[Technical Data]
Regular Machining Dimension Tolerance
Excerpts from JIS B 0405, 0419(1991)

1. Regular Cut Dimension Tolerance B 0405-1991-

Tolerances in Respect of Length Excluding Chamfered Portion — Unit:mm

Tolerance Class		Classification of Reference Dimension							
Symbol	Description	0.5 (1) or More 3 or Less	More than 3 6 or Less	More than 6 30 or Less	More than 30 120 or Less	More than 120 400 or Less	More than 400 1000 or Less	More than 1000 2000 or Less	More than 2000 4000 or Less
		Tolerance							
f	Precision Grade	±0.05	±0.05	±0.1	±0.15	±0.2	±0.3	±0.5	–
m	Medium	±0.1	±0.1	±0.2	±0.3	±0.5	±0.8	±1.2	±2
c	Coarse	±0.2	±0.3	±0.5	±0.8	±1.2	±2	±3	±4
v	Extremely Coarse	–	±0.5	±1	±1.5	±2.5	±4	±6	±8

Note (1) : A reference dimension less than 0.5 mm is followed by a tolerance.

2.Tolerances in Respect of the Length of the Chamfered Portion (Radius of rounding for edges and edge chamfering dimension)

Unit:mm

Tolerance Class		Classification of Reference Dimension		
Symbol	Description	0.5 (2) or More 3 or Less	More than 3 6 or Less	More than 6
		Tolerance		
f	Precision Grade	±0.2	±0.5	±1
m	Medium			
c	Coarse	±0.4	±1	±2
v	Extremely Coarse			

Note (2) : A reference dimension less than 0.5 mm is followed by a tolerance.

3. Angle Tolerance

Tolerance Class		Length of Shorter Side (Unit:mm)				
Symbol	Description	10 or Less	More than 10 50 or Less	More than 50 120 or Less	More than 120 400 or Less	More than 400
		Tolerance				
f	Precision Grade	±1°	±30'	±20'	±10'	± 5'
m	Medium					
c	Coarse	±1°30'	± 1°	±30'	±15'	±10'
v	Extremely Coarse	±3°	± 2°	± 1°	±30'	±20'

4.Regular Perpendicularity Tolerance B 0419-1991-

Unit:mm

Tolerance Class	Nominal Length of Shorter Side			
	10 or Less	More than 100 300 or Less	More than 300 1000 or Less	More than 1000 3000 or Less
	Perpendicularity Tolerance			
H	0.2	0.3	0.4	0.5
K	0.4	0.6	0.8	1
L	0.6	1	1.5	2

5. Regular Straightness and Flatness Tolerance

Unit:mm

Tolerance Class	Nominal Length					
	10 or Less	More than 10 30 or Less	More than 30 100 or Less	More than 100 300 or Less	More than 300 1000 or Less	More than 1000 3000 or Less
	Regular Straightness and Flatness Tolerance					
H	0.02	0.05	0.1	0.2	0.3	0.4
K	0.05	0.1	0.2	0.4	0.6	0.8
L	0.1	0.2	0.4	0.8	1.2	1.6

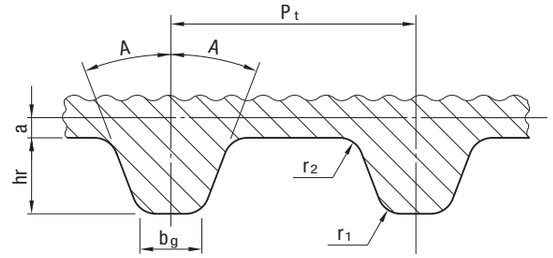
6.Regular Symmetry Tolerance

Unit:mm

Tolerance Class	Nominal Length			
	100 or Less	More than 100 300 or Less	More than 300 1000 or Less	More than 1000
	Symmetry Tolerance			
H	0.5			
K	0.6		0.8	1
L	0.6	1	1.5	2

[Technical Data]
Toothed Pulleys
Excerpts from JIS B 1856(1993)

1.Dimensions of the Rack for the Cutter and the Tolerances



The pulley should have involute teeth, which are created and shaped by the cutter.The dimensions of the rack for the cutter and the tolerances as determined by analyzing the shape of the rack with a projector, shape measuring instrument or the like, should be agree with the relevant figures in the table below.

Unit:mm

Type	Number of Teeth of the Pulley Z	Pt	A ±0.12	hr +0.05 0	bg +0.05 0	r1 ±0.03	r2 ±0.03	2a(1) (Reference)
MXL	10 ≤ Z ≤ 23	2.032 ± 0.008	28°	0.64	0.61	0.30	0.23	0.508
	24 ≤ Z		20°		0.67			
XL	10 ≤ Z	5.080 ± 0.010	25°	1.40	1.27	0.61	0.61	0.508
L	10 ≤ Z	9.525 ± 0.012	20°	2.13	3.10	0.86	0.53	0.762
H	14 ≤ Z ≤ 19	12.700 ± 0.016	20°	2.59	4.24	1.47	1.04	1.372
	20 ≤ Z						1.42	

Note (1) : a is a measurement indicating the position corresponding to the pitch line(Centerline of the Core Line of the Belt)of the belt corresponding to the shape of the rack for the cutter.

2. Tolerance of Adjacent Pitch Error and Cumulative Pitch Error

Unit:mm

Addendum Circle Diameter of Pulley do	Allowable Value	
	Tolerance of Adjacent Pitch Error	Accumulated Pitch Error
5.96 ≤ do ≤ 25.40	0.03	0.05
25.40 < do ≤ 50.80	0.03	0.08
50.80 < do ≤ 101.60	0.03	0.10
101.60 < do ≤ 177.80	0.05	0.13
177.80 < do ≤ 304.80	0.05	0.15
304.80 < do ≤ 508.00	0.08	0.18
508.00 < do ≤ 762.00	0.08	0.20
762.00 < do ≤ 967.16	0.08	0.23

3. Tolerance of Side Deflection

Unit:mm

Addendum Circle Diameter of Pulley do	Tolerance of Deflection(TIR)(2)
5.96 ≤ do ≤ 101.60	0.10
101.60 < do ≤ 254.00	Addendum Circle Dia. do×0.001
254.00 < do ≤ 967.16	0.25+[(Addendum Circle Dia. do-254.00)×0.0005]

Note (2) : TIR is an abbreviation for Total Indicator Reading and refers to the difference between the max. deflection reading and the min. deflection reading.

4. Tolerances of Addendum Circle Diameter

Unit:mm

Addendum Circle Diameter of Pulley do	Tolerance
5.96 ≤ do ≤ 25.40	$^{+0.05}_{0}$
25.40 < do ≤ 50.80	$^{+0.08}_{0}$
50.80 < do ≤ 101.60	$^{+0.10}_{0}$
101.60 < do ≤ 177.80	$^{+0.13}_{0}$
177.80 < do ≤ 304.80	$^{+0.15}_{0}$
304.80 < do ≤ 508.00	$^{+0.18}_{0}$
508.00 < do ≤ 762.00	$^{+0.20}_{0}$
762.00 < do ≤ 967.16	$^{+0.23}_{0}$

5. Tolerance of Circumferential Deflection of Addendum Circle

Unit:mm

Addendum Circle Diameter of Pulley do	Tolerance of Circumferential Deflection
5.96 ≤ do ≤ 203.20	0.13
203.20 < do ≤ 967.16	0.13 + [(Addendum Circle Dia. do-203.20) × 0.0005]

6. Tolerance of Cylindricity and Parallelism

Unit:mm

Nominal Widths of Pulley	Cylindricity Tolerance	Parallelism Tolerance
025~050	0.01	0.03
075~150	0.02	
200 · 300	0.04	0.04
400 · 500	0.06	0.05