

# INTERNATIONAL STANDARD

**ISO  
7129**

Second edition  
1989-02-01

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## **Earth-moving machinery — Tractors with dozer, graders, tractor scrapers — Cutting edges — Principal shapes and basic dimensions**

*Engins de terrassement — Tracteurs à lame, niveleuses, décapeuses — Bords  
coupants — Principales formes et dimensions de base*



Reference number  
ISO 7129: 1989 (E)

## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 7129 was prepared by Technical Committee ISO/TC 127, *Earth-moving machinery*.

This second edition cancels and replaces the first edition (ISO 7129:1982), of which it constitutes a minor revision.

# Earth-moving machinery — Tractors with dozer, graders, tractor scrapers — Cutting edges — Principal shapes and basic dimensions

## 1 Scope

This International Standard specifies the

- principal shapes and dimensions of the cross-section,
- hole location for the mounting bolts,
- shapes and dimensions of holes for the mounting bolts,

for cutting edges used on tractors with dozer, graders and tractor scrapers, as defined in ISO 6165, taking interchangeability into consideration.

NOTE — Some inch figures in this International Standard are not equivalent to the corresponding millimetre figures because widely used values have been adopted.

## 2 Normative reference

The following standard contains provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the edition indicated was valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent edition of the standard listed below. Members of IEC and ISO maintain registers of currently valid International Standards.

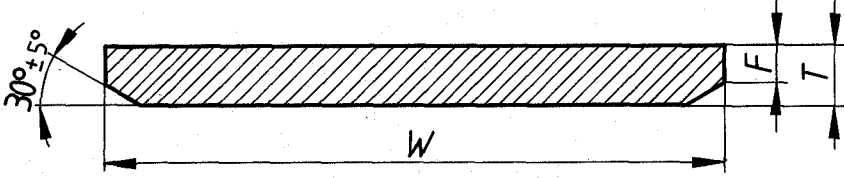
ISO 6165: 1987, *Earth-moving machinery — Basic types — Vocabulary*.

## 3 Cutting edges — Cross-sections — Principal shapes and basic dimensions

The principal shapes and basic dimensions of the cutting edge cross-section shall be as in tables 1 and 2.

Table 1 — Tractor with dozer and tractor scraper

NOTE — The shapes and dimensions of cutting edges with a 140 mm hole pitch are specified in annex A.

Dimensions in millimetres  
(Inch values in parentheses)


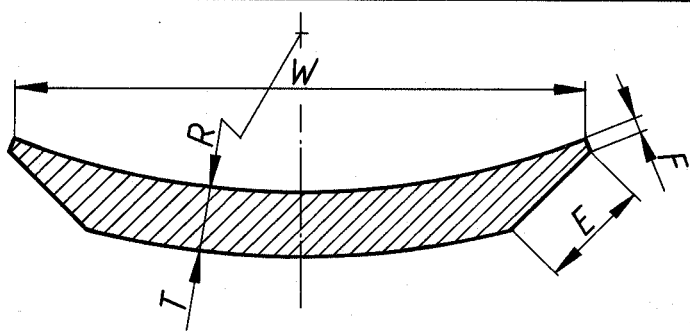
Application <sup>1)</sup>		Width, <i>W</i>		Thickness, <i>T</i>		Tip of chamfer, <i>F</i>	
Tractor with dozer	Tractor scraper	nom.	tol.	nom.	tol.	max.	min.
x		153 (6)	± 3 (± 0.118)	12,7 (0.5)		8 (0.32)	
x		153 (6)		16 (0.625)		10 (0.39)	
x		153 (6)		19 (0.75)		12 (0.47)	
x		165 (6.5)	+1,5 (+0.059) -4,5 (-0.177)	16 (0.625)		10 (0.39)	
x		204 (8)		16 (0.625)		10 (0.39)	
x		204 (8)		19 (0.75)		12 (0.47)	
x		204 (8)		22 (0.875)		13 (0.51)	
x		204 (8)		25,4 (1)		14 (0.55)	
x	x	254 (10)		19 (0.75)		12 (0.47)	
	x	254 (10)		22 (0.875)		13 (0.51)	
x	x	254 (10)		25,4 (1)		14 (0.55)	
x		254 (10)		32 (1.25)		20 (0.79)	
	x	254 (10)		41 (1.625)		25 (0.98)	
	x	305 (12)		19 (0.75)	For casting material: +2,4 (+0.095) -0,6 (-0.025)	12 (0.47)	
	x	305 (12)		22 (0.875)		13 (0.51)	
x		305 (12)		25,4 (1)		14 (0.55)	
x		305 (12)		28,6 (1.125)		18 (0.71)	
	x	305 (12)		32 (1.25)	For material other than casting: +0,8 (+0.032) -1,2 (-0.047)	20 (0.79)	
	x	305 (12)		38 (1.5)		23 (0.91)	
	x	330 (13)		19 (0.75)		12 (0.47)	
	x	330 (13)		22 (0.875)		13 (0.51)	
	x	330 (13)		25,4 (1)		14 (0.55)	
	x	330 (13)		28,6 (1.125)		18 (0.71)	
x		330 (13)		32 (1.25)		20 (0.79)	
x		330 (13)		35 (1.375)		21 (0.83)	
x		330 (13)		38 (1.5)		23 (0.91)	
	x	330 (13)		41 (1.625)		25 (0.98)	
	x	360 (14)		44,5 (1.75)		27 (1.06)	
	x	360 (14)	+1,5 (+0.059) -4,5 (-0.177)	19 (0.75)		12 (0.47)	
	x	360 (14)		22 (0.875)		13 (0.51)	
	x	360 (14)		25,4 (1)		14 (0.55)	
	x	360 (14)		28,6 (1.125)		18 (0.71)	
	x	360 (14)		32 (1.25)		20 (0.79)	
	x	360 (14)		35 (1.375)		21 (0.83)	
	x	406 (16)		22 (0.875)		13 (0.51)	
	x	406 (16)		25,4 (1)		14 (0.55)	
	x	406 (16)		28,6 (1.125)		18 (0.71)	
	x	406 (16)		32 (1.25)		20 (0.79)	
	x	406 (16)		35 (1.375)		21 (0.83)	
	x	406 (16)		38 (1.5)		23 (0.91)	
	x	406 (16)		41 (1.625)		25 (0.98)	
	x	406 (16)		44,5 (1.75)		27 (1.06)	
	x	482 (19)		28,6 (1.125)		18 (0.71)	
	x	482 (19)		32 (1.25)		20 (0.79)	
	x	482 (19)		35 (1.375)		21 (0.83)	
	x	482 (19)		38 (1.5)		23 (0.91)	
	x	482 (19)		41 (1.625)		25 (0.98)	
	x	482 (19)		44,5 (1.75)		27 (1.06)	

1) Recommendation only.

Table 2 — Grader

NOTE — The shapes and dimensions of cutting edges with 140 mm and 280 mm hole pitches are specified in annex A.

Dimensions in millimetres  
(Inch values in parentheses)



Width, $W$		Thickness, $T$		Radius of curvature, $R$		Chamfer	
nom.	tol.	nom.	tol.	nom.	tol.	$E$	$F$ min.
152 (6)		13 (0.5)					
152 (6)		16 (0.625)					
152 (6)	+3	19 (0.75)	$\pm 0,6$ ( $\pm 0.025$ )	280 (11)	$\pm 10$ ( $\pm 0.394$ )	30 (1.18)	2,5 (0.1)
204 (8)	-1,5	16 (0.625)					
204 (8)		19 (0.75)					

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4 Mounting bolts — Hole location

- 4.1 The hole location for the mounting bolts shall be those presented in tables 3 and 4.
- 4.2 Each countersink shall be located within a 3,2 mm (0.125 in) diameter true position circle.
- 4.3 The camber of the cutting edge shall be within 2 mm/m (0.08 in/39.4 in).

Table 3 — Tractor with dozer and tractor scraper

NOTE — The shapes and dimensions of cutting edges with a 140 mm hole pitch are specified in annex A.

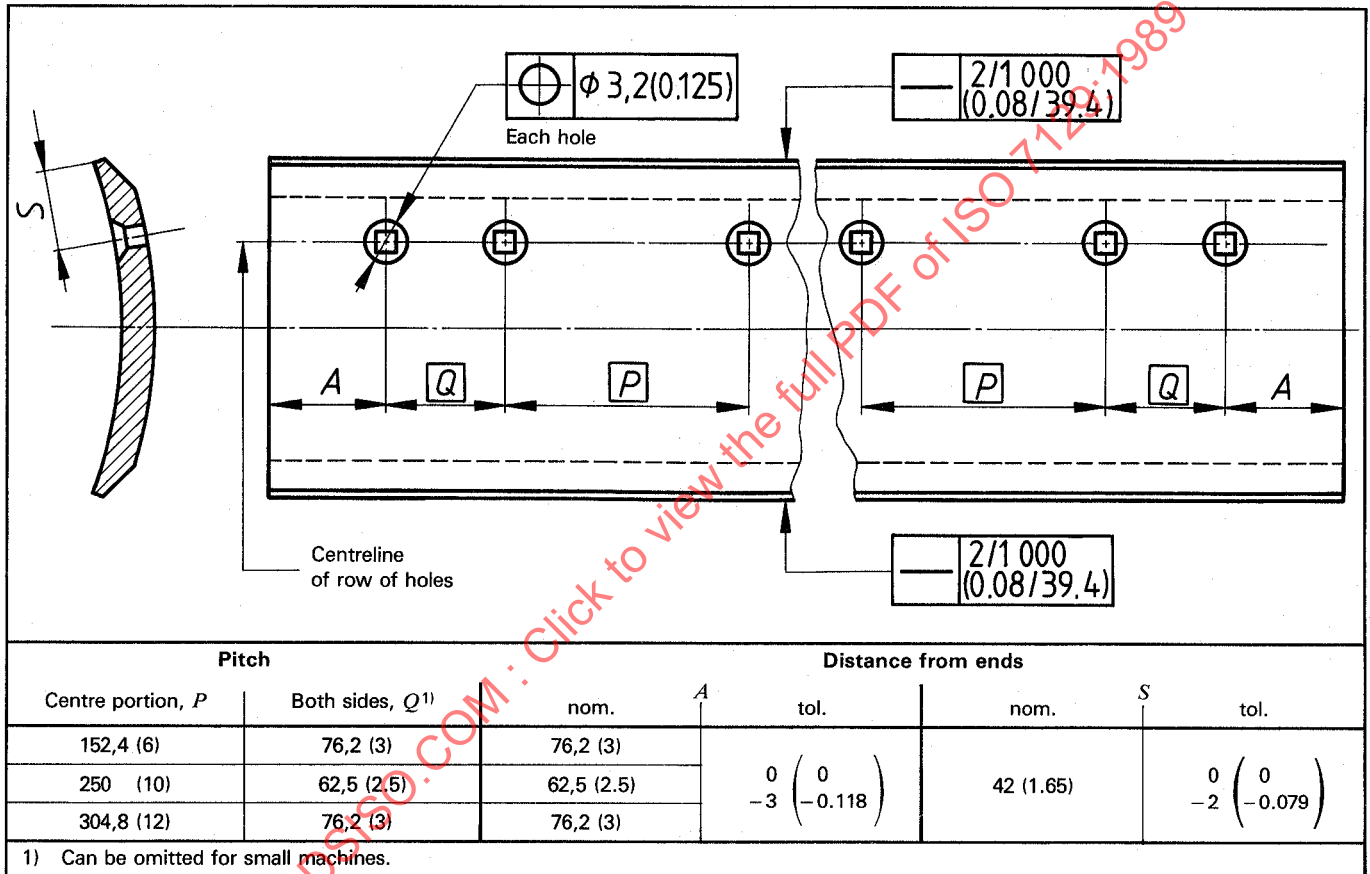
Dimensions in millimetres  
(Inch values in parentheses)

Width, <i>W</i>	Hole location
330 and less	<p>Each hole</p> <p>Centreline of row of holes</p> <p><math>\phi 3,2 (0.125)</math></p> <p><math>2/1\,000 (0.08/39.4)</math></p> <p><math>76,2 - \begin{smallmatrix} 0 \\ 3 \end{smallmatrix} (3 - 0.118)</math></p> <p><math>152,4 (6)</math></p> <p><math>2/1\,000 (0.08/39.4)</math></p> <p><math>W/2</math></p> <p><math>W</math></p>
330 and over	<p>Centrelines of rows of holes</p> <p><math>2/1\,000 (0.08/39.4)</math></p> <p><math>W - 76,2</math></p> <p><math>\frac{W - 76,2}{2}</math></p> <p><math>76,2 (3)</math></p> <p><math>W</math></p> <p><math>76,2 - \begin{smallmatrix} 0 \\ 3 \end{smallmatrix} (3 - 0.118)</math></p> <p><math>152,4 (6)</math></p> <p><math>2/1\,000 (0.08/39.4)</math></p> <p><math>\phi 3,2 (0.125)</math></p> <p>Each hole</p>

Table 4 — Grader

NOTE — The shapes and dimensions of cutting edges with 140 mm and 280 mm hole pitches are specified in annex A.

Dimensions in millimetres  
(Inch values in parentheses)



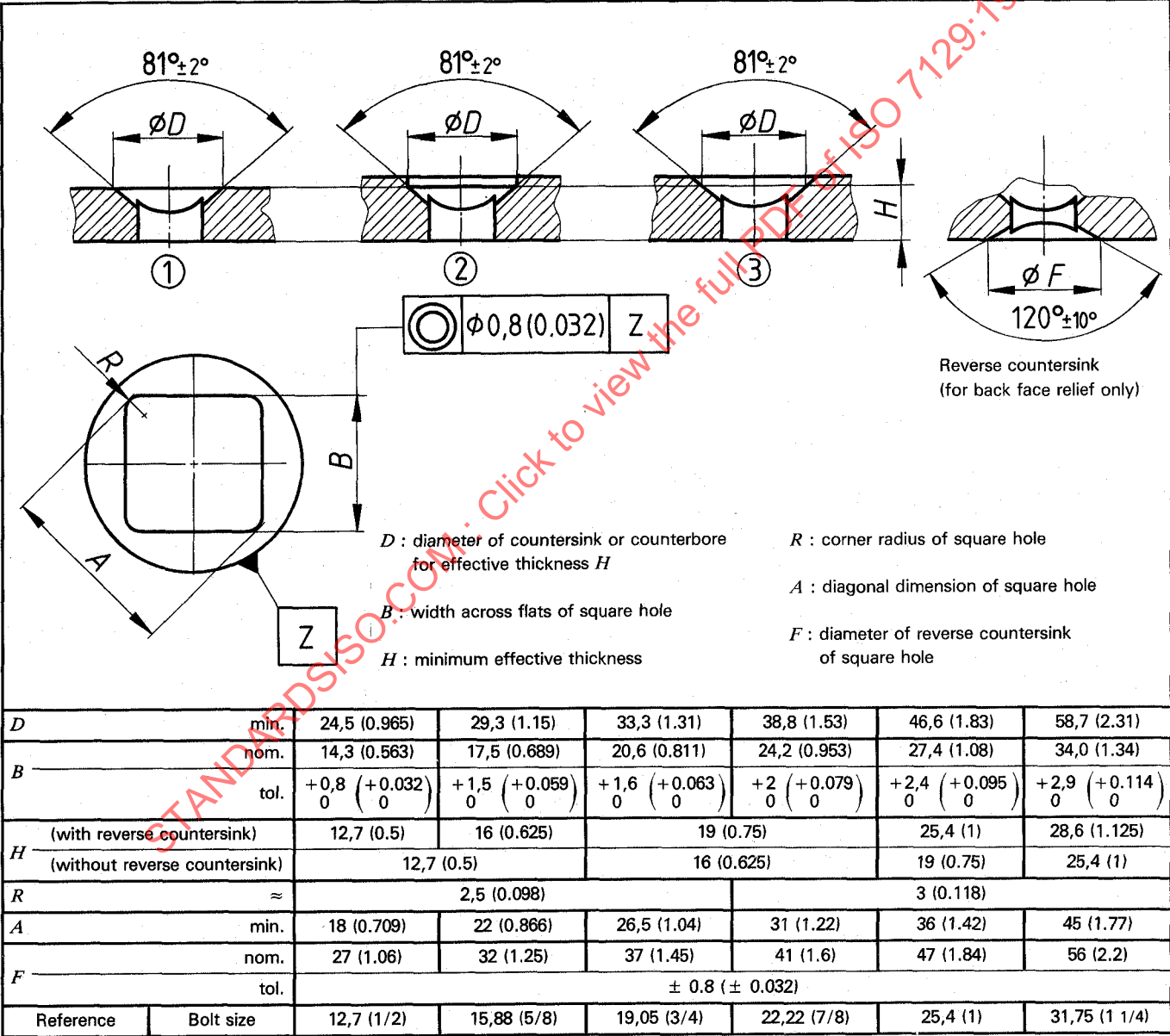
5 Mounting bolt hole — Shapes and dimensions

- 5.1 The shapes and dimensions of mounting bolts holes shall be those presented in table 5.
- 5.2 The inscribed circles of the square holes shall be concentric with the countersink to within 0,8 mm (0.032 in).

Table 5 — Mounting bolt hole

NOTE — The shapes and dimensions of mounting bolt hole with 140 mm and/or 280 mm hole pitches are specified in annex A.

Dimensions in millimetres  
(Inch values in parentheses)





## Annex A (normative)

### Principal shapes and basic dimensions of cutting edges with 140 mm and 280 mm hole pitch

#### A.1 Field of application

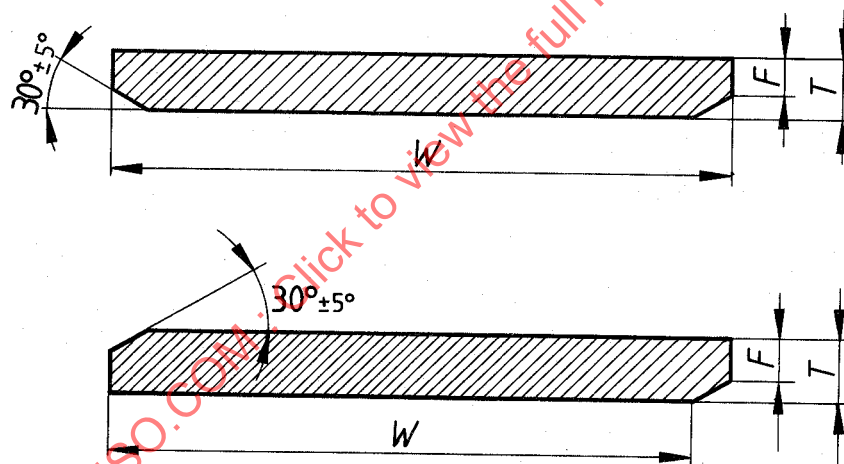
This annex applies in those countries using 140 mm and 280 mm pitch for mounting bolts.

#### A.2 Cutting edges — Cross-sections — Principal and basic dimensions

The principal shapes and basic dimensions of the cutting edge cross-section shall be as in tables A.1 and A.2.

Table A.1 — Tractor with dozer and tractor scraper

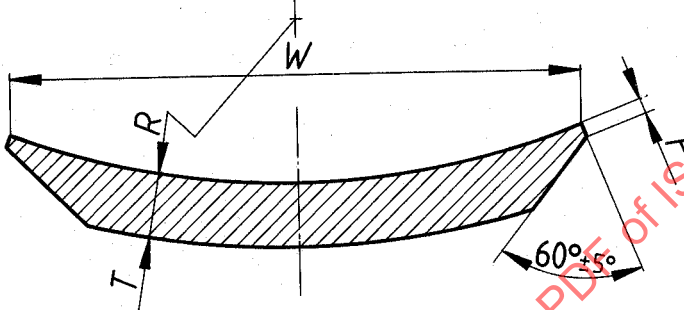
Dimensions in millimetres



Width, $W$		Thickness, $T$		Tip of chamfer, $F$	
nom.	tol.	nom.	tol.	max.	min.
150		12		8	
150		16		10	
180		12	+ 1	8	
180		16	- 2	10	
250	+ 2	18		12	
300	- 4,5	18		12	
300		25		16	4
360		25		16	
400		25	+ 1,5 - 2,5	16	
470	+ 2,5 - 5	30		20	

Table A.2 – Grader

Dimensions in millimetres

						
Width, <i>W</i>		Thickness, <i>T</i>		Radius of curvature, <i>R</i>		Tip of chamfer, <i>F</i>
nom.	tol.	nom.	tol.	nom.	tol.	min.
180	+ 2,5	12	± 1	350; 440	± 30	2
180	- 4,5	18				

### A.3 Mounting bolts — Hole location

**A.3.1** The hole locations for the mounting bolts shall be those presented in tables A.3, A.4 and A.5.

**A.3.2** Each countersink shall be located within a 3,2 mm diameter true position circle.

**A.3.3** The camber of the cutting edge shall be within 6 mm/m.

**Table A.3 — Tractor with dozer**

Dimensions in millimetres

No. of row	Hole location																		
1	<div><p>Centreline of row of holes</p><p>70 <math>\begin{smallmatrix} 0 \\ -5 \end{smallmatrix}</math> 140</p><p>6/1 000</p><p>W/2 W/2 W</p><p>6/1 000</p><p><math>\phi 3,2</math></p><p>Each hole</p></div>																		
2	<div><p>Centrelines of rows of holes</p><p>70 <math>\begin{smallmatrix} 0 \\ -5 \end{smallmatrix}</math> 140</p><p>6/1 000</p><p>A B</p><p>6/1 000</p><p><math>\phi 3,2</math></p><p>Each hole</p><table><tr><td>A</td><td>26</td><td>34</td><td>36</td><td>44</td><td>48</td><td>66</td></tr><tr><td>B</td><td>62</td><td>77</td><td>58</td><td>72</td><td>107</td><td>132</td><td>128</td><td>156</td><td>176</td><td>202</td></tr></table></div>	A	26	34	36	44	48	66	B	62	77	58	72	107	132	128	156	176	202
A	26	34	36	44	48	66													
B	62	77	58	72	107	132	128	156	176	202									

Table A.4 – Grader

Dimensions in millimetres

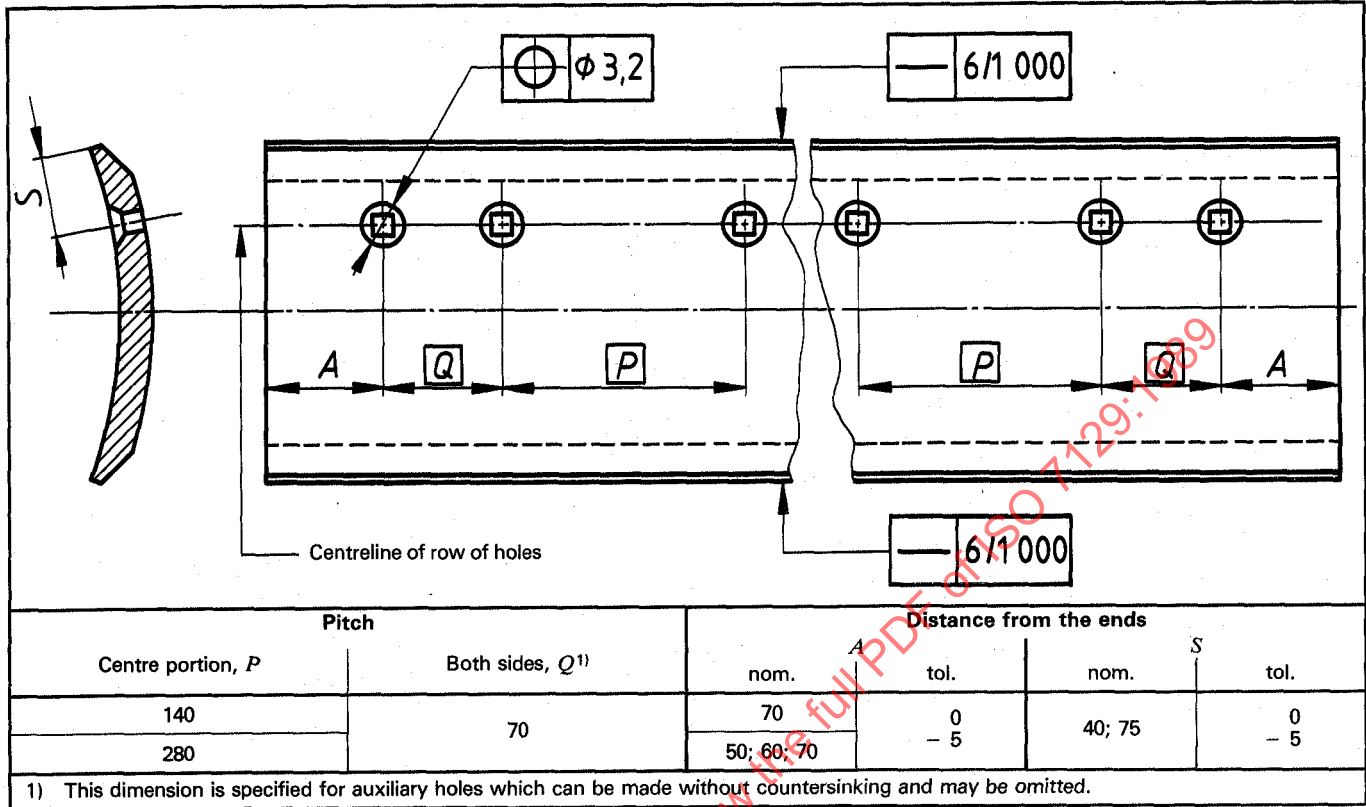


Table A.5 – Tractor scraper

Dimensions in millimetres

