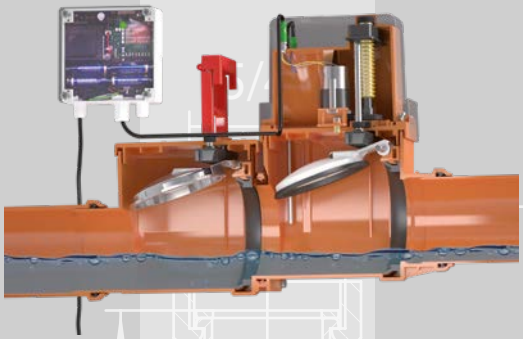
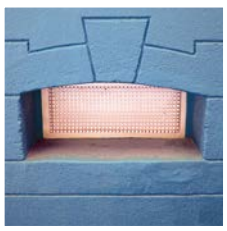
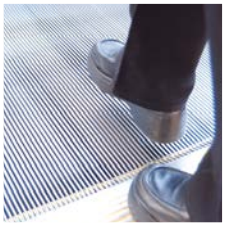
SIPHONS ABLÄUFE







HL Anti-flooding valves

16. Basement and backflooding

16

HL Anti-flooding valves

Basic information about design and installation

Allready during the design of drainage systems in buildings one should consider the issue „backflooding“. To simplify the professional installation of anti-flooding valves, we would like to point out the following topics.

▲ What does the term „flood level“ mean?
Flood level means the highest level, up to which backwater from the sewer could rise inside the building, according to the standard. In fact, this is (if not regulated by the authority) 15 cm above the street level or the pavement. Up to this level, it is possible to be save against backwater by using anti-flooding valves. Outlets and traps, which are above this level, are anyway secure against backflowing water from the sewer.

▲ Which drains have to be save against backwater?
Only drains, which are situated below the flood level, may be leaded through standardized anti-flooding valves. The reason is, that in case of backwater from the sewer, drains above the flood level still can be used. Please notice, that floors above the flood level should not be lead throught the anti-flooding valve. There is danger, that the basement is flooded by the sewage from the rest of the building (see picture below).

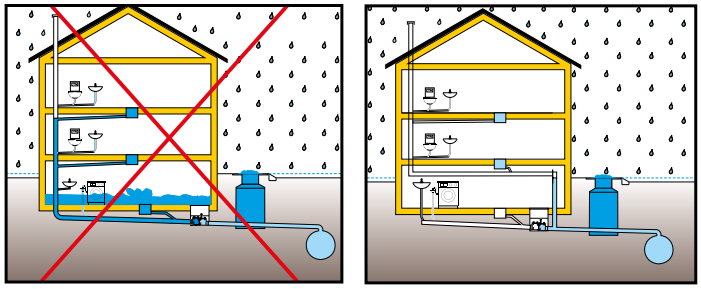
▲ When is it possible, to install an antiflooding valve?
• When there is a natural incline to the canalization
• When the rooms are used of subordinated use, which means, that no persons or material assets may be injured.l
• When there is little usage and an additional toilet above the backflow level.
• When there is an access for inspection/maintainence

▲ Maintainance
According to the standard maintainance and function test have to be made every half year.

▲ Classification acc. standard, see selection criteria

▲ Mechanical or electronic anti-flooding valve for waste water, containing faeces?
• Electronic anti-flooding valve:
Advantage: Faeces are not blocked by a closed flap, as the valve stays open during normal waste water flow. According to standard ÖNORM B2501, ÖNORM EN 13546 and EN12056-4
Disadvantage: High price of electronic valves due to an elaborated design, expensive installation (electrician!) and complicated maintenance.
• Double mechanical anti-flooding valve:
Advantage: Simple installation, low costs, resilient design, little maintenance (made by the house owner itself). Beside of that the stainless steel flap provides a perfect protection against rats.
Only according to standard ÖNORM B2501, ÖNORM EN13564 and EN12056-4

Image of a drainage system



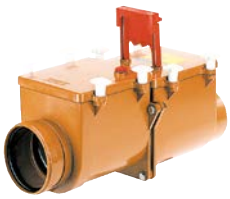
Relevant standards/directives

ÖNORM B2501 ..... Drainage of buildings
ÖNORM EN12056-1 …Gravity drainage systems inside of buildings
ÖNORM EN752 ……..Gravity drainage systems outside of buildings
DIN EN1986-100 …... Drainage systems for buildings and estates
DIN EN1986-3 …….. Drainage of buildings … (function)
DIN EN1986-30 ……. Drainage of buildings … (maintainence)
ÖNORM EN13564 ……. Anti-flooding valves for buildings

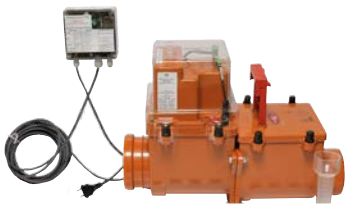
Selection of the convenient valve acc. ÖNORM EN13564-1

Typ 0: Anti-flooding valve with one self-acting closure.
HL710, HL712, HL715, HL720

Typ 1: Anti-flooding valve for horizontal pipes with one self-acting closure and one emergency closure. The emergency closure may be combined with the self-acting closure.
HL710.1, HL712.1, HL715.1, HL720.1



Typ 2: Anti-flooding valve with two self-acting closures and emergency closure.
The emergency closure may be combined with the self-acting closure.
HL710.2, HL712.2, HL715.2, HL720.2



Typ 3: Anti-flooding valve with a self-acting closure, which is operated by external power (electric, pneumatic or others) and emergency closure, which is independent from the self-acting closure.
HL710.2EPC, HL712.2EPC, HL715.2EPC

Typ 5: Anti-flooding valve, which is included in drainage sets or floor drains, with two self-acting closures and emergency closure. The emergency closure may be combined with the self-acting closure.
HL77, HL77.1

The prevention from backwater is one of the most sophisticated challanges of plumbing. HL cares for this task with it`s series of mature products. HL anti-flooding valves are designed according to all standards of drainage technology. Beside of that they are equiped with components made of stainless steel. This measure protects from the invasion of uninvited guests like rats, proved by a lab test of the medical university of Vienna.

During the lab test, the rats were not able to pass the stainless steel valve. HL anti-flooding valves are seen as a suitable instument, to protect buildings from the invasion of rodents.

HL Anti-flooding valves – Products – Overview

Anti-flooding valves



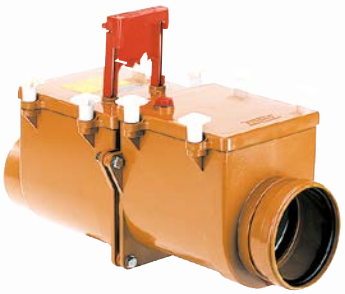
Product	HL710.1V	HL710 – HL720	HL710.1 – HL720.1
Description	Vertical anti-flooding valve with manual closure	Anti-flooding valve without manual closure	Anti-flooding valve with manual closure
Function	Only for vertical installation!	acc. EN 13564 type 0	acc. EN 13564 type 1

Drains




Product	HL70	HL71	HL72(N)	HL73(Pr)(.0)(.2)
Description	Floor drain horizontal with 3 side inlets	Basement drain with mud bucket	Basement drain with gravel catcher	Plug-in drain
Function	Backflow protected, with 3 inlet possibilities	For the drainage of floor surfaces, high capacity	For the drainage of floor surfaces	Fits for pipes DN110 (straight end, non socket)

HL Anti-flooding valves – Products – Overview



HL710.2 – HL720.2	HL710.2EPC – HL715.2EPC	HL710.0 – HL720.0
Double anti-flooding valve with manual closure	Anti-flooding valve with electronic valve and manual closure	Single anti-flooding valves
Corresponds to type 2 (acc. EN 13564); for upgrade to type 3 use upgrade kit HL0710E.X or HL0715E.X	acc. EN 13564 type 3	At the end of drainage pipes (e.g. in shafts), according EN 13564 - type 0

HL77, HL77.1	HL4
Basement drain with triple backwater valve	Backwater protector
Usage below the flood level, according EN13546 - type 5	Usage above the flood level!

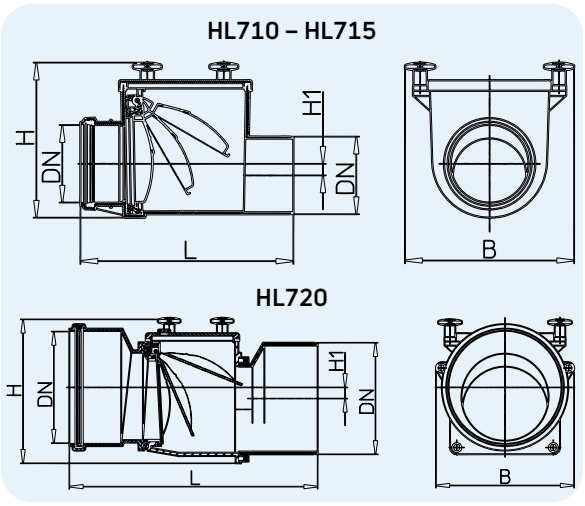
HL Anti-flooding valves – Products – Data

HL710 – 720 Anti-flooding valve with stainless steel flap and cleaning access

Data

Material	ABS
Inlet	DN110, DN125, DN160, DN200
Outlet	horizontal
Standard	According EN 13564 type 0
Recommended for	Plastic pipes with socket
Additional information	Self-acting stainless steel flap and cleaning access
Spare parts	see www.hl.at

HL-No.	Dimension	Weight	EAN	Piece/ package
710	DN110	2020 g	+907106	1
712	DN125	2090 g	+907120	1
715	DN160	3760 g	+907151	1
720	DN200	4060 g	+907205	1



	DN	H	B	L	H1
HL710	110	222	240	302	16,5
HL712	125	222	240	315	16,5
HL715	160	246	274	376	11,5
HL720	200	260	258	445	20

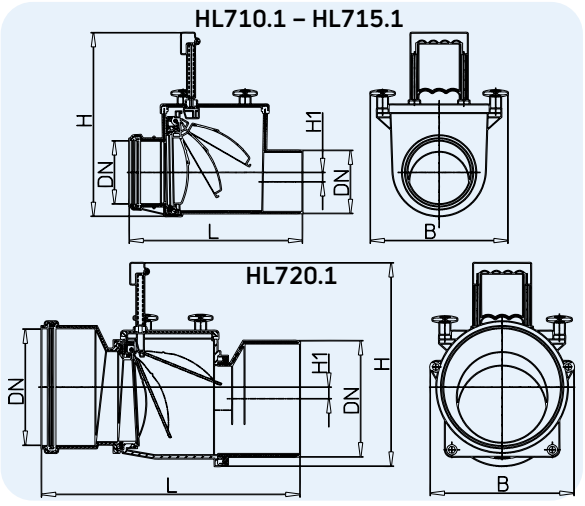
Dimensions in mm

HL710.1 – 720.1 Anti-flooding valve with stainless steel flap, manual closure and cleaning access

Data

Material	ABS
Inlet	DN110, DN125, DN160, DN200
Outlet	horizontal
Standard	According EN 13564 type 1
Recommended for	Plastic pipes with socket
Additional information	Self-acting stainless steel flap and cleaning access, additional manual closure and cleaning access
Spare parts	see www.hl.at

HL-No.	Dimension	Weight	EAN	Piece/ package
710.1	DN110	2180 g	+971015	1
712.1	DN125	2235 g	+971213	1
715.1	DN160	3380 g	+971510	1
720.1	DN200	3680 g	+972012	1



	DN	H	B	L	H1
HL710.1	110	220–320	240	302	16,5
HL712.1	125	220–320	240	315	16,5
HL715.1	160	266–356	274	376	11,5
HL720.1	200	248–348	258	445	20

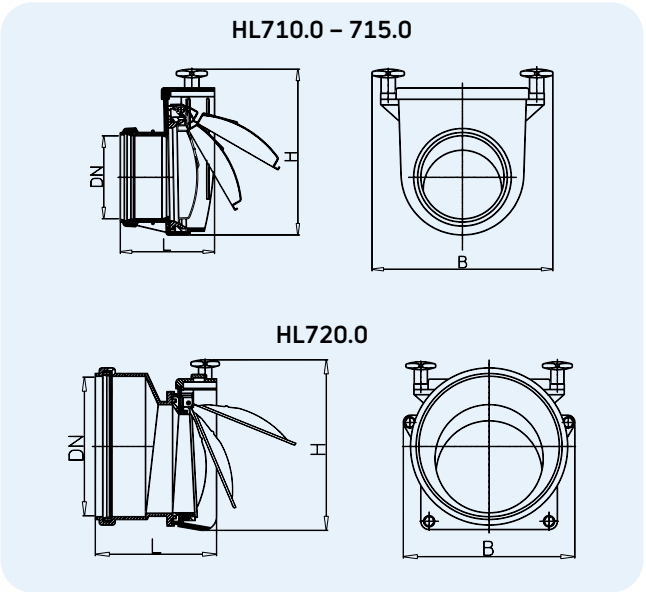
Dimensions in mm

HL710.0 – 720.0 Single anti-flooding valve with stainless steel flap

Data

Material	ABS
Inlet	DN110, DN125, DN160, DN200
Outlet	horizontal
Standard	According EN 13564 type 0
Recommended for	Plastic pipes with socket
Additional information	Self-acting stainless steel flap and cleaning access
Spare parts	see www.hl.at

HL-No.	Dimension	Weight	EAN	Piece/ package
710.0	DN110	720 g	+971008	1
712.0	DN125	730 g	+971206	1
715.0	DN160	1325 g	+971503	1
720.0	DN200	1340 g	+172009	1



	DN	H	B	L
HL710.0	110	222	240	125
HL712.0	125	222	240	128
HL715.0	160	246	274	164
HL720.0	200	260	258	177

Dimensions in mm

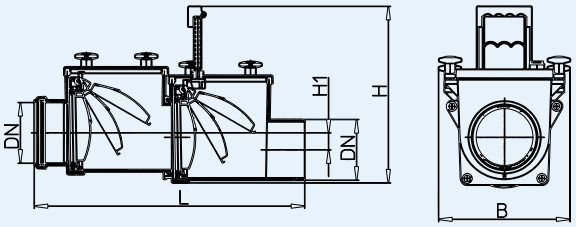
HL710.2 – 720.2 Anti-flooding valve with 2 stainless steel flaps, manual closure and cleaning access

Data

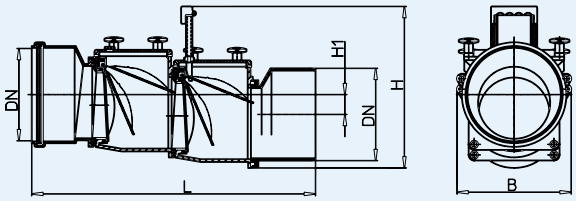
Material	ABS
Inlet	DN110, DN125, DN160, DN200
Outlet	horizontal
Standard	According EN 13564 type 2
Recommended for	Plastic pipes with socket
Additional information	2 self-acting stainless steel flaps, manual closure, cleaning access, mechanical parts made of stainless steel, connection to test-pipe, body made of impact-resistant ABS with tommy screws for easy opening For upgrade to type 3 use upgrade kit HL0710E.X or HL0715E.X
Spare parts	see www.hl.at

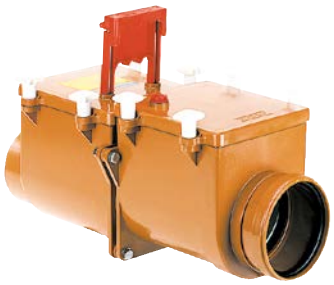
HL-No.	Dimension	Weight	EAN	Piece/ package
710.2	DN110	3230 g	+971022	1
712.2	DN125	3320 g	+971220	1
715.2	DN160	5870 g	+971527	1
720.2	DN200	6170 g	+972029	1

HL710.2 – HL715.2



HL720.2





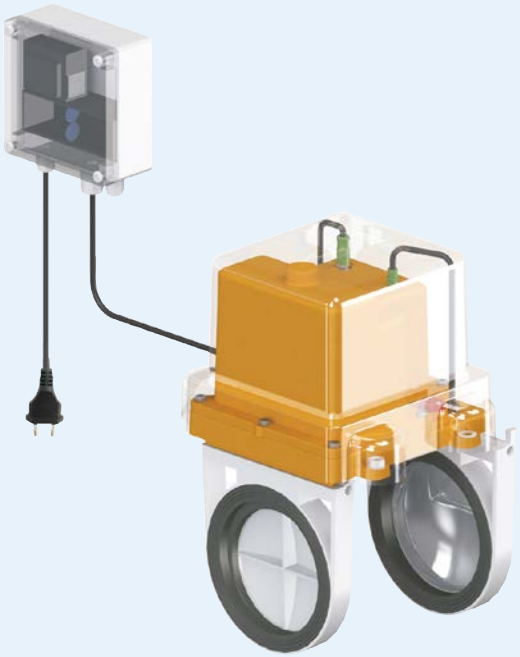
	DN	H	B	L	H1
HL710.2	110	220–320	240	490	31
HL712.2	125	220–320	240	503	31
HL715.2	160	266–356	274	590	23
HL720.2	200	248–348	258	615	40

Dimensions in mm

HL0710E.X Upgrade kit; for upgrading to electronic valve (type 3); DN110 + DN125
HL0715E.X Upgrade kit; for upgrading to electronic valve (type 3); DN150

Data

Material	ABS
Standard	Acc. EN 13564 type 3
Recommended for	upgrade from type 2 to type 3
Additional information	Optical display, optical and accoustic fault display in the control unit: additional PC interface
Power supply	230 V/0,5 A
Power supply line	6 m, PUR, 5 x 0,75 mm²
Motor	12 V low voltage
Emergency supply	12 V Accu
Sensor	Coaxial electrode
Tight power	500 N
Closure time	appr. 11 seconds
Spare parts / Manual	see www.hl.at

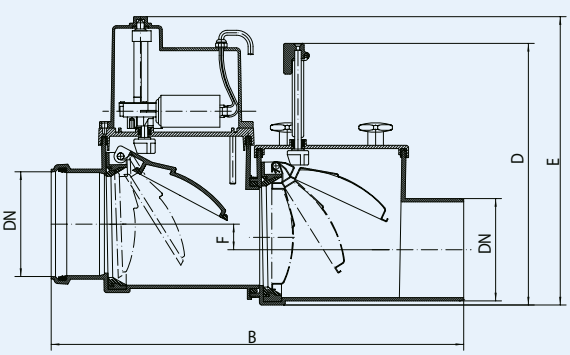


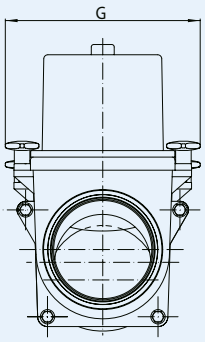
HL-No.	Fits to	Weight	EAN	Piece/package
0710E.X	HL710.2 + HL712.2	4300 g	+013364	1
0715E.X	HL715.2	4882 g	+013371	1

HL710.2EPC – 715.2EPC Anti-flooding valve with electronic operated flap

Data

Material	ABS
Inlet	DN110, DN125, DN160
Outlet	horizontal
Standard	According EN 13564 type 3
Recommended for	Plastic pipes with socket
Additional information	Optical display, optical and accoustic fault display in the control unit; additional PC interface
Anti-flooding valves	Stainless steel 1.4404/HDPE
Power supply	230 V/0,5 A
Power supply line from control unit to flap	6 m, PUR, 5 x 0,75 mm²
Motor	12 V low voltage
Emergency supply	12 V Accu
Sensor	Coaxial electrode
Tight power	500 Newton
Closure time	appr. 11 seconds
Spare parts / Manual	see www.hl.at





HL-No.	Dimension	Weight	EAN	Piece/ package
710.2EPC	DN110	6600 g	+008469	1
712.2EPC	DN125	6189 g	+008483	1
715.2EPC	DN160	7973 g	+011643	1

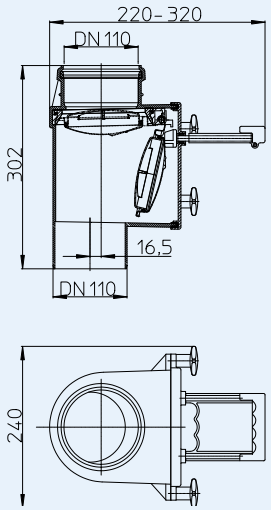
	DN	B	D	G	E	F
HL710.2EPC	110	490	220–320	240	352	31
HL712.2EPC	125	503	220–320	240	352	31
HL715.2EPC	160	590	266–356	274	371	23

Dimensions in mm

HL710.1V Vertical anti-flooding valve with manual closure

Data

Material	ABS
Inlet	DN110
Outlet	vertical
Recommended for	Plastic pipes with socket; for vertical installation
Additional information	Automatically working stainless steel flap with integrated floating body, additional manual closure and cleaning access
Spare parts / Manual	see www.hl.at

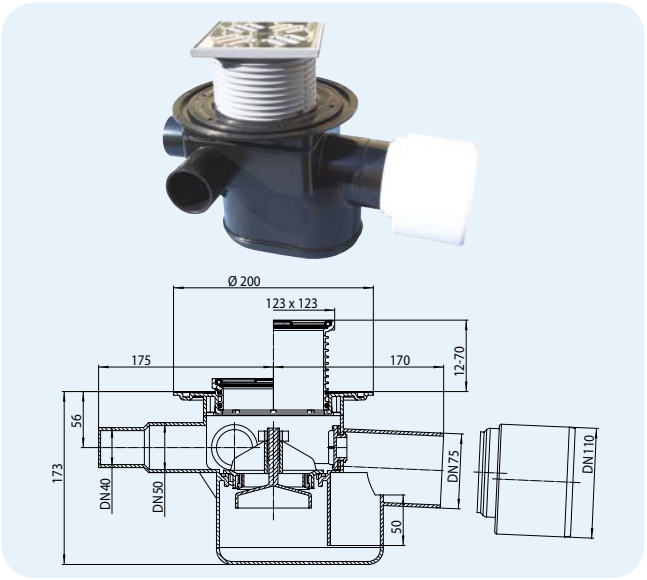


HL-No.	Dimension	Weight	EAN	Piece/ package
710.1V	DN110	1970 g	+826216	1

HL70 Floor drain with backwater protector and 3 side inlets

Data

Capacity	1,12 l/s
Material	PE
Inlet	3 side inlets, DN50/40, pluggable and weldable
Outlet	DN75/110, horizontal, pluggable and weldable
Extension	123 x 123 mm
Stench trap	Water trap
Grate	Stainless steel 115 x 115 mm
Standard	According EN 13564 type 4
Load classification	K3 – max. 300 kg
Recommended for	**Integration into a waterproofing is possible**
Additional information	Self-acting backwater protector, may also be fixed manually

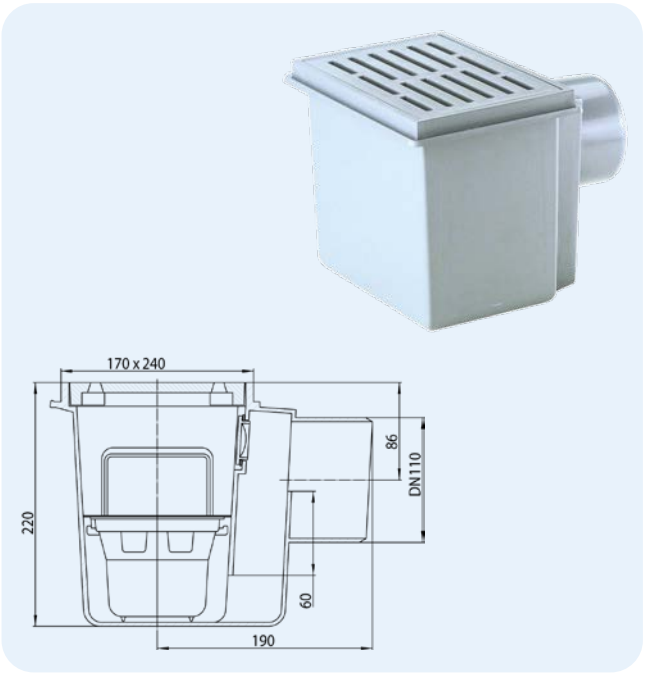


HL-No.	Dimension	Grate	Weight	EAN	Piece/package
70	DN75/110	Stainless steel 115 x 115 mm	1350 g	+700707	1
70G	DN75/110	Cast iron 150 x 150 mm	3250 g	+001941	1

HL71 Basement drain with plasic grate
HL71G like HL71, but with cast iron grate

Data

Capacity	2,30 l/s
Material	HL71: ABS HL71G: ABS/Cast iron
Outlet	DN110, horizontal, pluggable
Extension	170 x 240 mm
Stench trap	Water trap with 60 mm height of seal water
Grate	HL71: ABS HL71G: Cast iron
Standard	ÖNORM B2511, EN 1253
Load classification	HL71: K3 – max. 300 kg HL71G: L15 – max. 1,5 t
Recommended for	Basement area
Additional information	Installation, where you don`t have requirements for waterproofing. With mud bucket

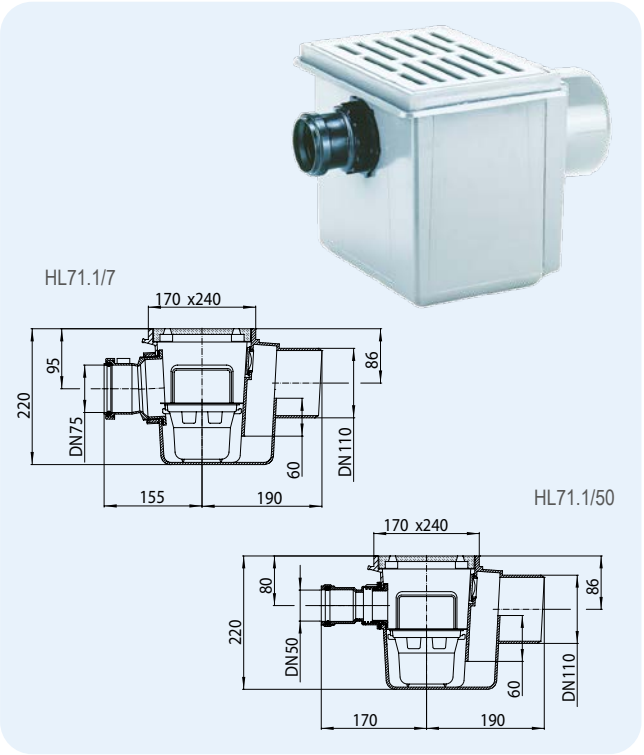


HL-No.	Dimension	Grate	Weight	EAN	Piece/package
71	DN110	Plastic	1400 g	+700714	1
71G	DN110	Cast iron	1550 g	+701711	1

HL71.1 Basement drain with side inlet DN50 or DN75

Data

Capacity	2,30 l/s
Material	ABS
Inlet	HL71.1/50: DN50 HL71.1/7: DN75
Outlet	DN110, horizontal, pluggable
Extension	170 x 240 mm
Stench trap	Water trap with 60 mm height of seal water
Grate	ABS
Standard	ÖNORM B2511, EN 1253
Load classification	K3 – max. 300 kg
Recommended for	Basement area
Additional information	Installation, where you don`t have requirements for waterproofing. With mud bucket

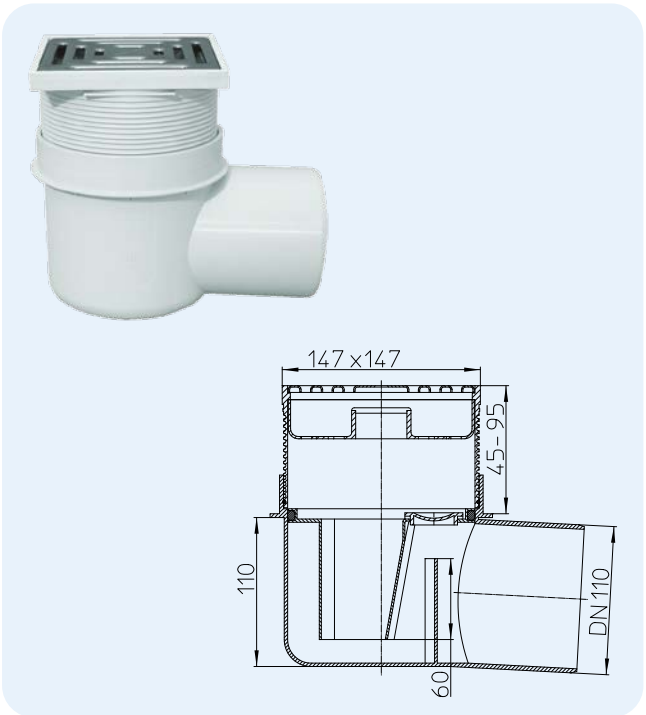


HL-No.	Dimension	Grate	Weight	EAN	Piece/package
71.1/50	DN110/50	Plastic	1430 g	+711505	1
71.1/7	DN110/75	Plastic	1660 g	+711703	1

HL72 Basement drain with plastic grate
HL72N like HL72 but with stainless steel grate

Data

Capacity	HL72: 1,67 l/s HL72N: 1,67 l/s HL72N/7: 1,47 l/s
Material	PP / Stainless steel
Outlet	HL72 u. HL72N: DN110 HL72N/7: DN75
Extension	horizontal, pluggable
Stench trap	Water trap with 60 mm height of seal water
Grate	HL72: Plastic grate 138 x138 mm HL72N u. HL72N/7: Stainless steel grate 138 x 138 mm
Standard	ÖNORM B2511, EN 1253
Load classification	K3 – max. 300 kg
Recommended for	Inside the building
Additional information	Installation, where you don`t have requirements for waterproofing. With gravel catcher

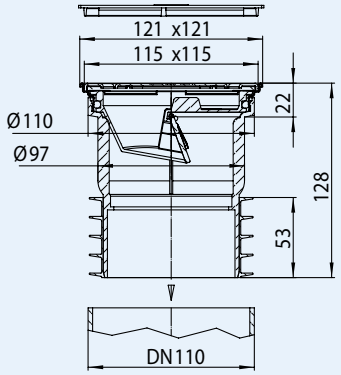


HL-No.	Dimension	Grate	Weight	EAN	Piece/package
72	DN110	Plastic	830 g	+700721	1
72N	DN110	Stainless steel	830 g	+999729	1
72N/7	DN75	Stainless steel	800 g	+013104	1

HL73(Pr)(.0)(.2) Plug-in drain DN110

Data

Capacity	HL73Pr: 0,46 l/s HL73.0: 1,1 l/s HL73.2: 0,8 l/s
Material	PP, stainless steel
Outlet	Fit into straight on of DN110 plastic pipe
Extension	121 x 121 mm
Stench trap	HL73Pr: PRIMUS trap (no stench, when it gets dry) HL73.0: Without trap HL73.2: With frostproof flap (use outside) stainless steel V4A
Grate	Stainless steel grate 115 x 115 mm stainless steel V2A
Load classification	K3 – max. 300 kg
Recommended for	HL73Pr: For not frequently used drains inside HL73.0: For rain water pipes HL73.2: For mixed sewer pipes outside
Additional information	To be used, when there is no waterproofing



HL037N.0E

HL037Pr.1E

HL073.1E

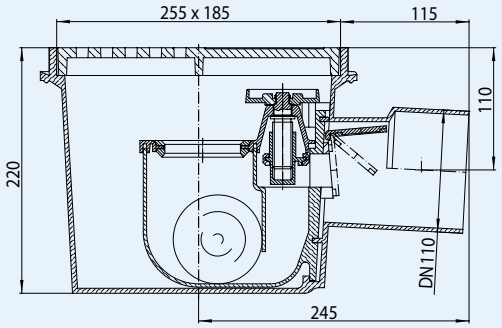
HL090.4EKK

HL-No.	Dimension	Grate	Weight	EAN	Piece/package
73Pr	DN110	Stainless steel V2A	457 g	+032327	1
73.0	DN110	Stainless steel V2A	397 g	+034420	1
73.2	DN110	Stainless steel V2A	447 g	+034437	1

HL77 Basement drain with triple backwater protection

Data

Capacity	1,58 l/s
Material	ABS
Outlet	DN110, horizontal, pluggable
Stench trap	Water trap
Grate	ABS, two parts, 180 x 125 mm
Standard	According EN 13564 type 5
Load classification	K3 – max. 300 kg
Recommended for	**Only for installation in frost-proof area!**
Additional information	2 self-acting anti-flooding valves, manual closure, removable trap, connection to test pipe



HL077.1E

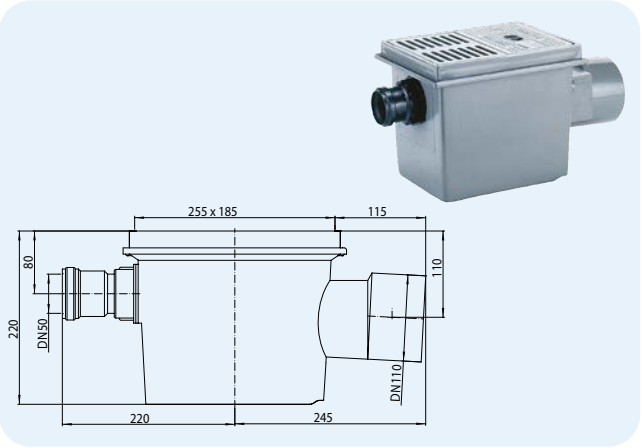
HL077.3E

HL-No.	Dimension	Weight	EAN	Piece/package
77	DN110	3340 g	+700776	1

HL77.1 Basement drain like HL77, with side inlet DN50

Data

Capacity	1,58 l/s
Material	ABS
Inlet	DN50
Outlet	DN110, horizontal, pluggable
Stench trap	Water trap
Grate	ABS, two parts, 180 x 125 mm
Standard	According EN 13564 type 5
Load classification	K3 – max. 300 kg
Recommended for	**Only for installation in frost-proof area!**
Additional information	2 self-acting anti-flooding valves, manual closure, removable trap, connection to test pipe

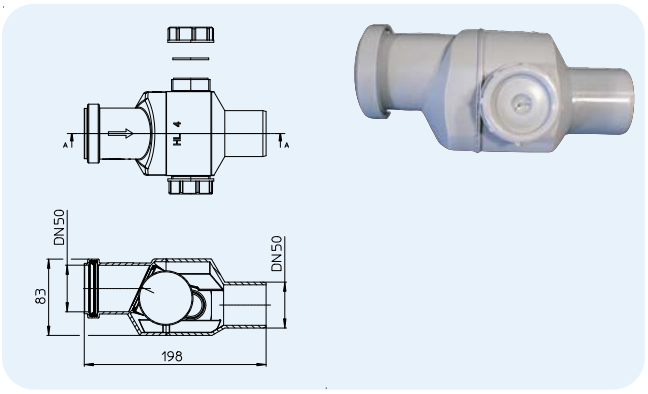


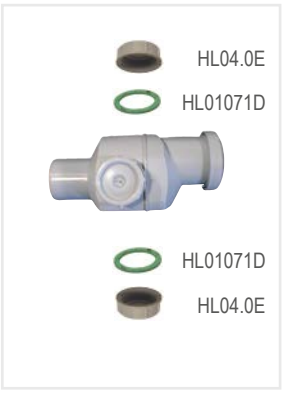
HL-No.	Dimension	Weight	EAN	Piece/package
77.1	DN110	3550 g	+710775	1

HL4 Backwater protector with cleaning screw DN50

Data

Capacity	1,36 l/s
Material	PP
Inlet	DN50
Recommended for	usage horizontal and vertical, **only above flood level**



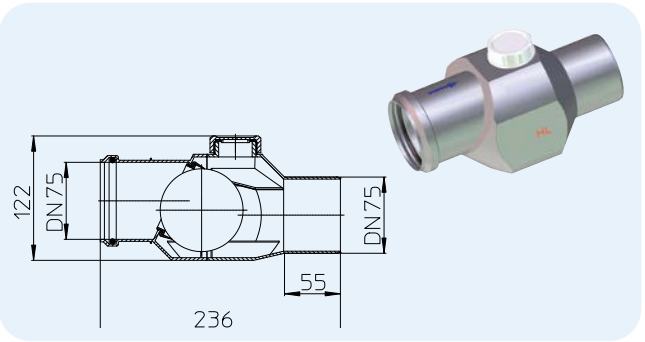


HL-No.	Dimension	Weight	EAN	Piece/package
4	DN50	280 g	+900046	1

HL4/7 Backwater protector with cleaning screw DN75

Data

Capacity	2,30 l/s
Material	PP
Inlet	DN75
Recommended for	usage horizontal and vertical, **only above flood level**



HL-No.	Dimension	Weight	EAN	Piece/package
4/7	DN75	400 g	+000661	1