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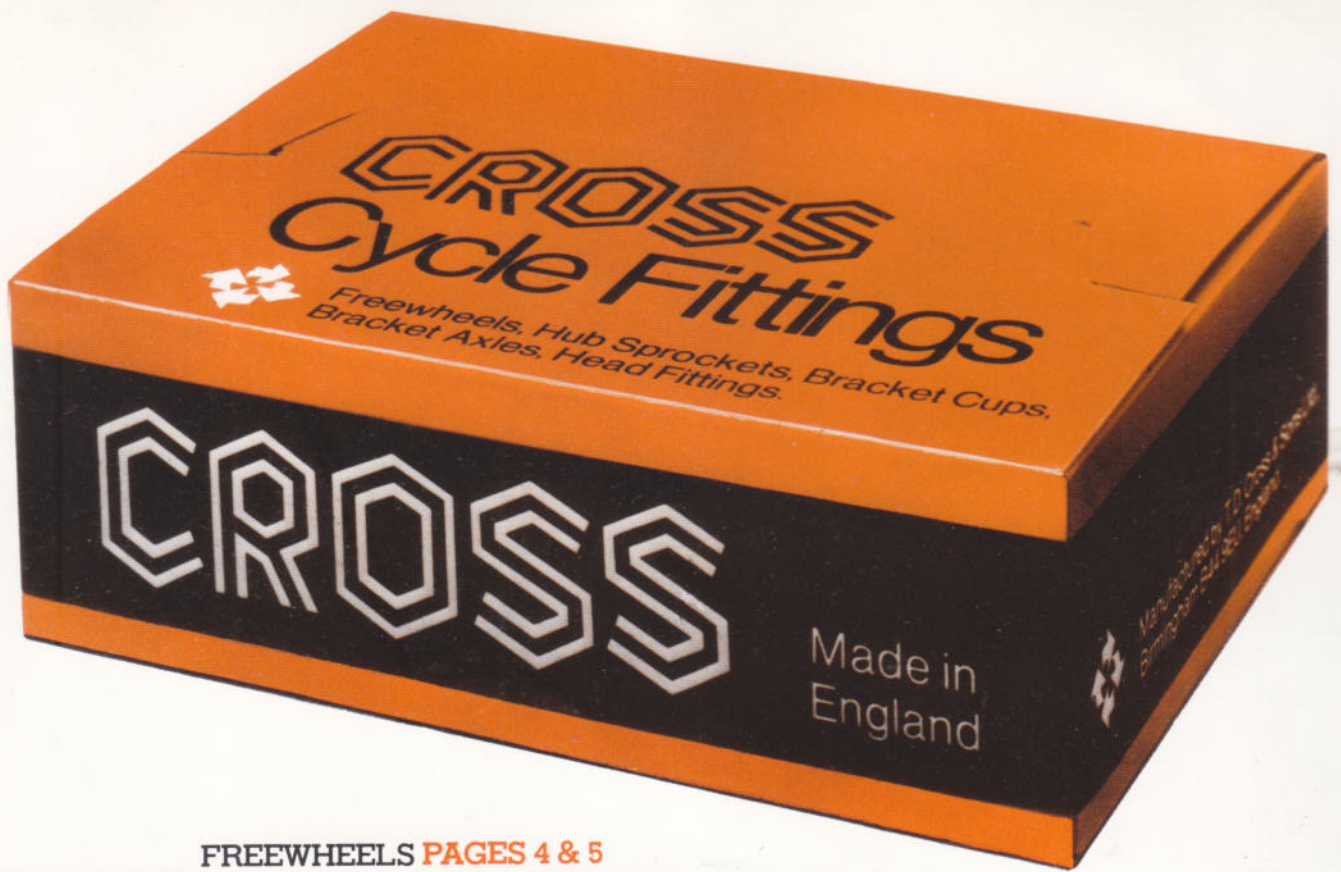




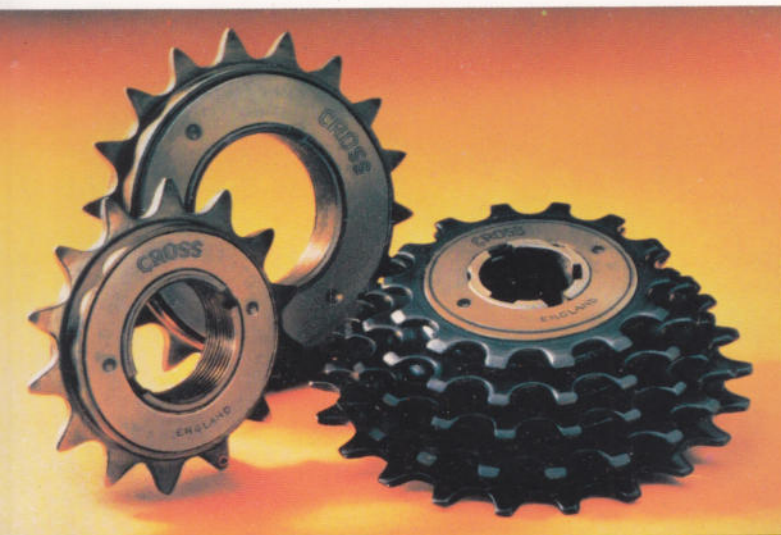
CROSS

BRITISH MADE
CYCLE COMPONENTS

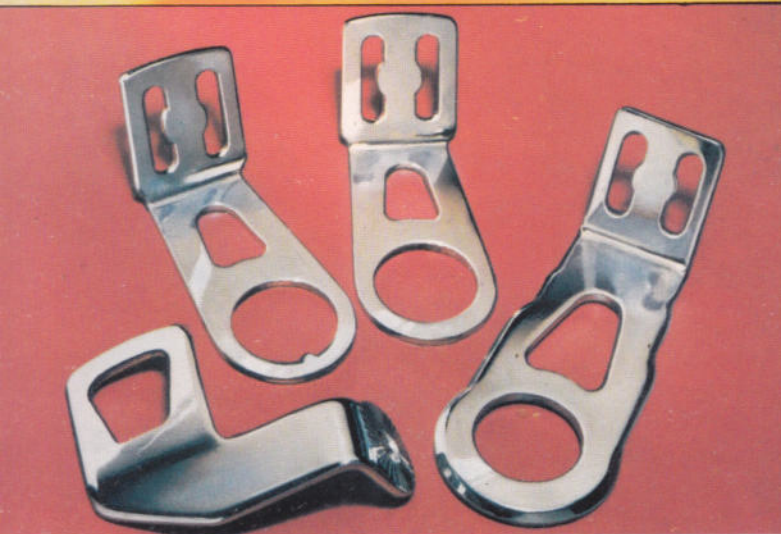
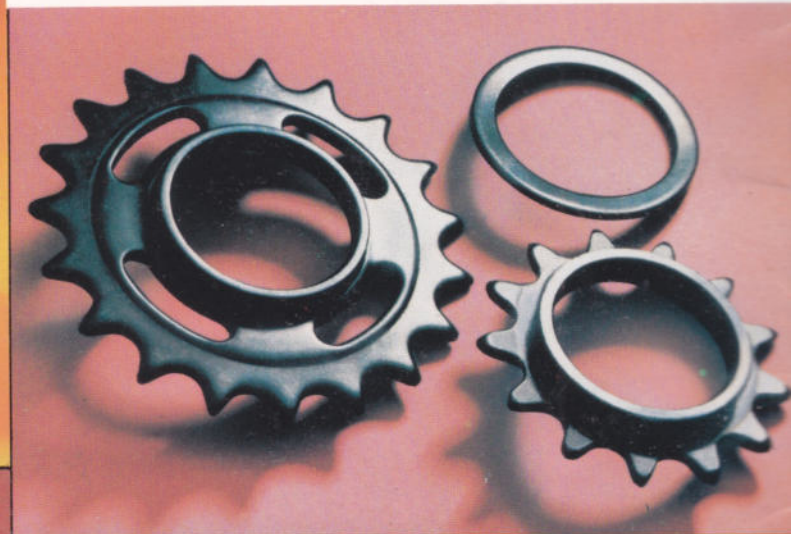




FREEWHEELS PAGES 4 & 5



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LAMP BRACKETS PAGE 9



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CROSS

THE COMPLETE RANGE OF BRITISH MADE CYCLE COMPONENTS

For over a century the name CROSS has been synonymous with the British Cycle Industry. Our components are now recognised as amongst the finest available justifying the exacting design and quality manufacturing standards we have always maintained.

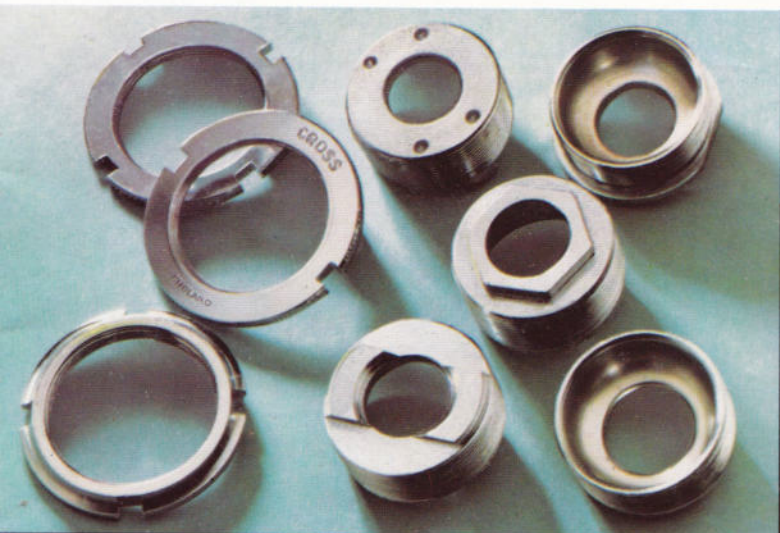
The new CROSS range includes many products now regarded as standard fittings by the world's leading manufacturers together with new products which are rapidly becoming recognised as a further advance in cycle development.

For the wholesale and retail trade we maintain adequate stocks of replacement fittings in attractive eye-catching packaging.

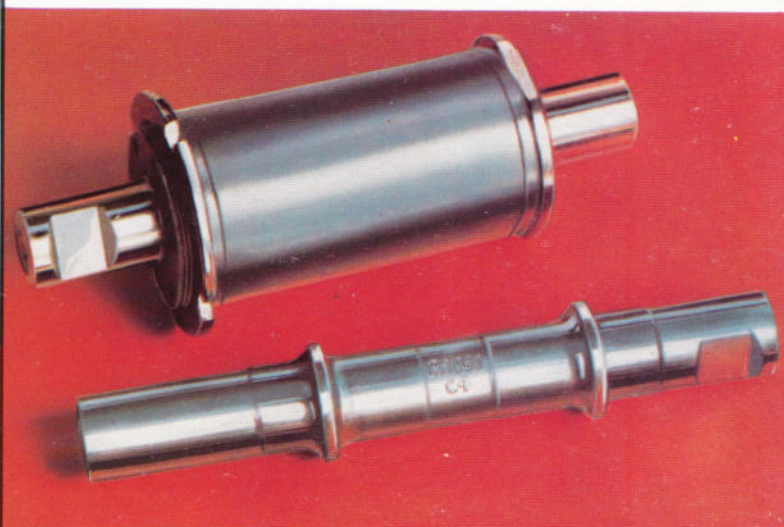
Our design team is readily available to assist and advise in the creation of 'specials'. Similarly, our manufacturing capacity can deal with the production of large or small orders using the most advanced materials.

We look forward to hearing from you.

BOTTOM BRACKET CUPS & LOCKRINGS PAGE 7



BOTTOM BRACKET AXLES & REPLACEMENT ASSEMBLED UNITS PAGE 8

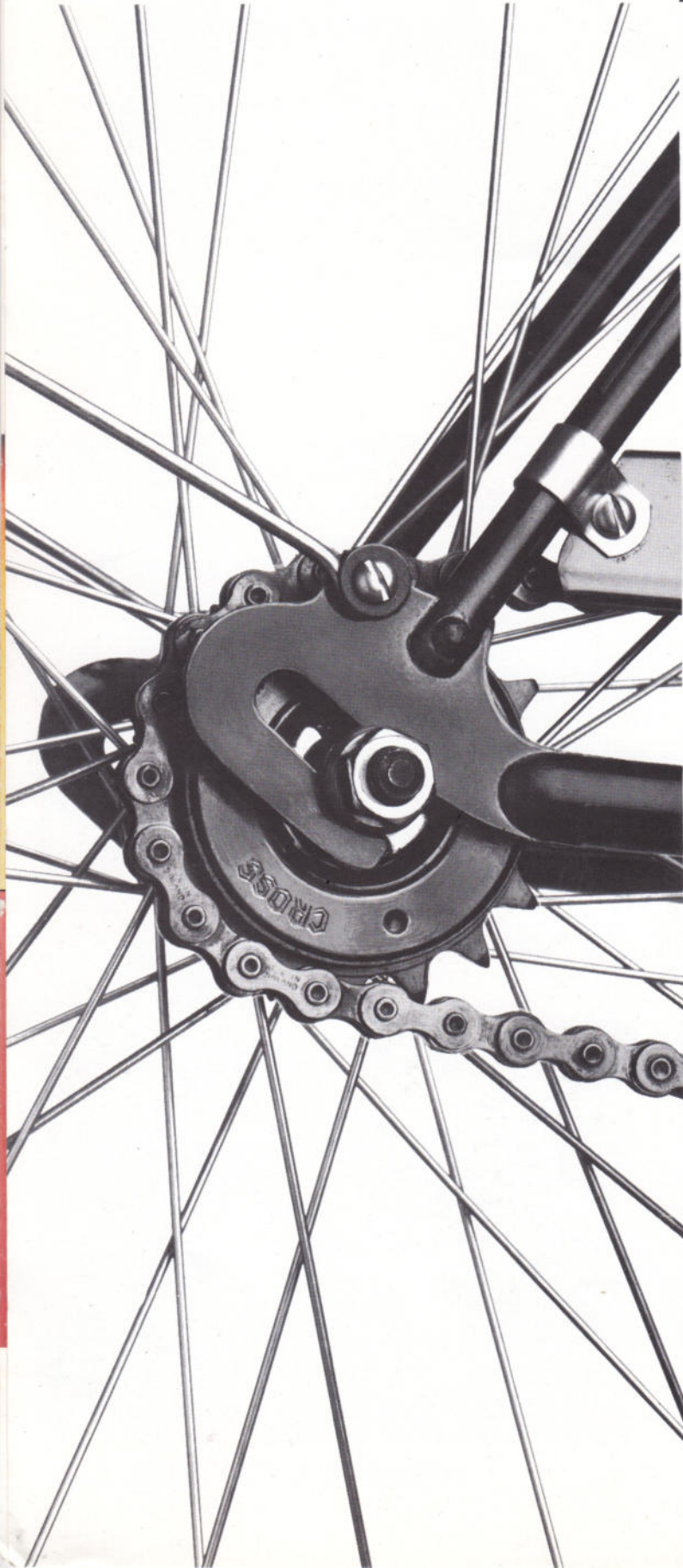


HEADSETS PAGE 12 & 13



SPANNERS & SPARES PAGE 14

Freewheels



The **CROSS** Range of Freewheels is produced from specially selected steel, with all components hardened for easy-running positive action.

Replacement Springs and Pawls are available for all Freewheels. See page 14.



A10A and A10B Standard Freewheel

Code No.	Computer Ref	No. of teeth	Pitch & Width
A10A	110A16180	16	$\frac{1}{2}'' \times \frac{1}{8}''$
A10A	110A18180	18	$\frac{1}{2}'' \times \frac{1}{8}''$
A10A	110A20180	20	$\frac{1}{2}'' \times \frac{1}{8}''$
A10A	110A22180	22	$\frac{1}{2}'' \times \frac{1}{8}''$
A10A	110A18332	18	$\frac{1}{2}'' \times \frac{3}{32}''$
A10B	110B16316	16	$\frac{1}{2}'' \times \frac{3}{16}''$
A10B	110B18316	18	$\frac{1}{2}'' \times \frac{3}{16}''$



Special Freewheels for many applications can be produced to specification.



A150 5-speed Freewheel

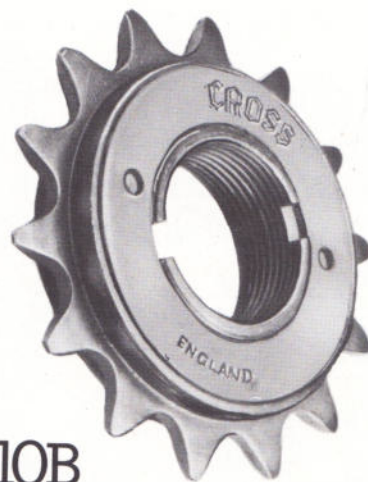
Supplied as carefully adjusted complete units ensuring concentricity. Teeth are accurately cut for smooth gear changing. Fitted with two full rows of balls, three sturdy pawls and springs.

Code No.	Computer Ref	Stock Ratios	Pitch & Width
A150	115051422	14, 16, 18, 20, 22	$\frac{1}{2}'' \times \frac{3}{32}''$
A150	115051523	15, 17, 19, 21, 23	$\frac{1}{2}'' \times \frac{3}{32}''$
A150	115051424	14, 16, 18, 21, 24	$\frac{1}{2}'' \times \frac{3}{32}''$
A150	115051428	14, 17, 20, 24, 28	$\frac{1}{2}'' \times \frac{3}{32}''$

(20-teeth upwards with lightening holes)

Please quote CODE number and ratios required when ordering.

$1.370'' \times 24$ TPI BSC Thread.



F10B Miniature Freewheel

Specially designed for maximum reliability and to suit most miniature hubs. Fitted with two full rows of balls.

Code No	Computer Ref	No. of Teeth	Pitch & Width
F10B	110B14180	14	$\frac{1}{2}'' \times \frac{1}{8}''$

IMPORTANT NOTE

In addition to the sizes shown, a number of other sizes may be held in stock in limited quantities.

Please ask for latest stock details.

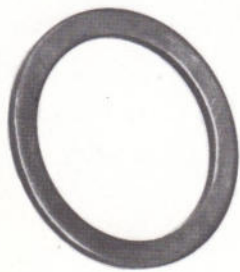
Special Freewheels can be produced to order as required.

Please quote code number and size required when ordering.
 $.970'' \times 20$ TPI BSW Thread.



A selection of additional sprockets which can be adapted from stock or manufactured to drawing.

CROSS Fixed Hub Sprockets are made from specially selected steel and all units in this range are hardened.



B14 Hub Spacer

Spacing washers with hub thread clearance.

Computer Ref 1B1400000

IMPORTANT NOTE
In addition to the sizes and types shown, a number of other sprockets may be available from stock in limited quantities.

Please ask for latest stock details.

Special sprockets can be produced to order as required.

Please quote code number and size required when ordering.

CROSS

Hub Sprockets and Spacers



B17A Lightweight (Flangeless Offset)

Code No	Computer Ref	Pitch	Width	No. of Teeth
B17A	1B1712332	1/2"	3/32"	12
B17A	1B1713332	1/2"	3/32"	13
B17A	1B1714332	1/2"	3/32"	14
B17A	1B1715332	1/2"	3/32"	15
B17A	1B1716332	1/2"	3/32"	16
B17A	1B1717332	1/2"	3/32"	17
B17A	1B1718332	1/2"	3/32"	18
B17A	1B1719332	1/2"	3/32"	19
B17A	1B1720332	1/2"	3/32"	20
B17A	1B1721332	1/2"	3/32"	21
B17A	1B1722332	1/2"	3/32"	22

18-teeth and upwards have elongated lightening holes.
All Hub Sprocket Bores 1.370" x 24 TPI BSC Thread.



B17 Lightweight (Flangeless Offset)

Code No	Computer Ref	Pitch	Width	No. of Teeth
B17	1B1712180	1/2"	1/8"	12
B17	1B1713180	1/2"	1/8"	13
B17	1B1714180	1/2"	1/8"	14
B17	1B1715180	1/2"	1/8"	15
B17	1B1716180	1/2"	1/8"	16
B17	1B1717180	1/2"	1/8"	17
B17	1B1718180	1/2"	1/8"	18
B17	1B1719180	1/2"	1/8"	19
B17	1B1720180	1/2"	1/8"	20
B17	1B1721180	1/2"	1/8"	21
B17	1B1722180	1/2"	1/8"	22

18-teeth upwards have elongated lightening holes.
All Hub Sprocket Bores 1.370" x 24 TPI BSC Thread.



Variations of Bracket Cups which illustrate the flexibility of our production facility.

CROSS

Bottom Bracket Cups and Lockrings

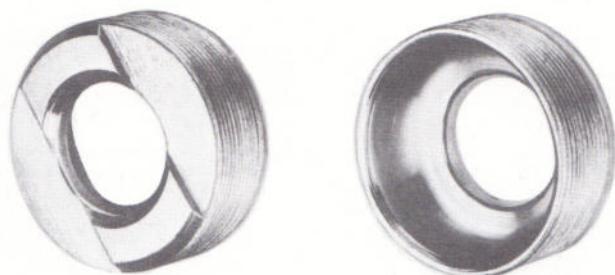
Standard Bottom Bracket Cup Sets

The range includes polished ballraces and are suitable for cotterless and cottered brackets.

Raleigh Type Bottom Bracket Cup Sets

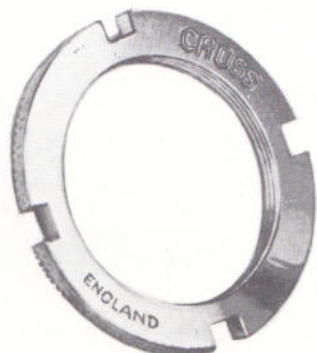
Suitable for the Raleigh range, including polished ballraces and threaded 1.370" x 26 TPI BSW Thread Form.

Code No	Computer Ref	Finish	Thread	Length in. mm
R20	1R20C0000	Chrome	RH	½" 13
R21	1R21C0000	Chrome	LH	½" 13
R22	1R22C0000	Chrome	RH	— —



R20
BOTTOM BRACKET SET

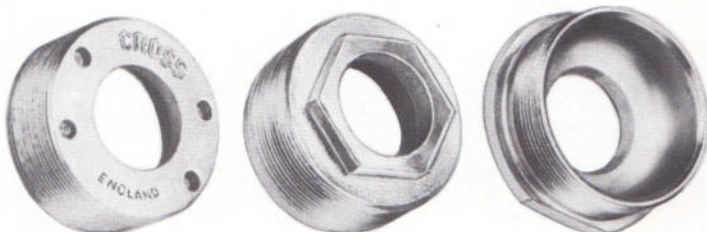
R21
BOTTOM BRACKET SET



R22
LOCKRING

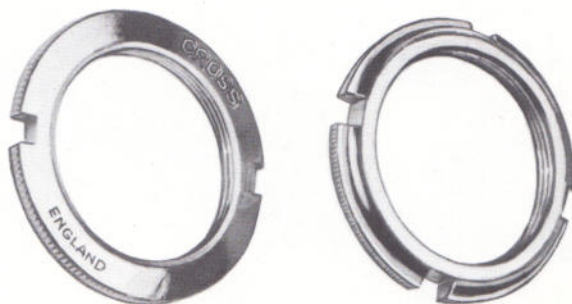
Code No	Computer Ref	Finish	Thread	Length in. mm
C12	1C12C0000	Chrome	RH	⅝" 16
HC12	1HC12C000	Chrome	RH	⅝" 16
C14	1C14C0000	Chrome	LH	½" 13
C14	1C14B0000	Black	LH	½" 13
C15	1C15C0000	Chrome	RH	— —
HC15	1HC15C000	Chrome	RH	— —

Threaded 1.370" x 24 TPI BSC Thread Form



C12 HC12 C14

BOTTOM BRACKET SET



C15
LOCKRING

HC15
LOCKRING

IMPORTANT NOTE
Other Bottom Bracket Cup Sets may be available from stock in limited quantities.

Please ask for latest stock details.
Please quote code number when ordering.



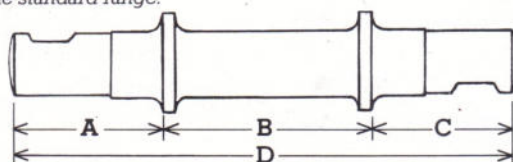
Bottom Bracket Axles and Replacement Assembled Units



Capacity is available to produce and assist with the design of special purpose Bracket Axles outside the standard range.



Bottom Bracket Axles



Accurately ground and hardened, this range is available in Chrome finish as detailed below. (NB: Special axles for miniature, standard and motorised cycles can be produced to order in suitable quantities).

Code No.	Computer Ref	Chain Line	Gear Case Clearance Non Gear Case Clearance	Finish	Description	A	B	C	D
C164	1C164C000	1 ¹ / ₁₆ " 39.69mm	G.C.C.	Chrome	For BSA type Bottom Brackets BW14	1 ¹ / ₁₆ " 42.86mm	2 ¹ / ₁₆ " 52.39mm	1 ⁵ / ₁₆ " 33.34mm	5 ¹ / ₁₆ " 128.59mm
C165	1C165C000	1 ⁵ / ₈ " 41.27mm	G.C.C.	Chrome	For BSA type Bottom Brackets BW 2C	1 ³ / ₄ " 44.45mm	2 ¹ / ₁₆ " 52.39mm	1 ⁷ / ₁₆ " 36.51mm	5 ¹ / ₄ " 133.35mm
R168	1R168C000	2 ¹ / ₁₆ " 52.39mm	NGCC	Chrome	For BSA type Bottom Brackets Similar to Raleigh Pattern A8	1 ²³ / ₃₂ " 43.66mm	2 ⁷ / ₁₆ " 61.91mm	1 ⁹ / ₃₂ " 32.54mm	5 ¹ / ₁₆ " 138.11mm
R1611	1R1611C00	1 ³ / ₄ " 44.45mm	GCC	Chrome	For BSA type Bottom Brackets Similar to Raleigh Pattern A16	1 ¹ / ₁₆ " 46.04mm	2 ³ / ₁₆ " 55.56mm	1 ¹ / ₃₂ " 34.13mm	5 ¹ / ₃₂ " 135.73mm

Replacement Bottom Bracket Assembled Units

Supplied as a fully assembled tube unit, complete with grease and ready to slide into bottom bracket shell for easy repair. Designed to fit reamed standard bottom bracket shell 1¹/₁₆" dia (36.5mm) with a tolerance of +0.005" (+0.13mm), standard shell length 2⁵/₈" (67mm).

This simple unit avoids costly rectification of frames with faulty or damaged bottom bracket threads.

Replacement units supplied with standard axles as follows:-

Unit Code No.	Computer Ref	Fitted with Bracket Axle
BBU 4	1BBU40000	C164
BBU 5	1BBU50000	C165

IMPORTANT NOTE:
Other Bottom Bracket Axles and units may be available in limited quantities.

Please ask for latest stock details.

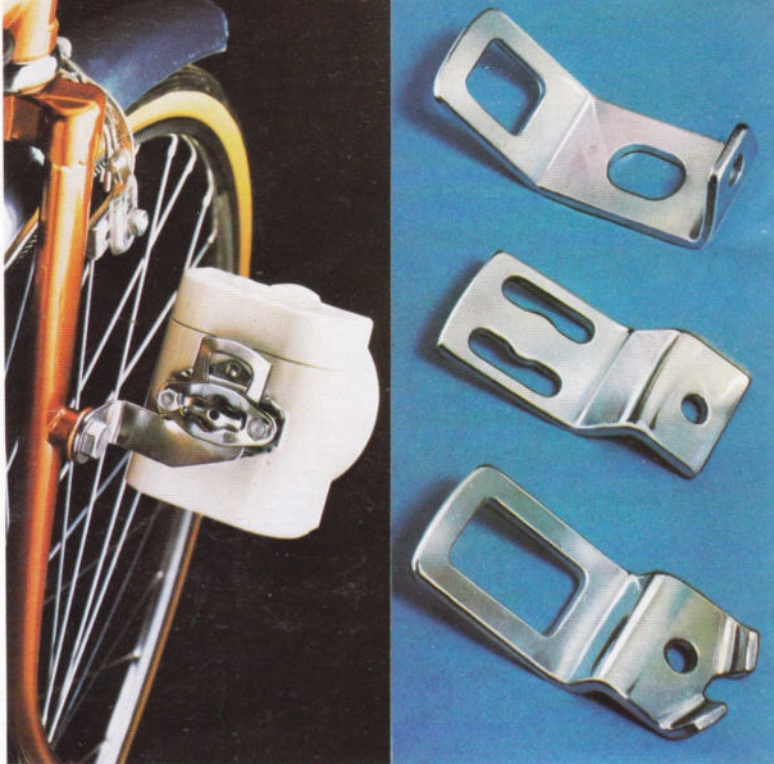
Special sizes can be produced to order as required.

Please state code number required when ordering.

CROSS

Lamp Brackets

Finished in Chrome

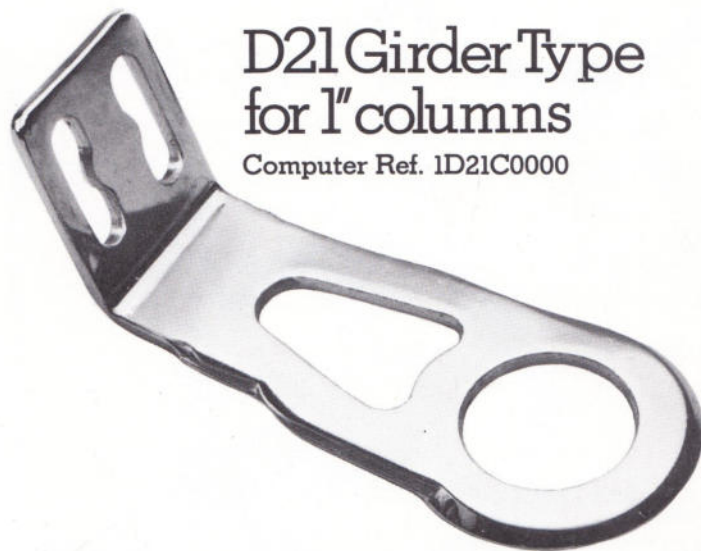


*Limited tooling is available for certain special lamp brackets.
We should be pleased to offer our assistance.*



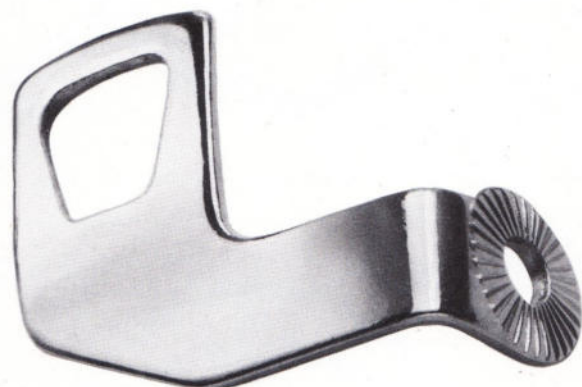
D20 Standard Pattern for 1" columns

Computer Ref: 1D20C0000



D21 Girder Type for 1" columns

Computer Ref. 1D21C0000



D28 for Front Fork Fitting with serrated side face.

Available for left hand or right hand
fork fitting.

Computer Ref (RH): 1D28C000

Computer Ref (LH): 1D28CL00



D27 Standard Pattern for 1" column with tag

Computer Ref: 1D27C0000

IMPORTANT NOTE

Other Lamp Brackets may be available from
stock in limited quantities.

Please ask for latest stock details.

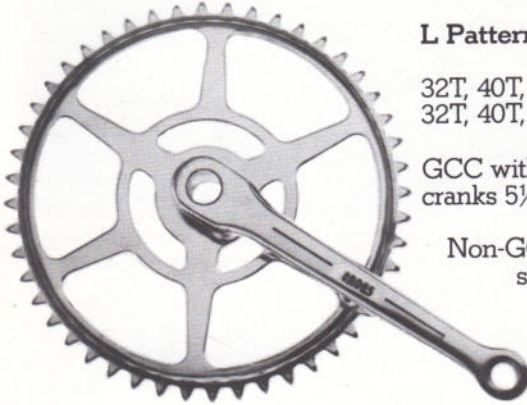
Special sizes and types can be produced to
order.

Please state code number when ordering.



Steel Chainwheels

Standard Chainwheel Sets



L Pattern

32T, 40T, 44T, 46T, 48T, $\frac{1}{8}$ "
32T, 40T, 44T, 46T, 48T, $\frac{3}{32}$ "

GCC with semi-square cranks $5\frac{1}{2}$ " $6\frac{1}{2}$ " & 170mm.

Non-GCC can also be supplied.

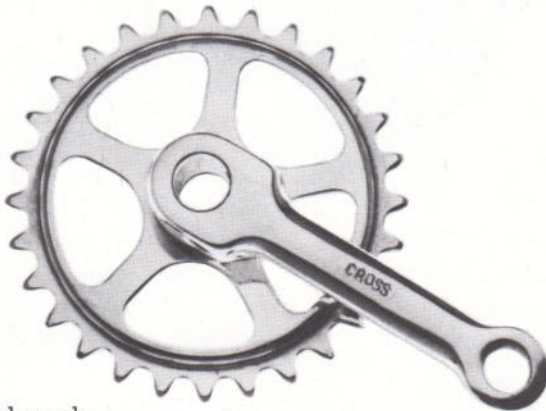


S Pattern

36T, 38T, 40T, 46T, $\frac{1}{8}$ "
36T, 38T, 40T, 46T, $\frac{3}{32}$ "

GCC with semi-square cranks $5\frac{1}{2}$ " $6\frac{1}{2}$ " & 170mm.

Non-GCC can also be supplied.



C Pattern (Junior)

28T, $\frac{1}{8}$ "
GCC with oval cranks only 4"



B Pattern

52T $\frac{1}{8}$ "
GCC with semi-square cranks $6\frac{1}{2}$ " & 170mm.

Non-GCC can also be supplied.

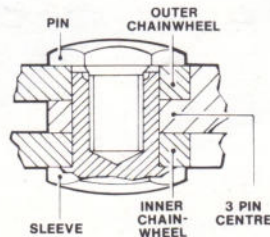
Detachable Chainwheel Sets



N34 Pattern (Single)

3 pin sleeve fixing.

32T, 36T, 40T, 44T, 46T, 48T, 50T, 52T, $\frac{3}{32}$ "
Non-GCC with semi-square cranks $6\frac{1}{2}$ "
GCC can also be supplied.



Sleeve Fixing 3 Pin Sets

This fixing is used on 3 pin single and double chainwheel sets. The screw only holds the wheel and centre together, the driving torque is transmitted by the sleeve nut.

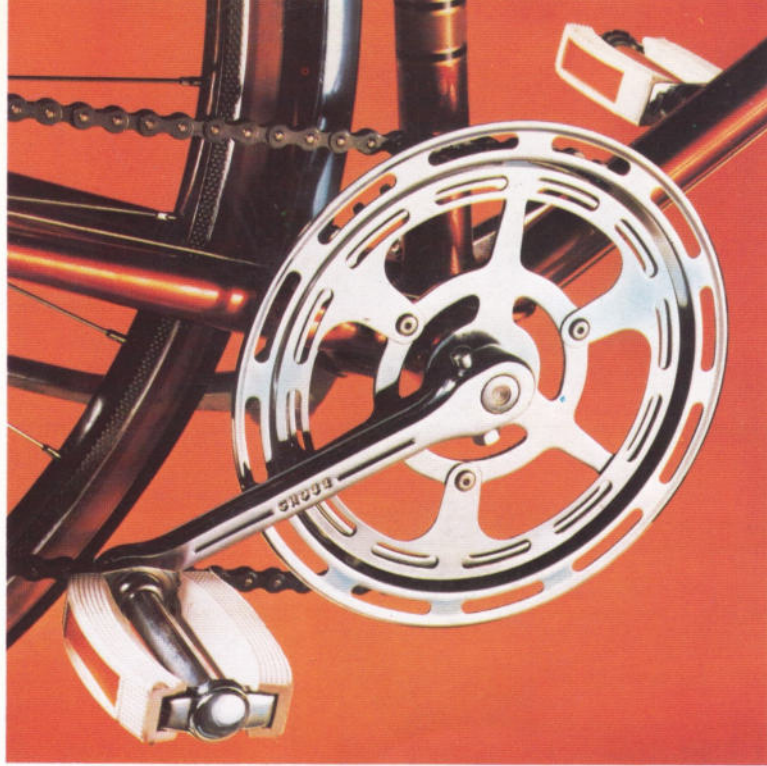


N34D Pattern

3 pin sleeve fixing.

32T, 36T, 40T, 44T, 46T, 48T, 50T, 52T, $\frac{3}{32}$ "
ECL with semi-square cranks $6\frac{1}{2}$ "

and Cranks



N901D Pattern

40T/44T, 46T, 48T, 50T, $\frac{3}{32}$ "
ECL with semi-square cranks $6\frac{1}{2}$ "

Double Chainwheel Sets



N201D Pattern

46T/47T, 49T, 50T, 52T, $\frac{3}{32}$ "
ECL with semi-square cranks $6\frac{1}{2}$ "

All chainwheels are joggled with teeth $\frac{1}{2}$ " pitch.
(.305" roller dia.). Chainguards can also be supplied.

Ordering Procedure...

(COMPUTER REFERENCES AVAILABLE ON REQUEST)

CHAINWHEEL SETS.

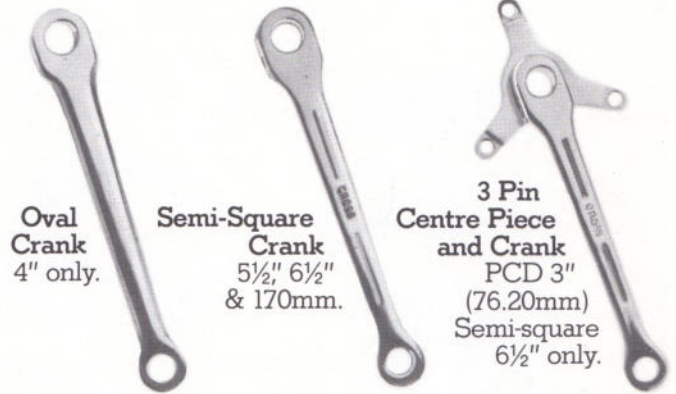
Please state: Wheel design Pattern Reference.
Number of Teeth.
Chain Size.

CRANKS.

Please state: Length: 4", $5\frac{1}{2}$ ", $6\frac{1}{2}$ " or 170mm.
Head Details: GCC., non-GCC, ECL.
Type: Oval Semi-square.
Thread: RH/LH $\frac{9}{16}$ " \times 20TPI. BSC Thread.
Finish: Chrome.

Cranks

Besides a very wide range of standard chainwheel sets, we can adapt our facilities to meet your requirements.



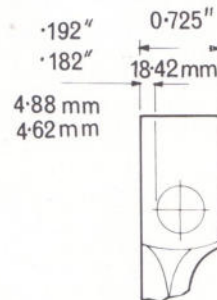
Oval Crank
4" only.

Semi-Square Crank
 $5\frac{1}{2}$ ", $6\frac{1}{2}$ "
& 170mm.

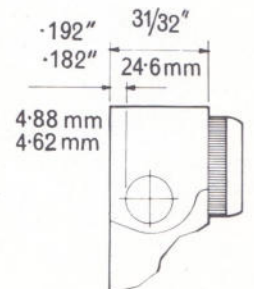
3 Pin Centre Piece and Crank
PCD 3"
(76.20mm)
Semi-square
 $6\frac{1}{2}$ " only.

Crank Head Details

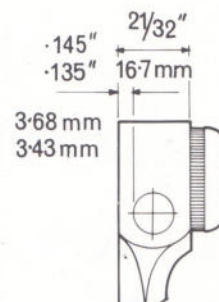
Pedal hole tapped $\frac{9}{16}$ " \times 20 TPI R.H. and L.H.
Or to suit customers' requirements.



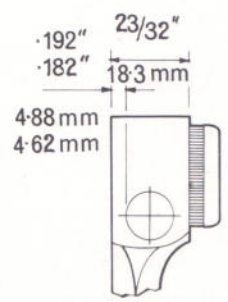
L.H. Standard Boss



R.H. GCC



R.H. N. GCC



R.H. ECL
(Double sets only).

CROSS

Headsets

The Harrier Set



Computer Ref:
1 HARSET 20
(single pack)



No 10 Harrier Locknut
Computer Ref:
1HAR10000



No 11 Harrier Spacer
Computer Ref:
1HAR11000



No 12 Harrier Screwed Race
Computer Ref:
1HAR12000



No 13 Harrier Top Race
Computer Ref:
1HAR13000



No 14 Harrier Bottom Race
Computer Ref:
1HAR14000



No 15 Harrier Crown Race
Computer Ref:
1HAR15000

The Hawk Set



Computer Ref:
1HAWSET 20
(single pack)



No 10 Hawk Locknut
Computer Ref:
1HAW10000



No 11 Hawk Spacer
Computer Ref:
1HAW11000



No 12 Hawk Screwed Race
Computer Ref:
1HAW12000



No 13 Hawk Top Race
Computer Ref:
1HAW13000



No 14 Hawk Bottom Race
Computer Ref:
1HAW14000



No 15 Hawk Crown Race
Computer Ref:
1HAW15000

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Raeker, Dassy & Co., Chausee De Haecht 124,
1030 Brussels, Belgium

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Paul Warnekaer, Norgesmindevej 32,
DK 2900 Hellerup, Denmark

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Soiniemi & Lintukari, Aurak 15D,
20100 Turku 10, Suomi, Finland

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M. Guyonneau, 12 Rue Volta, Becon-Courbevoie,
Seine, France

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Ottokar Miler, Abbachastrasse 27,
8000 Munchen 50, West Germany

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154 King & Charlotte Street,
Georgetown, Guyana

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Wapenaar Agenturen, Gouwe 11A, Postbus 22,
17182G Hoogwoud NH, Holland

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British Bicycle Co., 3 Wood Road,
Wanchai, Hong Kong

ISRAEL

Cyclesport, J. Kratka & Sons, 42 Halaliya Street,
Tel-Aviv, Israel

MALAYSIA & SINGAPORE

Ang Kim Chwee, Paya Lebar,
P.O. Box 46, Singapore

NEW ZEALAND

Geo E. Stock (N.Z.) Ltd., G.P.O. 2421,
Wellington, New Zealand

PORTUGAL

C. J. Chambers & Co. Ltd., Ponte Pereiro, Pedroso Gaia,
Apartado 93-4401 Gaia, Portugal

SOUTH AFRICA

H.E.A. Smith & Gibson (Pty) Ltd., P.O. Box 2839,
Johannesburg, Republic of South Africa

VENEZUELA

Felix Kalinhoff, P.O. Box 226, Cagua,
Aragua, Venezuela

SWEDEN

Mr Stenkil, Stenkil Consult, Kvarngrand,
S-432-00 Varberg, Sweden

Terms of Business

GUARANTEE: Goods manufactured, processed or merchanted by us are guaranteed only against faulty workmanship and flaws in material and on the following terms.

Any material claimed to be defective must be returned to us within three months from date of despatch and if accepted by us as defective shall be credited to the customer or replaced if desired, but shall not form the subject of any claim whatsoever.

We do not guarantee the fitness of any of the goods supplied or processed for any particular purpose.

Our liability is limited to replacement and we are not to be held responsible for any direct or consequential damage.

This guarantee is in place of any guarantee or warranty which would be implied by law.

FREE ISSUE MATERIAL: When machining customers' material or cutting teeth in blanks supplied by customers, the material supplied shall be reasonably soft, homogeneous and suitable for rapid machining. Should any such material or blanks be spoiled owing to hard places or otherwise defective, we are to be paid for the work carried out and for any damage caused to our cutters or other tools and we are not to be responsible for replacing any such defective material. We do not undertake to check or to rectify customers' material or blanks, neither do we accept any responsibility for loss or damage after despatch.

All waste or surplus metal from machining becomes our property and is allowed for in our estimate. Should any material or blanks sent for machining, teeth cutting, grinding or hardening be spoilt we do not accept responsibility for the value of such material or blanks or the cost of any prior machining performed thereon.

We further do not accept responsibility for the failure of parts treated by us whether such failure is due to any defect in the material or any other cause whatsoever. Every precaution is taken to avoid waste and extra material is only called for if absolutely necessary.

CARRIAGE (HOME): Refer to current price list.

CARRIAGE (EXPORT): Refer to current price list.

PACKING CASES (HOME): Refer to current price list.

CANCELLATION: We cannot accept cancellation of any orders for goods made specially to customers' requirements.

DELIVERY: Every effort will be made to keep delivery dates, but no liability can be accepted for loss caused through delay or non-delivery. The right is reserved to suspend delivery so long as payment for any goods previously invoiced is in arrears.

MINIMUM INVOICE CHARGE: Refer to current price list.

EXPORT BUSINESS: Orders are only accepted for shipment and payment through buying houses in England, unless agreed between customer, our agents or ourselves.

GENERAL: All prices are subject to revision without notice and orders only accepted subject to the prices ruling at the time of despatch, as per current lists existing at that time.

NOTIFICATION OF LOSS OF, OR DAMAGE TO, OR NON-DELIVERY OF GOODS (HOME): The Buyer must advise the Carrier and the Seller in writing (otherwise than by a qualified signature on the Carrier's Delivery Note) within the following time limits:

- (a) Partial loss, damage or non-delivery of any separate part of a consignment. (Within three days of date of delivery of the consignment or part consignment).
- (b) Non-delivery of whole consignment. (Within twenty-one days of date of despatch).

The Seller will decline to entertain claims unless the Buyer complies with the provisions of this Condition.

RESERVATION OF TITLE: Without prejudice to any of the Company's other rights under the agreement between the parties notwithstanding delivery of any goods the property in the goods shall remain in the Company until you have paid in full in cash therefor. If such payment is overdue in whole or in part the Company may (without prejudice to any of its other rights) recover or resell the goods or any of them and may enter upon your premises for that purpose, a licence for which purpose is hereby granted. If any of the goods are incorporated in other goods before such payment the property in the goods delivered by us shall nevertheless be and remain with us until such payment has been made PROVIDED THAT where any goods delivered under this contract have been sold by you either in their original form or after further processing or incorporation in some other product then you shall be trustee for us of the proceeds of sale thereof or of any claim by you in respect of such proceeds until such time as we shall have been paid in full for such goods. Notwithstanding the above, the risk in the goods shall pass to you upon delivery (and you should therefore insure).

CROSS

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