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JAPANESE INDUSTRIAL STANDARD

Rubber Shaft Couplings

JIS B 1455—1988

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Rubber Shaft Couplings

B 1455-1988

1. Scope

This Japanese Industrial Standard specifies rubber shaft couplings, hereinafter referred to as the "couplings", used for general machines.

Remark: 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 terms used in this Standard are defined as follows:

- (1) deviation in alignment of axes Generic term for the eccentricity and angular deviation between the centre lines (axes) of two shafts joined by a coupling.
- (2) eccentricity Distance between both axes (indicated by letter δ in Fig.).

Applicable Standards:

JIS B 0401-System of Limits and Fits

JIS B 0405-Permissible Machining Deviations in Dimensions without Tolerance Indication

JIS B 0407-Permissible Deviations in Dimensions without Tolerance Indication for Iron Castings

JIS B 0903-Cylindrical Shaft Ends

JIS B 0904-1/10 Conical Shaft Ends

JIS G 3101-Rolled Steel for General Structure

JIS G 3506-High Carbon Steel Wire Rods

JIS G 4051-Carbon Steels for Machine Structural Use

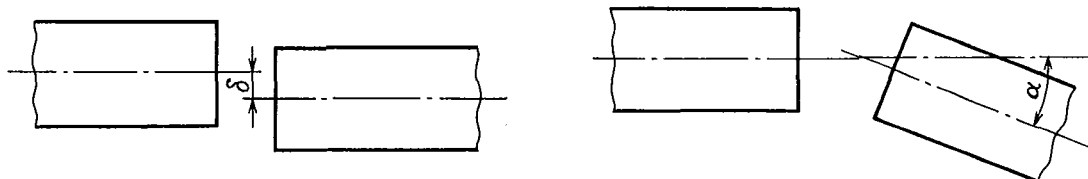
JIS G 5501-Gray Iron Castings

JIS K 6385-Testing Methods for Rubber Vibration Isolators

JIS K 6386-Rubber Materials for Vibration Isolators

- (3) angular deviation Angular deviation between both axes (indicated by letter α in Fig.).

Fig.



- (4) static torsion spring constant Torque necessary for giving a unit angle of static deflection to rubber part [indicated by (kt) in 7.2 (5)].
- (5) normal torque Torque normally applied in one direction without fluctuation (indicated by T in Attached Table).

3. Classification

Couplings shall be classified by the combination of symbol for permissible value of deviation between the centre lines of two shafts and that for static torsion spring constant, as given in Table 1.

Table 1. Classification

Permissible value of deviation between centre lines of shafts ⁽¹⁾		Static torsion spring constant	
Symbol	Division of permissible value of deviation	Symbol	Division of spring constant
E 1	Small	K 2	Considerably small
E 2	Slightly large	K 4	Small
E 4	Considerably large	K 8	Large
		K 16	Considerably large

Note ⁽¹⁾ Refer to Table 2.

4. Quality

4.1 Couplings shall be free from such defects as flaws, cracks and fissures in which would adversely affect their use.

4.2 Couplings shall transmit the normal torque (T) given in Attached Table and shall have sufficient life.

4.3 Permissible values of deviation in alignment of the centre lines of two shafts and the static torsion spring constant of the coupling shall be as given in Table 2.

Table 2. Deviation in Alignment of Axes and Static Torsion Spring Constant

Permissible value of deviation in alignment of centre lines of shafts			Permissible value of static torsion spring constant	
Symbol	Eccentricity	Angular deviation (deg)	Symbol	Permissible value N·m/rad{kgf·m/rad}
E 1	Refer to Attached Table	1 max.	K 2	2 <i>T</i> or over to and excl. 4 <i>T</i>
E 2		2 max.	K 4	4 <i>T</i> or over to and excl. 8 <i>T</i>
E 4		4 max.	K 8	8 <i>T</i> or over to and excl. 16 <i>T</i>
			K 16	16 <i>T</i> and over

4.4 Couplings shall be so balanced that they do not cause any vibration.

5. Dimensions and Construction

5.1 Principal dimensions of couplings shall be as given in Attached Table.

5.2 Shaft bore diameters of couplings shall be not more than the maximum diameter given in Attached Table, and shall generally conform to JIS B 0903 or JIS B 0904. In this case, dimensional tolerances on the shaft bore of couplings shall generally be H 7 specified in JIS B 0401.

Remark: The shaft bore diameter may be as roughly machined, subject to the agreement between the parties concerned.

5.3 Dimensional tolerances of the parts other than those to be fitted shall be as follows:

For machined parts Medium grade of JIS B 0405

For parts as cast Fine grade of JIS B 0407

5.4 The coupling shall be provided with a portion which enables to measure the deviation in alignment of the centre lines of shafts. Permissible value of run-out at this portion shall be as given in Table 3.

Table 3. Run-out

Unit: mm

 Outside diameter of measuring portion		Permissible values of run-out ⁽²⁾		
		Symbol	E 1	E 2
250 or under		0.04 max.	0.08 max.	0.16 max.
Over 250		0.06 max.	0.12 max.	0.25 max.

Note ⁽²⁾ These permissible values shall be applied to radial and axial run-out of outside diameter of the measuring portion.