
International Standard



4251 / 3

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Tyres and rims (existing series) for agricultural tractors and machines — Part 3 : Rims

Pneus et jantes (séries existantes) pour tracteurs et machines agricoles — Partie 3 : Jantes

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Descriptors : agricultural machinery, tractors, tyres, rims, dimensions.

Foreword

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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 4251/3 was prepared by Technical Committee ISO/TC 31, *Tyres, rims and valves*.

ISO 4251/3 was first published in 1980. This second edition cancels and replaces the first, of which it constitutes a technical revision.

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Tyres and rims (existing series) for agricultural tractors and machines —

Part 3 : Rims

1 Scope and field of application

This part of ISO 4251 sets out rim dimensions and rim coordinations for existing series of tyres for agricultural tractors and machines.

Tyre designation and dimensions, load ratings, and tyre classification and nomenclature are given in ISO 4251/1, ISO 4251/2 and ISO 4251/4 respectively.

2 Rim diameters

Nominal diameter size codes and specified diameters of rims are given in table 1 and shown in figure 1.

The specified diameters, D , are derived from the nominal diameter size codes, D_R , as follows :

- a) for $D_R = 15.3$, $D = 25,4 \times 15,288 = 388,3$ mm;
for all other rims with
 $D_R < 16$, $D = 25,4 (D_R - 0,031\ 25)$ mm;
- b) for $D_R = 16.1$, $D = 25,4 \times 16,043\ 75 = 407,5$ mm;
- c) for $D_R > 16.1$, $D = 25,4 (D_R + 0,187\ 5)$ mm.

For tyre design purposes only, a tolerance of $\pm 0,4$ mm on the specified diameter, D , may be applied.

For rim diameter measurements, see the annex.

A tolerance of $\pm 1,2$ mm on rim circumference is permitted.

3 Rim contours and valve holes

3.1 Drop centre W and DW rims

Dimensions and tolerances of drop centre W and DW rims are given in table 2 and shown in figure 2.

The location and dimensions of valve holes are shown in figure 2.

The valve hole shall have a diameter of $15,7 \begin{smallmatrix} +0,4 \\ 0 \end{smallmatrix}$ mm and may be on either side of the rim.

The valve seat angle is $30 \pm 5^\circ$ nominal. To provide for valve to vehicle clearance, optional valve seat angles of 15° minimum to 50° maximum are permissible. For any angle selected for a given rim, the tolerance is $\pm 5^\circ$.

3.2 Other drop centre rims

Dimensions and tolerances of other drop centre rims are given in table 3 and shown in figure 3. (Figure 4 gives dimensions and tolerances for a semi-drop centre rim 16.1 — 11 SDC.)

The normal location of valve holes in C, D, E, F and LB rims is shown in figure 3. The valve hole may be on either side of the rim well.

The valve hole diameter shall be :

- a) $15,7 \begin{smallmatrix} +0,4 \\ 0 \end{smallmatrix}$ mm for rims of nominal diameter size code 15 and above;
- b) $11,3 \begin{smallmatrix} +0,4 \\ 0 \end{smallmatrix}$ mm for rims of nominal diameter size code 14 and below.

An optional location of valve holes in C, D, E, and F rims of diameter size code 15 and above (valve hole diameter $15,7 + 0,4$ ₀ mm) is shown in figure 5.

The location of valve holes in rims W 10 L and 16.1 × W 11 C and an optional location of valve holes in the corner of the well of LB rims is shown in figure 6.

To provide for valve to vehicle clearance in LB rims, optional valve seat angles of 15° minimum to 50° maximum are permissible. For any angle selected for a given rim, the tolerance is ± 5°.

3.3 Divided rims

Dimensions and tolerances of divided rims are given in table 4 and shown in figure 7.

The location of valve holes is shown in figure 7.

The valve hole diameter shall be :

- a) $15,7 + 0,4$ ₀ mm for rims of nominal diameter size code 15 and above;
- b) $11,3 + 0,4$ ₀ mm for rims of nominal diameter size code 14 and below.

4 Rim knurling

Transverse knurling is optional on W and DW rims as shown in figure 2 and according to table 2, with the following specifications :

- a) knurling shall start $9,5 ± 0,8$ mm from the flange and shall be 1,6 mm minimum from the bead seat radius;
- b) the depth of knurling shall be 0,4 to 0,8 mm;
- c) the pitch of knurling shall be 1,6 to 3,2 mm.

5 Rim coordinations

In addition to the measurement rim width given in ISO 4251/1, the preferred rims and the permitted rims are specified :

- in table 5 for agricultural drive wheels, tractor tyres;
- in table 6 for agricultural steering wheels, tractor tyres;
- in table 7 for agricultural implement tyres with normal section height;
- in table 8 for agricultural implement tyres with low section height.

NOTE Rim coordinations for garden tractor tyres are under study.

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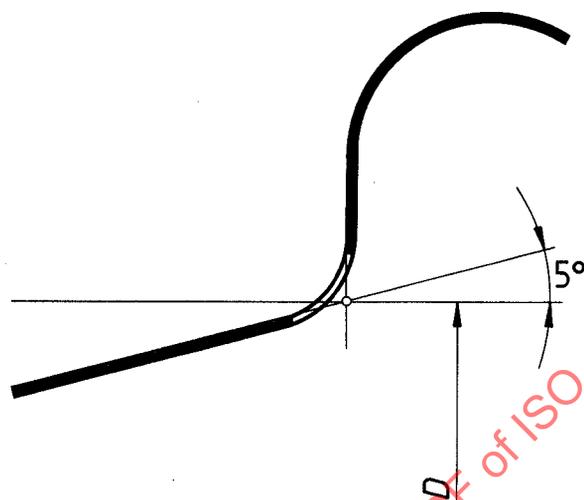


Figure 1 — Rim flange

Table 1 — Rim diameters

Dimensions in millimetres

Nominal diameter size code D_R	Specified diameter D
8	202,4
9	227,8
10	253,2
12	304,0
13	329,4
14	354,8
15	380,2
15.3	388,2
16	405,6
16.1	407,5
18	462,0
20	512,8
24	614,4
26	665,2
28	716,0
30	766,8
32	817,6
34	868,4
36	919,2
38	970,0
40	1 020,8
42	1 071,6
44	1 122,4
48	1 224,0

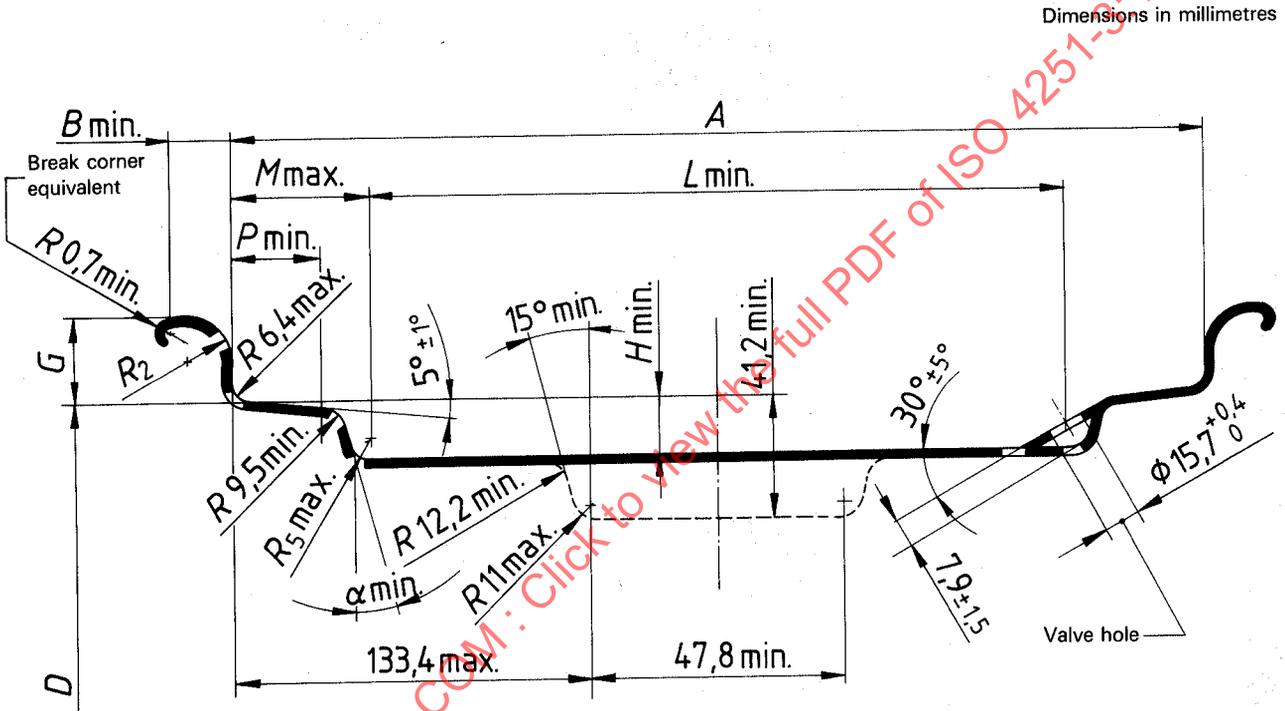


Figure 2 — Contour of W and DW rims

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Table 2 – Dimensions of W and DW rims

Rim size	A		B min. mm	G +1,2 -0,4 mm	H min. mm	M max. mm	P min. mm	L min. mm	R ₂ mm	R ₅ max. mm	α min. (°)
	mm	tol. mm									
W 6	152,4	± 2,4	7,9	22,2	20,5	44,5	23,8	61,0	9,5	11,0	6
W 7	177,8							87,0			
W 8	203,2							112,0			
W 8 H			25,4	33,0		96,0					
W 8 L	228,6		21,6	51,0		27,0	130,0	6			
W 9			25,4	155,0							
W 10	254,0		21,6	57,5		33,0	147,0				
W 10 H			156,0	27,0		14,3					
W 10 L	279,4		25,4				57,5	180,0	11,0		
DW 10			54,0*	14,3							
W 11	279,4		21,6			57,5	30,0	108,0	11,0		
DW 11			54,0*	14,3							
16.1 × W 11 C	304,8		9,5			25,4	57,5	205,0	11,0		
W 12				54,0*							14,3
DW 12	330,2		57,5	27,0		230,0	11,0				
W 13		255,0									
W 14 L	355,6	± 4,7	11,1	28,6	27,0	63,5	36,5	14,3	15		
DW 14										9,5	25,4
W 15 L	381,0	± 4,7	9,5	25,4	20,5	57,5	33,0	295,0		11,0	
W 16 L								406,4			14,3
DW 16	457,2	± 6,4	11,1	28,6	27,0	63,5	36,5	14,3			
DW 18										± 4,7	9,5
W 18 L	508,0	± 6,4	11,1	28,6	27,0	95,5	41,3	14,3			
26 × DW 20										36,5	
34, 32, 30 × DW 20	533,4	± 6,4	11,1	28,6	27,0	95,5	41,3	14,3			
DW 21											
DW 25											
DW 27											

* Optional tapered intermediate well DW 10, DW 11 and DW 12.

Dimensions in millimetres

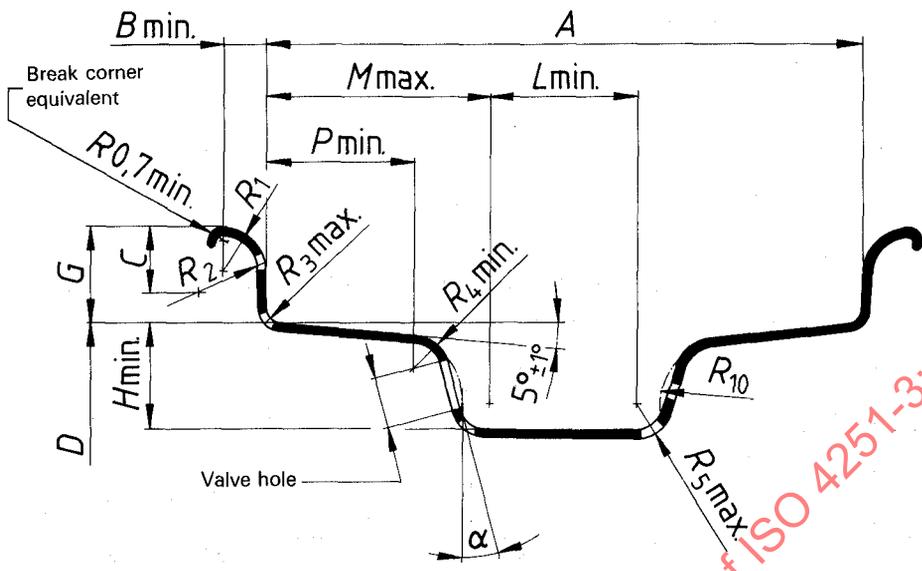


Figure 3 – Contour of other drop centre rims

Table 3 – Dimensions of other drop centre rims

Rim size	A		B		G		H	C	L	M	P	R ₁	R ₂	R ₃	R ₄	R ₅	R ₁₀	Valve hole		
	mm	tol. mm	min. mm	mm	tol. mm	min. mm	mm	min. mm	max. mm	min. mm	mm	mm	max. mm	min. mm	max. mm	mm	(see figure)	α min. (°)		
2.50 C	63,5		10,3	15,9		14,2	11,5	13,0	25,4	12,7	7,6	11,9	3,2		6,4		28,6			
3.00 D	76,2		10,8	17,5		19,0	12,4	17,8	28,7	14,2	8,1	13,0					31,8			
4.00 E	101,6		11,7	19,8		19,0	13,6	19,0	35,0	18,0	8,6	14,2			9,5	6,4	38,1			
4 J			10,3	17,3		17,8	9,7		45,0	19,8		9,7		6,4						
4.25 KA	108,0		9,1	19,6		26,2	10,4	22,0	42,0	20,8	6,4	10,7	6,4					3-5	15	
4.50 E	114,3		11,7	19,8		23,4	13,6		39,7	18,0	8,6	14,2				10,0				
5.00 F	127,0		12,2	22,2		26,2	14,5	25,4	54,0	23,8	9,5	15,6			9,5		8,0			
5 JA			8,1	15,8		19,0	8,1	52,8	38,1	17,8		8,1	5,5			10,0				
5 K			11,4	19,6	+1,2 -0,4	20,3	10,3	22,0	46,7	19,8	6,4	10,7			6,4	6,4				
5 KB		±1,6	9,4	19,6		20,3	10,3	25,4	44,2*	19,8		10,7						3-6	10	
5.50 F	139,7		12,2	22,2		26,2	14,5	25,4	54,0	23,8	9,5	15,6			9,5	8,0				
5 1/2 J			10,3	17,3		17,8	9,7	22,0	45,0	19,8	6,4	9,7			6,4	6,4				
5 1/2 K			11,4	19,6		20,3	10,3	22,0	46,7	19,8	6,4	10,7			6,4	6,4			3-5	15
6.00 F	152,4		12,2	22,2		26,2	14,5	25,4	54,0	23,8	9,5	15,6			9,5	8,0				
6 L			11,9	21,6		27,0		22,0	45,0	23,9	6,4	11,9				6,4				
6 LB	152,4		9,5	21,6		27,0		28,5	48,3*	25,4	7,2	12,0	6,4			6,4			3-6	10
7.00	177,8		11,4	20,5	±1	31,0		30,0	60,0	19,8	-	11,0			6,4	10,0			3-5	15
7 LB			9,5	21,6	+1,2 -0,4	27,0	11,0	28,5	54,0*	25,4	7,2	12,0				6,4	6,4			
8 LB	203,2		9,5	21,6		27,0	11,0	28,5	54,0*	25,4	7,2	12,0				6,4				10
9.00	229,6		11,4	19,0	±1	34,0		50,0	60,0	25,0	-	11,0				10,0			3-6	15
9		±2,4		25,4		31,0		50,0	60,0	27,0	-	11,0			9,5	11,0				
10 LB	254,0	±1,6	9,5	21,6	+1,2 -0,4	27,0		28,5	54,0*	25,4	7,2	12,0			6,4	6,4				10
11**	279,4	±2,4	25,4			31,0		60,0	65,0	31,8	-	11,0			9,5	11,0				15

* The rim may have offset well M max. shown on tyre mounting side, but the valve hole may be on opposite side.

** Not for rim 16.1 – 11 (see figure 4).

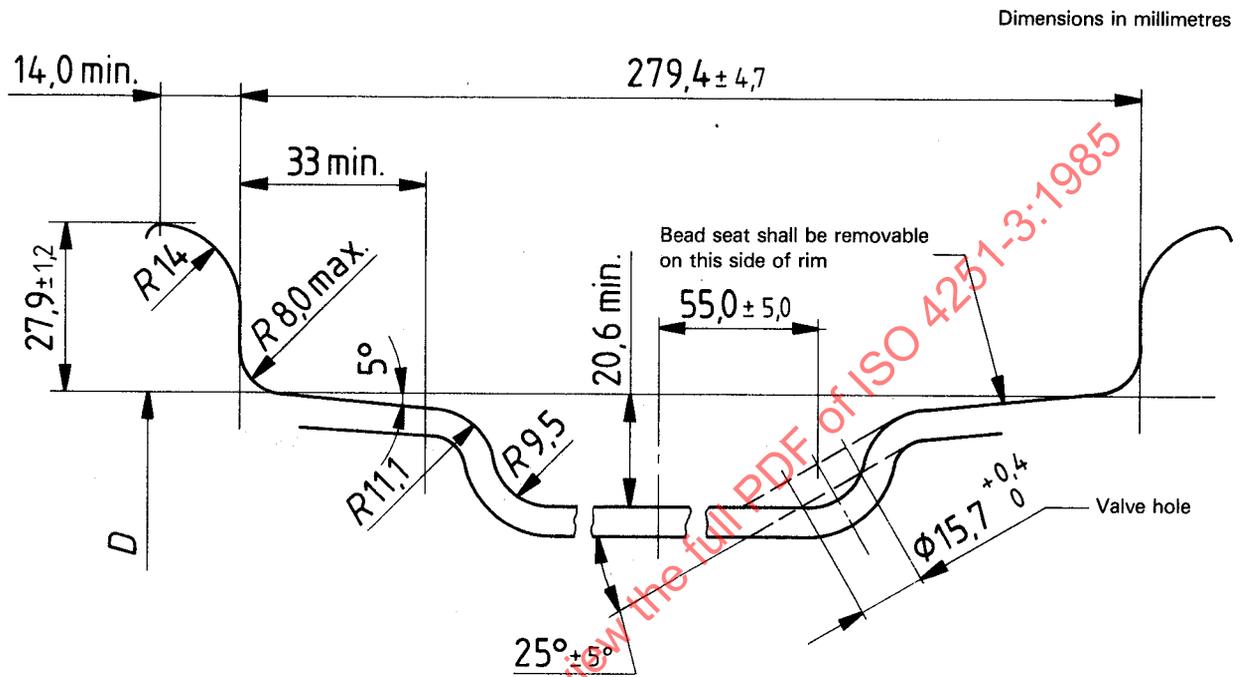


Figure 4 – Contour of semi-drop centre rim 16.1 – 11 SDC

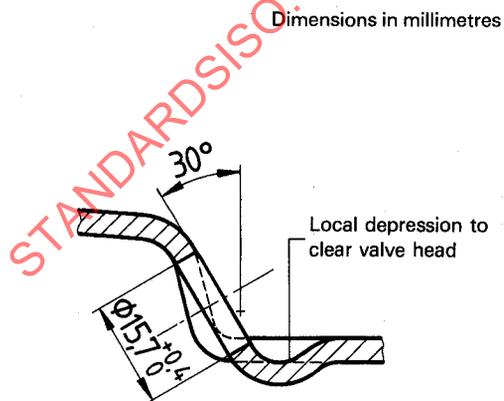


Figure 5 – Optional location of 15,7 mm valve hole

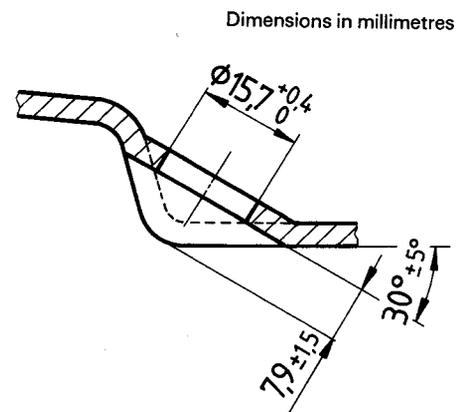


Figure 6 – Location of valve hole in corner of well

Dimensions in millimetres

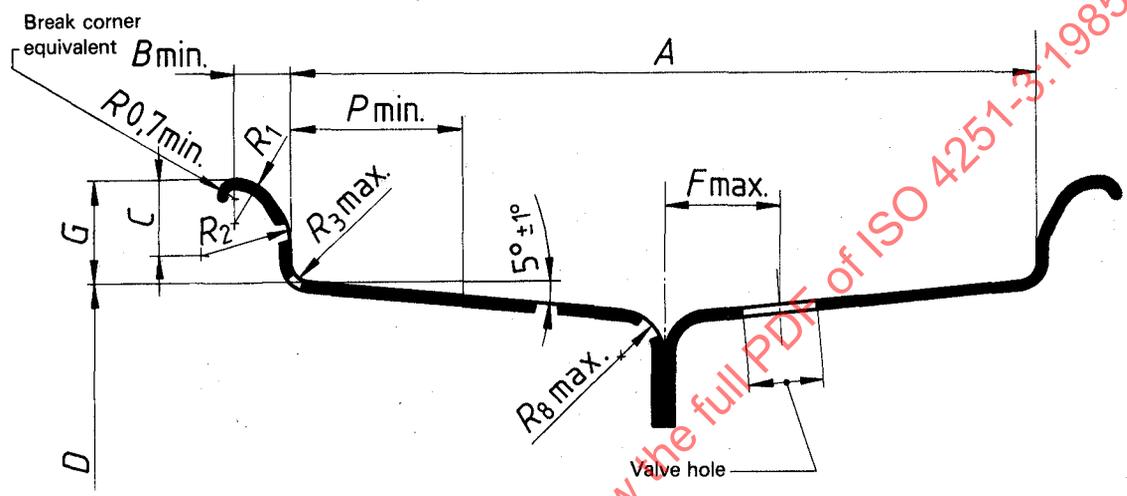


Figure 7 – Contour of divided rims

Table 4 – Dimensions of divided rims

Rim size	A $\pm 1,6$ mm	B min. mm	G $+1,2$ $-0,4$ mm	C mm	P min. mm	R_1 mm	R_2 mm	R_3 max. mm	R_8 max. mm	F max. mm
2.50 C	63,5	10,3	15,9	11,5	12,7	7,5	11,9	6,4	5,0	14,0
3.00 D	76,2	10,8	17,5	12,4	14,2	8,1	13,0		10,0	16,0
4.00 E	101,6	11,7	19,8	13,6	18,4	8,6	14,2		11,0	21,0
5.00 F	127,0	12,2	22,2	14,5	23,8	9,5	15,6		9,5	26,0
5.50 F	139,7	11,4	19,6	10,3	19,8	6,4	10,7		17,5	
5 1/2 K										
6.00 F	152,4	12,2	22,2	14,5	23,8	9,5	15,6		25,4	

Table 5 — Tyres for agricultural tractor drive wheels —
Preferred and permitted rims

Tyre size		Measurement rim width code	Preferred rim	Permitted rims
Diagonal	Radial			
7.2 — 36 7.2 — 40		6 6	W 6 W 6	
8.3 — 24 8.3 — 36 8.3 — 42 8.3 — 44	8.3 R 24 8.3 R 36 8.3 R 42 8.3 R 44	7 7 7 7	W 7 W 7 W 7 W 7	W 6 W 6 W 6 W 6
9.5 — 24 9.5 — 32 9.5 — 36 9.5 — 44 9.5 — 48	9.5 R 24 9.5 R 32 9.5 R 36 9.5 R 44 9.5 R 48	8 8 8 8 8	W 8 W 8 W 8 W 8 W 8	W 7, W 8 H W 7 W 7 W 7 W 7
11.2 — 24 11.2 — 28	11.2 R 24 11.2 R 28	10 10	W 10 W 10	W 9, W 10 H W 9, W 10 H
12.4 — 24 12.4 — 28 12.4 — 32 12.4 — 36 12.4 — 38	12.4 R 24 12.4 R 28 12.4 R 32 12.4 R 36 12.4 R 38	11 11 11 11 11	W 11 W 11 W 11 W 11 W 11	W 10, W 10 H W 10, W 10 H W 10 W 10, DW 11 W 10, DW 10, DW 11
13.6 — 24 13.6 — 28 13.6 — 36 13.6 — 38	13.6 R 24 13.6 R 28 13.6 R 36 13.6 R 38	12 12 12 12	W 12 W 12 W 12 W 12	W 11, DW 12 W 11 W 11 W 11, DW 11, DW 12
14.9 — 24 14.9 — 26 14.9 — 28 14.9 — 30 14.9 — 38	14.9 R 24 14.9 R 26 14.9 R 28 14.9 R 30 14.9 R 38	13 13 13 13 13	W 13 W 13 W 13 W 13 W 13	W 12, DW 12 W 12, DW 12 W 12 W 12, DW 12 W 12, DW 12
15.5 — 38	15.5 R 38	14	W 14 L	DW 14
16.9 — 24 16.9 — 26 16.9 — 28 16.9 — 30 16.9 — 34 16.9 — 38	16.9 R 24 16.9 R 26 16.9 R 28 16.9 R 30 16.9 R 34 16.9 R 38	15 15 15 15 15 15	W 15 L W 15 L W 15 L W 15 L W 15 L W 15 L	W 14 L, DW 14 W 14 L, DW 14
18.4 — 26 18.4 — 30 18.4 — 34 18.4 — 38	18.4 R 26 18.4 R 30 18.4 R 34 18.4 R 38	16 16 16 16	DW 16 W 16 L W 16 L W 16 L	W 15 L W 15 L, DW 16 W 15 L, DW 16 W 15 L
20.8 — 34 20.8 — 38	20.8 R 34 20.8 R 38	18 18	W 18 L W 18 L	W 16 L
23.1 — 26 23.1 — 30 23.1 — 34		20 20 20	DW 20 DW 20 DW 20	DW 18 DW 18
24.5 — 32		21	DW 21	DW 20
28 L — 26		25	DW 25	
30.5 L — 32		27	DW 27	

**Table 6 — Tyres for agricultural tractor steering wheels —
Preferred and permitted rims**

Tyre size	Measurement rim width code	Preferred rim	Permitted rims
4.00 — 12	3	3.00 D	2.50 C
4.00 — 15	3	3.00 D	
5.00 — 15	4	4 J	3.00 D, 4.00 E
5.50 — 16	4	4.00 E	4.25 KA, 4.50 E
6.00 — 16	4.5	4.50 E	4.00 E, 4.25 KA, 5.00 F, 5 K
6.50 — 16	4.5	4.50 E	4.00 E, 4.25 KA, 5.00 F, 5 K, 5.50 F
6.50 — 20	4.5	5.00 F	5.50 F
7.50 — 16	5.5	5.50 F	5.00 F, 5 K, 6.00 F, 6 LB
7.50 — 18	5.5	5.50 F	
7.50 — 20	5.5	5.50 F	5.00 F
9.00 — 16	6	6 LB	6.00 F
10.00 — 16	8	W 8 L	8 LB, W 8
11.00 — 16	10	W 10 L	8 LB, W 8, W 8 L, 10 LB
7.5 L — 15 (8.25/85 — 15)	6	6 LB	5 K, 5 KB, 5 1/2 J, 5 1/2 K, 6 L
9.5 L — 15 (9.5/85 — 15)	8	8 LB	
11 L — 15 (11.5/75 — 15)	8	8 LB	W 8 L, 10 LB
14 L — 16.1 (14.0/80 — 16.1)	11	W 11 C	

**Table 7 — Tyres for agricultural implement wheels with normal section height —
Preferred and permitted rims**

Tyre size	Measurement rim width code	Preferred rim	Permitted rims
4.00 — 8	3	3.00 D	2.50 A, 3.75 I
4.00 — 12	3	3.00 D	2.50 C, 3.00 B
4.00 — 15	3	3.00 D	4 J
5.00 — 15	3	3.00 D	4 J, 4.00 E, 4 1/2 J
5.50 — 16	4	4.00 E	3.50 D, 4.25 KA, 4.50 E
5.90 — 15	4	4 J	4 1/2 K, 4 1/2 KB, 5 K, 5 KB
6.00 — 16	4	4.00 E	4.50 E, 4.25 KA, 5.00 F, 5 K
6.40 — 15	4.5	4 1/2 K	4.00 E, 4 J, 4 1/2 KB, 5.50 F, 5 K, 5 KB
6.50 — 16	4.5	4.50 E	4.00 E, 4.25 KA, 5.00 F, 5 K, 5.50 F
7.00 — 12	5	5.00 F	5 JA, 5.50 F
7.50 — 16	5.5	5.50 F	5.00 F, 5 K, 6.00 F, 6 LB
7.50 — 18	5.5	5.50 F	5.00 F
7.50 — 20	5.5	5.50 F	5.00 F
7.50 — 24	5.5	W 7	
9.00 — 16	6	6 LB	5.50 F, 6.00 F, 8 LB, W 8 L
10.00 — 15	8	8 LB	
11.25 — 24	10	W 10	W 8, W 8 H, W 10 H
11.25 — 28	10	W 10	W 10 H
13.50 — 16.1	11	W 11 C	11 SDC ¹⁾

1) Consult tyre manufacturers for bead/flange fit.