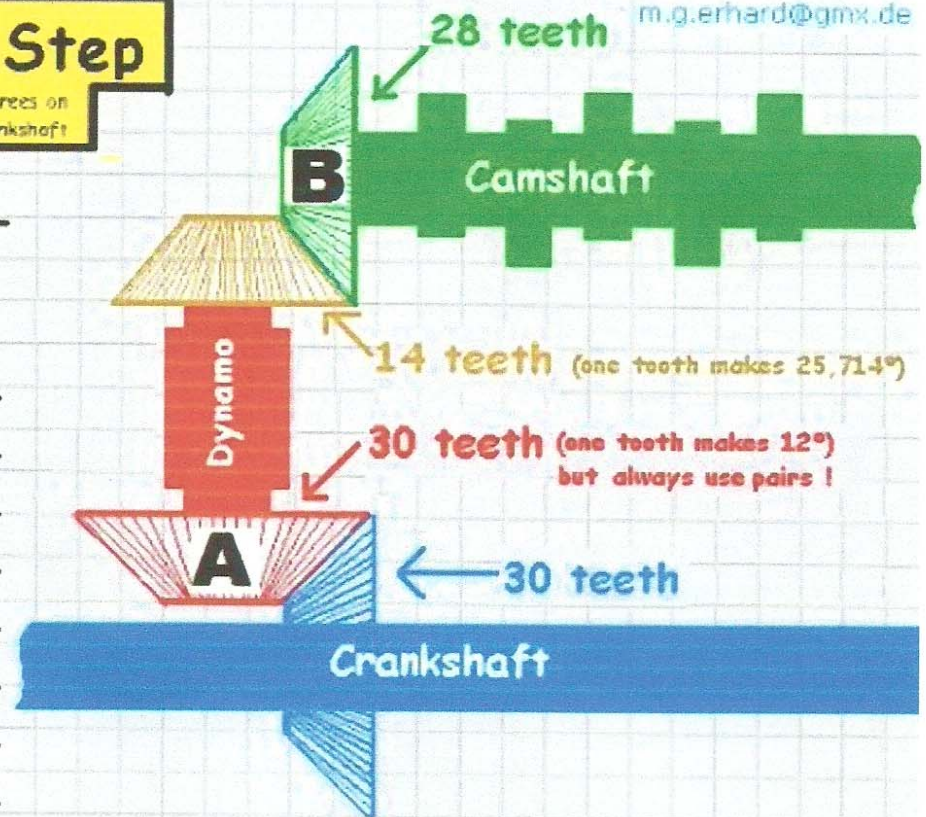


Valve-Timing-Step

min. 1,714285° degrees on crankshaft

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teeth retard on red gear	teeth advance on green gear	result in + degrees on crankshaft
A ↓	B ↓	
2 +	1	= 1,714° +
4 +	2	= 3,428° +
6 +	3	= 5,143° +
8 +	4	= 6,857° +
10 +	5	= 8,571° +
12 +	6	= 10,285° +
14 +	7	= 11,999° +
16 +	8	= 13,713° +



degrees minus can be achieved by advancing red gear **A** and retarding green gear **B**

1.71 degree is possible, because the number of teeth on the gears at different points in the drive chain are not the same. The following applies to the writer's F-type, as having the following gears: – 30 teeth on the bottom dynamo drive gear, and 14 teeth on the bevel drive pinion. So each dynamo drive tooth is $360/30 = 12$ degrees, or 24 deg for two teeth; and each pinion tooth is $360/14 = 25.71$ deg. So by using two teeth of one and one tooth of the other, a difference of 1.71 deg. is achieved. This is degrees of the crankshaft.

So, supposing on checking No.1 inlet valve timing (or any other valve), it is found to be 5 deg. late, the following correction can be applied. The engine is turned so that No.1 cylinder is on compression and at TDC. Now instead of the dynamo yoke being aligned fore and aft, it is turned 6 teeth anti clockwise (viewed from above), so retarding the timing by $6 \times 12 = 72$ deg. The rest of the drive is assembled in the usual manner. Finally, the camshaft is placed with the bevel engaging the pinion, so that when the bearings are done up, No.1 cylinder lobes will point up symmetrically as usual; but because this will mean turning it forward by an extra 3 teeth, or 77 deg., the final setting will be advanced by 5 deg. as required.