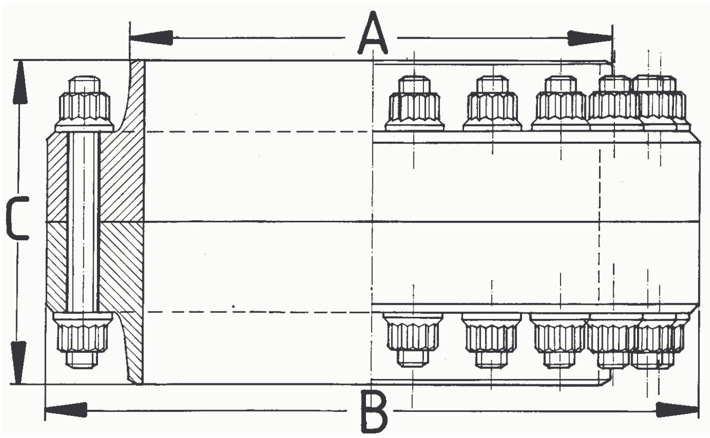
VERAX Standard	**Non-gasketed, flanged pipe connection Pressure rating : 600# (Max. working pressure: 120 bar)**	***VCF 103*** Edition 3 Ratified by: Jan Webjörn 1999-04-12

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 104		
40	1 ½	48,3	Use VCF 104		
50	2	60,3	89	54	0,9
65	2 ½	73,0	Use VCF 104		
65	2 ½	76,1	Use VCF 104		
80	3	88,9	123	64	2
100	4	114	148	64	2,6
125	5	141	181	74	4,4
150	6	168	213	88	6,8
200	8	219	275	108	14
250	10	273	Use VCF 104		
300	12	324	391	130	31
350	14	356	423	130	35
400	16	406	485	156	54
450	18	457	536	156	63
500	20	508	587	156	72
600	24	610	700	180	114
750	30	762	936	228	229

See next page for load capacity

Load Capacity of Class 600 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	102	3,3	265
65	2 ½		Use VCF 104	
65	2 ½		Use VCF 104	
80	3	203	8,9	280
100	4	290	16	245
125	5	420	27	235
150	6	630	49	290
200	8	1 ´000	100	270
250	10		Use VCF 104	
300	12	1 ´900	280	230
350	14	2 ´400	375	240
400	16	3 ´150	560	255
450	18	4 ´000	780	245
500	20	4 ´800	1 ´040	240
600	24	6 ´800	1 ´750	235
750	30	10 ´600	3 ´400	240