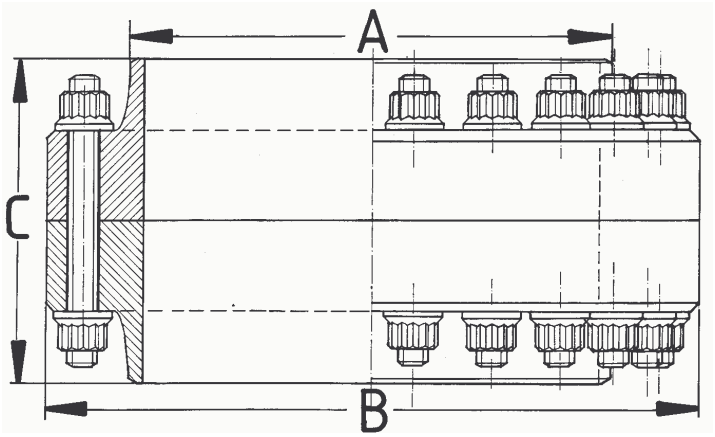
VERAX Standard	Non-gasketed, flanged pipe connection Pressure rating : 1'500# (Max. working pressure: 266 bar)	VCF 105 Edition 3 Ratified by: Jan Webjörn 1999-04-12

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 **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 107		
40	1 ½	48,3		Use VCF 107		
50	2	60,3		Use VCF 106		
65	2 ½	73,0		Use VCF 106		
65	2 ½	76,1		Use VCF 106		
80	3	88,9		Use VCF 106		
100	4	114		160	88	5,4
125	5	141		198	112	10,4
150	6	168		236	132	17,6
200	8	219		298	156	31,8
250	10	273		363	180	52
300	12	324		428	206	82
350	14	356		473	228	112
400	16	406		535	232	142
450	18	457		596	276	208
500	20	508		682	340	350
600	24	610		817	408	600
750	30	762		1'003	480	1'040

See next page for load capacity

Load Capacity of Class 1'500 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		Use VCF 106	
65	2 ½		Use VCF 106	
65	2 ½		Use VCF 106	
80	3		Use VCF 106	
100	4	580	33	520
125	5	920	65	605
150	6	1 ´200	103	565
200	8	2 ´000	211	570
250	10	2 ´900	380	550
300	12	4 ´150	630	570
350	14	4 ´900	830	560
400	16	6 ´350	1 ´200	555
450	18	8 ´100	1 ´750	540
500	20	10 ´500	2 ´600	600
600	24	14 ´100	4 ´100	540
750	30	22 ´600	8 ´100	580