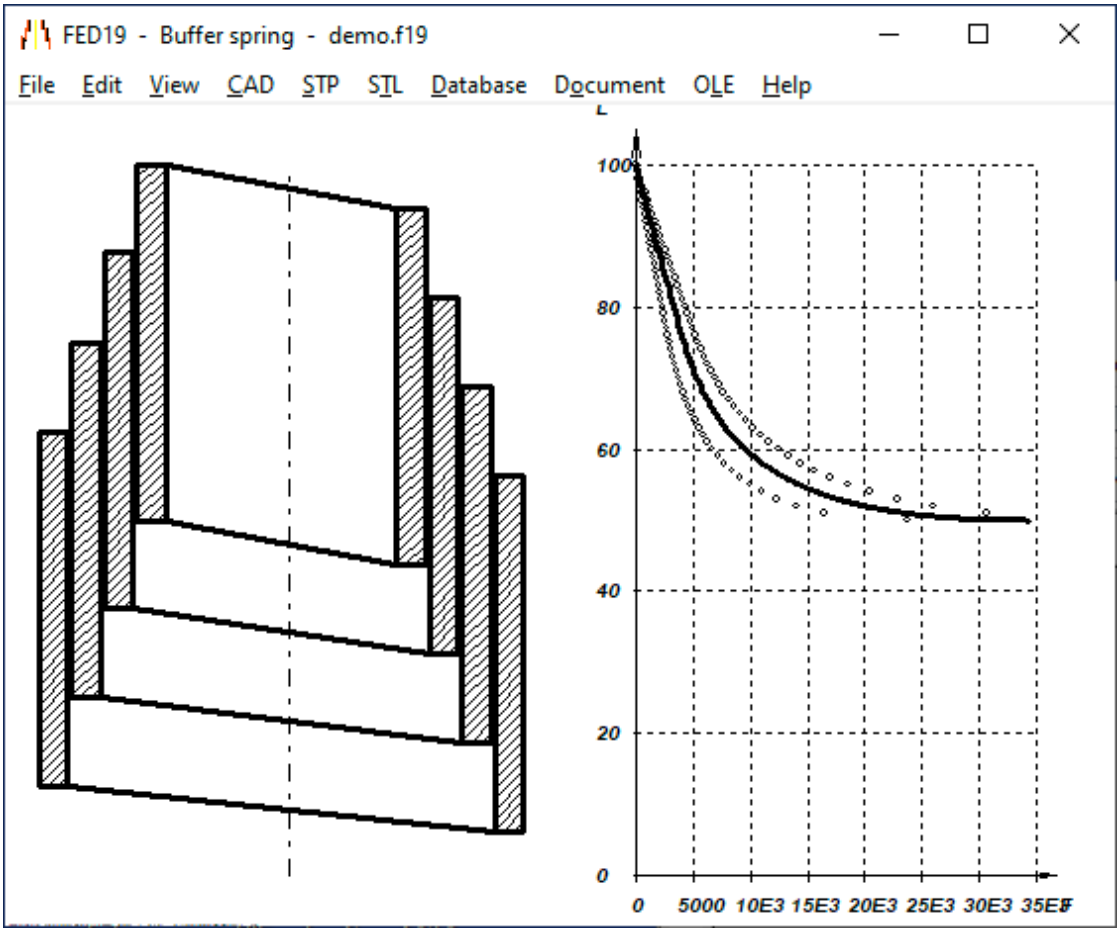
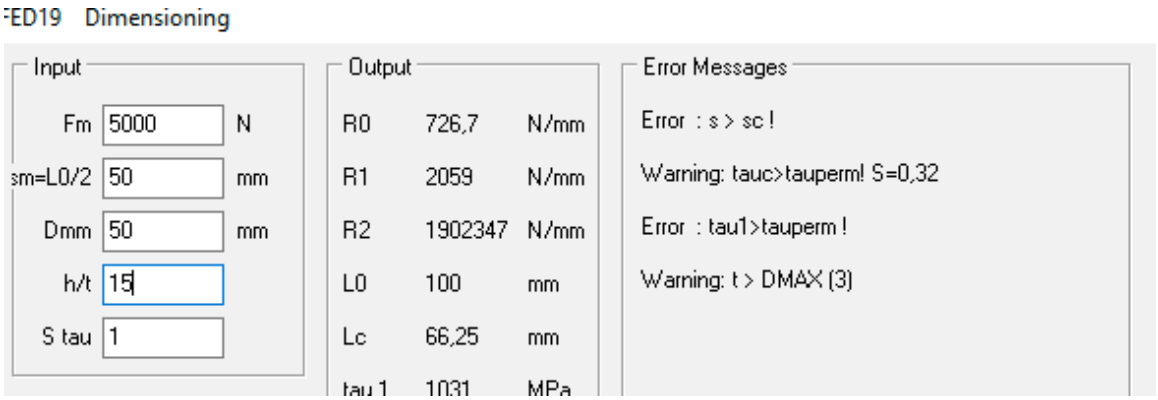
HEXAGON Newsletter 192 March / April 2022

by Fritz Ruoss

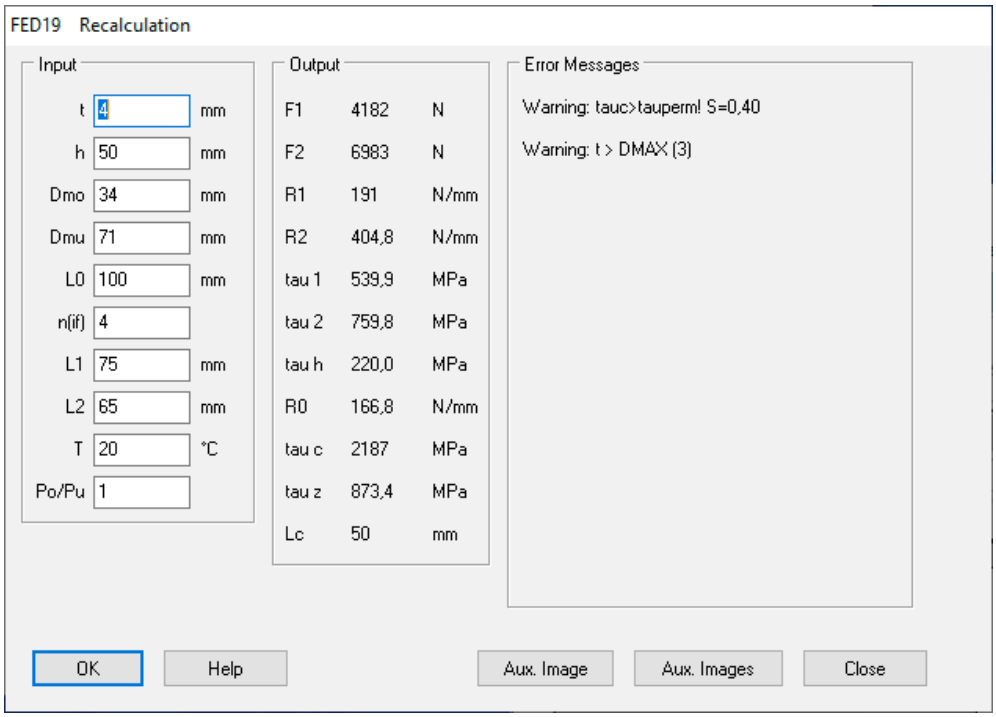
FED19: New software for buffer spring design



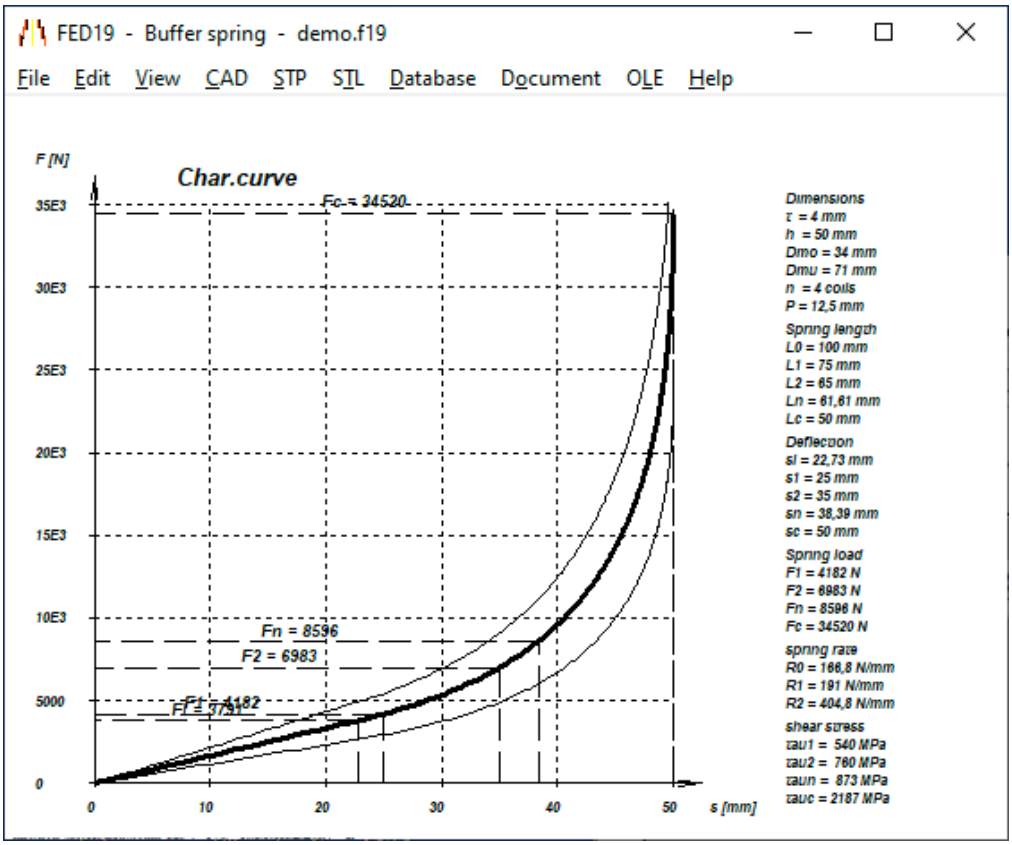
Conical helical compression springs made of spring strip are referred to as “buffer springs”. The calculation is similar to FED5 for conical helical compression springs made from round spring wire. In the "pre-design" of FED19 you can enter a mean spring force Fm and a mean spring deflection sm. Half the spring length is assumed to be the spring deflection sm (sm = L0/2 = Lm).



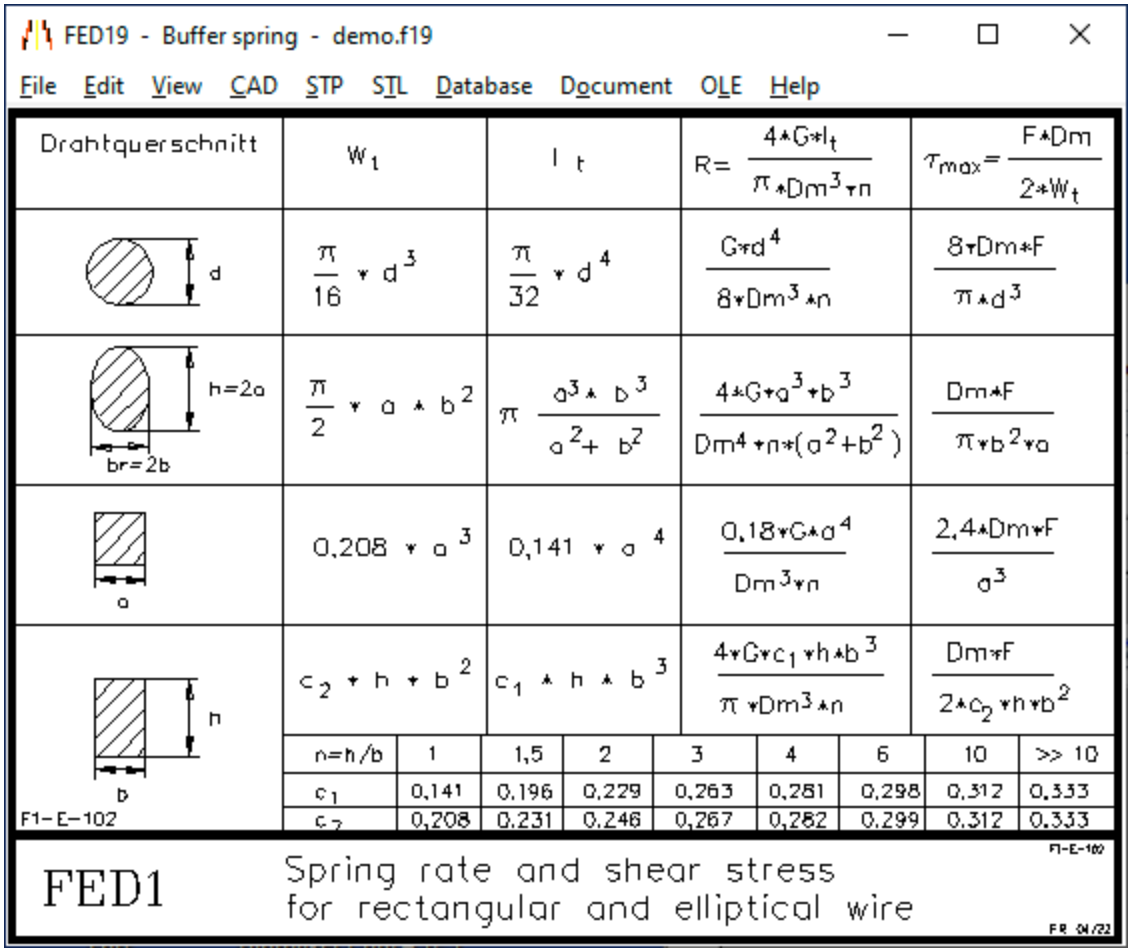
In the "recalculation" you can enter the dimensions of the spring (strip thickness, strip width, coil diameter at top/bottom, spring length, number of coils. For 2 spring lengths L1 and L2, FED19 calculates the spring forces F1 and F2.



It is also possible to increase or decrease the coil pitch, defined by the pitch ratio Po/Pu.
Buffer springs are subject to torsion, the coils twist under load and collide with each other. If you enter a friction coefficient under "Calculation method", the spring characteristic is displayed with hysteresis.



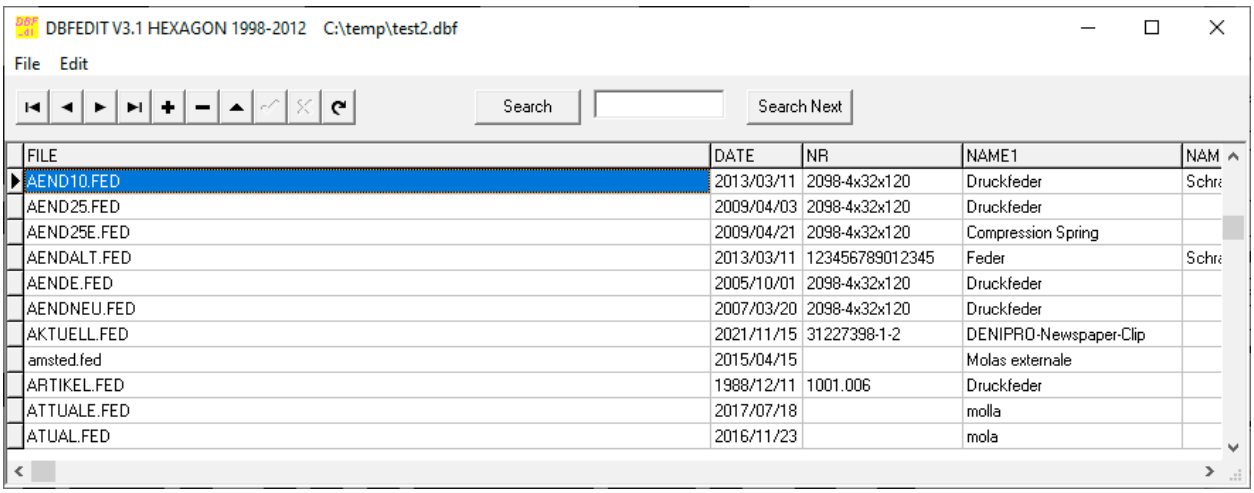
FED1+,2+,5,6,7,8,17,19: Auxiliary image with equations for spring calculation



Because the ratio of the spring band width to the band thickness of the buffer springs is usually greater than 10, the factors c1 and c2 for rectangular wire have been added in the c1/c2 table of the spring calculation help image. For very large strip width to strip thickness ratio, c1 and c2 are both 1/3.

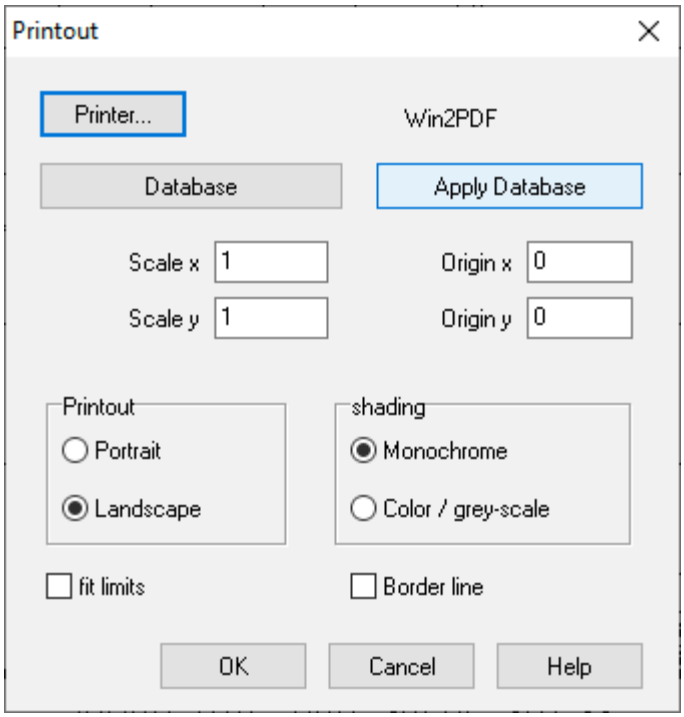
FED1+, FED2+, FED3+: Export all spring data for database or Excel

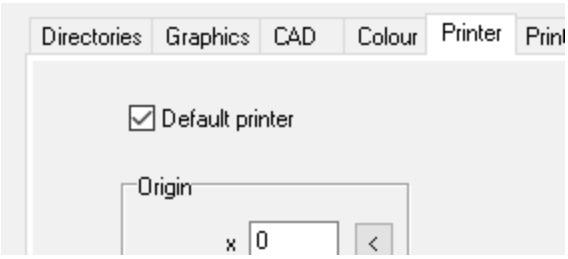
Until now, you could save the current calculation as a dbf or xls file under "File\Export dbf, xls". Now there is also the possibility to save all calculations in a folder into one dbf or xls file.



FILE	DATE	NR	NAME1	NAM
AEND10.FED	2013/03/11	2098-4x32x120	Druckfeder	Schra
AEND25.FED	2009/04/03	2098-4x32x120	Druckfeder	
AEND25E.FED	2009/04/21	2098-4x32x120	Compression Spring	
AENDALT.FED	2013/03/11	123456789012345	Feder	Schra
AENDE.FED	2005/10/01	2098-4x32x120	Druckfeder	
AENDNEU.FED	2007/03/20	2098-4x32x120	Druckfeder	
AKTUELL.FED	2021/11/15	31227398-1-2	DENIPRO-Newspaper-Clip	
amsted.fed	2015/04/15		Molas externale	
ARTIKEL.FED	1988/12/11	1001.006	Druckfeder	
ATTUALE.FED	2017/07/18		molla	
ATUAL.FED	2016/11/23		mola	

Printer settings





When printing the screen content, the default printer was previously set. In rare cases, there were problems when the default printer was removed or not available. Therefore, in January 2022, the default was removed, so you had to choose a printer first. This has now been criticized by customers who wanted the old printer function back after an update. So you no longer have to select the printer first, and with a pdf printer you had to enter a new file name, whereas previously the file name of the calculation was taken over. So the change was undone. However, if problems occur with deleted printers, you can now uncheck "Default printer" under File\Settings\Printer, then you must first select a printer.

Tip: Protection against cyber attacks: “Internet on demand” instead of “Always online”
The simplest and most effective protection against attacks from the network is disconnection from the network. This is practically impossible with smartphones, and it is also becoming increasingly difficult with Windows PCs. First you should set up Windows without a WLAN connection. "I do not have internet". With Windows 11 Home or S mode this is probably no longer possible, no Windows without a WLAN connection. After you have set up Windows without WLAN, you can still easily establish a WLAN connection afterwards. Uncheck “connect automatically”. Then configure the Internet connection as a “timed connection”. In this setting, the automatic updates of Windows and Co are also omitted. Then disconnect the WLAN connection and only go online if necessary.
If you have installed your HEXAGON software on drive C: (next to Windows) and the software no longer runs (“Invalid License Code”), then partitions on the hard disk have apparently been changed. If a Windows update is responsible for this, you can usually see it in the newly required key code request, because the C: hard drive appears to have shrunk by around 1 GB.

HEXAGON PRICE LIST 2022-05-01

Base price for single licences (perpetual)	EUR
DI1 Version 2.2 O-Ring Seal Software	190.-
DXF-Manager Version 9.1	383.-
DXFPLOT V 3.2	123.-
FED1+ V31.4 Helical Compression Springs incl. spring database, animation, relax., 3D,..	695.-
FED2+ V22.1 Helical Extension Springs incl. Spring database, animation, relaxation, ...	675.-
FED3+ V21.6 Helical Torsion Springs incl. prod.drawing, animation, 3D, rectang.wire, ...	600.-
FED4 Version 8.0 Disk Springs	430.-
FED5 Version 17.0 Conical Compression Springs	741.-
FED6 Version 18.0 Nonlinear Cylindrical Compression Springs	634.-
FED7 Version 15.0 Nonlinear Compression Springs	660.-
FED8 Version 7.4 Torsion Bar	317.-
FED9+ Version 7.0 Spiral Spring incl. production drawing, animation, Quick input	490.-
FED10 Version 4.5 Leaf Spring	500.-
FED11 Version 3.6 Spring Lock and Bushing	210.-
FED12 Version 2.7 Elastomer Compression Spring	220.-
FED13 Version 4.3 Wave Spring Washers	228.-
FED14 Version 2.7 Helical Wave Spring	395.-
FED15 Version 1.7 Leaf Spring (simple)	180.-
FED16 Version 1.4 Constant Force Spring	225.-
FED17 Version 2.1 Magazine Spring	725.-
FED19 Version 1.0 Buffer Spring	620.-
GEO1+ V7.5 Cross Section Calculation incl. profile database	294.-
GEO2 V3.3 Rotation Bodies	194.-
GEO3 V4.0 Hertzian Pressure	205.-
GEO4 V5.3 Cam Software	265.-
GEO5 V1.0 Geneva Drive Mechanism Software	218.-
GEO6 V1.0 Pinch Roll Overrunning Clutch Software	232.-
GEO7 V1.0 Internal Geneva Drive Mechanism Software	219.-
GR1 V2.2 Gear construction kit software	185.-
GR2 V1.2 Eccentric Gear software	550,-
HPGL-Manager Version 9.1	383.-
LG1 V7.0 Roll-Contact Bearings	296.-
LG2 V3.1 Hydrodynamic Plain Journal Bearings	460.-
SR1 V24.3 Bolted Joint Design	640.-
SR1+ V24.3 Bolted Joint Design incl. Flange calculation	750.-
TOL1 V12.0 Tolerance Analysis	506.-
TOL2 Version 4.1 Tolerance Analysis	495.-
TOLPASS V4.1 Library for ISO tolerances	107.-
TR1 V6.4 Girder Calculation	757.-
WL1+ V21.8 Shaft Calculation incl. Roll-contact Bearings	945.-
WN1 V12.4 Cylindrical and Conical Press Fits	485.-
WN2 V11.2 Involute Splines to DIN 5480	250.-
WN2+ V11.2 Involute Splines to DIN 5480 and non-standard involute splines	380.-
WN3 V 6.0 Parallel Key Joints to DIN 6885, ANSI B17.1, DIN 6892	245.-
WN4 V 6.1 Involute Splines to ANSI B 92.1	276.-
WN5 V 6.1 Involute Splines to ISO 4156 and ANSI B 92.2 M	255.-
WN6 V 4.1 Polygon Profiles P3G to DIN 32711	180.-
WN7 V 4.1 Polygon Profiles P4C to DIN 32712	175.-
WN8 V 2.6 Serration to DIN 5481	195.-
WN9 V 2.4 Spline Shafts to DIN ISO 14	170.-
WN10 V 4.4 Involute Splines to DIN 5482	260.-
WN11 V 2.0 Woodruff Key Joints	240.-
WN12 V 1.2 Face Splines	256.-
WN13 V 1.0 Polygon Profiles PnG	238.-
WN14 V 1.0 Polygon Profiles PnC	236.-
WNXE V 2.3 Involute Splines – dimensions, graphic, measure	375.-
WNXK V 2.2 Serration Splines – dimensions, graphic, measure	230.-
WST1 V 10.2 Material Database	235.-
ZAR1+ V 26.7 Spur and Helical Gears	1115.-

ZAR2 V8.2 Spiral Bevel Gears to Klingelnberg	792.-
ZAR3+ V10.4 Cylindrical Worm Gears	620.-
ZAR4 V6.3 Non-circular Spur Gears	1610.-
ZAR5 V12.4 Planetary Gears	1355.-
ZAR6 V4.3 Straight/Helical/Spiral Bevel Gears	585.-
ZAR7 V2.3 Plus Planetary Gears	1380.-
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ZAR9 V1.0 Cross-Helical Screw Gears	650.-
ZARXP V2.6 Involute Profiles - dimensions, graphic, measure	275.-
ZAR1W V2.6 Gear Wheel Dimensions, tolerances, measure	450.-
ZM1.V3.0 Chain Gear Design	326.-
ZM2.V1.0 Pin Rack Drive Design	320.-
ZM3.V1.0 Synchronous Belt Drive Design	224.-

PACKAGES	**EUR**
HEXAGON Mechanical Engineering Package (TOL1, ZAR1+, ZAR2, ZAR3+, ZAR5, ZAR6, WL1+, WN1, WN2+, WN3, WST1, SR1+, FED1+, FED2+, FED3+, FED4, ZARXP, TOLPASS, LG1, DXFPLOT, GEO1+, TOL2, GEO2, GEO3, ZM1, ZM3, WN6, WN7, LG2, FED12, FED13, WN8, WN9, WN11, DI1, FED15, GR1)	8,500.-
HEXAGON Mechanical Engineering Base Package (ZAR1+, ZAR3+, ZAR5, ZAR6, WL1+, WN1, WST1, SR1+, FED1,+, FED2+, FED3+)	4,900.-
HEXAGON Spur Gear Package (ZAR1+ and ZAR5)	1,585.-
HEXAGON Planetary Gear Package (ZAR1+, ZAR5, ZAR7, ZAR8, GR1)	3,600.-
HEXAGON Involute Spline Package (WN2+, WN4, WN5, WN10, WNXE)	1,200.-
HEXAGON Graphic Package (DXF-Manager, HPGL-Manager, DXFPLOT)	741.-
HEXAGON Helical Spring Package (FED1+, FED2+, FED3+, FED5, FED6, FED7)	2,550.-
HEXAGON Complete Spring Package (FED1+, FED2+, FED3+, FED4, FED5, FED6, FED7, FED8, FED9+, FED10, FED11, FED12, FED13, FED14,, FED15, FED16, FED17)	4,985.-
HEXAGON Tolerance Package (TOL1, TOL1CON, TOL2, TOLPASS)	945.-
HEXAGON Complete Package (All Programs)	14,950.-

Quantity Discount for Individual Licenses

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(Negative Discount means additional cost)

Language Version:

- **German and English :** all Programs
- **French**: FED1+, FED2+, FED3+, FED4, FED5, FED6, FED7, FED9+, FED10, FED13, FED14, FED15, TOL1, TOL2.
- **Italiano**: FED1+, FED2+, FED3+, FED4, FED5, FED6, FED7, FED9+, FED13, FED14, FED17.
- **Swedish**: FED1+, FED2+, FED3+, FED5, FED6, FED7.
- **Portugues**: FED1+, FED17
- **Spanish**: FED1+, FED2+, FED3+, FED17

Updates:

Software Update (software Win32/64 + pdf manual)	40 EUR
Software Update (software 64-bit Win + pdf manual)	50 EUR

Update Mechanical Engineering Package: 800 EUR, Update Complete Package: 1200 EUR
Maintenance contract for free updates: annual fee: 150 EUR + 40 EUR per program

Hexagon Software Network Licenses

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Conditions for delivery and payment

Delivery by Email or download (zip file, manual as pdf files): EUR 0.
General packaging and postage costs for delivery on CD-ROM: EUR 60, (EUR 25 inside Europe)
Conditions of payment: bank transfer in advance with 2% discount, or PayPal (paypal.me/hexagoninfo) net.
After installation, software has to be released by key code. Key codes will be sent after receipt of payment.

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