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Translation

O R

Doors, footboards, windows, steps, handles and handrails of coaches and luggage vans

Portes, emmarchements, fenêtres, marchepieds, poignées et mains courantes des voitures et des fourgons

Türen, Einstiege, Fenster, Tritte und Griffe an Personen- und Gepäckwagen



UNION INTERNATIONALE DES CHEMINS DE FER
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- Point 4.1.2 (1.7.97)
- Points 6.1.7, 6.2.5 and 6.3.5 (1.7.97)
- Points 7.6.1 and 7.6.2 (1.1.96)
- Point 3.1.2 (1.7.96)
- Points 1.4.1, 1.8.3 and Appendix I (1.7.98)

By derogation, from 6.1.8.1 of the Leaflet the FS are allowed to use a locking device permitting to lock the sliding doors of couchette compartments without any restriction. The use of this system in international traffic shall be subject to bilateral or multilateral agreements

Record of updates

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Important: Some articles (points) in this leaflet have been renumbered in the new edition. Please take account of this when using cross-references from other leaflets.

The person responsible for this leaflet is named in the UIC Code

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Summary

This leaflet contains all provisions relating to the doors, footboards, windows, steps, handles and handrails of coaches and luggage vans running freely in international traffic.

The successive strengthening of safety requirements over the years, especially as far as door closing and locking mechanisms are concerned, has given rise to equipment variants, the dates of application of which are indicated in the relevant text passages as well as in the "Application" chapter.

1 - Entrance doors

1.1 - General provisions

- 1.1.1 - Each door must be fitted with two operating handles, one on the inside, the other on the outside, or with operating push-buttons.
- 1.1.2 - Side entrance doors that open outwards must be fitted with closing devices that also permit double-locking, when the door is closed manually.
- 1.1.3 - The double-locking system must consist of two separate components, or a single component, if this operates in two stages (preliminary and main locking).
- 1.1.4 - When closed, entrance doors must not project beyond the vehicle body.
- 1.1.4.1 - When open, entrance doors whose lower part is at least 1050 mm above rail level, when the buffers are at the minimum permissible height, may project beyond the reduced clearance gauge of the vehicle by at most 200 mm.
- 1.1.4.1.1 - Entrance doors of coaches to be built after 1 January 1986 must meet the specifications of point 1.1.4.1 even during the opening operation.
- 1.1.4.1.2 - The restriction laid down in point 1.1.4.1 does not apply to hinged entrance doors fitted to coaches before 1 January 1980.
- 1.1.4.2 - For side entrance doors situated beyond the bogie pivots and whose bottom edges are less than 1050 mm above the rail, the necessary reduction in the clearance gauge with the buffers in the lowest permissible position of 980 mm can at most be decreased:

- during opening and
- in the "open" position,

by the value $\frac{(w_a - 0,02)(n+a)}{a}$. This only applies if $w_a > 0,02$ m).

NB : When shunting speeds remain at or below 30 km/h, lateral play does not generally exceed 0,02 m.

Definitions:

w_a = possible lateral displacement of bogie pivots and swing bolsters from the median position to the outside of the curve in metres,

n = distance of the relevant section of the vehicle with respect to the closest bogie pivot in metres,

a = centre-to-centre distance of the bogie pivots in metres.

- R** 1.1.4.3 - It shall be permissible to use doors that meet the conditions of both points 1.1.4.1 and 1.1.4.2.

In this case, the provision laid down in point **1.1.4.1 - page 2** also applies during the opening operation.

O 1.1.5 - The edges of entrance doors must be fitted with flexible joints to prevent hands being trapped.

O 1.1.6 - Side entrance doors opening towards the outside must be fitted with protection devices, which prevent hands being trapped.

O 1.1.7 - It must be possible to lock the entrance doors of vehicles built after 1 January 1983 in the closed position from the outside and the inside of the coach with the square socket key according to RIC.

R 1.1.7.1 - In case of coaches built before 1 January 1983, it is permissible for doors to be lockable only from the outside.

O 1.1.7.2 - On the front of locks for square socket keys, there must be a marker line that is in the vertical position, when the lock is open, and in the horizontal position, when the lock is closed.

1.1.8 - Colours of insides of doors.

O 1.1.8.1 - The colour shall provide a clear contrast with adjoining surfaces.

R 1.1.8.2 - A shade of the colour orange is recommended for coaches built before 1 January 1980 and not having been fitted with the door-locking system according to point **3 - page 10**.

O 1.1.9 - The inside surfaces of doors in the side walls must bear the following inscription:

"Ne pas ouvrir avant l'arrêt du train.
Nicht öffnen, bevor der Zug hält"
(Do not open before the train stops)

R 1.1.9.1 - This text may be added in one or more other languages.

R 1.1.9.2 - It is recommended to supplement this inscription with the corresponding pictogram of the UIC code.

1.1.10 - Protection against the effects of bad weather

R 1.1.10.1 - The entrance doors must be constructed as to ensure as complete tightness as possible to air and noise.

O 1.1.10.2 - Guiding systems, rollers, joints, insulated cables, sleeves etc., exposed to operating problems in winter conditions (frost, ice, etc.), must be well protected against the effects of bad weather.

Insulated cables must be fitted in such a way that water cannot accumulate and freeze.

Sleeves and other recesses must be provided with sufficient ventilation and drainage.

Open and hollow weather-stripping, in which water can accumulate, must be avoided. The elastomers chosen must be sufficiently resilient to withstand low temperatures.

1.1.11 - Window glazing

- O 1.1.11.1 - The upper part of the door shall be fitted with a window made of glass (see *UIC Leaflet 564-1*).
- R 1.1.11.2 - The provision of double glazing is recommended.
- R 1.1.12 - It is recommended that the kinematics of the door closing movement should be such that frozen snow can be easily broken off.
- R 1.1.13 - The control system for entrance doors should be designed in such a way that the doors close automatically after a certain period of time when low temperatures prevail.

The following must be observed regarding passenger safety:

- monitoring the entrance doors using a "passenger-flow detector", for example a photoelectric system or pressure-sensitive step;
- determining precisely the period of time elapsed between a person boarding and the doors closing;
- light and/or acoustic signal to indicate the doors are about to close (intermittent acoustic signal).

It must also be possible to disconnect the above equipment in workshops.

- R 1.1.14 - For vehicles to be built, it is recommended fitting the access doors with opening aids.

1.2 - General provisions for entrance doors with automatic opening control

- O 1.2.1 - Entrance doors must be locked mechanically, when closed.
- O 1.2.2 - However, the automatic opening command must not become operative until the door has been unlocked.
- R 1.2.3 - The door may be unlocked either manually or by an electric command from a push-button or a handle.
 - O 1.2.3.1 - If the release of the lock by electric command or by the automatic opening command fails, it must be possible to unlock and open the door manually.
 - 1.2.3.2 - Safety of electric door-command system
 - O 1.2.3.2.1 - If locking is by electric command, it must function in such a manner that - when the speed exceeds 5km/h - under normal running conditions, at least two separate failures must occur before the particular entrance door opens accidentally (except failures that are improbable in actual conditions).
 - R 1.2.3.2.2 - In order to guarantee this, it is recommended to use modern failure detection methods, either continuously or during normal maintenance work.

1.2.4 - Opening devices

- R 1.2.4.1 - Opening devices on coaches yet to be built.

- O 1.2.4.1.1** - The levels to be selected for the arrangement of internal and external handles and buttons on coaches to be built after 1 January 1985 are shown in Appendix H - page 32.
- R 1.2.4.1.2** - If the entrance door is opened by means of a handle, a push-button for use by passengers to control closing of the respective door must be fitted on the inside of the coach near the respective door on the door frame nearest the end wall at a height of approximately 900 mm above the floor.
- O 1.2.4.1.3** - External and internal handles must be designed without an opening for the hand so that passengers cannot grip them (see Appendices D - page 28 and E - page 29 for examples of the design).
- O 1.2.4.1.4** - When entrance doors are opened and closed by means of a push-button, the following push-button arrangement is obligatory:
- | | |
|---------|---|
| Inside | Adjacent opening and closing buttons on the door frame nearest end wall at a height of approximately 1350 mm above floor level. |
| Outside | Adjacent opening and closing buttons on the wall containing the door 1550 ± 300 mm above rail top (see Appendix H). |
- R 1.2.4.1.5** - The outside closing button may be omitted, if the door can be closed manually from the track bed.
- R 1.2.4.1.6** - It is recommended to indicate the opening direction of the door by means of an arrow placed near the inside handle.
- 1.2.4.2** - Opening devices on vehicles constructed before 1 January 1985.
- R 1.2.4.2.1** - In the case of coaches with neither handrails nor outside steps for shunters, it is recommended to design the dimensions of the outside opening devices as shown in Appendix H.
- O 1.2.4.2.2** - In this case, the dimension of the lower edge of the outside opening device shown in Appendix H may be a maximum 1700 mm.
- O 1.2.5** - Entrance doors must close automatically, when the speed of the train exceeds 5 km/h.
- 1.2.6** - Protection against the risk of jamming
- O 1.2.6.1** - When the doors close, there must be no risk of jamming, injury to persons or damage to luggage. If the closing door encounters an obstacle:
- either the door must reopen automatically and reclose after approximately 15 seconds,
 - or closing must be halted for approximately 10 seconds,
 - or the closing pressure, measured at the edge of the door, must be less than 150 N.
- R 1.2.6.2** - On coaches constructed before 1 January 1986, doors may be reclosed, after reopening, by means of:
- a push-button, pressed by a passenger, or
 - remote control, or
 - automatic closing at 5 km/h.

1.3 - Provisions for folding hinged entrance doors

- **1.3.1** - Folding hinged entrance doors must be designed as shown in Appendices **A - page 25** and **B - page 26**.
- **1.3.2** - The hinged cover attached to the large leaf of the entrance door, which masks the steps, must be fitted to it by an arrangement causing it to stand up vertically against the door leaf, when the door is open.
- **1.3.3** - The entrance doors must leave a free passage at least 740 mm wide, when open. In the area of the door handle, the guard and raised cover, at least 650 mm must be available.
- **1.3.4** - The broad door leaf shall be equipped with a fixed or openable safety glass window.
- **1.3.5** - The inner door handle must be secured by a guard against unintentional opening it should also be provided with an idle stroke.
- R **1.3.5.1** - It is recommended that the direction of rotation of the door handle, permitting the door to be opened or closed, is indicated by an arrow or pictogram near the handle.
- **1.3.5.2** - The end positions shall be marked as follows:
 "Ouvert - Fermé
 Offen - Zu"
 (Open - Closed)
- R **1.3.5.2.1** - This text may be added in one or more other languages.
- R **1.3.5.2.2** - It is recommended that the respective position of the handle be also indicated by a graphical symbol.
- R **1.3.6** - It is recommended to install automatic closure of the door, when the speed of the train exceeds 5 km/h.
- R **1.3.7** - It is recommended:
 - that double-locking be ensured using the upper lock as described in point **1.1.3 - page 2**;
 - that the lower lock be designed with an elastic spring element in such a way that the lock has a stabilising function only.

○ **1.4 - Provisions for sliding-plug entrance doors**

- 1.4.1** - Sliding-plug entrance doors must be designed as shown in Appendix **H - page 32**¹.
- 1.4.2** - The entrance doors must mask the steps on the outside, except the bottom step (folding)¹.
- 1.4.3** - The entrance doors must leave a free passage 800 mm wide, when open¹.
- 1.4.4** - The sliding-plug doors shall be fitted with fixed windows.

1. For Mu-type sleeping-cars, sliding-plug doors may allow for a smaller free passage of at least 725 mm.

o 1.5 - Provisions for swing-plug entrance doors

1.5.1 - Swing-plug doors must be designed as shown in Appendix C - page 27.

1.5.2 - The entrance doors must mask the entrance steps except the bottom two (one being a folding step).

1.5.3 - The entrance doors must leave a free passage at least 800 mm wide, when open.

1.5.4 - Outside handles that make it possible to use the steps, when the door is closed, are forbidden.

1.5.5 - Swing plug doors must be equipped with fixed windows.

1.6 - Side loading doors of luggage vans

R 1.6.1 - The loading doors may be of the sliding, folding or metal shutter type.

o 1.6.2 - The loading doors must be designed in such a way that they cannot fall out of their guides; metal shutters must be protected against accidental closure.

o 1.6.3 - Sliding and folding doors of luggage vans and luggage compartments must be fitted with a device, which prevents accidental closure of the doors. The free open space shall be at least 300 mm.

o 1.6.4 - If the side loading doors are of the sliding or metal-shutter type, movable safety bars (railings) must be placed near these doors, making it possible to prevent passage of the doors, when left open.

1.7 - Side loading doors of dining cars

o 1.7.1 - The loading doors must be of the sliding, sliding-plug or hinged type opening inward.

o 1.7.2 - The guides must be designed in such a way that partially or fully open loading doors cannot be torn away by the air current produced by train running.

o 1.7.3 - Each door must be fitted with a handle for inside operation.

o 1.7.4 - Each door must be fitted with a device, which prevents unintentional closure, when open.

o 1.7.5 - The loading doors must be designed in such a way that they can be locked in the closed position from inside using the square socket key according to RIC.

1.7.6 - Interior markings

o 1.7.6.1 - A plate with the following inscription must be placed on the inside surface of loading doors:

"Porte de chargement. Interdit aux voyageurs
Ladetür. Nicht für Reisende"
(Loading door. Not for passengers)

R 1.7.6.2 - This text may be added in one or more other languages.

R 1.7.6.3 - It is recommended that an additional plate be affixed with the following inscription:

"La porte de chargement ne doit être ouverte qu'à l'arrêt du train en vue du chargement et du déchargement.

Ladetür darf nur bei Stillstand des Zuges zum Be- und Entladen geöffnet werden".

(The loading door may only be opened for loading and unloading when the train is stationary.)

R 1.7.6.4 - This text may be added in one or more other languages.

o 1.8 - Special provisions to ensure safe closing

1.8.1 - The closing devices must be designed and maintained in a state which ensures safe performance of their function in normal service.

1.8.2 - In particular, the fixed parts (latch) and moving parts (pivot pins, hinged pivot pins) of locking devices must always have sufficient overlap.

1.8.3 - Door-closing mechanisms must be so designed that self-locking closure is ensured. This state must also be maintained during normal service.

2 - Remote control of entrance-door closure

2.1 - Fitting of remote-control mechanism for entrance-door closure

- O** 2.1.1 - The entrance doors of coaches built after 1 January 1972 must be equipped with a remote door closure system.
- R** 2.1.2 - For coaches built before 1 January 1972, the provision of a remote door closure system is recommended.
- R** 2.2 - A diagram of the electropneumatic closing system for folding hinged doors is shown in Appendix F - page 30 and one for sliding-plug doors is shown in Appendix K - page 35.
- O** 2.3 - The operating principle of this closing mechanism must correspond to the diagram shown in Appendix L - page 36. Instead of the electromagnetic equipment shown, electronic equipment fulfilling the same conditions may also be used.
- O** 2.4 - Wires 9 and 12 of the general sound channels as defined in *UIC Leaflet 568* must be used for remote control of door closure. The control elements connected to conductors 9 and 12 must have an input impedance of ≥ 1200 ohms and become operational with a minimum voltage of 15 V.
- O** 2.5 - The rated operating voltage for door remote control is 24 V d.c. and voltage variations between 18 V and 33 V are permissible.
- O** 2.6 - The switch for closing train doors must be a rotary clockwise switch with automatic return. It must be possible to operate it using a square socket key as specified in the RIC regulations.
- O** 2.6.1 - The switches must be fitted inside the coaches 500 mm above the coach floor so that they can be operated from the station platform.
- O** 2.6.2 - The door, at which the command is actuated, does not close automatically. It must be closed manually or by pressing the passenger push-button (see point 1.2.4.1.2 - page 5).

3 - Door-locking mechanism

3.1 - Scope of application

- 3.1.1 - The entrance doors of coaches built after 1 January 1980 shall be equipped with a door-locking mechanism conforming with the following conditions:
- 3.1.2 - The door-locking mechanism was only recommendatory for coaches built before 1 January 1980. Since 1 January 2000, it is mandatory for all coaches worked in international traffic.

3.2 - General provisions

3.2.1 - Locking of access doors

- 3.2.1.1 - Door locking and unlocking control must be independent for each coach.
- R 3.2.1.2 - It is recommended that an extra central locking mechanism be provided, enabling access doors opposite to the platform side to be locked during station stops, and both sets of doors to be locked during stops on open track.
- 3.2.2 - If, in the future, a centralised locking system making use of door-closing mechanisms becomes feasible, this can also be used, provided the two systems can function together in the same train consist.

3.3 - Operation of the door-locking system

- R 3.3.1 - General provisions for coaches built after 1 January 1987:
 - 3.3.1.1 - Operation on coaches without steps or outside handrails next to the entrance doors and without handholds outside the entrance doors:

The entrance doors of these coaches must be automatically locked inside and outside, when the speed exceeds 5 km/h.
 - 3.3.1.2 - Operation on coaches with steps and outside handrails next to the entrance doors:
 - 3.3.1.2.1 - The entrance doors of such coaches must be locked automatically inside, when the speed exceeds 5 km/h.
 - 3.3.1.2.2 - Opening of the entrance doors from the outside must be possible, irrespective of the running speed.
- 3.3.2 - Application to sliding-plug and swing-plug doors so far used.
 - 3.3.2.1 - These doors must be locked automatically inside and outside, when the speed exceeds 5 km/h.
 - R 3.3.2.2 - For coaches built before 1 January 1982, locking of the doors inside and outside at a speed between 15 and 25 km/h is permissible.

- R **3.3.2.3** - For coaches built before 1 January 1987, opening of the entrance doors from outside is permissible, irrespective of the running speed.
- R **3.3.2.4** - When major modifications are made to existing coaches with sliding-plug doors, it is recommended to make provision for the conditions of point **3.3.1 - page 10**.
- 3.3.3** - Application to folding hinged doors so far used.
- O **3.3.3.1** - The provisions of points **3.3.1.2.1 - page 10** and **3.3.1.2.2 - page 10** must be applied.
- O **3.3.3.2** - For doors fitted with an automatic closing system as described in point **1.3.6 - page 6**, locking for brief periods (maximum 8 seconds) by the automatic closing mechanism at 5 km/h is permitted.
- R **3.3.3.2.1** - In this case, it is permissible to lock the doors inside and outside at a speed between 15 and 25 km/h.
- R **3.3.3.2.2** - For coaches built before 1 January 1982, locking of the doors inside and outside at a speed between 15 and 25 km/h is permissible.
- 3.3.3.3** - For coaches with folding hinged doors, whose steps, handles and other handholds conform with point **3.3.1.1 - page 10**, entrance doors may be locked inside and outside. Locking should be actuated when the speed exceeds 5 km/h.
- O **3.3.4** - Automatic unlocking of doors must not occur, before stopping, until the speed has fallen below 5 km/h.
- O **3.3.5** - It must be possible to close open, or partially open doors without damaging the closing mechanism, even if the locking mechanism has already been actuated.

3.4 - Manual release of door locking and cancellation of any door-locking command not yet executed

3.4.1 - Emergency unlocking device

- O **3.4.1.1** - It must be possible to cancel door locking and any locking command not yet executed by operating an emergency device. In each entrance vestibule, there must be at least one control for this device, easily recognised by passengers, which operates the respective door or the two doors of that vestibule.
- R **3.4.1.2** - On coaches built before 1 January 1983 fitted with folding hinged doors and not fitted with automatic closing mechanisms, it is permissible for operation of the emergency device to cause only the release of the locking mechanism.
- O **3.4.2** - An optical or acoustic signal to indicate the activation of the emergency device and the release of the automatic locking and closing mechanism is essential.
- 3.4.3** - Markings concerning the emergency unlocking device

- O 3.4.3.1** - The emergency unlocking device must be marked by a plate bearing the following inscription:

"Déblocage de la porte
A n'utiliser qu'en cas d'urgence.

Aufheben der Türblockierung
Nur im Notfall benutzen".
(Door release. Only to be used in case of emergency)

- R 3.4.3.2** - This text may be added in one or more other languages.

3.4.4 - Cancellation of the action of the emergency device

- O 3.4.4.1** - A manually-operated facility to cancel the action of the emergency device must be provided.

- R 3.4.4.2** - It is permissible for folding hinged doors not fitted with automatic closing devices to have the automatic release of the emergency unlocking device operated by a time switch. In this case, point **3.4.2 - page 11** does not apply.

3.4.5 - Operation of the emergency device

- R 3.4.5.1** - It is recommended to fit the emergency device with a seal. In this case, it must be possible to operate the emergency device with a square socket key according to RIC without damaging the seal by this operation.

- R 3.4.5.2** - An implementation example of the form and operation of the emergency device is shown in Appendix **G - page 31**.

- O 3.4.6** - On coaches without handrails or outside steps and coaches with end doors built after 1 January 1987, it must be possible for a shunter to cancel, from the vestibule, any command to close and lock doors.

The following alternatives are permissible:

1. The shunter uses the emergency device of the locking system for passenger use (if the device is sealed, using a square socket key according to RIC).
2. Separate switches are installed for passengers (one for each door) and shunters in each vestibule.

The switch for shunters - one per vestibule - is activated by means of a square key. It activates both vestibule doors simultaneously.

The switch for shunters must be marked with a plate bearing the following inscription :

"Portes d'accès, déblocage de service.
Aufhebung der Einstiegtürblockierung, nur für den Dienstgebrauch"
(Door release, for service use only).

- O 3.4.6.1** - The acoustic or optical signal specified in point **3.4.2 - page 11** must also be activated by the operation of the square key.

- O 3.4.6.2** - A manual device to cancel the effect of the switch must be provided.

4 - Footboards, steps, handholds and handrails

4.1 - General provisions

Unless otherwise specified, the provisions laid down below are obligatory for standard coaches described in *UIC Leaflet 567-1 and 567-2*.

- R 4.1.1 - It is recommended to apply them also to other coaches used in international traffic.
- O 4.1.2 - Inside the coaches handholds shall be fitted to the left and right sides of the footboards. They should be easy to grasp and to hold. Their colour, on vehicles to be built after 31.12.1997, must clearly stand out from the surrounding surfaces. It is also recommended that existing vehicles be similarly adapted.

The handholds shall be designed so that they can all be serviced easily:

- with a rounded shape, fully accessible,
- with a mat finish, if metallic, or a surface that will not become discoloured,
- with a surface resistant to approved cleaning agents.

- R 4.1.3 - It is recommended to construct the handholds as shown in Appendix H - page 32.
- O 4.1.4 - The footboard must be adapted to station platform height between 300 mm and 780 mm above rail level.
- O 4.1.5 - All measures taken must provide adequate safety for passengers and staff.
- O 4.1.6 - A non-skid floor covering or door mat must be placed in front of every entrance inside the coach flush with the floor edge.
- R 4.1.7 - The use of a door mat, which will help to reduce dirt accumulation in the coach and which can be easily replaced, is recommended.
- O 4.1.8 - Except in the case of coaches with folding hinged doors, the bottom step of the entrance must be of the folding type. It must be connected to the door by means of an elastic element.
- R 4.1.9 - For coaches with folding hinged doors it is recommended to construct the bottom step as a folding step.
- O 4.1.10 - The gauge restriction for the step in the folded-down position may be reduced by a maximum value of:

$$w_i \frac{n}{a} + w_a \frac{n+a}{a}$$

Definition:

w_i = possible lateral displacement of bogie pivots and bogie bolsters from centre towards the inside of the curve in metres.

Other definitions see point 1.1.4.2 - page 2.

- O 4.1.11 - All coach steps (including shunters' steps) which could be covered with ice because they are not sheltered by the doors, must be made of a metal honeycomb structure.
- O 4.1.12 - Other steps must be designed to be of a non-slip type.
- R 4.1.13 - An arrangement of steps as shown by the example in Appendix H - page 32 is recommended.
- R 4.1.14 - For vehicles to be built after 31.12.97 the step edges must be made to contrast with their environment colour-wise. It is also recommended that existing vehicles be similarly modified.
- R 4.1.15 - For vehicles to be built, it is recommended to provide separate lighting for the footboards.

4.2 - Arrangement and dimensions of entry steps to coaches with folding hinged doors

- O 4.2.1 - The footboard of coaches built after 1 January 1983 shall be provided with 3 steps (4 levels) spaced as regularly as possible. In relation to the edges of the three steps it must have a uniform inclination with a maximum angle (angle of inclination) of 59° to the horizontal. The smallest possible angle of inclination is desirable. The bottom level should be approximately 565 mm above rail level and the fourth level should have the same height as the coach floor.
- R 4.2.2 - On coaches built before 1 January 1983 entrances with two steps (three levels) are also permitted.
- R 4.2.3 - On standard VTU coaches with a floor height in the entrance vestibule of less than 1160 mm above rail level, the entrance may only have three fixed steps spaced as regularly as possible.
- O 4.2.4 - Relative to the edges of the three top steps the footboard must form a uniform inclination with a maximum angle (angle of inclination) of 55° to the horizontal.
- R 4.2.5 - It is recommended to construct the bottom step to a folding design.
- O 4.2.6 - The minimum width of the fixed entrance steps must be 650 mm. The minimum depth of the steps must be 200 mm.
- R 4.2.7 - It is permissible for the edge of a step to overhang partially the next step in the vertical direction. In this case, the part of the step that is not overhung shall be, respectively, at least 190 mm and 145 mm deep (see Appendix H).
- R 4.2.8 - The distance between steps (step height) should approximately be 230 mm.
- O 4.2.9 - On standard VTU coaches the maximum distance between steps must be 270 mm maximum.
- O 4.2.10 - When the door is closed, passenger safety must be ensured by completely covering the footboard inside the coach.

4.3 - Arrangement and dimensions of entry steps to coaches with sliding-plug and swing-plug doors

- **4.3.1** - The entrance must have 3 steps (4 levels) spaced as regularly as possible. In relation to the edges of the three top steps it must have a uniform inclination with a maximum angle (angle of inclination) of 55° to the horizontal. The smallest possible angle of inclination is desirable. The maximum permissible angle of inclination between the two bottom steps is 59°. The bottom level must be approximately 565 mm above rail level and the fourth level should have the same height as the coach floor.
- 4.3.2** - The provisions of points [4.2.6 - page 14](#) and [4.2.8 - page 14](#) apply.
- **4.3.3** - The inside handhold or inside covering of the door frame towards the centre of the coach shall be designed so that the passengers are guided around the footboard.
- **4.3.4** - When the door is closed, there must not be any entrance steps that can be used from the outside.

5 - Intercommunicating doors

o 5.1 - General provisions

5.1.1 - Intercommunicating doors must be fitted with closing devices that provide absolute safety; they must have locks that can be unlocked or locked from both the outside and the inside, using a square socket key according to RIC. Facilities must be provided to hold these doors in the open position.

5.1.2 - The intercommunicating doors must be designed to withstand the differences in dynamic pressure acting on either side, when the coach is moving at maximum speed.

5.1.3 - The intercommunicating doors may be constructed as follows:

- doors with two panels opening outwards or inwards,
- sliding doors with two panels,
- sliding doors with one panel.

5.1.4 - Each panel must be fitted with:

- a glazed window and
- an operating handle on the inside and the outside (see point [5.2.1.2.1 - page 17](#) for exceptions).

The height of this handle must be between 1,2 m and 1,4 m above the floor of the entrance vestibule.

5.1.5 - Locking of intercommunicating doors with the gangway

5.1.5.1 - Intercommunicating doors must be fitted with a device which prevents passengers from opening them when the gangway is up.

5.1.5.2 - It must be possible to lower the gangway from inside the coach.

To this end, it must be possible to open a door with two panels at least 150 mm and a door with one panel at least 120 mm, the maximum in both cases being 200 mm.

5.1.6 - Seals or brushes must be provided to ensure that the doors are tight when closed. The tightness of the door must be such that the operation of the airconditioning or air-heating system is not impaired, even at the maximum speed of the coach.

5.2 - Intercommunicating doors on standard coaches

The provisions of this section apply to standard coaches approved for international traffic as defined in *UIC Leaflet 567-1 and 567-2*.

It is recommended to apply them also to other coaches operated in international traffic.

- o **5.2.1** - The intercommunicating doors must be constructed with one or two panels of sliding type with delayed closing action.

The closing mechanism must be designed so that passengers cannot be injured.

R 5.2.1.1 - It is recommended to arrange sliding doors with two panels in such a way that movement of only one panel causes both panels to open.

O 5.2.1.2 - Z-type coaches must be provided with an additional mechanism to assist opening.

R 5.2.1.2.1 - It is permissible to fit an opening handle on only one of the panels.

It is recommended to construct this handle without an opening for the hand.

R 5.2.1.2.2 - It is recommended that doors with delayed closing action be provided with a mechanism for automatic reopening, when the closing door meets an obstacle.

5.2.2 - Width of free passages

O 5.2.2.1 - Sliding doors must leave a free passage of at least 750 mm when open.

R 5.2.2.2 - It is recommended to leave a free passage of 960 mm.

6 - Compartment, large-compartment, side-corridor, toilet and washroom doors

6.1 - Compartment doors

- **6.1.1** - Compartment doors must be sliding doors.
- **6.1.2** - The door must be held in position, when open or closed. The holding mechanism must be automatic.
- **6.1.3** - The upper part of the door must be fitted with a fixed glazed window (see *UIC Leaflet 564-1*) and, on the front edge, flexible joints must be provided to prevent any risk of injury, if the door is closed forcefully.
- R **6.1.4** - If the airconditioning or air-heating installations require it, openings for air circulation may be provided in the lower parts of the doors.
- 6.1.5** - Width of free passage
- R **6.1.5.1** - It is recommended to allow a free passage at least 580 mm wide.
- **6.1.5.2** - This minimum dimension is obligatory for Z-type coaches.
- **6.1.6** - The free passage of the side corridor must not be reduced by more than 35 mm by the compartment doors except in the area of the handle.
- **6.1.7** - Doors more than three-quarters of whose surface consists of transparent material (e.g. glass) must be marked at eye level to indicate their presence clearly. More importantly, for vehicles to be built after 31.12.1997, this marking must also be set at children's eye level. It is also recommended to introduce this marking on existing vehicles.
- **6.1.8** - It must be possible to lock, from the corridor, the doors of seating coach and couchette coach compartments in the closed position using a square socket key according to RIC.
- **6.1.8.1** - In the case of sliding compartment doors of couchette coaches to be built in the future, the mechanism holding the door ajar must be designed so that partial opening of the door to a width of 5 cm is possible. Unlocking must only be possible from the inside, when the door is closed.

The locking mechanism must be arranged on the fixed column of the door frame on the side away from the opening.
- **6.1.8.2** - It must easily be possible for the couchette car crew to cancel the locking system from the inside of the compartment using a square socket key.
- R **6.1.9** - It is also recommended to apply the provisions of **6.1.8.1** and **6.1.8.2** to existing couchette coaches.

6.2 - Doors of large compartments

- O 6.2.1 - The doors of large compartments must be of the sliding type with one or two panels.
- O 6.2.2 - On coaches built after 1 January 1982, the doors of large compartments, which have to be used by wheelchairs as specified in *ISO 7193*, must provide a free passage of at least 720 mm width.
 - R 6.2.2.1 - For coaches built before 1 January 1982, a free passage of 700 mm is permitted.
 - R 6.2.2.2 - It is recommended to provide a free passage of 800 mm width.
- R 6.2.3 - It is recommended to equip doors with assisted opening and delayed closing action.
 - O 6.2.3.1 - Automatic closing must be designed so as to prevent injury to passengers.
 - O 6.2.3.2 - It must be possible to hold the door open in position when open.
- O 6.2.4 - The upper part of the door must be fitted with a fixed glazed window (see *UIC Leaflet 564-1*) and, on the front edge, flexible joints must be provided to prevent any risk of injury, if the door is closed forcefully.
- O 6.2.5 - Doors more than three-quarters of whose surface consists of transparent material (e.g. glass) must be marked at eye level to indicate their presence clearly. More importantly, for vehicles to be built after 31.12.1997, this marking must also be set at children's eye level. It is also recommended to introduce this marking on existing vehicles.
- R 6.2.6 - If the airconditioning or air-heating installations require it, openings for air circulation may be provided in the lower parts of the doors.

6.3 - Side-corridor doors

6.3.1 - Design

- O 6.3.1.1 - The side corridor must be separated from each entrance vestibule by a two-way hinged door attached to the side wall of the coach.
- R 6.3.1.2 - It is permissible to fit this door with a lock that can be opened from both sides with a square socket key according to RIC.

6.3.2 - Width of free passage

- O 6.3.2.1 - There must be a free passage of at least 585 mm.
- R 6.3.2.2 - It is recommended to leave a passage of 630 mm.
- O 6.3.3 - In AB coaches the two classes must be separated by an identical door.
- O 6.3.4 - The door must be fitted with:
 - a window (see *UIC Leaflet 564-1*),
 - a mechanism to return the door to the closed position,

- a handle on each side of the door so that it can be opened without risk of injury.

The side of the door containing the hinges shall be designed so as to prevent any risk of fingers being trapped.

- **6.3.5** - Doors more than three-quarters of whose surface consists of transparent material (e.g. glass) must be marked at eye level to indicate their presence clearly. More importantly, for vehicles to be built after 31.12.1997, this marking must also be set at children's eye level. It is also recommended to introduce this marking on existing vehicles.
- R **6.3.6** - If the airconditioning or air-heating installations require it, openings for air circulation may be provided in the lower parts of the doors.
- **6.3.7** - The extreme position of the door when opened must be limited by elastic stops.

6.4 - Toilet and washroom doors

- **6.4.1** - They must be of the hinged or sliding type.

They must be designed so as to prevent any risk of fingers becoming trapped.

Swivelling doors must open towards the inside of the cubicle and must be fitted with a guard.

- **6.4.2** - The door must provide a free passage of at least 500 mm wide.
- **6.4.3** - The door must be fitted with a lock with a releasable latch and a bolt, which is operated by hand on the inside, and by a square socket key according to RIC on the outside. The bolt must make an indicator appear on the outside and cause the occupied sign to light in the side corridor or large corridor.
- **6.4.4** - The extreme position of the open door must be limited with flexible stops.
- R **6.4.5** - It is recommended that the automatic door opening device be located on the toilet and washroom doors towards the coach interior so as to prevent passengers from inadvertently activating the outside door handle.

6.5 - Service-compartment doors

These may be of the hinged or sliding type.

7 - Windows

○ 7.1 - Provisions for glass

Window glass must conform with the conditions of *UIC Leaflet 564-1*.

7.2 - Compartment and side-corridor windows for X- and Y-type standard coaches

7.2.1 - Use of double glazing

- 7.2.1.1 - It must be possible to half-open all windows in compartments and side corridors. The fixed lower part must be fitted with double glazing.

- R 7.2.1.2 - Double glazing is also recommended for the upper mobile part.

- 7.2.2 - When the window is open, there must be a free passage at least 1200 mm wide and 400 mm high. The distance between the floor and the edge of the movable window, when open, must not exceed 1350 mm.

- 7.2.3 - In coaches with a step below the window, this distance may be increased, but the distance between the step and the edge of the movable window, when open, must not exceed 1295 mm.

- 7.2.4 - Handles must be provided to open the movable part of the window.

7.3 - Compartment and side-corridor windows for Z-type standard coaches

- 7.3.1 - Coaches of type Z₁ shall be fitted with fixed windows.

- 7.3.1.1 - Coaches of type Z₁ running in normal passenger traffic:

All windows shown on Plates I, II, IIIa, IIIb, IVa and IVb of *UIC Leaflet 567-2* shall be provided with a tilting fanlight in their upper part, which can be locked with a square socket key according to RIC.

- 7.3.1.2 - On pressure-sealed coaches running on tunnel lines for high speed traffic, at least the following windows shall be provided in their upper parts with a tilting fanlight, which can be locked with a square socket key according to RIC:

- Coaches with side corridor:
one window at each end of the corridor or in the entrance vestibule;
- Coaches with a centre aisle:
one window at each end of a saloon (one on each side of the coach), a total of 4 per coach.

- 7.3.1.3 - The following windows must be designed as emergency exits:

- On coaches with a side corridor:
one per compartment and at least three in the corridor;

- On coaches with a centre aisle :
at least two per saloon (one on each side of the coach).

Emergency exit must be possible after removing or breaking the glass. For further details, refer to *UIC Leaflet 564-1*.

- **7.3.2** - Z_2 type coaches must be fitted with opening windows. The windows must slide down vertically and, when open, allow free passage of a height of at least 400 mm. When the dimensions of free passage laid down in point **7.2.2 - page 21** are not met, emergency exit windows as specified in point **7.3.1 - page 21** must be provided.

Opening handles must be provided on the movable parts of windows.

- **7.3.3** - The windows must have the following dimensions:

- clear width of window pane:
1400 mm in 1st class,
1200 mm in 2nd class;
- the clear height of window pane must be 950 mm.

NB : In the case of windows with a movable upper part, the clear width relates to the fixed lower part. The overall clear height is reduced by the presence of the frame.

- **7.3.4** - All windows must be double glazed.
- **7.3.4.1** - The outer pane of windows of Z_1 type coaches must be of tinted glass to reflect part of the infra-red radiation.
- R **7.3.4.2** - A coefficient of radiation of 0,6 is recommended for reference.

7.4 - Toilet and entrance-vestibule windows

7.4.1 - Provisions concerning ventilation

- **7.4.1.1** - Toilet windows must have a lower fixed part and an opening fanlight (tilting or sliding).
- R **7.4.1.2** - An opening fanlight may be omitted, if adequate ventilation is ensured, even if there is a breakdown of forced ventilation.

7.4.2 - Insulating double glazing for toilet windows

- **7.4.2.1** - The fixed toilet windows, or their fixed parts, must be fitted with insulating double glazing.
- R **7.4.2.2** - It is recommended to fit tilting fanlights with double glazing.

- **7.4.3** - In airconditioned coaches, it must be possible to lock tilting fanlights with a square socket key according to RIC.

7.4.4 - Width of windows

- **7.4.4.1** - Only windows with a width of 800 and 600 mm are permissible.

R 7.4.4.2 - It is recommended to use windows with a free width of 800 mm.

O 7.4.5 - The clear height shall be 950 mm.

NB : only applies to Z-type coaches. In the case of windows with a movable upper part, the overall clear height is reduced by the presence of the frame.

O 7.4.6 - Toilet windows must be made of frosted glass.

O 7.4.7 - Entrance vestibule windows must be double glazed and have the same dimensions as toilet windows.

7.5 - Provisions concerning cleaning

7.5.1 - Outside of windows

O 7.5.1.1 - The panes of fixed windows shall be flush with the outer wall surface.

R 7.5.1.2 - It is recommended not to use projecting frames or decorative elements.

7.5.2 - Inside of windows

O 7.5.2.1 - The frames must be made of resistant materials.

The stops of the tilting windows must be easily accessible.

R 7.5.2.2 - As regards the frame it is recommended:

- to use rounded frame profiles, and
- select mat surfaces, if using metal.

7.6 - Requirements in winter conditions

O 7.6.1 - The material for weather-stripping joints must be such that sufficient elasticity is maintained in temperatures as low as -20°C and that it does not stick to other materials.

O 7.6.2 - Windows must be sealed, even against the effects of rain, snow and ice and sudden temperature variations.

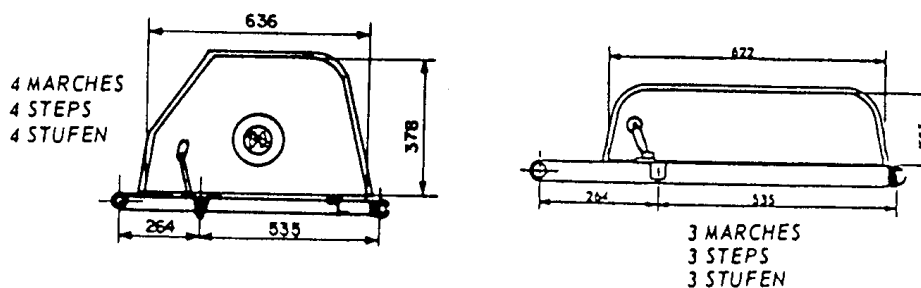
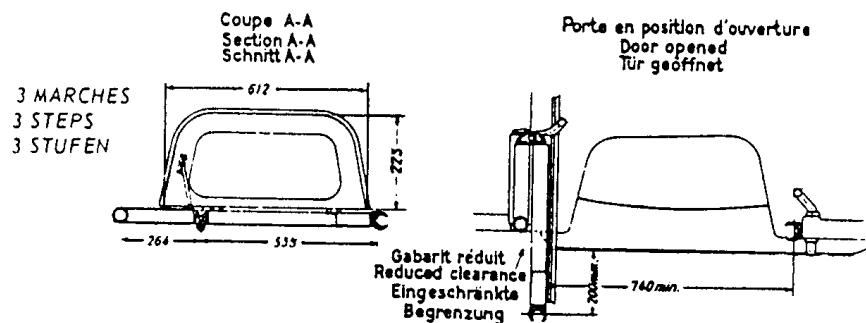
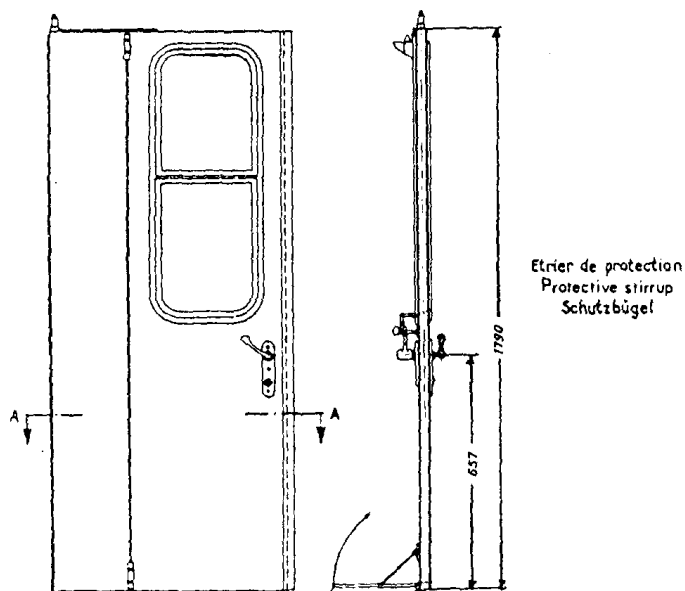
R 7.6.3 - In order to achieve a high level of thermal insulation, it is recommended that window casings be designed in two sections with intermediate thermal insulation.

8 - Work positions for shunters

- O **8.1** - Each side of each coach end must be fitted with a safe work position for shunters.
- O **8.1.1** - On coaches without door ends, a handrail and a step must be provided for the shunters to give them a safe work position.
- R **8.1.2** - On coaches fitted with end doors, where there are no outside handholds or steps for passengers, when the door is closed, special handrails and steps for shunters may be omitted.
- O **8.1.2.1** - In this case, the inner handrails must be arranged so that shunters have a safe position and good handhold, when the door is open. This also applies to all coaches with end doors built after 1 January 1987.
- O **8.1.2.1.1** - The inside handholds shall be arranged as shown in the examples given in Appendix **H** - page 32.
- O **8.1.2.1.2** - In this case of extensive modifications to existing coaches, it is recommended to make allowance for **8.1.2.1.1**.
- O **8.1.2.2** - In addition, the conditions of points **1.1.6** - page 3, **3.3.2.1** - page 10 and **3.4.6** - page 12 of this leaflet must be met.
- R **8.2** - It is recommended that each headstock be fitted with two coupling handles. These must be at least 330 mm long and be situated at a distance of between 500 mm and 750 mm for either side of the coach centre line (Appendix **M** - page 37).

Appendix A - Folding hinged door

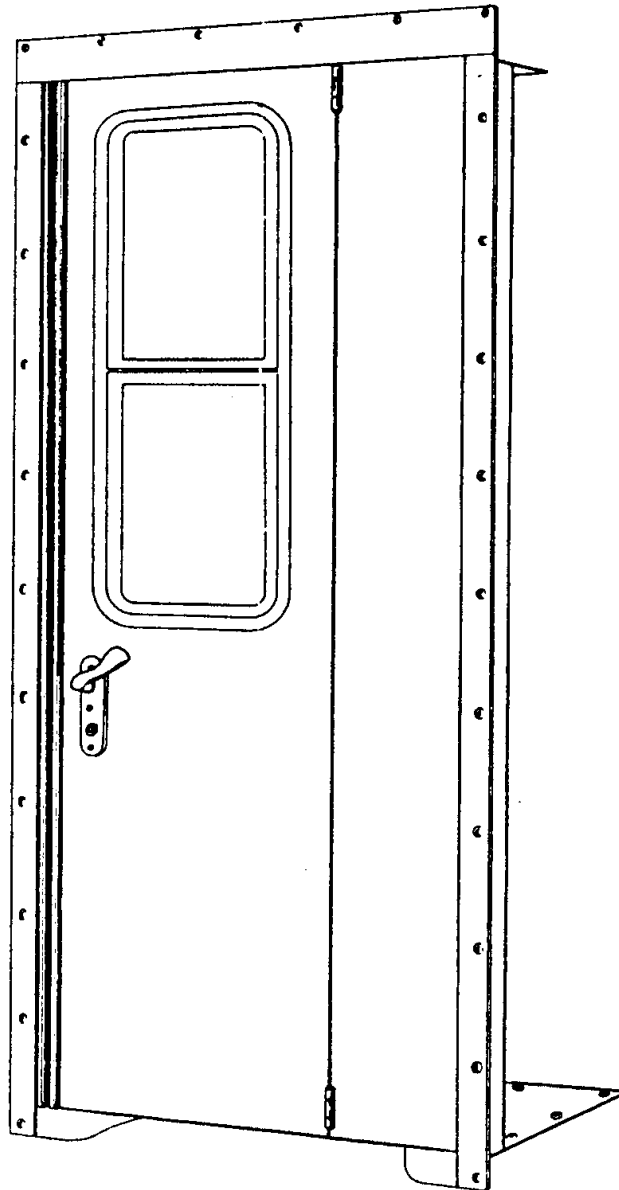
Porte pivotante et pliante
Drehfalttür



Voitures type unifié VTU
Standard coaches VTU
Reisezugwagen der Einheitsbauart VTU

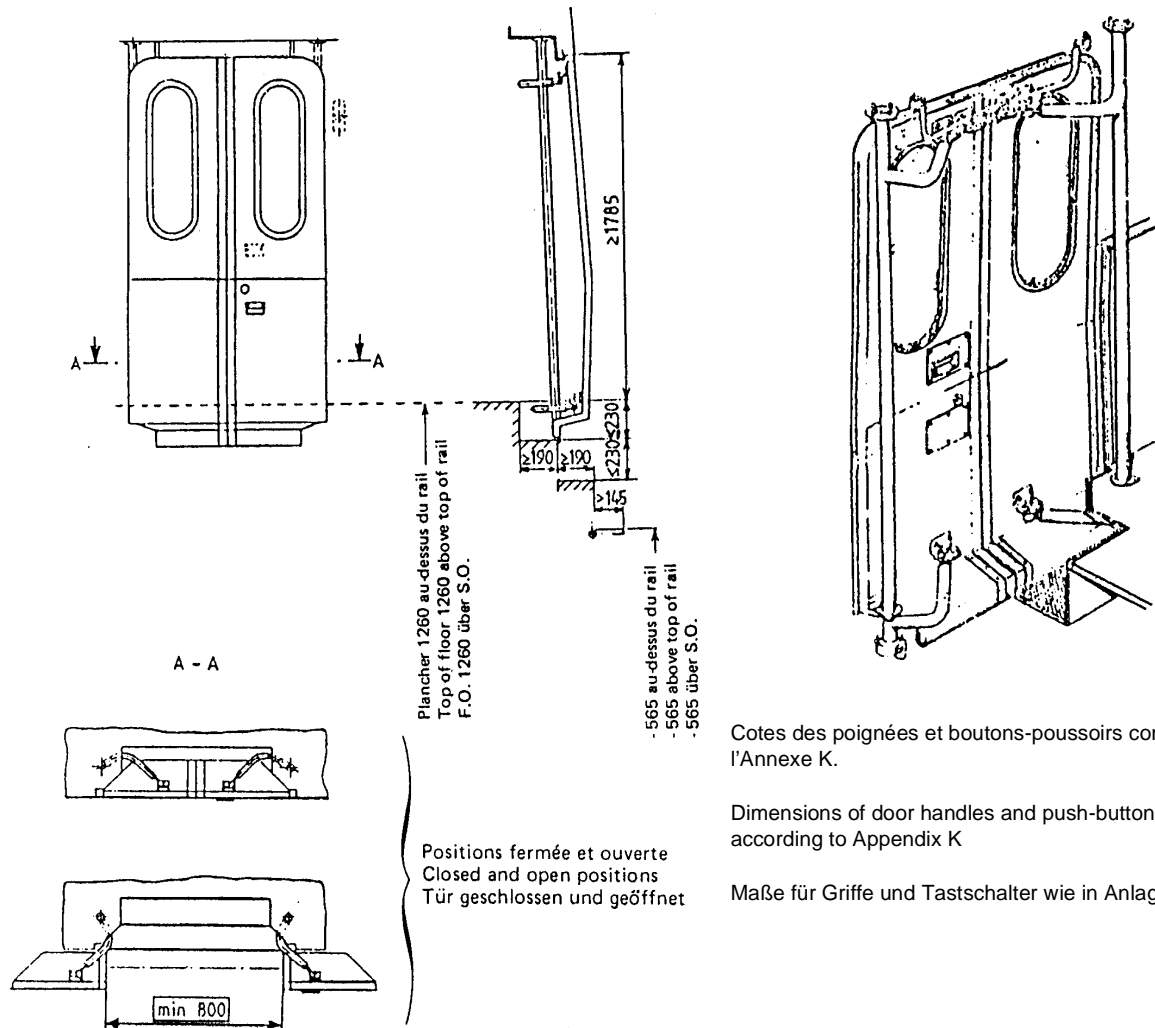
Appendix B - Prefabricated hinged folding door and frame assembly

Porte pivotante et pliante formant ensemble préfabriqué avec son encadrement
Drehfalttür mit Rahmen als Fertigteil



Appendix C - Swing-plug door

Porte louvoyante-pivotante
Drehschwenktür



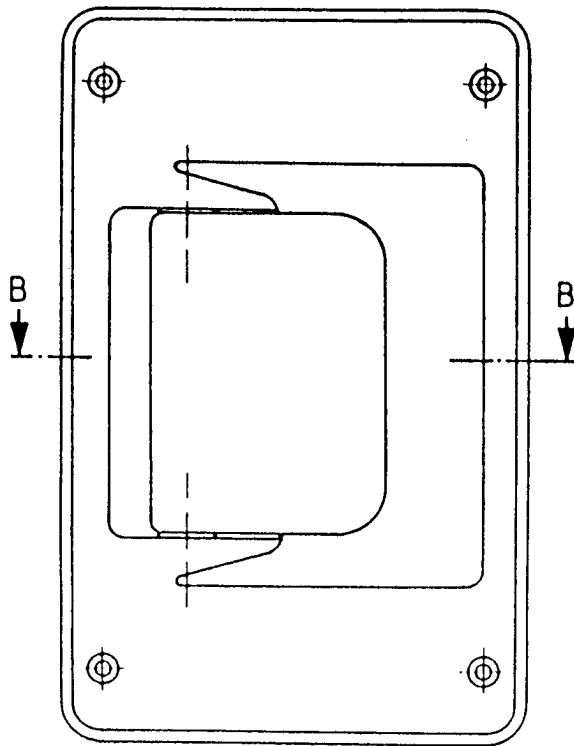
Cotes des poignées et boutons-poussoirs comme à l'Annexe K.

Dimensions of door handles and push-buttons according to Appendix K

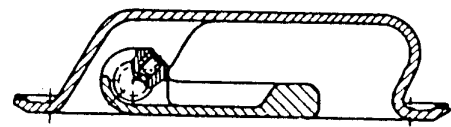
Maße für Griffe und Tastschalter wie in Anlage K.

Appendix D - External handle

Poignée extérieure
Außengriff



Coupe B - B
Section B - B
Schnitt B - B



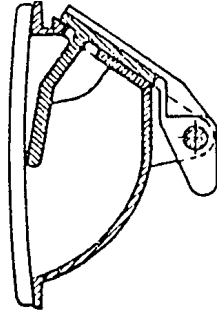
Echelle 1/2
Scale 1:2
Maßstab 1:2

Appendix E - External (and internal) handle

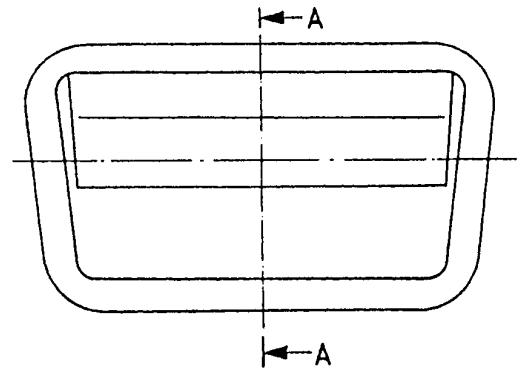
Poignée extérieure (et intérieure)

Außen- (und Innen-) griff

Position de repos
In rest position
in Ruhelage

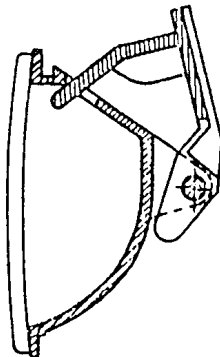


Coupe A-A
Section A-A
Schnitt A-A



Voiture IC NS
NS IC Coach
IC – Reisezugwagen NS

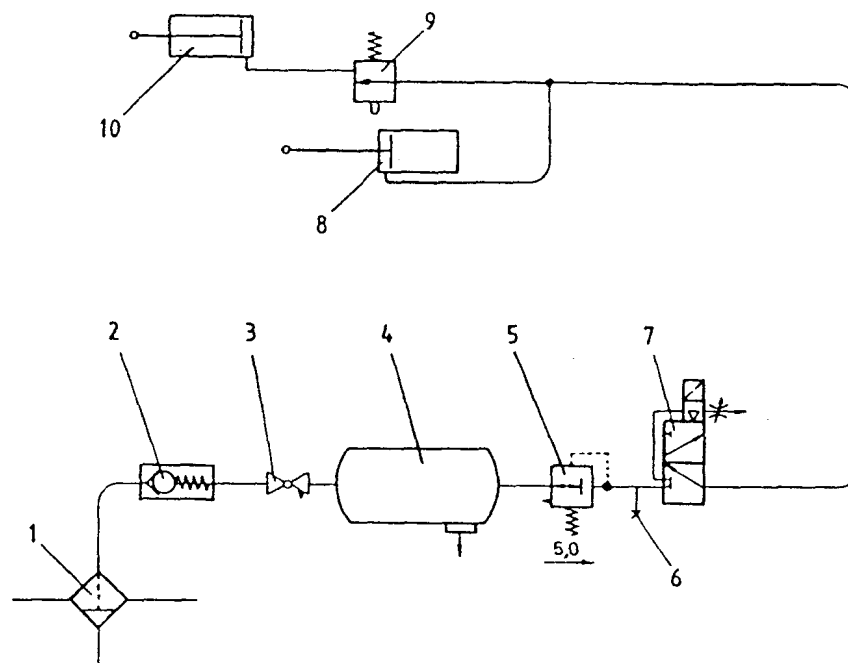
Position levée
Lifted
Aufgedrückt



Appendix F - Illustration of a diagram showing the layout of the electropneumatic device for the closure of folding hinged doors

Exemple de schéma du dispositif électropneumatique de fermeture pour portes pivotantes et pliantes

Beispiel für eine Schema der elektropneumatischen Türschließeinrichtung für Drehfalttüren



- 1. Filtre centrifuge avec robinet de vidange
- 2. Soupape de retenue
- 3. Robinet d'arrêt avec évent
- 4. Réservoir à air
- 5. Soupape de réduction
- 6. Tubulure de contrôle
- 7. Electrovalve temporisée de commande
- 8. Cylindre de fermeture
- 9. Distributeur
- 10. Cylindre de fermeture

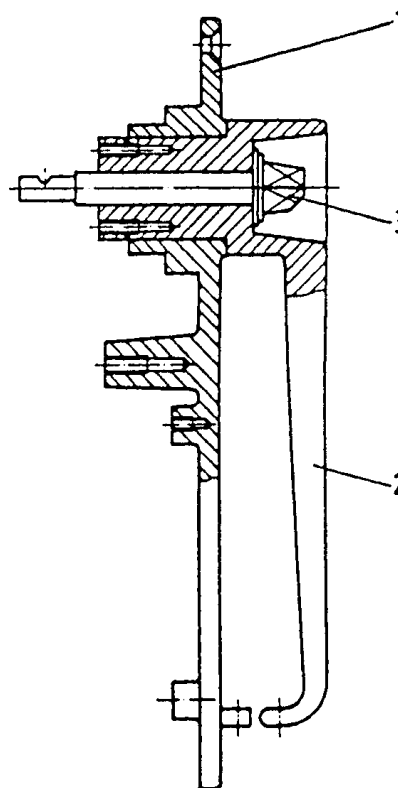
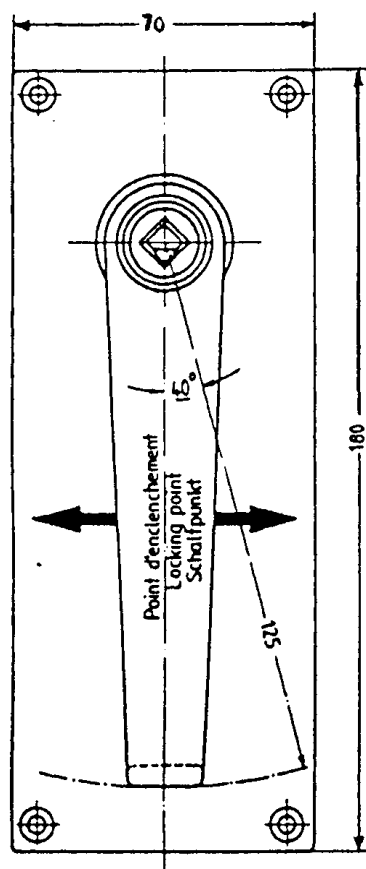
- 1. Schleuderfilter mit Ablasshahn
- 2. Rückschlagventil
- 3. Absperrhahn mit Entlüftung
- 4. Luftbehälter
- 5. Druckminderventil
- 6. Kontrollstutzen
- 7. Elektropneumatisches Zeitschaltventil
- 8. Schließzylinder
- 9. Steuerventil
- 10. Schließzylinder

- 1. Centrifugal filter with drain cock
- 2. Non-return valve
- 3. Stop-cock with outlet
- 4. Air reservoir
- 5. Reduction valve
- 6. Check vent
- 7. Electropneumatic timer valve
- 8. Closing cylinder
- 9. Distributor valve
- 10. Closing cylinder

Appendix G - Emergency switch

Dispositif de secours

Notschalter

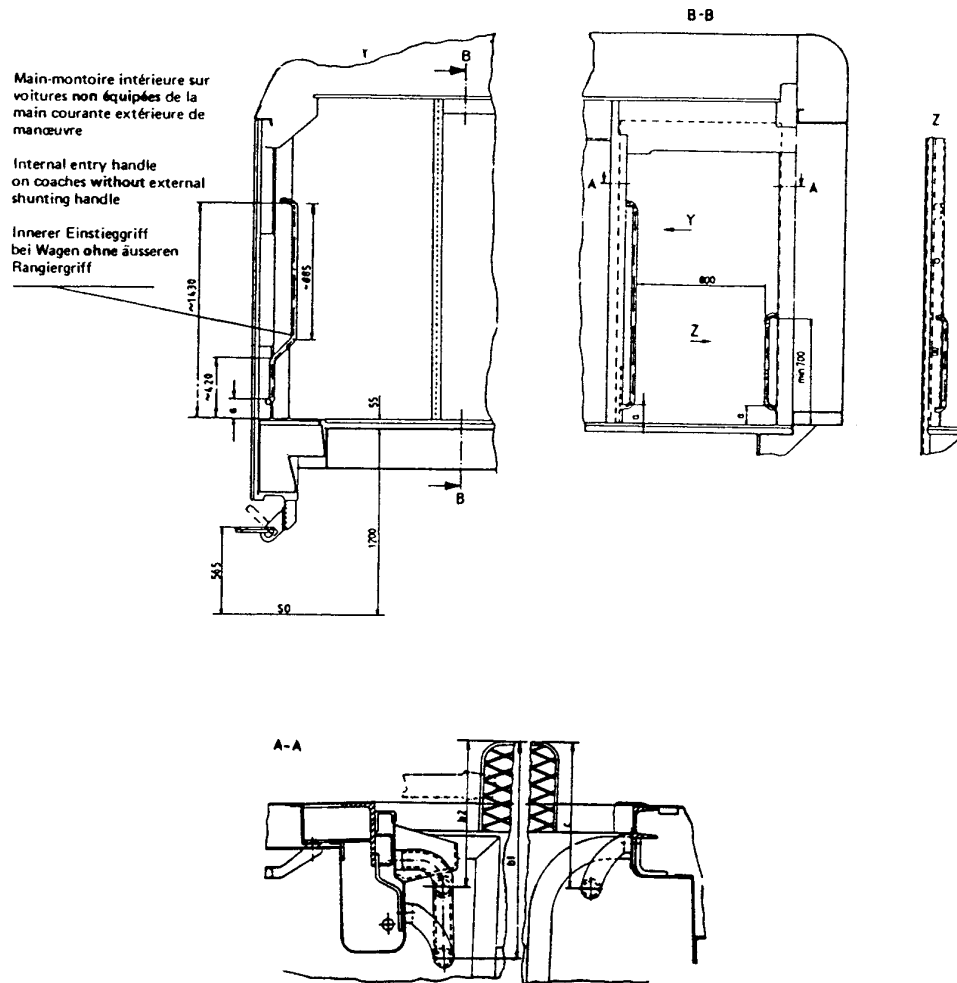


Il est recommandé de réaliser la poignée sans butée
 It is recommended to design the handle without a stop-catch.
 Es wird empfohlen, den Griff ohne Anschlag auszuführen.

1	Châssis de poignée	Handle plate	Griffplatte
2	Poignée	Handle	Griff
3	Arbre	Shaft	Welle

Appendix H - Arrangement of internal entry-handles

Emplacement des mains-montoires intérieures
Anordnung der inneren Einstieggriffe



Cote/Maß/Dimension Indice/Index/Index	a	b ₁	b ₂ =c
sans main courante de manoeuvre ohne Rangiergriff without shunting handle	max. 130 ^a	~ 350	max. 280 ^a
avec main courante de manoeuvre mit Rangiergriff with shunting handle	~ 220	~ 350	~ 350

a. cote obligatoire / obligatory dimension / verbindliches Maß

Appendix I - Precondition for ensuring proper covering of access-door locking systems

Condition à respecter pour assurer un recouvrement suffisant des organes de verrouillage des portes d'accès

Bedingung für das Einhalten einer ausreichenden Überdeckung der Verriegelungsteile von Einstiegtüren

(Reserved)

Appendix J - Folding-sliding door

Porte louvoyante-coulissante Schwenkschiebetür

Commande : ouverture et fermeture par boutons-poussoirs placés sur la caisse (intérieur et extérieur)

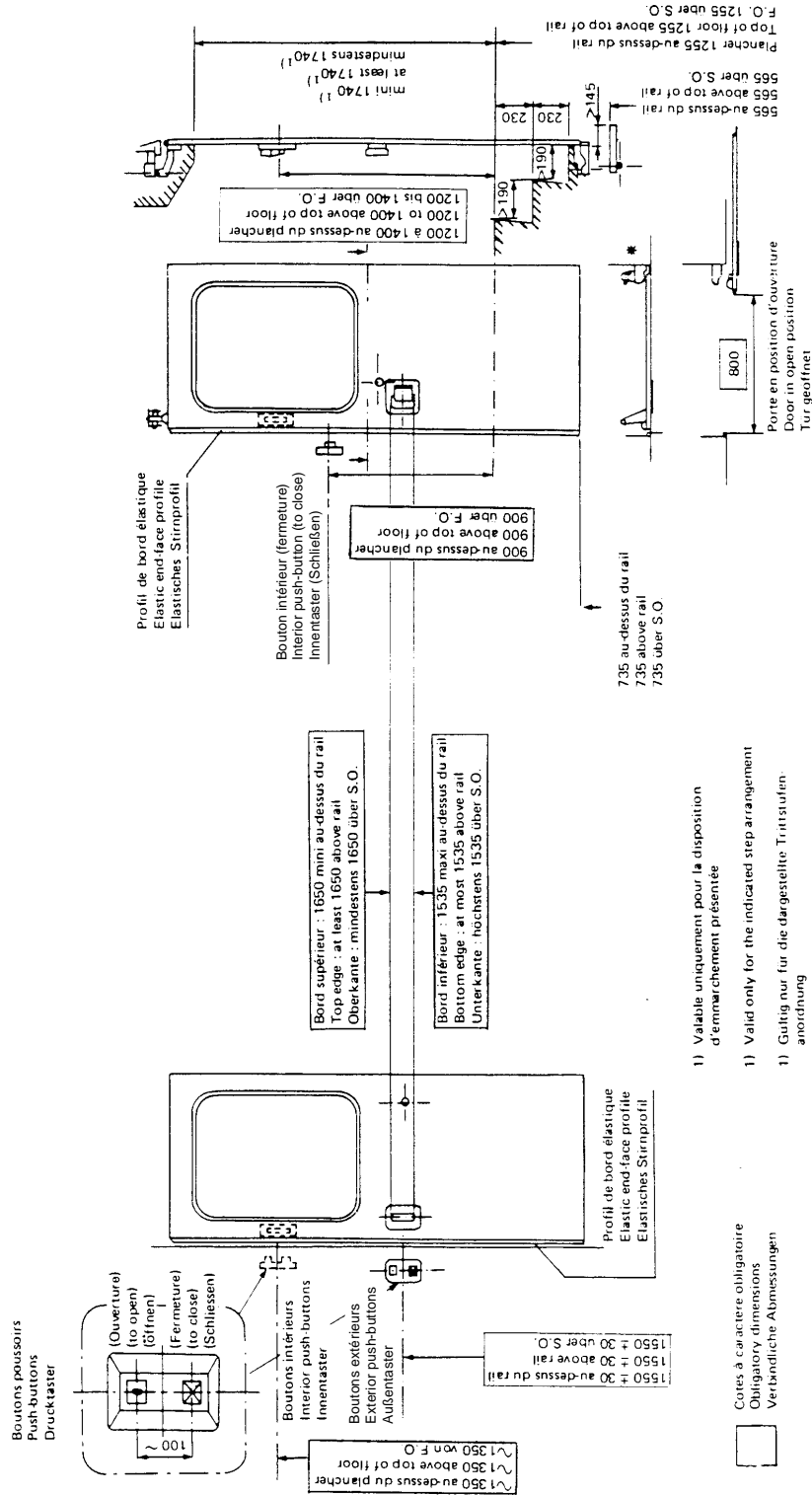
Operation : Open and close via push-buttons on vehicle body (interior and exterior)

Betätigung : Öffnen und Schließen durch Innen- und Außendrucktaster am Wagenkasten

Commande : ouverture par poignée placée sur la porte, fermeture par bouton intérieur

Operation : Open via-door-handle, close via interior push-button

Betätigung : Öffnen durch Griff an der Tür, Schließen durch Innentaster



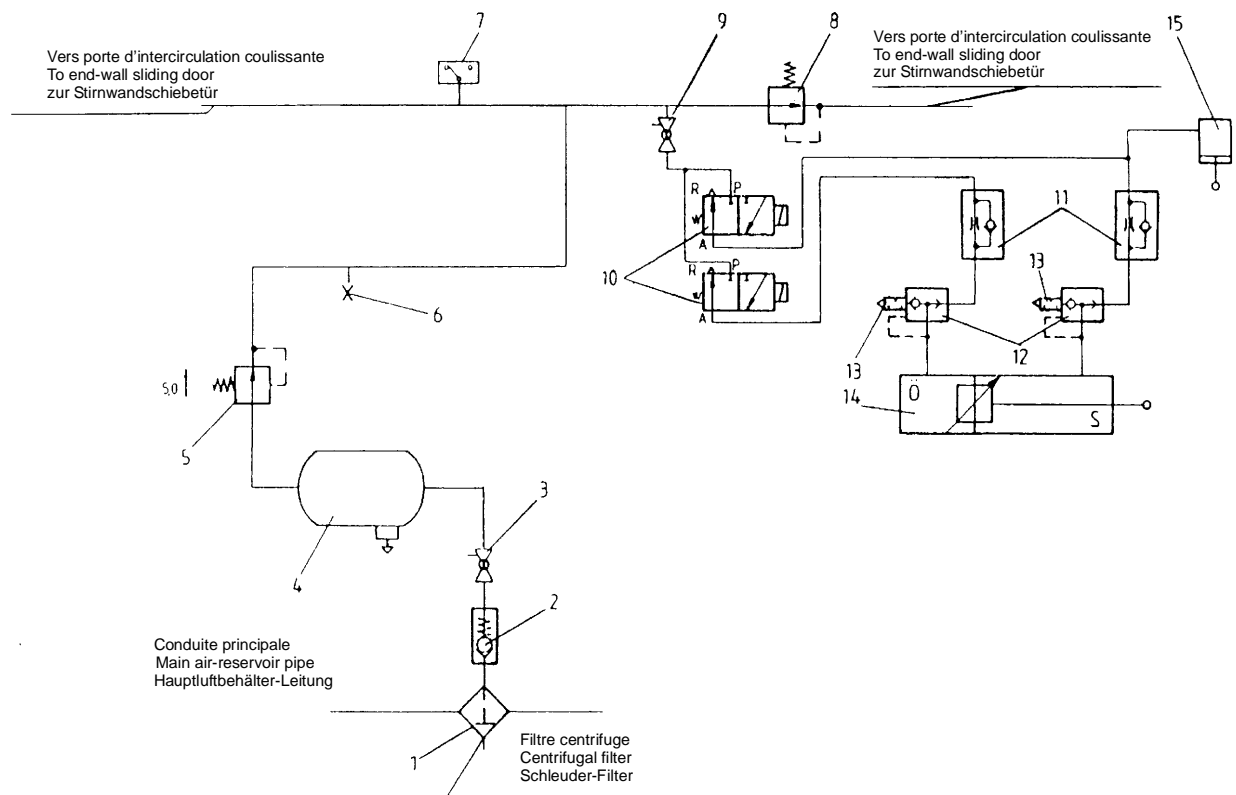
- 1) Valable uniquement pour la disposition d'embarquement présentée
- 1) Valid only for the indicated step arrangement
- 1) Gültig nur für die dargestellte Trittsufenanordnung

Cotes à caractère obligatoire
Obligatory dimensions
Verbindliche Abmessungen

Appendix K - Illustration of a diagram of the electropneumatic closing device for folding-sliding doors

Exemple de schéma du dispositif électropneumatique de fermeture pour portes louvoyantes-coulissantes

Beispiel für ein Schema der elektropneumatischen Türschließeinrichtung für Schwenkschiebetüren



- | | | |
|--|--|---------------------------------------|
| 1. Filtre centrifuge avec robinet de vidange | 1. Schleuderfilter mit Ablasshahn | 1. Centrifugal filter with drain cock |
| 2. Soupape de retenue R 1/2" | 2. Rückschlagventil R 1/2" | 2. Non-return valve R 1/2" |
| 3. Soupape d'arrêt R 1/2" avec évent | 3. Absperrventil R 1/2" mit Entlüftung | 3. Stop valve R 1/2" with outlet |
| 4. Réservoir à air de 75 l au minimum | 4. Luftbehälter mindestens 75 l | 4. Air reservoir of 75 litres min. |
| 5. Soupape de réduction | 5. Druckminderventil | 5. Reduction valve |
| 6. Tubulure de contrôle | 6. Kontrollstutzen | 6. Check vent |
| 7. Interrupteur pneumatique | 7. Druckschalter | 7. Pressure switch |
| 8. Soupape de réduction | 8. Druckminderventil | 8. Reduction valve |
| 9. Soupape d'arrêt avec évent | 9. Absperrventil mit Entlüftung | 9. Stop valve with outlet |
| 10. Electrovalve | 10. Magnetventil | 10. Magnetic valve |
| 11. Soupape d'étranglement de retenue | 11. Rückschlagventil mit Drosselung | 11. Non-return valve with choker |
| 12. Soupape de vidange rapide | 12. Schnellentlüftungsventil | 12. Rapid relief valve |
| 13. Amortisseur de bruit | 13. Geräuschdämpfer | 13. Noise damper |
| 14. Cylindre des portes | 14. Türzylinder | 14. Door cylinder |
| 15. Cylindre de verrouillage | 15. Verriegelungszyylinder | 15. Locking cylinder |

Appendix L - Illustration of a remote-control diagram for door closure

Exemple de télécommande de la fermeture des portes Beispiel einer Fernschaltung zum Türenschießen

Manual closing of the door from which the operation is carried out, without any device for indicating that the doors are closed

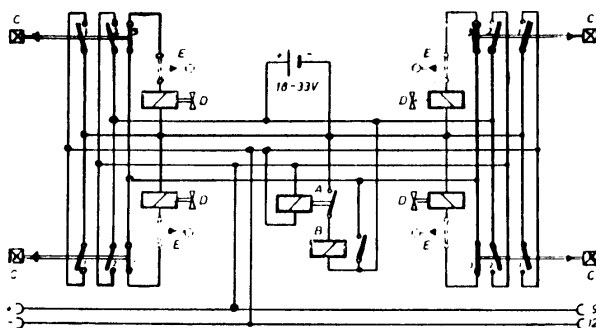
Electromechanical elements may be replaced by electronic elements if this does not constitute a change of the remaining conditions

Fermeture manuelle de la porte de laquelle s'effectue la manoeuvre sans dispositif d'annonce des portes fermées

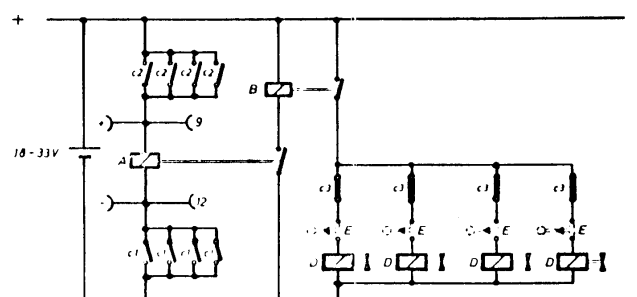
Les éléments constructifs électro-mécaniques peuvent être remplacés par des éléments électroniques à condition de ne pas changer les autres conditions

Schließen der Tür, von der der Schließimpuls ausgeht, von Hand ohne Türverschlussrückmeldung
Elektromechanische Bauteile dürfen durch elektronische Bauteile ersetzt werden, wenn dadurch die übrigen Bedingungen nicht verändert werden

1. Schéma de câblage - Leitungsplan - Cable diagram



2. Cheminement du courant - Stromlaufplan - Direction of current flow

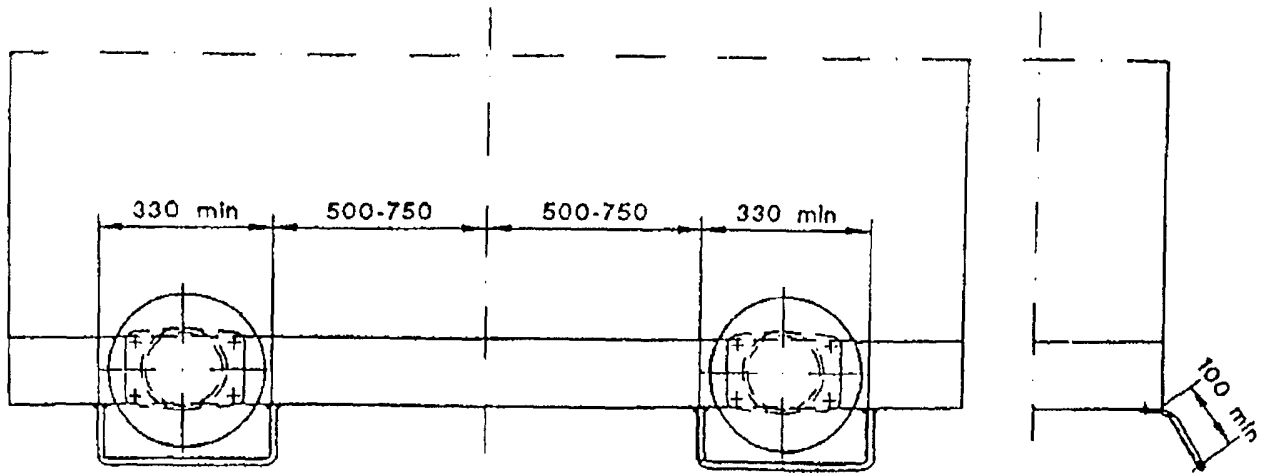


- A : Relais d'impulsion, avec une impédance d'entrée ≥ 1200 ohms.
Tension minimum d'enclenchement 15 V
- B : Relais des électrovalves
- C : Interrupteur à impulsion manoeuvrable avec clé carrée femelle, rotation à droite
- D : Electrovalve
- E : Contacts de verrouillage, représentés en position ouverte des portes. A prévoir seulement en cas de signalisation des portes ouvertes

- A : Impulsrelais mit Eingangs-Impedanz ≥ 1200 Ohm.
Mindestansprechspannung 15 V
- B : Arbeitsrelais zum Schalten der Magnetventil
- C : Impulsschalter mit Vierkant-Hohl-schlüssel mit Drehung nach rechts
- D : Magnetventil
- E : Türkontakt, Stellung bei geöffneter Tür. Nur vorsehen, wenn Türkontakte zur Anzeige offener Türen vorhanden sind

- A : Pulse relay of input impedance ≥ 1200 ohm.
Minimum pick-up voltage 15 V
- B : Electro-pneumatic valve relays
- C : Pulse-operated, switch controlled by a female-type carriage key, right-hand turn
- D : Electro-pneumatic valve
- E : Locking contacts, shown in the open position of the doors. To be provided only where an indication of doors open is incorporated

Appendix M - Layout of coupler handle



Bibliography

1. UIC leaflets

International Union of Railways

Leaflet 564-1 : Coaches - Windows made from safety glass, 1.1.79 - Reprint dated 1.1.90

Leaflet 564-2 : Regulations relating to fire protection and firefighting measures in passenger-carrying railway vehicles or assimilated vehicles used on international services, 1.1.91 and 2 Amendments

Leaflet 565-1 : Special comfort and constructional characteristics for sleeping-cars accepted in international traffic, 1.1.93 and 2 Amendments

Leaflet 565-2 : Special comfort and constructional characteristics and rules of hygiene for restaurant-cars accepted in international traffic, 1.1.79 and 3 Amendments

Leaflet 566 : Loadings of coach bodies and their components, 1.1.90 and addenda and 1 Amendment

Leaflet 567-1 : Standard X and Y coaches accepted for running on international services, 1.1.78 and 7 Amendments

Leaflet 567-2 : Standard Z-type coaches accepted for running on international services, 1.7.91 and 2 Amendments

2. Minutes of meetings

International Union of Railways

Sub-Committee for Coaches (Question 45/A/FIC, Point 8.4 - Examination of an NS proposal to revise the provisions on the reliability of access door control systems), May 1989

Traction and Rolling Stock Committee (Question 45/A/FIC, 17.5 Amendments resulting from drafting of Leaflet 567), June 1990

Traction and Rolling Stock Committee (Question 57/A/FIC, 30.3 - Other business - a) Permissible loading gauge of vehicles on lower folding step of coaches), October 1991

Sub-Committee 45A for Coaches (Question 45/A/FIC, Point 7.5 - Amendment to Leaflet 560 proposed by DB concerning the requirements to be met for protecting the end doors of coaches against fire), January 1995

Rolling Stock Committee (Question 45/A/FIC, Point 9.6 - Amendments to the leaflet proposed by ÖBB), May 1995

Sub-Committee 45A for Coaches (Question 45/A/FICb) - Point 7.2 - Difficulties in winter operating. Proposals for amendments to leaflets prepared by ERRI SC B 106), September 1995

Rolling Stock Committee (Question 45A7.1.3 - Studies on adapting and improving arrangements for passenger rolling stock accepted for international working. Transport of physically - challenged persons. Boarding-assistance systems built into coaching stock. Submission and approval of study - group proposals), April 1997

Sub-Committee 45A for Coaches (Question 45/A/FICc) - Proposal from RIV/RIC Bureau for modification to UIC Leaflet 560 - Addition to point 3.1.2), June 1996

Sub-Commission 15 - Passenger vehicles (Question 45AFIC, Point 8.19, Leaflet 560, exemption from point 1.4.1, point 8.1.10, Leaflet 560 ; modification to point 1.8.3 and Appendix 9 - Access-door locking devices), January 1998