



Kammer Series 132000
Corrosive Application Valves

132000 Series

Introduction

Flowserve's Kammer 132000 Series control valves combine many years of expertise in manufacturing both plastic lined valve bodies and precision globe control valves. With a variety of high quality linings avail-

able, this valve can be used in many corrosive mediums, and the unique bellows design allows for working pressures up to 232 psig. In addition, the 132000 Series has high flow capacities verified by flow testing.

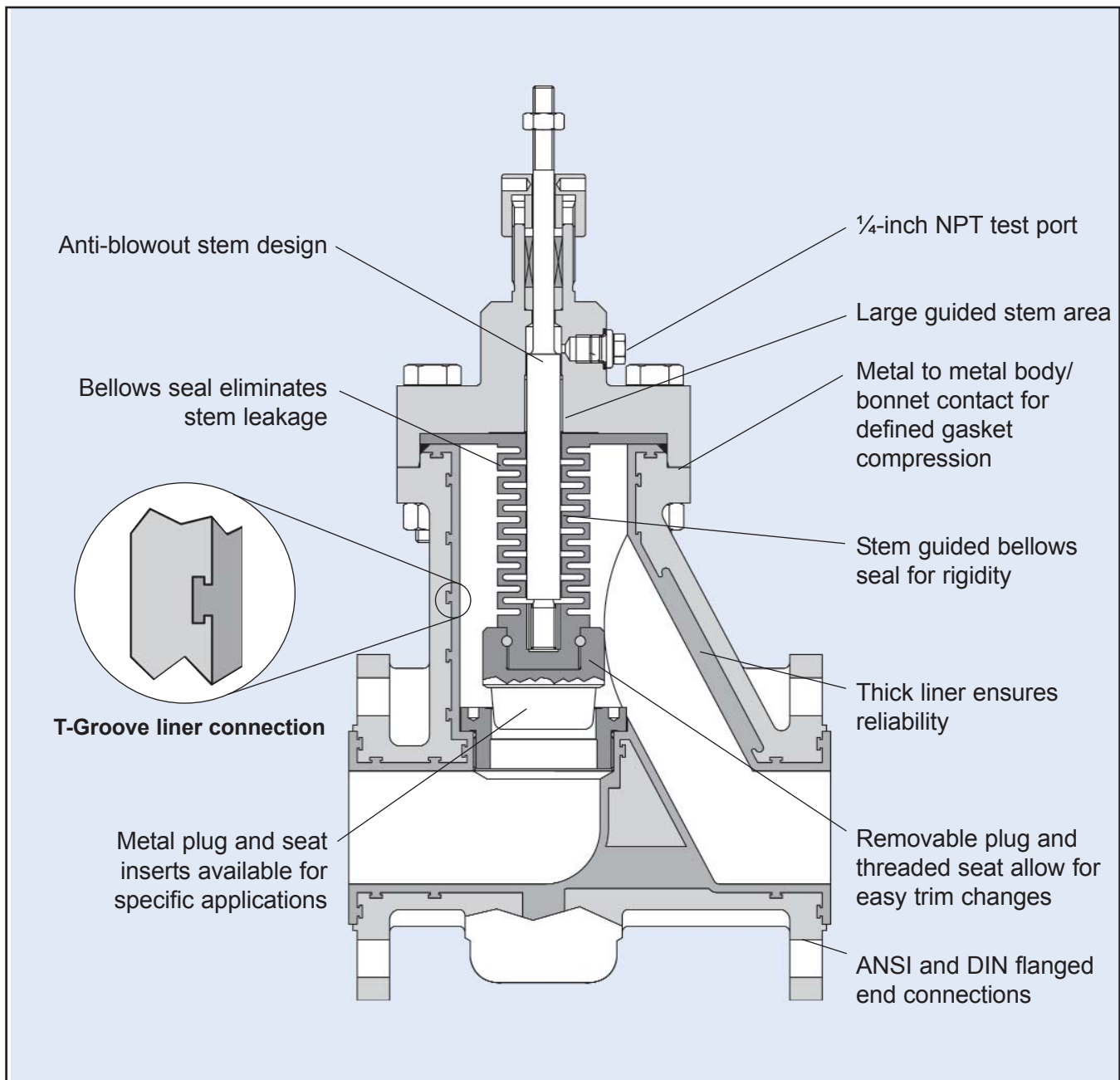


Figure 1: 132000 Series Body Assembly

132000 Series

Features and Benefits

Table 1: 132000 Series Features and Benefits

Liner Materials	Multiple high quality liner materials are available to cover most corrosive applications, including: PFA, FEP, PVDF, PP, ETFE, and anti-static PFA.
Liner Thickness	The liner thickness provides a high degree of protection from corrosive medias.
Liner Connection	T-grooves ensure a positive mechanical connection between the liner material and the valve body. This feature is especially important in vacuum applications.
Bellows Seal	The unique bellows design allows for working pressures up to 232 psig. Very high cycle life bellows (based on extensive cycle testing) are separable from plug to allow easy maintenance.
Trim Design	Large selection of precision and custom flow curves High rangeability Very large flow capacity (C _v) per valve size Separable plug head and threaded seat ring for easy maintenance
Metal Plug and Seat Inserts	Metal plug and seat inserts enable smaller C _v values Wear resistant materials High rangeability for precise control
End Connections	ANSI 150# flanges with ANSI face-to-face ANSI 150# flanges with DIN face-to-face DIN PN 16 flanges with DIN face-to-face
Safety	Anti-blowout stem design ¼-inch NPT leak detection port Backup packing for additional protection

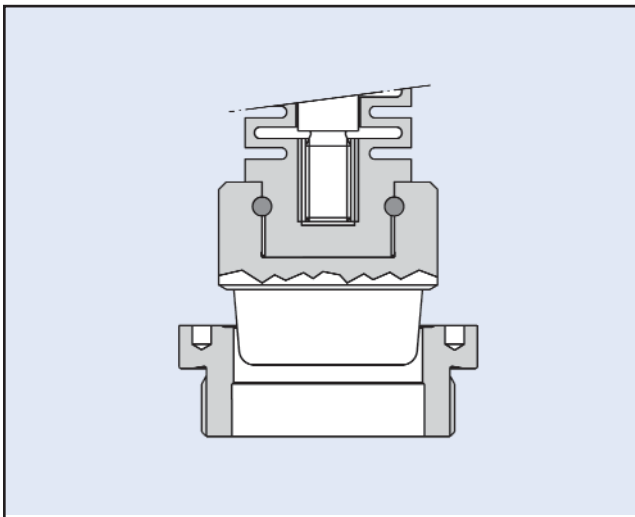


Figure 2: Separable Plug, Seat, and Bellows

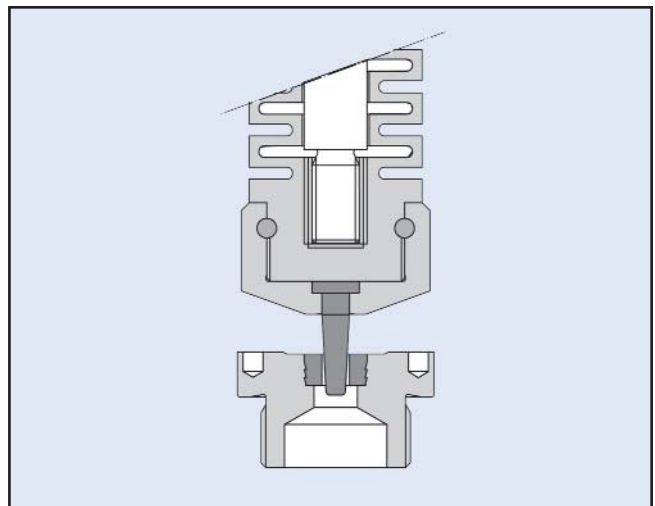


Figure 3: Metal Plug and Seat Inserts

132000 Series Lining Materials

High quality lining material, such as PFA (Perfluoroalkoxy resin), protects the metal parts of the valve assembly. T-grooves provide an extremely reliable connection between the liner and the metal valve body, which is especially important in vacuum applications. The liner thickness

is at least 5 mm for 1-inch to 4-inch (DN 25-100) valves and 3.5 mm liner thickness for ½-inch and ¾-inch (DN 15-20) valves. A variety of other liner materials including FEP, PP, PVDF, ETFE and anti-static PFA are available to meet the requirements for most applications.

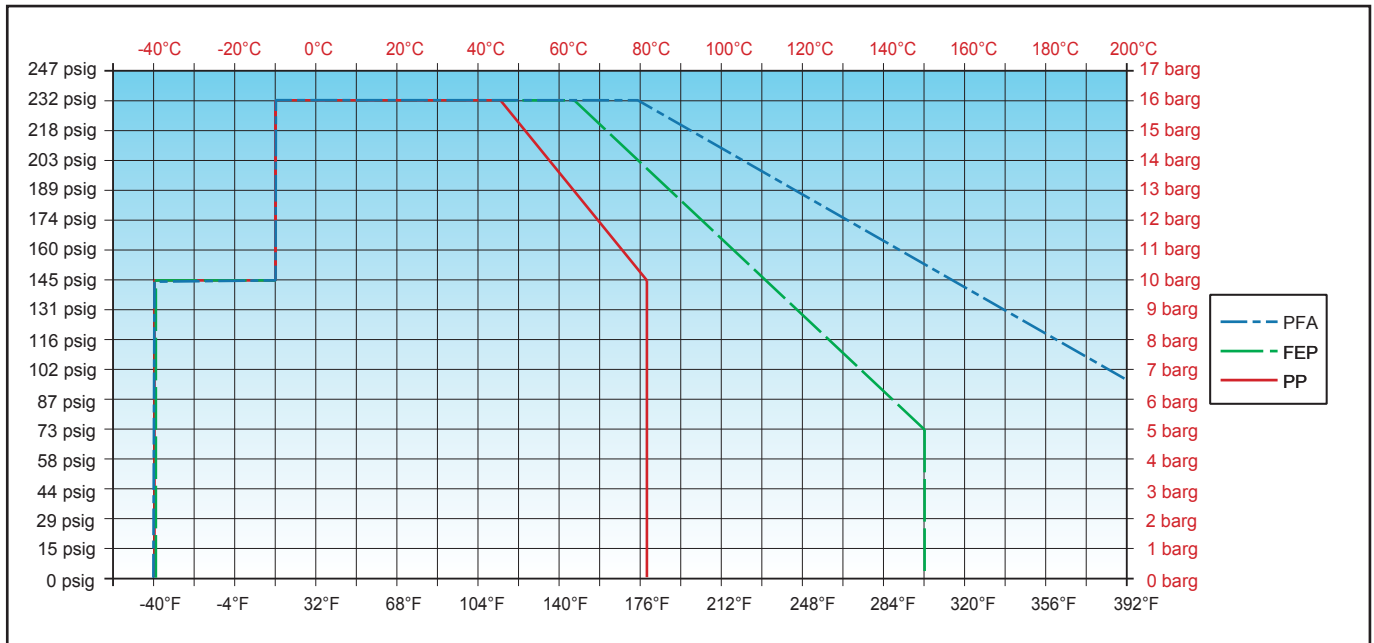


Figure 4: Pressure Temperature Diagram

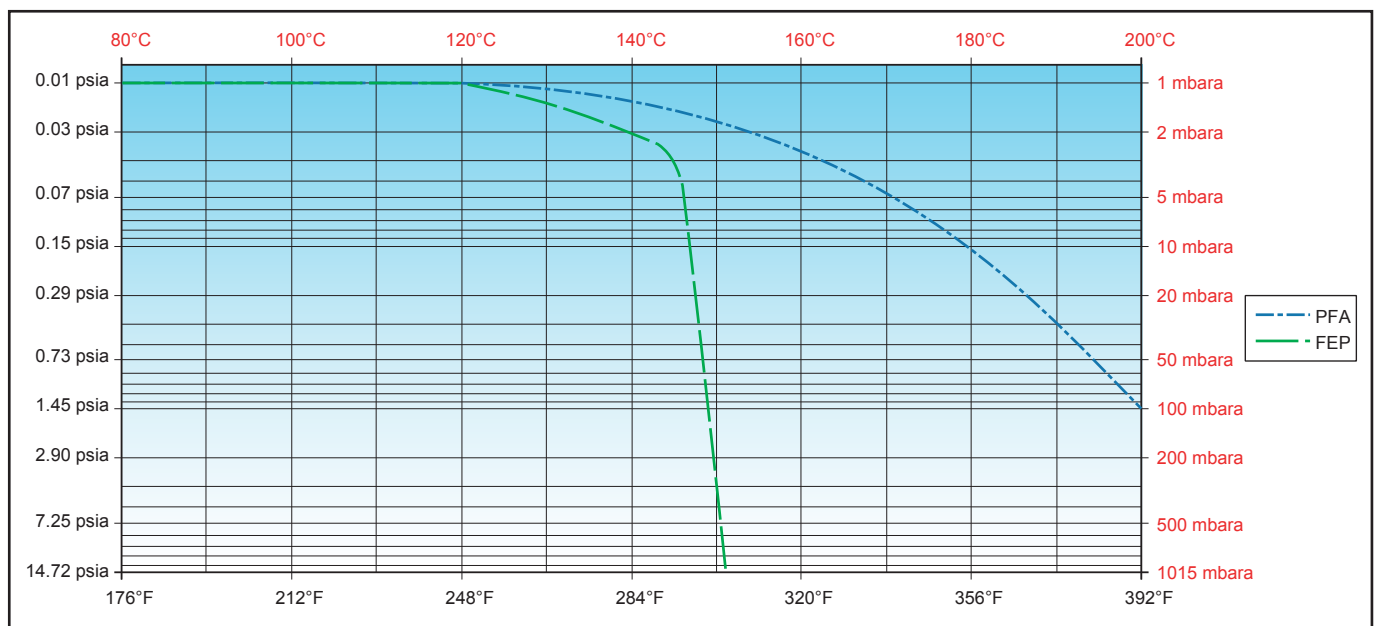


Figure 5: Vacuum Temperature Diagram

132000 Series Specifications

Table 2: 132000 Series Flow Metrics

Body Size		Stroke		Seat Diameter		Flow Coefficient		Standard Plug Material	Standard Seat Material	Rangeability
inches	DIN	inches	mm	inches	mm	C _v	K _{vs}			
0.50 0.75	15 20	0.39	10	0.12	3	0.013	0.011	Hastelloy C-276 ¹	Hastelloy C-276 ¹	50:1
						0.020	0.017			
						0.029	0.025			
						0.047	0.040			
						0.074	0.063			
				0.12	0.10	Hastelloy C-276 ^{1,2}	TFM 1600 ^{2,3}			
	0.18	4.5	0.19	0.16						
			0.29	0.25						
			0.47	0.40						
			0.74	0.63	TFM 1600 ³					
	0.28	7	1.2	1.0						
					1.9	1.6	TFM 1600	TFM 1600		
0.39	10	2.9	2.5							
0.59	15	5.8	5.0							
1	25	0.39	10	0.12	3	0.013	0.011	Hastelloy C-276 ¹	Hastelloy C-276 ¹	50:1
						0.020	0.017			
						0.029	0.025			
						0.047	0.040			
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		0.12	0.10	Hastelloy C-276 ^{1,2}	TFM 1600 ^{2,3}					
		0.18	4.5			0.19	0.16			
						0.29	0.25			
			0.47			0.40				
			0.74	0.63	TFM 1600 ³					
	0.28	7	1.2	1.0						
					1.9	1.6	TFM 1600	TFM 1600		
	0.39	10	2.9	2.5						
	0.47	12	4.7	4.0						
0.63	16	7.4	6.3							
0.98	25	15	13							
1.5	40	0.79	20	0.47	12	4.7	4.0	TFM 1600	TFM 1600	
				0.63	16	7.4	6.3			
				0.79	20	12	10			
				0.98	25	19	16			
				1.57	40	37	32			
2	50	0.79	20	0.63	16	7.4	6.3	TFM 1600	TFM 1600	
				0.79	20	12	10			
				0.98	25	19	16			
				1.26	32	29	25			
				1.97	50	55	47			
3	80	1.57	40	0.98	25	19	16	TFM 1600	TFM 1600	
				1.26	32	29	25			
				1.57	40	47	40			
				1.97	50	74	63			
				3.15	80	140	120			
4	100	1.57	40	1.57	40	47	40	TFM 1600	TFM 1600	
				1.97	50	74	63			
				2.48	63	120	100			
				3.94	100	210	180			

¹ Hastelloy C-276 inserts (other materials available upon request)

² TFM 1600 valve plug and seat rings are available for C_v sizes of 0.1 to 0.74 with 25:1 rangeability

³ Optional Hastelloy C-276 inserts

132000 Series Specifications

Table 3: Body and Lining Materials

Body / Bonnet Material	DIN 0.7043 (Ductile Iron)
Working Pressure Rating	See Figures 4 and 5
End Connections	ANSI Class 150 RF Flanges DIN PN 16 Flanges
Liner Materials	PFA (standard), FEP, PVDF PP, ETFE, and anti-static PFA
Liner Thickness	3.5 mm (minimum) for ½-inch & ¾-inch valve sizes 5 mm (minimum) for 1-inch to 4-inch valve sizes

Table 5: Bellow Seal

Material	TF 1620 for ½-inch to 1-inch valve sizes TFM 1600 for 1½-inch to 4-inch valve sizes
Working Pressure	232 psig at 250° F

Table 6: Options

Bellows Seal	Hastelloy C-276
Stem	Hastelloy C-276, other materials available upon request

Table 4: Trim

C_v Values	See Table 2
Rangeability	50:1
Valve Plug and Seat Ring Material	See Table 2
Flow Characteristics	Equal Percentage, Linear, or On-Off
Seat Leakage Class	ANSI Class VI

Table 7: Bellows Seal Data

Size		Effective Area		Stroke	
ANSI	DIN	inches ²	cm ²	inches	mm
0.5	DN 15	0.99	6.4	0.39	10
0.75	DN 20	0.99	6.4	0.39	10
1	DN 25	1.33	8.6	0.79	20
1.5	DN 40	1.33	8.6	0.79	20
2	DN 50	1.33	8.6	0.79	20
3	DN 80	2.05	13.2	1.57	40
4	DN 100	2.05	13.2	1.57	40

132000 Series Dimensions and Weight

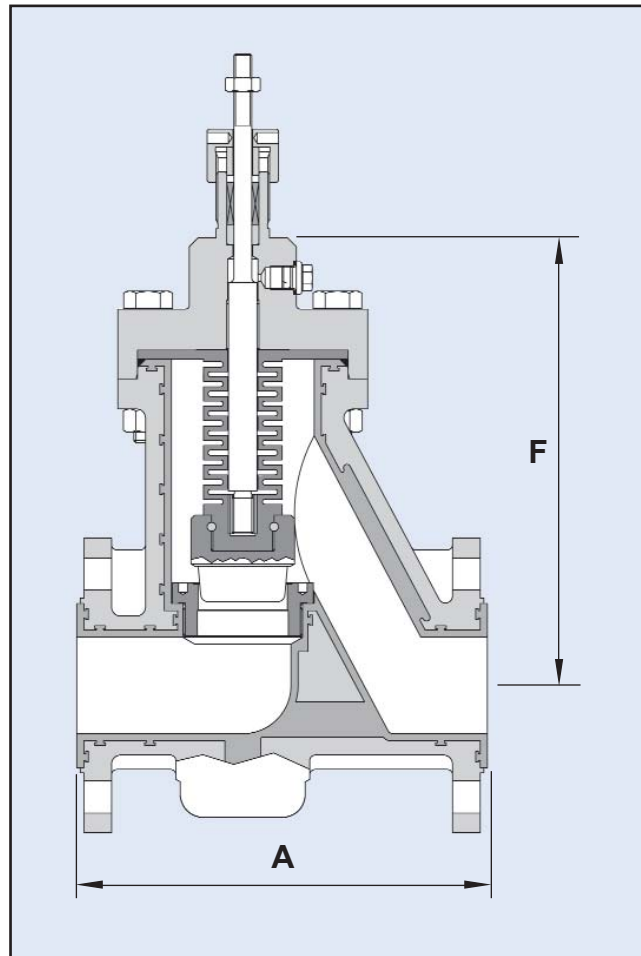


Figure 6: 132000 Series Dimensions

Table 8: Dimensions

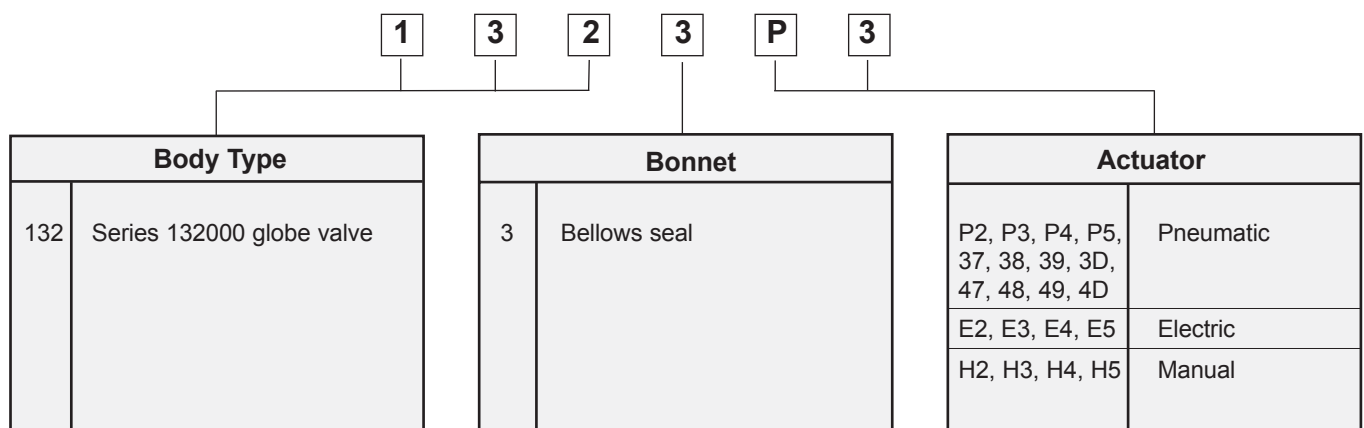
Size		Dimensions							
		A Class 150 ANSI		A Class 150 DIN		A PN 16 DIN		F	
inches	DN	inches	mm	inches	mm	inches	mm	inches	mm
0.5	15	5.1*	130*	5.1	130	5.1	130	7.3	185
0.75	20	5.1*	130*	5.1	130	5.1	130	7.3	185
1	25	7.25	184	6.3	160	6.3	160	9.4	240
1.5	40	8.75	222	7.9	200	7.9	200	9.6	245
2	50	10.0	254	9.1	230	9.1	230	9.8	250
3	80	11.75	298	12.2	310	12.2	310	15.7	400
4	100	13.87	350	13.8	350	13.8	350	17.7	450

*ANSI flanges with DIN face-to-face dimensions

Table 9: Weight

Size		ANSI		DIN	
inches	DN	lb	kg	lb	kg
0.5	15	13	6	13	6
0.75	20	13	6	13	6
1	25	26	12	24	11
1.5	40	42	19	37	17
2	50	46	21	42	19
3	80	82	37	86	39
4	100	97	44	97	44

Kammer 132000 Series Model Code



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