

# Honda AWD Conversion Guide HOW TO Convert Your Civic or Integra to AWD

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Modified on: Fri, 7 May, 2021 at 12:32 PM

Hondas are notoriously easy to make big power numbers but also notoriously difficult to get the power to the ground. With the new popularity of AWD swaps, the problem of getting the power to the ground has almost been completely eliminated. However, because it's new there's still lots of opinions and different information on how to make the swap effective and work. Hopefully this guide de-mystifies AWD for those wondering and gives you a game plan moving forward. We'll divide it into multiple sections so it's easy to understand.

## ***BUDGET***

As with anything, there are a multitude of ways to attack a project. I've compiled a rough idea of what to expect for different power levels as far as budget goes.

### *LOW Budget ( CRV Parts) 0-400HP*

\$5000

### *MID BUDGET (CRV / Wagon Parts) K Series 700HP // B Series 400HP*

\$9000

### *HIGH BUDGET ( CRV / Wagon Parts / Dogbox) 1000+HP*

\$15,000

These are rough estimates for setting a good budget for parts. CRV or Element parts can be used for the entire setup, however, for power applications, it's optimal to use the Civic Wagon or future aftermarket offerings.

## ***RT4WD EXPLAINED***

The most commonly asked question is "can I just take a CRV and transplant it in". The answer is yes. However, for most builds, it's not the optimal way. There are several ways to approach it using parts that aren't wagon which will be explained. But before we get into those options, we need to understand the difference between the CRV AWD system and the Civic Wagon AWD System.

### *Civic Wagon*



The civic wagon uses a driveshaft mounted viscous coupler to control the slip between the front and the rear differential. The viscous coupler contains plates and silicon fluid. As the viscous coupler slips from a difference of speed between the the front and rear, the viscosity of the silicon fluid rises locking the plates into place as much as the silicon's viscosity permits. The civic wagon AWD system is designed to be used in a full time AWD configuration. The civic wagon rear parts have been proven up to 1300HP.

### CR-V / Element

The CRV/Element 4WD system is a part-time AWD system. The system uses a 'dual pump' rear differential. The Dual Pump system detects slip and only allows AWD when needed rather than full time. Similar to the viscous coupler, as the fluid heads up, the diff is given more power. However, Honda Dual Pump fluid is prone to overheating due to extended periods of use and releases the pressure if the temperatures rises too much. When applying this to a high power street car, you might be able to get one pull in AWD, but the Dual Pump system will revert the car to FWD for safety. The CRV axles are also significantly smaller than the wagon counterparts. The CRV 4WD system is NOT designed to be used full time nor high power situations.

There are several workarounds for the CRV/Element setup which will be discussed later.

## **PARTS LIST**

### **K-Series**

K-Series CRV or Element AWD Transmission

RSX Cables/Shifter

Driveshaft, Diff (Matching CRV or Wagon Set, **cannot interchange**)

2 Long Wagon Axles or 2 short CRV Axles (Must match driveshaft diff)

**Complete AWD Conversion Kit** (<http://shop.humbleperformance.com/complete-honda-awd-conversion-kit/>).

Hasport AWD Rear Mount

*\*If using Wagon rear components, must get a driveshaft adapter\**

### **B-Series**

B-Series CRV Transmission

B-Series CRV Shifter/Cables OR KTuned Billet B-Series AWD Shifter/Cables

Driveshaft, Diff, Axles (Matching CRV or Wagon Set, **cannot interchange**)

**Complete AWD Conversion Kit** (<http://shop.humbleperformance.com/complete-honda-awd-conversion-kit/>).

Hasport AWD B-Series Mounts

*\*If using Wagon rear components, must get a driveshaft adapter\**

## **Viscous Coupler Alternatives for CRV Parts**

Because civic wagon parts have become notoriously expensive over the past few years, many have been seeking cheaper alternatives. People have been experimenting and have come up with several ideas. The most prominent one is to LOCK the CRV dual pump system by welding pins through the clutches in the differential and running a Freelander viscous coupler installed in the CRV driveshaft. This way is the 'poor-mans' wagon rear setup.

## **B-Series Weaknesses**

### *Gears*

The B-Series CR-V Transmission uses a unique 'SBXM' gearset. One of the major issues we've seen with B-Series cars is the lack of ability to shift at high RPM using the stock gearset in the CR-V transmissino. Until recently, there were no gear solutions. Now SpeedFactory has released their FWD2AWD kit which allows you to install B-Series Gearsets into the transmission make it easier than ever for SFWD guys to swap Dogboxes into CRV transmissions.

### *Transfer Case*

The B-Series transfer case is MUCH weaker than its K-Series counterpart. When asked how much power it will hold, there have been many varying cases. Some breaking as soon as 200HP. But the generally accepted limit of the stock T-Case is 300-400HP. **Drag Cartel has made their solution** (<http://shop.humbleperformance.com/b-series-billet-awd-transfer-case/>) to the issue which alleviates the notorious broken B-Series T-Case issue by replacing the weak cast aluminum piece with a billet piece. If you don't upgrade this piece but plan on making power, be prepared to replace it over and over again.

## **K-Series Advantages**

If you're starting a build from scratch the most effective starting point would be a K-Series platform. The K-Series transmission internals are the same as the RSX or EP3, and interchangeability requires no aftermarket support. The only true difference between the RSX/EP3 trans is the inclusion of a transfer case, an additional ring gear on the differential for the transfer case, and a different transmission mount. The CRV trans is just as strong as any other K-Series transmission. **We've taken one to 600HP no issues and have run multiple 10 second passes.** (<https://www.youtube.com/watch?v=p8SsmGjjRkc>).

K Kenny is the author of this solution article.