

Submitted by CLEPA

Informal document **GRRF-84-25**
84th GRRF, 19–22 September 2017
Agenda item 4

Replacement Brake Callipers

CLEPA Presentation to GRRF 84

Market

- The market for replacement brake callipers is serviced by:
 - new callipers from OEM suppliers
 - remanufactured* callipers from OEM suppliers
 - new “copy” callipers from non - OEM suppliers
 - remanufactured* callipers from non - OEM suppliers

* Common definition agreed by APRA, CLEPA, FIRM, VDA and ACEA

“A remanufactured part fulfils a function which is at least equivalent compared to the original part[1]. It is restored from an existing part (core), using standardized industrial processes in line with specific technical specifications . A remanufactured part is given the same warranty as a new part and it clearly identifies the part as a remanufactured part and the remanufacturer ”

A remanufactured part is different from a reused, repaired, rebuilt, refurbished, reworked or reconditioned part. These categories are not subject to this definition

Background

- In view of the evolution of the market it has been suggested that UN Regulation No. 90-02 should be extended to cover replacement brake callipers – both new “copy” parts and remanufactured units
- During discussions at the R90SIG in Spain (2016) it was envisaged that a legislative regime for new and remanufactured callipers could follow similar lines to existing tyre legislation for new and re-treaded tyres (R.108 PC & R.109 CV) which employ common test regimes but different COP procedures
- CLEPA was asked to consider the matter based on their members experience

CLEPA Position

- CLEPA members have found serious problems in the replacement market with products offered by some non –OEM suppliers
- These problems are with both new “copy” callipers and (supposed) “remanufactured” parts
- There are different views within the CLEPA membership as to how best these problems might be addressed
- CLEPA recognises that for GRRF to consider any proposal for legislation it is essential to establish if a safety risk of sufficient scale exists
- CLEPA members do not have any vehicle accident statistics directly attributed to brake calliper failures - *any information from CP’s would be very welcome* - but examples of the type of faults that have been found with new “copy” parts and supposed “remanufactured” parts follow

“Copy” Callipers – problems identified

- Problems have been found with “copy” callipers that are associated with the use of poor quality/low strength materials
 - Structural failure (carrier) < 700 brake applications of an ISO26965 brake pad test
 - Internal component failures (e.g. actuation levers, roller bearings) during early stages (~ 1000 brake applications) of endurance tests
- Problems have also been found with “copy” callipers associated with poor tolerancing/manufacture
 - Poor calliper efficiency (< 90%) @ higher pressures
 - Excessive load/unload hysteresis effects
 - Heavy/uneven actuation component wear

“Remanufactured” Callipers – problems identified

- Continued incorporation of worn/damaged parts that should have been replaced
 - e.g. castings/carriers/fasteners/bearings/adjusters
- Use of new components of poor quality/low strength
 - e.g. fasteners/bearings/shafts/tappets
- Poor assembly processes and practices
 - e.g. cleaning/sealing/lubrication/testing/traceability