

**1. FIELDS OF APPLICATION AND PROPER USE**

Installed in the water supplying pipe system the hydrant can be used for fire fighting, operations of water supplying companies and other applications as water supply for construction work or road cleaning. Furthermore the hydrant must not be operated with more than 16 bar at a maximum operating temperature of 40 °C. Every other use exceeding these limits is considered to be an improper use. The hydrant producer is not liable for damages resulting from an improper use. The risk is on the user only.

2. PRODUCT MARKING

Lower label:

- AVK-Logo
- Manufacturer
- Description
- Internal production number
- CE registration number
- Standards
- AVK reference number (see Table 1) with bar code
- Date of production



Upper label:

- AVK-Logo
- Turns to open (ineffective and total)
- Single shut-off
- Nominal size and pressure rating
- Standards



Casting:

- AVK-Logo
- Model
- Nominal pressure rating and standard
- Ductile cast iron



Casting:

- EN 14384 type "C" (with predetermined breaking point)

Model N7, with traffic break-away design (Type C), single shut-off**3. WORK SAFETY**

The hydrant has a state-of-the-art technology and is safe in operation. However, this valve can imply risks, when operated by untrained staff or when applied for improper use.

In order to guarantee proper use observe the installation and maintenance instructions. Unauthorized re-engineering and adaptation, that have influence on safe and proper operation of the hydrant, are prohibited.

4. INSTALLATION

Before installation, make sure the hydrant is clean. Otherwise the hydrant has to be cleaned or disinfected. Before placing the hydrant on the pipe remove the protection cap. Installation onto the pipe has to be done without causing any tension. The tightening torque should be between 80 Nm and 150 Nm. If using a socket connection it must be protected against shearing. A proper hydrant drainage has to be guaranteed by commercially available drain stones or packaging (e.g. AVK Flexdrain). After assembly the hydrant requires thorough rinsing.

The installation guidelines according DVGW worksheet W 331 section 5 must be observed.

5. OPERATION

The hydrant is a shut-off valve and must not be used in intermediate position! In frost the fire hydrant is to be closed immediately after every withdrawal and the outlet armature is to be opened thus preventing the hydrant from freezing. If the hydrant does not empty, it is to be pumped out immediately. An endangerment of traffic by black ice must be avoided.

Open:

At first remove one or more caps. Then connect couplings with valves or hoses with valves and open these valves. According to EN 14384 the maximum operating torque is 125 Nm (range 2). Open the hydrant with the recommended key (DIN 3223 type A or B) by slowly turning the operation nut counter-clockwise until it is fully open. The end position is clearly perceivable. Use the outlet armatures to control the volume, not the hydrant main valve.

Close:

Close the outlet armatures and remove all connected hoses. Slightly open one outlet valve to prevent overpressure in the hydrant body. Close the hydrant main valve fully by evenly turning the operation nut clockwise. The end position is clearly perceivable. The hydrant is equipped with a radially working piston seal. Therefore the closing force has no influence on the tightness.

Remove the remaining outlet valves and couplings and check the automatic drainage. Finally the caps have to be screwed on. Despite the caps the drainage continues because of the venting valve.

6. MAINTENANCE

Series 84 N7 hydrants are virtually maintenance free. However, they should be checked yearly. Therefore it is sufficient to open and close the hydrant main valve once (function control) as described in "5. Operation".

For operation and maintenance follow the DVGW code of practice W 331.

In case of a knock-over, normally no damages are caused to the hydrant shut-off and the pipe system. The bushes at the pre-determined breaking point separate the upper from the lower barrel. The operating pipe is loosely plugged together and uncouples at the same time.

For repair, the upper barrel and the adaptor ring with its o-ring are to be placed onto the lower barrel. The broken bushes and probably bent screws have to be replaced and tightened as follows:

Tighten the four screws at the two clamp halves evenly with approx. 5 Nm (then the upper barrel sits firmly on the lower barrel without inclination to one side). Then all four screws have to be tightened with an intermediate torque of approx. 30 Nm (20 Nm for optional titanium bushes) in order to reach an even clamp force, before being tightened with the final torque of 60±5 Nm (40±5 Nm for optional titanium bushes). Afterwards the hydrant has to be tested for function and tightness.

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If the main valve disc is damaged, e.g. by contamination or foreign bodies, the valve rod (comprising the lower operating pipe including the main valve disc) has to be replaced as follows:

1. Close the corresponding gate valve.
2. Dismantle the upper barrel by loosening the four screws at the separation point. Remove the adaptor ring, blocking ring and the o-ring shown in Fig. 1.
3. Fix the safety stirrup with screws and segments as shown in Fig. 2.
4. Loosen the stem guide by turning the stem counter-clockwise. Rotate the stem guide by 90° (Fig. 3). Make sure that there is a distance of 10-20 mm between the plate of the safety stirrup and the stem.
5. Lift the stem up by turning counter-clockwise (Fig. 3). Turn up also simultaneously the plate, keeping the distance. Rotate the stem guide again by 90° to place it on the two protrusions at the top of the lower barrel (see Fig. 4).
6. Turning the stem clockwise, the main valve disc is pulled out of its seat.

Important note:

To ensure the personal safety of the mounting staff, the safety stirrup (see points 4 and 5) must not be removed, until it has been checked that the hydrant is not pressurized.

7. Remove the safety stirrup and take the lower operating pipe with the disc away from the lower barrel. Unscrew the stem assembly.
8. Screw the stem assembly into the new operating pipe and put it back into the lower barrel. The stem nut carrier has two noses with different width. During assembly the noses must be inserted in their corresponding grooves (broad nose towards drain nipple).
9. Remount the safety stirrup, screw the threaded bolt down to push the main valve disc into the seat. Rotate the stem guide by 90° to lock it. To prevent a slide out of the valve rod turn the stem guide 90° under the above stop.
10. Remove the safety stirrup; insert the blocking ring and o-ring, check the position of the O-ring. Then place the adaptor ring with its o-ring. Remount the upper barrel and reassemble the complete hydrant as described in "6. Maintenance". Check function and tightness.

Fig. 1



Fig. 2



Fig. 3



Fig. 4



7. GENERAL NOTES

For damages resulting from a disregard of this operation manual, we do not take any liability. The design and specifications shown in this operation manual are subject to change without notice due to our continuing program of product development. The copyright of this manual remains with AVK Mittelmann Armaturen GmbH. This manual includes technical regulations and drawings that must not be copied, distributed or used unauthorized for competitive ends or other influence in third parties, neither completely, nor partly.

Model N7, with traffic break-away design (Type C), single shut-off

8. TECHNICAL DATA

Above ground hydrant according to DIN EN 14384-C – DN 80/100 PN 16.
Ductile cast iron GJS, single shut-off, breakaway design, automatic drain.

Max. operating pressure (PFA): 16 bar
Max. operating temperature: 40 °C

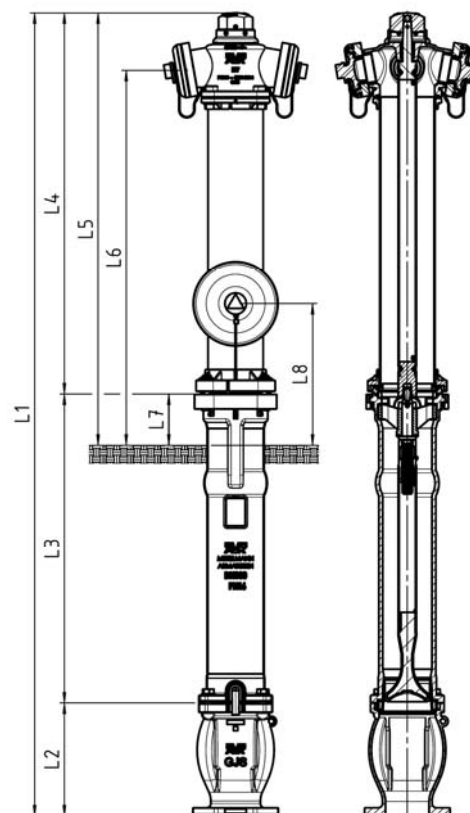
Table 1

DIMENSIONS AND WEIGHTS

AVK Reference No.	DN	PN	Bury m	L1 mm	L2 mm	L3 mm	L4 mm	L5 mm	L6 mm	L7 mm	L8 mm	Weight kg
84-080-91-2110XXXX	80	16	1,00	1886	220	770	895	1015	880	120	–	51
84-080-91-3110XXXX	80	16	1,25	2136	220	1020	895	1015	880	120	–	56
84-080-91-4110XXXX	80	16	1,50	2386	220	1270	895	1015	880	120	–	61
84-100-91-2110XXXX	100	16	1,00	1886	265	725	895	1015	880	120	–	61
84-100-91-3110XXXX	100	16	1,25	2136	265	975	895	1015	880	120	–	66
84-100-91-4110XXXX	100	16	1,50	2386	265	1225	895	1015	880	120	–	71

With A outlet:

84-100-91-2110XXXX	100	16	1,00	1886	265	725	895	1015	880	120	350	63
84-100-91-3110XXXX	100	16	1,25	2136	265	975	895	1015	880	120	350	69
84-100-91-4110XXXX	100	16	1,50	2386	265	1225	895	1015	880	120	350	73



Standards and und further regulations:

- DIN EN 14384, Pillar fire hydrants
- DIN EN 1074-6, Valves for water supply – Part 6: Hydrants
- DIN 14317, Solid coupling type C with metallic sealing area and cover; PN 16
- DIN 14318, Solid coupling type B with metallic sealing area and cover; PN 16
- DIN 14319, Solid coupling type A with metallic sealing area and cover; PN 16
- DVGW code of practice W 331, Selection, installation and operation of hydrants
- DIN 3223, Handling keys for valves



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EN 14384

Above ground hydrant, ductile cast iron, DN 80, PN 16

Closing direction.....clockwise

Number of turns to open:

(ineffective and total)3 and 11

Torque (MOT, mST)125 Nm, 250 Nm (Range 2)

Inlet.....EN 1092-2 DN 80

Outlet.....DIN 14318 – B, optional:
DIN 14317 – C

Type C.....–

K_v for 1x DN 65153 m³/h

K_v for 2x DN 65153 m³/h

EN 14384

Above ground hydrant, ductile cast iron, DN 100, PN 16

Closing direction.....clockwise

Number of turns to open:

(ineffective and total)3 and 14

Torque (MOT, mST)125 Nm, 250 Nm (Range 2)

Inlet.....EN 1092-2 DN 100

Outlet.....DIN 14318 – B, optional:
DIN 14319 – A, DIN 14317 – C

Type C.....–

K_v for 1x DN 65210 m³/h

K_v for 2x DN 65217 m³/h