

# Airworthiness Directive Schedule

## Components & Equipment

### Carburettors and Injection Systems

30 July 2020

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- Notes**
1. This AD schedule is applicable to carburettors and injection systems installed on aircraft.
  2. This AD schedule includes those National Airworthiness Authority (NAA) ADs applicable to carburettors and injection systems installed on aircraft. NAA ADs can be obtained directly from the applicable NAA website. The links to NAA websites are available on the CAA website at <http://www.caa.govt.nz/airworthiness-directives/states-of-design/>
  3. The date above indicates the amendment date of this schedule.
  4. New or amended ADs are shown with an asterisk \*

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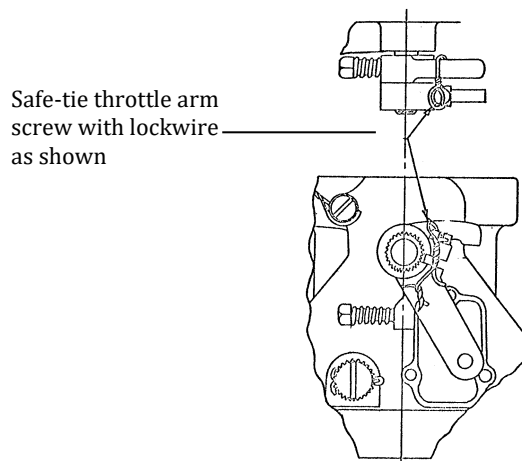
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- DCA/MA/1**                    **Cancelled**
- DCA/MA/2**                    **Cancelled**
- DCA/MA/3**                    **Cancelled - Purpose fulfilled**
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- DCA/MA/5**                    **Cancelled - Purpose fulfilled**
- DCA/MA/6**                    **Cancelled - Purpose fulfilled**
- DCA/MA/7A**                **Throttle Arm - Inspection**

**Applicability:** All carburettors on which the throttle arm is clamped to the throttle shaft

**Requirement:** To prevent throttle arm becoming loose and separating from the throttle shaft accomplish the following:-

1. Check for correct torque the clamp screw, or alternative bolt and self-locking nut securing the throttle arm to the throttle shaft. The correct torque values are 15 to 20 inch pounds for the number 10-24 screw on MA-3 series carburettors, 20 to 25 inch pounds for the number 10-24 screw on MA-4 series carburettors and 35 to 40 inch pounds for the number 10-32 bolt and nut.
2. Check that there is clearance between the clamp faces when the torque value is correct.
3. Lock screws with 0.032 inch lockwire as shown in the drawing below.



View of Carburetor Throttle Arm Showing Method of Tying Lockwire

**Compliance:** Within the next 100 hours TIS, unless already accomplished, and thereafter each time the throttle arm is fitted to the throttle shaft.

**Effective Date:** DCA/MA/7 - August 1971  
 DCA/MA/7A - 30 October 1992

- DCA/MA/8**                    **Cancelled – DCA/MA/15 refers**
- Effective Date:** 24 April 2008

**DCA/MA/9 Carburettor - Removal**

**Applicability:** MA-3PA carburettors, Facet P/N A10-5220, A10-5257 and A10-5267 having S/N in range DD-4-1583 through DD-4-1633, DM-3-1818 through DM-3-1829 and DT-3-1911 through DT-3-1981 respectively, each as detailed in Facet SB A1-87. These carburettors may be fitted to Lycoming O-235-C1C, -L2C, -H2C, -N2C, and -P1 engines.

**Requirement:** To prevent possible power loss due to a loose metering sleeve, accomplish the following:

1. Check affected engines to determine the carburettor S/N. (on carburettor name plate on throttle body).
2. If S/N is one of those listed in Facet SB A1-87 (Avco Lycoming SB 481 also refers), remove the carburettor from service before further flight. (FAA AD 88-02-04 refers)

**Compliance:** Within next 25 hours TIS or 30 days whichever is the sooner.

**Effective Date:** 8 April 1988

**Note:** This AD has been transferred from the Avco Lycoming AD Schedule - DCA/LYC/177 referred.

**DCA/MA/10 Carburettor - Modification**

**Applicability:** MA4-5, MA-5 and MA-6 series carburettors manufactured after April 1984, installed on but not limited to Lycoming O-360, O-540, VO-540, TVO-540 and Continental O-470 series engines.

**Requirement:** To prevent possible jamming of the throttle, modify affected carburettors per Facet SB A1-88. (Avco Lycoming SB 483 and TCM SB M88-15 refer). (FAA AD 89-04-02 refers)

**Compliance:** Within next 100 hours TIS.

**Effective Date:** 16 June 1989

**Note:** This AD has been transferred from the engine AD Schedules - DCA/LYC/178 and DCA/CON/160 referred.

**DCA/MA/11B Cancelled – DCA/MA/15 refers**

**Effective Date:** 24 April 2008

**DCA/MA/12B Improved Venturi - Modification**

**Applicability:** All MA-3A, MA-3PA, MA-3SPA and MA-4SPA carburettors.

**Requirement:** To prevent primary venturi failure and disruption of fuel flow to the engine, replace the two piece venturi with a one piece combination primary and main venturi casting per Precision Airmotive Corporation SB MSA-2, Revision 1, 2 or 3. (FAA AD 98-01-06 also refers)

**Note:** If the engine subsequently runs rough or experiences power loss after a one-piece venturi is installed, modify the carburettor in accordance with the following:

For Precision Airmotive Corporation Model MA-3SPA series carburettors with P/N 10-4894 or 10-4115-1, installed on Teledyne Continental Model O-200A series, install a new fuel nozzle per Precision Airmotive SB MSA-7, dated September 30, 1994. For Precision Airmotive Corporation Model MA-3SPA series carburettors with P/Ns 10-4895, 10-4439, or 10-3237, installed on Teledyne Continental Model O-300 or C-145 series engines, install a new fuel nozzle per Precision Airmotive SB MSA-8, dated July 10, 1995. For Precision Airmotive Corporation Model MA-3SPA series carburettors with P/Ns 10-4240, 10-4252, 10-4252-1, or 10-4457, installed on Teledyne Continental Model C-75, C-85, or C-90 series engines, install a new fuel nozzle per Precision Airmotive SB MSA-9, dated October 10, 1995.

**Compliance:** At next carburettor overhaul or by 31 August 1993, whichever is the sooner.

**Effective Date:** DCA/MA/12A - 12 February 1993

DCA/MA/12B - 13 March 1998

**DCA/MA/13 Mixture Control Shaft Retainer Clip - Installation**

**Applicability:** Precision Airmotive Corporation (formerly Facet Aerospace Products and Marvel-Schebler) Model HA-6 series carburetors P/N 10-5092, 10-5180, 10-5189, 10-5200, 10-5200-1, 10-5201-11, 10-5206, 10-5206-1, 10-5210, 10-5211, 10-5211-1, 10-5214, 10-5215, 10-5221, 10-5227.

**Requirement:** To prevent interruption of fuel flow to the engine caused by the mixture control shaft moving out of position, accomplish the following:-

Install a mixture control shaft retainer clip P/N 55-A239, screw P/N 15-B395 and washer P/N 78-A292 per Marvel-Schebler/Tillotson SB A1-78 or Precision Airmotive Corporation SB MSA-6.

(FAA AD 94-25-04 refers)

**Compliance:** By 14 April 1996

**Effective Date:** 14 April 1995

**DCA/MA/14 Cancelled – DCA/MA/16 refers**

**Effective Date:** 9 February 2009

**DCA/MA/15C Advanced Polymer Floats – Inspection**

**Applicability:** Marvel-Schebler Aircraft Carburetors (formerly Volare Carburetors, Precision Airmotive Corporation, Facet Aerospace and Marvel-Schebler) fitted with advanced polymer floats manufactured by Precision Airmotive Corporation and predecessors.

**Note 1:** DCA/MA/15C revised to introduce Volare Carburetors SB No. SB-2 revision B dated 22 June 2009 or later FAA approved revisions. The manufacturer formerly known as Volare Carburetors LLC is now Marvel-Schebler Aircraft Carburetors LLC.

There is no change to the AD applicability or the requirement. No action required if already in compliance with previous revisions of this AD.

**Requirement:** To prevent advanced polymer floats absorbing fuel and sinking, which could result in poor idle performance/cut-off or fuel leakage and disruption of fuel flow to the engine, accomplish the following:

Inspect the aircraft log books and/or the carburetor and determine whether an advanced polymer float is fitted.

If an advanced polymer float is fitted, replace with a solid blue epoxy float P/N 30-860, 30-862 or 30-864 per Volare Carburetors SB No. SB-2 revision B, dated 22 April 2009 before further flight.

**Note 2:** For further information on poor idle performance/cut-off or fuel leakage after shutdown, refer to Precision Airmotive LLC Service Information Letter No. MS-12 issued 24 February 2006.

(NZ Occurrences refer)

**Compliance:** By 18 July 2015

**Effective Date:** DCA/MA/15A - 30 April 2008  
DCA/MA/15B - 26 November 2009  
DCA/MA/15C - 18 June 2015

**DCA/MA/16 Fuel Injection Servos – Inspection**

**Applicability:** Precision Airmotive RSA-5 and RSA-10 series fuel injection servos and Bendix RSA-5 and RSA-10 series fuel injection servos fitted with a servo plug gasket P/N 365533 under the fuel injection servo plug P/N 383493.

**Note 1:** This AD is not applicable if the letter "G" is stamped or scribed on the face of the servo hex plug and a gasket P/N 2577258 is fitted.

Servo plug gasket P/N 365533 gaskets were installed on the following engines from 22 August 2006:

1. Lycoming IO, (L)IO, TIO, (L)TIO, AEIO, AIO, IGO, IVO and HIO series engines. (Regardless of displacement).
2. Teledyne Continental Motors LTSIO-360-RB and TSIO-360-RB engines.
3. Superior Air Parts IO-360 series engines.

The above list is not exhaustive. The AD applies to affected servos regardless of engine type or if the servo installation history is unknown.

This AD is also applicable if the fuel injection servo plug P/N 383493 has been removed during maintenance after 22 August 2006 and does not have a letter 'G' on the fuel injection servo plug P/N 383493.

Affected fuel injection servos were either new, rebuilt, overhauled or repaired after 22 August 2006.

**Note 2:** This AD supersedes DCA/MA/14. This AD revised to introduce an improved servo plug gasket P/N 2577258. The applicability revised to include Bendix RSA-5 and RSA-10 series fuel injection servos and TCM LTSIO-360-RB engines.

**Requirement:** To prevent a lean running engine possibly resulting in substantial loss of engine power, accomplish the following instructions per Precision Airmotive LLC Mandatory Service Bulletin No. PRS-107 revision 4, dated 16 July 2008:

1. Inspect the fuel injection servo plug P/N 383493 for looseness by attempting to turn it by hand. Be careful not to damage the safety wire or seal.

If the plug moves, accomplish the following:

- a) Cut and remove the servo plug locking wire.
- b) Carefully remove the servo plug without losing the gasket P/N 365533 which is located behind the plug. The gasket may be stuck to the regulator cover.
- c) Inspect the threads of the servo plug and regulator cover for damage. The threads should be smooth and consistent with no burrs or chips. Measure the servo plug outer thread diameter. The diameter should be between 0.7419 and 0.7500 inches.
- d) If the threads on either the servo plug or the regulator cover are damaged, or the servo plug outer thread diameter is not between 0.7419 and 0.7500 inches, replace the servo before further flight.
- e) Replace gasket P/N 365533 with a new improved gasket P/N 2577258.
- f) While the hex plug is removed, stamp or scribe the letter "G" onto the face of the hex plug.
- f) Fit the new gasket, P/N 2577258 onto the servo plug and refit the servo plug to the regulator cover. When reassembling, do not install a servo plug or regulator cover that is not found serviceable.
- g) Torque the servo plug to between 90 and 100 in-lbs. (This torque is specified to prevent the plug coming loose).
- h) Safety wire the servo plug to the regulator cover using 0.025-inch through 0.025-inch diameter wire.

- i) Inspect other safety wire on the servo and replace as required.

If the plug is not found loose the aircraft may be returned to service.

- 2. Replace servo plug gaskets P/N 365533 with gasket P/N 2577258 per the instructions in requirement 1 of this AD and MSB No. PRS-107.

**Note 4:** Accomplishing requirement 2 of this AD is a terminating action to the repetitive inspection requirements of this AD.

- 3. Servo plug gaskets P/N 365533 may not be fitted to any fuel injection servo. (FAA AD 2009-02-03 refers)

**Note 5:** Servo plug gaskets P/N 365533 are made of either a paper or fiber material impregnated with synthetic rubber. They are relatively flexible and have a rough surface. Servo plug gaskets P/N 2577258 are made of metal with a coating of synthetic rubber. They are relatively rigid and have a smooth surface.

**Compliance:** 1. Before further flight unless the fuel injection servo plug P/N 383493 was inspected within the last 50 hours TIS or at the last engine oil change. Thereafter inspect at every engine oil change or 50 hours TIS, whichever occurs first until accomplishment of requirement 2 of this AD.

- 2. By 31 December 2009.

- 3. From 9 February 2009.

**Effective Date:** 9 February 2009

#### **DCA/MA/17A Fuel Control Unit RSA-10AD1 – Inspection**

**Applicability:** Fuel Control Unit RSA-10AD1 installed on Robinson R44 II helicopters fitted with a Lycoming IO-540 series engine.

**Note 1:** DCA/MA/17A revised to introduce the terminating modification per Precision Airmotive SB PRS-110 dated 5 November 2015. Affected Fuel Control Units (FCUs) are manufactured by Precision Airmotive and predecessors.

**Requirement:** To prevent restricted fuel flow and possible loss of engine performance caused by the breakdown of thrust washer P/N 367757, accomplish the following:

- 1. Remove the fuel control unit from the aircraft and inspect the idle valve shaft thrust washer P/N 367757 for defects. If any defects are found, rectify before further flight.
- 2. Modify the fuel control unit per the instructions in Precision Airmotive SB PRS-110 dated 5 November 2015, or later approved revision.

**Note 2:** The inspection requires disassembly of the FCU which can only be accomplished by a Part 145 certified organisation with a maintenance rating for components as detailed in the organisation's exposition.

**Note 3:** A copy of SB PRS-110 can be obtained online from the Precision Airmotive website at <http://www.precisionairmotive.com/> (Occurrence 14/793 refers)

**Compliance:** 1. At 200 hours TTIS/TSO or within the next 5 hours TIS, whichever is the later, unless already accomplished within the last 200 hours TIS and thereafter inspect at intervals not to exceed 200 hours TIS.

If reduced engine performance or a stiff throttle is experienced, accomplish requirement 1 of this AD before further flight.

- 2. By 26 November 2016

**Effective Date:** DCA/MA/17 - 11 July 2014  
DCA/MA/17A - 26 November 2015

**\* DCA/MA/18A Fuel Injection Servo RSA-10AD1 – Inspection**

**Applicability:** All Precision Airmotive RSA-10AD1 Fuel Injection Servos (FIS) except those FIS installed on Robinson R44 II helicopters.

**Note 1:** DCA/MA/18A revised to introduce Precision Airmotive Service Bulletin PRS-110 dated, revision 2 dated 2 December 2019, introduce requirement 2 and revise note 2. DCA/MA/17A is applicable to Robinson R44 II helicopters.

**Requirement:** To prevent restricted fuel flow and possible loss of engine performance due to breakdown of thrust washer P/N 367757, accomplish the following:

1. Initial Inspection:

Remove the FIS from the aircraft and inspect the idle valve shaft thrust washer P/N 367757 for defects. If any defects are found, rectify before further flight.

2. Modification:

For fuel injection servo model RSA-10AD1 with P/N 2576630-4, embody valve kit P/N 2576659 per the instructions in Precision Airmotive Service Bulletin PRS-110 revision 2, dated 2 December 2019, or later approved revision and the instructions in the current applicable Precision Airmotive RSA Fuel Injection CMM.

**Note 2:** The inspection per requirement 1 of this AD and the modification per requirement 2 of this AD requires removal of the idle / mixture control valve lever assembly from the fuel injection servo in accordance with the instructions in the current applicable Precision Airmotive RSA Fuel Injection Component Maintenance Manual (CMM) and the instructions in Precision Airmotive SB PRS-110.

A licenced maintenance engineer with an appropriate powerplant group rating specified in Appendix B of Rule Part 66 can accomplish the AD requirements provided they have the current applicable Precision Airmotive RSA Fuel Injection CMM and SB PRS110.

If the current applicable Precision Airmotive RSA Fuel Injection CMM is not available, then the fuel injection servo must be sent to a Part 145 certificated organisation with an appropriate maintenance rating for components as detailed in the organisation's exposition to accomplish the AD requirements.

**Note 3:** Report all findings to the CAA. This includes nil defects found. Complete a CA005D defect report form and submit to the CAA at [CA005@caa.govt.nz](mailto:CA005@caa.govt.nz) Please provide as much engineering detail as possible, including photos of the defective parts, a photo of the FIS data plate, and the FIS hours TSN/TSO. Defect report form CA005D can be obtained from [http://www.caa.govt.nz/Forms/CA005D\\_Form.pdf](http://www.caa.govt.nz/Forms/CA005D_Form.pdf)

**Note 4:** For RSA fuel injection servo idle speed and mixture adjustments refer to Precision Airmotive Service Information Letter RS-67 dated 20 November 2002, or later approved revision.  
(Occurrence 14/793 refers)

**Compliance:** 1. Initial Inspection:

At 500 hours TTIS/TSO on the FIS, or within the next 200 hours TIS, whichever is the later, unless already accomplished within the last 200 hours TIS.

If reduced engine performance, or a stiff throttle is experienced, accomplish requirement 1 of this AD before further flight.

2. Modification:

By 31 January 2021

**Effective Date:** DCA/MA/18 – 28 August 2014  
DCA/MA/18A – 30 July 2020

- \* DCA/MA/19B Fuel Injection Servos RSA-5AB1, RSA-5AD1, RSA-10ED1, RSA-10ED2, RSA-10DB1 and RSA-10DB2 – Inspection**
- Applicability:** All Precision Airmotive, RSA-5AB1, RSA-5AD1, RSA-10ED1, RSA-10ED2, RSA-10DB1 and RSA-10DB2 Fuel Injection Servos (FIS).
- Note 1:** DCA/MA/19B revised to introduce Precision Airmotive Service Bulletin PRS-110 dated, revision 2 dated 2 December 2019, introduce requirement 2 and revise note 2. DCA/MA/17A is applicable to Robinson R44 II helicopters. DCA/MA/18A is applicable to other aircraft types fitted with Precision Airmotive RSA-10AD1 fuel injection servos.
- Requirement:** To prevent restricted fuel flow and possible loss of engine performance due to breakdown of idle valve shaft thrust washer, accomplish the following:
- Initial Inspection:**  
Remove the FIS from the aircraft and inspect the idle valve shaft thrust washer for defects. If any defects are found, rectify before further flight.
  - Modification:**  
For RSA-5AD1 and RSA-10ED1 fuel injection servos with a P/N listed in the applicability section of Precision Airmotive Service Bulletin PRS-110 revision 2, dated 2 December 2019, or later approved revision, embody valve kit P/N 2576659 per the instructions in SB PRS-110 and the instructions in the current applicable Precision Airmotive RSA Fuel Injection CMM.
- Note 2:** The inspection per requirement 1 of this AD and the modification per requirement 2 of this AD requires removal of the idle / mixture control valve lever assembly from the fuel injection servo in accordance with the instructions in the current applicable Precision Airmotive RSA Fuel Injection Component Maintenance Manual (CMM) and the instructions in Precision Airmotive SB PRS-110.  
A licenced maintenance engineer with an appropriate powerplant group rating specified in Appendix B of Rule Part 66 can accomplish the AD requirements provided they have the current applicable Precision Airmotive RSA Fuel Injection CMM and SB PRS110.  
If the current applicable Precision Airmotive RSA Fuel Injection CMM is not available, then the fuel injection servo must be sent to a Part 145 certificated organisation with an appropriate maintenance rating for components as detailed in the organisation's exposition to accomplish the AD requirements.
- Note 3:** Report all findings to the CAA. This includes nil defects found. Complete a CA005D defect report form and submit to the CAA at [CA005@caa.govt.nz](mailto:CA005@caa.govt.nz) Please provide as much engineering detail as possible, including photos of the defective parts, a photo of the FIS data plate, and the FIS hours TSN/TSO.  
Defect report form CA005D can be obtained from [http://www.caa.govt.nz/Forms/CA005D\\_Form.pdf](http://www.caa.govt.nz/Forms/CA005D_Form.pdf)
- Note 4:** For RSA fuel injection servo idle speed and mixture adjustments refer to Precision Airmotive Service Information Letter RS-67 dated 20 November 2002, or later approved revision.  
(Occurrence 14/793 refers)
- Compliance:**
- Initial Inspection:**  
At 500 hours TTIS/TSO on the FIS, or within the next 200 hours TIS, whichever is the later, unless already accomplished within the last 200 hours TIS.  
If reduced engine performance or a stiff throttle is experienced, accomplish requirement 1 of this AD before further flight.
  - Modification:**  
By 31 January 2021
- Effective Date:** DCA/MA/19 - 2 October 2014  
DCA/MA/19A - 10 October 2014  
DCA/MA/19B - 30 July 2020