



## Scottoil: Vacuum Connections General

### vSystem RMV Vacuum connection information



The original Scottoil Universal Kit, Touring kit and latest vSystem kits are vacuum operated. The core of the systems being the Reservoir Metering Valve (RMV), a vacuum operated valve.

When an engine is running negative pressure (vacuum) is generated, this is the case whether 2 stroke, 4 stroke, single cylinder, 4 cylinder, carburetted or Fuel Injected. This vacuum can be used for ancillary devices such as emissions control systems or fuel taps and a Scottoil.

Scottoil take advantage of this by using vacuum from the engine to open the valve of the RMV when the engine is running, allowing oil to drip feed under gravity to the dispenser – generally at the rear sprocket. The following document describes the various methods of accessing this vacuum, for model specific information see [www.scottoiler.com](http://www.scottoiler.com) where over 300 models are listed.

The RMV is a sealed device, when fitting **ensure all connections are firmly made** so the system will be closed i.e. no air will be drawn into the engine. On startup the RMV draws 3cc of air and holds this until the engine is stopped, this will not affect the running of your motorcycle.



Vacuum Damper Elbow

In all instances the Vacuum Damper Elbow, shown opposite, is used to provide an air tight connection to both the engine vacuum point and the black nylon vacuum tubing.

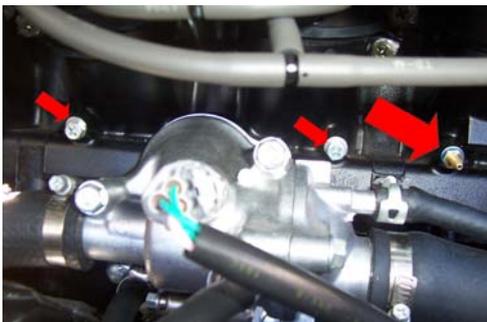
There is a bronze damper pellet in the Damper Elbow which serves to dampen the pulsating vacuum from the engine. This is more apparent with large single cylinder / twins than smoother 4 cylinder bikes.



On some models there are spare vacuum points, these might be redundant in certain markets due to emissions laws or might exist to facilitate carburettor / throttle body balancing.

This often provides a very straight forward vacuum connection, merely locate the vacuum point, remove the cap / bung and press the Scottoil Damper Elbow onto the vacuum point.

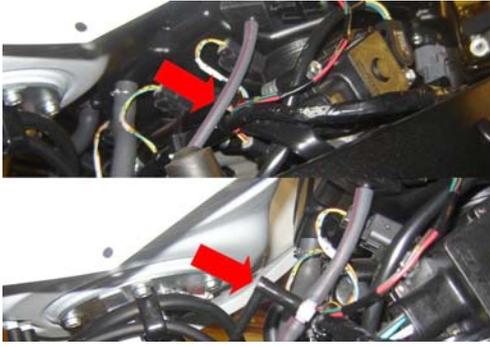
The top picture on the left shows a typical bung over spigot on a carburettor. In the lower half you can see the bung removed and the Damper Elbow being pressed on to the spigot.



Vacuum Screws

Other models have vacuum points plugged with screws. If this is the case the screw can be replaced with the M5 / M6 spigot from the Scottoil kit. This provides a vacuum connection onto which the Damper Elbow can be attached.

The picture shown left shows 3 vacuum points on a 4 cylinder Honda cylinder head, 2 of which are plugged with the OEM screws. The furthest right vacuum screw has been replaced with a Scottoil M5 spigot.



Some models have vacuum pipes running from the carburettor / throttle bodies, these are often for balancing the carburettor or throttle body, alternatively leading to a vacuum fuel tap or an electronic sensor.

Once located simply cut the vacuum line and insert the relevant Scottoilier T-Piece (4, 6 or 8mm) then press the Damper Elbow onto the third leg of the tee.

The picture on the left shows a vacuum pipe located and then the same pipe with the T-Piece inserted and Damper Elbow fitted.



Some Triumph models, particularly 955cc variants, have corrugated vacuum pipes from each throttle body. In order to make use of these, without compromising the air tight system, Scottoilier can supply a special T-Piece with Viton rubber sleeves which seal on the outside of the corrugated pipes.

The picture opposite shows this special T-Piece itself and in use, with the vacuum pipe pressed into the Viton on either side and Damper Elbow fitted.



Where no vacuum points or pipes exist it is still possible to access vacuum. To do so it is necessary to drill the inlet manifold or carburettor and install the Scottoilier Universal Spigot, this is available on request.

The picture opposite shows the Universal Spigot fitted to a rubber inlet manifold.

**Hint:** lightly lubricating the vacuum tubing, damper elbow and T-Piece will make them easier to press fit.

**Hint:** If the damper elbow is too tight onto the chosen vacuum point it can be warmed in hot water to make it more pliable.

**Note:** Check T-Piece and vacuum tube routing does not interfere with moving parts e.g. throttle linkages. Also avoid any hot exhaust and engine components.

**Hint:** If there's a check valve in the vacuum line make sure to cut on the engine side of the check valve otherwise residual vacuum will mean the Scottoilier is always on.

If you have any further comments or queries, and are unable to resolve them using our website, please do not hesitate to call technical on 0141 955 1100 or email [technical@scottoiler.com](mailto:technical@scottoiler.com) for assistance. Thank you.

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