

Pressure performance

Series MB

Series MB 600	Base material of the installation						
	1	2	3	5	6	7	8
	ETG-100 / 44SMn28 AISI 1144	C15Pb / 1.0403 ~ SAE 1015 (10L15)	EN 1563: GJS-600-3 ASTM A536: 80-60-03	EN 1561: GJL-250 ASTM A48: NO.35	AlCu4Mg1 / EN AW- 2024-T3 AA: 2024 T4/T6 ¹⁾	AlMgSiPb / EN AW- 6012-T6 AA: 6012-T6	G-AlSi7Mg / EN-AC-42100 ASTM/UNS: A356

Max. allowable working pressure = nominal pressure							
d _i ø 3–10 PN max.	450 bar / 6500 psi				380 bar / 5500 psi		
d _i ø 12–14 PN max.	350 bar / 5100 psi				280 bar / 4100 psi		

Proof pressure			
d _i ø 3–10 PN max.	1400 bar / 20300 psi		1200 bar / 17400 psi
d _i ø 12–14 PN max.	1000 bar / 14500 psi		900 bar / 13000 psi
Hole tolerance	0/+0,1 mm		
Hole roughness	Rz 10–30 µm	Anchorage in base metal	

Series MB 600 Inch	Base material of the installation						
	1	2	3	5	6	7	8
	ETG-100 / 44SMn28 AISI 1144	C15Pb / 1.0403 ~ SAE 1015 (10L15)	EN 1563: GJS-600-3 ASTM A536: 80-60-03	EN 1561: GJL-250 ASTM A48: NO.35	AlCu4Mg1 / EN AW- 2024-T3 AA: 2024 T4/T6 ¹⁾	AlMgSiPb / EN AW- 6012-T6 AA: 6012-T6	G-AlSi7Mg / EN-AC-42100 ASTM/UNS: A356

Max. allowable working pressure = nominal pressure							
d _i ø PN max. 0,093–0,281	450 bar / 6500 psi				380 bar / 5500 psi		

Proof pressure		
d _i ø PN max. 0,093–0,281	1400 bar / 20300 psi	1200 bar / 17400 psi
Hole tolerance	Ø 0,093 0/+0,002 Inch from Ø 0,125 0/+0,004 Inch	
Hole roughness	Rz 10–30 µm	Anchorage in base metal

Series MB 700	Base material of the installation						
	1	2	3	5	6	7	8
	ETG-100 / 44SMn28 AISI 1144	C15Pb / 1.0403 ~ SAE 1015 (10L15)	EN 1563: GJS-600-3 ASTM A536: 80-60-03	EN 1561: GJL-250 ASTM A48: NO.35	AlCu4Mg1 / EN AW- 2024-T3 AA: 2024 T4/T6 ¹⁾	AlMgSiPb / EN AW- 6012-T6 AA: 6012-T6	G-AlSi7Mg / EN-AC-42100 ASTM/UNS: A356

Max. allowable working pressure = nominal pressure							
d _i ø 3–10 PN max.	450 bar / 6500 psi				380 bar / 5500 psi		
d _i ø 12–22 PN max.	350 bar / 5100 psi				280 bar / 4100 psi		

Proof pressure		
d, ø 3–10 PN max.	1400 bar / 20300 psi	1200 bar / 17400 psi
d, ø 12–22 PN max.	1150 bar / 16700 psi	900 bar / 13000 psi
Hole tolerance	0/+0,1 mm	
Hole roughness	Rz 10–30 µm	Anchorage in base metal

Series MB 850	Base material of the installation						
	1	2	3	5	6	7	8
	ETG-100 / 44SMn28 AISI 1144	C15Pb / 1.0403 ~ SAE 1015 (10L15)	EN 1563: GJS-600-3 ASTM A536: 80-60-03	EN 1561: GJL-250 ASTM A48: NO.35	AlCu4Mg1 / EN AW- 2024-T3 AA: 2024 T4/T6 ¹⁾	AlMgSiPb / EN AW- 6012-T6 AA: 6012-T6	G-AlSi7Mg / EN-AC-42100 ASTM/UNS: A356

Max. allowable working pressure = nominal pressure							
d _i ø 3–10 PN max.	350 bar / 5100 psi				320 bar / 4600 psi		
d _i ø 12–22 PN max.	280 bar / 4100 psi				250 bar / 3600 psi		

Proof pressure			
d _i ø 3–10 PN max.	1100 bar / 16000 psi		1000 bar / 14500 psi
d _i ø 12–22 PN max.	900 bar / 13000 psi		800 bar / 11600 psi
Hole tolerance	0/+0,1 mm		
Hole roughness	Rz 10–30 µm	Rz 10–30 µm	Anchorage in base metal

¹⁾ SFC KOENIG's North American Engineering Department utilizes 2024-T4/T6 as a test base material.

Series CV

Series CV 173	Base material of the installation				
	1	3	4	6	8
	ETG-100 / 44SMn28 AISI 1144	EN 1563: GJS-600-3 ASTM A536: 80-60-03	EN 1563: GJS-450-10 ASTM A536: 65-45-12	AlCu4Mg1 / EN AW- 2024-T3 AA: 2024 T4/T6 ¹⁾	G-AlSi7Mg / EN-AC-42100 ASTM/UNS: A356
Max. allowable working pressure = nominal pressure					
d ₁ ∅ 3–10 PN max.				210 bar / 3000 psi	
d ₁ ∅ 12 PN max.				100 bar / 1500 psi	
Proof pressure					
d ₁ ∅ 3–10 PN max.				650 bar / 9400 psi	
d ₁ ∅ 12 PN max.				300 bar / 4300 psi	
Hole tolerance	0/+0,1 mm				
Hole roughness	Rz 10–30 µm			Anchorage in base metal	
Series CV 588	Base material of the installation				
	1	3	4	6	8
	ETG-100 / 44SMn28 AISI 1144	EN 1563: GJS-600-3 ASTM A536: 80-60-03	EN 1563: GJS-450-10 ASTM A536: 65-45-12	AlCu4Mg1 / EN AW- 2024-T3 AA: 2024 T4/T6 ¹⁾	G-AlSi7Mg / EN-AC-42100 ASTM/UNS: A356
Max. allowable working pressure = nominal pressure					
d ₁ ∅ 4–9 PN max.	350 bar / 5000 psi				
d ₁ ∅ 10 PN max.	280 bar / 4000 psi				
Proof pressure					
d ₁ ∅ 4–9 PN max.	1000 bar / 14500 psi				
d ₁ ∅ 10 PN max.	860 bar / 12500 psi				
Hole tolerance	0/+0,1 mm				
Hole roughness	Rz 10–30 µm			Anchorage in base metal	

¹⁾ SFC KOENIG's North American Engineering Department utilizes 2024-T4/T6 as a test base material.

Base material harder than Expander: To achieve the allowable working pressure, anchorage to the bore roughness of the base material is required. **Roughness R_z = 10–30 µm.**

Base material softer than Expander: Anchorage to the bore of the base material occurs automatically due to the serrations on the sleeve of the KOENIG EXPANDER®.

Transition zone: To achieve the allowable working pressure, anchorage to the bore roughness of the base material is required. **Roughness R_z = 10–30 µm.**

Series SK / SKC / HK

Series SK/SKC	Base material of the installation						
	1	2	3	5	6	7	8
	ETG-100 / 44SMn28 AISI 1144	C15Pb / 1.0403 ~ SAE 1015 (10L15)	EN 1563: GJS-600-3 ASTM A536: 80-60-03	EN 1561: GJL-250 ASTM A48: NO.35	AlCu4Mg1 / EN AW- 2024-T3 AA: 2024 T4/T6 ¹⁾	AlMgSiPb / EN AW- 6012-T6 AA: 6012-T6	G-AlSi7Mg / EN-AC-42100 ASTM/UNS: A356

Max. allowable working pressure = nominal pressure		
d _i ø 4–10 PN max.	500 bar / 7200 psi	450 bar / 6500 psi
d _i ø 12 PN max.	400 bar / 5800 psi	

Proof pressure		
d _i ø 4–10 PN max.	1600 bar / 23200 psi	1400 bar / 20300 psi
d _i ø 12 PN max.	1600 bar / 23200 psi	
Hole tolerance	0/+0,12 mm	
Hole roughness	Rz 10–30 µm	Anchorage in base metal

If SK/SKC plugs are used to keep channels separated, allowable working pressure on the insertion side is reduced by 50%.

Series HK	Base material of the installation						
	1	2	3	5	6	7	8
	ETG-100 / 44SMn28 AISI 1144	C15Pb / 1.0403 ~ SAE 1015 (10L15)	EN 1563: GJS-600-3 ASTM A536: 80-60-03	EN 1561: GJL-250 ASTM A48: NO.35	AlCu4Mg1 / EN AW- 2024-T3 AA: 2024 T4/T6 ¹⁾	AlMgSiPb / EN AW- 6012-T6 AA: 6012-T6	G-AlSi7Mg / EN-AC-42100 ASTM/UNS: A356

Max. allowable working pressure = nominal pressure							
d _i ø 3–10 PN max.	350 bar / 5100 psi					160 bar / 2300 psi	

Proof pressure		
d, ø 3–10 PN max.	1200 bar / 17400 psi	500 bar / 7200 psi
Hole tolerance	0/+0,1 mm	
Hole roughness	Rz 10–30 µm	Roughness anchoring not effective, Anchorage in base metal not possible

If HK plugs are used to keep channels separated, allowable working pressure on the insertion side is reduced by 50%.

¹⁾ SFC KOENIG's North American Engineering Department utilizes 2024-T4/T6 as a test base material.

Base material harder than Expander: To achieve the allowable working pressure, anchorage to the bore roughness of the base material is required. **Roughness R_z = 10–30 µm.**

Base material softer than Expander: Anchorage to the bore of the base material occurs automatically due to the serrations on the sleeve of the KOENIG EXPANDER®.

Transition zone: To achieve the allowable working pressure, anchorage to the bore roughness of the base material is required. **Roughness R_z = 10–30 µm.**

Soft base material: Anchorage is not possible with the HK Series. Such combinations are not allowed for high pressure applications.

Series LK / LP

Series LK 600	Base material of the installation						
	1	2	3	5	6	7	8
	ETG-100 / 44SMn28 AISI 1144	C15Pb / 1.0403 ~ SAE 1015 (10L15)	EN 1563: GJS-600-3 ASTM A536: 80-60-03	EN 1561: GJL-250 ASTM A48: NO.35	AlCu4Mg1 / EN AW- 2024-T3 AA: 2024 T4/T6 1)	AlMgSiPb / EN AW- 6012-T6 AA: 6012-T6	G-AISI7Mg / EN-AC-42100 ASTM/UNS: A356
Max. allowable working pressure = nominal pressure							
d ₁ ø 4–10 PN max.	60 bar / 850 psi						
Proof pressure							
d ₁ ø 4–10 PN max.	180 bar / 2600 psi						
Hole tolerance	0/+0,12 mm						
Hole roughness	Rz 10–30 µm					Anchorage in base metal	
Temperature range Test-B	-40 °C to +150 °C				-40 °C to +100 °C		
KOENIG EXPANDER® sealing plugs series LK are not suitable for pressure load applied on the insertion side of the plug. For special release contact SFC KOENIG.							

Series LK 950	Base material of the installation						
	1	2	3	5	6	7	8
	ETG-100 / 44SMn28 AISI 1144	C15Pb / 1.0403 ~ SAE 1015 (10L15)	EN 1563: GJS-600-3 ASTM A536: 80-60-03	EN 1561: GJL-250 ASTM A48: NO.35	AlCu4Mg1 / EN AW-2024-T3 AA: 2024 T4/T6 ¹⁾	AlMgSiPb / EN AW-6012-T6 AA: 6012-T6	G-AISI7Mg / EN-AC-42100 ASTM/UNS: A356
Max. allowable working pressure = nominal pressure							
d ₁ ø 4–20 PN max.		60 bar / 850 psi					
Proof pressure							
d ₁ ø 4–20 PN max.		180 bar / 2600 psi					
Hole tolerance		0,05/+0,15 0/+0,12 mm					
Hole roughness		Rz 10–30 µm				Rz 10–30 µm	Anchorage in base metal
Temperature range Test-B		-40 °C to +150 °C			-40 °C to +100 °C		
KOENIG EXPANDER® sealing plugs series LK are not suitable for pressure load applied on the insertion side of the plug. For special release contact SFC KOENIG.							

Series LP	Base material of the installation						
	1	2	3	5	6	7	8
	ETG-100 / 44SMn28 AISI 1144	C15Pb / 1.0403 ~ SAE 1015 (10L15)	EN 1563: GJS-600-3 ASTM A536: 80-60-03	EN 1561: GJL-250 ASTM A48: NO.35	AlCu4Mg1 / EN AW- 2024-T3 AA: 2024 T4/T6 ¹⁾	AlMgSiPb / EN AW- 6012-T6 AA: 6012-T6	G-AISI7Mg / EN-AC-42100 ASTM/UNS: A356
Max. allowable working pressure = nominal pressure							
d ₁ ø 4–12 PN max.		60 bar / 850 psi					
Proof pressure							
d ₁ ø 4–12 PN max.		180 bar / 2600 psi					
Hole tolerance		According to data sheet					
Hole roughness		Rz 10–30 µm			Anchorage in base metal		
Temperature range Test-B		-40 °C to +150 °C				-40 °C to +100 °C	

¹⁾ SFC KOENIG's North American Engineering Department utilizes 2024-T4/T6 as a test base material.