Force Unit Converter (N, kN, kgf, tonne-force, lbf, kip)

Convert a force between newtons, kilonewtons, meganewtons, kilogram-force, tonne-force, pound-force, kips and dynes.

Method: Unit definitions per NIST SP 811 and the SI Brochure (exact where defined)

Input parameters

Unit system: SI

Parameter	Value	Unit
Force (choose its unit)	1,000.0	N

Calculated results

Parameter	Value	Unit
newton	1,000.0	N
kilonewton	1.0000	kN
meganewton	0.001000	MN
kilogram-force	101.97	kgf
tonne-force	0.10197	tf
pound-force	224.81	lbf
kip (1000 lbf)	0.22481	kip
dyne	1.0000e+08	dyn

Notes for this case

- kgf and tonne-force use standard gravity 9.806 65 m/s².

Formula and method

$$x_{\text{unit}} = \frac{x_{SI}}{f_{\text{unit}}}$$

Variables

x	Force (choose its unit)	N

Method and standards

Each unit's factor to the SI unit is held once in the unit registry.

Assumptions and limits

- Exact factors where the definition is exact.

References

- Unit definitions per NIST SP 811 and the SI Brochure (exact where defined)

Report details

Report reference	FCC-34J2-8HNN (the same inputs always give the same reference)
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Software release	FireCAD Calc, release of 17 November 2026
Release checks	2 reference cases of this calculator, computed independently, are checked on every release

Results are for engineering estimation. Verify critical designs against the referenced standards and your own data.

This calculator online

https://calc.firecad.com/general/unit-conversions/force-unit-converter

Open this case on calc.firecad.com →

Reopens the calculator with the inputs of this report.