cicli

BASSO



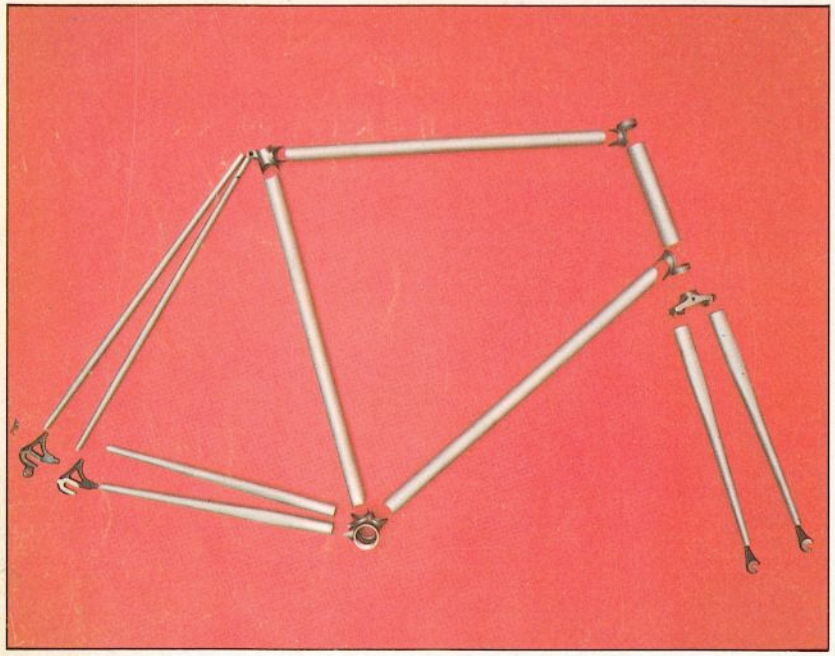
Il Veneto è tradizionalmente terra di ciclisti. La bicicletta qui fa parte integrante del panorama, e gode di una popolarità raramente conosciuta in altre contrade italiane.
È uno spettacolo familiare, per chiunque percorra le strade del Veneto, vedere giovani e meno giovani, a gruppi o isolati, pedalare con impegno agonistico, o semplicemente per svago turistico e salutare.
È una regione che ha dato i natali a molti campioni di razza, e dove, non a caso, è sorta e si è sviluppata la più prestigiosa fabbrica di componenti per biciclette: quel Campagnolo che nel mondo è sinonimo di alta qualità e tecnologia d'avanguardia.
Inserita in un ambiente di così diffusa professionalità tecnica e sportiva, l'azienda Basso è costantemente sospinta ad operare con i più moderni criteri costruttivi, sostenuta dalla lunga esperienza maturata in anni di pratica nel settore corse.

Das Land Venetien ist aus Tradition ein Land von Rennfahrern. Das Fahrrad ist hier im Panorama integriert und geniesst eine Popularität, die in den anderen Ländern längst nicht bekannt ist. Es ist immer ein Spektakel junge wie alte Leute, allein oder gruppenweise radeln zu sehen: mit grossem agonistischen Fleiss oder nur zur Entspannung.
Venetien, nicht nur das Geburtsland vieler Spitzenfahrer, sondern auch das Land wo die bekannteste Fabrik für Fahrradszubehörteile, und zwar die Firma Campagnolo, die für Qualität und hohe Technologie bürgt, ihren Grundstein legte und sich entwickelte.
Angespornt von dieser sportlichen und fachlichen Umgebung setzt die Firma Basso ihre langjährige Erfahrung im aktiven Berufssport mit den modernsten Konstruktionskriterien in die Tat um.

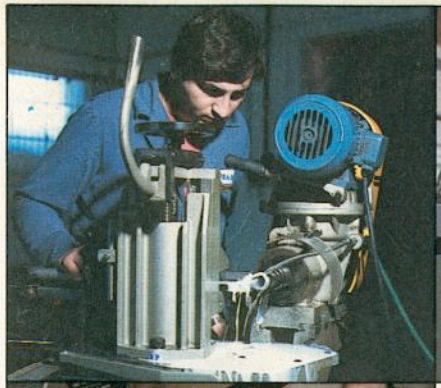
There is a deep-rooted cycling tradition in the Veneto. In fact, bicycles are so popular here that they seem an integral part of the landscape and are more popular than in most other parts of Italy.
If you travel through this region, you will see young and older cyclists, riding their bicycles competitively or simply for fun, and many Champion cyclists were born in the Veneto.
It is no wonder, therefore, that the most prestigious cycle-components factory has developed here. We are referring, of course, to Campagnolo, the firm that is known throughout the world for its sophisticated technology and the high quality of its products.
"Cicli Basso", being a part of this setting, is constantly striving towards the most advanced and up-to-date technological criteria, supported by long experience gained through years of first-hand experience in both amateur and professional cycle racing.

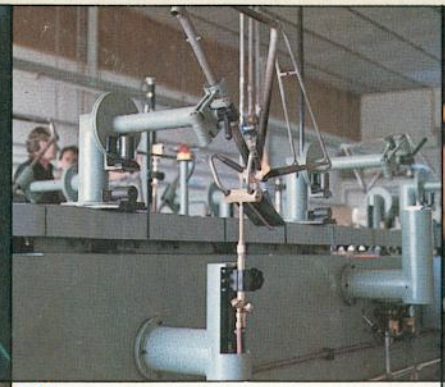


FRAME COMPONENTS

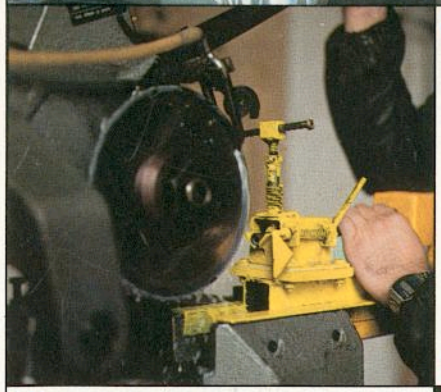


If we were to make a comparison between the human body and the bicycle we could say that the frame is the heart of the bicycle. At the basis of its design there are precise rules of construction which derive from years of practical experimentation.
The exact observance of these rules is particularly important when building racing frames. All the elements that determine the "geometry" of a racing frame, that is dimensions, angles, gauges, alignments have to be kept within very low degrees of tolerance. The steel tubing used for the construction of racing frames vary in quality and type according to the exact type of bicycle required. Types used range from the most economical carbon steel ones to the most expensive in manganese or chrome-molybdenum steel. These latter types are also the lightest and strongest. Other parts of the frame are the bottom bracket, lugs rear dropouts, seat lug conjunctions and the front forks which consist of the crown, two curved tubes, fork column and two front dropouts.
With the exception of the tubing used for the front fork (to which applies what has already been said with regard to the rest of the frame) these other components are made of high-grade carbon steel and are either pressed or microfusion processed.
The choice of one rather than other type is mainly a question of style and finish. Microfusion processed pieces look better and have more precise tolerances but both types are equally strong.
All dropouts are pressed and there exist a variety of types on the market.









Pre-heating of bottom bracket

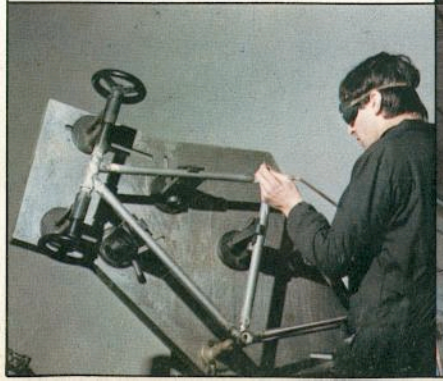
Pre-heating of seat lug



Mitering of tubing and mill-cutting for attachment of front fork and rear tips

Jig assembling of frame







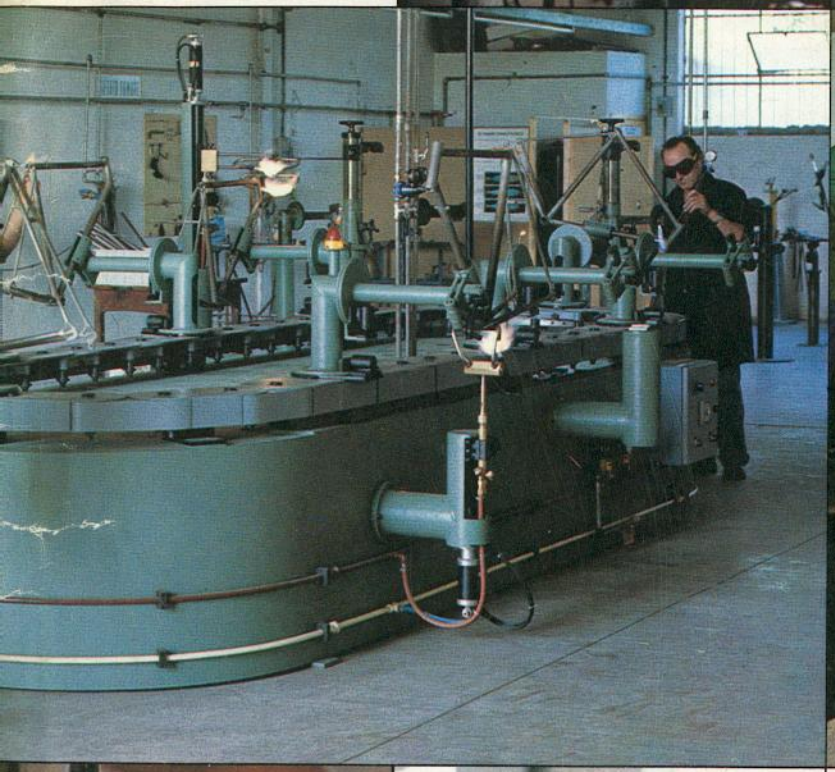
Brazing of head lugs

Brazing of fork crow

Brazing of seat lug

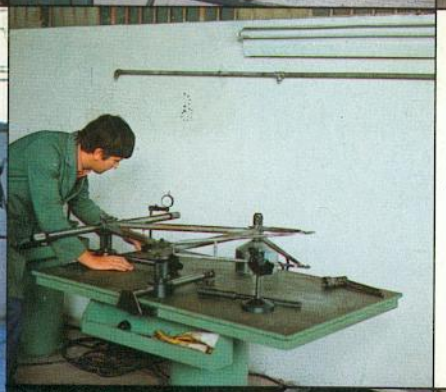
Visual inspection of frames after welding

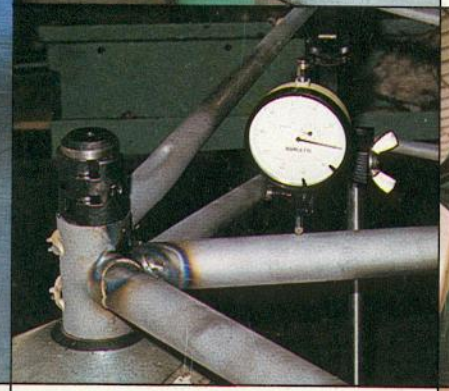
Semiautomatic unit for continuous welding of frame components

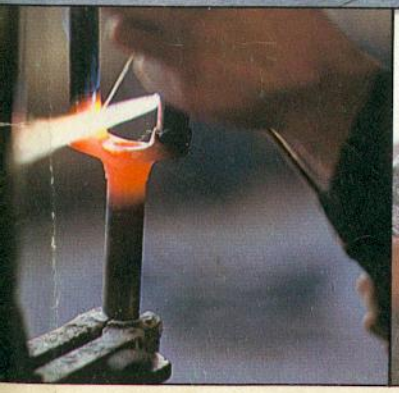














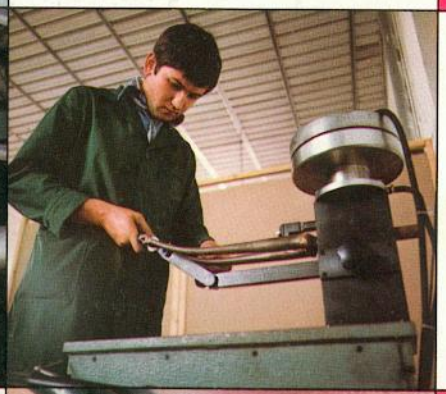
Brazing of fittings

Inspection of brazed parts by liquid penetrant

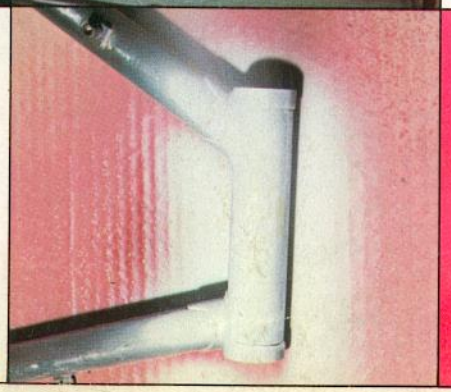


Alignment of rear tips

Alignment of frames at control table



Alignment of fork



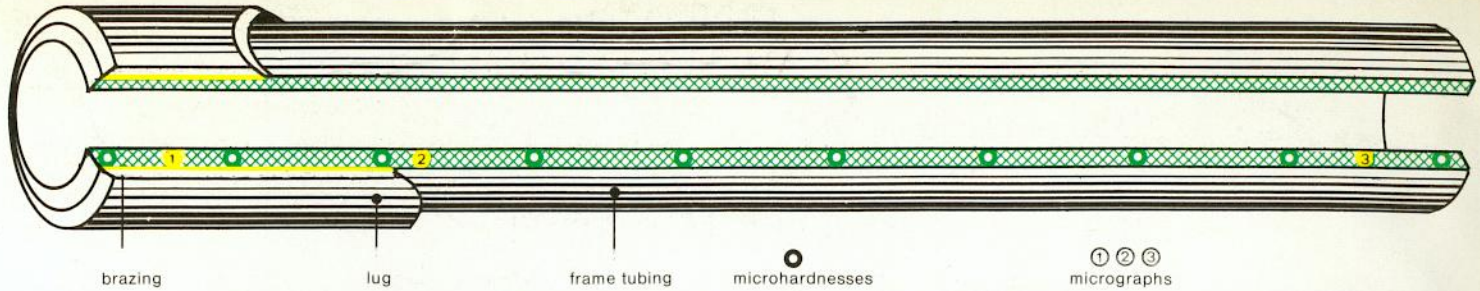
Road frame



Truck frame



FRAME BRAZING



The most important phase of the bicycle making process is the braze-welding of the tubes that form the frame. In fact, if brazing is mediocre, the strength of the frame is lessened considerably.

It is well-known that steel, when heated to a temperature of 900° C and air-cooled, undergoes a heat-treatment process known as "normalization" which involves a change in the internal structure of the metal and, therefore, in the strength of the tubing. We have carried out a series of metallurgical tests in order to check the effects on the tubing of the brazing temperature.

The first series of tests was performed on three samples of Z type, Columbus carbon-steel tubing.

As shown in the drawing (which is not to scale), a joint has been brazed on each 72 mm long piece of tubing. The first by means of an oxyacetylene flame without pre-heating; the second by means of an oxypropane flame without pre-heating and the third by means of an oxypropane flame but this time with pre-heating.

Having first obtained three samples in the longitudinal direction of the tube, 9 equally-spaced Vickers hardness tests were carried on each one. Three micrographs were then taken of the areas marked ① ② and ③ enlarged by a microscope to 100 times actual size.

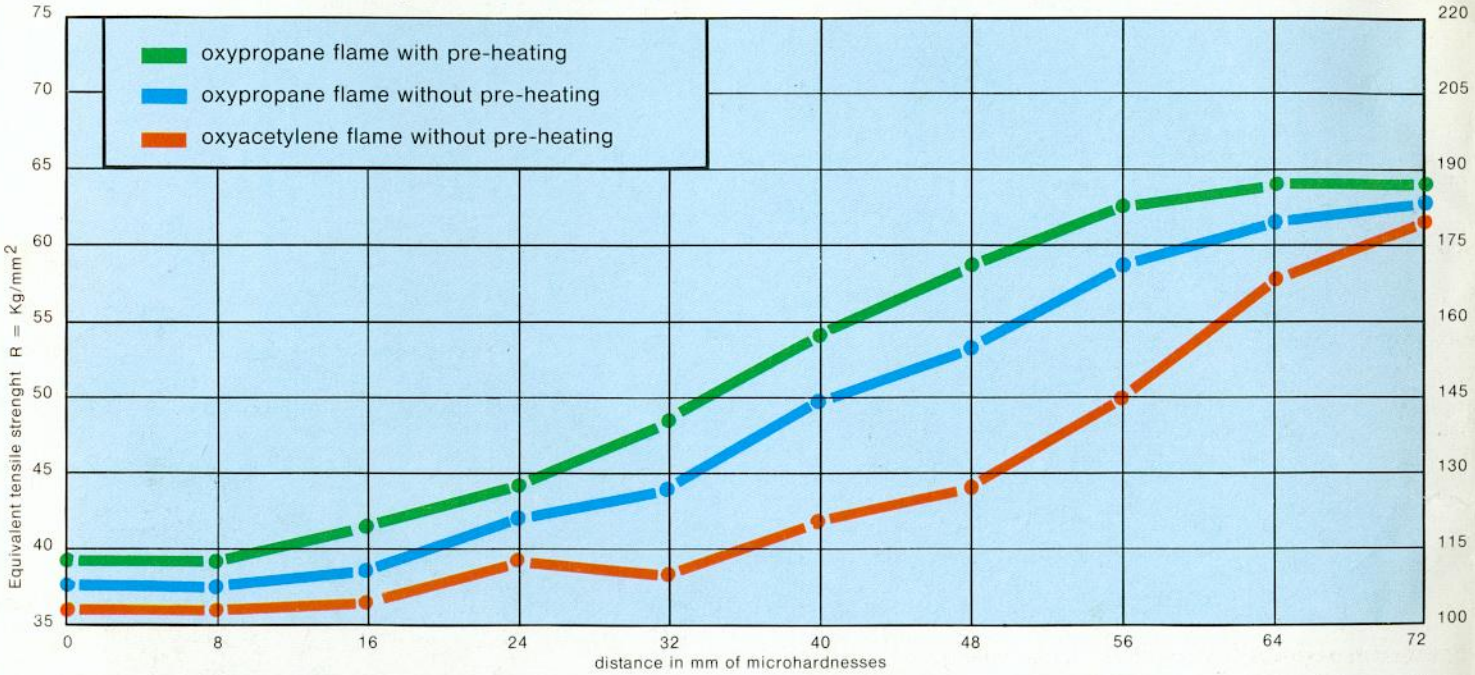
The values of hardness are shown on the diagram and three curves were obtained by joining the different values, each curve relating to the type of brazing adopted. Each curve shows a decrease in hardness in correspondence with the brazed area where a temperature of from 800-900° is reached.

Proceeding to the right, where the temperature is lower, the hardness increases to the normal values which characterized the original tubing. A decrease in hardness is quite normal as a consequence of the normalization process in carbon steels. However, even the lowest values are sufficient to guarentee the strength of the frame.

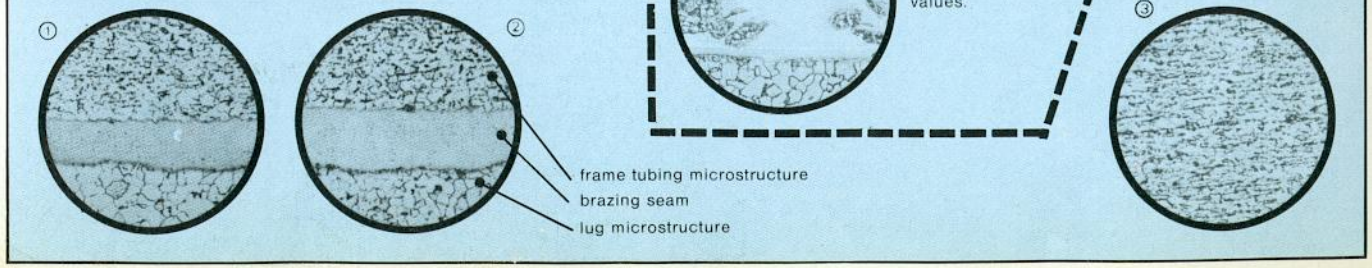
Of the three curves we consider the green one as the best both as regards its evenness and regularity in respect of the original properties of the tubing.

The micrographs show us a "Ferritic" - type cristalline structure with "Perlitic" areas and the size of the grain is 7 ASTM. There is however a difference in the shape of the grain between micrographs ① and ② (upper part of the tube) and micrograph N° ③ In the latter the grain maintains the typical elongated shape present in cold-drawn metals while in the other two elongation has been reduced owing to the heat effect. Unfortunately the limited space at our disposal prevents us from exploring this matter in greater detail. Nevertheless we hope that the diagram and the micrographs will provide a sufficiently clear picture of the importance of brazing process.

diagram of the 10 microhardnesses Hv (Hardness Vickers) found on the 3 test pieces of carbon-steel frame tubing after brazing of lugs



microstructures of frame tubing carbon steel found at points ① ② ③ after brazing of lugs.



This micrograph was taken on a test piece purposely overheating during brazing. The heat effect caused detachment of tube steel, which "migrated" inside the brazing seam. This indicates the attainment of dangerous temperature values.

FRAME BRAZING

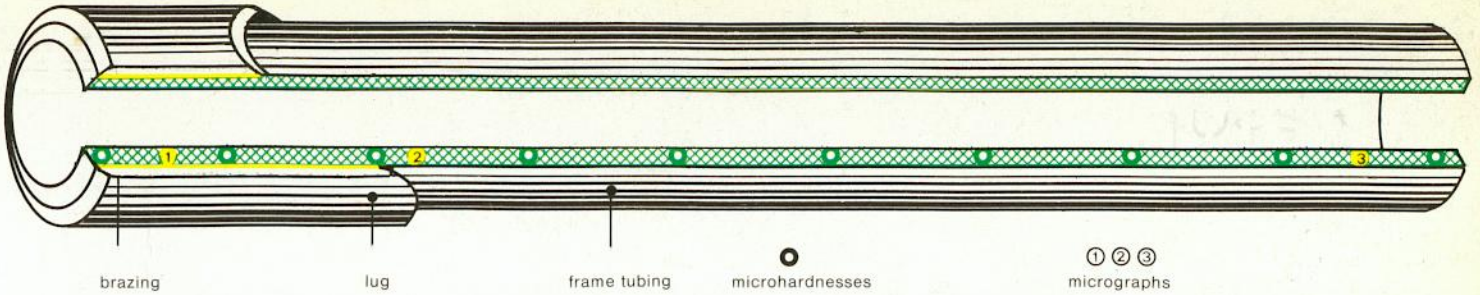
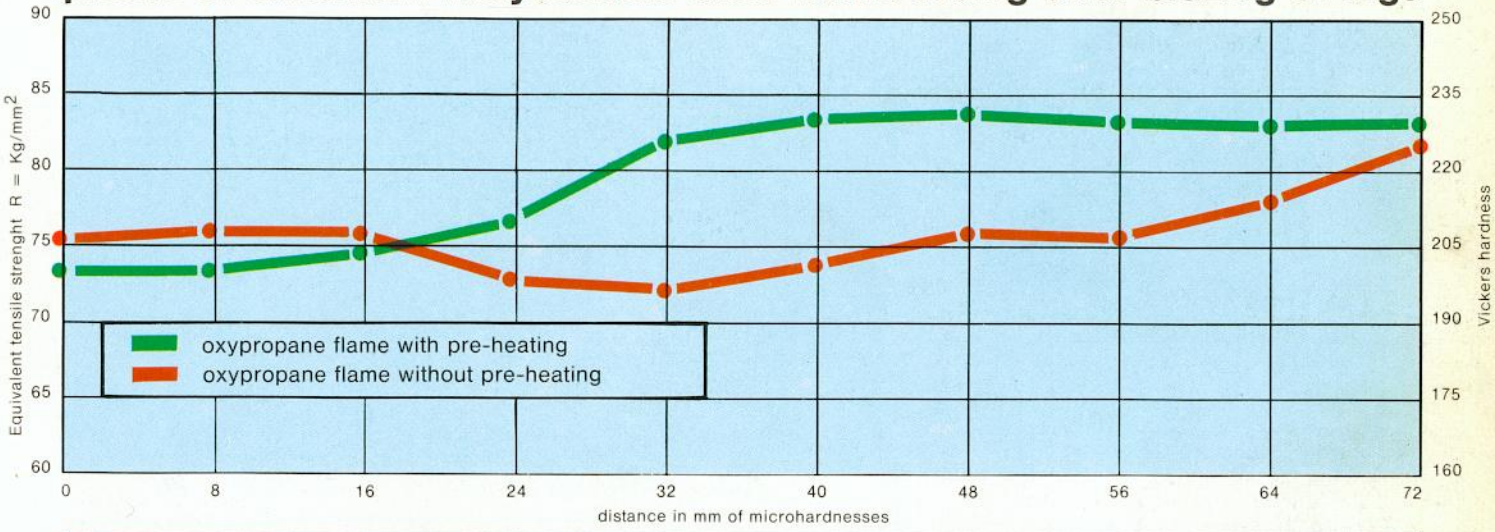


diagram of the 10 microhardnesses Hv (Hardness Vickers) found on the 2 test pieces of chromium-molybdenum steel frame tubing after brazing of lugs



The second series of tests were carried out on Columbus 'SL' tubing, in chromium-molybdenum steel, having the following chemical composition:

C	Mn	Si	Cr	Mo	S	P
0,24%	0,71%	0,25%	0,94%	0,18%	0,012%	0,010%

The tests were carried out as those for 'Z' tubing, with the exception of brazing by means of an oxyacetylene flame which was considered too aggressive owing to the extremely high temperature developed (3200° C compared to 2700° C when using an oxypropane flame).

We only tested tubing brazed by means of an oxypropane flame *with* and *without* pre-heating.

The hardness values of the part exposed to very high temperatures (extreme left of diagramm) are practically the same as those of the part where the temperature remained much lower (extreme right of diagramm).

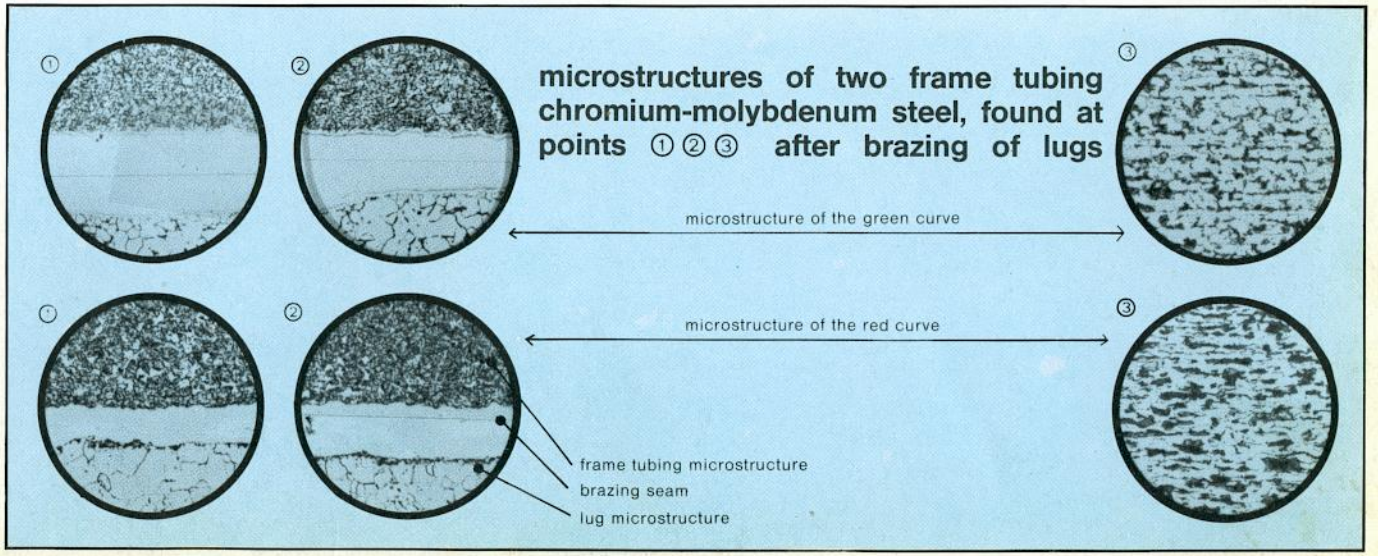
This fact is due to the presence in the steel of alloying elements such as chromium, molybdenum and, to a lesser extent, manganese.

These elements provide the steel which undergoes "normalization" with a certain self-hardening capacity. This enables the steel to preserve, (even at room temperature) and in the certain cases even to improve upon, the values of the steels that do not undergo brazing, which does not occur for carbon steel tubing. The explanation of the different behaviour of 'SL' steel tubing is seen more clearly by comparing the micrographs.

In micrographs ① and ② which show the parts exposed to brazing, it can be seen that the structure of the tubing (upper part; the lower part shows the structure of the joint in carbon steel) is different from that of the tube that has not been exposed to such high temperatures (see micrograph ③. In this latter case the grains of the steel are elongated as a result of the "stretching" of the fibers that it undergoes when cold drawn. In micrographs ① and ② on the other hand, the grains are globular and smaller. This is an indication of the more homogeneous nature of the steel and the fact that its mechanical properties have benefitted, rather than otherwise.

From a metallurgical point of view the curve relating to brazing with pre-heating gives a more positive result. It is evident from what we have previously stated that SL tubing gives the advantage of greater strength and reliability.

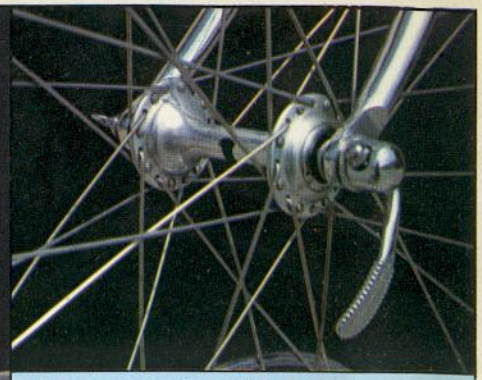
In conclusion we would like to stress once again that particularly with this type of steel brazing must be carried out with scrupolous care in order that the advantages deriving from the use of high quality tubing be fully exploited and their expense justified.





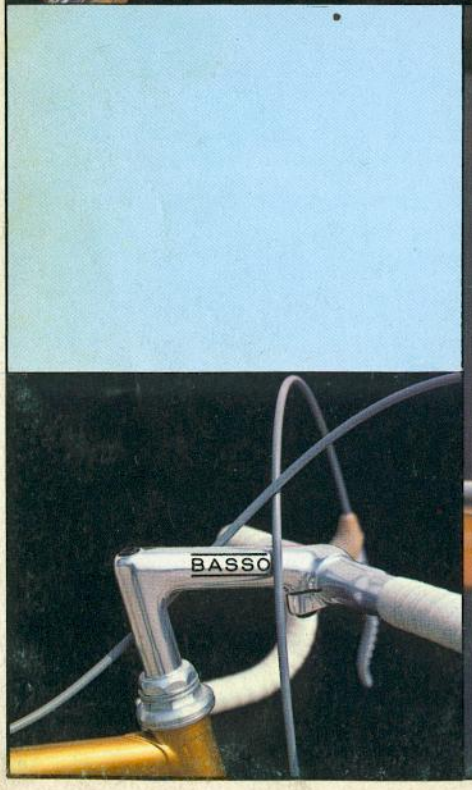
On completion of the geometrical characteristics control, finishing of brazed areas, painting and chrome-plating, the frame is ready for the assembling of components which will give to the bicycle the final trim.
It is worth mentioning that all other bicycle components as well as the frame, differentiate as far as quality and finishing degree are concerned.
Abviously, the parts and gearings of best quality (i.e. Campagnolo) are





The assembling of the various components develops along a series of operations requiring the most careful controls and manual adjustament of each individual part which shall subsequently fit and fully harmonize with the whole unit.
Basso firm entrust this delicate task to long-experienced and highly qualified specialists who in their function of mechanics did contribute with theirs precious activity to the successes of a number of professional racers.

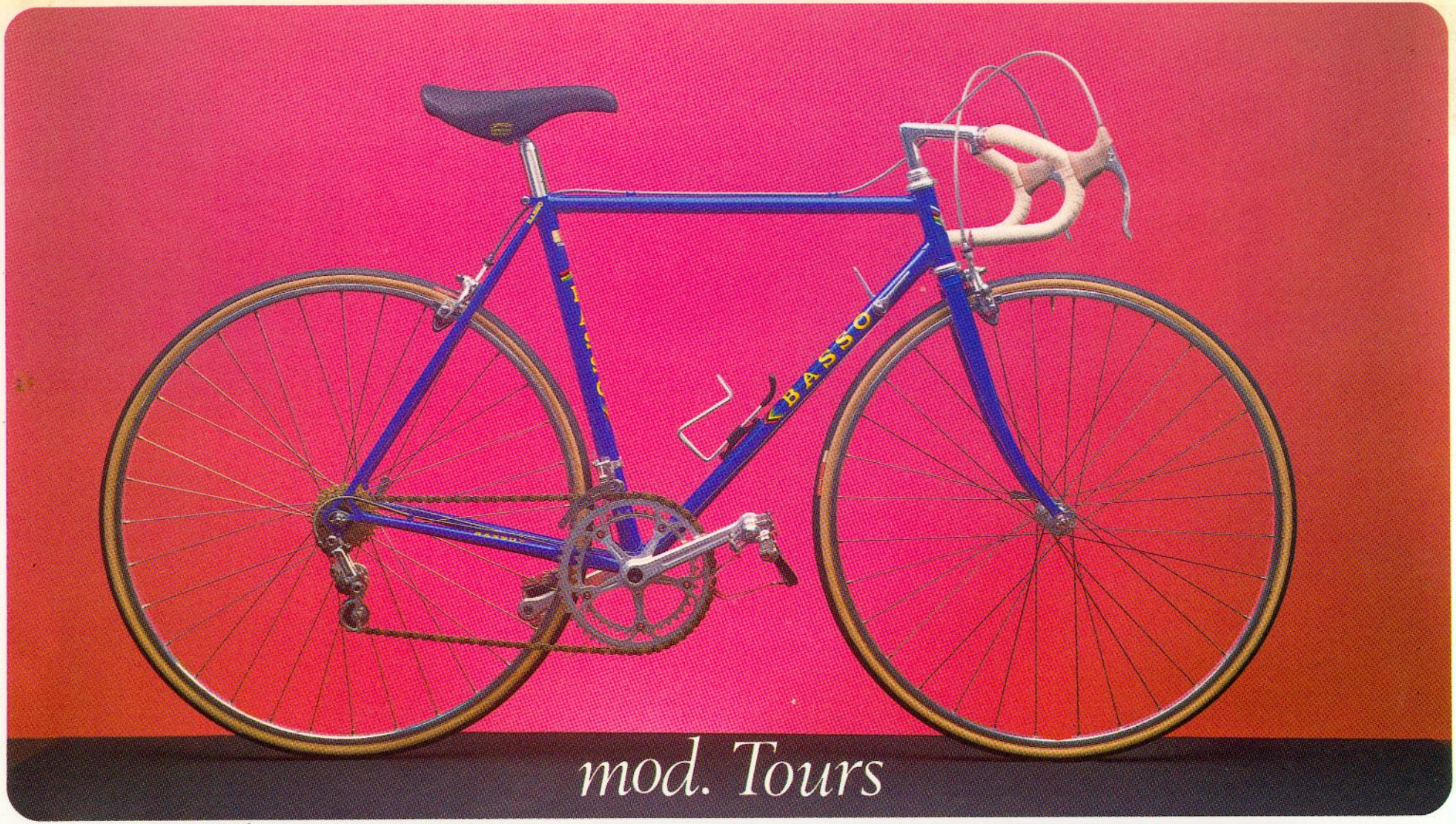






also of most advanced design and contribute with their innovation to the improvement of the bicycle in respect of safety, life-length and running comfort.
There are some reasons, however, that may induce the amateur to chose a less expensive type of bicycle, but always offering good quality features.
The Basso's production range is also including models of this kind, completely dependable for quality and at the same time economically convenient.





mod. Tours

cicli
BASSO

telai costruiti a mano su misura

36030 Cresole (Vicenza)
tel. 0444/33257
ITALY

telaio	sterzo	gruppo centrale	freni	catena	ruota libera	cambio deragliatore	mozzi	cerchi	tubolari	manubrio	sella	reggisella	pedali
rahmen	steuersatz	kettenrad garnitur	bremsen	kette	freirad	schaltung	naben	felgen	schlauchreifen	lenker	sattel	sattelstütze	pedale
frame	head set	crankset	brakes	chain	freewheel	deralleur group	hubs	rims	tubular tyres	handlebar	saddle	seat post	pedals
COLUMBUS SL	CAMPAGNOLO RECORD	CAMPAGNOLO RECORD	CAMPAGNOLO RECORD	REGINA EXTRA ORO	REGINA EXTRA ORO	CAMPAGNOLO RECORD	CAMPAGNOLO RECORD	NISI	CLEMENT CRITERIUM	TTT COMPETIZIONE	S. MARCO CONCOR	CAMPAGNOLO RECORD	CAMPAGNOLO RECORD

CICLI 3 BASSO



mod. Vignola

cicli
BASSO

telai costruiti a mano su misura

36030 Cresole (Vicenza)
tel. 0444/33257
ITALY

telaio	sterzo	gruppo centrale	freni	catena	ruota libera	cambio deragliatore	mozzi	cerchi	tubolari	manubrio	sella	reggisella	pedali
rahmen	steuersatz	kettenrad garnitur	bremsen	kette	freirad	schaltung	naben	felgen	schlauchrei-fen	lenker	sattel	sattel-stütze	pedale
frame	head set	crankset	brakes	chain	freewheel	deralleur group	hubs	rims	tubular tyres	handlebar	saddle	seat post	pedals
COLUMBUS ZETA	GIPIEMME SPRINT	GIPIEMME SPRINT	MODOLO	REGINA EXTRA ORO	REGINA EXTRA ORO	"980" CAMPAGNOLO	"980" CAMPAGNOLO	NISI	CLEMENT CONDOR	SCHIERANO OLIMPIC ANOD.	S. MARCO GI-LUX	GIPIEMME SPRINT	GIPIEMME SPRINT



mod. Vuelta

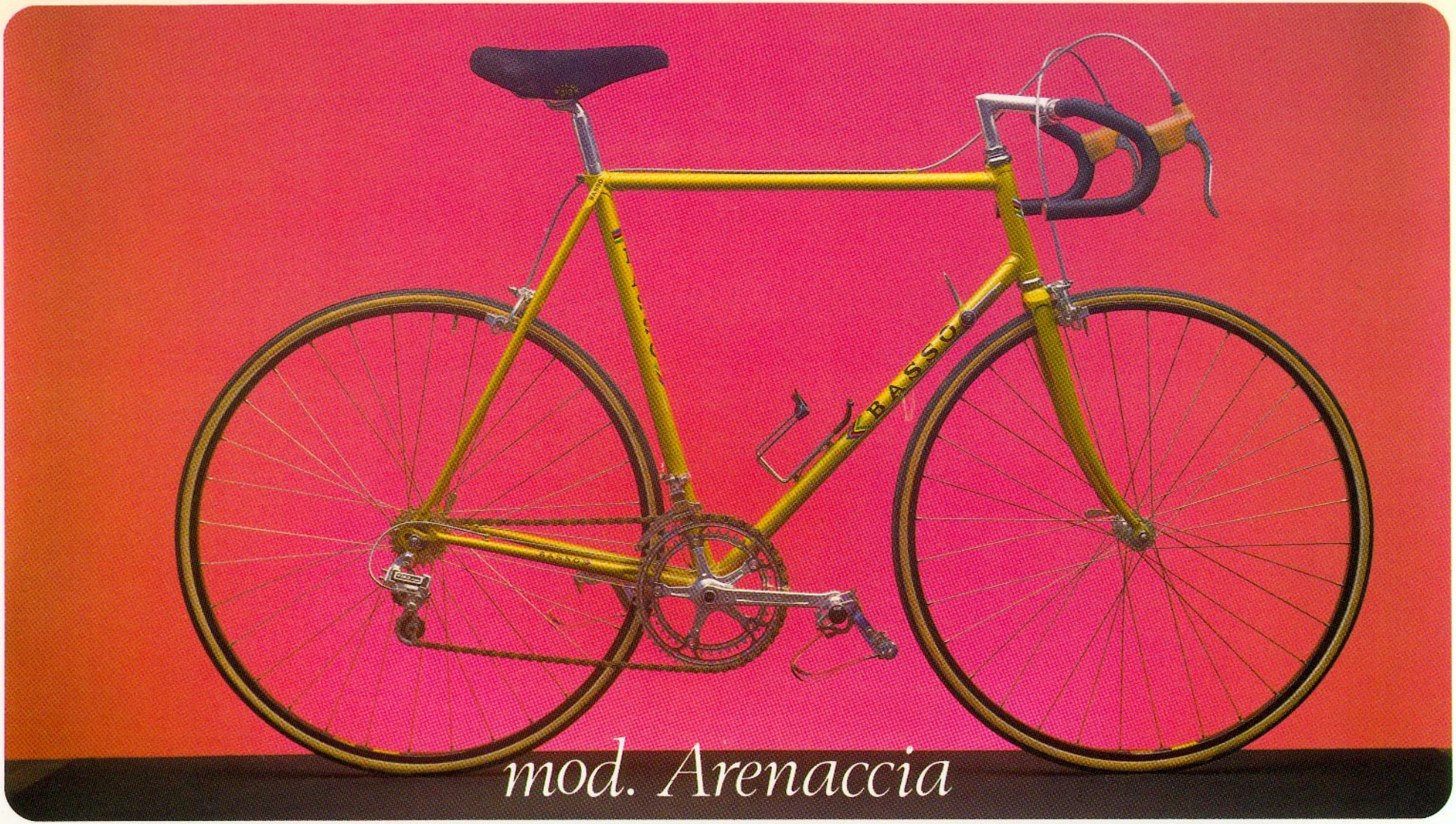
cicli
BASSO

telai costruiti a mano su misura

36030 Cresole (Vicenza)
tel. 0444/33257
ITALY

telaio	sterzo	gruppo centrale	freni	catena	ruota libera	cambio deragliatore	mozzi	cerchi	tubolari	manubrio	sella	reggisella	pedali
rahmen	steuersatz	kettenrad garnitur	bremsen	kette	freirad	schaltung	naben	felgen	schlauchrei-fen	lenker	sattel	sattel-stütze	pedale
frame	head set	crankset	brakes	chain	freewheel	deralleur group	hubs	rims	tubular tyres	handlebar	saddle	seat post	pedals
COLUMBUS ZETA	CAMPAGNOLO GRAN SPORT	CAMPAGNOLO GRAN SPORT	CAMPAGNOLO GRAN SPORT	REGINA EXTRA ORO	REGINA EXTRA ORO SESTUPLA	CAMPAGNOLO GRAN SPORT	CAMPAGNOLO GRAN SPORT	NISI	RITMO	TTT RECORD	S. MARCO GI-LUX	CAMPAGNOLO GRAN SPORT	CAMPAGNOLO GRAN SPORT

CICLI B® BASSO



mod. Arenaccia

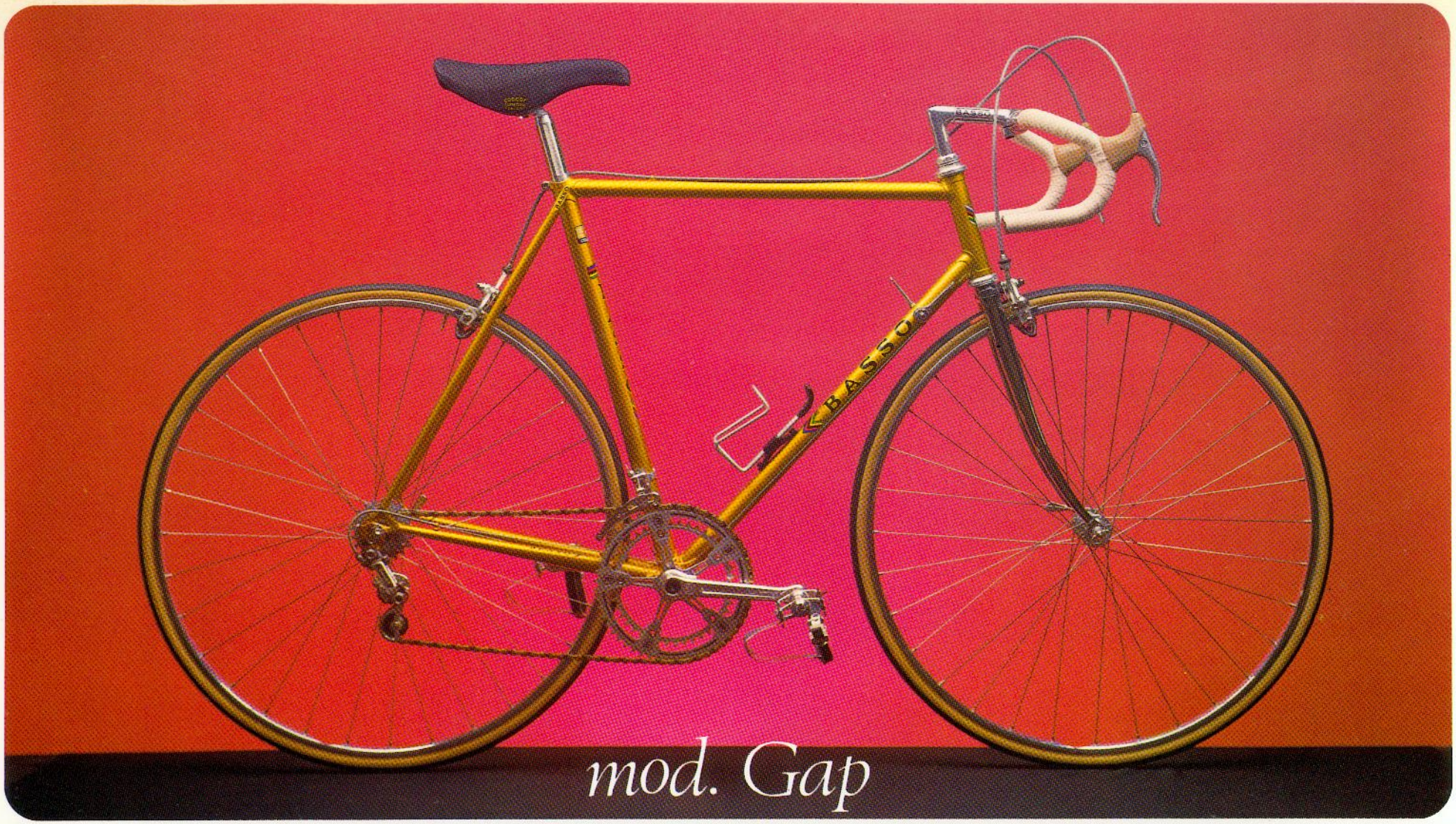
cicli
BASSO

telai costruiti a mano su misura

36030 Cresole (Vicenza)
tel. 0444/33257
ITALY

telaio	sterzo	gruppo centrale	freni	catena	ruota libera	cambio deragliatore	mozzi	cerchi	tubolari	manubrio	sella	reggisella	pedali
rahmen	steuersatz	kettenrad garnitur	bremsen	kette	freirad	schaltung	naben	felgen	schlauchreifen	lenker	sattel	sattelstütze	pedale
frame	head set	crankset	brakes	chain	freewheel	deralleur group	hubs	rims	tubular tyres	handlebar	saddle	seat post	pedals
COLUMBUS ZETA	RINO	RINO	MODOLO	REGINA EXTRA ORO	REGINA EXTRA ORO SESTUPLA	RINO	MICHELIN	NISI	CLEMENT CONDOR	SCHIERANO OLIMPIC ANOD.	S. MARCO GI-LUX	RINO	MICHELIN

CICLI B BASSO



mod. Gap

cicli
BASSO

telai costruiti a mano su misura

36030 Cresole (Vicenza)
tel. 0444/33257
ITALY

telaio	sterzo	gruppo centrale	freni	catena	ruota libera	cambio deragliatore	mozzi	cerchi	tubolari	manubrio	sella	reggisella	pedali
rahmen	steuersatz	kettenrad garnitur	bremsen	kette	freirad	schaltung	naben	felgen	schlauchreifen	lenker	sattel	sattelstütze	pedale
frame	head set	crankset	brakes	chain	freewheel	deralleur group	hubs	rims	tubular tyres	handlebar	saddle	seat post	pedals
COLUMBUS SL	CAMPAGNOLO SUPER RECORD	CAMPAGNOLO SUPER RECORD	CAMPAGNOLO SUPER R RECORD	REGINA EXTRA ORO SUPER LEGGERA	CAMPAGNOLO	CAMPAGNOLO SUPER RECORD	CAMPAGNOLO RECORD	NISI	CLEMENT SETA EXTRA	TTT SUPER LEGGERO	S. MARCO CONCOR	CAMPAGNOLO SUPER RECORD	CAMPAGNOLO SUPER RECORD

CICLI B® BASSO



mod. Gap-pista

cicli
BASSO

telai costruiti a mano su misura

36030 Cresole (Vicenza)
tel. 0444/33257
ITALY

telaio	sterzo	gruppo centrale	freni	catena	ruota fissa	cambio deragliatore	mozzi	cerchi	tubolari	manubrio	sella	reggisella	pedali
rahmen	steuersatz	kettenrad garnitur	bremsen	kette	freirad	schaltung	naben	felgen	schlauchreifen	lenker	sattel	sattelstütze	pedale
frame	head set	crankset	brakes	chain	freewheel	deralleur group	hubs	rims	tubular tyres	handlebar	saddle	seat post	pedals
COLUMBUS SL	CAMPAGNOLO	CAMPAGNOLO RECORD PISTA	—	WIPERMANN	CAMPAGNOLO	—	COMPETIZIONE PISTA	NISI PISTA	CLEMENT PISTA	TTT RECORD	S. MARCO GI-LUX	CAMPAGNOLO	CAMPAGNOLO

CICLI B BASSO



1981 EDITION - COPYRIGHT BY CICLI BASSO

CICLI
BASSO

cicli
BASSO

36030 Cresole (Vicenza) Italy
Via Ca' Alta ☎ 0444/33257

CICLI BASSO - 36030 RETTORGOLE - ITALY
C.C.I.A.A. - VICENZA 15818/M
POSIZIONE ESTERA - M/914527

DESIGN BY E. SABBATUCCI - PRINTED BY LITOSTAMPA S.R.L. - PERUGIA (ITALY)