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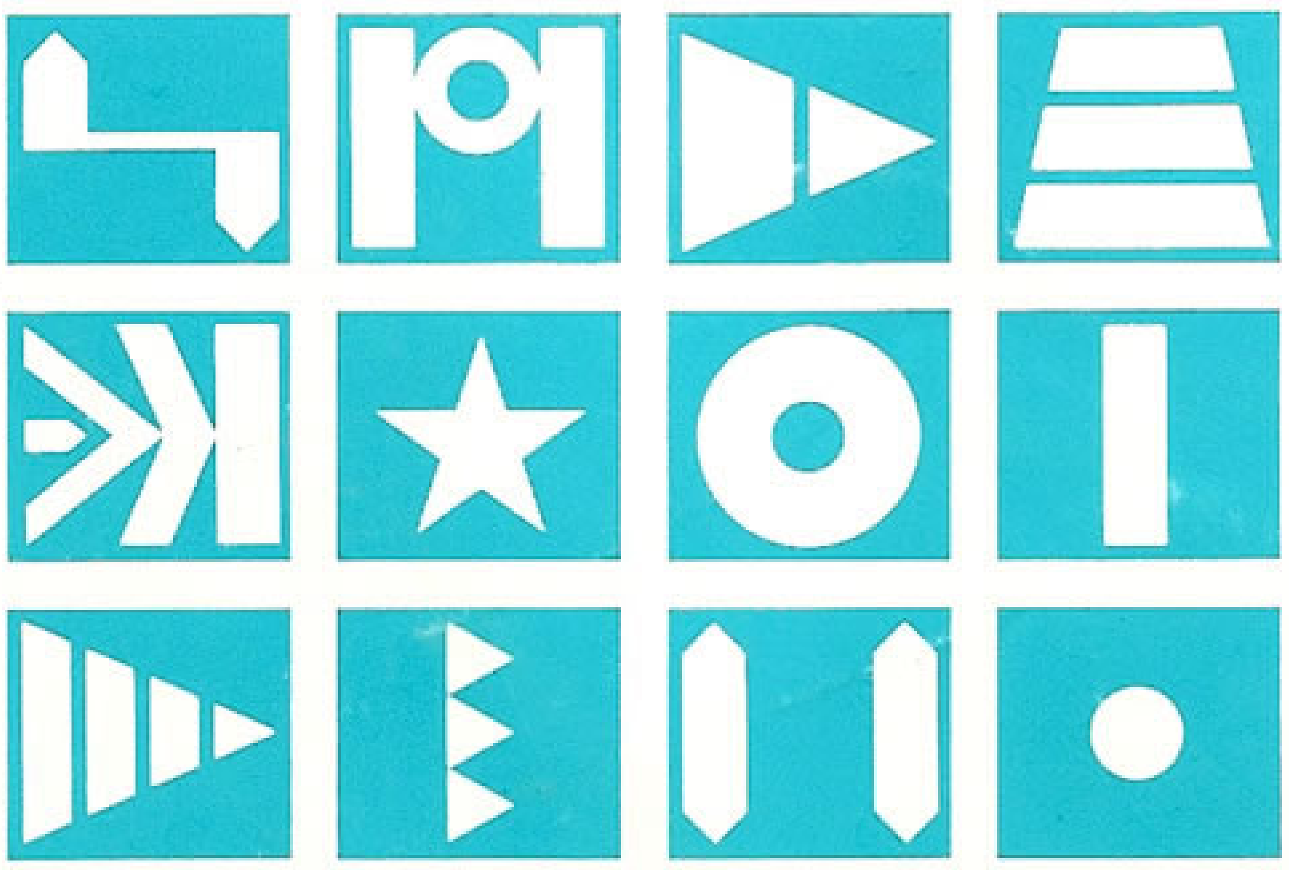
ATHENA®



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USA


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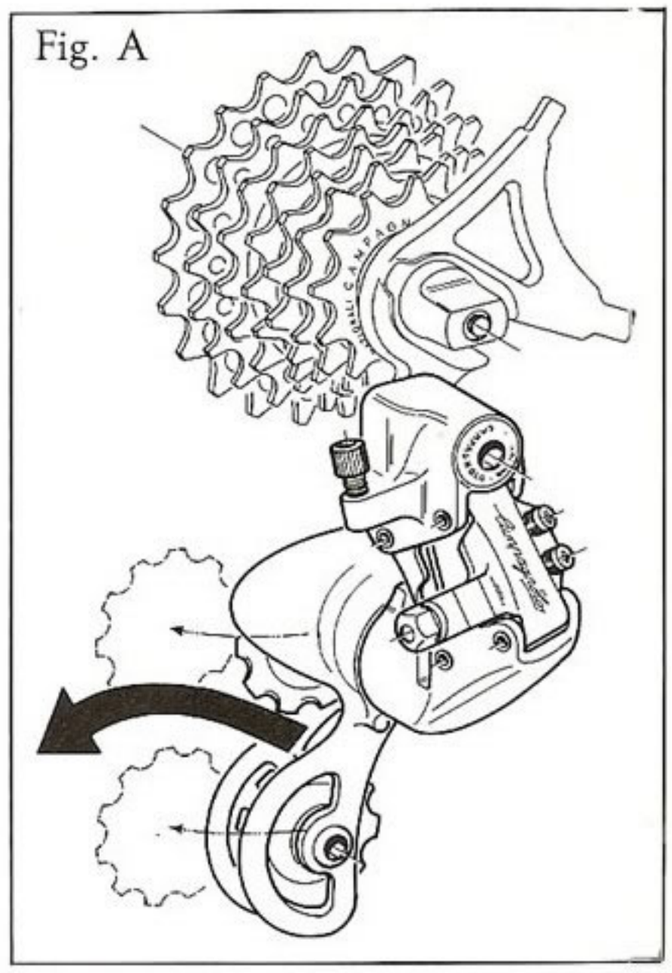
FRONT AND REAR DERAILLEURS

The consistency of the distance between the upper pulley of the rear derailleur and each of the freewheel sprockets is one of the fundamental requisites for precise shifting. Campagnolo's R & D department has examined all of the theoretical planes of movements that the parallelogram of the rear derailleur can operate within. This study has also been conducted hypothesizing all of the possible inclination angles of the rear derailleur at the gear hanger so that these two working planes function harmoniously.

The data from this exhaustive analysis has been tested both in the laboratory and on the road to confirm its validity. The result is the all new ATHENA rear derailleur with its exclusive, patented "LATERAL OPERATING SYSTEM". In its developed configurations the ATHENA rear derailleur allows the use of the freewheels with the highest tooth difference presently available anywhere. The "LATERAL OPERATING SYSTEM" allows the derailleur to work in a precise direction insuring an uniform distance between the upper pulley of the derailleur and each of the freewheel sprockets to facilitate chain travel in the transversal

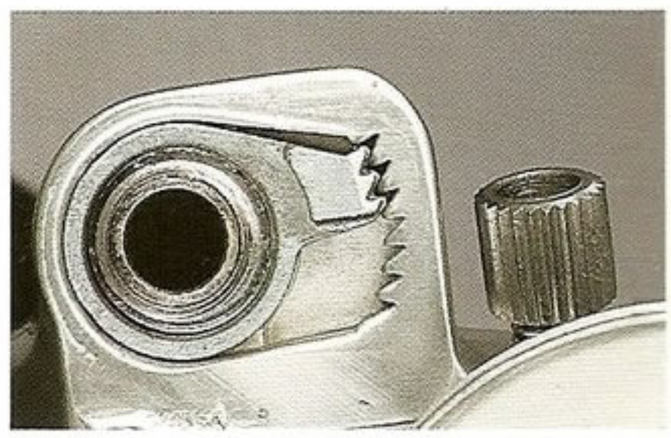
movement (Fig. A).

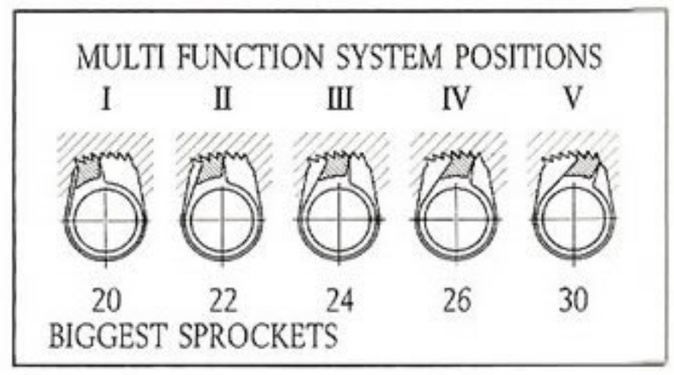
Fig. A



"MULTI FUNCTION SYSTEM"

Another innovation of the ATHENA derailleur is the "MULTI FUNCTION SYSTEM" which allows you to change the inclination of the derailleur five different ways depending upon the size of the freewheel used. The "MULTI





FUNCTION SYSTEM" is a notched alloy insert situated in the upper body of the derailleur that can be repositioned to give the derailleur five different working angles allowing the use of freewheels with sprockets up to 30 teeth.

The positioning of the insert depends upon the largest sprocket

of the freewheel that you choose to fit on the bicycle.

In order to insure vibration-proof gear adjustments Campagnolo has chosen to use stainless steel adjusting screws with coaxial keeper springs instead of the plastic inserts used on most other rear derailleurs. The screw heads are slotted to accept either a Phillips head screwdriver or the conventional flat head type. Also, instead of using the small diameter bolt and plastic bushings found on other rear derailleurs to attach the jockey wheel cage to the derailleur body Campagnolo has elected to use a larger diameter tempered steel bolt with antifriction bushings. In addition to protecting against premature wear the larger diameter bolt and the all metal construction is very resistant to impact damage and provides a superior seal to prevent dirt infiltration.

The rear derailleur is attached to the bicycle with a steel alloy pivot bolt and special elastic washer that compensates for irregularities and wear at the gear hanger. The plastic washer also insures that the pivot bolt will not vibrate loose on rough roads. The parallelogram is attached to the derailleur body with Teflon treated stainless steel pivot pins that are removable for service and repair. And finally, the ATHENA rear derailleur is as beautiful to look at as it is durable thanks to a special surface treatment by Campagnolo that includes polishing and anodizing.

The ATHENA front derailleur is an extremely precise component with the reliability and attention to detail that has made Campagnolo products the choice of the world's foremost pro cyclists and triathletes. Special features include: Teflon treated, stainless steel pivot pins, stainless steel adjusting screws with keeper springs instead of plastic inserts and derailleur arms and bodies of forged Avional aluminium, polished and anodized to a brilliant satin finish. This front derailleur also features a new specially contured changer fork made with a particular type of steel alloy that resists deformation under load. Its unique shape delivers quick, positive shifts and eliminates the need to constantly trim the derailleur to compensate for chain angle. It is available in both braze-on and clip-on versions and an unique adjustable clip version is also available for frame sets with tube diameters from 28 to 33 mm. The ATHENA group can be specified with Record FRICTION, Record DOPPLER (retrofriction) or Syncro shift levers. Syncro is available with either 6 or 7 speed inserts for the ATHENA derailleur.

ATHENA

SPROCKETS

A

B

CHAINRINGS

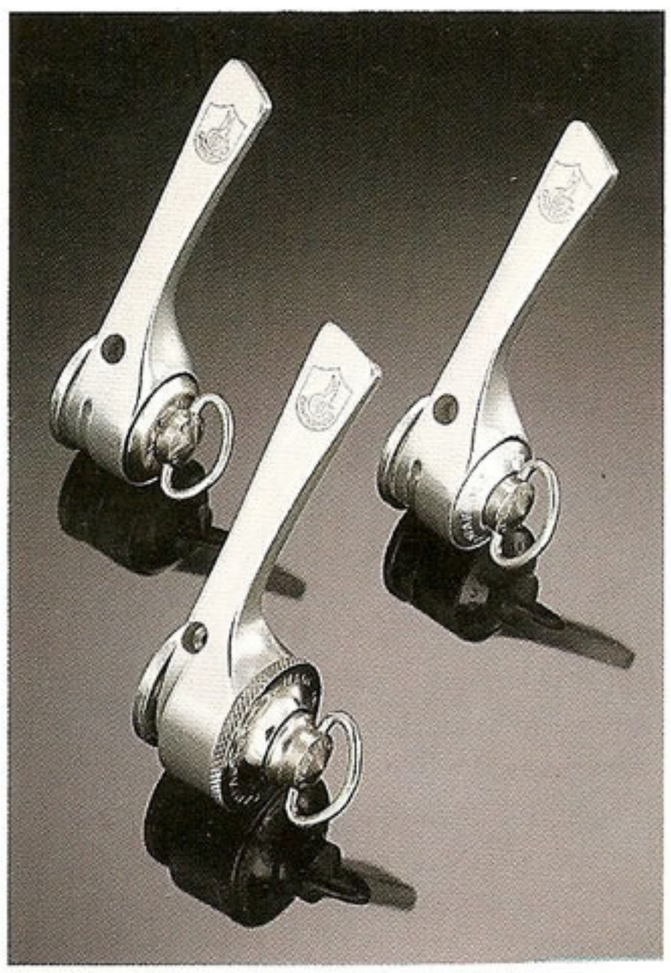
C

D

Gear change capacity = (D + A) – (C + B) = **30**

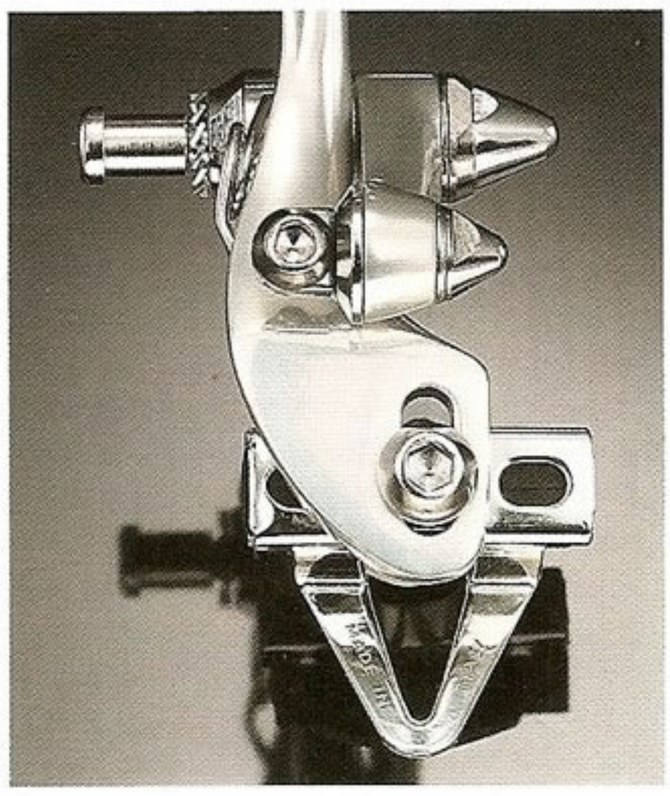
Biggest sprocket utilizable = A **30**

Front changer capacity = (D – C) = **18**

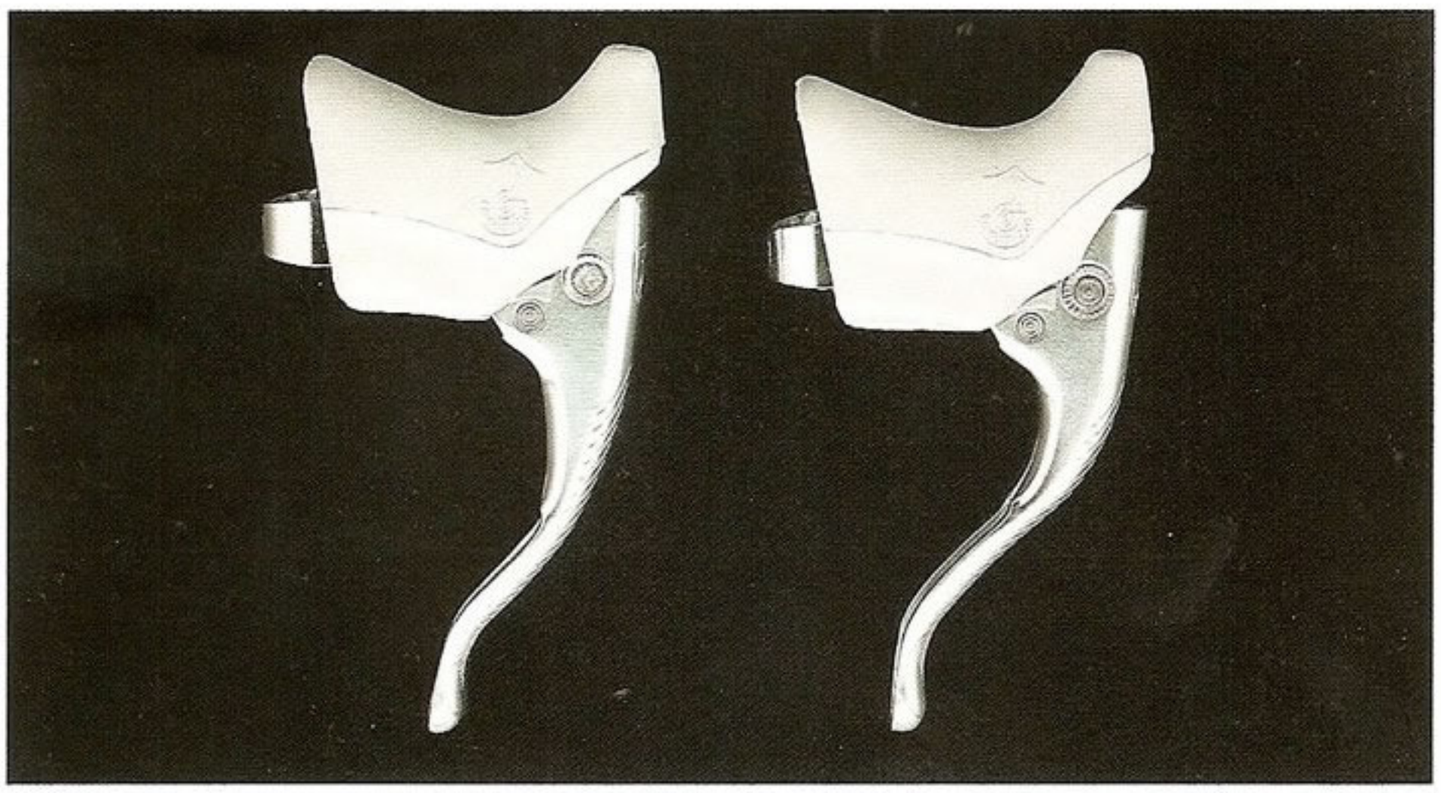


BRAKES

Computer designed for optimal transversal and longitudinal rigidity, the brake calipers are as pleasing to look at as they are functional. The unique geometry of the caliper arms provides a mating surface for the brake pad holders that is almost double the size of conventional arms. This means a substantial reduction of brake pad vibration. Campagnolo also uses chromed steel pad holders instead of a one piece moulded brake pad where the fixing bolt is merely inserted into the flexible rubber itself. Campagnolo employs a very special steel alloy, machined to microscopic tolerances for its caliper pivot bolts, this combined with computer precise milling for the pivot hole of the caliper arms simply eliminates the need for thrust bearings and other gimmicks in these critical areas. There are no painted surfaces on the brake calipers that could cause play or friction as the paint wears away, just satin finished, anodized Avional aluminium that will not clip, peel or discolor. In order to compensate for brake pad wear and cable tension an easy to use barrel adjuster that will not twist the cable casing is incorporated into the brake caliper.



Instead of a conventional quick release on the brake caliper the ATHENA group uses an ingenious system whereby the quick release is activated from the brake lever. This type of quick release is currently being used by all of Campagnolo's pro teams. The advantages of this method is well recognized because of its safety and simplicity. It is, in fact operated by simply pushing a button on the hand lever without having to remove one's hands from the handlebars. The brake levers are adaptable for either aero or conventional cable routing and can be changed from one style to the other at any time. Also, both brake levers are symetrical there is no left or right lever making parts completely interchangeable from one to the other. The rubber hoods of the levers are made of a special slip resistant elastomer and have a built in shock absorbing pad to provide a comfortable rest for the hands. Specially designed brake caliper springs, Teflon lined cable housing and precise machining means that Campagnolo does not have to complicate its brake levers with auxiliary springs for ease of modulation. In addition, as optional ATHENA COMPACT brake levers are available. The shape of this lever has been especially designed for riders with smaller hands, they mount 12 mm closer to the handlebars making them very easy to operate.



CHAINWHEEL AND BOTTOM BRACKET

Forged Avional aluminium, stress relieved, polished and anodized to a jewellike finish give the ATHENA chainwheel a look that is distinctly Campagnolo.

The crank arms are available in your choice of either 170 mm or 172,5 mm lengths. Complementing the chainwheel are chainrings in a full range of sizes, they are available from 39 to 44 teeth for the inner and from 48 to 53 for the outer. Like all Campagnolo chainrings the teeth are precision machined, one by one, not stamped like most other chainrings.

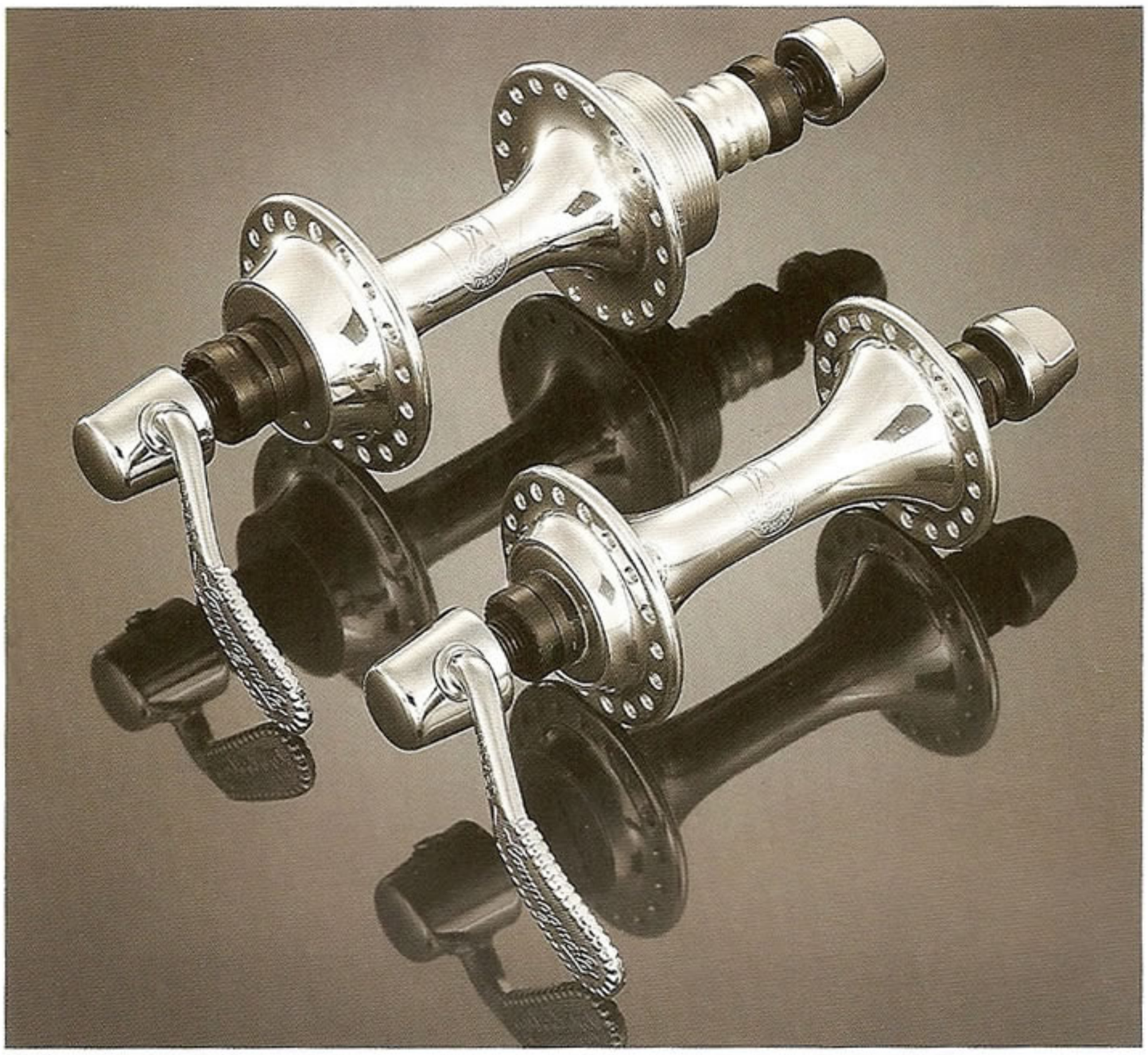
The ATHENA chainwheel turns on a case hardened Nickel-Chrome steel axle mated to bearing cups whose races have been precision ground and polished to eliminate any possibility of unwanted friction and even the ball bearings supplied are selected to have a tolerance of 1 micron.

In every race proven component of the ATHENA chainwheel one can find the incomparable safety and reliability that has made Campagnolo the choice of more world champions than all other component manufacturers combined.

PEDALS

The shoe contact surface of the ATHENA pedal is a semi-platform design that perfectly harmonizes with the functional and anatomical needs of the rider throughout the entire 360 degrees of rotation. The rear cage plate, developed for the Record Ergonomic pedal, provides positive shoe cleat engagement and prevents the shoe from wandering to the outside of the pedal during the thrust phase of the pedal stroke. Double sets of specially selected 5/32" ball bearings support the heat-treated, chrome moly axle. In order to eliminate power loss where the pedal contacts the crank arm Campagnolo engineers have designed the pedal axle to have 50% more contact surface at this critical area.

Adjustable bearing races are used just like the pedal for Campagnolo's pro teams and they emphasize the quality of ATHENA pedals when compared to the plastic bushings used in other pedals. Maintenance is easy because immediate access to the bearings can be had by simply unscrewing the dust cap at the end of the pedal. Professional quality spring steel toe clips are supplied with the pedal set and are available in your choice of small, medium or large sizes. Rich, leather toe straps with pull tabs compliment the system.



HUBS

The ATHENA hubs are forged using Campagnolo's renowned aluminium alloy and use the race proven cone, cup and ball bearing system with 3/16" balls in the front and 1/4" in the rear. The inner mechanism is protected from contamination by two metal, not plastic, covers with provisions for direct lubrication without disassembly.

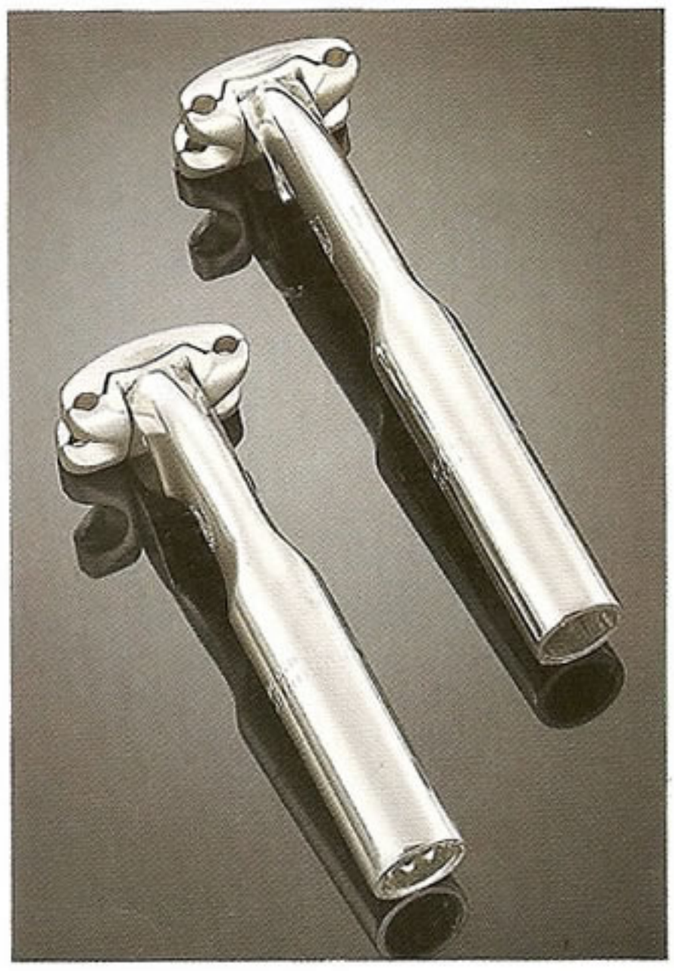
This system eliminates the power robbing frictional drag associated with so called "sealed" bearing systems. The patented quick release, now a standard feature on most hubs, was invented by Campagnolo and features a positive locking lever and an easy to use knurled adjusting nut. Hubsets are available in 32 and 36 holes and various widths for 6 or 7 speeds.

HEADSET

The headset included in the ATHENA group uses the innovative SELFORM system. Originally designed for our racing teams and used in our top of the line competition groups SELFORM is a shock absorbing system that evenly distributes the bearing loads so that the races are not damaged. The lower races are also protected from dirt and water damage by a nylon seal on the fork cone. In order to keep weight to a minimum the headset is made of special lightweight aluminium with micro polished steel race inserts and cones. The 3/16" ball bearings are selected to a tolerance of one micron and are held in place with special lightweight resin retainers.

SEATPOST

Available in 130 mm and 180 mm lengths and in 25-26,2-26,4-26,6-26,8-27-27,2 diameters. The seatposts feature a lightweight, wind cheating design with a single 6 mm allen fixing bolt for quick easy adjustments. Both the upper and lower saddle cradles are notched to provide positive retention and eliminate the need for additional bolts or screws to hold the saddle in the place you want it.



D000A **"ATHENA" Campagnolo group**
Basic composition:

Code	Description
D500	Subgroup brakes (front and rear brake, two brake levers, cables and casings)
D100	Subgroup gear and braze-on front changer
0281	Levers FRICTION, braze-on version (r.h. and l.h. levers, cables and casings)
D300	Subgroup small flange hubs (front and rear hub, complete with quick release)
D040	Chainwheel (r.h. crank width 135 two chainrings, l.h. crank)
D0H0	Bottom bracket
D600-AM	Subgroup pedals (r.h. and l.h. pedals complete with steel toe-clip and single layer leather strap)
D0D0	Head set
C0R2	Styled seat pin 180 mm complete with locking nut and screw Ø 8

Subgroups and alternative components:

Code	Description
C022	front changer with fixed clip (pipes Ø 28,5 mm)
C023	front changer with adjustable clip (pipes from Ø 28 to 33 mm)
	FRICTION levers complete with cables and casings in the versions:
0282	clip-on
0283	braze-on on-top-of-tube
	SYNCRO 2 levers complete with cables and casings in the versions:
0221	braze-on for 6-7 sprockets
0222	clip-on for 6-7 sprockets
0223	braze-on on-top-of-tube for 6-7 sprockets
C0R2-S	styled seat pin 130 mm complete with locking nut and screw Ø 8
D056	two brake levers COMPACT

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