

# High Precision Wire – The Ideal Tool To Manufacture Perfect Bores!

## acuwire-L

### bore size range

inch 0.160" – 0.080"  
metric 0.400mm – 2.000mm

### max. OD of part

inch 0.400"  
metric 10.000mm  
(customized solutions are available  
for larger diameters)

### usable arbor length

(wire-DSM length)  
inch 11 1/2"  
metric 290mm

### wire-DSM process control

NC control Siemens Simatic S7-200  
user interface Siemens Touch Screen  
(other user interfaces are available  
on request)

### wire-DSM spindle motor

rpm 500 - 4000 stageless

### electrical specifications

voltage 200V – 230V  
frequency 50Hz – 60Hz  
load 0.6kW

### dimensions

inch (LxHxW) 64" x 57" x 26"  
metric (LxHxW) 1600 x 1430 x 650 mm

weight 300kg / 660lbs.



acuwire-L  
"patent pending"



acucast-H  
(Arbor Casting System)

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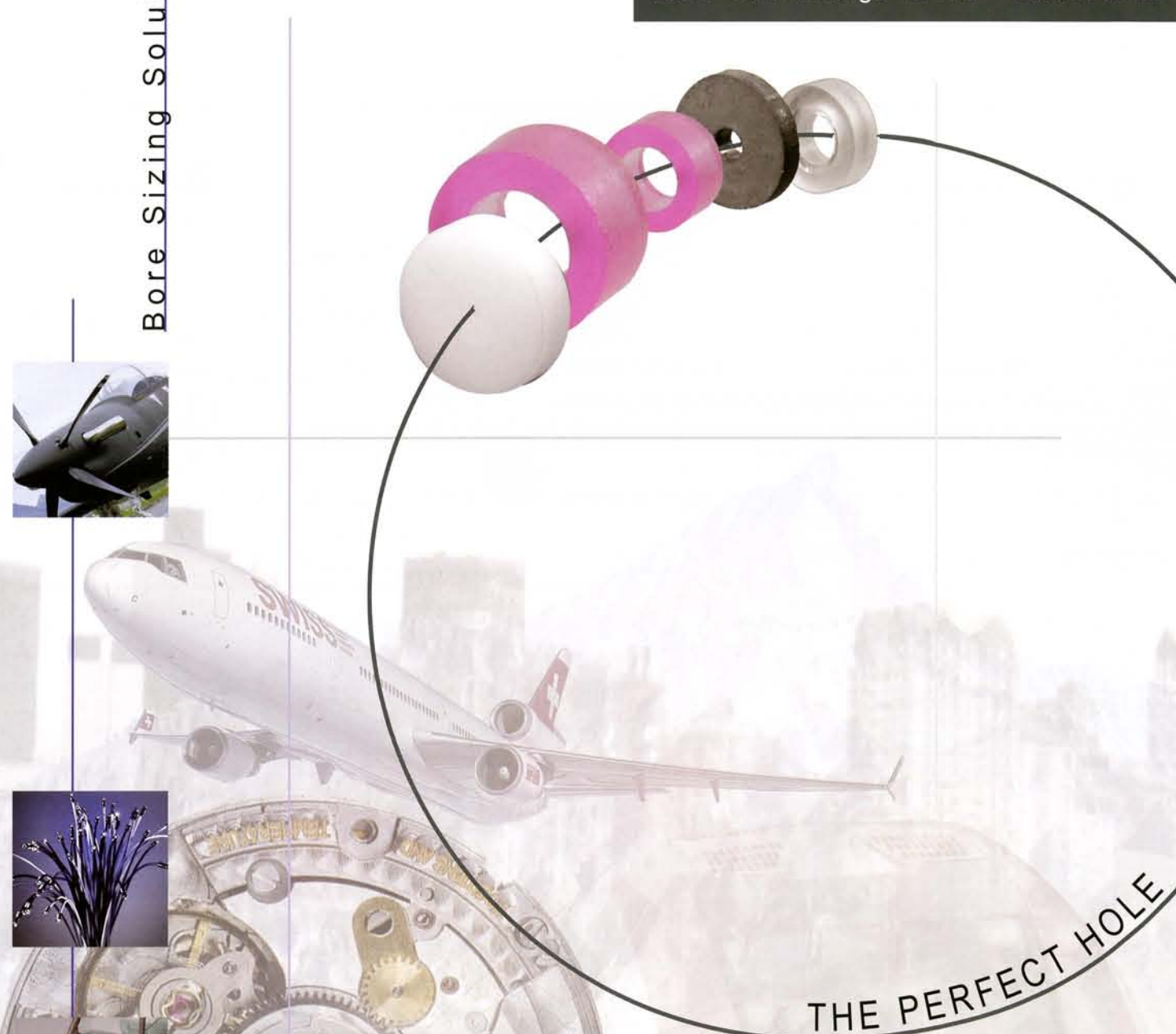
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ENGINEERING

Bore Sizing Solutions

acuwire-L  
Bore Size Range 0.400 - 2.000 mm



THE PERFECT HOLE

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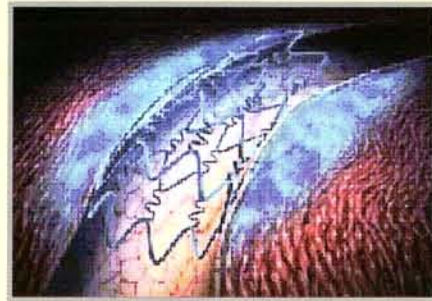
**1 Medical tubes** Small tubes made out of stainless steel find use in various areas in the medical industry; manufacturing processes for implants (stents), as components of implants as well as components of laboratory equipment and devices.

A Stent is a vessel support. It is used to extend vessel strictures of the coronary vessels.



**Example Part Data**

Material	Nitinol tubes
ID	1.300mm (+/-0.005)
	0.058" (+/-0.0002")
Surface Finish	<Ra 0.05
Length	290mm = 12"
OD	1.600mm = 0.063"



**wire-DSM Process Data**

	<u>metric(mm)</u>	<u>inch</u>
<b>Tolerances achieved</b>		
Diameter	+/- 0.003	+/- 0.00012
<b>Stock removal</b>	0.050	0.002
<b>Diamond suspension grain size</b>	0.005 – 0.008	1500 – 1350 grit
<b>Number of pieces per arbor load</b>		1
<b>Cycle time per arbor</b>		15 min.
<b>Cycle time per piece</b>		15 min.



**2 Ceramic bearings**, as shown in the photo, are used in ventilation fans of electronic components; Lap-top computer, projector, laboratory apparatus and metrology equipment to name but a few.

In the past, the bearings of such fans were predominantly made out of tungsten carbide or hardened steel. Ceramic bearings have recently been steadily replacing carbide and steel bearings. Two main reasons caused this change over: noise and life-time! Ceramic bearings run more quietly than and out-live both tungsten carbide and steel bearings.

**wire-DSM Process Data**

	<u>metric(mm)</u>	<u>inch</u>
<b>Tolerances achieved</b>		
Diameter	0.003	0.00012
Roundness	0.001	0.00004
Cylindricity	~0.001	~0.00004
<b>Stock removal</b>	0.050	0.002
<b>Diamond suspension grain size</b>	0.004	F1200 grit
<b>Number of pieces per arbor load</b>		200
<b>Cycle time per arbor</b>		38 min.
<b>Cycle time per piece</b>		11.5 sec.

**Example Part Data**

Material	Ceramic
ID	0.450mm
OD	5.300mm
Length	1.500mm



**3 The glass manufacturing industry** uses small "cutting wheels", called scribes to cut glass. Depending on the purpose and structure of the glass (heat absorbent, flooring, LCD displays, ...) different tungsten carbide grades as well as ceramic and PCD (polycrystalline-diamond) scribes are being used.

As small as this tool is, its influence on the cutting process outcome is large. The tighter the tolerance, with respect to concentricity (ID / OD -run out), and the lower the side wobble, the better the cutting result. Both of these factors are controlled by the high precision quality of the honed bore.

The following chart contains process data for tungsten carbide scribes. We have ready and available processes for both PCD and ceramic scribes. Unfortunately we are unable to release these figures in this brochure. Please contact us for detailed information which we will gladly provide on a bilateral basis.

**wire-DSM Process Data**

	<u>metric(mm)</u>	<u>inch</u>
<b>Tolerances achieved</b>		
Diameter	+/- 0.001	+/- 0.00004
Roundness	0.0005 - 0.001	0.00002 - 0.00004
Cylindricity	<0.001	<0.00004
<b>Stock removal</b>	0.075	0.003
<b>Diamond suspension grain size</b>	0.004	F1200 grit
<b>Number of pieces per arbor load</b>		460
<b>Cycle time per arbor</b>		60 min.
<b>Cycle time per piece</b>		8 sec.



CERAMIC GLASS CUTTER (SCRAPER)



PCD GLASS CUTTER (SCRAPER)



**Example Part Data**

Material	Tungsten Carbide
ID	0.817mm
OD	3.100mm
Length	0.650mm

