



SLOVENSKI STANDARD
oSIST prEN 14601:2023

01-april-2023

Železniške naprave - Ravne in kotne zaporne pipe za zavorne in glavne zračne vode

Railway applications - Straight and angled end cocks for brake pipe and main reservoir pipe

Bahnanwendungen - Gerade und abgewinkelte Luftabsperrhähne für die Hauptluftleitung und Hauptbehälterleitung

Applications ferroviaires - Robinets d'arrêt droit ou coudé pour conduite générale de frein et conduite principale

Ta slovenski standard je istoveten z: prEN 14601

ICS:

45.040 Materiali in deli za železniško Materials and components
 tehniko for railway engineering

oSIST prEN 14601:2023

en,fr,de

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

DRAFT
prEN 14601

February 2023

ICS 45.060.01

Will supersede EN 14601:2005+A2:2021

English Version

Railway applications - Straight and angled end cocks for brake pipe and main reservoir pipe

Applications ferroviaires - Robinets d'arrêt droit ou
coudé pour conduite générale de frein et conduite
principale

Bahnanwendungen - Gerade und abgewinkelte
Luftabsperrhähne für die Hauptluftleitung und
Hauptbehälterleitung

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 256.

If this draft becomes a European Standard, CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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prEN 14601:2023 (E)**European foreword**

This document (prEN 14601:2023) has been prepared by Technical Committee CEN/TC 256 “Railway applications”, the secretariat of which is held by DIN.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 14601:2005+A2:2021.

prEN 14601:2023 includes the following significant technical changes with respect to EN 14601:2005+A2:2021:

- normative references have been updated;
- tested end cock numbers in Table 1 “Operations to carry out for qualification” have been supplemented for 5.3.7;
- in 5.3.7 “Pneumatic test of the isolating device at given pressures and temperatures” a new time requirement for performance of the test has been added.

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1 Scope

This document is applicable to manually operated end cocks designed to cut-off the brake pipe and the main reservoir pipe of the air brake and compressed air system of rail vehicles; without taking the type of vehicles and track-gauge into consideration.

This document specifies requirements for the design, dimensions, testing and certification (qualification and/or homologation), and marking.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 50125-1:2014, *Railway applications - Environmental conditions for equipment - Part 1: Rolling stock and on-board equipment*

EN 61373:2010, *Railway applications — Rolling stock equipment — Shock and vibration tests (IEC 61373:1999)*

EN ISO 1179-1:2013, *Connections for general use and fluid power — Ports and stud ends with ISO 228-1 threads with elastomeric or metal-to-metal sealing — Part 1: Threaded ports*

EN ISO 9227:2022, *Corrosion tests in artificial atmospheres — Salt spray tests (ISO 9227:2022)*

ISO 4975:2022, *Railway applications — Braking system — Quality of compressed air for pneumatic apparatus and systems*

ISO 5208:2015, *Industrial valves — Pressure testing of valves*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp/>
- IEC Electropedia: available at <https://www.electropedia.org/>

3.1.1

end cock

two position, three way cock, with no piped vent and, with a rotary spindle moved by the operating handle

3.2

components

3.2.1

port

terminus of a fluid passage in a component (to which pipelines can be connected) for the transmission of fluid to, or from the component

prEN 14601:2023 (E)**3.2.1.1****venting port**

port which provides passage to atmosphere

3.2.1.2**outlet port**

port which is vented to atmosphere when the cock is closed

3.2.1.3**inlet port**

port which is not vented when the cock is closed

3.2.1.4**threaded port**

port arranged to accept screw threaded connection

3.2.2**direction of rotation**

direction of rotation quoted as viewed looking at the handle side

3.2.3**mechanical detent**

spring arrangement to retain moving parts in open or closed position and only able to be moved to another position with the specified force

3.2.4**latch**

mechanical device to retain moving parts in open or closed position which can only be moved when the latch is released

3.3**types of end cocks****3.3.1****design****3.3.1.1****straight end cock**

cock with axis of inlet and outlet ports in line

Note 1 to entry: See Figure 1.

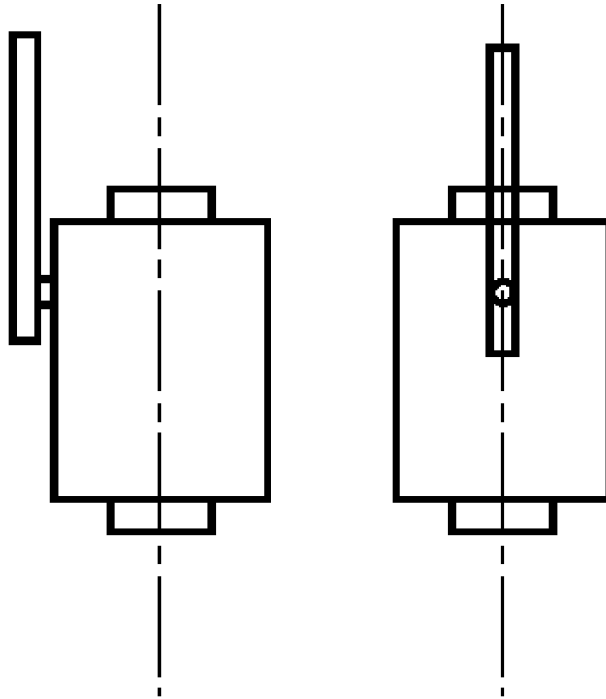


Figure 1 — Straight end cock

3.3.1.2

angled end cock

cock with axis of outlet port at an angle of $(35 \pm 2)^\circ$ with axis of inlet port

Note 1 to entry: See Figure 2.

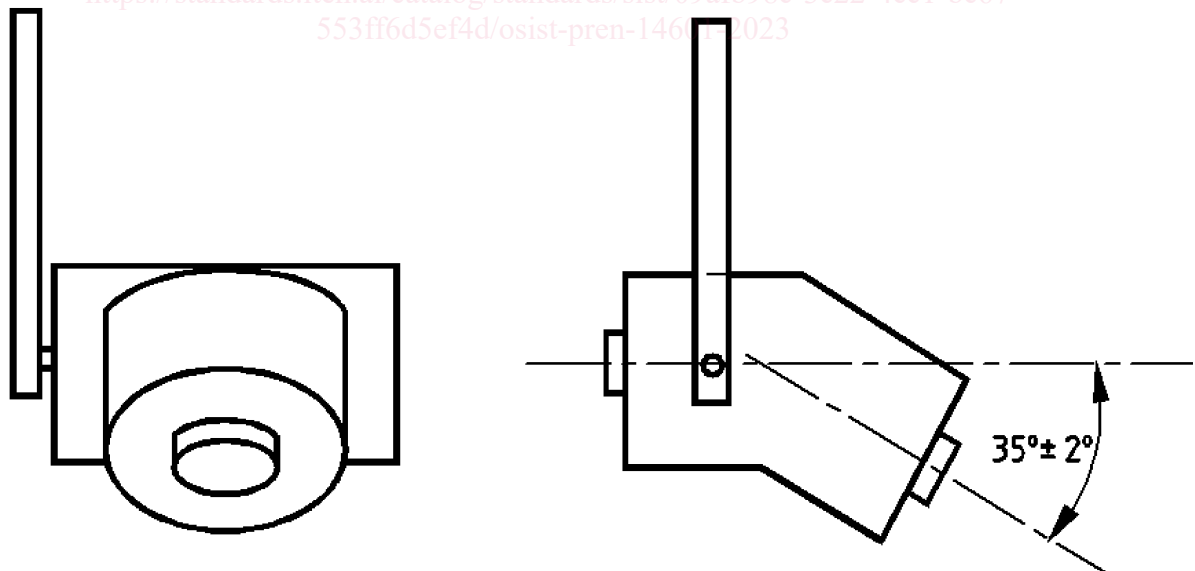


Figure 2 — Angled end cock

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3.3.2

location of the handle

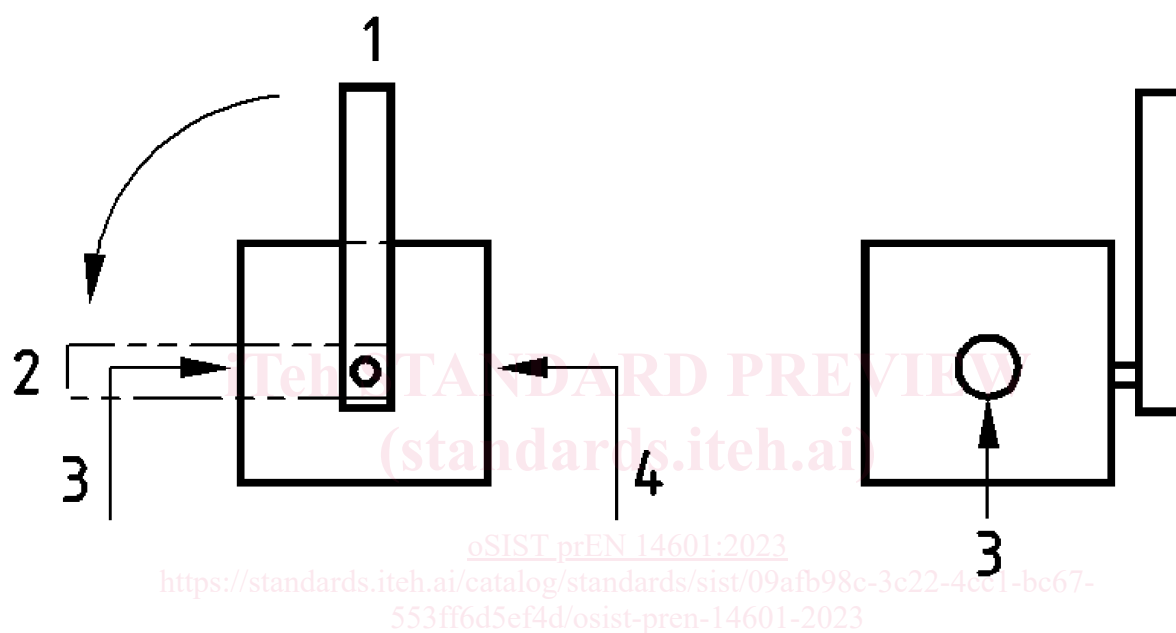
3.3.2.1

right hand end cock

handle located at the right hand side of the end cock with the handle closed in a vertically upwards position

Note 1 to entry: The end cock is opened by rotating the handle in an anticlockwise direction (see Figure 3).

Note 2 to entry: Standard mounting position. Other positions of handle are defined by drawing (see Figure 3).



Key

- 1 closed position
- 2 open position
- 3 outlet port
- 4 inlet port

Figure 3 — Right hand end cock

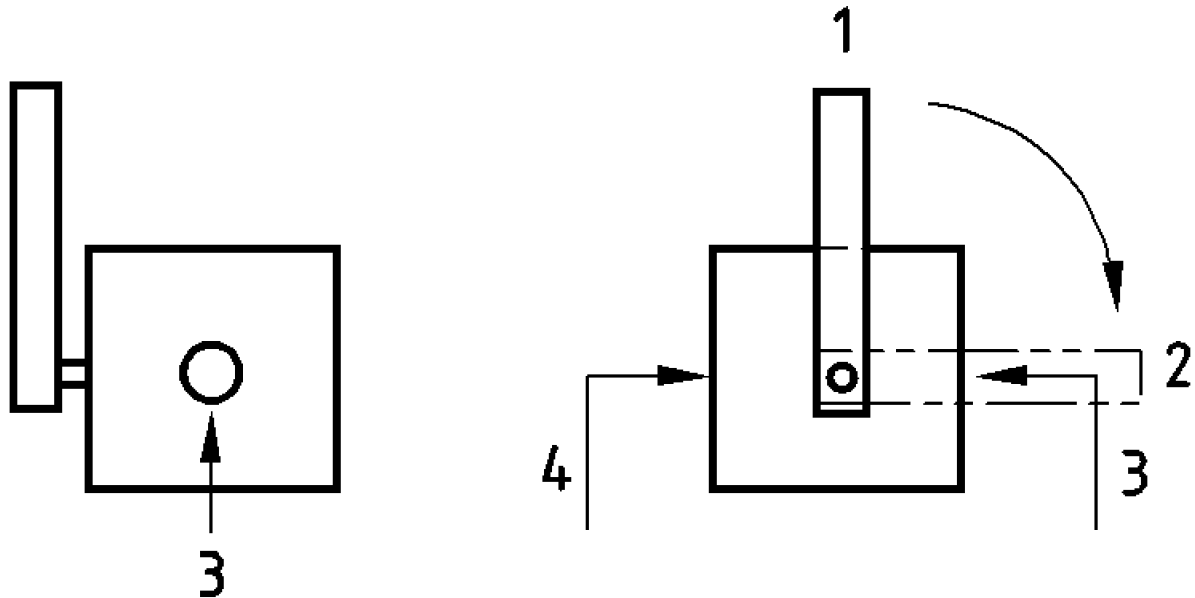
3.3.2.2

left hand end cock

handle located at the left hand side of the cock with the handle closed is in a vertically upwards position

Note 1 to entry: The cock is opened by rotating the handle in a clockwise direction (see Figure 4).

Note 2 to entry: Standard mounting position. Other positions of handle are defined by drawing (see Figure 4).

**Key**

- 1 closed position
- 2 open position
- 3 outlet port
- 4 inlet port

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Figure 4 — Left hand end cock

3.4 states

<https://standards.iteh.ai/catalog/standards/sist/09afb98c-3c22-4cc1-bc67-553ff6d5ef4d/osist-pren-14601-2023>

3.4.1

closed position

position of the valve component part in which the flow path between inlet and outlet ports is closed and the venting passage is open and connected to the hose and coupling side of the cock

Note 1 to entry: The cock handle is closed in the vertically upwards position on the vehicle.

Note 2 to entry: The purchaser will define the angle between the cock inlet port axis and the vertically upwards handle position for cocks not mounted horizontally.

3.4.2

open position

position of the valve member in which the flow path between inlet and outlet ports is fully open, and the venting passage is closed

3.4.3

fall time

time taken in a device for a quantity of air to fall from a specified high pressure level down to a specified lower pressure level

Note 1 to entry: Parameter used to define the fluid characteristic of the cock.

prEN 14601:2023 (E)**3.4.4****proof pressure**

test pressure, in excess of a maximum rated pressure, which causes no malfunction or permanent deformation damage

3.5**temperature range**

range of the temperature within which the apparatus can operate satisfactorily

3.6**leakage****3.6.1****external leakage**

leakage of the fluid contained in the end cock to atmosphere

3.6.2**internal leakage**

leakage of the fluid contained in the end cock from one side to the other side with the valve component part in the closed position

3.7**drift**

change or variation of a condition with time under steady state operating conditions

3.8**life expectancy**

predicted working period during which a component or system will maintain a specified level of performance under specified conditions

Note 1 to entry: Sometimes expressed in statistical term as a probability.

4 Requirements**4.1 Operating conditions**

The end cock shall be able to function under the following conditions:

- a) where the compressed air purity not better than “compressed air purity (ISO 4975) 4 – 4 – X [-40 °C; +35 °C]” in accordance with ISO 4975:2022. This requirement is verified when tests are carried out in accordance with 5.2;
- b) in the temperature range for the environmental conditions to which the rail vehicle is submitted during its operation and at least for a temperature range defined by the class T2 of EN 50125-1:2014. The purchaser can specify a higher temperature value if operational constraints demand it. This requirement is tested in accordance with 5.3.3, 5.3.7 and 5.3.12;
- c) the end cock shall withstand the external corrosion due to normal atmospheric pollutants as specified in EN 50125-1:2014. The end cock is tested in accordance with the test shown in 5.3.13;
- d) in the vibrational environment of the rail vehicle on which it is mounted and it shall remain in either the open or closed position. The cock shall be tested in accordance with 5.3.10.