

## Bunn 'Classic Crankcase Tuning Kit' - User Guide

1.0 **Introduction:** Bunn Classic Crankcase Kits manage the crankcase, controlling pressure and air flow. They uniquely pump air through the crankcase, purging corrosive blow-by gas. Bunn technology is researched, patented and operating in a wide range of classic and modern road and race engines. It's easy to fit. It stops pressure swings, cuts oil leaks and power loss and pumps out toxic blow-by.

### 2.0 **Bunn Breather Kit Contents:**

- 2.1 One Bunn Inlet Assembly - comprising assembled inlet valve [note embossed flow arrow] and tubing containing the main filter and filter screen. Fit this as one assembly to your engine.
- 2.2 One Bunn Exhaust Assembly - comprising the larger exhaust valve...[note small flow arrow embossed on valve] and the slash-cut 10mm ID by 100mm long exhaust 'Draft Tube'.
- 2.3 Tubing, 500mm each of 8mm and 10mm ID nitrile-rich rubber, to connect assemblies to engine
- 2.4 The Classic Kit User Guide, a step-by-step installation guide and warranty record.
- 2.5 Cable ties to secure valve assemblies and tubing to frame.

3.0 **Installing the Bunn Breather:** The Bunn Classic Kit uses two access points to the crankcase or connected compartment i.e. rocker/cam boxes, timing cases or chaincase. This enables the patented crankcase pumping action. The Classic Kit offers riders the choice of purging blow-by in either "Top>Down" or "Bottom>Up" directions, depending on engine design, appearance, bike configuration, oil fling etc. Examples of these breather installations are shown below. (Refer Figures 1 and 2 below)

3.1 **Bunn Inlet Assembly:** Use an existing timing plug, timing case, rev-counter, or crankcase breather union. Open unions are easily adapted. Disc, clack, filter or flapper breathers can be adapted by removing their discs or filters. In some engines OEM breathers may be used in series with the Bunn Kit. NB:-Check timed breathers for airflow. Either block them, or use them with Bunn Exhaust breathers. If you can't find any union, see <http://www.bunnbreather.bigblog.com.au> [Blog article 27/]. Here's a sample installation for later Triumph and BSA singles and twins. This uses the crankcase timing plug:-

- (a) Locate and unscrew the timing plug. This is in front on BSA, and behind on Triumph barrels.
  - (b) Replace with a brass 1/2"UNC thread union. [See Blog article 31/ for this].
  - (c) Find a sheltered spot for Inlet Assembly e.g. head-stock, seat, tank, toolbox, battery, sidecover.
  - (d) Ensure embossed arrow on Inlet valve points **TO** the engine. Blow through to check, if in doubt.
  - (e) Secure Inlet Assembly to frame with cable ties, adhesive foam, rubber or a P-bracket.
  - (f) Connect the Inlet Assembly to the timing union using the 8mm rubber tubing. Trim tube to fit.
- \*\* **Hint:** The valve and filter barbs hold the tubes securely. Clips can be added if desired.

3.2 **Bunn Exhaust Assembly:** Use an existing rocker/cam box union e.g. the later Triumph OIF tank vent line. If you've no union, here's a step-by step guide, using a rockerbox hatch cover:-

- (a) Unscrew a rockerbox hatch-cover, usually the inlet but the exhaust cover can also be used.
- (b) Obtain a 3/16-1/4" barbed & threaded brass union. [We supply these on request]
- (c) Tap it into a rocker hatch, with the inside flush, so union doesn't foul valve or valve spring.
- (d) Reinstall the hatch-cover and push the 10mmID tube onto the new union. Cable tie if required.
- (e) Curve the 10mm tube up 5-10cms (as a froth-tower), then down behind gearbox or engine case.
- (f) Insert the large Bunn Exhaust valve into tube, with embossed arrow facing **AWAY** from engine. Ensure valve is pressed home into the tube, so the tube covers all valve ribs. Moistening helps.
- (g) Similarly install the Draft Tube on valve. See the tip is pointing down to road. Cable tie to frame.

NB: Draft Tube slash-cut faces back, at right angles to air flow. [See Blog 59/ for pic.] PTO>>>

**Installation Tips:**\*\* If you find 'oil fling' up a breather, try reversing the air flow. Switch the valve assemblies and reverse their flow. If oil fling persists, try another breather location or a breather baffle.  
 \*\* While installing valves, do a "Blow-Test". Blow in Inlet line and check air flows out Exhaust line

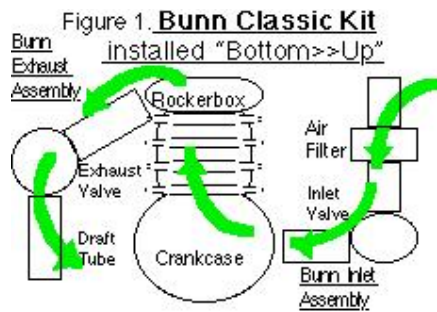


Fig 1-installing "Bottom>>Up"

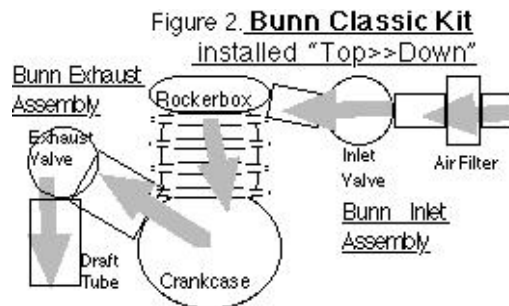


Fig 2-installing "Top>>Down"

**4.0 Annual Cleaning:** The valves open easily. Place valve on a board and insert a Stanley or kitchen knife blade into the join in valve case. Roll the valve along the board with the knife blade. The valve will open. Clean case with a cotton bud, spray seal with WD40 or silicone. Handle the seals carefully, as while durable they dent easily. Note the seal face that seats on the valve. Firmly twist and tap the valve halves together with a knife handle to seat the valve casing. Blow through the valve to check function and refit.

**5.0 Recycling Blow-by gas:** Connecting a breather to a carb intake opens a flame path for flammable blow-by gas. If your bike backfires there's a [remote] risk of a crankcase fire, unless a flame barrier is fitted. The Bunn Exhaust valve is an effective non-return valve, but I do not warrant it as a flame barrier. Where acceptable, I suggest exhausting blow-by vapour to ground (or race catch-can) to avoid this risk.

**6.0 Technical Data:** The Bunn valves are designed to operate at extremely low pressure and high speed. Valve and filter cases are made from a polypropylene grade, resistant to most chemicals including methanol and nitro. Operating temperature range -10C to +120C-140C. Tubing is a nitrile-rich rubber grade. The main air filter is sealed. Keep flammable exhaust breather gas away from exhaust ports.

**7.0 Warranty:** Valve seals are warranted for five years over unlimited mileage and valve cases, filter and tube for two years. Spare seals and accessories are available. See <http://bunnbreather.bigblog.com.au> Please insert your date of purchase here \_\_/\_\_/\_\_\_\_ and retain for warranty purposes.

**8.0 Frequently Asked Questions on the Bunn Breather Kit:**

Q. – I can sometimes hear a breather valve operating. Is this normal?

A. – Yes, on some bikes at idle, you may hear one or other valve working. It disappears above idle.

Q.- How long does the Bunn Kit last? Is any maintenance required?

A.- The Bunn Breather valves should last indefinitely. Once a year, open the valves to check and clean.

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Disclaimer: As user installation and operation vary widely; the Kit is not warranted work on every make and model of classic motorcycle. Some early J.A.P's and Meriden triples are exceptions.. Email for advice if you plan an installation outside the above guidelines <mailto:info@britcycle.com>