

## **6 Gun Racing 2004 to 2005 Subaru WRX STi hub conversion kit.**

(For off road use only.)

### **Parts Required:**

- 6 Gun Racing hub conversion kit
- 5x114.3 bolt pattern rotors, wheels
- 2005 compatible front uprights (strut to knuckle interface).

### **Tools Required:**

- Impact wrench
- Gear Puller
- Pry bar
- Press with assortment press cylinders.
- Vise
- Assortment of metric sockets including a 32mm for the axle nut.
- Various sockets/wrenches

### **Swapping the rear:**

- Swapping the rear is simple but requires the correct tools. The swap only requires the replacement of the existing wheel bearing (new bearing and seals) and use of the new 2005 hub. It is recommended that this be completed by a shop with a Subaru on-car bearing puller/press. The labor should not exceed that of a standard rear wheel bearing replacement job.
- Alternatively, the rear knuckle can be removed and a more traditional puller/press can be used. However this requires disassembly of the rear e-brake which will be difficult for most to rebuild and adjust.

### **Swapping the front:**

- Remove wheels
- Remove calipers and rotors
- Remove 32mm axle nuts with Impact wrench
- Remove wheel speed sensors.
- Remove the 19mm bolts from the upright.
- Disconnect the tie-rod and lower control arm from the knuckle.
- Pull knuckle and hub off of the axle.
- Remove axles from the car. '04 STis were made with two types of axles; ones that fit over stubs at the front diff (these axles include set screws, a visible indication of the stub/female axles) and ones that plug into the front diff (similar to R180 axles). Axles that plug in can be removed by prying with a breaker bar. Some of the transmission fluid will leak out after these axles are removed. Axles that fit over the studs must have their set screw (near the front diff) removed before they are pulled out.
- Each axle will have a wheel speed gear on the spindle. These require little force to remove with a standard gear puller. The gear will need to be reinstalled onto the 6 Gun Racing wheel speed collar. Once the collar and gear are pressed back onto the spindle,

the wheel speed gear will be properly aligned with the location of the sensor held in the 05 knuckle.

- The gear can be pressed onto the collar using a standard press. The gear should be pressed all the way against the thicker lip on the side of the collar. A small amount of the loctite on the collar is suggested but not required.
- To press the collar onto the axle, place the main shaft in a vise. Use the axle nut and an assortment of press cylinders to press the collar onto the spindle. The thick side of the collar should be near the inside of the axle. After selecting the press cylinders, hand tighten the axle nut. Making sure the spindle is level with the main axle will ease pressing the collars on. The assortment of press cylinders may need to be changed once the collar is pressed half way on. It is recommended that the axles nut be tightened by hand with a large wrench and that a caliper is used to ensure the collar is being pressed on straight.

**Note:** The pressing used for the collar can be a delicate procedure. Most would choose to press by hand (tighten the axle nut in this case) in order to 'feel' how the collar is being pressed on. Use of an impact wrench may speed the process however it may also press the collar on crooked and potentially damage the collar or spindle.

The collars used to adapt the gear to the 05 location are precisioned machined to press onto the spindle. Quality controlled is measured to 0.25 thousandth of an inch at 60 degrees Fahrenheit. Pressing on the collars is therefore a delicate operation. At such close tolerances, the collar temperature will have a significant effect on the interference distance. Heating the collar in an oven to 250-300 degrees allows the collar to slip onto spindle with much less difficulty than at room temperature.

- Bolt the 05 unit hubs to the 05 knuckle using the 8 (4 for each knuckle) bolts provided in the kit.
- Test fit the knuckle/hub onto one of the axles with the collar pressed on. The gear should line up in the middle of the hole for the wheel speed sensor.
- Replace the 04 upright with 05 (for coilover owners this is just a tall collar). Strut/spring owners will need to replace the struts with 05 equivalents.
- Reinstall the axles.
- Install new knuckle/hubs onto the axle and bolt to upright, tie rod, and control arm.
- Reinstall axle nut.
- Install rotors and brake calipers.
- Reinstall the wheel speed sensor.
- Double check all bolts are tightened to factory spec.
- Install wheels.

**Note:** Numerous companies offer both single and two piece rotors with dual bolt patterns (5x100 and 5x114.3). Owners of 5x100 rotors may decide to simply redrill their existing rotors in a 5x114.3 pattern offset from the 5x100 pattern.

### **Enjoy your upgraded hubs!**

6 Gun Racing accepts no responsibility for kits installed incorrectly or any damages or injuries that may result from following these instructions. Use these instructions at your own risk.