



ANSI/(NFPA)T3.21.16-1997 (R2004)

First edition

14 January 1997

Pneumatic fluid power – Labeling and communication of pneumatic products

A NATIONAL INDUSTRY STANDARD FOR FLUID POWER

**Approved by Committee ASC B93,
accredited by the American National Standards Institute (ANSI)**



Descriptors: air - oil tanks, components, cylinders, directional control valves, filters, flow control valves, lubricators, pneumatic fluid power, pneumatic system, regulators, relief valves

Developed and published by

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Any part of this standard may be quoted. Credit lines should read: Extracted from the national industry standard ***Pneumatic fluid power – Labeling and communication of pneumatic products, ANSI/(NFPA)T3.21.16-1997 (R2004).***

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Foreword

This Foreword is not part of American National Standard *Pneumatic fluid power — Labeling and communication of pneumatic products*, ANSI/(NFPA)T3.21.16-1997 (R2004).

A TSP was prepared at the 14 November 1989 T3.21 meeting. The NFPA Technical Board approved the TSP on 10 May 1990. John Berninger from Parker Hannifin agreed to be the Project Chairman.

On 15 November 1990 at the T3.21 meeting, Draft No. 1 was distributed and reviewed. At the 6 March 1991 T3.21 meeting written comments from the project group were reviewed.

Draft No. 2 was completed 7 July 1991. At the 21 August 1991 T3.21 meeting, it was agreed to change the title from "Labeling" to "Labeling and communication of pneumatic products."

Draft No. 3 was distributed with the 13 November 1991 minutes. Copies of the document were forwarded to T3.6, the Cylinder Section, for their review.

On 8 April 1992 T3.6 met and accepted Draft No. 3 of the document. T3.21 also met that day and made some minor revisions to the document.

NFPA's Technical Staff prepared the document for General Review on 15 May 1992. The General Review closed with comments from four companies. Many of the comments were incorporated into the document and the document was approved for balloting at the 21 January 1993 Technical Board meeting.

Headquarters sent the document out for Ballot on 19 April 1993. Balloting closed with comments from three companies. The negative ballots were all resolved with editorial changes plus the addition of maximum temperature requirements. Project Chairman Berninger updated the document and sent it to Headquarters on 27 July 1994.

Headquarters updated the document and sent it to NFPA legal counsel to be reviewed on 3 August 1994. T3.21 asked for comments on the functional versus safety aspect and what obligation does the manufacturer have once this standard is approved by ANSI on products that are already out in the industry. On 7 November 1994 Project Chairman John Berninger sent an updated document to Headquarters with the changes from NFPA legal counsel. These changes were discussed at the T3.21 meeting on 21 September 1994 and approved. T3.21 agreed that this document should be sent out for a Second Ballot because of the editorial and technical changes made. The reasoning behind the Second Ballot was included in the cover letter for the Second Ballot.

Headquarters sent the document out for Second Ballot on 18 November 1994. The Second Ballot closed with three negative votes. On 13 February 1995 Project Chairman Berninger wrote to all three commentators. One negative commentator wrote back that their company would still like to vote negative on this document.

With this outstanding negative comment, this document was put on the 13 April 1995 Technical Board agenda for final approval. At the Technical Board meeting the item was tabled so that the unresolved comment could be addressed by the Cylinder Section.

The document and the negative vote were discussed at the 20 September 1995 Cylinder Section meeting. A motion was made and passed at this meeting to change the document as discussed.

At the 14 February 1996 Pneumatic Valve meeting, Project Chairman Berninger discussed the changes to the document, from a letter dated 3 January 1996, that were agreed upon by the Cylinder Section and the Pneumatic Valve Section. A motion was made to accept these changes. At the 14 February 1996 Cylinder Section meeting, these changes to the document were reviewed.

At the 22 May 1996 Pneumatic Valve Section meeting it was decided upon that the document should be put on the 15 August 1996 Technical Board agenda for final approval contingent upon a resolution of the negative ballot from the Cylinder Section.

At the 22 May 1996 Cylinder Section meeting it was decided to accept the changes in the 3 January 1996 letter from John Berninger and put the document on the Technical Board agenda for final approval.

The document was placed on the 15 August 1996 Technical Board agenda for final approval with the one negative vote. At the Technical Board meeting the history of the document was reviewed in detail. It was explained that the changes that the negative commentator had asked for were made to the document but the company still wanted to retain their negative vote. The Technical Board voted to grant approval to this document and send it to ANSI for adoption.

Project Group Members who developed this standard:

John Berninger
Project Chairman
Parker Hannifin Corp.

Logan Mathis
Section Chairman
Ross Controls

Clifford Allen
Section Vice Chairman
Lexair, Inc.

E. Wayne Hays
Technical Auditor
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Michael Lyons
Rexroth Corp.

† Deceased

On 4 September 1996, ANSI/(NFPA)T3.21.16 was submitted to ANSI Committee B93 for ballot. Balloting closed with no negative comments. ANSI granted final approval of this document on 14 January 1997.

The membership roster of Standards Committee B93 at the time of ballot:

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Chairman

Daniel B. Shore
Vice Chairman

Shirley C. Seal
Secretary

American Society of Agricultural Engineers
W. L. Snyder

Compressed Air & Gas Institute
John Wiskamp
John Addington (alternate)

Fluid Controls Institute, Inc.
Jude Pauli
John Addington (alternate)

Fluid Power Society
Probir K. Chatterjea
Art DesMarais III
Greg Gordon
Ray Hanley
Bernard Larson
Paul Prass (alternate)
N. Pliny Smith
James J. Staczek

Fluid Sealing Association
Stephen B. Chapman
Robert Ecker (alternate)

Material Handling Institute
Jack C. McPherson

National Fluid Power Association
John Berninger

David Prevallet
Paul Schacht
William Wilkerson

National Machine Tool Builders' Association
Anthony Bratkovich

US Department of Defense
Wayne K. Wilcox

Company Members
Dennis Bonacorsi
John Welker (alternate)
Logan Mathis

Individual Members
John Eleftherakis
Russ Henke
Richard Pettibone
A. O. Roberts
Daniel B. Shore
Vince Torrusio
Jack Walrad
Tom Wanke
James C. White
Frank Yeaple

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On 18 May 2004, ANSI/(NFPA)T3.21.16-1997 was submitted to ANSI Committee B93 for ballot for reaffirmation. Balloting closed on 2 July 2004 with no negative votes. However, comments requesting changes to the bibliography were submitted and accepted. The bibliography in this R2004 version contains updated references.

ANSI/(NFPA)T3.21.16-1997 (R2004) was approved by ANSI's Board of Standards Review on 15 December 2004.

The membership roster of Standards Committee B93 at the time of ballot:

Jack C. McPherson
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Jenna Wetzel
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American Society of Agricultural Engineers
Scott Cedarquist

Compressed Air and Gas Institute
John Addington

Eaton Corporation
Jerry Carlin

Fluid Power Society
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National Fluid Power Association
John F. Berninger

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Dennis Bonacorsi

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John Montague
Albert Roberts
Paul Schacht
Jack Walrad
James C. White
Wayne K. Wilcox

/jw

Introduction

In pneumatic fluid power systems, power is transmitted and controlled through a gas under pressure within an enclosed circuit. To the extent that labels are used on the components in a pneumatic system to communicate certain information to users, it is beneficial that such information be communicated in a uniform manner.

It is helpful that as new products are developed and as existing products are modified, that a standard format be available by which new labeling can be designed. It is intended that this standard fulfill that purpose.

This is a preview of "ANSI/(NFPA)T3.21.16-...". [Click here to purchase the full version from the ANSI store.](#)

Pneumatic fluid power — Labeling and communication of pneumatic products

1 Scope

1.1 This standard provides a common reference for communicating information on a number of pneumatic components.

1.2 This standard includes:

— Descriptions for component manufacturers identification, product ratings, fluid power symbols and certain warning statements common to particular components.

— Application only to service with air as the medium.

— The following pneumatic components:

Air-oil tanks	Flow control valves
Cylinders	Lubricators
Directional control valves	Regulators
Filters	Relief valves

1.3 This standard does not include information on how to incorporate or apply components in a system (i.e., what is the appropriate selection of components or their use).

1.4 This standard applies only to products of a size to reasonably contain the information described.

1.5 This standard may be supplanted by other, reasonable alternative provisions for those pneumatic components where it is deemed appropriate.

1.6 This standard applies specifically to products manufactured after the date of adoption as an American National Standard.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this document. At the time of publication, the editions indicated were valid. All documents are subject to revision, and parties to agreements based on this document are encouraged to investigate the possibility of applying the most recent editions of the documents indicated below. NFPA maintains registers of currently valid NFPA/ANSI standards.

ANSI/B93.2-1986, *Fluid power systems and products — Glossary*.

ISO 1000:1992, *SI Units and Recommendations for the Use of Their Multiples and of Certain Other Units*.

ISO 1219-1:1991, *Fluid power systems and components — Graphic symbols and circuit diagrams — Part 1: Graphic symbols*.