

Expert Technical Statement

with respect to the occurrence of a possible endangerment
in the sense of §19/2 StVZO

No.: TZ-026950-B1-140_Engl

Vehicle Part :

SPECIAL HUBCAPS

(hubcaps disengaged from wheel rotation)

Trade Name:

Rigidisc



Patent No.: WO 02/32694 A1

Manufacturer:

**Rigidisc Media Inc.
2604 Nothampton Ave.
Orlando, Fl. 32828
USA**

1. Range of Application

The special hubcaps described in paragraph 2 are being used exclusively on wheels of categorie M1 (passenger cars) and N1 (trucks) vehicles with a wheel size of 13 up to 18 inches while observing the prescription described in paragraph 4

Instructions to Vehicle Keeper

An acceptance test of the part is not being considered as required

However, for proof of the part's adherence to prescriptions, it is recommended to always keep this expert technical statement in the vehicle to enable its presentation to authorized persons upon demand.

If desired by the vehicle keeper, an entry into the vehicle documents can be made. For this purpose, the vehicle must be presented to an officially recognized expert. The vehicle title and this confirmation must also be submitted at that time.

2. Description of Retrofitting (see photos)

Two-part special hubcaps consisting of cover disc and universal attachment disc as well as attachment parts in different versions being part of the delivery.

Cover Disc (Version A)



Universal attachment disc



Versions:

- Cover Disc

in 2 design versions A and B:

A: with edge-protective adhesive tape for vehicles with
max. design speed of **up to 220 km/h**

B: with an arched edging ($r \geq 2.5$ mm) for vehicles with
max. design speed of **up to 300 km/h**

and sizes each of:

- wheel size 13": disc \varnothing = 360 mm , weight 1,1 kg
- wheel size 14": disc \varnothing = 385 mm , weight 1,2 kg
- wheel size 15": disc \varnothing = 410 mm , weight 1,3 kg
- wheel size 16": disc \varnothing = 435 mm , weight 1,4 kg
- wheel size 17": disc \varnothing = 460 mm , weight 1,6 kg
- wheel size 18": disc \varnothing = 485 mm , weight 1,7 kg

- Universal attachment disc for wheel attachment in 2 sizes :

- pitch circle \varnothing of wheel (mm): 98 to 120 for 3-, 4- and 5-pitch wheel attachment
- pitch circle \varnothing of wheel (mm): 98 to 170 for 3-, 4- and 5-pitch wheel attachment

2.1 Marking:

Type label sticker or
Type label engraving
on inside of hubcap



2.2 Technical Data of Special Hubcaps:

The fixing of the attachment disc to the wheel is made with special clips (part of the delivery) in a force-fit manner onto the hexagonal bolts / lug nuts. During the mounting process, the attachment disc will automatically center itself onto the wheel. The cover disc will be screwed onto the rotary attachment disc exterior by means of 4 special screws. On the backside of the cover disc 2 pivoting disc-type weights are mounted which, in normal operation, disconnect the disc from the wheel rotation and only allow pendulum motion, which is being damped by a vibration absorber. At speeds exceeding 220 km/h, the cover disc can be put into rotation due to self-friction. In such a case, the disc-type weights will neutralize the imbalance by pivoting apart.

3. Tests and Test Results

Test basis are the prescription of StVZO as well as the directives issued for this.

In particular, the following tests were conducted:

- Directive 74/483/EEC – External Projections
- Attachment
- Corrosion test according to DIN 50021
- Endurance test in practical operation (approx. 1,500 test-km)
- Comparison testing of brake cooling with both, steel wheel and aluminum wheel
- Strength endurance testing (roller test stand), 15,000 km at alternating speeds in between 250 km/h and 300 km/h with rotating exterior disc

Additionally, the following tests were conducted by TUEV Austria; they were documented in Test Report No. 2002-KTV/PZW-EX-472/AB dated 26.04.2002:

- Speed test and imbalance test on roller test stand
- Endurance test in practical operation (approx. 1,436 test-km)
- Road worthiness with rotating exterior disc
- Strength test of clip connection
- Impact test according to ISO 7141 (curb contact)

Test Results:

All of the tests listed above have been concluded with positive test results.

4. Requirements

- 4.1 For attachment purposes, the mounting instructions must be observed. Only those attachment means that were part of the delivery may be used.
- 4.2 For the distance of the edge of the cover disc to the wheel/tire, the following restrictions are valid:
- If the cover disc will extend externally beyond the tire shoulder / rim the distance listed above may amount to maximally 20 mm. However, in no case may the limits of the wheel cover be exceeded to the exterior.
 - If the cover disc does not extend beyond the tire shoulder, then the a.m. distances can amount to maximally 30 mm.
 - Due to the cooling of the brake, the minimum distance may not fall below 10 mm
- 4.3 No retro-reflecting foil may be bonded to the exterior disc.
- 4.4 The tools for mounting must be kept in the vehicle at all times (tire change, air pressure controls)
- 4.5 An operation with snow chains is not permitted.
- 4.6 Vehicle with a design speed exceeding 220 km/h are obliged to use exterior cover version B (with rounded down sheeting edges).

5. Summarization

There are no technical objections against the attachment of the described special hubcaps to steel and aluminium wheels of M1 and N1 vehicles (passenger car / light-duty trucks).

On account of the simple mounting and the distinct attachment position, it is not considered necessary to conduct an acceptance test.

An endangerment to traffic participants in the sense of §19, paragraph 2 StVZO is not being expected.

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