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MANDATORY

SERVICE BULLETIN

DATE: May 17, 2018

Service Bulletin No. 627E
 Supersedes Service Bulletin No. 627D
 Engineering Aspects are
 FAA Approved

SUBJECT: Exhaust System Inspection

MODELS AFFECTED: Lycoming Engine Model TIO-540-AJ1A

TIME OF COMPLIANCE: If the Exhaust System is not replaced per this revision, after the initial Exhaust System Inspection, continue with subsequent repetitive Exhaust System Inspections per Table 2 in this Service Bulletin

REASON FOR REVISION: Refined language on Page 1 to add clarity for identifying engines which shipped from Lycoming in compliance with Part 1. Corrected Table 2 Required Actions for engines with 1000 hours or less time since last Exhaust System Maintenance.

NOTICE: Incomplete review of all the information in this document can cause errors. Read the entire Service Bulletin to make sure you have a complete understanding of the requirements. Figures in this Service Bulletin are for illustration purposes only; your engine can appear differently.

This Service Bulletin is in response to field reports of exhaust leaks due to cracked welds and exhaust studs pulling from a cylinder on some Lycoming TIO-540-AJ1A engine models.

This revision of this Service Bulletin includes a new option: replacement of the complete exhaust system on affected engines per instructions in Part 1 of this Service Bulletin with a new stainless steel design. Replacement of the complete system eliminates the need to continue required exhaust system inspections per the schedule in Table 2 in Part 2 of this Service Bulletin.

If the exhaust system is not replaced with the new design, continue to complete the exhaust system inspections per Table 2 in Part 2 in this Service Bulletin.

THE FAA HAS APPROVED PART 1 OF THIS SERVICE BULLETIN AS TERMINATING ACTION TO AD 2017-11-10, AND PART 2 OF THIS SERVICE BULLETIN AS AN ALTERNATIVE METHOD OF COMPLIANCE TO AD 2017-11-10.

The following TIO-540-AJ1A engines shipped from Lycoming included the new design exhaust system at the time of overhaul, rebuild, or manufacture, and are in compliance with Part 1 of this Service Bulletin.

- Factory REBUILT and OVERHAUL engines with the supplied logbook entry dated on or after August 22, 2017
- Factory NEW engines beginning with serial number L-14337-61E



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Part 1 - Exhaust System Replacement Procedure

NOTICE: Prior to exhaust system removal, be sure to have one of two exhaust system replacement kits available:

- Part Number P/N 05J28882 for an exhaust system without holes for the Exhaust Gas Temperature (EGT) Probes.
- P/N 05J28883 for an exhaust system with holes for the EGT Probes.

Lycoming Engines is providing options for factory participation on engines that are within Lycoming's factory warranty period and engines that are no longer within Lycoming's factory warranty period. Refer to the most current revision of Lycoming Service Letter L275 for details.

Although, this procedure identifies some airframe-installed exhaust components around the turbocharger as a point of reference, this procedure applies only to exhaust system components that are installed on the Lycoming TIO-540-AJ1A engine at the factory.

NOTICE: This procedure can be completed with the engine installed in the airframe.

1. Exhaust System Removal

⚠ CAUTION: PRIOR TO EXHAUST SYSTEM REMOVAL, LET THE ENGINE AND THE EXHAUST SYSTEM COOL FOR 1 HOUR OR LONGER AFTER ENGINE SHUTDOWN TO PREVENT BURNS. ENSURE THAT ALL POWER IS DISCONNECTED TO PREVENT ENGINE START.

ALL EXHAUST SYSTEM PARTS DESIGNATED TO BE DISCARDED IN THIS PROCEDURE MUST BE RENDERED UNAIRWORTHY. DO NOT RE-INSTALL THESE PARTS ON ANY ENGINE.

- A. To access the exhaust system (Figures 1 and 2), remove any airframe components as necessary per the airframe manufacturer's instructions.

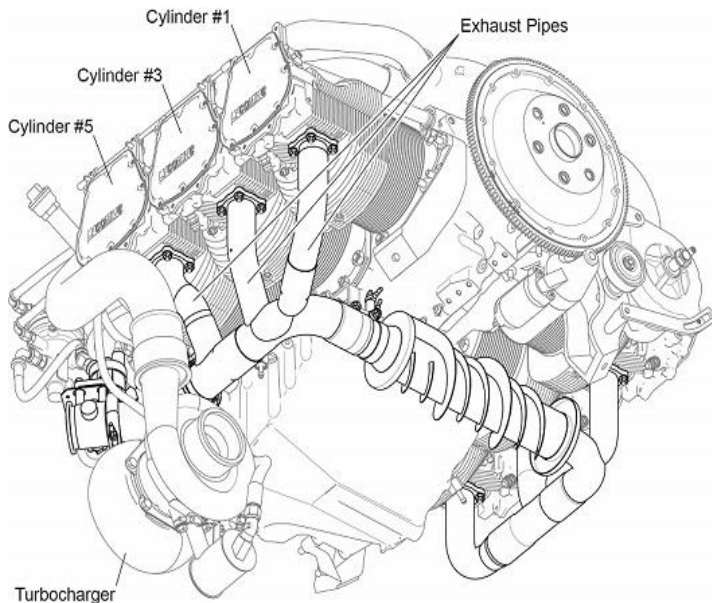


Figure 1
Exhaust System (#1, #3, #5 Cylinder - Right Side of Engine)

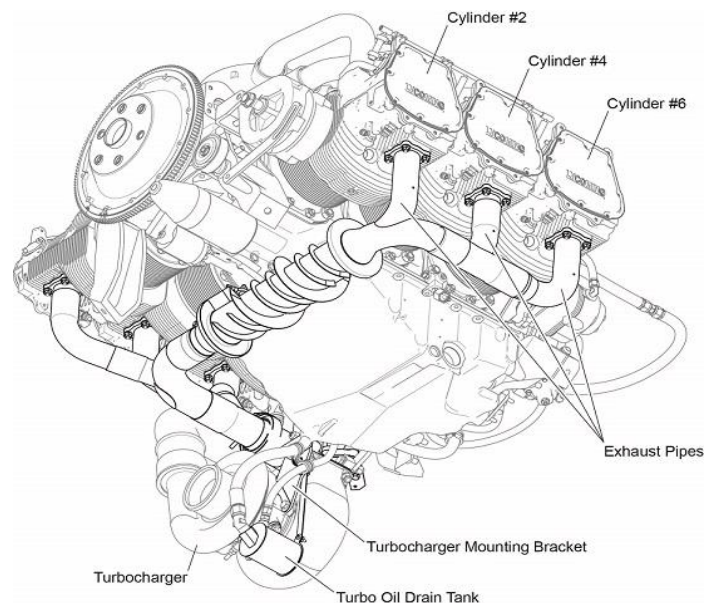


Figure 2
Exhaust System (#2, #4, #6 Cylinder - Left Side of Engine)

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- B. Before removal of the exhaust system and for reference on reassembly:
- (1) Take photos or draw a sketch of the exhaust system as installed and attached to the turbocharger.
 - (2) Identify the location of the No. 5 exhaust pipe V-band coupling, coupling gasket and flange to the exhaust transition assembly as the starting point for disassembly (Figure 4).
- C. Remove and discard No. 5 exhaust pipe V band coupling and coupling gasket from the exhaust transition assembly flange (Figure 4).
- D. Remove and discard the bolt and self-locking nut from the No. 2 exhaust pipe support clamp end of the cable assembly. Save the clamp for reassembly (Figure 4).
- ⚠ CAUTION:** AS A SAFETY PRECAUTION, USE THREE PEOPLE TO COMPLETE THE NEXT STEPS TO PREVENT INJURY AND PARTS FROM FALLING.
- E. While one person removes the self-locking nuts and washers from the vertical portion of the exhaust pipes on the engine (Figures 1 and 2), two people lower and remove the exhaust pipes as one piece and separate the pipes between No. 2 and No. 3 slip joint (Figure 4)
- F. Remove the airframe exhaust shroud from No. 2 exhaust pipe taking note of the correct orientation of the exhaust shroud for reassembly on the new exhaust system. Discard all removed exhaust gaskets, washers and lock nuts.
- G. Remove the flange from the exhaust transition assembly and discard.

Figures 4 and 5 Item Number	Part Number	Description	Quantity
(1)	LW-16902	FLANGE-EXHAUST MANIFOLD	1
(2)	78246	GASKET-V BAND COUPLING 2.25 TB	1
(3)	LW-12093-6	COUPLING-V BAND-2.25 OD TUBE (MVT69183-225)	1
(4)	LW-18234	GASKET-EXHAUST FLANGE	12
(5)	40G28860	ADAPTER- EXHAUST PIPE	2
(6)	STD-2044	NUT-.250-20 SELF LOCKING	25
(7)	AN960C416	WASHER-.250 PLAIN	24
(8)	75845	GASKET-V BAND COUPLING-2.25	1
(9)	LW-25SS-0.75	BOLT-.250-20 X .75 LONG HEX	1
(10)	MS20500-624	NUT-.375-24 UNF-SELF LOCKING	10
(11)	AN6C17A	BOLT-.375-24UNF X 1.95 LG-SS	1
(12)	LW-38SS-1.06	BOLT-HEX HEAD COARSE THREAD	2
(13)	AN6C22A	BOLT-.375-24UNF X 2.33 LG-SS	1
(14)	AN6C11A	BOLT-.375-24UNF X 1.20 LG-SS	2
(15)	406064	LOCKPLATE	1

Figure 3: Exhaust System Replacement Kit Hardware list

(For P/N 05J28882 and 05J28883 Kits)

NOTICE: For parts replacement using the item numbers shown in Figure 3, refer to the item numbers shown in parentheses in Figure 4 and Figure 5.

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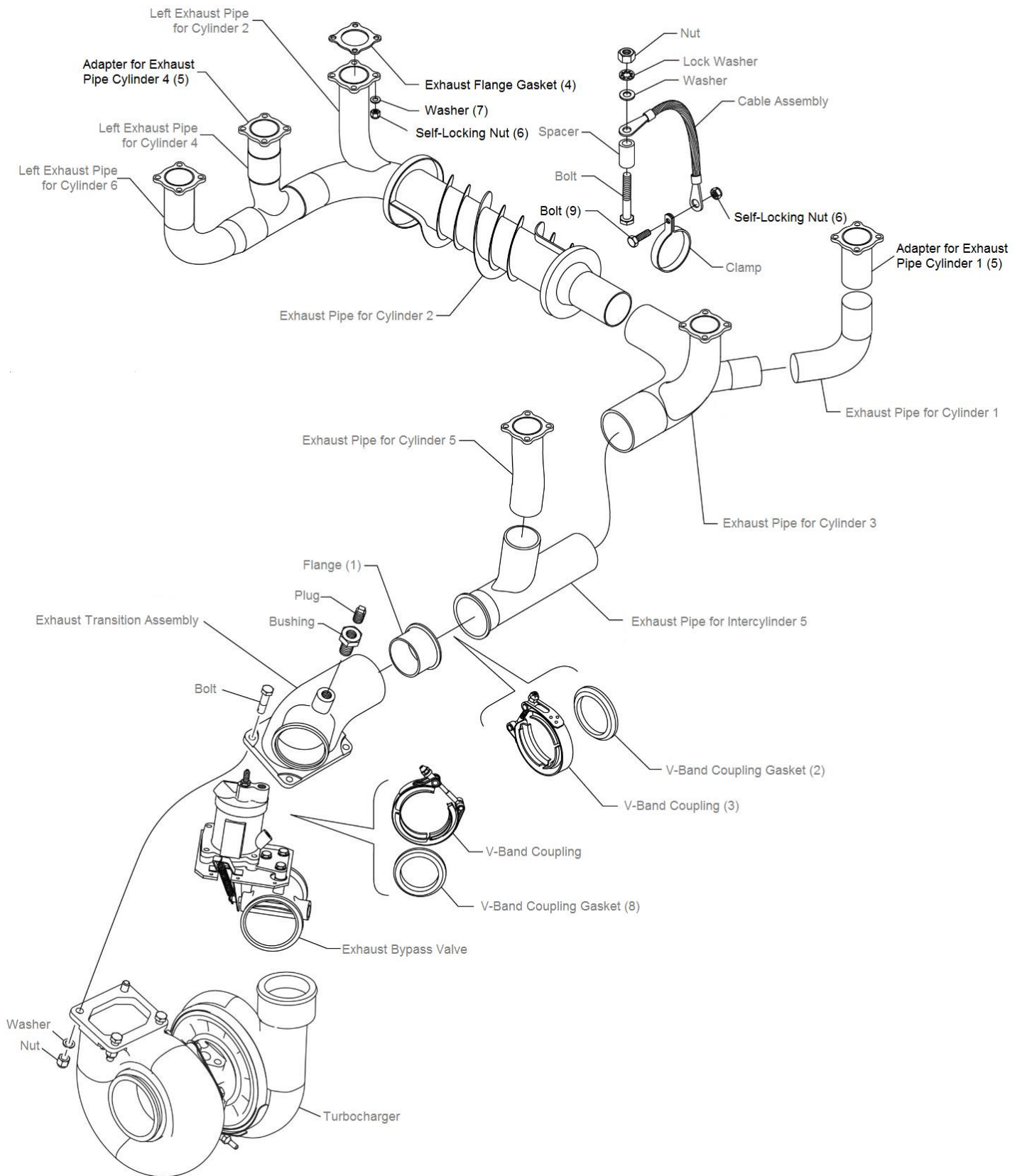


Figure 4
TIO-540-AJ1A Turbocharged Exhaust System

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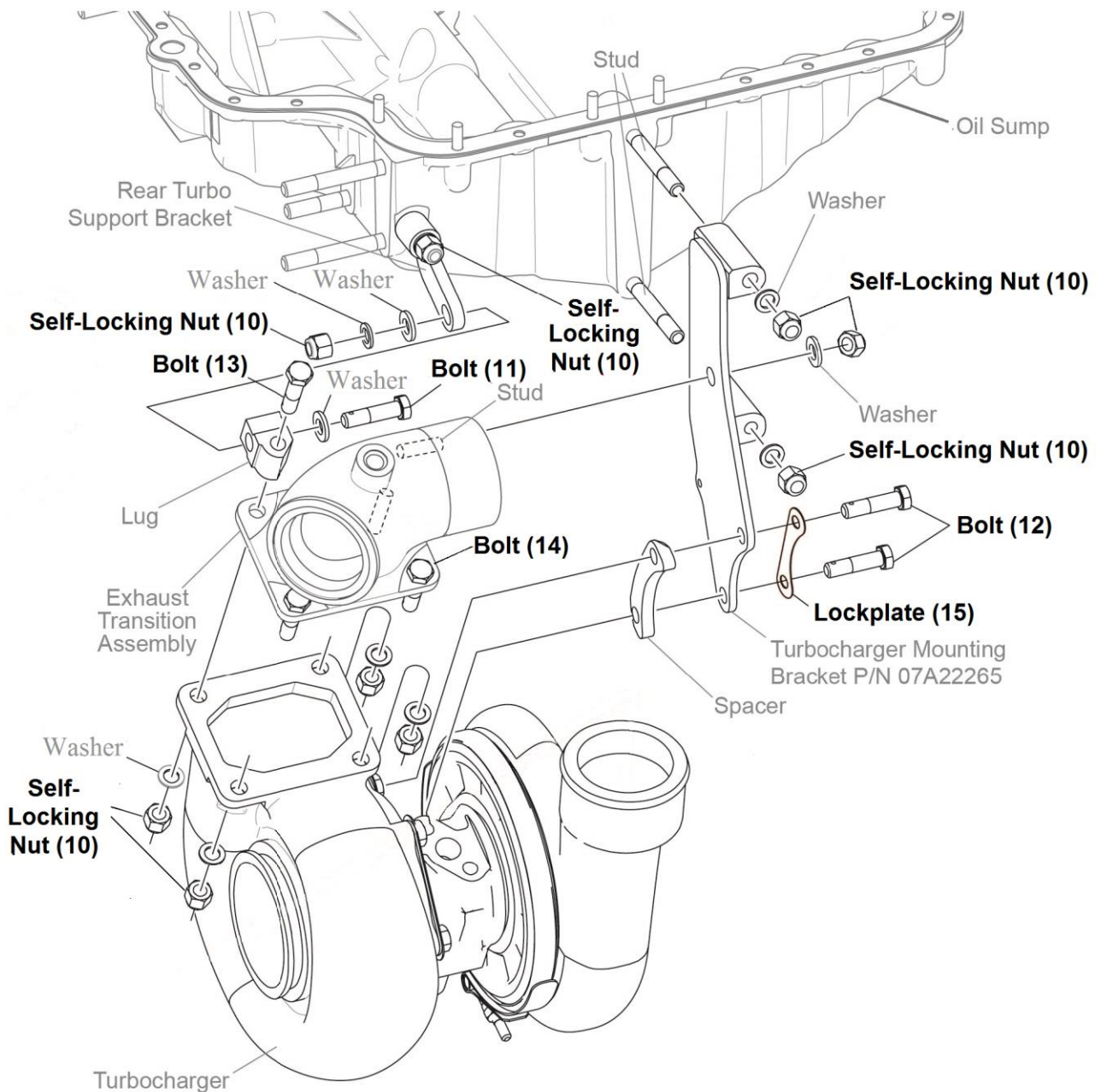


Figure 5
Turbocharger

2. Exhaust System Installation

⚠ CAUTION: INCORRECT ASSEMBLY OF THE EXHAUST SYSTEM CAN ADVERSELY AFFECT ENGINE OPERATION OR RESULT IN THE RELEASE OF HOT TOXIC GASES.

A. Examine the kit components for damage. Replace any component that is damaged.

⚠ CAUTION: DO NOT USE ETCH TOOLS, GRAPHITE LEAD PENCIL, OR SCRIBE TO APPLY AN IDENTIFIER MARK ON EXHAUST PIPES. USE A NON-GRAPHITE MARKER SUCH AS COLORBRITE NO. 2127 OR 4127 OR A MARKS-A-LOT.

B. (Optional) Use a non-graphite marker such as Colorbrite No. 2127 or 4127 or a Marks-A-Lot marker to identify the exhaust system pipes on each side of the engine.

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NOTICE: Clean the exhaust pipes, flanges, and slip joints as necessary, visually examine the exhaust pipes, flanges, and slip joints to ensure all connecting/mating surfaces are clean.

C. Apply a uniform coating of C5A Copper Based Anti-Seize or equivalent:

- Around the entire circumference of exhaust pipes at each slip joint
- Between the exhaust manifold connections, at all slip joints mating surfaces (to minimize binding)
- To the first three threads of each exhaust stud in all the cylinder heads.

D. Install the airframe exhaust shroud assembly over No. 2 exhaust pipe, and ensure the airframe exhaust shroud assembly installs at the correct angle to prevent binding and enable correct installation of the No.2 exhaust pipe. Reinstall the clamp for the cable support on No. 2 exhaust pipe.

E. Install the new flange into the exhaust transition assembly (Figure 4).

NOTICE: Do not force components into position, adjust as necessary for a loose fit. Assemble all the exhaust pipes as one unit before installing. Have two people lift the assembly into position while a third person installs all gaskets and hardware loosely to allow for adjustment.

F. Assemble each side of the exhaust system at the slip joints.

G. Slide the right and left sides of the exhaust system in place together slightly below the cylinders.

H. Install two new exhaust flange gaskets on each cylinder exhaust port (Figure 4). (Refer to the latest revision of Service Instruction SI-1204 for exhaust flange gasket information.)

I. Begin assembly of the exhaust system at the front of the engine and continue to the rear of the engine

J. Pull both sides up onto the studs all at the same time. Make sure there is no binding of the joined parts. If any binding or tightness is found adjust as necessary.

K. Install one new washer and one new self-locking nut loosely on each of the four cylinder exhaust port studs to allow for final adjustment in the next few steps.

⚠ CAUTION: USE CARE TO SUPPORT THE ENTIRE EXHAUST SYSTEM DURING INSTALLATION. DO NOT FORCE, PRY, OR BEND COMPONENTS DURING FINAL ALIGNMENT TO PREVENT DAMAGE TO THE PARTS.

L. Align exhaust pipes in the correct configuration (per Figure 4 and your photo or sketch).

M. Make sure there are no gaps at pipe connections and all pipes are correctly aligned before beginning the torque sequence of the fasteners.

⚠ CAUTION: ANY SELF-LOCKING NUTS, LOCK WASHERS, OR LOCK PLATE LOOSENED OR REMOVED TO GET CORRECT EXHAUST SYSTEM ALIGNMENT MUST BE DISCARDED AND REPLACED WITH NEW SELF-LOCKING NUTS, LOCK WASHERS, OR LOCK PLATE INCLUDED IN THE EXHAUST SYSTEM REPLACEMENT KIT.

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NOTICE: Optional, the following steps, (1 thru 5 and i thru ix) outline the loosening and tightening of the turbocharger and associated mounting points to aid in new exhaust system alignment if required. All exhaust system components can be adjusted if needed to ensure proper alignment as the new exhaust system kit is installed, (Figure 5) Do not force or bend connecting parts, loosen in the order described following steps 1 thru 5.

- (1) Remove the self-locking nut and washer from the stud that attaches the turbocharger mounting bracket to the exhaust transition assembly. Discard the self-locking nut, save the washer for reuse.
- (2) Remove the three bolts and four self-locking nuts that attach the exhaust transition assembly to the turbocharger. Discard the bolts and self-locking nuts. Save the washers and exhaust transition assembly for reuse.
 - If steps 1 and 2 achieve required exhaust system alignment, steps 3, 4 and 5 are not required. For reassembly, complete i and ii, as well as steps vi, vii, viii, and ix.
 - If steps 1 and 2 do not achieve required alignment, continue to step 3.
- (3) Remove and discard the horizontal bolt, lock washer and nut from the rear turbo bracket to the lug, keep the washers for reuse.
 - If steps 1, 2, and 3 achieve required exhaust system alignment, steps 4 and 5 are not required. For reassembly, complete i, ii and iii as well as steps vi, vii, viii, and ix.
 - If steps 1, 2, and 3 do not achieve required alignment, continue to step 4.
- (4) Remove and discard the three self-locking nuts that attach the turbocharger brackets to the oil sump, keep the washers for reuse.
 - If steps 1, 2, 3, and 4 achieve required exhaust system alignment, step 5 is not required. For reassembly, complete i, ii, iii and iv as well as steps vi, vii, viii, and ix.
 - If steps 1, 2, 3, and 4 do not achieve required alignment, continue to step 5.
- (5) Remove the two attaching bolts and lock plate from the turbocharger mounting bracket and discard.
 - For reassembly, complete steps i through ix.
 - If steps 1 through 5 do not achieve required alignment, contact Lycoming Engines Product Support for assistance.

NOTICE: Use the following steps (i thru ix) as required for reassembly, if components are loosened, or removed (Figure 5).

- i) Apply a uniform coating of C5A Copper Based Anti-Seize or equivalent to threads of bolts and studs prior to assembly.
- ii) Complete the following:
 - (a) Loosely install the washers and new self-locking nuts on the studs on the exhaust transition assembly.
 - (b) Loosely install the lug (Figure 5) on the exhaust transition assembly with the new vertical bolt, washer, and new self-locking nut.
 - (c) Loosely attach the exhaust transition assembly to the turbocharger with two bolts, two washers, and two self-locking nuts.
- iii) Loosely install the new horizontal bolt, washers, lock washer and nut through the rear turbocharger bracket into the lug.

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- iv) Loosely install the three washers and new self-locking nuts that attach the turbocharger brackets to the oil sump.
- v) Loosely attach the two new bolts through a new lock plate, the turbocharger mounting bracket, and spacer into the turbocharger.
- vi) Adjust brackets, exhaust transition assembly and turbocharger to gain proper exhaust system alignment, and tighten bolts and nuts sufficiently to maintain alignment of the exhaust system. Do not over tighten. Torque hardware per the following steps.
- vii) Torque the self-locking nuts on the 2 turbocharger to oil sump mounting brackets to 30 ft.-lbs. (40.7Nm)
- viii) Torque the self-locking nuts that attach the exhaust transition assembly (Figure 5) to the turbocharger to 30 ft.-lbs. (40.7Nm)
- ix) Torque the nut that attaches the exhaust transition assembly to the turbocharger mounting bracket (Figure 5) to 30 ft.-lbs. (40.7Nm)

⚠ CAUTION: THE V-BAND COUPLING AT THE EXHAUST TRANSITION ASSEMBLY MUST BE CORRECTLY ALIGNED. INCORRECT ALIGNMENT OF THE V-BAND COUPLING AT THE EXHAUST TRANSITION ASSEMBLY IS AN INDICATION THAT THE EXHAUST SYSTEM IS NOT CORRECTLY INSTALLED. IF THE V-BAND COUPLING DOES NOT ALIGN, ADJUST THE EXHAUST SYSTEM COMPONENTS UNTIL THE V-BAND COUPLING IS IN CORRECT ALIGNMENT.

NOTICE: V-band couplings are used to seal joints in the exhaust system. The V-band coupling joint consists of the coupling, two flanges and a metal gasket. Correct installation of the V-band coupling is critical. Tubes and components to be joined must be aligned with each other before installation of the V-band coupling. Flanges must also be aligned correctly with zero gap between flange faces prior to V-band coupling installation to ensure good joint performance.

N. During installation of a new exhaust system, the new V-band coupling must be installed with a new gasket. Make sure that V-band coupling has a complete seal on an exhaust system component.

O. Install V-band couplings as follows:

- (1) Slide the V-band coupling with a new gasket over the correct exhaust pipe.
- (2) Adjust all the pipes to ensure the slip joints are not bound up at each joint.

⚠ CAUTION: DURING V-BAND COUPLING INSTALLATION, USE CARE NOT TO SPREAD OR FORCE THE COUPLING BEYOND ITS NORMAL OPEN POSITION TO PREVENT DISTORTION OF THE COUPLING. THIS DISTORTION CAN CAUSE AN INEFFECTIVE SEAL OR FRACTURE THE METAL WHICH CAN RESULT IN FAILURE OF THE COUPLING.

P. With the exhaust transition assembly attached, and flanges aligned, assemble the V-band coupling over the flanges of both pipes and new gasket.

Q. Engage the T-bolt.

R. Torque the V-band coupling to approximately 60 in.-lbs. (6 to 7 Nm)

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Table 1
V-Band Coupling Torque Data

Coupling Size Tube OD	Lycoming Part No.	Vendor Part No.	Gasket Part No.	V-Band Coupling Type	T-Bolt Split Type Locknut Torque In.-Lbs.
3.69 in.	40D22382	NM115002-0225	78246	Spot-Welded	80-90
3.15 in.	40D22383	NH1008896-10	75845	Spot-Welded	80-90

- S. If there is binding at a slip joint, loosen and re-adjust the components until they align correctly.
- ⚠ CAUTION:** TORQUE HARDWARE FASTENERS EVENLY AND UNIFORMLY TO PREVENT LEAKS.
- T. Complete final torques to ensure all fasteners are torqued.
- U. Torque the 4 nuts that attach each pipe to the cylinders (Figure 4) to 96 in.-lb. (11 Nm) -on all cylinders.
- V. Torque the V-band coupling at the inter-cylinder number 5 and exhaust transition assembly connection to 80-90 in.-lb. (10 Nm). Refer to the latest revision of Lycoming Service Instruction No. SI-1238 for Assembly and Torque Procedures for V-Band Couplings.
- W. Install the exhaust system end of the cable assembly (Figure 4) with a new bolt and new self-locking nut. Torque the bolt and nut to 96 in.-lb. (10.9 Nm).
- X. Torque any remaining loose hardware fasteners equally and uniformly per the standard Torque Tables in the latest revision of the *Service Table of Limits - SSP-1776*.
- Y. Refer to the airframe manufacturer's maintenance manual and reinstall all airframe components previously removed to gain access to the Lycoming exhaust system.
- Z. Record replacement of the exhaust system (identify the kit part number) in the engine logbook.

Part 2 - Continued Exhaust System Inspections per Table 2 - Schedule for Exhaust System Inspections

NOTICE: If you do not replace the exhaust system with the specified kit per Part 1 of this Service Bulletin, you must continue to complete the exhaust system inspection per the schedule in Table 2 and instructions in Part 2 of this Service Bulletin.

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Table 2
Schedule for Exhaust System Inspections

Engines installed in aircraft equipped with an operating carbon monoxide detector*	Engines installed in aircraft not equipped with a carbon monoxide detector or with an inoperative carbon monoxide detector	
After the initial 10-hour Exhaust System Inspection, complete the: <ul style="list-style-type: none"> Exhaust System Inspection after every 50 hours time in service - complete Required Action 1. Torque Check after every 100 hours time in service - complete Required Actions 1 and 2. 	Engines that have accumulated 1000 hours or less time in service since the last Exhaust System Maintenance**	Engines that have accumulated more than 1000 hours time in service since the last Exhaust System Maintenance**
	After the initial 10-hour Exhaust System Inspection, complete the: <ul style="list-style-type: none"> Exhaust System Inspection after every 25 hours time in service - complete Required Actions 1. Torque Check after every 100 hours time in service - complete Required Actions 1, and 2. 	After the initial 10-hour Exhaust System Inspection, complete the: <ul style="list-style-type: none"> Exhaust System Inspection after every 50 hours time in service - complete Required Action 1. Torque Check after every 100 hours time in service - complete Required Actions 1 and 2.
* An operational carbon monoxide (CO) detector must be an electrochemical CO detector, located on the instrument panel, and set for a lower alarm threshold of 50 parts per million (PPM). ** Since having maintenance that required the removal/reinstallation or the removal and replacement of any exhaust system pipe or turbocharger mounting bracket.		

⚠ CAUTION: TOXIC GASES, SUCH AS CARBON MONOXIDE, FROM LEAKS IN THE EXHAUST SYSTEM CAN POTENTIALLY ENTER THE COCKPIT.

NOTICE: The inspection in this Service Bulletin is in addition to the requirements of Service Bulletin No. SB-614A and AD 2015-10-06. Both are to be accomplished as specified in their respective compliance times.

Figures in this Service Bulletin are for illustration purposes only; your engine can appear differently.

Required Action

- Exhaust System Inspection

⚠ CAUTION: THE ENGINE AND EXHAUST SYSTEM CAN BE HOT AND COULD CAUSE BURNS. DO NOT CONDUCT THE EXHAUST SYSTEM INSPECTION WITHIN 1 HOUR OF OPERATING THE ENGINE AND UNTIL THE ENGINE AND EXHAUST ARE COOL.

NOTICE: This inspection can be done on an engine installed in an airframe. It is very important during this inspection to look for any stamped data on the Exhaust No. 2 and 3 pipes.

- Examine Exhaust Pipe 2, identify any stamped markings.

The stamped markings for Exhaust Pipe 2 will have one of the following:

- Only the part number (P/N) (Figure 6). All pipes will be stamped with at least the P/N.
- The P/N and the Release ID# (Figure 7)
- The P/N, Release ID#, and a date code (Figure 8)

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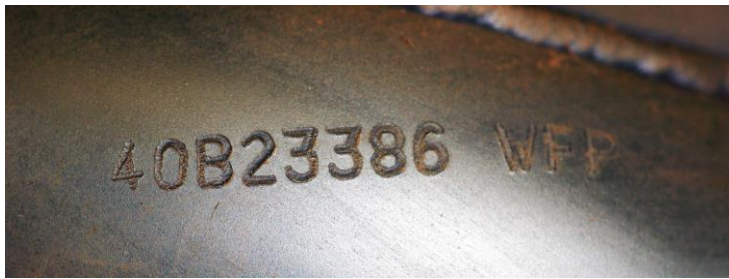


Figure 6
P/N Only on Exhaust Pipe 2



Figure 7
P/N and Release ID# on Exhaust Pipe 2

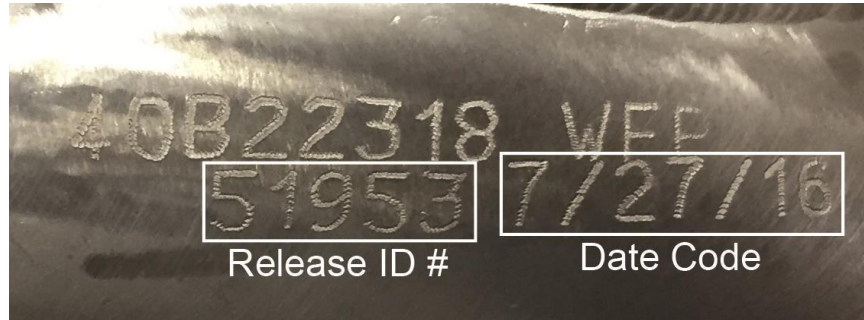


Figure 8
P/N, Release ID#, and Date Code on Exhaust Pipe 2

B. Examine Exhaust Pipe 3, identify any stamped markings.

The stamped markings for Exhaust Pipe 3 can have:

- Only the P/N (Figure 9). All pipes will be stamped with at least the P/N.
- The P/N and the Release ID# (Figure 10)

(There is no date code on Exhaust Pipe 3)



Figure 9
P/N Only on Exhaust Pipe 3



Figure 10
P/N and Release ID# on Exhaust Pipe 3

C. Examine the weld joints of the exhaust pipes for all cylinders (Figures 1 and 2). Closely examine the saddle reinforced weld joints (Figures 11 and 12), especially at Cylinder 3. If any cracks or damage is found, document the issue then replace with serviceable parts.

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Figure 11
Saddle



Figure 12
Saddle

D. Examine all cylinder exhaust flanges (Figure 13) for damage, distortion, or signs of exhaust gas leaking past the gasket, especially at Cylinder 2. Indications of a flange gasket leak are burnt paint around the exhaust flange bosses or powdery white to light brown or black residue near the leaks, on the spark plug, and the baffle. If the flange or pipe is distorted or damaged, document the issue then replace with serviceable parts.

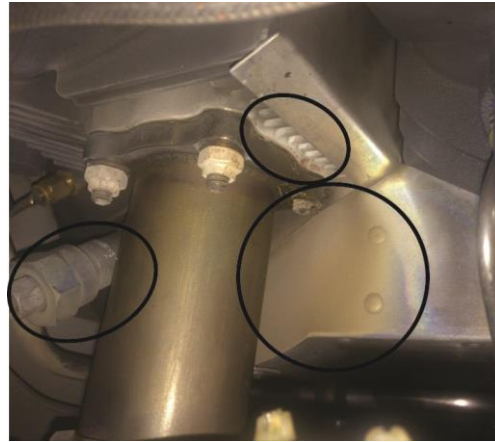


Figure 13
Signs of Exhaust Leak

⚠ WARNING: DO NOT OPERATE THE AIRCRAFT WITH A LEAKING ENGINE EXHAUST SYSTEM. OPERATION OF THE AIRCRAFT WITH AN EXHAUST SYSTEM LEAK CAN LEAD TO CARBON MONOXIDE POISONING, LOSS OF CONSCIOUSNESS, INJURY, OR DEATH.

- E. Complete a visual inspection on the entire exhaust system (Figures 1 and 2). If any sign of leaks, distortion, or damage is found, document the issue then replace with serviceable parts.
- 2. Flange Nut Torque Check
 - A. Since loose flange nuts can be an indication of a potential exhaust leak, complete a torque check on exhaust system flange nuts for all six cylinders.
 - B. If a flange, stud, flange nut, or pipe is distorted or visibly damaged, document the issue then replace with serviceable parts. If it is just a leaky gasket, determine root cause, and replace the gasket and hardware with new parts.
 - C. Check the fractional amount each flange nut turns to achieve the required 96 in.-lb (11 Nm) torque. If any flange nuts are loose enough to allow movement of the washer, contact Lycoming Engines' Product Support.

If you have any questions, contact Lycoming Field Service by phone at 570-327-7222 or 877-839-7878

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U.S. Department
of Transportation
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Administration**

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MAY 14 2018

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Subject: Lycoming’s request for a Global Alternate Method of Compliance (AMOC) to Airworthiness Directive (AD) 2017-11-10 (AMOC Log # 18-29, WTS # DOC-08121).

References:

- 1 – FAA AD 2017-11-10 effective date June 28, 2017
- 2 – Mandatory Service Bulletin (MSB) No. 627C, November 17, 2016
- 3 – Mandatory Service Bulletin (MSB) No. 627D, April 10, 2018

Dear Ms. Folk,

The Federal Aviation Administration (FAA) has received your May 1, 2018 request for a Global AMOC to use MSB No.627E to comply with paragraph (g) of AD 2017-11-10.

Paragraph (g) of AD 2017-11-10 mandates repetitive visual inspections of the engine exhaust system pipes and torque checks of the engine exhaust pipe attachment nuts on the engine mounting studs. These inspections and checks are performed on Lycoming TIO-540-AJ1A engines as specified in Lycoming MSB 627C at intervals that are determined by the time since the last maintenance was completed on the engine exhaust system. Inspection results were required to be sent to Lycoming.

Previously approved MSB 627C Supplement No. 1 is an AMOC to Paragraph (g) of AD 2017-11-10 that permits the use of an operating carbon monoxide detector to determine the inspection interval of the engine exhaust pipes and torque checks.

Previously approved as an AMOC, Part 1 of MSB 627D replaces the existing engine exhaust pipes with new stainless steel engine exhaust pipes designed to be in a single plane in order to remove a complicated bend that existed in the system in order to reduce possible installation stresses. The new engine exhaust pipes specify the same steel materials options as other current production engine exhaust pipes instead of the Inconel material previously used. These new exhaust pipes do not require any repetitive inspections, torque checks, or reporting to Lycoming. Part 1 of MSB 627D is approved as a terminating action to AD 2017-11-10.

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Previously approved as an AMOC, Part 2 of MSB 627D mandates the same visual inspections of the engine exhaust pipes, and torque checks of the attachment studs on Lycoming TIO-540-AJ1A engines at the same periodic intervals as MSB 627C requires. The inspection intervals are also determined by the time since the last maintenance was completed on the engine exhaust system, and if a carbon monoxide detector is installed, and operational on the airplane, it may be used to determine the inspection time intervals. These inspections are also repetitive but the results of the inspections are no longer required to be sent to Lycoming.

Part 1 of SB 627E is the same as SB 627D except for the addition of language to better identify the engine shipped from Lycoming with the new exhaust system that is the terminating action for the AD. It improves a customer's ability to identify compliance with a fielded engine when the "ship date" might not be readily know to an end customer, and for those engines which the ship date differed from the final inspection date.

Part 2 of SB 627E like SB 627D, Part 2 of SB 627E does not require the submission of the survey of findings in Part 2, and it contains a correction to Table 2 where removal of Required Action 3 (Survey) was incorrectly changed to require Action 2, making the 100-hour re-torque required every 25 hours. Table 2 in SB 627E correctly lists only Required Action 1 due every 25 hours.

The New York Aircraft Certification Branch approves compliance with MSB 627E, Part 1, engine exhaust system replacement, as a terminating action to AD 2017-11-10, or compliance with MSB 627E Part 2, inspection of the engine exhaust system, as a global AMOC to paragraph (g) of AD 2017-11-10.

In accordance with FAA Order 8110.103B, the following conditions apply:

1. All provisions of AD 2017-11-10 that have not been specifically referenced above remain fully applicable and must be complied with accordingly.
2. This approval is transferable with engine(s) to other operators.
3. Before using this AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.
4. The NYACO Branch will revoke this AMOC if the NYACO Branch later determines that this AMOC does not provide an acceptable level of safety.

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Should you have any questions, please contact this office or Norman Perenson at telephone number 516-228-7337, fax 516-794-5531, or email at norman.perenson@faa.gov.

Sincerely,



FOR: Kevin Dickert
Acting Manager, New York ACO Branch
Compliance & Airworthiness Division

cc: James Delisio, ANE-171 (PDF Copy)
Jose W. Marrero, AEG (PDF Copy)

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