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**मोटर वाहन - रिम्स - सामान्य आवश्यकताएँ भाग 1 नामकरण, पदनाम, अंकन और माप
(तीसरा संशोधन)**

Draft Indian Standard

**AUTOMOTIVE VEHICLES — RIMS — GENERAL REQUIREMENTS
PART 1 NOMENCLATURE, DESIGNATION, MARKING AND MEASUREMENT
(Third Revision)**

ICS: 01.040.43; 43.040.50

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**Last date for receipt of comments
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Automotive Tyres, Tubes and Rims Sectional Committee, TED 7

FOREWORD

(Formal clause to be added later on)

This standard was first published in 1984. It was subsequently revised in 1993 and 2009. The second revision was done based on the experience gained after publication of standard and availability of new designs.

This standard aims at uniform rims profiles that will match the tyres in obtaining proper fitment. The sizes, designations and markings have also been standardized to facilitate uniform adoption during manufacture.

This standard is one of the parts pertaining to rims for various types of automotive vehicles. The other parts in this series are:

- (Part 2): 2009 Passenger car (*second revision*)
- (Part 3): 2009 Commercial vehicles rims (*second revision*)
- (Part 4): 2009 Scooter and scooter derivative rims (*first revision*)
- (Part 5): 2009 Moped, motorcycle and motorcycle derivative rims (*second revision*)
- (Part 6): 2009 Rims for agricultural tractors, tillers and implements (*second revision*)
- (Part 7): 2009 Industrial truck rims (*first revision*)
- (Part 8): 2009 Earthmoving machine rims (*first revision*)

This part is in general agreement with ISO 3911: 2021 'Wheel/rim nomenclature, designation, marking and units of measurements' published by the International Organization for Standardization (ISO).

These parts do not lay down methods of testing and performance requirements for wheels/rims pertaining to the respective tyres of automotive vehicles but lay down only the profiles and other general requirements. For passenger car wheels and truck and bus wheels/rims reference may be made to the following Indian Standards for methods of testing performance requirements:

| <i>IS No.</i> | <i>Title</i> |
|---------------|---|
| 9436: 2018 | Performance requirements and methods of test for wheels for passenger cars, quadricycles and mini goods carriers (First Revision) |
| 9438: 2018 | Performance requirements and methods of tests for wheels/ rims for trucks and buses (First Revision) |

This third revision is taking place to keep pace with the latest technological advancement in the field of wheels/rims for all types of vehicles.

Following are the major changes in this revision:

- i) Marking clause 5.2.3 is modified

ii) Amendment 1 has been incorporated in this standard.

This standard contributes to the Goal 9 of UN Sustainable Development Goal.

The composition of the Committee responsible for the formulation of this standard is given at **Annex G (Will be added later)**.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of test or analysis, shall be rounded off in accordance with IS 2: 2022 'Rules for rounding off numerical values (*second revision*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

*Draft Indian Standard***AUTOMOTIVE VEHICLES — RIMS — GENERAL REQUIREMENTS
PART 1 NOMENCLATURE, DESIGNATION, MARKING AND MEASUREMENT
(Third Revision)****1 SCOPE**

1.1 It covers the nomenclature, designation, marking, methods and units of measurement and requirements for wheels/rims.

1.2 The figures given in this standard are intended to define fundamental wheel/rim terms rather than to provide all the wheel design features comprehensively.

2 REFERENCES

This standard contains no cross reference.

3 DEFINITIONS AND NOMENCLATURE

For the purpose of this standard, following definitions and nomenclatures shall apply:

3.1 Wheel — A rotating load carrying member between the tyre and the axle. It usually consists of two major parts:

- a) The rim; and
- b) The wheel disc.

3.1.1 Rim — The part of the wheel on which the tyre is mounted and supported.

3.1.2 Wheel Disc — That part of the wheel which is the supporting member between the axle and the rim.

3.1.3 Single Wheel — A wheel which supports one tyre on one end of an axle.

3.1.4 Inset Wheel — A wheel so constructed that the centre line of the rim is located inboard of the attachment face of the disc. Inset is the distance from the attachment face of the disc to the centre line of the rim [*see* Fig. 1(a)].

3.1.5 Zeroset Wheel — A wheel so constructed that the centre line of the rim is coincident with the attachment face of the disc [*see* Fig. 1(b)].

3.1.6 Outset Wheel — A wheel so constructed that the centre line of the rim is located outboard of the attachment face of the disc, Outset is the distance from the attachment face of the disc to the centre line of the rim [*see* Fig. 1(c)].

NOTE — Track, the distance between the centre line of the tyres on an axle, increases as the outset of the wheels is increased.

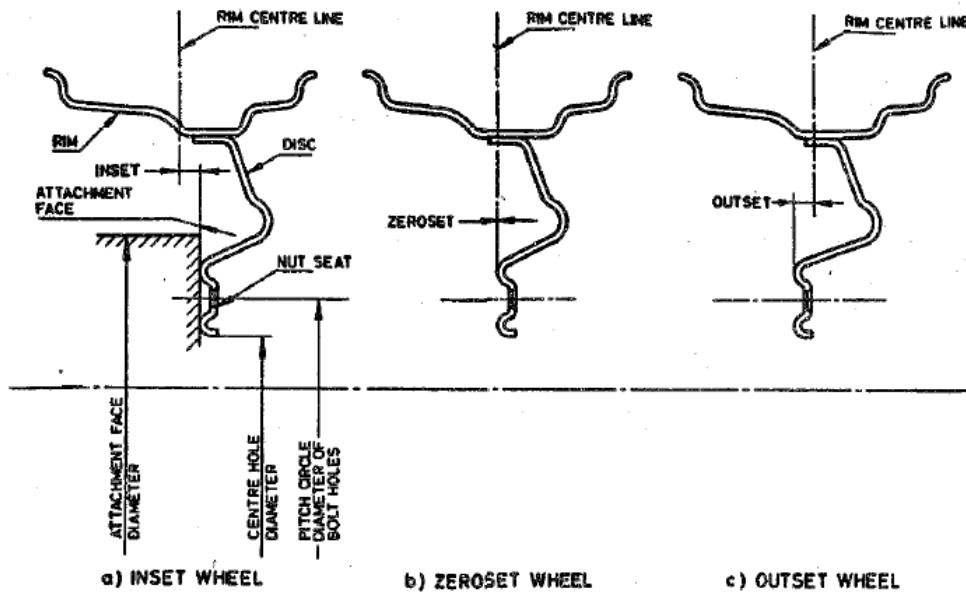


FIG. 1 PASSENGER CAR AND LIGHT COMMERCIAL VEHICLE DISC WHEEL NOMENCLATURE

3.1.7 Dual Wheel — A wheel of the type shown in Fig. 2 or a wheel with sufficient inset and configuration so that two such wheels, when assembled with each other, support two tyres on one end of an axle.

3.1.8 Dual Spacing — The distance between the centre lines of the rim to provide the required clearance between the tyres (*see* Fig. 2).

3.1.9 Offset (Half Dual Spacing) — The distance between the centre line of the rim and the outer face of the disc and is equal to the inset plus the nominal thickness of the disc.

3.2 Types of Wheel

3.2.1 Wheel — A permanent combination of a rim and a wheel disc (*see* Fig. 1 and Fig. 2).

3.2.2 Divided Wheel — A wheel so constructed that its two main parts, the rim portions of which may or may not be the same in width, when securely fastened together, combine to form a rim having two fixed flanges (*see* Fig. 3).

3.2.3 Reversible Wheel — A wheel so constructed that its wheel disc can be mounted on either face to provide inset (narrow track) or outset (wide track) (*see* Fig. 4).

3.2.4 Adjustable Wheel — A wheel so constructed that the rim can be repositioned axially relative to the wheel disc. Adjustments can be made: (a) manually, or (b) by power of the vehicle (*see* Fig. 5).

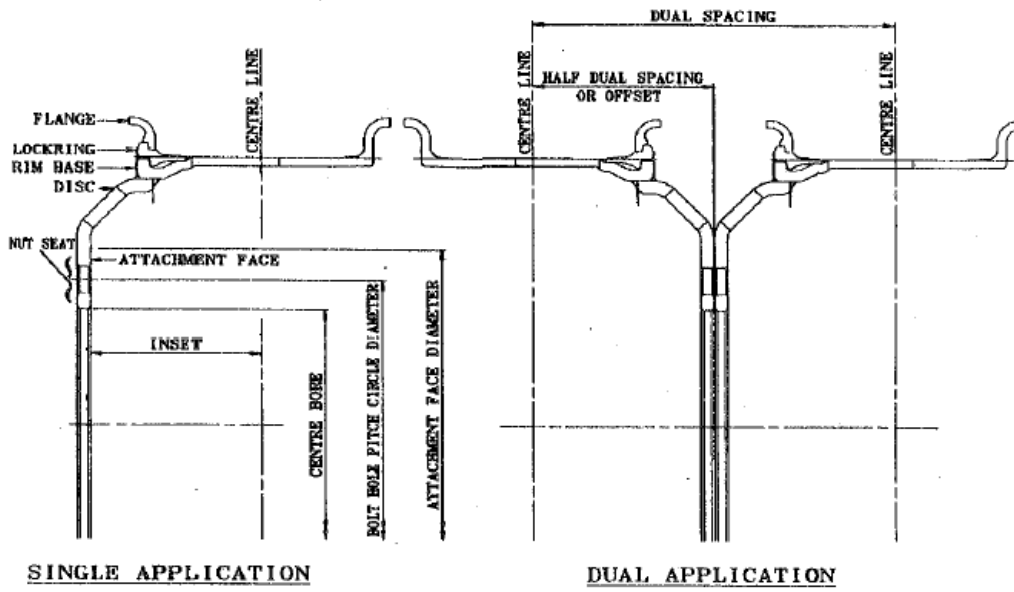


FIG. 2 COMMERCIAL VEHICLE WHEEL NOMENCLATURE

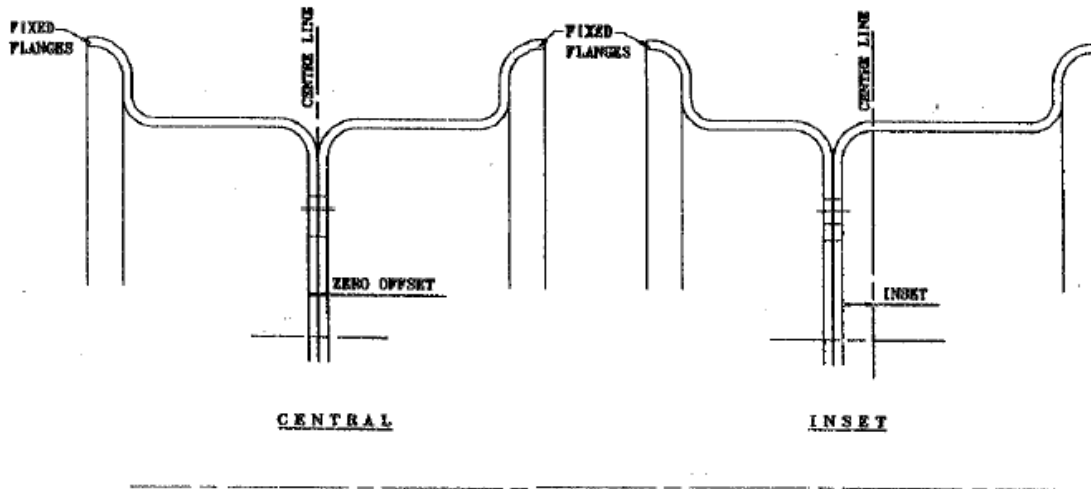


FIG. 3 DIVIDED WHEEL NOMENCLATURE

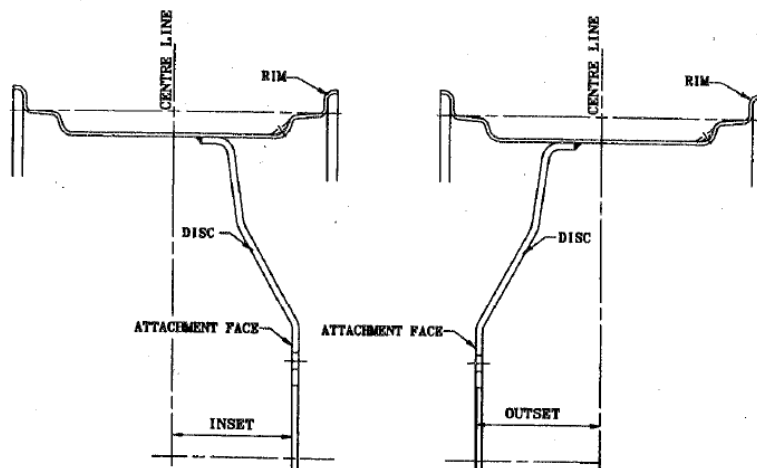


FIG. 4 REVERSIBLE WHEEL NOMENCLATURE

3.2.5 Spoke Wheel — A wheel so constructed that its rim is joined to the centre piece by a series of wire spokes (see Fig. 6).

3.2.6 Forklift Wheel (see Fig. 7)

3.3 Rim Nomenclature

3.3.1 Flange — That part of the rim which provides lateral support to the tyre (see A, B, G, R₂ and R₆ in Fig. 8).

3.3.2 Bead Seat - That part of the rim which provides radial support to the tyre (see D, P, Band R₃ in Fig. 8).

3.3.3 Well — That part of the rim so located with sufficient depth and width to enable the tyre beads to be mounted and demounted over the mounting side rim flange or bead seat taper (see R₄, α , M, H, L and R₅, in Fig. 8).

3.3.4 Valve Hole (Valve Aperture) — The hole or slot in the rim which accommodates the valve for tyre inflation (see V, Fin Fig. 8). For detail of valve hole aperture (see Fig. 21A, 21B, 21C, 21D, 21E, 21F, 21G and 21H).

3.3.5 Gutter — The groove in the rim base in which rim parts, such as a spring lock ring or a detachable spring flange fit and are retained by the gutter tip (see S and T in Fig. 8).

3.3.6 Other nomenclature shall be as given in Fig. 8.

3.4 Rim Types

3.4.1 One-Piece (Drop-Centre) Rim — A rim which is of one-piece construction and incorporates a well (see Fig. 9).

3.4.2 Two-Piece Rim (see Fig. 10) .

3.4.3 Three-Piece Rim (see Fig. 11)

3.4.4 Four-Piece Rim (see Fig. 12)

3.4.5 Five-Piece Rim (see Fig. 13)

3.4.6 Cylindrical Bead Seat Rim for Motorcycles (see Fig. 14)

4 SIZE DESIGNATION OF WHEEL/RIM

4.1 Present Designation

The wheels/rims shall be designated by the following figures representing:

- Nominal rim width code;
- Rim profile;
- Nominal rim diameter code;
- A letter or letters signifying the tyre-side profile of the rim (usually the profile designation follows the nominal rim width; it may, however, precede or include the nominal rim width); and
- Off the road* — The symbol ‘/’ followed by a figure or figures indicates the flange, height.

Example:

| RIM MARKING | | RIM CONTOUR | | NOMINAL DIAMETER CODE | SPECIAL FEATURES |
|------------------------------|----------------------|-------------|---------|-----------------------|---------------------|
| | | WIDTH CODE | PROFILE | | |
| PASSENGER CAR | | | | | |
| 4.5J × 15 | Or 15 × 4.5J | 4.5 | J | 15 | — |
| 4½ × 15 | Or 15 × 4½ | 4½ | J | 15 | — |
| 4.5J × 15 H2 | Or 15 × 4.5J H2 | 4.5 | J | 15 | H2 Hump Designation |
| COMMERCIAL VEHICLES | | | | | |
| 5.0-20 (5.0 × 20) | Or 20-5.0 (20 × 5.0) | 5 | — | 20 | — |
| 22.5 × 7.50 | Or 7.50 × 22.5 | 7.50 | — | 22.5 | — |
| 10.00 V-20 | Or 20-10.00 V | 10 | V | 20 | — |
| 10.00 V × 20 | (20 × 10.00 V) | | | | |
| AGRICULTURAL TRACTORS | | | | | |
| W 15 L × 28 | Or 28 × W 15 L | 15 | L | 28 | — |
| MOTOR CYCLES | | | | | |
| 16 × 1.20 | Or 1.20 × 16 | 1.20 | — | 16 | — |
| 18 × 2.15 | Or 2.15 × 18 | 2.15 | — | 18 | — |
| 18 × MT 2.15 H2 | Or MT 2.15 × 18 H2 | 2.15 | MT | 18 | — |
| SCOOTERS | | | | | |

| | | | | | |
|------------------------------|-------------------|-------|----|----|------------------------------|
| 8-2.10 | Or 2.10-8 | 2.10 | — | 8 | — |
| INDUSTRIAL/LIFT TRUCK | | | | | |
| 5.00F-10 | Or 10-5.00F | 5.00 | F | 10 | — |
| EARTHMOVING EQUIPMENT | | | | | |
| 8.00TG-24 SDC | Or 24-8.00TG SDC | 8.00 | TG | 24 | SEMI-DROP CENTRE (SDC) |
| 11.25-25/2.0 | Or 25-11.25/2.0 | 11.25 | — | 25 | CODE OF FLANGE HEIGHT (/2.0) |
| 25 × 14.00/1.3 | Or 14.00/1.3 × 25 | 14.00 | — | 25 | CODE OF FLANGE HEIGHT (/1.3) |

5 MARKING

Wheels with integral or permanently affixed rims and rims separate or demountable shall be legibly marked with their size designation.

5.1 Marking of Rims

Rims delivered without disc and being in compliance with the relevant Indian Standard shall be durably and legibly marked with the following:

- a) Size designation;
- b) Indication of the source of manufacture/manufacture's logo; and
- c) Rim bead seat contour type, if applicable (Rim bead seat contour type may be as given in ITTAC Manual or International standards).

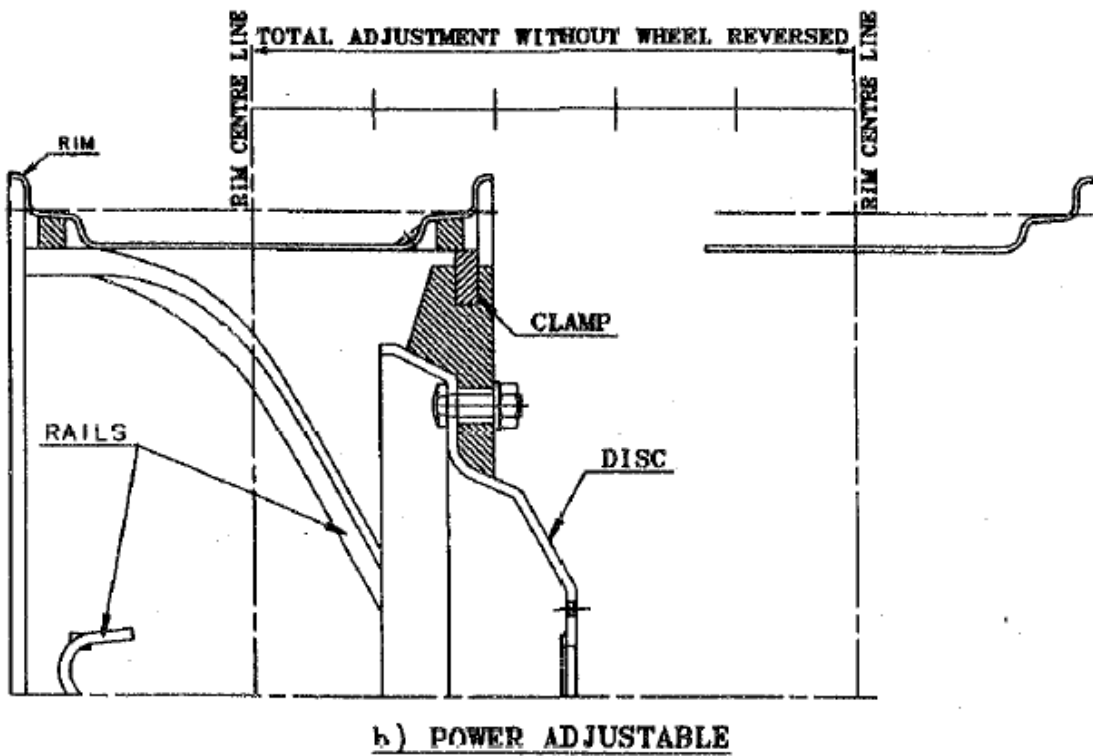
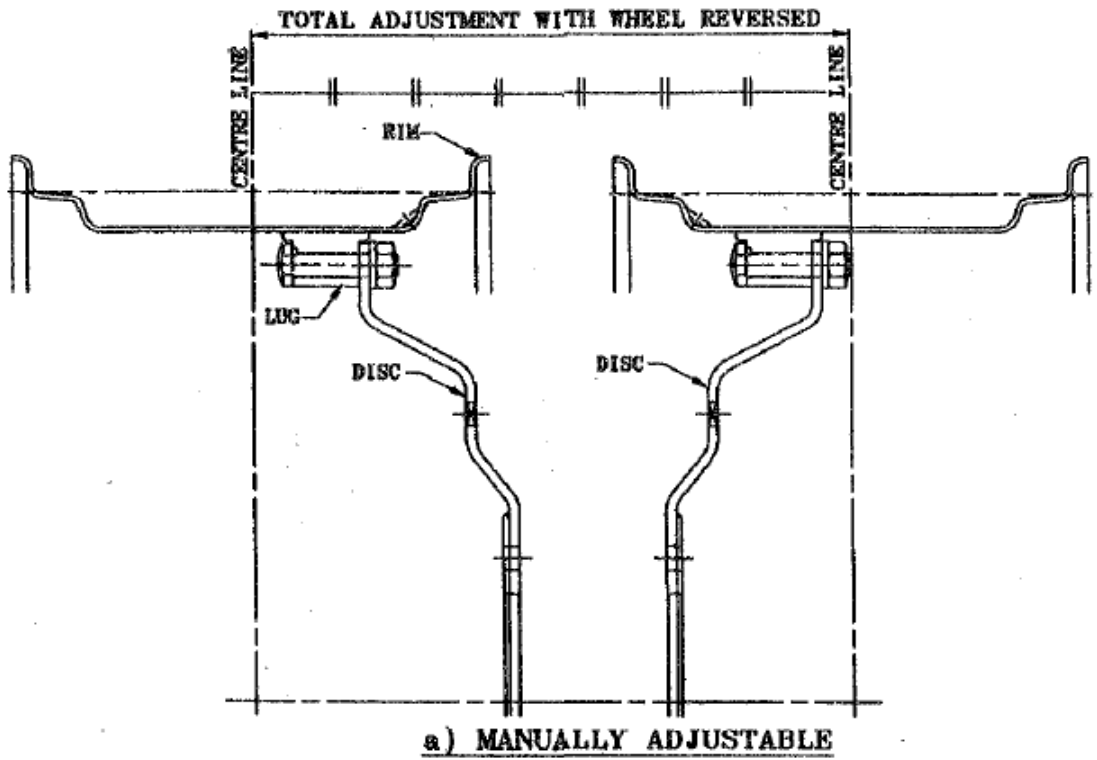


FIG. 5 ADJUSTABLE WHEEL NOMENCLATURE

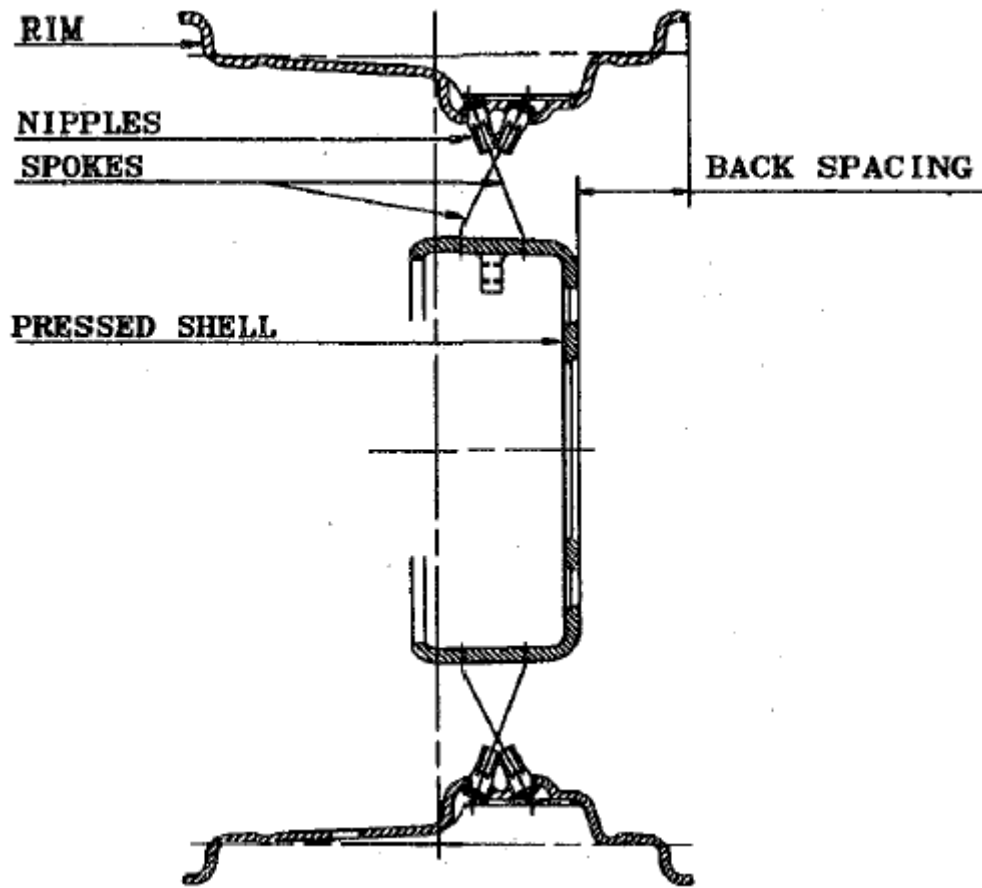


FIG. 6 SPOKE WHEEL NOMENCLATURE

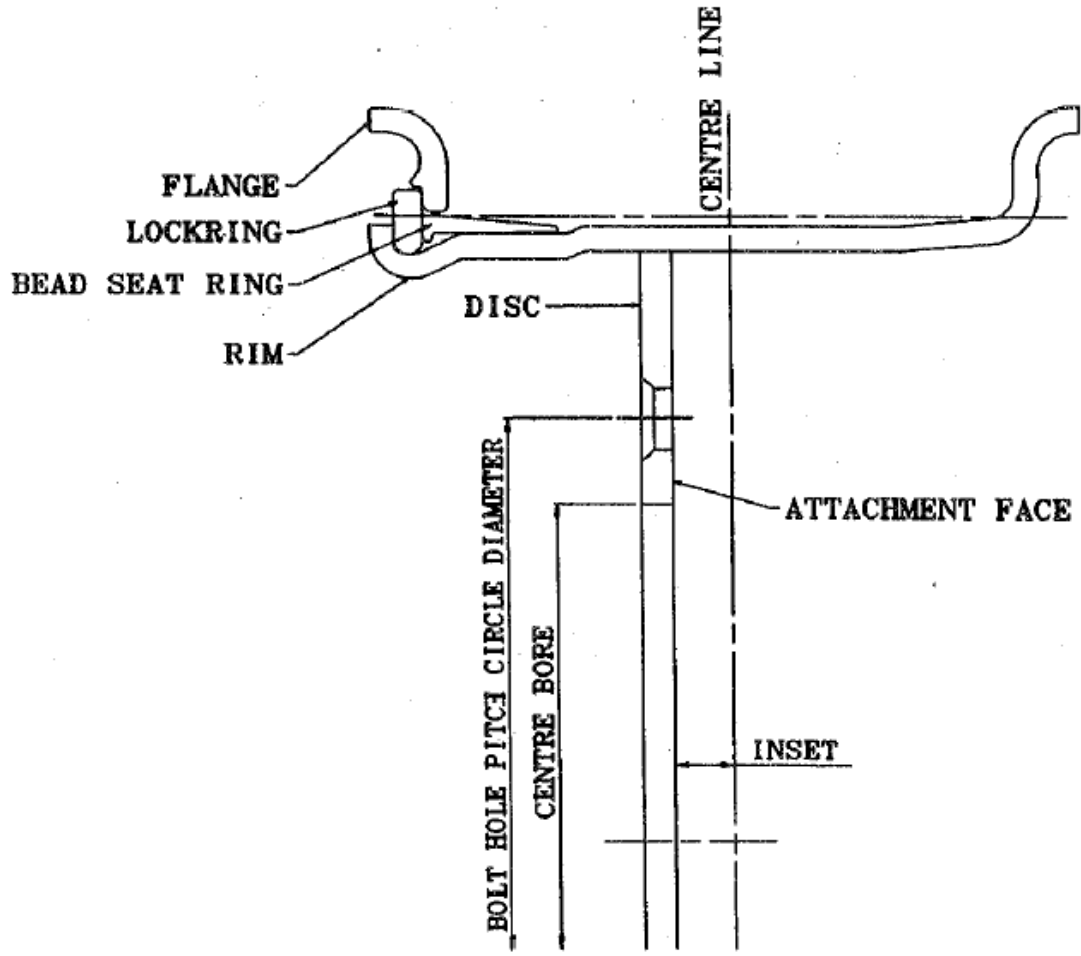
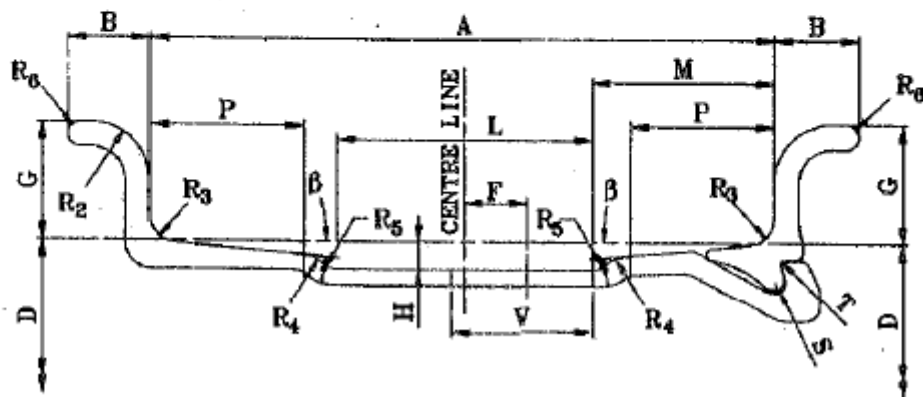
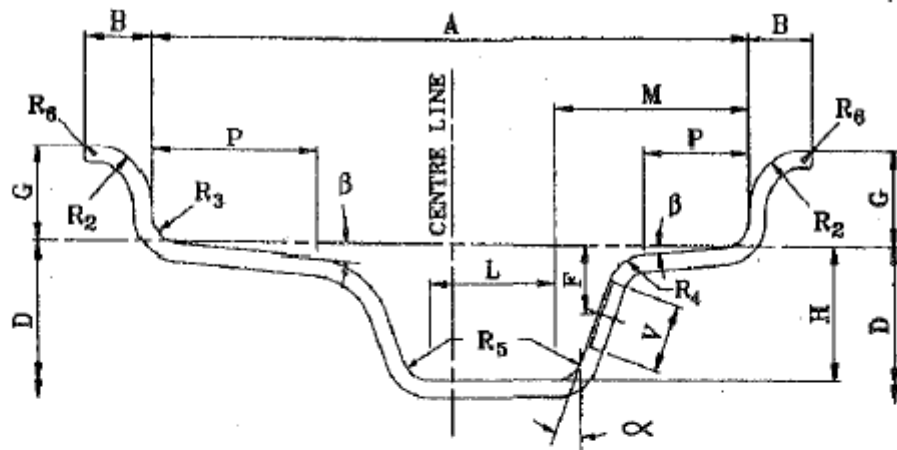


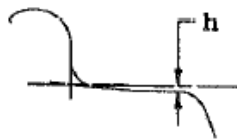
FIG. 7 FORKLIFT WHEEL NOMENCLATURE



OPTIONAL BEAD SEAT PROFILES



FLAT HUMP (FH)



SPECIAL HUMP (SL)



ROUND HUMP (RH)



CONTRE PENTE (CP)

OPTIONAL BEAD SEAT PROFILES

| <i>Flat Hump (FH)</i> | <i>Special Ledge (SL)</i> | <i>Round Hump (RH)</i> | <i>Contre Pente (CP)</i> |
|-----------------------|---------------------------|------------------------|--------------------------|
| <i>D</i> | Specified rim diameter | α | Well angle |
| <i>A</i> | Specified rim width | <i>H</i> | Well depth |
| <i>G</i> | Flange height | <i>L</i> | Well width |
| <i>B</i> | Flange width | <i>M</i> | Well position |
| <i>R₂</i> | Flange radius | <i>R₅</i> | Well bottom radius |
| <i>R₆</i> | Flange edge radius | <i>V</i> | Valve hole |
| <i>P</i> | Bead seat width | <i>F</i> | Valve bole location |
| <i>R₃</i> | Bead seat radius | <i>S</i> | Gutter groove |
| β | Bead seat angle | <i>T</i> | Gutter tip |
| <i>R₄</i> | Well top radius | <i>h</i> | Ledge dimension |

NOTE — Options may be permitted for bead seat contour as agreed between the rim and vehicle manufacturers in which case the rim shall bear identification for the safety hump as below:

| Hump Type | Bead Seat Contour | | Marking (on Rim) |
|------------------|-------------------|---------|------------------|
| | Outboard | Inboard | |
| Hump | Hump | Normal | H |
| Double hump | Hump | Hump | H ₂ |
| Flat hump | Flat hump | Normal | FH |
| Combination hump | Flat hump | Hump | CH |

FIG. 8 RIM TYRE SIDE PROFILE NOMENCLATURE AND OPTIONAL BEAD SEAT PROFILE

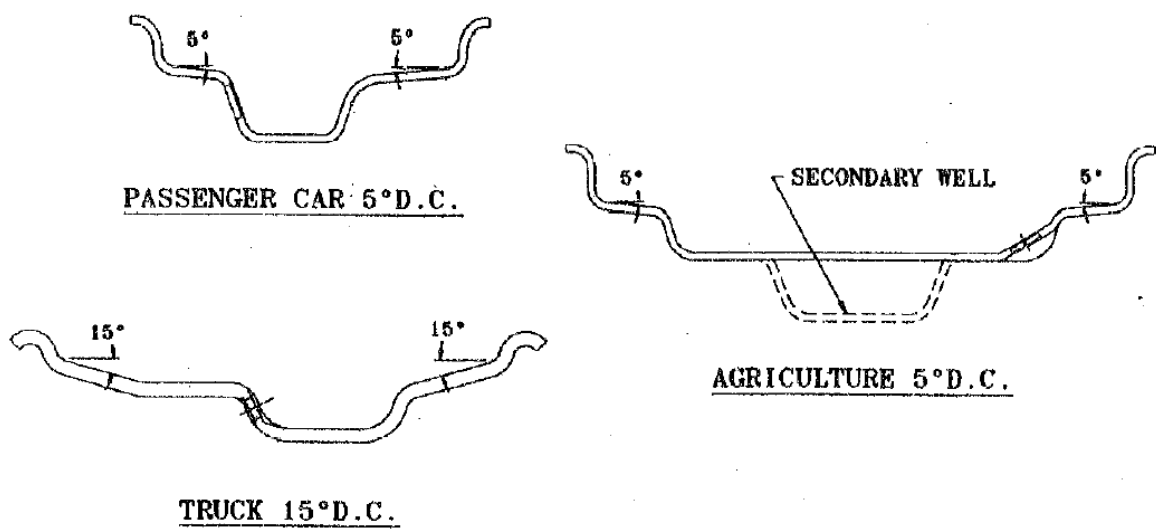


FIG. 9 ONE-PIECE (DROP-CENTER) RIM NOMENCLATURE

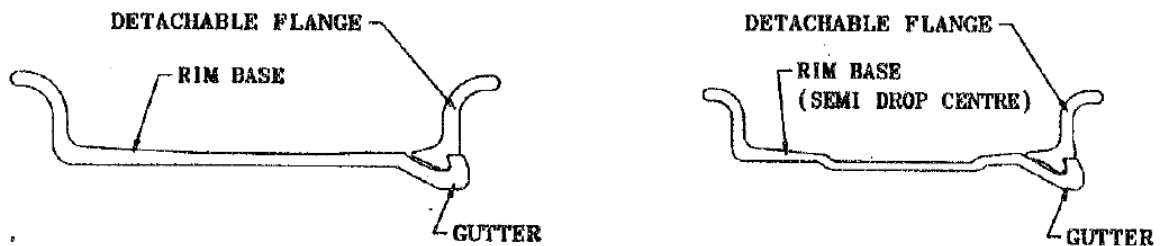


FIG. 10 TWO-PIECE RIM NOMENCLATURE

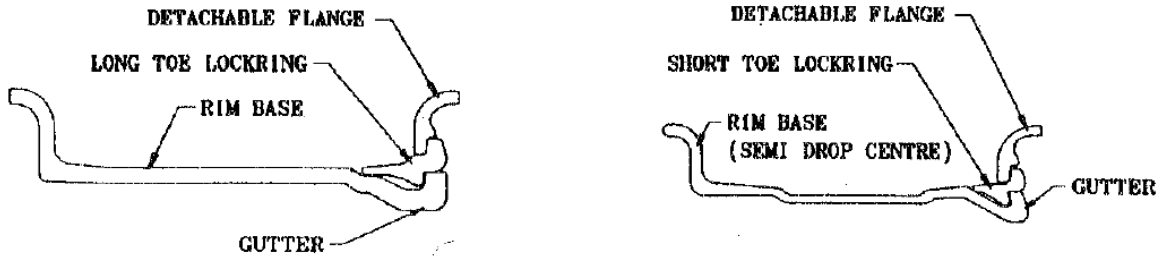


FIG. 11 THREE-PIECE RIM NOMENCLATURE

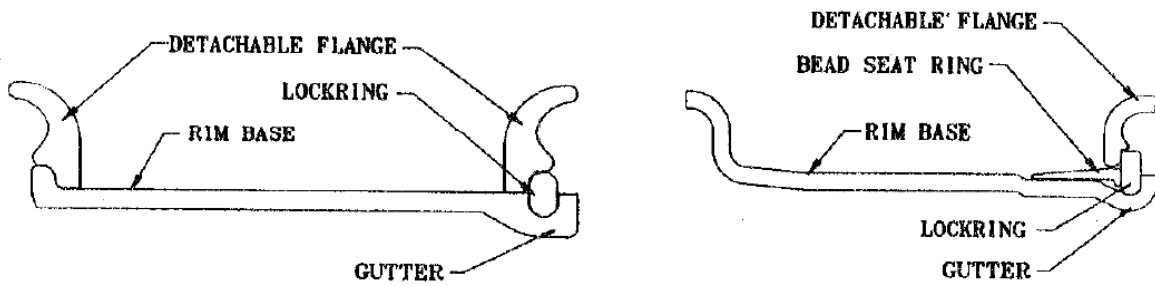


FIG. 12 FOUR-PIECE RIM NOMENCLATURE

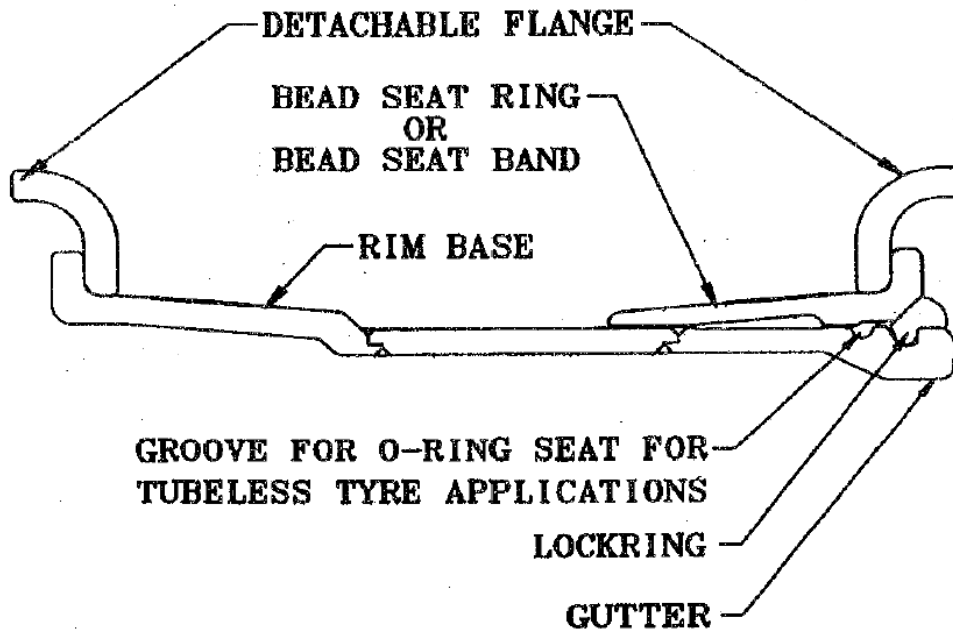


FIG. 13 FIVE-PIECE RIM NOMENCLATURE

5.1.1 In case the markings are impressed or embossed, the letters shall not be smaller than 2 mm and impressed to a depth or embossed to a height of not less than 0.13 mm.

5.1.2 In case other marking methods, for example, laser printing, pad printing, ink jet printing and stickers are used, such marking should be, legible, indelible, non-removable and durable.

5.1.3 The location of the markings shall be as per the discretion of the manufacturer.

The rims may be marked on the outer-side (*see* Fig. 15 and Fig. 16) or inside (*see* Fig. 17).

5.2 Marking of Disc Wheel Disc wheel

Disc wheels being in compliance with the relevant Indian Standard shall be durably and legibly marked with the following:

- a) Size designation;
- b) Indication of the source of manufacture/manufacturer's logo;
- c) Date of manufacturing: year and month or year and quarter of the year (for example 22 03 indicates March 2022; 22 III indicates third quarter of 2022); and
- d) Half dual spacing or inset may also be marked.

ONE PIECE RIM (SHALLOW WELL) - USED WITH SPOKES CYLINDRICAL BEAD SEAT RIM

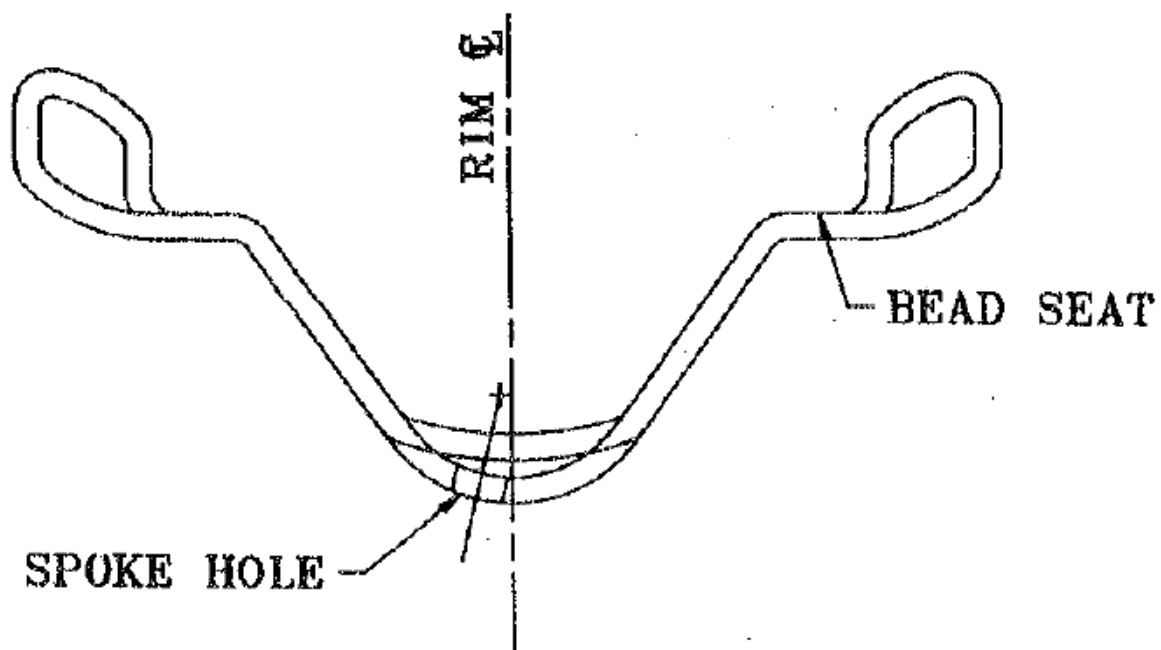


FIG. 14 CYLINDRICAL BEAD SEAT RIM FOR MOTOR CYCLES

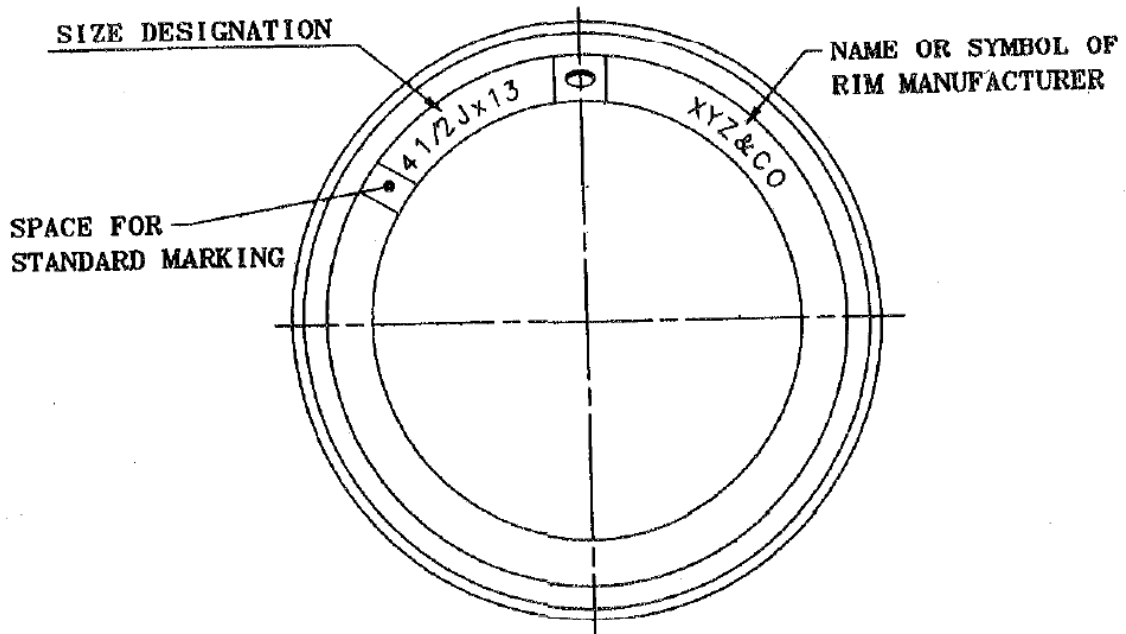


FIG. 15 EXAMPLE OF OUTER SIDE RIM MARK

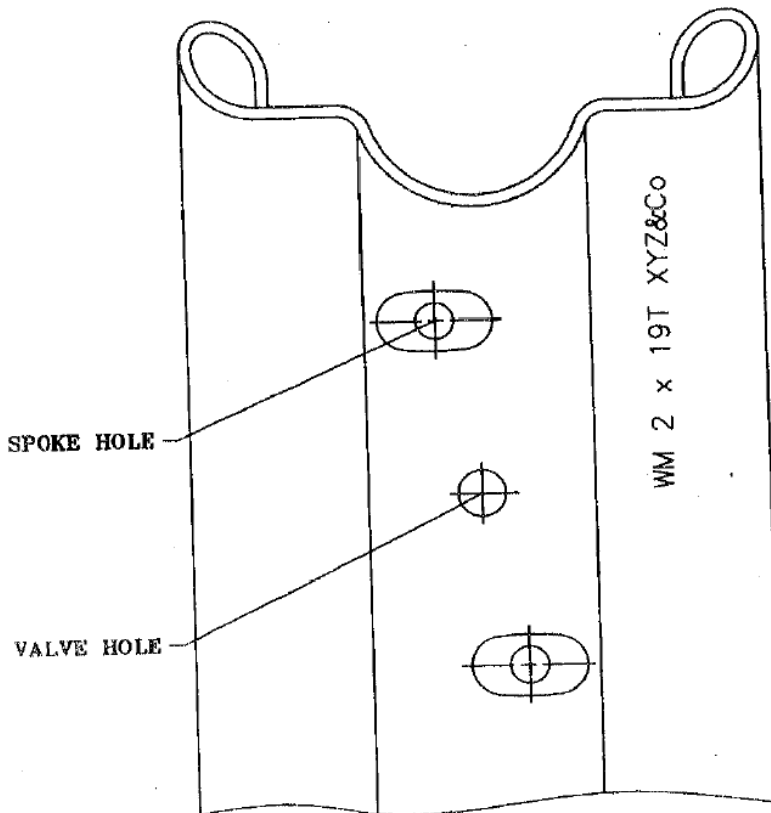


FIG. 16 EXAMPLE OF OUTSIDE RIM MARKING OF SPOKED RIMS

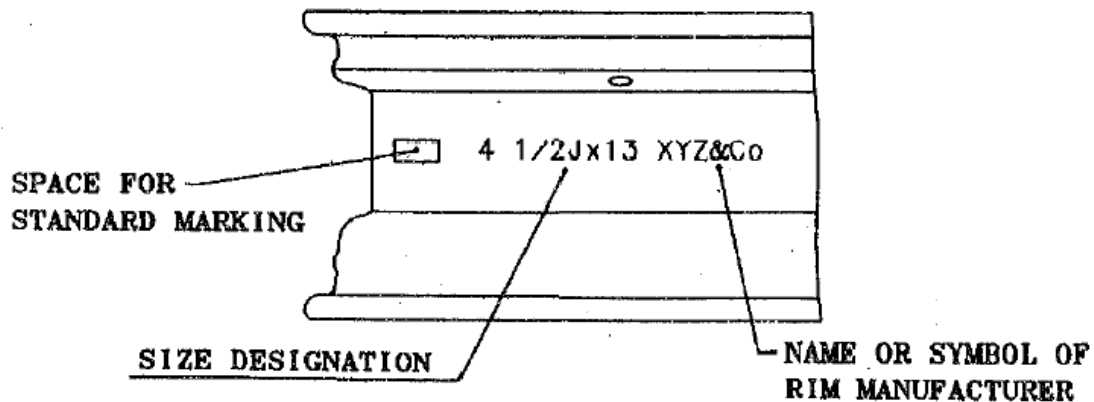


FIG. 17 EXAMPLE OF INSIDE RIM MARKING

5.2.1 In case the markings are impressed or embossed, the marking shall be recessed and without sharp edges and letters shall not be smaller than 2 mm and impressed to a depth or embossed to a height not less than 0.13 mm.

5.2.2 In case other marking methods, for example, laser printing, pad printing, ink jet printing and stickers are used, such marking should be legible, indelible, non-removable and durable

5.2.3 The location of the markings shall be at the discretion of the manufacturer. The disc wheels may be marked on the outer-side (*see* Fig.18) or inside (*see* Fig.17).'

6 METHODS OF RIM MEASUREMENT

Rims with a taper bead seat are measured by ball spring steel tape as located in position in Fig. 19.

6.1 For ball diameter of tape refer to the relevant Indian Standard on rim dimensions. The method is applicable to all 5° or 10.5° mean taper bead seat rim contours.

6.2 Measurement for Motorcycle/Moped Rims

The measurement of the cylindrical bead seat rim circumference shall be made on rims ready for mounting with a tape gauge whose length is related to mandrel diameter, specific for a specified rim diameter (*see* Fig. 20).

The tape shall be marked with details of rim width code and nominal rim diameter.

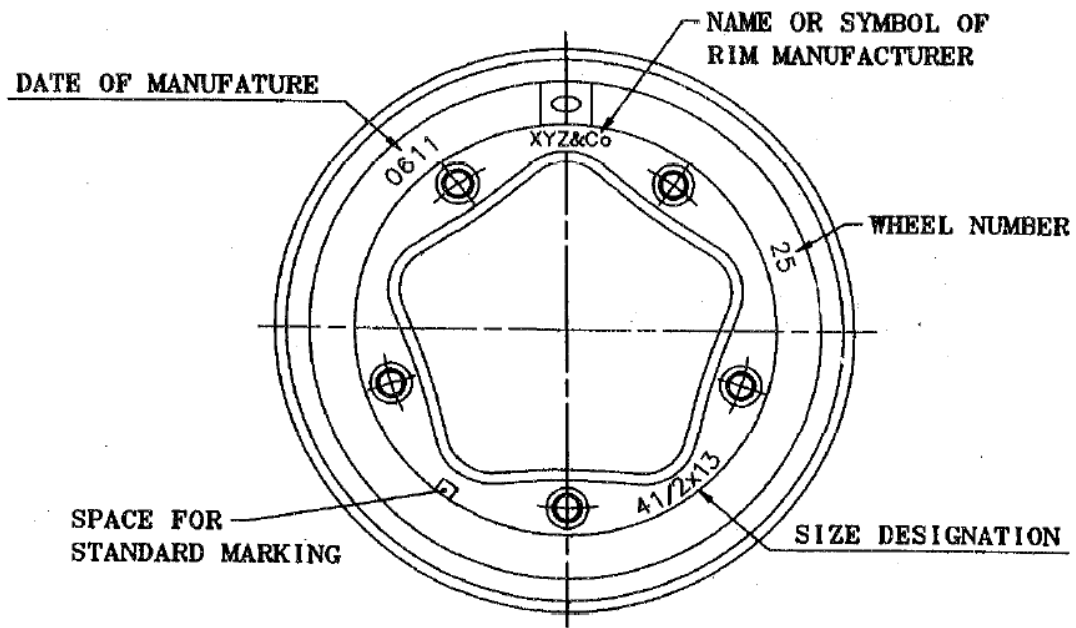


FIG. 18 EXAMPLE OF OUTER RIM MARKING

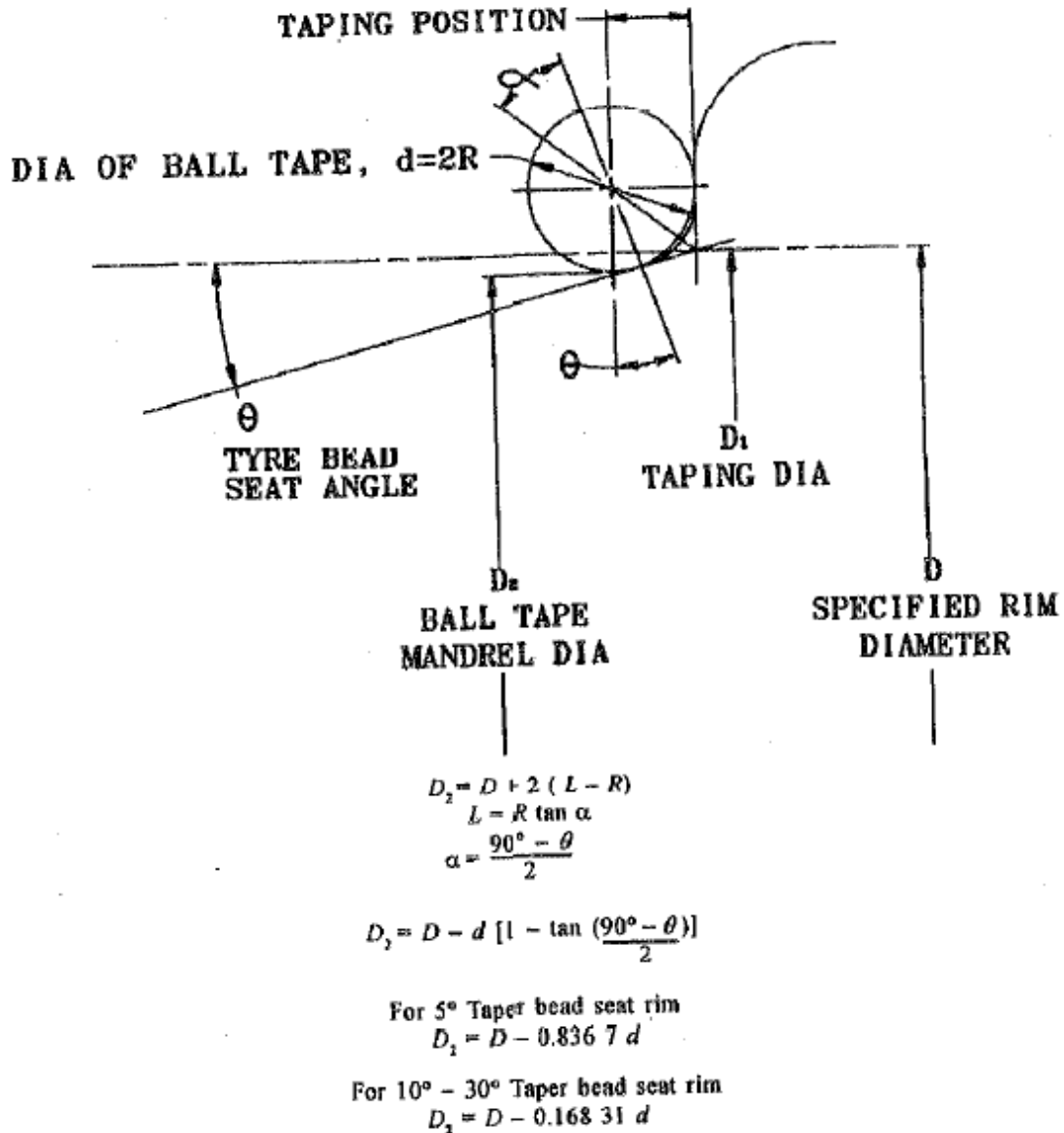


FIG. 19 METHOD OF USING TAPE

6.2.1 Accuracy of Measurement

For accurate measurement the individual circumference on each bead sea shall be measured and corrected to 20°C and checked against the data given in the relevant part of this Indian Standard. (In this case the tape width 'W' is free.)

6.3 Diameter and circumference and mandrel dimensions shall be as per Fig. 22, Fig. 23 and Fig. 24 and Tables 3 to 6.

7 UNIT

The dimensional data for rims shall be expressed in millimeters, and angular measurement in degrees. Load-carrying capacity shall be expressed in kilograms (kg). Tyre inflation pressure shall be expressed in kilopascals (kPa) [1kPa = 10³N/m² = 0.01 kgf/cm² (within 2 percent error)].

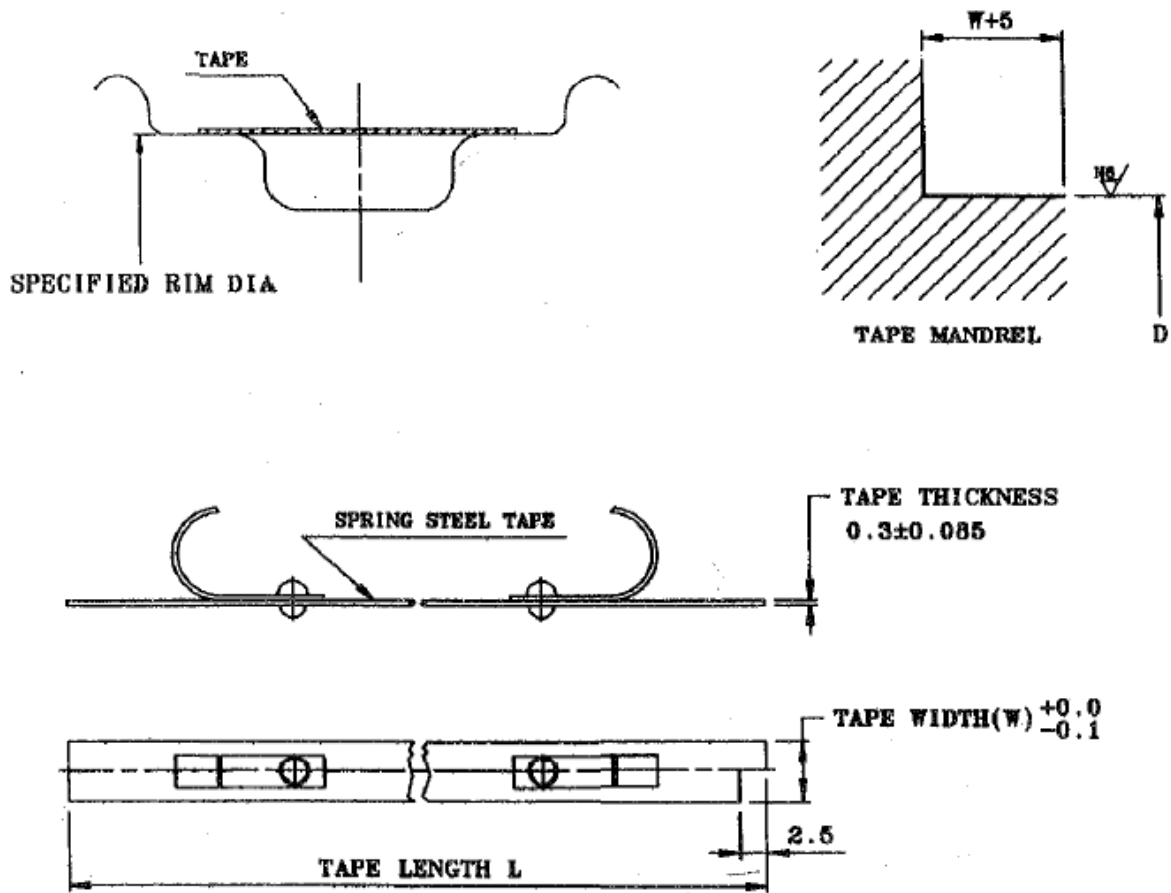


FIG. 20 MEASUREMENT OF CYLINDRICAL BEAD SEAT RIM

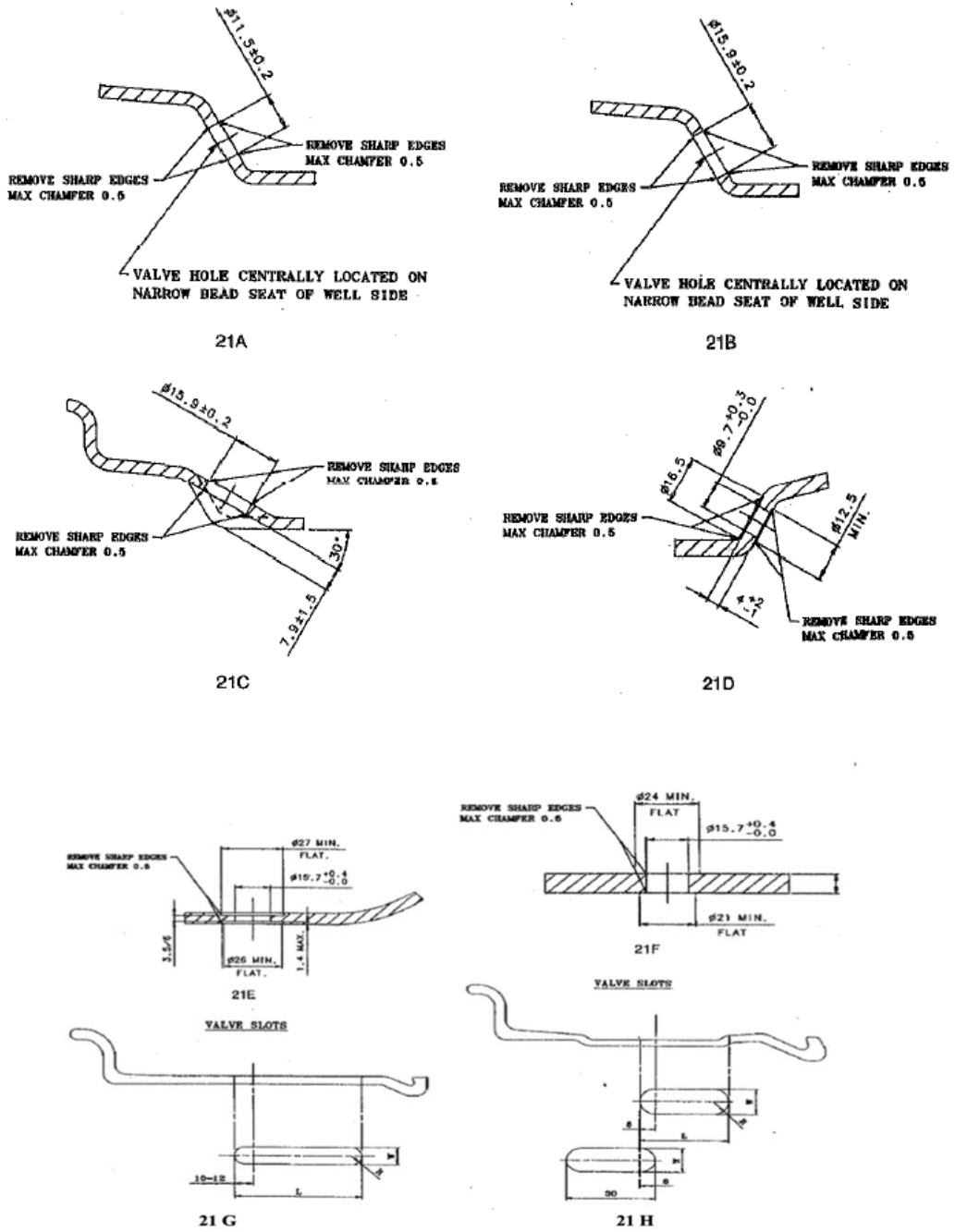


FIG. 21 VALVE HOLE APERTURE

All dimensions in millimetres.

Table 1 Valve slot details**(Fig. 21 G)**

| SI No. | Nominal Sire Designation | <i>L</i> | <i>W</i> | <i>R</i> |
|---------------|---------------------------------|-----------------|-----------------|-----------------|
| (1) | (2) | (3) | (4) | (5) |
| i) | B6.0 | 54 | 16 | 8 |
| ii) | B6.5 | 63.5 | 16 | 8 |
| iii) | B7.0 | 73 | 16 | 8 |
| iv) | | 96 | 16 | 8 |
| v) | B7.5 | 73 | 16 | 8 |
| vi) | | 96 | 16 | 8 |
| vii) | B8.0 | 73 | 16 | 8 |
| viii) | | 96 | 16 | 8 |
| ix) | B8.5 | 73 | 16 | 8 |
| x) | 7.00T | 75 | 15 | 7.5 |
| xi) | | 96 | 15 | 7.5 |
| xii) | 7.50V | 105 | 15 | 7.5 |
| xiii) | 8.50V5° | 100 | 16 | 8 |
| xiv) | 10.00 V5° | 120 | 16 | 8 |
| xv) | 10.00W | 150 | 16 | 8 |

Table 2 Valve slot details**(Fig. 21 H)**

| SI No. | Nominal Sire Designation | <i>L</i> | <i>W</i> | <i>R</i> |
|---------------|---------------------------------|-----------------|-----------------|-----------------|
| (1) | (2) | (3) | (4) | (5) |
| i) | 5.50 F × 16 | 45 | 16 (+0,-2) | 8 |
| ii) | 5.50 F × 16 | 35 | 16 (+0,-2) | 8 |
| iii) | 6.00 G × 16 | 45 | 16 (+0,-2) | 8 |
| iv) | 6.00 G × 16 | 30 | 16 (+0,-2) | 8 |
| v) | 6.00 G × 16 | 28.6 | 12.8 | 8 |
| vi) | 6.00 G × 16 | 30.0 | 12 | 6 |

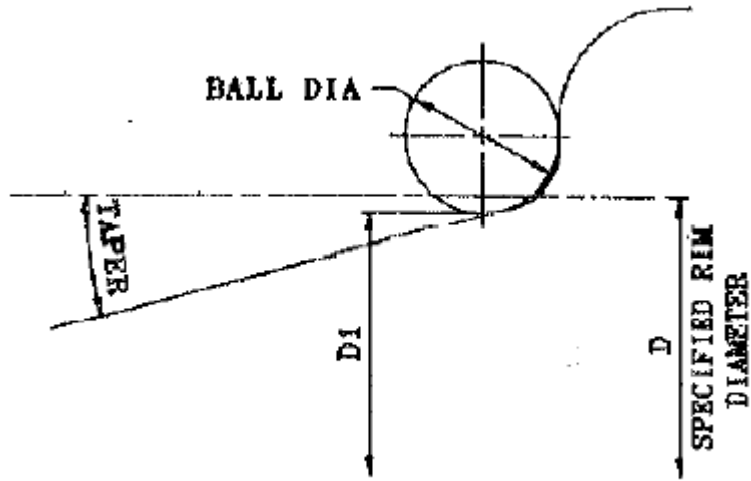


FIG. 22 MANDREL DIMENSIONS

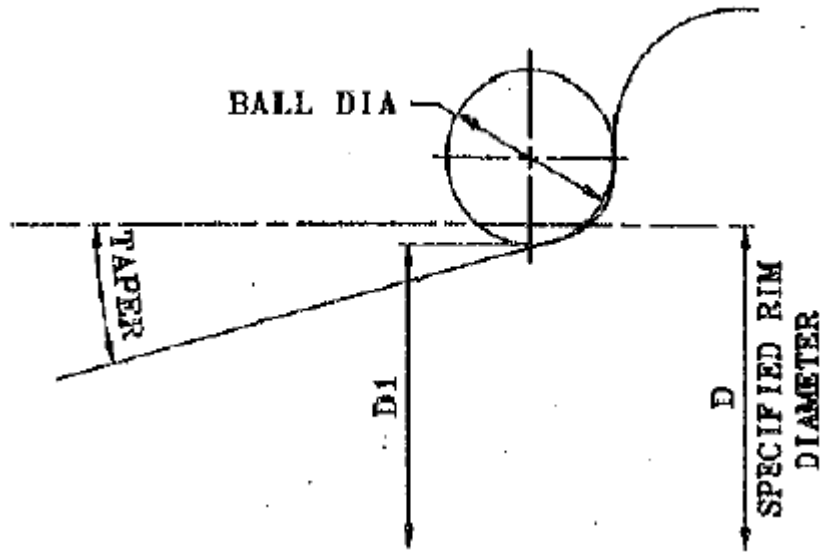


FIG. 23 MANDREL DIMENSIONS

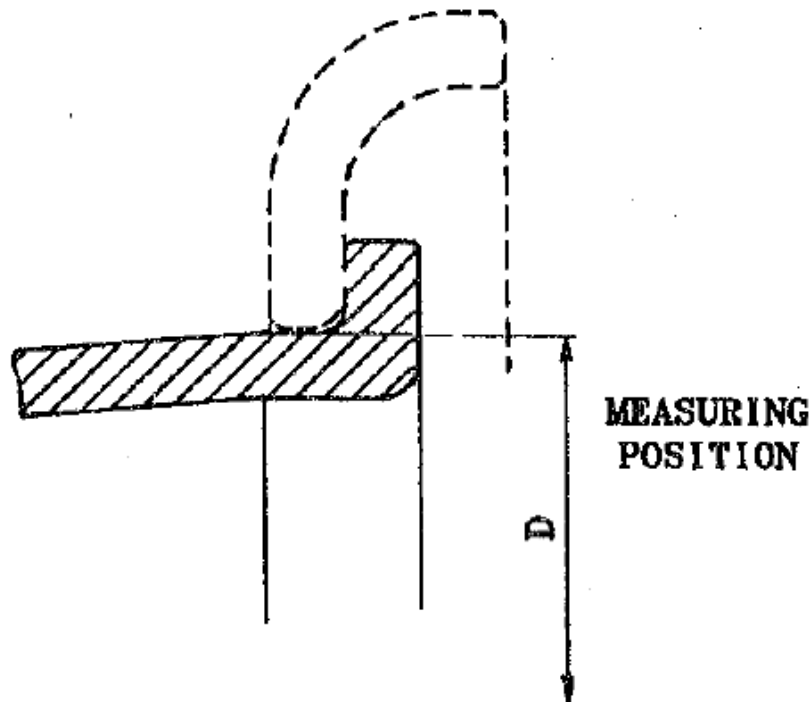


FIG. 24 DIMENSIONS FOR MEASUREMENT OF RIMS WITH TWO MOUNTABLE FLANGES

Table 3 Dimensions for Measurement of Tapered Bead Seat Rims
(Clause 5.3)

| SI No. | Nominal Dimensions | Dimensions | | |
|--------|-----------------------|---------------------------------------|--|---|
| | | Specified Diameter D , mm (3) | Nominal Mandrel Diameter $D1$, mm (4) | Nominal Mandrel Circumference, mm (5) |
| (1) | (2) | | | |
| | 3° Taper | | | Ball dia 20 |
| i) | 24 ⁽¹⁾ | 616.0 | 614.93 | 1931.9 ⁽¹⁾ |
| | 5° Taper | | | Ball dia 8 |
| i) | 4 | 100.8 | 100.14 | 314.6 |
| ii) | 6 | 151.6 | 150.94 | 474.2 |
| iii) | 8 | 202.4 | 201.74 | 633.8 |
| iv) | 9 | 227.8 | 227.14 | 713.6 |
| v) | 10 | 253.2 | 252.54 | 793.4 |
| vi) | 12 | 304.0 | 303.34 | 953.0 |
| vii) | 13 | 329.4 | 328.73 | 1 032.7 |
| viii) | 13M/C ⁽²⁾ | 332.2 | 331.53 | 1 041.5 ⁽²⁾ |
| ix) | 14M/C ⁽²⁾ | 357.6 | 356.93 | 1 121.3 ⁽²⁾ |
| x) | 15 M/C ⁽²⁾ | 383.0 | 382.33 | 1 201.1 ⁽²⁾ |
| xi) | 16 M/C ⁽³⁾ | 406.0 | 405.33 | 1 273.4 ⁽²⁾ |
| xii) | 17 M/C ⁽²⁾ | 433.8 | 433.13 | 1 360.7 ⁽²⁾ |
| xiii) | 18M/C ⁽²⁾ | 459.2 | 458.53 | 1 440.5 ⁽²⁾ |
| xiv) | 19 M/C ⁽²⁾ | 484.6 | 483.93 | 1 520.3 ⁽²⁾ |

| | | | | |
|--------|----------------------|-------|--------|-----------------------|
| xv) | 19 | 487.4 | 486.60 | 1 529.0 |
| xvi) | 21 M/C ²⁾ | 535.4 | 534.73 | 1 679.9 ²⁾ |
| xvii) | 30 | 766.8 | 766.09 | 2 406.7 |
| xviii) | 36 | 919.2 | 918.49 | 2 885.5 |
| xix) | 38 | 970.0 | 969.29 | 3 045.1 |

1) Only for EM 11.25/2.375 with tolerance on circumference + 1.2, -2.4 mm.

2) Only for Motorcycle MT type rims with tolerance on circumference + 1.5, -0.5 mm.

3) Only for Motorcycle MT type rims with tolerance on circumference ± 1.0 mm.

Table 4 Dimensions for Measurement of Tapered Bead Seat Rims
(Clause 5.3)

| SI No. | Nominal Dimensions | Dimensions | | |
|---------|--------------------|--------------------------------|--|--------------------------------------|
| | | Specified Diameter D , mm | Nominal Mandrel Diameter D_1 , mm | Nominal Mandrel Circumference, mm |
| (1) | (2) | (3) | (4) | (5) |
| | | 5° Taper | Ball dia 10 | |
| i) | 8 | 202.4 | 201.57 | 633.2 |
| ii) | 9 | 227.8 | 226.97 | 713 |
| iii) | 10 | 253.2 | 252.37 | 792.8 |
| iv) | 12 | 304.0 | 303.17 | 952.4 |
| v) | 13 | 329.4 | 328.57 | 1 032.2 |
| vi) | 14 | 354.8 | 353.97 | 1 112 |
| vii) | 15 | 380.2 | 379.37 | 1 191.8 |
| viii) | 16 | 405.6 | 404.77 | 1 271.6 |
| | | 5° Taper | Ball dia 16 | |
| i) | 8 | 202.4 | 201.7 | 631.7 |
| ii) | 9 | 227.8 | 226.47 | 711.5 |
| iii) | 10 | 253.2 | 251.87 | 791.3 |
| iv) | 12 | 304.0 | 302.67 | 950.9 |
| v) | 13 | 329.4 | 328.07 | 1 030.7 |
| vi) | 14 | 354.8 | 353.47 | 1 110.5 |
| vii) | 15 | 380.2 | 378.87 | 1 190.2 |
| viii) | 15 ¹⁾ | 387.4 | 386.01 | 1 212.7 |
| ix) | 15.3 | 388.3 | 386.98 | 1 215.7 |
| x) | 16 | 405.6 | 404.27 | 1 270 |
| xi) | 17 | 436.6 | 435.22 | 1 367.3 |
| xii) | 18 | 462 | 460.62 | 1 447.1 |
| xiii) | 19 | 487.4 | 486.02 | 1 526.9 |
| xiv) | 20 ¹⁾ | 512.8 | 511.42 | 1 606.7 |
| xv) | 20 ¹⁾ | 514.4 | 513.01 | 1 611.7 |
| xvi) | 21 | 538.2 | 536.82 | 1 686.5 |
| xvii) | 22 | 563.6 | 562.22 | 1 766.3 |
| xviii) | 24 | 614.4 | 613.02 | 1 925.9 |
| xix) | 24 ¹⁾ | 616 | 614.61 | 1 930.9 |
| xx) | 26 | 665.2 | 663.82 | 2 085.5 |
| xxi) | 28 | 716 | 714.62 | 2 245.1 |
| xxii) | 30 | 766.8 | 765.42 | 2 404.6 |
| xxiii) | 32 | 817.6 | 816.22 | 2 564.2 |
| xxiv) | 34 | 868.4 | 867.02 | 2 723.8 |
| xxv) | 36 | 919.2 | 917.82 | 2 883.4 |
| xxvi) | 38 | 970 | 968.62 | 3 043 |
| xxvii) | 40 | 1 020.8 | 1 019.42 | 3 202.6 |
| xxviii) | 42 | 1 071.6 | 1 070.22 | 3 362.2 |
| xxix) | 44 | 1 122.4 | 1 121.02 | 3 521.8 |
| xxx) | 46 | 1 173.2 | 1 171.82 | 3 681.4 |
| xxxi) | 48 | 1 224 | 1 222.62 | 3 841 |

| | | | | |
|---------|----|---------|----------|-----------------------|
| xxxii) | 50 | 1 274.8 | 1 273.42 | 4 000.6 |
| xxxiii) | 52 | 1 325.6 | 1 324.22 | 4 160.2 |
| xxxiv) | 54 | 1 376.4 | 1 375.02 | 4 319.8 |
| i) | 25 | 635 | 633.33 | 1 989.7 ²⁾ |

¹⁾ Only for CV rims.

²⁾ Tolerance on circumference ± 2.4 mm.

Table 5 Dimensions for Measurement of 15° Drop-Centre Rims
(Clause 5.3)

| SI No. | Nominal Dimensions | Dimensions | | |
|--------|--------------------|--------------------------------|--|--------------------------------------|
| | | Specified Diameter D , mm | Nominal Mandrel Diameter D_1 , mm | Nominal Mandrel Circumference, mm |
| (1) | (2) | (3) | (4) | (5) |
| | | 5° Taper | | Ball dia 20 |
| i) | 15.5 | 393.7 | 390.52 | 1 226.9 |
| ii) | 17.5 | 444.5 | 441.32 | 1 386.5 |
| iii) | 19.5 | 495.3 | 492.12 | 1 546 |
| iv) | 20.5 | 520.7 | 517.52 | 1 625.8 |
| v) | 22.5 | 571.5 | 568.32 | 1 785.4 |
| vi) | 24.5 | 622.3 | 619.12 | 1 945 |
| vii) | 26.5 | 673.1 | 669.92 | 2 104.6 |
| viii) | 30.5 | 774.7 | 771.52 | 2 433.8 |

Table 6 Dimensions for Measurement of Rims with Tow Demountable Flanges
(Clause 5.3)

| SI No. | Nominal Dimensions | Dimensions | | |
|--------|--------------------|--------------------------------|-------------------------------|-------------------------------|
| | | Specified Diameter D , mm | Minimum $\pi (D - 0.8)$ mm | Maximum $\pi (D + 0.4)$ mm |
| (1) | (2) | (3) | (4) | (5) |
| i) | 25 | 635 | 1992.4 | 1996.2 |
| ii) | 29 | 736.6 | 231.6 | 2315.4 |
| iii) | 33 | 838.2 | 2630.8 | 2634.5 |
| iv) | 35 | 889 | 2790.4 | 2794.1 |
| v) | 39 | 990.6 | 3109.5 | 3113.3 |
| vi) | 43 | 1092.2 | 3428.7 | 3432.5 |
| vii) | 45 | 1143 | 3588.3 | 3592.1 |
| viii) | 49 ¹⁾ | 1244.6 | 3907.5 | 3912.5 |
| ix) | 51 | 1295.4 | 4067.1 | 4072.1 |
| x) | 57 | 1447.8 | 4545.9 | 4550.9 |

¹⁾ Maximum circ $D (d + 0.8)$ for rims of diameter code 49 and over.