ANSI/ASABE S638 MAY2019
Pintle Hitch and Ring for Over the Road Towed Implements

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Full document details: ANSI ASABE S638-2019

ANSI/ASABE S638 MAY2019
Approved May 2019 as an American National Standard

Pintle Hitch and Ring for Over the Road Towed Implements

Developed by the Tractor Implement Interface/PTO subcommittee. Approved as an ASABE standard and as an American National Standard May 2019.

Keywords: Bulk, Carrier, Hitch, Implement, Pintle

1 Purpose and Scope

This standard establishes requirements for a pintle hitching system suitable for use with over the road towed implements as defined by ANSI/ASAE S390 (ISO 12934:2013). PTO driven implements are out of scope of this standard.

2 Normative References

The following referenced documents are indispensable to the application of this document. For dated references, only the edition cited applies unless noted. For undated references, the latest approved edition of the referenced document (including any amendments) applies.

ANSI/ASAE S338, Field Equipment for Agriculture — Safety Chain for Towed Equipment

ANSI/ASAE S390 (ISO 12934:2013), Tractors and Machinery for Agriculture and Forestry — Basic Types — Vocabulary

ANSI/ASABE S625, Drawbar Pin Dimensions and Requirements for Towing Machine with Clevis

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

ASABE/ISO 21244:2008, Agricultural equipment — Mechanical connections between towed and towing vehicles — Implement hitch rings and attachment to tractor drawbars

3 Terms and Definitions

3.1 agricultural field equipment: agricultural tractors, self-propelled machines, implements, and combinations thereof designed primarily for agricultural field operations

[SOURCE: ANSI/ASAE S390 (ISO 12934:2013)]

3.2 angle of pitch: rotation around a horizontal axis passing through the coupling point and perpendicular to the longitudinal plane of symmetry of the vehicle

[SOURCE: ASABE/ISO 21244:2008]

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3.3 angle of roll: rotation around a horizontal axis passing through the coupling point and located in the plane of symmetry of the vehicle

[SOURCE: ASABE/ISO 21244:2008]

3.4 angle of yaw: rotation around a vertical axis of the vehicle passing through the coupling point

[SOURCE: ASABE/ISO 21244:2008]

3.5 attached towed machine mass (ATMM): the recommended maximum permissible mass of the towed machine as defined by the manufacturer of the towed machine

3.6 hitch ring: the device comprising the towed machine portion of the hitch

3.7 implement train: multiple towed machines hitched in series and pulled by a single towing machine

3.8 over the road towed implement: interchangeable towed machinery that has been designed and intended for off-road agricultural use and which is designed to be safely towed on public roadways by a motor vehicle

[SOURCE: ANSI/ASAE S390 (ISO 12934:2013)]

3.9 pintle hitch: The device comprising the towing machine portion of the hitch covered by this standard. The pintle hitch includes a pintle hook, a pintle hook latch and any secondary features for attachment to the towing machine.

3.10 pintle hitching system: a mechanical connection by which motive and controlling forces are transferred from a towing machine to a towed machine and is comprised of a pintle hitch and a hitch ring

3.11 pintle hook: a typically curved upward-extending hitch projection designed to fit through the hitch ring

3.12 pintle hook latch: a mechanism designed to prevent inadvertent disengagement of the pintle hook and hitch ring

3.13 pintle hook latch keeper: a secondary device to prevent inadvertent operation of the pintle hook latch

3.14 total towed machine mass (TTMM): the recommended maximum mass of all towed machines behind the specified hitch point as defined by the manufacturer of the towing machine

3.15 towed machine: any unit of agricultural field equipment that receives the forces for movement and control from a towing machine

NOTE: In trains of multiple units of agricultural field equipment, a unit of agricultural field equipment may be both a towing and a towed machine.

[SOURCE: ANSI/ASABE S625]

3.16 towing machine: any tractor or self-propelled vehicle providing the forces to move and control a unit of agricultural field equipment

[SOURCE: ANSI/ASABE S625]

4 General Requirements

4.1 The total towed machine mass (TTMM) for a pintle hitching system shall not exceed 45 000 kg.

4.2 A towed machine shall not induce a static vertical downward load at the hitch ring exceeding 20% ATMM.

4.3 It is not a recommended practice for towed machines to impose upward loads on towing machines.

4.4 It is not a recommended practice for a hitch ring described below to be used with a tractor drawbar conforming to ANSI/ASABE AD6489-3:2004.

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