

NEW

INNOTOOL

LOOK FORWARD



ECO 6

PLUNGE MILL BW04E01

- High economic efficiency thanks to the 6-edged insert •*
- High process reliability - also in deep cavities •*
- Mainly axial cutting forces, low radial deflection •*
- Screw-in type plunge mill Ø20 up to Ø42 mm •*
- Inserts useable in shoulder-type and screw-in type end mills •*
- Aluminum geometry present •*

Product Overview

Following the successful implementation of our new **ECO 6** series in milling operations with shoulder mills and end mills, we are now using the same outstanding characteristics for a new series in the plunge mill area.

Our new **ECO 6 plunge mills** are a complement to the **ECO 6** series and are oriented in the small diameter range. We are thus not only extending and updating our product range, but are making the use of these inserts possible in many different tool concepts and applications.

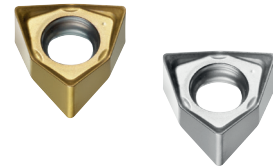
The standard version of the new series will be available as a screw-in type in a **Ø20 - Ø42 mm** range and will replace the previously available PunchIn tools BC...



Inserts

The 6-edged insert **WN_U04T3_N** is suitable for a max. side infeed of $b = 3.8$ mm and thanks to the 90° position in the tool body, generates a level surface during the machining process.

The insert has different corner radii and therefore, the effective tool diameter changes depending on how the insert is used.

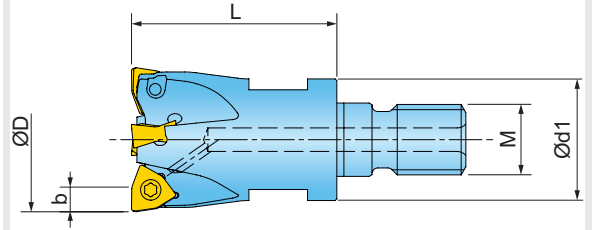
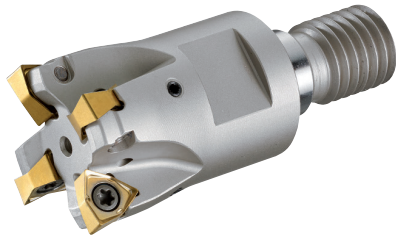


Advantages

- High economic efficiency thanks to the 6-edged insert
- Screw-in milling cutters for a diameter range $\text{Ø } 20 - \text{Ø } 42$ mm
- Generates 90° at the bottom
- Can also be used in shoulder and end mills
- Aluminum geometry present.

ECO 6 PLUNGE MILL BW04E01

SCREW-IN TYPE ADAPTION



Designation	D	d1	L	b	M	Z	IK	kg
BW.020.001	20	18	30	3,8	M10	3	✓	0,05
BW.025.001	25	21	35	3,8	M12	4	✓	0,10
BW.030.001	30	29	43	3,8	M16	5	✓	0,19
BW.032.001	32	29	43	3,8	M16	6	✓	0,20
BW.035.001	35	29	43	3,8	M16	6	✓	0,22
BW.040.001	40	29	43	3,8	M16	7	✓	0,25
BW.042.001	42	29	43	3,8	M16	7	✓	0,26

WNMU04T302N	WNMU04T304N	WNCU04T302FN-P
WNCU04T304FN-P	WNCU04T308FN-P	

Designation	fz(min/max)	Design	Grade	IN10K	IN2035	IN2504	IN2505	IN2530	IN4030
WNMU04T302N	0,07/0,18	positive geometry R0,2							
WNMU04T304N	0,07/0,18	positive geometry R0,4							
WNCU04T302FN-P	0,05/0,20	non-ferrous geometry R0,2	●						
WNCU04T304FN-P	0,05/0,20	non-ferrous geometry R0,4	●						
WNCU04T308FN-P	0,05/0,20	non-ferrous geometry R0,8	●						

● = P ● = M ● = K ● = N ● = S ○ = H

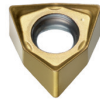
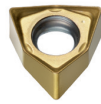
SPARE PARTS



SM25-064-00 (1,1Nm) DS-T08S

① = Insert screw ② = Screw driver

Tips & Parameters



insert:

feed per tooth fz [mm]:

recom. side infeed [mm]:

max. side infeed [mm]:

effective tool diameter [mm]:

	WNMU04T302N	WNMU04T304N	WNCU04T302FN-P	WNCU04T304FN-P	WNCU04T308FN-P
feed per tooth fz [mm]:	0,07 - 0,20	0,07 - 0,20	0,07 - 0,20	0,07 - 0,20	0,07 - 0,20
recom. side infeed [mm]:	step 2,5	step 2,5	step 2,5	step 2,5	step 2,5
max. side infeed [mm]:	step 3,8	step 3,8	step 3,8	step 3,8	step 3,8
effective tool diameter [mm]:	nom. Ø +0,1	nom. Ø	nom. Ø +0,1	nom. Ø	nom. Ø -0,1

Recommended Cutting Data:

material	cutting speed Vc [m/min]				feed per tooth fz [mm]
	1st choice dry machining resp. wear resistant carbide		1st choice wet machining resp. tough carbide		
unalloyed steel	IN2505	250-290	IN2530 / IN4030	200-240	0,07-0,18
alloyed steel 800 N/mm ²	IN2505	210-250	IN2530 / IN4030	160-200	0,07-0,13
alloyed steel 1100 N/mm ²	IN2505	160-180	IN2530 / IN4030	110-130	0,07
stainless steel	IN2505	120-180	IN4030 / IN6535	80-130	0,07-0,18
gray cast iron	IN2504	180-250	IN2530 / IN4030	150-200	0,07-0,18
nodular cast iron	IN2505	140-210	IN2530 / IN4030	110-160	0,07-0,13
aluminum	IN10K	800-1500	IN10K	500-800	0,07-0,20
high temperature alloys	IN2505	110-125	IN4030 / IN6535	60-80	0,07
titanium alloys	IN2505	40-50	IN4030 / IN6535	30-40	0,07
hard machining < 54 HRC	IN2504	30-40	-	-	0,07
hard machining < 63 HRC	-	-	-	-	-

Tips

- The worse the material machinability, the smaller the tool engagement should be chosen.
- The smaller the cutting tool diameter, the higher the cutting speed can be.
- The longer the programming length, the lower the cutting speed is.
- When plunging and for bottom contact the feed rate should be reduced by 30% at a distance of 3 mm.
- Retraction of the contour in 2 axes before retracting to the safety plane (approx. 0,2 - 0,5 mm) is recommended.
- Pay attention to the change in diameter depending on the indexable insert selection.

General Information:

insert screw: **SM25-064-00**

torque: **1,1 Nm**

torque wrench: **DTN011S with bit DS-T08TB**

Successful machining results depend on many factors, so cutting data recommendations can only be a rough guideline. Therefore in any case of doubt do not hesitate to contact your Innotool partner.