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Specification for

Dimensions of power take-off driving shafts and mounting faces for small internal combustion engines

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The Government department and scientific and industrial organizations marked with an asterisk in the above list, together with the following, were directly represented on the committee entrusted with the preparation of this British Standard:

Diesel Engineers' and Users' Association

This British Standard, having been approved by the Mechanical Engineering Industry Standards Committee, was published under the authority of the Executive Board on 30 June 1975

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Foreword

This British Standard has been prepared under the authority of the Mechanical Engineering Industry Standards Committee to facilitate the production and interchangeability of various attachments for small internal combustion engines. The dimensions given are in metric units and whilst being close to, they are not interchangeable with existing components in imperial units. The preparation of this standard was undertaken in the recognition that with the current changeover to the metric system, industry would benefit from a metric based standard for guidance in future design.

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 8, an inside back cover and a back cover.

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.

1 Scope

This British Standard specifies the dimensions of power take-off driving shafts and mounting faces for small internal combustion engines, generally up to 15 kW power output.

NOTE It is pointed out that the power take-off driving shafts and mounting faces specified in this standard are not related to the main power take-off assemblies specified in BS 3092.

2 References

The titles of the British Standards referred to in this standard are listed on page 8.

3 Dimensions

3.1 The dimensions of power take-off driving shafts shall be as shown in the following figures.

Figure 1 — Cylindrical shaft with keyway and threaded hole.

Figure 2 — Cylindrical shaft with threaded end.

Figure 3 — Cylindrical shaft with conical end (1 in 5 on diameter) and threaded hole.

Figure 4 — Cylindrical shaft with conical (1 in 10 on diameter) and threaded end.

3.2 The dimensions of the mounting faces shall be as shown in Figure 5.

Mounting faces may incorporate either or both of the attachment configurations shown in Figure 5 to suit individual applications as required.

Power take-off shafts up to and including 20 mm diameter are generally associated with the 50 mm diameter spigot bore and 90 mm PCD. Power take-off shafts over 20 mm diameter are generally associated with the 140 mm male spigot and 160 mm PCD.

4 Tolerances on assembled engines

4.1 Concentricity of the spigot diameters relative to the driving shaft axis shall be within 0.13 mm total indicator movement.

4.2 The run-out of the driving shaft, measured at the outboard end of the shaft, shall not exceed 0.05 mm per 100 mm of the shaft length, measured from the datum face.

4.3 The squareness of the mounting face to the driving shaft shall be within 0.15 mm full indicator movement per 100 mm of face diameter.

4.4 The end of the driving shaft shall be within ± 0.8 mm of the specified dimension from the datum face. This value shall include any endfloat of the shaft.

5 Screw threads

Screw threads shall comply with the requirements of BS 3643, tolerance class 6g for external and 6H for internal threads.

6 Stress concentrations on stepped shafts

For guidance purposes information on the avoidance of stress concentrations on stepped shafts is given in Appendix A.