

BRAKE DISC FOR CYCLE OR MOTORCYCLE

The present invention refers to a brake disc for cycle or motorcycle.

In the state of the art, a brake disc is known
5 comprising an outer ring which forms two flat surfaces parallel to each other which define contact areas with friction means adapted to brake. The outer ring comprises an outer edge and an inner edge from which protuberances protrude radially adapted to be associated with an inner
10 support ring which is adapted to fit centrally into a hub of a rotating means of a cycle or a motorcycle. The outer edge of the outer ring comprises recesses carved on the perimeter, such as for example EP 2112398 A1.

Disadvantageously, the brake disc is very hot
15 following a braking and it is not possible to disperse the heat effectively.

The object of the present invention consists in realising a brake disc for cycle or for motorcycle which is able to disperse in a much more effective way a heat
20 generated by braking between the disc and friction means adapted to brake.

According to the invention, this object is achieved with a brake disc for cycle or for motorcycle according to claim 1.

25 Other features are comprised in the dependent claims.

The features and advantages of the present invention will be more apparent from the following description, which is to be understood as exemplifying
30 and not limiting, with reference to the appended schematic drawings, wherein:

Figure 1 is a top view of a brake disc for cycle or

for motorcycle according to the present invention;

Figure 2 is an enlarged view of a detail A of Figure 1;

Figure 3 is a view from one side of the brake disc
5 of Figure 1;

Figure 4 is an enlarged view of a detail B of Figure 3;

Figure 5 is a sectional view of the disc along the line V-V of Figure 1;

10 Figure 6 shows an enlarged portion of a top view of an alternative brake disc according to the present invention;

Figure 7 shows an enlarged portion of a view from one side of the alternative brake disc of Figure 6.

15 With reference to the aforementioned figures and in particular Figures 1-5, a brake disc 10 for cycle or motorcycle is shown comprising an outer ring 20 comprising an inner edge 21 and an outer edge 22, a front surface 23 and a rear surface 24.

20 Said inner edge 21 comprises a multiplicity of protuberances or ribs 30 adapted to be mounted with a central disc not shown in the figures of the brake disc 10 which is configured to fit into a hub of a cycle or motorcycle wheel not shown in the figures.

25 Said front surface 23 and said rear surface 24 are parallel to each other and define contact areas with friction means for braking delimited at least by said inner edge 21 and by said outer edge 22.

Said outer ring 20 comprises a multiplicity of
30 recesses 43, 44 divided into a series of groups of multiplicities of recesses 43, 44 arranged periodically to each other.

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.

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.

Advantageously, a heat generated during braking is dispersed at least in a direction perpendicular to the outer ring 10 both to the front and to the rear.

Preferably and even more advantageously, each recess 43, 44 of said multiplicity of recesses 43, 44 is formed along said outer edge 22 in order to disperse the heat generated by the brake in a radial direction to the outside of the outer ring 10.

Preferably each recess 43, 44 of 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 as shown in particular in the Figure 2.

Preferably each recess 43, 44 of said multiplicity of recesses 43, 44 comprises a length shorter than a radial length of said outer ring 20. The recesses 43, 44 are not formed on the inner edge 21 of the outer ring 20 advantageously in such a way as not to disperse heat inside the brake disc 10.

Preferably each group of multiplicities of front recesses 43 and of multiplicities of rear recesses 44 requires that at least two recesses 43, 44 of said group comprise different lengths. Advantageously, different

lengths of the recesses 43, 44 allow to better disperse the braking heat.

Preferably each group comprises extreme recesses 43, 44 arranged at the ends of said group and central
5 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.

The lengths of the recesses 43, 44 of said group follow an outline of a geometric curve C1, C2, wherein
10 said geometric curve C1, C2 is included in a list comprising parabolas, hyperbolas, sinusoids or combinations thereof, as shown for example in Figure 2.

Even more preferably consecutive groups of recesses 43, 44 follow different outlines of geometric curves C1
15 and C2 in order to prevent resonance effects.

As shown in particular in Figures 1-5, even more preferably 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
20 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
25 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
30 multiplicity of rear recesses 44 are carved, respectively.

Advantageously, said second recesses 53, 54 allow

the braking heat to be better dispersed both in a perpendicular direction to the front and to the rear and in a radial direction.

Even more preferably, said second recesses 53, 54
5 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, i.e. they follow the outline of the respective group of
10 multiplicities of recesses 43, 44 as shown in particular in Figures 1 and 2.

Alternatively, as shown in Figures 6 and 7, it is possible to provide that the outer ring 20 does not require second recesses 53, 54.

15 Alternatively, it is possible to provide that each recess 43, 44 of said multiplicities of recesses 43, 44 has a length shorter than the radial length of the outer ring 20 and is not formed along said outer edge 22, limiting itself to dispersing the heat of the braking
20 towards one direction perpendicular to the outer ring 20.

Alternatively, it is provided that each recess 43, 44 of said multiplicity of recesses 43, 44 is carved onto the respective surface 23, 24 in a radial direction.

25 The invention thus conceived is susceptible to many modifications and variants, all falling within the same inventive concept; furthermore, all details can be replaced by equivalent technical elements. In practice, the materials used, as well as the dimensions thereof,
30 can be of any type according to the technical requirements.