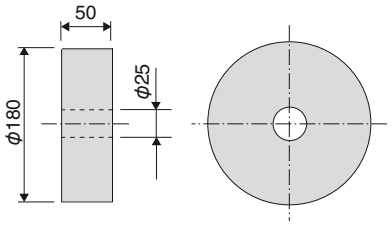
Case Studies

X40CrMoV51 (SKD62 (45HRC))

- Vc=60 m/min
- f=0.05 mm/rev
- H=50 mm (through hole)
- Wet (Internal Coolant)
- ZXMT070305GH (PR1230)
- S25-DRX250M-4-07



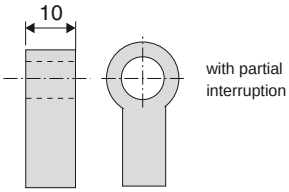
MagicDrill DRX	6 holes/edge
Competitor J	4 holes/edge (breakage)

150% of tool life

Results
- MagicDrill DRX has 1.5 times longer life than Competitor J
  Breakage is confirmed after machining 4 holes for Competitor J
  Interrupted machining is still possible after cutting 6 holes with MagicDrill DRX
- Finishing is not necessary because MagicDrill DRX provides a good finished surface (Evaluation by the user)

X10CrNiS18 9 (SUS303)

- Vc=75 m/min
- f=0.1 mm/rev
- H=10 mm (through hole)
- Wet (Internal Coolant)
- ZXMT06T204SM (PR1225)
- S25-DRX200M-3-06



MagicDrill DRX	1300 holes/edge
Competitor K	500 holes/edge

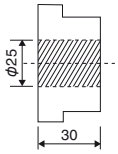
260% of tool life

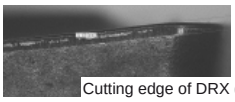
Results
- MagicDrillDRX had no sudden breakage that occurred for Competitor K and achieved stable machining with 2.6 times longer tool l life.

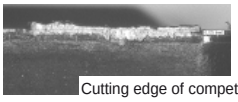
(Evaluation by the user)

SCM420HV (Cold Forging)

- Vc=118 m/min
- f=0.08 mm/rev (0.05 at the beginning)
- H=30 mm (through hole)
- Wet (Internal Coolant)
- ZXMT070305SM (PR1225)
- S25-DRX250M-3-07




Cutting edge of DRX (after 400 holes)


Cutting edge of competitors (after 400 holes)

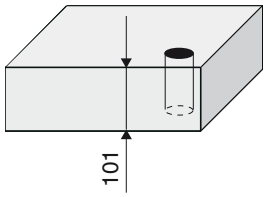
MagicDrill DRX	Less adhesion, continue to use even after 400 holes
Competitor L	Large adhesion (after 400 holes)

Results
- MagicDrill DRX had a good chip control and low adhesion for machining of the same number comparing to Competitor L.

(Evaluation by the user)

55NiCrMoV6 (SKT4 (42HRC))

- Vc=100 m/min
- f=0.07~0.08 mm/rev
- H=101 mm (through hole)
- Wet (External Coolant)
- ZXMT070305GM (PR1230)
- S25-DRX250M-4-07



Mold component ø25x101mm (through hole) 24 locations

MagicDrill DRX	Machining time : 28 min./pc
Conventional tool M	Machining time: 58 min./pc

50% reduction

Results
- For deep hole machining (4xD), MagicDrill DRX had no chip stuck and enabled machining without step feeding (machining time was reduced in half) despite use of external coolant
- MagicDrillDRX has improved 3 times longer tool life than Conventional tool M

(Evaluation by the user)