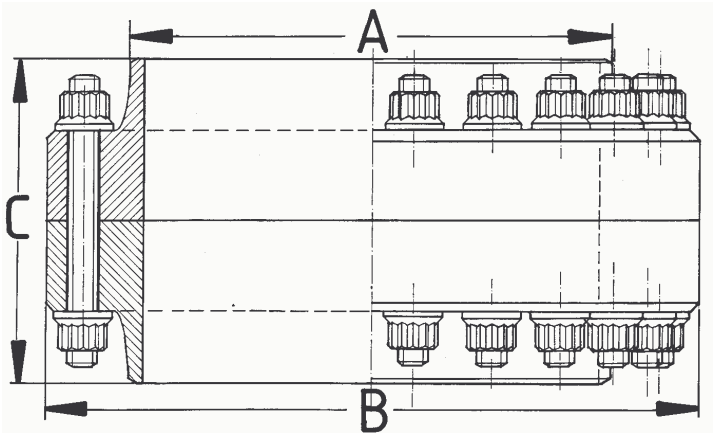
VERAX Standard	Non-gasketed, flanged pipe connection Pressure rating : 2'025# (Max. working pressure: 345 bar)	VCF 106 Edition 3 Ratified by: Jan Webjörn 1999-04-12

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 System



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 107		
40	1 ½	48,3		Use VCF 107		
50	2	60,3		100	78	2,2
65	2 ½	73,0		115	78	2,8
65	2 ½	76,1		115	78	2,8
80	3	88,9		134	88	4,3
100	4	114		171	112	8,6
125	5	141		209	134	15,4
150	6	168		247	156	25
200	8	219		309	180	43
250	10	273		Use VCF 107		
300	12	324		441	232	107
350	14	356		495	276	166
400	16	406		545	280	194
450	18	457		631	346	333

See next page for load capacity

Load Capacity of Class 2'025 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 execessive 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 107	
40	1 ½		Use VCF 107	
50	2	250	8,8	680
65	2 ½	370	16	715
65	2 ½	370	16	715
80	3	475	23	690
100	4	750	46	720
125	5	1 ´100	81	710
150	6	1 ´500	130	715
200	8	2 ´500	275	740
250	10		Use VCF 107	
300	12	4 ´900	770	680
350	14	6 ´600	1 ´160	850
400	16	7 ´600	1 ´510	680
450	18	10 ´500	2 ´300	760