

SERVICE INSTRUCTION

DATE: October 18, 1985
Service Instruction No. 1414A
(Supersedes Service Instruction No. 1414)
Engineering Aspects are
FAA Approved

SUBJECT: Bendix Service Bulletin No. RS-77, Rev. 1

MODELS AFFECTED: All Avco Lycoming engines employing Bendix RS or RSA fuel injector systems.

TIME OF COMPLIANCE: As required by subject service bulletin.

Bendix Service Bulletin No. RS-77, Rev. 1 herewith reprinted in its entirety pertains to the installation of the new two piece air bleed injector nozzles.



South Bend, Indiana 46620, U.S.A.

Service Bulletin

Fuel Systems

Bulletin No.: RS-77
 Rev. 1
 Date: 6-15-81
 Revised: 4-15-85

Subject: AIR BLEED NOZZLE, RS-RSA FUEL INJECTION SYSTEMS, TWO PIECE ASSEMBLY.

1. PLANNING INFORMATION:

A. Effectivity:

| <u>Bendix Part No.</u> | <u>Lycoming Part No.</u> | <u>Nomenclature</u> |
|------------------------|--------------------------|---------------------------|
| 2524864 | LW-18265 | Air Bleed Nozzle Assembly |
| 2524865 | LW-18266 | Air Bleed Nozzle Assembly |
| 2524866 | LW-18267 | Air Bleed Nozzle Assembly |
| 2524881 | LW-18182 | Air Bleed Nozzle Assembly |
| 2524917 | LW-18854 | Air Bleed Nozzle Assembly |
| 2524923 | LW-18853 | Air Bleed Nozzle Assembly |
| 2524925 | --- | Air Bleed Nozzle Assembly |
| 2524926 | LW-18855 | Air Bleed Nozzle Assembly |

B. Reason:

- (1) To introduce the new two piece nozzle with a removable fuel restrictor.
- (2) To provide installation instructions.
- (3) To provide cleaning instructions.

C. Compliance:

Operating activities: At owner's discretion.

Overhaul activities: Information.

D. Approval:

None.

E. Manpower:

No change.

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F. Material Availability:

| <u>Part No.</u> | <u>Nomenclature</u> | <u>Availability</u> |
|-----------------|--------------------------|---------------------------|
| 951391 | Preformed Packing | Bendix Distributors |
| 2521863 | Spring Holder | Bendix Distributors |
| 2541847 | Special Nut | Bendix Distributors |
| 2521864 | Spring | Bendix Distributors |
| 2522020 | Shipping Cap | Bendix Distributors |
| 2525892 | Tube Assembly | Bendix Distributors |
| 2525894 | Tube Assembly | Bendix Distributors |
| 2541494 | Body Assembly | Bendix Distributors |
| 2541946 | Body Assembly | Bendix Distributors |
| 2541949 | Body Assembly | Bendix Distributors |
| 2524864 | Airbleed Nozzle Assembly | Bendix Distributors |
| 2524865 | Airbleed Nozzle Assembly | Not Available * |
| 2524866 | Airbleed Nozzle Assembly | Not Available * |
| 2524881 | Airbleed Nozzle Assembly | Superseded by P/N 2524926 |
| 2524917 | Airbleed Nozzle Assembly | Not Available * |
| 2524923 | Airbleed Nozzle Assembly | Limited Availability * |
| 2524925 | Airbleed Nozzle Assembly | Not Available * |
| 2524926 | Airbleed Nozzle Assembly | Not Available * |

NOTE: * Refer to Figures 2 through 8. Procure individual replacement parts as necessary to form assembly.

G. Tooling:

No effect.

H. Weight and Balance:

No effect.

I. References:

Lycoming Service Instruction No. 1414.

2. ACCOMPLISHMENT INSTRUCTIONS:

CAUTION: DO NOT INTERCHANGE PARTS OF ONE AND TWO NOTCH FUEL RESTRICTORS.

NOTE: Each nozzle shown in Figures 1 through 5 has a restrictor with one ring located in the approximate center of the assembly.

A. Installation (Naturally Aspirated). Refer to Figure 1 of this directive.

- (1) Install nozzle in cylinder using a clean deep well 1/2 inch socket wrench. Tighten and torque nozzle to 60 pound-inches.

NOTE: Do not remove shipping cap from nozzle until nozzle is installed.

2. ACCOMPLISHMENT INSTRUCTIONS: (Continued)

- (2) Remove shipping cap and connect fuel line to nozzle. Tighten fuel line union nut (AN-805-2) to a torque value of 25-50 pound-inches. It is also permissible to tighten fuel line union nut, finger tight, and then continue tightening nut with a wrench - 30 to 60 degrees (1/2 to 1 flat of the nut). Torque in excess of 50 pound-inches may result in damage to the parts.

NOTE: Care should be taken not to drop the fuel restrictor during installation. Ensure fuel restrictor is still in place prior to attaching fuel lines.

B. Installation (Turbocharged). Refer to Figures 2 through 5 of this directive.

- (1) Proceed the same as specified in paragraph 2. A. (1).
- (2) Remove shipping cap and assemble packings, tube assembly, spring and spring holders. For nozzle assembly Figures 4 and 5, tighten special nut 5-10 lb-in. torque. Connect fuel line union nut as specified in paragraph 2. A. (2).

NOTE: Care should be taken not to drop the fuel restrictor during installation. Ensure fuel restrictor is still in place prior to attaching fuel lines.

Nozzles shown in Figures 6 through 8 are not interchangeable with similar looking nozzle assemblies shown in Figures 2 through 5.

C. Installation (Turbocharged) Hiflow nozzles. Refer to Figures 6 through 8 of this directive.

- (1) Remove shipping cap and assemble packings, tube assembly, spring and spring holders. Connect fuel line union nut as specified in paragraph 2.A.(2).

NOTE: Care should be taken not to drop the fuel restrictor during installation. Ensure fuel restrictor is still in place prior to attaching fuel lines.

D. Cleaning.

WARNING: METHYL ETHYL KETONE (MEK) AND ACETONE ARE FLAMMABLE AND HARMFUL TO EYES, SKIN, AND BREATHING PASSAGES. KEEP IGNITION SOURCES AWAY, PROVIDE ADEQUATE VENTILATION AND WEAR PROTECTIVE CLOTHING.

ALL NOZZLES AND FUEL LINE UNION NUTS MUST BE TORQUED TO THE VALUES SPECIFIED IN PARAGRAPHS 2.A. (1) AND (2) OR 2.B (1) AND (2). EXCEEDING THE VALUES SPECIFIED MAY RESULT IN DAMAGE TO THE PARTS.

2. ACCOMPLISHMENT INSTRUCTIONS: (Continued)

- (1) Remove fuel line union nut from nozzle. Remove fuel restrictor from nozzle body and clean in M.E.K. or acetone. Fuel restrictors should be cleaned annually. More frequent cleaning may be required, not to exceed 100 hrs. operational time, based upon aircraft/engine service history.

- (2) Use air pressure to clean the nozzle body in the cylinder. It is not necessary to remove the nozzle body from the cylinder for cleaning; however, it is recommended that the body be removed annually to reduce possibilities for seizure of the body to the cylinder. Do not clean any internal passages with any sharp instruments such as drills, pins, needles, etc.

NOTE: In all instances, keep each restrictor with its respective body. Use MEK, acetone or Hoppes Number 9 gun cleaning fluid to clean nozzle body removed from cylinder.

3. MATERIAL INFORMATION:

| New Part No. | Qty | Nomenclature | Old Part No. | Disposition |
|--------------|-----|--------------------------|--------------|-------------|
| 951391 | A/R | Packing | 951391 | B |
| 2521863 | A/R | Spring Holder | 2521863 | Use |
| 2541847 | A/R | Special Nut | 2541847 | Use |
| 2521864 | A/R | Spring | 2521864 | Use |
| 2522020 | A/R | Shipping Cap | --- | --- |
| 2525892 | A/R | Tube Assembly | 2525892 | Use |
| 2525894 | A/R | Tube Assembly | 2525894 | Use |
| 2541946 | A/R | Body Assembly | 2541945 | A |
| 2541949 | A/R | Body Assembly | --- | --- |
| 2524864 | A/R | Airbleed Nozzle Assembly | 2524107 | A |
| 2524865 | A/R | Airbleed Nozzle Assembly | --- | --- |
| 2524866 | A/R | Airbleed Nozzle Assembly | --- | --- |
| 2524917 | A/R | Airbleed Nozzle Assembly | --- | --- |
| 2524923 | A/R | Airbleed Nozzle Assembly | --- | --- |
| 2524925 | A/R | Airbleed Nozzle Assembly | --- | --- |
| 2524926 | A/R | Airbleed Nozzle Assembly | 2524881 | B |

A - Retain for use if serviceable.

B - Scrap.

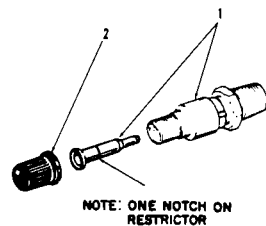
NOTE: The new part number nozzle is physically and functionally interchangeable with the corresponding old nozzle.

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3. MATERIAL INFORMATION: (Continued)

Key to Figure 1

1. Body Assembly - P/N 2524864
2. Shipping Cap - P/N 2522020

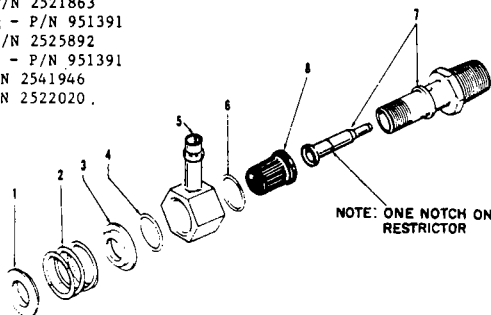


Airbleed Nozzle Assembly 2524864
Figure 1.

LA-8250A

Key to Figure 2

1. Spring Holder - P/N 2521863
2. Spring - P/N 2521864
3. Spring Holder - P/N 2521863
4. Preformed Packing - P/N 951391
5. Tube Assembly - P/N 2525892
6. Preformed Packing - P/N 951391
7. Body Assembly - P/N 2541946
8. Shipping Cap - P/N 2522020.



Airbleed Nozzle Assembly 2524865
Figure 2.

LA-8251A

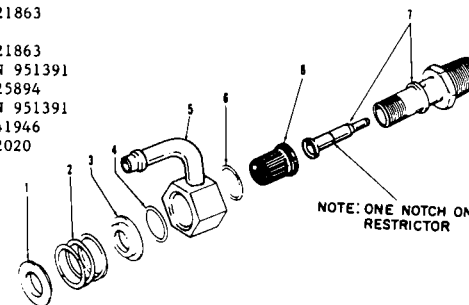
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3. MATERIAL INFORMATION: (Continued)

Key to Figure 3

1. Spring Holder - P/N 2521863
2. Spring - P/N 2521864
3. Spring Holder - P/N 2521863
4. Preformed Packing - P/N 951391
5. Tube Assembly - P/N 2525894
6. Preformed Packing - P/N 951391
7. Body Assembly - P/N 2541946
8. Shipping Cap - P/N 2522020

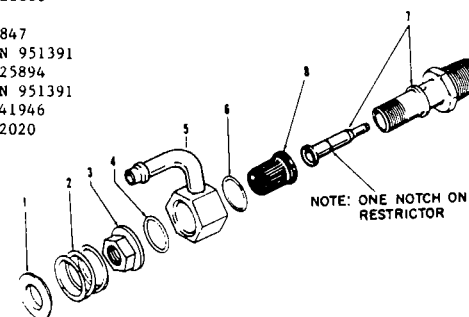


Airbleed Nozzle Assembly 2524866
Figure 3.

LA-8248

Key to Figure 4

1. Spring Holder - P/N 2521863
2. Spring - P/N 2521864
3. Special Nut - P/N 2541847
4. Preformed Packing - P/N 951391
5. Tube Assembly - P/N 2525894
6. Preformed Packing - P/N 951391
7. Body Assembly - P/N 2541946
8. Shipping Cap - P/N 2522020



Airbleed Nozzle Assembly 2524917
Figure 4.

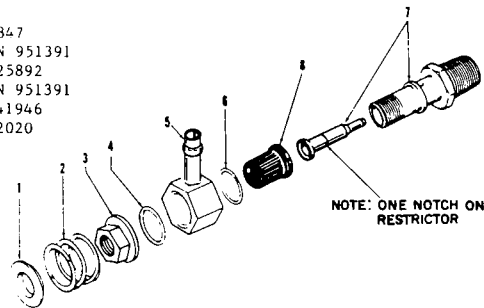
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3. MATERIAL INFORMATION: (Continued)

Key to Figure 5

1. Spring Holder - P/N 2521863
2. Spring - P/N 2521864
3. Special Nut - P/N 2541847
4. Preformed Packing - P/N 951391
5. Tube Assembly - P/N 2525892
6. Preformed Packing - P/N 951391
7. Body Assembly - P/N 2541946
8. Shipping Cap - P/N 2522020

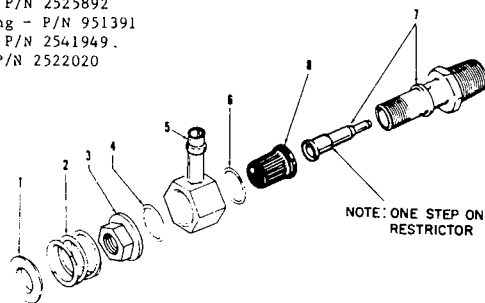


Airbleed Nozzle Assembly 2524923
Figure 5.

LA-8334

Key to Figure 6

1. Spring Holder - P/N 2521863
2. Spring - P/N 2521864
3. Special Nut - P/N 2541847
4. Preformed Packing - P/N 951391
5. Tube Assembly - P/N 2525892
6. Preformed Packing - P/N 951391
7. Body Assembly - P/N 2541949
8. Shipping Cap - P/N 2522020



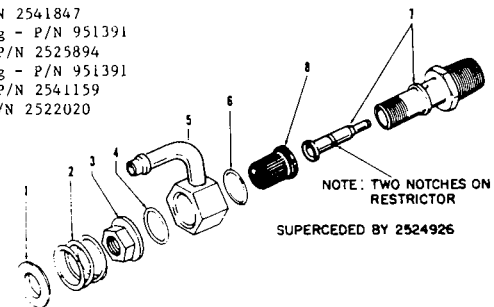
Airbleed Nozzle Assembly 2524925
Figure 6.

LA-8335

3. MATERIAL INFORMATION: (Continued)

Key to Figure 7

1. Spring Holder - P/N 2521863
2. Spring - P/N 2521864
3. Special Nut - P/N 2541847
4. Preformed Packing - P/N 951391
5. Tube Assembly - P/N 2525894
6. Preformed Packing - P/N 951391
7. Body Assembly - P/N 2541159
8. Shipping Cap - P/N 2522020

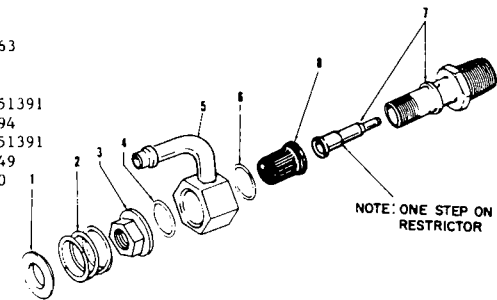


Airbleed Nozzle Assembly 2524881
Figure 7.

LA-8333

Key to Figure 8

1. Spring Holder - P/N 2521863
2. Spring - P/N 2521864
3. Special Nut - P/N 2541847
4. Preformed Packing - P/N 951391
5. Tube Assembly - P/N 2525894
6. Preformed Packing - P/N 951391
7. Body Assembly - P/N 2541949
8. Shipping Cap - P/N 2522020



Airbleed Nozzle Assembly 2524926
Figure 8.

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