



**EVO 8-9 Dry
Sump Kit**

Mission Statement

The goal of AMS is to provide the highest quality, best performing products available. By utilizing research and development, and rigorous testing programs AMS will never compromise the quality or performance of our products. In addition, AMS will only provide the finest customer service offering only parts and advice that are in the best interests of the customer. AMS was built on a foundation of integrity. This is who we are; this is what you can count on.

Disclaimer

A vehicle modified by the use of performance parts may not meet the legal requirements for use on public roads. Federal and state laws prohibit the removal, modification, or rendering inoperative of any part or element of design affecting emissions or safety on motor vehicles used for transporting persons or property on public streets or highways. Use or installation of performance parts may adversely affect the drivability and reliability of your vehicle, and may also affect or eliminate your insurance coverage, factory warranty, and/or new OEM part warranty. Performance parts are sold as-is without any warranty of any type. There is no warranty stated or implied due to the stresses placed on your vehicle by performance parts and our inability to monitor their use, tuning, or modification.

Instructions

These instructions are provided as a guide only as there are many variables that cannot be accounted for concerning your particular vehicle. These variables include but are not limited to model/model year differences, the presence of non-OEM parts and modifications that may already be or were previously installed. A basic knowledge of automotive parts and systems is helpful but a better understanding of the parts and systems on your particular vehicle may be required.

If you have any questions or issues at any time during the installation of your AMS product(s) please call us for technical assistance. The AMS tech line can be reached M-F, 9AM-PM Central time at 847-709-0530 for AMS products only.

Packing List:

- Dry sump oil pan with scraper and fittings
- OEM modified oil pump
- Tank
- Tank Bracket
- Oil filter with fittings and bracket
- Dry sump pump with all pulleys, fittings, and tensioner installed
- Belt
- Drive mandrel and associated parts (center bolt is loose)
- Dry sump pump bracket with hardware
- Oil filter block off plate

Things to know before installing dry sump kit:

- The AMS Dry Sump was engineered for road course and drag racing and is NOT intended for street or daily driver cars.
- This kit should be installed by a professional mechanic who has a good understanding of oil systems.
- This kit should be fully inspected after every race.
- This kit includes an oil filter with removable element that can be inspected to help monitor oil quality. Replacement oil filters can be purchased at www.amsperformance.com
- You will not be able to run balance shafts in your engine. You will also need to be sure that all balance shaft bearings are rotated or blocked off to maintain consistent oil pressure.
- There are no oil hose or hose ends included in this kit because every installation will be different. You can visit www.amsperformance.com to purchase hose and hose ends for your specific installation.
- This kit will not fit in the engine bay unless the air conditioning is removed.
- The dry sump pump is mounted in an area near the exhaust downpipe. We tried mounting the pump in a position that would suit everyone but in some cases there may need to be slight modifications made to the downpipe for clearance.
- This kit will not work with the AMS 42r turbo kit and may have clearance issues with other manufacturers big frame turbo kits.
- The dry sump tank will need to be mounted in a location deemed suitable by each installer. Every car is different and the tank will end up being mounted differently in each car.
- There is no oil cooler included in this kit. If you want to use an oil cooler we recommend visiting our website www.amsperformance.com to purchase a universal cooler.

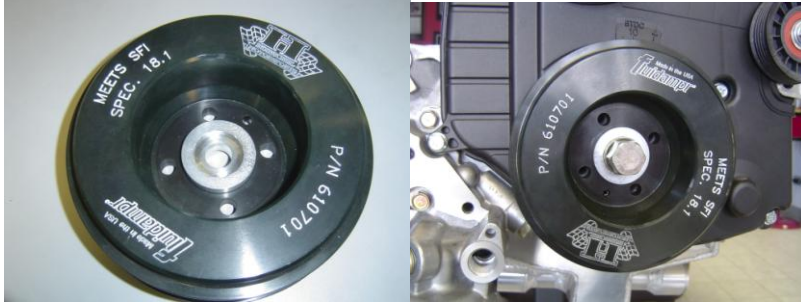
Instructions

1. Remove oil pan, windage tray and oil pump pickup. Scrape all gasket material and clean pan mounting surface.
2. Install crank centerline of scraper. Make sure to push it outwards from the crank, then tighten it down.

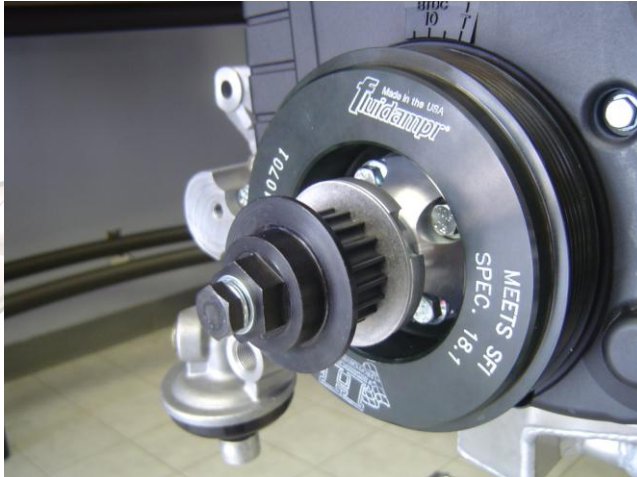


3. Rotate crank and make sure that all areas clear. Inspect areas around rod bolts and outer edges of crankshaft counterweights. If the scraper makes contact with any moving parts you will need to mark them, remove the scraper and use a file, grinder or band saw to carefully clearance the areas. Then reinstall the scraper and verify that there is sufficient clearance.
4. Remove OEM oil pump assembly and reinstall AMS supplied unit. Please refer to the service manual for this procedure.
**** This will remove all balance shafts and you must make sure that the balance shaft bearings are rotated or blocked off to maintain consistent oil pressure. ****
5. Install pan using three bond or equivalent silicone sealer.
6. You may need to use the supplied bolts in the starter area instead of the studs due to clearance issues.

7. Once pan is installed rotate crank and verify no noises are heard due to interference.
8. Remove crank pulley center bolt and washer, reinstall with AMS supplied washer. This should be installed so that the machined side is facing outwards to capture the crank pulley bolt.

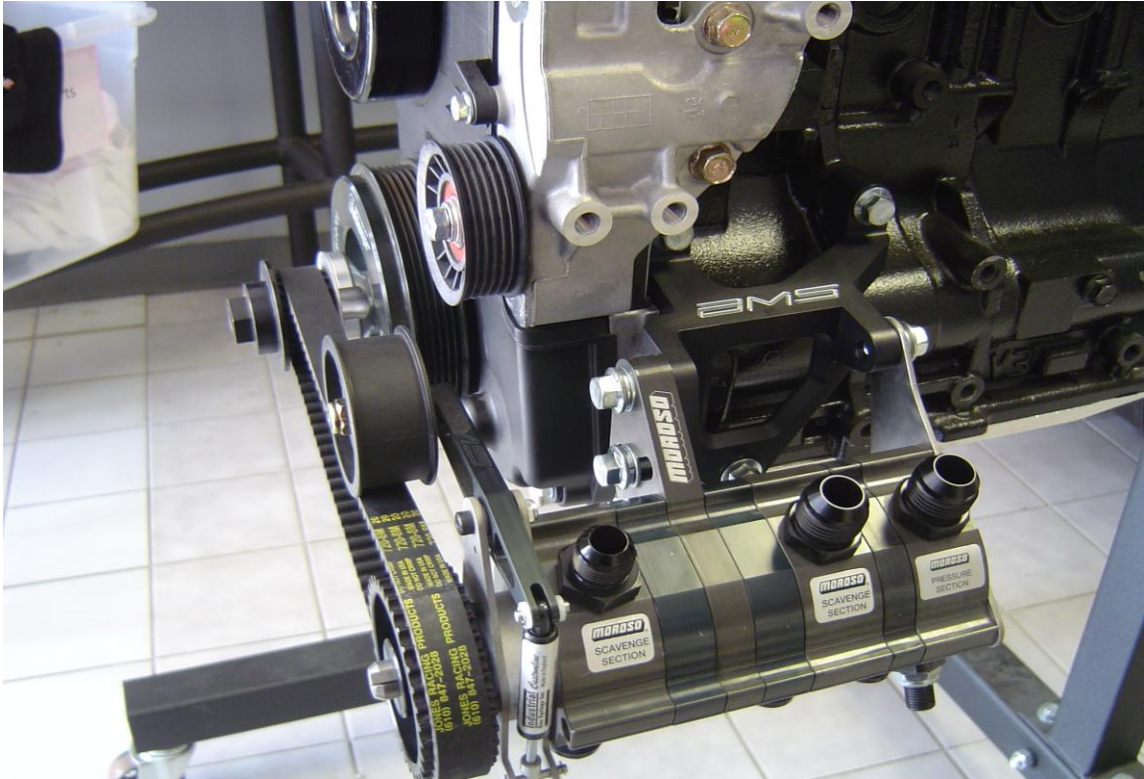


9. Install drive mandrel and pulley. Make sure to install it the same way that it was shipped to you. Tighten (4) 8 mm bolts and the 10mm outer black bolt.



10. Remove existing oil filter and install AMS supplied oil filter adapter. Be sure to coat o-ring with clean oil.
11. Install AMS Billet CNC dry sump bracket using holes that the a/c compressor used to occupy. Next install the pump to the mounting bracket. Be sure to use supplied bushing to adjust the hole on the oil pump to the correct bolt size. Leave bolts loose so pump can pivot.

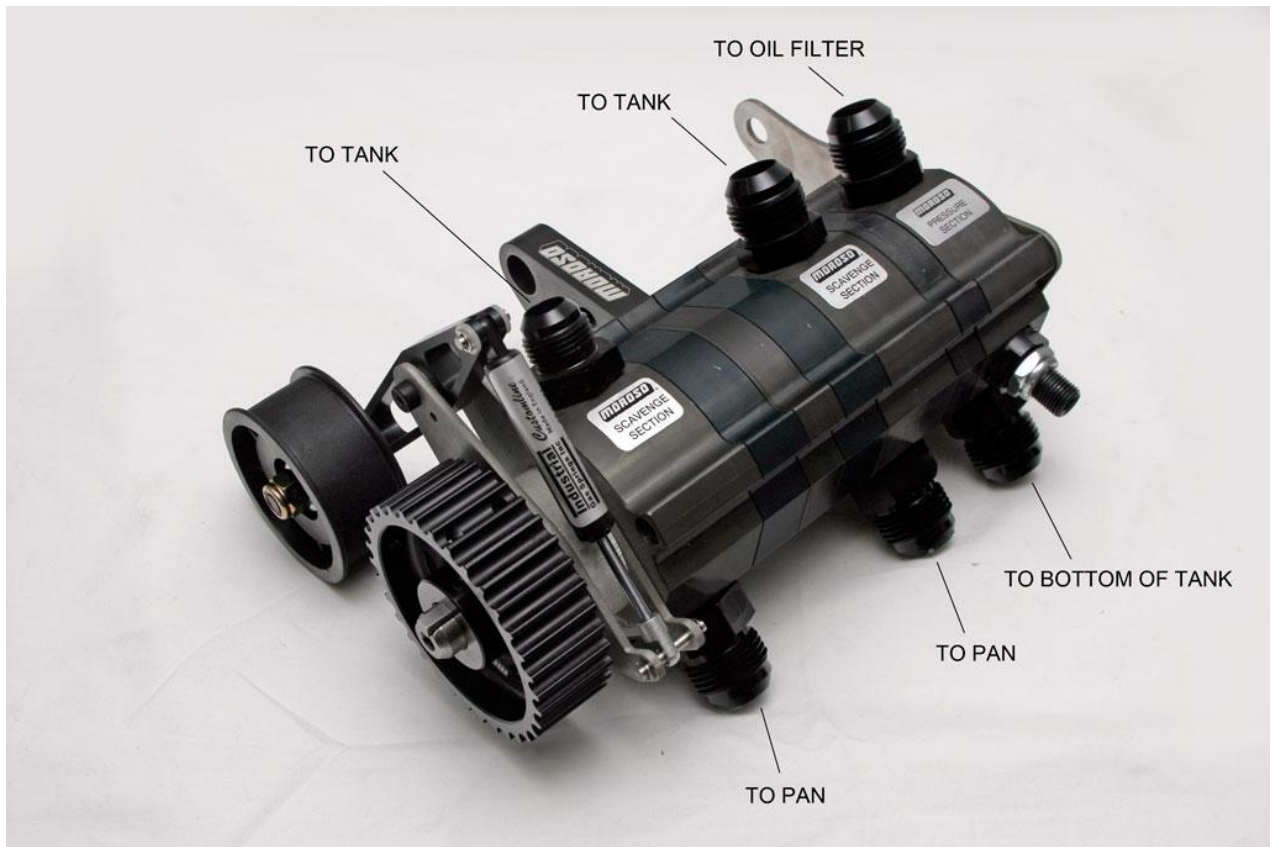




12. Install belt, apply pressure on pump to tighten belt. Belt should have some play in it. The tensioner will take up the slap and prevent it from flopping around excessively. Tighten mounting bolts. Verify that the belt is on straight and the pulleys are lined up correctly. You may need to slide the pulley on the pump in or out to properly align the pulleys. This can be done by loosening set screws and adjusting pulley. Be sure to loctite screws before retightening them.

13. Start planning and routing the oil scavenge lines. You will use 2 of the 3 fittings on the pan and run -12 lines from the two fittings to the two scavenge sections on the pump. The scavenge sections are located away from the pulley.

- All inlets are located on the bottom of the pump.
- All outlets are located on the top of the pump.



14. Install the AMS supplied oil filter. Mount it in a position that is easily accessible for future filter changes. Make a -10 hose that goes from the top of the pump to the inlet side of the filter and a second -10 hose to go from the inline filter to the oil filter adapter on the motor.
 - Make sure these and all other lines are cleaned thoroughly before final install.
15. Find a suitable location to mount the oil tank. You will probably want to mount it low to lower the cars center of gravity. It can be mounted anywhere that there is space. Keep in mind that you will need to access the bottom of the tank to drain it when performing oil changes.
16. Make and route the -12 oil lines from the 2 outlets on the pump to 2 of the 3 fittings on the side of the tank. The third fitting on the tank will be capped off. These lines will pump the scavenged oil into the tank. The last -12 line needed to be made will be the one from the bottom of the tank to the inlet side of the pressure section on the pump. This is the fitting on the bottom of the pump nearest the pulley.
17. Before starting a new motor, it is wise to prime the oiling system until oil pressure is shown on the gauge and oil has circulated through the system and returned to the tank. Do this by adding two quarts of oil to the pan, and filling the tank ½ way. Remove the drive belt and insert a 1/4-28 X 1" bolt in the threaded end of the shaft. Spin the pump in a clockwise direction with an electric drill while watching the vehicles oil pressure gauge. Maintain pressure for one minute. Depending on line length this may take a minute or more.

PRESSURE ADJUSTMENT

The Moroso Rotor & Scroll dry sump pumps have an externally adjustable oil pressure relief valve at the bottom rear of the pump. This valve is pre-set at 50 psi. To increase the pressure, loosen the locknut and turn the Allen set screw clockwise (tighten) or counterclockwise to decrease oil pressure. Remember to tighten the locknut after adjusting the pressure.

CRANKCASE VACUUM

Due to the installation of the dry sump system there will be an increase of vacuum in the crankcase. This is beneficial to aid in piston ring sealing. However if this is not monitored this can lead to excessive wear on internal parts such as piston pins and cylinder walls. The best way to test the vacuum is to install a vacuum gauge on the valve cover or the dipstick tube. Run vehicle at various rpms and record readings. Typically 8-10 inches of vacuum is acceptable. If you have more vacuum than this you may need to create a way for more air to enter the crankcase. This can be done by installing an additional breather onto the valve cover or installing an adjustable vacuum valve. For optimum performance you want to maintain 8-10 inches of vacuum at all times.