SAE The Engineering Society For Advancing Mobility Land Sea Air and Space®
INTERNATIONAL
400 Commonwealth Drive, Warrendale, PA 15096-0001

SURFACE VEHICLE STANDARD

SAE J738

REV. JUN86

Issued 1958-05
Revised 1986-06

Supersedes J738b

Submitted for recognition as an American National Standard

(R) CUTTING EDGE—DOUBLE BEVEL CROSS SECTIONS

1. ***Scope—***This standard is for cutting edge sections typically used in earthmoving machinery defined in SAE J1507:

a. Tractor - Scrapers as defined in SAE J728.
b. Dozers as described in SAE J729 and J173.
c. Loaders as described in SAE J731.
d. Graders as described in SAE J870.

Hole spacing is defined for dozers and scrapers in J737 and graders in J739. Hole conformation is defined in J740.

1.1 **Purpose—**This standard specifies dimensions for cutting edge cross section.

2. ***References***

2.1 **Applicable Publications**

2.1.1 SAE PUBLICATIONS—Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001.

SAE J173—Specification Definitions-Dozers
SAE J728—Component Nomenclature-Scrapers
SAE J729—Nomenclature-Dozers
SAE J731—Component Nomenclature-Loader
SAE J737—Hole Spacing for Scraper and Dozer Cutting Edges
SAE J740—Countersunk Square Holes for Cutting Edges and End Bits
SAE J870—Component Nomenclature-Graders
SAE J1057—Identification Terminology of Earthmoving Machines

3. ***Tolerances and Dimensions—***Table 1.

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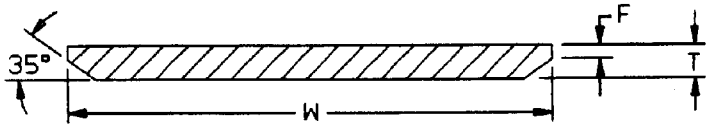
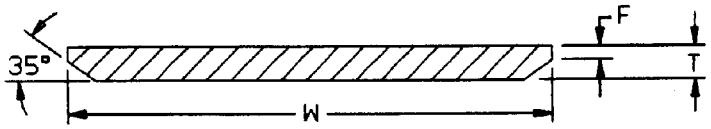
TABLE 1—DIMENSIONS FOR DOUBLE BEVEL CUTTING EDGE CROSS SECTIONS



THICKNESS = T IN.	THICKNESS = T mm	THICKNESS = T TOLERANCE	WIDTH = W IN.	WIDTH = W mm	WIDTH = W TOLERANCE	BLUNT = F IN.	BLUNT = F mm	BLUNT = F TOLERANCE
					$+0.12_{IN}$			
0.50	12.7		6.00	152.4	–0.06	0.30	7.6	
0.62	15.7		6.00	152.4		0.37	9.4	
0.75	19.0		6.00	152.4	$(^{+3.0}_{-1.5}mm)$	0.45	11.4	
0.62	15.7		6.50	165.1		0.37	9.4	
0.62	15.7		8.00	203.2		0.37	9.4	
0.75	19.0		8.00	203.2		0.45	11.4	
0.88	22.4		8.00	203.2		0.52	13.2	
1.00	25.4		8.00	203.2		0.60	15.2	
1.12	28.4		8.00	203.2		0.67	17.0	
0.75	19.0		10.00	254.0		0.45	11.4	
0.88	22.4		10.00	254.0		0.52	13.2	
1.00	25.4		10.00	254.0		0.60	15.2	
1.12	28.4		10.00	254.0		0.67	17.0	
1.25	31.8		10.00	254.0		0.75	19.0	
1.38	35.1		10.00	254.0		0.82	20.8	
1.62	41.1		10.00	254.0		0.97	24.6	
		±0.03 IN						0.16 IN MIN
0.75	19.0	(±0.8 mm)	12.00	304.8		0.45	11.4	(4.0 mm)
0.88	22.4		12.00	304.8		0.52	13.2	
1.00	25.4		12.00	304.8		0.60	15.2	
1.12	28.4		12.00	304.8		0.67	17.0	
1.25	31.8		12.00	304.8	$+.06^{IN}$	0.75	19.0	
1.50	38.1		12.00	304.8	–.18	0.90	22.9	
0.75	19.0		13.00	330.2		0.45	11.4	
0.88	22.4		13.00	330.2	$(^{+1.5}_{-4.6}mm)$	0.52	13.2	
1.00	25.4		13.00	330.2		0.60	15.2	
1.12	28.4		13.00	330.2		0.67	17.0	
1.25	31.8		13.00	330.2		0.75	19.0	
1.38	35.1		13.00	330.2		0.82	20.8	
1.50	38.1		13.00	330.2		0.90	22.9	
1.62	41.1		13.00	330.2		0.97	24.6	
1.75	44.5		13.00	330.2		1.05	26.7	
0.75	19.0		14.00	355.6		0.45	11.4	
0.88	22.4		14.00	355.6		0.52	13.2	
1.00	25.4		14.00	355.6		0.60	15.2	

TABLE 1—DIMENSIONS FOR DOUBLE BEVEL CUTTING EDGE CROSS SECTIONS (CONTINUED)



THICKNESS = T IN.	THICKNESS = T mm	THICKNESS = T TOLERANCE	WIDTH = W IN.	WIDTH = W mm	WIDTH = W TOLERANCE	BLUNT = F IN.	BLUNT = F mm	BLUNT = F TOLERANCE
1.12	28.4		14.00	355.6		0.67	17.0	
1.25	31.8		14.00	355.6		0.75	19.0	
0.88	22.4		16.00	406.4		0.52	13.2	
1.00	25.4		16.00	406.4		0.60	15.2	
1.12	28.4		16.00	406.4		0.67	17.0	
1.25	31.8		16.00	406.4		0.75	19.0	
1.38	35.1		16.00	406.4		0.82	20.8	
1.50	38.1		16.00	406.4		0.90	22.9	
1.62	41.1		16.00	406.4		0.97	24.6	
1.75	44.5		16.00	406.4		1.05	26.7	
1.12	28.4		19.00	482.6		0.67	17.0	
1.38	35.1		19.00	482.6		0.82	20.8	
1.62	41.1		19.00	482.6		0.97	24.6	

SRAIGHTNESS TOLERANCE (BOW AND CAMBER) TO BE 0.25 IN (6.4 mm) IN ANY 60 IN (1524 mm) OF LENGTH, REFERENCE AISI.
THICKNESS TOLERANCE—"FOR SECTIONS OTHER THAN ROLLED SECTIONS REFER TO MANUFACTURER'S STANDARDS"
ANGLE TOLERANCE TO BE:
1.±1/2 DEG FOR ALL THICKNESS UP THROUGH 35 mm ON ROLLED & MACHINED SECTIONS AND ±2 DEG FOR CAST, FORGED AND FLAME CUT SECTIONS.
1.±DEG FOR THICKNESS OVER 35 mm.

PREPARED BY THE SAE SUBCOMMITTEE 8—GROUND ENGAGING TOOLS (INDUSTRIAL)

SAE J738 Revised JUN86

Rationale—Standard J738b (Sept. 1972) has been revised to Standard J738 (JUN86) as a result of a review by Subcommittee 8.

Revisions include:

1. 1.12 in (28.4 mm) thickness has been added to the 8.00 in (203.2 mm) wide section -1.12 in (28.4 mm) and 1.38 in (35.0 mm) thicknesses have been added to the 10.00 in (254 mm) wide section - 1.12 in (28.4 mm) and 1.38 in (35.0 mm) sections are now commercially used.
2. Metric dimensions have been rounded to one place and inch dimensions have been rounded to two places in the "T" column, "F" column, and tolerance notes - to conform to SI units (Ref. SAE J916).
3. "A" dimension for the width dimension has been changed to "W" to conform to ISO 7129.
4. "Blunt dimension "F" tolerance "Min" has been changed from "F" Min = 0.156 in (3.96 mm)" to "Min 0.16 (4.0 mm)" - to conform to ISO 7129.
5. Straightness tolerance note has been changed from "Mill tolerance on straightness to be in accordance with AISI hot rolled carbon steel bars" - to - "Straightness tolerance (bow and camber) to be 0.25 in (6.4 mm) in any 60 in (1524 mm) of length (Ref. AISI)".Thickness tolerances - Rolled Sections - ±0.03 in (±0.8 mm) cast or forged +0.09 in, –0.03 in (+2.3 mm, –0.8 mm), and plate - SEE AISI, have been removed and replaced by thickness tolerance ±0.03 in (±0.8 mm) and added note "Thickness Tol. - for sections other than rolled sections refer to Manufacturer's Standards".Above changes to be in accordance with industry standards.
6. Tolerance added to 35 deg bevel angle to be consistent with dimensioning on other cutting edge standards.
7. Name of standard changed from "Scraper & Bulldozer Cutting Edge Cross Sections, Rolled, Cast, Forged or Machined" to "Cutting Edge - Double Bevel Cross Sections" at request of ConAg and Off-Road Machinery Council.

Relationship of SAE Standard to ISO Standard—Not applicable.

Application—This standard specifies dimensions for cutting edge cross section.

Reference Section

SAE J173—Specification Definitions-Dozers

SAE J728—Component Nomenclature-Scrapers

SAE J729—Nomenclature-Dozer

SAE J731—Component Nomenclature-Loader

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