

# TPV VINCENT TOP END CONVERSION

Thank you for inquiring about our new heads and barrels. We have developed these to overcome old design faults, and because second hand ones are not obtainable, I wanted to incorporate features that upgrade the engine to suit modern fuels and the performance orientated rider.

**ATTENTION:** only the 1200cc version has to have the crankcases bored out to accept the larger cylinder liner, this also applies to COMET crankcases for 600cc.

## CYLINDER HEAD FEATURES

1. **Larger finning** for better heat dissipation.
2. **Bath tub** combustion chamber to improve gas flow and increase compression ratio while eliminating detonation. This also incorporates a large squish area.
3. More **horizontal inlet port** and **D shape exhaust port** in conjunction with new combustion chamber shape has increased gas flow to 114 CFM, as cast but can be gas flowed to give over 150 CFM. This is double that of a standard Vincent cylinder head.
4. Larger port diameters 35-mm inlet, still with the ability to open out to 42 mm or further because of increased metal around the port.
- 5 **Twin spark plug holes** especially suited to **twin coil/twin fire** ignition for high compression and performance.
- 6 Simplified oil feed to rocker bearings eliminating metal oil line pipes.
- 7 Rocker bearing location area is lengthened to fully support lengthened rocker bearings.
- 8 Push rod tubes are sealed with **O** Rings instead of the old paper gasket type.
- 9 **Valve guides** are manufactured from high nickel content **aluminium bronze** and are fully shrunk in. The original type lock rings have been eliminated.
- 10 **Valve seats** fitted are suitable for all modern fuels.

## 12. CYLINDER HEADS come with:

Lower Guides - reamed to size.  
Valve Seats - Fitted and cut.  
Rocker Feed Bolts with sealing **O** Rings.  
Rocker Oil Feed Unions for oil hose connection.  
Push Rod Tube Gland Nuts and **O** Rings.  
Oil Lines and Ferrules  
Balance Pipe (Twin Only)

## MACHINING OPTIONS

- a) **1200cc version:** ports gas flowed and polished (at extra cost)

b) **1000cc version:** ports gas flowed and polished (at extra cost)

### *CYLINDER MUFFS/BARRELS – Features*

1. **Larger fining to suit our head.** The fins match the outer periphery of the lower head fin and barrel down to match the crankcase (whereas original barrels never matched the heads).
2. **Increased web thickness** for added strength when bored to suit 1200cc liners. This eliminates cylinder distortion causing loss of compression, hence power loss.
3. Muff to crankcase is sealed with an **O Ring** to eliminate original paper gasket.
4. Through boltholes reduced to 10.5 mm to suit our 2 piece bolts (ET55 MOD). On 1200cc conversions these holes if left standard (14.7 mm) are very close to the bore of the liner causing not only a weak point, but also a hot spot, which can eventually cause longitudinal cracking. This is not a problem on standard 1000cc engines.

Barrels come with base O Ring supplied.

### *MACHINING OPTIONS*

1200cc are bored to suit our liners and 10.5 mm through boltholes.

1000cc are bored to suit standard liner with 10.5 mm through boltholes. With this option the through bolt holes can easily be opened out to suit standard ET55/2 through bolts if desired, but it is also suitable for people wanting an **unfinished barrel** that they can bore to suit liners apart from those we supply to suit 1200cc conversions.

### *PISTONS*

**Forged** pistons available for 1200cc and 1000cc in 9.5:1 and 11.0:1 compression ratios. Pistons are supplied complete with rings and gudgeon pins.

### *INSPECTION CAPS ET24P*

Internally Designed to allow **Higher Valve Lift**. Gasket has been eliminated by an “O”ring in the sealing face, no more leaks and re-useable. Caps come polished and are plain.

### *MANIFOLDS*

Our front and rear manifolds are designed to suit 46mm diameter hose mounted carburetors such as MK11 AMALS .The flange boltholes have a hole centre distance of 2-1/41 (57mm)

and as such will not fit standard VINCENT heads. The flange incorporates an O Ring groove to seal to the HEAD.

These manifolds can be opened out from 35mm to 40mm.

We have also incorporated BALANCE PIPE connections to enhance smoother running.

**As our BARRELS & HEADS are made to suit many and varied uses from standard VINCENTS to SPECIALS and even CARS depending on space restrictions some finning may need to be altered to fit carburettor type.**

#### *HEAD STUDS ET55 MOD*

These are made from **high tensile** bar and heat treated for added strength and toughness.

The thread to suit the crankcase has been shortened slightly so the maximum diameter does not hold the barrel off the crankcase surface.

When the studs are fitted and the barrel is in position, the upper halves are then screwed on and bottom out on the lower half about 4 mm above the height of the barrel.

The lower halves should be loctited into the crankcases to stop them unwinding when the upper halves are removed. No loctite is required on the thread where the 2 halves screw together.

These bolts are also ideal for **Norvin builders** as it allows in-frame top-end removal.

#### *CYLINDER HEAD COMPONENTARY*

**We manufacture and can supply separately from the Kit every part of the overhead gear, from the cam followers up.**

All parts are made to the highest specifications. We have even made forgings for the cam followers and rocker arms.

As most engines suffer the highest amount of wear in the overhead gear, we offer a complete small parts kit per cylinder at severely discounted prices compared to purchasing components individually, so it's worthwhile to consider giving your engine a **complete new top end!**

**Footnote:** The entire compilation of parts we can offer for this conversion have been developed from my 50 years experience in racing, riding, developing and repairing Vincents.

I would also like to acknowledge the input of Rodney Brown, who is the Senior Foundry Technical Officer at one of Australia's largest foundries, and Neal Videan, an experienced toolmaker with a vast knowledge of production engineering and metallurgy. Both are keen Vincent owners.