

# New KOENIG-EXPANDER for the Future of Transportation

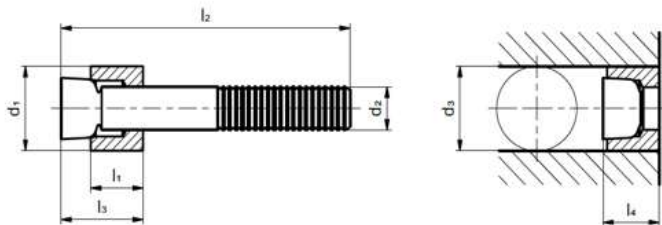
**SFC**KOENIG

Leader in  
Sealing & Flow Control  
Technology

SFC KOENIG Expander plugs reliably and safely seal drilled holes and are ideal for the future of transportation. Our unique metal-to-metal seal design and flexible tolerance allowances eliminate the potential for leaks associated with O-rings, gaskets, and other traditional seal types. Designed to meet the unique requirements of modern automotive and commercial vehicle applications, our new aluminum expander plugs support lightweight designs, new materials, and advanced performance requirements.

- **First entirely aluminum Expander Plug**
- **Part weighs 70% less than steel**
- **Designed for future lightweight materials**
- **Corrosion resistant, no red rust**
- **Patent pending**

## KOENIG-EXPANDER SEALING PLUGS SERIES LK 110



Part Number	d1	l1	d2	l2	d3 0/+0.12 *d3 0/+0.10	l3 max	l4 max	Packaging Unit	Weight in gram/pcs.
LK 110-080	8	6.5	4.3	34	8	10.0	7.0	100	1.9
LK 110-100	10	6.5	5.1	36	10	10.7	7.0	100	2.9
LK 110-120	12	7.5	5.9	36	12	12.0	8.5	100	4.3
LK 110-140	14	7.5	5.9	36	14*	12.2	8.5	100	5.1
LK 110-160	16	10.0	5.9	42	16*	16.0	11.5	100	7.5

Dimensions in millimeters

### MATERIAL

Sleeve:	EN AW-6060	Ø8-16
Mandrel:	EN AW-6056	Ø8-14
	EN AW-5019	Ø16

### PRESSURE PERFORMANCE - SERIES LK110

Series LK110 mm	Base Material of the Installation		
	⑥ AlCu4Mg1	⑦ AlMgSiPb	⑧ G-AlSi7Mg
Ø 8-16	100 bar / 1450 psi 30 bar / 435 psi		
Hole Tolerance	0/+0.12 mm - 0/+0.10 mm (Ø14/16)		
Hole Roughness	Rz 5 - 15 µm		
Proof Pressure Test B			
Max. Allowable Working Pressure = Nominal Pressure			

### DESIGN GUIDELINES - WALL THICKNESS / DISTANCE FROM EDGE

Base Material	Description	⑥ AlCu4Mg1	⑦ AlMgSiPb	⑧ G-AlSi7Mg
	Avg. Tensile Strength Rm [N/mm²]	480	340	260
	Minimum Elongation A5 [%]	8	8	2
	Avg. Ultimate Strength Rp 0.2 [N/mm²]	380	290	220
KOENIG-Expander Series		Factor fmin.		
LK 110	Ø 8 - 16 mm	0.3	0.3	0.3

**TEST PRESSURE / WORKING PRESSURE SERIES LK 110**

TEST PROCEDURE	Base Material of the Installation	
	⑥ AlCu4Mg1 / EN AW-2024-T3	⑧ G-AlSi7Mg / EN-AC-42100 ASTM/UNS: A356
Test A Step 1 Leakage Test @ 100 bar	No leakage	
Test A Step 2 Burst Pressure @ 20°C	min. 300 bar	
Test B Step 1 Long-Term Test *	Passed with no leakage	
Test B Step 2 (after Long-Term Test*) Burst Pressure	min. 100 bar @ 120°C min. 300 bar @ 20°C	
Max. allowable Working Pressure	30 bar	

**\* LONG TERM TEST B SERIES LK 110**

CONDITIONS	
Temperature	2 hrs @ +120°C / 2 hrs @ -40°C (Temp. change: approx. 30-45 min)
Duration	168 hrs / 7 days, approx. 10'000 cycles
Pressure	24 sec @ 0 bar 36 sec @ 100 bar (approx. 3 times working pressure)
Bore Condition	at maximum bore tolerance



# CO<sub>2</sub> neutral

We are on the road to net  
zero emissions by 2030

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