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ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

ISO RECOMMENDATION

R 1186

PRESSURES IN BRAKE LINES AND BRAKING EFFICIENCY

1st EDITION

March 1970

For each individual country the only valid standard is the national standard of that country.

Printed in Switzerland

Also issued in French and Russian. Copies to be obtained through the national standards organizations.

BRIEF HISTORY

The ISO Recommendation R 1186, *Pressures in brake lines and braking efficiency*, was drawn up by Technical Committee ISO/TC 22, *Automobiles*, the Secretariat of which is held by the Association Française de Normalisation (AFNOR).

Work on this question led to the adoption of a Draft ISO Recommendation.

In October 1968, this Draft ISO Recommendation (No. 1727) was circulated to all the ISO Member Bodies for enquiry. It was approved, subject to a few modifications of an editorial nature, by the following Member Bodies :

Belgium	Italy	Switzerland
Chile	Korea, Rep. of	Thailand
Czechoslovakia	Netherlands	Turkey
France	New Zealand	U.A.R.
Greece	Portugal	United Kingdom
Hungary	Romania	U.S.S.R.
Israel	Spain	

Three Member Bodies opposed the approval of the Draft :

Germany
Japan
Sweden

This Draft ISO Recommendation was then submitted by correspondence to the ISO Council, which decided, in March 1970, to accept it as an ISO RECOMMENDATION.

ISO Recommendation | R 1186 | March 1970

PRESSURES IN BRAKE LINES AND BRAKING EFFICIENCY

1. SCOPE

This ISO Recommendation

- determines and limits the values of pressures in the compressed-air lines used to ensure pneumatic connections between tractors and trailers;
- determines braking efficiency.

2. FIELD OF APPLICATION

This ISO Recommendation applies to vehicles for international commercial transport with trailers of a total loaded weight greater than 3.5 tonnes-force.

It deals only with compressed-air braking devices with two lines : one direct braking line and one automatic braking line.

3. VALUES OF PRESSURES IN THE LINES

3.1 Preliminary definition of nominal pressure

A pressure of *n* bar in the brake line conventionally means a pressure of *n* bar above the atmospheric pressure.

3.2 Direct brake line

3.2.1 *The maximum operating pressure* in the line of the direct brake system should be

$$6.5 \pm 0.5 \text{ bar}$$

The reference value for pressure, as measured at the coupling point of the braking system and used for studying braking performances, should be 4.5 bar in the direct brake line.

3.2.2 *The minimum pressure increase* in the direct brake line leading to brake application should be

$$0.6 \pm 0.4 \text{ bar}$$

This value, measured at the coupling head, should cause contact of the brake linings of each vehicle in the tractor-trailer combination.

In addition, the relay valve should start to operate at a pressure of not more than 0.5 bar, also measured at the coupling head of the direct brake line.

3.3 Automatic brake line

3.3.1 *The pressure in the automatic line during normal running* and the pressure in the compressed-air reservoir of the trailer fed by the automatic brake line should be

between 6.5 and 8 bar

3.3.2 *The operating pressure of the low-pressure warning device* in the automatic brake line should be

$4.5\ ^{+0.5}_{0}$ bar

as measured at the head coupling.

3.3.3 *Operation of automatic brake.* The automatic brake should start to function after the warning device has been in operation for a sufficient time, or in the case of breakage of the towing hitch.

Its operation should be progressive, as a function of the drop in pressure up to maximum efficiency.

4. BRAKING EFFICIENCY

The braking efficiency is defined by the braking ratio.

The ratios $\frac{T_M}{P_M}$ and $\frac{T_R}{P_R}$ are designated as "braking ratios",

where

T_M is the sum of braking forces at the periphery of all wheels of the tractor;

T_R is the sum of braking forces at the periphery of all wheels of the trailer or semi-trailer;

P_M is the permissible total loaded weight of the tractor;

P_R is the permissible total loaded weight of the trailer, or, in the case of a semi-trailer, that part of the total loaded weight on the semi-trailer wheels.

The braking ratios $\frac{T_M}{P_M}$ and $\frac{T_R}{P_R}$ of the tractor on the one hand and of the trailer or semi-trailer on the other should each have the value of 0.45 when the control pressure measured at the level of the coupling of the service brake line is

4.5 ± 0.5 bar for the braking ratio of the tractor;

$4.5\ ^{+1}_{0}$ bar for the braking ratio of the trailer or semi-trailer.