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INTERNATIONAL
400 Commonwealth Drive, Warrendale, PA 15096-0001

SURFACE VEHICLE STANDARD

SAE J740

REV. JUL86

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Supersedes J740b

An American National Standard

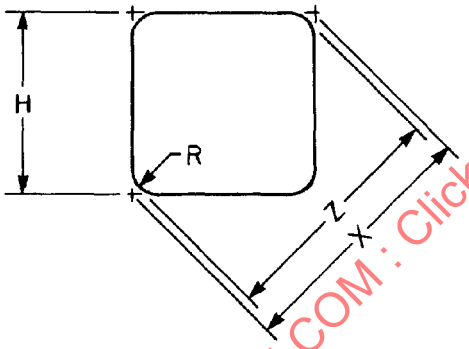
(R) COUNTERSUNK SQUARE HOLES FOR CUTTING EDGES AND END BITS

Foreword—This Document has not changed other than to put it into the new SAE Technical Standards Board Format.

1. Scope—To be used on cutting edges and end bits in conjunction with No. 3 head plow bolts (Ref. ANSI B18.9) typically used on off-road self-propelled work machines as described in SAE J1116.

Cutting edges are further defined in SAE J737, J739 and J1304.

End bits are further defined in SAE J63.



A = Minimum material thickness for bolt retention - countersunk one side
B = Minimum material thickness for bolt retention - countersunk both sides
C = Diameter of extended countersink
D = Diameter of 81 ± 2 deg countersink and counterbore
E = Angle of countersink = 81 ± 2 deg
H = Square hole size
X = Theoretical diagonal dimension of square hole
Z = Minimum diagonal dimension of square holes with corner radii R = .12 in (3.0 mm) maximum.

FIGURE 1—SQUARE HOLE DIMENSIONS

1. When section thickness exceeds A in drawing 1 (Figure 2) (countersunk one side) or B in drawing 4 (countersunk both sides), use counterbore with diameter D, as shown in cross section drawings 2, 5 and 6, or extended countersink C, as shown in cross section drawings 3 and 7.
2. The inscribed circle of the square holes shall be concentric with countersink or counterbore within 0.03 in (0.8 mm).

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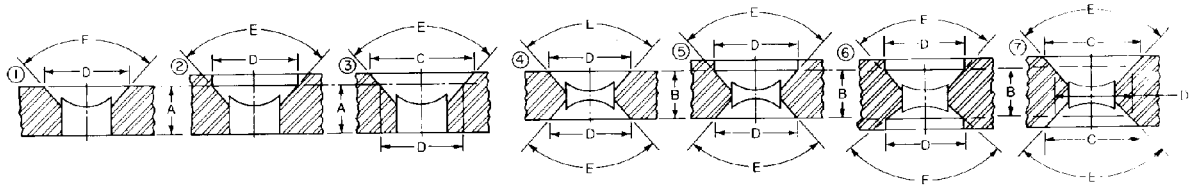

FIGURE 2—CROSS SECTION DRAWINGS 1 THRU 7

TABLE 1—DIMENSIONS FOR COUNTERSUNK HOLES USING NUMBER THREE HEAD PLOW BOLTS

BOLT SIZE	D		H				A (MIN)		B (MIN)		Z (MIN)	
	±.031	±.79										
in	in	mm	in		mm		in	mm	in	mm	in	mm
0.500	1.000	25.40	0.562	+.078 – 0.0	14.27	+1.98 –0.0	0.47	11.9	0.50	12.7	0.694	17.63
0.625	1.188	30.18	0.688	+.078 – 0.0	17.48	+1.98 –0.0	0.55	14.0	0.62	15.7	0.873	22.17
0.750	1.344	34.14	0.812	+.078 – 0.0	20.62	+1.98 –0.0	0.59	15.0	0.75	19.0	1.048	26.62
0.875	1.562	39.67	0.938	+.093 – 0.0	23.83	+2.36 –0.0	0.68	17.3	0.88	22.4	1.226	31.14
1.000	1.750	44.45	1.062	+.109 – 0.0	26.97	+2.77 –0.0	0.74	18.8	1.00	25.4	1.402	35.61
1.250	2.344	59.54	1.312	+.140 – 0.0	33.32	+3.56 –0.0	1.00	25.4	1.25	31.8	1.755	44.58

1.1 Purpose—This Standard specifies the principal shapes and dimensions for countersunk square holes.

2. References

2.1 Applicable Publications—The following publications form a part of the specification to the extent specified herein. Unless otherwise indicated the lastest revision of SAE publications shall apply.

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

SAE J63— Hole Placement on Dozer End Bits
SAE J737—Hole Spacing for Scraper and Dozer Cutting Edges
SAE J739—Grader Cutting Edge
SAE J1116—Categories of Off-Road Self-Propelled Work Machines
SAE J1304—Cutting Edge-Cross Sections Loader Straight with Bolt Holes

3. Notes

3.1 Marginal Indicia—The change bar (l) located in the left margin is for the convenience of the user in locating areas where technical revisions have been made to the previous issue of the report. An (R) symbol to the left of the document title indicates a complete revision of the report.

PREPARED BY THE SAE OFF-ROAD MACHINERY TECHNICAL COMMITTEE SC8—
GROUND ENGAGING TOOLS (INDUSTRIAL)