

WOSS 100/3

British Railways Board

Chief Mechanical & Electrical Engineer's Department

Inspection Procedures

General Mechanical

WORKSHOP OVERHAUL STANDARD SPECIFICATION



REVISION RECORD

It is intended to up-date this specification whenever experience dictates this to be necessary. Pages having amendments or additions will be issued in the form of revision letters. The amended or the additional portion of re-issued pages will be highlighted by an adjacent vertical black line.

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Issued by:-
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 & ELECTRICAL ENGINEERING
 RAILWAY TECHNICAL CENTRES
 London Road
 DERBY

WOSS 501/1

This Specification applies to equipment fitted to the vehicles indicated 'X' below, but it is only to be implemented when authorised by an appropriate maintenance/overhaul document.

LOCOMOTIVES

03	X
08	X
09	X
20	X
25	X
26	X
27	X
31	X
33	X
37	X
43	X
45	X
47	X
50	X
56	X
58	X

73	X
81	X
85	X
86	X
87	X
88	X
89	X
91	X

DMU's

101	X
104	X
107	X
108	X
110	X
111	X
114	X
115	X
116	X
117	X
119	X
121	X
123	X
140	X
141	X
142	X
143	X
144	X
150	X
151	X
155	X
156	X
210	X

EMU's

302	X
303	X
304	X
305	X
307	X
308	X
309	X
310	X
311	X
312	X
313	X
314	X
315	X
317	X
318	X
319	X
504	X
507	X
508	X

411	X
412	X
413	X
414	X
415	X
416	X
419	X
421	X
422	X
423	X
432	X
455	X
485	X
486	X
487	X
488	X
489	X
491	X

DEMU's

201	X
202	X
203	X
204	X
205	
207	

COACHING STOCK

Mk 1	
Mk 2, 2a-c	
Mk 2d-e	
Mk 2f	
Mk 2 DBSO	
Mk 3a	
Mk 3b	
Mk 3 (HST)	
Mk 3 SLE and SLEP	
Non Passenger	

WORKSHOP OVERHAUL STANDARD SPECIFICATION 100/3
INSPECTION PROCEDURES - GENERAL MECHANICAL

C O N T E N T S
SECTION 1 REPAIR PROCEDURE

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1. Inspection

1.1 Scope

These notes are intended to supplement instructions contained, where relevant, in the individual section of the Workshop Overhaul Standard Specification.

1.2 Wear Limits

Section 3 of each Specification is a schedule of clearance and wear tolerances for all parts where close running fits between mating surfaces are a feature of the design. Maximum permissible clearances are quoted, which, when exceeded call for replacement of one or both parts.

1.3 Seals and Sealing Rings

A housing type seal i.e. one that is pressed into position, which has been removed should be renewed. For all types of oil seals ensure that lip of the seal and the shaft on which it bears are not damaged or worn to any appreciable extent. Renew all 'O' rings and Dowty seals.

1.4 Bearings and Bushes

Ball and roller bearings should be cleaned to enable accurate measurement of wear and their suitability for further service to be made. If found to be serviceable it is important that they be maintained in a clean condition for subsequent build into the assembly. Bearings or components incorporating bearing surfaces, must in no circumstances be left in a dry condition, or unprotected against corrosion. Thoroughly examine each bearing for visual defects such as corrosion and discolouration, cracks, wear, indentations and bruising and track defects. A plain bearing that is lightly scored may have the marks blended out with a scraper. N.B. This does not apply to P.T.F.E. impregnated bushes. Bearings of this type cannot be scraped and should be renewed if lightly scored. Plain thrust bearings should be examined for excessive ridging or tearing of the thrust faces.

1.5 Shafts

The shafts and housings associated with bearings should be examined for defects such as pick-up, scoring and fretting. Light score marks may be blended out. Check that lubrication holes or passages in the shafts are clear. Examine all sudden changes of section for cracks. Thrust journals should be examined for excessive ridging or tearing of the thrust faces.

1.6 Splines

Examine splines and serrations for fretting and burring. Blend out any minor damage.

1.7 Gears

Gear teeth should be examined for damage or wear. Blend out any minor marks and check that the backlash with the mating gears is not excessive. Crack detect where necessary or in accordance with the detailed Workshop Overhaul Standard Specification.

1.8 Covers

Examine for fractures and check that the joint faces are in good condition.

1.9 Springs

Examine springs for distortion, corrosion or collapse and check their free length and loading. If bright rubbing marks are evident on any coils other than the ends then the spring should be discarded.

1.10 Studs

Examine and renew if bent, stripped or damage threads.

1.11 Joints (Gaskets)

Remove all traces of old jointing and check all mating surfaces for blemishes likely to prevent a good seal. Do not re-use old joints.

1.12 Circlips

Discard all circlips removed and fit new. Ensure that the circlip grooves are not damaged or worn.

1.13 Keys and Dowels

Examine all keys and dowels for wear and damage, also their fit in the keyways or holes. Renew on condition. Check all keyways or dowel holes for cracking, wear and fretting.

1.14 Pipes, Unions, etc.

Carefully examine all pipes for cracking and chafing especially at bends or clips. Additionally examine pipes for cracked union nuts and damage to the seatings or nipples. Ensure that pipes are free from any internal corrosion or blockage. Remove old grease from grease pipes.

1.15 Markings

Certain components are marked for matching or according to their individual positions. All such marks must be correctly related when assembling components. All new replacement parts, if not marked, must be marked by etching or stamping before fitting to correspond with the matching components

1.16 Split Pins

Renew irrespective of condition.

1.17 Locking Wire

Renew irrespective of condition.

1.18 Tab Washers

Renew irrespective of condition.

1.19 Stiff Nuts (Bent Beam & Insertion Types)

Renew irrespective of condition.

1.20 Locking Plates

Renew irrespective of condition.

1.21 Flat and Spring Cotters

Examine and renew if bent or scored.

1.22 Taper Pins (Solid Type)

Examine and debur those which can be used again, but pins found bent or scored shall be renewed.

1.23 Taper Pins (Sawn Split End Type)

Renew irrespective of condition.

1.24 Spring, Shakeproof and Crinkle Washers

Renew irrespective of condition.

1.25 Nuts (Castle, Slotted, Lock, Thin and Thick)

Examine and renew subject to condition of threads and hexagon.

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1.26 Bolts and Screws

Examine and renew if bent, damaged head, stripped or damaged threads.

1.27 Threaded Holes

Examine for stripped or damaged threads. Repair by rechasing, using Helicoil inserts or retapping to a larger size.

NOTE: Authority must be given before a repair using a Helicoil insert or by retapping to a larger size is carried out.

1.28 Plain Washers

Examine and renew if damaged.

1.29 Worm Drive Hose Clips

Renew irrespective of condition.

1.30 Rivets

Check all rivets for security and damage. Rerivet or renew rivet as necessary.

1.31 Cams

Examine cams for wear, pick-up, scoring or burrs. Remove all burrs and blend out pick-up and scoring from cam profile and its location hole. Compare with new cam, and any cam found to have excessive wear or scoring should be renewed.