



PALO ALTO BICYCLES 1984/85 CATALOG



Cat. No. 50-401

\$1.98

Gavia Pass, Italy



Cat. No. 50-402

\$1.98

Woodside, California



Cat. No. 50-403

\$4.98

Grosse Scheidegg Pass, Switzerland



Cat. No. 50-404

\$1.98

Nevada City, California



Cat. No. 50-405

\$4.98

Gavia Pass, Italy



Cat. No. 50-406

\$4.98

Old French bicycle poster

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The Cover: Two triathletes pass each other training on California Highway 1 near Half Moon Bay.

Color Posters 24" x 36"

Avocet Jerseys



Avocet Jerseys are made from 100% polypropylene. Their fabric is the result of extensive research and development by Avocet and is specifically designed for cycling. Polypropylene is accepted by cross country skiers because of its functional advantages over traditional fabrics. It is increasingly popular with cyclists because:

- Polypropylene keeps you dry and comfortable by wicking perspiration at twice the rate of wool.
- Polypropylene absorbs essentially no moisture—only 10% of wool's moisture regain—leaving it free to maintain temperature and dryness.
- Polypropylene has lower thermal conductivity than wool—better insulation and more comfort whether conditions are hot or cold.

These American designed and manufactured jerseys are traditionally styled with two back pockets, correct length, and careful detailing. They offer the latest in fabric technology with better durability, shape retention, and texture than other polypropylenes. Machine washable and very fast drying. **Colors:** Navy blue with royal blue panel, royal blue with yellow panel, powder blue with slate blue panel, red with navy blue panel, burgundy with yellow panel, slate blue with black panel. **Sizes:** XS, S, M, L, XL. *Sizing information on order form.*

Cat. No. 1-401 Specify size and color.

\$29.98

Avocet Shorts

Avocet Road Shorts have the same appearance as traditional wool shorts, but their specially processed 100% polypropylene fabric has many functional advantages over wool. Rapid wicking of perspiration and low moisture regain insure dry comfort. Much easier to care for than wool. Quality construction and careful detailing. Polypropylene Softwick Cushion Liner is sewn inside.

Avocet Touring Shorts are very functional for riding, yet off the bicycle they have the appearance of other quality sports shorts. They are made from layered polypropylene (inside for wicking, insulation and softness) and nylon (outside for abrasion resistance, shape retention and sheen). Two front and two back pockets. Softwick liner sewn inside.

Avocet Skin Shorts have a stylish "second skin" appearance without the poor breathability common in nylon or polyester shorts. Their unique fabric made from polypropylene and lycra, woven together for stretch and lightness, is extremely comfortable. Softwick liner sewn inside. All Avocet shorts are U.S. made.

All Avocet shorts feature the 100% polypropylene "Softwick Cushion Liner." Its care and comfort characteristics are much superior to the traditional leather chamois. The softwick liner stays dry even on the warmest rides. It cushions and protects. Unlike leather, it stays soft after washing, and it dries in hours rather than days.



Avocet Road Shorts. 100% polypropylene. Black only. **Sizes:** XS, S, M, L, XL. See order form for sizing information.

Cat. No. 2-401 Specify size. **\$29.98**

Avocet Touring Shorts. 60% polypropylene, 40% nylon. Navy blue only. **Sizes:** Men's—XS, S, M, L, XL. Women's—8, 10, 12, 14.

Cat. No. 2-402 Specify size. **\$34.98**

Avocet Skin Shorts. 93% polypropylene, 7% Lycra. Black only. **Sizes:** S, M, L, XL.

Cat. No. 2-403 Specify size. **\$29.98**

Sergal Jerseys



Sergal jerseys are made to our specifications from extra-soft virgin wool, treated to resist shrinkage. Wool is the traditional fabric for cycling clothing because it is more functional than cotton, nylon or acrylics. Wool breathes and wicks away perspiration without releasing body heat. Sergal tailors these jerseys so that when the rider is in the bent-over cycling position, they keep their clean lines and are long enough to cover the back. Jerseys have three back pockets and a durable nylon zipper. Short sleeves.

Colors: Maroon with yellow panel and blue with yellow panel.
Sizes: XS, S, M, ML, L and XL (Sizing information on order form.)
Cat. No. 3-401 Specify size and color. **\$31.98**



Sergal Shorts

Skin Shorts are very popular because of the comfort they provide and their sleek, stylish appearance. These are made from a very thin and stretchable nylon-Lycra blend that forms a second-skin, conforming to the rider's shape and movement. They are excellent for summer wear and racing. Sergal skin shorts have a shiny black finish.

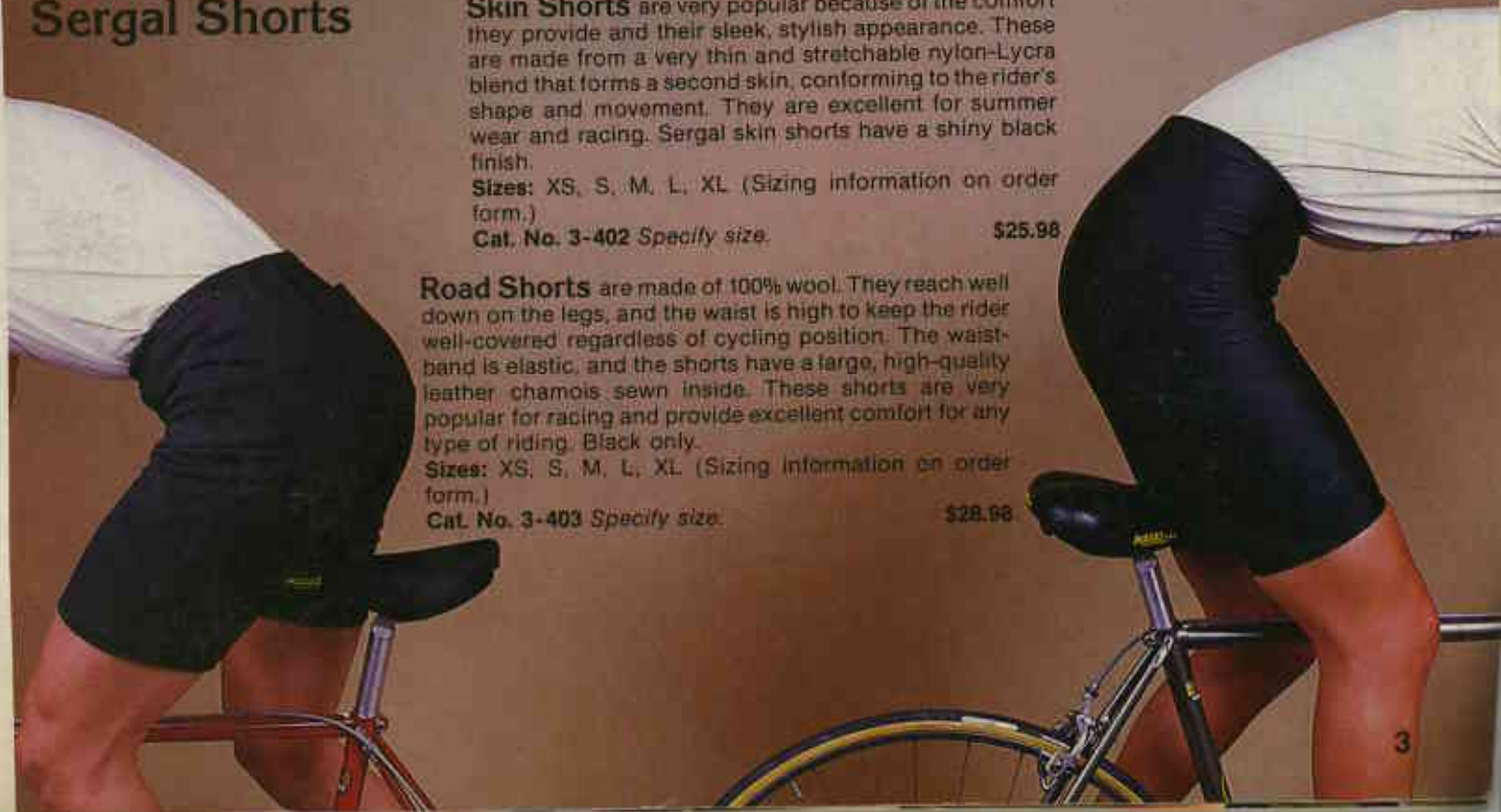
Sizes: XS, S, M, L, XL (Sizing information on order form.)

Cat. No. 3-402 Specify size. **\$25.98**

Road Shorts are made of 100% wool. They reach well down on the legs, and the waist is high to keep the rider well-covered regardless of cycling position. The waistband is elastic, and the shorts have a large, high-quality leather chamois sewn inside. These shorts are very popular for racing and provide excellent comfort for any type of riding. Black only.

Sizes: XS, S, M, L, XL (Sizing information on order form.)

Cat. No. 3-403 Specify size. **\$28.98**





Vittore Gianni Jerseys

These traditionally designed wool jerseys will last through years of hard use. Their luxurious fabric is extra thick and very soft. The vibrant solid colors are tasteful and always in fashion. If you want the traditional comfort advantages of wool with timeless Italian styling, choose a Gianni jersey.

Colors: Burgundy and royal blue

Sizes: XS, S, M, ML, L and XL (See order form for sizing information under "Moa.")

Cat. No. 4-401 Specify size and color. **\$59.98**

Giordana Coordinated Skin Jerseys and Shorts

These color-coordinated jerseys and shorts will let you ride in both comfort and style. Jerseys fit the body closely for a second skin appearance, but they are woven so that they will not stretch vertically from weight in the 3 back pockets. A fleeced inner layer provides extra softness. Shorts have a colored panel that matches the jersey color. They are sewn from 8 panels to create a shape that matches the curve of the body when in the bent-over cycling position. Padded leather chamois sewn inside.

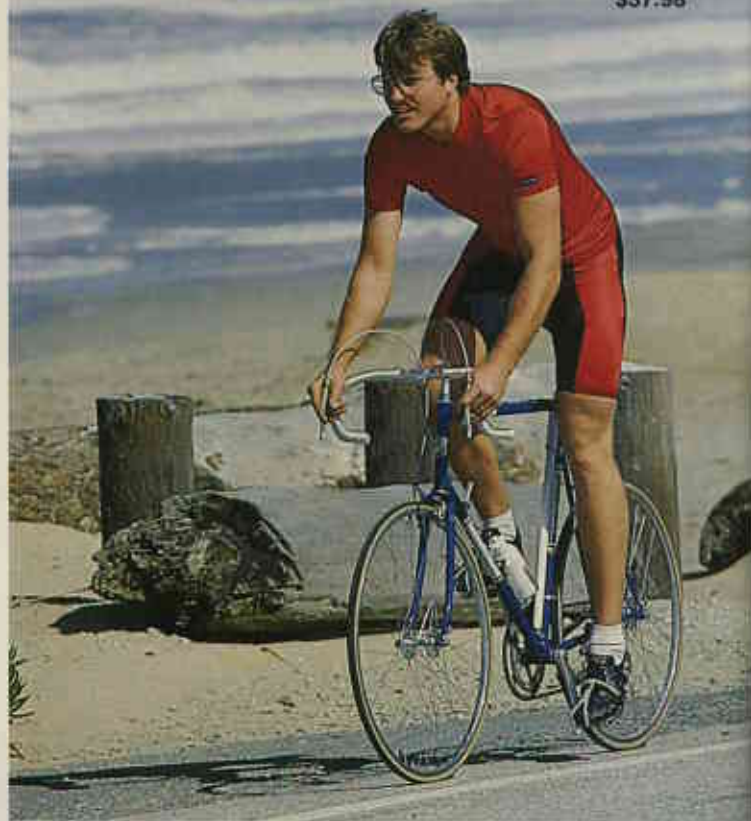
Colors: Jerseys, red and yellow. Shorts black with red or yellow panel

Jersey Sizes: XS, S, M, ML, L, XL (See order form for sizing information.)

Short Sizes: XS, S, M, L, XL

Cat. No. 4-402 Giordana Skin Jersey. Specify size and color. **\$34.98**

Cat. No. 4-403 Giordana Skin Shorts. Specify size and color. **\$37.98**



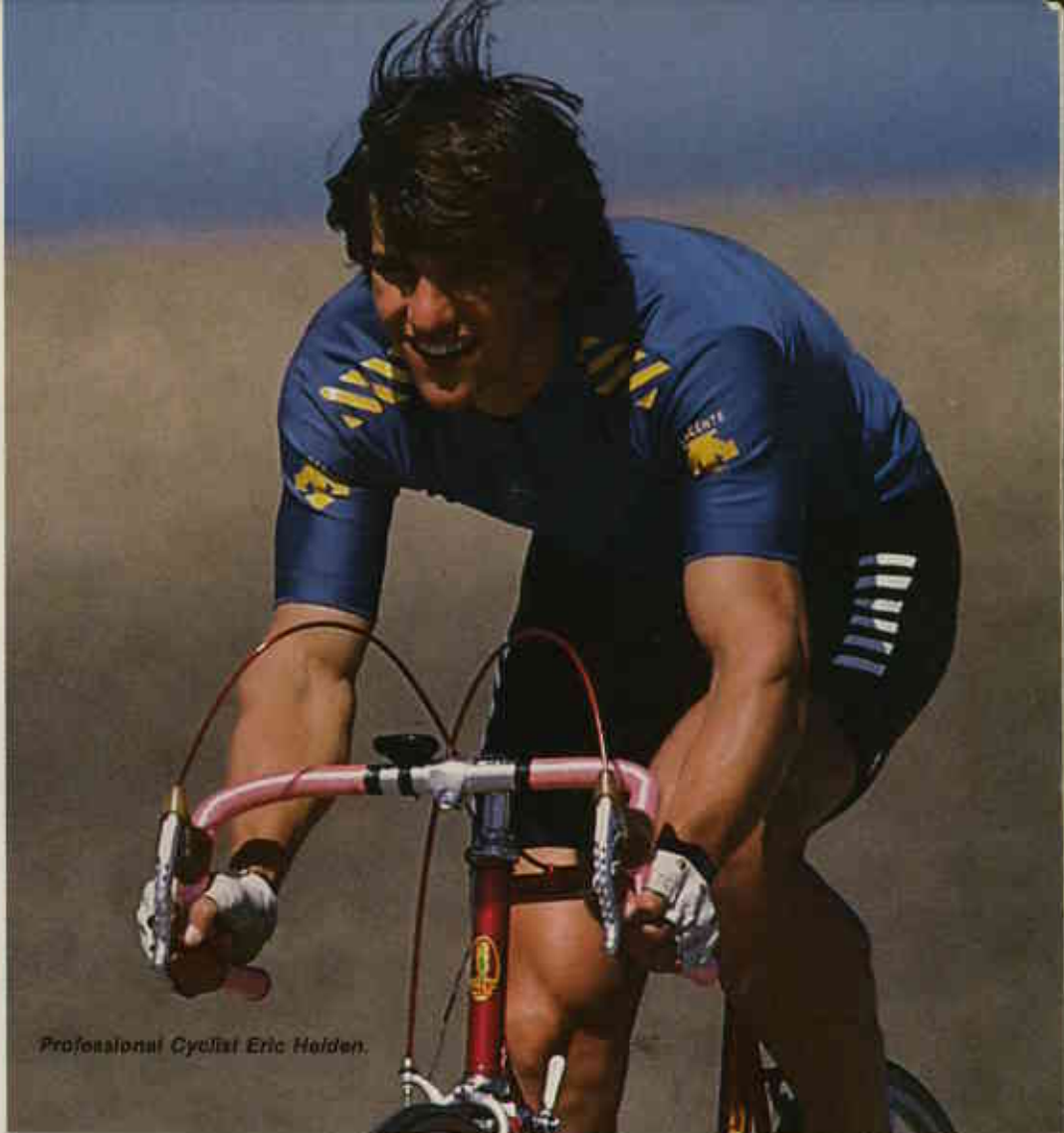
Descente Skin Jerseys and Shorts

Descente Skin Jerseys are made from 80% nylon and 20% Lycra. They offer low wind resistance and are popular for racing. Descente offers both dynamic styling and carefully detailed construction. Cuffs are elasticized, and the three back pockets are folded over and double stitched. **Colors:** Royal blue and plum **Sizes:** XS, S, M, L, XL (See order form for sizing information)

Cat. No. 5-401 Specify size and color. **\$47.00**

Descente Skin Shorts. Nylon-Lycra blend for a "second skin" fit. Eight panel construction shapes the shorts to match the dynamic contour of the cyclist. Uses synthetic chamois padded with single-cell foam. Elastic grippers at the waist and legs hold the shorts in place. Black only. **Sizes** XS, S, M, L, XL (See order form for sizing information)

Cat. No. 5-402 Specify size. **\$60.00**





Accessory Clothing

T-Shirts. These attractive 50% cotton, 50% polyester T-Shirts are suitable for wear on or off the bicycle. All designs are silk screened on heavy duty shirts for long wearing comfort. Sizes: All shirts come in S, M, L, and XL. (See order form for sizing information.)

- A. Columbus Short Sleeve T-Shirt**
Cat. No. 6-401 Specify size. **\$9.98**
- B. Palo Alto Bicycles Short Sleeve T-Shirt**
Cat. No. 6-402 Specify size. **\$7.98**
- C. Campagnolo Short Sleeve T-Shirt**
Cat. No. 6-403 Specify size. **\$9.98**
- D. Palo Alto Bicycles Long Sleeve T-Shirt**
Cat. No. 6-404 Specify size. **\$12.98**
- E. Avocet Short Sleeve T-Shirt**
Cat. No. 6-405 Specify size. **\$8.98**

Cotton Cycling Caps.

Traditional caps with attractive colored stripes down their centers and the Avocet or Palo Alto logos on their sides. Cycling caps are used in all active sports for keeping sun and hair and sweat out of the eyes. One size fits all.

- F. Cat. No. 6-406** **\$3.50**
Palo Alto
- G. Cat. No. 6-407** **\$3.50**
Avocet



Cycling Suspenders.

Rainbow striped suspenders of the best quality. They prevent sagging of shorts or tights. Clasps have plastic grippers which protect fabric from tearing and from discoloration caused by perspiration corrosion.

Cat. No. 6-408 **\$8.98**



A. Avocet Cycle Socks. 70% polypropylene provides comfort through moisture wicking, breathability, good insulation and low abrasion. 30% nylon for durability. Sizes: XS, S, M and L. **Cat. No. 6-409 Specify size. \$3.50**

B. Wool Cycling Socks. Warm, breathable, 100% wool socks. Sizes: S, M, L, and XL. **Cat. No. 6-410 Specify size. \$3.98**

Arm and Leg Warmers

Arm and leg warmers can be put on and taken off when conditions vary during a ride. They can be stuffed in a jersey back pocket when not in use.

A. Sergal Arm Warmers are made from 100% wool. The knit is elastic so that they cling well to jersey sleeves and do not sag. Black only. **Sizes:** Short, regular, long (See order form for sizing information)

Cat. No. 7-401 Specify size. **\$8.98**

B. Sergal Leg Warmers. 100% wool, warm and breathable. Black only. **Sizes:** Short, regular, long (See order form for sizing information)

Cat. No. 7-402 Specify size. **\$16.98**

C. Avocet Arm Warmers. Made from a blend of 90% polypropylene and 10% Lycra. Polypropylene is a better insulator than wool and it will keep you dry and comfortable with its superior wicking ability and low moisture regain. Lycra makes the fabric stretchy and prevents sagging. Black only. **Sizes:** Regular and long (See order form for sizing information)

Cat. No. 7-403 Specify size. **\$10.98**

D. Avocet Leg Warmers are made from the same polypropylene-Lycra blend as the arm warmers. The extra-thick fabric is fleeced on the inside for warmth and softness. They are elastic enough to pull over shoes. **Sizes:** Short, regular and long (See order form for sizing information)

Cat. No. 7-404 Specify size. **\$14.98**



Rain Wear



A. Sergal Rain Jacket. This waterproof windbreaker-style jacket was designed specifically for cycling. The nylon front and back eliminate wind chill and wetness; mesh sidepanels provide ventilation. Full length velcro opening for easy removal. Folds compactly to fit in jersey pocket. Blue only. **Sizes:** XS, S, M, L, XL (See order form for sizing information)

Cat. No. 7-405 Specify size. **\$16.98**

B. Cannondale Rain Cape. This cycling cape protects the rider from rain while allowing air circulation to prevent inside condensation. Finger and legloops eliminate billowing. The hood will accommodate a helmet and has a drawstring and bill for maximum protection. **Sizes:** M (Up to 5'6" height) and L (over 5'6")

Cat. No. 7-406 Specify size. **\$34.98**

C. Seca Toe Clip Covers act as wind shields and can eliminate the toe numbness caused by wind chill. They also keep shoes dry and clean in wet conditions. **Sizes:** S-M and L according to toe clip size.

Cat. No. 7-407 Specify size. **\$8.98**

Shoes



Duegi Model 101. These shoes have wooden soles which make them extremely stiff, increasing pedaling efficiency and comfort. A stiff sole insures that the force you put into the shoe reaches the pedal, and it isolates the sharp edge of the pedal which can cause discomfort. The upper is top-grade leather. Pre-mounted nylon cleats adjust forward and backward and angularly.

Sizes: Mens 3½—12½ with half sizes. (See order form for sizing information.)

Cat. No. 8-401 Specify size.

\$58.98



Duegi Model 115. A tough, stiff Lexan sole is combined with a mesh nylon upper in this very comfortable shoe. The sole gives excellent foot support, and nylon mesh is the ideal material for keeping feet cool in warm conditions. Leather reinforcement is provided where the toe strap wraps around the shoe and at the toe and heel. The adjustable nylon cleat tightens with a 5 mm allen wrench (not included).

Sizes: 3½—12½ with half sizes. (See order form for sizing information.)

Cat. No. 8-402 Specify size.

\$56.98

Duegi Replacement Cleats. Sold in pairs with mounting hardware.

Cat. No. 8-403 Cleats for Duegi Mod. 101

\$4.98

Cat. No. 8-404 Cleats for Duegi Mod. 115

\$4.98



Avocet Model 20. The new Model 20 cycle touring shoes provide cycling and walking comfort along with pedaling efficiency unmatched by other touring shoes. The multi-density sole that gives stiffness at the pedal and flexibility at the toe has been combined with a new non-stretch heel strap. This strap wraps around the heel near the Achilles tendon and is attached to the sole where it contacts the pedal. The strap sends more force to the pedals during the upstroke, harnessing power for speed and endurance that would otherwise be wasted.

Sizes: Mens 4—13 with half sizes. No 4½ or 12½. (See order form for sizing information.)

Cat. No. 8-405 Specify size.

\$29.98

How to Order Shoes

1. Wearing your regular cycling socks, stand on a piece of paper with your weight equally distributed on both feet. Hold a pencil vertically and trace an outline of each foot.
2. Tell us your shoe size for regular or cycling shoes.
3. Enclose foot outline and size with order.

We will gladly exchange shoes for a proper fit. Test shoes on a carpet to preserve new condition. Shoes worn out-of-doors will not be accepted for exchange or refund.





Detto Pietro Coppi 7. The Coppi 7 is made from soft calfskin with a double leather sole. A steel plate inside the sole provides plenty of support for competition or training. Comes with pre-mounted, adjustable cleats.

Sizes: Mens 3½—12½ with half sizes. (See order form for sizing information.)

Cat. No. 9-401 Specify size.

\$42.98



Detto Pietro Special 74. This is the new, improved version of our most popular cleated shoe. The sole is stiff, durable Lexan, and the adjustable cleat attaches with one 5 mm allen bolt. The heel has a disk of textured rubber attached to improve walking traction. The leather upper is perforated for good ventilation.

Sizes: Mens 3½—12 with half sizes. (See order form for sizing information.)

Cat. No. 9-402 Specify size.

\$34.98

Detto Pietro Replacement Cleats. Sold in pairs with mounting hardware.

Cat. No. 9-403 Cleats for Coppi 7 **\$3.98**

Cat. No. 9-404 Cleats for new Special 74 **\$3.98**

Cat. No. 9-405 Cleats for old Special 74 (two screws) **\$3.98**

Cat.No. 9-406 Pavarin Nylon Cleats **\$2.98**
(nail on—not shown)



Avocet Model 30. The Model 30 Cycle Touring shoe is a stiffer version of the Model 20 with an upper of breathable nylon mesh and top grade leather. It utilizes the non-stretch heel strap to harness extra power from the pedal up-stroke. Much of this power is lost in shoes that have stretchy heels. The stiffness of the multi-density sole of this shoe also contributes to pedaling efficiency. Its spring steel shank combined with fiber laminates, a contoured sole, inner sole, and foam padding give full support and comfort. Four grooves on the bottom of the sole fit any combination of pedal and toe clip and are properly angled for clearance between heel and crank arm. This is a high performance shoe, but it is still much more comfortable for walking than cleated racing shoes.

Sizes: Mens 4—13 with half sizes. No 4½ or 12½ (Sizing information on order blank.)

Cat. No. 9-407 Specify size.

\$42.98

Avocet Saddles

Touring Saddles. Avocet makes both men's and women's saddles. Each has the optimum width and shape to accommodate differences between the pelvic structures of men and women. The Model I touring saddles have been designed to give comfort to the beginning and intermediate rider. Their polyethylene shells and foam padding combine to produce an excellent cushion for those who ride short to moderate distances. Model II saddles provide the extra support required by those who ride long distances. They have a durable nylon shell and a relatively dense foam pad. The Touring III is the same as the Touring II except it has aluminum rails for light weight.

Avocet Saddle	Weight grams	Cat. No.	Price
Touring I Black	400	10-401	\$19.98
Touring I Brown	400	10-402	\$19.98
Women's Touring I Black	380	10-403	\$19.98
Women's Touring I Brown	380	10-404	\$19.98
Touring II Black	405	10-405	\$26.98
Touring II Brown	405	10-406	\$26.98
Women's Touring II Black	390	10-407	\$26.98
Women's Touring II Brown	390	10-408	\$26.98
Touring III Black	325	10-409	\$36.98
Women's Racing I Black	360	10-410	\$15.98
Women's Racing II Black	330	10-411	\$26.98
Racing I Black	400	10-412	\$15.98
Racing II Buffalo	375	10-413	\$26.98
Racing III Buffalo	290	10-414	\$33.98

Racing Saddles. Avocet makes both men's and women's racing saddles. They are designed for the beginning and intermediate rider. Model I is for the experienced rider. The Model II is for the experienced rider. The Model III is for the experienced rider. The Model IV is for the experienced rider. The Model V is for the experienced rider. The Model VI is for the experienced rider. The Model VII is for the experienced rider. The Model VIII is for the experienced rider. The Model IX is for the experienced rider. The Model X is for the experienced rider. The Model XI is for the experienced rider. The Model XII is for the experienced rider. The Model XIII is for the experienced rider. The Model XIV is for the experienced rider. The Model XV is for the experienced rider. The Model XVI is for the experienced rider. The Model XVII is for the experienced rider. The Model XVIII is for the experienced rider. The Model XIX is for the experienced rider. The Model XX is for the experienced rider. The Model XXI is for the experienced rider. The Model XXII is for the experienced rider. The Model XXIII is for the experienced rider. The Model XXIV is for the experienced rider. The Model XXV is for the experienced rider. The Model XXVI is for the experienced rider. The Model XXVII is for the experienced rider. The Model XXVIII is for the experienced rider. The Model XXIX is for the experienced rider. The Model XXX is for the experienced rider.

Women's Racing saddles have the same shape as the Touring saddles, but with less padding and without the two "bumps."



Seat Posts

S.R. Laprade. S.R.'s economically priced post features clamping and adjustment with a single 6 mm allen bolt. The clamp is pressed against a toothed surface for a positive grip. Available diameters are 25.0 mm, 25.4, 25.8 through 27.2 in .2 mm increments. Available lengths are 220 mm and 250 mm. The extra long length is popular on mountain bikes and can be used to compensate for a frame that is too small.

Cat. No. 10-416 220 mm Laprade Post *Specify Diameter* **\$11.98**

Cat. No. 10-417 250 mm Laprade Post *Specify Diameter* **\$13.98**

Seat Binder Bolts. These fit Palo Alto and Eddy Merckx frames and many others. 8x22 mm.

Cat. No. 10-418 Standard (lower left) **\$2.98**

Cat. No. 10-419 Campagnolo (lower right) **\$5.00**



Campagnolo Super Record.

This aluminum alloy seatpost is Campagnolo's best. It adjusts with a single bolt. It is fluted and has a fine satin finish. Length is 180 mm. Available diameters are 25.0, 25.8 through 27.2 in .2 mm increments.

Cat. No. 10-420 *Specify diameter.* **\$38.98**

Note: The inside diameters of frame seat tubes vary—often frames of the same model and brand will have variations. Because of this, when ordering seatposts you must specify an exact diameter. If the size is not stamped on your old post and you do not have access to a micrometer, cut a small section from the bottom of the old post and send it with your order.

Saddle Construction. Avocet saddles feature a new shell and design which positions the pelvic bone pressure points over those areas where the anatomic shell and padding provide maximum comfort.

Saddles are covered with high-quality leather, which, although it is more expensive than synthetics, wears for years and does not tear in falls or crashes. U.S. made Touring I and II saddles are available in smooth black or smooth brown leather. The special eyes used will not run or stain clothing.



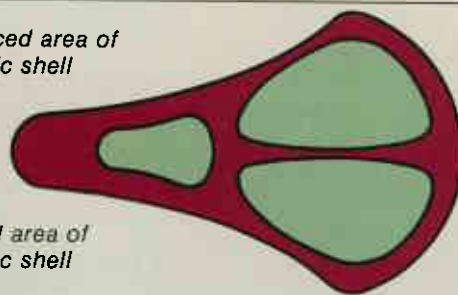
Avocet Touring Saddle Design

Cycle tourists often ride in a more upright position than racing cyclists. This position transfers weight from the handlebars to the seat and increases pressure on the rider's pelvic area. Many riders who find the traditional narrow, hard racing saddle uncomfortable should get welcome relief from an Avocet touring saddle.

Reinforced area of anatomic shell



Thinned area of anatomic shell



The saddle shell has been thinned for increased flexibility in the area where pelvic pressure is greatest. Then the foam padding is formed extra thick above the two pressure points. This anatomic design requires precise coordination of shell and padding thickness which only Avocet offers.

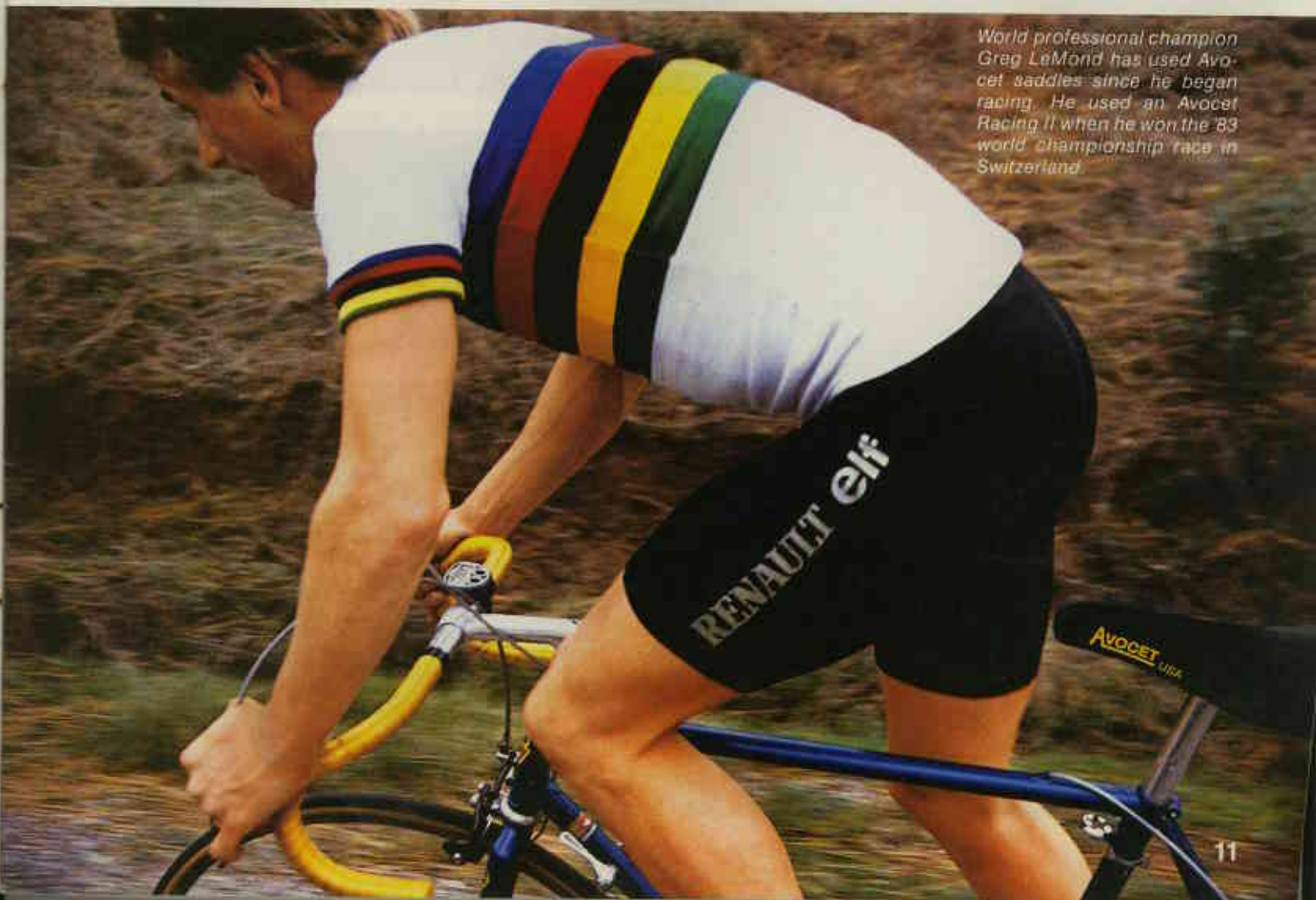
Avocet Saddle Covers. Attractive elasticized vinyl covers to keep your saddle clean and dry. Colors: Red, royal blue, navy blue, tan, gray and yellow.

Cat. No. 11-401 Specify color.

\$2.98



World professional champion Greg LeMond has used Avocet saddles since he began racing. He used an Avocet Racing II when he won the '83 world championship race in Switzerland.



Yakima Bicycle Carriers

Yakima Car Top Carriers — The Most Functional, The Most Versatile.

You will always feel secure when you are carrying your bicycle on a Yakima car top carrier. Their outstanding design and construction insures safe transportation for bicycles or any other load you want to carry. A wide range of carriers and bicycle mounts insures that there is a Yakima rack to fit both your car and your bike. There are setups for sports cars, vans, pick-ups, sedans and station wagons. You can carry a mountain bike, a tandem, a touring bike with a low rider front rack, a road bike or a track bike. Just choose the right combination of carrier and mount. The Yakima system fits cars and bicycles so precisely they are a pleasure to use.

Short Roofline carrier



Yakima tower
with lock

The Tower System. Almost any vehicle with drip rails (rain gutters) can and should use the tower carrier. The towers are made from Dupont Zytel nylon which is extremely strong and will not corrode. Since the tops of the towers can swivel, the drip rails need not be parallel—the tower will accommodate them without bending the trim. The nylon base will not mar the car finish, and the clamp has a tough, baked-on vinyl coating for clearance and protection.

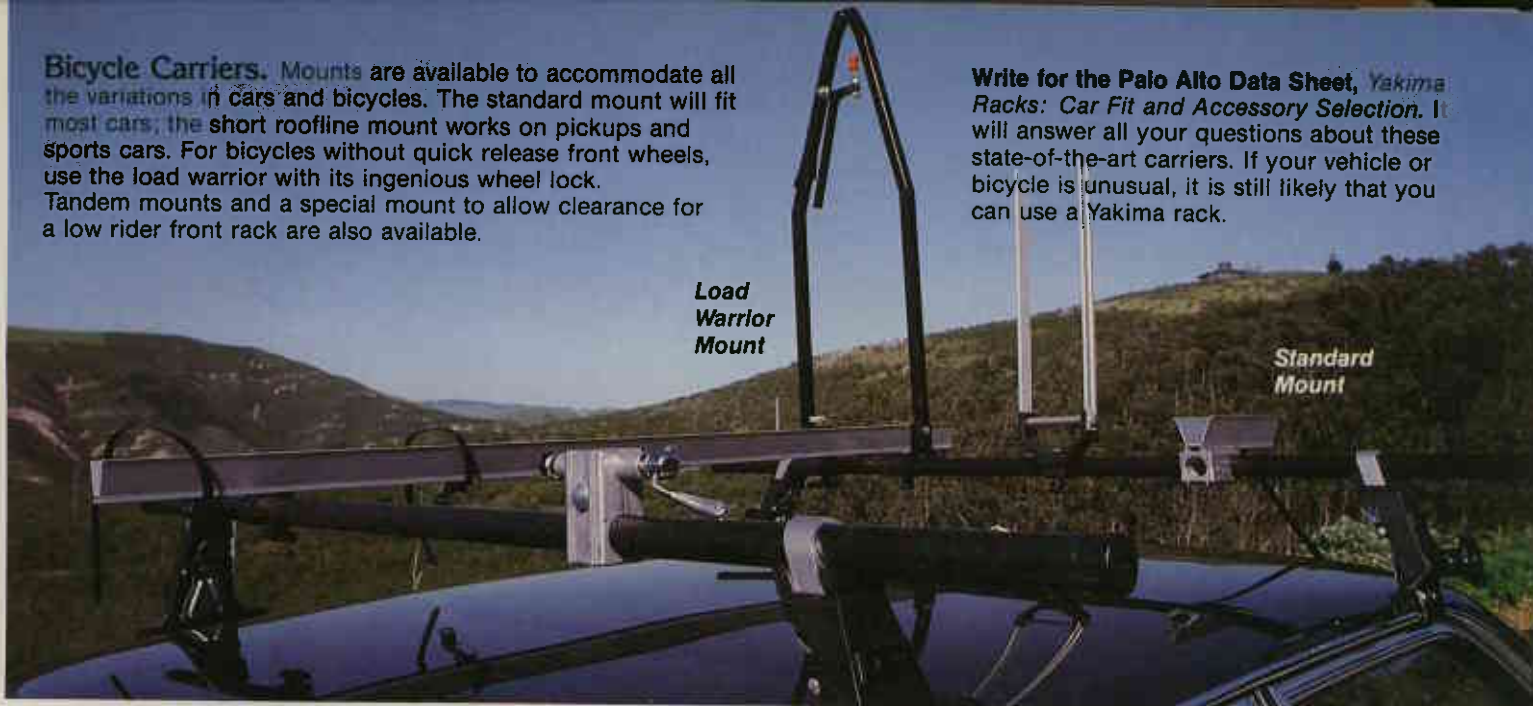
Security for Rack and Bicycles. Locks can be inserted in the tightening knobs which make it impossible to release either the tower or the cross bar. A security cable inserted in the tower and threaded through the bicycles deters theft simply and inexpensively.



Strap Carrier. If your car does not have drip channels, you can still take advantage of Yakima's carrier engineering by using their strap system. These strap carriers use a strong, light aluminum alloy cross bar. Attractively gold anodized, easy to handle and durable. The strap attachment system features 1" polypropylene webbing and a tensioner that locks with much more force than is possible by simply pulling the strap.

Bicycle Carriers. Mounts are available to accommodate all the variations in cars and bicycles. The standard mount will fit most cars; the short roofline mount works on pickups and sports cars. For bicycles without quick release front wheels, use the load warrior with its ingenious wheel lock. Tandem mounts and a special mount to allow clearance for a low rider front rack are also available.

Write for the Palo Alto Data Sheet, Yakima Racks: Car Fit and Accessory Selection. It will answer all your questions about these state-of-the-art carriers. If your vehicle or bicycle is unusual, it is still likely that you can use a Yakima rack.



Carrier Specifications. Match the crossbar length to the width of your roof. This will give adequate length and avoid excessive overhang.

Crossbar Length	Type of Car
48"	Sub-compact to compact
58"	Compact to mid-size
66"	Mid-size to vans
74"	Vans and trucks

Bicycle Mount Specifications. Match the mount to your bicycle and car. "Quick release required" means that the front wheel must be removed.

Mount Type	Bicycle and Car Roof Length Limitations
Standard	Front wheel quick release required. Roof must allow 36" crossbar spread.
Short Roofline	Front wheel quick release required. Any roof length.
Short Roofline/ Lowrider	Front wheel quick release, clearance provided for low rider front rack. Any roof length.
Load Warrior	No quick release required, can be adapted to to any wheel size. Any roof length.
Tandem	Adjusts to any size tandem. Any roof length.

Carriers

	Cat. No.	Price
48 Inch Blacktop Tower	13-401	\$65.00
58 Inch Blacktop Tower	13-402	67.00
66 Inch Blacktop Tower	13-403	69.00
74 Inch Blacktop Tower	13-404	71.00
58 Inch Strap Carrier	13-405	74.00

Bicycle Mounts (each)

Standard	13-406	36.00
Short Roof	13-407	41.00
Short Roof for Low Rider Front Rack	13-408	47.00
Load Warrior	13-409	54.00
Tandem Mount	13-410	99.00

Accessories

Set Of Four Locks	13-411	22.00
Security Cable	13-412	8.00
Extra Wheel Holder	13-413	11.00
Bronco Brackets (make artificial drip channel for campers, etc —set of 2)	13-414	9.50
Tower Sets	13-415	42.00
Hardware For Towers (to adapt tubular crossbars)	13-416	13.00
Family Ski Mount (for 4 pairs)	13-417	54.00

A Yakima set-up will consist of: 1. A carrier to match your car and 2. bicycle mounts for the number and types of bikes you will carry. A set of locks is highly recommended.

Fold-A-Rack. An easy to use, stable rack for those who occasionally transport bicycles on their car. No hardware is required for installation—straps secure it to trunk lid or hatch. Recommended for two bicycles, it can carry up to three. Padding protects the car finish, and coating on the supports protects the bikes. Can easily be converted to a luggage rack or ski carrier. The best of the economically priced racks.

Cat. No. 13-418 \$37.98





O.G.K. Helmet. This helmet gives excellent head protection and comfort at a very reasonable price. It has air scoops, a visor, a tough shell and shock absorbing liner. Quick release chin strap. White only. Includes sizing pads. Single shell size. *Sizing information on order form.*
Cat. No. 14-401 **\$21.98**

Bell's V1-Pro Helmet is styled after the traditional leather racing helmet, but utilizes a high-impact co-polymer shell and energy absorbing liner. Better protection than leather, yet retains the look, comfort and light weight of traditional helmets. Black only. **Sizes:** S, M, L. *Sizing information on order form.*
Cat. No. 14-402 Specify size. **\$39.98**

Bell TourLite Helmet. Light and comfortable with Bell's renowned head protection. Has tough Lexan shell with shock absorbing polystyrene liner, air scoops and adjustable visor. Includes sizing pads for a perfect fit. **Colors:** Red, black and white. **Sizes:** S and L. *Sizing information on order form.*
Cat. No. 14-403 Specify size and color. **\$39.98**



L'il Bell Shell. Small children can only tolerate extremely light helmets. This one weighs only about 8 ounces, yet gives head protection that meets proposed federal standards. Shell and liner are bonded together, and a sizing kit is included for a perfect fit and to allow for the child's growth. Fits children from approximately 1 to 4 years old. Small (hat size 5½-6) and large (6-6½) shell sizes.
Cat. No. 14-404 Specify size. **\$29.98**



Water Bottles

A. Palo Alto	Cat. No. 14-405	\$1.98
B. Plain	Cat. No. 14-406	1.75
C. Avocet	Cat. No. 14-407	1.98

Bottle Cages — Clip or Braze-on mounting.

D. T.A. Chromed steel with mounting hardware.	Cat. No. 14-408	\$4.50
E. Avocet. Light, non-rusting aluminum alloy.	Cat. No. 14-409	\$6.98

E.R.G. Electrolyte Replacement with Glucose drink mix. Replaces trace elements lost through perspiration to alleviate fatigue and cramping. **Flavors:** Natural, fruit punch or lemonade. *Please specify.*

F. Twin Pint Pack	Cat. No. 14-410	\$.75
G. Half Gallon Pack	Cat. No. 14-411	\$1.00

Gant Racer gloves offer maximum comfort and hand protection. Contoured padding covers the suede leather palm. The back is hand crocheted cotton. Cycling gloves cushion road shocks, reduce abrasion and protect the hands in case of a fall. Velcro closing wrist band.

Sizes: 7 through 10 with half sizes (see order form for sizing information)

Cat. No. 15-401 Specify size.

\$17.98



Cycle Pro Deluxe Gloves. A comfortable, well-padded cycling glove. Pigskin palm and hand crocheted back. Velcro wrist band. Cycling gloves offer excellent hand protection for driving, rowing and cross country skiing.

Sizes: 6 through 10 full sizes only (see order form for sizing information)

Cat. No. 15-402 Specify size.

\$8.98



Chamois Fat. Reduces chafing and preserves leather chamois.

Cat. No. 15-403 2 oz.

\$3.98

Leather Chamois (top). First quality leather, soft and durable. Can be used to replace a worn-out chamois, or sewn into shorts to make them suitable for cycling.

Cat. No. 15-404

\$8.98

Avocet Polypropylene Softwick Liner. Get one of the important comfort advantages of Avocet shorts by sewing this liner in your shorts or tights. The very soft polypropylene material provides a cushion and wicks away moisture. Sizes: Large, for use with wider touring saddles; medium, for use with narrow saddles.

Cat. No. 15-405 Specify size.

\$6.98



Tire Accessories

A. Rema Clincher Patch Kit. The best on the market. Includes five super-thin patches with tapered edges, sand paper and glue.

Cat. No. 15-406

\$1.50

B. Tire Pressure Gauges. Accurate, easy-to-read gauges that measure both pounds per square inch and atmospheres.

Cat. No. 15-407 Presta

\$8.98

Cat. No. 15-408 Schrader

\$8.98

C. Aluminum Tire Levers. Extra light to carry on rides for emergency repairs.

Cat. No. 15-409

\$1.50 pair

D. Kool Stop Rim Guard. Better than tape or rubber strips. Prevents punctures due to spoke abrasion. Widths for 1" and 1 1/4" rims.

Cat. No. 15-410 Specify width. \$1.98 each

E. Rema Patches. 10 round patches with feathered edges.

Cat. No. 15-411

\$1.50

F. Plastic Tire Levers. Less likely to pinch tube than metal ones.

Cat. No. 15-412 Set of 3.

\$1.98

G. Tire Savers mount on back of brake center bolt and wipe puncture causing debris from tires.

Cat. No. 15-413

\$1.98 pair

H. Rema Glue. 20 ml.

Cat. No. 15-414

\$1.50

I. Kool Stop Tire Guard. Installed between tube and tire, Tire Guard provides a barrier against sharp objects that cause punctures. Available for use with 1" or 1 1/4" tires.

Cat. No. 15-415 Specify width. \$4.98 ea.

Spokes



D. T. Stainless Steel Spokes These are the finest spokes available, unsurpassed in durability, appearance and consistency. All are made from stainless steel, which never corrodes. Straight gauge spokes have a higher tensile strength and are cheaper and easier to work with than butted ones. Butted spokes are more elastic, and in a well-built wheel provide exceptional durability because they absorb shock loads more effectively. Available lengths are 290 mm, 292, 294, 296, 298, 300, 302, 304, 306 and 308.

D. T. 15-16-15 light gauge (double butted) \$.40 ea.
 Cat. No. 16-401 2 bags of 37 spokes with nipples \$25.98

D. T. 14-15-14 heavy gauge (double butted) \$.40 ea.
 Cat. No. 16-402 2 bags of 37 spokes with nipples \$26.98

D. T. 15 light gauge (straight gauge) \$.30 ea.
 Cat. No. 16-403 2 bags of 37 spokes with nipples \$17.98

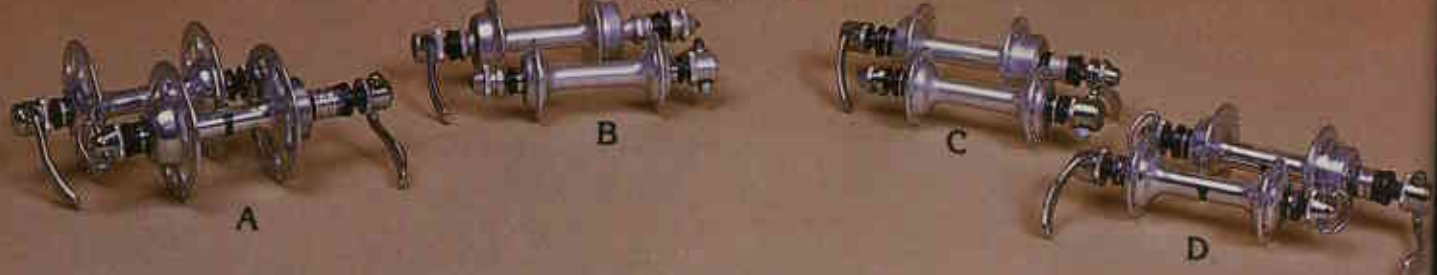
D. T. 14 heavy gauge (straight gauge) \$.30 ea.
 Cat. No. 16-404 2 bags of 37 spokes with nipples \$17.98

How to Order D. T. Spokes
 Spokes are measured from the inside of the bend near the head to the end of the spoke. Order by length, if known. Length is determined by rim size, diameter of hub flange and number of crosses. We can determine length if you tell us:

1. **Rim** — Brand, whether it is 27" or 700 diameter, model if possible and whether it is alloy or steel.
2. **Hub** — Brand, whether it is high or low flange, number of holes.
3. **Pattern** — Number of crosses. (We do not stock spokes short enough for radial spoking.)

Order spokes at each price if quantity differs from bagged number. Single bags cost one half of the 2 bag price.

Do you want to build your own wheels but need more information on design and components? Send a self-addressed, stamped envelope requesting the Palo Alto Data Sheet "Wheels and Tires to Meet Your Needs." Or ask for it with any order.



Hubs

A & D. Campagnolo Record. Good looking, smooth running and durable hubs. Rear axles for 5 or 6 speed spacing; 28, 32 or 36 holes. Add \$3 to cost if 6 speed and \$5 if not 36 hole. **Weights:** High, 580; low, 510.
 Cat. No. 16-405 High flange. *Specify axle and holes.* \$64.98 pair
 Cat. No. 16-406 Low flange. *Specify axle and holes.* \$58.98 pair

B. Avocet Model II. These hubs use long-wearing, removable and adjustable contact sealed cartridge bearings. Quick release skewers have aluminum alloy end pieces for light weight. Five or 6 speed; 28, 32 or 36 holes. **Weight:** 470 g.
 Cat. No. 16-407 Low Flange. *Specify axle and holes.* \$59.98 pair
 Cat. No. 16-408 Replacement bearing. \$6.98 each

C. Avocet Model I. These forged aluminum alloy hubs are an excellent buy. Perfectly adjustable loose ball bearings and precision ground races and cones insure smooth running. Satin finish. 36 holes for 5 or 6 speed. **Weight:** 520 g.
 Cat. No. 16-409 Low flange. *Specify axle.* \$39.98 pair

Skewers and Axle Sets

Brand	Skewer	Price	Axle Set	Price
Avocet Mod I Fr. or R.	16-410	\$ 8.98	16-414	\$ 5.98
Avocet Mod II Fr. or R.	16-411	11.98	16-415	7.98
Campagnolo Fr.	16-412	13.25	16-416	11.98
Campagnolo R.	16-413	13.50	16-417	12.98

Wheels

Using high quality wheels will make a big difference in the performance of any bicycle. A good wheel requires not only high quality components, but also skilled building. We use the best components that will result in versatile, reasonably priced wheels. Our builders have many years of experience and use proven techniques for lacing, tensioning, stress relieving and truing. Correct tension is verified with a tensiometer.

Specifications

Lacing pattern: 3 cross

Hub axle: For 5 or 6 speed freewheel (*please specify*)

Number of spokes: All available with 36; Cat. No. 17-404 and 17-406 available with 32 (*please specify*)
Please note that in order to keep wheels in stock for fast delivery, and to maintain their reasonable cost, no substitution of parts is allowed. All wheels are carefully packed and shipped in extra strong boxes.

Clincher Wheels (Pairs)

Rim	Spoke	Hub	Cat. No.	Price
Super Champion 27×1 (14-20 mm)	DT 15 gauge plated	Avocet Mod. I low flange	17-401	\$92.00
Mavic G-40 27×1 (14-20 mm)	DT 15 gauge stainless	Campagnolo Record low flange	17-402	139.98
Super Champion 700×25 (14-20 mm)	DT 15 gauge plated	Avocet Mod. I low flange	17-403	92.00
Mavic G-40 700×25 (14-20 mm)	DT 15 gauge stainless	Campagnolo Record low flange	17-404	139.98

Tubular Wheels (Pairs)

Super Champion Arc-en-Ciel	DT 15 gauge plated	Avocet Mod. I low flange	17-405	92.00
Mavic GP-4	DT 15 gauge stainless	Campagnolo Record low flange	17-406	139.98

Custom Built Wheels. With custom built wheels you can specify exactly the parts required to suit your particular needs. Any hub, rim and spoke in this catalog can be used, and, if you like, send us your own hubs to be laced. These wheels receive special attention from our wheel builders who make them tight and true, then spend extra time to equalize spoke tension and verify it with a tensiometer. A tight wheel with all the spokes at the same tension is extra durable and holds its trueness through thousands of miles. List the parts you require on your order specifying cross pattern, number of spokes, and 5 or 6 speed hub axle. Then add:
Cat. No. 17-407 (labor per wheel) **\$20.00**

For additional information to help you select wheels request the Palo Alto Data Sheet, "Wheels and Tires to Meet Your Needs." Send a self-addressed, stamped envelope with your request, or ask for the data sheet with any order.



Centering.



Stress relieving.



Verifying tension.

Rims

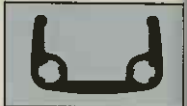


Clinchers (Wired-On)

Super Champion Gentlemen rims are both strong and light because of their hollow cross-section design and durable aluminum alloy material.



Super Champion Model 58 rims feature a durable double box design, tough aluminum alloy construction and the proper width for wider tires.



Mavic G-40 rims have a hollow cross section and have been heat treated for strength. They are hard anodized an attractive gray color.



Sew-Ups (Tubulars)

Mavic GP-4's have a reputation for toughness. Their aluminum alloy material is tempered for strength then hard anodized dark gray.



Super Champion Arc-en-Ciel have medium weight and are excellent all purpose rims.

Model	Size	Acceptable tire widths	Recommended use	Weight grams	Available drillings	Cat. No.	Price each
Super Champion Gentleman	700C×25 27×1	23 to 28 mm ¾ to 1 ¼ in.	Touring, training, general use	470	36	18-401	\$11.98
				485	36	18-402	11.98
Super Champion Model 58	700C×32 27×1 ¼	28 to 35 mm 1 ½ to 1 ¾ in.	Heavy duty touring, off-road riding	505	36	18-403	11.98
				520	36	18-404	11.98
Mavic G-40	700C×25 27×1	23 to 28 mm ¾ to 1 ¼ in.	Touring, training, general use	475	32, 36	18-405	23.98
				490	36	18-406	23.98
Mavic GP-4	700C	All tubulars	Training, rough course racing	410	28, 32 36	18-407	22.98
Super Champion Arc-en-Ciel	700C	All tubulars	Training, general racing	350	36	18-408	11.98

Wheel Tools



A. Dishing Tool. Accurately centers the rim between the hub axle locknuts when building wheels.
Cat. No. 18-409 \$9.98

B. "T" Type Spoke Wrench. Compact and convenient to carry in ride tool kit.
Cat. No. 18-410 \$.75

C. Spoke Ruler. Measures spoke length in millimeters and inches.
Cat. No. 18-411 \$4.98

D. Nipple Driver. Quickly takes the slack out of the spokes in a newly laced wheel. A pilot pin ejects the driver automatically for uniform thread engagement on all spokes.
Cat. No. 18-412 \$12.98

E. Loop Type Spoke Wrenches. Fits comfortably in the hand—best for wheel building. Specify black, for DT spokes; green, for other European spokes; red, for Japanese spokes.
Cat. No. 18-413 Specify color. \$3.98

F. Avocet Truing Stand. Lightweight aluminum with attractive black finish. Uprights spread for different axles; arm pivots for any wheel size.
Cat. No. 18-414 \$19.98



Handlebars, Stems and Headsets

A. Cinelli Handlebars come in four models to suit different riding positions and styles. The Model 63 is a popular all purpose bar. The Model 64 has the least drop and reach and is popular with tourists as it gives a more upright position. The Model 65 has a bend similar to a track bar and is good for criterium racing where most riding is done on the drops. The Model 66 has the greatest drop and reach. All bars come in 38 and 40 cm widths. The Model 66 also comes in 42 cm width. Weight (Mod. 63-40) 330 g.

- Cat. No. 19-401 Model 63 Handlebar. *Specify width.* \$15.50
 Cat. No. 19-402 Model 64 Handlebar. *Specify width.* \$15.50
 Cat. No. 19-403 Model 65 Handlebar. *Specify width.* \$15.50
 Cat. No. 19-404 Model 66 Handlebar. *Specify width.* \$15.50



B. Cinelli Stem Model 1/R. Binder bolt hidden on stem's underside drives the wedge-shaped end of a knurled plate that clamps the handlebar. Weight 258 g. (10 cm). English/Italian Diameter (22.2 mm) Extensions: 9.5 cm, 10, 10.5, 11, 11.5, 12, 12.5, 13, 14. French Diameter Extensions: 10 cm, 11, 12, 13, 14.

- Cat. No. 19-405 1/R Stem Eng./Ital. *Specify extension.* \$29.50
 Cat. No. 19-406 1/R Stem French. *Specify extension.* \$29.50

C. Cinelli Stem Model 1/A. Available in a full range of extensions to suit almost any bicycle set-up. Weight 280 g (10 cm). English/Italian Diameter (22.2 mm) Extensions: 7 cm, 8, 8.5, 9, 9.5, 10, 10.5, 11, 11.5, 12, 12.5, 13, 14. French Diameter (22.0) Extensions: 7, 8, 9, 10, 11, 12, 13, 14.

- Cat. No. 19-407 1/A Stem Eng./Ital. *Specify extension.* \$18.50
 Cat. No. 19-408 1/A Stem French. *Specify extension.* \$18.50



D. Avocet Model 20 Headset. A particularly durable and well finished U.S. made headset. Extra hard bearing surfaces control dimpling. Computer aided manufacture (CAM) insures completely round races and the smoothest available bearing surfaces. The 360° true seal feature gives bearing protection. A non-contact labyrinth seal insures that no dirt or water reaches the bearings, yet it does not interfere with the free turning of the fork. An O-ring seal in the lock nut keeps the stem from freezing in the fork. All parts interchange with Campagnolo. English, Italian or French threads. Weight 183 g.

- Cat. No. 19-409 *Specify threading.* \$29.98

E. Avocet Model 30 Headset. Same as Model 20 except made from highly polished aluminum alloy with steel bearing races pressed in. Weight 145 g.

- Cat. No. 19-410 *Specify threading.* \$39.98

F. Avocet Model II Headset. This is a high-quality headset with precision ground races; durable and holds adjustment through 360 degrees. Exterior surfaces are chromed. Weight 190 g. English, Italian or French threads.

- Cat. No. 19-411 *Specify threading.* \$19.98

G. Campagnolo Super Record Headset. Satin finished aluminum alloy with pressed in steel races. English, Italian or French threads.

- Cat. No. 19-412 *Specify threading.* \$41.98

H. Tange Headset. A good quality standard headset to replace one with worn out or pitted bearing surfaces. English, Italian or French threads.

- Cat. No. 19-413 *Specify threading.* \$9.50

Pedals

A. Avocet Model III Platform. The body of this unique pedal is molded from durable high-density nylon. It has an aerodynamic shape and gives excellent foot support. The alloy cage is detachable. The toe clips, which are included, adjust both back and forth and left to right to accommodate extra-large and extra-small shoes. This versatile pedal is well suited to both touring and racing. Weight 332 g.

Cat. No. 20-401 \$34.98

Cat. No. 20-402 Spare toe clips \$4.98 pr.

B. Avocet Model I. This economically priced pedal has the appearance and performance of other pedals costing much more. Its light-weight aluminum alloy cage is anodized black and drilled and tapped for mounting toe clips. The body is made from aluminum alloy with steel bearing races pressed in. Weight 332 g.

Cat. No. 20-403 \$19.98

C. Avocet Model II. The Model II pedal has a handsome and distinctive faceted body. Its aluminum alloy cage detaches for replacement should it be damaged. The bearing surfaces are hardened and finely ground to insure durability and smoothness. Weight 356 g.

Cat. No. 20-404 \$34.98

D. SR Silstar 100 BL. A good looking, economical pedal with an aluminum alloy body and black anodized cage which is drilled and tapped for toe clip attachment. Weight 354 g.

Cat. No. 20-405 \$13.98

E. SR Silstar SP11. A platform pedal that gives good foot support and is a good choice for touring. The cage and body are made from a single piece of aluminum alloy. The cage is drilled and tapped to accept standard toe clips. Weight 380 g.

Cat. No. 20-406 \$18.98

F. Campagnolo Superleggeri. All Campagnolo pedals have basically the same design. The track model (shown here) differs from the road model only in that its cages do not extend around the dust cap. These pedals have aluminum alloy cages and should only be ridden with plastic or nylon cleats, not steel or aluminum ones. Steel spindle. Weights: Road 321 g., Track 308 g.

Cat. No. 20-407 Road \$67.98

Cat. No. 20-408 Track \$67.98

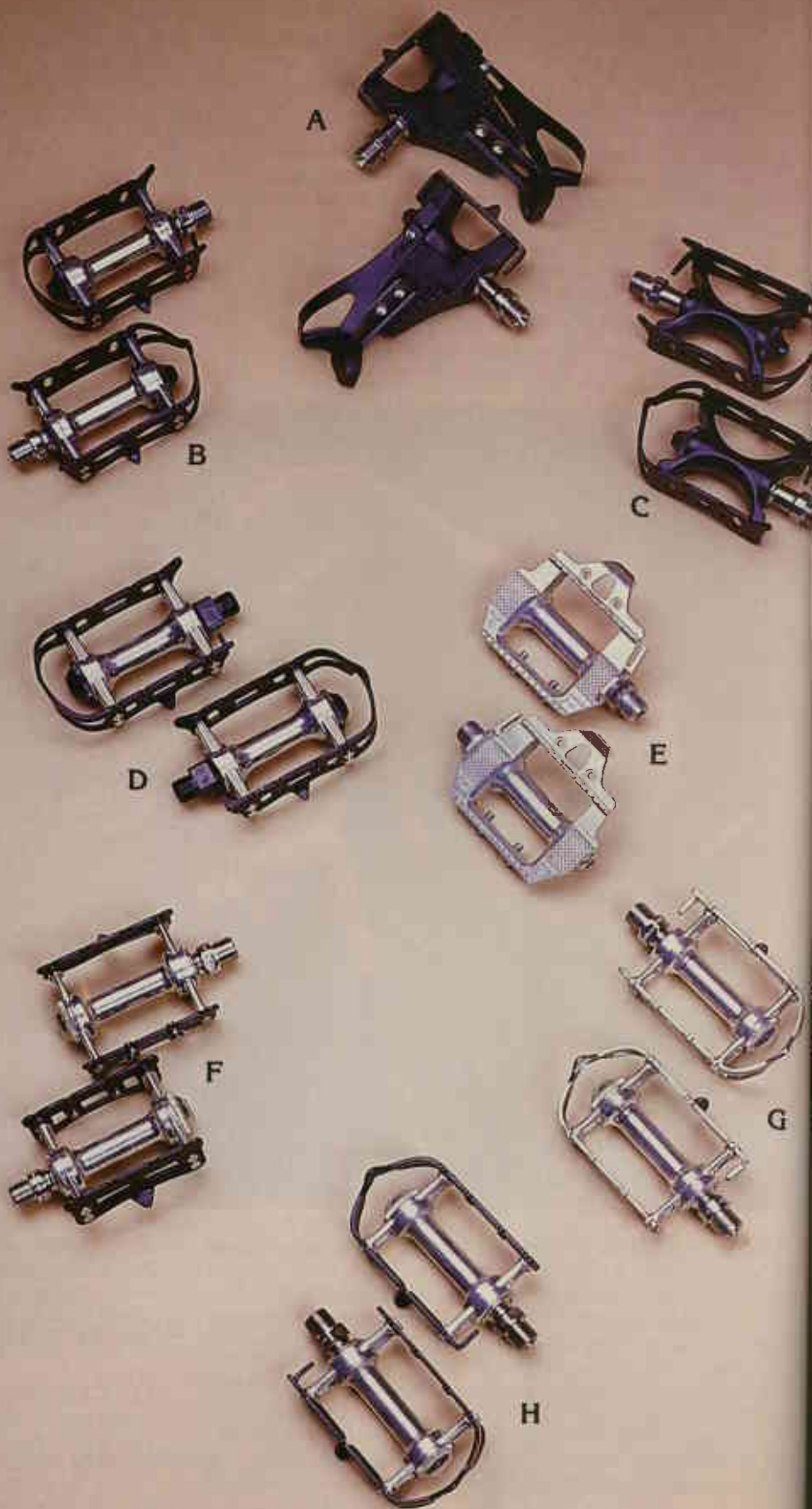
G. Campagnolo Record pedals have a chromed steel cage and steel spindle. All Campagnolo pedals have pick-up tangs that aid in getting feet into toe clips, and they come with toe clip mounting bolts. Weights: Road 403 g., Track 380 g.

Cat. No. 20-409 Road \$54.98

Cat. No. 20-410 Track \$54.98

H. Campagnolo Super Record. These have a black anodized aluminum alloy cage and a titanium spindle for light weight. Weight 259 g.

Cat. No. 20-411 Road \$129.98



All pedals sold in pairs. Threading: English, 9/16×20

Toe Clips, Toe Straps & Handlebar Tape

A. Avocet Model II Toe Straps are made from leather that comes from the thickest and strongest part of the cow hide. The buckle has nylon rollers. Black, white, blue or red.
Cat. No. 21-401 *Specify color.*
\$3.98 pair

B. Velox Handlebar Plugs. Rubber with screw, black only.
Cat. No. 21-402
\$1.00 pair

C. Cinelli Handlebar Caps. Plastic caps in red, white or blue.
Cat. No. 21-403 *Specify color.*
\$1.00 pair

D. Avocet Model III Toe Straps are stretch-proofed by laminating a nylon strip between two pieces of the best quality leather. Black only.
Cat. No. 21-404
\$7.98 pair

E. Alfredo Binda Extra Toe Straps. Non-stretch straps of beautifully tanned natural leather laminated with a nylon core. Ivory color.
Cat. No. 21-405
\$11.50 pair

F. Avocet Model I Toe Straps are made from durable leather with smooth functioning, riveted brass buckles. Black, white, blue or red. *Specify color.*
Cat. No. 21-406
\$2.50 pair

G. Avocet Model I Toe Clips are chromed spring steel that returns to its original shape if bent. 65 g. S, M, L. *Specify size.*
Cat. No. 21-407
\$3.50 pair

H. Avocet Model II Toe Clips are spring steel with a tough black coating which stops corrosion and smooths rough edges to protect shoes. 60 g. S, M, L. *Specify size.*
Cat. No. 21-408
\$4.98 pair



I. Avocet Model III Toe Clips are made from aluminum alloy. They are very light and cannot corrode. Anodized black. 25 g. S, M, L.
Cat. No. 21-409 *Specify size.*
\$9.98 pair

J. Campagnolo Steel Toe Clips. Beautifully chromed with shoe guide tang at back. 70 g. S, M, L.
Cat. No. 21-410 *Specify size.*
\$9.50 pair

K. Campagnolo Alloy Toe Clips. Clear anodized aluminum alloy with shoe guide tang at back. 25 g. S, M, L.
Cat. No. 21-411 *Specify size.*
\$12.50 pair

Toe Clip Sizing: Small fits shoe sizes up to men's 6; medium, 6½-9; large over 9½

L. Tressoplast Cotton Handlebar Tape. Adhesive backed tape with woven edges to prevent unravelling. Two rolls required to wrap both sides of handlebar. Black, white, dark blue, light blue, red, orange, yellow and green.
Cat. No. 21-412 *Specify color.*
\$1.00 each

M. Box of Ten Tressoplast Tape. Mix or match.
Cat. No. 21-413 *Specify color.*
\$9.00

N. Benotto Cello Tape. Plastic with non-slip texture. Two rolls with matching bar caps. White, red, gray, light blue, pink, yellow and black.
Cat. No. 21-414 *Specify color.*
\$1.98 pair

O. Grab-On Handlebar Padding. Quarter-inch thick polyurethane foam padding cushions hands and eliminates numbness. Black only.
Cat. No. 21-415
\$7.98

Palo Alto Frames



Palo Alto frames are made to perform flawlessly during the most difficult competition or touring. Each frame is carefully hand brazed from Columbus double butted tubing. A fine frame is the heart of a good bicycle, and there is no better frame value available.

Palo Alto Bicycles Data Sheet: Palo Alto Frame Specifications. This detailed specification sheet includes all angles, dimensions, materials and other details of Palo Alto frame design. It also has information about how design variables affect bicycle performance and guidance on how to select a frame to meet your needs. Send a self-addressed, stamped envelope for one, or request it with any order.



Touring Frame Our touring frames are designed to be rugged, stable and convenient for mounting racks and carrying loads. They have the same brazed-on fittings as the racing frame plus rear rack bosses and eyelets front and rear. Downtube shifter bosses are omitted to allow the use of handlebar shifters. The finish and chroming on racing and touring frames are identical. The touring frame geometry, however, is quite different. It is longer and less upright for riding comfort and stability when carrying loads. Accepts 700c or 27" wheels with normal reach brakes.

Cat. No. 22-401 (Without headset) *Specify size and color.*
\$340.00
Cat. No. 22-402 (With Avocet Model II headset) *Specify size and color.*
\$355.00

10% Discount on Component Group. If you buy a Palo Alto frame and at the same time buy the components necessary to complete the bicycle, we will discount the price of the parts group by 10%. These are the parts you must buy with your frame to qualify for the discount: Wheels (or hubs, rims and spokes), crankset, front and rear derailleurs, shifters, pedals, brakes, handlebar and stem, saddle and seatpost, freewheel, chain, headset, tires and tubes. If you choose the already discounted Campagnolo group, its price is net, but you can discount the other parts.

Racing Frame This is an upright frame with a short wheel-base. Designed for performance and quick handling, it is suitable for general sport riding as well as for road and criterium racing. The following fittings are brazed on each frame: Gear cable guides on bottom bracket underside, down tube shifter bosses, rear derailleur cable stop, top tube brake cable guides and water bottle bosses. Dropouts, fork tips, fork crowns and right chainstays are chromed. A chain hanger is brazed to the inner right seat stay. Accepts 700c or 27" wheels with normal reach brakes.

Cat. No. 22-403 (Without headset) *Specify size and color.*
\$340.00
Cat. No. 22-404 (With Avocet Model II headset) *Specify size and color.*
\$355.00

Specifications: All Frames

Sizes: 49, 51, 53, 55, 57, 58, 60 and 63 cm measured from the center of the bottom bracket shell to the centerline of the top tube. Add 1.3 cm to get measurement to top of seat lug.

Colors: Red, blue and anthracite baked enamel

Tubing: Columbus SL double butted (touring 58, 60 and 63 use SP)

Bottom Bracket Shell: 70 mm, Italian threads

Steering Tube Diameter: 22.2 mm

Seat Tube Inside Diameter: 27.2 mm

Dropout Spacing: 121 mm for 5 speed freewheel or 126 mm for 6 speed. *Please specify.*





American professional cyclist Jonathan Boyer who rode a Vitus aluminum frame to a 12th place finish in the 1983 Tour de France.

Photo © Winston Swift Boyer

Vitus 979 Frames

The Vitus 979 is made from heat treated aluminum-magnesium alloy tubing. It offers the performance and durability of a steel frame with a weight saving of approximately 30%. Until now, frames made from anything but steel were either too whippy, too fragile, too crudely finished, too expensive or all of these. The Vitus has a distinctive appearance, but it looks like a racing frame. It was race proven in the 1983 Tour de France by the SEM-Mavic team which rode well, Sean Kelly finishing 7th and Jonathan Boyer 12th. Vitus frames are already popular with U.S. triathletes and other racers. These frames are bonded together with a special adhesive. No heat is applied. This insures that the tube material will not be weakened. It also gives an even distribution of stress and provides elasticity that reduces shock. The deep, lustrous colors are anodized, and cannot chip as paint does.

Sizes: 13 sizes 48 through 60 cm measured from bottom bracket center to top tube center

Colors: Red, blue and silver anodized (all frames have adhesive decals with handsome Vitus graphics)

Tubing: Vitus Duralinox aluminum-magnesium alloy

Bottom Bracket and Steering Tube Threads: English

Seatpost and Stem Diameters: 25.0 mm post, 22.2 mm stem

Brake and Wheel Clearances: Normal or short reach brakes with 700c wheels, short reach only with 27"; recessed brake bolts required

Attached Fittings: Bottom bracket cable guide, chain stay cable stop, water bottle bosses, shift lever bosses. The brake cable runs inside the top tube through a special housing. Seat post binder included.

Weight: 4 lb. 7 oz. for 53 cm frame and fork with headset

Dimensions: For 53 cm frame—top tube 54 cm, wheelbase 97 cm, chain stay 41 cm.

When ordering specify the following: Size, color, and whether dropout spacing is for 5 or 6 speed hub axle.

Cat. No. 23-401 Vitus 979 Frame

\$495.00



Eddy Merckx Professional Frames

These frames come from a collaboration between a great cyclist and a master frame builder. Eddy Merckx, with more than 500 racing victories including 4 world championships and 5 Tours de France, knows what a frame requires for winning performance. Throughout Merckx's professional racing career, Ugo De Rosa built his frames. De Rosa's reputation as a designer and craftsman is unsurpassed. Now Merckx has established a frame building workshop in his native Belgium, with Ugo De Rosa in charge of production. The result is the Eddy Merckx frame. These road racing frames are suitable for all kinds of riding giving both comfortable and responsive performance.

Sizes: 17 sizes, 48 through 64 cm measured from bottom bracket center to top tube center

Colors: Red, blue and anthracite baked enamel

Tubing: Columbus SL double butted (59-61 cm use heavy gauge SP down tube, 62-64 all SP)

Lugs: De Rosa designed short point

Fork Crown and Bottom Bracket Shell: Cinelli investment cast

Brazing: Brass using a special De Rosa technique

Bottom Bracket and Steering Tube Threads: Italian

Seatpost and Stem Diameters: 27.2 mm post, 22.2 mm stem

Brake and Wheel Clearance: Normal or short reach brakes with 700c wheels, short reach only with 27"; recessed brake bolts required

Brazed on Fittings: Top tube cable guides, shifter bosses, water bottle bosses, chain stay cable stop, front derailleur boss, (Vitus cable guide clipped to underside of bottom bracket shell)

Weight: 6 lb. 3 oz. for 53 cm frame and fork with headset

Dimensions: For 53 cm frame—top tube 54 cm, wheelbase 97.5 cm, chain stay 41 cm

We recommend that you buy frames with headset installed. We will install it free if you buy the headset from us.

When ordering specify the following: Size, color, whether dropout spacing is for 5 or 6 speed hub axle

Cat. No. 23-402 Eddy Merckx frame

\$595.00

Campagnolo Component Group—For Palo Alto, Vitus or Merckx Frames. You may purchase separately, but no substitutions. Includes Super Record: chainset (170 mm arms, 42x52), front derailleur (specify standard or brazed-on) rear derailleur, headset (Ital.), and seatpost (specify 27.2 or 25.0); Nuovo Record: bottom bracket (Specify Ital. or Eng.), shift levers (for brazed on bosses), hubs (36 hole, specify 5 or 6 speed), brakes (specify regular or recessed bolts, normal or short reach) and pedals (black superleggeri).

Cat. No. 23-403

\$499.00

Brakes

A. Sun Tour Superbe Brakes. High quality brakes at a very reasonable price. They have polished aluminum alloy calipers and a quick release that allows the brake to operate with its cam in any position. Cables pass through a hole clamp which applies pressure all around and does not deform them. Top tube cable clips included. Gum rubber lever hoods interchange with Campagnolo.

Cat. No. 24-401 Superbe Normal Reach Brake Set **\$109.98**

Cat. No. 24-402 Superbe Short Reach Brake Set **\$109.98**

B. Campagnolo Record Brakes. Finely finished brakes with design characteristics which provide maximum braking control. Specify standard or recessed bolt.

Cat. No. 24-403 Campagnolo Normal Reach Brake Set **\$108.98**

Cat. No. 24-404 Campagnolo Short Reach Brake Set **\$108.98**

C. Dia Compe Model G Brakes. A moderately priced brake, well finished, and with all the good side-pull stopping and control characteristics. Available with normal reach and also with the extra-long reach required by some bicycles.

Cat. No. 24-405 Dia Compe G Normal Reach Brake Set **\$28.98**

Cat. No. 24-406 Dia Compe G Long Reach Brake Set **\$28.98**

A Brake Set Includes: Brake calipers, brake levers with hoods, cores, and housing.

Brake Fitting

To determine the brake reach your bicycle requires, you must mount the wheels you will use in the frame, then measure the distance from the center of the centerbolt hole to the centerline of the rim. If the brake is to fit, your measurement must fall within the range from the top of the slot to the bottom of the slot indicated in the table.



A and B are top and bottom of slot respectively.

This is the distance you must know.



Measurement in. mm.	Center of Slot	Top of Slot	Bottom of Slot	Weight of Brake Set
Campagnolo Normal	52	48	56	609 g.
Campagnolo Short	47	43	51	590 g.
Dia Compe "G" Normal	50	43	57	630 g.
Dia Compe "G" Long	62	52	72	640 g.
Superbe Normal	53	47	57	535 g.
Superbe Short	45	40	50	520 g.

Brake Lever Hoods

Cat. No. 24-407 Campagnolo each **\$5.98**

Cat. No. 24-408 Sun Tour Superbe, each **\$3.50**

Cat. No. 24-409 Dia Compe G, each **\$2.50**

Cat. No. 24-410 Universal 68 and 51, each **\$2.50**

Brake Shoes

Cat. No. 24-411 Campagnolo, each **\$2.75**

Cat. No. 24-412 Sun Tour Superbe, each, includes holder **\$1.50**

Brake Cables

Cat. No. 24-413 Campagnolo, front **\$2.50**

Cat. No. 24-414 Campagnolo, rear **\$3.00**

Cat. No. 24-415 Standard, front or rear **\$1.00**

Cable Housing

Teflon Lined. Vinyl coated with a slick teflon interior sleeve to reduce friction. Black, gray and white. Lengths: 2, 4, 6, and 8 feet. Eight feet is adequate for the brakes on the largest bicycle.

Cat. No. 24-416 Specify color and length. **\$.50/foot**

Standard. Vinyl coated. Black, white, red, blue and silver. Lengths: 2, 4, 6, and 8 ft.

Cat. No. 24-417 Specify color and length. **\$.25/foot**

Campagnolo. Gray only.

Cat. No. 24-418 Front **\$3.25**

Cat. No. 24-419 Rear **\$3.75**





Ritchey Team Comp. As the name implies, this is a bicycle designed for competition dirt riding. It has remarkably responsive handling. The Comp bicycle can take the punishment of all-out racing on the most brutal courses, yet it has the feel of the finest lightweight road bike. It features many Ritchey design innovations that have made his bikes accepted as the state-of-the-art. Custom Columbus SP tubing is lugless fillet-brazed for clean lines and exceptional strength. The custom Unifork and twin strut handlebars are other Ritchey exclusives.

Specifications

Wheels: Shimano Dura-Ace EX quick release hubs, Ambrosio Durex H.T. rims, 14-15 gauge stainless butted spokes, IRC 26 x 1.75 tires.

Drive Train: Shimano XT 26-36-48 crank, Ritchey custom sealed bottom bracket, Sun Tour XC oval pedals, Shimano

Deore XT shifters, front and rear derailleurs, Shimano Uniglide chain, Shimano 12-28 freewheel.

Brakes: Shimano Deore XT cantilever with Magura levers.

Headset: Avocet Model 30. **Saddle and Post:** Avocet Racing II saddle, SR Laprade post, Sun Tour 170 seat post quick release.

Sizes: 19 inch, 20, 21, 22, 23 (measured center to center)

Color: Team red **Weight:** 25 lbs. (21" frame)

Ritchey Comp Frame with headset, bottom bracket and custom handlebar.

Cat. No. 25-401 *Specify size.* **\$975.00**

Complete Ritchey Comp Bike. Shipped assembled, but knocked down.

Cat. No. 25-402 *Specify size.* **\$1345.00**



Mountain Bike Wheel Parts. Ambrosio rims are heat treated and anodized a gray color. They accept both 1.75 and 2.125 tire widths. Araya rims also accept both tire widths. Saturne rims take 1.75 tires for off road use or 1 3/8 tires for street cruising.

Rims	Weight	Cat. No.	Price ea.
A. Ambrosio Durex 26 x 1.75	495 g.	25-403	\$19.98
B. Araya 7X 26 x 1.75	620 g.	25-404	\$14.98
C. Specialized Saturne 26 x 1.5	465 g.	25-405	\$18.98

Tires	Weight	Cat. No.	Price ea.
D. Specialized TriCross 26 x 1.75	530 g.	25-406	\$14.98
E. Specialized Crossroads 26 x 2.125	820 g.	25-407	\$14.98
F. Specialized Street Stomper 26 x 1.75	750 g.	25-408	\$14.98
G. Panaracer 26 x 2.125	900 g.	25-409	\$12.98

H. DT Stainless 14 Gauge Spokes. Lengths 265 mm, 268, and 270 to fit most mountain bike wheels. Specify length or hub, rim and cross pattern. Sold in 100's with nipples.

Cat. No. 25-410 **\$14.98**



Tomasselli Brake Levers. These motorcycle style levers have excellent leverage allowing "two-finger" braking in rough conditions so that a firm grip on the handlebars is still possible. Extra tough aluminum alloy construction with rubber dust hoods on body and cable entry.

Cat. No. 25-412 **\$34.98**

Mountain Bike Applications. Mountain bikes are surprisingly versatile. Their comfortable ride, stability, and durable tires and wheels make them an excellent choice for commuting and utility riding. Off road touring is an exciting alternative to pavement riding, and mountain bike geometry and gearing make carrying loads easy. Mountain bike racing is becoming increasingly popular—a sport that demands skilled bike handling and good physical condition.



Ritchey-Palo Alto Mountain Bikes

A. Ritchey-Palo Alto Mountain Bike Frames. Tom Ritchey is acknowledged as a primary inventor of the mountain bike and as one of the world's most skilled frame builders. He is producing a limited number of frames for Palo Alto Bicycles. They are made of custom 4130 chrome-moly tubing, lugless fillet brazed and impeccably finished. Complete bicycles are also available with components especially selected for quality and compatibility. Unless you are transferring good components from another frame, we recommend that you purchase the complete bike which comes assembled but knocked down. For durability, riding pleasure and craftsmanship, no other mountain bikes match those built by Ritchey, and although the Ritchey-Palo Alto is by no means an inexpensive bicycle, it is an excellent value. Each frame comes with a Custom Ritchey Sealed Bottom Bracket and an Avocet Model II Headset installed.

Frame Specifications:

Sizes: 5 sizes 19-23 inches

Colors: Metallic Red and Metallic Green

Bottom Bracket and Steering Tube Threads: English

Seatpost and Stem Diameters: Seatpost 26.8 mm, stem 22.2 mm

Brazed-on Fittings: Top tube brake cable guides, bosses for cantilever brakes, water bottle bosses, thumb shifter cable guides, rack or fender bosses, bottom bracket cable guide

Weight: 7 lbs. 15 oz. (22" frame), complete bike 29 lbs.

Dimensions: For 22" frame—top tube 23", wheelbase 44 1/2", chainstay 17 3/4". Dropout spacing is for 6 speed hub axle.

When ordering specify the following: Size and color

Ritchey-Palo Alto Mountain Bike Frame

Cat. No. 26-401

\$550.00

Complete Ritchey-Palo Alto Mountain Bike with components described on page 27

Cat. No. 26-402

\$898.00



Mountain Bike Component Group.

This group has been especially selected for compatibility with our Ritchey-Palo Alto frame, and for performance and value. You may also order the parts separately from the list at the right, but no substitutions are allowed in such specifications as freewheel ratios, crank chainwheels and wheel components. Specifications may change without notice, but we will confirm any changes when you order.

Cat. No. 27-401 **\$398.00**

Frames are painted with durable Imiron paint in metallic red or metallic green. Ritchey decal on head tube and Palo Alto decal on down tube. Special Ritchey sealed bottom bracket (not shown) is installed.

Mountain Bike Components.

Together these parts make up our component group.

B. Wheels. Built with Shimano XT large flange hubs (6 speed), Araya 7X rims 26x1.75 and 14 gauge stainless steel spokes.

Cat. No. 27-402 **\$109.98**

Hubs, Shimano XT Large Flange (6 speed)

Cat. No. 27-403 **\$34.98**

Rim Strips, Rubber 26x1.75 pair

Cat. No. 27-404 **\$1.00**

C. Freewheel, Shimano 13-28

Cat. No. 27-405 **\$19.98**

D. Rear Derailleur, Shimano Deore XT

Cat. No. 27-406 **\$18.98**

E. Seatpost, SR Laprade 26.8 mm diameter, 250 mm long

Cat. No. 10-417 **\$13.98**

F. Seat Post Binder, Suntour quick release

Cat. No. 27-407 **\$6.98**

G. Front Derailleur, Shimano Deore XT

Cat. No. 27-408 **\$12.98**

H. Grips, Ame black

Cat. No. 27-409 **\$3.98**

I. Brake Levers, Magura with leather hoods

Cat. No. 27-410 **\$34.98**

J. Chainset, Shimano 600 XT, 175 mm arms, triple chainwheels 26-36-46

Cat. No. 27-411 **\$69.98**

K. Pedals, Sun Tour XC-II "bear claw" with labyrinth seal

Cat. No. 27-412 **\$24.98**

L. Brakes, Shimano Cantilevers without levers

Cat. No. 27-413 **\$21.98**

M. Shifters, Sun Tour thumb controls

Cat. No. 27-414 **\$18.98**

Brake Cables and Housing, Ritchey approved heavy duty

Cat. No. 27-415 **\$7.98**

N. Tires, Panaracer 26x2.125 (group includes pair, each price below)

Cat. No. 25-409 **\$12.98**

O. Tubes, 26x1.75 schrader (group includes pair, each price below)

Cat. No. 27-416 **\$4.98**

P. Saddle, Avocet Touring I black

Cat. No. 10-401 **\$19.98**

Q. Handlebar and Stem, Ritchey designed "bullmoose"

Cat. No. 27-417 **\$39.98**

R. Chain, Shimano Uniglide

Cat. No. 27-418 **\$7.98**



Carry your mountain bike to the best riding areas on a Yakima car top rack. The Load Warrior mount shown here makes loading and unloading a breeze. Details on page 13.

Cranksets

A. T.A. Cyclotouriste Cranksets offer an exceptional range of touring gears. Due to the extremely wide range of middle and inner chainwheels, and the availability of all numbers of teeth, no compromise is necessary in choosing exactly the gearing you require. This crankset can be used with either two or three chainwheels, and it is easily converted from double to triple. Crank arms and chainwheels are finished with highly polished chrome plating.

Crank Arm Lengths: 165 mm, 170, 172.5, 175, and 180. *Please specify.*
Chainwheels: Outer, 40 to 54 teeth. Inner and middle (triple) 26 to 50. *Please specify.*

Bottom Bracket Cup Threading: English, French and Italian. *Please specify.* Crankset without bottom bracket deduct \$11.00 from price below.
 T.A. Double Crankset. **Cat. No. 28-401** **\$76.98**
 T.A. Triple Crankset. **Cat. No. 28-402** **\$84.98**

B. Sugino Aero Tour. An economical crankset with a wide gear range. Forged Duralumin arms and chainwheels. Available in either double or triple models. For Sugino cranksets without bottom bracket deduct \$9.00 from prices below.

Standard Sugino A/T Double — 170 mm crank arms, 42×52 chainwheels. English bottom bracket. **Cat. No. 28-403** **\$69.98**

Standard Sugino A/T Triple — 170 mm crank arms, 28×46×50 chainwheels, English bottom bracket. **Cat. No. 28-404** **\$77.98**

Special Sugino A/T Cranksets, If you want to specify crank arm length, chainwheels or bottom bracket threads other than standard, order a special A/T crankset below:

Crank Arm Lengths: 170 mm and 175. *Please specify.*

Chainwheels: 24, 26, 28 (triple only) 34, 36, 38, 40, 42, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54. *Please specify.*

Bottom Bracket Cup Threading: English, French and Italian. *Please specify.*

Special Sugino A/T Double. **Cat. No. 28-405** **\$81.98**

Special Sugino A/T Triple. **Cat. No. 28-406** **\$92.98**

C. Avocet Racing. Beautifully sculptured and finished crankarms with durable, extra-hard chainwheels. Available with standard Model I bottom bracket or the high precision Model 20.

Crank Arm Lengths: 170 mm and 175. *Please specify.*

Chainwheels: 41 through 54 inner or outer. *Please specify.*

Bottom Bracket Cup Threading: English, French or Italian (Mod. 20 also available in Swiss). *Please specify.* For crankset without bottom bracket deduct price of b.b. from b.b. section from price below.

Racing Crankset with Mod. I Bottom Bracket. **Cat No. 28-407** **\$101.96**

Racing Crankset with Mod. 20 Bottom Bracket. **Cat No. 28-408** **\$116.96**

D. Campagnolo Super Record. An attractively finished and durable crankset.

Crank Arm Lengths: 165 mm, 170, 172.5, 175, 180. *Please specify.*

Chainwheels: 41 through 54. Inner and outer interchangeable. *Please specify.*

Bottom Bracket Cup Threading: English, French and Italian. *Please specify.* (Nuovo Record bottom bracket). For crankset without bottom bracket deduct \$18.50 from price below.

Note: Add \$5 to price below if crank arm or chainwheel combination is different from what is shown. Add \$10 if both are different.

Super Record Crankset 170 mm, 42×52. **Cat. No. 28-409** **\$136.50**

E. Avocet Touring. Touring crank arms have holes machined to allow mounting a third chainwheel directly to them. This method allows exceptional strength and stiffness. Choose either the standard Model I bottom bracket or the high-precision Model 20.

Crank Arm Lengths: 165 mm, 170, 172.5, 175. *Please specify.*

Chainwheels: Inner, 24-40 (even only). Middle and outer, 41-54.

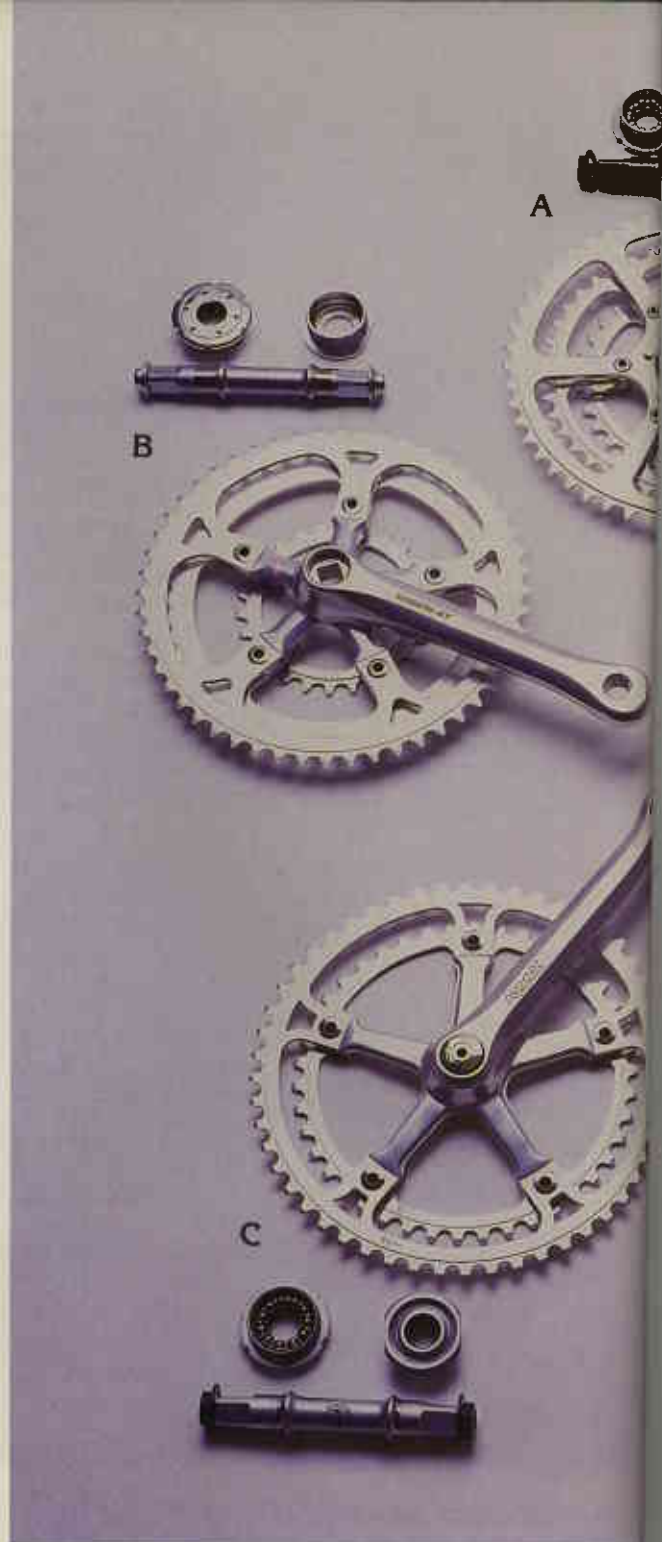
Note: 41 is the smallest middle position chainwheel for a triple.

Bottom Bracket Cup Threading: English, French, Italian. Model 20 is also available in Swiss. *Please specify.* For crankset without bottom bracket deduct price of b.b. from b.b. section from prices below.

Note: If you only want two chainwheels subtract \$12 from the price below.

Touring Crankset with Mod. I Bottom Bracket. **Cat. No. 28-410** **\$119.96**

Touring Crankset with Mod. 20 Bottom Bracket. **Cat. No. 28-411** **\$134.96**



A complete crankset includes the following:
 Right and left crank arms (with English pedal threads),
 Chainwheels
 Chainwheel fixing bolts and spacers (if used),
 Cupset with lockring and ball bearings,
 Bottom bracket spindle with bolts and washers.
 A chainset is a crankset without a bottom bracket.
When ordering a crankset specify the following:
 1. Crank arm length (170 mm is standard).
 2. Chainwheel selection (42 and 52 are standard for double).
 3. Bottom bracket cup threading. If threading is not known, specify brand of frame.



Bottom Brackets. If you need to replace a worn out bottom bracket, consider getting the U.S. made Avocet Model 20. It is an extremely tough and precise unit. Bearing surface smoothness and hardness are unsurpassed. Computer aided manufacture insures that exact tolerances are held and materials have been selected for toughness. All parts interchange with Campagnolo. It will work on any crank we sell.

Ordering Bottom Brackets

1. Specify cup threading. Cups marked 1.37×24 are English, 36×24 Italian, and 35×1 French or Swiss (the Swiss fixed cup has left hand threads). All our bottom brackets come in English, French or Italian; Mod. 20 Swiss also.
2. Specify the crankset you will use.
3. Specify the number of chainwheels on the crank. We only stock Campagnolo bottom brackets for double chainwheels; all others double or triple.

Avocet Model 1 Bottom Bracket	Cat. No. 29-401	\$19.98
Model 1 Cupset	Cat. No. 29-402	\$10.00
Model 1 Spindle	Cat. No. 29-403	\$10.00
Avocet Mod. 20 Bottom Bracket	Cat. No. 29-404	\$34.98
Model 20 Cupset	Cat. No. 29-405	\$20.00
Model 20 Spindle	Cat. No. 29-406	\$15.00
Campagnolo N.R. Bottom Bracket	Cat. No. 29-407	\$36.98
Campagnolo Cupset	Cat. No. 29-408	\$26.50
Campagnolo Spindle	Cat. No. 29-409	\$22.50
Sugino A/T Bottom Bracket	Cat. No. 29-410	\$17.98
Sugino A/T Cupset	Cat. No. 29-411	\$9.00
Sugino A/T Spindle	Cat. No. 29-412	\$9.00
T.A. Bottom Bracket	Cat. No. 29-413	\$21.98
T.A. Cupset	Cat. No. 29-414	\$11.00
T.A. Spindle	Cat. No. 29-415	\$11.00

Crank Arms and Chainwheel Bolts. Avocet arm sets include chainwheel bolts; others do not.

Avocet Racing Arms	Cat. No. 29-416	\$53.98
Avocet Touring Arms	Cat. No. 29-417	\$59.98
Avocet Double Bolts (5)	Cat. No. 29-418	\$5.00
Avocet Triple Bolts (5)	Cat. No. 29-419	\$5.00
Campagnolo Arms	Cat. No. 29-420	\$95.00
Campagnolo Bolts (5)	Cat. No. 29-421	\$12.50
T.A. Arms	Cat. No. 29-422	\$40.00
T.A. Arm to Outer Chainwheel Bolts	Cat. No. 29-423	\$1.50
T.A. Double Bolts	Cat. No. 29-424	\$2.50
T.A. Triple Bolts	Cat. No. 29-425	\$3.50

Chainwheels. See crankset section for number of teeth available.

Sugino A/T Triple 24, 26, 28	Cat. No. 29-426	\$8.98
Sugino A/T 34-49	Cat. No. 29-427	\$9.98
Sugino A/T 50-54	Cat. No. 29-428	\$12.98
T.A. Inner	Cat. No. 29-429	\$9.98
T.A. Outer	Cat. No. 29-430	\$11.98
Avocet Inner Triple	Cat. No. 29-431	\$12.00
Avocet Double	Cat. No. 29-432	\$14.00
Campagnolo Super Record	Cat. No. 29-433	\$26.98

Chainwheel Interchangeability. Avocet and Campagnolo outer and middle chainwheels interchange. They also interchange with any other chainwheels that have a distance between bolt holes of 89.0 mm. Sugino A/T chainwheels (except triple 24, 26 and 28) fit Sugino GT, and old-style Mighty Tour and Maxy cranksets.

Crank Arm Length: Short crank arms "spin" more easily than longer ones; longer ones give more leverage. Crankarm length should be related to leg length, but there is no precise formula. Most riders can use the 170 mm length effectively, and it is by far the most common.



Regina Freewheels

Regina CX freewheels offer smooth operation and a simplified cog attachment system. The body is constructed to close tolerances and the races are ground for precision. As a result CX freewheels run almost silently and without rough spots.

Regina Super Corsa Oro freewheels have been popular over the years because they offer light weight, a wide cog range, good cog availability and smooth operation. Both Oro and CX freewheels have multiple splines on their inner bodies for removal. This system is much more positive than notches and prevents damage to the body by the remover.

Regina CX Kits. Two kits are available, one for constructing racing ratios and one for touring ratios. With the CX6 kit you can make almost any 6 speed ratio beginning with 13 or 14 and ending with up to 24 teeth. With the CX6 Alpine go from 14 or 15 up to 31. Each kit includes a body, a splined remover, and 16 cogs for CX6, 15 for the Alpine kit.

Cat. No. 30-499 CX6 Kit \$49.98
 Cat. No. 30-4001 CX6 Alpine Kit \$49.98

Sun Tour Freewheels

Sun Tour New Winner Ultra 6 and Ultra 7. Because Sun Tour's Ultra freewheels have closer cog spacing than conventional freewheels, the 6 speed is the same width as a regular 5 speed, and the 7 speed has only a 6 speed width. When cogs are added, a freewheel is widened, and the wheel must be offset so that the rim is centered. This "dishing" weakens the wheel, and the normal 6 speed wheel approaches the practical limit of offset, Ultra freewheels offer an additional cog without increasing offset. They must be used with a narrow chain such as the Sedisport or Regina CXS. Sun Tour freewheels have English threads. They are durable and smooth running.

Pro Compe freewheels will accommodate up to a 34 tooth cog for an exceptionally low gear. They are economically priced, smooth running and replacement cogs are widely available. See table for ratios. We offer the Pro Compe Ultra 6 in a 14-17-20-24-28-34 ratio.
 Pro Compe Ultra 6 14-34 Cat. No. 30-4003 \$21.98

Freewheel Cogs. Order cogs by giving us the complete ratio of the freewheel in which the cogs will be used. Circle the cogs you are ordering.

CX Cog Cat. No. 30-4004 \$5.00
 Super Corsa Oro Cog Cat. No. 30-4005 \$5.00
 Winner Ultra Cog Cat. No. 30-4006 \$5.00
 Pro Compe Cog Cat. No. 30-4007 \$4.00

Cog Ratio 5 Speeds	Number and Price		Number and Price		Number and Price	
	Sun Tour Pro Compe		Regina CX		Regina Oro	
13-14-15-16-17	---	---	30-401	\$22.98	30-402	\$14.98
13-14-15-17-19	---	---	30-403	\$22.98	30-404	\$14.98
13-15-17-19-21	---	---	30-405	\$22.98	30-406	\$14.98
13-15-18-21-24	---	---	30-407	\$22.98	30-408	\$14.98
13-16-20-23-26	---	---	30-409	\$25.98	30-410	\$16.98
13-16-20-24-28	---	---	30-411	\$25.98	30-412	\$16.98
13-16-20-26-31	---	---	30-413	\$25.98	30-414	\$16.98
14-15-16-17-18	30-415	\$10.98	30-416	\$22.98	30-417	\$14.98
14-15-16-18-20	---	---	30-418	\$22.98	30-419	\$14.98
14-15-17-19-21	30-420	\$10.98	30-421	\$22.98	30-422	\$14.98
14-16-18-20-22	30-423	\$10.98	30-424	\$22.98	30-425	\$14.98
14-16-18-20-23	---	---	30-426	\$22.98	30-427	\$14.98
14-16-18-21-24	30-428	\$10.98	30-429	\$22.98	30-430	\$14.98
14-16-19-22-26	30-431	\$12.50	30-432	\$25.98	30-433	\$16.98
14-17-20-24-28	30-434	\$12.50	30-435	\$25.98	30-436	\$16.98
14-17-20-26-31	---	---	30-437	\$25.98	30-438	\$16.98
14-18-22-26-32	30-439	\$12.50	---	---	---	---
14-18-22-28-34	30-440	\$12.50	---	---	---	---
15-16-17-18-19	---	---	30-441	\$22.98	30-442	\$14.98
15-16-17-19-21	---	---	30-443	\$22.98	30-444	\$14.98
15-17-19-21-23	---	---	30-445	\$22.98	30-446	\$14.98

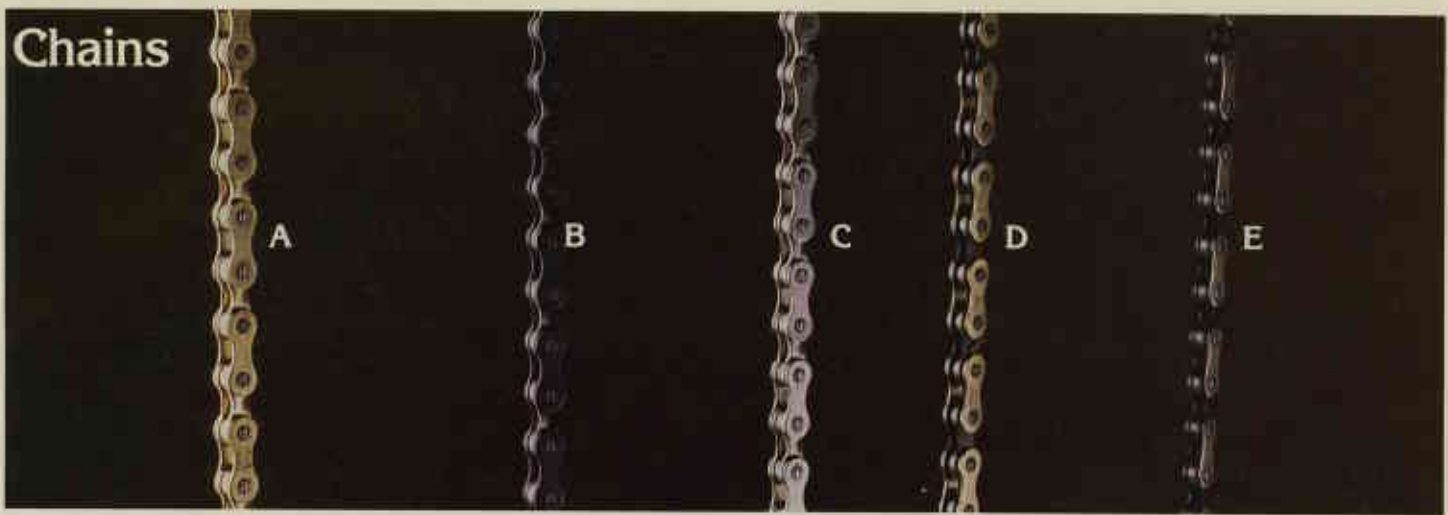
Cog Ratios 6 Speeds	Number and Price		Number and Price		Number and Price	
	Sun Tour New Winner Ultra 6		Regina CX		Regina Oro	
12-13-14-15-16-17	---	---	30-447	\$26.98	30-448	\$17.50
12-13-14-15-17-19	---	---	30-449	\$26.98	30-450	\$17.50
13-14-15-16-17-18	30-451	\$22.50	30-452	\$26.98	30-453	\$17.50
13-14-15-16-18-20	30-454	\$22.50	30-455	\$26.98	30-456	\$17.50
13-14-15-17-19-21	30-457	\$22.50	30-458	\$26.98	30-459	\$17.50
13-15-17-19-21-23	30-460	\$22.50	30-461	\$26.98	30-462	\$17.50
13-14-16-18-21-24	30-463	\$22.50	30-464	\$26.98	30-465	\$17.50
13-15-17-20-23-26	30-466	\$25.50	30-467	\$28.98	30-468	\$18.50
13-15-17-20-24-28	30-469	\$25.50	30-470	\$28.98	30-471	\$18.50
13-15-18-21-26-32	30-472	\$25.50	---	---	---	---
14-15-16-17-18-19	---	---	30-473	\$26.98	30-474	\$17.50
14-15-16-17-19-21	---	---	30-475	\$26.98	30-476	\$17.50
14-15-16-18-20-22	---	---	30-477	\$26.98	30-478	\$17.50
14-15-17-19-21-23	---	---	30-479	\$26.98	30-480	\$17.50
14-16-18-20-22-24	---	---	30-481	\$26.98	30-482	\$17.50
14-16-18-20-23-26	---	---	30-483	\$28.98	30-484	\$18.50
14-16-18-20-24-28	---	---	30-485	\$28.98	30-486	\$18.50

Cog Ratios 7 Speeds	Number and Price		Number and Price	
	Sun Tour New Winner Ultra 7		Sun Tour New Winner Ultra 7	
12-13-14-15-16-17-19	---	---	30-487	\$25.50
12-13-14-16-18-20-22	---	---	30-488	\$25.50
12-13-15-17-19-21-24	---	---	30-489	\$25.50
12-13-15-17-20-23-26	---	---	30-490	\$29.50
12-14-16-18-21-24-28	---	---	30-491	\$29.50
12-14-16-18-21-26-32	---	---	30-492	\$29.50
13-14-15-16-17-18-19	---	---	30-493	\$25.50
13-14-15-16-17-19-22	---	---	30-494	\$25.50
13-14-15-17-19-21-24	---	---	30-495	\$25.50
13-14-16-18-20-23-26	---	---	30-496	\$29.50
13-14-16-18-20-24-28	---	---	30-497	\$29.50
13-15-17-19-21-26-32	---	---	30-498	\$29.50

Custom Freewheels. If none of the stock ratios offered meets your needs, we will assemble any cog sequence you want. Please note that there are position limitations on these freewheels, so not all ratios are possible. If the freewheel you want has cogs that are not shown in any stock ratio, verify that the cogs are made for that position before ordering. Note that Regina does make a 21 tooth cog for the third from the largest position.
 Cat. No. 30-4002 Custom labor. \$3.00

More Information Available. Request Palo Alto Bicycles Data Sheet "Chainwheels and Freewheels—Gear Selection" with any order, or send a self-addressed, stamped envelope for it.

Chains



- A. Sedisport Gold.** A smooth running and smooth shifting chain that works well on narrow spaced (ultra) and standard freewheels. Long wearing, hardened pins. Gold finish. 335 g.
Cat. No. 31-401 **\$8.98**
- B. Sedisport Black.** Same as above with black finish. 335 g.
Cat. No. 31-403 **\$4.98**
- C. Sedisport Silver.** Same as gold, but with a bright silver finish. 335 g.
Cat. No. 31-402 **\$8.98**

Superlight Parts

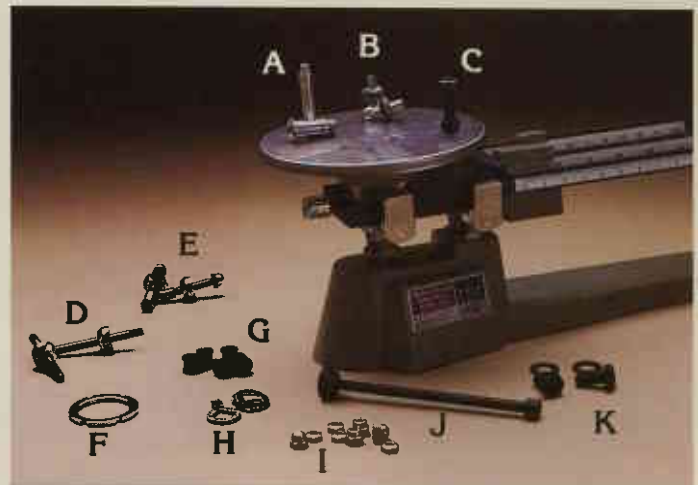
Those who want to have the lightest possible bicycle can save weight by using these parts. The weight of a comparable standard part is in parentheses following superlight weight.

- A. Alloy Rear Derailleur Bolts.** Fit Campagnolo only and replace the gear pivot bolt and gear spring bolt.
Cat. No. 31-406 Weight 15 g. (34 g.) **\$8.98 pr.**
- B. Alloy Brake Cable Adjusters.** Fit Campagnolo.
Cat. No. 31-407 Weight 12 g. (22 g.) **\$7.98 pr.**
- C. Alloy Seat Binder Bolt.** For 9 mm hole. Lengths: 25 mm and 28.5 mm.
Cat. No. 31-408 Weight 7 g. (10 g.) **\$4.98**
- D. Titanium Brake Centerbolts (fit Campagnolo only)**
Cat. No. 31-409 Front Weight 13 g. (28g.) **\$9.98**
Cat. No. 31-410 Rear Weight 11 g. (24 g.) **\$9.98**
- E. Titanium Brake Centerbolts for Recessed Hole.** Fits Campagnolo only.
Cat. No. 31-411 Front Weight 11 g. (24 g.) **\$9.98**
Cat. No. 31-412 Rear Weight 9 g. (20 g.) **\$9.98**
- F. Alloy Bottom Bracket Lock Ring.** English, French or Italian threads.
Cat. No. 31-413 Specify threading Weight 5 g. (12 g.) **\$1.98**
- G. Alloy Chainwheel Bolts.** Fits most standard cranksets. Set of 5.
Cat. No. 31-414 Weight 5 g. (24 g.) **\$9.98**

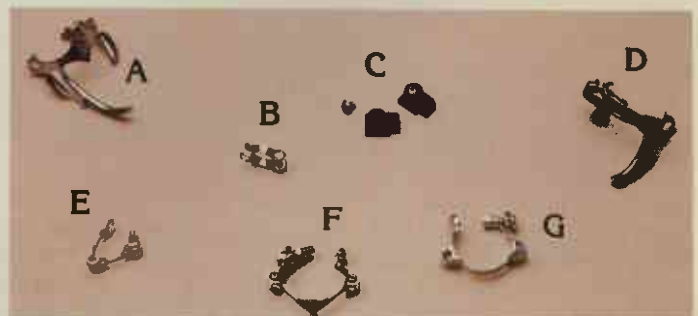
Cable Guides and Cable Stops

- A. Campagnolo Bottom Bracket Guide** **Cat. No. 31-419** **\$5.98**
B. Campagnolo Chain Stay Cable Stop **Cat. No. 31-420** **2.98**
C. Brazed on Shifter Boss Adapters **Cat. No. 31-421** **6.98**
 (Convert shifter bosses into cable guides for use with handlebar shifters)
- D. Sun Tour Bottom Bracket Guide** **Cat. No. 31-422** **1.98**
E. Sun Tour Chain Stay Cable Stop **Cat. No. 31-423** **.98**
F. Campagnolo Handlebar Shift Cable Stop **Cat. No. 31-424** **3.98**
G. Sun Tour Handlebar Shift Cable Stop **Cat. No. 31-425** **1.98**

- D. Regina Oro.** A standard derailleur chain, brass plated for smooth cog engagement and good looks. 370 g.
Cat. No. 31-404 **\$7.98**
- E. Regina CXS.** An extra narrow chain designed for narrow spaced (ultra) freewheels, but will decrease noise and improve shifting on any freewheel. 315 g.
Cat. No. 31-405 **\$24.98**



- H. Alloy Washers.** Fit Campagnolo standard and brazed-on shift levers.
Cat. No. 31-415 Weight 4 g. (8 g.) **\$1.98 pr.**
- I. Alloy Brake Nuts.** Set of 8.
Cat. No. 31-416 Weight 8 g. (23 g.) **\$2.98**
- J. Alloy Expander Bolt for Stems.** Fits Cinelli and TTT stems (except aero).
Cat. No. 31-417 Weight 22 g. (63 g.) **\$4.98**
- K. Alloy Crank Arm Bolts.** 15 mm for Avocet, Campagnolo, and T.A.
Cat. No. 31-418 Weight 12 g. (30 g.) **\$4.98 pr.**



Derailleurs and Shift Levers



Get the best gear and derailleur match. Request Data Sheet "Chainwheels and Freewheels—Gear Selection".

Campagnolo Nuovo Record. Traditional racing derailleurs. Rear has 28 tooth freewheel capacity. Shifters clamp to down-tube.

Shifters, **Cat. No. 32-401** 68 g. **\$16.98**
 Rear Derailleur, **Cat. No. 32-402** 205 g. **\$49.98**
 Front Derailleur, **Cat. No. 32-403** 93 g. **25.98**

Campagnolo Super Record. Rear derailleur has titanium pivot bolts. Front and rear have black trim. Nuovo Record shifters without clamp for mounting on brazed-on bosses.

Shifters, **Cat. No. 42-404** 40 g. **\$16.50**
 Rear Derailleur, **Cat. No. 42-405** 190 g. **\$73.98**
 Front Derailleur, **Cat. No. 42-406** 88 g. **\$27.98**
 Front Derailleur (Braze on), **Cat. No. 42-407** 91 g. **\$29.98**

New Sun Tour Superbe Pro. Beautifully sculpted levers are also functional. Brazed-on model fits Campagnolo bosses. Rear derailleur has sealed bearings in wheels (which also fit Campagnolo), alloy mounting bolt and 26 tooth freewheel cog capacity. Front derailleur has endless band mounting and cut-out cage.

Shifters (with clamp), **Cat. No. 42-408** 55 g. **\$19.98**
 Shifters (braze-on), **Cat. No. 42-409** 38 g. **\$19.98**
 Rear Derailleur, **Cat. No. 42-410** 175 g. **\$39.98**
 Sealed Derailleur Wheels, **Cat. No. 42-411** **\$ 9.98**
 Front Derailleur, **Cat. No. 42-412** 82 g. **\$19.98**

Sun Tour Cyclone II. Shifters attach with "endless clamp" and have "synchro-shift" that automatically trims front derailleur when rear is shifted. Rear derailleur has 24 tooth freewheel capacity. All adjusting and clamping bolts are recessed on front and rear derailleurs.

Shifters, **Cat. No. 42-413** 72 g. **\$13.98**
 Rear Derailleur, **Cat. No. 42-414** 162 g. **\$26.98**
 Front Derailleur, **Cat. No. 42-415** 95 g. **\$15.98**



Sun Tour Cyclone II GT. For touring. Ratchet handlebar shifters do not slip and can be precisely controlled. Includes cables, housing and stop. Rear derailleur handles up to 34 tooth cog smoothly. Front has cage extending bracket for use with small chainwheels.

Handlebar Shifters, **Cat. No. 42-416** 230 g. **\$15.98**
 Rear Derailleur, **Cat. No. 42-417** 210 g. **\$27.98**
 Front Derailleur w/Bracket, **Cat. No. 42-418** 100 g. **\$17.98**
 GT Front Derailleur Bracket, **Cat. No. 42-419** **\$ 2.00**



Sun Tour ARX and VX. Standard derailleurs and shifters.
 VX Shifters, **Cat. No. 42-420** 82 g. **\$ 7.98**
 ARX GT Rear Derailleur, **Cat. No. 42-421** 278 g. **\$13.98**
 ARX Front Derailleur, **Cat. No. 42-422** 91 g. **\$ 8.98**

Huret Duopar. Excellent rear derailleur for handling gear ratios with large jumps between cogs. Handles 34 tooth cog.
Cat. No. 42-423 **\$29.98**



Shift Cables

Campagnolo Front, **Cat. No. 42-424** **\$1.75 ea.**
 Campagnolo Rear, **Cat. No. 42-425** **\$1.75 ea.**
 Standard Front or Rear, **Cat. No. 42-426** **\$1.00 ea.**
 Sun Tour Handlebar, **Cat. No. 42-427** **\$2.50 ea.**

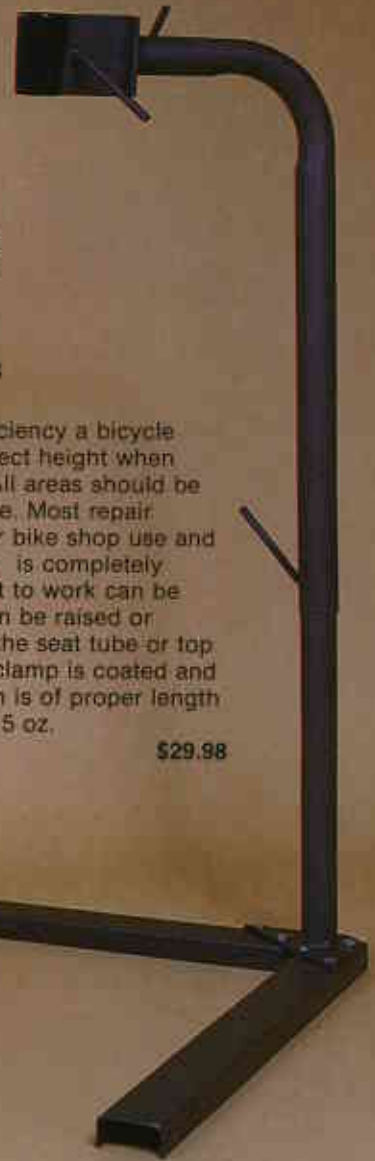
Repair Stands



Bench Mount Repair Stand. This version of our popular repair stand is designed to mount on a work bench. It can also be clamped to any convenient support, and since it is very compact, it can be carried to races or tours and mounted on support vehicles. The clamp is identical to the one on our free-standing stand, and can be completely rotated. Use 4 screws for permanent mounting on a work bench, or a "C" clamp for temporary mounting. **Weight:** 3 lb. 14 oz.
Cat. No. 33-401 **\$19.98**

Repair Stand For convenience and efficiency a bicycle must be held secure and stable at the correct height when repairs and adjustments are being made. All areas should be accessible and moving parts free to operate. Most repair stands with these features are designed for bike shop use and are heavy, bulky, and expensive. Our stand is completely adjustable so that the area where you want to work can be precisely positioned. The stand's clamp can be raised or lowered, and the bike can be clamped on the seat tube or top tube, then rotated to any orientation. The clamp is coated and will not mar paint. The neck on the column is of proper length to provide pedal clearance. **Weight:** 11 lbs. 5 oz.
Cat. No. 33-402 **\$29.98**

- Heavy Duty Construction
- No-Scratch Clamp
- 360° Clamp Rotation
- Adjustable Height
- Durable Textured Finish



A. Waterless Hand Cleaner. Carry in your spare tire/tube bag and use to remove grease and rim glue after on-the-road repairs.
Cat. No. 33-403 2 oz. **\$1.25**

B. Simichrome. For polishing metal parts. Will not scratch fine finishes.
Cat. No. 33-404 50 g. **\$3.50**

C. Park Storage Hooks. Hang bikes from wall or ceiling. Many uses. Hook has non-scratch coating.
Cat. No. 33-405 **\$.98 each**

D. Triflow Lubricant. An all purpose lubricant containing teflon. Penetrating and long lasting.
Cat. No. 33-406 2 oz. **\$1.98**

E. Dri-Slide Aerosol. A dry film lubricant that does not attract dirt, and since it displaces water, it can be used after wet rides to help reduce rust. Spray on chains and derailleurs.
Cat. No. 33-407 5.25 oz. **\$6.50**

F. Dri-Slide Spout. Excellent for hard-to-reach places like brake spring retainers and cable guides.
Cat. No. 33-408 4 oz. **\$3.98**

G. Cycle Oil. For general lubrication of bicycle parts.
Cat. No. 33-409 7 oz. **\$1.25**

H. Gold Seal Grease. Waterproof and stable at high temperatures.
Cat. No. 33-410 2 oz. **\$1.25**

I. Phil Wood Grease. Waterproof.
Cat. No. 33-411 3 oz. **\$1.98**

J. Campagnolo Special Grease (not shown).
Cat. No. 33-412 100 g. **\$4.50**

Brake Accessories



- A. Campagnolo Top Tube Cable Clips**
Cat. No. 34-401 Set of 3. \$7.98
- B. Box and End Wrenches.** All common brake and derailleurs sizes. Includes 8, 9, 10, and 11 mm box and end wrenches.
Cat. No. 34-402 Set of 5. \$12.98
- C. Kool Stop Brake Pads** for positive, non-grabbing stops in wet or dry conditions.
Cat. No. 34-403 \$1.98 each
- D. Park Cable Cutters.** Cut cables so that they will not fray. Vinyl covered handles.
Cat. No. 34-404 \$9.98
- E. Dia Compe Drop Bolts.** Increase the reach of Dia Compe or Sun Tour Superbe brakes by 10 mm.
Cat. No. 34-405 *Specify front or rear.* \$16.98 each
- F. Modolo Anatomic Brake Hoods.** Fit Sun Tour and Campagnolo levers.
Cat. No. 34-406 \$8.98 pair
- G. Campagnolo "T" Tool,** 8 mm wrench and 5 mm allen key.
Cat. No. 34-407 \$7.98
- H. Fourth Hand Cable Tensioner.** For brake and derailleurs cables.
Cat. No. 34-408 \$6.98
- I. Brake Centering Wrench.** 10 mm and 13 mm ends to fit most popular brakes.
Cat. No. 34-409 \$4.98
- J. Third Hand Tool.** Holds brake shoes to rim while cable tension is adjusted.
Cat. No. 34-410 \$1.98
- K. Specialized Top Tube Cable Clips.**
Cat. No. 34-411 Set of 3. \$2.98

Freewheel Tools

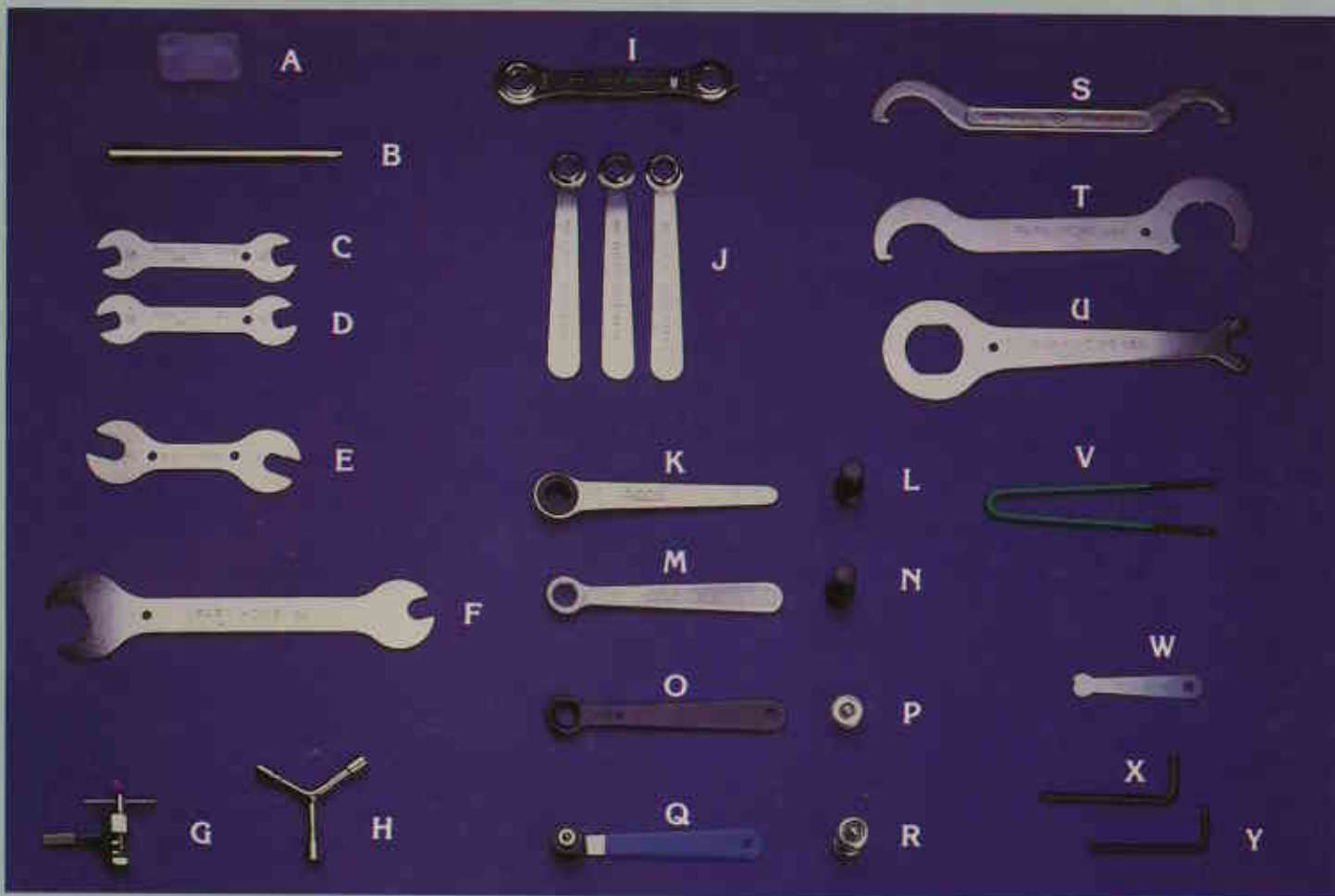


- A. Cog Vise.** For removal of freewheel cogs. Use with cog remover. Takes up to a 24 tooth cog. With hub axle vise.
Cat. No. 34-412 \$15.98
- B. Cog Removing Tool.** For removing cogs from the freewheel body. One tool needed with freewheel vise; two required without a vise.
Cat. No. 34-413 For standard freewheels \$3.98
Cat. No. 34-414 For "Ultra" freewheels \$6.98
- C. Regina 2-Notch Freewheel Remover.**
Cat. No. 34-415 \$5.98
- D. Regina Splined Freewheel Remover.** All our Regina freewheels use this remover.
Cat. No. 34-416 \$3.98
- E. Sun Tour Freewheel Remover.**
Cat. No. 34-417 \$1.98

- F. Phil Wood Grease Injector.** Attaches to back of freewheel and allows it to be greased without disassembly.
Cat. No. 34-418 \$24.98
- G. New Winner Body Spanner.** Adjusts and disassembles all New Winner freewheels.
Cat. No. 34-419 \$8.98
- H. Freewheel Pin Spanner.** Removes the body cover plate from freewheels with two pin holes.
Cat. No. 34-420 \$3.50

Tools and Accessories for Drive Train and Hubs

Palo Alto Bicycles Data Sheet available:
"Installation and maintenance of drive
train parts."



- A. Bottom Bracket Sleeve.**
Cat. No. 35-401 \$1.98
- B. Chain Stay Protector.** Contoured stainless steel. Prevents paint nicks.
Cat. No. 35-402 \$1.98
- C. Park Cone Wrench 13-14 mm.** Two wrenches are required to adjust hub cones. Fits Avocet and Campagnolo.
Cat. No. 35-403 \$2.50
- D. Park Cone Wrench 15-16 mm.** Fits Japanese hubs.
Cat. No. 35-404 \$2.50
- E. Combination Cone Wrench.** One end has 13 and 14 mm openings; the other 15-16 mm.
Cat. No. 35-405 \$3.98
- F. Headset and Pedal Wrench.** Two tools required to adjust headsets, or one tool and a large adjustable spanner. 15 mm pedal wrench fits all metric pedals.
Cat. No. 35-406 \$6.98
- G. Cyclo Chain Rivet Extractor.** With instructions and spare pin.
Cat. No. 35-407 \$3.98
- H. Y Wrench.** 8, 9, 10 mm. Ideal for carrying on rides.
Cat. No. 35-408 \$4.98
- I. Park Universal Crank Wrench.** 14, 15, and 16 mm wrenches plus 5 mm allen key and dust cap screwdriver.
Cat. No. 35-409 \$10.98
- J. Park Crank Bolt Wrenches.** 14 mm (fits Sugino AT), 15 mm (fits Avocet Campagnolo and TA) and 16 mm (fits Stronglight).
Cat. No. 35-410 Specify size. \$3.98
- K. 15 mm Avocet Crank Wrench.**
Cat. No. 35-411 \$8.98
- L. Avocet Crank Extractor.**
Cat. No. 35-412 \$6.98
- M. 15 mm Campagnolo Crank Wrench.**
Cat. No. 35-413 \$7.25
- N. Campagnolo Crank Extractor.**
Cat. No. 35-414 \$9.98
- O. 15 mm T.A. Crank Wrench.**
Cat. No. 35-415 \$4.00
- P. T.A. Crank Extractor.**
Cat. No. 35-416 \$3.00
- Q. Park Universal Crank Extractor.**
Cat. No. 35-417 \$8.50
- R. Sugino AT Extractor.**
Cat. No. 35-418 \$4.98
- S. Universal Lock Ring Tool.** One end fits all bottom bracket lock rings, the other, lock rings found on some headsets.
Cat. No. 35-419 \$8.98
- T. Lock Ring Tool.** One end fits Avocet and Campagnolo, the other end fits all brands.
Cat. No. 35-420 \$7.98
- U. Adjustable Cup—Fixed Cup Tool.** One end is a pin spanner for Avocet and Campagnolo adjustable cups. The other end is a fixed cup wrench that fits most fixed cups.
Cat. No. 35-421 \$8.98
- V. Universal Adjustable Cup Tool.** A pin spanner that fits all bottom bracket adjustable cups.
Cat. No. 35-422 \$3.50
- W. Chainwheel Nut Tool.**
Cat. No. 35-423 \$.98
- X. 6 mm Allen Key.** For stem expander and binder bolts.
Cat. No. 35-424 \$1.00
- Y. 5 mm Allen Key.** For chainwheel bolts and crank dustcaps.
Cat. No. 35-425 \$.75

Specialized Clincher Tires

Touring

Tire casings are made from nylon cords to take both road punishment and high internal pressure. Tread is durable, and at the same time supple to resist cracking and to provide good traction. A raised center ridge gives increased wear, and the mixed herringbone and ribbed tread on the sidewalls provides cornering traction.

Touring II Touring II tires offer the same strength and durability as the regular touring tires with a significant weight saving. Touring II casings are made from extra fine cords, but otherwise all Touring tires have identical construction

Touring K4 A layer of durable Kevlar material sandwiched between the nylon casings gives this tire excellent puncture resistance. If you have trouble with punctures while commuting or touring, this is the tire for you. Apart from the Kevlar layer, construction is the same as other Touring tires.

Ultra Light The Ultra Light is a narrow cross section tire suitable for racing and sport riding on an unloaded bicycle. The weave of the casing is especially fine for strength and suppleness. With a light tube its weight is comparable to a medium weight tubular. For use on narrow rims only.

Turbo Riders who have used the Turbo compare its performance to that of tubulars. The narrow Turbo/S is a good racing tire, whereas the Touring Turbo's wider cross section makes it suitable for use on bicycles which will be loaded or ridden on rough roads. The Turbo folds compactly and is ideal for carrying as a spare.

Touring X Bicycle campers, who load their bikes heavily, and tandem riders will appreciate the wide cross section and extra thick tread of the Touring X. This tire has all the features of the rest of the Touring line along with extra bulk to take punishment, and a unique X-shaped tread design.

Expedition The Expedition is the widest tire that will fit in a conventional 10-speed frame making it excellent for use on on loaded tandems or heavily loaded touring bikes that will be ridden on rough roads. The heavy-duty casing is matched to a very thick herringbone tread for long wear and good traction.

Model	Best Use	Size	Pressure/PSI	Threads/In.	Weight/g.	Cat. No.	Price
Touring	Light to heavy touring depending on width, commuting.	27×1	95	36	300	37-401	\$8.98
		700×25			300	37-402	8.98
		27×1½			325	37-403	8.98
		700×28			325	37-404	8.98
		27×1¼			345	37-405	8.98
		700×32			345	37-406	8.98
Touring II	Touring, commuting.	27×1	95	66	270	37-407	9.50
		700×25			270	37-408	9.50
		27×1½			290	37-409	9.50
		700×28			290	37-410	9.50
Touring K4	Commuting, Touring.	27×1½	95	36	350	37-411	14.98
		700×28			340	37-412	14.98
		27×1¼			360	37-413	14.98
		700×32			350	37-414	14.98
Ultra Light	Training, racing.	27×1	95	106	235	37-415	10.98
		700×25			235	37-416	10.98
Turbo/S	Training, racing.	27×1	100	106	195	37-417	14.98
		700×25			195	37-418	14.98
Touring Turbo	High performance touring, training.	27×1½	95	66	250	37-419	14.98
		700×28			250	37-420	14.98
		27×1¼			280	37-421	14.98
		700×32			280	37-422	14.98
Touring X	Heavy touring, tandems.	27×1¼	95	36	400	37-423	9.50
		700×32			400	37-424	9.50
Expedition	Heavy touring on rough roads.	27×1½	75	36	475	37-425	10.50
		700×35			475	37-426	10.50

Information to help you choose tires. Palo Alto Bicycles Data Sheet "Wheels and Tires to Meet Your Needs" can answer your questions. Send a self-addressed, stamped envelope with your request, or ask for it when you place an order.



Tubes Our tubes are high-quality butyl rubber with valves vulcanized on. One inch tubes should be used with narrow rims. Twenty-seven inch and 700C rims use the same tube. Schrader valves are the type used on automobile tires; presta valves are the narrow metal type.

Tube	Compatible Rim	Cat. No.	Price
1 Inch Presta	1" or 25 mm.	37-427	\$2.98
1 Inch Schrader	1" or 25 mm.	37-428	\$1.98
1½-1¼ Inch Presta	1½-1¼" or 28-32 mm.	37-429	\$2.98
1½-1¼ Inch Schrader	1½-1¼" or 28-32 mm.	37-430	\$1.98
1 Inch Presta Ultralight (75 g.)	1" or 25 mm.	37-431	\$3.98

Tubular Tires and Accessories

A. Velox Tubular Tire Patch Kit

Contains patches, glue, thimble, and needle and thread.

Cat. No. 38-401 \$1.98

B. Clement Glue. 1.5 fl. oz.

Cat. No. 38-402 \$1.25

C. Latex Solution. For renewing the protective coating of latex on tubular tire sidewalls. Also useful for covering sidewall cuts, gluing down base tape after repairs, and gluing fabric patches (boots) over casing cuts inside tubulars or clinchers.

4 fl. oz.

Cat. No. 38-403 \$2.98

D. Tubular Rim Glue Remover.

Removes old glue from rims quickly and easily. Also takes road tar off frames. 4 oz.

Cat. No. 38-404 \$3.98

E. Tubasti Glue. 1.5 fl. oz.

Cat. No. 38-405 \$1.25



F. Clement Paris-Roubaix. Hand-made silk. A good all-purpose tire with a cross-section wide enough for rough roads and weight light enough for racing.

G. Clement Criterium. Hand-made silk. The standard racing tire, light with a narrow cross section.

H. Clement Campionato del Mondo. A wide cross section silk tire particularly suited to heavy riders, rough roads and loaded bicycles.

I. Wolber Invulnerable. A fine layer of stainless-steel mesh is applied between the casing and tread of this tire. Resists the penetration of sharp objects, reducing punctures. Cotton.

J. Vittoria Giro del Mondo. A light tire at an economical price. For competition or general use by light riders. Cotton.

K. Vittoria Leone. Heavy casing and tread guarantee a long lasting tire. For training and use on rough roads. Cotton.

L. Vittoria Mondiale. An economical, well made tubular for training and general use. Cotton.

M. Vittoria Corsa CX. The most popular tire among European racers, who demand tires they can depend on. Casing of the finest long-fiber cotton.

N. Vittoria Pave CG. Extremely tough with a wide cross section for good rim protection. An extra layer of fabric beneath the tread improves puncture resistance. Cotton.

Clement Campionato del Mondos have a ribbed tread; all other tubulars have a mixed tread.

Tire	Weight	Use	Cat. No.	Price
Clement Paris-Roubaix	275 g.	Training, racing	38-406	\$28.98
Clement Criterium Seta	250	Racing	38-407	28.98
Clement Del Mondo	290	Training, touring	38-408	29.98
Wolber Invulnerable	285	Training, commuting	38-409	19.98
Vittoria Giro Del Mondo	260	Racing	38-410	19.98
Vittoria Leone	330	Training	38-411	14.98
Vittoria Mondiale	290	Training	38-412	12.98
Vittoria Corsa CX	250	Racing	38-413	28.98
Vittoria Pave Corsa CG	290	Training, racing	38-414	28.98

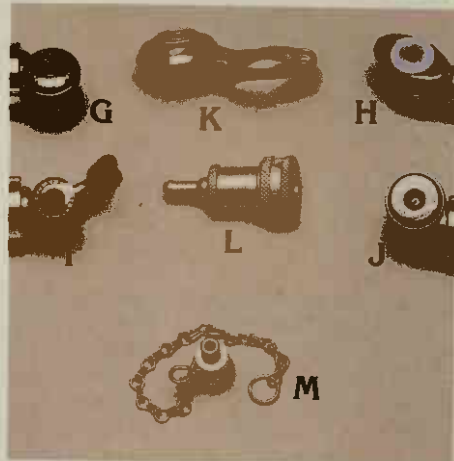
Pumps



A. Silca Floor Pump. This is the best high pressure pump available. Its brass presta air chuck has an air tight seal. An extremely efficient pump, it is capable of reaching 170 lbs. per square inch pressure with minimum effort.
Cat. No. 39-401 **\$26.98**

B. Standard High Pressure Pump. This inexpensive but well made pump comes with a schrader thumb lock fitting.
Cat. No. 39-402 **\$9.98**

C. Reservoir Pump. This pump includes an easy-to-read air gauge and a reservoir that makes pumping easy at high pressures. Schrader thumb lock.
Cat. No. 39-403 **\$15.98**



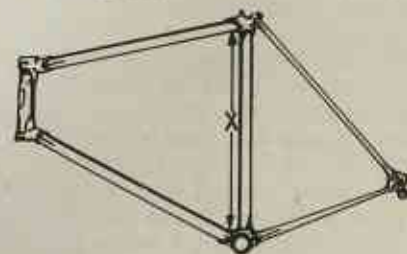
Pump Heads and Accessories

- G. Campagnolo Plastic Pump Head
Cat. No. 39-404 **\$4.98**
- H. Silca Plastic Pump Head
Cat. No. 51-406 **\$9.98**
- I. Campagnolo Steel Pump Head
Cat. No. 39-406 **\$7.98**
- J. Primus Plastic Schrader Head
Cat. No. 39-407 **\$3.50**
- K. Campagnolo Umbrella Clip.
Cat. No. 39-408 **\$7.50**
- L. Silca Brass Chuck.
Cat. No. 39-409 **\$2.98**
- Cat. No. 39-410** Spare grommet. **\$9.98**
- M. Schrader Adaptor. Insert in schrader thumb lock to allow pumping presta tubes.
Cat. No. 39-411 **\$2.98**

D and F. Silca Impero-Frame Fit Pumps. These pumps require no holding clip when used on a frame smaller than 25 inches. They are light, can reach high pressures, their tough plastic bodies will not dent, and they come in colors to complement any frame. A compression spring in the handle holds them firmly between the frame tubes. Chrome finished pumps (D) look good on any frame. Colored pumps (F) are available in black, white, silver, red, dark blue, light blue and yellow. *Specify size and color — sizing information at right.*

Pump Head	Chrome Pump		Colored Pump	
None	39-412	\$8.98	39-413	\$7.98
Silca Plastic Presta	39-414	9.98	39-415	8.98
Campagnolo Plastic Presta	39-416	12.98	39-417	11.98
Campagnolo Steel Presta	39-418	14.98	39-419	13.98
Primus Plastic Presta	39-420	11.98	39-421	10.98

E. Zefal HP Pumps. These pumps can reach high pressures on tires with either presta or schrader valves. A thumb lock on the schrader head prevents air loss when the pump is used. Umbrella clip included. Short pumps fit frames up to 22 inches; long pumps fit frames over 22 inches.
Cat. No. 39-422 Short pump **\$8.98**
Cat. No. 39-423 Long pump **\$8.98**



Pump Fitting. For proper pump fitting measure the distance marked "X" on your frame. Send this measurement to us along with your pump color. Note: This is not frame size. If you are replacing a pump, you can tell us the size stamped on the end of the old pump, but be sure to tell us "body size," otherwise we will assume it is the "X" measurement.

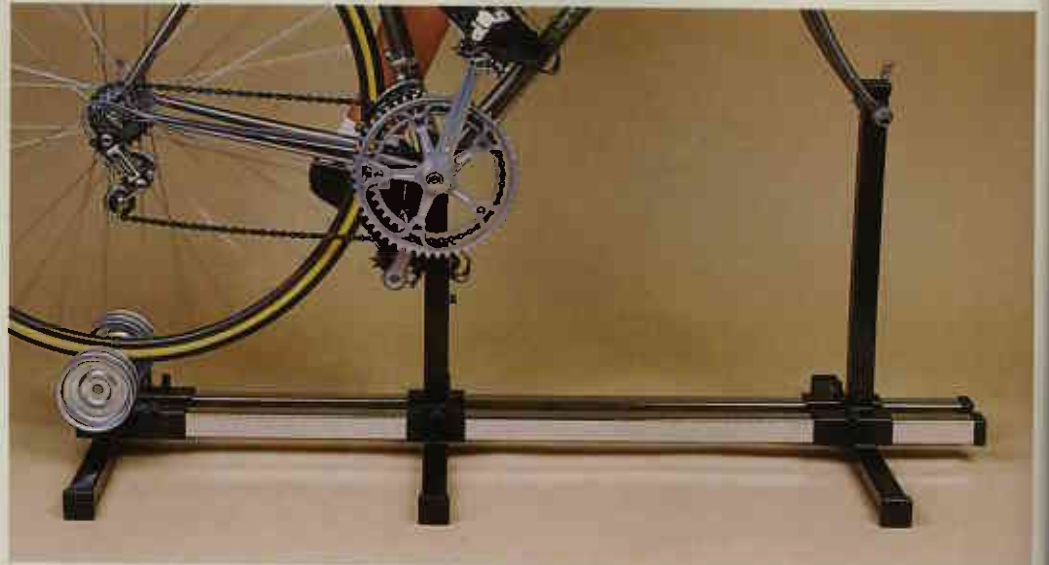
Rollers and Wind Trainers



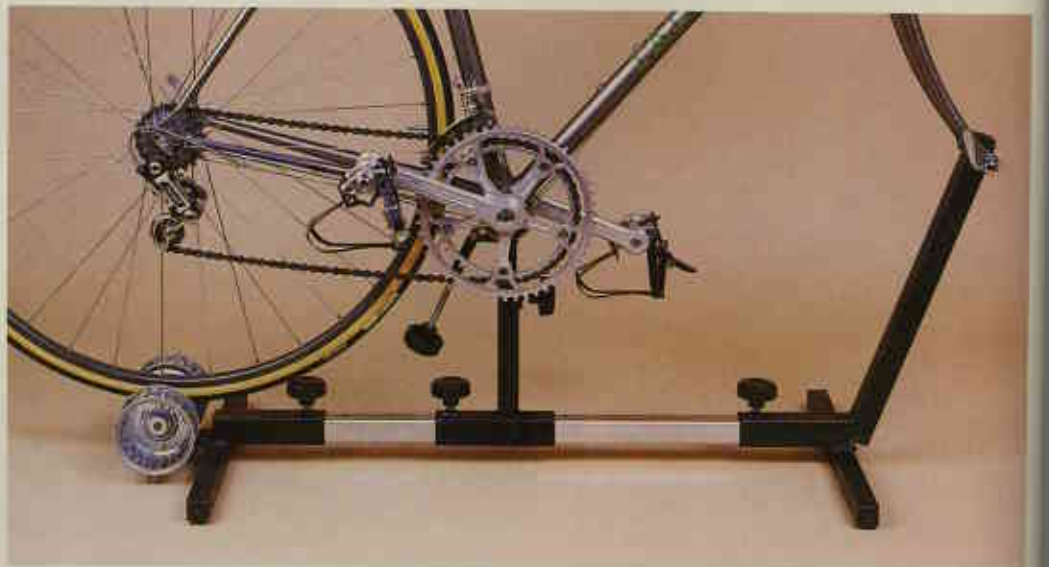
Al Kreidler Challenger Rollers. Kreidler rollers stand head and shoulders above any others in durability, quietness, smooth riding and general craftsmanship. PVC drums 4½" in diameter and 15 inches wide are lathe turned to roundness within 2 thousandths of an inch. Permanently lubricated sealed bearings are nearly frictionless. Kreidler rollers are so quiet and

smooth that you can watch TV or listen to music while you ride. They adjust to fit bikes with 39 to 44 inch wheel bases. The belt is recessed so that it cannot be derailed by the tires. Legs have rubber caps to protect the floor and there is plenty of floor clearance even for shag rugs. They fold for easy storage.
Cat. No. 40-401 **\$179.98**

Road Simulator. This is the best-designed and best-built wind-load training stand available. It offers stability, heavy duty construction and convenience features not found in other training stands. For stability it has double rails, a cross member under the bottom bracket and a fork support that retains the bicycle's full wheelbase. Rails have heavy-duty truck bumper chrome and baked-on epoxy paint to resist sweat corrosion. Easy to assemble, and no tools are needed to attach or remove your bicycle. Adjusts to fit any size bicycle. Doubles as a repair stand.
Cat. No. 40-402 **\$189.98**



Standard Wind Trainer. This fully adjustable wind-load trainer will give you good workouts at a very reasonable price. Squirrel cage fan unit runs on smooth, quiet sealed bearings. Bottom bracket shell is supported by a coated cradle that gives clearance for under-shell cables. A coated hook firmly clamps the bottom bracket while the fork is held by a standard wheel quick release.
Cat. No. 40-403 **\$79.98**



Palo Alto Bicycles Data Sheet Available. Send a self addressed, stamped envelope for "Training Aids and Training Programs", or request one with any order.

Technical and Touring Books

The Bicycle Wheel by Jobst Brandt

This book is both a guide for building true and lasting wheels and a complete analysis of the wheel as a structure. The wheel building method is straightforward and works for any lacing pattern and with any components. The technical section provides essential background for the builder by answering basic questions about how wheels work and how different designs and components affect performance. Profusely illustrated. Hardbound. Published by Avocet, Inc.

Cat. No. 41-401 **\$9.98**

The Ten Speed Bicycle

A guide book aimed at answering both basic and advanced questions on equipment selection, set-up and maintenance of the ten speed bicycle.

Cat. No. 41-402 **\$11.98**

The Custom Bicycle

Packed with information on selecting, setting-up, and riding a quality bicycle. The frame section includes profiles of well known builders, as well as a detailed discussion of tubes, lugs and frame geometry.

Cat. No. 41-403 **\$10.98**

Bicycling Science

A detailed study of the measurable aspects of human power and human powered machines. Includes information on braking, steering, friction, air drag, transmissions and gearing, speed-record machines and the history of the bicycle.

Cat. No. 41-404 **\$9.98**

Designing and Building Your Own Frameset

Even if you decide that you don't want to build a frame after reading this book, the information you have learned will be invaluable in selecting a stock or custom-built frame. Very detailed information on design, materials, and construction technique. New, revised edition.

Cat. No. 41-405 **\$34.98**

Glenn's Complete Bicycle Manual

A 339 page well illustrated book which concentrates just on maintenance. Very complete.

Cat. No. 41-406 **\$10.98**

Bicycle Frames

A close-up look at frame materials, measurements, and building techniques. 43 pages.

Cat. No. 41-407 **\$2.50**

Guide to Bicycles and Bicycling

by Fred DeLong

A complete guide to all areas of cycling such as buying a bike, riding techniques, repair, accessories, competition, and safety. Over 400 photos and illustrations.

Cat. No. 41-408 **\$9.98**

The All New Complete Book of Bicycling by Eugene A. Sloane

A revised and expanded edition of the original complete guide to all aspects of bicycles and bicycling. Clothbound, 736 pages.

Cat. No. 41-409 **\$19.98**

Runner's World Bike Book

This 225 page book, illustrated with more than 100 photos and drawings, is written for cyclists of all abilities. The author, himself a veteran rider, explains bike handling, vehicular cycling and repair, with instructions for a complete overhaul.

Cat. No. 41-410 **\$9.98**

Outfitting and Source Book for Bicycle Touring

Contains a comprehensive, illustrated discussion of touring equipment; a state-by-state listing of route information; an international touring section; and lists of suppliers, organizations and general information sources. Clothbound.

Cat. No. 41-411 **\$14.98**

Bicycle Touring in Europe

This book concentrates on the popular touring countries of Western Europe, giving information on geography and roads, bicycle rentals, maps, accommodations, climate and access for 13 countries.

Cat. No. 41-412 **\$4.98**

Bike Touring—Sierra Club Guide

A basic manual on touring, with all aspects from planning to riding techniques covered. Excellent for the beginner, with plenty of information for more advanced riders.

Cat. No. 41-413 **\$8.98**

Pacific Coast Bicentennial Bike Route

A very complete guide to the scenic coastal route and invaluable for finding routes through metropolitan areas. Detailed maps begin at the Oregon border and cover the approximately 1000 miles to the Mexican border.

Cat. No. 41-414 **\$3.98**

Adventure Cycling in Europe

by John Rakowski

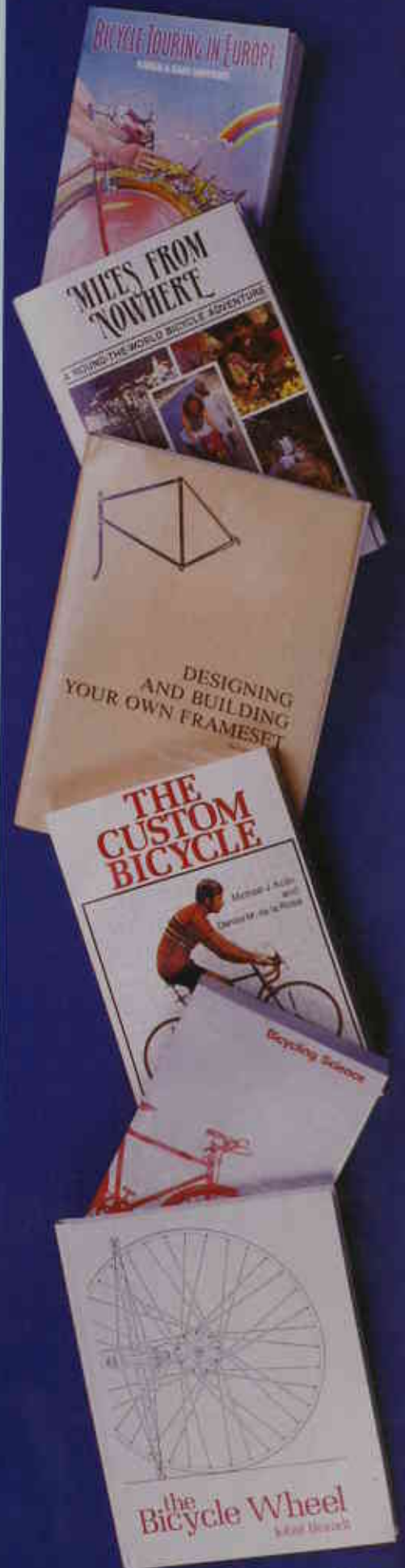
Mr. Rakowski believes that the cyclist will get more out of his tour if he is willing to visit places that are off the beaten track such as the Aegean coast of Turkey. Topics include what equipment to take; how to prepare psychologically; where to get visas, passports, and touring information.

Cat. No. 41-415 **\$14.98**

Miles From Nowhere

The inspiring story of a couple's round-the-world cycling journey. A cyclist's view of people and scenery from the American mid-West to the mountains of Nepal.

Cat. No. 41-416 **\$14.98**



Racing and Training Books

Cycling for Sport

This book by cycling coach Michael J. Kolin tells you how to develop your cycling technique, then apply your skills to a training program. Tips on proper bike set-up, improving your pedal stroke, and learning to sprint, climb hills and corner will give you a head start to improved performance.

Cat. No. 42-401 \$10.98

Cyclist's Training Diary

You can significantly improve your training and performance by keeping a training diary. This one is particularly convenient because entries are not pre-dated—they are broken down into 52 weekly segments, but you can begin on any date. Each daily entry has space for recording sleep, weight, pulse, food, miles, workout type, course, weather and remarks, plus a summary section. Includes inspirational photos and quotations.

Cat. No. 42-402 \$7.98

The Fabulous World of Cycling—1983 Season.

A beautiful picture book of the most important races of 1983, a season dominated by the brilliant riding of Greg LeMond. Perfect for any cyclist's coffee table. Hard bound, 192 pages.

Cat. No. 42-403 \$34.98

Tour '79

The story of the 1979 Tours of France and Italy. Includes a stage by stage account of the action in these famous races and many dramatic photographs.

Cat. No. 42-404 \$8.98

Tour '81

This is bicycle racing at its most difficult, and also one of the most spectacular entertainments in Europe. All the excitement and color of the 1981 Tours of France and Italy are captured in this book. Same format as Tour '79.

Cat. No. 42-405 \$12.98

Tour '82

The stories of the 1982 Tour de France and Giro d'Italia. Same format as Tour '79.

Cat. No. 42-406 \$13.98

Tour '83

The story of the great European races in words and pictures. Same format as Tour '79.

Cat. No. 42-407 \$13.98

The Bernard Hinault Story

A racing biography in words and pictures of a man who has dominated European racing in the late '70's and early '80's as Eddy Merckx did the decade before.

Cat. No. 42-408 \$12.98

The Three M's: Merckx, Maertens and Moser

Biographies and race records of three world champions and central figures in cycling in the decade of the '70's.

Cat. No. 42-409 \$5.98

Inside the Cyclist

An anthology from *Velo-News* filled with practical advice and supporting theory on how to prepare the body for racing or for a long tour.

Cat. No. 42-410 \$9.98

Food for Fitness

The proper diet for the active athlete is discussed by physicians and coaches. 141 pages.

Cat. No. 42-411 \$4.98

Runner's World Triathlon Training Book by Mark Sisson with Ray Hostler

Learn the right way to train for the popular triple fitness sport that combines cycling, swimming and running from one of the country's best triathletes. Cycling strategy and equipment tips are included. The author finished 4th in the 1982 Ironman Triathlon.

Cat. No. 42-412 \$6.98

Winning Bicycle Racing by Jack Simes

This is a how-to-do-it book on bicycle racing in the United States. An excellent book for those who are considering racing, or those who have just obtained their racing license. Included are 83 photos.

Cat. No. 42-413 \$7.98

Beginning Bicycle Racing

A thoughtful and personal introduction to the sport of bicycle racing. Discusses the demands and rewards of racing. Machinery, training and racing skills also receive detailed treatment.

Cat. No. 42-414 \$12.98



World champion Greg LeMond training with the Avocet Cyclometer 20.



Cyclometers

Cyclometer Accuracy. We tested most of the cycle computers on the market before choosing the Avocet and Cateye Solar. For measuring speed and distance, the Avocet was by far the most accurate (accurate enough that the number one professional team, Renault-Gitane uses it in racing).

Unlike other bicycle computers, the Cyclometer 20 shows you data at the instant it is measured. The Cyclometer 20 receives a steady stream of pulses—the speed it shows is the speed you are traveling at that instant.

For timing, both are as accurate as a good watch, and the Cateye offers 1/10 second precision during the first hour. The Cateye has a cadence function which is the most accurate available.



The Cateye Solar Cyclocomputer is powered by two silver oxide batteries that are recharged by solar cells. It offers numerous functions and provides information for touring, racing or training. Speed is constantly displayed in either miles or kilometers per hour. Other functions include elapsed time, trip distance, average speed, maximum speed, total distance, cadence and clock time. There is also an alarm that can be set to sound at a set time, distance or speed. The Cateye Solar is easily calibrated for any wheel size (0 to 118 inch diameter) by entering a number through a special button. A calibration table is provided, or you can measure your wheel circumference and convert it to a calibration number. Speed reads from 0 to 71 mph in 1 mph increments. Time is given to tenths of a second for the first hour, to seconds from 1 to 10 hours, and to the minute over ten hours up to 1000 hours. Pedalling cadence is measured from a magnet attached to the crankarm. It reads from 15 to 300 rpm in 1 rpm increments.

Cat. No. 43-401

\$75.98

How can you use a bicycle computer to help you train. The Palo Alto Bicycles Data Sheet "Training Aids and Training Programs" will answer your questions.

Huret Cyclometer. The completely silent Huret cyclometer eliminates the ticks and clicks commonly associated with mechanical bicycle cyclometers. It attaches to the front wheel and is self contained. Includes a resettable trip odometer and a cumulative mileage odometer.

Cat. No. 43-402

\$9.98



Avocet Cyclometer 20. The U.S. made Avocet electronic Cyclometer 20 is a precise, easy to use, compact and inexpensive cycling data source. It measures speed and distance with 99.9 percent average accuracy because it can be calibrated for exact wheel size even taking into account variations caused by tire pressure and tread wear.

Easy Operation. The large control buttons click to indicate changes in function. Speed, trip distance, cumulative mileage and elapsed time are displayed in one-third inch tall digits. Timer and trip distance functions are resettable.

Calibration. A calibration table comes with each instruction sheet. Simply entering the appropriate number through the control buttons makes the Cyclometer ready to use. To take full advantage of the unit's precision you can easily determine the dynamic circumference of your tires, and by the formula given convert it to a calibration number.

Compact and Easily Installed. The Cyclometer measures only 2 inches across and weighs about 1 ounce. It mounts by sliding into the handlebar bracket, and it can be quickly removed when not in use. Installation is very simple.

Energy Efficient. Patented (CMOS) circuitry in the Cyclometer 20 requires so little energy that there is no need for a power switch. The inexpensive battery lasts more than three years.

Precise, On-Line Data. Unlike other bicycle computers, the Cyclometer 20 shows you data at the instant it is measured. Other systems that receive only intermittent pulses from the wheel must average data then display it seconds late. The Avocet Cyclometer receives a steady stream of pulses—the speed it shows is the speed you are traveling at that instant. Speed reads in 0.5 (miles or kilometers per hour) increments, trip distance in 0.1 increments and cumulative distance in whole numbers. The timer shows seconds and minutes up to one hour, then hours and minutes to 12 hours.

Avocet Cyclometer 20 English Cat. No. 43-403

\$24.98

Avocet Cyclometer 20 Metric Cat. No. 43-404

\$24.98

Spare Transmission and Mounting Kit Cat. No. 43-405

\$7.98

Handlebar Packs



Eclipse Standard (left). A handlebar pack with plenty of space for most touring needs. Made from 8 oz. Cordura nylon, it includes a map case and the patented Eclipse suspension. **Weight:** 20 oz. **Capacity:** 540 cu. in. **Colors:** Red, blue and gray
Cat. No. 44-401 Specify color. \$45.00

Eclipse Professional (right). A large pack with eight separate pockets. The Eclipse suspension fits easily on the handlebar stem and is stabilized by shock cords tensioned to the fork. Shoulder strap included. **Weight:** 24 oz. **Capacity:** 610 cu. in. **Colors:** Red, blue and gray
Cat. No. 44-402 Specify color. \$65.00

Express Metro (left). Made by Eclipse. This economical handlebar pack has many features found in more expensive bags including the patented Eclipse suspension. **Weight:** 10 oz. **Capacity:** 400 cu. in. **Colors:** Red, blue and gray
Cat. No. 44-403 Specify color. \$21.98



Express Sport (right). An economical handlebar pack designed for day touring and commuting. It has a large main compartment and two mesh side pockets. Made from tough nylon oxford cloth. Map case included. **Weight:** 10 oz. **Capacity:** 420 cu. in. **Colors:** Red, blue and gray
Cat. No. 44-404 Specify color. \$31.98



Kirtland ST II (left). Has 7 external pockets and 4 internal pockets. Features "Ultra" support system that clamps bag securely to the handlebar stem and requires no shock cord stabilizers. Includes shoulder strap. **Weight:** 31 oz. **Capacity:** 724 cu. in. **Colors:** Red, blue and black
Cat. No. 44-405 Specify color. \$79.98



Kirtland XT II (right). Has large front compartment, two envelope pockets on the sides, aluminum stiffener and integrated map case. Support frame slides into leather channels and locks to bag with snap clips. **Weight:** 25 oz. **Capacity:** 511 cu. in. **Colors:** Red, blue and black
Cat. No. 44-406 Specify color. \$59.98



Pursuit 7 (left). Made by Kirtland. A large, but economically priced handlebar pack, it has 5 roomy external pockets including two side mesh compartments. Includes map case, three internal dividers, shoulder strap and key keeper. **Weight:** 16 oz. **Capacity:** 715 cu. in. **Colors:** Red, blue and black
Cat. No. 44-407 Specify color. \$41.98

Pursuit 3 (right). Has a wrap-around zippered main compartment with double pulls and two mesh side pockets. Includes bright front reflector. All Pursuit packs are made from durable 8 oz. Cordura nylon. **Weight:** 25 oz. **Capacity:** 380 cu. in. **Colors:** Red, blue and black
Cat. No. 44-408 Specify color. \$24.98

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Rhode Gear Rear View Mirror (left). Attaches to the brake lever with a Velcro strap. Large viewing area. Fully adjustable. Sturdy construction.
Cat. No. 45-401 **\$9.98**

Third Eye Rear View Mirror (right). Fits any helmet. Screws firmly to shell.
Cat. No. 45-402 **\$7.98**



Kirtland Camera Carrier protects your camera and lenses from vibration and shock with layers of dense, closed-cell foam. Movable partitions. Fits in all handlebar packs.
Cat. No. 45-403 **\$21.98**

A. Pursuit Tool Roll. Keeps tools organized and eliminates rattling and scratching when metal contacts metal. Holds everything you want to take on an extended tour. Black only.
Cat. No. 45-404 **\$8.98**

B. Pursuit Pocket Pack. More than just a wallet. The pocket pack will hold your passport, credit cards, money plus toiletries and a first aid kit. Keep these valuable and frequently used items separate from the rest of your gear and easily accessible. The pocket pack fits conveniently in any touring bag. Black only.
Cat. No. 45-405 **\$14.98**

C. Tekna-Strap. Convert your Tekna light into an emergency headlight with this strap. Attach it to your wrist or to the handlebar. The self-adjusting buckle conforms to muscle expansion and contraction to keep a perfect fit. This is ideal for attaching leg lights or for use as a watch band. 3/4" by 13" Velcro with stainless steel buckle.
Cat. No. 45-406 **\$6.98**

D. Tekna-Lite 2. State-of-the-art flashlight. Body is made from impact resistant Lexan which is waterproof to a depth of 2000 feet. Turns on by rotating the lens. Uses 2 5 power magnifying lens which shows detail with great clarity. Powered by two AA cells (not included) it produces as much light as larger flashlights. Black only.
Cat. No. 45-407 **\$11.98**

E. Tekna Micro-Lite. Only 4 inches long and weighs less than 2 ounces with batteries. Carry one in your tool or spare bag in case you are caught by darkness. Waterproof to 2000 feet. Uses 2 "N" batteries (not included). Black only.
Cat. No. 45-408 **\$6.98**





A. Mountain Rack. Although it was designed for the rigors of mountain bike touring, this rack fits any touring bike. Constructed from heat treated large gauge aluminum rod with a special front strut for strength, and a wide platform for rigidity. Hardware included to mount on either seat stays or brake bolt. Fits up to 23½ inch frame. Weight: 550 g.

Cat. No. 46-401 Silver \$23.98
Cat. No. 46-402 Black \$25.98

B. SX1 Expedition Rack. A rugged rack for touring with heavy loads. It has plenty of clearance for use on mountain bikes. Mounts either on brazed-on seat stay bosses or with clips (included). Fits almost any frame. Weight: 560 g.

Cat. No. 46-403 Silver \$23.98
Cat. No. 46-404 Black \$25.98

C. Low Riders. Holds panniers low and centered over the front wheel. This is the optimal placement for handling stability. Attaches to fork eyelets and to fork blades with coated clamps. Sold in pairs with hardware. Weight 580 g. per pair.

Cat. No. 46-405 Silver \$27.98
Cat. No. 46-406 Black \$29.98

D. Adjustable Front Rack holds panniers or can be used as a platform for carrying tent or sleeping bag. Adjusts to different sized frames. Weight: 290 g.

Cat. No. 46-412 Silver \$19.98
Cat. No. 46-413 Black \$21.98

E. Adjustable Rear Rack. A stainless steel tongue attaches to the brake centerbolt. By adjusting the tongue, the rack can be leveled on frames of various sizes. Frames larger than 24 inches require the special AR-2 rack. Weight: 425 g.

Cat. No. 46-408 Silver \$21.98
Cat. No. 46-409 Black \$23.98
Cat. No. 46-410 AR-2 Silver \$29.98
Cat. No. 46-411 AR-2 Black \$31.98



Blackburn Rack Straps (left). Heavy elastic webbing in two pieces for holding down both sides of the load.

Cat. No. 46-414 \$4.98

Blackburn Custom Eyelets (center) let you put a rear rack on frames with Campagnolo or similar dropouts without eyelets.

Cat. No. 46-415 \$4.50

Eclipse Seat Post Thing allows a handlebar pack to be used as a very stable and easily removed seat bag.

Cat. No. 46-416 \$15.00



Panniers



Kirtland LT II Kirtland calls their new panniers "Generation II." The suspension system has been redesigned and all the hardware upgraded to make these the most advanced bags available. They are clamped to the rack by means of a rotating lever. Retractable hooks grip the bottom of the rack. Pannier backs are protected by a hard "sway-guard" plate. The LT II's are perfect for use with a Low Rider front rack. **Colors:** Red, blue and black. **Weight:** 49 oz. **Capacity:** 1600 cu. in.

Cat. No. 47-401 Specify color.

\$99.98



Kirtland ST II. Plenty of space is provided for carrying gear on a long camping tour. Six external pockets and the large top loading main compartment with a unique aluminum hold-open bar organize and stabilize the load. Generation II panniers have an aerodynamically efficient profile and a center of balance 20% lower than previous models. For use as luggage off the bike they snap together and stand up conveniently. The ST II features an "air dry" mesh pocket for drying wet gear as you ride. **Colors:** Red, blue and black. **Weight:** 59 oz. **Capacity:** 2,200 cu. in.

Cat. No. 47-402 Specify color.

\$139.98



Pursuit 7. Kirtland designed and produced panniers at a very reasonable price. They are made from durable 8 oz. Cordura nylon and include 6 roomy external pockets per set. Zippered "Air Dry" mesh pockets allow wet clothing to dry as you ride. **Colors:** Red, blue and black. **Weight:** 47 oz. **Capacity:** 2400 cu. in.

Cat. No. 47-403 Specify color. **\$83.98**



Pursuit 3. Front-rear panniers perfect for use on a Low Rider front rack. Pursuit panniers feature a horizontal tension spring and hook style suspension and a poly stiffener with integrated hold open bar. The Pursuit 3's have two side pockets plus two mesh "Air Dry" pockets. **Colors:** Red, blue and black. **Weight:** 40 oz. **Capacity:** 1425 cu. in.

Cat. No. 47-404 Specify color. **\$58.98**

Kangaroo Black Sage. Designed for mountain bikes, but perfect for any kind of touring mounted on a front or rear rack. Black waterproof "ballistic" nylon resists abrasion and heavy-duty suspension uses 3/4" nylon cross straps for exceptional stability. Includes main compartment with elasticized hood, zippered valuables pocket and side slot tool pocket. Compression straps stabilize load. **Weight:** 24 oz. **Capacity:** 1750 cu. in.

Cat. No. 47-405 **\$69.98**

Kirtland Blazer. The Leverlock suspension system really performs during rough, off-road use. The pannier is locked to the rack, and the sway guard plate prevents abrasion and eliminates swaying. Deep rear pockets fit fuel and water bottles and don't snag brush; zipper pocket in top flap. Use on front or rear rack. Black only. **Weight:** 49 oz. **Capacity:** 1850 cu. in.

Cat. No. 47-406 **\$129.98**



Specialty and Commuting Bags



Kirtland Attache Pannier. This briefcase-style pannier has a hook and spring suspension system which can be zipped into its own compartment when the bag is off the bicycle. A full wrap-around zipper gives easy access to its six inside compartments and dividers. The Attache comfortably holds legal-size papers, plus gear such as windbreaker, lock and books. The black nylon fabric is waterproofed. **Weight:** 26 oz. **Capacity:** 515 cu. in.

Cat. No. 48-401 Sold singly.

\$59.98

Pursuit Racketeer. The main compartment is fully lined and insulated which makes it ideal for carrying beverages. Four roomy, zippered external pockets organize items. Attaches to rack by nylon web straps with quick-release buckles. Web carrying with a leather grip make it convenient to carry off the bicycle. **Weight:** 8 oz. Cordura nylon construction. Reflector attached. **Colors:** Red, blue and black. **Weight:** 15 oz. **Capacity:** 800 cu. in.

Cat. No. 48-402 Specify color.

\$41.98



Blazer Rack Pack. Off road riding requires packs that attach securely and control shifting of the load. This pack attaches with two 1" mounting-compression straps, easy to use and very stable. Closed-cell foam at top and bottom of main compartment protects gear. Three external pockets and D-rings for shoulder straps. Black only. **Weight:** 15 oz. **Capacity:** 750 cu. in.

Cat. No. 48-403

\$49.98



Express Rack Duffel. A utility bag as useful off the bicycle as on it. Fits any rear rack with easy-to-attach Velcro straps. Features a net side pocket, an interior stiffener, and D-rings for an optional shoulder strap. **Colors:** Red, blue and gray. **Weight:** 12 oz. **Capacity:** 900 cu. in.

Cat. No. 48-404 Specify color.

\$29.98

Seat Bags

Kirtland Fas-Paks. Kirtland's Fas-Pak series of under-the-saddle bags combines a clean wedge-shape design with the usual Kirtland sturdy construction and careful detailing. All three are made from black Cordura nylon. The Fas-Pak 80 holds 2 spare tubulars or tube, patch kit, and tools. It has an exterior zipper pocket for wallet and keys. The Fas-Pak 290 offers the capacity of a medium-sized seat bag with an unobtrusive wedge shape. Along with the essentials, there is room for items such as a windbreaker and snacks. It has a unique and stable 3-point suspension, a plastic stiffener, and reflective safety stripe. The Fas-Pak 470 gives the capacity of a handlebar pack in the under seat location many riders prefer. All the features of the Fas-Pak 290 are included with room for the gear needed on day and even non-camping overnight trips. Pack number is the same as its capacity in cubic inches.

Cat. No. 49-401 Fas-Pak 80 \$15.98

Cat. No. 49-402 Fas-Pak 290 \$35.98

Cat. No. 49-403 Fas-Pak 470 \$39.98

A. Hot Pursuit has a neat wedge shape that eliminates pedaling interference. Attaches to saddle rails and to seat post. **Capacity:** 150 cu. in. **Colors:** Red, blue and black. **Cat. No. 49-404 Specify color. \$10.98**

B. Eclipse Vector features a unique support system that gives unequalled stability and ease of removal. A bracket is attached to the saddle rails, and the bag's support frame simply slides into it. A Velcro loop secures the bag to the seat post. **Capacity:** 280 cu. in. **Colors:** Black and gray. **Cat. No. 49-405 Specify color. \$34.98**



Kirtland Tucker Pack (top) comfortably holds tube, patch kit and tire irons. Wrap around zipper. Fastens under seat with a Velcro strap. **Capacity:** 30 cu. in. **Colors:** Red, blue and black. **Cat. No. 49-406 Specify color. \$6.98**

Kangaroo Tool Bag (middle). Carries one or two spare tubes and tools necessary for on-the-road repairs. Nylon mounting strap and Velcro seat post strap. **Capacity:** 40 cu. in. **Colors:** Blue, burgundy and gray. **Cat. No. 49-407 Specify color. \$6.98**

Burley Utility Bag (bottom). Carries spare tubular or folding clincher, plus patch kit, tools and spare tube. Coated nylon construction with a Velcro strap. **Capacity:** 40 cu. in. **Colors:** Red, blue, yellow and black. **Cat. No. 49-408 Specify color. \$7.50**



Retail Store: Palo Alto Bicycles
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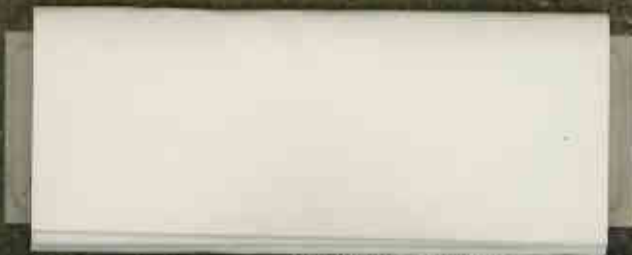
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