

JIS

JAPANESE INDUSTRIAL STANDARD

Motorcycle tyres — Dimensions

JIS D 4203—1991

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Motorcycle tyres—Dimensions

J I S

D 4203-1991

1. Scope

This Japanese Industrial Standard specifies classes and dimensions of motorcycle tyres (hereafter referred to as the "tyres").

Remarks 1. The Applicable Standards of this Standard shall be given as under.

JIS D 4201- Designation System of Tire, Tube, Rim Band, and Flap for Automobiles

JIS D 4215- Rims for Motorcycles

JIS Z 8401- Rules for Rounding off of Numerical Values

2. The International Standards corresponding to this Standard shall be given as under.

ISO 5751-1 1988 : Motorcycle tyres and rims (metric series)
—Part 1 : Tyres, all series

ISO 5751-2 1988 : Motorcycle tyres and rims (metric series)
—Part 2 : Tyre series 100, 90, 80, 70, and 60

3. The units and numerical values given in { } in this Standard are based on the traditional unit system and are appended for informative reference.

2. Definitions

The principal definitions to be used in this Standard shall be as follows.

- (1) bias ply tyre Pneumatic tyre of which the carcass cord has a structure disposed diagonally to the center line of tread (see Fig. 1). These tyres are classified in "with breaker" and "without breaker".
- (2) radial ply tyre Air containing tyre having the structure of which the carcass cords have been disposed at 90° (in the direction of radius) or the angle near it to tread center line and bound tight by the belt (see Fig. 2).

Fig. 1. Structural figure of bias ply tyre (example)

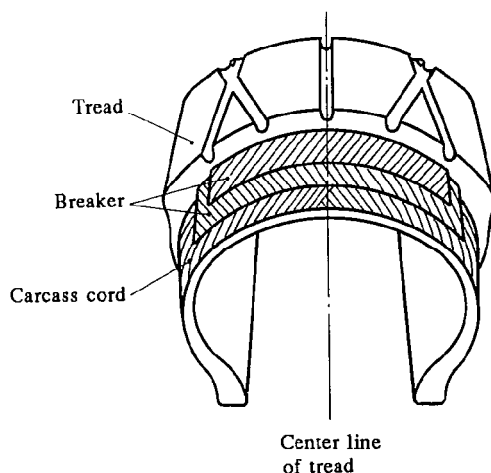
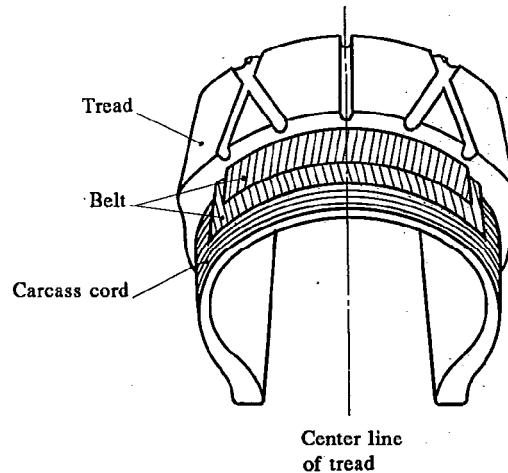


Fig. 2. Structural figure of radial ply tyre (example)



(3) design dimensions Standard dimensions for the tyre design.

(4) growth dimensions Dimensions of tyre including the growth attended with the travelling.

- (5) new tyre dimensions The new tyre dimensions shall be as follows:

Equip the application rim with a new tyre, keep the tyre pressure at the air pressure corresponding to the largest load and leave that tyre alone at room temperature (15 to 30°C) for 24 h. After that, adjust the tyre pressure to the original air pressure again and measure the dimensions.

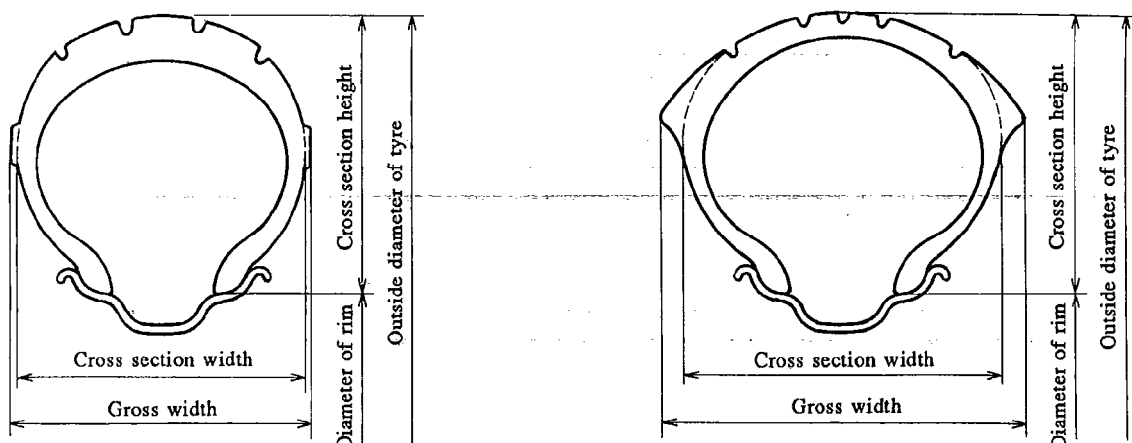
- (6) gross width Equip the application rim with a tyre, take the tyre pressure as the air pressure specified in Attached Tables 1 to 14. The interval between the flanks of the outside of tyre including all of patterns, letters and the like of the side of the tyre in the load-free state. The tread⁽¹⁾ shall be included (see Fig. 3).

Note ⁽¹⁾ The part at where the tyre contacts with the road surface (see Fig. 1 and Fig. 2).

- (7) gross width largest The allowable largest value of the gross width (growth dimension) of a tyre.
- (8) section width The width excluding the patterns, letters and the like of the flanks of tyre from the gross width of tyre. The tread⁽¹⁾ is not included (see Fig. 3).
- (9) section width smallest The minimum value of the sectional width of tyre.
- (10) outside diameter Equip the application rim with a new tyre, give the air pressures specified in Attached Tables 1 to 14. Take the outside diameter of the tyre in the load free state as the outside diameter (see Fig. 3).
- (11) outside diameter largest The largest value of the outside diameter of tyre (growth dimension).
- (12) dynamic outside diameter largest The allowable largest value of the outside diameter including the kinetic dimensional change in the direction of outside diameter by the centrifugal force being attended with the travelling of tyre.
- (13) cross section height $\frac{1}{2}$ of the difference between the outside diameter of tyre and the diameter of rim (see Fig. 3).
- (14) flatness ratio The ratio of the section height of the tyre to its section width. The percentage of the ratio of the cross section height to the nominal size⁽²⁾ of the section width is called the nominal size of the flatness ratio.

Note ⁽²⁾ See the nominal size of the cross section width of Table 5.

Fig. 3. Cross section of tyre



- (15) static load radius Equip the application rim with the tyre, take the air as the pressure specified in Attached Tables 1 to 14, place that tyre vertically to the flat board in a stationary state and add the largest load specified in Attached Tables 1 to 14. The shortest distance from the center of the axis of tyre at this time to the contact surface is the static load radius.

Remarks: The "load" used in this Standard means the mass loaded on the tyre and the unit is shown by kg.

- (16) largest load The largest load capable of adding to the tyre.
- (17) load index Symbol (see Table 1) of the number corresponding to the largest load that the tyre can transport at the speed (see Table 2) shown by the speed symbol in accordance with the use conditions of the specifications.

Table 1. Load index

Load index	Load kg	Load index	Load kg	Load index	Load kg
0	45	30	106	60	250
1	46.2	31	109	61	257
2	47.5	32	112	62	265
3	48.7	33	115	63	272
4	50	34	118	64	280
5	51.5	35	121	65	290
6	53	36	125	66	300
7	54.5	37	128	67	307
8	56	38	132	68	315
9	58	39	136	69	325
10	60	40	140	70	335
11	61.5	41	145	71	345
12	63	42	150	72	355
13	65	43	155	73	365
14	67	44	160	74	375
15	69	45	165	75	387
16	71	46	170	76	400
17	73	47	175	77	412
18	75	48	180	78	425
19	77.5	49	185	79	437
20	80	50	190	80	450
21	82.5	51	195	81	462
22	85	52	200	82	475
23	87.5	53	206	83	487
24	90	54	212	84	500
25	92.5	55	218	85	515
26	95	56	224	86	530
27	97.5	57	230	87	545
28	100	58	236	88	560
29	103	59	243	89	580

- (18) speed symbol Symbol showing the speed at which the tyre can carry the load (see Table 1) corresponding to the load index in accordance with the conditions of the specifications (see Fig. 2).

Table 2. Speed symbols

Speed symbols	Speed km/h
J	100
P	150
S	180
H	210

- (19) application rim The rim suited to let the performance of tyre exhibit effectively.

3. Classification

The tyres shall be classified as given in Table 3 by the nominal designation of the diameter of application rim, the construction, the nominal designation of the flat ratio, road surface to be used and the speed symbol.

Table 3. Classes of tyres

Classes					Various dimensions table
Nominal designation ⁽³⁾ of the diameter of application rim	Construction	Nominal designation ⁽⁴⁾ of the flat ratio	Road surfaces to be used	Speed symbols	
Not less than 13 (M/C)	Bias ply	70	For the road	S	Attached Table 1
				H	
		80	For the road	S	Attached Table 2
				H	
			For both regular road and rough ground	P	Attached Table 3
		90	For the road	P	Attached Table 4
				S	
				H	
		For both regular road and rough ground	P	Attached Table 5	
	100	For the road	P	Attached Table 6	
		For both regular road and rough ground	P	Attached Table 7	
	Radial ply	60	For the road	H	Attached Table 8
		70	For the road	H	Attached Table 9
		80	For the road	H	Attached Table 10
90		For the road	H	Attached Table 11	
4 to 12	Bias ply	80	—	J	Attached Table 12
		90	—	J	Attached Table 13
		100	—	J	Attached Table 14

Notes ⁽³⁾ See JIS D 4215 for the nominal designation of the diameter of rim.

⁽⁴⁾ The series of the tyres of which the nominal designation of flat ratio is the same is designated series.

Example: Where the nominal designation of the flat ratio is 70 : 70 series.

4. Dimensions

The dimensions of tyre shall be as follows, and these are given in Attached Tables 1 to 14 as a table.

Furthermore, the static load radius shall be given in Attached Tables 1 to 14 for informative reference.

(1) Nominal designation of tyre The nominal designation of tyre shall be in accordance with JIS D 4201.

(2) Dimensions The dimensions of a tyre shall be as follows.

(a) The section width "S" of the design dimensions shall be as given in Table 4.

Table 4. Section width

Unit: mm

Nominal designation of section width	Nominal designation of flat ratio 100, 90, 80		Nominal designation of flat ratio 70, 60	
	Nominal designation of the standard rim width ⁽⁵⁾	Design section width S	Nominal designation of the standard rim width ⁽⁵⁾	Design section width S
60	1.50	61	1.60	59
70	1.60	69	1.85	69
80	1.85	80	2.15	80
90	2.15	90	2.50	90
100	2.50	101	2.75	100
110	2.50	109	3.00	110
120	2.75	119	3.50	122
130	3.00	129	3.50	129
140	3.50	142	4.00	141
150	3.50	150	4.00	149
160	4.00	162	4.50	161
170	4.00	170	4.50	168
180	4.50	183	5.00	180

Note ⁽⁵⁾ See JIS D 4215 for the nominal designation of rim width. Provided that the MT symbol is omitted.