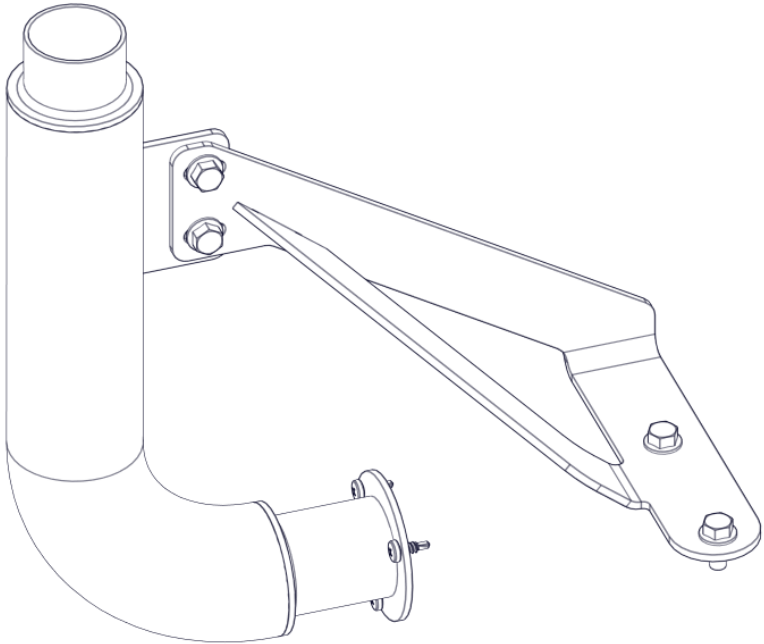


Installation Manual

A500035 G30 Exhaust Resonator



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Changes and Revisions

Version	Revision Details	Revised by /date	Checked by /date	Reviewed by /date	Implemented
A	Engineering Release	REF 14 October 2015	JKR 19 October 2015	NAC 19 October 2015	19 October 2015
B	ECN 15-118	REF 29 October 2015	JKR 30 October 2015	DSB 30 October 2015	30 October 2015

The information in this manual is intended for certified VMAC installers who have been trained in installation procedures and for people with mechanical trade certification who have the tools and equipment to properly and safely perform the installation. Do not attempt this installation if you do not have the appropriate mechanical training, knowledge and experience.

Follow all safety precautions for mechanical work. Any grinding, bending or restructuring operations for correct fit in modified trucks must follow standard shop practices.

Notice

Manuals are subject to change without notice.

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General Information

Important Safety Notice

The information contained in this manual is based on sound engineering principles, research, extensive field experience and technical information. Information is constantly changing with the addition of new models, assemblies and service techniques. If a discrepancy is noted in this manual, contact VMAC prior to initiating or proceeding with service. Current information may clarify the issue. Any person with knowledge of such discrepancies who performs service and repair assumes all risks.

Only proven service procedures are recommended. Anyone who departs from the specific instructions provided in this manual must first assure that their safety and that of others is not being compromised and that there will be no adverse effects on performance or the operational safety of the equipment.

VMAC will not be held responsible for any liability, injuries, loss or damage to individuals or to equipment as a result of the failure of any person to properly adhere to the procedures set out in this manual or standard safety practices. Safety should be your first consideration in performing service operations. If you have any questions concerning the procedures in this manual or require any more information on details that are not included in this manual, please contact VMAC before beginning repairs.

Safety Messages

This manual contains various warnings, cautions and notices that must be observed to reduce the risk of personal injury during service or repair and the possibility that improper service or repair may damage the equipment or render it unsafe.



This symbol is used to call your attention to instructions concerning your personal safety. Watch for this symbol; it points out important safety precautions, it means, "Attention, become alert! Your personal safety is involved". Read the message that follows and be alert to the possibility of personal injury or death. Be alert; your safety is involved. While it is impossible to warn about every conceivable hazard, let good common sense be your guide.



This symbol is used to call your attention to instructions on a specific procedure that if not followed may damage or reduce the useful life of the compressor.

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Torque Specifications

All fasteners must be torqued to specifications. Use manufacturers torque values for OEM fasteners. **Apply Loctite 242® or equivalent on all engine-mounted fasteners.** Torque values are with Loctite applied unless otherwise specified.

STANDARD GRADE 8 NATIONAL COARSE THREAD								
Size	1/4	5/16	3/8	7/16	1/2	9/16	5/8	3/4
Foot-pounds (ft-lb)	9	18	35	55	80	110	170	280
Newton meter (N•m)	12	24	47	74	108	149	230	379

STANDARD GRADE 8 NATIONAL FINE THREAD						
Size	3/8	7/16	1/2	5/8	3/4	
Foot-pounds (ft-lb)	40	60	90	180	320	
Newton meter (N•m)	54	81	122	244	434	

METRIC CLASS 10.9						
Size	M6	M8	M10	M12	M14	M16
Foot-pounds (ft-lb)	4.5	19	41	69	104	174
Newton meter (N•m)	6	25	55	93	141	236

Spark Arrester

The gas drive is equipped from the factory with a spark arrester.

For more information regarding the spark arrester refer to the Subaru® Engine manual supplied with the system (VMAC part number: 1901022).

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Part List

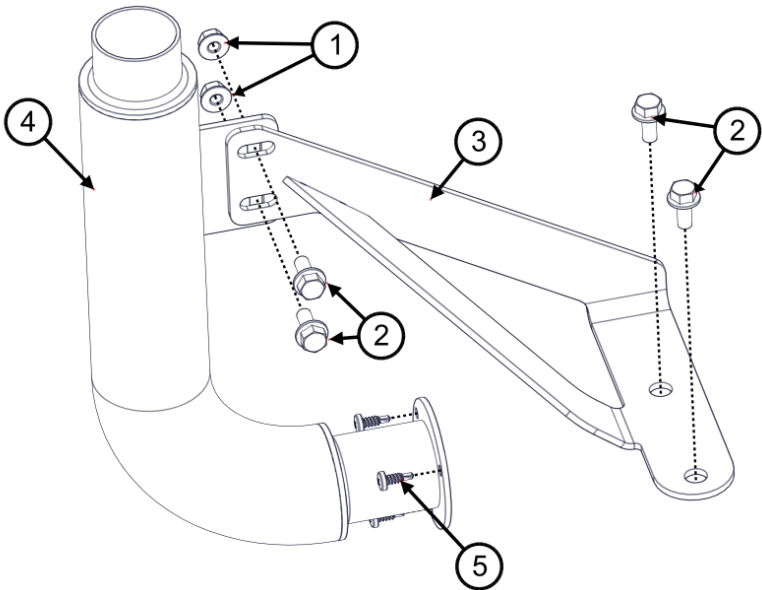


Figure 1– A500035 contents

Item	Part Number	Quantity	Description
1	1560516	2	Nut M6 x 1.0 FL PL
2	1520590	4	Bolt HHCS M6X1.0X14 FL PL
3	1200853	1	Bracket, Mounting
4	9240006	1	Weldment Resonator
5	1500021	3	#8-18 x 1/2" Phillips #2 Point SDS

Ordering Parts

To order parts, contact your VMAC dealer. Your dealer will ask for the VMAC serial number, part number, description and quantity. To locate your nearest dealer, call 1-800-738-8622 or online at www.vmacair.com

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Safety Precautions



Moving Parts Hazard

- Before performing service, disconnect the battery and disconnect the spark plug wire to prevent unexpected engine start.
- Do not operate the compressor without guards in place. If the guards are damaged or missing, replace them before operating the equipment.



Burn Hazard

- The engine, exhaust and the compressor system get very hot during operation, contact with the components or the oil can cause serious injury. Allow sufficient time for the system to cool before performing service.
- Never allow any part of your body to contact the engine or compressor components.



General Warnings

- Disconnect Spark plug wire before attempting any repair or service.
- Be attentive for unexplained changes in operation parameters and record any changes.
- Check compressor oil level and condition before starting the system. Do not add or change oil while the system is running. Use only approved oil.
- The compressor operates anytime the engine is running. Avoid contact with the compressor, hoses, or engine during operation.
- Keep hoses and wiring aware from sharp edges or moving components.
- Use only approved hoses and replacement parts.
- Do not modify the equipment.
- Do not operate the air compressor when fatigued or under the influence of alcohol or drugs.
- Know how to operate the compressor, fully read the manual.
- Check equipment before every use.
- Never bypass or disable any of the safety equipment.
- Never adjust or attempt to make any repairs to the compressor system while the engine is running. Components and hoses under pressure could fail and cause serious injury or death.

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Installation

- Ensure the system is cool, and the key is in the off position.
- Disconnect the spark plug wire (Figure 2).

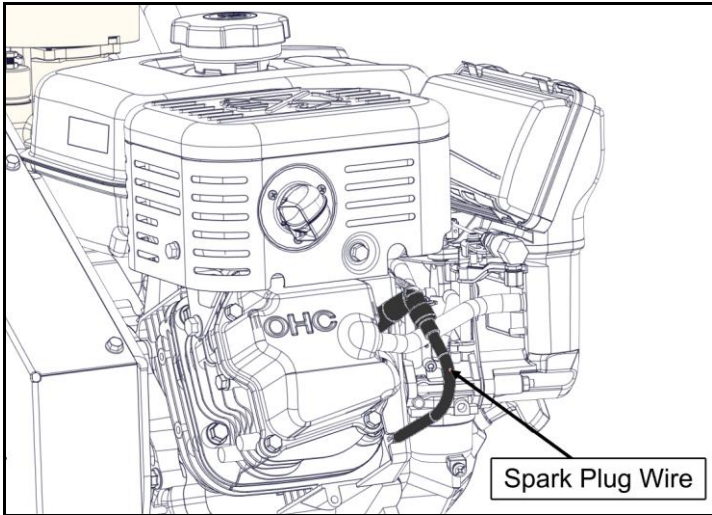


Figure 2 – Spark plug wire

- Remove and discard the three screws and exhaust elbow from the engine (Figure 3).

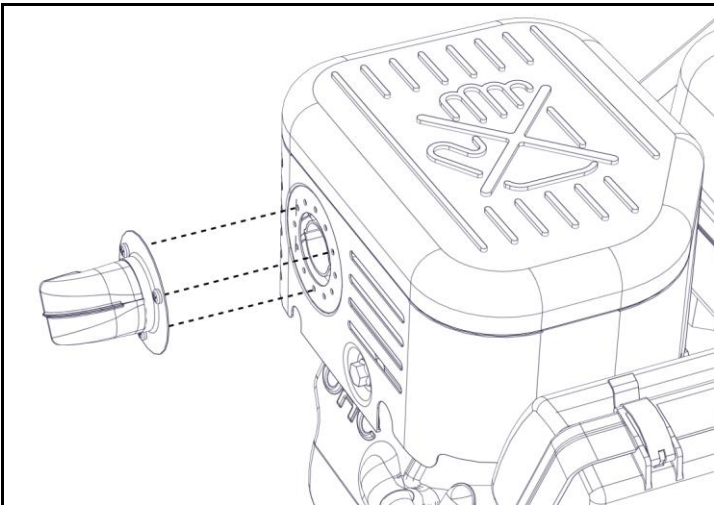


Figure 3 – Exhaust removal

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- Remove and discard the two bolts from the top of the engine exhaust heat shield (Figure 4).

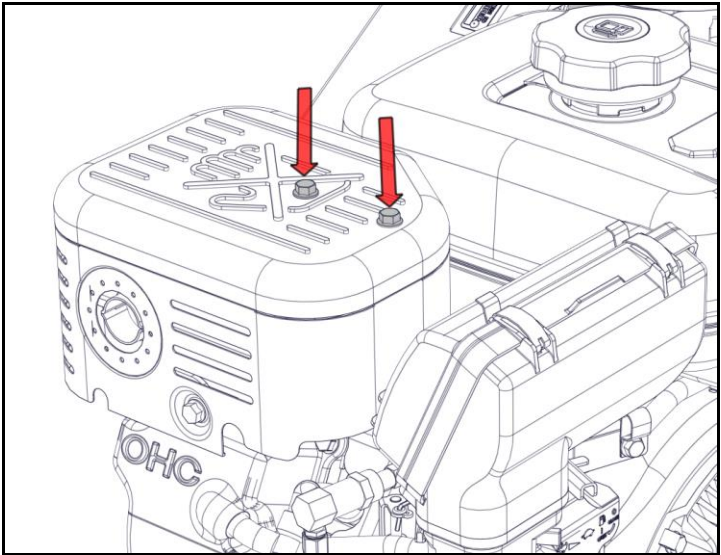


Figure 4 – Exhaust heat shield bolts

- Loosen but do not remove the fasteners on the resonator brace (Figure 5).

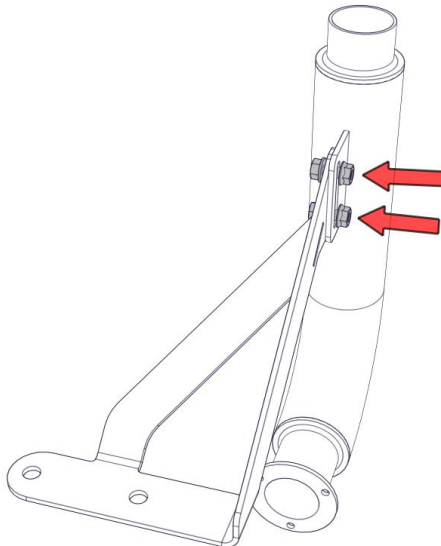


Figure 5 – Resonator fasteners

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- Apply blue Loctite® and install the two supplied M6 x 14 bolts through the top bracket into the exhaust heat shield holes finger tight, **do not torque at this time** (Figure 6).

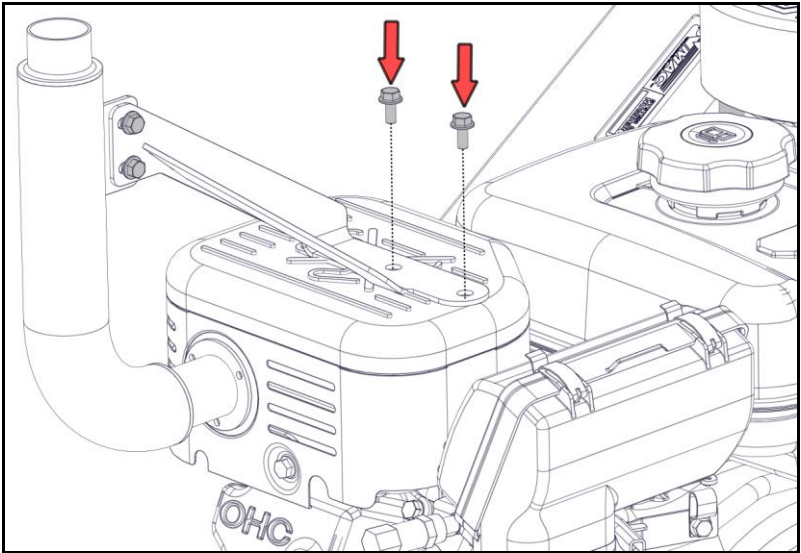


Figure 6 – Top resonator bracket bolts

- Place the resonator in position and install the three supplied screws into the exhaust flange, *take care not to damage the screw or the threads* (Figure 7).

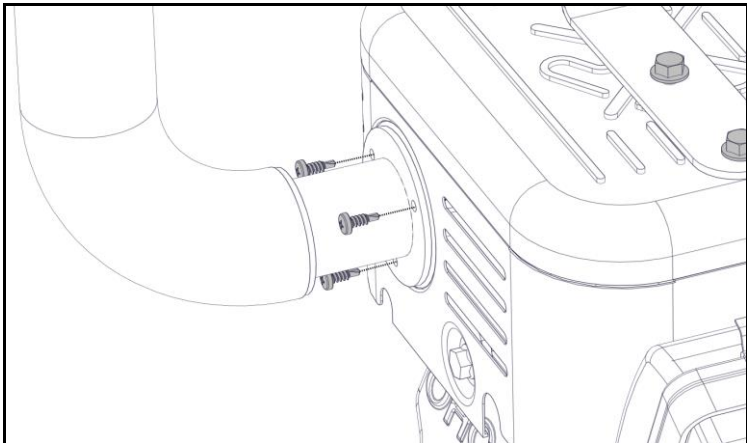


Figure 7 – Exhaust flange screws

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- Torque the top bracket plate bolts to specification (Figure 8).

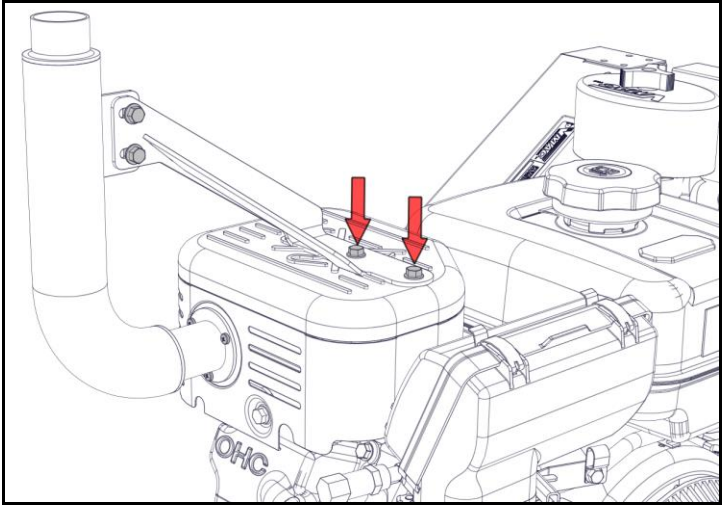


Figure 8 – Top bolts

- Apply blue Loctite® and torque the bracket fasteners to specification (Figure 9).

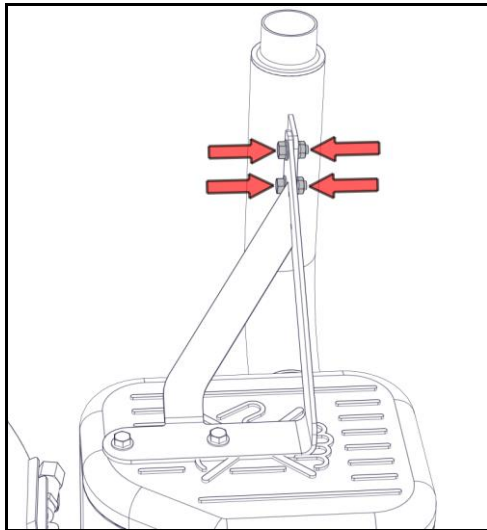


Figure 9 – Exhaust fasteners

- Reconnect the spark plug wire.

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Exhaust Extension

If you are adding an exhaust extension, ensure the following requirements are met (Figure 10):

Exhaust Pipe Length	Diameter
Exhaust pipe less than 10 feet (3 meters)	1.18" (30mm)
Exhaust pipe 10 feet (3 meters) to 16 feet (5 meters)	1.3" (33mm)

Figure 10 – Exhaust extension diameter table

System Testing

- Run the gas drive, check for any exhaust leaks or excessive vibration.

- If system does not operate normally ensure all fasteners are tight, and that components are sitting flat on their mating surfaces. If the problem still exists contact VMAC technical support at 1-888-241-2289 or tech@vmacair.com.

Operation and Maintenance

Spark Arrester

The gas drive is equipped from the factory with a spark arrester. The spark arrester must be cleaned regularly for optimal engine performance (Figure 11).

For information on servicing the spark arrester refer to the Subaru® Engine manual supplied with the system. (VMAC P/N: 1901022). Not following the Subaru® Engine manual supplied can result in poor engine performance or engine damage.

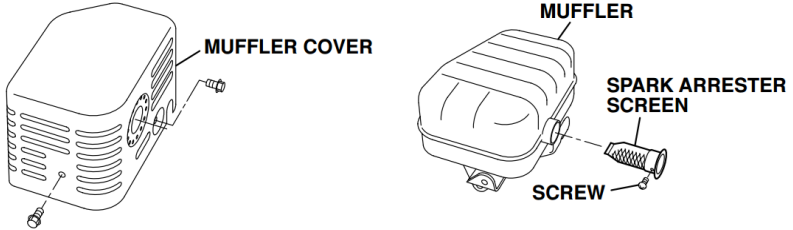


Figure 11 – Spark arrester
Image taken from Subaru® Owner's manual

Heavy Rain

The exhaust resonator is designed to drain water, however in heavy rain conditions it is possible that water may get into the engine muffler. The Resonator has been designed so that you can add on an exhaust flapper valve (VMAC part number 9500124) or exhaust extension to prevent this (Figure 12).

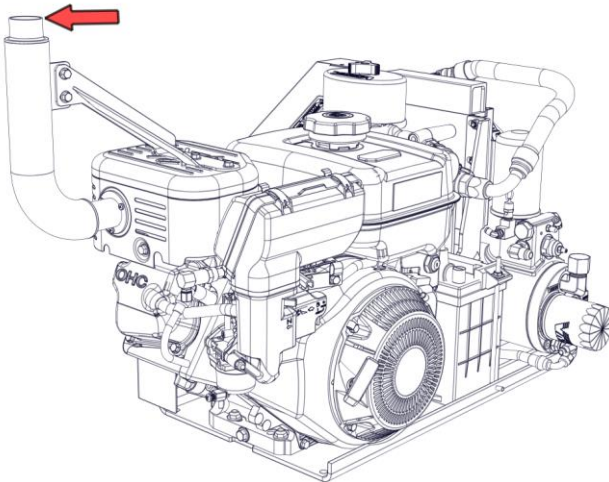


Figure 12 – Resonator outlet

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