



# HARO FREESTYLER

## Tool of the Trade

By Bob Hadley

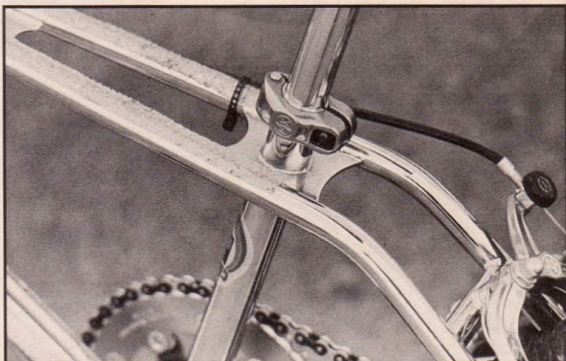
Photos by Dean Bradley and James Cassimus

If you're a freestyle buff, the selection of bikes specifically designed to suit your needs goes kinda like this: you can get anything you want as long as it's a Haro, because it's the only freestyle bike on the market.

*A man with a mission. A boy with a bike. Bob Haro and his versatile new Freestyler. Is this tomorrow's bike today? We know the answer. Do you?*

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If you're thinking that those top tubes look similar to Torker's set-up, you're right—they are, and for good reason. Check the text for details.

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Says who? Says top riders who use Dia-Compe brakes like Harry Leary, Stu Thompsen, R.L. Osborn, Eric Rupe, Jeff Bottema, Scott Clark, Lee Medlin, Anthony Sewell and just about everybody who is anybody in BMX.

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Hi-Ho Silver Away! Haro's noble new iron horse—mandatory mount for serious freestylers and a wise addition to any well-rounded stable.



To get a better understanding of the Freestyler's Dia-Compe MX-1000 callipers under actual riding conditions, test consultant Aparlo went above and beyond the call of duty and sanity! Martin's outrageous rolling hand stand.



Emergency stops? No prob—just grab the binders, and sit back and let the Freestyler's exceptional braking and balance characteristics take it from there.

the need for something to give him an edge: something more than a great race bike that also made a good freestyler.

### Design Evaluation

To initiate the design of the Freestyler, a complete evaluation of priorities was made. Freestyle bikes are ridden backwards and forwards and at speeds slower than typical race speeds. They are jumped constantly, subjected to sideways pounding, crawled around on and balanced on.

Those are a lot of things to ask of one bike. Your basic race machine looks only to be lightweight and to be stable and agile at breakneck speeds.

From a structural standpoint, a freestyle bike had to be stronger, but how much? Certainly not so much as to make the bike a pig. How about the geometry? The Torker was already pretty good for freestyle, and drastic changes might make it worse, not better.

Haro realized this, and, aside from the head tube gusseting, the changes he made turned out to be very subtle, even though the effort put into the design was big. Several riders were called in to consult on

the geometry, while the experts at Torker worked on the structural requirements. Several ideas were tried in an effort to find all the answers. For Haro, it had to be right. Not because his name was going on it (which was reason enough), but because he *knows* that twelve feet up and sideways is no time to worry about a bike that won't cut it.

### More Extensive

The head area was redesigned even more extensively than first meets the eye. As you can see, the down tube is connected higher than normal to accommodate the large wedge gusset. On typical frames, smaller wedge gussets are often added as insurance, but the Haro frame relies on the gusset for major structural support. The main reason behind this design was probably to give the frame a distinguishable feature, and that it does. But the changes go farther than simply visual modifications. The steering tube was beefed up substantially by going to a thicker material. To get the maximum strength-to-weight ratio, however, the 4130 chrome-moly tube was machined down in the center, leaving the extra wall

thickness only where it's needed: at the ends to resist flaring. (The new design works so slick that it's now standard on all Torkers!) Also of note, but something we'll discuss later, is the increased (steeper) head angle and how it corresponds to the Haro fork geometry.

### The Word

Thick is the word that best describes the rear dropouts, thick and strong. They're designed to take the sideways whips and flexes from flubbed rock-walks and mistimed landings. The left-side dropout has a built-in anchor for the coaster brake arm—a very convenient feature. Both axle and anchor slots allow enough latitude in rear-wheel position to let you fine-tune the wheelbase to your preference. The slots are parallel with the ground so wheel adjustments won't have any effect on the basic frame angles. A caliper mount is provided if you want to run a caliper in conjunction with a coaster brake (or a caliper by itself, for that matter). If you run calipers, a 90mm-reach unit will cover the short half of the axle adjustment, and a 100mm-reach unit will cover the long half (with some overlap). The caliper mount on the Freestyler is a tube, where Torker's normal mount would be a flat plate. Although a trace heavier, the tube is better suited to handle the back-and-forth flexing if the rider drags his brakes on the rollbacks or backhops. A small detail but significant, nonetheless.

Another minor detail worth mentioning is the anti-slip knurl pattern next to the slot on the washer runway. This breaks up the slick chrome finish and insures against axle slippage. The rest of the chrome plating on the chrome-moly frame and fork is flawless, bright, and lustrous.

Haro's front fork design is as slick and functional as any new design we've ever seen. Like the rear tabs, the fork ends are double thick to resist flex. The bond to the slanted fork-tube end is an ideal way of doing it. In addition to the tab thickness, the wall thickness on the fork legs is one gauge thicker than standard. This helps achieve an overall stiffness throughout the fork. We'd recommend that just about anyone who has fork problems look at a pair of Freestyler forks. They may not be the lightest (they don't profess to be), but they're surely among the strongest.



*Dazzle your friends! Confuse your enemies! Scare the living daylight outta your mom! The Freestyler's forgiving geometry and non-slip grip taped twin top tubes make delicate moves like this framestand easy.*

### A Complicated Picture

We didn't discuss the frame angles earlier because we wanted to include explanations on why they're the way they are and why they work.

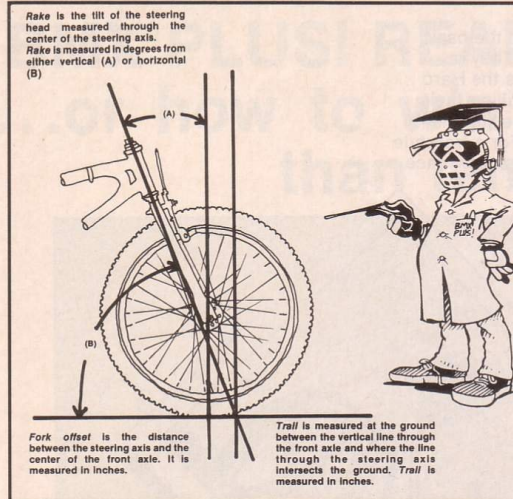
First, let's start by looking at how the Freestyler was changed from the basic Torker design. Haro increased the seat angle several degrees. He increased the head angle a slight amount. He increased the fork height, and decreased the fork's axle offset. Essentially, all the changes were based on extensive trial and error and Haro's seat-of-the-pants judgment.

The seat angle move was easy. It put the nose of the seat forward into a position where it could be used to steady his legs when performing framestands; but, just as important, it moved it *out* of a bad

position, where it was in the way more than it should've been. The back part of a freestyle bike has to be open to allow deep, way-back crouching that is necessary on many tricks (not everyone has arms long enough to clear a back-angled seat).

Front fork alterations must be considered in context with the increased head angle. First, let's review some old rules on front-end geometry. We know that a bike has to have a moderate amount of trail in order to steer correctly.

Remember trail? It's the distance between, a) where the steering axis intersects the ground and, b) where a vertical line drawn through the center of the front wheel intersects the ground. (See box.) Too much trail and the front end won't hold steady while negotiating corners.



Too little trail and the bike will not have any self-stabilizing tendencies. Basically, trail is affected by two factors: the fork offset and the head angle. If you decrease the fork offset, you will move the center of the wheel farther away from the steering axis, increasing the trail measurement. When you tilt the head angle steeper, you move the steering axis in closer to the center of the wheel, decreasing the trail measurement.

Isn't that what Haro did? Increase the trail by shortening the offset and decrease the trail by tilting the head steeper? Yep, exactly. Why bother if the changes in trail just cancel each other out? Because steeper head angles make the front wheel easier to steer. And when given enough trail they offer a decent measure of hands-off stability.

This geometry suits the Haro Freestyler. It makes it very easy to flick the front end from side to side (one reason why Haro makes his rollback sliders look easy), yet the front wheel will hold itself straight when you're balanced. The geometry works perfectly up to moderately fast speeds (20 mph), about the top end for freestyle. The bike can be ridden faster, but it just takes more concentration to hold a precise line.

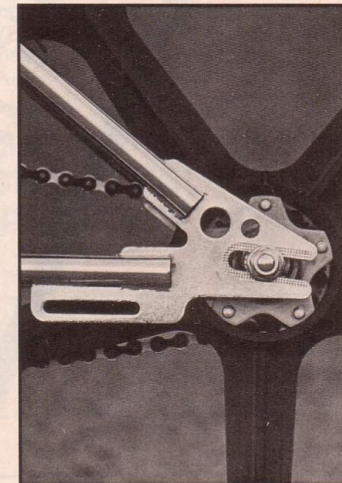
As far as jumping the Freestyler, it's in-flight characteristics are as good as a Torker's. It's no wonder: the hanger height, stay length, and wheelbase are almost identical. Balance control is so easy to maintain that, when combined with a set of Tuff Wheels, you feel like you can get away with any radical maneuver.



*Freestyling requires balance, coordination, and concentration, not to mention supreme confidence in your bike. If the Freestyler is good enough for Haro then...*



*Some of the beefiest forks in the biz combined with a specially machined head tube and wedge gusset add to the Freestyler's unique looks and superior strength.*



*Stout rear dropouts feature lengthy axle slots knurled for added grip and built-in anchor for the coaster brake arm. It's known as attention to detail.*

## Reflections

The Freestyler reflects what Haro is all about probably better than any other single Haro product. It represents the innovative design, concern for function, and dedication to reliability that goes into everything he sells, from number plates to elbow guards.

Only as a sport is freestyle trick riding in its infancy. As an activity, it enjoys a surprising number of participants. It seems to draw the

people looking beyond the basic dimensions of racing. They're serious about it, just as the Haro Freestyler is about fulfilling their needs. But likewise, the Haro isn't limited in dimension. For a freestyle bike, it makes a pretty decent race bike, too.

**Bike:** HARO FREESTYLER 20" FRAME/  
**FORK SET** Age Range: 10 AND OVER  
 Country of Origin: U.S.A.  
 Intended Use: FREESTYLE/PARK/HIGH-PERFORMANCE STREET  
 BY TORNER 4130 CHROME-MOLY HELI-ARC WELDED, CHROME PLATED FEATURING 5/8" O.D. COMBO TWIN TOP TUBE - SEAT STAYS. BOTTOM BRACKET, 4" HEAD TUBE  
 Fork: HARO BY TORNER 4130 CHROME-MOLY, HELI-ARC WELDED, HELI-ARC WELDED. Wheelbase: 34 3/8" - 35 3/4"  
 Top Tube: 11 1/2" HIGH. Steering Head Angle: 73° Seat Tube Angle: 70°  
 Bracket: 1 1/2" HIGH. Steering Head Angle: 73° Seat Tube Angle: 70°  
 Wheels: SKYWAY GRAPHITE TUFF WHEELS. FRONT (45-50 PSI) DRIVE TRAIN: CRANKS: TAKAGI BELLY SKINWALL 20" X 1.75" R. (40-45 PSI) W/TANGE BOTTOM BRACKET  
 CRO-MO ONE PIECE 180 MM 24-T.P. 1 W/TANGE BOTTOM BRACKET  
 PEDALS: SKYWAY TUFF PEDALS W/ PLASTIC BODY/REPLACEABLE ALLOY CAGES AND 1/2 CRO-MOLY SMARTS. CHAIN: D.I.D. 1/2" X 1/8" BLACK/CHROME. FRONT SPROCKET: PETE'S PRECISION 48T QUICK CHANGE ALLOY W/ SUGINO CALIPEES/ AND 1/2 CRO-MOLY SMARTS. BRAKES: DIA-COMPE MX-1000 CALIPEES/ SPIDER. FREEWHEEL: SUNTOUR 16T. BRAKES: DIA-COMPE MX-2  
 CABLES FRONT AND REAR W/ DX TYPE LEVERS ETC. HEADSET: TANGE MX-2  
 STEM: TUFF NECK PRO ALLOY 4 BOLT W/ CRO-MOLY SMART. HANDLEBARS: 4130 CRO-MOLY V-TYPE 8 1/2" RISE 26" WIDTH, HELI-ARC WELDED, CRO-MOLY POST SAFETY-TYPE SEAT CLAMP AND DIA-COMPE TECH II ALLOY POST CLAMP. ACCESSORIES: 3 HARD RACING SUPERLITE PADS, HARO FLO PANEL PLATE. OVERALL WEIGHT: 26 lbs. \*NOTE: CURRENTLY HARO DESIGNS ONLY PRODUCES A FREESTYLER FRAME AND FORK SET, NOT A COMPLETE BIKE.

SUGGESTED RETAIL FOR FRAME AND FORK AROUND \$239-259  
 HARO DESIGNS, INC.  
 6066 CORTE DEL CEDRO  
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 (619) 438-4812

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## OFFICIAL ENTRY BLANK BMX PLUS! READERSHIP SURVEY CONTEST

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PHONE \_\_\_\_\_ AGE \_\_\_\_\_

### SURVEY RULES

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