

**WOSS 563/1**

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**British Railways Board**

Director of Mechanical and Electrical Engineering

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**Conduit, Cable Ducts,  
Connection and  
Terminal Boxes**

**WORKSHOP OVERHAUL STANDARD SPECIFICATION**



REVISION RECORD

This Specification will be updated when necessary by the issue of amended pages accompanied by revision letters. The amended or additional part of re-issued pages will be marked with a vertical black line.

If you consider that an amendment is necessary, complete BR Form 14298 and pass it to the local BRB Resident Engineer or Area Quality Engineer. Submission of a form does not authorise the proposed amendments.

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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
90	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
118	X
119	X
120	X
121	X
122	X
127	X
128	X
140	X
141	X
142	X
143	X
144	X
150	X
151	X
154	X
155	X
156	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
320	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
438	X
442	X
	X
455	X
485	X
486	X
487	X
488	X
489	X

DEMU's

204	X
205	X
207	X
210	X

COACHING STOCK

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

WORKSHOP OVERHAUL STANDARD SPECIFICATION 563/1

CONDUIT, CABLE DUCTS, CONNECTION AND TERMINAL BOXES

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REFERENCE DOCUMENTS

WOSS 560/3 'Cable Repairs'

WOSS 560/4 'Crimped Joints for Cables'

MT234 Data Manual for Standard and Rationalised Components : Section 4 (Metal Conduits & Fitting)

Maintenance Painting Schedule BR6 Diesel and Electric Locos

Maintenance Painting Schedule BR2 Passenger Rolling Stock

Engineering Instruction G/260 'Allocation of Wire Numbers and Letters using Identification Sleeves'

TOOLS AND MATERIALS

BR Cat. No.

Silicone Rubber Sealant

7/60607 or 60116

Sealing Strip Prestick

7/55170

or Arboseal

7/55536

SECTION 1. REPAIR PROCEDURE

1. Conduits

- 1.1 Repair or renew any parts of fixed and flexible conduits which are damaged or corroded. Surface corrosion is to be removed and the surface treated in accordance with the Painting Schedule.

Any steel conduit renewed must to be BS 4568 Standard Sheet 2 and Protection to Class 3. Internal surfaces of conduit and fittings must be free from sharp edges, burrs, etc, which may damage cable insulation. The ends of conduits must be fitted with BS pattern bushes and all threads must be secure and watertight.

Mk 2c coaches: if the headstock interlock conduit run is damaged it is to be renewed in accordance with Section 4 Additional Procedure 2.

Renewed external conduit on coaching stock is to be treated in accordance with Section 4 Additional Procedure 1.

- 1.2 Tighten any loose conduit brackets, saddles and clips and renew any which are missing. Remove any sharp edges.
- 1.3 Fill any gaps surrounding conduits where they pass through vehicle floors with sealing strip or sealant.

## 2. Cable Ducts

- 2.1 Repair or renew any parts which are damaged or corroded. Where damage has allowed the ingress of oil or water the contamination must be cleaned from the ducting. Surface corrosion is to be removed and the surface treated in accordance with the Painting Schedule.
- 2.2 Check the security of cable ducting and lids. Tighten loose screws and renew any which are missing.
- 2.3 Fill any gaps surrounding cable ducting where it passes through vehicle floors with sealing strip or sealant.

## 3. Connection &amp; Terminal Boxes

- 3.1 Remove lids.
- 3.1 Clean out any dirt, oil or water that may have impregnated the boxes and dry out. Investigate and correct the reason for the ingress. Surface corrosion is to be removed and the surface treated in accordance with the Painting Schedule.
- 3.3 Wipe clean all connection and terminal bars.
- 3.4 Examine terminal bars and panels. Repair or renew items which are fractured or show signs of overheating or burning. Tighten loose screws and nuts and renew any which are missing.
- 3.5 See WOSS 560/3 for attention to cables.
- 3.6 Check cable connections for mechanical defects and overheating. Renew defective crimped terminations in accordance with WOSS 560/4. Repair or renew defective sweated terminations. Tighten any loose connection securing devices.
- 3.7 Renew any cable idents which are worn, split, illegible or missing in accordance with G.260. Where terminal positions are marked on connection blocks/terminal bars, re-mark any which are illegible.
- 3.8 Fit a new gasket if damaged and fit the lid.

## SECTION 3 TECHNICAL DATA

Table 1 Plastic Conduit Details

Description	Size	Egatube Part No.	BR Cat. No. (54/)
Trunking Saddle	50	CS.1001/1	159250
	75	CS.1001/2	159280
Modified Norwich Trunking	100 x 35	CS.1003	160041
Norwich Trunking Coupler		CS.1004	151600
Internal Angle for Norwich			
Trunking (with gusset)	4" x 1.1/2"	CS.1008	60305
Flanged Coupler Norwich	4" x 1.1/2"	CS.1009	60489
	4" x 1.1/2"	CS.1010	60490
Trunking Unit	2" x 2"	CS.1021	60228
Trunking Flanged Coupler	3" x 2"	CS.1127	60501
Coupler Screwed H.G.	1.1/2"	CS.1141/5	50895
Bend Screwed H.G.	1.1/2"	CS.1142	50869
Conduit H.G.	1.1/2"	CS.1184/5	50702
	2"	CS.1184/6	50704
	16	CS.1185/11	123530
	20	CS.1185/2	123550
	25	CS.1185/3	123570
	32	CS.1185/4	123590
Conduit Oval	1/2"	CS.1186/1	50705
Coupler Expansion	16	EEC/1	132520
	20	EEC/2	132540
	25	EEC/3	132560
	32	EEC/4	132580
Coupler Inspection	16	EIS/1	132521
	20	EIS/2	132541
	25	EIS/3	132561
	32	EIS/4	132581
Saddle Strap	1.1/2"	CS.1191/5	50916
	2"	CS.1191/6	50917
	16	ES/1	136600
	20	ES/2	136620
	25	ES/3	136640
	32	ES/4	136660
Saddle Spacer Bar	16	ESB/1	136601
	20	ESB/2	136621
	25	ESB/3	136641
	32	ESB/4	136661
Adapter Female with bush	1.1/2"	CS.1195/5	50857
	2"	CS.1195/6	50861
	16	EFA/1	125520
	20	EFA/2	125550
	25	EFA/3	125580
	32	EFA/4	125610

Table 1 (Contd)

Description	Size	Egatube Part No.	BR Cat. No. (54/)
Bush Male Plain	1.1/2"	CS.1197/5	50888
	16	MPB/1M	13300
	20	MPB/2	131320
	25	MPB/3	131340
	32	MPB/4M	131360
Plugs - Plain	16	EP/1M	135100
	20	EP/2	135110
	25	EP/3	135120
	32	EP/4M	135130
Bends Normal H.G.	1.1/2"	CS.1201/5	50873
	16	ENB/1M	126110
	20	CS-1202-2M	126112
	25	ENB/3	126114
Elbow Inspection	16	EIE/1M	133420
	20	CS.1204/2	133440
Tee Inspection	16	EIT/1M	137200
	20	EIT/2	137220
	25	EIT/3	137240
Bend Inspection	16	EIB/1M	126111
	20	EIB/2	126113
	25	EIB/3	126115
Clip	2"	CS.1208/6	50893
	16	ECC/1	131830
	20	ECC/2	131850
	25	ECC/3	131870
	32	ECC/4	131890
Bush Female	1.1/2"	CS.1210/5	50890
	16	EBF/1M	131301
	20	EBF/2	131321
	25	EBF/3	131341
	32	CS-1211-4M	131361
Locknut	16	EHL/1	134204
	20	EHL/2	134220
	25	EHL/3	134240
	32	EHL/4	134260
Lock Ring	16	ECL/1M	135800
	20	ECL/2	135820
	25	ECL/3	135840
	32	ECL/4	135860
Box Rectangular Through	32	ERB/1	128220
Box Rectangular Angle	1.1/2"	CS.1217/2	50877
	32	ERB/4	128221
Box Rectangular Tee	2"	CS.1218/6	50885
	32	ERB/7	128222
Box Rectangular 4-Way	32	ERB/10	128223
	2"	CS.1218/12	50887



Table 1 (Contd)

Description	Size	Egatube Part No.	BR Cat. No. (54/)
Box Circular 1-Way	16	1/ECR/2	12830
	20	2/ECR/2	128160
	25	3/ECR/2	128190
Box Circular 1-Way + B.O.	16	1/ECR/7	128135
	20	2/ECR/7	128165
	25	3/ECR/7	128195
Box Circular 2-Way	16	1/ECR/3	12831
	20	2/ECR/3	128161
	25	3/ECR/3	128191
Box Circular 2-Way + B.O.	16	1/ECR/8	128136
	20	2/ECR/8	128166
	25	3/ECR/8	128196
Box Circular 3-Way	16	1/ECR/5	12833
	20	2/ECR/5	128163
	25	3/ECR/5	128193
Box Circular 3-Way + B.O.	16	1/ECR/10	128138
	20	2/ECR/10	128168
	25	3/ECR/10	128198
Box Circular 4-Way	16	1/ECR/6	12834
	20	2/ECR/6	128164
	25	3/ECR/6	128194
Box Circular 4-Way + B.O.	16	1/ECR/11	128139
	20	2/ECR/11	128169
	25	3/ECR/11	128199
Box Circular Angle	16	1/ECR/4	12832
	20	2/ECR/4	128162
	25	3/ECR/4	128192
Box Circular Angle + B.O.	16	1/ECR/9	128137
	20	2/ECR/9	128167
	25	3/ECR/9	128197
Coupler H.G. Plain	20	EIS/2	132542
	25	EIS/3	132562
	32	EIS/4	132582
	1.1/2"	CS.1227/5	50906
	2"	CS.1227/6	50907
Coupler Heavy Gauge Plain Reducer	16	EIS/1	132522
	20 x 16	ER/1	135301
	25 x 20	ER/2	135321
	32 x 25	ER/3	135341
	38 x 32	ER/5	135360
	2" x 1.1/2"	CS.1228/7	50914
Trunking Internal Coupler	50 x 50	TIC/1	151500
	75 x 50	TIC/2	151550
	75 x 75	TIC/3	151551
	100 x 75	TIC/4	151630
	100 x 75	TIC/5	151660

## SECTION 4. ADDITIONAL PROCEDURES

## AP1. Corrosion Protection for Renewed External Conduits

Materials	BR Cat. No.
T-wash cleaner	7/21760
Zinc phosphate blast primer	28/63031
Grease, lithium 3	27/1350-6

- 1.1 Before fitting any saddles/clips, prepare the new conduit as follows.
  - 1.1.1 Abrade the outer surface of the conduit using a Scotchbrite pad or similar.
  - 1.1.2 Brush on T-wash solution until all the surface blackens.
  - 1.1.3 Spray on a coat of zinc phosphate blast primer.
- 1.2 Use galvanised clips/saddles where possible. Non-galvanised items are to have the surfaces which will touch the conduit painted.
- 1.3 Before fitting clips/saddles, apply grease to the surfaces which will touch the conduit.
- 1.4 After fitting clips/saddles, continue the painting process in accordance with the Maintenance Painting Schedule BR2.

## AP2. Renewal of Interlock Conduit: Mk2c Coaches.

BR Drawings: C-S-6107 Mk2f Bodyside Heater Conduits SO.  
 C-S-8083 Mk2f Bodyside Heater Conduits FO.  
 C-S-8096 Mk2f Bodyside Heater Conduits BSO.

Materials		BR Cat. No.
Conduit M25 steel		54/124254
Conduit saddle 25		63/2982
Adaptor, 1" to 25	(2 off)	54/126064
Coupler 25	(2 off)	54/132332
Locknut 25	(2 off)	54/134314
Threaded stud	(2 off)	30/180106
Nut M5 plated	(2 off)	3/174125
Washer M5 plated	(2 off)	3/195106

- 2.1 Disconnect and pull back the wiring.
- 2.2 Remove the damaged conduit.
- 2.3 Fit two M5 studs to the drawgear strap and new conduit in accordance with the appropriate drawing.
- 2.4 Fit and connect wiring.