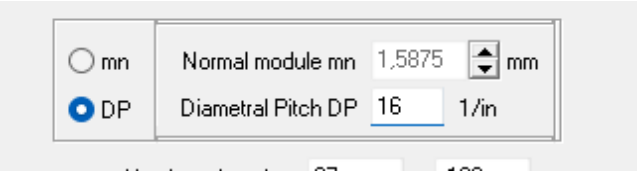
HEXAGON Newsletter 211 **May / June 2025**

by Fritz Ruoss

ZAR1+,2,3+,4,5,6,7,8,9,ZARXP,WN2,4,5,10,WNXE: Diametral Pitch
When switching to imperial units, the number of teeth per inch in the pitch circle is printed instead of normal module, that is 25.4 mm/module [mm]. Or 1/module [inch]. In addition to "Diametral Pitch DP," there are also designations "Normal Pitch Pn," "Spline Pitch P," or "Diametral pitch Dp." All ZAR programs now use the designation "Diametral pitch DP." Only WN4 and WN5 retain the designation "Spline pitch P."

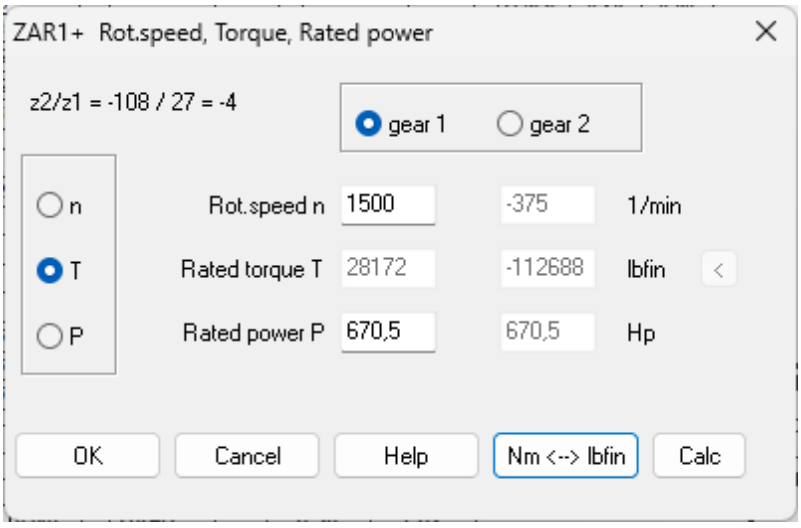
ZAR1+, ZAR5: Input Module or Diametral Pitch



In the gear programs, you can now choose whether to enter the module or DP. The option to enter the pitch value was already available, but DP was internally converted to the normal module. This resulted in inaccuracies in the µm range when repeating the input (mn=0.396875mm for DP 64 was saved as mn=0.3969mm), which can no longer occur.

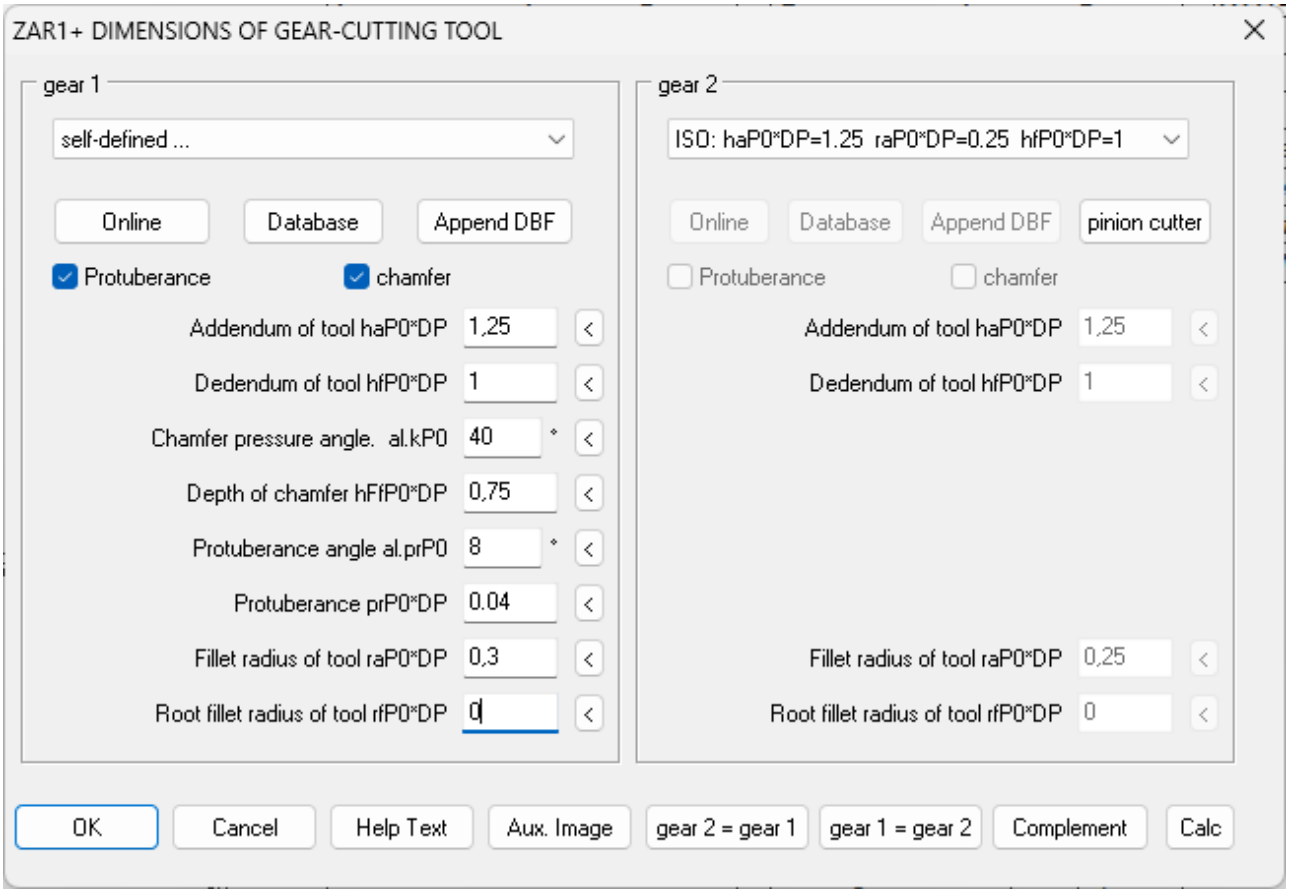
ZAR1+, ZAR5: Imperial Units: Hp instead of kW, ft/s instead of m/s
When switching to imperial units, in addition to inches, lbf, psi, and lbfin, power is now displayed in hp instead of kW, and speeds in ft/s instead of m/s.

Under "Edit\Input/Output" as well as in "Edit\Predimensioning" and "Edit\Predimension multi-stage" you can enter power in hp instead of kW.

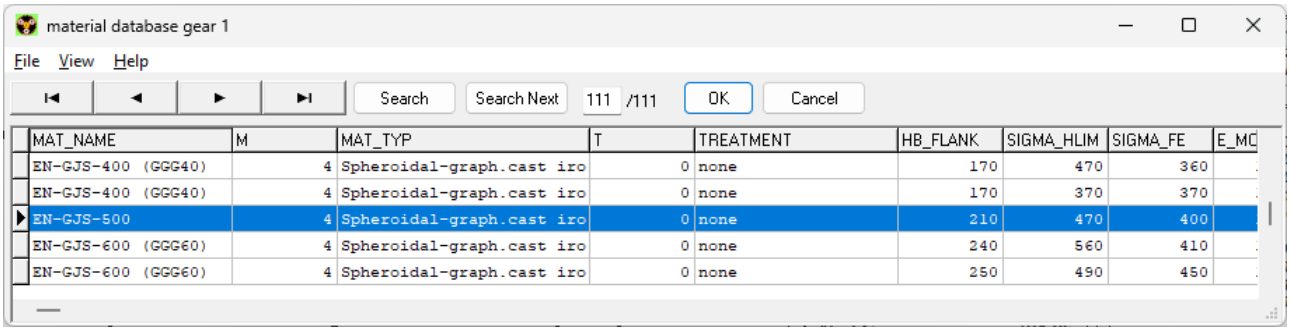


When switching to imperial settings, the text for entering the coefficients changes. The face width factor b/mn in mm is equal to b[in] * DP[1/in].

For the face height factors, for example, "haP0/mn" in mm is equal to "haP0[in] * DP[1/in]".



ZAR1+, 2+, 3+, 5, 6, 7, 8, 9: GJS-500 added



GJS-500 has been added to the gear material database. Its strength values are between GJS-400 and GJS-600.

ZAR5: Warning cffmin < 0 !

In ZAR5, the warning cff min<0 known from ZAR1+ was missing when the tooth tip hits the root fillet of the mating gear.

```
------------------------------------------------------------------------
Warning: cffmin < 0 ! (-0,436),SP
Origin : Distance between form diameter (tooth root) and tip
diameter of the mating gear is too small.
Remedy : Edit\Dimensions tooth: decrease tooth root fillet
radius or modify tooth height factors.
------------------------------------------------------------------------
Warning: cffmin < 0 ! (-0,426),PH
Origin : Distance between form diameter (tooth root) and tip
diameter of the mating gear is too small.
Remedy : Edit\Dimensions tooth: decrease tooth root fillet
radius or modify tooth height factors.
------------------------------------------------------------------------
```

FED13: Coil diameter at block

The outer diameter of the wave spring at the block length was included in the FED13 results printout. For the spring manufacturer, this also represents the blank size. The increase in the coil diameter is in the thousandths of a percent range.

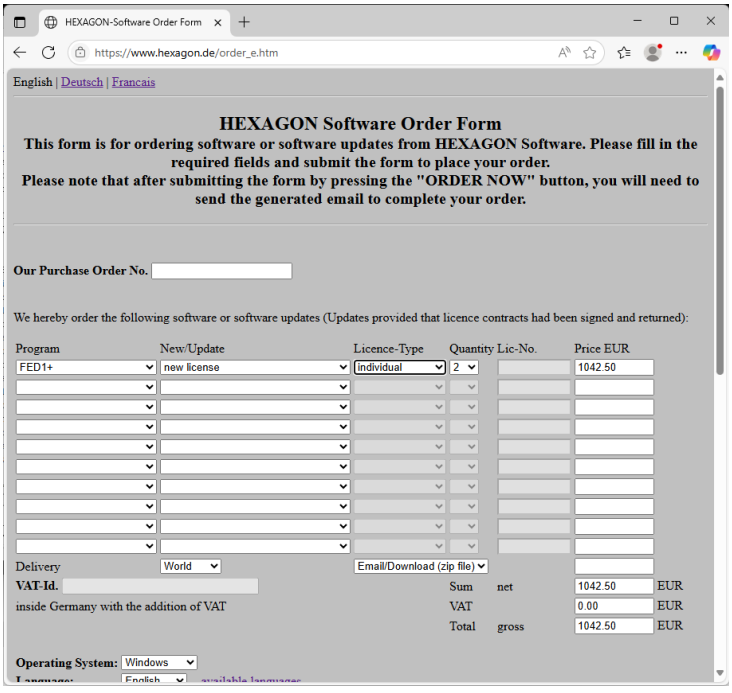
```
------------------------------------------------------------------------
Increase in coil diameter at Lc   deltaDe  mm            0,34
------------------------------------------------------------------------
Outside diameter                  Dec      mm          134,34
------------------------------------------------------------------------
```

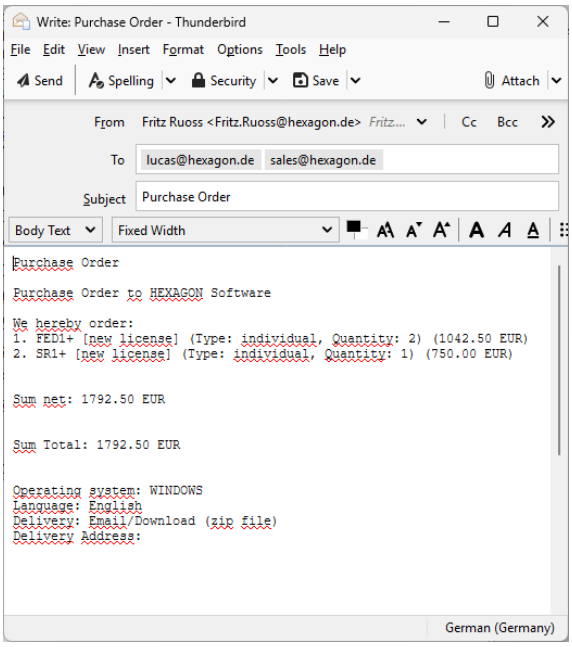
Floating licenses network statistics

The usage of floating licenses is recorded in the file "netststat.doc." The number of floating licenses currently in use has now been added.

```
FED1+ Float.Lic.1/2: 2025-05-30 7:54, UN=Fritz, UD=HEXAGON, CN=PC1
```

Online order improved





The online order now directly generates an email order without having to download the order_d.exe or copy the input form.

HEXAGON PRICE LIST 2025-07-01

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+ V32.2 Helical Compression Springs incl. spring database, animation, relax., 3D,..	695.-
FED2+ V22.7 Helical Extension Springs incl. Spring database, animation, relaxation, ...	675.-
FED3+ V22.1 Helical Torsion Springs incl. prod.drawing, animation, 3D, rectang.wire, ...	600.-
FED4 Version 8.0 Disk Springs	430.-
FED5 Version 17.7 Conical Compression Springs	741.-
FED6 Version 18.7 Nonlinear Cylindrical Compression Springs	634.-
FED7 Version 15.7 Nonlinear Compression Springs	660.-
FED8 Version 7.6 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 4.4 Wave Spring Washers	228.-
FED14 Version 2.9 Helical Wave Spring	395.-
FED15 Version 1.7 Leaf Spring (simple)	180.-
FED16 Version 1.4 Constant Force Spring	225.-
FED17 Version 2.7 Magazine Spring	725.-
FED19 Version 1.0 Buffer Spring	620.-
GEO1+ V7.5 Cross Section Calculation incl. profile database	294.-
GEO2 V3.4 Rotation Bodies	194.-
GEO3 V4.1 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 V1.4 Eccentric Gear Software	550,-
GR3 V1.3 Cycloidal Gear Software	600,-
HPGL Manager Version 9.1	383.-
LG1 V7.0 Roll-Contact Bearings	296.-
LG2 V3.1 Hydrodynamic Plain Journal Bearings	460.-
SR1 V25.5 Bolted Joint Design	640.-
SR1+ V25.5 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 V6.5 Girder Calculation	757.-
WL1+ V21.9 Shaft Calculation incl. Roll-contact Bearings	945.-
WN1 V12.4 Cylindrical and Conical Press Fits	485.-
WN2 V11.6 Involute Splines to DIN 5480	250.-
WN2+ V11.6 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 6.2 Involute Splines to ANSI B 92.1	276.-
WN5 V 6.2 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 4.5 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 2.4 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 27.2 Spur and Helical Gears	1115.-
ZAR2 V8.2 Spiral Bevel Gears to Klingelnberg	792.-
ZAR3+ V10.6 Cylindrical Worm Gears	620.-
ZAR4 V6.5 Non-circular Spur Gears	1610.-
ZAR5 V13.1 Planetary Gears	1355.-
ZAR6 V4.3 Straight/Helical/Spiral Bevel Gears	585.-
ZAR7 V2.7 Plus Planetary Gears	1380.-
ZAR8 V2.3 Ravigneaux Planetary Gears	1950.-
ZAR9 V1.1 Cross-Helical Screw Gears	650.-
ZARXP V2.6 Involute Profiles - dimensions, graphic, measure	275.-
ZAR1W V2.7 Gear Wheel Dimensions, tolerances, measure	450.-
ZM1.V3.1 Chain Gear Design	326.-
ZM2.V1.1 Pin Rack Drive Design	320.-
ZM3.V1.1 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, FED19)	4,985.-
HEXAGON Tolerance Package (TOL1, TOL1CON, TOL2, TOLPASS)	945.-
HEXAGON Complete Package (All Programs)	14,950.-

Quantity Discount for Individual Licenses

Licenses	2	3	4	5	6	7	8	9	>9
Discount %	25%	27.5%	30%	32.5%	35%	37.5%	40%	42.5%	45%

Network Floating License

Licenses	1	2	3	4	5	6	7..8	9..11	>11
Discount/Add.cost	-50%	-20%	0%	10%	15%	20%	25%	30%	35%

(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 Windows: 40 EUR, Update Win64: 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
Floating License in the time-sharing manner by integrated license manager.

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: 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.
Fee for additional key codes: 40 EUR

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