



SURFACE VEHICLE INFORMATION REPORT

J503™

JAN2018

Issued 1928-02
Revised 1959-05
Stabilized 2018-01

Superseding J503 MAY1959

Woodruff Key Slots and Keyways

RATIONALE

The technical report covers technology, products, or processes which are mature and not likely to change in the foreseeable future.

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1. **Scope**

2. **References**—There are no referenced publications specified herein.

3. **Shaft Diameter, L**—Decimal equivalents are given to four places in Table 1. All figures are calculated from this basic dimension. Any change in the shaft diameter from basic will necessarily change all other figures; and, in this case, should accurate dimensions be required, the formula given below should be used.

4. **Versed Sine, G**—The versed sines specified are determined from the following formula:

$$G = \frac{L}{2} - \sqrt{\frac{L^2 - A^2}{4}} \quad (\text{Eq. 1})$$

where:

A is the minimum width of the key

5. **Bottom of Key Slot to Opposite Side of Shaft, H**—Obtain by subtracting the versed sine G, and depth of key slot, B, from the shaft diameter, L.

6. **Top of Key to Opposite Side of Shaft, J**—Obtain by subtracting the versed sine, G, from the shaft diameter, L, and then adding to this figure the height of key above shaft, C.

7. **Bottom of Keyway to Opposite Side of Bore, K**—Obtain by subtracting the versed sine, G, from the shaft diameter, L, and then adding to this figure the depth of keyway, E.