

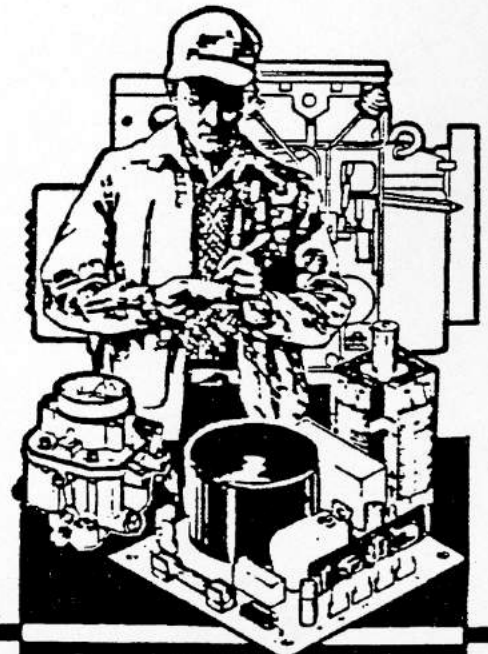
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**Onan**

**Parts  
Manual**

**M C C K**

**Marine GenSet**



**Onan Service Parts**

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927-0224  
5-88 (Spec H-J)  
Replaces  
8-81 (Spec H)  
Printed in U.S.A.

## General Information

For parts or service, contact the dealer from whom you purchased this equipment or refer to your Nearest Authorized Onan Parts and Service Center.

To avoid errors or delay in filling your parts order, always give the MODEL, SPEC NO. and SERIAL NO. from the Onan nameplate.

The image shows a rectangular form with two circular punch holes at the top corners. The word "Onan" is printed in a large, bold, stylized font. Below the logo is a wide rectangular box labeled "MODEL AND SPEC NO.". Below that is a narrower rectangular box labeled "SERIAL NO.". The bottom right corner of the form is folded over, showing a second layer of the form.

M-1149

For handy reference, insert "YOUR" nameplate information in the spaces above.

# Important Safety Precautions

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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 Gen 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

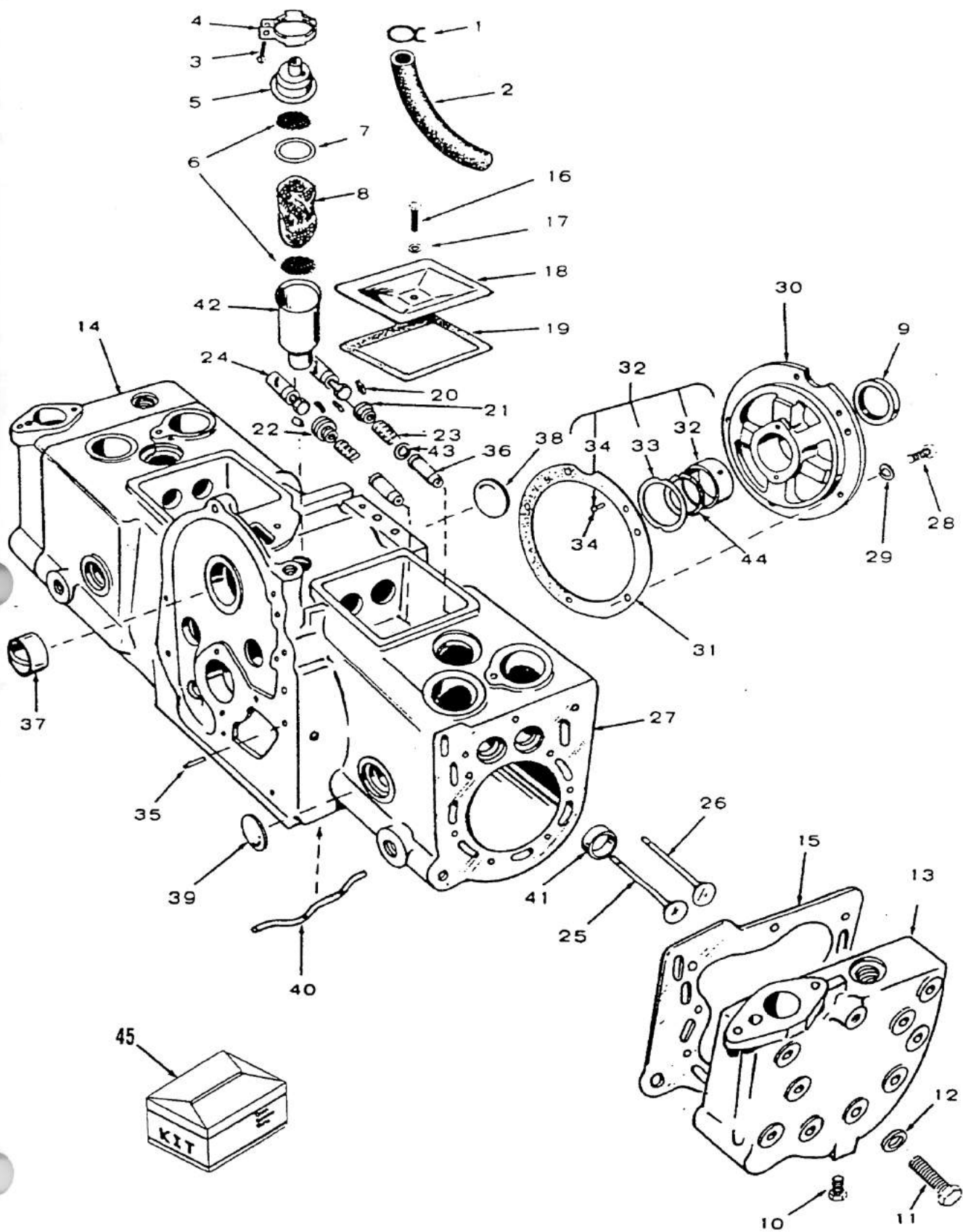
| MODEL AND SPECIFICATION | ELECTRICAL DATA |         |       |      |       | PARTS KEY NO. |
|-------------------------|-----------------|---------|-------|------|-------|---------------|
|                         | WATTS           | VOLTS   | HERTZ | WIRE | PHASE |               |
| 3.5MCCK-53CR/*          | 3500            | 120/240 | 50    | 4    | 1     | 1             |
| 4.0MCCK-3CR/*           | 4000            | 120/240 | 60    | 4    | 1     |               |
| 5.5MCCK-53CR/*          | 5500            | 120/240 | 50    | 4    | 1     | 2             |
| 6.5MCCK-3CR/*           | 6500            | 120/240 | 60    | 4    | 1     |               |

\* - The Specification Letter Advances (A to B, B to C, etc.) with manufacturing changes.

### Standard Parts Section

This section contains the illustrated parts listing for the standard generator sets listed in the Data Table.

# Cylinder Block



## Cylinder Block

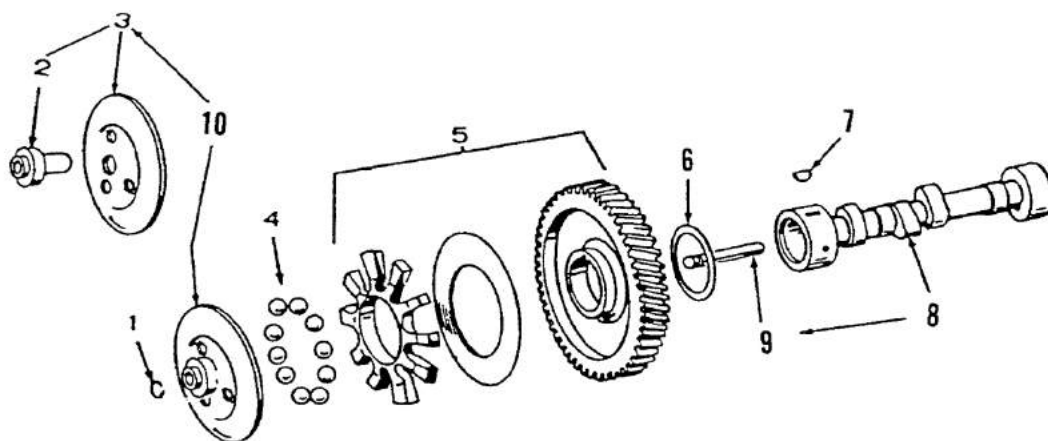
| REF NO. | PART NO.    | QTY USED | PART DESCRIPTION                                 | REF NO. | PART NO.    | QTY USED | PART DESCRIPTION                                   |
|---------|-------------|----------|--|---------|-------------|----------|--|
| 1       | 503-0170    | 2        | Clamp, Hose                                      | 27      | 110-2553    | 1        | Block Assembly, Cylinder (Includes Parts Marked *) |
| 2       | 503-0761    | 1        | Hose, Rubber - Preformed                         |         |             |          |  |
| 3       | 809-0035    | 1        | Screw, Tapping - Round Head, Slotted (#8 x 3/4") | 28      | 800-0512    | 5        | *Screw, Cap - Hex Head (Special)                   |
| 4       | 123-0951    | 1        | Clamp, Loop - Metal                              | 29      | 850-0045    | 5        | *Washer, Lock - Spring (5/16")                     |
| 5       | 123-0955    | 1        | Cap, Tube - Breather                             | 30      | 101-0316    | 1        | *Plate, Bearing - Rear (Less Bearing)              |
| 6       | 123-0958    | 2        | Screen, Tube - Breather                          | 31      | 101-0115    | 1        | *Gasket Kit, Plate - Bearing (Includes Shims)      |
| 7       | 509-0117    | 1        | Gasket, Tube - Breather                          | 32      |             |          | Bearing Kit, Crankshaft (Includes Thrust Washer)   |
| 8       | 123-1417    | 1        | Filter, Tube - Breather                          |         |             |          |  |
| 9       | 509-0041    | 1        | Seal, Oil (In Gasket Kit 168-0149)               |         |             |          |  |
| 10      | 502-0153    | 2        | Plug, Pipe - Hex Head (Brass)                    |         | 101-0450    | 2        | * Standard   |
| 11      | 800-0509    | 18       | Screw, Cap - Hex Head (Special)                  |         | 101-0450-02 | 2        | .002" Undersize                                    |
|         |             |          |  |         | 101-0450-10 | 2        | .010" Undersize                                    |
| 12      | 526-0122    | 18       | Washer, Flat (5/16)                              |         | 101-0450-20 | 2        | .020" Undersize                                    |
| 13      |             |          | Head, Cylinder - Right Side                      |         | 101-0450-30 | 2        | .030" Undersize                                    |
|         | 110-1479    | 1        | Sets Without Heat Exchanger                      | 33      | 104-0575    | 2        | *Washer, Thrust                                    |
|         | 110-1506    | 1        | Sets With Heat Exchanger                         | 34      | 516-0072    | 2        | *Pin, Drive - Headed (.190" Dia. x 11/32")         |
| 14      |             |          | Head, Cylinder - Left Side                       |         |             |          |  |
|         | 110-1478    | 1        | Sets Without Heat Exchanger                      | 35      | 516-0141    | 2        | *Pin, Dowel (5/16" Dia. x 7/8")                    |
|         | 110-1505    | 1        | Sets With Heat Exchanger                         | 36      | 110-0902    | 4        | *Guide, Valve                                      |
| 15      | 110-3535    | 2        | Gasket, Head                                     | 37      | 101-0367    | 2        | **Bearing, Sleeve - Camshaft                       |
| 16      | 800-0012    | 2        | Screw, Cap - Hex Head (1/4-20 x 2-1/4")          | 38      | 517-0048    | 1        | *Plug, Expansion (1-5/8" Dia.)                     |
|         |             |          |  | 39      | 517-0011    | 8        | *Plug, Expansion (1-1/4" Dia.)                     |
| 17      | 526-0063    | 4        | Washer, Flat - Copper (1/4)                      | 40      | 120-0386    | 1        | *Tube, Oil   |
| 18      | 110-0666    | 2        | Cover, Valve                                     | 41      |             |          | Seat, Valve - Exhaust                              |
| 19      | 110-0667    | 2        | Gasket, Cover - Valve                            |         | 110-0872    | 2        | * Standard   |
| 20      | 110-0639    | 8        | Lock, Stem - Valve                               |         | 110-0872-02 | 2        | .002" Oversize                                     |
| 21      | 110-0893    | 2        | Washer, Retainer - Intake Valve Spring           |         | 110-0872-05 | 2        | .005" Oversize                                     |
|         |             |          |  |         | 110-0872-10 | 2        | .010" Oversize                                     |
| 22      | 110-0904    | 2        | Rotocap, Spring - Exhaust Valve                  |         | 110-0872-25 | 2        | .025" Oversize                                     |
|         |             |          |  | 42      | 123-0953    | 1        | *Tube, Breather                                    |
| 23      | 110-0539    | 4        | Spring, Valve                                    | 43      | 110-3136    | 2        | *Gasket, Guide - Intake Valve                      |
| 24      |             |          | Tappet, Valve                                    | 44      | 104-0776    | 1        | Shim, Bearing - Thrust                             |
|         | 115-0006    | 4        | Standard   | 45      | 168-0149    | 1        | Gasket Kit, Engine                                 |
|         | 115-0006-02 | 4        | .002" Oversize                                   |         |             |          |  |
|         | 115-0006-05 | 4        | .005" Oversize                                   |         |             |          |  |
| 25      | 110-0880    | 2        | Valve, Exhaust (Chrome Cobalt Alloy)             |         |             |          |  |
| 26      | 110-0881    | 2        | Valve, Intake (Steel)                            |         |             |          |  |

\* - Parts Included in 110-2553 Cylinder Block Assembly

\*\* - Units with Hi-Lift Cam, Use 101-0405 Bearing(1)



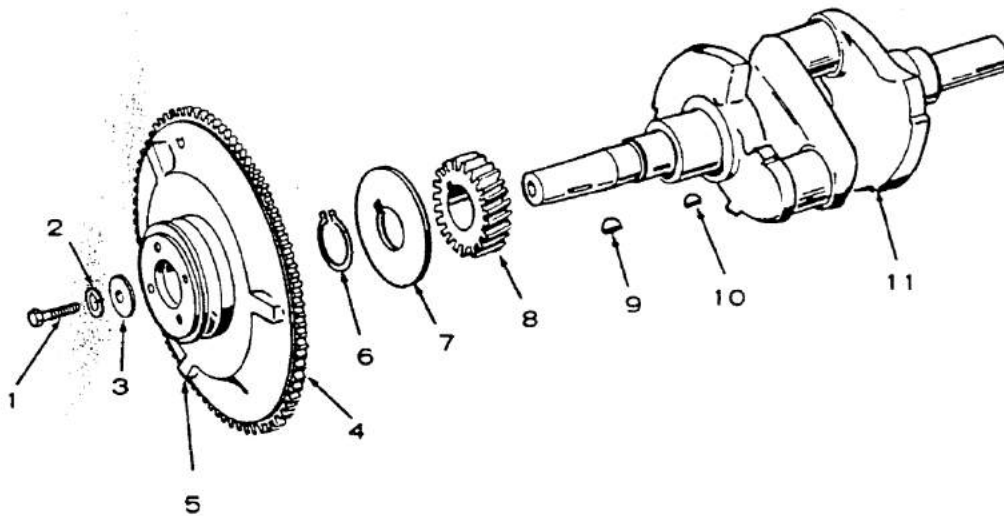
## Camshaft



| REF NO. | PART NO. | QTY USED | PART DESCRIPTION                                    | REF NO. | PART NO. | QTY USED | PART DESCRIPTION                            |
|---------|----------|----------|---|---------|----------|----------|---|
| 1       | 150-0078 | 1        | Ring, Retaining                                     | 7       | 515-0001 | 1        | Key, Woodruff (1/2" Dia. x 1/8" Thk)        |
| 2       | 150-1519 | 1        | *Hub, Governor                                      | 8       | 105-0140 | 1        | Camshaft Assembly (Includes Center Pin)     |
| 3       | 150-1520 | 1        | *Cup, Governor                                      | 9       | 150-0075 | 1        | Pin, Center - Camshaft                      |
| 4       | 510-0015 | 10       | Ball, Fly   | 10      | 150-1695 | 1        | Cup Kit, Governor (Includes Parts Marked *) |
| 5       | 105-0332 | 1        | Gear Assembly, Camshaft (Includes Spacer and Plate) |         |          |          |   |
| 6       | 105-0541 | 1        | Washer, Thrust                                      |         |          |          |   |

\* - Parts Included in 150-1695 Governor Cup Kit

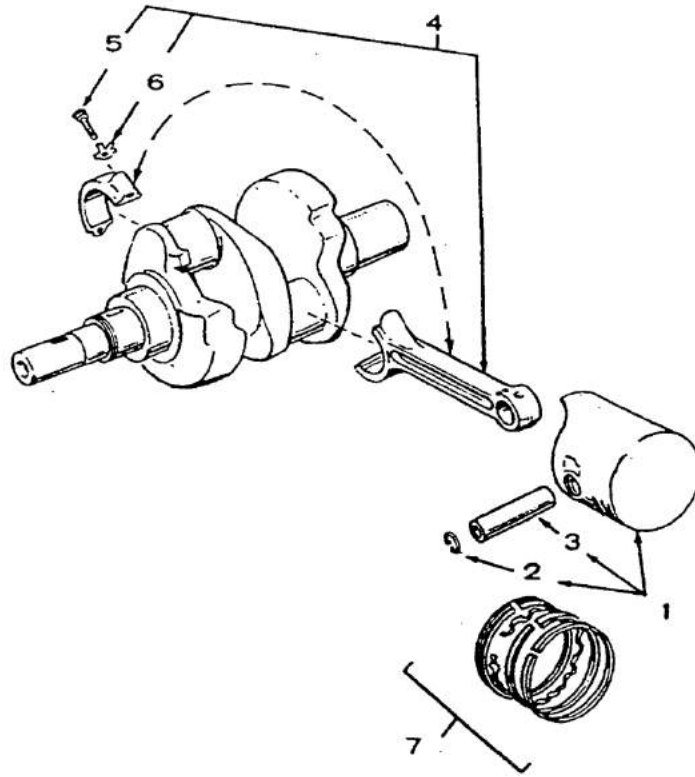
## Crankshaft and Flywheel



| REF NO. | PART NO. | QTY USED | PART DESCRIPTION                | REF NO. | PART NO. | QTY USED | PART DESCRIPTION                         |
|---------|----------|----------|---------------------------------|---------|----------|----------|--|
| 1       | 104-0170 | 1        | Screw, Cap - Hex Head (Special) | 7       | 104-0043 | 1        | Washer, Retaining - Gear                 |
| 2       | 850-0055 | 1        | Washer, Lock - Spring (7/16")   | 8       | 104-0032 | 1        | Gear, Crankshaft                         |
| 3       | 526-0017 | 1        | Washer, Flat (7/16)             | 9       | 515-0098 | 1        | *Key, Woodruff (5/8" Dia. x 3/16" Thk)   |
| 4       | 104-1069 | 1        | Flywheel (Includes Ring Gear)   | 10      | 515-0001 | 1        | *Key, Woodruff (1/2" Dia. x 1/8" Thk)    |
| 5       | 134-0673 | 1        | Gear, Ring                      | 11      | 104-1346 | 1        | Crankshaft Kit (Includes Parts Marked *) |
| 6       | 518-0014 | 1        | Ring, Retaining                 |         |          |          |  |

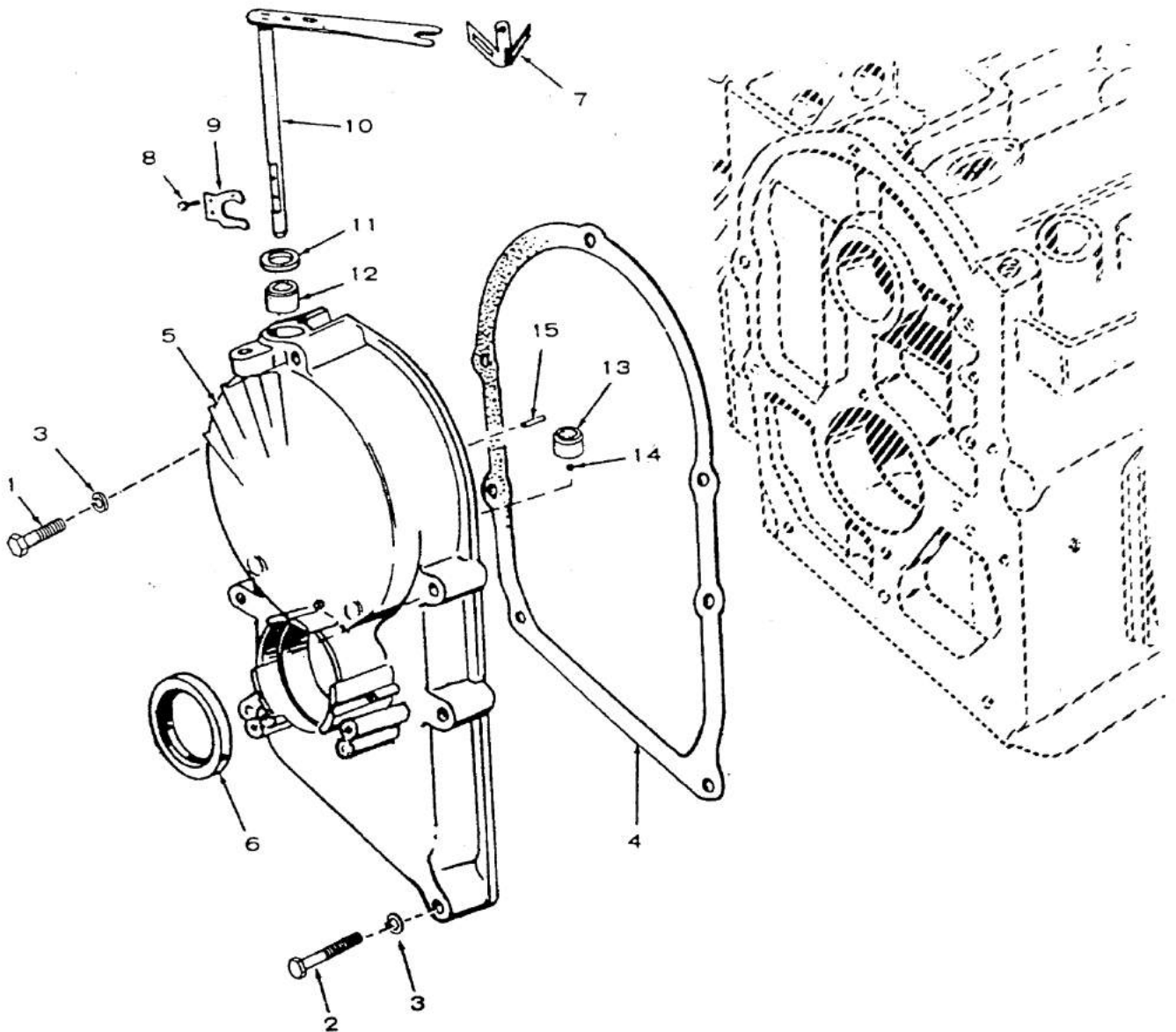
\* - Parts Included in Crankshaft Kit

## Piston and Rod



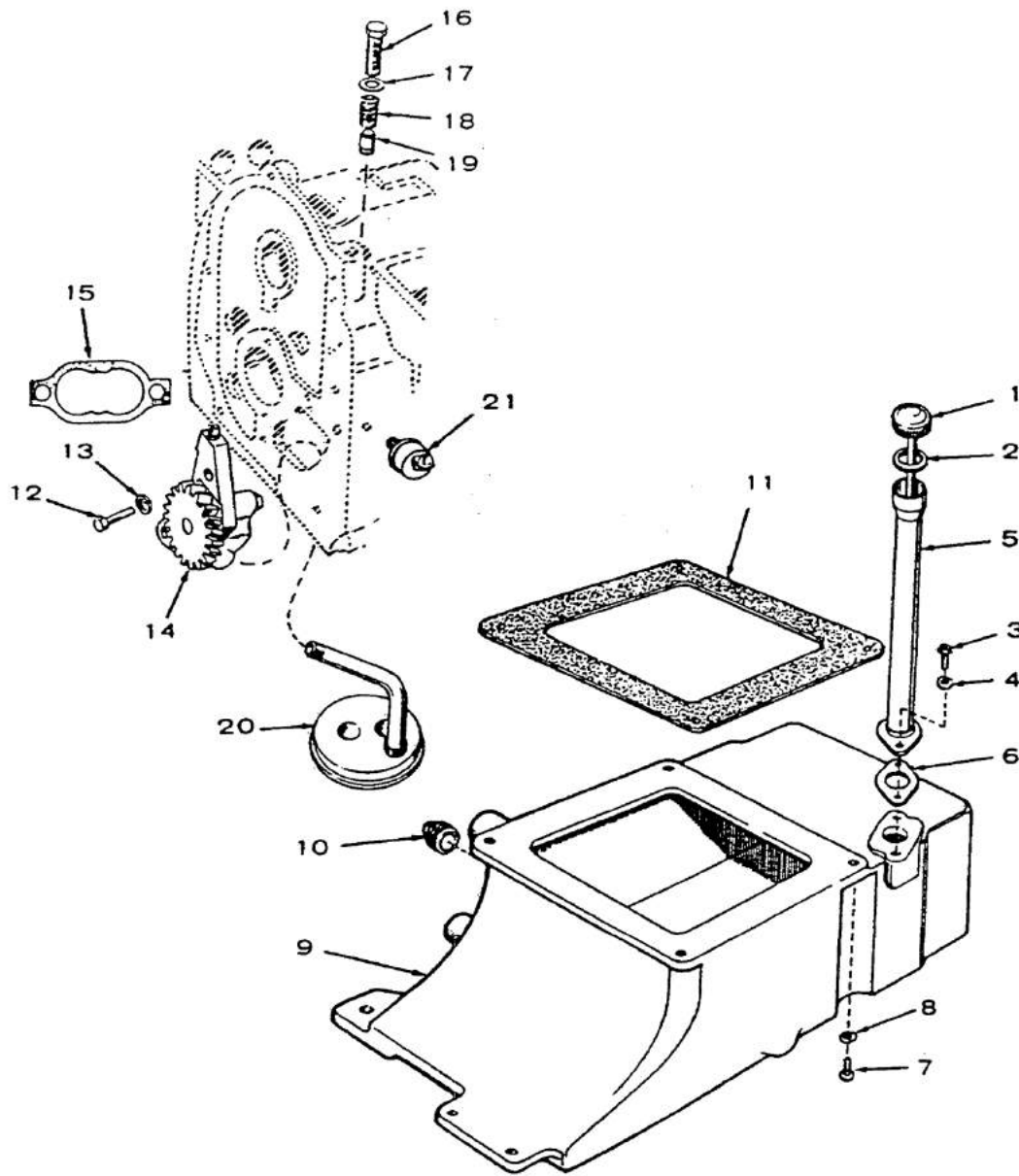
| REF NO. | PART NO.    | QTY USED | PART DESCRIPTION   | REF NO. | PART NO.    | QTY USED | PART DESCRIPTION                |
|---------|-------------|----------|--|---------|-------------|----------|---------------------------------|
| 1       |             |          | Piston and Pin (Includes Retaining Rings and Wrist Pins) | 5       | 800-0548    | 4        | Screw, Cap - Hex Head (Special) |
|         | 112-0179    | 2        | Standard   | 6       | 114-0059    | 4        | Washer, Lock - Connecting Rod   |
|         | 112-0179-05 | 2        | .005" Oversize   | 7       | 113-0152    | 2        | Ring Set, Piston                |
|         | 112-0179-10 | 2        | .010" Oversize   |         | 113-0152-05 | 2        | Standard                        |
|         | 112-0179-20 | 2        | .020" Oversize   |         | 113-0152-10 | 2        | .005" Oversize                  |
|         | 112-0179-30 | 2        | .030" Oversize   |         | 113-0152-20 | 2        | .010" Oversize                  |
|         | 112-0179-40 | 2        | .040" Oversize   |         | 113-0152-30 | 2        | .020" Oversize                  |
| 2       | 112-0003    | 4        | Ring, Retaining  |         | 113-0152-30 | 2        | .030" Oversize                  |
| 3       | 112-0069    | 2        | Pin, Wrist - Piston                                      |         | 113-0152-40 | 2        | .040" Oversize                  |
| 4       |             |          | Rod, Connecting (Includes Screw and Lock)                |         |             |          |                                 |
|         | 114-0098    | 2        | Standard   |         |             |          |                                 |
|         | 114-0098-10 | 2        | .010" Undersize  |         |             |          |                                 |
|         | 114-0098-20 | 2        | .020" Undersize  |         |             |          |                                 |
|         | 114-0098-30 | 2        | .030" Undersize  |         |             |          |                                 |

## Gearcase



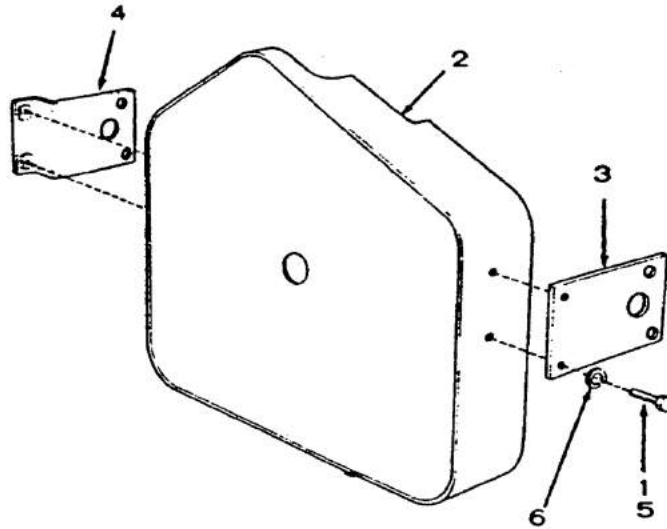
| REF NO. | PART NO. | QTY USED | PART DESCRIPTION   | REF NO. | PART NO. | QTY USED | PART DESCRIPTION  |
|---------|----------|----------|--|---------|----------|----------|---|
| 1       | 800-0034 | 1        | Screw, Cap - Hex Head (5/16-18 x 2-1/4")                 | 10      | 150-1564 | 1        | *Arm and Shaft, Governor (Includes Clip)                      |
| 2       | 114-0022 | 4        | Screw, Cap - Hex Head (5/16-18 x 1-3/4")                 | 11      | 509-0008 | 1        | *Seal, Oil - Governor Shaft                                   |
| 3       | 850-0045 | 5        | Washer, Lock - Spring (5/16")                            | 12      | 510-0013 | 1        | *Bearing, Needle - Upper                                      |
| 4       | 103-0011 | 1        | Gasket, Gearcase   | 13      | 510-0013 | 1        | *Bearing, Needle - Lower                                      |
| 5       | 103-0667 | 1        | Gearcase Assembly (Includes Parts Marked *)              | 14      | 510-0014 | 1        | *Ball, Bearing  |
| 6       | 509-0040 | 1        | *Seal, Oil - Crankshaft                                  | 15      | 516-0130 | 1        | *Pin, Roll - Yoke Stop  |
| 7       | 150-0678 | 1        | *Clip, Adjustment - Sensitivity                          |         | 815-0193 | 2        | *Screw, Hex Head - Thread Cutting (1/4-20 x 3/8") (Not Shown) |
| 8       | 815-0046 | 2        | Screw, Machine - Pan Head, Cross-Recessed (#8-32 x 3/8") |         | 815-0261 | 1        | *Screw, Hex Head - Thread Cutting (1/4-20 x 1/2") (Not Shown) |
| 9       | 150-1187 | 1        | *Yoke, Governor  |         |          |          |   |

## Oil System



| REF NO. | PART NO. | QTY USED | PART DESCRIPTION                               | REF NO. | PART NO. | QTY USED | PART DESCRIPTION                         |
|---------|----------|----------|--|---------|----------|----------|--|
| 1       | 123-1160 | 1        | Indicator, Fill - Oil<br>(Includes Gasket Cap) | 11      | 102-0158 | 1        | Gasket, Base - Oil                       |
| 2       | 123-0191 | 1        | Gasket, Cap - Oil Fill                         | 12      | 800-0007 | 2        | Screw, Cap - Hex Head<br>(1/4-20 x 1")   |
| 3       | 800-0004 | 2        | Screw, Cap - Hex Head<br>(1/4-20 x 5/8")       | 13      | 850-0040 | 2        | Washer, Lock - Spring (1/4")             |
| 4       | 850-0040 | 2        | Washer, Lock - Spring (1/4")                   | 14      | 120-0491 | 1        | Pump, Oil                                |
| 5       | 123-0508 | 1        | Tube, Fill - Oil                               | 15      | 120-0161 | 1        | Gasket Kit, Pump - Oil                   |
| 6       | 141-0078 | 1        | Gasket, Tube - Oil Fill                        | 16      | 801-0048 | 1        | Screw, Cap - Hex Head<br>(3/8-24 x 3/4") |
| 7       | 102-0455 | 4        | Screw, Cap - Hex Head<br>(Special)             | 17      | 526-0066 | 1        | Washer, Flat - Copper (3/8)              |
| 8       | 850-0050 | 4        | Washer, Lock - Spring (3/8")                   | 18      | 120-0140 | 1        | Spring, Valve - Bypass                   |
| 9       | 102-0517 | 1        | Base, Oil                                      | 19      | 120-0398 | 1        | Plunger, Valve - Bypass                  |
| 10      | 505-0056 | 2        | Plug, Pipe - Square Head                       | 20      | 120-0400 | 1        | Cup, Intake - Oil Pump                   |
|         |          |          |  | 21      | 309-0113 | 1        | Switch, Pressure - Low Oil               |

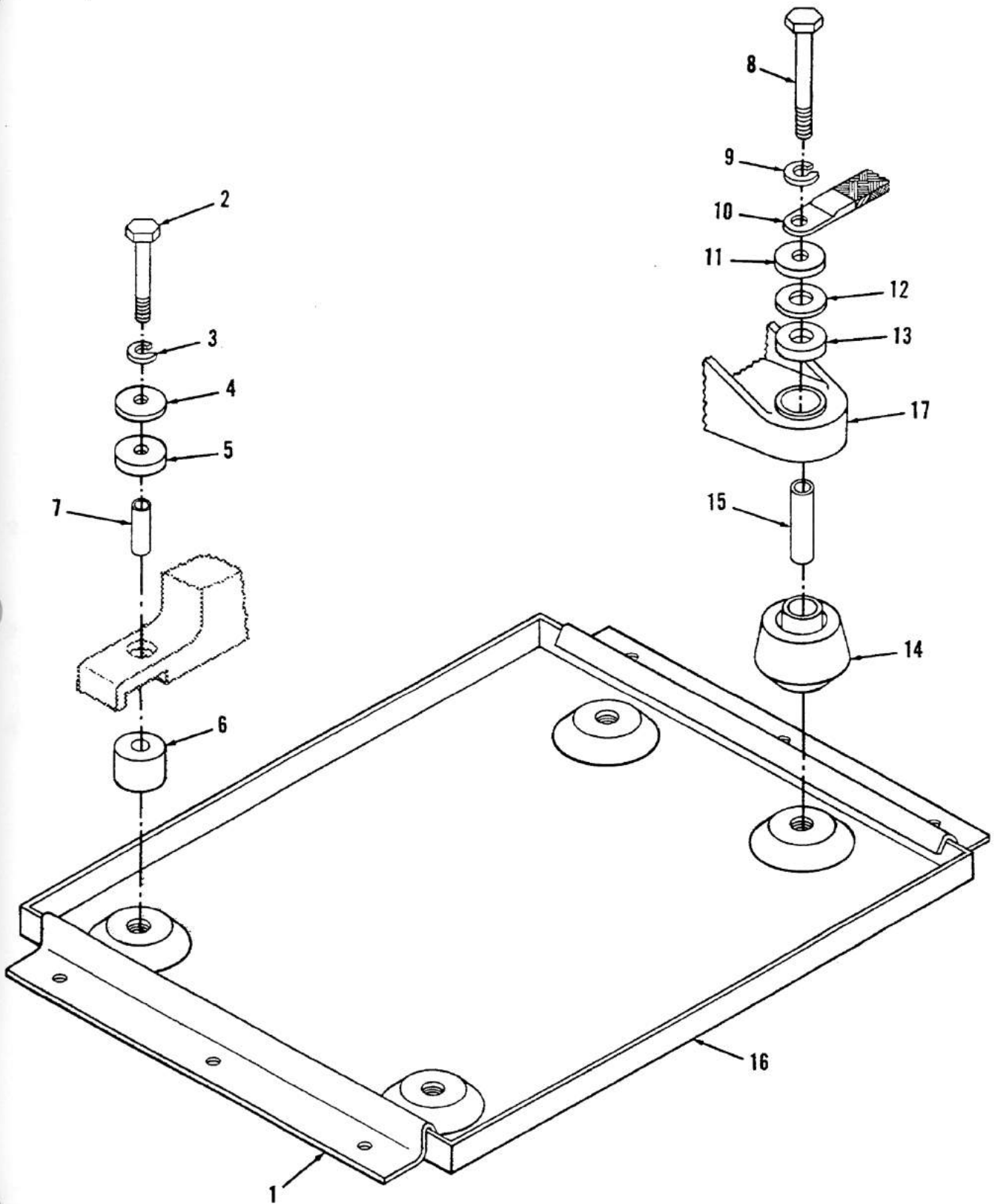
# Belt Guard



| REF NO. | PART NO. | QTY USED | PART DESCRIPTION  | REF NO. | PART NO. | QTY USED | PART DESCRIPTION                              |
|---------|----------|----------|---|---------|----------|----------|---|
| 1       | 821-0010 | 4        | Screw, Self-locking - Hex Washer Head (1/4-20 x 1/2") - Key 1 | 4       | 131-0282 | 1        | *Bracket, Guard - Belt (Left Hand)            |
| 2       | 131-0277 | 1        | Guard, Belt   | 5       | 800-0708 | 4        | Screw, Cap - Hex Head (1/4-20 x 1/2") - Key 2 |
| 3       | 131-0281 | 1        | *Bracket, Guard - Belt (Right Hand)                           | 6       | 850-0160 | 4        | Washer, Lock (1/4") - Key                     |

\* - Brackets Attached to Engine via Cylinder Head Cap Screws.

# Vibration Mounts

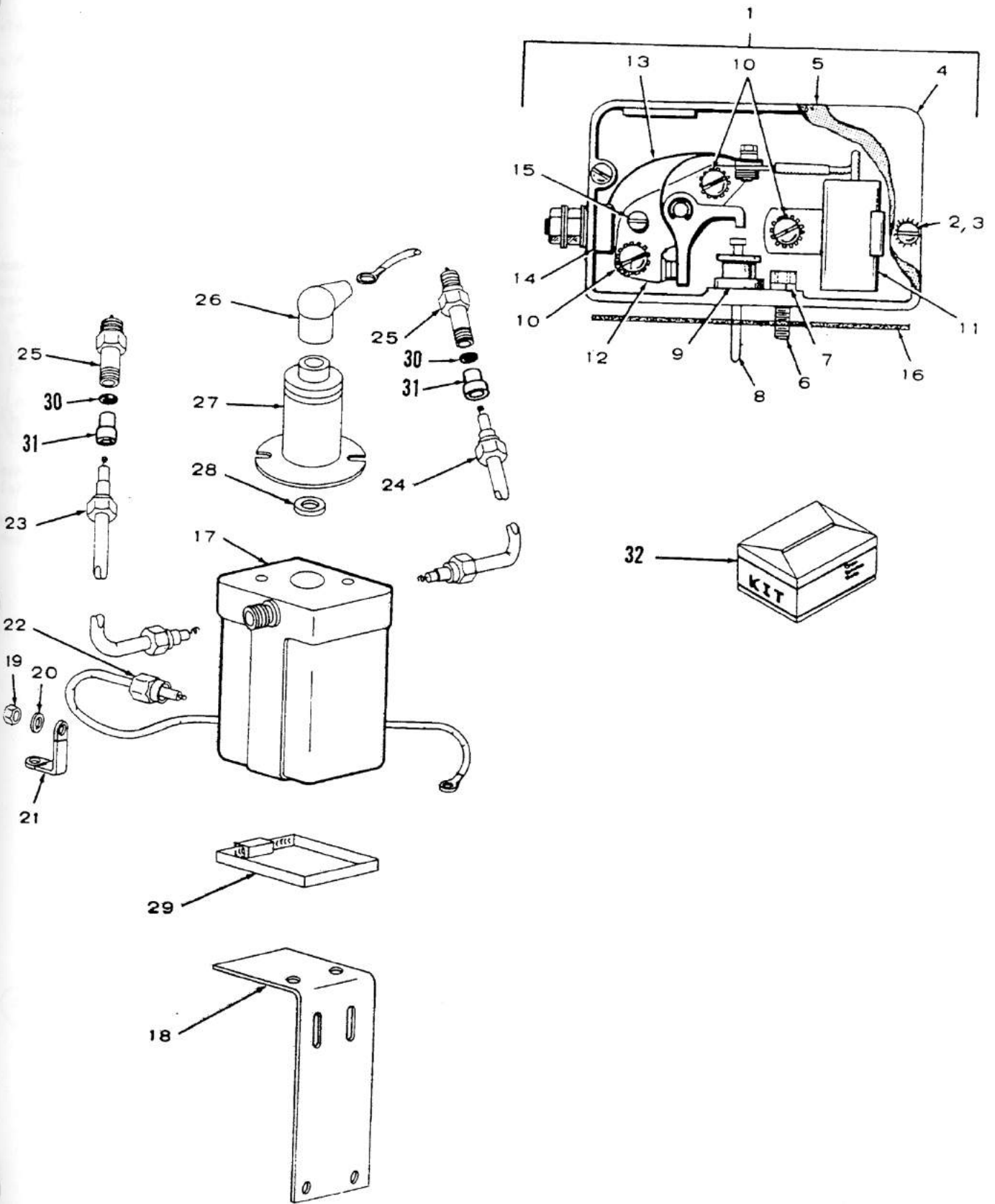


### Vibration Mounts

| REF NO. | PART NO. | QTY USED | PART DESCRIPTION                            | REF NO. | PART NO. | QTY USED | PART DESCRIPTION      |
|---------|----------|----------|---|---------|----------|----------|-----------------------|
| 1       | 405-1265 | 2        | Clamp, Holddown                             | 10      | 337-0091 | 1        | Strap, Ground         |
| 2       | 800-0055 | 2        | Screw, Cap - Hex Head<br>(3/8-16 x 2-1/4")  | 11      | 526-0128 | 2        | Washer, Flat (15/32") |
| 3       | 850-0050 | 2        | Washer, Lock - Spring (3/8")                | 12      | 526-0198 | 4        | Washer, Flat (5/8")   |
| 4       | 526-0124 | 4        | Washer, Flat (3/8")                         | 13      | 402-0282 | 2        | Snubber, Rubber       |
| 5       | 402-0131 | 2        | Snubber, Rubber                             | 14      | 402-0284 | 2        | Cushion, Rubber       |
| 6       | 402-0036 | 2        | Cushion, Rubber                             | 15      | 402-0290 | 2        | Bushing, Sleeve       |
| 7       | 402-0176 | 2        | Bushing, Sleeve                             | 16      | 403-1505 | 1        | Pan, Drip             |
| 8       | 800-0081 | 2        | Screw, Cap - Hex Head<br>(7/16-14 x 3-1/2") | 17      | 232-2321 | 1        | Support, Generator    |
| 9       |          |          | Washer, Lock                                |         |          |          |                       |
|         | 850-0055 | 1        | Spring (7/16")                              |         |          |          |                       |
|         | 856-0012 | 1        | External/Internal Tooth<br>(7/16")          |         |          |          |                       |



# Ignition System



## Ignition System

| REF NO. | PART NO. | QTY USED | PART DESCRIPTION   | REF NO. | PART NO. | QTY USED | PART DESCRIPTION  |
|---------|----------|----------|--|---------|----------|----------|---|
| 1       | 160-1277 | 1        | Box Assembly, Breaker<br>(Includes Parts Marked *)                               | 22      | 336-4674 | 1        | Lead, Electrical - Shielded<br>(Box to Coil)              |
| 2       | 812-0077 | 2        | *Screw, Machine - Round Head<br>Slotted (#8-32 x 3/8")                           | 23      | 167-1631 | 1        | Lead, Electrical - Shielded,<br>Spark Plug (25")          |
| 3       | 856-0002 | 2        | Washer, Lock - External<br>Internal Tooth (#8)                                   | 24      | 167-1632 | 1        | Lead, Electrical - Shielded,<br>Spark Plug (10")          |
| 4       | 160-0930 | 1        | *Cover, Box - Breaker  |         |          |          | (Includes Parts Marked †)                                 |
| 5       | 160-0440 | 1        | *Gasket, Box - Breaker   | 25      | 167-0199 | 2        | Plug, Spark - Shielded                                    |
| 6       | 802-0034 | 2        | *Screw, Cap - Socket Head<br>(1/4-20 x 3/4")                                     | 26      | 167-0300 | 1        | Nipple, Rubber - Coil<br>Terminal                         |
| 7       | 850-0040 | 2        | *Washer, Lock - Spring (1/4")  | 27      | 312-0083 | 1        | Condenser, Ignition -<br>Shielded                         |
| 8       | 160-0265 | 1        | *Plunger   | 28      | 509-0102 | 1        | Seal, "O" Ring  |
| 9       | 160-0264 | 1        | *Guide, Plunger  | 29      | 503-1142 | 1        | Clamp, Loop - Coil Mounting                               |
| 10      | 518-0049 | 3        | *Screw, Machine - Round Head<br>with External Tooth<br>Lockwasher (#8-32 x 1/4") | 30      | 167-0077 | 2        | †Spring and Washer Assembly<br>(Includes Parts Marked ††) |
| 11      | 312-0069 | 1        | **Condenser, Ignition  |         |          |          | ††Spring, Steel Wire                                      |
| 12      | 160-0002 | 1        | *Point Set, Breaker  |         | 167-0302 | 2        | ††Eyelet, Spring  |
| 13      | 160-0428 | 1        | *Lead, Flat - Point Set to<br>Terminal   |         | 167-0301 | 2        | ††Washer, Flat (.133 I.D. x<br>.281 O.D. x .025" Thk)     |
| 14      | 160-0349 | 1        | *Terminal Assembly, Box -<br>Breaker   |         | 526-0320 | 2        | †Grommet, Rubber  |
| 15      | 160-0075 | 1        | *Pivot, Adjusting - Point Set  | 31      | 167-0208 | 2        | Tune Up Kit, Ignition<br>(Includes Parts Marked *)        |
| 16      | 160-0043 | 1        | *Gasket, Mounting - Breaker Box  | 32      | 160-0836 | 1        |   |
| 17      | 166-0382 | 1        | Coil, Ignition - Shielded  |         |          |          |   |
| 18      | 166-0704 | 1        | Bracket, Mounting - Coil   |         |          |          |   |
| 19      | 870-0053 | 2        | Nut, Hex (#10-32)  |         |          |          |   |
| 20      | 854-0010 | 1        | Washer, Lock - Internal<br>Tooth (#10)   |         |          |          |   |
| 21      | 337-0419 | 1        | Strap, Ground  |         |          |          |   |

\* - Parts Included in 160-1277 Breaker Box Assembly  
† - Parts Included in 167-1631, 167-1632 Shielded Spark Plug Lead  
\* - Parts Included in 160-0836 Ignition Tune Up Kit  
†† - Parts Included in 167-0077 Spring and Washer Assembly

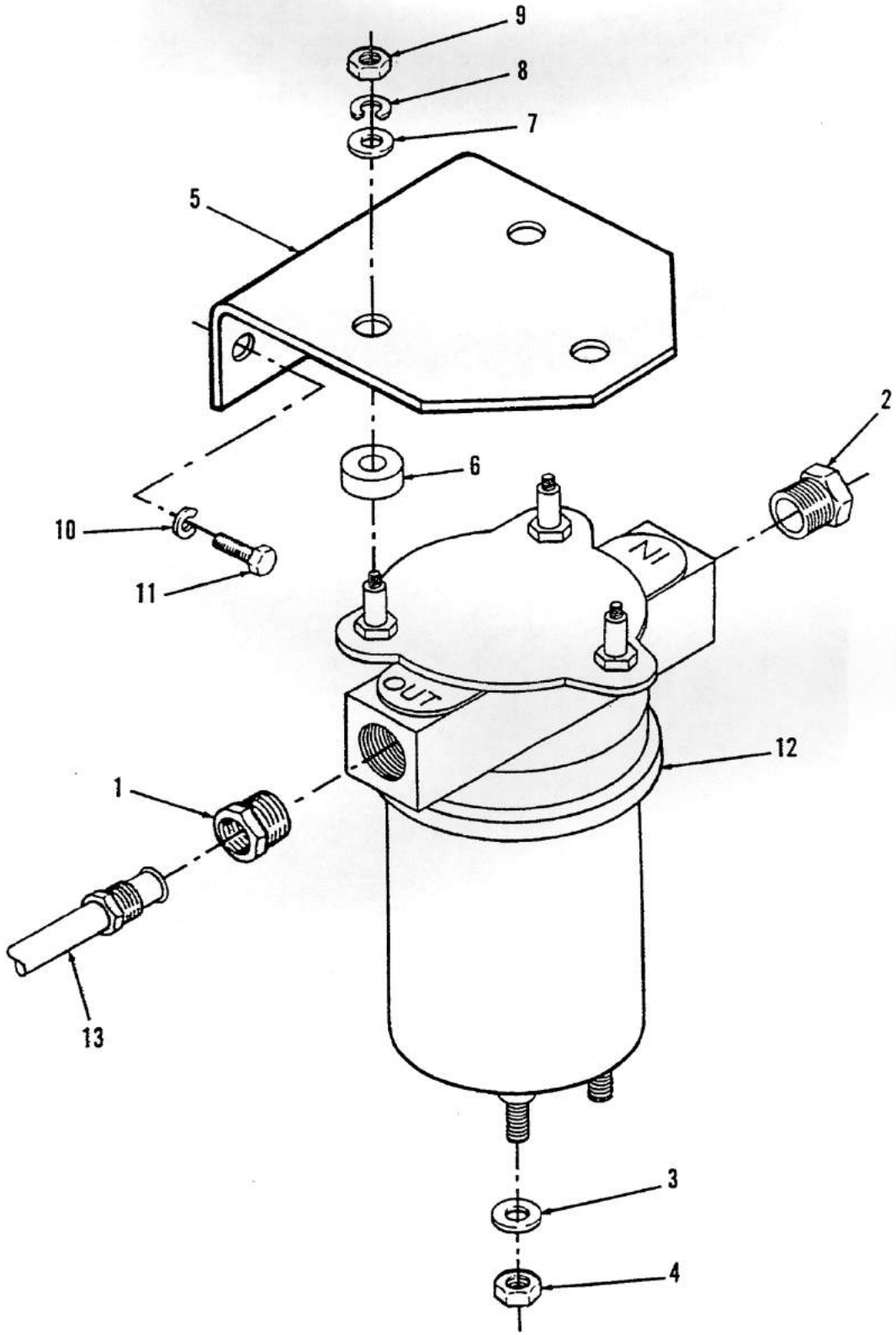


## Fuel System

| REF NO. | PART NO. | QTY USED | PART DESCRIPTION   | REF NO. | PART NO. | QTY USED | PART DESCRIPTION   |
|---------|----------|----------|--|---------|----------|----------|--|
| 1       | 150-0621 | 1        | Nut, Acorn   | 32      | 812-0084 | 1        | Screw, Machine - Round Head (#8-32 x 1")                   |
| 2       | 150-0096 | 1        | Stud, Adjusting - Governor   | 33      | 850-0025 | 1        | Washer, Lock - Spring (#8)                                 |
| 3       | 150-1612 | 1        | Spring, Governor   | 34      | 153-0516 | 1        | Spacer, Sleeve   |
| 4       | 800-0004 | 2        | Screw, Cap - Hex Head (1/4-20 x 5/8")  | 35      | 332-0527 | 1        | Terminal, Tab  |
| 5       | 150-1577 | 1        | Bracket, Governor  | 36      | 153-0116 | 1        | Cover, Choke   |
| 6       | 149-0003 | 1        | Gasket   | 37      | 153-0017 | 1        | Element, Choke   |
| 7       | 518-0004 | 1        | Clip, Rod - End  | 38      | 815-0110 | 1        | †Screw, Machine - Fillister Head (#10-32 x 7/8")           |
| 9       | 870-0131 | 1        | *Nut, Self-locking Hex (#10-32)  | 39      | 850-0030 | 1        | †Washer, Lock - Spring (#10)                               |
| 10      | 150-0639 | 1        | *Ball, Joint   | 40      | 153-0058 | 1        | †Housing, Choke  |
| 11      | 870-0053 | 2        | *Nut, Hex (#10-32)   | 41      | 813-0098 | 2        | Screw, Machine - Round Head (#10-32 x 3/8")                |
| 12      | 150-1732 | 1        | *Rod, Control  | 42      | 850-0030 | 2        | Washer, Lock - Spring (#10)                                |
| 13      | 862-0015 | 1        | Nut, Hex (5/16-18)   | 43      | 153-0481 | 1        | Adapter, Choke   |
| 14      | 518-0350 | 1        | Clamp, Loop - Insulated Line, Fuel   | 44      | 800-0028 | 2        | Screw, Cap - Hex Head (5/16-18 x 1")                       |
|         | 149-1624 | 1        | Spec A-H   | 45      | 850-0045 | 2        | Washer, Lock - Spring (5/16")                              |
|         | 149-2154 | 1        | Spec J   | 46      | 146-0439 | 1        | Carburetor, Gasoline (See Separate Illustration for Parts) |
| 17      | 800-0544 | 2        | Screw, Cap - Hex Head (Special)  | 47      | 141-0858 | 1        | Gasket, Mounting - Carburetor                              |
| 18      | 850-0160 | 2        | Washer, Lock - Spring (1/4")   | 48      | 800-0007 | 2        | Screw, Cap - Hex Head (1/4-20 x 1")                        |
| 19      | 502-0002 | 1        | Elbow, Inverted Male - Brass (1/4 Pipe, 1/8 NPT)   | 49      | 850-0040 | 2        | Washer, Lock - Spring (1/4")                               |
| 20      | NFS      | 1        | Pump, Fuel Spec A-H (Must convert to Spec J. Use Kit 149-2186) (See Next Page for Breakdown) | 50      | 154-2077 | 1        | Adapter, Mounting - Carburetor                             |
|         | 149-2159 | 1        | Spec J   | 51      | 141-0859 | 1        | Gasket, Mounting - Carburetor                              |
| 21      | 865-0020 | 1        | Nut, Wing - Self-locking (1/4-20)  | 52      | 800-0059 | 2        | Screw, Cap - Hex Head (3/8-16 x 3-1/4")                    |
| 22      | 520-0093 | 1        | Stud (1/4-20 x 7/8")   | 53      | 850-0050 | 2        | Washer, Lock - Spring (3/8")                               |
| 23      | 145-0516 | 1        | Arrester, Spark  | 54      | 154-2078 | 1        | Manifold, Intake   |
| 24      | 813-0106 | 3        | Screw, Machine - Round Head (#10-32 x 1-1/8")  | 55      | 154-0013 | 2        | Gasket, Manifold - Intake                                  |
| 25      | 850-0030 | 3        | Washer, Lock - Spring (#10)  | 56      | 502-0003 | 1        | Adapter, Pipe to Tube                                      |
| 26      | 509-0145 | 2        | Seal, "O" Ring   | 57      | 502-0020 | 1        | Elbow, Inverted Male                                       |
| 27      | 140-1473 | 1        | Adapter, Cleaner - Air   | 58      | 502-0577 | 1        | Connector, Male  |
| 28      | 120-0848 | 2        | Screen, Adapter - Carburetor   | 59      | 501-0242 | 1        | Line, Fuel (3/8"ID x 24")                                  |
| 29      | 140-1684 | 1        | Gasket, Adapter to Carburetor  | 60      | 153-0440 | 1        | Housing, Choke (Includes Parts Marked †)                   |
| 30      | 815-0285 | 2        | Screw, Machine - Round Head with External Tooth Lockwasher (#8-32 x 5/16")                   | 61      | 526-0196 | 1        | *Washer, Flat (#10)  |
| 31      | 526-0062 | 2        | Washer, Flat (#8)  |         |          |          |  |

\* - Parts Included in 150-1718 Linkage Assembly  
† - Parts Included in 153-0440 Choke Housing

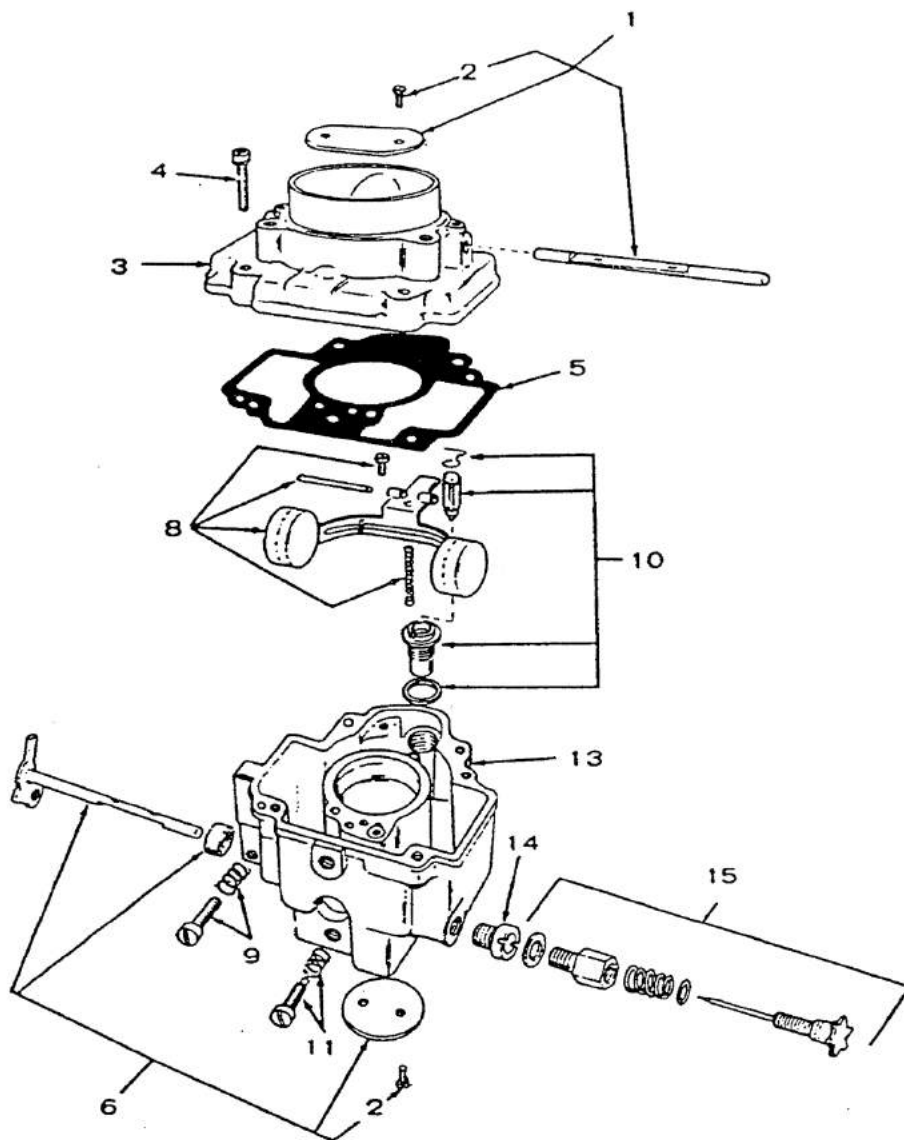
Fuel Pump  
(Begin Spec J)



**Fuel Pump  
(Begin Spec J)**

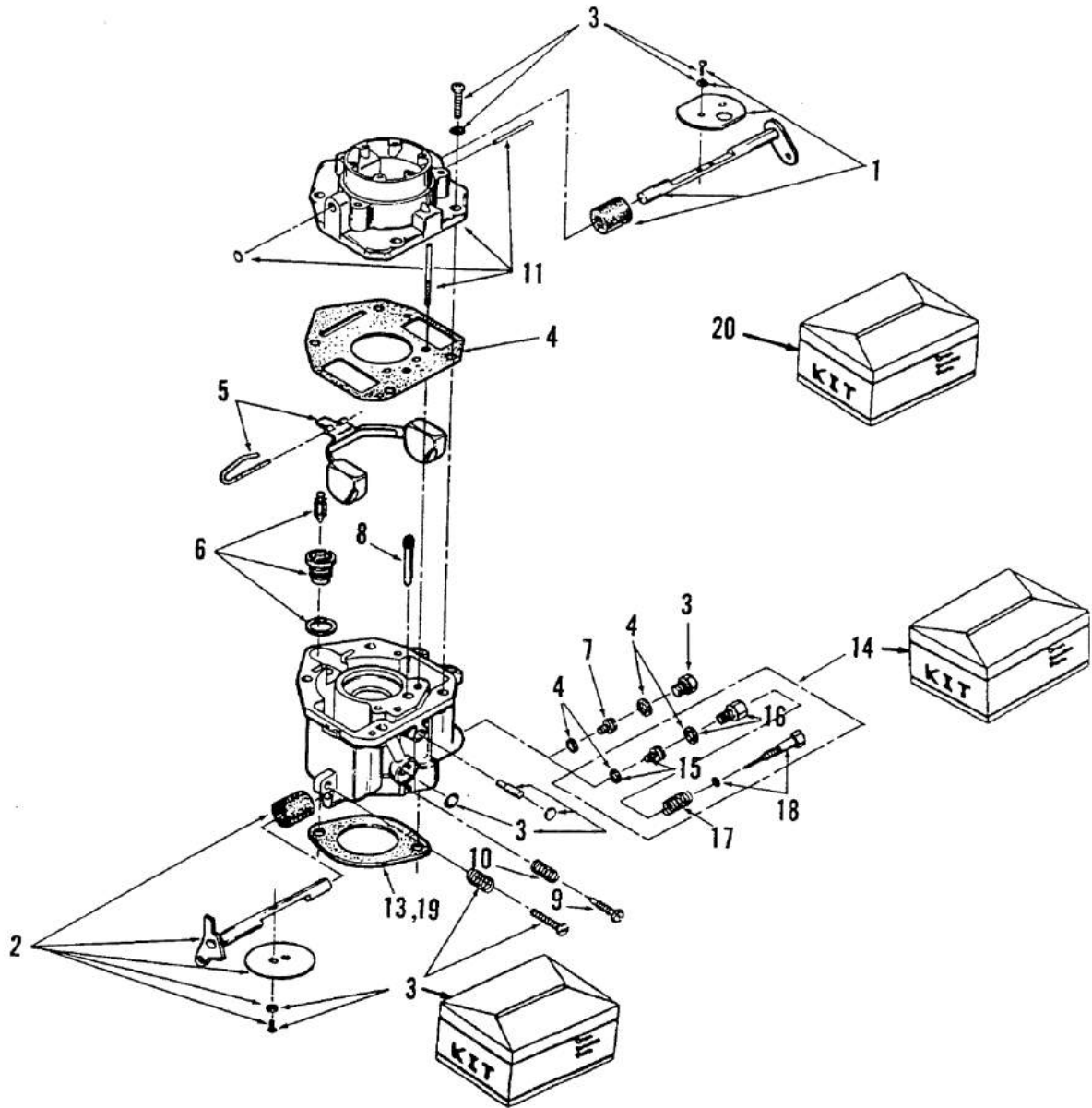
| REF NO. | PART NO. | QTY USED | PART DESCRIPTION              | REF NO. | PART NO. | QTY USED | PART DESCRIPTION                        |
|---------|----------|----------|-------------------------------|---------|----------|----------|---|
| 1       | 502-0033 | 1        | Connector, Male - Inverted    | 8       | 850-0030 | 3        | Washer, Lock (#10)                      |
| 2       | 502-0029 | 1        | Bushing, Pipe                 | 9       | 870-1053 | 3        | Nut, Hex (#10-32)                       |
| 3       | 526-0008 | 2        | Washer, Flat (#10)            | 10      | 850-0160 | 2        | Washer, Lock - Spring (1/4)             |
| 4       | 870-0131 | 2        | Nut, Hex - Ext Tooth (#10-32) | 11      | 800-0708 | 2        | Screw, Cap - Hex Head<br>(1/4-20 x 1/2) |
| 5       | 149-2153 | 1        | Bracket, Pump - Fuel          | 12      | 149-2159 | 1        | Pump, Fuel                              |
| 6       | 370-4052 | 3        | Spacer, Mounting - Fuel Pump  | 13      | 149-2154 | 1        | Line, Fuel                              |
| 7       | 526-0008 | 3        | Washer, Flat (#10)            |         |          |          |   |

## Carburetor Parts (Walbro)



| REF NO. | PART NO. | QTY USED | PART DESCRIPTION                      | REF NO. | PART NO. | QTY USED | PART DESCRIPTION        |
|---------|----------|----------|---------------------------------------|---------|----------|----------|-------------------------|
|         | 146-0313 | 1        | Carburetor (Includes Mounting Gasket) | 6       | 146-0267 | 1        | Shaft Package, Throttle |
| 1       | 146-0264 | 1        | Shaft Package, Choke                  | 8       | 146-0262 | 1        | Float Package           |
| 2       | 146-0142 | 4        | Screw, Mounting - Valve (Special)     | 9       | 146-0261 | 1        | Throttle Package        |
| 3       | NFS      | 1        | Intake, Air                           | 10      | 146-0227 | 1        | Valve and Seat Package  |
| 4       | 146-0247 | 4        | Screw, Body to Intake (Special)       | 11      | 146-0209 | 1        | Needle Package, Idle    |
| 5       | 146-0220 | 1        | Gasket Kit, Carburetor                | 13      | NFS      | 1        | Body                    |
|         |          |          |                                       | 14      | 146-0243 | 1        | Jet, Power              |
|         |          |          |                                       | 15      | 146-0248 | 1        | Needle Package, Power   |
|         |          |          |                                       |         | 146-0258 | 1        | Repair Kit, Carburetor  |

## Carburetor Parts (Nikki)

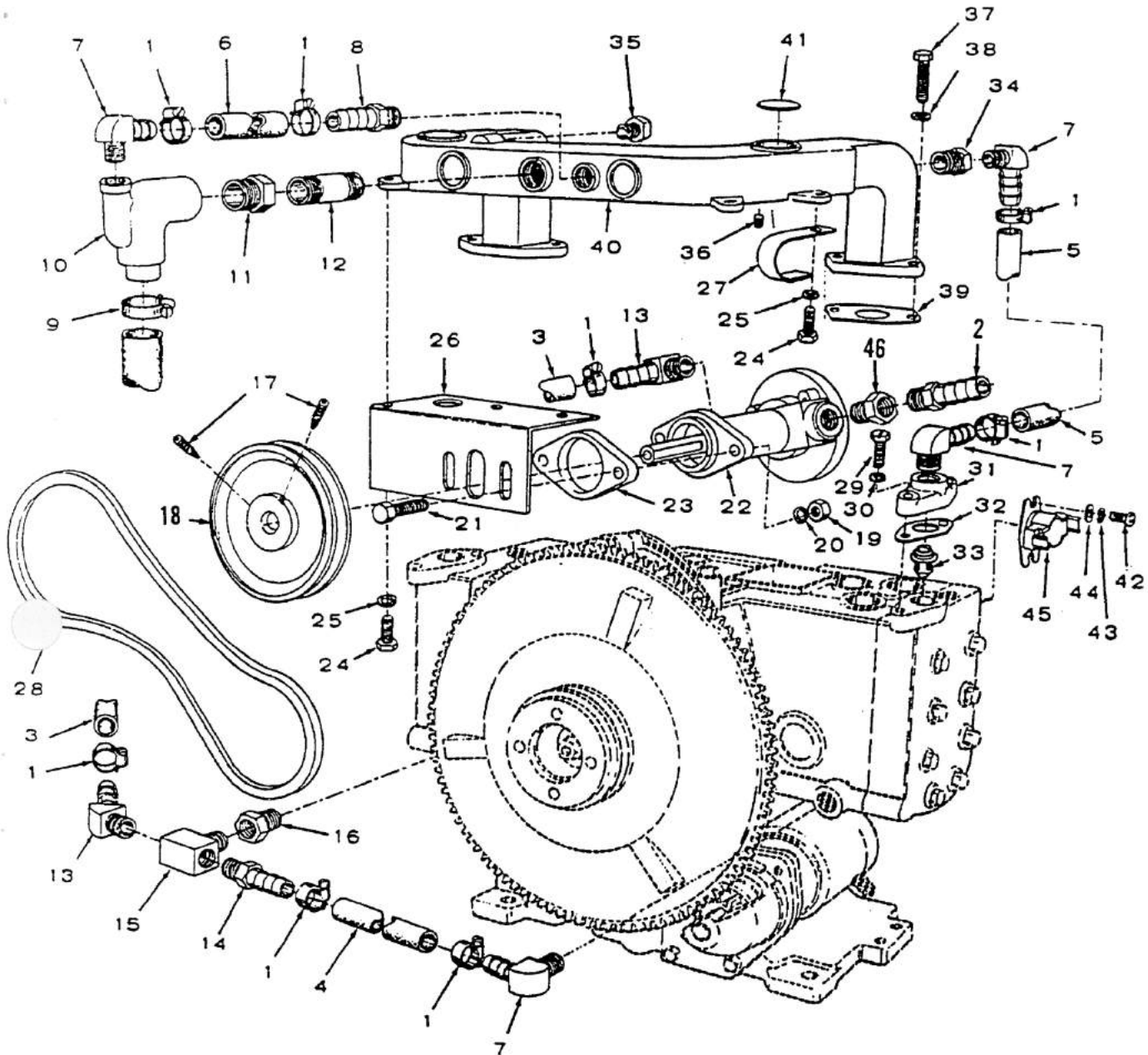


| REF NO. | PART NO. | QTY USED | PART DESCRIPTION                                   | REF NO. | PART NO. | QTY USED | PART DESCRIPTION   |
|---------|----------|----------|--|---------|----------|----------|--|
|         | 146-0439 | 1        | Carburetor, Complete<br>(Includes Mounting Gasket) | 14      | 146-0327 | 1        | Jet Kit, Variable - Optional<br>(High Altitude Application)<br>(Includes Parts Marked +) |
| 1       | 146-0417 | 1        | Choke, Shaft Kit                                   | 15      | 146-0343 | 1        | +Jet, Power - Variable<br>(Includes Gasket)  |
| 2       | 146-0418 | 1        | Shaft, Throttle (Kit)                              | 16      | 146-0340 | 1        | +Retainer, Needle - Power<br>(Includes Gasket)   |
| 3       | 146-0322 | 1        | *Screw and Plug Kit (Includes<br>Parts Marked *)   | 17      | 146-0341 | 1        | +Spring, Needle - Power  |
| 4       | 146-0326 | 1        | *Gasket Kit  | 18      | 146-0342 | 1        | +Needle, Power - Complete  |
| 5       | 146-0325 | 1        | Float Kit  | 19      | 141-0859 | 1        | Gasket, Mounting - Carburetor  |
| 6       | 146-0329 | 1        | *Valve and Seat Kit                                | 20      | 146-0356 | 1        | Repair Kit (Includes Parts<br>Marked *)  |
| 7       | 146-0343 | 1        | Jet, Power (Includes Gasket)                       |         |          |          |  |
| 8       | 146-0420 | 1        | Jet, Idle  |         |          |          |  |
| 9       | 146-0335 | 1        | *Needle, Adjusting - Idle                          |         |          |          |  |
| 10      | 146-0331 | 1        | *Spring, Needle - Idle<br>Adjusting                |         |          |          |  |
| 11      | NFS      | 1        | Intake, Air  |         |          |          |  |
| 12      | NFS      | 1        | Body   |         |          |          |  |
| 13      | 141-0858 | 2        | Gasket, Mounting - Carburetor                      |         |          |          |  |

\* - Parts Included in 146-0356 Repair Kit.  
+ - Parts Included in 146-0327 Variable Jet Kit.  
\* - Part Included in 146-0322 Screw and Plug Kit



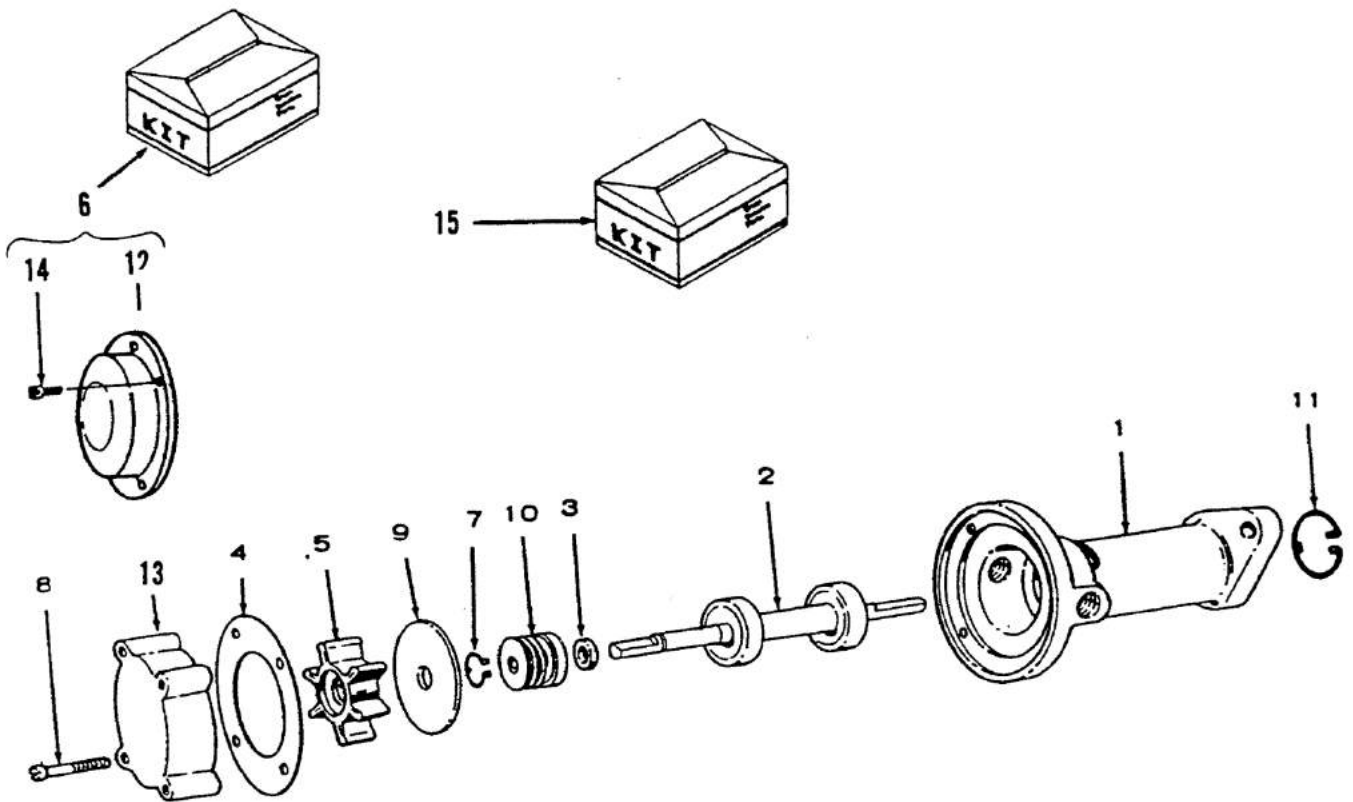
# Cooling - Exhaust System



## Cooling - Exhaust System

| REF NO. | PART NO. | QTY USED | PART DESCRIPTION   | REF NO. | PART NO.    | QTY USED | PART DESCRIPTION                             |
|---------|----------|----------|--|---------|-------------|----------|--|
| 1       | 503-0976 | 12       | Clamp, Hose  | 25      | 850-0040    | 4        | Washer, Lock - Spring (1/4")                 |
| 2       | 503-0827 | 1        | Connector, Hose  | 26      | 131-0270    | 1        | Bracket, Mounting - Water Pump               |
| 3       | 503-0696 | 1        | Hose, Rubber (1/2" ID x 7")  | 27      | 148-0274    | 1        | Bracket, Support - Hose                      |
| 4       | 503-0468 | 1        | Hose, Rubber (1/2" ID x 13-1/2")                                       | 28      | 511-0073    | 1        | Belt, Drive                                  |
| 5       | 503-0975 | 2        | Hose, Rubber (1/2" ID x 6")  | 29      | 800-0007    | 4        | Screw, Cap - Hex Head (1/4-20 x 1")          |
| 6       | 503-0434 | 1        | Hose, Rubber (1/2" ID x 8")  | 30      | 850-0040    | 4        | Washer, Lock - Spring (1/4")                 |
| 7       | 502-0237 | 6        | Elbow, Hose - 90°  | 31      | 309-0185    | 2        | Housing, Thermostat                          |
| 8       | 502-0238 | 1        | Connector, Hose  | 32      | 309-0186    | 2        | Gasket                                       |
| 9       | 503-1141 | 2        | Clamp, Hose  | 33      | 309-0130    | 2        | Thermostat                                   |
| 10      | 155-1058 | 1        | Elbow, Exhaust with Injector Port                                      | 34      | 502-0029-05 | 2        | Reducer, Bushing                             |
| 11      | 505-0023 | 1        | Bushing, Reducer   | 35      | 502-0153    | 1        | Plug, Pipe - Hex Head, Brass                 |
| 12      | 505-1344 | 1        | Nipple, Pipe (Special)   | 36      | 502-0080    | 1        | Plug, Pipe - Square Head, Brass              |
| 13      | 502-0575 | 2        | Elbow, Hose - 45°  | 37      | 800-0029    | 4        | Screw, Cap - Hex Head (5/16-18 x 1-1/8")     |
| 14      | 502-0238 | 1        | Connector, Hose  | 38      | 850-0045    | 4        | Washer, Lock - Spring (5/16")                |
| 15      | 502-0446 | 1        | Tee, Pipe  | 39      | 154-0973    | 2        | Gasket, Manifold - Exhaust                   |
| 16      | 502-0426 | 1        | Bushing  | 40      | 154-2092    | 1        | Manifold, Exhaust (Includes Expansion Plugs) |
| 17      | 803-0062 | 2        | Screw, Set - Socket (5/16-18 x 5/16")                                  | 41      | 517-0041    | 4        | Plug, Expansion - Brass (1-1/4" Dia.)        |
| 18      | 512-0166 | 1        | Pulley, Groove (Includes Set Screw)                                    | 42      | 812-0145    | 2        | Screw, Machine - Round Head (1/4-20 x 5/16") |
| 19      | 870-0154 | 2        | Nut, Hex (1/4-20)  | 43      | 854-0014    | 2        | Washer, Lock - Internal Tooth (1/4)          |
| 20      | 850-0160 | 2        | Washer, Lock - Spring (1/4")   | 44      | 526-0016    | 2        | Washer, Flat (1/4)                           |
| 21      | 816-0090 | 2        | Bolt, Carriage - Zinc Plate, Grade 5 (1/4-20 x 1-1/4")                 | 45      | 309-0257    | 1        | Switch, High Temperature                     |
| 22      | 131-0257 | 1        | Pump, Water - Complete (See Separate Illustration for Component Parts) | 46      | 502-0976    | 1        | Adapter                                      |
| 23      | 131-0173 | 1        | Adapter, Pump  |         |             |          |  |
| 24      | 800-0005 | 4        | Screw, Cap - Hex Head (1/4-20 x 3/4")                                  |         |             |          |  |

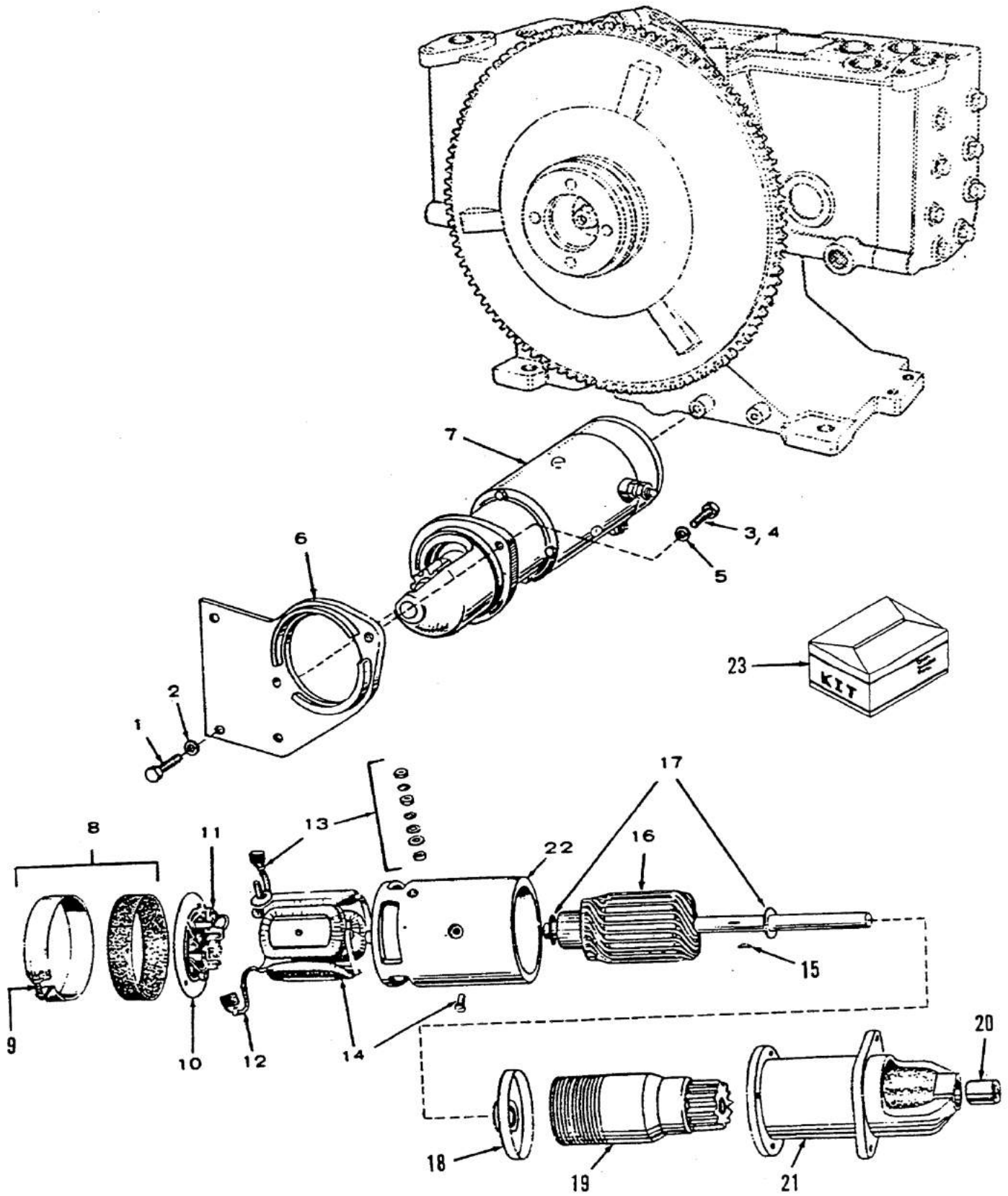
## Water Pump Parts (131-0257)



| REF NO. | PART NO. | QTY USED | PART DESCRIPTION                                     | REF NO. | PART NO. | QTY USED | PART DESCRIPTION  |
|---------|----------|----------|--|---------|----------|----------|---|
|         | 131-0257 | 1        | Pump, Water (Complete)                               | 9       | 131-0217 | 1        | *Plate, Wear - Water Pump   |
| 1       | 131-0212 | 1        | Body, Pump - Water                                   | 10      | 131-0220 | 1        | *Seal Assembly, Rotary  |
| 2       | 131-0222 | 1        | *Shaft Assembly, Pump - Water                        | 11      | 518-0373 | 1        | *Ring, Retaining - Internal   |
| 3       | 131-0219 | 1        | *Slinger, Shaft - Water Pump                         | 12      | NFS      | 1        | #Housing (1/8" Mounting Flange  |
| 4       | 131-0210 | 1        | *Gasket, Housing - Impeller                          | 13      | NFS      | 1        | Housing (1" Mounting Flange<br>for Replacement Order Kit<br>132-0229) |
| 5       | 131-0386 | 1        | *Impeller, Pump - Water                              | 14      | 815-0465 | 4        | #Screw, Machine - Fillister<br>Head (#10-32 x 3/8")                   |
| 6       | 132-0229 | 1        | Housing Kit, Impeller<br>(Includes Parts Marked #)   | 15      | 131-0258 | 1        | Repair Kit, Pump - Water<br>(Includes Parts Marked *)                 |
| 7       | 518-0392 | 1        | *Ring, Retaining - External                          |         |          |          |   |
| 8       | 815-0477 | 4        | Screw, Machine - Fillister<br>Head (#10-32 x 1-1/8") |         |          |          |   |

\* - Parts Included in 131-0258 Repair Kit

# Starter



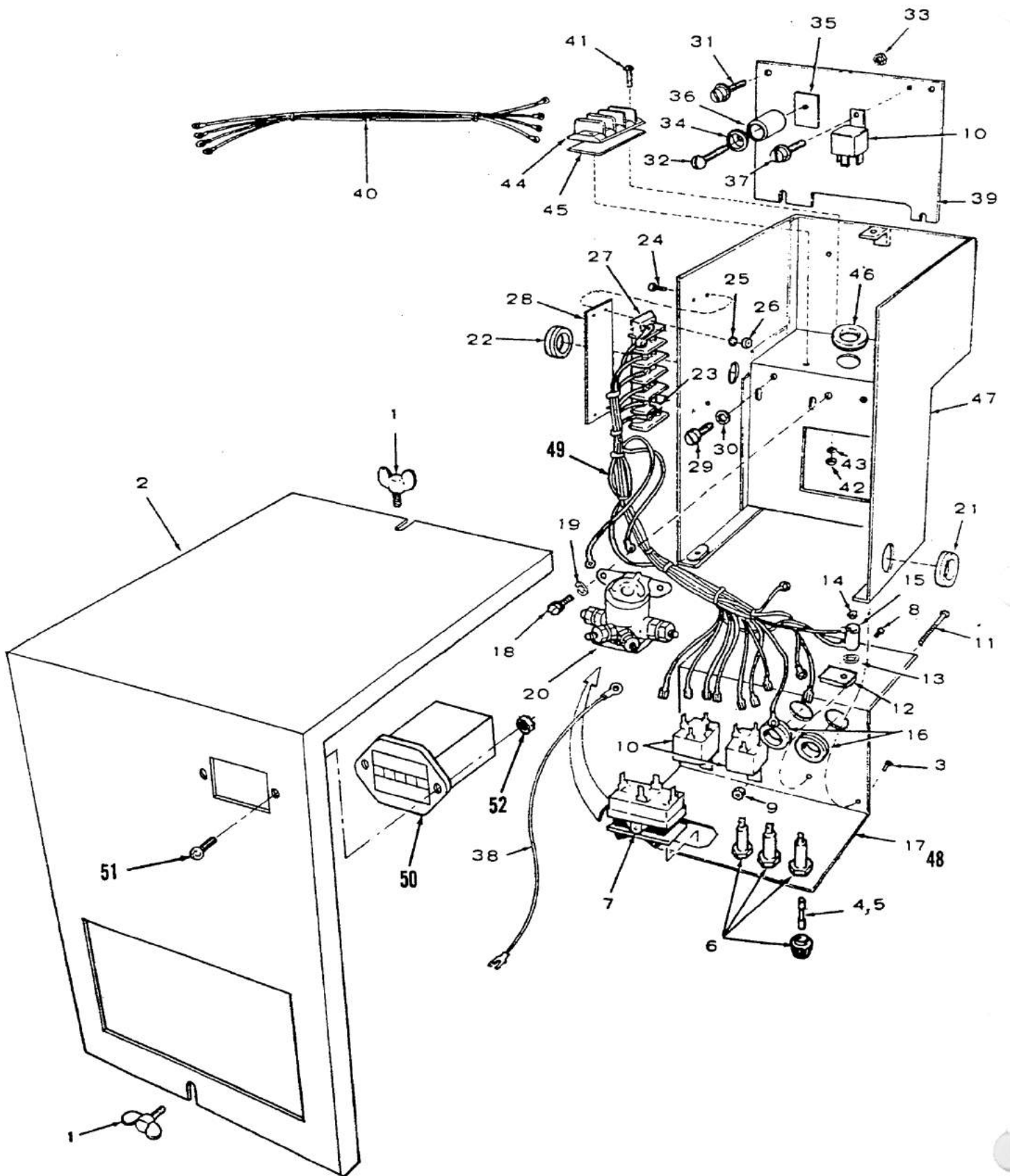
## Starter

| REF NO. | PART NO. | QTY USED | PART DESCRIPTION                                | REF NO. | PART NO. | QTY USED | PART DESCRIPTION                                |
|---------|----------|----------|---|---------|----------|----------|---|
| 1       | 800-0051 | 3        | Screw, Cap - Hex Head<br>(3/8-16 x 1-1/4")      | 11      | 191-1020 | 1        | *Spring Set, Brush                              |
| 2       | 850-0050 | 3        | Washer, Lock - Spring (3/8")                    | 12      | 191-0513 | 1        | *Brush Set                                      |
| 3       | 800-0049 | 1        | Screw, Cap - Hex Head<br>(3/8-16 x 7/8")        | 13      | 191-1022 | 1        | *Terminal Package                               |
| 4       | 800-0050 | 1        | Screw, Cap - Hex Head<br>(3/8-16 x 1")          | 14      | 191-1017 | 1        | *Coil Assembly, Field                           |
| 5       | 850-0050 | 2        | Washer, Lock - Spring (3/8")                    | 15      | 515-0094 | 1        | Key, Woodruff (#6)                              |
| 6       | 191-0508 | 1        | Flange, Mounting - Starter                      | 16      | 191-0517 | 1        | *Armature                                       |
| 7       | 191-1246 | 1        | Starter, Sealed (Includes<br>Parts Marked *)    | 17      | 191-1021 | 1        | *Washer Package, Thrust                         |
| 8       | 191-1267 | 1        | †*Band, Cover (Includes<br>Gasket and Hardware) | 18      | 191-1019 | 1        | *Bearing Assembly, Intermediate                 |
| 9       | 813-0110 | 1        | †Screw, Round Head - Machine<br>(#10-32 x 2")   | 19      | 191-0271 | 1        | *Drive Assembly, Plated                         |
| 10      | 191-1018 | 1        | *Head Assembly, Commutator                      | 20      | 191-0735 | 1        | *Bearing, Sleeve - Bronze                       |
|         |          |          |   | 21      | NFS      | 1        | *Pinion, Housing - (With Drain<br>Hole)         |
|         |          |          |   | 22      | NFS      | 1        | *Frame, Starter - Sealed Type                   |
|         |          |          |   | 23      | 191-1524 | 1        | Band Kit - Starter (Includes<br>Parts Marked †) |

\* - Parts Included in 191-1246 Starter Assembly

† - Parts Included in 191-1524 Starter Band Kit

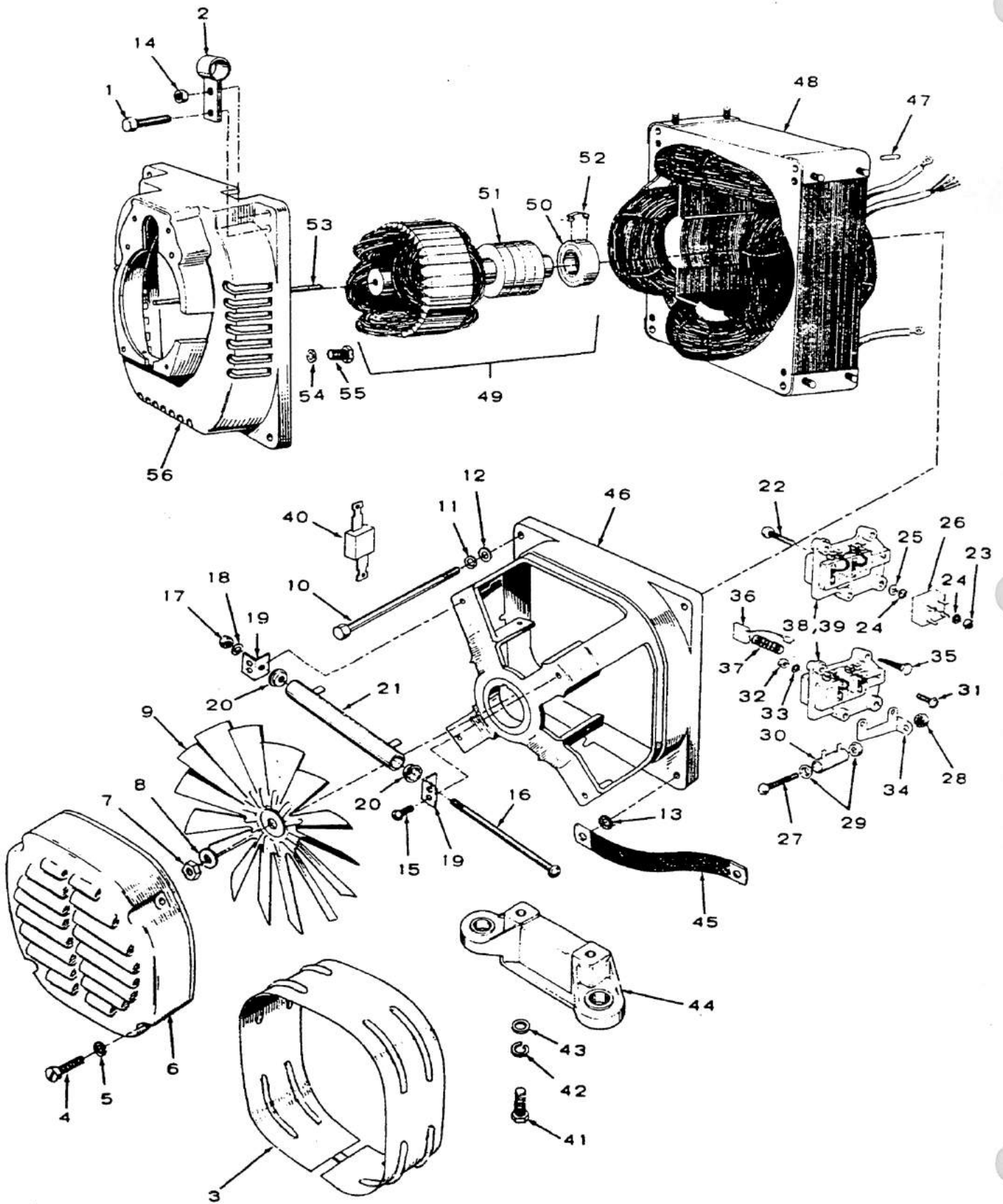
# Control



## Control

| REF NO. | PART NO. | QTY USED | PART DESCRIPTION  | REF NO. | PART NO. | QTY USED | PART DESCRIPTION   |
|---------|----------|----------|---|---------|----------|----------|--|
| 1       | 518-0056 | 2        | Screw, Wing (#10-32 x 1/2")                               | 28      | 332-2103 | 1        | Strip, Marker  |
| 2       | 301-9199 | 1        | Cover, Box - Control<br>(Includes Decal)                  | 29      | 800-0708 | 2        | Screw, Cap - Hex Head<br>(Special)   |
|         | 98-3733  | 1        | Decal, Diagram - Wiring                                   | 30      | 850-0160 | 2        | Washer, Lock - Spring (1/4")   |
| 3       | 821-0004 | 2        | Screw, Self-locking - Hex<br>Washer Head (#10-32 x 5/16") | 31      | 821-0004 | 2        | Screw, Self-locking - Hex<br>Washer Head (#10-32 x 5/16")                      |
| 4       | 321-0174 | 2        | Fuse, Cartridge - 5 Ampere<br>(F1, F2)                    | 32      | 813-0112 | 1        | Screw, Machine - Round Head<br>(#10-32 x 2-1/2")                               |
| 5       | 321-0153 | 1        | Fuse, Cartridge - 5 Ampere<br>(F3)                        | 33      | 870-0131 | 1        | Nut, Hex - With External<br>Tooth Lockwasher (#10-32)                          |
| 6       | 321-0175 | 3        | Holder, Fuse  | 34      | 304-0014 | 1        | Washer, Shoulder - Resistor<br>Centering                                       |
| 7       | 308-0383 | 1        | Switch, Toggle - Start/Stop<br>(S1)                       | 35      | 304-0292 | 1        | Insulator, Mounting - Resistor   |
| 8       | 821-0004 | 2        | Screw, Self-locking - Hex<br>Washer Head (#10-32 x 5/16") | 36      | 304-0060 | 1        | Resistor, Fixed - 1.72-Ohm,<br>25 Watt (R3)                                    |
| 9       | 870-0131 | 2        | Nut, Hex - With External<br>Tooth Lockwasher (#10-32)     | 37      | 815-0350 | 1        | Screw, Tapping - Hex Washer<br>Head (#10 x 3/8")                               |
| 10      | 307-1575 | 3        | Relay, Crank/Run/Stop -<br>K2,3,4                         | 38      | 336-4678 | 1        | Lead, Electrical (Solenoid<br>to Starter)                                      |
| 11      | 812-0087 | 1        | Screw, Machine - Round Head<br>(#8-32 x 1-1/2")           | 39      | 301-4887 | 1        | Plate, Mounting - Relay  |
| 12      | 304-0580 | 1        | Insulator, Mounting - Resistor                            | 40      | 338-1099 | 1        | Harness, Wiring - Generator<br>to Control                                      |
| 13      | 508-0015 | 1        | Insulator, Washer   | 41      | 812-0066 | 2        | Screw, Machine - Round Head<br>(#6-32 x 3/4")                                  |
| 14      | 870-0221 | 1        | Nut, Hex - With External<br>Tooth Lockwasher (#8-32)      | 42      | 860-0005 | 2        | Nut, Hex (#6-32)   |
| 15      | 352-0161 | 1        | Resistor, Fixed - 100-Ohm,<br>5 Watt (R1)                 | 43      | 853-0003 | 2        | Washer, Lock - External<br>Tooth (#6)  |
| 16      | 331-0088 | 2        | Insulator, Bushing  | 44      | 332-0236 | 1        | Block - Terminal - TB2   |
| 17      | 301-4879 | 1        | Panel, Control  | 45      | 332-2117 | 1        | Strip, Marker  |
| 18      | 800-0708 | 2        | Screw, Cap - Hex Head<br>(Special)                        | 46      | 508-0191 | 1        | Insulator, Bushing   |
| 19      | 850-0160 | 2        | Washer, Lock - Spring (1/4")                              | 47      | 301-4634 | 1        | Box, Control   |
| 20      | 307-1617 | 1        | Solenoid (K1)   | 48      | 98-5966  | 1        | Decal, Panel - Control   |
| 21      | 508-0021 | 1        | Grommet, Rubber   | 49      | 338-1264 | 1        | Harness, Wiring - Control<br>(Includes Relays, Resistor<br>and Terminal Block) |
| 22      | 508-0208 | 1        | Insulator, Bushing  | 50      | 302-0885 | 1        | Meter, Time - Running  |
| 23      | 332-1043 | 2        | Jumper, Terminal  | 51      | 815-0385 | 2        | Screw, Machine - Round Head<br>(#6-32 x 1/2")                                  |
| 24      | 812-0065 | 2        | Screw, Machine - Round Head<br>(#6-32 x 5/8")             | 52      | 870-1183 | 2        | Nut, Hex - W/ET (#6-32)  |
| 25      | 854-0006 | 2        | Washer, Lock - Internal Tooth<br>(#6)                     | 53      | 525-0216 | 1        | Paint, Touch-Up - White<br>Enamel (16 oz. Spray Can)                           |
| 26      | 860-0005 | 2        | Nut, Hex (#6-32)  |         |          |          |  |
| 27      | 332-0699 | 1        | Block, Terminal - TB1                                     |         |          |          |  |

# Generator





## Generator

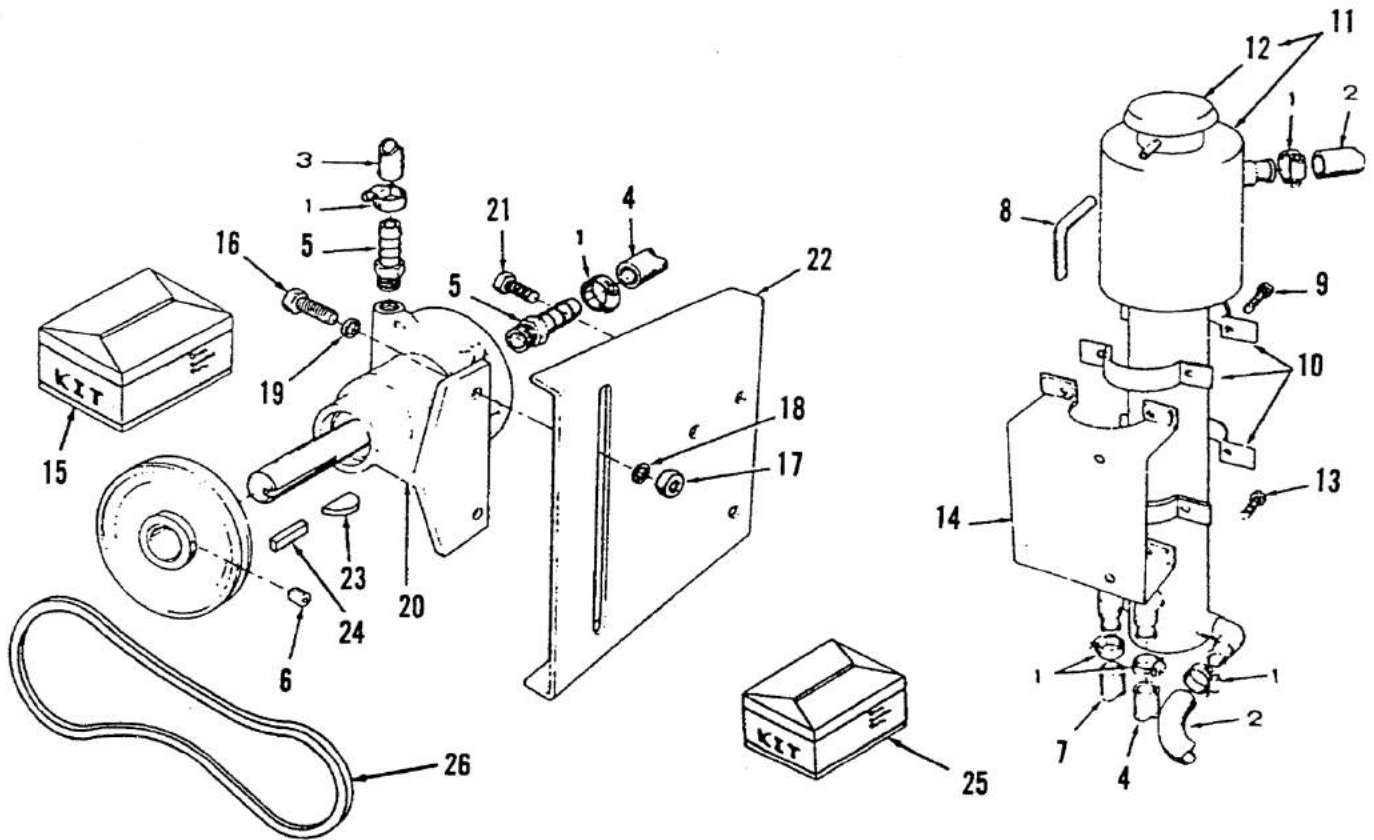
| REF NO. | PART NO. | QTY USED | PART DESCRIPTION                                  | REF NO. | PART NO. | QTY USED | PART DESCRIPTION  |
|---------|----------|----------|---|---------|----------|----------|---|
| 1       | 815-0454 | 4        | Screw, Tapping - Hex Head (5/16-18 x 1-1/4")      | 31      | 812-0066 | 2        | *Screw, Machine - Round Head With External Tooth          |
| 2       | 403-1500 | 2        | Bracket, Lifting                                  |         |          |          | Lockwasher (#6-32 x 3/4")                                 |
| 3       | 234-0362 | 1        | Wrapper, Bell - End                               | 32      | 860-0005 | 2        | *Nut, Hex (#6-32)   |
| 4       | 812-0156 | 2        | Screw, Machine - Round Head (1/4-20 x 1-1/4")     | 33      | 853-0003 | 2        | *Washer, Lock - External Tooth (#6)                       |
| 5       | 850-0040 | 2        | Washer, Lock - Spring (1/4")                      | 34      | 304-0304 | 2        | *Bracket, Mounting - Resistor                             |
| 6       | 232-2107 | 1        | Cover, Fan - Generator                            | 35      | 815-0359 | 15       | Screw, Tapping - Hex Washer Head (#10-32 x 7/8")          |
| 7       | 870-0203 | 1        | Nut, Hex - Hardened (7/16-20)                     | 36      | 214-0096 | 8        | Brush, Ring - Collector                                   |
| 8       | 850-0055 | 1        | Washer, Lock - Spring (7/16")                     | 37      | 212-1232 | 8        | Spring, Brush   |
| 9       | 205-0090 | 1        | Fan, Generator                                    | 38      | 212-0359 | 2        | Block, Brush - Generator (Bottom and Right Side Position) |
| 10      |          |          | Screw, Cap - Hex Head (Through Generator)         |         |          |          |   |
|         | 800-0043 | 4        | 3.5MCCK; 4.0MCCK (5/16-18 x 5")                   | 39      | 212-0360 | 2        | Block, Brush - Generator (Top and Left Side Position)     |
|         | 800-0044 | 4        | 5.5MCCK; 6.5MCCK (5/16-18 x 7-1/2")               | 40      | 357-0030 | 1        | Rectifier, Diode - CR2                                    |
| 11      | 850-0045 | 3        | Washer, Lock - Spring (5/16")                     | 41      | 800-0051 | 2        | Screw, Cap - Hex Head (3/8-16 x 1-1/4")                   |
| 12      | 526-0115 | 4        | Washer, Flat (5/16)                               | 42      | 850-0050 | 2        | Washer, Lock - Spring (3/8")                              |
| 13      | 856-0008 | 1        | Washer, Lock - External Tooth (5/16")             | 43      | 526-0030 | 2        | Washer, Flat (3/8)  |
| 14      | 862-0015 | 4        | Nut, Hex (5/16-18)                                | 44      | 232-2321 | 1        | Support, Generator  |
| 15      | 815-0333 | 2        | Screw, Tapping - Round Head (#10-32 x 1/2")       | 45      | 337-0091 | 1        | Strap, Bond   |
| 16      | 812-0118 | 1        | Screw, Machine - Round Head (#10-24 x 5")         | 46      | 211-0364 | 1        | Bell, End - Generator                                     |
| 17      | 860-0011 | 1        | Nut, Hex (#10-24)                                 | 47      | 516-0182 | 8        | Pin, Dowel (1/4" OD x 3/4")                               |
| 18      | 850-0030 | 1        | Washer, Lock - Spring (#10)                       | 48      |          |          | Stator, Generator   |
| 19      | 304-0706 | 2        | Bracket, Mounting - Resistor                      |         | 220-3050 | 1        | 3.5MCCK; 4.0MCCK - Key 1                                  |
| 20      | 304-0015 | 2        | Washer, Centering - Resistor                      |         | 220-3049 | 1        | 5.5MCCK; 6.5MCCK - Key 2                                  |
| 21      | 353-0092 | 1        | Resistor, Fixed                                   | 49      |          |          | Rotor, Generator (Includes Bearing and Collector Rings)   |
| 22      | 815-0341 | 1        | Screw, Machine - Round Head (#10-32 x 1")         |         | 201-2704 | 1        | 6.5MCCK - Key 2   |
| 23      | 871-0010 | 1        | Nut, Hex (#10-32)                                 |         | 201-2705 | 1        | 5.5MCCK - Key 2   |
| 24      | 853-0008 | 2        | Washer, Lock - External Tooth (#10)               |         | 201-2706 | 1        | 4.0MCCK - Key 1   |
| 25      | 526-0049 | 2        | Washer, Flat (#10)                                |         | 201-2707 | 1        | 3.5MCCK - Key 1   |
| 26      | 305-0653 | 1        | Rectifier, Bridge - CR1                           | 50      | 510-0047 | 1        | Bearing, Ball   |
| 27      | 813-0112 | 2        | *Screw, Machine - Round Head (#10-32 x 2-1/2")    | 51      | 204-0110 | 1        | Ring, Collector   |
| 28      | 870-0131 | 2        | *Nut, Hex with External Tooth Lockwasher (#10-32) | 52      | 232-0596 | 1        | Clip, Retaining - Bearing                                 |
| 29      | 304-0014 | 4        | †Washer, Shouldered - Resistor Centering          | 53      |          |          | Stud, Through - Rotor                                     |
| 30      | 353-0091 | 2        | *Resistor, Fixed                                  |         | 520-0732 | 1        | 3.5MCCK; 4.0MCCK - Key 1                                  |
|         |          |          |   |         | 520-0733 | 1        | 5.5MCCK; 6.5MCCK - Key 2                                  |
|         |          |          |   | 54      | 850-0050 | 4        | Washer, Lock - Spring (3/8")                              |
|         |          |          |   | 55      | 800-0050 | 4        | Screw, Cap - Hex Head (3/8-16 x 1")                       |
|         |          |          |   | 56      | 231-0164 | 1        | Adapter, Generator to Engine                              |

\* - Prior to Serial #399168 During Spec H Quantity-(1)  
 † - Prior to Serial #399168 During Spec H Quantity-(2)

## OPTIONAL PARTS SECTION

This section contains illustrated parts listing of factor installed options for the generator sets. Options may not be applicable to all models; for field conversions additional parts are usually required. Optional parts listed in this section are in addition or in place of those shown in the standard parts section.

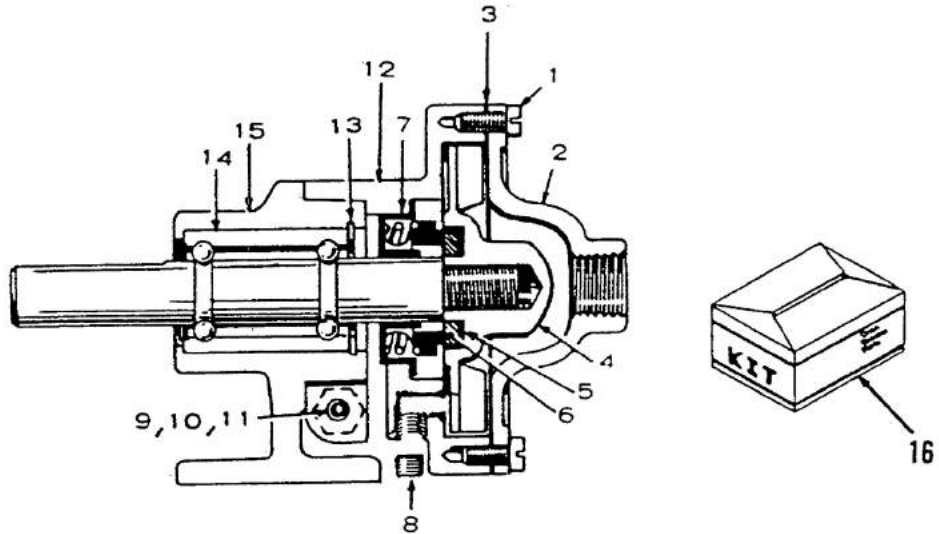
# Heat Exchanger Cooling System



| REF NO. | PART NO. | QTY USED | PART DESCRIPTION  | REF NO. | PART NO. | QTY USED | PART DESCRIPTION  |
|---------|----------|----------|---|---------|----------|----------|---|
| 1       | 503-0976 | 6        | +Clamp, Hose  | 16      | 800-0703 | 2        | +Screw, Cap - Hex Head (Special) (1/4-20 x 1")                              |
| 2       | 503-0978 | 2        | +Hose, Rubber (1/2" ID x 36")                                     | 17      | 870-0154 | 2        | +Nut, Hex (1/4-20)  |
| 3       | 503-1448 | 1        | +Hose, Rubber (1/2" ID x 11-1/2")                                 | 18      | 850-0160 | 2        | +Washer, Lock - Spring (1/4")   |
| 4       | 503-0434 | 2        | +Hose, Rubber (1/2" ID x 8")                                      | 19      | 526-0015 | 2        | +Washer, Flat (1/4)   |
| 5       | 502-0238 | 2        | +Connector, Hose  | 20      | 132-0110 | 1        | +Pump, Water (See Separate Illustration for Parts)                          |
| 6       | 803-0062 | 3        | +Screw, Set - Socket (5/16-18 x 5/16")                            | 21      | 821-0016 | 3        | +Screw, Self-locking - Hex Head (5/16-18 x 3/4")                            |
| 7       | 503-0713 | 1        | +Hose, Rubber (1/2" ID x 25-1/2")                                 | 22      | 130-1397 | 1        | +Bracket, Mounting - Water Pump   |
| 8       | 503-0492 | 1        | +Hose, Rubber (5/16" ID x 26")                                    | 23      | 515-0227 | 1        | Key Kit, Woodruff (Kit) (Use on 132-0110 Water Pumps with Key Way on Shaft) |
| 9       | 821-0013 | 4        | +Screw, Self-locking - Hex Head (1/4-20 x 1")                     | 24      | 515-0249 | 1        | +Key, Machine (Use on 132-0179 Water Pump Assembly)                         |
| 10      | 130-0632 | 4        | +Strap, Retaining - Heat Exchanger                                | 25      | 130-1429 | 1        | Conversion Kit, Exchanger - Heat  |
| 11      | 130-1394 | 1        | +Exchanger, Heat (Includes Cap)                                   | 26      | 511-0039 | 1        | +Belt, Drive  |
| 12      | 130-0824 | 1        | +Cap, Pressure (14 lb)  |         |          |          |   |
| 13      | 821-0010 | 2        | +Screw, Self-locking - Hex Head (1/4-20 x 1/2")                   |         |          |          |   |
| 14      | 130-1393 | 1        | +Plate, Mounting - Heat Exchanger                                 |         |          |          |   |
| 15      |          |          | Pulley Kit, Pump - Water (Includes Set Screw)                     |         |          |          |   |
|         | 512-0134 | 1        | Sets with Flat Area on Water Pump Shaft (Includes 1 Set Screw)    |         |          |          |   |
|         | 132-0252 | 1        | +Sets with Keyed Area on Water Pump Shaft (Includes 2 Set Screws) |         |          |          |   |

+ - Parts Included in 130-1429 Heat Exchanger Kit

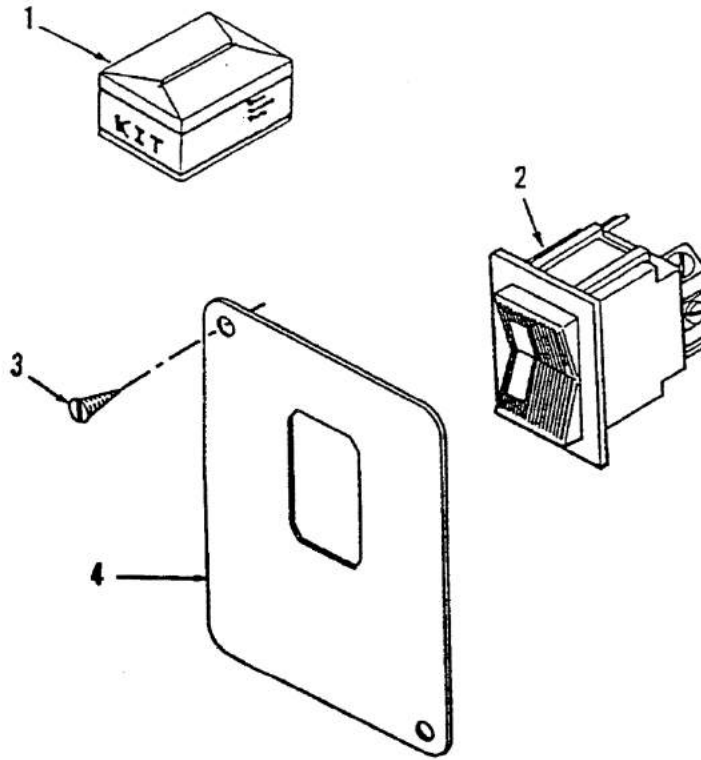
## Water Pump Parts (132-0110)



| REF NO. | PART NO. | QTY USED | PART DESCRIPTION                         | REF NO. | PART NO. | QTY USED | PART DESCRIPTION                     |
|---------|----------|----------|--|---------|----------|----------|--------------------------------------|
|         | 132-0110 | 1        | Pump, Water                              | 10      | 132-0139 | 1        | Washer, Lock - Spring (Special)      |
| 1       | 132-0113 | 6        | *Screw, Cap - Hex Head Slotted (Special) | 11      | 132-0140 | 1        | Nut, Hex (Special)                   |
| 2       | 132-0137 | 1        | Cover, Pump - Water                      | 12      | NFS      | 1        | Body, Pump                           |
| 3       | 132-0112 | 1        | *Gasket                                  | 13      | 132-0132 | 1        | Ring, Retaining                      |
| 4       | 132-0114 | 1        | *Impeller                                | 14      | 132-0225 | 1        | *Bearing & Shaft Assembly            |
| 5       | 132-0092 | 1        | *Seat                                    | 15      | 132-0142 | 1        | Pedestal, Pump                       |
| 6       | 132-0091 | 1        | *Ring, Wear                              | 16      | 132-0111 | 1        | Repair Kit (Includes Parts Marked *) |
| 7       | 132-0101 | 1        | *Seal Assembly                           |         |          |          |                                      |
| 8       | 132-0141 | 1        | Plug, Pipe - Socket Drive                |         |          |          |                                      |
| 9       | 132-0138 | 1        | Screw, Cap - Hex Head (Special)          |         |          |          |                                      |

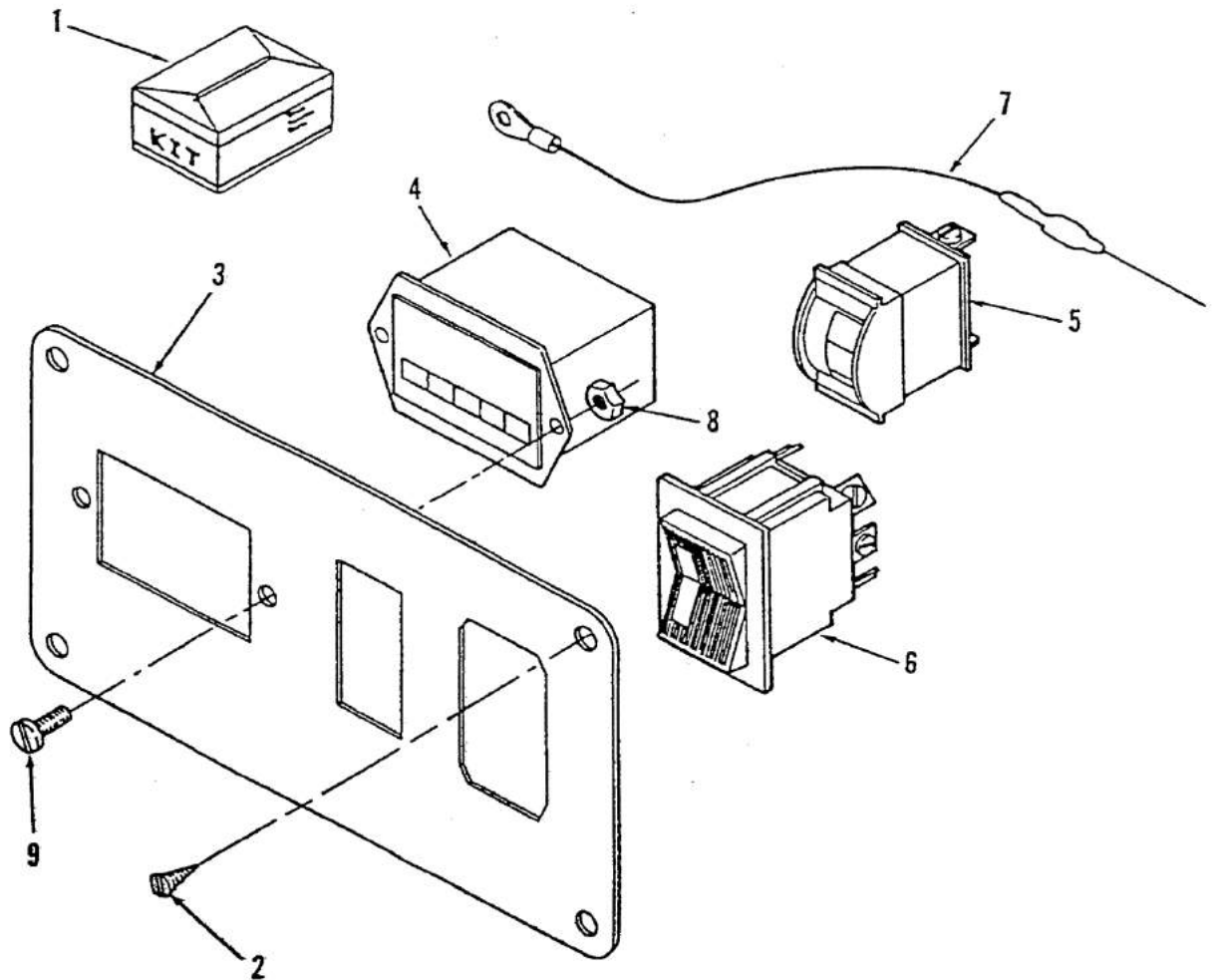
\* - Parts Included in 132-0111 Repair Kit

## Remote Control Panel (Basic)



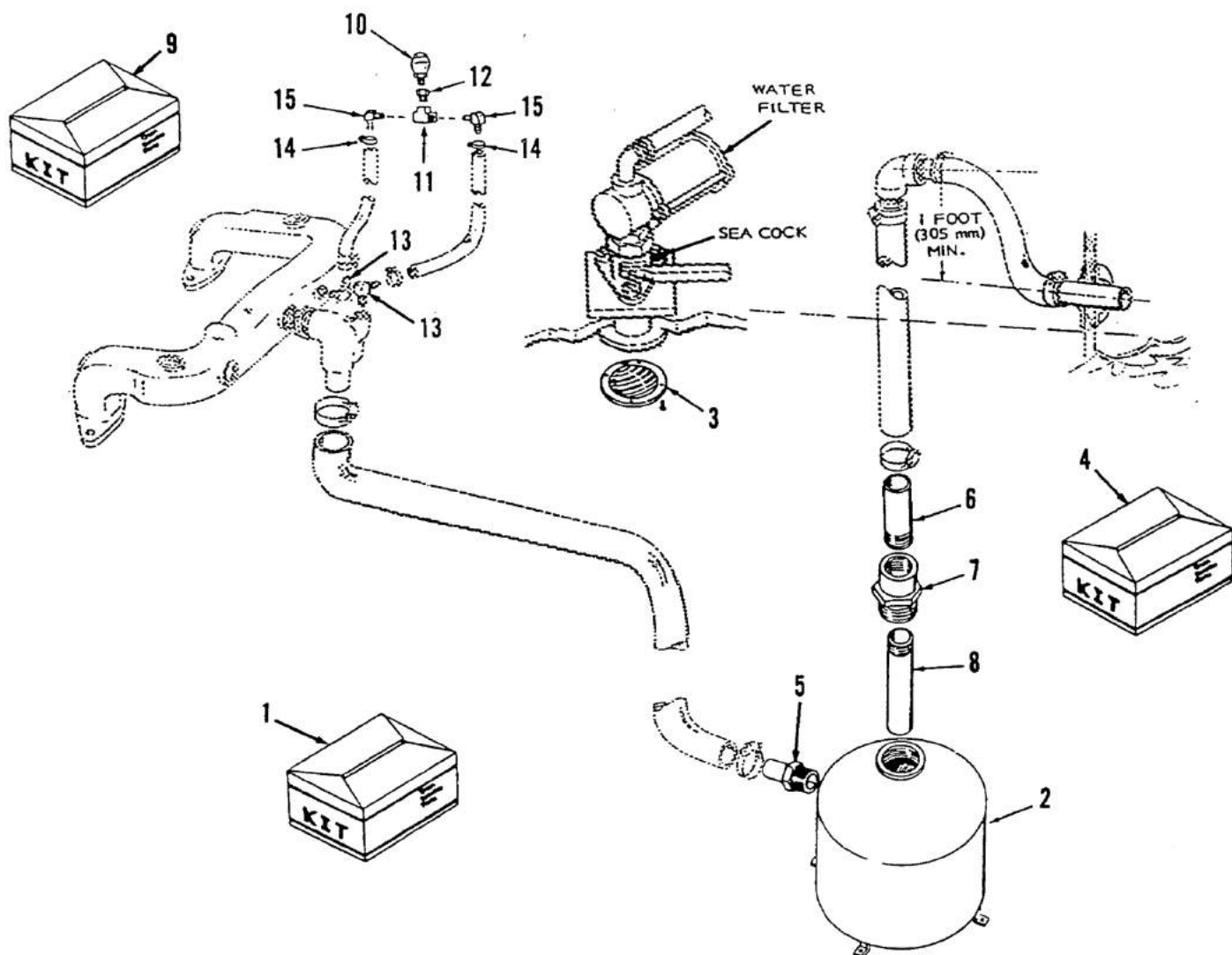
| REF NO. | PART NO. | QTY USED | PART DESCRIPTION   | REF NO. | PART NO. | QTY USED | PART DESCRIPTION  |
|---------|----------|----------|--|---------|----------|----------|---|
| 1       | 300-3468 | 1        | Panel Kit, Control - Remote<br>(Includes Parts Marked *) | 4       | 319-0491 | 1        | *Panel, Control (Does Not<br>Include Front & Back Decals) |
| 2       | 308-0827 | 1        | *Switch, Rocker  |         | 98-5946  | 1        | Decal, Panel - Rear                                       |
| 3       | 815-0380 | 2        | *Screw, Wood - Oval Head<br>Cross Recessed (#5 x 1/2")   |         | 98-5949  | 1        | Decal, Panel - Front                                      |

## Remote Control Panel (Deluxe)



| REF NO. | PART NO. | QTY USED | PART DESCRIPTION                                       | REF NO. | PART NO. | QTY USED | PART DESCRIPTION                           |
|---------|----------|----------|--|---------|----------|----------|--|
| 1       | 300-3467 | 1        | Panel Kit, Control - Remote (Includes Parts Marked *)  | 4       | 302-0885 | 1        | *Meter, Totalizing - Time                  |
| 2       | 815-0380 | 4        | *Screw, Wood - Oval Head, Cross Recessed (#5 x 1/2")   | 5       | 302-0888 | 1        | *Meter, Condition - Battery                |
| 3       | 319-0492 | 1        | *Panel, Control (Does Not Include Front & Back Decals) | 6       | 308-0827 | 1        | *Switch, Rocker                            |
|         | 98-5944  | 1        | Decal, Panel - Rear                                    | 7       | 359-0034 | 1        | *Diode and Lead Assembly                   |
|         | 98-5946  | 1        | Decal, Panel - Front                                   | 8       | 870-0183 | 2        | *Nut, Hex (#6-32)                          |
|         |          |          |  | 9       | 815-0385 | 2        | *Screw, Machine - Round Head (6-32 x 1/2") |

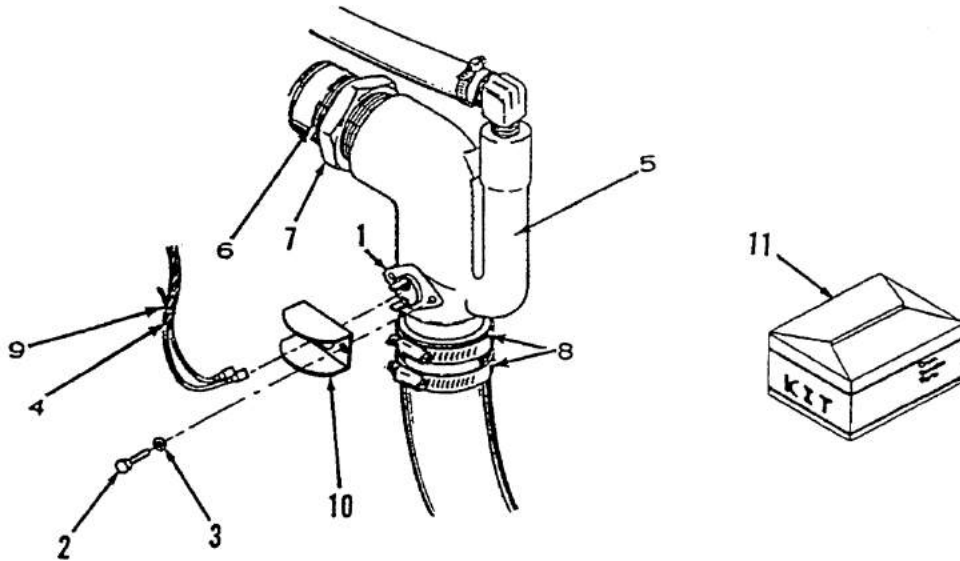
## Aqualift Exhaust System



| REF NO. | PART NO. | QTY USED | PART DESCRIPTION   | REF NO. | PART NO. | QTY USED | PART DESCRIPTION           |
|---------|----------|----------|--|---------|----------|----------|----------------------------|
| 1       | 155-1004 | 1        | Muffler Kit, Aqualift (Includes Parts Marked *)                    | 8       | 505-0632 | 1        | *Nipple, Pipe - Half, PVC  |
| 2       | NFS      | 1        | *Muffler, Aqualift (For Replacement, Order Kit 155-1004)           | 9       | 155-0950 | 1        | Relief Kit, Break - Siphon |
| 3       | 155-1002 | 1        | *Strainer, Water - Thru Hull                                       | 10      | 504-0062 | 1        | +Valve, Relief - Vacuum    |
| 4       | 155-0955 | 1        | *Muffler, Aqualift Mounting Kit, Muffler (Includes Parts Marked *) | 11      | 502-0090 | 1        | +Tee, Pipe - Brass         |
| 5       | 155-1121 | 1        | *Inlet Assembly, Epoxy Coated                                      | 12      | 502-0270 | 1        | +Adapter, Pipe             |
| 6       | 505-0721 | 1        | *Nipple, Pipe - Half   | 13      | 502-0237 | 2        | +Elbow, Pipe to Hose       |
| 7       | 505-0635 | 1        | *Bushing, Double Tapped  | 14      | 503-0446 | 2        | Clamp, Hose (1/2")         |
|         |          |          |  | 15      | 505-1346 | 2        | +Elbow, Hose - 90°         |

\* - Parts Included in Kit #155-1004  
 \* - Parts Included in Package #155-0955  
 + - Parts Included in Kit #155-0950

## High Exhaust Temperature Cut-Off Switch

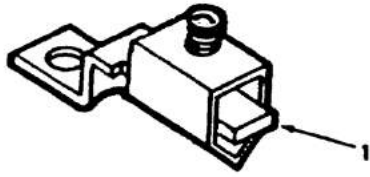


| REF NO. | PART NO. | QTY USED | PART DESCRIPTION                            | REF NO. | PART NO. | QTY USED | PART DESCRIPTION                                 |
|---------|----------|----------|---|---------|----------|----------|--|
| 1       | 309-0420 | 1        | *Switch, Cut-Off - High Exhaust Temperature | 8       | 503-1141 | 2        | *Clamp, Hose                                     |
| 2       | 815-0569 | 2        | *Screw, Crescent (6-32 x 5/16")             | 9       | 332-1794 | 1        | *Tie, Wire                                       |
| 3       | 854-0008 | 2        | *Washer, Lock (IT #6)                       | 10      | 309-0501 | 1        | *Shield, Switch - Temperature                    |
| 4       | 338-1413 | 1        | *Harness, Wiring                            | 11      | 309-0421 | 1        | Switch Kit, Cut-Off<br>(Includes Parts Marked *) |
| 5       | 155-1058 | 1        | *Elbow, Exhaust                             |         |          |          |  |
| 6       | 505-1344 | 1        | *Nipple, Pipe                               |         |          |          |  |
| 7       | 505-0023 | 1        | *Reducer, Bushing                           |         |          |          |  |

\* - Parts Included in 309-0421 High Exhaust Temperature Cut-Off Switch



## Miscellaneous Optional Parts



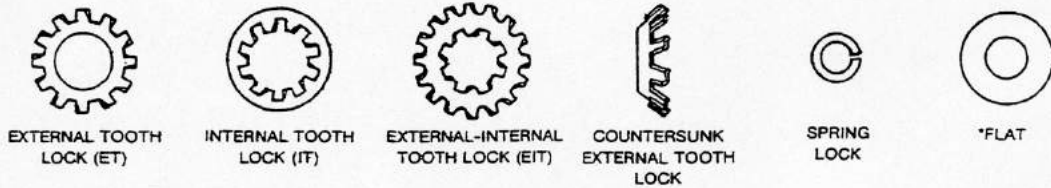
| REF NO. | PART NO. | QTY USED | PART DESCRIPTION                   |
|---------|----------|----------|------------------------------------|
| 1       | 332-0142 | 1        | Terminal, Solderless               |
| 2       | 110-1827 | 4        | Guide, Valve (To Stop Oil Seepage) |

| REF NO. | PART NO. | QTY USED | PART DESCRIPTION |
|---------|----------|----------|------------------|
|---------|----------|----------|------------------|

# HARDWARE IDENTIFICATION

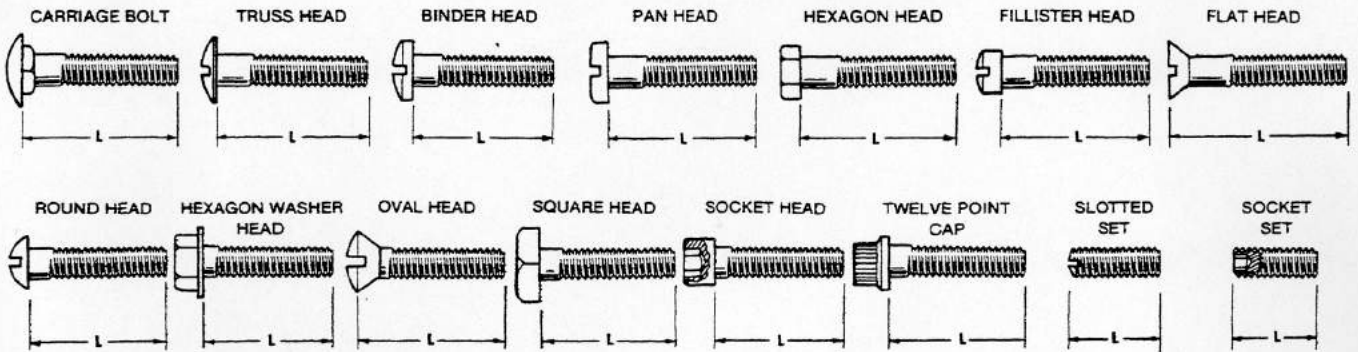
Illustrated hardware items are only for identification purposes. All hardware items listed throughout this parts catalog are steel SAE grade five (5) or lower (zinc plated with clear chromate dip) unless parts description indicates differently. All dimensions are in inches.

## WASHER TYPES



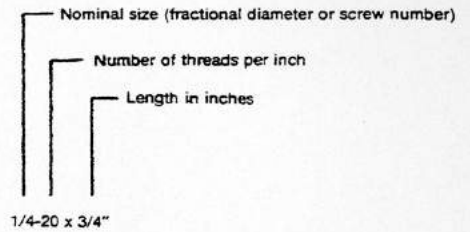
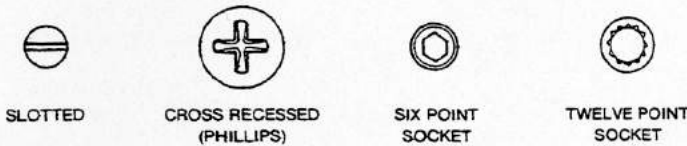
\* - Flat washer dimensions given are: Inside Diameter (ID), Outside Diameter (OD) and Thickness (Thk).

## BOLT AND SCREW TYPES

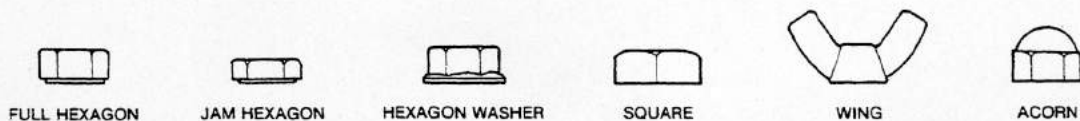


L - Measure length between these points.

### INTERNAL DRIVE TYPES



## NUT TYPES





Onan Corporation  
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Minneapolis, Minnesota 55432

Telephone: (612) 574-5000  
Telex: 275477  
Cable ONAN