



SERVICE BULLETIN - SB030

Doc. No.:	SB030
Revision:	00
Rev. Date:	25/07/2022

I.C.P. Srl



SERVICE BULLETIN 30 - Exhaust manifolds welding for Rotax 912

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00	25/07/2022	First issue	Federico Peronato



SERVICE BULLETIN - SB030

Doc. No.:	SB030
Revision:	00
Rev. Date:	25/07/2022

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SERVICE BULLETIN - SB030

Doc. No.:	SB030
Revision:	00
Rev. Date:	25/07/2022

Table of content

1.	Classification.....	5
2.	Subject.....	5
3.	Applicability.....	5
4.	Compliance.....	7
5.	Approval	7
6.	Labor time.....	7
7.	Warranty	8
8.	Tools and Equipment.....	9
9.	Variations.....	9
10.	Accomplishment Instructions	10



SERVICE BULLETIN - SB030

Doc. No.:	SB030
Revision:	00
Rev. Date:	25/07/2022

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SERVICE BULLETIN - SB030

Doc. No.:	SB030
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1. Classification

The following classification is used for I.C.P. Srl manufacturer Service Bulletins: Mandatory - Recommended - Optional - Informational.
The present Service Bulletin has been classified:

MANDATORY

2. Subject

The exhaust manifolds, steel pipes from engine to exhaust muffler, which are equipped on Rotax 912 series engines of ICP aircrafts, are the parts affected by the present SB (see *Figure 1*).

2.1. Reason

The exhaust manifolds of the engine Rotax 912 model are 4 steel pipes composed mainly by two parts welded together, the ones straight connected and constrained directly to the engine cylinders and the curved ones, which is then connected to the exhaust muffler. Some welding of these parts were found cracked within few hours of flight, in different aircrafts. The part is shown in *Figure 1*.

3. Applicability

The following list (*Table 1*) indicates all the affected airplanes identified by means of Serial Number which can be found on the right side of fuselage rear cone, below the horizontal tailplane.



SERVICE BULLETIN - SB030

Doc. No.:	SB030
Revision:	00
Rev. Date:	25/07/2022

Aircraft Model	Aircraft S/N
Ventura	21-05-62-0023R
	21-06-62-0024R
	21-11-62-0027K
	21-12-62-0028K
Bingo	07-05-52-215
Savannah	09-03-51-813

Aircraft Model	Aircraft S/N
Savannah S	14-01-54-0302
	16-03-54-0461
	20-10-54-0730
	21-07-54-0807
	21-09-54-0809
	21-11-54-0828
	21-10-54-0821
	21-11-54-0824
	21-11-54-0826
	21-11-54-0830
	21-12-54-0834
	21-12-54-0835
	21-12-54-0836
	21-12-54-0837
	21-12-54-0838
	21-12-54-0839
	21-12-54-0840
22-01-54-0841	

Aircraft Model	Aircraft S/N
Savannah S	22-01-54-0844
	22-01-54-0848
	22-02-54-0849
	22-02-54-0850
	22-02-54-0851
	22-02-54-0852
	22-03-54-0854
	22-03-54-0855
	22-03-54-0856
	22-03-54-0858
	22-03-54-0859
	22-03-54-0860
	22-03-54-0861
	22-03-54-0862
22-04-54-0863	
22-04-54-0864	
22-06-54-0877	

Table 1: Affected airplanes S/N



SERVICE BULLETIN - SB030

Doc. No.:	SB030
Revision:	00
Rev. Date:	25/07/2022

4. Compliance

Apply the SB within next flight.

Ferry flight of maximum 3 hours is allowed to reach maintenance facility only if accurate inspection of the manifolds welding (see *Figure 1*) is performed and no visible crack or imperfections are found.

5. Approval

None.

6. Labor time

OPTION 1: Spare new exhaust manifolds.

Object	Time [min]
Exhaust muffler and manifolds uninstallation	15'
Spare new exhaust manifolds installation	10'
Exhaust muffler installation	10'
SB close-up	15'
TOTAL	50'

OPTION 2: Weld the existing manifolds.

Object	Time [min]
Exhaust muffler and manifolds uninstallation	15'
Exhaust manifolds welding	TBD, dependent of welding supplier, approximately not more than 4x10'
Welded exhaust manifolds installation	10'
Exhaust muffler installation	10'
SB close-up	15'
TOTAL	50'+TBD



SERVICE BULLETIN - SB030

Doc. No.:	SB030
Revision:	00
Rev. Date:	25/07/2022

7. Warranty

Regarding the OPTION 1, I.C.P. Srl will supply the affected parts (4 x exhaust manifold) as a brand new only if the old parts are sent back to the Company. Regarding the OPTION 2, I.C.P. Srl will refund the working time of the welding supplier, previously agreed with the Company. In both cases, I.C.P. Srl will recognize the working time defined in *Chapter 6* from an authorized aircraft workshop or National Dealer approved maintenance facility. Different agreement could be found by contacting directly the National Dealer or the Company at the email *info@icp.it*.

7.1. Contacts

Telephone	:	(+39) 011 9927503
Website	:	http://www.icp.it
Email	:	info@icp.it
PEC	:	icpsrl@pec.it
C.C.I.A.A.	:	00611190059
VAT number E C.F.	:	(IT) 00611190059
Address	:	S.P. 16 km 15,150 Castelnuovo Don Bosco, Italy, 14022

7.2. Support

Parts and additional information about installation can be requested to the National Dealer or directly to I.C.P. Srl to the email *info@icp.it*.

7.3. Material - Price and Availability

Spare new parts are available from I.C.P. Srl and eventually from the National Dealer. In case of exhaust manifolds are equipped with welded nut for EGT probes provision, inform ICP consequently.



SERVICE BULLETIN - SB030

Doc. No.:	SB030
Revision:	00
Rev. Date:	25/07/2022

8. Tools and Equipment

OPTION 1:

The tools needed are the following: - 13 [mm] fixed wrench (for M8 nut); - hook for manifold spring; - hand dynamometer (up to 15 [Nm]) with hexagonal socket wrench 13 [mm] (for M8 nut).

OPTION 2:

Same as Option 1 plus TIG welding machine and qualified welding personnel.

9. Variations

None.

9.1. Weight and Balance

None.

9.2. Electrical load

None.

9.3. Interchangeability

The parts are identical.



SERVICE BULLETIN - SB030

Doc. No.:	SB030
Revision:	00
Rev. Date:	25/07/2022

10. Accomplishment Instructions

AFFECTED PART: exhaust manifolds, one for each cylinder.

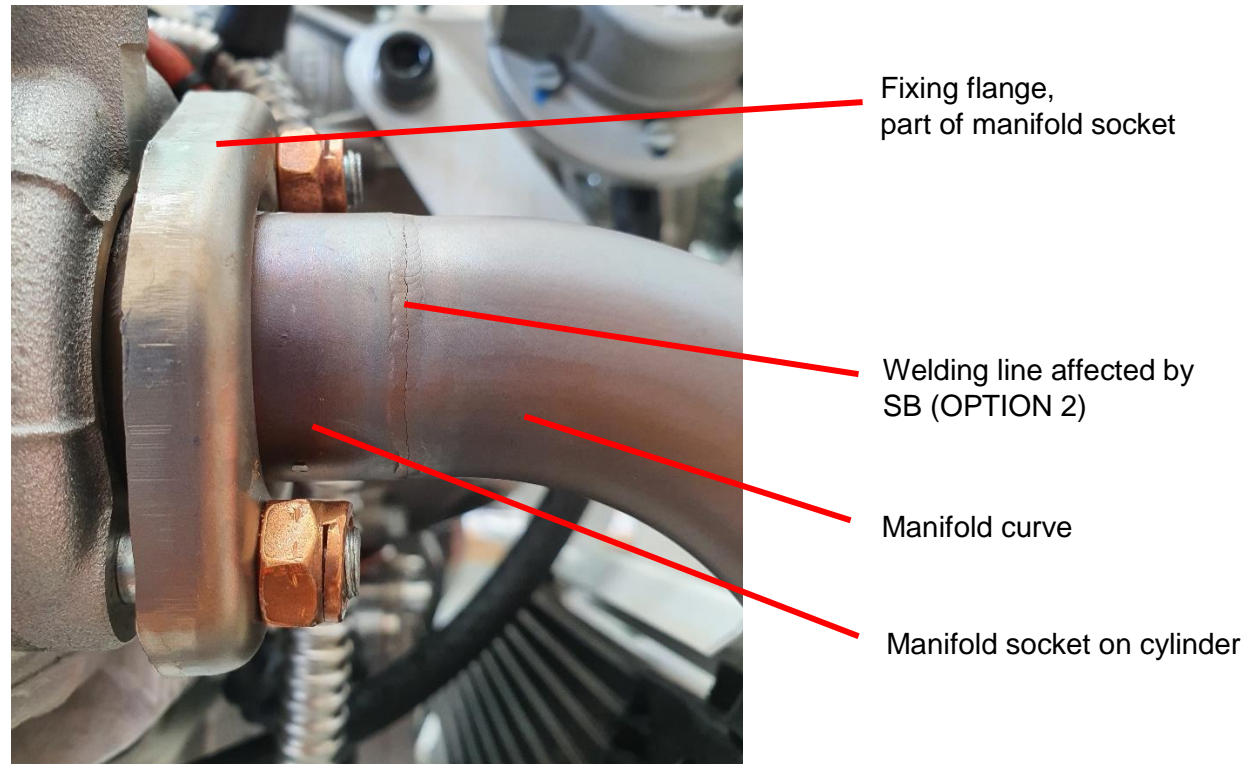


Figure 1: Exhaust manifold

10.1. Reference documents

Refer to the Rotax engine manufacturer Installation and Maintenance Manual at Exhaust System chapter for additional information.



SERVICE BULLETIN - SB030

Doc. No.:	SB030
Revision:	00
Rev. Date:	25/07/2022

10.2. Instructions

OPTION 1:

Procedure steps	Additional description
A/C securing	Chocks, Master off, Magnetos off
Open engine cowling	
Exhaust muffler uninstallation	Remove the manifolds springs and open the manifolds sockets nuts
Exhaust manifolds uninstallation from cylinder	Remove the sockets nuts and disconnect the manifolds from cylinders
Spare new exhaust manifolds installation	Insert the new manifolds on cylinders
Exhaust muffler installation	Couple the muffler with all the manifolds and set the proper relative position
Sockets nuts closure on cylinder bolt at 15 [Nm] torque	Set the sockets on cylinder bolts and pre-install the nuts
Exhaust muffler and manifolds springs pulled between	Install the springs of the manifolds and pull them between the muffler. Find the correct relative position between all the parts
Sockets nuts closure	Close the sockets nuts at 15 [Nm] torque with dedicated wrench. Check Installation and Maintenance Manual of Rotax engine manufacturer to find additional information
Exhaust system verification	Check the system installation is rigid, all components are installed and nut closed
Engine run up and verification	Perform engine warm up and run 5 minutes more than 2500 RPM, with 1 cycle of 10 seconds at full throttle. Then shut-off and check the exhaust system installation to the engine and manifold to muffler connections are clean and rigid, correctly assembled
Logbook entry	Report in the aircraft maintenance logbook the SB performed

OPTION 2:

Apply the same procedure of Option 1 excluding the installation of "spare new exhaust manifolds". Use the old manifolds and perform a new welding of the socket to the manifold curve, refer to *Figure 1*. It is necessary to request ICP an approval to perform this option; basically it must be demonstrated that the welding is operated by a certified welder workshop.



SERVICE BULLETIN - SB030

Doc. No.:	SB030
Revision:	00
Rev. Date:	25/07/2022

10.3. Verifications

10.3.1. Ground test

Perform engine run-up as indicated in *Chapter 10.2* and operate regular next scheduled maintenance, paying particular attention to the exhaust system as a consequence of the SB related items application.

10.3.2. Flight test

Not necessary. Post flight check of the exhaust system is operated during daily pre-flight verifications (overview) and to the next scheduled maintenance.

10.3.3. Documentation

Aircraft maintenance logbook entry of Service Bulletin and eventual additional related operations. It is mandatory to send back to I.C.P. Srl an image or scan of the logbook entry after the SB application. If not present a dedicated logbook, use the final pages of the Maintenance Manual of the aircraft (Chapter Maintenance record). If not sent the entry to ICP, the work is considered not executed in terms of aircraft warranty and safety problems related.