

ANSI/ASABE AD500-1:2014 MAR2015 (R2019ED)

Agricultural tractors — Rear-mounted power take-off types 1, 2, 3 and 4 — Part 1: General specifications, safety requirements, dimensions for master shield and clearance zone



**American Society of
Agricultural and Biological Engineers**

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This standard was reviewed and approved for adoption by the ASABE Power and Machinery Tractors and Tractor Implement Interface/PTO Technical subcommittees. This adoption along with the adoption with deviations of ISO 8759-1:1998 and ISO 8759-2:1998 and the identical adoptions of ISO 500-2:2004, and ISO 500-3:2004 replaced ASAE S203.14 and ASAE S513. Rear mounted PTOs are addressed in the ISO 500 adoptions, front mounted in the ISO 8759 adoptions. Adoption with deviations of ISO 500-1:2004 approved by ASABE and ANSI as an American National Standard January 2011; revised November 2011; replaced with adoption with deviations of ISO 500-1:2014 and approved by ANSI March 2015; revised editorially and reaffirmed May 2019.

Keywords: Clearance zone, Master shield, Power take-off, Requirements, Safety, Speed, Tractors

0 Foreword

0.1 ANSI/ASABE AD500-1:2014, Agricultural tractors — Rear-mounted power take-off types 1, 2, 3 and 4 — Part 1: General specifications, safety requirements, dimensions for master shield and clearance zone, is an adoption with deviations of the identically titled ISO 500-1:2014, Agricultural tractors — Rear-mounted power take-off types 1, 2, 3 and 4 — Part 1: General specifications, safety requirements, dimensions for master shield and clearance zone, Deviations noted in the following Foreword sections pertain to those provisions where harmonization could not be achieved between ASABE and the International Standard.

Deviations from the subsequently printed international standard are noted with underscore (addition) or strikethrough (deletions) text. Deviations from the international standard figures, tables and equations are clearly marked.

0.2 ANSI/ASABE AD500-1:2014 gives general specifications, including speeds, safety requirements, the dimensions for the master shield, and clearance zones for rear-mounted power take-offs (PTO's) of types 1, 2, 3, and 4 on agricultural tractors with a track setting of more than 1 150mm (those with a track setting width of 1 150mm or less are covered in ASABE/ISO 500-2:2004). This scope is identical to the scope of ISO 500-1 except for:

0.2.1 The inclusion of over speed requirements

0.2.2 Referencing ASABE/ISO 500-2:2004 in place of ISO 500-2.

NOTE: Front mounted PTO is addressed in ANSI/ASABE AD8759-1:1998, Agricultural wheeled tractors — Front-mounted equipment — Power take-off and three-point linkage, which is the adoption with deviations of ISO 8759-1:1998.

0.3 Two normative references are listed in ISO 500-1:2014. The responsible ASABE committee has reviewed these references and approved the following deviation:

0.3.1 Replace ISO 5673-2, Agricultural tractors and machinery — Power take-off drive shafts and power-input connection — Part 2: Specification for use of PTO drive shafts, and position and clearance of PTO drive line and PIC for various attachments with ASABE adoption ANSI/ASABE AD5673-2:2005 SEP2014, Agricultural tractors and machinery — Power take-off drive shafts and power-input connection — Part 2: Specification for use of PTO drive shafts, and position and clearance of PTO drive line and PIC for various attachments. Any reference to ISO 5673-2 in the printed portion of ISO 500-1:2014 shall be replaced by ANSI/ASABE AD5673-2:2005.

0.4 This standard has been approved as an American National standard by ANSI (American National Standard Institute). The original content of ISO 500 and ISO 8759 was based on ASAE S203.

0.5 This standard deviates from ISO 500-1:2014 as follows:

0.5.1 Inclusion of the following references:

0.5.1.1 ANSI/ASABE AD6489-3:2004, Agricultural vehicles — Mechanical connections between towed and towing vehicles — Part 3: Tractor drawbar

0.5.1.2 ASAE S207, Operating Requirements for Tractors and Power Take-Off Driven Implements

0.5.1.3 ANSI/ASABE S604.1, Safety for Power Take-off (PTO), Safety for Power Take-off (PTO), PTO Drive Shafts, and Power Input Connection (PIC) for Agricultural Field Equipment

0.5.2 Over speed requirements:

0.5.2.1 Tractors capable of driving the 540 r/min shaft in excess of 630 r/min, the 1000 r/min shaft in excess of 1170 r/min, and the 1300 r/min in excess of 1520 r/min shall also include a suitable warning of operation in excess of those speeds.

0.5.2.2 If a shiftable PTO is provided, a means shall be employed on the tractor to prevent over speeding of a type 1 tractor PTO shaft in excess of 630 r/min, a type 2 or 3 tractor PTO shaft in excess of 1170 r/min, or a type 4 tractor PTO shaft in excess of 1520 r/min.

0.5.5 The safety for power take-off (PTO), PTO drive shafts, and power input connection (PIC) provisions specified in ANSI/ASABE S604 remain in effect.

Text of ISO 500-1:2014, Agricultural tractors — Rear-mounted power take-off types 1, 2, 3 and 4 — Part 1: General specifications, safety requirements, dimensions for master shield and clearance zone follows.

1 Scope

This part of ISO 500 gives general specifications, including speeds, safety requirements, the dimensions for master shield, ~~and~~ clearance zones, ~~and over speed requirements~~ for rear-mounted power take-offs (PTOs) of types 1, 2, 3, and 4 on agricultural tractors with a track setting of more than 1 150 mm (those with track setting width of 1 150 mm or less are covered in ~~ISO 500-2~~ [ASABE/ISO 500-2:2004](#)).

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 5673-2, *Agricultural tractors and machinery — Power take-off drive shafts and power-input connection — Part 2: Specification for use of PTO drive shafts, and position and clearance of PTO drive line and PIC for various attachments*