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JIS

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JAPANESE INDUSTRIAL STANDARD

Wheel Nut Wrenches for Automobiles

JIS D 8105-1977
(Reaffirmed: 1983)

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Wheel Nut Wrenches for Automobiles

D 8105-1977
(Reaffirmed: 1983)

1. Scope

This Japanese Industrial Standard specifies wheel nut wrenches used for attachment and detachment of wheel nuts for automobiles, hereinafter referred to as the "wrenches".

Remark: The unit and numerical values shown in braces { } in this Standard are based on the International System of Units (SI) and are appended for informative reference.

2. Classification

Wrenches shall be classified into the three types the double-socket type, single-socket T type, and single-socket L type, according to their shape.

3. Shape and Dimensions

The shapes of wrenches shall normally be as shown in Attached Figure, and their dimensions shall be as shown in Attached Tables 1 to 4.

4. Quality

4.1 Appearance The appearance of wrenches shall be as follows:

(1) Wrenches shall be free from detrimental cuts, cracks, burrs, rust, warp and other defects, and be finished properly.

(2) The surface of wrenches which engages with the nut shall be smooth and form an equilateral hexagon or square.

4.2 Hardness The hardness of the wrench body shall be not lower than H_RC 30 at the head.

Applicable Standards:

JIS G 3101-Rolled Steel for General Structure

JIS G 4051-Carbon Steels for Machine Structural Use

JIS Z 2245-Method of Rockwell and Rockwell Superficial Hardness Test

Reference Standard:

JIS D 2701-Wheel Nuts for Automobiles

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4.3 Strength The strength of the wrench body and handle shall be as follows:

(1) The wrench body shall have a torsional strength of not lower than the value shown in Table 1.

(2) The handle shall have a bending strength of not lower than 60 % of the value shown in Table 1. However, for double-socket type wrenches, the value corresponding to the larger width across flats shall be taken.

Table 1

Unit: kgf·m{N·m}

Width across flats (mm)	14	17	19	20	21	23	26	29	32	35	38	41
Hexagon part	21 {206}	30 {294}	36 {353}	—	42 {412}	49 {481}	58 {569}	70 {686}	85 {834}	100 {981}	100 {981}	100 {981}
Square part	—	39 {382}	—	52 {510}	55 {539}	—	—	—	—	—	—	—

5. Material

The materials of wrenches shall conform to those shown in Table 2 or be materials equal or superior thereto in quality.

Table 2

Part name	Material
Body (head and shank)	S 45 C of JIS G 4051
Handle	SS 34 of JIS G 3101

6. Testing Methods

6.1 Hardness Test The hardness test of wrenches shall be performed according to the method specified in JIS Z 2245.

However, other methods equivalent thereto may be used.

6.2 Strength Test The strength tests of the wrench body and handle shall be performed as follows:

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