



Funzionamento

Il processo di giunzione flangiata consiste in un collegamento meccanico tra due estremità circolari piatte (le flange) perpendicolari all'asse del tubo, che viene realizzato tramite un insieme di viti disposte in cerchio e equidistanti, il cui serraggio determina la compressione di una guarnizione che garantisce la tenuta del giunto (vedere Figura 1).

Questo tipo di collegamento è progettato per formare un giunto che può essere facilmente smontato e rimontato allentando e riserrando le viti, liberando/fissando la guarnizione di tenuta.

Esistono diverse tipologie di flange previste dalla norma UNE-EN 1092-1 che consentono diversi processi di giunzione al tubo di acciaio, come ad esempio:

- Flangia piana a saldare VI2278, illustrata nella Figura 2;
- Flangia cieca VI6093, illustrata nella Figura 3;
- Flangia con collare a saldare VI2282, illustrata nella Figure 1 e 4;

Figura 1

Giunzione flanfiata con VI2282.

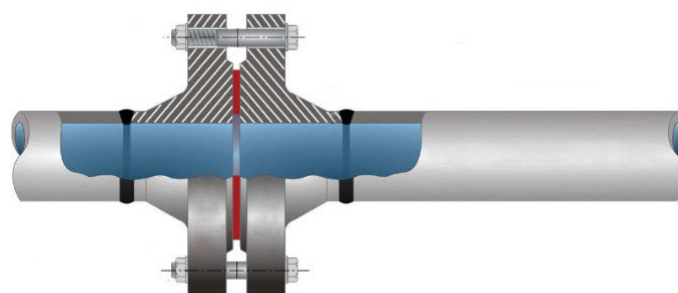


Figura 2
VI 2278

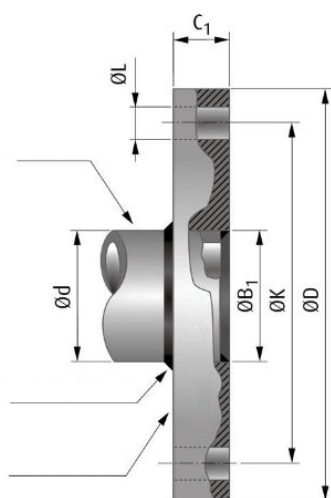


Figura 3
VI 6093

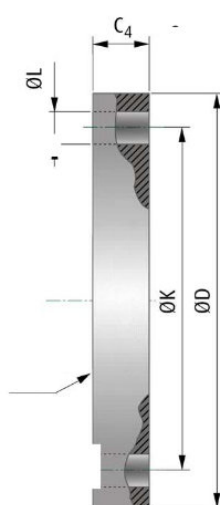
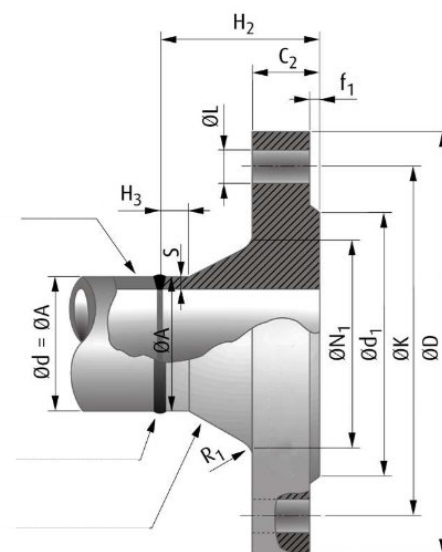


Figura 4
VI 2282



Flange UNI-EN 1092-1			Tolleranze dimensionali (mm)										
Cod.	Disegno	DN	Diametro esterno	Diametro interno	Diametro esterno del collo	Spessore del collo	Altezza	Diametro del collo	Spessore	Diametro interasse viti	Diametro fori per viti		
			$\varnothing D$	$\varnothing B_1, \varnothing B_2$	$\varnothing A$	S	H ₁ , H ₂	$\varnothing N_2$	C ₁ , C ₂ , C ₄	$\varnothing K$	$\varnothing L$		
VI 2278		≤ DN 100	± 2,0 mm	+0,5/0 mm	-	-	-	-	spessore ≤ 18 mm: +1,0/-1,3 mm spessore ≤ 50 mm: ± 1,5 mm spessore > 50 mm: ± 2,0 mm	viti ≤ M24: ± 1,0 mm viti ≤ M45: ± 1,5 mm viti > M45: ± 2,0 mm	viti ≤ M24: +1,0/0 mm viti ≤ M45: +2,5/0 mm viti > M45: +4,0/0 mm		
		≤ DN 150		+1,0/0 mm									
		≤ DN 400	± 3,0 mm	+1,5/0 mm									
		≤ DN 500											
		≤ DN 600	± 5,0 mm										
		≤ DN 1200	+3,0/0 mm										
VI 6093		≤ DN 150	± 2,0 mm	-	-	-	-	-	sp. ≤ 18 mm: +1,0/-1,3 mm sp. ≤ 50 mm: ± 1,5 mm sp. > 50 mm: ± 2,0 mm	viti ≤ M24: ± 1,0 mm viti ≤ M45: ± 1,5 mm viti > M45: ± 2,0 mm	viti ≤ M24: +1,0/0 mm viti ≤ M45: +2,5/0 mm viti > M45: +4,0/0 mm		
		≤ DN 500	± 3,0 mm										
		≤ DN 1200	± 5,0 mm										
VI 2282		≤ DN 80	± 2,0 mm	+3,0/0 mm	-	+1,0/0 mm	± 1,5 mm	-	spessore ≤ 18 mm: +1,0/-1,3 mm spessore ≤ 50 mm: ± 1,5 mm spessore > 50 mm: ± 2,0 mm	viti ≤ M24: ± 1,0 mm viti ≤ M45: ± 1,5 mm viti > M45: ± 2,0 mm	viti ≤ M24: +1,0/0 mm viti ≤ M45: +2,5/0 mm viti > M45: +4,0/0 mm		
		≤ DN 100											
		≤ DN 125											
		≤ DN 150	± 3,0 mm	+4,5/0 mm								+1,5/0 mm	± 2,0 mm
		≤ DN 250											
		≤ DN 400	± 5,0 mm	+4,5/0 mm								+2,0/0 mm	± 3,0 mm
		≤ DN 500											
≤ DN 1200													

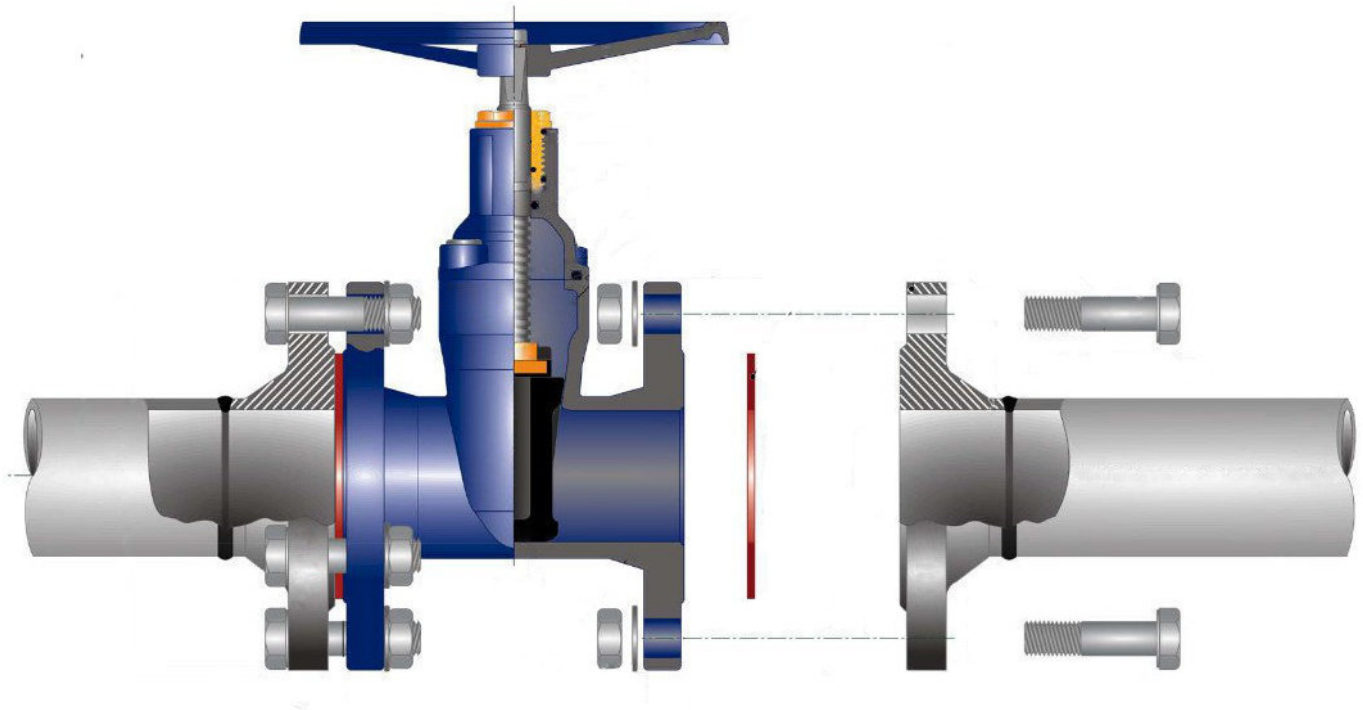
Flange UNI-EN 1092-1		Designazione PN					
Cod.		PN 2,5	PN 6	PN 10	PN 16	PN 25	PN 40
VI 2278		O	DIN 2573	DIN 2576	O		
VI 6093		O	DIN 2527				
VI 2282		DIN 2630	DIN 2631	DIN 2632	DIN 2633	DIN 2634	DIN 2635

o Inesistenza della norma DIN a sostituzione della UNI-EN 1092-1

ESEMPIO DI APPLICAZIONE

Esempio 1

Installazione di una valvola a saracinesca flangiata collegata al tubo con 2 flange a collare VI2282, secondo la norma UNE-EN 1092-1.





Operation

The flanged joint process consists of a mechanical connection between two flat circular ends (the flanges) perpendicular to the axis of the pipe, which is made by means of a set of screws arranged in a circle and equidistant, the tightening of which causes the compression of a gasket that guarantees the sealing of the joint (see Figure 1).

This type of connection is designed to form a joint that can be easily dismantled and reassembled by loosening and retightening the screws, freeing/securing the sealing gasket. There are different types of flanges provided for by the UNE-EN 1092-1 standard that allow different joining processes to the steel pipe, such as:

- Flat flange to weld VI2278, illustrated in Figure 2;
- Blind flange VI6093, illustrated in Figure 3;
- Flange with collar to weld VI2282, illustrated in Figures 1 and 4;

Figure 1
Flanged joint with VI2282.

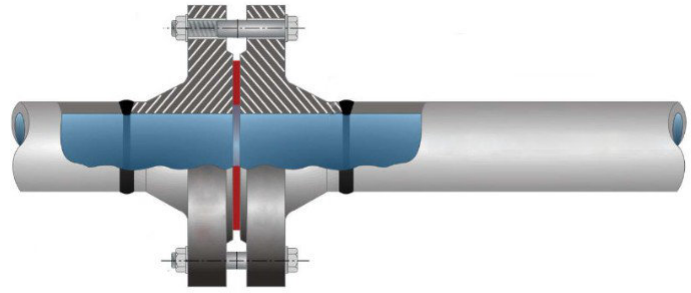


Figure 2
VI 2278

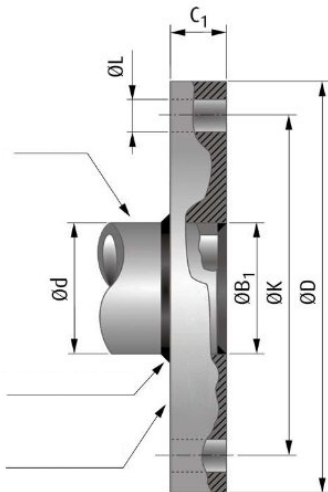


Figure 3
VI 6093

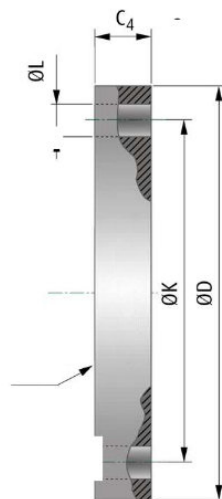
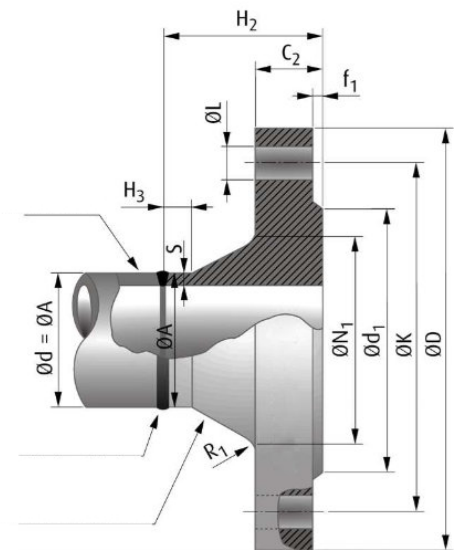


Figure 4
VI 2282



UNI-EN 1092-1 flanges			Dimensional tolerances (mm)										
Cod.	Draw	DN	Diameter external $\varnothing D$	Diameter internal $\varnothing B_1, \varnothing B_2$	Outer neck diameter $\varnothing A$	Neck thickness S	Height H_1, H_2	Neck diameter $\varnothing N_2$	Thickness C_1, C_2, C_4	screw center distance diameter $\varnothing K$	Diameter holes for screws $\varnothing L$		
VI 2278		≤ DN 100	± 2,0 mm	+0,5/0 mm	-	-	-	-	thickness ≤ 18 mm: +1,0/-1,3 mm thickness ≤ 50 mm: ± 1,5 mm thickness > 50 mm: ± 2,0 mm	screw ≤ M24: ± 1,0 mm screw ≤ M45: ± 1,5 mm screw > M45: ± 2,0 mm	viti ≤ M24: +1,0/0 mm viti ≤ M45: +2,5/0 mm viti > M45: +4,0/0 mm		
		≤ DN 150		+1,0/0 mm									
		≤ DN 400	± 3,0 mm	+1,5/0 mm									
		≤ DN 500											
		≤ DN 600	± 5,0 mm										
		≤ DN 1200	+3,0/0 mm										
VI 6093		≤ DN 150	± 2,0 mm	-	-	-	-	-	th ≤ 18 mm: +1,0/-1,3 mm	≤ M24: ± 1,0 mm	≤ M24: +1,0/0 mm		
		≤ DN 500	± 3,0 mm						th ≤ 50 mm: ± 1,5 mm	≤ M45: ± 1,5 mm	≤ M45: +2,5/0 mm		
		≤ DN 1200	± 5,0 mm						th > 50 mm: ± 2,0 mm	> M45: ± 2,0 mm	> M45: +4,0/0 mm		
VI 2282		≤ DN 80	± 2,0 mm	+3,0/0 mm	-	+1,0/0 mm	± 1,5 mm	-	thickness ≤ 18 mm: +1,0/-1,3 mm thickness ≤ 50 mm: ± 1,5 mm thickness > 50 mm: ± 2,0 mm	screw ≤ M24: ± 1,0 mm screw ≤ M45: ± 1,5 mm screw > M45: ± 2,0 mm	screw ≤ M24: +1,0/0 mm screw ≤ M45: +2,5/0 mm screw > M45: +4,0/0 mm		
		≤ DN 100										± 2,0 mm	+1,5/0 mm
		≤ DN 125											
		≤ DN 150	± 3,0 mm	+4,5/0 mm		± 3,0 mm							
		≤ DN 250											
		≤ DN 400	± 5,0 mm	+2,0/0 mm									
		≤ DN 500											
≤ DN 1200													

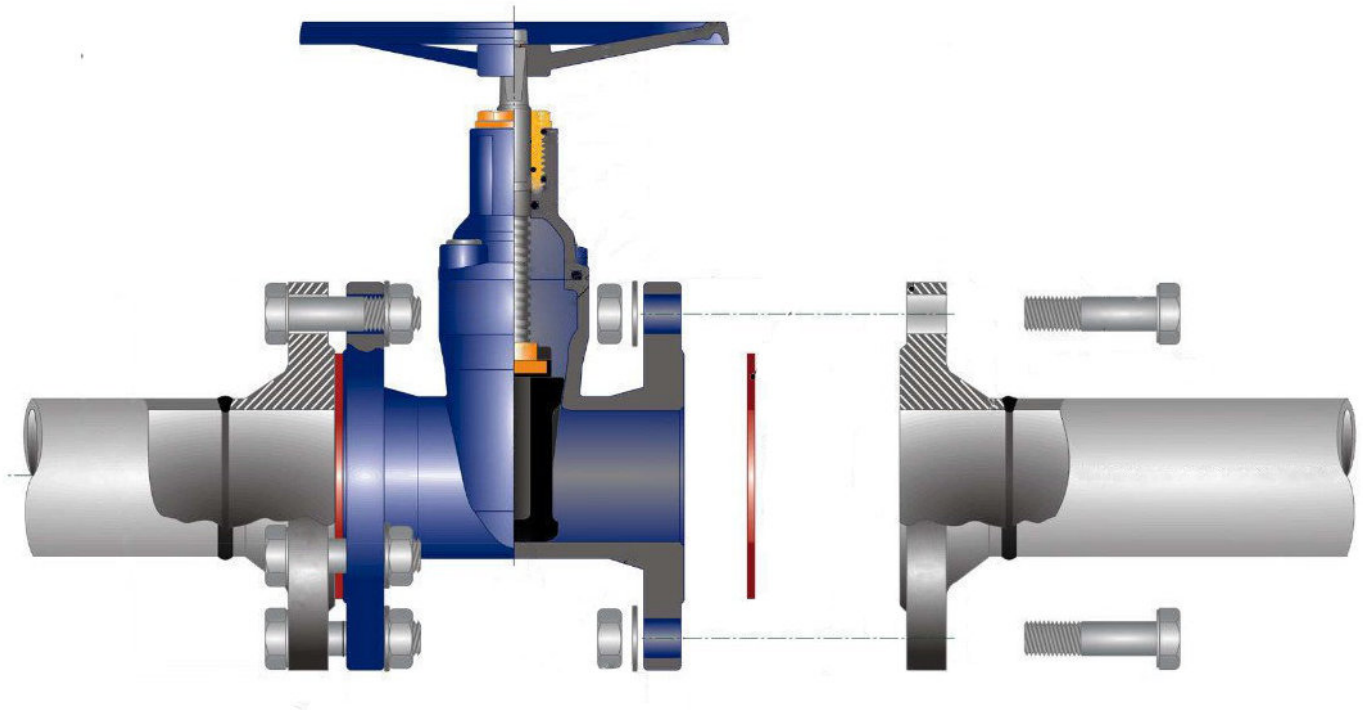
UNI-EN 1092-1 flanges		PN designation					
Cod.		PN 2,5	PN 6	PN 10	PN 16	PN 25	PN 40
VI 2278		O	DIN 2573	DIN 2576	O		
VI 6093		O	DIN 2527				
VI 2282		DIN 2630	DIN 2631	DIN 2632	DIN 2633	DIN 2634	DIN 2635

o Non-existence of the DIN standard to replace UNI-EN 1092-1

APPLICATION EXAMPLE

Example 1

Installation of a flanged gate valve connected to the pipe with 2 collar flanges VI2282, according to the UNE-EN 1092-1 standard.





Opérations

Le procédé de joint à brides consiste en une liaison mécanique entre deux extrémités circulaires plates (les brides) perpendiculaires à l'axe du tuyau, qui est réalisée au moyen d'un ensemble de vis disposées en cercle et équidistantes, dont le serrage provoque la compression d'un joint qui garantit l'étanchéité du joint (voir Figure 1).

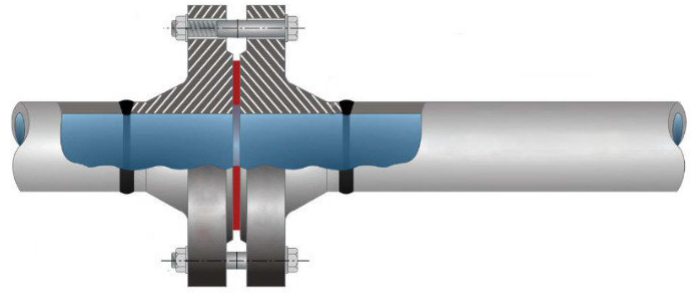
Ce type de connexion est conçu pour former un joint qui peut être facilement démonté et remonté en desserrant et en resserrant les vis, libérant/fixant le joint d'étanchéité.

Il existe différents types de brides prévues par la norme UNE-EN 1092-1 qui permettent différents procédés d'assemblage au tube en acier, tels que :

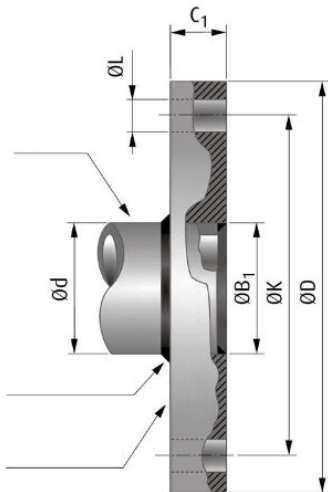
- Bride plate à souder VI2278, illustrée à la figure 2 ;
- Brides pleines VI6093, illustrées à la figure 3 ;
- Bride à collerette à souder VI2282, illustrée en Figures 1 et 4;

Chiffres 1

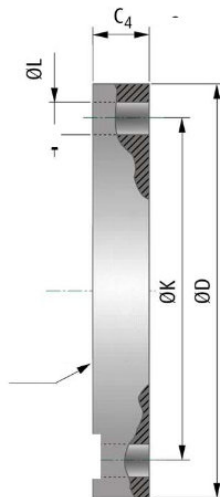
Joint à bride avec VI2282.



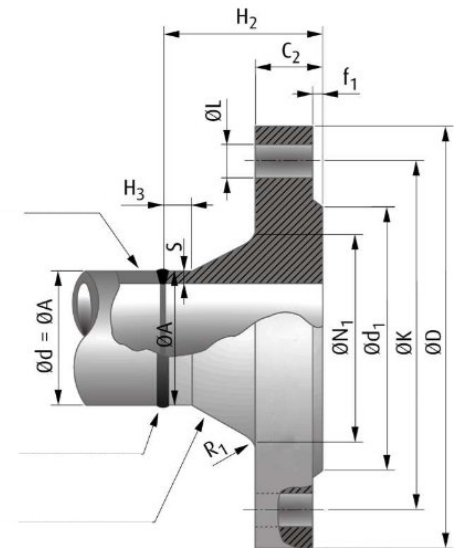
Chiffres 2
VI 2278



Chiffres 3
VI 6093



Chiffres 4
VI 2282



Brides UNI-EN 1092-1			Tolérances dimensionnelles (mm)											
Cod.	Dessin	DN	Diamètre extérieur ØD	Diamètre interne ØB ₁ , ØB ₂	Diamètre extérieur du col ØA	épaisseur du cou S	Hauteur H ₁ , H ₂	Diamètre du col ØN ₂	épaisseur C ₁ , C ₂ , C ₄	Diamètre de l'entraxe des vis ØK	Diamètre de la distance entre les centres des trous de vis ØL			
VI 2278		≤ DN 100	± 2,0 mm	+0,5/0 mm	-	-	-	-	thickness ≤ 18 mm: +1,0/-1,3 mm thickness ≤ 50 mm: ± 1,5 mm thickness > 50 mm: ± 2,0 mm	screw ≤ M24: ± 1,0 mm screw ≤ M45: ± 1,5 mm screw > M45: ± 2,0 mm	viti ≤ M24: +1,0/0 mm viti ≤ M45: +2,5/0 mm viti > M45: +4,0/0 mm			
		≤ DN 150		+1,0/0 mm										
		≤ DN 400	± 3,0 mm	+1,5/0 mm										
		≤ DN 500												
		≤ DN 600	± 5,0 mm	+3,0/0 mm										
		≤ DN 1200												
VI 6093		≤ DN 150	± 2,0 mm	-	-	-	-	-	th ≤ 18 mm: +1,0/-1,3 mm th ≤ 50 mm: ± 1,5 mm th > 50 mm: ± 2,0 mm	≤ M24: ± 1,0 mm ≤ M45: ± 1,5 mm > M45: ± 2,0 mm	≤ M24: +1,0/0 mm ≤ M45: +2,5/0 mm > M45: +4,0/0 mm			
		≤ DN 500										± 3,0 mm		
		≤ DN 1200										± 5,0 mm		
VI 2282		≤ DN 80	± 2,0 mm	-	+3,0/0 mm	+1,0/0 mm	± 1,5 mm	-	thickness ≤ 18 mm: +1,0/-1,3 mm thickness ≤ 50 mm: ± 1,5 mm thickness > 50 mm: ± 2,0 mm	screw ≤ M24: ± 1,0 mm screw ≤ M45: ± 1,5 mm screw > M45: ± 2,0 mm	screw ≤ M24: +1,0/0 mm screw ≤ M45: +2,5/0 mm screw > M45: +4,0/0 mm			
		≤ DN 100												
		≤ DN 125												
		≤ DN 150										± 3,0 mm	+4,5/0 mm	± 2,0 mm
		≤ DN 250												
		≤ DN 400										± 5,0 mm	+2,0/0 mm	± 3,0 mm
		≤ DN 500												
≤ DN 1200														

Brides UNI-EN 1092-1		Désignation PN					
Cod.		PN 2,5	PN 6	PN 10	PN 16	PN 25	PN 40
VI 2278		O	DIN 2573	DIN 2576	O		
VI 6093		O	DIN 2527				
VI 2282		DIN 2630	DIN 2631	DIN 2632	DIN 2633	DIN 2634	DIN 2635

o Inexistence de la norme DIN pour remplacer la norme UNI-EN 1092-1

EXEMPLE D'APPLICATION

Exemple 1

Installation d'une vanne à guillotine à brides raccordée au tuyau avec 2 brides à collier VI2282, selon la norme UNE-EN 1092-1.

