

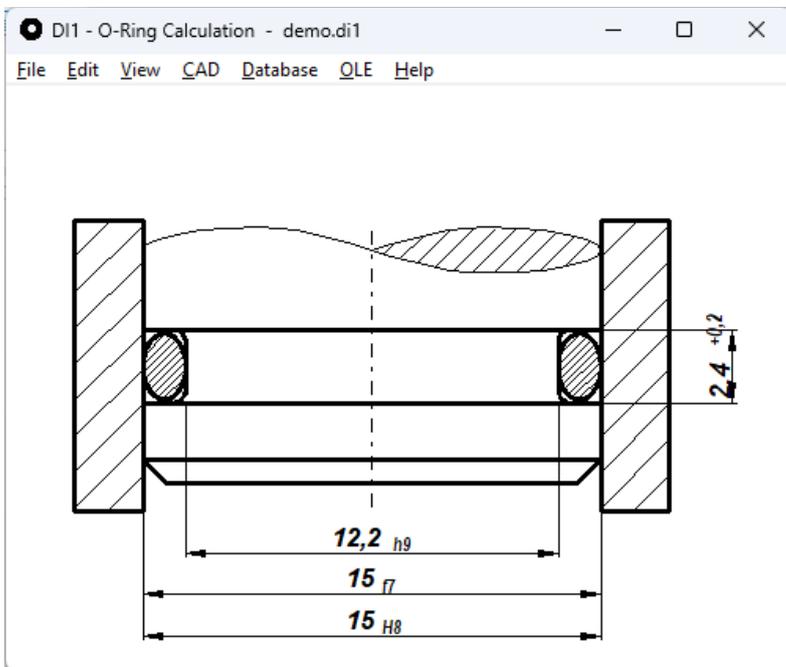
DI1



O-Ring Design

for Windows

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Application

- DI1 calculates O-Ring seals for these applications:
- radial outer sealings (piston/cylinder)
 - radial inner sealings (shaft/cylinder)
 - axial sealings (case)

Calculation

DI1 calculates squeeze of the o-ring under consideration of tolerances, reduction of cross section, concentric and eccentric position.

Database

The O-Ring database delivered with DI1 includes all the sizes according to DIN ISO 3601-1 (class A and B) for industrial applications ($d_2 = 1.78 / 2.62 / 3.53 / 5.33 / 6.99$ mm) and sizes for aeronautics ($d_2 = 1.8 / 2.65 / 3.55 / 5.3 / 7.0$ mm). You can modify and extend database records.

CS	STANDARD	TIDYN	TISTAT	B1	HAX	BMAX	R1	D1H
0,5		0	0,35	0,8	0,35	0,8	0,2	
0,74		0	0,5	1	0,5	1	0,2	
1		0	0,7	1,4	0,7	1,4	0,2	
1,02	ISO3601-1	0	0,7	1,4	0,7	1,4	0,2	
1,2		0	0,85	1,7	0,85	1,7	0,2	
1,25		0	0,9	1,7	0,9	1,7	0,2	
1,27	ISO3601-1	0	0,9	1,7	0,9	1,7	0,2	
1,3		0	0,95	1,8	0,95	1,8	0,2	
1,42		0	1,05	1,9	1,05	1,9	0,2	
1,6		1,25	1,1	2	1,1	2,1	0,3	
1,62	ISO3601-1	1,25	1,1	2	1,1	2,1	0,3	
1,6		1,3	1,2	2,1	1,2	2,2	0,3	
1,63		1,3	1,2	2,1	1,2	2,2	0,3	

		min	max
gap	s	mm	0,008 0,030
gap ecc	s ecc	mm	0,000 0,061
Groove depth incl. gap	z	mm	1,400 1,435
Groove depth incl. gap ecc	z ecc	mm	1,383 1,468
Reduction cross sect.	QV	%	0,8 3,0
Squeeze adm	sq adm	%	13,0 28,1
Squeeze excl. QV	sq-	%	15,6 24,7
Squeeze excl. QV	sq-	mm	0,27 0,46
squeeze	sq	%	13,0 24,2
squeeze	sq	mm	0,21 0,45
Squeeze ecc	sq ecc	%	11,1 25,2
Squeeze ecc	sq ecc	mm	0,18 0,47
Elongation d1 adm	el adm	%	0,5 8,0
Elongation d1	el	%	0,8 4,3
Groove fill	gf	%	80,0 82,9

O-Ring	nom	min	max
d1	mm	11,89 ± 0,19	11,700 12,080
d2	mm	1,78 ± 0,06	1,700 1,880
d2 QV	mm		1,649 1,848

Warning: sq < 13,0 % !
Warning: sqe < 13,0 % !

Dimensioning

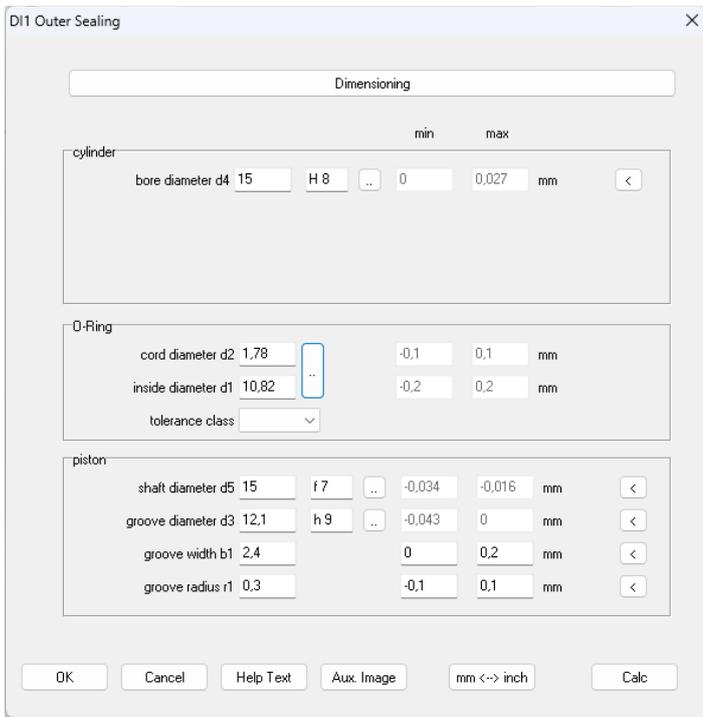
For Dimensioning, enter the main mounting dimensions, and DI1 searches a proper O-ring from database.

Recalculation

For Recalculation, enter all dimensions and tolerances, and DI1 calculates squeeze and strain. You can also calculate non-standard o-ring seals.

Limits

Results are checked for min and max values of squeeze, elongation, compression strain and groove filling. If overranged, DI1 reports error messages. In a diagram you can see how your O-ring design lays in the admissible squeeze zone.



Tolerances

You can directly input ISO tolerance terms according to DIN EN ISO 286, and DI1 converts into dimensions and tolerances.

Text Printout

Calculation results may be printed, saved as TXT or HTML file, or exported to MS-Excel.

Tables and Drawings

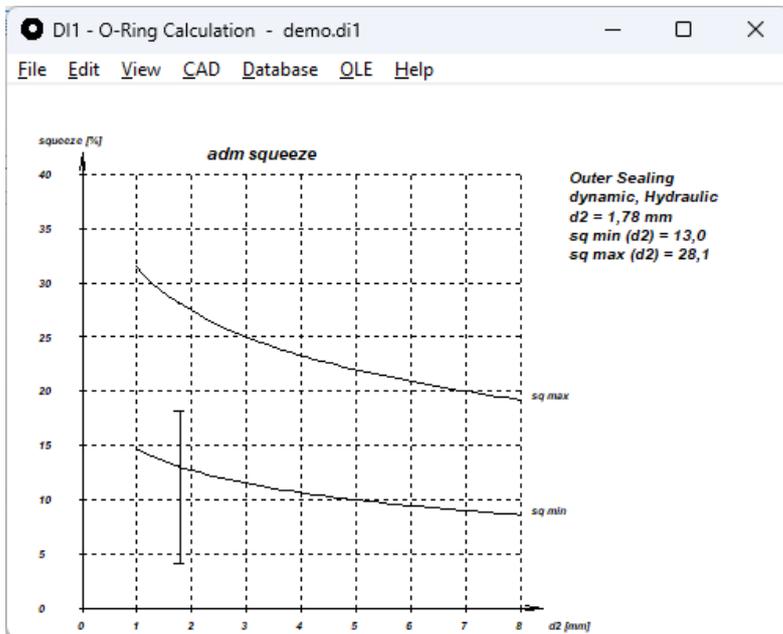
DI1 generates true-scale drawings of O-Ring design which may be exported to CAD via DXF or IGES file. Tables with dimensions and tolerances are also generated.

Quick View

Quick View displays drawings and diagrams on one screen.

Interfaces

Drawings and diagrams can be saved as DXF or IGES file to be loaded with CAD programs. The OLE interface lets you import/export data from/ to Excel.



User Interface

The dialogue windows of DI1 allow even the less experienced PC user to find his way around the program quickly. DI1 provides users with a help text wherever they are in the program. When the demo mode is selected, DI1 runs through a demo in which an example calculation is performed. DI1 contains auxiliary pictures with geometrical signs and formulas used by the program.

Units

DI1 can be switched between metric units (mm, N, MPa) and imperial units (inch, lbf, psi).

Export Formats

DXF, IGES, HTML, TXT, DBF, Excel, DI1.

Import Formats

TXT, DBF, Excel, DI1.

System Requirements

DI1 is available as 32-bit app or as 64-bit app for Windows 11, Windows 10, Windows 7.

Scope of Delivery

Program with user manual (pdf), example applications and help images, non-expiring license for unlimited time use with update rights.

Software Maintenance

HEXAGON Software is continuously improved and updated. Registered users are regularly kept informed of updates and new editions.

Guarantee

HEXAGON gives a 24 month guarantee on full functionality of the software. We provide help and support by email without extra charge.

