

**norm****NEN-EN-ISO 5172**

Gas welding equipment - Blowpipes for gas welding, heating and cutting - Specifications and tests (ISO/DIS 5172:2004, IDT)

Publicatie uitsluitend voor commentaar

juni 2004  
ICS 25.160.30

Commentaar voor 2004-10-17

Zal vervangen NEN-EN-ISO 5172:1996

Als Europees normontwerp is gepubliceerd: prEN ISO 5172:2004, IDT

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Matériel de soudage aux gaz -- Chalumeaux pour soudage  
aux gaz, chauffage et coupage - Spécifications et essais  
(ISO/DIS 5172:2004)

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## Foreword

This document (prEN ISO 5172:2004) has been prepared by Technical Committee ISO/TC 44 "Welding and allied processes" in collaboration with Technical Committee CEN/TC 121 "Welding", the secretariat of which is held by DIN.

This document is currently submitted to the parallel Enquiry.

This document will supersede EN ISO 5172:1996.

## Endorsement notice

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ISO/TC 44/SC 8

Secretariat: DIN

Voting begins on:  
2004-06-17

Voting terminates on:  
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# Gas welding equipment — Blowpipes for gas welding, heating and cutting — Specifications and tests

*Matériel de soudage aux gaz — Chalumeaux pour soudage aux gaz, chauffage et coupage — Spécifications et essais*

(Revision of ISO 5172:1995, ISO 5172:1995/Amd.1:1995 and ISO 5186:1995)

ICS 25.160.30

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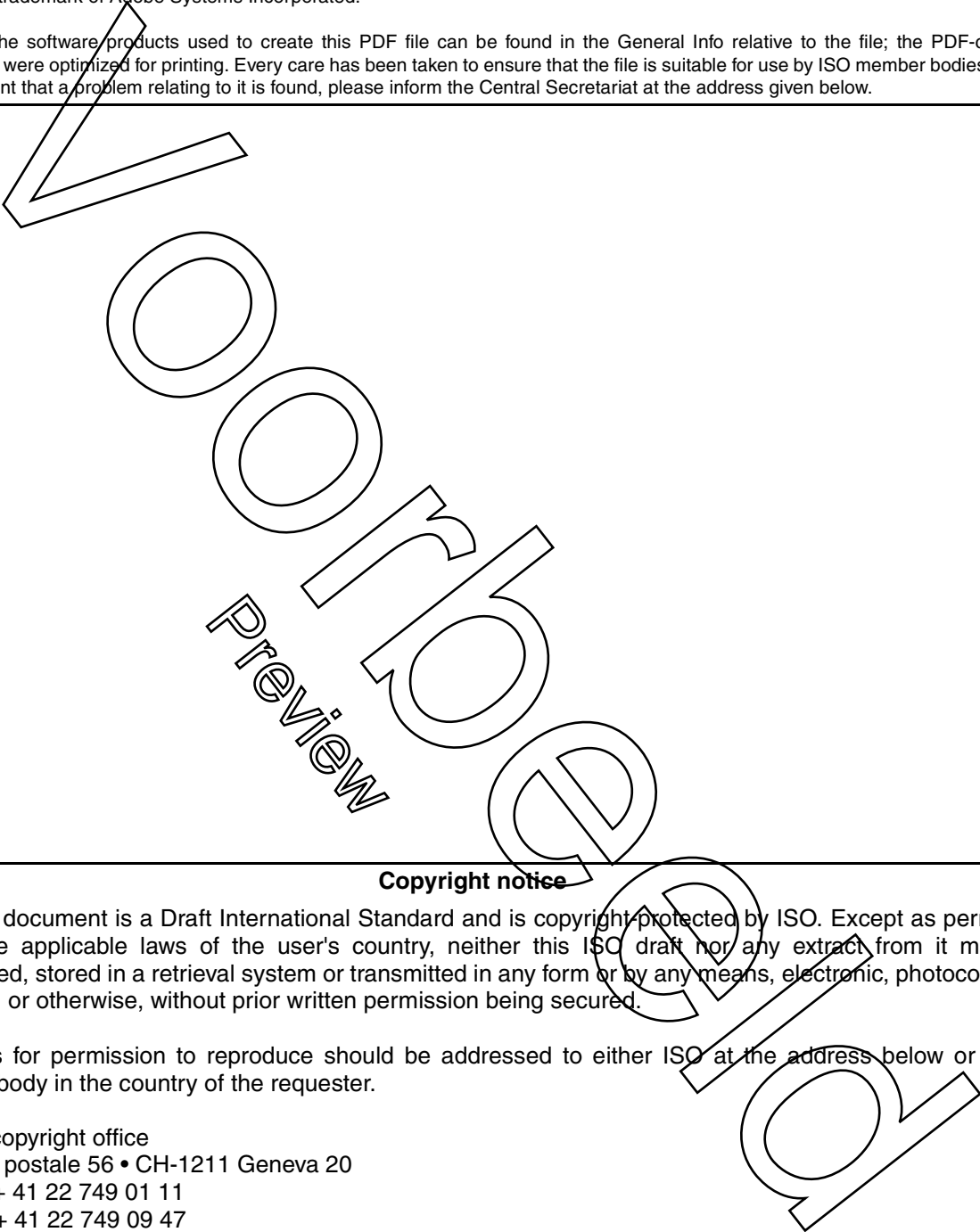
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## Foreword

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International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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ISO 5172 was prepared by Technical Committee ISO/TC 44, *Welding and allied processes*, Subcommittee SC 8, *Equipment for gas welding, cutting and allied processes*.

This document will replace ISO 5172:1995 and ISO 5186:1995.

Annexes A to G and I of this International Standard are informative.

Annex H of this International Standard is normative.



# Gas welding equipment — Blowpipes for gas welding, heating and cutting — Specifications and tests

## Introduction

Requests for official interpretations of any aspect of this standard should be directed to the Secretariat of ISO/TC 44/SC 8 via your national standards body, a complete listing which can be found at [www.iso.org](http://www.iso.org).

## 1 Scope

This International Standard applies to blowpipes for gas welding, heating and cutting of metals and gives specifications and corresponding type tests.

This International Standard covers manual blowpipes for welding and heating with a nominal thermal power up to 32 000 kcal/h and manual and machine cutting blowpipes with a cutting range up to 300 mm.

For the most common fuel gases the corresponding flow rates are given in Annex A, Table A.1.

Air-aspirated blowpipes are excluded from this International Standard (see ISO 9012).

NOTE Blowpipes with greater nominal thermal power or cutting range can also be tested in accordance with this standard if the test requirements are suitable.

## 2 Normative references

The following referenced documents are indispensable for the application 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 554, *Standard atmospheres for conditioning and/or testing — Specifications.*

ISO 3253, *Gas welding equipment — Hose connections for equipment for welding, cutting and allied processes.*

ISO 5175, *Equipment used in gas welding, cutting and allied processes — Safety devices for fuel gases and oxygen or compressed air — General specifications, requirements and tests.*

ISO 9012, *Gas welding equipment — Air-aspirated hand blowpipes — Specifications and tests.*

ISO 9090, *Gas tightness of equipment for gas welding and allied processes.*

ISO 9539, *Materials for equipment used in gas welding, cutting and allied processes.*

ISO/DIS 15296, *Gas welding equipment — Terminology — Terms used for gas welding equipment.*

### 3 Terms and definitions

For the purposes of this document the terms and definitions given in ISO/DIS 15296 and the following apply.

Examples of blowpipes are given in Annex B.

#### 3.1 Mixing system

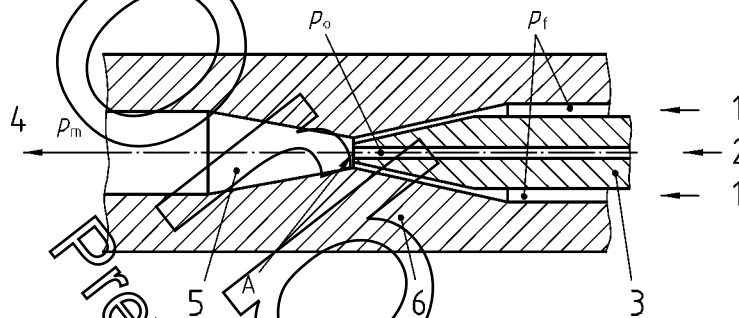
##### 3.1.1

##### low-pressure blowpipe

a blowpipe, in which the fuel gas pressure – measured immediately before the mixing chamber – is lower than the pressure of the gas mixture – measured between the mixing chamber and welding nozzle

$$p_f < p_m$$

NOTE Fuel gas and oxygen/compressed air are mixed by the action of the latter gas which, being discharged from the orifice of the injector generates suction at point "A" of the mixing system thus entraining the fuel gas. See examples of injector-mixer, fixed or adjustable in Figure 1 and Figure 2.



#### Key

- |   |                       |       |  |             |               |
|---|-----------------------|-------|--|-------------|---------------|
| 1 | fuel gas              | $p_f$ | pressure of fuel gas                   | $p_f < p_m$ | low pressure  |
| 2 | oxygen/compressed air | $p_o$ | pressure of oxygen (or compressed air) | $p_f > p_m$ | high pressure |
| 3 | pressure nozzle       | $p_m$ | pressure of mixture                    | $p_o > p_m$ |               |
| 4 | mixture               |       |  |             |               |
| 5 | mixing chamber        |       |  |             |               |
| 6 | mixing nozzle         |       |  |             |               |
| A | point A               |       |  |             |               |

Figure 1 — Injector-mixer for low-pressure and high-pressure blowpipes

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