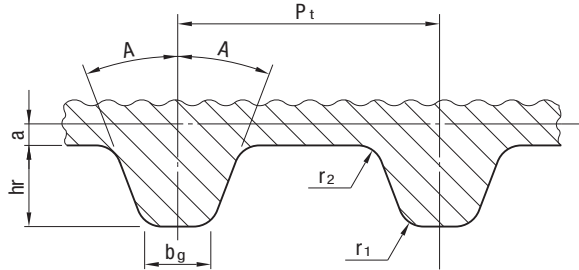


[Technical Data]
Pulley/Tooth Tolerance Excerpts from JIS B 1856(1993)

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 | P _t | A ±0.12 | hr +0.05 0 | bg +0.05 0 | r ₁ ±0.03 | r ₂ ±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 d _o | Allowable Value | |
|---|-----------------------------------|-------------------------|
| | Tolerance of Adjacent Pitch Error | Accumulated Pitch Error |
| 5.96 ≤ d _o ≤ 25.40 | 0.03 | 0.05 |
| 25.40 < d _o ≤ 50.80 | 0.03 | 0.08 |
| 50.80 < d _o ≤ 101.60 | 0.03 | 0.10 |
| 101.60 < d _o ≤ 177.80 | 0.05 | 0.13 |
| 177.80 < d _o ≤ 304.80 | 0.05 | 0.15 |
| 304.80 < d _o ≤ 508.00 | 0.08 | 0.18 |
| 508.00 < d _o ≤ 762.00 | 0.08 | 0.20 |
| 762.00 < d _o ≤ 967.16 | 0.08 | 0.23 |

3. Tolerance of Side Deflection Unit: mm

| Addendum Circle Diameter of Pulley d _o | Tolerance of Deflection (TIR) ⁽²⁾ |
|---|---|
| 5.96 ≤ d _o ≤ 101.60 | 0.10 |
| 101.60 < d _o ≤ 254.00 | Addendum Circle Dia. d _o ×0.001 |
| 254.00 < d _o ≤ 967.16 | 0.25+[(Addendum Circle Dia. d _o -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 d _o | Tolerance |
|---|------------|
| 5.96 ≤ d _o ≤ 25.40 | +0.05 0 |
| 25.40 < d _o ≤ 50.80 | +0.08 0 |
| 50.80 < d _o ≤ 101.60 | +0.10 0 |
| 101.60 < d _o ≤ 177.80 | +0.13 0 |
| 177.80 < d _o ≤ 304.80 | +0.15 0 |
| 304.80 < d _o ≤ 508.00 | +0.18 0 |
| 508.00 < d _o ≤ 762.00 | +0.20 0 |
| 762.00 < d _o ≤ 967.16 | +0.23 0 |

5. Tolerance of Circumferential Deflection of Addendum Circle Unit: mm

| Addendum Circle Diameter of Pulley d _o | Tolerance of Circumferential Deflection |
|---|---|
| 5.96 ≤ d _o ≤ 203.20 | 0.13 |
| 203.20 < d _o ≤ 967.16 | 0.13 + [(Addendum Circle Dia. d _o -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 |

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

1. Regular Cut Dimension Tolerance B 0405-1991- Typically, unless otherwise specified, Misumi uses "medium" tolerance for all machined features. Please, verify the tolerance with Misumi technical team at engineering@misumiusa.com

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 | ±0.2 | ±0.5 | ±1 |
| c | Coarse | ±0.4 | ±1 | ±2 |
| v | Extremely Coarse | ±0.4 | ±1 | ±2 |

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 | ±1° | ±30' | ±20' | ±10' | ± 5' |
| 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 | | | |
|----------------------------|--------------------------------|---------------------------|----------------------------|-----------------------------|
| | 100 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 | | | |
| L | 0.6 | 1 | 1.5 | 2 |