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Fittings provided in coaches in the interests of hygiene and cleanliness

International Union of Railways

Leaflet to be classified in volumes:

IV - Operating

V - Traction stock

Amendments

1	1.1.91	
2	1.7.91	
3	1.1.93	
4	1.1.96	

Preliminary remarks:

Obligatory provisions are preceded by an asterisk: *

A double vertical line (‖) in the margin denotes amendments introduced at the date shown at the foot of the page.

Enforcement of this leaflet is governed by the provisions given under "Application" at the end of this document.

Note

This leaflet is part of a set which also includes :

Leaflet 413 : Measures to facilitate travel by rail.

Leaflet 505-2 : Kinematic gauge for coaches and vans used on international services.

Leaflet 508-1 : Interaction between passenger rolling stock and fixed installations.

Leaflet 550 : Power supply installations for passenger stock.

Leaflet 553 : Ventilation, heating and air-conditioning in coaches.

Leaflet 560 : Doors, entrance platforms, windows, steps, handles and handrails of coaches and luggage vans.

Leaflet 566 : Loadings of coach bodies and their components.

Leaflet 567-1 : Standard X- and Y-type coaches accepted for running in international traffic - Characteristics

Leaflet 567-2 : Standard Z-type coaches accepted for running in international traffic - Characteristics.

Leaflet 580 : Inscriptions and markings, route indicators and number plates to be affixed on coaching stock used in international traffic.

Leaflet 890 : Technical specification for the supply of paper hand towels.

Leaflet 891 : Technical specification for the supply of toilet soap in cake form for use in dispensers.

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1 - General conditions

* **1.1** - Any vehicle intended to be used for the conveyance of passengers must be provided with at least one toilet. Coaches with room for more than 40 seated passengers must be provided with two toilets. A wash-basin must be installed in each toilet.

* The ambient temperature must be at least 20° C. The necessary precautions to this end must be taken by thermally insulating the toilets against the range of outside temperatures stipulated in Leaflet 553 for passenger-dedicated areas.

* **1.2** - All necessary measures should be taken to ensure that the conditions provided for both the users and maintenance staff are fully hygienic.

* **1.2.1** - The toilet must be designed aesthetically and ergonomically.

1.3 - It is recommended that, at each end of the coaches, an extra toilet should be provided, separate from and in addition to a lavatory with wash-basin.

* **1.3.1** - The basic equipment must include the fittings usually provided in toilets (wash-basin, sink fittings, flushing device, etc.).

* **1.4** - The water tanks and pipes must be so designed that continuous use of coach amenities is guaranteed down to temperatures of - 20°C. Furthermore, it must be possible for coaches to remain stationary in the open air with the heating system turned off for a continuous period of 12 hours at an external temperature of - 10°C, without any harmful formation of ice or water-supply breakdown when the coach is replaced in service, assuming that the internal temperature of coaches was approximately + 20°C before the heating system was turned off.

* The water tanks must be housed in a protected area with adequate thermal insulation and if necessary in a temperate room.

* They must be compact and if possible cylindrical.

* The tanks must be bonded to avoid the formation of thermal bridges.

* **1.5** - Fittings must be as simple as possible in order to reduce repairs and maintenance work (checks, inspection, cleaning, etc.). The latter shall be included in regular overhauls. Components must be easily accessible and easy to maintain.

* **1.6** - Toilet bowls must be strong, easy to clean and designed to resist damage during cleaning.

* **1.7** - Sanitary fittings should be designed for ease of maintenance and cleaning :

- rounded shapes, all parts of which are easy to reach,
- resistant to corrosion, cleaning products, abrasion, etc.,
- stain-resistant surfaces.

1.8 - Retention toilets are accepted in international traffic.

* **1.8.1** - They must comply with the provisions in section 6.

* **1.8.2** - Their use should be governed by bilateral or multilateral agreements.

2 - Water supply

* **2.1** - All coaches must be fitted so that water can be provided for flushing the lavatories and for use in the wash-basins, and an inlet connection must be fitted in the lower part of the side walls, in accordance with Appendix 1 to this leaflet.

* **2.2** - The inlet pipes fitted to the water tanks must have a diameter equal to that of the bayonet joint.

All pipes should have a large diameter wherever possible and be set at a sufficient angle. They must be direct wherever possible.

They must be installed in a manner that precludes formation of water pockets and air trapping.

* **2.2.1** - Inlet connections in coaches built after 1 July 1989 must be fitted with a special dirt and snow shield.

2.2.1.1 - It is recommended that this shield cover the outside of the connection over a minimum length of 12 mm.

* **2.2.1.2** - It must be designed to allow condensation and overflow water to drain off freely, to ensure that the connection will not become frozen and to obviate the likelihood of excess pressure when filling the tanks.

2.2.1.3 - A practical example is given in Appendix 2.

2.3 - Fresh water supply

* **2.3.1** - For coaches built from 1 January 1977, the capacity of the water tanks must be at least 400 litres at each end of coaches with traditional toilets.

* **2.3.2** - In the case of retention toilets, the quantity of fresh water must be calculated to ensure that it is sufficient for a train journey of one day.

* **2.3.3** - The tanks and the filling and emptying pipes must be made of material that will not deteriorate and, in particular, is not corrosive or toxic. For this purpose, untinned (deoxidised) copper is a suitable material as when in contact with water it has a germ-killing effect.

* **2.4** - The water supply must be installed so as to prevent the water from freezing in heated coaches, irrespective of the external temperature.

2.4.1 - In order to reduce the risk of freezing, it is recommended that hand valves be placed near water tanks on pipes supplying lavatories and wash-basins.

* **2.5** - Water tanks and pipes must be provided with a drainage system designed to ensure complete emptying and efficient rinsing.

This system must be designed to guarantee smooth operation of tanks and piping after prolonged exposure to low external temperatures once the coach is replaced in service.

Valves :

Provision must be made for the possibility of centralised discharge at an appropriate point on the water supply system. It must be possible to operate it using the Bern key.

This centralised discharge option may be supplemented by a thermostat-controlled discharge valve which is actuated automatically before the water in the supply circuit freezes.

It must be possible to empty the water supply system completely within 10 to 30 minutes. However, this limit may deliberately be exceeded in the case of thermostat-controlled graduated discharge, whenever there is a risk of parts of the system freezing up in critical areas.

* **2.5.1** - Coaches must possess water level indicators including gauges on the outside of the vehicle.

2.5.2 - On coaches built before 1 January 1989, water gauges may also be fitted inside the vehicle.

2.5.3 - Examples of external indicator design are to be found in Appendices 3, 4 and 5.

* **2.6** - In the case of coaches complying with point 2.4 above, the devices facilitating the drainage of the water system for the toilet compartments must be identified by means of a yellow ring placed in the immediate vicinity of the fitting controlling the operation of these devices. In addition, inlet connections at the bottom of the side walls must be marked by a painted yellow ring placed close to these connections.

* **2.7** - In the case of coaches complying with point 1.4 above, the same markings must take the form of a yellow disc.

* **2.8** - In the case of coaches not complying either with point 2.4 or with point 1.4 above, the same markings must take the form of a green ring.

* **2.9** - The external diameter of these coloured signs must not be less than 40 mm.

3 - Heating of water for wash-basins

3.1 - It is recommended that the water for wash-basins be moderately hot.

3.1.1 - When the water for wash-basins is heated in a separate small capacity tank, it is recommended that a system be provided so that water can circulate between this smaller tank and the main tank.

* **3.2** - The water for wash-basins should not be heated to a temperature of more than about 30°C. The installation must be protected against over-heating by another device also when the tank is empty.

* **3.3** - When the water for wash-basins is heated by means of immersion heaters, these shall have an approximate power of 750 W.

The data relating to electric power are shown in UIC Leaflet 550.

* **3.4** - It must be possible to control the water heater for wash-basins by means of a switch (see UIC Leaflet 550).

4 - Fittings in toilets and washrooms

4.1 - Provisions applicable to all coaches accepted for running in international traffic.

4.1.1 - Dimensions

4.1.1.1 - It is recommended that the following minimum floor spaces be provided:

- 1.20 m^2 for toilets with a wash-basin; minimum width 0.9 m;
- 0.60 m^2 for washrooms, minimum width 0.7 m.

4.1.1.2 - It is recommended that there be a distance of at least 500 mm between the toilet seat and the inner panel of the wall.

4.1.2 - Partition walls and linings.

4.1.2.1 - Materials used for the partition walls of toilets must be moisture resistant.

* **4.1.2.2** - Linings for walls, cupboard doors, ceilings and covers must meet the following requirements:

- antistatic,
- smooth shiny surfaces for areas in enamel or synthetic materials,
- a pattern which does not accentuate stains,
- resistance to cleaning products, disinfectants, and, in the toilet pan area, urine,
- resistance to impact and abrasion for the lower part of partition walls and doors.

4.1.2.4.1 - A matt surface is recommended for metal areas.

4.1.2.5 - It is recommended that joints be avoided as much as possible.

* 4.1.2.5.1 - If it is impossible to avoid them, they must be designed to be watertight when washed, at least up to the top edge of the sink unit, with high-pressure water sprays (maximum 70 bars at nozzle outlet at a rate of 10 litres/minute).

This provision applies to coaches built after 1 July 1989.

* 4.1.2.3 - Jointing sleeves must project as little as possible in order to allow easy cleaning of surfaces.

* 4.1.2.4 - The floor must form a regular pan rounded off at the edges, made of a material impervious to high-pressure water sprays, and connected to the partition walls by a sealed joint. No rods are to be inserted into this floor.

* 4.1.2.4.1 - The floor material must be resistant to urine, cleaning products and disinfecting products, and, as far as possible, abrasion ; its non-slip surface, even when wet, shall be of a colour which does not accentuate stains ; any raised surface pattern should have a maximum height of 3 mm and be rounded to prevent retention of stains.

* 4.1.2.4.2 - A drain with a plug should be provided in the floor. The plug must be convenient and accessible and be made of non-corrosive material.

* 4.1.3 - Toilets and washrooms must be suitably ventilated.

4.1.3.1 - It is also recommended that the upper part of the toilet window should open.

4.1.3.2 - The existence of a window is not obligatory in :

— washrooms,

— toilets in air-conditioned coaches.

* 4.1.4 - When building coaches, the following conditions must be applied so as to obtain a uniform design of the toilet pan, seat cover and seat, the lower closing flap, the flushing system and fittings :

* 4.1.4.1 - The pan must be constructed from scratch-resistant, non-corrosive material ; its inside shape and surface must facilitate disposal of faeces ; its outside should have a smooth surface with as few protuberances as possible and must be easily accessible for cleaning.

* 4.1.4.2 - The bottom of the pan must be provided with a closing flap which opens when the flush is operated.

* 4.1.4.2.1 - The closing flap shall be of non-corrosive material ; it must be freeze-resistant ; it must remain shut when the flush is not in operation.

* 4.1.4.3 - The seat and seat cover must be made of non-brittle material, must not warp or discolour, must be resistant to cleaning products and disinfectants, and must have a smooth and resistant surface.

* 4.1.4.4 - The seat and seat cover must remain in place when raised, even when the vehicle is moving.

* 4.1.4.5 - When closed, the seat cover must completely cover the toilet seat.

This provision is obligatory for coaches delivered from 1 July 1989.

4.1.4.5.1 - It is recommended that point 4.1.4.5 should also apply to existing coaches.

* 4.1.5 - The down pipe and the aperture covered by the closing flap must have an unobstructed opening of at least 115 mm on traditional non-retention toilets.

* 4.1.5.1 - The pipe must be made of non-corrosive material.

* **4.1.5.2** - In order to protect the down pipes against freezing and to ensure adequate hot air intake from the coach interior, the outlet pipe must be cut horizontally at the bottom end and be fitted with a suction nozzle.

4.1.5.3 - It is recommended that the down pipe be fitted vertically and have a cone-shaped design towards its bottom part, its smallest diameter being greater than that of the toilet bowl outflow pipe.

* **4.1.5.3.1** - The material used and the layout adopted must ensure the system can be easily unblocked, whilst also guaranteeing ease of access and replacement from the vehicle exterior.

* **4.1.5.4** - The waste water outlet must be fitted so that it does not interfere with the operation of equipment located under the coach body and in the bogies or, in particular, the operating safety of axle-boxes and the effectiveness of braking equipment. The formation of ice on these components must also be prevented as far as possible.

* **4.1.6** - Operation of the flush must leave the toilet bowl properly clean.

* **4.1.6.1** - To meet the requirements of maintenance departments, it must be possible to operate the flush for cleaning purposes when the coach is stationary.

* **4.1.6.2** - The flush should be controlled by a foot pedal or any other device (push-buttons, for example).

* **4.1.6.3** - Attachments must be of non-corrosive material.

* **4.1.6.4** - Operation of the equipment as a whole (flush, pumps, etc.) should not occasion aural discomfort either inside or outside the vehicle, whether the vehicle is stationary or in motion.

* **4.1.7** - The construction of wash-basins, wash-basin taps and their controls must comply with the following regulations :

* **4.1.7.1** - The wash-basin must be regular in shape and built of non-corrosive materials resistant to abrasion and discolouration (including the wash-basin base, to ensure easy evacuation of water).

* **4.1.7.2** - The drain hole must be situated at the lowest point of the bottom of the basin ; it must not be fitted with a plug, since dirty water must be able to drain away immediately.

* **4.1.7.3** - The drain hole must only be fitted with a perforated plate or similar device mounted level with the bottom of the wash-basin.

* **4.1.7.4** - The wash-basin tap shall be controlled by a foot pedal ; other devices may be used, especially push-buttons.

* **4.1.7.5** - The mouth of the wash-basin tap must be situated at least 100 mm above the rim of the wash-basin and its position must leave space for passengers to wash their hands under running water.

* **4.1.7.6** - The nature of water flow from the tap (quantity, pressure, etc.) must be such that passengers can wash their hands without splashing.

* **4.1.8** - Directions indicating the method of operating the various controls must comply with the pictograms in UIC Leaflet 413.

4.1.8.1 - The directions indicating how to operate the various controls may also be :

- either in 4 languages (English, French, German and Italian) ;
- or in the language of the owning railway and 2 of the above-mentioned 4 languages.

* **4.1.9** - The pictogram "Water unfit for drinking" in accordance with UIC Leaflet 413 must be placed close to the wash-basin taps.

4.1.10 - Lavatories and toilets in coaches must be provided with the following accessories :

* **4.1.10.1** - A dispenser for paper hand towels (an example is given in Figure 1 of Appendix 6).

* **4.1.10.1.1** - The maximum distance between the floor and the upper edge of the dispenser shall be 1750 mm.

* **4.1.10.1.2** - It shall be placed so as to be easily visible and accessible (possibly indicated by a pictogram).

* **4.1.10.1.3** - It shall be easy to refill.

* **4.1.10.1.4** - It shall be directly affixed to or set into the wall.

* **4.1.10.1.5** - If folded towels are used, the dispenser shall carry directions as to how it is to be filled.

4.1.10.1.6 - It is recommended that dispensers be designed so that the level of the stock is directly visible from outside.

4.1.10.1.7 - It is recommended that a lock with a retractable latch be fitted to this dispenser.

4.1.10.1.8 - Electric hand-dryers may be used, in which case paper hand-towel dispensers need not necessarily be provided.

* **4.1.10.2** - A receptacle for used towels.

* **4.1.10.2.1** - The receptacle must be convenient to empty, and it must be possible to do so without having to handle the towels themselves.

* **4.1.10.2.2** - The unobstructed opening shall be 100 × 200 mm minimum ; the volume shall be at least 10 litres (16 litres recommended).

4.1.10.2.3 - It is recommended that it be fixed in wash-basin unit.

* **4.1.10.2.4** - It must be constructed of non-corrosive and fireproof material.

* **4.1.10.2.5** - If electric hand-dryers are provided, this receptacle should, nevertheless be retained.

* **4.1.10.3** - A holder for toilet paper rolls provided with a hinged cover plate and in accordance with the dimensions shown in figure 2 of Appendix 6.

4.1.10.3.1 -
Any other arrangement with a greater capacity is recommended.

* **4.1.10.3.1.1** - Such an arrangement must meet the condition of being able to hold rolls of normal size.

4.1.10.3.2 - It is recommended that the holder should be locked in the position for use (an RIC carriage key should be used).

* **4.1.10.4** - A soap dispenser, for either solid soap (in accordance with Appendix 8), or liquid soap (see point 4.1.10.4.3).

* **4.1.10.4.1** - The dispenser must be easy to clean and refill.

* **4.1.10.4.2** - It shall be fitted above the wash-basin.

* **4.1.10.4.3** - If liquid soap is used, the volume of the dispenser shall be such that it is not necessary to refill it outside the owner railway.

* **4.1.10.5** - A hook.

* **4.1.10.6** - A sufficiently large level surface or surfaces with a rounded edge to prevent objects falling off.

* **4.1.10.6.1** - These surfaces must be positioned to avoid splashes from the wash-basin.

4.1.10.7 - A cigarette-tray is recommended.

* **4.1.10.7.1** - It must be of non-inflammable, burn-resistant material.

4.1.10.8 - It is recommended that a receptacle be provided to hold a deodorant.

* **4.1.10.9** - One or several mirrors as large as possible.

* **4.1.10.9.1** - They should cover the entire surface of the partition wall panel or not hinder its cleaning.

* **4.1.11** - The characteristics of paper hand towels are stipulated in UIC Leaflet 890.

5.2.7.1 - It is recommended that point 5.2.7 should also apply to existing coaches.

5.3 - Litter bins at ends of coaches

* 5.3.1 - They shall be visible and easily accessible.

* 5.3.2 - They shall have a minimum capacity of 16 litres.

* 5.3.3 - Their minimum opening shall be 100 x 200 mm.

* 5.3.4 - It must be possible to empty them by:

- easy removal of the bin,
- extraction of the litter by hand.

* 5.3.5 - The lid, if there is one, must not impede emptying.

* 5.3.6 - They shall be accompanied by the pictogram shown in Leaflet 413.

5.4 - Ashtrays

* 5.4.1 - They must be watertight, fireproof, resistant to burns and corrosion.

* 5.4.2 - It must be possible to empty them with one hand in a simple gesture allowing litter to be emptied into a receptacle held by the other hand whilst not dirtying nearby trimmings.

6 - Special provisions for retention toilet fittings

6.1 - Basic equipment

* 6.1.1 - The equipment must not cause unpleasant odours or stains inside or outside the coach or adjoining coaches, even when being evacuated.

6.1.1.1 - The use of fresh-water flush systems is recommended. Vehicles fitted with recirculation toilets may only be approved on the basis of bilateral agreements.

* 6.1.2 - The equipment must not involve large-scale consumption of energy.

* 6.1.3 - Water tank and retention-tank capacity.

The dimensions of water tanks and retention tanks shall be calculated on the basis of the following values:

- 0.25 uses of toilet per seat and per hour of vehicle utilisation (minimum duration of daily utilisation: 10 h; for long-haul coaches in international traffic: 16 h);

- water tanks shall be of sufficient size to guarantee fresh-water supply for a 24-hour train run with absolute certainty;

- retention-tank capacity shall be sufficient to enable 72 hours to go by between two emptying operations.

* 6.1.4 - The equipment must be designed such that any objects that may be thrown into the toilet pan do not cause incidents when the toilet is used or when the waste-water tanks are emptied. Objects more than 40 mm long must not be able to enter the waste pipe.

* **6.1.4.1** - For fresh-water flush systems, the equipment shall be considered protected when the toilet bowl waste pipe has a shape and diameter (< 45 mm) constituting the smallest diameter in the whole toilet system ; the shape of the waste pipe must be such as to prevent long narrow objects (ball-point pens or disposable syringes, for example) from entering the system.

* **6.1.5** - In recirculation systems, the colouring of the flush mixture must be acceptable to the user.

6.1.6 - It is recommended that electric hand-dryers (complying with the specifications in Appendix 19) or automatic roller towels be used. In such cases, it is recommended not to install paper-towel dispensers in order to avoid the danger of equipment malfunctioning due to possible build-up of paper in the tanks.

* **6.1.7** - The "toilet engaged" sign must be the same as in coaches without retention toilets.

6.1.8 - It is recommended that the toilet door be provided with an automatic locking device in the case of malfunction (e.g. no water, emptying system down, etc.) or overflow of the retention system. This device must, however, allow egress from the toilet at all times and opening by staff on duty.

* **6.1.9** - If a toilet is not to be used (out of order, retention tank full, etc.) this must be indicated by a coloured light over or next to the door. This light must be provided with a pictogram indicating that the toilet is out of order (use prohibited).

* **6.1.9.1** - The coloured light must flash when the fault occurs, regardless of whether the toilet is locked or not.

The locking of the toilet by a member of the train crew and acknowledgement of this operation on the control panel must result in the flashing light ceasing to flash and remaining permanently on.

* **6.1.9.2** - The "toilet engaged" sign must light up at the same time as the coloured light (flashing or constant) indicating that use of the toilet is prohibited.

* **6.1.10** - The fittings and different components must be designed to be proof against freezing (paragraphs 1.4, 2.4 and 2.5 of this leaflet). In particular, retention tanks situated beneath the coach body must be insulated and provided with a heating device to prevent freezing during both normal running and stops to comply with operating requirements.

It is recommended that stationary coaches be supplied with a minimum of power (thermal chain) through the train line to protect them from freezing.

The pipes of toilet bowls fitted with flaps must be heat insulated, with heating as and when required (Appendix 22).

Once the water tank has been emptied, several rinsing cycles must be automatically triggered in order to flush away all water from the toilet system pipes.

6.1.10.1 - Examples of locations for retention tanks, extractor nozzles and markings are given in Appendix 20.

* **6.1.11** - The volume of each flush must be such that the waste water remains sufficiently liquid and that no blockages result in the emptying equipment.

6.1.11.1 - A volume of no less than 0.4 l. is recommended for each flush.

6.2 - Fittings

* **6.2.1** - It must be possible to use the equipment normally during halts in stations and for a time in ferries. In the latter case, the coaches shall not receive power from the high-voltage train line and must run on batteries and/or the compressed air available in the coach.

* **6.2.1.1** - This clause must also be respected should there occur a breakdown in electric power supply resulting in battery-only operation.

6.2.1.1.1 - Where this is the case, it is recommended that provision be made for approximately 10 flushes per toilet. However, each railway shall make an individual decision according to its own criteria of use.

* **6.2.2** - All measures must be taken to prevent accumulation of inflammable gases in the tank from being the source of an explosion (these gases may be produced by the fermentation of effluents: methane, etc.).

6.3 - Emptying of retention tanks

6.3.1 - The period between two successive emptying operations (see paragraph 6.1.3) depends firstly on the emptying cycle chosen by the railways involved and secondly on the authorised time-limit for proper operation (smells, effectiveness of the additive in the case of recirculation systems, proliferation of bacteria, performance of emptying equipment, etc.). These different factors will determine the volume of the retention tank to be adopted.

* **6.3.2** - Retention toilet fittings and retention tanks in particular must be designed for emptying by suction (vacuum extraction: a maximum value of 0.2 bar must be borne by the tank).

* Retention tanks under atmospheric pressure must be fitted with a sufficient number of aeration facilities.

* **6.3.3** - Retention tanks and components in contact with liquid matter (pumps, pipes, etc.) must be designed to allow full emptying and ease of maintenance even in freezing weather conditions.

Inside access apertures must be provided to facilitate cleaning and dismantling of component parts.

All connecting and emptying pipes filled with water and/or in which water is liable to remain must be heat-insulated and heated where necessary.

The retention tank must be heat-insulated or heated to avoid waste water from freezing, even when outside temperatures are extremely low.

The extractor pipe located between the retention tank and the emptying nozzle must be designed to ensure that, in revenue service, no effluent can flow towards the cover when the retention tank is full.

In addition to the water filling connections, the effluent discharge pipe should also be fitted with a protective flap.

Heating the pipes is only authorised when a solution without heating is not practicable.

* **6.3.4** - Emptying connections for retention tanks must be fitted on both sides of coaches.

* **6.3.4.1** - The emptying nozzles must be positioned in the lower part of the side walls, using the dimensions specified in Appendix 9.

* **6.3.4.2** - The access doors when open should not impinge upon the minimum clearance for 3" emptying nozzles.

6.3.4.3 - It is recommended that the extractor nozzles be arranged along the length of the coach as shown in Appendix 21 and that the coach be calculated for a length of 26.4 m. Rapid and trouble-free emptying of a passenger rake while the train is at a halt can only be guaranteed under these conditions.

* 6.3.11 - Coaches must be provided with:

* 6.3.11.1 - A marking in accordance with Appendix 18, affixed on each side wall at right angles to the tanks.

* 6.3.11.2 - A level indicator on each side of the coach for each retention tank, to denote that this tank needs evacuating (in accordance with point 6.3.16).

* 6.3.11.2.1 - The level indicators must start working when the particular retention tank is filled to approximately 80% of its capacity, and when it cannot be used more than a limited number of times.

6.3.12 - Examples of locations for retention tanks and markings on vehicles are given in Appendix 20.

* 6.3.13 - The putrefying gases emanating from the tanks must not enter the coaches.

* 6.3.14 - The technical design of the retention tanks must enable them to resist:

- the overpressures normally permissible for fresh water tanks. This specification will make it possible to check that the retention tanks are completely sealed;

- permanent and/or temporary overpressures and/or drops in pressure related to the normal running of the retention tank system;

- pressure drops which may occur following possible siphoning through the blow-off pipe, or the overflow pipe where this exists;

- pressure drops produced during drainage (initial shock wave and permanent low pressure due to extraction).

* 6.3.15 - Water discharge pipes from the wash-basin(s) must not be connected to the retention tank(s) in order to prevent pathogenic germs rising into the wash-basin(s).

* 6.3.16 - A coloured indicator lamp on the lower part of each coach side wall indicates when the retention tank must be emptied. The lamp must light up when the remaining capacity in the retention tank only allows the toilet to be used a set number of times determined beforehand by the railway involved, according to what it deems the most appropriate method of organisation.

* 6.3.17 - Where the extractor nozzles are located below the maximum filling level of the waste water tank, the appropriate equipment should be fitted to prevent siphoning of the waste water.

* 6.3.18 - The extractor nozzles must be protected by the appropriate fittings or arranged so that the evacuation pipe can be attached and screwed in without difficulty, even in winter operations.

* 6.3.19 - The extractor nozzles and the fresh-water filling nozzles shall be arranged on the coach in such a way that the fresh-water filling nozzle can not be contaminated by waste water when the sealing cap and/or the evacuation pipe are removed.

*** 6.4 - Markings**

Within the toilet cubicle, various pictograms shall draw the user's attention to the particular features of the toilet in question:

Examples:
Presence of receptacles for sanitary towels, paper hand towels.
Ban on throwing sundry objects into the toilet pan, etc.

6.5 - Treatment of effluents

If additives are used in the retention toilet system (for toilets with recirculation), they must comply with the follwing specifications:

* **6.5.1** - It must be possible to transfer effluents, which may be diluted with water or waste water from local facilities (stations, maintenance shops, etc.), directly into a sanitation system while complying with current local legislation.

* **6.5.2** - Dilution must comply with the limits set by local legislation for a series of parameters such as:

- suspended matter,
- colouring,
- pH value,
- chemical oxygen requirement,
- biochemical oxygen requirement,
- total nitrogen.

6.6 - Characteristics of possible additives

* **6.6.1** - They shall reduce and delay the bacterial reactions initiated by the effluents, in order to avoid possible risk of pollution and unpleasant odours.

* **6.6.2** - The effective life of additives must allow compliance with the stipulated frequency for drainage of retention tanks (in respect of bacterial action, smell and colour).

* **6.6.3** - Chemical additives must be designed to be handled without risk by maintenance staff.

* **6.6.4** - These additives must possess a chemical composition such that the mixture of water + chemical + effluents may be discharged in accordance with current legislation on waste, without requiring a special treatment plant.

* **6.6.5** - The chemical must be compatible with the materials used for the particular installation.

6.7 - Use of additives

* **6.7.1** - Their form must be such that they can be added into the waste water tanks without the need for a special filling pipe (e.g. via the toilet or the suction pipe) and dissolve in the water used for filling the tanks without the need for stirring. A fully-automatic processing and filling procedure must be possible.

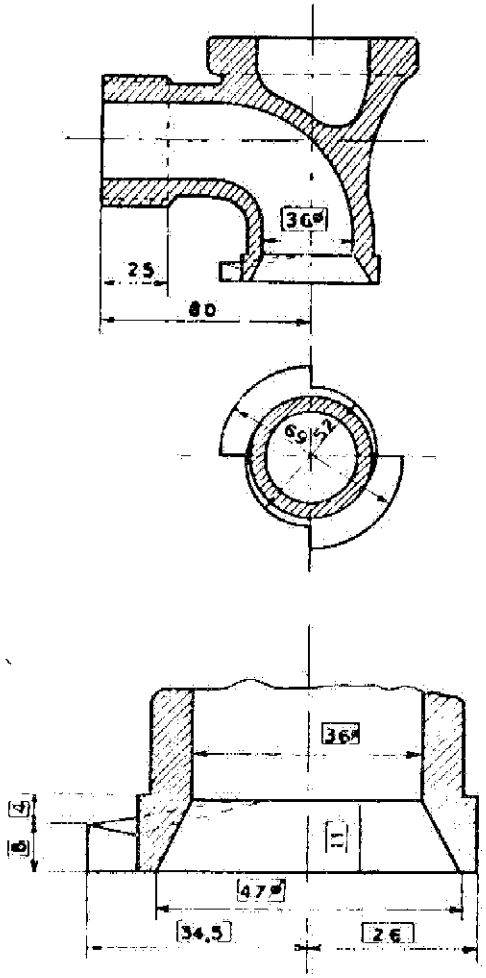
* **6.7.2** - They must be simple to store.

* **6.7.3** - The concentration to be used (quantity of primary product to be diluted in the water) must be known for each of the additives used.

6.7.4 - It is recommended that the concentration be identical for all authorised additives.

ANNEXE 1
ANLAGE 1
APPENDIX 1

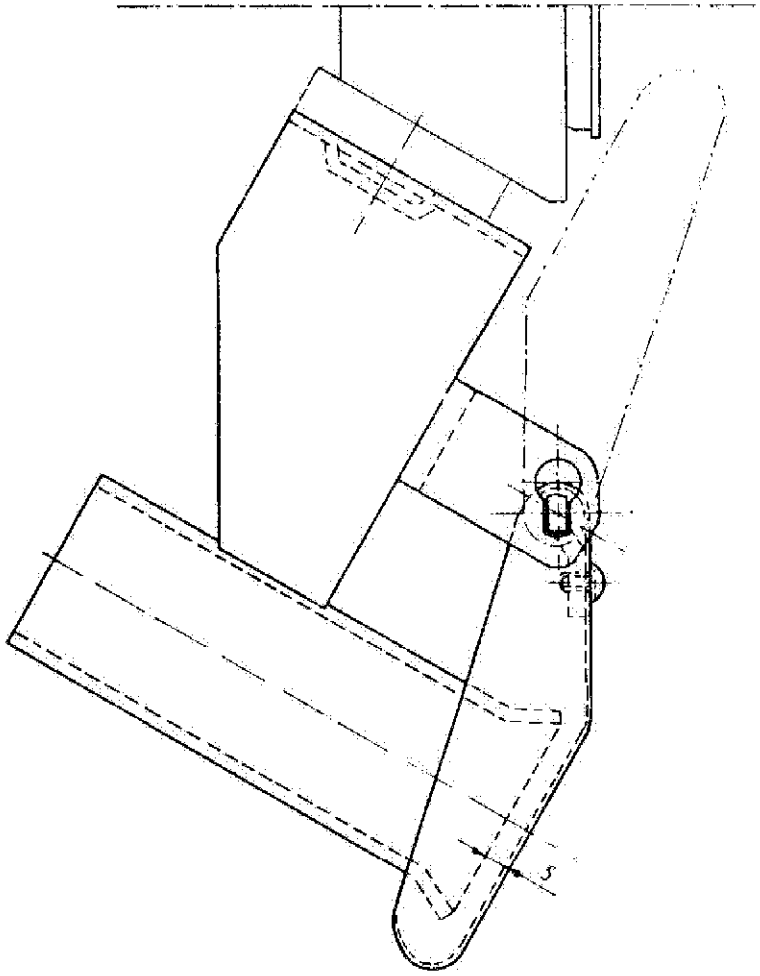
Raccords de remplissage des réservoirs à eau
Füllanschluss der Wasserbehälter
Inlet connections for water tanks



□ = Obligatoire
□ = Verbindliches Mass
□ = Obligatory

ANNEXE 2
ANLAGE 2
APPENDIX 2

Couvercle de protection du raccord de remplissage
Schutzklappe für Füllstutzen
Protection cover for filling nozzle



APPENDIX 3

Mechanical water level indicator for coaches

(see also Appendix 4)

This indicator shows the water level in the tank at any time, from the inside or outside of the coach simultaneously.

It is mechanically controlled by the float in the tank and includes :

- the float itself with its system of rods,
- 2 Bowden cables of stainless steel and plastic material,
- marking plates (or cursors) sliding vertically in recesses provided in the side of the coach and thus indicating the water level.

The Bowden cables are fixed to the end of the float lever situated outside the water tank. At the lower end of each one, level with the recess in the bottom of the side wall, a marking plate is suspended, the lower edge of which represents the water level. The recess may be either circular or rectangular.

The visible surface of the rear of the casing containing the indicator is in the same dark colour as the side wall of the coach, while the marking plate itself is in light colour ; when the tank is filled, the very sensitive Bowden cable draws the marker plate upwards and the latter, moving in its slide, exposes the dark surface of the rear of the casing, while during emptying, the marker plate descends gradually, and its light-coloured surface indicates that the tank needs filling.

The indicator referred to above may be fitted to the outside of the coach, through a circular opening in the external plating.

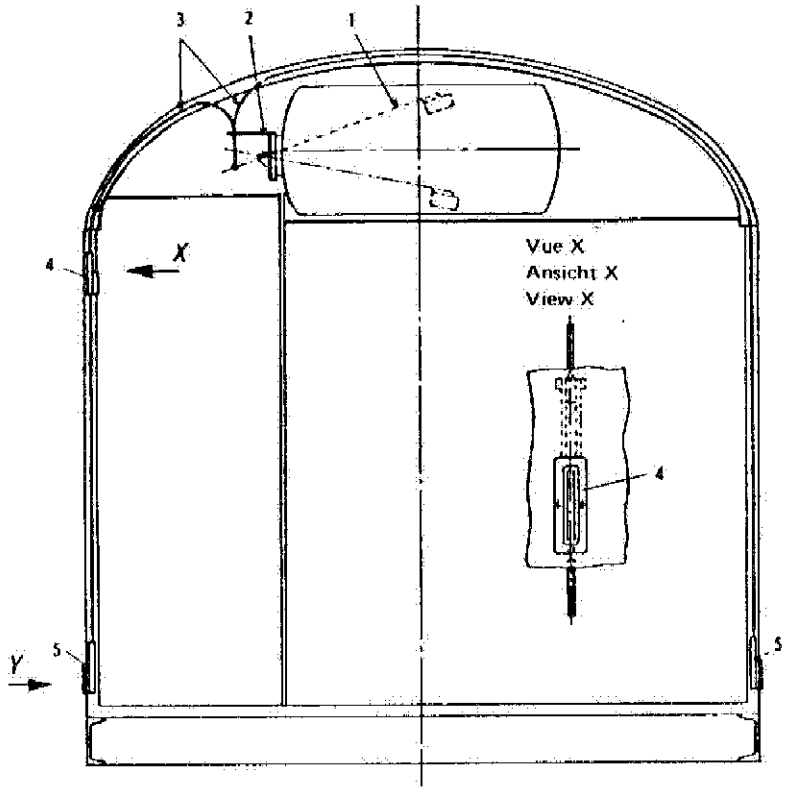
The marker plate must be heavy enough to ensure that the Bowden cable always remains taut.

If a light is incorporated in the marker plate and an incandescent lamp fitted to the casing, this will also enable the minimum water level to be shown by means of an indicator light.

The device described above may also incorporate an indicator inside the coach without any appreciable increase in the frictional resistance encountered by the sliding parts, by attaching an additional marker plate to the Bowden cable, inside the coach, in the side corridor.

ANNEXE 4
ANLAGE 4
APPENDIX 4

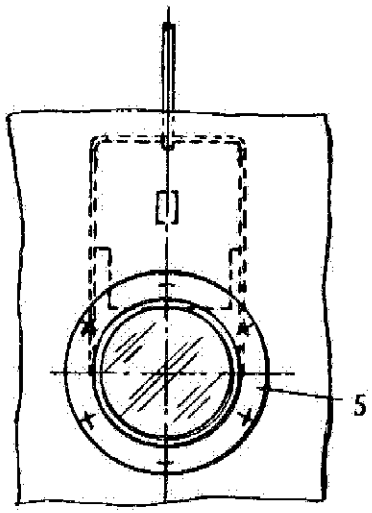
Indicateur de niveau d'eau — Wasserstandsanzeiger



ANNEXE 4
ANLAGE 4
APPENDIX 4

– Water level indicator

Vue Y
Ansicht Y
View Y



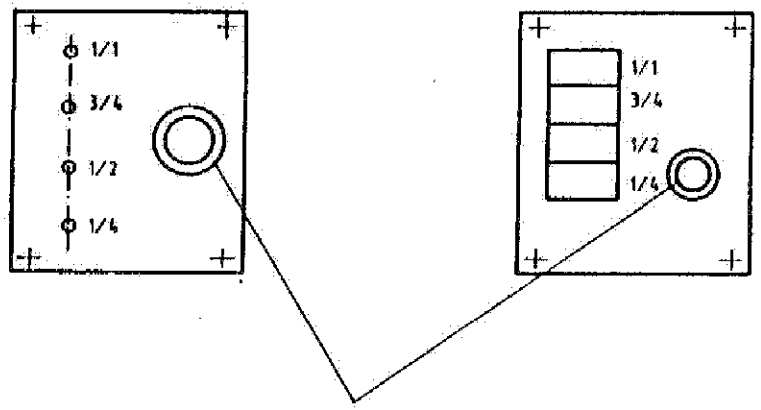
1 - Flotteur
2 - Console
3 - Transmission Bowden
4 - Indicateur intérieur
5 - Indicateur extérieur

1 - Schwimmer
2 - Konsole
3 - Bowdenzug
4 - Anzeige, innen
5 - Anzeige, aussen

1 - Float
2 - Bracket
3 - Bowden cable
4 - Internal indicator
5 - External indicator

ANNEXE 5
ANLAGE 5
APPENDIX 5

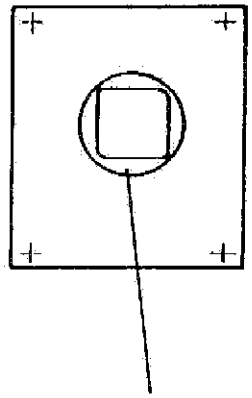
Indicateur de niveau d'eau — Wasserstandsanzeiger
Indication externe — Äußere Anzeige



Poussoir d'appel
Abruftaste
Call button

ANNEXE 5
ANLAGE 5
APPENDIX 5

Water level indicator
External indicator



Contact lumineux par pression
Leucht-Druckkontakt
Luminous pushbutton contact

ANNEXE 6
ANLAGE 6
APPENDIX 6

Accessoires des cabinets et des lavabos — Ausrüstungsteile

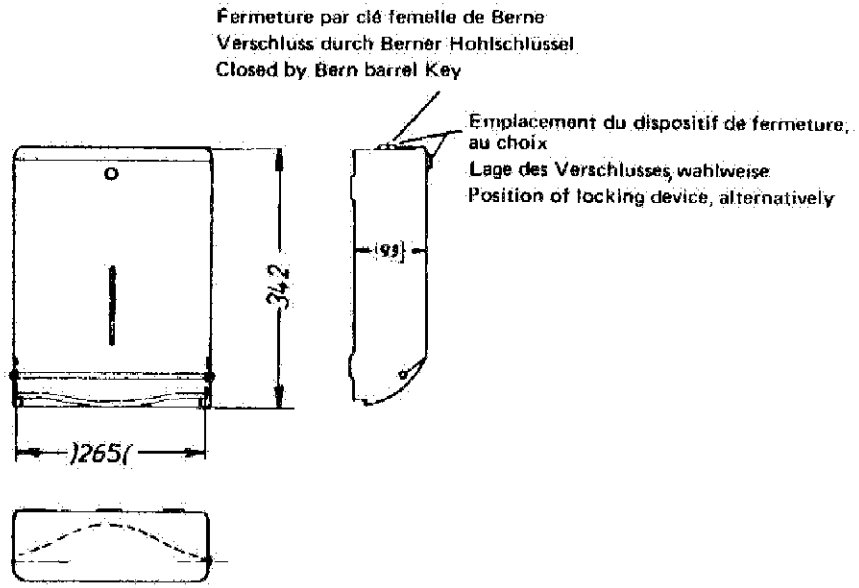
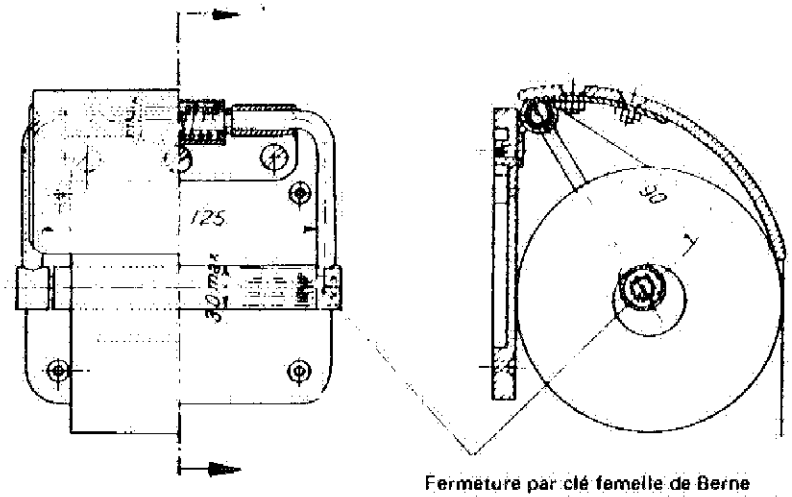


Fig N° 1 — Bild Nr. 1 — Fig. No. 1

Distributeur pour essuie-mains en papier propres
Verteiler für reine Papierhandtücher
Dispenser for clean paper towels

ANNEXE 6
ANLAGE 6
APPENDIX 6

der WC- und Waschräume — Accessories in toilets and washrooms



Fermeture par clé femelle de Berne
Verschluss durch Berner Hohlschlüssel
Closed by Bern barrel Key

Fig. N° 2 — Bild Nr. 2 — Fig. No. 2

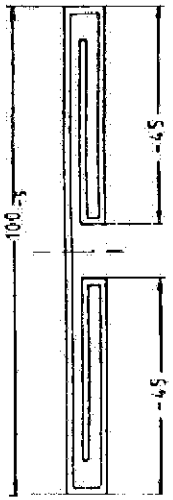
Support pour rouleau de papier hygiénique
Rollenhalter für Toilettenpapier
Holder for a roll toilet paper

Diamètre maximal des rouleaux	140 mm
Largeur maximale des rouleaux	120 mm
Diamètre intérieur minimal du mandrin	35 mm
Höchstdurchmesser der Rollen	140 mm
Höchstbreite der Rollen	120 mm
Mindest-Innendurchmesser des Hohldorns	35 mm
Maximum diameter of rolls	140 mm
Maximum width of rolls	120 mm
Minimum inside diameter of tube	35 mm

ANNEXE 7
ANLAGE 7
APPENDIX 7

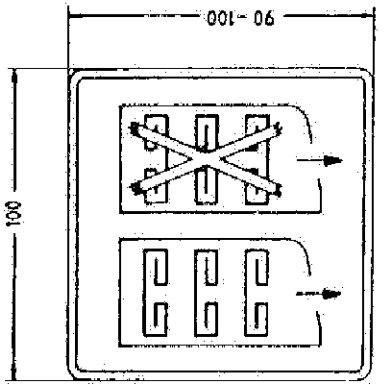
Marque indicatrice "Disposition des essuie-mains dans le distributeur"
Hinweiszeichen "Anordnung der Handtücher im Verteiler"
Instruction sign : "Position of towels in dispenser"

Fig. 1 — Bild 1



Pliage des essuie-mains en papier (cotes en mm)
Falten der Papierhandtücher (Masse in mm)
Folding of paper hand towels (dimensions in mm)

Fig. 2 — Bild 2



Nota : Dessin et filet : noir sur fond ivoire
croix : rouge

Anmerkung : Zeichnung und Rand : Schwarz auf elfenbeinfarbenem Grund
Kreuz : Rot

Note : Drawing and border : black on ivory-coloured background
Cross : red

ANNEXE 7
ANLAGE 7
APPENDIX 7

Positionnement de la marque indicatrice de disposition des essuie-mains dans le distributeur
Stelle für das Anbringen des Hinweiszeichens für die Anordnung der Handtücher im Verteiler
Location of sign indicating position of towels in dispenser

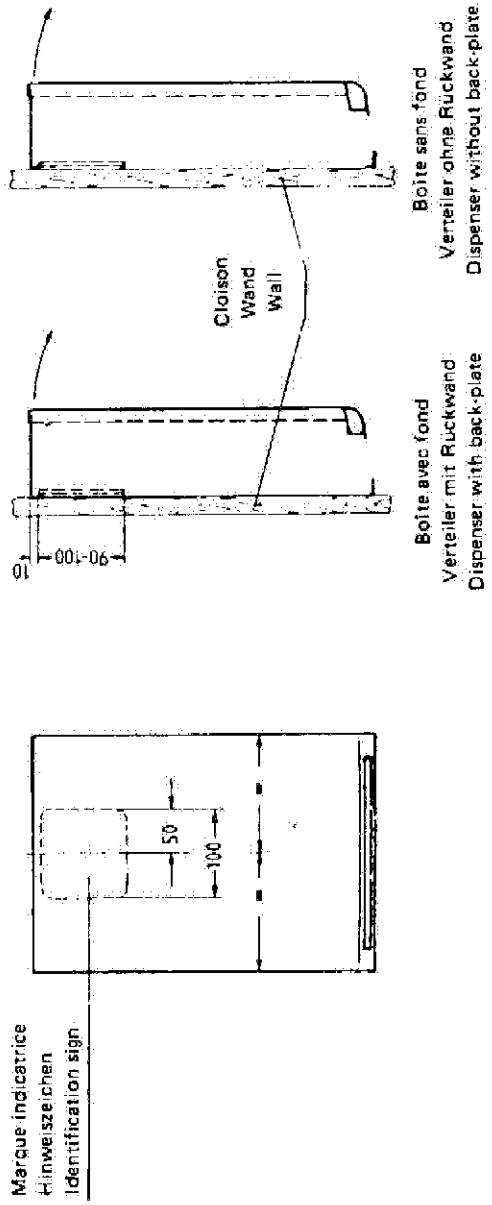


Fig. 3 - Bild 3

APPENDIX 8

"Sapor" soap dispenser. Operating conditions

European Railways which are members of the UIC may exercise for their exclusive use the patent rights covering this type of dispenser and the bar soap used with it, free of all licencing and other charges, both in respect of themselves and their suppliers, subject to observance of the following conditions. :

– the drawings of the dispenser, together with the precise manufacturing conditions for the soap, shall be sent to them, through the General Secretariat, by the firm owning the patents ;

– the railways concerned undertake to :

a) advise the General Secretariat of the addresses of the various manufacturers to whom they are likely to have recourse for the manufacture of dispensers and soap, and the General Secretariat will forward these addresses to the owner of the patent ;

b) only place orders for dispensers and soap with those manufacturers, or with firms holding the patent :

- August BELZ, Apparatebau, Friedrichshafen and

- August BELZ, Metallwarenfabrik, Goldach, Switzerland (1) ;

c) stipulate, in the supply contract, that licence holders authorised by the railway must not offer or sell, either directly or indirectly, to any other buyer, the dispensers and soap manufactured, legal prerogative being vested exclusively in the Seine Commerce Tribunal in the event of any dispute in the matter.

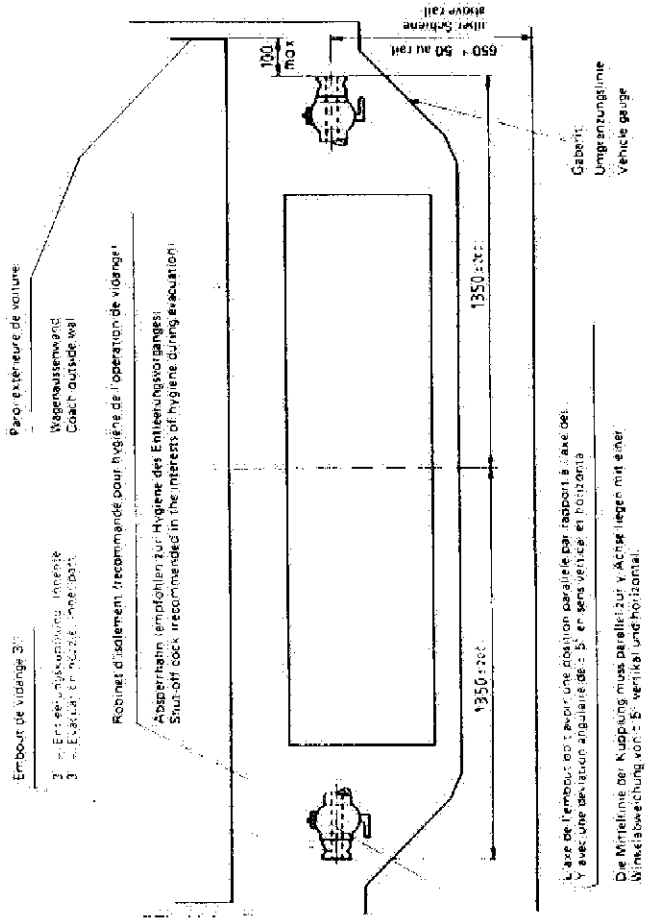
Furthermore, the conclusion of private agreements with the holder of the patent remains subject to reservations.

(1) UIC railways belonging to the OSJD shall not be bound by the clause stipulating manufacture in their own respective countries and shall be entitled, while respecting the other clauses, to place orders, either individually or collectively, for the SAPOR dispenser and the soap with firms whose Head Offices are situated in any of the countries of the railways in question.

As an exception, the Jugoslav Railway Community is authorised to participate in group orders placed by the above railways.

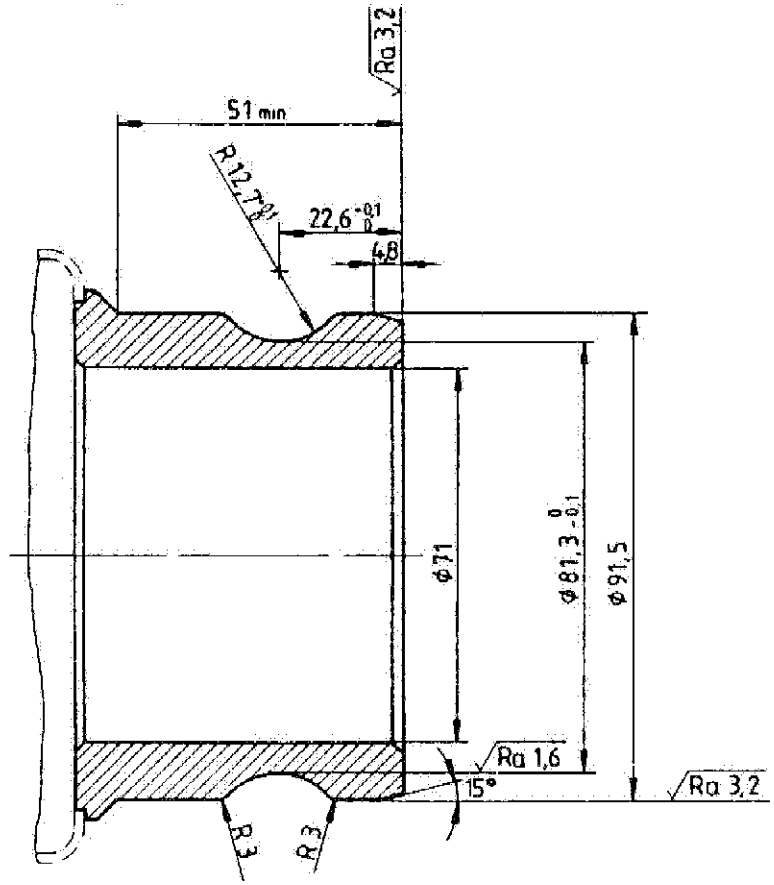
ANNEXE 9
ANLAGE 9
APPENDIX 9

Disposition des embouts de vidange 3"
Anordnung der 3" - Entleerungskupplungen (Innenteil)
Diagram of 3" evacuation nozzle (Inner part)



ANNEXE 10
ANLAGE 10
APPENDIX 10

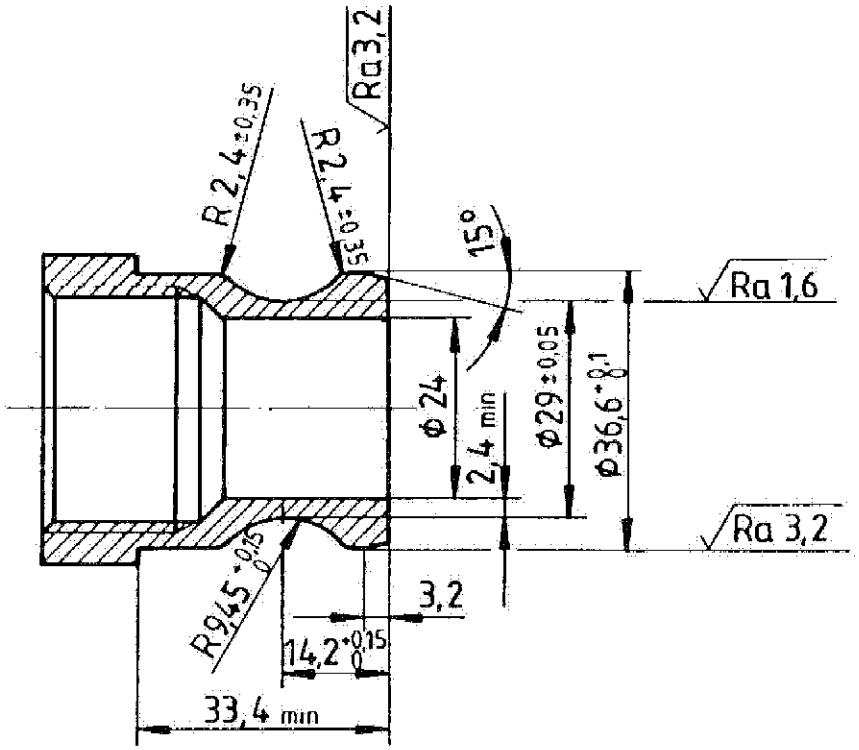
Embout 3" de vidange
3" - Entleerungskupplung (Innenteil)
3" - Evacuation nozzle (Inner part)



Matière : acier inox	Tolérances générales ± 0,1
Werkstoff : nichtrostender Stahl	Allgemeine Toleranzen ± 0,1
Material : stainless steel	General tolerances ± 0.1

ANNEXE 11
ANLAGE 11
APPENDIX 11

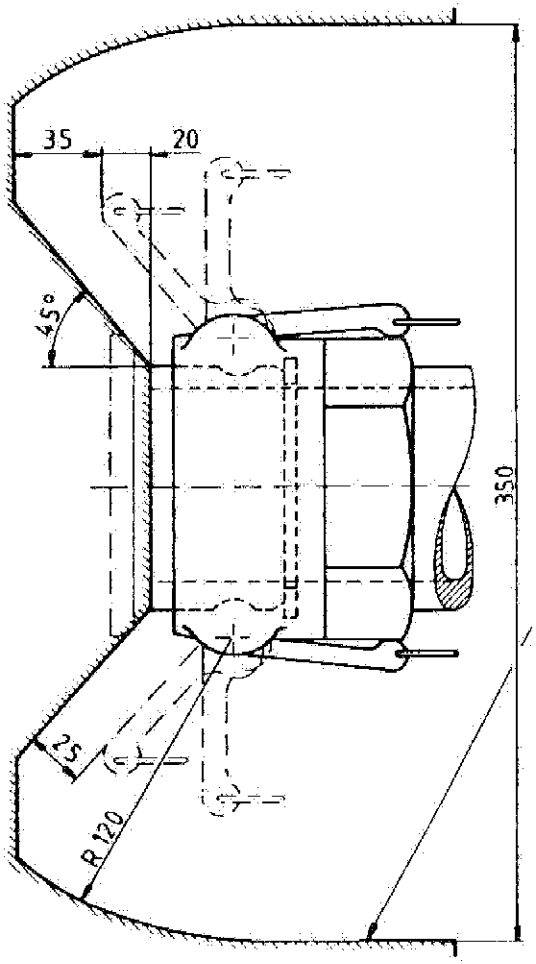
Embout 1" de rinçage
1" - Spülkupplung (Innenteil)
1" Flushing connection (Inner Part)



Matière : acier inox	Tolérances générales ± 1
Werkstoff : nichtrostender Stahl	Allgemeine Toleranzen ± 0,1
Material : stainless steel	General tolerances ± 0.1

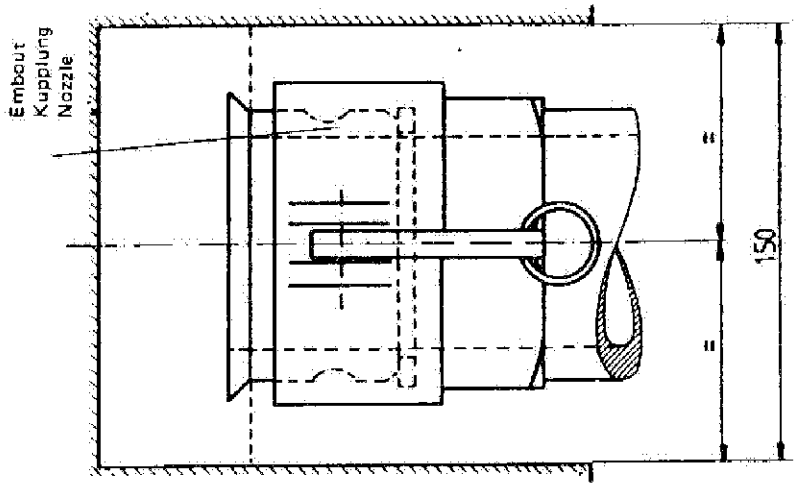
ANNEXE 12
ANLAGE 12
APPENDIX 12

Volume d'encombrement minimum pour embout 3" de vidange en cas de réalisation sans robinet d'arrêt
Mindest-Freiraum für 3"-Entleerungskupplung bei Ausführung ohne Absperrhahn
Minimum clearance for 3" evacuation nozzle in design without stop cock



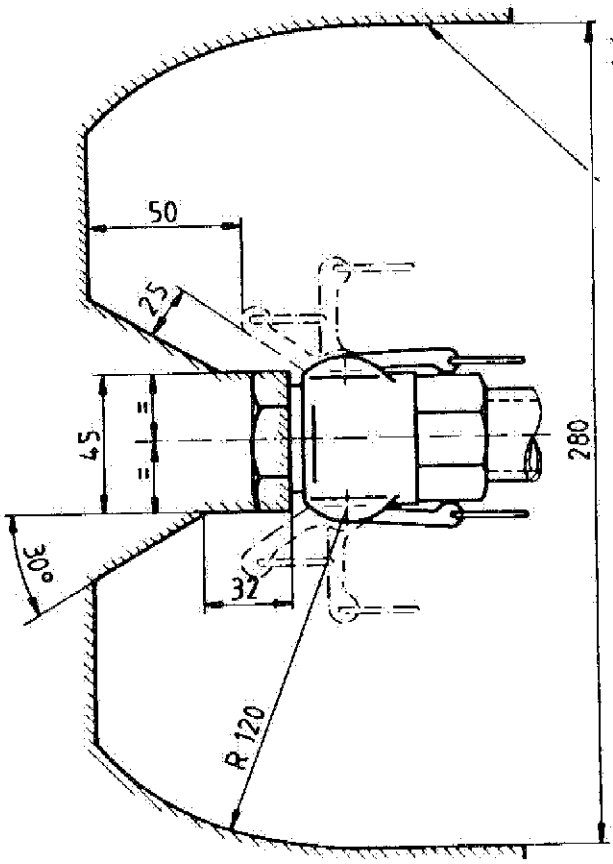
Volume d'encombrement minimum pour assurer une manœuvre aisée
Mindest-Freiraum zur Gewährleistung einer bequemen Bedienung
Minimum clearance to guarantee convenient use

ANNEXE 12
ANLAGE 12
APPENDIX 12



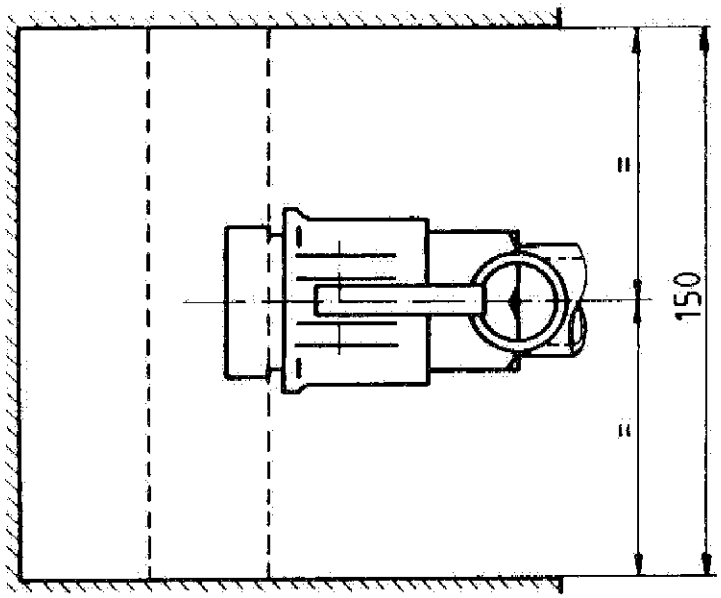
ANNEXE 13
ANLAGE 13
APPENDIX 13

Volume d'encombrement minimum pour embout 1" de rinçage
Mindest-Freiraum für 1" - Spülkupplung
Minimum clearance for 1" flushing connection



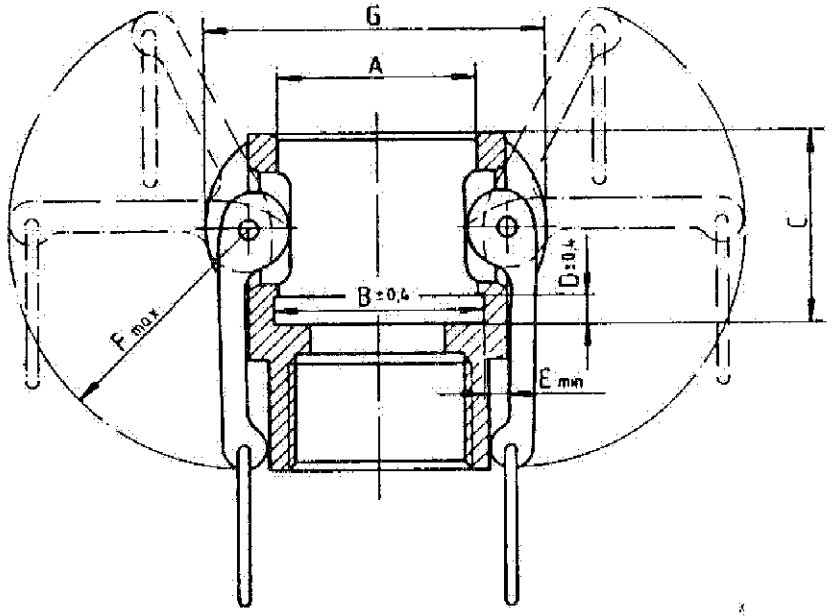
Volume d'encombrement minimum pour assurer une manœuvre aisée
Mindest-Freiraum zur Gewährleistung einer bequemen Bedienung
Minimum clearance for convenient use

ANNEXE 13
ANLAGE 13
APPENDIX 13



ANNEXE 14
ANLAGE 14
APPENDIX 14

Coupleur 3" de vidange et coupleur 1" de rinçage
3"-Entleerungs- und 1"-Spülkupplung (Aussenteile)
3" evacuation connection and 1" Connection for flushing (outer parts)



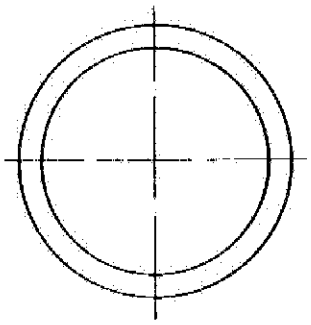
	A	B	C	D	E	F	G
Coupler 3" 3"-Kupplung 3" connection	92,20	104	55	7,14	4	82,55	133,3
Coupler 1" 1"-Kupplung 1" connection	37,24	40,5	37,5	7,14	2,4	44,45	65

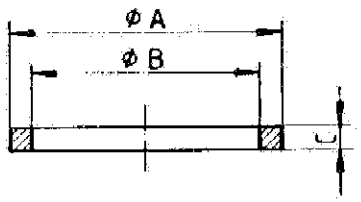
Matière : acier inox
Werkstoff : nichtrostender Stahl
Material : stainless steel

Tolérances générales ± 0,1
Allgemeine Toleranzen ± 0,1
General tolerances ± 0.1

ANNEXE 15
ANLAGE 15
APPENDIX 15

Joints
Dichtungen





	A	B	C
Joint 3" 3"-Dichtung 3" joint	94,45	76,20	6,35
Joint 1" 1"-Dichtung 1" joint	39,69	26,98	6,35

Tolérances générales ± 0,1
Allgemeine Toleranzen ± 0,1
General tolerances ± 0.1

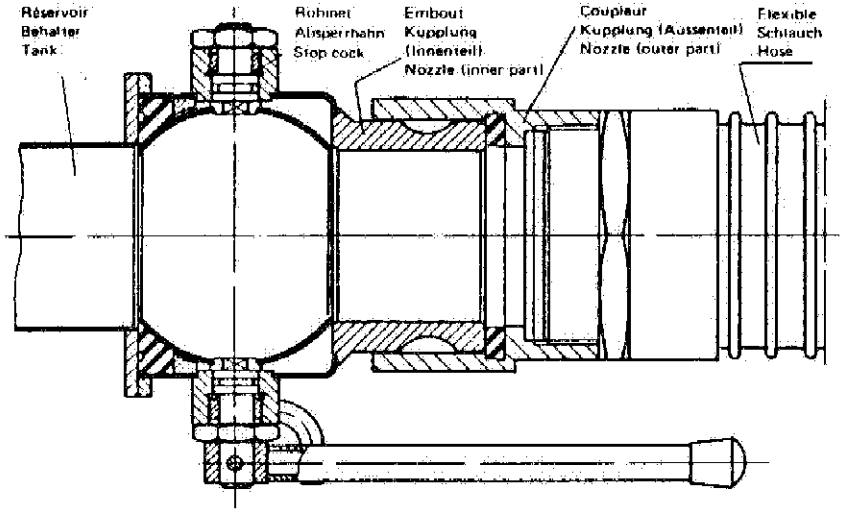
Matière : Élastomère, résistant aux matières fécales, p.e. FPM (caoutchouc fluoré)
Werkstoff : Elastomer, fäkalienbeständig, wie z.B. FPM (Fluorkautschuk)
Material : Elastomer, faeces-resistant, e.g. FPM (fluor ~~caoutchouc~~ rubber)

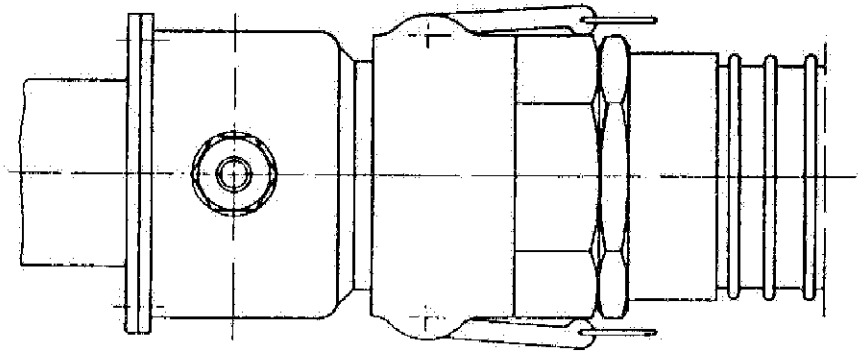
ANNEXE 16
ANLAGE 16
APPENDIX 16

Exemple de réalisation du raccordement du conduit 3" de vidange (réalisation avec robinet d'isolement)

Ausführungsbeispiel für den Anschluss der 3"-Entleerungsleitung (Ausführung mit Absperrhahn)

Example of the 3" evacuation pipe connection (with stop cock)



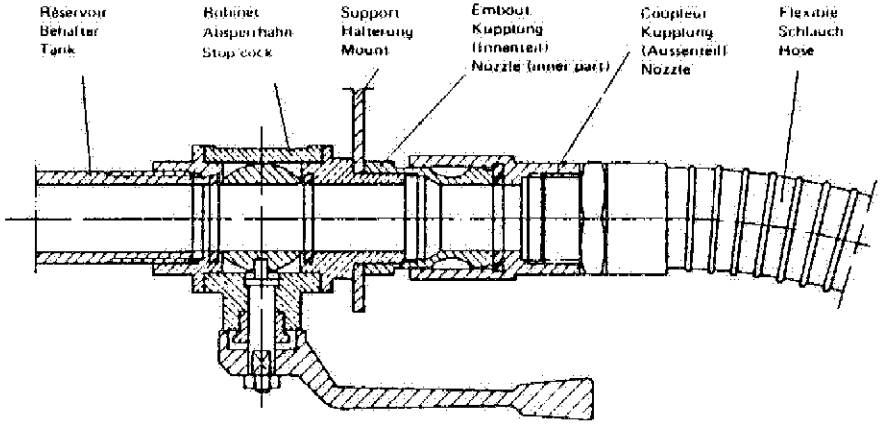


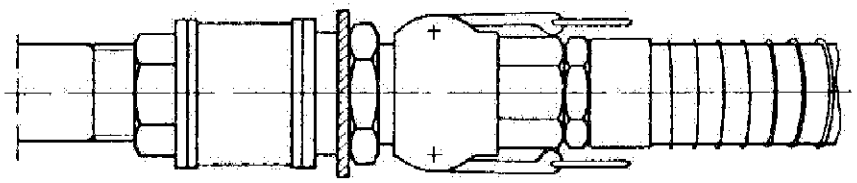
ANNEXE 17
ANLAGE 17
APPENDIX 17

Exemple de réalisation du raccordement du conduit 1" de rinçage (réalisation avec robinet d'isolement)

Ausführungsbeispiel für den Anschluss der 1"-Spülleitung (Ausführung mit Absperrhahn)

Example of the 1" flushing pipe connection (with stop cock)



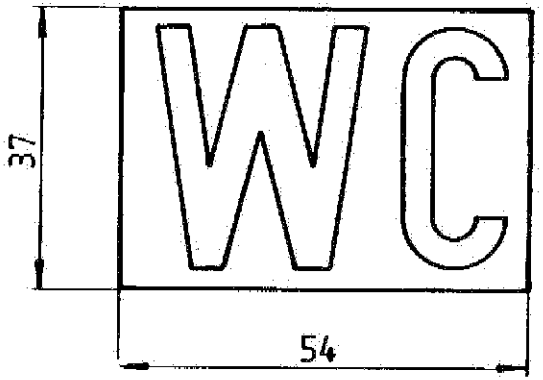


ANNEXE 18
ANLAGE 18
APPENDIX 18

Symbole du réservoir de rétention

Kennzeichen für Abwasserbehälter

Retention tank marking



APPENDIX 19

Electric hand-dryers

Electric hand-dryers must comply with the following conditions to ensure operating safety :

– the casing must be splash-proof, impact-resistant and fire-proof,
– the appliance must stop automatically after a specified operating period,
– the appliance must stop when the blower-motor is not working,
– The carbon brushes and other parts subject to wear must be easy to inspect.

In order to protect hand-dryers against vandalism, the following measures are recommended :

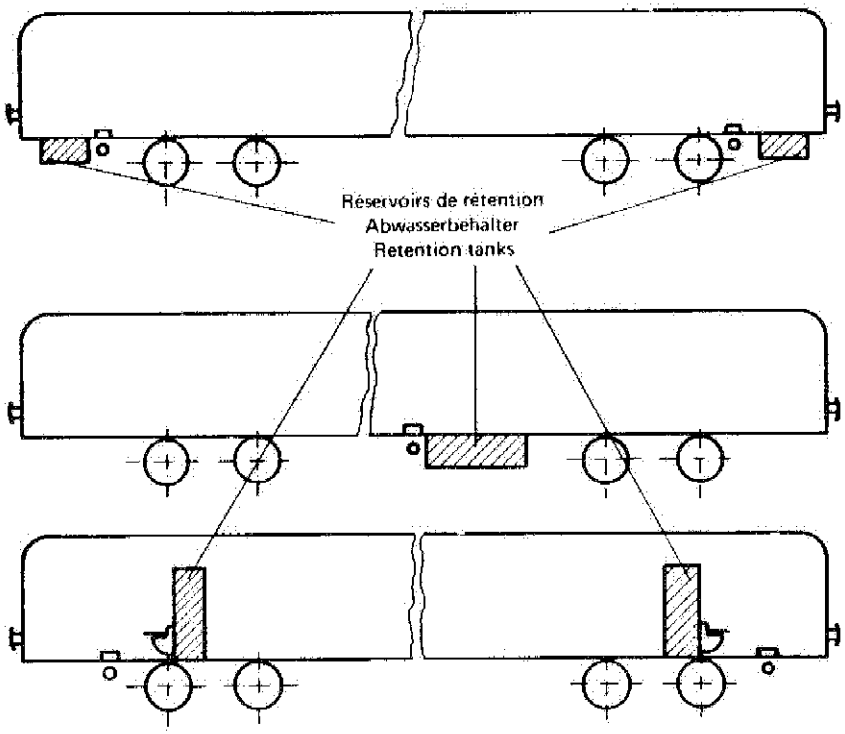
- position the bolts intended for assembly, dismantling or maintenance in such a way that they cannot be seen from the inside of the toilet cubicle (e.g. fastening bolts concealed behind the mirror) or from the outside (behind the fitting flap),
- locate the air-intake apertures in an inaccessible position in order to prevent them from being obstructed,
- design the hot-air outlet to make it impossible for objects (wire) or hands to be inserted inside it.

ANNEXE 20
ANLAGE 20
APPENDIX 20

Exemples d'emplacement des réservoirs de rétention et symboles

Beispiele für die Anordnung von Abwasserbehältern und Kennzeichen

Examples of location of retention tanks and markings



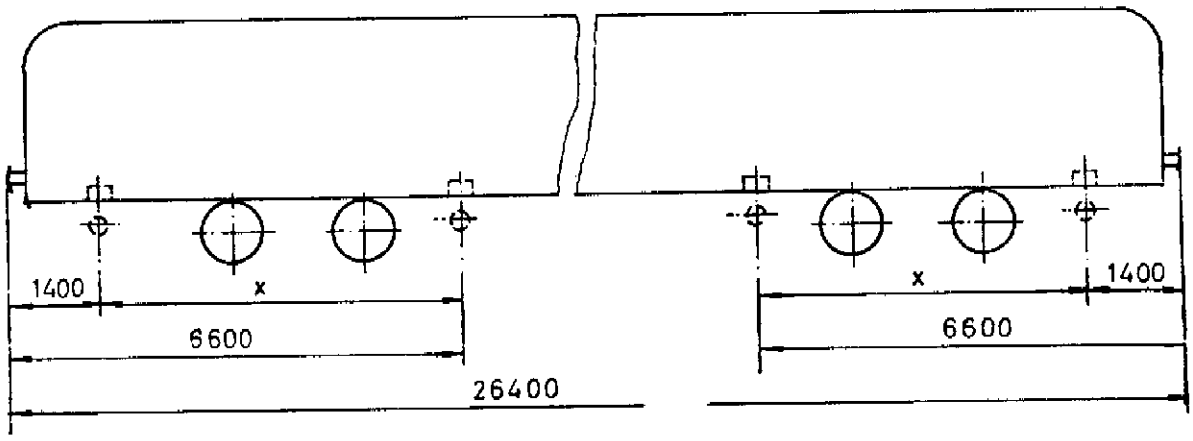
○ Embout d'extraction
Absauganschluss
Extractor nozzle

▭ Marquage
Kennzeichnung
Marking

Disposition et marquage des embouts pour les réservoirs à eaux usées

Anordnung und Kennzeichnung der Absaugstutzen von Abwasserbehältern

Arrangement and markings of waste-water tank nozzles



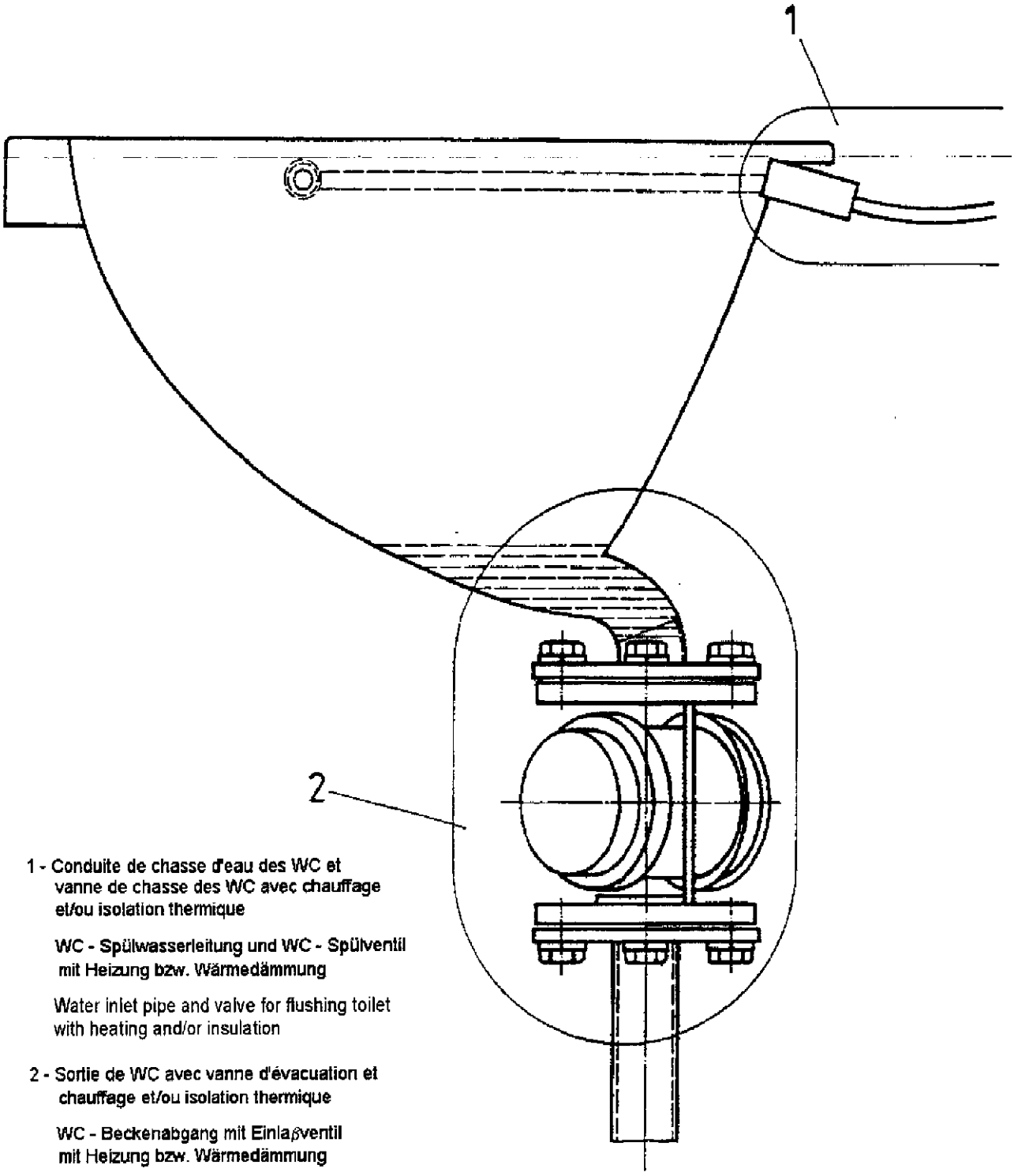
○ Embout d'extraction
Absauganschluß
Extractor nozzle

x Zone de positionnement de l'embout d'extraction

Bereich für Lage des Absaugstutzens

Extractor nozzle location zone

□ Marquage
Kennzeichnung
Marking



1 - Conduite de chasse d'eau des WC et vanne de chasse des WC avec chauffage et/ou isolation thermique

WC - Spülwasserleitung und WC - Spülventil mit Heizung bzw. Wärmedämmung

Water inlet pipe and valve for flushing toilet with heating and/or insulation

2 - Sortie de WC avec vanne d'évacuation et chauffage et/ou isolation thermique

WC - Beckenabgang mit Einlaßventil mit Heizung bzw. Wärmedämmung

Toilet bowl outlet with discharge valve and heating and/or insulation

Application

With effect from 1 January 1990 for provisions of an obligatory nature, with the following exceptions :

- Point 1.1 (2nd para.)	
- Point 1.4 (2nd, 3rd and 4th paras.)	
- Point 2.2.1 (last part of the sentence)	1.1.96
- Point 4.1.5.3.1	
- Point 4.1.5.4 (last sentence)	
- Point 6.1.3	1.7.91
- Points 6.1.4, 6.1.4.1	
- Point 6.1.11	1.1.93
- Point 6.3.2 (2nd para.)	
- Point 6.3.3	1.1.96
- Points 6.3.7, 6.3.7.1	
- Point 6.3.17, 6.3.18, 6.3.19	1.1.93
- Point 6.7.1	
- Appendix 21	1.1.93

All UIC Members.

Record references

Most recent headings under which the question has been dealt with :

- *Question 45/A/FIC* - Revision of leaflets.
(Joint Sub-Committee for Coaches : Paris, May 1989).

- *Question 45/A/FIC* - Revision of leaflets.
Point 8.5.3 - DB proposal for an amendment.
(Joint Sub-Committee for Coaches : Paris, January 1990).

- *Question 45/A/FIC* - Revision of leaflets.
Point 17.5 - Amendments resulting from the drafting of Leaflet 567.
(Traction and Rolling Stock Committee : Paris, June 1990).

- *Question 45/A/FIC* - Revision of leaflets.
Point 9.4 - Establishing a factor to determine the capacity of water tanks and waste-water tanks in relation to seating capacity.
(Joint Sub-Committee for Coaches : Paris, January 1991).

- *Question 45/A/27* - Point 18 - Interface between permanent servicing installations and coaches.
(Traction and Rolling Stock Committee : Paris, June 1992).

- *Question 45/A/FIC* - Revision of leaflets.
Point 7.2 - Question 45/A/FICb - Difficulties encountered in wintry conditions: proposals for leaflet modification framed by ERRI SC B 106.
(Sub-Committee 45A for Coaches : Paris, September 1995).