Step-by-Step Guide for Standard & NA2 NSX-R ABS Conversion for 1991-1999 NSXs

Upgrade Kit consists of the following:

☐ 57110-SL0-Z03 (N91 - NSX-R)	☐ 57110-SL0-Z03 (N91 - NSX-R)
☐ 57116-SL0-000	☐ 57116-SL0-000
☐ 46210-SL0-003	☐ 46210-SL0-003
☐ 46215-SL0-000	☐ 46215-SL0-000
☐ 57101-S2A-003 x 3	☐ 57101-S2A-003 x 3
☐ 57102-S2A-003 x 2	☐ 57102-S2A-003 x 2
☐ 46372-SL0-D00	☐ 46372-SL0-N00
☐ 46373-SL0-D00	☐ 46373-SL0-N00
☐ 46374-SL0-D00	☐ 46374-SL0-N00
☐ 46375-SL0-D00	☐ 46375-SL0-N00
☐ 46376-SL0-D00	☐ 46376-SL0-N00
☐ 46377-SL0-D01	☐ 46377-SL0-N00
☐ 46378-SL0-D00	☐ 46378-SL0-N01
☐ 46379-SL0-D01	☐ 46379-SL0-N01
☐ 46395-SM4-951	☐ 46395-SM4-951
☐ 46380-SH3-000	☐ 46380-SH3-000
☐ 46396-SL0-003	☐ 46396-SL0-003
☐ 46392-SE0-000	☐ 46392-SE0-000
☐ 46392-SL0-003	☐ 46392-SL0-003
☐ 94071-06080 x 2	☐ 94071-06080 x 2
☐ 95701-06016-05 x3	☐ 95701-06016-05 x3
☐ 95701-08040-05	☐ 95701-08040-05
39797-SE0-003	☐ 39797-SE0-003
☐ Electrical ABS Harness	☐ Electrical ABS Harness

Preparation:

- Adjust the passenger seat backward for ample working space behind the glove box.
- Remove spare tire carrier, battery, sub-relay box near the vent blower, and ventilation drain duct.

System Disassembly:

- Disconnect harness connectors on the ventilation fan, noting driver's side pin placement.
- Remove glove box, dashboard side door vent, door vent duct, and subwoofer foot plate.
- Detach the two connectors from the ABS computer situated atop the instrument rack. The optional removal of the computer involves a specific process:
    - It necessitates the removal of three 10mm bolts:
    - One bolt is positioned on the right side, adjacent to the computer's connector side.
    - The second bolt, on the left, is accessible through the firewall opening.
    - The third bolt is situated close to the firewall on the right side, behind a wire harness, requiring a ¼" flex drive for access.
    - Additionally, removing the harness push pin strap from the left side mounting tab of the rack is necessary. Subsequently, bending the tab aside allows for sliding out the computer unit. After removal, reconfigure the wire harness mounting tab to its original position and reinstall the harness's push pin strap.

Brake System Disassembly:

- Extract brake fluid from master cylinder and ABS modulator reservoirs.
- Adjust cruise control cable for better access when removing brake lines from the master cylinder.
- Remove old brake lines from the master cylinder and clean the front brake line fender well brackets.
- Disconnect lines from the distribution block going to the modulator, modulator solenoid connectors, ALB pump motor connector, and pressure switch connector.
- Detach the three 14mm modulator mounting bolts and proceed to remove the modulator.
    - Exercise caution as it weighs approximately 22 pounds.
- Prepare for the replacement of brake lines using the provided color key and photos.

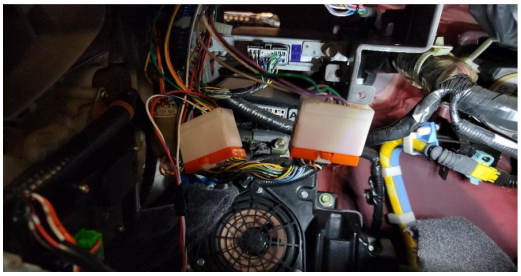
Installation Procedure:

1. Install front brake lines, ensuring correct positioning and torque of flare nut fittings.

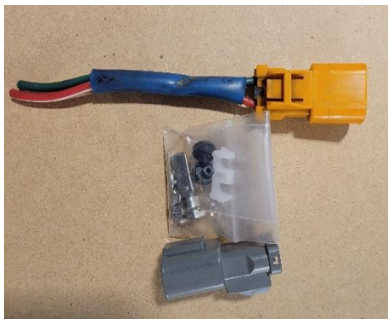
   a. To install the front brake lines, straighten the bends where they pass through the fender wells. Use the provided new fender well grommets before reconnecting the brake lines to the caliper lines. Hold off on readjusting or connecting the lines at this point since their positioning will be adjusted during the modulator installation.
   b. Initially, pre-install all modulator lines on the bench except for the two MC lines (46734 & 46735). These two lines should be the final ones installed. Some lines might require slight bending to fit and align with the modulator. Be cautious not to over-bend and risk crimping a line. The flare nut fittings should be torqued to 14 ft lbs.
   c. To achieve proper torque on the fittings, a flare nut crows foot socket and torque wrench are necessary. However, leave several fittings loose until after modulator installation, hindering socket access. To circumvent this, consider a workaround using a luggage scale. Ensure the scale's calibration aligns with the torque wrench and compensate your torque based on the wrench size used. For instance, a 6” wrench required a 28lbs pull on the scale in this scenario.
      i. Prior to securing the modulator bracket mounting bolts, ensure to guide the wire harness modulator connector upwards from below, positioning it between the modulator mounting bracket and the inner fender. Take care to lift the orange connector locking clip, connect the connector to the modulator, and then firmly press the locking clip back down into place.

2. Reinstall the modulator, mountings, and distribute brake lines as per provided instructions.
   a. Should the MC completely drain, it's advisable to perform a bench bleed before reinstalling it. Secure the MC in a vice and install the two old MC lines, bending them to loop back into the reservoir. Fill the reservoir and, using the end of a Phillips screwdriver, push the pushrod to circulate the fluid back into the reservoir until all air bubbles are eliminated. Afterward, remove the lines and seal the ports using two of the black plugs taken from the modulator until it's time to reconnect the lines.

3. Once all the lines are in position and the passenger-side brake line is securely clipped to the firewall, you can readjust the front brake lines from the fender well to align them with the caliper brake lines. Avoid installing the retaining clips until you've properly aligned and partially threaded the brake line fittings.
    a. Install the new plastic brake line spacer clip along with the original clip. Three spacer clips are to be installed on the lines passing under the modulator, while four go on the MC side of the modulator.
    b. Create a ¾" slit at the upper section of the large grommet, allowing the main wire harness passage to the instrument rack behind the glove boxes. This slit should be sufficient, considering the disconnection of large connectors, leaving only small ones to pass through.
    c. Route the new harness alongside the passenger-side brake line, securing it with zip ties. Any excess harness can be tucked through the grommet, coiling behind the glove box.
    d. *Instructions depict three different configurations for the new harness connectors based on the year. The NA-100 configuration has been successfully applied on NSXs between 1991 & 1992. The solenoid PN 39797-SE0-003 provided with the kit isn't necessary.*
4. Route the harness mini connectors atop the instrument rack and reconnect the two large white ABS harness connectors to the mini connectors. Connect the white connectors to the connectors removed from the ABS computer. Secure the harness with zip ties to prevent any chance of connector movement.



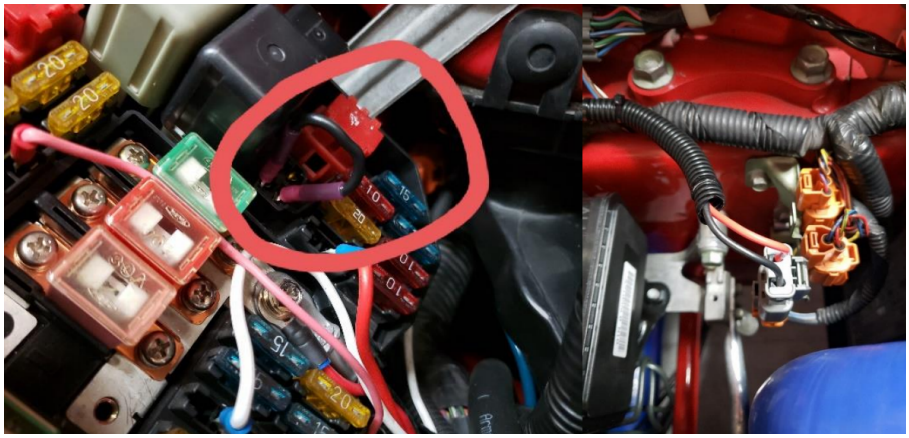
5. Mount the subwoofer foot plate, ventilation duct, dashboard door vents, and glove box.
    a. *Optional: Rather than following the instructions to direct the new ABS harness's power lead to the ABS 40-amp fuse and the ground wires to a local modulator ground, an alternative approach is available. Both can be connected to the OEM ABS pump connector.*
        i. *To accomplish this task, there are two recommended methods:*
            1. *Purchase a new Yazaki 58 Sealed Series Connector. It's advisable to acquire additional Yazaki connector terminals, especially if you're less experienced with crimping.*
            2. *Alternatively, if you intend to discard the pump, simply cut the connector and wire leads on the pump for future use.*
                a. *Choosing a new connector will provide terminals, rubber seals, and compatibility with the OEM female connector. Whether utilizing a new or previously used OEM connector, ensure both pairs of ground and power leads are cut to identical lengths. As both power and ground leads are black, marking the power lead is crucial. Combine each set of wires into two single 14g wire leads, preferably in different colors (black for ground and red for power). Ensure these leads are long enough to fit onto*



a no longer used solenoid mounting bracket. Use heat shrink crimp connectors or heat shrink connectors with a low melt temperature lead in the center.

b. *Lastly, jumper the ABS Relay terminals in the Main Relay Box. Remove the relay by lifting the side locking tabs or using relay removal pliers if available. Craft a jumper using a 1.5" to 2" section of 14g wire with insulated heat shrink spade terminals on each end. Install the jumper into the two terminals closest to the 40-amp fuse. This jumper supplies power to the fuse and the original OEM ABS pump connector. Connect the pump power connectors together and slide it onto an empty slot on the modulator side of the solenoid connector mounting bracket.*

6. After completing the installation, connect the four now obsolete solenoid connectors to each other and slide them back onto the solenoid mounting bracket.

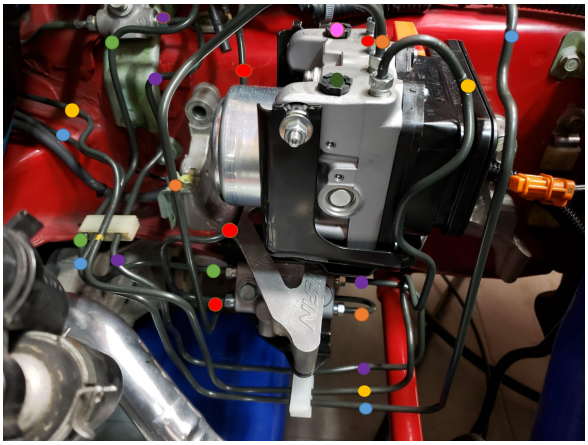


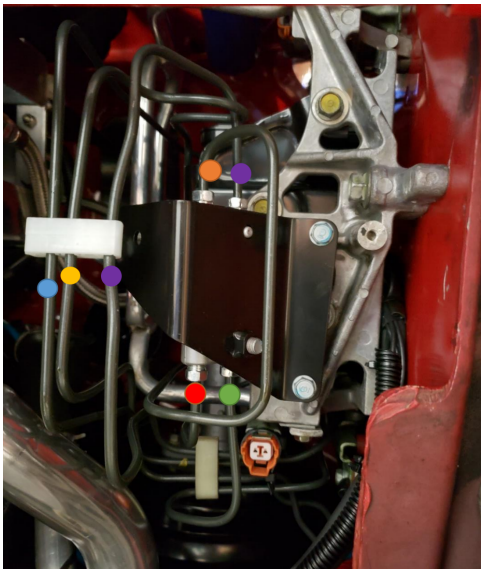
7. Reinstall the ventilation fan housing, reconnect the fan's electrical connectors, replace the drain duct, and reposition the sub-relay box.

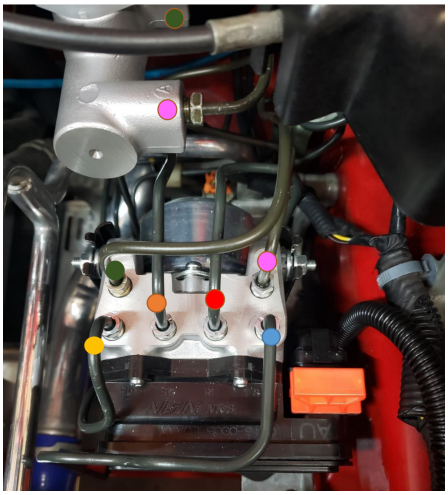
System Bleeding:

1. To bleed the system, a pressure bleeder is the optimal method, but if unavailable, a vacuum bleeder or the traditional brake-pumping technique can suffice. For left-hand drive (LHD) cars, begin bleeding at the driver's side front and continue clockwise around the vehicle.

46372: From the modulator to the new distribution block
46373: From the modulator to the new distribution block
46374: From the modulator to the master cylinder
46375: From the modulator to the master cylinder
46376: Right front brake line
46377: Left front brake line
46378: From the modulator to the distribution mounted on the fender well
46379: From the modulator to the distribution mounted on the fender well







NSX-R Master Cylinder and Brake Booster (Optional):

The 2002 NSX-R ABS system can function with the standard master cylinder. However, for a complete 100% conversion involving the installation of the NSX-R Master Cylinder and Brake Booster, you'll need to create two lines from the MC to the Modulator as they are exclusively available in right-hand drive (RHD) versions. The primary distinction between the OEM standard lines included in the kits and the NSX-R lines is the NSX-R MC's use of two 10mm SAE/JASO bubbler flare fittings, while the standard MC employs one 10mm and one 12mm ISO (JASO/SAE) 45-degree double flare fittings. The remainder of the system utilizes 45-degree double flares.

To create these lines, you'll require specific items and tools easily found online:

- [ ] Brake Line Tubing Bender
- [ ] Tubing Cutter
- [ ] Reamer
- [ ] 45-degree Double Flaring Tool
- [ ] Bubble Flaring Tool
- [ ] PVF Coated 3/16 Steel Brake Line (similar to JASO-rated OEM brake lines; avoid using other materials)
- [ ] 2 - 10mm Bubble Fittings and 2 – 10mm Double Flare Fittings (double flare fittings from unused brake lines can be utilized)

Different bending and flaring tools are available; practicing with the brake line (provided in a 25’ roll) might help perfect your skills. For gentle bends, manual shaping works well, while tighter bends benefit from tools like bending pliers to avoid crimping.

Custom Line Fabrication (NSX-R):

If you're new to creating double and bubble flares, consider seeking instructional resources specific to Honda's methods or tutorials directly related to the NSX ABS brake system. Honda's choice to use the more intricate SAE/JASO bubble flares on the NSX-R master cylinder, while employing standard ISO 45-degree double flares throughout the system, presents a unique approach. The use of bubble flares may be attributed to their potential advantage in minimizing leaks compared to ISO fittings. Ensure the flaring tool chosen specifically caters to creating 45-degree flares, aligning with Honda's or MITA's requirements. Utilize the provided master cylinder-modulator brake lines from MITA's ABS Upgrade Kit for 1991-1999 NSXs as a guide when shaping the new lines. Additionally, consider repurposing two 10mm double flare fittings from the discarded lines to fit the new master cylinder lines.