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## **1981 Honda CB750 DOHC Restoration Guide**

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## Honda

# CB750 DOHC

### Restoration Guide — Model Year 1981

|                                                                           |                                                          |
|---------------------------------------------------------------------------|----------------------------------------------------------|
| <b>Engine</b><br>743 cc DOHC 16-valve inline four (see displacement note) | <b>Output</b><br>77-78 hp @ 9,000 rpm                    |
| <b>Brakes</b><br>Dual 275 mm front discs / 180 mm rear drum (K)           | <b>Weight / Tank</b><br>233 kg dry / 20 L tank (K, RC01) |

Single-year edition — covers the **1981** model year only (CB750K / CB750F / CB750C - needle-bearing swingarm standard). A companion to the Honda factory service manual, not a replacement: correct sequence, year-change points, measure-first checkpoints, finishes, fasteners and markings, parts interchange, and honest value guidance.

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## About this guide

This is a **restoration companion to the Honda factory service manual**, not a replacement for it. You need both: the manual gives the full teardown procedures, torque tables and the wiring diagram; this guide gives you the correct **sequence**, the **model-year change points**, what to **measure before you clean anything**, what **not to do**, the **finishes, fasteners and markings** that make a restoration factory-correct, parts interchange, and honest value guidance.

Every numeric value in this guide is cited to a source in the spec tables. Anything the cited literature does not give a number for is omitted or flagged [**UNVERIFIED — not in factory literature**]. We never invent specifications.

This is a **single-year edition**: it covers the **1981 CB750 DOHC** only. Do not apply its year-specific details to other years.

*Scope: CB750 DOHC — model year 1981 (CB750K / CB750F / CB750C - needle-bearing swingarm standard)*

## Honda Motor Co. — the context that matters

Honda Motor Co., Ltd. was founded in 1948 by Soichiro Honda — a mechanic who had designed his own piston rings in 1938 — and began building motorised bicycles before releasing its first true motorcycle, the Dream D-Type, in 1949. (autoevolution.com Honda background)

Through the 1960s Honda built its reputation on small, reliable motorcycles; the CB450 (1965) was Honda's first 'big' motorcycle, aimed at the British 500s (Wikipedia, Honda CB450). The 1969 CB750 then opened the superbike era.

For restoration purposes, Honda's pre-1975 naming matters: 'K0' marks the first version of a model, with K1, K2 etc. marking running revisions (American Honda Motorcycle Identification Guide, quoted on forums.sohc4.net). The K number does not always track the calendar year — check frame serials, not just the letter.

## Model history — CB750 DOHC

Honda presented the DOHC CB750 at the 1978 IFMA in Cologne as the SOHC CB750 Four's successor - 'what happens when you keep winning races' - with the engine derived from the RCB943/RCB997 endurance racers: four valves per cylinder and separate chains driving the exhaust and intake cams (Wikipedia, Honda CB750K (RC01) (Honda press release 1978-12-12; Honda CB750K Service Manual)).

US model-year shape: the K (RC01) and the F Super Sport (RC04) open the line for 1979; the C Custom joins for 1980-1982; the K and F continue through the period this guide covers; the SC Nighthawk derivative arrives for 1982 (Wikipedia, Honda CB750 (model/spec table)).

Family context: the same DOHC architecture scales up to the CB900F (US 1981-82, covered by its own IronHead single-year guides) and the CB1100F of 1983. Parts and specifications do not transfer between the three capacities - each has its own guide.

Period positioning: 77-78 hp at 9,000 rpm and a 125 mph top-speed claim for the K (Wikipedia, Honda CB750K (RC01) (Honda press release 1978-12-12; Honda CB750K Service Manual)) - strong numbers that period tests

(Bennetts' fifty-years retrospective quotes 72 hp for the DOHC version) did not always reproduce; both figures are labelled where they appear in this guide.

## Model identification — confirm what you have

Model code RC01 for the CB750K - frame and engine numbers carry the RC01 family. The DOHC bike is not a SOHC CB750 with a new head: it is a new engine (two cam chains - one per cam - 16 valves, alternator moved to the right side) in a new double-loop frame with a removable right-side support for engine removal (Wikipedia, Honda CB750K (RC01) (Honda press release 1978-12-12; Honda CB750K Service Manual)). Displacement is printed as 743 cc (62 x 62 mm) in the RC01-specific literature citing Honda's 1978 press release and the CB750K Service Manual; Honda's general CB750 table lists 748 cc for the same models - the conflict is carried in this guide's Sources, never silently resolved. Plain IH-HONDA-CB750- SKUs in the IronHead catalog are the SOHC buyer's guides - a different motorcycle and a different product.

**This 1981:** CB750K / CB750F / CB750C - needle-bearing swingarm standard. Frame serial reference: RC01 family numbers (K); 17-character VIN era - the 10th character B is the 1981 year code.

**Year-correct equipment:** K colours: Candy Muse Red or Black Metallic (autoevolution, CB750 Four K 1981).

Confirm the serial block **before ordering parts** — especially brakes, wheels, carburettors and electrics, which are year-specific on this model. A bike titled as one year but carrying another year's major parts is common after 40–60 years; trust the stampings, not the title.

*1981 at a glance: Dual 275 mm front discs, 180 mm rear drum (K)*

## Year-change register — what changed for 1981

Running changes across the model run, with why each matters to a restorer. Rows marked for this year are the ones that affect **your** parts ordering.

- First full year with the needle-roller swingarm bearings standard after the end-of-1980 change (Wikipedia, RC01).
- The 1981 F is listed at 67 hp in Honda's general model table against 78 hp for the 1979-80 F - a market/rating difference the table does not explain; this guide prints both figures labelled rather than choosing one (Wikipedia, Honda CB750).
- K equipment notes for 1981: air-adjustable front forks and a megaphone-style 4-into-4 muffler design (autoevolution, CB750 Four K 1981) - treat as variant/market detail and verify on the bike.

## Verified spec tables — 1981 CB750 DOHC

Every row cites its source. Rows flagged [UNVERIFIED] are printed as found, not as factory-verified. Year band: CB750K / CB750F / CB750C - needle-bearing swingarm standard.

### ENGINE

| Spec                        | Value                                                                                          | Unit      | Source / notes                                                                                                                                        |
|-----------------------------|------------------------------------------------------------------------------------------------|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Engine type</b>          | Air-cooled DOHC inline four, 16 valves (4/cyl), two cam chains (one per cam), tappet actuation |           | Wikipedia, Honda CB750K (RC01) (Honda press release 1978-12-12; Honda CB750K Service Manual)                                                          |
| <b>Displacement</b>         | 743 (RC01 literature) - Honda general table lists 748; conflict carried, see Sources           | cc        | Wikipedia, Honda CB750K (RC01) (Honda press release 1978-12-12; Honda CB750K Service Manual) / Wikipedia, Honda CB750 (model/spec table)              |
| <b>Bore x stroke</b>        | 62 x 62                                                                                        | mm        | Wikipedia, Honda CB750K (RC01) (Honda press release 1978-12-12; Honda CB750K Service Manual)                                                          |
| <b>Compression ratio</b>    | 9:1                                                                                            |           | Wikipedia, Honda CB750K (RC01) (Honda press release 1978-12-12; Honda CB750K Service Manual)                                                          |
| <b>Max power (claimed)</b>  | 77-78 @ 9,000                                                                                  | hp @ rpm  | Wikipedia, Honda CB750K (RC01) (Honda press release 1978-12-12; Honda CB750K Service Manual) (77 in technical details; 78 in infobox and Honda table) |
| <b>Max torque (claimed)</b> | 66 @ 7,000 (49 lb-ft)                                                                          | N-m @ rpm | Wikipedia, Honda CB750K (RC01) (Honda press release 1978-12-12; Honda CB750K Service Manual)                                                          |
| <b>Carburettors</b>         | 4 x 30 mm Keihin constant-pressure (CV)                                                        |           | Wikipedia, Honda CB750K (RC01) (Honda press release 1978-12-12; Honda CB750K Service Manual) (Service Manual data)                                    |
| <b>Lubrication / crank</b>  | Pressure-circulation; one-piece steel crankshaft on five plain bearings                        |           | Wikipedia, Honda CB750K (RC01) (Honda press release 1978-12-12; Honda CB750K Service Manual)                                                          |

## ELECTRICAL

| Spec                        | Value                                                                                                                      | Unit | Source / notes                                                                               |
|-----------------------------|----------------------------------------------------------------------------------------------------------------------------|------|----------------------------------------------------------------------------------------------|
| <b>Ignition</b>             | Contactless transistorized with centrifugal advance; electric start                                                        |      | Wikipedia, Honda CB750K (RC01) (Honda press release 1978-12-12; Honda CB750K Service Manual) |
| <b>Alternator / battery</b> | Three-phase alternator 260 W at 5,000 rpm; 12 V / 14 Ah battery; alternator on the RIGHT side (moved from the SOHC layout) |      | Wikipedia, Honda CB750K (RC01) (Honda press release 1978-12-12; Honda CB750K Service Manual) |

## CHASSIS

| Spec                    | Value                                                                                                   | Unit | Source / notes                                                                               |
|-------------------------|---------------------------------------------------------------------------------------------------------|------|----------------------------------------------------------------------------------------------|
| <b>Frame</b>            | Double-loop tubular steel; right-side support unscrews for engine removal                               |      | Wikipedia, Honda CB750K (RC01) (Honda press release 1978-12-12; Honda CB750K Service Manual) |
| <b>Front suspension</b> | 35 mm telescopic fork, 160 mm travel                                                                    | mm   | Wikipedia, Honda CB750K (RC01) (Honda press release 1978-12-12; Honda CB750K Service Manual) |
| <b>Rear suspension</b>  | Twin shocks, 5-position preload; swingarm in plastic bushings - needle-roller bearings from end of 1980 |      | Wikipedia, Honda CB750K (RC01) (Honda press release 1978-12-12; Honda CB750K Service Manual) |

| Spec           | Value                                                         | Unit | Source / notes                                                                               |
|----------------|---------------------------------------------------------------|------|----------------------------------------------------------------------------------------------|
| Front brake    | 2 x 275 mm discs, single-piston calipers (K)                  |      | Wikipedia, Honda CB750K (RC01) (Honda press release 1978-12-12; Honda CB750K Service Manual) |
| Rear brake     | 180 mm drum (K)                                               | mm   | Wikipedia, Honda CB750K (RC01) (Honda press release 1978-12-12; Honda CB750K Service Manual) |
| Wheels / tyres | ComStar aluminium, tubeless: 3.25-19 front / 4.00-18 rear (K) |      | Wikipedia, Honda CB750K (RC01) (Honda press release 1978-12-12; Honda CB750K Service Manual) |
| Wheelbase      | 1,520                                                         | mm   | Wikipedia, Honda CB750K (RC01) (Honda press release 1978-12-12; Honda CB750K Service Manual) |
| Seat height    | 800                                                           | mm   | Wikipedia, Honda CB750K (RC01) (Honda press release 1978-12-12; Honda CB750K Service Manual) |
| Dry weight     | 233                                                           | kg   | Wikipedia, Honda CB750K (RC01) (Honda press release 1978-12-12; Honda CB750K Service Manual) |
| Fuel capacity  | 20                                                            | L    | Wikipedia, Honda CB750K (RC01) (Honda press release 1978-12-12; Honda CB750K Service Manual) |

## Restoration sequence

A DOHC CB750 restoration is won or lost in the head: 16 valves, two cam chains and shim-era service discipline. Bench order: document and identify the variant (K/F/C), compression, head and cam chains, bottom end, carburettor bank, electrics, chassis (note the swingarm-bearing split), brakes, finishes.

### Step 1 - Document and identify

PREREQUISITE: the factory service manual for your year. System: whole bike. Variant first (K, F or C) - tanks, bars, seats, exhausts and trim are variant property. Record RC01-family numbers; photograph the swingarm pivot: bushing vs needle-bearing specification splits at the end of 1980.

### Step 2 - Head, valves and cam chains

PREREQUISITE: the factory service manual for your year. System: engine. Two chains drive the cams (exhaust cam chain, then intake) - inspect both chains, guides and tensioners on any teardown. Measure all 16 valve clearances cold and record before changing anything; clearance figures come from the factory manual.

### Step 3 - Bottom end

PREREQUISITE: the factory service manual for your year. System: engine. One-piece crank on five plain bearings - plastigauge before ordering shells. Nominal bore 62 mm (RC01 literature); measure before honing.

### Step 4 - Carburettor bank

PREREQUISITE: the factory service manual for your year. System: fuel. Four 30 mm Keihin CVs (Service Manual data for the K). Strip as a bank, keep each body's parts together, inspect diaphragms, bench-sync then vacuum-sync.

## Step 5 - Electrics

PREREQUISITE: the factory service manual for your year. System: electrical. Contactless transistorized ignition with centrifugal advance - test the advance mechanism as well as the electronics. The alternator sits on the RIGHT of the engine (the SOHC bike's is on the left) - SOHC-era parts and habits do not transfer.

## Step 6 - Chassis

PREREQUISITE: the factory service manual for your year. System: chassis. Taper-roller steering-head bearings; 35 mm forks (160 mm travel). Swingarm: plastic bushings (to end of 1980) wear oval - needle-bearing bikes need bearing inspection instead. FVQ rear dampers are period units; rebuild or replace in pairs.

## Step 7 - Brakes and wheels

PREREQUISITE: the factory service manual for your year. System: brakes. Dual 275 mm front discs with single-piston calipers and a 180 mm rear drum on the K - measure rotor thickness and drum ID before ordering. ComStar wheels carry tubeless tyres; inspect for cracks at the spoke roots.

## Step 8 - Reassembly and commissioning

PREREQUISITE: the factory service manual for your year. System: whole bike. The frame's right-side support unscrews for engine installation - use it rather than fighting the loop. Bench-verify cam timing twice, frame-up assembly, fluids, carb sync, brake bleed, heat-cycle break-in.

## Finishes, fasteners & markings — the concours details

This is what separates a restoration from a repair. Get these right and judges notice; get them wrong and the bike reads as 'refreshed'.

- K(Z) colour chart is verified (see 1979 entry): candy colours are base-plus-tint systems - a single-stage respray will not match. Canada-only brown on a US bike is a tell.
- Variant equipment is identity: F Super Sport and C Custom trim are not K trim. Restore the variant the frame says it is.
- ComStar wheels: modular aluminium - inspect and refinish carefully; never powder-coat over cracks.
- Fasteners: metric JIS - use JIS screwdrivers. Preserve RC01-family stampings; never re-stamp.
- Exhaust: the K's 4-into-4 is part of its identity (later megaphone-style mufflers noted for 1981) - aftermarket 4-into-1 systems are modifications.

## Wiring

No generated wiring diagram appears in this guide — a text table is not a wiring diagram, and a wrong diagram is worse than none. Use the **factory service manual's year-correct wiring diagram** as your primary reference.

*SUPPLEMENT — not a wiring diagram. Trace the factory service manual's year-correct wiring diagram for your bike. The table below maps the major circuits as an inspection aid only; wire colours vary by year and market.*