INTERNAL GEARBOX RATIOS FOR A AND B GROUP S/A MODELS

PART NUMBERS OF GEAR PINIONS & SHAFTS

NUMBER OF TEETH ON GEAR PINIONS.

DESCRIPTION	GEARBOX MARKING	A	B	C	D	E	F	G	H	MAIN SHAFT	LAY SHAFT	SPEEDO GEARS	
												DRIVING	DRIVEN
EXTRA CLOSE ROAD RACING	RR.	67-3184 [25]	42-3022 [18]	67-3361 [22]	42-3026 [21]	67-3187 [24]	67-3198 [19]	67-3221 [18]	67-3216 [25]	67-3330	42-3019	42-3033	42-3032
EXTRA CLOSE ROAD RACING	RR.T	67-3184 [25]	42-3086 [18]	67-3361 [22]	42-3026 [21]	67-3187 [24]	67-3198 [19]	67-3221 [18]	42-3087 [25]	67-3330	42-3094	42-3033	42-3032
EXTRA CLOSE ROAD RACING	RR.T2	42-3133 [25]	42-3086 [18]	67-3361 [22]	42-3026 [21]	42-3136 [24]	67-3198 [19]	42-3137 [19]	42-3138 [24]	42-3131	42-3094	42-3033	42-3032
DAYTONA	DAY.	67-3207 [26]	42-3020 [17]	67-3361 [22]	42-3026 [21]	67-3223 [25]	67-3226 [18]	67-3221 [18]	67-3216 [25]	67-3330	42-3019	67-3088	67-3175
DAYTONA	DAY.T	67-3207 [26]	42-3081 [17]	67-3361 [22]	42-3026 [21]	67-3223 [25]	67-3226 [18	67-3221 [18]	42-3087 [25]	67-3330	42-3094	67-3088	67-3175
SCRAMBLES	SC.	67-3311 [25]	42-3022 [18]	67-3302 [19]	42-3024 [24]	67-3305 [22]	67-3212 [21]	67-3191 [16]	42-3097 [27]	67-3315	42-3019	42-3033	42-3032
SCRAMBLES	SC.T	42-3088 [25]	42-3086 [18]	67-3302 [19]	42-3024 [24]	67-3305 [22]	67-3212 [21]	67-3191 [16]	42-3210 [27]	67-3315	42-3094	42-3033	42-3032
A10 SPITFIRE 1957 ONLY	SC.T2	42-3157 [25]	42-3086 [18]	67-3302 [19]	42-3024 [24]	67-3305 [22]	67-3212 [21]	67-3191 [16]	42-3210 [27]	42-3156	42-3094	42-3033	42-3032
STANDARD	STD.	67-3192 [26]	42-3020 [17]	67-3201 [20]	42-3023 [23]	67-3202 [24]	67-3198 [19]	67-3191 [16]	42-3097 [27]	67-3330	42-3019	67-3088	67-3175
STANDARD	STD.T	42-3076 [26]	42-3081 [17]	67-3201 [20]	42-3023 [23]	67-3202 [24]	67-3198 [19]	67-3191 [16]	42-3210 [27]	67-3330	42-3094	67-3088	67-3175
TRIALS	TRI.	67-3309 [26]	42-3020 [17]	67-3301 [17]	42-3025 [26]	67-3210 [22]	67-3212 [21]	67-3313 [14]	67-3213 [29]	67-3313	42-3019	67-3088	67-3175
TRIALS	TRI.T	42-3091 [26]	42-3081 [17]	67-3301 [17]	42-3025 [26]	67-3210 [22]	67-3212 [21]	67-3313 [14]	42-3093 [29]	67-3313	42-3094	67-3088	67-3175
B34 GOLD STAR CLUBMAN 1962	ARRT.	42-3088 [25]	42-3086 [18]	67-3302 [19]	42-3024 [24]	67-3210 [22]	67-3212 [21]	67-3313 [14]	42-3093 [29]	67-3313	42-3094	42-3033	42-3032
B34 GOLD STAR CATALINA 1962	ASC.T	42-3088 [25]	42-3086 [18]	67-3302 [19]	42-3024 [24]	67-3210 [22]	67-3212 [21]	67-3313 [14]	42-3093 [29]	67-3313	42-3094	42-3033	42-3032
A10 SUPER ROCKET 1962	STD.2	42-3088 [25]	42-3022 [18]	67-3302 [19]	42-3024 [24]	67-3210 [22]	67-3212 [21]	67-3313 [14]	67-3213 [29]	67-3313	42-3019	42-3033	42-3032
650cc G/STAR TWIN 1963	ARRT.	42-3088 [25]	42-3086 [18]	67-3302 [19]	42-3024 [24]	67-3210 [22]	67-3212 [21]	67-3313 [14]	42-3093 [29]	67-3313	42-3094	42-3033	42-3032
650cc G/STAR SPITFIRE 1963	ASC.	42-3088 [25]	42-3022 [18]	67-3302 [19]	42-3024 [24]	67-3210 [22]	67-3212 [21]	67-3313 [14]	67-3213 [29]	67-3313	42-3019	42-3033	42-3032

***NOTE*—T. IN MARKING INDICATES NEEDLE ROLLERS ON LAYSHAFT.**

T.2 IN MARKING INDICATES NEEDLE ROLLERS ON LAYSHAFT AND MAINSHAFT.

THE FORWARD FOOTCHANGE CAM PLATE IS PART No. 67-3332.

THE REVERSE FOOTCHANGE CAM PLATE IS PART No. 42-3011.

TO FIND THE GEAR RATIOS OF A MACHINE CALCULATE THE TOP GEAR AS FOLLOWS :

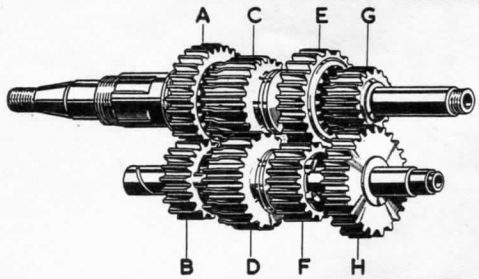
DIVIDE THE NUMBER OF TEETH ON THE CLUTCH SPROCKET BY THE NUMBER OF TEETH ON THE ENGINE SPROCKET AND MULTIPLY BY THE NUMBER OF TEETH ON THE REAR WHEEL SPROCKET DIVIDED BY THE NUMBER OF TEETH ON THE GEARBOX SPROCKET AS EXAMPLE :

$$\frac{\text{CLUTCH SPROCKET (43)}}{\text{ENGINE SPROCKET (17)}} \times \frac{\text{R/W SPROCKET (42)}}{\text{G/B SPROCKET /19)}} = \frac{1806}{323} = 5.591$$

TO FIND THE INTERMEDIATE GEAR RATIO MULTIPLY THE OVERALL TOP GEAR BY THE INTERNAL GEAR RATIO CONCERNED, AS EXAMPLE :

TOP GEAR 5.591 OR 5.6 X BOTTOM GEAR INTERNAL RATIO 2.58=14.4 BOTTOM GEAR OVERALL RATIO.

$$\text{GEARBOX INTERNAL RATIO} = \frac{\text{LAYSHAFT GEAR}}{\text{MAINSHAFT GEAR}} \times \frac{\text{PINION SLEEVE}}{\text{LAYSHAFT FIXED GEAR}}$$



GEARBOX INTERNAL RATIOS

MARKING	TOP	THIRD	SECOND	BOTTOM
RR. or RR.T	1	1.099	1.326	1.929
RR.T2	1	1.099	1.326	1.754
DAY. or DAY.T	1	1.101	1.460	2.124
SC. or SC.T	1	1.325	1.754	2.343
STD. or STD.T	1	1.210	1.758	2.580
TRI. or TRI.T	1	1.459	2.339	3.167
ARRT. , ASC ASC.T or STD.2	1	1.325	1.754	2.877

A DEALER CONVENIENCE CHART FROM BSA Incorporated 639 PASSAIC AVENUE NUTLEY 10, NEW JERSEY JULY 1963