HEXAGON Info 153

by Fritz Ruoss

FED5 – Conical spring drawings with end coils



Conical spring is drawn with end coils now in section drawing, in "Quick3" and "Quick4" View, and in animation.

FED1+,2+,5,6,7: Warning ,,tau2 > tauz min !"

A new warning "tau2 > tau z min !" refers to minimum tensile strength from table fedrmmin.dbf, if material was selected from database, and if a table with tensile strength tolerances is available for the selected material. Tensile strength data in fedrmmin.dbf and fedrmmmax.dbf refer to wire as delivered. If tensile strength of the finished spring higher than that of the raw wire (i.e. by age hardening of stainless steel) you can ignore the warning. If you configure "Hide warnings" or uncheck "display Rm min/max, taumin/max" the warning is disabled.

FED6, FED7: Animation with load-deflection diagram



Load-deflection diagram is drawn now side-by-side with the animated spring, and a point moves along the load-deflection curve due to deflection of the spring.



FED1+, FED3+, FED5, FED6 - Input mandrel diameter

Maximum usable mandrel diameter for compression springs or torsion springs is calculated and displayed in the production drawing with mandrel diameter " $\leq x.x$ ". As alternative, you can now input mandrel diameter with +/- tolerance. If entered diameter plus tolerance is larger than calculated maximum, you get an error message.

FED1+ production drawing	
Burring of spring ends no inside outside free inside and outside	mandrel bedding Image: display setting length 23 ± 0.2 mm Set test springs ! Supply remaining Springs set Image: display setting length Ls = Ls = Lc
	display Ld, P, m
	I display F1, F2
Range of working temperature from 0	to 100 °C
surface protection ph	phosphated
Additional Indications	
Drawing with mandrel and bore	EN 10270-3-1.4310-NS
bore bedding	OK Cancel <u>H</u> elp

FED1+, FED5, FED6: taukn and taukc



If dynamic loaded, shear stress is multiplied by dynamic stress correction coefficient k. Dynamic zone lies between spring deflection s1 and s2 with stresses tauk1 and tauk2. Block stress tauc is static. Thus tauk2 can be higher than tauc. Theoretical dynamic stress at block (taukc) and at usable length (taukn) is listed in brackets now with load-deflection diagrams and stress-deflection diagram.

FED1+, FED3+, FED6: 3D helical center line for rectangular and elliptic wire

3D centerline can be drawn for all wire types now. For ground end coils, 3D line begins near z=0, and for raw end coils near z=d/2. Height of the centerline of an unloaded spring can be calculated from unloaded spring length L0 and block length Lc: L0center = L0-Lc+nt*dmax If you want a drawing with nominal dimensions without tolerances, set wire tolerance to 0 at "Edit->Material", then check ,,Lc=(nt+1)*dmax" if raw end coils or ,,Lc=nt*dmax" if ground end coils at "Edit->Production".

FED4: F-L Diagram

Spring length instead of deflection is drawn on the x axis of the new F-L diagram in FED4.



FED4: Animation

Animation simulates deflection of the disk springs on screen. You can define start length, end length, number of steps and pause. A moving point on the load-deflection diagram shows present load of the spring package.



WN9 - CAD profile drawing min/max



Profile of straight splined shaft and splined hub has been drawn with mean tolerance until now. In the new version of WN9 you can enter dimension or click min/mean/max buttons to set dimension with desired tolerance for spline profile drawings.

🙀 WN9 CAD	🙀 WN9 CAD 📃 🗖	⊐×
minor diameter shaft Di 25,97	minor diameter hub Di 26,01	×
major diameter shaft De 29,64	major diameter hub De 30,04	× n
tooth thickness shaft b 5.946	tooth gap hub b 6.015	× 1
OK Cancel <u>H</u> elp	OK Cancel <u>H</u> elp	

SR1 - Small Thread Size

Thread sizes M1.6, M2 and M2.5 for hexagon socket head screws according to EN ISO 4762 have been added to the database.

WN1, ZAR1+, ZAR2, ZAR5, ZAR6 - Production Drawing in standardized scale

Until now, drawings have been scaled to fit in the available drawing area. Now, hubs and gear wheels are drawn in next standardized scale according to ISO (M1:1, 1:2, 1:5, 1:10 ... M2:1, 5:1, 10:1 ...).

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Configurable border width of ISO 7200 drawings with coordinates and mm scale

ZAR1+ Konfiguration	
Directories Grafik CAD Farbe Drucker Ausdruck	Einstellungen Extern Zeichnung
Fertigungszeichnung Image: HEXAGON ZAR1+ Zahnradberechnung V24.3 ? Image: HEXAGON Z	Zeichnung mit Kopf ISO 7200 Fig.2 Zeichnungsrand 10 mm ABCD-1234 Umrandung mm Scale Umrandung Änderungen anzeigen ?
OKAbbrechen	Größenfaktor Bemaßung 1 <

According to ISO 5457, border width to drawing area is 10 mm (bottom, top, right) and 20 mm left. Old DIN 6771 defined 5 mm and 15 mm left. This reduces drawing area by 10 mm in height and width. Until now, production drawings (A4) and Quick4 View (A3) were drawn with 5 mm border. Now you can configure ISO 7200 drawing with 5 mm or 10 mm border. If 10 mm border configured, you can fill the border with coordinates A,B,C,D – 1,2,3,4.. and/or a millimeter scale.



However, the 10 mm border can not be used with each production drawing until now, because i.e. the A4 table drawings of the springs require the complete drawing area.

But "Quick4" drawings and "Quick3 Production Drawing" in each program had been checked and modified to fit in the ISO 7200 drawing with 10 mm border.

ISO 7200 title block with modification index

According to ISO 7200, drawing modifications are no longer described. Only the modification index is listed as letter A,B,C. Nevertheless, you can now configure to list the modifications directly above the title block

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[в	01.11.2015	F	Ruoss	ISO 7200 mod	ficat.		drawing mo	difications can be disp	layed even with ISO	7200 data	field.				
L	A	04.09.2015	F	Ruoss	29 into 30		Length 29 mm changed into 30 mm									
L	Index	Date	N	Name	ame Modification Description								- 9			
H	Respor	nsible dept.		Techr	ical reference			Docum	ent type			Document status			A	-
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Extend Title Block by self-defined drawing elements

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If you want to extend the standard title block by self-defined standard specifications, symbols and drawing elements, you can create a title block extension drawing and save it as DXF file. Insertion point is the left upper corner of the configured title block (ISO 7200 or DIN 6771). Create a DXF drawing and convert into a DX\$ file, copy into temporary directory and set read-only file attribute. With different file names the drawing extensions are used with A4 drawing, A3 drawing (Quick4), or with each production drawing:

\$HEAD_0.DX\$: drawing inserted above title block.

\$HEAD_4.DX\$: drawing inserted above title block, A4 production drawing only.

\$HEAD_3.DX\$: drawing inserted above title block, A3 drawing (Quick4) only.

Extend drawing by self-defined drawing elements

You also can insert self-defined drawings at coordinate origin (0/0) of the generated drawing. Convert your DXF drawing into DX\$, save in temp directory and set R/O attribute as described previous.

\$INSERT_0.DX\$: drawing inserted in A3 or A4 production drawing

\$INSERT_3.DX\$: drawing inserted in A3 production drawing (Quick4)

\$INSERT_4.DX\$: drawing inserted in A4 production drawing

At "File->Settings->Drawing" you have to configure that self-defined drawing elements must be used.

Open manual

Each program got a new menu item "Help->Manual" to run the electronic manual. Manual is delivered as PDF files and one index HTM file. Your computer must have installed PDF viewer and HTML Browser (no internet connection required) to run the e-Manual. Folder with manual pdf and htm files can be configured at "File->Settings->External". Default setting is program path.

📔 SR1+ 🛛 Bolted 💶 🗖 🗙	E SR1+ Configuration
SR1+ Bolted Image: Second content of the seco	SR1+ Configuration Directories Graphics CAD Colour Printer Printout Settings external Drawing DXFPLOT Command Lines C:\DXFPLOT Command Lines Config C.\DXFPLOT.DXFPLOT.DXF /M1.0 Config C:\DXFPLOT.WDXFPLOT DXFPLOT.DXF /M1.0 C:\DXFPLOT.WDXFPLOT DXFPLOT.DXF /M1.0 Config Edit C:\DXFPLOT.WDXFPLOT DXFPLOT.DXF /M1.0 Edit Edit Edit C:\DXFPLOT.WDXFPLOT DXFPLOT.DXF /M1.0 E.\DXFPLOT.WDXFPLOT DXFPLOT.DXF /M1.0 Edit C:\DXFPLOT.WDXFPLOT DXFPLOT.DXF /M1.0 Edit Edit Word processor C:\VINDOWS\WRITE.EXE SR1+ E-Manual c:\hexagon\sr1
SR1+	OK Cancel Save Export Import

FNAME Tool for lowercase file names

Windows makes no difference between uppercase and lowercase characters in file names, but Unix does. If you run software and e-manual on a Unix server and get error messages "file not found" maybe could be the reason. File names must be lowercase. You can use our tool "FNAME" ("FNAME *.*") to convert file names in lowercase characters. Customers can download the tool at www.hexagon.de/history/tools.

Installation with or without Setup.exe

Under Windows 10, waiting period at installation with setup.exe can be up to one minute, no idea why. Because the blue annulus is rotating and nothing else seems to happen, it looks like setup.exe hangs. But you have to wait until setup window closes. As alternative, you can install programs without setup.exe. Just unzip or copy the files in a new folder. Then create a shortcut on the desktop to run the program.

In earlier versions, setup.exe also linked HEXAGON program with file extension of the calculation files, but since Windows Vista HEXAGON Setup.exe fails with registering file extensions. Link file extension with calculation program is useful if you want to start the calculation program by a double click into the calculation file.

Tip: Link files with program via file extension

Example: Open .sr1 files with SR1+ under Windows 7

Organize 👻 📋 Open Burn New folder	
Documents Name Date modified Type	*
Music Music Z015-05-26 11:50 File folder	
Pictures 2015-05-26 11:50 SR1 File	
Videos 1_1986.SR1 2015-05-2611:50 SR1 File	No preview available.
1_2001.SR1 2015-05-26 11:50 SR1 File	no preview available.
Homegroup 1_2014.5R1 2015-05-26 11:50 SR1 File	
Computer 2015-05-26 11:50 PLT File	

Use Windows Explorer and double click file (1.SR1)



"Select a program from a list of installed programs".

"Browse..."

Compression Spring Design HEXAGON Industriesoftware Gm

Notepad Microsoft

28 V

this kind of file

Embarcadero RAD Studio Launcher for

X

Browse...

OK Cancel

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				If the program you want is not in the list or on your computer, you can look for the appropriate program on the Web.
				OK Cancel

Select program (c:\hexagon\sr1\wsr1.exe), then "Open" "OK". WSR1.EXE opens 1.SR1 file

PRICELIST 2015-11-01

PRODUCT	EUR
DI1 Version 1.2 O-Ring Seal Software	190,-
DXF-Manager Version 8.7	383,-
DXFPLOT V 3.1	123,-
FED1 V27.4 Helical Compression Springs	491
FED1+ V27.4 Helical Compression Springs incl. spring database, animation, relax., 3D	695
FED2 V19.1 Helical Extension Springs	501
FED2+ V19.1 Helical Extension Springs incl. spring database, animation, relaxation,	675
FED3+ V17 9 Helical Torsion Springs incl. prod drawing animation 3D rectang wire	480 -
FED4 Version 7.0 Disk Springs	430 -
FED5 Version 1/, 3 Conical Compression Springs	7/1 -
FED6 Version 14.8 Nonlinear Cylindrical Compression Springs	634 -
EED7 Version 12.0 Nonlinear Compression Springs	660
EED? Version 6.5 Tersion Per	217
FED0 Version 5.6 Spiral Spring	204
FED9 Version 3.0 Spiral Spiring	<u> </u>
FED10 Version 3.2 Lear Spring (complex)	500,-
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TOL1CON V1.5 Conversion Program for TOL1	281,-
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TR1 V3.7 Girder Calculation	757
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WN1 Version 11.5 Cylindrical and Conical Press Fits	485
WN2 V 9.5 Involute Splines to DIN 5480	250
WN2+ V 9.5 Involute Splines to DIN 5480 and non-standard involute splines	380
WN3 V 5.3 Parallel Key Joints to DIN 6885, ANSI B17.1, DIN 6892	245 -
WN4 V 4.4 Involute Splines to ANSLB 92.1	276 -
WN5 V 4.4 Involute Splines to ISO 4156 and ANSI B 92.2 M	255 -
WN6 V 2.9 Polygon Profiles P3G to DIN 32711	180 -
WN0 V 2.3 Totygon Profiles P3C to DIN 32712	175 -
$\frac{1}{12} \frac{1}{12} \frac$	175,-
WN0 V 1.9 Selfation to DIN 3461	195,-
WN9 V 2.1 Spline Sharts to DIN ISO 14	170,-
WNTO V 3.7 Involute Splines to DIN 5462	260,-
WN11 V 1.3 WOOdruff Key Joints	240,-
WINKE V 1.1 Involute Splines - dimensions, graphic, measure	375,-
WS11 V 9.3 Material Database	235,-
ZAR1+ V 24.3 Spur and Helical Gears	1115,-
ZAR2 V7.7 Spiral Bevel Gears to Klingelnberg	792,-
ZAR3 V8.7 Worm Gears	404,-
ZAR3+ V8.7 Worm Gears incl. profile drawings, variable tooth height, OPD measure	620,-
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ZAR1W V1.5 Gear Wheel Dimensions, tolerances, measure	450,-
ZM1.V2.3 Chain Gear Design	326,-

Packages

PACKAGES	EUR				
HEXAGON Mechanical Engineering Package (TOL1, ZAR1+, ZAR2, ZAR3+, ZAR5, ZAR6, WL1+, WN1, WN2+, WN3, WST1, SR1+, FED1+, FED2+, FED3+, FED4, ZARXP, TOL PASS, LG1, DXFPLOT, GEO1+,					
TOL2, TOL1CON, GEO2, GEO3, ZM1, WN6, WN7, LG2, FED12, FED13, WN8, WN9, WN11, DI1, FED15,	8,500				
HEXAGON Mechanical Engineering Base Package (ZAR1+, ZAR3+, ZAR5, ZAR6, WL1+, WN1, WS11,	4 900 -				
SR1+, FED1,+, FED2+, FED3+)	4.000,				
HEXAGON Spur Gear Bundle (ZAR1+ and ZAR5)	1,585				
HEXAGON Graphic Package (DXF-Manager, HPGL-Manager, DXFPLOT)					
HEXAGON Helical Spring Package (FED1+, FED2+, FED3+, FED5, FED6, FED7)	2,550				
HEXAGON Tolerance Package (TOL1, TOL1CON, TOL2, TOLPASS)	945				
HEXAGON Complete Package (All Programs of Engineering Package, Graphics Package, Tolerance Package, Helical Spring Package, TR1, FED8, FED9, FED10, ZAR4, GEO4, WN4, WN5, FED11,WN10, ZAR1W, FED14)	11,500				

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Language Version:

- German and English : all Programs
- French: FED1, FED1+, FED2, FED2+, FED3, FED3+, FED5, FED6, FED7, FED9, WL1+.

- Italiano: FED1, FED1+, FED2, FED2+, FED3, FED3+, FED5, FED6, FED7, FED9, DXFPLOT.

- Swedish: FED1, FED1+, FED2, FED2+, FED3, FED3+, FED5, FED6, FED7, DXFPLOT.

- Portugues: FED1, FED1+

- Spanish: FED1, FED1+

Updates:

Update prices	EUR	
Software Update (software + pdf manual)	40,-	
Software Update (software 64-bit Win + pdf manual)	50,-	

Update Mechanical Engineering Package: 800 EUR, Update Complete Package: 1000 EUR

Maintenance contract for free updates: annual fee: 150 EUR + 40 EUR per program

Upgrades

For upgrades to network licenses or plus versions or software bundles, upgraded licenses are credited 75%.

Hexagon Software Network Licenses

Floating License in the time-sharing manner by integrated license manager Individual licenses may not be installed in a network!

Conditions for delivery and payment

General packaging and postage costs are EUR 60, (EUR 25 inside Europe) Delivery by Email (program packed, manual as pdf files): EUR 0. Conditions of payment: bank transfer in advance with 2% discount, or by credit card (Master, Visa) net.

Key Code

After installation, software has to be released by key code. Key codes will be sent after receipt of payment.

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