



B.S.A. quality, B.S.A. performance

and B.S.A. reliability bred from long

engineering experience has been proved

once again by the spectacular series of

successes on the race tracks of Europe

and North America . . .

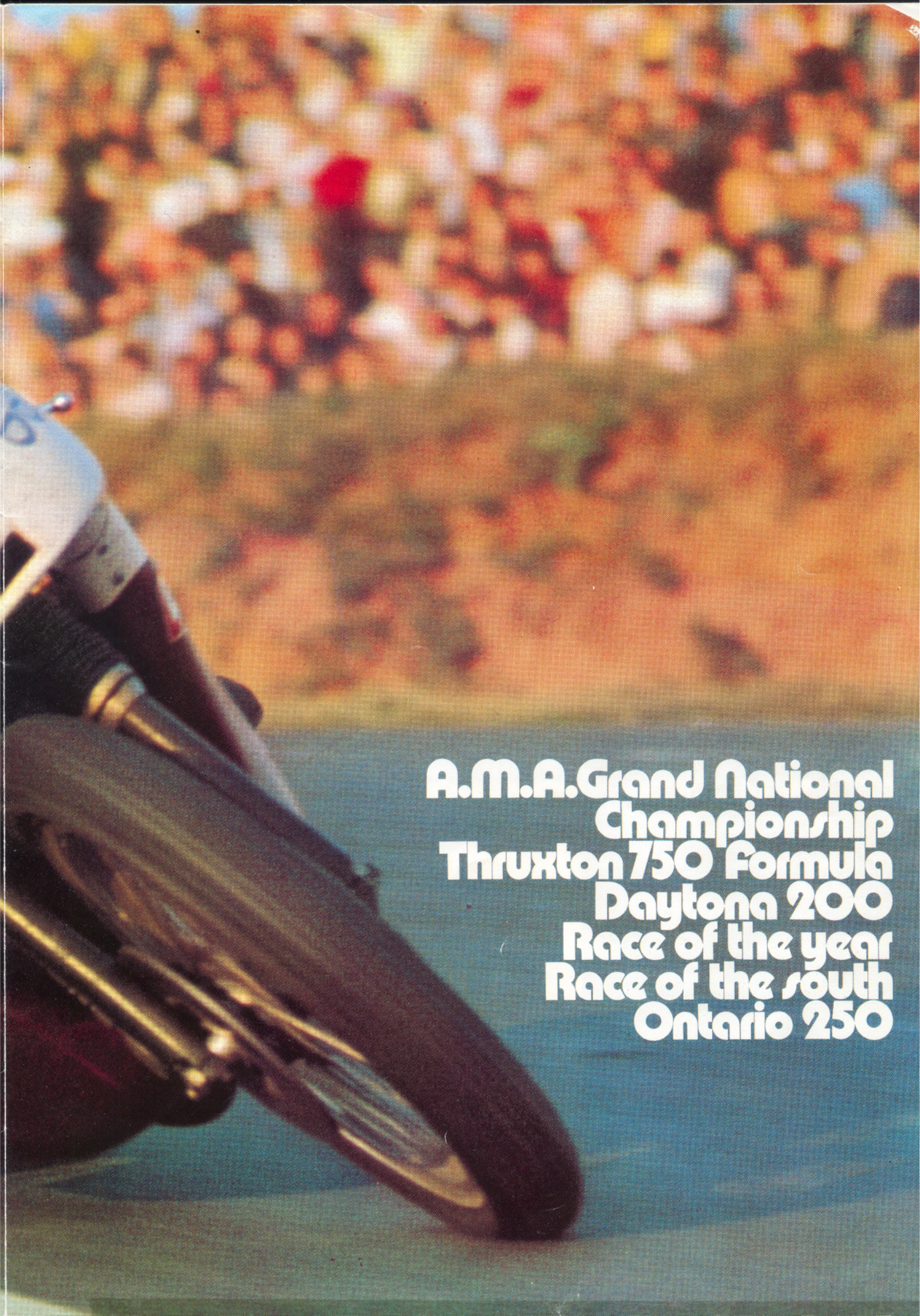
J. K. HIRST LTD.
10, LISTERHILLS ROAD
GLASGOW, 7, SCOTLAND





1971 Year of The Big Wins

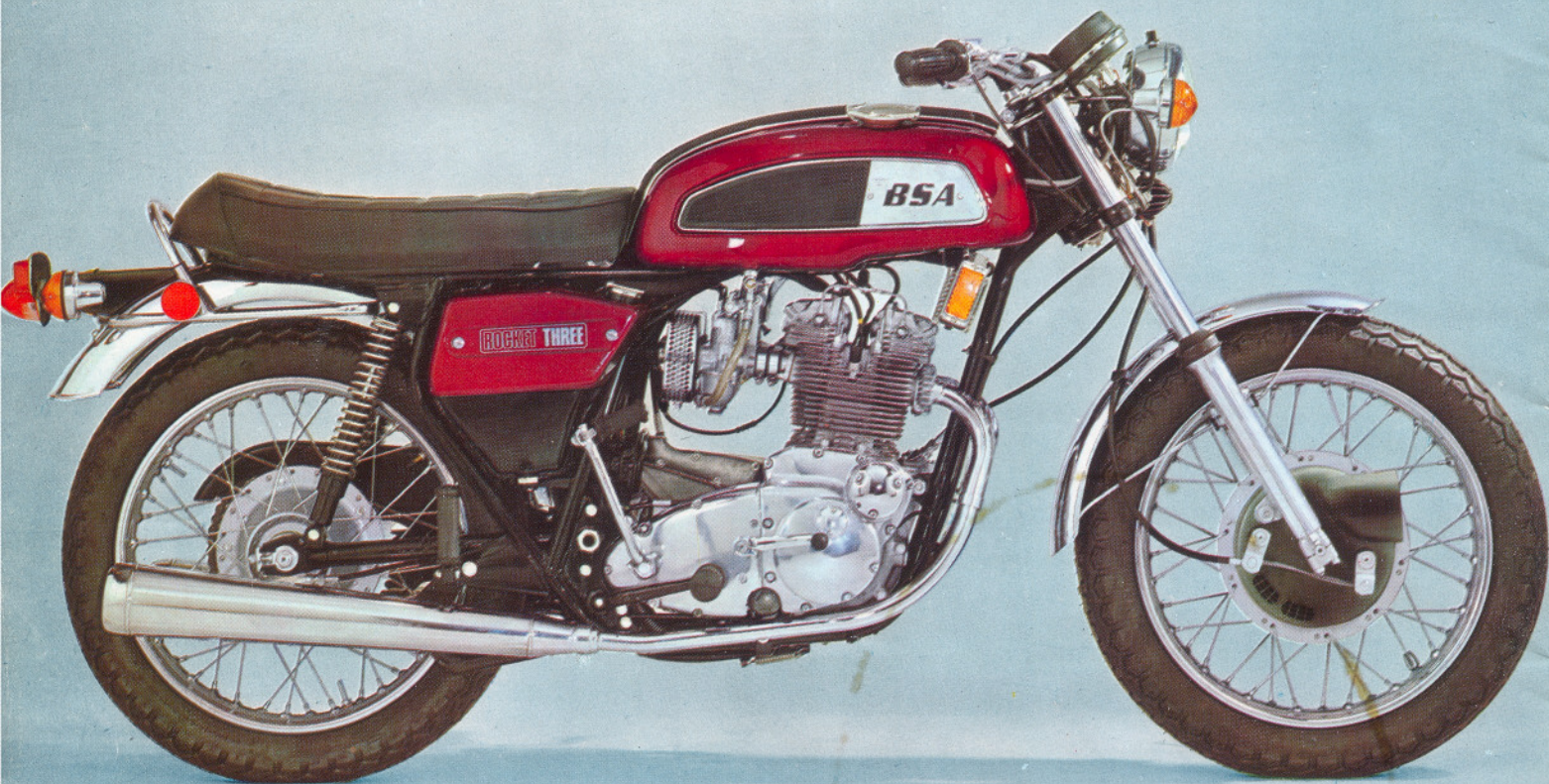




**A.M.A. Grand National
Championship
Thruxton 750 Formula
Daytona 200
Race of the year
Race of the south
Ontario 250**



TOUGH RACE PRO



OVEN PERFORMANCE

750 ROCKET 3

- 750 cc 3 Cylinder Engine
- 3 Carburettors ● Diaphragm Clutch
- 12 Volt Electrics ● Duplex Cradle Frame

A Rocket 3 won Daytona '71 at a new record average speed of 104.7 m.p.h. John Cooper beat Agostini to win the '71 'Race of the Year' and 'Race of the South', and won the Ontario 250 Mile Classic on a Rocket 3. The BSA expertise that produces this type of performance on the race track is built into the machine you buy. Rocket 3's three cylinder, three carburettor engine gives smooth, effortless acceleration (0 - 100 m.p.h. in 13.75 seconds) and Rocket 3 has a stunning maximum speed and many other exciting features. Two-way damped forks give a smooth controlled ride. Now in new colours for 1972.

Rocket 3 . . . The big bike with performance that speaks for itself.



CONTROL LAYOUT OF THE ROCKET 3

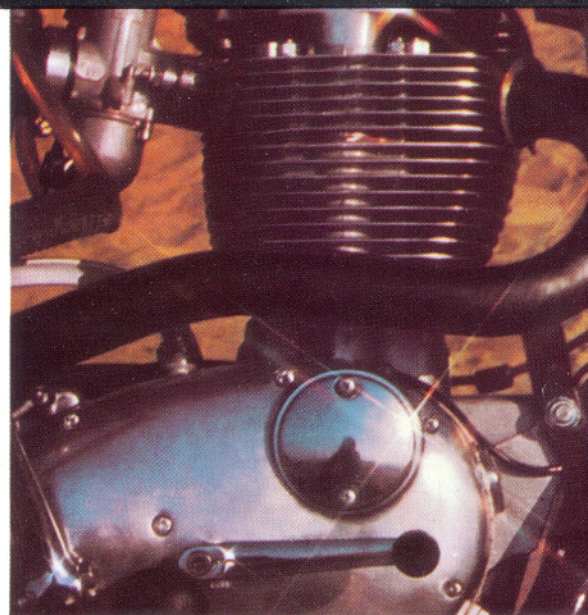
Comfortably shaped bars for maximum control. Light alloy clutch and brake levers. Horn, flasher and dip switches in neat groupings. Speedometer and Tachometer easily visible. Warning lights for Main Beam, Direction Indicators and Oil Pressure.

GOLD STAR 500

- 500 cc Single Cylinder OHV Engine
- Alloy Head and Barrel
- Welded Frame with Oil Containing Top Tube
- Upswept Black Finish Exhaust

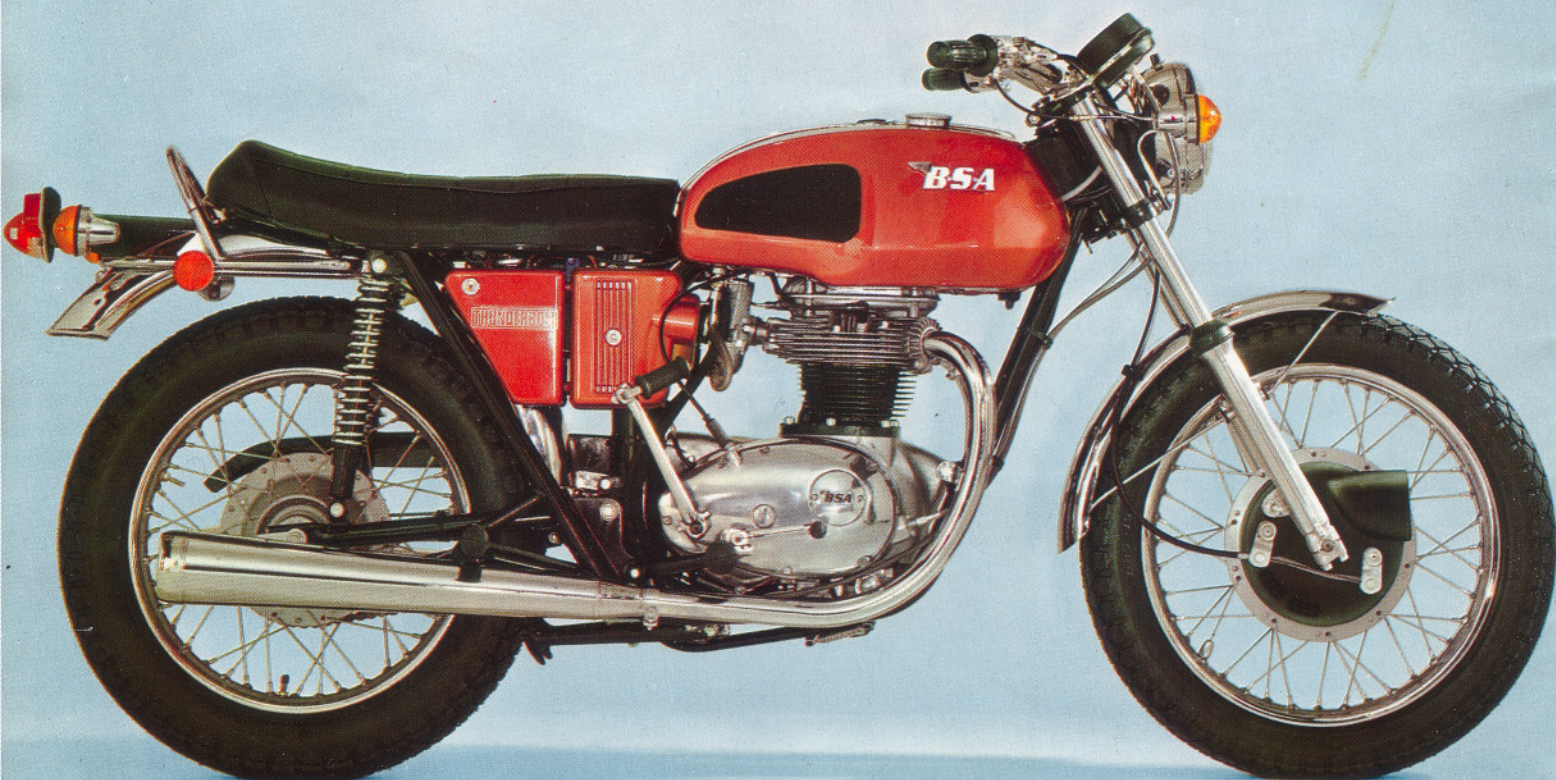
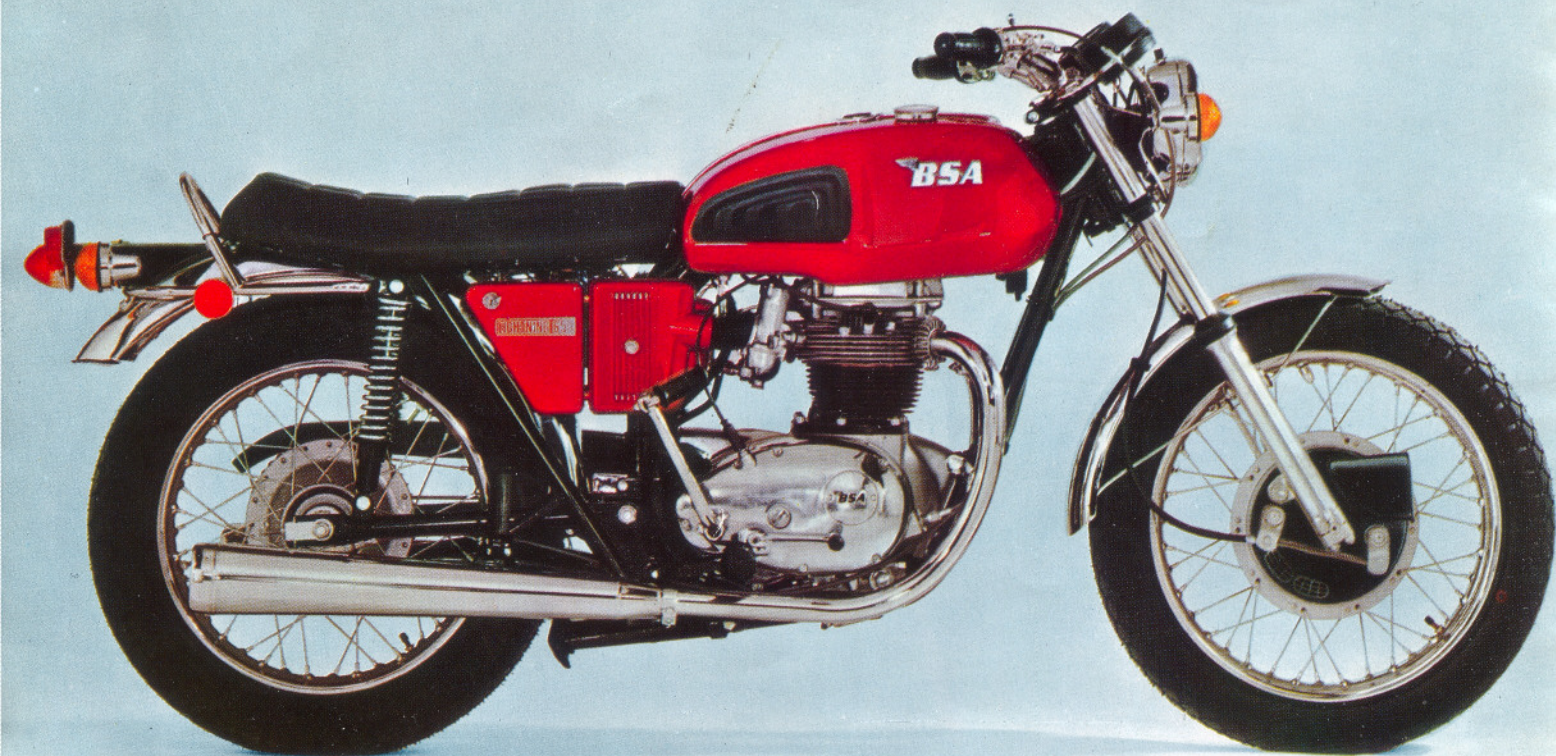
A Gold Star 500 won the 500 cc class in the Thruxton 500 miler*, and the Barcelona 24 hours Race* and won the Zolder 24 hour Race* outright. A tough no-nonsense street scrambler which is as much at home off the road as on it. Gold Star 500 has an extremely rugged race-proven frame, a willing 4-stroke power unit giving tremendous torque at low r.p.m. - the right power at the right time. New colours for '72 with polished front forks and hubs, make the 500 Gold Star a machine that looks good . . . and works hard.

*Entered by Mead & Tompkinson of Hereford, England and ridden by Nigel Rollason and Clive Brown.



AN ENGINE WITH MOTOCROSS BREEDING

Unique, the four-stroke Gold Star 500 engine is the direct result of many years of successful competition on the International motocross scene. Four-stroke power means tremendous torque, additional engine braking - the right power at the right time.



The issue of this brochure does not constitute an offer and illustrations and specifications described herein will vary for different countries. In line with our policy of continuous research and development we reserve the right to alter or change specification at any time without notice. Variations from stated technical data may occur due to production considerations.

LIGHTNING 650

- 650 cc OHV Twin Cylinder Engine
- Welded Frame with Oil Containing Top Tube
- Superb Forks with Two-way Hydraulic Damping

BSA's wide racing experience is the key to the success of the dynamic Lightning 650.

Sporting good looks with twin-cylinder/twin-carburettor performance to match. Twin leading shoe 8" front brake for stopping power to match performance. Immensely tough all welded frame with large diameter main tube which also carries the engine oil. New in dramatic Firebird Red with chromium plated guards and polished forks. Dependable, rugged and fast – that's the Lightning 650.



POWER IN PLENTY, LIGHTNING POWER

The famous Lightning engine, two cylinders, two carburettors and tremendous performance. Alloy head, twin contact breakers and large capacity gear type oil pump. An engine that will Go and keep going!

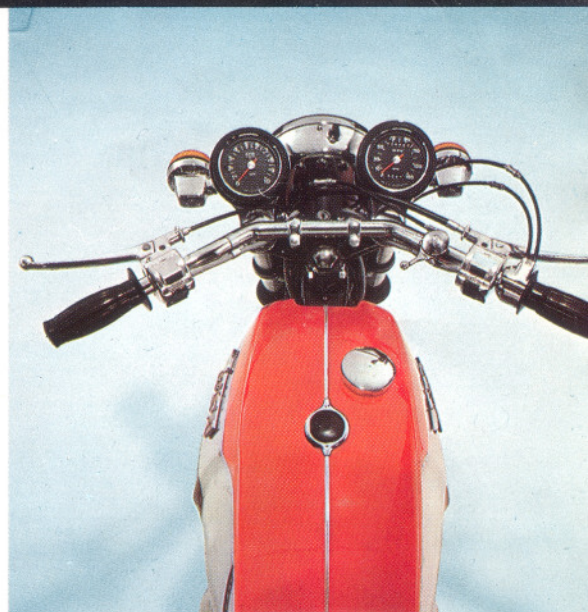
THUNDERBOLT 650

- 650 cc OHV Twin Cylinder Engine
- Single Carburettor ● 12 Volt Electrics
- Twin Megaphone Type Silencers

One of the world's most popular long-range machines. The vertical twin-cylinder engine gives the best of both worlds – the thrust from a large capacity engine plus the flexibility of a single carburettor configuration.

With its immensely strong frame and two-way hydraulically damped forks the '72 Thunderbolt comes in Etruscan Bronze with chromium plated guards and polished forks.

Mechanical simplicity, unobtrusive power with dynamic acceleration and a top speed of over 100 m.p.h. – that's the BSA Thunderbolt 650.



CONTROL LAYOUT OF THE THUNDERBOLT

Bars designed for maximum comfort and controllability. Powerful headlamp carrying warning lights for Main Beam, Direction Indicators and Oil Pressure. Switches grouped for easy use. Alloy brake and clutch levers.



THE QUEEN'S AWARD TO INDUSTRY



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Armoury Road, Birmingham B11 2PX
Telegrams & Cables: 'Selmoto, Birmingham
Telex: 33315.



SPECIFICATIONS

ROCKET 3

Engine: 750 cc inclined transverse light alloy three cylinder O.H.V. Three 27 mm Amal carburettors. Valves pushrod operated from high performance camshafts. Three, easily adjustable contact breakers, oil cooler and high capacity gear type oil pump.

Forks: Polished aluminium sliders to minimise unsprung weight. Two-way hydraulic damping.

Rear Suspension: Swinging fork, hydraulically damped and adjustable for load.

Gearbox: Four speed, single dry plate diaphragm spring clutch.

Brakes: Front 8" twin leading shoe drum brake. Balanced shoe application and individual snail cam shoe adjustment. Rear 7" brake single leading shoe with fully floating cam. Conical light alloy hubs.

Electrical and Lighting Equipment: 12 volt. One coil per cylinder. Crankshaft-mounted alternator. Master electrical switch and handlebar switch consoles. Direction indicators.

Frame: All welded Duplex cradle frame.

Petrol Tank: All steel welded, with quick release filler cap.

Wheels: Plated spokes and rims with Dunlop TT100 tyres.

Handlebars and Fittings: Chromium plated with smooth action twist grip. Heavy duty brake cables with built-in adjusters. Nylon lined clutch cable. Clutch and front brake lever brackets with built-in mirror fixing points and electrical switches.

GOLD STAR 500

Engine: 500cc high torque single cylinder O.H.V. Light alloy cylinder head. Alloy barrel with liner. Needle roller big end bearing; three main bearings.

Forks: Polished aluminium sliders to minimise unsprung weight. Two-way hydraulic damping.

Rear Suspension: Swinging fork, hydraulically damped and adjustable for load.

Gearbox: Four speed. Multiplate clutch with bonded segments and built-in transmission shock absorber.

Brakes: Conical light alloy hubs with front 8" twin leading shoe drum brakes. Balanced shoe application and individual snail cam shoe adjustment. Rear brake with 7" single leading shoe with fully floating cam.

Electrical and Lighting Equipment: 12 volt. Single coil. Crankshaft-mounted alternator. Master electrical switch and handlebar switch consoles. Direction indicators.

Frame: Welded frame with large diameter oil-containing top tube for strength and rigidity. Tapered roller steering head bearings. Swinging arm spindles with quadrant for accurate rear chain adjustment.

Petrol Tank: All steel welded, with quick release filler cap.

Handlebar and Fittings: Chromium plated with smooth action twist grip. Heavy duty cables with built-in adjusters. Clutch and front brake lever brackets have built-in mirror fixing points and switch consoles.

LIGHTNING/THUNDERBOLT

Engine: 650 cc twin O.H.V. with light alloy cylinder head. Pushrod valve operation. Twin carburettors (Lightning), single carburettor (Thunderbolt). Twin, easily adjustable contact breakers. Gear type oil pump.

Forks: Polished aluminium sliders to minimise unsprung weight. Two-way hydraulic damping.

Rear Suspension: Swinging fork, hydraulically damped and adjustable for load.

Gearbox: Four speed. Multiplate clutch with bonded segments and built-in transmission shock absorber.

Brakes: Conical light alloy hubs. Front 8" twin leading shoe drum brake. Balanced shoe application and individual snail cam shoe adjustment. Rear brake 7" single leading shoe with fully floating cam.

Electrical and Lighting Equipment: 12 volt. One coil per cylinder. Crankshaft mounted alternator. Master electrical switch and handlebar switch consoles. Direction indicators.

Frame: All welded Duplex cradle frame with large diameter oil-containing main tube. Tapered roller steering head bearings.

Petrol Tank: All steel welded, with quick release filler cap.

Dual Seat Assembly: Hinged seat providing ready access to battery and other electrical equipment.

Handlebars and Fittings: Chromium plated with smooth action twist grip. Heavy duty brake cables with built-in adjusters. Clutch and front brake lever brackets have built-in mirror fixing points and switch consoles.

TECHNICAL DATA

Model	Rocket 3	Gold Star 500	Lightning 650	Thunderbolt 650
Model No.	A75	B50SS	A65L	A65T
Engine Type	OHV	OHV	OHV	OHV
No. of Cylinders	3	1	2	2
Bore/Stroke mm.	67×70	84×90	75×74	75×74
Bore/Stroke ins.	2.64×2.76	3.31×3.54	2.95×2.91	2.95×2.91
Capacity cc.	740	499	654	654
Capacity cu. ins.	45.00	30.40	39.91	39.91
Comp. Ratio	9.5:1	10:1	9:1	9:1
Eng. Spr. Teeth	28	28	28	28
Clutch Spr. Teeth	50	52	58	58
G/Box Spr. Teeth	18	17	20	20
Rear Spr. Teeth	53	47	47	47
RPM @ 10 mph (top gear)	755	699	649	649
Gear Ratio 4th	5.26	5.14	4.87	4.87
" " 3rd	6.53	6.38	5.57	5.57
" " 2nd	8.88	8.42	7.79	7.79
" " 1st	12.82	13.60	12.23	12.23
Carburettor Make	Amal (3)	Amal	Amal (2)	Amal
Carburettor Type	626	R930	R930/L930	R928
Primary Chain Size	$\frac{3}{8}$ " Triplex	$\frac{3}{8}$ " Duplex	$\frac{3}{8}$ " Triplex	$\frac{3}{8}$ " Triplex
Rear Chain Size	$\frac{5}{8}$ " × $\frac{3}{8}$ "	$\frac{5}{8}$ " × $\frac{1}{4}$ "	$\frac{5}{8}$ " × $\frac{3}{8}$ "	$\frac{5}{8}$ " × $\frac{3}{8}$ "
Tyre Size Front	4.10 H×19 TT100	3.25×18 K70	3.25×19 K70	3.25×19 K70
Tyre Size Rear	4.10 H×19 TT100	3.50×18 K70	4.00×18 K70	4.00×18 K70
Front Brake Diam/ins/Type/mm	8" 2LS 200	8" 2LS 200	8" 2LS 200	8" 2LS 200
Rear Brake Diam/ins/Type/mm	7" 1LS 180	7" 1LS 180	7" 1LS 180	7" 1LS 180
Finish	Burgundy	Hi-Violet	Firebird Red	Etruscan Bronze
Seat Height ins/mm	32/810	32/810	31/790	31/790
Wheel Base ins/mm	57/1470	54/1370	56/1420	56/1420
Length ins/mm	88½/2230	85/2150	87½/2220	87½/2220
Width ins/mm	33/840	33½/850	33/840	33/840
Ground Clearance ins/mm	7/180	7/180	7/180	7/180
Dry Weight lbs/kilos	445/201	310/141	383/174	380/173
Fuel Capacity—Imp. gallons/litres	4/18 (optional) 2.5/11.5)	3/13.5 (optional) 2/9)	4/18 (optional) 2.5/11.5)	4/18 (optional) 2.5/11.5)
Oil capacity—Imp. pints/litres	5/2.8	4/2.25	5/2.8	5/2.8