

BUZZWANGLE INSTRUCTIONS

TIMING IS EVERYTHING!

Buzzwangle is a fantastic new tool concept from Sticky produced together with TSR - The Scooter Republic. Setting ignition marks and measuring port timings is now *faster, more accurate and easier* than ever before.



The complete kit: Buzzwangle, Buzzwangle-O-Meter and Piston Stop Tool

What does it fit?

Buzzwangle Tool #1 has four different threads to mount to a massive range of flywheels. This version fits the following:

- **M27x1.0 right hand thread 'VT'** – Vespatronic, many Honda models with Kokusan ignition, many Yamaha (e.g. Blaster, Banshee, RZ350, RD350), many Gas Gas models.
- **M27x1.25 right hand thread 'L'** – Lambretta (most models), MZ (some models), Ducati (many ignitions), Motoplat (some ignitions), Powerdynamo ignitions.
- **M28x1.0 right hand thread 'V'** – most manual gearchange Vespa and LML models, many Piaggio and Gilera scooters.
- **M24x1.0 right hand thread 'P'** – Latest Parmakit Vespa ignitions, Aprilia RS125, many 50cc models from Yamaha, MBK, Peugeot, Honda and Kymco.



The Buzzwangle-O-Meter will read crankshaft rotation from any zeroed position

What else do I need?

The Buzzwangle tool screws into the flywheel extractor threads on your ignition system, providing a solid, stable platform for a digital inclinometer such as our Buzzwangle-O-Meter 360. This magnetic meter is superior to many commercial inclinometers which only measure in 90-degree quadrants.

In order to set ignition timing you will also require a piston stop tool. We have produced a special adjustable Buzzwangle Piston Stop which can be set for almost any engine. The adjustable centre bolt means it will work on cylinder heads with concentric or offset spark plug positions. The Piston stop tool is reversible to fit either 14mm or 10mm spark plug threads.

Both of these items are supplied in the full Buzzwangle timing kit. Additionally you will need a timing strobe gun (the simpler the better) and possibly a pocket calculator.

Limitations:

The Buzzwangle reads angle position by referencing earth gravity. It is highly accurate but only when the crankshaft is in a horizontal axis. If the crankshaft is not horizontal (e.g. so the meter is tipped forwards or backwards) then the Buzzwangle-O-Meter will display 'ERR' signalling an alignment error. If you see this message re-angle the engine so the crankshaft is in the correct axis before measuring again.

Advantages:

- **Simple!** The CNC-machined Buzzwangle provides a rigid platform for any magnetic inclinometer to attach.
- **No disassembly!** On many vehicles the Buzzwangle can be used without need to disturb the flywheel or flywheel nut making it much easier and quicker than using a degree disc.
- **Greater accuracy!** The Buzzwangle-O-Meter reads to 0.1 degrees; which is ten times the resolution of a standard degree disc.
- **Solid fit!** The offset design of the platform and central lock screw means that the Buzzwangle can be locked to the flywheel in any position and fastened so securely that you can even rotate the flywheel and crankshaft with the Buzzwangle.



Tighten the Allen screw against the crankshaft to lock the Buzzwangle in any position.

HOW TO SET IGNITION TIMING MARKS

STAGE 1 – Mounting the parts

1. Clean your flywheel extractor threads and fit the Buzzwangle using the correct thread for your ignition. In most cases you should not need to remove the flywheel nut.
2. Gently tighten the Allen lock screw against the end of the crankshaft to lock the Buzzwangle in any position.
3. Replace your spark plug with the piston stop.
4. Rotate the crankshaft (using a spanner on the Buzzwangle if the crankshaft is stiff to move). Adjust the Piston Stop centre bolt so that there is approximately 270 degrees rotation (3/4 of a rotation) or less between the stop positions.
5. Tighten the lock-nut on the Piston Stop tool to prevent the bolt from moving.

STAGE 2 – Calculate Top Dead Centre (T.D.C)

1. Mark a clear fine line at the outside edge of your flywheel if one is not already provided.
2. Rotate the flywheel fully ANTI CLOCKWISE until the piston gently touches the piston stop.
3. Turn on the Buzzwangle-O-Meter and fix it to the Buzzwangle magnetically with the meter resting securely against the two stops. Ensure the meter is in the degrees mode.
4. Press the ON/OFF/ZERO button twice to zero the display. It will display an 'S' icon.

5. Rotate the flywheel fully clockwise until the piston touches the stop again.
6. Take a reading from the screen (e.g. 90 degrees)
7. Halve the reading (divide by 2) to find the angle at which T.D.C is located. (e.g. $90/2 = 45$ degrees).
8. Remove the piston stop and rotate the flywheel until the meter displays your T.D.C figure (e.g. 45 degrees)
9. You can mark your engine in line with the line on your flywheel as a permanent T.D.C mark if you wish.

STAGE 3 – Marking your firing point CLOCKWISE ROTATING FLYWHEELS

1. With the crankshaft held at the TDC point, press the ON/OFF/ZERO button TWICE to zero the display again.
2. Rotate the flywheel ANTI-CLOCKWISE until the display reads your desired firing point (e.g. 17 degrees Before Top Dead Centre)
3. Mark your engine casing in line with the mark scribed on your flywheel.
4. Now you have an accurate mark with which to strobe your ignition.

FIND VIDEO INSTRUCTIONS EASIER?

Search '**BUZZWANGLE**' on YouTube for 3 videos covering the entire process.

STAGE 3a – Marking your firing point ANTI-CLOCKWISE ROTATING FLYWHEELS

1. With the crankshaft held at the TDC point, press the ON/OFF/ZERO button ONCE to zero the display again.
2. Calculate your firing point by subtracting your chosen timing figure from 360. E.g 17 degrees Before Top Dead Centre (BTDC) would be $360-17 = 343$ degrees. Rotate the flywheel **CLOCKWISE** until the display reads your desired firing point (e.g. 343.0 degrees).
3. Mark your engine casing in line with the mark scribed on your flywheel.
4. Now you have an accurate mark with which to strobe your ignition.

HOW TO MEASURE 2-STROKE PORT TIMING

STAGE 1 – Mounting the parts

1. Clean your flywheel extractor threads and fit the Buzzwangle using the correct thread for your ignition (see table). In most cases you do not need to remove the flywheel nut.
2. Gently tighten the Allen lock screw against the end of the crankshaft to lock the Buzzwangle in any position.
3. Mount the meter to the Buzzwangle.
4. Remove the cylinder head. If the cylinder is now loose, use spacers and refit the head nuts to hold the cylinder firmly fixed to the engine casing, complete with correct base gasket.

STAGE 2 – Making the measurement

1. Place a very thin feeler gauge along the crown of the piston with the tip inside the port you want to measure.
2. Rotate the crankshaft clockwise until the piston traps the feeler gauge in the roof of the port. (NOTE - You can also do this by eye if you prefer.)
3. Lightly press the ON/OFF/ZERO button twice to zero the gauge.
4. Rotate the crankshaft anti-clockwise until the piston closes again on the feeler gauge tip.
5. The number of degrees shown in the meter is your port timing (port open duration)



A thin feeler gauge trapped in the port by the piston crown.