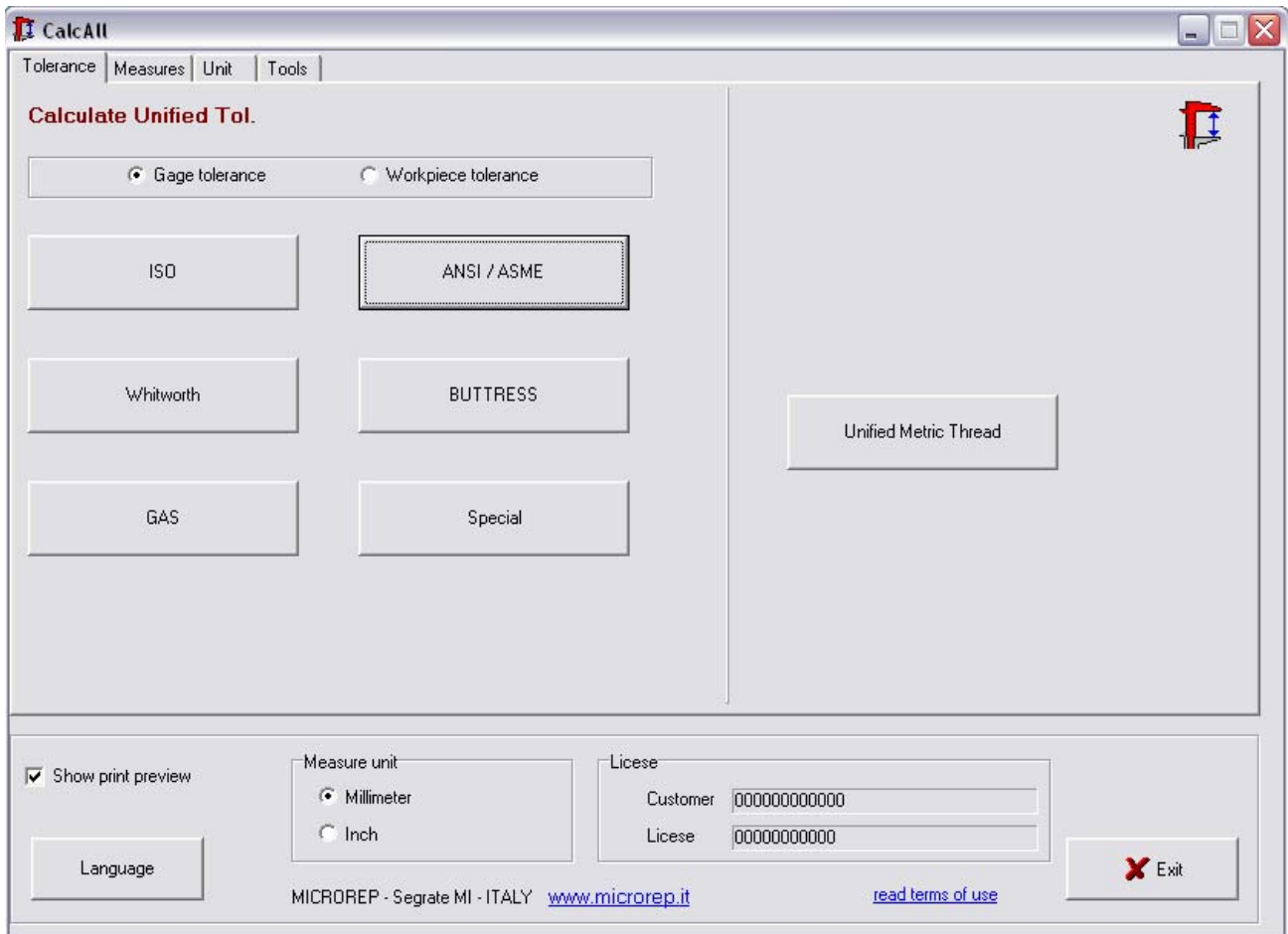


# CalcAll - Tolerance Software

## Tolerance calculation for Work-piece & Gage » technical libraries for tolerances, measurement and conversions «



## Features

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- Tolerance calculation for workpieces:
  - : plain shaft
  - : plain hole
  - : thread shaft
  - : thread hole
  - :
- Tolerance calculation for gages:
  - : plain plug
  - : plain ring
  - : thread plug
  - : thread ring
- Effective diameter tolerance, drilling hole size, external and internal diameter of the gage.
- Various norms available:
  - : ISO metric gages and workpieces - according to ISO/R - 1938, ISO 286, ISO 965/1, ISO/R - 1502.
  - : ANSI/ASME gages and workpieces - according to ANSI/ASME B1.13M (ISO 965/1), ANSI/ASME B1.16M-1984, Plain gage ANSI-inch, ANSI/ASME B89.1.6M-1984, Gagemaker's Tolerance Chart, ANSI/ASME B.1.1-1982, ANSI/ASME B1.2-1983, ANSI/ASME B.1.20.1-1983, ASME B1.20.5-1991.
  - : Whitworth gages and workpieces - according to BS 919, BS 84.
  - : Buttress gages and workpieces - according to ANSI B1.9, BS 1657.
  - : Gas gages - according to ISO 7, ISO 228.
- Measurement formulae for threads:
  - : three wire method
  - : contact arms
  - : T-sphere
- Unit conversion:
  - : length (mm, inch, feet, etc.)
  - : temperature (°C, °F, etc.)
  - : mass (Kg, pounds, etc.)
  - : degree (sexagesimal, radians, etc.)
  - : pressure (atm, bar, etc.)
- Thermal expansion calculation for common materials
- Printout of measurement results and tolerances calculation

## Work-piece tolerance

**ISO - metric**

Nominal diameter: +022.000.0    Measure unit: mm

Pitch: +001.000.0

Angle (degree): 60    N.starts: 1

**Gage tolerance**    M 22 X 1

Calc. Unif. Tolerance: 7H

**Workpiece tolerance    Internal thread devial**

Max: +021.550.0    Avg value: +021.450.0    tap drill size: +021.026.0

Min: +021.350.0    +/- deviation: +000.100.0    based on: 90 % thread

Printout    Measure Piece    Close

## Gage tolerance

**ISO - metric | thread for internal | Limit thread plug gage**

Nominal diameter: +032.000.0    Measure unit: mm

Pitch: +002.000.0

Angle (degree): 60    N.starts: 1

**Gage tolerance**    M 32 X 2

Pitch diameter: External | Internal | Angle/Pitch

Calc. Unif. Tolerance: 6H

	Go	No-go
Max Nom.	+030.724.0	+030.939.0
Min Nom	+030.710.0	+030.925.0
Worn	+030.696.0	+030.917.0
Avg. diam	+030.717.0	+030.932.0

**Workpiece toleranc:** Internal thread deviation

Max: +030.925.0

Min: +030.701.0

Printout    Measure Gage    Measure Piece    Close

## Thread measurement formulae

**Thread measurement**

THREAD

diameter: +032.000.0

semi-angle: 30 30

pitch: +002.000.0

n.starts: 1

WIRE

diameter: 1.1

material: Steel

Tolerance

upper limit: +030.925.0

low limit: +030.701.0

3 wires | Arms | T-sphere

Measure force: 1 N

Calculate deformation

Calc Theoretical Wire

+001.154.7

Reading on Wires: 32.456

Result (M): +030.891.1

diameter: +030.891.1

PRINTOUT DATA

Code: \_\_\_\_\_

Note: \_\_\_\_\_

Printout

Show print preview

Measure unit:  Millimeter  Inch

License

Customer: 000000000000

License: 000000000000

Language

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## Units conversion

**Convert Measurement Unit**

120 mm convert 4.72440944 inch

22 °C convert 71.6 °F

1.3 Kg convert 2.86600940 pound

22 degree convert 0.38397243 rad

2.5 atm convert 36.7398719 psi

Show print preview

Measure unit:  Millimeter  Inch

License

Customer: 000000000000

License: 000000000000

Language

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# Material thermal expansion

CalcAll
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Tolerance | Measures | Unit | Tools

**Material Thermal Expansion**

length	+123.000.0	+123.000.0	
Temperature	24 °C	28 °C	
material	Steel	Steel	
Exp. Coeff *	11.5 k-1	11.5 k-1	
	Calculate	Calculate	
length at 20°C   68°F	+122.994.3	+122.988.7	
length deviation	+000.005.7	+000.011.3	

\* Avg. value for temperature range near environment conditions

Show print preview  
  

Language

Measure unit

 Millimeter  
 Inch

Licene

Customer

Licene

X Exit

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