

# UNDERDRIVING AN OVERACHIEVER

A SIMPLE PULLEY SWAP CAN FREE UP HORSEPOWER

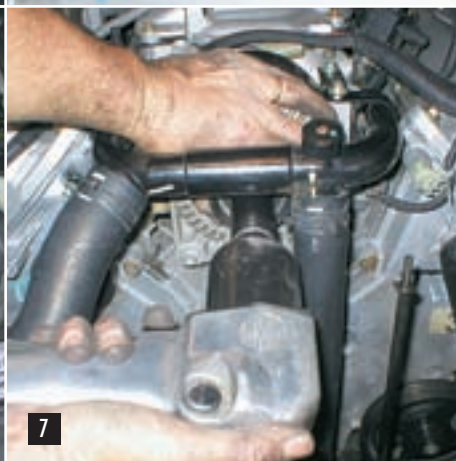
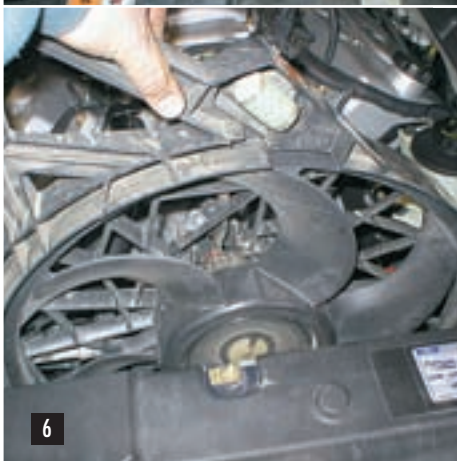
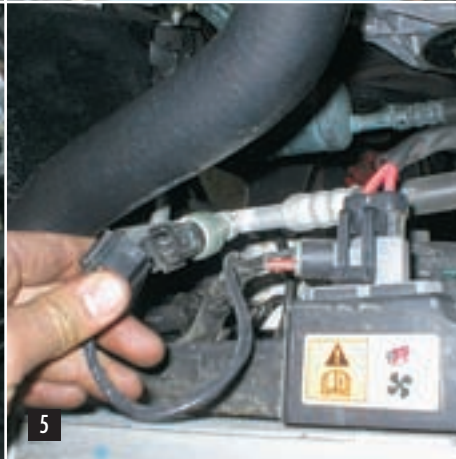
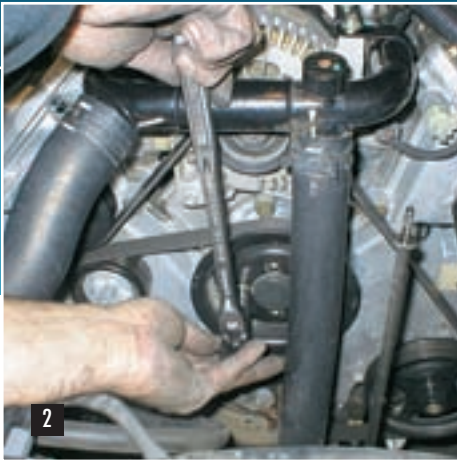


MUSTANG ENTHUSIASTS HAVE IT FAIRLY EASY NOWADAYS. IT SEEMS AS IF EVERY MONTH THERE IS A NEW PRODUCT COMING TO MARKET THAT IS FIGHTING FOR YOUR HARD-EARNED MONEY. AMONG THE PLETHORA OF NEW ENGINE, SUSPENSION, DRIVETRAIN AND INTERIOR UPGRADES THAT ARE CONTINUALLY BEING INTRODUCED THERE ARE MANY ITEMS THAT ARE TIME-PROVEN, FUNDAMENTAL UPGRADES THAT ARE VALUABLE IN THE INITIAL STAGES OF HOPPING UP A MUSTANG. ONE OF THESE KEY INGREDIENTS IN THE MUSTANG PERFORMANCE RECIPE IS UNDERDRIVE POWER PULLEYS.

Power pulleys have long been one of the more popular “bolt-ons” in the Mustang world because they are a simple and effective way of improving your Mustang engine’s output. Underdrive power pulleys are a proven method of increasing horsepower and torque across the entire power band from idle to redline. Depending on the application, it is not uncommon to see gains of 8-15 hp at the rear wheels. Typically, most Mustang power pulley kits require the replacement of the stock alternator pulley, water pump pulley and crank pulley with different diameter alternator, water pump and crank pulleys. This is done in order to underdrive (slow down) the engine’s accessories, which reduces the amount of parasitic horsepower loss. Basically, the function of the power pulleys is to make the engine more efficient so that it doesn’t work as hard to turn all the belt-driven engine accessories (alternator, water pump, A/C, power steering, etc). Naturally, power that the engine saves here is power that is ultimately transmitted to the rear wheels, and that’s what we’re all after.

Auto Specialty Performance (ASP) has been making Mustang power pulleys for years, and offers a wide selection of pulley kits for nearly every Mustang on the road. This includes, but is not limited to, 5.0L Mustangs, 4.6L GTs, Cobras, and even 3.8L V-6 Mustangs. In addition, ASP offers power pulleys for many other makes and models.

One of the distinctive features of the ASP 4.6L pulleys is the design of their harmonic balancer with an integrated crank pulley. Many power pulley kits available for the 4.6L offer “piggy-back” crank pulleys. As the name implies, piggyback crank pulleys bolt onto the stock harmonic balancer. You then install the original harmonic balancer with the new supplied piggyback crank pulley. Although this method works, it is a bit crude, adds unnecessary weight (rotational mass kills horsepower), is more difficult to install and, frankly, looks somewhat strange. ASP’s design of incorporating a new harmonic



1. Begin by removing the three nuts that hold the factory coolant reservoir and moving the reservoir to the side to better access the front of the engine.

2. Remove the four water pump bolts and remove the water pump pulley.

3. Using a 3/8-inch breaker bar, release the tension on the serpentine belt tensioner.

4. You can now remove the serpentine belt.

5. Unplug all the electrical connections on the radiator fan, as it will have to be removed for clearance.

6. Remove the two 8mm bolts that secure the electric fan to the radiator. There will be one bolt on each side of the electric fan. Now remove the electric fan from the engine compartment. It is a tight fit, so be patient to avoid damaging anything.

7. Using an air impact gun, loosen and remove the large nut on the stock alternator pulley. Be sure to hold the pulley firmly with one hand (a leather glove will be a big help) to prevent it from spinning from the force of the air gun. Once free, remove the pulley.

8. Using an air impact gun, loosen the large single bolt that holds the stock harmonic balancer/alternator pulley to the engine.

9. Using a suitable balancer/alternator pulley removal tool, carefully extract the stock balancer/alternator pulley. Make sure to support the stock balancer/alternator pulley with one hand to prevent it from falling off and causing damage to the pulley, the ground, or your foot.



10. Here's a side-by-side comparison of the stock pulleys versus the ASP Power Pulleys. The stock pulleys are stacked vertically on the left side and the ASP pulleys are stacked vertically on the right side. Note the size difference in the crank pulley. Needless to say, this is where most of the power is gained.

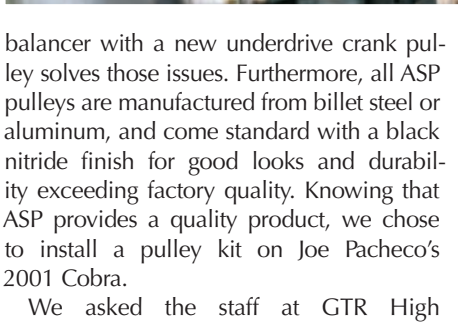
11. Be sure to apply some RTV silicon to the keyway slot in the hub of the ASP crank pulley to prevent oil leaks, then install the ASP crank pulley with the new (supplied) bolt and original washer. Make certain to align the keyway in the crankshaft, with the keyway slot in the crank pulley, or damage may occur. NOTE: The supplied crank bolt is only for installation purposes. DO NOT final-tighten the crank pulley with this bolt. You must re-use the original crank pulley bolt and washer for final tightening. Torque to factory specifications.

12. Install the new ASP alternator pulley and the new water pump pulley using the original nut and bolts, respectively, and tighten to the factory specs.

13. Re-install the original serpentine belt around all pulleys following the original belt routing. You will need to use a 3/8-inch breaker bar to release the belt tensioner in order to slip the belt over the pulleys.

14. Re-install the electric fan and secure with the original hardware, making sure to reconnect all of the fan's electrical connections. Next, re-install the coolant reservoir using the original hardware.

15. This wraps up the pulley installation. Enjoy your newfound power!



balancer with a new underdrive crank pulley solves those issues. Furthermore, all ASP pulleys are manufactured from billet steel or aluminum, and come standard with a black nitride finish for good looks and durability exceeding factory quality. Knowing that ASP provides a quality product, we chose to install a pulley kit on Joe Pacheco's 2001 Cobra.

We asked the staff at GTR High Performance in Rancho Cucamonga, California, to give us a walk-through of the installation procedure of the ASP Power Pulleys. The experts at GTR High Performance specialize in all things Mustang, and made short work of this project. The installation is relatively straightforward, and can be done by a novice Mustanger in a couple of hours. Although we are demonstrating this installation on a 2001 Cobra, 1996-2004 Mustang GT owners will follow virtually the same procedure. If you want to tackle this job on your own, you will need an assortment of basic hand tools along

with a harmonic balancer puller, air tools, and a torque wrench. On the 4.6L Mustangs, this installation cannot be done without these special tools. Swapping the pulleys onto the current breed of 4.6L Mustangs is a bit more complicated than the previous generation 5.0 Mustang, but is still similar. If you don't have access to the above-mentioned tools, GTR High Performance offers professional installation for a reasonable fee of \$85. GTR sells the three-piece 4.6L ASP Power Pulley kit for \$189.99, making this a solid "bang-for-the-buck" upgrade. ■

## SOURCES

Auto Specialty Performance  
ASP Underdrive Power Pulleys -  
\$189.99 (GTR retail price)  
[www.aspracing.com](http://www.aspracing.com)

GTR High Performance  
8429 White Oak Ave. #107  
Rancho Cucamonga, CA 91730  
(909) 987-4386  
[www.gtrhipo.com](http://www.gtrhipo.com)