

CLAIMS

1. Brake disc (10) for cycle or motorcycle comprising an outer ring (20) comprising an inner edge (21) and an outer edge (22), a front surface (23) and a rear surface (24),

wherein said inner edge (21) comprises a multiplicity of protuberances or ribs (30) adapted to be mounted with a central disc of the brake disc (10), which is configured to fit into a hub of a cycle or motorcycle wheel,

wherein said front surface (23) and said rear surface (24) are parallel to each other and define a contact area with friction means for braking,

wherein said outer ring (20) comprises a multiplicity of recesses (43, 44) divided into a series of multiplicities of recesses (43, 44) arranged periodically to each other,

wherein each group of multiplicities of recesses (43, 44) comprises a multiplicity of front recesses (43) carved into the front surface (23) in the contact area, and a multiplicity of rear recesses (44) carved into the rear surface (24) in the contact area,

wherein said multiplicity of front recesses (43) is alternated with said multiplicity of rear recesses (44) in such a way that a cross section of the outer ring (20) follows an outline of a geometric sinusoid (S).

2. Brake disc (10) according to claim 1, characterised in that each recess (43, 44) of said multiplicity of recesses (43, 44) is formed along said outer edge (22).

3. Brake disc (10) according to any one of claims 1 or 2, characterised in that each recess (43, 44) of

said multiplicity of recesses (43, 44) is carved onto the respective surface (23, 24) in a radial direction.

4. Brake disc (10) according to any one of claims 1 or 2, characterised in that each recess (43, 44) of
5 said multiplicity of recesses (43, 44) is carved onto the respective surface (23, 24) in such a way that each recess (43, 44) is parallel to every other recess (43, 44) of the same group.

5. Brake disc (10) according to any one of claims
10 3 or 4, characterised in that each recess (43, 44) of said multiplicity of recesses (43, 44) comprises a length shorter than a radial length of said outer ring (20).

6. Brake disc (10) according to claim 5,
characterised in that each group of multiplicities of
15 front recesses (43) and of multiplicities of rear recesses (44) requires that at least two recesses (43, 44) of said group comprise different lengths.

7. Brake disc (10) according to claim 6,
characterised in that each group comprises extreme
20 recesses (43, 44) arranged at the ends of said group and central recesses (43, 44) arranged at the centre of said group, wherein said extreme recesses (43, 44) comprise a length shorter than a length of said central recesses (43, 44).

25 8. Brake disc (10) according to any one of claims 6 or 7, characterised in that the lengths of the recesses (43, 44) of said group follow an outline of a geometric curve (C1, C2), wherein said geometric curve (C1, C2) is included in a list comprising parabolas, hyperbolas,
30 sinusoids or combinations thereof.

9. Brake disc (10) according to any one of claims 1-8, characterised in that said outer ring (20) comprises

a multiplicity of second recesses (53, 54) arranged at said groups of multiplicities of front recesses (43) and of rear recesses (44), wherein said second recesses (53, 54) comprise second front recesses (53) carved into the front surface (23), and second rear recesses (54) carved into the rear surface (24), wherein said second recesses (53, 54) reduce a thickness of said outer ring (10) at said groups of multiplicities of front recesses (43) and of rear recesses (44), in such a way as to form a central protuberance (25) of a thickness lower than said outer ring (20), wherein said protuberance (25) comprises a front surface and a rear surface, in which said multiplicity of front recesses (43) and said multiplicity of rear recesses (44) are carved, respectively.

10. Brake disc (10) according to claim 9, characterised in that said second recesses (53, 54) comprise a hollow outline, which follows an outline of a geometric curve (C1, C2), wherein said geometric curve (C1, C2) is included in a list comprising parabolas, hyperbolas, sinusoids or combinations thereof.