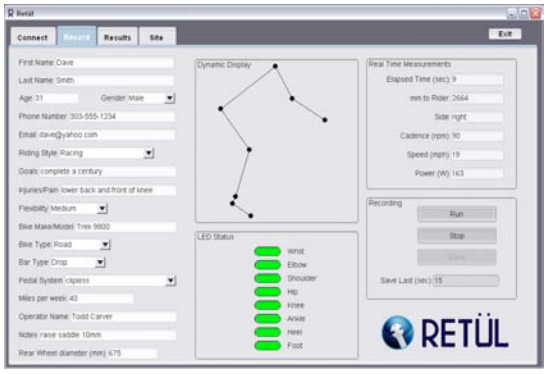
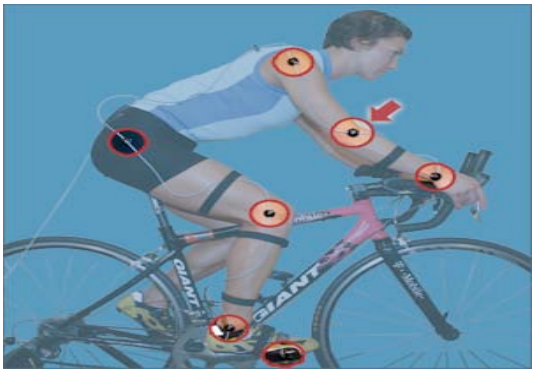
What is Retül?
Retül is a state-of-the-art 3-D Dynamic Motion Capture Bike Fit System.

Industry Trends: Quality bike fitting is becoming a foundation for how many retail locations are starting to sell bicycles. Experience suggests that consumers will pay more for a bike or bike configuration that will provide them more comfort and performance, justified by an interactive technology and a qualified bicycle fitter.

Industry Significance: Research concerning bike fitting has long suffered due to the lack of consistency in data collection. Tools such as Plumb Bob lines, gonimeters, and tape measures are all subject to user execution and therefore inaccurate from one fitter to the next. These outdated 'props' have provided data for static bike fits, which is fitting someone to *sit* on the bike, not *ride* the bike. Retül has created this common quantifiable language in that every bike fit using the retül system is consistent to within 1 mm, enabling future file sharing and thus useful networking between bike fitters. All retül data will soon be synchronized **anonymously** with a web-based analytical software, which will define fit trending and therefore become invaluable data to bike manufacturers, industry leaders, and retül clients.



Retül Data Capture Screen


8 point active marker tracking system

Why is Retül technology superior than existing bike fit systems?
Capturing dynamic data from a rider allows a bike fitter to replicate the most realistic movements of the cyclist's body that take place on the road or trail. The retül software compiles the data in the most comprehensive rider fit report available on the market. The fit report summarizes sub-millimeter accurate bike-fit specific measurements in 3-dimensions. The Retül also captures traditional performance data such as cadence & power. Retül is portable, affordable, and scalable for businesses with multiple locations. Over the past few years, the term 'motion capture' has often been misused with 2-D video analysis systems. Multiple video cameras which record the riders position from different viewpoints is NOT 3-D; True 3-D involves using a spatial model, which can only be accomplished with the marker set on the body of the rider.

Selected by industry leading bike fitters: Chris Carmichael and CTS
Slipstream Chipotle Pro Cycling Team
Serotta International Cycling Institute (SICI)
USA Triathlon; National Governing Body
Fit Institute of SlowTwitch (F.I.S.T)
Several World Champion Triathletes

TRIATHLON

World Champion Craig Alexander

World Champion Samantha McGlone

CYCLING

Tour de France TT Champ Dave Zabriskie

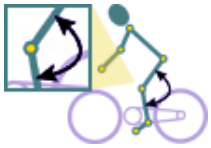
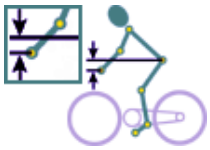
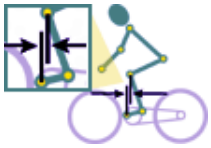
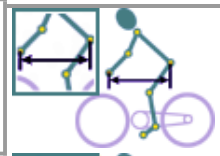
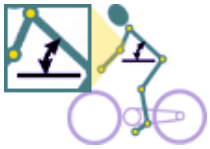
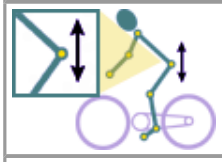
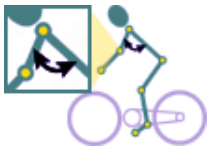
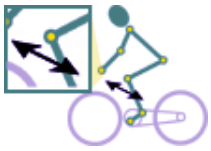
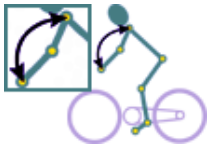
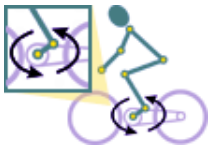
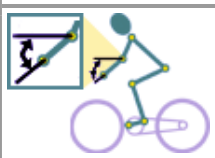
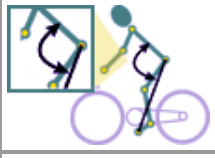
Slipstream Chipotle's Tom Danielson

Personal Bicycle Fitting Report

Rider Information

NAME:	David Zabriskie	**RIDING STYLE:**	Elite
AGE:	28	**GOALS:**	Slipstream
GENDER:	Male	**INJURIES/PAIN:**	
PHONE:		**FLEXIBILITY:**	High
EMAIL:		**MILES/WEEK:**	400

MEASUREMENTS & ANGLES

KEY	DESCRIPTION	MEASUREMENT	KEY	DESCRIPTION	MEASUREMENT
	Knee angle TDC Knee angle BDC	110 deg 36 deg		Wrist height relative to Hip	-108 mm
	Knee forward of Foot	-8 mm		Hip to Wrist distance	725 mm
	Ankle angle BDC Ankle angle range	114 deg 36 deg		Back angle to horizontal	41 deg
	Hip vertical travel	48 mm		Armpit angle	72 deg
	Knee lateral travel	32 mm		Elbow angle	138 deg
	Cadence average	98 rpm		Forearm angle to horizontal	-28 deg
	Power output average Speed average	477 watts 29 mph		Shoulder/Hip/Foot angle	62 deg

KNEE TRACING (FRONT VIEW)

BIKE & SESSION INFORMATION

MAKE/MODEL:	Felt Z
TYPE:	Road
PEDALS:	clipless
HANDLEBAR:	Drop
DATE/TIME:	2007/11/08 11:36
SIDE:	left #5
DURATION:	15 sec
NOTES:	hard effort

SITE INFORMATION

NAME:	Retul Mobile Studio
OPERATOR:	Todd Carver
ADDRESS:	PO Box 18060
	Boulder, CO 80308
	USA
PHONE:	720.406.1171
WEBSITE:	www.retul.com

THIS BIKE FIT PERFORMED USING THE RETÜL SYSTEM