

ULTRIK LIGHTWEIGHT CRANKSHAFT PULLEY UPGRADE INSTALLATION INSTRUCTIONS P/N NME5030

The ULTRIK lightweight crankshaft pulley upgrade is designed to greatly reduce the rotational mass of the crankshaft pulley, reducing the parasitic losses and making your MINI engine more responsive.

- *This pulley kit Part# 020200402 contains a crank pulley, a steel hub, three (3) allen bolts and three (3) lock washers. Check that the part number matches the number engraved on the back of the pulley. If the part numbers or quantity of parts do not match, do not install them and call Mini Mania Inc.*

Installation Instructions

2002- 2006 Mini Cooper S 1.6L SOHC 16V Supercharged

Notice: *These instructions are not a replacement for the factory manual; factory specified tools maybe required for removal of the original parts.*

- The engine should be completely cold for easier installation.
- Open the hood to gain access to the engine compartment.
- Loosen the lug nuts on the passenger side wheel then raise the passenger side of vehicle and secure with a jack/safety stand.
- Remove the passenger side wheel and the plastic wheel well shroud in front of the crank pulley.
- Loosen and remove the accessory belt using factory tensioner loosening tool.
- Loosen crankshaft pulley bolt, but do not remove it yet.
 - Manual Transmission: Have helper place car in 5th gear, with clutch released. Have helper hold the brake pedal firmly. The crank pulley bolt is tight and will require significant force to loosen.
 - Automatic Transmission: Follow the crank pulley removal procedure/s specified in the factory manual.
- Use the factory specified puller or a flange style puller, ear type. (The rod on the puller, or an extension rod, used must fit in the inner bore of the pulley and go all the way through the bore of the crank snout, past the threads and bottom out at the end of the threaded bore in the crank snout).
- Once factory pulley is removed clean any rust or corrosion from crank snout, then place a bag of ice on the crank snout, you can use tape on the timing cover to affix the bag (Cooling is necessary to cause the crank snout to contract slightly, allowing for an easy installation).
- Preheat your oven to 500 degrees (you may also heat the steel center with a torch, heat until the coating in the bore begins to turn brown). Take the outer aluminum ring off the steel center and place only the steel center in an oven for 45 minutes at 500 degrees (Heating is necessary as the hub is an interference fit,

heating the hub causes its bore to expand enough to allow easy installation on the crank snout).

- Remove the bag of ice and using leather or thick cloth gloves remove heated steel center from oven and press it onto the crank snout as far as possible without burning your hand. The steel hub must be fully seated against the front edge of the crank snout. If not seated you may, while the steel hub is still hot use a block of wood with a mallet or hammer to seat the steel center fully onto the crank snout.

If the steel hub is not seated properly you will throw the accessory belts or the belts will squeal when running the engine.

- Tighten the crank pulley bolt while hub is hot to assure proper seating, see the torque specification below.
- Allow the hub to cool for 30-45 min. and install the aluminum ring, see the torque specification below.
- Tighten the accessory belt via the factory tensioner and re-install the remaining components in reverse order.
- The maximum HP gains will occur in 5-7 days of installation, once the computer recalibrates to take advantage of the engines lighter rotational weight.
- After installation when necessary to remove steel hub for any servicing make absolutely sure that the puller is aligned properly to the hub so it comes off straight, eliminating the risk of bending the ears of the hub.

Torque Specifications

- **Steel Hub to Crankshaft Bolt:** 30 ft-lbs. / 360 in-lbs / 40.68 NM
- **Aluminum Pulley Ring to Steel hub bolts:** 19 ft-lbs. / 228 in-lbs. / 26 NM
- **Belts Size:** Remains the same as stock.