

SURFACE VEHICLE STANDARD

SAE J1170

REV.
FEB93

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Submitted for recognition as an American National Standard

(R) FRONT AND REAR POWER TAKE-OFF FOR AGRICULTURAL TRACTORS

1. Scope

- 1.1 This SAE Standard establishes the specifications and dimensions that are essential in order that 540 r/min and 1000 r/min power take-off driven machines may be operated with any make of tractor equipped with the corresponding power take-off drive.
- 1.2 This document does not, in itself, insure adequate telescoping of the power line or safety shielding.
- 1.3 This document provides dimensions relating to the tractor power take-off shield.

2. References

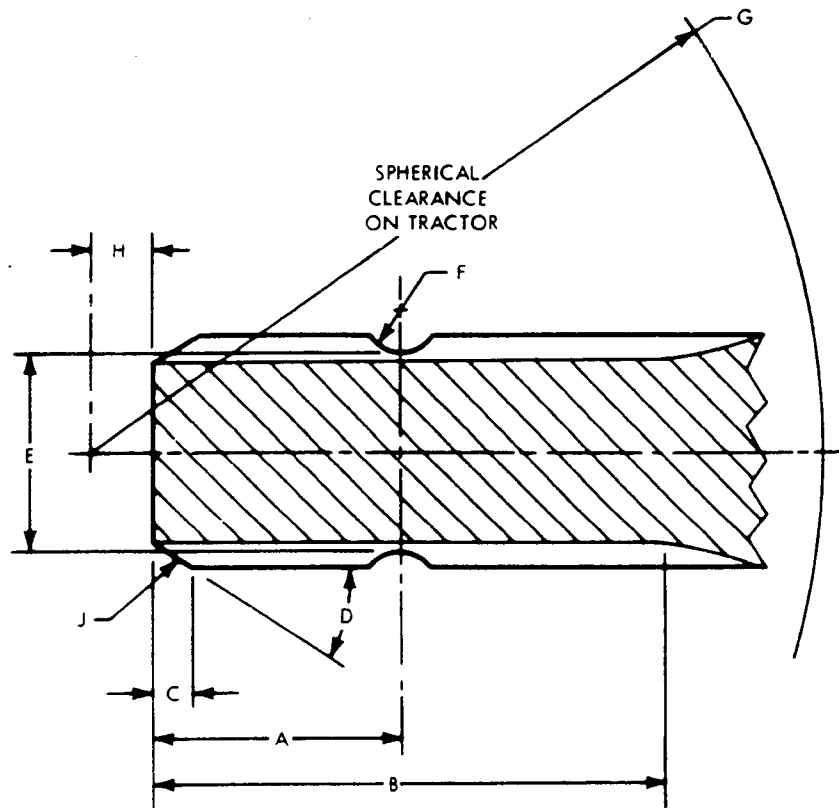
- 2.1 **Applicable Documents**—The following publications form a part of this specification to the extent specified herein. The latest issue of SAE publications shall apply.
- 2.1.1 SAE PUBLICATIONS—Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001.
- SAE J208 AUG86—Safety for Agricultural Equipment
SAE J721 FEB93—Operating Requirements for Tractors and Power Take-Off Driven Implements
SAE J1548 FEB93—Drawbars—Agricultural Wheel Tractors

3. Specifications

- 3.1 The rear power take-off shaft (except belt-pulley shafts) for power take-off drives extending from the tractor to the rear shall have the dimensions shown in Figures 1, 2, 3, and 4 and Table 1. The front power take-off shaft shall have the dimensions shown in Figures 1 and 3 and only the Type II portion of Table 1.

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The circumferential groove is provided for a locking means in the implement hub.

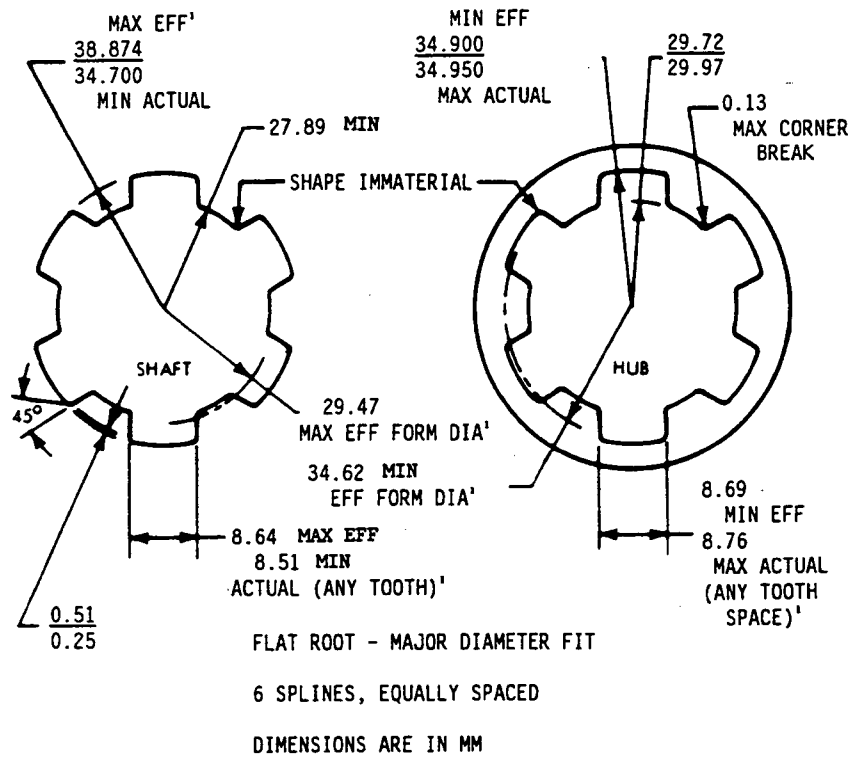
Effective spline length, B, to be heat-treated for surface durability (within Rockwell C48-56)

FIGURE 1—POWER TAKE-OFF SHAFT (SEE TABLE 1)

TABLE 1—POWER TAKE-OFF SHAFT DIMENSIONS¹ (SEE FIGURE 1)

		Type I 35 mm Dia 540 rpm	Type II 35 mm Dia 1000 rpm	Type III 45 mm Dia 1000 rpm
A	Groove to end of shaft	38.1	25.4	38.1
B	Effective spline length with relation gage, min	76.2	63.5	88.9
C	Chamfer	7.1	4.8	7.6
D	Chamfer angle	0.5 rad (30 degree)	0.5 rad (30 degree)	0.5 rad (30 degree)
E	ID of groove	$\frac{29.46}{29.26}$	$\frac{29.46}{29.26}$	$\frac{37.34}{37.13}$
F	Radius of groove	6.86 ± 0.25	6.86 ± 0.25	8.38 ± 0.25
G	Spherical clearance radius on tractor min	82.6	82.6	101.6
H	Location of center of clearance radius	0	12.7	0
J	Break sharp corner or chamfer	Yes	Optional	Optional

¹ Dimensions are in mm



¹ THE MAJOR DIAMETER AND EFFECTIVE SPLINE MUST BE CONCENTRIC AT THE MAXIMUM MATERIAL CONDITION (CHECKED WITH RELATION GAGE)

FIGURE 2—TYPE 1 POWER TAKE-OFF 540 rpm (35 mm) DIAMETER
 STRAIGHT SIDE SPLINE DIMENSIONS