

POWER WHEELS TECH TOPIC #1

Separate Accelerator and Brake Pedals

Idea and Advantage:

Power Wheels' Power Lock[®] braking system works by shorting the motors to a resistor when the accelerator pedal is released. This effectively brakes the motors and is great for a beginner driver to keep from crashing into driveway obstacles and running over his parents. It doesn't teach a child how to use a brake pedal, however. If they learn how to use a brake pedal at three, maybe they won't drive through your garage wall when they turn 16. By controlling the resistor shorting with another pedal, a child not only learns how to go, but also learns how to stop. Added benefits of a separate brake pedal is that the Power Lock[®] is disengaged, so the vehicle's drive wheels roll freely. No need to carry that 60lb Jeep anymore, it will push easily into the garage. In faster Power Wheels vehicles, separate braking will allow powerslides, 90° and 180° turns on command. It will also tighten the turning radius considerably.

To summarize:

- Teaches children how to use a brake pedal
- Vehicle Rolls freely when pushed, easier for parent to put away
- Controlled powerslides, 90° and 180° Turns are possible. Child learns to "turn into the skid"
- Vehicle can coast through corners, reducing turning radius without killing speed
- Brake can be wired to override accelerator OR brake only when brake pedal is pushed/accelerator is off

Warning: This Mod is not for everyone. Some kids just aren't good drivers. Parental supervision IS REQUIRED at all times during the operation of Power Wheels vehicles. For kids below the age of 6, Seatbelts with a shoulder strap are highly recommended as is the use of a helmet.

Materials/Tools Required:

1. Extra pedal assembly (non working OK if pedal is not broken) (pre 1998 best as they are designed for a DP rocker)
(Note new pedal assemblies are available from Power Wheels for less than \$15, including a SPDT switch)
2. Known good SPDT or DPDT switch (a cleaned, used one is fine)
3. Exacto knife
4. Wire cutters/stripper
5. Insulated female blade connectors – 2 required

Applications:

This mod is meant primarily for **pre 1998 12V power wheels vehicles with a large pedal backing plate**. These include such vehicles as the **metal frame Jeeps, Bigfoot**, etc. This mod **will also** work on the **unibody 2 seat Wranglers, F150, Silverado**, etc. up to the present, though the illustrations show the earlier switch (Later vehicles use a plunger switch). Quads, Corvette, Lamborghini, the Extreme Machine and Eliminator use a single pedal plate (as do most 6V vehicles) and would not be eligible for this modification (but this doesn't mean an extra pedal can't be adapted).

Note that the Original Power Wheels Jeeps **HAD** two pedal assemblies in the 1980's. They were factory wired so that BOTH pedals were required to be pushed before the Jeep would go. Two pedal assemblies are very rare and highly desirable. Two minutes of pedal removal, wire swapping and pedal reinstallation will convert "two pedal go" to "separate gas and brake". Skip straight to the wiring steps of the procedure if your vehicle is so equipped.

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Procedure:

- 1.) Start by removing the existing accelerator pedal with a screwdriver and squeezing the ends of the switch to remove (See Figure #1). Drill a small pilot hole at the same level and distance from edge as the existing screw hole. Note that if your pedal plate is pre 1994 there may be an indication of a hole location on the backside.



Figure # 1 Pedal Base Plate with Pedal Removed

- 2.) Trace the pedal pattern onto a piece of paper and carefully trim with an exacto knife. Line up the hole in the pattern to the new hole and transfer the pattern to the plate. Ensure the pattern is parallel to the existing pattern. (See Figure #2)

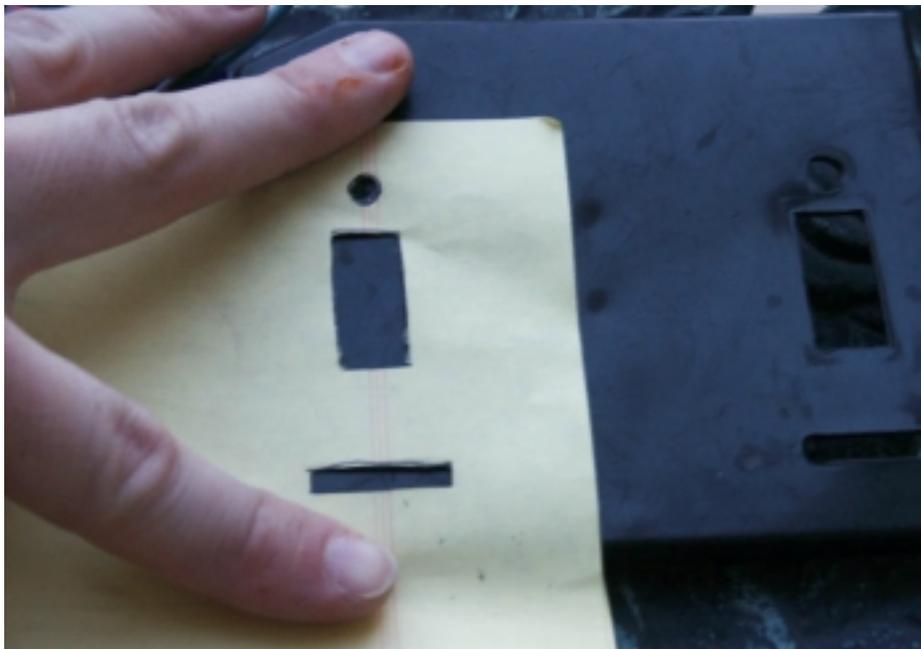


Figure # 2: Transfer Pattern to Plate

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3.) Trim the plate so that both a new pedal will move freely in the slot, but also that your switch of choice will fit. This plate is trimmed for a Power Wheels DPDT (double pole, double throw – 6 prong) switch. (This gives more brake wiring options than a SPDT accelerator switch) (See Figure #3):



Figure #3: Cut-out Pattern to Fit Pedal and Switch

4.) Install switch and brake pedal into plate. Some trimming of the screw hole may be necessary. (See Figure #4):



Figure #4: Installation of Switch and Pedal

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- 5) Install the screw and test the brake pedal to ensure pedal moves with binding at the hinge slot or at the screw (see Figure #5)



Figure #5: Finished Brake Pedal

- 6) Reinstall the Accelerator pedal and the switch is finished and ready to install (See Figure #6):

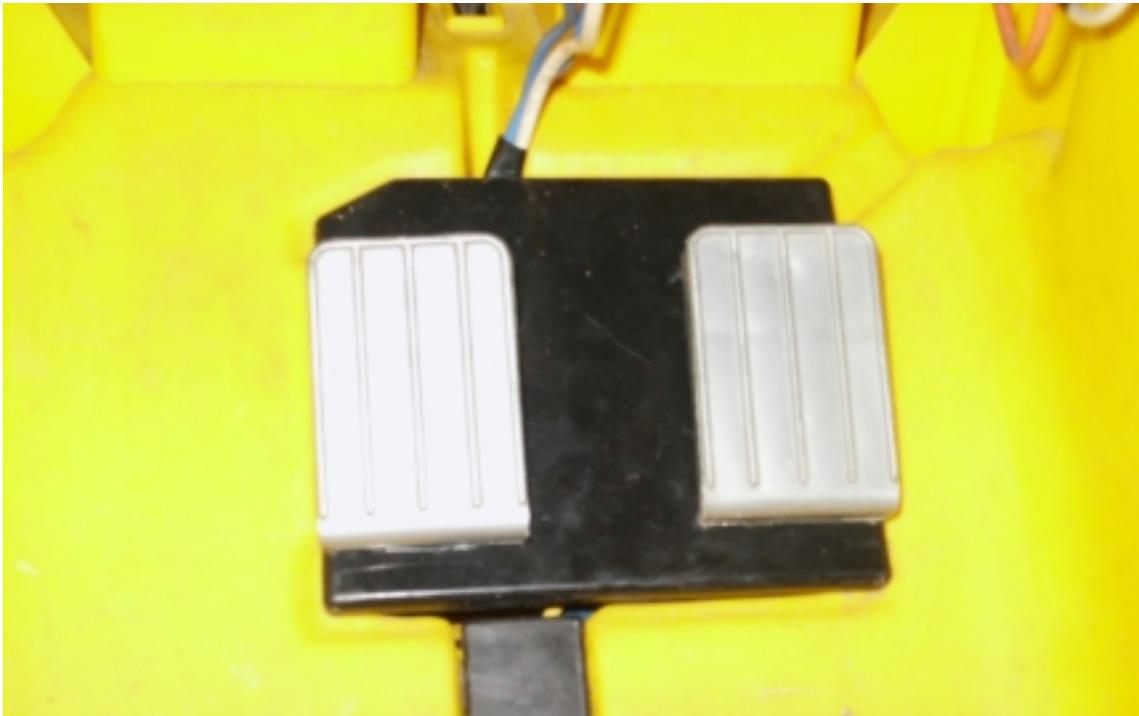


Figure #6: Completed Pedal Assembly Installed

7) Wiring Modifications. If a DPDT (6 tang) switch was installed, there are a few ways that the switch can be installed (Figure #7 or #8 are just two examples) If a SPDT (3 Tang) switch was installed, it can be wired per Figure #7 only (Unless an additional ground wire is run (black wire in Figure #8)). NOTE that when wired per Figure #7, the brake WILL NOT OVERRIDE the accelerator.

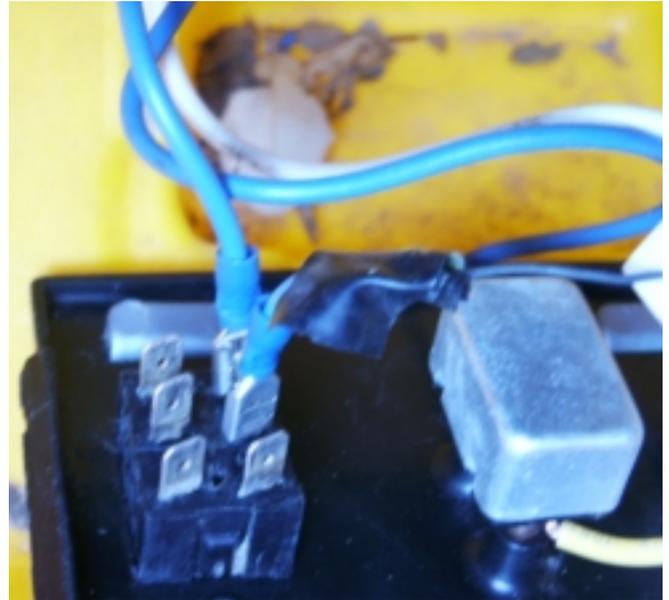
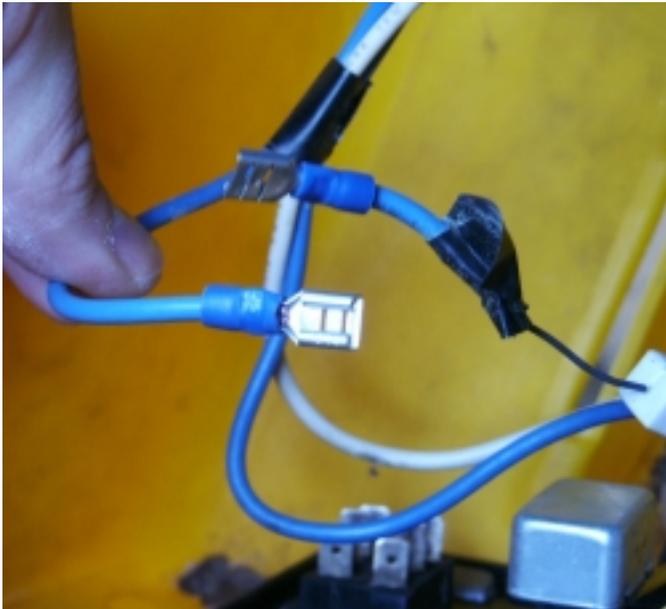


Figure #7: Cut the Resistor wire (in the braided, thick wire, not in the thin wire near the resistor), strip and put a female terminal on both cut ends, install as shown on the switch (Brake pedal pressed, circuit completes)

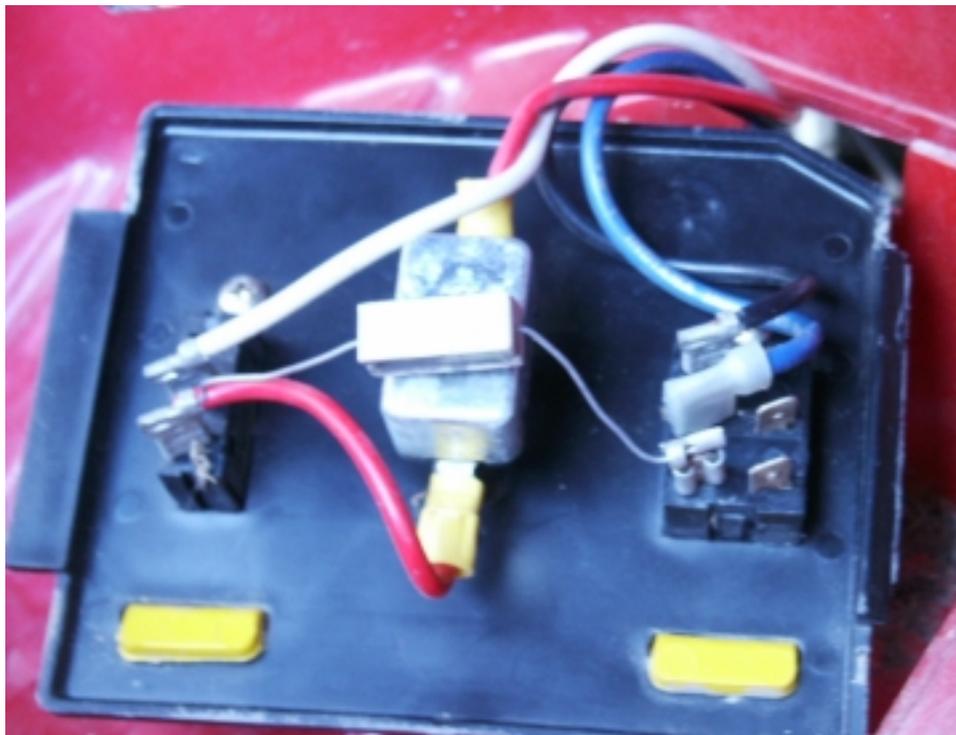


Figure #8: Advanced method, factory two pedal set-ups, Resistor wire run to one side of the switch, but Black wire is run back to a battery negative. When pedal is pressed, motors are no longer grounded, so power is cut and resistor is applied (note this is opposite the factory wiring on factory two pedal vehicles). Note also that an alternative to this is to splice the White power wire into the unused side of the brake switch to provide an additional measure of redundancy if welded switch contacts are a concern. Working Brake lights could also be wired through this switch very easily.

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