

ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

ISO RECOMMENDATION R 254

QUALITY, MACHINING AND BALANCING
OF TRANSMISSION PULLEYS

1st EDITION
March 1962

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Printed in Switzerland

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

BRIEF HISTORY

The ISO Recommendation R 254, *Quality, Machining and Balancing of Transmission Pulleys*, was drawn up by Technical Committee ISO/TC 41. *Pulleys and Belts (Including V-Belts)*, the Secretariat of which is held by the Association Française de Normalisation (AFNOR).

Work on this question by the Technical Committee began in 1956 and led, in 1959, to the adoption of a Draft ISO Recommendation.

In May 1960, this Draft ISO Recommendation (No. 374) was circulated to all the ISO Member Bodies for enquiry. It was approved by the following Member Bodies:

Australia	Finland	New Zealand
Argentina	France	Portugal
Belgium	Germany	Romania
Brazil	Greece	Spain
Chile	India	Sweden
Colombia	Israel	Switzerland
Czechoslovakia	Japan	United Kingdom
Denmark	Netherlands	U.S.S.R.

Two Member Bodies opposed the approval of the Draft:

Hungary, U.S.A.

The Draft ISO Recommendation was then submitted by correspondence to the ISO Council, which decided, in March 1962, to accept it as an ISO RECOMMENDATION.

QUALITY, MACHINING AND BALANCING OF TRANSMISSION PULLEYS

1. SCOPE

The purpose of this ISO Recommendation is to give some general indications concerning choice and quality of materials of which the transmission pulleys are composed. It states also prescriptions for machining and balancing these pulleys.*

2. CHOICE AND QUALITY OF MATERIALS

- 2.1 Pulleys should be made of cast iron, steel, suitable alloys or any other material capable of being made to conform to the dimensions and tolerances standardized and capable of withstanding without damage the conditions of service (overheating, mechanical stresses, abrasion, ambient atmosphere, etc.).
- 2.2 Cast pulleys should be made of a fine grain material, free from porosity or blow-holes on the groove faces after machining, and free from contraction cracks or hollows in the spokes (or arms), centreplate (or web) and boss.
- 2.3 In the case of metal pulleys, superficial defects of the rim, boss and centreplate or web (excluding those in the spokes or arms) may be filled by autogenous welding or brazing solder with the help of facing metals chosen and used in such a way as not to give rise to internal stresses. The use of mastic having the appearance of metal, of lead or of cast or compressed soft metals is not permitted.

3. MACHINING

- 3.1 The machining of the rim and bore should have a good finish, and the groove faces (in the case of grooved pulleys) should be finished with a tool leaving no visible marks and enabling smooth surfaces to be obtained.
- 3.2 The edges of each groove (in the case of grooved pulleys) should be chamfered or radiused. The outside diameter of the pulley should be constant over the entire width of the rim.

When the length of the boss is more than twice the diameter of the bore, the latter may be symmetrically chambered, provided the length of the chamber does not exceed a third of the length of the boss.

4. BALANCING

- 4.1 Out-of-balance of pulleys can set up dangerous vibrations.
- 4.2 All pulleys should be statically balanced.
- 4.3 Dynamic balancing is necessary whenever the circumferential speed is high or the width of the pulley large in relation to its diameter.

Dynamic balancing of pulleys which serve as flywheels is necessary in almost all cases.

* It is envisaged subsequently to complete this ISO Recommendation by
 (a) minimum characteristics with specified figures in connection with the quality of the materials,
 (b) more precise conditions as to the balancing.