

* Please consult us for information on processing not on the list.

1. Applicable Range

These specifications apply to special molding products with a short lead time.

The grade used shall as a rule be TK8/NF15.

These specifications shall apply in principle and negotiations shall be used to handle single items depending on product configuration.

2. Basic Specifications

-1. Outside diameter (MAX. $\phi 59$)

Configuration	Tolerance
Solid carbide type	ϕD +0.9 +0.4
Solid-head carbide type	ϕD +1.0 +0.6

* ϕD is the finishing diameter

-2. Length (MAX. 330 mm)

Basic tolerance

Length	More than	Less than	More than	Less than	More than	Less than	More than	Less than
	—	50	50	100	100	150	150	—
Tolerance	+0.8 +0.3		+1.3 +0.3		+1.8 +0.3		+2.3 +0.3	

*1 This applies to both total length and the length of each step, but depending on direction of the grinding process, use the same tolerance width but a negative tolerance value.

*Use the shank standard for a cutting edge with a broad configuration.

-3. Flute processing (Flute length MAX. 250 mm)

Length	More than	Less than	More than	Less than	More than	Less than
	—	100	100	150	150	—
Tolerance	0 -1.0		0 -1.5		0 -2.0	

*2 If there are instructions for remaining flute length, use the same tolerance width and a positive tolerance value.

*3 Unless otherwise specified, whetstone radius for groove grinding is R 37.5. If this value is smaller than the R value used by the user, reduce the flute length to prevent sintered surface from remaining.

*4 You can select a flute inner angle R of R0, R1.0, R2.0 and R3.0. Use R0 unless otherwise specified.

*5 Helical flute processing can also be performed. Total length is max. 220 mm, unless otherwise specified, use R50.

Center height and center thickness

Tolerance
+1.0 +0.5

* Apply this to each specified dimension. If sinter is ordered, select -0.5 from the upper and lower limit in the table on the left.

* Please consult us for information on processing not on the list.

-4. Oil hole processing ($\phi 0.5$ -)

-5. Step processing

Do not perform step processing if the height difference is less than 1 mm (or if the difference in external diameter is less than 2 mm).

-6. Center

Center processing should be used for locations other than V-cut portions that have undergone brazing. Center point or center hole should be determined by the user. Use center hole processing for an end face if not otherwise specified.

-7. Runout

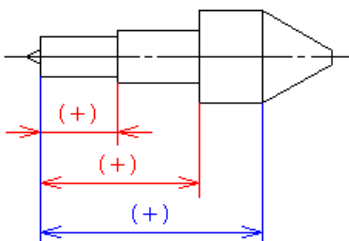
Configuration	Allowable value
Solid carbide type	NHM standard
Solid-head carbide type	0.3 or less

* NHM standard: When both centers are supported, use a minimum grinding allowance of -0.2 as the allowable value.

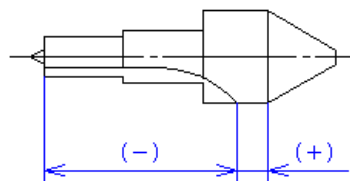
-8. Other details

Other processing is also possible, but if many complex processes are required, a separate meeting to discuss the delivery schedule may be necessary.

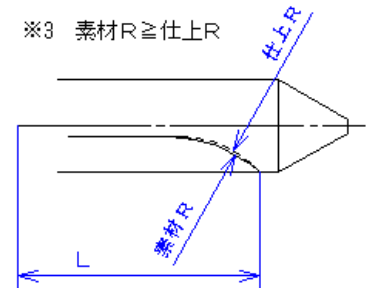
※1



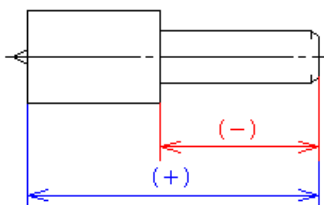
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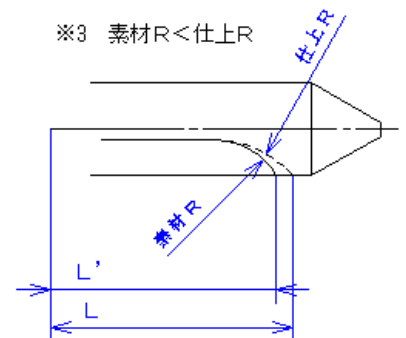
※3 素材R \geq 仕上R



※1



※3 素材R < 仕上R



1. Applicable Range

These specifications apply to center point and center hole of special molding products for quick delivery.

These specifications shall apply in principle and negotiations shall be used to handle single items depending on product configuration.

2. Center point (Figure - 1)

A selection should be made from the following table based on end face diameter.

End face diameter	$\phi d1$
- $\phi 5$ or less	—
More than $\phi 5$ - $\phi 10$ or less	3
More than $\phi 10$ - $\phi 20$ or less	4
More than $\phi 20$ -	5

* When the end-face diameter is $\phi 5$ or less, the center point becomes a cone with the same diameter as the end-face diameter.

3. Center hole (Figure - 2)

A selection should be made from the following table based on end face diameter.

End face diameter	$\phi d2$	$\phi d3$
- $\phi 5$ or less	0.7	—
More than $\phi 5$ - $\phi 10$ or less	1.0	2
More than $\phi 10$ - $\phi 15$ or less	1.5	3
More than $\phi 15$ - $\phi 20$ or less	2	4
More than $\phi 20$ -	2.5	5

[Figure - 1]

[Figure - 2]

