Introduction

The following Installation Guide is designed to provide installers with sufficient information to successfully install a WaStop check valve. Typically, our customers were provided with Shop Drawings prior to manufacture for both review and authorization to manufacture. These documents alone, however, may not provide all the guidance needed to install the WaStop.

The WaStop

Regardless of dimension, all WaStop share some specific features. There are two main methods of installing a WaStop; with mounting tabs or with a flange. The dimension of the bolt holes is noted on the shop drawings.

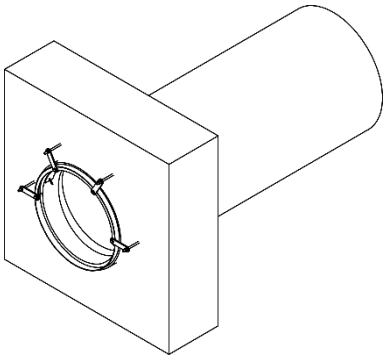

fig 1. Mounting tabs and rubber seal.

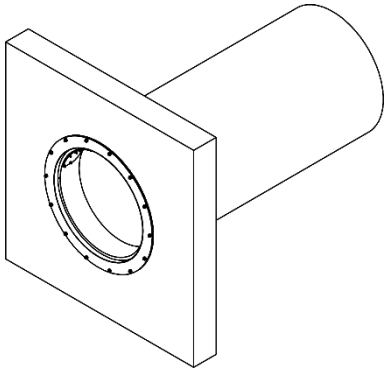

fig 2. Flange

Orientation

The WaStop should always be installed with the 'spine' of the membrane upwards. Depending on the dimension the WaStop could be pushed in place by hand or using lifting equipment and slings.

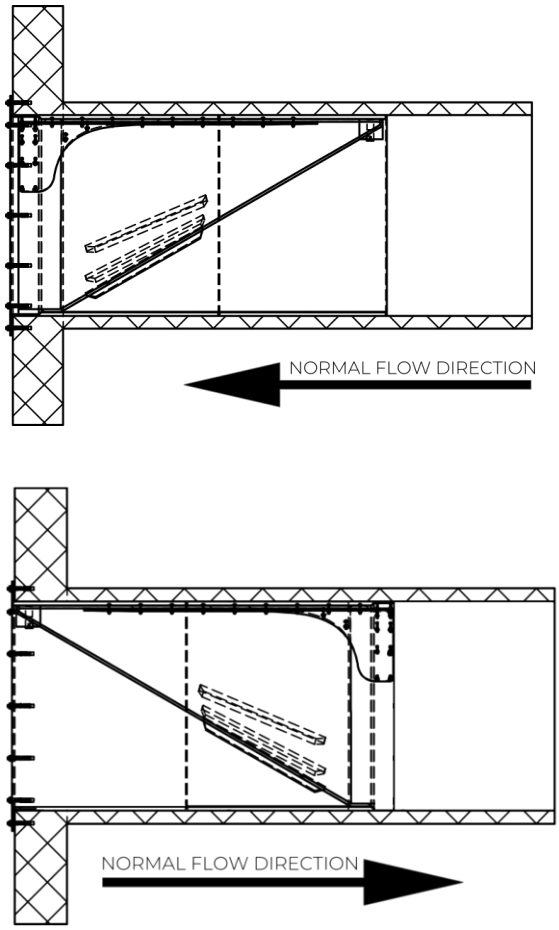

fig 3. Orientation and flow direction.

Fastener

Wapro recommends the use of concrete anchor bolts or threaded rods secured with chemical anchors. Different applications might warrant other fasteners.

Sealant

A rubber seal is provided with all WaStops designed to be installed using mounting tabs. Damaged, out of round or otherwise irregular pipes might require additional sealing material. WaStop with flange does generally not include any seal or gasket due to the variation of sealants different installations require.

Recommended sealant depends on the application, guidelines:

1) If the concrete wall is in good shape with no cracks, flush and otherwise not damaged it's usually enough with EPDM tape, silicone sealant or similar attached to the flange to seal between the flange and the concrete mounting surface.

2) If the Concrete has minor irregularities: hydrophilic systems; swellable profiles or sealants such as SikaSwell are recommended to fill minor cracks.
3) If the concrete has cracks or irregularities, a non-shrinking grout is recommended to fill the voids between the flange and the concrete wall.

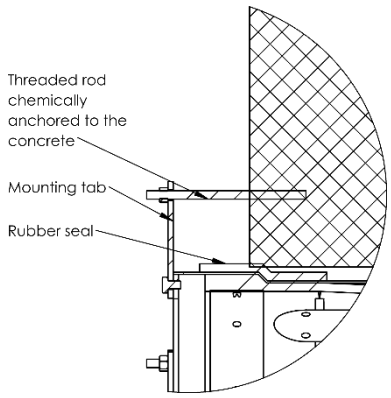

fig 4. Detail mounting tabs and rubber seal.

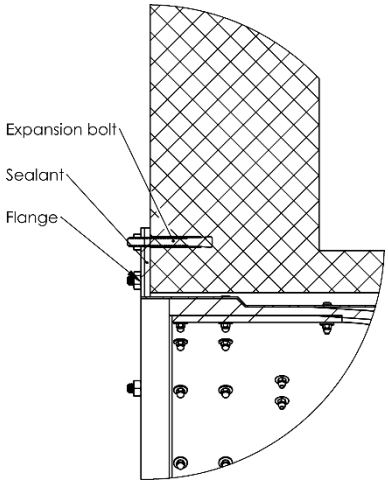

fig 5. Flange with applied sealant fastened with expansion bolt.

Mounting tabs and rubber seal

The rubber seal should be positioned halfway up the collar of the valve body, creating a step (diameter increase). When inserting the WaStop it should seal against the edge of the concrete pipe, *see fig 4.*

The mounting tabs are bolted to the concrete structure surrounding the host pipe, such as a wing wall or concrete chamber using the appropriate size fasteners.

In case of cracks or out of round pipes, there might be a need for additional sealant according to section '*Sealants.*'

In the case of a protruding host pipe with no headwall, the mounting tabs can be bent back onto the pipe. In some cases, custom-made tabs may be required to be able to bolt the mounting tabs into the concrete pipe instead of a wall.

Flange

Larger WaStops are installed with a flange. Once the host pipe is cleaned internally and inspected for irregularities, the following steps should be followed:

1) **Orientation**

   The WaStop should always be installed with the 'spine' of the membrane upwards

2) Position
   The first step in installing a WaStop is to position the valve. Flange bolt holes are sized to allow anchor bolts to pass through the flange to the mounting surface.
3) Anchors
   If threaded rod is used for anchors, install stainless steel threaded rods cut to appropriate length using a two-part epoxy-glue to secure the rods in the concrete. Allow time to set, according to the manufacturer's recommendation.
   Expansion anchors should be installed according to the manufacturers' recommendation.
4) In the case of an irregular mounting surface, a thrust nut can be used to provide an adjustable surface against which the flange will rest (*see fig. 5*). Adjust the nut leaving about 10mm (½'') space between the flange and the mounting surface. In case of a flat surface, apply sealant and push flange firmly against the mounting surface.
5) Place jam nut on each anchor, then firmly tighten jam nuts to secure the valve permanently.
6) In case of voids between the mounting surface and the flange; mix a non-shrinking grout and fill the space between the mounting surface and the flange to seal.

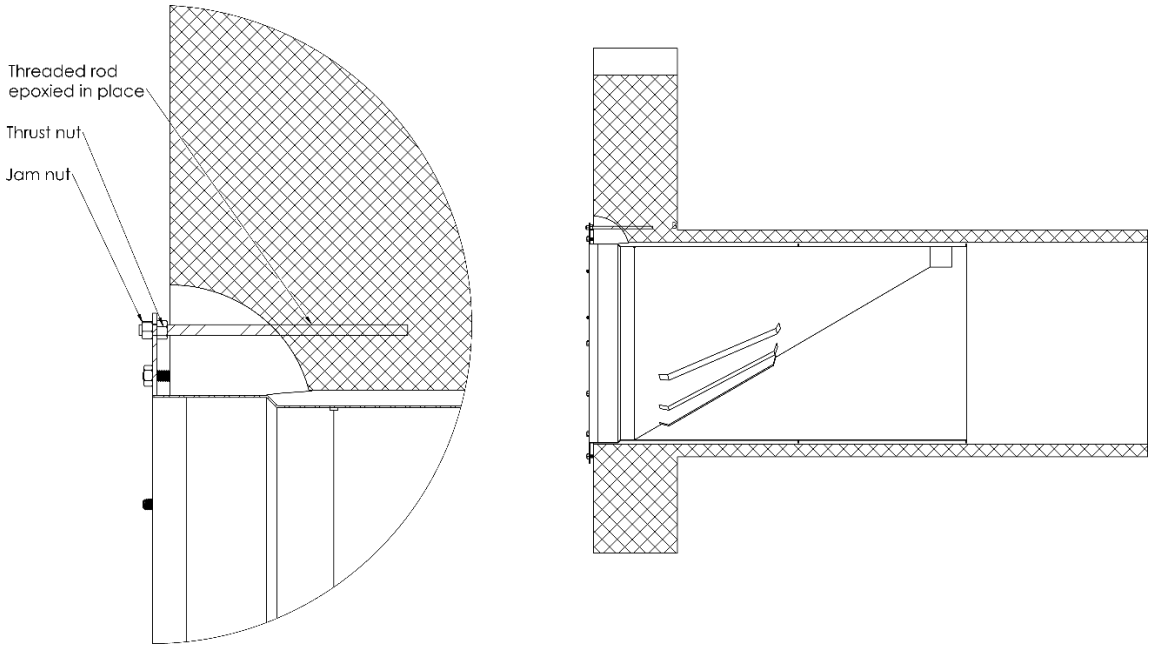

fig 6. WaStop with flange, mounting surface with crack.