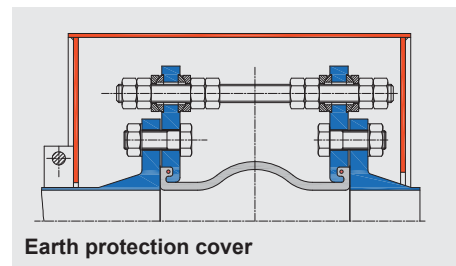


WILLBRANDT Accessories

Earth protection cover

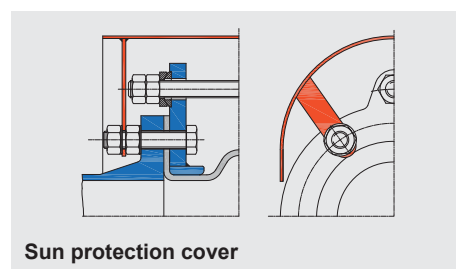
The earth protection cover is necessary if rubber expansion joints are built into the ground and the bellow requires protection from direct contact with earth and sand. The earth protection cover does not restrict the expansion joint's movement, which means that it can absorb subsidence and pipe shifts. The cover is manufactured in two parts, so that it can be mounted after the expansion joint has been completely installed. It is secured to the pipe on one side (preferably not the moving side).



Earth protection cover

Sun protection cover

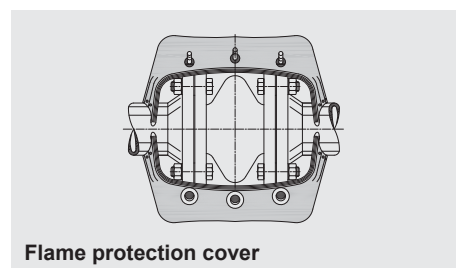
Used wherever heavy solar radiation is expected in order to avoid hardening (ageing). It is manufactured as a single part with $\frac{3}{4}$ circulation. It can be fastened directly using the flange connection bolts. It should however be noted that the bolts required for fastening the cover are longer than normal, as a second lock nut must also be accommodated. The covers are made from 1.4301 stainless steel; other materials are available upon request.



Sun protection cover

Flame protection cover

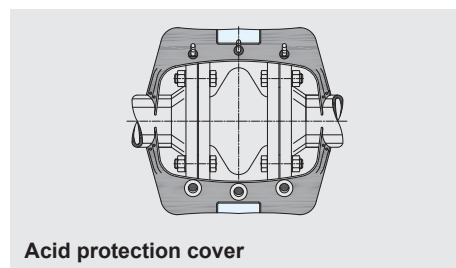
The flame protection cover is used to protect the unit wherever open flames are possible. The main field of application is ships' engine rooms. The cover is delivered as a single unit with a resealable opening. After the expansion joint has been completely installed, it is placed around the expansion joint and counter flange, and closed.



Flame protection cover

Acid protection cover

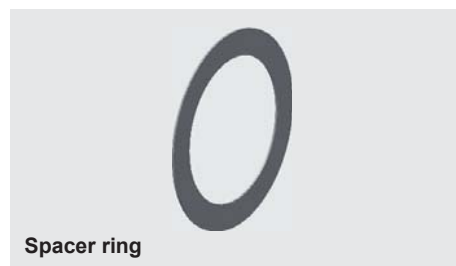
The acid protection cover is used for in applications where aggressive media are transported and personal protection is necessary. The cover is primarily made from PTFE and can be provided a window and an outlet valve. The cover is delivered as a single unit with a resealable opening. It will be mounted after the expansion joint has been completely installed. The cover is placed around the expansion joint and closed.



Acid protection cover

Spacer ring

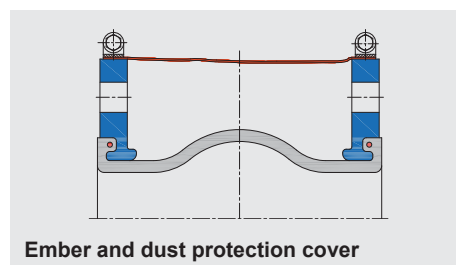
A spacer ring made of metal is used, when the inner diameter of the sealing surface of the counter flange is greater than the diameter of the rubber bellow (please refer to the table for the rubber bellow sealing profile on page 118). This is applicable by using crimped flanges or slip-on flanges. An additional sealing between counter flange and spacer ring is necessary.



Spacer ring

Ember and dust protection

This is a simple protective band made from an aluminium coated glass fabric. It is designed to prevent damage to the expansion joint during operation under heavy load, e.g. falling hot ash or embers in steelworks. It is also designed to prevent heavy soiling between the bellow and flange, which can lead to significant abrasion during movement. The dust protection cover is delivered as a sleeve and attached to the flange using hose clamps. All covers are constructed so that the expansion joints' freedom of movement is not limited.



Ember and dust protection cover