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See installation pics and web technical support at [www.bunnbreather.bigblog.com.au](http://www.bunnbreather.bigblog.com.au) & [www.bunn.co.nz](http://www.bunn.co.nz)

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

1.0 **Introduction**:- Bunn Classic Crankcase Kits manage crankcase air pressure and flow. The patented 'warm air induction' design flushes air through the crankcase, purging moisture and corrosive blow-by gas. Bunn Kits are research-based and work in classic and modern road and race engines. They're easy to fit, stop pressure swings, cut oil leaks and pumping losses, and purge moisture and blow-by gas.

2.0 **Bunn Breather Kit Contents**:- (see [www.bunnbreather.bigblog.com.au](http://www.bunnbreather.bigblog.com.au) reports 91& 104 for pics)

- 2.1 One **Bunn Inlet Assembly**-comprising inlet valve [note embossed flow arrow] and tubing containing the circular filter and white internal tubing filter, (plus five spare white filters.)
- 2.2 One **Bunn Exhaust Assembly**- comprising the larger exhaust valve...[note small flow arrow embossed on valve] and the slash-cut 10mmID 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 This 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 e.g. "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 as Bunn Exhaust breathers.

If you can't find a union, see [www.bunnbreather.bigblog.com.au](http://www.bunnbreather.bigblog.com.au) reports 27/ & 31/. Here's a sample installation for later Triumph and BSA singles and twins. This uses the handy crankcase timing hole:-

- (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 report 31/ for this)
- (c) To obtain warm air induction, position the Inlet assembly to collect warm air. See report 99/.  
Positions include: behind a cylinder, gearbox, or crankcase: above the engine, under the tank: or close (but not too close) to an exhaust pipe.
- (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 a cable tie.
- (f) Connect the Inlet Assembly to the timing union using 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 any 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.
- (c) Tap it into a rocker hatch, so union doesn't foul the 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 the 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 report 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.  
 \*\* When installing, do a "Blow-Test" (see report 88/). Blow in Inlet and check air flows out Exhaust.



Fig 1-installing "Bottom>>Up"

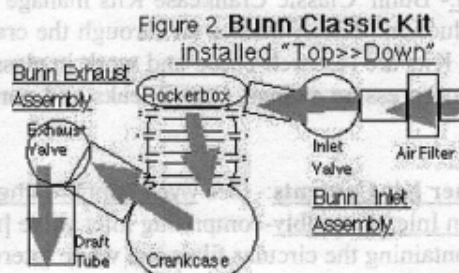


Fig 2-installing "Top>>Down"

**4.0 Annual Cleaning:-** The valves open easily. Place valve on a board and insert a kitchen knife blade into the join in valve case. Roll the valve along the board with the blade to open. Clean case with a cotton bud, spray seal with WD40/silicone. Handle 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 the knife handle to seat the valve casing. Blow through valve to check and refit. The circular air filter is sealed. It can be washed with warm water and detergent or WD40 and re-used. Replace the white tube filters when soiled. Insert them 40-50mm into the end of the Inlet breather tube.

**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 low cracking pressures and high speeds. 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. For safety reasons, 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 [www.bunnbreather.bigblog.com.au](http://www.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 at idle. Is this normal?
- A. – Yes, some bikes resonate at idle. It disappears above idle. Angling the tube can control this.
- Q.- How long does the Bunn Kit last? Is any maintenance required?
- A.- The valves last indefinitely. Once a year, open the valves to check and clean, and insert a new filter.

Carlel Pty Ltd Classic Restorations, 18 Yandiah Place, Castle Hill,  
 NSW 2154 Australia. ACN061003521 ABN7306100352  
 Classic Motorcycle Breathing Specialists

Disclaimer- As user installation and operation vary widely; I do not warrant the Kit will work on every make and model of classic motorcycle. Some early J.A.P's and Meriden triples are exceptions.. Email me for advice if you plan an installation outside the above guidelines [rexbunn@bigpond.com](mailto:rexbunn@bigpond.com)