

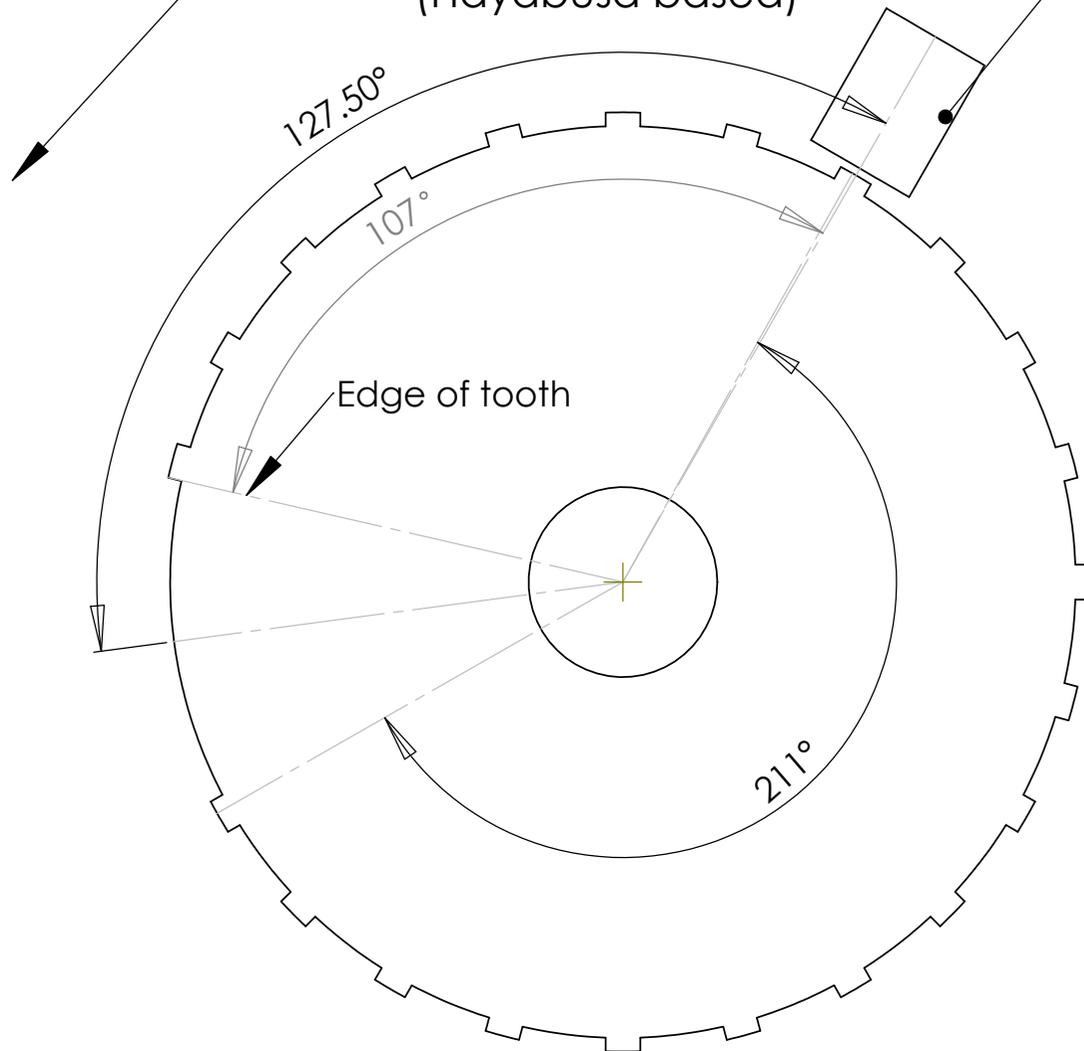
**Viewed from Generator side**  
 Engine rotation is Anti-clockwise  
 (Hayabusa based)

### Crank Sensor

When No.1 Cylinder is at TDC, the Sensor must be placed 127.5 degrees after the centre of the gap. You can place the sensor in the most suitable position for ease of mounting within the 360 circle provided the above rule is adhered to. The sensor we use (part number CRK-SEN5) has a 3mm diameter magnetic pick up (inductive type 2 wire). The diameter of your wheel if you are producing your own, is controlled by the size of the magnetic pick up. The gap between each tooth must be a minimum of 3.5mm, and must not be less than the diameter (or width) of the magnetic pick up itself, otherwise the sensor will not be able to detect a gap, it will just see the teeth on either side. The trigger teeth must have a minimum width of 3mm, this is to ensure there is sufficient Ferous material present for a suitable cranksignal to be generated. The number of teeth on the wheel is 24 with 2 teeth removed (22 teeth with one big gap). It is recommended that you have a maximum gap between sensor and the timing wheel of 1mm. The gap between the sensor and the timing wheel may need to be reduced according to the diameter of the wheel you are using. If you are struggling with space and require to make the size of the wheel very small, it is recommended that you begin to reduce the width of the teeth in order to maintain the minimum gap between teeth, so the sensor can still detect the gap. Obviously, as the teeth get smaller, the sensor will struggle to detect the signal being generated by the tooth. This is the reason for reducing the gap between the sensor and the timing wheel. It must be remembered that there is no substitute for a large volume trigger tooth, and the smaller this is made, the more Ferous material will need to be added, or a greater differentiation between the high and low points of the teeth will be required (or both).

It is recommended that the depth of the cut out between each tooth is as deep as possible. The reason for this is the deeper the gap the harder it will be for the sensor to detect anything other than the tooth. This is particularly important if your engine or equipment fitted to the engine produces interference, this will help to reduce the problem of signal degradation.

You must remember that if your tooth wheel or sensor does not produce a clean signal for the ECU , at the very least the engine may not start and unfortunately even worse, if the sensor signal is poor or weak, it may create a random misfire. This could then be virtually impossible to detect its cause and it could take days to find the cause.



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**SBD Motorsport Ltd**

DWG NO.

24-2 Trigger Wheel  
 Setup Drawing

A4

**REVISION:**