

# Service Procedures for S700170/S700172

500 & 1000HR Service Kits A700205 & A700206

## General Service Information

### Safety and Service Precautions

Observe these precautions when performing any service:

- Never attempt to clean the filter element with compressed air. Replace the filter element.
- To prevent damage to the oil filter, always use a proper filter wrench. Never over-tighten the filter, as this may damage the seal or the filter.
- You must use the supplied compressor oil in this system. Failure to use this recommended oil may result in damage to the compressor and may void your warranty.
- Do not overfill the system, as this can flood the sight glass window and make the system appear empty.
- If the system has been operating, shut it off and wait at least 30 seconds for the air pressure to vent before performing service.



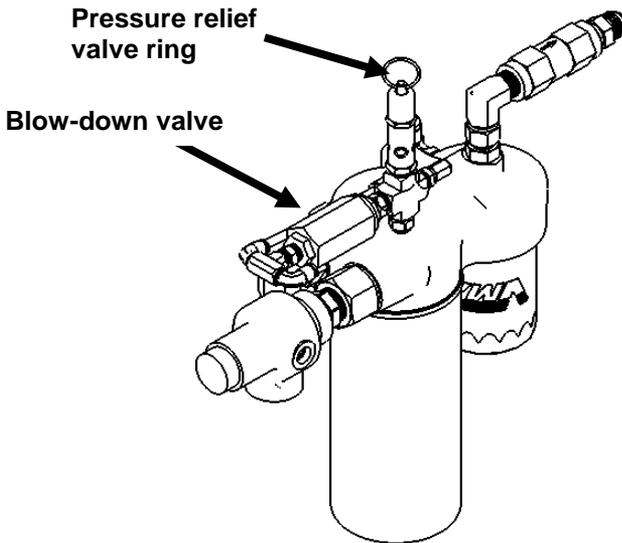
***Before beginning any services you must make sure there is no pressure left in the system. The system is designed to automatically release system pressure via the rapid blow-down valve on the manifold block. Pull the pressure relief valve ring to double check that pressure has released. See Figure 1.***

**VMAC – Vehicle Mounted Air Compressors**

Toll Free: 1-800-738-8622

Local 1-250-740-3200

Fax: 1-250-740-3201



**Figure 1 – Manifold block with blow-down valve**

- If the system is cold, bring the engine to operating temperature and then operate the compressor system for a few minutes to bring the compressor oil to operating temperature. This will also help to suspend contaminants in the oil so that they can be removed from the system along with the old oil.
- Observe all safety procedures relating to moving belts, hot oil and compressed air. Use all safety equipment to protect yourself.
- Check the old oil (on 500 hour service) and the inside of the tank (on 1000 hour service) for any evidence of metallic particles or contamination; if found, flush the tank, hoses and cooler. Metallic particles typically indicate system damage, call tech support for further details, 1-800-738-8622.

## **Flushing Procedure**

Component failure (such as a gearbox, compressor, hose or cooler core) can leave metal filings and other foreign materials in the system. To flush the system, follow this procedure:

1. Before replacing any failed component, check all other system components for evidence of contamination and clean thoroughly. Use compressed air to blow out lines and other components. Remove the oil

**VMAC – Vehicle Mounted Air Compressors**

Toll Free: 1-800-738-8622

Local: 1-250-740-3200

Fax: 1-250-740-3201

filter and dump out oil from the filter. If there is no metal in the oil filter, continue with the regular flush procedure, (continue to step 2).

If there is metal in the oil filter, look for metal in the return line to the compressor. If metal is found, the cooler must be flushed before the new compressor is installed. As well, the lines from the tank to the cooler and cooler to compressor need to be thoroughly checked/flushed or replaced before installing the new compressor.

2. Once the system has been cleaned as thoroughly as possible, replace the failed component and reconnect all lines and fittings.
3. Install a new oil filter and fill the system with VMAC compressor oil to the correct level.
4. Start the engine and engage the air system. Allow the system to pressurize and allow it to operate in no-load mode for about 15 minutes without discharging any air.
5. Shut-down, allow the system to cool and change the oil and the oil filter. Refill with compressor oil to the correct level.
6. After 50 hours, replace the oil filter and top up the oil level.

## **Service Kit Contents**

A 500 hour service kit will contain an air filter, oil filter and sufficient oil for the system.

A 1000 hour service kit will contain the components of the 500 hour service kit plus a coalescing separator element.

### ***VMAC – Vehicle Mounted Air Compressors***

Toll Free: 1-800-738-8622

Local 1-250-740-3200

Fax: 1-250-740-3201

# 500 Hour Service Procedures

## 1. Inspect the Drive Belt

Check the drive belt carefully for evidence of glazing, missing portions of the ribs or damage to the belt edges and surface. If the belt is damaged, install a new drive belt.

Inspect all pulleys and idlers for damage. If any component shows cracks, chipping, impact damage or any other indications of physical damage, replace the pulley or idler.

If the damage indicates possible misalignment, check pulley alignment. If the pulleys are not properly aligned, check all fasteners to ensure that they are properly tightened and that there are no loose components.

## 2. Replace the Air Filter

1. Remove the air filter cover retaining clamps and the cover.
2. Remove the filter element from the air cleaner housing.
3. Immediately cover the air inlet opening by masking with tape or with a clean cloth to prevent contamination entering the intake hose and compressor.



***Do not use compressed air or perform any other tasks around the filter and cover until both are replaced. Never clean the filter element with compressed air, as this will allow some contaminants into the compressor system. Always replace the air filter element.***

4. Clean the inside of the filter cover with a clean, dry cloth.



**Do not use flammable solvents to clean the inside of the cover. If a solvent has been used rinse the cover thoroughly with water and dry it before installing the cover. Fire in the compressor can cause an explosion.**

5. Remove the cloth from the air cleaner housing.
6. Place the filter into the air cleaner housing and secure the cover with the retaining clamps.



***Make sure the new filter is a VMAC filter, part number 9500061.***

## 3. Replace the Oil Filter



***Hot oil can cause severe burns.***

**VMAC – Vehicle Mounted Air Compressors**

Toll Free: 1-800-738-8622

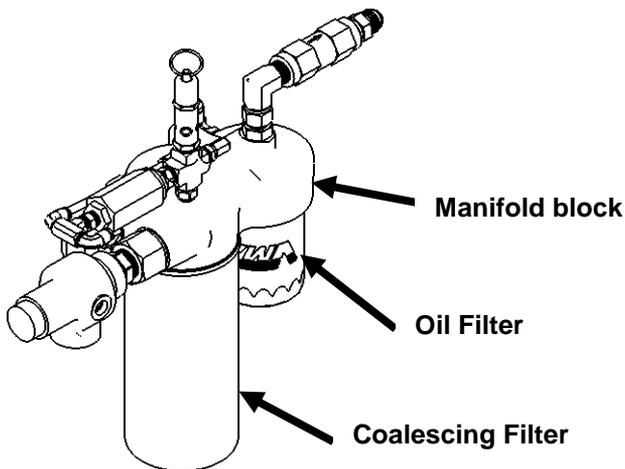
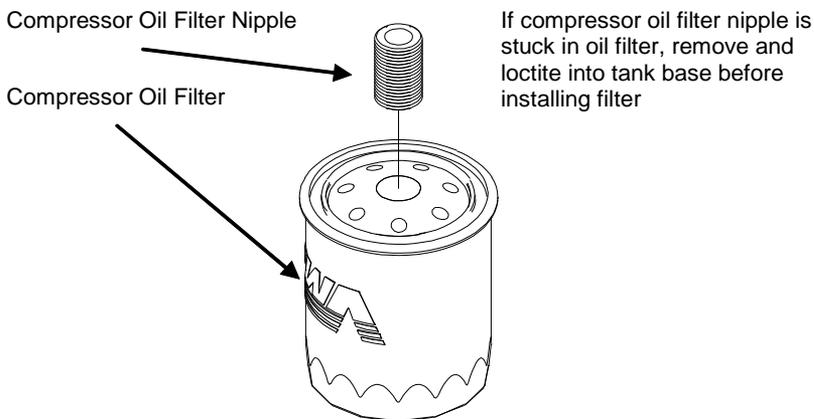
Local: 1-250-740-3200

Fax: 1-250-740-3201

1. Clean the area around the manifold block and the filter to prevent contamination.
2. Remove the oil filter by turning it counterclockwise.



***Check the filter to make sure that the threaded nipple did not unscrew the filter. If it is in the filter, remove it carefully to avoid thread damage, coat the threads that go into the manifold block with a small amount of Loctite blue and install it into the manifold block.***



**Figure 2 - Compressor Oil Filter**

**VMAC – Vehicle Mounted Air Compressors**

Toll Free: 1-800-738-8622

Local 1-250-740-3200

Fax: 1-250-740-3201

3. Check the gasket-sealing surface of the manifold block for contamination, old gasket material or damage.



***Make sure the new filter is a VMAC filter, part number 9200039. This oil filter is a high pressure oil filter, not an automotive oil filter, which will rupture under high pressure.***

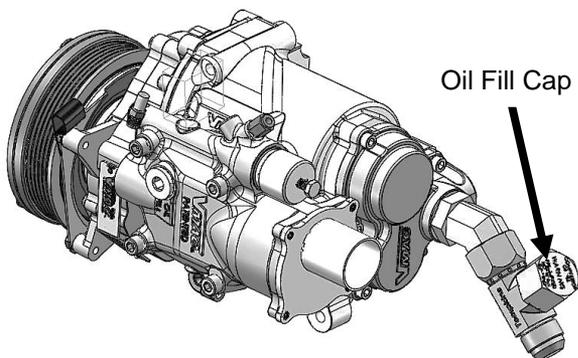
4. Apply a thin coating of compressor oil to the filter-sealing gasket and fill the filter with VMAC compressor oil.
5. Spin the filter onto the threaded nipple until the gasket contacts the sealing surface of the manifold block, then tighten the filter an additional 3/4 to 1 turn to seat the sealing gasket.



***Never over-tighten the filter, as this may damage the seal or filter.***

## 4. Replace the Oil

1. Remove the cap from the T-fitting off of the compressor discharge hose. Pour VMAC compressor oil into the oil fill hole using a funnel.



2. Allow 5 minutes for the oil to drain into the tank and then check the level on the oil level plate at the front of the tank.
3. Continue adding oil until the level is correct. Install the fill plug and tighten it securely.

**VMAC – Vehicle Mounted Air Compressors**

Toll Free: 1-800-738-8622

Local: 1-250-740-3200

Fax: 1-250-740-3201

## 5. Completing the Service

1. Start the engine and allow it to reach operating temperature.
2. Turn the compressor switch on the control unit to the “ON” position and allow the system to pressurize.
3. Discharge air with a tool for 2 minutes.
4. Turn the compressor switch on the control unit to the “OFF” position.
5. Allow the system to settle for 5 minutes, and then check the oil level through the sight glass. The level must be between the minimum and maximum level indicators. If not, add/remove oil as required to bring oil to the correct level.
6. Check for oil leaks.
7. For systems that show a message “HRSxxx500HR SVC” on the control box:
  - press and hold the OFF button (about 5 seconds) until “DIAGNOSTICS” appears in the display
  - release, then press and hold the OFF button (about 5 seconds) until “500 HR CLEAR” appears in the display
  - continue pressing the off button until “CLEAR OK” appears in the display

**VMAC – Vehicle Mounted Air Compressors**

Toll Free: 1-800-738-8622

Local 1-250-740-3200

Fax: 1-250-740-3201

# 1000 Hour Service Procedures

## 1. General Service

Follow procedures numbered 1, 2 and 3 in the 500 hour service instructions for inspecting the belt, replacing the air filter, draining the oil and replacing the oil filter.

## 2. Changing the Coalescing Separator Element

If the system has been operating, shut it off and wait at least 30 seconds for the air pressure to vent before performing service.



***Before beginning any services you must make sure there is no pressure left in the system. The system is designed to automatically release system pressure via the rapid blow-down cap in the end of the tank. Pull the pressure relief valve ring to double check that pressure has been released.***

1. Clean the area around the manifold block and the filter to prevent contamination.
2. Remove the filter by turning it counter-clockwise using a suitable filter wrench.
3. Do not use a screwdriver punched into the side of the filter, as this practice can damage the scavenging tube and screen.



***Check the filter to make sure that the threaded nipple did not unscrew with the filter. If it is in the filter, remove it carefully to avoid thread damage, coat the threads that go into the manifold block with a small amount of Loctite blue and install it into the manifold block.***



***Use caution when removing the filter so as to avoid catching the scavenge screen orifice on the bottom of the scavenge tube on the lip of the coalescing filter. This scavenge screen orifice is attached to the scavenge tube by a “push to connect” fitting. If the fitting has come off of the tube, re-insert the tube into the fitting ensuring that the tube is fully engaged.***

VMAC – Vehicle Mounted Air Compressors

Toll Free: 1-800-738-8622

Local: 1-250-740-3200

Fax: 1-250-740-3201

4. Check the gasket-sealing surface of the manifold block for contamination, old gasket material or damage.

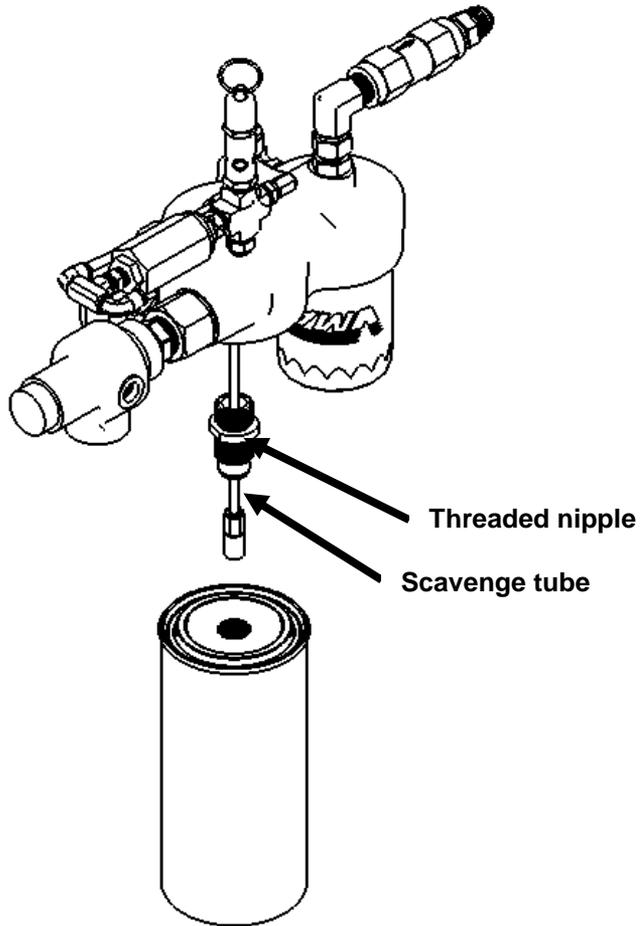


Figure 3 - Coalescing Element



***Make sure the new filter is a VMAC filter, part number 3600079. This is a high pressure filter. Use of other filters not rated to the required pressure may cause the filter to rupture.***

**VMAC – Vehicle Mounted Air Compressors**  
Toll Free: 1-800-738-8622  
Local 1-250-740-3200  
Fax: 1-250-740-3201

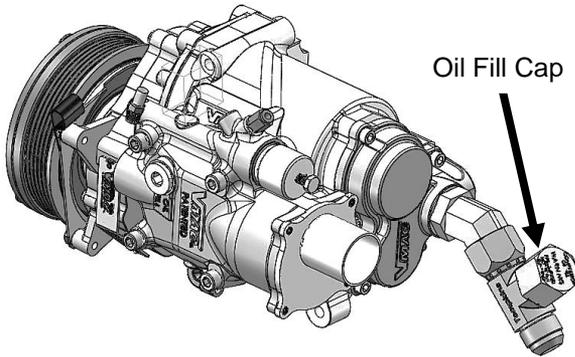
5. Apply a thin coating of compressor oil to the coalescing filter sealing gasket and coat the end of the threaded nipple, as there is also an O-ring inside the coalescing filter.
6. Spin the filter onto the threaded nipple until the gasket contacts the sealing surface of the manifold block.
7. Tighten the filter an additional  $\frac{3}{4}$  to 1 turn to seat the sealing gasket.



***Never over-tighten the filter, as this may damage the seal or filter.***

### 3. Replace the Oil

1. Remove the cap from the T-fitting off of the compressor discharge hose. Pour VMAC compressor oil into the oil fill hole using a funnel.



2. Allow 5 minutes for the oil to drain into the tank and then check the level on the oil level plate at the front of the tank.
3. Continue adding oil until the level is correct. Install the plug and tighten securely.

### 4. Completing the Service

1. Start the engine and allow it to reach operating temperature.
2. Turn the compressor switch on the control unit to the “ON” position and allow the system to pressurize.
3. Discharge air with a tool for 2 minutes.
4. Turn the compressor switch on the control unit to the “OFF” position.

**VMAC – Vehicle Mounted Air Compressors**

Toll Free: 1-800-738-8622

Local: 1-250-740-3200

Fax: 1-250-740-3201

5. Allow the system to settle for 5 minutes, and then check the oil level through the sight glass. The level must be between the minimum and maximum level indicators. If not, add/remove oil as required to bring oil to the correct level.
6. Check for oil leaks.
7. For systems that show a message “HRSxxx1000HRSVC” on the control box:
  - press and hold the OFF button (about 5 seconds) until “DIAGNOSTICS” appears in the display
  - release, then press and hold the OFF button (about 5 seconds) until “1000 HR CLEAR” appears in the display
  - continue pressing the off button until “CLEAR OK” appears in the display

Document #1901001

Version	Revision Details	Revised by/date	Approved by/date	Implemented
.001	DRAFT COPY	RR 09-SEPT-14	PID 10-SEPT-14	10-SEPT-14
A	ENGINEERING RELEASE	RR 22-SEPT-14	PD 22 Sept 2014	RD 22 Sept 2014

**Copyright 2009** All trademarks used in this manual are the property of the respective copyright holder. The contents of this manual may not be reproduced in any form without the express written permission of VMAC, 1333 Kipp Road, Nanaimo, BC V9X 1R3. Printed in Canada

**VMAC – Vehicle Mounted Air Compressors**

Toll Free: 1-800-738-8622

Local 1-250-740-3200

Fax: 1-250-740-3201