C.E.P.S.1062

British Railways Board

Mechanical & Electrical Engineering Department

Overhaul of Bodyside Door Locks and Striking Plates

REVISION RECORD

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PROCESS SPECIFICATION

C.E.P.S. 1062

OVERHAUL OF BODYSIDE DOOR LOCKS AND STRIKING PLATES

May 1984

Issued by:-

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DERBY.

OVERHAUL OF BODYSIDE DOOR

LOCKS AND STRIKING PLATES

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Issue 1
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1. INTRODUCTION

1.1 This document details the procedure to be followed in the overhaul and testing of bodyside door locks and striking plates when removed from vehicles undergoing main work repair.

1.2 Door lock "in-situ" test for both Main Works and Outstation Depots.

1.3 Also contained in this document are lists of parts and catalogue numbers of lock components as specified on the lock drawing arrangement, and where appropriate, catalogue numbers of identical components.

3. INDEX TO ENGINEERING INSTRUCTIONS

No.	Title	Ref. No.
G/82	Definition of Terms	4
G/515	Exterior handles-corner doors	8
G/539	Renewal and repair of defective door handles	6.2, 8.2
HC/153	Striking plates: body corner door locks	7.1

4. GLOSSARY OF TERMS

Term	Action required
CHANGE	Remove the original and fit a new or overhauled part or assembly in its place.
CHECK	Determine a particular nominated condition before, during or after repair, e.g. completeness, security, position.
CLEAN	Take off all dirt and deposits.
DISMANTLE	Take to pieces.
EXAMINE	Determine general condition before repair, e.g. wear, cracks, splits, leaks, scoring, corrosion, breaks, distortion, looseness.
INSPECT	Determine general condition after repair and attention, i.e. conformity to required standards.
OVERHAUL	Do what is necessary to make assembly or sub-assembly re-usable, i.e. dismantle, strip clean, examine fit new parts, repair, re-assemble, test and inspect as required.
REASSEMBLE	Put together.
RECORD	Put down in writing a finding from examination, test, inspection or special checks.
RECTIFY	To set right.
REFIT	Put back and reconnect.
REMOVE	Disconnect and take off.
RENEW	Remove and scrap the original part and put new part in its place.
REPAIR	Restore an original part to the required condition by hand-tooling, machining, building-up, welding, patching, bending, setting, heat-treating, re-securing, etc.
STRIP	Take off covering, i.e. paint, polish, fabric, etc.
TEST	Prove correct operation by trial.

(Based on Engineering Instruction G/82)

5. CLEANING AND TREATMENT

5.1 Locks, handles and striking plates must be cleaned by immersing in approved cleaning agent until accumulations of dirt, oil and grease have been removed.

5.2 Plated components which are worn, damaged or have received heat treatment during repair, welding for example, must be stripped of the existing coating and replated to the original standards.

6. LOCK TYPES

6.1 Single Action lock

Drawing references:

B1-AO-9016664 - Inside and outside actuation.

SC/ES/893 - Outside actuation.

C-A1-335 - Outside actuation.

Dismantle and give attention to components as follows:

6.1.1 Case

If bolt guide surfaces are worn 0.4 mm ($^{1}/_{64}$") or if bolt aperature has worn by this amount in either direction, renew lock.

If pinion housing has worn 0.4 mm ($^{1}/_{64}$") or more on original diameter, renew lock. Tapped holes to be filled by brazing and drilled and re-tapped where the threads are worn. Where the surface chrome is damaged repair by re-chroming.

6.1.2 Bolt

(a) Renew bolt if any visual signs of wear exist on the tip profile.

(b) Renew bolt if the length is less than:-

B1-AO-9016664/5	94 mm ($3\ ^{11}/_{16}$")
B1-AO-9016664/8	94 mm ($3\ ^{11}/_{16}$")
C-A1-335-5	98 mm ($3\ ^{7}/_{8}$")
C-A1-335-6	98 mm ($3\ ^{7}/_{8}$")

(c) Renew bolt if teeth are visually worn or damaged

(d) Renew bolt if any visual sign of wear exists on the sides.

6.1.3 Pinion

Fit new pinion.

Cont'd...

6.1.4 Bolt Spring

Renew Spring.

6.1.5 Spring guide pin

Examine and renew if corroded, distorted or worn.

6.1.6 Re-assembly

Re-assemble lock and lightly lubricate all items inside the lock with grease B.R. Cat. 27/1350.

6.1.7 Repair Identification

On completion of the re-assembly but before the bench test the repair date and repair centre code is to be stamped into the lock case adjacent to where the bolt projects. Repair centre codes are, Derby 'D'; York 'Y'; Swindon 'S'; Eastleigh 'E'; Wolverton 'W'; Glasgow 'G'.

6.1.8. Bench test

Check that the lock mechanism operates freely and that the tongue projection is not greater than:

B1-A0-9016664	16.3 mm ($^{41}/_{64}$")
SC/ES/893	16.3 mm ($^{41}/_{64}$")
C-A1-335	22.2 mm ($^{7}/_{8}$")

NOTE:- Adjustment is only permitted to the pinion shoulder if the door handle is not horizontal and/or the bolt projection is incorrect.

Test the lock bolt spring/s force, to be checked against the figures given below using the bench test equipment detailed in Section 9.

(a) Minimum load to commence actuation
4.9 kgf. ($10^{3}/_{4}$ lbf)

(b) Minimum load to complete actuation
5.9 kgf. (13 lbf)

(c) Maximum load to complete actuation
6.75 kgf. (15 lbf)

Check that the loading and unloading pressures increase and decrease uniformly throughout the bolt travel.

See Section 9 for test equipment details. When the above checks have been carried out satisfactorily the casing screws must be locked in position by peening and/or the use of the Loctite 270 B.R. Cat. 7/60352.

DOOR LOCK ARRANGEMENT B1-AO-9016664/1 - as drawn
BR CAT NO. 18/12632
(SINGLE ACTION - INSIDE & OUTSIDE ACTUATION OR OUTSIDE ACTUATION ONLY)

COMPONENT	DRG NO	CAT NO	IDENTICAL TO	CAT NO
Lock Case	B1-AO-9016664/2	18/24843		
Back Plate	B1-AO-9016664/3	-		
Bolt (inside & outside actuation)	B1-AO-901664/5	18/2168		
Bolt (outside actuation only)	B1-AO-9016664/8	18/3207		
Bolt Spring	B1-AO-9016664/6	18/16395		
Spring Guide	B1-AO-9016527/6	18/1084	B1-AO-9015689/17 B1-AO-9015382/6	18/1117 18/14280
Pinion	B1-AO-9016664/9	18/10211		

DOOR LOCK ARRANGEMENT SC/ES/893 - as drawn
B.R. CAT. NO. 18/12605
(SINGLE ACTION - OUTSIDE ACTUATION ONLY)

COMPONENT	DRG. NO.	CAT. NO.	IDENTICAL TO	CAT. NO.
Lock Case	SC/ES/894	18/22499		
Back Plate	Bl-AO-9016664/3	-		
Bolt	Bl-AO-9016664/8	18/3207		
Bolt Spring	Bl-AO-9016664/6	18/16395		
Spring Guide	Bl-S-9016517/6	18/1084	Bl-AO-9015689/21	
Pinion	Bl-AO-9016664/9	18/10211		

DOOR LOCK ARRANGEMENT C-A1-335/1 - as drawn
B.R. CAT NO. 18/6817
(SINGLE ACTION - OUTSIDE ACTUATION ONLY)

COMPONENT	DRG. NO.	CAT. NO.	IDENTICAL TO	CAT. NO.
Lock Case	C-A1-335/3	18/6820		
Back Plate	B1-A1-9015382/10	18/3506	B1-S-9016517/10	18/1086
Bolt	C-A1-335/5	18/6821		
Bolt Spring	B1-A1-9015382/8	18/16358	B1-AO-9015689/12	18/16467
Spring Guide	B1-A1-0915382/6	18/14280	B1-AO-9015689/17	18/1117
Pinion	B1-A1-9015382/18	18/25476	B1-S-9016517/32	18/25561

DOOR LOCK ASSEMBLY C-A1-335/2 opp. to drawn
B.R. CAT. NO. 14/6818
(SINGLE ACTION - OUTSIDE ACTUATION ONLY)

COMPONENT	DRG. NO.	CAT. NO.	IDENTICAL TO	CAT. NO.
Lock Case	C-A1-335/4	18/6819		
Back Plate	B1-A1-9015382/17	18/26741	B1-S-9016517/26	
Bolt	C-A1-335/6	18/6822		
Bolt Spring	B1-A1-9015382/8	18/16358	B1-AO-9015689/12	18/16467
Spring Guide	B1-A1-9015382/6	18/14280	B1-AO-9015689/17	18/1117
Pinion	B1-A1-9015382/19	18/25559	B1-S-9016517/33	18/25561

6.2.4 Bolt Spring

Renew Spring.

6.2.5 Spring guide pin

Examine and renew if corroded, distorted or worn.

6.2.6. Re-assembly

Re-assemble lock and lightly lubricate all items in side the lock with grease B.R. Cat. 27/1350.

6.2.7 Repair Identification

See para. 6.1.7.

6.2.8 Bench test

Ensure that the lock mechanism operates freely and that the tongue projection is not greater than:

SC/DE/21626	22.2 mm ($^{7}/_{8}$")
B1-A1-9015382	22.2 mm ($^{7}/_{8}$")
C-A1-1469	22.2 mm ($^{7}/_{8}$")
B1-AO-9002399	22.2 mm ($^{7}/_{8}$")

NOTE: To ensure that the above requirements are maintained with the handle in the horizontal position adjustment is only permitted at the pinion shoulder.

Check the ram projection and renew if less than 6.3 mm ($^{1}/_{4}$").

Test the lock bolt spring/s force, to be checked against the figures given below using the bench test equipment detailed in Section 9.

(a) For SC/DE/21626, B1-AO-9015382 and C-A1-1469

Minimum load to commence actuation 6.75 kgf. (15 lbf)
Maximum load to complete actuation to prop engagement 13.5 kgf. (30 lbf)

(b) For B1-AO-902399
Minimum load to commence actuation 14.5 kgf. (32lbf)
Maximum load to complete actuation to prop engagement 22.23 kgf. (49lbf)

Ensure that the pressure decreases uniformly when the bolt is released. See Section 9 for test equipment details. When the above checks have been carried out satisfactorily the casing screws must be locked in position by peening and/or the use of Loctite 270 B.R. Cat. 7/60352.

DOOR LOCK ASSEMBLY SC/DE/21626/1 - as drawn
B.R. CAT NO. 14/1964
(DOUBLE ACTION - OUTSIDE ACTUATION ONLY)

COMPONENT	DRG. NO.	CAT. NO.	IDENTICAL TO	CAT. NO.
Lock Case	SC/DE/21626/4			
Back Plate	SC/DE/21626/6	18/18636		
Bolt	SC/DE/21626/8	18/18637		
Bolt Spring	B1-AO-9015689/12	18/16467		
Spring Guide	B1-AO-9015689/17	18/1117		
Pinion	SC/DE/21626/16	18/14241	B1-S-9016517/32 B1/A1/9015382/18	18/25560 18/25476
Ram	SC/DE/21626/11	18/15181		
Prop	SC/DE/21626/15	18/20419	B1-S-9016517/4 B1/A1/9015382/4	18/15121 18/14857
Prop Spring	B1-AO-9015689/14	18/1114	B1-S-9016517/9 B1/A1/9015382/9	18/1085 18/16419

DOOR LOCK ARRANGEMENT B1-A1-9015382 - as drawn
B.R. CAT. NOS. 18/12690; 18/14644; 18/12631; 18/6842
(DOUBLE ACTION - OUTSIDE ACTUATION ONLY)

COMPONENT	DRG. NO.	CAT. NO.	IDENTICAL TO	CAT. NO.
Lock Case	B1-A1-9015382/14	18/4510		
Back Plate	B1-A1-9015382/10	18/3506		18/1086
Bolt	B1-A1-9015382/2	18/3161	B1-S-9016517/10	
Bolt Spring	B1-A1-9015382/8	18/16358	B1-AO-9015689/12	18/16467
Spring Guide	B1-A1-9015382/6	18/14280	B1-AO-9015689/17	18/1117
Pinion	B1-A1-9015382/18	18/25476	B1-S-9016517/32	18/25560
Ram	B1-A1-9015382/5	18/15177	B1-S-9016517/5	18/15177
Prop	B1-A1-9015382/4	18/14857	B1-S-9016517/4 SC/DE/21626/15	18/15121 18/20419
Prop Spring	B1-A1-9015382/9	18/16419	B1-S-9016517/4 B1-AO-9015689/14	18/1085 18/1114

DOOR LOCK ARRANGEMENT B1-A1-9015382 - opp. to drawn

(DOUBLE ACTION - OUTSIDE ACTUATION ONLY)

COMPONENT	DRG. NO.	CAT. NO.	IDENTICAL TO	CAT. NO.
Lock Case	B1-A1-9015382/12			
Back Plate	B1-A1-9015382/17	18/26741		
Bolt	B1-A1-9015382/13	18/21853	B1-S-9016517/26	18/21853
Bolt Spring	B1-A1-9015382/8	18/16358	B1-S-9016517/27	18/16467
Spring Guide	B1-A1-9015382/6	18/14280	B1-AO-9015689/12	18/1117
Pinion	B1-A1-9015382/19	18/25559	B1-AO-9015689/17	18/25561
Ram	B1-A1-9015382/14	18/13084	B1-S-9016517/33	18/13084
Prop	B1-A1-9015382/16	18/13085	B1-S-9016517/28	18/13085
Prop Spring	B1-A1-9015382/9	18/16419	B1-S-9016517/30 B1-S-9016517/9	18/1114 18/1085

DOOR LOCK ARRANGEMENT C-A1-1469/1 - as drawn
B.R. CAT. NO. 18/11313
(DOUBLE ACTION - OUTSIDE ACTUATION ONLY)

COMPONENT	DRG. NO.	CAT. NO.	IDENTICAL TO	CAT. NO.
Lock Case	C-A1-1469/3		B1-S-9016517/14	18/3505
Back Plate	B1-A1-9015382/10	18/3506	B1-S-9016517/10	18/1086
Bolt	B1-S-9016517/2	18/16283	B1-A1-9015382/2	18/3161
Bolt Spring	B1-A1-9015382/8	18/16358	B1-AO-9015689/2	18/886
Spring Guide	B1-A1-9015382/6	18/14280	B1-AO-9015689/17	18/1084
Pinion	B1-A1-9015382/18	18/25476	B1-S-9016517/32	18/25561
Ram	B1-A1-9015382/5	18/15177	B1-S-9016517/5	18/15177
Prop	B1-A1-9015382/4	18/14857	B1-S-9016517/4 SC/DE/21626/15	18/15121 18/20419
Prop Spring	B1-A1-9015382/9	18/16419	B1-S-9016517/9 B1-AO-9015689/14	18/1085 18/1114

DOOR LOCK ARRANGEMENT C-A1-1469/2 - opp. to drawn
B.R. CAT NO. 18/11314
(DOUBLE ACTION - OUTSIDE ACTUATION ONLY)

COMPONENT	DRG. NO.	CAT. NO.	IDENTICAL TO	CAT. NO.
Lock Case	C-A1-1469/4		B1-S-9016517/25	
Back Plate	B1-A1-9015382/17	18/26741	B1-S-9016517/26	
Bolt	B1-S-9016517/27	18/21853	B1-A1-9015382/13	18/21853
Bolt Spring	B1-A1-9015382/8	18/16358	B1-AO-9015689/12	18/16467
Spring Guide	B1-A1-9015382/6	18/14280	B1-AO-9015689/17	18/1117
Pinion	B1-A1-9015382/19	18/25559	B1-S-9016517/33	18/25561
Ram	B1-A1-9015382/14	18/13084	B1-S-9016517/28	18/13084
Prop	B1-A1-9015382/16	18/13085	B1-S-9016517/30	18/13085
Prop Spring	B1-A1-9015382/9	18/16419	B1-AO-9015689/14 B1-S-9016517/9	18/1114 18/1085

DOOR LOCK ARRANGEMENT B1-AO-9002399/1 - as drawn
B.R. CAT. NO. 63/463
(DOUBLE ACTION - OUTSIDE ACTUATION ONLY)

COMPONENT	DRG. NO.	CAT. NO.	IDENTICAL TO	CAT. NO.
Lock Case	B1-AO-9002399/3			
Back Plate	B1-Ao-9002399/5			
Bolt	B1-AO-9002399/7	63/1251		
Bolt Spring	B1-A1-9015382/8	18/16358	B1-AO-9015689/12	18/16467
Spring Guide	B1-A1-9015382/6	18/14280	B1-AO-9015689/17	18/1117
Pinion	B1-S-9016517/32	18/25560	B1-A1-9015382/18	18/25476
Ram	B1-AO-9002399/9	63/1252		
Prop	B1-S-9016517/4	18/15121	B1-A1-9015382/4	18/14857
Prop Spring	B1-S-9016517/9	18/1085	B1-AO-9015689/14 B1-A1-9015382/9	18/1114 18/16419

DOOR LOCK ARRANGEMENT B1-AO-9002399/2 - opp. to drawn
B.R. CAT. NO. 63/462
(DOUBLE ACTION - OUTSIDE ACTUATION ONLY)

COMPONENT	DRG. NO.	CAT. NO.	IDENTICAL TO	CAT. NO.
Lock Case	B1-AO-9002399/4			
Back Plate	B1-AO-9002399/6			
Bolt	B1-AO-9002399/8	63/1254		
Bolt Spring	B1-A1-9015382/8	18/16358	B1-AO-9015689/12	18/16467
Spring Guide	B1-A1-9015382/6	18/14280	B1-A)-9015689/17	18/1117
Pinion	B1-S-9016517/33	18/25561	B1-A1-9015382/19	18/25559
Ram	B1-AO-9002399/10	63/1253		
Prop	B1-S-9016517/30	18/13085	B1-A1-9015382/16	18/13085
Prop Spring	B1-S-9016517/9	18/1085	B1-AO-9015689/14 B1-A1-9015382/9	18/1114 18/16419

6.3 Double action lock with outside and inside actuation

Drawing references:

Bl-S-9016517
SC/DE/21626-2

Dismantle and give attention to components as follows:

6.3.1 Case

If bolt guide surfaces are worn 0.4 mm ($^{1}/64$") or if bolt aperature has worn by this amount in either direction, renew lock.

If pinion housing has worn 0.4 mm ($^{1}/64$") or more on original diameter, renew lock. Tapped holes to be filled by brazing and re-tapped when threads are worn. Where the surface chrome is damaged repair by re-chroming.

6.3.2 Bolt

(a) Renew bolt if any visual signs of wear exist on the tip profile

(b) Renew bolt if length is less than:-

Bl-S-9016517 - 98.5 mm ($3^{7}/8$")
SC/DE/21626 - 115.5 mm ($4^{17}/32$")

(c) Renew bolt if teeth are visually worn or damaged (chipped)

(d) Renew bolt if any visual signs of wear exist on the sides

6.3.3 Pinion

Fit new pinion.

6.3.4 Bolt Spring

Renew Spring.

6.3.5 Spring guide pin

Examine and renew if damaged, corroded, distorted or worn.

6.3.6 Ram and prop

Examine ram face and renew if worn by more than 1.5 mm ($^{1}/16$") from the nominal sizes given on Bl-S-9016517 items 4 & 5.

If the wear on the prop is such that the bolt, in the engaged position, extends beyond 8 mm ($^{5}/16$") then the prop must be renewed.

6.3.7 Inside actuation handle slide

Check condition of handle and locating pins and renew if defective.

6.3.8 Inside actuation handle shield

Repair and re-chrome where surface is damaged.

6.3.9. Re-assemble

Re-assemble lock and lightly lubricate all items inside the lock with grease B.R. cat. 27/1350. The four shield screws to be locked in position by the use of Loctite 270 B.R. Cat. No. 7/60352. The screws must not protrude into the lock interior.

6.3.10 Repair Identification

See para. 6.1.7.

6.3.11 Bench Test

Check thatthe lock mechanism operates freely and that the bolt projection is not greater than:

SC/DE/21626	22.2 mm ($^{7}/8$")
Bl-S-9016517	22.2 mm ($^{7}/8$")

NOTE: Adjustment is only permitted to the pinion shoulder if the door handle is not horizontal and/or the bolt projection is incorrect.

Check ram projection and renew if less than 6.3 mm (0.25"). Test the lock spring/s force, to be checked against the figures given below using the bench test equipment detailed in Section 9.

(a) Minimum load to commence actuation 5.45 kgf (12 lbf)

(b) Maximum load to complete actuation 6.82 kgf (15 lbf)

Check that the pressure decreases uniformly when the bolt is released. See section 9. for test equipment details.

When the above checks have been carried out satisfactorily the casing screws must be locked in position by peening and/or the use of Loctite 270 B.R. Cat. 7/60352.

6.3 Double action lock with outside and inside actuation

Drawing references:

Bl-S-9016517
SC/DE/21626-2

Dismantle and give attention to components as follows:

6.3.1 Case

If bolt guide surfaces are worn 0.4 mm ($^{1}/64$") or if bolt aperature has worn by this amount in either direction, renew lock.

If pinion housing has worn 0.4 mm ($^{1}/64$") or more on original diameter, renew lock. Tapped holes to be filled by brazing and re-tapped when threads are worn. Where the surface chrome is damaged repair by re-chroming.

6.3.2 Bolt

(a) Renew bolt if any visual signs of wear exist on the tip profile

(b) Renew bolt if length is less than:-

Bl-S-9016517 - 98.5 mm ($3^{7}/8$")
SC/DE/21626 - 115.5 mm ($4^{17}/32$")

(c) Renew bolt if teeth are visually worn or damaged (chipped)

(d) Renew bolt if any visual signs of wear exist on the sides

6.3.3 Pinion

Fit new pinion.

6.3.4 Bolt Spring

Renew Spring.

6.3.5 Spring guide pin

Examine and renew if damaged, corroded, distorted or worn.

DOOR LOCK ARRANGEMENT B1-S-9016517 - opp. to drawn
B.R. CAT NO. 18/12735
(DOUBLE ACTION - INSIDE AND OUTSIDE ACTUATION)

COMPONENT	DRG. NO.	CAT. NO.	IDENTICAL TO	CAT. NO.
Lock Case	B1-S-9016517/25		B1-A1-9015382/12	
Back Plate	B1-S-9016517/26		B1-A1-9015382/17	18/26741
Bolt	B1-S-9016517/27	18/21853	B1-A1- 9015382/13	18/21853
Bolt Spring	B1-S-9016517/24	18/886		
Spring Guide	B1-S-9016517/6	18/1084		
Pinion	B1-S-9016517/33	18/25561	B1-A1-9015382/19	18/25559
Ram	B1-S-9016517/28	18/13084	B1-A1-9015382/14 SC/DE/21626/11	18/13084 18/15181
Prop	B1-S-9016517/30	18/13085	B1-A1-9015382/16 SC/DE/21626/15	18/13085 18/20419
Prop Spring	B1-S-9016517/9	18/1085	B1-A0-9015689/14 B1-A1/9015382/9	18/1114 18/16419
Slide	B1-S-9016517/13	18/1088	SC/DE/21626/10	18/1088
Shield	B1-S-9016517/12	18/1087	B1-A0-9015689/7	18/1087

7. STRIKING PLATE TYPES

7.1 Drawing references C-A1-6643 and C-A1-13754 only (For drawing references B1-A0-9015447 and B1-S-9016517 see section 7.2).

Dismantle and give attention to components as follows: (see also E.1. HC/153).

7.1.1 Cam Housing

Examine lugs and repair or renew striking plate if defective.

Check that the cam 45° angled face is undamaged.

7.1.2 Lock Bolt Well

Examine internally for evidence of ridging. All ridges and grooves must be dressed out. Maximum enlargement of well not to exceed 1 mm (0.040") on drawing dimensions.

7.1.3 Striking Plate Face

Examine for wear and restore profile were necessary by welding and dressing off to a smooth finish.

7.1.4 Cam

Examine pivot pin holes and renew if worn above 7 mm ($^{9}/_{32}$") diameter. Restore were necessary or renew if excessively worn.

7.1.5 Pivot Pin

Renew.

7.1.6 Spring

Renew.

7.1.7 Draught Excluder

Renew.

7.1.8 Re-assembly

Re-assemble striking plate and check as follows:-

Lightly smear cam and spring with grease BR Cat. No. 27/1350 and re-assemble.

Check that the cam operates freely and when released returns to the fully extended position.

Check that the projection of the cam from the striking plate face is not less than 18 mm. (23/32").

Check that the spring, pivot pin and retaining socket screws are secure.

When the above checks have been carried out satisfactorily the fixing screws must be locked in position by peening and the use of Loctite 270 BR Cat. No. 7/60352.

7.2 Drawing references B1-A0-9015447 and B1-S-9016517 only. (For drawing references C-A1-6643 and C-A1-13754 see section 7.1.)

Dismantle and give attention to components as follows:-

7.2.1 Cam Housing

Repair or renew if:

(a) Lugs are defective or wall thickness has been reduced.

(b) Cam spigot bearings are worn to 7 mm ($^{9}/32$") diameter.

(c) Tapped holes for cap plate are defective.

(d) Cam hole dimension exceeds drawing dimension by more than 0.8 mm ($^{1}/32$").

7.2.2 Lock Bolt Well

Examine internally for evidence of ridging. All ridges and grooves must be dressed out. Maximum enlargement of well not to exceed 1 mm (0.040") on drawing dimensions.

7.2.3 Striking Plate Face

Examine for wear and restore profile were necessary by welding and dressing off to a smooth finish.

7.2.4 Back Plate (Cap Plate)

Check that the plate is flat and examine countersunk holes. Rectify any defects.

Check condition of cam spigot bearing and renew if worn.

7.2.5 Cam

Examine spigots and renew if worn to, or below 6 mm ($^{15}/64$") diameter.

Examine catch face and shoulder stop and renew if defective.

7.2.6 Spring

Renew.

7.2.7 Draught Excluder

Renew if worn or defective.

7.2.8 Re-assembly

Re-assemble striking plate and check as follows:

Lightly smear cam and spring with grease BR. Cat. 27/1350 and re-assemble.

Check that the cam operates freely and when released returns to the fully extended position. Check that the projection of the cam from the striking plate face is not less than 5 mm ($^{3}/_{16}$"). Check that the shoulder of the cam does not protrude beyond the face of the striking plate. When the above checks have been carried out satisfactory the fixing screws must be locked in position by peening and the use of Loctite 270 BR. Cat. No. 7/60352.

STRIKING PLATE B1-AO-9015447
B.R. CAT NOS. 18/14644 as drawn, 18/6842 opp. to drawn

COMPONENT	DRG. NO.	CAT. NO.	REMARKS
Striking Plate	B1-AO-9015447/1 or	18/1089	As B1-S-9016517/14
	B1-AO-9015447/9 or		As B1-S-9016517/31
	B1-AO-9015447/8		-RB Lot 30512
Cam	B1-AO-9015447/2	18/4462	
Cap	B1-AO-9015447/3	18/4385	As B1-S-9016517/15
Cam Spring	B1-AO-9015447/4	18/4466	
Cap Screws	B1-AO-9015447/5		As B1-S-9016517/19
Tube (Draught Preventer)	B1-AO-9015447/6		As B1-S-9016517/17
9 BA Screw (Draught Preventer)	B1-AO-9015447/7		As B1-S-9016517/20

STRIKING PLATE B1-S-9016517
B.R. CAT. NO. 18/18/12735

COMPONENT	DRG. NO.	CAT. NO.	REMARKS
Striking Plate	B1-S-9016517/14 B1-S-9016517/31	18/1089	As B1-AO-9015447/1 As B1-AO-9015447/9
Cam	B1-S-9016517/16	18/4461	
Cap	B1-S-9016517/15	18/4385	As B1-AO-9015447/3
Cam Spring	B1-S-9016517/18	18/4466	
Cap Screws	B1-S-9016517/19		As B1-AO-9015447/5
Tube (Draught Preventer)	B1-S-9016517/17	10/58497	As B1-AO-9015447/6
9 BA Screw (Draught Preventer)	B1-S-9016517/20		As B1-AO-9015447/7

STRIKING PLATE B1-A1-9010321
(MKII CORNER DOORS)
B.R. CAT NO. 18/17564 left hand, 18/17565 right hand

COMPONENT	DRG. NO.	CAT. NO.	REMARKS
Striking Plate	B1-A1-9010321/1	18/17564	
	or B1-A1-9010321/2	18/17565	Opp. hand to B1-A1-9010321/1
Cam	B1-A1-9010321/3	18/19825	Interchangeable with B1-A1-9010323/3
Draught Preventer Securing Spring	B1-A1-9010321/5	18/19828	Interchangeable with B1-A1-9010323/5
Cam Spring	B1-A1-9010321/6	18/19827	Interchangeable with B1-A1-9010323/6
Pivot Pin	B1-A1-9010321/7	18/19826	Interchangeable with B1-A1-9010323/7
Draught Preventer	B1-S-9016517/17		Identical to

STRIKING PLATE B1-A1-9010323
(MK III & H.S.T. CORNER DOORS)

COMPONENT	DRAWING NOS.	CAT. NO.	
Striking Plate	B1-A1-9010323/1	18/17564	
Cam	B1-A1-9010323/3	18/19825	Interchangeable with B1-A1-9010321/3
Draught Prevention Securing Spring	B1-A1-9010323/5	18/19828	Interchangeable with B1-A1-9010321/5
Cam Spring	B1-A1-9010323/6	18/19827	Interchangeable with B1-A1-9010321/6
Pivot Pin	B1-A1-9010323/7	18/19826	Interchangeable with B1-A1-9010321/7
Draught Preventer			

8. HANDLE AND ROSE PLATE

Check condition of handle and rose plate. Check that the handle is a good fit yet freely moves in the rose plate.

Examine threads on handle and rose plate and renew if damaged.

Check that spindle is not bent, twisted or worn. Renew if defective or repair by 'flash butt' welding. Welding must conform to the standards required in BR Specification 528.

Check that the square face of the spindle is in correct alignment with the handle.

For handles BR Cat. No. 63/464 see E.1. G/515.

For handle B.R. Cat. Nos. 18/9834 and 18/138 see E.1. G/539.

9. TEST EQUIPMENT

9.1 Where bench testing of the force being applied to the lock bolt is called for in this document, this must be carried out using a Lock Spring Force Test Rig obtainable from

Pickersgill-Kaye Ltd
10 Pepper Road
Leeds LS10 2EH

to their drawing number HP 30652 and used in conjunction with a Chatillon Dial push pull gauge DPP/25 kg obtainable from

Mecmesin Ltd
Newton Heath
Cross Road
Tadworth
Surrey KT20 5SR
Telephone Tadworth 4113 or 4114.

9.2 Where bench testing of the force required to operate the inside actuation slide of door locks with inside and outside actuation, then this must be carried out using a device for testing inside actuation door lock operating force, BR Drg No. TSU-A0-9018312.

9.3 Where in-situ testing of the force required to operate the bolt on door locks is required this should be carried out using the test device to BR Drg No. TVE-A0-0030 in conjunction with a Chatillon Dial push/pull gauge DPP/25 kg.

10. TESTS AFTER FITTING TO VEHICLES

10.1 Double Action Lock (wrap round corner door)

10.1.1 Check that the striking plate is located on the door pillar correctly.

(a) The striking plate shall be set at an angle of 10°30' from a horizontal line taken at 90° to the bodyside skin, represented by the line A-B shown in the Section 11 Appendices 11.1.1 and 11.1.2.

(b) Referring to 11.1.1 and 11.1.2 the edge of the striking plate marked C shall be fitted flush with the corner of the corrosion moulding.

(c) The engagement between the lock bolt and striking plate safety catch shall not be less than 5 mm.

(d) Profiles of setting templates are shown in Section 11. Appendices 11.2.1 and 11.2.2.

10.1.2 Check the lock bolt slides freely into the fully engaged position in the striking plate and that the handle is horizontal when the lock bolt is fully engaged.

10.1.3 With the door in the open position check bolt extends no more than the following:-

SC/DE/21626)
B1-A1-9015382)
C-A1-1469) 22.2 mm (7/8")
B1-A0-9002399)

10.1.4 Doors must be opened and slammed shut from the half-open position and checked that the lock bolt is fully engaged and the handle correctly aligned. Maximum allowable misalignment is ± 5°.

10.1.5 With the door lock bolt in the safety catch position, check that the door is retained by the safety catch and that the minimum lock bolt to safety catch engagement is 5 mm.

If the engagement is found to be less than 5 mm and the lock bolt and striking plate projections are correct then adjustments must be carried out by shimming. Metallic shims only shall be used to Drawing No. C-A3-25166 items 1 and 2, BR Cat Nos. 63/8121 and 63/8122. The maximum amount of shimming is 4 mm.

Should the 5 mm engagement not be obtained by this means, thin shimming to a maximum of 3 mm of the lock must be carried out. Metallic shims only shall be used to Drawing No. A1-A2-8501114, BR Cat No. 850/111401.

Should the 5 mm engagement not be obtained this indicates a defective door lock striking plate mounting or door/door lock mounting which must be corrected before proceeding further.

After correct engagement requirements, and correct interaction of door lock bolt to striking plate has been obtained, care must be taken that the correct working clearance of 1.5 mm to 2 mm is obtained between the door edge and striking plate.

10.1.6 Test the lock bolt spring/s force, using the in-situ test device stated in Section 9. This equipment should be used as follows:-

(i) The device must be inserted into the striking plate and attached to the end of the bolt as shown in section 11 Appendix 11.3.

(ii) The double action must be released before any readings are taken, by pulling by hand the in-situ test device until the bolt will move no more and at this point the ram must be pushed in, and the bolt then released, allowing it to fully extend.

(iii) Readings must be taken and multiplied by 3 to reach the following figures:-

(a) For SC/DE/21626, B1-A1-9015382 and C-A1-1469. Minimum load to commence actuation 6.75 Kg.f.

(b) For B1-A0-9002399. Minimum load to commence actuation 14.5 Kg.f.
Maximum load to complete actuation 22.23 Kg.f.

10.2 Double action locks (other than wrap round corner doors).

10.2.1 Check that the lock bolt slides freely into the fully engaged position in the striking plate and that the handle s horizontal when the lock bolt is fully engaged. Maximum allowable misalignement is $\pm 5^{o}$.

10.2.2 With the door in the open position check that the bolt extends no more than the following:-

SC/DE/21626)
B1-S-90165127)
C-A1-1469) 22.2 mm ($^{7}/8"$)
B1-A0-9002399)
B1-A1-9015382)

10.2.3 Doors must be opened and slammed shut from the half open position and checked that the lock bolt is fully engaged and the handle correctly aligned.

10.2.4 With the door lock bolt in the safety catch position, check that the door is retained by the safety catch and that the double action ram and the door lock bolt is in contact with the striking plate.

10.2.5 Check that the double action ram engages lock bolt when the door is fully open and that there is no premature release of the ram.

10.2.6 Test the door lock inside actuation, by using the device for testing inside actuation door lock operation force. See Section 9 for test equipment and section 11 Appendix 11.4 for the use of the test equipment. The force required must not exceed 11.4 Kg.f. (25 lb.f.)

10.2.7 Test the lock bolt spring/s force, using the in-situ test device stated in Section 9. This equipment should be used as follows:-

(i) The device must be inserted into the striking plate and attached to the end of the bolt as seen in section 11 Appendix 11.3.

(ii) The double action must be released before any readings are taken, by pulling by hand the in-situ test device until the bolt will move no more, and at this point the ram must be pushed in, and the bolt released allowing it to fully extend.

(iii) Readings must be taken and multiplied by 3 to reach the following figures:-

(a) For SC/D /21626, B1-AO-9015382 and C1-A1-1469
Minimum load to commence actuation 6.75 Kgf
Maximum load to complete actuation to prop engagement 13.5 Kgf.

(b) For B1-AO-9002399
Minimum load to commence actuation 14.5 Kgf
Maximum load to complete actuation to prop engagement 22.23 Kgf.

10.3 Single action locks (excluding modified experimental locks).

10.3.1 Check that the lock bolt slides freely into the fully engaged position in the striking plate and that the handle is horizontal when the lock bolt is fully engaged. Maximum allowable misalignment is $\pm 5^{o}$.

10.3.2 With the door in the open position check that the handle operates freely and when released the bolt returns to full projection. Check that sticking or binding does not occur.

Check that the bolt extends no more than the following:-

B1-AO-9016664	16.3 mm ($^{41}/_{64}$")
SC/ES/893	16.3 mm ($^{41}/_{64}$")
C-A1-335	22.2 mm ($^{7}/_{8}$")

10.3.3 Doors must be slammed shut from the half-open position and checked that the lock bolt is fully engaged and the handle is correctly aligned.

10.3.4 With the door lock bolt in the safety catch position, check that the door is retained by the safety catch and that the lock bolt is fully extended and the safety catch has no excess play.

10.3.5 Test the lock bolt spring/s force, using the in-situ test device stated in Section 9. This equipment should be used as follows:-

(i) The device must be inserted into the striking plate and attached to the end of the bolt as seen in section 11 Appendix 11.3.

(ii) Readings must be taken and multiplied by 3 to reach the following figures:-

(a) Minimum load to commence actuation 4.9 Kg.f.

(b) Minimum load to complete actuation 5.9 Kg.f.

(c) Maximum load to complete actuation 6.75 Kg.f.

10.4 Single action lock (other than wrap around corner doors).

10.4.1 Check that the lock bolt slides freely into the fully engaged position in the striking plate and that the lock handle is horizontal when the lock bolt is fully engaged. Maximum allowable misalignment is $\pm 5^{o}$.

10.4.2 With the door in the open position check that handle operates freely and when released the bolt returns to full projection. Check that sticking or binding does not occur.

Check that the bolt extends no more than the following:-

Bl-AO-9016664	16.3 mm ($^{41}/_{64}$")
SC/ES/893	16.3 mm ($^{41}/_{64}$")
C-Al-335	22.2 mm ($^{7}/_{8}$")

10.4.3 Doors must be slammed shut from the half-open position and checked that the lock bolt is fully engaged and the handle correctly aligned.

10.4.4 With the door held on the striking plate safety catch check that the lock bolt is in contact with the face of the striking plate and that, in this position, the handle gives a clear indication of misalignment from the horizontal position. If the misalignment from the horizontal is less than 10^{o} adjustments must be made by using approved metal shims behind the striking plate in order to restore the handle misalignment to approx. 20^{o}.

10.4.5 Test the door lock inside actuation by using a device for testing inside actuation door lock operating force, see Section 9 for test equipment and section 11 Appendix 11.4 for the use of the test equipment. The force required must not exceed 11.4 Kg.f. (25 lb.f).

10.4.6. Test the lock bolt spring/s force, using the in-situ test device stated in Section 9. The equipment should be used as follows:-

(i) The device must be inserted into the striking plate and attached to the end of the bolt as shown in section 11 Appendix 11.3.

(ii) Readings must be taken and multiplied by 3 to reach the following figures:-

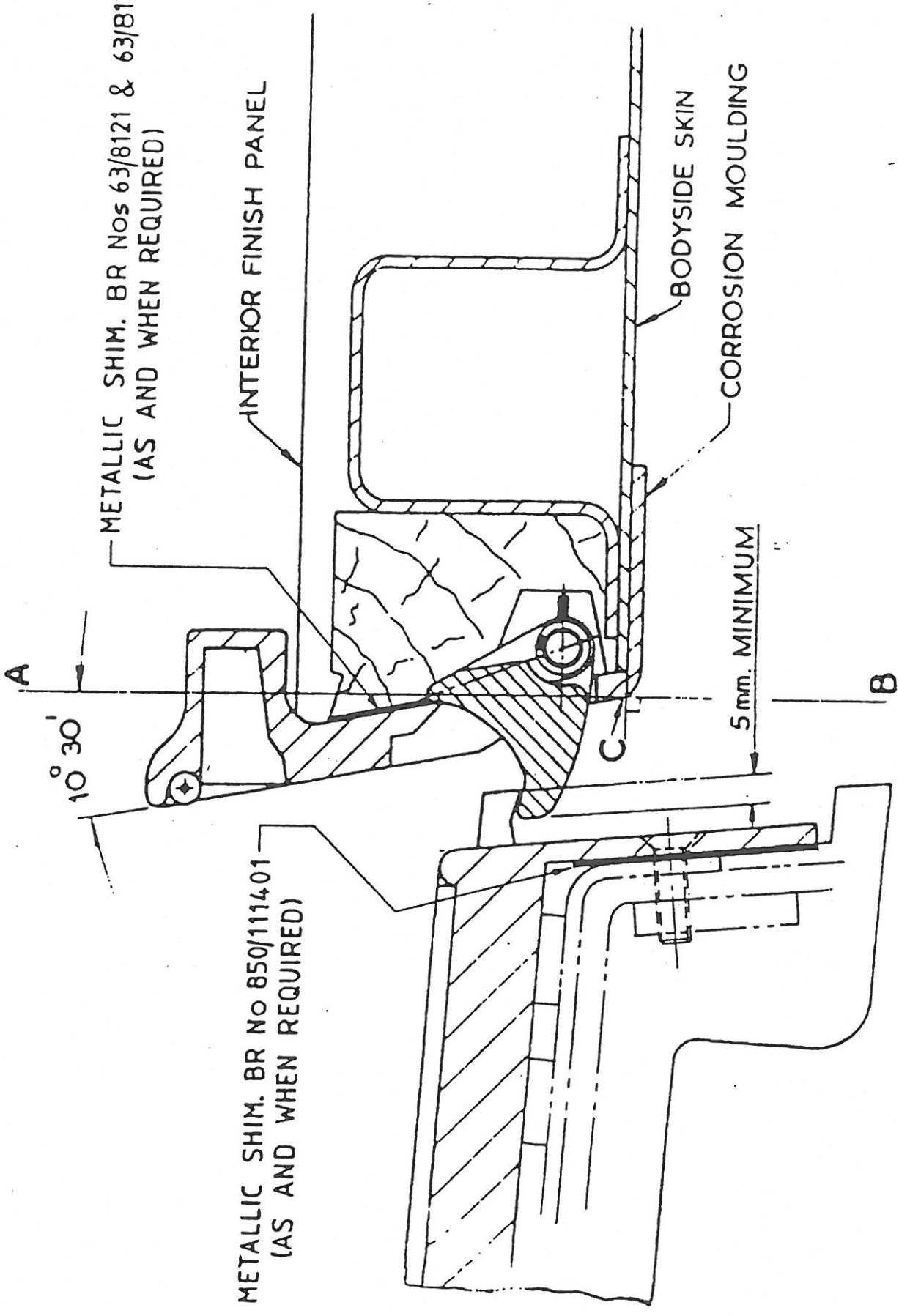
(a) Minimum load to commence actuation 4.9 Kg.f.

(b) Minimum load to complete actuation 5.9 Kg.f.

(c) Maximum load to complete actuation 6.75 Kg.f.

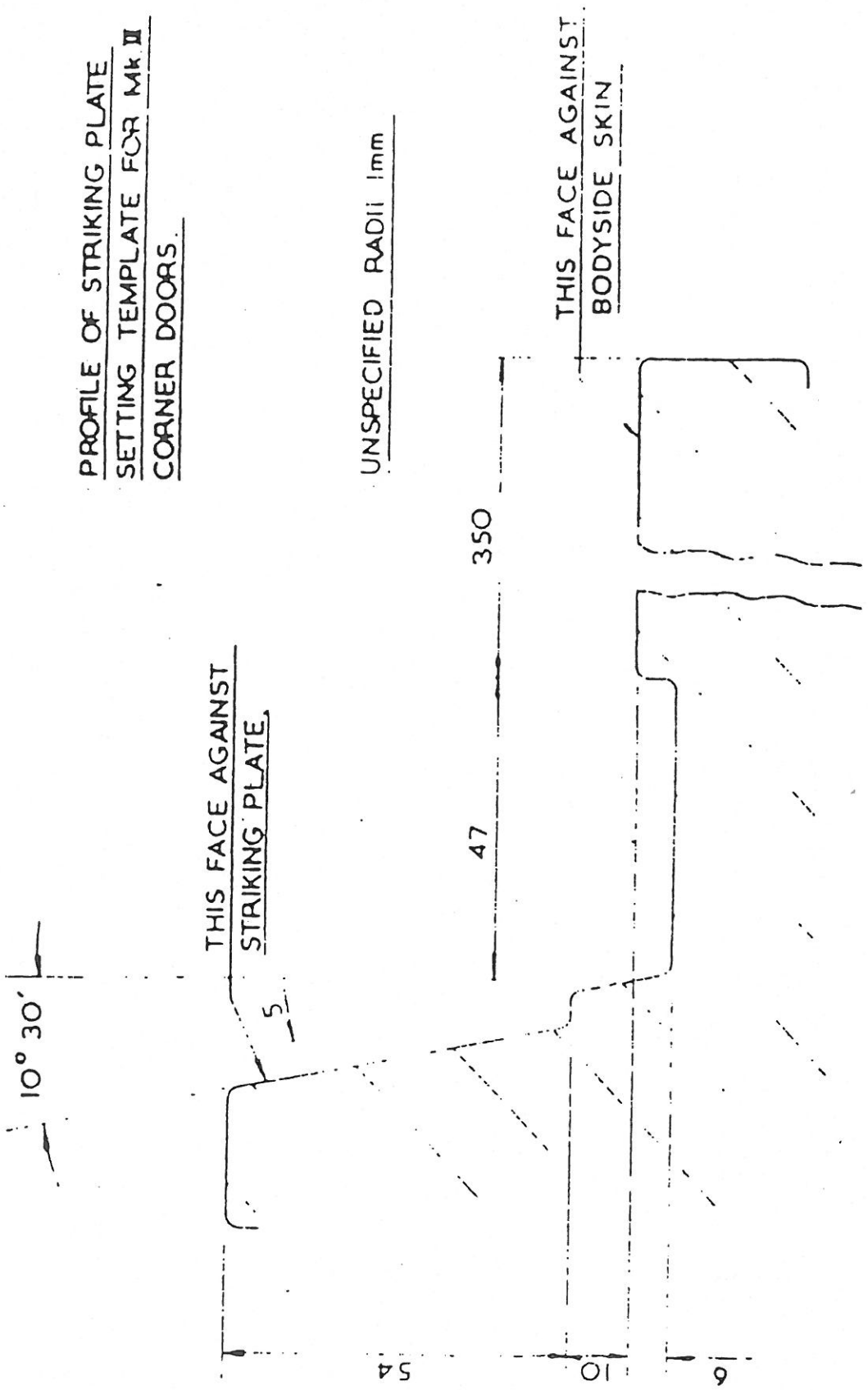
11. APPENDICES

11.1.1. Mk II D, E, & F, Mk III and H.S.T. passenger carrying rolling stock corner door lock bolt (safety catch engagement illustrations.



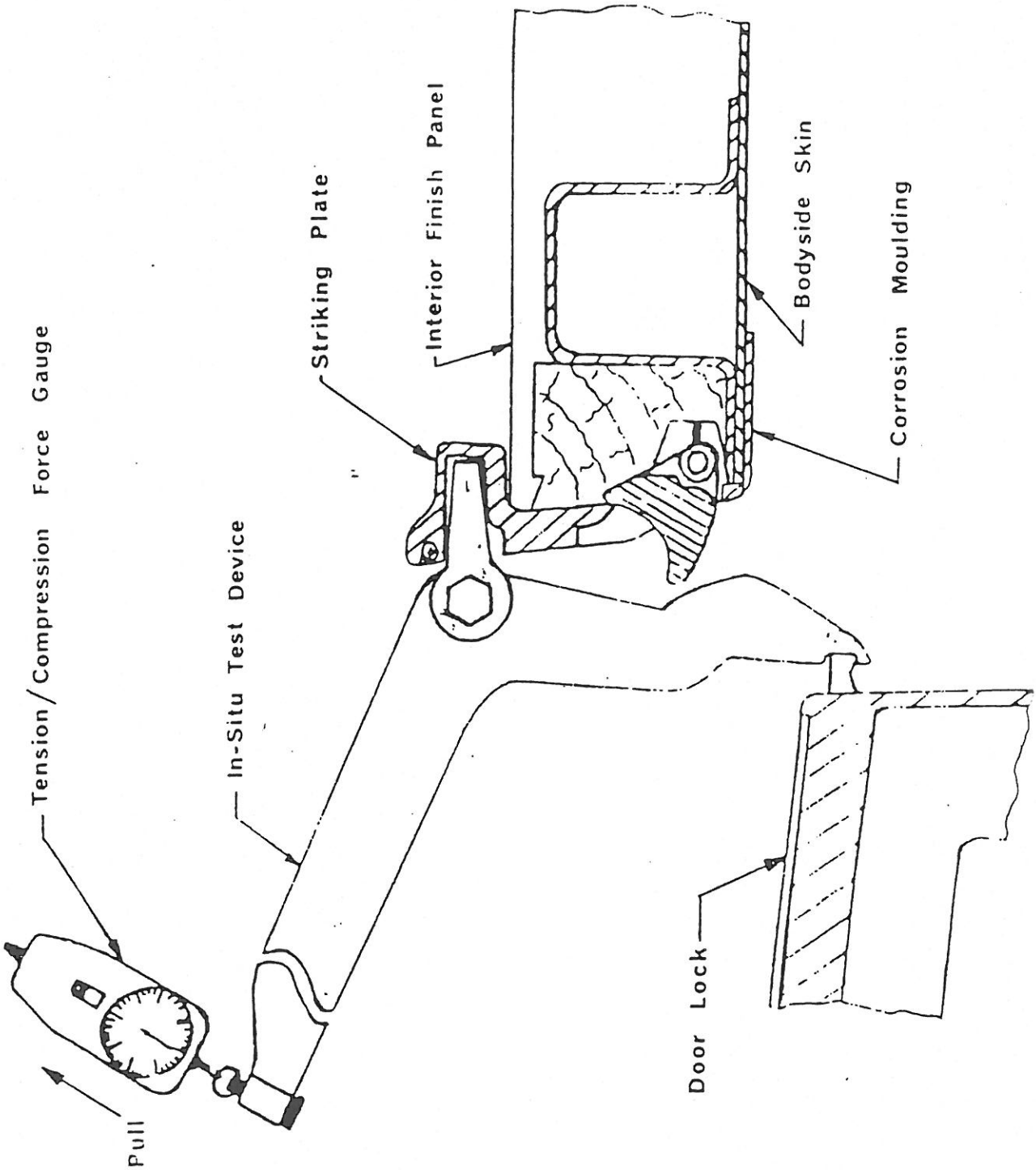
11. APPENDICES

11.2.1 Profile of Striking Plate Setting template



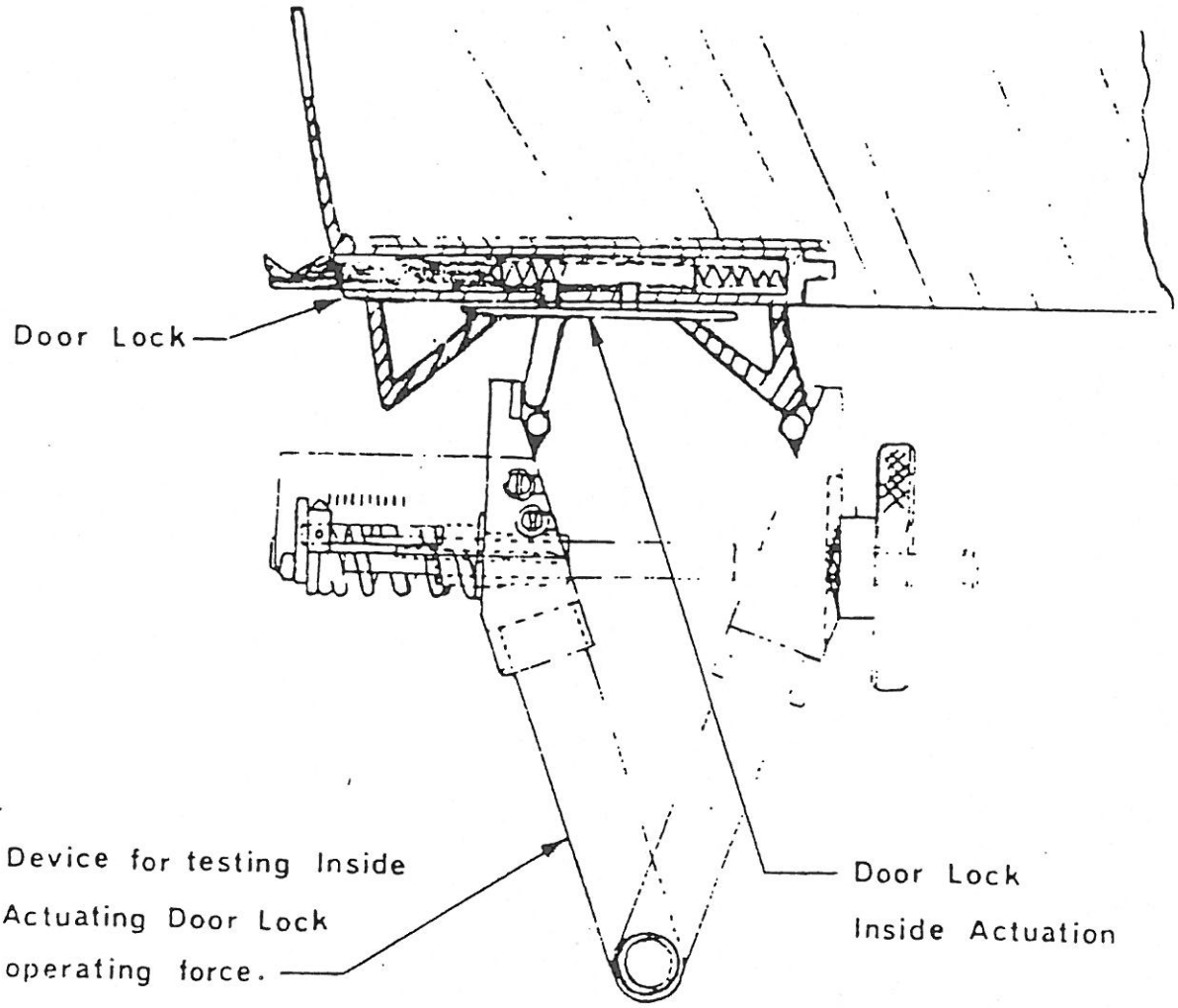
11. APPENDICES

11.3 How to Use In-Situ Door Lock Test Device



11. APPENDICES

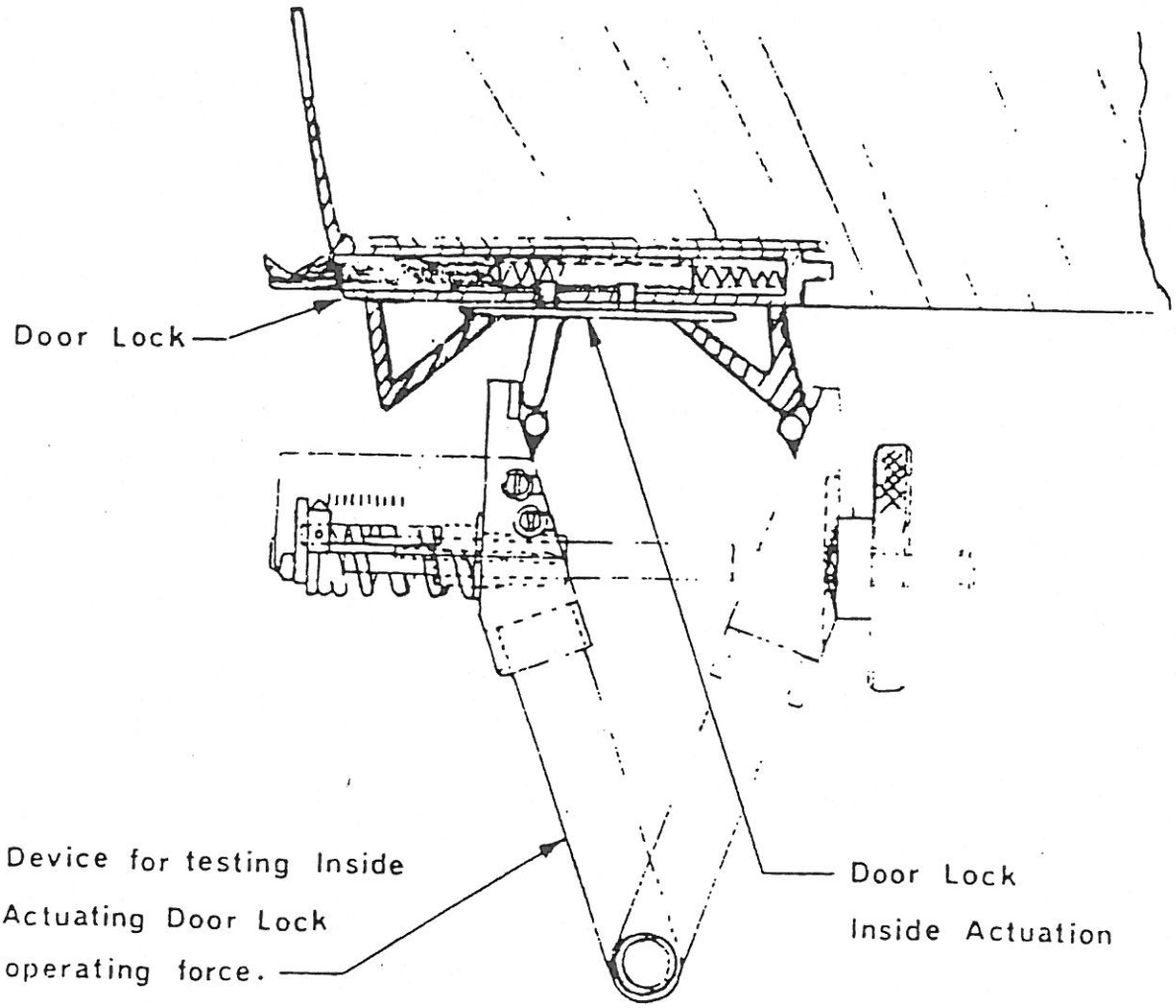
11.4 How to Use Inside Actuation Door Lock Test Device



The handle must be turned clockwise until the inside actuation starts operating. At this point a reading can be taken and if force exceeds 11.4 Kg.f. (25 lb.f.) the lock must be changed.

11. APPENDICES

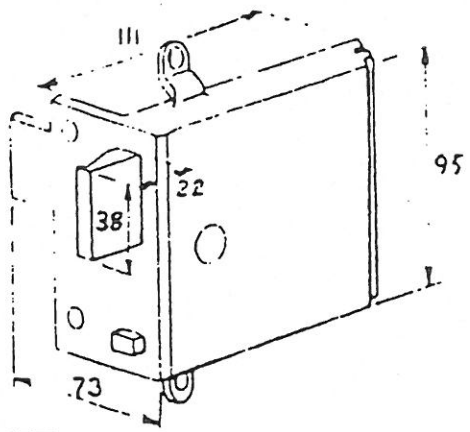
11.4 How to Use Inside Actuation Door Lock Test Device



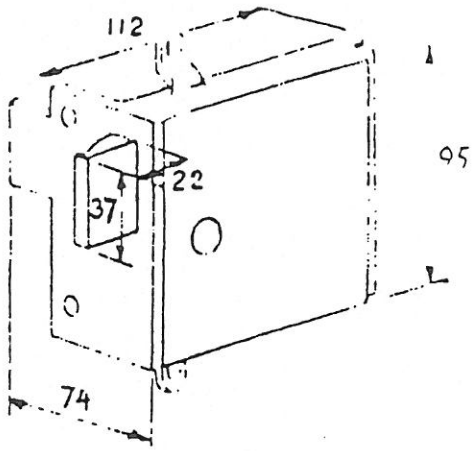
The handle must be turned clockwise until the inside actuation starts operating. At this point a reading can be taken and if force exceeds 11.4 Kg.f. (25 lb.f.) the lock must be changed.

11. APPENDICES

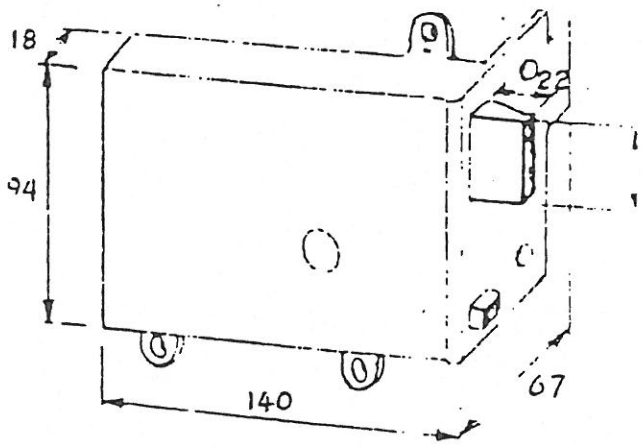
11.6 Drawings of All Locks for Easy In-Situ Identification



Used on Mks I, II & IIa
Drg. No. B1-A0-9015382



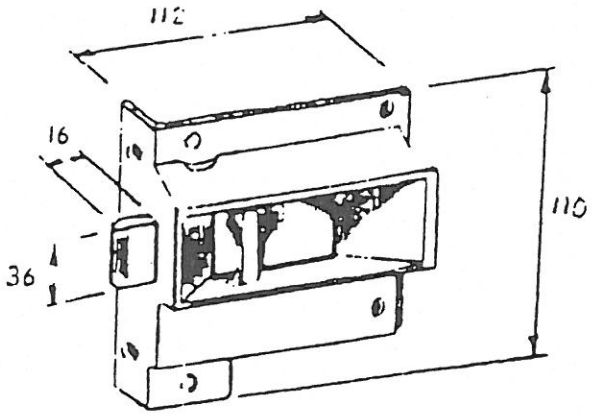
Used on Mk IIb & IIc
Drg. No. C-A1-335



Used on Mk III
Drg. No. B1-A0-9002399

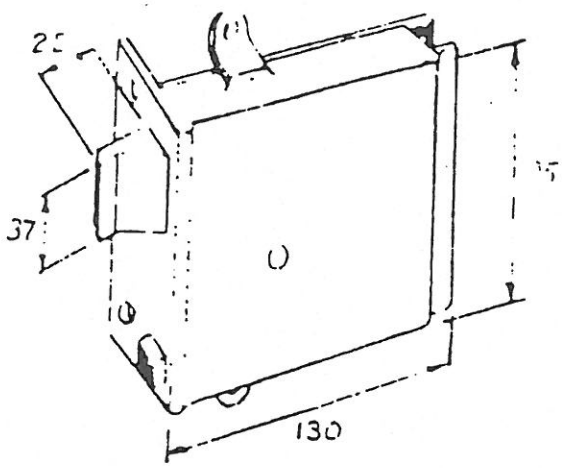
11. APPENDICES

11.6 Drawings of All Locks for Easy In-Situ Identification (Cont'd)...



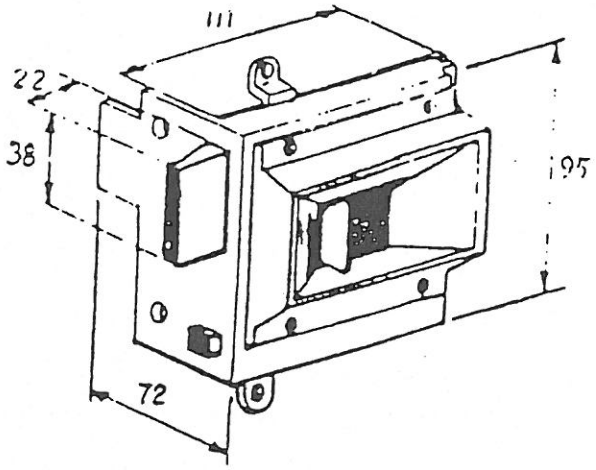
Used on SR EMU's & DEMU's

Drg. No. B1-A0-9016664



Used on Classes 120, 123, 124 & 119 DMU's

Drg. No. SC/DE/21626



Used on all other EMU's & DMU's

Drg. No. B1-S-9016517

PROCESS SPECIFICATION

OVERHAUL OF BODYSIDE DOOR LOCKS AND STRIKING PLATES

BR PUBLICATION NO. CEPS 1062

REVISION LETTER NO. 2

LOCATION	ACTION	REASON FOR CHANGE
Page 35 Issue 2.	Replace with Issue 3 of this page.	Additional information.

After incorporating the above, endorse the "Revision Record" at the front of the manual accordingly.

When this Revision letter has been actioned, it is to be stored at the back of the publication (capacity permitting) for easy future reference.

DATE : APRIL 1986

REF : 220-6-2

TEL : 056-3582

Issued by:-

D of M & EE, BRB
Railway Technical Centre
Derby

2312/3534h/3

PROCESS SPECIFIC ATION

OVERHAUL OF BODYSIDE DOOR LOCKS

AND STRIKING PLATES

B.R. PUBLICATION NO. C.E.P.S. 1062

REVISION LETTER NO. 1

LOCATION	ACTION	REASON FOR CHANGE
Pages 8, 9, 14, 22 34, 35, 36 and 40	Replace with Issue 2 of these pages	Additional and amended items

After incorporating the above, endorse the "Revision Record" at the front of the manual accordingly.

When this Revision letter has been actioned, it is to be stored at the back of the publication (capacity permitting), for easy future reference.

Date: September 1985

Ref: 220-6-2

Tel: 056-3582

Issued by:

Director of Mechanical and Electrical Engineering
BRB
Railway Technical Centre
Derby

2320/256h/1

British Rail

MECHANICAL & ELECTRICAL ENGINEERING

Depot Engineer
Old Oak Common (WR)
TEL: 00- 29343

OUR REF: BS/MB258-86

9th February,1991

Production Managers.
HST Supervisors.
Lift Shop Supervisors.
C & W Supervisors.
Paddington Supervisors.
Staff Noticeboards: HST, C&W.

Copy to: AFM,TRSE,PTO FACT. STO HST, STO C&W, SECT.ENG.
MATERIALS MANAGER,

DOOR LOCK CHANGING

B.R.M.L. Springburn have rejected a batch of door locks from the manufacturers, because the force required to operate the lock was below the minimum specified.

Until further notice please ensure that all vehicles, where the locks are changed, also receive the lock bolt spring force test specfified in MT 261, Item 5.11 to ensure that they do not enter service with defective door locks.

Any locks which do not comply with the force required are to be replaced.

B. Scarrott.
Depot Engineer.

DEPARTMENT OF MECHANICAL AND ELECTRICAL ENGINEERING

Mechanical Equipment Engineer

MEMORANDUM

To: Area Fleet Manager
Old Oak Common.
fao R.Pamment Esq.

From: Environment Engineer,
Interiors Group.

Room: TX
Ext: 3546 or 6942

y/r:
o/r:TME-170-382-2(EGB) Date: 07/11/90

Subject: Door Lock Testing, MT/261.

With reference to the telephone conversation between Messrs Pamment/Bond on the above date. The vehicle should be tested to MT/261 report form clause 2.24. Testing to clauses 2.25 and 2.26 should not be carried out.

E.G.BOND
For
A.C.JONES
(Interiors Engineer).

MT/261

DOOR LOCKS TESTING

(following door open in motion or lock malfunction)

April 1986

Issued by:-
D of M & EE BRB
Railway Technical Centre
Derby

2114/1167L/1

REVISION RECORD

REVISION NUMBER	DATE	INSERTED BY

REVISION NUMBER	DATE	INSERTED BY

CEPS 1054

British Railways Board

Mechanical & Electrical Engineer's Department

OVERHAUL OF BODYSIDE SWING DOORS

INCLUDING DRIVERS, GUARDS & LUGGAGE

COMPARTMENT DOORS

REVISION RECORD

REVISION NUMBER	DATE	INSERTED BY
1 TO 5	INCORPORATED	
6	FEB 1985	
7	JAN 1987	
8	JUNE 1987	

REVISION NUMBER	DATE	INSERTED BY