



Diameter Correction Tool for thread mills

DCT

Volume 1



Key features: DCT



1 Reduce setup & machining time

RPRG values are indicated on tool shank manufactured from November 2014. Now possible to reduce the checking and correction simply by entering the RPRG value.

2 Scale sleeve

Measurable range 100% ~ 50% tolerance of thread size (6H)

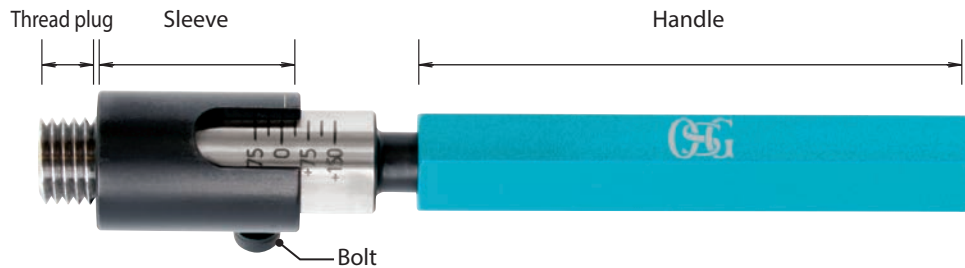
3 7 positions on the reading scale

With an attached reading scale, the effective diameter's position can be confirmed at a glance.

Key features & benefits DCT

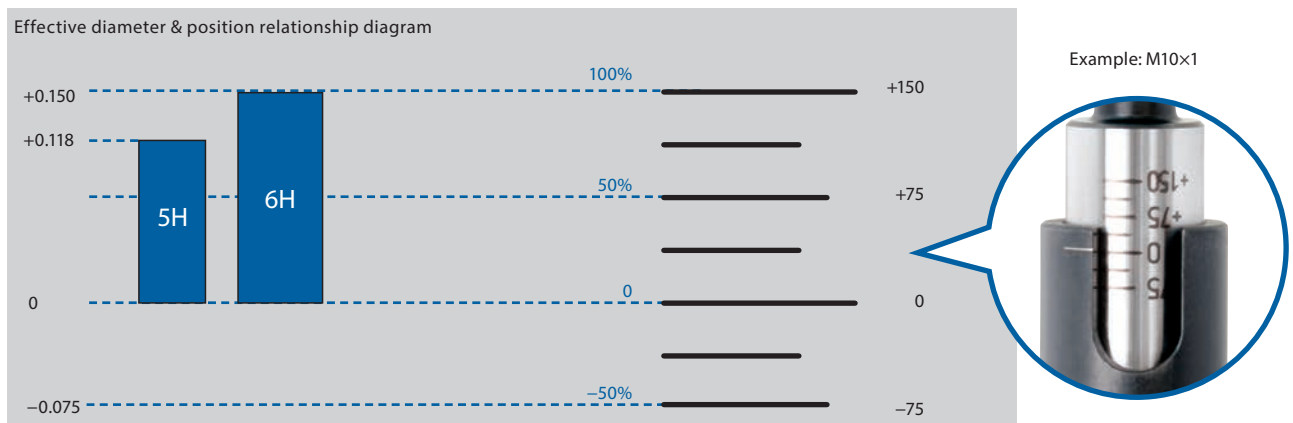
1 Reduce setup & machining time

The internal thread effective diameter, which used to be difficult to determine, can now be measured with readable values.



2 Scale sleeve

The DCT is made up of three components – the thread plug, scale sleeve and bolt for fixing the position. Measurable range from 100% ~ -50% tolerance of thread size (6H); with 7 positions on the reading scale.



3 Measuring method

1

Insert the DCT into the thread. Turn the tool until it has reached the deepest position.

2

Release the reading sleeve so that it touches the top of the thread. Fix the bolt by screwing it tight.

3

Turn the tool in reverse to remove it from the thread.

4

Read the value on the scale

* The reading value should be used as reference only. To inspect the screw thread please use the limit gauge (refer to p.6).
 * Depending on work environment this product may not be applicable.



EDP	Thread Size	Measurable depth (mm) in blind hole	Sleeve Dia.	Price
9342000	M6 × 1 – 1.5 D	9 ~	Ø13	
9342001	M8 × 1.25 – 1.5 D	12 ~	Ø13	
9342002	M8 × 1 – 1.5 D	12 ~	Ø13	
9342003	M10 × 1.5 – 1.2 D	12 ~	Ø15	
9342004	M10 × 1 – 1.2 D	12 ~	Ø15	
9342005	M12 × 1.75 – 1.2 D	14.4 ~	Ø17	
9342006	M12 × 1.5 – 1.2 D	14.4 ~	Ø17	
9342007	M12 × 1.25 – 1.2 D	14.4 ~	Ø17	
9342008	M14 × 2 – 1.2 D	16.8 ~	Ø19	
9342009	M14 × 1.5 – 1.2 D	16.8 ~	Ø19	
9342010	M14 × 1 – 1.2 D	16.8 ~	Ø19	
9342011	M16 × 2 – 1 D	16 ~	Ø21	
9342012	M16 × 1.5 – 1 D	16 ~	Ø21	
9342013	M18 × 2.5 – 1 D	18 ~	Ø23	
9342014	M18 × 1.5 – 1 D	18 ~	Ø23	
9342015	M20 × 2.5 – 1 D	20 ~	Ø25	
9342016	M20 × 1.5 – 1 D	20 ~	Ø25	
9342017	M24 × 3 – 1 D	24 ~	Ø29	

- 1) Customization is required for chamfer exceeding thread size + 1 mm and counterboring applications with a diameter less than the scale sleeve.
- 2) Accommodates 5H, 2 and 1 classes of fit.







EDP	Thread Size	Measurable depth (mm) in blind hole	Sleeve Dia.	Price
9342018	5/16 – 24UNJF – 1.5 D	11,9 ~	Ø13	

- 1) Customization is required for chamfer exceeding thread size + 1 mm and counterboring applications with a diameter less than the scale sleeve.

Contact your nearest OSG sales representative for more information.

Specials (alternative thread sizes, modification of reading scale, etc.) available upon request.

OSG Thread mill lineup

Product series		Size Range		Features
WX-ST-PNC-3P	Thread mill for small size	M1,8 ~ M20 MF 16 ~ MF 20 G1,8 ~ G2		<ul style="list-style-type: none"> • The 3-crest thread length reduces cutting forces and applies a low load to the tool and equipment. • A short overall length of 40mm for superb ease of use. • The WXS Coating, with a proven track record on end mills for high hardened materials, and an exclusive carbide base material.
WH-VM-PNC	for Small Diameter	S1~1.4 M1~1.8 M2~5 No.8		<ul style="list-style-type: none"> • Available from M1, 0.25 pitch small-diameter threads • Suitable for carbon steels, stainless steels, castings and non-ferrous metals • Cuts hardened steels exceeding 50HRC and heat-resistant alloys (M2 and larger) • Suitable for metric, S and unified threads
				
WX-ST-PNC	for Steels	M6~M24 U/UNJ 1/4~1 R/RC 1/16~2 RP/G 1/16~2 NPT 1/16~2		<ul style="list-style-type: none"> • Available from M6, 0.75 pitch threads • Suitable for carbon, stainless and hardened steels (up to 45HRC) • With/without coolant hole • Newly expanded with pipe thread mills
WXO-ST-PNC	for Steels with Internal Coolant Supply	M6 ~ M27		
WX-PNC	for Nonferrous Metals and Heat-Resistant Alloy	M6 ~ M27 UNF/UNC 1/4~7/8 RC 1/8~2 NPT 1/16~2		<ul style="list-style-type: none"> • Available from M6, 1 pitch threads • Suitable for non-ferrous metals and heat-resistant alloys • For metric, unified and pipe thread mills

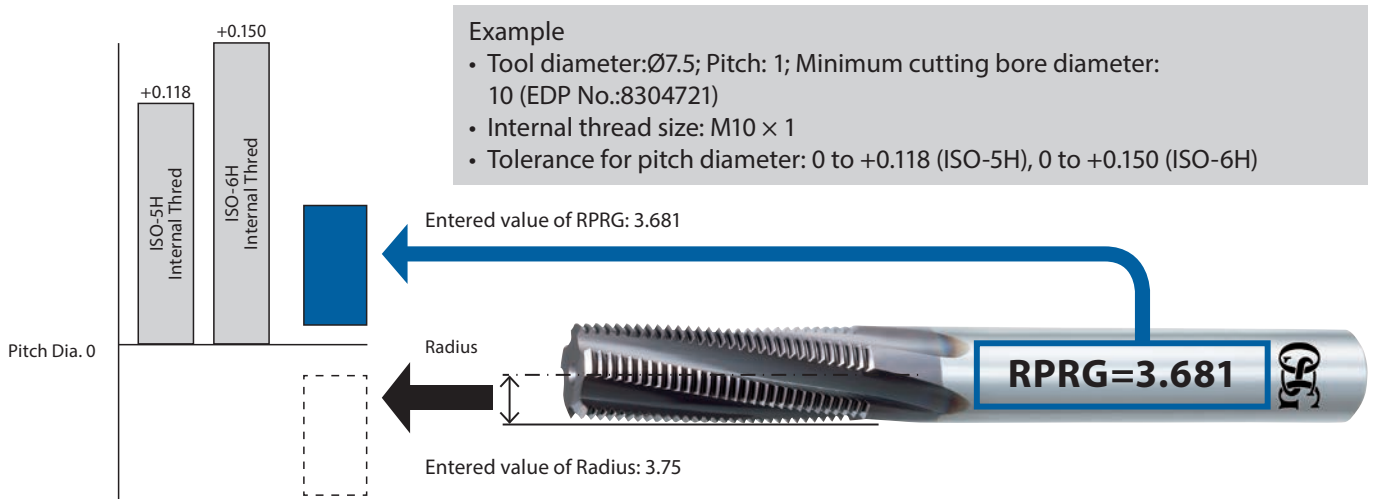
* Planet Cutter is a registered trademark of OSG Corporation.

Support tools for your thread milling needs

RPRG

RPRG is the reference value of tool radius offset

Conventionally, the tool radius was entered during setup as a parameter of the NC system, which was corrected by checking the thread with a gauge. However, it has become possible to reduce the checking and correction simply by entering the RPRG value indicated on the tool shank.



- RPRG is reference values. Optimal values for actual cutting depend on the machining environment. Determine optimal values after trial cutting.
- RPRG values are optimally established to achieve ISO:5H (formerly Grade 1) internal thread limits for metric threads and ANSI:3B internal thread limits for unified threads. RPRG values established for taper pipes (R/Rc) are effective when using the thread milling NC code generator software ThreadPro available on our website.
- For diameters of thread mills, RPRG values are calculated based on the minimum cutting bore diameter (the minimum cutting internal thread size of the tool diameter). To cut other diameters, it is necessary to use a smaller value than RPRG.
- RPRG values are indicated on tool shank manufactured from November 2014.

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ThreadPro

Thread milling NC Code Generator Software



- Available in 12 different languages
- Supports 8 NC programming languages
- Incorporates RPRG* value to further simplify process

* RPRG = reference value of tool radius offset



<http://www.osg.co.jp/>

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ThreadPro

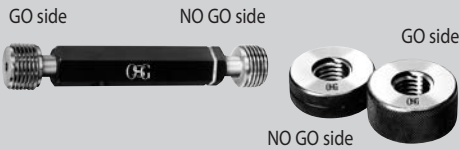
Tools for the gauging of threads

LG

Limit gauges for screw threads

for Internal thread

for External thread



Limit gauges for screw threads are graded in the same manner as screws. Screw threads are inspected according to two limits defined by GO and NO GO gauges. The Previous JIS gauge system provides two categories of NO GO gauges depending on the purpose of usage: machining and inspection. This classification is not used in the ISO system. Screw threads pass the inspection if the GO gauge, when screwed by hand without using excess force on the thread under test for the specified engagement length, goes over the entire thread length, and if the NO GO gauge, when screwed by hand without using excess force, enter on both sides by not more than two turns of thread (not more than three turns of thread in ANSI).

LG

(G·PF·PS)

Limit gauges for parallel pipe threads

for Internal thread

for External thread



In September 1966, the JIS standard for parallel pipe threads was revised to incorporate ISO standards. As a result, JIS B 0202 (principally addressing mechanical joints) was added to the existing JIS B 0203 (principally addressing sealability). The revision involved radical amendments to the specifications for screw thread gauges. The JIS B 0253 (PS) for taper threads focused on sealability as a principal purpose. Since sealability is concerned with the combination of an external taper thread and a parallel internal thread, screw thread plug gauges survived while screw thread ring gauges were discontinued. Meanwhile, JIS B 2054 (PF) was established principally for mechanical joints. Subsequently, JIS B 0202 (Parallel pipe threads) was revised in 1982. Its main text sets out the content of ISO 228/1, using the thread symbol "G," while "PF" used in the previous JIS edition is specified in the Appendix. Furthermore, the main text of JIS B 0203 (Taper pipe threads) also sets out the content of ISO 7/1, using thread symbols "R," "Rc" and "Rp." Symbols "PT" and "PS" used in the previous JIS edition are specified in the Appendix to the standard.

TG
(R·PT)

Gauges for taper pipe threads



Gauges for taper pipe threads are used to inspect taper pipe threads and parallel pipe internal threads that fit taper threads. A taper thread plug gauge and a taper thread ring gauge form a pair of gauges for taper pipe threads. To inspect the manufacturing tolerance for an internal taper thread or external taper thread, the notch in the large end of a taper thread plug gauge or the small end of a taper thread ring gauge is referred to. When a taper thread plug or ring gauge is screwed up into or on an internal or external taper thread by hand, the pipe or pipe fitting passes the inspection if its end is within the range defined by the notch. The JIS standard for taper pipe threads was revised in 1982. Its main text sets out the content of ISO 7/1, using thread symbols "R," "Rc" and "Rp." Symbols "PT" and "PS" used in the previous JIS edition are specified in the Appendix to the standard. To inspect pipe threads specified in the revised JIS, gauges that bear the new thread symbols should be used.

TG
(NPT)

Gauges for ANSI taper pipe threads



Gauges for ANSI taper pipe threads (NPT) are used to inspect taper pipe threads (NPT) in general sealable parts. Various gauge specifications are in use for NPT gauges, some of which have notches, while others do not. Commonly used thread plug and ring gauges are provided with three-step notches (L1). If the inspected taper thread conforms to the standard dimensions, the pipe end stops at the BASIC position, which is the middle notch on the gauge. The other two notches indicate the maximum and minimum allowed dimensions.

TG
(NPTF)

Gauges for ANSI taper pipe threads



Gauges for ANSI taper pipe threads (NPTF) are intended for threads used to join fuel or oil pipes in ships, automobiles, aircraft and etc. These threads are designed to achieve dry seal joints without using a sealing material. L1 plug and L1 ring are used to inspect the hand-tight length (L1) of external and internal threads. L3 plug and L2 ring are used to check the wrench-tight length (L3 and L2-L1) of external and internal threads. When the positional relationship of the notches of two gauges, L1 and L3 plugs, or L1 and L2 rings, is not more than a half turn, the degree of taper of the product is guaranteed.
* We offer L1 gauges as standard stocked items. L2 and L3 gauges are made to order.



shaping your dreams

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