

AVK REWAG STAINLESS STEEL REPAIR CLAMPS



EXPECT SOLUTIONS

Expect... **AVR**

EXPECT HIGH QUALITY PRODUCTS

AVK Rewag (REpairing WATER and Gas) is part of the internationally operating AVK Group and is the production location of AVK Nederland. AVK Rewag was originally started as Rewag Pipeline Products in 1991 where the production of stainless steel repair clamps took place.

In 2004 the company became a member of the AVK Group and changed its name into AVK Rewag. Throughout the years the product range has been expanded and innovated with stainless steel repair clamps with vulcanized spanner plate, stainless steel tapping saddles and QR transition couplings.

In 2011 the AVK Rewag production facility has completely updated. The last years the production has been expanded with welding robots and an own test facility. AVK Rewag has more than 30 year experience in manufacturing repair clamps and our products are sold in more than 40 countries.

A recent change was the integration of the Repico® product range moving from outsourced production to AVK Rewag production facility. The production facility is expanded with a new

building of 1000 m², according to the latest environmental requirements.

The production process is in accordance with ISO 9001 and ISO 14001. We are also implementing a Corporate Social Responsibility (CSR) policy according to ISO 26000 standards.

Product applications

The AVK stainless steel repair clamp is a simple, quick and solid solution for repairs to pipes made of steel, copper, asbestos cements, cast iron and synthetic materials. This stainless steel repair clamp can be used for the permanent repair of cracks, holes, complete breakages in pipes or for tapping. The stainless steel repair clamps are manufactured and assembled at AVK Nederland BV in Vaassen. This manufacturing company is completely adjusted to the wishes and demands of this time. The whole manufacturing process is ISO 9001 and ISO 14001 certified.

Product description

The principle rests on a stainless steel, pre-rolled plate, which is clamped around the pipe and fastened with welded bolts and nuts. The clamp has a rubber lining. The tensile force applied by the clamp fastenings is converted to a radial pressure on the rubber lining. The repair clamp for small diameter pipes consist of a single section. For larger diameters there are clamps made of several sections. The stainless steel repair clamp is made of AISI 304 quality, but also AISI 316 and other qualities are available. After welding the stainless steel repair clamp is completely passivated to guarantee

optimum corrosion resistance.

An essential part of the stainless steel repair clamp is its rubber lining. This rubber lining has a "waffled" structure and a unique cracular top which forms sealed cells when clamped. The type of rubber used depends on the application. The standard application is EPDM and NBR. For special applications there is a choice of Viton and other rubbers.

EPDM (ethenepropeneterpolymer), according EN 681-1, WRAS & W270 approved, is highly suitable for water, hot water, steam, oxidising fluids and acids. Temperature ranging from -40°C till +120°C.

NBR (nitril rubber), according EN 682 is especially suitable for gas, oil, water, animal and vegetable oil. Temperature ranging from -40°C till +100°C

Our sales department would be glad to advise you on the choice of rubber suitable for other applications.





Manufacturing process

In our welding department the stainless steel plates and coils are cut and after that provided with the necessary welding parts. Our standard stainless steel repair clamps are equipped with support plate, but other executions are also possible such as fingers or Navewa. The welding robot takes care of a precise welding on the welding parts, but also on the stainless steel plate. After this procedure the clamps will be fully passivated to guarantee optimum corrosion resistance. The cutting of the rubber (EPDM/NBR) and the exact dimension is being done per order. After

cutting, the rubber is provided with double-faced tape. The use of double-faced tape gives advantages during manufacturing, such as better adhesion on stainless steel plate in comparison with glue, environmentally friendly and better labour conditions.

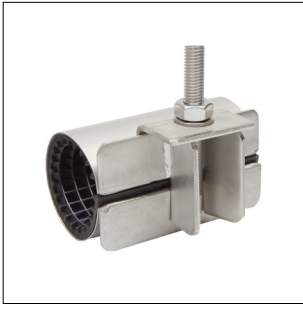
When all parts of the stainless steel repair clamps are lying on the assembling table then the production employee can start assembling the clamp.

The internal transport system takes care, that the production employee receives the needed materials per order. After finishing the stainless steel repair clamp an ineradicable label or engraving

print with the correct information is put on to the clamp. After this the stainless steel repair clamp is transported through our conveyer system to the logistic department and they make the order ready for dispatch.



Product line



C: single-section clamp. Available in diameters ranging from Ø16 mm to Ø112 mm.



FS10: single-section clamp. Diameter reach 10 mm. Available in diameters ranging from Ø48 mm to Ø360 mm.



FS20: double-section clamp. Diameter reach 20 mm. Available in diameters ranging from Ø88 to Ø650 mm.

FS30: triple-section clamp. Diameter reach 30 mm. Available in diameters ranging from Ø270 to Ø840 mm. For larger sizes up to Ø1440 mm clamps are multi-sectional.



FSA: Clamp with threaded branching.



FST: Clamp with flange branching. Available in diameters ranging from Ø88 mm. Flange connections are always double or multi-sectional.

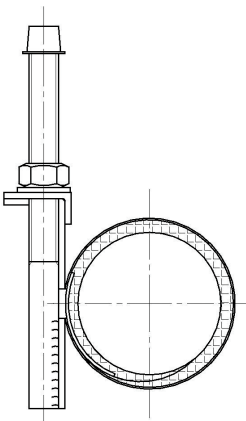


UK: external repair clamp. Available in diameters ranging from Ø600 mm to Ø2000 mm.

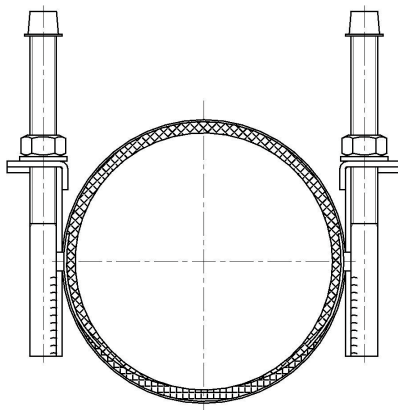


IR: internal repair clamp. Available in diameters ranging from Ø600 mm to Ø2000 mm.

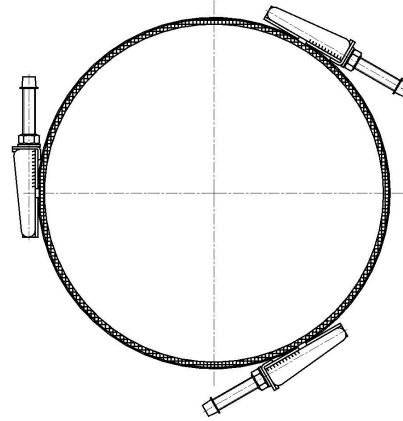
Diameter of repair clamp



A single-section clamp has a reach of 10 mm, above Ø 48 mm.



A double-section clamp has a reach of 20 mm, above Ø 88 mm.



A triple-section clamp has a reach of 30 mm, above Ø 270 mm.

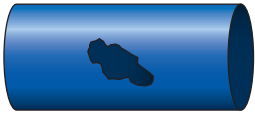
Threaded branching

All repair clamps are also available with threaded branching (½", ¾", 1", 1 ¼", 1½", 2", 2 ½", 3", 4" and Polsafe 1 ½" and 2") depending on pipe diameter. These sizes have internal threads. Outside threads are also available on request.

Flange branching

All repair clamps are also available with flange branching (DN 50 to DN 500) depending on pipe diameter. Standard drilling PN 10, other drillings such as PN 16 are also available. Special clamp models are available on request.

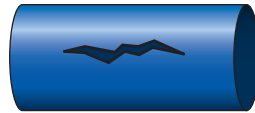
Product applications



Holes in AC, steel or cast iron pipes



For breaks in AC and cast iron pipes



For cracks in AC, steel, cast iron or PVC pipes



Damage caused by service crane or breaking-off of branching section



For corrosion leaks

Note: Not recommended for total break

Advantages

- Made entirely of stainless steel, therefore no corrosion.
- Clamp completely passivated after welding operations.
- Extremely lightweight, therefore easy to handle.
- Easy assembling with handgrip on stainless steel repair clamp
- No sharp edges or angles.
- Rubber lining (EPDM / NBR) is water and gas resistant.
- No loose parts that can be lost during assembly.
- No problem with non-round pipes. Clamp assumes form of pipe.
- Teflon coating on threads for smooth operation and to avoid galling.
- Spannerplate vulcanized into the rubber gasket.
- Clamps available in all lengths and diameters.
- Also available with threaded branching ranging from ½" to 4".
- Also with flange connections ranging from DN 50 till DN 500.

Advice length of repair clamp

Length of clamp = $A + 2B$, but is at least equal to the diameter of the pipe.

A = length of crack or hole

B = minimum 75 mm depending on:

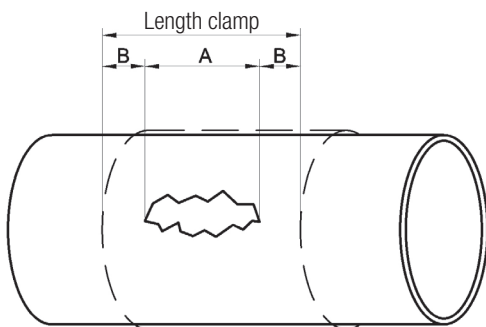
- length of crack
- pressure
- liquid

Plastics require 50% more clamp length.

Repair is not permanent for PE pipes.

Plate thickness

Varying between 0.6 to 3 mm, depending on diameter and pressure class of pipe.



STANDARD PRESSURE RANGE PER DIAMETER

Repair clamp, type C



16 bar

20-23
25-28
32-35
37-41
40-44
46-50
54-58
60-64

Repair clamp, type FS 10



16 bar

48-52
52-59
57-64
60-67
63-70
67-74
70-77
73-80
76-83
82-89
87-94
95-102
98-108
102-112
108-118
113-123
118-128
120-131
125-135
135-145
145-155
151-161
159-170
165-175
159-170
165-175
168-180

10 bar

176-186
186-196
193-203
200-210
209-220
215-225
219-229
222-233
230-240
243-254
250-260
261-271
270-280
280-291
290-300

6 bar

300-310
310-320
315-325
320-330
340-350
350-360

Repair clamp, type FS 20



16 bar

88-110
108-128
114-134
120-140
135-155
140-160
159-180
168-189

10 bar

190-210
195-217
210-230
216-238
225-246
240-260
250-270
273-293
295-315
315-335
322-344
337-358

10 bar

347-367
365-385
382-402
396-420
410-430
420-440
440-460
457-477
468-488
488-508
500-520

6 bar

520-540
545-565
568-588
586-606
600-620
625-645

Repair clamp, type FS 30



10 bar

270-300
310-340
340-370
365-395
395-425
420-450
440-470
500-530

6 bar

530-560
545-575
570-600
600-630
620-650

4 bar

650-660
640-670
690-720

3 bar

710-740
730-760
750-780
790-820
810-840

For gas applications we advise you to contact our sales department.

If necessary a repair clamp can be reinforced for use with high pressure piping. Further information can be required at our sales department.



AVK has a standard product warranty of 10 years, but this is assuming the product is installed.

Under careful attention of the below mentioned instructions AVK Nederland BV recommends the following maximum storage times:

Type of elastomer	Storage period
NBR	3 years
EPDM, FKM	5 years

If the below mentioned instructions concerning storage are not followed, product warranty is lost.

General

In general storage areas must be cool, dry ^[2], dust free and free of insects or other animals ^[3] because of hygienic reasons.

Due to possible chemical interaction solvents, fuels, lubricants, chemicals, acids, disinfectants, etc. should not be stored in the storage area.

Repair clamps with tolerance above Ø100 should not be put on its side ^[4] but must be stored in upright ^[5] position.

Temperature

The storage temperature should be above 5°C and below + 35°C otherwise temperatures can shorten service life.

Heating elements and piping in the storage area must be screened and the distance between them and the goods stored must be at least 1 meter.

Humidity

The relative humidity should preferably be lower than 65%. It must be ensured, that Condensation ^[2] does not occur.

Light

Elastomeric parts must be protected from direct sun light or artificial light, which has a high ultraviolet ^[1] content. For this reason, windows should be coated with red or orange paint (never blue). The lighting should be diffused.

Ozone

Ozone is degenerating many kinds of rubber. Therefore, the starting-up of electrical equipment, motors and machinery that generates sparks and the creation of high voltage fields in these areas is not permitted because of the formation of ozone.

All light sources that emit ultraviolet radiation ^[1] are harmful because of the associated formation of ozone.

Additional precautions

In the event of doubt as to the condition of rubber parts that have been stored for a long time, they can be tested by stretching them slightly. Elastomers that present fine cracks on the surface must not be used.



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