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The influence of braces on the playability of trumpets

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The influence of braces on the playability, response and sound properties of the trumpet is an intense discussed subject for players and instrument makers. In addition to the problem of finding the proper position of the braces, inserted braces can produce stress between the instruments tubes.

In this paper the influence of the tube stress is investigated. To ensure an adjustable and reproducible stress between the trumpet tubes special adjustable braces in conjunction with a force monitor are used. The results of blind playing tests are compared with spectral analysis of the played sounds. In addition, the acoustic input impedance, the wall vibrations and the transfer function of the instrument are investigated.