

• Supplement: Sport 3-Spoke MF Wheel Retrofit

Model & year: **91-97 8-Series, U.S.**

Expertise level: **Beginner > Intermediate > Advanced**

Date: **February, 2012**

Estimated time to complete: **varies**

Tools Required

- Wiring supplies
 - Other basic hand tools
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Facilities Needed

- CNC Machine Shop
 - Work Bench
-

Parts Required

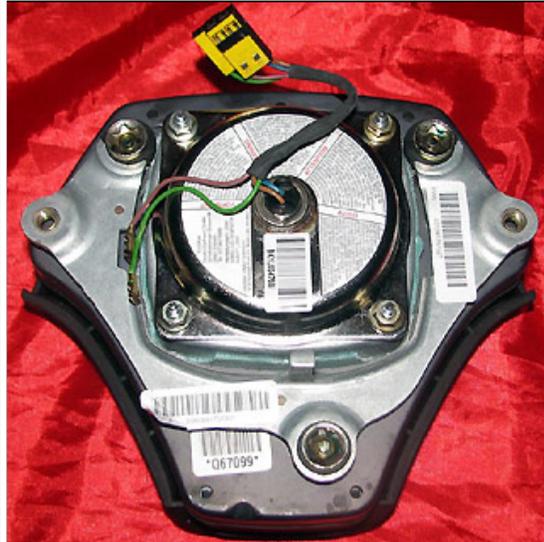


- (1) BMW Sport 3-Spoke Multifunction Wheel (image above), about \$140 used
- (1) Slip Ring, p/n 32 34 1 094 261, \$175 list



**Standard (non-MF) Sport 3-Spoke Airbag
(rear view)**

Z3 and Euro E36; thru 4/99
p/n: 32 34 1 092 762



**MF Sport 3-Spoke Airbag
(rear view)**

E46; thru 6/00
p/n: 32 34 1 095 767

- (1) Standard (preferred) or MF Airbag (see above), about \$175 used
- Miscellaneous Hardware and/or Wiring (see procedure below)

Getting Started

Wheel

BMW's sport 3-spoke airbag wheel, in both standard and multifunction versions, is arguably their most desirable. The MF version offers more functional appeal and is slightly smaller in diameter than the standard version. Unfortunately for 8-series owners, it is not plug-n-play since it was made for the E46 3-series and column-mounted slip rings. It can be adapted however by machining the wheel's base (with a CNC machine) to accept a "standard" wheel-mounted slip ring instead. The slip ring used will be '261. In addition, slip ring mounting locations need to be added.

Slip Ring

The '261 slip ring was the last before BMW transitioned to dual-stage airbags and column-mounted slip rings in 3/99. Its wiring is adaptable to all earlier BMW's. The bus connector plugs directly into the right (cruise) switch block after removing the existing bridge lead (white connector), which was for original column-mounted slip rings.

Airbag

Pair the wheel with either the matching standard or MF airbag. There are pros and cons to each approach:

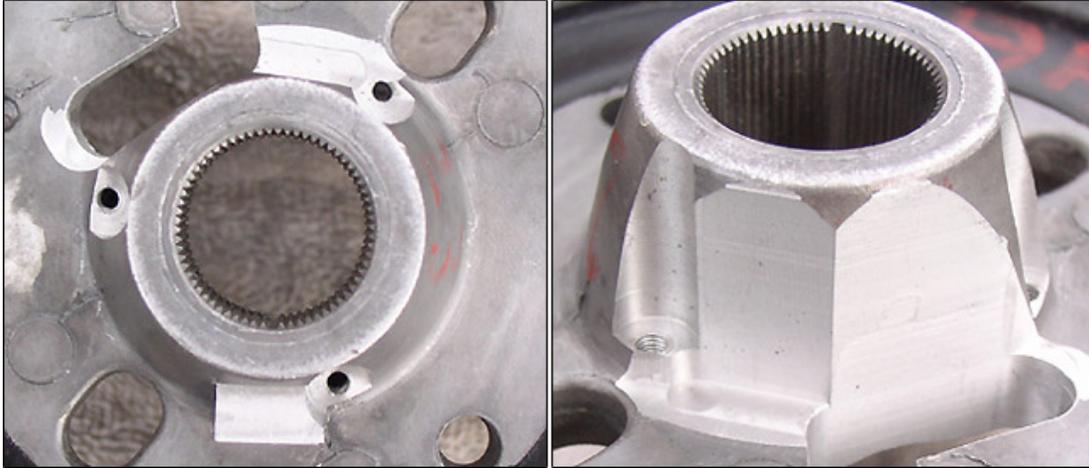
Standard Airbag ('762): (Preferred) This airbag plugs right into the '261 slip ring including horn relay wire since this airbag was originally made for the '111 slip ring, which shares the same airbag and horn connection. But since the new MF wheel is deeper than standard wheels, this airbag must be mounted using longer bolts with spacers to align properly with the wheel surface. See procedure below for details.

MF Airbag ('767): Although BMW transitioned to dual-stage airbags after 3/99, this airbag remained a single-stage unit produced thru 6/00 and is - as far as I know - compatible with earlier cars. It was made specifically for this MF wheel and therefore fits perfectly (without spacers). But, it was also made for column-mounted slip rings (note airbag is "hard wired"). This means airbag-to-ring wiring is NOT compatible with the '261 slip ring. To use this airbag, you'll have to splice into both airbag AND slip ring wiring to install common connectors, including horn. This makes airbag replacement (after an accident, for example) a non plug-n-play proposition.

Procedure

Steering Wheel

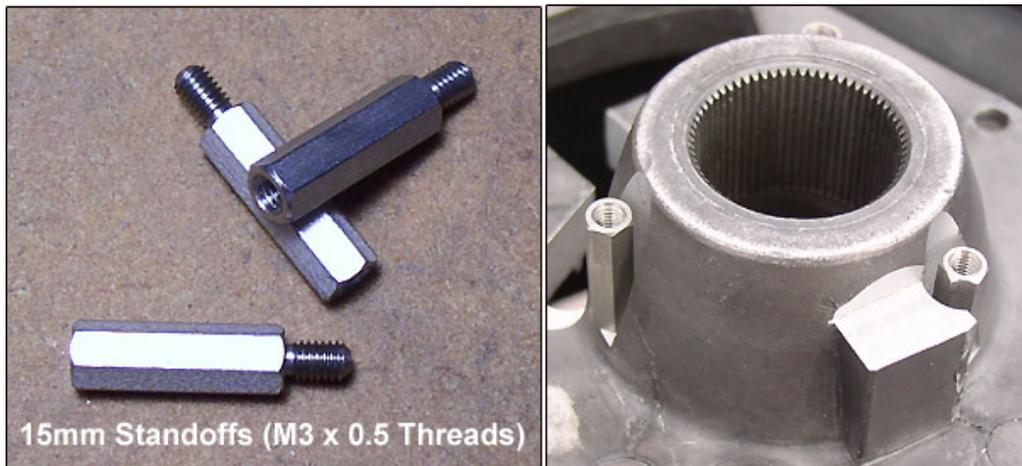
Using a '95-'98 MF wheel as a guide, machine the base of your wheel to match. Examples below:



Note slip ring mounting points. These are machined in relief and should be tapped on center to receive the standoff risers for securing the slip ring. My standoffs needed a metric M3 x 0.5 thread. Standoffs used may vary in height from 15mm (minimum) to 18mm (maximum), and therefore the relief depth may vary accordingly. See next section.

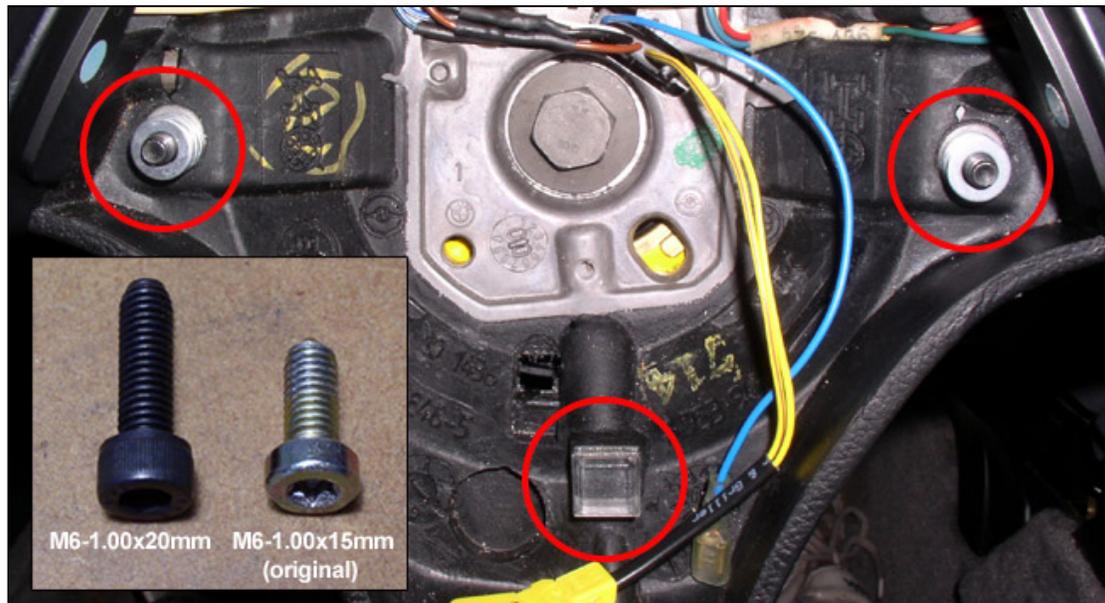
Slip Ring Mounting Points

I chose to use 15mm standoffs, in order to minimize the amount of material removed from the base. Combined with a 3mm offset from hub surface - as on factory wheels - the overall standoff relief is 18mm (15mm + 3mm = 18mm). I secured the standoffs with a dab of blue thread locker. The slip ring then mounts using the factory 3mm screws:



Airbag

Standard Airbag ('762): (Preferred): Although this airbag plugs directly into the '261 slip ring, it is too shallow for the deeper multifunction wheel. Therefore both spacers and longer mounting bolts (20mm) will be needed. See image below:



I used six (6) matching M6 washers on each new bolt to provide the necessary standoff depth of 8mm. For the lower mounting point, I used 2 self-stick 1/2 inch, square rubber bumpers. With airbag in place, verify proper clearance for horn movement. Do not be tempted to use 25mm bolts as they are too long and will interfere with horn movement.

MF Airbag ('767): This airbag fits without the above modifications, but requires re-wiring both airbag and slip ring.

Snip and replace both airbag and slip ring airbag connectors with common electrical connectors. Airbag wires are brown and blue. Then determine which of the remaining wires (violet and green) are for horn relay and wheel ground, respectively. These will have to be connected appropriately (wheel ground may be omitted). Slip ring horn wire is blue.

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