



Gaulin Micro-Gap® Valve Applications

Description

We are often asked whether the Micro-Gap® valve can be used on a given product, the associated wear life and the suggested operating pressure. In all cases where the Micro-Gap valve is referenced, the P2 or back-pressure must be 10 to 15% of the total pressure.

In that there are hundreds of units in operation, we have accumulated considerable data and suggest the following pressures for dairy products.

PRODUCT	STANDARD VALVE	MICRO-GAP® VALVE	COMMENTS
(3.5, 3.25, 2.0, 1.0% Fat)	1600-2200 psi	1000-1300 psi	Backpressure of 10-15% of total on Micro-Gap
Chocolate Milk	1600-2200 psi	1000-1300 psi	If cocoa powder is used, reduced valve life will result.
Ice Cream Mix	2000-2500 psi	1200-1500 psi	Dissolve/solubilize stabilizer, cocoa, and whey at 100°F. for 10-20 min. * Need 300 to 400 psig on second-stage.
Ice Milk	1600-2200 psi	1000-1300 psi	
Sweetened Condensed Milk	N/A	N/A	Product is not homogenized
Evaporated Milk	2000-3000 psi	1200-1800 psi	
Heavy Cream (30-40% Fat)	N/A	N/A	Product is not homogenized
Light Cream (18-30% Fat)	1300-1800 psi	900-1100 psi	
Sour Cream	2000-2500 psi	1200-1400 psi	
Half-and-Half (10% Fat)	2000 psi	1200 psi	
Yogurt	1600-2200 psi	1000-1300 psi	Milk for yogurt – same as for pasteurized milk

Some products may contain undissolved solids, such as in ice cream mix and other products with whey powder or cocoa. Where possible, whey powder, stabilizers and cocoa should be dissolved or softened by holding at 100 to 110°F. for 10 minutes (minimum) before homogenization. If these materials are not dissolved, abrasion and poor valve life may result.

Because of the wide variety of processing conditions and product mix, it is difficult to estimate the "life" of a valve set before regrinding becomes necessary; but, as a general guide, we estimate the following.

PRODUCT	ESTIMATED HOURS BEFORE REGRINDING
Milk	3000-5000
Milk/By-Products	2000-3000
By-Products Only	1500-2500

NOTE: Valve sets should be returned to APV Products - Homogenizers for repair. They can normally be reground up to ten times, depending upon the degree of wear when returned.