WMS High Velocity Ram Air Intake - 2011+ Mustang

Thanks for purchasing a WMS intake, we strive to produce innovative, quality products and trust you will be satisfied for years to come. Please read the instruction manual carefully before installing and feel free to contact us if you have further questions.

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Installation should be performed by a licensed mechanic familiar with fuel injected engines
Be sure engine is cold before performing any work.
FOR OFF HIGHWAY OR RACING USE

The finished install showing front mounted filter, ram air box and relocated coolant tank

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The WMS High Velocity Ram Air intake is available in two versions:

• 87mm - this is a direct bolt on, so no changes to the factory ECU or tune are required. This is a great choice if are only doing minor modifications like air intake and mufflers. If you are using a programmer with our 87mm intake, any of the standard performance tunes are compatible. No specific intake tune is needed with this system as the mass air transfer function is same as stock.

• 100mm - this intake is designed for maximum power gains and must be used with a specific tune as the mass air transfer function is very different than stock.

To load the SCT Tune: Plug programmer into OBDII port and select Program Vehicle. Follow on screen instructions until you come to Adjust Options. Select Saved Options > then Intake Airbox > then WMS 100mm. Begin Programming and follow on screen instructions until complete.

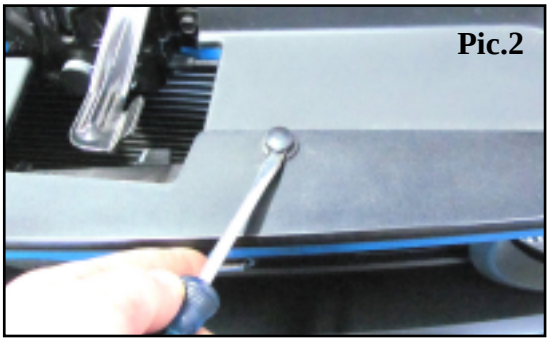
To load the Diablo Tune: Plug programmer into OBDII port and select Performance. Follow on screen instructions until you come to tunes. Select WMS 100mm with either 91 or 93 Octane. Follow on screen instructions until complete.

Installation Instructions

1. If equipped, remove the Strut Tower Brace by undoing the 4 bolts at strut towers that fasten it in place.
2. Remove 5.0 Intake cover by gently pulling up. It is attached to the intake by 4 press-in tabs circled in Pic.1.

Pic.1

3. Remove 8 plastic push pins (Pic.1) that hold plastic radiator cover in place. Lift up center of the push pin with a small screwdriver as shown in Pic.2, then pull out the entire pin.



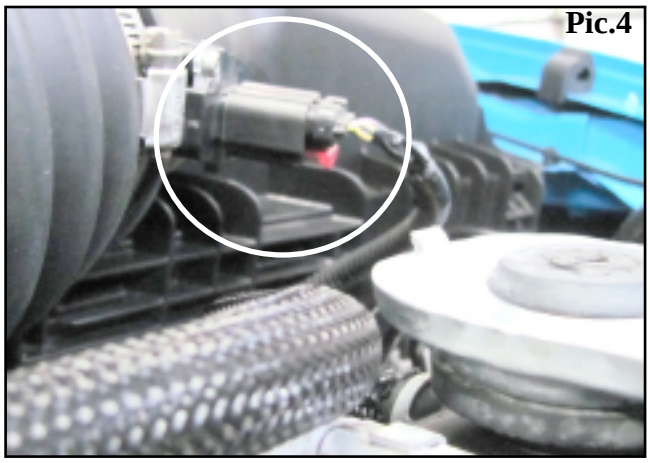
Pic.2

4. Remove plastic radiator cover from car. Lift up on back, then slide out from under front grill.

Pic.3

5. Remove sound tube from car (Pic.3) by loosening clamp at intake and remove 10mm bolt at rear of fender. Pull out from tab at airbox and on strut tower. You can also remove the speed nut that is clipped into the fender. The sound tube is no longer required as the WMS intake makes all the right intake sounds on it's own!

6. Unplug Mass Air Flow wiring harness at front of airbox (Pic.4). Pull the red clip back, found on the bottom of the connector as shown. Then carefully pull the plug out from the electronics.


Pic.4

7. Unclip Mass Air Flow wiring harness from airbox

8. Loosen air box clamp at throttle body. Remove 10mm bolt holding airbox to the inner fender. Both are shown circled in Pic.5 below.


Pic.5

9. Remove PCV tube that runs from airbox to valvecover (Pic.6). Push large black hose towards air intake then push down on grey clip as shown. Once clip releases then pull hose away from air intake.

10. Automatic transmission cars will have a second tube attached to the air intake above the PCV tube, disconnect this tube in a similar manner to the PCV tube.

11. Remove stock air box and air intake as one unit from the car.


Pic.6

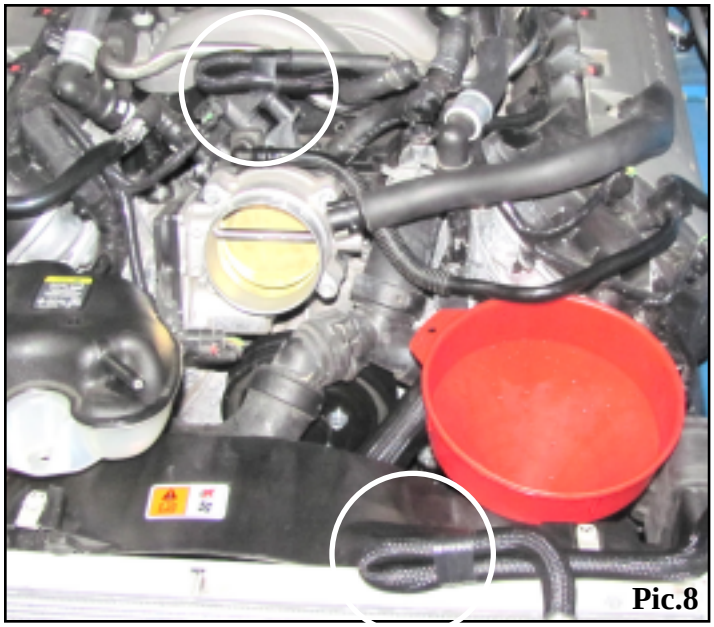
Coolant Tank Relocation - The next step is to relocate the stock coolant tank. You can drain the coolant as described in the factory manual, using the drain on passengers bottom of the radiator. We have successfully relocated the tank without draining the system but two people are required and there is a chance of spilling coolant. We describe this method below if you would like to attempt it.

1. Remove coolant tank cap. Remove 2 - 8mm bolts that hold coolant tank in place. Place a coolant jug down on crossmember on passengers side in front of engine. Use a funnel and empty contents of coolant tank into the jug (Pic.7) Once empty, set coolant tank back in place and remove jug.


Pic.7

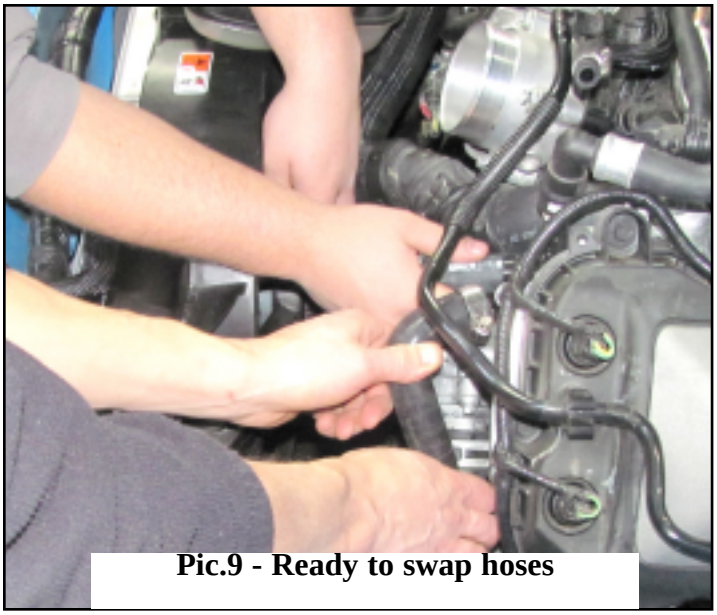
2. Disconnect two small hoses from top of overflow tank. Fold hoses over and tape or zip tie so that they cannot leak as shown in Pic.8.

3. Now the tricky part... you can quickly swap the WMS overflow hose for the stock overflow hose without loosing coolant but it does require two people. First prepare the WMS overflow hose by attaching 2 supplied clamps to each end of the hose. Release stock spring clamp where overflow tank hose meets the drivers side front of engine. Have an assistant pull the stock hose off and quickly push the WMS hose back on (Pic.9 & 10). Coolant will leak out so you must be fast. Also keep the ends of the hoses high so they do not leak.


Pic.8

4. Remove the stock coolant tank and hose as one unit. Completely drain into the coolant jug.

5. Remove the two small hoses that were folded over in Step 2. Only the hose that ran to the intake will be reused.


Pic.9 - Ready to swap hoses


Pic.10 - WMS overflow hose in place

6. Remove the stock overflow bottle clip-nuts (Pic.11) from the fan shroud by using a small screwdriver to push the retaining clip up and slide the clip-nut out. Transfer these clip-nuts to the WMS aluminum mounting bracket, they slide into the cut slots. Mount the overflow tank to the aluminum bracket using the stock bolts

Pic.11

7. Push the WMS urethane bushing into the existing hole on lower inner fender as shown in Pic.12. Set the overflow bottle into the bushing and bolt aluminum bracket to car with the stock 10mm bolt.

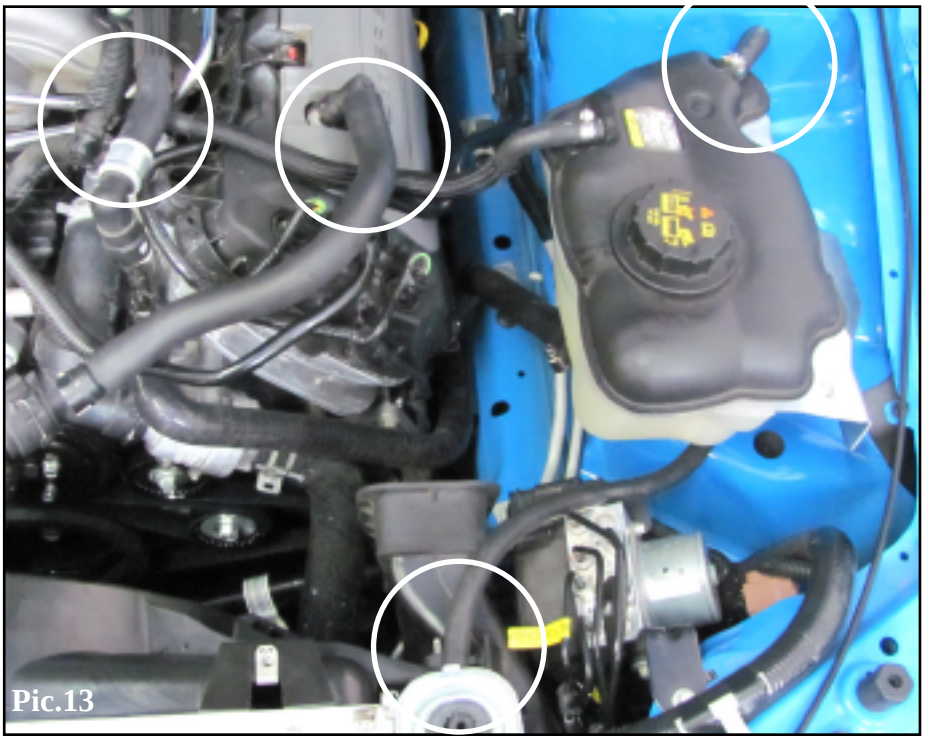
8. Attach WMS overflow hose to tank and tighten both hose clamps (at overflow bottle and front of engine).


Pic.12

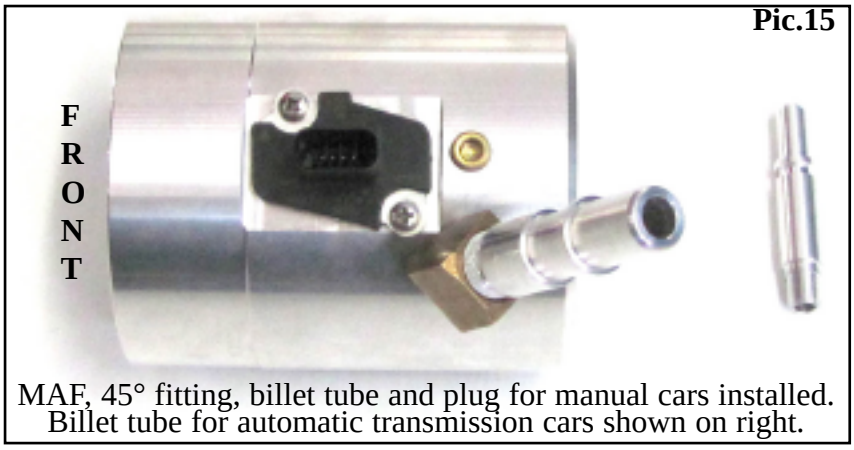
9. Re-use the stock intake to overflow hose and route as shown in the Pic.13 below. It goes under all three lines towards the overflow tank. Use the supplied screw clamps to clamp.

10. Use the supplied 30” hose and route as shown in Pic.13. From the top corner of the overflow tank, go under the tank, along the aluminum bracket and over to the radiator. Use the supplied screw clamps to clamp.

11. Re-fill coolant into overflow tank. If you did not spill any coolant it should be high in the tank until the hoses fill again. Replace the overflow cap.


Pic.13


Pic.14 - Remove MAF



Pic.15

MAF, 45° fitting, billet tube and plug for manual cars installed.
Billet tube for automatic transmission cars shown on right.

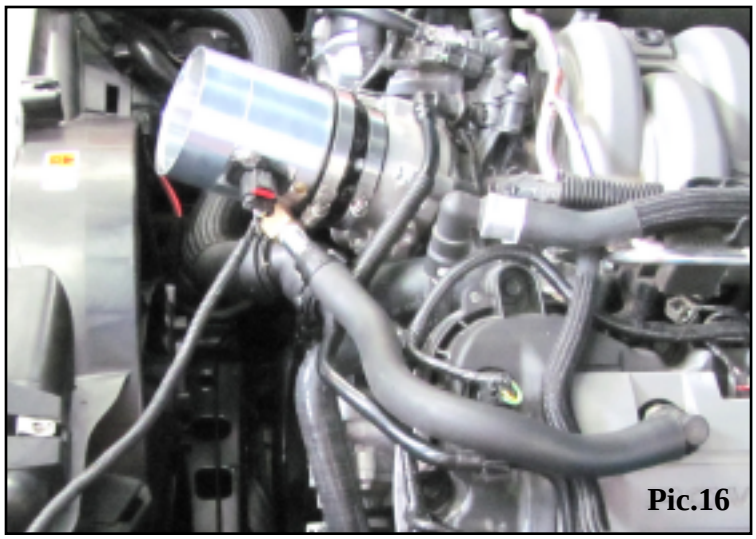
Intake Assembly

1. Remove Mass Air Flow (MAF) sensor electronics from stock airbox using supplied Tork bit as shown in Pic.14.

2. Transfer MAF to WMS billet mass air housing as shown. Be sure MAF is pointing the correct direction, front of mass air housing is shown, fittings go to the back. The large opening in the MAF electronics must point towards the front of the meter. When installed correctly the part number will be right side up as shown in Pic.15.

3. Screw 45 fitting into the billet housing and large billet tube into the fitting (Pic.15). Use teflon tape to seal the threads. Rotate approximately as shown in the photo above, this will be adjusted later. For manual transmission cars, screw the brass plug into the small hole in the billet housing, use teflon tape. For automatic transmission cars, screw the small billet tube into the small hole in the billet housing, use teflon tape.

4. Install urethane coupler onto stock throttle body and clamp (Pic.16). Be sure it is pushed all the way back onto the throttle body. Clamp WMS billet mass air housing to coupler, pushed far back as well. Also make sure maf electronics are horizontal and line up with throttle body plate.


Pic.16

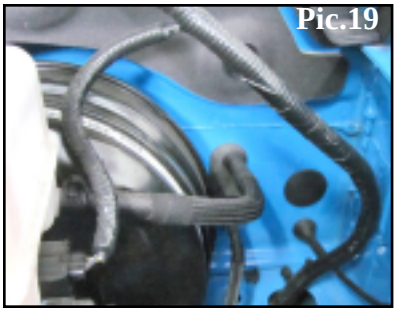
5. Adjust position of 45° fitting and large billet adapter so PCV hose lines up. Push PCV hose onto adapter until clips into place. If automatic, clip second hose onto small billet adapter.

6. Route the mass air wiring harness under the radiator bracket as shown in Pic.17 and then plug into the MAF sensor. Push in red tab to secure.

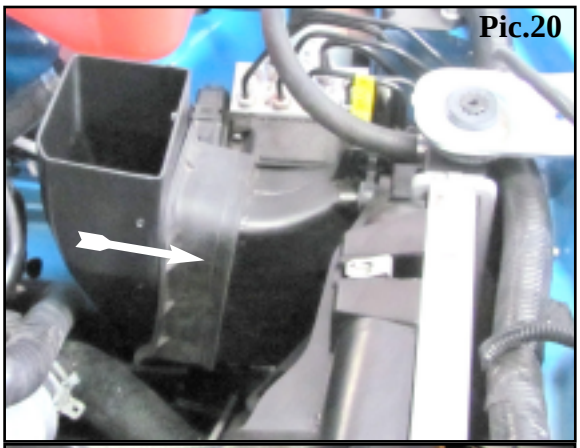

Pic.17


Pic.18

7. Push rubber wellnut into passengers side radiator mount. Use a screwdriver to push on the bolt as shown in Pic.18. Remove bolt once fully seated.

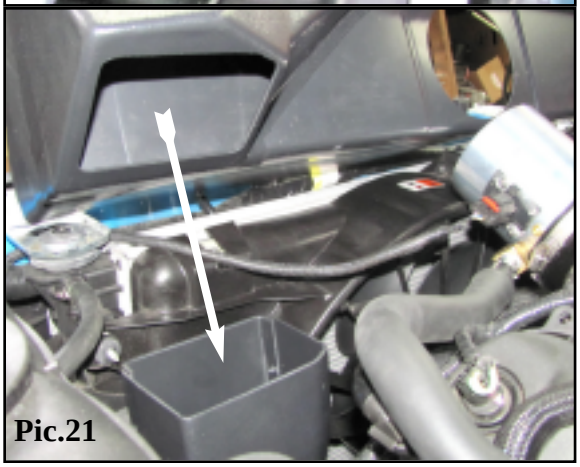

Pic.19

8. Plug sound tube hole in the drivers side firewall (Fig. 19) using the supplied rubber plug


Pic.20

9. Hook bottom of ram air duct into the stock air duct and push into the rubber flange until tight (Pic.20).

10. Set ram air box into car (Pic.21), with the WMS billet mass air housing through the center hole. Carefully push the ram air duct into the ram air box, it is a tight fit and will catch on the edges. Push edges of the duct in as you push the two together.


Pic.21

10. Bolt Ram Air box in place using 8/32" bolt on passengers side and 1/4" bolt on drivers side as shown in Pic.22.

11. Slide filter over WMS Billet mass air housing, all the way back. Be sure filter is even side to side and tilted down slightly. Tighten hose clamp.

12. Reinstall stock plastic radiator cover and the 8 push pins that hold it in place. Reinstall intake cover by pushing 4 locating tabs in. Reinstall strut tower brace if equipped.

Pic.22