AT-2 R-SPEC

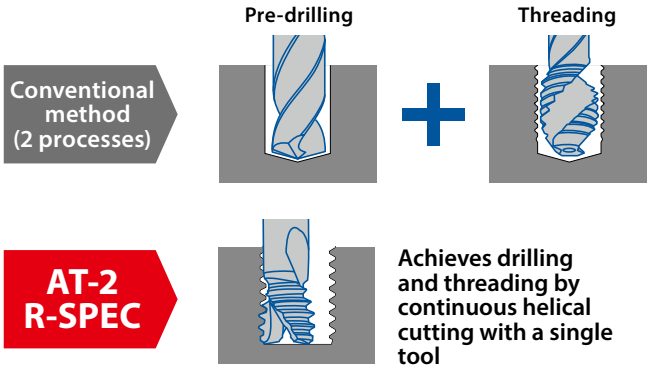
The A Brand

High-efficiency thread mill with end-cutting edge for non-ferrous metals

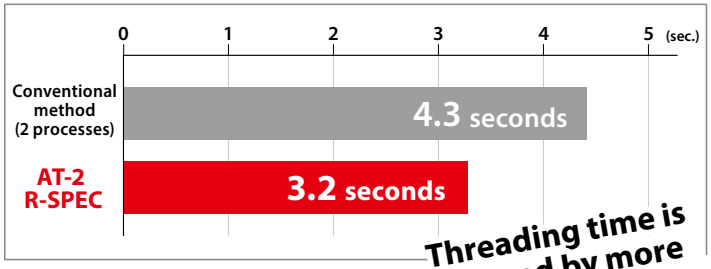
Super high-efficiency threading

"ThreadRacer"

Threading time can be dramatically reduced!



■ Threading time comparison with conventional method (includes non-cutting time)

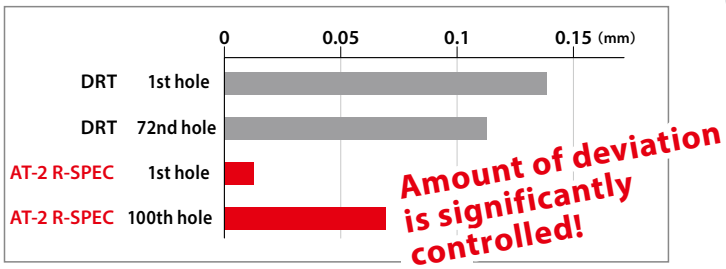


M6×1 Threading length 10mm ADC12 material
Conventional drill : Vc=126m/min,f=0.6mm/rev
Tap : Vc=94m/min (ATC: 1 time)
AT-2 R-SPEC : Vc=220m/min,f=1.2mm/rev

Useful for preventing shifting of cutting position in cast hole!

Rough position settings and inclined nature of cast holes can cause position shifting in following processes...

■ Comparison of hole position accuracy with drill tap (DRT)



M8×1.25 Depth 18mm AC material
Cutting test by shifting the axial center of ϕ4.3 pilot hole by 0.7 mm
Drill tap : Vc=100m/min,f=1.25mm/rev
AT-2 R-SPEC : Vc=220m/min,f=1.2mm/rev

Possible to thread with air-blow!

Q. Cutting oil sometimes cannot be used for machining aircraft and electrical parts...

A. Water-soluble coolant is generally recommended. However, air-blow can also be used when a pre-drilled hole is made to enhance chip separation and restrain welding of the DLC coating.

Left-hand cut configuration

Climb milling
*Counterclockwise spindle rotation

With end-cutting edge

Helical drilling + threading can be done simultaneously

Oil hole

Superior chip evacuation
(Tool DC = ϕ4.6 or more)

DLC-IGUSS coating

Welding prevention & long tool life

PAT.in Japan

Special cutting edge shape

Bending of the tool can be controlled

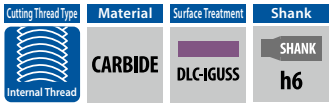
2-flute

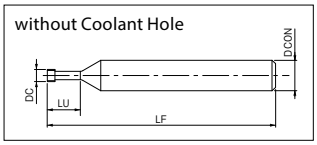
Wide chip room

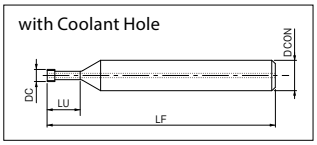
Roughing teeth (2 ridges)

Higher efficiency by load distribution

Dimension







Effective thread 2 x D type

Unit:mm

EDP No.	Thread Size	DC	LF	Maximum threading length	LU	DCON	Flutes	Oil Hole	Stock	Price (Yen)
8331220	M 3×0.5	2.4	50	6	7.75	6	2	—	○	9,410
8331221	M 4×0.7	3.1	50	8	10.45	6	2	—	○	9,580
8331222	M 5×0.8	4	50	10	12.8	6	2	—	○	9,960
8331223	M 6×1	4.6	50	12	15.5	6	2	○	○	10,200
8331224	M 8×1.25	6.2	70	16	20.38	8	2	○	○	15,900
8331225	M 10×1.5	7.5	80	20	25.25	10	2	○	○	16,600
8331226	M 12×1.75	9	80	24	30.13	10	2	○	○	17,700

Effective thread 2.5 x D type

Unit:mm

EDP No.	Thread Size	DC	LF	Maximum threading length	LU	DCON	Flutes	Oil Hole	Stock	Price (Yen)
8331227	M 3×0.5	2.4	50	7.5	9.25	6	2	—	○	9,410
8331228	M 4×0.7	3.1	50	10	12.45	6	2	—	○	9,580
8331229	M 5×0.8	4	50	12.5	15.3	6	2	—	○	9,960
8331230	M 6×1	4.6	50	15	18.5	6	2	○	○	10,200
8331231	M 8×1.25	6.2	70	20	24.38	8	2	○	○	15,900
8331232	M 10×1.5	7.5	80	25	30.25	10	2	○	○	16,600
8331233	M 12×1.75	9	80	30	36.13	10	2	○	○	17,700

○=Limited standard stock item

Recommended cutting conditions

ThreadPro

Use OSG's helpful NC code generator software "ThreadPro!"

Scan to access ▶

Work Material		Aluminum Alloy Casting						Wrought Aluminum Alloy・Magnesium Alloy						Copper Alloy					
		AC4C・ADC						A5052・A7075・AZ91・AZ80A						C1100					
Recommended Coolant		Water-Soluble						Water-Soluble						Water-Soluble					
Cutting Speed (m/min)		100 ～ 300						100 ～ 300						100 ～ 300					
Thread Size	DC	2 x D Type			2.5 x D Type			2 x D Type			2.5 x D Type			2 x D Type			2.5 x D Type		
		Speed (min^{-1})	Feed (mm/min)	Feed per Tooth (mm/t)	Speed (min^{-1})	Feed (mm/min)	Feed per Tooth (mm/t)	Speed (min^{-1})	Feed (mm/min)	Feed per Tooth (mm/t)	Speed (min^{-1})	Feed (mm/min)	Feed per Tooth (mm/t)	Speed (min^{-1})	Feed (mm/min)	Feed per Tooth (mm/t)	Speed (min^{-1})	Feed (mm/min)	Feed per Tooth (mm/t)
M 3×0.5	2.4	13,263	1,592	0.3	13,263	1,592	0.3	13,263	159	0.03	13,263	159	0.03	13,263	159	0.03	13,263	159	0.03
M 4×0.7	3.1	14,375	1,941	0.3	14,375	1,941	0.3	14,375	194	0.03	14,375	194	0.03	14,375	194	0.03	14,375	194	0.03
M 5×0.8	4	15,915	1,910	0.3	12,732	1,528	0.3	15,915	255	0.04	12,732	204	0.04	15,915	255	0.04	12,732	204	0.04
M 6×1	4.6	15,224	2,842	0.4	11,072	2,067	0.4	15,224	284	0.04	11,072	207	0.04	15,224	284	0.04	11,072	207	0.04
M 8×1.25	6.2	12,322	2,218	0.4	8,214	1,479	0.4	12,322	277	0.05	8,214	185	0.05	12,322	277	0.05	8,214	185	0.05
M10×1.5	7.5	10,186	2,037	0.4	6,791	1,358	0.4	10,186	255	0.05	6,791	170	0.05	10,186	255	0.05	6,791	170	0.05
M12×1.75	9	8,488	1,698	0.4	5,659	1,132	0.4	8,488	212	0.05	5,659	141	0.05	8,488	212	0.05	5,659	141	0.05

- AT-2 R-SPEC is only for milling internal threads.
- This cutting condition table shows standard values. When machining, it is recommended to use the program created by the NC code generator software ThreadPro.
- Please select "Single-feed" for the path type in ThreadPro. Please adjust the cutting conditions depending on the rigidity of machine, tool holders, and workpiece clamping.
- Tool vibrations should be kept at a minimum level for maximum accuracy.
- When machining magnesium alloy materials, please use the coolant oil recommended by the coolant oil manufacturer. Please also properly dispose the cutting chips to prevent fire hazards.
- Spindle rotation must be counterclockwise due to the left-hand cut configuration.

Note

Bottom shape of finished hole is as depicted in the right picture. Please make sure that it is acceptable based on the cutting instruction in advance.

OSG Corporation

Headquarters
3-22 Honnogahara, Toyokawa-City, Aichi 442-8543, Japan
TEL : +81-533-82-1118 FAX : +81-533-82-1136
E-mail : cs-info@osg.co.jp Web : https://www.osg.co.jp/

Central Japan Sales Division
1-9 Kifune, Meito-ku, Nagoya-City, Aichi 465-0058, Japan
TEL : +81-52-703-6131 FAX : +81-52-703-7775

Eastern Japan Sales Division
3-25-4 Minamimagome, Ota-ku, Tokyo 143-0025, Japan
TEL : +81-3-5709-4501 FAX : +81-3-5709-4515

Western Japan Sales Division
NaniwasuziSIA Bldg. #405, 2-4-2, Shin-machi, Nishi-ku,
Osaka-City, Osaka 550-0013, Japan
TEL : +81-6-6538-3880 FAX : +81-6-6538-3879

Copyright ©2021 OSG Corporation. All rights reserved. Tool specifications are subject to change without notice.

F-327.115.AA.AA (DN)
21.05