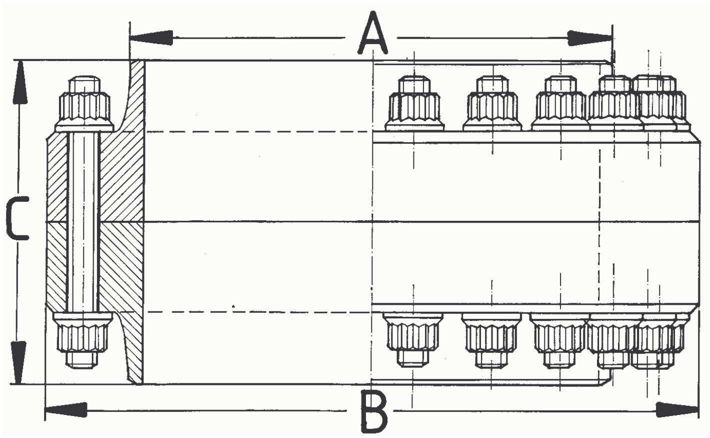
VERAX Standard	Non-gasketed, flanged pipe connection Pressure rating : 300# (Max. working pressure: 54 bar)	VCF 102 Edition 2 Ratified by: Jan Webjörn 1998-04-08

This standard covers the geometry, general dimensions and weight of a series of VCF-joints of a certain pressure rating. Such data (except inside diameter) are the same for all VCF-joints (within a certain pressure rating) regardless of material. Proof test pressure is 50% above max. working pressure. For applications at operating temperature in excess of +450 °C, consult VERAX for special design.

"VCF-joint" stands for pipe connection according to the **V**ERAX **C**ompact **F**lange **S**ystem



DN	Nominal size	A	B	C	Weight of complete joint
	inch	mm	mm	mm	kg
15	½	21,3	Use VCF 107		
20	¾	26,7	Use VCF 107		
25	1	33,4	Use VCF 107		
32	1 ¼	42,2	Use VCF 104		
40	1 ½	48,3	Use VCF 104		
50	2	60,3	Use VCF 103		
65	2 ½	73,0	105	54	1,1
65	2 ½	76,1	105	54	1,1
80	3	88,9	118	54	1,3
100	4	114	143	54	1,6
125	5	141	175	64	2,8
150	6	168	202	64	3,4
200	8	219	259	74	6,2
250	10	273	313	74	7,9
300	12	324	369	88	12,2
350	14	356	401	88	14
400	16	406	463	108	24
450	18	457	513	108	27
500	20	508	575	130	44
600	24	610	678	130	55
750	30	762	841	152	93

See next page for load capacity

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Load Capacity of Class 300 VCF-joints

On most pipe connections not only fluid pressure, but also bending moments and axial loads, act on the joint to pull it apart and to make it leak. When engineering a bolted joint of any kind, the most important part of the work is to establish the magnitude and the character of such loads, either by detailed computations, actual measurements and experiements or by ”guesstimates”. This involves by far the major and most important part of the work.

In those special cases, where a high bending moment or a high axial load, are expected, an analysis of the effects is possible just by adding all load cases together. The design criterium is, that a breakaway situation must be avoided, that in particular no bolt may develop exececessive plastic deformation. It follows that the relationship between various load cases, using denomations as follows:

F = actual max. axial load — F_{max} = the maximum axial load permissible
M = actual bending moment — M_{max} = the max. bending moment permissible
P = required fluid pressure capacity — P_{max} = the max. fluid pressure permissible

Is it readily understood, that if F/F_{max} is 0,5 and M/M_{max} say 0,3 then P/P_{max} may not exceed 0,2 what may be expressed as follows

$$\frac{F}{F_{max}} + \frac{M}{M_{max}} + \frac{P}{P_{max}} <= 1$$

In the following table the load carrying capacities for this series VCF-joints are listed

DN	Nominal size	Maximum axial load F_{max}	Maximum bending moment M_{max}	Maximum fluid pressure P_{max}
	inch	kN	kNm	bar
15	½		Use VCF 107	
20	¾		Use VCF 107	
25	1		Use VCF 107	
32	1 ¼		Use VCF 104	
40	1 ½		Use VCF 104	
50	2		Use VCF 103	
65	2 ½	102	3,8	170
65	2 ½	102	3,8	170
80	3	120	5,2	165
100	4	165	8,4	155
125	5	230	14,8	150
150	6	350	26	190
200	8	500	48	135
250	10	665	77	107
300	12	950	130	115
350	14	1 ´200	170	120
400	16	1 ´700	285	145
450	18	2 ´000	380	130
500	20	2 ´900	620	180
600	24	3 ´400	850	120
750	30	5 ´000	1 ´500	110