

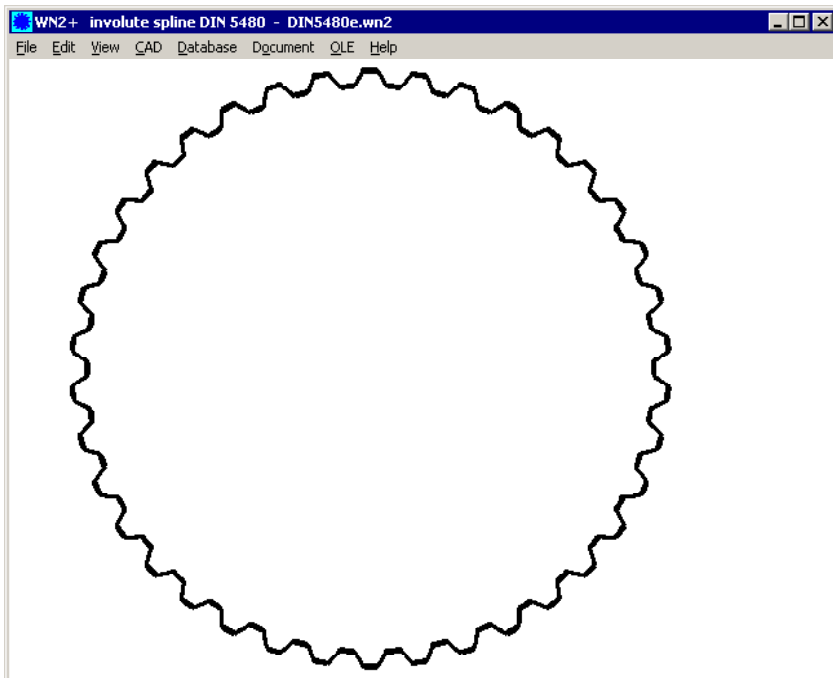
WN2 / WN2+



www.hexagon.de

Software for Involute Splines according to DIN 5480 for Windows

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Involute Splines to DIN 5480

WN2 software calculates dimensions and transferable torque of involute splined shaft/hub joints according to DIN 5480. The plus version WN2+ provides additionally the calculation of non-standard splines by input of tooth height factors and profile shift or measured dimensions over/between pins.

Dimensions

From reference diameter, pressure angle, module, number of teeth and DIN 5480 tolerance zone, WN2 calculates the involute spline dimensions. Profile drawing and data table can be displayed on screen, printed or exported to CAD.

Data Base

WN2 includes a data base which contains all combinations of DIN 5480 standard sizes (700 data records). The database file may be modified and extended by the user. Material properties can be selected from included material database.

Tolerances

Select DIN 5480 tolerance series and tolerance row, and WN2 calculates tolerances and permissible deviations of shape, angle and run-out.

Shaft DIN 5480 - W 120 x 3 x 38 x 8f			Hub DIN 5480 - N 120 x 3 x 38 x 9H		
no. of teeth	z	38	no. of teeth	z	38
module	m	3	module	m	3
pressure angle	alpha	30 °	pressure angle	alpha	30 °
tip diameter	da1	119,35 h11	root diameter	df2	120,00 +0,76
root form diameter	df1f1	113,91 max	root form diameter	dfT2	119,49 min
root diameter	df1	113,4 -0,76	tip diameter	da2	114 H11
tooth thickness max. eff.	s v max	6,243	tooth gap max. actual	e max	6,361
tooth thickness max. act. Ref.	s max	6,220	tooth gap min. act. Ref.	e min	6,305
tooth thickness min. actual	s min	6,180	tooth gap min. eff.	e v min	6,271
no. of teeth meas	k	7	Pin diameter	DM	5,250
span measurement (k=7)	Wmax	59,666	Measurement between pins	M2max	109,265
span measurement (k=7)	Wmin	59,632	Measurement between pins	M2min Ref.	109,169

Load				STRENGTH			
rated torque	TN	Nm	140	material		42CrMo4	St 50
maximum torque	Tmax	Nm	280	Yield Point	Re	900	320
application factor	KA		1,00	Supp. Factor	fS	1,20	1,50
equiv. torque	Teq	Nm	140	Hardness factor	fH	1,00	1,00
load alternating factor	fVV		1,00	Perm surface pressure	padm	1080	480
load distrib factor	K lambda		1,00	load peak frequency factor	fL	1,00	1,00
equiv. eff. surface pressure	peq	MPa	1	safety marg. fV*padm/peq	Seq	1830,40	813,49
max. eff. surface pressure	pmax	MPa	1	safety marg. fL*padm/pmax	Smax	1076,70	478,52

WN2+ Gear quality DIN 5480

Edit Ase1, Asi1, Ase2, Asi2

shaft: Tolerance series 8, tolerance zone f

hub: Tolerance series 9, tolerance zone H

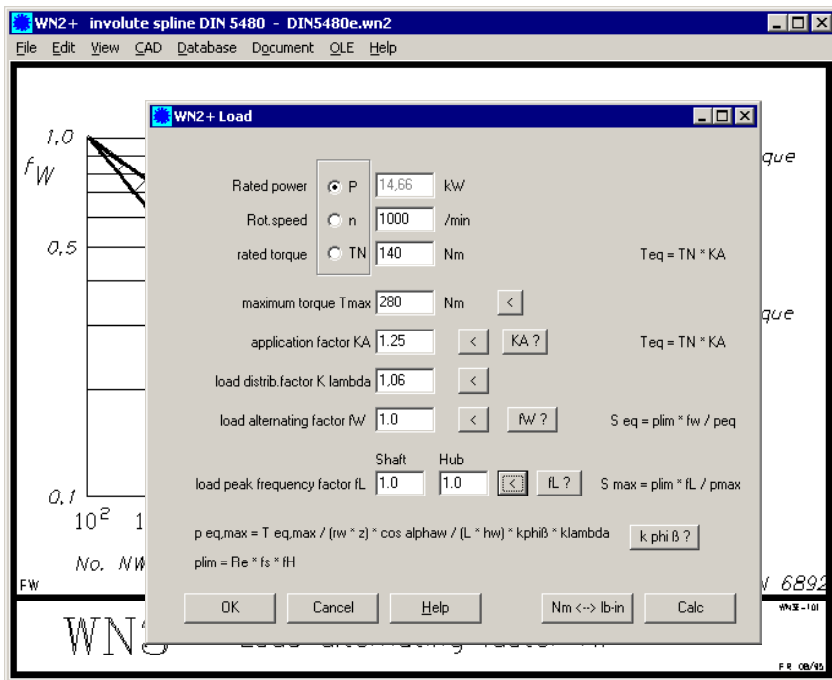
Ase1: -0,028 mm, it min = 0,028 mm, Ase2: 0 mm

Asi1: -0,091 mm, it max = 0,181 mm, Asi2: -0,09 mm

Buttons: OK, Cancel, Help Text, Calc

Measurement

The program calculates span width and dimensions over / between pins (min, max & nom. values). Number of teeth measured and pin diameter can be modified.



Strength Calculation

WN2 calculates transmissible torque or safety according to Niemann/Höhn (2005, as in DIN 3892) or according to Roloff/Matek.

Drawing Tables

Drawing tables with dimensions and results can be printed or exported to CAD.

Tooth Contact

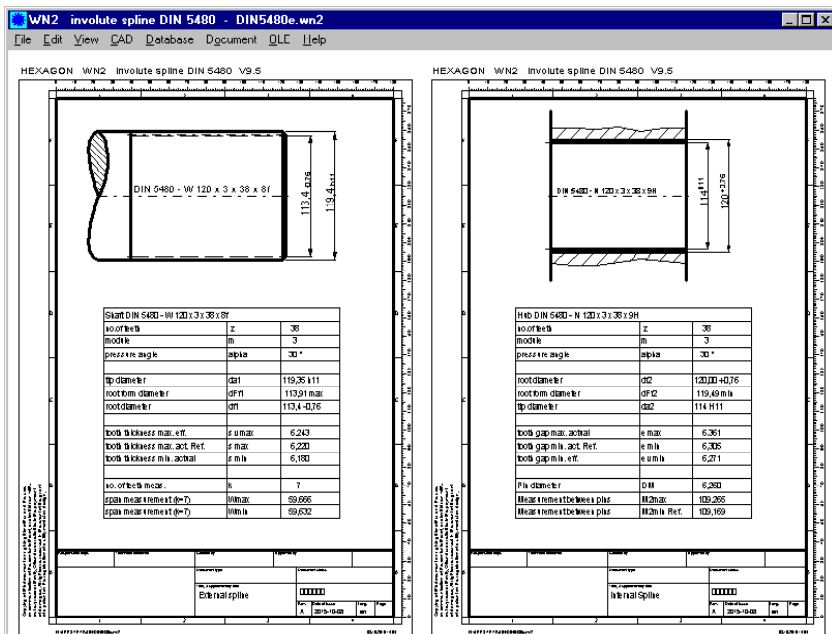
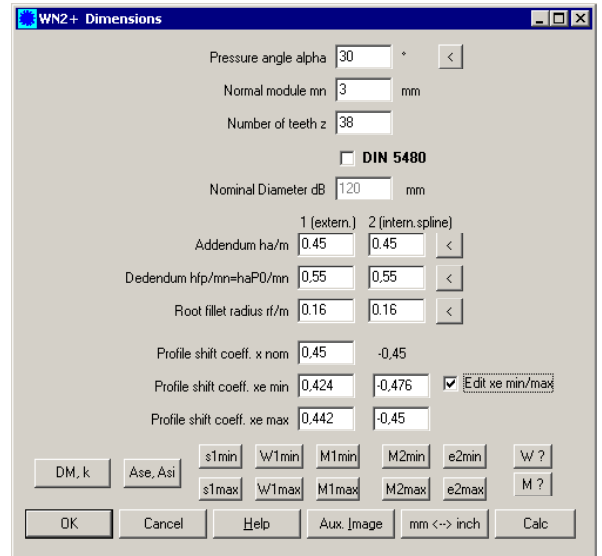
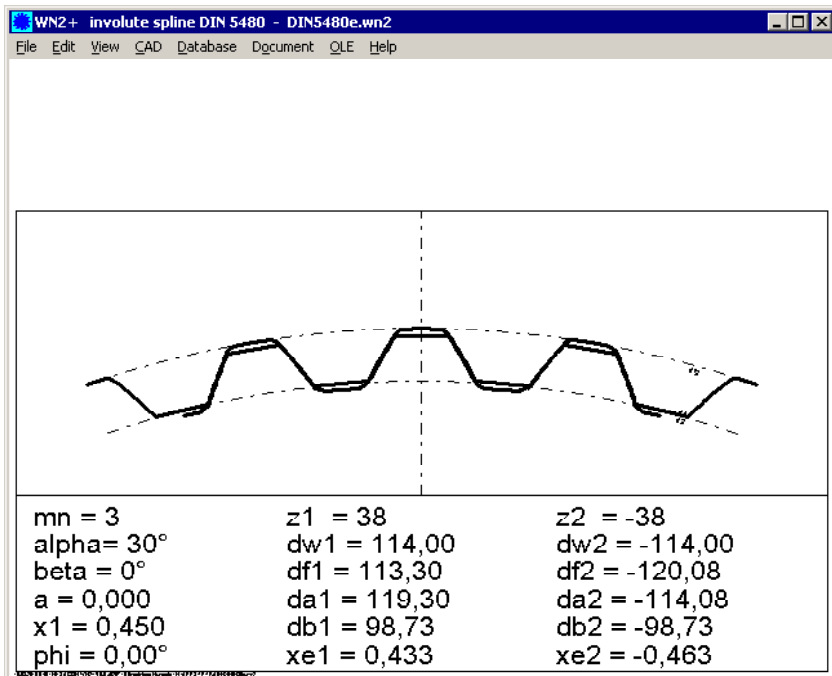
Drawings of involute spline profile, tooth gap, tooth contact, tooth shape and reference profile can be printed or exported as true-scale drawing to CAD.

Production Drawing

Drawing and table with dimensions may be generated by WN2 with ISO 7200 drawing header.

WN2+ for Non-Standard Splines

The extended version WN2+ provides an additional input window for tooth height factors and profile shift coefficients. This enables you to design non-standard splines. Reference diameter d_B is calculated from profile shift x for this case. Profile shift coefficients can be entered, or calculated from span width or over-pin-dimension. This eases the design of a partner profile for an existing internal/external spline.



CAD Interface

A true-scale drawing of the involute splines can be exported to CAD via DXF or IGES files.

Hard and Software Requirements

WN2 / WN2+ is available as 32-bit app or 64-bit app for Windows XP, Vista, Windows 7, 8, Windows 10.

Scope of Delivery

Program with user manual (pdf), database files, example applications, declaration of conformity, non-expiring license for unlimited time use with update rights.

Guarantee

HEXAGON gives a 24 month guarantee on full functionality of the software. HEXAGON Software is continuously improved and updated. Registered users are kept informed of updates and new editions.