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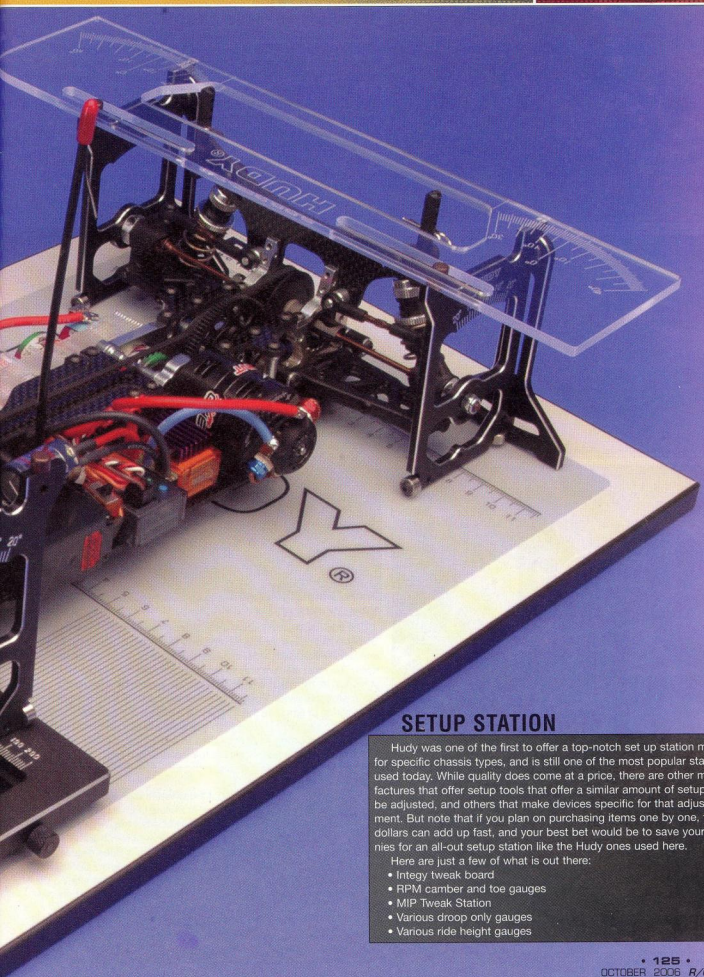
Use a Setup Station

Set up your ride!

By Collin Cocores

The true die-hard racer either owns a full-on setup station, or has it written down on their "list of things to buy." For those not on the same page as me, a setup station is just that, a station that allows you to effectively set up your vehicle with the most precision possible. This is a miniature version of what the likes of F1, rally, and touring cars use to set up their rides. While setup stations are not for everyone, and are mainly for the serious competitive racer, they can still be somewhat confusing to understand at times. The stations nowadays come with what seems like a gazillion tools and gadgets, and can sometimes force you to overlook something, forget to remove a particular piece before making an adjustment, or even to simply confuse you on how a certain device works. In this how-to, I will give you a brief rundown of some of the most crucial adjustments, a quick explanation of what they are, a simplification of how to complete them, and also some info that you may or may not know to perform when making certain adjustments.



SETUP STATION

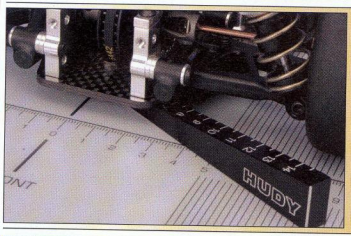
Hudy was one of the first to offer a top-notch set up station made for specific chassis types, and is still one of the most popular stations used today. While quality does come at a price, there are other manufactures that offer setup tools that offer a similar amount of setups to be adjusted, and others that make devices specific for that adjustment. But note that if you plan on purchasing items one by one, the dollars can add up fast, and your best bet would be to save your pennies for an all-out setup station like the Hudy ones used here.

Here are just a few of what is out there:

- Integy tweak board
- RPM camber and toe gauges
- MIP Tweak Station
- Various droop only gauges
- Various ride height gauges

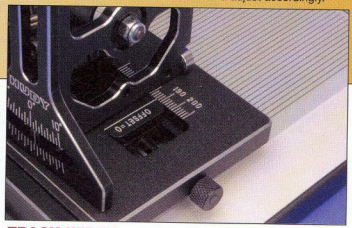
DOWNSTOPS (ALSO DROOP)

Droop determines the amount of travel the arm has, or in simpler terms, how low the arm hangs down from the chassis. To adjust droop, first determine the kickup and anti-squat settings you want to use, remove the wheels from the car, disconnect the shocks from the arms, and place the car on the support blocks. Place the droop gauge under the lowest part of the front arm and the rear arm, and either tighten or loosen the droop screw until you are at your desired setting. It is crucial to set the right and left arms identical to one another. Once you have the downstops set, install the shocks and measure again. The measurements should still be the same. If for some reason an arm hangs higher with the shock installed, remove the shock and loosen the rod end on the shock shaft a little bit until desired setting is met. Again, adjust rod ends evenly on each side.



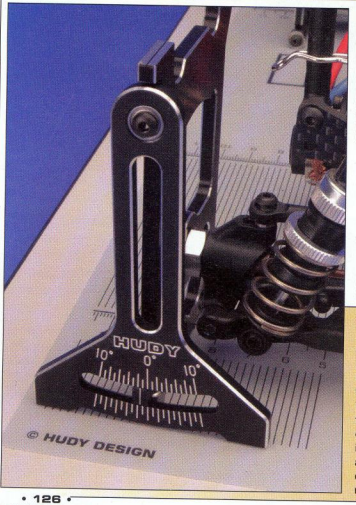
RIDE HEIGHT

Ride height is a pretty basic adjustment that adjusts the distance between the bottom of the chassis and the ground. You want to have your car as low as possible to get the most traction, but you do not want your chassis to bottom out. Prepared surfaces allow a lower ride height, while bumpy tracks force you to raise it. When adjusting ride height, make sure to increase the preload evenly for the front, and evenly for the rear. After an adjustment, make sure to compress the suspension a few times and allow it to settle, then re-measure and adjust accordingly.



TRACK-WIDTH

The track-width is a feature that not too many electric tourers hold. Track-width is a feature more commonly found on nitro touring cars, and like Pontiac said, wider is better. But remember to stay within the rules. The most efficient way to set track is to use the included tweak station. With the setup stands installed, set the track-width platform to the appropriate width. Place one end of the car on the track platform and shorten or lengthen the links until the stands are able to sit in the pins on the platform. The key is to make certain that each side of the car is adjusted evenly to one another. To ensure the links are symmetrical, you can use a set of calipers to measure each link.

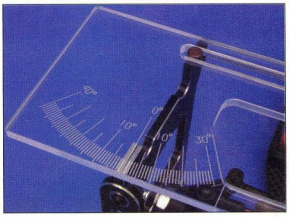


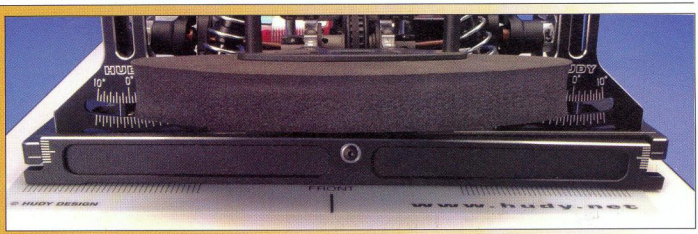
CAMBER

Camber determines the angle of the wheel to the ground; negative cambers means the top of the wheel is leaning in towards the car, and positive camber means the top of the wheel is leaning away from from the car. About 99 percent of the time you will want to run some negative camber, usually between minus one and minus three degrees. With the setup stands on the car and placed on the board, compress the suspension a few times and allow it to settle. Without touching the car, take note of the readings from the camber gauges. Adjust accordingly in very small increments, and reset the suspension after each adjustment to check your settings. Repeat for all four wheels until desired degree is reached. Note that camber affects the ride height, so recheck the ride height once the camber is set.

TOE

Toe is how much angle the front of the wheels are set towards or away from each other when viewed from above the car. Toe-in is when the front of the wheels are closed to each other, and toe-out is when the front of the wheels are opened from each other. Toe is greatly used to determine the amount of rear traction and responsiveness of the steering. In the front, you are going to use either zero degree or some toe-out the majority of the time. In the rear of the car, you are always going to want toe-out. To adjust toe, place all setup stands on the car, and use the clear toe gauge. Place the toe gauge atop either the front or rear stands, and allow the pins to sit in the slots on the toe gauge. To measure the left toe, slide the gauge all the way to the right, and *vice versa* for the right. Note where the marks on the stands line up with those on the toe gauge, and adjust so that both the right and left sides are even. Uneven toe from right to left can cause your car not to track straight, or tweak the steering throw.



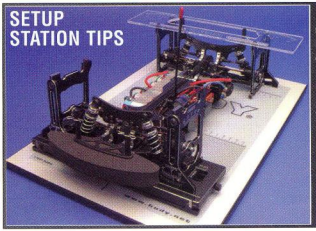


TWEAK

Adjusting tweak does just what is says, it determines if you car is "tweaked." A tweaked car means that the car is unbalanced, and has more weight being placed on a corner of the suspension, which can and usually does cause the vehicle to pull in one direction under acceleration or braking. Set up the Hudy station by removing any swaybars, if installed, then install all of the setup stands on the car, and place the tweak station on the set up board. To check for rear tweak, place the front of the car on the tweak station, for front tweak place the rear suspension on the station, compress the suspension and allow it to settle. If the tweak gauge does not line up with the center marks, your ride is tweaked. There are a few ways to eliminate tweak. One way is to loosen the screws on the upper deck, hold the chassis down on a flat surface and retighten the screws. you may also want to double check your downstop settings from left to right, You can try to reapply oil in your shocks, check for binding parts such as arms, or your last resort is to counter the tweak by adjusting spring preload. To adjust the preload, you will want to adjust the preload on the end of the car that is not on the gauge. If the marks on the right side of the gauge are above the center point, apply more (tighter or thicker spacers) tension to the left spring and less (loosen or use thinner spacers) tension to the right spring. If the mark on the right side of the gauge is below the center mark, loosen the left shock and tighten the right shock. It is key to adjust in equal amounts to keep the appropriate ride height. Like everything else, make small adjustments at a time, and resettle the suspension after each adjustment.

CONCLUSION

Now that you have been refreshed as well as enlightened on using setup stations, you can now rest assured that when you first set your vehicle down on the track it is set up just perfect, no matter how it comes off at the end of the race. If you are still somewhat confused, don't worry. Each time you use the station the better you get, and what you have read will all come together and makes sense sooner or later. One of the main things to remember when using a setup station is to go all out, and make sure everything is perfect; there is no point in taking so much time to get 85 percent done, and then rush the rest of the job—doing this will be pointless. With that said, go spend your next Friday night locked in your workroom, with your setup station out, and dialing in your ride. ❑



Before setting up your ride, make sure all surfaces are clean. Even the smallest piece of dirt can drastically change your readings

- Make sure to always compress the suspension and allow it settle after each adjustment and tweak
- Remember that changing kickup/anti-squat readjusts droop
- Remove swaybars when checking tweak
- Do not over tighten any of the gauges as this can cause false readings