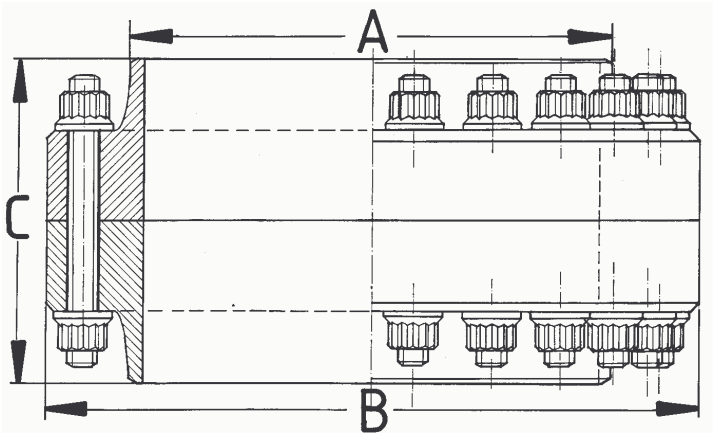
VERAX Standard	**Non-gasketed, flanged pipe connection Pressure rating : 2'500# (Max. working pressure: 426 bar)**	**VCF 107** Edition 3 Ratified by: Jan Webjörn 1999-04-12

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		50	54	0,4
20	¾	26,7		56	54	0,5
25	1	33,4		68	64	1
32	1 ¼	42,2		76	64	1,2
40	1 ½	48,3		82	64	1,3
50	2	60,3		105	90	3
65	2 ½	73,0		121	90	3,9
65	2 ½	76,1		121	90	3,9
80	3	88,9		145	110	6,8
100	4	114		182	132	13
125	5	141		220	156	21,4
150	6	168		258	180	33
200	8	219		323	206	58
250	10	273		390	232	93
300	12	324		463	280	157

See next page for load capacity

Load Capacity of Class 2'500 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	61	1,1	970
20	¾	82	1,7	940
25	1	116	2,6	1 ´000
32	1 ¼	174	4,5	1 ´100
40	1 ½	200	5,9	1 ´000
50	2	320	11,7	950
65	2 ½	475	20	1 ´010
65	2 ½	475	20	1 ´010
80	3	590	30	920
100	4	970	62	1 ´060
125	5	1 ´300	103	930
150	6	1 ´800	167	920
200	8	2 ´800	320	810
250	10	4 ´200	585	840
300	12	6 ´100	1 ´010	910