



Technical Bulletins

Guideline for Different Seal Materials

Bimba offers Buna-N (nitrile rubber) as a standard seal material on the majority of its product lines. However, since no two applications are exactly the same, a specific operating medium or environment may necessitate a different seal material. Some of the more common seal materials available are:

| MATERIAL | TEMPERATURE RANGE | COMPATIBILITY ISSUES | ITEMS TO NOTE |
|--|--|---|--|
| Buna-N | <ul style="list-style-type: none"> -20°F to +200°F Original Line, Double-Wall®, Pneu-Turn® +15°F to +160°F on EF1 series | Compatible with wide range of general purpose oils & lubricants, including mineral spirits & petroleum based (comparable to our HT-99) | Standard material on majority of product lines |
| Fluoroelastomer (Option (V) on Original Line, Flat, Double-Wall, Pneu-Turn, EF1, & PC series) | <ul style="list-style-type: none"> 0°F to +400°F on Original Line, Flat, & Pneu-Turn 0°F to +300°F on Double-Wall +15°F to +225°F on EF1 series | <ul style="list-style-type: none"> Allows usage in higher operating temperatures Compatible with caustic fumes & certain types of coolants/cutting fluids | <ul style="list-style-type: none"> Actual operating temperature may be further limited by other components of a specific cylinder design. Compatible with Dow Corning #710, a silicone based lubricant with temperature range from 0° to +400F |
| EPDM - ethylene propylene | -40°F° to +350°F | <ul style="list-style-type: none"> Brake fluid Radiation environment, dosage not to exceed 1x10⁷ Rads exposure | Swelling induced with petroleum based lubricants. Recommend using Dow Corning #710. |
| Low Temperature Buna (Option (N) on Original Line) | -40°F to +200°F | <ul style="list-style-type: none"> Ideal for mobile applications (reference Bimba TB-102395) | <ul style="list-style-type: none"> Compatible with Dow Corning #55M, a silicone based lubricant with temperature range of -85° to +350°F |

NOTE: Extended or continuous operation at extremes of rating limits may affect the life or performance of a cylinder.

Should there be any question on a seal material's compatibility rating, a general recommendation can be obtained through the Bimba Technical Assistance Center (800-44-BIMBA). However, if there is still doubt on how well a certain material will hold up under specific operating conditions or parameters, it is recommended that compatibility tests be conducted. This will verify how much adverse effect (shrinkage, hardness, etc.) can be expected. Another thing to keep in mind is that many factors such as media concentration, temperature, and presence of impurities influence the rate of deterioration.

The information presented is in Bimba's best engineering opinion and should be used for reference only. Recommendations derived should be verified under actual operating conditions. Bimba reserves the right to change specifications without prior notice. Date: 12/4/08 Rev Level 0