

# Discover lost horizons

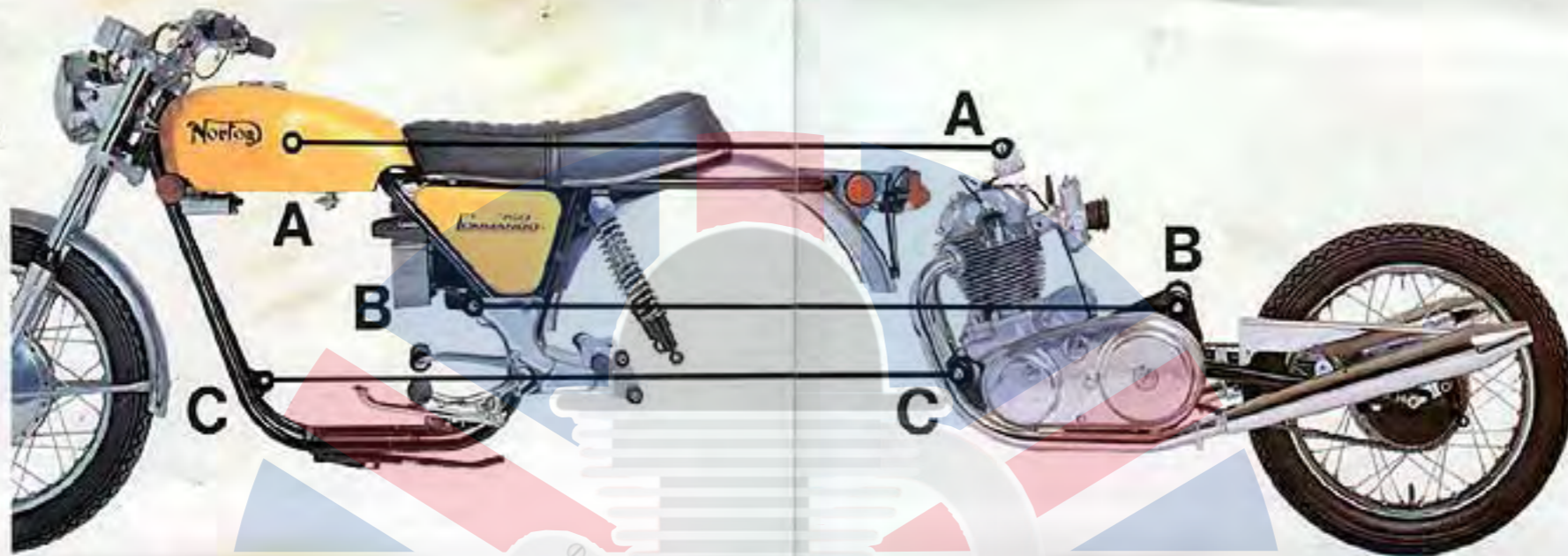


www.motocyclos-anglais.com

# 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.



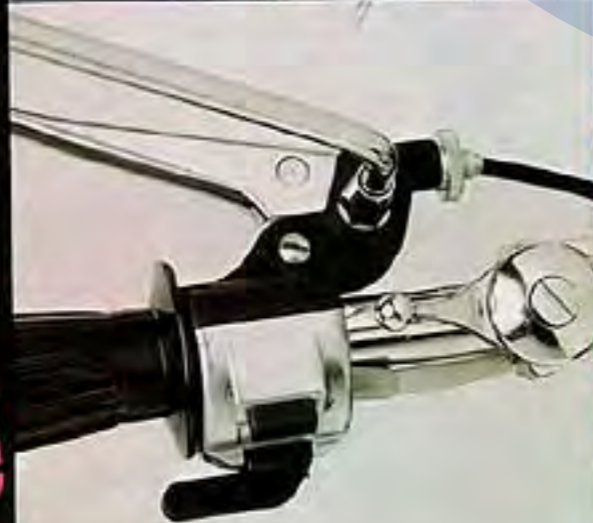
The Norton Isolastic principle (patented) built into the Commando couples the engine and gearbox directly to the rear wheel as one unit (as illustrated) on which the frame is secured by three strategically located resilient mounts (A, B and C).

This principle of construction not only insulates the rider, frame, lamps 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.

Easy-read speedometer with trip mileage. (Interstate only)



Switch cluster



**The Norton Owners Club**  
for social and sporting events for Norton Owners.  
Branches in U.S.A.  
Apply to Secretary, David Pipe  
89 Downs Way  
Southwick  
Sussex, England.



Top centre  
**Formula 750 Racer**

Built to F.I.M. regulations for Formula 750 and A.M.A. rule Book Chapter XIII C: & E.

Top left  
**Production Racer**

Built to F.I.M. regulations for Production Racers.

All racers fitted 5 speed close ratio gearbox, electronic ignition and Amal G.P. type carburetors. Available through your dealers. Ask for latest leaflet.



Bottom centre  
**'John Player Norton Team' Racer**

Specially constructed for sponsorship by John Player & Sons in Formula 750 racing.

Bottom left  
**Interpol**

Well tried police version of the Commando in use by many police forces throughout the world.

Every age has its legend of the unreachable, its Shangri-La, famous for its inaccessibility to the average man. But, with the advent of the Norton Commando, the old rule changed. All at once, the unattainable ideal is placed within your grasp — dreams can be realised and far horizons explored.

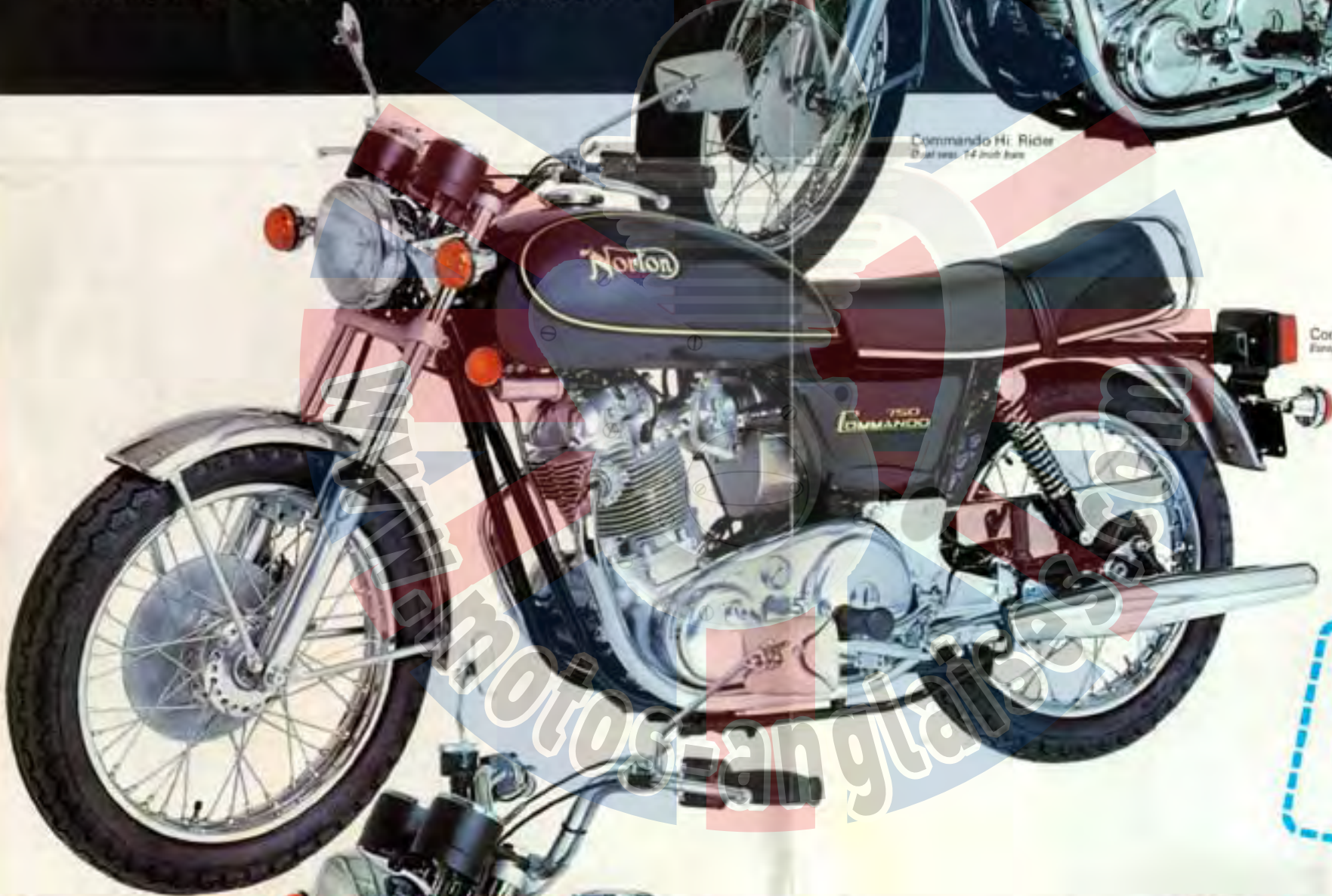
Spearhead of the Norton resurgence in world motorcycling, the Commando 750 utilises the famous Norton twin cylinder engine, accelerating you from 0-60 m.p.h. in five seconds and to 100 m.p.h. in twelve. A slim, sporty exterior — not for nothing is it known as "the world's lightest superbike" — yet concealing olympic stamina for long distances. Then our tour de force, the exclusive Isolastic construction, liberating the rider from the vibration fatigue once worn like an endurance badge.

Rideability and simplicity — not multicomplication — is the keynote.

Try one for yourself — it's meant for going places.



Commando Hi-Rider  
Dual seat, 14 inch bars



Commando Interstate  
European base illustrated



Commando Roadster  
Semi-Western base illustrated

STOP PRESS 21st DECEMBER 1972  
**Unprecedented  
record breaking**  
With nominations from Norton Commando riders  
**VOTED MACHINE  
OF THE YEAR**  
by the readers of Motorcycle News  
NOW A CLINTON WINNER

# Specification:

## Construction

Isolastic anti-vibration. Under this principle, the engine, transmission, swing arm and rear wheel are coupled together. Isolation of this assembly from the main frame, as shown in the illustration on the upper folded flap of this leaflet, 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 swing 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 could 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 swing 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 bronze loaded PTFE 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, British patent 1,219,896 and Canadian patent 866584 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 a 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. A strong steering lock abutment and substantial lock stops are provided.

U.S.A. design patent D212404, U.S.A. patent 3,508,765, Canadian patent 866083 and British registered design 932428 have been granted on the frame. Other patents and design registrations are pending.

## Suspension

"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 fork yokes and stem provide hairline steering geometry. Girling suspension units at rear with exposed chromed springs control the swing arm which pivots on oilite bushes.

## Engine

Air-cooled four stroke overhead valve vertical twin cylinder engine. Dry sump lubrication with full flow disposable element oil filter. Cast iron finned cylinder. Aluminum one piece cylinder head and rocker box. Hemispherical combustion chambers with large ports, valves angled for maximum power. Forged steel rocker arms. Austenitic nickel chrome steel exhaust valves. Inlet valve stem oil seals. Built up forged steel crankshaft with central flywheel. High capacity superblended roller main bearings. Forged aluminum alloy connecting rods with inserted thin shell big end bearings. Aluminum pistons. Gear and short chain timing drive to forged, hardened and nitrided camshaft. High efficiency direct drive to tachometer. Profiled aluminum push rods. Cam followers with stellite face pads for long life. Polished aluminum timing cover.

Capacity	745 c.c. (45 cu. in.)	
Bore	73 mm. (2.88 in.)	
Stroke	89 mm. (3.5 in.)	
Compression Ratio	Standard	High Compression
	8.5:1	9.5:1
	(Roadster only)	
Maximum r.p.m.		
continuous cruising	6,500	6,500
B.H.P. at sea level		
at 6,500 r.p.m. (SAE)	58	62

## Exhaust Systems

Roadster and Hi. Rider: Twin downswept pipes with upswept full flow mufflers.

## Interstate

Twin downswept pipes with low level full flow mufflers.

## Carburetors

Twin Amal concentric carburetors, matched and tuned for easy starting, tractor-like torque through the mid-range and crisp, powerful response at top end. The design of the carburetors gives consistent mixtures at any cornering angle and prevents surge or fuel starvation during acceleration or braking. High efficiency air cleaner with built-in induction silencer incorporates an automotive type replaceable filter element. Consult your Norton dealer for settings appropriate to altitude and climatic conditions in your area.

## Clutch

Multi disc clutch with large diameter diaphragm spring, the special design of which ensures light hand operation.

## Transmission

Wide tooth four speed gearbox with medium close ratios. Precision gear pinions of high alloy nickel chrome steel for maximum dog strength. Triple row heavy duty primary chain drive within streamlined aluminum housing. Oil feed pipe to rear chain. Efficient cush drive with reinforced polyurethane pads in rear wheel.

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.	k.p.h.
Gearbox sprocket teeth	19		
4th (Top) gear	4.84:1	108	174
3rd gear	5.90:1	89	143
2nd gear	8.25:1	63	101
1st (Bottom) gear	12.40:1	42	68
Gearbox sprocket teeth	21		
4th (Top) gear	4.38:1	119	191
3rd gear	5.30:1	99	159
2nd gear	7.45:1	70	113
1st (Bottom) gear	11.20:1	47	76
Alternative sprocket sizes available on order through your Norton dealer.			

## Electrics

12 volt electrical system fed by high output alternator fitted to ensure output balance point at 27 m.p.h. (43 k.p.h.) Zener diode charge control and silicon diode bridge connected rectifier. Coil ignition by twin contact breakers and two 6 volt coils with ballast resistor. Capacitors mounted in common pack with neat rubber cover. Capacitor discharge auxiliary ignition system for operation without battery. 7 inch (170 mm.) headlight—5½ inch (145 mm.) on Hi. Rider—with 45/40 watt conventional bulb or high brilliancy halogen unit. Powerful Alpine windtone horn for freeway use. Charge warning light with sealed and spring mounted assistor. Warning light for headlight high beam. Four position master switch for ignition and lights and light selection switch in headlight shell. Neat ergonomically designed switch clusters on handlebar controls for dip switch, engine kill button and turn signals. External live socket for auxiliaries or battery charging mounted conveniently on the side of the battery tray.

## Gastanks

Capacity:

Interstate (Steel)	7½ gall. (27 litres)
Roadster (Steel)	3 gall. (11 litres)
Hi.Rider (Fibreglass)	2½ gall. (9 litres)

All tanks fitted quick filler cap and reserve supply gas tap.

## Oil Tank

All steel construction for heat conduction. Capacity 6 pints (3 litres). Drain plug and dipstick. Concealed by neat cover. Reinforced flexible feed and return pipe.

## Seat

All models fitted with luxurious deep cushion contoured seats with supple black cover having dimpled top panel for maximum rider comfort.

## Stands

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

## Wheels

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

## Brakes

Front: High efficiency hydraulically operated Norton-Lockheed disc brake with light weight aluminum hydraulic units and 10.7 inch precision ground disc (cable operated ventilated twin leading shoe 8 inch drum brake on Hi.Rider).

Rear: Cable operated 7 inch drum brake.

## Tires

Front: 4.10 x 19

Rear: 4.10 x 19

Consult your Norton dealer or manufacturer's tire chart for correct pressures particularly for heavy loads and sustained high speeds.

## Other equipment

Matching easy-to-read tachometer and speedometer, passenger footpegs, tool kit, side reflectors, steering lock cushion and handgrips, optional amber flashing turn signals, rear view mirrors and grabrail.

## Colors

Gastank and side panels. Range of colors available. Consult your Norton dealer.

## Dimensions

Wheelbase	57 in.	(145 cm.)
Length	88 in.	(223 cm.)
Width	26 in.	(66 cm.)
Ground Clearance	6 in.	(15 cm.)
Dry weight	415-430 lb. (189-196 kg.) depending on specification	

## Performance

Under best conditions:	
Top speed	Approaching 125 m.p.h.
Acceleration	
0-60 m.p.h.	5 seconds
Standing ¼ mile	
Standard Engine	13 seconds
Terminal speed 100 m.p.h.	
High Compression Engine	12½ seconds
Terminal speed 103 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 and in metric units.

## Options for your choice

(1) High compression or standard engine. Choose the high compression for the ultimate performance for short periods. 100 octane fuel only. Choose the standard engine for longer distances and for travel where 100 octane fuel is not available.

(2) Rear sprocket 19T or 21T. Choose the 19T for best acceleration. Choose the 21T for high speed cruising and the best maximum speed. Other sprocket sizes available to special order.

(3) Equipment. Rear view mirrors, turn signals, grab rail, halogen headlight and (except Hi.Rider) European or Semi-western handlebars.

Legislation in some areas may require or may prohibit fitment of certain equipment. Consult your Norton Dealer.

Norton Villiers Limited  
Walworth  
Andover Hampshire England

