How to calculate the torque that can be transmitted by the gears you have already chosen ?

The majority of the pages in this catalogue contain a value for torque. The values for standard gears should only be used as a reference in your own calculations.

They are based on:

(1) *A driving gear with 50 teeth. turning at a speed of 1000 rpm*
(2) *A driven gear with 50 teeth.*
(3) *Gear used 12H per day.*
(4) *Good lubrication.*

A

Variation in the number of teeth of the driving gear:
Fixed parameters:
Speed of driving gear: 1000 rpm
50 tooth driving gear

Teeth/driving gear	Real torque (Nm)
100	Reference torque x 2,00
75	Reference torque x 1,50
50	Reference torque x 1,00
40	Reference torque x 0,75
30	Reference torque x 0,50
20	Reference torque x 0,25

Dimensions in mm

B

Variation in the number of teeth of the driven gear:
Fixed parameters:
Speed of driving gear: 1000 rpm
50 tooth driving gear

Teeth/driven gear	Real torque (Nm)
100	Reference torque x 1,27
50	Reference torquee x 1,00
30	Reference torque x 0,80
20	Reference torque x 0,63

NOTE: *For worm and wheel systems, only B, C and D are used.*

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C

Speed variation:
Fixed parameters :
50 tooth driving gear
50 tooth driven gear

Speed rpm	Real torque (Nm)
2000	Reference torque x 0,85
1000	Reference torque x 1,00
500	Reference torque x 1,15
100	Reference torque x 1,54
10	Reference torque x 2,38

D

Variation in working time:
Fixed parameters:
Speed of driving gear: 1000 rpm
50 tooth driving gear
50 tooth driven gear

Hours of work per day (H)	Real torque (Nm)
24	Reference torque x 0,90
12	Reference torque x 1,00
6	Reference torque x 1,10
3	Reference torque x 1,22
1	Reference torque x 1,44
1/2	Reference torque x 1,58

Calculation and examples

- *Exemple: helical gears*
  H 0,8-30 and H0,8-100
  Reference torque Co = 0,395 Nm

Variables

- *30 tooth driving gear*
- *100 tooth driven gear*
- *Speed in rotation of driving gear: 500 rpm*
- *Hours of work per day: 6 h*
- ***So for 30 teeth:***

{[(0,395 x 0,50) x 1,27] x 1,15} x 1,1 = 0,317 Nm
Co A B C D