

**Informal Document No. GRRF-61-13**  
**61<sup>st</sup> GRRF, 5 - 9 February 2007**  
**Agenda item 4.)**

## **STATUS REPORT**

**Transmitted by the Chairman of the GRRF Informal Group on "ECE-R.90 - Replacement Discs and Drums" (RD&D)**

Until now the RD&D Group had held seven meetings (in Germany, Spain, England and Italy) to discuss and amend the comprehensive Informal Document No. GRRF-56-6 of over 60 pages. Members of the Group are experts from the industry (component and vehicle manufacturers), technical services and government representatives.

Although the group could agree about many essential requirements, one big problem has not yet been solved, namely the Scope of Application.

### **1 Scope of Application**

There are strongly held diametrically opposite views concerning the scope of regulation. There are two different positions:

#### **A) Vehicle manufacturers' position**

Regulation R90 should not apply to original equipment brake lining assemblies and brake drums and discs, or vehicle manufacturer's replacement brake lining assemblies and brake drums and discs.

##### **Justification:**

Performance of brake disks and drums is tested according to the specifications of ECE-Regulation No. 13 & 13H. There is currently no separate approval required in ECE-Regulation No. 90 for the parts delivered by the vehicle manufacturer. The vehicle manufacturers consider that in real life, there is no safety issue concerning replacement disks and drums supplied by the vehicle manufacturers.\*

Concerning new regulations, the vehicle manufacturers see no need for an "over-regulation" in technical domains where in practice; there is no safety-risk. In consequence, they cannot accept neither an amendment of the braking regulations ECE 13 and 13H concerning disks and drums nor integration of these parts in the scope of ECE-Regulation No. 90.

In order to harmonise the regulations of replacement parts, the vehicle manufacturers think that in the case of replacement disks and drums, the same principles as in the recently adopted new regulation ECE 124 on replacement wheels should be applied: Vehicle manufacturer's re-

replacement brake drums and discs should be excluded from the scope of the new regulation ECE 90.

\* Vehicle manufacturer's replacement brake drums and discs are brake drums and discs supplied by the vehicle manufacturer which are intended to replace the OE parts during the service life of the vehicle.

## **B) Majority component manufacturers' position**

It is proposed that all replacement parts should be subject to ECE-Regulation No. 90 irrespective of their channel of distribution (via the vehicle manufacturer or the independent aftermarket).

### **Justification:**

It is well known that during the service life of a vehicle the vehicle manufacturer frequently delivers parts to the market which are different to those approved as original equipment particularly for those vehicles which are no longer in series production. These parts are not necessarily covered by any formal approval system.

Aftermarket manufacturers operate to internationally recognised quality systems such as ISO 9001-2002 or ISO TS 16949 etc. and as such provide ongoing COP.

By granting vehicle manufacturers carte blanche exemption from any regulation it discriminates unfairly against the IAM (independent aftermarket) and risks inferior parts reaching the market place.

### **To overcome this deadlock the chairman of the RD&D Group made the following proposal "C".**

The group wishes that the GRRF gives guidance whether this proposal is in principal supported by the GRRF. The following proposal outlines only some basic ideas expressed by the chairman during the last ad hoc working meeting. Provided that GRRF can support this concept the concrete requirements have to be worked out in detail and have to be discussed by the group.

## **C) Chairman's compromise proposal**

The vehicle manufacturers are exempt from the whole of the R90 Regulation for the OES-parts which are intended to replace the OE parts (which have a Type Approval to R13/R13H) during the service life of the vehicle, provided that these replacement parts (brake disc & brake drum) can be identified as such.

It is therefore proposed that in Annex 2 (ECE-R13) and Annex 1 (ECE-R13H) a "Replacement Code" has to be specified.

This Replacement Code is similar as the required identification code of Directive 71/320/EEC (see Annex I, paragraph 2.3.4) and provides the link between the replacement part and the approved braking system.

The vehicle manufacturer may specify any code. This code may be identical for different OES part numbers as long as it relates to the type approved vehicle.

To distinguish the Replacement Code from other numbers on the part it should be required that the Replacement Code must be grouped together with the logo or trade mark of the vehicle manufacturer.

The group intends to propose amendments to ECE-Regulation No. 90 in order that the axle manufacturer is treated in a similar way as the vehicle manufacturer. The Replacement Code for a trailer could then be taken from the test report (according to ECE-R13, Annex 11) of the axle manufacturer.

### **Conclusion**

The Replacement Code identifies a replacement disc or drum which is confirmed by the vehicle manufacturer as being covered by the braking type approval according to ECE-Regulation No. 13 / 13H.

The additional burden of the vehicle manufacturer to the benefits with respect of safety is negligible.

- Replacement brake disc and replacement brake drum which are regarded to fulfil a certain safety standard are either marked with the vehicle manufacturer's Replacement Code (in conjunction with the logo or trade mark of the vehicle manufacturer) or with the R90 approval mark.
- This replacement code enables also to find a practical solution with respect to trailers which are manufactured by "thousands" of trailer manufacturers.
- The work of the GRRF RD&D informal group on replacement disks and drums to improve the safety level of aftermarket replacement parts is appreciated by the vehicle manufacturers. Therefore it is expected from the vehicle manufacturer that they contribute to this goal a little bit as well. Compared to the burden of extensive homologation testing required from the IAM (independent aftermarket) over and above what they already do to bring a product to the market the additional marking effort required from the vehicle manufacturer is very little.

## **61<sup>st</sup> GRRF session**

The RD&D Groups expects guidance from the GRRF whether the chairman's proposal is principally backed up by the contracting parties so that concrete requirements can be worked out in detail by the Group.

## Other items are:

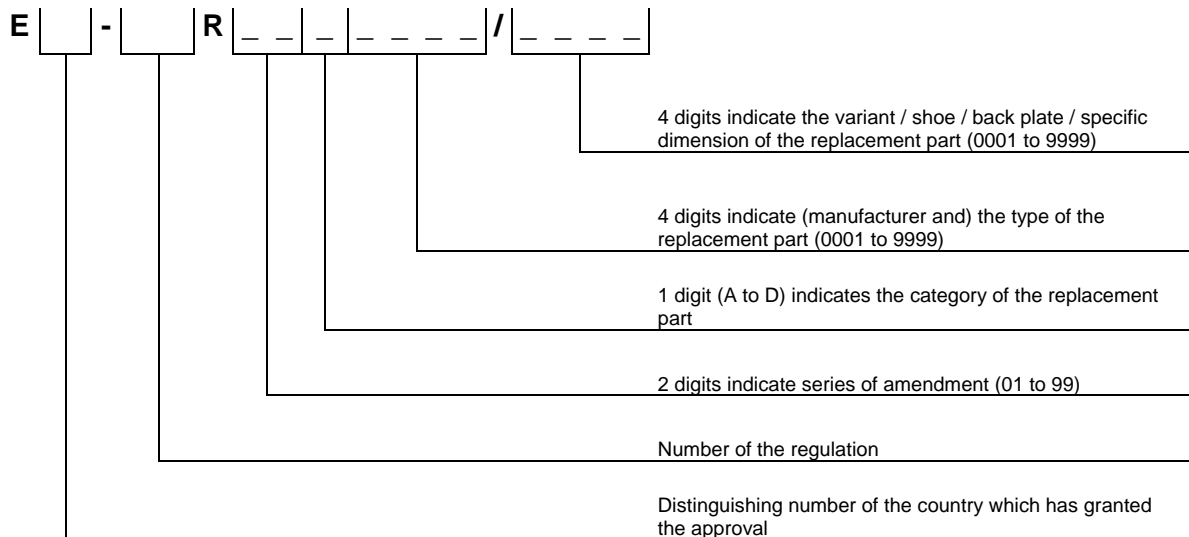
### 2 Type of Parts

The current working paper defines the following different parts:

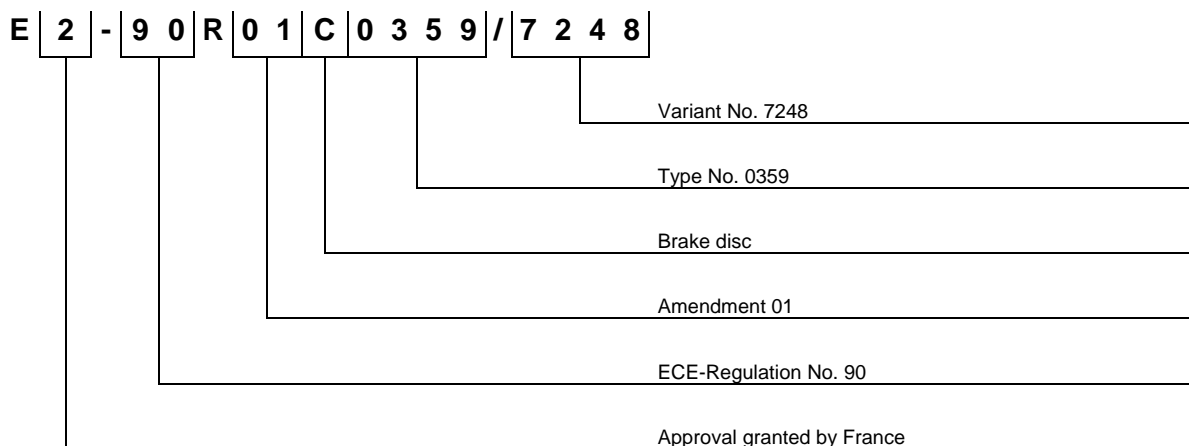
- Original parts
- (Vehicle manufacturer's replacement parts)  $\Leftarrow$  no agreement yet
- Identical parts
- Equivalent parts
- Interchangeable parts
- Special part (which are not covered by ECE\_R90)

According to the type of part the test requirements are defined.

### 3 Approval mark



#### Example:



The new proposed approval mark distinguishes between the four different categories parts:

- A Replacement brake lining assembly
- B Replacement drum brake lining
- C Replacement brake disc
- D Replacement brake drum

The current 3 digit type and 3 digit variant number (allocated by the approval authority) were increased to a 4 digit number (reflecting the current practice in some countries).

#### 4 Marking

For the brake drum and disc replacement parts approved according ECE-Regulation No. 90 the RD&D Group proposes the following marking requirements:

6.2.2.	Marking
	Every brake disc/drum approved in accordance with this regulation shall be durably marked with at least the following information:
6.2.2.1	Manufacturer's name or trade mark,
6.2.2.2	The approval number
6.2.2.3	An indication which provides traceability of the production process (e.g. date, batch number, source code)
6.2.2.4	The minimum thickness of the brake disc or the maximum permissible inside diameter of the brake drum.

#### 5 Test group criteria (within the same type)

In the case of brake discs the test groups are defined with respect to outside diameter of the disc and the disc thickness.

In the case of brake drums the test groups are defined with respect to inside diameter of the drum and the shoe width of the drum brake.

Each test group within a particular type of replacement brake disc/drum shall be tested.

Thus, if various brake discs or drums fall within the defined range of a test group only one part falling in that test group has to be tested.

## 6 Type of Tests

The following types of tests are described:

- Performance tests to show compliance with ECE-Regulation No. 13 and 13H (Road tests and alternative dynamometer tests) [Verification of the statutory requirements in the road test]
- Crack resistance test [integrity test]
- Strength test
- Material testing

## 7 COP

To the current COP annex [Annex 9] a second part (Part B) is added which covers the extent of testing with respect to the conformity of production of discs and drums.

## 8 New Annexes

It is intended to add to the current ECE-Regulation No. 90 the following annexes.

**Annex 10** - Illustrations

**Annex 11** - Requirements for replacement brake discs/drums for vehicles of category M and N

**Annex 12** - Requirements for replacement brake discs/drums for vehicles of category O

**Annex 13** - Requirements for replacement brake discs/drums for vehicles of category L

Until now the discussions of the group have covered the body of the regulation and the annexes up to number 11. The trailer Annex 12 and the motor cycle Annex 13 have not yet been discussed.

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