FREE SAMPLE

The opening pages of

1991 BMW /7 Buyer's Guide

Read these pages exactly as they appear in the full guide.
Nothing here is rewritten or summarised — it is the product itself,
so you can judge the depth before you spend a dollar.

The full guide: https://ironheadguides.com/product/IH-BMW-SLASH7-1991

IronHead — instant PDF download after checkout.

IRONHEAD

1991 BMW Airhead

Factory-Correct Buyer Guide

IronHead single-year guide · Model year 1991 only

KEY FACTS AT A GLANCE

- Model year 1991 — R100R introduced to the US: Paralever roadster, 980 cc, 60 hp
- BMW NA Bulletin 2753 documents 1991 serial ranges: R100R from 0280001; R100 6419001–6419181 (small run); R100CS 6188171–6188176 (six machines)
- R80R roadster: European markets — not officially imported to the US
- R100GS and R100GS PD continue; R100RT and R100RS Monolever continue
- All 1991 gearboxes in the circlip-uncertain era
- 17-digit VIN: 10th character M = 1991 (BMW NA Bulletin 2753)

SAMPLE EXCERPT — full guide available at the link on the cover sheet

Year chosen: 1991. The roadster year: the R100R joins the US range — Paralever chassis, 980 cc, 60 hp, classic roadster styling — while BMW's US bulletin documents the year's serial ranges in unusual detail, including a small R100 run and a tiny six-machine R100CS run. The European R80R roadster is not officially imported to the US. A 1991 is the first year the US Airhead range can be decoded machine by machine from BMW's own bulletin.

1. Manufacturer history: BMW

BMW began in 1916 as an aircraft-engine manufacturer, and engines have remained the company's identity ever since. The first BMW motorcycle, the 1923 R32, established the two signatures every Airhead still carries more than seventy years later: a longitudinally mounted flat-twin "boxer" engine and shaft final drive. Through the 1950s and 1960s the /2 series (R50, R60, R69S) kept BMW's motorcycle division alive on superb build quality and engineering conservatism — but by the late 1960s that conservatism had become a crisis. The /2 line was obsolete against the Japanese multis, and BMW's motorcycle future was openly questioned inside the company.

The /5 was the answer, and it was a clean-sheet one: an entirely new engine and chassis developed for production at BMW's new Berlin-Spandau plant, launched in 1969 for model year 1970. Electric starting, telescopic forks, a 12-volt electrical system with a proper alternator, and a modern duplex drum front brake replaced the /2's vintage specification, while the boxer twin and shaft drive carried the marque's identity forward. The /5 saved BMW Motorrad. The /6 (1974) added a five-speed gearbox and front disc brakes; the /7 (1977) grew the line into a full touring range; and the Airhead architecture then evolved in place for nearly two more decades — electronic ignition, Nikasil cylinders, the lighter clutch, Monolever and Paralever rear ends — until the last Airheads left production in the mid-1990s, overlapping the oilhead K and R models that replaced them.

For the buyer, this history sets two realities. First, Airheads are the longest-lived modern motorcycle architecture: parts interchangeability is enormous, which is a blessing for keeping a bike on the road and a curse for originality, because almost any Airhead can be built out of any other. Second, BMW's own records culture is excellent but model-year boundaries are porous — production years and model years routinely straddle, and the US model year (read from the tenth VIN character from 1981 on) can differ from the build date. This guide cites genuine sources for every claim and says plainly where the literature is silent.

2. Model history: the /7 and later Airheads

The /7 was the Airhead grown up: launched for 1977 with a full touring range (R60/7, R75/7, R100/7, R100S, R100RS), it became the platform BMW evolved in place for the next eighteen years. The major chapters: 1978 brought the R80/7, the R100RT full tourer, and the small-boxer R65; 1980 brought the R80G/S — the first Monolever and the machine that invented the adventure bike — plus the base R100; the 1981 model year brought the deep technical updates (electronic ignition, Nikasil cylinders, the lighter clutch carrier, the 280-watt alternator, Brembo brakes); 1982 added the R80RT and R80ST; 1984 closed the twin-shock era with the R100RS "Last Edition"; 1985 put the touring models on the Monolever; and 1987 brought the Paralever R100GS, the adventure flagship that carried the Airhead into the 1990s alongside the R100R roadster (1991), the R100R Mystic (1993), and the final US-model-year Airheads of 1995.

No other classic motorcycle rewards — and punishes — parts knowledge like a late Airhead. Gearboxes, final drives, forks, wheels, and bodywork swap across decades, so a "1979 R100RT" can easily be a 1984 engine in a 1981 frame with 1992 bodywork. Every guide in this series therefore treats numbers-matching verification as the core skill: frame/VIN, engine, transmission, final-drive ratio, carburetor and instrument numbers, and the paint-scheme tag, checked against each other, not trusted from any single stamping.

SAMPLE EXCERPT — full guide available at the link on the cover sheet

3. What is unique about the 1991 the /7 and later Airheads

- The R100R launch — the Paralever roadster: verify roadster bodywork, Paralever rear, and VIN allocation together.
- Bulletin-documented rarities: the 1991 small-run R100 (6419001–6419181) and the six-machine R100CS run (6188171–6188176) — provenance must be complete.
- R80R is Europe-only: a US-titled '1991 R80R' needs its import story verified.
- First year of machine-by-machine US serial documentation in the BMW NA bulletin.

4. Technical data — 1991 the /7 and later Airheads

4.1 Frame and engine numbers (1991)

17-digit VIN, 10th character M = 1991. BMW NA Service Bulletin 2753 lists 1991 US serial ranges including R100R from 0280001, R100 6419001–6419181, and R100CS 6188171–6188176. Verify the VIN's model allocation against the bulletin ranges.

4.2 Engine specifications (1991)

Model	Engine	Power	Torque	Notes
R100R	980 cc (94 × 70.6 mm)	60 hp	—	Paralever roadster
R100GS	980 cc (94 × 70.6 mm)	60 hp @ 6,500 rpm	76 Nm @ 3,750 rpm	8.5:1; Paralever; 19.5 L tank
R100GS PD	980 cc (94 × 70.6 mm)	60 hp @ 6,500 rpm	76 Nm @ 3,750 rpm	8.5:1; Paralever; 35 L tank; solo seat and large fairing
R100RT	980 cc (94 × 70.6 mm)	60 hp	74 Nm	8.45:1; Monolever; full touring fairing
R100RS	980 cc (94 × 70.6 mm)	60 hp	—	Monolever; full fairing
R80R	797.5 cc (84.8 × 70.6 mm)	50 hp	—	Paralever roadster; European markets — not officially imported to the US

4.3 Fuel, oil, and electrical

Electrics are 12-volt. Points-and-coil ignition through the 1980 model year; electronic ignition from the 1981 model year (introduced September 1980), with the 280-watt alternator replacing the earlier 180-watt unit. The electronic ignition is reliable and largely fit-and-forget, but the ignition control unit lives under the tank where heat and moisture find it — carry a spare on a touring bike, and verify the charging system output under load before trusting a "new battery" story. US-market bikes from 1981 carry PulseAir emissions plumbing; verify it is complete and functional rather than blanked off with hardware-store plugs.

Fuel system. Bing constant-depression carburetors (Dell'Orto on the R90S only, and only in the /6 years). Verify jetting against the carburetor body stamping before ordering parts. Inspect every fuel tank interior with a borescope — steel tanks rust from the inside, and the large-capacity GS and PD tanks are expensive to replace.

SAMPLE EXCERPT — full guide available at the link on the cover sheet

4.4 Transmission and final drive

Gearbox. Five-speed across the range. Two cautions specific to these years. First, gearboxes built from roughly late 1983 into the 1990s may lack the output-shaft circlip and its groove — year and model alone cannot prove what a specific gearbox contains, because transmission serial sequences overlap and are approximate. Inspect the service history and, where the record is silent, the gearbox internals; a missing circlip lets the output shaft walk and destroys the gearbox. Second, the usual Airhead shifter vagueness is detent and linkage wear until proven otherwise. Change the gearbox oil on purchase.

Clutch and final drive. Dry single-plate clutch; from the 1981 model year the lighter clutch carrier. Shaft final drive: twin-shock swingarm through 1984, Monolever from 1980 (G/S) and 1985 (tourers), Paralever on the GS from 1987. Verify the final-drive ratio stamping on the housing — units swap freely across decades, and the wrong ratio is the most common undocumented change on these bikes.

Output-shaft circlip (1991 gearboxes). Circlip-uncertain era — service history or internal inspection required.

4.5 Chassis, suspension, and brakes

Frame and suspension. Double-loop tubular steel frame with bolt-on rear section, carried through the whole /7 era with detail changes. Telescopic forks throughout; rear suspension defines the sub-eras: twin-shock swingarm through 1984, Monolever (single-sided swingarm) from 1980 on the G/S and 1985 on the tourers, Paralever (torque-arm rear) on the GS from 1987. Monolever and Paralever rear splines wear — check for backlash at the rear wheel with the bike on the center stand.

Brakes and wheels. ATE disc brakes through 1980; Brembo from the 1981 model year (dual 260 mm front discs on the sporting models). The 1977–78 "snowflake" cast wheels are a known recall item: the 19-inch front wheel was recalled, so verify recall compliance or replacement — a bike still on its original recalled front wheel is a safety issue, not a patina choice. Wire-spoked wheels on the GS models need the usual spoke and rim checks; check every disc for thickness and runout and every caliper for free pistons.

4.6 Paint and finish (1991)

Confirm every scheme against the paint-scheme tag — no complete 1991 chart was located.

4.7 Production numbers

1991 US serial ranges per BMW NA Bulletin 2753 (see 4.1). No complete production totals located for the 1991 model year.

4.8 Service specifications

Valve clearances (all Airheads): 0.10 mm intake, 0.20 mm exhaust, measured cold. This is the BMW-specified baseline, corroborated across Airhead specialists — set them at every service and they will tell you about the engine's health: tightening exhaust clearances mean valve and seat wear.

Cylinder-head torque. Factory-era torque figures conflict between period literature and later Airhead specialists, so this guide does not print a single number as "the" factory torque. Use the torque table in the Haynes or Clymer manual for your year, tighten in the specified criss-cross pattern in stages, and re-torque after the first full heat cycle.

Service rhythm. Change engine oil and filter often (the owner's manual interval is the authority); change gearbox, driveshaft, and final-drive oils on purchase and then per the manual — they are the neglected fluids on every barn-find Airhead. Keep the battery on a maintainer, keep points (or the electronic ignition's connections) clean, and synchronize the carburetors after every valve adjustment. Airheads reward routine and punish neglect; there is nothing exotic about the maintenance, only about the consequences of skipping it.

SAMPLE EXCERPT — full guide available at the link on the cover sheet

4.9 Wear- and rust-prone areas — where to look first

1. **Rear drive splines (all rear ends).** Monolever and Paralever splines wear — check backlash at the rear wheel on the center stand, and pull the boot to inspect.
2. **Gearbox output-shaft circlip (late 1983 on).** Year and model cannot prove a specific gearbox has the circlip — service history or internal inspection is the only answer.
3. **Snowflake front wheel (1977–78).** Verify recall compliance; do not ride an unrecalled original 19-inch front.
4. **Electronic ignition control unit (1981 on).** Heat- and moisture-sensitive under the tank; intermittent spark is the symptom.
5. **Charging system.** Verify output under load — the 280-watt system is adequate only when healthy.
6. **Steering-head and swingarm bearings.** Notchiness and weave.
7. **Brake calipers and master cylinders.** Seized pistons and pitted bores from old fluid; check disc thickness and runout.
8. **Fuel tank interior.** Borescope every tank, especially large GS/PD tanks.
9. **Fork seals and stanchions; rear shock(s).** Twin-shock units sag; Monolever/Paralever shocks are rebuild-or-replace items.
10. **Wiring loom and PulseAir plumbing (US, 1981 on).** Cracked insulation; verify emissions plumbing is complete, not blanked off.

4.10 Buyer's inspection sequence

1. **Decode before you travel.** Get the frame/VIN, engine, and transmission numbers from the seller and check them against the tables in 4.1 before spending money on travel.
2. **Cold start, cold engine.** Valves tick slightly when cold and quiet down warm — the reverse (quiet cold, noisy hot) means tight valves. Watch for smoke on startup (valve guides) and under load (rings).
3. **Ride it.** Clutch engagement smooth with no slip; gearbox shifts cleanly with no false neutrals; no weave or notchiness in the steering; brakes stop straight without pulsing; no driveline clunk on throttle transitions (worn splines).
4. **Numbers audit on the lift.** Frame, engine, transmission, final-drive ratio stamping, carburetor numbers, instrument faces, paint-scheme tag — photograph everything and compare against 4.1–4.6.
5. **Fluids and filters.** Pull the gearbox and final-drive drain plugs: paste is wear, chips are damage. Check the oil for coolant (none should exist — air-cooled) and fuel smell.
6. **Electrics.** Charging voltage at cruising rpm, all lights and switches, horn. On 1981-on bikes, confirm the ignition control unit is secure and dry.
7. **Decide the restoration class.** A numbers-matching, original-paint bike justifies a concours budget; a bitsa with a replacement engine is a rider — price it as one and enjoy it as one.

SAMPLE EXCERPT — full guide available at the link on the cover sheet

Sources

1. BMW of North America — Service Bulletin 2753: US model-year / VIN identification 1981–1997 — https://bmwr65.org/htdocs/yabbfiles/Attachments/VIN_Bulletin.pdf
2. BMW Club (UK) — R100S marque page (11,762 built) — http://bmbikes.bmw-club.org.uk/specpages/R100S.htm
3. BMW Club (UK) — R100RS marque page (33,648 twin-shock built) — http://bmbikes.bmw-club.org.uk/specpages/R100RS.htm
4. BMW Club (UK) — R100RT marque page (18,015 twin-shock built) — http://bmbikes.bmw-club.org.uk/specpages/R100RT.htm
5. BMW Club (UK) — R100RT Monolever marque page (60 hp; 1987–1996) — http://bmbikes.bmw-club.org.uk/specpages/R100RTmono.htm
6. BMW Club (UK) — R80/7 marque page (18,522 built) — http://bmbikes.bmw-club.org.uk/specpages/R80-7.htm
7. BMW Club (UK) — R100 marque page (10,111 built) — http://bmbikes.bmw-club.org.uk/specpages/R100.htm
8. BMW Club (UK) — R65 marque page (29,454 built) — http://bmbikes.bmw-club.org.uk/specpages/R65.htm
9. BMW Club (UK) — R65LS marque page (6,389 built) — http://bmbikes.bmw-club.org.uk/specpages/R65LS.htm
10. BMW Club (UK) — R65 Monolever marque page (8,260 built) — http://bmbikes.bmw-club.org.uk/specpages/R65mono.htm
11. BMW Club (UK) — R80G/S marque page (21,864 built) — http://bmbikes.bmw-club.org.uk/specpages/R80G-S.htm
12. BMW Club (UK) — R100GS marque page (34,007 built; 1986–1996) — http://bmbikes.bmw-club.org.uk/specpages/R100GS.htm
13. BMW Club (UK) — paint-code and scheme references — http://bmbikes.bmw-club.org.uk/paintcodes/reds.htm
14. Snowbum — BMW Airhead transmission pages (output-shaft circlip) — https://bmwmotorcycletech.info/transmission.htm
15. Snowbum (Robert Fleischer) — BMW Airhead ID numbers and dating — https://bmwmotorcycletech.info/IDnumbrs.htm
16. Beemer Boneyard — Airhead valve-clearance service data (0.10 mm intake / 0.20 mm exhaust, cold) — https://www.beemerboneyard.com/wurthairhead.html
17. Haynes — BMW Airhead R50/5 through R100GS PD 1970–1996 Service & Repair Manual — https://us.haynes.com/products/bmw-airhead-r50-5-through-r100gs-pd-1970-1996-service-repair-manual
18. Clymer — BMW R-series Airhead service manuals (M502 and related R100GS/R volumes)

SAMPLE EXCERPT — full guide available at the link on the cover sheet