

BASE MATERIALS / INSTALLATION REQUIREMENTS

Operating pressures listed can be achieved for the following base materials:

Base Material of the Installation	Tensile Strength Rm [N/mm ²]	Elongation A5 [%]	Yield Strength Rp0.2 [N/mm ²]	Hardness HB
① High Strength Steel ETG-100 / 44SMn28 AISI 1144	960 - 1000	6	min. 865	320 avg.
② Case Hardened Steel C15Pb / 1.0403 AISI 10L15	430 - 730	10	min. 280	200 avg.
③ Ductile Cast Iron EN 1563: GJS-600-3 ASTM A536: 80-60-03	min. 600	3	min. 370	200 - 290
④ Ductile Cast Iron (Dura-Bar®) EN 1563: GJS-450-10 ASTM A536: 65-45-12	450 avg.	12	310 avg.	131 - 217
⑤ Gray Cast Iron EN 1561: GJL-250 ASTM A48: NO.35	350 avg.	0.3	165 - 228	160 - 250
⑥ Aluminum-Alloy AlCu4Mg1 / EN AW-2024-T3 AA: 2024 T4/T6*	min. 450	8	min. 310	120 avg.
⑦ Aluminum-Alloy AlMgSiPb / EN AW-6012-T6 AA: 6012-T6	min. 310	8	min. 260	105 avg.
⑧ Cast Aluminum-Alloy G-AlSi7Mg / EN-AC-42100 ASTM/UNS: A356	min. 230	2	min. 190	min. 75

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

- Equally high working pressures can also be achieved with base materials with similar mechanical properties. However, compliance must be met for the appropriate installation conditions.
- Applications in high-strength aluminum alloys, magnesium alloys, nonferrous metals and plastics require special consideration and can be developed upon request.
- Applications in base materials with high hardness and hardened materials, require special consideration and can be developed upon request.
- **Applications in surface coated materials (zinc plated, anodized ...) require special consideration and can be developed upon request.**
- For factors affecting pressure performance please see:
 - Anchoring Principle
 - Surface Finish: Requirements
 - Design Guidelines

SAFETY MARGIN

The safety margin includes uncontrollable factors. Dynamic loads at nominal pressure, with 10⁶ load cycles and a frequency of 3 – 4 Hz have shown that the subsequently measured bursting pressures, are reduced according to Test(A) by 20 % as well as Test(B).