

Airworthiness Directive Schedule

Engines

Engines General – Reciprocating Engines

29 June 2023

- Notes:**
1. This AD schedule is applicable to general equipment, components and parts installed on reciprocating engines. These ADs should be listed in the AD section of the reciprocating engine logbook.
 2. This AD schedule includes those National Airworthiness Authority (NAA) ADs applicable to aircraft engines. NAA ADs can be obtained directly from the applicable NAA website. Links to NAA websites are available on the CAA website at: <https://www.aviation.govt.nz/aircraft/airworthiness/airworthiness-directives/links-to-state-of-design-airworthiness-directives/>
 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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The State of Design ADs listed below are available directly from the National Airworthiness Authority (NAA) websites. Links to NAA websites are available on the CAA website at https://www.aviation.govt.nz/aircraft/airworthiness/airworthiness-directives/links-to-state-of-design-airworthiness-directives/ If additional NZ ADs need to be issued when an unsafe condition is found to exist in an aircraft or aeronautical product in NZ, they will be added to the list below.		
FAA AD 2018-02-04	Mufflers - Inspection	8
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* FAA AD 2023-09-09	V-Band Exhaust Couplings - Inspection	8

DCA/ENG/1 Oil Filter - Replacement

- Applicability:** Champion oil filters P/N CH48108 and CH48109 approved for installation in, but not limited to, Beech V35, V35B, A36, 58 series aircraft and Cessna R172K, 340, 401, 402 series aircraft
- Requirement:** To preclude possible oil filter malfunction remove from service all P/N CH48108 filters with date code 1A7E and 2A7C, and all P/N CH48109 filters with date code 1A7G and 1A7I. Filters with "Insp OK 507A" stamped adjacent to manufacturing date code are not affected
- Compliance:** Within the next 50 hours TIS
- Effective Date:** 30 September 1977

DCA/ENG/2 Hoses - Inspection

- Applicability:** All Aircraft Metal Products Corporation oil and fuel system hoses P/N 762506 known to be installed on, but not limited to, certain Piper model PA-28 and PA-32 aircraft
- Requirement:** To prevent possible fire or explosion in engine compartment or engine failure due to loss of engine oil, accomplish the following:
1. Inspect hoses for fluid leakage, excessive abrasion or excessive length. Renew any hose found leaking, worn, or which is too long.
 2. Loosen each coupling fitting and check for hose movement in direction of fitting. Renew any hose found with evidence of pre-existing twist.
 3. Retighten each coupling fitting, gripping collar just behind fitting with pliers with just enough force to prevent hose from turning with fitting. If hose turns, loosen and repeat retightening procedure.
 4. Inspect installation for adequate clearance between hose and other parts of aircraft. If contact found, complete insulation must be provided by use of AN742 cushion clamps and/or koroseal lacing, or other equivalent means.
(FAA AD 79-26-05 refers)
- Compliance:** Within the next 50 hours TIS
- Effective Date:** 8 February 1980

DCA/ENG/3 Turbocharger Installations - Inspection

- Applicability:** Roto-Master Inc (Rajay Industries Inc) Rajay model 325E10 and 3AT6EE10J2 turbochargers installed on but not limited to : Continental engine models TSIO-360, O-470, IO-470, IO-520, TIO-520; Lycoming engine models O-320, IO-320, LIO-320, O-360, IO-360, TO-360, O-540, IO-540, TIO-540. These engines are installed on but not limited to : Piper PA-28R-201T, PA-28-RT-201T, PA-28-201T series; PA-34-200, PA-34-200T series; PA-30 and PA-39 series; Mooney M20 A through K series; Lake LA-4, LA-4A and LA-4-200 series
- Requirement:** To preclude possibility of fire in power plant nacelle and/or heat damage to power plant installation caused by exhaust gases escaping through a cracked turbocharger turbine housing, inspect per FAA AD 82-27-03. Renew defective parts as prescribed
- Compliance:** Within the next 50 hours TIS and thereafter at intervals not exceeding 200 hours TIS until turbine housing Roto-Master P/N 600510-04 (TCM P/N 643931) installed
- Effective Date:** 28 January 1983

DCA/ENG/4A Bracket Air Filters - Inspection and Replacement

Applicability The following Bracket air filter assemblies that utilise a neoprene gasket. Air filter assemblies; BA-2010, BA-4106, BA-4106-1, BA-4210, BA-5110, BA-5110A, BA-6110, BA-8910, AAF-117 and AAF-118. These air filters could be installed as original equipment or in accordance with STC SA71GL or STC SA693CE.

Requirement: To prevent gasket particles from entering the carburettor because of air filter gasket failure, accomplish the following:

1. Visually inspect the inside and outside of the air filter frame for gasket looseness, movement, or deterioration in accordance with Bracket Air Filter Document I-194, dated March 16, 1994. If any gasket is found to be damaged, prior to further flight, replace the air filter assembly with one having a retaining lip per the applicable Brackett Installation Instruction Sheet listed.

Air Filter Assembly	Replace with Assembly	Instruction Sheet
BA-2010	BA-2010 Revision A	BA-2004, dated 6/6/95
BA-4106	BA-4106 Revision D	BA-4105, dated 6/15/95
BA-4106-1	BA-4106-1 Revision A	RM-1, dated 7/6/95
BA-4210	BA-4210 Revision B	BA-4205, dated 6/14/95
BA-5110	BA-5110 Revision H	BA-5105, dated 5/8/95
BA-5110A	BA-5110A Revision D	BA-5111, dated 5/8/95
BA-6110	BA-6110 Revision C	BA-6105, dated 6/5/95
BA-8910	BA-8910 Revision B	BA-8910-3, dated 6/6/95
AAF-117	BA-4106 Revision D	BA-4105, dated 6/15/95
AAF-118	BA-5110 Revision H	BA-5105, dated 5/8/95

2. Replace the air filter assembly with one having a retaining lip per the applicable Brackett Installation Instruction Sheet listed.
(FAA AD 96-09-06 refers)

Compliance:

1. Within next 100 hours TIS and thereafter at intervals not to exceed 100 hours TIS until replaced per part 2 of this airworthiness directive.
2. Within next 500 hours TIS.

Effective Date: DCA/ENG/4 14 April 1995
DCA/ENG/4A 5 July 1996

DCA/ENG/5 Tornado Alley Turbo System Exhaust Clamp - Replacement

Applicability: Beech 35-C33A, E33A, E33C, F33A, F33C, S35, V35, V35A, V35B, 36, and A36 that incorporate a Teledyne Continental engine equipped with a turbocharger system and have Tornado Alley Turbo STC SA5223NM and STC SE5222NM incorporated.

Requirement: To prevent the tailpipe from detaching from the turbocharger due to failure of the V-band exhaust clamp, the release of high temperature gases inside the engine compartment and possible engine compartment fire, accomplish the following:-

Replace the V-band exhaust clamp, Aeroquip P/N 4404C375-M per the Turbo-Flite 520/550 System Maintenance and Troubleshooting manual. Tornado Alley Turbo Mandatory SB TAT 98-1 also references these procedures.
(FAA AD 2001-08-08 refers)

Compliance: At 400 hours TIS after incorporating STC SA5223NM and STC SE5222NM or within the next 25 hours TIS, whichever occurs later, and thereafter at intervals not to exceed 400 hours TIS.

Effective Date: 31 May 2001

DCA/ENG/6 Bracket Single Screen Air Filters - Inspection and Modification

Applicability: Brackett single screen air filter assemblies, P/N BA-2410, that are installed on, but not limited to, the following aircraft;

Cessna Model

TP206A, TP206B, TP206C, TP206D, and TP206E,
TU206A, TU206B, TU206C, TU206D, TU206E, TU206F, TU206G and
T207A,

210 All S/Ns equipped with air conditioning.

T210F, T210G, T210H, T210J, T210K, T210L, T210M, T210N, 210R, and T210R

Requirement: To detect and correct incorrect installation of the air filter, which could result in failure of the air filter, engine/turbocharger ingestion of the air filter foam element and possible engine failure, accomplish the following

1. Visually or by touch, check the single screen Brackett air filter assembly P/N BA-2410 to ensure that it is installed with the screen on the down-stream side of the filter assembly as follows:

a) Remove both upper engine cowlings. Open the alternate air access door located on the right side of the engine compartment by applying pressure.

b) While viewing through the alternate air access door, use an inspection mirror and light to check that the screen is installed on the down stream side of the filter assembly; OR

c) Partially insert a hand into the open alternate air access door and touch the back of the filter element, feeling for the presence of the screen or absence of the screen. If the screen is not present on the down stream side of the filter, fit additional screen P/N 2404-00 or alternate approved filter assembly before further flight.

2. Ensure that the BA-2410 air filter assembly has screens on both sides. Install an additional screen P/N 2404-00 on the BA-2410 air filter assembly if it is not already equipped with screens on both sides. Alternatively, replace the single screen Brackett air filter assembly, P/N A-2410, with an alternate approved filter that is not Brackett P/N BA-2410.

3. Do not install, any single screen Brackett air filter assembly, P/N BA-2410.

(FAA AD 2002-26-03 refers)

Compliance:

1. Within next 50 hours TIS.
2. Within next 100 hours TIS.
3. From 25 March 2004

Effective Date: 25 March 2004

DCA/ENG/7 B.C. Aero Engines - Non-Conformance of Maintenance.

Applicability: All Textron Lycoming and Teledyne Continental Motors reciprocating engines that have been overhauled, repaired or disassembled between 1 February 2002 and 18 July 2004, to the extent where the main crankcase halves have been split, by **B.C. Aero Engines Ltd.**, an approved maintenance organization (AMO) 84-02, of 5-9566 Hurricane Road, Sidney, British Columbia, Canada.

Requirement: Investigations carried out by Transport Canada have determined certain Textron Lycoming and Teledyne Continental Motors reciprocating engines that have been overhauled, repaired or disassembled by B.C. Aero Engines Ltd. are not in conformance with the manufacturer's overhaul data and have serious quality issues that may result in an unsafe situation. Transport Canada cancelled B.C. Aero Engines' AMO (84-02) on 18 July 2004. To correct the above situation which may result in an in-flight engine failure, accomplish the following.

1. Engine Log Book Review. Review the Technical Records including the engine logbook to determine if the engine had been inspected, repaired or disassembled to the extent the crankcase halves were split, or if the engine had been overhauled by B.C. Aero Engines Ltd. between 1 February 2002 and 18 July 2004. If no engine inspection, repair or disassembly to the extent the crankcase halves were split, or no engine overhaul work was performed by B.C. Aero Engines Ltd., no further action is required by this directive.

2. Inspect the affected engine for evidence of non-conformity, including the excessive use of crankcase split-line sealant to that recommended by the applicable overhaul manual, crankcase split-line fretting, excessive split-line oil leaks, loss of crankcase through-bolt torque and unapproved repairs. If necessary, restore the engine's conformity.

(Transport Canada AD CF-2005-40 refers)

Compliance:

- By 23 March 2006.
- For Single Engine-Powered Aircraft: Within the next 50 hours TIS, or by 23 August 2006, whichever occurs sooner.

For Twin Engine-Powered Aircraft: Within the next 100 hours TIS, or by 23 February 2007, whichever occurs sooner.

If the engine exhibits in-service difficulties (such as oil leaks or oil filter contamination), then inspect within 5 hours TIS or by 23 March 2006, whichever occurs sooner.

Effective Date: 23 February 2006

DCA/ENG/8 Kelly Turbochargers – Replacement

Applicability: Kelly Aerospace Energy Systems rebuilt turbochargers with P/N 406610-9005, 406610-9015, 406610-9018, 406610-9019, 406610-9020, 406610-9021, 406610-9025, 406610-9026, 406610-9028, 406610-9029, 406610-9030, 406610-9032, 407810-9001, 406990-9004, 408610-9001, 409170-9001, 409680-9011, 465680-9001, 465680-9004, 465680-9005, 465930-9002, 465930-9003, 465292-9002, 465292-9004, 465398-9002, 407540-9003, 466881-9001, 466642-9001, 466642-9002, 466642-9005, 466304-9003, 600572-9000*, 600573-9000*, 600574-9001*, 600575-9001*, 600575-9002*, 600576-9000*, 600700-9001*, 600803-9001* and 600803-9002* with S/N listed in table III of Kelly Aerospace Energy Systems, LLC (KAES) SB No. 039A, dated 10 February 2010.

These rebuilt turbochargers are installed on, but not limited to, the engines and aircraft listed in table IV of Kelly Aerospace Energy Systems, LLC SB No. 039 A, dated 10 February 2010.

Note: Turbocharger P/N with an asterisk may have a CF prefix.

Requirement: To prevent failure of the turbocharger turbine which could result in partial or complete loss of engine power, loss of engine oil and smoke in the aircraft cabin, accomplish the following:

- Remove affected turbochargers and replace with a new or overhauled turbocharger per SB No. 039 A before further flight.

2. Affected turbochargers shall not be fitted to any engine unless the turbocharger is overhauled by an approved maintenance organisation. The overhaul must include the replacement of the turbine wheels with P/N listed in table II of SB No. 039 A and the replacement of the turbine wheel mating bushings, and the attached Return to Service Tag marked with this AD number.

(FAA AD 2010-07-08 refers)

Compliance: 1. Within the next 10 hours TIS.
2. From 19 April 2010.

Effective Date: 19 April 2010

DCA/ENG/9 Hartzell Turbochargers – Inspection and Rework

Applicability: Lycoming and TCM turbocharged reciprocating engines listed in, but not limited to table 1 of this AD,

Fitted with Hartzell Engine Technologies, LLC (HET) turbocharger models TA3601, TAO401, TAO402, TAO411, TAO413, T1879, T18A21, T18A44, THO867 and TEO659 which were manufactured (known as the -0000 series) before S/N H-NJL00003, or rebuilt (known as the -9000 series) before S/N H-NJR00002, and

With a P/N listed in table 2 or table 3 of this AD, and

With a "slanted A" foundry mark located on the Center Housing and Rotating Assembly (CHRA).

Table 1 – Lycoming and TCM Engines Affected

TSIO-520-BE	TSIO-360-H	TIO-540-AF1A	TIGO-541-E
TSIO-360-MB, SB	O-540-L3C5D	TIO-540-AF1B	GTSIO-520-F
TIO-540-AK1A	TSIO-520-T	TIO-540-AH1A	GTSIO-520-K
L/TSIO-360-RB	L/TO-360-E1A6D	TIO-541-E1D4	GTSIO-520-D
TIO-540-AE2A	TIO-540-AG1A	TIO-541-E1C4	GTSIO-520-H

Table 2 – KAES Turbocharger P/N Affected

406990-9004	407540-0003	407540-9003	407800-9003
465292-0001	465292-9001	465292-0002	465292-9002
465398-9002	466011-0002	466011-9002	466304-0003
466642-0002	466642-9002	466642-0005	466642-9005
408610-9001	465398-0002	466642-9001	408590-9012
465292-0004	466304-9003	466642-0006	408610-0001
465292-9004	466642-0001	466642-0007	

Table 3 – Original Equipment Turbocharger P/N Affected

637374-1	633274-4	635034-2	642518-4
649151-2	46C19836	46C19839	46C22924
LW-10191	LW-13310	LW-16254	646677
C295001-0301	649151-1	C295001-0304	

Note 1: This AD is not applicable to turbochargers with more than 50 hours TIS on the effective date of this AD, or turbochargers with a circled "JT" foundry mark on the CHRA, or engines with new or overhauled turbochargers installed on or before September 2001.

Requirement: To prevent the turbocharger turbine seizing which could result in damage to the engine and smoke in the aircraft cabin, accomplish the following:

1. Review the aircraft records or inspect the aircraft and determine if an affected turbocharger is fitted. If an affected turbocharger is found fitted, accomplish requirement 2 of this AD at the applicable compliance threshold.
2. Disassemble the turbocharger and clean the CHRA center housing cavity per the instructions in paragraphs 1 through to 10 of Hartzell Engine Technologies, LLC SB No. 040, revision A, dated 22 December 2010.

Note 2: The reference to step 16 in paragraph 10 in SB No. 040 is incorrect. The correct reference is step 9.

(FAA AD 2011-13-03 refers)

Compliance:

1. Before further flight.
2. For affected turbochargers including overhauled turbochargers with up to 10 hours TIS:

Before further flight unless previously accomplished.

For affected turbochargers including overhauled turbochargers with more than 10 hours TIS but less than 50 hours TIS:

Within the next 10 hours TIS unless previously accomplished.

For affected turbochargers with more than 50 hours TIS:

No further AD action required.

Effective Date: 16 July 2011

The State of Design ADs listed below are available directly from the National Airworthiness Authority (NAA) websites. Links to NAA websites are available on the CAA website at <https://www.aviation.govt.nz/aircraft/airworthiness/airworthiness-directives/links-to-state-of-design-airworthiness-directives/>

If additional NZ ADs need to be issued when an unsafe condition is found to exist in an aircraft or aeronautical product in NZ, they will be added to the list below.

FAA AD 2018-02-04 Mufflers - Inspection

Applicability: The following Aerospace Welding Minneapolis, Inc. (AWI) mufflers:

P/N A1754001-23, S/N 33553 through to 33557; 34721 through to 34728; 35322 through to 35329; 35670; 38481 through to 38485; 38584 through to 38586; and 38723 through to 38727.

P/N A1754001-25, S/N 32795 through to 32800; 33558 through to 33569; 33779 through to 33790; 34636 through to 34653; 34968 through to 34984; 35159 through to 35176; 37903 through to 37906; 38174 through to 38193; 38502 through to 38506; 38566 through to 38575; and 38817 through to 38836.

These mufflers are known to be installed on but not limited to the aircraft listed in figure 2 of paragraph (c) in FAA AD 2018-02-04.

Effective Date: 21 February 2018

FAA AD 2022-16-03 Cancelled - Refer to the note below

Note: FAA AD 2022-16-03 removed from the Engines General – Reciprocation Engines AD Schedule and introduced to the Electrical Equipment – Reciprocating Engines AD Schedule.

Effective Date: 27 October 2022

* FAA AD 2023-09-09 V-Band Exhaust Couplings - Inspection

Applicability: All turbocharged reciprocating engine-powered aeroplanes and helicopters, and turbocharged reciprocating engines with a spot-welded, multi-segment v-band coupling installed at the tailpipe to turbocharger exhaust housing flange, **except for** Aeroplanes that are in compliance with an AD listed in paragraphs (d)(1) through to (10) of FAA AD 2023-09-09, or have the STC listed in paragraph (d)(11) of FAA AD 2023-09-09 embodied.

Note 1: These v-band couplings are installed on, but not limited to, the products listed in Table 1 to paragraph (d) of FAA AD 2023-09-09.

Note 2: For the purpose of this AD, a “v-band coupling” means a spot-welded, multi-segment v-band coupling installed at the tailpipe to turbocharger exhaust housing flange.

Effective Date: 17 July 2023