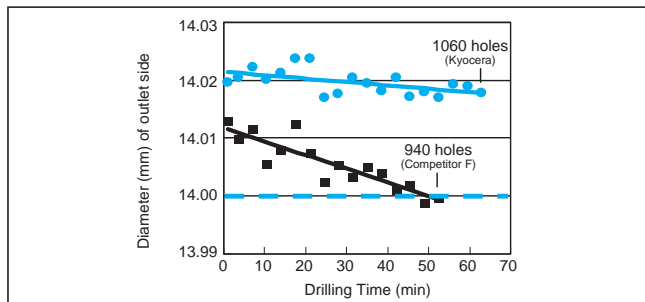
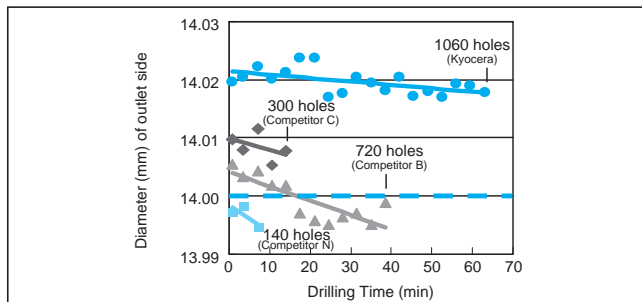


● Drilling Diameter (f = 0.3 mm/rev)

1) Comparison with indexable drill



2) Comparison with carbide solid drill



Q&A

Q-3 During deep hole machining using DRC (8D type), dimension variation of diameters has occurred at entrance and far (outlet) side possibly due to deflection. Is there any countermeasure?

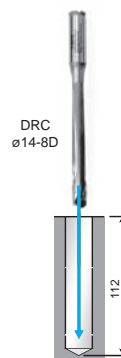
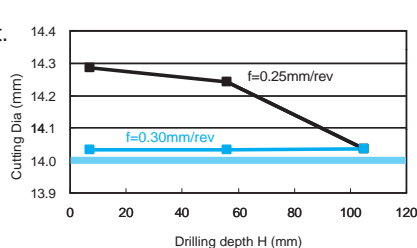
A-3 There are some countermeasures as follows to prevent deflection (to improve bite of drill).

Countermeasures 1

● Increasing the feed rate

Increasing the feed rate may keep the processing diameters constant.
(Estimated rate: Current rate + 0.03 to 0.05 mm/rev)

<Cutting conditions>
C55 (S55C) Vc=80m/min H=112mm
f=0.25mm/rev → 0.30 mm/rev
Wet (Internal coolant)
SS16-DRC140M-8
DC1400M-SC (PR0315)



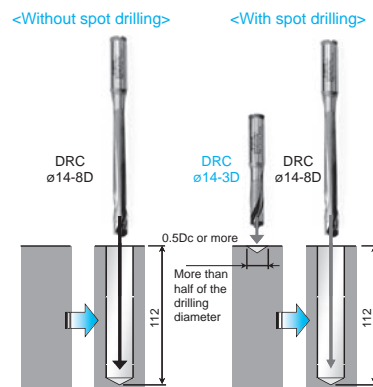
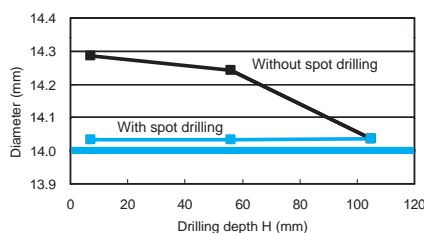
If increasing the feed rate is not possible because rigidity of machine or clamp is weak

Countermeasures 2

● Making a center spot

- 1) Make a center spot using the DRC drill or a commercially available center drill which has a vertex angle of about 140°. (If the center drill can be modified, make its vertex angle larger than 140°.)
- 2) Then drill the hole using the DRC drill (8D type).

<Cutting conditions>
S55C Vc=80m/min
f=0.25mm/rev H=112mm
Wet (Internal coolant)
SS16-DRC140M-3
SS16-DRC140M-8
DC1400M-SC (PR0315)



Case Studies

C50 (S50C)	
<ul style="list-style-type: none"> • Flange • Vc=97m/min (n=2,490min⁻¹) • H=32mm • f=0.3mm/rev (Vf=747mm/min) • Wet (Internal Coolant) • DC1250M-SC (PR0315) 	
SS14-DRC120M-3	3,000holes/insert
Competitor A	1,800holes/drill
Compared to competitor's drill A, MagicDrill DRC type has reduced burr and reduced more than 10% of the power required. Tool life has also improved greatly. (Evaluation by the user)	

42CrMo4 (SCM440)	
<ul style="list-style-type: none"> • Housing • Vc=83m/min (n=2,400min⁻¹) • H=32mm • f=0.24mm/rev (Vf=576mm/min) • Wet (Internal Coolant) • DC1100M-SC (PR0315) 	
SS12-DRC110M-3	2,400holes/insert
Competitor B	2,000holes/drill
Compared to competitor's solid drill B, MagicDrill DRC type has greatly reduced preparation time with its easy insert replacement feature. Also, the costs of spare tools for re-grinding has been reduced, and tool life has improved. (Evaluation by the user)	

