

Superplus!

the new Commando 850's



Norton's revolutionary answer to vibration



Its flexible approach leaves

Competitions

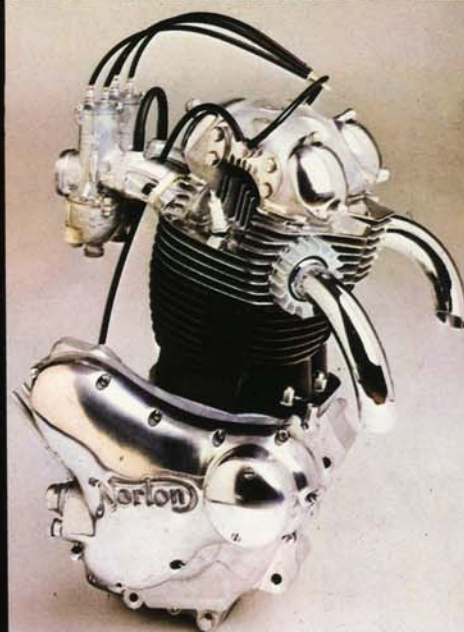
New high performance short-stroke 750cc engine

77 mm x 80 mm bore and stroke. Many performance components, including Four-S camshaft, larger inlet valves at modified angle, hidural exhaust valve guides, improved valve springs, 10.5 :1 compression solid skirt pistons, forged steel connecting rods and electronic ignition. External finish, black cylinder barrel and polished aluminum head.

Limited quantities of this engine, *illustrated right*, are available either as a separate unit or installed in a Commando Roadster, *illustrated below*. Use this machine on the street as supplied or use it as a base for modification and preparation for competition as your local rules may permit.

Kit of megaphone exhaust system and two 33 mm carburetors with bell mouth intakes to provide up to 80 bhp at the crankshaft at 8,000 rpm also available for events where mufflers are not required.

The John Player Norton Team machines, *illustrated at far right*, have been specially constructed for sponsorship by John Player and Sons for a program of racing in F.I.M. Formula 750 and Production Racing events.



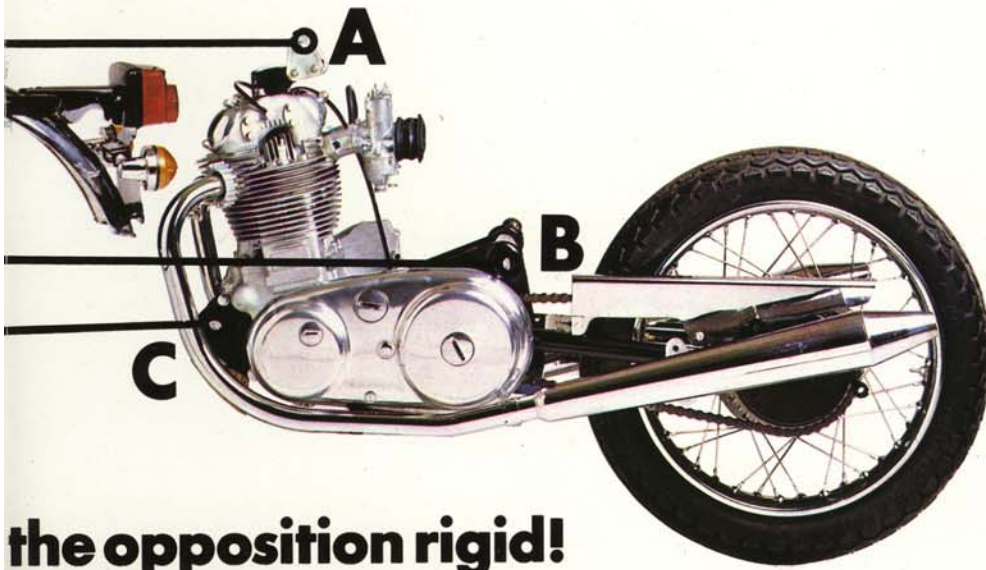
Commando
short-stroke
750 Roadster



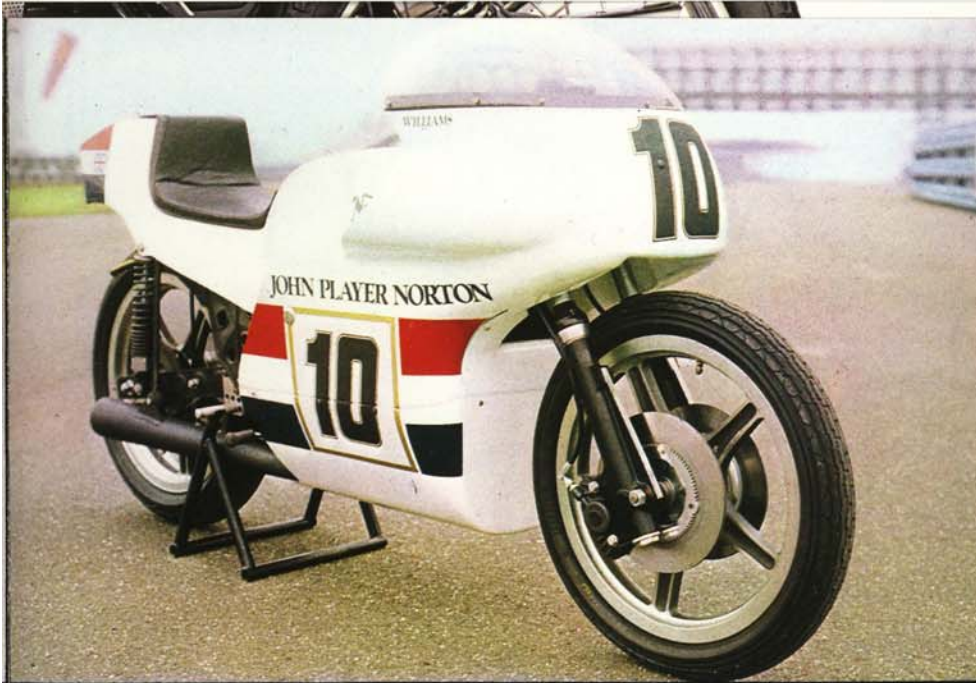
Isolastic

The Norton patented Isolastic construction insulates you from that hated motorcycle fault—vibration—and gives you a velvet smooth ride with the excitement of a high performance big twin.

The illustration shows the engine, gearbox and rear wheel as one directly coupled unit on which the frame is secured by three scientifically located resilient mounts which effectively insulate it and the rider from engine and transmission vibration. The system is fully described in the specification on the back page of this leaflet. It is unique in that, by mounting the swing arm directly on the engine cradle, it ensures excellent handling characteristics by preventing twisting between the countershaft sprocket and the rear sprocket under load.



the opposition rigid!



John Player Norton Team
F.I.M. Formula 750 Racer



John Player Norton Team
750 c.c. Production Racer

The Norton Owners Club

for social and sporting events for
Norton Owners
Branches in U.S.A.
Apply to Secretary, David Pope
89 Downsway
Southwick
Sussex, England.

Superplus!

A word coined for the most sensational development yet from the Norton stable, successor of the bike hailed in the late Sixties as the motorcycling sensation of the decade—the Commando “Superbike”.

The Commando 750 roared into the forefront of the big league with its powerful Norton twin, superb handling and what was described as “the only truly different chassis in the industry”—the Isolastic construction. Thousands discovered the Norton experience—roadburning acceleration, distance-devouring capacity—qualities which made it the unprecedented five times winner of the *Motor Cycle News* Machine of the Year award.

That was the beginning.

Now, for the mid-Seventies, we created the Commando 850—the “Superplusbikes”.

Still with that famous race-bred Norton rideability and simplicity.

Still with that unrivalled styling.

Still with that exclusive Isolastic construction to insulate you from vibration fatigue.

But boasting the added dynamism of a new 830 c.c. engine, superlative powerhouse of even more exciting performance figures.

And demonstrating the extra maturity of five years’ development in its lazy strength, lower noise levels and extended component life.

And all on regular—lower pollution—gas.

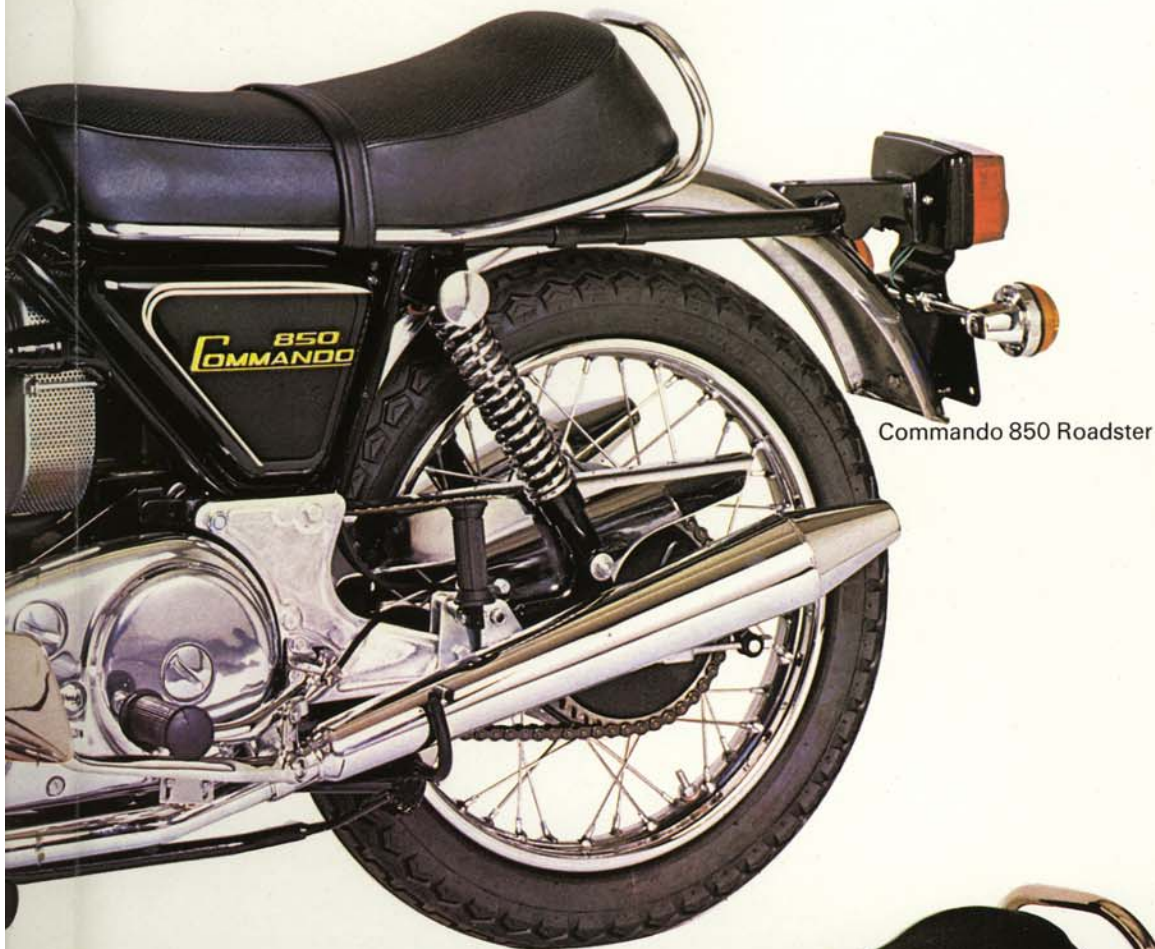
It’s the Commando 850 *Superplus*, the freedom bike. Try one and get in at the start of a legend!





The Commando 850 engine

- Recognisable by its through bolted cylinder block and exhaust balance pipe.
- 8.5 :1 compression ratio for regular gas
- Higher capacity specially manufactured large diameter superblended roller main bearings.
- Redesigned scavenge and breathing system
- Better component manufacture and many other detail improvements introduced to provide longer and cleaner trouble-free life for your Commando.



Commando 850 Roadster

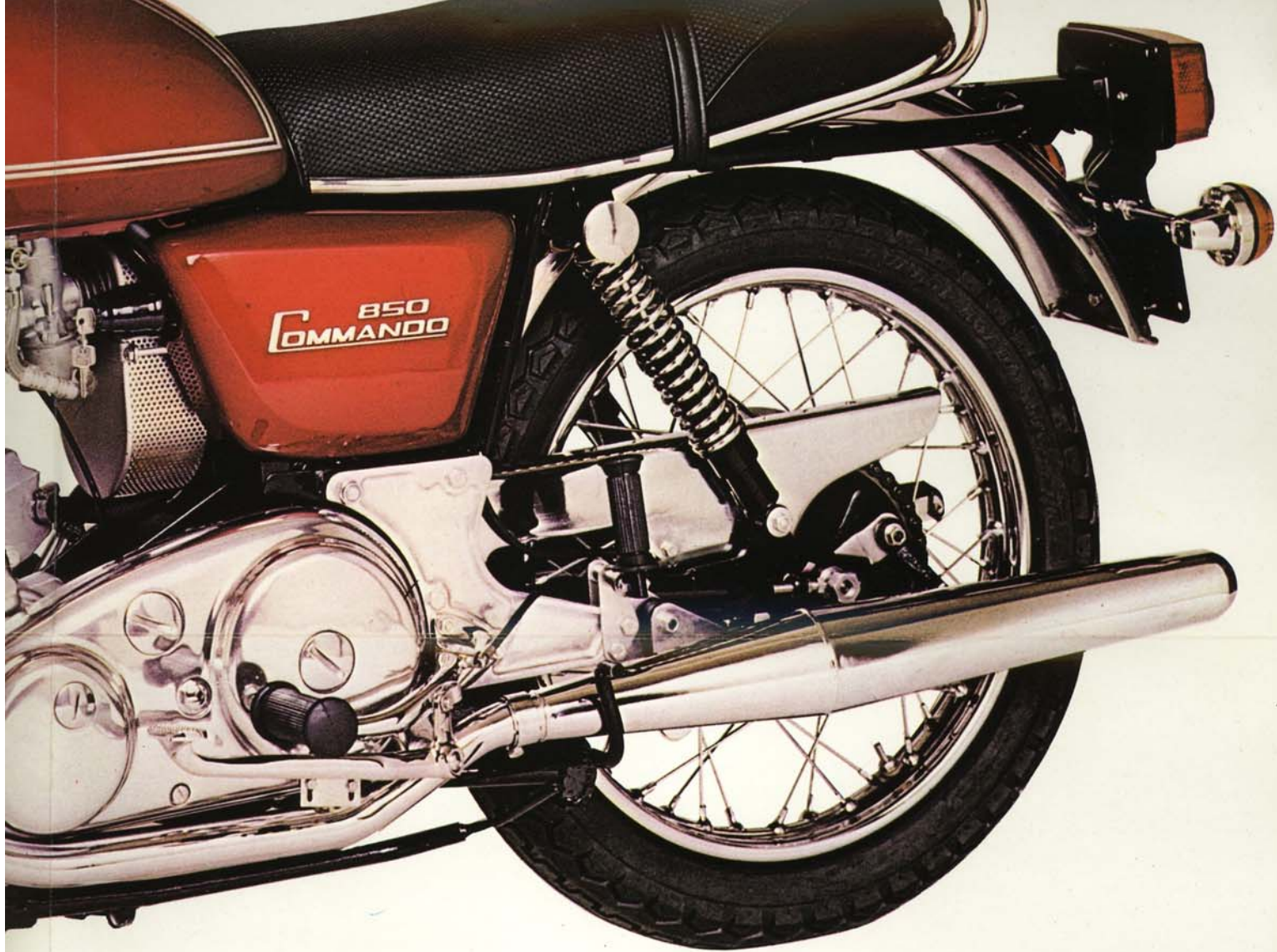
Commando 850 Interstate



Commando 850 with low noise air intake and exhaust system including new reverse flow annular discharge muffler (Patent applied for).

Commando 850 Hi Rise Dual Seat





to 850 Hi Rider
al Seat



Commando Interpol
Rapidly expanding use by the police forces of the world.

Specification:

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 countershaft sprocket and the rear sprocket 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, while 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 866,584 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 866,083 and British registered design 932,428 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 slimline 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. Bolt-through 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 large diameter 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	828 c.c.	(50 cu. in.)
Bore	77 m.m.	(3.03 in.)
Stroke	89 m.m.	(3.5 in.)
Compression Ratio	8.5:1	
Maximum r.p.m.		
continuous cruising	5,900	
B.H.P. at crankshaft at sea level, silenced to California legal requirement:		
At 5,900 r.p.m.	60	
At 4,500 r.p.m.	47	

Exhaust Systems

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

Interstate: Twin linked 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 hardened steel center and large diameter diaphragm spring, the special design of which ensures light hand operation.

Transmission

Wide tooth four-speed gearbox with medium-close ratios in heavy duty casing. Nickel chrome steel gear pinions 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.
Ratio		

Countershaft sprocket teeth

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

Alternative sprocket sizes available on order through your Norton dealer.

Electrics

12 volt electrical system fed by high output alternator which provides an output balance point at 27 m.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 headlight—5½ inch 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 assulimator. 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 gal.
Roadster (Steel)	3 gal.
Hi. Rider (Fibreglass)	2½ gal.

All tanks fitted 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 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. 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 handgrips, 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.
Length	88 in.
Width	26 in.
Ground Clearance	6 in.
Dry Weight	418-430 lb.
	depending on specification

Performance

Depending on conditions, an elapsed time of 12½-12½ seconds with terminal speed of 103-105 m.p.h. for a standing start quarter mile and a top speed approaching 125 m.p.h. may be expected.

On 15th February, 1973 at Santa Pod drag strip, Northamptonshire, England, a Commando 850 of the foregoing specification with a 21T countershaft sprocket, silenced to 86 d.b.a. California test procedure, ridden by a Company staff development tester, was electronically timed over a standing start quarter mile at an elapsed time of 12.53 seconds and a terminal speed of 104 m.p.h. Air temperature was approximately at freezing point.

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

