

# The front runners

first the  
sprinter...

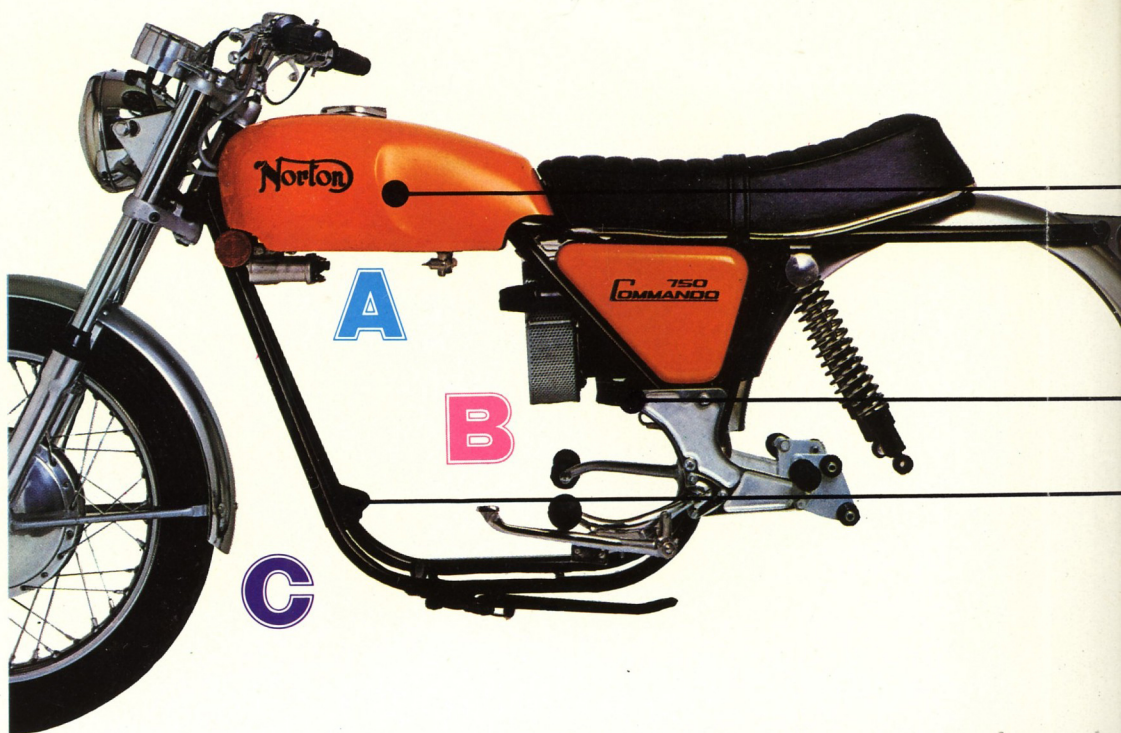
and now a  
long distance  
strider



# Isolastic

## Norton's revolutionary answer to vibration

One of the world's foremost motorcycle magazines, "CYCLE" of America, called the Norton Commando Isolastic construction "ingenious" and "revolutionary." Why? Because Norton have with Isolastic construction insulated you from that most hated of motorcycle faults — vibration. By mounting the engine, gearbox and rear wheel assembly on the same polymer cushioned plane, they have given you for the first time a velvet smooth ride on a high performance big twin.



## New factory options

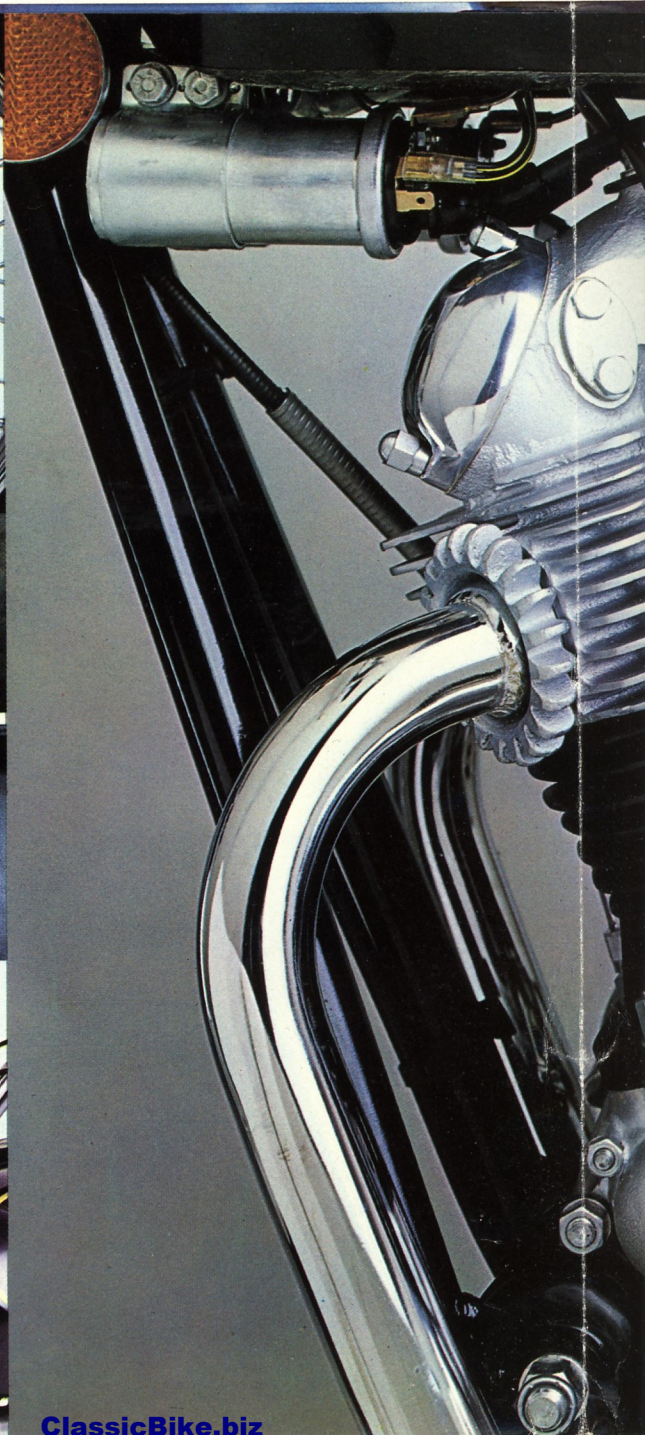
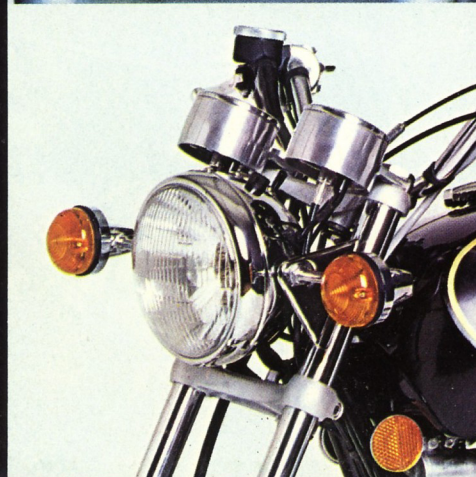
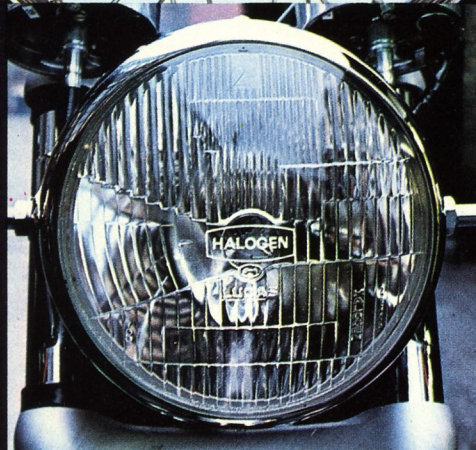
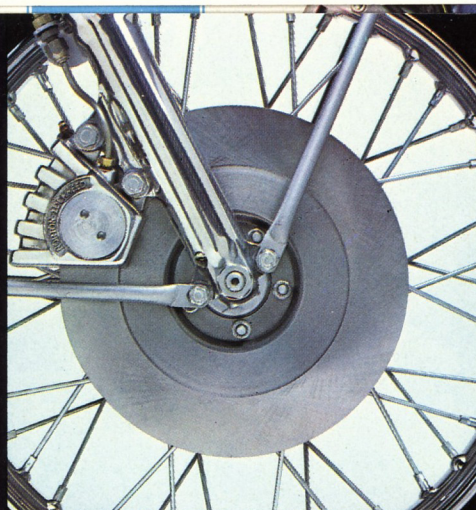
**Combat engine** New exciting higher power engine option now available for the Roadster and Interstate — recognized by the distinctive black cylinder barrel.

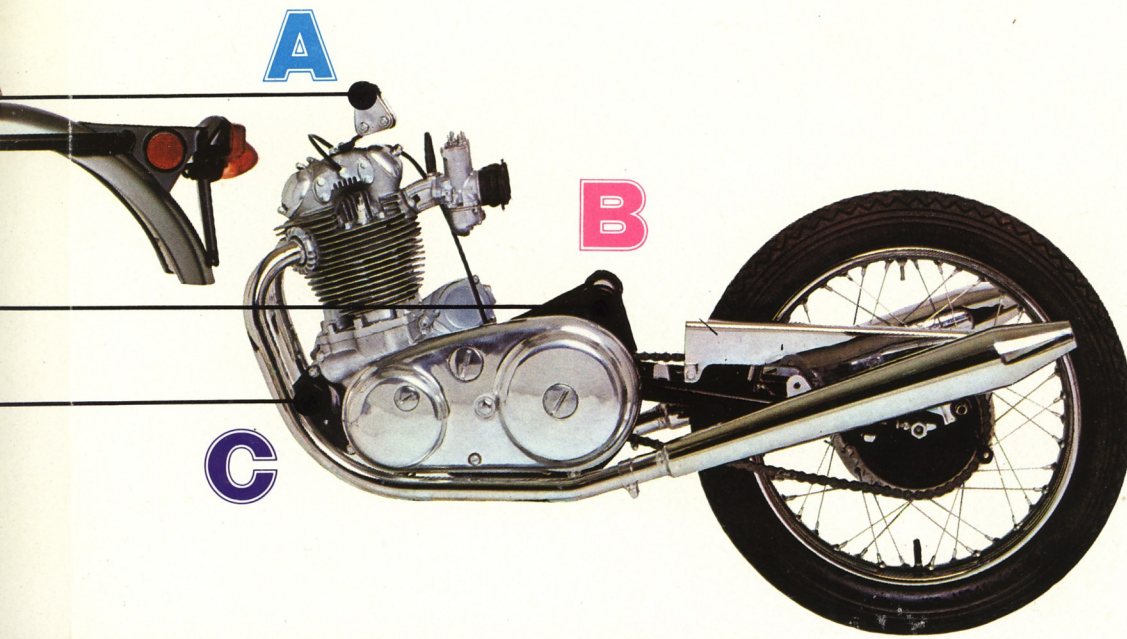
**Disc Brake** Norton-Lockheed hydraulic front disc brake option now available for the Roadster and Interstate. Designed by a combined team from Lockheed and Norton and manufactured by Norton Villiers to the most exacting engineering standards, this new brake provides ultra smooth action with fantastic fade-free stopping power. The Norton Commando — the lightest bike in the super league — and the new lightweight brake make a formidable combination, whether for winning on the track or for that extra margin on the freeway.

**Quartz Halogen** high brilliancy light unit for safer night riding.

*(Legislation may not allow fitment as initial equipment in U.S.A. and Canada).*

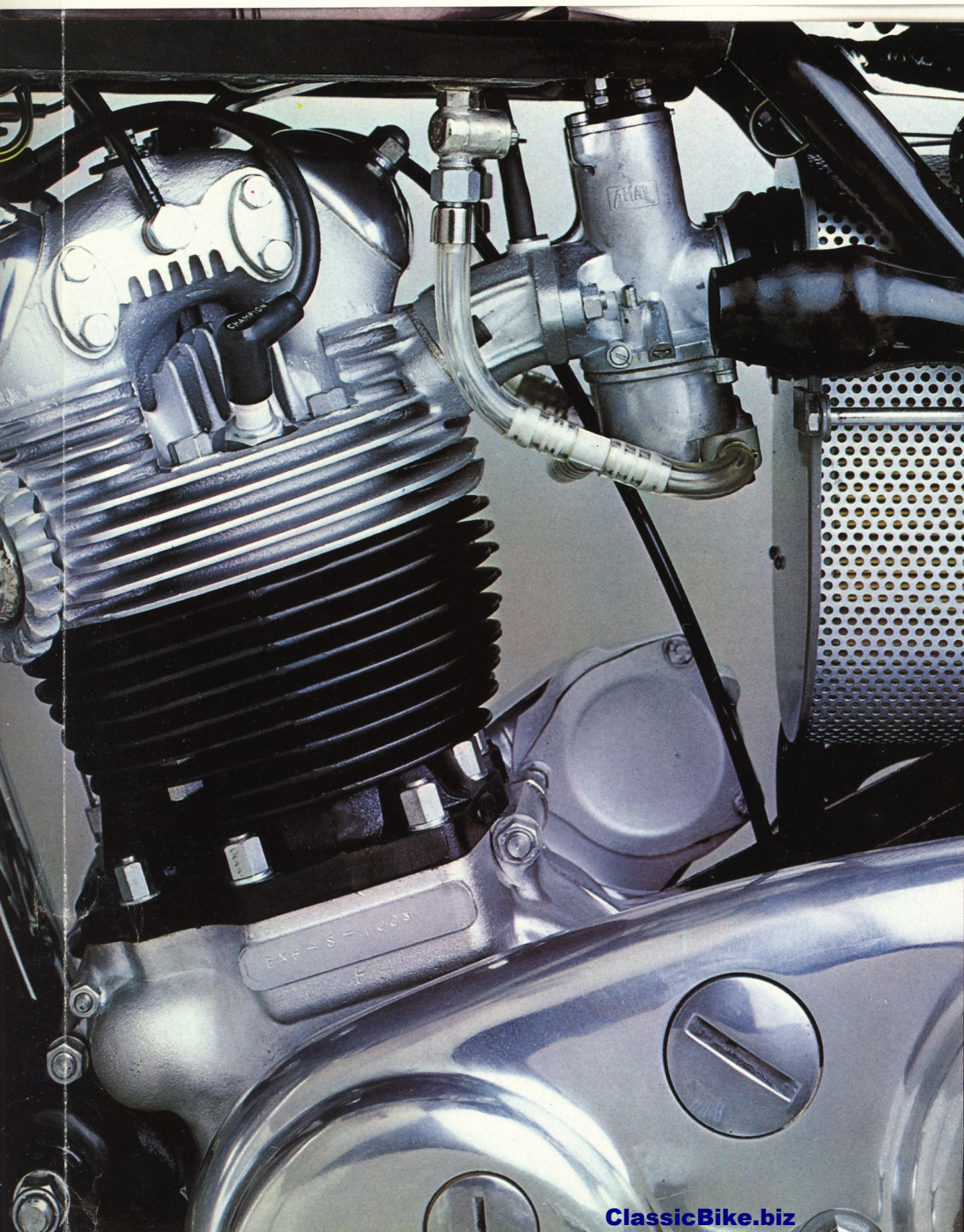
**Flashing amber** turn signals front and rear.





The Norton Isolastic principle (patented) built into the Commando couples the engine and gearbox directly to the rear wheel as one unit (as illustrated) on which the frame is secured by three strategically located resilient mounts (A, B and C).

This principle of construction not only insulates the rider, frame, lights and instruments from engine vibration, thus enabling continued use of an uncomplicated high performance vertical twin engine with low maintenance costs and light weight without loss of riding comfort — the famous Commando formula — but also is unique in that, by mounting the rear swinging arm directly on the engine cradle, it ensures excellent handling characteristics by preventing twisting between the engine and rear wheel sprockets under load, a defect associated with earlier attempts by the motorcycle industry to reduce vibration by simple rubber engine mounts.



## For the technically minded.

Detail engine improvements by the Norton Villiers development team.

### All engines:

- Strengthened crankcase
- Roller main bearings throughout
- Full flow oil filter
- Improved oil scavenging and breathing
- Improved casting finish
- Improved valve guide location
- Reinforced flexible oil lines

### Combat engines:

- Higher compression ratio
- Improved inlet port flow
- "Double S" high performance cams
- Larger carburetors

STOP PRESS 15<sup>th</sup> DECEMBER, 1971

**Frontrunning!**  
For the fourth record-breaking year  
Norton Commando again

**VOTED MACHINE  
OF THE YEAR**

By the readers of Motorcycle News  
NOW A QUADRUPLE WINNER

Holding a place in the winning team is rarely just a matter of luck. The runners that stay ahead are there for a very good reason – they are the best. What are the qualities which make a superbike a frontrunner?

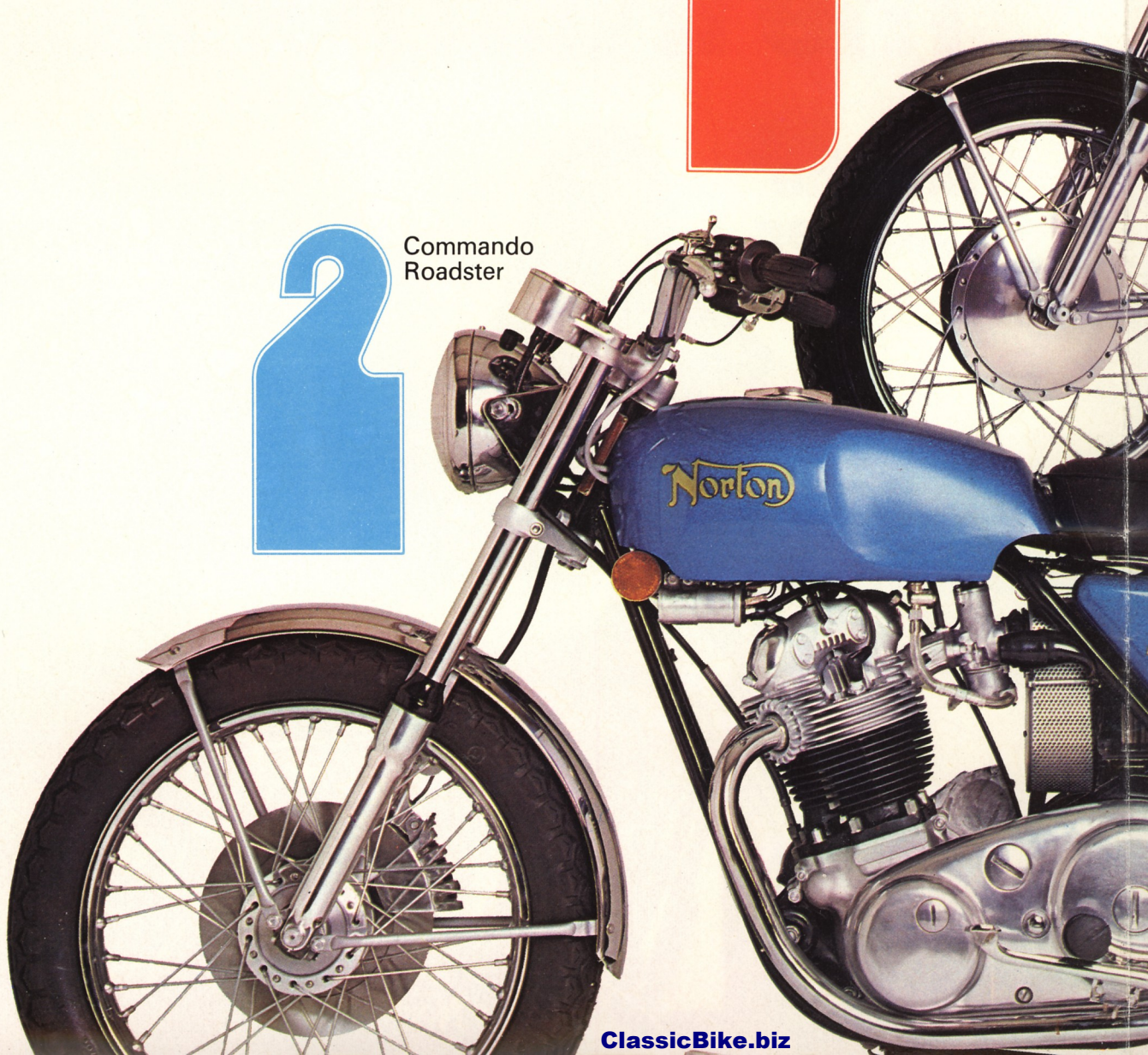
Only by reducing weight to the lowest level can a bike produce that sleek look and devastating power-to-weight ratio which ensures the dynamic acceleration and superb easy-riding handling and braking necessary to be a frontrunner. Vibration-free rider comfort with that instant surge of power at your command which marks a high torque four-stroke engine, together with a strength and ruggedness to withstand without effort every test of street and track, are further essential

3

Commando  
Hi. rider  
Also available  
with dual seat

2

Commando  
Roadster



ingredients. Other vital frontrunner attributes are sound design, precision engineering, dazzling appearance and ease of maintenance.

We are, of course, describing the lightest superbike of all, the world-famed Commando 750 from Norton, makers of frontrunning motorcycles for over half a century. If you doubt us, go to your Norton dealer and get the feel of a real frontrunner – sit astride the biggest lightweight in the world and experience the perfectly balanced ease of movement for which the Commando is renowned.

Take a test and ride the wind like never before.



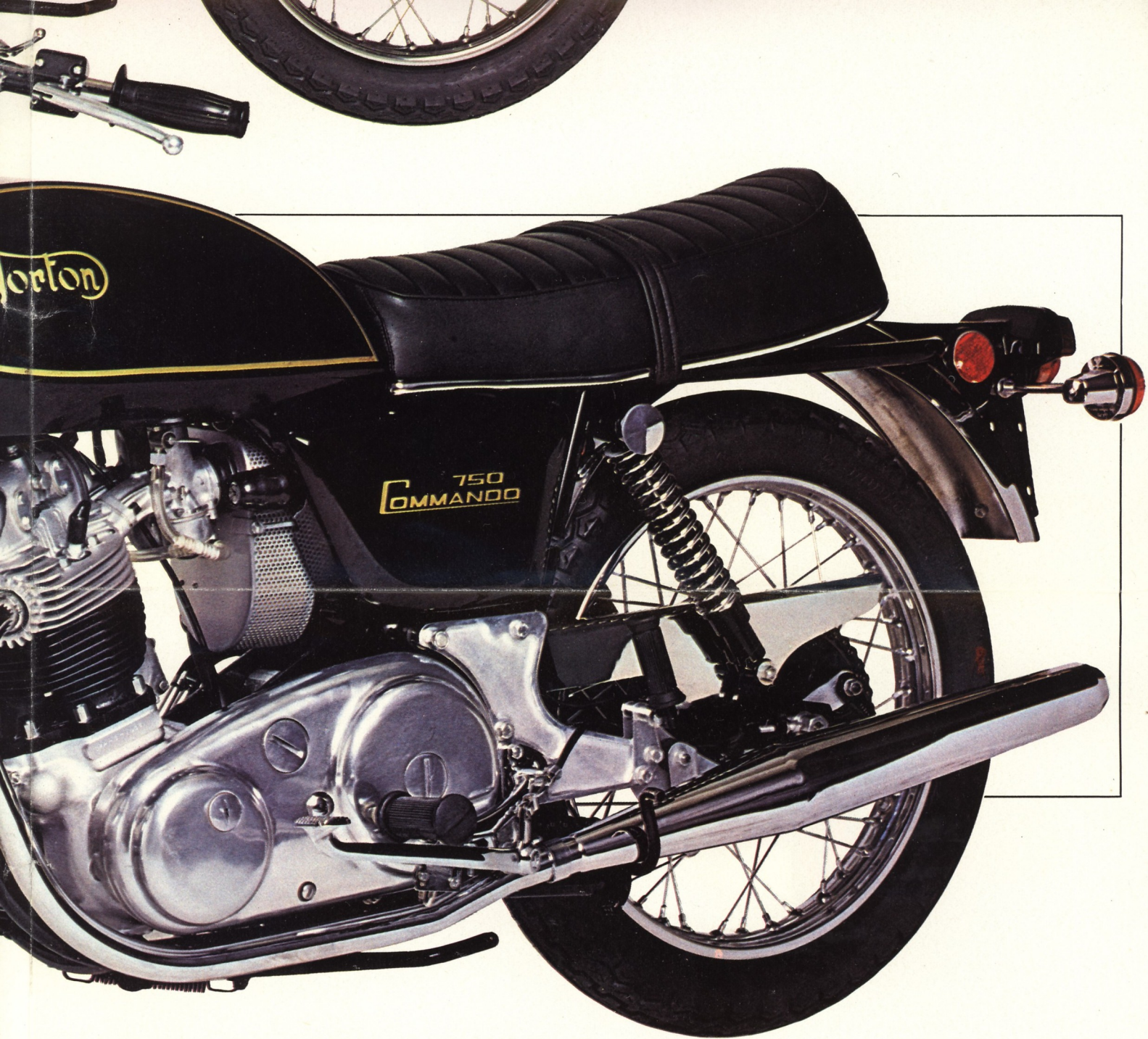
# 1

## The new **Commando Interstate.**

Big tank combines the world-famous Commando performance with long range riding.

Saddlebags, luggage rack and fairing styled to match also available as optional extras.





4

Original ever popular **Commando Fastback**.  
First ever outright three times winner of Britain's *Motor Cycle News* "Machine of the Year" readers' poll 1968-1970.

5

**Racer**  
Built to F.I.M. "750 cc Production racing" or "750 cc racing class" formulas. Specially assembled high compression engine. Norvil "Triple S" high performance camshaft. Norvil hydraulic racing front disc brake. Tachometer. Rear racing footrests, clip-on handle-bars, aluminum alloy wheel rims, racing seat, racing fairing.  
Choice of: 3½ or 5 gallon petrol tank  
4 speed or 5 speed close ratio gearbox  
conventional or transistorised ignition system  
megaphone or muffler

Production Racer specification also includes full electrical equipment with single or dual headlamps and speedometer. Order through your Norton dealer.

6

**Interpol**  
Now in service with or ordered by nearly 40 police forces of the world who have appreciated the unique qualities of the Commando for police work, particularly the cushion comfort of the Isolastic construction to delicate radios and to police riders spending many hours in the saddle. Available with equipment to private buyers through your Norton dealer on special order.



# Specification:

## Construction

Isolastic anti-vibration. This principle couples together the engine, transmission, swinging arm and rear wheel. This assembly, parted from the main frame, is seen clearly in the illustration overleaf. Isolation of the engine transmission swinging arm and rear wheel is achieved by the use of resilient mountings shown at A, B and C. Unlike earlier attempts at rubber mounting, the Commando is unique in that the swinging arm is mounted on the engine cradle and thus isolated from the main frame. This layout prevents twisting between the engine and rear wheel sprockets under load which would otherwise cause premature chain wear or even displacement of the chain.

The power unit in its mounting plates oscillates on the rear mounting (B) which has three bonded and two buffer rubbers. This arrangement provides maximum support, particularly to the swinging arm and rear wheel, whilst isolating the power unit vibration from the frame.

The front mounting (C) controls the degree of movement of the power unit on the rear mounting and the two bonded and two buffer rubbers allow more flexibility than does the rear mounting.

Both the front and rear mountings incorporate polyurethane thrust washers to permit side play to be kept within very restricted limits without transmitting engine and transmission vibrations to the rider. The degree of side play is controlled by shims to enable the figure to be kept within design limits even after considerable mileages. The engine head steady (A) completes the triangular formation of the resilient mountings and controls lateral movement of the engine unit in the frame. The insulating rubbers are fitted between the side plates and frame tube.

U.S.A. patent 3,542,146 and British patent 1,219,896 have been granted on the Isolastic mounting system. Other patents are pending.

## Frame

The unique Commando frame combines lightness with strength, giving exceptional torsional rigidity. It is constructed of high quality steel tube with large diameter backbone supporting the steering head, twin downtubes anchoring the engine cradle. Pre-greased non-adjustable sealed bearings are fitted at the steering head. Strong security steering lock abutment and substantial lock stops are provided.

U.S.A. design patent D212404, U.S.A. patent 3,508,765 and British registered design 932428 have been granted on the frame. Other patents and design registrations are pending.

## Suspension

Famous "Roadholder" front forks with progressive two-way oil damping and long single rate springs housed in high quality chromed steel stanchions in slim-line profile. Light aluminum sliders to reduce unsprung weight for high speed roadholding. Slimline fork top covers incorporate rigid headlight brackets. Precision front fork yokes and stem provide hairline steering geometry. Girling suspension units at rear with exposed chromed springs control swinging arm pivoting on oilite bushes.

## Engine

Air cooled four-stroke overhead valve vertical twin cylinder engine. Dry sump lubrication with full flow oil filter. Cast iron finned cylinder. Die-cast aluminum crankcase. Cast aluminum one piece rocker box and cylinder head with hemispherical combustion chambers with the largest possible ports angled for maximum power. Forged steel rocker arms. Nickel chrome steel exhaust valves. Inlet valve stem oil seals. Forged steel crankshaft with central flywheel. Roller main bearings. Forged aluminum connecting rods with insert type bearings. Aluminum pistons. Chain drive to camshaft with hardened steel cams and high efficiency direct drive to tachometer. Barrel shaped aluminum push rods. Large diameter tappets with hardened faces for maximum life. Polished aluminum side covers.

Capacity	745 c.c.	(45 cu. ins.)
Bore	73 mm.	(2.88 ins.)
Stroke	89 mm.	(3.5 ins.)
	<i>Standard</i>	<i>Combat</i>
Compression Ratio	9:1	10:1
Max. cruising r.p.m.	7,000	7,000
B.H.P. at sea level	60 at	65 at
	6,800 r.p.m.	6,500 r.p.m.

## Exhaust System's

Roadster, Fastback and Hi.rider: Twin downswept pipes with upswept full flow mufflers.

Interstate, Interpol: Twin downswept pipes with low level full flow mufflers.

## Carburetors

Twin Amal concentric with high efficiency air cleaner. Automobile type replacement element.

Factory settings:	<i>Standard</i>	<i>Combat</i>
Carburetor size	30 mm.	32 mm.
Main jet:	220	220
Throttle valve	3	3
Needle jet	0.107	0.106
Needle position:	Middle groove	Middle groove

Consult your Norton dealer for optimum local setting, depending on altitude and temperature.

## Clutch

Automobile type multi-disc clutch with large diameter diaphragm spring, the special design of which allows light hand operation.

## Transmission

Wide tooth four-speed gearbox with medium-close ratios. Extra tough nickel chrome steel pinions, triple row heavy duty primary drive within streamlined aluminum housing with oil feed pipe to chain with flow adjustable by easy to operate precision needle valve. Efficient paddle type polyurethane shock absorber in rear hub.

Primary drive ratio:	57 tooth clutch sprocket
	26 tooth engine sprocket
	2.19:1

Final drive ratios:

Rear sprocket teeth	42	Speed at 7,000 r.p.m. m.p.h.
	Ratio	

Gearbox sprocket teeth	19	
4th (Top) gear	4.84:1	108
3rd gear	5.90:1	89
2nd gear	8.25:1	63
1st (Bottom) gear	12.40:1	42

Gearbox sprocket teeth	20	
4th (Top) gear	4.60:1	114
3rd gear	5.60:1	94
2nd gear	7.80:1	67
1st (Bottom) gear	11.80:1	44

Gearbox sprocket teeth	21	
4th (Top) gear	4.38:1	119
3rd gear	5.30:1	99
2nd gear	7.45:1	70
1st (Bottom) gear	11.20:1	47

19 tooth sprocket normally fitted at the factory. Alternative 20 and 21 tooth sprockets available through your Norton dealer. Larger sizes available to special order.

## Electrics

12 volt electrical system fed by high output alternator with zener diode regulator and silicon bridge rectifier. Coil ignition with twin contact breakers. Capacitors mounted in common pack with neat rubber cover. Capacitor discharge auxiliary ignition system in event of battery failure. 7 inch headlight—5½ inch on Hi.rider—with 45/40 watt bulb. Powerful Alpine windtone horn for use on turnpikes and freeways. Charge warning light with sealed and spring mounted assmulator. Warning light for headlight high beam. Four position master switch for ignition and lights and light selection switch in headlight shell. Neat cluster switches on handlebar controls for dip switch, engine kill button and optional turn signals. External live socket for auxiliaries or battery charging mounted conveniently on the side of the battery tray.

## Gastank

Capacity:		
Interstate	Fibreglass	6½ gallons
	Steel	6½ gallons
Interpol	Steel (no radio)	4¾ gallons
	Steel (radio insert)	4½ gallons
Fastback	Fibreglass	4 gallons
Roadster	Fibreglass	2¾ gallons
	Steel	3 gallons
Hi.rider	Fibreglass	2½ gallons

Quick filler cap and reserve supply gas tap.

## Oil Tank

All steel construction for heat conduction. Capacity 6 pints. Drain plug and dipstick. Concealed by neat fibreglass or steel cover. Reinforced flexible feed and return pipe.

## Seat

All models fitted with luxurious deep cushion contoured seats with supple black pleated covers.

## Stands

Robust easy-lift high-tuck-up center stand mounted on rear engine plates. Strong extra length sidestand angled to give maximum support even on poor surfaces.

## Wheels

Chromed rims with plated steel spokes laced to aluminum hubs. Quickly detachable rear wheel removable without disturbing the rear chain or brake.

## Brakes

Front: either cable-operated ventilated twin-leading shoe internal-expanding 8 inch drum brake or high efficiency hydraulically-operated Norton-Lockheed disc brake with lightweight aluminum hydraulic units and 10.7 inch precision ground disc.

Rear: cable-operated internal-expanding 7 inch drum brake.

## Tires

Front and rear: 4.10 x 19 low profile high speed tires. Recommended pressure for normal solo riding 26 p.s.i. Consult your dealer or a manufacturers tyre chart for correct pressures for riding two-up, with heavy loads or at sustained high speed.

## Other Equipment

Matching easy-to-read tachometer and speedometer, buddy pegs, tool kit, side reflectors, steering lock, cushion hand grips. Flashing amber turn signals with sealed flasher in headlight shell available as optional extra.

## Colors

Rear fairing (Fastbacks only), gastank and side panels. Wide range of colors available. Consult your dealer.

## Dimensions

Wheelbase	56.75 in.
Length	87.5 in.
Width	26 in.
Ground Clearance	6 in.
Weight (dry)	385-395 lb. dependent on style and equipment.

## Performance

Under best conditions:	
Top speed	Approaching 125 m.p.h.
Acceleration	
0-60 m.p.h.	Under 5 seconds
Standing ¼ mile:	
Standard Engine	Under 13 seconds
	Terminal speed over 100 m.p.h.
Combat Engine	Under 12.5 seconds
	Terminal speed over 105 m.p.h.

*Norton Villiers reserves the right to vary the specification of all motorcycles and spare parts without notice and the information in this leaflet does not therefore constitute a term of any sale. All descriptions and claims are given and made in good faith but are intended to apply generally. Variations in performance and construction on individual machines may occur. Performance on any particular occasion will also be affected by the conditions, circumstances and the rider.*

*Capacity measurements in this leaflet are stated in U.S. gallons and pints.*

Norton Villiers Limited  
Walworth  
Andover, Hampshire, England.

