Install your **future**

SYSTEM **KAN-therm**

Sprinkler

Fire safety
for years to come

EN 21/03

∅ 22-108 mm

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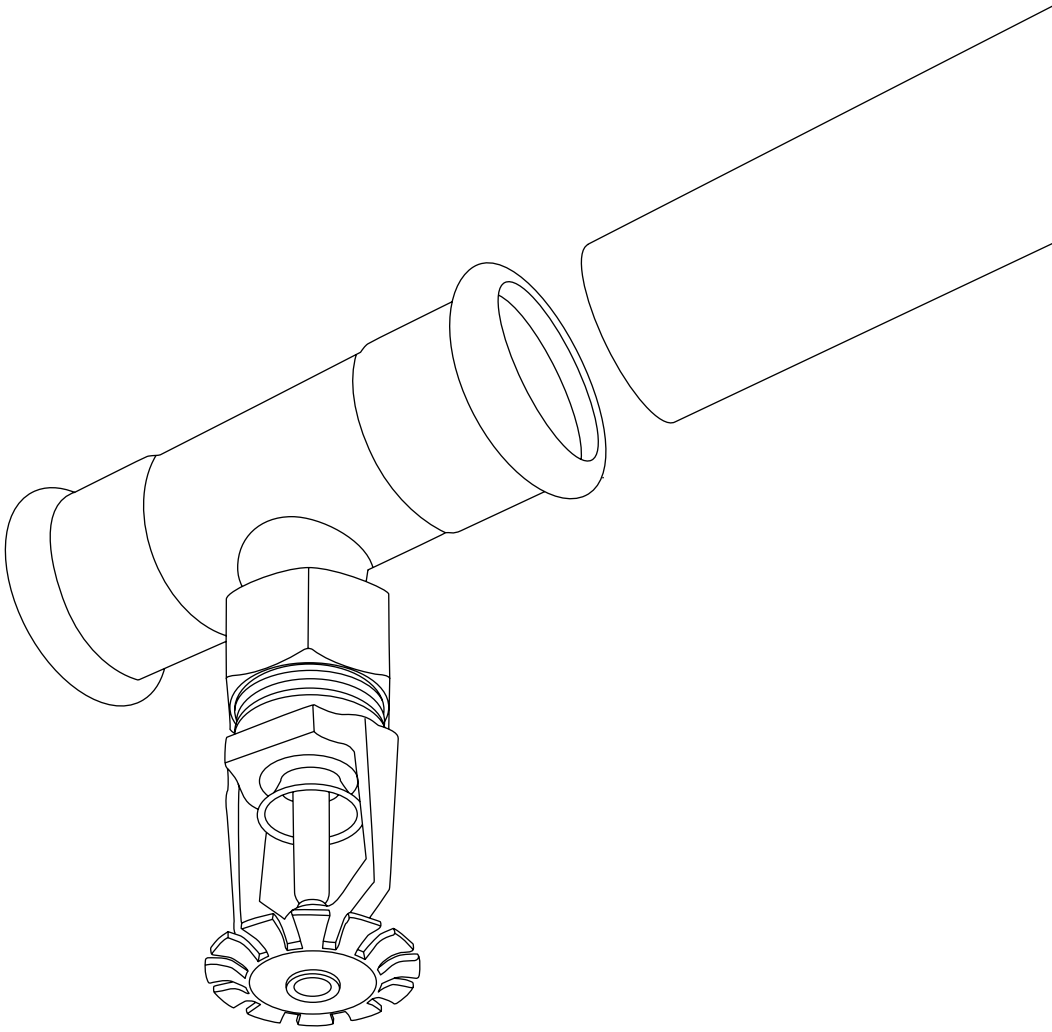


SYSTEM **KAN-therm**

Sprinkler

KAN-therm Sprinkler is a complete fire extinguishing installation system consisting of pipes and fittings made of zinc-plated carbon steel (Steel Sprinkler) or stainless steel (Inox Sprinkler) in 22–108 mm (DN20 – DN100) diameter range.

Particular system elements are joined using the state of the art, professional and, most of all, safe "Press" technique based on pressing fittings on the pipe using dedicated tools.

The KAN-therm Sprinkler System is designed for constructing indoor-use, fire fighting hydrant* and sprinkler systems. Both material versions are verified and certified according to VdS guidelines for application in stationary sprinkler systems after emergency valves, within rooms characterized by low or medium fire hazard (LH, OH1, OH2, OH3, and to OH4 in respect to exhibition halls, cinemas, theatres and concert halls).

KAN-therm Sprinkler Systems are ideal for constructing new and replacing old, traditional fire extinguishing sprinkler installations.

* according to national regulations, hydrant systems are certified by Polish CNBOP.

Introduction

As fire safety in newly created and renovated objects, as well as the pursue to minimize installation construction time become a big concern, innovative systems like KAN-therm Sprinkler appear as an obvious choice.

KAN-therm Sprinkler Features

There are many systems on the constructions market using conventional solutions, such as threading, welding and soldering. The advantages brought by applying „Press" coupling technique, as compared to the above mentioned, have been already appreciated long time ago.

It is the aesthetics of systems constructed using KAN-therm Sprinkler that is frequently the main reason for which architects and designers choose our products for constructing fire extinguishing mechanisms.

All elements of the system are manufactured in a modern plant, which allows us to guarantee unshaken quality and availability of our products. Use of the advanced technology of laser welding in the production process assures an absolute control of all elements. Fully automated tightness testing is an integral part of the laser welding process. All straight couplings with screwed ending are produced from one element, thanks to which the couplings' dimensions are limited to the minimum, just like the risk of occurrence of leaks. Thanks to an extraordinarily smooth surface of pipes and fittings, the obtained flow characteristics allow for a significantly increased efficiency, as compared to conventional solutions. The high quality of KAN-therm Sprinkler System has been confirmed by national and international certifying bodies.

Reliability

In KAN-therm System Sprinkler systems, the quality of joint mainly depends on the used tool. This minimizes risk of human-caused assembly faults.

To limit the risk of occurrence of human-caused assembly faults, all KAN-therm Sprinkler System fittings feature LBP (Leak Before Press) function, detecting non-pressed joints. For fittings of dimensions up to DN50, inclusive, the LBP functionality is assured by specific structure of the sealing O-Ring; for elements of dimensions above DN50, the fitting's stub pipe has been ovalized. The LBP function allows for occurrence of a distinct leakage from the pipe-fitting joint, if the joint has not been pressed. This makes it easy to quickly state which connections have not been pressed during installation, and perform the necessary repairs. After pressing the fitting on the pipe, tightness is guaranteed.

KAN-therm Sprinkler System advantages:

- quick and secure installation and assembly, without the necessity of welding or screwing pipes (risk of working with open fire eliminated),
- wide range of pipe and fitting diameters - from 22 mm to 108 mm,
- high aesthetics of the performed installations, without the necessity of painting,
- small weight of pipes and fittings,
- optimized fitting dimensions assure easier construction of the installation,
- resistance to mechanical damage.

The above features cause KAN-therm Sprinkler System to be easy and comfortable in assembly, not requiring specific skills.

KAN-therm Sprinkler System assembly takes place without use of open fire (as opposed to welding or soldering), or applying other heavy and potentially dangerous tools.

Thanks to the minimal requirements, KAN-therm Sprinkler System is a perfect solution for modernizations or renovations. Additionally, the small weight of KAN-therm Sprinkler pipes and fittings and their precision of making contribute to improvement of conditions and increase of work comfort.

Short KAN-therm Sprinkler System assembly time, as compared to conventional assembly systems, is a very important factor, decreasing costs related with investment execution.

We are convinced that the presented advantages encourage you to try KAN-therm Sprinkler System when designing and constructing sprinkler systems.

KAN-therm Sprinkler System Application

KAN-therm Sprinkler System may be used in the construction of stationary fire protection installations, both hydrants and sprinklers.

Indoor hydrant installations

KAN-therm Sprinkler System in indoor hydrant systems is certified by National Technical Assessment issued by Polish CNBOP.

KAN-therm Steel Sprinkler is suitable for performing only indoor, constantly filled with water, non-flow (until fire extinguishing) hydrant installations which are totally separated or single-side connected to potable water systems.

KAN-therm Inox Sprinkler is suitable for performing indoor dry and constantly filled with water hydrant installations. It may be combined with or be a part of potable water systems.

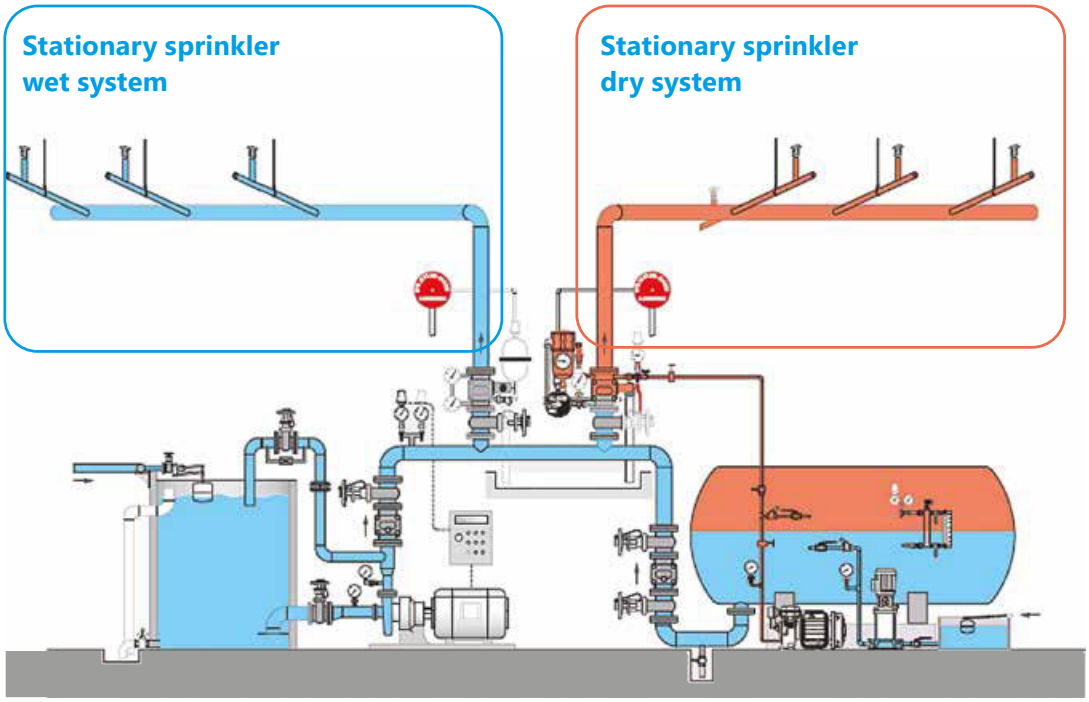
Sprinkler installations

Stationary sprinkler installations are built-in fire extinguishing and prevention systems that independently detect and report fire, and automatically initiate the extinguishing process.

KAN-therm Sprinkler System assembly in sprinkler systems should be performed according to the applicable guidelines (e.g. VdS-CEA 4001 or PN-EN 12845+A2:2010).

Depending on the applied material (stainless steel or galvanized steel), the system may be used with water (wet) or dry stationary sprinkler systems.

KAN-therm Sprinkler System is designed for use with only wet sprinkler systems, whereas KAN-therm Inox Sprinkler System may be applied with wet, as well as dry stationary sprinkler systems.



KAN-therm Steel Sprinkler and KAN-therm Inox Sprinkler Systems have been tested and certified according to the VdS guidelines for application in stationary sprinkler installations equipped with emergency valve.

The following guidelines refer to all products comprising KAN-therm Sprinkler System, operating at working pressure stated in the below table:

TAB. 1 OPERATING PRESSURE IN KAN-THERM SPRINKLER SYSTEM

DN	Internal Ø [mm]	Sprinkler System	
		wet [bar]	wet and dry (stainless steel) [bar]
20	22	16	16
25	28	16	16
32	35	16	16
40	42	16	16
50	54	16	16
65	76,1	12,5	16
80	88,9	10	12,5
100	108	10	10

Application is limited exclusively to KAN-therm Sprinkler System original elements. Connecting elements other than the original (not included in the KAN-therm Sprinkler System offer) is permissible only on the condition of using detachable metal connections.

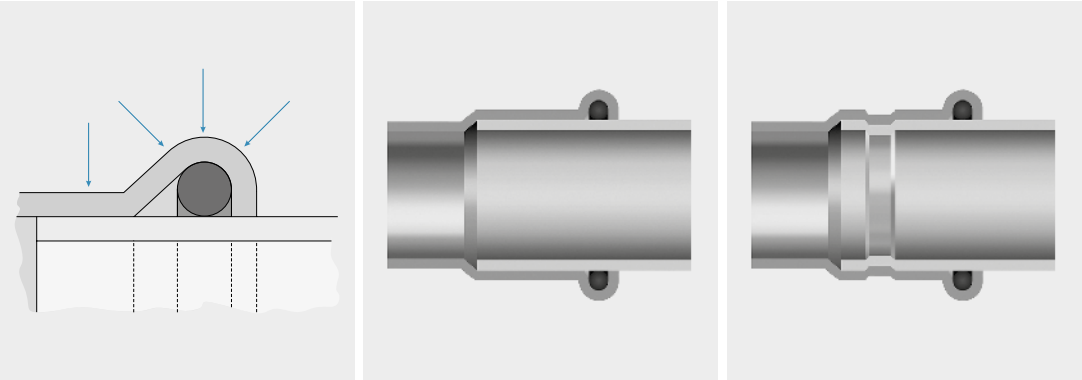
Assembly and installation of KAN-therm Sprinkler System may be performed only by qualified technical personnel, having formal qualifications for performing sprinkler system-related works. Requirements regarding assembly of stationary sprinkler installations are included in VdS-CEA 4001 or PN-EN 12845+A2:2010 guidelines. The company performing installation must assure conformity with the above guidelines.

"Press" coupling technique

The „Press" coupling technique consists of pressing fittings on the pipe, using specialist power tools.

Tightness of the connections is assured by special O-Ring seals made of EPDM rubber resistant to high temperatures, and „M" type clamping system (O-Ring clamped in three spots). This guarantees long and reliable operation.

1. M" type clamp system
2. Joint before pressing
3. Joint after pressing



LBP O-Ring seal

KAN-therm Sprinkler System pressed fittings are equipped with EPDM O-rings of the following operating parameters:

Material	EPDM LBP (DN20 – DN50)	EPDM (DN65 – DN100)
Colour	black	black
Layer	without silicone, Teflon-based	without silicone, Teflon-based
Operating temperature	-35 °C to +135 °C	-35 °C to +135 °C
Max. temperature (short term)	150 °C	150 °C
Max. operating pressure	16 bar	up to 16 bar (depending on diameter - check application conditions for a given KAN-therm Sprinkler System)
Application range	Wet and dry sprinkler systems	Wet and dry sprinkler systems

Thanks to special slots of the LBP O-Ring body (22-54 mm), optimum control of the system during pressure test is assured. The nonpressed joints are easy to locate, as they are not water tight. When pressing, the O-Ring changes its shape, adhering entirely to pipe and fitting surface, assuring reliable and tight joint.

KAN-therm Sprinkler System also offers internal threaded elements that are used for connecting threaded elements from outside of the system (not comprising KAN-therm Sprinkler System), such as sprinklers, valves or other fixtures. Internal and external threads are manufactured in compliance with DIN 2999/ISO 7/1 (taper thread). It is recommended to perform the threaded connection before pressing the fitting, not to stress the pressed joint. To tighten the joint, do not apply Teflon tapes or any other compounds containing chlorides.

KAN-therm System elastic hoses

KAN-therm System elastic hoses are covered by approval issued by VdS for stationary sprinkler systems. We offer two versions of hoses, equipped with straight or 90 degree-angled endings. The following dimensions are available:

DN20 and DN25 of 800, 1000, 1500 mm lengths. Elastic hoses designed for fitting in:

- ceiling systems with I-beams, covered with mineral cotton panels and metal cassettes (with fixation to main and auxiliary beams),
- ceiling systems with fixation profiles,
- ceiling systems of gypsum-cardboard panels,
- suspended standard sprinkler systems,
- enclosed sprinklers or sprinklers concealed in cavities.

Assembly of sprinkler lines using stiff pipe conduits in suspended ceilings may be very expensive and time consuming. Use of elastic hoses in sprinkler systems allows easy and quick connection of sprinklers in any place in the area within the hose's length. Elastic hoses assure easy assembly of sprinklers in suspended ceilings, which saves time and costs.

The system comes with assembly holders, which allow safe and reliable fixture of the sprinkler hose to the suspended ceiling.

The elastic hose also feature pipe adapters, 100% compatible with KAN-therm Sprinkler. The pipe adapter assures easy connection of the elastic hose to installation performed in KAN-therm Sprinkler system, using Press fittings. In installations using twisted joints, in order to connect the elastic hose with pipe adapter, KAN-therm Sprinkler fitting must be used that has a threaded ending (external/internal) on its one side, and a pressed ending on the other side. After screwing in the fitting, you only need to plug the hose to the pipe adapter and press the joint.

Features

- easy and quick assembly using standard KAN-therm Sprinkler tools,
- hose made of stainless steel,
- allow for easy assembly in the vicinity of other installation and buildings' structural elements,
- no need for rotating the entire hose during assembly thanks to using straight pipe ending,
- freedom of choice at selecting the system fixing the sprinklers along the ceiling plate,
- no need for bending or lifting ceiling elements thanks to elastic structure of fixture between sprinkler hose and ceiling,
- no need for disassembling and reassembling sprinkler systems during renovations or ceiling replacements. Hoses and holders (together with the installed sprinklers) may be disassembled and reassembled in a new place, without the need of emptying the entire installation (only within the hose length),
- easy vertical setting of the sprinkler thanks to a scale on the sprinkler's sleeve.

ELASTIC HOSE TECHNICAL SPECIFICATION

Sprinkler hose	Type RS 339L92, DN20/DN25, elastic braided structure, performed entirely of stainless steel, welded joints.
Sprinkler joint (straight)	Stainless steel, pipe thread complying with DIN EN 10226 (ISO 7/1), Rp ½ „(SW 27). Scale for easy vertical set-up. Application for installation in limited spaces. Installation height only 170 mm above the lower edge of a suspended ceiling.
Sprinkler joint (angular, 90°)	Stainless steel, pipe thread complying with DIN EN 10226 (ISO 7/1), Rp ½ „(SW 27). Scale for easy vertical set-up. Application for installation in limited spaces. Installation height only 170 mm above the lower edge of a suspended ceiling.
Connection adapter	Stainless steel, straight ending, 22 or 28 mm diameter for connecting with KAN-therm Sprinkler System connectors.
Nominal length	800, 1000, 1500 mm
Max. operating pressure	16 bar, 100% tightness control
Minimum bend radius	70 mm for Ø22 hoses; 85 mm for Ø28 hoses

KAN-therm Sprinkler System Tools

Pressing of the KAN-therm Sprinkler fittings should be performed using pressing units and press jaws („M" profile) delivered by KAN-therm Sprinkler System.

Name	Permissible pressed diameters range	Power type
ACO203XL	22 – 54 mm	18,0V / 3,0Ah, battery feed
ECO301	22 – 54 mm	220 – 240 V / 50 Hz, stationary feed
ACO401 / ACO403	76 – 108 mm	18,0V / 3,0 Ah, battery feed

Suitable adapters must be used to combine ACO203XL and ECO301 drives with press collars.

Depending on the diameter, KAN-therm provides various configuration of tools. In order to select optimal set of tools, please follow below chart:

TAB. 2 SELECTION OF TOOLS TABLE: SYSTEM KAN-THERM SPRINKLER STEEL & INOX

Producer	Press machine		Diameter [mm]	Jaws/press collars		Adapter		KAN-therm System	
	Description	Code		Description	Code	Description	Code	Steel Sprinkler	Inox Sprinkler
NOVOPRESS	ACO203XL	1948267181	22	[J] M	1948267139	-	-	+	+
			28	[J] M	1948267141	-	-	+	+
			35	HP Snap On	1948267124	ZB203	1948267000	+	+
			42	HP Snap On	1948267126			+	+
			54	HP Snap On	1948267128			+	+
	ECO301	1948267163	22	[J] M	1944267008	-	-	+	+
			28	[J] M	1944267011	-	-	+	+
			35	HP Snap On	1948267124	ZB 303	1948267166	+	+
			42	HP Snap On	1948267126			+	+
			54	HP Snap On	1948267128			+	+
	ACO401 ACO403	1948267151 1948267209	76,1	HP	1948267100	-	-	+	+
			88.9	HP	1948267102	-	-	+	+
			108	HP	1948267098	-	-	+	+

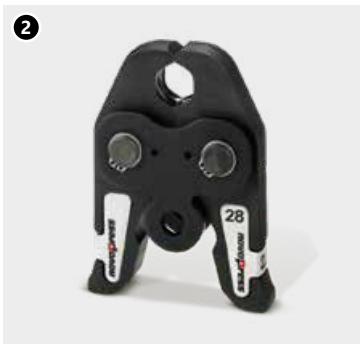
[J] - two segment jaw, other elements are press collars and may need additional adapter to combine with press machines

NOVOPRESS Tools:

1. ACO203XL press tool
2. PB2 jaws M22 – 28 mm
3. HP collar 35 – 54 Snap On

4. ZB 203 adapter

1. ECO 301 press tool
2. PB3 jaws M22–28 mm
3. HP collar 35 – 54 Snap On



4. ZB 303 adapter

1. ACO401 press tool
2. ACO403 press tool
3. HP collar 76,1 – 108 Snap On

Installation joints

1 Cutting pipes

Pipes must be cut perpendicularly to the axis, using pipe cutter. Cut pipes perpendicularly to the axis using a roll pipe cutter (breaking incompletely cut pipe sections is prohibited). You may also use other tools, such as hand saws and electric saws designed for cutting carbon or stainless steel, provided that the cut is made perpendicularly and the edges of the pipe are not chipped. Do not use torches or cutting discs for pipe cutting, which can generate significant amounts of heat, angle grinders, etc.

2 Bevelling

Use a manual chamfer (for bigger diameters – a semi-round steel file) to chamfer the internal and external edge of the pipe, removing all chips, which could potentially damage the O-Ring during assembly.

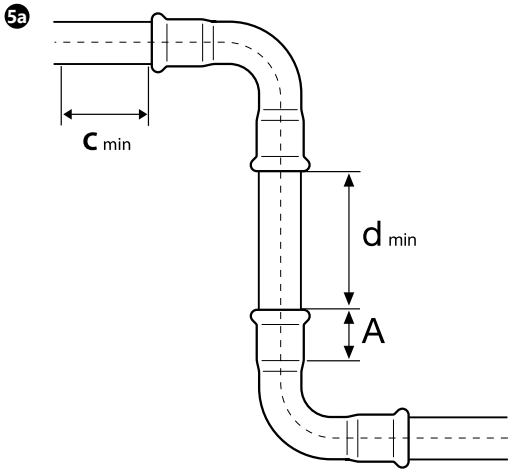
3 Control

Prior to assembly, visually inspect the presence and condition of the O-Ring. Check, if there are no chips or metal shavings or other pollutions on the pipe and the fitting, which could damage the seal during installation. Make sure if the distance between neighbouring fittings is above the permissible (d_{min}).

4 Installing pipe and fitting

Before pressing, insert the pipe into the fitting up to the marked depth (slight rotation permissible). Do not use lubricants, greases or fats when mounting the pipe (water or a soap solution is permissible – recommended for pressure tests conducted with compressed air).

When mounting multiple joints at the same time (mounting pipes inside fittings), before pressing the following joints, inspect the depth of mount marked on the pipe.



A – pipe insert depth,

d_{min} – minimum installation distance between fittings

c_{min} – minimum distance of fitting from the wall

5 Marking the insert depth

To achieve sufficient joint strength, maintain correct insert depth A (Tab. 3, Fig. 5a). The sufficient insert distance should be marked on the pipe (or the fitting) with a marker. After performing the pressing, the marking must still be visible just by the fitting's edge. Appropriate insert depth is crucial for resistance of joint for stretching, after pressing the O-Ring.

TAB. 3 PIPE INSERT DEPTH AND MINIMUM INSTALLATION SPACES

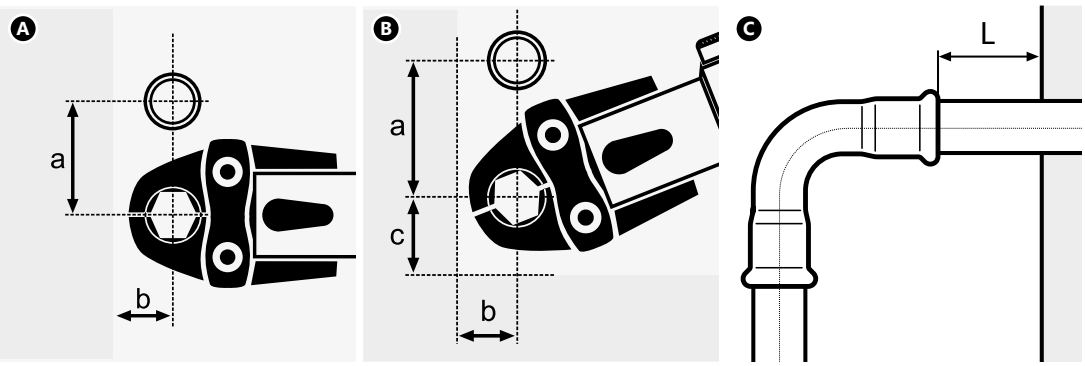
DN	Ø	Insert depth	Minimum distance between two pressed joints	Minimum pipe length
	[mm × mm]	A [mm]	d_{min} [mm]	d_{min}+2×A [mm]
20	22×1,2	21	10	52
25	28×1,2	23/46*	10	62
32	35×1,5	26/52*	10	80
40	42×1,5	30/60*	20	90
50	54×1,5	35/70*	20	90
65	76,1×2,0	55/54*	40	165
80	88,9×2,0	63/64*	50	186
100	108×2,0	77/74*	60	234

* applies to Groove type couplings

TAB. 4 INSTALLATION DISTANCES

DN	Ø	Fig. A		Fig. B			Fig. C
	[mm × mm]	a	b	a	b	c	L - Pipe stand-off from wall distance [mm]
20	22×1,2	65	25	80	31	35	40
25	28×1,2	75	25	80	31	35	60
32*	35×1,5	115	75	115	75	75	70
40*	42×1,5	120	75	115	75	75	70
50*	54×1,5	200	85	120	85	85	70
65*	76,1×2,0	250	170	200	170	190	80
80*	88,9×2,0	250	170	250	170	210	90
100*	108×2,0	250	170	250	170	210	100

* applies to press collars



6 **Pressing**

Before starting any works, read all suitable instruction manuals and verify the proper operation of your tools. Use press tools and jaws recommended by KAN. Select the size of your press jaw basing on the diameter of the joint. Place the jaws on the joint so that its notch embraces the protruding part of the fitting (the space where the O-Ring is located). After starting the press, the process takes place automatically and cannot be stopped. If, for any reason, the process of pressing is stopped, the joint needs to be disassembled (cut off) and a new one needs to be executed. If the installer has press tools and jaws not supplied by the KAN-therm, the possibility of using them should be consulted with KAN.

Pipe bending (for diameters up to Ø28)

If needed, „cold" bending may be performed, on the condition of maintaining minimum bend radius:

$$R_{min} \geq 3{,}5 \times D$$

For diameters bigger than 28 mm use available bends and elbows.

For pipes bending, use manual, hydraulic or electrical bender. The pipes should not be „hot" bent.

Threaded joints

KAN-therm Sprinkler system also includes external and internal thread elements, which serve the purpose of connecting other threaded elements of the system (such as sprinklers, valves or other). External and internal threads are manufactured according to DIN 2999 / ISO 7/1 (taper thread). It is recommended to perform threaded connection before pressing the fitting, not to stress the pressed joint.

General information regarding system installation

Fitting pipelines

While installing KAN-therm Sprinkler System, care must be taken not to overstress the pipelines network, while standby, as well as during an emergency. A/C channels or cable racks should not be placed above the sprinkler pipe.

In case if design or structural reasons make it impossible to avoid the sprinkler pipe crossing other system elements, such as A/C channels or cable racks, the sprinkler system should be secured from over stressing, using additional, certified fixture elements.

The required space between fixtures is provided in the table. Fixture distance from pipe ending must not exceed 90 cm.

DN	Pipe dimensions External Ø [mm]	Max clamp spacing [m]	
		DIN 1988–2	CEA 4001 (VdS)
20	22	2	2
25	28	2,25	2
32	35	2,75	2
40	42	3	2
50	54	3,5	2
65	76,1	4,25	2
80	88,9	4,75	2
100	108	5	2

KAN-therm Sprinkler maximal clamp distances apply only, if there are no other installations (pipelines, channels) above the sprinkler system pipe.

There should be at least one clamp within at least 0,9 m from each joint. Each pipe section should be held by at least one clamp. Clamps and supports must be designed and constructed in conformity with EN 12845+A2:2010.

Pipeline flushing

After performing the installation, the entire sprinkler system must be thoroughly flushed with treated water. The flushing is necessary for assuring proper operation of the sprinkler system and protecting it from contamination. After flushing, the installation should be emptied. After removing all materials required for flushing, sprinklers should be installed.

Filling and deaerating pipe networks

After flushing the pipelines, they must be filled with filtered drinking water and completely deareated.

Tightness test

Pipelines of the sprinkler system must be pressure tested, in conformity with applicable guidelines, such as CEA 4001, no.17.1.1. (VdS). The test should last at least two hours at a pressure (measured at emergency valves) being a 1,5 multiple of admissible operating pressure, but not smaller than 15 bar.

Pressure decrease, e.g. due to meteorological factors, must be monitored at 24h basis.

Dry sprinkler installations must be pneumatically tested for pressure not smaller than 2,5 bar for a period of at least 24 hours. Each leak that causes a decrease of pressure greater than 0,15 bar for a period of at least 24 h, must be sealed. All detected defects, such as permanent deformations, breaks or leaks must be fixed and be tested again. During pneumatic test all leaks may be localized acoustically or utilizing foaming agents approved for contact with EPDM gaskets.

Hydrant installations should be pressure tested identically like potable water systems - test pressure 1,5x admissible operating pressure but not less than 10 bar.

Transport and storage

When transporting and storing KAN-therm Sprinkler System pipes and pressed fittings, they should be kept away from damage or contamination hazards.

KAN-therm Sprinkler System elements should not be stored together with elements of other metal systems.

It is not allowed to store system elements directly on the ground (concrete or earth).

It is not allowed to store the elements in direct vicinity of chemical compounds.

Pipe bundles should be stored and transported on wooden or plastic pads (avoid direct contact with other steel elements, such as steel pipe racks).

To avoid ovalization of pipes, it is recommended to form piles not higher than 6 bundles. During transport, loading and unloading, avoid scratching or else mechanically damaging pipes and fittings - do not: throw, pull and bend.

Rooms for storing the elements must be dry (maximum permissible relative humidity must not exceed 65%). Recommended temperature for storage is in the range of 10 to 25 °C.

External pipe surfaces during storage, construction and operation must not be exposed to extensive and direct contact with humidity.

General hydraulic dimensioning guidelines for KAN-therm Sprinkler systems

Pressure losses

To calculate pressure loss in pipe network of sprinkler systems, Hazen-Williams formula should be applied.

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

where:

p – linear pressure loss [bar]
Q – flow intensity [l/min]
d – internal pipe diameter
C – pipe constant, for KAN-therm Steel and Inox Sprinkler systems C=140
L – substitute length for pipes and fittings [m]

The formula covers linear losses on the length of the calculated section of the pipelines, as well as local losses in form of equivalent (substitute) lengths for fittings and fixtures (values of substitute lengths for fittings are shown in table below).

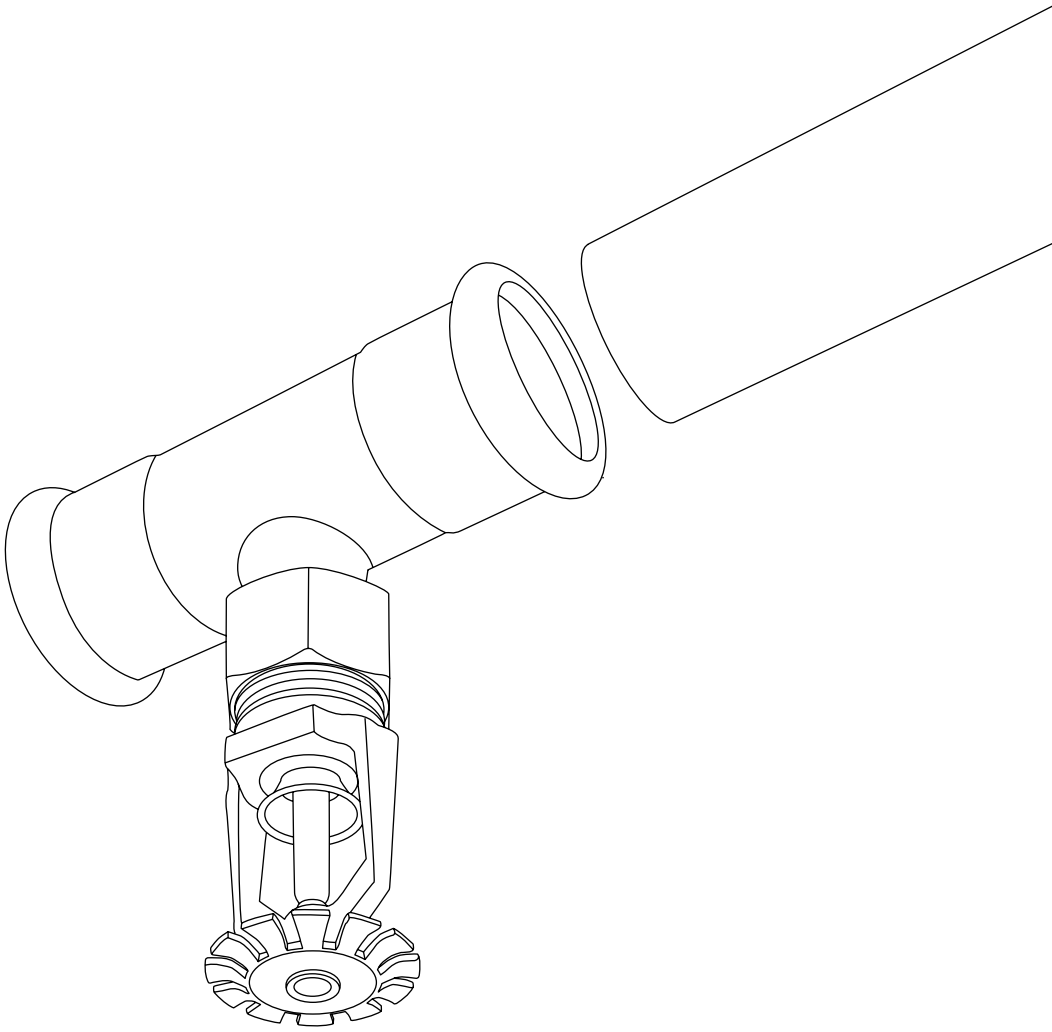
Designing and hydraulic dimensioning principles for sprinkler systems are defined by PN-EN 12845+A2:2010 standard. Stationary fire extinguishing units. Automatic sprinkler systems. Design, assembly and maintenance.

Ø 22 – 54 mm									
Local resistance coefficients ζ									
ζ	**1,5**	**0,7**	**0,5**	**0,5**	**0,4**	**0,9**	**1,3**	**1,5**	**3**
Equivalent lengths of fittings [m]									
22	1,40	0,60	0,50	0,50	0,40	0,80	1,20	1,40	2,80
28	1,90	0,90	0,60	0,60	0,50	1,10	1,50	1,90	3,80
35	2,50	1,20	0,80	0,80	0,70	1,50	2,10	2,50	5,00
42	3,10	1,40	1,00	1,00	0,90	1,80	2,60	3,10	6,20
54	4,00	1,80	1,30	1,30	1,10	2,30	3,30	4,00	8,00
Ø 76,1 – 108 mm									
Local resistance coefficients ζ									
ζ	**1,3**	**0,6**	**0,4**	**0,5**	**0,1**	**1,0**	**1,3**	**1,5**	**3,0**
Equivalent lengths of fittings [m]									
76,1	6,10	2,80	1,90	2,40	0,50	4,70	6,10	7,10	14,20
88,9	7,80	3,60	2,40	3,00	0,60	6,00	7,80	9,00	18,00
108	10,60	4,90	3,30	4,10	0,80	8,20	10,60	12,30	24,60

TAB. 5 PRESSURE LOSSES IN ELASTIC HOSES AND EQUIVALENT PIPE LENGTHS CORRESPONDING TO VDS SPECIFICATIONS

Length	Sprinkler joint type	Sprinkler connector	Outside Ø	Pressure losses	Equiv. pipe length
[mm]			[mm]	[bar]	[m]
1000	straight	Rp ½"	Ø22	0,9	8
1500	straight	Rp ½"	Ø22	1,3	12
1000	straight	Rp ½"	Ø28	0,5	8
1500	straight	Rp ½"	Ø28	0,8	11
800	degree 90°	Rp ½"	Ø22	0,8	8
1000	degree 90°	Rp ½"	Ø22	0,9	8
1500	degree 90°	Rp ½"	Ø22	1,3	12
800	degree 90°	Rp ½"	Ø28	0,5	8
1000	degree 90°	Rp ½"	Ø28	0,5	8
1500	degree 90°	Rp ½"	Ø28	0,8	11

NOTES



SYSTEM **KAN-therm**

Steel Sprinkler

Application and operating conditions

KAN-therm Steel Sprinkler System is designed for constructing pipelines (distributing or splitting conduits) of stationary water sprinkler systems installed in small or medium fire hazard areas (LH, OH1, OH2, OH3 and up to OH 4 - in reference to exhibition rooms, theatres and concert halls) (according to VdS CEA 4001 guidelines).

KAN-therm Steel Sprinkler is also suitable for performing indoor, permanently filled with water, non-flow* (until fire fighting action), fully separated or single-side connected to potable water system hydrant installations.

Check local regulations before commencing any work.

Application in other fire extinguishing systems and dry sprinkler systems is prohibited.

*As non-flow hydrant installations with no intake points other than hydrant valves are understood, and the water flow occurs only during the fire fighting operation and / or annual performance tests, in accordance with EN 671-3: 2008 Fixed fire fighting equipment. Internal hydrants. Part 3: Maintenance of indoor hydrants with semi-rigid hose and indoor hydrants with flat folded hose.

System pipes and fittings hold certificates issued by Fire Protection Scientific Research Centre CNBOP as well as VdS and FM.


VdS

Certificate

of

Approval

of

Components and Systems

VSH Fittings B.V.
Oude Amersfoortseweg 99

NL-1212AA Hilversum

G 4080037 7 09.11.2009 24.02.2013

Pipe system, stainless steel
Type "VSH Press Sprinkler Edelstahl"

in Stationary water extinguishing systems

Procedure Guidelines - VdS 2344en: 2005-12

Guidelines for Water Extinguishing Systems - Requirements and Test Methods for Metal Press Fitting Pipe Systems
VdS 2100-26: 2007-03 (draft)

Köln (Cologne), 09.11.2009

Schlingel

i. V. Hesels

The installation should be designed and constructed according to guidelines included in this document, as well as with applicable standards and regulations.

Designing, assembly and commissioning of the sprinkler system is defined by PN-EN 12845:2008 standard. Stationary fire extinguishing units. Automatic sprinkler units. Design, assembly and maintenance.

Maximum operating pressure of the pipes and fittings is:

- for 22 – 54 diameters 16,0 bar,
- for 76,1 diameter 12,5 bar,
- for 88,9 and 108 diameters 10,0 bar.

KAN-therm Steel Sprinkler System – carbon steel pipes

KAN-therm Steel Sprinkler System pipes for water sprinkler installations are precise carbon steel no. 1.0031 (EN10305-3 compliant) pipes. They are made of cold rolled strip, galvanized using the Sendzimir method of coating the metal plate with zinc by immersing it in electrolytic zinc, after which the zinc is applied on both sides simultaneously. This means the pipe is protected by zinc layer on inside and outside. The zinc layer is never less than 20 µm thick. The Sendzimir galvanization is known for guaranteeing particularly good adherence and high resistance to corrosion.

Fire environment properties

KAN-therm Steel Sprinkler System carbon steel pipes may be classified as class A incombustible materials, according to DIN 4102, part 1.

TAB. 1 TECHNICAL DETAILS OF PIPES

DN	Outside diameter × wall thickness	Inside diameter	Unit mass	Water capacity
	mm × mm	[mm]	[kg/m]	[dm³/m]
20	22 × 1,5	19,0	0,761	0,284
25	28 × 1,5	25,0	0,980	0,491
32	35 × 1,5	32,0	1,241	0,804
40	42 × 1,5	39,0	1,542	1,195
50	54 × 1,5	51,0	1,999	2,043
65	76,1 × 2,0	72,1	3,503	4,083
80	88,9 × 2,0	84,9	4,412	5,661
100	108 × 2,0	104,0	5,382	8,495

TAB 2. KAN-THERM STEEL SPRINKLER PIPES FOR FIRE FIGHTING INSTALLATIONS

Material	ULC („Ultra Light Carbon") galvanized (Sendzimir method) material no. 1.0031 acc. to EN 10305-3
Outside diameter tolerance	acc. to EN10305-3
Thermal expansion coefficient	0,0108 mm/m at ΔT= 1K
Minimum bend radius (for diameters up to Ø28 mm)	3,5 × pipe outside diameter (up to -10°C)
Delivery	6 m ± 50 mm lengths
Marking	name or manufacturer label, material identification, outside diameter x wall thickness, approval no., manufacture date
Zinc layer	at least 20 µm. The pipe joints are extra galvanized.
Max. operating pressure	16 bar (22-54 mm); 12,5 bar (76,1 mm); 10 bar (88,9-108 mm)

KAN-therm Steel Sprinkler System – pressed carbon steel couplings

KAN-therm Steel Sprinkler System pressed couplings are made of material no. 1.0034 [34-2 steel] carbon steel. They are rust protected by the applied zinc layer (8-15 µm). The couplings are equipped with EPDM rubber sealing ring (O-Ring). The DN20 - 50 O-Rings feature non-pressed joints detection function LBP (Leak Before Press).

Coupling diameter range DN20 - DN100

KAN-therm Steel Sprinkler System - assortment

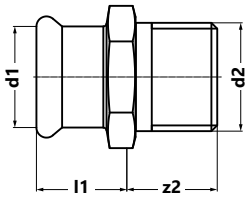
Both side Zinc coated carbon steel pipe

GROUP: J

Size	New code	*	Code			UM	Price EUR/UM
22×1,5	1530207013		6241114S	6	360	m	
28×1,5	1530207014		6241125S	6	300	m	
35×1,5	1530207016		6241136S	6	180	m	
42×1,5	1530207018		6241147S	6	150	m	
54×1,5	1530207020		6241158S	6	90	m	
76,1×2	1530207022		6241378S	6	-	m	
88,9×2	1530207010		6241389S	6	-	m	
108×2	1530207024		6241391S	6	-	m	

Male connector

GROUP: I



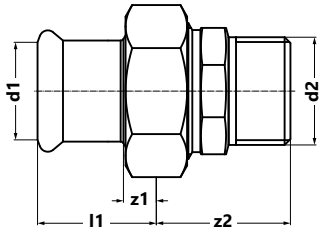
Size	l1	z2	New code	*	Code			UM	Price EUR/UM
22 R½"	21	22	1511045002		6241015S	10	70	pc.	
22 R¾"	21	23	1511045003		6240135S	10	100	pc.	
22 R1"	21	29	1511045001		6241026S	10	60	pc.	
28 R¾"	23	23	1511042000		6249852S	10	60	pc.	
28 R1"	23	25	1511045004		6240146S	10	60	pc.	
35 R1"	26	27	1509045021		6341247S	10	40	pc.	
35 R1¼"	26	29	1511045005		6240157S	10	40	pc.	
42 R1½"	30	29	1511045006		6240168S	4	24	pc.	
54 R2"	35	34	1511045007		6240179S	4	12	pc.	
76,1 R2½"	55	42	1511045000	**	6302823S	2	-	pc.	
88,9 R3"	63	46	1511045008	**	6302825S	2	-	pc.	

coil bar pipes in tube bag carton box pallet

* custom-made - lead time max 4 weeks | ** availability as agreed | *** while stock lasts

Male union connector

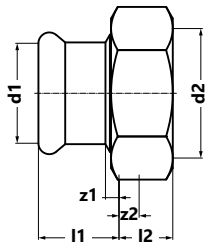
GROUP: I



Size	l1	z1	z2	New code	*	Code			UM	Price EUR/UM
22 R¾"	30	9	40	**1511272000**		**6240916S**	2	40	pc.	
28 R1"	31	8	44	**1511272001**		**6240927S**	2	30	pc.	
35 R1¼"	34	8	48	**1511272002**		**6240938S**	2	20	pc.	
42 R1½"	41	11	47	**1511272003**		**6240949S**	2	16	pc.	
54 R2"	47	12	53	**1511272004**		**6240951S**	2	10	pc.	

Female half union with flat gasket

GROUP: I



Size	l1	l2	z1	z2	New code	*	Code			UM	Price EUR/UM
22 G1"	30	10	9	2	**1511050001**	**	-	10	60	pc.	
28 G1¼"	31	10	8	2	**1511050002**	**	-	10	40	pc.	
35 G1½"	34	11	8	2	**1511050003**	**	-	4	32	pc.	
42 G1¾"	41	11	11	2	**1511050004**	**	-	4	12	pc.	
54 G2⅜"	47	11	12	3	**1511050005**	**	-	4	8	pc.	

coil bar pipes in tube bag carton box pallet

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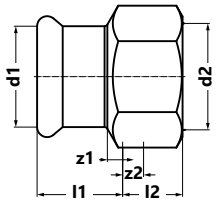
Female connector

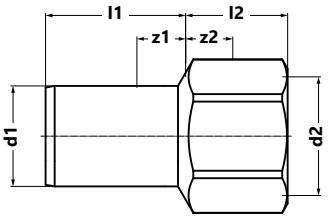
GROUP: I



Size	l1	l2	z1	z2	New code	*	Code			UM	Price EUR/UM
22 Rp½"	22	14	1	0	1509044042		6302708S	10	100	pc.	
22 Rp¾"	23	20	2	4	1511044001		6240102S	10	100	pc.	
28 Rp½"	24	14	1	1	1511044006		6240113S	10	60	pc.	
28 Rp¾"	24	17	1	0	1511044005		6249830S	10	60	pc.	
28 Rp1"	26	23	3	4	1511044002		6240124S	10	60	pc.	
35 Rp½"	30	12	4	1	1511044000	**	6340917S	10	40	pc.	
35 Rp¾"	28	15	2	3	1511044011	**	-	10	40	pc.	
35 Rp1"	33	13	7	0	1509044029	**	6340939S	10	40	pc.	
35 Rp1¼"	28	22	2	7	1511044007		6241004S	10	30	pc.	
42 Rp1½"	32	22	2	6	1511044003		6302721S	10	40	pc.	
54 Rp2"	37	26	2	8	1511044004		6302723S	10	40	pc.	

Female nipple connector

GROUP: I



Size	l1	l2	z1	z2	New code	*	Code			UM	Price EUR/UM
22 Rp½"	29	21	8	6	1511076000		6240960S	10	70	pc.	
22 Rp¾"	29	24	8	8	1511076001		6240971S	10	100	pc.	

coil bar pipes in tube bag carton box pallet

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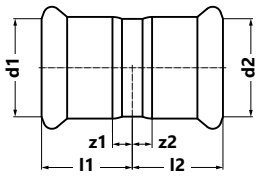
Coupling

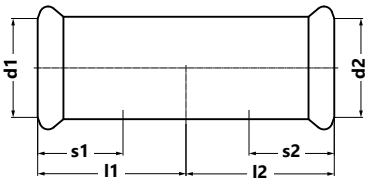
GROUP: I



Size	l1/l2	z1/z2	New code	*	Code			UM	Price EUR/UM
22	28	7	**1511245001**		**6240003S**	10	80	pc.	
28	30	7	**1511245002**		**6240014S**	10	60	pc.	
35	33	7	**1511245003**		**6240025S**	10	40	pc.	
42	38	8	**1511245004**		**6240036S**	4	24	pc.	
54	43	8	**1511245005**		**6240047S**	4	16	pc.	
76,1	63	8	**1511245006**		**6206200S**	2	-	pc.	
88,9	72	9	**1511245007**		**6206211S**	2	-	pc.	
108	86	9	**1511245000**		**6206222S**	2	-	pc.	

Slip coupling

GROUP: I



Size	l1/l2	s1/s2	New code	*	Code			UM	Price EUR/UM
22	42	25	**1511080001**		**6240058S**	10	60	pc.	
28	46	30	**1511080002**		**6240069S**	10	40	pc.	
35	52	30	**1511080003**		**6240071S**	10	20	pc.	
42	61	40	**1511080004**		**6240080S**	4	16	pc.	
54	70	40	**1511080005**		**6240091S**	4	8	pc.	
76,1	115	60	**1511080006**		**6206233S**	2	-	pc.	
88,9	131	70	**1511080007**		**6206244S**	2	-	pc.	
108	151	80	**1511080000**		**6206255S**	2	-	pc.	

coil bar pipes in tube bag carton box pallet

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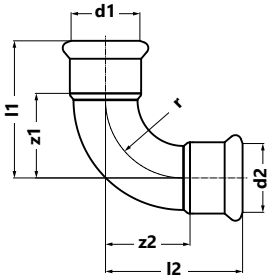
Elbow 90°

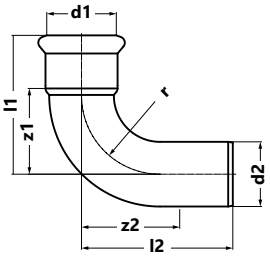
GROUP: I



Size	l1/l2	z1/z2	r	New code	*	Code			UM	Price EUR/UM
22	51	30	27	1511068020		6240181S	10	60	pc.	
28	61	38	34	1511068021		6240190S	10	30	pc.	
35	72	46	42	1511068022		6240201S	10	10	pc.	
42	87	57	51	1511068023		6240212S	2	16	pc.	
54	105	70	65	1511068024		6240223S	2	8	pc.	
76,1	155	100	92	1511068025		6208004S	2	-	pc.	
88,9	179	116	107	1511068026		6208048S	2	-	pc.	
108	216	139	130	1511068019		6208059S	2	-	pc.	

Nipple elbow 90°

GROUP: I



Size	l1	l2	z1	z2	r	New code	*	Code			UM	Price EUR/UM
22	51	58	30	37	27	1511068028		6240410S	10	60	pc.	
28	61	66	38	43	34	1511068029		6240421S	10	30	pc.	
35	72	76	46	50	42	1511068030		6240432S	10	10	pc.	
42	87	93	57	63	51	1511068031		6240443S	2	8	pc.	
54	105	111	70	76	65	1511068032		6240454S	2	6	pc.	
76,1	155	168	100	113	92	1511068033		6208061S	2	-	pc.	
88,9	179	193	116	130	107	1511068034		6208070S	4	-	pc.	
108	216	233	139	156	130	1511068027		6208081S	4	-	pc.	

coil bar pipes in tube bag carton box pallet

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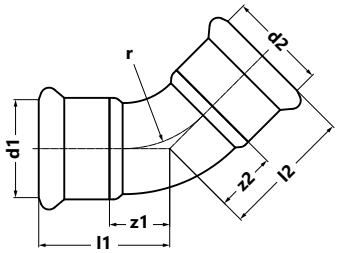
Elbow 45°

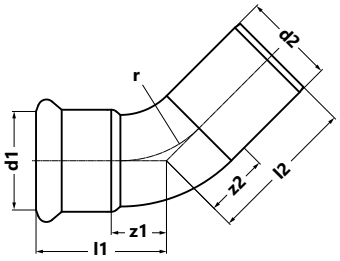
GROUP: I



Size	l1/l2	z1/z2	r	New code	*	Code			UM	Price EUR/UM
22	35	14	27	**1511068004**		**6240511S**	10	70	pc.	
28	40	17	34	**1511068005**		**6240520S**	10	40	pc.	
35	46	20	42	**1511068006**		**6240531S**	5	25	pc.	
42	56	26	51	**1511068007**		**6240542S**	2	16	pc.	
54	67	32	65	**1511068008**		**6240553S**	2	8	pc.	
76,1	101	46	92	**1511068009**		**6208125S**	4	-	pc.	
88,9	116	53	107	**1511068010**		**6208136S**	4	-	pc.	
108	139	62	130	**1511068003**		**6208147S**	2	-	pc.	

Nipple elbow 45°

GROUP: I



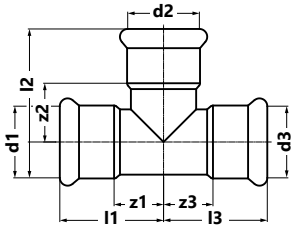
Size	l1	l2	z1	z2	r	New code	*	Code			UM	Price EUR/UM
22	35	42	14	21	27	**1511068012**		**6240465S**	10	60	pc.	
28	40	46	17	23	34	**1511068013**		**6240476S**	10	40	pc.	
35	46	51	20	25	42	**1511068014**		**6240487S**	5	25	pc.	
42	56	63	26	33	51	**1511068015**		**6240498S**	4	16	pc.	
54	67	73	32	38	65	**1511068016**		**6240509S**	2	8	pc.	
76,1	101	114	46	59	92	**1511068017**		**6208092S**	2	-	pc.	
88,9	116	130	53	67	107	**1511068018**		**6208103S**	2	-	pc.	
108	139	157	62	80	130	**1511068011**		**6208114S**	2	-	pc.	

coil bar pipes in tube bag carton box pallet

* custom-made - lead time max 4 weeks | ** availability as agreed | *** while stock lasts

Tee

GROUP: I



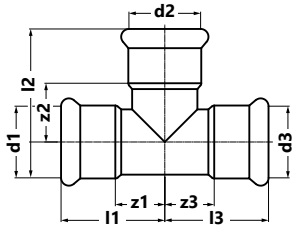
Size	l1/l3	l2	z1/z3	z2	New code	*	Code			UM	Price EUR/UM
22	40	49	19	28	**1511257001**		**6240564S**	10	40	pc.	
28	45	54	22	31	**1511257002**		**6240575S**	10	30	pc.	
35	52	60	26	34	**1511257003**		**6240586S**	5	15	pc.	
42	61	67	31	37	**1511257004**		**6240597S**	4	8	pc.	
54	71	78	36	43	**1511257005**		**6240608S**	2	6	pc.	
76,1	115	110	60	55	**1511257006**		**6206442S**	2	-	pc.	
88,9	130	128	67	65	**1511257007**		**6206453S**	2	-	pc.	
108	155	153	78	76	**1511257000**		**6206464S**	2	-	pc.	

coil bar pipes in tube bag carton box pallet

* custom-made - lead time max 4 weeks | ** availability as agreed | *** while stock lasts

Reducing tee

GROUP: I



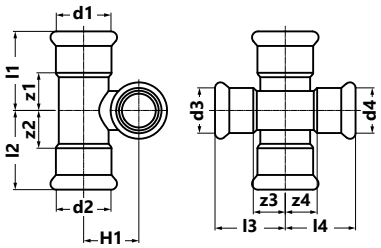
Size	l1/l3	l2	z1/z3	z2	New code	*	Code			UM	Price EUR/UM
22×28×22	40	52	19	29	**1511260007**		**6240718S**	10	40	pc.	
28×22×28	45	52	22	31	**1511260008**		**6240729S**	10	30	pc.	
35×22×35	52	55	26	34	**1511260009**		**6240731S**	5	20	pc.	
35×28×35	52	57	26	34	**1511260010**		**6240740S**	10	20	pc.	
42×22×42	60	58	30	37	**1511260011**		**6240751S**	4	12	pc.	
42×28×42	60	60	30	37	**1511260012**		**6240762S**	4	12	pc.	
42×35×42	60	63	30	37	**1511260013**		**6240773S**	4	12	pc.	
54×22×54	71	64	36	43	**1511260014**		**6240784S**	2	8	pc.	
54×28×54	71	66	36	43	**1511260015**		**6240795S**	2	8	pc.	
54×35×54	71	69	36	43	**1511260016**		**6240806S**	2	8	pc.	
54×42×54	71	73	36	43	**1511260017**		**6240817S**	2	8	pc.	
76,1×22×76,1	115	68	60	47	**1509260043**	**	**6303371S**	2	-	pc.	
76,1×28×76,1	115	85	60	62	**1511260018**	**	**6303373S**	2	-	pc.	
76,1×35×76,1	115	87	60	61	**1511260019**	**	**6303375S**	2	-	pc.	
76,1×42×76,1	115	97	60	67	**1511260020**	**	**6303377S**	2	-	pc.	
76,1×54×76,1	115	110	60	75	**1511260021**		**6206475S**	2	-	pc.	
88,9×22×88,9	130	76	67	55	**1509260053**	**	**6303379S**	2	-	pc.	
88,9×28×88,9	130	92	67	69	**1511260025**	**	**6303381S**	2	-	pc.	
88,9×35×88,9	130	97	67	71	**1509260051**	**	**6303383S**	2	-	pc.	
88,9×42×88,9	130	105	67	75	**1511260022**	**	**6303385S**	2	-	pc.	
88,9×54×88,9	130	117	67	82	**1511260023**	**	**6303387S**	2	-	pc.	
88,9×76,1×88,9	130	117	67	62	**1511260024**		**6206486S**	2	-	pc.	
108×22×108	155	85	78	64	**1511260000**	**	**6303389S**	2	-	pc.	
108×28×108	155	102	78	79	**1511260001**	**	**6303391S**	2	-	pc.	
108×35×108	155	107	78	81	**1511260002**	**	**6303393S**	2	-	pc.	
108×42×108	155	115	78	85	**1511260003**	**	**6303395S**	2	-	pc.	
108×54×108	155	128	78	93	**1511260004**	**	**6303397S**	2	-	pc.	
108×76,1×108	155	128	78	73	**1511260005**	**	**6303399S**	2	-	pc.	
108×88,9×108	155	137	78	82	**1511260006**		**6206497S**	2	-	pc.	

coil bar pipes in tube bag carton box pallet

* custom-made - lead time max 4 weeks | ** availability as agreed | *** while stock lasts

Pipe cross

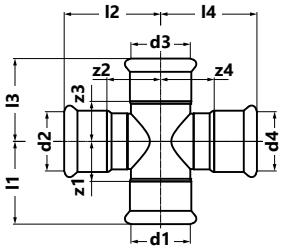
GROUP: I



Size	l1/l3	l2/l4	z1/z3	z2/z4	H1	New code	*	Code			UM	Price EUR/UM
28×22×22×28	45	40	22	19	31	**1511057000**		**6240828S**	10	20	pc.	

Crossing

GROUP: I



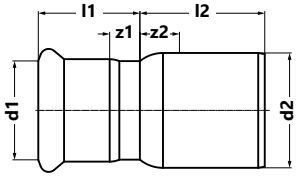
Size	l1/l3	l2/l4	z1/z3	z2/z4	New code	*	Code			UM	Price EUR/UM
35×35×35×35	52	60	26	34	**1511057002**	**	-	2	8	pc.	
42×42×42×42	61	67	31	37	**1511057003**	**	-	2	8	pc.	
54×54×54×54	71	78	36	43	**1511057004**	**	-	-	4	pc.	
35×28×35×28	52	57	26	34	**1511057005**	**	-	2	14	pc.	
42×28×42×28	61	60	31	37	**1511057006**	**	-	2	8	pc.	
54×28×54×28	71	66	36	43	**1511057001**	**	**6341027S**	-	4	pc.	

coil bar pipes in tube bag carton box pallet

* custom-made - lead time max 4 weeks | ** availability as agreed | *** while stock lasts

Nipple reducer

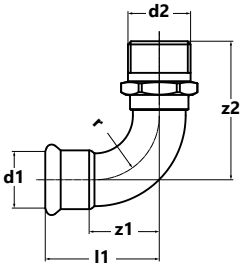
GROUP: I



Size	l1	l2	z1	z2	New code	*	Code			UM	Price EUR/UM
28×22	33	33	12	10	**1511221006**		**6240234S**	10	80	pc.	
35×22	30	41	9	15	**1511221007**		**6240245S**	10	50	pc.	
35×28	36	34	13	8	**1511221008**		**6240256S**	10	60	pc.	
42×22	32	51	11	21	**1511221013**		**6246651S**	5	30	pc.	
42×28	32	51	9	21	**1511221014**		**6240267S**	5	30	pc.	
42×35	39	41	13	11	**1511221009**		**6240278S**	4	24	pc.	
54×22	34	63	13	28	**1511221010**		**6240289S**	4	16	pc.	
54×28	33	58	10	23	**1511221011**		**6240291S**	4	16	pc.	
54×35	38	57	12	22	**1511221015**		**6240300S**	10	30	pc.	
54×42	44	52	14	17	**1511221012**		**6240993S**	4	16	pc.	
76,1×42	50	97	20	42	**1511221002**		**6206387S**	2	-	pc.	
76,1×54	55	86	20	31	**1511221003**		**6206398S**	2	-	pc.	
88,9×54	54	101	19	38	**1511221004**		**6206409S**	2	-	pc.	
88,9×76,1	68	90	13	27	**1511221005**		**6206411S**	2	-	pc.	
108×76,1	68	120	13	43	**1511221000**		**6206420S**	2	-	pc.	
108×88,9	77	110	14	33	**1511221001**		**6206431S**	2	-	pc.	

Male elbow 90°

GROUP: I



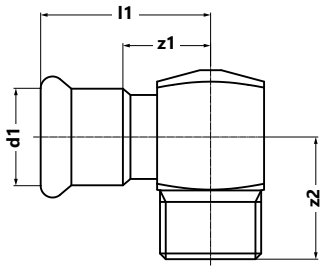
Size	l1	z1	z2	r	New code	*	Code			UM	Price EUR/UM
22 R¾"	51	30	62	27	**1511070000**		**6240366S**	10	60	pc.	
28 R1"	61	38	74	34	**1511070001**		**6240377S**	10	30	pc.	
35 R1¼"	72	46	86	42	**1511070002**		**6240388S**	10	10	pc.	
42 R1½"	87	57	96	51	**1511070003**		**6240399S**	4	12	pc.	
54 R2"	105	70	116	65	**1511070004**		**6240401S**	2	8	pc.	

coil bar pipes in tube bag carton box pallet

* custom-made - lead time max 4 weeks | ** availability as agreed | *** while stock lasts

Short male elbow 90°

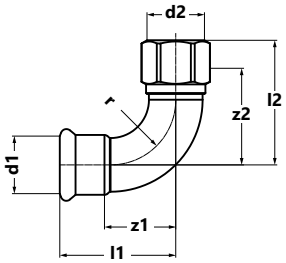
GROUP: I



Size	l1	z1	z2	New code	*	Code			UM	Price EUR/UM
22 R¾"	45	24	32	1511070005		6240982S	10	60	pc.	

Female elbow 90°

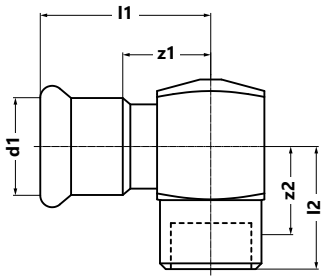
GROUP: I



Size	l1	l2	z1	z2	r	New code	*	Code			UM	Price EUR/UM
22 Rp½"	51	59	30	44	27	1511068000		6249577S	10	30	pc.	
22 Rp¾"	51	59	30	43	27	1511068001		6240964S	10	30	pc.	
28 Rp½"	61	65	38	50	34	1511069000		6241169S	5	30	pc.	
28 Rp¾"	61	65	38	49	34	1511069001		6241171S	5	30	pc.	
28 Rp1"	61	70	38	51	34	1511069002		6249588S	5	30	pc.	
35 Rp½"	72	75	46	55	42	1511069003		6241180S	5	10	pc.	
35 Rp¾"	72	75	46	54	42	1511069004		6241061S	5	10	pc.	
35 Rp1"	72	75	46	56	42	1511068002		6249599S	5	10	pc.	

Short female elbow 90°

GROUP: I



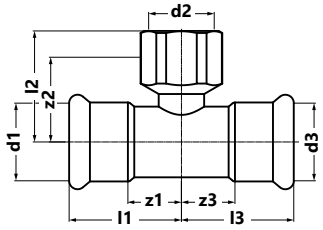
Size	l1	l2	z1	z2	New code	*	Code			UM	Price EUR/UM
22 Rp½"	45	31	24	16	1511069006	*	-	10	50	pc.	
28 Rp½"	51	35	28	20	1511069005	*	-	5	30	pc.	
35 Rp½"	57	35	31	20	1511069007	*	-	5	10	pc.	

coil bar pipes in tube bag carton box pallet

* custom-made - lead time max 4 weeks | ** availability as agreed | *** while stock lasts

Female tee

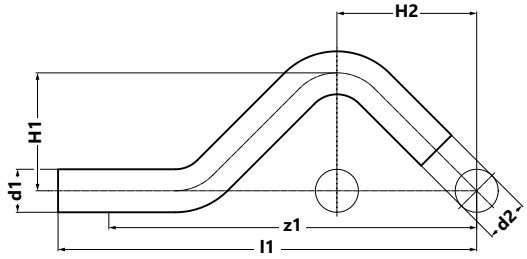
GROUP: I



Size	l1/l3	l2	z1/z3	z2	New code	*	Code			UM	Price EUR/UM
22 Rp½"	40	39	19	24	**1511258003**		**6240619S**	10	50	pc.	
22 Rp¾"	40	41	19	25	**1511258002**		**6240621S**	10	40	pc.	
28 Rp½"	45	42	22	27	**1511258004**		**6240630S**	10	30	pc.	
28 Rp¾"	45	44	22	28	**1511258005**		**6240641S**	10	30	pc.	
28 Rp1"	45	48	22	25	**1511257008**		**6249601S**	10	30	pc.	
35 Rp½"	52	46	26	31	**1511258006**		**6240652S**	10	20	pc.	
35 Rp¾"	52	48	26	31	**1511258007**		**6240663S**	10	20	pc.	
35 Rp1"	52	52	26	29	**1511257009**		**6249610S**	10	20	pc.	
42 Rp½"	61	48	31	33	**1511258008**		**6240674S**	4	16	pc.	
42 Rp¾"	61	50	31	34	**1511258009**		**6240685S**	4	16	pc.	
42 Rp1"	61	54	31	31	**1511257010**		**6249621S**	4	16	pc.	
54 Rp½"	71	54	36	39	**1511258010**		**6240696S**	2	8	pc.	
54 Rp¾"	71	56	36	40	**1511258011**		**6240707S**	2	8	pc.	
54 Rp1"	71	60	36	37	**1511258000**		**6241070S**	2	8	pc.	
76,1 Rp¾"	115	82	60	66	**1511258012**		**6206508S**	2	-	pc.	
88,9 Rp¾"	130	84	67	68	**1511258013**		**6206519S**	1	-	pc.	
108 Rp¾"	155	94	78	78	**1511258001**		**6206521S**	1	-	pc.	

Crossover

GROUP: I



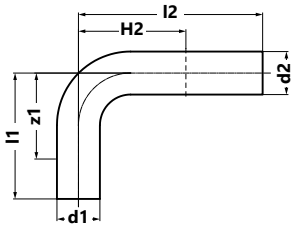
Size	l1	z1	H1	H2	New code	*	Code			UM	Price EUR/UM
22	178	157	44	65	**1511022000**		6240883S	10	50	pc.	
28	210	187	50	74	**1511022001**		6240894S	10	20	pc.	

coil bar pipes in tube bag carton box pallet

* custom-made - lead time max 4 weeks | ** availability as agreed | *** while stock lasts

Bend 90°

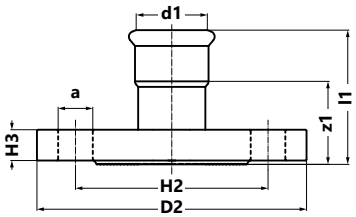
GROUP: I



Size	l1	l2	z1	H2	New code	*	Code			UM	Price EUR/UM
22	74	122	53	70	**1511011000**		**6240839S**	10	40	pc.	
28	84	122	61	80	**1511011001**		**6240841S**	10	20	pc.	
35	122	202	96	100	**1511011002**		**6240850S**	4	8	pc.	
42	152	252	122	120	**1511011003**		**6240861S**	2	4	pc.	
54	202	302	167	145	**1511011004**		**6240872S**	2	2	pc.	

Flange PN16

GROUP: I



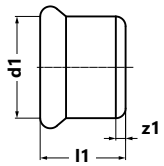
Size	l1	z1	a	H2	H3	D2	otw.	New code	*	Code			UM	Price EUR/UM
76,1 (DN65)	112	57	18	145	16	185	4	**1511091002**		**620659.6S**	4	-	pc.	
88,9 (DN80)	118	55	18	160	18	200	8	**1511091003**		**620660.7S**	2	-	pc.	
108 (DN108)	114	37	18	180	18	220	8	**1511091001**		**620661.8S**	2	-	pc.	

coil bar pipes in tube bag carton box pallet

* custom-made - lead time max 4 weeks | ** availability as agreed | *** while stock lasts

Stop end

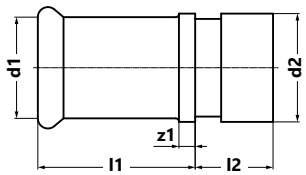
GROUP: I



Size	l1	z1	New code	*	Code			UM	Price EUR/UM
22	24	3	**1511250001**		**6240311S**	10	240	pc.	
28	26	3	**1511250002**		**6240322S**	10	130	pc.	
35	29	3	**1511250003**		**6240333S**	5	75	pc.	
42	37	7	**1511250004**		**6240344S**	4	48	pc.	
54	42	7	**1511250005**		**6240355S**	4	32	pc.	
76,1	64	9	**1511250006**		**6206915S**	4	-	pc.	
88,9	72	9	**1511250007**		**6206926S**	4	-	pc.	
108	97	20	**1511250000**		**6206937S**	4	-	pc.	

Coupling Steel Sprinkler/Groove

GROUP: I



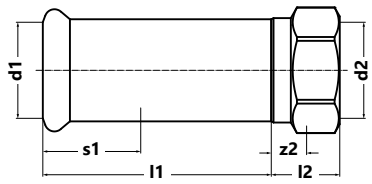
Size	l1	l2	z1	New code	*	Code			UM	Price EUR/UM
28×33,7	49	24	26	**1511042001**	**	**624130.1S**	10	30	pc.	
35×42,4	54	24	28	**1511042002**	**	**624134.5S**	10	30	pc.	
42×48,3	61	24	31	**1511042003**	**	**624135.6S**	5	20	pc.	
54×60,3	73	24	38	**1511042004**	**	**624136.7S**	5	15	pc.	
76,1×76,1	56	24	1	**1511042006**	**	**6340774S**	2	-	pc.	
88,9×88,9	76	24	13	**1511042007**	**	**6340785S**	2	-	pc.	
108×114	84	26	7	**1511042005**	**	**6340796S**	2	-	pc.	

coil bar pipes in tube bag carton box pallet

* custom-made - lead time max 4 weeks | ** availability as agreed | *** while stock lasts

Female slip connector

GROUP: I



Size	l1	l2	z2	s1	New code	*	Code			UM	Price EUR/UM
22 Rp½"	92	22	15	21	1511044008	**	624131.2S	10	60	pc.	
22 Rp¾"	97	27	17	21	1511044009	**	624132.3S	10	60	pc.	
28 Rp½"	94	24	15	23	1611042018	**	624126.8S	10	40	pc.	
28 Rp¾"	93	23	17	23	1511044010	**	624127.9S	10	40	pc.	

O-Ring LBP EPDM

GROUP: I

Size	New code	*	Code			UM	Price EUR/UM
22	1509182024		-	20	500	pc.	
28	1509182025		-	20	400	pc.	
35	1509182026		-	20	400	pc.	
42	1509182027		-	20	300	pc.	
54	1509182028		-	20	300	pc.	

O-Ring EPDM

GROUP: I

Size	New code	*	Code			UM	Price EUR/UM
76,1	1609182023		-	5	100	pc.	
88,9	1609182024		-	5	100	pc.	
108	1609182025		-	5	50	pc.	

coil bar pipes in tube bag carton box pallet

* custom-made - lead time max 4 weeks | ** availability as agreed | *** while stock lasts

Flexible hose with straight ending

GROUP: I

Size	New code	*	Code			UM	Price EUR/UM
Rp½"×Ø22 1000	1611289001	**	619800.5S	-	10	pc.	
Rp½"×Ø22 1500	1511289005	**	619802.7S	-	10	pc.	
Rp½"×Ø22 2000	1511289006	**	619803.8S	-	10	pc.	
Rp½"×Ø28 1000	1511289007	**	619804.9S	-	10	pc.	
Rp½"×Ø28 1500	1511289008	**	619806.0S	-	10	pc.	
Rp½"×Ø28 2000	1511289009	**	619807.1S	-	10	pc.	

Flexible hose with angle ending

GROUP: I

Size	New code	*	Code			UM	Price EUR/UM
Rp½"×Ø22 800	1511289000	**	619808.2S	-	10	pc.	
Rp½"×Ø22 1000	1611289000	**	619809.3S	-	10	pc.	
Rp½"×Ø22 1500	1511289001	**	619811.5S	-	10	pc.	
Rp½"×Ø28 800	1511289002	**	619813.7S	-	10	pc.	
Rp½"×Ø28 1000	1511289003	**	619814.8S	-	10	pc.	
Rp½"×Ø28 1500	1511289004	**	619816.1S	-	10	pc.	

coil bar pipes in tube bag carton box pallet

* custom-made - lead time max 4 weeks | ** availability as agreed | *** while stock lasts

Tools

Pipe cutter

GROUP: K

Size	New code	*	Code			UM	Price EUR/UM
12-54	1948267025		113000	-	1	pc.	
35-108	1948267027		113100	-	1	pc.	

Replacement cutiing wheel

GROUP: K

	New code	*	Code			UM	Price EUR/UM
	1941267037		341614	-	1	pc.	

REMS Cento pipe cutting machine

GROUP: K

Size	New code	*	Code			UM	Price EUR/UM
22-108	1948183001		845002	-	1	pc.	

Note:
Cutting wheel included.

coil bar pipes in tube bag carton box pallet

* custom-made - lead time max 4 weeks | ** availability as agreed | *** while stock lasts

Duecento pipe support

GROUP: K

	New code	*	Code			UM	Price EUR/UM
	1948267029		845220	-	1	pc.	

Deburrer for pipes

GROUP: K

Size	New code	*	Code			UM	Price EUR/UM
22-54	1948267015		113835	-	1	pc.	

Press tool Novopress ACO203XL

GROUP: K

Size	New code	*	Code			UM	Price EUR/UM
22-108	1948267181		-	-	1	pc.	

Set consists of:
- Battery 18 V/ 3.0 Ah Li-Ion Milwaukee - 2 pcs.
- Charger - 1 pc.
- Grease - 1 pc.
- Plastic case

coil bar pipes in tube bag carton box pallet

* custom-made - lead time max 4 weeks | ** availability as agreed | *** while stock lasts

PB2 Press jaws „M" profile for Novopress ACO203XL

GROUP: K

Size	New code	*	Code			UM	Price EUR/UM
22	1948267139		43590-50	-	1	pc.	
28	1948267141		43591-50	-	1	pc.	

Press tool Novopress ECO301

GROUP: K

Size	New code	*	Code			UM	Price EUR/UM
22-54 mm	1948267163	***	620570.5	-	1	pc.	

PB3 Press jaws „M" profile for Novopress ECO301

GROUP: K

Size	New code	*	Code			UM	Price EUR/UM
22	1948267164	***	620575.1	-	1	pc.	
28	1948267165	***	620576.0	-	1	pc.	

coil bar pipes in tube bag carton box pallet

* custom-made - lead time max 4 weeks | ** availability as agreed | *** while stock lasts

Collar HP Snap On for Novopress ACO203XL and ECO301

GROUP: K

Size	New code	*	Code			UM	Price EUR/UM
35	1948267124		634106.0	-	1	pc.	
42	1948267126		634107.1	-	1	pc.	
54	1948267128		634108.2	-	1	pc.	

Note:
Jaws for diameters 35 - 54 mm with ECO301 press tool must be used with ZB303 adapter.
Jaws for diameters 35 - 54 mm with ACO203XL and EFP203 press tools must be used with ZB 203 adapter.

ZB203 Novopress adapter for ACO203XL

GROUP: K

Size	New code	*	Code			UM	Price EUR/UM
35-54	1948267000		43610-50	-	1	pc.	

ZB303 Novopress adapter for ECO301 press tool

GROUP: K

Size	New code	*	Code			UM	Price EUR/UM
35-54	1948267166	***	634111.5	-	1	pc.	

coil bar pipes in tube bag carton box pallet

* custom-made - lead time max 4 weeks | ** availability as agreed | *** while stock lasts

Battery Novopress ACO403 press tool

GROUP: K

Size	New code	*	Code			UM	Price EUR/UM
76,1-108	1948267209		-	-	1	pc.	

Set consists of:
- Battery 18 V/ 3.0 Ah Li-Ion Milwaukee - 2 pcs.
- Charger - 1 pc.
- Grease - 1 pc.
- Plastic case

Battery Novopress ACO401 press tool

GROUP: K

Size	New code	*	Code			UM	Price EUR/UM
76,1-108	1948267151	***	634008.1	-	1	pc.	

HP collar Novopress for ACO401 and ACO403 press tool

GROUP: K

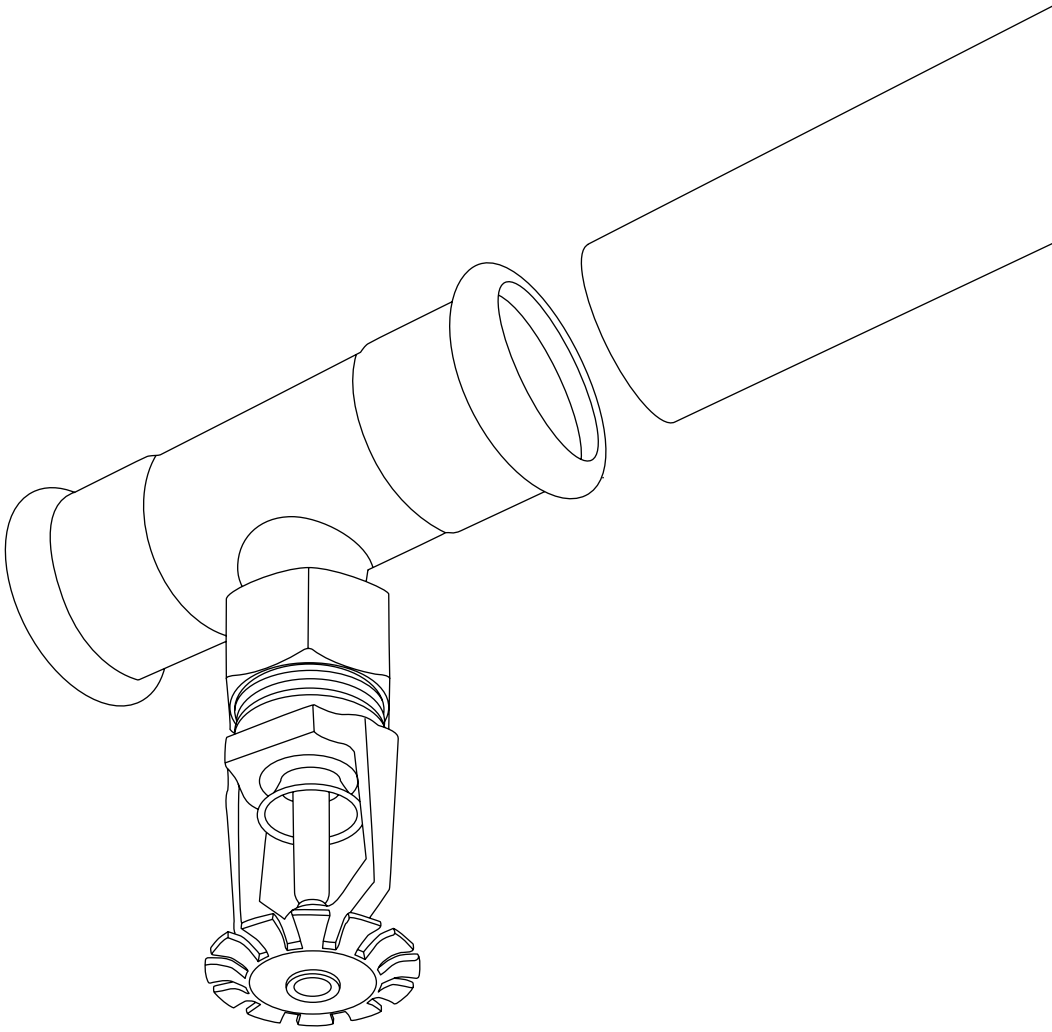
Size	New code	*	Code			UM	Price EUR/UM
76,1	1948267100		634009.2	-	1	pc.	
88,9	1948267102		634010.3	-	1	pc.	
108	1948267098		634011.4	-	1	pc.	

Note:
Collars for Novopress ACO401 and ACO403 tools.

coil bar pipes in tube bag carton box pallet

* custom-made - lead time max 4 weeks | ** availability as agreed | *** while stock lasts

NOTES



SYSTEM **KAN-therm**

Inox Sprinkler

Application and operational conditions

KAN-therm Inox Sprinkler System is designed for constructing pipelines (distributing or splitting conduits) of stationary air or water sprinkler systems installed in small or medium fire hazard areas (LH, OH1, OH2, OH3 and up to OH 4 - in reference to exhibition rooms, theatres and concert halls) (according to VdS CEA 4001 guidelines).

KAN-therm Inox Sprinkler is also suitable for indoor hydrant installations. These installations may be both separate as well as a part of potable water systems.

Application in other fire extinguishing systems is prohibited.

System pipes and fittings hold certificates issued by Fire Protection Scientific Research Centre CNBOP as well as VdS and FM.


VdS

Certificate

of

Approval

of

Components and Systems

VSH Fittings B.V.
Oude Amersfoortseweg 99

NL-1212AA Hilversum

G 4080037	7	09.11.2009	24.02.2013

Pipe system, stainless steel
Type "VSH Press Sprinkler Edelstahl"

in Stationary water extinguishing systems

Procedure Guidelines - VdS 2344en: 2005-12

Guidelines for Water Extinguishing Systems - Requirements and Test Methods for Metal Press Fitting Pipe Systems
VdS 2100-26: 2007-03 (draft)

Köln (Cologne), 09.11.2009

Schlingel

i. V. Hetels

The installation should be designed and constructed according to guidelines included in this document, as well as with applicable standards and regulations.

Designing, assembly and commissioning of the sprinkler system is defined by PN-EN 12845:2008 standard. Stationary fire extinguishing units. Automatic sprinkler units. Design, assembly and maintenance.

Maximum operating pressure of the pipes and fittings is:

- for 22 – 76,1 diameters 16,0 bar,
- for 88,9 diameter 12,5 bar,
- for 108 diameter 10,0 bar.

KAN-therm Inox Sprinkler System - stainless steel pipes

KAN-therm Inox Sprinkler System pipes for sprinkler systems are precise X5CrNiMo (1.4401 acc. to EN 10088 AISI 316) stainless steel pipes.

KAN-therm Inox Sprinkler System pipes may be classified as A category incombustible materials, acc. to DIN 4102, part 1.

The pipes are distributed in 6 meters lengths. Minimum pipe bend radius 3,5 × D (for DN20 - DN25 diameters).

TAB. 1 PIPE TECHNICAL SPECIFICATION

DN	Outside diameter × wall thickness	Inside diameter	Unit mass	Water capacity
	mm × mm	[mm]	[kg/m]	[dm³/m]
20	22 × 1,5	19,6	0,624	0,302
25	28 × 1,5	25,6	0,790	0,515
32	35 × 1,5	32,0	1,240	0,804
40	42 × 1,5	39,0	1,503	1,195
50	54 × 1,5	51,0	1,972	2,043
65	76,1 × 2,0	72,1	3,550	4,548
80	88,9 × 2,0	84,9	4,150	5,661
100	108 × 2,0	104,0	5,050	8,495

TAB 2. KAN-THERM INOX SPRINKLER PIPES FOR FIRE FIGHTING SYSTEMS

Material	X5CrNiMo stainless steel material no. 1.4401 acc. to EN 10088-2 (AISI 316)
Outside diameter tolerance	acc. to EN10305-3
Thermal expansion coefficient	0,0160 mm/m at ΔT= 1K
Minimum bend radius (for diameters up to Ø28 mm)	3,5 × outside pipe diameter (up to -10°C)
Delivery	6 m ± 50 mm lengths
Marking	name or manufacturer label, material identification, outside diameter x wall thickness, approval no., manufacture date
Max. operating pressure	16 bar (22-76,1 mm); 12,5 bar (88,9 mm); 10 bar (108 mm)

KAN-therm Inox Sprinkler System – pressed stainless steel couplings

KAN-therm Inox Sprinkler System pressed couplings are made of stainless steel, material no. 1.4404 acc. to EN 10088. The couplings are equipped with EPDM rubber sealing ring (O-Ring).

Coupling diameter range DN20 - DN100

KAN-therm Inox Sprinkler System - assortment

Stainless steel pipe 1.4401

GROUP: H

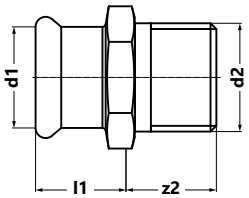
Size	New code	*	Code			UM	Price EUR/UM
22×1,2	1630194069		611793.6S	6	360	m	
28×1,2	1630194070		611794.7S	6	300	m	
35×1,5	1630194071		611795.8S	6	180	m	
42×1,5	1630194072		611796.9S	6	150	m	
54×1,5	1630194073		611797.1S	6	90	m	
76,1×2	1630194074		611798.0S	6	168	m	
88,9×2	1630194075		611799.1S	6	136	m	
108×2	1630194066		611800.2S	6	108	m	

coil bar pipes in tube bag carton box pallet

* custom-made - lead time max 4 weeks | ** availability as agreed | *** while stock lasts

Male connector

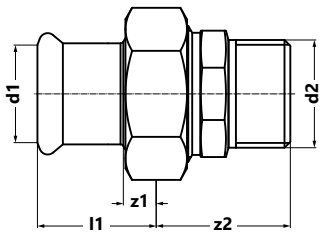
GROUP: G



Size	l1	z2	New code	*	Code			UM	Price EUR/UM
22 R½"	21	28	1611045001		6190635S	10	70	pc.	
22 R¾"	21	21	1611045002		6190646S	10	100	pc.	
22 R1"	21	22	1611045000		6190624S	10	60	pc.	
28 R¾"	23	25	1611045005		6190679S	10	50	pc.	
28 R1"	23	29	1611045004		6190657S	10	60	pc.	
28 R1¼"	23	22	1611045003		6190668S	10	30	pc.	
35 R1"	26	27	1611045007		6190681S	10	40	pc.	
35 R1¼"	26	30	1611045008		6190701S	5	40	pc.	
35 R1½"	26	29	1611045006		6190690S	10	20	pc.	
42 R1¼"	30	29	1611045009		6190723S	4	12	pc.	
42 R1½"	30	29	1611045010		6190712S	4	24	pc.	
54 R1½"	35	30	1611045011		6190734S	4	16	pc.	
54 R2"	35	34	1611045012		6190745S	4	12	pc.	
76,1 R2½"	55	75	1611045013		620475.9S	2	-	pc.	
88,9 R3"	63	74	1611045014		620476.1S	2	-	pc.	

Male union connector

GROUP: G



Size	l1	z1	z2	New code	*	Code			UM	Price EUR/UM
22 R½"	63	9	33	1611272001		6192164S	2	40	pc.	
22 R¾"	69	9	29	1611272002		6192175S	2	40	pc.	
22 R1"	72	9	42	1611272000		6192186S	2	30	pc.	
28 R1"	73	8	42	1611272003		6192197S	2	30	pc.	
35 R1¼"	78	8	44	1611272004		6192208S	2	16	pc.	
42 R1½"	85	11	44	1611272005		6192219S	2	12	pc.	
54 R2"	100	12	53	1611272006		6192296S	2	4	pc.	

coil bar pipes in tube bag carton box pallet

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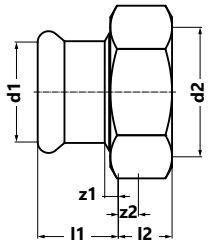
Female union with flat gasket

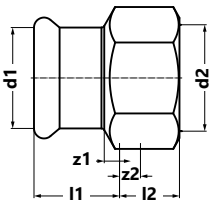
GROUP: G



Size	l1	l2	z1	z2	New code	*	Code			UM	Price EUR/UM
22 Rp1"	30	10	9	2	1611**271006**		**6191757S**	10	60	pc.	
28 Rp1¼"	31	10	8	2	1611**271007**		**6191768S**	10	40	pc.	
35 Rp1½"	34	11	8	2	1611**271008**		**6191779S**	4	32	pc.	
42 Rp1¾"	41	11	11	2	1611**271009**		**6191781S**	4	12	pc.	
54 Rp2⅜"	47	11	12	3	1611**271010**		**6191790S**	4	8	pc.	

Female connector

GROUP: G



Size	l1	l2	z1	z2	New code	*	Code			UM	Price EUR/UM
22 Rp½"	24	20	3	7	1611**042001**		6190461S	10	100	pc.	
22 Rp¾"	21	15	0	5	1611**042002**		6190470S	10	100	pc.	
22 Rp1"	23	17	2	6	1611**042000**		6190459S	10	60	pc.	
28 Rp½"	26	12	3	1	1611**042013**		6193308S	10	40	pc.	
28 Rp¾"	23	17	0	6	1611**042005**		6190503S	10	40	pc.	
28 Rp1"	25	20	2	7	1611**042003**		6190481S	10	60	pc.	
28 Rp1¼"	25	22	2	7	1611**042004**		6190492S	10	30	pc.	
35 Rp1"	27	20	1	7	1611**042007**		6190514S	10	20	pc.	
35 Rp1¼"	28	22	2	8	1611**042012**		6190536S	10	30	pc.	
35 Rp1½"	28	22	2	7	1611**042006**		6190525S	10	20	pc.	
42 Rp1¼"	32	22	2	8	1611**042009**		6190558S	4	12	pc.	
42 Rp1½"	30	22	0	0	1611**042008**		6190547S	4	24	pc.	
54 Rp1½"	36	22	1	8	1611**042010**		6190569S	4	12	pc.	
54 Rp2"	37	26	2	8	1611**042011**		6190571S	4	12	pc.	

coil bar pipes in tube bag carton box pallet

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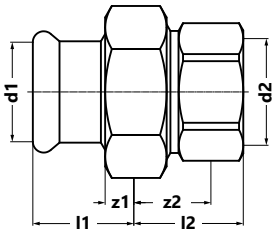
Female union connector

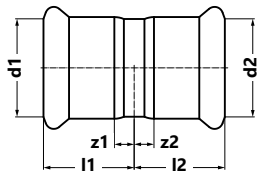
GROUP: G



Size	l1	l2	z1	z2	New code	*	Code			UM	Price EUR/UM
22 Rp¾"	63	33	9	22	1611271001		6192065S	2	40	pc.	
22 Rp1"	66	36	9	23	1611271000		6192076S	2	30	pc.	
28 Rp1"	65	34	8	21	1611271002		6192087S	2	26	pc.	
35 Rp1¼"	73	39	8	24	1611271003		6192098S	1	20	pc.	
42 Rp1½"	82	41	11	27	1611271004		6192109S	2	8	pc.	
54 Rp2"	91	44	12	26	1611271005		6192111S	2	4	pc.	

Coupling

GROUP: G



Size	l1/l2	z1/z2	New code	*	Code			UM	Price EUR/UM
22	26	5	1611245001		6190965S	10	80	pc.	
28	28	5	1611245002		6190976S	10	60	pc.	
35	31	5	1611245003		6190987S	5	40	pc.	
42	36	6	1611245004		6190998S	4	24	pc.	
54	41	6	1611245005		6191009S	4	16	pc.	
76,1	71	16	1611245006		620415.4S	4	-	pc.	
88,9	82	19	1611245007		620416.5S	4	-	pc.	
108	96	19	1611245000		620417.6S	4	-	pc.	

coil bar pipes in tube bag carton box pallet

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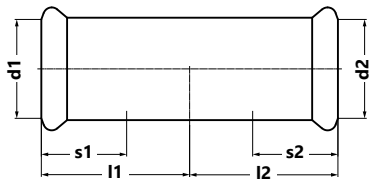
Slip coupling

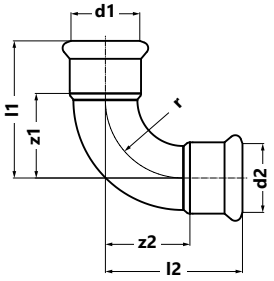
GROUP: G



Size	l1/l2	s1/s2	New code	*	Code			UM	Price EUR/UM
22	42	25	1611080001		6191306S	10	60	pc.	
28	46	30	1611080002		6191317S	10	40	pc.	
35	51	30	1611080003		6191328S	5	20	pc.	
42	60	40	1611080004		6191339S	4	16	pc.	
54	70	40	1611080005		6191341S	2	8	pc.	
76,1	115	60	1611080006		620428.6S	2	-	pc.	
88,9	129	70	1611080007		620429.7S	2	-	pc.	
108	153	80	1611080000		620430.8S	2	-	pc.	

Elbow 90°

GROUP: G



Size	l1/l2	z1/z2	r	New code	*	Code			UM	Price EUR/UM
22	51	30	27	1611068026		6190228S	10	60	pc.	
28	60	37	34	1611068027		6190239S	5	30	pc.	
35	71	45	42	1611068028		6190241S	5	20	pc.	
42	86	56	51	1611068029		6190250S	2	8	pc.	
54	105	70	65	1611068030		6190261S	2	8	pc.	
76,1	150	95	91	1611068031		6230004S	2	-	pc.	
88,9	174	111	107	1611068032		6230015S	2	-	pc.	
108	215	138	130	1611068025		6230026S	1	-	pc.	

coil bar pipes in tube bag carton box pallet

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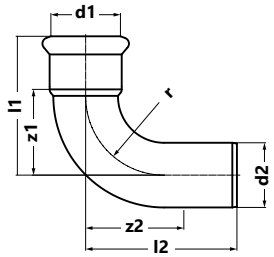
Nipple elbow 90°

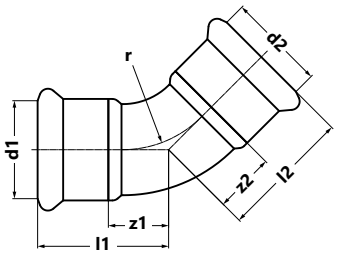
GROUP: G



Size	l1	l2	z1	z2	r	New code	*	Code			UM	Price EUR/UM
22	51	60	30	39	27	1611068034		6190360S	5	60	pc.	
28	60	66	37	43	34	1611068035		6190371S	5	30	pc.	
35	71	76	45	50	42	1611068036		6190382S	5	10	pc.	
42	86	93	56	63	51	1611068037		6190393S	2	8	pc.	
54	105	111	70	76	65	1611068038		6190404S	2	6	pc.	
76,1	150	165	95	110	91	1611068039		6230037S	1	-	pc.	
88,9	175	190	112	127	107	1611068040		6230048S	1	-	pc.	
108	216	238	139	161	130	1611068033		6230059S	1	-	pc.	

Elbow 45°

GROUP: G



Size	l1/l2	z1/z2	r	New code	*	Code			UM	Price EUR/UM
22	35	14	27	1611068010		6190063S	10	70	pc.	
28	40	17	34	1611068011		6190074S	10	40	pc.	
35	47	21	42	1611068012		6190085S	5	25	pc.	
42	56	26	51	1611068013		6190096S	2	16	pc.	
54	67	32	65	1611068014		6190107S	2	8	pc.	
76,1	98	49	91	1611068015		6230061S	2	-	pc.	
88,9	112	61	107	1611068016		6230070S	2	-	pc.	
108	138	61	130	1611068009		6230081S	2	-	pc.	

coil bar pipes in tube bag carton box pallet

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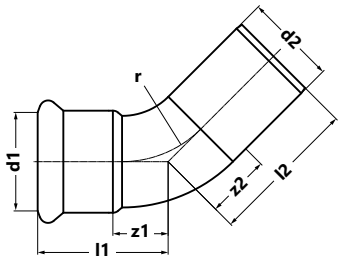
Nipple elbow 45°

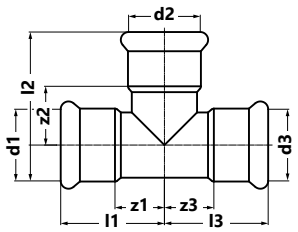
GROUP: G



Size	l1	l2	z1	z2	r	New code	*	Code			UM	Price EUR/UM
22	35	42	14	21	27	1611068018		6190131S	10	70	pc.	
28	40	46	17	23	34	1611068019		6190140S	10	40	pc.	
35	46	51	20	25	42	1611068020		6190151S	5	25	pc.	
42	56	63	26	33	51	1611068021		6190162S	2	16	pc.	
54	65	73	30	38	65	1611068022		6190173S	2	8	pc.	
76,1	98	117	43	62	91	1611068023		6230092S	2	-	pc.	
88,9	112	131	49	68	107	1611068024		6230103S	2	-	pc.	
108	138	154	61	77	130	1611068017		6230114S	2	-	pc.	

Tee

GROUP: G



Size	l1/l3	l2	z1/z3	z2	New code	*	Code			UM	Price EUR/UM
22	40	44	19	23	1611257001		6191405S	10	40	pc.	
28	45	49	22	26	1611257002		6191449S	5	25	pc.	
35	51	55	25	29	1611257003		6191493S	5	15	pc.	
42	60	62	30	32	1611257004		6191537S	4	8	pc.	
54	71	72	36	37	1611257005		6191581S	2	6	pc.	
76,1	116	115	61	60	1611257006		620431.9S	2	-	pc.	
88,9	156	156	68	68	1611257007		620432.1S	2	-	pc.	
108	231	231	79	78	1611257000		620433.0S	2	-	pc.	

coil bar pipes in tube bag carton box pallet

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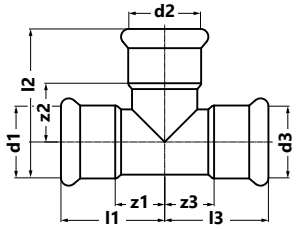
Reducing tee

GROUP: G



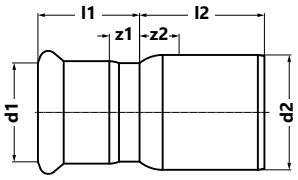
Size	l1/l3	l2	z1/z3	z2	New code	*	Code			UM	Price EUR/UM
28×22×28	45	47	22	26	1611260007		6191438S	10	30	pc.	
35×22×35	51	50	25	29	1611260008		6191471S	5	20	pc.	
35×28×35	51	52	25	29	1611260009		6191482S	5	20	pc.	
42×22×42	60	53	30	32	1611260010		6191504S	4	12	pc.	
42×28×42	60	55	30	32	1611260011		6191515S	4	12	pc.	
42×35×42	60	58	30	32	1611260012		6191526S	4	12	pc.	
54×22×54	71	59	36	38	1611260013		6191548S	2	8	pc.	
54×28×54	71	61	36	38	1611260014		6191559S	2	8	pc.	
54×35×54	71	64	36	38	1611260015		6191561S	2	8	pc.	
54×42×54	71	58	36	28	1611260016		6191570S	2	8	pc.	
76,1×22×76,1	116	68	61	45	1611260017		620434.1S	2	-	pc.	
76,1×28×76,1	116	71	61	74	1611260018	**	620435.2S	2	-	pc.	
76,1×35×76,1	116	75	61	48	1611260019	**	620436.3S	2	-	pc.	
76,1×42×76,1	116	79	61	47	1611260020	**	620437.4S	2	-	pc.	
76,1×54×76,1	116	80	61	43	1611260021	**	620438.5S	2	-	pc.	
88,9×22×88,9	131	76	68	53	1611260022		620439.6S	2	-	pc.	
88,9×28×88,9	131	76	68	52	1611260023	**	620440.7S	2	-	pc.	
88,9×35×88,9	131	83	68	56	1611260024	**	620441.8S	2	-	pc.	
88,9×42×88,9	131	85	68	53	1611260025	**	620442.9S	2	-	pc.	
88,9×54×88,9	131	93	68	56	1611260026	**	620443.1S	2	-	pc.	
88,9×76,1×88,9	131	116	68	61	1611260027	**	620444.0S	2	-	pc.	
108×22×108	156	85	79	62	1611260000		620445.1S	2	-	pc.	
108×28×108	156	88	79	64	1611260001	**	620446.2S	2	-	pc.	
108×35×108	156	94	79	67	1611260002	**	620447.3S	2	-	pc.	
108×42×108	156	96	79	64	1611260003	**	620448.4S	2	-	pc.	
108×54×108	156	102	79	65	1611260004	**	620449.5S	2	-	pc.	
108×76,1×108	156	125	79	70	1611260005	**	620450.6S	2	-	pc.	
108×88,9×108	156	135	79	72	1611260006		620451.7S	2	-	pc.	

coil bar pipes in tube bag carton box pallet

* custom-made - lead time max 4 weeks | ** availability as agreed | *** while stock lasts

Nipple reducer

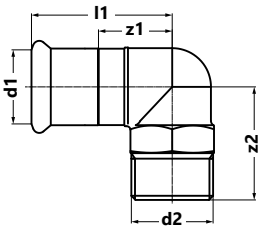
GROUP: G



Size	l1	l2	z1	z2	New code	*	Code			UM	Price EUR/UM
28×22	29	34	8	11	1611220003		6191174S	10	80	pc.	
35×22	29	42	8	16	1611220004		6191196S	5	50	pc.	
35×28	31	38	8	12	1611220005		6191207S	5	60	pc.	
42×22	33	53	12	23	1611220006		6191218S	4	24	pc.	
42×28	31	51	8	21	1611220007		6191229S	4	24	pc.	
42×35	34	42	8	12	1611220008		6191231S	4	24	pc.	
54×22	33	66	12	31	1611220009		6191240S	4	16	pc.	
54×28	34	62	11	27	1611220010		6191251S	4	16	pc.	
54×35	34	60	8	24	1611220011		6191262S	4	16	pc.	
54×42	40	55	10	20	1611220012		6191273S	4	16	pc.	
76,1×42	79	72	49	17	1611220013		620421.1S	2	-	pc.	
76,1×54	42	98	7	43	1611220014		620422.0S	2	-	pc.	
88,9×54	42	114	7	51	1611220015		620423.1S	2	-	pc.	
88,9×76,1	68	88	13	25	1611220016		620424.2S	2	-	pc.	
108×54	66	138	31	61	1611220000		620425.3S	2	-	pc.	
108×76,1	69	127	14	50	1611220001		620426.4S	2	-	pc.	
108×88,9	77	113	14	36	1611220002		620427.5S	2	-		

Male elbow 90°

GROUP: G



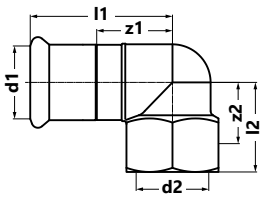
Size	l1	z1	z2	New code	*	Code			UM	Price EUR/UM
22 R¾"	49	28	39	1611070000		6190899S	10	60	pc.	
28 R1"	53	30	46	1611070001		6190901S	10	30	pc.	
35 R1¼"	60	34	52	1611070002		6190910S	5	20	pc.	
42 R1½"	69	39	58	1611070003		6190921S	2	16	pc.	
54 R2"	82	47	68	1611070004		6190932S	2	8	pc.	

coil bar pipes in tube bag carton box pallet

* custom-made - lead time max 4 weeks | ** availability as agreed | *** while stock lasts

Female elbow 90°

GROUP: G



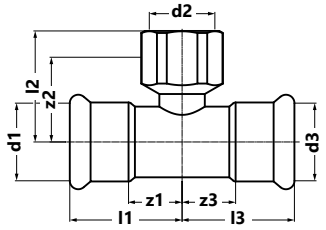
Size	l1	l2	z1	z2	New code	*	Code			UM	Price EUR/UM
22 R½"	49	33	28	17	**1611068001**		**6198456S**	10	50	pc.	
22 Rp¾"	55	37	32	24	**1611068000**		**6190844S**	10	50	pc.	
28 R½"	62	42	36	27	**1611068006**		**6198467S**	10	30	pc.	
28 Rp¾"	45	31	24	16	**1611068003**		**6198478S**	10	30	pc.	
28 Rp1"	48	35	25	20	**1611068002**		**6190855S**	10	30	pc.	
35 Rp½"	51	35	28	19	**1611068008**		**6198489S**	5	10	pc.	
35 Rp¾"	56	35	30	20	**1611068005**		**6198491S**	5	10	pc.	
35 Rp1"	58	37	32	21	**1611068007**		**6198500S**	5	10	pc.	
35 Rp1¼"	58	41	32	28	**1611068004**		**6190866S**	5	10	pc.	

coil bar pipes in tube bag carton box pallet

* custom-made - lead time max 4 weeks | ** availability as agreed | *** while stock lasts

Female tee

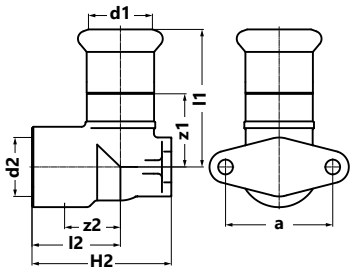
GROUP: G



Size	l1/l3	l2	z1/z3	z2	New code	*	Code			UM	Price EUR/UM
22 Rp½"	40	37	19	27	1611257010		6191625S	10	40	pc.	
22 Rp¾"	40	39	19	28	1611257011		6191636S	10	40	pc.	
28 Rp½"	45	40	22	30	1611257012		6191647S	5	30	pc.	
28 Rp¾"	45	42	22	31	1611257014		6191658S	10	30	pc.	
28 Rp1"	51	44	25	34	1611257013		6198599S	10	30	pc.	
35 Rp½"	51	46	25	35	1611257015		6191669S	5	20	pc.	
35 Rp¾"	60	46	30	36	1611257017		6191671S	5	20	pc.	
35 Rp1"	60	48	30	37	1611257016		6198601S	5	20	pc.	
42 Rp½"	71	52	36	42	1611257018		6191680S	4	16	pc.	
42 Rp¾"	71	65	36	47	1611257020		6191691S	4	12	pc.	
42 Rp1"	71	54	36	43	1611257019		6198610S	4	12	pc.	
54 Rp½"	45	46	22	33	1611257021		6191702S	2	8	pc.	
54 Rp¾"	51	50	25	37	1611257023		6191724S	2	8	pc.	
54 Rp1"	60	52	30	39	1611257022		6198621S	2	8	pc.	
54 Rp2"	71	58	36	45	1611257024		6191713S	2	6	pc.	
76,1 Rp¾"	116	68	61	55	1611257026		620452.8S	2	-	pc.	
76,1 Rp2"	131	87	68	74	1611257025		620455.0S	2	-	pc.	
88,9 Rp¾"	156	86	79	73	1611257028		620453.9S	2	-	pc.	
88,9 Rp2"	116	81	61	59	1611257027		620456.1S	2	-	pc.	
108 Rp¾"	131	88	68	66	1611257009		620454.1S	2	-	pc.	
108 Rp2"	156	98	79	76	1611257008		620457.2S	2	-	pc.	

Female directly fixed wallplate elbow

GROUP: G



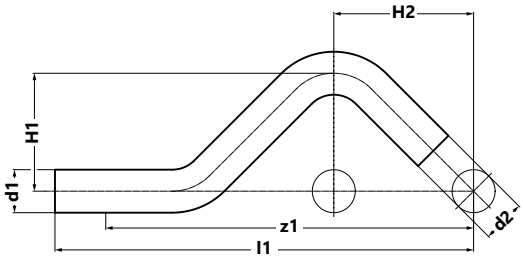
Size	l1	l2	z1	z2	H2	a	New code	*	Code			UM	Price EUR/UM
22 Rp¾" - długie	49	33	28	17	64	40	1611285001		6192010S	10	40	pc.	
22 Rp¾" - krótkie	49	33	28	17	52	40	1611285000		6191823S	10	50	pc.	

coil bar pipes in tube bag carton box pallet

* custom-made - lead time max 4 weeks | ** availability as agreed | *** while stock lasts

Crossover

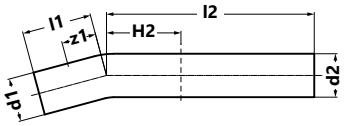
GROUP: G



Size	l1	z1	H1	H2	New code	*	Code			UM	Price EUR/UM
22	178	157	44	65	1611022000		6191108S	10	50	pc.	
28	210	187	50	74	1611022001		6191119S	10	20	pc.	

Bend 15°

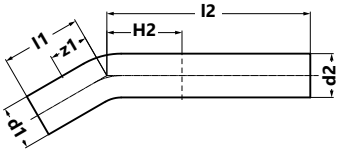
GROUP: G



Size	l1	l2	z1	H2	New code	*	Code			UM	Price EUR/UM
28	45	134	22	48	1611011000		6190008S	10	40	pc.	
35	73	222	47	53	1611011001		6190019S	5	15	pc.	
42	89	280	59	59	1611011002		6191834S	2	20	pc.	
54	122	337	87	67	1611011003		6191845S	2	10	pc.	

Bend 30°

GROUP: G



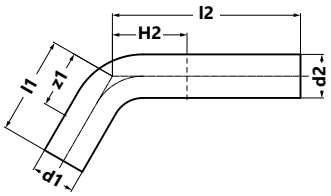
Size	l1	l2	z1	H2	New code	*	Code			UM	Price EUR/UM
28	51	130	28	54	1611011004		6190021S	10	40	pc.	
35	73	214	47	60	1611011005		6190030S	4	12	pc.	
42	99	272	69	69	1611011006		6191856S	2	20	pc.	
54	134	326	99	79	1611011007		6191867S	2	8	pc.	

coil bar pipes in tube bag carton box pallet

* custom-made - lead time max 4 weeks | ** availability as agreed | *** while stock lasts

Bend 60°

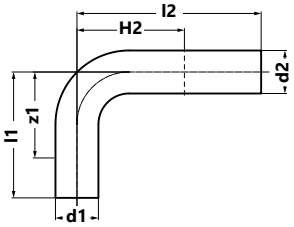
GROUP: G



Size	l1	l2	z1	H2	New code	*	Code			UM	Price EUR/UM
28	63	121	40	66	1611011008		6190184S	5	30	pc.	
35	97	203	71	77	1611011009		6190195S	4	12	pc.	
42	102	256	72	90	1611011010		6191878S	5	5	pc.	
54	162	306	127	107	1611011011		6191889S	2	6	pc.	

Bend 90°

GROUP: G



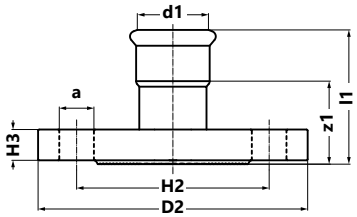
Size	l1	l2	z1	H2	New code	*	Code			UM	Price EUR/UM
22	72	120	51	70	1611011012		6190294S	10	30	pc.	
28	82	120	59	80	1611011013		6190305S	5	20	pc.	
35	120	200	94	100	1611011014		6190316S	4	8	pc.	
42	150	250	120	120	1611011015		6190327S	2	4	pc.	
54	200	300	165	145	1611011016		6190338S	2	2	pc.	

coil bar pipes in tube bag carton box pallet

* custom-made - lead time max 4 weeks | ** availability as agreed | *** while stock lasts

Flange PN16

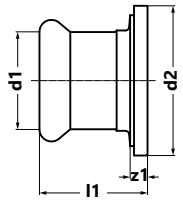
GROUP: G



Size	l1	z1	a	H2	H3	D2	otw.	New code	*	Code			UM	Price EUR/UM
22	59	38	14	75	12	105	4	**1611091004**		**6190778S**	1	12	pc.	
28	65	42	14	85	14	115	4	**1611091005**		**6190789S**	1	12	pc.	
35	69	43	18	100	15	140	4	**1611091001**		**6190791S**	1	6	pc.	
42	77	47	18	110	16	150	4	**1611091006**		**6190800S**	1	4	pc.	
54	87	52	18	125	16	165	4	**1611091007**		**6190811S**	1	2	pc.	
76,1	126	71	18	145	18	185	4	**1611091002**		**620412.1S**	4	-	pc.	
88,9	147	84	18	160	20	200	8	**1611091003**		**620413.2S**	2	-	pc.	
108	167	90	18	180	20	220	8	**1611091000**		**620414.3S**	2	-	pc.	

Flange connector

GROUP: G



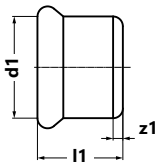
Size	l1	z1	D2	New code	*	Code			UM	Price EUR/UM
22 1¼"	28	7	39	**1611090001**		**6191933S**	20	80	pc.	
22 1½"	28	7	44	**1611090000**		**6191944S**	20	80	pc.	
28 1½"	31	8	44	**1611090002**		**6191955S**	20	80	pc.	
35 2"	33	7	56	**1611090003**		**6191966S**	10	30	pc.	
42 2¼"	37	7	62	**1611090004**		**6191977S**	10	30	pc.	
54 2¾"	44	9	78	**1611090005**		**6191988S**	5	20	pc.	

coil bar pipes in tube bag carton box pallet

* custom-made - lead time max 4 weeks | ** availability as agreed | *** while stock lasts

Stop end

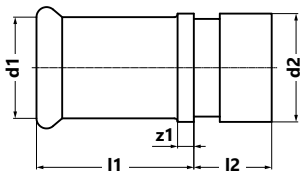
GROUP: G



Size	l1	z1	New code	*	Code			UM	Price EUR/UM
22	24	3	1611250001		6191031S	10	150	pc.	
28	26	3	1611250002		6191042S	10	130	pc.	
35	29	3	1611250003		6191053S	5	75	pc.	
42	37	7	1611250004		6191064S	4	48	pc.	
54	42	7	1611250005		6191075S	4	24	pc.	
76,1	95	40	1611250006		620418.7S	4	-	pc.	
88,9	107	44	1611250007		620419.8S	4	-	pc.	
108	127	50	1611250000		620420.9S	4	-	pc.	

Coupling Inox Sprinkler/Groove

GROUP: G



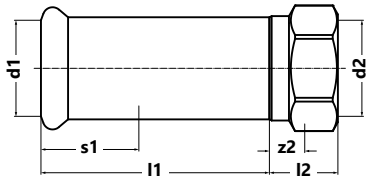
Size	l1	l2	z1	New code	*	Code			UM	Price EUR/UM
28×33,7	49	24	26	1611042014	**	619855.5S	10	30	pc.	
35×42,4	54	24	28	1611042015	**	619856.6S	10	30	pc.	
42×48,3	61	24	31	1611042016	**	619857.7S	5	20	pc.	
54×60,3	73	24	38	1611042017	**	619858.8S	5	15	pc.	
76,1×76,1	76	24	21	1611042019	**	6193319S	2	-	pc.	
88,9×88,9	86	24	23	1609042036	**	6193321S	2	-	pc.	
108×114	84	26	7	1609042029	**	6193330S	2	-	pc.	

coil bar pipes in tube bag carton box pallet

* custom-made - lead time max 4 weeks | ** availability as agreed | *** while stock lasts

Female slip connector

GROUP: G



Size	l1	l2	z2	s1	New code	*	Code			UM	Price EUR/UM
22 Rp½"	70	19	15	21	1611042020	**	619851.1S	10	60	pc.	
22 Rp¾"	70	24	17	21	1611042021	**	619852.2S	10	60	pc.	
28 Rp½"	70	21	15	23	1611042022	**	619853.3S	10	40	pc.	
28 Rp¾"	70	21	17	23	1611042023	**	619854.4S	10	40	pc.	

O-Ring LBP EPDM

GROUP: I

Size	New code	*	Code			UM	Price EUR/UM
22	1509182024		-	20	500	pc.	
28	1509182025		-	20	400	pc.	
35	1509182026		-	20	400	pc.	
42	1509182027		-	20	300	pc.	
54	1509182028		-	20	300	pc.	

O-Ring EPDM

GROUP: I

Size	New code	*	Code			UM	Price EUR/UM
76,1	1609182023		-	5	100	pc.	
88,9	1609182024		-	5	100	pc.	
108	1609182025		-	5	50	pc.	

coil bar pipes in tube bag carton box pallet

* custom-made - lead time max 4 weeks | ** availability as agreed | *** while stock lasts

Flexible hose with straight ending

GROUP: I

Size	New code	*	Code			UM	Price EUR/UM
Rp½"×Ø22 1000	1611289001	**	619800.5S	-	10	pc.	
Rp½"×Ø22 1500	1511289005	**	619802.7S	-	10	pc.	
Rp½"×Ø22 2000	1511289006	**	619803.8S	-	10	pc.	
Rp½"×Ø28 1000	1511289007	**	619804.9S	-	10	pc.	
Rp½"×Ø28 1500	1511289008	**	619806.0S	-	10	pc.	
Rp½"×Ø28 2000	1511289009	**	619807.1S	-	10	pc.	

Flexible hose with angle ending

GROUP: I

Size	New code	*	Code			UM	Price EUR/UM
Rp½"×Ø22 800	1511289000	**	619808.2S	-	10	pc.	
Rp½"×Ø22 1000	1611289000	**	619809.3S	-	10	pc.	
Rp½"×Ø22 1500	1511289001	**	619811.5S	-	10	pc.	
Rp½"×Ø28 800	1511289002	**	619813.7S	-	10	pc.	
Rp½"×Ø28 1000	1511289003	**	619814.8S	-	10	pc.	
Rp½"×Ø28 1500	1511289004	**	619816.1S	-	10	pc.	

coil bar pipes in tube bag carton box pallet

* custom-made - lead time max 4 weeks | ** availability as agreed | *** while stock lasts

Tools

Pipe cutter

GROUP: K

Size	New code	*	Code			UM	Price EUR/UM
12-54	1948267025		113000	-	1	pc.	
35-108	1948267027		113100	-	1	pc.	

Replacement cutiing wheel

GROUP: K

	New code	*	Code			UM	Price EUR/UM
	1941267037		341614	-	1	pc.	

REMS Cento pipe cutting machine

GROUP: K

Size	New code	*	Code			UM	Price EUR/UM
22-108	1948183001		845002	-	1	pc.	

Note:
Cutting wheel included.

coil bar pipes in tube bag carton box pallet

* custom-made - lead time max 4 weeks | ** availability as agreed | *** while stock lasts

Duecento pipe support

GROUP: K

	New code	*	Code			UM	Price EUR/UM
	1948267029		845220	-	1	pc.	

Deburrer for pipes

GROUP: K

Size	New code	*	Code			UM	Price EUR/UM
22-54	1948267015		113835	-	1	pc.	

Press tool Novopress ACO203XL

GROUP: K

Size	New code	*	Code			UM	Price EUR/UM
22-108	1948267181		-	-	1	pc.	

Set consists of:
- Battery 18 V/ 3.0 Ah Li-Ion Milwaukee - 2 pcs.
- Charger - 1 pc.
- Grease - 1 pc.
- Plastic case

coil bar pipes in tube bag carton box pallet

* custom-made - lead time max 4 weeks | ** availability as agreed | *** while stock lasts

PB2 Press jaws „M" profile for Novopress ACO203XL

GROUP: K

Size	New code	*	Code			UM	Price EUR/UM
22	1948267139		43590-50	-	1	pc.	
28	1948267141		43591-50	-	1	pc.	

Press tool Novopress ECO301

GROUP: K

Size	New code	*	Code			UM	Price EUR/UM
22-54 mm	1948267163	***	620570.5	-	1	pc.	

PB3 Press jaws „M" profile for Novopress ECO301

GROUP: K

Size	New code	*	Code			UM	Price EUR/UM
22	1948267164	***	620575.1	-	1	pc.	
28	1948267165	***	620576.0	-	1	pc.	

coil bar pipes in tube bag carton box pallet

* custom-made - lead time max 4 weeks | ** availability as agreed | *** while stock lasts

Collars HP Snap On for Novopress for Novopress ACO203XL and ECO301

GROUP: K

Size	New code	*	Code			UM	Price EUR/UM
35	1948267124		634106.0	-	1	pc.	
42	1948267126		634107.1	-	1	pc.	
54	1948267128		634108.2	-	1	pc.	

Note:
Jaws for diameters 35 - 54 mm with ECO301 press tool must be used with ZB303 adapter.
Jaws for diameters 35 - 54 mm with ACO203XL and EFP203 press tools must be used with ZB 203 adapter.

ZB203 Novopress adapter for ACO203XL

GROUP: K

Size	New code	*	Code			UM	Price EUR/UM
35-54	1948267000		43610-50	-	1	pc.	

ZB303 Novopress adapter for ECO301 press tool

GROUP: K

Size	New code	*	Code			UM	Price EUR/UM
35-54	1948267166	***	634111.5	-	1	pc.	

coil bar pipes in tube bag carton box pallet

* custom-made - lead time max 4 weeks | ** availability as agreed | *** while stock lasts

Battery Novopress ACO403 press tool

GROUP: K

Size	New code	*	Code			UM	Price EUR/UM
76,1-108	1948267209		-	-	1	pc.	

Set consists of:
- Battery 18 V/ 3.0 Ah Li-Ion Milwaukee - 2 pcs.
- Charger - 1 pc.
- Grease - 1 pc.
- Plastic case

Battery Novopress ACO401 press tool

GROUP: K

Size	New code	*	Code			UM	Price EUR/UM
76,1-108	1948267151	***	634008.1	-	1	pc.	

HP collar Novopress for ACO401 and ACO403 press tool

GROUP: K

Size	New code	*	Code			UM	Price EUR/UM
76,1	1948267100		634009.2	-	1	pc.	
88,9	1948267102		634010.3	-	1	pc.	
108	1948267098		634011.4	-	1	pc.	

Note:
Collars for Novopress ACO401 and ACO403 tools.

coil bar pipes in tube bag carton box pallet

* custom-made - lead time max 4 weeks | ** availability as agreed | *** while stock lasts

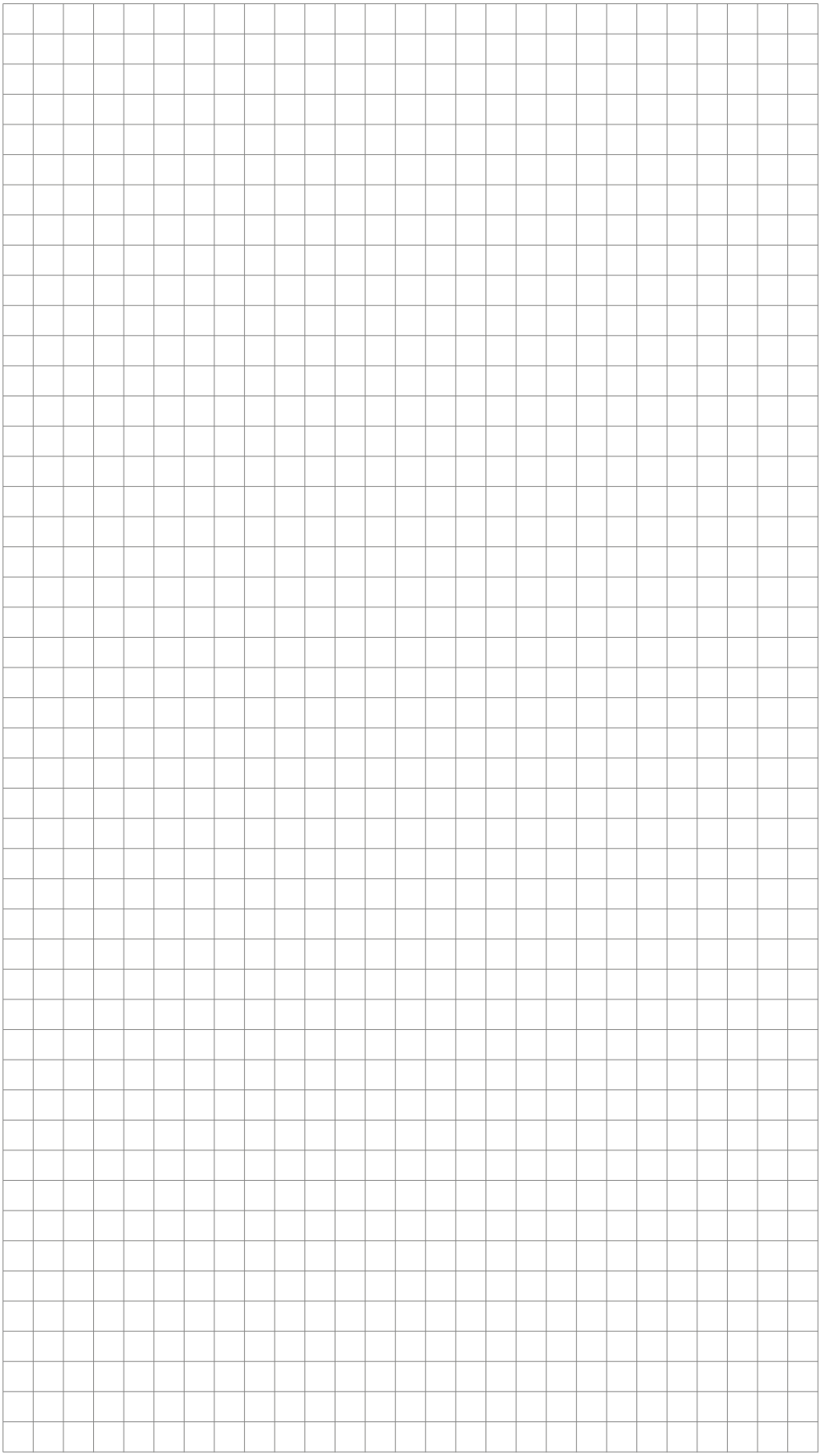
New code index

New code index

Old code index

Old code index

NOTE



NOTE

SYSTEM **KAN-therm**

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