

## Proposed amendment to Appendix 10 to the GCU

### Record of amendments

Amended by	Date	Module	Amendment
Burkhard Lerche	24/05/2022	M01.001	First draft
Burkhard Lerche	04/11/2022	M01.001	Update
AG Neandertal	04/01/2023	M01.001	Update
WG MNT decision	18/04/2023	M01.001	Update and approval (see minutes of the Maintenance WG meeting)
WU SG decision	23/05/2023	M01.001	WU SG approval
GCU JC decision	07/06/2023	M01.001	

<b>Title</b>	M01.001: Wheelset removal/installation M01.001: Démonter/monter l'essieu M01.001: Radsatz aus/ein
<b>Proposed amendment made by RU/keeper/other:</b>	B. Lerche
<b>Proposed amendment to:</b>	<input checked="" type="checkbox"/> Appendix 10 <input type="checkbox"/> Annex 6 (Appendix 10)
<b>Proposer:</b>	Working Group Modularisation Appendix 10
<b>Location, date:</b>	Mainz, 24/05/2022
<b>Concise description:</b>	Description of the exchange of a wheelset after various damages

## 1. Starting point (current situation):

<b>1.1. Introduction</b>
The task of the Working Group for the modularisation of Appendix 10 of the GCU is to describe new modules containing the measures to restore fitness to run and to create a link to the damage codes of appendix 9 as well as to the coding of the works of appendix 10 annex 6
<b>1.2. Mode of operation</b>
The results of the working group are submitted as amendment to the Working Group Appendix 10 and so introduced in the regular process for validation of amendments
<b>1.3. Anomaly/description of problem</b>
Appendix 10 does not currently provide a comprehensive package of works to be carried out in order to restore the fitness to run. By introducing modularisation, this problem is solved. Modularisation supports the further digitalisation.
<b>1.4. Does this concern a recognised code of practice* (e.g. ISO, EN)?</b>
<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes (state which): <small>* "a written set of rules that, when correctly applied, can be used to control one or more specific hazards." (Source: Regulation (source: Regulation EC 352/2009, Article 3)          "Technical provisions laid down in writing or conveyed verbally and pertaining to procedures, equipment and modes of operation which are generally agreed by the populations concerned (specialists, users, consumer and public authorities) to be suitable for achieving the objective prescribed by law, and which have either proven their worth in practice or, it is generally agreed, are likely to within a reasonable period of time". (Source: BMJ Handbuch der Rechtsförmlichkeit – guide published by German Ministry of Justice)</small>

## 2. Target situation

<b>2.1. Elimination of anomaly/problem (solution sought)</b>
<p>This measure restores the fitness to run after following damage codes Appendix 9:</p> <ul style="list-style-type: none"> <li>• 1.1.1 Thickness tyred wheel less than 35 mm on wagons for 120 km/h or 30 mm on other wagons</li> <li>• 1.1.2 Tyred wheel broken, cracked lengthways or crossways</li> <li>• 1.1.3 Tyred wheel loose, inspection marks inconsistent, unclear ring, tyre clip loose, appearance of rust between the tyre and the rim over more than one third of the circumference</li> <li>• 1.1.4 Inspection marks tyred wheel missing, not clearly identifiable</li> <li>• 1.1.5 Tyred wheel shifted sideways, tyre clip loose or visibly distorted</li> <li>• 1.1.6 Damage to tyred wheel clip (cracked, broken, missing)</li> <li>• 1.2.1 Minimum thickness groove marking of solid wheel is no longer fully visible in cross section</li> <li>• 1.2.3.2 Wear and/or exceptional deformation of the entire circumference of the wheel tread, <math>\geq 2</math>mm deep, caused by the brake block.</li> <li>• 1.3.1.2 Width tyre or corresponding part of solid wheel <math>&gt; 140</math> mm <math>&lt; 133</math> mm, presence of a projection</li> <li>• 1.3.2 Tread crushed in places of tyre or corresponding part of solid wheel, uneven contact surfaces or irregular protrusions on the wheel rim.             <ul style="list-style-type: none"> <li>• 1.3.3.1 Wheel flat longer than 60 mm (wheel <math>\varnothing &gt; 840</math> mm)</li> <li>• 1.3.3.2 Wheel flat longer than 40 mm (wheel <math>\varnothing 630</math> mm <math>&lt; d \leq 840</math> mm)</li> <li>• 1.3.3.3 Wheel flat longer than 35 mm (wheel <math>\varnothing \leq 630</math> mm)</li> <li>• 1.3.4.1 Metal build up over a length of <math>&gt; 60</math> mm or <math>\geq 1</math> mm thick (wheel <math>\varnothing &gt; 840</math> mm)</li> <li>• 1.3.4.3 Metal build up over a length of <math>&gt; 40</math> mm or <math>\geq 1</math> mm thick (wheel <math>\varnothing: 630</math> mm <math>&lt; d \leq 840</math> mm)</li> </ul> </li> </ul>

- 1.3.4.5 Metal build up over a length of >35 mm and  $\geq 1$  mm thick (wheel  $\varnothing \leq 630$  mm)
- 1.3.5.1 Cavity, shelling or flaking wheel  $\varnothing > 840$  mm, length > 60 mm
- 1.3.5.2 Cavity, shelling or flaking wheel  $\varnothing$ :  $630 \text{ mm} < d \leq 840$  mm, length > 40 mm
- 1.3.5.3 Cavity, shelling or flaking wheel  $\varnothing \leq 630$  mm, length > 35 mm
- 1.3.6.1 Crack at the interface between the wheel tread and the front edge
- 1.3.6.4 Cracks on the tread - isolated cracks: with characteristics of thermal overload
- 1.3.8.2 Grooves with sharp edges  $\geq 1$  mm deep
- 1.3.8.3 Furrows and false flanges > 2 mm deep
- 1.4.1 Height of flange Sh greater than 36 mm hollow on wheel tread
- 1.4.2 Flange thickness < 22 mm on wheel  $\varnothing > 840$  mm or < 27.5 mm on wheel  $\varnothing 630$  (330) - 840 mm or worn flange
- 1.4.3 Wear of flange guide faces  $\leq 6.5$  mm or sharp flange
- 1.4.4 Burrs or sharp edges on guide face at a distance h > 2 mm from maximum height of flange (see also Annex 4)
- 1.5.1 Damage to solid wheel centre or wheel hub (cracked, broken or defect repaired by welding)
- 1.5.2 Damage to tired wheel centre, tyre clip, tyre (cracked, broken or defect repaired by welding)
- 1.6.1 Damage to axle (cracked, deformed (see also 1.7.1), defect repaired by welding, sharp edge, worn to a depth of more than 1 mm)
- 1.7.1 Clearance between internal faces of wheelset non-compliant with limit values, signs of derailment, signs of movement of wheel on axle, heating (solid wheel) in zone between web and rim/tyre
- 1.8.1.1 Housing axle box not watertight, defect allowing water or dust to enter cracked or broken housing missing plug (loss of protective cover of the centring cone is permissible)
- 1.8.2 Axle box guides no longer able to guide the axle guide broken axle box in abnormal position
- 1.8.3.1 Housing too hot to touch with back of hand, traces of rust
- 1.8.3.2 Confirmation by the RU of box over-heating during transport
- 1.8.4 Hard manganese wear plate on axle box of Y bogie or derivative designs displaced or missing
- 3.2.4.2 Defekte Befestigung der Bremsscheibe auf der Welle
- 3.2.4.4 Durchgehender Riss an Bremsscheibe

### 3. Additional text (relates only to proposed amendments to GCU Appendix 10):

Colour codes for amendment proposals:

**Black:** Currently applicable text; provides information and remains unchanged

**Red:** New text

**Blue:** (may be crossed out): Text to be deleted

Symbols are used as follows:

→ Link to other section of the GCU

☑ Communication between keeper and workshop


📄 Documentation of the work acc. to app. 10 annex 6

Note: if changes of the annex 6 are required, they have to be named below.


**EN**

#### **M01.001: Wheelset removal/installation**


<b>Technical requirements:</b>	Wheelset lowering and/or lifting equipment
<b>Organisational preparations:</b>	☑ If necessary, request wheelset from the keeper with →Form HR <sup>R</sup> in accordance with Appendix 7
<b>No.</b>	<b>Work tasks, technical target state and additional notes</b>
1.	Prepare wheelset removal →1.36 <ul style="list-style-type: none"> <li>• loosen axle-guard tie or T-lifting guard</li> <li>• increase brake block clearance for unhindered removal of the wheelset</li> </ul>

	<ul style="list-style-type: none"> <li>remove parts obstructing wheelset removal</li> </ul> <i>Additional notes: secure the suspension against tipping, for the removal of the axle-guard tie →M04.001</i>
2.	<p>Remove wheelset:</p> <ul style="list-style-type: none"> <li>One-sided lifting of the wagon is only permitted with the appropriate signs.</li> <li>When lifting vehicles, the permissible bending angles must be observed</li> <li>Lifting at the buffers is not permitted</li> <li>Bogies must not hang from the bogie pin</li> </ul> <p>Hydraulic and pneumatic hoses as well as electrical cables must not be damaged or kinked</p>
3.	Examine brake blocks in accordance with →3.7 and →3.8
4.	If the wheelset becomes damaged through rubbing, rectify cause →M03.004 (in creation)
5.	Install wheelset →1.21
6.	<p>Remount disassembled parts with suitable locking screws and nuts according to the previously attached connections</p> <p><i>Additional notes: →M04.001 when attaching the axle-guard tie →M04.001</i></p>
7.	Measure buffer height →M05.002 (in creation)
8.	Carry out a brake function test →M03.001
	

**FR****M01.001 : Démonter/monter l'essieu monté**

<b>Conditions techniques :</b>	Vérin en fosse et/ou dispositif de levage
<b>Mesures préparatoires :</b>	<input checked="" type="checkbox"/> Le cas échéant, demander l'essieu auprès du détenteur avec → modèle H <sup>R</sup> selon l'annexe 7
<b>n°</b>	<b>Contenu de l'intervention, état technique théorique et autres indications</b>
1.	<p>Préparer la dépose de l'essieu monté, tenir compte de →1.36:</p> <ul style="list-style-type: none"> <li>Entretoises de plaques de garde ou pièces en T démontées</li> <li>Accroître le jeu au sabot de frein pour permettre la dépose aisée de l'essieu monté</li> <li>Démontage de pièces gênant la dépose de l'essieu monté</li> </ul> <p><i>Indications complémentaires : Sécuriser les ressorts de suspension contre le basculement ; lors du démontage de la plaque de garde →M04.001</i></p>
2.	<p>Dépose de l'essieu monté</p> <ul style="list-style-type: none"> <li>Le relevage d'un côté du wagon n'est autorisé qu'en cas d'inscription correspondante et, lors du relevage de véhicules à bogies centraux, il convient de respecter les angles d'articulation autorisés et de ne pas dépasser l'angle admissible inscrit.</li> <li>Le relevage par les tampons n'est pas autorisé</li> <li>Les bogies ne doivent pas être suspendus au dispositif de verrouillage de la cheville-ouvrière du pivot de bogie</li> </ul> <p>Les accouplements de frein hydrauliques et pneumatiques ainsi que les câbles électriques ne doivent pas être endommagés ni pliés</p>
3.	Examiner les semelles de frein selon →3.7 et →3.8
4.	En cas d'endommagement de l'essieu-axe par des pièces frottantes, éliminer la cause → M03.004 (en cours de création)
5.	Monter l'essieu →1.21
6.	<p>Monter les pièces démontées avec les éléments de fixation appropriés selon les assemblages préalablement réalisés</p> <p><i>Indications complémentaires : Lors du démontage de l'entretoise de plaque de garde →M04.001</i></p>
7.	Mesurer le niveau des tampons →M05.002 (en cours de création)
8.	Test de fonctionnement du frein →M03.001
	

**DE****M01.001: Radsatz aus/ein**

<b>Technische Voraussetzungen:</b>	Radsatzsenke bzw. Hebevorrichtung
<b>Organisatorische Vorbereitungen:</b>	<input checked="" type="checkbox"/> ggf. Radsatz beim Halter mit →Muster HR nach Anlage 7 abfordern
<b>Nr.</b>	<b>Arbeitsinhalt, technischer Sollzustand und sonstige Hinweise</b>
1.	Radsatzausbau vorbereiten, unter Beachtung von →1.36: <ul style="list-style-type: none"> <li>• Radsatzhalterstege bzw. T-Stücke Abhebesicherung demontiert</li> <li>• Bremsklotzspiel für den ungehinderten Ausbau des Radsatzes vergrößern</li> <li>• Ausbau von Teilen, die den Radsatzausbau behindern</li> </ul> <i>Sonstige Hinweise: Sichern der Tragfedern gegen Abkippen; beim Abbau des Radsatzhalterstegs →M04.001beachten</i>
2.	Radsatz ausbauen: <ul style="list-style-type: none"> <li>• Einseitiges Anheben des Wagens ist nur bei entsprechender Anschrift gestattet</li> <li>• Beim Anheben von Fahrzeugen sind die zulässigen Knickwinkel zu beachten</li> <li>• Das Anheben an den Puffer ist nicht gestattet</li> <li>• Drehgestelle dürfen nicht am Drehpfannenbolzensicherung hängen</li> </ul> Hydraulik- und Pneumatikschläuche, sowie elektrische Leitungen dürfen weder beschädigt noch abgeknickt werden
3.	Bremssohlen untersuchen nach →3.7 und →3.8
4.	Bei Beschädigung der Radsatzwelle durch schleifende Teile, Ursache beheben →M03.004 (in Erstellung)
5.	Radsatz einbauen unter Berücksichtigung von →1.21
6.	Demontierte Teile mit geeigneten Befestigungselementen gemäß den zuvor angebrachten Verbindungen anbauen <i>Sonstige Hinweise: beim Anbau des Radsatzhalterstegs →M04.001 beachten</i>
7.	Pufferstand messen →M05.002 (in Erstellung)
8.	Funktionsprobe der Bremse durchführen →M03.001
	

**4. Reason:**

<b>5. Assess potential positive/negative impacts</b>
<p>Assess the possible positive and negative effects (operations, costs, administration, interoperability, safety, competitiveness, etc.) on a scale of 1 (very low) to 5 (very high):</p> <p>Reasoning behind amendment:</p> <p>This measure describes the good practice in maintenance and should not have a positive or negative effect on operations, costs, administration, interoperability, competitiveness, but presents an increase on safety.</p>

## 6. Safety appraisal of proposed amendment

Description of actual/target system, and scope of change to be made (see points 1 and 2).

Performance of risk analysis is unnecessary where only recognised standards are implemented.

Risk analysis conducted by:

<b>6.1. Does the change have an impact on safety?</b>	<input type="checkbox"/> No <input checked="" type="checkbox"/> Yes
Reason: The exchange of the wheelset is a safety relevant task	
<b>6.2. Is the change significant?</b>	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes
Reason: the frame conditions were already defined, and this task is performed in nearly every freight wagon workshop	
<b>6.3. Determining and classifying risk</b>	<input checked="" type="checkbox"/> N/A
6.3.1. Effect of change in normal operation: 6.3.2. Effect of change in the event of disruption/deviation from normal operation: 6.3.3. Potential misuse of system: <input type="checkbox"/> No <input type="checkbox"/> Yes (describe possible misuse):	
<b>6.4. Have safety measures been applied?</b>	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes
For each type of risk, one of the following risk acceptance criteria is to be selected: <ul style="list-style-type: none"> <li>• Code of practice</li> <li>• Use of reference system</li> <li>• Explicit risk assessment</li> </ul>	
<b>6.5. Has a risk analysis been submitted to the assessment body?</b>	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes
Assessment body: Attach the verdict reached by the assessment body	[Appendix]