

# Z-TYPE Diamond Interaction Chamber for High Pressure Homogenizer

Nanoemulsion | Graphene | Cell Disruption | Nanodispersion | Deagglomeration | Liposome

## Unique Benefits

- Full replacement for the chamber of Microfluidizer processors
- Electro polishing and inner Passivation for pharmaceutical application
- Lower cost and higher quality
- Longer warranty period
- Real-time cooling option to reduce oversized particles in USP729 Retaining protein activity
- High pressure connection with the homogenizers of other manufacturers, such as Avestin, PSI, ATS, PhD



## Diamond Interaction Chamber

High pressure homogenizers are equipped with various types of valves, nozzles, or chambers. Among them, the Y-Type Interaction Chamber is one of the most powerful. These chambers are made from abrasion-resistant materials, with diamond being the most durable and expensive option. Y-Type Interaction Chamber is firstly disclosed in PAT. NO. 4533254. It has been used by several manufacturers, such as Microfluidics (F20Y, F12Y Interaction Chamber), Avestin (Static Homogenizing Valve) and Nanomizer (Collision-Type Generator). In the Microfluidics system (FIG. 1), the flow stream is split in two channels that are redirected at right angles over the same plane and propelled into a single flow stream. High pressure promotes a high speed at the crossover of the two flows, which results in high shear, turbulence, and cavitation over the single outbound flow stream.

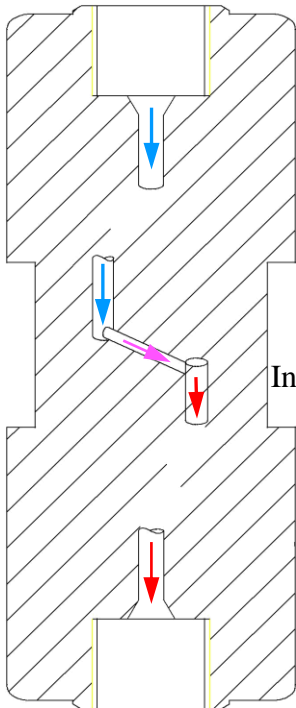
We have been providing high quality Z-type Diamond Interaction Chambers for high pressure homogenization in compliance with FDA standards. The Single-Slotted Chamber can be used as a full replacement for the chambers from M-110Y, M-110P, M-110L, M-110S, and M-110EH Microfluidizers and the Static Homogenizing Valve from Avestin. The Multi-Slotted Chamber can be used as a full replacement for the chambers used on production units, such as M-210, M-7115, M-7125, and M-7250. Our confidence in the quality of our products allows us to provide a 1-year warranty, compared to the 90-day warranties of other manufacturers.



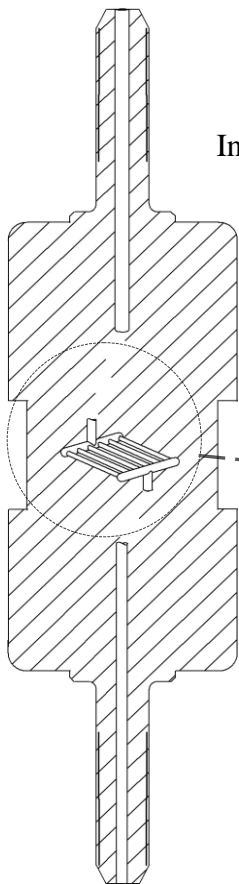
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# Z-TYPE Diamond Interaction Chamber for High Pressure Homogenizer



**FIG. 1**  
Single-Slotted  
Z-Type  
Interaction Chamber

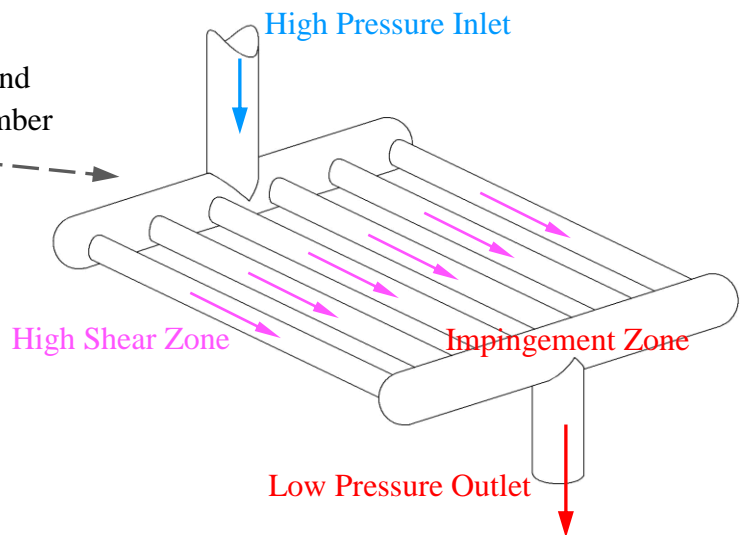


**FIG. 2**  
Multi-Slotted  
Z-Type  
Interaction Chamber

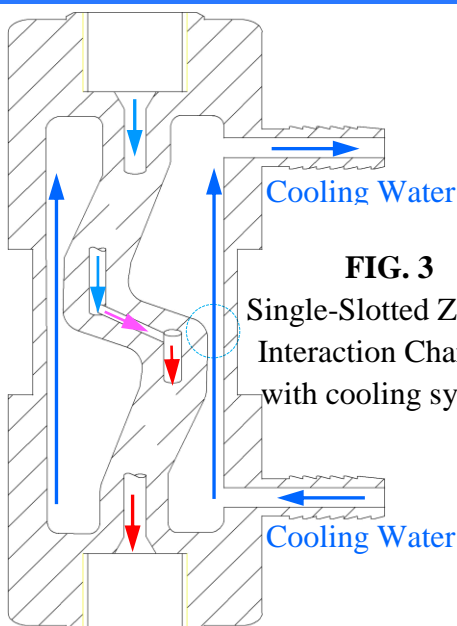
## Specifications

Description	Z-Type Diamond Interaction Chamber Single-Slotted, Multi-Slotted
Brand	OEM with High Quality
Materials	Diamond, 316SS stainless steel
Compatibility and Full Replacement for Microfluidizer Processors & Avestin EmulsiFlexs	Single-Slotted: M-110Y, M-110P, M-110PS, M-110L, M-110S and M-110EH Static Homogenizing Valve (Avestin) Multi-Slotted: M-7115, M-7125, M-7250 and M-210
Standard Warranty	1 year (up to 5 years available)
Dimensions W x D x H	35mm x 35mm x 85mm (Single-Slotted) 45mm x 45mm x 165mm (Multi-Slotted)
Weight	1 lbs. (0.5kg) (Single-Slotted) 3 lbs. (1.5kg) (Multi-Slotted)
Cleaning	Flush to clean
Sterilizing	Whole unit autoclavable
Pressure Range	0-30,000 psi, 0-45,000 psi, 0- 60,000psi
Chamber Type Available (See price list)	Single-Slotted: G10Z, H10Z, H30Z, H210Z, H230Z Multi-Slotted: G10Z-2, G10Z-4, G10Z-6, H10Z-2, H10Z-4, H10Z-6, H10Z-8

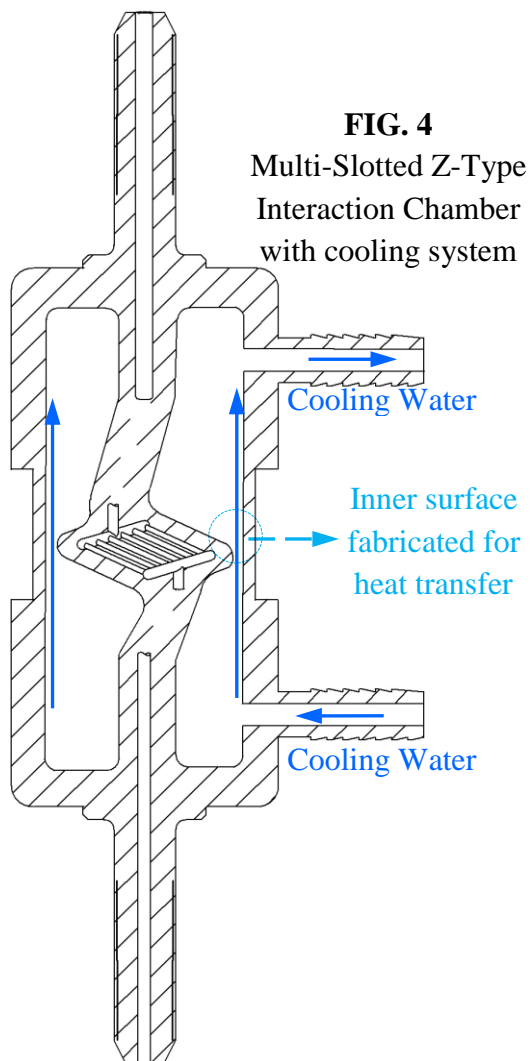
**Z-6 DIXC**  
6-slotted  
Z-Type Diamond  
Interaction Chamber



# Diamond Interaction Chamber with COOLING SYSTEMS



**FIG. 3**  
Single-Slotted Z-Type  
Interaction Chamber  
with cooling system



**FIG. 4**  
Multi-Slotted Z-Type  
Interaction Chamber  
with cooling system

## Chamber with Real-Time Cooling

The outside temperature of a working chamber can exceed 80 °C and much higher from inside, which reduces the quality of the product. For example, in the pharmaceutical industry, an overheated chamber leads to the formation of oversized particles. Particles in the parenteral > 5 microns (µm) or PFAT5 > 0.05% are not favored by the FDA and United States Pharmacopeia (USP) 729. During cell disruption, protein activity will also be compromised. Further, the real-time cooling chamber is a better choice for preparation of Emulsified Fuel in the safer temperature. The traditional method cools the chamber by immersing it entirely in cooling liquid, but the chamber's thick steel cover makes this an ineffective solution. This patent fabrication has the cooling option inside the chamber (Fig. 3, Fig. 4), which allows for much more effective heat exchange.

## Specifications

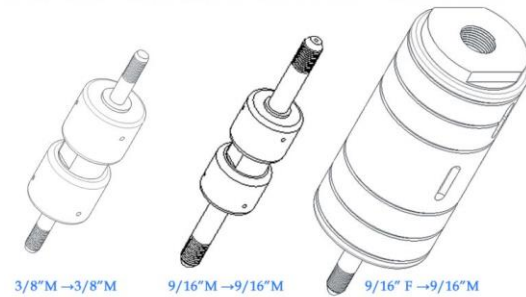
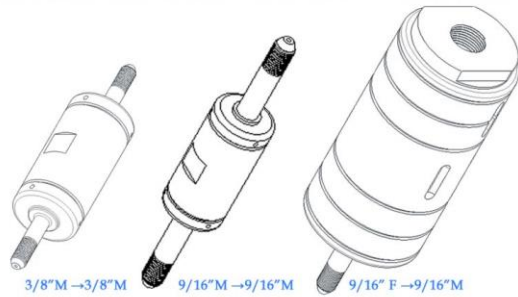
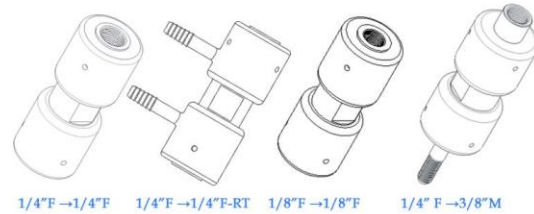
Description	Z-Type Diamond Interaction Chamber Single-Slotted, Multi-Slotted
Brand	OEM with High Quality
Materials	Diamond, 316SS stainless steel
Compatibility and Full Replacement for Microfluidizer Processors & Avestin EmulsiFlexs	Single-Slotted: M-110Y, M-110P, M-110PS, M-110L, M-110S and M-110EH Static Homogenizing Valve (Avestin) Multi-Slotted: M-7115, M-7125, M-7250 and M-210
Standard Warranty	1 year (up to 5 years available)
Dimensions W x D x H	35mm x 35mm x 85mm (Single-Slotted) 45mm x 45mm x 165mm (Multi-Slotted)
Weight	1 lbs. (0.5kg) (Single-Slotted) 3 lbs. (1.5kg) (Multi-Slotted)
Cleaning	Flush to clean
Sterilizing	Whole unit autoclavable
Pressure Range	0-4,5000 psi
Chamber Type Available (See price list)	Single-Slotted: G10Z-RT, H10Z-RT, and H30Z-RT, H210Z-RT, H230Z-RT Multi-Slotted: H10Z-4-RT, H10Z-5-RT, H10Z-6-RT, H10Z-7-RT, H30Z-4-RT, G10Z-6-RT, G10Z-7-RT



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# Catalog for Y/Z type Diamond Interaction Chamber



Catalog No.	Slotted	Connection	Price (US\$)
F12Y	1-12 slotted	1/4, 3/8, 9/16 High pressure fitting	quote
F20Y	1-12 slotted	1/4, 3/8, 9/16 High pressure fitting	quote
G10Z	1-12 slotted	1/4, 3/8, 9/16 High pressure fitting	quote
H10Z	1-12 slotted	1/4, 3/8, 9/16 High pressure fitting	quote
H210Z	1-6 slotted	1/4, 3/8, 9/16 High pressure fitting	quote
H30Z	1-6 slotted	1/4, 3/8, 9/16 High pressure fitting	quote
H230Z	1-3 slotted	1/4, 3/8, 9/16 High pressure fitting	quote
Q50Z	Single slotted	1/4, 3/8, 9/16 High pressure fitting	quote
<b>F12Y-RT</b>	1-12 slotted	1/4, 3/8, 9/16 High pressure fitting	quote
<b>F20Y-RT</b>	1-12 slotted	1/4, 3/8, 9/16 High pressure fitting	quote
<b>G10Z-RT</b>	1-12 slotted	1/4, 3/8, 9/16 High pressure fitting	quote
<b>H10Z-RT</b>	1-12 slotted	1/4, 3/8, 9/16 High pressure fitting	quote
<b>H210Z-RT</b>	1-6 slotted	1/4, 3/8, 9/16 High pressure fitting	quote
<b>H30Z-RT</b>	1-6 slotted	1/4, 3/8, 9/16 High pressure fitting	quote
<b>H230Z-RT</b>	1-3 slotted	1/4, 3/8, 9/16 High pressure fitting	quote
<b>Q50Z-RT</b>	Single slotted	1/4, 3/8, 9/16 High pressure fitting	quote
<b>J20Y, J30Y, N40Y, T60Z</b>		1/4, 3/8, 9/16 High pressure fitting	quote



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