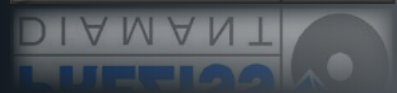


PCD metalworking tools applications machining data



global tool partner

applications machining data

Preziss *tool designs and applications*

application 1

component: automotive cylinder head
cam shaft bores.

Material: aluminium alloy

machine: transfer line

Spindle speed: 4.000 r.p.m.

Feed rate: Fz=0.13 mm Vc=350 m/min.

coolant: semi-synthetic (10%)

Size achieved: 26.517+/-0.002mm - 27.528+/-0.003mm

28.028+/-0.003mm - 28.528+/-0.003mm

36.034+/-0.003mm - 50.034+/-0.003mm

Finish achieved: 0.25Ra



PCD cam bore tool
long boring tool
adjustable pcd tipped blades
A.R.C compensation sys.
SK 50 taper
internal coolant



applications machining data

Preziss *tool designs and applications*

application 2

component: automotive cylinder head
cam shaft bores.

Material: aluminium alloy

machine: transfer line

Spindle speed: 4.000 r.p.m.

Feed rate: $F_z=0.13$ mm - $V_c=350$ m/min.

coolant: semi-synthetic (10%)

Size achieved:

Finish achieved:

PCD pilot cam bore tool
pilot finishing tool
adjustable pcd tipped blades
A.R.C compensation sys.
SK 50 taper
internal coolant



applications machining data

Preziss *tool designs and applications*

application 3

component: automotive cylinder head
PCD cam bore pilot reamer.

Material: aluminium alloy

machine: CNC horizontal machining center

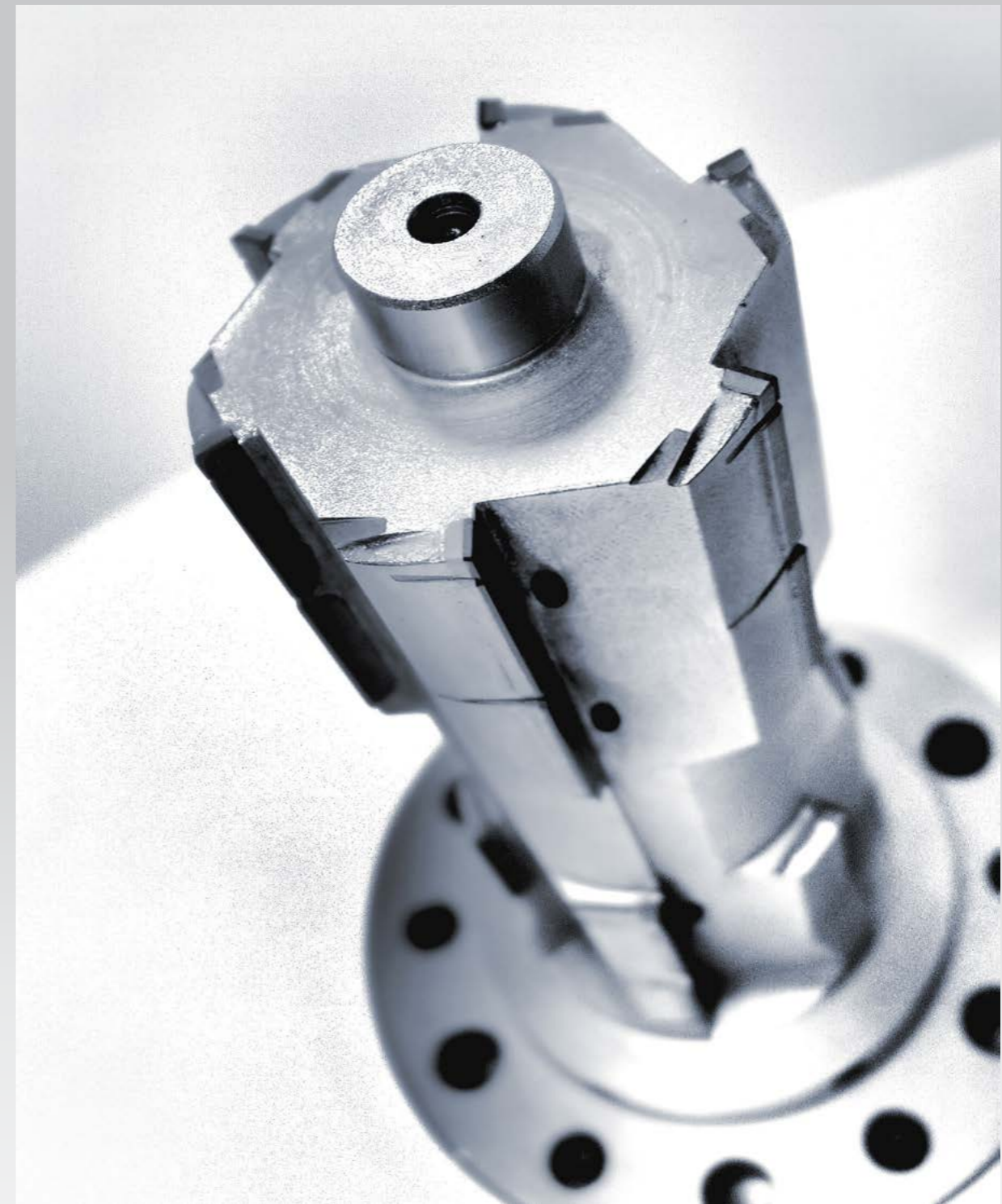
Spindle speed: 2.800 r.p.m.

Feed rate: $F_z=0.10$ mm/rev. - $V_c=378$ m/min.

coolant: semi-synthetic (10%)

Size achieved: 43.20 ± 0.002 mm - $43.196\pm 0.002/-0.000$ mm
 44.026 ± 0.002 mm

Finish achieved:



PCD Pilot tool
brazed pcd blades
A.R.C compensation sys.
SK 50 taper
internal coolant



applications machining data

Preziss *tool designs and applications*

application 4

component: automotive cylinder head
exhaust.

Material: aluminium alloy

machine: CNC horizontal machining center

Spindle speed: 5.000 r.p.m.

Feed rate: Fz=0.05 mm - Vc=510 m/min.

coolant: semi-synthetic (10%)

Size achieved: 12.012+/-0.002 mm- 31.015+/-0.003mm

Finish achieved:



PCD parent bore exhaust tool
brazed pcd blades
run out compensation
SK 50 taper
internal coolant

applications machining data

Preziss *tool designs and applications*

application 5

component: shifter shaft hole. drilling blind hole and reaming.

Material: aluminium alloy

machine: CNC machining center

Spindle speed: 1.800-2.600 r.p.m.

Feed rate: $F_z=0.037$ mm - $V_c=68-98$ m/min.

coolant: semi-synthetic (12%)

Size achieved: 12.0mm+0.050/+0.045

Finish achieved:

PCD boring/reaming tool
brazed pcd blades
helical shape concept
HM body
internal coolant



applications machining data

Preziss *tool designs and applications*

application 6

component: dowel hole machining. drilling blind hole and reaming.

Material: aluminium alloy

machine: CNC vertical machining center

Spindle speed: 4.300 r.p.m.

Feed rate: $F_z=0.05$ mm - $V_c=203$ m/min.

coolant: semi-synthetic (12%)

Size achieved: 15.0mm+0.002/-0.002

Finish achieved:



PCD boring/reaming tool
brazed pcd blades
helical shape concept
HM body
internal coolant



applications machining data

Preziss *tool designs and applications*

application 7

component: blind hole reaming.

Material: aluminium alloy

machine: CNC Heller machine.

Spindle speed: 4.500-8.000 r.p.m.

Feed rate: $F_z=0.08$ mm - $V_c=56 - 100$ m/min.

coolant: semi-synthetic (12%)

Size achieved: 4.008mm $+0.003/-0.003$

Finish achieved:

PCD reaming tool
brazed pcd blades
helical shape concept
HM body
internal coolant



applications machining data

Preziss *tool designs and applications*

application 8

component: blind hole drilling and reaming.

Material: aluminium alloy

machine: CNC Fancu machine.

Spindle speed: 1.250-1.400 r.p.m.

Feed rate: $F_z=0.04-0.05$ mm - $V_f=94 - 105$ mm/min.

coolant: semi-synthetic (12%)

Size achieved: 18.10mm $+0.050/-0.050$ -

20.022 $+0.002$ mm/ -0.002 mm

23.10mm $+0.000/-0.008$ mm

24.260 $+0.002$ mm/ -0.002 mm

Finish achieved:

PCD step drill
reamer /cluth housing
brazed pcd blades
helical shape concept
HM body
internal coolant



applications machining data

Preziss *tool designs and applications*

application 9

component: PTU HOUSING hole reaming reaming and circular milling.

Material: aluminium alloy

machine: CNC machine.

MILLING

Spindle speed: 2.600-5.000 r.p.m.

Feed rate: Fz=0.05-0.08 mm - Vc=326 - 628 m/min.

REAMING

Spindle speed: 3.500 - 4.500 r.p.m.

Feed rate: Fz=0.5-0.65 mm - Vc=637 - 820 m/min.

coolant: semi-synthetic

Size achieved: 55.00+/-0.1 mm

58.031mm +0.003/-0.003mm

Finish achieved:

PCD combined tool
reaming + circular milling
brazed pcd blades
HSK 63 A taper
internal coolant



applications machining data

Preziss *tool designs and applications*

application 11

component: finishing hole.

Material: aluminium alloy

machine: CNC machine.

Spindle speed: 8.000-12.000 r.p.m.

Feed rate: $F_z=0.05 - 0.15 \text{ mm}$ - $V_c=450-678 \text{ m/min.}$

coolant: semi-synthetic (12%)

Size achieved: $18.10\text{mm}+0.050/-0.050$

Finish achieved:



PCD finishing reamer
brazed pcd blades
helical shape concept
HM body
internal coolant
A.R.C hydro system
SK 40 taper

applications machining data

Preziss *tool designs and applications*

application 11

component: finishing holes.

Material: aluminium alloy

machine: CNC machine.

Spindle speed: 4.000-6.000 r.p.m.

Feed rate: $F_z=0.05 - 0.15 \text{ mm}$ - $V_c=300-450 \text{ m/min}$.

coolant: semi-synthetic (12%)

Size achieved: $20.022 +0.002\text{mm}/-0.002\text{mm}$

$24.260 +0.002\text{mm}/-0.002\text{mm}$

Finish achieved:



