Hydrants

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Hydrants
Made of ductile cast iron (SGCI)

Introduction

Hydrants made by Keulahütte GmbH in Krauschwitz are manufactured based on many years of design and development work and a high level of engineering expertise.

Main and supplementary shut-off valves and double shut-off device are of modular design. This serves to optimise provision and storage of spare parts and to make maintenance simple and efficient. Thanks to the double shut-off device, users of our products can go without an additional upstream gate valve. Maintenance work can thus be carried out on the hydrant without the need to shut off an entire pipeline section. All hydrant models with double shut-off device are fitted with shut-off ball valves. All offered coating options provide reliable long-term corrosion protection. All parts of the hydrants which may be under pressure are made of EN-GJS-400-15, so that the weight of the hydrants is reduced and they have a lean look. Thanks to the patented predetermined breaking point, neither the lower part of the hydrant nor the water pipeline can be damaged when external force is applied. The broken unit can be repaired easily without the need to remove the shut-off valve and fittings, but simply by replacing the rupture ring. The hydrants are designed such that remnant water cannot collect and that there a no cavities with stagnant water. This is to prevent damage caused by frost and impairment of the drinking water quality. The vertical dry barrel prevents ingrowing roots.

Hydrants have the following functions in the water supply network:
- Supply of water for fire fighting
- Aerating and bleeding of water pipelines
- Flushing the pipeline network for hygienic reasons
- Provision of temporary and emergency water supply points, bridging defective pipe sections, filling of tank trucks.
- Hydrants are typically provided at the following distances: Rural communities: approx. 140 m, urban and sub-urban residential areas: approx. 120 m, city centres and business districts: approx. 100 m.

Hydrants are no control valves. They only have two positions, ‘open’ and ‘closed’. The valves shall be fully opened or fully closed, i.e. until you clearly notice a mechanical stop. The rated performance of our hydrants exceeds the reference values as required by DVGW. The flow rate depends on the line pressure and on any downstream valves, fittings and pipes. Given a pressure drop of 1 bar, measured immediately upstream and downstream of the hydrant, the minimum flow rate specified in DIN EN 14384 and DIN EN 14339 is exceeded.

Information for project planning and installation

An important point here is the pipeline coverage or installation depth. It must be ensured that there is no damage caused by frost.

When installing the hydrants it is recommended to follow the fitting instructions which are provided in an adhesive pocket with each unit.

Observing the specified dimensions forms a prerequisite for proper function of the hydrant. Proper drainage of remnant water shall be ensured by embedding the base of the hydrant in suitable material.

Hydrants comply with standards DIN EN 14384 and DIN EN 14339 and are tested in accordance with DIN EN 1074-1/2/6 and DIN EN 12266-1. Each hydrant has an ID number. A works certificate with testing results can be issued on request.

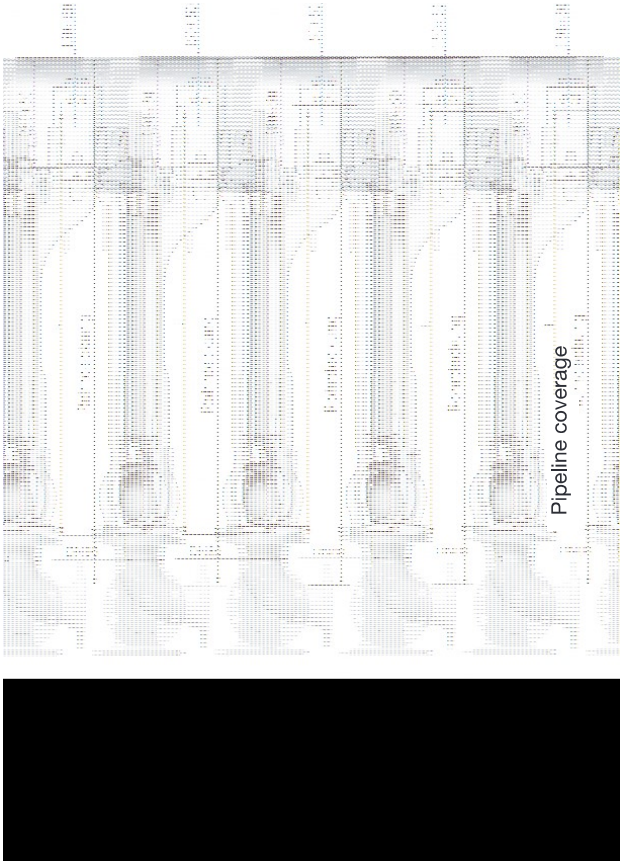
Underground hydrants

Keuladrant Model 97 F
DN 80/PN 16; according to DIN EN 14339 (previously DIN 3221) and DIN EN 1074-6
Type A1 – with single shut-off device
Type AD1 – with double shut-off device

Specifications

- DIN-DVGW-NW-6401AS2087
- CE approval no. according to DIN EN 14339: E-30-00265-07
- Flange connection according to DIN EN 1092-2, PN 16
- DN 80 connection claw for standpipe according to DIN 14375, PN 16
- Additional marking:
  - Pipeline coverage by notches on the upper jacket pipe flange (see table below)
  - Type of shut-off device by colour coding of type plate and claw cap (yellow: single shut-off device, red: double shut-off device)
- Extremely low actuating torque (fully encapsulated, maintenance-free stem bearing)
- Opening starts already after 2–3 turns, full flow after 10–11 turns
- Easy installation thanks to ample assembly space and integrated gasket at the connection flange
- Integrated ejection lock

- Protection against ingress of contamination thanks to integrated venous valve
- Reversible-flow cleaning at full capacity (ball retainer: V4A stainless steel spring)
- No metallic surfaces which would be susceptible to caking in the drainage section
- Advantages of the drainage:
  - Protection against the ingress of foreign particles thanks to cross-section enlargement in the flow direction
  - Complete drainage takes about 3 minutes, volume of remnant water < 15 ml



Minimum volumetric flow rate KV = 110 m^3/h

The indicated flow rate applies to a fully opened hydrant at a pressure drop of 1 bar, measured immediately upstream and downstream of the hydrant.

Type	DN	Pipeline coverage Rd in m	Number of notches	Length in mm L	Weight in kg
A1	80	0.75	1	520	24.0
		1.00	2	725	26.5
		1.25	3	975	31.5
		1.50	4	1225	36.5
AD1	80	0.75	1	520	24.5
		1.00	2	725	27.0
		1.25	3	975	32.0
		1.50	4	1225	37.0

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Type AD1 – with double shut-off device

Surface protection

- Jacket pipe: internal and external epoxy resin powder coating, according to DIN 3476, minimum layer thickness of 250 µm or fully enamelled inside according to DIN 51178 and external epoxy resin powder coating

- Claw and lid: all-round epoxy resin powder coating
- Colour: sky blue (RAL 5015)
- Layer thickness min. 300 µm according to DIN 3476

All materials and coatings used have been tested for hygienic and bacteriological suitability and are approved for use in drinking water pipelines. They comply with the requirements of the German Federal Environmental Agency (UBA).

Description	Material
Jacket pipe	EN-GJS-400-15
Cover lid	EN-GJS-400-15
Cone, rubber coated	EN-GJS-400-15, EPDM W 270
Stem	X20Cr13V
Stem screw nut	Brass
Extension pipe	X5CrNi1810
Retaining spring	X12CrNi177
Claw	EN-GJS-400-15
Seat ring	Brass
Square cap	EN-GJS-400-15 galvanised
O-rings	EPDM W 270
Wiping ring	EPDM
Bolts and pins	Stainless steel

Option

Keuladrant Model 97 F
with self-closing lid “**Keuladrant SF**”

Specification

- Self-closing claw lid (SF: schließfix – quick-shut)
- Material: 1.4301 (V2A), V4A possible on request
- Fixture: hexagon head bolt at the claw

Handling

- Self-closing lid can be opened with the hydrant wrench (no additional tools required)
- The lid will close the hydrant shaft automatically when the standpipe is removed.

Underground hydrants

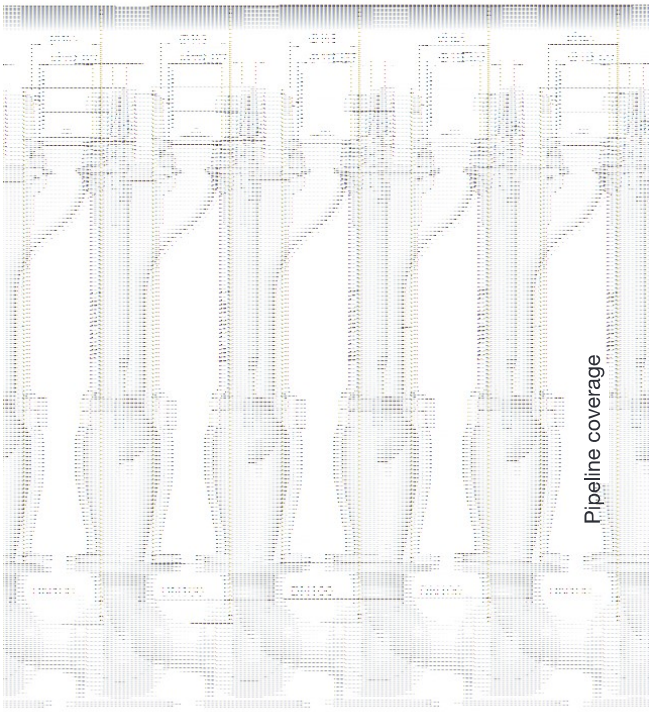
Model 02
DN 100/PN 16; according to DIN EN 14339 (previously DIN 3221) and DIN EN 1074-6
Type AD1 – with double shut-off device

Specifications

- DIN DVGW conformity mark for AD1: NW-6401BN0341
- Flange connection according to DIN EN 1092-2, PN 16
- Connection claw as shown or with DN 80 adapter for standpipe according to DIN 14375, PN 16
- Additional marking:
  - Pipeline coverage by notches on the upper jacket pipe flange (see table below)
  - Type of shut-off device by colour coding of type plate, claw cap and transport protection cover (red: double shut-off device)
- Extremely low actuating torque (fully encapsulated, maintenance-free stem bearing)
- Opening starts already after 2–3 turns, full flow after 10–11 turns
- Easy installation thanks to ample assembly space
- Reversible-flow cleaning at full capacity
- No metallic surfaces which would be susceptible to caking in the drainage section
- Advantages of the drainage:
  - Protection against the ingress of foreign particles thanks to cross-section enlargement in the flow direction

Minimum volumetric flow rate 260 m^3/h

The indicated flow rate applies to a fully opened hydrant at a pressure drop of 1 bar, measured immediately upstream and downstream of the hydrant.



Type	DN	Pipeline coverage Rd in m	Number of notches	Length in mm L	Weight in kg
AD1	100	1.00	2	770	40.0
		1.25	3	1000	45.0
		1.50	4	1250	50.0

Note:
If you plan to install a DN 100 underground hydrant, you are recommended to include a DN 100/80 claw adapter in your order, because the fire brigades often only have standpipes for DN 80 underground hydrants on board.

Underground hydrants

Model 02
DN 100/PN 16; according to DIN EN 14339 and DIN EN 1074-6
Type AD1 – with double shut-off device

Surface protection

- Jacket pipe: all-round (internal and external) epoxy resin powder coating according to DIN 3476 with a minimum layer thickness of 300 µm
- Claw and lid: all-round epoxy resin powder coating
- Colour: sky blue (RAL 5015)
- Layer thickness min. 250 µm according to DIN 3476

All materials and coatings used have been tested for hygienic and bacteriological suitability and are approved for use in drinking water pipelines. They comply with the requirements of the German Federal Environmental Agency (UBA).

Description	Material
Jacket pipe	EN-GJS-400-15
Cover lid	EN-GJS-400-15
Cone, rubber coated	EN-GJS-400-15, EPDM
Stem	X20Cr13V
Stem screw nut	Brass
Extension pipe	X5CrNi1810
Claw	EN-GJS-400-15
Seat ring	Brass
Square cap	EN-GJS-400-15 galvanised
Socket	Brass
O-ring	EPDM
Wiping ring	EPDM
Bolts and pins	Stainless steel