

Method for

Determination of fatigue pressure rating of metal pressure containing envelopes in hydraulic fluid power systems

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Foreword

This British Standard has been prepared under the direction of the Machinery and Components Standards Policy Committee.

The method of test described in this British Standard is the result of research carried out by the British Hydraulics Research Association and member companies of the British Fluid Power Association during which it became apparent that pressure cycle rate has a pronounced effect on the fatigue life of hydraulic fluid power components. It has also shown that sufficient time is required to be given for the pressurizing fluid to flow into and out of fatigue cracks that may develop during the test.

Since a basic requirement of hydraulic fluid power components is that they shall be capable of safely and efficiently operating and containing the working fluid at the necessary pressures, this test method provides a rational and practical method of determining the ability of series produced metal pressure containing components to withstand the required internal working pressures. To this end it provides a method for establishing the component's fatigue pressure rating. The standard is not intended to cover components manufactured in small quantities.

It is intended that further details of exceptions and variations to the general method of test described in section 1 of the standard will be added by amendment action to cover requirements for hydraulic accumulators. BS 7201-1 covers the production testing of seamless steel hydro-pneumatic accumulator bodies.

Ratings established in accordance with this standard do not replace pressure ratings based on considerations such as performance, bearing capacity, leakage and heat rejection. The ratings are intended to supplement those provided by present practice and may be numerically different from prior ratings.

Pressure rating standards, based on structural integrity already existing for hose and non-metallic components such as seals and accumulator bladders which are subject to failure mechanisms that are different from those of metals, are not covered by this test method.

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Summary of pages

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This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.