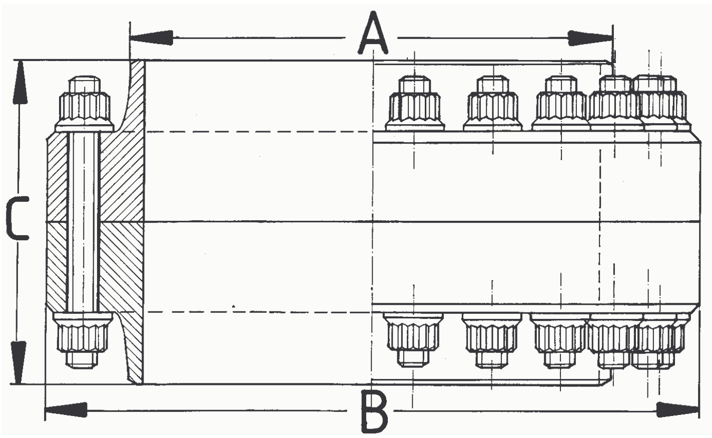
VERAX Standard	**Non-gasketed, flanged pipe connection Pressure rating : 150# (Max. working pressure: 20 bar)**	***VCF 101*** Edition 2 Ratified by: Jan Webjörn 1998-04-08

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	42,3		Use VCF 104		
40	1 ½	48,3		Use VCF 104		
50	2	60,3		Use VCF 103		
65	2 ½	73,0		Use VCF 102		
65	2 ½	76,1		Use VCF 102		
80	3	88,9		Use VCF 102		
100	4	114		Use VCF 102		
125	5	141		Use VCF 102		
150	6	168		Use VCF 102		
200	8	219		253	64	4,2
250	10	273		307	64	5,1
300	12	324		364	74	8,4
350	14	356		396	74	9,4
400	16	406		446	74	10,6
450	18	457		497	74	12
500	20	508		553	84	17
600	24	610		655	84	21
750	30	762		818	106	41

See next page for load capacity

Load Capacity of Class 150 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 104	
40	1 ½		Use VCF 104	
50	2		Use VCF 103	
65	2 ½		Use VCF 102	
65	2 ½		Use VCF 102	
80	3		Use VCF 102	
100	4		Use VCF 102	
125	5		Use VCF 102	
150	6		Use VCF 102	
200	8	290	27	84
250	10	350	39	44
300	12	665	89	145
350	14	750	110	120
400	16	830	140	87
450	18	915	170	66
500	20	1’250	260	82
600	24	1’400	330	49
750	30	2’500	760	69