


Gears

This extension is a fork of <https://github.com/ssentinel/inkscape-gears-dev> and allows to create different gear types with/without spokes, racks, etc.

 Gear-dev

Gears

Advanced options

Rack

Usage-core

Usage-adv

Number of teeth (3..1200)

240

Tooth size (Module, CP, DP)

1,00000

Tooth system

☒ Module (mm)

☐ Circular Pitch (in)

☐ Diametral Pitch (in)

Pressure angle (5..45)

20,0

☒ Draw center cross


☐ Draw pitch circle (for meshing)

☐ Draw annotation text

☐ Live preview

Close

Apply

 Gear-dev

Gears

Advanced options

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Units

mm

Clearance (bottom)

0,000

Profile shift [% of module]

0,0

☐ Ring gear (Internal gear)

Mount hole diameter

14,000

Number of spokes

5

Spoke, rim (or ring) width

13,000

Mount support diameter

10,000

Tooth accuracy

automatic

Use higher accuracy with lower tooth count. Set Number of spokes to 0 to disable. Set Mount hole diameter to 0 to disable.

Rack length (teeth) 10

Height of base 5,000

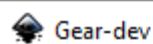
Length of end tab 5,000

The matching rack gear is drawn additionally and below the spur gear.

☐ Live preview

Close

Apply



Gears	Advanced options	Rack	Usage-core	Usage-adv
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Gears:

Be sure to set the document properties to inches or mm if you want real-world dimensions.

For gears to mesh - the size of the teeth on each gear must be the same.

This is why tooth count and Circular Pitch or Metric Module is used to define gears and not radius.

The Circular Pitch, p , is the distance between adjacent teeth around the Pitch Circle.

$$p = p_i \cdot D / z$$

- where z is the number of teeth on a gear of pitch diameter D .

The SI measure is the Module - which expresses the core ratio of Pitch Diameter to number of Teeth:

$$m = p / p_i = D / z$$

where:

- Pitch Circle: Radius is equal to the distance from the center of the gear to the pitch point.
- Pitch Point: The point of tangency of the pitch circles of two meshing gears.

☐ Live preview

Close

Apply



Gears	Advanced options	Rack	Usage-core	Usage-adv
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Gears:

Pressure angle [in degrees]. Usually 20. Historical: 14.5; High torque gears: 25.

The higher the pressure angle, the stronger the teeth. With higher pressure angles, more effort is needed to turn the gears (due to friction).

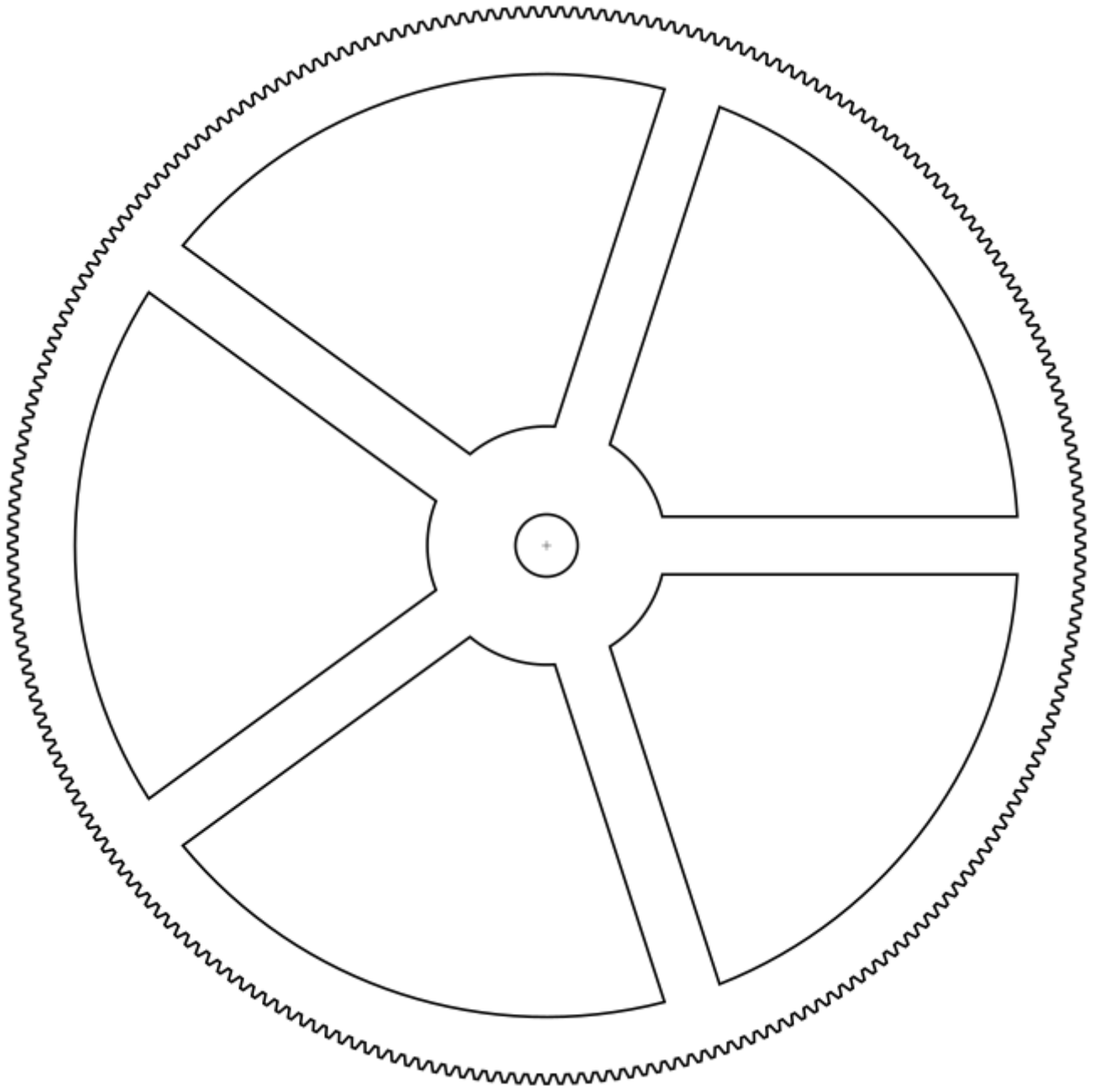
Caution: Undercut is currently not generated. E.g. a gear at pressure angle 20 deg and less than 17 teeth would either need a (negative!) profile shifting or will cause undercut. We only produce a warning.

☒ Confirm gear with undercut

☐ Live preview

Close

Apply



Version #3

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