

Australian Standard<sup>®</sup>

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**GUARDS FOR AGRICULTURAL  
TRACTOR PTO DRIVES**

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This Australian standard was prepared by Committee AG/4, Agricultural Tractors and Machinery. It was approved on behalf of the Council of the Standards Association of Australia on 21 December 1982 and published on 9 May 1983.

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The following interests are represented on Committee AG/4:

Australian Workers Union  
CSIRO, Agricultural Engineering Group  
Department of Agriculture, N.S.W.  
Department of Agriculture, Vic.  
Department of Employment and Labour Relations, Qld  
Department of Industrial Relations, N.S.W.  
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## PREFACE

This edition of this standard was prepared by the Association's Committee on Agricultural Tractors and Machinery to supersede AS 1121—1971. It incorporates technical changes, and in addition the format of the document has been brought into line with current SAA policy.

This edition incorporates the relevant requirements of ISO 500, Agricultural Tractors — Power Take-off and Drawbar — Specification, which now covers Type 2 and Type 3 PTOs in addition to the type (Type 1) covered in the previous edition of AS 1121. The tests specified for the power take-off shaft guards have been changed to align with those specified in ISO/DIS 5674/2, Tractors and Machinery for Agriculture and Forestry — Guards for Power Take-off Drive Shafts — Test Method for Robustness and Durability, except that the temperature for the freezing and impact tests has been raised from  $-35^{\circ}\text{C}$  to  $-10^{\circ}\text{C}$  which was considered to be adequate for the Australian conditions and in line with Australian comment and vote on the ISO draft.

The running test has been deleted to effect alignment with the ISO document. Extensive studies, carried out by ISO, indicated that this test, which is difficult to conduct, does not add higher requirements for the quality or durability of the guard, and that the axial and radial loading tests as given in Section 4 herein, have requirements stricter than the running test.

Consideration was given to the inclusion of a test for the deterioration of plastics guards due to exposure to sunlight, but the committee was advised that no suitable test method was available.

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## STANDARDS ASSOCIATION OF AUSTRALIA

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**Australian Standard  
for  
GUARDS FOR AGRICULTURAL TRACTOR PTO DRIVES**

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## SECTION 1. SCOPE AND GENERAL

**1.1 SCOPE.** This standard specifies requirements for guards for power take-off (PTO) drives of agricultural tractors and associated implements. Requirements are specified for —

- (a) tractor PTO guard;
- (b) implement PIC guard; and
- (c) PTO shaft guard.

The clearance zone required around the PTO is specified.

**1.2 REFERENCED DOCUMENTS.** The following document is referred to in this standard:

ISO 500      Agricultural Tractors — Power Take-off and Drawbar — Specification.

**1.3 DEFINITIONS.** For the purpose of this standard, the following definitions apply (see also Fig. 1.1):

**1.3.1 Power take-off (PTO)** — a 'power driven' externally splined stub shaft on a tractor.

**1.3.2 Power input connection (PIC)** — an externally keywayed, splined or drilled stub shaft on an implement.

**1.3.3 PTO shaft** — the assembly from the PTO yoke boss to the PIC boss inclusive of the shafts, universal joints, connectors and fasteners used to transmit rotational power from the tractor PTO to the implement PIC.

**1.3.4 Shaft closed length** (yoke centres) — the distance between the centres of the yoke journal assemblies when the PTO shaft is fully closed.

**1.3.5 Shaft extended length** (yoke centres) — the distance between the centres of the yoke

assemblies when the PTO shaft is fully extended without exceeding the maximum allowable extension.

**1.3.6 Tractor PTO guard** — a guard fixed to the tractor above the PTO.

**1.3.7 Implement PIC guard** — a guard fixed to the implement above the PIC.

**1.3.8 PTO shaft guard, non-rotating** — a PTO shaft guard which is held stationary when the shaft is rotating.

**1.3.9 PTO shaft guard, rotating** — a PTO shaft guard which rotates with the shaft except when it comes into contact with some other object.

**1.3.10 PTO types** — PTO types I, 2 and 3 as specified in ISO 500.

**1.4 GUARDING REQUIREMENTS.** Unless an equivalent degree of protection is provided by other means, e.g. supports for towing device in place of tractor PTO guard or implement PIC guard, the following guards shall be provided for each PTO drive:

- (a) Tractor PTO guard in accordance with Section 2.
- (b) Implement PIC guard in accordance with Section 3.
- (c) PTO shaft guard in accordance with Section 4.

**1.5 MATERIALS.** Guards shall be constructed from materials capable of complying with the requirements specified in [Section 2](#), [Section 3](#) or [Section 4](#), as appropriate.

NOTE: Where guards are constructed from plastics material, the plastics should be a type that is known to be resistant to deterioration due to the effects of exposure to sunlight or to high ambient temperatures.