
International Standard



6535

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Forestry machinery — Portable chain saws — Chain brake — Performance

Machines forestières — Scies à chaîne portatives — Freins de chaîne — Performances

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been authorized 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.

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 6535 was developed by Technical Committee ISO/TC 23, *Tractors and machinery for agriculture and forestry*, and was circulated to the member bodies in November 1981.

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

Australia	Finland	Portugal
Belgium	Germany, F. R.	Romania
Brazil	India	Spain
Bulgaria	Iraq	Sweden
Canada	Italy	Turkey
China	Korea, Rep. of	United Kingdom
Czechoslovakia	Mexico	USA
Denmark	New Zealand	
Egypt, Arab Rep. of	Poland	

The member body of the following country expressed disapproval of the document on technical grounds :

France

Forestry machinery — Portable chain saws — Chain brake — Performance

1 Scope and field of application

This International Standard specifies methods for measuring the braking time and release force of manually-operated chain brakes on portable hand-held chain saws.

2 Apparatus

2.1 Rotational speed indicator with a rotating speed reading accuracy of $\pm 2,5$ %.

2.2 Time recording device, including pick-ups, having an accuracy of ± 5 ms.

2.3 Pick-up device for registering the brake arm activation.

2.4 Pick-up device for registering the chain motion.

2.5 Force gauge having an accuracy of ± 1 N.

2.6 Pendulum having a mass of 0,7 kg, a length of 0,7 m and a diameter of 50 mm.

3 Preparations

The chain saw shall be adjusted for best cutting performance in accordance with the manufacturer's recommendations.

During the test, the saw shall be rigidly mounted by the bar pad or the handles.¹⁾

Initially, the brake friction surfaces shall be in a dry and unlubricated condition.

The ambient temperature shall be 20 ± 5 °C.

4 Measuring objects

Measurements shall be carried out on three different normal production saws of the same model with specified guide bar and chain. The engine shall have been run in before the test in 5.1 is commenced and the carburettor and ignition adjusted according to the instructions of the manufacturer.

5 Test procedure

5.1 Braking time

The brake shall be released with a blow from the pendulum. The pendulum shall strike the guard from a drop height of 0,2 m.

The throttle shall be kept in a fixed position during the braking. This position shall correspond to the manufacturer's rated speed for maximum power plus 33 % or full throttle (racing speed), whichever is less. When the chain has stopped after braking, the throttle shall be adjusted to an idling position and the brake reset.

The braking time is defined as the interval from the instant the pendulum hits the brake to the instant the saw chain ceases to move. No readings shall be excluded.

No brake adjustment of any kind shall be made during the test.

The measurement shall be carried out according to the following procedure.

5.1.1 Warm up the engine.

1) It should be stated in the test report in which way the saw has been mounted.

5.1.2 First test

5.1.2.1 Run the engine for 4 min 45 s at maximum power speed.

5.1.2.2 Run the engine for 15 s at racing speed.

5.1.2.3 Make one brake and record the braking time.

5.1.3 Second test

5.1.3.1 Run the engine idling for 3 min.

5.1.3.2 Run the engine for 1 min 45 s at maximum power speed.

5.1.3.3 Run the engine for 15 s at racing speed.

5.1.3.4 Make one brake and record the braking time.

5.1.3.5 Repeat 5.1.3.1 to 5.1.3.4 three times.

5.1.4 Third test

5.1.4.1 Run the engine at racing speed.

5.1.4.2 Make 15 blind brakes at 10 to 20 second intervals.

5.1.4.3 Make 5 brakes at the same 10 to 20 second intervals and record the braking time.

5.1.5 Report the average value of 5.1.2, 5.1.3 and 5.1.4.¹⁾

5.1.6 Report the highest value of 5.1.2 and 5.1.3.

5.2 Release force (static test)²⁾

With the engine not running, the force on the brake shall be measured in the direction of 45° forward and downward in relation to the guide bar centre line at the centre of the top (horizontal) part of the brake arm. The force shall be applied at a uniform rate (see the figure).

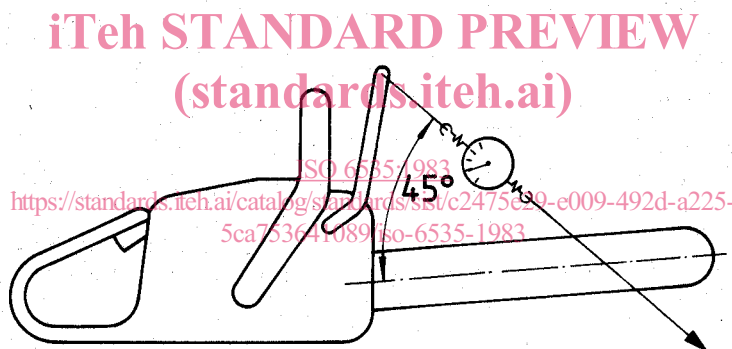


Figure — Static test of release force

1) Recommended performance : the braking time should not exceed 0,12 s average and 0,15 s maximum.

2) An International Standard specifying a method for measuring the release force with the engine running is foreseen.