cherokee

SERVICE MANUAL

CARD 1 OF 4

PA-28-140
PA-28-150
PA-28-160
PA-28-180
PA-28-235
PA-28R-180
PA-28R-200

PIPER AIRCRAFT CORPORATION

PART NUMBER 753-586

January 31, 2008

AEROFICHE REVISION STATUS

Revisions to the Cherokee Service Manual (P/N 753-586) originally published August 16, 1972 are as follows:

Revision	Publication Date	Aerofiche Card Effectivity
ORG720816	August 16, 1972	All
CR810115	January 15, 1981	1, 2, 3 and 4
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PR831003	August 3, 1983	1, 2, 3 and 4
PR840423	April 23, 1984	1, 2, 3 and 4
PR86115	January 15, 1986	1 and 3
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IR950215	February 15, 1995	1 and 2
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PR080131*	January 31, 2008	1, 2, 3, and 4

*** PARTIAL REVISION OF SERVICE MANUAL 753-586**

Revisions appear in all aerofiche cards. Accordingly, replace your entire existing Aerofiche Card Set with this one dated 01/31/08.

Consult the Customer Service Information Aerofiche (P/N 1753-755) for current revision dates for this manual.

TABLE III-I - INSPECTION REPORT - PA-28-140/150/160/180/235

Refer to Notes 1, 2, 3, and 4 before performing the following inspections.

NATURE OF INSPECTION	Inspection Interval (Hrs) 50	100
A. PROPELLER GROUP		
WARNING: USE EXTREME CAUTION WHEN ROTATING PROPELLER BY HAND; PROPELLER MAY KICK BACK. PRIOR TO ROTATING PROPELLER ENSURE BOTH MAGNETO SWITCHES ARE OFF (GROUNDED). IF MAGNETOS ARE NOT GROUNDED, TURNING PROPELLER MAY START ENGINE.		
1. Inspect spinner and back plate for cracks, dents, missing screws, and security	O	O
2. Inspect blades for nicks and cracks	O	O
3. In PA-28-235 only, if constant speed propeller installed: check for grease and oil leaks	O	O
4. In PA-28-235 only, if constant speed propeller installed: lubricate propeller per Lubrication Chart, Section II		O
5. Inspect spinner mounting brackets for cracks and security		O
6. Inspect propeller mounting bolts for security and safety. Check torque and re-safety if safety is broken		O
7. In PA-28-235 only, if constant speed propeller installed: inspect hub parts for cracks and corrosion		O
8. In PA-28-235 only, if constant speed propeller installed: rotate blades of propeller and check for tightness in hub pilot tube. (Refer to Section VIII.)		O
9. Inspect complete propeller and spinner assembly for security, chafing, cracks, deterioration, wear, and correct installation		O
B. ENGINE GROUP		
WARNING: IF MAGNETOS ARE NOT GROUNDED, TURNING PROPELLER MAY START ENGINE. USE EXTREME CAUTION WHEN ROTATING PROPELLER BY HAND; PROPELLER MAY KICK BACK. PRIOR TO ROTATING PROPELLER ENSURE BOTH MAGNETO SWITCHES ARE OFF (GROUNDED).		
NOTE: Read Note 5 prior to completing this group.		
1. Remove engine cowling and inspect for internal and external damage	O	O
2. Clean and inspect cowling for cracks, distortion, and loose or missing fasteners. (See Note 6.)		O
3. Drain oil sump. (See Note 8.)	O	O
4. Clean suction oil strainer at oil change; inspect strainer for foreign particles	O	O
5. Clean pressure oil strainer or change full-flow (cartridge-type) oil filter element. Inspect strainer or element for foreign particles	O	O
6. Inspect oil temperature sender unit for leaks and security		O
7. Inspect oil lines and fittings for leaks, security, chafing, dents, & cracks	O	O
8. Clean and inspect oil radiator cooling fins		O

TABLE III-I - INSPECTION REPORT - PA-28-140/150/160/180/235

Refer to Notes 1, 2, 3, and 4 before performing the following inspections.

NATURE OF INSPECTION	Inspection Interval (Hrs) 50	100
B. ENGINE GROUP (CONT.)		
9. Fill engine with oil per information on cowling or in Lubrication Chart, Sec. II	O	O
CAUTION: USE CAUTION NOT TO CONTAMINATE VACUUM PUMP WITH CLEANING FLUID. (REFER TO LATEST REVISION OF LYCOMING SERVICE INSTRUCTION NO. 1221.)		
10. Clean engine with approved solvents		O
11. Inspect condition of spark plugs. Clean and adjust gap as required; adjust per latest revision of Lycoming Service Instruction No. 1042		O
NOTE: If fouling of spark plugs is apparent, rotate bottom plugs to upper plugs.		
12. Inspect spark plug cable leads	O	O
13. Check cylinder compression. (Refer to AC 43.13-1, latest revision.)		O
14. Inspect cylinders for cracked or broken fins. (See Note 10.)		O
15. Inspect rocker box covers for evidence of oil leaks. If found, replace gasket; torque cover screws 50 inch-pounds. (See Note 10.)	O	O
16. Inspect ignition harness and insulators for high tension leakage and continuity		O
17. Check magneto points for proper clearance		O
18. Inspect magnetos for oil seal leakage (See Note 34.)		O
19. Inspect breaker felts for proper lubrication		O
20. Inspect magnetos to engine timing		O
21. Remove air filter and clean per Section II. Replace as required	O	O
22. Drain carburetor and clean inlet line fuel strainer	O	O
23. Inspect condition of alternate air valve and housing	O	O
24. Inspect condition of carburetor heat air door and box	O	O
25. Check throttle body attaching screws for tightness. (Correct torque is 40 to 50 in.-lbs.)	O	O
26. Inspect vent lines for evidence of fuel or oil seepage	O	O
27. Inspect intake seals for leaks and clamps for tightness. (Torque clamps 40-50 in.-lbs.)	O	O
28. Inspect all induction air and alternate heat ducts per Induction Air Inlet Duct and Alternate Heat Duct Inspection. (See Special Inspections, Procedures.) (See Note 7.)	O	O
29. Inspect condition of flexible fuel lines. Replace as required		O
30. Inspect fuel system for leaks	O	O
31. Inspect engine-driven and electric fuel pumps for condition and operation. Replace as required. Clean screens in electric fuel pump(s)	O	O
32. PA-28-140/150/160/180 models only, remove and clean fuel filter bowl and screen on lower left side of firewall	O	O
33. Inspect and operationally test engine driven vacuum pumps and lines		O

TABLE III-I - INSPECTION REPORT - PA-28-140/150/160/180/235

Refer to Notes 1, 2, 3, and 4 before performing the following inspections.

NATURE OF INSPECTION	Inspection Interval (Hrs) 50	100
B. ENGINE GROUP (CONT.)		
34. Inspect throttle, carburetor heat, mixture, and propeller governor controls for security, travel and operating condition. (See Notes 27 & 29.)		O
35. Inspect exhaust stacks, connections and gaskets per Exhaust System Inspection. (See Special Inspections, Procedures.) Replace gaskets as required	O	O
36. Inspect muffler, heat exchange and baffles per Exhaust System Inspection. (See Special Inspections, Procedures.)	O	O
37. Inspect breather tube for obstructions and security		O
38. Inspect crankcase for cracks, leaks, and security of seam bolts		O
39. Inspect engine mounts for cracks and loose mounting		O
40. Inspect all engine baffles		O
41. Inspect all wiring connected to engine and accessories	O	O
42. Inspect rubber engine mount bushings for deterioration. (Replace as required.)		O
43. Inspect firewall seals		O
44. Lubricate alternator idler pulley; remove front grease seal and add grease per Lubrication Chart, Section II. Disregard if sealed bearing is installed		O
45. Inspect condition of alternator and starter		O
46. Inspect security of alternator and mounting		O
47. Inspect condition and tension of alternator drive belt. (See Checking Generator and Alternator Belt Tension, Section XI.)		O
48. If installed, inspect condition of A/C compressor belt and tension. (See Adjustment of Drive Belt Tension, Section XIV, Paragraph 14-23.)		O
49. If installed, check A/C compressor oil level. (See Note 12.)		O
50. If installed, inspect A/C compressor clutch security and wiring. (See Note 13.)		O
51. If installed, inspect A/C compressor mounting for cracks, corrosion, and security		O
52. Check fluid in brake reservoir. Fill as required	O	O
53. Inspect and lubricate all controls per Lubrication Chart, Section II		O
54. Install engine cowling	O	O
C. CABIN AND COCKPIT GROUP		
1. Inspect cabin door latch and hinges, and windows, for damage, operation and security		O
2. Inspect windows for scratches, crazing, and condition		O
3. Check window and door seals for deterioration, cracks, and voids		O
4. Inspect upholstery for tears		O
5. Inspect seats and seat belts for security of brackets and bolts. (See Note 32 and Restraint System, Inspection, Section XIV.)		O
6. Inspect trim control operation		O
7. Inspect condition and operation of rudder pedals and rudder bar assembly. (See Note 28.)		O

TABLE III-I - INSPECTION REPORT - PA-28-140/150/160/180/235

Refer to Notes 1, 2, 3, and 4 before performing the following inspections.

NATURE OF INSPECTION	Inspection Interval (Hrs) 50	100
C. CABIN AND COCKPIT GROUP (CONT.)		
8. Inspect parking brake and brake handle for operation and cylinder leaks		O
9. Inspect control wheels, column, pulleys, cables, and fittings. (See Notes 14 & 22.)		O
10. Perform Flap Control Cable Attachment Bolt Inspection. (See Special Inspections, Procedures, and Note 14.)		O
11. Inspect landing, navigation, cabin and instrument lights. (See Note 23.)	O	O
12. Inspect instruments, avionics, lines, and attachments		O
13. Inspect gyro operated instruments and electric turn and bank. (Overhaul or replace as required.)		O
14. Replace filters on the gyro horizon and directional gyro, or replace the central air filter		O
15. Clean or replace vacuum regulator filter		O
16. Inspect static system, altimeter and transponder for installation/certification per latest revision of AC 43.13-1 and current test/inspection per FAR's 91.411 and 91.413, respectively		O
17. Inspect and test ELT per FAR 91.207		O
18. Inspect operation of fuel selector valve. (See Notes 15 & 25.)		O
19. PA-28-235 only, check operation of fuel drain		O
20. PA-28-235 only, inspect fuel valve drain lever cover for security. Verify door opens and closes freely and prevents operation of lever when closed	O	O
21. Inspect condition of heater controls and ducts		O
22. Inspect condition and operation of air vents		O
23. If installed, inspect condition of air conditioning ducts		O
24. If installed, remove and clean air conditioning evaporator filter		O
25. If installed, inspect portable fire extinguisher minimum weight as specified on nameplate		O
D. FUSELAGE AND EMPENNAGE GROUP		
1. Remove inspection plates and panels		O
2. Check forward wing attach fittings for condition and security		O
3. Inspect aft wing attach fittings per Aft Wing Attach Fittings 100 Hour Inspection. (See Special Inspections, Procedures.)		O
4. Inspect baggage door, latch and hinges for damage, operation and security	O	O
5. Inspect battery, box and cables. Flush or clean area as required and fill battery per instructions on box and in Electrical System, Section XI	O	O
6. Inspect electronic installations		O
7. Inspect skins, bulkheads, frames, and stringers for damage, irregularities, or structural defects (i.e. - skin cracks, distortion, dents, corrosion and loose or missing rivets)		O
8. Inspect condition and security of antenna mounts and electric wiring		O
9. Inspect air conditioning system for refrigerant leaks. (See Note 12.)		O

TABLE III-I - INSPECTION REPORT - PA-28-140/150/160/180/235

Refer to Notes 1, 2, 3, and 4 before performing the following inspections.

NATURE OF INSPECTION	Inspection Interval (Hrs) 50	100
D. FUSELAGE AND EMPENNAGE GROUP (CONT.)		
10. Inspect refrigerant level in sight gauge of receiver-dehydrator. Refer to Section XIV	O	O
11. Inspect air conditioner condenser air scoop for condition and rigging. (See Note 16.)	O	O
12. Inspect fuel lines, valves, and gauges for damage and operation		O
13. PA-28-235 only, clean screens in fuel pumps.		O
14. PA-28-235 only, remove, drain and clean fuel strainer bowl, located at the bottom of selector valve. Refer to Fuel System, Section IX	O	O
15. Inspect security of all lines		O
16. Inspect vertical fin and rudder for surface damage or irregularities (i.e. - skin cracks, distortion, dents, corrosion, and excessive paint build up); structural defects (i.e. - loose or missing rivets); misrigging or structural imbalance; hinge damage, excessive wear, freedom of movement and proper lubrication; and attachment points for missing or worn hardware		O
17. Inspect rudder hinges, horn and attachments for damage, security, and operation		O
18. Inspect vertical fin attachments for security		O
19. Inspect rudder control stops to ensure stops have not loosened and locknuts are tight		O
20. Inspect rudder hinge bolts for excess wear. Replace as required		O
21. Inspect stabilator and trim tab for surface damage or irregularities (i.e. - skin cracks, distortion, dents, corrosion, and excessive paint build up); structural defects (i.e. - loose or missing rivets); misrigging or structural imbalance; hinge damage, excessive wear, freedom of movement and proper lubrication; and attachment points for missing or worn hardware		O
22. Inspect stabilator, trim tab hinges, horn, and attachments for damage, security, and operation		O
23. Inspect stabilator attachments per Stabilator Attach Fittings Corrosion Inspection. (See Special Inspections, Procedures)		O
24. Inspect stabilator and tab hinge bolts and bearings for excess wear. Replace as required		O
25. Inspect stabilator control stops to ensure stops are not loose. Ensure bolts and locknuts are tight		O
26. Inspect rudder and stabilator cables, fittings, turnbuckles. Check all cable tensions using a tensiometer. (See Notes 14 & 17.)		O
27. Inspect aileron, rudder, stabilator and stabilator trim cables, terminals, fittings, turnbuckles, guides, and pulleys for safety, damage, and operation. (See Notes 14 & 21.)		O
28. Lubricate per Lubrication Chart, Section II	O	O
29. Inspect rotating beacon for security and operation		O

TABLE III-I - INSPECTION REPORT - PA-28-140/150/160/180/235

Refer to Notes 1, 2, 3, and 4 before performing the following inspections.

NATURE OF INSPECTION	Inspection Interval (Hrs) 50	100
D. FUSELAGE AND EMPENNAGE GROUP (CONT.)		
30. Inspect security of Autopilot servo bridle cable clamps. (See Note 14.)		O
31. Inspect all control cables, air ducts, electrical leads, harnesses, lines, radio antenna leads, and attaching parts for security, routing, chafing, deterioration, wear, and correct installation. (See Note 14.)		O
32. Inspect ELT battery for condition and date per FAR 91.207		O
33. Inspect ELT installation and antenna for condition and security. Replace antenna if bent or damaged		O
34. Install inspection plates and panels		O
E. WING GROUP		
1. Remove inspection plates and fairings		O
2. Inspect wing surfaces and tips for damage, loose rivets, and the condition of walkways		O
3. Inspect ailerons for surface damage or irregularities (i.e. - skin cracks, distortion, dents, corrosion, and excessive paint build up); structural defects (i.e. - loose or missing rivets); misrigging or structural imbalance; hinge damage, excessive wear, freedom of movement and proper lubrication; and attachment points for missing or worn hardware		O
4. Inspect aileron hinges and attachments. (See Note 24.)		O
5. Inspect aileron control stops to ensure stops have not loosened and locknuts are tight		O
6. Inspect aileron cables, fittings, terminals, turnbuckles, pulleys, and bellcranks for damage and operation, and cable tensions. (See Note 14.)		O
7. Inspect flaps for surface damage or irregularities (i.e. - skin cracks, distortion, dents, corrosion, and excessive paint build up); structural defects (i.e. - loose or missing rivets); misrigging or structural imbalance; hinge damage, excessive wear, freedom of movement and proper lubrication; and attachment points for missing, damaged or worn hardware		O
8. Inspect condition of flap hinge bolts. Replace as required		O
9. Lubricate per Lubrication Chart, Section II	O	O
10. Inspect wing fore and aft attach fittings, and bolts for security, corrosion and condition. (See Notes 30 & 31.)		O
11. Inspect pitot tube for damage and condition		O
CAUTION: SEVERE BURNS CAN RESULT FROM COMING IN CONTACT WITH A HEATED PITOT TUBE.		
12. Check pitot heat		O
13. Inspect fuel tanks and lines for leaks and water. (See Note 18.)		O
14. Inspect fuel tanks for minimum octane markings		O
15. Confirm fuel tanks are marked for capacity		O
16. Inspect fuel tank vents		O

TABLE III-I - INSPECTION REPORT - PA-28-140/150/160/180/235

Refer to Notes 1, 2, 3, and 4 before performing the following inspections.

NATURE OF INSPECTION	Inspection Interval (Hrs) 50	100
E. WING GROUP (CONT.)		
17. Inspect all control cables, air ducts, electrical leads, lines, and attaching parts for security, routing, chafing, deterioration, wear, and correct installation. (See Note 14.)		O
18. Install inspection plates and fairings		O
F. LANDING GEAR GROUP		
1. Check oleo struts for proper extension and evidence of fluid leakage. See Landing Gear, Section II	O	O
2. Inspect nose gear steering control and travel		O
3. Remove wheel fairings		O
4. Inspect wheel alignment		O
5. Put airplane on jacks. (Refer to Section II.)		O
6. Inspect tires for cuts, uneven or excessive wear, and slippage		O
7. Remove wheels; clean, inspect, and repack bearings		O
8. Inspect wheels for cracks, corrosion, and broken bolts		O
9. Check tire pressure	O	O
10. Inspect brake lining and disc for condition and wear		O
11. Inspect brake backing plates for condition and wear		O
12. Inspect brake lines for condition and security		O
13. Inspect shimmy dampener operation		O
14. Inspect gear forks for damage		O
15. Inspect oleo struts for fluid leaks and scoring		O
16. Inspect gear struts and mounting bolts for condition and security. (See Note 26.)		O
17. Inspect torque links for cracks, bolts for condition and security. Check assembly for excessive side play. (See Note 33.)		O
18. Inspect wheel fairings and attachments		O
19. Inspect all hydraulic lines, electrical leads, and attaching parts for condition and security (i.e. - routing, chafing, damage, wear, etc.)		O
20. Lubricate per Lubrication Chart, Section II	O	O
21. Install wheel fairings		O
22. Remove airplane from jacks		O
G. FLOAT GROUP		
1. Inspect float attachment fittings		O
2. Inspect floats for damage		O
3. Inspect pulleys and cables		O

TABLE III-I - INSPECTION REPORT - PA-28-140/150/160/180/235

Refer to Notes 1, 2, 3, and 4 before performing the following inspections.

NATURE OF INSPECTION	Inspection Interval (Hrs) 50	100
H. SPECIAL INSPECTIONS		
See Special Inspections, Requirements, below.		
I. OPERATIONAL INSPECTION		
NOTE: Refer to Note 19 prior to starting engine or taxiing airplane.		
1. Check fuel pump and fuel tank selector	O	O
2. Check fuel quantity, pressure, and flow readings	O	O
3. Check oil pressure and temperature	O	O
4. Check alternator output	O	O
5. Check manifold pressure	O	O
6. Check carburetor heat	O	O
7. Check parking brake	O	O
8. If installed, check vacuum gauge	O	O
9. Check gyros for noise and roughness	O	O
10. Check cabin heater operation	O	O
11. Check magneto switch operation	O	O
12. Check magneto RPM variation	O	O
13. Check throttle and mixture operation	O	O
14. Check propeller smoothness	O	O
15. Check propeller governor action	O	O
16. Check engine idle	O	O
17. Check electronic equipment operation	O	O
18. Check operation of autopilot, including automatic pitch trim, and manual electric trim. (See Note 20.)	O	O
19. Check air conditioner compressor clutch operation	O	O
20. Check air conditioner condenser scoop operation	O	O
J. GENERAL		
1. Aircraft conforms to FAA Specifications	O	O
2. Latest revision of applicable FAA Airworthiness Directives complied with	O	O
3. Latest revision of applicable manufacturer's Service Bulletins, Letters, and Instructions complied with	O	O
4. Current and correct Pilot's Operating Handbook is in the airplane	O	O
5. Appropriate entries made in the Aircraft and Engine Log books	O	O
6. Registration Certificate is in the aircraft and properly displayed	O	O
7. Radio Station FCC License is in the aircraft and properly displayed	O	O
8. Aircraft Equipment List, Weight and Balance and FAA Form(s) 337 (if applicable) are in the aircraft and in proper order	O	O
9. Operational inspection and run-up completed	O	O
10. Aircraft cleaned and lubricated after wash (as required)	O	O

TABLE III-I - INSPECTION REPORT - PA-28-140/150/160/180/235

K. NOTES

1. Refer to Piper's Customer Service Information Aerofiche P/N 1753-755 for latest revision dates to Piper Inspection Reports/Manuals and this service manual. References to Section are to the appropriate Section in this manual.

   WARNING: INSTRUCTIONS FOR CONTINUED AIRWORTHINESS (ICA) FOR ALL NON-PIPER APPROVED STC INSTALLATIONS ARE NOT INCLUDED IN THIS MANUAL. WHEN A NON-PIPER APPROVED STC INSTALLATION IS INCORPORATED ON THE AIRPLANE, THOSE PORTIONS OF THE AIRPLANE AFFECTED BY THE INSTALLATION MUST BE INSPECTED IN ACCORDANCE WITH THE ICA PUBLISHED BY THE OWNER OF THE STC. SINCE NON-PIPER APPROVED STC INSTALLATIONS MAY CHANGE SYSTEMS INTERFACE, OPERATING CHARACTERISTICS AND COMPONENT LOADS OR STRESSES ON ADJACENT STRUCTURES, THE PIPER PROVIDED ICA MAY NOT BE VALID FOR AIRPLANES SO MODIFIED.

2. Inspections or operations are to be performed as indicated by a "O" at the 50 or 100 hour inspection interval. Inspections or operations (i.e. – component overhauls/replacements, etc.) required outside the 100 hour cycle are listed as special inspections in Section III. Inspections must be accomplished by persons authorized by the FAA.

   (a) The 50 hour inspection accomplishes preventive maintenance, lubrication and servicing as well as inspecting of critical components.

   (b) The 100 hour inspection is a complete inspection of the airplane, identical to an annual inspection.

   NOTE: A log book entry should be made upon completion of any inspections.

3. Piper Service Bulletins are of special importance and Piper considers compliance mandatory. In all cases, see Service Bulletin/Service Letter Index P/N 762-332 or Service Bulletin/Service Letter Aerofiche Set P/N 1762-331 to verify latest revision.

4. Piper Service Letters are product improvements and service hints pertaining to servicing the airplane and should be given careful attention.

5. Inspections given for the power plant are based on the engine manufacturer's operator's manuals (See Introduction, Supplementary Publications) for these airplanes. Any changes issued to the engine manufacturer's operator's manuals supersede or supplement the inspections outlined in this report.

6. In PA-150/160/180 S/N's 28-1761 and up; and PA-28-235's: inspect teflon bushings and pins attaching top and bottom engine cowlings at nose for condition and security. Replace as required.

7. In PA-28-140 S/N's 28-20001 thru 28-7225172; PA-28-150/160/180 S/N's 28-03, 28-1 thru 28-7305012; PA-28-235 S/N's 28-10001 thru 28-7310005; for airplanes which have not installed either Piper Kit No. 760-634V, 760-635V, 760-639V, or 760-640V per Piper Service Bulletin No. 360: conduct the Induction Air Inlet Duct and Alternate Heat Duct Inspection (see Special Inspections, Procedures).

8. Refer to latest revision of Lycoming Service Bulletin No. 480 and Service Instruction 1014.

TABLE III-I - INSPECTION REPORT - PA-28-140/150/160/180/235

K. NOTES (CONT.)

9. Not used.
10. Check cylinders for evidence of excessive heat indicated by burned paint on the cylinders. This condition is indicative of internal damage to the cylinder and, if found, its cause must be determined and corrected before the airplane is returned to service. Heavy discoloration and appearance of seepage at the cylinder head and barrel attachment area is usually due to emission of thread lubricant used during assembly of the barrel at the factory, or by slight gas leakage which stops after the cylinder has been in service for a while. This condition is neither harmful nor detrimental to engine performance and operation. If it can be proven that leakage exceeds these conditions, the cylinder must be replaced.
11. Not used.

    CAUTION: ENVIRONMENTAL REGULATIONS MAY REQUIRE SPECIAL EQUIPMENT AND PROCEDURES BE USED WHEN CHARGING AIR CONDITIONING SYSTEMS.

12. The compressor oil level should not be checked unless a refrigerant leak has occurred or system pressure has been released, requiring an addition of refrigerant to the system.
13. Clean any traces of oil from the clutch surface.
14. Examine cables for broken strands by wiping them with a cloth for their entire length. Visually inspect the cable thoroughly for damage not detected by the cloth. Replace any damaged or frayed cables.
    (a) See Special Inspections, Procedures, Control Cable Inspection, below, or the latest edition of FAA AC 43.13-1.
    (b) At fifteen (15) years time-in-service, begin Cable Fittings 100 Hour Special Inspection. See Special Inspections, Procedures, Control Cable Inspection, below.
15. In PA-28-140 S/N's 28-20002 thru 28-26783 and 28-26945 thru 28-7125595; PA-28-150/160/180 S/N's 28-1 thru 28-7105179: if fuel selector valve is difficult to rotate, inspect and lubricate valve per Fuel Selector Valve 400 Hour Inspection (see Special Inspections, Procedures).
16. Refer to Section XIV (Paragraphs 14-31 through 14-35) for condenser assembly rigging and adjustment.
17. Maintain cable tensions as specified in Surface Controls, Section V.
18. Sloshing of fuel tanks not approved. For airplanes with fuel tanks which have previously been sloshed, perform Sloshed Fuel Tank 100 Hour Inspection in Section IX.
19. Refer to Section 4 of the Flight Manual/Pilot's Operating Handbook for preflight and flight check list.
20. Refer to Flight Manual/Pilot's Operating Handbook Supplement for preflight and flight check and for intended function in all modes.

TABLE III-I - INSPECTION REPORT - PA-28-140/150/160/180/235

K. NOTES (CONT.)

21. If not accomplished already, create access panels for inspection (refer to Sec. IV, Para. 4-79). Inspect stabilator control cables.
22. In PA-28-140 S/N's 28-20001 thru 28-7725290, PA-28-150, -160, -180 S/N's 28-1 thru 28-4377, PA-28-235 S/N's 28-10001 thru 28-11039, for airplanes with the original equipment "butterfly" control wheels still installed, perform the 100 Hour Control Wheel Inspection (see Special Inspections, Procedures).
23. If the landing light is located in the air filter and the improved Landing Light Support P/N 85174-002 has not been installed, perform Landing Light Seal Inspection, (see Special Inspections, Procedures).
24. In PA-28-140 S/N's 28-20000 thru 28-26233, PA-28-150, -160, -180 S/N's 28-1 thru 28-5611, PA-28-235 S/N's 28-10001 thru 28-11300, perform Aileron Hinge Doubler 100 Hour Inspection (see Special Inspections, Procedures).
25. In PA-28-235 S/N's 28-10001 thru 28-74100093, for airplanes which have not installed Piper Kit No. 757-148 (with the 1-H65-2 valve) or 760-895: each 50 hours, perform the Fuel Selector Valve 50 Hour Leak Check (see Special Inspections, Procedures).
26. For airplanes which are not equipped with forged main landing gear strut cylinders P/N 65489-002 on both left and right sides, perform Cast Main Landing Gear Strut Cylinder 100 Hour Inspection (see Special Inspections, Procedures).
27. During inspection of throttle, determine if there is internal cable ballooning. If so, replace the affected cables.
28. In PA-28-140 S/N's 28-20001 thru 28-7325073, PA-28-150, -160, -180 S/N's 28-03, 28-1 thru 28-7305081, PA-28-235 S/N's 28-10001 thru 28-7310048; for airplanes which have not modified the original equipment rudder bar assembly per Figure 3-25, perform Rudder Bar Assembly 100 Hour Inspection (see Special Inspections, Procedures).
29. In PA-28-180 S/N's 28-5153 thru 28-7405188 and PA-28-235 S/N's 28-7310001 thru 28-7410081; for those airplanes which have not installed Piper Kit No. 760-890 (PA-28-180) or 760-891 (PA-28-235): inspect throttle and mixture cable forward end balljoints for excessive wear (see Figure 8-10a).
30. Verify torque at forward and aft spar attach per Section IV, Figure 4-2. Retorque wing aft spar attach bolts per Wing Aft Spar-to-Fuselage Attachment Hardware 100 Hour Inspection (see Special Inspections, Procedures).
31. Verify initial compliance with Piper Service Bulletin No. 886.
32. In PA-28-180 S/N's 28-7105001 thru 28-7505046 and PA-28-235 S/N's 28-7110001 thru 28-7510016: inspect the quick-disconnect mechanism for each rear seat per Rear Seat Quick-Disconnect Mechanism Inspection (see Special Inspections, Procedures).

TABLE III-I - INSPECTION REPORT - PA-28-140/150/160/180/235

K. NOTES (CONT.)

33. In PA-28-140 S/N's 28-20001 thru 28-7725290, PA-28-150, -160 S/N's 28-1 thru 28-4377, PA-28-180 S/N's 28-671 thru 28-7505259 and PA-28-235 S/N's 28-10001 thru 28-7710089; for those airplanes which have not installed Piper Kit No. 760-910 or a new greaser bolt P/N 79543-002 and have accumulated 500 hours time-in-service: perform Main Landing Gear Torque Link Greaser Bolt Inspection (see Special Inspections, Procedures).
34. Inspect magnetos:
    (a) For airplanes equipped with Slick Magnetos: inspect magneto(s) per the appropriate 100 Hour Inspection in the Slick F1100 Master Service Manual, available from Unison Industries, PH: (904) 739-4000, or http://www.unisonindustries.com/.
    (b) For airplanes equipped with TCM/Bendix Magnetos: inspect magneto(s) per the procedures in the Periodic Maintenance section of the applicable Service Support Manual, available from Teledyne Continental Motors, Inc., PH: (800) 718-3411, or http://www.tcmlink.com/.

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(f) Cable Fittings.

1 100 Hour Standard Inspection.

Check swaged terminal reference marks for any indication of cable slippage within fitting. Inspect fitting assembly for distortion and/or broken strands at the terminal. Check that all bearings and swivel fittings (bolted or pinned) pivot freely to prevent binding and subsequent failure. Check turnbuckles for proper thread exposure and broken or missing safety wires/clips.

Pay particular attention to corrosion and "pitting" on cable terminals, turnbuckles and cable fittings. Any corrosion or pitting found requires replacement of the corroded fitting and/or cable.

2 100 Hour Special Inspection.

For airplanes 15 years old or older, using a 10X magnifier, visually inspect the entire surface of each cable terminal, turnbuckle, or other cable fitting for corrosion or cracking. Inspect under safety wire or clips wrapped around the cable or fitting. Any evidence of corrosion or cracking, however minute, is cause for replacement. A logbook entry documenting the replacement of a cable terminal, turnbuckle, or other cable fitting relieves the inspection requirement for that fitting only, until such time as that fitting has been in service for 15 years.

(g) Pulleys.

Inspect pulleys for roughness, sharp edges, and presence of foreign material embedded in the grooves. Examine pulley bearings to assure proper lubrication, smooth rotation, freedom from flat spots, dirt, and paint spray. Periodically rotate pulleys, which turn through a small arc, to provide a new bearing surface for the cable. Maintain pulley alignment to prevent the cable from riding on flanges and chafing against guards, covers, or adjacent structure. Check all pulley brackets and guards for damage, alignment, and security.

(h) Pulley Wear Patterns.

Various cable system malfunctions may be detected by analyzing pulley conditions. These include such discrepancies as too much tension, misalignment, pulley bearing problems, and size mismatches between cables and pulleys. Examples of these conditions are shown in Figure 3-17.

(18) EXHAUST SYSTEM INSPECTION. (Refer to Figure 3-18 thru 3-19.)

WARNING: A VERY THOROUGH INSPECTION OF THE ENTIRE EXHAUST SYSTEM, INCLUDING EXHAUST HEATER SHROUD ASSEMBLY, MUFFLER AND MUFFLER BAFFLES, STACKS AND ALL EXHAUST CONNECTIONS AND WELDS MUST BE ACCOMPLISHED AT EACH 100 HOUR INSPECTION.

The possibility of exhaust system failure increases with use. It is recommended that the system be checked more carefully as the number of hours increase, therefore inspection at the 700 hour period, that the exhaust system has been in use would be more critical than ones in the 100 hour period. The system should also be checked carefully before winter operation when the cabin heat will be in use.

NOTE: Piper recommends that all PA-28 airplanes be fitted with a new muffler at or near the 1000 hour period of which the muffler has been used.

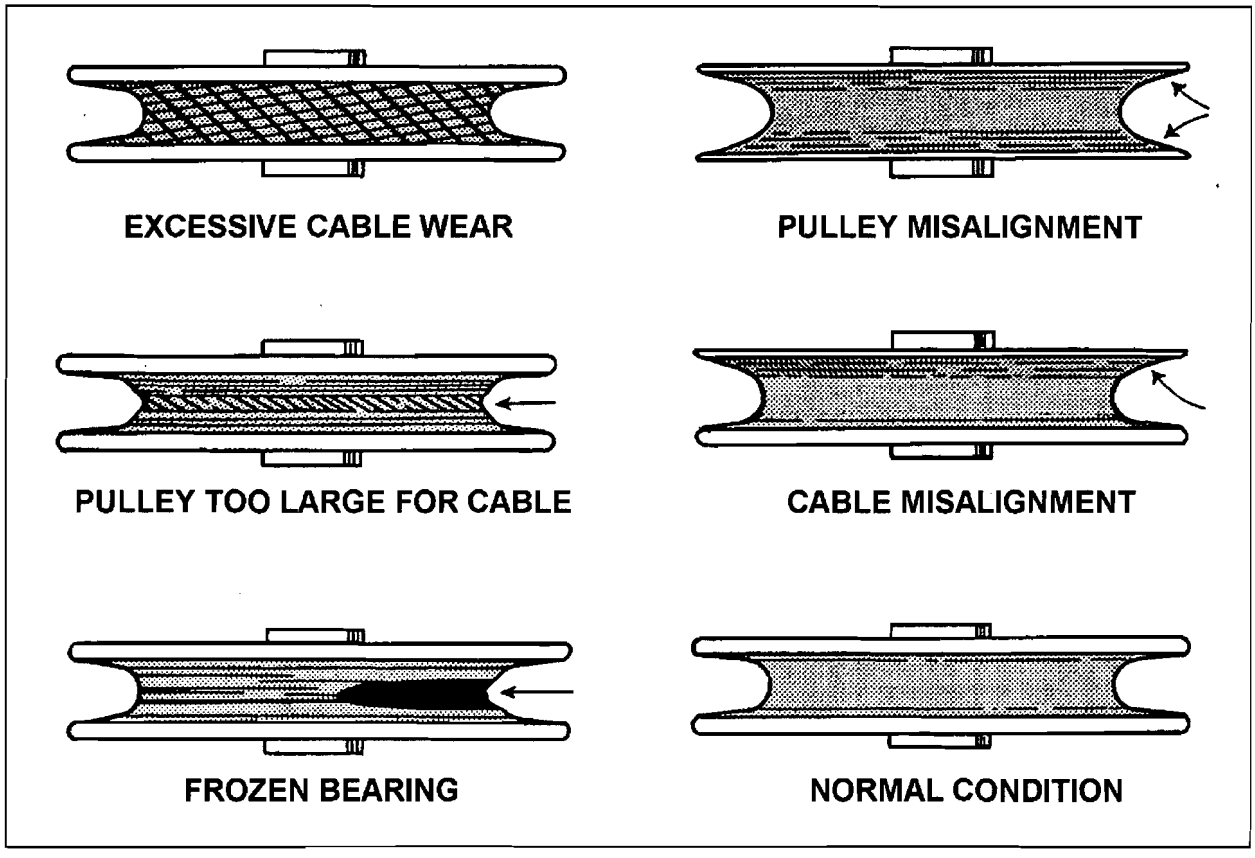

Figure 3-17. Pulley Wear Patterns

CAUTION: WHEN REMOVING OR INSTALLING COUPLING CLAMP, SLIDE CLAMP OVER END OF PIPE BEFORE ASSEMBLY / DISASSEMBLY. EXCESSIVE SPREADING CAN LEAD TO PREMATURE FAILURE OF CLAMP.

NOTE: When installing an exhaust clamp having an alignment pin be certain that the pin engages the mating holes in exhaust pipe and muffler to prevent separation of components.

Removal of the tail pipe and stacks is required for inspection of the muffler baffle. Remove or loosen all exhaust shields, carburetor and cabin heat muffs, shrouds, heat blankets, etc., as required to permit inspection of the complete system. Perform the necessary cleaning operations and inspect all external surfaces for dents, cracks and missing parts. Pay particular attention to welds, clamps, supports and support attachment lugs, slip joints, stack flanges and gaskets. Inspect internal baffle or diffusers. Any cracks, warpage or severe oxidation are cause for replacement of the muffler.

If any component is inaccessible for a thorough visual inspection, accomplish one of the following:

(a) Accomplish a submerged pressure check of the muffler and exhaust stack at 2 psi air pressure.

(b) Conduct a ground test using a carbon monoxide indicator by heading the airplane into the wind, warming the engine on the ground, advancing the throttle to full static RPM with cabin heat valves open, and taking readings of the heated airstream inside the cabin at each outlet (including rear seat heat outlet, if installed). Appropriate sampling procedures applicable to the particular indicator must be followed. If carbon monoxide concentration exceeds .005 percent or if a dangerous reading is obtained on an indicator not calibrated in percentages, the muffler must be replaced.

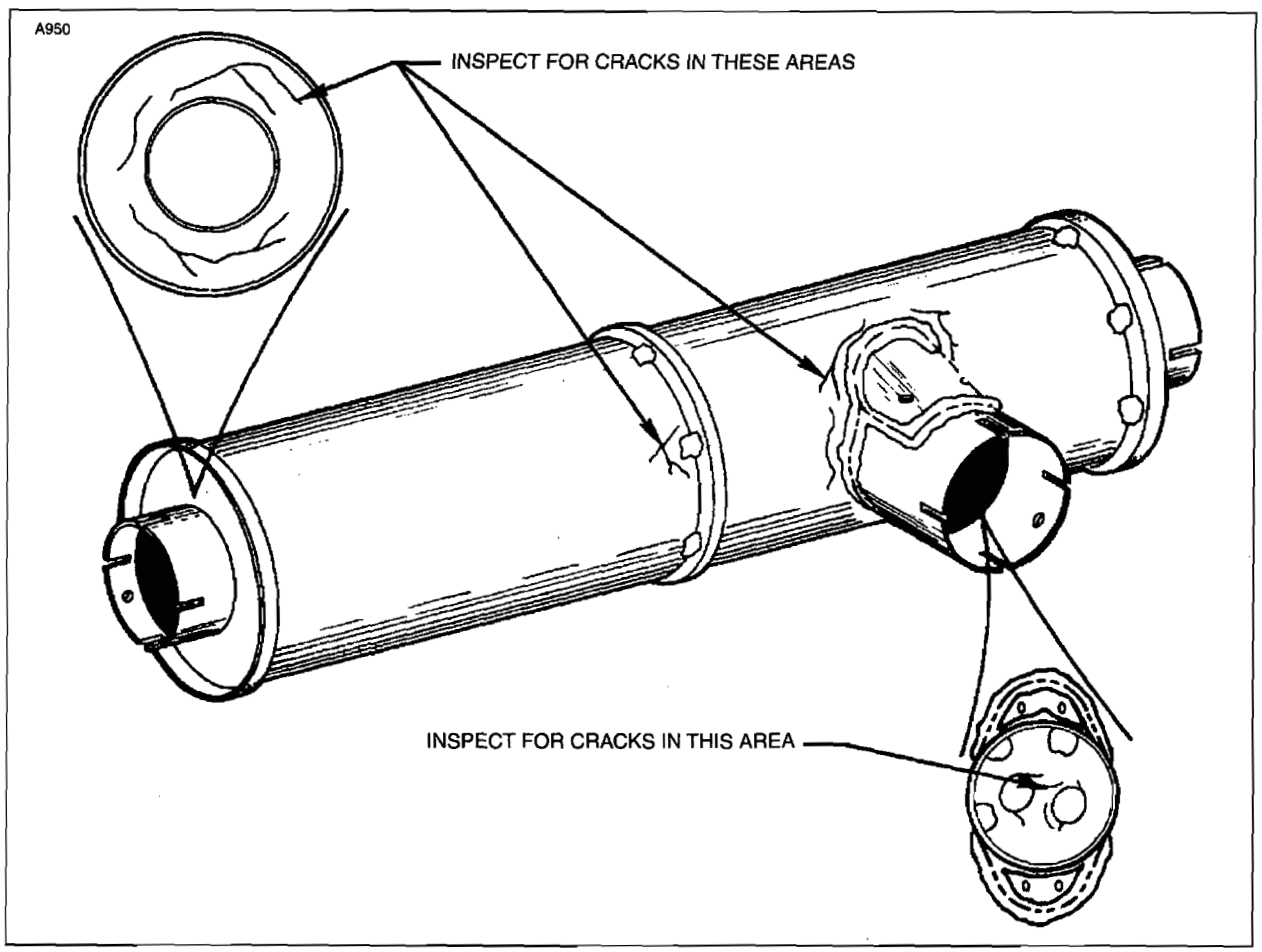

Figure 3-18. Typical Muffler Fatigue Areas

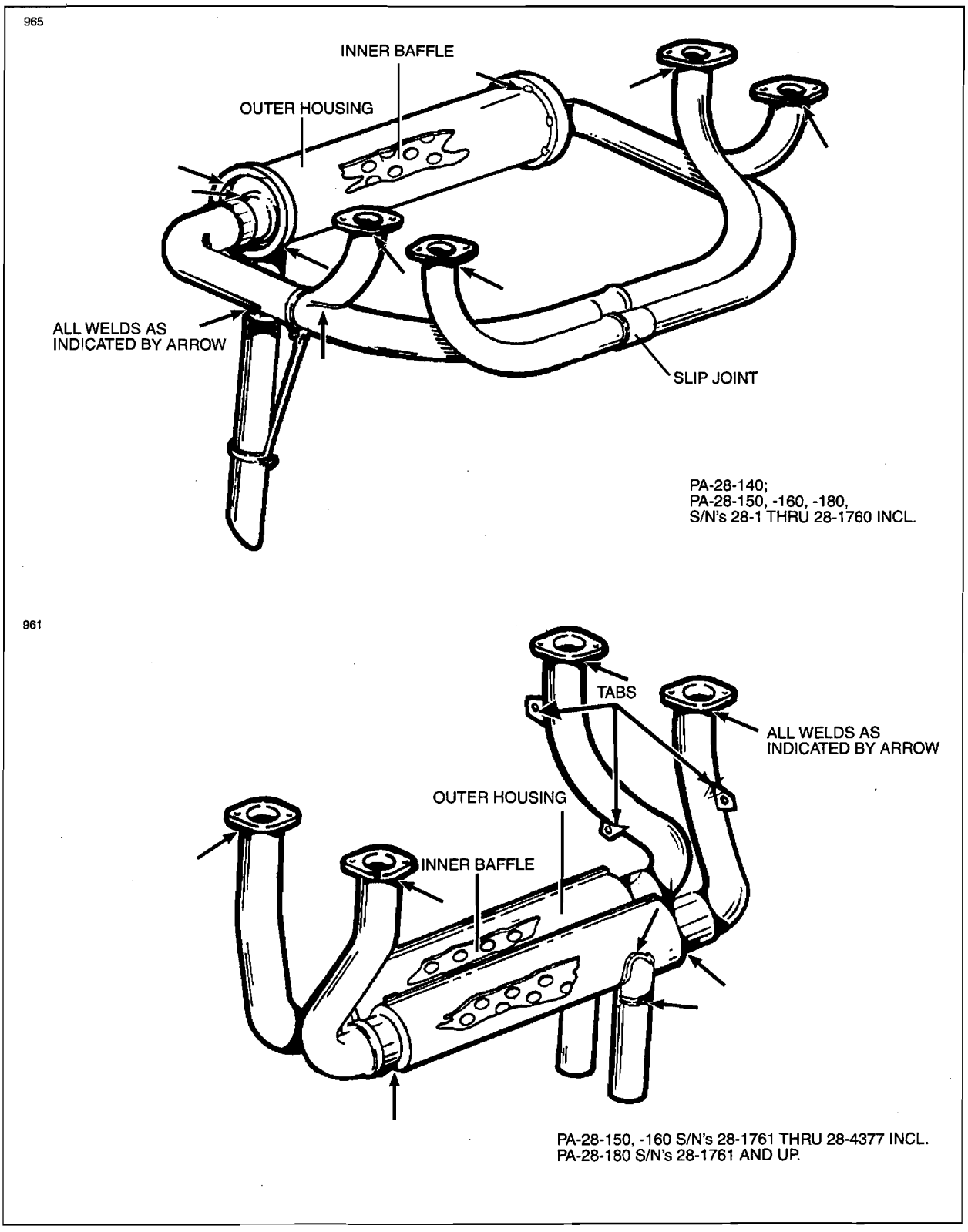

Figure 3-19. Exhaust System Inspection Points (Sheet 1)

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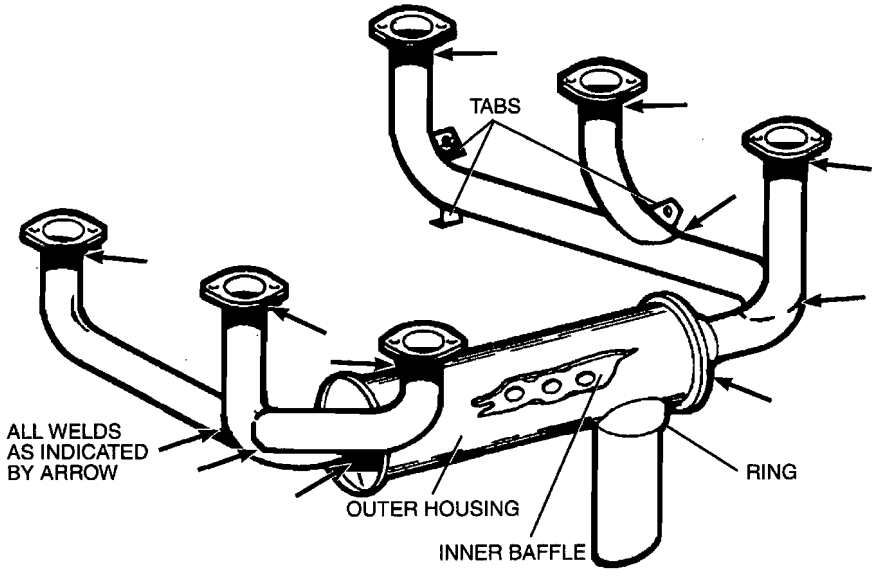

PA-28-235

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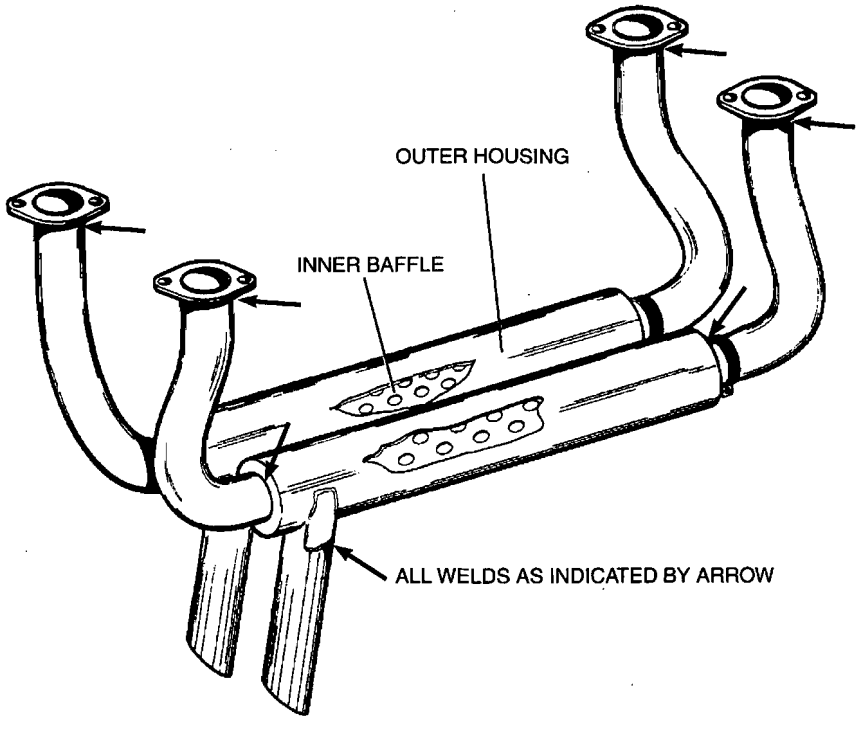

PA-28R

Figure 3-19. Exhaust System Inspection Points (Sheet 2)

(19) FIELD CHECK OF PA-28R-180 and PA-28R-200 MUFFLER ASSEMBLIES. (Refer to Figure 3-20.)

(a) Remove end clips.

(b) Check for any movement between the heater muff end plates and the muffler pipes in the directions shown on Figure 3-20. If there is no movement, the muffler assembly is acceptable.

(c) If there is any movement, remove the muffler assembly and inspect all parts, especially for abnormal wear on muffler shroud. Rework the end plates to give a .03" min. gap after assembly.

(d) Prior to reassembly, the two top screw holes in the upper shroud assembly should be slotted as necessary to allow the screws to be installed without causing any deformations of the skin.

(e) Install, but do not tighten, the two screws which hold the lower shroud assembly in place.

(f) Install the end strap clamps and torque them from 25 to 30 inch-pounds before installing the two top screws which hold the top shroud assembly in place.

(g) Tighten the two lower screws and then the two upper screws.

(h) Check the muffler for tightness after assembly.

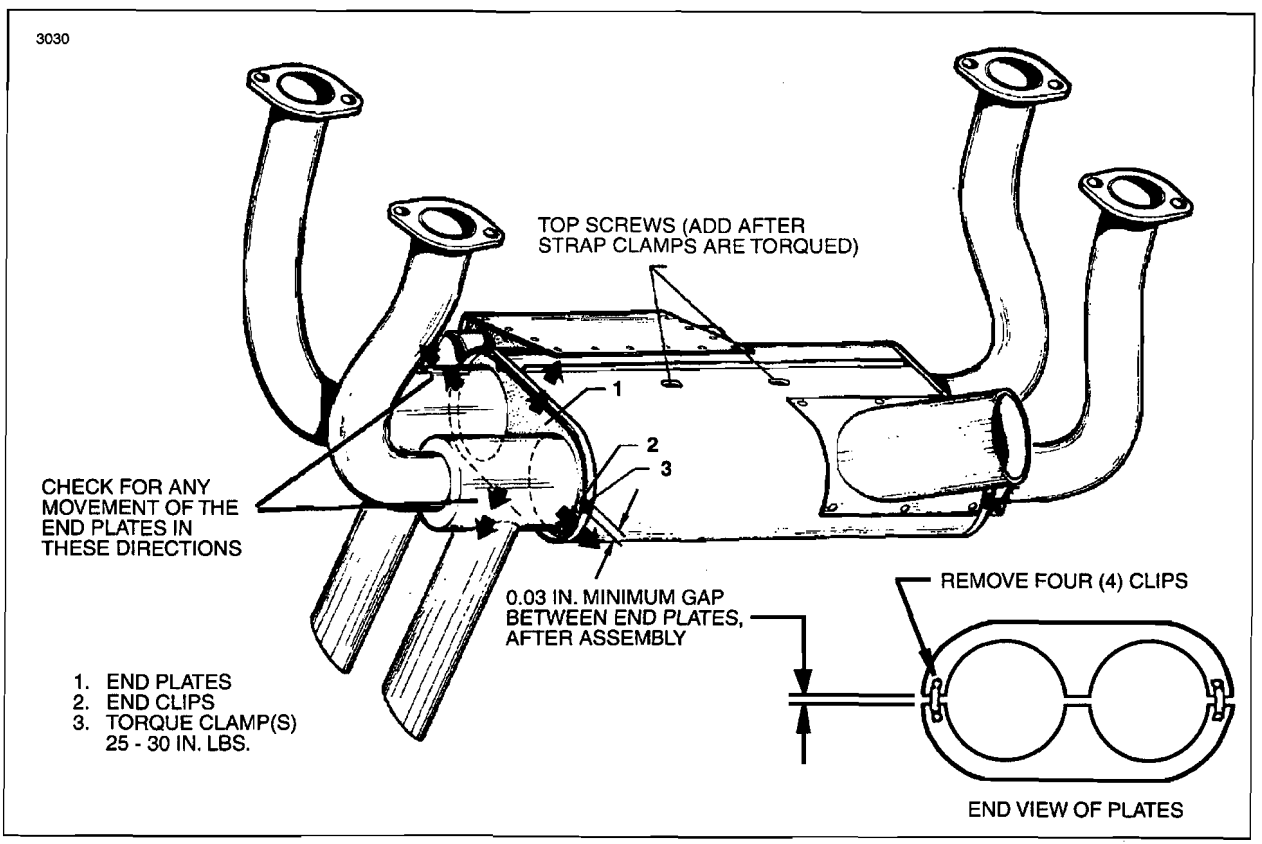

Figure 3-20. Exhaust System Installation, PA-28R-180, -200