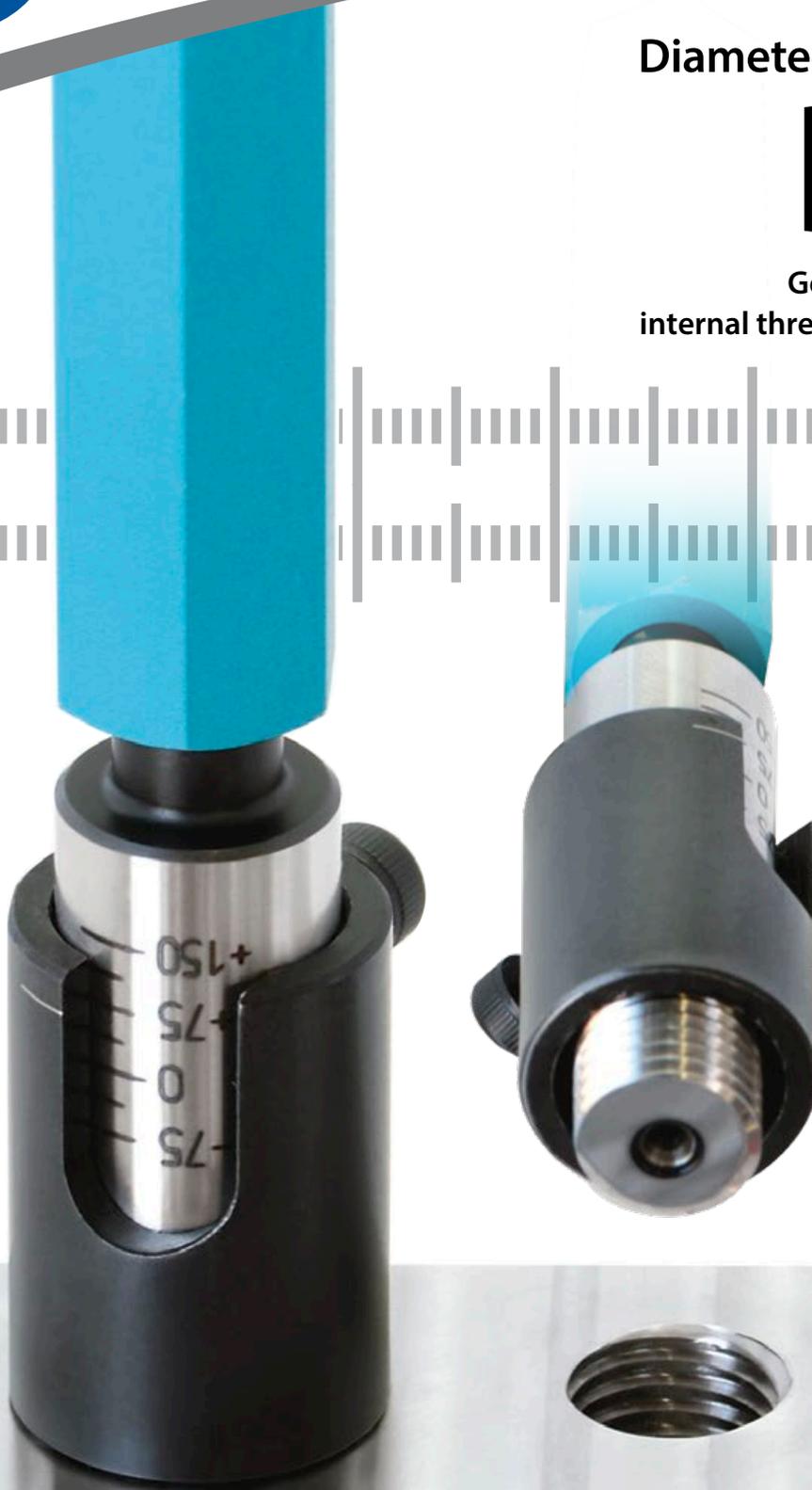




Diameter Correction Tool

DCT

Get accurate values of the
internal thread diameter at a glance!



Thread mills are ideal for the following

High-precision taper pipe threading (no stop marks)

Airtight threads by having no stop marks

Stop Marks



Processing by tap



Processing by thread mill

Thread cutting in drill holes with little allowance

Thread milling cuts the thread closer to the bottom of a hole than tapping, leaving only one incomplete crest of thread



3 Support Tools for Your Thread Milling Needs

Reduce setup, machining time, and achieve stable tool life with these 3 support tools.

1
RPRG
Reference value of tool radius offset

P.2 for details

- RPRG is the reference value of tool radius offset.
- 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.

Thread Milling

2

ThreadPro
Thread Milling NC Code Generator Software

P.2 for details

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

3

Diameter Correction Tool for Thread Mills

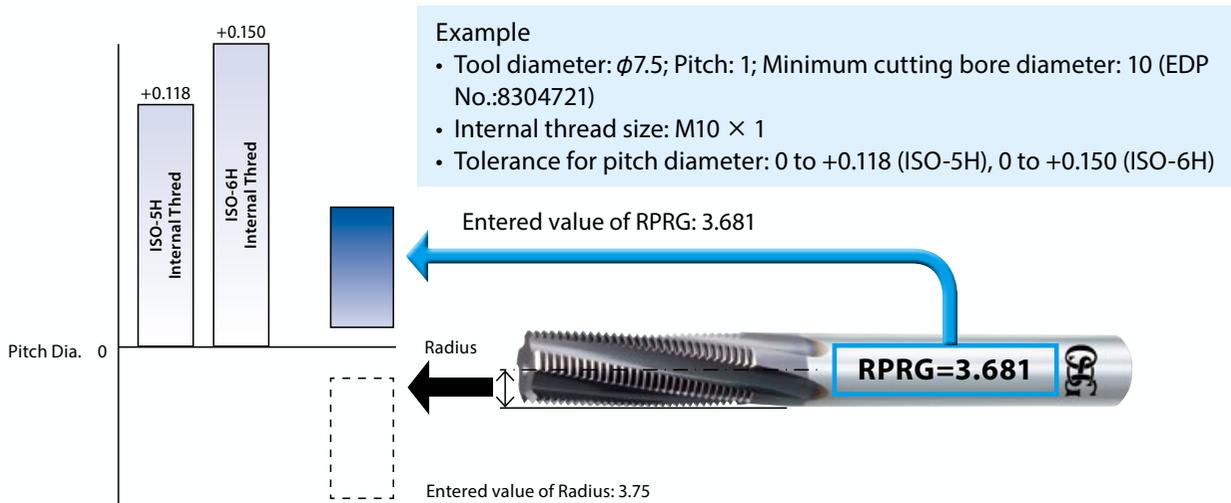
P.3 for details

- The internal thread effective diameter, which used to be difficult to determine, can now be measured with readable values.
- Measurable range from 100% ~ -50% tolerance of thread size (6H).
- With an attached reading scale, the effective diameter's position can be confirmed at a glance.

1 RPRG (Reference value of tool radius offset)

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.



• Notes

1. RPRG is reference values. Optimal values for actual cutting depend on the machining environment. Determine optimal values after trial cutting.
2. 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.
3. 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.
4. RPRG values are indicated on tool shank manufactured from November 2014.

2 ThreadPro (Thread Milling NC Code Generator Software)



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

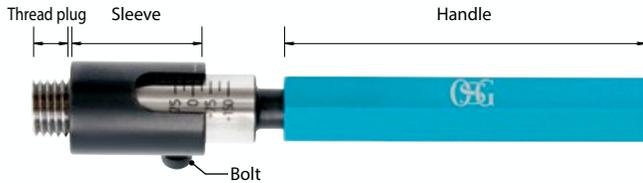
* RPRG = reference value of tool radius offset



Scan for details

3 Diameter Correction Tool for Thread Mills

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

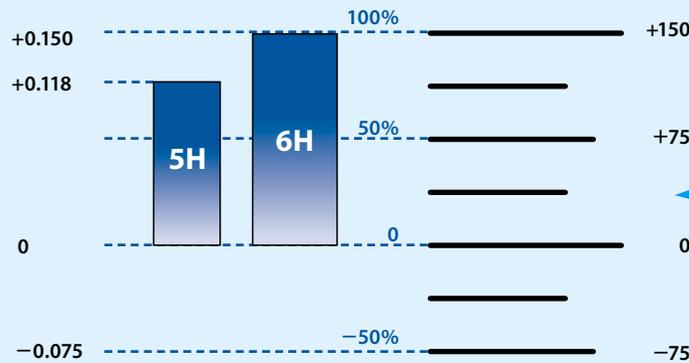


Specifications

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.

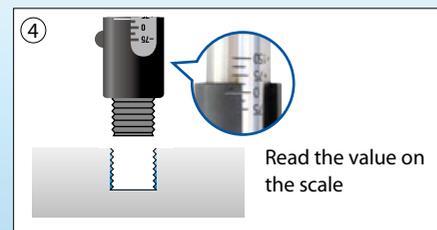
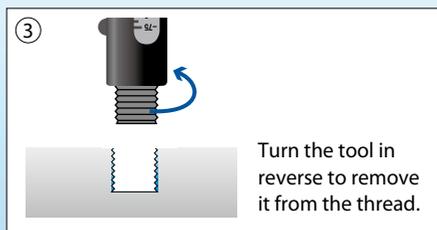
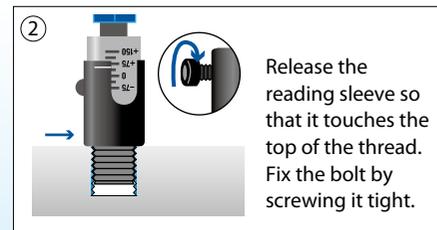
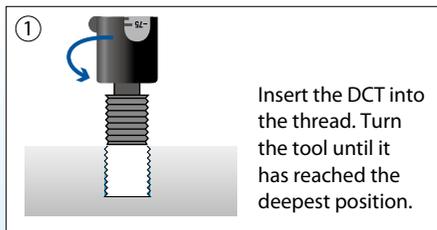
Example: M10×1

Effective diameter & position relationship diagram



Measuring Method

Get the value of the effective diameter at a glance by simply inserting the DCT into the thread and releasing the scale sleeve once it has reached the deepest position (for the correction of value in step processing of thread milling).



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



Diameter Correction Tool for Thread Mills

for 6H
with
scale



EDP No.	Thread Size	THLGTH	Measurable Depth (mm) in Blind Hole	Sleeve Dia.	Stock	Yen
9342000	M6 × 1 – 1.5D	9	9 ~	φ13	D	55,000
9342001	M8 × 1.25 – 1.5D	12	12 ~	φ13	D	56,200
9342002	M8 × 1 – 1.5D	12	12 ~	φ13	D	54,600
9342003	M10 × 1.5 – 1.2D	12	12 ~	φ15	D	56,800
9342004	M10 × 1 – 1.2D	12	12 ~	φ15	D	56,800
9342005	M12 × 1.75 – 1.2D	14.4	14.4 ~	φ17	D	58,400
9342006	M12 × 1.5 – 1.2D	14.4	14.4 ~	φ17	D	57,200
9342007	M12 × 1.25 – 1.2D	14.4	14.4 ~	φ17	D	58,400
9342008	M14 × 2 – 1.2D	16.8	16.8 ~	φ19	D	61,200
9342009	M14 × 1.5 – 1.2D	16.8	16.8 ~	φ19	D	60,600
9342010	M14 × 1 – 1.2D	16.8	16.8 ~	φ19	D	65,600
9342011	M16 × 2 – 1 D	16	16 ~	φ21	D	65,000
9342012	M16 × 1.5 – 1 D	16	16 ~	φ21	D	62,400
9342013	M18 × 2.5 – 1 D	18	18 ~	φ23	D	69,800
9342014	M18 × 1.5 – 1 D	18	18 ~	φ23	D	65,600
9342015	M20 × 2.5 – 1 D	20	20 ~	φ25	D	76,000
9342016	M20 × 1.5 – 1 D	20	20 ~	φ25	D	69,800
9342017	M24 × 3 – 1 D	24	24 ~	φ29	D	88,600

- 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.
- 3) If the internal thread is a blind hole, please confirm that the internal thread length is longer than the screw length of the DCT.

D = Standard stock item

for 3B
with
scale

EDP No.	Thread Size	THLGTH	Measurable Depth (mm) in Blind Hole	Sleeve Dia.	Stock	Yen
9342018	5/16 – 24UNJF – 1.5D	11.9	11.9 ~	φ13	D	77,000

- 1) Customization is required for chamfer exceeding thread size + 1 mm and counterboring applications with a diameter less than the scale sleeve.
- 2) If the internal thread is a blind hole, please confirm that the internal thread length is longer than the screw length of the DCT.

D = Standard stock item

Contact your nearest OSG sales representative for more information.

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

OSG thread mill series lineup

for Small Diameter	WH-VM-PNC	S1~1.4 M1~1.8 	<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 	
		M2~5 No.8 		
for Steels	WX-ST-PNC		<ul style="list-style-type: none"> Available from M6, 0.25 pitch threads Suitable for carbon, stainless and hardened steels (up to 45HRC) With/without coolant hole For metric, unified and pipe thread mills 	
for Steels with Internal Coolant Supply	WXO-ST-PNC			
for Nonferrous Metals and Heat-Resistant Alloy	WX-PNC		<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 	
HY-PRO P Single Point	HY-PRO P Single Point	 	<ul style="list-style-type: none"> One single insert compatible with multiple pitches Can be cut to adjust the overall length Multiple inserts are attached to improve efficiency 	
General-Purpose Solid Tools	for General Purpose, Solid Carbide Spiral-Fluted Type	OT-SFT-PNGT		
	for HSS	PNGT		
	for General Purpose, Solid Carbide Type	OT-PNGT		
	HY-PRO P Multi-Point	HY-PRO P Multi-Point	 	
Super-Planet Cutter for Multifunction Milling	Super-Planet Cutter for Multifunction Milling	DR-PNAC		<ul style="list-style-type: none"> One single tool for drilling, chamfering and internal threading Suitable for high-efficiency cutting of aluminum and cast iron
	Super-Planet Cutter for Multifunction Milling with Internal Coolant Supply	DR-O-PNAC		

* Planet Cutter is a registered trademark of OSG Corporation.



For the detail of tools listed above, please see "Thread Mill Series" Catalog.

OSG offers a comprehensive line of precision measurement tools for the gauging of threads.

LG Limit gauges for screw threads

for Internal thread for External thread

GO side NO GO side GO side


NO GO side

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

GO side NO GO side GO side


NO GO side

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



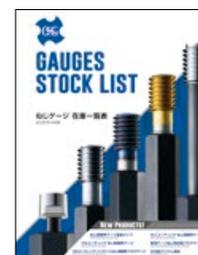
Gauges for ANSI taper pipe threads (NPT) are used to inspect taper pipe threads (NPT) in general sealable parts. Various gauge specifications are in use for NPT gauges, some of which have notches, while others do not. Commonly used thread plug and ring gauges are provided with three-step notches (L1). 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.

For the details of gauges listed above, please see "Gauges Stock List" .





shaping your dreams

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厚木 ☎(046)230-5030	京滋 ☎(077)553-2012	
諏訪 ☎(0266)58-0152	大阪 ☎(06)4308-3411	

〈工具の技術的なご相談は…〉

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〈その他のお問い合わせは…〉 E-mail:cs-info@osg.co.jp

〈最新情報〉 OSG HP <https://www.osg.co.jp/>

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安全にお使いいただくために

- 工具を使用する時は、破損する危険があるので、必ずカバー・保護眼鏡・安全靴等を使用して下さい。
- 切れ刃は素手で触らないで下さい。
- 切りくずは素手で触らないで下さい。
- 工具の切れ味が悪くなったら使用を中止して下さい。
- 異常音・異常振動が発生したら、直ちに使用を中止して下さい。
- 工具には手を加えないで下さい。
- 加工前に工具の寸法確認を行って下さい。

Safe use of cutting tools

- Use safety cover, safety glasses and safety shoes during operation.
- Do not touch cutting edges with bare hands.
- Do not touch cutting chips with bare hands. Chips will be hot after cutting.
- Stop cutting when the tool becomes dull.
- Stop cutting operation immediately if you hear any strange cutting sounds.
- Do not modify tools.
- Please use correct tools for the operation. Check dimensions to ensure proper selection.

◆ 製品については、常に研究・改良を行っておりますので、予告なく本カタログ掲載仕様を変更する場合があります。

◆ Tool specifications are subject to change without notice.

OSG代理店

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