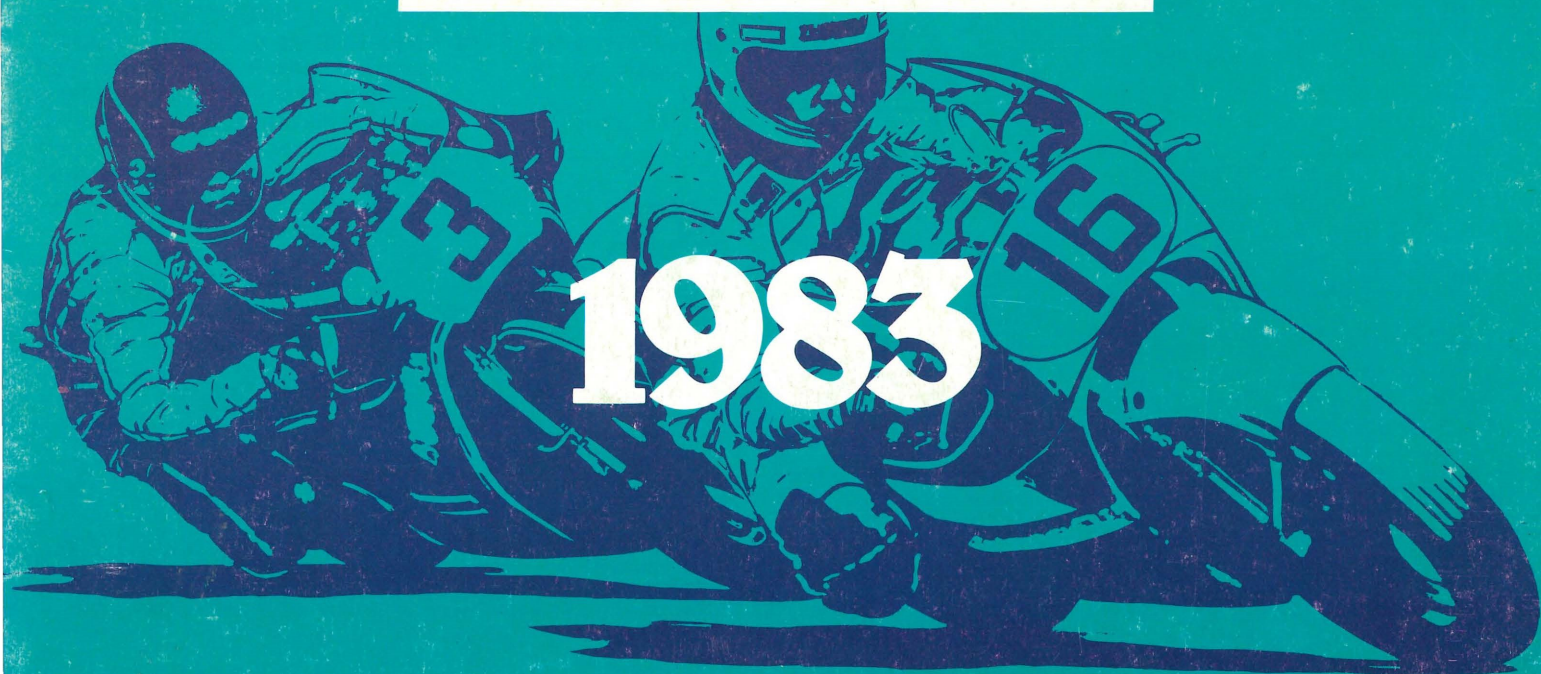


RENOLD **MOTORCYCLE** **REPLACEMENT** **CHAINS**



1983



RENOLD

MOTORCYCLE ORIGINAL

**RENOLD POWER
TRANSMISSION
LIMITED**

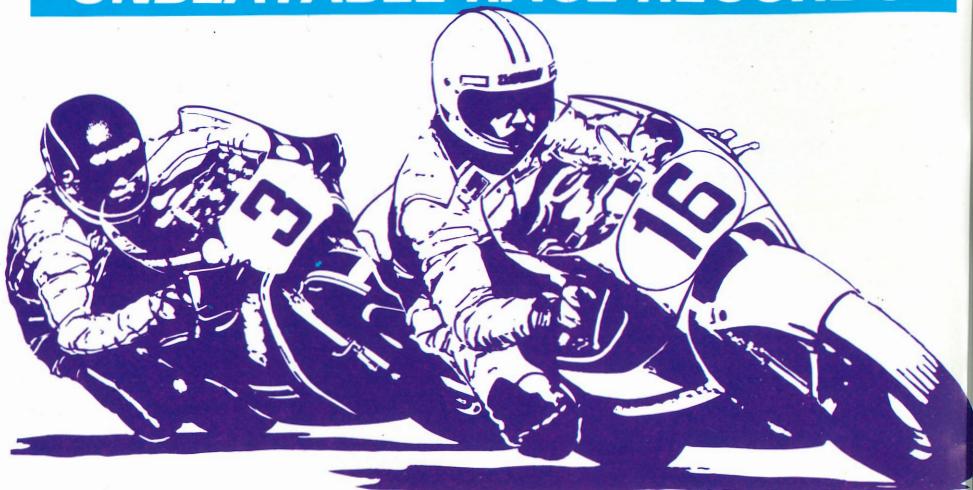
Positive Power
Transmission
Engineers

This list is issued for the motorcycle replacement trade. Details of the chains fitted to specific machines have been compiled from information received from motorcycle manufacturers and from other sources. Whilst every effort has been made to ensure that the information is correct and complete, it is impossible to guarantee the accuracy of all details due to varied sources from which the information has been obtained.

Specifications and Illustrations.
The right of modification
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**RENOLD
MOTORCYCLE
CHAINS
FIRST CHOICE
FOR TOP QUALITY
AND RELIABILITY**

UNBEATABLE RACE RECORDS

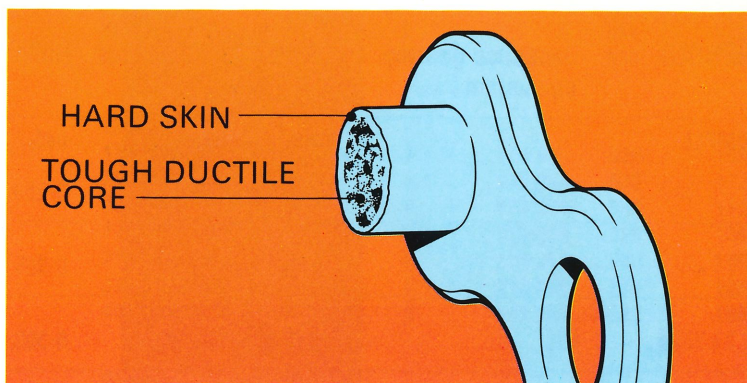
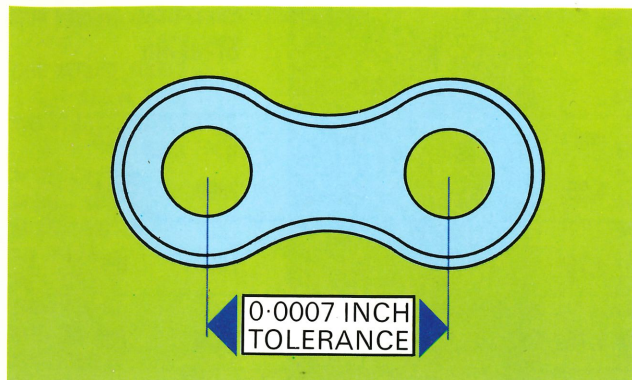


*In 1982, three world champions, the British Solo and Sidecar champions and over 80% of TT riders raced on Renold Grand Prix chains – proving that Renold chains **MUST** be good. The same high performance and super reliability is available to all street bikers.*



CHAINS AND BEST

Renold made the first ever bush roller chains- supplied them for the world's first chain driven bike - and now build over 100 years' know-how into every Renold motorcycle chain.



The steel used is specially formulated and rigorously inspected. Purpose built production machinery makes components to incredibly fine tolerances and assembles the finished chain. Heat treatment is rigidly controlled and all chain components are inspected before being built into the chain.

Every Renold chain is proof loaded to pre-stretch it and to reveal any hidden flaw which might reduce service life. Each chain is tested for fit and free running on accurate test sprockets and finally, each chain is immersed in hot, melted special chain grease to guarantee lubrication during the first few hundred miles' service. After that, it's up to the rider.

Study of individual chain components reveals the care, attention to detail and accuracy built into their manufacture. The chain sideplates are produced from high quality, high tensile cold rolled steel strip, carefully heat treated to ensure the optimum balance between ductility to prevent brittleness and fatigue failure, and tensile strength to

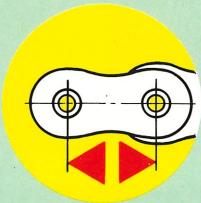
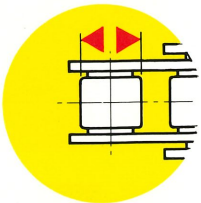
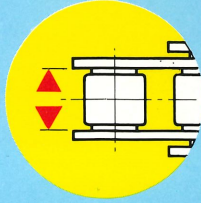
resist breakage due to snatch. The overall length of a new motorcycle chain is specified within such close limits that the pitch of the pin holes in each plate must be held within a total tolerance of only three quarters of one thousandth of an inch.

The chain bushes and rollers feature absolute concentricity between the bore and outside diameter. The surface finish of these parts, and of the chain pins, must be of a high standard of fineness to provide maximum wear life. Careful case-hardening of the surfaces of all these components further ensures that this wear life is at a maximum due to the hard 'skin' which case-hardening gives, whilst at the same time ensuring a tough, ductile core of metal within the 'skin' to prevent brittleness and breakage.

These are the chains which have set the quality standards by which all other competitive products are judged and have been fitted by more of the leading international competition riders than any other make. Their sheer consistency of quality guarantees reliability and makes them the automatic choice of top riders.



DIMENSIONS OF RENOLD MOTORCYCLE REPLACEMENT CHAINS

Chain No									
RENOLD	Japanese gearing equivalent	Pitch		Roller dia		Width between inner plates		Breaking load	
SIMPLE		inch	mm	inch	mm	inch	mm	lbf	daN
110 038	317R	$\frac{3}{8}$ (0.375)	9,53	0.250	6,35	0.225	5,7	2000	890
111 044	410	$\frac{1}{2}$ (0.50)	12,70	0.305	7,75	0.130	3,3	2000	890
111 046	415	$\frac{1}{2}$ (0.50)	12,70	0.305	7,75	0.192	4,9	2000	890
§ 112 042	415	$\frac{1}{2}$ (0.50)	12,70	0.305	7,75	0.192	4,9	3600	1600
§ 112 043	420	$\frac{1}{2}$ (0.50)	12,70	0.305	7,75	0.250	6,4	3600	1600
110 046	428	$\frac{1}{2}$ (0.50)	12,70	0.335	8,51	0.305	7,8	4000	1780
† 119 043	40	$\frac{1}{2}$ (0.50)	12,70	0.312	7,92	0.312	7,9	3700	1646
110 054	520	$\frac{5}{8}$ (0.625)	15,88	0.400	10,16	0.255	6,5	5000	2224
110 056	530	$\frac{5}{8}$ (0.625)	15,88	0.400	10,16	0.380	9,7	5000	2224
‡ 119 058	520	$\frac{5}{8}$ (0.625)	15,88	0.400	10,16	0.255	6,5	6800	3025
‡ 119 059	530	$\frac{5}{8}$ (0.625)	15,88	0.400	10,16	0.380	9,7	6800	3025
** 122 050	530	$\frac{5}{8}$ (0.625)	15,88	0.400	10,16	0.380	9,7	6600	2936
** 122 060	630	$\frac{3}{4}$ (0.75)	19,05	0.469	11,91	0.375	9,5	8500	3780
DUPLEX									
114 038	317R-2	$\frac{3}{8}$ (0.375)	9,53	0.250	6,35	0.225	5,7	3900	1735
TRIPLEX									
116 038	—	$\frac{3}{8}$ (0.375)	9,53	0.250	6,35	0.225	5,7	5600	2490

§ Moped chains

† American standard chain

‡ RENOLD Grand Prix chains

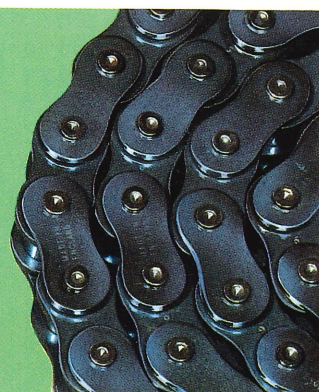
** Self lubricating 'O' ring chains

LIST OF RENOLD MOTORCYCLE REPLACEMENT CHAINS

Make and model	Drive	Renold chain no	Japanese chain no (gearing)	Pitches
AJS				
FB ENDURO	R	110 046	428	124
ARMSTRONG - CCM				
FOUR STROKE MOTO-CROSS 1975/1980	R	119 058	520	110/118
FOUR STROKE TRIALS 350 cc 1978	R	119 058	520	94
TWO STROKE MOTO-CROSS HIRO 1980	R	119 058	520	110/118
CM 35 - 250 cc	R	119 058	520	94
CM 36 - 250 cc	R	119 058	520	94
CM 36 - 350 cc	R	119 058	520	94
CME - 174 cc	R	119 058	520	114
CME - 250 cc	R	119 058	520	114
CME - 450 cc	R	119 058	520	114
CMT - 310 cc	R	119 058	520	94
CMX - 250 cc	R	119 058	520	114
CMX - 450 cc	R	119 058	520	114
BARRON				
ECONOMY	R	112 042	415	120
125 ROADSTER	R	110 046	428	98
BATAVUS				
STARGLO	R	111 046	415	96
STARGLO 2	R	111 046	415	96
PRONTO	R	111 046	415	96
MONDIAL	R	111 046	415	96
BENELLI				
500/4	R	119 059	530	102
750 SE1	R	119 059	530	100
BIMOTA				
SB3	R	122 060	630	90
KB1	R	122 060	630	86
HB2	R	122 060	630	90
BSA				
50 BEAVER	R	112 042	415	92
GT 50	R	112 042	415	92
50 BRIGAND	R	112 042	415	90
EASY RIDER ER1	R	112 042	415	90
EASY RIDER ER2	R	112 042	415	90
BULTACO				
UP TO 1974 SHERPA	R	110 046	428	120
175 cc SHERPA	R	110 054	520	102
250 cc SHERPA	R	119 058	520	98
350 cc SHERPA	R	119 058	520	98
PURSANG	R	119 058	520	112

Make and model	Drive	Renold chain no	Japanese chain no (gearing)	Pitches
CAGIVA				
SST 125	R	110 046	428	122
WMX 125	R	119 043	40	126
SST 250	R	110 056	530	110
MXR 250	R	119 059	530	136
RX 250	R	119 059	530	128
SST 350	R	119 059	530	110
CAN-AM				
125 MX6	R	110 054	520	108
250 MX6	R	110 054	530	112
400 MX6	R	119 059	530	112
175 QUALIFIER	R	110 054	520	106
250 QUALIFIER	R	110 054	520	108
350 QUALIFIER	R	119 058	520	108
400 QUALIFIER	R	119 059	530	108
UCATI				
500 PANTAH	R	119 059	530	94
600 PANTAH	R	119 059	530	94
DARMAH SPORT	R	119 059	530	106
DARMAH SUPERSPORT	R	119 059	530	106
900 SS	R	119 059	530	102
ENFIELD INDIA				
INDIA	P	114 038	317R-2	90
350 MADRAS	R	110 056	530	94
FANTIC				
ISSIMO DELUX	R	112 042	415	120
ISSIMO SPORT	R	112 042	415	120
ISSIMO CONVERT	R	112 042	415	120
GRAND TURISMO	R	112 042	415	120
CABALLERO 50	R	112 042	415	124
CABALLERO CASA	R	112 042	415	120
CABALLERO 125	R	110 046	428	128
TRIAL 50	R	112 042	415	112
TRIAL 100	R	110 046	428	118
TRIAL 125	R	110 046	428	116
TRIAL 175	R	110 046	428	116/118
TRIAL 200	R	110 046	428	116
ENDURO 50	R	110 046	428	110
ENDURO 125	R	110 054	520	136
NX 125	R	110 054	520	135

- P - PRIMARY CHAIN
- R - REAR CHAIN
- PC - PEDALLING CHAIN
- C - CAMSHAFT CHAIN
- S - STARTER CHAIN



Make and model	Drive	Renold chain no	Japanese chain no (gearing)	Pitches
GARELLI				
KATIA MK	R	111 046	415	84
KATIA 25	R	111 046	415	92
NOI N/MK	R	111 046	415	99
NOIMATIC	R	111 046	415	109
KL 50F	R	111 046	415	111
KLSV	R	111 046	415	113
EUREKA MATIC	R	111 046	415	105
TIGER CROSS	R	111 046	415	109
RECORD	R	111 046	415	93
BIMATIC	R	111 046	415	104
CONCORD	R	111 046	415	102
HARLEY DAVIDSON				
XLH 1000 SPORTSTER	R	119 059	530	106
XLS 1000	R	119 059	530	106
HESKETH				
V1000	C	110 038	317R	90 x 2
	S	114 038	317R-2	46
	R	119 059	530	96
HONDA				
C 50	R	112 043	420	98
MB 50S	R	112 043	420	108
MT 50S	R	112 043	420	108
C 70M, DX	R	112 043	420	98
C 70K, M, ZZ	R	112 043	420	96
C 90M	R	110 046	428	98
C 90K, ZZ	R	110 046	428	100
CB 100 N	R	110 046	428	100
H 100-A	R	110 046	428	108
XL 100S-B	R	110 046	428	118
XL 125S-B	R	110 046	428	118
CR 125 R	R	110 054	520	110
CB 125 TB	R	110 046	428	112
CG 125 K1	R	110 046	428	98
CG 125 B	R	110 046	428	98
XL 185S	R	110 046	428	120
CD 200 T	R	110 046	428	112
CM 200 T-A/B	R	110 046	428	112
XL 250S	R	110 054	520	102
CR 250 R	R	110 054	520	108
XR 250	R	110 054	520	102
CB 250 RS-A	R	110 054	520	98
CB 250 N	R	110 056	530	102
CB 250 DX	R	110 054	520	102
CM 250 T	R	110 054	520	104
CB 400 N	R	119 059	530	100
CB 400 A-T	R	119 059	530	100
CR 450 R	R	119 058	520	116
XR 500	R	119 058	520	100
XL 500S	R	119 058	520	96
FT 500 C	R	119 058	520	98
CBX 550 F2	R	119 059	530	100
CB 650 Z	R	119 059	530	102
CB 750 FB	R	119 059	530	102
CB 900 F2	R	119 059	530	106
CBX	R	122 060	630	86
CB 1100 RC	R	122 060	630	88
CBX 1000 A	R	119 059	530	102

Make and model	Drive	Renold chain no	Japanese chain no (gearing)	Pitches
HUSQVARNA				
250 CR	R	119 058	520	112
450 CR	R	119 058	520	112
250 WR	R	119 058	520	112
JAWA CZ				
FREEWHEELER	R	111 046	415	97
MUSTANG 50	R	111 046	415	111
CZ 250 SINGLE	R	110 046	428	129
CZ 250 TWIN	R	110 046	428	124
350	R	110 046	428	128
ITALJET				
PR6	R	112 043	420	95
J50	R	112 043	420	95
100 T	R	112 043	420	95
250 T	R	110 054	530	95
350 T	R	110 054	520	95
KAWASAKI				
AE 50	R	112 043	420	116
AR 50	R	112 043	420	116
AB 80	R	112 043	420	116
AR 80	R	112 043	420	116
KM 100	R	110 046	428	98
KC 100	R	110 046	428	104
KE 100 B	R	110 046	428	110
KH 100 G	R	110 046	428	106
KH 125 K	R	110 046	428	112
KE 125	R	110 046	428	118
KE 175	R	110 046	428	118
KDX 175	R	110 054	520	118
Z 200	R	110 054	520	98
KL 250	R	110 054	520	96
KDX 250	R	110 054	520	116
Z 250 A	R	110 056	530	98
Z 250 B	R	110 056	530	98
Z 250 C	R	110 056	530	98
Z 250 G	R	110 054	520	100
Z 400 J	R	119 059	530	100
Z 440 C	R	119 059	530	100
Z 550 H	R	119 059	530	98/100
GPZ 550	R	119 059	530	104
Z 650 C	R	119 059	530	102
Z 650 SR	R	119 059	530	102
Z 650 F	R	122 060	630	84
Z 750 R	R	122 060	630	84
KZ 750 TWIN	R	119 059	530	106
Z 1000 J	R	122 060	630	96
Z 1100 B	R	122 060	630	92
GPZ 750	R	122 060	630	88
Z1 900	R	122 060	630	92
Z 900	R	122 060	630	92
Z1R 1000	R	122 060	630	92
Z 1000 LTD	R	122 060	630	96
GPZ 1100	R	122 060	630	98
KRAMER				
LR 125	R	110 054	520	110
LR 250	R	119 058	520	110
LR 410	R	119 058	520	110

Make and model	Drive	Renold chain no	Japanese chain no (gearing)	Pitches
KTM				
125 cc MX	R	110 054	520	112
250 cc MX	R	110 056	520	114
400 cc MX	R	119 059	530	108
420 cc MX	R	119 059	530	116
125 cc GS	R	110 054	520	110
175 cc GS	R	110 054	520	110
250 cc GS	R	110 056	530	110
400 cc GS	R	119 059	530	110
420 cc GS	R	119 059	530	116

LAMBRETTA				
150 GP	P	114 038	317R-2	80
200 GP	P	114 038	317R-2	80

LAVERDA				
500 MONTJUC	R	119 059	530	102
1000 JOTA UP TO 1980	C	110 038	317R	102
	P	116 038	—	76
	R	119 059	530	106
1000 JOTA 1981-	C	110 038	317R	102
	P	116 038	—	76
	R	122 060	630	88
1200	C	110 038	317R	102
	P	116 038	—	76
	R	122 060	630	88
1200 TTS MIRAGE	C	110 038	317R	102
	P	116 038	—	76
	R	122 060	630	88
1200 FORMULA MIRAGE	C	110 038	317R	102
	P	116 038	—	76
	R	122 060	630	88

MALAGUTI				
MON AMI	R	112 042	415	90
MOTORIK	R	112 042	415	96
CAVALCONE	R	112 042	415	113

MAICO				
MEGA 2/E 250	R	119 058	520	114
MEGA 2/E 400	R	119 058	520	114
MEGA 2/E 490	R	119 058	520	114

MONTESA				
COTA 123	R	110 046	428	118
COTA 200	R	110 046	428	118
COTA 247	R	119 058	520	96
COTA 248	R	119 058	520	99
COTA 348	R	119 058	520	89
COTA 349	R	119 058	520	99
CAPPRA 250	R	119 058	520	114
CAPPRA 360	R	119 058	520	114
CAPPRA 414	R	119 058	520	112

MOTO-MORINI				
250	R	110 054	520	112
SPORT 3 1/2	R	119 059	530	96
STRADA 3 1/2	R	119 059	530	96
500 MAESTRO	R	119 059	530	106

Make and model	Drive	Renold chain no	Japanese chain no (gearing)	Pitches
MZ				
S50 B/1 SIMSON	R	112 043	420	112
S51 B/SIMSON	R	112 043	420	112
TS 125 ALPINE	R	110 046	428	120
TS 125 PATHFINDER	R	110 046	428	120
TS 150 EAGLE	R	110 046	428	120
TS 250 SUPAS	R	110 046	428	126
ETZ 250	R	110 046	428	130
ETZ 250 DE LUX	R	110 046	428	130

OSSA				
250	R	119 058	520	100
350	R	119 058	520	100

PUCH				
MAXI N QUICKLY	R	112 042	415	99
ZIPPY	R	112 042	415	106
MAXI SW	R	112 042	415	99
MAXI TWO-SPEED	R	112 042	415	97
ALPINE X50-3	R	112 042	415	108
MONZA 50	R	112 042	415	110
RANGER 50	R	112 042	415	110
X 40	R	112 042	415	110

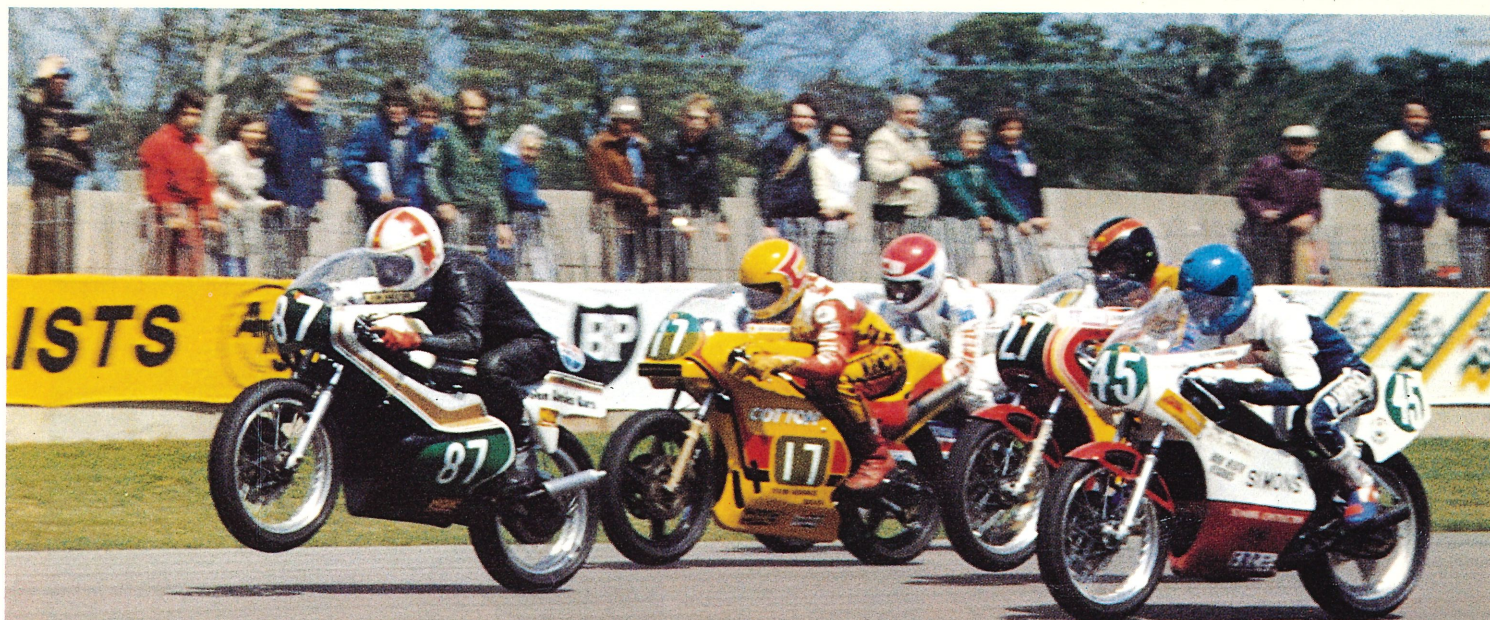
RIVARA				
LEOPARD 4V	R	112 042	415	116
LEOPARD 6V	R	112 042	415	116

SERVETA				
150 SPECIAL	P	114 038	317R-2	80
200 JET	P	114 038	317R-2	80

SUZUKI				
ZR 50 SLKX	R	112 043	420	112
ZR 50 SKX	R	112 043	420	112
TS 50 ER	R	112 043	420	114
FR 50	R	112 043	420	104
TS 50 ERKX	R	112 043	420	114
FR 80 Z	R	112 043	420	104
GP 100 C	R	110 046	428	120
GP 100 Z	R	110 046	428	122
TS 100 ERX	R	110 046	428	114
GP 125 N	R	110 046	428	118
GP 125 X	R	110 046	428	122
GS 125 Z	R	110 046	428	118
PE 175	R	110 054	520	106
TS 185 ERX	R	110 054	520	96/120
SB 200 X	R	110 054	520	98
GT 200 EN	R	110 054	520	98
GT 200 X 3	R	110 054	520	98
GSX 250 E2	R	110 054	520	104
TS 250 ERV	R	110 056	530	104
GT 250 X 7	R	110 054	520	100
DR 400	R	119 058	520	108
GSX 400 F	R	119 059	530	104
GSX 400 T	R	119 059	530	104
GSX 400 E	R	119 059	530	104
SP 400 T	R	119 058	520	100
GN 400 TT	R	119 058	520	102
GS 550 EX	R	119 059	530	110

Make and model	Drive	Renold chain no	Japanese chain no (gearing)	Pitches
SUZUKI continued				
GS 550 LT	R	119 059	530	110
GSX 550 ESD	R	119 059	530	112
GSX 550 KATANA	R	119 059	530	112
GS 1000 ET	R	122 060	630	96
GSX 1000	R	122 060	630	96
GSX 750 ESD	R	119 059	530	112
GSX 1100 EX	R	122 060	630	96
GSX 1100 ESD	R	122 060	630	98
RM 50	R	122 043	420	92
RM 80	R	110 046	428	110
RM 100	R	110 046	428	132
RM 125	R	110 054	520	112
RM 250	R	119 058	520	114
RM 465	R	119 058	520	112
RG 500	R	119 059	530	110
SWM				
RS 125 GS	R	110 054	520	104
RS 175 GS	R	110 054	520	104
RS 250 GS (UP TO 1980)	R	110 054	520	109
RS 250 GS 1981-	R	110 056	530	109
RS 400 MC	R	119 059	530	111
RS 125 MC	R	110 054	520	104
RS 250 MS (UP TO 1980)	R	110 054	520	109
RS 250 MC 1981-	R	110 056	530	109
125 TLM	R	110 054	520	101
240 TLM	R	110 054	520	98
320 TLM	R	119 058	520	97
TRIUMPH				
T65 THUNDERBIRD	P	116 038	-	84
	R	119 059	530	106
TR7RV	P	116 038	-	84
	R	119 059	530	108
TR7T TIGER TRIAL	P	116 038	-	84
	R	119 059	530	108
T140E BONNEVILLE	P	116 038	-	84
	R	119 059	530	106
T140E ELECTRO BONNEVILLE	P	116 038	-	84
	R	119 059	530	106
T140E ELECTRO EXECUTIVE	P	116 038	-	84
	R	119 059	530	108
BONNEVILLE AV	P	116 038	-	84
	R	119 059	530	106
TSS	P	116 038	-	84
	R	119 059	530	107

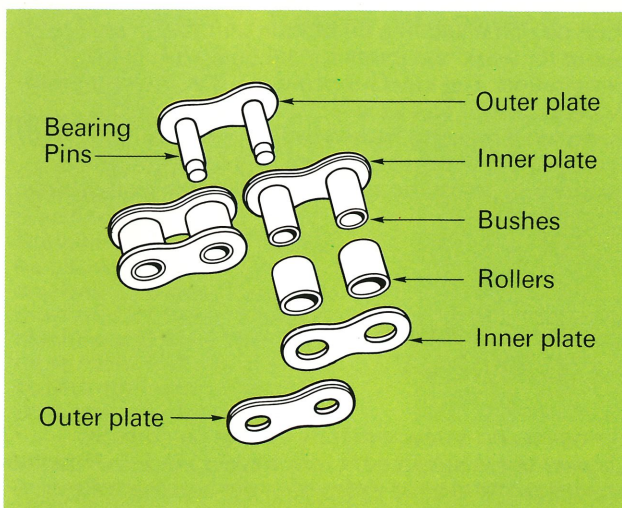
Make and model	Drive	Renold chain no	Japanese chain no (gearing)	Pitches
VESPA				
BRAVO	R	111 044	410	76
C1AO	R	111 044	410	76
YAMAHA				
FS1 MDX	R	112 043	420	96
TY 50	R	112 043	420	104
LC 50M	R	112 043	420	N/A
RD 50M	R	112 043	420	104
DT 50M	R	112 043	420	104
RD 50MX	R	112 043	420	104
DT 50MX	R	112 043	420	104
DT 80	R	112 043	420	104
V 80	R	112 043	420	100
CV 80	R	112 043	420	100
RD 80 LC	R	110 046	428	N/A
RS 100	R	110 046	428	110
DT 100	R	110 046	428	110
YB 100	R	110 046	428	100
RS 125	R	110 046	428	110
DT 125MX	R	110 046	428	118
SR 125	R	110 046	428	120
DT 125 LC	R	110 046	428	118
XT 125	R	110 046	428	118
RD 125 LC	R	110 046	428	118
DT 175	R	110 046	428	118
RD 200	R	110 046	428	112
RS 200	R	110 046	428	112
XS 250	R	119 059	530	100
XS 250 SPECIAL	R	119 059	530	100
XT 250	R	110 054	520	98
SR 250	R	110 054	520	102
RD 250	R	119 059	530	96
RD 350	R	119 059	530	92
RD 250 LC	R	119 059	530	96
RD 350 LC	R	119 059	530	96
RD 400	R	119 059	530	96
XS 400 SPECIAL	R	119 059	530	98
SR 500	R	119 059	530	102
XJ 550	R	119 059	530	104
XS 650 SPECIAL	R	119 059	530	104
TZ 125	R	110 044	-	N/A
TZ 250	R	119 058	520	N/A
TZ 350	R	119 058	520	N/A
TZ 500	R	119 059	530	N/A
TZ 750	R	119 059	530	N/A



MOTORCYCLE CHAIN CARE

A drive chain is built up of alternate inner and outer links, the bearing pins of the outer links passing through the bushes of the inner links. It is a precision product made to close dimensional tolerances using high grade steels. Chain pitch is the distance between bearing pin centres. A chain is used on most motorcycles to drive the rear wheel, and in some instances is found on the primary drive also. Long, trouble free life and good performance depend on the chains and their sprockets being maintained in good condition. These notes show how to do this with simple tools and equipment; it is also important to follow any specific instructions given in the bike handbook.

THE THREE MOST IMPORTANT FACTORS TO ENSURE GOOD SERVICE FROM A CHAIN ARE CORRECT ADJUSTMENT, CORRECT LUBRICATION AND CORRECT ALIGNMENT.



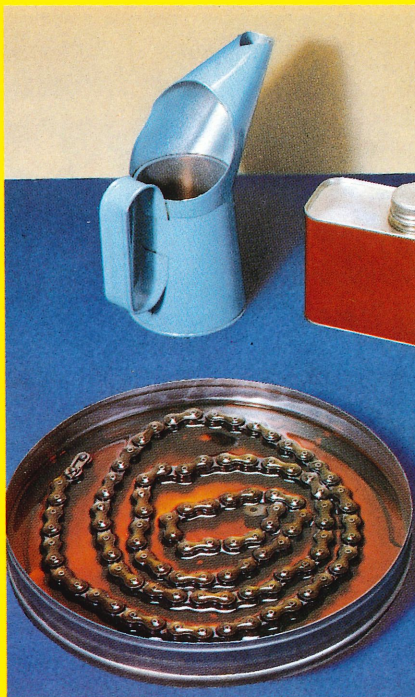
ROUTINE MAINTENANCE

Adjustment Check

Adjustment is correct when the total up-and-down movement of the slack chain strand is $\frac{3}{4}$ inch midway between sprockets. On many bikes the rear suspension design puts the chain at its tightest ONLY when the gearbox sprocket, swinging arm pivot and rear wheel axle are all in a straight line. This is usually when there is a rider's weight on the machine. If necessary ask an assistant to help weight the bike whilst you check chain adjustment. Remember that overtensioning not only wears the chain but will also damage sprockets. Adjustment is carried out by moving the rear wheel taking care to adjust the screws equally each side to keep the wheel truly in line with the bike. Don't forget to tighten the wheel spindle nuts after adjusting and to re-check the chain afterwards.



A new chain takes a little time to bed down and more frequent adjustment checks will be needed during this period.



MAJOR SERVICE MAINTENANCE

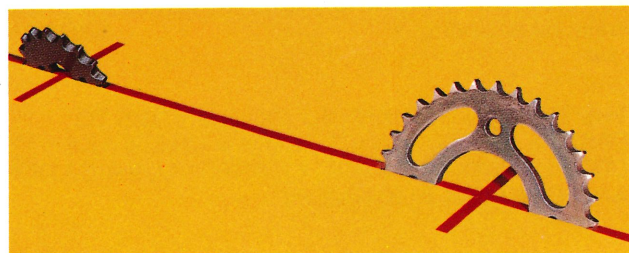
(All chains except self lubricating 530 and 630 chains)

Periodically the rear chain should be removed, washed thoroughly in paraffin and hung up to drain. It must then be immersed in a tin of lubricant and swished about to 'work' the joints for adequate lubricant penetration. The ideal lubricant is a low melting point, water repellent grease which sticks to the chain surfaces. It must be heated just enough to liquefy but not overheat the grease. There is at least one such proprietary grease on the market with full instructions

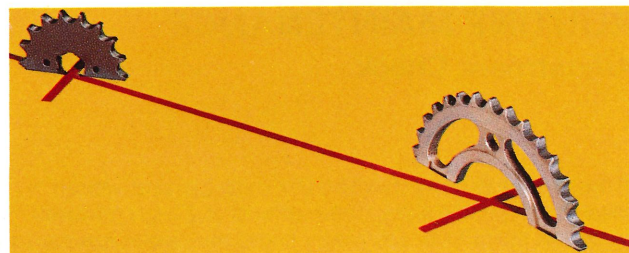
for use. Otherwise, a thick oil — SAE 90 as used in car differentials, or heavier, is recommended. Drain and wipe surplus oil off the chain before refitting. Clean the sprockets before refitting the chain. Chain removal and re-threading is made easier if a spare or old chain is kept. Connect this to the machine chain and run on to the sprockets as the latter is run off. Reverse the process when refitting.

CHAIN DRIVE ALIGNMENT

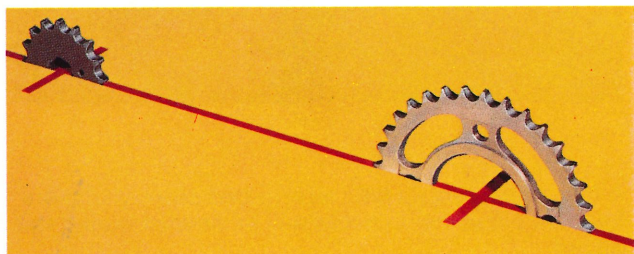
Sprockets on a new machine should be correctly aligned but misalignment may develop in use. Possible causes are slackened nuts, incorrect assembly after repairs or servicing, or minor spills. It is worth checking alignment at major services when removal of guards, etc., makes the job easier. A straight edge across the sides of the teeth of two sprockets should touch at four points at all positions of sprocket rotation. In this condition the insides of the chain plates should show a slight polish equally on both sides. If one side shows considerably more wear than the other, suspect misalignment. If the inside of the plates on both sides of the chain show really heavy wear and the two sprockets show a ring of wear on one side of the teeth, particularly after a short mileage, it is probable that one sprocket is further out on its shaft than the other.



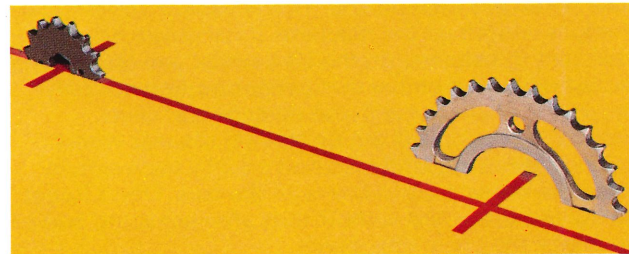
SPROCKETS OUT OF LINE



SPINDLES OUT OF PARALLEL



PERFECT ALIGNMENT



SPROCKETS OUT OF ALIGNMENT

LUBRICATION

Lubricant **MUST** penetrate to the inner bearing surfaces of the chain to reduce friction and wear. Oil on the outside of an exposed chain only collects road dirt which forms an abrasive paste and may actually increase sprocket wear. You can tell when a chain is starved of lubricant by a reddish-brown deposit which forms at the chain joints.

Rear Chain (all except 530 and 630)

Manual lubrication of the rear chain must never be neglected if reasonable chain life is to be achieved. Lubricant must be applied to the chain whenever it appears dry, the best method being to use a RENOLD

AEROSOL directing the spray to the link edges on the inside run of the chain. The special Renold formulation assists penetration, resists any tendency to drain or drip from a stationary chain and 'winds in' to the clearances between pins, bushes and rollers. If an aerosol is not available, an oilcan can be used in the same way. A few machines have a metered oil feed to the rear chain as standard, usually from the crankcase oil supply. The feed is controllable from an adjustable valve. Once set correctly to provide sufficient oil without excess getting on to other parts of the machine, further lubrication is only necessary if exceptional conditions cause the chain to become dry.

Rear Chain (530 and 630 self lubricating chains)

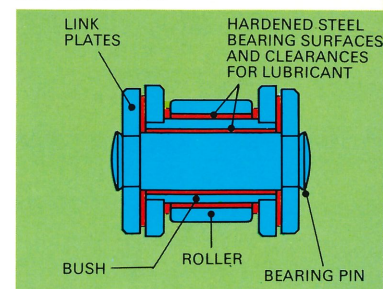
These chains have an 'O' ring seal between the bush and outer plate to hold in the grease lubricant injected during manufacture. This primary lubricant virtually eliminates the need for regular periodic lubrication. In addition to primary grease, the 630 chain also has an oil impregnated bush.

Even though 'O' ring chains are designed to be maintenance free a minimum chain wash in paraffin is recommended for the 530 chain every 400 miles (650 kilometres). This should prevent the build up of excessive road dirt between link plates and roller/bush surfaces. After washing, re-lubricate again, generously, with motor oil, such as SAE 80-90. The 630 chain may lose impregnating oil due to excessive dirt or wet conditions. High temperatures due to prolonged high speeds and loads may also dry or gum the chain. In such cases brush the chain with SAE 40 or 50 oil, preferably not detergent or multigrade.

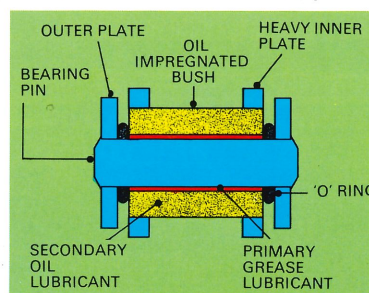
Primary chain

Primary chains run in an oilbath and only require oil changes according to the machine handbook. However, the oil level should be checked regularly and any leaks causing it to fall must be eliminated. A clean machine will show leaks up more easily. Keep chaincase screws tight and check the condition of gaskets and seals.

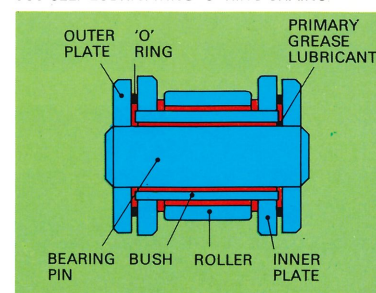
ALL CHAINS OTHER THAN 530 AND 630 SELF LUBRICATING.



630 SELF LUBRICATING 'O' RING CHAINS



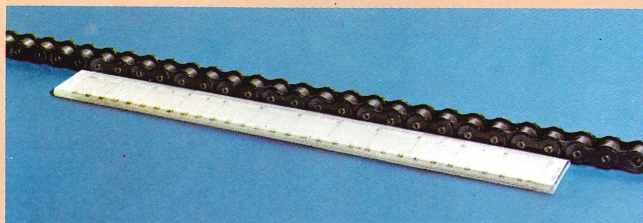
530 SELF LUBRICATING 'O' RING CHAINS



MEASURING CHAIN WEAR

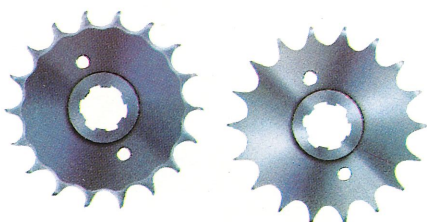
Chains don't stretch but, like tyres, brakes and other moving parts, they wear. Wear takes place between the pin and bush at every link and these small amounts added up over the whole chain make a measurable difference on the total length, giving the impression of stretch. If the length of a worn chain is more than 2% greater than when new ($\frac{1}{4}$ inch in the foot), it is worn out and needs replacing.

Before checking for wear, clean the chain in paraffin and wipe it dry. Hook one end of the chain over a nail in the bench, pull it tight and measure a convenient length from pin centre to pin centre using a steel rule.



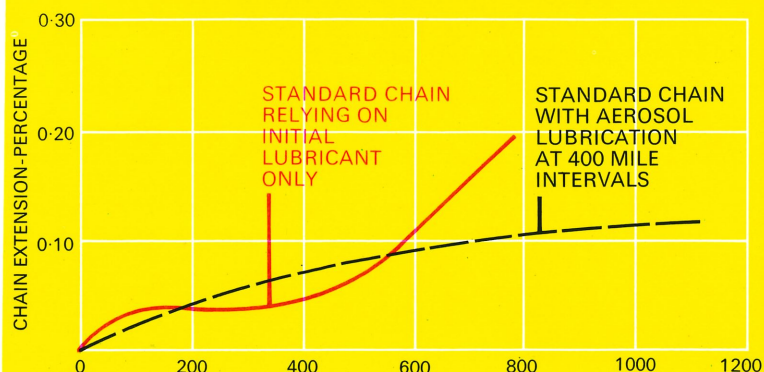
Chain pitch inch	Number of pins to measure over	Chain measurement	
		New inch	2% worn inch
0.375	24	9.0	9.188
0.500	23	11.5	11.750
0.625	16	10.0	10.219
0.750	16	12.0	12.250

SPROCKETS



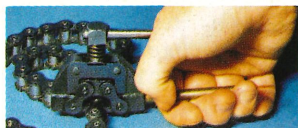
Worn sprockets have a 'hooked' appearance as shown and must be replaced. Putting a new chain on a badly worn sprocket will cause noise and rapid chain wear. Replacement sprockets should be checked for accuracy. The sprocket bore must be truly central with the teeth, otherwise the chain will slacken and tighten as the sprocket is rotated. A pointer secured close to the tip of the teeth indicates eccentricity. Check, however, that apparent eccentricity is not due to a bent shaft.

ACTUAL TEST RESULTS SHOW THE IMPORTANCE OF REGULAR LUBRICATION IN PREVENTING WEAR



SPECIAL TOOLS

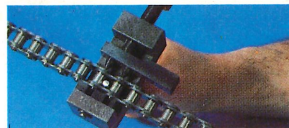
These make chain repairs much simpler.



LINK EXTRACTOR
Grip chain roller between the jaws of the tool. Turn extractor screw clockwise until the tip engages the chain pin. Continue turning just sufficiently to force the pin from the plate. Repeat operation on the pin at the opposite end of the plate.
NEVER RE-USE A DETACHED LINK.



SPRING CLIP PLIERS
To detach a spring clip, press on the open end with the flat jaw of the pliers with the grooved jaw engaging the bearing pin end. To fit a spring clip, place the flat jaw against the closed end of the clip.



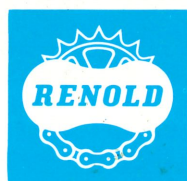
ASSEMBLY AND BREAKING TOOL
To remove outer link:- Place chain in tool with pointed pins facing bearing pin ends. Turn screw to force out pins. To assemble chain:- Place connecting link in chain and position on tool. Place loose plate in block and turning screw, force plate onto pins.
NEVER RE-USE A DETACHED LINK.

CONNECTING UP THE CHAIN

A chain is only as strong as its weakest link and the spring clip link, although very convenient, is the weakest link because of its loose fitted side plate. Ideally, all chains should be connected by a riveting link and this is essential on competition and racing machines of any engine capacity and all production bikes of 350 cc and over. On other bikes, a spring clip link will give reasonable service but we suggest that it is renewed every 5000 miles to be sure.
ALWAYS FIT THE SPRING CLIP WITH THE CLOSED END FACING THE DIRECTION IN WHICH THE CHAIN RUNS, otherwise it can be knocked off if the chain accidentally brushes against some part of the machine such as the chain guard.

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