

BS 8468-6.2:2020



BSI Standards Publication

Respiratory protective devices for use against chemical, biological, radiological and nuclear (CBRN) agents

Part 6.2: Constant flow compressed air line equipment —
Specification

Contents

Page

Foreword

ii

1 Scope

1

2 Normative references

1

3 Terms and definitions

2

4 Requirements

2

4.1 General

2

4.2 Preconditioning

2

4.3 Visual inspection

3

4.4 Inward leakage

3

4.5 Chemical agent permeation and penetration

3

5 Marking

3

6 Information supplied by the manufacturer

4

Figure 1 — HD agent droplet placement for facepiece and belt-mounted air-supply equipment

4

Figure 2 — HD agent droplet placement for hood (incorporating inner mask) and belt-mounted air-supply equipment

5

Figure 3 — HD agent droplet placement for hood (including integrated mask) and belt-mounted air-supply equipment

5

Figure 4 — HD agent droplet placement for blouse with belt-mounted air-supply equipment

6

Figure 5 — HD agent droplet placement for blouse, belt-mounted air supply equipment and integrated breathing hose

7

Summary of pages

This document comprises a front cover, and inside front cover, pages i to iv, pages 1 to 7, an inside back cover and a back cover.

Contents

Page

Foreword

ii

1 Scope

1

2 Normative references

1

3 Terms and definitions

2

4 Requirements

2

4.1 General

2

4.2 Preconditioning

2

4.3 Visual inspection

3

4.4 Inward leakage

3

4.5 Chemical agent permeation and penetration

3

5 Marking

3

6 Information supplied by the manufacturer

4

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4

Figure 2 — HD agent droplet placement for hood (incorporating inner mask) and belt-mounted air-supply equipment

5

Figure 3 — HD agent droplet placement for hood (including integrated mask) and belt-mounted air-supply equipment

5

Figure 4 — HD agent droplet placement for blouse with belt-mounted air-supply equipment

6

Figure 5 — HD agent droplet placement for blouse, belt-mounted air supply equipment and integrated breathing hose

7

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Presentational conventions

The provisions of this standard are presented in roman (i.e. upright) type. Its requirements are expressed in sentences in which the principal auxiliary verb is “shall”.

Commentary, explanation and general informative material is presented in smaller italic type, and does not constitute a normative element.

Where words have alternative spellings, the preferred spelling of the Shorter Oxford English Dictionary is used (e.g. “organization” rather than “organisation”).

Requirements in this standard are drafted in accordance with *Rules for the structure and drafting of UK standards*, subclause **G.1.1**, which states, “Requirements should be expressed using wording such as: ‘When tested as described in Annex A, the product shall ...’”. This means that only those products that are capable of passing the specified test will be deemed to conform to this standard.

Notes and commentaries are provided throughout the text of this standard. Notes give references and additional information that are important but do not form part of the recommendations. Commentaries give background information.

Contractual and legal considerations

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a British Standard cannot confer immunity from legal obligations.

1 Scope

This British Standard specifies requirements for compressed air line breathing apparatus with constant airflow as a respiratory protective device intended to be used during rescue, evacuation, escape, hazard containment and decontamination, and similar activities by emergency first responders or first receivers (e.g. fire, ambulance, police, and associated civilian agencies and workers) in areas containing and contaminated by chemical, biological, radiological and nuclear (CBRN) agents.

This British Standard contains requirements for testing and marking.

This British Standard is applicable to Type CBRN1 or Type CBRN3 devices, according to their intended use.

Type CBRN1 devices provide protection against hazardous particulate matter and gaseous chemical agent permeation and penetration.

Type CBRN3 devices provide protection against hazardous particulate matter and gaseous and liquid chemical agent permeation and penetration.

Requirements for methods of and criteria for decontamination of respiratory protective devices (RPD) are not specified in this British Standard.

NOTE Compressed air line breathing apparatus conforming to this British Standard might be suitable for use in situations other than those involving the specific CBRN agents identified in this British Standard.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes provisions 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.

[BS 8467:2006](#), *Protective clothing – Personal protective ensembles for use against chemical, biological, radiological and nuclear (CBRN) agents – Categorization, performance requirements and test methods*

BS 8468-8:2020, *Respiratory protective devices for use against chemical, biological, radiological and nuclear (CBRN) agents – Part 8: Test methods*

BS EN 134, *Respiratory protective devices – Nomenclature of components*

BS EN 136:1998, *Respiratory protective devices – Full face masks – Requirements, testing, marking*

[BS EN 137](#), *Respiratory protective devices – Self-contained open-circuit compressed air breathing apparatus with full face mask – Requirements, testing, marking*

BS EN 1073-1:2016+A1:2018, *Protective clothing against solid airborne particles including radioactive contamination – Part 1: Requirements and test methods for compressed air line ventilated protective clothing, protecting the body and the respiratory tract*

BS EN 13274-1:2001, *Respiratory protective devices – Methods of test – Part 1: Determination of inward leakage and total inward leakage*

BS EN 14594:2018, *Respiratory protective devices – Continuous flow compressed air line breathing devices – Requirements, testing and marking*

[BS EN ISO 16972:2020](#), *Respiratory protective devices – Vocabulary and graphical symbols*

3 Terms and definitions

For the purposes of this part of BS 8468, the terms and definitions given in [BS EN ISO 16972](#), BS EN 134, BS EN 14594 and the following apply.

3.1 chemical agent

toxic chemical that can be disseminated to cause harm

NOTE Chemical agents include chemical warfare agents and toxic industrial chemicals.

3.2 biological agent

microorganism that is a pathogen and that has the potential to be used intentionally to cause harm

NOTE Human pathogens are relevant to RPD selection.

3.3 radiological agent

substance that emits ionizing radiation and that could be disseminated to cause harm

3.4 nuclear agent

radioactive matter resulting from a nuclear explosion or accidental release from a nuclear facility

3.5 decontamination

physical and/or chemical process of removing as much contamination as possible from people or equipment

4 Requirements

4.1 General

NOTE Compressed air line breathing apparatus with constant flow may be used with a full face mask, hood, helmet or suit (the apparatus).

The apparatus shall be constant flow equipment meeting type CBRN1 or type CBRN3 in accordance with BS 8468-8.

If the facepiece is a full face mask, it shall conform to BS EN 136:1998, class 2 or class 3.

Type CBRN1 devices shall conform to BS EN 14594:2018, class 4A or class 4B; or shall conform to BS EN 1073-1:2016+A1, class 1-5.

Type CBRN3 devices shall either conform to BS EN 14594:2018, class 4A or class 4B, and the lower inward leakage specified in [4.4](#); or shall conform to BS EN 1073-1:2016+A1, class 3, 4 or 5.

The apparatus shall also conform to the chemical agent permeation and penetration resistance specified in [4.5](#), according to CBRN type.

4.2 Preconditioning

Type CBRN1 samples shall be preconditioned in accordance with BS EN 14594 or BS EN 1073-1 prior to visual inspection (see [4.3](#)) and testing for chemical agent permeation and penetration (see [4.4](#) and [4.5](#), respectively) where required.

Type CBRN3 samples shall be preconditioned in accordance with [BS EN 137](#) prior to visual inspection (see [4.3](#)) and testing for inward leakage and chemical agent permeation and penetration (see [4.4](#) and [4.5](#), respectively) where required.

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Type CBRN3 devices shall either conform to BS EN 14594:2018, class 4A or class 4B, and the lower inward leakage specified in [4.4](#); or shall conform to BS EN 1073-1:2016+A1, class 3, 4 or 5.

The apparatus shall also conform to the chemical agent permeation and penetration resistance specified in [4.5](#), according to CBRN type.

4.2 Preconditioning

Type CBRN1 samples shall be preconditioned in accordance with BS EN 14594 or BS EN 1073-1 prior to visual inspection (see [4.3](#)) and testing for chemical agent permeation and penetration (see [4.4](#) and [4.5](#), respectively) where required.

Type CBRN3 samples shall be preconditioned in accordance with [BS EN 137](#) prior to visual inspection (see [4.3](#)) and testing for inward leakage and chemical agent permeation and penetration (see [4.4](#) and [4.5](#), respectively) where required.

6 Information supplied by the manufacturer

The information supplied shall be in accordance with the relevant clauses of BS EN 14594.

The information shall describe precisely and comprehensibly which permissible combinations of components are to be used.

If the manufacturer provides information concerning decontamination and disposal, the information shall specify the agent to be used and the process to be followed.

Figure 1 — HD agent droplet placement for facepiece and belt-mounted air-supply equipment

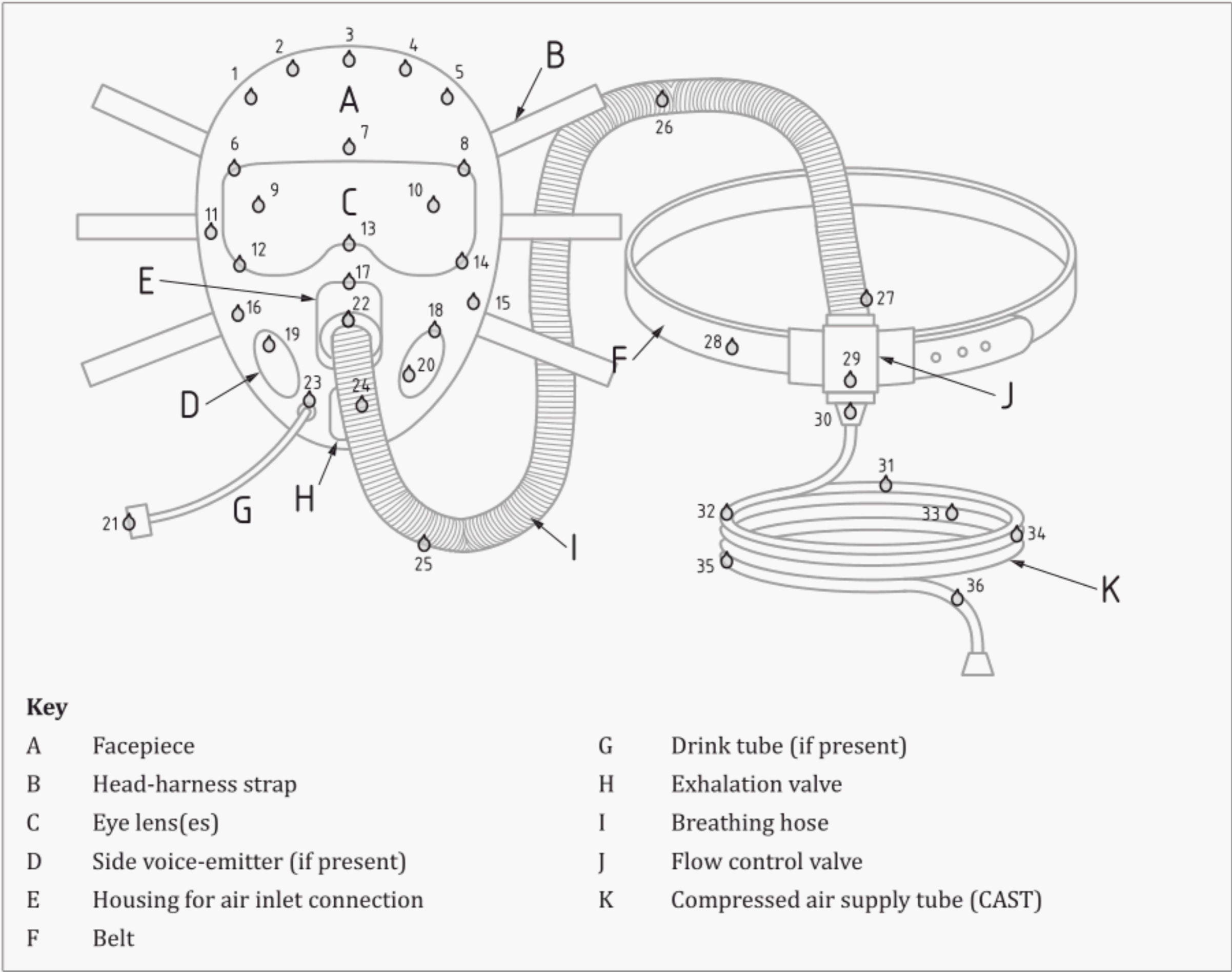


Figure 2 — HD agent droplet placement for hood (incorporating inner mask) and belt-mounted air-supply equipment

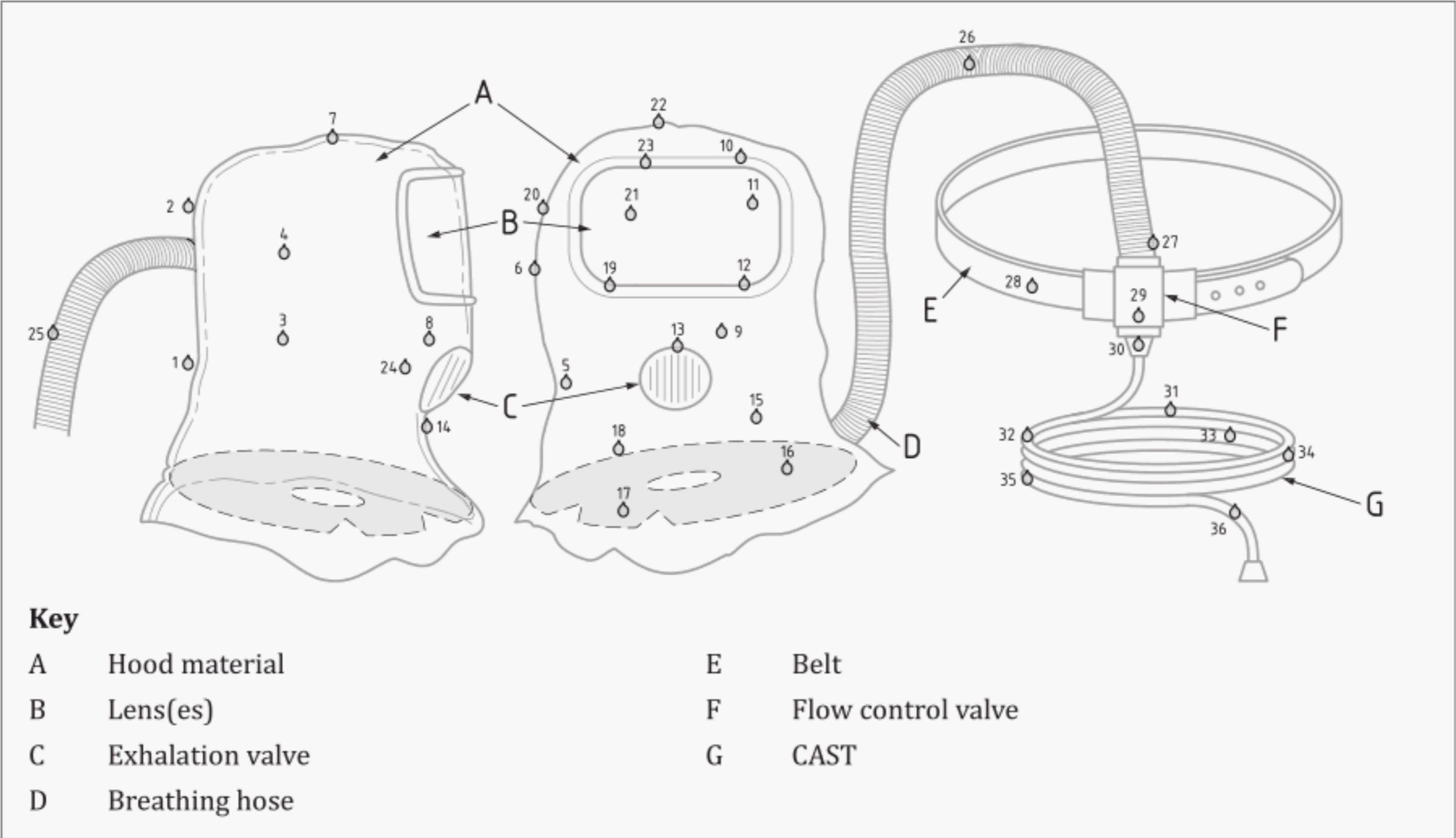


Figure 3 — HD agent droplet placement for hood (including integrated mask) and belt-mounted air-supply equipment

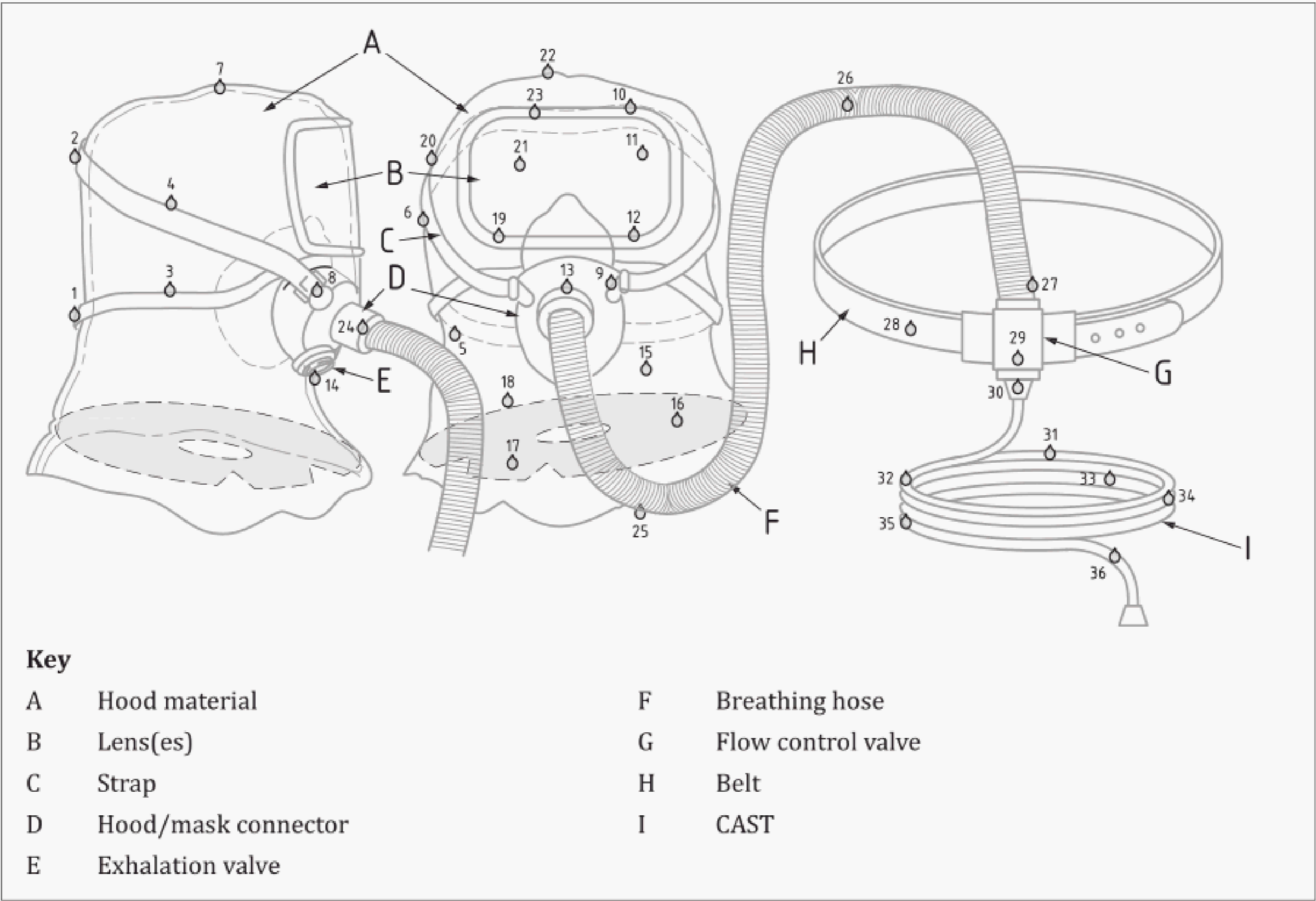


Figure 4 — *HD agent droplet placement for blouse with belt-mounted air-supply equipment*

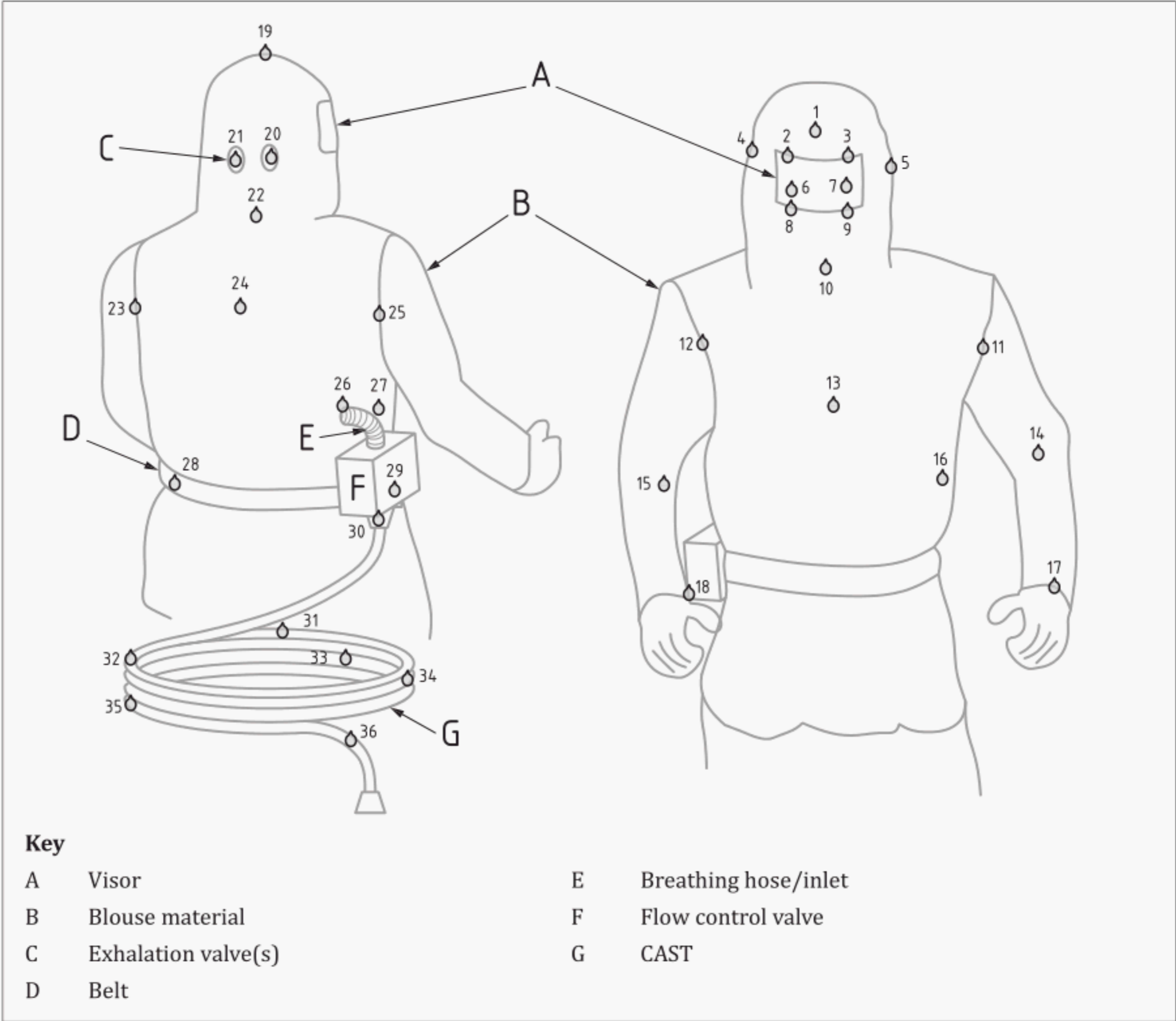
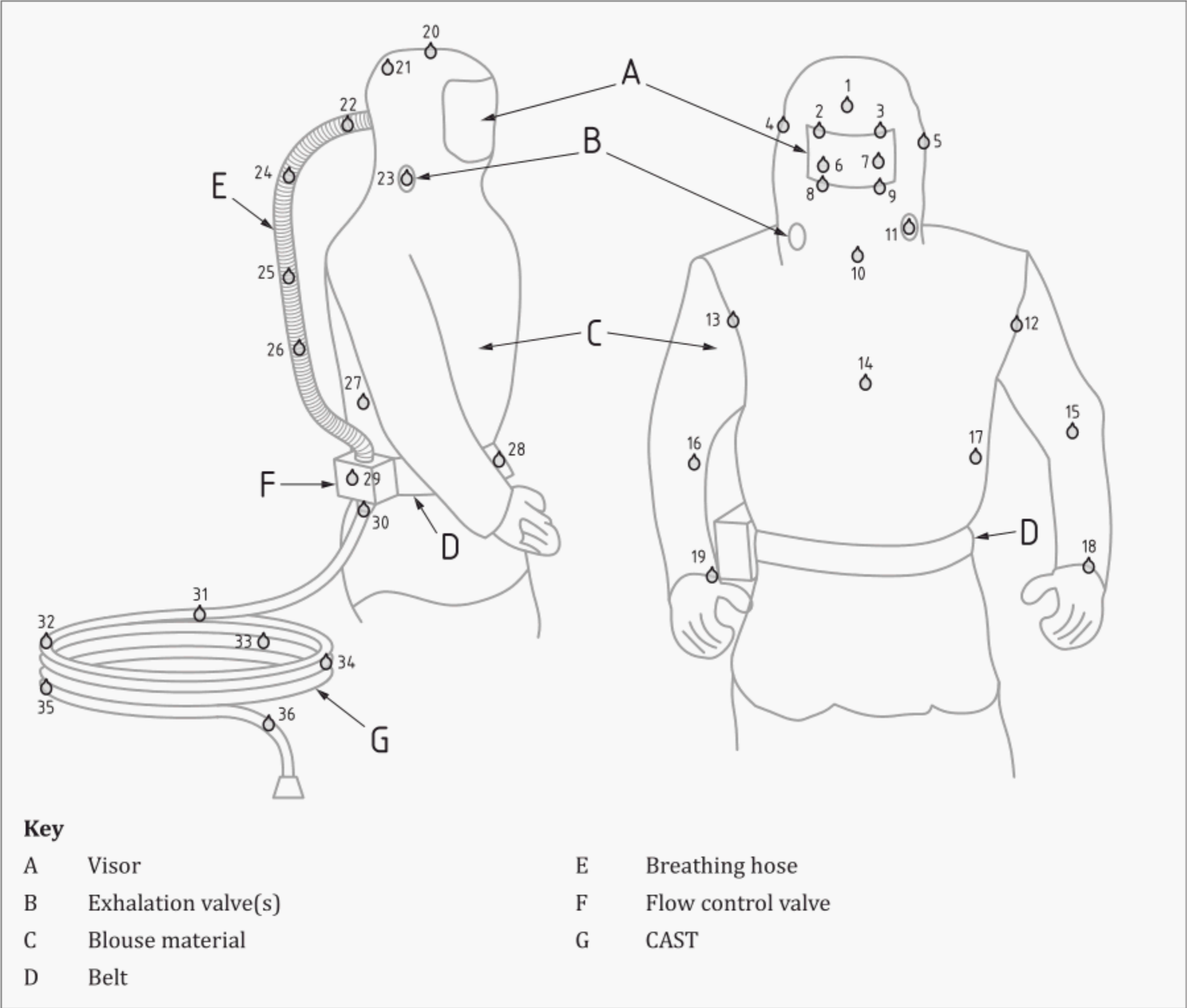


Figure 5 — *HD agent droplet placement for blouse, belt-mounted air supply equipment and integrated breathing hose*



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