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# International Standard



# 5687

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INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

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## Equipment for harvesting — Combine harvester — Determination and designation of grain tank capacity and unloading device performance

*Matériel de récolte — Moissonneuses-batteuses — Détermination et désignation de la capacité et des performances du dispositif de déchargement des trémies*

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**Descriptors** : agricultural machinery, harvest equipment, combines, hoppers, tests, loading, determination, capacity, speed, testing conditions, designation.

## Foreword

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Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 5687 was developed by Technical Committee ISO/TC 23, *Tractors and machinery for agriculture and forestry*, and was circulated to the member bodies in December 1979.

It has been approved by the member bodies of the following countries :

Australia	Germany, F.R.	South Africa, Rep. of
Austria	India	Spain
Belgium	Italy	Switzerland
Bulgaria	Korea, Dem. P. Rep. of	Turkey
China	Mexico	United Kingdom
Denmark	New Zealand	USSR
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The member bodies of the following countries expressed disapproval of the document on technical grounds :

Canada  
Czechoslovakia  
USA

# Equipment for harvesting — Combine harvester — Determination and designation of grain tank capacity and unloading device performance

## 1 Scope and field of application

This International Standard is intended to provide a uniform method for determining and designating the capacity and unloading rate of combine grain tank systems.

## 2 Reference

ISO 712, *Cereals and cereal products — Determination of moisture content (Routine reference method)*.

## 3 Grain tank capacity designation and determination

The grain tank capacity of a combine shall be the number of volumetric units of wheat that are unloaded by its own unloading system under the conditions described below.

### 3.1 Test conditions

The wheat shall have a moisture content not exceeding 15 % and shall have a maximum impurity level of 3 %<sup>1)</sup>.

To ensure that the grain tank and unloading system are effectively empty before starting the rating procedure, the unloading mechanism shall be operated for a minimum of 1 min after the main unloading stream of wheat has subsided, and then shut off.

During both filling and unloading of the grain tank, the combine shall be stationary, level and running at rated speeds with feed table and threshing mechanisms engaged.

### 3.2 Test

The grain tank shall be filled by means of its own loading system up to, but not beyond, the point of spillage.

The wheat shall then be unloaded by the combine's own unloading system operating at rated speed.

### 3.3 Results

The number of volumetric units may be calculated by dividing the mass of unloaded wheat by the actual mass per litre of the wheat which is used.

Grain tank capacity shall be expressed in litres, rounded upwards to the nearest whole one hundred litres.

## 4 Determination of the grain tank unloading system performance

### 4.1 Maximum grain tank unloading rate

The maximum unloading rate, during the unloading cycle, shall be calculated by measuring the amount of material discharged during a period of 30 s starting 5 s after the material first appears from the unloading device.

The unloading rate shall be expressed in litres per second.

### 4.2 Grain tank unloading time

The grain tank unloading time is calculated by measuring the time, in seconds, required to unload 95 % of the grain tank capacity as specified in 3.3.

### 4.3 Average grain tank unloading rate

The average grain tank unloading rate is calculated by dividing 95 % of the grain tank capacity, as specified in clause 3, by the grain tank unloading time as specified in 4.2.

1) It shall be stated that the sample of grain used in the test was of  $X$  % moisture content and contained  $Y$  % of impurities by mass.