

SMPTE STANDARD

for Motion-Picture Equipment (35-mm) — Universal Intermittent Sprockets



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1 Scope

1.1 This standard specifies the dimensions of two types of 16-tooth intermittent sprockets for 35-mm motion-picture projectors. Other dimensions and definitions are given in annex A.

1.2 This standard is applicable to sprockets used in conjunction with film perforated in accordance with ANSI/SMPTE 139 (0.1870 in pitch) or SMPTE 102.

2 Sprocket tooth types

2.1 Type S is the standard square tooth that is used internationally and known as the CS sprocket tooth.

2.2 Type R is the round tooth that eliminates sharp corners on film contacting surfaces.

3 Dimensions

3.1 The dimensions shall be as specified in figure 1 and table 1.

3.2 The sprocket tooth pitch is measured at the midpoint of 0.006 in (0.15 mm) film thickness:

$$\frac{(\text{Diameter } E + 0.006 \text{ in}) \pi}{\text{Number of teeth}}$$

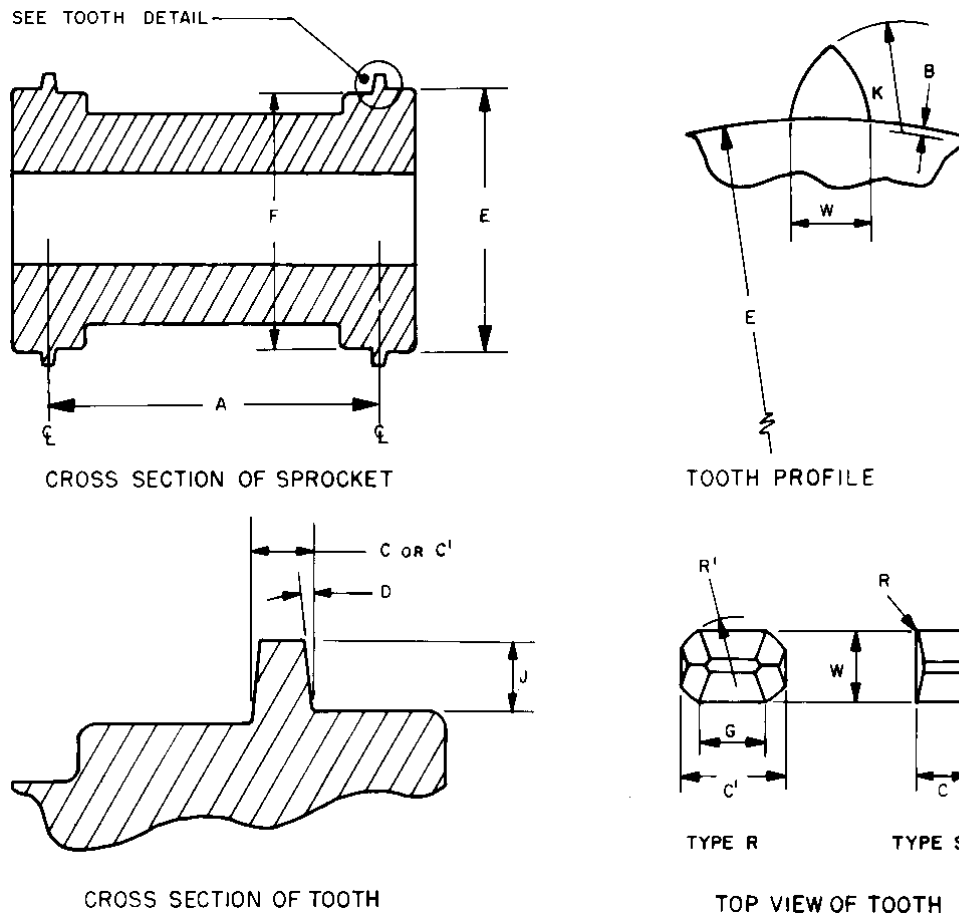


Figure 1 – Intermittent sprocket

Table 1 – Specifications

Dimensions		Inches	Millimeters
A	Tooth centerline to centerline	1.125 ± 0.001	28.58 ± 0.03
B	Center point of tooth arc	0.004 – 0.001	0.10 – 0.03
C	Square tooth lateral width	0.040 + 0.001 – 0.002	1.02 + 0.03 – 0.05
C'	Round tooth lateral width	0.072 – 0.002	1.83 – 0.05
D	Lead angle at tooth sides	7° 30' max	
E	Root (film supporting) diameter	0.950 ± 0.001	24.13 ± 0.03
F	Inner diameter	0.010 less than E	0.25 less than E
G	Bearing surface	0.046 – 0.002	1.17 – 0.05
J	Tooth height above E	0.050	1.27
K	Tooth arc	0.077 + 0.002	1.96 + 0.05
R	Square tooth corner radius	0.005 max	0.13 max
R'	Round tooth corner radius	0.043 ± 0.001	1.09 ± 0.03
W	Horizontal tooth width	0.055 – 0.002	1.40 – 0.05