



Easy Upgrades: Give Your VW Engine Reliability, Durability & More HP

If you don't have your own Volkswagen engine repair story to tell, then you probably haven't had an Air Cooled VW very long. It's almost a rite of passage to wrench on your Volkswagen along the side of the road once those vintage parts finally cash out after a long life. Luckily, engine components are out there to quickly get you back on the road and even add looks and performance to your ride.

Choose MST

With all the choices available for VW upgrades, it can sometimes be tough to know you're making the best choice. Motorsports Tulsa, or MST, makes the decision easier by continually providing high quality engine components that fit well and work even better.

Serpentine Pulley System

Benefits Over OE

The MST Serpentine Pulley System is built like those on modern vehicles. The design includes an automatic tensioner that means less maintenance for you, because there is no tightening required. It is also a more reliable system with less belt wear, less resistance and more horsepower.

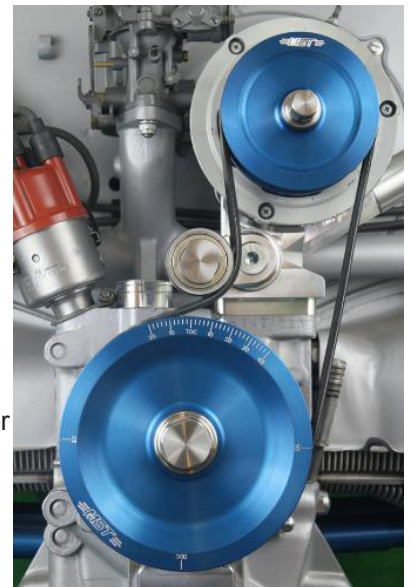
Custom Styles

The MST Serpentine Pulley System offers reliability and consistency with a great look. Each system is CNC machined from 6061-T6 Billet aluminum to exact tolerances, ensuring product quality. The idler assembly is designed with a knurl resistant face and comes with a high-rpm double row bearing. Each style is available in four colors, adding a flash of color your engine compartment.

- **Regular Style** – The flagship design for MST, this system has a 10-year track record for delivering exceptional performance.
- **Excalibur Style** – Sleek cutouts in the wheel are accented by a subtle serration to provide the same power and reliability.

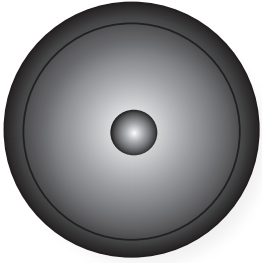
MST

MOTORSPORTS TULSA





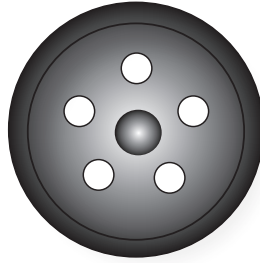
- **Matador** – A simpler style is applied to this system, featuring a configuration of 5 round cutouts.
- **Raptor** – Sleek cutouts appear on this style as well, this time accented by 3 round cutouts.
- **Renegade** – Simple styling is again the key to this system, with 5 trapezoidal cutouts.



REGULAR



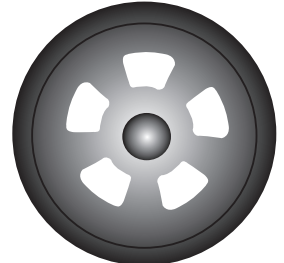
EXCALIBUR



MATADOR



RAPTOR



RENEGADE

Installation

No matter which style you choose, your VW is only nine steps away from better engine performance.

Step 1. Remove the existing belt, alternator/generator pulley and crank pulley from the engine. Be careful not to lose the 3mm and 8mm keys from the crankshaft and the generator shaft. Also, remove the two studs (facing you) from the front of the generator stand. To prepare for installation, clean the shafts and generator stand area where you removed old items.

Step 2. The Idler Bearing and Bracket have been partially pre-assembled for your convenience. The bolts are **NOT** tightened for use and will need to be tightened per the instructions in Step 8 after installation.

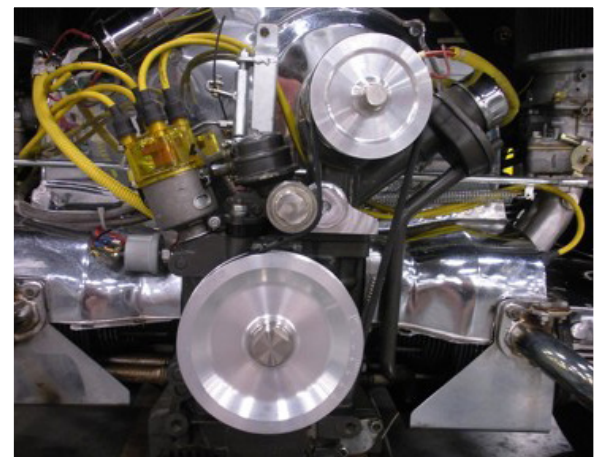
Step 3. Facing the engine, place the Sub-Assembly described in Step 2 over the two holes where the studs were. Insert the (2) bolts with washers and leave them loose so the bracket assembly will still move freely for belt installation.

Step 4. Install and securely tighten the crank pulley to the crankshaft, making sure to align the key slot. The pulley should slide on easily with minimum force. It may be necessary to tap the pulley into position using a rubber mallet. If it requires too much force, remove the pulley and lightly sand the inside diameter of the pulley to help it slide easier. We also recommend using a light oil or lubricant when installing the crank pulley.

Step 5. Slide the generator pulley into position on the generator shaft following the same procedure as the crank pulley installation. Make sure that it is pushed all the way in. Use a straight edge to lie across the face of the crank pulley and generator pulley to check alignment of pulleys. A maximum of (1mm) deviation in the alignment of the pulleys is acceptable. Misalignment of the pulleys greater than 1mm will result in the belt tracking improperly and the unit will not function properly.

Step 6. Once the pulleys are aligned, tighten the generator pulley. Loosen the bolt holding the idler bearing adjustment bracket to the mounting bracket and install the belt. The belt should be around both pulleys and to the right side of the idler bearing. The belt and the idler sub-assembly should be floating freely at this point.

Step 7. Tighten the two bolts in the generator stand firmly using your best judgment of the belt alignment and idler bearing alignment. Rotate the idler bearing to place tension on the belt and firmly tighten from behind the bracket assembly using a 5/8" wrench. **DO NOT OVER TENSION THE BELT!** Too much tension on the belt can cause damage to your generator shaft. Use the same amount of belt tension that you would normally require on any standard belt setup. **NOTE: We recommend using Thread-locker to tighten the Bearing Bolt to the idler bracket.**





Step 8. At this point you should see that the pulleys, belt and bearing are in alignment, tightened securely and ready for use. Clear all tools and possible obstructions out of your way and start the engine. If the belt begins to track out of the grooves and up the sidewall of the generator pulley, not the direction it is moving (to the front of the car; or to the back of the car) shut off the engine.

Follow Step 9 to correct the tracking problem. If the belt is tracking in the grooves properly, Step 9 is not required.

Step 9. Belt alignment and tracking. When the engine is running, the belt must track evenly through the generator pulley with the grooves aligned properly. If the belt is tracking improperly and moving up the sidewall of the pulley or beginning to fold; first check to make sure the faces of the pulleys are in line and then, if necessary, adjust the position of the idler bearing bracket assembly. This is accomplished by loosening the (2) 8mm generator stand bolts slightly and using a small pry bar to change the alignment of the bearing. Re-tighten the assembly, re-start the engine and repeat this step until the belt is tracking evenly and properly.

Remember, careful and patient installation of this Serpentine Kit will give you many hours and many miles of outstanding performance. Do not rush through the installation process. Missed or shortcut steps may cause damage to your engine.

Alternator/Generator Stand

The Alternator/Generator Stand serves a very important purpose, cradling the alternator securely in place so the Serpentine Pulley System can operate properly. As your VW ages, the Alternator Stand can become cracked or broken, jeopardizing engine function.

Benefits Over OE

This Aluminum Alternator/Generator Stand is manufactured using 6061-T6 Billet Aluminum and precision machined on a 5-Axis CNC Machining Center. It is a direct replacement of the original and will work with either an alternator or generator. The filler hole has a universal thread allowing it to be used with many other stock and aftermarket filler caps and vent. Once again, this piece gives you the ability to customize your engine compartment with four color options.

We know that not everyone wants to customize their Volkswagen. However, if you're looking for some engine upgrades that will make you stand out from the stock options, there are plenty of choices out there.

