

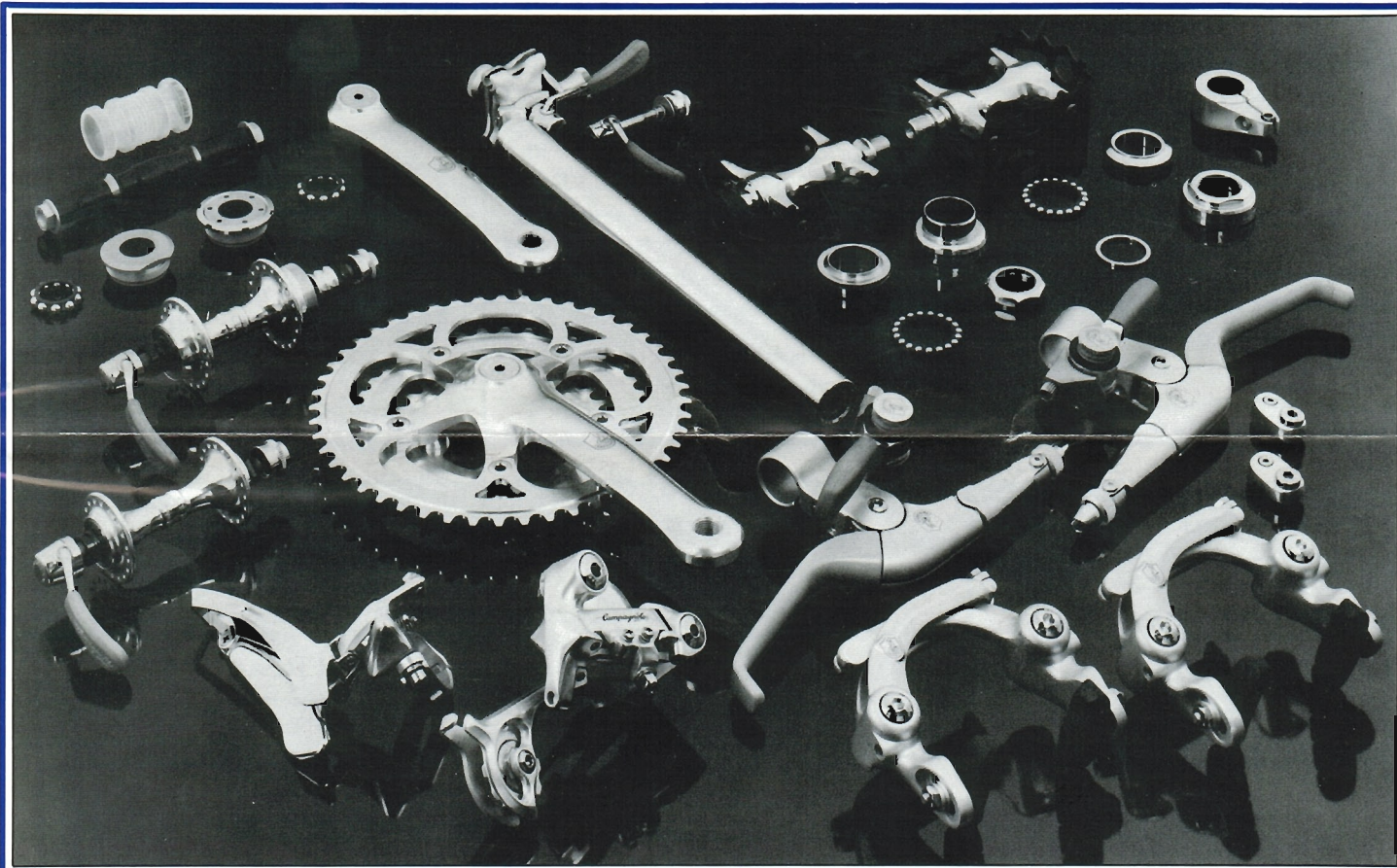
# Record News

SUMMER 1989

Vol. 3 No. 1

## Campagnolo Euclid

### Offering A New Dimension In Mountain Bike Technology



### The Campagnolo Euclid Gruppo

"Whether you're old school or new guard, Campy's first mountain bike group, Euclid, has something for you." *Bicycling Magazine*, March 1989.

Through all of its existence in the bicycle business, Campagnolo has produced state-of-the-art components for racing on the road and track. Now, with Euclid, Campagnolo has gone one more step and introduced a highly

sophisticated, extremely durable and uniquely versatile bicycle-racing group to take you where paved surfaces don't exist. The Euclid components are designed and manufactured to meet the demands of the "mountain bike racer."

These components can be used any place you can ride a bike. They are the finest and most precise we know how to make...which means they will be the most adaptable and longest lasting you can find.

### Euclid Crankset

The cranks are the largest and most visual item in a Campagnolo group. "In Euclid's case, the style is sleek, strong and precise," says *Bicycling Magazine*.

The arm flows down from the pedal and then flares into five smooth spider arms. The main arm and the chainring arms are a single unit formed with Avional aluminum—the same as C-Record—using the temperature-controlled method developed by



Campagnolo. This ensures that there will be no interruptions in the smooth and continuous fibral structure in the main arm where it joins the spider or around the apertures for the pedal threads and the bottom bracket axle tapers.

The area surrounding the crankarm pedal threads is reinforced to match the corresponding enlarged area of contact on the pedal. By increasing the size of this joint, the crank/pedal system becomes more stable and approximately 30% more efficient in power transfer than a conventional design.

The crankarm has five chainring arms placed in a traditional pattern. The middle and the outer chainrings bolt to the chainring shoulders, which have a 110mm bolt circle.

The outer chainrings, equipped with a catch tab, are asymmetrical. This means the center plane of the teeth is slightly inboard of the center line of the chainring plane where it mounts on the crankarm. This is done in order to work more efficiently with narrow chains. They are cut, tooth by tooth, on a numerically controlled gear cutter. These are available in 46, 48, 50 and 52 teeth.

The middle chainrings have symmetrical teeth cut by the same machines and are available in 36, 38, 40 and 42 teeth.

The inner chainrings have a 74mm bolt circle. They are cut like the outer chainrings, asymmetrically and tooth by

tooth. Inner chainrings are available in 24, 26, 28, 30 and 34 teeth.

All the chainrings are round.

The bottom bracket axle and the cups are steel. The axle is hollow on the right side with a hole in the center. This arrangement allows grease to be injected into the bottom bracket without disassembling the crankset. The axles are available in 132, 136 and 140mm lengths.

The cups have polished races and a double contact shield at the axle aperture. These shields are made of a special material and protect the bearings from dust, mud and other contaminants without adversely affecting the serviceability of the bottom bracket.

The bottom brackets use 1/4 inch bearings in specially matched sets with tolerance of .001mm (1 micron). The bearings come in a resin retainer designed to spread Campagnolo lubricants around the bearings and over the races. They also come with an accordion sleeve.

### Specifications

- Crankarm lengths: 170, 175 and 180mm.
- Pedal threads:  $\frac{9}{16} \times 20$ .
- Inner chainring: 24, 26, 28, 30 and 34 teeth.
- Middle chainring: 36, 38, 40 and 42 teeth.
- Outer chainring: 46, 48, 50 and 52 teeth.
- Axle lengths: 132 and 140 are symmetric, 136 is asymmetric.
- Axle bolts: 15mm hex.
- Bottom brackets are available in French, English and Italian threads.
- All bottom brackets are packed with an accordion dust sleeve.

## Euclid Headset

The Euclid headset appears to be a close relative of the C-Record headset; in appearance they are virtually twins. But when you look more closely you find that the C-Record is aluminum while the Euclid is made of a special steel alloy that has a scratch-resistant chrome plating.

The lower cup and cone encase the bearings between the steel races and a pliable contact shield. The upper race is also equipped with a contact

shield made of the same special, long-lasting material.

The races are precision ground and polished. The  $\frac{3}{16}$ " ball bearings are the same high grade as all other Campagnolo bearings, matched sets with a tolerance of .001mm (1 micron).



The adjusting cup wrench flats are specially designed to give the mechanic the best possible support while reducing the chance that the wrench could slip and adversely affect adjustment.

This headset supports the forks in the frame both evenly and precisely. Properly installed, it gives a smooth and dependable rotation.

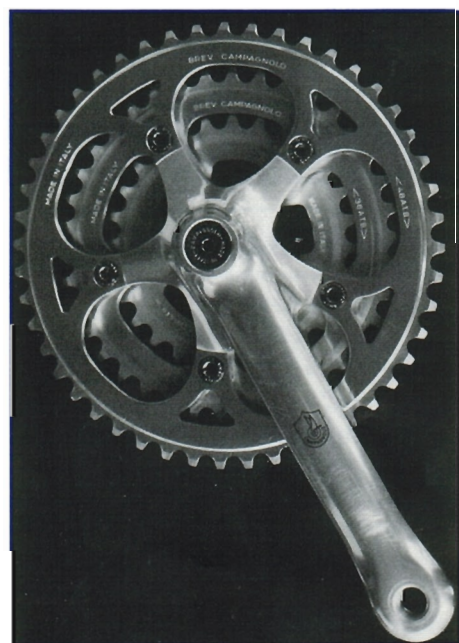
The headset is supplied with a cable casing stop for the Euclid front brake. This carrier is specially designed to engage the headset locknut. Once properly set, neither the locknut nor the stop will be loosened due to rough off-road conditions.

## Euclid Rear Derailleur

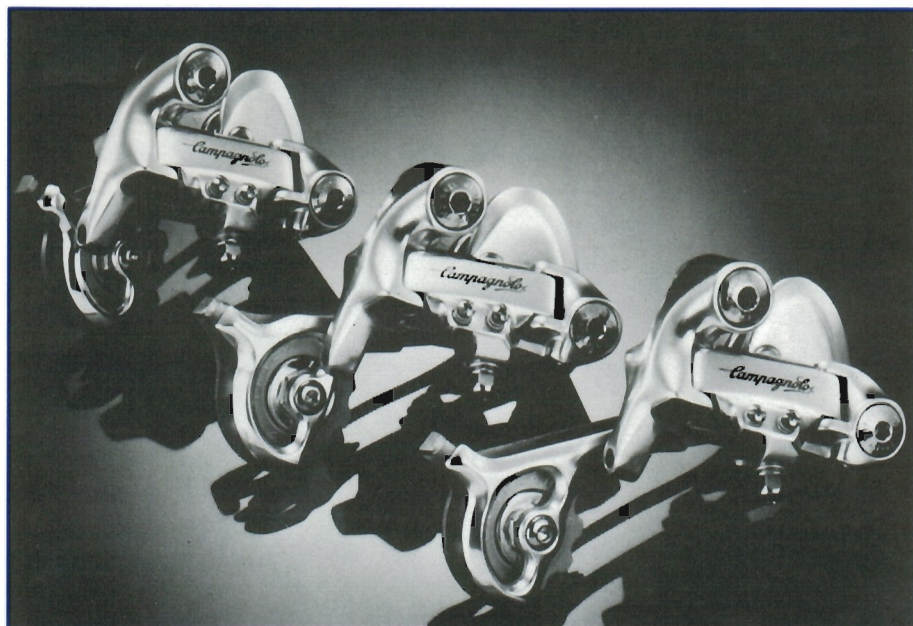
The Euclid is based on the design principles of the Campagnolo Chorus derailleurs. Even though it appears a bit more complex than the Chorus derailleur, the Euclid has no unpleasant surprises for those who have never before dealt with a Campagnolo derailleur.

There are three versions of the Euclid rear derailleur. They are the Euclid LG, MD and SM. The major difference in these derailleurs is the length of the pulley cage and their overall gear capacity. But all three share performance features.

The Euclid derailleur has a double spring design. Both the upper and lower pivots have adjustable springs. The upper spring may be pre-loaded by adjusting the original position of the spring or with an adjusting screw that works against







the derailleur hanger stop tab.

The lower pivot spring may be adjusted by resetting the original position or with an adjusting screw found in the lower section of the derailleur body.

As Mountain & City Biking Magazine put it, "You can adjust chain tension and the jockey wheel cage spring, allowing nearly infinite adjustability." The final adjustment of these springs will be determined by the specifications of the dropout hanger, as well as by the chain and the freewheel being used.

The Euclid pulleys are the same as the Record pulleys. The pulleys spin on 1/8" bearings that are installed in matched sets with a tolerance of .001mm (1 micron). The bearings roll on an adjustable cup and cone. This allows for precise control of the chain as it passes through the pulley cage.

The pulley cage is specially shaped, in a manner some may think is bent. This is to prevent shifting from being adversely affected by tight frame geometries, the cage getting caught in the spokes or the chain from escaping the cage.

The Euclid can handle a cog as large as 34 teeth or as small as 14 teeth on a Campagnolo dropout.

The main parallelogram is held together with Teflon-treated stainless steel rods. This combination is strong, smooth and wear-resistant.

The smooth contours and the satin look is easy to clean. Remember,

EUCLID CHART			
SPROCKETS		CHAINRINGS	
A _____		C _____	
B _____		D _____	
E _____			
	EUCLID LG	EUCLID MD	EUCLID SM
Gear change capacity = $(E + A) - (C + B) =$	44	38	32
Biggest sprocket utilizable = $A =$	34	34	30
Front changer capacity = $(E - C) =$	26	26	26

although it is designed for professional racing, it can be used almost every day, no matter what the weather.

### Euclid Front Derailleur

The geometry of this front derailleur is specially set to provide sure upshifts or downshifts even when the derailleur is subjected to the high stress encountered on a sprint or a hill climb. And Mountain Bike Magazine concludes, "This front derailleur ranks with the best."

The derailleur can handle a 26 tooth difference (24-36-50 for example) between the large and small chainrings.

The cage plate is made of carbon-nitrated steel. This, in conjunction with thick chrome plating, reduces chain drag when shifting. The chrome also reduces chain wear on the cage plates.

The pivot rods for the front derailleur cage lifting arms are Teflon-treated

stainless steel.

The flathead/Phillips adjusting screws are kept in place with retaining springs that keep them from being loosened by the rough conditions, even the severe ones often encountered in many off-road rides.

The frontal section of the cage plates are ribbed for strength, which reduces the side flex of the plates and keeps shifts very quick under heavy loads.

The Euclid comes in three clamp-on versions: the 28.5 clamp-on, 28.0-33mm adjustable clamp-on and the 35-36mm clamp-on.

### Euclid Shift Levers

The Euclid shifters are the patented I.G.A.S. levers. The Integrated Global Adjustment System has more freedom of setting and greater ergonomic



coordination than any other ATB shift lever systems.

Both Euclid levers, front and rear, work as a Syncro lever or, with easy resetting, as a simple friction lever. The internal components of the levers are basically the same as the standard double-spring Syncro. The rear lever can operate in Syncro with a 6-speed or 7-speed freewheel, and the front derailleur can operate in Syncro with a double or a triple crankset.

The shift levers, which are anchored to the brake lever body, can be moved in three ways to make the lever's position comfortable for the rider. They can be moved laterally, allowing you to set them either closer or further from the body of the brake lever. They can be rotated away from horizontal to be tilted up or down. They can even be rotated far enough to be placed under the handlebar rather than on top. The working angle—the angle that marks the position of the lever in low gear to high gear—can be rotated as well, although the degree of that angle will remain the same. The lever's low gear position is adjusted for the rider's comfort.

Shifting from Syncro to friction is done by lifting the round knurled ring and rotating it 90 degrees. The friction level is set by turning the top knob, which is coaxial with and above the knurled ring.

The Syncro cable-tension adjuster is located on the shift lever. This allows the rider to make any necessary adjustments without getting off the bike.

## Euclid Brakes

The Euclid brakes are based on the highly successful Monoplanar design first incorporated in our Chorus brakes. The Euclid brakes "feel great and are easy to modulate," according to *Bicycling Magazine*. That is a simple way of explaining the results of Campagnolo's design.

The Euclid brakes can be adjusted to allow the arms to be properly aligned even when the braze-ons are out of line.

The caliper arm return springs can be tuned so that the brake shoes come into even contact with the rim. This generates consistent braking rather than having most of the drag being created

by one brake shoe. When the shoes wear evenly, the braking performance is more dependable and predictable.

The yoke cable length may be varied since only one end of the cable has a barrel head and the other end must be clamped. The best length is determined by the frame geometry. The yoke cable carrier can be locked in place on the cable to help keep the braking forces even.

Matching the angle of the rim wall and the toeing of the brake shoes can be done with the brake shoe itself. The brake shoes allow this adjustment since they are attached to the caliper arm through a ball joint.

### Specifications

- Rim width: 34-46mm.
- Braze-on point above axle center: 315-317mm.
- Braze-on width: 85-90mm.



## Euclid Brake Levers

There are three different Euclid brake levers available for use with the Euclid Monoplanar calipers: Standard, Biofitting and Compact. They all allow the final resting angle of the lever to be moved away from or closer to the handlebar. From the center of that angle, the distance between the end of the lever to the handlebar has a swing of plus or minus 18mm.

The Standard lever has a single-piece handle, which has a semi-cylindrical cross-section that results in both high strength and extreme durability. The T-shaped tab at the end of the lever helps prevent a rider's hand from sliding off and reduces the chance of injury in an accident.

The Biofitting lever allows the profile of the lever to be altered by rotating

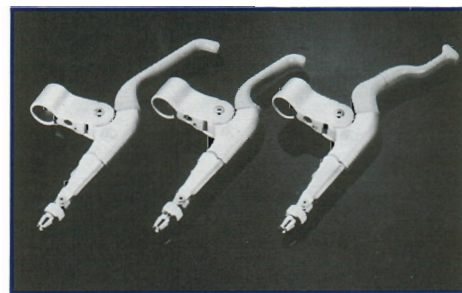
the end of the lever. When the end of the lever is set as far from the handlebar as possible, it accommodates the riders who prefer to brake using their forefinger and middle finger. But if the end of this lever is turned 180 degrees and set as close to the handlebar as possible, it accommodates riders who prefer to brake by using their ringfinger and little finger. The T-shaped tab prevents a rider's hand from sliding off and reduces the chance of injury in an accident.

The Compact lever is a shorter version of the Standard design for riders with small hands.

All these levers have a quick release and a brake cable tension adjuster in the same mechanism. The quick release is activated by rotating the cable casing support lever away from its resting place on the lever body. This opens the brake calipers to their widest position without detaching the yoke cable or the yoke cable carrier. It also allows the lever to be replaced, for whatever reason, without detaching the cables from the caliper.

The tension adjuster is located on the end of the quick release mechanism and allows the cable to be adjusted without having to get off the bike.

All three of these levers can control two brake calipers by accepting two cables at the same time. One of the cables will have a tension adjuster to allow the braking action to be balanced. All the levers fit handlebars between 21.8-22.0mm.



## Euclid Pedals

The basic design of the Euclid's body and axle comes from the Campagnolo Record pedals, which are used by professional racing teams around the world.

The bearings, completely serviceable and adjustable, are protected by a

special gasket that shields the gap between the axle and the body where the axle protrudes.

The cage is hard anodized alloy. The cage has teeth on both sides to grip the sole of the shoe no matter which side of the pedal the foot touches. The cage is held on the body by four Phillips screws and is replaceable.

The basic design is suitable for Mountain Bike shoes. However, Campagnolo offers a special set of serrated cage plates that completely cover both sides of the cage and its protruding teeth to make the pedal suitable for any shoe.



Campagnolo also offers a special resin toeclip with a built-in reflector for the Euclid pedal. "They keep feet in place on rough terrain almost as well as toe straps, yet are far easier to exit" (Bicycling Magazine)

Standard toeclips and straps are available for the Euclid pedal.

### Specifications

- Axle threads:  $\frac{9}{16}$  x 20.
- Thread length: 14mm.
- Bearings:  $\frac{1}{8}$ " 14 x 14.

## Euclid Hubs

The Euclid hubs follow the design of Campagnolo Record hubs. The hub shell is aluminum alloy with hardened axles. The bearings are supported in the traditional cup and cone system used by Campagnolo, which allows complete service and adjustment without removing the hub from the wheel. It is a system that is "noticeably superior," in the words of Mountain and City Biking Magazine.

The hubs have a hole in the dust cap and the center of the shell for grease

injection. This allows the hub to be flushed and properly lubricated without disassembling. The lubrication hole at the center of the hub shell is covered by a spring clip that is kept in place by the raised clip shoulders.

The dust cap has a contact shield between it and the axle cone to protect the bearings in the worst possible riding conditions.

The ground and polished cups and cones found in Euclid use ball bearings that are supplied in matched sets. All the bearings in a set are within .001mm (1 micron) of each other.

The diameter of the flanges and the spoke arrangement are the same as the Record and Croce D'Aune hubs, making proper spoke length calculation simple.

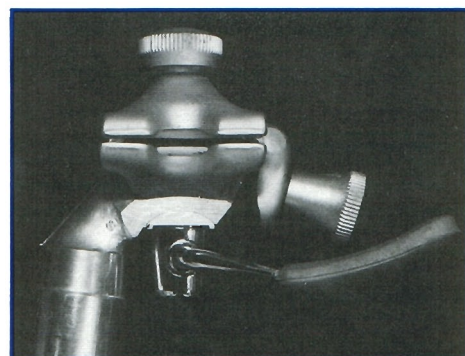
### Specifications

- Small Flange with quick release or solid axle.
- Large Flange with quick release or solid axle.
- Drillings: 32 or 36 hole, 28 hole in front only.
- Axle width: front 100mm, rear 126.5 and 130mm.
- Freewheel width: 36mm.
- Bearings: front  $\frac{3}{16}$ " 9 x 9, rear  $\frac{1}{4}$ " 9 x 9.
- Only English threads in the U.S.

## Euclid Seatposts

The Euclid seatpost is an extra long, aluminum cylinder seatpost that allows quick and easy horizontal adjustment without losing the pre-set tilt of the seat. The friction-locking system is engaged by clamping the seat rails with a quick release lever located under the clamp assembly. The clamping pressure is adjusted by the knurled nut on the top of the seatpost.

Releasing the clamping lever allows the rider to quickly and easily move the saddle toward or away from the handlebars. The Angle Tuning System allows micro-metric adjustment of the seat's position and holds that position even when the quick release lever is opened. This system is controlled with the knurled nut found on the rear section of the seatpost head. Using it requires no special tools and may be done by hand.



The seatpost is available in the quick release version or a double clamp bolt version. The double clamp is similar to the standard design of the Nuovo Record seatpost.

### Specifications

- Length: 325mm.
- Diameters: 26.4, 26.6, 26.8, 27.0 and 27.2mm.
- Available in quick release or double clamp bolt versions.
- Micro-metric angle adjustment possible on either.
- Either version is supplied with a quick release seatpost binder for frame.

## Euclid Option

In response to needs of the marketplace, Campagnolo will supply a special steel freewheel and chain with the Euclid gruppo when it is requested.

The steel freewheel will be made for Campagnolo by Regina. Each freewheel will be individually checked, by Campagnolo, to ensure it meets our design specifications. Each then will be marked with the Campagnolo emblem on the freewheel body.

The freewheels will be packaged in Campagnolo boxes with all the information needed in order to properly use them with the Euclid Syncro. (The chains will be handled in the same manner as the freewheels.)

Neither the freewheel nor the chain are part of a standard Euclid gruppo. They must be specified with your order.



## International Cycling Teams Using Campagnolo Components

### Italy:

- Gewiss—Bianchi
- Atala—Campagnolo
- Del Tongo—Pinarello
- Ariostea—De Rosa
- Selca—Ciclolinea Conti
- Pepsi-Cola—Fanini
- Malvor-Cidi—Colnago
- Titan—Bonifica—Benotto—Sidermec

### Spain:

- BH
- Reynolds—Pinarello
- Caja Rural—Orbea
- Helios—CR—Raseza
- Kelma—Merckx
- Zahor—Macario
- Seur—Otero
- Clas—Colnago

### San Marino:

- Alfa Lum—Colnago
- Vervet—Colnago

### Holland:

- Panasonic—Colnago
- PDM—Concord

### Belgium:

- Sigma—Diamant
- La William—Merckx

### Colombia:

- Bavaria
- Postobon

### England:

- Raleigh—Banania

### USA:

- Fanini—7-Up

### Australia:

- Polli—Mobile—Export—Fanini

### France:

- System U—Raleigh
- Fagor—MBK

### Portugal:

- Sicasal—Torreense
- Recer—Boavista
- Garcia—Joaheiro

## Cycling Teams In The United States Using Campagnolo Components

- Celestial Seasoning
- Team U.S.A. (USCF)
- ADR/Coors Silver Bullet Team
- Team Lycra (men)
- Mazda Cycling Team
- Bud Light Cycling Team
- Giant/Nelson Vails
- Cannondale Women's Team
- Eurocar Team

## Euclid's First Victories

Campagnolo's top quality Euclid group for "All Terrain" bikes, recently launched on the market, has already begun to collect victories. While awaiting success in road races (many athletes are now choosing Euclid for their Mountain Bikes for competitive use), the Campagnolo group has won two important awards: the Oscar For The Bicycle Of The Year 1989 and the Trophy For The Best Mountain Bike 1989. A jury of 9 personalities awarded the two titles in the Bicycle of the Year competition organized by the French Cycling Federation.

The Oscar was won outright by the Tracker bicycle by MBK fitted with a mudguard and a bottom bracket guard for the gear (MBK patent) and, most important, equipped 100% with the Euclid group. From the wide range of alternatives and options offered by the Euclid group the famous French manufacturer chose the following:

- Complete control unit with normal type brake control levers with quick release mechanism.
- Hubs with a small flange, giving the wheels a particular dynamic movement, with 36 holes and long axles for applying the gear guard.
- LG gear with 7-speed freewheel.
- Pedals with knurled plate and multi-use toe-clips.

- Seat pin with one screw and angular adjustment (Campagnolo patent).

The U-type rear brake was positioned under the rear horizontal fork of the frame. This beautiful bicycle, designed and built to conform with the most severe safety regulations, will be sold at a retail price of around Lire 2,500.00.

The Trophy for the best Mountain Bike was won by the Cascade model by Gitane, also fitted with the Campagnolo Euclid group. This famous French manufacturer, with a glorious tradition in the world of sports, has found success also in the field of "off-road" bikes. The Cascade model is equipped with Euclid "Biofitting" brake control levers, hubs with small flanges and 32 holes and, in view of its specifically competitive use, the rear brake (U-type) is mounted on the traditional fork. The seat pin is of the type with two screws while the gear control lever is of the Syncro type for a 7-speed freewheel. In the midst of a group of All Terrain bikes, the Euclid-Cascade model will certainly not escape notice. Two great successes for the Euclid group, two new victories for Campagnolo who continue, with determination and seriousness, on the road towards efficient technical and technological innovation.

### PATENTS EXCLUSIVE FOR THE EUCLID GROUP

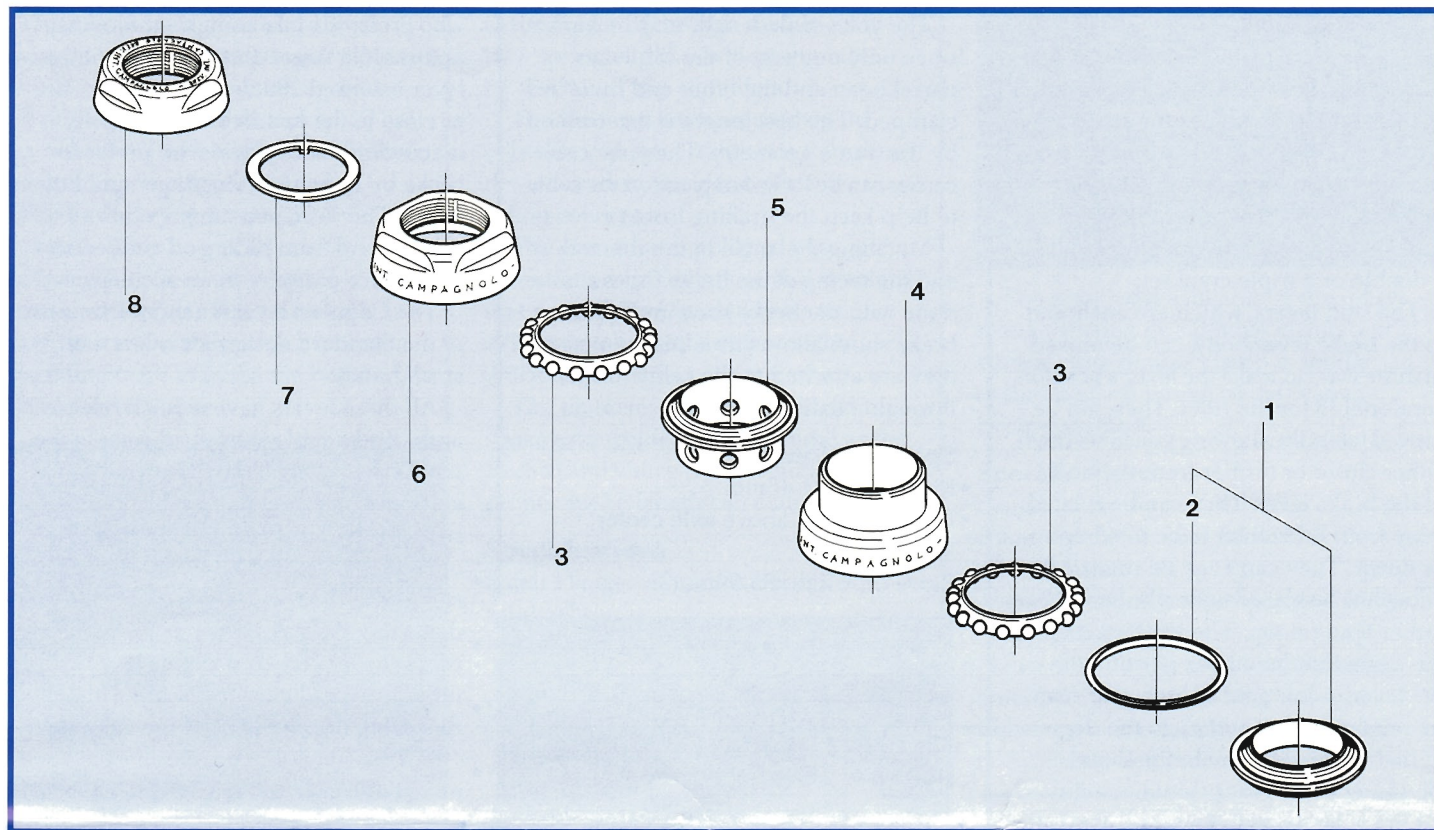
- Possibility to adjust the ergonomics of the gear control levers.
- Quick release on the brake control levers.
- Possibility to adjust the ergonomics of the brake control levers.
- Biofitting lever.
- Axial adjustment on the brake shoe levers.
- Seat-pin adjustment.
- Self-locking bracket on the headset.

### PATENTS ALSO UTILIZED ON THE EUCLID GROUP AND EXCLUSIVE SYSTEMS

- Brake control levers usable with 2 types of cables.
- Double braking circuit.
- Cable adjuster on brake lever.
- Fully adjustable spring-loaded calipers.
- Fully adjustable brake pads (spheric articulation).
- Front and rear syncro levers.
- Rear derailleur with two adjustable springs (upper and lower body).
- Adjustable clamp front changer.
- Central bottom clamp bracket with greasing system.
- Exclusive toe-clips.
- Asymmetric chainrings.



## Campagnolo Headset Component Interchangeability Chart



	Record	Croce D'Aune	Chorus	Athena
Fork Race (1) with shield	7133046	1133001	1133001	1133003
Bearing Set (3)	1134014 $\frac{5}{32}$	1134018 $\frac{3}{16}$	1134018 $\frac{3}{16}$	1134018 $\frac{3}{16}$
Lower Cup (4)	1131038	1131049	1131049	1131063
Upper Race (5)	7133045	7133081	7133081	7133085
Adj. Cup (6) Italian French English	1131056 1131057 1131058	1131046 1131047 1131048	1131046 1131047 1131048	1131062 1131061 1131060
Lockwasher (7) Ital./Eng. French	7300119 7300120	7300119 7300120	7300119 7300120	7300119 7300120
Lock Nut (8) Italian French English	7161133 7161134 7161135	7161133 7161134 7161135	7161133 7161134 7161135	7161192 7161193 7161194
Lower Seal only	7211007	7211007	7211007	7211007

### Specifications:

- The stack height of these headsets is 41.5mm.
- The Selform insert found in all of these headsets is neither removable nor replaceable by the user.
- The wrench flats on these headsets have a width of 32mm.
- These headsets should be lubricated only with Campagnolo grease, 02ZPT.

## Campagnolo Technical Support Schedule For 1989

The Campagnolo Technical Support Staff will be offering technical assistance to all the cyclists competing in the following races.

• June 1-4	Niagara Cycling Classic	St. Catharines, Ontario
• June 13-18	Core States Championships	Philadelphia, PA
• June 25-July 2	Ore-Ida	Boise, ID
• July 10-19	Senior Road Championships	Park City, UT
• July 23	Race for Hope	Providence, RI
• July 25-30	Whaling City Pro-Am	New Bedford, MA
• August 15	Junior Nationals	Colorado Springs, CO
• August 19-25	Masters Nationals	Bear Mt., NY
• Sept. 16-17	Carolina Cup	Greensboro, SC
• Sept. 22-24	A to Z Cycling Classic	Columbus, OH
• Oct. 1	Key Biscayne Triumph	Miami, FL
• Oct. 8	South Miami Classic	Miami, FL
• Oct. 15	Coconut Grove Classic	Miami, FL



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