

# INTERNATIONAL STANDARD

**ISO**  
**13441-1**

First edition  
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## **Air-assisted agricultural sprayers — Data sheets —**

### **Part 1: Typical layout**

*Pulvérisateurs agricoles à jet porté — Fiches techniques —*

*Partie 1: Plan type de présentation*



Reference number  
ISO 13441-1:1997(E)

## 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.

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.

International Standard ISO 13441-1 was prepared by Technical Committee ISO/TC 23, *Tractors and machinery for agriculture and forestry*, Subcommittee SC 6, *Equipment for crop protection*.

ISO 13441 consists of the following parts, under the general title *Air-assisted agricultural sprayers — Data sheets*:

- *Part 1 : Typical layout*
- *Part 2 : Technical specifications related to components*

Annex A forms an integral part of this part of ISO 13441. Annex B is for information only.

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# Air-assisted agricultural sprayers — Data sheets —

## Part 1:

### Typical layout

## 1 Scope

This part of ISO 13441 establishes the technical specifications of data sheet presentation, for the preparation of documents giving information about dimensions, materials, characteristics and design of air-assisted agricultural sprayers used for the application of crop protection products in arboriculture, viticulture and hop cultivation. Data sheets prepared according to this part of ISO 13441 will facilitate discussion between the manufacturers of sprayers and the manufacturers of component parts and accessories.

This part of ISO 13441 is applicable during the preparation of data sheets by manufacturers or importers of air-assisted agricultural sprayers, whether mounted, trailed or self-propelled.

The list of codes used in this part of ISO 13441 is given in annex A. A list of International Standards related to this part of ISO 13441 is given in annex B.

## 2 Normative reference

The following standard contains provisions which, through reference in this text, constitute provisions of this part of ISO 13441. At the time of publication, the edition indicated was valid. All standards are subject to revision, and parties to agreements based on this part of ISO 13441 are encouraged to investigate the possibility of applying the most recent edition of the standard indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 789-3:1982, *Agricultural tractors — Test procedures — Part 3: Turning and clearance diameters.*

### 3 General specifications

#### 3.1 Manufacturer

Name and address of manufacturer/distributor/importer: .....

.....

.....

.....

.....

#### 3.2 Type and year of manufacture

Type:

Mounted

Trailed (p.t.o. driven)

Self-propelled

Trailed (driven by engine)

General design of spraying and auxiliary devices (code 502): .....

Capacity: .....

Year of manufacture: .....

Model: .....

Direct indication of the year of manufacture (explanation of code): .....

.....

Location of marking (code 101): .....

.....

#### 3.3 Trade-name(s)

.....

## 4 Dimensions

See figures 1 to 3.

|                                                                         | Mounted<br>equipment   | Trailed<br>equipment   | Self-propelled<br>equipment |
|-------------------------------------------------------------------------|------------------------|------------------------|-----------------------------|
| Total length, $L_1$ : .....                                             | <input type="text"/> m | <input type="text"/> m | <input type="text"/> m      |
| Axle-coupling length, $L_2$ : .....                                     |                        | <input type="text"/> m |                             |
| Wheelbase, $L_3$ : .....                                                |                        |                        | <input type="text"/> m      |
| Wheel track, $W_1$                                                      |                        |                        |                             |
| non-variable: .....                                                     | <input type="text"/> m | <input type="text"/> m | <input type="text"/> m      |
| minimum: .....                                                          | <input type="text"/> m | <input type="text"/> m | <input type="text"/> m      |
| maximum: .....                                                          | <input type="text"/> m | <input type="text"/> m | <input type="text"/> m      |
| Height to top of tank filler, $H_1$ : .....                             | <input type="text"/> m | <input type="text"/> m | <input type="text"/> m      |
| Clearance (below chassis), $H_2$ : .....                                |                        | <input type="text"/> m | <input type="text"/> m      |
| Width, $W_2$ : .....                                                    | <input type="text"/> m | <input type="text"/> m | <input type="text"/> m      |
| Operating height, $H_3$ : .....                                         | <input type="text"/> m | <input type="text"/> m | <input type="text"/> m      |
| Height during transport, $H_4$ : .....                                  | <input type="text"/> m | <input type="text"/> m | <input type="text"/> m      |
| Height of lower coupling points, $H_5$ : .....                          | <input type="text"/> m |                        |                             |
| Minimum turning radius (determined in accordance with ISO 789-3): ..... |                        |                        | <input type="text"/> m      |

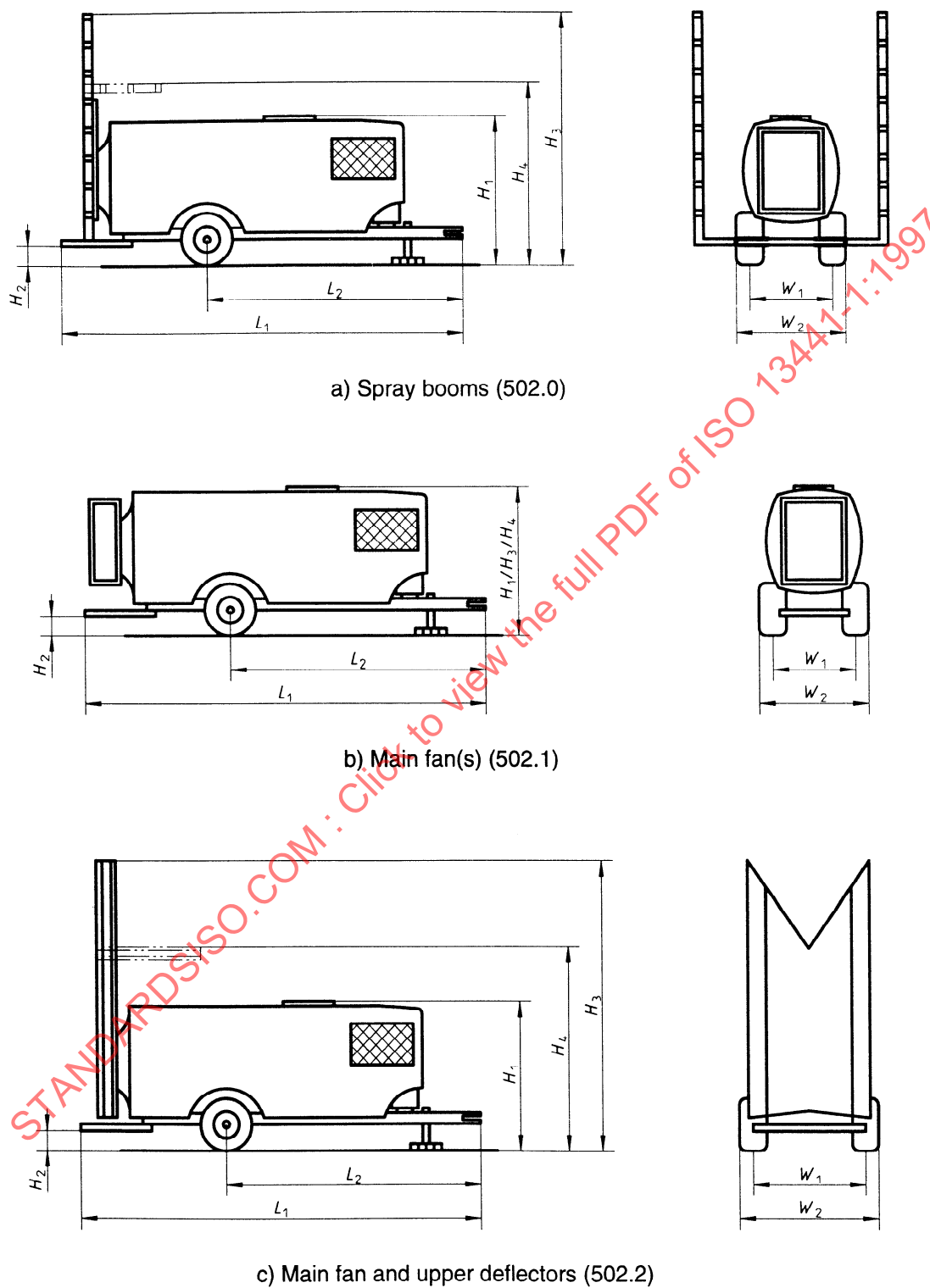
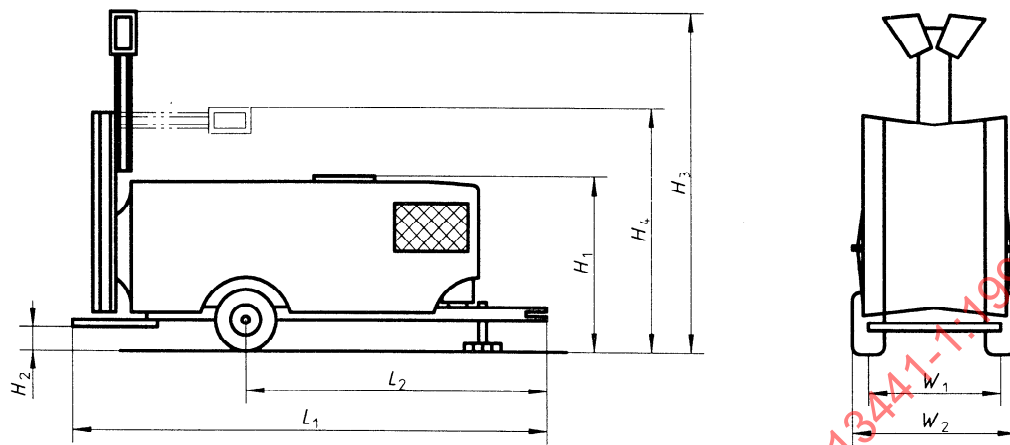
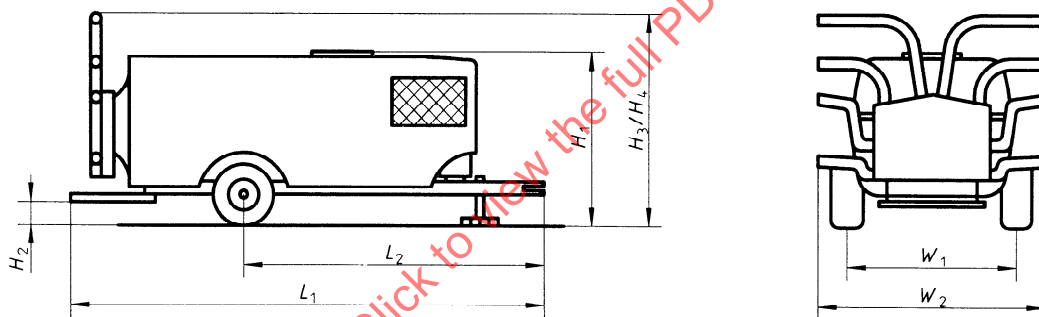


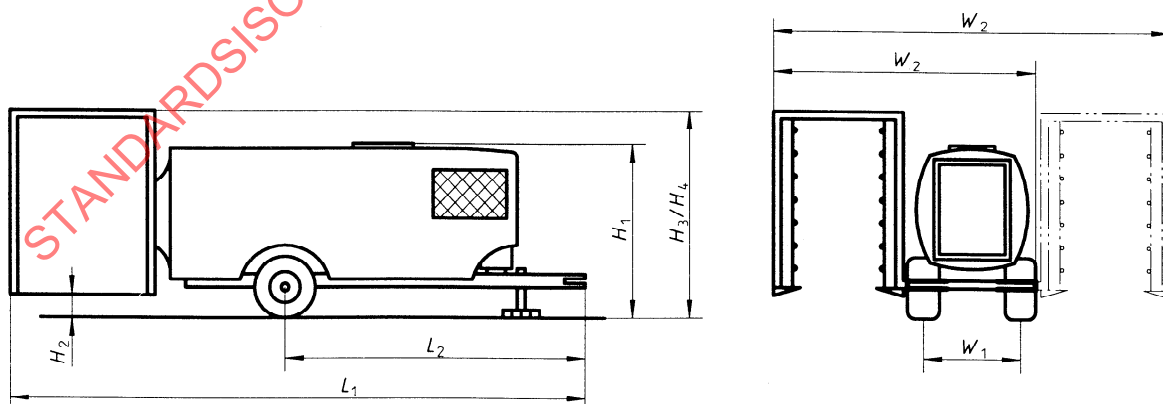
Figure 1 — Dimensions of trailed equipment



d) Main fan and additional fan(s) (502.3)

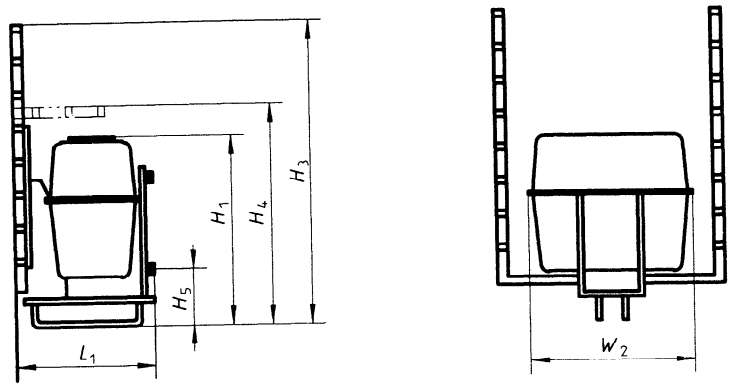


e) Main fan and ventilation lines for each nozzle (502.4)

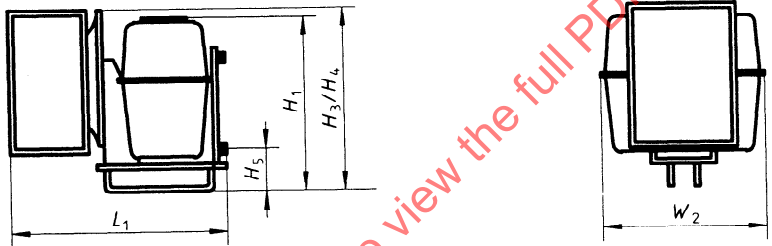


f) Recuperation or reflection panels (502.5)

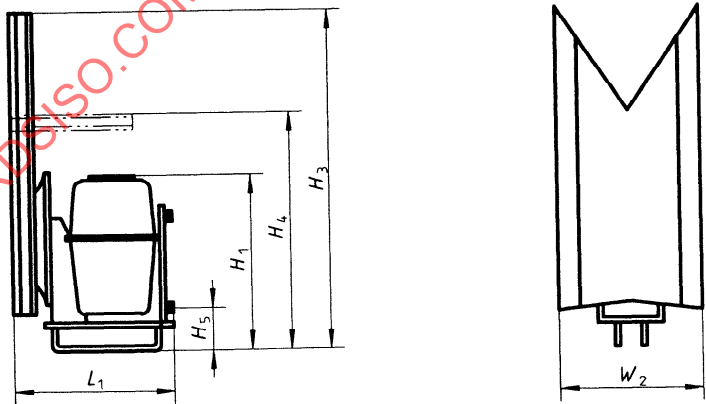
Figure 1 — Dimensions of trailed equipment (concluded)



a) Spray booms (502.0)

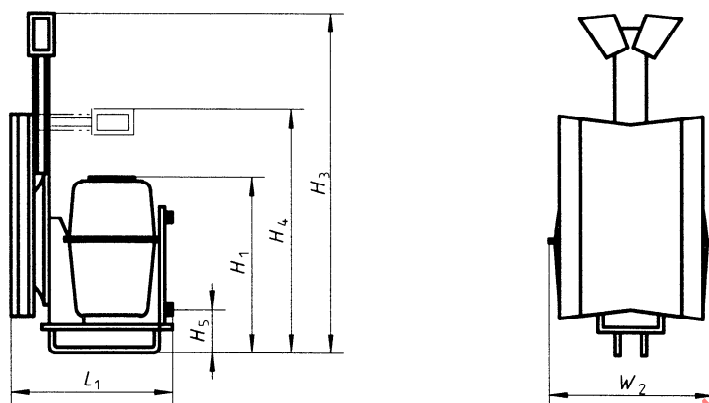


b) Main fan(s) (502.1)

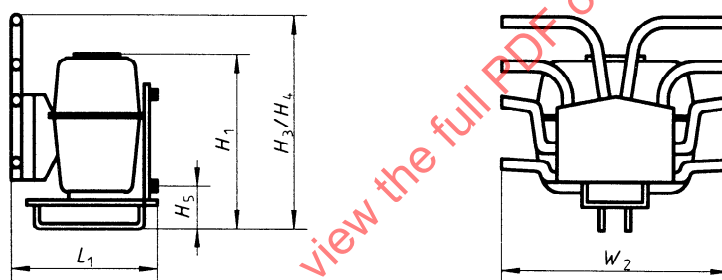


c) Main fan and upper deflectors (502.2)

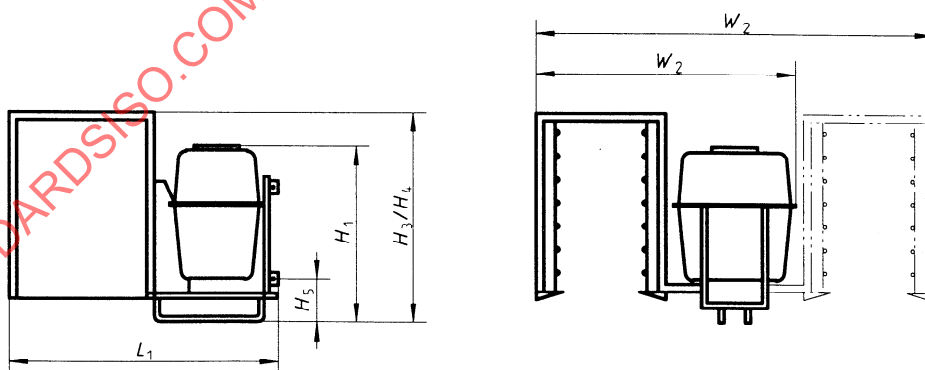
Figure 2 — Dimensions of mounted equipment



d) Main fan and additional fan(s) (502.3)

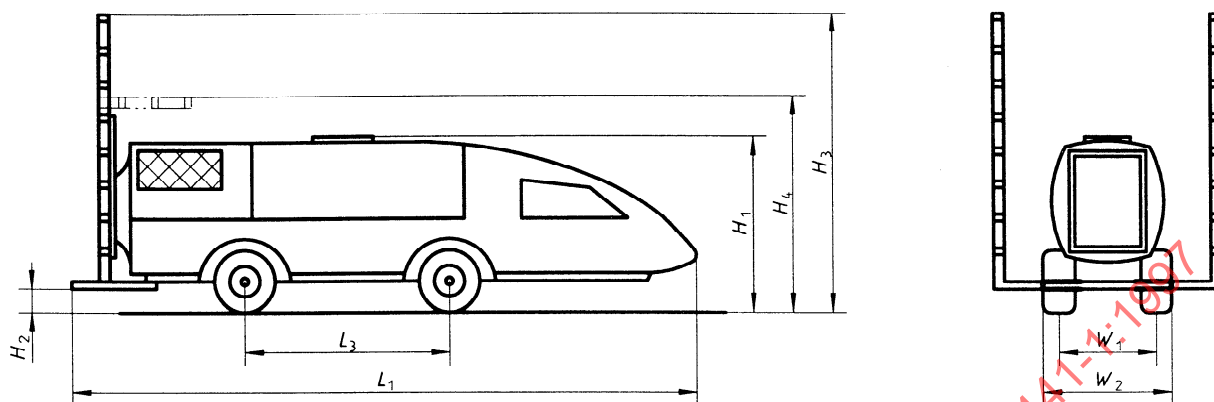


e) Main fan and ventilation lines for each nozzle (502.4)

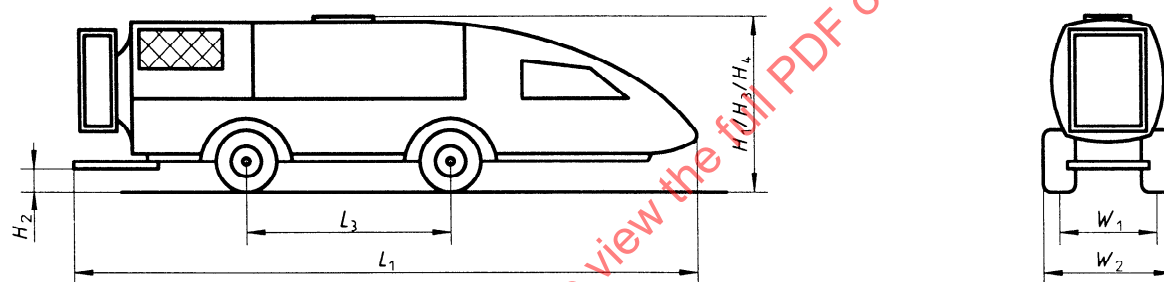


f) Recuperation or reflection panels (502.5)

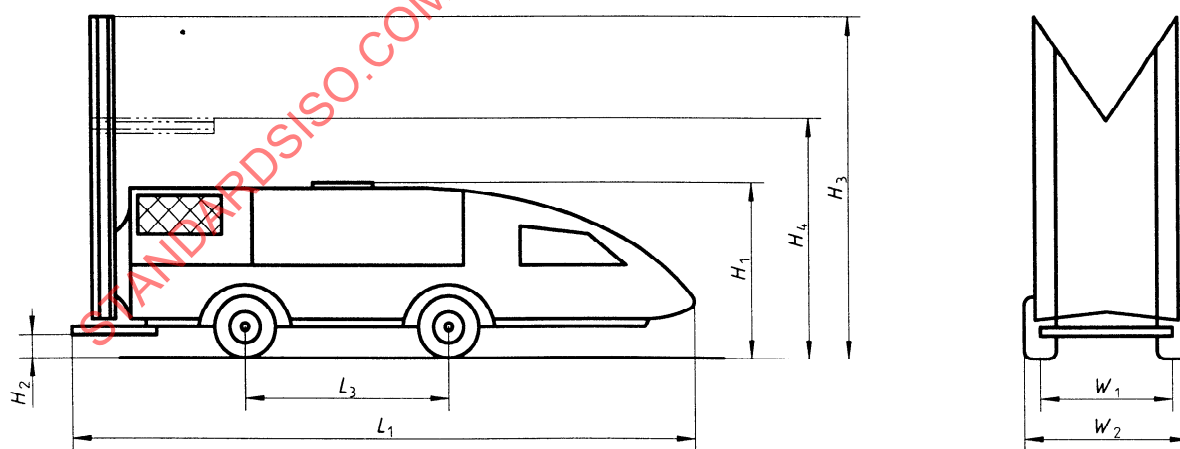
**Figure 2 — Dimensions of mounted equipment (concluded)**



a) Spray booms (502.0)

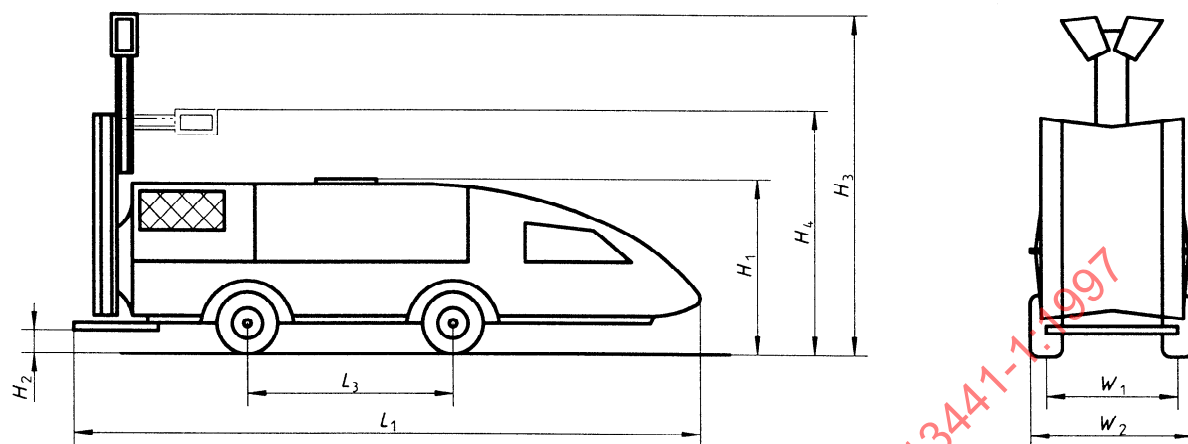


b) Main fan(s) (502.1)

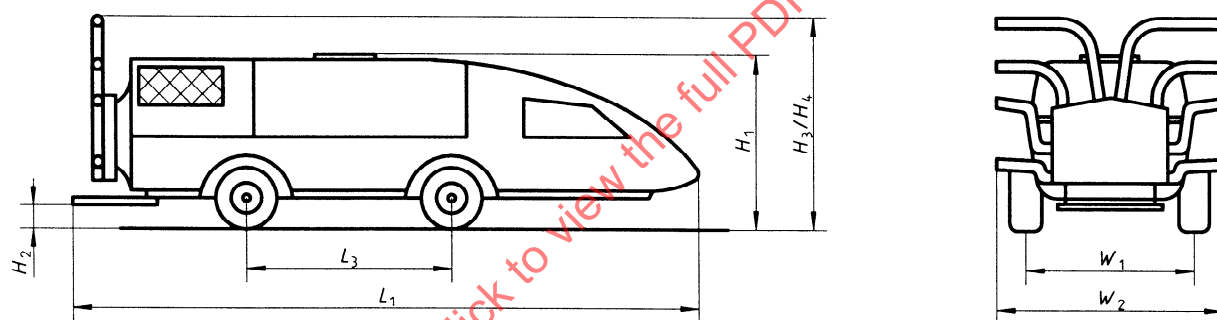


c) Main fan and upper deflectors (502.2)

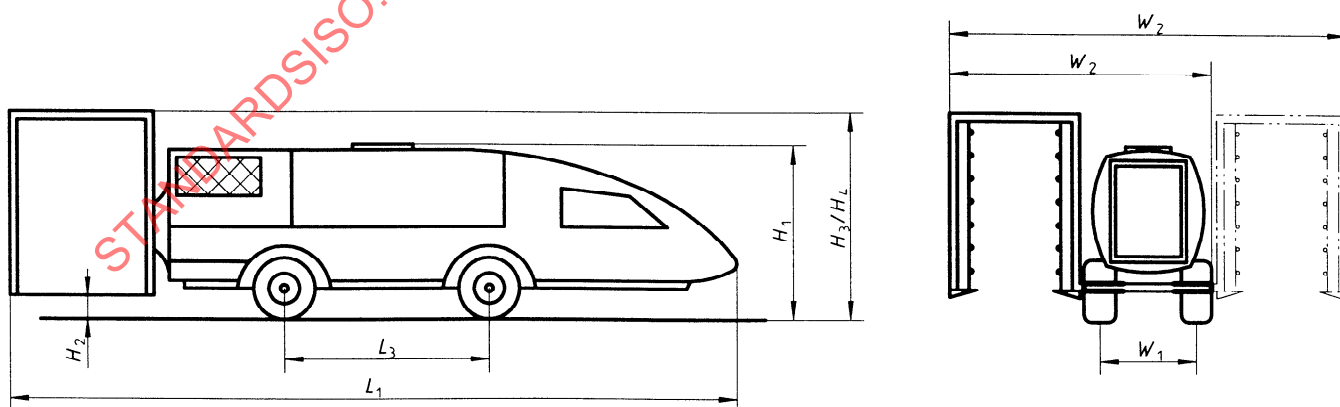
**Figure 3 — Dimensions of self-propelled equipment**



d) Main fan and additional fan(s) (502.3)



e) Main fan and ventilation lines for each nozzle (502.4)



f) Recuperation or reflection panels (502.5)

Figure 3 — Dimensions of self-propelled equipment (concluded)

5 Masses

|                                            | Mounted equipment |      | Trailed equipment |      | Self-propelled equipment |      |
|--------------------------------------------|-------------------|------|-------------------|------|--------------------------|------|
|                                            | empty             | full | empty             | full | empty                    | full |
| Mass on drawbar or front wheels (kg):..... |                   |      |                   |      |                          |      |
| Mass on rear wheels (kg):.....             |                   |      |                   |      |                          |      |
| Total mass (kg): .....                     |                   |      |                   |      |                          |      |

6 Tyres

|                          | Trailed equipment | Self-propelled equipment |      |
|--------------------------|-------------------|--------------------------|------|
|                          |                   | front                    | rear |
| Make:.....               |                   |                          |      |
| Type: .....              |                   |                          |      |
| Dimensions:.....         |                   |                          |      |
| Inflation pressure:..... |                   |                          |      |

7 Brakes

|                                    | Trailed equipment | Self-propelled equipment |
|------------------------------------|-------------------|--------------------------|
| Parking brake (specify type):..... |                   |                          |
| Foot-brake (specify type): .....   |                   |                          |

## 8 Engine-driven trailed equipment and self-propelled equipment — Engine specifications

Make: .....

Type of cycle: .....

Supercharged: .....

Cooling: .....

Number and arrangement of cylinders: .....

Engine capacity: .....  cm<sup>3</sup>

Rated speed: .....  r/min

Output (see ISO 2288): .....  kW

Fuel tank capacity: .....  l

## 9 Self-propelled equipment — Other specifications

### 9.1 Transmission

Speed range: .....  km/h to  km/h

Drive-axle

front: .....

rear: .....

Clutch: .....

Steering: .....

**9.2 Driving position**

|                                   |                                     |                                   |
|-----------------------------------|-------------------------------------|-----------------------------------|
| Cab:.....                         | <input type="checkbox"/> YES        | <input type="checkbox"/> NO       |
| Seat                              |                                     |                                   |
| make:.....                        | <input type="text"/>                |                                   |
| type:.....                        | <input type="text"/>                |                                   |
| adjustable:.....                  | <input type="checkbox"/> YES        | <input type="checkbox"/> NO       |
| Windscreen washer:.....           | <input type="checkbox"/> YES        | <input type="checkbox"/> NO       |
| Number of windscreen wipers:..... | <input type="text"/>                |                                   |
| Cab filtering: .....              | <input type="checkbox"/> Mechanical | <input type="checkbox"/> Chemical |
| Air conditioning:.....            | <input type="checkbox"/> YES        | <input type="checkbox"/> NO       |

**9.3 Other equipment**

|                                |                              |                             |
|--------------------------------|------------------------------|-----------------------------|
| Spotlight: .....               | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Dividers on front wheels:..... | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Rear coupling device:.....     | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Tool kit:.....                 | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Area meter:.....               | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Optional equipment: .....      | <input type="text"/>         |                             |

## Annex A (normative)

### Code list

If the code number "99" is used, a description which is as exact as possible should be given.

When more than one code is used, the code numbers shall be separated by "+".

#### 101 General — Location of marking

| Implement part |                    | Location |              |
|----------------|--------------------|----------|--------------|
| 0              | no marking         |          |              |
| 1              | on chassis         | 1        | front left   |
| 2              | on tank            | 2        | front middle |
| 3              | on auxiliary parts | 3        | front right  |
| 99             | other              | 4        | rear left    |
|                |                    | 5        | rear middle  |
|                |                    | 6        | rear right   |
|                |                    | 7        | left         |
|                |                    | 8        | right        |
|                |                    | 99       | other        |

#### 502 General design

|    |                                                                                       |
|----|---------------------------------------------------------------------------------------|
| 0  | spray booms                                                                           |
| 1  | main fan(s)                                                                           |
| 2  | main fan and upper deflectors                                                         |
| 3  | main fan and additional fan(s)                                                        |
| 4  | main fan and ventilation lines for each nozzle                                        |
| 5  | recuperation or reflection panels on one side                                         |
| 6  | recuperation or reflection panels on two sides                                        |
| 7  | recuperation or reflection panels in the centre (as on a straddling vineyard tractor) |
| 99 | others                                                                                |

## Annex B

(informative)

### Bibliography

- [1] ISO 565:1990, *Test sieves — Metal wire cloth, perforated metal plate and electroformed sheet — Nominal sizes of openings*.
- [2] ISO 2288:—<sup>1)</sup>, *Agricultural tractors and machines — Engine test code — Net power*.
- [3] ISO 4102:1984, *Equipment for crop protection — Sprayers — Connection threading*.
- [4] ISO 5681:1992, *Equipment for crop protection — Vocabulary*.
- [5] ISO 5682-1:1996, *Equipment for crop protection — Spraying equipment — Part 1: Test methods for sprayer nozzles*.
- [6] ISO 5682-2:—<sup>2)</sup>, *Equipment for crop protection — Spraying equipment — Part 2: Test methods for hydraulic sprayers*.
- [7] ISO 5682-3:1996, *Equipment for crop protection — Spraying equipment — Part 3: Test method for volume/hectare adjustment systems of agricultural hydraulic pressure sprayers*.
- [8] ISO 6686:1995, *Equipment for crop protection — Antidrip devices — Determination of performance*.
- [9] ISO 8169:1984, *Equipment for crop protection — Sprayers — Connecting dimensions for nozzles and manometers*.
- [10] ISO 9357:1990, *Equipment for crop protection — Agricultural sprayers — Tank nominal volume and filling hole diameter*.
- [11] ISO 9898:—<sup>3)</sup>, *Equipment for crop protection — Test method for air-assisted sprayers — Air flow rate and power required*.
- [12] ISO 10626:1991, *Equipment for crop protection — Sprayers — Connecting dimensions for nozzles with bayonet fixing*.
- [13] ISO 10627-1:1992, *Agricultural sprayers — Data sheet — Part 1: Typical layout*.
- [14] ISO 10627-2:1996, *Hydraulic agricultural sprayers — Data sheets — Part 2: Technical specifications related to components*.
- [15] ISO 13440:1996, *Equipment for crop protection — Agricultural sprayers — Determination of the volume of total residual*.

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1) To be published. (Revision of ISO 2288:1989)

2) To be published. (Revision of ISO 5682-2:1986)

3) To be published.