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1970 Triumph Bonneville Buyer's Guide

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IRONHEAD

1970 T120 Bonneville

Factory-Correct Restoration Guide

KEY FACTS AT A GLANCE

- **Model year covered:** 1970 only (T120 Bonneville; T120R in the US). The last full year of the dry-frame 650. This guide does not cover the 1969 or 1971 T120 except where differences are explicitly noted.
- **Engine:** 649 cc air-cooled OHV parallel twin; 71.0 mm x 82.0 mm bore x stroke; unit construction with 4-speed gearbox.
- **Fuel system:** Twin Amal Concentric carburetors.
- **Ignition:** Battery-and-coil breaker-point ignition.
- **Electrics:** 12-volt.
- **Transmission:** 4-speed constant-mesh, in unit; chain primary; wet multi-plate clutch; chain final drive.
- **Brakes:** 8-inch twin-leading-shoe front drum; rear drum. (The oil-in-frame chassis and its brake changes arrive in 1971.)
- **Wheels/tires:** Wire-spoked wheels; 3.25 x 19 front, 3.50 x 18 rear (period fitment).
- **Frame/engine serials:** Alpha-numeric system: month letter + model-year code + sequential from 00100. Model-year code for 1970 is D (Lowbrow Customs).
- **Power:** Approx. 49 bhp (period figure, continuous with 1968-1969).
- **Documented color:** Astral Red — recorded on a documented 1970 example (Hagerty). Survivor evidence; verify the full palette in the parts book.
- **Production context:** The last dry-frame year before the 1971 oil-in-frame redesign.

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This is a single-year guide. It covers the 1970 Triumph T120 Bonneville only. Other model years are discussed solely to mark differences — for a different year, use that year's IronHead guide.

1. Manufacturer history: Triumph

Triumph began as a bicycle and motorcycle maker in Coventry, England, founded by the German immigrant Siegfried Bettmann in the 1880s; the company built its first motorcycle in 1902. Through the 1920s Triumph was one of Britain's major motorcycle manufacturers, and in 1936 the arrival of designer Edward Turner changed the company's trajectory permanently: his 1937/38 Speed Twin — a 500 cc parallel twin — created the template (light, narrow, good-looking twin with real performance) that the whole British industry, and then the Japanese, would chase for the next forty years.

Bombing forced the move from Coventry to a new factory at Meriden in 1942, and in 1951 Triumph was sold to the BSA group. The 1950s and 1960s were the boom years: the 650 twins (Thunderbird, Tiger, Bonneville) sold in huge numbers, overwhelmingly to the United States — more than 65 percent of Bonneville production went to America, a figure Hagerty's marque history repeats across its model summaries. The American market's appetite for the big parallel twin is the reason the Bonneville exists in the form it does: tuned for US tastes, styled for US showrooms, and sold through legendary importers like Johnson Motors (JoMo) on the West Coast and the Triumph Corporation (TriCor) in the East.

The 1970s brought the collapse. Mismanagement, labor strife, and Japanese competition pushed BSA/Triumph to the brink; the 1973 creation of Norton Villiers Triumph (NVT) was followed by an 18-month workers' sit-in at Meriden (Hagerty), after which the factory continued as the Meriden Workers' Co-operative — owner-workers building essentially the same motorcycles with almost no development money. Production limped on until 1983, when the Meriden works closed and the rest of Triumph's motorcycle production ended with it. Businessman John Bloor bought the name and assets the same year; his new Hinckley company would eventually relaunch the Bonneville in 2001, but the Meriden-built line this guide covers died in 1983.

For the restorer, that history explains the parts landscape: enormous US sales mean used parts and pattern parts are plentiful for the popular years; the co-operative years (1975-1983) mean running changes, mixed fittings, and documentation gaps that demand verification against the factory parts books rather than memory.

2. Model history: the Bonneville

The Bonneville began in 1959 as the T120: a 650 cc pre-unit parallel twin, essentially a twin-carburettor Tiger 110, named for the land-speed records Johnny Allen set on the Bonneville Salt Flats in 1956 aboard a Triumph-powered streamliner. It was an instant hit in America, and for the next two decades the Bonneville was Triumph's flagship — the bike the company was known by.

Three mechanical generations matter for the restorer. The **pre-unit T120** (1959-1962) has a separate gearbox. The **unit 650** (1963-1972, covered by factory workshop manual 99-0883/0889 for 1963-1970) combines engine and gearbox in one crankcase casting — the engine most people picture when they hear "Bonneville." The **750 T140** (1973-1983) is a bored-and-developed descendant of the oil-in-frame 650, covered by the T140 factory repair manual. Within those generations, the year-to-year changes — carburetors, brakes, frames, electrics, shift side, paint — are exactly what this guide series isolates, one year at a time.

Two production facts anchor every guide in this series. First, Hagerty's marque history records that by the time the last 649 cc T120 was sold in 1972, production had reached **250,000 units** — the Bonneville was a mass-market machine, not an exotic. Second, the same source puts total T140 production at roughly **60,000 units** across 1973-1983. And more than 65 percent of all Bonneville production was sold in the United States, which is why US-specification details (US-only paint names, US-market fittings, the T120R designation for the US road model) dominate the restoration record.

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Designation	Years	What changed that matters
T120 Bonneville	1959-1962	650 cc pre-unit twin. Named for the 1956 Bonneville Salt Flats land-speed records.
T120 Bonneville (unit)	1963-1970	Unit construction (engine and gearbox in one casting) from 1963. 12-volt electrics from 1964. Amal Concentric carbs and 8-inch twin-leading-shoe front brake from 1968.
T120R/T120V (oil-in-frame)	1971-1972	Oil carried in the frame instead of a separate tank. 54 bhp @ 6,750 rpm. Five-speed option for 1972. Last of the 649 cc line: ~250,000 T120s built in total (Hagerty).
T140V Bonneville	1973-1978	750 twin (724 cc at launch, 744 cc shortly after). Five-speed, right-side shift to 1975, left-side shift and rear disc from 1976.
T140J Silver Jubilee	1977	Limited edition: 1,000 UK + 1,000 US machines (Bonhams).
T140E / T140D	1979-1980	E for emissions: parallel-port head, Amal MkII carbs, Lucas Rita electronic ignition. D Special: factory custom by Tom Higham.
T140ES Electro	1980-1983	Electric start alongside the kick starter.
T140LE Royal Wedding	1981	Limited edition for the Charles and Diana wedding; published build totals conflict (see Section 10).
T140AV	1981-1983	Anti-vibration rubber-mounted police/touring model.
T140 TSS / TSX	1982-1983	Eight-valve Weslake-derived head on the TSS (~60 bhp per Hagerty).
End of line	1983	Meriden closes. ~60,000 T140s built in total (Hagerty).

3. What makes the 1970 T120 Bonneville unique

The 1970 T120 is the end of an era twice over: the last full model year of the dry-frame unit 650 (the frame carried its oil in a separate tank, as it had since 1963) and the last year before the radical 1971 oil-in-frame redesign. A factory-correct 1970 is therefore defined as much by what it is not — not oil-in-frame, not five-speed — as by what it is.

1970-only details:

- **Dry frame, separate oil tank.** The 1970 frame is the 1963-1970

dry-frame type with a separate oil tank. The 1971 oil-bearing frame is a completely different chassis — no 1971 frame, fork, or oil-system part belongs on a 1970, and vice versa. This is the single most important specification boundary in the late-60s/early-70s Bonneville line.

- **Model-year code D.** The alpha-numeric system continues: month letter

+ **D** (1970) + sequential from 00100 (Lowbrow Customs). Verify the code tables against Lowbrow's guide — published lists vary.

- **1968-1969 mechanical specification carried over.** Concentrics, 8-inch

TLS front brake, 4-speed unit gearbox, 12-volt electrics.

- **Astral Red.** A documented 1970 example wears Astral Red (Hagerty) —

survivor evidence of the year's colorway. Verify the complete palette in the parts book.

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1970 buyer cautions:

- **1971 parts do not belong.** Because the 1971 redesign is famous,

oil-in-frame parts (frame, tanks, side covers, oil lines) sometimes migrate onto 1970 bikes. A 1970 with a spine frame is not a 1970 at all — check the frame type first.

- **The D-code check.** Confirm the model-year code is D and the format is

the alpha-numeric system. A DU-number "1970" is a 1969-or-earlier machine (the DU system ended during 1969).

4. Decoding your 1970 Bonneville

Alpha-numeric system only (the DU sequence ended during 1969). Format: **month letter + model-year code + sequential number from 00100**, with **D as the 1970 model-year code** (Lowbrow Customs). Engine number: left crankcase below the barrel. Frame number: steering head. The two should match. Verify month-letter tables against Lowbrow's guide — published tables vary.

5. Engine — technical restoration data

The table below is the 1970 T120 Bonneville's technical core. Every figure is sourced; where no verified factory figure was found in the sources checked, the table says so explicitly rather than printing a plausible number. Use the factory workshop manual for your exact model as the final authority.

Specification	Detail
Engine	649 cc air-cooled OHV parallel twin, unit construction
Bore x stroke	71.0 mm x 82.0 mm
Compression ratio	Not printed: no verified factory figure found in the sources checked.
Carburetion	Twin Amal Concentric
Ignition	Battery-and-coil, breaker points
Power	Approx. 49 bhp (period figure, continuous with 1968-1969)
Gearbox	4-speed constant-mesh, in unit with engine
Clutch / primary	Wet multi-plate clutch; chain primary drive
Final drive	Chain
Frame	Steel cradle, dry type with separate oil tank (LAST year — oil-in-frame from 1971)
Front suspension	Telescopic fork
Rear suspension	Twin Girling shock absorbers
Front brake	8-inch twin-leading-shoe drum
Rear brake	Drum
Wheels	Wire-spoked, steel rims
Tires (period)	3.25 x 19 front, 3.50 x 18 rear
Electrics	12-volt

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Specification	Detail
Fuel capacity	Not printed: verify against the factory parts book for the year.

6. Transmission, clutch and primary drive

The 1970 runs a 4-speed constant-mesh, in unit with engine. Wet multi-plate clutch; chain primary drive. Final drive is by Chain. Rebuild practice is standard unit-twin work: inspect gear dogs and slots for rounding, replace bearings and seals as a set, check clutch-plate flatness and basket notching, and set the primary-chain tension and clutch adjustment to the factory manual before judging gearbox behavior.

7. Frame, suspension, wheels and brakes

Frame: Steel cradle, dry type with separate oil tank (LAST year — oil-in-frame from 1971). Front suspension: Telescopic fork. Rear: Twin Girling shock absorbers. Brakes: 8-inch twin-leading-shoe drum front, Drum rear. Wheels: Wire-spoked, steel rims. Wheel and brake originality is checked as a set — hub, brake plate or caliper, and fork fitment must all agree with the year's specification in Section 3.

8. Electrics, ignition and instruments

Ignition: Battery-and-coil, breaker points. Carburetion: Twin Amal Concentric. Electrics: 12-volt. Fit a new wiring harness — original insulation is finished — rebuild or replace the switches, fit the correct battery, and test the charging system under load. Set timing to the factory manual before attempting any carburetion tuning.

9. Paint, trim and finishes

Documented: Astral Red, recorded on a documented 1970 example (Hagerty) — survivor evidence of the year's colorway. Verify the complete 1970 palette against the factory parts book and period brochures before paint.

10. Production and rarity

No published model-year split found. The 1970 run is bounded by the D-code alpha-numeric allocation (from 00100). Total T120 production: 250,000 by 1972 (Hagerty).

11. Corrosion and wear areas to inspect

Check every one of these before committing to the restoration — they are the places 1970 Bonnevilles hide their expensive surprises.

- **Chrome:** rechroming expected.
- **Exhaust:** inside-out rot.
- **Frame:** steering head, swingarm pivot, lower rails; separate oil tank — check the tank itself for internal rust and seam leaks.
- **Tank interior:** borescope before paint.
- **Electrics:** replace connectors and grounds.
- **Fasteners:** replating usually needed.

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12. Restoration sequence

Work in an order that never forces you to undo finished work. The sequence below is the standard professional order for a unit-twin Triumph; the notes flag where the 1970 T120 Bonneville needs special attention.

1. **Document everything first.** Photograph the complete bike from all sides,

then every assembly before you touch a fastener. Record the frame and engine numbers (see Section 4) and check them against the year ranges before spending money — a mis-described year is the most expensive restoration mistake.

2. **Assess, don't strip.** Inventory what's original, what's period-correct,

what's wrong-year, and what's missing. On a 1970, pay particular attention to confirming the dry-frame specification and D-code serials.

3. **Engine and gearbox out; frame inspection.** Check the frame for crash

damage, cracks at the steering head and swingarm pivot, and previous repairs. Dry frame with separate oil tank: inspect the oil tank itself (rust, seams, mounts) as well as the frame.

4. **Engine rebuild.** Split only as far as needed. Measure everything:

bore, crank journals, cam bushings, valve guides. Rebores on these barrels are routine, but match pistons to the measured clearance, not to the catalogue's optimism. Replace the sludge-trap plug's staking on the crank — a loose sludge trap destroys cranks.

5. **Gearbox and clutch.** Inspect dogs and slots for rounding, replace

bearings and seals as a set, check clutch-plate flatness and basket notching.

6. **Cycle parts.** Rebuild forks with new seals and correct oil; rebuild

shocks or replace with correct-pattern units. Wheel rebuilds: new spokes and nipples, rims trued — chrome rims that are pitted will not take a lasting polish.

7. **Brakes.** 8-inch TLS front: full strip and inspection; rear drum as usual. Rebuild hydraulics completely on disc models:

seals, hoses (replace, don't reuse), master-cylinder bore inspection.

8. **Electrics.** New wiring harness (the original insulation is done),

rebuilt or replaced switches, correct battery, charging-system test under load. 12-volt system: new harness, rebuilt switches, charging test under load.

9. **Paint and plating.** Paint last among the major jobs, after all

trial-fitting is done. Astral Red is documented on a survivor — verify the complete 1970 palette in the parts book before paint.

10. **Final assembly and shakedown.** Torque to the factory manual's figures

(see Section 13), set timing and carburation to the book, then run a disciplined shakedown: heat cycles, re-torque the head, re-check tappets, change the oil early.

13. Torque values and service data

Torque figures are **not printed here from memory**. Triumph revised fastener specifications across the run, and a wrong figure on a cylinder-head stud or a brake caliper is how threads and castings get destroyed. Use the factory workshop manual for your exact model:

- **1963-1970 650 twins:** Triumph factory workshop manual 99-0883/0889

(unit-construction 650 cc models, 1963-1970), which keys running changes to engine-number breakpoints.

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