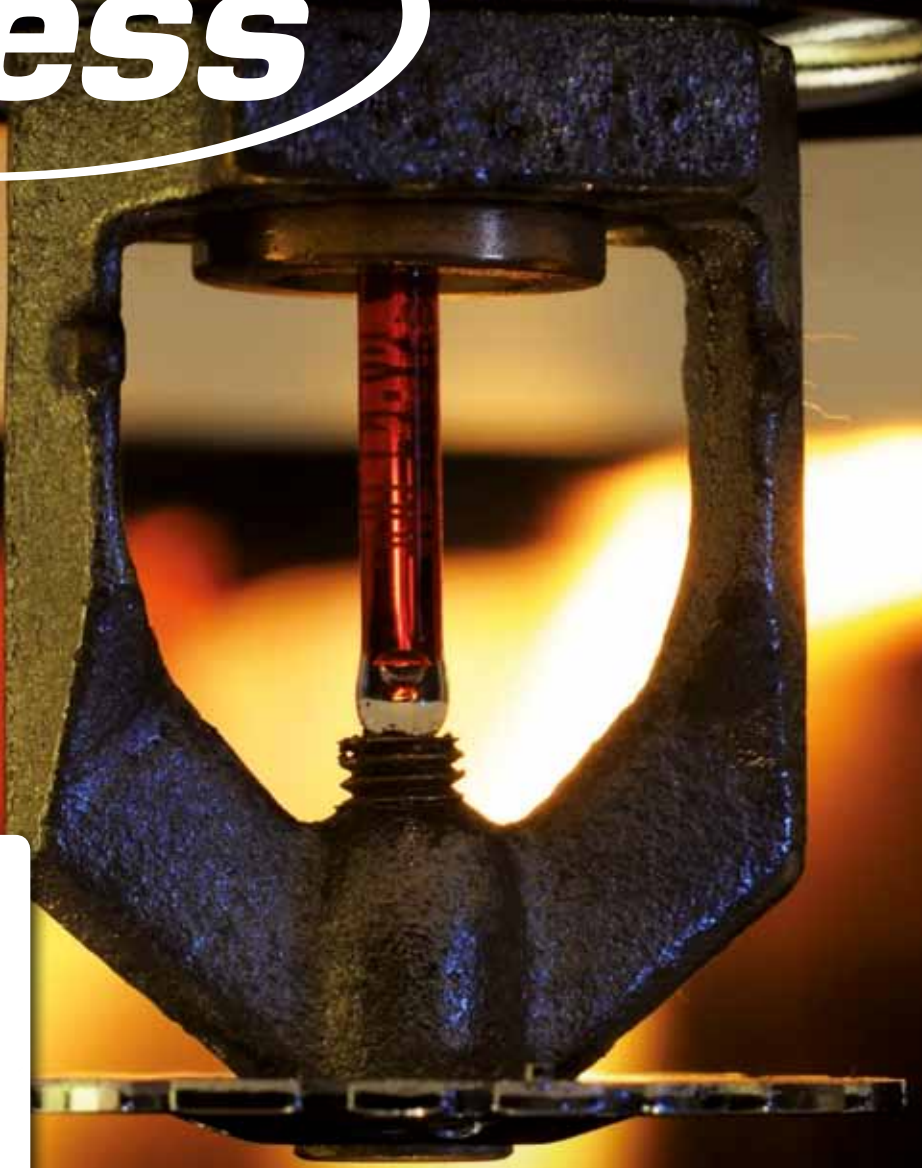


XPress



GALVANIZED STEEL



STAINLESS STEEL

XPress Sprinkler System

VSH 

XPress Sprinkler system

Your lightweight, easy and fast to install, cost-saving alternative for wet sprinkler installations.



Disclaimer:

The technical data are not binding and not expressly warranted characteristics of the goods. These are subject to change. Please consult our General Conditions of Supply. Additional information is available upon request. It is the Designer's responsibility to select products suitable for the intended service and to ensure that pressure ratings and performance data is not exceeded. Always read and understand the installation instructions. Never remove any piping components nor correct or modify any piping deficiencies without first depressurizing and draining the system.

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1 Scope

This technical instruction specifies the requirements for the use and installation of XPress Sprinkler tubes and fittings in fixed sprinkler installations. This installation instruction document shall be used when installing a sprinkler system to the LPC Rules for Automatic Sprinkler Installations.

2 General

Fixed sprinkler systems are permanently installed fire suppression and fire protection systems, which independently detect and report a fire and automatically start the suppression process. The installation of the XPress Sprinkler system in sprinkler systems is carried out in accordance with appropriate guidelines:

- LPC Rules for automatic sprinkler systems; and
- EN12845

3 Technical data

3.1 XPress Sprinkler fittings

The XPress Sprinkler fittings are available in either carbon or in stainless steel. The carbon steel fittings are manufactured from unalloyed steel (material 1.0034/St 34-2) and are protected against corrosion by means of a zinc layer (8-15 µm) which is applied by electroplating. The stainless steel fittings are manufactured from stainless steel (material 1.4404 /AISI 316L). XPress Sprinkler fittings are equipped with an EPDM O-ring as standard.

3.2 XPress Sprinkler tube

XPress Sprinkler tubes are available in the dimensions DN20 to DN50 (22-54 mm). Entry of dirt during transportation or storage is prevented by caps at both ends of the tube and utilising the correct packaging for distribution. XPress Sprinkler tubes are classified as non-combustible tubes of building material class A, DIN 4102, part 1.

3.3 XPress Sprinkler Galvanized

The XPress Sprinkler Galvanized tubes for wet sprinkler systems are thin-walled precision steel tubes. The tubes are made from cold rolled steel that is galvanized using the Sendzimir process. During this process zinc is brought onto the metal strip, running through a zinc bath, covering both sides simultaneously. The tube is protected both on the inside and outside with a zinc layer. The thickness of this layer is minimal 20 µm. After welding the seam zinc is reapplied sealing the seam. With the Sendzimir process a good adhesion of the zinc layer and corrosion resistance are achieved.

Dimensions of XPress Sprinkler Galvanized tube

DN	Outside ø (mm)	Wall thickness (mm)	Wall thickness tolerance (mm)	Weight (kg)	Capacity (l/m)
20	22	1,5	± 0,15	0,761	0,284
25	28	1,5	± 0,15	0,980	0,491
32	35	1,5	± 0,15	1,241	0,804
40	42	1,5	± 0,15	1,542	1,195
50	54	1,5	± 0,15	1,999	2,043

Material specifications of XPress Sprinkler Galvanized tube

Material	Unalloyed ULC ('Ultra Light Carbon') C-steel, E190 part no. 1.0031 according EN 10305-3
Specifications	EN10305-3
Approvals	VdS, FM, FG, CNBOP, SBSC, LPCB, SETSCO
Type of tubing	HF welded
Welding deterioration reduction	100% EDDY CURRENT tested according to SEP 1925
Weld slag removal	Outside weld flat, insight raising max. 0,5 mm, for dimensions >54 mm 0,8 mm
Tolerances	According to EN10305-3
Finishing	Zinc coating of at least 20µm according steel grade ZNT275. The tube welding seam is subsequently galvanized on the outside.
Surface finish	Silver-coloured
Marking	VSH XPress Sprinkler galvanized, DN[]/[size x wall thickness], LPCB, VdS G4080007 [working pressure VdS] bar, <FM> [working pressure] FM psi, DNV, GL, [batch number or production date], [supplier code]
Smallest bending radius	3,5 x external diameter of the tube (max. 28 mm)
Supply mode	Tubes, length of 6 m +0/-50 mm, with protective caps
Heat expansion coefficient	0,0108 mm/m with ΔT= 1K
Max. operating pressure	16 bar

3.4 XPress Sprinkler Stainless

The XPress Sprinkler Stainless tubes are suitable for wet sprinkler systems and are also thin-walled precision steel tubes. The outer- and inner surfaces of the tubes are blank, free of discolouration and are supplied free of manufacturing residue that could otherwise cause corrosion. The strict size tolerances and welding seam quality are checked on both the outside and inside.

Dimensions of XPress Sprinkler Stainless tube

	Outside ø (mm)	Wall thickness (mm)	Wall thickness tolerance (mm)	Weight (kg)	Capacity (l/m)
20	22	1,2	± 0,10	0,624	0,302
25	28	1,2	± 0,10	0,790	0,515
32	35	1,5	± 0,10	1,240	0,804
40	42	1,5	± 0,10	1,503	1,195
50	54	1,5	± 0,10	1,972	2,043

Material specifications of XPress Sprinkler Stainless tube

	1.4401	1.4521	1.4520
Material	X5CrNiMo 17 12 2 Material no. 1.4401 according to DIN-EN 10088-2	X2CrMoTi 18 2 Material no. 1.4521 according to DIN-EN 10088-2	X2CrTi17 Material no. 1.4520 according to DIN-EN 10088-2
Specifications	EN 10312 – DVGW worksheet GW541 (2004) Table 2	EN 10312 – DVGW worksheet GW541 (2004) Table 2	EN 10296-2
Approvals	DVGW, SVGW, ETA, ÖVGW, BYGGFORSK, STF, PZH, SITAC, CSTBat, WRAS, VdS, FM, FG, CNBOP, SBSC, SETSCO, LPCB, DNV, GL, LR	DVGW, SVGW, ETA, FM, ÖVGW, FG, LPCB, DNV, GL, LR	FM, FG
Type of tubing	TIG or laser welded	Laser welded	Laser welded
Welding deterioration reduction	100% EDDY CURRENT tested according to SEP 1914/ EN 10246-2	100% EDDY CURRENT tested according to SEP 1914/ EN 10246-2	100% EDDY CURRENT tested according to SEP 1914/ EN 10246-2
Weld slag removal	Outside	Outside	Outside
Tolerances	According to EN 10312 table 2	According to EN 10312 table 2	According to EN 10296-2
Finishing	Annealed under a protective atmosphere W2R	Annealed under a protective atmosphere W2R	Annealed under a protective atmosphere W2R
Surface finish	Matt silver-coloured	Matt silver-coloured	Matt silver-coloured
Marking	VSH XPress stainless DN[]/[size x wall thickness] mm, Stainless steel/Edelstahl – Sanitary/Sanitär – GAS, 1.4401/AISI316 W2R, EN10312, DVGW GW541 Reg.nr. DW-7301BM5610, SVGW, ÖVGW W1.397, WRAS, ETA, BYGGFORSK, STF, PZH, SITAC 0168/04, CSTBat 116-1482, LPCB, VdS G4080037 [working pressure VdS] bar, <FM> [working pressure FM] psi, DNV, GL, [batch number or production date], [supplier code]	VSH XPress stainless DN[]/[size x wall thickness] mm Edelstahl/Stainless steel, 1.4521/AISI444 W2R, EN10312, DVGW GW541 Reg.nr. DW-7301BP5610, SVGW, ÖVGW, ETA, LPCB, <FM> [working pressure FM] psi, DNV, GL, Tectite 316, [batch number or production date], [supplier code]	VSH XPress stainless, DN[]/[size x wall thickness] mm, Stainless steel/Edelstahl, 1.4520/AISI439, Heating/Compressed air - Heizung/Druckluft, LPCB, <FM> [working pressure FM] psi, [batch number or production date], [supplier code]
Smallest bending radius	3,5 x external diameter of the tube (max. 28 mm)	3,5 x external diameter of the tube (max. 28 mm)	3,5 x external diameter of the tube (max. 28 mm)
Supply mode	Tubes, length of 6 m +0/-50 mm, with protective caps	Tubes, length of 6 m +0/-50 mm, with protective caps	Tubes, length of 6 m +0/-50 mm, with protective caps
Heat expansion coefficient	0,0160 mm/m with ΔT= 1K	0,0104 mm/m with ΔT= 1K	0,0104 mm/m with ΔT= 1K
Max. operating pressure	16 bar	16 bar	16 bar

3.5 O-ring

The XPress Sprinkler fittings are supplied with an EPDM Leak Before Pressed O-ring in the dimensions DN20-DN50 (22-54 mm) with the following data:

Technical data of the XPress LBP EPDM O-ring

Material	EPDM
Colour	black
Coating	Silicone-free
Min./max. temperature (°C)	-35°C up to +135°C
Max. short-term operating temperature (°C)	150°C
Max. operating pressure (bar)	16 bar (refer to table 20 for applicable dimensions)
Fields of operation	Wet and dry tube sprinkler systems

3.6 XPress Sprinkler tools

An important part of the XPress Sprinkler range are the press tools which are used to make a press joint. The tools which we prescribe for the XPress Sprinkler range consist of a press machine and the accompanying press jaws or slings. Depending on the outside diameter of the tube, you should choose the corresponding press jaws or slings to ensure a completely tight joint.



Only tools made by Novopress (suitable for M-Profile) are permitted to be used in combination with the XPress Sprinkler system. Other brands of machines and press jaws and slings are currently not permitted due to the certification of our sprinkler range. The following machines, press jaws and slings made by Novopress are approved:

- Novopress ECO 301

Pressing tool ECO 301				
	Article no.	DN / dimension	Outside ø (mm)	Adapter
ECO 301 jaw	6205751	20	22	
ECO 301 jaw	6205760	25	28	
Press sling 35	6241037	32	35	ZB 302
XPress power sling	6241048	40	42	ZB 302
XPress power sling	6241059	50	54	ZB 302
Snap on HP 35	6341060	32	35	ZB 303
Snap on HP 42	6341071	40	42	ZB 303
Snap on HP 54	6341082	50	54	ZB 303

4 Product identification

You can recognize the XPress Sprinkler range by the laser marking on the fitting which makes it easy for you to identify the fitting used. Information such as material, approvals and dimensions are all permanently marked onto the fitting.

XPress Sprinkler Galvanized fitting		
	Laser marking VSH XPress Galvanized Approvals Dimension Traceability code	Packaging Label Type C..... Dimension Description: ...C-Pr EAN Nr. Art. Nr. VSH Approvals Number of pieces
XPress Sprinkler Stainless fitting		
	Laser marking VSH XPress 316L Approvals Dimension Traceability code	Packaging Label Type R..... Dimension Description: ...S-PR EAN Nr. Art. Nr. VSH Approvals Number of pieces

5 Use of XPress in sprinkler installations

The XPress Sprinkler system has been tested and certified in accordance with the LPCB guidelines (TS1599 draft 5) for both the galvanized and stainless steel system for use in fixed wet sprinkler systems for above ground applications. These guidelines refer to the XPress Sprinkler system with a working pressure of 16 bar. In the appendix a full list can be found of the LPCB certificated products.

Except where correct fittings are used to connect the system to other ISO 65 or EN 10255 medium weight piping systems, XPress system components shall not be used in conjunction with other piping systems. The jointing of other non-system components such as ISO 65 piping is only admissible via detachable metal connections. Additives or anti-corrosive agents shall not be used in the extinguishing system unless VSH Fittings have confirmed the compatibility.

For XPress Sprinkler installations which are installed according to LPC rules, the allowable range hazard classes is from LH up to OH3.

Painting of the installation is allowed as long as the painting is done after installation and the paint used is water based.

When installing XPress Galvanized to a potable water system, special care should be taken to use a WRAS approved water backflow preventer. XPress Sprinkler Stainless is WRAS approved.

When installing XPress Sprinkler, the installer must always ensure that adequate (meeting the requirements of the building regulations and LPC Sprinkler Rules) fire stopping is undertaken following the routing of pipes.

6 Installation requirements

Making a press joint is very easy, especially due to the light weight of fittings and tube and the machine controlled process which is taking place during the joint of tube and fitting. To always ensure an optimal joint between tube and fitting it is mandatory to follow the installation instructions which are illustrated below, and which are also displayed on each bag of fittings. Fittings should remain sealed in their bags until the point of installation, to prevent debris contaminating the O-ring.

6.1 Transport and storage

During transport and storage of XPress Sprinkler tubes and press fittings it is important to avoid damage and soiling. The best storage temperature for fittings and tubes is between 10°C and 25°C and they should be stored in a dry area (maximum humidity 65%). The storage of tubes should be horizontal, separated by wooden blocks. Don't stack the bundles too high to prevent tubes from becoming distorted (the maximum height should not exceed 6 bundles, when stacking stack in 2x2/3x3, etc.). Please make sure not to mix tube materials (carbon and stainless steel) in storage.

6.2 Cutting the tube to size

After the measurements have been taken, the XPress Sprinkler tube can be cut to size with a tube cutter, a fine-toothed handsaw or a mechanical saw with motor suitable for the tube material. The tube should always be cut completely. Never partially cut the tube and then break it (this could cause corrosion).

Do not use oil cooled saws, abrasive wheels or flame cutting.

6.3 Deburring the tube

The tube ends should be carefully deburred on the internally and externally after cutting to length to prevent damages to the O-ring when the tube is inserted into the press fitting. Deburring can be carried out both inside and outside using either a manual or an electric deburring tool. Burrs sticking to the tube must be removed.

6.4 Insertion depth marking

Mark the insertion depth on the tube in order to guarantee a safe and proper joint with a suitable marking tool as supplied by VSH. Reliable pressing with the corresponding tensile strengths can only be achieved by a proper installation. The pressing operation behind the crimp is of crucial importance for the tensile strength. The marking on the tube must remain visible (but close to the fitting) after the joint is pressed to identify any movement before or after pressing.

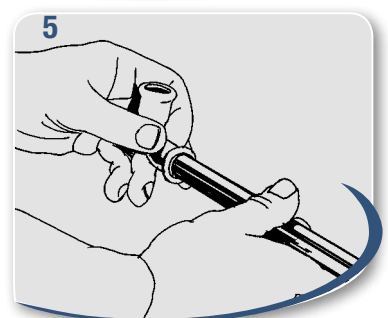
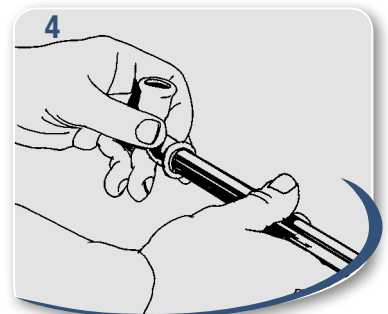
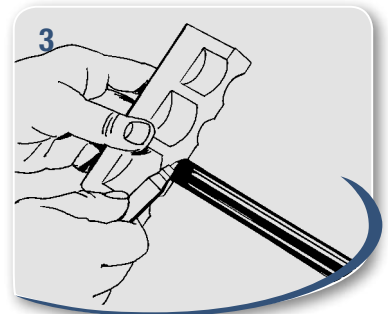
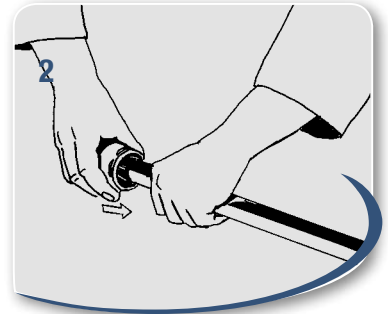
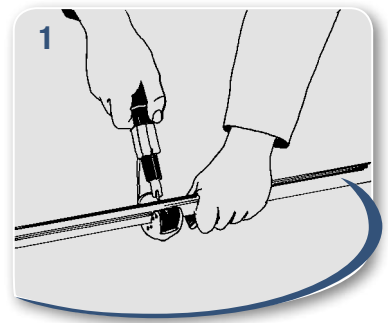
6.5 Check the fitting and tube

Before assembly, the fitting must be checked to ensure the correct position and presence of the O-rings. The tube, fitting and O-ring should be examined for foreign material (e.g. dirt, burrs), which should be removed if present.

6.6 Assembly of fitting and tube

Insert the tube into the press fitting up to the marked insertion depth while being rotated slightly and pushed in an axial direction at the same time. The marking for the insertion depth must still be visible. In case of fittings without a stop the fittings should be inserted at least as far as the marked insertion depth.

Rough and careless insertion of the tube into the press fitting may result in damage to the O-ring and is therefore not permitted. When assembly is more difficult due to permitted tolerances in sizes, a lubricant as water or soap may be used, but never use oil or grease.



Under no circumstances should oils or grease be used as lubricants

For practical reasons and in order to optimize the installation time, it is standard procedure to establish a certain number of joints first before pressing the different joints one after the other.

This makes it important to mark the insertion depth as described under 6.4

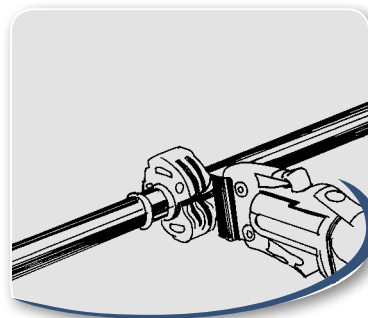
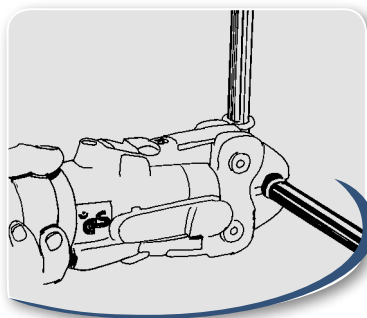
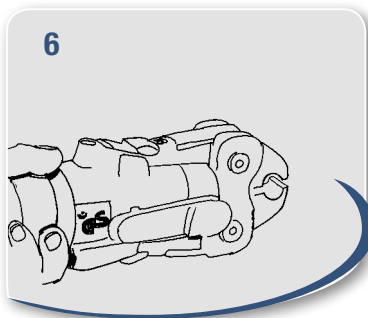
Before the final pressing operation is carried out for the different tube connections, always check the minimum clearances which are listed in the below table.

DN	Outside \varnothing (mm)	Insertion depth		Minimum distance between 2 pressings		Minimum tube length required	
		e (mm)		A-min (mm)		2 x e + A-min (mm) L-min	
		C-steel	St. steel	C-steel	St. steel	C-steel	St. steel
20	22	21	21	10	10	52	52
25	28	23	23	10	10	56	56
32	35	26	26	10	10	62	62
40	42	30	30	20	20	80	80
50	54	35	35	20	20	90	90

6.7 Pressing

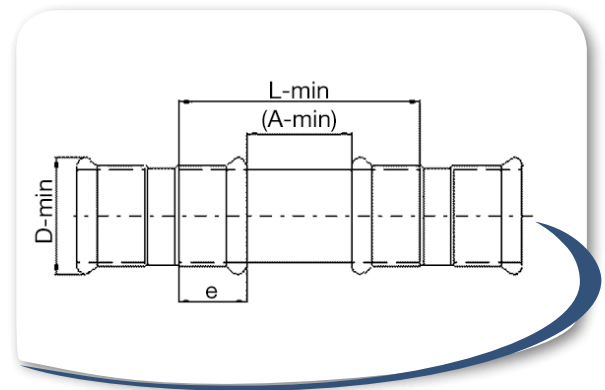
Before starting to press, the press jaws and slings must be checked for dirt, which must be removed if present. Furthermore, it must be ensured that the press machine is in good condition and that the instructions for operating the device, maintenance and the manufacturers' instructions have been followed. Also make sure that you use the correct press jaws and slings for the XPress Sprinkler application. In order to create a proper pressed joint, the groove of the press tool must enclose the press fitting O-ring bead. Once the pressing has started, always complete the press cycle and under no circumstances interrupt the process.

It is not allowed to press a fitting twice or more



6.8 Minimum distance between fittings

The XPress fittings are all equipped with the M-profile. To ensure a proper mounting of the press jaws and slings there should always be a minimum clearance available between the fittings. Before the final pressing operation is carried out for the different tube connections, the minimum clearances must be checked.



5.7 Available space needed for press tool

Using a press tool including the press jaws and slings can be limited due to the available space for the press tool. To make sure that there is enough space available for the press tool, please make sure to follow the minimum distances in the table below. The table lists the important minimum distances and the space requirement for an installation in order to guarantee correct processing.

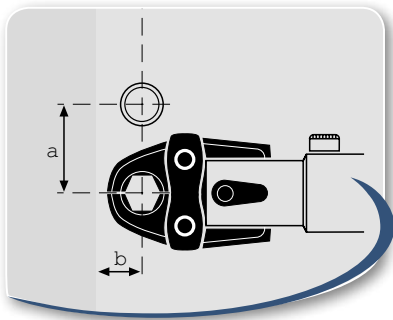


Figure 15

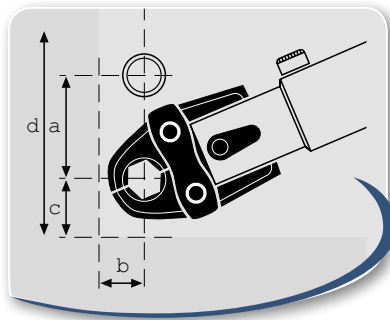


Figure 16

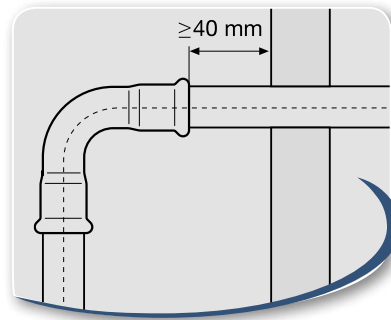


Figure 17

DN	Outside \varnothing (mm)	Figure 15		Figure 16			Figure 17	
		a	b	a	b	c	d	Tube depth (mm)
20	22	65	25	80	31	35	150	40
25	28	75	25	80	31	35	150	60
32	35*	115	75	115	75	75	265	70
40	42*	120	75	115	75	75	265	70
50	54*	200	85	120	85	85	290	70

6.10 Bending

Depending on the system, it may be necessary to bend the tube during installation. For this, commercially available manual, hydraulic or electric bending tools with the corresponding bending segments are used. The suitability of the bending tool is defined by the manufacturer. XPress Sprinkler tubes for sprinkler installations are cold pliable in the sizes 22 and 28 mm.

The minimum bending radius is as follows: $r_{\min} = 3,5 \times \text{outside diameter (max. 28 mm)}$

22 mm: 77 mm

28 mm: 98 mm

7 Pipe supports

7.1 General

Pipe supports shall be fixed directly to the building or, if necessary, to machines, storage racks or other structures. They shall not be used to support any other installations. They shall be of the adjustable type in order to secure an even load-bearing capability. Supports shall completely surround the pipe and shall not be welded to the pipe or fittings.

Distribution pipes and risers shall have a suitable number of fixed points to take account of axial forces. No part of any support shall be made of combustible material. Nails shall not be used. Supports for stainless steel pipes shall be provided with a suitable lining with sufficient electrical resistance, in order to prevent contact corrosion (for example steel Munsen ring and/or clip with an elastomeric or fabric material).

Make sure to use the appropriate hangers for sprinkler applications which are also suitable for the outside diameters of XPress Sprinkler and that no hangers are mounted on the fittings. Where a reducer is installed, a pipe hanger shall be used adjacent to the reducer on the larger pipe.

7.2 Spacing and location

Supports for XPress Sprinkler shall be spaced as listed in below table:

DN	Outside ø (mm)	Maximum distance between supports
		LPCB
20	22	2,50
25	28	2,50
32	35	3,50
40	42	3,50
50	54	3,50

Additional requirements for spacing and location of supports for XPress Sprinkler are:

- There shall be at least one support within 1 m of each joint;
- There shall be at least one support on each pipe section.
- The distance from any terminal sprinkler to a support shall not exceed
 - o 0,9 m for DN25/28 mm diameter piping;
 - o 1,2 m for piping greater than DN25/28 mm diameter.
- The distance from any upright sprinkler to a support shall not be less than 0,15 m.
- Vertical pipes shall have additional supports in the following cases:
 - o pipes more than 2 m long;
 - o pipes more than 1 m long feeding single sprinklers.
- Pipes that are at a low level or otherwise vulnerable to mechanical impact shall be separately supported except for the following cases:
 - o horizontal pipes less than 0,45 m long feeding individual sprinklers;
 - o drop or rise pipes less than 0,6 m long feeding individual sprinklers

Support of risers:

Risers shall be supported by pipe clamps or by hangers located on the horizontal connections within 0,6 m of the centreline of the riser. To adequately support a riser, the full surface of a clamp must bear against the surface of the pipe. The distance between supports for risers shall not exceed 7,6 m.

Sidewall sprinklers:

Wall mounted sidewall sprinklers shall be restrained to prevent movement.

8 General instructions for use

8.1 Flushing the network

After completion of the installation work the entire sprinkler system has to be thoroughly rinsed through with potable water. Flushing of the system is necessary in order to guarantee that it is working correctly and to prevent contamination within the system. After the system has been rinsed through it has to be drained off. The sprinklers then have to be attached after the removal of all the materials required for flushing the network.

8.2 Filling and bleeding the tube network

After flushing of the tube network has been carried out, the network should be filled with potable water and completely bled.

8.3 Pressure testing

The tubes belonging to the sprinkler system must be subjected to a pressure test according to valid guidelines. In general testing should last at least two hours at the test pressure (measured at the alarm valves) corresponding to 1,5 times the maximum operating pressure - but at least 15 bar – must be maintained. Any faults disclosed, such as permanent deformations, ruptures or leakages shall be corrected, and the pressure test must be repeated. Care shall be taken not to subject any system components to pressure higher than those recommended by the supplier.

8.4 Flow loss

Every fluid that flows through a tubing system experiences continuous and local flow resistances that are apparent from the pressure drop in the system. There is a difference between the continuous and the local pressure drop. The continuous pressure drop is mainly caused by the flow resistance in straight tube sections, which in turn essentially results from the friction between the fluid and the tube wall. Local pressure drops, on the contrary, are those flow resistances that are caused by turbulence, for instance where there is a change of internal tube diameter, a tube branch, in an elbow, etc.

8.4.1 Continuous pressure drop

To calculate the total pressure drop resulting from the flow of fluids in a straight section of the tubing system, first determine the pressure drop over a unit of length and then multiply the total length with this value. This value can be determined analytically using the Hazen-Williams formula.

$$p = \frac{6,05 \times 10^5}{C^{1,85} \times d_i^{4,87}} \times Q^{1,85}$$

p = pressure loss in the tube [bar/m]

Q = flow through the tube [l/min]

d_i = mean internal diameter of the tube [mm]

C = constant for type and condition of the tube

C=140 for XPress Sprinkler tube


The pressure loss due to velocity may be ignored.

8.4.2 Local pressure drops

Local pressure drop is, as mentioned in the introduction of this section, the resistance to flow that results from changes in the flow direction and cross-sectional area, flow splitting over several channels, etc. There are in general two possibilities to calculate these flow resistances: the direct analytical method and the method using equivalent lengths.

8.4.2.1 Equivalent length method

This is a calculation method that solves the calculation problem as a function of a particular local resistance and gives the equivalent length of a straight piece of tube with the same diameter that would have the same pressure drop. In order to use this method of calculation all length-equivalent values for each fitting type in table 18 are to be added to the actual length of the supply network. The total calculation of the equivalent length is multiplied by continuous pressure drop [bar/m]. This will show the overall resistance in the circuit. This method is not as accurate as the direct analytical method but has the advantage that the calculation can be carried out faster.



DN 20 - 100 (Ø 22 - 108 mm)										
DN	mm	Method of equivalent length (m)								
20	22	1,4	0,6	0,5	0,5	0,4	0,8	1,2	1,4	2,8
25	28	1,9	0,9	0,6	0,6	0,5	1,1	1,5	1,9	3,8
32	35	2,5	1,2	0,8	0,8	0,7	1,5	2,1	2,5	5,0
40	42	3,1	1,4	1,0	1,0	0,9	1,8	2,6	3,1	6,2
50	54	4,0	1,8	1,3	1,3	1,1	2,3	3,3	4,0	8,0

8.4.2 Direct analytical method

The local pressure drop can be calculated with the following mathematical equation:


$$\Delta p_L = \sum \zeta \times v^2 \times \gamma / 2 \times 10^{-5} \text{ [bar]}$$

v = flow velocity of the fluid [m/s]

γ = specific density of the fluid [kg/m³]

ζ = local flow resistance coefficient

Table 19 gives the $[\zeta]$ values for every type of fitting. We can assume that $[\zeta]$ is velocity independent for those velocities that occur in domestic installations or in other normal applications; this is supported by the fact that the change of $[\zeta]$ as a function of the Reynolds number in these velocity ranges is only minimal. Once the $[\zeta]$ value is known, one can read off directly the corresponding local pressure drop.



DN 20 - 50 (Ø 22 - 54 mm)										
ζ Direct analytical method										
		1,5	0,7	0,5	0,5	0,4	0,9	1,3	1,5	3,0

9 Underground and embedded installations

The XPress Sprinkler system is intended for above ground sprinkler installations only. The XPress Galvanized system is not be installed embedded in concrete. XPress Sprinkler Stainless is also allowed to be used in embedded installations.

When installing XPress stainless embedded in concrete, no specific limitations apply on isolation (thermal or acoustic). During the installations special care should be taken to ensure the concrete fully surrounds the piping and to avoid any empty spaces between concrete and piping. It is of great importance to use a concrete mixture which doesn't contain chlorides or other substances which could negatively influence the stainless steel.

Pressure testing of the installation has to be done before embedding the pipes and fittings in concrete. Any faults disclosed, such as permanent deformations, ruptures or leakages shall be corrected, and the pressure test must be repeated.

10 Service and maintenance

A sprinkler system should be regularly serviced, maintained and periodically inspected so that it will work properly in the event of a fire. Sprinkler systems have an extensive service, maintenance and inspection programme covering the whole of their design life, including weekly, monthly, quarterly, yearly, three-yearly up to ten-yearly checks and tests. Regular service and maintenance should be carried out in accordance with EN12845 Annex K and Technical Bulletin TB203 by an LPCB (or equivalent) certified sprinkler contractor for all but the monthly and weekly checks. Installations made with XPress Sprinkler Galvanized should be visually inspected regularly (preferably on a monthly basis) on signs of external corrosion. The design life time for the XPress Sprinkler system (both galvanized and stainless steel) is 50 years, providing they have been installed in the released environments.

Loss Prevention Certification Board



APPENDIX TO CERTIFICATE NO. 1033

VSH Fitting BV

Certificate No: 1033a to TS1599 Issue draft 5

VSH XPress lightweight Galvanized Steel Sprinkler Pipework System

Description	Size/mm	LPCB Ref
Pipe	22, 28, 35, 42, 54	1033a/01
Straight Coupling (2 x Press)	22, 28, 35, 42, 54	1033a/02
Slip Coupling (2 x Press)	22, 28, 35, 42, 54	1033a/03
90° Elbow (2 x Press)	22, 28, 35, 42, 54	1033a/04
90° Elbow (Press x plain end)	22, 28, 35, 42, 54	1033a/05
45° Elbow (2 x Press)	22, 28, 35, 42, 54	1033a/06
45° Elbow (Press x plain end)	22, 28, 35, 42, 54	1033a/07
90° Bend (2 x plain end)	22, 28, 35, 42, 54	1033a/08
Cross over (2 x plain end)	22, 28	1033a/09
Tee equal (3 x Press)	22, 28, 35, 42, 54	1033a/10
Tee reduced (3 x Press)	22x28x22, 28x22x28, 35x22x35, 35x28x35, 42x22x42, 42x28x42, 42x35x42, 54x22x54, 54x28x54, 54x35x54, 54x42x54	1033a/11
Tee threaded (Press x fem. thread x Press)	22x1/2"x22, 22x3/4"x22, 28x1/2"x28, 28x3/4"x28, 28x1"x28, 35x1/2"x35, 35x3/4"x35, 35x1x35, 42x1/2"x42, 42x3/4"x42, 42x1"x42, 54x1/2"x54, 54x3/4"x54, 54x1"x54	1033a/12
Reducer (Large Plain end x Press)	28x22, 35x22, 35x28, 42x28, 42x35, 54x35, 54x42,	1033a/13

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Date of Issue 1st April 2011

Issue No. 01

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APPENDIX TO CERTIFICATE NO. 1033

VSH Fitting BV

Description	Size/mm	LPCB Ref
Reducer (2 x Press)	28x22	1033a/14
Straight connector (Plain end x female thread)	22x 1/8", 22x 1/4"	1033a/15
Straight connector (Press x female thread)	22x 1/8", 28x 1/8", 28x 1/4", 28x1", 35x1 1/4"	1033a/16
Straight connector (Press x male thread)	22x 1/8", 22x 1/4", 22x1", 28x 1/8", 28x1", 28x1 1/4", 35x1", 35x1 1/4", 35x1 1/2", 42x1 1/4", 42x1 1/2", 54x1 1/2", 54x2"	1033a/17
Straight union (Press x male thread)	22x 1/4", 28x1", 35x1 1/4", 42x1 1/2", 54x2"	1033a/18
90° Angle adaptor (Press x male thread)	22x 1/4"	1033a/19
90° Elbow (Press x male thread)	22x 1/8", 28x1", 35x1 1/4", 42x1 1/2", 54x2"	1033a/20
90° Elbow (Press x female thread)	22x 1/8", 22x 1/4", 28x 1/8", 28x 1/4", 28x1", 35x 1/8", 35x 1/4", 35x1"	1033a/21
Straight connector (Press x grooved)	28x33.7, 35x42.4, 42x48.3, 54x60.3	1033a/22
Stop end (1 x press)	22, 28, 35, 42, 54	1033a/23

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VSH Fitting BV

Description	Size/mm	LPCB Ref
Reducer (2 x Press)	28x22	1033a/14
Straight connector (Plain end x female thread)	22x 1/8", 22x 1/4"	1033a/15
Straight connector (Press x female thread)	22x 1/4", 28x 1/4", 28x 1/2", 28x1", 35x1 1/4"	1033a/16
Straight connector (Press x male thread)	22x 1/8", 22x 1/4", 22x1", 28x 1/4", 28x1", 28x1 1/4", 35x1", 35x1 1/4", 35x1 1/2", 42x1 1/4", 42x1 1/2", 54x1 1/2", 54x2"	1033a/17
Straight union (Press x male thread)	22x 1/4", 28x1", 35x1 1/4", 42x1 1/2", 54x2"	1033a/18
90° Angle adaptor (Press x male thread)	22x 1/4"	1033a/19
90° Elbow (Press x male thread)	22x 1/4", 28x1", 35x1 1/4", 42x1 1/2", 54x2"	1033a/20
90° Elbow (Press x female thread)	22x 1/8", 22x 1/4", 28x 1/8", 28x 1/4", 28x1", 35x 1/8", 35x 1/4", 35x1"	1033a/21
Straight connector (Press x grooved)	28x33.7, 35x42.4, 42x48.3, 54x60.3	1033a/22
Stop end (1 x press)	22, 28, 35, 42, 54	1033a/23

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VSH Fitting BV

Description	Size/mm	LPCB Ref
Reducer (2 x Press)	28x22	1033a/14
Straight connector (Plain end x female thread)	22x 1/2", 22x 3/4"	1033a/15
Straight connector (Press x female thread)	22x 3/4", 28x 3/4", 28x 1/2", 28x1", 35x1 1/4"	1033a/16
Straight connector (Press x male thread)	22x 1/2", 22x 3/4", 22x1", 28x 3/4", 28x1", 28x1 1/4", 35x1", 35x1 1/4", 35x1 1/2", 42x1 1/4", 42x1 1/2", 54x1 1/2", 54x2"	1033a/17
Straight union (Press x male thread)	22x 3/4", 28x1", 35x1 1/4", 42x1 1/2", 54x2"	1033a/18
90° Angle adaptor (Press x male thread)	22x 3/4"	1033a/19
90° Elbow (Press x male thread)	22x 3/4", 28x1", 35x1 1/4", 42x1 1/2", 54x2"	1033a/20
90° Elbow (Press x female thread)	22x 1/2", 22x 3/4", 28x 1/2", 28x 3/4", 28x1", 35x 1/2", 35x 3/4", 35x1"	1033a/21
Straight connector (Press x grooved)	28x33.7, 35x42.4, 42x48.3, 54x60.3	1033a/22
Stop end (1 x press)	22, 28, 35, 42, 54	1033a/23

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More information?

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