

BSA SERVICE SHEET No. 216

October, 1956
Revised April, 1960

A Group (Swinging Arm Frame)

USEFUL DATA

Model	A7	A7 Shooting Star	A10	A10 Road Rocket and Super Rocket
Engine Stroke	72.6 mm.	72.6 mm.	84 mm.	84 mm.
Engine Bore	66 mm.	66 mm.	70 mm.	70 mm.
Engine Capacity	497 mm.	497 mm.	646 mm.	646 mm.
Petrol Tank Capacity	2 or 4 galls.	2 or 4 galls.	2 or 4 galls.	2 or 4 galls.
Oil Tank Capacity	5½ pints	5½ pints	5½ pints	5½ pints
Gearbox Capacity	1 pint	1 pint	1 pint	1 pint
Gearbox Capacity (after 1956)				
fluid ozs. and c.c.	14-(400)	14-(400)	14-(400)	14-(400)
Front Fork Capacity (each leg)	7½ fl. ozs. (213 c.c.)	7½ fl. ozs. (213 c.c.)	7½ fl. ozs. (213 c.c.)	7½ fl. ozs. (213 c.c.)
Chaincase Capacity	8 fl. ozs. (225 c.c.)	8 fl. ozs. (225 c.c.)	8 fl. ozs. (225 c.c.)	8 fl. ozs. (225 c.c.)
	Note:—¼ pint = 5 fluid ozs.	8 tablespoons.		
Tappet Clearance (engine cold)	(See note below)			
Inlet .. .. .	.010 in.	.008 in.	.010 in.	.008 in.
Exhaust .. .. .	.016 in.	.012 in.	.016 in.	.008 in.
Piston Ring Gap (compression) .. .. .	.013 in.	.013 in.	.013 in.	.013 in.
Piston Ring Gap (oil control) .. .. .	.011 in.	.011 in.	.011 in.	.011 in.
Piston Ring Side Clearance .. .. .	.002 in.	.002 in.	.002 in.	.002 in.
Piston Clearance (split skirt) .. .. .	.0011/.0031 in.	.0011/.0031 in.	.0011/.0031 in.	.0011/.0031 in.
Piston Clearance (solid skirt) .. .. .	.002/.004 in.	.0035/.005 in.	.0035/.005 in.	.004/.0055 in.
Ignition Advance before T.D.C.	⅝ in.	¾ in.	⅞ in.	¾ in.
Ignition Advance (For machines with frame No. prefixed 'G.A.')				
	⅞ in.	¾ in.	⅞ in.	¾ in.
Contact Breaker Gap .. .. .	.012 in.	.012 in.	.012 in.	.012 in.
Compression Ratio	6.6—1	7.25—1	6.5—1	8.0—1
Compression Ratio (after 1957)	6.6—1	8.0—1	7.25—1	8.26—1 S/R.
Compression Ratio (after 1959)	7.25—1	8.0—1	7.25—1	8.26—1 S/R.
Sparking Plug (Champion)	L.7	N.3	L.7	N.3
Sparking Plug Gap .. .. .	.018/.020 in.	.018/.020 in.	.018/.020 in.	.018/.020 in.
Valve Timing—Inlet				
Opens before T.D.C.	30°	42°	30°	42°
Closes after B.D.C.	70°	62°	70°	62°
Valve Timing—Exhaust				
Opens before B.D.C.	65°	67°	65°	67°
Closes after T.D.C.	25°	37°	25°	37°

Note:—After Engine Nos. CA7—5232 and DA10—1647, the valve timing for the A7 and A10 is the same as the Shooting Star and Rocket machines. Tappet clearances for quiet running should be .008 in. inlet; .010 in. exhaust, but for maximum power .010 in. inlet and .016 in. exhaust.

B.S.A. SERVICE SHEET No. 216 (cont'd)

Model	A7		A7 Shooting Star		A10		A10 Road Rocket and Super Rocket	
	Std.	Mono.	Std.	Mono.	Std.	Mono.	R/R 10TT9	S/R Mono.
Carburetter (up to 1959)								
Bore	$\frac{3}{8}$	$\frac{3}{8}$	1	1	$1\frac{1}{8}$	$1\frac{1}{8}$	$1\frac{1}{8}$	$1\frac{1}{8}$
Main Jet	140	210	160	270	170	240	360	250
Throttle Valve	6/4	376/3 $\frac{1}{2}$	6/4	376/3 $\frac{1}{2}$	6/4	376/3 $\frac{1}{2}$	6	376/3 $\frac{1}{2}$
Needle Position	4	2	3	3	2	3	4	3
Needle Jet	.107	.1065	.107	.1065	.107	.1065	9	.1065
Carburetter (1960)								
Bore	—	$\frac{3}{8}$	—	1	—	$1\frac{1}{8}$	$1\frac{1}{8}$	$1\frac{1}{8}$
Main Jet	—	210	—	270	—	250	410	420
Throttle Valve	—	376/3 $\frac{1}{2}$	—	376/3 $\frac{1}{2}$	—	389/3 $\frac{1}{2}$	7	389/3
Needle Position	—	2	—	3	—	3	4	2
Needle Jet	—	.1065	—	.1065	—	.106	.109	.106
Gear Ratios								
Top		5.28		5.28		4.52		4.52
3rd		6.38		6.38		5.47		5.47
2nd		9.28		9.28		7.95		7.95
1st		13.62		13.62		11.67		11.67
Rear Chainwheel. No. of Teeth		42		42		42		42
Engine Sprocket. No. of Teeth		Solo 18 S/C 18		Solo 18 S/C 18		Solo 21 S/C 18		21
Clutch Sprocket. No. of Teeth		43		43		43		43
Gearbox Sprocket. No. of Teeth		Solo 19 S/C 17		Solo 19 S/C 17		Solo 19 S/C 19		19
Front Chain, $\frac{1}{2} \times .305$ in.		Solo 67 S/C 67		Solo 67 S/C 67		Solo 69 S/C 67		69
Rear Chain, $\frac{3}{8} \times \frac{3}{8}$ in.		Solo 98 S/C 97		Solo 98 S/C 97		Solo 97 S/C 98		97
Tyres : front		3.25 x 19		3.25 x 19		3.25 x 19		3.25 x 19
rear		3.50 x 19		3.50 x 19		3.50 x 19		3.50 x 19
Tyre Pressures (Solo): front		17 lbs. p.s.i.		17 lbs. p.s.i.		17 lbs. p.s.i.		17 lbs. p.s.i.
rear		19 lbs. p.s.i.		19 lbs. p.s.i.		20 lbs. p.s.i.		19 lbs. p.s.i.
Total Front Fork Movement		5 $\frac{1}{2}$ in.		5 $\frac{1}{2}$ in.		5 $\frac{1}{2}$ in.		5 $\frac{1}{2}$ in.
Rear Suspension Movement		4 in.		4 in.		4 in.		4 in.
Brake Dimensions: front (in.)		8 x 1 $\frac{3}{8}$		8 x 1 $\frac{3}{8}$		8 x 1 $\frac{3}{8}$		8 x 1 $\frac{3}{8}$
1954 and 1955 rear (in.)		7 x 1 $\frac{1}{4}$		7 x 1 $\frac{1}{4}$		7 x 1 $\frac{1}{4}$		7 x 1 $\frac{1}{4}$
Brake Dimensions: front (in.)		7 x 1 $\frac{1}{2}$		7 x 1 $\frac{1}{2}$		7 x 1 $\frac{1}{2}$		7 x 1 $\frac{1}{2}$
1956 and 1957 rear (in.)		7 x 1 $\frac{1}{4}$		7 x 1 $\frac{1}{4}$		7 x 1 $\frac{1}{4}$		7 x 1 $\frac{1}{4}$
Brake Dimensions: front (in.)		7 x 1 $\frac{3}{8}$		7 x 1 $\frac{3}{8}$		7 x 1 $\frac{3}{8}$		7 x 1 $\frac{3}{8}$
1958 to 1960 rear (in.)		7 x 1 $\frac{1}{4}$		7 x 1 $\frac{1}{4}$		7 x 1 $\frac{1}{4}$		7 x 1 $\frac{1}{4}$