



## **POSITIVE STEERING RESPONSE SYSTEM for** **2002+Mini Cooper S and Standard**

07242008

Thank you for purchasing the ALTA Positive Steering Response System (P.S.R.S.) Installation of these components should only be performed by persons experienced in the installation and proper operation of Mini Cooper suspension systems. The Mini factory service manual is required for proper torque and alignment specifications.

NOTE: A PROFESSIONAL FOUR WHEEL ALIGNMENT WILL BE REQUIRED UPON COMPLETION OF THIS INSTALLATION. IT IS HIGHLY RECOMMENDED THAT THE VEHICLE BE TOWED TO ALIGNMENT SHOP. IF THE ALIGNMENT CANNOT BE DONE AT TIME OF INSTALLATION CUSTOMER MUST USE EXTREME CARE DRIVING VEHICLE TO ALIGNMENT FACILITY! PERRIN PERFORMANCE IS NOT RESPONSIBLE FOR DAMAGE TO THE VEHICLE, ITS COMPONENTS (E.G. TIRES), OR TO ANY OTHER PROPERTY, OR PERSONS.

### **SPECIAL NOTES:**

- **A hydraulic press is needed for removal and installation of P.S.R.S.**
- **There are 2 types of OEM control arms that have a slightly different size hex where sleeve slides onto. These arms need to be modified by removing some of the material on the peaks of the hex shape. DO NOT PRESS THE SLEEVE ON, THIS WILL CAUSE DAMAGE TO THE SLEEVE!!**
- **Like the control arms, there are 2 different types of OEM bodies the PSRS presses into. One is larger than the other. On the looser PSRS bodies, we highly recommend pressing them in with permanent thread locker. The "knurling" on our PSRS body is designed to make up the slight difference and bite with threadlocker.**

### **Parts Included with ALTA PSRS**

- (2) PSRS bodies
- (2) PSRS ball joint pivots
- (2) PSRS SS pivot sleeves
- (12) 1/4-20x5/16 set screws

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### **Removal and Installation:**

- 1) Park car on a smooth level surface. Using suitable commercial vehicle hoist or floor jack, raise vehicle onto jack stands. NEVER WORK UNDER A VEHICLE SOLELY SUPPORTED BY A JACK! DEATH OR INJURY MAY OCCUR.
- 2) Using factory service manual for reference remove both front control arms from vehicle.
- 3) Once removed, locate rear control arm mount bolted to sub frame. Sub frame will have to be lowered to access bolts holding rear control arm mount. Carefully place jack under each side of sub frame and remove bolts holding it to chassis. Remove (8) bolts at the back, (2) large bolts next to strut. Remove (2) bolts securing control arm mounts to chassis.
- 4) Lower sub frame roughly 3-4" but not too far, as this can damage other items still connected to sub frame.
- 5) Remove bolts securing sway bar, and control arm mounts to sub frame. Hold sway bar out of way and remove mounts. Make sure to keep track of orientation of mounts left to right, and front to back.
- 6) Using a hydraulic press, press OEM rubber bushings out of mount.
- 7) The ALTA PSRS can be pressed into the mount in many ways. See below pics demonstrating the different effects. Once you have determined where you want to press the PSRS into the set PSRS with logo facing the front of the car, and press completely into bushing mount. It is important to press on the body of the PSRS not bushings.
- 8) Install bushing sleeve onto control arm. Make sure to align set screws with flats on hexed shaped pivot. Tighten set screws to 80in-lbs.
- 9) Install PSRS to control arm, and install back into chassis. Loosely install ball joint and bushing mount to sub frame. Some alignment of the bushing mount may be needed. A light tap with a rubber mallet will aid in this situation.
- 10) Install bolts through sway bar brackets and bushing mount, and bolt holding bushing mount to chassis. Tighten bolts to factory specs.
- 11) Tighten ball joint to sub frame, and install outer ball joint to strut's hub.
- 12) Push sub frame back up to chassis and tighten all bolts to factory specs.
- 13) Make sure all bolts and nuts are tightened to factory specs.
- 14) Lower vehicle from hoist or jack stands.
- 15) Take for short test drive. If abnormal noises are noted, check torque specs on all nuts and bolts.
- 16) Immediately drive (preferably tow) to professional alignment shop.
- 17) Have vehicle professionally aligned to factory or desired specifications only as recommended by a qualified professional.

NOTE: SOME MINOR INCREASE IN ROAD NOISE MAY BE PRESENT AFTER INSTALLATION. THIS IS A NORMAL BY-PRODUCT OF THE P.S.R.S. HOWEVER, CLUNKING, SNAPPING OR POPPING NOISES ARE NOT CONSIDERED NORMAL AND INSPECTION IS REQUIRED PRIOR TO ADDITIONAL ROAD TESTING OR DELIVERY TO CUSTOMER!



Above picture indicates preferred installations of PSRS. Option #1 gives the most caster, roughly (1.5 degrees). Option #2 gives you added caster, roughly (.75 degrees), and added anti-lift.



Control arm installed into PSRS

**PARTS WE RECOMMEND TO GO WITH YOUR PSRS:**

- ALTA 19MM OR 22MM REAR SWAY BAR
- ALTA FRONT AND REAR ENDLINKS
- ALTA TRAILING ARM LOCK OUT

**For questions & comments please contact**

**[TECH@ALTAMINIPERFORMANCE.COM](mailto:TECH@ALTAMINIPERFORMANCE.COM)**

**503-222-MINI**

**AIM CONTACT ALTAPERRINSALES**