Airborne
Air & Fuel Products

Service Letter

⚠ WARNING

This Service Letter contains information **CRITICAL TO PILOT AND PASSENGER SAFETY!** Read **COMPLETELY** and comply with all directives immediately.

Service Letter Number: 72 (Supersedes Service Letters 17B, 38A, 43A, 53C and 54D)

Date: February 15, 2008

Subject: All Parker/Airborne Engine-Driven Air Pumps are beyond their Mandatory Replacement Time and must be removed from service.

Applicability:

This Service Letter applies to all aircraft using Parker/Airborne Engine-Driven Air Pumps in pneumatic systems which power critical gyro flight instruments (e.g. artificial horizon instruments, directional indicator instruments) and/or deice boots. This Service Letter applies to **ALL** Parker/Airborne Engine-Driven Air Pump model numbers. For your reference these model numbers are:

> **Any model beginning with 200 through 216, E211 through E212, 220 through 242, 420 through 442, 832, 842, 28C214 or 28C444.**

Background:

The pneumatic system which powers gyro flight instruments and/or deice boots on aircraft which fly Instrument Flight Rules (IFR) is critical to the safety of the pilot and the passengers. If any component of the pneumatic system fails during Instrument Meteorological Conditions (IMC) and the pilot is not proficient in using partial panel instruments, the pilot may become spatially disoriented and may not be able to control the aircraft. This could result in the loss of life for the pilot and the passengers.

Parker/Airborne ceased the manufacture of Engine-Driven Air Pumps in February 2002. Parker/Airborne Engine-Driven Air Pumps have a Mandatory Replacement Time of 6 years from date of manufacture. **Thus, ALL Parker/Airborne Engine-Driven Air Pumps are beyond their Mandatory Replacement Time and must be removed from service.**

Compliance:

Compliance with the following is **mandatory.**

Within the next 30 days, inspect your aircraft for Parker/Airborne Engine-Driven Air Pumps. **IF YOUR AIRCRAFT'S PNEUMATIC SYSTEM CONTAINS A PARKER/AIRBORNE ENGINE-DRIVEN AIR PUMP, REMOVE THE UNIT BEFORE NEXT FLIGHT.** In order to ensure continued compliance with this Service Letter, continue to inspect your aircraft for Parker/Airborne Engine-Driven Air Pumps during subsequent annual inspections. Contact the manufacturer of your aircraft for the appropriate replacement for your Parker/Airborne engine-driven air pump.

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Approval:

The technical content of this Service Letter that affects Type Design is FAA approved.

Reminder:

Parker/Airborne realizes that owners and operators of aircraft have the choice of purchasing a new or overhauled/ reconditioned engine-driven air pump. However, aircraft owners/operators/pilots should be aware of the increased risk of pneumatic system failure when using overhauled or reconditioned Parker/Airborne engine-driven air pumps. An overhauled or reconditioned Parker/Airborne engine-driven air pump **must not** be used. Any time a Parker/Airborne engine-driven air pump is removed, contact the manufacturer of your aircraft for the appropriate replacement.

Refer to: Service Letter Number 66 - Mandatory Inspection and Replacement of Overhauled or Field Reconditioned Parker/Airborne Air Pumps, Pneumatic System Valves and Check Valve Manifolds.

Superseded Parker/Airborne Service Letters:

The following Parker/Airborne Service Letters are superseded by this Service Letter Number 72, the removal of all Parker/Airborne engine-driven air pumps from service:

Service Letter Number 17B – Dry Air Pump Coupling Service Life Limitation.

Service Letter Number 38A – Mandatory Replacement of Airborne Engine-Driven Air Pumps that Have Been Subjected to Sudden Engine Stoppage.

Service Letter Number 43A – Mandatory Inspection Intervals for Airborne Air Pumps for Oil Contamination and Mandatory Replacement of OIL Contaminated Air Pumps.

Service Letter Number 53C – Mandatory Inspection Intervals and Replacement Times for 28C444CW-6 Engine Driven Clutch Operated Air Pumps.

Service Letter Number 54D – Mandatory Inspection Intervals and Replacement Times for 28C214CW-2 Engine Driven Clutch Operated Air Pumps.

Any questions concerning this Service Letter or requests for copies of any Airborne Service Letters (can also be printed from Airborne's website) should be directed to Airborne's Customer Support Team as follows:

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Service Letter No: 66

Date: January 31, 2007

Subject: **Mandatory Inspection and Replacement** for Overhauled or Reconditioned Parker/Airborne Air Pumps, Pneumatic System Valves and Check Valve Manifolds

Applicability:

This Service Letter applies to all aircraft with pneumatic systems powering critical flight instruments (e.g. pneumatic powered artificial horizon and/or pneumatic powered directional indicator) and/or deice boots. This Service Letter applies to all Parker/Airborne component model numbers. A list of these model numbers is provided below.

Applicable Parker/Airborne Model Numbers:

Air Pumps:
Any model beginning with 211 through 216, 241 through 242, 441 through 442, 842, 28C214, 28C444, 4A2 or 4A3.

Check Valves, Check Valve Manifolds and Regulator Check Valve Manifolds:
Any model beginning with 1H5, 1H24, 1H37, 2H24 and models 2H3-39 or 2H3-47.

Vacuum Regulators and Pressure Regulators:
Any model number beginning with 2H3 or 2H30.

Pneumatic System Valves:
Any model beginning with 1H27, 1H43, 1H44, 1H47, 1H51, 1H52, 1H53, 2H22, 2H48, 2H59 or 2H86.

Background:

The pneumatic system which powers flight instruments and/or deice boots on aircraft which fly Instrument Flight Rules (IFR) is critical to the safety of the pilot and the passengers. If any component of the pneumatic system fails during Instrument Meteorological Conditions (IMC) and the pilot is not proficient in using partial panel instruments, the pilot may become spatially disoriented and may not be able to control the aircraft, resulting in loss of life for the pilot and the passengers.

Parker/Airborne pneumatic components are **not** designed to be overhauled or reconditioned, and **no** parts of any of these components (including the outer housing and any of the internal parts) can be reused. Parker/Airborne has **not** and **does not** overhaul or recondition pneumatic components. Parker/Airborne **does not** supply any parts, drawings, instructions, specifications or approvals for the overhaul or recondition of its pneumatic components.

The parts comprising Parker/Airborne air pumps and/or pneumatic components were designed and manufactured with tolerances to specific proprietary dimensions and distinct materials to meet performance specifications. These parts were individually measured, categorized and placed in matched sets to ensure the component meets

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pneumatic system performance requirement. Therefore, Parker/Airborne parts only precisely fit with other Parker/Airborne parts of the same matched set and manufacture.

Overhauled and reconditioned air pumps and/or pneumatic components are **not** authorized by Parker/Airborne and can include mixed parts from various vintage Parker/Airborne components, parts made by others, and parts from various components with undocumented history and undocumented traceability. Overhauled or reconditioned Parker/Airborne pneumatic components **must not** be used and can result in the loss or inadequate operation of gyros and deice boot inflation.

SAFETY WARNING:

FAILURE OF AN OVERHAULED OR RECONDITIONED PARKER/AIRBORNE PNEUMATIC COMPONENT ESPECIALLY WHILE FLYING IN INSTRUMENT METEOROLOGICAL CONDITIONS (IMC) CAN LEAD TO SPATIAL DISORIENTATION OF THE PILOT AND SUBSEQUENT LOSS OF AIRCRAFT CONTROL RESULTING IN DEATH, BODILY INJURY OR PROPERTY DAMAGE. OVERHAULED OR RECONDITIONED PARKER/AIRBORNE PNEUMATIC COMPONENTS **MUST NOT** BE USED AND **MUST BE** REPLACED IMMEDIATELY WITH A NEW COMPONENT.

Compliance:

Compliance with the following is **mandatory**.

Within the next 30 days, inspect your aircraft for overhauled or reconditioned Parker/Airborne Pneumatic Components. In order to ensure continued compliance with this Service Letter, continue to inspect your aircraft for overhauled or reconditioned Parker/Airborne components during the annual aircraft inspection. If your aircraft's pneumatic system contains an overhauled or reconditioned Parker/Airborne Pneumatic Component, replace the unit with a NEW one before the aircraft is flown IFR.

A. How To Identify Overhauled Or Reconditioned Parker/Airborne Air Pumps.

The information below should be used as a guide in determining if you have an overhauled or reconditioned Parker/Airborne air pump. Refer to the applicability section on the first page of this Service Letter for applicable Parker/Airborne model numbers.

1. **Nameplates** – Overhaulers, in most cases, remove the Parker/Airborne nameplate and install one of their own design which indicates "Manufacturer: Airborne" and may or may not identify the overhauler. Parker/Airborne nameplates will always have either an Airborne or Parker Logo. Overhaulers assign their own serial numbers which have a different format than Parker/Airborne. Parker/Airborne serial numbers consist of a combination of numbers and letters. The first numbers (1 through 12) indicate the month of manufacture (January through December). The next or two letters indicate the year of manufacture followed by the unit number.

   Parker/Airborne example: 11AU123. Overhauler examples: 38956, 25AK364

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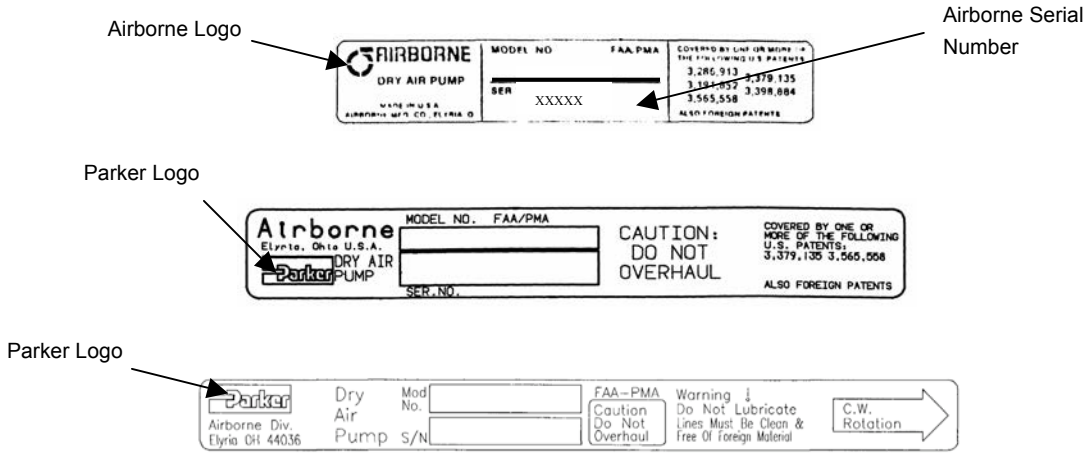
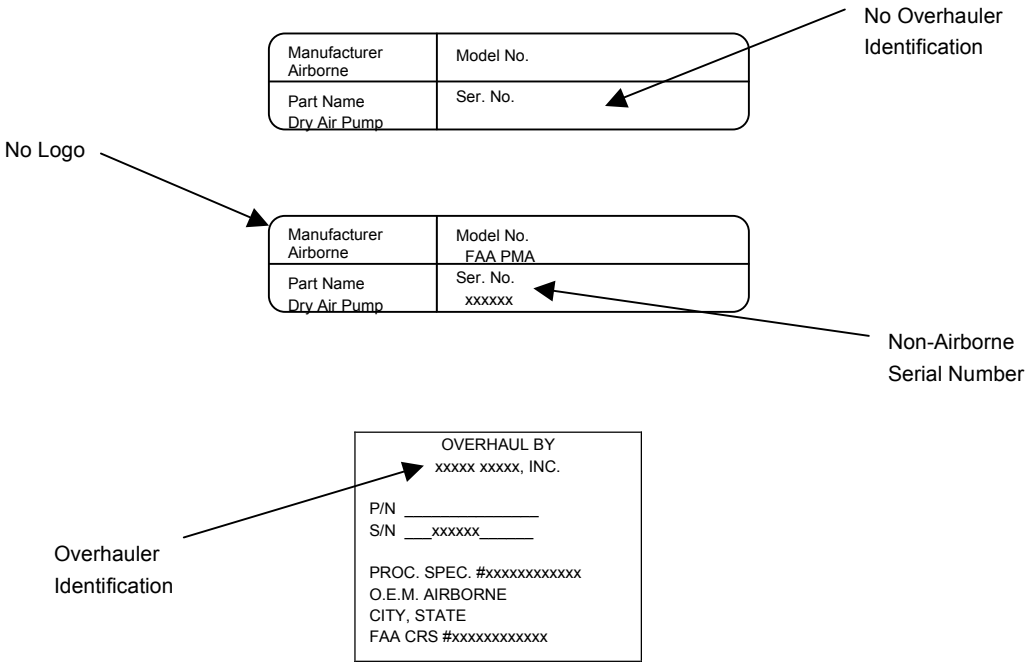
Typical Parker/Airborne air pump nameplates



Typical overhauled or reconditioned nameplates



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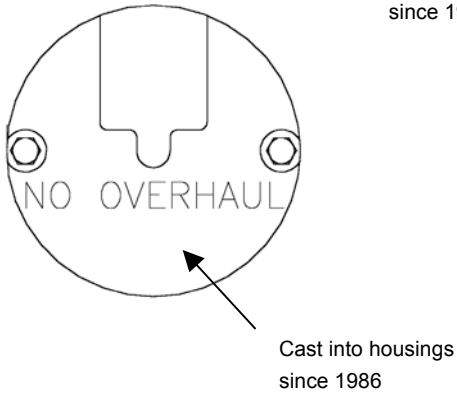
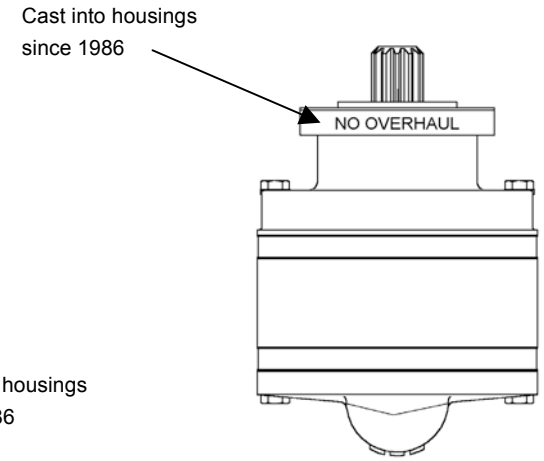
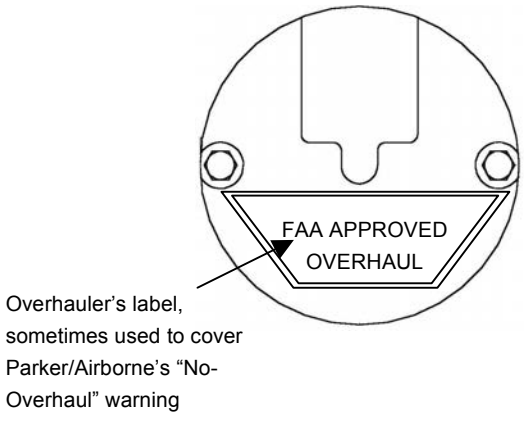
2. **"No Overhaul" Labeling** - Parker/Airborne has cast into the mounting flange and back flange of our air pumps "NO OVERHAUL", since 1986. Overhaulers, in some cases, cover the "NO OVERHAUL" on the back flange with labels stating "FAA APPROVED OVERHAUL" or "RETURNABLE CORE". Check to see if the air pump includes "NO OVERHAUL" cast into the housing and also a label stating "FAA APPROVED OVERHAUL" or "RETURNABLE CORE".



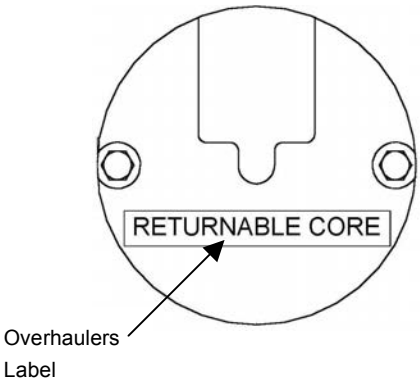
Back End of Parker/Airborne Pump



Parker/Airborne Pump



Overhauled Parker/Airborne Pump



Overhauled Parker/Airborne Pump

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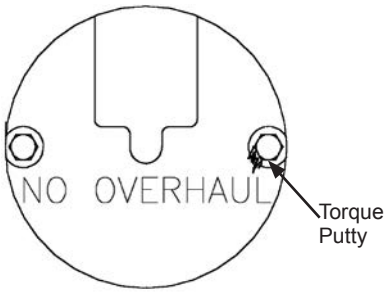
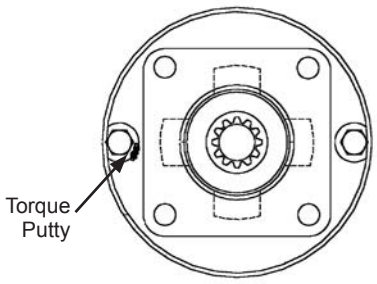
3. **Torque Putty** - Torque putty is used on one fastener of each end of the air pump. Overhaulers use colored torque putty while Parker Airborne has always used white torque putty. Parker/Airborne torque putty may discolor with age and/or temperature, changing from white to tan.



Back End of Parker/Airborne Pump



Front End of Parker/Airborne Pump

4. **Painting** - Some Overhaulers paint the entire pump black to cover the coloring of various vintage parts used.

5. **Anti-Vise Label** – Overhaulers use a smooth plastic anti-vise label where Parker/Airborne always used a fabric material anti-vise label. The fabric weave in the Parker/Airborne material is visible.

6. **Log Book Review** - Review log books for entries identifying installation of overhauled or reconditioned air pumps.

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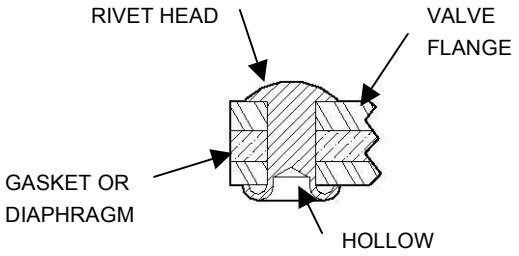
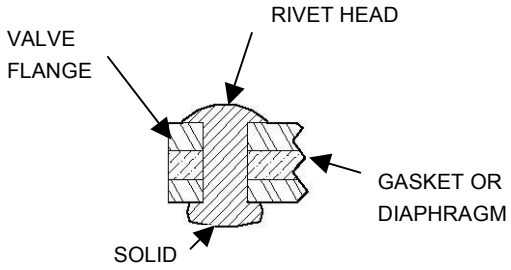
B. How To Identify Overhauled Or Reconditioned Parker/Airborne Pneumatic System Valves or Check Valve Manifolds

The information below should be used as a guide in determining if you have an overhauled or reconditioned Parker/Airborne pneumatic system valve or check valve manifold. Refer to the applicability section on the first page of this Service Letter for applicable Parker/Airborne model numbers.

The easiest way to identify if a Parker/Airborne pneumatic system valve or check valve manifold has been overhauled or reconditioned is by examining the rivets used. Based on the overhauled or reconditioned valves and manifolds that Parker/Airborne has examined to date, overhauled or reconditioned units are reassembled with "solid" rivets. Parker/Airborne only uses "tubular" rivets on these assemblies.



Cross-Section Parker/Airborne's Tubular Rivet



Cross-Section Overhauler's Solid Rivet

Summary:

Promptly and regularly inspect your aircraft for overhauled or reconditioned Parker/Airborne pneumatic components. If you determine that your air pump or pneumatic component is an overhauled or reconditioned Parker/Airborne component, then immediately replace it with a new component. If, after following the above component identification methods, you cannot determine whether your Parker/Airborne component has been overhauled, or if you cannot determine the history of the component, then immediately replace it with a new component.

Parker/Airborne realizes that owners and operators of aircraft have the choice of purchasing a new or overhauled/reconditioned air pump, pneumatic system valve, and check valve manifold. However, aircraft owners/operators/pilots should be aware of the increased risk of pneumatic system failure when using overhauled or reconditioned Parker/Airborne pneumatic components. An overhauled or reconditioned Parker/Airborne pneumatic component **must not** be used. Any time a Parker/Airborne pneumatic component is replaced, a new one **must** be used.

Any questions concerning this Service Letter or requests for free copies of any Parker/Airborne Service Letters (which can also be printed from Parker/Airborne's website) should be directed to Parker/Airborne Customer Support Team as follows:

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Service Letter

Service Letter Number: 58A

Date: March 23, 2006 (Supersedes Service Letter Number 58 dated May 31, 2002)

Subject: **Mandatory** Replacement Times for Airborne Air Pumps.

Applicability:
All Airborne Air Pump models. These air pumps which are listed on the next page are typically used on single-engine and multi-engine piston aircraft to power gyro flight instruments and de-ice systems.

Background:

Airframe Manufacturers typically provide replacement times for air pumps in their aircraft maintenance manuals. In the absence of air pump **mandatory** replacement times provided by Airframe Manufacturers, Airborne is providing these **mandatory** replacement times.

WARNING: Failure of the air pump will result in the loss of the pneumatically powered gyro flight instruments and de-ice system.

Compliance:

Compliance with the following is **mandatory**.

Airborne air pumps **must not** be operated beyond the Airframe Manufacturer's specification for **mandatory** inspection intervals or **mandatory** replacement times or Airborne's **mandatory** inspection intervals or **mandatory** replacement times, whichever comes first.

Any authorized technician can replace the air pump in accordance with the instructions provided by the Airframe Manufacturer in the appropriate maintenance publication. Upon completion of the **mandatory** replacement, ensure an entry has been added in the aircraft's engine logbook identifying compliance with this Service Letter Number 58A.

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MANDATORY REPLACEMENT TIMES FOR AIRBORNE AIR PUMPS	
Airborne Air Pump Model Number	**Mandatory Replacement Times**
Engine-Driven Air Pump:	
Any model no. beginning with 200 through 216	500 aircraft hrs. or 6 years from date of manufacture, whichever comes first
E211CC or E2I2CW	500 aircraft hrs. or 6 years from date of manufacture, whichever comes first
Any model no. beginning with 220 through 242	500 aircraft hrs. or 6 years from date of manufacture, whichever comes first
Any model no. beginning with 28C214 or 28C444	500 aircraft hrs. or 6 years from date of manufacture, whichever comes first
Any model no. beginning with 420 through 442	400 aircraft hrs. or 6 years from date of manufacture, whichever comes first
832CW or 842CW	300 aircraft hrs. or 6 years from date of manufacture, whichever comes first
Auxiliary Motor-Driven Air Pump and Elapsed Time Indicator:	
Any model no. beginning with 4A2 or 4A3	500 pump hrs. or 10 years of service, whichever comes first

Determine the air pump date of manufacture by one (1) of the two (2) following methods:

1) The date of manufacture is encoded in the serial number located on the nameplate of the air pump as depicted in Figure 1. The first numbers (1 through 12) of the serial number indicate the **month** (January through December) of manufacture. The following letter combinations of the serial number indicate the **year** of manufacture:

T = 1972	E = 1979	AB = 1986	AJ = 1993	AT = 2000	BC = 2007
V = 1973	F = 1980	AC = 1987	AK = 1994	AU = 2001	BD = 2008
W = 1974	H = 1981	AD = 1988	AL = 1995	AV = 2002	BE = 2009
A = 1975	J = 1982	AE = 1989	AM = 1996	AW = 2003	BF = 2010
B = 1976	K = 1983	AF = 1990	AN = 1997	AY = 2004	BG = 2011
C = 1977	M = 1984	AG = 1991	AP = 1998	BA = 2005	BH = 2012
D = 1978	AA = 1985	AH = 1992	AR = 1999	BB = 2006	BJ = 2013

2) There may be an occasion when the nameplate has been lost or obliterated. Starting in 1972, a quarter/year marking may have been stamped on the back of the air pump as depicted in Figure 1. For example, 2Q02 signifies the air pump was manufactured in the second quarter of 2002.

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If the product nameplate has been lost, obliterated, or for any reason the year of manufacture cannot be substantiated, replace the air pump.

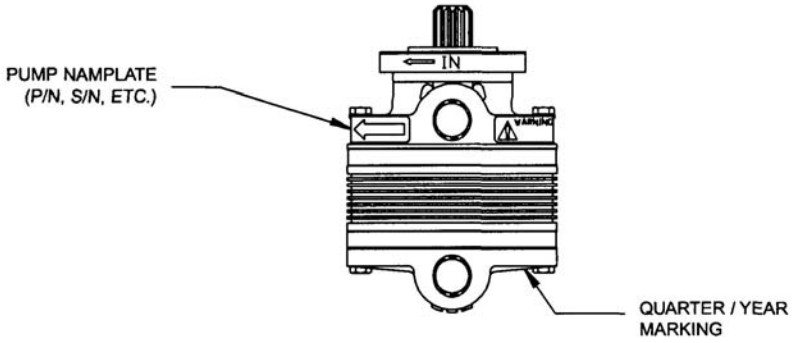

Figure 1

These **mandatory** replacement times do not take into account the shortening of air pump life caused by improper maintenance, improper regulator settings, higher than optimal air pump loads, speeds and temperatures, oil contamination, dirty filters, etc.

In no event, however, should an Airframe Manufacturer's specification for replacement times or Airborne's **mandatory** replacement times be considered an alternative to either a back-up pneumatic power source for the air driven gyros, or a back-up electric attitude gyro instrument. Air pump or pneumatic system failures can and do occur without warning, sometimes with fewer hours of service than those specified in **mandatory** replacement schedules. As stated in Airborne Service Letter Number 31, **SAFETY WARNING — Vacuum/Pressure Gyroscopic Flight Instrument Power System**, A BACK-UP PNEUMATIC POWER SOURCE FOR THE AIR DRIVEN GYROS, OR A BACK-UP ELECTRIC ATTITUDE GYRO INSTRUMENT, **MUST** BE INSTALLED IN ALL AIRCRAFT WHICH FLY IFR.

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