



BSA

SPEED & SPORTS PARTS



from **BSA Incorporated Service Dept.**

Speed Bulletin #5

March 8, 1963

C-15S MODEL EXTERNAL GEAR RATIOS

A wide selection of gear ratio combinations are required for the various types of competition riding and they can be obtained by assembling different size sprockets on the C15S Competition Motorcycles.

This Chart shows the engine, rear wheel and gearbox sprockets that are available and shows the selection of External Gear Ratios that it is possible to obtain according to the number of teeth on the sprockets.

EXTERNAL GEAR RATIO CHART

TOP SPEED GEAR RATIOS ARE SHOWN WITH 23T ENGINE SPROCKET AND 52T CLUTCH SPROCKET

REAR WHEEL SPROCKETS		52-T	56-T	60-T	68-T
GEARBOX SPROCKET	15-T	7.83	8.44	9.04	10.24
GEARBOX SPROCKET	16-T	7.34	7.91	8.47	9.60
GEARBOX SPROCKET	17-T	6.91	7.44	7.98	9.04
GEARBOX SPROCKET	18-T	6.53	7.03	7.53	8.54
GEARBOX SPROCKET	19-T	6.18	6.66	7.14	8.09
GEARBOX SPROCKET	20-T	5.87	6.33	6.78	7.68

TOP SPEED GEAR RATIOS ARE SHOWN WITH 18T ENGINE SPROCKET AND 52T CLUTCH SPROCKET

REAR WHEEL SPROCKETS		52-T	56-T	60-T	68-T
GEARBOX SPROCKET	15-T	10.01	10.78	11.55	13.09
GEARBOX SPROCKET	16-T	9.38	10.11	10.83	12.27
GEARBOX SPROCKET	17-T	8.83	9.57	10.19	11.55
GEARBOX SPROCKET	18-T	8.34	8.98	9.63	10.91
GEARBOX SPROCKET	19-T	7.90	8.51	9.12	10.33
GEARBOX SPROCKET	20-T	7.51	8.08	8.66	9.82

HOW TO FIGURE TOP SPEED EXTERNAL GEAR RATIOS:

MULTIPLY: THE NUMBER OF TEETH ON THE CLUTCH SPROCKET BY THE NUMBER OF TEETH ON THE REAR WHEEL SPROCKET -- THEN MULTIPLY: THE NUMBER OF TEETH ON THE ENGINE SPROCKET BY THE NUMBER OF TEETH ON THE GEARBOX SPROCKET. DIVIDE THE LATTER PRODUCT BY THE FORMER PRODUCT & THE RESULT IS THE EXTERNAL GEAR RATIO IN TOP SPEED.

Example: $\frac{52 \times 56}{23 \times 15} = 8.44$ to 1 in Top Speed





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The internal gear ratio chart shown below will make it possible to figure the gear ratios in 3rd, 2nd and bottom speeds on the three types of gearbox internal gear ratios.

C-15 INTERNAL GEAR RATIO CHART

<u>INTERNAL GEAR RATIOS:</u>	<u>TOP</u>	<u>3RD</u>	<u>2ND</u>	<u>BOTTOM</u>
C-15 Model - STD.	1 to 1	1.28 to 1	1.76 to 1	2.67 to 1
C-15S " - SCR.	1 to 1	1.20 to 1	1.66 to 1	2.11 to 1
C-15T " - TRI.	1 to 1	1.63 to 1	2.45 to 1	3.16 to 1

HOW TO FIGURE 3RD - 2ND AND BOTTOM EXTERNAL GEAR RATIOS

MULTIPLY: THE KNOWN TOP SPEED GEAR RATIO BY THE INTERNAL GEAR RATIO SHOWN ON THE CHART ABOVE TO OBTAIN 3RD - 2ND - AND BOTTOM SPEEDS.

EXAMPLE: For 3rd speed with standard gearbox

$$8.44 \times 1.28 = 10.80 \text{ to } 1 \text{ in } 3\text{rd speed}$$

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Speed Bulletin #3

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SPROCKETS FOR C15-S COMPETITION MOTORCYCLES

<u>PART NO.</u>	<u>GEAR BOX SPROCKETS</u>	<u>LIST PRICE</u>
40-3072	15-T - Gear Box Sprocket	\$5.04 A
40-3052	16-T - Gear Box Sprocket	5.40 A
40-3049	17-T - Gear Box Sprocket	5.76 A
40-3122	18-T - Gear Box Sprocket	6.48 A
40-3123	19-T - Gear Box Sprocket	6.84 A
40-3124	20-T - Gear Box Sprocket	6.84 A

BOLT ON REAR WHEEL SPROCKETS

40-6051	52-T - Rear Wheel Sprocket	9.90 A
40-6052	56-T - Rear Wheel Sprocket	10.80 A
40-6057	60-T - Rear Wheel Sprocket	11.70 A
B637	68-T - Rear Wheel Sprocket (Alloy)	14.60 B

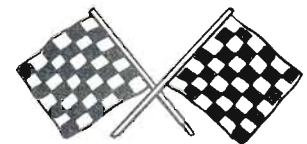
ENGINE SPROCKETS

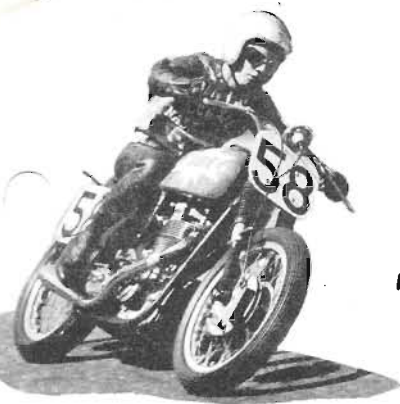
40-582	18-T - Engine Sprocket	7.20 A
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ALL PRICES SHOWN ARE SUBJECT TO CHANGE WITHOUT NOTICE.





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PARTS FOR THE THREE TYPES OF C-15 MODEL GEARBOXES

There are three distinct ranges of internal gear ratios for the C-15 Standard - C-15 Scrambler and C-15 Trials Models and are available for three specific types of riding.

Standard Ratio for Road Racing - Scrambles Ratio for Scrambles Riding - Trials Ratio for Trials and Enduro Riding.

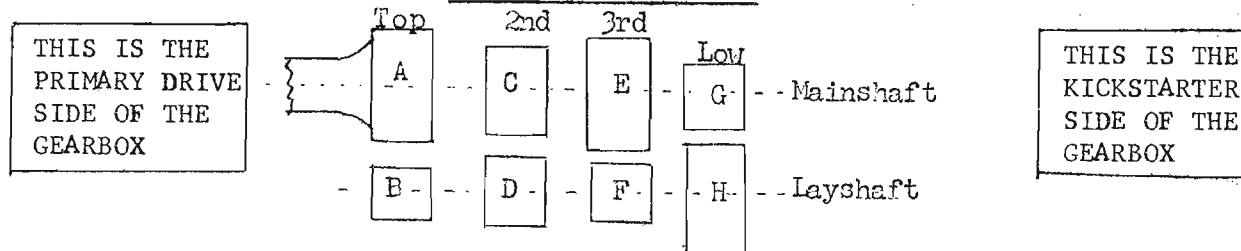
This first Chart shows the part numbers for the gears in each type of gearbox, the number of teeth on each gear, and the location of each gear in the gearbox according to the "letters" shown on the "Gear Location Chart."

GEAR PART NUMBER CHART

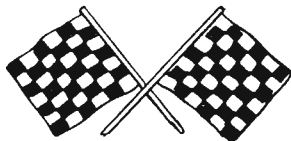
LOCATION	A	B	C	D	E	F	G	H
STD. G/BOX	40-3017 (30)	40-3013 (20)	40-3011 (23)	40-3010 (27)	40-3010 (27)	40-3011 (23)	40-3012 (18)	40-3014 (32)
SCR. G/BOX	41-3029 (26)	41-3027 (17)	40-3130 (24)	40-3132 (26)	40-3131 (28)	40-3134 (22)	40-3151 (21)	40-3152 (29)
TRI. G/BOX	40-3106 (31)	40-3109 (19)	40-3101 (20)	40-3100 (30)	40-3103 (25)	40-3102 (25)	40-3108 (17)	40-3104 (33)

The "Gear Location Chart" shows where the gears are in the gearbox according to the "letters" on the Chart above.

GEAR LOCATION CHART



continued



This Chart shows the part numbers for the mainshafts, layshafts, shifter forks, and kickstarter springs for each type of gearbox.

<u>TYPE</u>	<u>MAINSHAFT</u>	<u>LAYSHAFT</u>	<u>SHIFTFORK</u>	<u>SHIFTFORK</u>	<u>SPRING</u>
STD.	40-3004	40-3009	40-3033	40-3033	40-3028
SCR.	40-3004	40-3009	40-3033	40-3033	40-3118
TRI.	40-3004	40-3009	40-3113	40-3112	40-3118

The gearbox in any type of C-15 Model can be converted by assembling the gears listed for the specific gear ratio desired.

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