

Glamorous and

Big Japanese in-line fours start with the Honda CB750. It's cheap, invincible, and it'll get you there on modern roads

Thirty five years ago, Honda changed motorcycling forever by making the first mass produced in-line four. The 125mph CB750 had features that rival's brochures just could not match. They included an engine with obvious grand prix ancestry, electric starting, a five-speed gearbox and a disc front brake. The Dream Four, as Honda originally named it, was unveiled at the 1968 Tokyo Show and was on US roads the following summer. It was sold in the UK from January 1970.

Despite huge development costs, the blockbuster four was keenly priced – it cost less than a Triumph triple in the US. They sold by the shedload. Hugely influential, the CB750 design remained in production until 1978, with updates and derivatives. An estimated total of 553,000 were built.

Well equipped – and weighty – the CB750 offers a remarkably modern level of sophistication. Prices are rising and some spares are getting scarce, but the dependable Honda can take you many miles at modern traffic speeds with hardly any spannering.

BY MICK DUCKWORTH

(ACTION) JOHN NOBLE (STUDIO) LYNDSEY CHURCH

PHOTOGRAPHY

ring.



glorious

IN DOSSIER

Anatomy of a blockbuster

TIMELINE

PAGE 57

Know your Ks and Fs

RIDING

PAGE 58

On the road with a 1976 CB750 K6

ANATOMY

Motorcycles are as great as their parts

RACING

PAGE 63

The four's track record

SPECIALS

PAGE 64

Reframed CB750s for better handling

OWNING

PAGE 65

Maintenance de-mystified

PRICES

Early CB750s fetch the most: rarities can fetch £10,000. Super Sports are not in great demand but a F2 could give you a lot of riding for your money.

GOOD ROAD BIKE £2000-£3000 TATTY ROAD BIKE................ £1000-£1500

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SPECIFICATION

1969 HONDA CB750

▼ ENGINE/TRAI	NSMISSION	
type	air-cooled in-line four	
capacity	736cc	
bore x stroke	61 x 63mm	
compression ratio	9:1	
lubrication	dry sump	
carburation	4 x 28mm Keihin	
primary/final drive	chain/chain	
clutch/gearbox	wet, multiplate/five-speed	
electrics	12 volts	
ignition	coil	
▼ CHASSIS		
frame	duplex cradle, welded	

front suspension	telescopic forks
rear suspension	swingarm, twin shocks
brakes front/rear	296mm disc/180mm drum
wheels	wire spoke/steel rims
tyres front/rear	3.25 x 19in/4.10 x 19in
	Dunlop or Bridgestone

▼ DIMENSIONS

dry weight	481lb/218kg
seat height	31½in/800mm
wheelbase	57in/1455mm
fuel capacity	3½ gallons/16 litres

▼ PERFORMANCE

Looking for a useable classic? Honda's CB750 is the last word in useability

top speed	125mph
standing ¼ mile	12.4 seconds @ 100mph
power output	67bhp @ 8000rpm
fuel consumption	45-50mpg
price new	£650



ompany founder Soichiro Honda set a challenging brief for the youthful project team who were charged with creating the company's first 750cc motorcycle engine. The bike had to deliver stronger performance than any of its rivals, but with less vibration and more reliability.

Imposing appearance was important. Yet the engine had to be compact enough to avoid creating an unmanageable monster, while being cost-effective to produce and easy to service.

Honda chose an in-line four over horizontally-opposed and vee multi cylinders. The layout's advantages included smoothness and an affinity with Honda's successful grand prix racers – riders were going to be much more interested in buying motorcycles that were like the race winners.

The finalised design electrified the 1968 Tokyo Show and set an industry pattern that endures today.

Plain bearings are used throughout the bottom end, with big-end journals disposed at 180-degree intervals: the inner two are at top

dead centre when the outers are at bottom dead centre. The cam chain and twin primary chains are driven by sprockets cut in the crank metal between the inner cylinders' webs. Valve gear is simple, with a single camshaft in plain bearings that opens eight valves via rockers with clearance adjusters.

The biggest challenge was how to cut down the weight and width of a large capacity four.

To minimise engine width, Honda made a radical decision to sacrifice revs – the bore is 2mm less than the 63mm stroke. To reduce engine height, they tilted the cylinders forward. And to find more ground clearance, they used a dry sump lubrication system – almost every other Honda has a wet sump system.

Oil is circulated through internal galleries by a twin rotor trochoidal pump in the crankcase. Some lubricant is supplied to the gearbox from where, on pre-1976 engines, a trickle was passed to the chain across the inner face of the output sprocket.

Driven by the paired primary chains via a shock absorber, the multi-plate clutch is in the

right-side portion of an elaborate horizontallysplit crankcase. There are five ratios in a conventional two-shaft gearbox, with output from a third shaft carrying the sprocket.

The alternator is a sophisticated three-phase 180 watt Hitachi type with exciter coils rather than permanent magnets. It mounts at the leftward end of the crankshaft.

Four 28mm Keihin round-slide carburettors with integral float chambers are operated by a rocking beam throttle mechanism. The earliest models have an all-cable one-into-four exhaust.

Honda knew that four separate exhaust pipes were not essential for performance but instead used them for striking visual effect on its 1968 bombshell and all later CB750s except the Super Sports and Automatics.

Teething troubles included a leaky head joint, soon addressed by an extra holding-down bolt. Honda dealt with early drive chain failures by enlarging the gearbox sprocket. You can get cam chain rattle if the tensioner's badly adjusted or carburation is unbalanced. Generally however, Honda's landmark engine is trouble-free.

THE MEN BEHIND THE FOUR



SOICHIRO HONDA

Before Soichiro Honda instigated the 750cc project, the words 'big' and 'motorcycle' rarely went together in Japan. But after a mid-Sixties visit to the US, the ambitious company boss was determined to go large, telling engineers: "The bigger the better".

Despite being preoccupied with the problematic Honda 1300 car at the time, Pop Honda followed the CB750 development programme closely and urged the team to think boldly. He persuaded them to fit the relatively untried disc front brake, so as to further boost the four's high-tech image.

Honda Motor Company rarely ascribes achievements to individual engineers but it is known that the project leader was Yoshiro Harada who also designed the CB72 and CB450. Masaru Shirakura oversaw the CB750's engine development and Hitoshi Ikeda was chief stylist.

MODEL TIMELINE

CB750

1969 Original version of the CB750 with louvred side panels, all-cable throttles, tiny seat hump, plastic instrument lenses. First 7400 or so have 'sand-cast' crankcase.

1971 Updated K1 (biggest-selling CB750) was in US in late 1969. Beam-operated throttles, restyled airbox and oil tank with new emblems. White tank lettering, black front brake caliper. **1972** K2 with restricted silencers, altered rear shocks and metal chainquard instead of plastic. Warning lights panel between instruments.

1973 K3 for the US, K2 continues elsewhere. Improved front fork and five-way adjustable shocks. K3: new tank graphics, restricted air intake, front disc water guard and running lights in indicators.

1974 K4 for USA/Japan, K2 elsewhere. Only three vertical braces in cylinder head side fins. K4: ratio indicator on gearbox.

1975 K5 for USA, K2/K4 elsewhere. K5: bigger indicators, rubber-tipped 'flip-up' side stand. 1976 K6 with stronger swingarm, detuned engine, no chain oiler.

1977 K7 with F1-type engine and single carburettor accelerator pump. Plainer silencers, 17in rear wheel with wider tyre, O-ring chain, flush fuel filler.

1978 K8 for US with two-tier seat, minor engine changes.

CB750 Super Sports

1975/1976 Super Sport F/F1: lower gearing, four-into-one exhaust, increased fork trail, stronger swingarm, disc rear brake and 'Euro' cosmetics

1977/1978 Super Sport F2/F3. Bigger-valves and stronger bottom-end in 70bhp engine, accelerator pump. New front fork with twin discs, Comstar five-spoke wheels, FVQ shocks.

CBT50A Hondamatic

1976 to 1978 CB750A Hondamatic with semiautomatic transmission (not sold in the UK) Hefty 578lb propelled by only 48bhp.

1977: A1(EARA in Japan): four-into-two exhaust, 1978: A2 with Comstar wheels

1969



1970

1971

1972



American/Japanese

974 CB750 K4

1974

1973



CB750 Super Sport

1976

1977

1977 CB750 K7

PRODUCTION Numbers built

(in round figures) . СВ750 КО СВ750 К1 77,000 CB750 K2 63,500 CB750 K3 38.000 CB750 K4 60.000 35,000

CB750 K5 CB750 K6 42,000 38,000 CB750 K7 CB750 K8 36,000 CB750 F 15,000 CB750 F1 44.000 CB750 F2 25.000 CB750 F3 18.400

CB750A 4100 CB750A1 2300 CB750A2 1700 553,400

1976 CB750 EARA

Hondamatic

ENGINE AND FRAME NUMBERS

Honda built and numbered its CB750 engines and frames at separate plants.

CB750 (1969-1970)

frame from 1000001, engine from E1000001

CB750 K1 (Aug 1970-Nov 1971)

Frame from 1053399, engine from E1044806

CB750 K2 (Nov 1971-Sept 1972)

Frame from 2000001, engine from E2000001 CB750 K3 (Sept 1972-June 1973)

Frame from 2200001, engine from E2200001

CB750 K4 (June 1973-May 1974)

Frame from 2300001, engine from E2300001

CB750 K5 (May-December 1974)

Frame from 2500001, engine from E2372115

CB750 K6 (Dec 1974-June 1976)

Frame from 2540001, engine from E2428762

CB750 K7 (June 1976-May 1977)

Frame from 2700002, engine from E2700001

CB750 K8 (May 1977-May 1978)

Frame from 2800001. engine from E3000001

CB750F (Jan-Feb 1975)

Frame from 1000002, engine from 2500004

CB750 F1 (March 1975-Nov 1976)

Frame from 2000003, engine from 2515094

CB750 F2 (Nov 1976-May 1977)

Frame from 2100011,

engine from 2600004

CB750 F3 (May 1977-May 1978)

Frame from 2200001. engine from 3100001

CB750A (Dec 1975-Sept 1976)

Frame from 7000001, engine from E7000001

CB750A1 (Sept 1976 - May 1977)

Frame from 7100001, engine from E7100001

CBA2 (May-Oct 1977)

Frame from 7200001, engine from E 7200001



How to buy one

Engine numbers do not match frame numbers, and may differ by as much as 2000. US-market bikes have a dated maker's plate on the steering head.

Find a bike that is evidently well cared for, starts instantly and runs evenly. Inspect frame downtubes for dents caused by violent removal of aftermarket exhausts and ask to see under the gearbox sprocket cover for signs of damage from chain breakage.

Non-standard wheels, pipes, seats or handlebars don't always mean a bike has been neglected. If you want a perfectly standard example, look for one with everything intact as parts supplies are drying up. Although a genuine pre-K2, 300-coded, exhaust system can still be bought it can cost more than £700.

MARKET VIEW



The first of the type 750-4s have been known to make £8000-plus. Later roadworthy but scruffy sohc models can

struggle at £1000. An all original fully restored example at the right price is your best bet because restoration costs can be huge. The K6 photographed is for sale at £4250, and asking prices ranged from £1500 (1978 F2) to £6000 (1978 F2 Phil Read Replica) in our last issue. There was a 1974 K2 which looked very good value at £2000. At Bonhams (p14) a 1970 K1 (est £3300-£3800) failed to sell, and a 1978 Read Replica made £2530.

Brian Crichton



Riding the CB750

ize and weight are the things that strike you when you first approach the CB750. Yet the Honda is far from being unmanageable. Rolling it off the stand won't give you a hernia and the choke lever is readily to hand. A mere jab of the thumb sets the four-cylinder powerhouse burbling and its power delivering is pleasantly docile at small throttle openings.

We rode a 1976 CB750, coded K6. On several markets, including the UK, it was the first update of the four since the K2 of 1972. The 900cc Kawasaki Z1 and Honda GL1000 Gold Wing had arrived by 1976, so the 750 could no longer claim to be the ultimate bike. It was simply an affordable 110mph workhorse

ready to go the distance, while offering a high level of comfort and convenience.

Some of the edge has gone off the grand prix howl of the original four's exhaust note. But the environmentally corrected K6 engine still has a pleasant tone and a useful head of steam. It may not spin as readily as a modern four, but making music by winding up to 7000rpm through the gears makes for an exhilarating ride.

For a quieter life, you can saunter along in a high ratio, knowing you only need snick the leftside pedal down to stoke up enough revs for strong forward thrust when it's needed.

The gearchange is notchy at low speed and the clutch on this machine is far from silky, but on the whole the bike is easy to control, letting

you to concentrate on enjoying the ride.

The seat is really comfy, although tingly high frequency vibes penetrate the filling across a fair span of the rpm range. The bars and footrests are well placed for brisk, rather than frenetic, road riding, with windblast inevitably becoming an issue at motorway velocity.

Except when making tight turns, when topheaviness is apparent, the four's bulk can be largely forgotten. But, although the front disc and rear drum offer effective braking for leisurely riding, when the machine's 480lb-plus weight is rolling at speed it's a mistake to expect too much from the disc.

On minor country roads the ride is bouncy, the impression being that the K6 has over-firm





Easy to read clocks and warning lights



Front disc sports plastic splash guard



Lifting seat reveals battery and tools



Exhaust noise is subdued but tuneful

AN OWNER'S STORY



NAME: Chris Rushden OCCUPATION: development engineer BIKE: 1969 Honda CB750 (US market) YEARS OWNED: 14

YEARS OWNED: 14 MILEAGE: 54,000

CB: Why a CB750?

CR: It's the first real superbike. I really wanted one when I was a student in the Seventies, but couldn't afford it.
And I love the exhaust sound!

CB: Best CB750 experience?

CR: My annual riding holiday in Scotland, when I cover 300-plus miles each day.

CB: Problems?

CR: None. Maintenance is simple and I change the drive chain and rear tyre, at roughly 5000 miles. On this early model the top throttle cable needs renewing after about 25,000.

CB: Modifications?

CR: As it's a rare sand cast example I keep it as original as possible. But I have fitted Hagon shocks, taperedroller steering head bearings and phosphor-bronze swingarm bushes. I use modern brake pads and Dot 5 silicon brake fluid.

CB: Other bikes?

CR: Various Honda fours from 350 to 1300cc, including later CB750s and an RC30. Of all my bikes I ride this the most, about 6000 miles a year.

fork action and poorly-damped rear units. Suspension was one of the most frequently revised areas during CB750 production and many owners fitted aftermarket rear shocks.

When the stock rear units on this bike are warmed-up, wavering can be felt when cornering with verve, although not to an alarming degree at legal speeds. Handling quirks are the price you pay for 68bhp allied to Sixties' Japanese chassis design.

Modern Avon tyres are fitted although specialist restorer John Wyatt, who built this gleaming beauty out of a 100,000-miler, says he prefers the lighter steering of a slimmer front tyre with a ribbed tread of the type seen on original fitments.

On this model, which has a Honda replacement tank, the single petrol tap is on the left. Earlier fours had it on the right: not good for switching to reserve while operating the twistgrip at the same time.

Also on the left, under the forward part of the tank, the ignition key is awkward. It comes as no surprise that a US aftermarket conversion for re-siting the switch on the handlebar was a hot seller. A lock is provided for the seat, which lifts to give access to the battery and a tray for the rarely-needed tools.

Many refinements were made during the CB750's long production life. New regulations had to be met and Honda tried to minimise risks, holding talks with US safety campaigner

Ralph Nader. Faults and weaknesses that cropped up in service were addressed.

As a result, although blander and slower than the earlier models, the less lusted-after later Ks offer more sophistication and dependability.

Direct comparison with a 21st century four may make the Honda seem rough, clattery and sluggish, but the CB750 is a spectacularly clever package for a 35-year-old design. Positive attributes, such as strong performance, decent brakes, dependable electrics and reliability far outweigh the shortcomings. It won't win you friends among the more blinkered devotees of its British contemporaries, but this eye-grabbing classic gives you the freedom to go as far as you want whenever you want.







Various similar-looking Showa shocks were fitted, from an early gas-filled type to the later FVQs (owners said it stood for Fade Very Quickly). All are often replaced with aftermarket units to enhance handling.

Drive chains broke on earlier models with a 16tooth output sprocket – some crankcases still carry the scars. Fitting a 17 or 18-tooth sprocket is recommended. Convert to an O-ring chain, as fitted from 1977, for complete peace of mind.

The racer-style four into The racer-style 100. four exhaust system is a CB750 trademark, but exhausts are not always original. The 300-coded pre-K2 silencer is less restricted and a new style appeared on the K7/K8. A four into one is standard on the CB750F Super Sports models.



Honda's first doublecradle frame has no less than six tubes running to the steering head, but is not so well braced at the rear end where flex can split metal tool trays. Later models have a strengthened swingarm (and plastic tool trays!). This fuel tank style with stripe-edged side panels is seen on versions from K3 to this 1976 K6. The petrol tap was switched from right to left on the K5, so it can be switched to reserve on the move without using the throttle hand.

The imposing all-alloy ohc engine was a revelation in 1969 and showed the world how sophisticated Honda's manufacturing capability was. The first 7400 or so CB750s made have a rough textured 'sand-cast' (actually gravity diecast) crankcase.

Electrics are first class with a powerful Hitachi alternator, but its leads can loosen. With a decent battery, the kickstarter isn't needed. Some switchgear is quirky: on early UK machines, accidentally hitting a dipswitch mid position turns off the headlamp.

Disc brake has a Girlingstyle pin-pivoted caliper held in alignment by a spring and it benefits from modern sintered pads. A guard to stop water being flung onto the plugs was fitted from K3. Original style of ribbed front tyre still made by Continental.





15.03.70Daytona Speedway, Florida

or a machine not designed to race, the CB750 notched up some fine results, the most outstanding being Dick Mann's 1970 Daytona victory. Veteran American rider Mann outran Harley-Davidson, Kawasaki, BSA/Triumph, Suzuki and Yamaha rivals, averaging a record 102.69mph for the 200 miles.

Bob Hansen of American Honda had warned his seniors that if they didn't enter official CB750s in the race, the four's image could be tarnished by private bikes taking lowly places. So the factory built four racers with special engine and cycle parts to be homologated by listing a speed kit.

Honda's Formula One boss Yoshio Nakamura oversaw the Daytona team. UK riders were chosen: ex-Honda GP stars Ralph Bryans and Tommy Robb, racing dealer Bill Smith and his associate Steve Murray. When Honda decided to field an American rider, Hansen nominated Mann, recently dropped from BSA's US squad. Mike Hailwood (BSA), Gary Nixon (Triumph) and Ron Grant (Suzuki) took turns to lead the race but all retired. That left wily Mann out in front on the howling Honda, which he had opted to run on high gearing. As anticipated, its cam chain tensioner started breaking up in the late stages, but Mann still pipped Gene Romero's works Triumph. Bryans and Robb started on two of the other factory bikes (the fourth burnt out after a crash in practice) but both were sidelined by cam chain tensioner failures.

"Daytona is hard on engines, but it was my job to finish first, and long races were my speciality," recalls Mann. Honda paid him well but had the result it needed and did not call on his services again. Hansen, who defied Nakamura's order to signal Mann to speed up during the critical final laps, lost his job.

Morio Sumiya and Roger Reiman rode factory CB750s at Daytona in 1973 but, struggling against big two-strokes, Sumiya could only manage sixth place.

ROLL OF HONOUR

Masters of endurance

Before the Daytona sensation, less modified CB750s won endurance events in Japan and France. Some effective racers were built with Honda's speed kit, including a Yoshimura-tuned four on which Gary Fisher led Daytona in 1972 before retiring. CB750-based engines were prominent in European endurance events until 1975.

196

- Suzuka, Japan 10 Hours Production
 Morio Sumiya/Tetsuya Hishiki,
 Yoichi Oguma/Minoru Sato
- Montlhéry (France) Bol d'Or 24 Hours
 1 Michel Rougerie/Daniel Urdich
- Daytona (USA) 200 MileDick Mann

1971

Amaroo Park (Australia) Castrol 10001 Bryan Hindle/Clive Knight

1972

- Le Mans (France) Bol d'Or 24 Hours
 Gérard Debrock/Roger Ruiz,
 Georges Godier/Alain Genoud
 Stan Woods/John Williams
- European Endurance Championship Godier/Genoud

1977

Le Mans (France) Bol d'Or,1 Debrock/Thierry Tchernine

1975

• FIM Endurance Championship Ruiz/Huguet

1977

Isle of Man TT, Formula 11 Phil Read

RACING LEGENDS



PHIL READ
Racing legend
Brave Read
splashed to victory
on a Honda Britain

820cc four in the inaugural Formula 1 race of 1977, cut from five laps to four in foul weather. Skipping his second pit stop, he finished with an empty oil tank. A row erupted because Honda knew of the race shortening before rival teams.



MORIO SUMIYA Honda racer Sumiya played a key role in developing the racing CB750. He won several races on fours in his

home country and raced one at Mallory Park in 1970. He was killed testing, prior to the 1975 Bol d'Or.



Dresda Honda

After Dave Degens provided the chassis with which French Honda importer Japauto won the 1972 Bol d'Or, the road racing proprietor of Dresda Autos produced batches of his CB750-based cafe racer. It had a long wheelbase frame of T45 tube. Later versions sported cast wheels and fairings with twin headlamps. Overthe-top custom paintwork was an option. Batches of Dresda Hondas were shipped to Spain, to circumvent import restrictions on Japanese bikes.

CB750 based specials

he coming of the CB750 generated a boom in aftermarket frame kits. Taking the powerful and dependable engine out of its mass-produced Japanese frame and installing it in a hand-made European chassis with much better handling brought together the best of both worlds. Some

Seeley Honda

Aiming to improve the handling and accessibility of the CB750, former sidecar racer Colin Seeley built his elegant but costly Seeley Honda from 1975 to 1978. Made in several versions, it had a duplex cradle frame in Reynolds 531 tube and later editions used US-made S & W shocks, Jardine exhausts and 810 or 1000cc big bore kits. German type approval was obtained and Seeley Hondas were exported to 12 countries.

conversions used engines in standard tune and retained Honda front forks, wheels and brakes. But others, often based on full-house endurance racers, had more radical chassis. Their engines were tuned, and had hot cams and four-into-one exhaust systems while the design allowed safe enlargement to give capacities up to 1000cc.

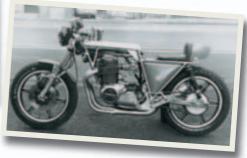


Bimota

The first machine to emerge from the Italian Bimota factory was a CB750-based racer in a lightweight tubular steel frame. Company bosses Massimo Tamburini and Giuseppe Morri built it for Luigi Anelli to campaign in Italian Formula 750 events from 1973. Demand for similar bikes was so strong that Bimota, previously a heating and ventilation duct specialist, switched to motorcycle making and became a byword for exclusive products with excellent handling.

Rickman Honda CR750

Hampshire company Rickman was already in the frame kit business when the CB750 arrived. From 1973, it marketed a kit with which a skilled person could convert a donor CB750 into a stylish cafe racer in a weekend. It comprised a nickel-plated frame in large-diameter Reynolds 531, a front fork, swingarm, Girling shocks and disc brakes as well as a distinctive moulded tank, seat and mudguards.



Egli Honda

Swiss frame maker and engine tuner Fritz Egli's frame for the CB750 followed his earlier Vincent type in being open-bottomed, with a large-diameter tubular spine containing the engine oil. Egli made his own exhaust systems and cast wheels. Georges Godier and Alain Genoud won the 1972 European Endurance on an Egli Honda, before turning to Kawasaki Z1 power.



A SENSE OF BALANCE

Expert John Wyatt's advice on carburettor balancing is this:

"A set of vacuum gauges is essential, but the job isn't as difficult as people seem to think. With the engine warmed up, connect the gauges to the carbs and run the engine at tickover. Set each throttle by turning the 17mm adjuster on top of the carb until the gauge readings are in synch. Then retighten the 10mm locking nuts. On an early engine, I run it at 2500-3000rpm, tweaking the carbs'



cable adjusters to equalise them. Then I let it idle and fine-tune using the throttle stop screws. Watch out for blocked pilot jets, especially on later bikes with thinner tanks that rust more."

OWNERS CLUBS

Honda Owners Club

The Honda Owners' Club GB has a classic section and holds an annual rally at which Hondas of all ages are welcome. Membership is £15. Contact: G Gull, 61 Vicarage Road, Ware, Herts SG12 7BE.

VIMC

The Vintage Japanese Motorcycle Club supports several major classic events as well as hosting its own annual show. With branches worldwide, it has a spares scheme and offers discount insurance. Membership is £20 in the UK or £22 overseas, plus £5 joining fee. Contact: Don Leeson, PO Box 14, Corwen LL21 9WF.

NEXT MONTH: DOSSIER 03 – NORTON DOMINATOR