

Applicable workpiece

Application	Shape of Workpiece	Caution for machining
Plain Surface		<ol style="list-style-type: none"> Due to good chip control, step machining is not necessary for Soft Steel like SS400. When machining SUS304, for hole depths of more than 2.5D, utilize the step machining process. In order to have smooth chip removal, we recommend internal coolant.
Stacked Plates		<ol style="list-style-type: none"> Fix stacked plates securely to ensure they do not slip while machining.
Hole Expansion		<ol style="list-style-type: none"> If the overlap amount is less than $1/3 \times D$, machining is possible.
Concave Surface		<ol style="list-style-type: none"> When machining concave holes set the feed rates at half or less than continuous hole machining.
Pipe Material		<ol style="list-style-type: none"> Hole machining above the centerline of the pipe is possible. Do not machine on curved surface areas.

Not Recommended workpieces

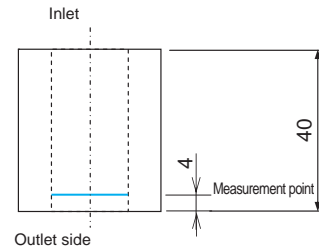
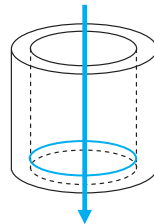
Application	Shape of Workpiece
Slant Surface	
Half Cylindrical	
Cored Hole	

Comparison of Cutting Precision

Cutting Condition and Measurement Point

<Cutting conditions>

Workpiece Material	C45 (S45C)
Vc (m/min)	100
f (mm/rev)	0.2mm/rev, 0.3mm/rev
Drilling depth H (mm)	Through hole (40mm)
Coolant	Wet (Internal coolant)
Tool	$\phi 14 \times 3D$ type
Machine	M/C



Roundness

1) Roundness (f=0.2mm/rev)

Indexable drill		Carbide solid drill		
Kyocera	Competitor F	Competitor B	Competitor C	Competitor N
Roundness: 5.5 μm	Roundness: 22.5 μm	Roundness: 6.4 μm	Roundness: 9.8 μm	Roundness: 5.2 μm

2) Roundness (f=0.3mm/rev)

Indexable drill		Carbide solid drill		
Kyocera	Competitor F	Competitor B	Competitor C	Competitor N
Roundness: 10.7 μm	Roundness: 15.2 μm	Roundness: 12.0 μm	Roundness: 11.8 μm	Roundness: 12.3 μm

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Drilling