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1974 Yamaha RD350 Restoration Guide

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Yamaha

RD350

Restoration Guide — Model Year 1974

Engine *347 cc air-cooled two-stroke reed-valve twin*	***Output*** *39 bhp @ 7,500 rpm*
Brakes *Front disc / rear drum (US)*	***Weight / Tank*** *155 kg wet / tank see spec table*

*Single-year edition — covers the **1974** model year only (RD350A). A companion to the Yamaha 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 Yamaha 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 **1974 RD350** only. Do not apply its year-specific details to other years.

Scope: RD350 — model year 1974 (RD350A)

Yamaha Motor Co. — the context that matters

Yamaha Motor Co. built its reputation on two-strokes: from the 1955 YA-1 the company made light, rev-happy twins its signature, and the RD line carried the TZ racer formula (reed valves, seven ports, Autolube) onto the street (Hagerty Media; Rider Magazine).

For restoration purposes the RD naming matters: the letter after the model (RD350A, RD400C and so on) is the model-year revision, and US designations do not always match rest-of-world ones — the 1979 US Daytona 'F' is the standing warning (Wikipedia, Yamaha RD400).

Yamaha's parts system keys everything to the model-code prefix in the frame number (351-, 1A1-, 2V0- on these bikes). Order by prefix and year, never by model name alone.

Model history — RD350

The RD350 (US model years 1973-1975) replaced the piston-port R5 350. It kept the R5's 64 x 54 mm dimensions but added reed-valve induction — Yamaha's Torque Induction — with a seven-port cylinder, plus a six-speed gearbox for the US market (Rider Magazine retrospective, Yamaha RD350 1973-1975; Hagerty Media, Yamaha RD350 history).

Autolube automatic oil injection meant no pre-mix: a separate oil tank and pump feed oil in proportion to throttle opening (Wikipedia, Yamaha RD400, RD system description).

The US bike's single front disc and rear drum were praised in period testing: Cycle magazine recorded class-leading stopping performance (Hagerty Media, Yamaha RD350 history). Note for restorers: the front DRUM belongs to the earlier R5 and to the later Indian-built Rajdoot licence copy — US RD350s are disc-front bikes from the 1973 launch year. Do not build a 'drum-brake 1973 US RD350'; it did not exist.

Period price and pace: $839 new in 1973 (Rider Magazine retrospective, Yamaha RD350 1973-1975); claimed top speed about 105 mph (rd350.info, RD350 specification sheet (marque reference)). Yamaha claimed 39 bhp at the crank; a period Cycle dyno test measured about 30 bhp at the rear wheel (Rider Magazine retrospective, Yamaha RD350 1973-1975) — both figures are printed, labelled, in this guide.

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For 1976 the line grew into the RD400 (longer-stroke 399 cc engine) and the air-cooled RD350 left the US range (Wikipedia, Yamaha RD400).

Model identification — confirm what you have

US frame/engine numbers carry the 351- series prefix in Hagerty VIN records: 1974 RD350A examples record VINs in the 3512xxxxx range and 1975 RD350B examples in the 3513xxxxx range (Hagerty Valuation Tools). Read the steering-head number before ordering: A (1974) and B (1975) bikes differ in minor jetting and electrical detail (rd350.info), and the plain 1973 bike pre-dates the letter suffixes. Cylinder part numbers in the 360- series (e.g. 360-11311-00-00) appear in OEM listings for the 1973-75 top end — a useful cross-check, not an identification.

This 1974: RD350A. Frame serial reference: 3512xxxxx range in Hagerty VIN records (e.g. VIN 351211549, 351200104)

Year-correct equipment: Documented 1974 sale examples: Metallic Maroon and Red exterior colours (Hagerty Valuation Tools past-sale records for VIN 351200104 and 351215700). Confirm the scheme against your parts book — sale-record colours describe those bikes, not a full factory palette.

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.

1974 at a glance: *Front disc (267 mm), rear drum (178 mm)*

Year-change register — what changed for 1974

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.

- The A-suffix model: Hagerty's VIN records identify 1974 US bikes as RD350A (Hagerty Valuation Tools).
- Minor jetting and electrical differences from the 1973 bike are reported by the marque reference — order carburettor and electrical parts by year, not by 'RD350' alone (rd350.info).
- Mechanical package carried over: 347 cc reed-valve twin, 2 x 28 mm Mikuni, front disc / rear drum.

Verified spec tables — 1974 RD350

Every row cites its source. Rows flagged [UNVERIFIED] are printed as found, not as factory-verified. Year band: RD350A.

ENGINE

Spec	Value	Unit	Source / notes
Engine type	Air-cooled two-stroke parallel twin, reed-valve (Torque Induction), 7-port		Rider Magazine retrospective, Yamaha RD350 1973-1975 / Hagerty Media, Yamaha RD350 history
Displacement	347	cc	autoevolution, Yamaha RD model pages / rd350.info, RD350 specification sheet (marque reference)

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Spec	Value	Unit	Source / notes
Bore x stroke	64 x 54	mm	Rider Magazine retrospective, Yamaha RD350 1973-1975 / rd350.info, RD350 specification sheet (marque reference)
Compression ratio	6.6:1		rd350.info, RD350 specification sheet (marque reference) / autoevolution, Yamaha RD model pages
Max power (claimed)	39 @ 7,500	bhp @ rpm	rd350.info, RD350 specification sheet (marque reference) / autoevolution, Yamaha RD model pages
Max power (period dyno)	about 30 at rear wheel	bhp	Rider Magazine retrospective, Yamaha RD350 1973-1975 (Cycle magazine test, as reported)
Max torque (claimed)	33 (24 lb-ft) @ 7,000	N·m @ rpm	autoevolution, Yamaha RD model pages
Carburettors	2 x Mikuni 28 mm		Rider Magazine retrospective, Yamaha RD350 1973-1975 (28 mm carbs)
Lubrication	Autolube oil injection, separate oil tank (over 0.5 US gal)		Rider Magazine retrospective, Yamaha RD350 1973-1975 / Wikipedia RD system description
Transmission	6-speed (US market); kick start		rd350.info, RD350 specification sheet (marque reference) / Hagerty Media, Yamaha RD350 history

CHASSIS

Spec	Value	Unit	Source / notes
Frame	Tubular twin-cradle steel		rd350.info, RD350 specification sheet (marque reference)
Front brake	267 mm single disc (US, all years 1973-75)	mm	autoevolution, Yamaha RD model pages / Hagerty Media, Yamaha RD350 history
Rear brake	178 mm drum	mm	autoevolution, Yamaha RD model pages
Tyres	3.00 x 18 front / 3.50 x 18 rear		rd350.info, RD350 specification sheet (marque reference)
Wheelbase	1,320 (52 in)	mm	rd350.info, RD350 specification sheet (marque reference)
Wet weight	155 (342 lb)	kg	rd350.info, RD350 specification sheet (marque reference) / autoevolution, Yamaha RD model pages
Fuel capacity	[UNVERIFIED — not in factory literature] 15.5 L is quoted by a marque reference (rd350.info); no factory table located — measure your tank	L	rd350.info, RD350 specification sheet (marque reference) (unverified)
Top speed (claimed)	about 105	mph	rd350.info, RD350 specification sheet (marque reference)

Restoration sequence

A two-stroke twin is simple and unforgiving in equal measure: it has few parts, and the parts it has — crank seals, reed petals, the Autolube pump — decide whether it lives. Bench order: document, identify (year/suffix by

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frame number), leak-down and crank-seal check BEFORE first start, top end, crank, carbs as a pair, Autolube verification, chassis, brakes, electrics.

Step 1 — Document and identify

PREREQUISITE: the factory service manual for your year. System: whole bike. Record the frame number (351-series) and suffix year. Photograph tank/side-cover colours and stripes before stripping — 1974 and 1975 documented schemes differ.

Step 2 — Crank seals and leak-down, before first start

PREREQUISITE: the factory service manual for your year. System: engine. Age-dried crank seals lean a cylinder and can seize a fresh top end. Pressure/vacuum-test the crankcase; replace seals on any bike stored for years, however clean it looks.

Step 3 — Top end

PREREQUISITE: the factory service manual for your year. System: engine. Nominal bore 64 mm. Measure bore and piston clearance before honing; inspect the seven-port bridges and reed blocks; replace chipped or lifted reed petals as a pair.

Step 4 — Carburettors and Autolube together

PREREQUISITE: the factory service manual for your year. System: fuel/oil. 2 x Mikuni 28 mm — strip as a pair, record jet numbers (A/B years differ in minor jetting, rd350.info). Then verify the Autolube pump actually delivers to both lines before the engine runs under load: no delivery, no start.

Step 5 — Ignition

PREREQUISITE: the factory service manual for your year. System: electrical. Points ignition: clean faces, set gap and timing per the factory manual (no factory timing table is reproduced in this guide — see Sources/Omitted). Weak spark on RDs is usually points, condensers or grounds, in that order.

Step 6 — Brakes and wheels

PREREQUISITE: the factory service manual for your year. System: brakes. Front disc 267 mm / rear drum 178 mm on every US year. Measure rotor thickness and drum ID; rebuild the caliper with piston and seals as a set; spoked 18-inch wheels — check rim runout and spoke tension.

Step 7 — Reassembly and break-in

PREREQUISITE: the factory service manual for your year. System: whole bike. Frame-up assembly, fresh gearbox oil, bleed the Autolube lines, heat-cycle gently with varied load — prolonged idling cooks rings on an air-cooled two-stroke and proves nothing.

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'.

- Documented colours are year-tied (see Identification): 1974 maroon/red sale examples, 1975 orange sale examples; 1973 palette unverified in cited sources — parts book governs.

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- Engine: black-finished engine cases are part of the RD look (Hagerty Media) — match your bike's surviving finish.
- Fasteners: metric JIS throughout — JIS screwdrivers, not Phillips, on case and carb screws.
- Preserve the frame stamping (351- series); never grind or re-stamp.

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.*

From	To	Purpose
Battery (+)	Main fuse	Feed
Main fuse	Ignition switch	Switched feed
Ignition switch	Coils	Points ignition feed
Points / condensers	Plugs	High tension
Alternator	Regulator / rectifier	Charging
Regulator	Battery (-) / frame	Ground return

Inspection checklist: battery terminals, main fuse holder, ignition switch contacts, coil connections, ground strap to frame/engine, charging connectors. Clean and dielectric-grease every connection you touch.

Tool list

Real tools, honest substitutes. JIS screwdrivers are non-negotiable on a Yamaha of this era.

Tool	Qty	Spec / example	Purpose
JIS screwdriver set	1	Vessel or Hozan JIS	Case and carb screws
Leak-down / crankcase pressure tester	1	Two-stroke type	Crank-seal check before first start
Micrometer + bore gauge	1	64 mm nominal bore	Top-end measurement
Feeler gauges	1	Metric	Points gap per factory manual
Timing light	1	—	Ignition timing check
Carb sync gauges	1	2-gauge vacuum set	Twin sync
Torque wrench	1	Low + mid range	Engine/chassis fasteners — factory table governs

Troubleshooting — symptom → spec check

Each symptom points at the spec-table check that confirms it. No folk remedies presented as specification.

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