

## COUNCIL DIRECTIVE

of 26 May 1986

on the approximation of the laws of the Member States relating to the power take-offs of wheeled agricultural and forestry tractors and their protection

(86/297/EEC)

THE COUNCIL OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Economic Community, and in particular Article 100 thereof,

Having regard to the proposal from the Commission <sup>(1)</sup>,

Having regard to the opinion of the European Parliament <sup>(2)</sup>,

Having regard to the opinion of the Economic and Social Committee <sup>(3)</sup>,

Whereas the technical requirements with which wheeled agricultural or forestry tractors must comply pursuant to national laws relate, *inter alia*, to the power take-off and its protection;

Whereas those requirements differ from one Member State to another; whereas it is therefore necessary that all Member States adopt the same requirements, either in addition to, or in place of, their existing rules, in particular in order to allow the EEC type-approval procedure which was the subject of Council Directive 74/150/EEC of 4 March 1974 on the approximation of the laws of the Member States relating to the type-approval of wheeled agricultural or forestry tractors <sup>(4)</sup>, as last amended by the Act of Accession of Spain and Portugal, to be applied in respect of each tractor type;

Whereas the Council Resolution of 29 June 1978 concerning an action programme of the European Communities on safety and health at work <sup>(5)</sup> provides for the application of the principles of accident prevention in the design and creation of plant and machinery, including the agricultural sector; whereas the provisions concerning power take-offs and their protection constitute safety factors;

Whereas the approximation of the national laws relating to wheeled agricultural or forestry tractors entails reciprocal recognition by Member States of the checks carried out by each of them on the basis of common requirements,

HAS ADOPTED THIS DIRECTIVE:

*Article 1*

1. 'Agricultural or forestry tractors' means any motor vehicle, fitted with wheels or endless tracks, having at least

two axles, the main function of which lies in its tractive power and which is specially designed to tow, push, carry or power certain tools, machinery or trailers intended for agricultural or forestry use. It may be equipped to carry a load or passengers.

2. This Directive shall apply only to the tractors defined in paragraph 1, which are fitted with pneumatic tyres and have at least two axles and a maximum design speed of between 6 and 30 km/h.

*Article 2*

No Member State may refuse to grant EEC type-approval or national type-approval in respect of a tractor, or refuse or prohibit its sale, registration, entry into service or use, on grounds relating to the power take-off and its protection if the latter satisfy the requirements set out in Annex I.

*Article 3*

This Directive shall not affect the right of Member States to specify, with due observance of the Treaty, the requirements they deem necessary to ensure that workers are protected when using the tractors in question, provided this does not mean that the power take-off and its protection are modified in a way unspecified in this Directive.

*Article 4*

Any amendments necessary to adapt the requirements of Annex I and the model Annex to the EEC type-approval certificate shown in Annex II to technical progress shall be adopted in accordance with the procedure laid down in Article 13 of Directive 74/150/EEC.

*Article 5*

1. Member States shall bring into force the laws, regulations and administrative provisions necessary to comply with this Directive within 18 months of its adoption. They shall forthwith inform the Commission thereof. However, the requirements of section 5.2 of Annex I shall not apply until 1 October 1995.

<sup>(1)</sup> OJ No C 164, 23. 6. 1983, p. 5.

<sup>(2)</sup> OJ No C 307, 14. 11. 1983, p. 104.

<sup>(3)</sup> OJ No C 341, 19. 12. 1983, p. 2.

<sup>(4)</sup> OJ No L 84, 28. 3. 1974, p. 10.

<sup>(5)</sup> OJ No C 165, 11. 7. 1978, p. 3.

2. Member States shall ensure that the text of the main provisions of national law which they adopt in the field covered by this Directive are communicated to the Commission.

Done at Brussels, 26 May 1986.

*Article 6*

This Directive is addressed to the Member States.

*For the Council*  
*The President*  
G. BRAKS

## ANNEX I

**DEFINITION AND SCOPE, APPLICATION FOR EEC TYPE-APPROVAL, EEC, TYPE-APPROVAL, TYPES OF POWER TAKE-OFF AND DESIGN AND POSITIONING REQUIREMENTS IN RESPECT OF THE LATTER AND THEIR PROTECTIVE GUARDS**

## 1. DEFINITION AND SCOPE

- 1.1. 'Power take-off' (PTO) means the projecting part of the tractor drive shaft which transmits motion to a machine.
- 1.2. The provisions of this Directive shall apply only to power take-offs as defined in 1.1 and located at the rear of the tractor. However, section 5.2 below shall apply only to tractors with a minimum fixed or adjustable track at one of the drive axles of at least 1 150 mm.

## 2. APPLICATION FOR EEC TYPE-APPROVAL

- 2.1. The application for the type approval of a tractor type as regards the power take-off and its protection must be submitted by the tractor manufacturer or his authorized representative.
- 2.2. It must be accompanied by drawings, in triplicate, on an appropriate and suitably detailed scale, of those parts of the tractor subject to the requirements of this Directive.
- 2.3. A tractor representative of the type submitted for approval or those part(s) of the tractor considered essential for the execution of the tests required by this Directive must be supplied to the technical service responsible for conducting the type-approval tests.

## 3. EEC TYPE-APPROVAL

- 3.1. A certificate conforming to the model which appears in Annex II must be attached to the EEC type-approval certificate for each approval granted or refused.

## 4. TYPES OF POWER TAKE-OFF

- 4.1. The characteristics of PTOs must conform to one of the types described in Table 1:

TABLE 1

Characteristics of types of PTO

| Type | Nominal Diameter (mm) | Number of splines        | Nominal PTO rotation speed rpm <sup>(1)</sup> |
|------|-----------------------|--------------------------|---|
| 1    | 35                    | 6 straight splines       | } 540 and/or 1 000                            |
| 2    | 35                    | 21 } Involute serrations |   |
| 3    | 45                    | 20 }                     |   |

<sup>(1)</sup> Except PTO whose rotation speed is linked to the tractor's ground speed.

- 4.2. It must be possible to maintain the rotation speed of the PTO by suitable means.
- 4.3. Should more than one ratio between the engine speed and the PTO rotation speed be provided, any change of ratio must be perceptible. In addition, specific design measures must be taken to ensure that unintentional changes of ratio — in particular changing to a higher rotation speed — cannot occur. This safety device must operate each time the PTO is engaged.
- 4.4. Means must be provided by which the selected PTO rotation speed is clearly indicated at all times.

5. DESIGN AND POSITIONING REQUIREMENTS

5.1. Direction of rotation of the rear PTO

Clockwise when the PTO is observed in the direction of travel of the tractor.

5.2. Zone of clearance around the PTO

The PTO zone of clearance must be in conformity with the drawings in Figure 1 and the dimensions in Table 2.

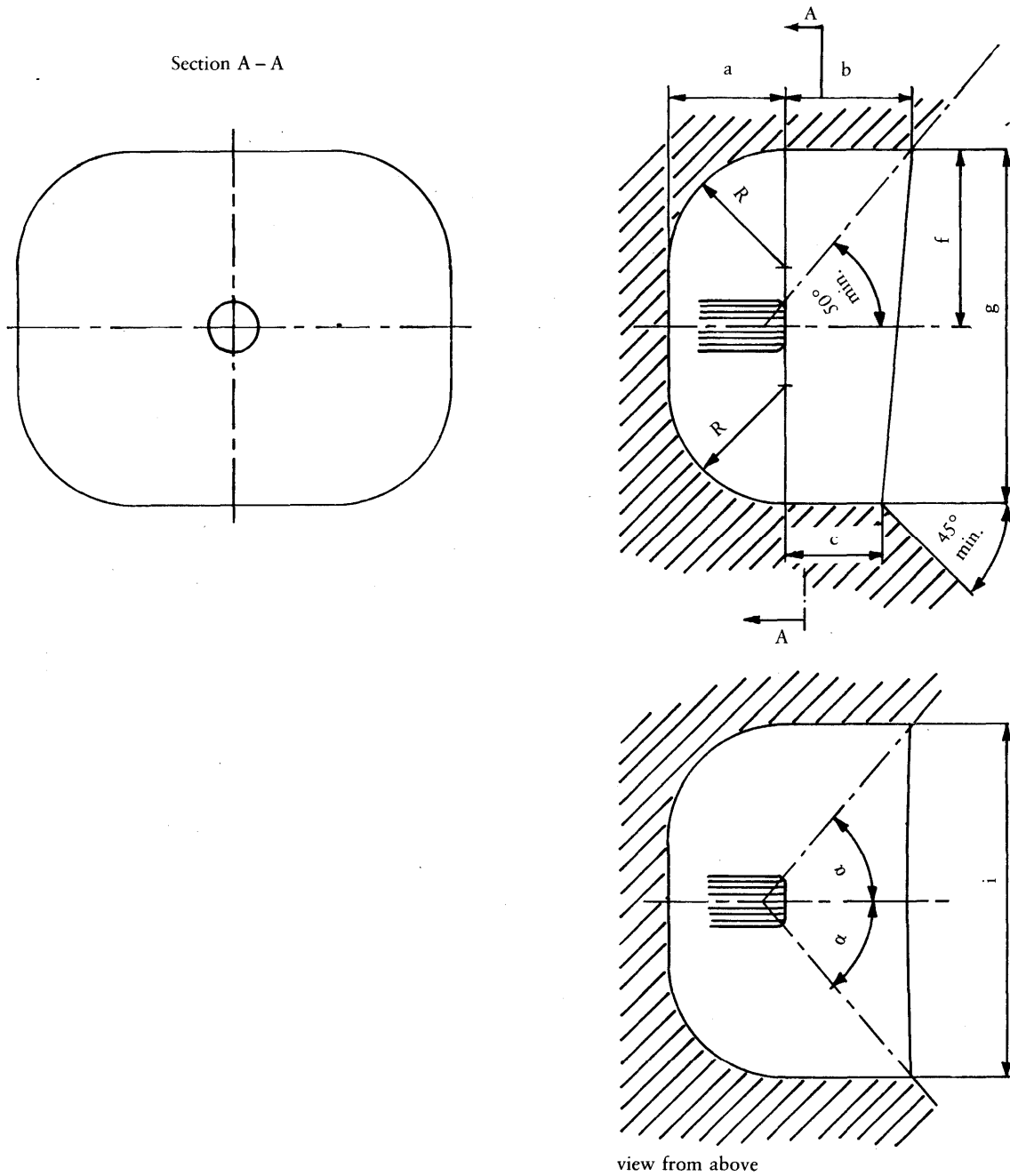


Figure 1

## Zone of clearance around PTO

TABLE 2

## Dimensions of the clearance zone

| Type | a<br>min. | b<br>max. | c<br>max. | f<br>min. | g<br>min. | i<br>min. | R<br>spheric<br>max. | $\alpha$<br>min. |
|------|-----------|-----------|-----------|-----------|-----------|-----------|----------------------|------------------|
| 1    | 76        | 80        | 60        | 120       | 240       | 280       | 76                   | 55°              |
| 2    |           |           |           |           |           |           |                      |                  |
| 3    | 89        | 100       | 65        | 145       | 290       | 295       | 89                   | 51°              |

## 5.3. Protection of PTOs

## 5.3.1. Protection

5.3.1.1. The power take-off must be protected by a guard mounted on the tractor which covers at least the top part and the two sides of the PTO as shown in Figure 2 below, or by other means providing a similar degree of protection such as the location of the PTO in a recess that is part of the tractor or is formed by a separate part (tow-hook mounts, coupling cover, etc.).

5.3.1.2. The dimensions of the protective guard are laid down, as a function of the type of PTO, in Table 3 below.

5.3.1.3. An additional non-rotating protective device which fully covers the PTO must also be supplied with the tractor to protect the PTO when the latter is not in use.

## 5.3.2. Characteristics of protective guards

5.3.2.1. The protective guard must be designed so as not to impede (or in order to facilitate) the use and maintenance of the tractor.

It must be possible to carry out maintenance operations without removing the protective guard.

5.3.2.2. The materials used must be able to withstand bad weather, must retain their mechanical properties in cold weather and must be sufficiently sturdy.

5.3.2.3. The protective guard must have no points or sharp edges; it must contain no orifices exceeding 8 mm diameter or side of a square or rectangle other than that necessary for attaching the chain of the protective device for the universal-joint drive shaft and must be able to bear a weight of 120 daN, unless it is designed in such a way that it cannot be used as a step.

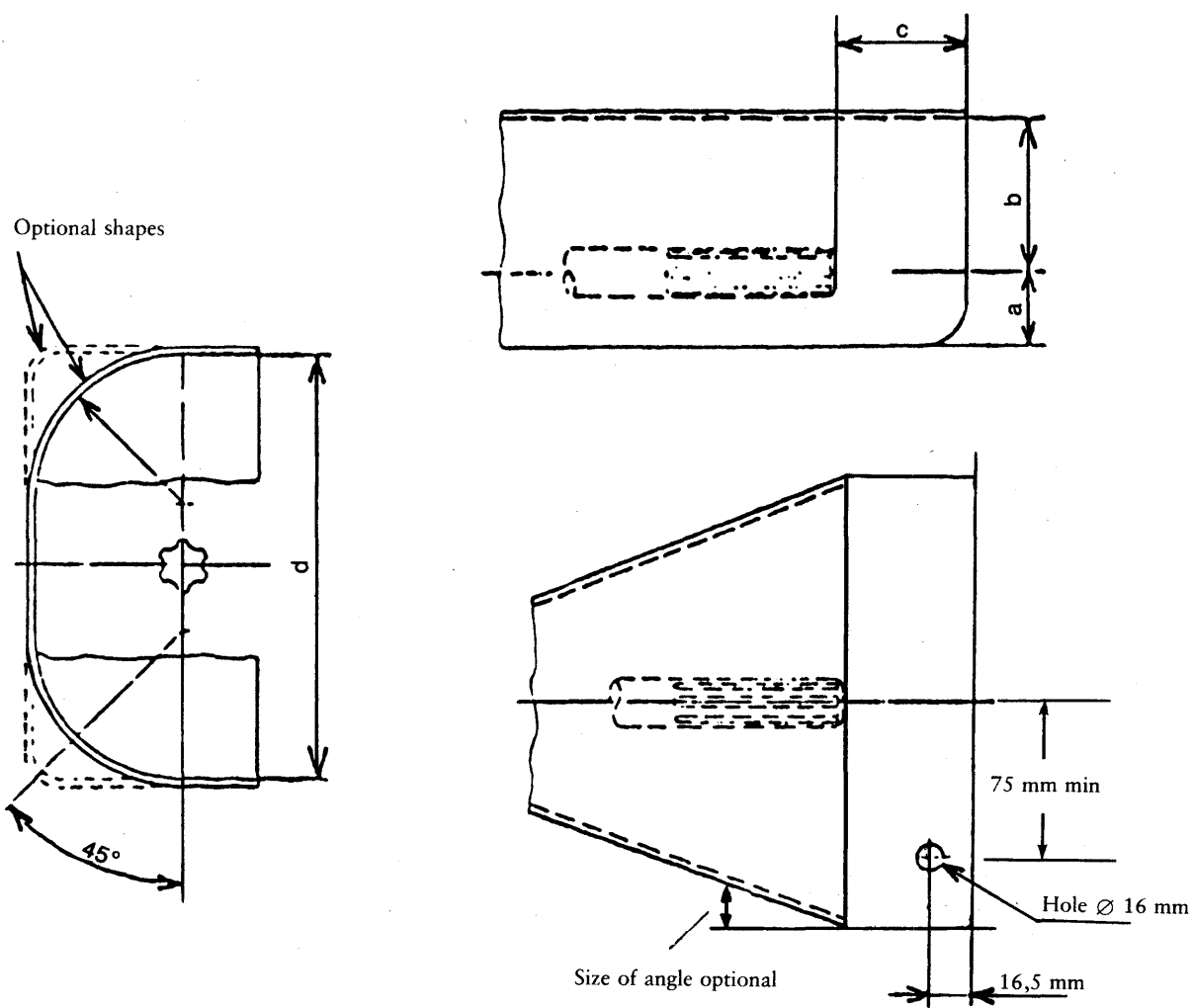


Figure 2

Protective guard for type 1, 2 and 3 PTOs

TABLE 3

Dimensions of the power take-off protective guard

| Type | Dimensions of protective guard <sup>(1)</sup><br>(mm) |       |       |       |
|------|---|-------|-------|-------|
|      | a   | b ± 5 | c ± 5 | d ± 5 |
| 1    | 70  | 125   | 85    | 285   |
| 2    | 70  | 125   | 85    | 285   |
| 3    | 80  | 150   | 100   | 300   |

<sup>(1)</sup> In the case of tractors having two rear PTO shafts, the dimensions b and/or d may be adjusted in order to maintain equivalent clearance areas between the shafts and the protective guard.

ANNEX II

MODEL

|                        |
|------------------------|
| Name of administration |
|------------------------|

**ANNEX TO THE EEC TYPE-APPROVED CERTIFICATE FOR A TRACTOR TYPE WITH REGARD TO THE POWER TAKE-OFF AND ITS PROTECTION**

(Articles 4 (2) and 10 of Council Directive 74/150/EEC of March 1974 on the approximation of the laws of the Member States relating to the type approval of wheeled agricultural or forestry tractors)

EEC type-approval No: .....

1. Trade name or mark of tractor: .....
2. Tractor type: .....
3. Name and address of manufacturer: .....
4. If applicable, name and address of manufacturer's authorized representative: .....
5. Brief description of type of power take-off and its protection: .....
6. Date tractor submitted for type-approval: .....
7. Technical service responsible for type-approval tests: .....
8. Date of report by that service: .....
9. Number of report issued by that service: .....
10. EEC type-approval with regard to the power take-off and its protection has been granted/refused <sup>(1)</sup>.
11. The following drawings bearing the abovementioned type-approval No are attached to this communication:  
 A set of drawings of those parts of the tractor considered of interest for the purposes of Council Directive 86/297/EEC of 26 May 1986 on the approximation of the laws of the Member States relating to power take-offs of wheeled agricultural on forestry tractors and their protection.  
 These drawings will be supplied to the competent authorities of the Member States at their express request.
12. Remarks, if any: .....
13. Place: .....
14. Date: .....
15. Signature: .....

<sup>(1)</sup> Delete where inapplicable.