

**CHAPTER 1****GENERAL**

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## CHAPTER 1

## GENERAL

1.000 Introduction

The R22 Maintenance Manual contains instructions necessary for proper maintenance, servicing, and handling of R22-series helicopters. The R22 Instructions for Continued Airworthiness (ICA) includes the R22 Maintenance Manual (MM), R22 Illustrated Parts Catalog (IPC), R22 Service Bulletins (SBs), R22 Service Letters (SLs), Lycoming O-320-series and O-360-series Operator's Manuals, applicable Lycoming technical publications, and applicable component manufacturer technical publications.

Service Bulletins are issued by Robinson Helicopter Company (RHC), Lycoming, and component manufacturers. RHC Service Bulletin compliance is mandatory; comply with other applicable Service Bulletins as directed. RHC technical publications are available online at [www.robinsonheli.com](http://www.robinsonheli.com). Recent technical publications are available from Lycoming at [www.lycoming.com](http://www.lycoming.com), and from Continental Motors, Inc. (CMI) at [www.continentalmotors.aero](http://www.continentalmotors.aero).

Kit instructions are issued for field installation of either optional or mandatory (due to Service Bulletin or parts obsolescence) equipment upgrades, or provisions for upgrades. Kit instruction issued by RHC either implement approved type design data, or are approved as type design data.

**CAUTION**

Always read instructions completely before performing a task.

1.001 R22 Maintenance Manual Revisions

Before using the R22 Maintenance Manual, verify it consists of current effective pages. The list of effective pages is located in the Revision Log in Chapter 37. When a new manual is purchased, complete and submit the Subscription Order Form available online at [www.robinsonheli.com](http://www.robinsonheli.com). Subscribers receive publication revisions for a two-year period. Renew subscriptions annually. The revision status for all RHC technical publications is available online at [www.robinsonheli.com](http://www.robinsonheli.com).

### 1.002 R22 Maintenance Authorization

Only appropriately certificated mechanics who have successfully completed an R22 factory-sponsored maintenance course, or are under direct supervision of the above-stated mechanic, may perform maintenance, repairs, or inspections on R22-series helicopters. Annual inspections of U.S.-registered light helicopters must be performed by holders of an Inspection Authorization (IA) or by repair stations certificated by the Federal Aviation Administration (FAA). The daily preflight and some preventive maintenance may be performed by the above-stated mechanics, or by the pilot/owner after receiving appropriate instruction in accordance with the R22 Pilot's Operating Handbook and applicable aviation regulations.

### 1.003 R22 Component Maintenance Authorization

Only appropriately certificated mechanics who have successfully completed both a factory-sponsored maintenance course and component maintenance course, and who possess technical data supplied by RHC, are authorized to perform maintenance specified in the Component Maintenance Manual (CMM). Component maintenance may only be performed at an RHC-authorized Service Center that has required special tools.

### 1.004 Maintenance Record

The Airframe Maintenance Record is available online at [www.robinsonheli.com](http://www.robinsonheli.com).

Airframe Maintenance Record blank PDF forms may be used for R22-series, R44-series, and R66-series helicopters. Component Record blank PDF forms may be used for life-limited or TBO components. Blank paper copies are available for purchase (P/N R8478 Airframe Maintenance Record and P/N R8479 Component Record [pack of 20]).

A Component Record is a maintenance record of the removals, installations, or maintenance performed on a life-limited or TBO component. When a life-limited or TBO component is installed in the helicopter, the Component Record card is inserted in the Airframe Maintenance Record. When a life-limited or TBO component is removed from the helicopter, remove the Component Record card and keep the card with the Component. Major assemblies may contain one or more life-limited or TBO component.

RHC encourages operators to utilize Component Record cards to assist in tracking time on interchangeable parts since service lives may be different between models.

RHC does not create Component Record cards for spares, however, operators may create their own.

RHCs Repair Station does not require a Component Record card in order to perform work on a component, unlike a Component/Return Authorization form.

RHC recommends using a toner-based laser, or a pigment-based inkjet, color printer and 65 lb white (96 bright) premium card stock for Maintenance Record or Component Record card production. Maintenance Record binders and tab sets are available separately (P/N R8656 Maintenance Record Binder and P/N R8650 Maintenance Record Tabs).

### 1.005 Notations

The following notations will be found throughout the manual:

<p style="text-align: center;"><b>NOTE</b></p>
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<p style="text-align: center;">A <b>NOTE</b> provides emphasis or supplementary explanation.</p>
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<p style="text-align: center;"><b>CAUTION</b></p>
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<p style="text-align: center;">Equipment damage can result if a <b>CAUTION</b> is not followed.</p>
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<p style="text-align: center;"><b>WARNING</b></p>
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<p style="text-align: center;"><b>Personal injury or death can result if a <b>WARNING</b> is not followed.</b></p>
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### 1.006 Maintenance Manual and Illustrated Parts Catalog References

Maintenance Manual and Illustrated Parts Catalog Section and Figure references are subject to relocation and renumeration. Effort will be made at the time of RHC technical document revisions to correct superseded references, however, certain documents may not otherwise require revision and superseded references may remain. A keyword or part number search in online documents (Ctrl + F [PC] or Command + F [Mac]) may help to locate applicable data.

**| 1.007 Definitions and Abbreviations**

Refer to R22 Pilot's Operating Handbook (POH) Section 1 for additional definitions and abbreviations.

**A. Definitions**

- 14 CFR § 27.602 Critical Part:** A part identified as a 14 CFR § 27.602 critical part within this manual is subject to special inspection requirements. RHC Technical Support must be notified whenever the part fails to meet the special inspection requirements.
- 12 years:** With respect to a 12 year inspection or life-limit, 12 years means 12 years from the date of the factory-issued airworthiness certificate or factory-issued authorized release certificate (FAA Form 8130-3, Airworthiness Approval Tag).
- Annually:** With respect to an annual inspection, annually means within the preceding 12 calendar months.
- Datum:** An imaginary vertical plane from which all horizontal measurements are taken for balance purposes with the aircraft in level flight attitude. Refer to § 16-20 for R22 datum location.
- Empty Weight:** Empty Weight includes the weight of the airframe, powerplant, required and installed equipment, fixed ballast, unusable fuel, and gearbox oil. Refer to R22-series Type Certificate Data Sheet (TCDS) in Chapter 3. Refer to Equipment List/Weight and Balance Data Sheet (RF 134) and Weight and Balance Record in R22 POH Section 6 for installed equipment.
- Life-Limited Part:** Refer to Chapter 3. Any part for which a mandatory replacement limit is specified in the type design, the Instructions for Continued Airworthiness, or the maintenance manual.
- Time in Service:** With respect to maintenance time records, time in service means the time from the moment an aircraft leaves the surface of the earth until it touches it at the next point of landing.

1.007 Definitions and Abbreviations (continued)**B. Abbreviations**

14 CFR:	Title 14 of the Code of Federal Regulations. The Federal Aviation Regulations (FARs) are part of the CFR.
AOG:	Aircraft on Ground
ATA-100:	Air Transport Association of America Specification No. 100
BL:	Butt Line Station locations
CO:	Carbon Monoxide
CRA:	Component Return/Authorization
ELT:	Emergency Locator Transmitter
FS:	Fuselage Station locations
HID:	High Intensity Discharge
HS:	Horizontal Stabilizer Station locations
LBL:	Left Butt Line Station locations
LED:	Light Emitting Diode
LH:	Left-hand
LRU:	Line-Replaceable Unit
MRDS:	Main Rotor Drive Shaft
MRGB:	Main Rotor Gearbox
OEM:	Original Equipment Manufacturer
R22 IPC:	R22 Illustrated Parts Catalog
R22 MM:	R22 Maintenance Manual
R22 POH:	R22 Pilot's Operating Handbook
RHC:	Robinson Helicopter Company
RH:	Right-hand
RS:	Rotor Station locations
SB:	Service Bulletin
SL:	Service Letter
TBO:	Time Between Overhaul
TCDS:	Type Certificate Data Sheet
TRDS:	Tail Rotor Drive Shaft
TRGB:	Tail Rotor Gearbox
TS:	Tailcone Station locations
TSN:	Time Since New
TSO:	Time Since Overhaul
WL:	Water Line Station locations

## 1.008 Service Information

### **A. Part Designation**

RHC parts are designated with an alphanumeric part number beginning with letter "A", "B", "C", etc., followed by three digits and a dash number.

A revision letter or letters follow(s) the stamped or ink-marked part number. Revision progression is A thru Z, followed by AA thru AZ, followed by BA thru BZ, etc. Unless otherwise specified, any revision of the same part number is interchangeable, such as "A101-1 A" and "A101-1 D".

A change in dash number indicates a change in form, fit, and/or function (e.g. part number C339-1 is not interchangeable with part number C339-10 even though both are jackshaft weldments for [hydraulic] R44s).

### **B. Returning Parts**

All parts shipped to RHC must include a signed Component Return/Authorization (CRA) Form available online at [www.robinsonheli.com](http://www.robinsonheli.com).

### **C. Ordering and Shipping**

Procure parts from any R22 Dealer or Service Center, or order directly from assigned RHC Customer Service Representative via email, fax, or phone.

### **D. Warranty Claims**

Complete CRA Form (refer to Part B) and, in the Warranty Claim section, indicate if rotorcraft or component is under warranty. If claim is for parts or for labor allowance due to a Service Bulletin issued against rotorcraft or component, write in "per SB-XX" adjacent to requested warranty action.

### **E. Customer Support Directory**

Please visit [www.robinsonheli.com](http://www.robinsonheli.com) for a complete support directory.



1.009 Assembly Instructions for R22-series Helicopter Crated for Export**NOTE**

Aircraft assembly to be performed by a certificated mechanic.

1. Remove all components from tailcone crate and all accessible components from cabin crate. Assemble landing gear per §§ 5.220 (float gear only) and 5.320.

**CAUTION**

Do not lift helicopter and attached crate using main rotor hub; damage to main rotor gearbox and frames could result.

2. Attach a hoist to main rotor hub per § 17-20. Lift aft end of crate while taking up slack in hoist. When main rotor shaft is vertical, remove bolts at landing gear attach points and remove crate. Install landing gear per § 5.120. Lower helicopter on ground.
3. Install front cross tube cover panel. For float landing gear, set float pressure per Mariner supplement of Pilot's Operating Handbook and verify float stabilizer is being used in place of tail skid.
4. Install tailcone per § 4.312. Install tail rotor visual warning guard.
5. Install empennage assembly per § 4.322.
6. Install exhaust system per § 6.520. Install lower half of cooling fan scroll.
7. Remove preservative plugs from engine cylinder upper spark plug holes. Install upper spark plugs and special torque per § 23-33. Connect ignition leads.
8. Fill engine oil to six quart mark on dipstick, as required.
9. Install main rotor blades per § 26-10. Match color coded markings on blades, hub bolts, hub, and pitch links. Attach upper end of pitch links to pitch horns.
10. Install tail rotor per §§ 9.212 or 9.213, as applicable.
11. If required, fill battery with electrolyte and charge.
12. Fill main and tail rotor gearboxes with A257-2 oil. For helicopters shipped "on-side", inject 6 ounces A257-2 oil into aft vent hole atop main rotor gearbox static mast tube.
13. Fuel helicopter and drain a small amount of fuel through gascolator.

1.009 Assembly Instructions for R22-series Helicopter Crated for Export (continued)

14. If ship is equipped with artificial horizon, directional gyro, or vertical card magnetic compass, install as follows:

Artificial Horizon and/or Directional Gyro:

- a. Remove amber ALT light and red OIL light from B050 console. Pull out A777-1, A981-1, or B197-1 instrument face by removing perimeter mounting screws. Place a pad under face to prevent scratches.
- b. Install required instrument(s) using screws provided.

**CAUTION**

Directional gyro mounting screws must not exceed 1 inch in length or unit will be damaged.

- c. Connect straight multi-pin connector to directional gyro and/or angled connector to artificial horizon ensuring that angled strain relief points down. Ensure that connectors lock in place. Ty-rap excess wiring.
- d. Install instrument face, ALT light, and OIL light.

Vertical Card Magnetic Compass:

Locate two wires extending from windshield bow. Slide one piece of heat-shrink tubing (provided) over each wire. Connect compass pins to wire sockets (polarity not critical). Position heat-shrink tubing over connections and apply heat. Install compass using two screws provided.

15. Install battery (Negative Ground System).

**NOTE**

This must be performed by a qualified pilot and a certificated mechanic.

16. Perform preflight inspection per Pilot's Operating Handbook and inspection per §§ 2.205 and 2.210.

17. Check tail rotor balance per § 10.240.

18. Perform hover checks in § 2.220.1. DO NOT proceed into forward flight at this time.

19. Track and balance main rotor per § 10.230.

20. While climbing at takeoff power per placard and 50 KIAS:

- a. Evaluate roughness at maximum and minimum power-on RPM.
- b. At minimum power-on RPM perform 30° left yaw to check for adequate directional control.

1.009 Assembly Instructions for R22-series Helicopter Crated for Export (continued)

21. During level flight at 3000 feet pressure altitude (if able), MCP, with right trim and governor on:
  - a. Verify longitudinal and lateral cyclic control forces are neutralized (no tendency of cyclic to creep longitudinally or laterally).
  - b. Verify collective control forces are neutralized (no tendency of collective to creep up or down).
  - c. Verify throttle correlation. Set MAP to 22 inches and turn governor off. Without twisting throttle, lower collective to 12 inches MAP then raise it to 22.5 inches MAP. RPM must stay in green arc.
22. Evaluate roughness at minimum power-on RPM, takeoff power per placard, and  $V_{ne}$  per placard.
23. Check all instruments, gauges, and avionics for proper operation.
24. During autorotation at 50 KIAS and 90% rotor RPM, perform 30° right yaw to check for adequate directional control.

**TABLE 1 SCHEDULED INSPECTIONS**

Consult latest revision of listed publications for specific applicability.

	First 25 hours	First 100 hours	Every 50 hours	Every 100 hours	Every 300 hours	Every 500 hours	Every 800 hours	Every 2200 hours	Every 4 months	Every 12 months	Every 24 months	Every 4 years	Every 12 years
Perform inspection per Lycoming Operator's Manual.*	•		•	•	•								
Perform <b>Lycoming SI 1129</b> <i>Methods of Checking DC Alternator and Generator Belt Tension.</i>	•			•									
Perform <b>Lycoming SI 1191</b> <i>Cylinder Compression.</i>				•									
Perform <b>Lycoming SI 1080</b> <i>Maintenance Items for Special Attention.</i>			•	•									
Perform <b>Lycoming SB 301*</b> <i>Maintenance Procedures and Service Limitations for Valves.</i>					•								
Perform <b>Lycoming SB 366, as applicable</b> <i>Carburetor Throttle Body Screw Inspection.</i>			•										
Perform <b>Lycoming SB 388</b> (also applies to replacement cylinders) <i>Procedure to Determine Exhaust Valve and Guide Condition.</i>		•			•								
Perform <b>Lycoming SB 480</b> <i>I. Oil &amp; Filter Change &amp; Screen Cleaning / II. Oil Filter/Screen Content Inspection.</i>	•		•					•					
Perform <b>CMI SB 643, as applicable</b> <i>Maintenance Intervals for All CMI/TCM/Bendix Magnetos &amp; Related Equipment.</i>				•		•						•	•
Perform <b>CMI SB 658</b> <i>Distributor Gear Maintenance.</i>						•						•	
Perform <b>CMI SB 663</b> <i>Two-Wire Magneto Tach. Breaker Contact (Points) Assy. P/N 10-400507.</i>						•						•	
Perform <b>CMI SB 670</b> <i>Replacement and maintenance of Magneto Distributor Block.</i>						•						•	
Perform 100-hour/annual inspection per § 2.400.				•						•			
Lubricate A181-4 Revision K, L, and M bearings per § 22-42.					•					•			
Lubricate A181-4 Revision N bearing per § 22-42.							•					•	
Lubricate A184 bearing per § 22-41.					•					•			
Perform clutch assembly lubricant inspection & servicing per § 22-30.						•							
Drain and flush gearboxes per §§ 22-13 & 22-23.						•							
Clean gearbox chip detectors per §§ 22-11 & 22-21.						•				•			
Perform FAA AD 88-26-01 R2 (A158-1 spindles only).						•							
Perform 2200-hour inspection per § 2.600.								•					
Inspect emergency locator transmitter (ELT) per U.S. 14 CFR § 91.207.										•			
Test and inspect transponder per U.S. 14 CFR § 91.413.											•		
Perform 12-year inspection per § 2.600.**													•

\* Shorter interval than published on referenced document.

\*\* 12-year inspection is only required for helicopters that have accumulated 12 years in service and less than 2200 hours time in service since new, since last 2200-hour inspection, or since last 12-year inspection.

## 1.100 Helicopter Servicing

### 1.101 Scheduled Maintenance and Inspections

Required maintenance and inspection intervals are given in Table 1. Publications listed are subject to revision.

Consult the following for specific applicability, as some aircraft may require maintenance and inspections in addition to the requirements in Table 1:

- Aircraft maintenance records
- Service Bulletins (SBs)
- Aviation regulations
- Airworthiness Limitations
- Airworthiness Directives (ADs)

Preventive maintenance is required between scheduled inspections. Fluid leaks, discoloration, fretting, galling, chafing, nicks, scratches, dents, cracks, and corrosion all warrant further investigation. Unairworthy items must be replaced or repaired as allowed by RHC.

1.102 Additional Component Maintenance

**A. Remove the following components when they have accumulated 12 years time in service and less than 2200 hours time in service since new, since last overhaul, or since last 12-year maintenance:**

Part Number	Description	Action
A005-4	A154-1 Main Rotor Hub & Bearing Assembly	Perform inspection and repair per MM § 2.610, return to RHC for inspection and repair, or replace with new.
A005-12	B370-1 Main Rotor Hub & Bearing Assembly	
A005-6	A016-4 Main Rotor Blade & A158-1 Spindle Assembly	Submit to RHC-authorized component maintenance facility for 12-year maintenance, or replace with new or overhaul exchange. 12-year maintenance includes blade replacement (as required), spindle bearing replacement (as required), pitch horn screw replacement, boot and o-ring replacement, and inspection.
A005-7	A016-6 Main Rotor Blade & A158-1 Spindle Assembly	
A005-14	A016-6 Main Rotor Blade & A158-3 Spindle Assembly	
A006-1 & -6	Main Rotor Gearbox Assembly	Submit to RHC-authorized component maintenance facility for 12-year maintenance, or replace with new or overhaul exchange. 12-year maintenance includes pinion seal replacement, o-ring replacement, sealed bearing replacement, rubber mount replacement, additional bearings replacement (as required), and inspection.
A007-3 or -5	Fanshaft Assembly	Replace with new A007-5 fanshaft assembly.
A008-2 or -4	Tail Rotor Assembly	Replace with new A008-4 tail rotor assembly.
A014-8	Landing Gear Assembly originally installed on R22 S/N 0002 thru 0487.	Replace with new.
A017-2	Swashplate Assembly	Submit to RHC-authorized component maintenance facility for 12-year maintenance, or replace with new or overhaul exchange. 12-year maintenance includes inspection and repair as necessary.
A018-1	Clutch Assembly (anodized)	Submit to RHC-authorized component maintenance facility for 12-year maintenance, or replace with new or overhaul exchange. 12-year maintenance includes seal and o-ring replacement, bearing replacement, and inspection.
A018-2	Clutch Assembly (metalized)	
A020-2	Upper Frame Assembly S/N 0399 and prior (originally installed on R22 S/N 0002 thru 0311).	Replace with new. Note: Frame replacement may require tailcone forward bay replacement.
A021-1	Tail Rotor Gearbox Assembly	Replace with new or overhaul exchange B021-1 tail rotor gearbox assembly.
A031-1	Tail Rotor Pitch Control	Replace with new.
A041-11 or -12	Tail Rotor Drive Shaft Damper Bearing Assembly	Replace with new A041-11 or -12 damper bearing assembly or replace with new B224-1 or -3 drive shaft.

1.102 Additional Component Maintenance (continued)

**A. Remove the following components when they have accumulated 12 years time in service and less than 2200 hours time in service since new, since last overhaul, or since last 12-year maintenance (continued):**

Part Number	Description	Action
A044-1	Horizontal Stabilizer Rev M and prior (originally installed on R22 S/N 0002 thru 0631).	Replace with new.
A051-1 or A051-3	Clutch Actuator Assembly (A051-1 includes gearmotor assembly)	Replace with new or overhaul exchange.
A120-1	Tail Rotor Bellcrank	Replace with new.
A169-1, -2, or -4	Muffler with Risers Rev J and prior (baffled muffler with straight tailpipe, originally installed on R22 S/N 0002 thru 0500) with subsequent revision.	Replace with new.
A169-6 or -35	Muffler with Risers (O-320 engine)	Visually inspect muffler interior; verify no obvious loss of material.
A169-24 or -37	Muffler with Risers (O-360 engine)	Visually inspect muffler interior; verify no obvious loss of material.
A190-1 or -2	V-Belt Set	Replace with new A190-2 v-belt set.
A193-2	Flex Plate	Replace with new A947-2 flex plate assembly.
A193-3	Flex Plate	Replace with new A947-3 flex plate assembly.
A197-1 thru -7	Tail Rotor Drive Shaft Assembly originally installed on R22 S/N 0002 thru 0747.	Replace with B224-1 drive shaft & appropriate B223 yoke.
A258-1	Main Rotor Pitch Link Assemblies	Replace with new A258-1 or A258-5 link assembly.
A258-5	Main Rotor Pitch Link Assemblies	Disassemble. 10X visually inspect barrel; verify no corrosion.
A480-1	Swashplate Boot	Replace with new.
A493-1	Lower Sheave Rev H and prior (anodized, originally installed on R22 S/N 0002 thru 0294) with subsequent (steel-sprayed) revision.	Replace with new.
A649-1, -2, or C649-1	Oil Cooler	Replace with new or overhaul exchange C649-1 oil cooler.
A785-1	Hose – Air (intake)	Replace with new.
A785-2	Hose – Air (hot air inlet)	Replace with new.
A785-6	Hose – Air (engine cooling)	Replace with new.
A785-7	Hose – Air (alternator cooling)	Replace with new.
A785-26	Hose – Air (hot air inlet)	Replace with new.
A785-32	Hose	Replace with new.

1.102 Additional Component Maintenance (continued)

**A. Remove the following components when they have accumulated 12 years time in service and less than 2200 hours time in service since new, since last overhaul, or since last 12-year maintenance (continued):**

Part Number	Description	Action
A792-2 or -4	Dual Tachometer	Replace with new or overhaul exchange A792-4 dual tachometer.
B021-1	Tail Rotor Gearbox Assembly	Perform 12-year maintenance per MM § 2.620, or replace with new or overhaul exchange.
B173-1	V-belt – Alternator	Replace with new.
B174-1	Fanwheel (Rev “J” or subsequent)	Perform 12-year maintenance per MM § 2.630, or replace with new or overhaul exchange.
B283-1	Hose Assembly (fuel system) Revision A thru P	Replace with new.
B283-2	Hose Assembly (fuel system) Revision A thru P	Replace with new.
B283-6	Hose Assembly (fuel system) Revision A thru P	Replace with new.
B286-2	Governor Controller	Replace with new or overhaul exchange.
D756-2 (or A011-2)	Bellcrank Assembly – Throttle	Replace with new.



1.102 Additional Component Maintenance (continued)

**B. Remove the following components when they have accumulated 2200 hours time in service since new or since last overhaul:**

Part Number	Description	Action
A005-4	A154-1 Main Rotor Hub & Bearing Assembly	Perform inspection and repair per MM § 2.610, return to RHC for inspection and repair, or replace with new.
A005-12	B370-1 Main Rotor Hub & Bearing Assembly	
A005-6	A016-4 Main Rotor Blade & A158-1 Spindle Assembly	Replace with new or overhaul exchange A005-7 or A005-14 main rotor blade and spindle assembly.
A005-7	A016-6 Main Rotor Blade & A158-1 Spindle Assembly	
A005-14	A016-6 Main Rotor Blade & A158-3 Spindle Assembly	
A006-1 & -6	Main Rotor Gearbox Assembly	Replace with new or overhaul exchange A006-6 main rotor gearbox assembly.
A007-3 or -5	Fanshaft Assembly	Replace with new A007-5 fanshaft assembly.
A008-2 or -4	Tail Rotor Assembly	Replace with new A008-4 tail rotor assembly.
A014-8	Landing Gear Assembly originally installed on R22 S/N 0002 thru 0487.	Replace with new.
A017-2	Swashplate Assembly	Submit to RHC-authorized component maintenance facility for overhaul, or replace with new or overhaul exchange.
A018-1	Clutch Assembly (anodized sheave)	Replace with new or overhaul exchange.
A018-2	Clutch Assembly (metalized sheave)	
A020-2	Upper Frame Assembly S/N 0399 and prior (originally installed on R22 S/N 0002 thru 0311).	Replace with new. Note: Frame replacement may require tailcone forward bay replacement.
A021-1	Tail Rotor Gearbox Assembly	Replace with new or overhaul exchange B021-1 tail rotor gearbox assembly.
A031-1	Tail Rotor Pitch Control	Replace with new.
A041-11 or -12	Tail Rotor Drive Shaft Damper Bearing Assembly	Replace with new A041-11 or -12 damper bearing assembly or replace with new B224-1 or -3 drive shaft.
A044-1	Horizontal Stabilizer Rev M and prior (originally installed on R22 S/N 0002 thru 0631).	Replace with new.
A051-1 or A051-3	Clutch Actuator Assembly (A051-1 includes gearmotor assembly)	Replace with new or overhaul exchange.
A120-1	Tail Rotor Bellcrank	Replace with new.
A121-17	Push-Pull Tube Assembly	Replace with new.

1.102 Additional Component Maintenance (continued)

**B. Remove the following components when they have accumulated 2200 hours time in service since new or since last overhaul (continued):**

Part Number	Description	Action
A169-1, -2, or -4	Muffler with Risers Rev J and prior (baffled muffler with straight tailpipe, originally installed on R22 S/N 0002 thru 0500).	Replace with new.
A169-6 or -35	Muffler with Risers (O-320 engine)	Replace with new A169-35 muffler.
A169-24 or -37	Muffler with Risers (O-360 engine)	Replace with new A169-37 muffler.
A189-10	Nut – Double Lock	Replace with new.
A190-1 or -2	V-Belt Set	Replace with new A190-2 v-belt set.
A193-2	Flex Plate	Replace with new A947-2 flex plate assembly.
A193-3	Flex Plate	Replace with new A947-3 flex plate assembly.
A197-1 thru -7	Tail Rotor Drive Shaft Assembly originally installed on R22 S/N 0002 thru 0747.	Replace with new B224-1 drive shaft & appropriate B223 yoke.
A258-1	Main Rotor Pitch Link Assembly	Replace with new A258-5 link assembly.
A258-5	Main Rotor Pitch Link Assembly	Disassemble; fluorescent penetrant inspect barrel.
A426-6	Cap – Collective Spring	Replace with new.
A480-1	Swashplate Boot	Replace with new.
A493-1	Lower Sheave Rev H and prior (anodized, originally installed on R22 S/N 0002 thru 0294).	Replace with new.
A615-1	Gasket – Carburetor-to-Air Box	Replace with new.
A628-6	Connector Assembly – Harness	Replace with new.
A636-2	Support (O-320 engine)	Replace with new.
A649-1 or -2	Oil Cooler	Replace with new or overhaul exchange C649-1 oil cooler.
A723-1	Oil Line Assembly	Replace with new A723-5 oil line assembly.
A723-2	Oil Line Assembly	Replace with new A723-6 oil line assembly.
A780-33	Cable Assembly	Replace with new.
A785-1	Hose – Air (intake)	Replace with new.
A785-2	Hose – Air (hot air inlet)	Replace with new.
A785-6	Hose – Air (engine cooling)	Replace with new.
A785-7	Hose – Air (alternator cooling)	Replace with new.
A785-26	Hose – Air (hot air inlet)	Replace with new.
A785-32	Hose	Replace with new.
A792-2 or -4	Dual Tachometer	Replace with new or overhaul exchange A792-4 dual tachometer.

1.102 Additional Component Maintenance (continued)

**B. Remove the following components when they have accumulated 2200 hours time in service since new or since last overhaul (continued):**

Part Number	Description	Action
A947-1	Flex Plate Assembly – Forward	Replace with new.
A947-2	Flex Plate Assembly – Intermediate	Replace with new.
A947-3	Flex Plate Assembly – Aft	Replace with new.
B021-1	Tail Rotor Gearbox Assembly	Replace with new or overhaul exchange.
B173-1	V-belt – Alternator	Replace with new.
B174-1	Fanwheel (Rev “J” or subsequent)	Replace with new or overhaul exchange.
B224-1	Tail Rotor Drive Shaft	Replace with new.
B224-3	Tail Rotor Drive Shaft	Replace with new.
B283-1	Hose Assembly (fuel system)	Replace with new.
B283-2	Hose Assembly (fuel system)	Replace with new.
B283-6	Hose Assembly (fuel system)	Replace with new.
B286-2	Governor Controller	Replace with new or overhaul exchange.
B350-2	Pin – Spring (fanshaft nut)	Replace with new.
C636-2	Support (O-360 engine)	Replace with new.
C649-1	Oil Cooler	Replace with new or overhaul exchange.
D756-2 (or A011-2)	Bellcrank Assembly – Throttle	Replace with new.
F628-8	Buckle Assembly	Replace with new.
KI-217-1	R22 Bladder Fuel Tank Installation Kit	Required for helicopter S/N 0002 thru 4620 per R22 SB-109, if not previously accomplished.
KI-2207	A017-1 Swashplate Installation Kit	Replace existing parts with kit parts.
KI-2208	R22 A057-2 Airbox Assembly Installation Kit	Required for helicopter S/N 2571M thru 2664 if not previously accomplished.
AN320-18	Nut – Fanshaft	Replace with new.
MS16562-15	Pin – Spring	Replace with new.
MS20002-18	Washer	Replace with new.
MS24665-355	Cotter Pin	Replace with new.
NAS1149F1832P	Washer	Replace with new.
NAS630-80	Bolt	Replace with new.
NAS6604-38	Bolt	Replace with new.

1.102 Additional Component Maintenance (continued)**C. Engine Limits**

Refer to latest revisions of Textron Lycoming Service Instruction No. 1009 and Lycoming Service Bulletin No. 240.

**D. Airframe and Engine Accessory Limits**

Refer to accessory manufacturer's instructions for continued airworthiness for accessory limits. Remove accessories per R22 Maintenance Manual or accessory manufacturer's instructions as required.