

Flanged & flued

MFF series

A special case of the Thick Wall type, Flanged and Flued expansion joints are made in two halves from flat annular plates.

The outside edges of the plates are formed in one direction (flanged), and the inside edges are formed in the other direction (flued).

The two halves are welded together and then welded into the heat exchanger shell. Because of the higher wall thickness, this type of expansion joint is rugged and the most durable from the standpoint of abuse, but it has the disadvantage of limited flexibility.

MACOGA MFF Expansion Joints are designed as per ASME VIII-1 mandatory Appendix 5 guidelines for the design of flanged and flued expansion joints and ASME Appendix 26 and EJMA that provide methods of calculating the stresses, fatigue life and spring rate.



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Features

TYPE	SERIES					
Flanged & flued	MFF					
PRESSURE THRUST RESTRAINT	MOVEMENTS			MATERIALS		
✘	Axial		✔		Austenitic Stainless Steels 304, 321, 316, 316L, 310, 309...	Limitless sizes Limitless convolution height
	Lateral	Single-plane	✘		Nickel Alloys Inconel, Incoloy, Hastelloy...	
		Multi-plane	✘			
	Angular	Single-plane	●	Limited use	Carbon Steel P265GH, 16Mo3, 13 CrMo 44...	Single layer in thick material
		Multi-plane	●	Limited use		

Applications

The most common application for flanged and flued Expansion Joints is heat exchangers and large diameter piping systems.

MFF Expansion joints are promising for accommodating differential thermal expansion of heat exchanger shells, pressure vessels, and pipelines carrying high-temperature fluids. Differences in the axial expansion of the shell and the tube bundle due to high mean metal temperature differentials warrant incorporation of expansion joints in heat exchangers. This is particularly true for fixed tube-sheet exchangers.

For fixed tube-sheet exchangers, when the difference between shell and tube mean metal temperatures becomes large (greater than approximately 50°C for carbon steel), the tube-sheet thickness and tube end loads become excessive. Therefore, an expansion joint is incorporated into the shell. MFF Expansion joints also find applications in floating head exchangers, in the pipe between the floating head cover and the shell cover to cushion the thermal expansion between the tube bundle and the shell.

Expansion joints used as an integral part of heat exchangers or other pressure vessels shall be designed to provide flexibility for thermal expansion and also to function as a pressure-retaining structural element.

Sample image

