

HUDY 'QUICK-TWEAK STATION'

BY DEZ CHAND

Ever clipped a corner only to discover that your car now turns better one way than the other? It is 'tweaked' because you have bent the chassis, damaged a suspension member or knocked the settings out of balance, so the corner weights are no longer equal and one wheel has more weight being suspended on it, hence it has more authority over the vehicle's direction. Some cars can display this handling characteristic without being damaged simply because the droop screws are badly adjusted, the shock absorbers are different lengths, or the spring pre-loads are out of balance.



ABOVE & BELOW: In its own foam lined alloy carry case, a Tweak Station is a concealed weapon of Lap Time Destruction!



ABOVE: Front and rear supports, bubble gauge in the front, with central rod and threaded feet. Simple but effective

AM I TWEAKED?

Do a simple test. Make sure your car rolls dead straight, and you have equal amounts of steering lock, as each front wheel reaches the lock stop without straining, then put your car against a line on the floor to reference it back to. Now apply full left steering and slowly drive 180 degrees in a half circle until the car is parallel with the starting position. Pick the car up and replace it heading the opposite direction on the same spot, then drive slowly back to the starting point by applying full right steering. If it doesn't end up where you started it means you have unequal steering geometry and it will be difficult to control at speed. The chassis is tweaked, but what can you do about it?

The new Hudy Quick-Tweak Station offers a quick and easy way to ensure accurate, balanced handling by ensuring that each axle applies equal pressure to both wheels, allowing you to dial in electric and nitro touring cars, 1/10th Pan/GT/F1 cars, 1/12th circuit and even Mardave circuit and oval cars to perfection. Distribution of the equipment on the chassis has an effect on tweak, so if you find your Quick-Tweak Station is making you dial in lots more spring pre-load to one corner compared to another, then your chassis isn't evenly weighted. You can measure corner weight using four sets of identical scales (or one set of scales and three blocks of matching height). Just wind off all spring pre-load and droop screws to measure your car corner weights, before simply adding ballast to the lightest corner of the chassis to give each wheel a similar weight reading to its partner on the same axle.

Now, assuming your chassis is flat and your shock absorbers have been built to equal lengths, any tweak must be down to spring pre-load adjustments, but how can you dial this in without knowing how far out it is in the first place?



ABOVE: Using the front bubble to set the rear support horizontal, then likewise the central rod

ON THE TEST BENCH

GIVE IT A QUICK-TWEAK

Having a tweak tool is great but without a flat level surface to work from it can be very misleading, so always start on a set-up board like one in the Hudy range as seen here, preferably with the additional graphic sticker to aid your track width and wheelbase adjustments. Most hauler bags have a pouch at the rear for storing set-up boards, and will usually accommodate your Tweak Station too, once you store it safely in the foam lined aluminium carry case it was delivered in. Look after it and treat it with respect; consider your tools as a valuable piece of your racing equipment and they will look after you for many seasons to come.

Select a steady and sturdy stable table to lay your flat Hudy set-up board on, because if it rocks about you will be chasing your settings round in circles! Installing the central rear support with its two threaded feet, use the front support as a spirit level to adjust the feet until it is horizontal. The central rod slides into the hole in the rear support gripped by an internal 'O' ring and has a threaded front foot which you then adjust until it is perfectly horizontal by laying the front support along the rod as a spirit level again. The front support is then attached to the nose of the central rod, supported in twin ball bearings. It's as simple as that, you are all set-up, to set your car up!

With a bubble gauge in one end the front support is CNC machined to be perfectly weight balanced side to side, so it doesn't influence the tweak settings. The bearings it swings on need to be extremely free rotating, which begs the question why they are rubber sealed? Surely flicking these off and blowing out any grease will improve their action. Your race car bearings have rubber seals to prevent moisture ingress and to retain the grease/lubricant at high speed, but in the Tweak Station these bearings will hardly ever rotate, and certainly won't come into contact with water, so you can confidently flick out the seals with a pin and blow out the grease with motor cleaner, perhaps adding just a drip of a light silicone oil to prevent corrosion.

Wind off any droop screws acting upon the suspension arms, and install alloy set-up wheels to negate any errors due to your regular racing wheel diameters, differing weights, eccentricity, insert stiffness etc. Also, while you have your set-up wheels fitted, check the track width on the set-up board as any wheel off set could put you over the legal limit for your class. The superbly flat Hudy set-up board will also let you perfect the ride height and droop utilising the other excellent set-up tools in the Hudy range.

Install your car onto the Quick-Tweak Station, noting that the wheelbase can be pre-set from 180 mm to 270 mm by regarding the numbers on the central rod, which pass through a window in the rear support. Now move your car sideways until each wheel sits on a number showing the track width, i.e. the same both sides, front and rear. This will show you at a glance whether your car is wider at the front or rear.

Once the car is sitting exactly central, take a look at the bubble in the front support, if it's not dead centre your car is sitting 'tweaked' so dial in the rear shock pre-loads until the front sits level. Now spin the car around and use the front shock pre-loads to set the level of the rear axle. Spin the car around again and double check the front is still level and adjust again if required.

If your chassis doesn't offer any spring pre-load adjustment like a Pan car, GT/F1/Mardave, simply use the Hudy Quick-Tweak Station to determine the placement of equipment and ballast until you get matching corner weights.

Driving your car before and after setting up on a Hudy Quick-Tweak Station will show the difference it delivers, and your lap times will reflect the increased confidence a neutral handling car with balanced corner weights can deliver. Until now only team drivers had access to equipment like this, and they use it before every qualifier and final, but now you know about it too. Knowledge is power, and hopefully this info and the Hudy Quick-Tweak Station will help you climb further up the grid at your next meeting! **RRCI**

RIGHT: A Tweak station needs a hard, flat, set-up board, so do it right!

BELOW: Use set-up wheels instead of race tyres, and put the car central on the marks



BELOW: Flat and level, ready to race



RIGHT: Use the set-up board with additional ride height and droop tools to get it dialled



QUICK SPEC

#DY107904 – Hudy Quick-Tweak Station + Alu Carry Case – £58.99 RRP
 #DY108201 – Hudy Flat Set-Up Board For 1/10 Touring Cars – £18.99 RRP
 #DY108211 – Hudy Plastic Set-Up Board Decal For 1/10 – £9.99 RRP

CONTACT

RC Disco
www.rcdisco.com
 Tel: +44 (0)1530 414 417
 Also see www.hudy.net