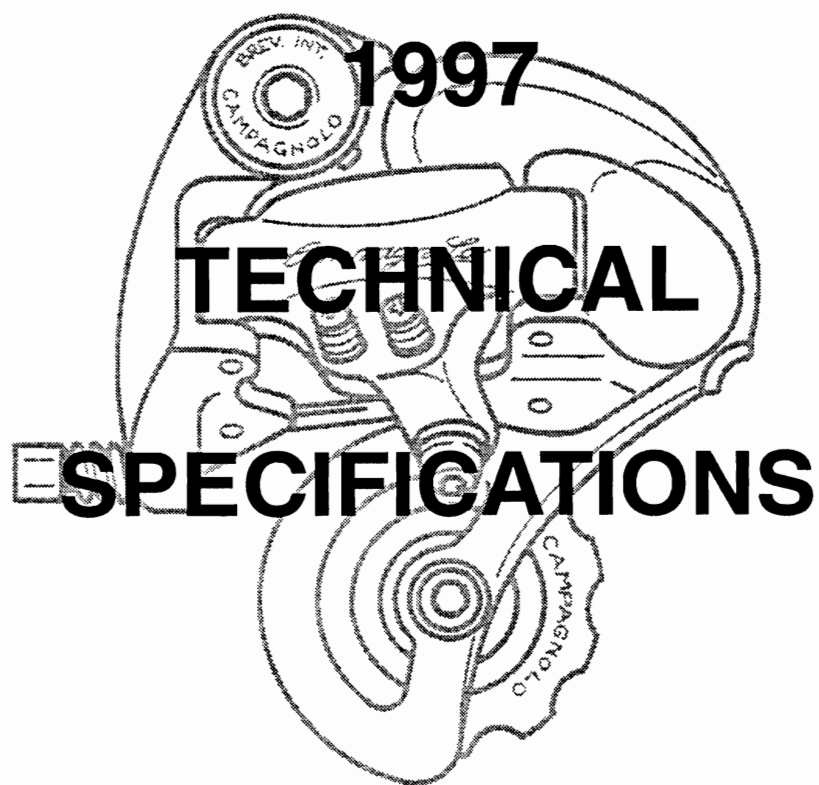


*Campagnolo*®

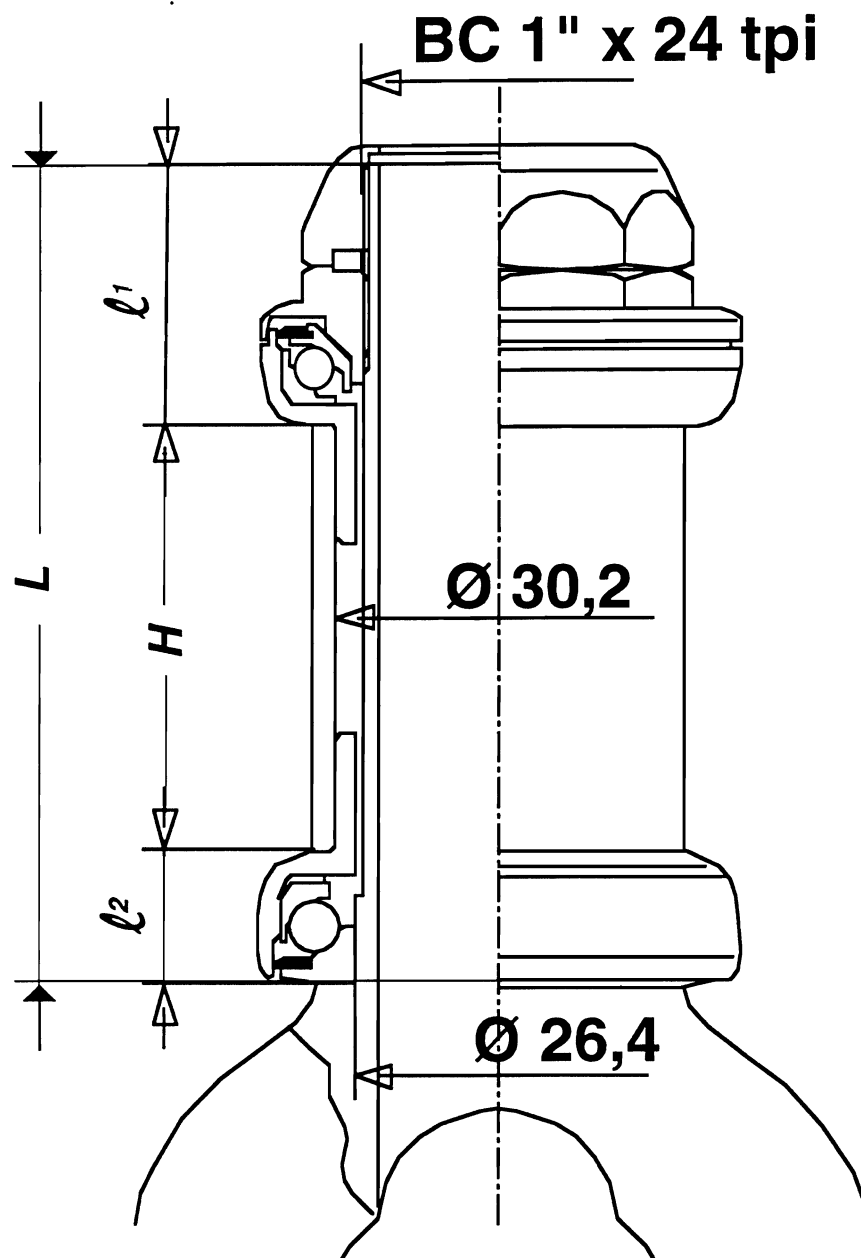


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# **RECORD-CHORUS-ATHENA-VELOCE-MIRAGE**

## **HEADSETS**



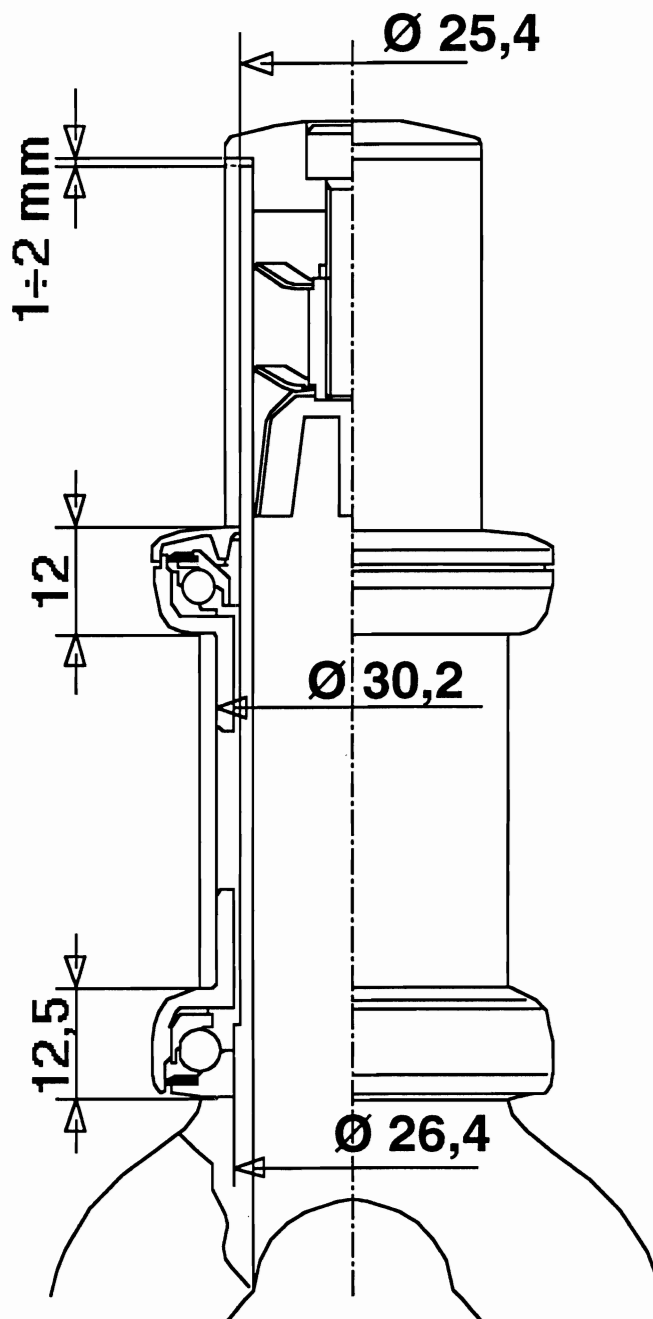
(illustration shows RECORD-CHORUS model)

<b>STACKING HEIGHTS for 1997 HEADSETS</b>					
model	item code	weight	$\ell^1$	$\ell^2$	$\ell^1 + \ell^2$
<b>RECORD</b>	HS-21RE	106 g	24 mm	12,5 mm	36,5 mm
<b>CHORUS</b>	HS-11CH	107 g	24 mm	12,5 mm	36,5 mm
<b>ATHENA</b>	HS-11AT	142 g	26 mm	15,5 mm	41,5 mm
<b>VELOCE</b>	HS-21VL	141 g	26 mm	15,5 mm	41,5 mm
<b>MIRAGE</b> ^	HSI01MI	142 g	26 mm	15,5 mm	41,5 mm

^ for **MIRAGE** & **AVANTI**

# ***HS-100 THREADLESS***

## HEADSET for unthreaded steerer columns



<b><i>HS-100 THREADLESS</i></b>		
model	item code	weight
<b><i>HS-100</i></b> *	HS-01HD	117 g

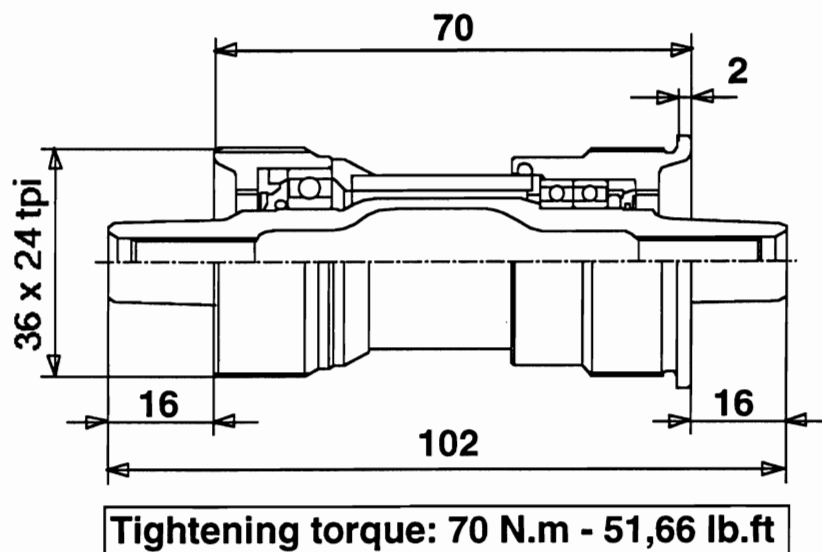
\* for **RECORD & CHORUS**

## **RECORD** -BOTTOM BRACKET

(for **RECORD 9 Speed** & **RECORD 8 speed**)

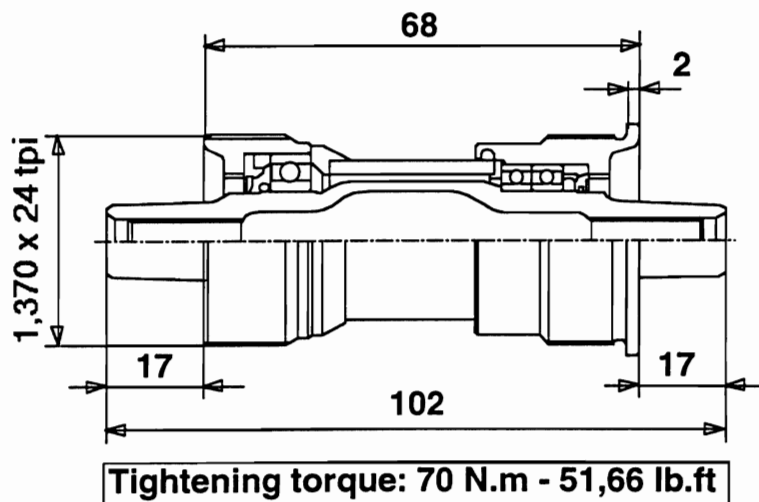
### ITA. threading

item code	weight	bb-spindle
BB-31RE CART	193 g	102 mm



### BSC. threading

item code	weight	bb-spindle
BB-33RE CART	190 g	102 mm

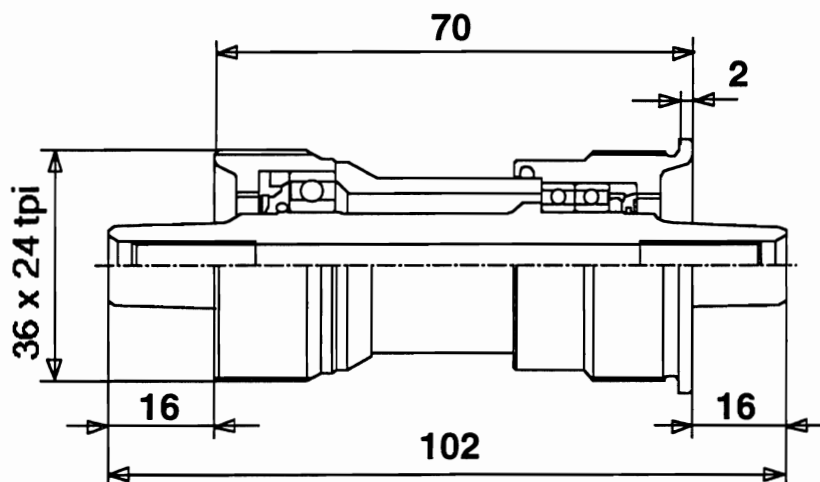


# **CHORUS-BOTTOM BRACKET**

(for **CHORUS 9 Speed** & **CHORUS 8 speed**)

## ITA. threading

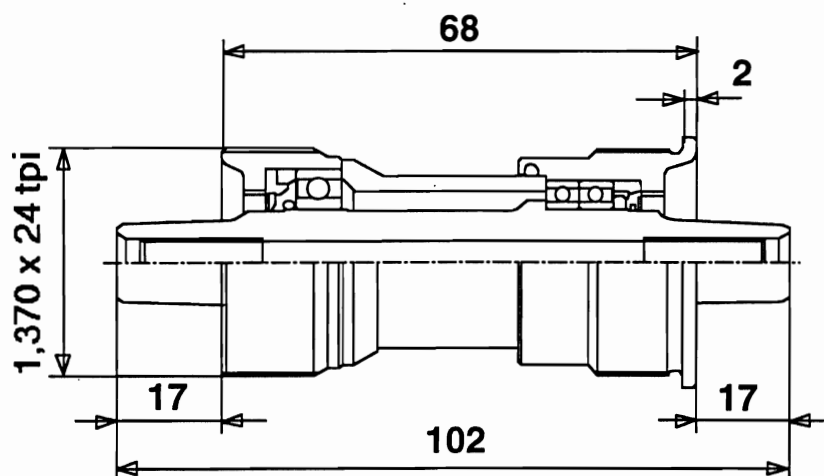
item code	weight	bb-spindle
BB-01CHCART	226 g	102 mm



**Tightening torque: 70 N.m - 51,66 lb.ft**

## BSC. threading

item code	weight	bb-spindle
BB-03CHCART	223 g	102 mm



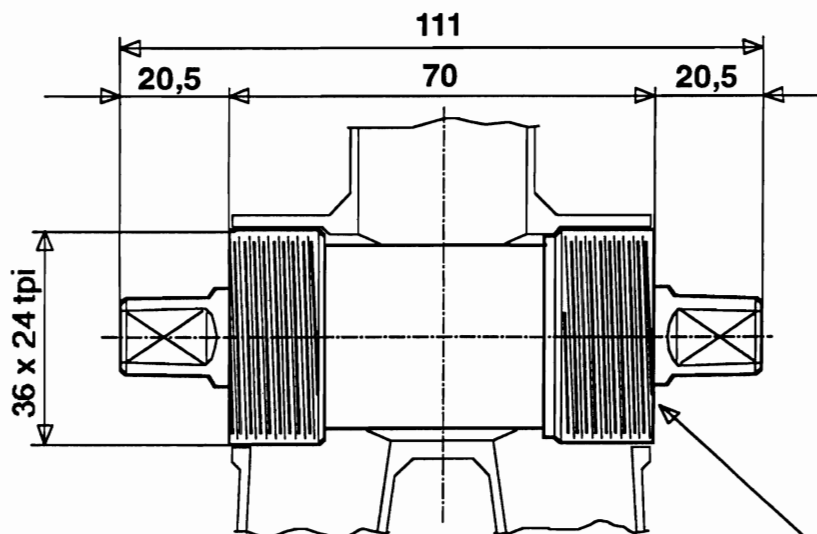
**Tightening torque: 70 N.m - 51,66 lb.ft**

# ***ATHENA* -BOTTOM BRACKET**

(for ***ATHENA*** & ***RACING T***)

## ITA. threading

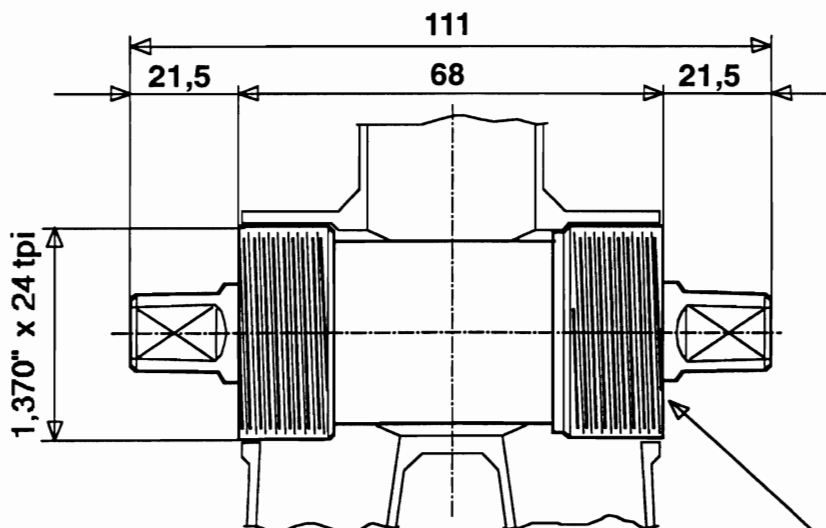
item code	weight	bb-spindle
BB-11ATCART	278 g	111 mm



Campagnolo tool: 7130036  
Tightening torque: 70 N.m - 51,66 lb.ft

## BSC. threading

item code	weight	bb-spindle
BB-13ATCART	276 g	111 mm



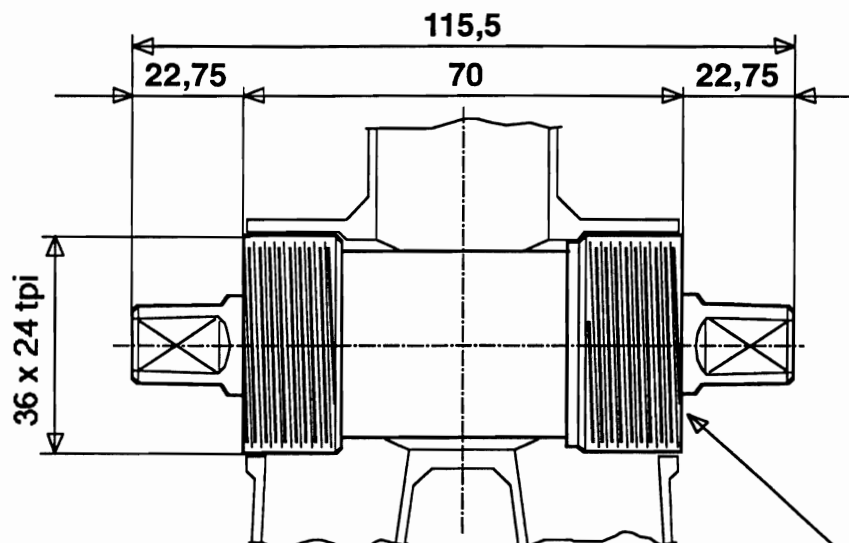
Campagnolo tool: 7130036  
Tightening torque: 70 N.m - 51,66 lb.ft

# **ATHENA -BOTTOM BRACKET**

(for **RACING** Tw. seat tube  $\varnothing \geq 32$  mm)

## ITA. threading

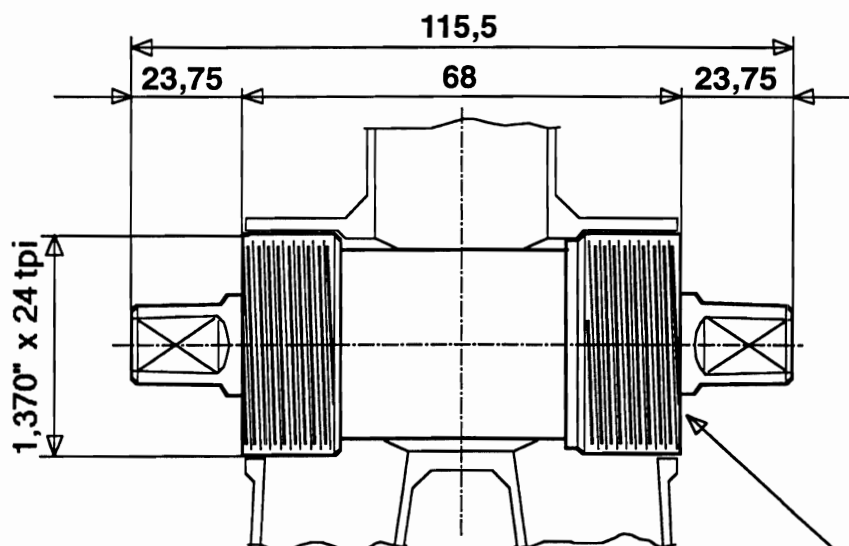
item code	weight	bb-spindle
BB-11RA3	296 g	115,5 mm



Campagnolo tool: 7130036  
Tightening torque: 70 N.m - 51,66 lb.ft

## BSC. threading

item code	weight	bb-spindle
BB-13RA3	294 g	115,5 mm



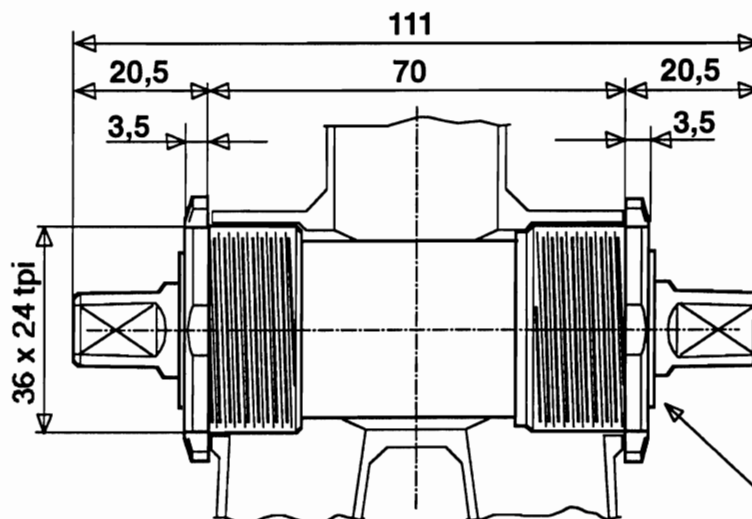
Campagnolo tool: 7130036  
Tightening torque: 70 N.m - 51,66 lb.ft



# **VELOCE -BOTTOM BRACKET** (for **VELOCE** & **VELOCE Triple**)

## ITA. threading

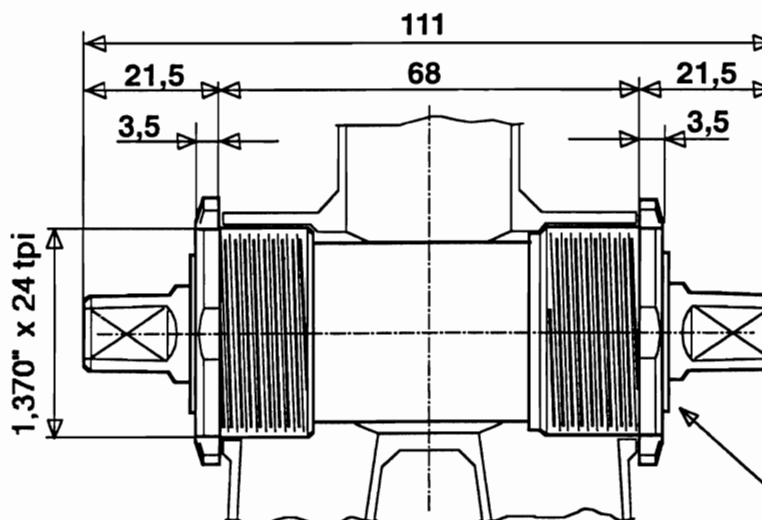
item code	weight	bb-spindle
BB-11VLCART	303 g	111 mm



Campagnolo tool: 1134180  
Tightening torque: 70 N.m - 51,66 lb.ft

## BSC. threading

item code	weight	bb-spindle
BB-13VLCART	297 g	111 mm



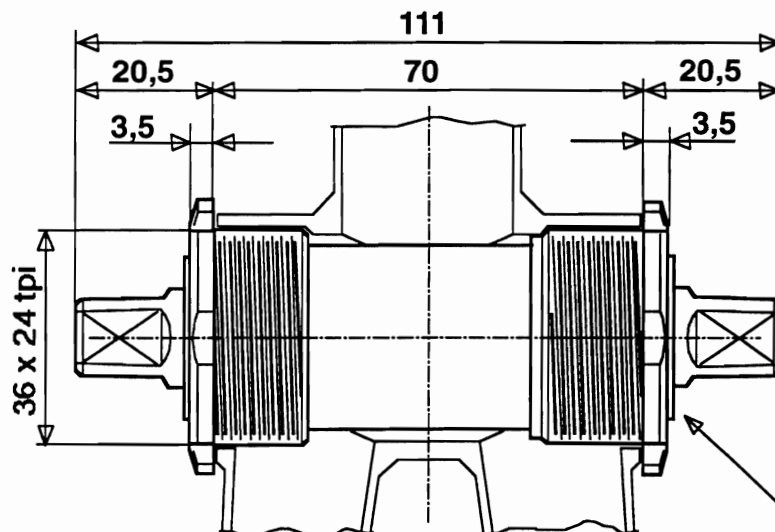
Campagnolo tool: 1134180  
Tightening torque: 70 N.m - 51,66 lb.ft

# **MIRAGE -BOTTOM BRACKET**

(for **MIRAGE-AVANTI** & **MIR.-AVA. Triple**)

## ITA. threading

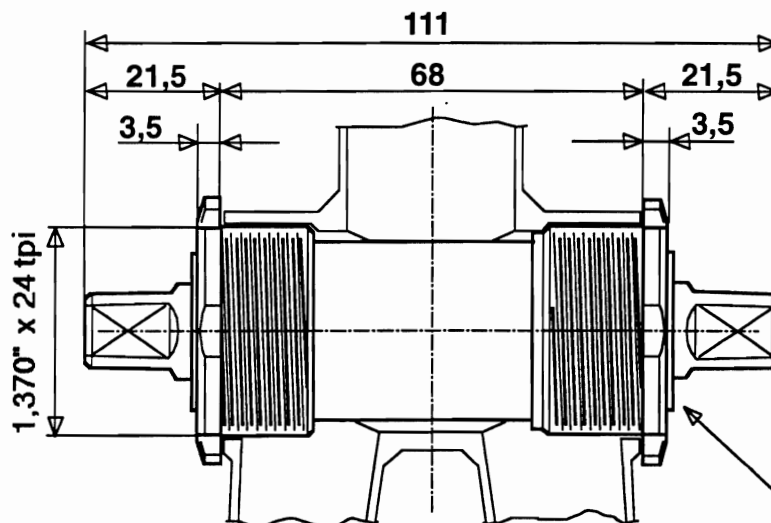
item code	weight	bb-spindle
BBI11MICART	374 g	111 mm



Campagnolo tool: 1134180  
Tightening torque: 70 N.m - 51,66 lb.ft

## BSC. threading

item code	weight	bb-spindle
BBI13MICART	358 g	111 mm



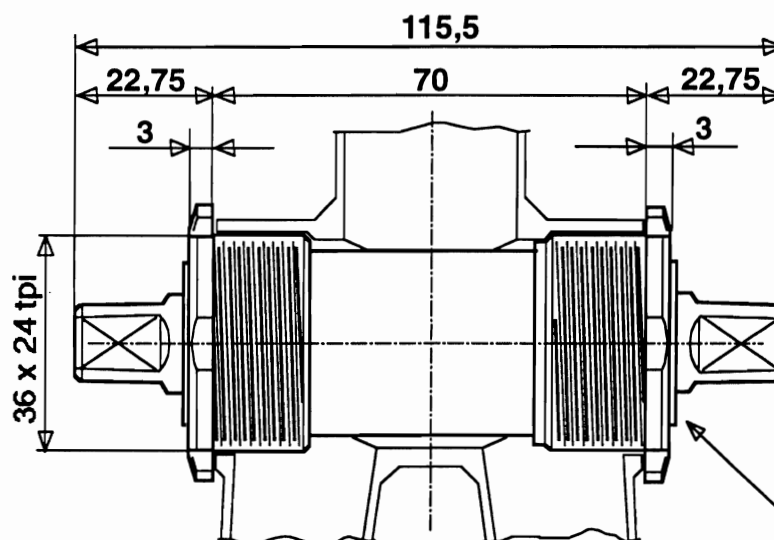
Campagnolo tool: 1134180  
Tightening torque: 70 N.m - 51,66 lb.ft

# MIRAGE -BOTTOM BRACKET

(for **MIRAGE Triple-AVANTI Triple** w. seat tube  $\varnothing \geq 32$  mm)

## ITA. threading

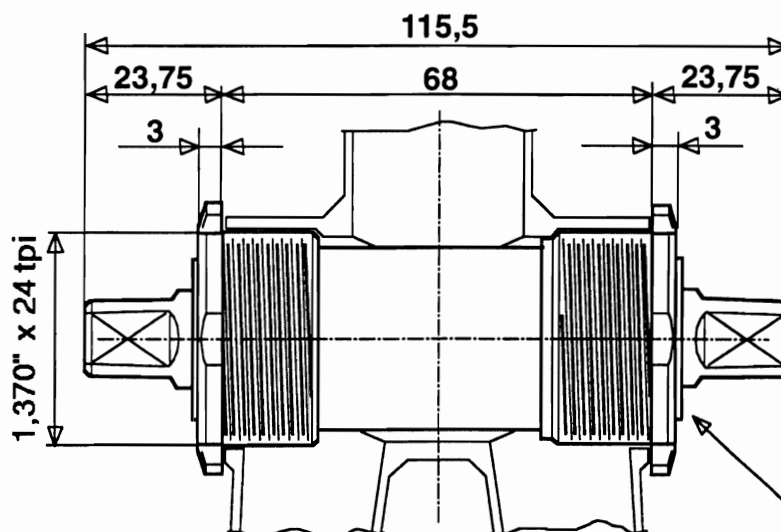
item code	weight	bb-spindle
BBI01MI3	364 g	115,5 mm



Campagnolo tool: 1134180  
Tightening torque: 70 N.m - 51,66 lb.ft

## BSC. threading

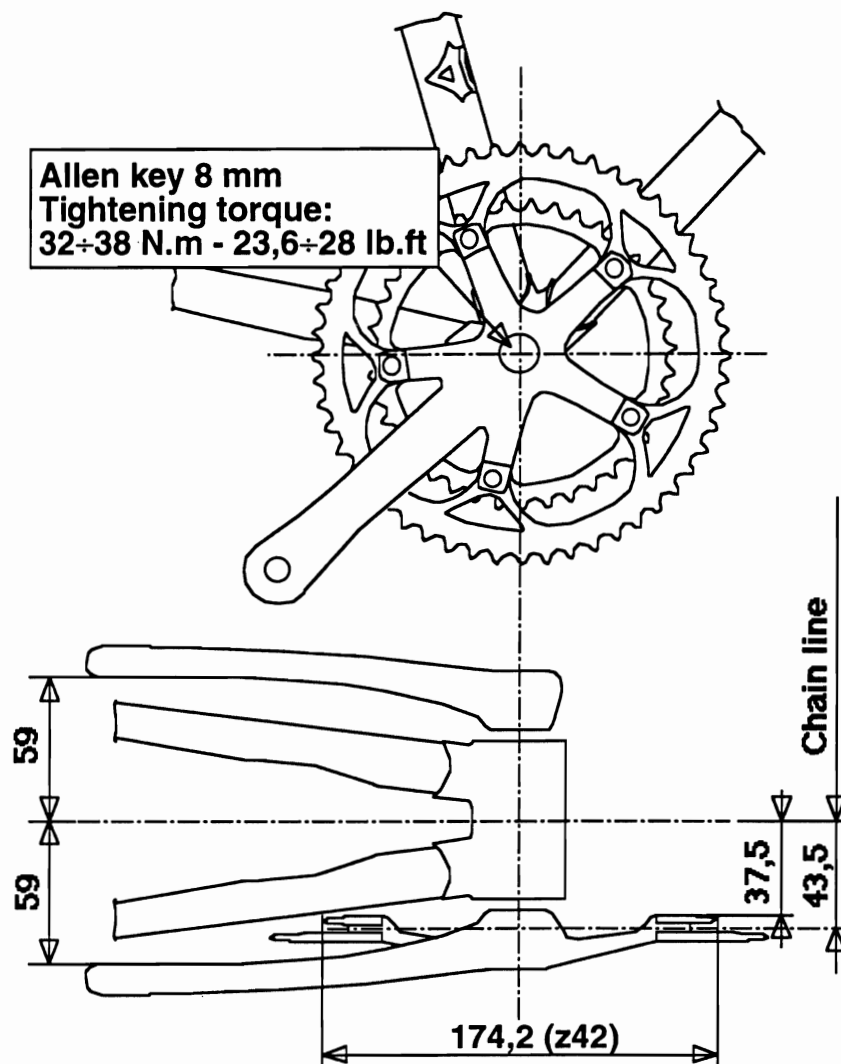
item code	weight	bb-spindle
BBI03MI3	364 g	115,5 mm



Campagnolo tool: 1134180  
Tightening torque: 70 N.m - 51,66 lb.ft

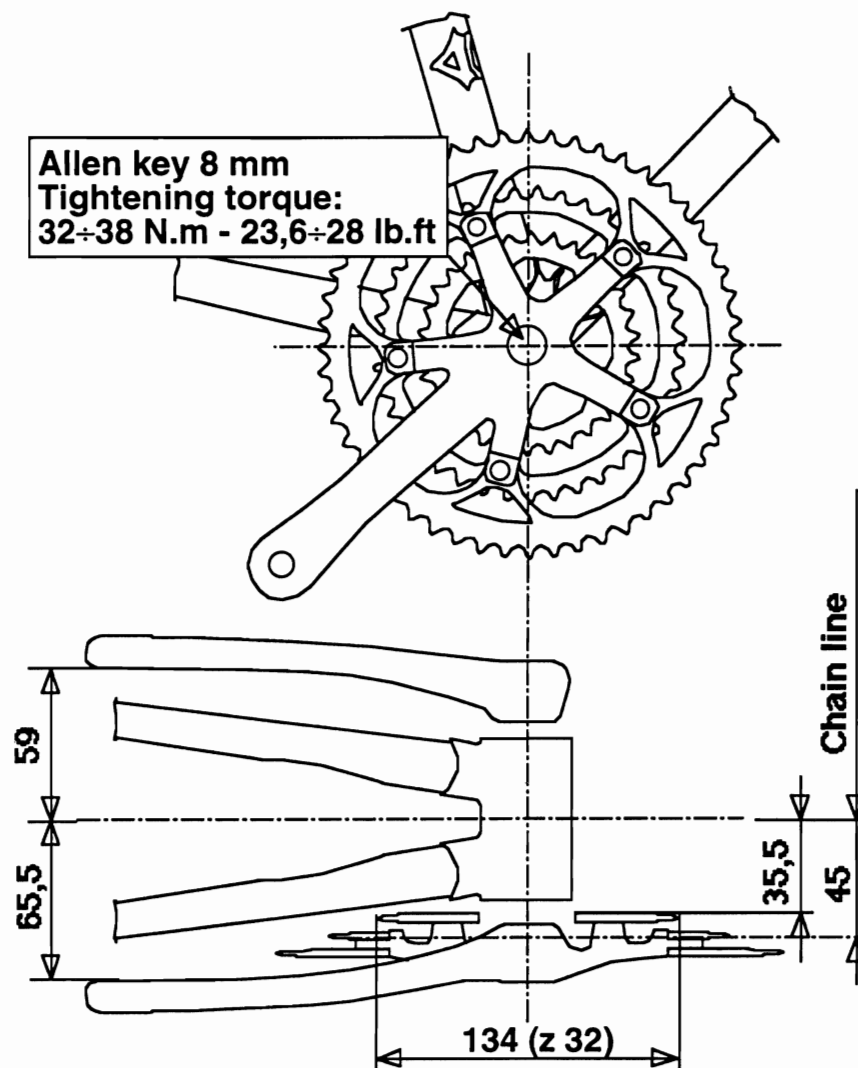
## CRANKSETS

(with double chainrings)



1997 CRANKSETS					
model	item code	weight	bb-spindle	big chainring	small chainr.
<b>RECORD</b>	FC-21RE	670 g	102 mm	4 mm	3,5 mm
<b>CHORUS</b>	FC-21CH	700 g	102 mm	4 mm	3,5 mm
<b>ATHENA</b>	FC-21AT	650 g	111 mm	4 mm	3,5 mm
<b>VELOCE</b>	FC-21VL	650 g	111 mm	4 mm	2,8 mm
<b>MIRAGE</b>	FCI11MI	653 g	111 mm	2,8 mm	2,8 mm
<b>AVANTI</b>	FCI11AV	686 g	111 mm	2,8 mm	2,8 mm

## TRIPLE CRANKSETS

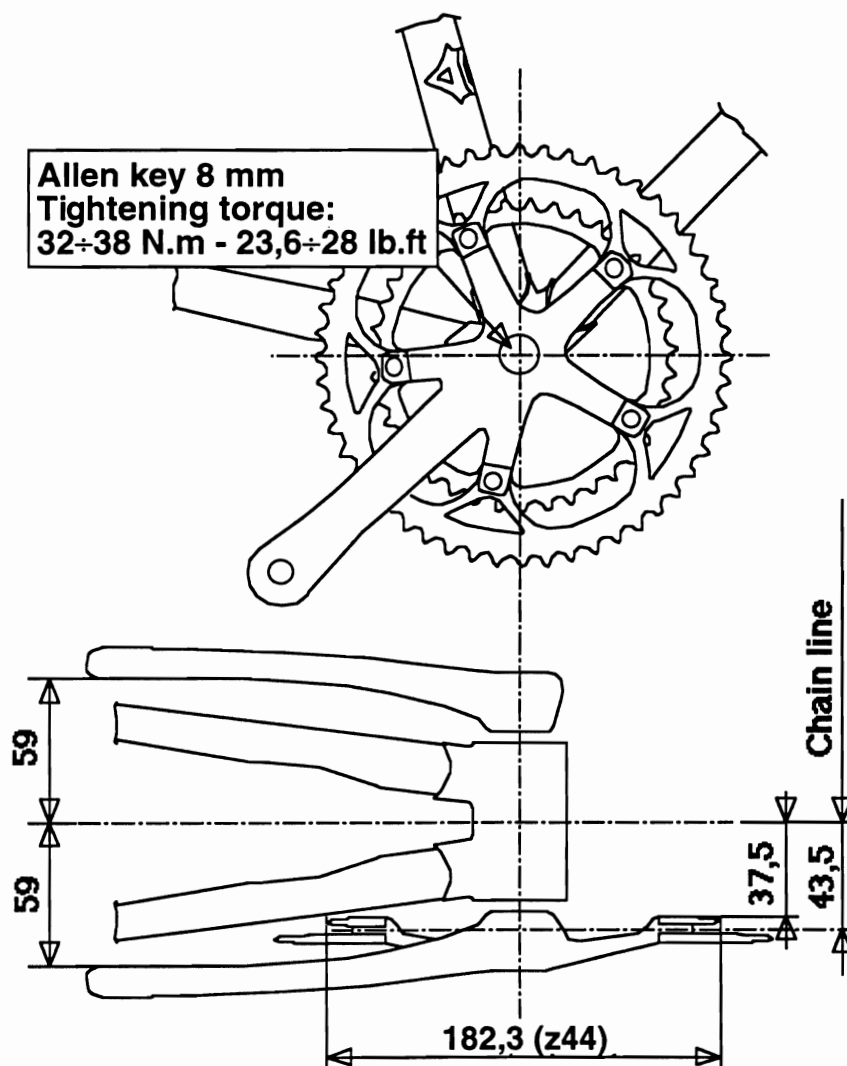


1997 TRIPLE CRANKSETS						
model	item code	weight	bb-spindle	big chainr.	med. "	small "
<b>RACING T *</b>	FC-01RA3	735 g	111 mm	4 mm	3,5 mm	3,5 mm
<b>VELOCE Triple</b>	FC-11VL3	736 g	111 mm	4 mm	3,5 mm	2,8 mm
<b>MIRAGE Triple^</b>	FCI11MI3	725 g	111 mm	2,8 mm	2,8 mm	2,8 mm

\* for **RECORD-8speed**, **CHORUS-8speed** & **ATHENA**

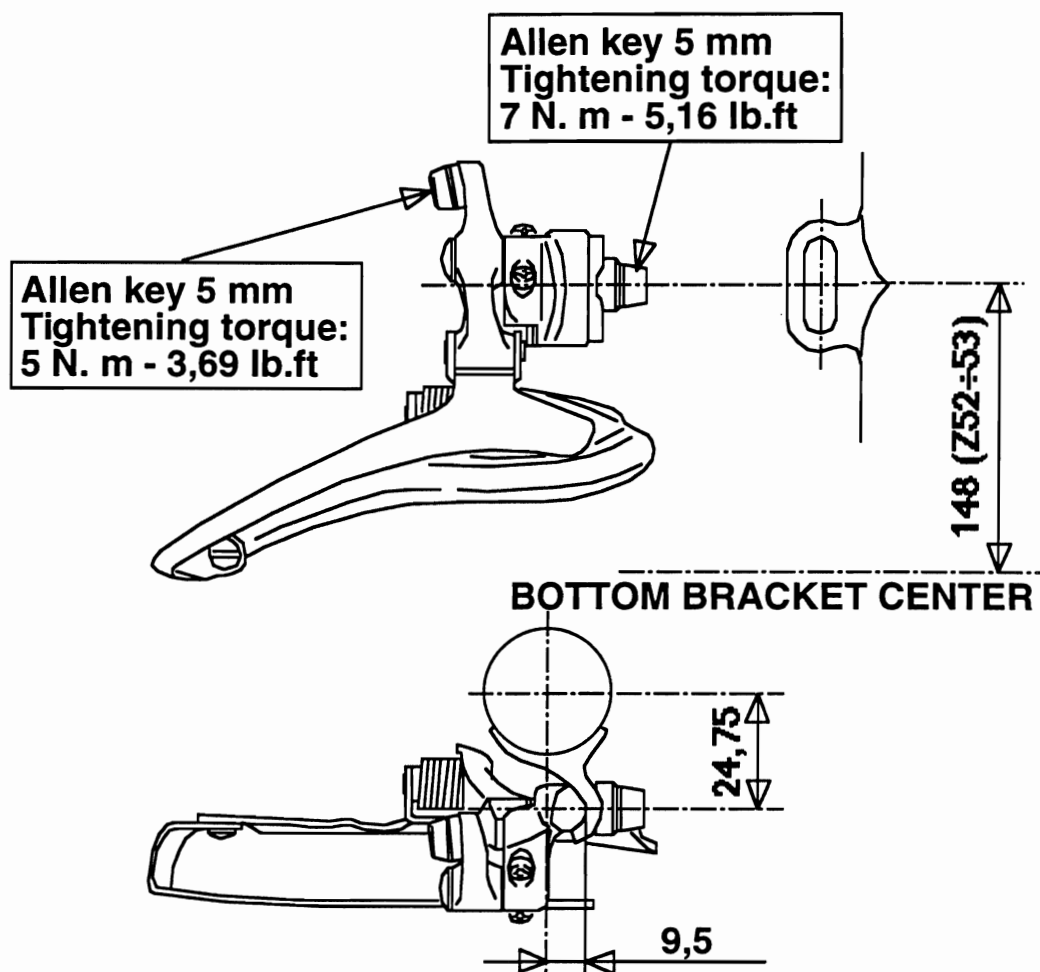
^ for **MIRAGE** & **AVANTI**

## ***SPEED TH - CRANKSET***



<b><i>SPEED TH - CRANKSET</i></b>					
model	item code	weight	bb-spindle	big chainring	small chain
<b><i>SPEED TH</i></b>	FC-01TH	670 g	111 mm	4 mm	3,5 mm

## BRAZE-ON FRONT DERAILLEURS (for double chainrings)

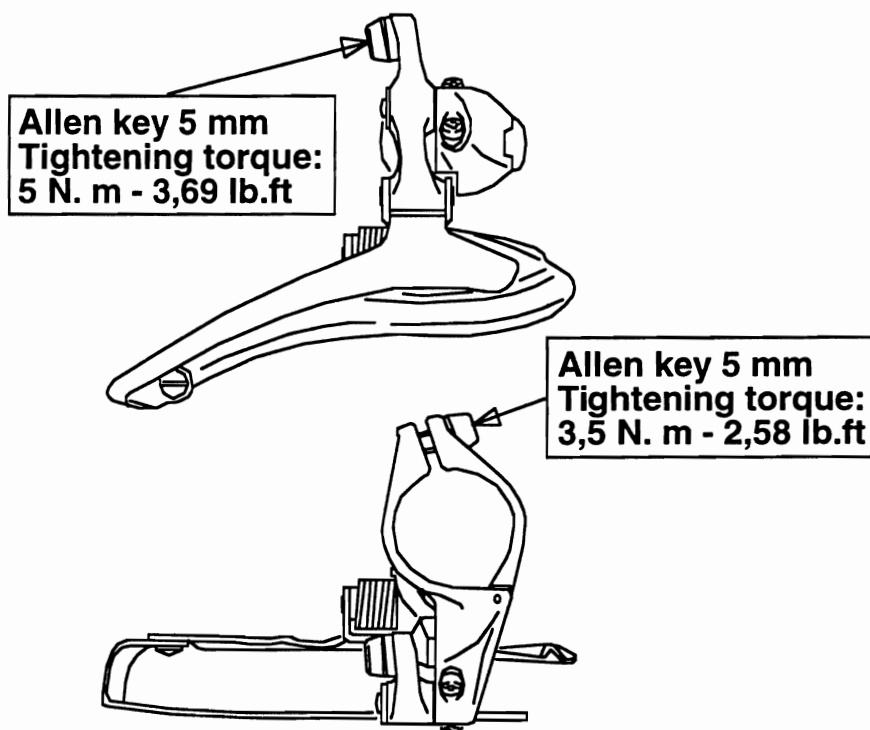


1997 braze-on FRONT DERAILLEURS				
model	item code	weight	capacity	max. chainr.
<b>RECORD</b> *	FD-31SRE	89 g	15 teeth	54
<b>CHORUS</b> °	FD-21SCH	87 g	15 teeth	54
<b>VELOCE</b> ^	FD-31SVL	93 g	15 teeth	54
<b>AVANTI</b>	FDI11SAV	100 g	15 teeth	54

\* for **RECORD**-8speed & **9 Speed**  
 ° for **CHORUS**-8speed & **9 Speed**, **ATHENA**  
 ^ for **VELOCE** & **MIRAGE**



## CLIP-ON FRONT DERAILLEURS (for double chainrings)



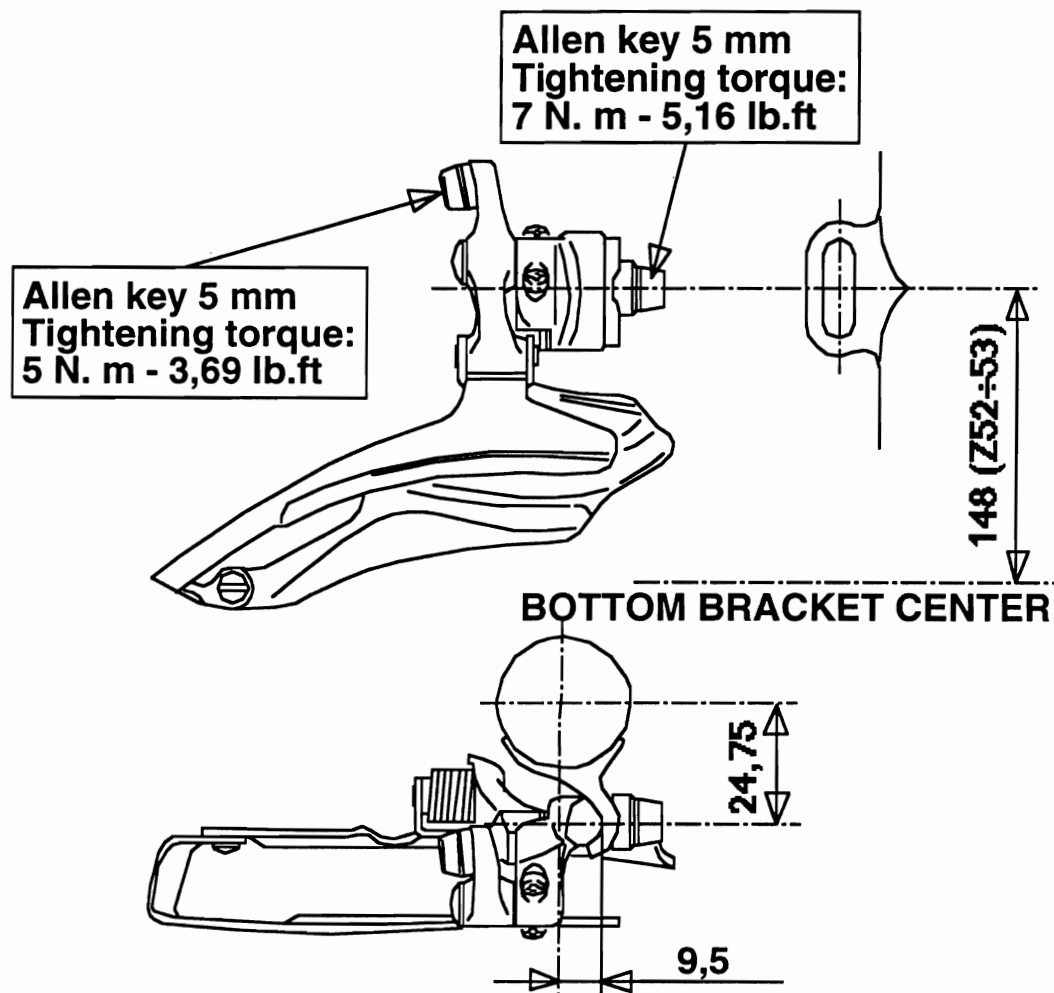
1997 clip-on FRONT DERAILLEURS				
model	item code	weight	capacity	max. chainr.
<b>RECORD</b> (ø 28,6) *	FD-31FRE	102 g	15 teeth	54
<b>RECORD</b> (ø 32) *	FD-12FRE	103 g	15 teeth	54
<b>RECORD</b> (ø 35) *	FD-13FRE	104 g	15 teeth	54
<b>CHORUS</b> (ø 28,6) °	FD-11FCH	100 g	15 teeth	54
<b>CHORUS</b> (ø 32) °	FD-12FCH	101 g	15 teeth	54
<b>CHORUS</b> (ø 35) °	FD-03FCH	101 g	15 teeth	54
<b>VELOCE</b> (ø 28,6) ^	FD-31FVL	100 g	15 teeth	54
<b>VELOCE</b> (ø 32) ^	FD-12FVL	101 g	15 teeth	54
<b>VELOCE</b> (ø 35) ^	FD-13FVL	101 g	15 teeth	54
<b>AVANTI</b> (ø 28,6)	FDI11SAV	115 g	15 teeth	54

\* for **RECORD**-8speed & **9 Speed**, **ATHENA**  
 ° for **CHORUS**-8speed & **9 Speed**, **ATHENA**  
 ^ for **VELOCE** & **MIRAGE**



## BRAZE-ON FRONT DERAILLEURS

(for triple chainrings)

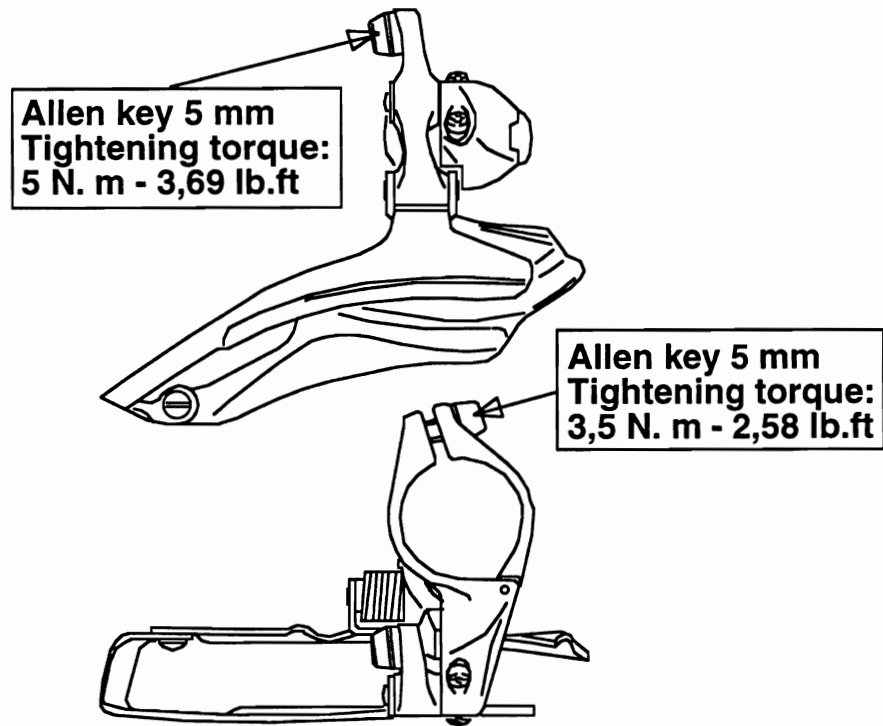


1997 braze-on FRONT DERAILLEURS				
model	item code	weight	capacity	max.chainr.
<b>RACING T *</b>	FD-11SRA3	98 g	22 teeth	52
<b>VELOCE T °</b>	FD-31SVL	99 g	22 teeth	52
<b>AVANTI Triple</b>	FDI01SAV3	116 g	22 teeth	52

\* for **RECORD-8speed**, **CHORUS-8speed** & **ATHENA**  
 ° for **VELOCE** & **MIRAGE**

# CLIP-ON FRONT DERAILLEURS

## (for triple chainrings)



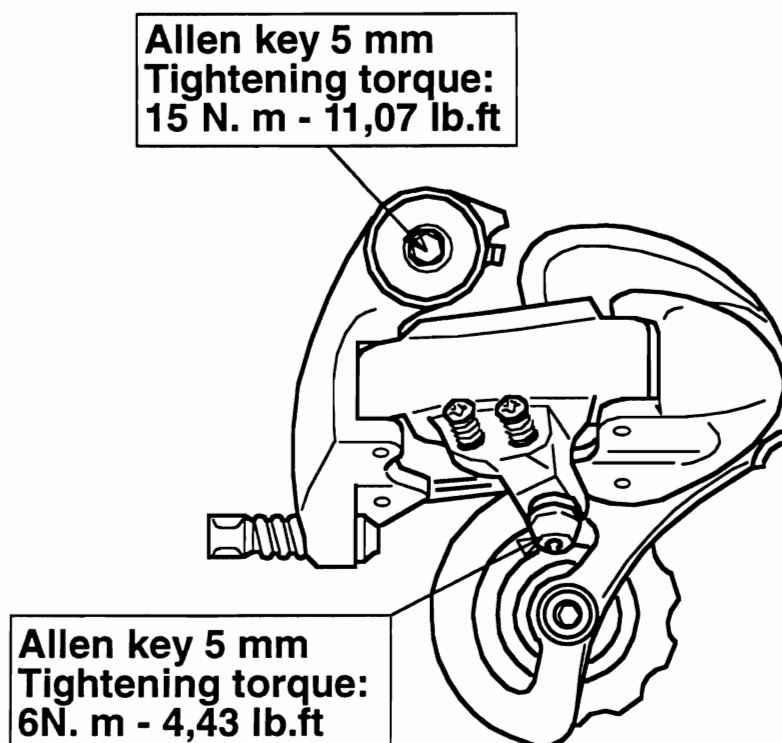
1997 clip-on FRONT DERAILLEURS				
model	item code	weight	capacity	max. chainr.
<b>RACING T</b> (ø 28,6)	FD-11FRA3	114 g	22 teeth	52
<b>RACING T</b> (ø 32)	FD-12FRA3	115 g	22 teeth	52
<b>RACING T</b> (ø 35)	FD-13FRA3	115 g	22 teeth	52
<b>VELOCE T</b> (ø 28,6) °	FD-11FVL3	114 g	22 teeth	52
<b>VELOCE T</b> (ø 32) °	FD-12FVL3	115 g	22 teeth	52
<b>VELOCE T</b> (ø 35) °	FD-13FVL3	115 g	22 teeth	52
<b>AVANTI T</b> (ø 28,6) *	FDI01FAV3	131 g	22 teeth	52

\* for **RECORD**-8speed, **CHORUS**-8speed & **ATHENA**

° for **VELOCE** & **MIRAGE**

## REAR DERAILLEURS

(with short cage)

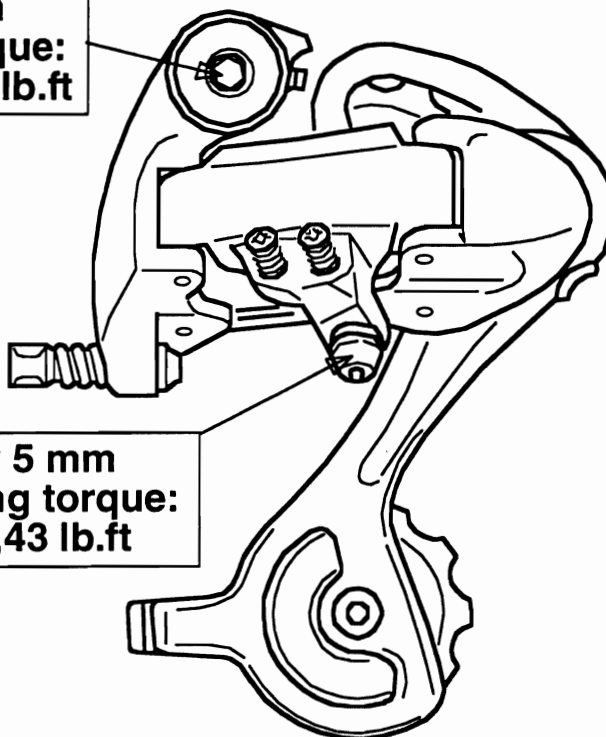


1997 REAR DERAILLEURS				
model	item code	weight	capacity	max. chainr.
<b>RECORD 9 Speed</b>	RD-09RE	230 g	27 teeth	26
<b>RECORD (8-speed)</b>	RD-08RE	234 g	27 teeth	26
<b>CHORUS 9 Speed</b>	RD-09CH	250 g	27 teeth	26
<b>CHORUS (8-speed)</b>	RD-08CH	250 g	27 teeth	26
<b>ATHENA</b>	RD-41AT	253 g	27 teeth	26
<b>VELOCE</b>	RD-31VL	260 g	28 teeth	28
<b>MIRAGE</b>	RDI11MI	260 g	28 teeth	28
<b>AVANTI</b>	RDI11AV	280 g	28 teeth	28

## TRIPLE-REAR DERAILLEURS (with long cage)

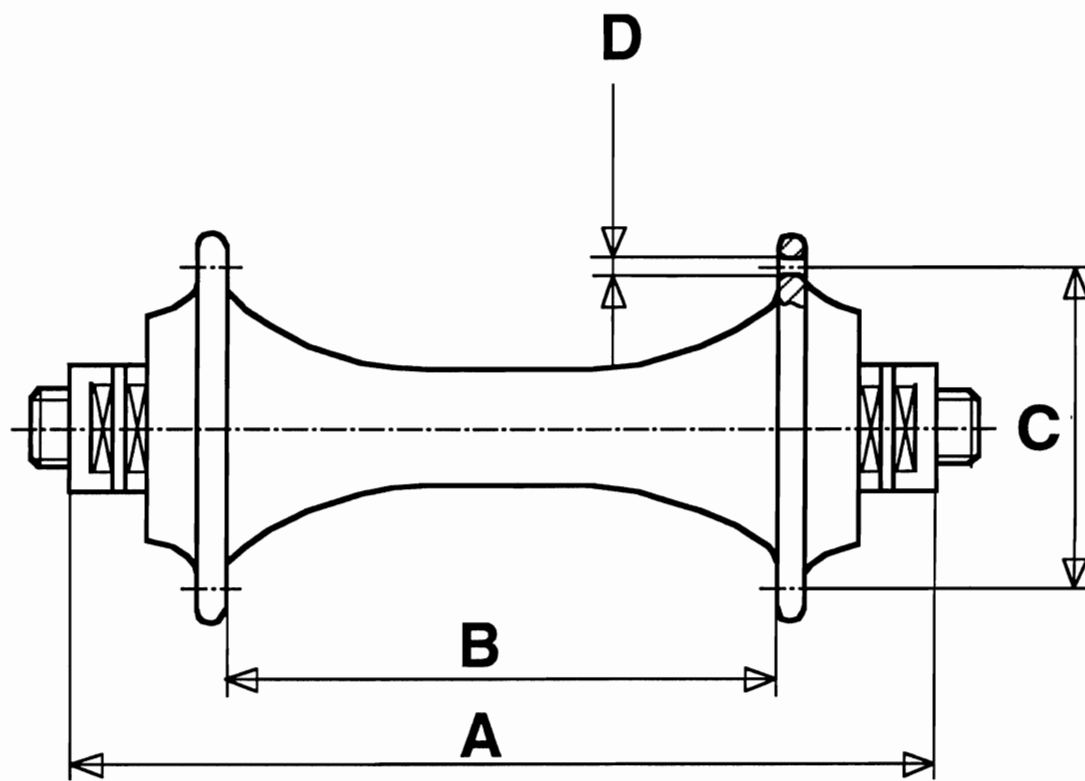
Allen key 5 mm  
Tightening torque:  
15 N. m - 11,07 lb.ft

Allen key 5 mm  
Tightening torque:  
6N. m - 4,43 lb.ft



1997 TRIPLE REAR DERAILLEURS				
model	item code	weight	capacity	max. chainr.
<b><i>RACING Triple *</i></b>	RD-11RA3	267 g	37 teeth	28
<b><i>VELOCE Triple</i></b>	RD-13VL	279 g	37 teeth	28
<b><i>MIRAGE Triple</i></b>	RDI03MI	276 g	37 teeth	28
<b><i>AVANTI Triple</i></b>	RDI03AV	298 g	37 teeth	28

# FRONT WHEEL HUBS



1997 FRONT WHEEL HUBS						
model	item code	weight	A	B	C	D
<b>RECORD</b>	HB-30RE	128 g	100 mm	65 mm	38,5 mm	2,4 mm
<b>CHORUS</b>	HB-20CH	146 g	100 mm	65 mm	38,5 mm	2,6 mm
<b>ATHENA</b>	HB-40AT	144 g	100 mm	65 mm	38,5 mm	2,6 mm
<b>VELOCE</b>	HB-30VL	144 g	100 mm	65 mm	38,5 mm	2,6 mm
<b>MIRAGE</b>	HBI20MI	154 g	100 mm	65 mm	38,5 mm	2,6 mm
<b>AVANTI</b>	HBI00AV	154 g	100 mm	64 mm	40 mm	2,7 mm



# 1997 9 Speed

## **RECORD 9 Speed SPROCKET SETS**

	1	2	3	4	5	6	7 <i>Titanium</i>	8 <i>Titanium</i>	9 <i>Titanium</i>
<b>12 - 21</b>	12A-1P	13A	14A	15A	16A	17A	18C	19C	21C
<b>12 - 23</b>	12A-1P	13A	14A	15A	16A	17A	19A	21A	23A
<b>13 - 23</b>	13A-1P	14A	15A	16A	17A	18C	19C	21C	23C
<b>13 - 26</b>	13A-1P	14A	15A	16A	17A	19A	21A	23A	26A

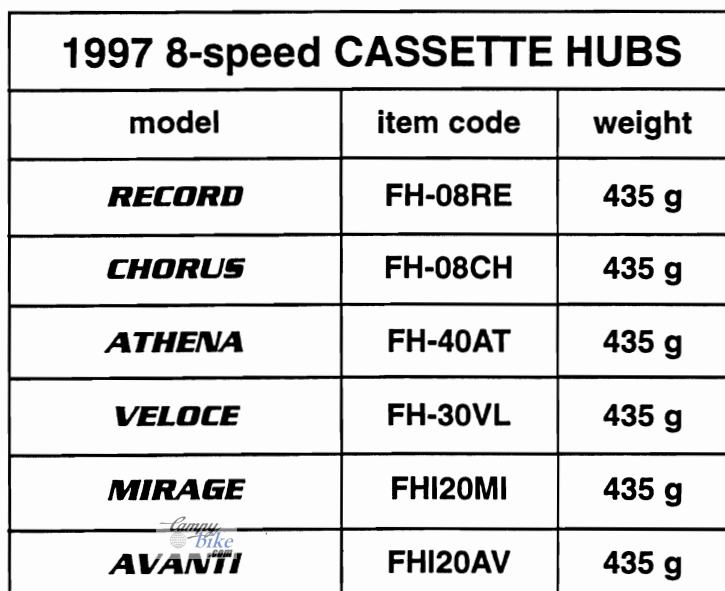
## **RECORD 9 Speed Titanium SPROCKET SETS**

	1	2	3	4	5	6	7	8	9
<b>12 - 21</b>	12A-1P	13A	14A	15A	16A	17A	18C	19C	21C
<b>12 - 23</b>	12A-1P	13A	14A	15A	16A	17A	19A	21A	23A
<b>13 - 23</b>	13A-1P	14A	15A	16A	17A	18C	19C	21C	23C
<b>13 - 26</b>	13A-1P	14A	15A	16A	17A	19A	21A	23A	26A

## **9 Speed SPROCKET SETS**

	1	2	3	4	5	6	7	8	9
<b>11 - 21</b>	11A-1P	12A*	13A	14A	15A	16A	17A	19A	21A
<b>11 - 23</b>	11B-1P	12B*	13B	14B	15B	17B	19A	21A	23A
<b>12 - 21</b>	12A-1P	13A	14A	15A	16A	17A	18C	19C	21C
<b>12 - 23</b>	12A-1P	13A	14A	15A	16A	17A	19A	21A	23A
<b>13 - 23</b>	13A-1P	14A	15A	16A	17A	18C	19C	21C	23C
<b>13 - 26</b>	13A-1P	14A	15A	16A	17A	19A	21A	23A	26A

\* sprocket in second position has built-in spacer and smooth face



1997 8-speed CASSETTE HUBS		
model	item code	weight
<b><i>RECORD</i></b>	FH-08RE	435 g
<b><i>CHORUS</i></b>	FH-08CH	435 g
<b><i>ATHENA</i></b>	FH-40AT	435 g
<b><i>VELOCE</i></b>	FH-30VL	435 g
<b><i>MIRAGE</i></b>	FHI20MI	435 g
<b><i>AVANTI</i></b>	FHI20AV	435 g



# 1997 *8 Speed* SPROCKET SETS

## *8 Speed* SPROCKET SETS

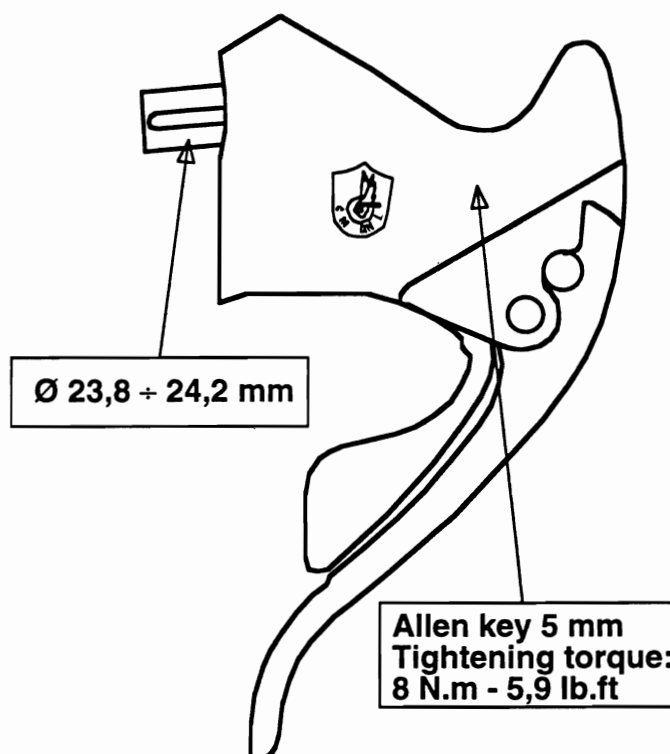
	1	2	3	4	5	6	7	8
<b>11 - 21</b>	11B-1P	12B	13B	14B	15B	17B	19A	21A
<b>12 - 21</b>	12A-1P	13A	14A	15A	16A	17A	19A	21A
<b>12 - 23</b>	12B-1P	13B	14B	15B	17B	19A	21A	23A
<b>12 - 25</b>	12C-1P	13C	15C	17B	19A	21A	23A	25A
<b>13 - 23</b>	13A-1P	14A	15A	16A	17A	19A	21A	23A
<b>13 - 26</b>	13B-1P	14B	15B	17B	19A	21A	23A	26A
<b>14 - 26</b>	14A-1P	15A	16A	17A	19A	21A	23A	26A
<b>16 - 23</b>	16A-1P	17A	18C	19C	20D	21D	22D	23D

## *8 Speed Titanium* SPROCKET SETS

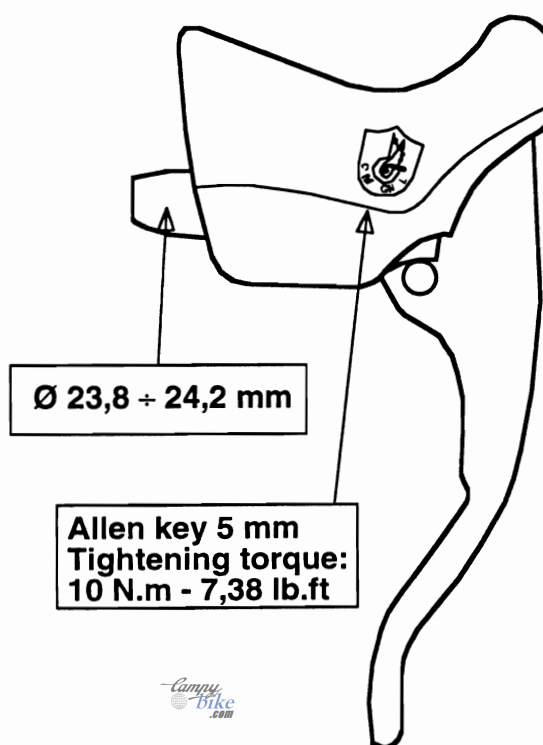
(compatible with *9 Speed* cassette body)

	1	2	3	4	5	6	7	8
<b>12 - 21</b>	12A-1P	13A	14A	15A	16A	17A	19A	21A
<b>13 - 23</b>	13A-1P	14A	15A	16A	17A	19A	21A	23A

## ERGOPOWER CONTROLS

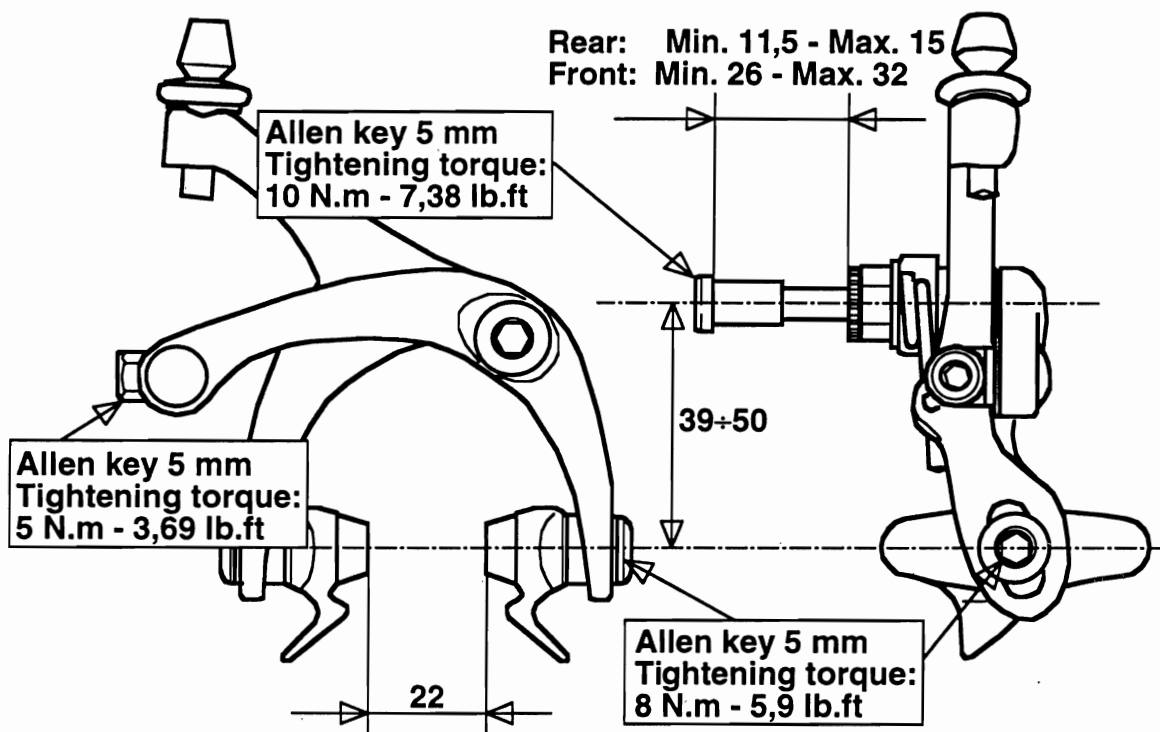


## BREMSGRIFFE CONTROLS



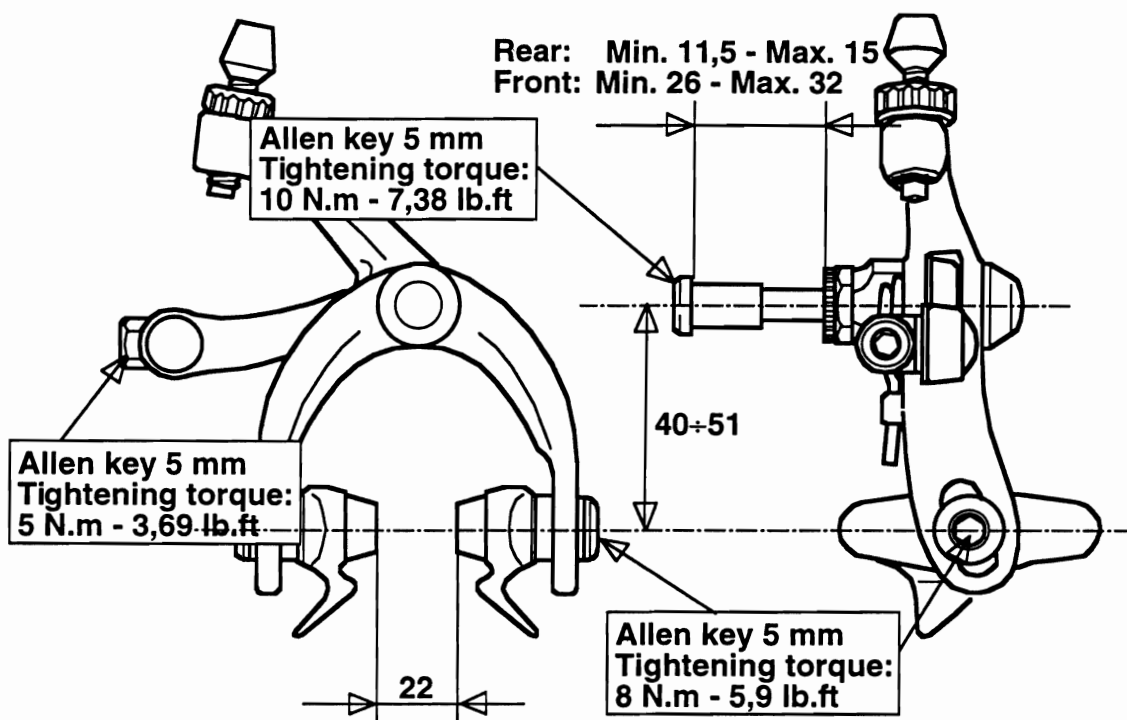
# **RECORD-CHORUS-ATHENA**

## **DUAL-PIVOT BRAKES**



<b>DUAL-PIVOT BRAKES</b>		
model	item code	weight
<b>RECORD</b>	BR-34RE	408 g
<b>CHORUS</b>	BR-42CH	400 g
<b>ATHENA</b>	BR-32AT	386 g

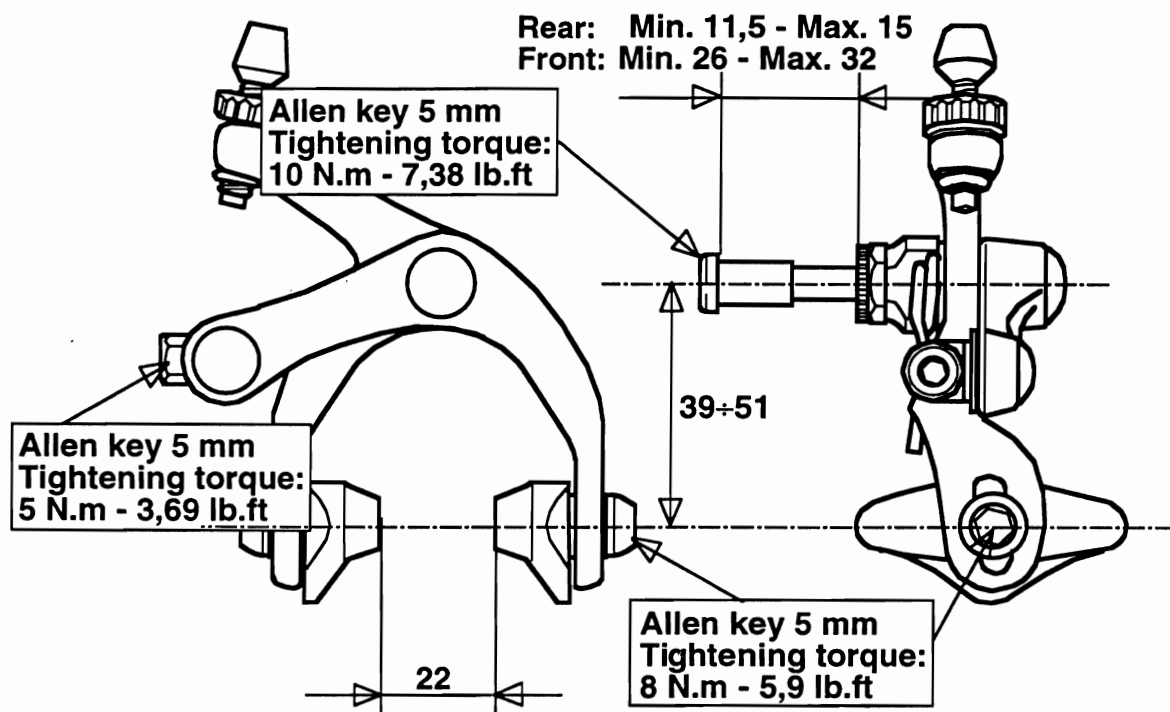
# **VELOCE-MIRAGE** **MONOPLANER BRAKES**



MONOPLANER - BRAKES		
model	item code	weight
<b>VELOCE</b>	BR-22VL	364 g
<b>MIRAGE</b>	BRI12MI	332 g

# AVANTI

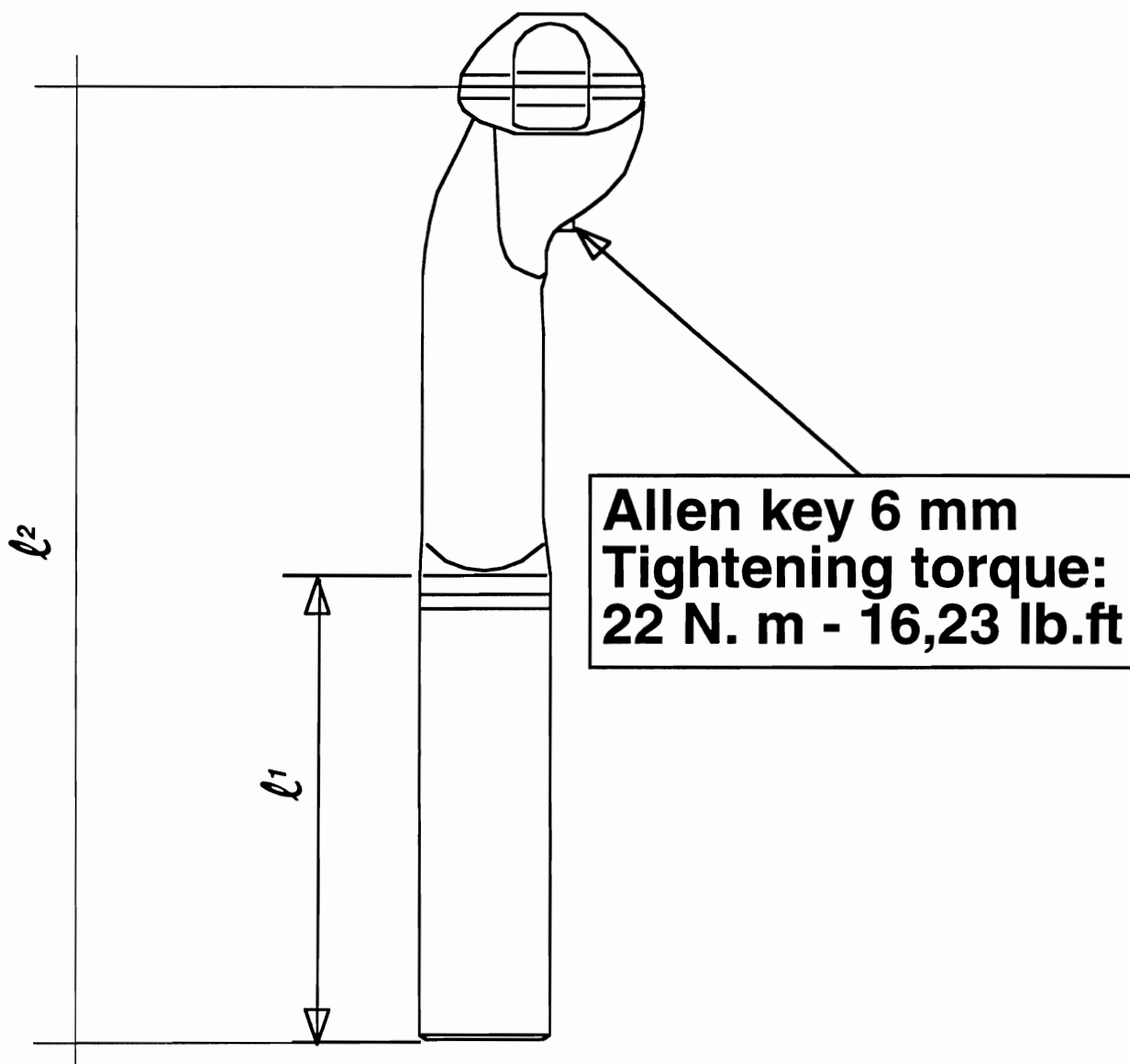
## SIDE-PULL BRAKES



SIDE-PULL BRAKES		
model	item code	weight
<b>AVANTI</b>	BRI12AV	310 g

# **RECORD-CHORUS-ATHENA**

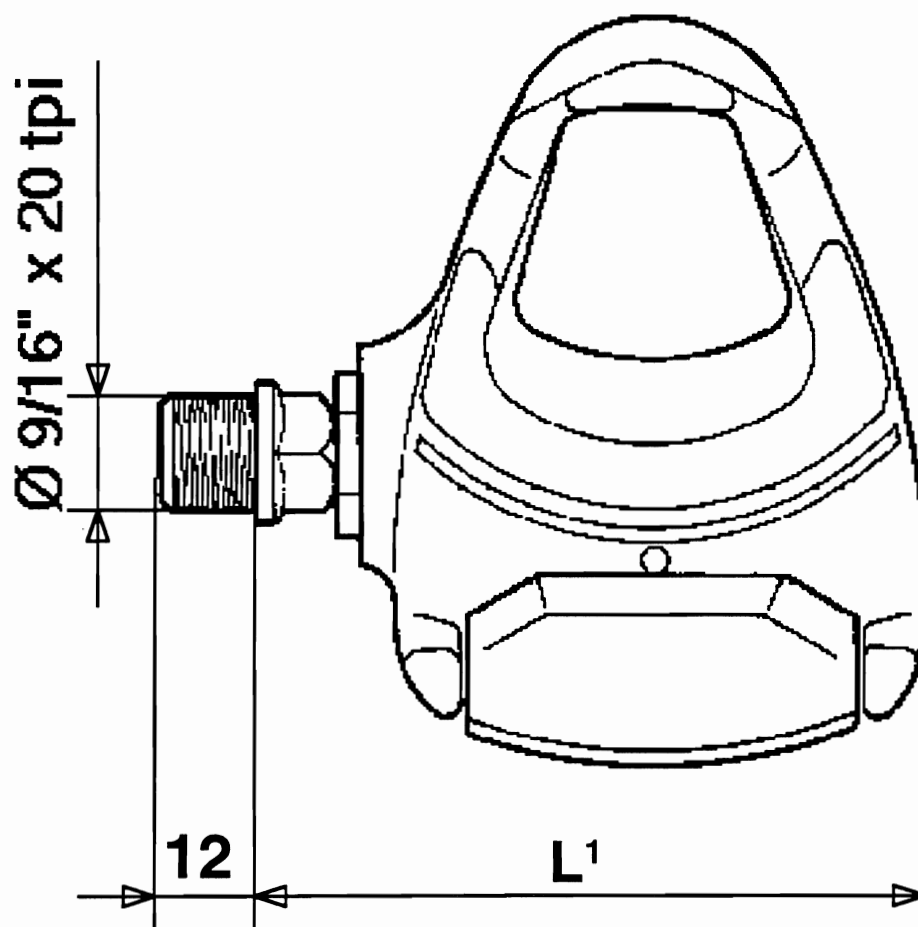
## **SEAT POSTS**



1997 SEAT POSTS					
model	item code	weight	seatpost-ø	$l^1$	$l^2$
<b>RECORD</b>	SP-10RE	227 g	27 - 27,2 mm	170 mm	210 mm
<b>CHORUS</b>	SP-10CH	250 g	25 - 26,8 - 27 - 27,2 mm	170 mm	210 mm
<b>ATHENA</b>	SP-10AT	263 g	25 - 26,8 - 27 - 27,2 mm	170 mm	204 mm

# **RECORD-ATHENA-MIRAGE**

## **QUICK RELEASE PEDALS**



**Tightening torque: 40 N.m - 29,5 lb.ft**

1997 QR-PEDALS			
model	item code	weight	L <sup>1</sup>
<b>RECORD</b> *	PD-42REQR	436 g	80 mm
<b>ATHENA</b> °	PD-42ATQR	402 g	84 mm
<b>MIRAGE</b> ^	PD112MIQR	366 g	84 mm

\* for **RECORD**-8speed & **9 Speed**, **CHORUS**-8speed & **9 Speed**

° for **ATHENA** & **VELOCE**

^ for **MIRAGE** & **AVANTI**

<b>SPOKE LENGHTS - for 1997 AERO-WHEELS</b>		
<b>SHAMAL tubular FRONT 26"</b>		<b>257 mm</b>
<b>SHAMAL tubular FRONT 28"</b>		<b>282 mm</b>
<b>SHAMAL tubular REAR 26" 9 speed</b>	<b>L.</b>	<b>257 mm</b>
	<b>R.</b>	<b>257mm</b>
<b>SHAMAL tubular REAR 28" 9 speed</b>	<b>L.</b>	<b>282 mm</b>
	<b>R.</b>	<b>283 mm</b>
<b>SHAMAL clincher FRONT 28"</b>		<b>282 mm</b>
<b>SHAMAL clincher REAR 28" 8 speed</b>	<b>L.</b>	<b>283 mm</b>
	<b>R.</b>	<b>282 mm</b>
<b>SHAMAL clincher REAR 28" 9 speed</b>	<b>L.</b>	<b>282 mm</b>
	<b>R.</b>	<b>283 mm</b>
<b>SHAMAL PISTA FRONT 28" (16 spokes)</b>		<b>276 mm*</b>
<b>SHAMAL PISTA REAR 28" (16 spokes)</b>	<b>L/R</b>	<b>274/277 mm*</b>
<b>VENTO clincher FRONT 26"</b>		<b>256 mm</b>
<b>VENTO clincher FRONT 28"</b>		<b>282 mm</b>
<b>VENTO clincher REAR 26" 8 speed</b>	<b>L.</b>	<b>257 mm</b>
	<b>R.</b>	<b>251 mm</b>
<b>VENTO clincher REAR 28" 8 speed</b>	<b>L.</b>	<b>282 mm</b>
	<b>R.</b>	<b>278 mm</b>
<b>VENTO clincher REAR 26" 9 speed</b>	<b>L.</b>	<b>255 mm</b>
	<b>R.</b>	<b>251 mm</b>
<b>VENTO clincher REAR 28" 9 speed</b>	<b>L.</b>	<b>282 mm</b>
	<b>R.</b>	<b>278 mm</b>
<b>ZONDA clincher FRONT 28"</b>		<b>279 mm*</b>
<b>ZONDA clincher REAR 28"</b>	<b>L.</b>	<b>277 mm*</b>
	<b>R.</b>	<b>281 mm*</b>
<b>SCIROCCO clincher FRONT 28"</b>		<b>271 mm*</b>
<b>SCIROCCO clincher REAR 28"</b>	<b>L.</b>	<b>269 mm*</b>
	<b>R.</b>	<b>271 mm*</b>
<b>EURUS clincher FRONT 28"</b>		<b>274 mm*</b>
<b>EURUS clincher REAR 28"</b>	<b>L.</b>	<b>272 mm*</b>
	<b>R.</b>	<b>274 mm*</b>

\* elbow spokes  
(all others = straight spokes)





## Cassette Rear Hub Overhaul Procedure

**Tools Required:**

- 2 - 14mm Cone Wrenches
- 1 - 17mm Cone Wrench - Adjustable Wrench will work
- 1 - 2mm Allen Key
- 1 - Axle Vice
- 1 - Pawl Retainer Clip

- 1) Remove the Quick Release Skewer .
- 2) Remove the Cogs using a Chain Whip and Campagnolo Splined tool #7130036.
- 3) Remove the Freehub Body from the hub.
  - a) Use the 2mm Allen Key to loosen the small set screw on the right axle locknut, back it out about 2-3 turns.
  - b) Hold the cone on the left side using a 14 mm Cone Wrench, loosen and remove the right locknut with the 17mm Wrench.
  - c) Hold the wheel or hub so that the Freehub (right) side is down and close to the workbench. Slide the Freehub Body off the axle, the pawls and springs will release but with residual lubrication and if all is close to the bench they will just drop onto the bench.

*Now you have what is basically a traditional hub for all practical purposes. The differences are that all adjustments must be made from one side and there are two different size balls used here. There are 9 pieces of 1/4" ball on the left and 10 pieces of 7/32" ball on the right.*

- 4) Axle and Shell Disassembly and Inspection
  - a) Use the 14mm Cone Wrenches to free the left side locknut and cone.
  - b) Remove the locknut, washer and cone.
  - c) Remove the axle and bearings.
  - d) Clean and inspect all bearing surfaces, pawls, springs, pawl ratchet steps and the hub shell and freehub body in general.
- 5) Cassette Hub Reassemble
  - a) Apply a liberal coat of grease to the cups in the hub shell. Place all of the bearings in the hub. Check that all are there and that the right sizes are on the correct sides. Swab grease over all the bearings so that they are immersed in grease.
  - b) Install the axle from the freehub side and screw the cone down to the bearings. Put the washer on and then the locknut.
  - c) The adjustment is made most easily using an axle vise to anchor the axle for minute adjustments. Look for perfect setting here, this cassette axle will not compress appreciably under clamp load as traditional freewheel hub axles would.
  - d) Lightly grease the pawl ratchet steps and then insert the pawls and springs into their respective sockets. It is recommended that the o-ring seal be greased as well for the best sealing effect.
  - e) There is a wire clip supplied with all of the cassette hubs. This clip will compress the pawls so that they will allow insertion of the freehub body into the hub shell. Set the freehub body on the workbench with the pawl end up and just clip it on. Slide the body onto the axle and into the shell part way. Hold everything steady and remove the wire clip. Move the body into the shell all the way. Sometimes turning it a bit while moving the last few millimeters will assist in sliding the o-ring seal into it's proper position.
  - f) Put the washers back onto the axle and then the locknut. Note that there is a split washer along with the flat washers. The Locknut should be tightened only until the split washer is compressed. Just snug it up after feeling the resistance increase, indicating complete compression of said washer.
  - g) Last thing, tighten up the 2mm Hex screw in the right locknut and you are ready for cogs and QR and then it's time to ride on down road!

