

## SERVICE INSTRUCTION

# Running modifications of the Bing constant depression carburetor for ROTAX® Engine Type 912 and 914 (Series) and 582 UL mod. 99/mod. 17 (Series)

ATA System: 73-00-00 Fuel system

### 1) Planning information

To obtain satisfactory results, procedures specified in this publication must be accomplished with accepted methods in accordance with prevailing legal regulations.

BRP-Rotax GmbH & Co KG cannot accept any responsibility for the quality of work performed in accomplishing the requirements of this publication.

#### 1.1) Applicability

All versions of ROTAX® engines types:

| Engine type            | Serial number |
|------------------------|---------------|
| 912 (Series)           | all           |
| 914 (Series)           | all           |
| 582 UL Mod. 99/Mod. 17 | all           |

NOTE: It is NOT mandatory to retrofit carburetors with older configurations state unless affected by a Service Bulletin.

#### 1.2) Concurrent ASB/SB/SI and SL

In addition to this Service Instruction, the following Service Instructions must be observed and complied with:

- in general all relevant Alert Service Bulletins (ASB), Service Bulletins (SB), Service Instructions (SI), Service Letters (SL), Service Instruction - Parts and Accessories (SI-PAC) with relevance to perform this maintenance, repair or overhaul task.
- SI-912-012 /SI-914-014, title "Routine modifications of the Bing constant depression carburetor", current issue.
- SI-2ST-005, title "Running modifications on carburetors", current issue.

#### 1.3) Reason

In the course of continued development and our commitment to product improvement, changes to several carburetor parts have been introduced.

#### 1.4) Subject

Running modifications of the Bing constant depression carburetor for ROTAX® Engine Type 912 and 914 (Series) and 582 UL mod. 99/mod. 17 (Series).

#### 1.5) Compliance

NONE - For Information Only.

#### 1.6) Approval

The technical content of this document is approved under the authority of the DOA ref. EASA.21J.048.

## SERVICE INSTRUCTION

---

### 1.7) Labor time and credit

Estimated labor hours:

Engine installed in the aircraft - - - labor time will depend on airframe installation and therefore no estimate is available from the engine manufacturer.

### 1.8) Mass data

Change of weight - - - none.

Moment of inertia - - - unaffected.

### 1.9) Electrical load data

No change.

### 1.10) Software modifications

No change.

### 1.11) References

In addition to this technical information refer to current issue of:

- in general Illustrated Parts Catalog (IPC)
- in general Maintenance Manual Line (MML)
- in general Maintenance Manual Heavy (MMH)

NOTE: The status of the Manuals can be determined by checking the table of amendments. The 1<sup>st</sup> column of this table shows the revision status. Compare this number to that listed on the ROTAX website:

[www.flyrotax.com](http://www.flyrotax.com). Updates and current revisions can be downloaded for free.

### 1.12) Other Publications affected

None.

### 1.13) Interchangeability of parts

- All parts are interchangeable
- Used parts and new parts may be intermixed with some reservations.

# SERVICE INSTRUCTION

## 2) Material Information

### 2.1) Material- cost and availability

Price and availability will be provided on request by ROTAX® Authorized Distributors or their independent Service Centers.

### 2.2) Company support information

- Shipping costs, downtime costs, loss of income, telephone costs etc. or costs of conversion to other engine versions or additional work, as for instance simultaneous engine overhauls are not covered in this scope and will not be borne or reimbursed by ROTAX®.

### 2.3) Material requirement and credit per engine

None.

### 2.4) Material requirement per spare part

Following list shall provide an overview on changed or affected spare part numbers of the new carburetor generation "MY 2022".

| Section | New part no.    | Qty/ engine | Description             | Old part no.             | Application       |
|---------|-----------------|-------------|-------------------------|--------------------------|-------------------|
| 3.2.2   | 830721 / 830722 | 2           | Gasket                  | 830720 / 830724 / 830728 | Float chamber     |
| 3.2.3   | 963026*         | 1           | Throttle valve lever    | 963026                   | For cylinder 1/3  |
| 3.2.3   | 963021*         | 1           | Throttle valve lever    | 963021                   | For cylinder 2/4  |
| 3.2.4   | 963231          | 1           | Float chamber assy. 1/3 | 963230                   | 912 A/F/S/UL/ ULS |
| 3.2.4   | 963233          | 1           | Float chamber assy. 2/4 | 963232                   | 912 A/F/S/UL/ ULS |
| 3.2.4   | 963236          | 1           | Float chamber assy. 1/3 | 963235                   | 914 F/UL          |
| 3.2.4   | 963238          | 1           | Float chamber assy. 2/4 | 963237                   | 914 F/UL          |
| 3.2.5   | 963666*         | 2           | Throttle valve          | 963666                   | Throttle shaft    |
| 3.2.6   | 861189          | 2           | Floats (pair)           | 861188                   | Carburetor        |
| 3.2.7   | 889534          | 1           | Maintenance set carb.   | 889536                   | 914 F/UL          |
| 3.2.8   | 938286          | 2           | Return spring           | 938287                   | Choke shaft       |
| 3.2.8   | 938288          | 2           | Return spring           | 938289                   | Throttle shaft    |
| 3.2.9   | 961281          | 2           | Choke housing           | 961280                   | Choke shaft       |
| 3.2.10  | 945786          | 2           | Circlip                 | 945785                   | Jet needle        |
| 3.2.11  | 961241          | 2           | Retaining ring          | 961240                   | Diaphragm         |
| 3.2.12  | 838242*         | 1           | Spring                  | 838242                   | Chamber top       |

\* NOTE: Part number has not changed. These changes were introduced by an increase in revision state of the part.

### 2.5) Rework of parts

None.

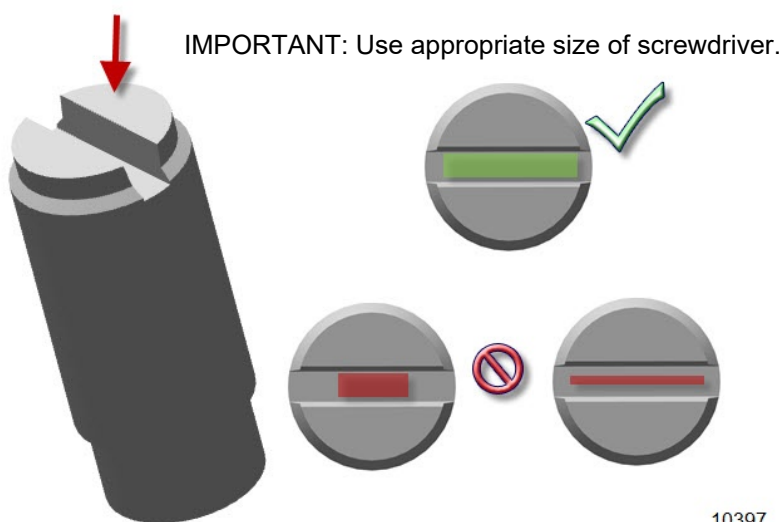
d06944.fm

## SERVICE INSTRUCTION

### 2.6) Special tooling/lubricant-/adhesives-/sealing compound/price and availability

Price and availability will be supplied on request by ROTAX® Authorized Distributors or their independent Service Centers:

| Description | Part no. | Application                        |
|-------------|----------|------------------------------------|
| Screwdriver | n.a.     | Fixation screw (Carburetor piston) |



# SERVICE INSTRUCTION

## 3) Accomplishment/Instructions

- ROTAX® reserves the right to make any amendments to existing documents, which might become necessary due to this standardization, at the time of next revision or issue.

NOTE: Before maintenance, review the entire documentation to make sure you have a complete understanding of the procedure and requirements.

### Accomplishment

All measures must be implemented and confirmed by at least one of the following persons or organizations:

- ROTAX® - Authorized Distributors or their independent Service Centers
- Persons with approved qualifications for the corresponding engine types. Only authorized persons (iRMT, Level Heavy Maintenance) are entitled to carry out this work.



All work has to be performed in accordance with the relevant ROTAX® Instructions for Continued Airworthiness (ICA) of the respective engine type.

### General

Further material on general inspection, maintenance and repair can also be found in relevant Advisory Circular AC 43.13 from FAA.

### Advisory Circular

The Advisory Circular (AC) contains maintenance methods, techniques and practices.

### 3.1) General information

The modifications do have an effect on individual part changes and have been introduced in the different carburetor serial number ranges. Due to the relevant logistic chain the modifications were introduced as a running change in several steps and different carburetor serial numbers. For detailed information see the following section.

The various modifications need to be considered during the next repair work / major overhaul.

NOTE: The various color markings on the carburetor housing do have no relevant reference information for the end user.

## SERVICE INSTRUCTION

### 3.2) Individual part changes are as follows:

#### 3.2.1) Parts free of CR6+ chromium

See Fig. 10, Fig. 11, Fig. 12.

NOTE: Due to changing regulations all individual parts listed below are now free of CR6+ chromium.

Overview of parts with Cr6-free surface:

| Part no. | Description                 | Application                                |
|----------|-----------------------------|--|
| 847910   | Distance sleeve             | Chamber top, spring attachment             |
| 244073   | Washer 4.3                  | Fixation of throttle valve position sensor |
| 841030   | Combined screw M4x22        | Fixation of throttle valve position sensor |
| 938288   | Return spring               | Throttle lever                             |
| 851072   | Support 1/3                 | Chamber top, throttle cable                |
| 851074   | Support 2/4                 | Chamber top, throttle cable                |
| 240761   | Slotted head screw M5x16    | Chamber top, throttle cable                |
| 942541   | Hex. nut M6x0.75 hight 3 mm | Chamber top                                |
| 261200   | Hex nut M5                  | Chamber top                                |
| 827160   | Shim                        | Main jet                                   |
| 941200   | Slotted head screw M3x6     | Throttle valve fixation                    |
| 241847   | Allen screw M5x12           | Throttle cable fixation                    |
| 847741   | Graduated sleeve            | Throttle cable fixation                    |
| 827801   | Washer A 5.5                | Throttle cable fixation                    |
| 842032   | Lock nut M5                 | Throttle cable fixation                    |
| 841210   | Combined screw M4x12        | Diaphragm fixation                         |
| 640220   | Slotted head screw M6x5     | Carburetor housing (2-stroke)              |
| 241430   | Hex. screw M5x12            | Cover plate fixation (2-stroke)            |
| 963167   | Adjustment screw            | Carburetor housing (2-stroke)              |

Parts with Cr6-free surface have been introduced as of:

|                            |                           |
|----------------------------|---------------------------|
| Carburetor part no. 892500 | from S/N 171420 inclusive |
| Carburetor part no. 892505 | from S/N 171421 inclusive |
| Carburetor part no. 892520 | from S/N 171517 inclusive |
| Carburetor part no. 892525 | from S/N 171501 inclusive |
| Carburetor part no. 892530 | from S/N 171748 inclusive |
| Carburetor part no. 892535 | from S/N 171679 inclusive |

d06944.fm

## SERVICE INSTRUCTION

### 3.2.2) Gasket for float chamber

See Fig. 10, Fig. 11, Fig. 12.

The material of the float chamber gasket was changed to a Viton based material with new part no. 830721 and 830722. This new gaskets can be used instead of previous paper or cork gaskets part no. 830720 / 830724 / 830728.

New Viton gaskets have been introduced as of:

|                            |                           |
|----------------------------|---------------------------|
| Carburetor part no. 892500 | from S/N 172977 inclusive |
| Carburetor part no. 892505 | from S/N 172883 inclusive |
| Carburetor part no. 892520 | from S/N 172340 inclusive |
| Carburetor part no. 892525 | from S/N 172450 inclusive |
| Carburetor part no. 892530 | from S/N 172633 inclusive |
| Carburetor part no. 892535 | from S/N 172783 inclusive |

### 3.2.3) Throttle valve levers

See Fig. 1.

Throttle valve levers (1) were changed to a pressed notch style which provides improved connection to the throttle valve shaft. For the revised throttle levers part no. 963026 for the 1/3 carburetor and part no. 963021 for the 2/4 carburetor.

New throttle valve levers have been introduced as of:

|                            |                           |
|----------------------------|---------------------------|
| Carburetor part no. 892500 | from S/N 171420 inclusive |
| Carburetor part no. 892505 | from S/N 171421 inclusive |
| Carburetor part no. 892520 | from S/N 171517 inclusive |
| Carburetor part no. 892525 | from S/N 171501 inclusive |
| Carburetor part no. 892530 | from S/N 171748 inclusive |
| Carburetor part no. 892535 | from S/N 171679 inclusive |

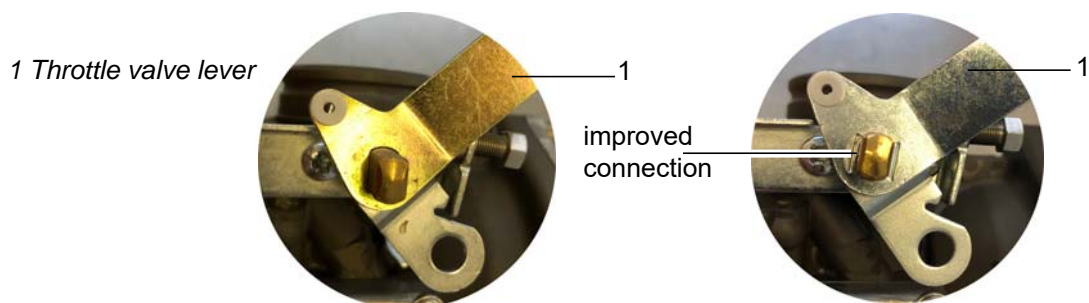


Fig. 1  
Throttle valve levers OLD and NEW

## SERVICE INSTRUCTION

### 3.2.4) Float chamber assembly

See Fig. 2.

The float chamber assembly has been changed from Zinc die-cast material coated with a sealing agent, to anodized Aluminum die-cast material.

This provides better resistance against contamination, such as aged fuel or water corrosion etc.

Part numbers for the revised float chambers are listed in section 2.4 of this Service Instruction.

New float chamber assemblies have been introduced as of:

|                            |  |
|----------------------------|--|
| Carburetor part no. 892500 | from S/N 4411654 inclusive (912 A)<br>from S/N 4413197 inclusive (912 F) |
| Carburetor part no. 892505 | from S/N 4411654 inclusive (912 A)<br>from S/N 4413197 inclusive (912 F) |
| Carburetor part no. 892520 | from S/N 4422517 inclusive   |
| Carburetor part no. 892525 | from S/N 4422517 inclusive   |
| Carburetor part no. 892530 | from S/N 213674 inclusive  |
| Carburetor part no. 892535 | from S/N 213519 inclusive  |

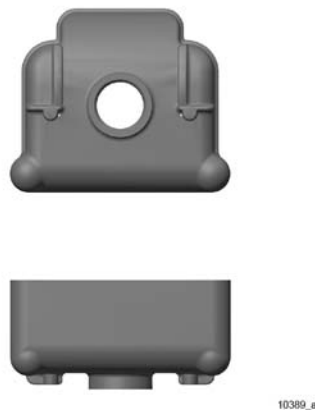


Fig. 2  
Float chamber assy.

10389a

NOTE: Float chamber assy. do not have to be replaced as a pair. Meaning it is acceptable to mix old and new float chambers on the same engine.

### 3.2.5) Throttle valve

See Fig. 3.

The throttle valve was changed to a machining process instead of die cutting process.

The part number for the throttle valve is 963666.

New throttle valve has been introduced as of:

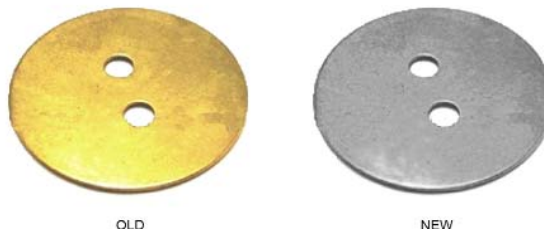
|                            |                           |
|----------------------------|---------------------------|
| Carburetor part no. 892500 | from S/N 171420 inclusive |
| Carburetor part no. 892505 | from S/N 171421 inclusive |

d06944.fm



## SERVICE INSTRUCTION

|                            |                           |
|----------------------------|---------------------------|
| Carburetor part no. 892520 | from S/N 171517 inclusive |
| Carburetor part no. 892525 | from S/N 171501 inclusive |
| Carburetor part no. 892530 | from S/N 171748 inclusive |
| Carburetor part no. 892535 | from S/N 171679 inclusive |



OLD

NEW

Fig. 3

Throttle valve OLD and NEW

### 3.2.6) Floats (pair)

See Fig. 4.

New floats pair part no. 861189 has been introduced as of:

|                            |                           |
|----------------------------|---------------------------|
| Carburetor part no. 892500 | from S/N 185575 inclusive |
| Carburetor part no. 892505 | from S/N 185690 inclusive |
| Carburetor part no. 892520 | from S/N 185475 inclusive |
| Carburetor part no. 892525 | from S/N 185630 inclusive |
| Carburetor part no. 892530 | from S/N 185425 inclusive |
| Carburetor part no. 892535 | from S/N 185326 inclusive |

Maintenance (Line) - related information

Pay attention to the specifications of the latest version of the Maintenance Manual Line (MML) for respective engine type.

#### NOTICE

As per Maintenance Manual Line (MML) let the floats dry for 1-2 minutes. Only weigh dry floats. In no case the max. weight (of both floats together) is allowed to exceed 7 grams (0.0154 lb.). This applies to all floats, old and new.

See relevant Maintenance Manual Line (MML) Chapter 12-20-00.

Maintenance (Heavy) - related information

Pay attention to the specifications of the latest version of the Maintenance Manual Heavy (MMH) for respective engine type, Chapter 73-00-00 section Fuel system.

NOTE: Carburetor floats must be replaced as a pair.

## SERVICE INSTRUCTION

The new floats are not marked with any identification “dots”, but instead of a “B” they have an “R” identification mark.

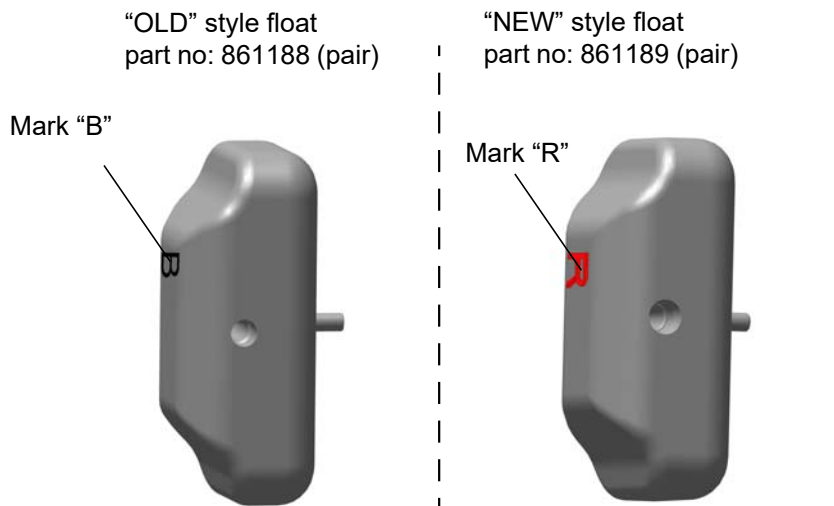


Fig. 4

Floats OLD and NEW

### 3.2.7) Maintenance/Gasket set carburetor

The various modifications on the carburetors are introduced in an ongoing process to the following kits:

| Part no. | Description  | Engine type        |
|----------|--|--------------------|
| 889534   | Maintenance set carburetor   | 912/912S           |
| 889536   | Maintenance set carburetor<br>(which will eventually be replaced by part no. 889534 due to the standardization of parts) | 914                |
| 996949   | Gasket set carburetor  | 582 UL MY 99/MY 17 |

### 3.2.8) Throttle / Choke return springs

See Fig. 5.

The return springs were changed to stainless steel material.

- The part number for the throttle return spring is 938288.
- The new part number for the choke return spring is 938286.



Fig. 5

Return springs

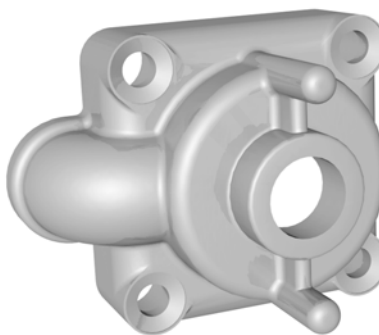
d069444.fm

## SERVICE INSTRUCTION

### 3.2.9) Choke housing

See [Fig. 6](#).

The choke housing has had a change in supplier. The new part number for the choke housing is 961281.



10388

*Fig. 6*  
Choke housing

### 3.2.10) Circlip (jet needle)

See [Fig. 7](#).

Circlips were changed to a heat treatment process. The new part number for the circlip is 945786.



*Fig. 7*

10390

Circlip (jet needle)

### 3.2.11) Retaining ring

See [Fig. 8](#).

The retaining ring has had a change in supplier. The new part number for the retaining ring is 961241.



10391

*Fig. 8*  
Retaining ring (diaphragm)

10391

d06944.fm

## SERVICE INSTRUCTION

### 3.2.12) Spring (chamber top)

See Fig. 9.

The springs were changed to stainless steel material. The new part number for the spring is 838242.



Fig. 9

10387\_a

Spring (chamber top to compensation tube)

### 3.3) Test run

Conduct test run.

In case of uninstalled engines test run is accomplished with the mandatory test run after installation into aircraft.



See Chapter 12-20-00 of the latest Maintenance Manual Line (MML) for the respective engine type.

### 3.4) Summary

These instructions (section 3) have to be followed in accordance with the deadlines specified in section 1.5.

The execution of the Service Instruction must be confirmed in the logbook.

**NOTE:** Work on EASA certified parts might affect the EASA Form 1 and does require appropriate documentation by authorized persons. Repairs must be entered into the engine logbook and also do apply for the EASA Form 1.

A revision bar outside of the page margin indicates a change to text or graphic.

Translation into other languages might be performed in the course of language localization but does not lie within ROTAX® scope of responsibility.

In any case the original text in English language and the metric units are authoritative.

### 3.5) Inquiries

Inquiries regarding this Service Instruction should be sent to the ROTAX® Authorized Distributor of your area.

A list of all ROTAX® Authorized Distributors or their independent Service Centers is provided on <https://dealerlocator.flyrotax.com>.

d06944.fm

# SERVICE INSTRUCTION

## 4) Appendix



See also the latest Illustrated Parts Catalog (IPC) of the respective engine type.

The following drawings should convey additional information (part changes = red):

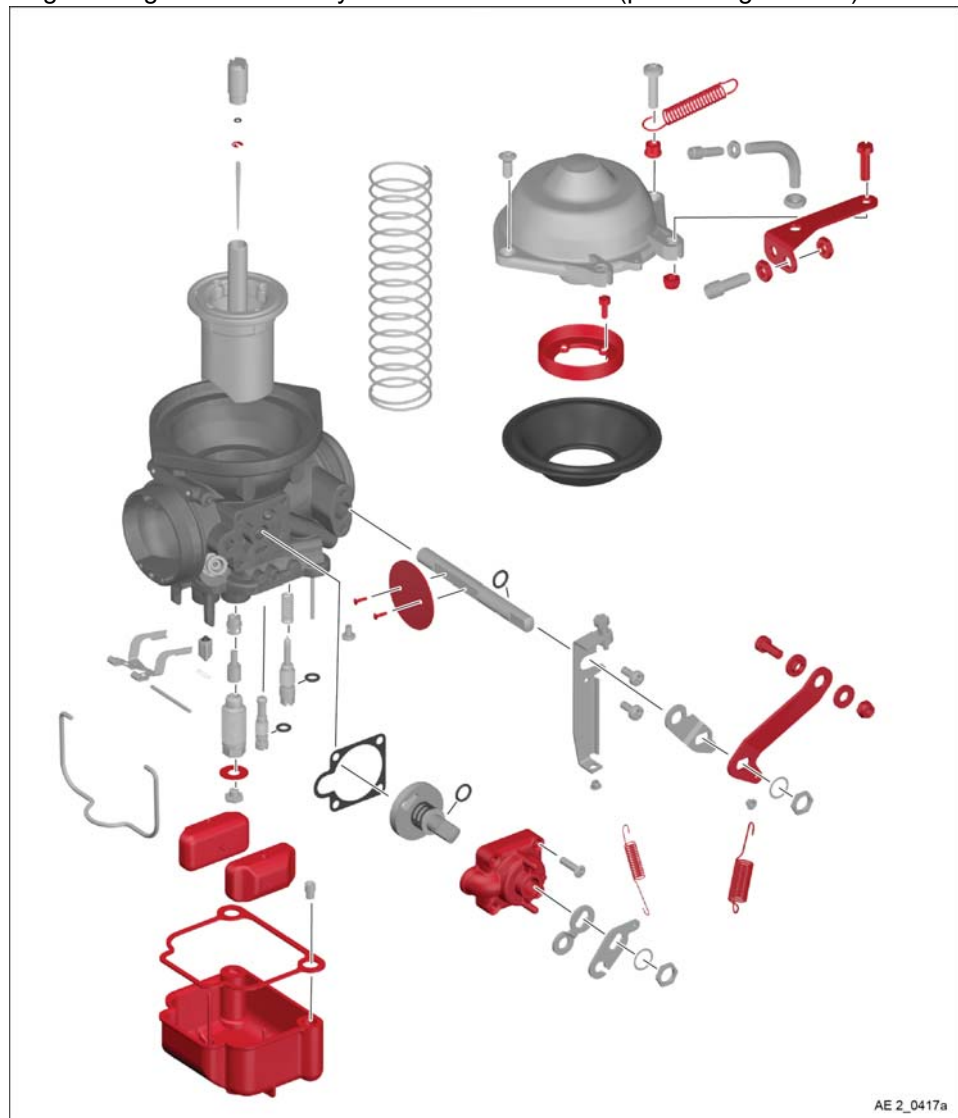
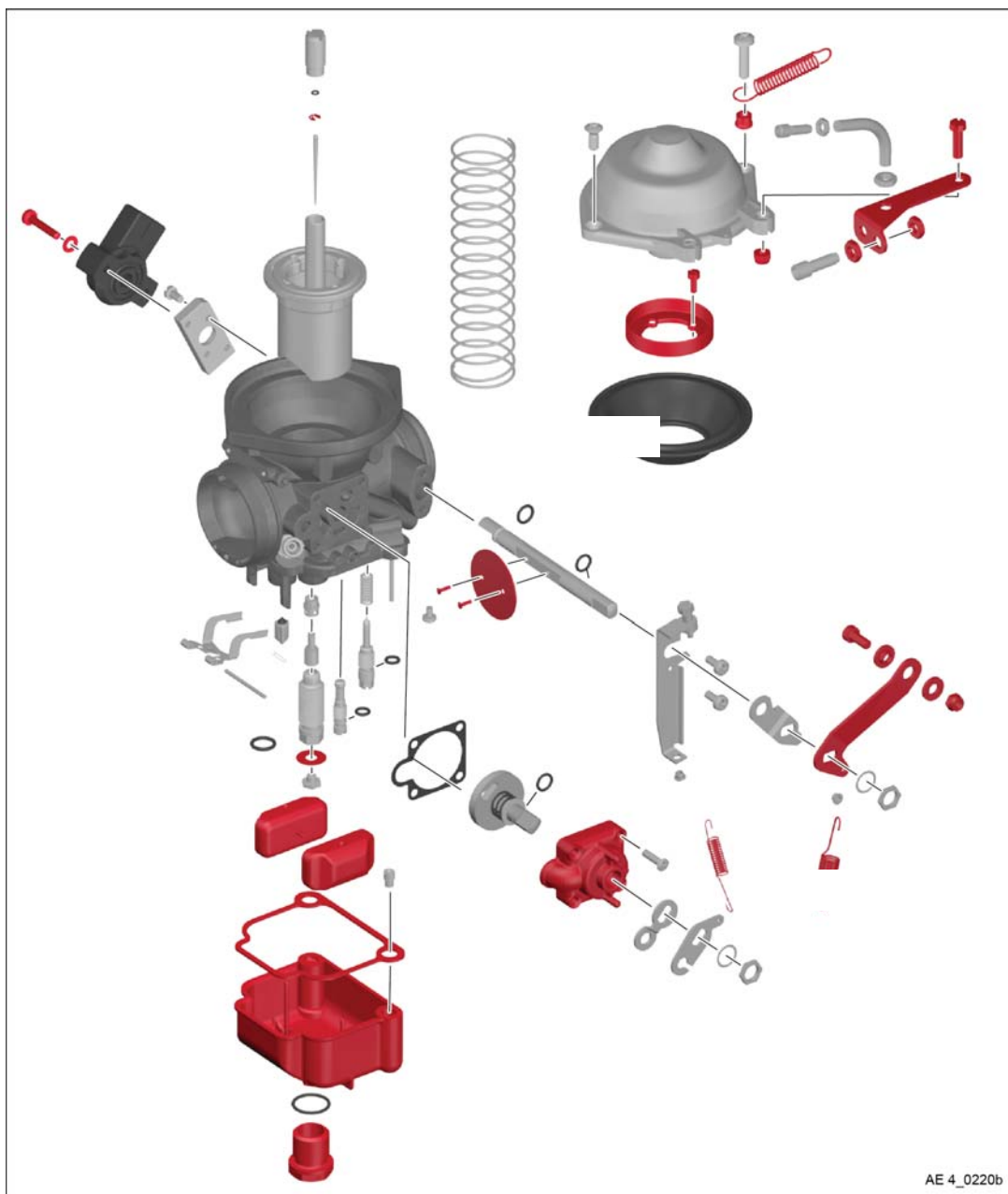


Fig. 10  
Carburetor overview (912 Series)

d06944.fm

# SERVICE INSTRUCTION



*Fig. 11*  
Carburetor overview (914 Series)

d06944.fm

# SERVICE INSTRUCTION

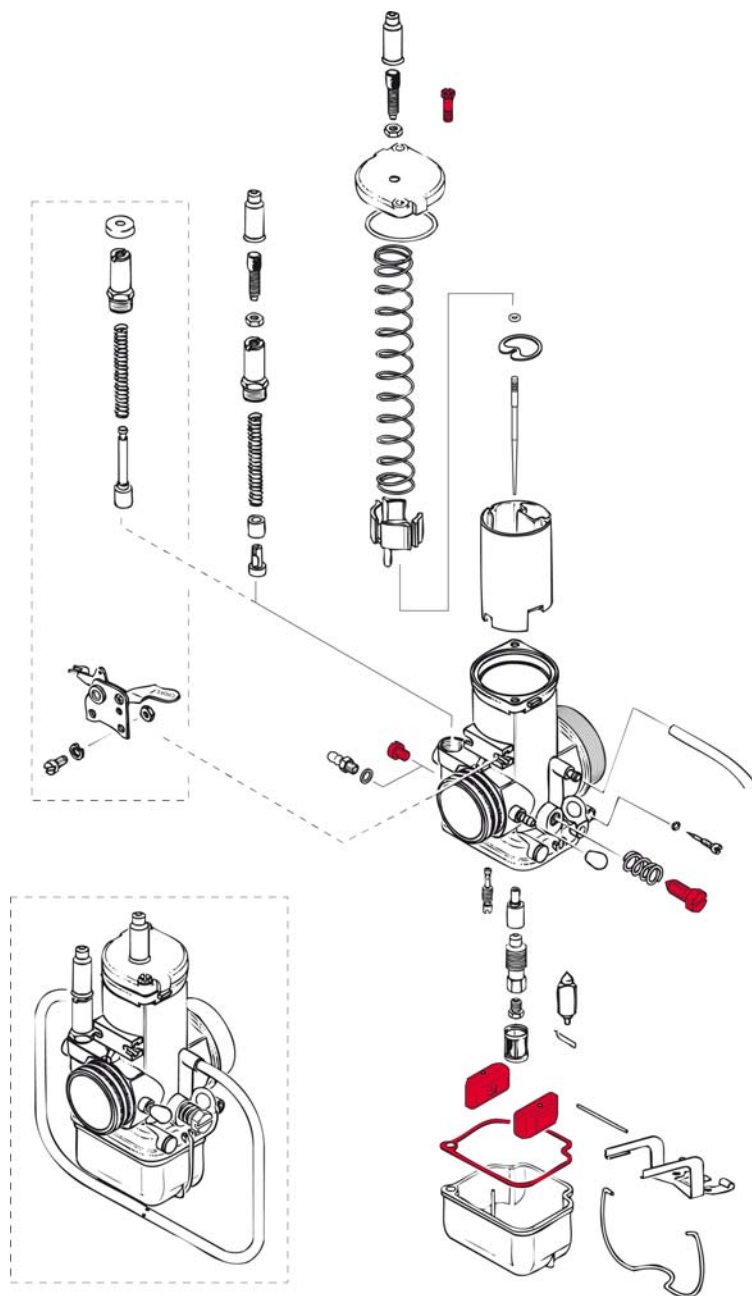


Fig. 12  
Carburetor overview (582 UL)

10295\_a

NOTE: The illustrations in this document show the typical construction. They may not represent full detail or the exact shape of the parts which have the same or similar function. Exploded views are **not technical drawings** and are for reference only. For specific detail, refer to the current documents of the respective engine type.

d06944.fm