S2000 Steering Hub Install

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Foreward

A steering hub adapter ("hub") is used to "adapt" your factory steering column to an aftermarket steering wheel. It also has the side effect of removing the driver's airbag. Due to this fact, they are hard to get in the US and typically are imported from Japan. Check with your supplier first! If they don't know, chances are it will NOT work. Most "generic" Honda hubs from Japan made for *current* Hondas will work, most "generic" Honda hubs available in the US will NOT. A hub that is truly made for the car will not only fit and cancel the turn signals properly, it will also come with the proper wiring to defeat the SRS computer's airbag warning and prevent a constant "SRS" light.

WARNING!!! Think twice before you disable your airbag!!! The simple fact is that they are there for your safety and to save your life! If you have ever been in an accident you realize the insane amount of force at work in even relatively slow collisions. If you remove your airbag, you are taking your life in your own hands. In no way shape or form will S2000.org or the author be liable for your own stupidity (or so our lawyers tell us).

Selecting a Wheel

Many people upgrade wheels for looks. What many people don't consider is you can change the thickness of the steering wheel, the diameter and the dish (how far from the hub face it extends). The S2000's lack of tilt or extension adjustments make this critical. Essentially, if you don't like the factory wheel or driving position, you can change it. A wheel with minimal dish (around 1.25") coupled with the hub adapter will provide roughly the same "extension" from the column as stock. If you want to move the wheel closer to you, get one with more dish. If you want it further away from you, get one with less.

Keep in mind that hole patterns for steering wheels and hubs differ between manufacturers. Momo, Sparco, and Mugen are all the same, while Nardi is different. The adapter shown/used in this install works with all of those. Grant wheels/hubs (commonly available in the US) are different still, and generally don't work with *anyones* hubs but Grant's.

What You Need

Once you have everything in front of you, this shouldn't take more than an hour. The install is pretty straightforward for the average DIY'er.

- Small flathead screwdriver
- 14mm socket, ratchet and breaker bar
- 10mm wrench - T30 Torx driver or bit
- Torque wrench
- Steering wheel puller (rent/buy from your local auto parts store)
- Loctite "blue" (medium strength)
- Aftermarket steering wheel
- HKB Boss (used here) or similar hub for Hondas w/airbag

Removing the Factory Wheel

The absolute first thing you **must** do is disconnect the battery. Using the 10mm wrench, disconnect the negative cable from the battery. This precaution should be followed to help prevent accidental deployment of the airbag.

Now you can work on the stock wheel. Remove the 2 screw covers from the LH side of the wheel and the RH side of the wheel as shown (use the a flathead or pocketknife):

Once you remove these covers you can access the two T30 torx screws that hold the airbag in place. Use it to remove these:

Now disconnect the airbag cable. To do this, you will need to pull back on a "sleeve" on one side (towards the wires) and pull the other side out. The sleeve has to be slid back to release the connector locking mechanism.

Now you can **gently** remove the airbag:

Be sure to store the airbag face up in a cool, dry place that won't be subject to a lot of vibration- you don't want it going off!!! Treat the airbag like you would any other explosive device, that's exactly what it is.

Before you can get the wheel off, you need to disconnect the cruise and horn connectors:

With the airbag out and everything disconnected you can now remove the factory wheel from the column. At this point you have to be **VERY** sure your wheels are straight. Your steering wheel needs to be perfectly straight. This may require you to put you key in, turn it so the steering wheel unlocks, and straighten out the wheels. If they are not straight you may need to remove and re-center the hub all over again.

Using the 14mm socket and breaker bar, break torque on the hub bolt. Be sure to hold the wheel while you do this! If you move the wheel off of center, carefully center it back before you loosen the hub bolt/nut. Once you have loosened the bolt/nut, loosen it 5 or 6 turns (but don't remove it).

Now use the steering wheel puller you've rented (or bought) to remove the wheel. There are two holes just outside of the hub bolt/nut; use these to mount the puller, with the center bolt of the puller pressing against the hub nut/bolt:

In this instance, for some reason I could not find a wheel puller that would work right. To use the one I had, I needed to find shorter bolts than what came with mine, as well as a different fitting for the center shaft. If you need to do something similar to this, the bolts are 8mm x 1.25.

It may take a little force but you should be able to pop the wheel off. The first time I did it I thought I was going to break something, then it popped. **Again, be careful not to uncenter the steering wheel**. Once you have the wheel loose (and still centered!) carefully remove the bolt/nut and then remove the wheel and set it aside. Don't turn the wheel while taking it off! If you do turn the wheel, having left the hub bolt in (but loose) should allow you to recenter the wheel. This is important to keep from goofing up the steering wheel alignment and having to pull and recenter it later.

You should now be looking at the cable reel:

The cable reel allows all the horn, SRS (airbag), and cruise wires to be spun around with the steering wheel and not get tangled. The importance of not turning the steering wheel lies in if the cable reel moves (and you're not sure where center is), it has to be recentered. It's designed to turn with the wheel and will only turn 2+ times until it locks up. You'll need to turn it until it locks, turn it back (until it's straight up), then turn it again (away from the lock) one more time.

Installing the Hub Adapter

Be sure that the cable reel's posts are horizontal and match with the hub. The hub should have an alignment mark, arrow, or "TOP" designation. Line it and the holes for the cable reel's prongs up, and be sure that the turn signal cancellation tabs, down inside the cable reel, line up vertically as well. The hub has slots in it to match. Test fit the hub, it should install just like the wheel came off. If you are unsure, try fitting the factory wheel back to the column (but be careful, again, not to turn the wheel!). The splines on the shaft are spaced far enough apart that if it's not aligned right, it should look like it. Center it, then install the hub bolt/nut to 39 ft-lbs of torque with the torque wrench. At this point, if you turn the wheel while torqueing it down, it's OK. I used the theft lock "feature" to hold the hub and shaft while I torqued it down.

It's easy from here on out. If your hub adapter came with a cover installed on it, remove it now. Fish the factory wiring through the opening in the hub. Part of the beauty of a "real" airbag-defeating hub is that it comes with a resistor and wiring to make the airbag control system "think" an airbag is installed. The electronics sense the resistance of the airbag firing system and if not installed (or electrically open) will turn on the SRS light. The resistor defeats this purpose. Whether yours comes with connectors on it or not, you'll want to connect the resistor across the two pins in the yellow airbag connector.

Since you won't need the cruise control connector anymore (did I forget to mention you lose your cruise control buttons with the wheel?), tape it and the airbag resistor off and out of the way. Leave the horn wire accessible, you'll need it when you attach your horn button in a minute. You should be done with the wiring in the hub now, go ahead and slip on the hub cover. You will likely need to adjust it so it covers the hub but doesn't rub the column.

Now you're ready to install your wheel. Line it up with the pattern it matches (the hub used here shows several). If you moved the steering wheel while torqueing, be sure to line up the topmost bolt on the wheel with the "TOP" mark on the hub! Use the screws included with the hub (or the wheel, or whatever actually fits the hub) to attach the steering wheel. I recommend Loctite on these as they are small (can't torque them much) and are really the only thing between you and a loose steering wheel. Put a dab of Loctite on the threads and tighten them with the allen key (should be supplied with the hub or wheel).

Now you should be able to do the horn. The hub used here came with a neat-o Honda horn button, but it only fits Momo/Mugen and possibly Nardi wheels (not Sparco). Honda uses a switched ground connection; usually one of the tabs makes a connection to the grounding bar when the button is pressed. If you have a meter you can check, otherwise I invite you to guess- worst case you will sound the horn all the time when you insert the switch into the wheel. You can easily pop it out and switch the wire. Be sure when you insert the switch that the grounding tab on the side contacts the hub surface when you install it, this is how it makes contact with the vehicle ground.

And now you're done!! Reconnect the battery and make sure the horn works. Enjoy your new wheel!!!

Note: As a reference, about half of the stuff that came with my hub adapter I didn't need. Basically everything to the right of the hub in the first picture on this page.