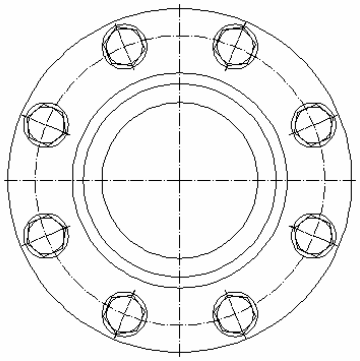
Mounting guidelines for reduced flanges

The usual advises for the assembly of flange connections have to be applied

By assembling flange connections the following points are to be considered:

Alignment of Parts*

The seal as well as the used flanges must be aligned centrically to the tube centre. Before tightening of screws, the sealing surfaces of the flanges must collimate flat to each other and must fit tightly the seal. The pulling –on of the sealing surfaces by screw pre-loading with the use of a tool is not permissible. In case of horizontally pipe laying, the hole position of the upper and/or lower two screws has as well to be horizontally (see illustration 1).



BELOW

Illustration 1: Alignment of the screws by horizontal pipelaying.

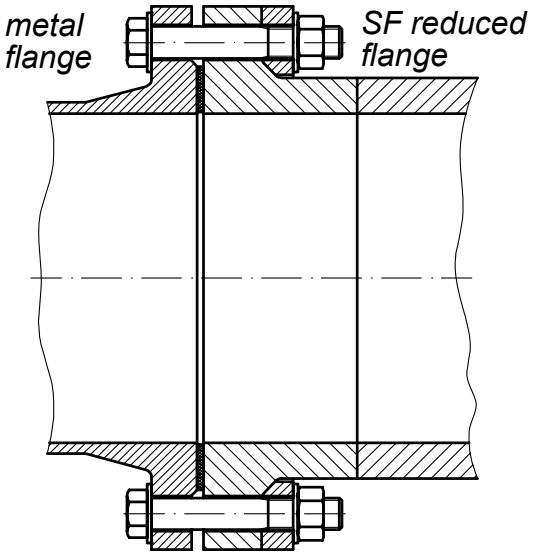
Tightening the screws *

The length of the screws has to be chosen to ensure that the screw thread-length overlap with at least two threads. Flat-washers have to be used on both sides.

The connecting bolts must be tightened diagonally, in several steps and uniformly with a torque spanner. The necessary torque depends on the form, on the material of the selected seal and as well as on the friction in the screw thread and/or at the nut bearing face.

The upper limit values for torque coefficients on use of elastomeric seals and more recently, with screws furnished with lubricant are displayed in table 1.

* The following data are part of the guideline:
DVS 2210-1 supplementary sheet 3



Torque coefficients for the assembly of flange connections *

The DVS details in table 1 is valid for stub ends and backing rings according to DIN 16963/16962 which have a smaller contact area between stub end and backing ring than Reinert-Ritz SF Special flange connection (or reduced flange).

Therefore an **exceeding of the torque coefficients of maximal 30% is allowed for the Reinert-Ritz SF Special flange connection.**

Table 1:

Nominal width DN	Tightening torque of screws [Nm]		
	Flat ring (guide value) ad p ≤ 10 bar	Profil ring (guide value) ad p ≤ 16 bar	O-ring (guide value) ad p ≤ 16 bar
15	15	10	10
20		15	15
25			
32	20		
40	30		
50	35	20	20
65	40		
80			
100			
125	50	30	25
150	60	35	30
200	70	40	35
250	80	50	40
300	100	60	45
350	100	70	50
400	120	80	60
500	190	90	70
600	220	100	80

ad p = admissible operating pressure

=ad p ≤ 6 bar

Warning:
Upon completion of the pressure test, the torque moments should be re-checked and adjusted as necessary.

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