SLOVENSKI STANDARD
oSIST prEN ISO 5210:2025

01-april-2025

Industrijski ventili - Priključki vrtilnih pogonov na ventilih (ISO/DIS 5210:2025)

Industrial valves - Multi-turn actuator attachments (ISO/DIS 5210:2025)

Industriearmaturen - Anschlüsse von Drehantrieben für Armaturen (ISO/DIS 5210:2025)

Robinetterie industrielle - Raccordement des actionneurs multitours (ISO/DIS 5210:2025)

Ta slovenski standard je istoveten z: **prEN ISO 5210**

ICS:

23.060.01 Ventili na splošno Valves in general

oSIST prEN ISO 5210:2025 **en,fr,de**

DRAFT International Standard

ISO/DIS 5210

Industrial valves — Multi-turn actuator attachments

Robinetterie industrielle — Raccordement des actionneurs multitours

ICS: 23.060.01

ISO/TC **153**

Secretariat: **AFNOR**

Voting begins on:
2025-02-24

Voting terminates on:
2025-05-19

This document is circulated as received from the committee secretariat.

ISO/CEN PARALLEL PROCESSING

Reference number
ISO/DIS 5210:2025(en)

COPYRIGHT PROTECTED DOCUMENT

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

Contents

Page

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

ISO draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). ISO takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO had not received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at www.iso.org/patents. ISO shall not be held responsible for identifying any or all such patent rights.

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 153, *Valves*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 69, *Industrial valves*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This third edition cancels and replaces the second edition (ISO 5210:2023), which has been technically revised.

The main changes are as follows:

— Figures 1, 2 and 6 were corrected;

— dimensions d_5, h_4 and h_5 were introduced;

— 7.3, Annex B and Bibliography were updated;

— editorial changes were made.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

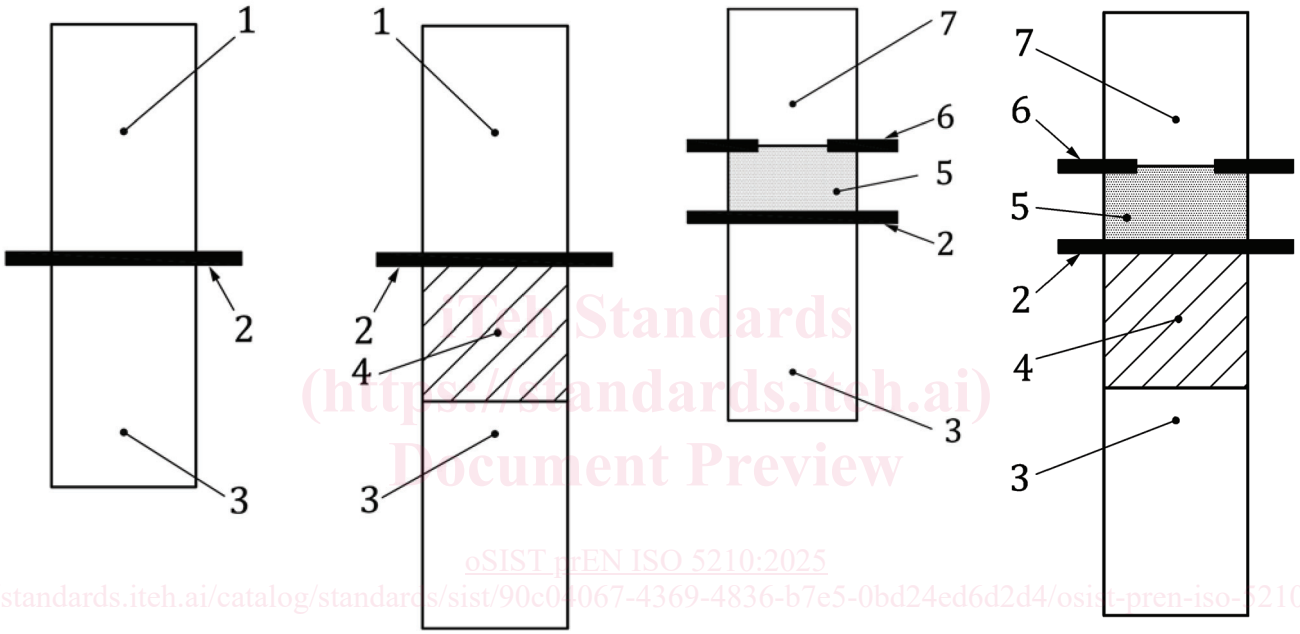
Introduction

The purpose of this document is to establish certain basic requirements for the attachment of multi-turn actuators, in order to define the interface between actuator and valve.

This document is, in general, considered in conjunction with the specific requirements which may be agreed between the parties concerned.

NOTE 1 In this document, the term “valve” can also be understood to include “valve with an intermediate support” [see Figure 1 b)].

NOTE 2 When a combination of a multi-turn actuator and separate multi-turn/linear gearbox is coupled to form an actuator, the multi-turn attachment to the gearbox is in accordance with this document [see Figures 1 c) and 1 d)]. A combination of a multi-turn actuator with integral multi-turn/linear gearbox supplied as an actuator is in accordance with Figures 1 a) and 1 b).



a) Direct interface | **b) Intermediate support interface** | **c) Direct interface (when combination of a multi-turn actuator and multi-turn/linear gearbox)** | **d) Intermediate support interface (when combination of a multi-turn actuator and a multi-turn/linear gearbox)**

Key

1 multi-turn/linear actuator
2 interface (see ISO 5210)
3 valve
4 intermediate support
5 gearbox
6 interface (see ISO 5210)
7 multi-turn actuator

Figure 1 — Interface between multi-turn/linear actuator and valve

Industrial valves — Multi-turn actuator attachments

1 Scope

This document specifies the requirements for the attachment of multi-turn actuators to valves.

Throughout this document, "actuator" can be understood as "actuator and/or gearbox" providing a multi-turn and/or linear output.

It specifies:

— flange dimensions necessary for the attachment of actuators to industrial valves [see Figure 1 a)] or to intermediate supports [see Figure 1 b)];

— those driving component dimensions of actuators which are necessary to attach them to the driven components;

— reference values for torque and thrust for flanges having the dimensions specified in this document.

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.

ISO 273, *Fasteners — Clearance holes for bolts and screws*

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
actuator
any device designed for attachment to a general-purpose industrial valve in order to provide for the operation of the valve

Note 1 to entry: The device is designed to operate using motive energy which may be electrical, pneumatic, hydraulic, manual, etc., or a combination of these. Movement is limited by travel, *torque* (3.4) and/or *thrust* (3.5).

3.2
multi-turn actuator
actuator (3.1) which transmits *torque* (3.4) to the valve for at least one revolution and may be capable of withstanding *thrust* (3.5)

Note 1 to entry: An actuator may be a combination of a multi-turn actuator and multi-turn gearbox.

3.3
linear actuator
actuator (3.1) which transmits *thrust* (3.5) to the valve for a defined linear stroke

Note 1 to entry: An actuator may be a combination of a *multi-turn actuator* (3.2) and linear gearbox.

3.4
torque
turning moment transmitted through the mounting flanges and couplings

Note 1 to entry: Torque is expressed in newton-metres.

3.5
thrust
axial force transmitted through the mounting flanges and couplings

Note 1 to entry: Thrust is expressed in kilonewtons.

4 Maximum torques and thrusts

The torque and thrust shall comply with the values listed in Table 1 which represent the maximum torques and thrusts which can be transmitted simultaneously through the mounting flanges and couplings. They are based upon specified criteria.

Table 1 — Maximum torque and thrust values

Flange type	Torque [Nm]	Thrust [kN]
F05	20	10
F07	40	20
F10	100	40
F12	250	70
F14	400	100
F16	700	150
F25	1 200	200
F30	2 500	325
F35	5 000	700
F40	10 000	1 100
F48	20 000	2 000
F60	40 000	4 000

The values specified in Table 1 have been defined on the basis of bolts in tension at a stress of 290 MPa and a coefficient of friction of 0,2 between the mounting interface. All variations in these defined parameters lead to variations of the transmittable torque and/or thrust values. See Annex A for an explanation on the calculation method.

The selection of flange size for a particular application should take account of additional torques and/or thrust that may be generated at the valve stem because of sizing, safety factors, inertia or other similar factors. Specifically, the torque and thrust generated at the maximum output torque and/or thrust of the selected actuator shall be calculated and considered in the selection of the flange along with the ability of the valve and actuator to withstand such torque and thrust forces.

5 Flange dimensions

Flanges for actuator attachment shall comply with the dimensions shown in Figure 2 and given in Table 2. The method of attachment shall be by means of studs or through bolting.