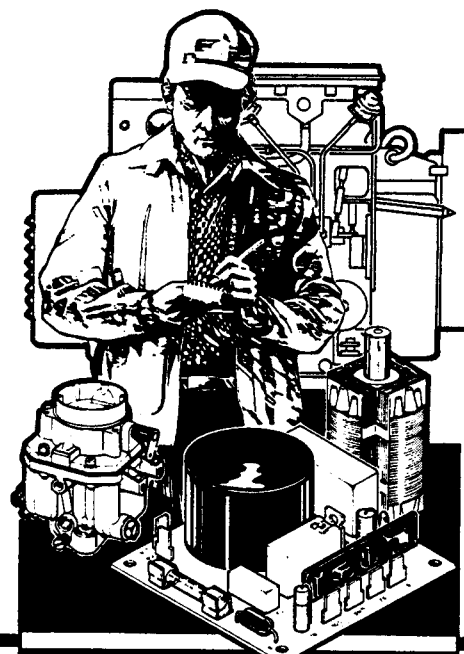


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Onan

Parts Manual

D V D
GenSet



Onan Service Parts

982-0224
9-86 (Spec A - B)
Replaces 12-84 (Spec A)
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. Electrocution 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

This Parts Manual applies to the Standard Sets Listed below. The illustrations are arranged in groups of related items, and each part or assembly is identified by a Reference Number. All parts illustrated are typical, and unless otherwise mentioned in the description column the parts are interchangeable between models.

These typical illustrations are subject to change and reflect only the latest replacement parts arrangement. The Right and Left sides of the Set are determined by FACING the FRONT (Engine end) of the Set.

Set Data Table

MODEL IDENTIFICATION	RATING	RPM RATING	BATTERY VOLTAGE
100.0 DVD - */ # @	100,000 WATTS	1500 RPM	24 VDC
125.0 DVD - */ # @	125,000 WATTS	1800 RPM	24 VDC

Electrical Data Table

*VOLTAGE CODE	VOLTS	HERTZ	WIRE	PHASE	NOTES
9X	347/600	60	4	3	
15	120/240	60	12	1	+
15	120/208	60	12	3	+
	120/240				
	127/220				
	139/240				
	240/416				
	254/440				
	227/480				
515	110/220	50	12	1	+
	115/230				
515	110/190	50	12	3	+
	110/220				
	115/200				
	115/230				
	120/208				
	127/220				
	220/380				
	230/400				
	240/416				
	254/480				

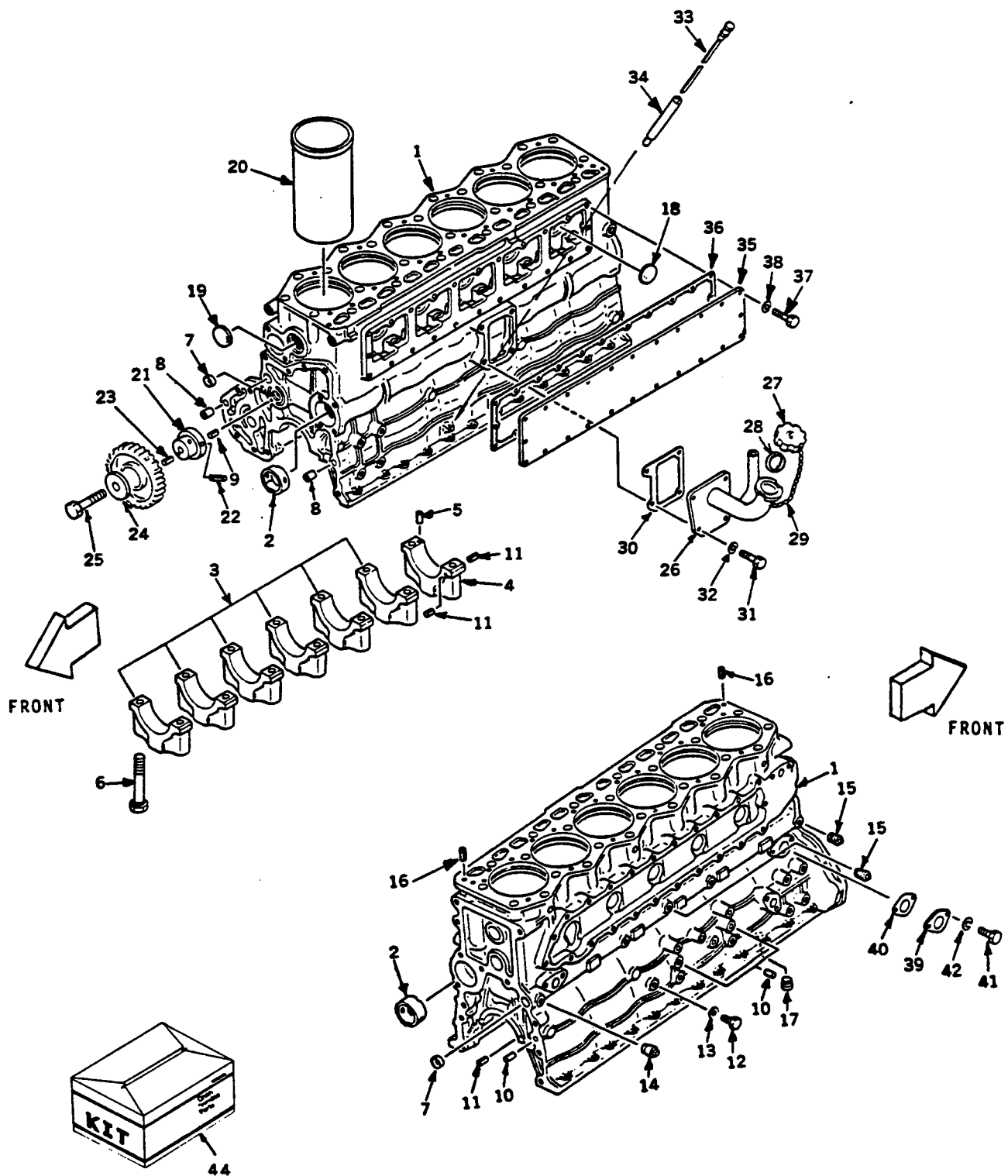
* - Voltage Codes follow Model Letter designations.

- Specification Number: Number 1 is Standard, all others indicate variations.

@ - Specification Letter: Letter advances (A to B, B to C, etc) with major manufacturing changes.

+ - These Generators are Reconnectible, Refer To Operator's Manual for wiring data.

Cylinder Block

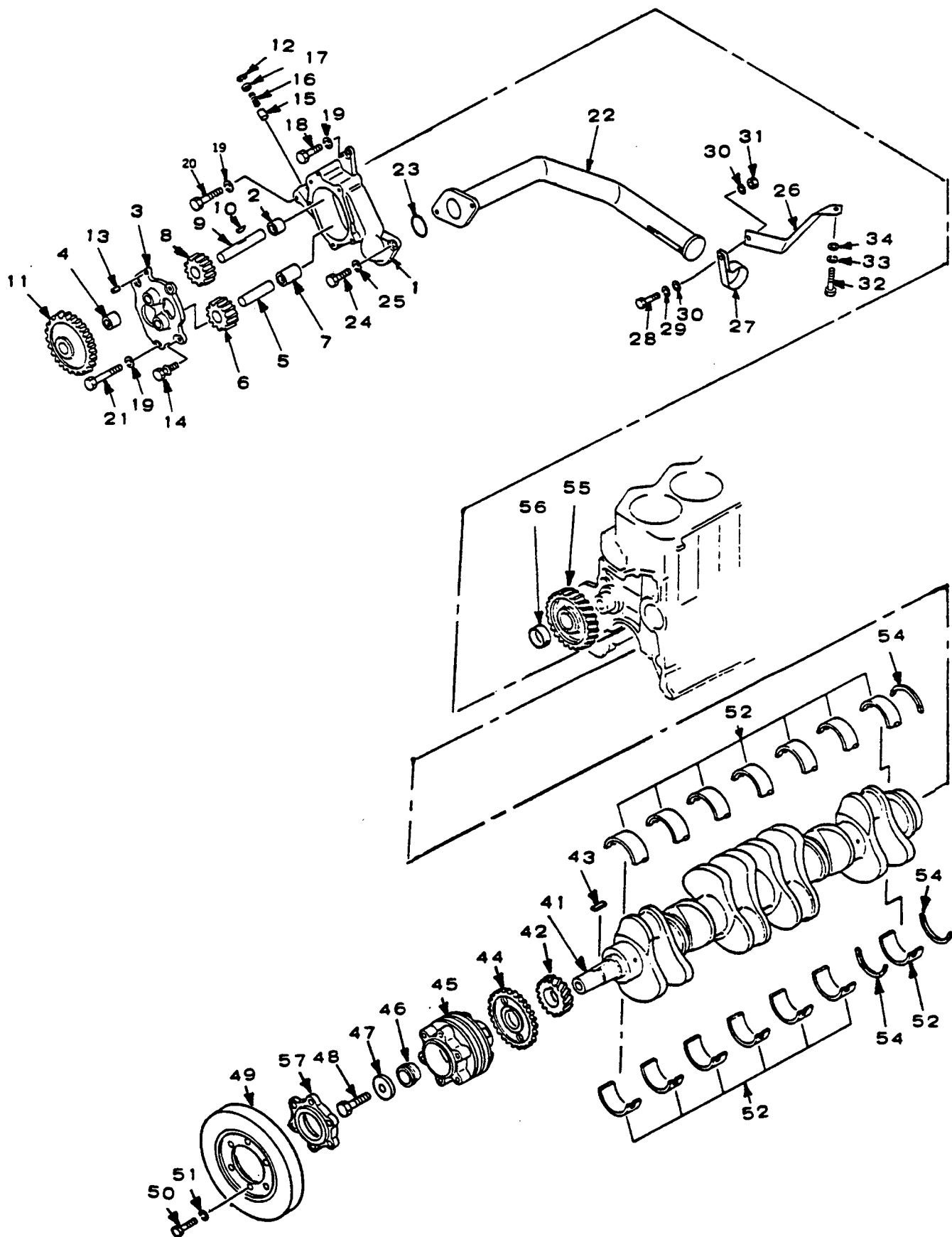


Cylinder Block

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	186-0558	1	Block, Cylinder (Includes Parts Marked *)	23	186-0126	1	Pin, Roll
2	186-0237	4	*Bearing, Sleeve - Camshaft	24	186-0243	1	Plate, Thrust
3	186-0559	6	*Cap, Bearing - Main	25	720-1083	1	Bolt, Hex Head (M12 x 1.75 x 75mm)
4	186-0560	1	*Cap, Bearing - Main (Rear)	26	186-0384	1	Housing, Fill - Oil (Includes Cap, Gasket, and Chain)
5	186-0122	1	*Pin, Dowel	27	186-0259	1	Cap, Fill - Oil (Includes Gasket)
6	186-0266	14	*Bolt, Special - Bearing Cap	28	186-0260	1	Gasket
7	186-0190	2	*Plug, Expansion	29	186-0261	1	Chain
8	186-0238	2	*Pin, Dowel	30	186-0263	1	Gasket
9	186-0126	1	*Pin, Roll	31	186-0501	4	Bolt, Hex Head
10	186-0123	4	*Pin, Dowel	32	186-0096	4	Washer, Lock - Spring
11	186-0125	6	*Pin, Roll	33	186-0252	1	Indicator, level - Oil
12	186-0150	1	*Plug, Threaded	34	186-0253	1	Guide, Indicator - Oil
13	186-0146	1	*Gasket	35	186-0556	1	Cover
14	186-0152	2	*Plug, Pipe	36	186-0557	1	Gasket
15	186-0151	3	*Plug, Pipe	37	186-0499	24	Bolt, Hex Head
16	186-0127	2	*Pin, Roll	38	186-0095	24	Washer, Lock - Spring
17	186-0515	1	*Plug, Pipe	39	186-0580	1	Plate
18	186-0158	7	*Plug, Expansion	40	186-0467	1	Gasket
19	186-0516	1	*Plug, Expansion	41	186-0499	2	Bolt, Hex Head
20			*Liner, Cylinder	42	186-0095	2	Washer, Lock - Spring
	186-0455	6	+ Marked "A" On Lower Edge	44	186-0446	1	Gasket Kit, Block - Cylinder
	186-0456	6	+ Marked "B" On Lower Edge				
21	186-0242	1	Shaft				
22	186-0124	1	Pin, Roll				

* Parts included in 186-0558 Cylinder Block Assembly
+ Order the cylinder liner according to the identification mark on the cylinder block. Block marked "A" use liner marked "A", etc.

Crankshaft, And Oil Pump

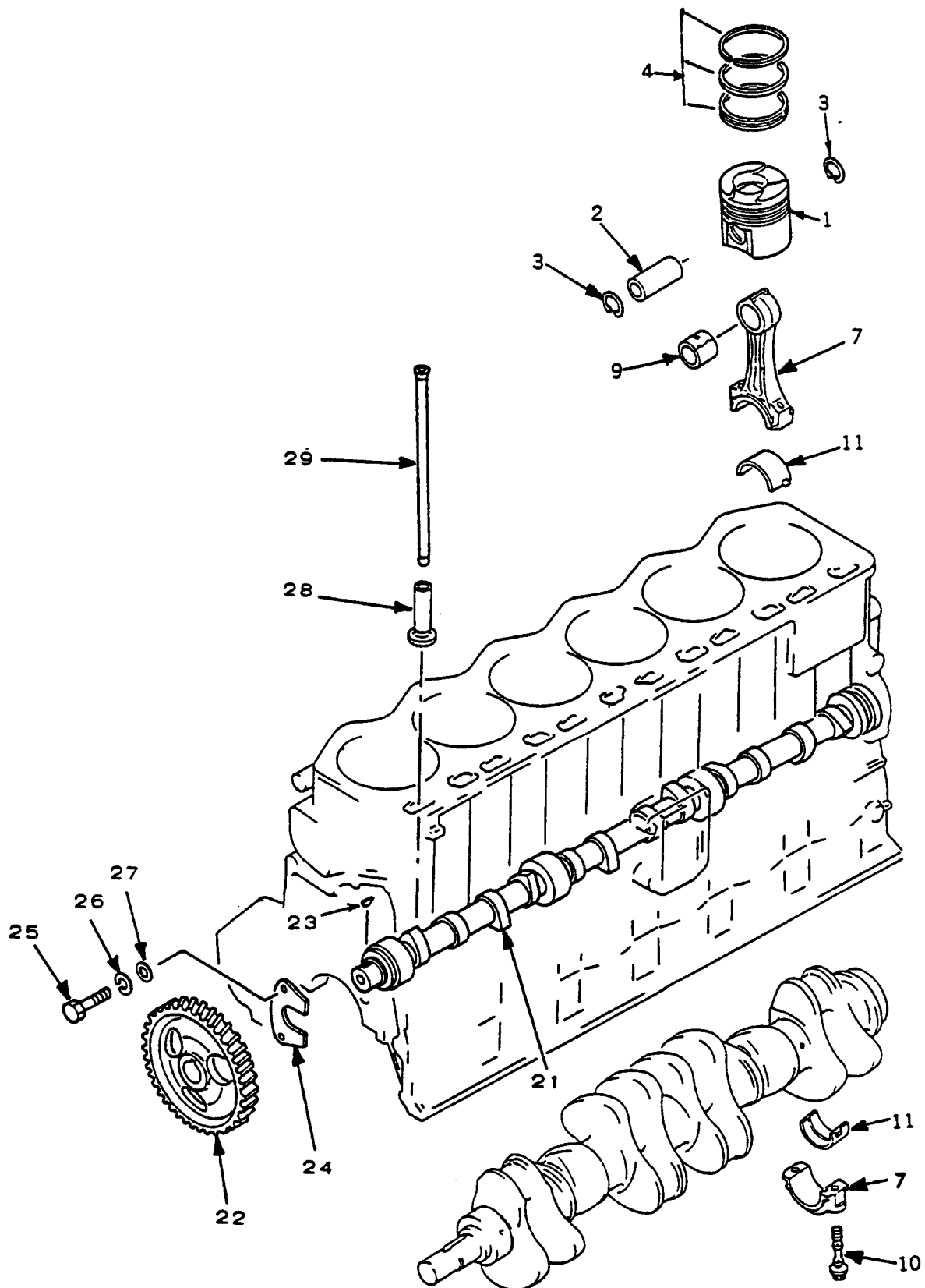


Crankshaft, And Oil Pump

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	186-0321	1	Pump, Oil (Includes Parts Marked *)	30	186-0102	2	Washer, Flat
2	186-0322	1	*Bushing, Sleeve	31	186-0089	1	Nut, Hex
3	186-0532	1	*Cover (Includes Bushing And Shaft)	32	720-1054	1	Bolt, Hex Head (M10 x 1.5 x 25mm)
4	186-0323	1	*Bushing, Sleeve	33	186-0096	1	Washer, Lock - Spring
5	186-0533	1	*Shaft	34	186-0103	1	Washer, Flat
6	186-0324	1	*Gear (Includes Bushing)	41	186-0457	1	Crankshaft (Includes Gear And Key)
7	186-0444	1	*Bushing, Sleeve	42	186-0279	1	Gear
8	186-0325	1	*Gear	43	186-0281	1	Key
9	186-0326	1	*Shaft	44	186-0280	1	Gear
10	186-0121	1	*Key	45	186-0530	1	Pulley
11	186-0327	1	*Gear	46	186-0283	1	Collar, Tapered
12	186-0130	1	*Ring, Snap	47	186-0284	1	Plate
13	186-0328	1	*Pin	48	186-0182	1	Bolt, Hex Head - Self-Locking
14	186-0329	3	*Bolt, Shoulder	49	186-0461	1	Damper, Vibration
15	186-0330	1	*Valve	50	186-0503	6	Bolt, Hex Head (M12 x 1.75 x 25mm)
16	186-0331	1	*Spring	51	186-0097	6	Washer, Lock - Spring
17	186-0332	1	*Retainer	52			Bearing Set, Main (Includes Upper and Lower Half Brgs)
18	720-1038	1	Bolt, Hex Head (M8 x 1.25 x 30mm)		186-0267	7	Standard
19	186-0095	3	Washer, Lock - Spring		186-0276	7	0.25mm Undersize
20	720-1041	1	Bolt, Hex Head (M8 x 1.25 x 45mm)		186-0272	7	0.50mm Undersize
21	720-0143	1	Bolt, Hex Head (M8 x 1.25 x 55mm)		186-0270	7	0.75mm Undersize
22	186-0316	1	Pipe, Pickup - Oil		186-0268	7	1.00mm Undersize
23	186-0143	1	Seal, O-Ring	54			Washer Set, Thrust (Includes Three Half Washers)
24	720-1037	2	Bolt, Hex Head (M8 x 1.25 x 25mm)		186-0264	1	Standard
25	186-0095	2	Washer, Lock - Spring		186-0277	1	0.25mm Oversize
26	186-0317	1	Bracket		186-0273	1	0.50mm Oversize
27	186-0318	1	Clamp		186-0271	1	0.75mm Oversize
28	720-1037	1	Bolt, Hex Head (M8 x 1.25 x 25mm)		186-0269	1	1.00mm Oversize
29	186-0095	1	Washer, Lock - Spring	55	186-0286	1	Gear
				56	186-0285	1	Bushing, Sleeve
				57	186-0561	1	Spacer

* Parts included in 186-0321 Oil Pump Assembly.

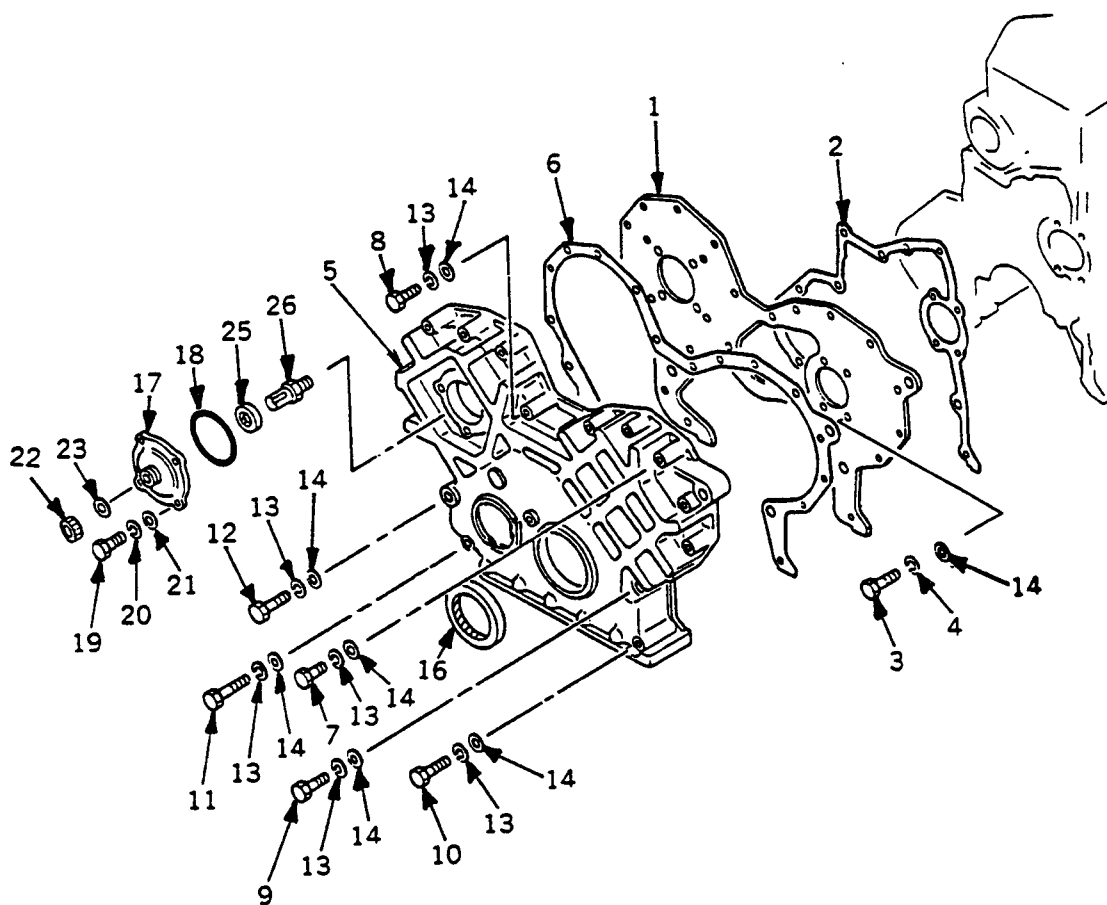
Camshaft, Piston, And Connecting Rod



Camshaft, Piston, And Connecting Rod

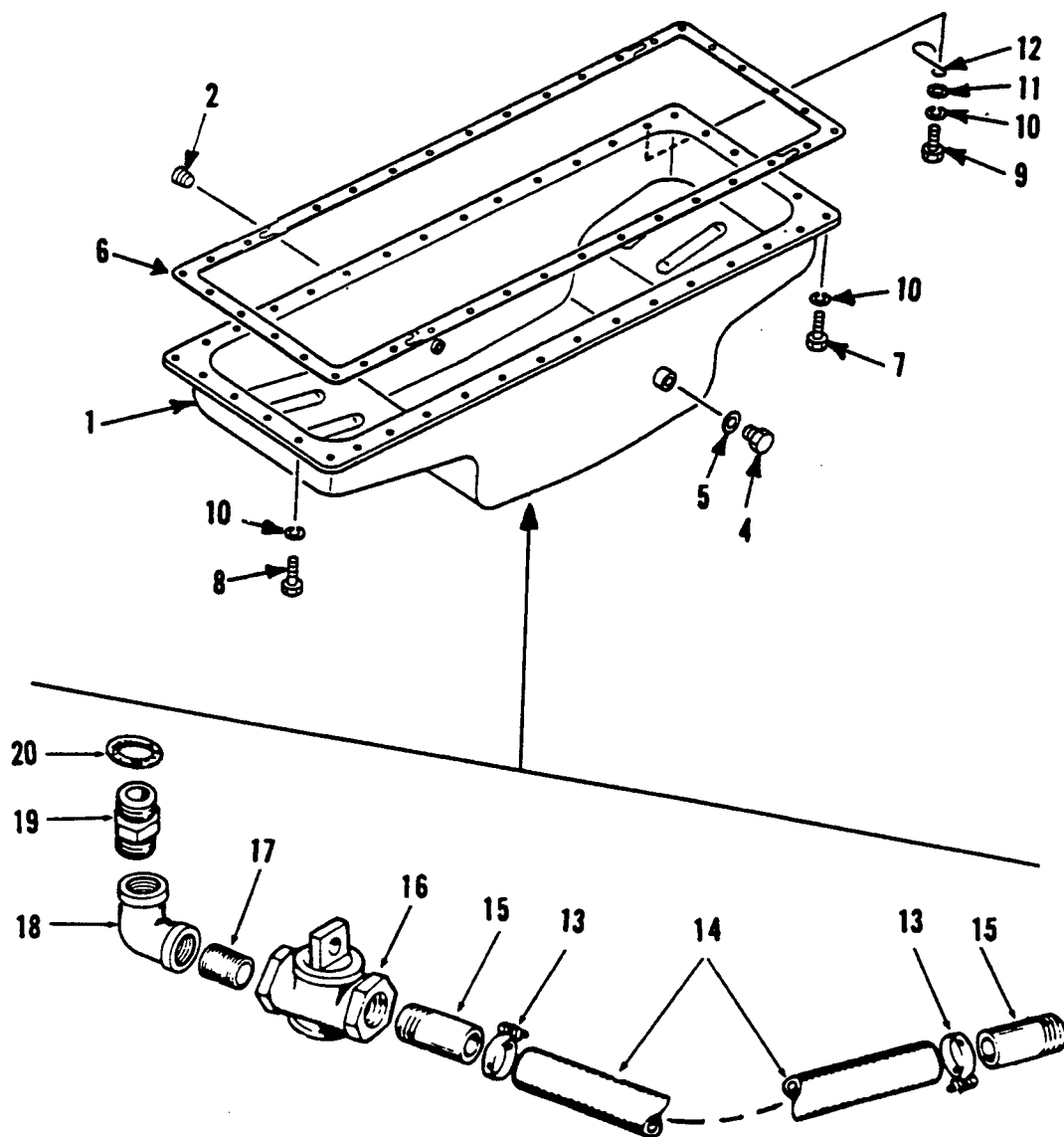
REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	186-0463	6	Piston (Includes Pin and Snap Rings)		186-0390	1	Used on Engine Serial Nos. Beginning with 51262
2	186-0564	1	Pin	22	186-0295	1	Gear
3	186-0131	2	Ring, Snap	23	186-0120	1	Key
4	186-0563	6	Ring Set, Piston	24	186-0296	1	Plate, Thrust
7	186-0468	6	Rod, Connecting (Includes Cap)	25	720-1037	2	Bolt, Hex Head (M8 x 1.25 x 25mm)
9	186-0565	1	Bushing, Sleeve	26	186-0095	2	Washer, Lock - Spring
10	186-0290	2	Bolt, Special - Connecting Rod	27	186-0101	2	Washer, Flat
11			Bearing Set, Rod - Connecting	28			Tappet
	186-0459	6	Standard		186-0685	12	Used on Engine Serial Nos. 50020 thru 51092
	186-0464	6	0.25mm Undersize				
	186-0568	6	0.50mm Undersize		186-0302	12	Used on Engine Serial Nos. Beginning with 51262
	186-0567	6	0.75mm Undersize				
	186-0566	6	1.00mm Undersize	29	186-0303	12	Rod, Push
21			Camshaft (Includes Gear And Key)				
	186-0684	1	Used on Engine Serial Nos. 50020 thru 51092				

Gear Cover



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	186-0245	1	Plate, Front	12	186-0081	1	Bolt, Hex Head
2	186-0249	1	Gasket	13	186-0095	18	Washer, Lock - Spring
3	186-0079	4	Bolt, Hex Head	14	186-0101	22	Washer, Flat
4	186-0095	4	Washer, Lock - Spring	16	186-0246	1	Seal, Oil - Front
5	186-0244	1	Gearcase	17	186-0247	1	Cover, Bearing
6	186-0248	1	Gasket, Gearcase	18	186-0136	1	Seal, O-Ring
7	720-1044	10	Bolt, Hex Head (M8 x 1.25 x 60mm)	19	720-1037	4	Bolt, Hex Head (M8 x 1.25 x 25mm)
8	720-1046	4	Bolt, Hex Head (M8 x 1.25 x 70mm)	20	186-0095	4	Washer, Lock - Spring
9	720-1048	1	Bolt, Hex Head (M8 x 1.25 x 80mm)	21	186-0101	4	Washer, Flat
10	720-1062	1	Bolt, Hex Head (M10 x 1.5 x 65mm)	22	186-0375	1	Cap, Drive - Tachometer
11	720-1062	1	Bolt, Hex Head (M10 x 1.5 x 65mm)	23	186-0199	1	Gasket
				25	186-0405	1	Seal, Oil
				26	186-0374	1	Shaft

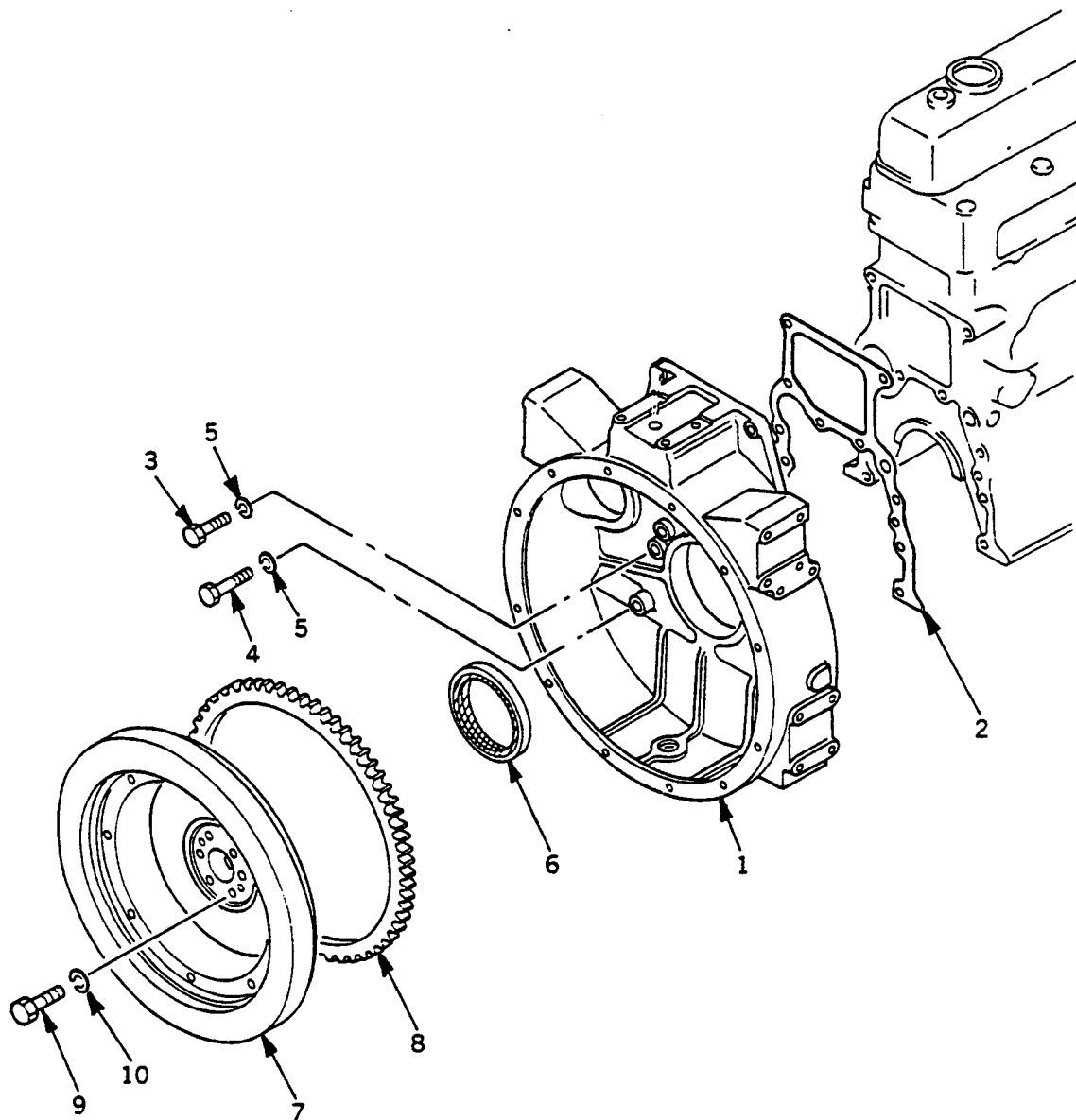
Oil Pan



REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	186-0398	1	Pan, Oil
2	186-0117	1	Plug
4	186-0407	1	Plug
5	186-0148	1	Gasket
6	186-0254	1	Gasket, Pan - Oil
7	186-0079	27	Bolt, Hex Head
8	720-1037	8	Bolt, Hex Head (M8 x 1.25 x 25mm)
9	720-1038	3	Bolt, Hex Head (M8 x 1.25 x 30mm)
10	186-0095	38	Washer, Lock - Spring

REF NO.	PART NO.	QTY USED	PART DESCRIPTION
11	186-0102	2	Washer, Flat
12	186-0192	1	Clip
13	503-0197	2	Clamp, Hose
14	503-1195	1	Hose, Rubber
15	505-0185	2	Nipple, Pipe - Half
16	504-0011	1	Valve, Cock - Brass
17	505-0100	1	Nipple, Pipe - Close
18	505-0040	1	Elbow, Pipe - 90°
19	502-0936	1	Adapter, Pipe - Hex
20	186-0140	1	Gasket, O-Ring

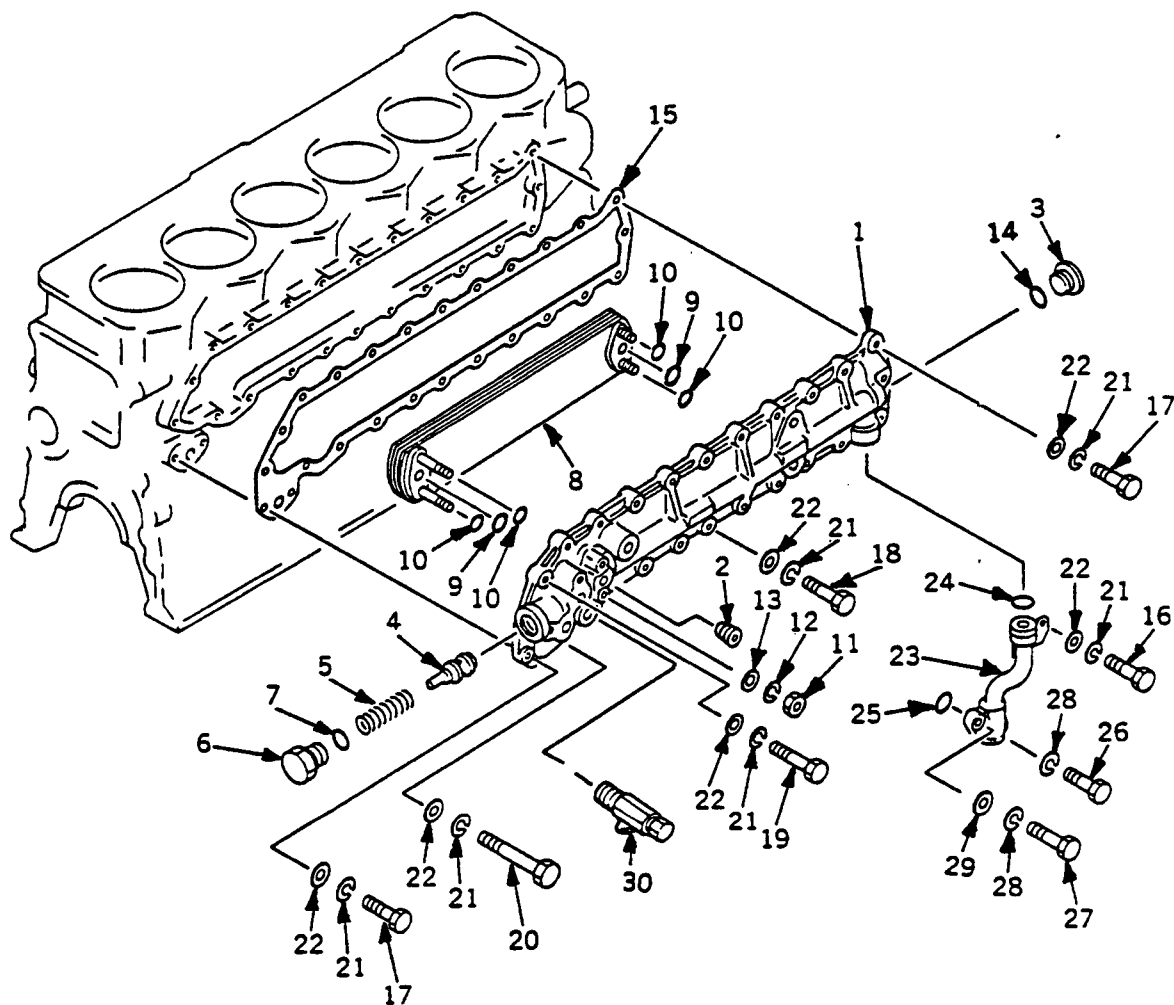
Flywheel, And Flywheel Housing



REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	186-0555	1	Housing, Flywheel
2	186-0251	1	Gasket
3	720-1076	9	Bolt, Hex Head (M12 x 1.25 x 35mm)
4	720-1080	2	Bolt, Hex Head (M12 x 1.75 x 60mm)

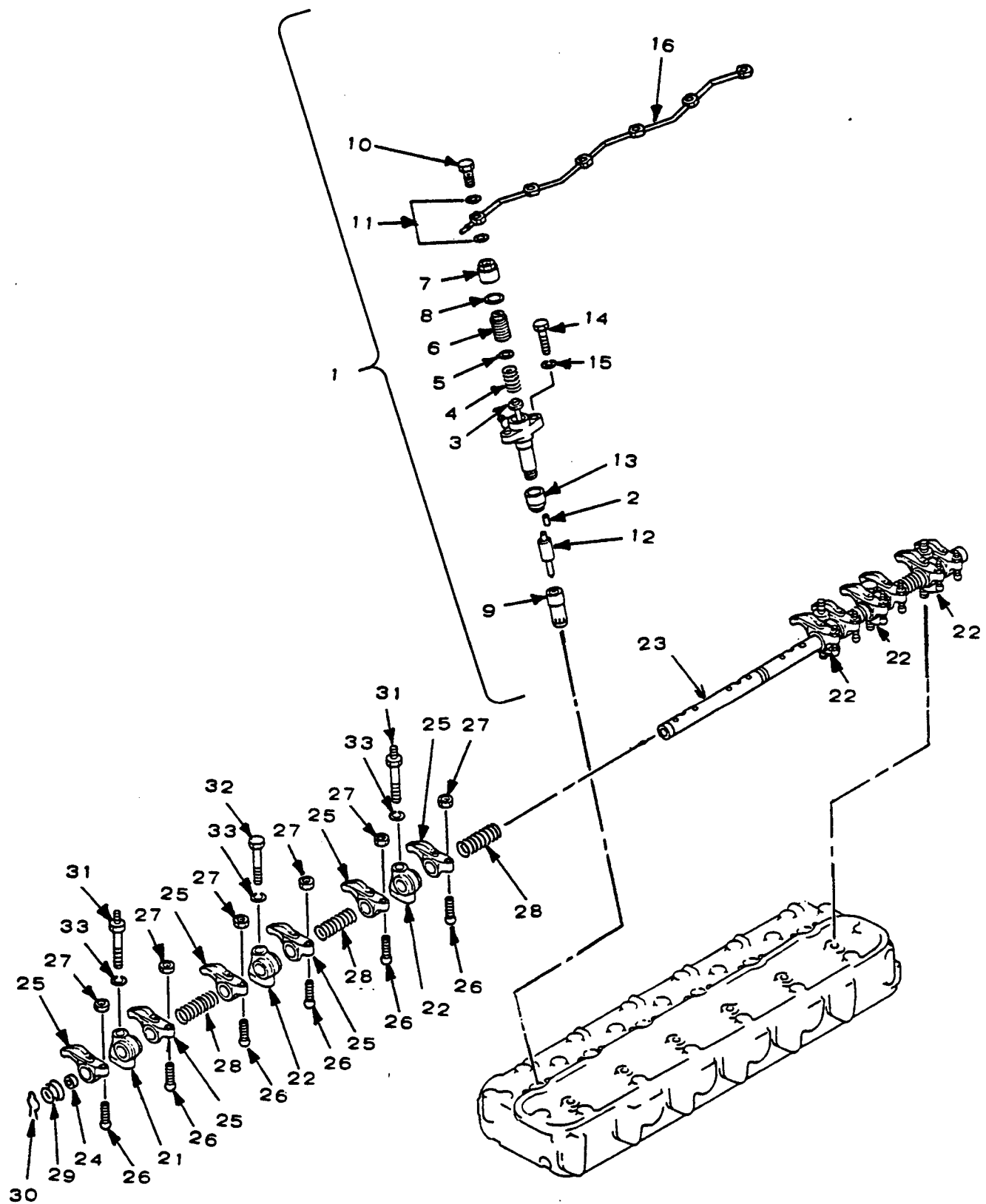
REF NO.	PART NO.	QTY USED	PART DESCRIPTION
5	186-0097	11	Washer, Lock - Spring
6	186-0440	1	Seal, Oil - Rear
7	186-0562	1	Flywheel (Includes Ring Gear)
8	186-0193	1	Gear, Ring
9	186-0086	6	Bolt, Hex Head
10	186-0181	6	Washer, Lock - Spring

Oil Cooler



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	186-0351	1	Cover	18	720-1039	16	Bolt, Hex Head (M8 x 1.25 x 35mm)
2	186-0117	2	Plug	19	720-1045	1	Bolt, Hex Head (M8 x 1.25 x 65mm)
3	186-0399	1	Plug	20	720-1043	1	Bolt, Hex Head (M8 x 1.25 x 55mm)
4	186-0354	1	Valve, Thermo	21	186-0095	25	Washer, Lock - Spring
5	186-0353	1	Spring	22	186-0102	25	Washer, Flat
6	186-0352	1	Plug	23	186-0349	1	Pipe, Oil
7	186-0342	1	Seal, O-Ring	24	186-0429	1	Seal, O-Ring
8	186-0177	1	Element	25	186-0142	1	Seal, O-Ring
9	186-0343	2	Seal, O-Ring	26	720-1038	1	Bolt, Hex Head (M8 x 1.25 x 30mm)
10	186-0189	4	Seal, O-Ring	27	720-1043	1	Bolt, Hex Head (M8 x 1.25 x 55mm)
11	186-0092	4	Nut, Hex	28	186-0095	2	Washer, Lock - Spring
12	186-0099	4	Washer, Lock - Spring	29	186-0102	1	Washer, Flat
13	186-0106	4	Washer, Flat	30	186-0401	1	Valve, Drain
14	186-0343	1	Seal, O-Ring				
15	186-0345	1	Gasket				
16	720-1037	5	Bolt, Hex Head (M8 x 1.25 x 25mm)				
17	720-1038	2	Bolt, Hex Head (M8 x 1.25 x 30mm)				

Rocker Arm, And Nozzle Holder

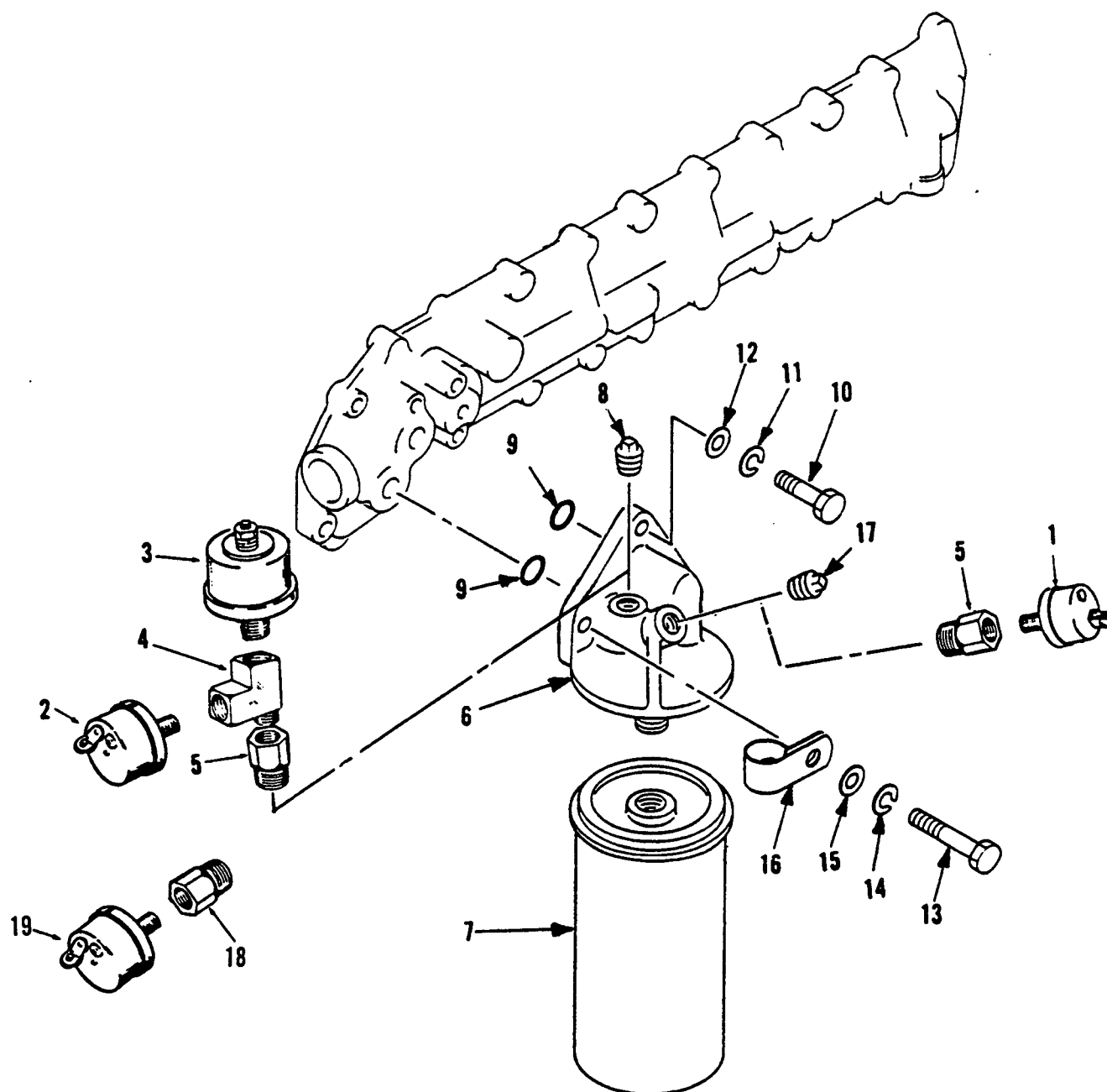


Rocker Arm, And Nozzle Holder

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	186-0453	6	Holder, Nozzle (Includes Parts Marked *)	16	186-0366	1	Line, Fuel - Return
2	186-0003	2	*Pin	21	186-0310	1	Bracket, Arm - Rocker
3	186-0005	1	*Rod, Push	22	186-0311	5	Bracket, Arm - Rocker
4	186-0004	1	*Spring	23	186-0569	1	Shaft, Arm - Rocker (Includes Plug)
5	186-0001	1	*Washer	24	186-0596	1	Plug
6	186-0006	1	*Screw, Adjusting	25	186-0312	12	Arm, Rocker
7	186-0007	1	*Nut, Lock	26	186-0313	12	Screw, Adjusting
8	186-0002	1	*Gasket	27	186-0089	12	Nut, Hex - Self-Locking
9	186-0008	1	*Retainer, Nozzle	28	186-0299	5	Spring
10	186-0187	1	*Bolt, Hex Head	29	186-0300	2	Spring
11	186-0144	2	*Gasket	30	186-0301	2	Clip
12	186-0454	1	*Nozzle	31	186-0298	4	Stud
13	186-0208	1	Packing	32	720-1084	2	Bolt, Hex Head (M12 x 1.75 x 80mm)
14	720-1043	12	Bolt, Hex Head (M8 x 1.25 x 55mm)	33	186-0097	6	Washer, Lock - Spring
15	186-0095	12	Washer, Lock - Spring				

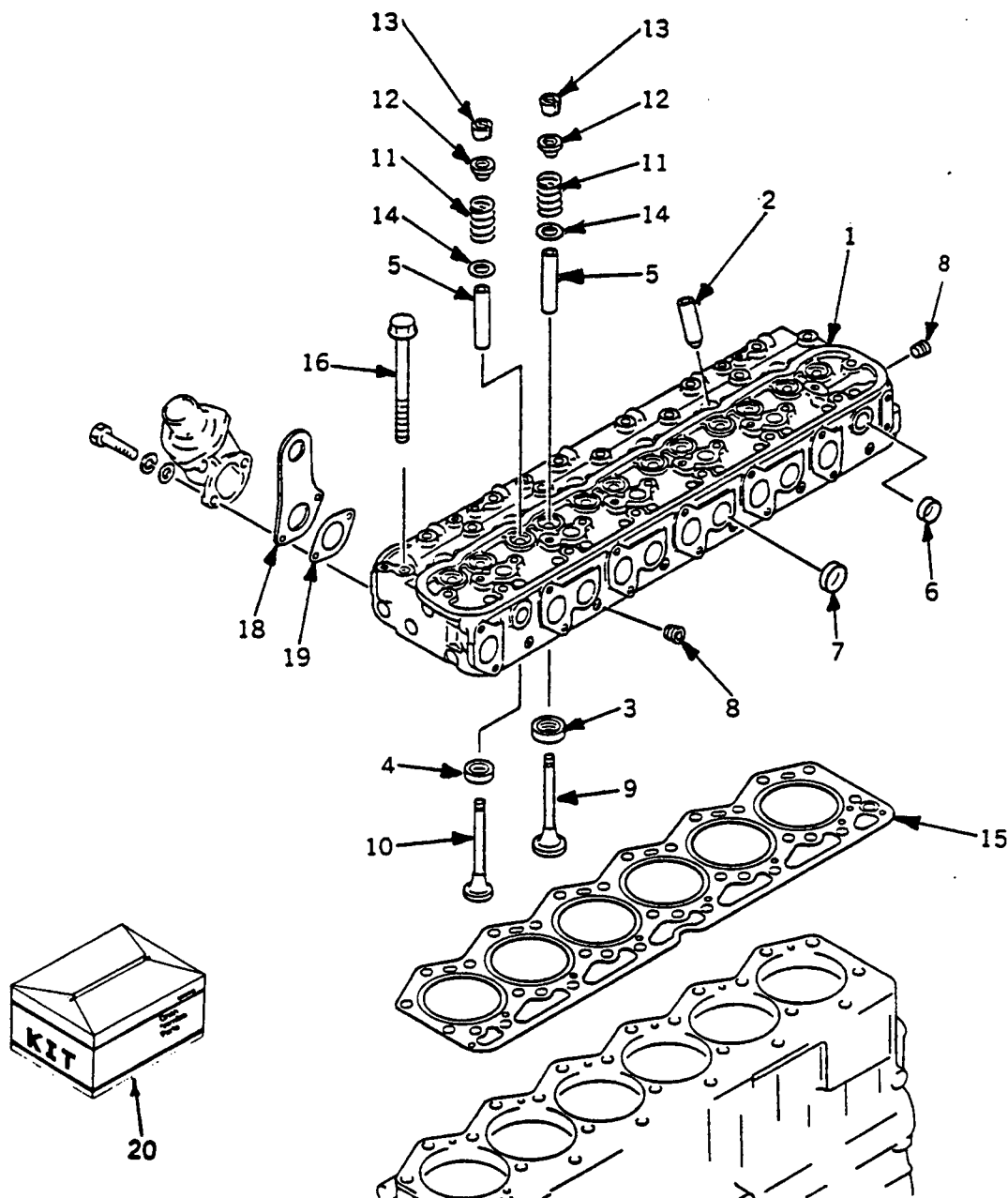
* Parts included in 186-0227 Nozzle Holder Assembly.

Oil Filter



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	309-0272	1	Switch, Pressure - Lo Oil (S5)	11	186-0096	2	Washer, Lock - Spring
2	309-0169	1	Switch, Pressure - Lo Oil (S1)	12	186-0103	2	Washer, Flat
3	193-0244	1	Sender, Pressure - Oil (E1)	13	186-0080	1	Bolt, Hex Head
4	502-0058	1	Tee, Pipe - Brass	14	186-0095	1	Washer, Lock - Spring
5	502-0917	2	Adapter, Pipe - Hex	15	186-0102	1	Washer, Flat
6	186-0314	1	Adapter, Filter	16	186-0403	1	Clamp, Loop
7	186-0315	1	Filter, Oil	17	186-0151	1	Plug, Pipe
8	186-0154	2	Plug, Pipe	18	505-0395	1	Bushing, Reducer
9	186-0142	2	Seal, O-Ring	19	193-0353	1	Sender, Temperature - Oil
10	720-1056	2	Bolt, Hex Head (M10 x 1.5 x 35mm)				

Cylinder Head

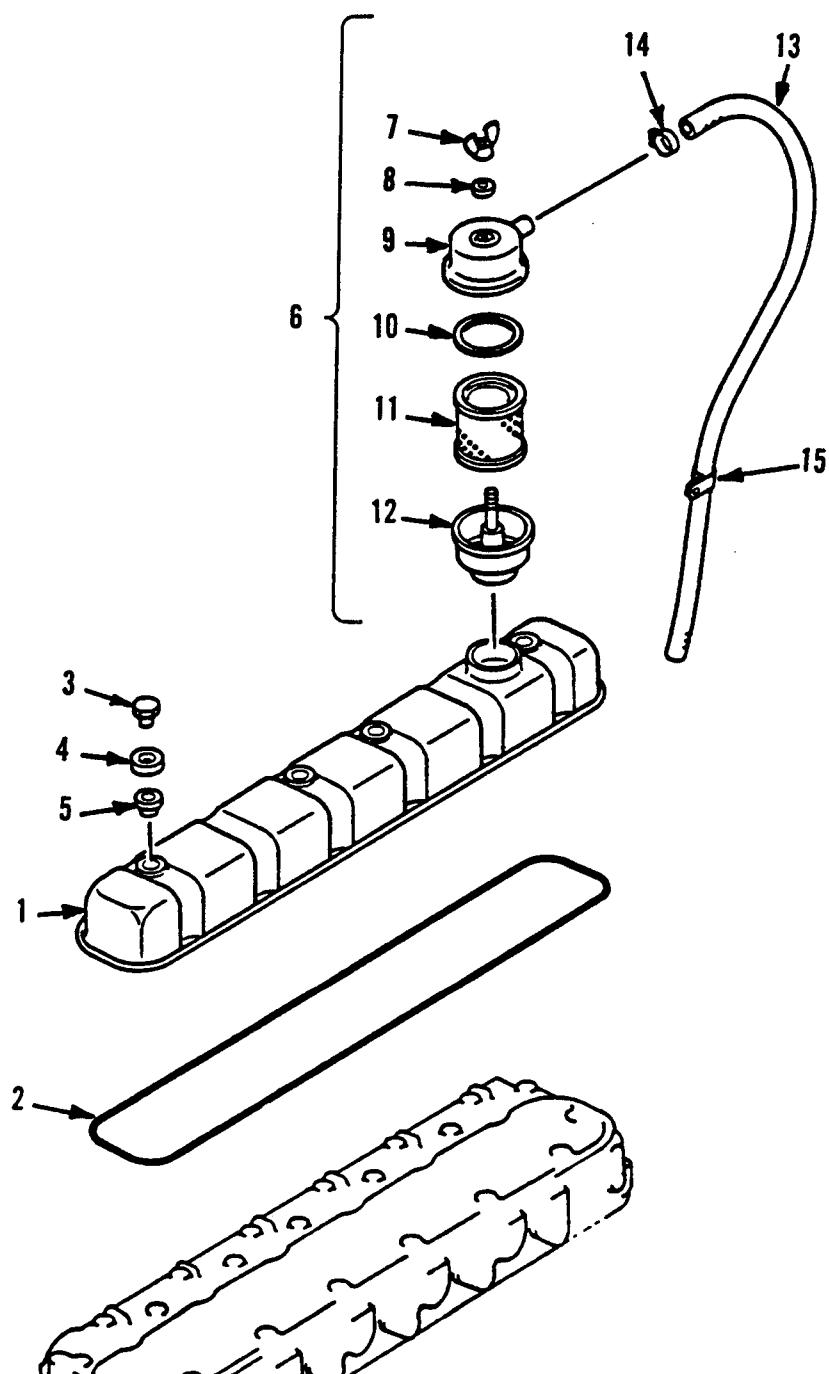


REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	186-0552	1	Head, Cylinder With Valves (Includes Parts Marked *)
	186-0553	1	Less Valves (Includes Parts Marked +)
2	186-0204	6	**Sleeve
3	186-0484	6	**Seat, Valve - Intake (Std)
4	186-0554	6	**Seat, Valve - Exhaust (Std)
5	186-0442	12	**Guide, Valve
6	186-0157	13	**Plug, Expansion
7	186-0158	4	**Plug, Expansion
8	186-0156	7	**Plug, Expansion

REF NO.	PART NO.	QTY USED	PART DESCRIPTION
9	186-0304	6	*Valve, Poppet - Intake
10	186-0305	6	*Valve, Poppet - Exhaust
11	186-0306	12	*Spring, Valve
12	186-0307	12	*Guide, Valve
13	186-0308	24	*Collet, Lock - Valve
14	186-0297	12	*Seat, Spring - Valve
15	186-0447	1	Gasket, Head - Cylinder
16	186-0226	26	Bolt, Hex Head
18	186-0207	1	Hanger, Front
19	186-0206	1	Gasket
20	186-0445	1	Gasket Kit, Head - Cylinder

* Parts included in 186-0552 Cylinder Head Assembly.
+ Parts included in 186-0553 Cylinder Head Assembly.

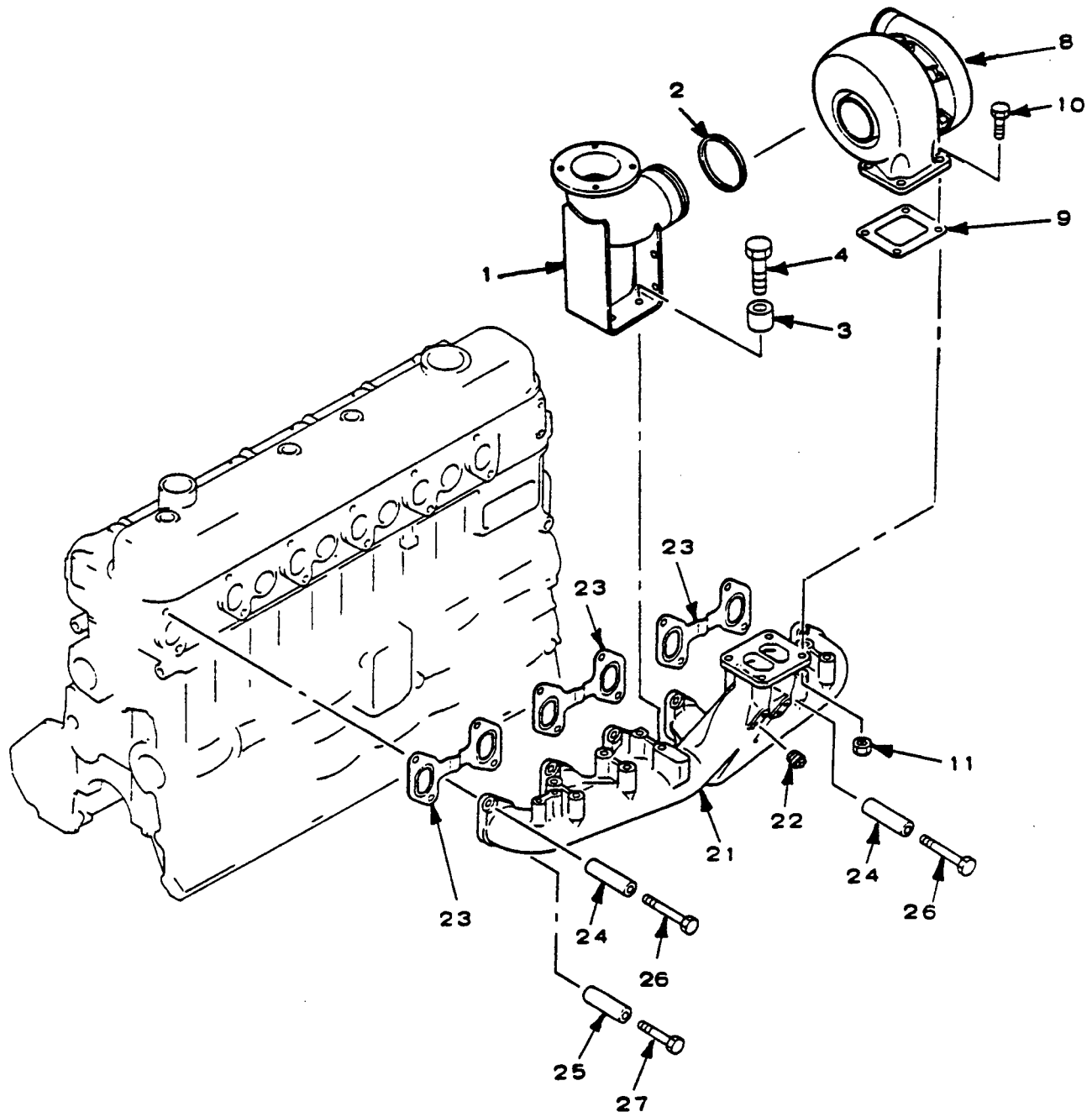
Cylinder Head Cover



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	186-0221	1	Cover, Head - Cylinder	8	186-0519	1	*Washer, Flat
2	186-0222	1	Seal, O-Ring - Cylinder Cover	9	186-0549	1	*Cover, Breather
3	186-0218	4	Nut, Hex - Crown	10	186-0597	1	*Gasket
4	186-0219	4	Washer, Flat	11	186-0550	1	*Element, Breather
5	186-0220	4	Seal	12	186-0548	1	*Body, Breather
6	186-0547	1	Breather Assembly (Includes Parts Marked *)	13	186-0223	1	Hose, Rubber
7	186-0551	1	*Nut, Wing	14	186-0167	1	Clamp, Hose
				15	186-0403	1	Clip

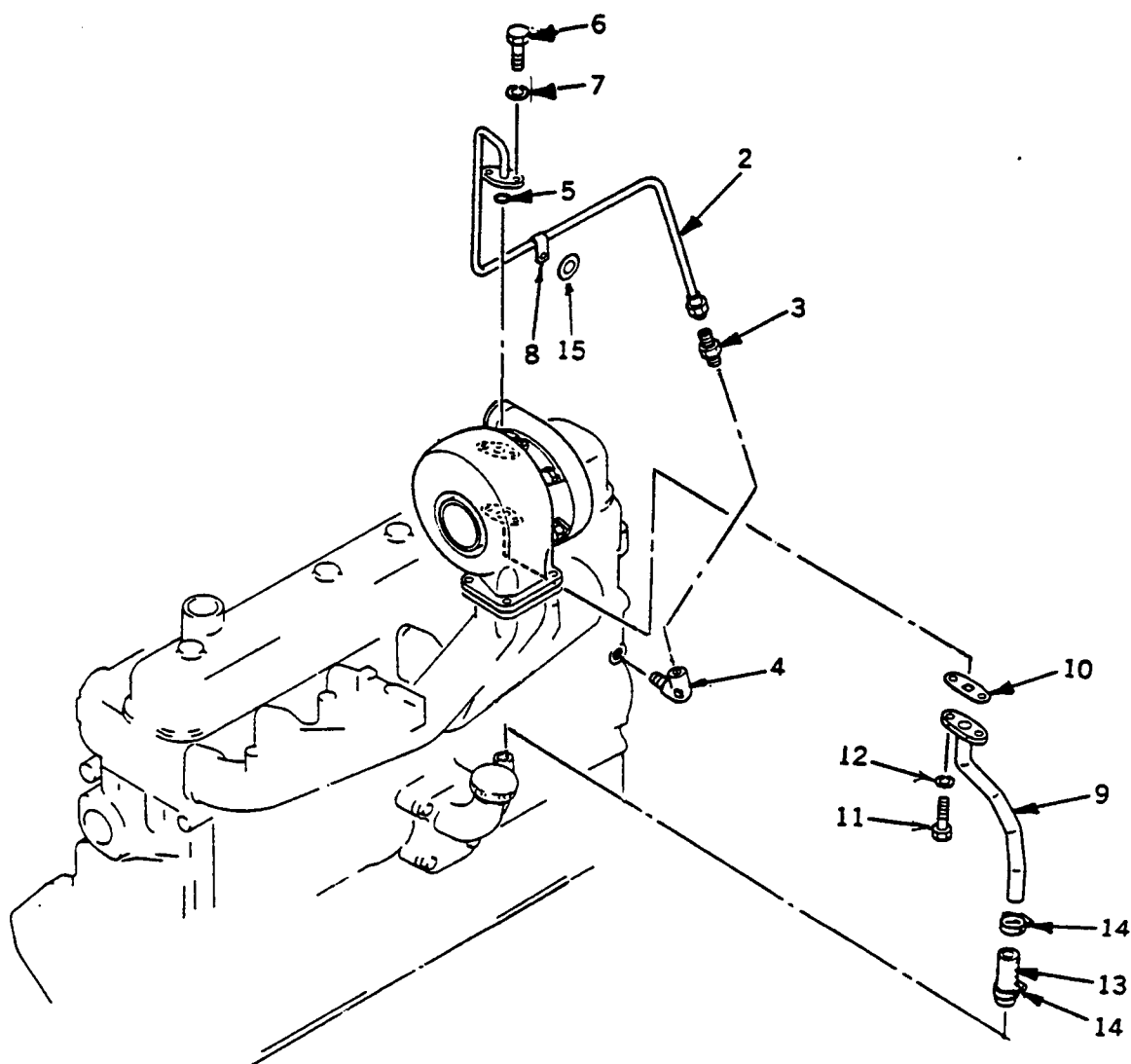
* Parts included in 186-0547 Breather Assembly.

Exhaust Manifold, And Turbocharger



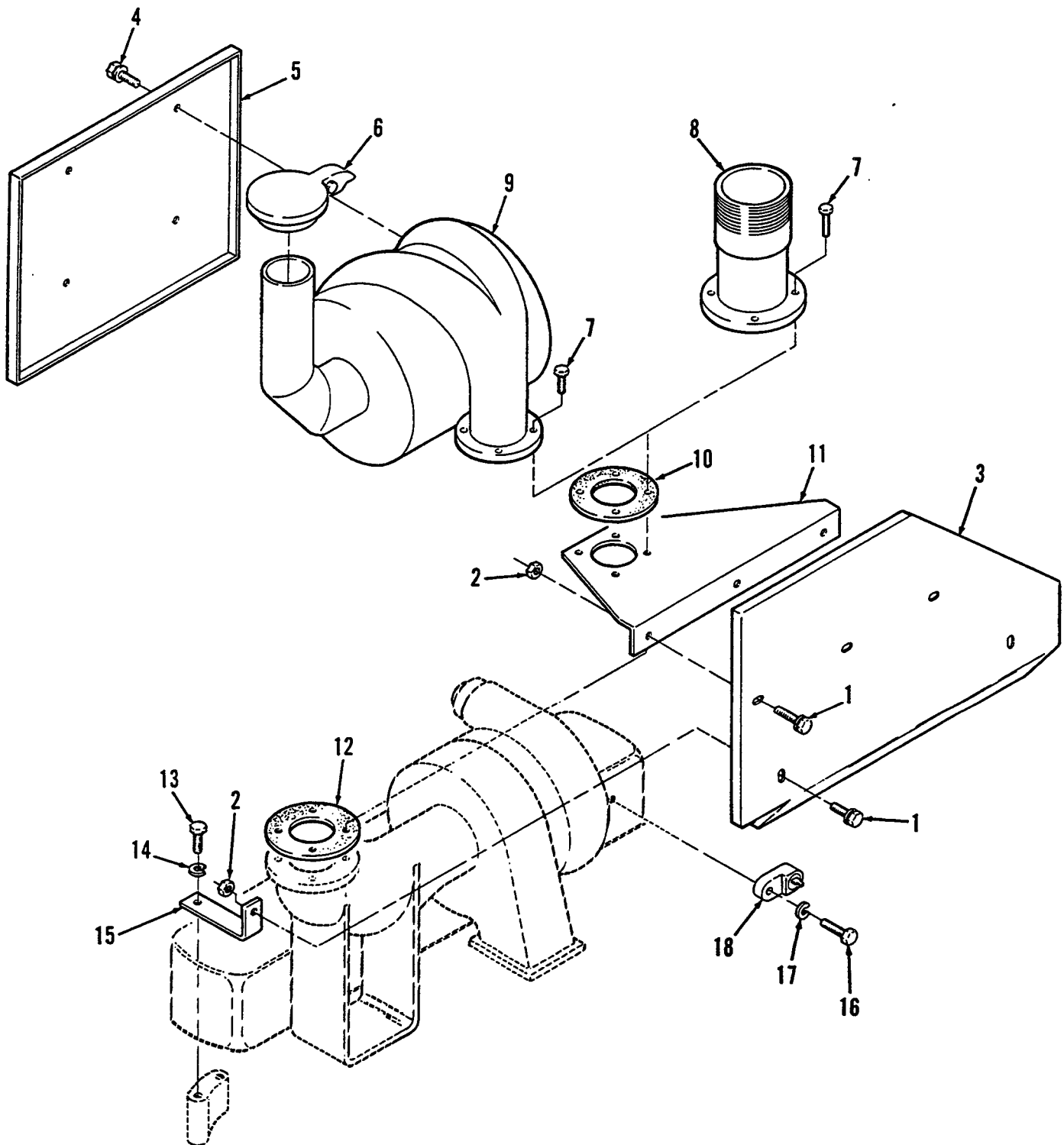
REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	186-0380	1	Elbow, Exhaust	21	186-0379	1	Manifold, Exhaust
2	186-0186	1	Ring, Seal	22	186-0153	2	Plug
3	186-0406	4	Spacer	23	186-0213	3	Gasket
4	720-1057	4	Bolt, Hex Head (M10 x 1.5 x 40mm)	24	186-0212	11	Spacer
8	186-0471	1	Turbocharger	25	186-0185	1	Spacer
9	186-0201	1	Gasket	26	186-0082	11	Bolt, Hex Head
10	186-0114	4	Bolt, Hex Head	27	720-1061	1	Bolt, Hex Head (M10 x 1.5 x 60mm)
11	186-0200	4	Nut, Hex				

Turbocharger Lubricating System



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
2	186-0392	1	Pipe, Inlet	10	186-0202	1	Gasket
3	186-0162	1	Nipple, Pipe - Hex	11	720-1056	2	Bolt, Hex Head (M10 x 1.5 x 25mm)
4	186-0393	1	Elbow, Pipe	12	186-0486	2	Spacer
5	186-0141	1	Seal, O-Ring	13	186-0165	1	Hose, Rubber
6	186-0079	2	Bolt, Hex Head	14	186-0168	2	Clamp, Hose
7	186-0095	2	Washer, Lock - Spring	15	186-0487	1	Washer, Flat
8	186-0188	1	Clip				
9	186-0391	1	Pipe, Outlet				

Exhaust System

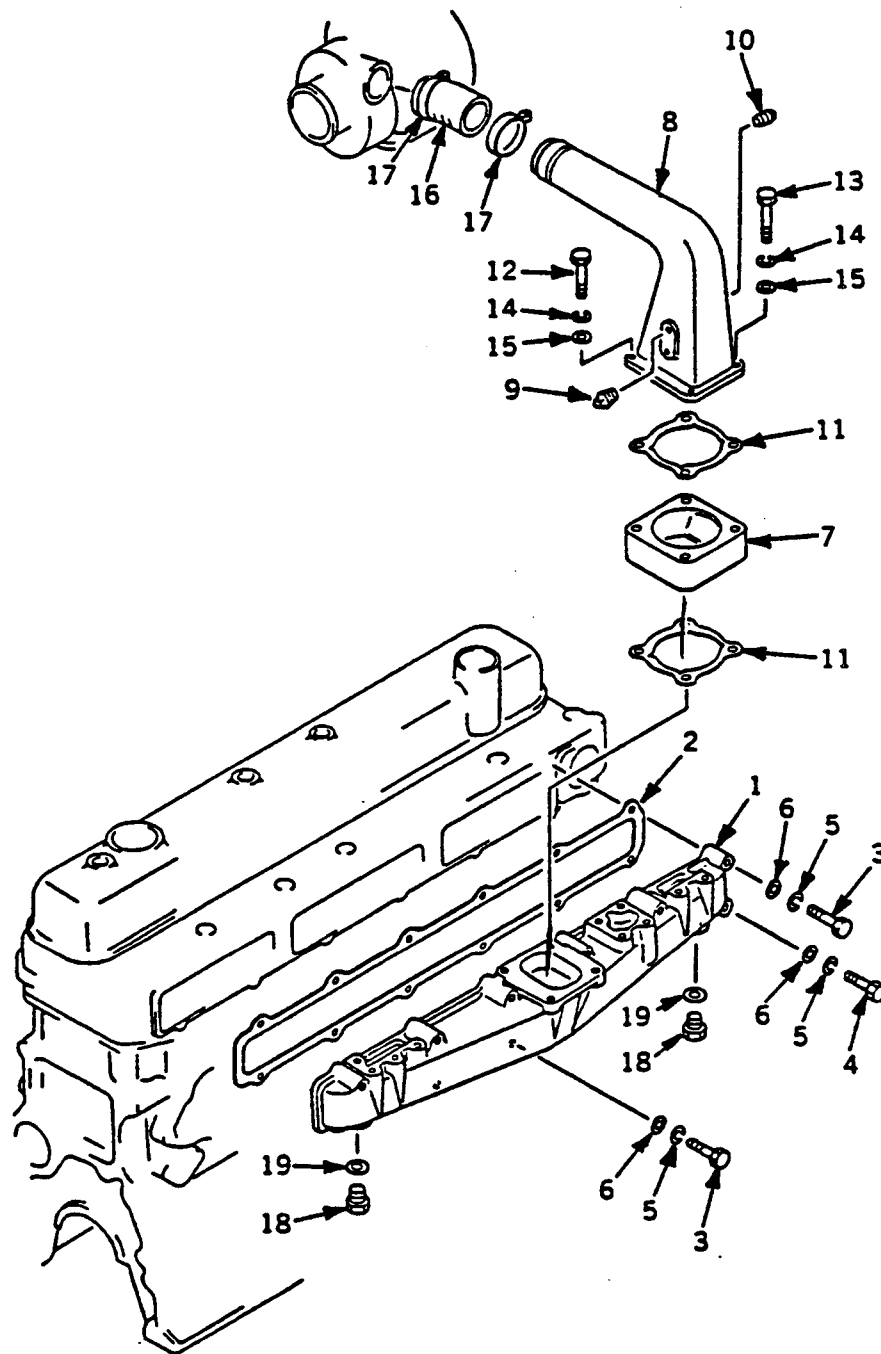


Exhaust System

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	821-0029	5	Screw, Self-Lock - Hex Washer Head (3/8 - 16 x 3/4")	10	155-2165	1	Gasket
2	870-0281	5	Nut, Self-Locking - Hex Washer Head (3/8 - 16)	11	155-2072	1	*Plate, Mounting - Head Shield
3	155-2069	1	*Shield, Heat	12	155-1886	1	*Gasket
4	821-0016	4	Screw, Self-Lock - Hex Washer Head (5/16 - 18 x 3/4")	13	800-2085	2	Screw, Cap - Hex Head (M10 x 1.5 x 20mm)
5	155-2070	1	*Shield, Heat	14	850-2010	2	Washer, Lock - Spring (M10)
6	155-2062-02	1	Cap, Rain	15	155-2071	2	*Bracket, Mtg - Heat Shield
7	720-1055	4	Screw, Cap - Hex Head (M10 x 1.5 x 30mm)	16	800-2087	1	Screw, Cap - Hex Head (M10 x 1.5 x 30mm)
8	154-2570	1	Adapter, Exhaust	17	850-2010	1	Washer, Lock - Spring (M10)
9	155-2060	1	Muffler, Exhaust	18	309-0269	1	Switch, Thermostatic - Lo Engine Temperature (S4)

* Parts used on Housed Generator Sets.

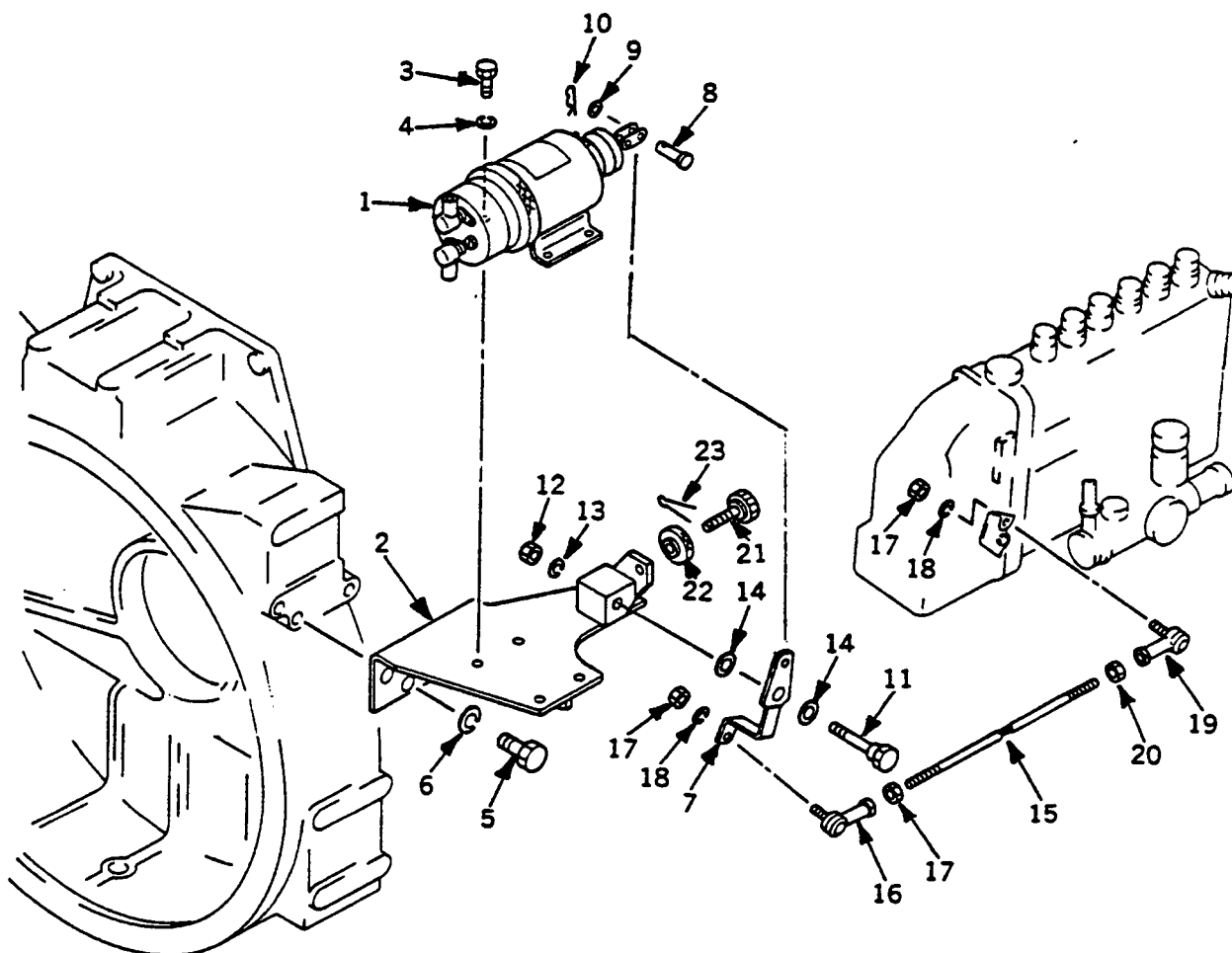
Intake Manifold



REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	186-0209	1	Manifold, Intake
2	186-0210	1	Gasket
3	720-1045	10	Bolt, Hex Head (M8 x 1.25 x 65mm)
4	720-1042	2	Bolt, Hex Head (M8 x 1.25 x 50mm)
5	186-0095	12	Washer, Lock - Spring
6	186-0102	12	Washer, Flat
7	186-0424	1	Spacer
8	186-0377	1	Duct, Air
9	186-0151	2	Plug
10	186-0155	1	Plug

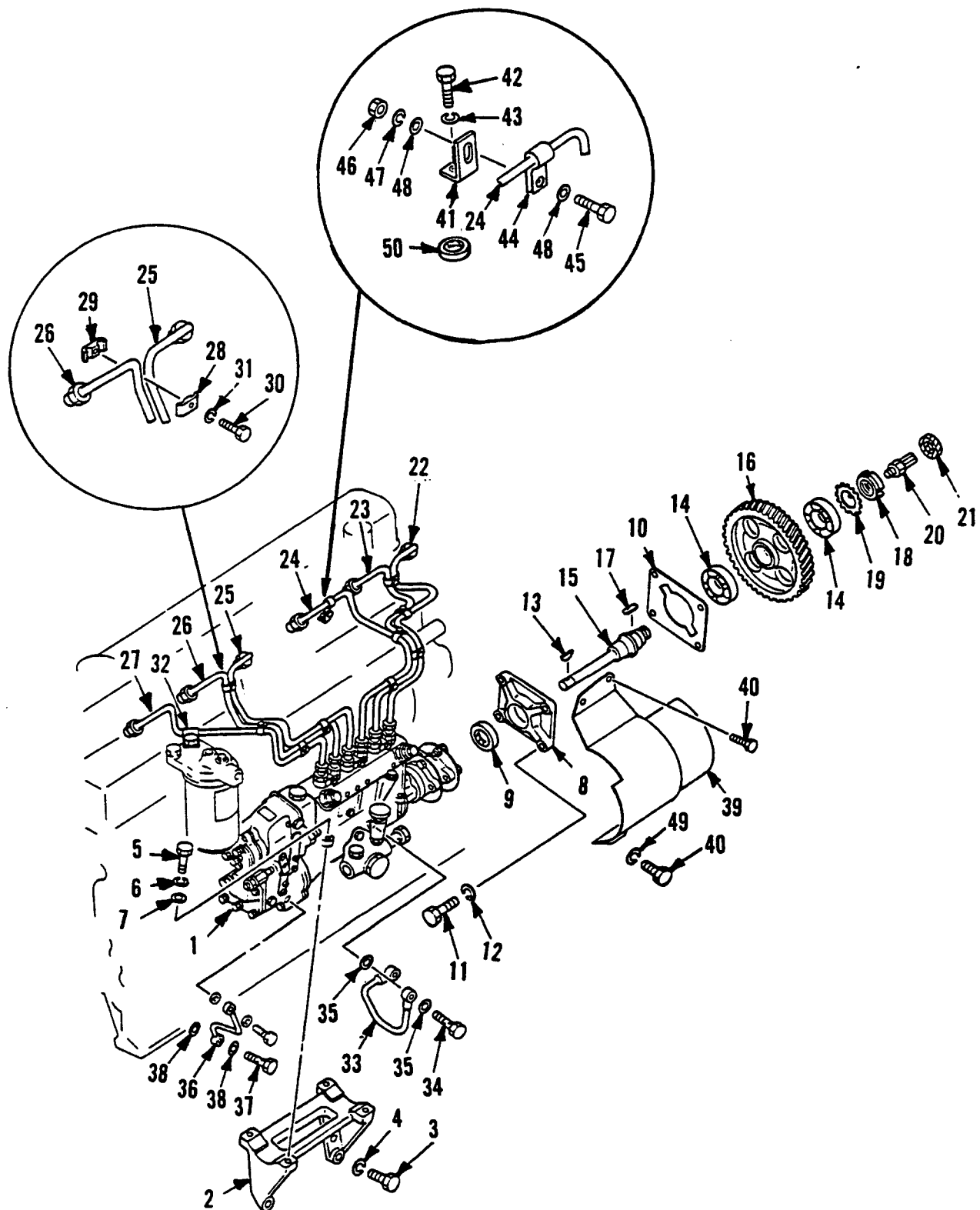
REF NO.	PART NO.	QTY USED	PART DESCRIPTION
11	186-0211	2	Gasket
12	720-1046	3	Bolt, Hex Head (M8 x 1.25 x 70mm)
13	720-1047	1	Bolt, Hex Head (M8 x 1.25 x 75mm)
14	186-0095	4	Washer, Lock - Spring
15	186-0102	4	Washer, Flat
16	186-0378	1	Hose, Rubber
17	186-0170	2	Clamp, Hose
18	186-0438	2	Plug
19	186-0430	2	Gasket

Fuel Control Solenoid



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	186-0179	1	Solenoid, Electric	12	186-0089	1	Nut, Self-Locking - Hex
2	186-0423	1	Bracket	13	186-0095	1	Washer, Lock - Spring
3	186-0489	4	Bolt, Hex Head	14	186-0104	2	Washer, Flat
4	186-0094	4	Washer, Lock - Spring	15	186-0422	1	Rod
5	720-1073	2	Bolt, Hex Head (M12 x 1.75 x 25mm)	16	186-0416	1	Joint, Ball
6	186-0097	2	Washer, Lock - Spring	17	186-0088	3	Nut, Hex
7	186-0418	1	Lever	18	186-0094	2	Washer, Lock - Spring
8	186-0133	1	Pin	19	186-0417	1	Joint, Ball (LH Threads)
9	186-0105	1	Washer, Flat	20	186-0087	1	Nut, Hex (LH Threads)
10	186-0129	1	Pin, Snap	21	186-0420	1	Knob (Thumbscrew)
11	186-0419	1	Bolt, Shoulder - Hex Head	22	186-0421	1	Nut, Knurled
				23	186-0510	1	Pin, Cotter

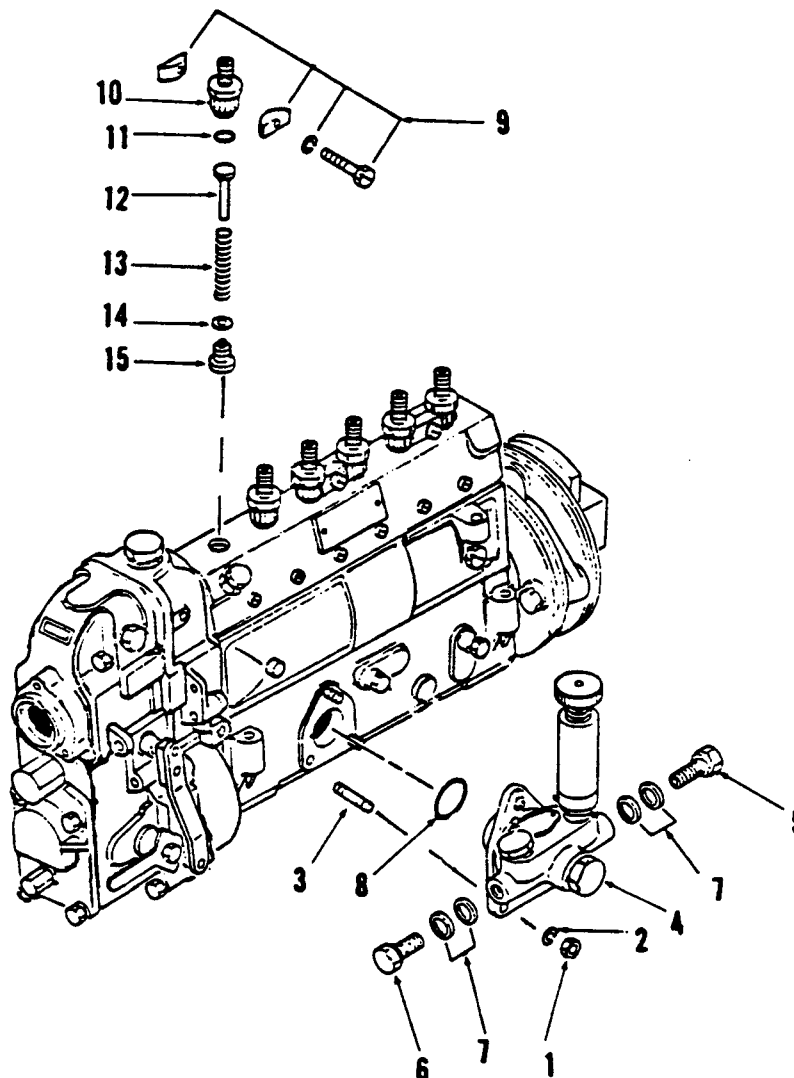
Fuel Injection Pump



Fuel Injection Pump

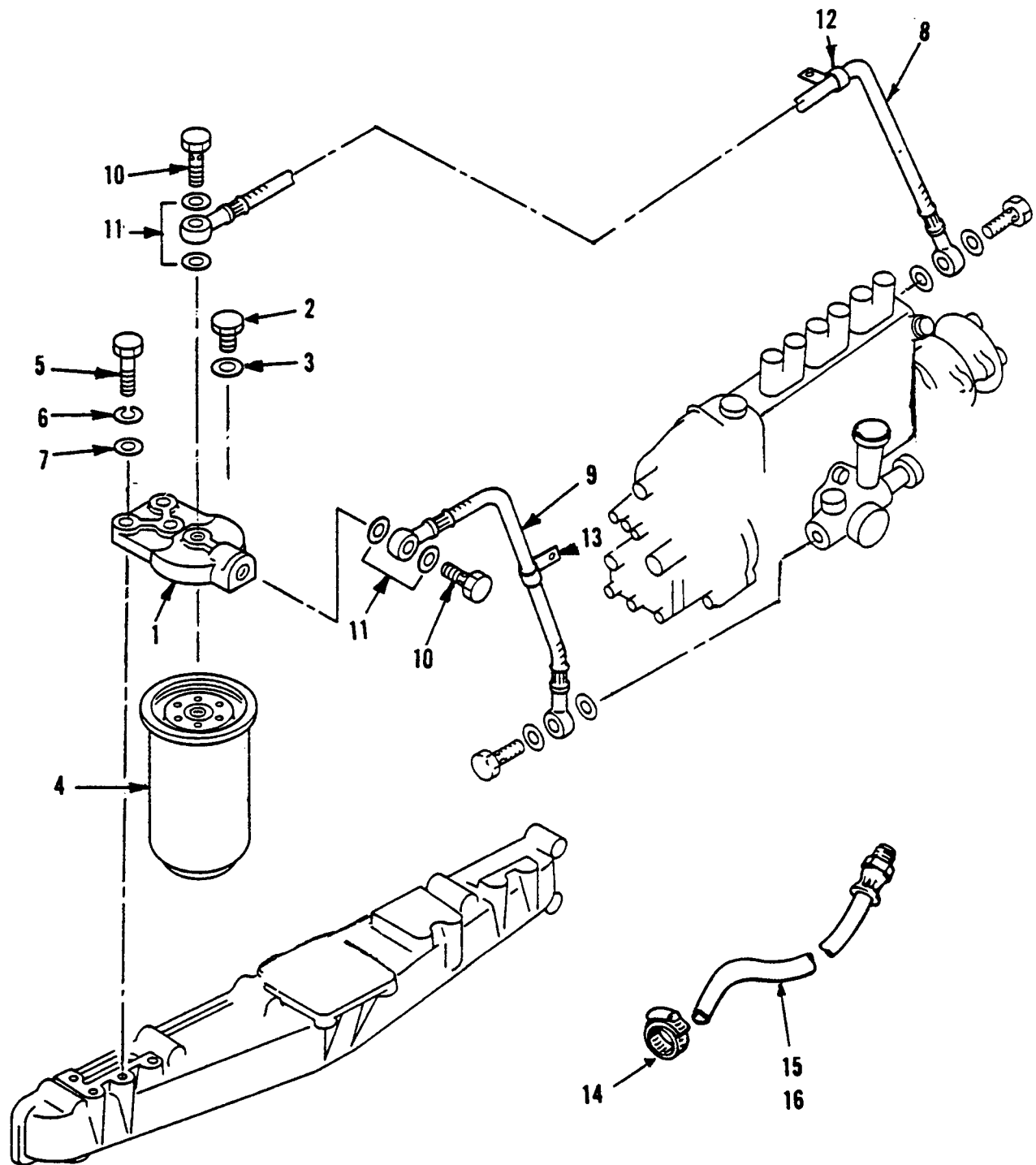
REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	186-0469	1	Pump, Injection - Fuel (See Separate Page For Components)	26	186-0364	1	Line, Injection - Fuel (No. 5)
2	186-0255	1	Bracket	27	186-0365	1	Line, Injection - Fuel (No. 6)
3	720-1056	4	Bolt, Hex Head (M10 x 1.5 x 35mm)	28	186-0195	1	Clip
4	186-0096	4	Washer, Lock - Spring	29	186-0196	1	Clip
5	720-1046	4	Bolt, Hex Head (M8 x 1.25 x 70mm)	30	186-0197	1	Screw, Cap - Hex Head
6	186-0095	4	Washer, Lock - Spring	31	186-0524	1	Washer, Lock - Spring
7	186-0183	4	Washer, Flat	32	186-0525	1	Clip
8	186-0359	1	Cover	33	186-0320	1	Line, Fuel
9	186-0513	1	Seal, Oil	34	186-0159	2	Bolt, Hollow - Hex
10	186-0203	1	Gasket	35	186-0145	4	Gasket
11	186-0084	4	Bolt, Hex Head	36	186-0319	1	Line, Fuel
12	186-0096	4	Washer, Lock - Spring	37	186-0160	2	Bolt, Hollow - Hex
13	186-0113	1	Key	38	186-0146	4	Gasket
14	186-0134	2	Bearing, Ball	39	186-0400	1	Cover
15	186-0582	1	Shaft	40	720-1042	5	Bolt, Hex Head (M8 x 1.25 x 50mm)
16	186-0355	1	Gear	41	186-0371	1	Bracket
17	186-0118	1	Key	42	186-0501	1	Bolt, Hex Head
18	186-0356	1	Nut, Lock	43	186-0096	1	Washer, Lock - Spring
19	186-0357	1	Washer, Lock - ET	44	186-0368	1	Clip
20	186-0374	1	Shaft	45	720-1054	1	Bolt, Hex Head (M10 x 1.5 x 25mm)
21	186-0405	1	Seal, Oil	46	186-0090	1	Nut, Hex
22	186-0360	1	Line, Injection - Fuel (No. 1)	47	186-0100	1	Washer, Lock - Spring
23	186-0361	1	Line, Injection - Fuel (No. 2)	48	186-0108	2	Washer, Flat
24	186-0362	1	Line, Injection - Fuel (No. 3)	49	186-0095	1	Washer, Lock - Spring
25	186-0363	1	Line, Injection - Fuel (No. 4)	50	186-0486	1	Spacer

Fuel Injection Pump Components



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	186-1018	3	Nut, Hex	8	186-1019	1	Seal, O-Ring
2	186-1017	3	Washer, Lock - Spring	9	186-1011	3	Clamp Assembly
3	186-1016	3	Stud	10	186-1021	6	Holder
4	186-1128	1	Pump, Fuel - Feed (Includes Joint Bolts And Gaskets)	11	186-1122	6	Seal, O-Ring
5	186-1023	1	Bolt, Hollow - Hex	12	186-1114	6	Plunger
6	186-1021	1	Bolt, Hollow - Hex	13	186-1123	6	Spring
7	186-1022	4	Gasket	14	186-1125	6	Gasket
				15	186-1127	6	Valve, Delivery

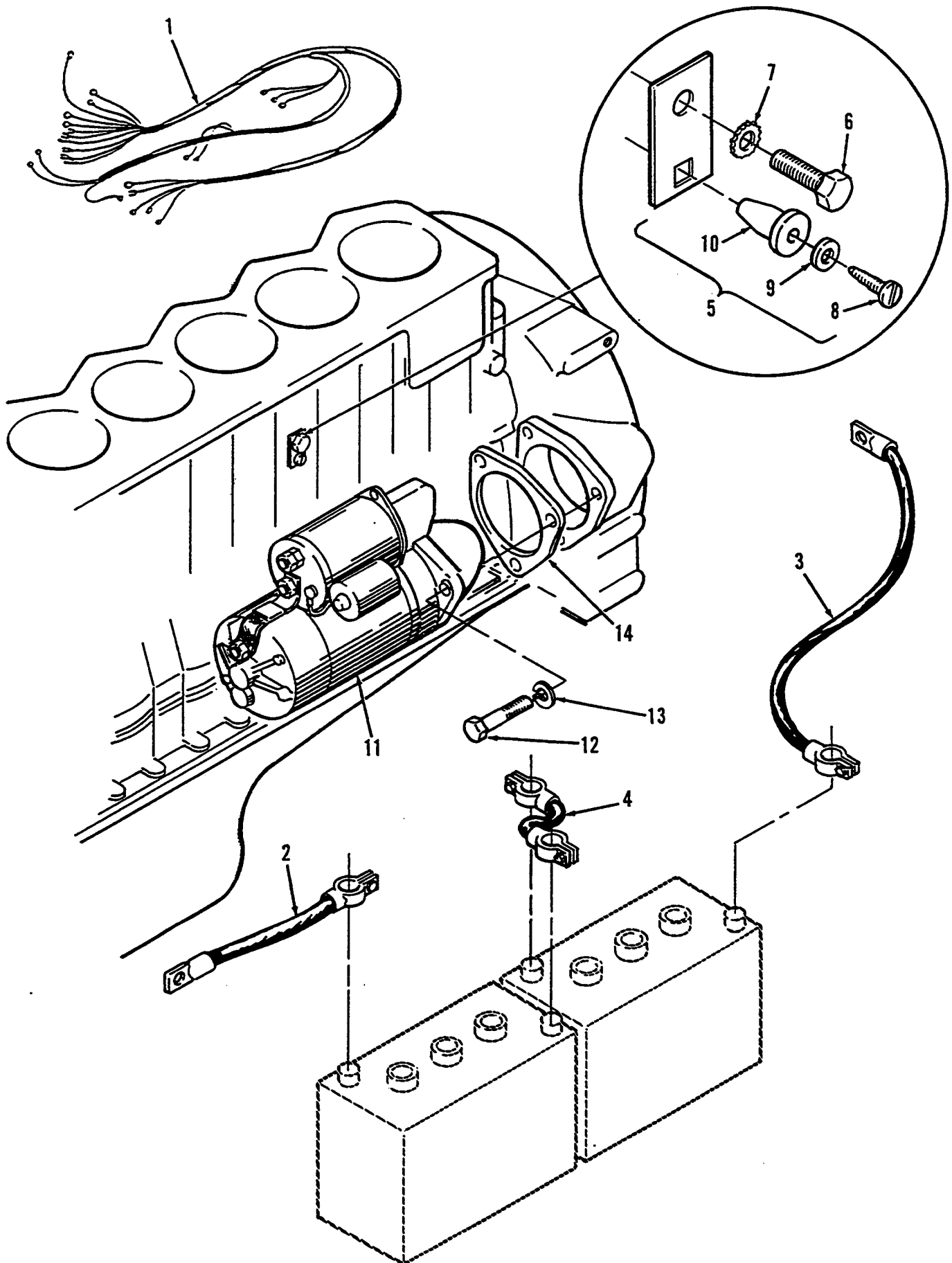
Fuel Filter



REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	186-0372	1	Adapter, Filter - Fuel
2	186-0373	1	Plug
3	186-0147	1	Gasket
4	186-0370	1	Filter, Fuel
5	720-1056	2	Bolt, Hex Head (M10 x 1.5 x 35mm)
6	186-0096	2	Washer, Lock - Spring
7	186-0103	2	Washer, Flat
8	186-0163	1	Hose, Fuel

REF NO.	PART NO.	QTY USED	PART DESCRIPTION
9	186-0166	1	Hose, Fuel
10	186-0161	2	Bolt, Joint
11	186-0147	4	Gasket
12	186-0198	1	Clip
13	186-0367	1	Clip
14	503-0685	2	Clamp, Hose
15	501-0501	1	Line, Fuel - Flexible (30")
16	501-0502	1	Line, Fuel - Flexible (60")

Starter

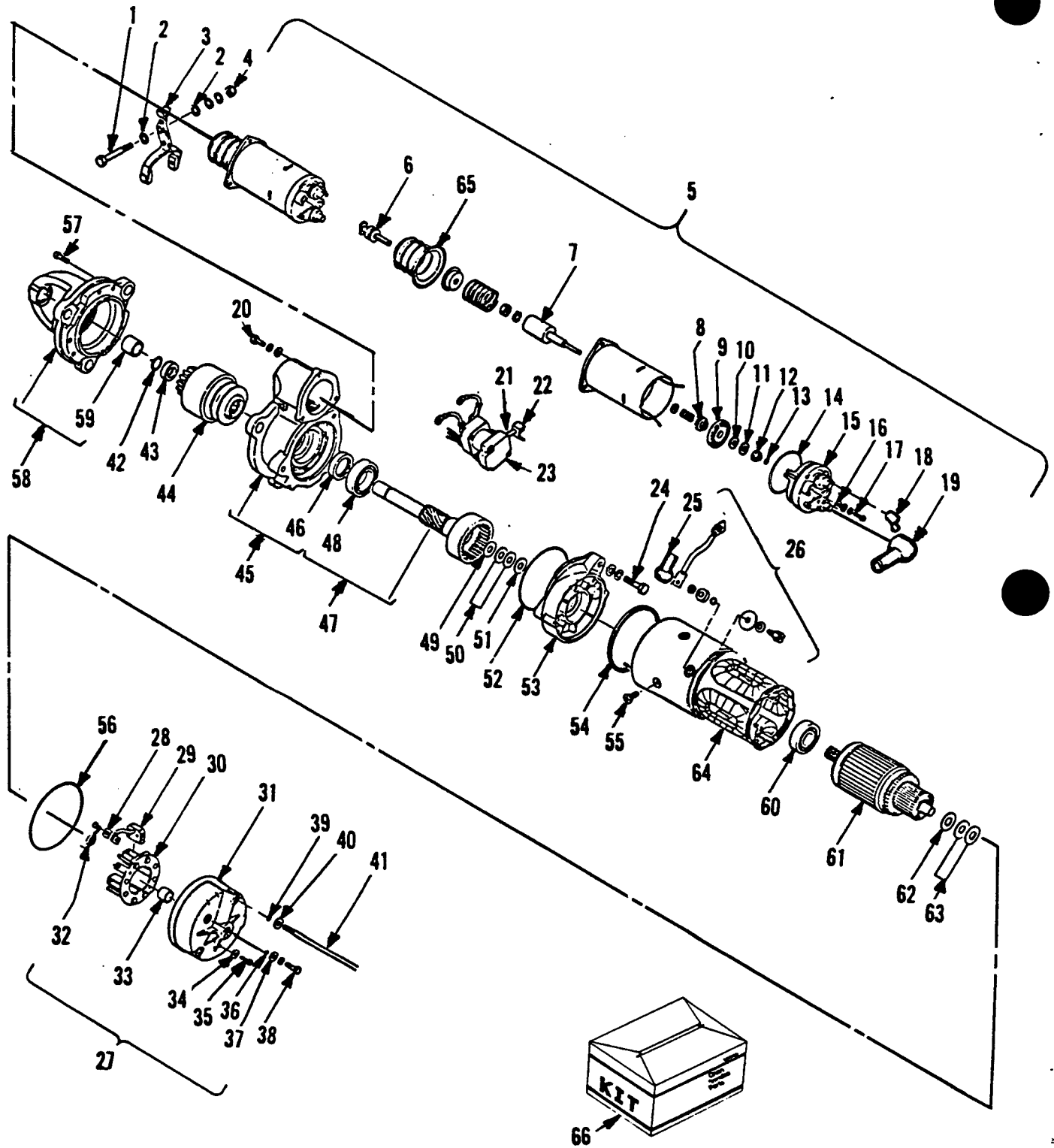


Starter

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	338-1823	1	Harness, Wiring - Control To Engine	8	809-0035	1	*Screw, Thread Cutting - Round Head (#8 x 3/4")
2	416-0619	1	Cable, Battery (18")	9	508-0015	1	*Washer, Insulating (#8)
3	416-0531	1	Cable, Battery (24")	10	870-0196	1	*Nut, Insulating (#8)
4	416-0473	1	Cable, Battery (Jumper)	11	186-0437	1	Starter (See Separate Page For Components)
5	332-2739	1	Terminal Assembly (Includes Parts Marked *)	12	186-0491	3	Screw, Cap - Hex Head
6	800-2112	1	Screw, Cap - Hex Head (M12 x 1.75 x 30mm)	13	186-0492	3	Washer, Lock - Spring
7	856-2012	1	Washer, Lock - EIT (M12)	14	186-2094	1	Shim

* Parts included in 332-2739 Terminal Assembly.

Starter Components

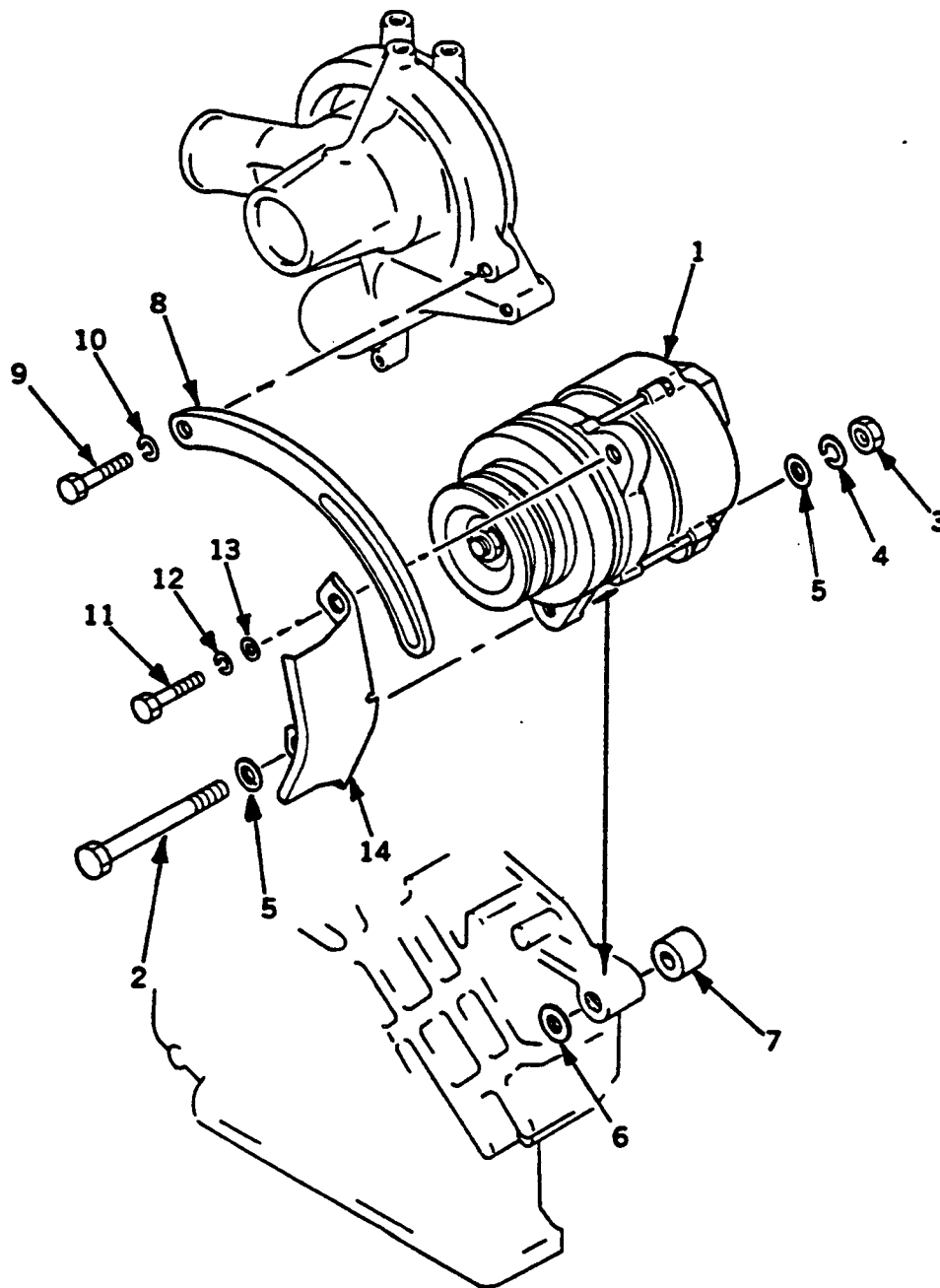


Starter Components

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	186-0047	1	Pin, Lever - Threaded	35	186-0623	1	Bolt, Hex Head
2	186-0030	2	Seal	36	186-0624	2	*Seal, O-Ring
3	186-0598	1	Lever, Shift	37	186-0625	2	Washer, Flat
4	186-0599	1	Nut, Hex	38	186-0626	2	Bolt, Hex Head
5	186-0476	1	Solenoid	39	186-0627	2	*Seal, O-Ring
6	186-0600	1	Screw, Plunger	40	186-0628	2	Washer, Flat
7	186-0601	1	Plunger	41	186-0629	2	Bolt, Hex Head
8	186-0602	1	Bushing	42	186-0630	1	Ring, Retaining
9	186-0603	1	Contact	43	186-0631	1	Stop, Pinion
10	186-0604	1	Washer, Insulator	44	186-0479	1	Clutch
11	186-0605	2	Washer, Flat	45	186-0632	1	Bracket, Center
12	186-0606	1	Holder	46	186-0633	1	Seal, Oil
13	186-0607	2	Ring, Retaining	47	186-0634	1	Shaft
14	186-0608	1	*Seal, O-Ring	48	186-0477	1	Bearing, Ball
15	186-0609	1	Terminal	49	186-0635	1	Washer, Thrust
16	186-0610	2	Seal	50	186-0636	2	Washer, Thrust
17	186-0611	2	Bolt, Hex Head	51	186-0637	1	Washer, Insulator
18	186-0042	1	*Cap, Rubber (Terminal Cover)	52	186-0638	1	*Seal, O-Ring
19	186-0612	1	*Cap, Rubber (Terminal Cover)	53	186-0639	1	Bracket, Center
20	186-0613	3	Bolt, Hex Head	54	186-0640	1	*Seal
21	186-0018	1	Bolt, Hex Head	55	186-0641	4	Screw, Flat Head - Cross Recessed
22	186-0614	1	Holder, Switch	56	186-0642	1	*Seal, O-Ring
23	186-0475	1	Switch	57	186-0029	6	Bolt, Hex Head
24	186-0615	3	Bolt, Hex Head	58	186-0643	1	Housing, Front
25	186-0041	1	*Cap, Rubber (Terminal Cover)	59	186-0483	1	Bushing, Sleeve
26	186-0616	1	Terminal	60	186-0478	1	Bearing, Ball
27	186-0617	1	Housing, Rear	61	186-0644	1	Armature
28	186-0618	4	Plate	62	186-0645	1	Washer, Flat
29	186-0480	4	Brush	63	186-0646	2	Washer, Thrust
30	186-0619	4	Holder, Brush	64	186-0647	1	Coil, Field
31	186-0620	1	Housing	65	186-0648	1	Boot, Rubber
32	186-0621	4	Spring, Brush	66	186-0481	1	Package, Seal (Includes Parts Marked *)
33	186-0482	1	Bushing, Sleeve				
34	186-0622	1	Seal				

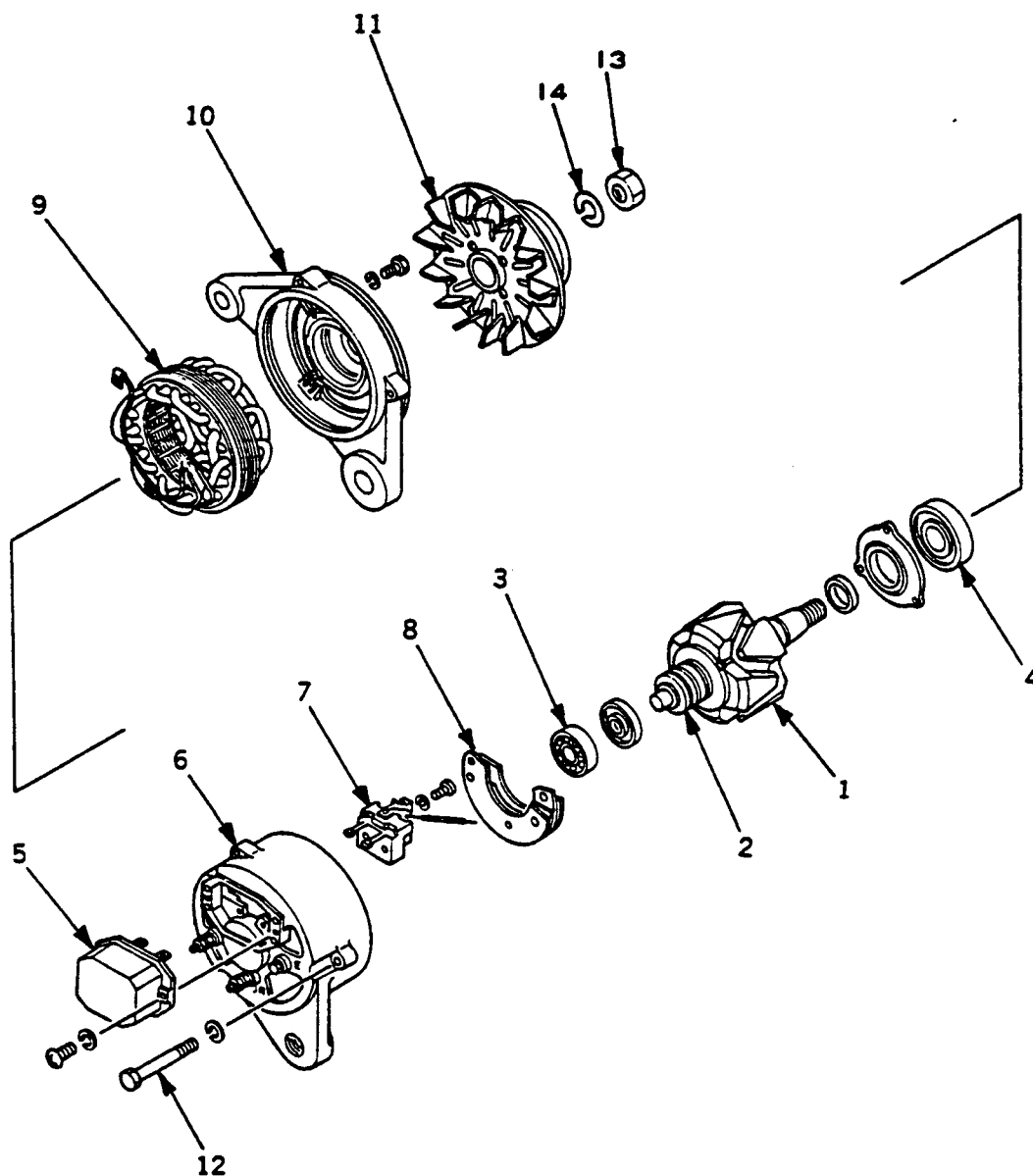
* Parts included in 186-0481 Seal Package Assembly.

Alternator



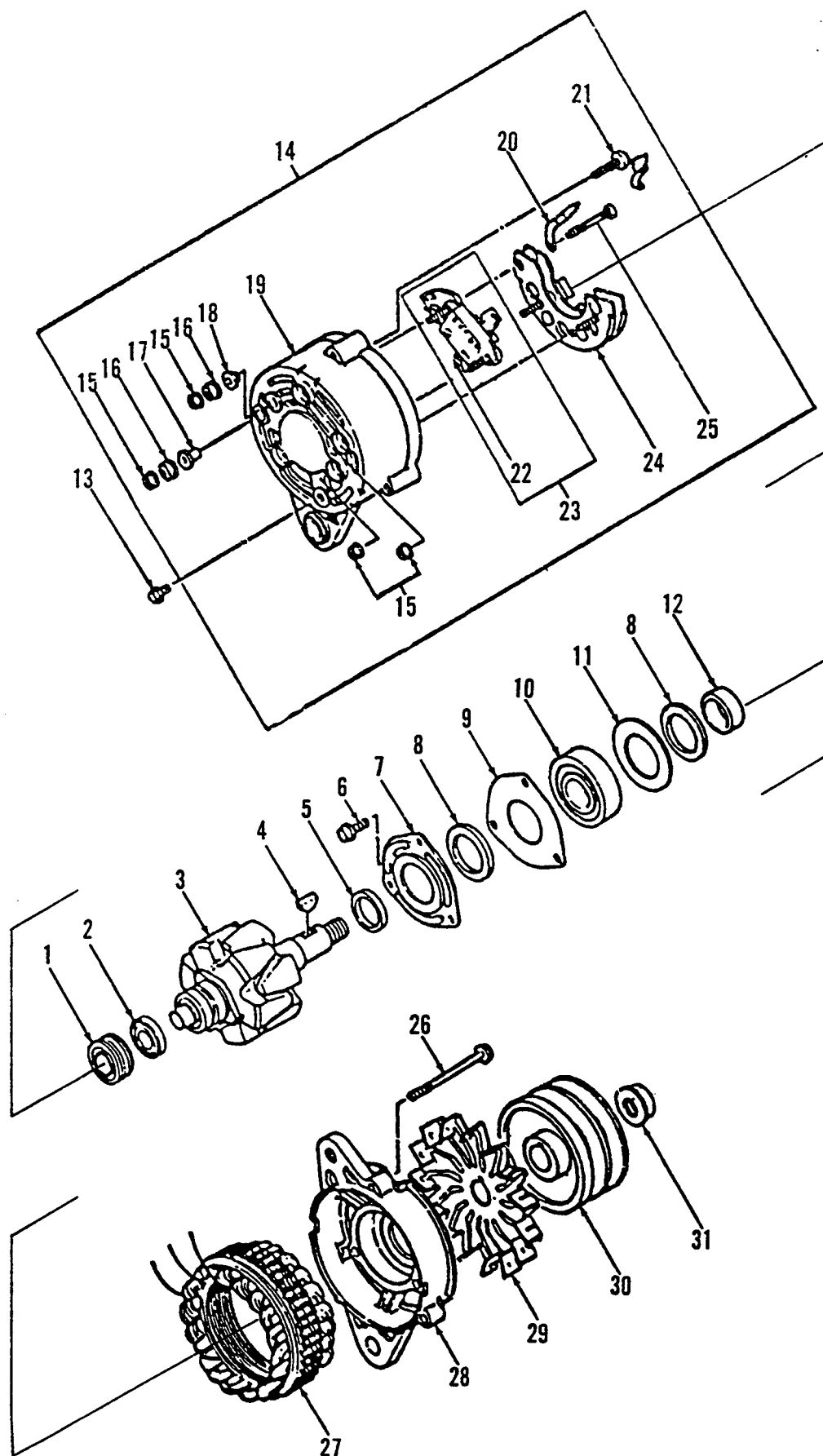
REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	186-2092	1	Alternator (See Separate Page For Components)	8	186-0258	1	Arm, Adjusting
2	186-0184	1	Bolt, Hex Head	9	720-1054	1	Bolt, Hex Head (M10 x 1.5 x 25mm)
3	186-0094	1	Nut, Hex	10	186-0096	1	Washer, Lock - Spring
4	186-0098	1	Washer, Lock - Spring	11	186-0085	1	Bolt, Hex Head
5	186-0506	1	Washer, Flat	12	186-0097	1	Washer, Lock - Spring
6	186-0256	1	Spacer	13	186-0109	1	Washer, Flat
7	186-0257	1	Spacer, Sleeve	14	186-0594	1	Guard, Belt

Alternator Components (8-Pole)



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	186-0078	1	Rotor (Includes Slip Ring)	8	186-0025	1	Diode
2	186-0067	1	Ring, Slip	9	186-0068	1	Stator
3	186-0032	1	Bearing, Ball	10	186-0069	1	Bracket, Mounting - Front
4	186-0033	1	Bearing, Ball	11	186-0023	1	Pulley
5	186-0071	1	Regulator, Voltage	12	186-0019	3	Bolt, Hex Head
6	186-0024	1	Bracket, Mtg - Rear (Includes Brush Holder And Diode)	13	186-0493	1	Nut, Hex
7	186-0070	1	Holder, Brush	14	186-0494	1	Washer, Lock - Spring

Alternator Components (12-Pole)

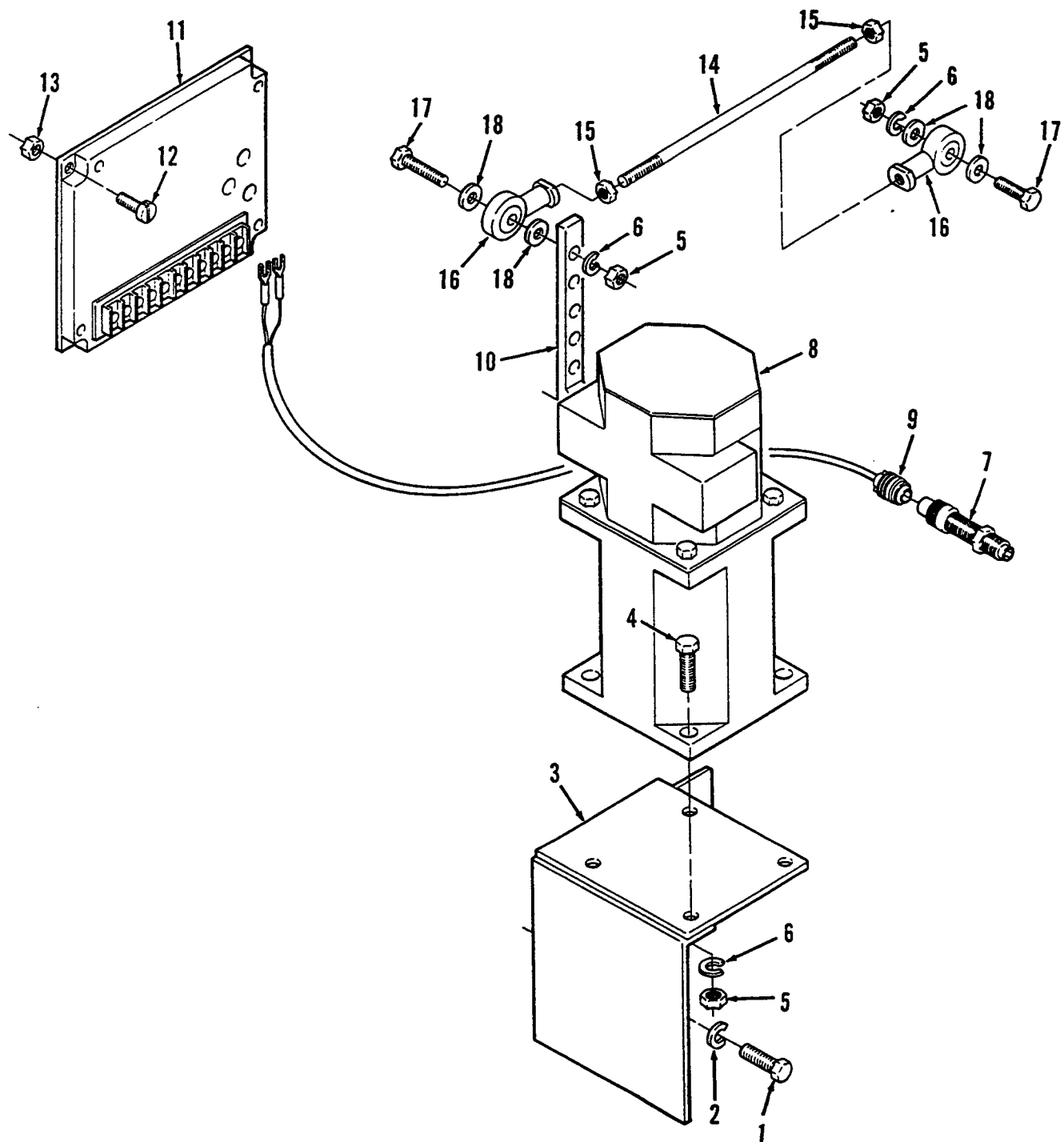


Alternator Components (12-Pole)

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	186-2097	1	Bearing, Ball	17	186-2110	1	*Bushing, Insulating
2	186-2098	1	Retainer	18	186-2111	1	*Bushing, Insulating
3	186-2099	1	Rotor	19	186-2112	1	*Bracket, Rear
4	186-1645	1	Key, Woodruff	20	186-2113	1	*Bar, Connect
5	186-2100	1	Collar	21	186-2114	1	*Terminal
6	186-2101	3	Bolt	22	186-2115	2	*Holder, Brush
7	186-2102	1	Retainer	23	186-2116	1	*Regulator Assembly (Includes Brush Holder)
8	186-1655	2	Packing	24	186-2117	1	*Rectifier Assembly
9	186-1653	1	Retainer	25	186-2118	1	*Bolt
10	186-2103	1	Bearing, Ball	26	186-2119	3	Bolt
11	186-2104	1	Retainer	27	186-2120	1	Stator Assembly
12	186-2105	1	Collar	28	186-2121	1	Bracket, Front
13	186-2106	1	Bolt	29	186-2122	1	Fan
14	186-2107	1	Bracket Assembly, Rear (Includes Parts Marked *)	30	186-2123	1	Pulley
15	186-2108	6	*Nut	31	186-2124	1	Nut
16	186-2109	2	*Nut				

* Parts included in 186-2107 Rear Bracket Assembly.

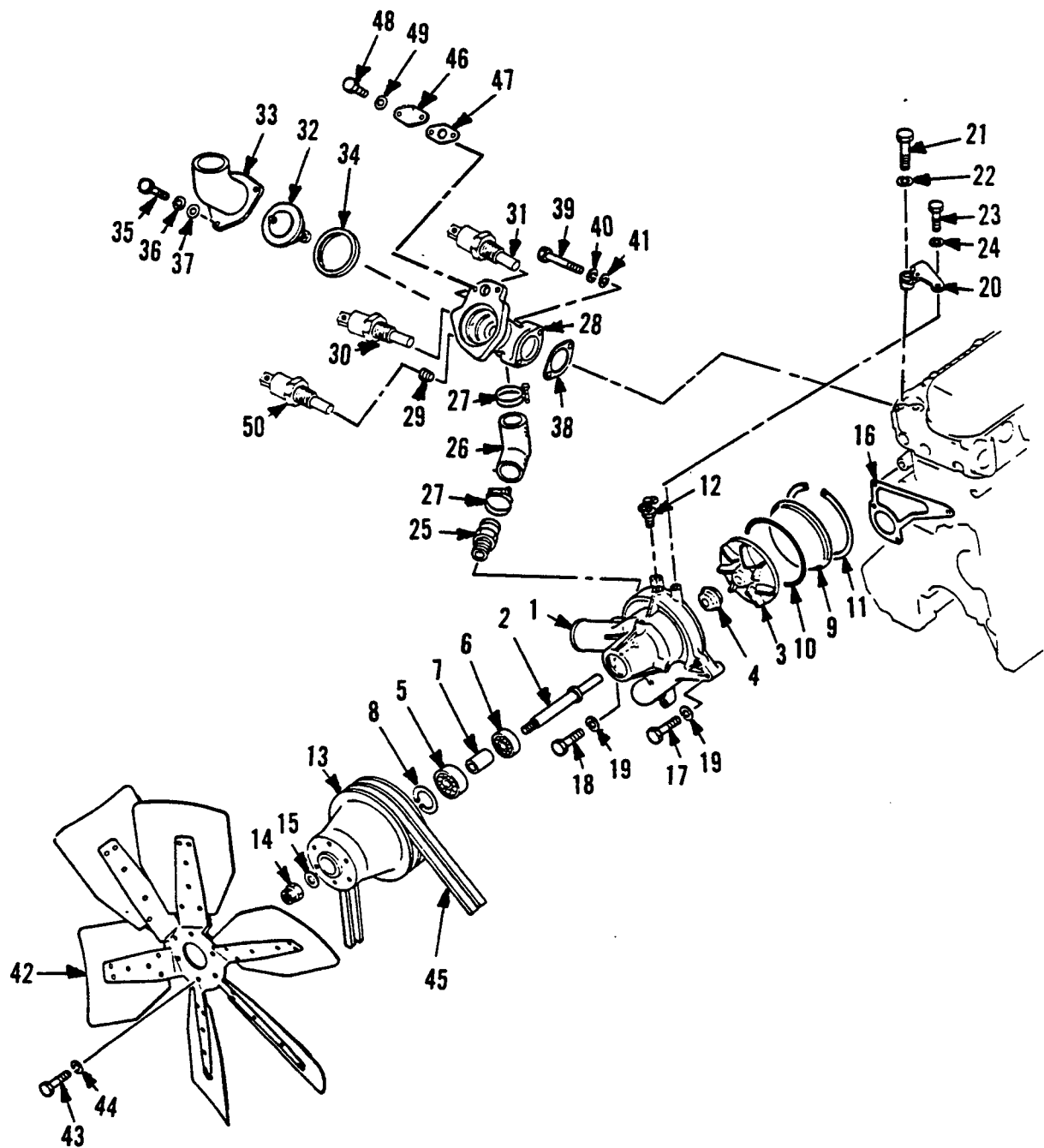
Electric Governor



REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	800-2111	4	Screw, Cap - Hex Head (M12 x 1.75 x 25mm)
2	850-2012	4	Washer, Lock (M12)
3	150-2118	1	Bracket, Mounting - Governor
4	800-2037	4	Screw, Cap - Hex Head (M6 x 1 x 35mm)
5	860-2007	6	Nut, Hex (M6)
6	850-2006	6	Washer, Lock (M6)
7	151-0603-02	1	Sensor, Speed - Sensor
8	151-0612	1	Actuator, Governor
9	151-0613	1	Cable, Pickup - Magnetic

REF NO.	PART NO.	QTY USED	PART DESCRIPTION
10	150-2145	1	Lever, Actuator
11	151-0611	1	Control, Governor
12	813-0103	4	Screw (#10 - 32 x 3/4")
13	870-0131	4	Nut, Hex - ET (#10 - 32)
14	520-0957	1	Stud
15	115-0025	2	Nut, Hex (1/4 - 28)
16	150-2120	2	End, Rod
17	800-2035	2	Screw, Cap - Hex Head (M6 x 1 x 25mm)
18	526-0021	4	Washer, Flat (1/4)

Cooling Fan, And Water Pump

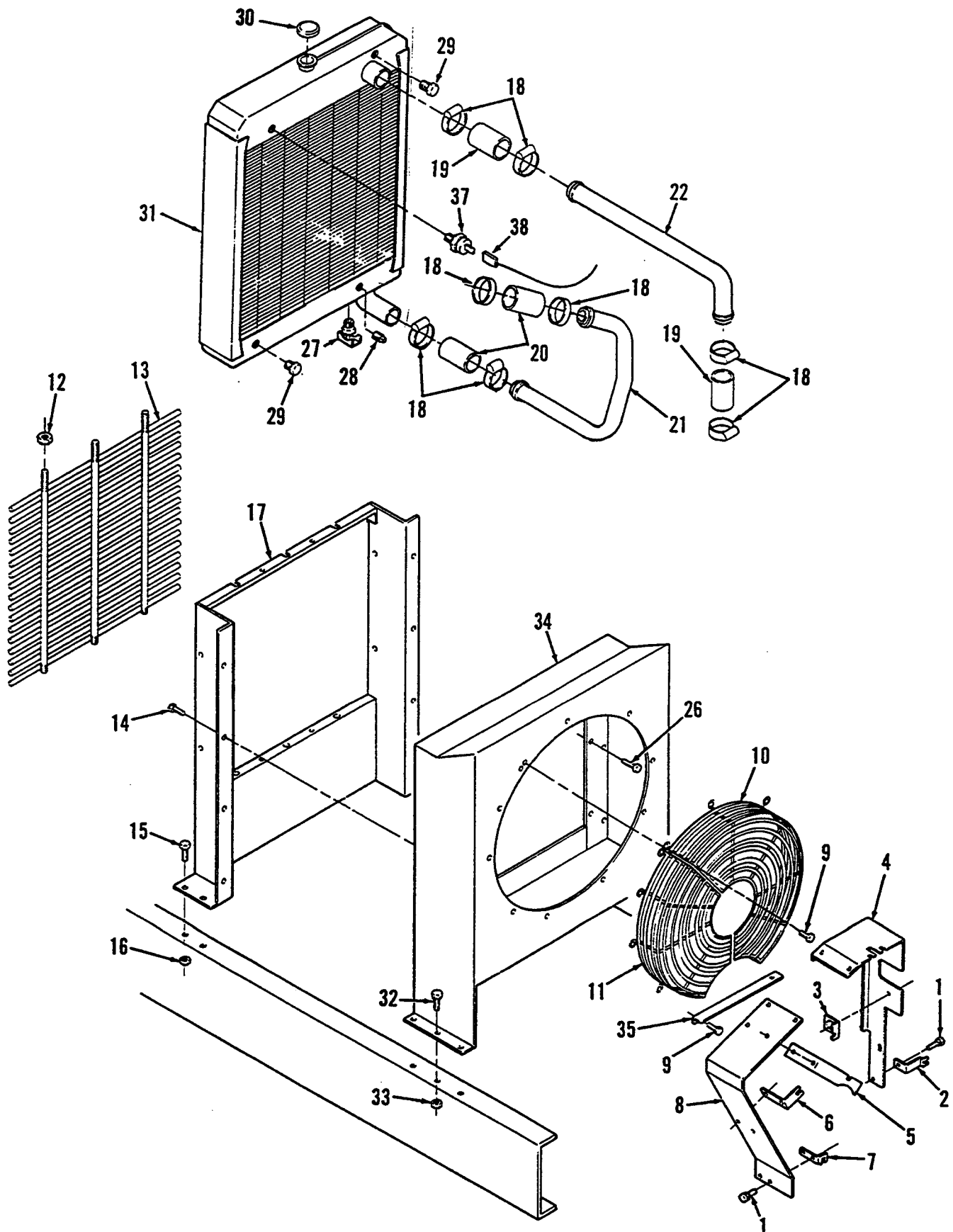


Cooling Fan, And Water Pump

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	186-0465	1	Pump, Water (Includes Parts Marked *)	28	186-0545	1	Housing, Thermostat
2	186-0527	1	*Shaft	29	186-0490	1	Plug, Pipe
3	186-0574	1	*Impeller	30	193-0375	1	Sender, Temperature - Engine Coolant (E2)
4	186-0404	1	*Seal	31	309-0522	1	Switch, Thermostatic - Hi Engine Coolant Temp (S2)
5	186-0441	2	*Bearing, Ball	32	186-0436	1	Thermostat
6	186-0511	1	*Bearing, Ball	33	186-0546	1	Connector, Outlet - Water
7	186-0526	1	*Spacer	34	186-0451	1	Gasket
8	186-0528	1	*Ring, Snap	35	720-1038	3	Bolt, Hex Head (M8 x 1.25 x 30mm)
9	186-0571	1	*Cover	36	186-0095	3	Washer, Lock - Spring
10	186-0428	1	*Seal, O-Ring	37	186-0102	3	Washer, Flat
11	186-0572	1	*Ring, Snap	38	186-0206	1	Gasket
12	186-0517	1	*Cock, Drain	39	720-1061	2	Bolt, Hex Head (M10 x 1.5 x 60mm)
13	186-0575	1	*Pulley	40	186-0096	2	Washer, Lock - Spring
14	186-0508	1	*Nut, Hex - Self-Locking	41	186-0505	2	Washer, Flat
15	186-0507	4	*Washer, Flat	42	186-0176	1	Fan
16	186-0341	1	Gasket	43	720-1056	6	Bolt, Hex Head (M10 x 1.5 x 35mm)
17	720-1061	3	Bolt, Hex Head (M10 x 1.5 x 60mm)	44	186-0096	6	Washer, Lock - Spring
18	186-0502	1	Bolt, Hex Head	45	186-0425	1	Belt Set, V
19	186-0096	4	Washer, Lock - Spring	46	130-2801	1	Plate
20	186-0530	1	Bracket	47	130-2800	2	Gasket
21	720-1057	1	Bolt, Hex Head (M10 x 1.5 x 40mm)	48	720-1037	2	Bolt, Hex Head (M8 x 1.25 x 25mm)
22	186-0096	1	Washer, Lock - Spring	49	186-0095	2	Washer, Lock - Spring
23	720-1035	2	Bolt, Hex Head (M8 x 1.25 x 16mm)	50	309-0521	1	Switch, Thermostatic - Hi Engine Coolant Temp (S6)
24	186-0096	2	Washer, Lock - Spring				
25	186-0347	1	Adapter, Pipe				
26	186-0466	1	Hose, Rubber				
27	186-0169	2	Clamp, Hose				

* Parts included in 186-0465 Water Pump.

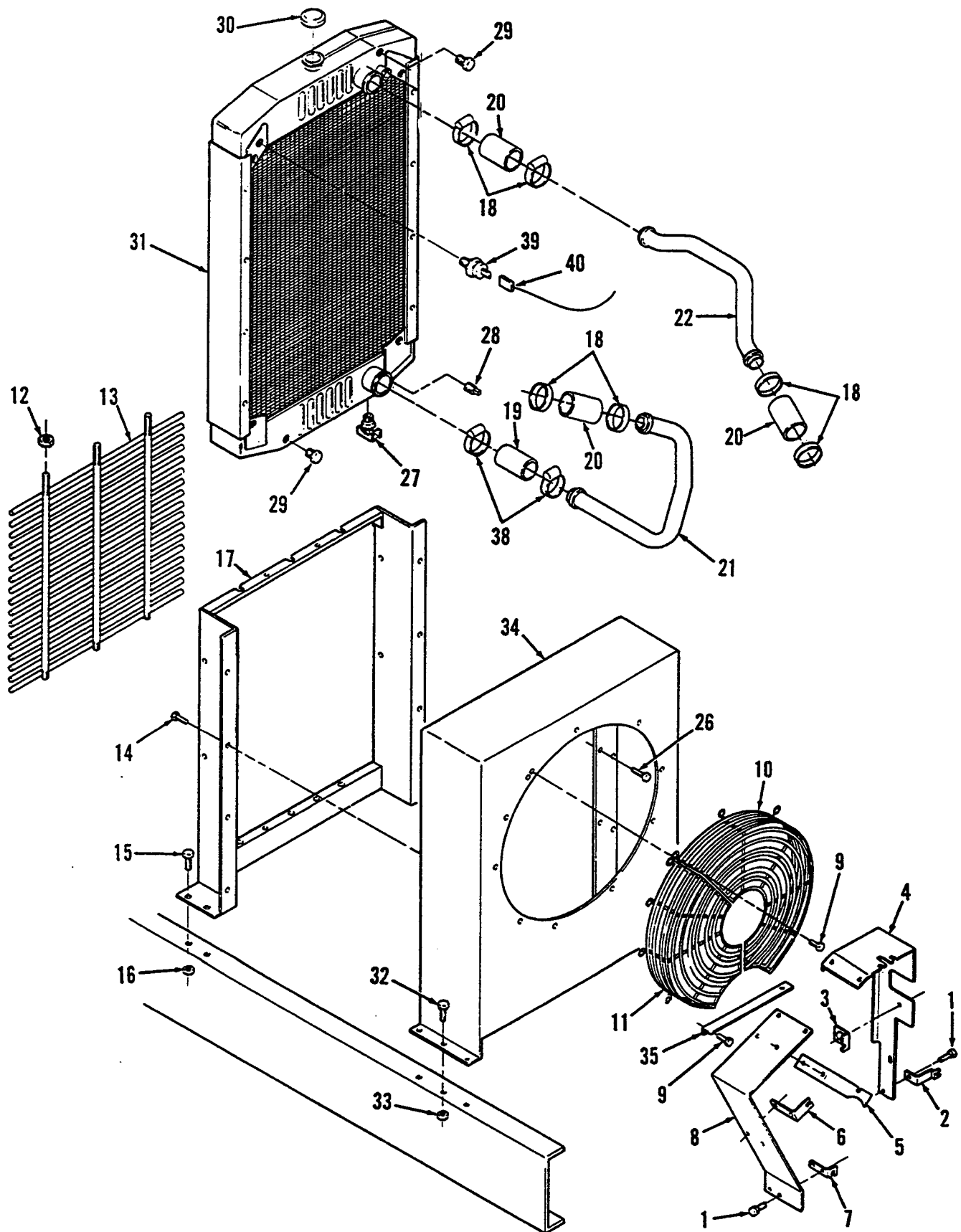
Cooling System (Standard)



Cooling System (Standard)

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	821-0010	9	Screw, Self-Locking - Hex Washer Head (1/4 - 20 x 1/2")	18	503-0354	8	Clamp, Hose
2	130-2605	1	Bracket, Support - Belt Guard	19	503-1380-01	2	Hose, Rubber
3	130-2604	1	Bracket, Support - Belt Guard	20	503-1380-01	2	Hose, Rubber
4	130-2647	1	Guard, Belt (Less Brackets)	21	130-2642-02	1	Tube, Outlet - Coolant
5	130-2603	1	Bracket, Support - Belt Guard	22	130-2641-02	1	Tube, Inlet - Coolant
6	130-2643	1	Bracket, Support - Belt Guard	26	821-0029	8	Screw, Self-Locking - Hex Washer Head (3/8 - 16 x 3/4")
7	130-2606	1	Bracket, Support - Belt Guard	27	504-0003	1	Cock, Drain
8	130-2646	1	Guard, Belt (Less Brackets)	28	502-0155	1	Plug, Pipe - Square Head
9	821-0018	11	Screw, Self-Locking - Hex Washer Head (1/4 - 20 x 5/8")	29	502-0153	3	Plug, Pipe - Hex Head
10	130-2615-02	1	Guard, Fan	30	130-0523	1	Cap, Radiator Large Neck
11	130-2615-01	1	Guard, Fan		130-2344	1	Small Neck
12	870-0281	6	Nut, Self-Locking - Hex Washer Head (3/8 - 16)	31	130-2519	1	Radiator (Includes Cap)
13	130-2625	1	Grille	32	821-0030	6	Screw, Self-Locking - Hex Washer Head (3/8 - 16 x 1")
14	821-0018	8	Screw, Self-Locking - Hex Washer Head (1/4 - 20 x 5/8")	33	870-0281	6	Nut, Self-Locking - Hex Washer Head (3/8 - 16)
15	821-0030	4	Screw, Self-Locking - Hex Washer Head (3/8 - 16 x 1")	34	130-2587-02	1	Shroud, Fan
16	870-0281	4	Nut, Self-Locking - Hex Washer Head (3/8 - 16)	35	130-2683	1	Bracket, Guard - Fan
17	130-2627	1	Guard, Radiator (Less Grille)	37	193-0322	1	Switch, Level - Coolant
				38	338-1919	1	Harness, Wiring

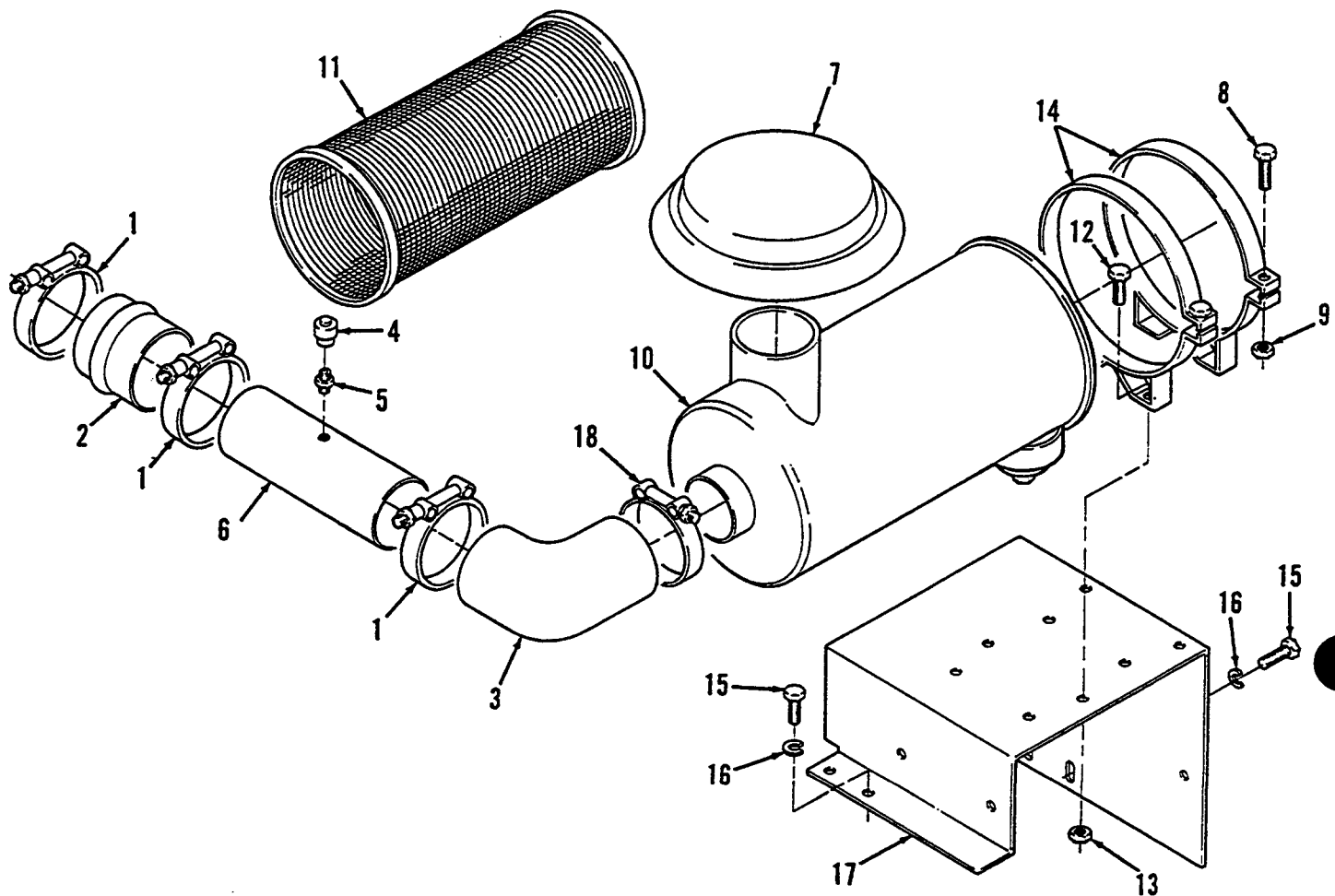
Cooling System (Hi Temperature)



Cooling System (Hi Temperature)

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	821-0010	9	Screw, Self-Locking - Hex Washer Head (1/4 - 20 x 1/2")	18	503-0354	6	Clamp, Hose
2	130-2605	1	Bracket, Support - Belt Guard	19	503-1414-01	1	Hose, Rubber
3	130-2604	1	Bracket, Support - Belt Guard	20	503-1380-01	2	Hose, Rubber
4	130-2647	1	Guard, Belt (Less Brackets)	21	130-2879	1	Tube, Outlet - Coolant
5	130-2603	1	Bracket, Support - Belt Guard	22	130-2880	1	Tube, Inlet - Coolant
6	130-2643	1	Bracket, Support - Belt Guard	26	821-0029	8	Screw, Self-Locking - Hex Washer Head (3/8 - 16 x 3/4")
7	130-2606	1	Bracket, Support - Belt Guard	27	504-0003	1	Cock, Drain
8	130-2646	1	Guard, Belt (Less Brackets)	28	502-0155	1	Plug, Pipe - Square Head
9	821-0018	11	Screw, Self-Locking - Hex Washer Head (1/4 - 20 x 5/8")	29	502-0153	3	Plug, Pipe - Hex Head
10	130-2615-02	1	Guard, Fan	30			Cap, Radiator
11	130-2615-01	1	Guard, Fan		130-0523	1	Large Neck
12	870-0281	6	Nut, Self-Locking - Hex Washer Head (3/8 - 16)		130-2344	1	Small Neck
13	130-2626	1	Grille	31	130-2521	1	Radiator (Includes Cap)
14	821-0018	8	Screw, Self-Locking - Hex Washer Head (1/4 - 20 x 5/8")	32	821-0030	6	Screw, Self-Locking - Hex Washer Head (3/8 - 16 x 1")
15	821-0030	4	Screw, Self-Locking - Hex Washer Head (3/8 - 16 x 1")	33	870-0281	6	Nut, Self-Locking - Hex Washer Head (3/8 - 16)
16	870-0281	4	Nut, Self-Locking - Hex Washer Head (3/8 - 16)	34	130-2883	1	Shroud, Fan
17	130-2885	1	Guard, Radiator (Less Grille)	35	130-2683	1	Bracket, Guard - Fan
				38	503-0648	2	Clamp, Hose
				39	193-0322	1	Switch, Level - Coolant
				40	338-1919	1	Harness, Wiring

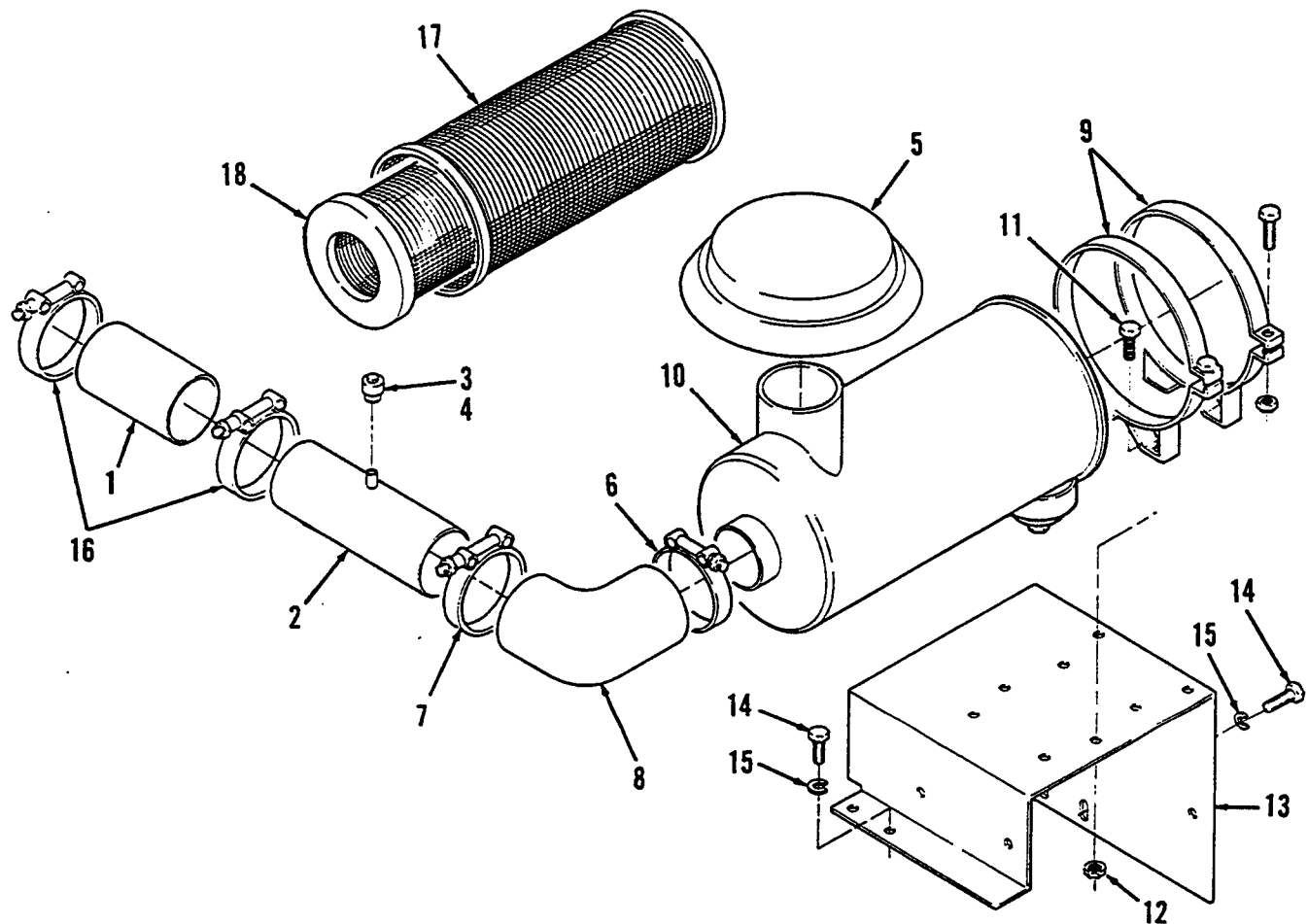
Air Cleaner (Standard)



REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	503-0885	4	Clamp, Hose
2	503-1371	1	Hose, Air
3	140-1970	1	Elbow, Rubber - 90°
4	140-1548	1	Indicator, Service - Air
5	140-1260	1	Adapter, Hex - Air Service Indicator
6	140-1958	1	Tube, Air
7	140-1601	1	Hood, Cleaner - Air
8	815-0115	2	Screw, Machine - Fillister Head (1/4 - 20 x 1")
9	863-0002	2	Nut, Square (1/4 - 20)
10	140-1971	1	Cleaner Assembly, Air (Includes Element)

REF NO.	PART NO.	QTY USED	PART DESCRIPTION
11	140-1969	1	Element, Cleaner - Air
12	821-0025	4	Screw, Self-Locking - Hex Head (3/8 - 16 x 3/4")
13	870-0281	4	Nut, Self-Locking - Hex Washer Head (3/8 - 16)
14	140-1973	2	Band, Mounting
15	800-2110	4	Screw, Cap - Hex Head (M12 x 1.75 x 20mm)
16	850-2012	4	Washer, Lock - Spring (M12)
17	140-1959	1	Bracket, Mounting - Air Cleaner
18	503-0900	1	Clamp, Hose

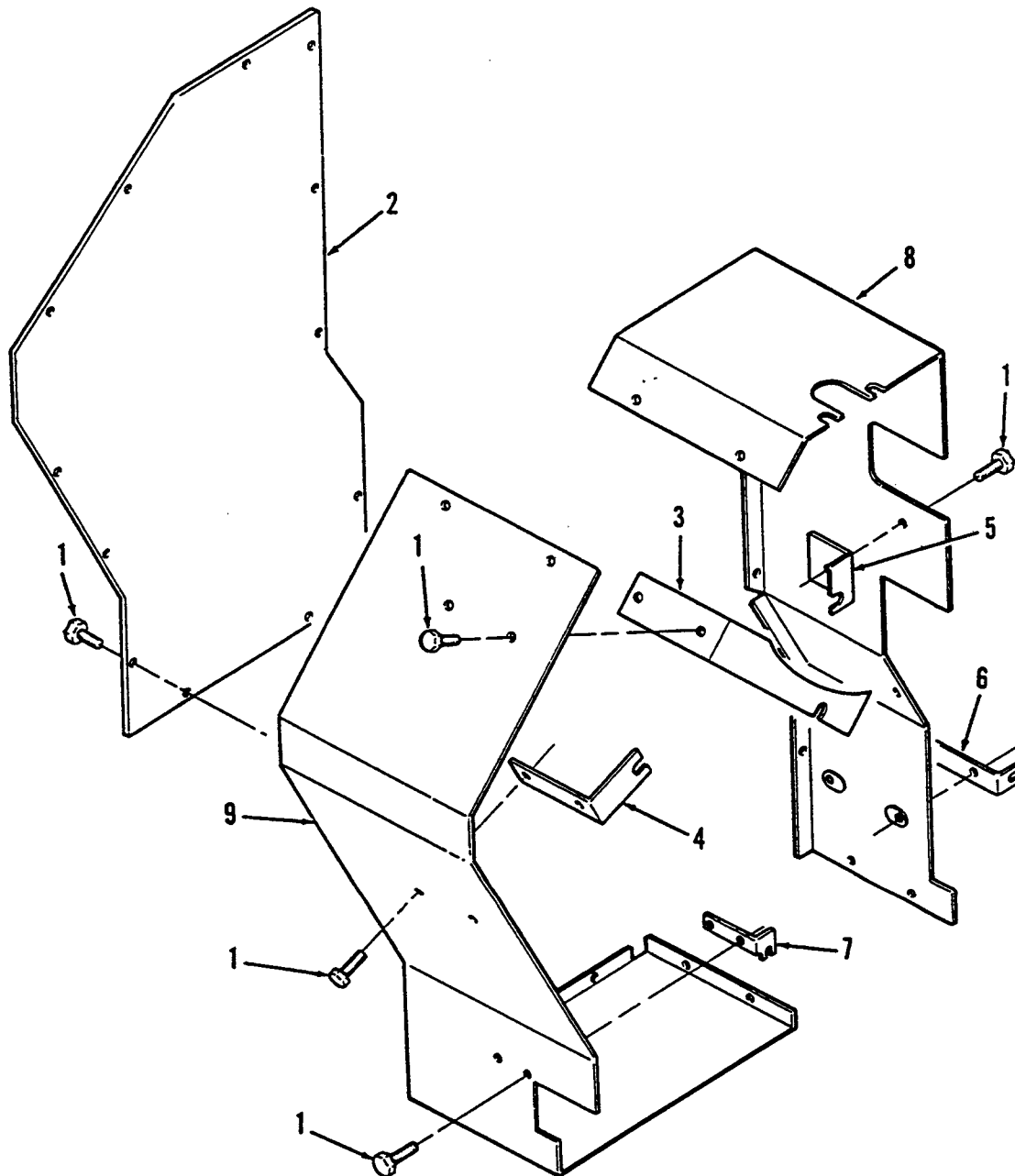
Heavy Duty Air Cleaner (Dual Air Filter)



REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	503-0788	1	Hose -
2	140-1958	1	Tube, Inlet - Air
3	140-1260	1	Fitting, Filter - Safety
4	140-1548	1	Indicator, Service
5	140-1601	1	Hood, Inlet - Air
6	503-0900	1	Clamp, Hose - T-Bolt
7	503-0885	1	Clamp, Hose - T-Bolt
8	140-1970	1	Elbow, Reducing - 90°
9	140-1973	2	Band, Mounting
10	140-2079	1	Cleaner, Air (Includes Elements)

REF NO.	PART NO.	QTY USED	PART DESCRIPTION
11	821-0029	4	Screw, Lock (3/8 - 16 x 3/4")
12	870-0281	4	Nut, Lock (3/8 x 16)
13	140-1959	1	Bracket, Mounting - Air Cleaner
14	800-2110	2	Screw, Cap - Hex Head (M12 x 1.75 x 20mm)
15	850-2012	2	Washer, Lock (M12)
16	503-0868	2	Clamp, Hose - T-Bolt
17	140-1969	1	Element, Air Cleaner - Primary
18	140-2080	1	Element, Air Cleaner - Safety

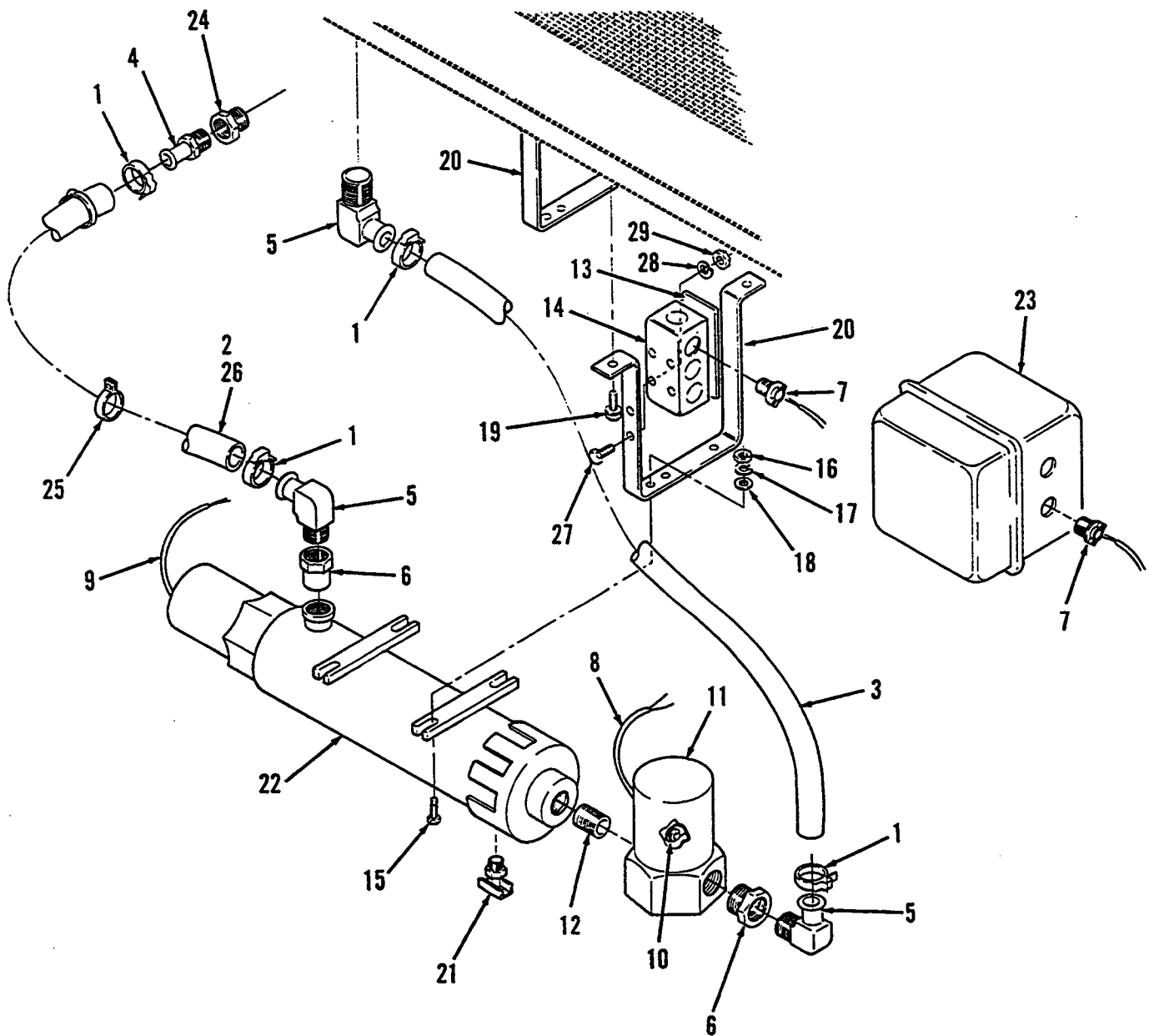
Remote Radiator



REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	821-0010	26	Screw, Self-Locking - Hex Washer Head (1/4 - 20 x 1/2")
2	130-2833	1	Cover, Guard - Belt
3	130-2603	1	Bracket, Guard - Belt
4	130-2643	1	Bracket, Guard - Belt
5	130-2604	1	Bracket, Guard - Belt

REF NO.	PART NO.	QTY USED	PART DESCRIPTION
6	130-2806	1	Bracket, Guard - Belt
7	130-2606	1	Bracket, Guard - Belt
8	130-2830	1	Wrapper, Guard - Belt (Left Hand)
9	130-2643	1	Wrapper, Guard - Belt (Right Hand)

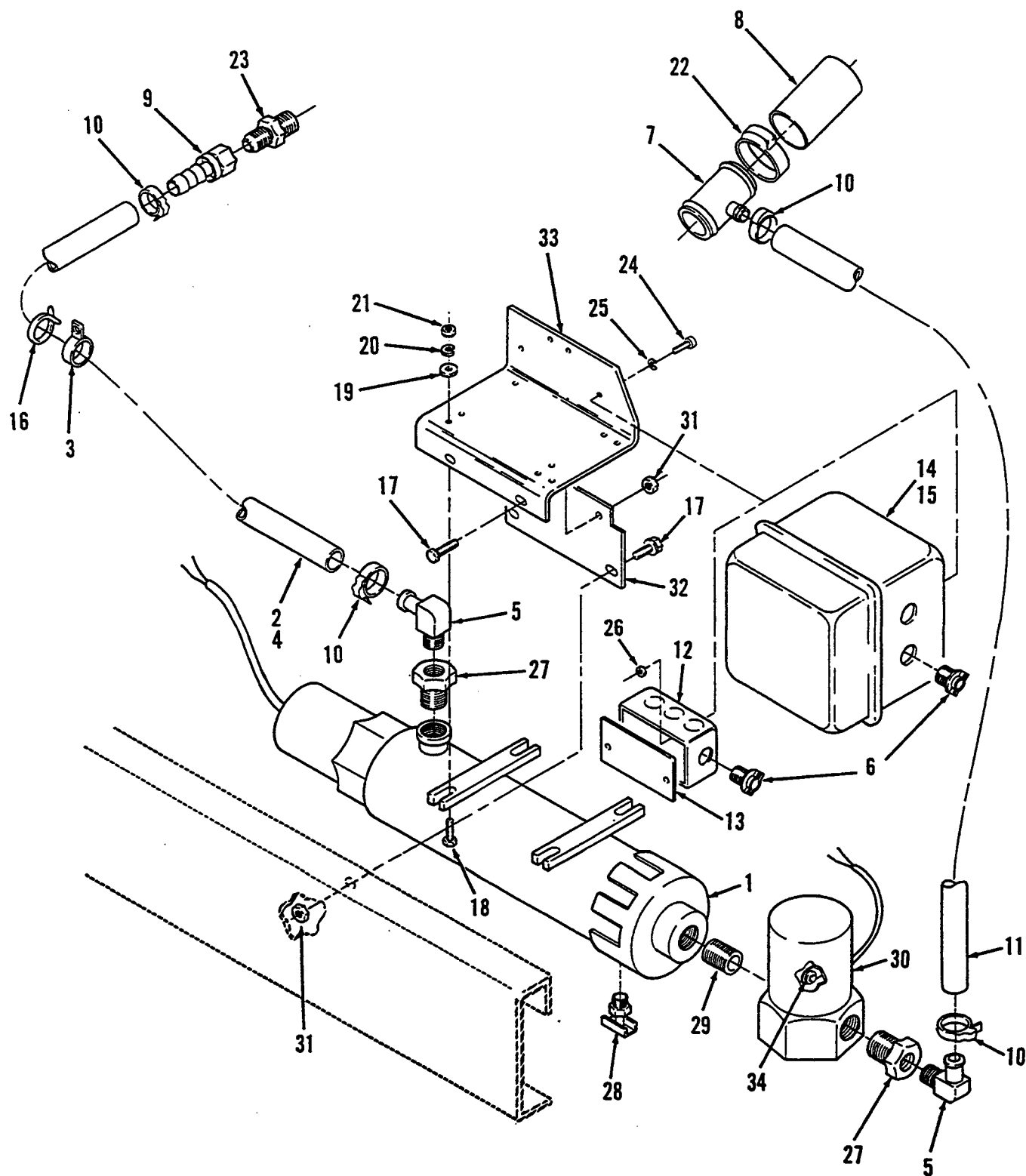
Engine Coolant Heater



Engine Coolant Heater

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	503-0183	4	Clamp, Hose	19	821-0029	4	Screw, Self-Locking - Hex Washer Head (3/8 - 16 x 3/4"
2	503-1170	1	Hose, Rubber				Bracket, Mounting
3	503-1012	1	Hose, Rubber	20	130-2618	2	Cock, Drain
4	502-0943	1	Adapter, Hose	21	504-0003	1	Heater, Electrical - 2000 Wat
5	502-0942	3	Elbow, Hose - 90°	22			120 VAC, 1 Phase
6	505-0455	2	Bushing, Reducer - Hex		333-0158	1	208 VAC, 1 Phase
7	331-0027	4	Clamp, Cable		333-0167	1	240 VAC, 1 Phase
10			Terminal		333-0141	1	480 VAC, 1 Phase
	332-0014	2	#10 (Used On White Leads)		333-0147	1	Contactor, Electric - 480 VAC
	332-0149	5	#8 (Used On White Leads)	23	307-1164	1	Screw, Machine - Round Head
	323-0957	4	Nut, Wire (Used On Black Leads)		812-0100	2	(#10 - 24 x 1/2")
11	309-0304	1	Switch, Thermostatic		850-0030	2	Washer, Lock - Spring (#10)
12	505-0004	1	Nipple, Pipe - Close		860-0011	2	Nut, Hex (#10 - 24)
13	330-0016	1	Cover, Box - Outlet	24	502-0948	1	Adapter, Pipe
14	330-0005	1	Box, Outlet - Electrical	25	148-0274	1	Clip, J
15	800-0006	4	Screw, Cap - Hex Head (1/4 - 20 x 7/8")	26	128-0108	1	Insulation, Hose
16	862-0001	4	Nut, Hex (1/4 - 20)	27	812-0100	2	Screw, Machine - Round Head
17	850-0040	4	Washer, Lock - Spring (1/4)	28	850-0030	2	(#10 - 24 x 1/2")
18	526-0018	4	Washer, Flat (1/4)	29	860-0011	2	Washer, Lock (#10)
							Nut, Hex (#10 - 24)

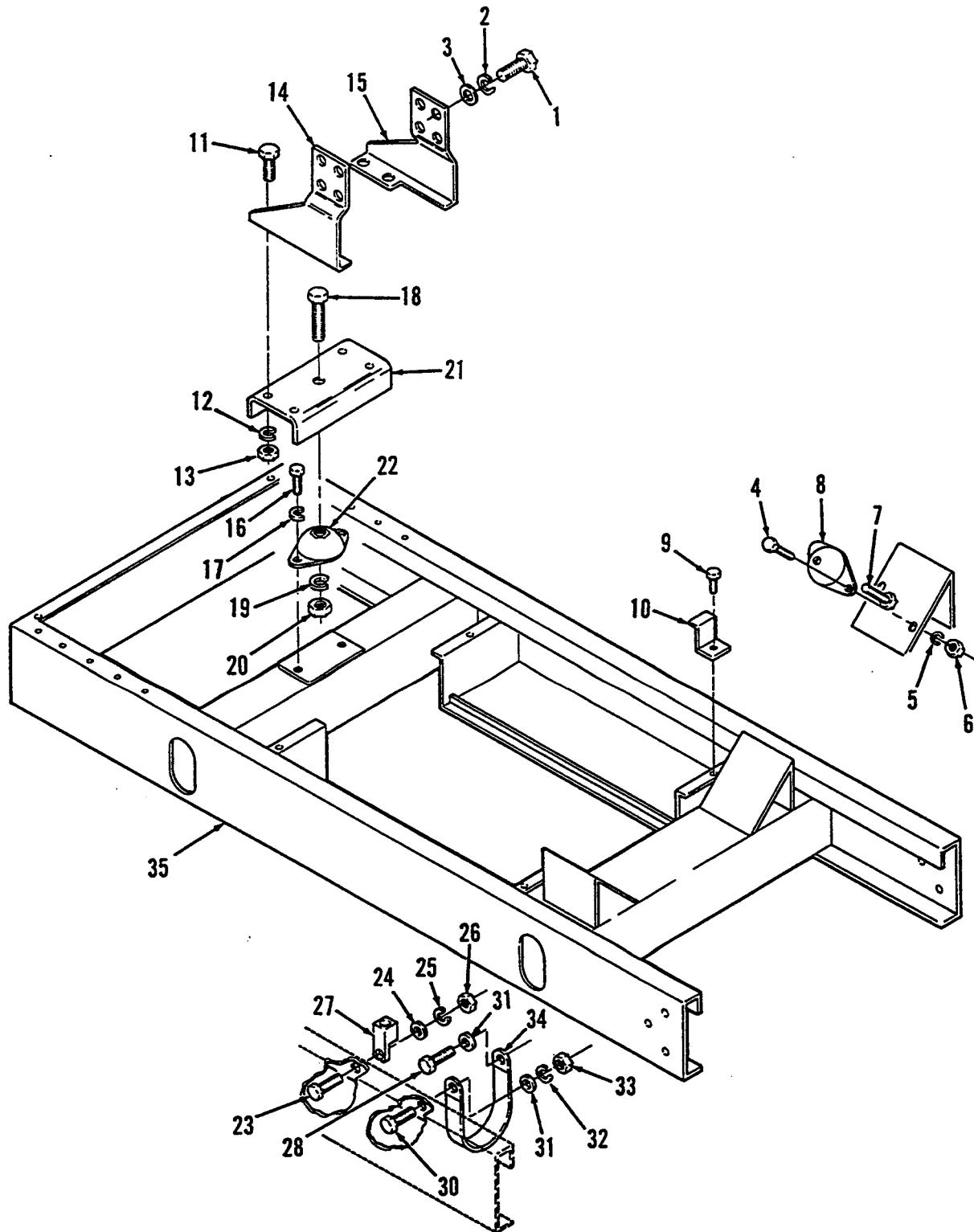
Engine Coolant Heater (Remote Radiator Set)



Engine Coolant Heater (Remote Radiator Set)

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	333-0158	1	Heater, Electrical - 2000 Watt	17	821-0029	4	Screw, Lock (3/8 - 16 x 3/4")
	333-0167	1	120 VAC, 1 Phase	18	800-0006	4	Screw, Cap - Hex Head (1/4 - 20 x 8 3/4")
	333-0141	1	208 VAC, 1 Phase	19	526-0018	4	Washer, Flat (1/4)
	333-0147	1	240 VAC, 1 Phase	20	850-0040	4	Washer, Lock (1/4)
2	128-0108	1	480 VAC, 1 Phase	21	862-0001	4	Nut, Hex (1/4 - 20)
3	148-0274	1	Insulation, Hose (3/4 x 54")	22	503-0354	2	Clamp, Hose
4	503-1169	1	Clip, J	23	502-0948	1	Adapter, Pipe
5	502-0942	2	Hose, Rubber (5/8 x 39")	24	812-0100	2	Screw, Machine - Round Head (#10 - 24 x 1/2")
6	331-0027	2	Elbow, Hose - 90°	25	850-0030	2	Washer, Lock (#10)
7	130-2906	1	Clamp, Cable	26	860-0011	2	Nut, Hex (#10 - 24)
8	503-1380-01	1	Tube, Heater - Water	27	505-0455	2	Bushing, Reducer
9	502-0943	1	Hose, Radiator (2 3/8 x 4")	28	504-0003	1	Valve, Drain
10	503-0183	4	Connector, Hose (Beaded)	29	505-0004	1	Nipple, Close
11	503-1168	1	Clamp, Hose	30	309-0304	1	Switch, Thermostatic
12	330-0005	1	Hose, Rubber (5/8 x 25")	31	870-0281	2	Nut, Lock (3/8 - 16)
13	330-0004	1	Box, Outlet - Electrical	32	130-2850	1	Bracket, Mounting - Heater
14	307-1164	1	Cover, Box - Outlet	33	130-2851	1	Bracket, Mounting - Heater
15	332-0149	1	Contactor, Electric - 480 VAC	34	323-0957	1	Nut, Wire (Used on Black Leads)
			Terminal (#8) (Used on White Leads)				
16	332-0941	10	Tie, Cable				

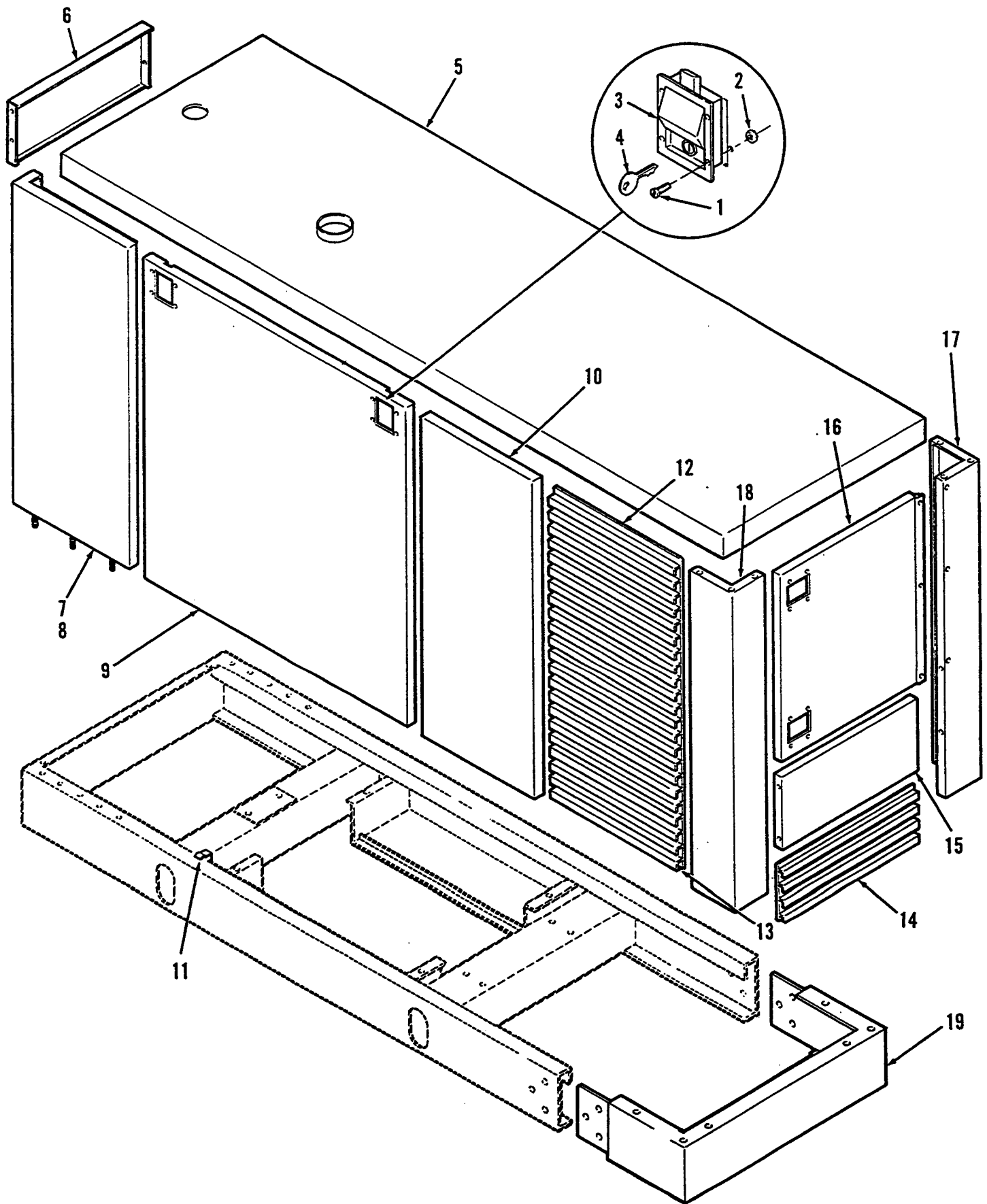
Chassis



Chassis

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	800-2112	8	Screw, Cap - Hex Head (M12 x 1.75 x 30mm)	17	850-0060	2	Washer, Lock - Spring (1/2)
2	850-2012	8	Washer, Lock - Spring (M12)	18	800-0153	1	Screw, Cap - Hex Head (3/4 - 10 x 1-1/2")
3	856-0013	2	Washer, Lock - EIT (1/2)	19	850-0079	1	Washer, Lock - Spring (3/4)
4	800-0091	4	Screw, Cap - Hex Head (1/2 - 13 x 1-1/4")	20	862-0008	1	Nut, Hex (3/4 - 10)
5	850-0060	4	Washer, Lock - Spring (1/2)	21	403-2323	1	Brace, Mounting - Engine
6	862-0016	4	Nut, Hex (1/2 - 13)	22	402-0030	1	Mount, Vibration
7	800-0520	2	Screw, Cap - Hex Head (3/4 - 10 x 1")	23	800-0028	1	Screw, Cap - Hex Head (5/16 - 18 x 1")
8	402-0568	2	Mount, Vibration	24	856-0008	1	Washer, Lock - EIT (5/16)
9	800-0048	4	Screw, Cap - Hex Head (3/8 - 16 x 3/4")	25	850-0045	1	Washer, Lock - Spring (5/16)
10	416-0850	4	Bracket, Holddown - Battery	26	862-0015	1	Nut, Hex (5/16 - 18)
11	800-0091	4	Screw, Cap - Hex Head (1/2 - 13 x 1-1/4")	27	332-1473	1	Terminal, Lug
12	850-0060	4	Washer, Lock - Spring (1/2)	28	800-2111	1	Screw, Cap - Hex Head (M12 x 1.75 x 25mm)
13	862-0010	4	Nut, Hex (1/2 - 13)	30	800-0090	1	Screw, Cap - Hex Head (1/2 - 13 x 1")
14	403-2301	1	Bracket, Mounting - Engine	31	856-0013	2	Washer, Lock - EIT (1/2)
15	403-2302	1	Bracket, Mounting - Engine	32	850-0060	1	Washer, Lock - Spring (1/2)
16	800-0090	2	Screw, Cap - Hex Head (1/2 - 13 x 1")	33	862-0016	1	Nut, Hex (1/2 - 13)
				34	337-0090	1	Strap, Electrical - Ground
				35	403-2293	1	Chassis

Set Housing

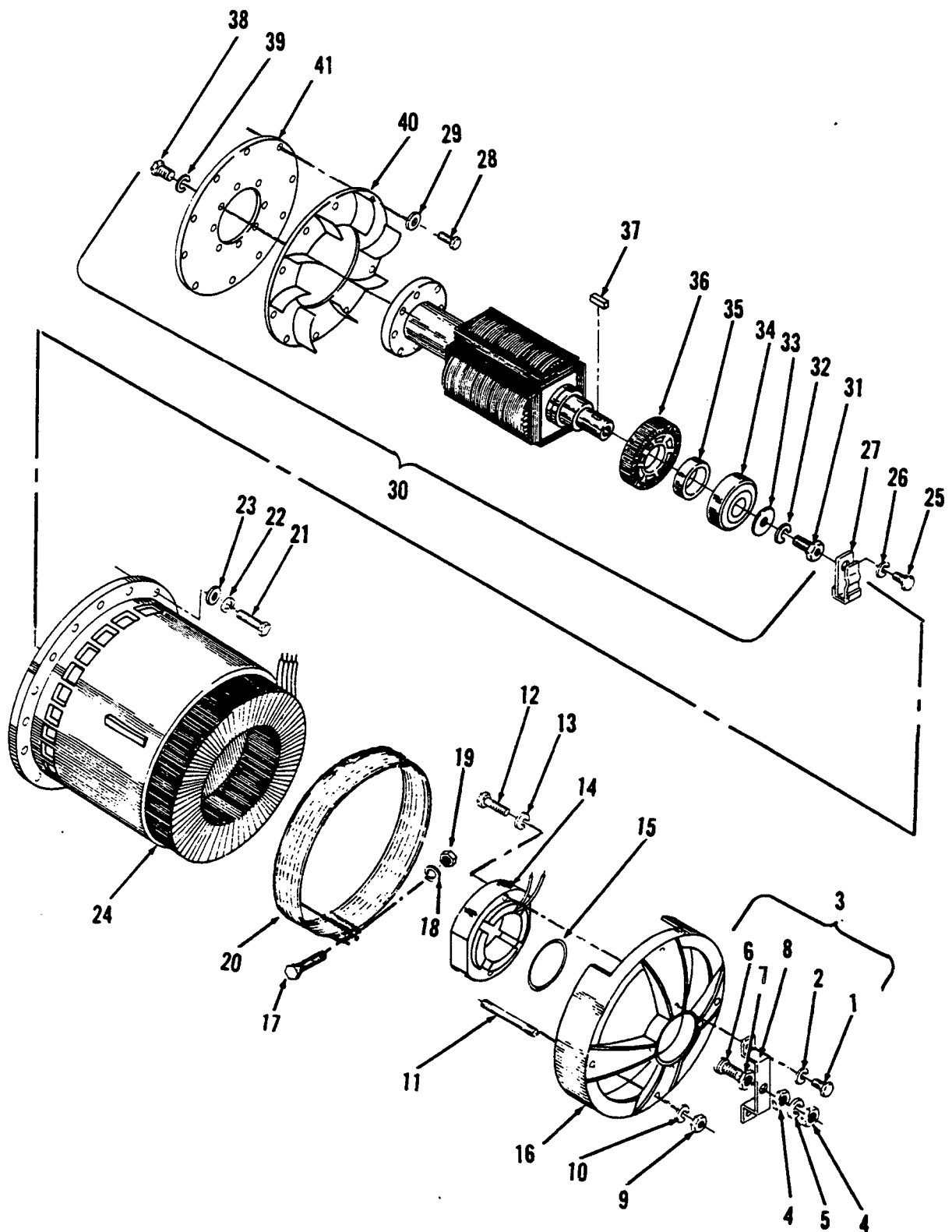


Set Housing

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	815-0607	24	Screw, Machine - Oval Head (#8 - 32 x 3/8")	13	405-3368	2	Bracket, Support - Grille
2	870-0235	24	Nut, Lock - Hex (#8 - 32)		821-0014	4	Screw, Self-Lock - Hex Wash Head (5/16 - 18 x 1/2")
3	406-0576	4	Latch, Door (Includes Key)		870-0257	4	Nut, Lock - Hex (5/16 - 18)
4	406-0577	1	Key, Latch	14	405-3357	1	Grille, Housing - Rear
5	405-3367	1	Panel, Top		821-0014	4	Screw, Self-Lock - Hex Wash Head (5/16 - 18 x 1/2")
	821-0029	14	Screw, Self-Locking - Hex Wash Head (3/8 - 16 x 3/4")		870-0257	4	Nut, Lock - Hex (5/16 - 18)
	870-0281	14	Nut, Lock - Hex (3/8 - 16)	15	405-3353	1	Panel, Housing - Rear
6			Panel, Housing - Front		821-0014	4	Screw, Self-Lock - Hex Wash Head (5/16 - 18 x 1/2")
	405-3377-02	1	Standard Cooling System		870-0257	4	Nut, Lock - Hex (5/16 - 18)
	405-3377-03	1	Hi Temp Cooling System	16	405-3361	1	Door, Access - Control
	821-0010	4	Screw, Lock - Hex Washer Head (1/4 - 20 x 1/2")		819-1083	3	Screw, Mach - Pan Head, (1/4 - 20 x 7/16")
	870-0212	4	Nut, Lock - Hex (1/4 - 20)	17	405-3347	1	Panel, Housing - Rear Post
7	405-3349	1	Panel, Housing - Side/Front		821-0029	3	Screw, Self-Lock - Hex Wash Head (3/8 - 16 x 3/4")
	870-0281	4	Nut, Lock - Hex (3/8 - 16)		870-0281	3	Nut, Lock - Hex (3/8 - 16)
8	405-3350	1	Panel, Housing - Side/Front (Not Illustrated)	18	405-3375	1	Panel, Housing - Rear Post
	870-0281	4	Nut, Lock - Hex (3/8 - 16)		821-0029	3	Screw, Self-Lock - Hex Wash Head (3/8 - 16 x 3/4")
9	405-3352	2	Door, Access - Engine (Does NOT Include Latches)		870-0281	3	Nut, Lock - Hex (3/8 - 16)
10	405-3373	2	Panel, Housing - Side	19	403-2313-02	1	Base, Skid - Rear
11	406-0574	8	Pivot, Hinge - Door/Panel		800-0090	6	Screw, Cap - Hex Head (1/2 - 13 x 1")
	821-0010	8	Screw, Self-Locking - Hex Wash Head (1/4 - 20 x 1/2")		850-0060	6	Washer, Lock - Spring (1/2)
	870-0212	8	Nut, Lock - Hex (1/4 - 20)		862-0016	6	Nut, Hex (1/2 - 13)
12	405-3358	2	Grille, Housing - Side				
	821-0014	4	Screw, Self-Lock - Hex Wash Head (5/16 - 18 x 1/2")				

Note: Heat Shields used with Housing are illustrated in the Exhaust System.

Generator

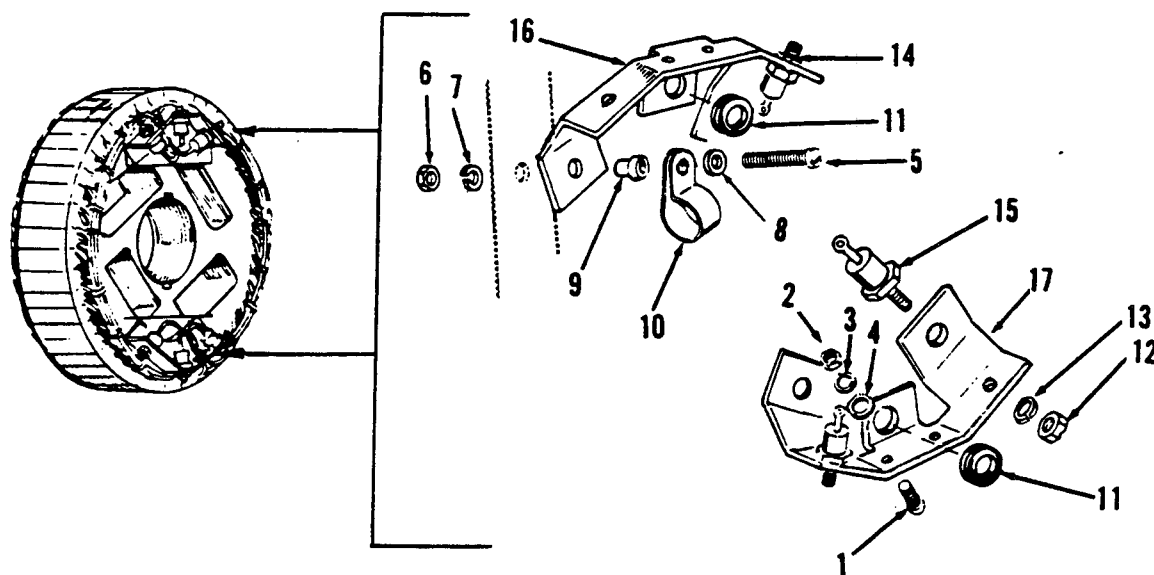


Generator

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	800-0003	2	Screw, Cap - Hex Head (1/4 - 20 x 1/2")		220-1778	1	Code 15 (Environmental Protected)
2	850-0040	2	Washer, Lock - Spring (1/4)		220-1989	1	Code 515
3	150-1456	1	Contact Assembly, Overspeed (Includes Parts Marked *)		220-2259	1	Code 515 (Environmental Protected)
4	862-0001	2	*Nut, Hex (1/4 - 20)	25	800-0048	1	Screw, Cap - Hex Head (3/8 - 16 x 3/4")
5	853-0013	1	*Washer, Lock - ET (1/4)	26	856-0010	1	Washer, Lock - Spring (3/8)
6	150-0723	1	*Contact, Electrical	27	150-0717	1	Switch, Overspeed
7	870-0250	1	*Nut, Insulator	28	720-1075	8	Screw, Cap - Hex Head (M12 x 1.75 x 35mm)
8	150-1356	1	*Bracket, Mounting - Contact				
9	862-0011	4	Nut, Hex (3/8 - 16)	29	740-1010	8	Washer, Flat (M12)
10	850-0050	4	Washer, Lock - Spring (3/8)	30			Rotor Assembly, Generator (Includes Parts Marked +)
11	520-0735	4	Stud		201-3270	1	Codes 6D, 9X, 15, 515
12	800-0009	4	Screw, Cap - Hex Head (1/4 - 20 x 1-1/2)		201-3272	1	Codes 15, 515 (Extended Stack)
13	850-0040	4	Washer, Lock - Spring (1/4)		201-3367	1	Codes 15, 515 (Environmental Protected)
14			Stator, Exciter	31	800-0513	1	+Screw, Cap - Hex Head (3/4 - 10 x 1-1/2")
	220-2353	1	Standard	32	850-0079	1	+Washer, Lock - Spring (3/4)
	220-1774	1	Environmental Protected	33	526-0238	1	+Washer, Flat (3/4)
15	509-0125	1	Seal, O-Ring - Oil	34	510-0101	1	+Bearing, Ball
16	211-0185	1	Bell, End - Generator	35	232-2102	1	+Spacer, Sleeve
17	800-0008	2	Screw, Cap - Hex Head (1/4 - 20 x 1-1/4")	36			+Rotor Assembly, Exciter (See Separate Page For Components)
18	850-0040	2	Washer, Lock - Spring (1/4)		201-1739	1	Standard
19	862-0001	2	Nut, Hex (1/4 - 20)		201-1845	1	Environmental Protected
20	234-0368	1	Screen, Air - Generator	37	515-0145	1	+Key, Machine
21	800-2088	12	Screw, Cap - Hex Head (M10 x 1.5 x 35mm)	38	805-0033	8	+Bolt, Hex Head (5/8 - 11 x 1")
22	850-2010	12	Washer, Lock - Spring (M10)	39	526-0259	8	+Washer, Flat (11/16" ID x 1-3/8" OD x 7/64" THK)
23	740-1008	12	Washer, Flat (M10)	40	205-0095	1	+Fan, Generator
24			Stator, Generator	41	232-2037	1	+Disc, Drive - Generator
	220-2639	1	Code 6D				
	220-2454	1	Code 7				
	220-1612	1	Code 9X				
	220-1517	1	Code 15				
	220-1519	1	Code 15 (Extended Stack)				

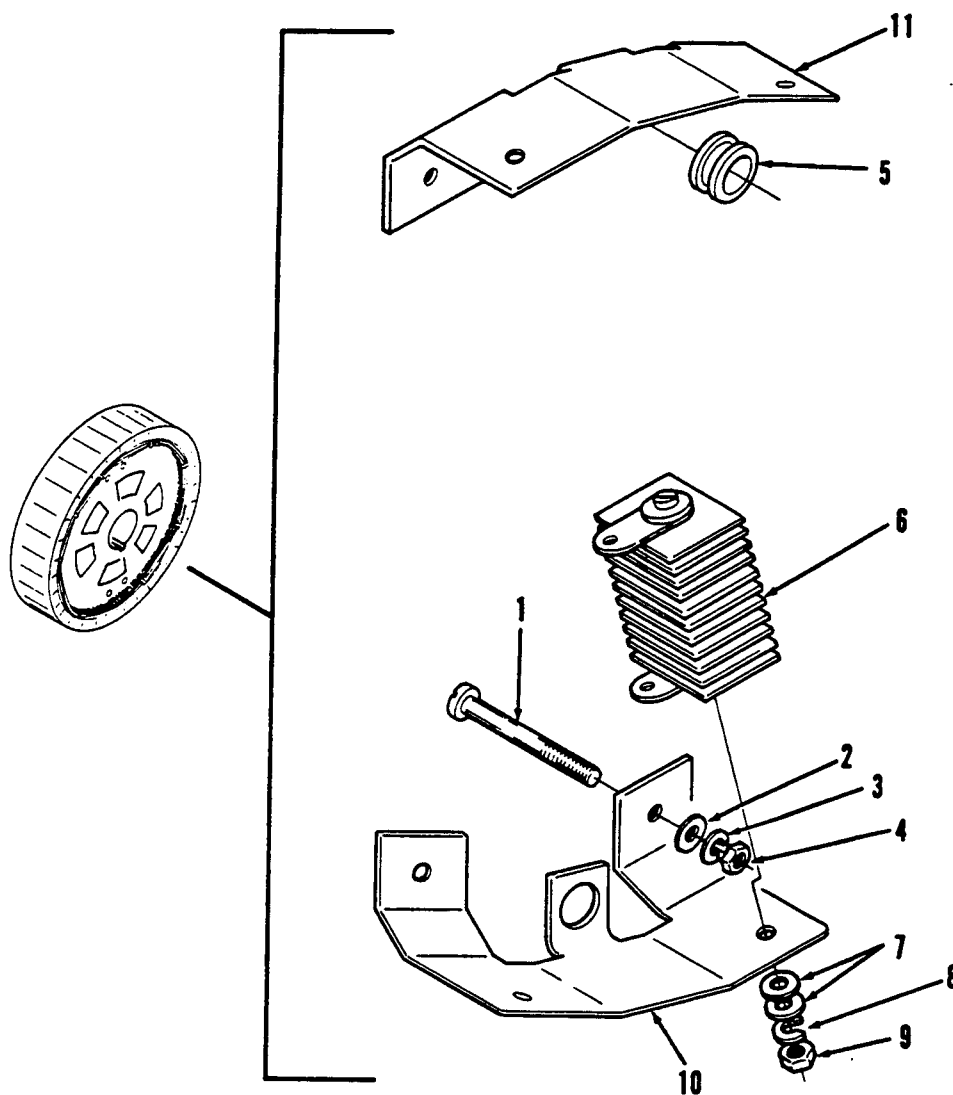
* Parts included in 150-1456 Overspeed Contact Assy.
+ Parts included in Generator Rotor Assembly.

Exciter Rotor



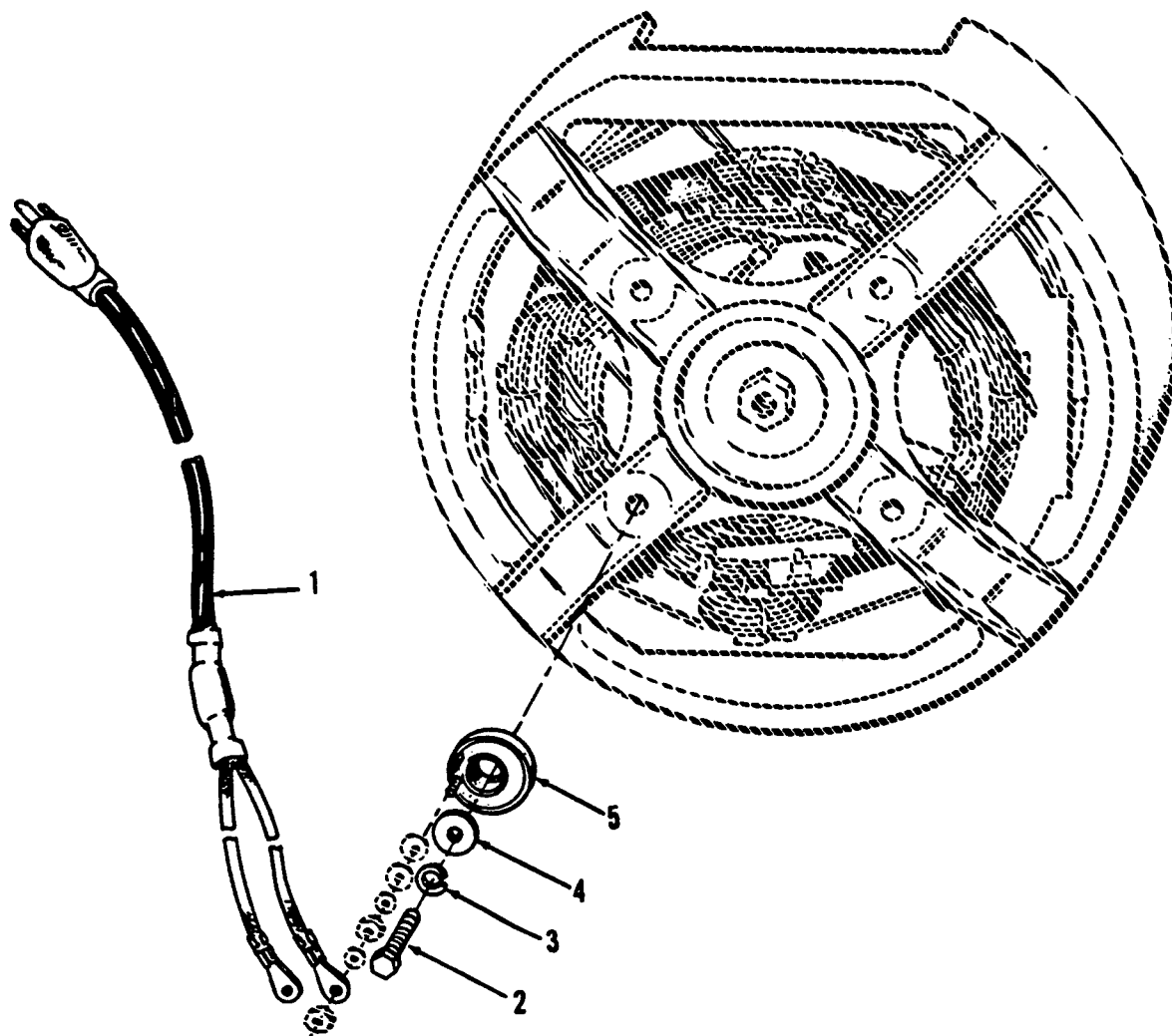
REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
	201-1739	1	Rotor Assembly - Exciter Standard	9	508-0187	4	Spacer, Stepped
	201-1845	1	Environmental Protected	10	332-0050	2	Clamp, Loop
1	813-0100	2	Screw, Machine - Round Head (#10 - 32 x 1/2")	11	508-0093	2	Grommet, Rubber
2	870-0053	2	Nut, Hex (#10 - 32)	12	870-0053	6	Nut, Hex (#10 - 32)
3	850-0030	2	Washer, Lock - Spring (#10)	13	850-0030	6	Washer, Lock - Spring (#10)
4	526-0008	2	Washer, Flat (13/64" ID x 7/16" OD x 1/32" THK)	14			Diode, Rectifier - Positive (CR1, CR2, CR3)
5	813-0110	4	Screw, Machine - Round Head (#10 - 32 x 2")		358-0097	3	Standard
6	870-0053	4	Nut, Hex (#10 - 32)		358-0044	3	Environmental Protected
7	850-0030	4	Washer, Lock - Spring (#10)	15			Diode, Rectifier - Negative (CR4, CR5, CR6)
8	526-0009	4	Washer, Flat (7/32" ID x 1/2" OD x 1/16" THK)		358-0096	3	Standard
					358-0043	3	Environmental Protected
				16	363-0054	1	Sink, Heat - Positive Diodes
				17	363-0055	1	Sink, Heat - Negative Diodes

Voltage Suppressor



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	813-0112	4	Screw, Machine - Round Head (#10 - 32 x 2-1/2")	7	526-0140	4	Washer, Flat (7/32" ID x 3/8" OD x 3/64" THK)
2	526-0140	4	Washer, Flat (7/32" ID x 3/8" OD x 3/64" THK)	8	850-0030	4	Washer, Lock - Spring (#10)
3	850-0030	4	Washer, Lock - Spring (#10)	9	870-0053	4	Nut, Hex (#10 - 32)
4	870-0053	4	Nut, Hex (#10 - 32)	10	363-0054	1	Sink, Heat - Positive
5	508-0093	2	Grommet, Rubber	11	363-0055	1	Sink, Heat - Negative
6	305-0526	1	Suppressor Set, Voltage (Matched Pair)				

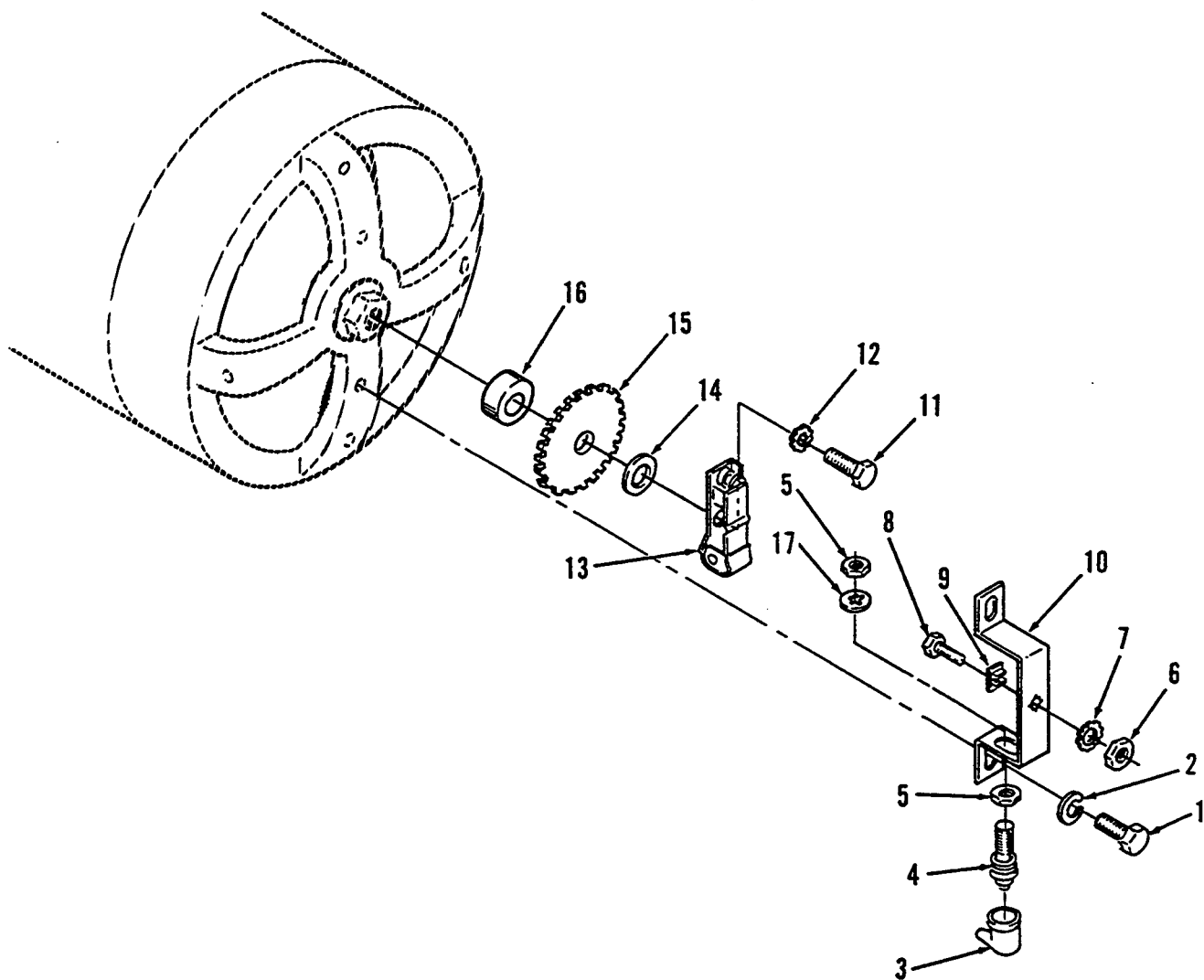
Generator Heater



REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1			Cable Assembly, Electric (Includes Thermostat)
	335-0146	1	120 VAC
	335-0147	1	240 VAC
2	800-0004	1	Screw, Cap - Hex Head (1/4 - 20 x 5/8")

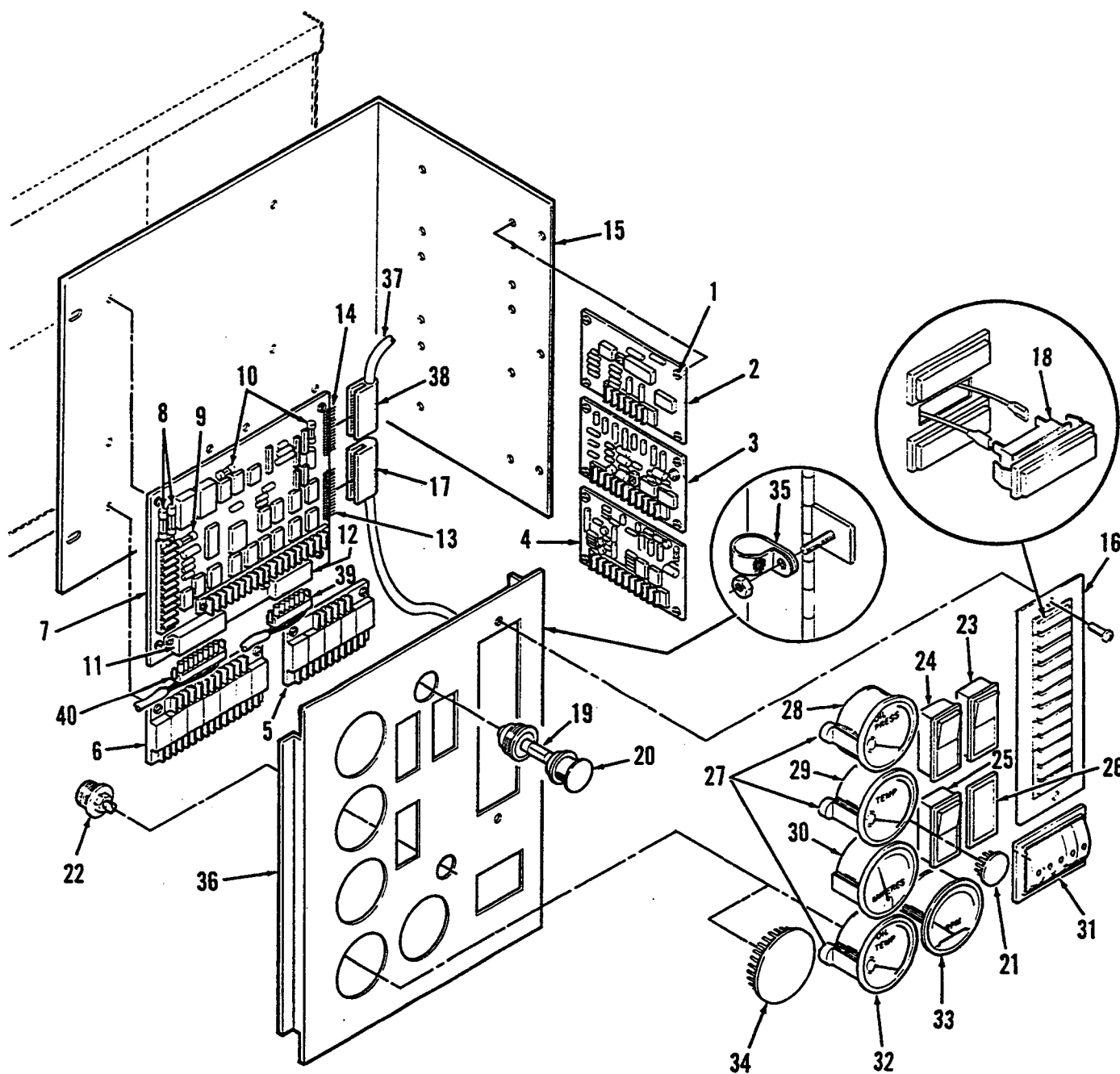
REF NO.	PART NO.	QTY USED	PART DESCRIPTION
3	850-0038	1	Washer, Lock - Spring (1/4)
4	526-0158	1	Washer, Flat (17/64" ID x 1" OD x 1/8" THK)
5			Heater, Electrical
	333-0059	1	120 VAC, 125 Watt
	333-0192	1	240 VAC, 200 Watt

Magnetic Pickup



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	800-0003	2	Screw, Cap - Hex Head (1/4 - 20 x 1/3")	10	301-9402	1	Bracket, Mounting
2	850-0040	2	Washer, Lock - Spring (1/4")	11	800-0053	1	Screw, Cap - Hex Head (3/8 - 16 x 1-3/4")
3	150-1410	1	Cap, Insulator	12	856-0010	1	Washer, Lock - EIT (3/8)
4	150-1406	1	Sensor, Speed - Magnetic	13	150-0717	1	Switch, Overspeed
5	868-0011	2	Nut, Hex - Jam (3/4 - 16)	14	526-0077	1	Washer, Flat (13/32" ID x 1-1/4" OD x 1/4" THK)
6	862-0001	2	Nut, Hex (1/4 - 20)	15	150-1557	1	Wheel, Sensor - Speed
7	853-0013	1	Washer, Lock - ET (1/4)	16	370-4011	1	Spacer, Sleeve
8	150-0723	1	Contact, Electrical	17	854-0031	1	Washer, Lock - IT (3/4)
9	870-0250	1	Nut, Insulator				

Engine Control

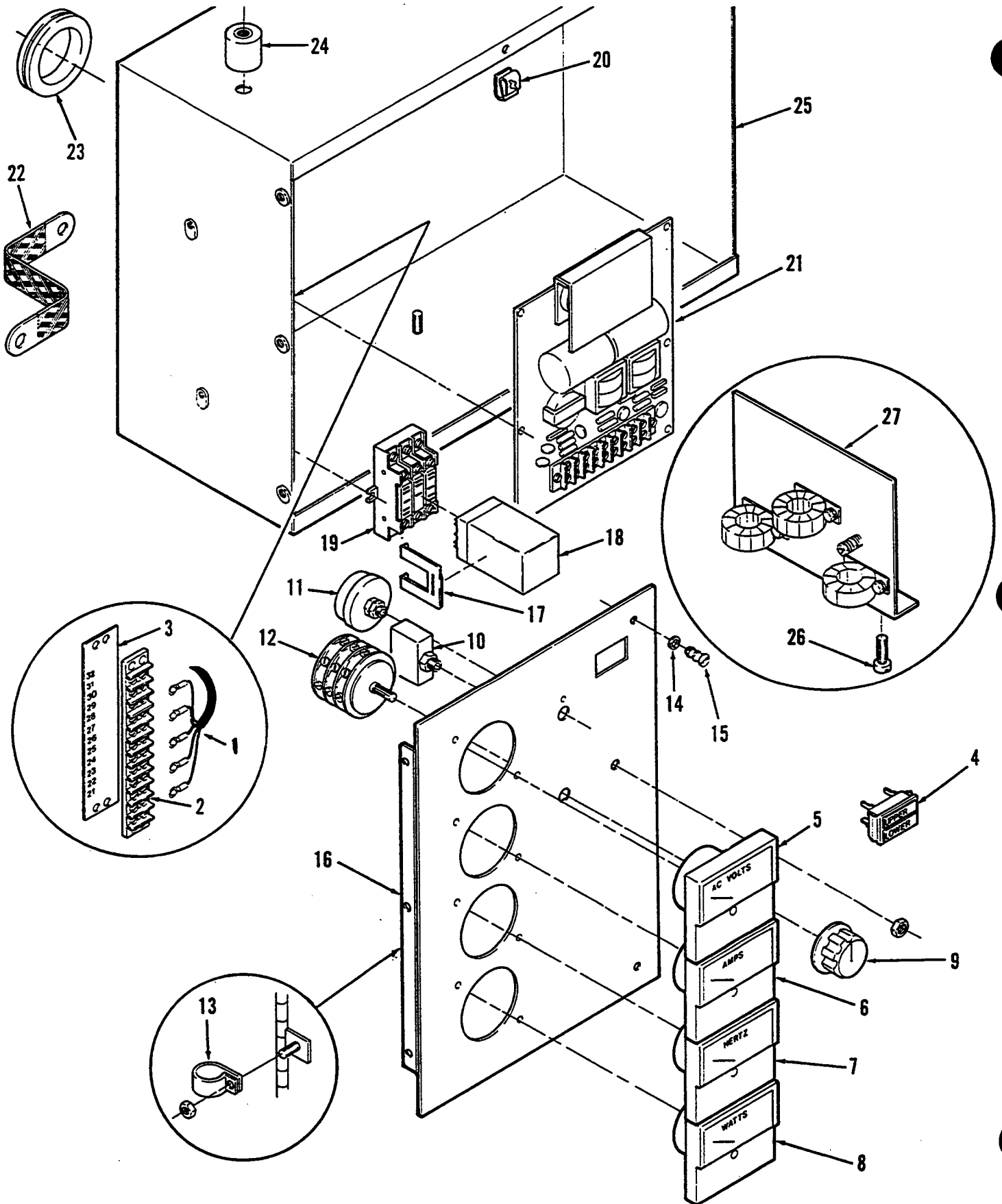


Engine Control

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	815-0544	24	Screw, Machine - Round Head IT Washer (#6 - 32 x 1/2")	815-0385	2		Screw, Machine - Round Head (#6 - 32 x 1/2")
2	300-2899	1	Board Assy, Printed Circuit - Time Delay, Start/Stop (A15)	870-0183	2		Nut, Self-Locking - ET Hex Washer Head (#6 - 32)
3			Board Assy, Printed Circuit - Magnetic Pickup (A16)	17	323-1310	1	Housing, Conn - 13 pin (J3)
	300-2903	1	Standard (Fixed Sensitivity)		323-1302	13	Contact, Pin
	300-2904	1	Precision (Adj Sensitivity)	18	322-0369-02	1	Lamp, Incandescent - 1/3 Watt 28 Volts DC
4	300-2906	1	Board Assy, Printed Circuit - Over/Under Volt Sensor (A17)	19	322-0017	1	Lamp, Incandescent - 28 Volts DC (DS11)
5	300-2856	1	Board Assy, Printed Circuit - Relay Assembly - (A13)	20	322-0361	1	Holder, Lamp
6	300-2863	1	Board Assy, Printed Circuit - Relay Assembly - (A14)	21	517-0131	1	Plug, Button
7			Board Assy, Printed Circuit - Engine Monitor - (A11) (Includes Fuses & Connectors)	22	151-0402	1	Potentiometer - Speed Control (R11)
	300-2808	1	2 Light Control	23	308-0785	1	Switch, Push - Reset/Panel Lamp (S11)
	300-2810	1	7 Light Control	24	308-0784	1	Switch, Push - Run/Stop/ Remote (S12)
	300-2812	1	12 Light Control	26	301-6257	1	Cover, Hole - Switch
8	321-0270	2	Fuse, Cartridge - 20 Amp (F1, F2)	27	193-0250	3	Resistor, Gauge (R12)
9	321-0231	1	Fuse, Cartridge - 15 Amp (F3)	28	193-0352	1	Gauge, Pressure - Oil (M11)
10	321-0094	2	Fuse, Cartridge - 5 Amp (F4, F5)	29	193-0351	1	Gauge, Temp - Water (M12)
11	323-1305	1	Connector - 8 Pin (P1)	30	302-1790	1	Meter, Ampere - DC (M13)
12	323-1303	1	Connector - 6 Pin (P2)	31	302-0885	1	Meter, Running Time (M14)
13	323-1309	1	Connector - 13 Pin (P3)	32	193-0330	1	Gauge, Temp - Oil (M15)
14	323-1307	1	Connector - 12 Pin (P4)	33	302-1715	1	Meter, Tach (M16)
15	301-8851	1	Bracket, Mounting - Printed Circuit Board Assembly	34	517-0221	1	Plug, Button
	821-0004	4	Screw, Self-Locking - Hex Washer Head (#10 - 32 x 5/16")	35	322-0052	1	Clamp, Loop
16			Module, Indicator - Fault (A12) (Includes Connector Housing)		870-0131	1	Nut, Self-Locking - ET Hex Washer Head (#10 - 32)
	322-0358-02	1	2 Light Control	36			Door, Control
	322-0359-02	1	7 Light Control		301-9055-01	1	5 Gauge Holes
	322-0360-02	1	12 Light Control		301-9055-02	1	3 Gauge Holes
				37	338-1817	1	Harness, Wiring - DC (Includes Connector Housing)
				38	323-1308	1	Housing, Conn - 12 Pin (J4)
					323-1302	12	Contact, Pin
				39	323-1304	1	*Housing, Conn - 6 Pin (J2)
					323-1200	6	* Contact, Pin
				40	323-1306	1	*Housing, Conn - 8 Pin (J1)
					323-1200	8	* Contact, Pin

* Parts included in Control To Engine Wiring Harness.

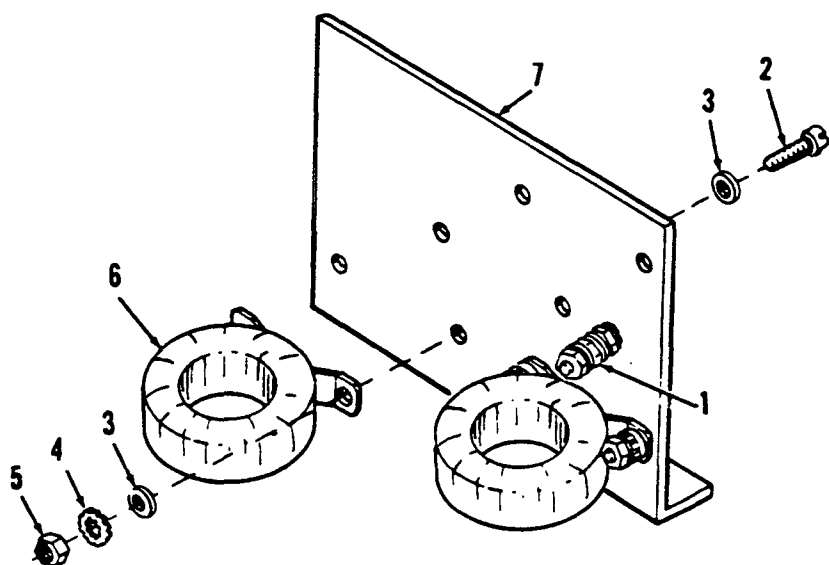
Generator Control



Generator Control

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1			Harness, Wiring - AC (Includes Terminal Block)	15	406-0333	2	Stud, Fastener - Turnbutton
	338-1818	1	Controls With Meters	16			Door, Control
	338-1853	1	Controls Without Meters		301-9054-01	1	4 Meter Holes
	812-0065	2	Screw, Machine - Round Head (#6 - 32 x 5/8")		301-9054-02	1	3 Meter Holes
					301-9054-03	1	No Meter Holes
2	332-0607	1	Block, Terminal (TB1)		821-0004	3	Screw, Self-Locking - Hex Washer Hd (#10 - 32 x 5/16")
3	332-2723	1	Strip, Marker	17	307-1987	2	Clip, Retaining - Relay
4	322-0363	1	Light, Indicator - Dual (DS21, DS22)	18	307-1056	1	Relay, 24 VDC
5	302-1148	1	Meter, Volt - AC (M21)	19	323-0804	1	Socket, Relay
6			Meter, Ampere - M22 Single Scale		815-0544	2	Screw, Machine - IT Round Washer Hd (#6 - 32 x 1/2")
	302-1176	1	0-200 (Voltage Code 9X) Dual Scale	20	406-0332	2	Receptacle, Turnbutton Fastener
	302-1685	1	0-200/400 Amp (Voltage Code 515)	21	300-2880	1	Regulator, Voltage (VR21)
	302-1724	1	0-250/500 Amp (Voltage Code 15)		815-0544	6	Screw, Machine - IT Round Washer Hd (#6 - 32 x 1/2")
7	302-1720	1	Meter, Frequency (M23)	22	337-0049	1	Strap, Electrical (Ground)
8		1	Meter, Watt (M24) (See Separate Page For Components)		800-0024	1	Screw, Cap - Hex Head (5/16 - 18 x 1/2")
9	303-0032	1	Knob		856-0008	1	Washer, Lock - EIT (5/16)
10		1	Breaker, Circuit (CB21)	23	508-0051	1	Grommet
	320-1121	1	Without Auxiliary Contacts	24	402-0527	4	Mount, Vibration
	320-1438	1	With Auxiliary Contacts		800-0045	4	Screw, Cap - Hex Head (5/16 - 18 x 3/8")
11	303-0261	1	Rheostat (R21)		850-0045	4	Washer, Lock - Spring (5/16)
12	308-0284	1	Switch, Rotary (S21)	25	301-8065	1	Box, Control
13	332-0052	1	Clamp, Loop	26	821-0010	2	Screw, Self-Locking - Hex Washer Hd (1/4 - 20 x 1/2")
	870-0131	1	Nut, Self-Locking - ET Hex Washer Head (#10 - 32)	27		1	Transformer Assembly - Current (See Separate Page For Components)
14	406-0334	2	Clip, Retaining - Turnbutton Fastener				

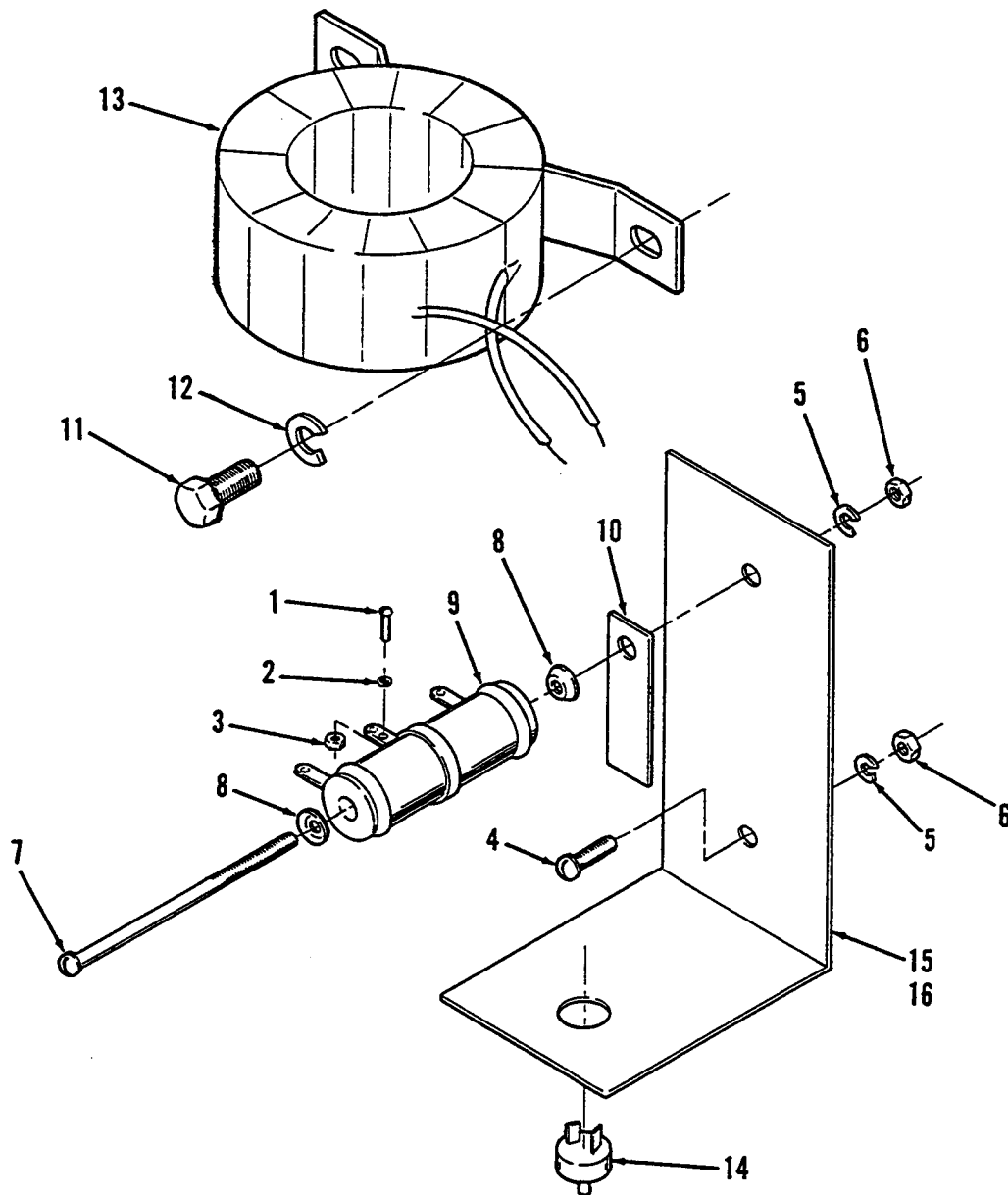
Current Transformer



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1			Terminal Assembly, Ground (Includes Parts Marked *)	3	526-0008	6	Washer, Flat (13/64" ID x 7/16" OD x 1/32" THK)
	815-0203	1	* Screw, Machine - Round Head	4	856-0003	6	Washer, Lock - EIT (#10)
	871-0010	3	* Brass (#10 - 32 x 7/8")	5	870-0053	6	Nut, Hex (#10 - 32)
	856-0003	1	* Nut, Hex - Brass (#10 - 32)	6	302-0764	1	Bracket, Mounting - Transformer
	854-0010	2	* Washer, Lock - EIT (#10)	7			Transformer, Current
	526-0049	2	* Washer, Lock - IT (#10)		302-0865	3	Code 9X - Ratio 200/5
		2	* Washer, Flat - Brass (13/64" ID x 7/32" OD x 1/32" THK)		302-0608	3	Code 515 - Ratio 400/5
2	813-0100	6	Screw, Machine - Round Head (#10 - 32 x 1/2")		302-0547	3	Code 15 - Ratio 500/5

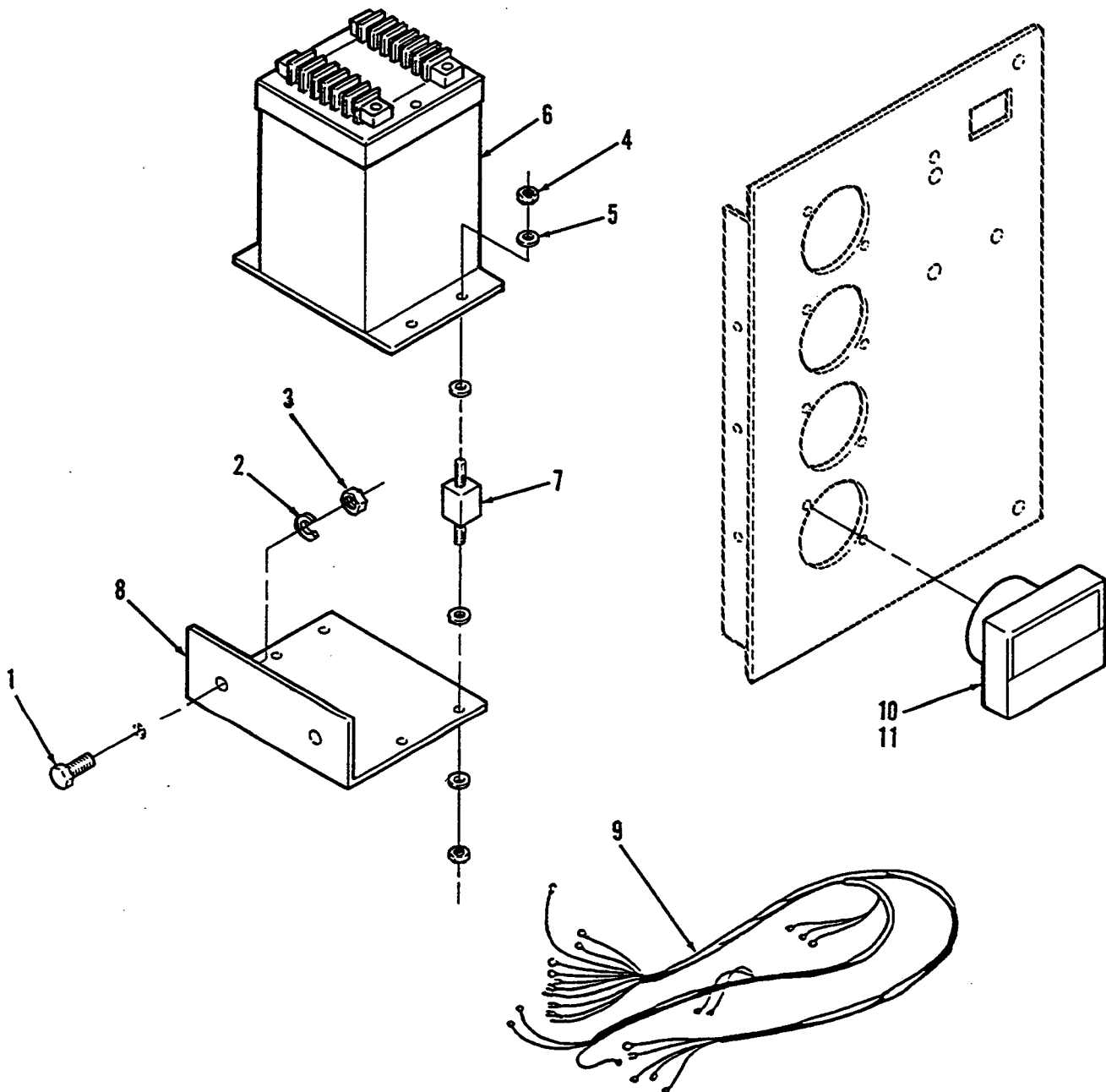
* Parts included in Ground Terminal Assembly.

Cross Current Transformer



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	812-0061	3	Screw, Machine - Round Head (#6 - 32 x 3/8")	8	304-0014	2	Washer, Centering (7/32)
2	853-0003	6	Washer, Lock - ET (#6)	9	304-0282	1	Resistor, Current - Cross
3	860-0006	6	Nut, Machine - Hex (#6 - 32)	10	304-0292	1	Insulator, Resistor
4	813-0100	1	Screw, Machine - Round Head (#10 - 32 x 1/2")	11	800-0003	2	Screw, Cap - Hex Head (1/4 - 20 x 1/2)
5	850-0030	2	Washer, Lock (#10)	12	850-0040	2	Washer, Lock (1/4)
6	870-0053	2	Nut, Hex (#10 - 32)	13	302-0826	1	Transformer, Current - Cross
7	813-0113	1	Screw, Machine - Round Head (#10 - 32 x 2-3/4")	14	308-0069	1	Switch, Toggle
				15	301-9657	1	Bracket, Current - Cross
				16	98-2313	1	Decal

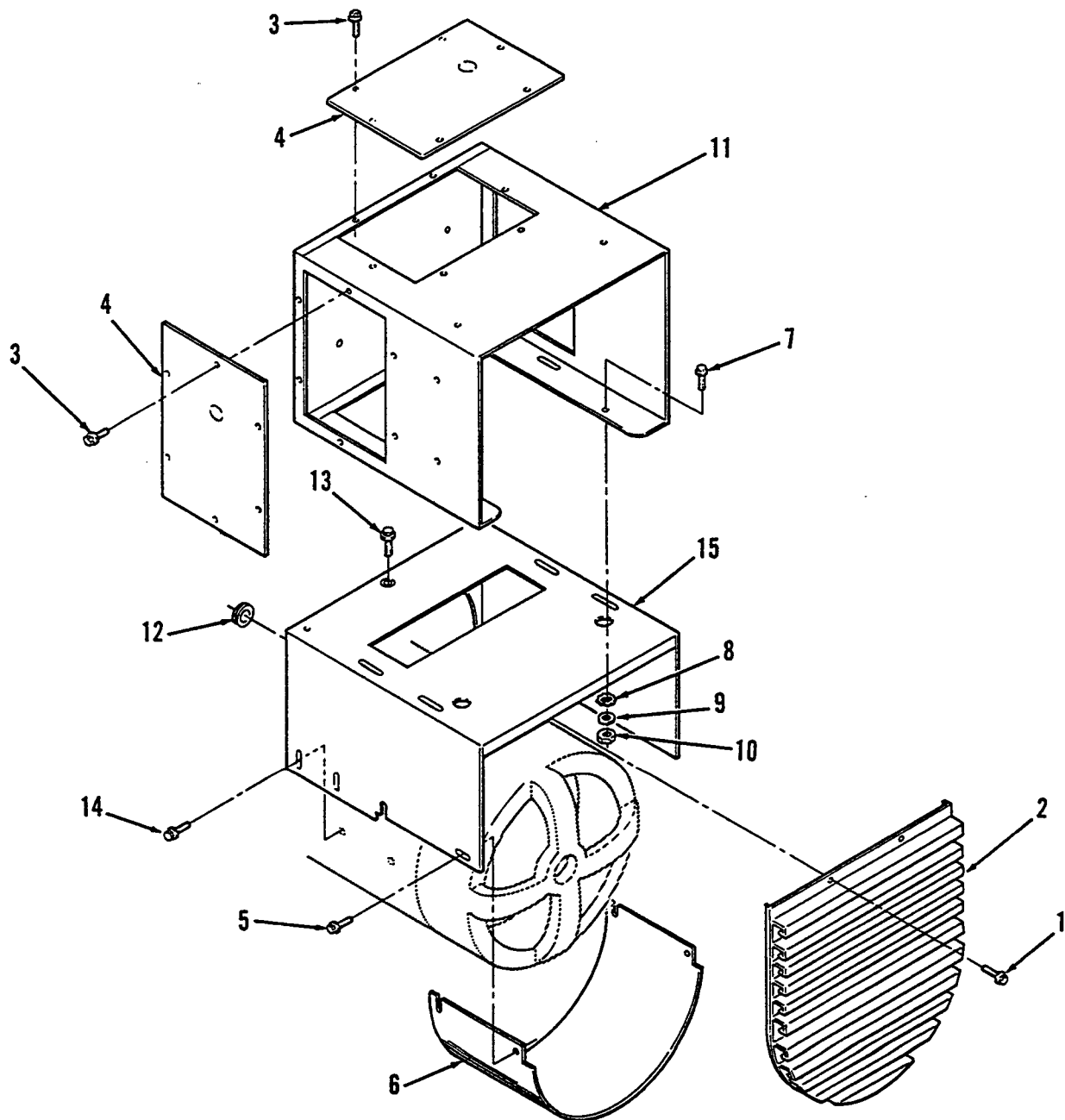
Wattmeter



REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	821-0017	2	Screw, Lock (5/16 - 18 x 1/2")
2	850-0045	2	Washer, Lock (5/16)
3	862-0014	2	Nut, Hex (5/16 - 18)
4	860-0008	8	Nut, Hex (#8 - 32)
5	856-0002	16	Washer, Lock - EIT (#8)
6			Transducer, Watts
	302-1082	1	3 Phase, 60 Hertz
	302-1083	1	3 Phase, 50 Hertz

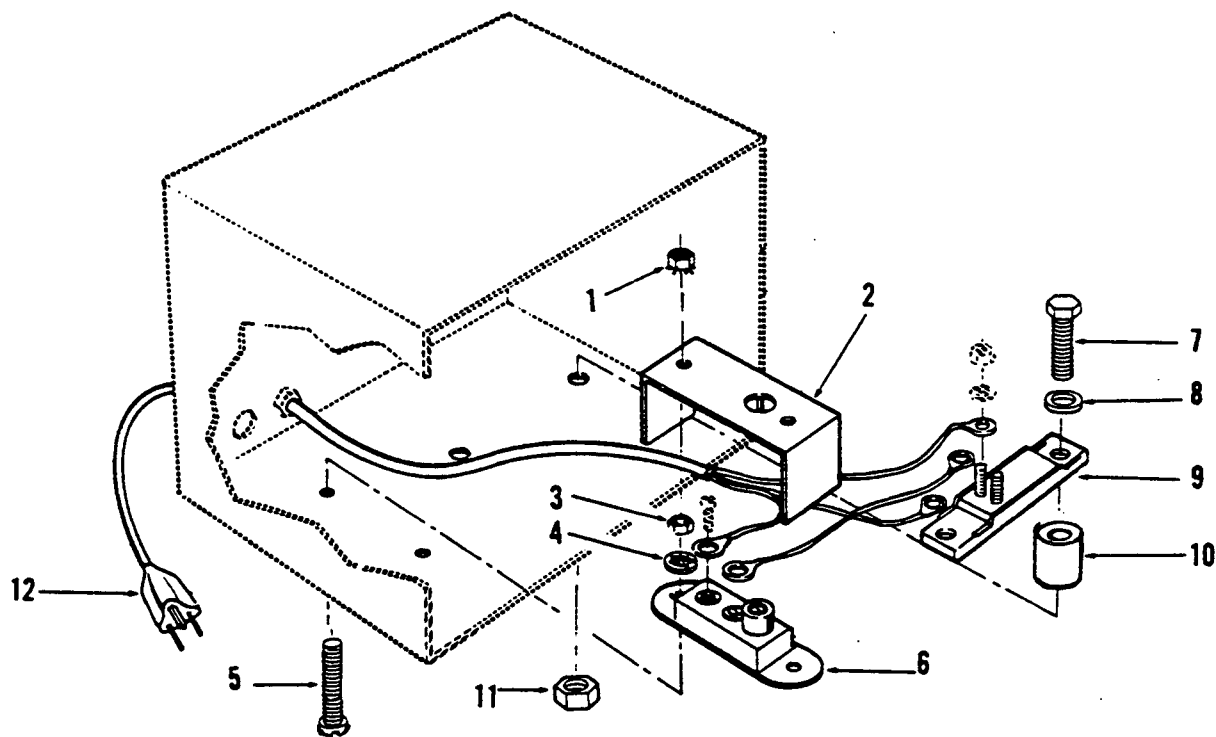
REF NO.	PART NO.	QTY USED	PART DESCRIPTION
7	402-0354	4	Mount, Shock
8	301-6987	1	Bracket, Mounting - Watts Transducer
9	338-1936	1	Harness, Wiring - Watts Transducer
10	302-1722	1	Meter, Watt - DC
11	302-1721-06	1	Dial, Wattmeter

Control Housing



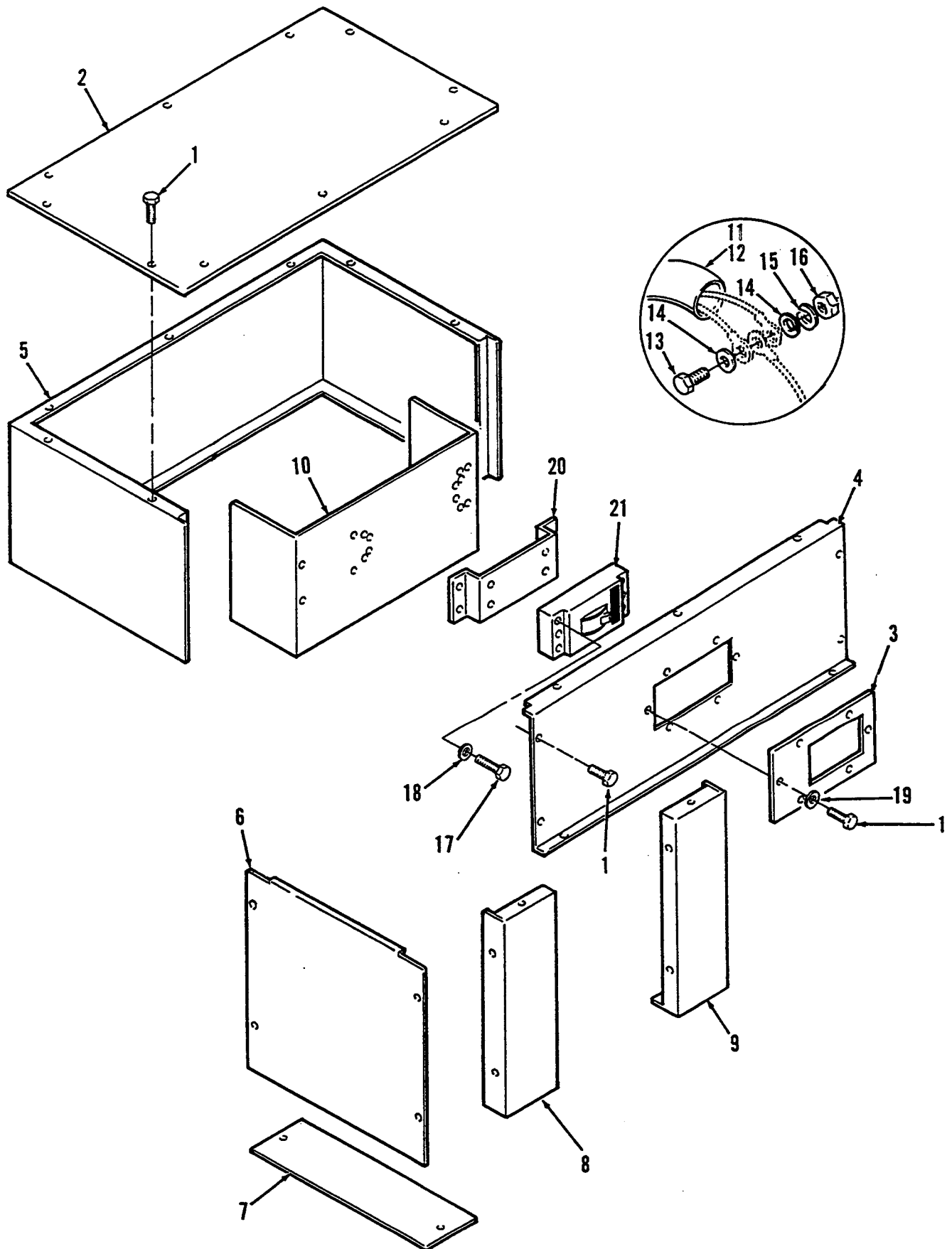
REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	821-0010	8	Screw, Self-Locking - Hex Washer Hd (1/4 - 20 x 1/2")	9	526-0018	5	Washer, Flat (17/64" ID x 5/8" OD x 1/16" THK)
2	234-0370	1	Grille, Air - Generator Inlet	10	870-0212	6	Nut, Hex (1/4 - 20)
3	815-0350	18	Screw, Tap - Hex Washer Head (#10 - 32 x 3/8")	11	301-3155	1	Housing, Box - Control Grommet
4	301-3156	3	Panel, Access	12	508-0203	1	Used Thru October 1984
5	821-0010	4	Screw, Self-Locking - Hex Washer Hd (1/4 - 20 x 1/2")		508-0051	1	Used Beginning November 1984
6	234-0361	1	Wrapper, Bell - End	13	821-0010	1	Screw, Self-Locking - Hex Washer Hd (1/4 - 20 x 1/2")
7	821-0018	6	Screw, Self-Locking - Hex Washer Hd (1/4 - 20 x 5/8")	14	821-0014	8	Screw, Self-Locking - Hex Washer Hd (5/16 - 18 x 1/2")
8	856-0006	1	Washer, Lock - EIT (1/4)	15	301-3154	1	Saddle, Box - Control

Control Heater



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	870-0183	2	Nut, Self-Locking - Hex ET. (#6 - 32)	7	800-0034	2	Screw, Cap - Hex Head (5/16 - 18 x 2-1/4")
2	301-1886	1	Cover, Thermostat	8	526-0113	2	Washer, Flat (11/32" ID x 1" OD x 3/32" THK)
3	860-0006	2	Nut, Hex (#6 - 32)	9	333-0151	1	Heater, Electrical
4	854-0006	2	Washer, Lock - IT (#6)	10	130-1107	2	Spacer, Sleeve
5	812-0070	2	Screw, Machine - Round Head (#6 - 32 x 1-1/4)	11	870-0257	2	Nut, Self-Locking (5/16 - 18)
6	309-0128	1	Thermostat, Adjustable	12	335-0161	1	Cable, Electrical

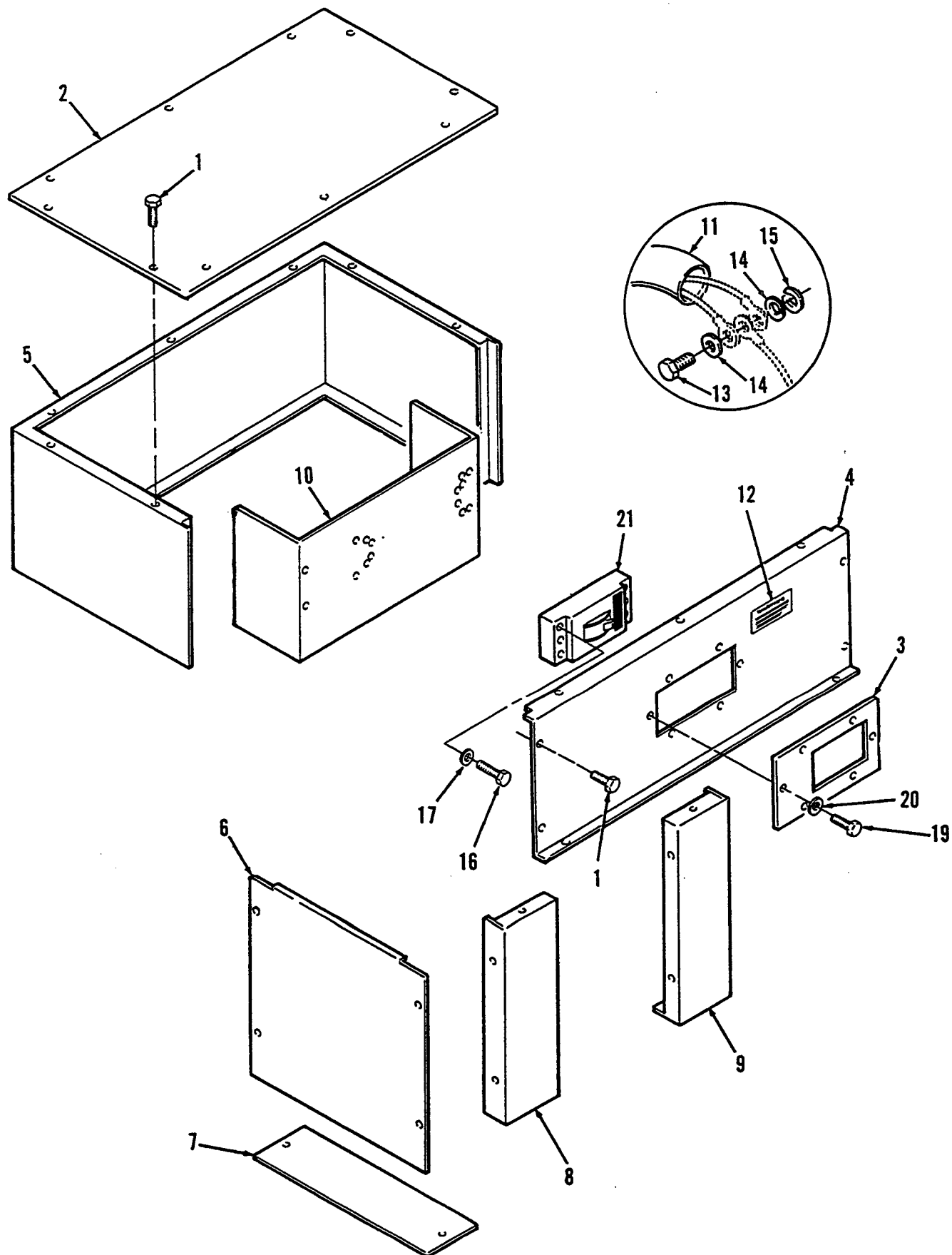
Circuit Breaker (Spec A)



Circuit Breaker (Spec A)

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	813-0096	48	Screw, Machine - Round Head (#10 - 32 x 1/4")	320-0423	1	300 Amp, 240 VAC	
2	301-9257	1	Cover, Top	320-0401	1	300 Amp, 480/600	
3			Cover, Breaker - Circuit	320-0448	1	350 Amp, 240 VAC	
	301-9259	1	5" x 3-1/4" Breaker Hole	320-0449	1	400 Amp, 240 VAC	
	301-9458	1	3-1/4" x 1-1/2" Breaker Hole	320-0625	1	450 Amp, 240 VAC	
4	301-9251	1	Panel, Front	320-0738	1	Three Pole with Aux Contact	
5	301-9258	1	Wrapper, Enclosure	320-0700	1	150 Amp, 480/600 VAC	
6	301-9255	2	Cover, Access - Side	320-0988	1	175 Amp, 240 VAC	
7	301-9254	2	Panel, Access - Bottom	320-1222	1	200 Amp, 480/600 VAC	
8	301-9253	2	Panel, End	320-1222	1	225 Amp, 240 VAC	
9	301-9252	2	Panel, End	320-0975	1	250 Amp, 480/600 VAC	
10	301-9256	1	Bracket, Mounting - Circuit Breaker	320-0620	1	300 Amp, 240 VAC	
11			Sleeving, Shrinkable	320-0300	1	300 Amp, 480/600 VAC	
	898-0863	1	0.75" ID	320-1425	1	350 Amp, 240 VAC	
	898-0865	1	1.00" ID	320-1220	1	400 Amp, 240 VAC	
	898-0875	1	1.50" ID			Three Pole with 12 Volt	
	898-0869	1	2.00" ID	320-0658	1	Shunt Trip	
	898-1112	1	3.00" ID	320-0453	1	150 Amp, 600 VAC	
12			Sleeving, Fiberglass	320-0392	1	175 Amp, 600 VAC	
	898-0974	1	0.75" ID	320-0370	1	200 Amp, 600 VAC	
	898-0976	1	1.00" ID			300 Amp, 600 VAC	
13	800-0028	5	Screw, Cap - Hex Head (5/16 - 18 x 1")	320-0688	1	Three Pole with 24 Volt	
14	526-0022	10	Washer, Flat (21/64" ID x 9/16" OD x 1/16" THK)	320-0731	1	Shunt Trip	
15	850-0045	5	Washer, Lock - Spring (5/16)	320-0529	1	150 Amp, 600 VAC	
16	862-0015	5	Nut, Hex (5/16 - 18)	320-1433	1	175 Amp, 600 VAC	
17	812-0156	4	Screw, Machine - Round Head (1/4 - 20 x 1-1/2")	320-0438	1	200 Amp, 600 VAC	
18	850-0040	4	Washer, Lock - Spring (1/4)	320-0627	1	225 Amp, 600 VAC	
19	850-0030	6	Washer, Lock (#10)	320-0627	1	300 Amp, 600 VAC	
20			Bracket, Mounting - Circuit Breaker	320-0524	1	350 Amp, 600 VAC	
	301-9459	1	Used on Circuit Breakers 480 Volts and Up	320-1379	1	400 Amp, 600 VAC	
	301-9460	1	Used on Circuit Breakers 240 Volts and Below			Three Pole with 120 Volt	
21			Breaker, Circuit	320-0315	1	Shunt Trip	
			Two Pole	320-0215	1	150 Amp, 600 VAC	
	320-1062	1	150 Amp, 240 VAC	320-0573	1	175 Amp, 600 VAC	
	320-0344	1	175 Amp, 240 VAC	320-0285	1	200 Amp, 600 VAC	
	320-1409	1	200 Amp, 240 VAC	320-0708	1	225 Amp, 600 VAC	
	320-0359	1	225 Amp, 240 VAC	320-0268	1	250 Amp, 600 VAC	
	320-1411	1	250 Amp, 240 VAC	320-0275	1	300 Amp, 600 VAC	
	320-0420	1	300 Amp, 240 VAC			350 Amp, 600 VAC	
	320-0421	1	350 Amp, 240 VAC			Three Pole with 240 Volt	
	320-0705	1	400 Amp, 240 VAC			Shunt Trip	
			Three Pole	320-0405	1	400 Amp, 600 VAC	
	320-0346	1	150 Amp, 240 VAC			Three Pole with 480 Volt	
	320-0425	1	150 Amp, 480/600 VAC			Shunt Trip	
	320-0347	1	175 Amp, 240 VAC	320-0331	1	300 Amp, 600 VAC	
	320-0426	1	175 Amp, 480/600 VAC	320-0279	1	350 Amp, 600 VAC	
	320-0348	1	200 Amp, 240 VAC			Two Pole with 12 or 24 Volt	
	320-0447	1	200 Amp, 480/600 VAC			Shunt Trip and Aux Contact	
	320-0349	1	225 Amp, 240 VAC	320-1144	1	200 Amp, 240 VAC (24 V)	
	320-0269	1	225 Amp, 480/600 VAC	320-1424	1	300 Amp, 240 VAC (24 V)	
	320-0422	1	250 Amp, 240 VAC			Three Pole with 12 or 24 Volt Shunt Trip and Aux Contacts	
	320-0445	1	250 Amp, 480/600 VAC	320-0772	1	150 Amp, 240 VAC (12 V)	
				320-1422	1	150 Amp, 600 VAC (24 V)	
				320-1145	1	200 Amp, 240 VAC (24 V)	
				320-1035	1	225 Amp, 240 VAC (12 V)	
				320-1429	1	250 Amp, 600 VAC (24 V)	

Circuit Breaker (Spec B)



Circuit Breaker (Spec B)

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	815-0350	52	Screw, Self-Locking - Hex Washer Hd (#10 - 32 x 3/8")	320-1458-48	1	150 Amp, 600 VAC	
2	301-9257	1	Cover, Top	320-1459-08	1	175 Amp, 600 VAC	
3	301-9720	1	Cover, Breaker - Circuit For use with 225 Amp Circuit Breakers and below	320-1459-09	1	200 Amp, 600 VAC	
	301-9721	1	For use with 250 Amp Circuit Breakers and above	320-1459-10	1	225 Amp, 600 VAC	
4	301-9251	1	Panel, Front	320-1460-06	1	250 Amp, 600 VAC	
5	301-9258	1	Wrapper, Enclosure	320-1460-07	1	300 Amp, 600 VAC	
6	301-9255	2	Cover, Access - Side	320-1460-08	1	350 Amp, 600 VAC	
7	301-9254	2	Panel, Access - Bottom	320-1460-09	1	400 Amp, 600 VAC	
8	301-9253	2	Panel, End	320-1460-10	1	450 Amp, 600 VAC	
9	301-9252	2	Panel, End				Two Pole with Aux Contacts
10	301-9716	1	Bracket, Mounting - Circuit Breaker Used on Circuit Breakers 600 Amps and below	320-1515-07	1	150 Amp, 600 VAC	
	301-9722	1	Used on Circuit Breakers 700 Amps and above	320-1515-08	1	175 Amp, 600 VAC	
11	898-0863	1	Sleeving, Shrinkable 0.75" ID	320-1515-09	1	200 Amp, 600 VAC	
	898-0865	1	1.00" ID	320-1515-10	1	225 Amp, 600 VAC	
	898-0867	1	1.50" ID	320-1516-06	1	250 Amp, 600 VAC	
	898-0869	1	2.00" ID	320-1516-07	1	300 Amp, 600 VAC	
12	98-2304	1	Silkscreen, Breaker - Circuit (Warning)	320-1516-08	1	350 Amp, 600 VAC	
13	800-0028	5	Screw, Cap - Hex Head (5/16 - 18 x 1")	320-1516-09	1	400 Amp, 600 VAC	
14	526-0022	10	Washer, Flat (21/64" ID x 9/16" OD x 1/16" THK)	320-1462-31	1	450 Amp, 600 VAC	
15	850-0045	5	Washer, Lock - Spring (5/16)	320-1462-48	1	150 Amp, 480 VAC	
16	812-0156	4	Screw, Machine - Round Head (1/4 - 20 x 1-1/2")	320-1463-08	1	150 Amp, 600 VAC	
17	850-0040	4	Washer, Lock - Spring (1/4)	320-1463-09	1	175 Amp, 600 VAC	
18	332-1445	3	Tie, Cable (Not Shown)	320-1463-10	1	200 Amp, 600 VAC	
19	813-0096	6	Screw, Machine - Round Head (#10 - 32 x 1/4")	320-1464-06	1	225 Amp, 600 VAC	
20	850-0030	6	Washer, Lock (#10)	320-1464-07	1	250 Amp, 600 VAC	
21			Breaker, Circuit Two Pole	320-1464-08	1	300 Amp, 600 VAC	
	320-1512-07	1	150 Amp, 600 VAC	320-1464-09	1	350 Amp, 600 VAC	
	320-1512-08	1	175 Amp, 600 VAC	320-1464-10	1	400 Amp, 600 VAC	
	320-1512-09	1	200 Amp, 600 VAC				Two Pole with 24 Volt Shunt Trip
	320-1512-10	1	225 Amp, 600 VAC	320-1522-07	1	300 Amp, 600 VAC	
	320-1513-06	1	250 Amp, 600 VAC				Two Pole with 120 Volt Shunt Trip
	320-1513-07	1	300 Amp, 600 VAC	320-1524-08	1	175 Amp, 600 VAC	
	320-1513-08	1	350 Amp, 600 VAC				Three Pole with 12 Volt Shunt Trip
	320-1513-09	1	400 Amp, 600 VAC	320-1466-48	1	150 Amp, 600 VAC	
	320-1458-31	1	150 Amp, 480 VAC	320-1467-08	1	175 Amp, 600 VAC	
				320-1467-09	1	200 Amp, 600 VAC	
				320-1468-07	1	300 Amp, 600 VAC	
							Three Pole with 24 Volt Shunt Trip
				320-1470-48	1	150 Amp, 600 VAC	
				320-1471-08	1	175 Amp, 600 VAC	
				320-1471-09	1	200 Amp, 600 VAC	
				320-1471-10	1	225 Amp, 600 VAC	
				320-1472-06	1	250 Amp, 600 VAC	
				320-1472-07	1	300 Amp, 600 VAC	
				320-1472-08	1	350 Amp, 600 VAC	
				320-1472-09	1	400 Amp, 600 VAC	

Circuit Breaker (Spec B)

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
			Three Pole with 120 Volt Shunt Trip				Three Pole with 12 Volt Shunt Trip & Auxiliary Contacts
320-1474-48	1		150 Amp, 600 VAC	320-1487-07	1		150 Amp, 600 VAC
320-1475-09	1		200 Amp, 600 VAC	320-1487-10	1		225 Amp, 600 VAC
320-1475-10	1		225 Amp, 600 VAC				Three Pole with 24 Volt Shunt Trip & Auxiliary Contacts
320-1476-06	1		250 Amp, 600 VAC				200 Amp, 600 VAC
320-1476-07	1		300 Amp, 600 VAC	320-1491-09	1		225 Amp, 600 VAC
320-1476-08	1		350 Amp, 600 VAC	320-1491-10	1		250 Amp, 600 VAC
			Three Pole with 480 Volt Shunt Trip	320-1492-06	1		300 Amp, 600 VAC
320-1484-07	1		300 Amp, 600 VAC	320-1492-07	1		
320-1484-08	1		350 Amp, 600 VAC				
			Two Pole with 24 Volt Shunt Trip & Auxiliary Contacts				
320-1536-09	1		200 Amp, 600 VAC				

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