


Tour tech: Giant Trinity Advanced SL available to public

By James Huang, Technical Editor



Come September, consumers will be able to buy virtually the same exact bike used by Rabobank for time trials (James Huang/BikeRadar)

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As we predicted earlier this week, Giant announced on the morning of [Stage 4](#) that they would be offering to the public the same cutting-edge aero bike being raced by Rabobank in the Tour de France.

Save for a few production-friendly refinements, the newly named Trinity Advanced SL is a virtual carbon copy of the team bike with the same aero features, including the innovative front end with its inline stem and top tube, vertical deep-section seat tube, proprietary brake system and clever internal cable routing.

Consumer versions should be available by early September. The price? US\$14,000 (approx £8,700).

Giant reckon the three frame sizes will accommodate most riders thanks to well-spaced stack and reach measurements across the range paired with fairly aggressive 80, 110 and 140mm head tube lengths.

Base bar height adjustments on the newly dubbed AeroDrive front end will be a tad more complicated than the norm – requiring users to swap out both the upper and lower carbon fibre stems – but three sets will be included with each bike for a fairly generous total adjustment range of 80mm.

The rest of the proprietary integrated bar is also highly customisable: the extensions can be raised up to 40mm via a series of stacked aluminium spacers; grip widths can be set between 100mm and 180mm (or more depending on how the S-bend extensions are rotated in the clamps); and the system offers about as much extension length adjustment as you dare cut with a hacksaw.

The pad width can be set between 220mm and 320mm (outside-to-outside), fore-aft offset can vary up to 15mm and there is five degrees of angular movement built in as well.



The vertically oriented seatpost is surprisingly accommodating, too, with virtual seat tube angles ranging from 74-78 degrees and horizontal saddle offsets from about -8cm to +3cm depending on frame size and seatpost cradle position.

Speaking of the seatpost, the Trinity Advanced SL will trade the conventional integrated seatmast of the road-

going TCR Advanced SL for a so-called 'reverse ISP' setup whereby the bottom of the post rests on an internal shelf – instead of cutting the frame, users will need to cut the post.

Height adjustments are made by adding or removing spacers and a minimal rear-mounted clamp eliminates any play. Ultimately, though, even if the clamp is removed, there's no way for the seatpost to slip further down into the frame.



The clever internal cable routing will use full housing for all the control lines and differs little from team bikes. Cables are fed inside the base bar and down through the lower stem but instead of popping out of the bottom of the steerer tube, as did earlier prototypes, a new forged aluminium fork crown guides the lines straight out the back, just below the mounting bolt for the proprietary rear-mounted scissor brake.

The tight confines require the use of an extra-flexible housing such as Nokon – at least until just after the housing enters the down tube – but Giant insist the system runs with very low friction and isn't a nightmare to set up. Access holes are appropriately sized for Shimano Dura-Ace Di2 and the non-drive chainstay sports an integrated battery mount.



According to Giant, design priorities for the Trinity Advanced SL were aerodynamics first and stiffness second, with weight and aesthetics falling somewhere below. To be sure, the bike's appearance is decidedly subjective and although not a particularly superlight machine, it's still competitive with its peers. Claimed 'cockpit weight' (medium frame without bottom bracket cups, fork, headset, stem, complete aero bar, seatpost and associated hardware) is 3.12kg (6.89lb).

Also of note is the complete absence of frame-mounted bottle bosses – rear-mounted cages or bar-mounted hydration systems only, please.



Intriguingly, Giant made sure to emphasise the AeroDrive's pending patent, which describes the concept as follows:

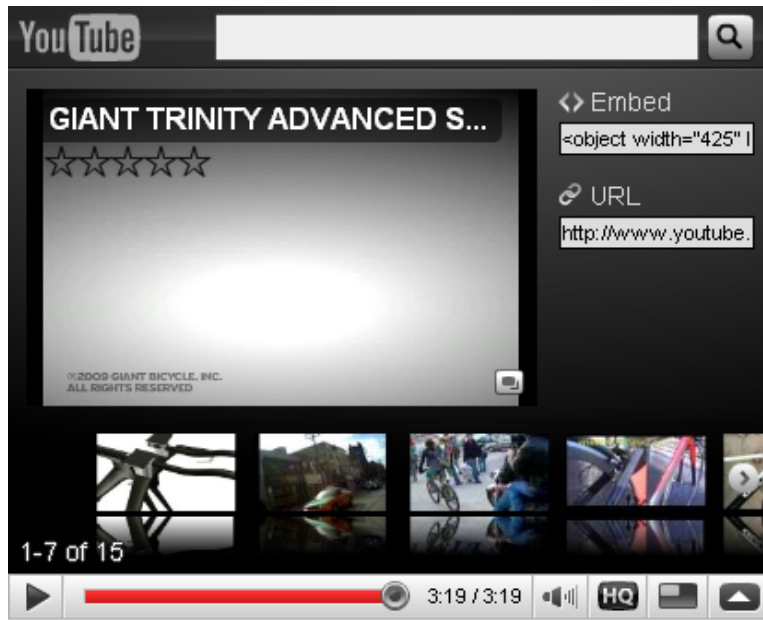
"An aerodynamically configured handlebar assembly for use in a bicycle includes a mounting head which has a rear clamping body for clamping an upper end of a steering stem of a bicycle front fork so as to cantilever a front aerodynamic body of the mounting head, a handlebar body which extends laterally from opposite sides of the front aerodynamic body and which has handgrips at leftmost and rightmost ends thereof, and an aerodynamic bracket member which is disposed beneath the front aerodynamic body and which has a rear crosspiece.

"The crosspiece is secured to a crotch segment of the bicycle front fork by a fastening unit so as to enable the bracket member to better support weight of the cantilevered front aerodynamic body."



The critical term to note here is 'crosspiece', which would seemingly apply to any mechanical means used to attach a front-mounted 'aerodynamic member' to the fork crown area. As such, designs like the Felt DA, Look 596 and Trek's new Speed Concept that use a one-piece fork and external steerer don't fit this description.

Things aren't so clear with Specialized's new S-Works Shiv however, which uses a 'strap' to connect the bottom of its lower stem to the fork crown. Whether or not that bike is in violation of the pending patent (US# 20080036170A1) will be up to the lawyers to decide but Giant – without naming specific models from other makes or potential consequences – firmly state that they "will defend the patent". This may get interesting.



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