

TMS Power Pulleys

E46M3, E46M3 CSL, MZ3 S54

Parts list for kit: (TEN 46 10 001) 1 Valeo Alternator Pulley
(TEN 99 22 509) 1 E46M3 Valeo Alternator Stereo Pulley
(TEN 46 10 002) 1 Water Pump Pulley
(TEN 46 10 003) 1 Power Steering Pump Pulley
6 Grove 1538mm long belt for S54

6cyl E36, E46, E39, Z3, MZ3 S52

Parts list for kit: (TEN 36 10 001) 1 Valeo Alternator Pulley
(TEN 99 22 501) 1 E36/E46 Valeo Alternator Stereo Pulley
(TEN 36 10 002) 1 Bosch Alternator Pulley 1.605" or 40.77mm
(TEN 99 22 004) 1 Bosch Alternator Pulley 1.477" or 37.50mm
(TEN 99 22 505) 1 E36/E46 Bosch Alternator Stereo Pulley

(TEN 36 10 003) 1 Water Pump Pulley

(TEN 46 10 004) 1 Flat Shape Power Steering Pump Pulley
(TEN 36 10 004) 1 Bell Shape Power Steering Pump Pulley

6 Grove 1590mm long belt for M52 TU, M54, M56
6 Grove 1597mm long belt for M50, S50, M52, S52

TMS Power Pulley kits are designed to replace the alternator, water pump, and power steering pulleys with an OE look. The crankshaft pulley can't be changed because the harmonic balancer is built into the stock pulley, and can cause crankshaft vibrational problems or failure.

Power is not actually *made* from these pulleys, power is *released* from the engine by reducing drag from the accessories. In addition, there is a decrease in overall rotational inertia, allowing the engine to rev up and down in a shorter time period. All pulleys are based on a percentage of size increase from stock (or a size ratio) to allow them to be used safely and effectively on the street and racetrack. Our pulleys are professionally CNC machined, from high grade 6061-T6 aluminum and hardcoat anodized for long lasting protection. Accurate performance dyno charts for *real/proven* horsepower numbers, and documentation of other characteristics done exclusively by TMS R&D are available on the Turner Motorsport website.

Install time: 2 hours

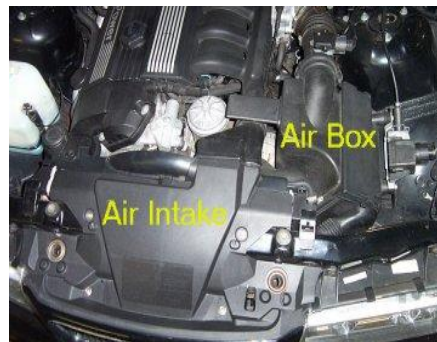
Directions on next page

Note: Due to the multiple applications of these parts, specific instructions are not possible.

Note: Before taking apart your car, make sure and compare the pulleys you received to the pulleys that are on your car. BMW varied what pulleys were used during certain years.

Note: Whether you have underdrive pulleys or stock BMW pulleys, we suggest checking your belt tensioner pulley and belt tensioner hydraulic piston often. If these parts fail or degrade you will have problems with the main drive belt coming off or getting cut!!! **Tips:** The tensioner pulley should sound and feel smooth and quiet when spinning with the belt off. The belt tensioner hydraulic piston should have the same resistance through the full movement range with the belt off. It is a good indication the piston is going bad if it starts off easy then gets stiffer. These parts will need to be changed more often in race cars due to the sudden RPM changes and high RPM's.

1. Remove air intake and air box
 - a. Disconnect any wiring
 - b. Remove Xenon box (if equipped) to access an air box bolt, and move aside.



2. Remove radiator fan and shields (process varies for electric or clutch fans)

Notes: Steps **b.** & **d.** do not apply for cars with coolant tank on fan shroud.

- a. Remove plastic under tray for access underneath the car.
- b. Loosen the radiator shroud (4 torx bolts, one in each corner).
- c. Undo fan (fan wrenches may be needed).
 - o *Note: the threads are reverse.*
- d. Remove fan and shroud assembly from the top of the car.



3. Remove air-conditioning belt.
 - Loosen the tensioner and remove the belt.

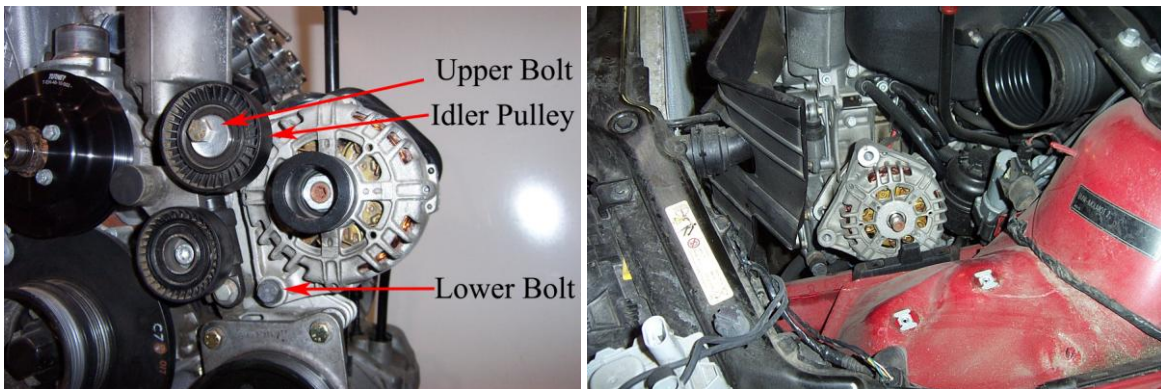
- The procedure may vary on different models to loosen belt tensioner.
- Some models will have a 16mm lug on the side to loosen the tensioner.
- Other models require removal of the plastic cap on the tensioner pulley. Under the cap there will be either a hex, allen, or torx bolt. Use this to loosen the tensioner.

4. Remove main drive belt

- Before removing belt loosen the bolts on the water and power steering pump pulleys.
- Remove cover over belt tensioner
- Note the belt routing for re-installation.
- Loosen the tensioner and remove the belt.

5. Remove alternator pulley

- Remove Alternator
 - Remove the two bolts that secure it to the engine block (be careful, the wiring does not need to be removed). Note: if you are going to remove the alternator from the car disconnect the battery first.
- Use an impact gun to break the pulley loose, and remove



6. Remove Power Steering Pulley

- The bolts should already be loose, so remove bolts and remove pulley.

7. Remove the Water Pump Pulley

- The bolts should already be loose, so remove bolts and remove pulley.

8. Install Water Pump Pulley.

- Tighten bolts. Bolts can be fully tightened after belt is put on.
- Corrosion may need to be removed from the shaft.
- Turner logo faces out.

9. Install Power Steering Pulley.

- Tighten bolts. Bolts can be fully tightened after belt is put on.
- Turner logo faces out.

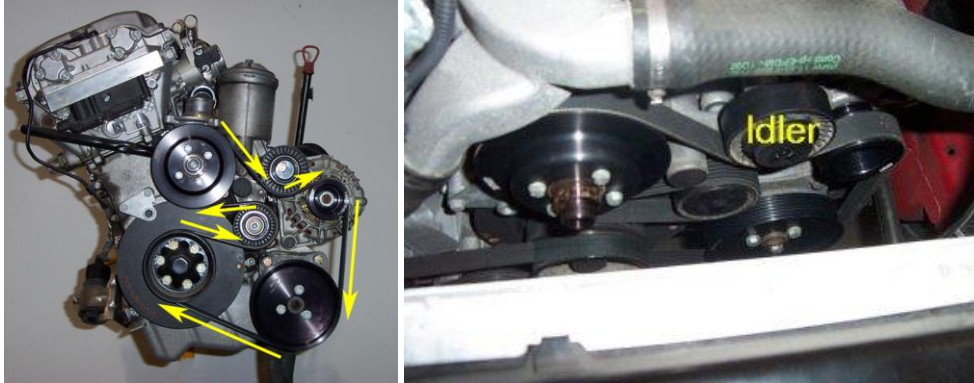
10. Install alternator pulley.

- Slide pulley over shaft.
- Turner logo faces out.
- Torque nut to: 60 N*m (44 ft*lb) (locktite is optional)
- Re-install alternator



Tip: If the lower section of the alternator does not want to slide on the oil filter housing, try screwing the bolt in to the alternator in the stock orientation. Tap on the head of the bolt to move the steel sleeve back just a hair. However, it should not take excessive force. Be careful to not damage the alternator

11. Reinstall main drive belt.
- Properly route the belt according to original routing.



12. Check belt for proper tension, that it is seated correctly on each pulley, and routed correctly.
- Tighten all bolts on the Pulleys.
 - Torque water pump to 10 N*m (89 in*lb)
 - Torque power steering to 22 N*m (16 ft*lb)
 - Check for proper fitment again.
13. Stand clear and start the car
- If anything is out of normal shut down immediately and re-check fitments, seating, tightness, and routing.
 - If all seems normal, look to see if belt or pulleys are running true or rubbing anything.
 - Shut car off and re-check for interferences or signs of non-fitment.
14. Re-install air-conditioning belt, and check fitments and seating on that belt.
15. Re-install all other parts and trim pieces.

After installation, please use the prepaid postage envelope to return the alternator pulley not used in the kit. This creates less confusion during installation and allows us to keep cost down.