



# 650 cm<sup>3</sup> Thunderbolt



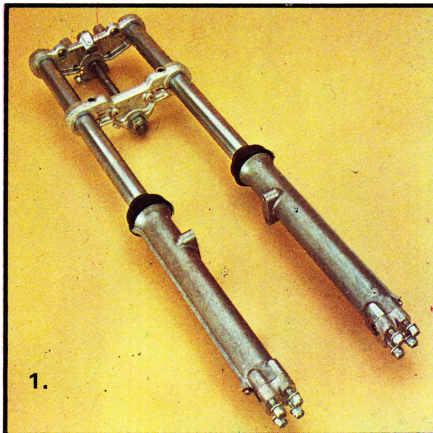


BSA's wide racing experience has provided the know-how to make the Thunderbolt so successful. This vertical twin cylinder engine offers the ideal combination—large capacity plus a single carburetter configuration. This means mechanical simplicity, unobtrusive power, economy plus a top speed of over 100 mph with dynamic acceleration. Now the Thunderbolt is even better, incorporating new front fork design for better handling, new brakes and an immensely strong frame.

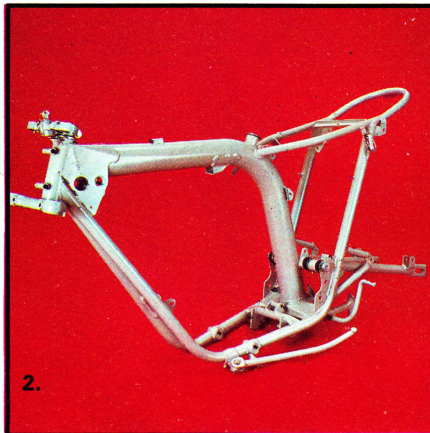
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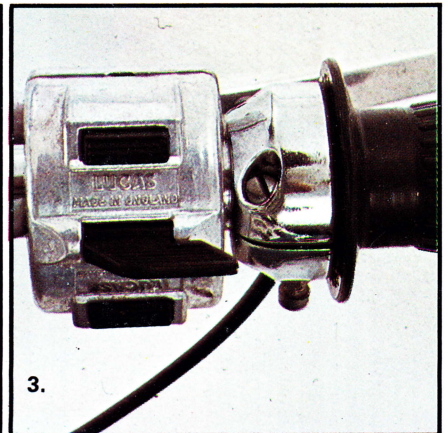
# New 650 cm<sup>3</sup> Thunderbolt



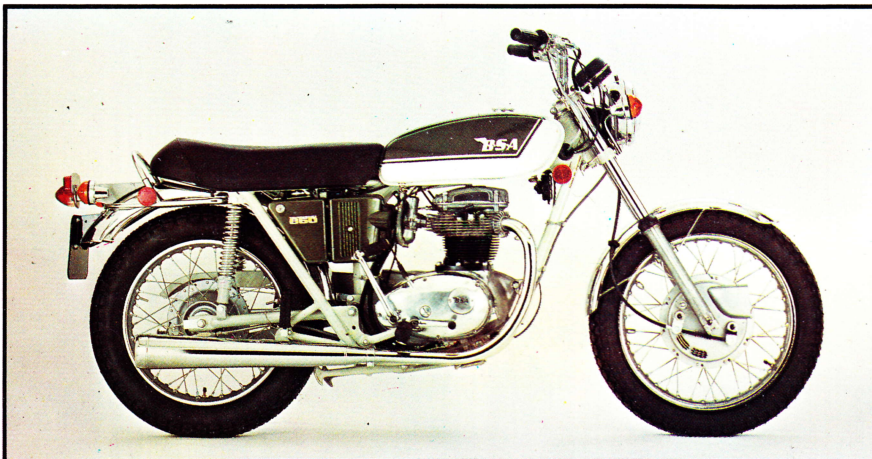
1.



2.



3.



## NEW FEATURES

1. New front fork design with full two-way hydraulic damping, gives smooth controlled ride whatever the road conditions.
2. New frame is immensely strong and rigid because of the large diameter main tube. This carries the engine oil too, thus effecting a significant weight saving and improved heat dissipation. A frame plotted by computer and proved over the most punishing test surfaces available.
3. New compact switch arrangement with horn button, dip switch, direction indicator switches, headlamp flasher and ignition cut-out button in two compact consoles.

### PLUS THESE EXTRA FEATURES:

- Fade free brakes—front 8" with twin leading shoes. Rear brake 7" single leading shoe and fully floating cam.
- New conical hubs front and rear, made from light alloy. Design adds strength, dissipates heat faster.
- New megaphone type silencers.
- Flashing direction indicators front and rear.
- Instruments and headlamp cushioned in new anti-shock mountings.

## SPECIFICATIONS

### ENGINE:

Twin O.H.V. Light alloy cylinder head. Pushrod valve operation. Single carburetter. Twin, easily adjustable contact breakers. Gear type oil pump.

### FORKS:

Two-way damped, with strong alloy legs to minimise unsprung weight.

### 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. New master electrical switch and handlebar switch consoles. Direction indicators.

### FRAME:

New, 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

Engine Type	OHV	Primary Chain Size	$\frac{3}{8}$ " Triplex
No. of Cylinders	2	Rear Chain Size	$\frac{5}{8}$ " x $\frac{3}{8}$ "
Bore/Stroke mm.	75 x 74	Tyre Size Front	3.25 x 19
Bore/Stroke ins.	2.95 x 2.91	Tyre Size Rear	4.00 x 18
Capacity cm <sup>3</sup>	654	Front Brake dia/type ins/cm	8" 2LS 20
Capacity cu. ins.	39.91	Rear Brake dia/type ins/cm	7" 1LS 18
Comp. Ratio	9:1	Finish	Sterling Moss (Green)
Eng. Spr. Teeth	28	Seat Height ins/cm	32"/81
Clutch Spr. Teeth	58	Wheel base ins/cm	56"/142
G/Box Spr. Teeth	20	Length ins/cm	87½"/222
Rear Spr. Teeth	47	Width ins/cm	33"/84
RPM @ 10 MPH (top gear)	649	Ground Clearance ins/cm	7½"/19
Gear ratio 4th	4.87	Dry Weight lbs/kilos	390/176
" " 3rd	5.57	Petrol—Imp gallons/litres	2½/11.33
" " 2nd	7.79	Oil—Imp pints/litres	5/2.8
" " 1st	12.23		
Carburetter Make	Amal		
" Type	R928		