

INTERNATIONAL STANDARD

**ISO
789-9**

First edition
1990-10-15

Agricultural tractors — Test procedures —

Part 9: Power tests for drawbar

Tracteurs agricoles — Méthodes d'essai —

Partie 9: Essais de puissance à la barre d'attelage



Reference number
ISO 789-9 : 1990 (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 789-9 was prepared by Technical Committee ISO/TC 23, *Tractors and machinery for agriculture and forestry*.

This first edition of ISO 789-9 transfers power tests for the tractor drawbar from ISO 789-1 : 1981 which is being revised at the same time.

ISO 789 consists of the following parts, under the general title *Agricultural tractors — Test procedures*:

- *Part 1: Power tests for power take-off*
- *Part 2: Hydraulic power and lifting capacity*
- *Part 3: Turning and clearance diameters*
- *Part 4: Measurement of exhaust smoke*
- *Part 5: Partial power PTO — Non-mechanically transmitted power*
- *Part 6: Centre of gravity*
- *Part 7: Axle power determination*
- *Part 8: Engine air cleaner*
- *Part 9: Power tests for drawbar*

Annexes A and B form an integral part of this part of ISO 789. Annexes C to F are for information only.

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Agricultural tractors — Test procedures —

Part 9: Power tests for drawbar

1 Scope

This part of ISO 789 specifies test procedures for determining the power available at the drawbar on agricultural tractors of the wheeled, track-laying or semi-track-laying type.

The statement of power rating of the drawbar is specified in 6.4.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 789. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 789 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 612 : 1978, *Road vehicles — Dimensions of motor vehicles and towed vehicles — Terms and definitions*.

ISO 789-1 : 1990, *Agricultural tractors — Test procedures — Part 1: Power tests for power take-off*.

ISO 4251-1 : 1988, *Tyres and rims (existing series) for agricultural tractors and machines — Part 1: Tyre designation and dimensions*.

3 Definitions

For the purposes of this part of ISO 789, the following definitions apply.

3.1 wheelbase: (See ISO 612.)

3.2 Tractor mass

3.2.1 basic tractor mass (unladen tractor): Mass of the tractor in working order with full tanks and radiators. Optional front and rear weights (ballast), tyre ballast, the tractor operator, mounted implements, mounted equipment or any specialized components are not included.

3.2.2 ballasted tractor mass (laden tractor): Mass of the tractor ballasted according to 5.7 for the performance test given in clause 6.

3.3 rated engine speed: Engine speed specified by the tractor manufacturer for continuous operation at full load.

3.4 drawbar power: Power measured at the drawbar which can be sustained for at least 20 s, or the time needed to cover a distance of at least 20 m, whichever is longer.

3.5 maximum drawbar pull: Maximum horizontal drawbar pull at a drawbar hitch point recommended by the manufacturer and complying with the limitations set forth in 5.7, 6.1 and 6.2, which a tractor can sustain in its longitudinal axis.

3.6 specific fuel consumption: Mass of fuel consumed per unit of work.

3.7 dynamic radius index: Effective radius corresponding to the distance travelled by the tractor in one rotation of the driving wheels (i.e. this distance divided by 2π), when the tractor is driven without drawbar load at a speed of approximately 3,5 km/h. (See ISO 4251-1.)

4 Measurement units and permissible tolerances

The following are used in this part of ISO 789:

— rotational frequency, in revolutions per minute	± 0,5 %
— time, in seconds	± 0,2 s
— distance, in metres or millimetres	± 0,5 %
— force, in newtons	± 1 %
— mass, in kilograms	± 0,5 %
— fuel consumption, in kilograms per kilowatt hour	± 1 %
— atmospheric pressure, in kilopascals	± 0,2 kPa
— tyre pressure (gauge), in kilopascals	± 5 %
— temperature of fuels, etc., in degrees Celsius	± 2 °C
— wet and dry bulb thermometer temperatures, in degrees Celsius	± 0,5 °C