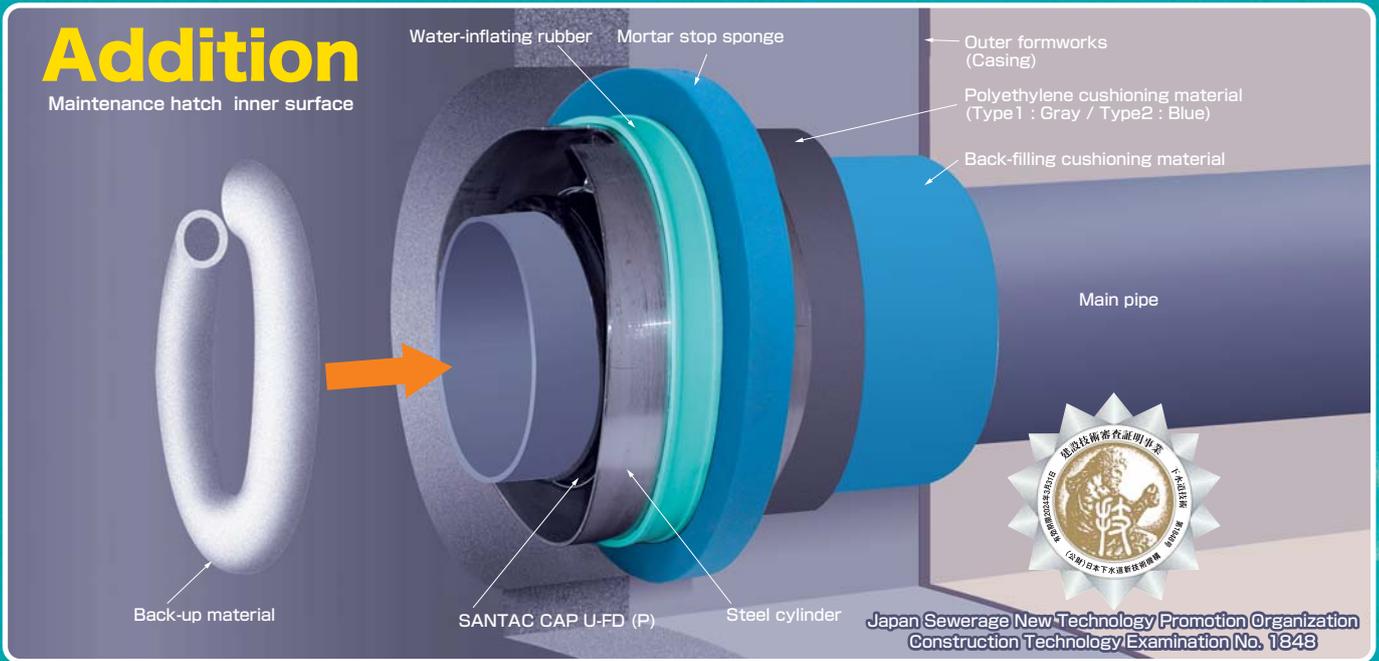


SANTAC CAP U-FD(P)

Water-proof flexible joint for maintenance hatch

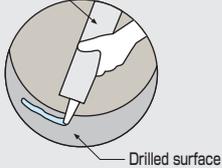


- Installation can be performed from the inner surface of the maintenance hatch.
- Clear earthquake resistance level 2.
- Water leakage is prevented by water expansion stop material.
- It can also be used for the propulsion method.

Installation Procedure

When water-inflating coking is used to improve the watertightness of the maintenance hatch drilling and filling mortar boundaries.

《Option》 Water expansion caulking



Coking is put on the drilled surface, and shaped with a trowel so that the center of the drilling surface is the thickest.

Note 1

Please dry with a burner, etc. before applying it because it will not stick to the wet side.

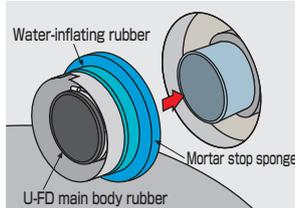
Note 2

Coking requires 12 hours or more for the surface to harden, so it's best to apply it 12 hours or more ago.

4

Flexible joint insertion

Position U-FD so that its top edge is within 5mm of the manhole inside.



1-1

Adjusting the dimensions of the back-filling section cushioning material

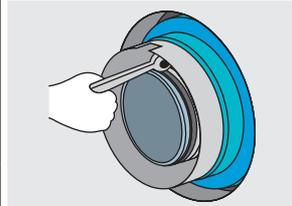
No need when filling with sand.

When winding casing and maintenance hatch with concrete, etc.

Measure the distance from the waterproofer to the outside of the maintenance hatch and adjust the dimension with polyethylene cushioning and backing cushioning materials.

5

Tightening band



Peel off the protective film of the fastening band, and tighten the two fastening bands firmly with the dedicated rajet wrench until the band lifts up from the back side. Retighten from the fastening band on the back side.

Note 1

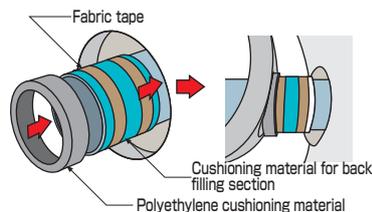
Be sure to remove the protective film from the fastening band.

Note 2

Be sure to check the tightening of the fastening band.

1-2

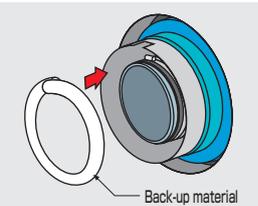
Inserting polyethylene cushioning and backing cushioning



- ① Polyethylene cushioning materials and backing cushioning materials will be made to be enveloped by fabric tapes at the site.
- ② Insert the back filling section cushioning material from the inside of the maintenance hatch.
- ③ Insert the polyethylene buffer material from the inside of the maintenance hatch.

6

Back-up material insertions



Push the backup material between the steel cylinder and the main pipe so that water stop mortar does not enter.

N.B.

Make sure that the cut-off part has two weights on the back-up material and that no waterproof mortar enters from the cut-off part.

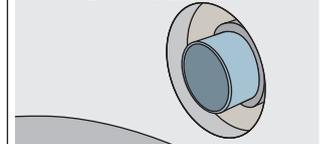
2

Checking the main pipe connection position

If the main pipe is misaligned, check the connection position with the main pipe. If the width is small, cut the mortar-stop sponge of the flexible joint with a cutter, etc., and adjust.

3

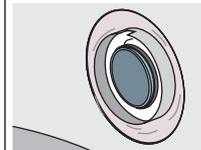
Cutting the pipe



Cut the main pipe according to the inner surface of the maintenance hatch.

7

Static mortar filling



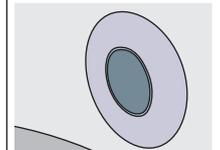
Fill the gap between the drilled surface and the steel cylinder with water stop mortar.

N.B.

The gaps in the formworks around the outer circumference of the main pipe may become blurred. Smooth the convex part with sander and the concave part with epoxy, etc.

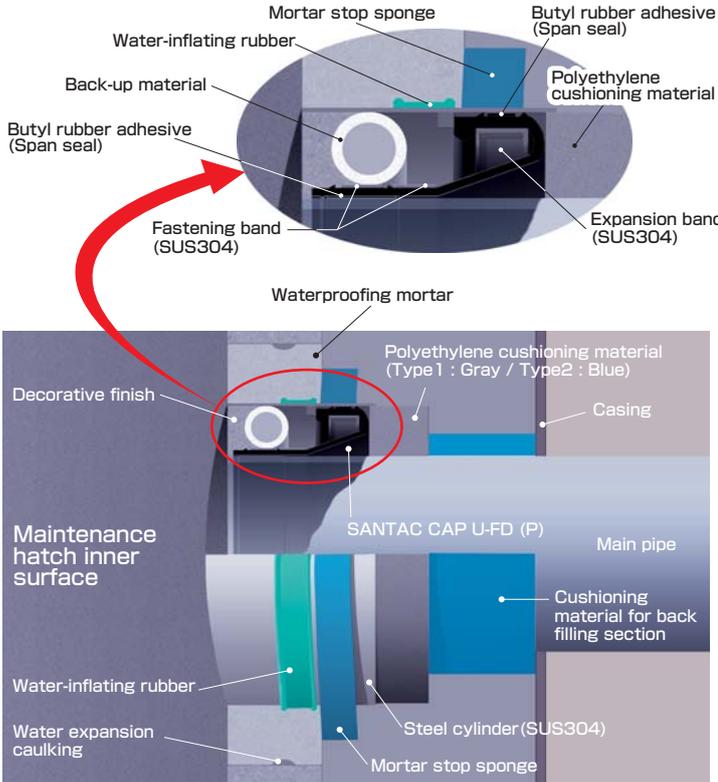
8

Mortar finish



Depending on the depth of the decorative material, the back-up material is pushed in, and mortar is filled to carry out decorative finishing.

■ Tectonic profile

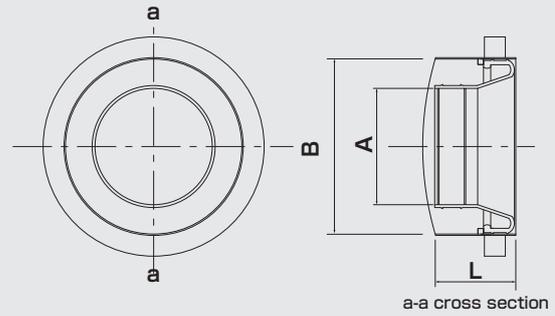


Figures are from V-150 to V-350

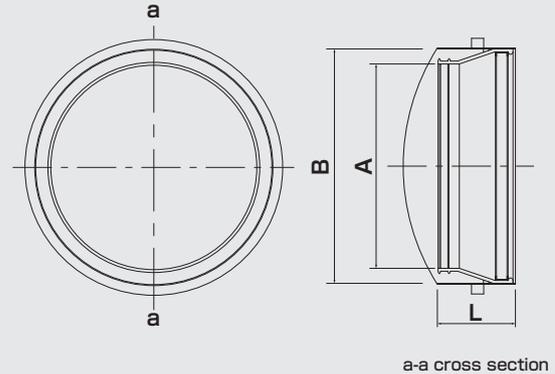
■ Dimensions of Rubber Body

(The type 2 products will be made-to-order.)

TYPE1: V-150 ~ V-350 / H-200 ~ H-250



TYPE2: V-400 ~ V-600 / H-300 ~ H-800



※ V : PVC pipe / H : Hume pipe

■ Rubber properties

Item	Unit	Standard value	Test value	Testing method	
Normal condition	Density	Mg/ m ³	1.15±0.05 (1.11±0.05)	1.15 (1.11)	JIS K 6268
	Hardness	-	60±5 (50±5)	60 52	JIS K 6253
	Tensile strength	MPa	≥18.0	20.0 (19.6)	JIS K 6251
	Elongation	%	≥400	480 (550)	JIS K 6251
Aging	Hardness change	-	0 ~ +7	+2 (+1)	JIS K 6257※1
	Tensile strength change	%	≤-20	-5 (-4)	JIS K 6257※1
	Elongation change	%	-30 ~ +10	-3 (-10)	JIS K 6257※1

※1: Normal oven method 70±1°C×72 hours

() are of type 2

■ Rubber Dimensions Table

Unit mm

PVC pipe				Hume pipe					
Product Number (Tube Outer Diameter)	Standard drilling diameter	Dimensions(Unit mm)			Product Number (Tube Outer Diameter)	Standard drilling diameter	Dimensions(Unit mm)		
		A	B	L			A	B	L
V-150(165)	304	169	252	115(140)	H-200(318)	464	322	410	115(140)
V-200(216)	356	220	304	115(140)	H-250(360)	530	374	456	125(140)
V-250(267)	410	271	356	115(140)	H-300(414)	530	416	482	160(160)
V-300(318)	464	322	410	115(140)	H-350(470)	586	472	532	160(160)
V-350(370)	530	374	456	115(140)	H-400(526)	644	528	588	160(160)
V-400(420)	530	422	482	160(160)	H-450(584)	760	586	660	160(160)
V-450(470)	586	472	532	160(160)	H-500(640)	760	642	702	160(160)
V-500(520)	644	522	588	160(160)	H-600(760)	886	762	826	160(160)
V-600(630)	760	632	692	160(160)	H-700(880)	1002	882	946	160(160)
					H-800(960)	1120	962	1026	160(160)

● Applicable types are PVC, hume, and resins

● Figures in () in L are for maintenance hatches with an internal diameter of 1500mm.

■ Physical properties of butyl rubber adhesive

Item	Unit	Standard value	Test value	Testing method	
Normal condition	Density	Mg/ m ³	1.40±0.10	1.41	JIS K 6268
	Penetration	-	75±15	77	JIS K 2207※2
	Non volatility	MPa	≥97	99	150°C×Weight remaining ratio after 5 hours
	Tensile strength	MPa	≥0.069	0.078	JIS K 6251
	Elongation	%	≥1000	1120	JIS K 6251

※2: Total weight 100g / Loading time 5 sec. / Measuring stitches 1 mm

■ Waterproofing performance

Waterproofing performance	Figures	External water pressure	Loading time	Test Results
Normal position	-	0.1Mpa	3 minutes	No water leak
Escape displacement	60 mm	0.1Mpa	3 minutes	No water leak
Settlement displacement	20 mm (15 mm)	0.1Mpa	3 minutes	No water leak
Bending displacement	15° (5°)	0.1Mpa	3 minutes	No water leak

() Type 2

The specifications and appearance are subject to change without notice for product improvement.

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