CNC TOLERANCE STANDARDS

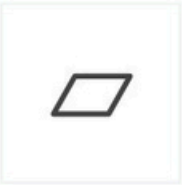
The following information represents the tightest tolerances Accu Design can guarantee, with guidance from a customer 2D drawing. Without a drawing, all parts are produced to our ISO 2768 medium standard

STRAIGHTNESS

*Normal condition; metal parts; low risk of deformation

Dimension Range	US Tolerance		China Tolerance	
	Metric	Imperial	Metric	Imperial
≤10	0.0500	0.0020	0.0080	0.0003
>10~16	0.0500	0.0020	0.0100	0.0004
>16~25	0.0500	0.0020	0.0120	0.0005
>25~40	0.0500	0.0020	0.0150	0.0006
>40~63	0.0500	0.0020	0.0200	0.0008
>63~100	0.0500	0.0020	0.0250	0.0010
>100~160	0.1000	0.0039	0.0300	0.0012
>160~250	0.1500	0.0059	0.0400	0.0016
>250~400	0.2000	0.0079	0.0500	0.0020
>400~630	0.2500	0.0098	0.0600	0.0024
>630~1000	0.3000	0.0118	0.0800	0.0031
>1000~1600	0.3500	0.0138	0.1000	0.0039
>1600~2500	0.4000	0.0157	0.1200	0.0047
>2500~4000	0.4500	0.0177	0.1500	0.0059
>4000~6300	0.5000	0.0197	0.2000	0.0079
>6300~10000	1.0000	0.0394	0.2500	0.0098

FLATNESS



*Normal condition; metal parts; low risk of deformation

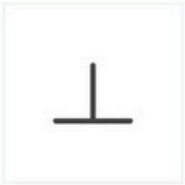
Dimension Range	US Tolerance		China Tolerance	
	Metric	Imperial	Metric	Imperial
≤10	0.0500	0.0020	0.0080	0.0003
>10~16	0.0500	0.0020	0.0100	0.0004
>16~25	0.0500	0.0020	0.0120	0.0005
>25~40	0.0500	0.0020	0.0150	0.0006
>40~63	0.0500	0.0020	0.0200	0.0008
>63~100	0.0500	0.0020	0.0250	0.0010
>100~160	0.1000	0.0039	0.0300	0.0012
>160~250	0.1500	0.0059	0.0400	0.0016
>250~400	0.2000	0.0079	0.0500	0.0020
>400~630	0.2500	0.0098	0.0600	0.0024
>630~1000	0.3000	0.0118	0.0800	0.0031
>1000~1600	0.3500	0.0138	0.1000	0.0039
>1600~2500	0.4000	0.0157	0.1200	0.0047
>2500~4000	0.4500	0.0177	0.1500	0.0059
>4000~6300	0.5000	0.0197	0.2000	0.0079
>6300~10000	1.0000	0.0394	0.2500	0.0098

PARALLELISM

*Normal condition; metal parts; low risk of deformation

Dimension Range	US Tolerance		China Tolerance	
	Metric	Imperial	Metric	Imperial
≤10	0.0500	0.0020	0.0200	0.0008
>10~16	0.0500	0.0020	0.0250	0.0010
>16~25	0.0500	0.0020	0.0300	0.0012
>25~40	0.0500	0.0020	0.0400	0.0016
>40~63	0.0500	0.0020	0.0500	0.0020
>63~100	0.0500	0.0020	0.0600	0.0024
>100~160	0.1000	0.0039	0.0800	0.0031
>160~250	0.1500	0.0059	0.1000	0.0039
>250~400	0.2000	0.0079	0.1200	0.0047
>400~630	0.2500	0.0098	0.1500	0.0059
>630~1000	0.3000	0.0118	0.2000	0.0079
>1000~1600	0.3500	0.0138	0.2500	0.0098
>1600~2500	0.4000	0.0157	0.3000	0.0118
>2500~4000	0.4500	0.0177	0.4000	0.0157
>4000~6300	0.5000	0.0197	0.5000	0.0197
>6300~10000	1.0000	0.0394	0.6000	0.0236

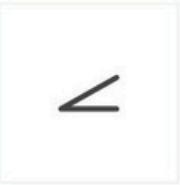
PERPENDICULARITY



*Normal condition; metal parts; low risk of deformation

Dimension Range	US Tolerance		China Tolerance	
	Metric	Imperial	Metric	Imperial
≤10	0.0500	0.0020	0.0200	0.0008
>10~16	0.0500	0.0020	0.0250	0.0010
>16~25	0.0500	0.0020	0.0300	0.0012
>25~40	0.0500	0.0020	0.0400	0.0016
>40~63	0.0500	0.0020	0.0500	0.0020
>63~100	0.0500	0.0020	0.0600	0.0024
>100~160	0.1000	0.0039	0.0800	0.0031
>160~250	0.1500	0.0059	0.1000	0.0039
>250~400	0.2000	0.0079	0.1200	0.0047
>400~630	0.2500	0.0098	0.1500	0.0059
>630~1000	0.3000	0.0118	0.2000	0.0079
>1000~1600	0.3500	0.0138	0.2500	0.0098
>1600~2500	0.4000	0.0157	0.3000	0.0118
>2500~4000	0.4500	0.0177	0.4000	0.0157
>4000~6300	0.5000	0.0197	0.5000	0.0197
>6300~10000	1.0000	0.0394	0.6000	0.0236

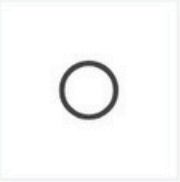
ANGULARITY



*Normal condition; metal parts; low risk of deformation

Dimension Range	US Tolerance		China Tolerance	
	Metric	Imperial	Metric	Imperial
≤10	0.0500	0.0020	0.0200	0.0008
>10~16	0.0500	0.0020	0.0250	0.0010
>16~25	0.0500	0.0020	0.0300	0.0012
>25~40	0.0500	0.0020	0.0400	0.0016
>40~63	0.0500	0.0020	0.0500	0.0020
>63~100	0.0500	0.0020	0.0600	0.0024
>100~160	0.1000	0.0039	0.0800	0.0031
>160~250	0.1500	0.0059	0.1000	0.0039
>250~400	0.2000	0.0079	0.1200	0.0047
>400~630	0.2500	0.0098	0.1500	0.0059
>630~1000	0.3000	0.0118	0.2000	0.0079
>1000~1600	0.3500	0.0138	0.2500	0.0098
>1600~2500	0.4000	0.0157	0.3000	0.0118
>2500~4000	0.4500	0.0177	0.4000	0.0157
>4000~6300	0.5000	0.0197	0.5000	0.0197
>6300~10000	1.0000	0.0394	0.6000	0.0236

CIRCULARITY



*Normal condition; metal parts; low risk of deformation

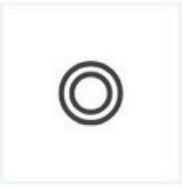
Dimension Range	US Tolerance		China Tolerance	
	Metric	Imperial	Metric	Imperial
≤3	0.0500	0.0020	0.0040	0.0002
>3~6	0.0500	0.0020	0.0050	0.0002
>6~10	0.0500	0.0020	0.0060	0.0002
>10~18	0.0500	0.0020	0.0080	0.0003
>18~30	0.0500	0.0020	0.0090	0.0004
>30~50	0.0500	0.0020	0.0110	0.0004
>50~80	0.1000	0.0039	0.0130	0.0005
>80~120	0.1500	0.0059	0.0150	0.0006
>120~180	0.2000	0.0079	0.0180	0.0007
>180~250	0.2500	0.0098	0.0200	0.0008
>250~315	0.3000	0.0118	0.0230	0.0009
>315~400	0.3500	0.0138	0.0250	0.0010
>400~500	0.5000	0.0197	0.0270	0.0011

CYLINDRICITY

*Normal condition; metal parts; low risk of deformation

Dimension Range	US Tolerance		China Tolerance	
	Metric	Imperial	Metric	Imperial
≤3	0.0500	0.0020	0.0040	0.0002
>3~6	0.0500	0.0020	0.0050	0.0002
>6~10	0.0500	0.0020	0.0060	0.0002
>10~18	0.0500	0.0020	0.0080	0.0003
>18~30	0.0500	0.0020	0.0090	0.0004
>30~50	0.0500	0.0020	0.0110	0.0004
>50~80	0.1000	0.0039	0.0130	0.0005
>80~120	0.1500	0.0059	0.0150	0.0006
>120~180	0.2000	0.0079	0.0180	0.0007
>180~250	0.2500	0.0098	0.0200	0.0008
>250~315	0.3000	0.0118	0.0230	0.0009
>315~400	0.3500	0.0138	0.0250	0.0010
>400~500	0.5000	0.0197	0.0270	0.0011

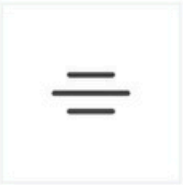
CONCENTRICITY



*Normal condition; metal parts; low risk of deformation

Dimension Range	US Tolerance		China Tolerance	
	Metric	Imperial	Metric	Imperial
≤1	0.0500	0.0020	0.0060	0.0002
>1~3	0.0500	0.0020	0.0060	0.0002
>3~6	0.0500	0.0020	0.0080	0.0003
>6~10	0.0500	0.0020	0.0100	0.0004
>10~18	0.0500	0.0020	0.0120	0.0005
>18~30	0.0500	0.0020	0.0150	0.0006
>30~50	0.1000	0.0039	0.0200	0.0008
>50~120	0.1500	0.0059	0.0250	0.0010
>120~250	0.2000	0.0079	0.0300	0.0012
>250~500	0.2500	0.0098	0.0400	0.0016
>500~800	0.3000	0.0118	0.0500	0.0020
>800~1250	0.3500	0.0138	0.0600	0.0024
>1250~2000	0.4000	0.0157	0.0800	0.0031
>2000~3150	0.5000	0.0197	0.1000	0.0039
>3150~5000	1.0000	0.0394	0.1200	0.0047
>5000~8000	1.5000	0.0591	0.1500	0.0059
>8000~10000	2.0000	0.0787	0.2000	0.0079

SYMMETRY



*Normal condition; metal parts; low risk of deformation

Dimension Range	US Tolerance		China Tolerance	
	Metric	Imperial	Metric	Imperial
≤1	0.0500	0.0020	0.0060	0.0002
>1~3	0.0500	0.0020	0.0060	0.0002
>3~6	0.0500	0.0020	0.0080	0.0003
>6~10	0.0500	0.0020	0.0100	0.0004
>10~18	0.0500	0.0020	0.0120	0.0005
>18~30	0.0500	0.0020	0.0150	0.0006
>30~50	0.1000	0.0039	0.0200	0.0008
>50~120	0.1500	0.0059	0.0250	0.0010
>120~250	0.2000	0.0079	0.0300	0.0012
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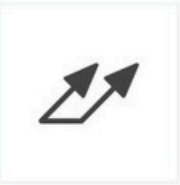
>500~800	0.3000	0.0118	0.0500	0.0020
>800~1250	0.3500	0.0138	0.0600	0.0024
>1250~2000	0.4000	0.0157	0.0800	0.0031
>2000~3150	0.5000	0.0197	0.1000	0.0039
>3150~5000	1.0000	0.0394	0.1200	0.0047
>5000~8000	1.5000	0.0591	0.1500	0.0059
>8000~10000	2.0000	0.0787	0.2000	0.0079

CIRCULAR RUNOUT

*Normal condition; metal parts; low risk of deformation

Dimension Range	US Tolerance		China Tolerance	
	Metric	Imperial	Metric	Imperial
≤1	0.0500	0.0020	0.0060	0.0002
>1~3	0.0500	0.0020	0.0060	0.0002
>3~6	0.0500	0.0020	0.0080	0.0003
>6~10	0.0500	0.0020	0.0100	0.0004
>10~18	0.0500	0.0020	0.0120	0.0005
>18~30	0.0500	0.0020	0.0150	0.0006
>30~50	0.1000	0.0039	0.0200	0.0008
>50~120	0.1500	0.0059	0.0250	0.0010
>120~250	0.2000	0.0079	0.0300	0.0012
>250~500	0.2500	0.0098	0.0400	0.0016
>500~800	0.3000	0.0118	0.0500	0.0020
>800~1250	0.3500	0.0138	0.0600	0.0024
>1250~2000	0.4000	0.0157	0.0800	0.0031
>2000~3150	0.5000	0.0197	0.1000	0.0039
>3150~5000	1.0000	0.0394	0.1200	0.0047
>5000~8000	1.5000	0.0591	0.1500	0.0059
>8000~10000	2.0000	0.0787	0.2000	0.0079

TOTAL RUNOUT



*Normal condition; metal parts; low risk of deformation

Dimension Range	US Tolerance		China Tolerance	
	Metric	Imperial	Metric	Imperial
≤1	0.0500	0.0020	0.0060	0.0002
>1~3	0.0500	0.0020	0.0060	0.0002
>3~6	0.0500	0.0020	0.0080	0.0003
>6~10	0.0500	0.0020	0.0100	0.0004
>10~18	0.0500	0.0020	0.0120	0.0005
>18~30	0.0500	0.0020	0.0150	0.0006
>30~50	0.1000	0.0039	0.0200	0.0008
>50~120	0.1500	0.0059	0.0250	0.0010
>120~250	0.2000	0.0079	0.0300	0.0012
>250~500	0.2500	0.0098	0.0400	0.0016
>500~800	0.3000	0.0118	0.0500	0.0020
>800~1250	0.3500	0.0138	0.0600	0.0024
>1250~2000	0.4000	0.0157	0.0800	0.0031
>2000~3150	0.5000	0.0197	0.1000	0.0039
>3150~5000	1.0000	0.0394	0.1200	0.0047
>5000~8000	1.5000	0.0591	0.1500	0.0059
>8000~10000	2.0000	0.0787	0.2000	0.0079