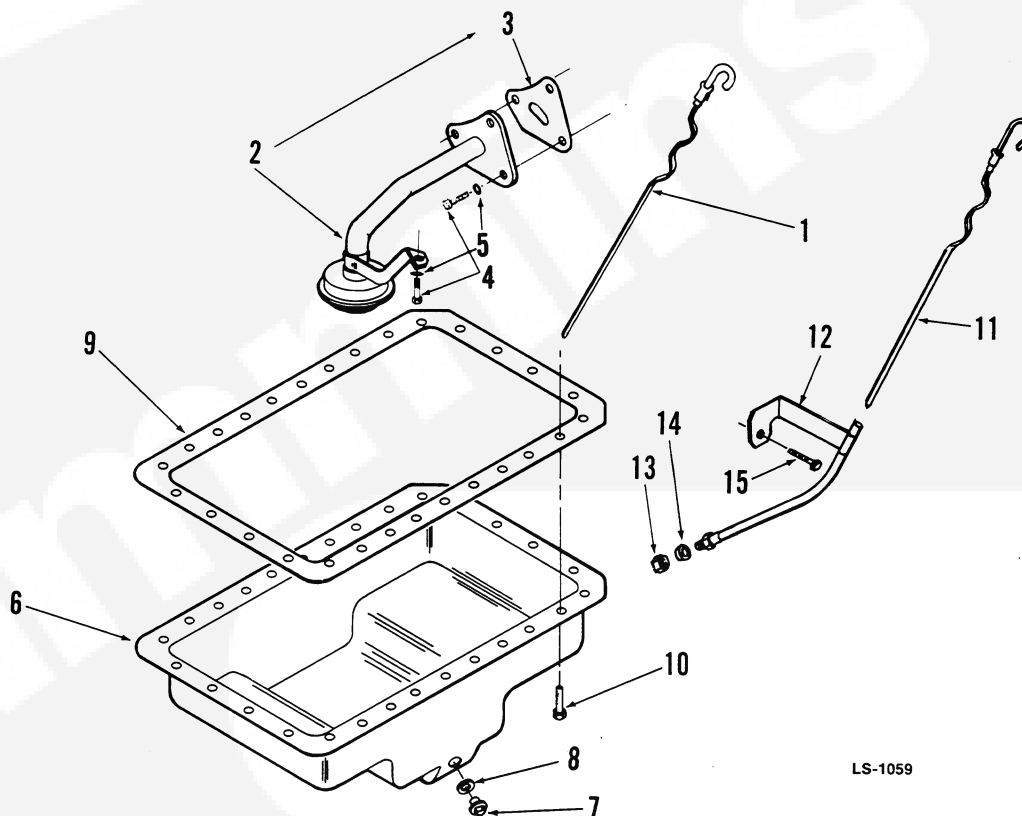
REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	140-1772	1	Bracket, Mounting
2	FILTER, FUEL		
	149-2053	1	Primary
	149-2054	1	Secondary
3	149-2056	1	Bracket, Mounting
4	149-2055	1	Adapter, Fuel Filter
5	INSERT		
	149-2057	1	Primary Filter
	149-2058	1	Secondary Filter
6	149-2067	1	Pump, Fuel Transfer (Includes Mounting Gasket)
7	149-2069	1	Repair Package - Fuel Pump
8	149-1728	1	Gasket, Fuel Pump
9	149-1732	1	Pushrod, Fuel Pump
10	501-0516-05	1	Line, Fuel - Flexible (14")
11	501-0516-11	1	Line, Fuel - Flexible (20")
12	502-0736	1	Plug
13	502-0978-07	3	Elbow, Male (90°)

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
14	503-1055	1	Line, Fuel Return (Flexible) 380 MM Long
15	503-1053	3	Line, Fuel Return (Flexible) 180 MM Long
16	503-1054	1	Line, Fuel Return (Flexible) 25 MM Long
17	718-1021	3	Screw, Cap - Hex Head (M6 x 20 MM)
18	740-1004	3	Washer, Flat (M6)
19	800-2058	6	Screw, Cap - Hex Head (M8 x 25 MM)
20	800-2086	2	Screw, Cap - Hex Head (M10 x 25 MM)
21	800-2112	1	Screw, Cap - Hex Head (M12 x 30 MM)
22	850-2008	6	Washer, Lock-Spring (M8)
23	850-2010	2	Washer, Lock-Spring (M10)
24	850-2012	1	Washer, Lock-Spring (M12)
25	870-2055	3	Nut, Lock (M8)
26	332-0941	2	Tie, Cable

OIL PAN

Code 17AA (20° Tilt - Drain to Accessory Side)
 Code 17AB (30° Tilt - Drain to Accessory Side)
 Code 17AC (20° Tilt - Drain to Front)
 Code 17AD (30° Tilt - Drain to Front)
 Code 17AE (20° Tilt - Drain to Rear)
 Code 17AF (30° Tilt - Drain to Rear)

Code 17AG (20° Tilt - Drain to Non-Accessory Side)
 Code 17AH (30° Tilt - Drain to Non-Accessory Side)
 Code 17AN (20° Tilt - Drain to Accessory Side)
 Code 17AP (20° Tilt - Drain to Front and Accessory Side)
 Code 17BF (20° Tilt - Drain to Front and Accessory Side - Damped)
 Code 17CB (Indicator Tube - Extended)



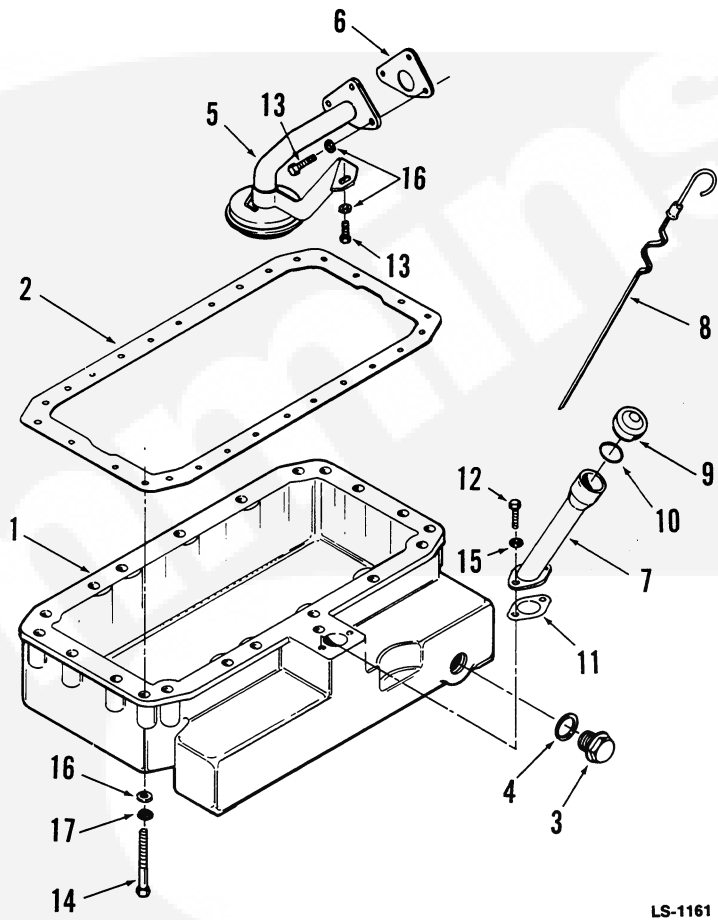
REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	INDICATOR, OIL LEVEL (Not Used With Code 17CB) 123-1439	1	Code 17AA, 17AC, 17AE, 17AG, 17AN, 17AP, 17BF
	123-1541	1	Code 17AB, 17AD, 17AF, 17AH
2	CUP AND TUBE KIT, OIL PICKUP (Includes Gasket) 120-1007	1	Code 17AB, 17AD, 17AF, 17AH
	120-1008	1	Code 17AA, 17AC, 17AE, 17AG, 17AN, 17AP, 17BF
3	120-0917	1	Gasket, Oil Pickup
4	SCREW, CAP - HEX HEAD 718-1044	2	M8 × 60 MM
	718-1036	2	M8 × 20 MM
5	740-1006	4	Washer, Flat (M8)
6	PAN, OIL 102-1188	1	Code 17AA, 17AC, 17AE, 17AN, 17AG, 17AP (Includes Adapter, Plugs and Oil Drain Gaskets)
	102-1189	1	Code 17AB, 17AD, 17AF, 17AH (Includes Plugs and Oil Drain Gaskets)
	102-1272	1	Code 17BF (Includes Adapter, Plugs and Oil Drain Gaskets)

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
7	PLUG, OIL DRAIN 102-1047	1	Early Models (Prior to July 1983) - 12 MM
	102-1146	1	Late Models (Begin July 1983) - 18 MM
	102-1146	2	Code 17BF
8	GASKET, OIL DRAIN PLUG 102-1046	1	Early Models (Prior to July 1983) - 12 MM Plug
	102-1147	1	Late Models (Begin July 1983) - 18 MM Plug
	102-1147	2	Code 17BF
9	102-0981	1	Gasket, Oil Pan
10	815-0547	28	Screw, Cap - Hex Head (Includes Washer) - M8 × 20 MM
11	123-1755	1	Indicator, Oil Level - Code 17CB
12	123-1750	1	Tube, Oil Level - Code 17CB
13	502-0967	1	Nut, Flareless Tube - Code 17CB
14	502-0966	1	Sleeve, Flareless Tube - Code 17CB
15	718-1020	1	Screw, Cap - Hex Head (M6 × 16 MM) Code 17CB

OIL BASE

Code 17BT

5100-1052



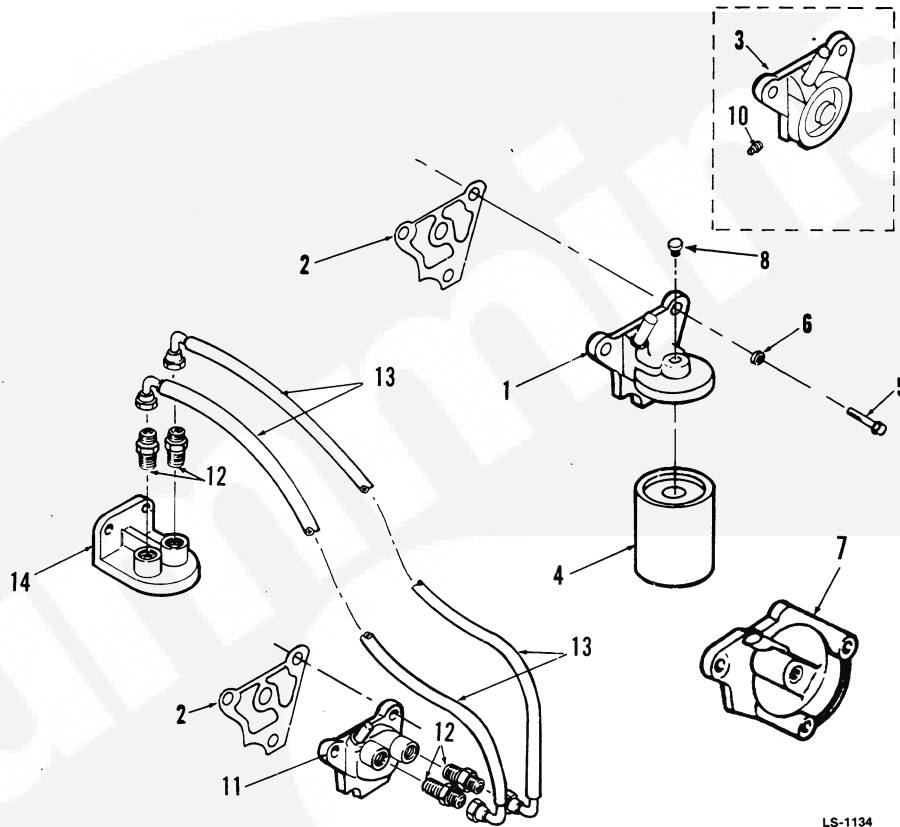
LS-1161

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	102-1285	1	Base, Oil
2	102-1300	1	Gasket, Oil Base
3	102-1301	1	Plug, Oil Drain
4	102-1302	1	Gasket, Drain Plug
5	120-1008	1	Pickup Kit, Oil (Includes Gasket)
6	120-0917	1	Gasket, Oil Pickup
7	123-0568	1	Tube, Oil Fill
8	123-1700	1	Indicator, Oil Level
9	123-1719	1	Cap, Oil Fill (Includes Gasket)
10	123-0191	1	Gasket, Oil Fill Cap
11	141-0078	1	Gasket, Oil Fill Tube
12	718-1020	2	Screw, Cap - Hex Head (M6 x 16 MM)
13	SCREW, CAP - HEX HEAD		
	718-1036	2	M8 x 20 MM
	718-1044	2	M8 x 60 MM
14	SCREW, CAP - HEX HEAD		
	718-1038	10	M8 x 30 MM
	718-1048	10	M8 x 80 MM
15	740-1004	2	Washer, Flat (M6)
16	740-1006	24	Washer, Flat (M8)
17	526-2110	24	Washer, Lock-Spring (M8)

OIL FILTER

Code 17AJ (Vertical Down)
Code 17AK (Horizontal)
Code 17AS (Remote Filter)
Code 17AW (45°)

5100-0383
5100-0454
5100-0539
5100-0802



LS-1134

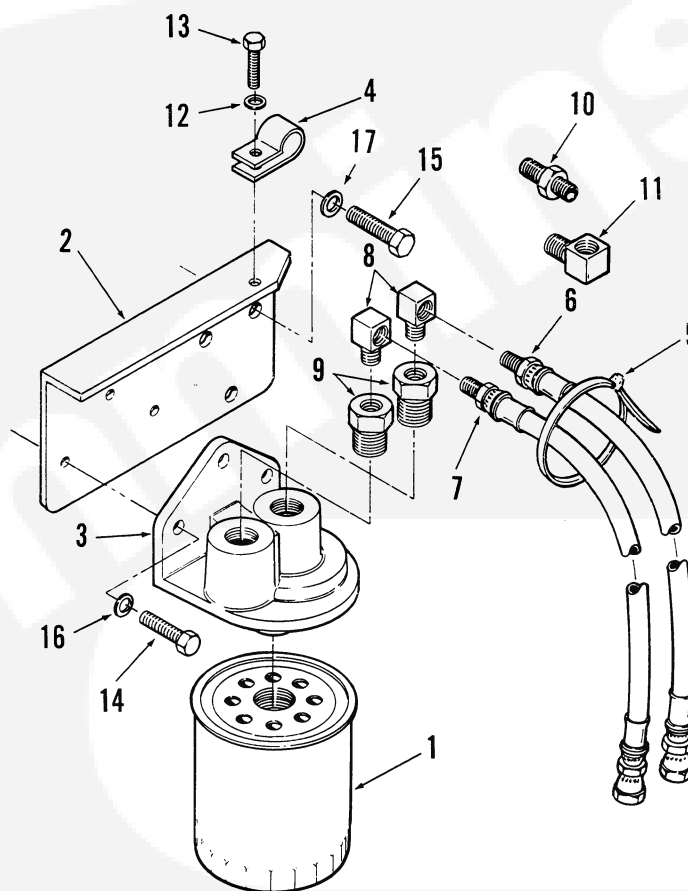
REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	ADAPTER, OIL FILTER (Includes Gasket) - Code 17AJ		
	122-0568	1	Spec A
	122-0613	1	Begin Spec B
2	122-0635	1	Gasket, Adapter
3	ADAPTER, OIL FILTER (Includes Gasket) - Code 17AK		
	122-0567	1	Spec A
	122-0614	1	Begin Spec B
4	122-0550	1	Filter, Oil
5	SCREW, CAP		
	725-1051	3	Socket Head (M8 × 25 MM) Code 17AJ
	718-1040	2	Hex Head (M8 × 40 MM) Code 17AK
	725-1053	1	Socket Head (M8 × 35 MM) Code 17AK
	718-1040	3	Hex Head (M8 × 40 MM) Code 17AS
	718-1804	2	Hex Head (M8 × 110 MM) Code 17AW
	718-1037	1	Hex Head (M8 × 25 MM) Code 17AW

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
6	WASHER, FLAT (M8)		
	526-2108	3	Code 17AJ, 17AS, 17AW
	526-2108	2	Code 17AK
	740-1802	1	Code 17AK
7	122-0606	1	Adapter, Oil Filter - Code 17AW
8	505-0274	1	Plug, Pipe - Countersunk (1/8")
10	505-0266	1	Plug, Pipe - Countersunk (3/8") Code 17AK (Use Began During Spec B)
11	ADAPTER, OIL FILTER LINES - Code 17AS		
	122-0564	1	Spec A
	122-0612	1	Begin Spec B
12	502-0873	4	Adapter, Oil Lines - Code 17AS
13	501-0479	2	Line, Oil - Code 17AS
14	122-0581	1	Base, Oil Filter - Code 17AS

OIL BYPASS FILTER

Code 17BM

5100-1056



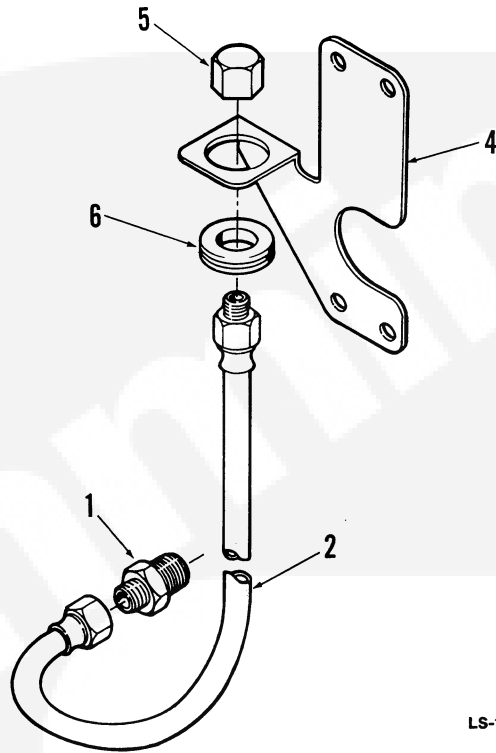
LS-1159

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	122-0669	1	Filter, Oil Bypass
2	122-0670	1	Bracket, Mounting
3	122-0675	1	Base, Oil Filter
4	332-0051	1	Clip, Wire
5	332-0941	1	Tie, Cable
6	501-0515-09	1	Line, Oil - Flexible (18")
7	501-0515-14	1	Line, Oil - Flexible (23")
8	502-0020	2	Elbow, Street (90°)
9	502-0029-03	2	Bushing, Reducer (1/2" to 1/8")
10	502-0137	1	Connector, Male
11	502-0138	1	Elbow, Male
12	526-2060	1	Washer, Flat (M5)
13	800-2004	1	Screw, Cap - Hex Head (M5 × 12 MM)
14	800-2057	3	Screw, Cap - Hex Head (M8 × 20 MM)
15	800-2111	3	Screw, Cap - Hex Head (M12 × 25 MM)
16	850-2008	3	Washer, Lock-Spring (M8)
17	850-2012	3	Washer, Lock-Spring (M12)

REMOTE OIL DRAIN

Code 17BA

5100-0571



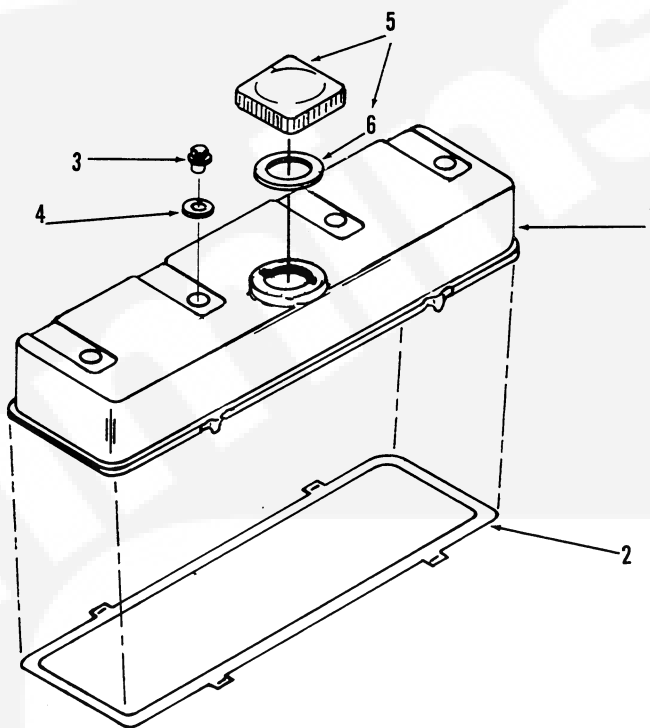
LS-1135

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	102-1237	1	Adapter, Oil Drain
2	501-0478	1	Line, Oil Drain
4	102-1235	1	Bracket, Oil Drain
5	502-0876	1	Cap, Pipe
6	508-0250	1	Grommet

OIL FILLER - ROCKER COVER

Code 17AL (Top Center)
Code 17AM (Top Center and Side Gearcase)

5100-0078



LS-1060

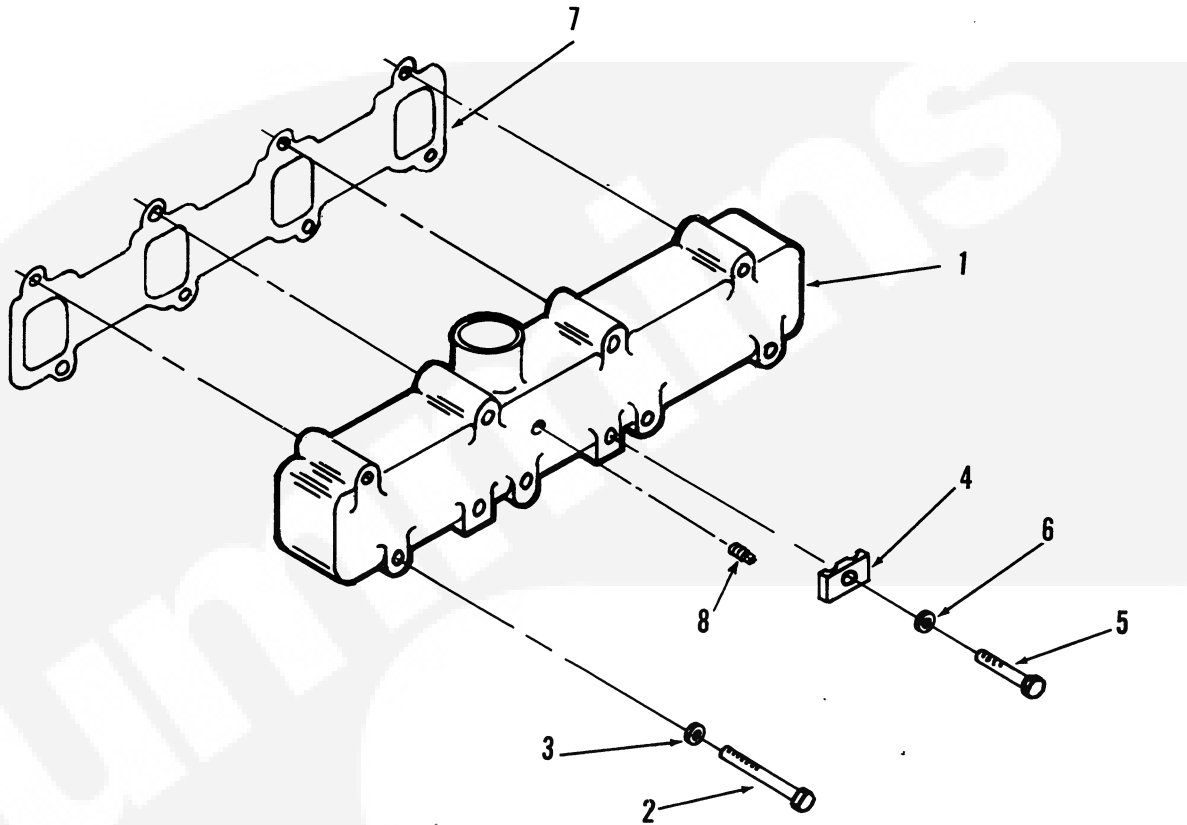
REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	115-0345	1	Cover, Rocker
2	115-0254	1	Gasket, Rocker Cover
3	115-0320	4	Capnut, Rocker Cover
4	115-0232	4	Gasket, Capnut
5	123-1605	1	Cap, Oil Fill (Includes Gasket)
6	123-1518	1	Gasket, Oil Fill Cap

NOTE: Additional parts for Code 17AM will be found in the Gearcase Group.

INTAKE MANIFOLD

Code 19AA (Center Up)

5100-0013
5100-0480

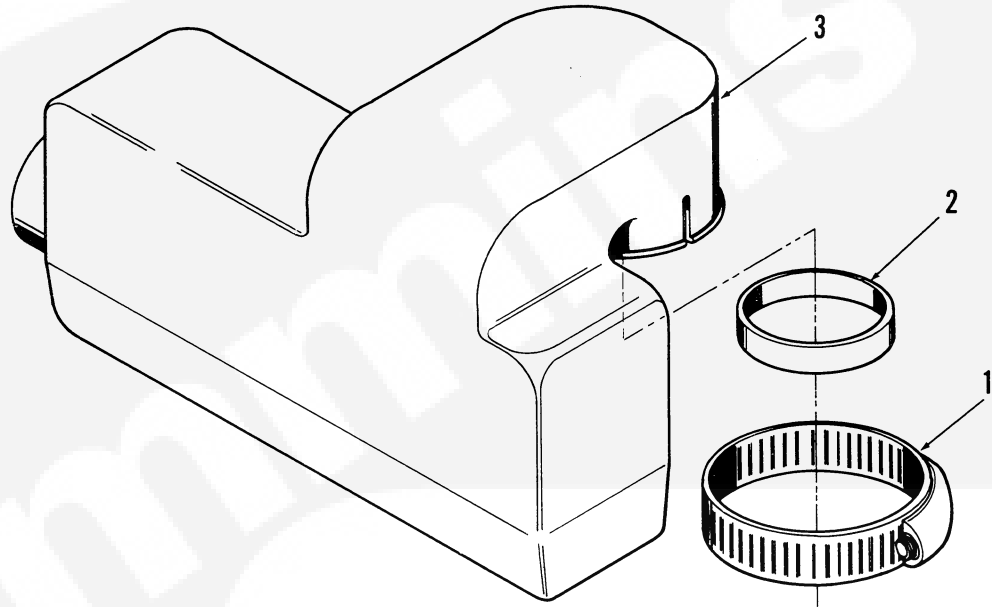


EXS-1050

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	154-2460	1	Manifold Kit, Intake (Includes Plug)
2	718-1801	8	Screw, Cap - Hex Head (M8 × 85 MM) Engines Without Code 31AL
3	740-1006	8	Washer, Flat (M8)
4	147-0438	4	Clamp, Injection Lines - Spec A
5	718-1022	2	Screw, Cap - Hex Head (M6 × 25 MM) - Spec A
6	740-1004	2	Washer, Flat (M6) - Spec A
7	154-2261	1	Gasket, Intake Manifold
8	505-0274	1	Plug, Pipe - Countersunk (1/8")

AIR SILENCER

Code 19AG



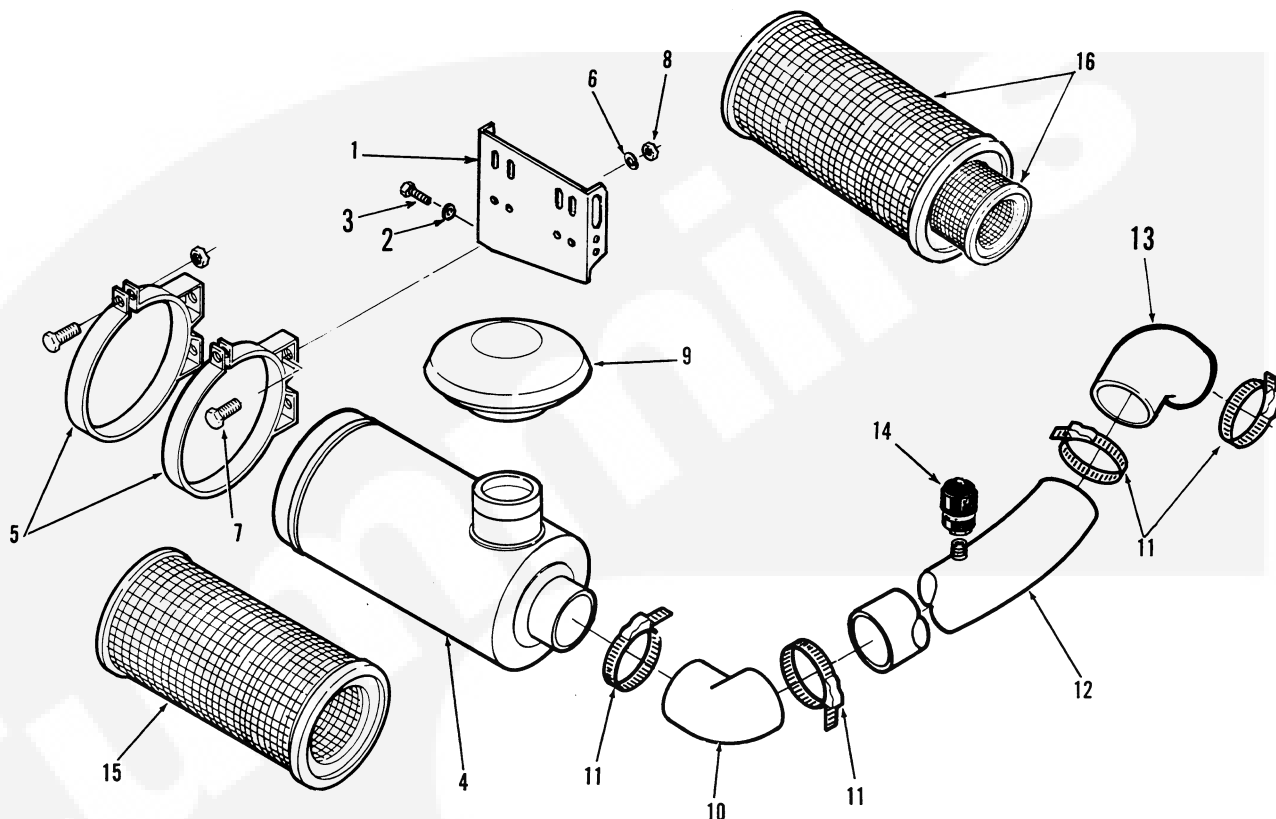
EXS-1101

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	503-0648	1	Clamp
2	140-1857	1	Sleeve
3	140-1848	1	Silencer, Air Intake

AIR CLEANER

Code 19AB (Medium Duty - Unhoused Power Unit)
 Code 19AC (Heavy Duty - Dual Stage - Not Mounted)
 Code 19AY (Single Stage)

5100-0183
 5100-1132



XFS-1383

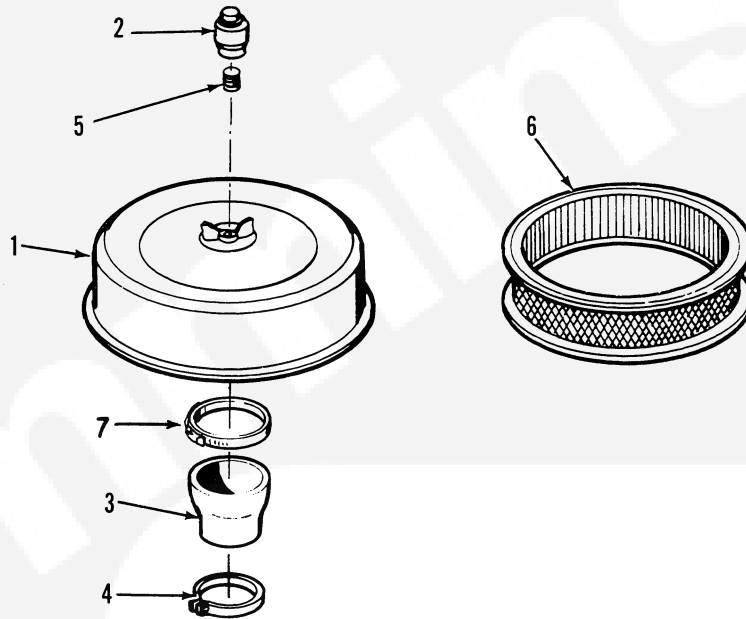
REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	140-1772	1	Bracket, Air Cleaner Mounting - Code 19AB, 19AY
2	740-1010	1	Washer, Flat - Hardened (M12) - Code 19AB, 19AY
3	718-1073	1	Screw, Cap - Hex Head (M12 x 25 MM) - Code 19AB, 19AY
4	CLEANER, AIR (Includes Element)		
	140-1786	1	Codes 19AB, 19AY
	140-1541	1	Code 19AC
5	140-0078	2	Band, Air Cleaner
6	740-1006	4	Washer, Flat-Hardened (M8) - Code 19AB, 19AY
7	718-1036	4	Screw, Cap - Hex Head (M8 x 20 MM) - Code 19AB, 19AY
8	750-1006	4	Nut, Hex (M8) - Code 19AB, 19AY
9	HOOD, AIR INLET		
	140-1787	1	Codes 19AB, 19AY
	140-1435	1	Code 19AC

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
10	140-1775	1	Elbow, 90° - Code 19AB, 19AY
11	CLAMP, HOSE		
	503-1143	1	Code 19AB
	503-0354	3	Code 19AB
	503-1143	3	Code 19AY
12	TUBE, AIR INLET		
	140-1801	1	Code 19AB
	140-2119	1	Code 19AY
13	ELBOW, REDUCER		
	503-1084	1	Code 19AB
	140-1785	1	Code 19AY
14	140-1791	1	Indicator, Service - Code 19AB, 19AY
15	140-1204	1	Element, Air Cleaner - Code 19AB, 19AY
16	ELEMENT, AIR CLEANER		
	140-1540	1	Primary
	140-1539	1	Secondary

AIR CLEANER

Code 19AJ

5100-0106



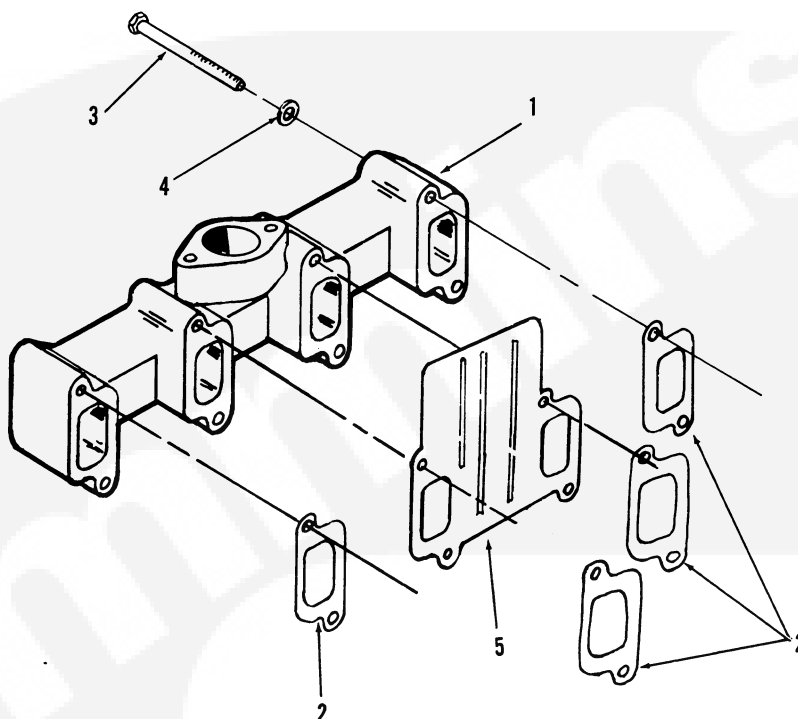
FS-1385

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	140-1091	1	Cleaner, Air (Includes Element)
2	140-0961	1	Indicator, Service
3	503-1181	1	Hose, Air Cleaner
4	503-0465	1	Clamp, Hose
5	505-0098	1	Nipple, Pipe
6	140-1089	1	Element, Air Cleaner
7	503-0648	1	Clamp, Hose

EXHAUST MANIFOLD

Code 21AA (Center Up)
Code 21AB (Center Down)

5100-0028
5100-0161



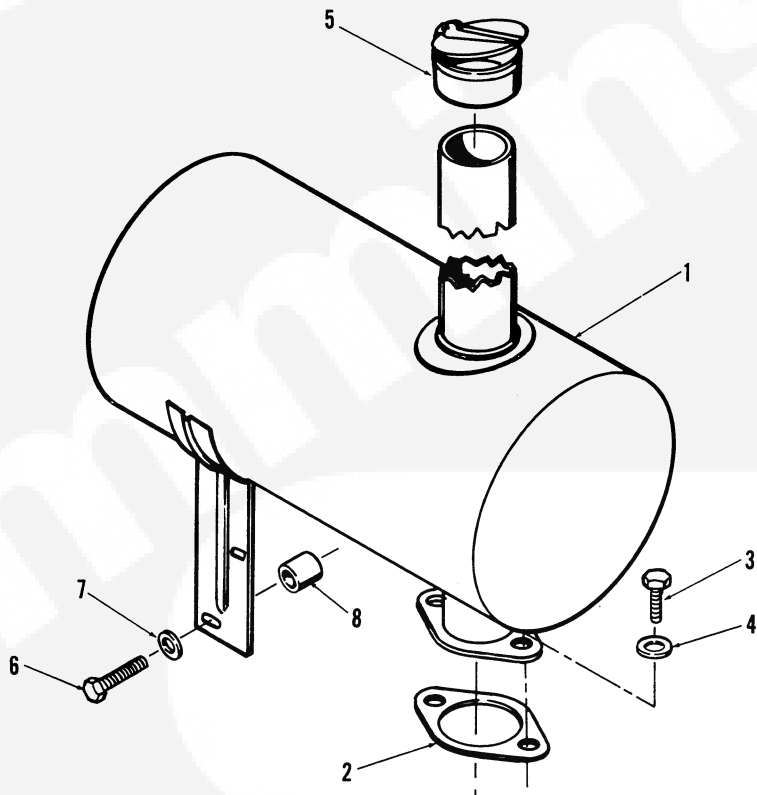
EXS-1051

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	154-2388	1	Manifold, Exhaust
2	GASKET, EXHAUST MANIFOLD		
	154-2162	2	21AA
	154-2162	4	21AB
3	SCREW, CAP - HEX HEAD		
	800-2524	8	Late Models (M8 × 90 MM)
	718-1048	8	Early Models (M8 × 80 MM)
4	740-1006	8	Washer, Flat (M8)
5	154-2325	1	Gasket, Exhaust Manifold - Code 21AA

MUFFLER

Code 21AC (Horizontal)

5100-0372



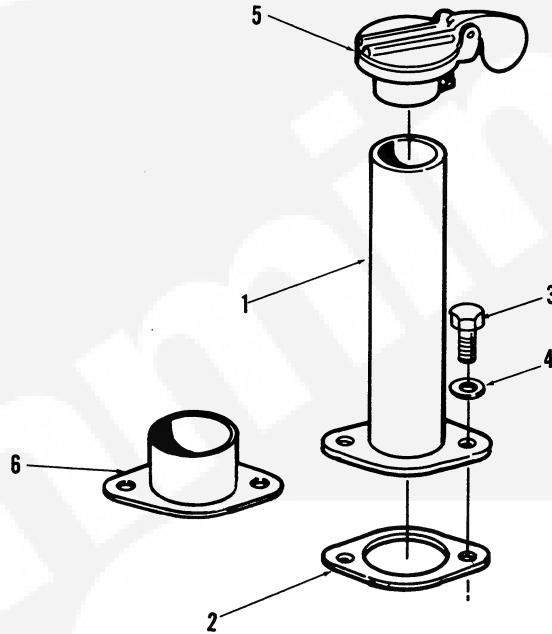
XS-1091

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	155-1967	1	Muffler, Exhaust
2	155-1920	1	Gasket, Muffler Mounting
3	718-1054	2	Screw, Cap - Hex Head (M10 × 25 MM)
4	740-1008	2	Washer, Flat (M10)
5	155-0986	1	Cap, Rain
6	718-1807	2	Screw, Cap - Hex Head - (M8 × 95 MM)
7	850-2008	2	Washer, Flat (M8)
8	155-1964	2	Spacer, Muffler Brace

EXHAUST PIPE

Code 21AD (With Rain Cap)
Code 21AG (Exhaust Flange)
Code 21AJ (Gasket Only)

5100-0190
5100-0285
5100-0338



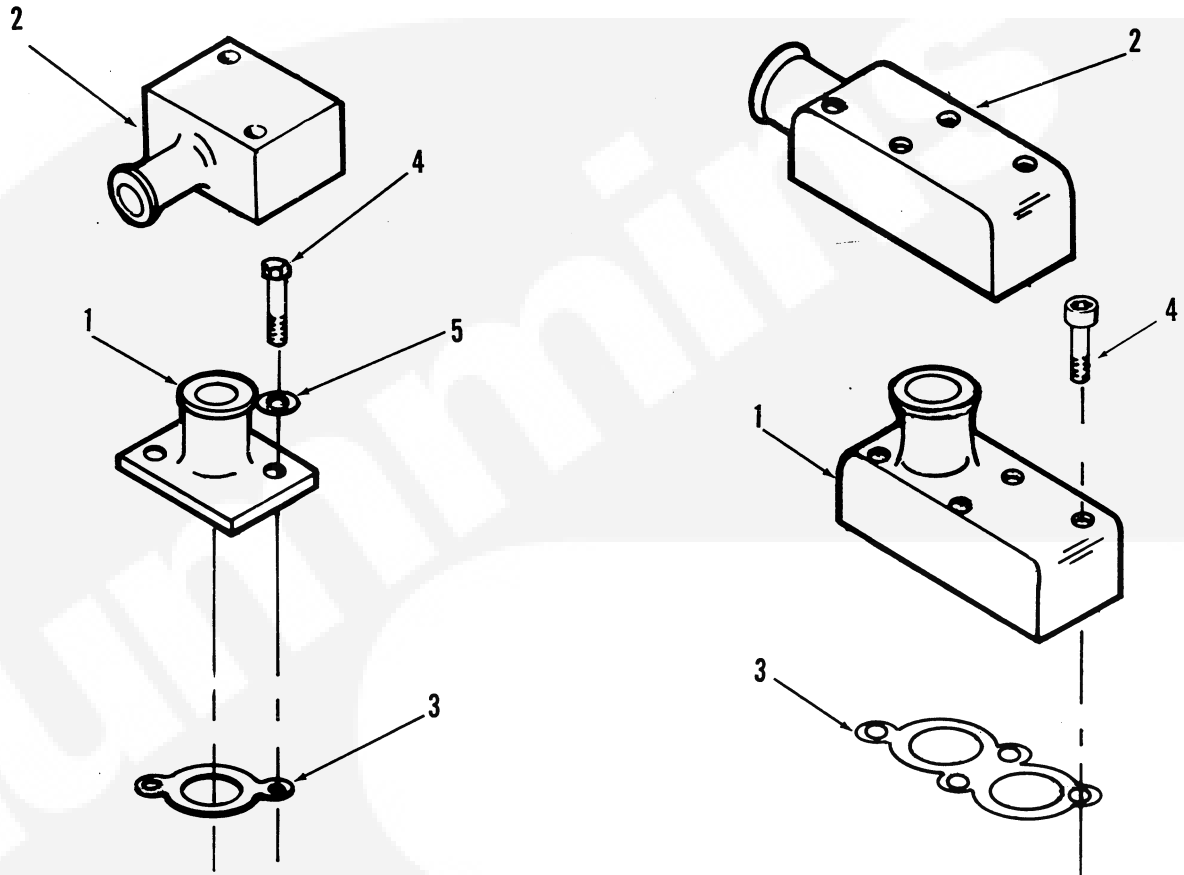
EXS-1065

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	155-1919	1	Pipe, Exhaust - Code 21AD
2	155-1920	1	Gasket
3	718-1054	2	Screw, Cap - Hex Head (M10 × 25 MM) - Code 21AD, 21AG
4	740-1008	2	Washer, Flat (M10) - Code 21AD, 21AG
5	155-0985	1	Cap, Rain - Code 21AD
6	155-1916	1	Flange, Exhaust - Code 21AG

COOLANT OUTLET CONNECTOR

5100-0129

Code 23AA (Vertical, Accessory Side)
Code 23AB (Horizontal, Non-Accessory Side)
Code 23AC (Horizontal, Accessory Side)
Code 23CP (Vertical, Non-Accessory Side)



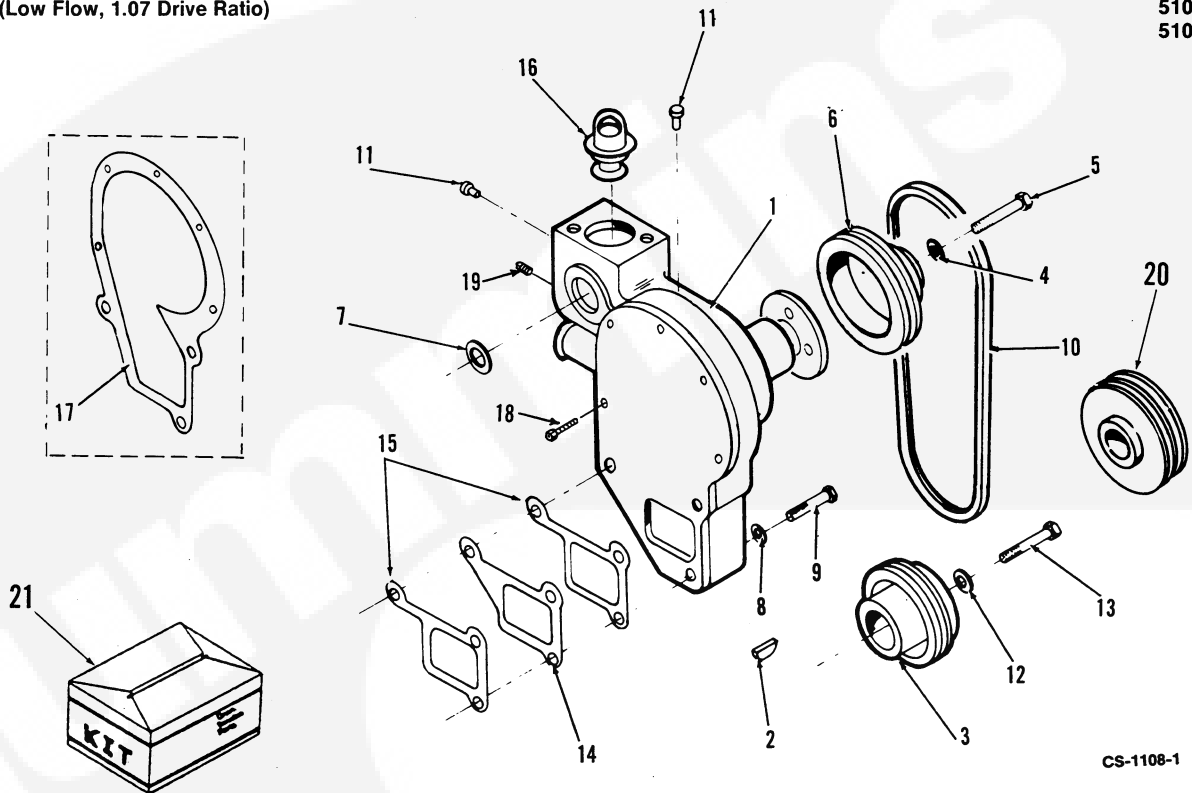
CS-1112-2

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	COVER, THERMOSTAT (Includes Gasket)		
	309-0472	1	Single Thermostat Cover - Code 23AA
	309-0473	1	Double Thermostat Cover - Code 23AA, 23CP
2	COVER, THERMOSTAT (Includes Gasket)		
	309-0471	1	Single Thermostat Cover Code 23AB, 23AC
	309-0475	1	Double Thermostat Cover
3	GASKET, THERMOSTAT COVER		
	309-0417	1	Single Thermostat Cover
	309-0424	1	Double Thermostat Cover
4	SCREW, CAP		
			Hex Head (Single Thermostat Cover)
	718-1037	2	M8 × 25 MM - Code 23AA
	718-1045	2	M8 × 65 MM - Code 23AB, 23AC
			Socket Head (Double Thermostat Cover)
	725-1056	4	M8 × 50 MM - Code 23AA, 23CP
	725-1058	4	M8 × 60 MM - Code 23AB, 23AC
5	740-1006	2	Washer, Flat (M8) Single Thermostat Cover

COOLANT PUMP (SMALL - WITH ONE THERMOSTAT)

Code 23AD (Low Flow, 1.15 Drive Ratio)
 Code 23AE (High Flow, .81 Drive Ratio)
 Code 23BC (Low Flow, 1.29 Drive Ratio)
 Code 23BD (High Flow, 1.15 Drive Ratio)
 Code 23BF (Low Flow, .97 Drive Ratio)
 Code 23DM (Low Flow, 1.07 Drive Ratio)

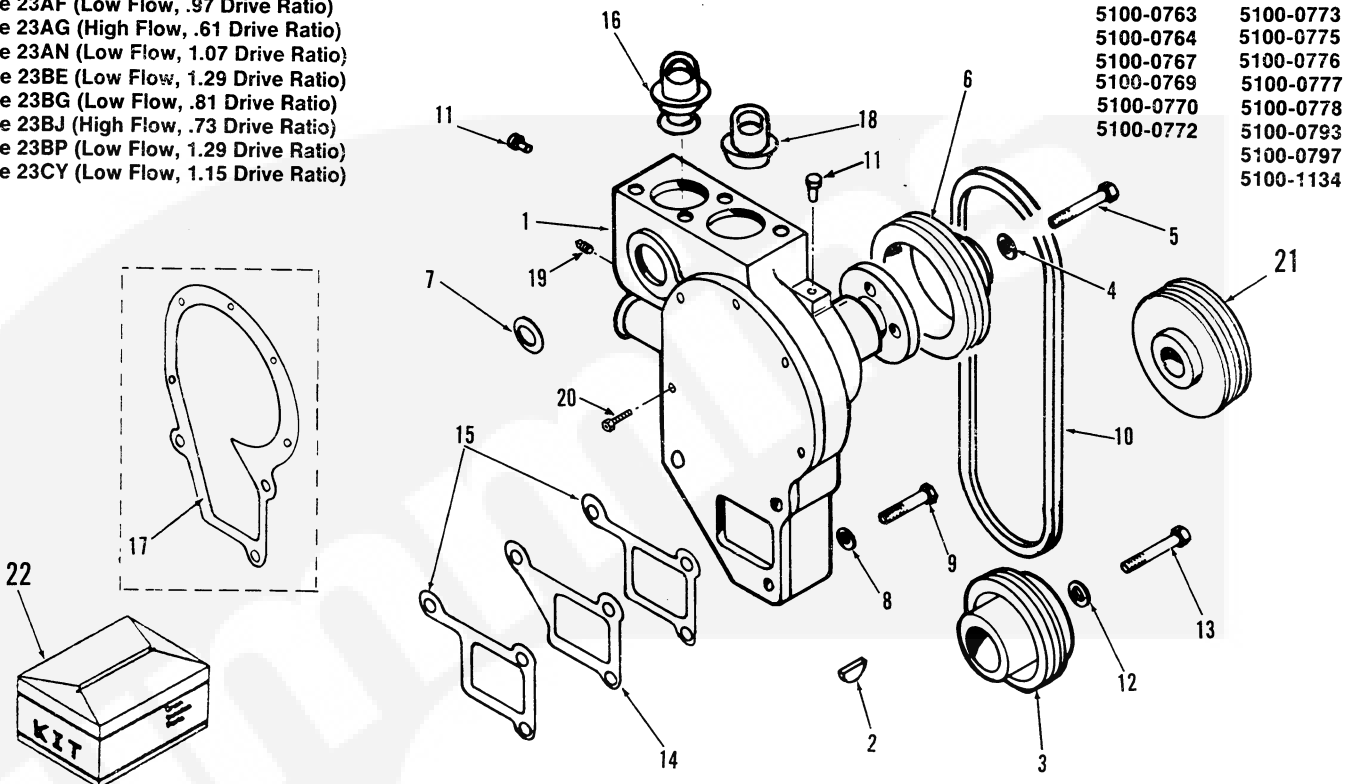
5100-0765
 5100-0766
 5100-0771
 5100-0773
 5100-0775
 5100-0777
 5100-0778



REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	PUMP KIT, COOLANT (Includes Mounting Gaskets)						Code 23BC
	131-0350	1	Code 23AD, 23BC, 23BF, 23DM	511-0147-13	1		High Mounted Alternator
	131-0352	1	Code 23AE, 23BD	511-0147-08	1		Low Mounted Alternator
2	515-0245	1	Key, Pulley				Code 23BF
3	PULLEY, CRANKSHAFT			511-0147-15	1		High and Low Mounted Alternator
			Single Groove	511-0147-17	1		High Mounted Idler Pulley
	104-1470	1	Code 23AD, 23BD	511-0147-12	1		Code 23DM - High Mounted Alternator
	104-1466	1	Code 23AE, 23BF				
	104-1472	1	Code 23BC				
	104-1467	1	Double Groove - Code 23DM	11	502-0775	3	Plug, Brass - Hex Head
4	740-1006	4	Washer, Flat (M8)	12	526-0283	1	Washer, Flat (M8)
5	718-1035	4	Screw, Cap - Hex Head (M8 x 16 MM)	13	720-1123	1	Screw, Cap - Hex Head (M16 x 60 MM)
6	PULLEY, COOLANT PUMP (Single Groove)			14	131-0324	1	Spacer, Coolant Pump
	131-0344	1	Code 23AD, 23AE, 23BD, 23BF	15	131-0294	2	Gasket, Coolant Pump Mounting
	131-0342	1	Code 23BC, 23DM	16	309-0458	1	Thermostat
7	509-0264	1	Seal O-Ring	17	131-0334	1	Gasket, Coolant Pump Backplate
8	740-1006	3	Washer, Flat (M8)	18	815-0612	5	Screw, Countersunk - Flat Head - Torque Drive (Special)
9	718-1044	3	Screw, Cap - Hex Head (M8 x 60 MM)	19	502-0317	1	Plug, Pipe - Hex Head (3/4")
10	BELT, COOLANT PUMP AND ALTERNATOR DRIVE			20	PULLEY, ALTERNATOR (Single Groove)		
			Code 23AD, 23BD		191-1339	1	Code 23AD, 23BC, 23BD, 23BF
	511-0147-03	1	High Mounted Alternator		191-1338	1	Code 23AE, 23DM
	511-0147-17	1	Low Mounted Alternator	21	KIT, REPAIR - Coolant Pump (Includes Gaskets, Seal, Hub, Bearing, Impeller and Backplate Mounting Screws)		
			Code 23AE		541-0214-02	1	Code 23AD,BC,BF,DM
	511-0147-13	1	High Mounted Alternator		541-0214-01	1	Code 23AE,BD
	511-0147-01	1	Low Mounted Alternator				

COOLANT PUMP (LARGE - WITH TWO THERMOSTATS)

Code 23AF (Low Flow, .97 Drive Ratio)
 Code 23AG (High Flow, .61 Drive Ratio)
 Code 23AN (Low Flow, 1.07 Drive Ratio)
 Code 23BE (Low Flow, 1.29 Drive Ratio)
 Code 23BG (Low Flow, .81 Drive Ratio)
 Code 23BJ (High Flow, .73 Drive Ratio)
 Code 23BP (Low Flow, 1.29 Drive Ratio)
 Code 23CY (Low Flow, 1.15 Drive Ratio)

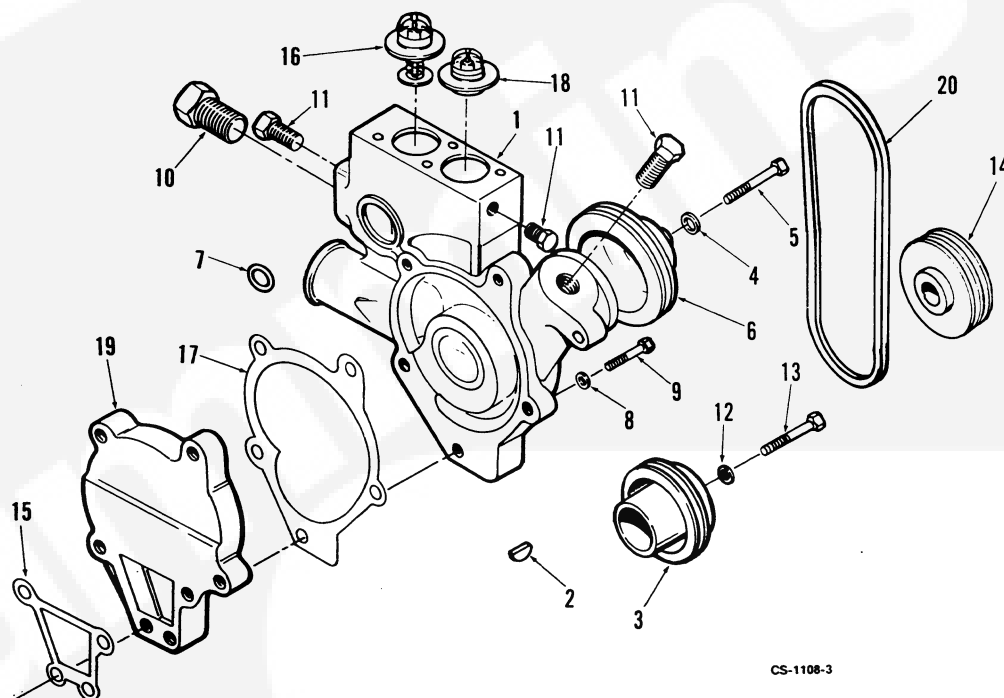


				CS-1108			
REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	PUMP KIT, COOLANT (Includes Mounting Gaskets)			511-0147-13	1		High Mounted Alternator
	131-0349	1	Code 23AG,BJ	511-0147-08	1		Low Mounted Alternator
	131-0351	1	Code 23AF,AN,BE,BG,BP,CY				Code 23BG
2	515-0245	1	Key, Pulley	511-0147-13	2		High Mounted Alternator
3	PULLEY, CRANKSHAFT			511-0147-01	2		Low Mounted Alternator
			Single Groove				Code 23BJ (Some Engines Require 2)
	104-1472	1	Code 23AF,BE,BP	511-0147-03	1		High Mounted Alternator
	104-1466	1	Code 23AN,AG,BG	511-0147-06	1		Low Mounted Alternator
	104-1470	1	Code 23CY	511-0147-06	1		High Mounted Idler Pulley
			Double Groove				Code 23CY
	104-1468	1	Code 23AF,BE,BJ	511-0147-17	1		High Mounted Alternator
	104-1467	1	Code 23AN	511-0147-16	1		Low Mounted Alternator
4	740-1006	4	Washer, Flat (M8)	11	502-0775	3	Plug, Brass - Hex Head
5	718-1035	4	Screw, Cap - Hex Head (M8 x 16MM)	12	526-0283	1	Washer, Flat (M8)
6	PULLEY, COOLANT PUMP			13	720-1123	1	Screw, Cap - Hex Head (M16 x 60MM)
			Single Groove	14	131-0324	1	Spacer, Coolant Pump
	131-0344	1	Code 23AF,BG,CY	15	131-0294	2	Gasket, Coolant Pump Mounting
	131-0346	1	Code 23AG	16	309-0458	1	Kit, Thermostat (192°)
	131-0342	1	Code 23AN,BE,BP	17	131-0335	1	Gasket, Coolant Pump Backplate
	131-0347	1	Double Groove - Code 23BJ	18	309-0462	1	Kit, Thermostat (180°)
7	509-0264	1	Seal O-Ring	19	502-0317	1	Plug, Pipe - Hex Head (3/4")
8	740-1006	3	Washer, Flat (M8)	20	815-0612	5	Screw, Countersunk (Special)
9	718-1044	3	Screw, Cap - Hex Head (M8 x 60MM)	21	PULLEY, ALTERNATOR		
10	BELT						Single Groove
			Code 23AF	191-1339	1		Code 23AF,BE,BP,CY
	511-0147-15	1	High and Low Mounted Alternator	191-1338	1		Code 23AG,AN
			High Mounted Idler Pulley				Double Groove
	511-0147-17	1	Code 23AG (Some Engines Require 2)	191-1342	1		Code 23BG
			High Mounted Alternator	191-1333	1		Code 23BJ
	511-0147-05	1	Low Mounted Alternator	22	KIT, REPAIR - COOLANT PUMP (Includes Gaskets, Seal, Hub, Bearing, Impeller and Backplate Mounting Screws).		
	511-0147-11	1	Code 23AN	541-0214-03	1		Code 23AG,BJ
			Code 23BE,BP (Some Engines Require 2)	541-0214-04	1		Code 23AF,AN,BE,BG,BP,CY

COOLANT PUMP (LARGE - WITH TWO THERMOSTATS)

Code 23AR (Pulley Ratio and Belts, .97 Drive Ratio)
 Code 23CG (Automotive Type, Low Fan Center, .81 Drive Ratio)
 Code 23CR (Automotive Type, Low Fan Center, .97 Drive Ratio)
 Code 23CS (Pulley Ratio and Belts, 1.07 Drive Ratio)

5100-0906
 5100-0940
 5100-1032
 5100-1106
 5100-1107



CS-1108-3

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	KIT, COOLANT PUMP (Includes Thermostat Cover Gasket and Parts Marked *)		
	131-0428	1	Code 23CG
	131-0434	1	Code 23CR
2	515-0245	1	Key, Pulley
3	PULLEY, CRANKSHAFT		
	104-1466	1	Single Groove - Code 23CG
			Double Groove
	104-1468	1	Code 23AR, 23CR
	104-1467	1	Code 23CS
4	740-1006	4	Washer, Flat (M8)
5	SCREW, CAP - HEX HEAD		
	718-1035	4	M8 x 16 MM - Code 23AR, 23CR, 23CS
	718-1036	4	M8 x 20 MM - Code 23CG
6	PULLEY, COOLANT PUMP		
			Single Groove
	131-0344	1	Code 23AR, 23CR
	131-0342	1	Code 23CS
	131-0416	1	Double Groove - Code 23CG
7	509-0264	1	*Seal O-Ring
8	740-1006	3	Washer, Flat (M8)

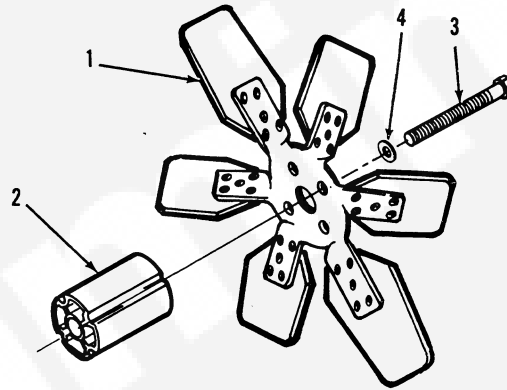
REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
9	SCREW, CAP - HEX HEAD		
	718-1041	3	Pump to Base
	718-1042	1	M8 x 45 MM
	718-1046	1	M8 x 50 MM
	725-1051	2	Pump to Block (M8 x 70 MM)
10	502-0317	1	Base to Block (M8 x 25 MM)
11	502-0775	1	*Plug, Pipe - Hex (3/4")
12	526-0283	1	*Plug, Pipe - Brass, Hex (3/8")
13	720-1123	1	Washer, Flat (M8)
			Screw, Cap - Hex Head (M16 x 60 MM)
14	PULLEY, ALTERNATOR		
	191-1338	1	Single Groove - Code 23CG
			Double Groove
	191-1333	1	Code 23AR, 23CR
	191-1342	1	Code 23CS
15	131-0409	1	*Gasket, Coolant Pump Mounting
16	309-0458	1	Kit, Thermostat (192°) Includes Cover Gasket
17	131-0408	1	*Gasket, Coolant Pump Base
18	309-0462	1	Kit, Thermostat (180°) Includes Cover Gasket
19	131-0406	1	Base, Coolant Pump
20	BELT		
	511-0147-08	1	Code 23AR, 23CR
	511-0147-10	1	Code 23CG
	511-0147-27	1	Code 23CS

* - Parts Included in Coolant Pump Kit

COOLING SYSTEM - FAN

Code 23AH (Suction Fan and 46 MM Spacer)
 Code 23AU (17-1/2" Diameter Blower Fan and 46 MM Spacer)
 (20-1/4" Diameter Blower Fan and 53 MM Spacer)
 Code 23BL (Suction Fan and 89 MM Spacer)
 Code 23CH (Suction Fan and 20 MM Spacer)
 Code 23CW (32 MM Spacer)
 Code 23DL (Suction Fan and 65 MM Spacer)

5100-0178
 5100-0262
 5100-0651
 5100-0954
 5100-1124
 5100-1132



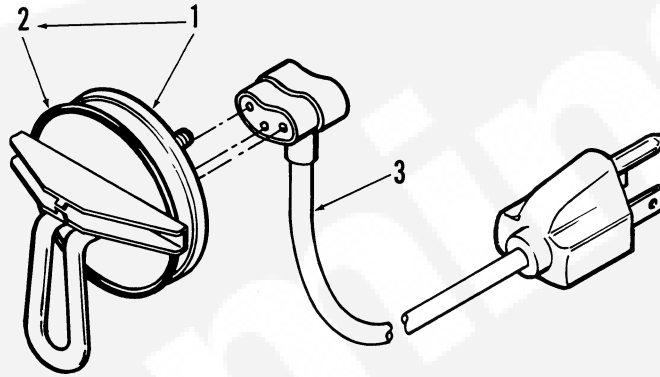
CS-1166

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	FAN, COOLING		
	130-1924	1	Code 23AH, 23BL Code 23AU
	130-2148	1	17-1/2" Diameter
	130-2324	1	20-1/4" Diameter
	130-2698	1	Code 23CH
	130-3152	1	Code 23DL
2	SPACER, FAN		
	130-1872	1	Code 23AH Code 23AU
	130-1872	1	46 MM Long
	130-1873	1	53 MM Long
	130-1874	1	Code 23BL
	130-2699-02	1	Code 23CH
	130-1880	1	Code 23CW
	130-1876	1	Code 23DL
3	SCREW, CAP - HEX HEAD		
	718-1046	4	Code 23AH (M8 x 70 MM) Code 23AU
	718-1046	4	46 MM Spacer (M8 x 70 MM)
	718-1047	4	53 MM Spacer (M8 x 75 MM) Code 23BL
	718-1803	4	Cast Iron Pulley (M8 x 115 MM)
	718-1804	4	Sheet Steel Pulley (M8 x 110 MM)
	718-1041	4	Code 23CH (M8 x 45 MM)
	718-1043	4	Code 23CW (M8 x 55 MM)
	800-2070	4	Code 23DL (M8 x 85 MM)
4	WASHER, FLAT		
	740-1006	4	Code 23AH, 23AU Cast Iron and Sheet Steel Pulley (M8)
	526-0122	4	Sheet Steel Pulley (5/16") Code 23BL
	526-0122	4	Cast Iron Pulley (5/16")
	740-1006	4	Sheet Steel Pulley (M8)
	740-1006	4	Code 23CH, 23CW, 23DL (M8)

ENGINE BLOCK HEATER

Code 23AL (600 Watt)

5100-0540



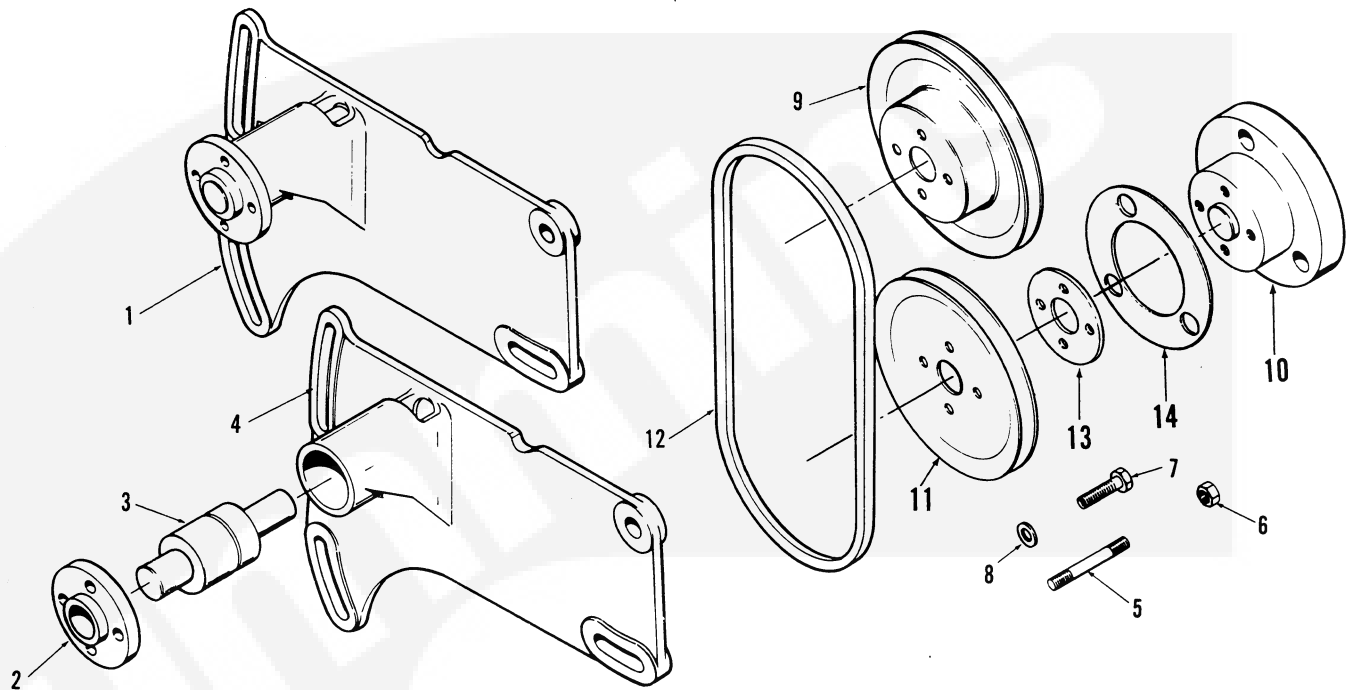
M-1597

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	333-0187	1	Heater (Includes O-Ring Seal)
2	509-0104	1	Seal, O-Ring
3	335-0158	1	Cord, Heater

LOW FAN DRIVE

Code 23BK (1.07 Ratio)

5100-0420
5100-1117



XCS-1234

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	130-2137	1	Adapter Assembly, Fan (Includes Parts Marked*)
2	131-0297	1	*Hub, Fan
3	131-0321	1	*Bearing and Shaft, Fan
4	130-2139	1	*Bracket, Fan Support
5	520-2403	1	Stud (M8)
6	750-1006	1	Nut, Hex (M8)
7	SCREW, CAP - HEX HEAD		
	718-1806	1	M8 × 90 MM
	718-1046	2	M8 × 70 MM
	718-1035	4	M8 × 16 MM
	720-1056	3	M10 × 35 MM
	718-1036	4	M8 × 20 MM

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
8	WASHER, FLAT		
	526-2106	4	M8
	740-1006	8	M8
	740-1008	3	M10
9	131-0342	1	Pulley, Coolant Pump
10	104-1483	1	Adapter, Low Fan Pulley
11	104-1447	1	Pulley, Low Fan Drive
12	511-0147-20	1	Belt, Drive
13	104-1637	1	Spacer, Pulley Alignment - Front (Begin Spec B)
14	104-1638	1	Spacer, Pulley Alignment - Rear (Begin Spec B)

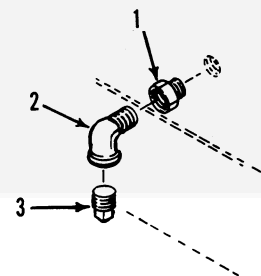
* - Parts Included in 130-2137 Adapter Assembly.

COOLANT HEATER CONNECTION

5100-0671
5100-0672

Code 23AW

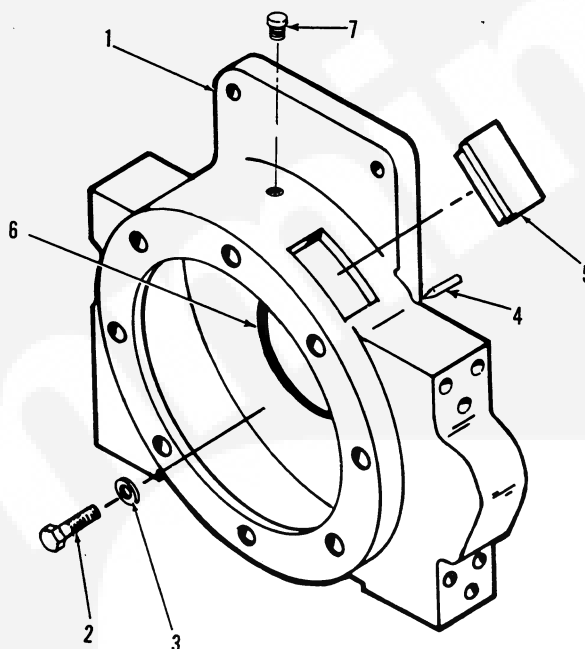
REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	505-0017	1	Bushing
2	502-0156	1	Elbow, Street
3	502-0153	1	Plug, Brass



FLYWHEEL HOUSING

Code 27AA (SAE 5 Without Magnetic Pickup)
 Code 27AB (SAE 4 Without Magnetic Pickup)
 Code 27AC (SAE 3 Without Magnetic Pickup)
 Code 27AE (SAE 5 With One Magnetic Pickup - Metric Tapped)
 Code 27AF (SAE 4 With One Magnetic Pickup, 70° From Horizontal)
 Code 27AG (SAE 3 With One Magnetic Pickup)
 Code 27AH (SAE 4 With Two Magnetic Pickups)
 Code 27AN (SAE 4 With One Magnetic Pickup, 47° From Horizontal)
 Code 27AV (SAE 5 With One Magnetic Pickup - English Tapped)

5100-0214
 5100-0974



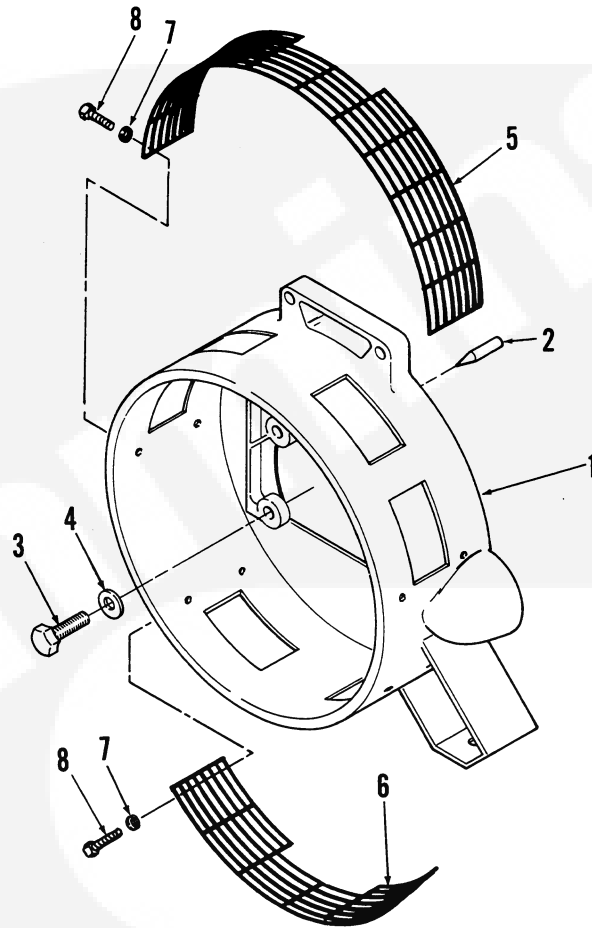
CS-1109

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	HOUSING, FLYWHEEL (Includes Seal and Indicator)		
	101-0719	1	Code 27AA
	101-0740-04	1	Code 27AB
	101-0714	1	Code 27AC
	101-0720	1	Code 27AE
	101-0740-01	1	Code 27AF
	101-0715	1	Code 27AG
	101-0740-03	1	Code 27AH
	101-0740-02	1	Code 27AN
	101-0698-03	1	Code 27AV
2	718-1078	6	Screw, Cap - Hex Head (M12 × 50 MM)
3	740-1801	6	Washer, Flat (M12)
4	160-1292	1	Indicator, Timing
5	101-0592	1	Plug, Timing Window
6	101-0630	1	Seal, Flywheel Housing
7	PLUG, CAP		
	517-0265	1	Code 27AE, 27AF, 27AG, 27AN (5/8-24)
	517-0265	2	Code 27AH (5/8-24)
	517-0259	1	Code 27AV (3/4-16)

GENERATOR ADAPTER

Code 27AJ

5100-1090

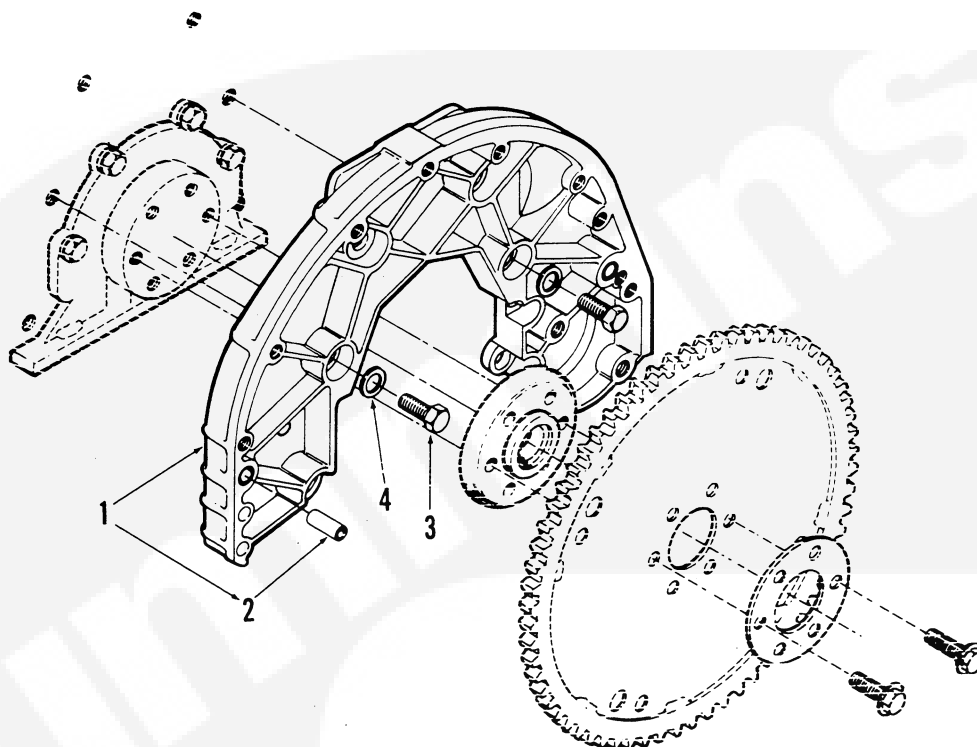


REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	231-0267	1	Adapter Assembly, Generator (Includes Timing Indicator)
2	160-1292	1	Indicator, Timing
3	718-1078	6	Screw, Cap - Hex Head (M12 x 50 MM)
4	740-1801	6	Washer, Flat (M12)
5	234-0689	1	Guard, Generator Fan - Upper
6	234-0690	1	Guard, Generator Fan - Lower
7	526-0022	8	Washer, Flat (5/16")
8	800-0029	8	Screw, Cap - Hex Head (5/16-18 x 1-1/8")

TRANSMISSION ADAPTER

Code 27AL

5100-0603



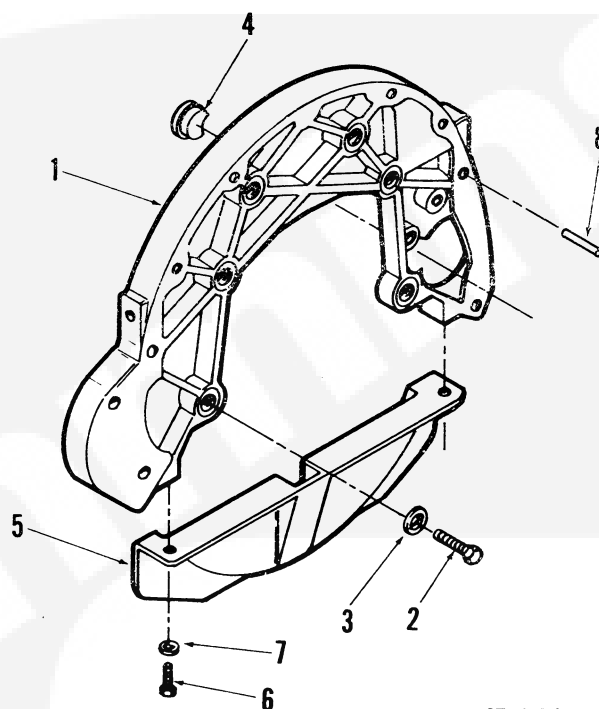
CT-1082

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	190-0622-02	1	Adapter Assembly, Transmission (Includes Dowel Pins)
2	516-0217	2	Pin, Dowel
3	718-1076	6	Screw, Cap - Hex Head (M12 × 40 MM)
4	740-1801	6	Washer, Flat (M12)

TRANSMISSION ADAPTER

Code 27AP (Chrysler 318 Case)
Code 27AR (Chrysler 440 Case)

5100-1082
5100-1083

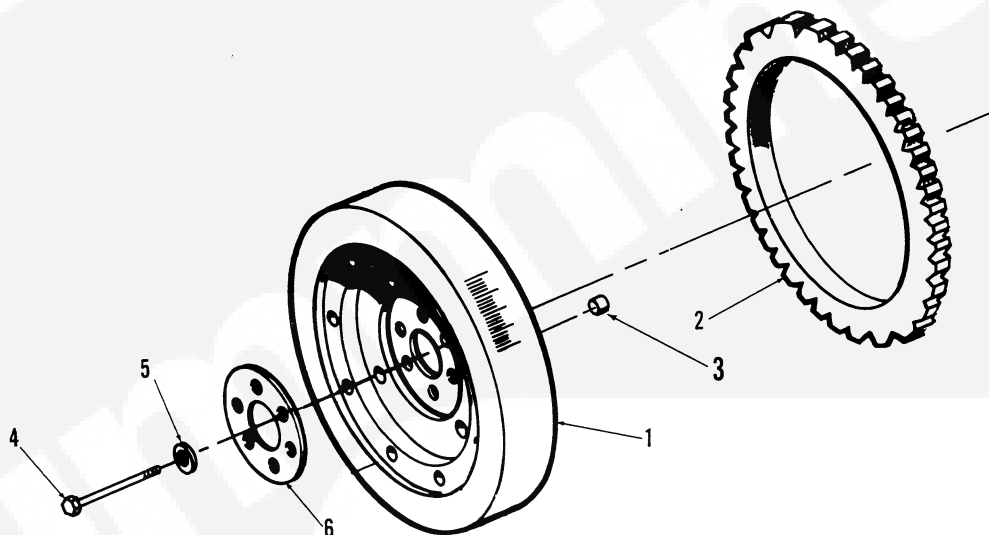


REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	ADAPTER, TRANSMISSION		
	101-0746-01	1	Code 27AP
	101-0746-02	1	Code 27AR
2	718-1076	6	Screw, Cap - Hex Head (M12 x 40 MM)
3	740-1801	6	Washer, Flat (M12)
4	517-0238	1	Plug, Access Hole
5	104-1647	1	Cover, Flywheel
6	815-0634	2	Screw, Cap - Hex Head (With Nylon Locking Element) Special
7	526-2083	2	Washer, Flat (M6)
8	516-0167	2	Pin, Dowel

FLYWHEEL

Code 29AA (7.5" Over Center - SAE #5)
 Code 29AC (9" Flat Face - For Rockford Cover UCLA 9.00 TT - SAE #5)
 Code 29AD (10" Over Center - SAE #4)
 Code 29AE (10" Flat Face - For Rockford Cover UCLA 10.00 TT - SAE #4)
 Code 29AF (11" Flat Face - For Rockford Cover UCLA 11.00 RT - SAE #4)
 Code 29AG (11.5" Over Center - SAE #3)
 Code 29AH (12" Flat Face - For Rockford Cover UCLA 12.00 RT - SAE #3)
 Code 29AK (Generator Application - SAE #500)
 Code 29AT (Generator Application - SAE #5)

5100-0010
 5100-0051
 5100-0052
 5100-0090
 5100-0463
 5100-0565
 5100-0566
 5100-0567
 5100-0931



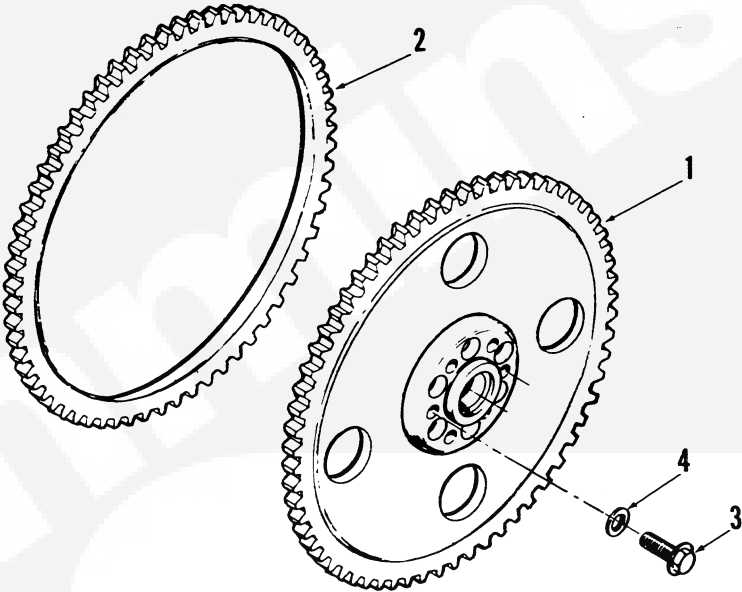
CS-1110

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	FLYWHEEL ASSEMBLY (Includes Ring Gear and Alignment Pin)		
	104-1504	1	Code 29AA
	104-1509	1	Code 29AC
	104-1505	1	Code 29AD
	104-1388	1	Code 29AE
	104-1389	1	Code 29AF
	104-1506	1	Code 29AG
	104-1393	1	Code 29AH
	104-1503	1	Code 29AK
	104-1462	1	Code 29AT
2	GEAR, RING		
	104-1169	1	Code 29AA, 29AC, 29AT
	104-1185	1	Code 29AD, 29AE, 29AF, 29AK
	104-1184	1	Code 29AG, 29AH
3	104-1171	1	Pin, Alignment
4	SCREW, CAP - FLANGE HEX HEAD (Special)		
	720-1804	6	Code 29AA, 29AC, 29AK, 29AT
	720-1805	6	Code 29AD, 29AE, 29AF, 29AG, 29AH
5	740-1008	6	Washer, Flat (M10) Code 29AA, 29AC, 29AK, 29AT
6	104-1036	1	Plate, Washer - Code 29AD, 29AE, 29AF, 29AG, 29AH

FLYWHEEL

Code 29AZ (Chrysler A727 Automatic Transmission)

5100-1084



CT-1082-3

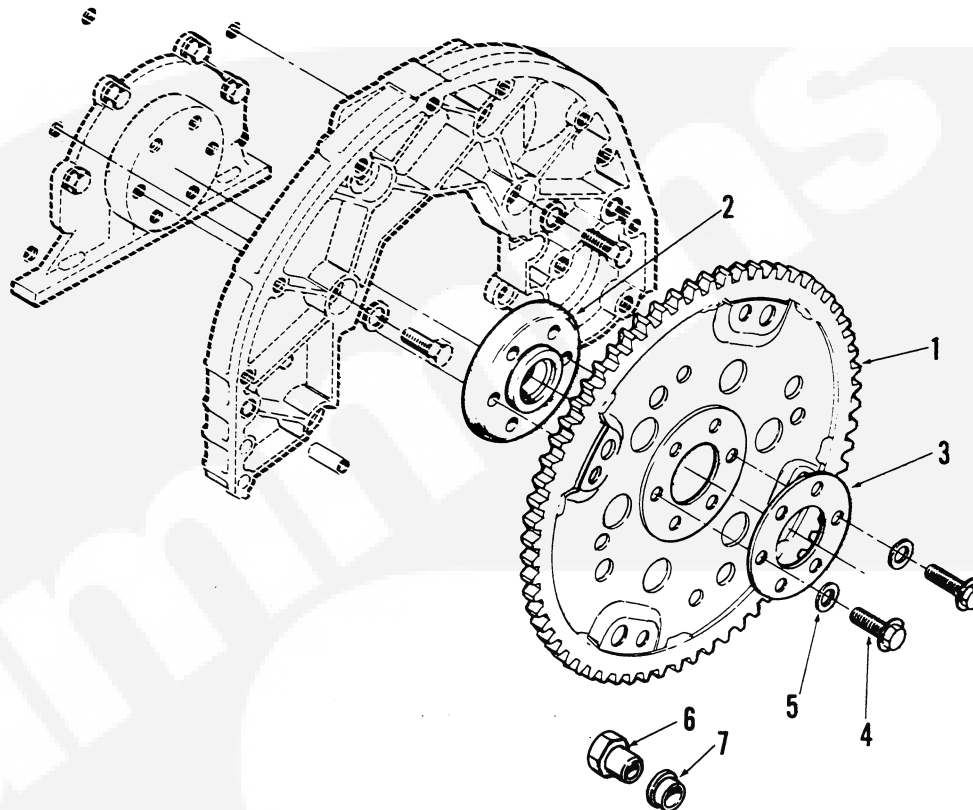
REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	104-1630	1	*Flywheel Assembly (Includes Ring Gear)
2	104-1169	1	Gear, Ring
3	720-1805	6	Screw, Cap - Hex Head (M10 x 45 MM)
4	740-1008	6	Washer, Flat (M10)

* - Chrysler part number 4058428, Torque Converter Drive Plate, is used to mate with Chrysler A727 Torque Converter.

FLEXPLATE

Code 29AP (Automatic Transmission)
Code 29AU (Automatic Transmission)

5100-0602
5100-0953



CT-1082-2

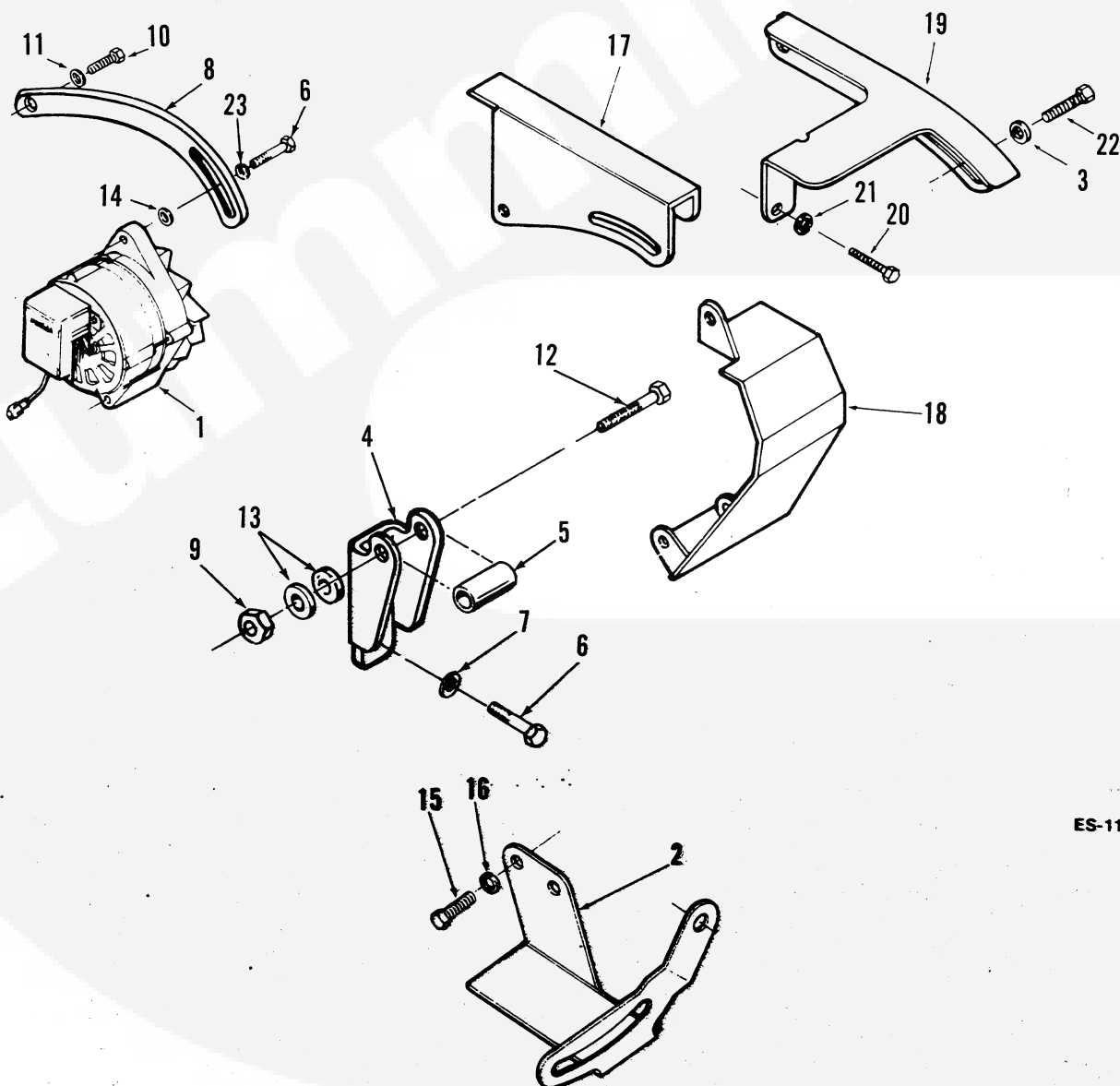
REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	FLEXPLATE		
	104-1574	1	Code 29AP
	104-1669	1	Code 29AU
2	104-1536	1	Hub, Flexplate
3	104-1497	1	Clamp, Flexplate
4	720-1804	6	Screw, Cap - Flange Hex Head (M10 x 38 MM)
5	740-1008	6	Washer, Flat (M10)
6	104-1538	4	Nut, Sleeve - Code 29AU
7	104-1537	4	Spacer, Flexplate - Code 29AU



ALTERNATOR

Code 31AA (High Mount Accessory Side - 37 Amp, 12 Volt)
 Code 31AB (Low Mount Accessory Side - 37 Amp, 12 Volt)
 Code 31AC (High Mount Accessory Side - 62 Amp, 12 Volt)
 Code 31AD (Low Mount Accessory Side - 62 Amp, 12 Volt)
 Code 31AE (High Mount Accessory Side - No Alternator)
 Code 31AF (Low Mount Accessory Side - No Alternator)
 Code 31AL (High Mount Accessory Side - No Alternator)
 Code 31AP (Low Mount Accessory Side - No Alternator)
 Code 31AR (High Mount Accessory Side - 35 Amp, 24 Volt)
 Code 31AU (Belt and Alternator Guard, High Mount Accessory Side)

5100-0231
 5100-0330
 5100-0781
 5100-0782
 5100-0785
 5100-0889
 5100-0899
 5100-0948
 5100-1105



ES-1170-1

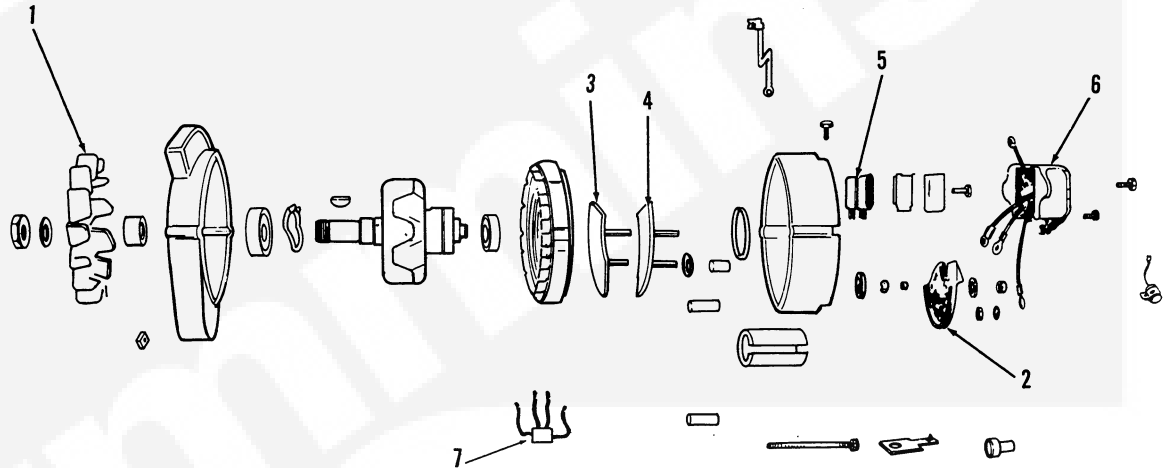
ALTERNATOR

Code 31AA (High Mount Accessory Side - 37 Amp, 12 Volt)	5100-0231
Code 31AB (Low Mount Accessory Side - 37 Amp, 12 Volt)	5100-0330
Code 31AC (High Mount Accessory Side - 62 Amp, 12 Volt)	5100-0781
Code 31AD (Low Mount Accessory Side - 62 Amp, 12 Volt)	5100-0782
Code 31AE (High Mount Accessory Side - No Alternator)	5100-0785
Code 31AF (Low Mount Accessory Side - No Alternator)	5100-0889
Code 31AL (High Mount Accessory Side - No Alternator)	5100-0899
Code 31AP (Low Mount Accessory Side - No Alternator)	5100-0948
Code 31AR (High Mount Accessory Side - 35 Amp, 24 Volt)	5100-1105
Code 31AU (Belt and Alternator Guard, High Mount Accessory Side)	

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	ALTERNATOR (See Separate Group for Components)		
	191-1525	1	Code 31AA, 31AB
	191-1526	1	Code 31AC, 31AD
	191-1570	1	Code 31AR
2	191-1615	1	Brackets, Alternator Mounting - Code 31AP
3	526-0122	1	Washer, Flat (5/16") Code 31AL
4	BRACKET, ALTERNATOR MOUNTING		
	191-1332	1	Code 31AB, 31AD, 31AF, 31AP
	191-1331	1	Code 31AA, 31AC, 31AE, 31AL, 31AR
5	191-1321	1	Spacer, Alternator Bracket
6	SCREW, CAP - HEX HEAD		
	718-1037	5	Code 31AA, 31AB, 31AC, 31AP (M8 x 25 MM)
	718-1037	4	Code 31AD, 31AE, 31AF, 31AL, 31AR (M8 x 25 MM)
	800-2058	1	Code 31AR (M8 x 25 MM)
7	740-1006	5	Washer, Flat (M8) Code 31AA,AB, AC,AD,AE,AF,AL,AP,AR
8	STRAP, ALTERNATOR ADJUSTING		
	191-1312	1	Code 31AB, 31AD, 31AF
	191-1365	1	Code 31AA, 31AC, 31AE, 31AR
9	860-2009	1	Nut, Hex (M10)
10	SCREW, CAP - HEX HEAD		
	718-1036	1	M8 x 20 MM - Code 31AA, 31AC, 31AD, 31AE
	718-1037	1	M8 x 25 MM - Code 31AL, 31AR
11	740-1006	1	Washer, Flat (M8) - Code 31AA, 31AC, 31AE, 31AL, 31AR
12	800-2100	1	Screw, Cap - Hex Head (M10 x 100 MM)
13	526-2123	2	Washer, Flat (M10)
14	SPACER, ALTERNATOR STRAP -		
	191-1322	1	Code 31AA, 31AB, 31AC, 31AD, 31AE, 31AF, 31AP, 31AR
	191-1759	1	Code 31AL
15	718-1072	2	Screw, Cap - Hex Head (M12 x 20 MM) Code 31AP
16	740-1010	2	Washer, Flat (M12) Code 31AP
17	130-2784	1	Guard, Belt - Code 31AU
18	191-1677	1	Guard, Alternator - Code 31AU
19	191-1758	1	Strap, Alternator Adjusting - Code 31AL
20	718-1806	1	Screw, Cap - Hex Head (M8 x 90 MM) Code 31AL
21	740-1006	1	Washer, Flat (M8) Code 31AL
22	718-1038	1	Screw, Cap - Hex Head (M8 x 30 MM) Code 31AL
23	526-2106	1	Washer, Flat (M8) Code 31AA,AB, AC,AD,AE,AF,AL,AP,AR

ALTERNATOR COMPONENTS

Code 31AA (High Mount Accessory Side - 37 Amp, 12 Volt)
 Code 31AB (Low Mount Accessory Side - 37 Amp, 12 Volt)
 Code 31AC (High Mount Accessory Side - 62 Amp, 12 Volt)
 Code 31AD (Low Mount Accessory Side - 62 Amp, 12 Volt)
 Code 31AR (High Mount Accessory Side - 35 Amp, 24 Volt)



ES-1292

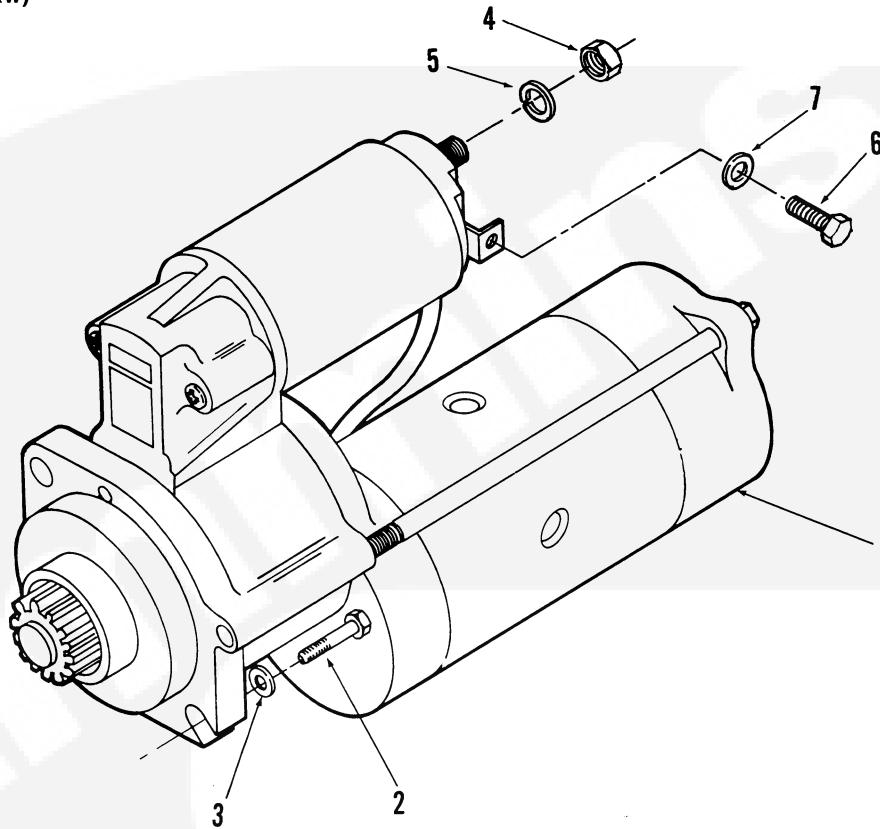
NOTE: Component part numbers for 35 Amp Alternator not available at time of printing.

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
ALTERNATOR, COMPLETE							
	191-1525	1	Code 31AA, 31AB - Used on Late Models - Has No Isolation Diodes on Back Side of Alternator (Replaces Early Models With Isolation Diode Assembly on Back Side of Alternator)	4	DIODE, RECTIFIER - POSITIVE		
	191-1526	1	Code 31AC, 31AD	191-1452	1	Used on Early Models with Isolation Diode Assembly	
	191-1570	1	Code 31AR	191-1559	1	Used on Late Models without Isolation Diode Assembly	
1	191-0943	1	Fan, Alternator	5	BRUSH ASSEMBLY		
2	191-1454	1	Diode Assembly, Isolation - Used on Early Models	191-0659	1	Used on Early Models with Isolation Diode Assembly	
3	DIODE, RECTIFIER - NEGATIVE			191-1558	1	Used on Late Models without Isolation Diode Assembly	
	191-1453	1	Used on Early Models with Isolation Diode Assembly	6	REGULATOR, VOLTAGE		
	191-1560	1	Used on Late Models without Isolation Diode Assembly	191-1457	1	Used on Early Models with Isolation Diode Assembly	
				191-1557	1	Used on Late Models without Isolation Diode Assembly	
				7	191-1556	1	Diode, Trio - Used on Late Models without Isolation Diode Assembly

STARTER

Code 33AA (12 or 24 Volt, 2.6 kW)
Code 33AU (12 Volt, 3.2 kW)

5100-0082
5100-0411
5100-1145

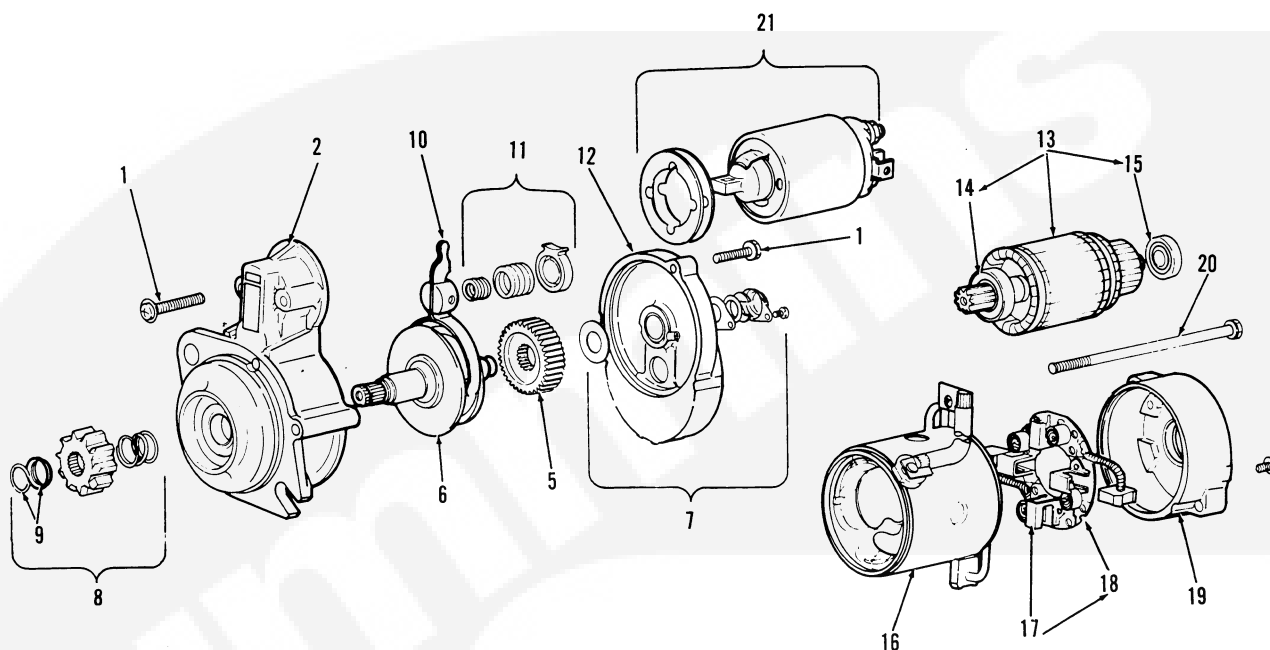


XES-1169

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	STARTER (See Separate Group for Components) (Includes Switch Terminal Hardware)		
	191-1394	1	12 Volt Code 33AA
	191-1807	1	Code 33AU
	191-1550	1	24 Volt - Code 33AA
	191-1394	1	12 Volt
	191-1550	1	24 Volt
2	720-1806	2	Screw, Cap - Flanged Hex Head (M12 x 30 MM)
3	740-1010	2	Washer, Flat (M12)
4	860-2008	1	Nut, Hex (M8) B+ Terminal
5	850-2008	1	Washer, Lock - Spring (M8) B+ Terminal
6	718-1002	1	Screw, Cap - Hex Head (M5 x 8 MM) Solenoid Terminal
7	850-2005	1	Washer, Lock - Spring (M5) Solenoid Terminal

STARTER COMPONENTS

Code 33AA (12 or 24 Volt, 2.6 kW)
Code 33AU (12 Volt, 3.2 kW)



XES-1255

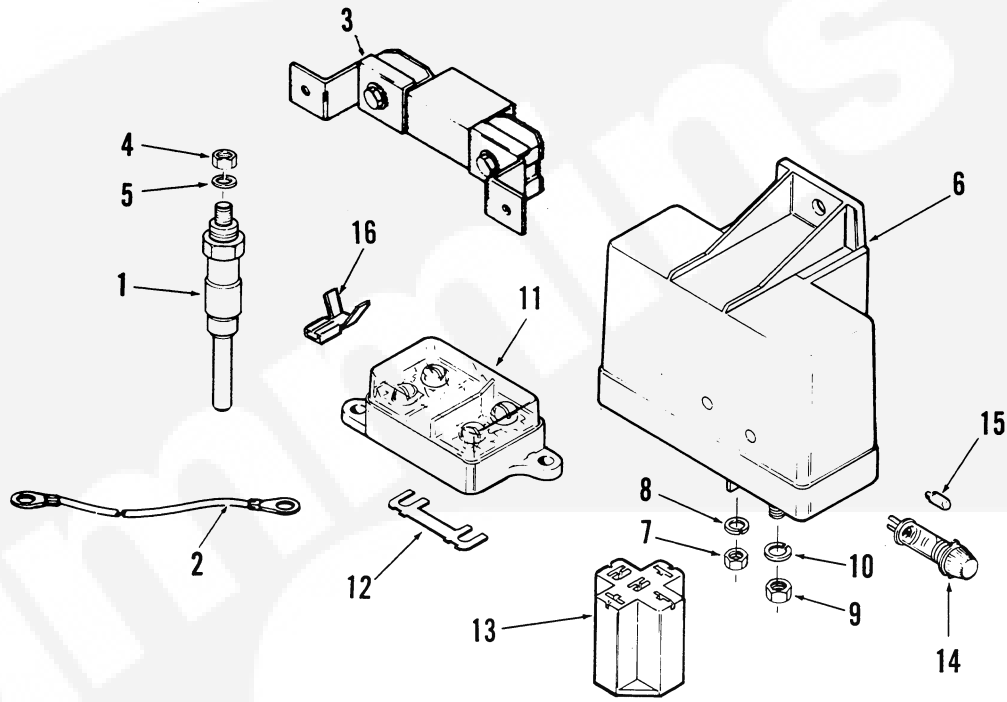
REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
STARTER (Complete)			
	191-1394	1	12 Volt Code 33AA
	191-1807	1	Code 33AU
	191-1550	1	24 Volt - Code 33AA
1	191-1450	1	Screw Set
2	BRACKET ASSEMBLY, FRONT (Includes Bearing)		
	191-1449	1	12 Volt
	191-1605	1	24 Volt
5	191-1446	1	Gear
6	191-1445	1	Clutch
7	191-1444	1	Cover Set (Includes Cover, Plate, Washers, Snap Ring, and Screws)
8	191-1443	1	Pinion Set (Includes Pinion, Spring, and Stopper Set)
9	191-1442	1	Stopper Set (Includes Stopper and Ring)
10	191-1441	1	Lever Assembly
11	191-1440	1	Spring Set
12	191-1439	1	Bracket Assembly, Center
13	ARMATURE ASSEMBLY (Includes Bearings)		
			12 Volt
	191-1438	1	Code 33AA
	191-1854	1	Code 33AU
	191-1606	1	24 Volt - Code 33AA

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
14	191-1437	1	Bearing, Center
15	191-1436	1	Bearing, Rear
16	YOKE ASSEMBLY (Includes Pole Shoes, Field Coil and Positive Brushes)		
			12 Volt
	191-1435	1	Code 33AA
	191-1853	1	Code 33AU
	191-1607	1	24 Volt - Code 33AA
17	HOLDER, BRUSH (Includes Negative Brushes)		
			12 Volt
	191-1434	1	Code 33AA
	191-1852	1	Code 33AU
	191-1608	1	24 Volt - Code 33AA
18	SPRING, BRUSH		
	191-1433	4	Code 33AA
	191-1851	4	Code 33AU
19	191-1432	1	Bracket, Rear
20	BOLT SET		
	191-1431	1	Code 33AA
	191-1850	1	Code 33AU
21	SWITCH ASSEMBLY		
	191-1430	1	12 Volt
	191-1609	1	24 Volt

GLOW PLUG

Code 33AD (12 Volt 20 Second Glow Plugs, Lead and Ballast Resistor)
 Code 33AE (12 Volt 7 Second Glow Plugs, Lead and Control)
 Code 33AG (24 Volt 60 Second Glow Plugs, Lead and Ballast Resistor)
 Code 33AN (12 Volt 20 Second Glow Plugs)
 Code 33AR (12 Volt 7 Second Glow Plugs)

5100-0176
 5100-0314
 5100-0342
 5100-0542
 5100-0628



M-1565

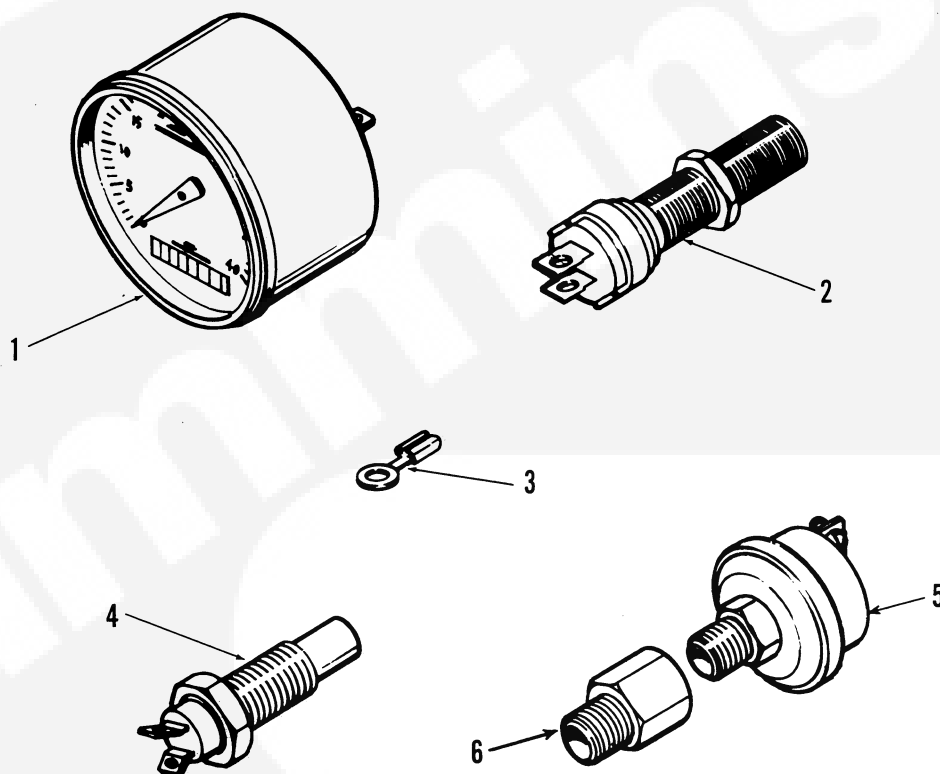
REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	PLUG, GLOW		
	333-0195	4	Code 33AD, 33AN
	333-0220	4	Code 33AE, 33AR
	333-0226	4	Code 33AG
2	336-4131	3	Lead, Glow Plug
3	RESISTOR, BALLAST		
	333-0199	1	Code 33AD
	333-0225	1	Code 33AG
4	750-1002	4	Nut, Hex (M5)
5	850-2005	4	Washer, Lock - Spring (M5)
6	333-0245	1	Controller, Glow Plug - Code 33AE

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
7	750-1002	1	Nut, Hex (M5) - Code 33AE
8	850-2005	1	Washer, Lock-Spring (M5) - Code 33AE
9	750-1004	1	Nut, Hex (M6) - Code 33AE
10	850-2006	1	Washer, Lock-Spring (M6) - Code 33AE
11	321-0263	1	Holder, Fuse - Code 33AE
12	321-0262-02	1	Fuse, Strip (50 Ampere) - Code 33AE
13	307-1690	1	Plug, Harness - Code 33AE
14	322-0354	1	Light, Indicator - Code 33AE
15	322-0353	1	Lamp, Indicator - Code 33AE
16	332-1497	1	Connector, Terminal - Code 33AE

TACHOMETER AND SWITCHES

Code 35AA (High Water Temperature Switch)
 Code 35AC (Low Oil Pressure and High Water Temperature Switches)
 Code 35AE (Magnetic Speed Sensor)
 Code 35AF (Tachometer/Hour Meter)
 Code 35AN (Low Oil Pressure and High Water Temperature Warning Switches)

5100-0261
 5100-0340
 5100-0341
 5100-0374
 5100-0911



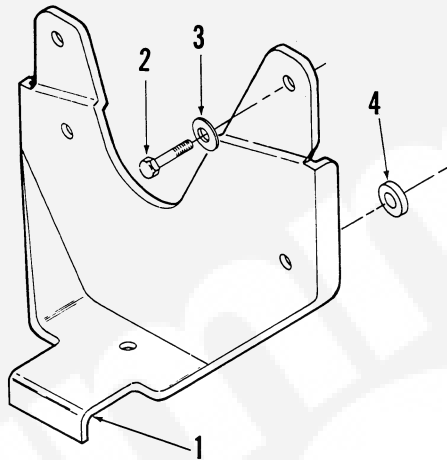
M-1489

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	302-1438	1	Meter, Tachometer/Hour Code 35AF
2	150-1925	1	Sensor, Speed - Magnetic - Code 35AE, 35AF
3	332-0807	5	Terminal - Code 35AF
4	SWITCH, HIGH WATER TEMPERATURE		
	309-0482	1	Code 35AA, 35AC
	309-0437	1	Code 35AN
5	SWITCH, LOW OIL PRESSURE		
	309-0177	1	Code 35AC
	309-0169	1	Code 35AN
6	502-0175	1	Connector - Code 35AN

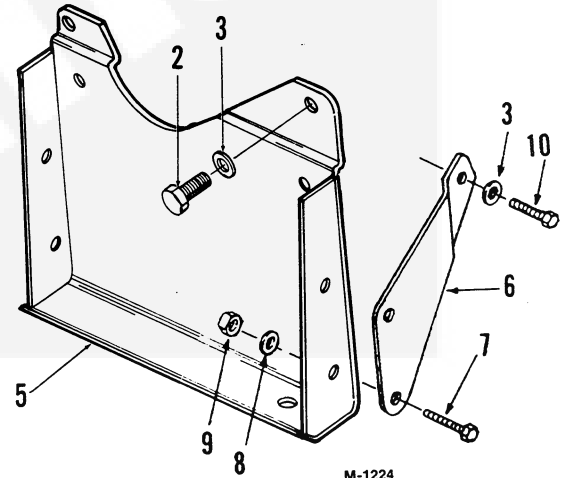
FRONT ENGINE MOUNT

Code 41AA (Single Point)
 Code 41AB (Rigid Four Point - With Radiator Support Arms)
 Code 41AH (Rigid Four Point - Without Radiator Support Arms)

5100-0065
 5100-0197
 5100-1034



M-1548



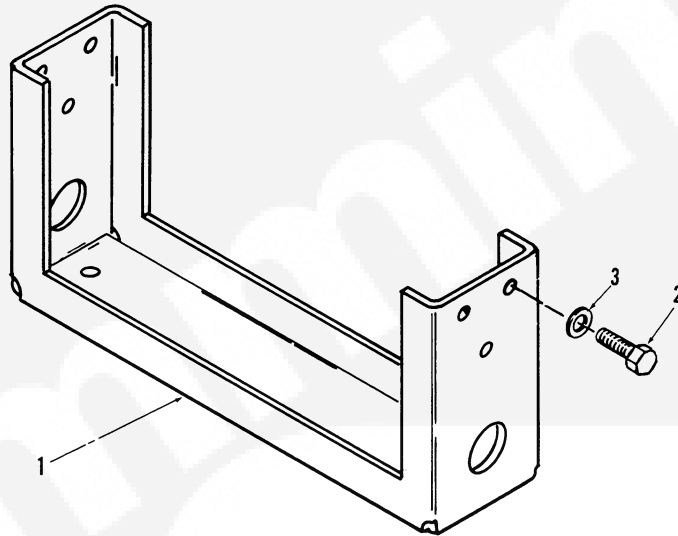
M-1224

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	403-1925	1	Bracket, Mount - Code 41AA
2	SCREW, CAP - HEX HEAD		
	718-1086	2	M12 × 90 MM (Top)
	718-1802	2	M12 × 95 MM (Bottom)
3	WASHER, FLAT (M12)		
	740-1010	4	Code 41AA, 41AB
	740-1010	6	Code 41AH
4	403-1932	2	Spacer, Bracket Mounting - Code 41AA
5	403-2033	1	Bracket, Mount - Code 41AB, 41AH
6	SUPPORT - Code 41AH		
	130-2797	1	Right Hand
	130-2798	1	Left Hand
7	718-1074	4	Screw, Cap - Hex Head (M12 × 30 MM) Code 41AH
8	850-2012	4	Washer, Lock (M12) Code 41AH
9	750-1010	4	Nut, Hex (M12) Code 41AH
10	718-1073	2	Screw, Cap - Hex Head (M12 × 25 MM) Code 41AH

REAR ENGINE MOUNT

Code 41AB (Rigid Four Point)

5100-0198



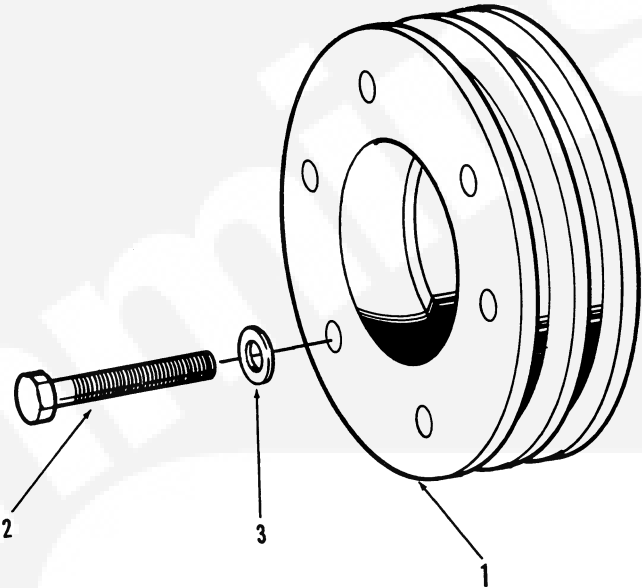
M-1224

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	403-1952	1	Bracket, Mount (For Engines with SAE #5 Flywheel Housing - Code 27AA, 27AE)
2	718-1073	6	Screw, Cap - Hex Head (M12 × 25 MM)
3	850-2012	6	Washer, Lock - Spring (M12)

CRANKSHAFT PULLEY

Code 45AB (Two Groove)

5100-0144



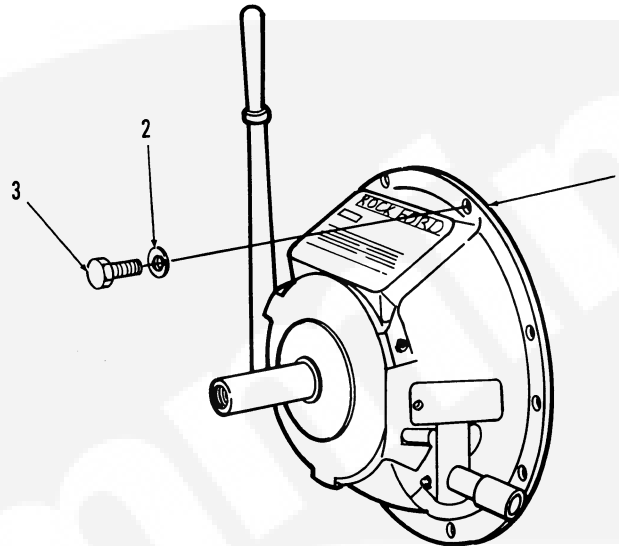
CT-1042

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	104-1374	1	Pulley, Crankshaft
2	720-1059	6	Screw, Cap - Hex Head (M10 × 50 MM)
3	740-1008	6	Washer, Flat (M10)

CLUTCH

Code 45AC (7.5" Over Center)
 Code 45AD (10.0" Over Center)
 Code 45AE (11.5" Over Center)
 Code 45AH (10.0" Over Center, In-Line)

5100-0180
 5100-0181
 5100-0182
 5100-0354



M-1344

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	CLUTCH ASSEMBLY, POWER TAKE-OFF		
	190-0541	1	Code 45AC
	190-0594	1	Code 45AD
	190-0595	1	Code 45AE
	190-0598	1	Code 45AH
2	WASHER, FLAT (Hardened)		
	740-1006	8	M8 - Code 45AC
	740-1008	8	M10 - Code 45AC
	740-1008	20	M10 - Code 45AD, 45AE, 45AH
3	SCREW, CAP - HEX HEAD		
	718-1038	8	M8 × 30 MM - Code 45AC
	718-1054	8	M10 × 25 MM - Code 45AC
	718-1054	12	M10 × 25 MM - Code 45AD, 45AE, 45AH
	718-1056	8	M10 × 35 MM - Code 45AD, 45AE, 45AH

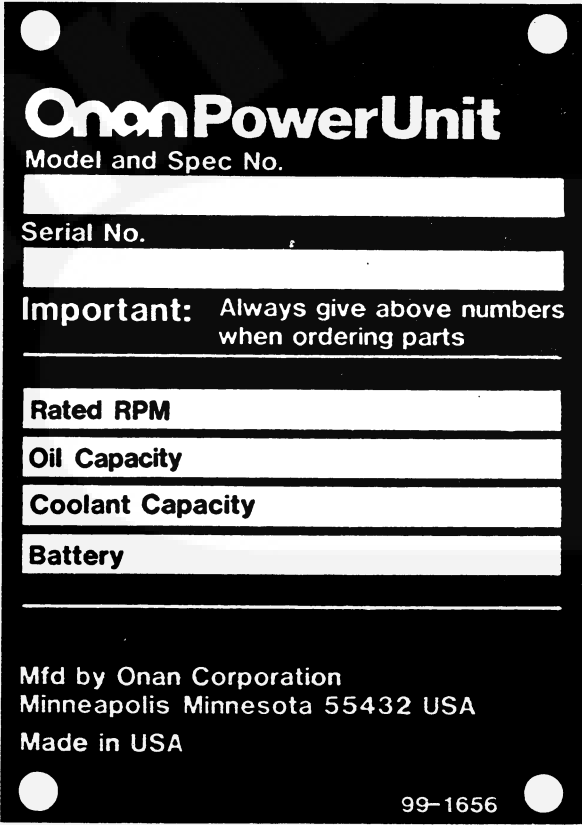
PAINT AND THREAD SEALANT

PART NO.	QTY. USED	PART DESCRIPTION
525-0454		Paint, Greige (13 oz. Pressurized Spray Can)
518-0452		Sealant, Thread (50 cc Bottle)

POWER UNIT SECTION

This section contains replacement parts for the Power Unit as listed by Sales Option Code number on the radiator shroud nameplate.

MODEL IDENTIFICATION LABEL



Onan Power Unit
Model and Spec No.

Serial No.

Important: Always give above numbers
when ordering parts

Rated RPM _____
Oil Capacity _____
Coolant Capacity _____
Battery _____

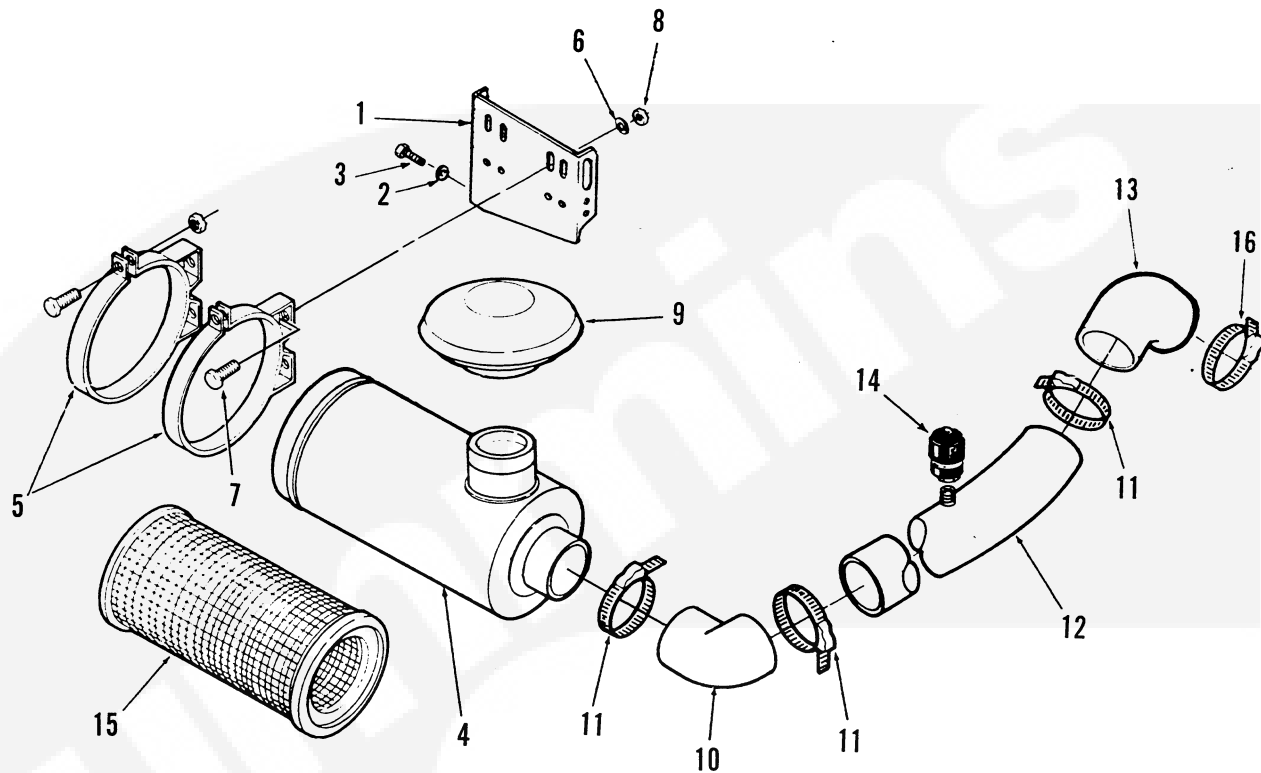
Mfd by Onan Corporation
Minneapolis Minnesota 55432 USA
Made in USA
99-1656

For handy reference, insert your radiator shroud nameplate and Sales Option Code information in the spaces above.

AIR CLEANER (SPEC A)

Code 19AB (Medium Duty - Housed or Unhoused)

5100-0183
5100-0191



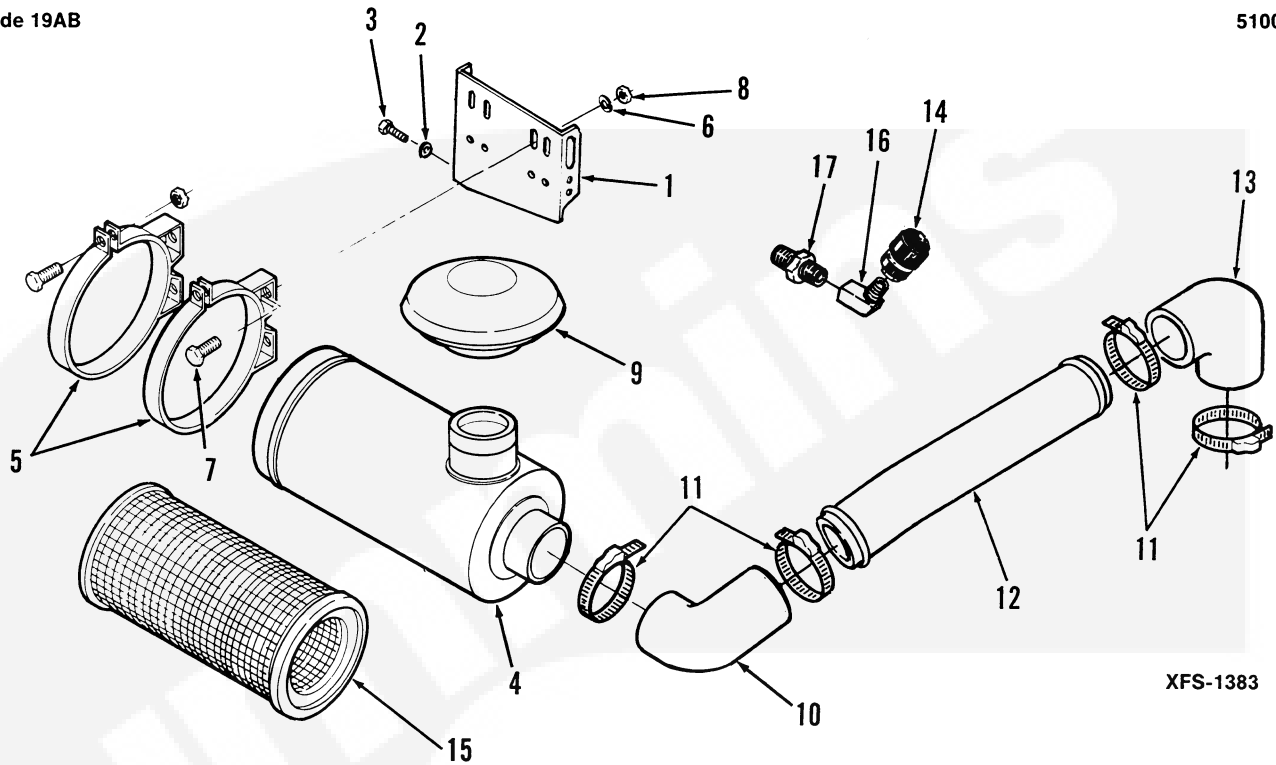
XFS-1383

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	140-1772	1	Bracket, Air Cleaner Mounting - Unhoused
2	740-1010	1	Washer, Flat - Hardened (M12) Unhoused
3	718-1073	1	Screw, Cap - Hex Head (M12 x 25 MM) Unhoused
4	140-1786	1	Cleaner, Air (Includes Element)
5	140-0078	2	Band, Air Cleaner
6	WASHER (M8)		
	740-1006	4	Flat - Hardened - Unhoused
	850-2008	4	Lock - Spring - Housed
7	SCREW, CAP - HEX HEAD		
	718-1036	4	M8 x 20 MM - Unhoused
	718-1034	4	M8 x 14 MM - Housed
8	750-1006	4	Nut, Hex (M8) Unhoused
9	140-1787	1	Hood, Air Inlet
10	140-1775	1	Elbow - 90°
11	503-0354	3	Clamp, Hose
12	TUBE, AIR INLET		
	140-1801	1	Unhoused
	140-1774	1	Housed
13	ELBOW, REDUCER		
	503-1084	1	Unhoused
	140-1785	1	Housed
14	140-1791	1	Indicator, Service - Unhoused
15	140-1204	1	Element, Air Cleaner
16	CLAMP, HOSE		
	503-1087	1	Unhoused
	503-0465	1	Housed

AIR CLEANER (SPEC C)

Code 19AB

5100-1141



XFS-1383

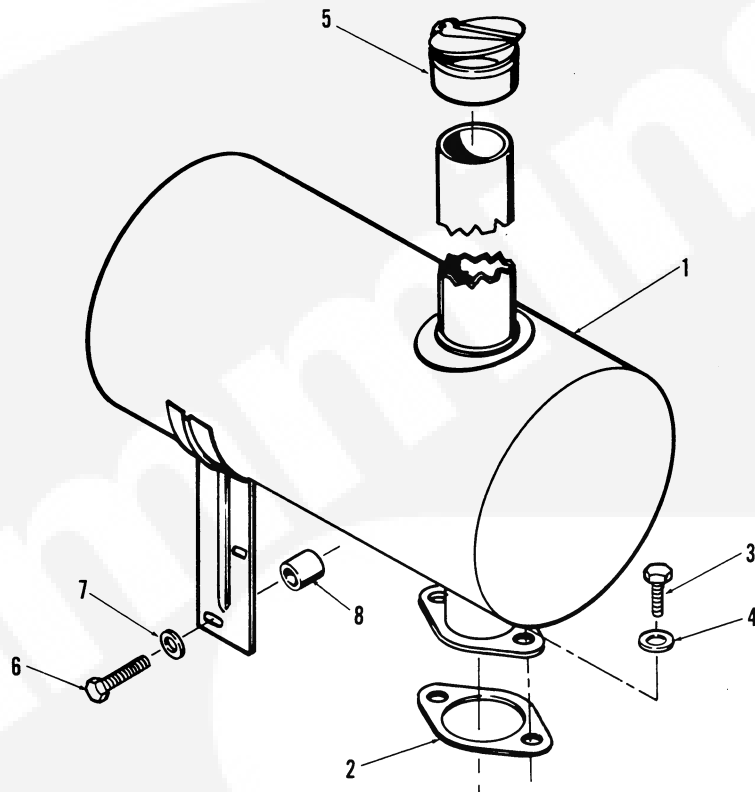
REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	140-1772	1	Bracket, Air Cleaner Mounting
2	526-2148	1	Washer, Flat - Hardened (M12)
3	800-2111	1	Screw, Cap - Hex Head (M12 x 25 MM)
4	140-1869	1	Cleaner, Air (Includes Element)
5	140-0078	2	Band, Air Cleaner
6	526-2103	4	Washer, Flat - Hardened (M8)
7	800-2057	4	Screw, Cap - Hex Head (M8 x 20 MM)
8	860-2008	4	Nut, Hex (M8)
9	140-1787	1	Hood, Air Inlet
10	503-1222	1	Elbow - 90°
11	503-0354	4	Clamp, Hose
12	140-1991-02	1	Tube, Air Inlet
13	503-1406	1	Elbow, 90°
14	140-1791	1	*Indicator, Service
15	140-1204	1	Element, Air Cleaner
16	502-0020	1	*Elbow, 90° (1/8")
17	502-0082	1	*Nipple, Hex - Pipe (1/8")

* - Intake manifold mounted.

MUFFLER

Code 21AC (Horizontal)

5100-0372



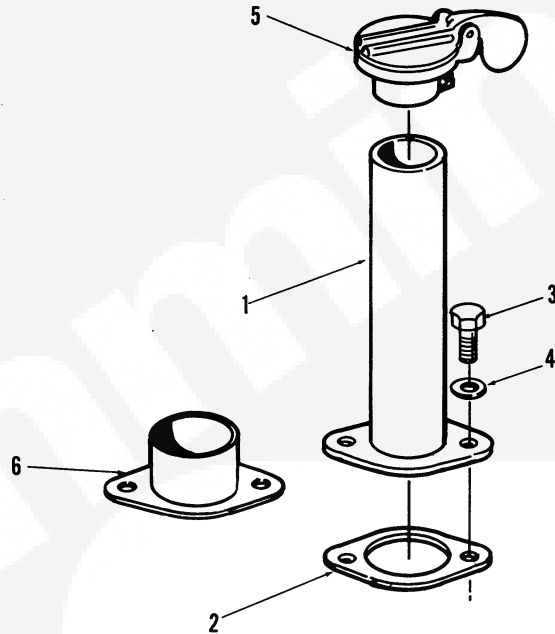
XS-1091

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	155-1967	1	Muffler, Exhaust
2	155-1920	1	Gasket, Muffler Mounting
3	718-1054	2	Screw, Cap - Hex Head (M10 x 25 MM)
4	740-1008	2	Washer, Flat (M10)
5	155-0986	1	Cap, Rain
6	718-1807	2	Screw, Cap - Hex Head - (M8 x 95 MM)
7	850-2008	2	Washer, Flat (M8)
8	155-1964	2	Spacer, Muffler Brace

EXHAUST PIPE

Code 21AD (With Rain Cap)
Code 21AG (Exhaust Flange)

5100-0190
5100-0338



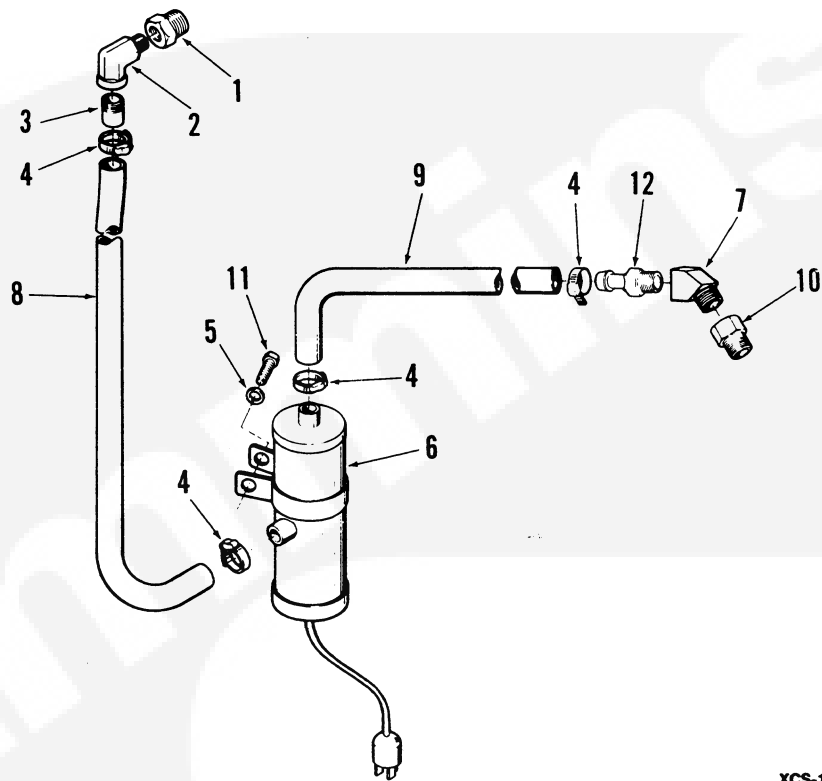
EXS-1065

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	155-1919	1	Pipe, Exhaust - Code 21AD
2	155-1920	1	Gasket
3	718-1054	2	Screw, Cap - Hex Head (M10 × 25 MM)
4	740-1008	2	Washer, Flat (M10)
5	155-0985	1	Cap, Rain - Code 21AD
6	155-1916	1	Flange, Exhaust - Code 21AG

ENGINE TANK HEATER

Code 23AY (850 Watt, 120 Volt)
Code 23BB (1000 Watt, 230 Volt)

5100-0665



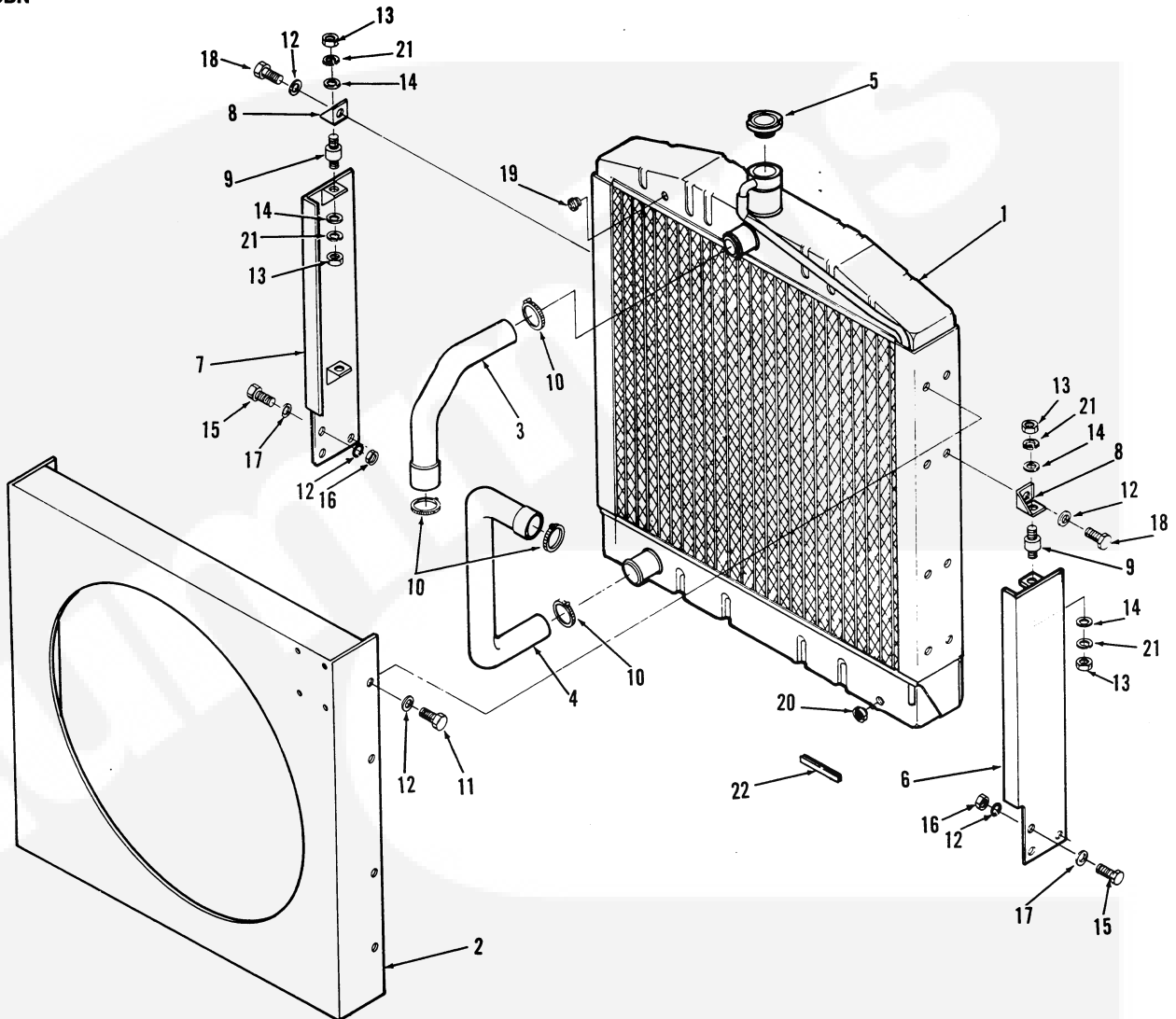
XCS-1244-1

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	505-0131	1	Bushing, Reducer (3/4" x 3/8")
2	505-0120	1	Elbow, Street (3/8")
3	505-0135	1	Nipple, Half (3/8" x 1-1/2")
4	503-0382	4	Clamp, Hose
5	850-2012	1	Washer, Lock (M12)
6	HEATER, TANK (Includes Hose Adapter, Cord and Mounting Bracket)		
	333-0203	1	Code 23AY
	333-0201	1	Code 23BB
7	502-0156	1	Elbow, Street (1/4")
8	503-1168	1	Hose, Rubber (5/8" ID x 36")
9	503-0387	1	Hose, Rubber (5/8" ID x 10-1/4")
10	505-0017	1	Bushing, Reducer (3/8" x 1/4")
11	718-1071	1	Screw, Cap - Hex Head (M12 x 16 MM)
12	502-0613	1	Adapter, Pipe to Hose (1/4" Pipe x 5/8" ID Hose)

COOLING SYSTEM - RADIATOR (SPEC A)

Code 23AJ
Code 23AR
Code 23BN

5100-0194
5100-0845



XCS-1164

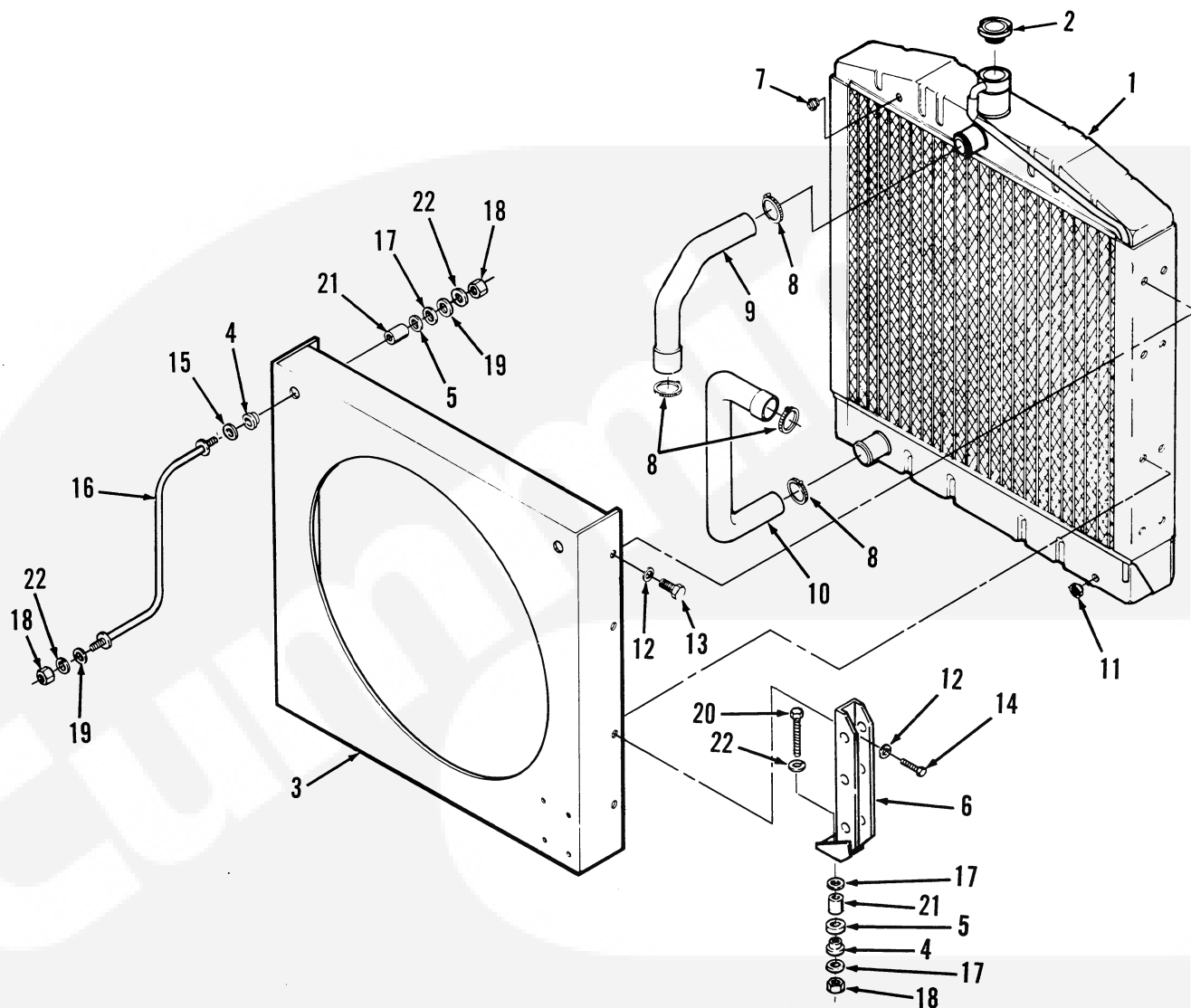
REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	130-1817	1	Radiator
2	130-2006	1	Shroud
3	503-1091	1	Hose, Upper
4	HOSE, LOWER		
	503-1192	1	Engines Without Front PTO
	503-1347	1	Engines With Front PTO
5	130-2003	1	Cap, Pressure
6	405-2885	1	Support, Radiator
7	405-2884	1	Support, Radiator
8	405-2876	4	Bracket, Radiator Isolator
9	402-0508	4	Isolator, Vibration
10	503-0365	4	Clamp, Hose
11	718-1032	8	Screw, Cap - Hex Head (M8 x 10 MM)
12	850-2008	16	Washer, Lock - Spring (M8)
13	862-0001	8	Nut, Hex (1/4 - 20)
14	850-0040	8	Washer, Lock - Spring (1/4")

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
15	SCREW, CAP - HEX HEAD (M8 x 20 MM)		
	718-1036	6	Open Power Units
	718-1036	4	Housed Power Units
16	750-1006	6	Nut, Hex (M8) Open Power Units
17	WASHER, FLAT (M8)		
	740-1006	6	Open Power Units
	740-1006	4	Housed Power Units
18	718-1034	4	Screw, Cap - Hex Head (M8 x 14 MM)
19	502-0153	1	Plug, Pipe (1/4")
20	504-0003	1	Cock, Drain (1/4")
21	526-0018	8	Washer, Flat (1/4")
22	508-1008	2	Channel, Edging - Used on Some Early Models Built Prior to September 21, 1982

COOLING SYSTEM - RADIATOR (SPEC C)

Code 23BN

5100-1139



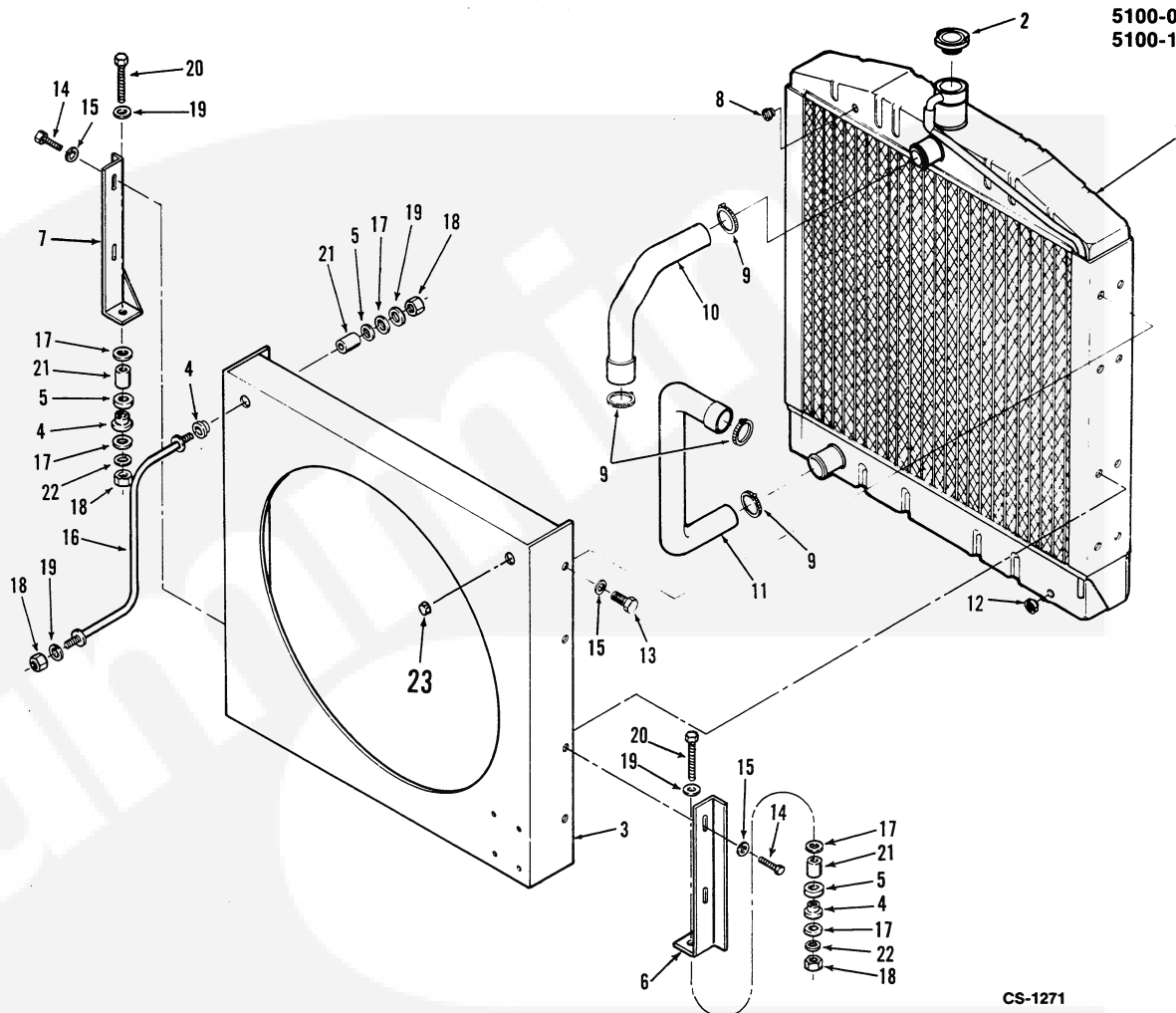
REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	130-1817	1	Radiator
2	130-2003	1	Cap, Pressure
3	130-2456	1	Shroud
4	402-0514	4	Isolator, Bushing
5	402-0515	4	Isolator, Ring
6	130-2768	2	Support, Radiator
7	502-0153	1	Plug, Pipe (1/4")
8	503-0365	4	Clamp, Hose
9	503-1367	1	Hose, Radiator - Upper
10	503-1366	1	Hose, Radiator - Lower
11	504-0003	1	Cock, Drain
12	853-0016	8	Washer, Lock - ET (5/16")
13	800-2050	4	Screw, Cap - Hex Head (M8 x 10 MM)

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
14	800-2054	4	Screw, Cap - Hex Head (M8 x 14 MM)
15	526-0087	2	Washer, Flat (1-17/64" ID x 1-3/4" OD x 1/16" Thk)
16	130-2452	2	Rod, Stabilizer
17	526-0322	6	Washer, Isolator (2" OD)
18	860-2010	6	Nut, Locking (M12)
19	526-2148	4	Washer, Flat (M12)
20	718-1079	2	Screw, Cap - Hex Head (M12 x 55 MM)
21	130-2458	4	Spacer, Isolator
22	850-2012	6	Washer, Lock-Spring (M12)

COOLING SYSTEM - RADIATOR

Code 23BM
Code 23CA
Code 23CM

5100-0661
5100-1057



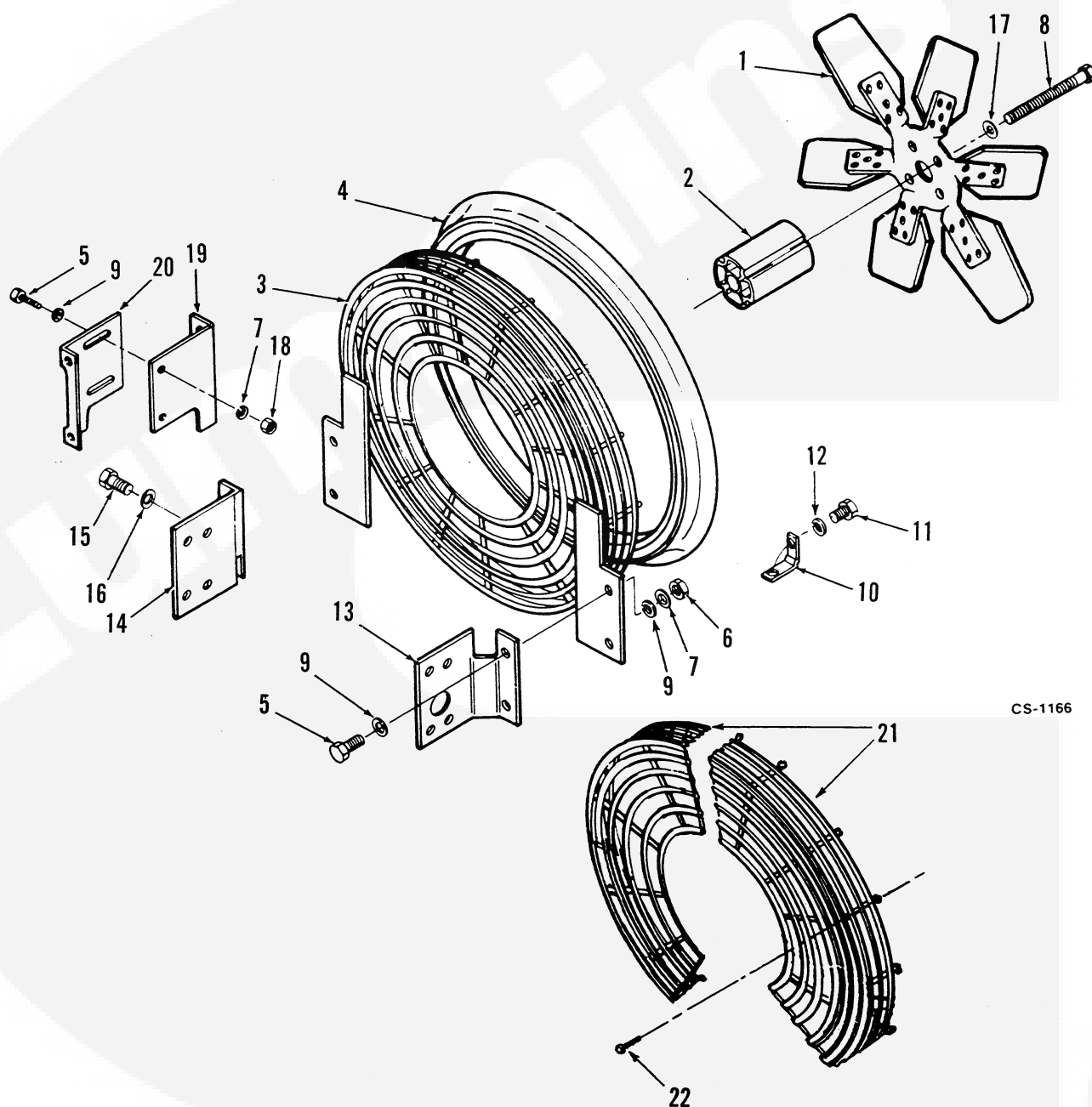
CS-1271

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	130-1817	1	Radiator
2	130-2003	1	Cap, Pressure
3	130-2456	1	Shroud
4	ISOLATOR, BUSHING		
	402-0547	4	Code 23BM, 23CA Engines With Large Coolant Pump (Two Thermostats)
	402-0514	4	Engines With Small Coolant Pump (One Thermostat)
5	ISOLATOR, RING		
	402-0514	4	Code 23CM
	402-0548	4	Code 23BM, 23CA Engines With Large Coolant Pump (Two Thermostats)
	402-0515	4	Engines With Small Coolant Pump (One Thermostat)
	402-0515	4	Code 23CM
6	130-2444-01	1	Support, Radiator - Right Hand
7	130-2444-02	1	Support, Radiator - Left Hand
8	502-0153	1	Plug, Pipe (1/4")
9	503-0365	4	Clamp, Hose

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
10	HOSE, RADIATOR - UPPER		
	503-1091	1	Engines With Large Coolant Pump (Two Thermostats)
	503-1367	1	Engines With Small Coolant Pump (One Thermostat)
11	HOSE, RADIATOR - LOWER		
	503-1192	1	Engines With Large Coolant Pump (Two Thermostats)
	503-1366	1	Engines With Small Coolant Pump (One Thermostat)
12	504-0003	1	Cock, Drain
13	718-1032	4	Screw, Cap - Hex Head (M8 x 10 MM)
14	718-1034	4	Screw, Cap - Hex Head (M8 x 14 MM)
15	853-0016	8	Washer, Lock - ET (5/16")
16	130-2452	2	Rod, Stabilizer
17	526-0322	6	Washer, Isolator (2" O.D.)
18	750-1010	6	Nut, Hex (M12)
19	740-1010	6	Washer, Flat (M12)
20	718-1079	2	Screw, Cap - Hex Head (M12 x 55 MM)
21	130-2458	4	Spacer, Isolator
22	850-2012	2	Washer, Lock-Spring (M12)
23	517-0150	2	Plug, Hole (Cooling Systems Without Stabilizer Rods)

COOLING SYSTEM - FAN (SPEC A)

Code 23AJ (Suction Fan, 89 MM Spacer)
 Code 23AR (Blower Fan, 89 MM Spacer)
 Code 23BM (Blower Fan, 53 MM Spacer)
 Code 23BN (Blower Fan, 89 MM Spacer)
 Code 23CA (Suction Fan, 53 MM Spacer)
 Code 23CM (Blower Fan, 53 MM Spacer)



CS-1166

COOLING SYSTEM - FAN (SPEC A)

Code 23AJ (Suction Fan, 89 MM Spacer)
 Code 23AR (Blower Fan, 89 MM Spacer)
 Code 23BM (Blower Fan, 53 MM Spacer)
 Code 23BN (Blower Fan, 89 MM Spacer)
 Code 23CA (Suction Fan, 53 MM Spacer)
 Code 23CM (Blower Fan, 53 MM Spacer)

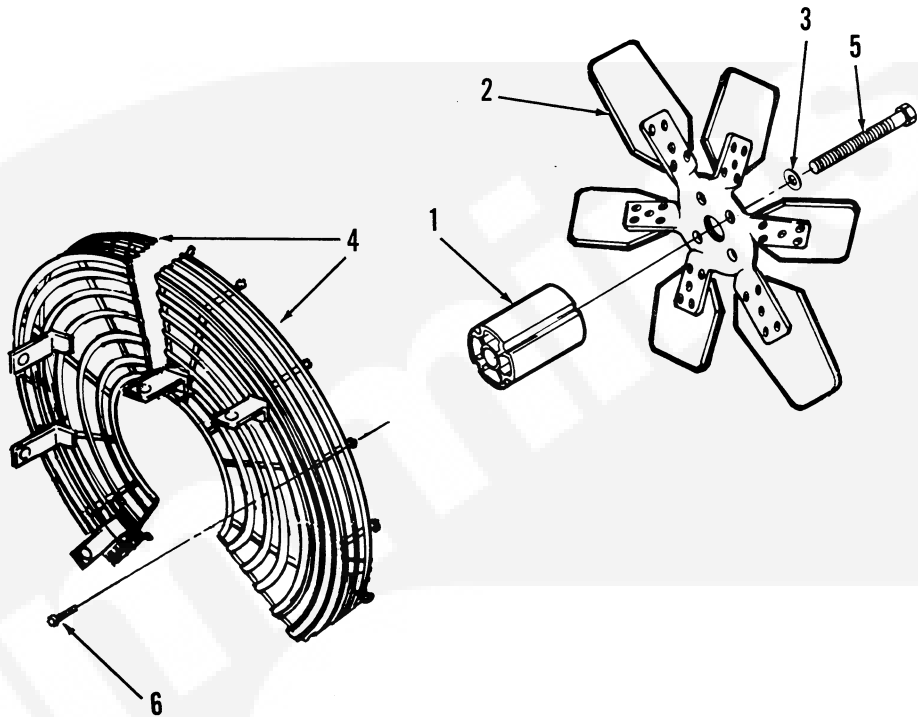
5100-0192
 5100-0193
 5100-0388
 5100-0659
 5100-0847
 5100-0993

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	FAN, COOLING			11	718-1005	1	Screw, Cap - Hex Head (M5 x 14 MM)
	130-1924	1	Code 23AJ, 23CA				- Code 23AJ, 23AR, 23BN
	130-2148	1	Code 23AR, 23BM, 23BN, 23CM	12	850-2005	1	Washer, Lock-Spring (M5)
2	SPACER, FAN						- Code 23AJ, 23AR, 23BN
	130-1874	1	Code 23AJ, 23AR, 23BN	13	130-2004	1	Bracket, Fan Guard - RH
	130-1873	1	Code 23BM, 23CA, 23CM				- Code 23AJ, 23AR, 23BN
3	130-1964	1	Guard, Fan - Code 23AJ, 23AR, 23BN	14	130-2005	1	Bracket, Fan Guard - LH
4	130-1969	1	Shroud, Fan - Code 23AJ, 23AR, 23BN				- Engines Without Front PTO
5	SCREW, CAP - HEX HEAD (M8 x 20 MM)			15	718-1036	4	Screw, Cap - Hex Head (M8 x 20 MM)
	- Code 23AJ, 23AR, 23BN						- Code 23AJ, 23AR, 23BN
	718-1036	4	Engines Without Front PTO	16	740-1006	4	Washer, Flat (M8) Code 23AJ, 23AR, 23BN
	718-1036	6	Engines With Front PTO	17	WASHER (M8)		
6	750-1006	4	Nut, Hex (M8) Code 23AJ, 23AR, 23BN		850-2008	4	Lock-Spring - Code 23BM, 23CA, 23CM
7	WASHER, LOCK-SPRING (M8) Code 23AJ, 23AR, 23BN				740-1006	4	Flat - Code 23AJ, 23AR, 23BN
	850-2008	4	Engines Without Front PTO	18	860-2008	2	Nut, Hex (M8 x 1.25) Engines With Front PTO
	850-2008	6	Engines With Front PTO				- Code 23AJ, 23BN
8	SCREW, CAP - HEX HEAD			19	130-2470	1	Support, Fan Guard - Engines With Front PTO
	718-1047	4	53 MM Spacer (M8 x 75 MM) Code 23BM, 23CA, 23CM				- Code 23AJ, 23BN
			89 MM Spacer - Code 23AJ, 23AR, 23BN	20	130-2471	1	Bracket, Fan Guard - Engines With Front PTO
	718-1804	4	Sheet Steel Pulley (M8 x 110 MM)				- Code 23AJ, 23BN
	718-1803	4	Cast Iron Pulley (M8 x 115 MM)	21	GUARD, FAN - Code 23BM, 23CA, 23CM		
9	WASHER, FLAT (M8)				130-2442	1	Left Hand
	740-1006	8	Engines Without Front PTO - Code 23AR		130-2443	1	Right Hand
	740-1006	10	Engines With Front PTO - Code 23AJ, 23BN	22	821-2033	8	Screw, Locking - Hex Washer Head (M6 x 20 MM)
10	130-2085	1	Clip, Pan - Shroud - Code 23AJ, 23AR, 23BN				

**COOLING SYSTEM - FAN
(SPEC C)**

Code 23AJ (Suction Fan, 75MM Spacer)
Code 23BN (Blower Fan, 53MM Spacer)

5100-1154
5100-1212

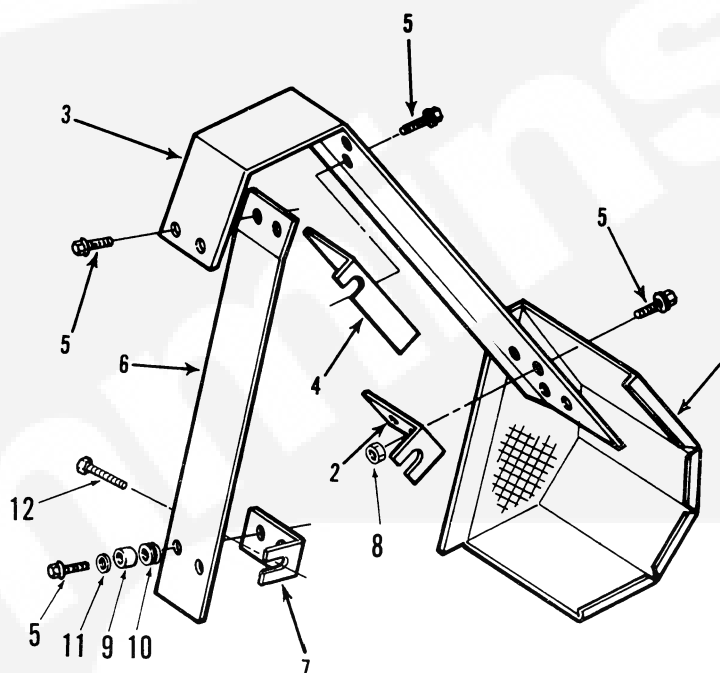


REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	SPACER, FAN		
	130-1878	1	Code 23AJ
	130-1873	1	Code 23BN
2	FAN, COOLING		
	130-1924	1	Code 23AJ
	130-2148	1	Code 23BN
3	850-2008	4	Washer, Lock-Spring (M8)
4	GUARD, FAN		
	130-3063	1	Left Hand
	130-3062	1	Right Hand
5	SCREW, CAP - HEX HEAD		
	718-1808	4	M8 x 100MM - Code 23AJ
	718-1047	4	M8 x 75MM - Code 23BN
6	821-2033	8	Screw, Locking - Hex Washer Head (M6 x 20MM)

BELT GUARD

Code 23BM (Belt Guard - Low Alternator)
Code 23CA (Belt Guard - Low Alternator)

5100-0663
5100-0851



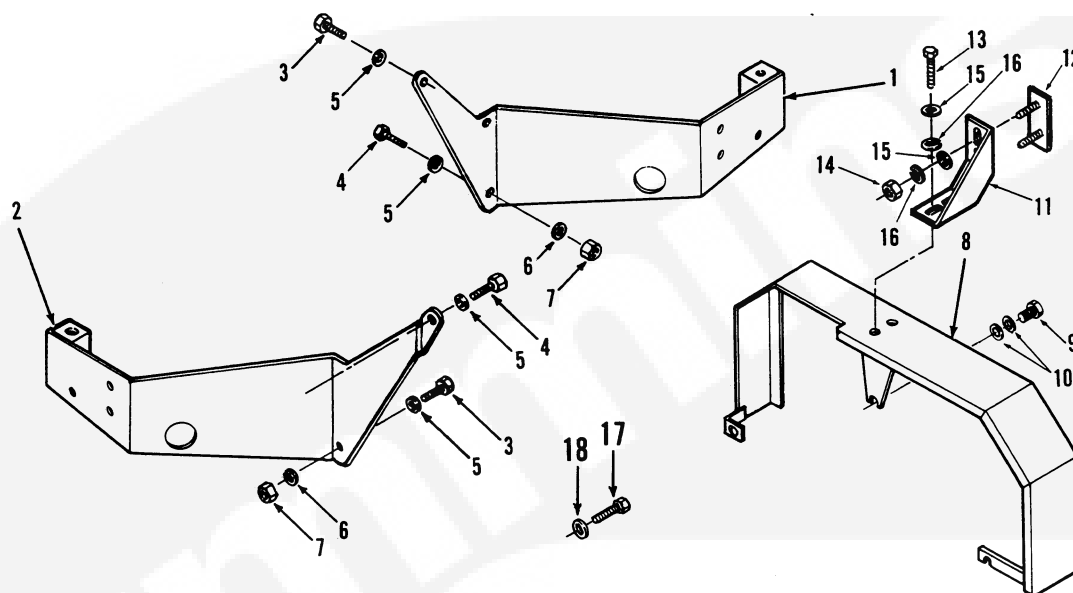
M-1595

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	191-1539	1	Guard, Alternator Belt
2	BRACKET, BELT GUARD		
	191-1543	1	Code 23BM
	191-1655	1	Code 23CA
3	GUARD, ALTERNATOR BELT		
	191-1540	1	Code 23BM
	191-1656	1	Code 23CA
4	BRACKET, BELT GUARD		
	191-1542	1	Code 23BM
	191-1580	1	Code 23CA
5	SCREW, LOCKING HEAD		
			1/4-20 x 1/2"
	821-0010	10	Code 23BM
	821-0010	2	Code 23CA
	821-2032	4	M6 x 12 MM - Code 23CA
	821-2033	4	M6 x 16 MM - Code 23CA
6	GUARD, ALTERNATOR BELT		
	191-1546	1	Code 23BM
	191-1577	1	Code 23CA
7	BRACKET, ALTERNATOR BELT		
	191-1547	1	Code 23BM
	191-1590	1	Code 23CA
8	870-2054	2	Nut, Locking Flange (M6) - Code 23CA
9	402-0546	4	Insert, Isolator - Code 23CA
10	508-0248	4	Grommet - Code 23CA
11	526-0021	4	Washer, Flat (1/4") Code 23CA
12	718-1044	1	Screw, Cap - Hex Head (M8 x 60 MM)

BELT GUARD AND RADIATOR SUPPORTS (SPEC A)

Code 23AJ
Code 23AR
Code 23BN

5100-0195
5100-0196



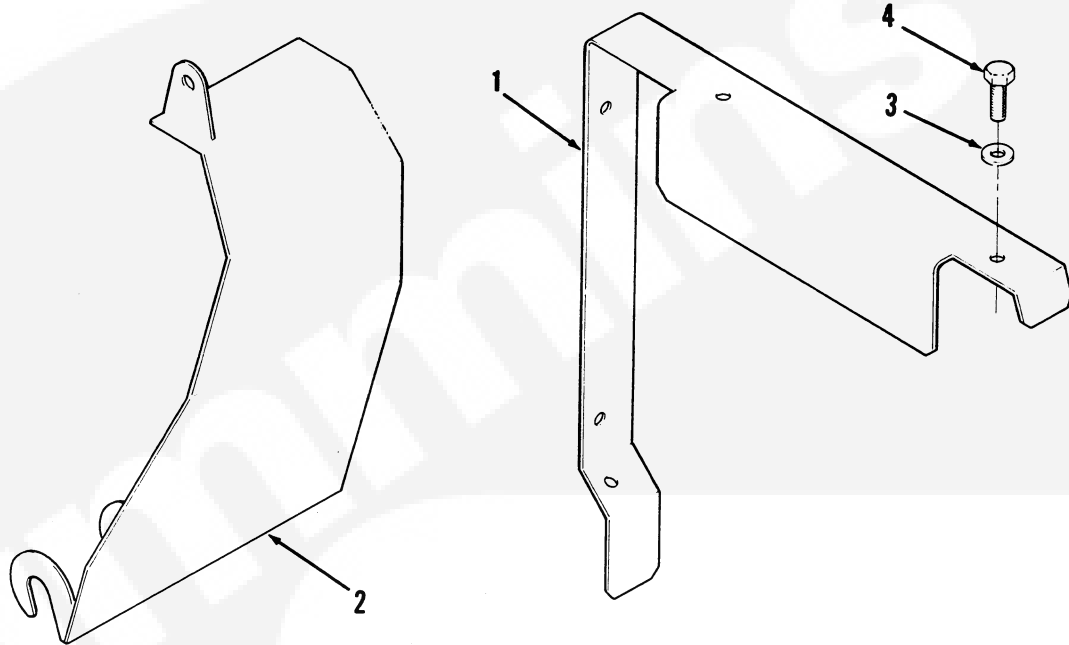
M-1343

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	130-2007	1	Support, Radiator - RH
2	130-2008	1	Support, Radiator - LH
3	718-1074	4	Screw, Cap - Hex Head (M12 × 30 MM)
4	718-1072	2	Screw, Cap - Hex Head (M12 × 20 MM)
5	740-1010	6	Washer, Flat (M12)
6	850-2012	4	Washer, Lock-Spring (M12)
7	750-1010	4	Nut, Hex (M12)
8	130-1993	1	Guard, Belt - Code 23AJ, 23BN
9	718-1047	1	Screw, Cap - Hex Head (M8 × 75 MM) Code 23AJ, 23BN
10	740-1006	2	Washer, Flat (M8) Code 23AJ, 23BN
11	130-2192	1	Support, Belt Guard Code 23AJ, 23BN
12	130-2210	1	Plate, Fan Guard Support Code 23AJ, 23BN
13	718-1020	2	Screw, Cap - Hex Head (M6 × 16 MM) Code 23AJ, 23BN
14	750-1004	2	Nut, Hex (M6) Code 23AJ, 23BN
15	526-0018	4	Washer, Flat (M6) Code 23AJ, 23BN
16	850-2006	4	Washer, Lock-Spring (M6) Code 23AJ, 23BN
17	718-1035	1	Screw, Cap - Hex Head (M8 × 16MM) Code 23AJ, 23BN
18	740-1006	1	Washer, Flat (M8) Code 23AJ, 23BN

BELT GUARD (SPEC C)

Code 23AJ
Code 23BN

5100-1151

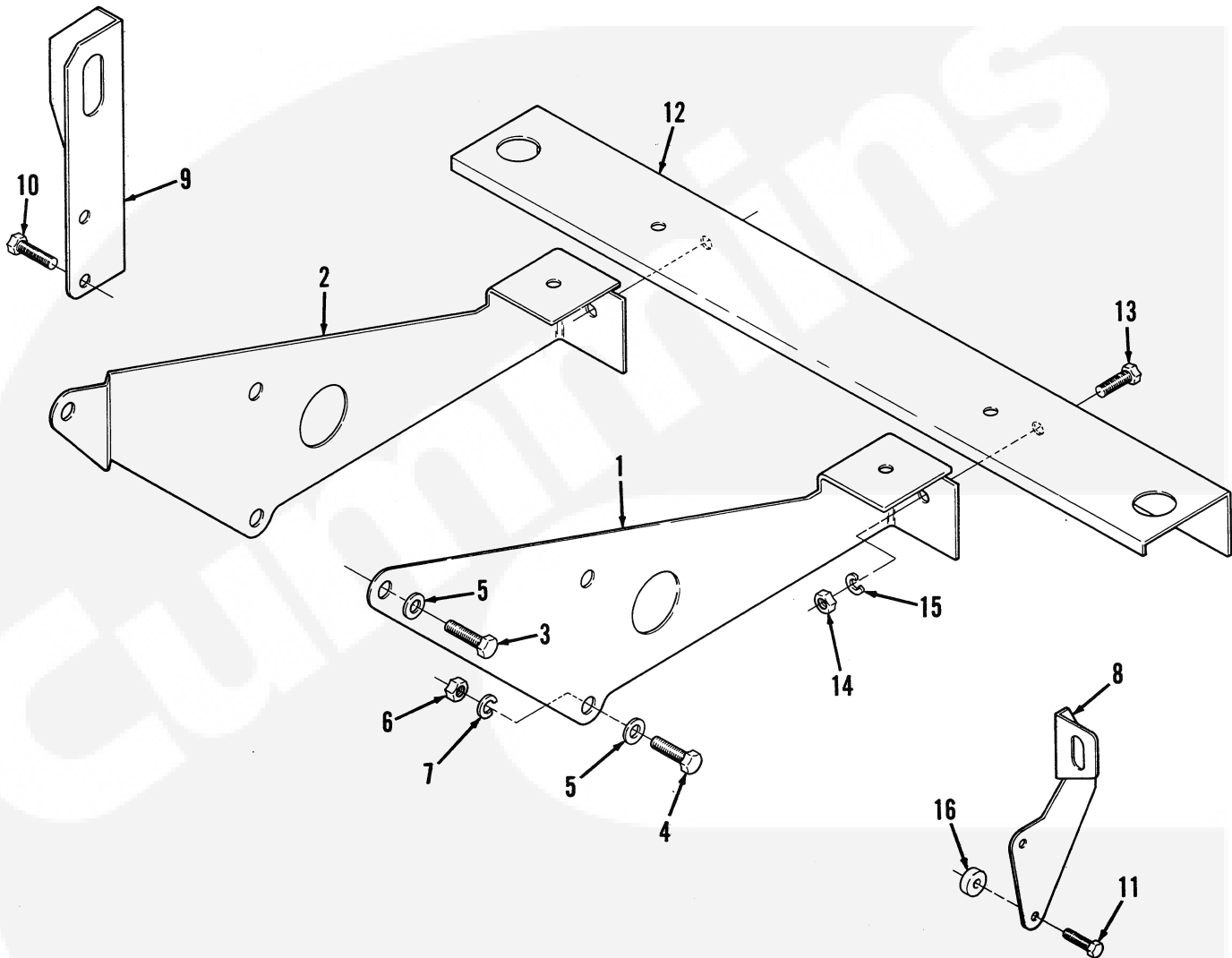


REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	130-3060	1	Guard, Belt
2	191-1741	1	Guard, Alternator
3	526-2103	5	Washer, Flat (M8)
4	800-2052	5	Screw, Cap - Hex Head (M8 x 12MM)

RADIATOR SUPPORTS (SPEC C)

Code 23BN

5100-1140



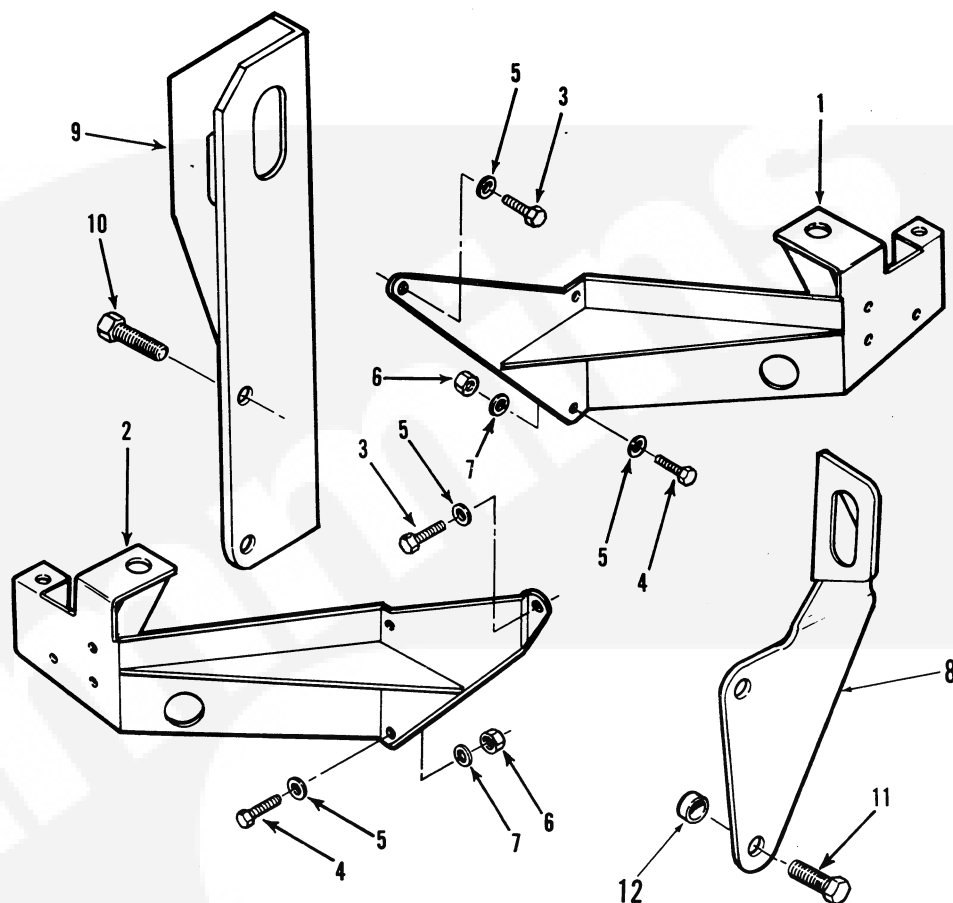
REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	130-2933	1	Support, Lower Radiator (Right Hand)
2	130-2934	1	Support, Lower Radiator (Left Hand)
3	800-2110	2	Screw, Cap - Hex Head (M12 x 20MM)
4	800-2112	4	Screw, Cap - Hex Head (M12 x 30MM)
5	526-2148	6	Washer, Flat (M12)
6	860-2010	4	Nut, Hex (M12)
7	850-2012	4	Washer, Lock-Spring (M12)
8	130-2838	1	Support, Upper Radiator (Right Hand)

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
9	130-2338	1	Support, Upper Radiator (Left Hand)
10	800-2086	2	Screw, Cap - Hex Head (M10 x 25MM)
11	718-1807	2	Screw, Cap - Hex Head (M8 x 95MM)
12	130-2935	1	Channel, Radiator Mounting
13	800-2057	4	Screw, Cap - Hex Head (M8 x 20MM)
14	860-2008	4	Nut, Hex (M8)
15	526-2103	4	Washer, Flat (M8)
16	191-1322	1	Spacer

RADIATOR SUPPORTS

Code 23BM
Code 23CA
Code 23CM

5100-0662



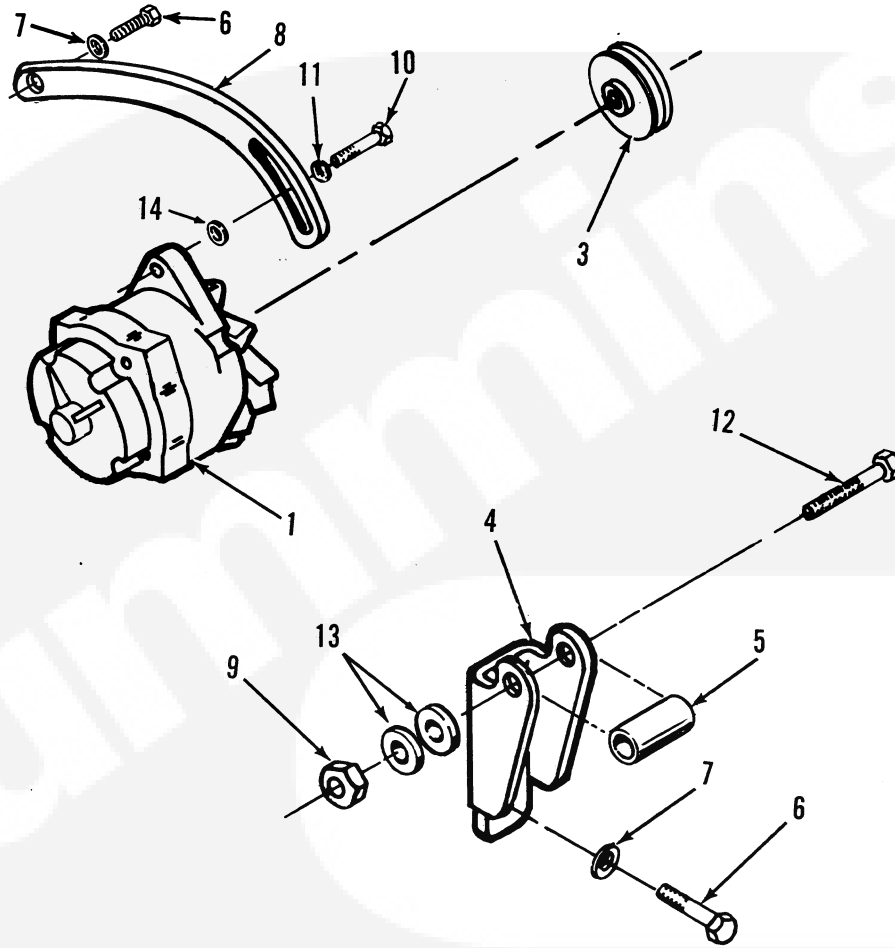
M-1594

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	130-2448	1	Support, Lower Radiator (Right Hand)
2	130-2449	1	Support, Lower Radiator (Left Hand)
3	718-1072	2	Screw, Cap - Hex Head (M12 x 20 MM)
4	718-1074	4	Screw, Cap - Hex Head (M12 x 30 MM)
5	740-1010	6	Washer, Flat (M12)
6	750-1010	4	Nut, Hex (M12)
7	850-2012	4	Washer, Lock - Spring (M12)
8	130-2838	1	Support, Upper Radiator (Right Hand)
9	130-2338	1	Support, Upper Radiator (Left Hand)
10	718-1054	2	Screw, Cap - Hex Head (M10 x 25 MM)
11	718-1807	2	Screw, Cap - Hex Head (M8 x 95 MM)
12	191-1322	2	Spacer (Some Engines Require 1)

ALTERNATOR

Code 31AA (High Mount Accessory Side - 37 Amp) 12 Volt
 Code 31AB (Low Mount Accessory Side - 37 Amp) 12 Volt
 Code 31AC (High Mount Accessory Side - 62 Amp) 12 Volt

5100-0060
 5100-0231
 5100-0781
 5100-0785



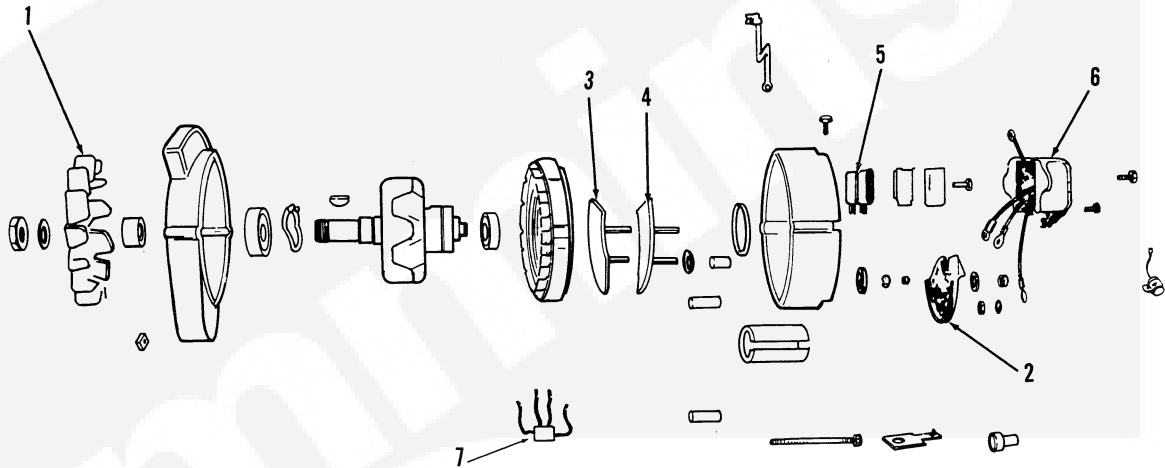
ES-1170

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	ALTERNATOR (Includes Fan - See Separate Group for Components)		
	191-1525	1	Code 31AA, 31AB
	191-1526	1	Code 31AC
3	191-1339	1	Pulley, Alternator - 78 MM Diameter - Single Groove
4	BRACKET, ALTERNATOR MOUNTING		
	191-1332	1	Code 31AB
	191-1331	1	Code 31AA, 31AC
5	191-1321	1	Spacer, Alternator Bracket
6	SCREW, CAP - HEX HEAD		
	718-1037	4	M8 x 25 MM
	718-1036	1	M8 x 20 MM

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
7	WASHER, FLAT (M8)		
	740-1006	5	Code 31AA, 31AC
	740-1006	4	Code 31AB
8	STRAP, ALTERNATOR ADJUSTING		
	191-1365	1	Code 31AA, 31AC
	191-1312	1	Code 31AB
9	860-2009		
10	800-2058	1	Screw, Cap - Hex Head (M8 x 25 MM) Code 31AA
11	526-2106	1	Washer, Flat (M8)
12	800-2100	1	Screw, Cap - Hex Head (M10 x 100 MM)
13	526-2123	2	Washer, Flat (M10)
14	191-1322	1	Spacer, Alternator Strap

ALTERNATOR COMPONENTS

Code 31AA (High Mount Accessory Side - 37 Amp, 12 Volt)
 Code 31AB (Low Mount Accessory Side - 37 Amp, 12 Volt)
 Code 31AC (High Mount Accessory Side - 62 Amp, 12 Volt)



ES-1292

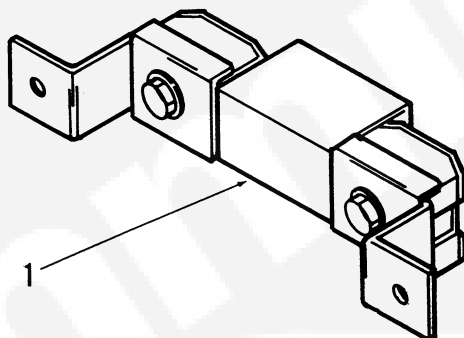
REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
	ALTERNATOR, COMPLETE		
	191-1525	1	Code 31AA, 31AB - Used on Late Models - Has No Isolation Diodes on Back Side of Alternator (Replaces Early Models With Isolation Diode Assembly on Back Side of Alternator)
	191-1526	1	Code 31AC
1	191-0943	1	Fan, Alternator
2	191-1454	1	Diode Assembly, Isolation - Used on Early Models
3	DIODE, RECTIFIER - NEGATIVE		
	191-1453	1	Used on Early Models with Isolation Diode Assembly
	191-1560	1	Used on Late Models without Isolation Diode Assembly

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
4	DIODE, RECTIFIER - POSITIVE		
	191-1452	1	Used on Early Models with Isolation Diode Assembly
	191-1559	1	Used on Late Models without Isolation Diode Assembly
5	BRUSH ASSEMBLY		
	191-0659	1	Used on Early Models with Isolation Diode Assembly
	191-1558	1	Used on Late Models without Isolation Diode Assembly
6	REGULATOR, VOLTAGE		
	191-1457	1	Used on Early Models with Isolation Diode Assembly
	191-1557	1	Used on Late Models without Isolation Diode Assembly
7	191-1556	1	Diode, Trio - Used on Late Models without Isolation Diode Assembly

BALLAST RESISTOR

Code 33AP (Ballast Resistor)

5100-0316



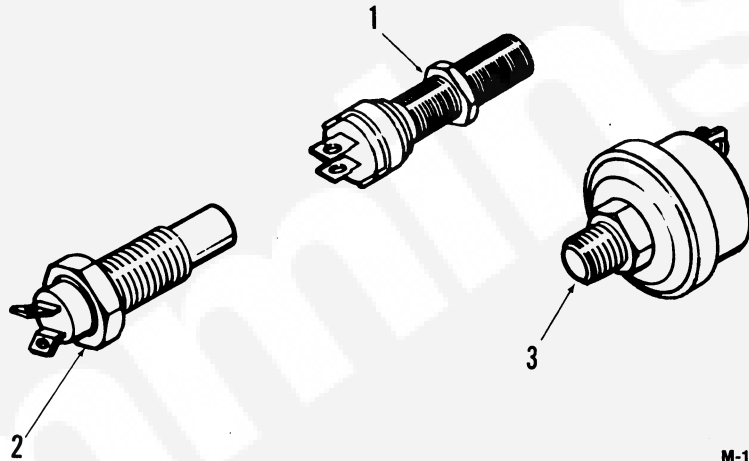
M-1345-1

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	333-0199	1	Resistor, Ballast (12 Volt)

SWITCHES

Code 35AC (Low Oil Pressure Switch and High Water Temperature Switch)
Code 35AE (Speed Sensor - Magnetic)

5100-0261
5100-0340

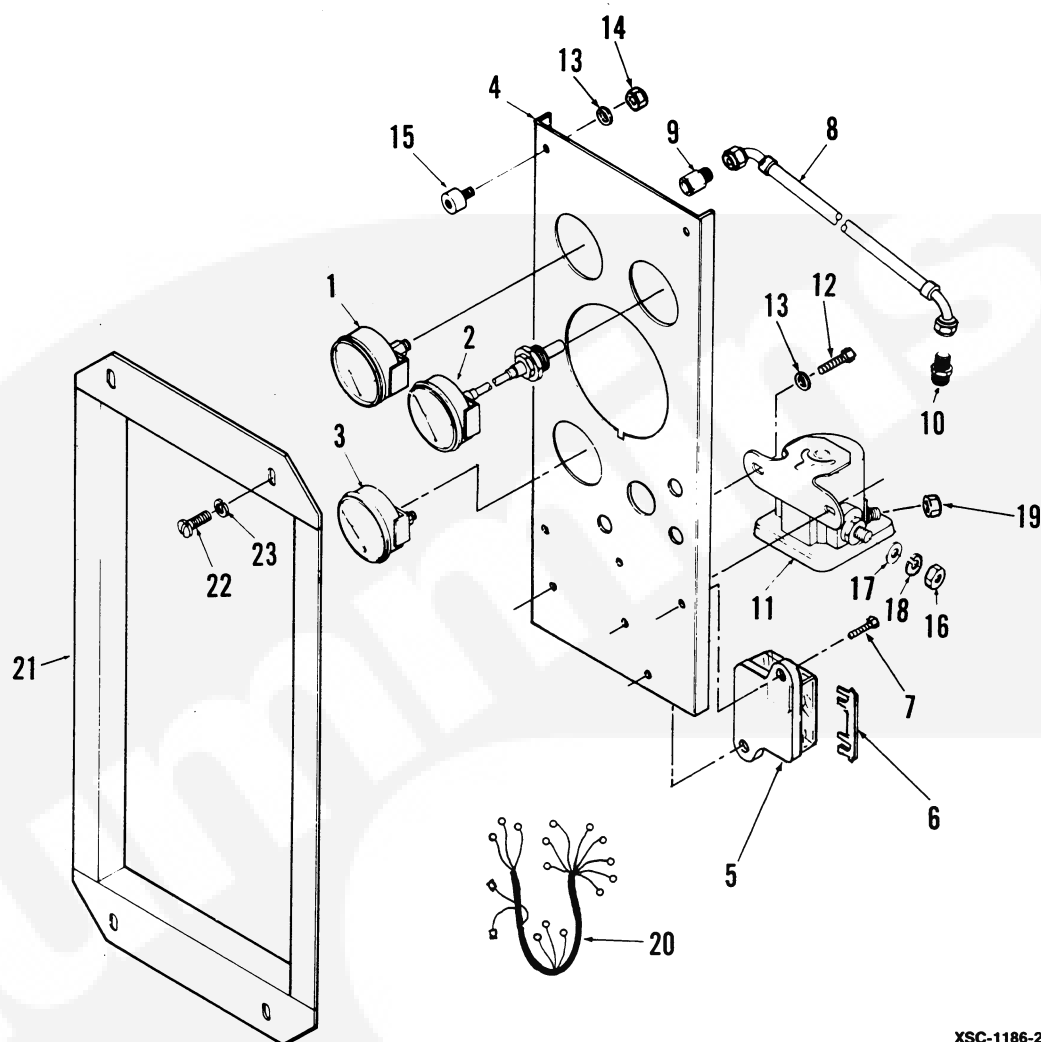


REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	150-1925	1	Sensor, Speed - Magnetic - Code 35AE
2	309-0482	1	Switch, High Water Temperature - Code 35AC
3	309-0177	1	Switch, Low Oil Pressure - Code 35AC

CONTROL - POWER UNIT

Code 35AB

5100-0517



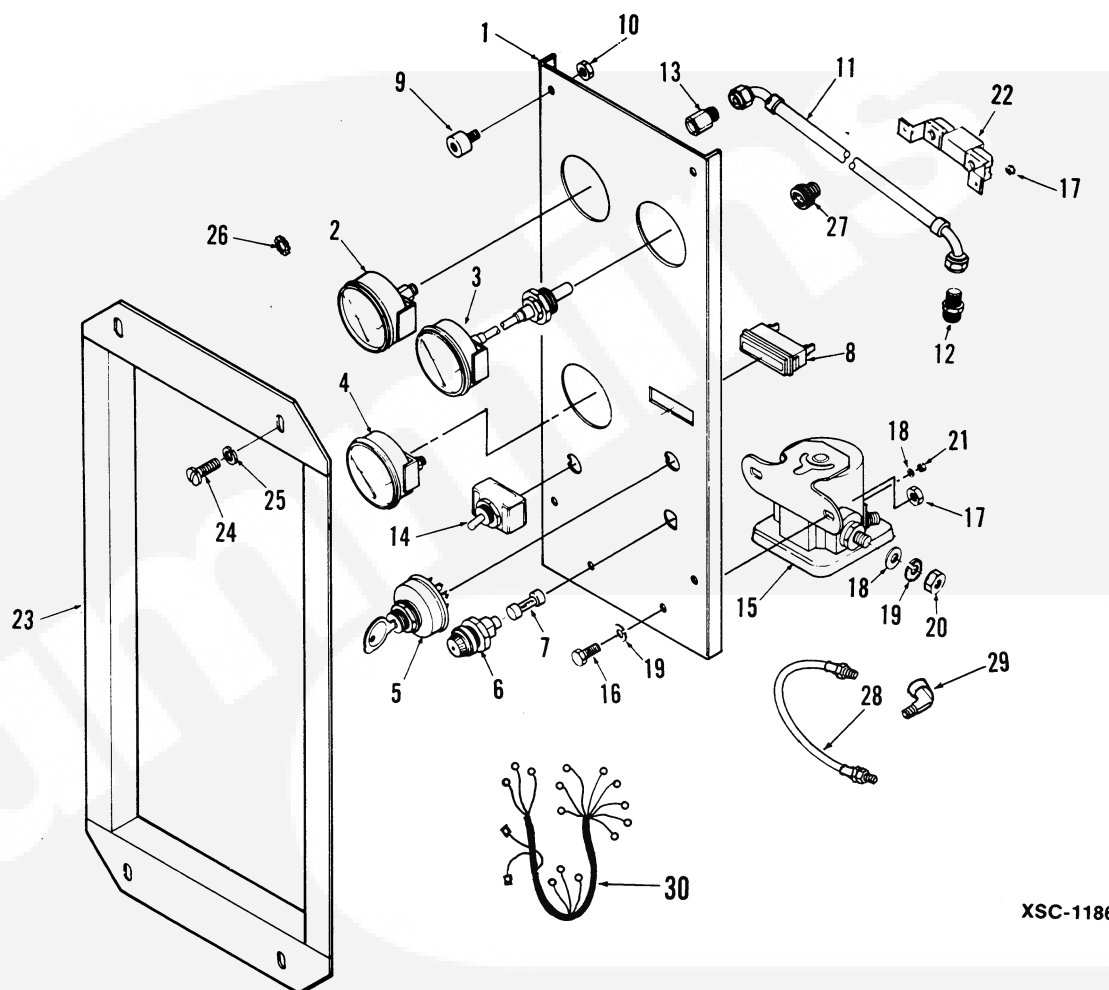
XSC-1186-2

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	193-0326	1	Gauge, Oil Pressure
2	193-0327	1	Gauge, Water Temperature
3	302-0063	1	Ammeter (Includes Mounting Hardware)
4	301-8259	1	Panel, Control
5	321-0263	1	Holder, Fuse
6	321-0262-02	1	Fuse - 50 Amp
7	800-4073	2	Screw, Machine - Slotted Hex Head (M4 x 10 MM)
8	501-0438	1	Line, Flexible - Oil
9	502-0808	1	Nipple, Hose Adapter
10	502-0807	1	Nipple, Hose Adapter
11	307-1031	1	Relay, Solenoid
12	800-2029	2	Screw, Cap - Hex Head (M6 x 12 MM)
13	850-2006	6	Washer, Lock-Spring (M6)
14	860-2007	4	Nut, Hex (M6)
15	402-0507	4	Isolator, Vibration
16	868-0002	2	Nut, Jam (5/16-24)
17	526-0022	2	Washer, Flat (5/16")
18	850-0045	2	Washer, Lock-Spring (5/16")
19	870-0131	1	Nut, Hex - ET (#10-32)
20	338-1728	1	Harness, Wiring
21	301-6709	1	Frame, Control Panel
22	800-2029	4	Screw, Cap - Hex Head (M6 x 12 MM)
23	850-2006	4	Washer, Lock-Spring (M6)

CONTROL - POWER UNIT

Code 35AD

5100-0189



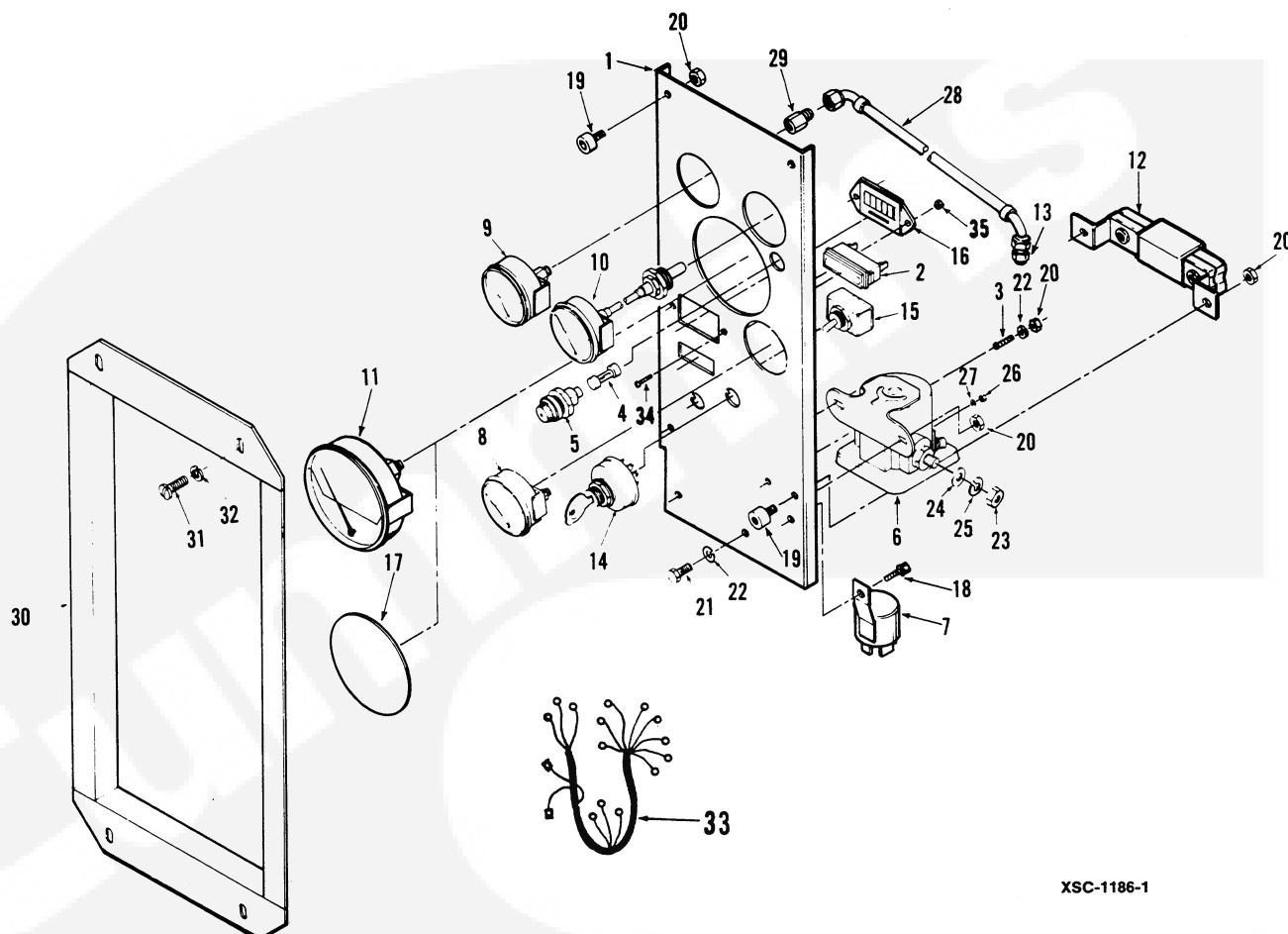
XSC-1186

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	301-6710	1	Panel, Control	19	WASHER, LOCK - SPRING		
2	193-0323	1	Gauge, Oil Pressure	850-0045	2	5/16"	
3	193-0324	1	Gauge, Water Temperature	850-2006	2	M6	
4	302-0063	1	Ammeter	20	868-0002	2	Nut, Jam (5/16 - 24)
5	308-0385	1	Switch (Includes Key)	21	870-0131	1	Nut, Hex W/ET (#10-32)
6	321-0175	1	Holder, Fuse	22	333-0199	1	Resistor, Ballast
7	321-0254	1	Fuse	23	301-6709	1	Frame, Control Panel
8	322-0302	1	Light, Indicator	24	718-1017	4	Screw, Cap - Hex Head (M6 x 10 MM)
9	402-0507	4	Isolator, Vibration	25	850-2006	4	Washer, Lock - Spring (M6)
10	750-1004	4	Nut, Hex (M6)	26	856-0008	2	Washer, Lock - EIT (5/16") - Ground to Rear Housing
11	501-0438	1	Line, Flexible - Oil	27	505-0131	1	Bushing, Reducer (3/4 to 3/8")
12	502-0807	1	Nipple, Hose Adapter	28	501-0002	1	Line, Flexible Fuel - Transfer Pump
13	502-0808	1	Nipple, Hose Adapter	29	ELBOW		
14	308-0155	1	Switch, Toggle	502-0041	1	Inverted Male - Transfer Pump	
15	307-1031	1	Relay, Solenoid	502-0053	1	Street Pipe - Injection Pump	
16	718-1018	2	Screw, Cap - Hex Head (M6 x 12 MM)	30	338-1554	1	Harness, Wiring
17	750-1004	2	Nut, Hex (M6)				
18	WASHER, FLAT						
	526-0022	2	5/16"				
	526-0008	1	#10				

CONTROL - POWER UNIT

Code 35AP (Without Tachometer)
Code 35AR (With Tachometer)

5100-0912-01
5100-0912-03



XSC-1186-1

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	301-8990	1	*Panel, Control
2	322-0302	1	Light, Indicator
3	718-1021	1	Screw, Cap - Hex Head (M6 x 20 MM) Grounding Stud
4	321-0254	1	Fuse
5	321-0175	1	Holder, Fuse
6	307-1031	1	Relay, Solenoid (Start) (Includes Terminal Hardware)
7	307-1886	1	Relay (Shutdown)
8	302-0063	1	Ammeter (Includes Mounting Hardware)
9	GAUGE, OIL PRESSURE		
	193-0378	1	Spec A
	193-0394	1	Spec C
10	GAUGE, WATER TEMPERATURE (Includes 3/8-18 Hex Reducer)		
	193-0377	1	Spec A
	193-0393	1	Spec C
11	302-1719	1	Tachometer (Includes Mounting Hardware) Code 35AR
12	333-0199	1	Resistor, Ballast
13	502-0807	1	Nipple, Hose Adapter (Male)
14	308-0385	1	Switch (Includes Keys)
15	308-0792	1	Switch, Toggle
16	302-0885	1	Meter, Time Totalizing
17	517-0190	1	Plug, Hole - Code 35AP
18	718-1002	1	Screw, Locking Head (M5 x 8 MM)
19	402-0507	4	Isolator, Vibration

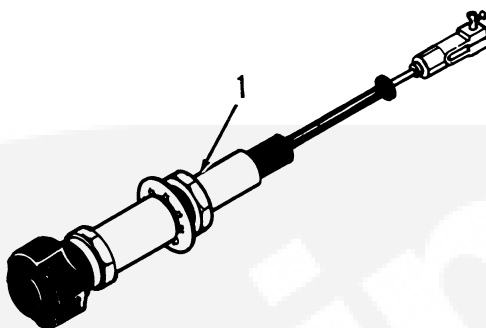
REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
20	750-1004	7	Nut, Hex (M6)
21	718-1018	2	Screw, Cap - Hex Head (M6 x 12 MM)
22	850-2006	3	Washer, Lock-Spring (M6)
23	868-0002	2	Nut, Hex - Jam (5/16-24)
24	526-0022	2	Washer, Flat (5/16")
25	850-0045	2	Washer, Lock-Spring (5/16")
26	870-0131	1	Nut, Hex - ET (#10-32)
27	526-0008	1	Washer, Flat (#10)
28	501-0438	1	Line, Oil Pressure
29	502-0808	1	Nipple, Hose Adapter (Female)
30	301-6709	1	*Frame, Control Panel (Not required on all engines)
31	800-2027	4	Screw, Cap - Hex Head (M6 x 10 MM)
32	850-2006	4	Washer, Lock-Spring (M6)
33	HARNESS, WIRING		
	338-1813-02	1	Engines Without Tachometer
	338-1813-01	1	Engines With Tachometer
34	812-0061	2	Screw, Machine - Round Head (#6-32 x 3/8")
35	870-1183	2	Nut, Hex - With ET (#6-32)

*NOTE: Control Panel width was increased 12.0 MM to 144.0 MM eliminating the need for the control Panel Frame. This change occurred during Spec A.

THROTTLE CONTROL (SPEC A)

Code 39AA

5300-0018

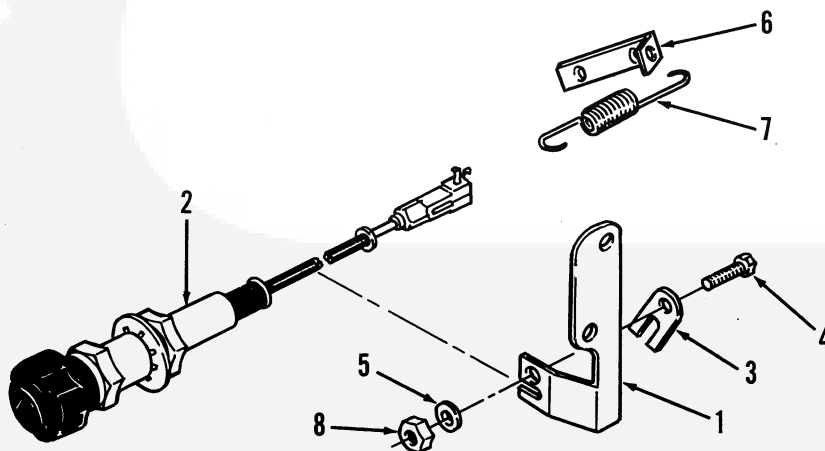


REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	152-0241	1	Control, Vernier

THROTTLE CONTROL (SPEC C)

Code 39AA

5100-1098



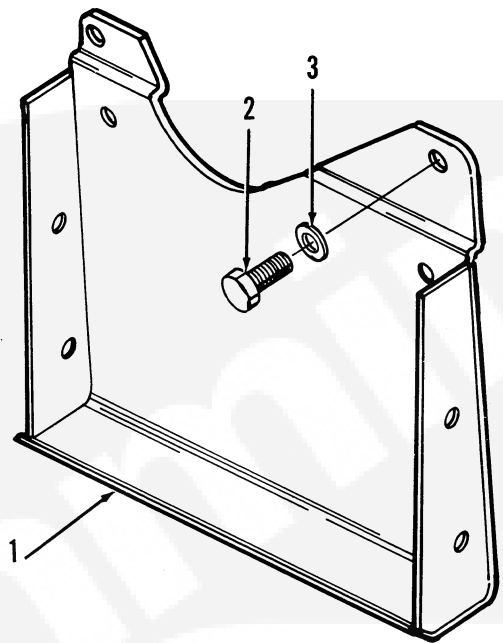
M-1346-1

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	152-0251	1	Bracket, Cable
2	152-0254	1	Cable, Speed Adjusting
3	152-0253	1	Clamp, Cable
4	800-2033	1	Screw, Cap - Hex Head (M6 x 16 MM)
5	850-2006	1	Washer, Lock-Spring (M6)
6	150-2144	1	Bracket, Spring
7	150-2056	1	Spring, Accelerator Return
8	860-2007	1	Nut, Hex (M6)

FRONT ENGINE MOUNT

Code 41AB (Rigid Four Point)

5100-0197



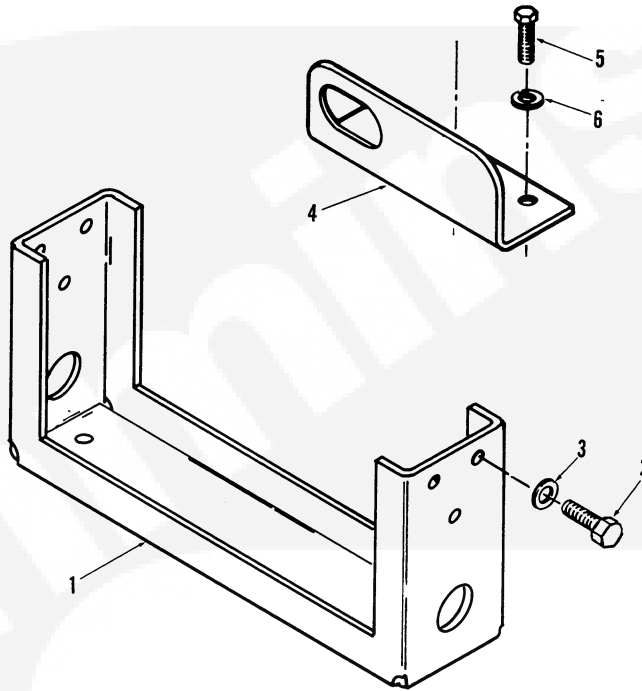
M-1224

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	403-2033	1	Bracket, Mount
2	SCREW, CAP - HEX HEAD		
	718-1086	2	M12 × 90 MM
	718-1802	2	M12 × 95 MM
3	740-1010	4	Washer, Flat (M12)

REAR ENGINE MOUNT AND LIFTING BRACKET

Code 41AB (Rigid Four Point)

5100-0198
5100-0199
5100-0207
5100-0311



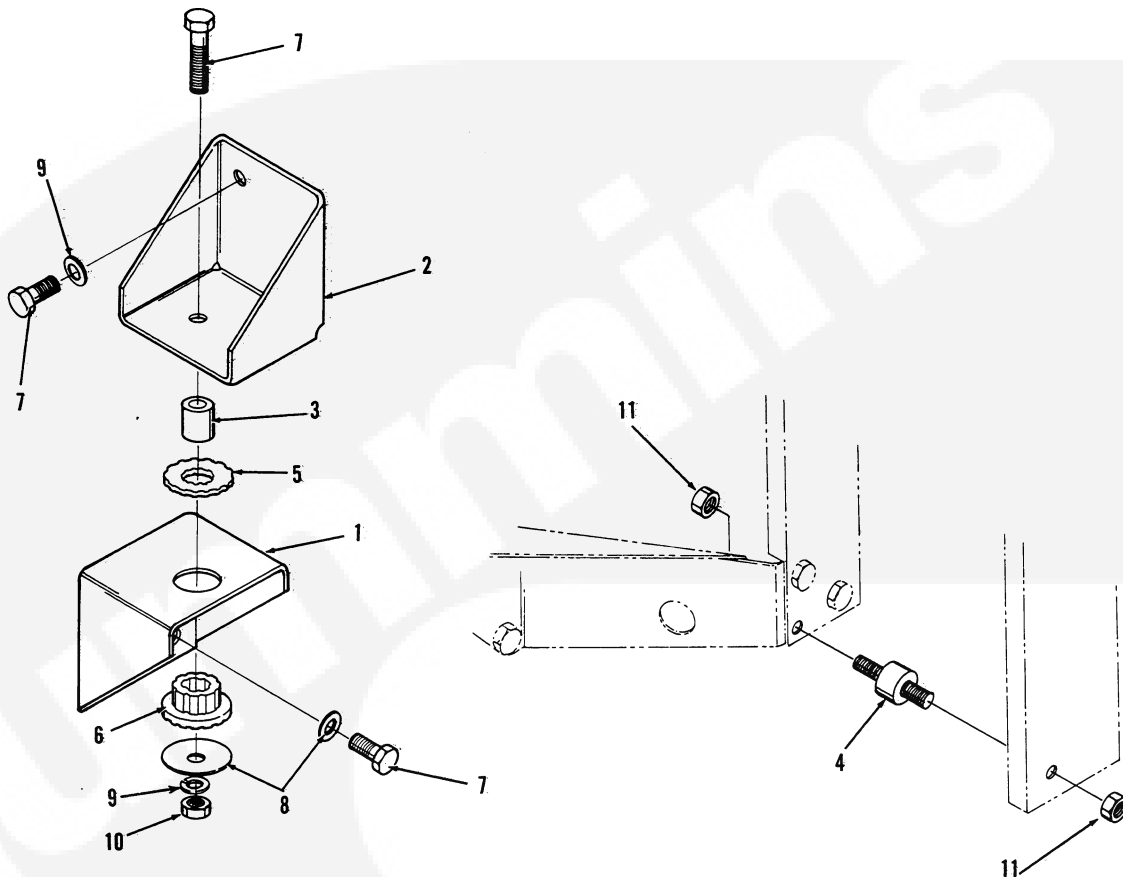
M-1224

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	BRACKET, REAR HOUSING 403-2036	1	For Engines With SAE #3 Flywheel Housing (Code 27AC, 27AG)
	403-1973	1	For Engines With SAE #4 Flywheel Housing (Code 27AB, 27AF, 27AH)
	403-1952	1	For Engines With SAE #5 Flywheel Housing (Code 27AA, 27AE)
2	718-1073	6	Screw, Cap - Hex Head (M12 × 25 MM)
3	850-2012	6	Washer, Lock-Spring (M12)
4	403-1937	1	Bracket, Lifting - Unhoused Engines
5	718-1053	2	Screw, Cap - Hex Head (M10 × 20 MM) - Unhoused Engines
6	850-2010	2	Washer, Lock-Spring (M10) - Unhoused Engines

HOUSING MOUNTING HARDWARE (SPEC A)

Code 43AA
Code 43AB

5500-0009



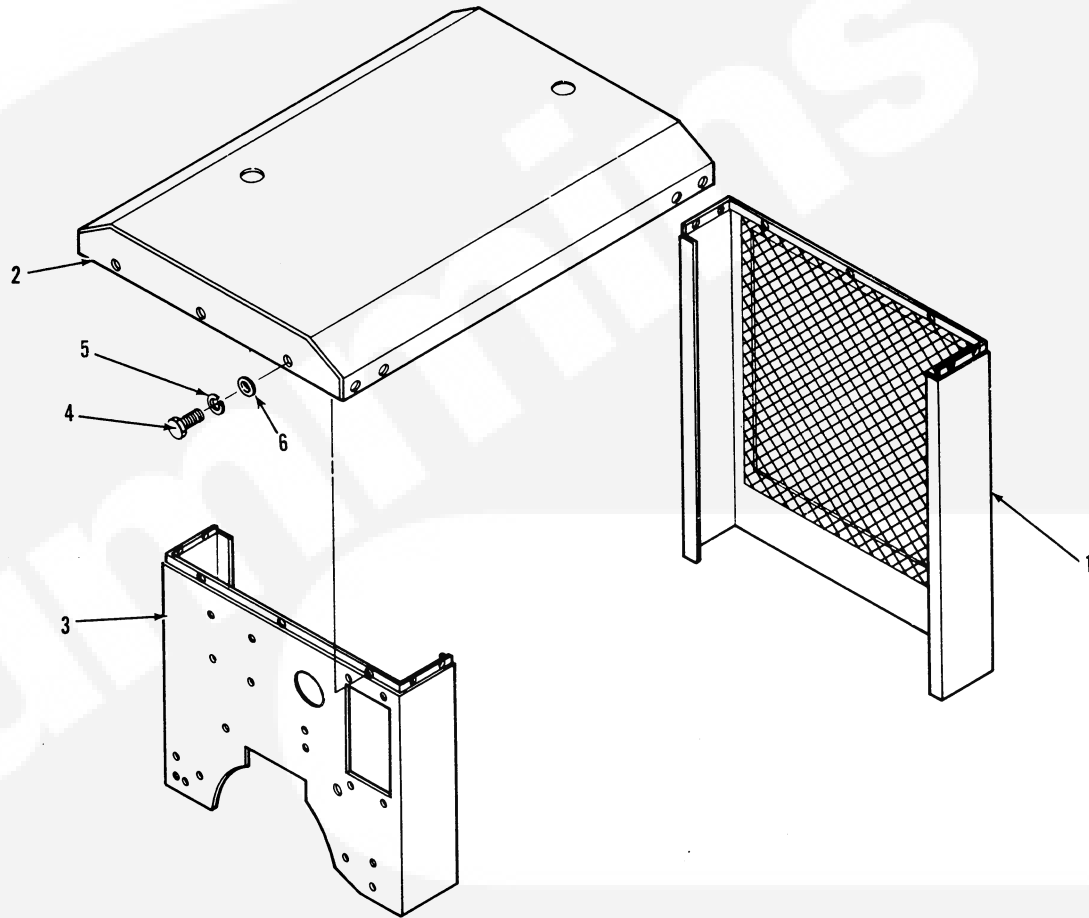
M-1340

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	BRACKET, REAR HOUSING MOUNTING		
	405-3029	1	Right Hand
	405-3030	1	Left Hand
2	405-3028	2	Bracket, Rear, Housing Mounting
3	405-3031	2	Spacer
4	402-0508	4	Isolator, Vibration
5	402-0515	2	Isolator, Vibration
6	402-0514	2	Isolator, Vibration
7	SCREW, CAP - HEX HEAD		
	718-1073	4	M12 x 25 MM
	718-1035	4	M8 x 16 MM
	718-1041	2	M8 x 45 MM
8	WASHER, FLAT		
	740-1010	4	M12
	526-0321	2	M8
9	850-2008	6	Washer, Lock-Spring (M8)
10	750-1006	2	Nut, Hex (M8)
11	870-0212	8	Nut, Self Locking (1/4 - 20)

HOUSING (SPEC A)

Code 43AA
Code 43AB

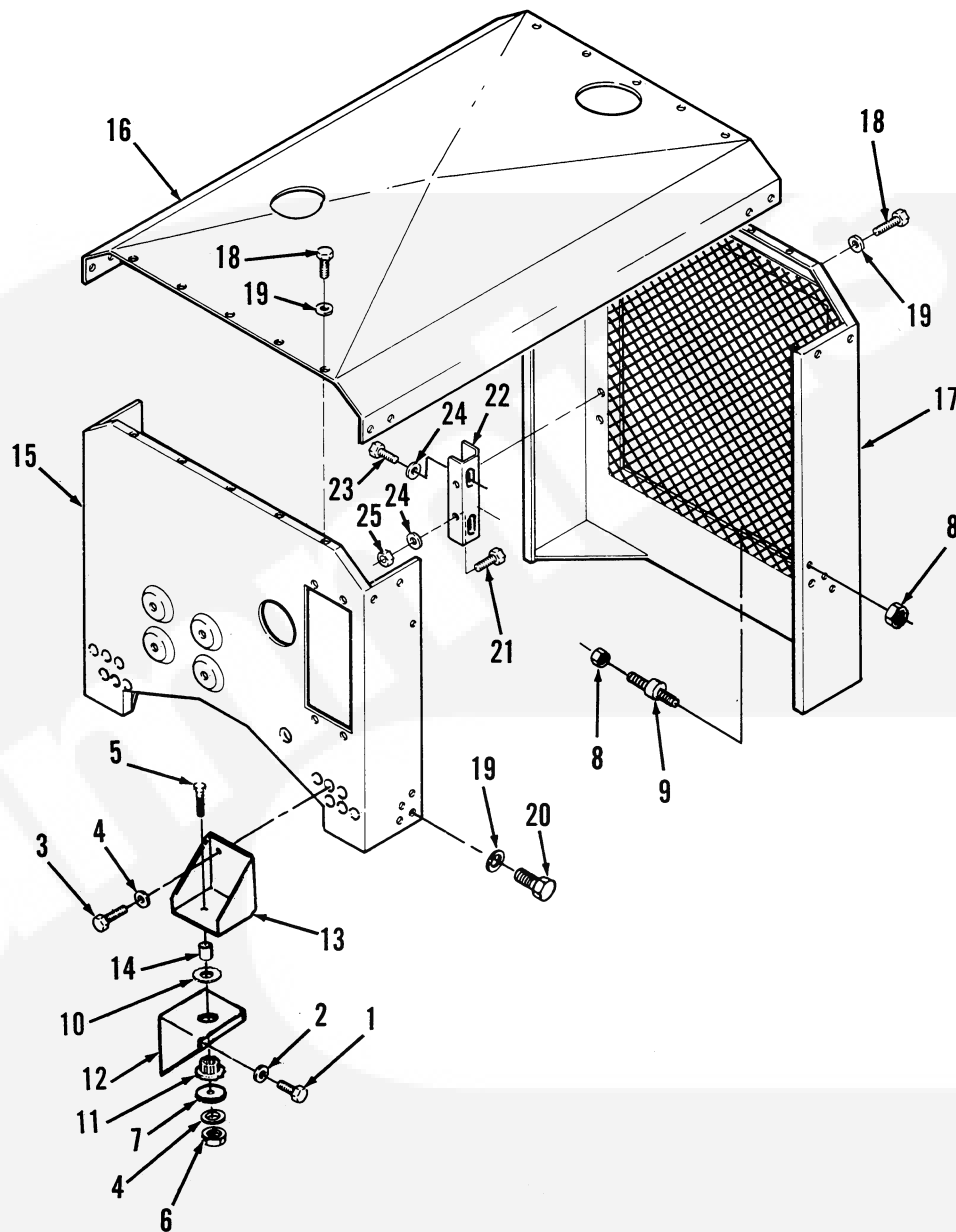
5500-0010



M-1342

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	405-2887	1	Housing, Radiator
2	405-2890	1	Roof, Housing
3	405-2897	1	Housing, Rear
4	718-1018	14	Screw, Cap - Hex Head (M6 x 12 MM)
5	850-2006	14	Washer, Lock - Spring (M6)
6	526-2081	14	Washer, Flat (M6)

HOUSING (SPEC C)

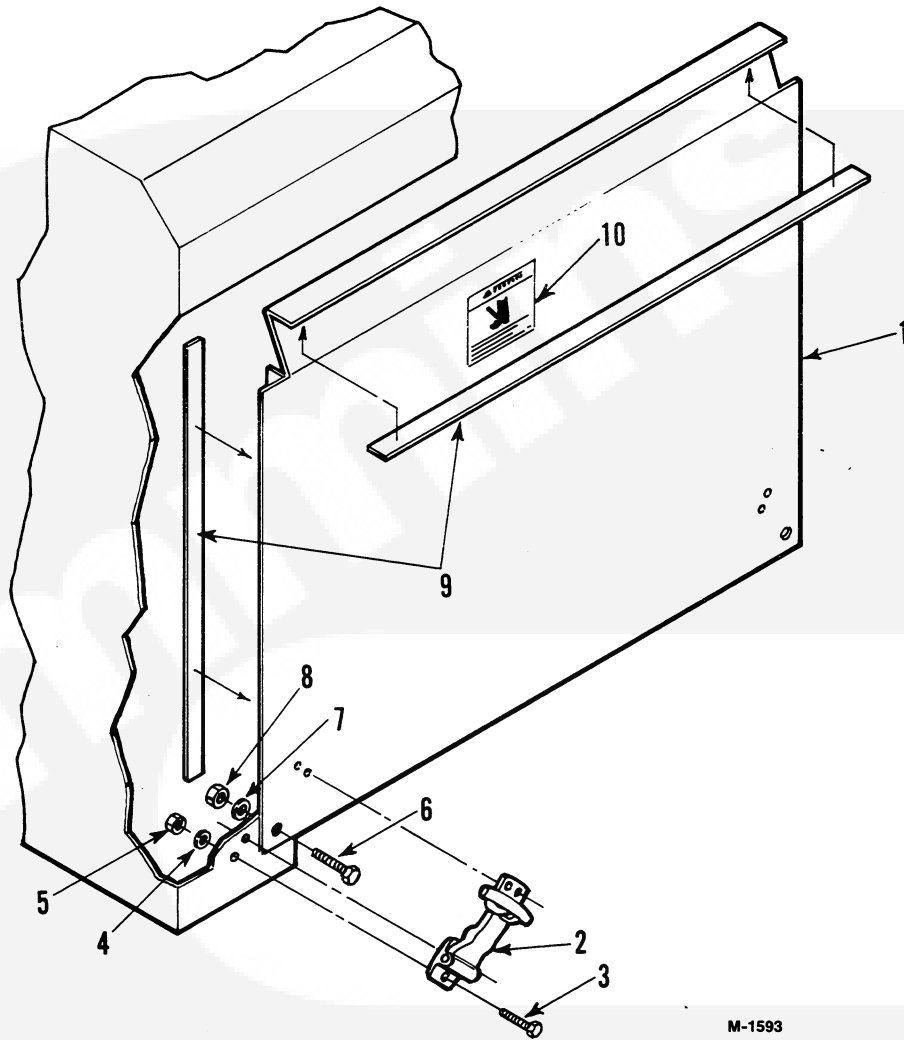


REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	800-2111	4	Screw, Cap - Hex Head (M12 x 25MM)	13	405-3028	2	Bracket, Rear Housing Mounting
2	526-2148	4	Washer, Flat (M12)	14	405-3031	2	Spacer
3	800-2056	4	Screw, Cap - Hex Head (M8 x 16MM)	15	405-3571	1	Housing, Rear
4	850-2008	6	Washer, Lock-Spring (M8)	16	405-3511	1	Roof, Housing
5	800-2062	2	Screw, Cap - Hex Head (M8 x 45MM)	17	405-3775	1	Housing, Radiator
6	860-2008	2	Nut, Hex (M8)	18	800-2052	18	Screw, Cap - Hex Head (M8 x 12MM)
7	526-0321	2	Washer, Flat (M8)	19	526-2108	20	Washer, Flat (M8)
8	870-0212	8	Nut, Self-Locking (1/4-20)	20	800-2062	2	Screw, Cap - Hex Head (M8 x 45MM)
9	402-0508	4	Isolator, Vibration	21	800-2058	4	Screw, Cap - Hex Head (M8 x 25MM)
10	402-0515	2	Isolator, Vibration	22	405-3768	2	Bracket, Housing Support
11	402-0514	2	Isolator, Vibration	23	800-2052	4	Screw, Cap - Hex Head (M8 x 12MM)
12	BRACKET, REAR HOUSING MOUNTING			24	526-2103	8	Washer, Flat (M8)
	405-3029	1	Right Hand	25	860-2008	4	Nut, Hex (M8)
	405-3030	1	Left Hand				

LOCKABLE DOORS - SPEC A

Code 43AB (Lockable Doors)

5100-0704



NOTE: These lockable doors **MUST** be used with a blower type cooling fan.

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	405-3307	2	Door
2	406-0562	2	Latch, Door (Includes Keeper)
3	718-1004	8	Screw, Cap - Hex Head (M5 × 12 MM)
4	740-1002	8	Washer, Flat (M5)
5	750-1002	8	Nut, Hex (M5)
6	718-1036	2	Screw, Cap - Hex Head (M8 × 20 MM)
7	740-1006	6	Washer, Flat (M8)
8	750-1006	2	Nut, Hex (M8)
9	405-3339	2	Gasket, Door (1829 MM)
10	98-5333	2	Label, Caution

MODEL SPECIFICATION NUMBER TO OPTION CODE TABLE

The front of this parts manual states that an option code identification plate is attached to each engine. This plate lists all the option codes used to manufacture and service the engine. Early production engines have been manufactured and shipped less this plate leaving no proper identification of component parts. This table lists the applicable option codes below the specification number. For your convenience, Sales Option Codes for the Power Units are combined with Sales Option Codes that apply to the Industrial Engine portion. Using the specification number from your engine nameplate determine the option codes that apply to your engine.

SPEC NO.	10001	10002	10003	10004	10005	10007	10009	10010 PU	10013 PU	10014	10015	10024	10025	10031	10032	10033	10036 PU	10037 PU	10043
OPTION	11AB	11AA	11AA	11AB	11AA	11AA	11AA	11AA	11AA	11AB	11AB	11AA	11AA	11AA	11AB	11AB	11AB	11AB	11AB
	13AB	13AA	13AA	13AB	13AK	13AA	13AA	13AA	13AA	13AB	13AB	13AA	13AA	13AA	13AB	13AB	13AB	13AB	13AP
	15AA	15AA	15AA	15AA	15AA	15AA	15AA	15AA	15AA	15AA	15AA	15AA	15AA	15AA	15AA	15AA	15AA	15AA	15AA
	17AA	17AA	17AA	17AA	17AA	17AA	17AA	17AA	17AA	17AA	17AA	17AA	17AA	17AA	17AA	17AA	17AA	17AA	17AA
	17AJ	17AJ	17AJ	17AJ	17AJ	17AJ	17AJ	17AJ	17AJ	17AJ	17AJ	17AJ	17AJ	17AJ	17AJ	17AJ	17AJ	17AJ	17AJ
CODE	17AL	17AL	17AL	17AL	17AL	17AL	17AL	17AL	17AL	17AL	17AL	17AM	17AM	17AL	17AM	17AL	17AL	17AL	17AM
	19AA	19AA	19AA	19AA	19AA	19AA	19AA	19AA	19AA	19AA	19AA	19AA	19AA	19AA	19AA	19AA	19AA	19AA	19AA
	21AA	21AA	21AA	21AA	21AB	21AA	21AA	19AB	19AB	21AA	21AA	21AA	21AA	21AA	21AA	21AA	19AB	19AB	21AA
	23AA	23AA	23AA	23AA	23AC	23AA	23AA	21AA	21AA	23AA	23AA	23AA	23AA	23AA	23AA	23AA	21AA	21AA	23AA
	23AE	23AD	23AD	23AE	23AE	23AD	23AD	21AD	21AD	23AE	23AE	23AF	23AF	23AF	23AF	23AF	21AD	21AD	23BJ
NUMBERS	27AA	27AA	27AA	27AA	27AF	23AH	33AD	23AA	23AA	33AD	23AH	27AA	31AA	27AA	27AA	27AA	23AA	23AA	27AF
	29AA	29AA	29AA	29AA	29AD	27AA		23AF	23AF		27AA	29AA	33AA	29AA	29AA	29AA	23AF	23AF	29AK
	31AB	31AB	31AA	31AA	31AA	29AA		23AJ	23AJ		29AA	31AA	33AD	33AA	31AA	33AA	23AJ	23AJ	31AG
	33AA	33AA	33AA	33AA	33AA	31AA		27AA	27AA		31AA	33AA		33AN	33AA	33AN	27AA	27AA	33AA
	33AD	33AD	33AD	33AD	33AD	33AA		29AA	29AA		33AA	33AD			33AD		29AA	29AA	33AR
						33AD		31AA	31AA		33AD						31AA	31AA	41AA
								33AA	33AA								33AA	33AA	
								33AN	33AN								33AN	33AN	
								33AP	35AD								33AP	35AD	
								41AB	39AA								41AB	39AA	
								41AB										41AB	
								43AA										43AA	

SPEC NO.	10045 PU	10046	10047 PU	10048	10057	10064	10067	10068	10073	10075	10076 PU	10079	10080	10082	10083 PU	10087	10089	10090	10091
OPTION	11AA	11AA	11AA	11AB	11AB	11AA	11AC	11AC	11AB	11AA	11AA	11AA	11AB	11AA	11AA	11AA	11AC	11AB	11AB
	13AA	13AA	13AA	13AJ	13AJ	13AK	13AE	13AC	13AJ	13AA	13AA	13AA	13AJ	13AA	13AA	13AK	13AE	13AB	13AF
	15AA	15AA	15AA	15AA	15AA	15AA	15AA	15AA	15AA	15AA	15AA	15AA	15AA	15AA	15AA	15AA	15AA	15AA	15AA
	17AA	17AJ	15AF	17AA	17AB	17AA	17AA	17AA	17AB	17AA	17AA	17AA	17AA	17AA	17AA	17AA	17AA	17AA	17AC
	17AJ	17AL	17AJ	17AJ	17AJ	17AJ	17AJ	17AJ	17AJ	17AJ	17AJ	17AJ	17AJ	17AJ	17AJ	17AJ	17AJ	17AJ	17AJ
	17AL	17BF	17AL	17AM	17AM	17AM	17AM	17AM	17AM	17AL	17AL	17AM	17AL	17AL	17AL	17AL	17AM	17AL	17AL
CODE	19AA	19AA	17BA	19AA	19AA	19AA	19AA	19AA	19AA	19AA	19AA	19AA	19AA	19AA	19AA	19AA	19AA	19AA	19AA
	19AB	21AB	17BF	21AA	21AA	21AB	21AA	21AA	21AA	21AA	19AB	21AB	21AA	21AA	19AB	21AB	21AA	21AA	19AE
	21AA	23AA	19AA	23AA	23AA	21AJ	23AA	23AA	23AA	23AA	21AA	21AJ	23AA	23AA	21AA	21AJ	23AA	23AA	21AB
	21AD	23AF	19AB	23AE	23AE	23AC	23BP	23BP	23AE	23AF	21AD	23AA	23AE	23AF	21AD	23AA	23BE	23AF	23AC
NUMBERS	23AA	27AF	19AF	27AA	23BK	23AE	27AF	27AF	23BK	27AC	23AA	23AE	23AH	27AB	23AA	23AE	27AF	27AB	23AE
	23AF	29AD	21AB	29AA	27AA	27AF	29AK	29AK	27AA	29AG	23AF	27AF	27AA	29AD	23AF	27AB	29AD	29AD	27AA
	23AJ	33AA	23AA	31AA	29AA	29AD	33AA	33AA	29AA	33AA	23AJ	29AD	29AA	33AA	23AJ	29AD	31AA	31AA	29AA
	27AA	33AR	23AF	33AA	31AA	31AA	33AR	33AR	31AE	33AD	27AC	31AA	31AA	33AN	27AB	31AB	33AA	33AA	31AA
	29AA		23AR	33AD	33AA	33AA	41AA	41AA	33AA		29AG	33AA	33AA		29AD	33AA	33AD	33AD	33AA
	31AA		27AF	41AA	33AD	33AD			33AD		31AA	33AD	33AD		31AA	33AD	35AC		33AD
	33AA		29AD		41AA				41AA		33AA				33AA		41AA		35AA
	33AD		31AA								33AD				33AP				
	39AA		33AA								35AD				41AB				
	41AB		33AR								39AA								
	43AA		35AB								41AB								
			35AE								43AA								
			41AB																
			43AA																

SPEC NO.	10092	10096	10097	10098	10099 PU	10102	10104	10105	10106	10118	10119	10120 PU	10121	10130	10131 PU	10135	10136 PU	10140	10144
OPTION	11AC	11AB	11AC	11AC	11AC	11AB	11AB	11AB	11AC	11AB	11AC	11AC	11AB	11AA	11AA	11AA	11AA	11AB	11AB
	13AC	13AB	13AE	13AC	13AC	13AB	13AD	13AD	13AE	13AD	13AC	13AC	13AB	13AA	13AA	13AA	13AA	13AB	13AP
	15AA	15AA	15AA	15AA	15AA	15AA	15AA	15AA	15AA	15AA	15AA	15AA	15AA	15AA	15AA	15AA	15AA	15AH	15AA
	17AA	17AA	17AA	17AA	17AA	17AA	17AA	17AA	17AA	17AA	17AA	17AA	17AA	15AD	17AA	17AA	17AA	15AJ	17AJ
	17AJ	17AK	17AK	17AJ	17AJ	17AJ	17AJ	17AJ	17AJ	17AJ	17AJ	17AJ	17AB	17AJ	17AJ	17AJ	17AJ	17AA	17AM
	17AM	17AL	17AM	17AM	17AM	17AL	17AL	17AM	17AM	17AM	17AL	17AL	17AJ	17AL	17AL	17AM	17AM	17AK	17BA
CODE	19AA	19AA	19AA	19AA	19AA	19AA	19AA	19AA	19AA	19AA	19AA	19AA	17AL	19AA	19AA	19AA	19AA	17AM	17BF
	21AA	19AB	21AA	21AA	19AB	21AA	19AB	21AA	21AA	21AA	21AA	19AB	19AA	21AA	19AB	21AA	19AB	19AA	19AA
	23AA	21AA	23AA	23AA	21AC	23AA	21AA	23AA	23AA	23AA	23AA	21AA	19AC	23AA	21AA	23AA	21AA	21AA	21AA
	23BE	23AC	23BE	23BE	23AA	23AE	21AD	23AF	23BE	23BJ	23BE	21AD	21AA	23AF	21AD	23AF	21AD	23AB	23AA
NUMBERS	27AF	23AG	27AF	27AB	23BE	27AA	23AA	27AF	27AF	27AF	27AF	23AA	23AA	27AF	23AA	27AB	23AA	23BG	23AW
	29AD	27AE	29AD	29AD	23BN	29AA	23AE	29AD	29AD	29AK	29AD	23BE	23AF	29AD	23AF	29AD	23AF	27AE	23BJ
	31AA	29AA	31AA	33AA	27AB	31AA	27AA	31AA	31AA	31AG	33AA	23BN	27AF	31AG	23BN	31AG	23BN	29AA	27AF
	33AA	31AA	33AA	33AD	29AD	33AA	29AA	33AA	33AA	33AA	33AN	27AF	29AF	33AA	27AF	33AA	27AB	31AA	29AK
	33AD	33AA	33AD		31AA	33AD	31AA	33AD	33AD	33AR		29AD	31AA	33AN	29AD	33AN	29AD	31AG	31AG
	35AC	33AD	35AC		33AA	45AA	33AA	41AA	41AA	41AA		31AA	31AG		31AC		31AA	33AA	33AA
	41AA	35AC	41AA		33AD		33AD					33AA	33AA		31AG		31AG	33AD	33AR
		45AB			35AD		35AC					33AN	33AD		33AA		33AA	35AJ	41AA
					41AB		41AB					33AP	35AC		33AN		33AN		
					43AB							41AB	41AA		35AD		35AD		
															39AA		39AA		
															41AB		41AB		
															43AA		43AA		

SPEC NO.	10145	10168 PU	10169	10170	10171	10172	10175	10176 PU	10177	10180	10182	10183 PU	10184	10185	10186 PU	10187	10188 PU	10197	10198
OPTION	11AB	11AA	11AA	11AA	11AC	11AC	11AA	11AA	11AB	11AA	11AC	11AC	11AA	11AA	11AA	11AC	11AC	11AC	11AC
	13AD	13AA	13AA	13AA	13AE	13AC	13AA	13AA	13AF	13AA	13AC	13AC	13AA	13AA	13AA	13AC	13AC	13AE	13AC
	15AA	15AA	15AA	15AA	15AA	15AA	15AA	15AA	15AA	15AK	15AA	15AA	15AJ	15AA	15AA	15AA	15AA	15AA	15AA
	17AJ	17AA	17AA	17AA	15AJ	15AJ	17AA	17AA	15AD	15AP	15AJ	15AJ	15AP	17AA	17AA	17AA	17AA	15AJ	15AJ
	17AM	17AJ	17AJ	17AJ	17AA	17AA	17AJ	17AJ	17AA	17AA	17AA	17AA	17AF	17AJ	17AJ	17AJ	17AJ	17AA	17AA
CODE	17BA	17AL	17AL	17AL	17AJ	17AJ	17AL	17AL	17AJ	17AJ	17AJ	17AJ	17AJ	17AL	17AL	17AM	17AM	17AJ	17AJ
	17BF	19AA	19AA	19AA	17AM	17AM	19AA	19AA	17AL	17AL	17AL	17AL	17AL	19AA	19AA	19AA	19AA	17AM	17AM
	19AA	19AB	21AA	21AA	19AA	19AA	21AA	19AB	19AA	19AA	19AA	19AA	19AA	21AA	19AB	21AA	19AB	17BA	17BA
	21AA	21AA	23AA	23AA	21AA	21AA	23AA	21AA	21AA	21AB	21AA	19AB	21AA	23AA	21AA	23AA	21AA	19AA	19AA
	23AA	21AD	23AD	23AD	23AA	23AA	23AF	21AD	23AA	23AA	23AA	21AA	23AA	23AF	21AD	23BE	21AD	21AA	21AA
NUMBERS	23AW	23AA	23AU	23AU	23BP	23BP	27AC	23AA	23AF	23AD	23BP	21AG	23AD	27AH	23AA	27AF	23AA	23AA	23AA
	23BJ	23AF	27AA	27AB	27AF	27AF	29AG	23AF	23AH	27AL	27AF	23AA	27AF	29AD	23AF	29AD	23BE	23AW	23AW
	27AF	23AJ	29AA	29AD	29AD	29AD	31AG	23AJ	27AA	29AP	29AD	23AY	29AF	31AG	23AJ	33AA	23BN	23BP	23BP
	29AK	27AB	31AA	31AA	31AG	31AG	33AA	27AC	29AA	31AA	31AG	23BM	31AA	33AA	27AH	33AD	27AF	27AF	27AF
	31AG	29AD	31AG	31AG	33AA	33AA	33AN	29AG	31AA	31AG	33AA	23BP	31AG	33AN	29AD	29AD	29AD	29AK	29AK
	33AA	31AA	33AA	33AA	33AR	33AR		31AA	33AA	33AA	33AR	27AF	33AA		31AA		31AA	31AG	31AG
	33AR	33AA	33AD	33AD	35AJ	35AJ		31AG	33AD	33AE	35AJ	29AD	33AD		31AG		33AA	33AA	33AA
	41AA	33AN			41AA	41AA		33AA	45AA	35AJ		31AB	35AJ		33AA		33AD	33AR	33AR
		35AD						33AN	45AB	45AB		31AG	45AB		33AN		35AC	35AJ	35AJ
		39AA						35AD	45AC			33AA			33AP		35AD	41AA	41AA
		41AB						39AA				33AR			41AB		35AE		
		43AA						41AB				35AJ					41AB		
								43AA				41AB					43AB		

SPEC NO.	10201 PU	10205	10206 PU	10230	10231 PU	10232	10236 PU	10238	10243	10244	10247	10248 PU	10253 PU	10261 PU	10262	10263 PU	10264	10265 PU	10270
OPTION	11AA	11AC	11AC	11AA	11AA	11AA	11AA	11AA	11AE	11AE	11AC	11AC	11AA	11AC	11AA	11AA	11AC	11AA	11AB
	13AA	13AC	13AC	13AA	13AA	13AA	13AA	13AA	13AP	13AD	13AC	13AC	13AA	13AC	13AA	13AA	13AE	13AA	13AB
	15AA	15AA	15AA	15AA	15AA	15AK	15AA	15AA	15AA	15AA	15AJ	15AJ	15AA	15AA	15AA	15AA	15AA	15AA	15AG
	17AA	17AA	17AA	15AJ	15AJ	15AP	17AA	15AJ	15AJ	15AJ	15AP	15AP	15AJ	15AJ	15AJ	17AA	15AJ	17AA	15AJ
	17AJ	17AJ	17AJ	17AA	17AA	17AA	17AJ	17AA	17AJ	17AJ	17AA	17AA	17AA	17AA	17AA	17AJ	17AA	17AJ	17AK
CODE	17AL	17AM	17AM	17AJ	17AJ	17AJ	17AL	17AJ	17AM	17AM	17AJ	17AJ	17AJ	17AJ	17AJ	17AL	17AJ	17AL	17AM
	19AA	19AA	19AA	17AL	17AL	17AL	19AA	17AL	17BA	17BA	17AL	17AL	17AL	17AL	17AL	19AA	17AL	19AA	17BF
	19AB	21AA	19AB	19AA	19AA	19AA	19AB	19AA	17BF	17BF	19AA	19AA	19AA	19AA	19AA	19AB	19AA	19AB	19AA
	21AA	23AA	21AA	21AA	19AB	19AG	21AA	21AA	19AA	19AA	21AA	19AB	19AB	19AB	21AA	21AA	19AB	21AA	23AB
	21AD	23BE	21AD	23AA	21AA	21AB	21AD	23AA	21AA	21AA	23AA	21AA	21AA	21AA	23AA	21AD	21AA	21AD	23BG
NUMBERS	23AA	27AE	23AA	23AF	21AD	23AC	23AA	23AD	23AA	23AA	23AF	21AD	21AD	21AG	23AD	23AA	23AA	23AA	23CB
	23AF	29AA	23BE	27AE	23AA	23CG	23AF	27AG	23AW	23AW	23CB	23AA	23AA	23AA	27AE	23AF	23BE	23AF	23CD
	23AJ	31AG	23BN	29AA	23AF	23CH	23AJ	29AG	23BJ	23BJ	27AA	23AF	23AF	23AY	29AA	23AJ	27AA	23AJ	27AE
	27AC	33AA	27AE	31AG	23AJ	27AL	27AB	31AA	27AF	27AF	29AA	23AJ	23AJ	23BN	31AA	27AB	29AA	27AF	29AA
	29AG	33AD	29AA	33AA	27AE	29AU	29AD	31AG	29AK	29AK	31AG	23CB	27AE	23BP	31AG	29AD	31AA	29AD	31AA
	31AA		31AC	33AN	29AA	31AC	31AA	33AA	31AG	31AG	33AA	27AA	29AA	27AF	33AA	31AA	31AG	31AA	31AG
	33AA		31AG	35AJ	31AA	31AG	33AA	33AD	33AA	33AA	33AN	29AA	31AA	29AD	33AD	33AA	33AA	31AG	33AA
	33AD		33AA	45AA	31AG	33AA	33AN	35AJ	33AR	33AR	35AC	31AA	31AG	31AA	35AC	33AN	33AD	33AA	33AE
	33AP		33AD		33AA	33AE	35AC	45AA	35AJ	35AJ	35AJ	31AG	33AA	31AG	35AJ	35AD	35AC	33AN	35AL
	35AC		35AC		33AN	35AJ	35AD		41AA	41AA		33AA	33AN	33AA	41AA	39AA	35AJ		
	41AB		41AB		33AP	35AN	39AA					33AN	35AD	33AR	45AA	41AB		39AA	
			43AA		35AJ	45AA	41AB					35AC	35AJ	35AJ	45AB	43AB		41AB	
					41AB		43AA					35AJ	41AB	41AB				43AA	
					45AA							41AB	43AA						
												45AA							

SPEC NO.	10272	10275	10279	10295	10299	10303	10309	10310 PU	10314	10315 PU	10317	10318 PU	10338	10339 PU	10345	10347	10350	10351 PU	10359
OPTION	11AE	11AB	11AE	11AB	11AA	11AB	11AC	11AC	11AB	11AA	11AA	11AA	11AA	11AA	11AB	11AA	11AC	11AC	11AC
	13AD	13AB	13AD	13AB	13AA	13AB	13AC	13AC	13AJ	13AA	13AA	13AA	13AA	13AA	13AB	13AA	13AC	13AC	13AC
	15AG	15AG	15AJ	15AK	15AJ	15AJ	15AJ	15AJ	15AD	15AJ	15AJ	15AJ	15AJ	15AJ	15AA	15AK	15AJ	15AJ	15AJ
	15AJ	15AJ	15AP	15AP	15AP	15AP	15AP	15AP	15AJ	15AP	15AP	15AP	15AP	15AP	15AD	15AP	15AP	15AP	15AP
	17AJ	17AK	17AA	17AC	17AJ	17AJ	17AA	17AA	15AP	17AA	17AA	17AA	17AA	17AA	15AJ	17AA	17AA	17AA	17AA
	17AM	17AM	17AK	17AJ	17AL	17AL	17AJ	17AJ	17AA	17AJ	17AJ	17AJ	17AJ	17AJ	17AA	17AJ	17AJ	17AJ	17AJ
CODE	17BF	17BF	17AL	17AL	17AP	17AP	17AL	17AL	17AK	17AL	17AM	17AM	17AL	17AL	17AJ	17AL	17AL	17AL	17AL
	19AA	19AA	19AA	19AA	19AA	19AA	19AA	19AA	17AL	19AA	19AA	19AA	19AA	19AA	17AM	19AA	19AA	19AA	19AA
NUMBERS	23AB	23AB	21AA	19AE	21AA	21AA	21AA	19AB	19AA	19AB	21AA	19AB	21AB	19AB	19AA	21AB	21AA	19AB	19AB
	23BG	23BG	23AA	21AB	23AA	23AA	23AA	21AA	21AA	21AA	23AA	21AA	23AA	21AB	21AA	23AB	23AA	21AA	21AA
	23CB	23CB	23AU	23AC	23AD	23AE	23AF	21AD	23AA	21AD	23AF	21AD	23AF	23AA	21AG	23AF	23AD	21AG	21AG
	23CD	23CD	23BJ	23AE	27AE	27AE	23CB	23AA	23AE	23AA	23CB	23AA	27AC	23AF	23AC	31AE	27AF	23AA	23AA
	27AF	27AE	23CD	23CD	29AA	29AA	27AA	23AF	23AH	23AF	27AF	23AF	29AH	23AJ	23AG	31AG	29AD	23AD	23AD
	29AK	29AA	27AF	27AA	31AA	31AA	29AA	23AJ	27AA	23AJ	29AD	23CA	31AG	27AC	27AF	33AA	31AB	23BM	27AF
	31AA	31AH	29AD	29AA	31AG	31AG	31AG	23CB	29AA	23AL	31AG	23CB	33AA	29AH	29AD	33AE	31AG	27AF	29AD
	31AG	31AR	31AA	31AA	33AA	33AA	33AA	27AA	31AA	23CB	33AA	27AF	33AN	31AA	31AA	35AJ	33AA	29AD	31AB
	33AA	33AA	31AG	31AG	33AD	33AD	33AN	29AA	33AA	27AA	33AD	29AD	35AJ	31AG	31AG	45AT	33AR	31AB	31AG
	33AE	33AG	33AA	33AA	35AJ	35AJ	35AJ	31AA	33AD	29AA	35AJ	31AB		33AA	33AA		35AJ	31AG	33AA
	35AJ	35AL	33AD	33AD				31AG	35AJ	31AA		31AG		33AN	33AD			33AA	33AR
			35AC	35AA				33AA		31AG		33AA		35AD	35AJ			33AR	35AJ
			35AJ	35AJ				33AN		33AA		33AD		35AJ				35AJ	41AH
								35AD		33AN		35AE		39AA				41AB	
								35AJ		35AD		35AJ		41AB					
								41AB		35AJ		35AR		43AA					
								43AA		39AA		39AA							
										41AB		41AB							
										43AB		43AA							

SPEC NO.	10361	10365	10372	10373 PU	10387	10388	10389	10390	10395	10413	10414	10432 PU	10435	10442	10443	10449	10450 PU	10455	10456
OPTION	11AB	11AB	11AA	11AA	11AE	11AE	11AC	11AC	11AA	11AA	11AA	11AA	11AA	11AA	11AB	11AA	11AA	11AA	11AA
	13AJ	13AJ	13AB	13AB	13AP	13AD	13AE	13AC	13AA	13AK	13AA	13AA	13AA	13AA	13AH	13AA	13AA	13AA	13AA
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				43AB														39AA	
				45AA														41AB	
																		43AB	
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SPEC NO.	10465	10467	10476	10477	10484	10490 PU	10491 PU	10499	10500 PU	10505	10511	10513	10529	10537	10544	10564	10565 PU	10572	10573 PU
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	23CD	29AP	29AD	29AD	29AZ	27AE	23BN	29AA	23AF	31AD	29AA	29AA	29AA	31AB	29AP	31AA	27AE	31AA	27AG
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	35AJ						39AA		33AP										41AB
	41AH						41AB		35AC										43AA
	45AA						43AA		35AJ										
									41AB										
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SPEC NO.	10575	10577	10578	10583	10584	10588	10591	10594	10602	10603	10604 PU	10607	10625	10628	10634	10639	10647	10650	10652
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	23AD	27AU	23CG	23AA	23BK	23CR	23CS	27AG	23AA	23AA	23AA	27AE	31AE	23CR	23BE	23AD	23AL	27AF	27AE
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SPEC NO.	10658	10660	10663	10664
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	31AG	31AG	31AG	31AG
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	33AD	33AE	33AE	33AU
	35AJ	35AJ	35AC	35AJ
	45AA	45AT	35AJ	45AT
			41AB	



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