

## Customer focused development

- spindles + slides
- plan-tables + instruments
- machines
- micro cutting technology



## *airbearing mounted machining spindle ASP*



The air bearings from the ASP series are a milestone in the continuous process of development at ess Mikromechanik GmbH.

Spindles from this bearing type are available for use in a wide variety of machining tasks. Not only the superior accuracy is convincing, but also the excellent running performance.

The model series is available in a variety of motors. Therefore they cover an exceeding wide spectrum for performance requirements.

One of the special features of these spindles is that aerodynamic flow channels are included in the rotor surface. Therefore it is possible to glide down the bearing on rotation speed to zero in the case of break-off delivery air.

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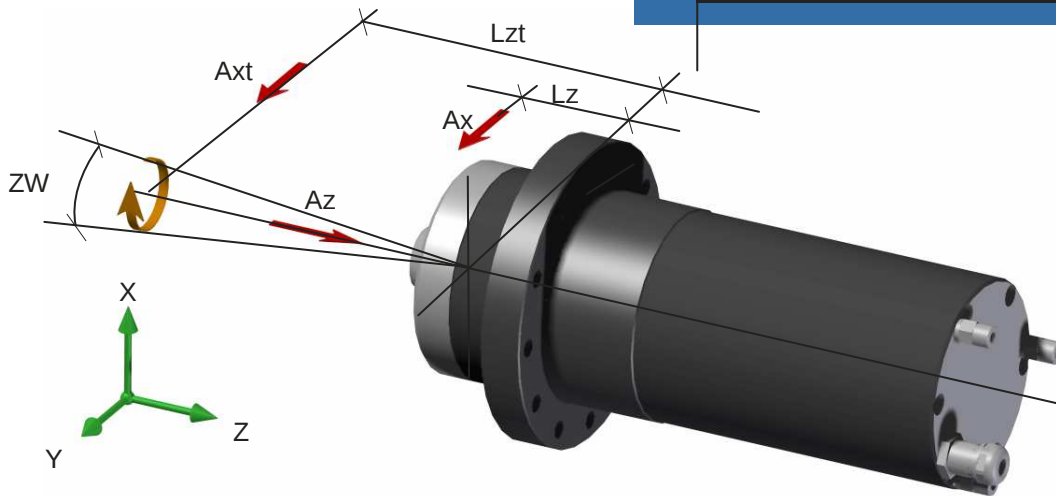
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	Technical data
Balancing performance (V <sub>eff</sub> ) mm/s *	0,1
Operating pressure (bar)	5
Mounting position	horizontal / vertical
Operation temperature	15 up to 35°C
Storage temperature	2 up to 40°C

\* = measured after VDI 2056 in two levels

## Technical data

airbearing machining spindles  
ASP 040 / 050 / 060 / 075 / 100  
ess Mikromechanik GmbH



Ax	=	Irregularity of accuracy in X-axis
Lz	=	Measuring high
Az	=	Irregularity of accuracy in Z-axis
Axt	=	Irregularity of accuracy from
Lzt	=	Measuring high
Zw	=	Wobble

## Tolerances

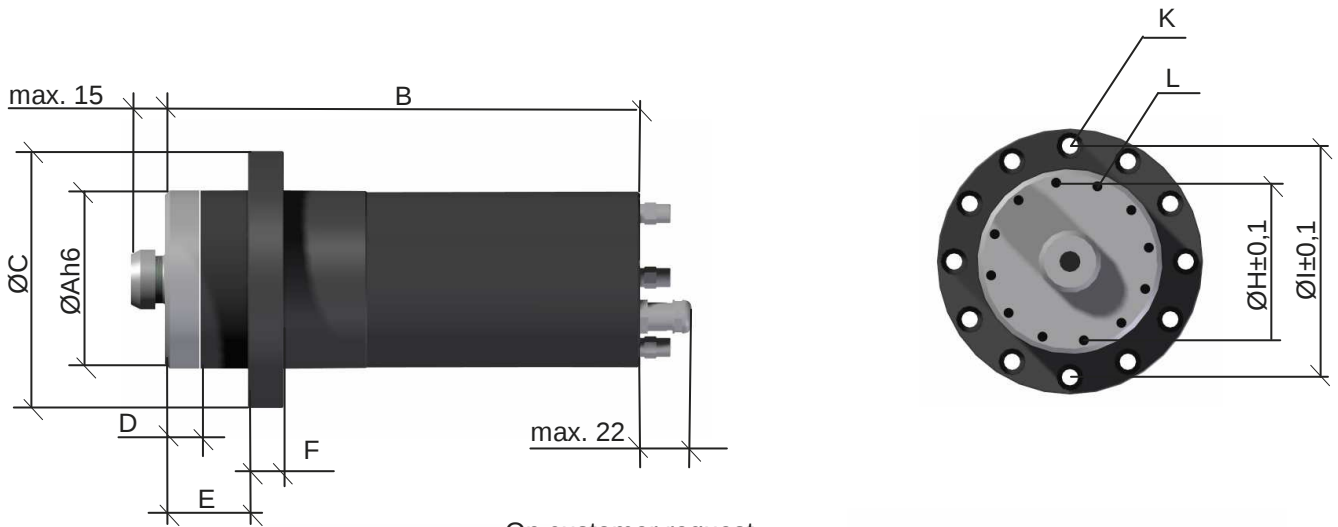
	Accuracy						
	Ax	Az	Lz	Axt	Lzt	Zw	
	$\mu\text{m}$	$\mu\text{m}$	$\text{mm}$	$\mu\text{m}$	$\text{mm}$	$\text{sec}$	$\mu\text{rad}$
ASP 040	0,10	0,10	32	0,20	100	0,21	1,0
ASP 050	0,10	0,10	32	0,20	100	0,21	1,0
ASP 060	0,10	0,10	32	0,20	100	0,21	1,0
ASP 075	0,10	0,10	32	0,20	100	0,21	1,0
ASP 100	0,15	0,15	32	0,25	100	0,21	1,0

## More information

	More information			
	Power drain up to W	Cooling system	speed (max.) $\text{min}^{-1}$	Air consumption l/min
	ASP 040	140	air cooling	80.000
ASP 050	420	air / water cooling	100.000	14
ASP 060	700	air / water cooling	80.000	18
ASP 075	920	water cooling	65.000	25
ASP 100	1100	water cooling	40.000	27,5

## Technical data

airbearing machining spindles  
ASP 040 / 050 / 060 / 075 / 100  
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On customer request  
available without fixing coil



## Dimension table

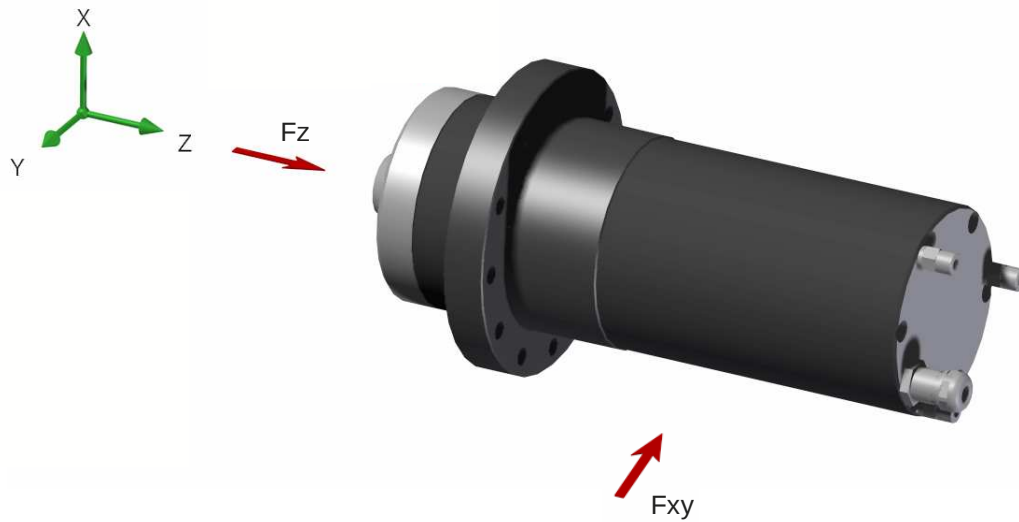
	Dimension A to F					
	A	B	C	D	E	F
	mm	mm	mm	mm	mm	mm
ASP 040	40	107	58	7,5	18	8
ASP 050	50	133	72	10	23	10
ASP 060	60	160	86	12	28	12
ASP 075	75	200	108	14,5	35	15
ASP 100	100	267	144	20	48	20

	Dimension G to K + thread				
	G	H	I	K	L
	mm	mm	mm	DIN 974-1	thread
ASP 040	39	35	50	12x km3	12x M3
ASP 050	49	42	62	12x km4	12x M3
ASP 060	59	50	75	12x km5	12x M4
ASP 075	74	65	94	12x km6	12x M5
ASP 100	99	85	125	12x km6	12x M5

## Technical data

airbearing machining spindles  
ASP 040 / 050 / 060 / 075 / 100  
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## Strength and torque

### Strength and torque

	Device	ASP 040	ASP 050	ASP 060	ASP 075	ASP 100
Load capacity Fz (axial)	<i>N</i>	50	180	250	650	1000
Load capacity Fyx (radial)	<i>N</i>	30	110	160	350	600
Power drain	<i>W</i>	140	420	700	920	1100
Cooling systems		L	L/W	L/W	W	W
Speed (max. zul.)	<i>min<sup>-1</sup></i>	80.000	100.000	80.000	65.000	40.000
Balancing performance (Veff)	<i>mm/s*</i>	0,1	0,1	0,1	0,1	0,1
Air consumption	<i>l/min</i>	8	14	18	25	27,5
Operating pressure	<i>bar</i>	5	5	5	5	5
Mounting position		h/v	h/v	h/v	h/v	h/v
Weight	<i>kg</i>	2	5,5	7,5	10,5	15