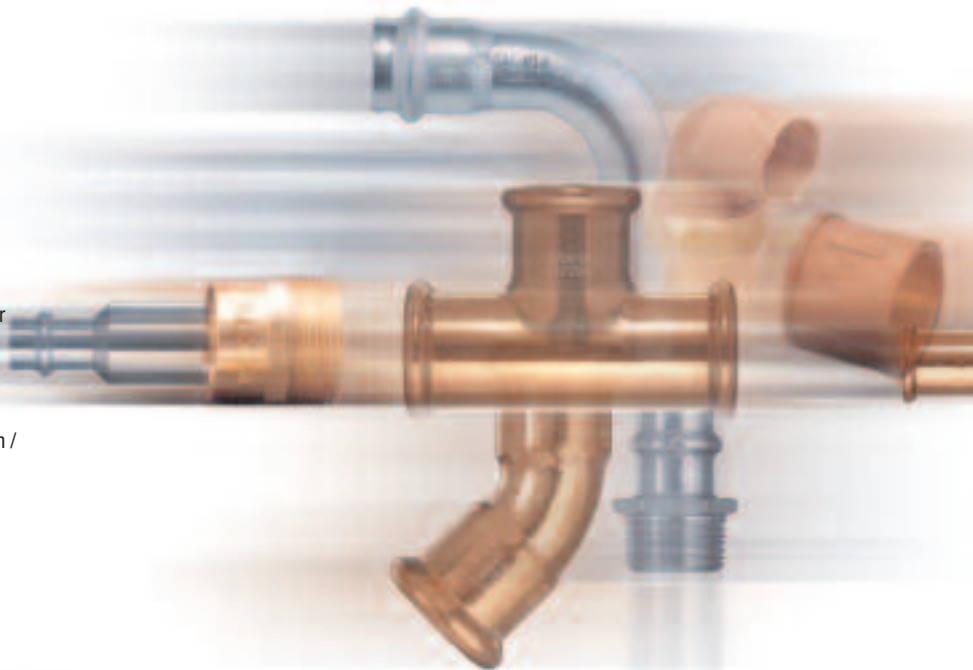


## SISÄLLYS / INNEHÅLL / CONTENT

- Tekniset tiedot / Teknisk information / Technical Information
- Putki-yhdeyhdistelmä / Rördelskombinationer / Fitting combinations
- Järjestelmäputket / Systemrör / System piping
- **NiroSan**® Haponkestävät puristeosat / **NiroSan**® presskopplingar i rostfritt syrafast stål / **NiroSan**® pressfittings in stainless steel
- Kuparista ja punametallista **SANHA**® puristusliittimet / **SANHA**® presskopplingar av koppar och rödgods / **SANHA**® pressfittings of copper and bronze
- **SANHA**®-**Therm** puristusjärjestelmä / **SANHA**®-**Therm** presssystem / **SANHA**®-**Therm** press system
- Muuta / Övrigt / Miscellaneous



## ASENNUSOPAS | MONTERINGSHJÄLP | ASSEMBLY MANUAL

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**SANHA**®

**SANHA**®

**Asennusopas**  
**Monteringshjälp**  
**Installation Assistant**

## Reference:

The technical references listed in this installation assistant serve as general information.

For a professionally implemented installation, observation of a **SANHA**, currently used specialized manual and/or the current technical information is absolutely necessary.

This installation assistant is only an excerpt of the current **SANHA** specialized manual and/or the current technical information.

The listed measurement data of the

z-dimensions and press fitting combinations are subject to manufacturing-conditional tolerances. For installation according to the z-dimension method, the necessary current press fitting dimensions are always to be obtained beforehand by the user.

**SANHA**, reserves the right to technical changes.

The **SANHA**, application consultation is available to you for technical inquiries 01494 / 484255.

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


## 1. Press connection

In the press fitting technology, a form-fitting connection is manufactured by common radial deformation of fittings and pipe. An additionally inserted ring gasket made of elastic polymer ensures the sealing function against leaks of the conducted medium. The special features of both the **SANHA**<sup>®</sup>, press fittings of copper and copper alloys and the **NiroSan**<sup>®</sup> press systems of stainless steel are the construction and manufacture of the socket couplings. They enable reliable processing and ensure a

permanently sealed connection. With both systems, the main feature in the development was that all pressing jaws employed for press connections, Type M-MM (mechanical connector of metal for metal pipes) and pressing tools can be approved. This applies in particular from the viewpoint of security. For the craftsman this means that there is no loss of the system guarantee due to a change of the pressing jaws in case of utilization of **SANHA**<sup>®</sup> products - which is different from products by other manufacturers.



# NiroSan® press fitting system

Quick reference guide to **NiroSan®** press fitting system of stainless steel, Material No. 1.4404

Field of application	Dim./Nominal pressure	Seal	Tool
<b>NiroSan®-Press</b> (Series 9000) <ul style="list-style-type: none"> <li>- Drinking water</li> <li>- Processed water</li> <li>- Heating system</li> <li>- Cooling water</li> <li>- Condensate</li> <li>- Utility and rain water</li> </ul>	d = 15 - 22 mm PN 40 d = 28 - 35 mm PN 25 d = 42 - 108 mm PN 16	<b>EPDM</b> Color: black Max. continuous temp.: -30°C up to 120°C (short time up to 150°C) Requirements according to KTW satisfied	d = 15 - 54 mm Free selection of pressing tools and jaws and/or slings (see chapter 1.7) d = 76.1 - 108 mm ECO 3/ECO 301/HCP (see chapter 1.7)
<b>NiroSan®-Press Gas</b> (Series 17000) <ul style="list-style-type: none"> <li>- Flammable gases according to DVGW G 260 and G 262</li> </ul>	d = 15 - 108 mm PN 5 / GT 5 Underground laying not admissible 	<b>HNBR</b> Color: yellow Max. continuous temp.: -20°C to 70°C Requirements according to DVGW VP 614 satisfied	d = 15 - 54 mm Free selection of pressing tools and jaws and/or slings (see chapter 1.7) d = 76.1 - 108 mm ECO 3/ECO 301/HCP (see chapter 1.7)
<b>NiroSan®-Press Industry</b> (Series 18000) <ul style="list-style-type: none"> <li>- Compressed air</li> <li>- Solar thermal power</li> <li>- Cooling water</li> <li>- Bulk goods</li> <li>- Applications in industry</li> </ul>	d = 15 - 22 mm PN 40 d = 28 - 35 mm PN 25 d = 42 - 108 mm PN 16 	<b>Special sealing ring</b> Color: red Max. continuous temp.: -20°C to 200°C (according to medium) Solar thermal power up to 200°C (short time up to 280°C) Resistant against oils and water-glycol mixture	d = 15 - 54 mm Free selection of pressing tools and jaws and/or slings (see chapter 1.7) d = 76.1 - 108 mm ECO 3/ECO 301/HCP (see chapter 1.7)
<b>NiroSan®-Press SF</b> (Series 19000) <ul style="list-style-type: none"> <li>- Applications, which must be free of paint-wetting disturbing substances (automobile industry, paint industry, paint work, aircraft industry, etc.)</li> </ul>	d = 15 - 22 mm PN 40 d = 28 - 35 mm PN 25 d = 42 - 108 mm PN 16 	<b>Spezialdichtring</b> Max. continuous temp.: -20°C to 200°C (according to medium) Solar thermal power to 200°C (short time up to 280°C) Resistant against oils and water-glycol mixture	d = 15 - 54 mm Free selection of pressing tools and jaws and/or slings (see chapter 1.7) d = 76.1 - 108 mm ECO 3/ECO 301/HCP (see chapter 1.7)
<b>Materials:</b> Fittings from pipe: Threaded fittings: Stainless steel parts: Pipes: Pipe inside surface:	Material No.: 1.4404 according to EN 10088 Material No.: 1.4571 according to EN 10088 Material No.: 1.4408 according to EN 10283 Material No.: 1.4404 according to EN 10088 Pipe dimensions according to EN 10312 and DVGW-GW 541 bright-annealed and solution-heat-treated, strength limited in upper values according to EN 10312, free of harmful component parts and according to the special requirements of GW DVGW - Code of Practice 541		

## 1.2. SANHA® press fittings of copper and copper alloys

Quick reference guide to **SANHA®** press fittings of copper and copper alloys

Field of application	Dim./Nominal pressure	Seal	Tool
<b>SANHA®-Press</b> (Series 6000/8000)  – Drinking water – Heating system – Cooling water – Utility and rain water	d = 12 – 108 mm PN 16  Fittings without additional colored exterior identification	<b>HNBR</b> Max. continuous temp.: -30°C up to 120°C (short time up to 150°C) Requirements according to KTW satisfied	d = 12 – 54 mm selection of pressing tools and jaws and/or slings (see chapter 1.7) d = 64 - 108 mm ECO 3/ ECO 301 (see chapter 1.7)
<b>SANHA®-Press Gas</b> (Series 10000/11000)  – Flammable gases according to G DVGW 260	d = 12 – 54 mm PN 5 / GT 5  Soil transfer not admissible  	<b>HNBR</b> Color: yellow Max. continuous temp.: -20°C up to 70°C  Requirements met to DVGW VP in 614 satisfied	d = 12 – 54 mm free selection of pressing tools and jaws and/or slings (see chapter 1.7)
<b>SANHA®-Press Solar</b> (Series 12000/13000)  – Solar thermal power – Cooling water – Compressed air – Applications in industry	d = 12 – 54 mm PN 16  	<b>Specialesealing ring</b> colour :red Max. contious temp.: -20 °C bis 200 °C (depends on medium) Solar thermal power up to 200 °C (short time up to 280 °C) Resistant against oils and water-glycol mixture	d = 12 – 54 mm free selection of pressing tools and jaws and/or slings (see chapter 1.7)
<b>Materials:</b> Copperfittings:  Fittings of copper alloys:  Pipes:	Material No.: CW024A (Cu-DHP) according to EN 1254  Material No.: CC491 (CuSn5Zn5Pb5-C) according to EN 1282 with restrictions in accordance with DIN 50930-6  Material No.: CW024A (Cu-DHP) according to EN 1057 (See table in Chapter 1.5 "Approved copper pipes")		

### 1.3. NiroTherm® press system


Quick reference guide **NiroTherm®** press systems of rustproof steel  
(not suitable for drinking water)

Field of application	Dim./Nominal pressure	Seal	Tool
<b>NiroTherm®</b> – Heating system – Cooling water – Condensate – Compressed air – Industry	d = 15 - 22 mm PN 40 d = 28 - 35 mm PN 25 d = 42 - 108 mm PN 16 Provide pipes with red longitudinal strip	<b>EPDM</b> Color: black Max. continuous temp -30°C to 120°C (short-term to 150°C)	d = 12 - 54 mm free selection of presses and jaws and/or loops (see chapter 1.7)  d = 64 - 108 mm ECO 3/ECO 301/HCP (see chapter 1.7)
<b>Materials:</b> Fittings from pipe: Threaded fitting's: Stainless steel parts:  Pipes:  Pipe inside surface:	Material No.: 1.4404 according to EN 10088 Material No.: 1.4571 according to EN 10088 Material No.: 1.4408 according to EN 10283  Material-No.: 1.4301 according to EN 10088 Pipe dimensions according to EN 10312 Clean and solution-heat-treated, strength limited to upper value Marked with red longitudinal stripe and (among other things) the labeling heating, compressed air  According to EN 10312, Free from harmful component parts		

The **NiroTherm®** system pipe can also be connected directly with the **SANHA®**-Therm press fittings.

## 1.4. SANHA®-Therm pressing systems

Quick reference guide **NiroTherm®** pressing systems of unalloyed steel and **SANHA® Therm** press fittings (not suitable for drinking water)

Field of application	Dim./Nominal pressure	Seal	Tool
<b>SANHA®-Therm</b> – Heating system – Cooling water – Compressed air (dry) – Industry	d = 15 – 108 mm PN 16 	<b>EPDM</b> Color: black Max. continuous temp -30°C to 120°C (short-term up to 150°C)	d = 12 - 54 mm: free selection of presses and jaws and/or loops (see chapter 1.7)  d = 78.1 - 108 mm ECO 3/ECO 301 (see chapter 1.7)
<b>Materials:</b> Copper fittings:  Fittings of copper alloys:  Pipes:	Material-N.: CW024A (Cu-DHP) according to EN 1254 Outside and inside surface refined  Material No.: CC491 (CuSn5Zn5Pb5 C) according to EN 1282 Exterior and inside surface refined  Material No.: 1.0034 (E 195) galvanized according to EN 10305 Pipe dimensions according to EN 10312 Externally zinc galvanized, layer thickness between. 7 - 15 µm		

The **NiroTherm®** press fittings can also be connected directly with the **SANHA® Therm** system pipe.

## 1.5 Approved copper pipes

Quick reference guide for connecting the **SANHA®** press fittings of copper and copper alloys of copper pipes approved according to EN 1057. For the manufacture of the pressed connection with the copper pipes listed in the following table, support sleeves are not required!

D (mm)	Outer diameters and wall thicknesses correspond to EN 1057, Table 3										
	S (mm)										
	0,6	0,7	0,8	0,9	1,0	1,1	1,2	1,5	2,0	2,5	3,0
12	X	X	X		X						
14		X	X		X						
15		X	X		X		X	X			
16			X		X		X				
18			X		X		X	X			
22				X	X	X	X	X			
28				X	X		X	X			
35					X	X	X	X	X		
42					(1)	(1)	X	X			
54						(1)	X	X			
64								X			
66,7								X			
76,1								X	X	X	
88,9									X	X	X
108							(2)	(2)	X	X	X

(1) Only with pressing jaws and slings, whose pressing tracks are cleaned and lubricated.

(2) Only with "Copper only" press sling (SANHA® Type No.: 16934)

## 1.6. Areas of application

An overview of the areas of application is included in the following table. For the selection of the piping system for the area of application, both the requirements of

the operator on the pipe system, as well as the respective national regulatory works are to be considered. Further applications can be requested from our application consultation.

Designation	SANHA® Products for pressing
Drinking water including fire-extinguishing water	<b>NiroSan®-Press</b> pressing system (Series 9000), <b>SANHA®-Press</b> press fittings from copper and red brass (Series 6000/8000)
Processed water	<b>NiroSan®-Press</b> pressing system (Series 9000), <b>SANHA®-Press</b> press fittings from copper and red brass (Series 6000/8000)
Rainwater	<b>NiroSan®-Press</b> System (Series 9000), <b>SANHA®-Press</b> press fittings from copper and red brass (Series 6000/8000)
Heating system	<b>NiroSan®-Press</b> pressing system (Series 9000), <b>SANHA®-Press</b> press fittings from copper and red brass (Series 6000/8000), <b>NiroTherm®</b> pressing system, <b>NiroTherm®</b> system pipe and <b>SANHA®-Therm</b> press fittings, <b>SANHA®-Therm</b> system pipe and press fittings
Cooling water	<b>NiroSan®-Press</b> pressing system (Series 9000), <b>SANHA®-Press</b> Systemfittings (Series 6000/8000), <b>NiroTherm®</b> pressing system, <b>NiroTherm®</b> system pipe and <b>SANHA®-Therm</b> press fittings, <b>SANHA®-Therm</b> system pipe and press fittings
Solar thermal power	<b>NiroSan®-Press</b> pressing system (Series 18000), <b>SANHA®-Press</b> press fittings from copper and red brass (Series 12000/13000)
Compressed air	<b>NiroSan®-Press</b> pressing system (Series 18000), <b>SANHA®-Press</b> press fittings from copper and red brass (Series 12000/13000)
	WITH RESTRICTION <b>NiroSan®-Press</b> pressing system (Series 9000), <b>SANHA®-Press</b> press fittings from copper and red brass (Series 6000/8000), <b>NiroTherm®</b> pressing system, <b>NiroTherm®</b> system pipe and <b>SANHA®-Therm</b> press fittings, <b>SANHA®-Therm</b> system pipe and press fittings
Technical Gases (not medical)	<b>NiroSan®-Press</b> pressing system (Series 9000), <b>SANHA®-Press</b> press fittings from copper and red brass (Series 6000/8000), <b>NiroTherm®</b> pressing system, <b>NiroTherm®</b> system pipe and <b>SANHA®-Therm</b> press fittings, <b>SANHA®-Therm</b> system pipe and press fittings

## Continuation

Designation	SANHA® Products for the pressing
Technical vacuum	<b>NiroSan®-Press</b> pressing system, Series 9000, <b>SANHA®-Press</b> press fittings from copper and red brass (Serie 6000/8000), <b>NiroTherm®</b> pressing system, <b>NiroTherm®</b> system pipe and <b>SANHA®-Therm</b> press fittings, <b>SANHA®-Therm</b> system pipe and press fittings
Heating oil and diesel	<b>NiroSan®-Press</b> pressing system (Serie 18000), <b>SANHA®-Press</b> press fittings from copper and red brass (Serie 10000/11000)
Natural gas	<b>NiroSan®-Press</b> pressing system (Serie 17000), <b>SANHA®-Press</b> press fittings from copper and red brass (Serie 10000/11000)
Liquefied gas	<b>NiroSan®-Press</b> pressing system (Serie 17000), <b>SANHA®-Press</b> press fittings from copper and red brass (Serie 10000/11000)
Exhaust gas condensate	<b>NiroSan®-Press</b> pressing system (Serie 18000)
Vapor condensate	<b>NiroSan®-Press</b> pressing system (Serie 9000), <b>NiroSan®</b> pressing system
Wet, sprinkler	<b>NiroSan®-Press</b> pressing system (Serie 9000), <b>NiroSan®-Press</b> pressing system (Serie 18000)
Dry, sprinkler	<b>NiroSan®-Press</b> pressing system (Serie 18000)
Industr. applications	(on request)
Industr. applications, Free of paint wetting-disturbing substances	(on request)

## 1.7. Suitable and recommended pressing tools

For the **NiroSan**<sup>®</sup> pressing systems, the **NiroTherm**<sup>®</sup> pressing system, the **SANHA**<sup>®</sup>-**Therm** press fittings and the **SANHA**<sup>®</sup> press fittings of copper and copper alloys, the following pressing tools listed below, subject to observation of the maintenance and maintenance references, are suitable for the manufacture of a permanently sealed press connection.

Both pressing jaws - which wear off automatically in the course of operation - as well as press tools, must be accordingly subject to regular functional checks. Basically, all pressing jaws, as well as all pressing tools, should go through maintenance at least once a year, provided that no other maintenance intervals are stipulated by the manufacturer.

In order to achieve a permanent and secure press fit, pressing tools can be employed up to and including the dimension 54 mm, which generate a linear pressure of at least 30 kN during the pressing. If significantly higher linear pressures occur (e.g. above 34 kN), the pressing jaws could be damaged (caution, danger of injury!).

For the preparation of the press connections, all traditional pressing jaws and slings, up to and including the dimension 54 mm

of the Type M-MM (mechanical connectors of metal for metal lines), can be employed. On the construction site it is unavoidable that pressing jaws and slings get dirty. In the same way, a coating consisting of metal abrasion residue is formed on the surface of the press contour with time, such that the friction between the metal surface of the fittings and the surface of the pressing jaw significantly increases. This coating can be removed, for example, with a metal-free fibrous mat (Catalog No. 961) in connection with a solvent, such as denatured alcohol. Furthermore, the hinge points are to be oiled in order to decrease the wear in the area of the pins. Following this, the entire jaw is to be sprayed with a rust and corrosion protection. In case of press slings, graphite oil is to be sprayed in addition between slide segments and press clamps. The segments must always be able to slide freely. Finally, in case of pressing jaws and intermediate jaws for electronically controlled pressing tools (Catalog No. 6920 and/or 6931), the contacts are to be cleaned.

A prerequisite is that, in case of all pressing tools and jaws or slings employed, a regular maintenance and/or verification has been carried out.

Suitable conventional pressing tools for the **NiroSan**<sup>®</sup>-pressing system, the **NiroTherm**<sup>®</sup>-pressing system, the **SANHA**<sup>®</sup>-**Therm** press fittings and the **SANHA**<sup>®</sup> press fittings of copper and copper alloys

#### Usable conventional pressing tools, up to d = 54 mm

All pressing tools are suitable which satisfy the following requirements:

- Minimum pressing force: 30 kN
- Mandatory throughput control:
  - After the pressing procedure has been introduced, it must be ensured that the machine cannot be withdrawn from a possibly incompletely pressed-on connection point, without further measures (actuation of an emergency switch or similar).
 Alternatively, the manufacturer can verify the suitability of the pressing tool through certification by a recognized testing institute.
- Bolt diameter of the pressing clamp retainer: 14 mm
- Minimum width of the pressing clamp retainer: 33 mm

For

<b>example: SANHA</b> <sup>®</sup>	<b>SANHA</b> <sup>®</sup> -ECO 1/ECO 201, mains power (Catalog No. 6902, 6903), <b>SANHA</b> <sup>®</sup> -ACO 1/ACO 201, rechargeable battery operation (Catalog No. 6908, 6909), <b>SANHA</b> <sup>®</sup> -EFP 201, mains power (Catalog No. 6915, 6916),
<b>Geberit</b>	Mapress electromechanical pressing tool, Type EFP 2, Mapress ECO 1/ECO 201 or ACO 1/ACO 201, Geberit pressing machine PWH 75,
<b>Viega</b>	Viega system press-on tool Type 2, Viega system press-on tool Type PT3-H, Viega rechargeable battery press hand-held unit, Viega rechargeable battery press machine REC SAN (up to 22 mm),
<b>REMS</b>	REMS Power press machine, REMS rechargeable battery press machine,
<b>Roller</b>	ROLLER'S Uni-Press 2000 main machine, ROLLER'S Multi-Press 2000 rechargeable battery press machine,
<b>Rothenberger</b>	Romax Pressliner, Vario-Press 1000 APC, Romax Pressliner ECO, Romax AC ECO,
<b>Holger Clasen</b>	Rechargeable battery pressing hand-held unit APH,
<b>Klauke</b>	UAP 2,
<b>RIDGID</b>	RP 10-B/S, PT 2 – H,
<b>VIRAX</b>	Viper P 20+, Viper P 21+

Usable pressing jaws and slings to d = 54 mm		(Continuation)
- Pressing jaws and slings are suitable for connections of M-MM type with - <b>SANHA</b> ®, <b>Mapress</b> - or <b>Viega</b> -profile (Note: It is an requirement that all measurements of the press contour incl. all tolreances must be in accordance with the original press profiles)		
<b>For example: SANHA</b> ®		
	Service Plus pressing jaws and slings 12 mm - 54 mm (Catalog No. 6940, 6930, 6932), Standard pressing jaws 12 mm - 54 mm (Catalog No. 6958),	
<b>Geberit</b>	Mapress pressing jaws 12 mm - 54 mm, Mapress pressing slings 42 mm - 54 mm,	
<b>Viega</b>	Viega pressing jaw for Profipress and Sanpress 12 mm - 54 mm	
<b>REMS</b>	REMS pressing clamps V 12 mm - 54 mm, M 12 mm - 35 mm, SAT 12 mm - 35 mm	
<b>Roller</b>	ROLLER'S pressing clamps V 12 mm - 54 mm, M 12 mm - 35 mm, SAT 12 mm - 35 mm	
<b>Rothenberger</b>	Vario-Press pressing jaws V 12 mm - 54 mm, M 12 mm - 54 mm	

Suitable electronic pressing tools for the **NiroSan**<sup>®</sup>-pressing system, the **NiroTherm**<sup>®</sup>-pressing system, the **SANHA**<sup>®</sup>-**Therm** press fittings and that **SANHA**<sup>®</sup> press fittings of copper and copper alloys

Usable electronically controlled pressing tools, up to d = 54 mm and/or d = 108 mm	
For example: <b>SANHA</b> <sup>®</sup>	<p><b>SANHA</b><sup>®</sup>-EFP 3, electronic pressing tools, mains operation, for dimensions 12 mm - 54 mm,</p> <p><b>SANHA</b><sup>®</sup>-AFP 3, electronic pressing tools, rechargeable battery operation, for dimensions 12 mm - 54 mm,</p> <p><b>SANHA</b><sup>®</sup>-ECO 3/ECO 301, electronic pressing tools, mains operation, for dimensions 12 mm - 108 mm (Catalog No. 6900, 6901),</p> <p><b>SANHA</b><sup>®</sup>-ACO 3, electronic pressing tools, rechargeable battery operation, for dimensions 12 mm - 54 mm (Catalog No. 6904, 6905),</p> <p>Mapress electronic pressing tools Typically EFP 3/AFP 3, ACO 3 (to 54 mm), Mapress type electronic pressing tool ECO 3/ECO 301 for dimensions 12 mm - 108 mm.</p>
Geberit	
Usable pressing jaws and slings for d = 12 mm to d = 108 mm	
For example: <b>SANHA</b> <sup>®</sup>	<p><b>SANHA</b><sup>®</sup> press jaws and slings with intermediate jaw, 12 mm, - 54 mm (Catalog No. 6920, 6931.1, 6932) for electronic pressing tools Type EFP 3/AFP 3, ACO 3 and ECO 3/ECO 301,</p> <p><b>SANHA</b><sup>®</sup> press slings and intermediate jaws 64 mm - 108 mm (Catalog No. 6933, 6931.1, 6931.2, 6931.3), electronic <b>SANHA</b><sup>®</sup> or Geberit pressing tool ECO 3/ECO 301</p> <p>Mapress pressing jaws and slings, 12 mm, - 54 mm, for electronic pressing tools Type EFP 3/AFP 3, ACO 3 and ECO 3/ECO 301, Mapress press slings and Intermediate jaws Super Size 76.1 mm - 108 mm only for electronic <b>SANHA</b><sup>®</sup> or Mapress pressing tools ECO 3/ECO 301</p>
Geberit	

Suitable, non-compatible pressing tool for the **NiroSan**<sup>®</sup> pressing systems and the **NiroTherm**<sup>®</sup> pressing system

Other pressing tools for d = 76.1 mm to d = 108 mm	
Geberit	Hydraulic cylinder HCP in connection with hydraulics unit of H5 and HCP press slings

Concerning the usability of presses and jaws and loops not listed in the above tables, our application consultation is available under +49 (0) 2054 925 - 164/165/166 to provide information. The complete technical documents are required for the evaluation of the inquired press.

## 2. Processing directives

### 2.1. Storage and transport of pipes and fittings

In case of storage and transport of pipes and fittings, damage and contamination through e.g. mortar, soil, sludge, rain or dirt water must be avoided.

It is recommended to transport and to store the pipes in a suitable manner. They are to be laid effectively on squared timbers on the loading space of the truck, both during the transport as well as in case of storage. In this way it is assured that the pipes and fittings are stored dry and not placed directly on the ground. Fittings are to be taken from the original packing only directly prior to installation.

### 2.2. Bending of stainless steel, carbon steel and copper pipes

The hot bending of stainless steel pipes is not allowed. Copper pipes in drinking water installations up to dimension 28 mm (inclusive) may not be hot bent.

SANHA®-NiroSan® system pipes up to dimension 28 mm and copper pipes according to EN 1057 must be cold bent with suitable bending tools up to dimension 18 mm.

The system pipe **NiroTherm®** and the **SANHA®-Therm** system pipe can be cold bent up to dimension 28 mm. In this case, a bending radius, measured in the neutral axis of the bend, of at least  $R = 3.5x d$  for **SANHA®** system pipe of stainless steel and unalloyed steel and for copper of at least  $R = 3x d$ , is to be kept.

It is to be ensured that, after the bending, a sufficiently long cylindrical pipe piece is available for further processing. In case of items larger than the above-mentioned dimensions, the manufacturer of the bending device is responsible for a successful bending result.

### 2.3. Cutting of stainless steel, carbon steel and copper pipe

The cutting of stainless steel, carbon steel and copper pipes is implemented preferably with a fine-toothed metal saw or a pipe cutter. If electrically driven saws are employed for the cutting of stainless steel pipes, the cutting speed may be only so high that no annealing colors arise at the interface, in order to avoid a sensitization of the material. If, contrary to expectations, annealing colors should arise, these must be eliminated on the inside and outside surface of the stainless steel pipes. Experience in-



indicates that even a straw-yellow discoloration of the stainless steel can lead to a sensitization of the material. Particularly suitable for the cutting of pipes of stainless steel or copper is the planetary saw RA 21 +GF+, with which the outside cut edges are also deburred simultaneously with the cutting.

The utilization of cutting disks (flexible) or even flame cutter is not permissible for the shortening of stainless steel pipes.

### Caution:

After shortening, the pipe ends are to be carefully deburred inside and outside.

## 2.4. Sealing materials and sealing auxiliary materials

Sealing materials and sealing auxiliary materials may not give off chloride ions in case of utilization of stainless steel pipes and fittings. With the employment of copper pipes and fittings, no ammonium ions may be released.

In drinking water installations, compressed air installations etc. (however not in gas installations according to TRGI and according to TRF), it is recommended to employ a permanently elastic screw thread caulking material instead of the time-consuming hemp-insertion.

## 2.5. Electrical trace heating

Shut off lines which do not possess their own safety systems must not be heated, in order to avoid inadmissible increases of pressure in these areas. In connection with electrical trace heating, it is absolutely necessary that EN 1717 and the state of the art of the technology be observed.

In case of stainless steel lines which are equipped with electrical trace heating, it is to be ensured that the pipe inside-wall temperature does not exceed 60°C for a long period.

Short-term temperature exceedings of approx. 70°C are permissible for the purpose of thermal disinfection. In case of copper lines, there are no temperature restrictions in connection with electrical trace heating, provided that inadmissible increase of pressure is avoided.

## 2.6. Electrical protective measures

Equipotential bonding is to be carried for all electrically conducting pipes. Stainless steel and copper pipes form, with their corresponding fittings (also using press fittings), a continuous electrically conducting connection and the equipotential bonding must be included.

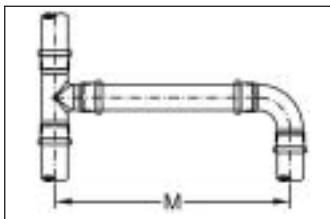
The installer of the electric systems is responsible for the implementation of the electrical protective measures.

## 2.7. Z-dimension method and fitting combinations

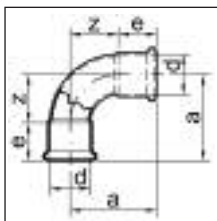
The z-dimension method is a prefabrication method which is described more detailed in the **SANHA**<sup>®</sup> specialist manual.

These z-dimensions of the **SANHA**<sup>®</sup> products can be found on the Internet under: [www.sanha.com/catalog/index.html](http://www.sanha.com/catalog/index.html), the tables of the associated **SANHA**<sup>®</sup> product overview (please request separately). In case of application of the z-dimension method, both planners, as well as fitters, by all means must request the valid z-dimension from the parts' manufacturer.

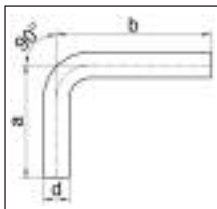
The >center-to-center< measurement method (Illustration 2.1) is the basis of the



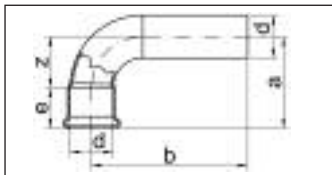
*Illus. 2.1: Measurement method in case of the z-dimension method*



*Illus.2.2: Socket-coupling special fitting*



*Illus. 2.3: Nozzle special fitting*



*Illus. 2.4: Socket-coupling nozzle special fitting*

z-dimension installation. The measurement of pipe axis to pipe axis allows the precise stipulation of the corresponding pipe lengths with the knowledge of the z-dimension.

The z-dimension  $\langle z \rangle$  in case of socket-coupling special fittings results as a difference from the structural length  $\langle a \rangle$  minus the socket insertion depth  $\langle e \rangle$ . The nozzle dimension is always the structural length of the special fitting (see Illustration 2.2 - 2.3).

The following applies:

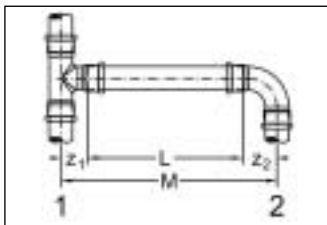
$$z = a - e$$

The pipe length  $\langle L \rangle$  is determined from the center-to-center measurement  $\langle M \rangle$  minus the z-dimension  $\langle z \rangle$  of the fittings involved (Illustration 2.2 - 2.3).

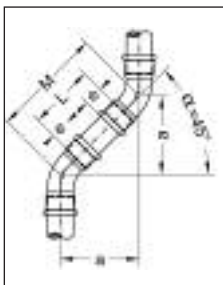
The following applies:

$$L = M - (z_1 + z_2)$$

If a certain misalignment "a" is required (as in case of an off-set bend) (see Illustration 2.5) and 45° bends should be employed for that to avoid unnecessary pressure losses, the measure  $\langle M \rangle$  is to be calculated thus.



Illus. 2.5: Determination of the pipe length



Illus 2.6:  
Calculation of  
off-set  
bends

The following applies:

$$\sin \alpha = \frac{a}{M} \quad \sin \alpha_{45^\circ} = 0,7071$$

$$M = \frac{a}{0,7071}$$

Some of the most important fitting combinations used in practice for the application are listed in the following tables.

## 2.8. Fire protection

The fire protection is to be implemented according to the respective national regulatory works and/or specifications.

## 2.9. Acoustic insulation

The acoustic insulation is to be implemented according to the respective national regulatory works and/or specifications.

Pipes including fittings itself generate no noise.

But armatures that are poorly constructed or poor dimensioned can generate flow noise that will be transmitted on the pipework.

Pipes should always be acoustically insulated against structure-borne noise in wall break-through penetrations, or on installation walls (clamps with acoustic insulation liner, **SANHA**® Catalog No. 9918) or should be laid in utility shafts.

## 2.10. Thermal insulation

**Thermal insulation** of pipes is appropriate for reasons of cost-effectiveness and environmental protection (decrease of CO<sub>2</sub> emissions). This is stipulated in the respective nationally applicable regulatory works. Pipelines for cold drinking water are to be laid so that the drinking water quality is not impaired by the heat influence of the environment. A sufficient separation distance to heat sources is to be maintained (hot water and heating lines, chimneys etc.), so that the lines are not influenced by these heat sources. If this is not possible, the cold water lines must be insulated against inadmissible heating.

Standard values for the minimum insulation layer thickness for the insulation of tubes for drinking water cold according to DIN 1988-2, scale 9

Installation location	Insulation layer thickness with a thermal conductivity of $\lambda = 0,04 \text{ W m}^{-1} \text{ K}^{-1}$ <sup>1)</sup>
Pipe work single laid in not heated rooms	4 mm
Pipe work single laid in heated rooms	9 mm
Pipe work in a duct, without warm pipes	4 mm
Pipe work in a duct, beside warm pipes	13 mm
Pipe work in a wall slot, riser pipes	4 mm
Pipe work in wall cut-outs, beside warm Pipes	13 mm
Pipe work on the concrete floor	4 mm
<sup>1)</sup> For other thermal conductivities the insulation thickness must be converted, based on a diameter of $d = 20 \text{ mm}$ .	

In case of operating conditions usual in residential buildings, sufficient insulation thickness is to be selected in such cases (see above table). In case of stagnated flow of the drinking water, thermal insulation also cannot offer any permanent protection against heating. The specifications in the table can also be employed for protection against water condensate on the insulation

material surface, with assumption of a drinking water temperature of 10°C. Protection against water condensate is not necessary if the pipe has a suitable jacket covering (e.g. **WICU**® pipe).

Standard values according to EnEV for **NiroSan**®, **NiroTherm**®, **SANHA**®-**Therm** system pipes and copper pipes can be taken from the following table.

Insulation thickness for **NiroSan®**-, **NiroTherm®**-, **SANHA®-Therm Systemrohre**

Tube outside diameter d [mm]	Insulation thickness  100 % $\lambda = 0,035 \text{ W m}^{-1} \text{ K}^{-1}$	Total outside diameter D [mm]
12/15/18/22 28/35 42/54/76,1/88,9/108	20 mm 30 mm same as DN	52/55/58/62 88/95 122/154/216/249/308
Tube outside diameter d [mm]	Insulation thickness  100 % $\lambda = 0,04 \text{ W m}^{-1} \text{ K}^{-1}$	Total outside diameter D [mm]
12/15/18/22 28/35	26 mm 38 mm	64/67/70/74 104/111
<sup>1)</sup> Measurements refer to a ROCKWOOL insulation jacket RS 800 und RS 835, by usage of insulation materials of other producers (Mittel, Armaflex etc.) the diameters must be verified by the producer informations		

In refrigeration systems **cooling water pipes** are frequently operated with temperatures from 4°C to 6°C. To decrease the energy losses and for avoidance of water condensate (undershooting of the dew-point temperature of the ambient air), these

lines must be water-blocking thermally-insulated.

These requirements apply not only for newly built systems, but also for those laid during renovation in existing buildings.

## 2.11. Pipe fastenings

Fastening spacing for pipes with **NiroSan**<sup>®</sup>-pressing systems, **NiroTherm**<sup>®</sup> pressing system, **SANHA**<sup>®</sup>-**Therm** press fittings and **SANHA**<sup>®</sup> press fittings of copper and copper alloys

Nominal diameter [DN]	Pipe outside diameter [mm]	Spacing [m]
10	12	1,25
12	15	1,25
15	18	1,50
20	22	2,00
25	28	2,25
32	35	2,75
40	42	3,00
50	54	3,50
-	64 / 66,7	4,00
65	76,1	4,25
80	88,9	4,75
100	108	5,00

Pipes are to be connected directly to building by means of standard clamps and must not be attached to other lines. In order to fulfill the acoustic protection requirements, clamps with rubber inserts are to be employed (**SANHA**<sup>®</sup> Catalog No. 9918). The maximum clamp separations are stipulated for the different applications in the respective regulatory works. If no specifications are

available in this connection, these can be taken from the above table. Clamps are always to be attached on the pipe only, not on the fittings. With the arrangement of pipe fastening - in particular in the area of pipe bypasses and branches (bends, T-joints etc.) - the references of the Chapter "Thermally caused change in length of pipes" are to be considered.

## 2.12. Thermally caused changes in length of pipes

Heat transition pipes and lines which are exposed to a high level of heat radiation (e.g. solar radiation etc.), expand differently according to material.

If the lines are hindered in case of this thermally caused change in length, then damage can arise (mostly in the form of fatigue failures). In order to avoid this, sufficient space for expansion must be allowed for the pipe.

To achieve this, the elasticity of the pipe network can frequently be exploited. For this it is necessary to obtain sufficiently easily bent line sections in the area of line bypasses through correct arrangement of the pipe brackets.

The basic principle is that sufficient expansion possibility must always be available between two fixed points.

Provided that the natural line routing does not enable sufficient compensation of the



*Illustration 2.7: Axial compensator with NiroSan® press sockets (SANHA® Catalog No. 9872)*

thermal expansion, this must be realised through the installation of special component parts, such as e.g. metal bellows compensators (SANHA® Catalog No. 9872, see Illustration 2.6). If sufficient space is available, a U-pipe compensator can also be employed, as indicated in Illustration 2.11.

In case of concealed installation, the unobstructed thermal expansion is to be ensured such that the lines are coated with elastic material of sufficient thickness. In particular, ceiling penetrations are to be cushioned carefully - provided that a fixed point has not been intentionally placed there (see Illustrations 2.8 - 2.10).

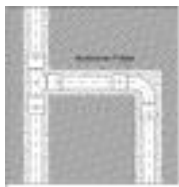


Illustration 2.8:  
Pipes under plaster

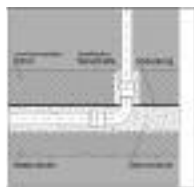


Illustration 2.9: Pipes  
under composition floor  
(in thermal and footfall  
acoustic insulation)



Illustration 2.10:  
Pipes in ceiling  
penetrations

Thermal expansion " $\Delta l$ " of **NiroSan**<sup>®</sup>-, **NiroTherm**<sup>®</sup> system pipes  
and copper pipes

Thermal expansion " $\Delta l$ " of stainless steel and copper [mm]							
	10	20	30	40	50	60	70
1	0,17	0,33	0,50	0,66	0,83	0,99	1,16
2	0,33	0,66	0,99	1,32	1,65	1,98	2,31
3	0,50	0,99	1,49	1,98	2,48	2,97	3,47
4	0,66	1,32	1,98	2,64	3,30	3,96	4,62
5	0,83	1,65	2,48	3,30	4,13	4,95	5,72
6	1,00	1,98	2,97	3,96	4,95	5,94	6,93
7	1,16	2,31	3,47	4,62	5,78	6,93	8,09
8	1,33	2,64	3,96	5,28	6,60	7,92	9,24
9	1,49	2,97	4,46	5,94	7,43	8,91	10,40
10	1,66	3,30	4,95	6,60	8,25	9,90	11,55

Thermal expansion " $\Delta l$ " of **SANHA®-Therm** system pipes

Thermal expansion " $\Delta l$ " of carbon steel [mm]							
	10	20	30	40	50	60	70
1	0,12	0,24	0,36	0,48	0,60	0,72	0,84
2	0,24	0,48	0,72	0,96	1,20	1,44	1,68
3	0,36	0,72	1,08	1,44	1,80	2,16	2,52
4	0,48	0,96	1,44	1,92	2,40	2,88	3,36
5	0,60	1,20	1,80	2,40	3,00	3,60	4,20
6	0,72	1,44	2,16	2,88	3,60	4,32	5,04
7	0,84	1,68	2,52	3,36	4,20	5,04	5,88
8	0,96	1,92	2,88	3,84	4,80	5,76	6,72
9	1,08	2,16	3,24	4,32	5,40	6,48	7,56
10	1,20	2,40	3,60	4,80	6,00	7,20	8,40

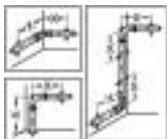


Illustration 2.11:

Minimum separation distance "X" of the clamps to the shaped pieces with heating pipes (see Table A 3.3 and A 3.4)

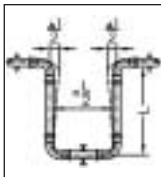


Illustration 2.12:

Necessary length of leg "L" of the double U-bend, as expansion compensating element, to take up the thermal expansion (see Table A 3.5 and A 3.6)

Minimum separation distance "X" of the clamps to the shaped pieces, dependent on the change in length of heating pipes (see Illustration 2.11)

Necessary length of pipe leg "X" of the <b>NiroSan</b> ®, <b>NiroTherm</b> ® pressing systems, as well as <b>SANHA</b> ®- <b>Therm</b> system pipe with <b>SANHA</b> ®- <b>Therm</b> press fittings [m]							
Expansion take-up [mm]							
d [mm]	10	20	30	40	50	60	70
15	0,57	0,80	0,98	1,13	1,27	1,39	1,50
18	0,62	0,88	1,08	1,24	1,39	1,52	1,64
22	0,69	0,97	1,19	1,37	1,54	1,68	1,82
28	0,77	1,10	1,34	1,55	1,73	1,90	2,05
35	0,87	1,22	1,50	1,73	1,94	2,12	2,29
42	0,95	1,35	1,64	1,90	2,12	2,32	2,51
54	1,08	1,52	1,86	2,15	2,41	2,63	2,85
76,1	1,28	1,81	2,21	2,55	2,86	3,13	3,38
88,9	1,38	1,95	2,39	2,76	3,09	3,38	3,65
108	1,52	2,15	2,63	3,04	3,40	3,73	4,02

Necessary length of leg "X" for copper pipes with <b>SANHA</b> ® press fittings of copper and copper alloys [m]							
Expansion take-up [mm]							
d [mm]	10	20	30	40	50	60	70
12	0,67	0,94	1,16	1,34	1,49	1,64	1,77
14	0,72	1,02	1,25	1,44	1,61	1,77	1,91
15	0,75	1,06	1,29	1,49	1,67	1,83	1,98
16	0,77	1,09	1,34	1,54	1,72	1,89	2,04
18	0,82	1,16	1,42	1,64	1,83	2,00	2,16
22	0,90	1,28	1,57	1,81	2,02	2,21	2,39
28	1,02	1,44	1,77	2,04	2,28	2,50	2,70
35	1,14	1,61	1,98	2,28	2,55	2,79	3,02
42	1,25	1,77	2,16	2,50	2,79	3,06	3,31
54	1,42	2,00	2,45	2,83	3,17	3,47	3,75
64	1,54	2,18	2,67	3,08	3,45	3,78	4,08
66,7	1,57	2,23	2,73	3,15	3,52	3,86	4,17
76,1	1,68	2,38	2,91	3,36	3,76	4,12	4,45
88,9	1,82	2,57	3,15	3,64	4,06	4,45	4,81
108	2,00	2,83	3,47	4,01	4,48	4,91	5,30

Necessary length of leg "L" of the double U-bend, as expansion compensating element, to take up the thermal expansion (see Illustration 2.12)

Necessary length of pipe leg "X" of the <b>NiroSan®</b> -, <b>NiroTherm®</b> -, pressing systems as well as <b>SANHA®-Therm</b> system pipe with <b>SANHA®-Therm</b> press fittings [m]							
Expansion take-up [mm]							
d [mm]	10	20	30	40	50	60	70
15	0,33	0,46	0,57	0,65	0,73	0,80	0,87
18	0,36	0,51	0,62	0,72	0,80	0,88	0,95
22	0,40	0,56	0,69	0,79	0,89	0,97	1,05
28	0,45	0,63	0,77	0,89	1,00	1,10	1,18
35	0,50	0,71	0,87	1,00	1,12	1,22	1,32
42	0,55	0,77	0,95	1,10	1,22	1,34	1,45
54	0,62	0,88	1,08	1,24	1,39	1,52	1,64
76,1	0,74	1,04	1,28	1,47	1,65	1,81	1,95
88,9	0,80	1,13	1,38	1,59	1,78	1,95	2,11
108	0,88	1,24	1,52	1,76	1,96	2,15	2,32

Necessary length of leg "L" for copper pipes with <b>SANHA®</b> press fittings of copper and copper alloys [m]							
Expansion take-up [mm]							
d [mm]	10	20	30	40	50	60	70
12	0,39	0,55	0,67	0,77	0,86	0,94	1,02
14	0,42	0,59	0,72	0,83	0,93	1,02	1,10
15	0,43	0,61	0,75	0,86	0,96	1,06	1,14
16	0,45	0,63	0,77	0,89	1,00	1,09	1,18
18	0,47	0,67	0,82	0,94	1,06	1,16	1,25
22	0,52	0,74	0,90	1,04	1,17	1,28	1,38
28	0,59	0,83	1,02	1,18	1,32	1,44	1,56
35	0,66	0,93	1,14	1,32	1,47	1,61	1,74
42	0,72	1,02	1,25	1,44	1,61	1,77	1,91
54	0,82	1,16	1,42	1,64	1,83	2,00	2,16
64	0,89	1,26	1,54	1,78	1,99	2,18	2,36
66,7	0,91	1,29	1,57	1,82	2,03	2,23	2,40
76,1	0,97	1,37	1,68	1,94	2,17	2,38	2,57
88,9	1,05	1,48	1,82	2,10	2,35	2,57	2,78
108	1,16	1,64	2,00	2,31	2,59	2,83	3,06

## 2.13. Space required for the manufacture of the press connections

For the manufacture of press connections, the minimum separation distances to walls and in corners and wall slots listed below must be adhered to – in order to be able to apply the pressing tool without any problems.

For a cost and time-saving installation, for compliance with the minimum separation distance between two fittings, adapter pieces already produced ex-works are available (**SANHA**® Catalog No. 9050). The minimum space requirement for the manufacture of the press connections is indicated in the following tables.

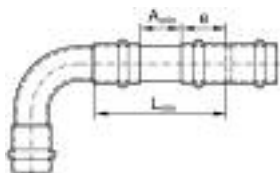


Illustration 2.13: Minimum distance between two pressing locations for the **NiroSan**<sup>®</sup>- and **NiroTherm**<sup>®</sup> pressing systems

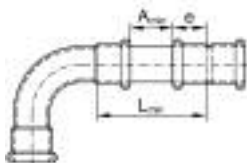


Illustration 2.14: Minimum distance between two pressing locations for the **SANHA**<sup>®</sup>-**Therm** press fittings **SANHA**<sup>®</sup> press fittings of copper and copper alloys

Minimum distances between two pressing locations for the pressing systems **NiroSan**<sup>®</sup>- and **NiroTherm**<sup>®</sup>-, as well as for the **SANHA**<sup>®</sup>-**Therm** press fittings and for the press fitting **SANHA**<sup>®</sup> copper and copper alloys (Illustrations 2.13 and 2.14)

<b>NiroSan</b> <sup>®</sup> - and <b>NiroTherm</b> <sup>®</sup> pressing system					<b>SANHA</b> <sup>®</sup> - <b>Therm</b> pressing systems and <b>SANHA</b> <sup>®</sup> press fittings of copper and copper alloys				
e [mm]	A <sub>min</sub> [mm]	L <sub>min</sub> [mm]	d [mm]	DN	d [mm]	e [mm]	A <sub>min</sub> [mm]	L <sub>min</sub> [mm]	
				10	12	16	10	42	
25	10	60	15	12	15	18	10	46	
25	10	60	18	15	18	20	10	50	
28	10	66	22	20	22	24	10	58	
29	10	68	28	25	28	27	10	64	
30	10	70	35	32	35	32	10	74	
38	20	96	42	40	42	38	20	96	
44	20	108	54	50	54	43	20	106	
				--	64	47	30	124	
				--	66,7	48	30	126	
50	30	130	76,1	65	76,1	50	30	130	
57	30	144	88,9	80	88,9	56	30	142	
69	30	168	108	100	108	70	30	170	

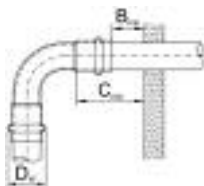


Illustration 2.15: Minimum distance between two pressing locations for the **NiroSan®**- and **NiroTherm®** pressing systems

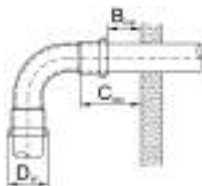


Illustration 2.16: Minimum distance between two pressing locations for the **SANHA®-Therm** press fittings of copper and copper alloys

Minimum distances between two pressing locations for the pressing systems **NiroSan®** and **NiroTherm®**, as well as for the **SANHA®-Therm** press fittings and for the press fitting **SANHA®** copper and copper alloys (Illustrations 2.15 and 2.16)

<b>NiroSan®</b> - and <b>NiroTherm®</b> pressing system				<b>SANHA®-Therm</b> -pressing systems and <b>SANHA®</b> press fittings of copper and copper alloys				
$D_w$ [mm]	$B_{min}$ [mm]	$C_{min}$ [mm]	$d$ [mm]	DN	$d$ [mm]	$D_w$ [mm]	$B_{min}$ [mm]	$C_{min}$ [mm]
				10	12	19	60	76
23	60	85	15	12	15	23	60	78
26	60	85	18	15	18	26	60	80
31	60	88	22	20	22	31	60	84
37	60	89	28	25	28	37	60	87
45	60	90	35	32	35	45	60	92
53	60	98	42	40	42	54	60	98
65	60	104	54	50	54	67	60	103
				--	64	80	60	107
				--	66,7	82	60	108
95	60	110	76,1	65	76,1	94	60	110
109	60	117	88,9	80	88,9	109	60	116
133	60	129	108	100	108	131	60	130

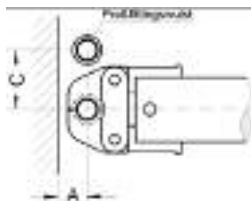


Illustration 2.17: A minimum separation distance of the lines to the wall and minimum separation distance C of the lines between each other

<b>NiroSan<sup>®</sup>, NiroTherm<sup>®</sup> pressing systems, SANHA<sup>®</sup>-Therm press fittings and SANHA<sup>®</sup> press fitting of copper and copper alloys</b>			
<b>d</b> [mm]		<b>A</b> [mm]	<b>C</b> [mm]
12	Jaw	20	56
15	Jaw	20	56
18	Jaw	22	60
22	Jaw	25	65
28	Jaw	25	75
35	Jaw	30	83
42	Sling	65	90
42	Jaw	45	140
54	Sling	70	100
54	Jaw	45	140
64	Sling	100	145
66,7	Sling	100	145
76,1	Sling	110	160
88,9	Sling	120	180
108	Sling	130	200

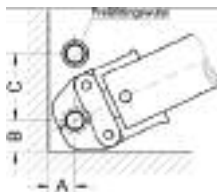
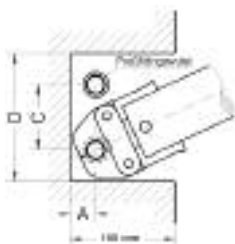


Illustration 2.18: A minimum separation distance of the lines to the wall, minimum separation distance B of the lines to the corner and minimum separation distance C of the lines between each other

<b>NiroSan® , NiroTherm®</b> pressing systems, <b>SANHA®-Therm</b> press fittings and <b>SANHA®</b> press fitting of copper and copper alloys				
d [mm]		A [mm]	B [mm]	C [mm]
12	Jaw	28	40	75
15	Jaw	28	40	75
18	Jaw	28	43	75
22	Jaw	31	50	80
28	Jaw	31	54	80
35	Jaw	31	61	84
42	Sling	65	65	90
42	Jaw	60	110	155
54	Sling	70	70	100
54	Jaw	60	110	155
64	Sling	100	100	145
66,7	Sling	100	100	145
76,1	Sling	110	200	220
88,9	Sling	120	200	220
108	Sling	130	200	230



*Illustration 2.19: Minimum width D of niches, minimum separation distance A of the lines to the niche back wall and minimum separation distance C of the lines between each other*

<b>NiroSan® , NiroTherm® pressing systems, SANHA®-Therm press fittings and SANHA® press fitting of copper and copper alloys</b>				
<b>d</b> [mm]		<b>A</b> [mm]	<b>B</b> [mm]	<b>C</b> [mm]
12	Jaw	31	80	155
15	Jaw	31	80	155
18	Jaw	31	80	161
22	Jaw	31	80	173
28	Jaw	31	80	181
35	Jaw	31	84	206
42	Sling	65	90	220
42	Jaw	60	155	375
54	Sling	70	100	240
54	Jaw	60	155	375
64	Sling	100	145	345
66,7	Sling	100	145	345
76,1	Sling	110	220	640
88,9	Sling	120	220	640
108	Sling	130	230	640

## 2.14. Pressure test

Designation		Test conditions with	
		Water	Inert gas
Drinking water installations DIN 1988 (D)	Preliminary test (applies also for non-pressed, non-sealed press fittings)	$p_{\text{test}} = 1 \text{ bar}$ with $t_{\text{test}} \geq 10 \text{ min}$ (with moderate flow velocity)	$p_{\text{test}} = 110 \text{ mbar}$ with $V_{\text{pipe}} \leq 100 \text{ l}$ of $t_{\text{test}} = 30 \text{ min}$ (for every further 100 l, increase $t_{\text{test}} \geq 10 \text{ min}$ in each case)
	Final test	$p_{\text{test}} = p_{\text{allowed}} \times 1,5$ with $\Delta\vartheta < 10 \text{ k}$ of 10 min and $\Delta\vartheta \geq 10 \text{ k}$ of $t_{\text{test}} \geq 10 \text{ min}$	$p_{\text{test}} = 3 \text{ bar}$ (up to DN 50) and $p_{\text{test}} = 1 \text{ bar}$ (greater than DN 50) with $V_{\text{pipe}} \geq 100 \text{ l}$ of $t_{\text{test}} \geq 30 \text{ min}$ (for every further 100 l, increase $t_{\text{test}} \geq 10 \text{ min}$ in each case)
Heating installations	Preliminary test (applies also for non-pressed, non-sealed press fittings)	$p_{\text{test}} = 1 \text{ bar}$ with $t_{\text{test}} \geq 10 \text{ min}$ (with moderate flow velocity)	$p_{\text{test}} = 110 \text{ mbar}$ with $V_{\text{pipe}} \leq 100 \text{ l}$ of $t_{\text{test}} \geq 30 \text{ min}$ (for every further 100 l, increase $t_{\text{prüt}} \geq 10 \text{ min}$ in each case)
	Final test	$p_{\text{test}} = p_{\text{allowed}} \times 1,3$ with $\Delta\vartheta < 10 \text{ k}$ of $t_{\text{test}} \geq 10 \text{ min}$	$p_{\text{test}} = p_{\text{allowed}} \times 1,3$ or $p_{\text{test,max.}} = 3 \text{ bar}$ von $t_{\text{test}} \geq 30 \text{ min}$

The times for the equalization of temperature are not included in the minimum test times indicated in the above table and these minimum test times thus have to be added. Measuring devices which enable a sufficient accuracy of reading

are to be employed for the pressure test. According to the areas of application, the implementation regulations for the pressure test described in the respective national regulatory works and standards are to be considered.

## 2.15. Flushing

Drinking water lines are to be flushed thoroughly with filtered drinking water immediately after the pressure test, independent of the type of material employed. The cold and hot water lines are to be flushed separately with an air-water mixture, intermittently under pressure. The flushing with drinking water is to be implemented so that a minimum flow velocity of 0.5 m/s is

achieved in the largest pipe to be flushed. A minimum number of extraction points must be opened for this purpose (see the following tables).

The process for line flushing is to be coordinated beforehand with the builder and carried out and recorded in the presence of the builder and/or one of his agents.

Basically, the respective national regulatory works are to be considered in the flushing of drinking water lines.

*Minimum number of the extraction points to be opened for the flushing system, with a minimum flow velocity of 0.5 m/s*

Largest dimension of the distribution line							
Nominal diameter DN	25	32	40	50	65	80	100
Outside diameter [mm]	28	35	42	54	76,1	88,9	108
Minimum volume flow at full filling of the distribution line [l/min]	15	25	38	59	100	151	236
Minimum number of extraction points DN 15 to be opened	1	2	3	4	6	9	14

*Minimum quantity of the tapping points to be opened for the flushing acc. to ZVSHK-leaflet with a flush duration of 5 minutes at the last opened tapping point*

Largest dimension of the distribution line							
Nominal diameter DN	25	32	40	50	65	80	100
Outside diameter [mm]	28	35	42	54	76,1	88,9	108
Minimum number of extraction points DN 15 to be opened	2	4	6	8	12	18	28

## 2.16. Disinfection

### Disinfection of drinking water pipes

Drinking water installations are to be flushed thoroughly with filtered drinking water before operational startup, to establish hygienically trouble-free conditions.

If a disinfection of drinking water pipes is necessary, the respective national regulatory works and/or specifications are to be considered.

An intensive flushing with clear drinking water must be carried out directly after the disinfection. No remains of disinfection agents may be measured in the drinking water at the tappings and respectively the

tapping measure values may not be higher than the values at the hand over point (house service connection). It is essential for the success of the flushing that the flow rate in each pipe section is high enough. Intermittent flushing is recommended the mixture of air and water. After the flushing cycle the pipe work must be exhausted from air.

The implementation of a thermal disinfection of the drinking water lines with hot water, at a temperature between 70°C and 95°C, and a disinfection time of approx. 1 hour in every line section, is sufficient in most cases.

The thermal disinfection of stainless steel and copper lines can be implemented with

considerably higher temperatures. The temperature is limited to 120°C in case of press fittings because of the elastomer. However, there is no restriction on the disinfection duration.

#### **Disinfection of drinking water**

The disinfection of drinking water is to be implemented according to the respective national regulatory work and/or specifications

## 2.17. Inner corrosion protection in open systems

### Stainless steel

Stainless steel forms a passive layer (chromic oxide layer for the most part) on contact with oxygen and/or oxygenated water (e.g. drinking water). This passive layer prevents any reaction between the material and the water and its material contents. In this way, the water is not influenced in any manner by the pipe material.

Since stainless CrNiMo steels do not add any materials to the drinking water due to the passive layer formed, they can be connected with all other materials authorized for drinking water installation, without compliance with a flow-direction regulation, i.e. in arbitrary precedence. For this reason, the **NiroSan®** press system is also particularly suitable for partial clean-ups of existing drinking water installations - independent of their pipe materials.

However, stainless steel and carbon steel must not be connected directly with each other. Rather a bracket is to be installed of non-ferrous heavy metal, through which the separation distance between the com-

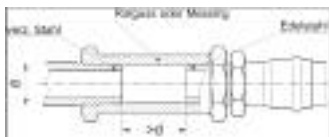


Illustration 2.20: Permissible connection between stainless steel and carbon steel

ponent part of carbon steel and the component part of stainless steel corresponds to the pipe outside diameter at least (see Illustration 6.110). This is achieved e.g. through the installation of a non-ferrous metal valve (brass or red brass) between the stainless steel and carbon steel materials.

In case of the installation of stainless steel with copper materials, experience indicates that a minimum relationship of the water-contacting surfaces between copper materials (copper and brass and red brass together) and stainless steel should not be fallen below considerably.

A sensitization of the stainless steel is possible through oxide layers, annealing colours, incorrect heat treatment (e.g. during the welding, separation with fast-running saws or with cutting disks) of the component parts, and must be securely avoided. The hot bending of the pipes is not permissible.

$$\left( \frac{A_{\text{Copper}}}{A_{\text{Stainless Steel}}} \right)_{\text{min}} = 0,02$$

In case of an impact chlorination for the disinfection of a pipe, the national standards and regulatory works are to be considered, since strong oxidizing agents, as they are used in this case, can damage the passive layer in case of non-professional application.

## Copper

Direct connection of copper with carbon steel is possible, subject to observation of the flow regulation which states that copper is always to be arranged downstream of component parts of carbon steel, seen in the direction of flow of the water. Otherwise the carbon steel would be prone to hole-corrosion through the precipitation of copper ions on the surface of the carbon steel pipes.

The assembling of stainless steel and copper is possible for stainless steel as described above.

## 2.18 Inner corrosion protection in closed systems

In closed systems which are operated with water which is approximately oxygen-free, such as e.g. heating plant, solar energy plants etc., no corrosion processes can take place on metal pipe materials. For this reason, all usual pipe materials, as well as unalloyed steel, can be employed in heating plants. The combination of the different metal pipe materials (copper, unalloyed steel, stainless steel etc.) is possible in arbitrary precedence without restrictions. However, in closed systems no oxygen must then penetrate.

Zinc can erode with higher pH-values - as they generally occur in heating plants - also with absence of oxygen and with hydrogen formation. This leads to the separation of the zinc layer in case of carbon steel pipes, however not to damage to the pipe, since the unalloyed steel is not attacked. However, the hydrogen formation generally leads to plant malfunctions (gas cushion formation). For this reason galvanized ferrous materials are to be dispensed with in heating plants.

## 2.19. External corrosion protection

In some in the following cases, which are described in detail, suitable coatings (subsequently applied protective paint coats) are permissible. However, it is to be considered that e.g. in the area of the pipe fixing and/or pipe passages, a continuously trouble-free surface paint coating can be achieved in rare cases only. Improperly protected spots are generally exposed to a concentrated corrosion attack. Subsequent paint coating of already installed pipes is thus not to be recommended.

### Underground Pipes

Basically, pipes and pipe connectors and valves laid underground must be protected against mechanical action (e.g. through laying in a protective conduit). Metal pipes additionally require protection against external corrosion attacks.

For **stainless steel** and **copper pipelines**, anti-corrosive tape and heat-shrinkable sleeves, in accordance with DIN 30672, Class A (non-corrosive ground), Class B (corrosive ground), can be employed as subsequent external corrosion protection. Copper pipes coated by the manu-

facturer can also be employed in case of copper pipes, provided that the requirements on DIN 30672, Class B (except for the peeling resistance) (e.g. WICU pipe), are satisfied. In every case, the fittings are to be provided with anti-corrosive tapes or heat-shrinkable sleeves.

The pipes of unalloyed steel are to be provided with a subsequent external corrosion protection in accordance with DIN 30672 of the Contamination Class C.

**Below the pavement**, pipes laid (not in the pavement, but within the thermal and footfall acoustic insulation and/or in recesses in the unfinished ceiling) are to be protected as described above for underground pipes.

### Exterior installed pipe work

Basically, metal pipes and pipe connectors and, where appropriate, valves laid in the open must be protected against mechanical action and (provided the danger exists) against the admission of halogens (fluorine, chlorine, bromide and iodine).

**Stainless steel pipelines** do not require any additional corrosion protection.

**Copper pipes** generally do not require any additional corrosion protection, except where gas conduits according to TRGI are in-

volved. In this case, the line is to be protected as described above for underground pipes.

**Pipes of unalloyed steel** are to be protected against corrosive damages as described in the section "Underground pipes". Alternatively suitable corrosion coatings and/or zinc coatings can be employed. The hot-dip galvanizing can be used in this case on the exterior surface which, depending on the type of atmosphere, represents a long-term corrosion protection. As equivalent corrosion protection with respect to the hot-dip galvanizing, the galvanized pipe surface with a coating thickness of 7 - 15  $\mu\text{m}$  can be considered.

### **Pipes laid concealed**

**Stainless steel pipelines** do not require any additional corrosion protection, provided that the surrounding materials do not include any chloride-content additives (e.g. frost protection additive). In the latter case, direct contact of the material with the pipe material must be avoided through suitable coatings or jacketing.

**Copper pipes** do not require any additional corrosion protection, provided that the surrounding materials do not include any ammonium-content additives (e.g. retarding admixtures). In the latter case, di-

rect contact of the material with the pipe material must be avoided through suitable coatings or jacketing.

**Galvanized steel pipes do not** require in general any additional corrosion protection, except where action from moisture is expected over a longer period or additives are employed in the covering material that can cause corrosion processes at the galvanized steel. In these cases, an additional corrosion protection is to be implemented as described in the Section "Underground pipe".

### **Surface-mounting laid pipes**

**Stainless steel pipelines** do not require any additional corrosion protection, except in chlorine-content atmospheres (e.g. swimming pool). In the latter case the pipes must be provided with suitable coatings or jacketing.

**Copper pipes** generally do not require any additional corrosion protection, except for ammonia, (pipes laid in animal stables) or bivalent sulfur (e.g. hydrogen sulfide of biogases) existing in the room air. This applies also for lines in rooms of the meat processing industry (also e.g. cold shelf), since animal protein can convert into sulfidic products. In these cases, the lines are to be

protected as described above for underground pipes.

**Galvanized steel pipes** do not require in general any additional corrosion protection, except where action from moisture is expected over a longer period or additives are employed in the covering material that can cause corrosion processes at the galvanized steel. In these cases, an additional corrosion protection is to be implemented as described in the Section "Underground pipe".

### Suitable insulation materials

Thermal insulation is to be kept permanently dry in order to retain the thermal insulation effect. For this reason, they are always to be implemented water-blocking. In this connection, closed-cell insulation materials are especially to be recommended. Insulation materials for **stainless steel pipelines** must not exceed a mass content of 0.05% of water-soluble chloride ions. Insulation materials in AS quality (AS = Austenitic Steels), fall significantly below this mass content and are therefore particularly suited for stainless steel.

Insulation materials for **copper pipes** must be nitrite-free and must not exceed a mass content of 0.02% ammonia.

## 2.20. Manufacture of the press connections

The procedure for the manufacture of a press connection is indicated below in the example of the **SANHA®** press fittings of copper, in association with copper pipes approved by **SANHA®** (see table in the Chapter "Approved to header pipes").

For the press system **NiroSan®**, **Niro-Therm®** and the connecting of the **Niro-Therm®** and **SANHA®-Therm** system pipe with the **SANHA®-Therm** press fittings, the same procedure applies.

The pipe ends must be clean for the manufacture of trouble-free press connections. The pipe exterior surfaces may indicate no scratches or grooves over a length which corresponds to the inserted length at least. In case of dismantling of works-coated plastic pipes, it is to be particularly ensured that the pipe surface is not damaged in this area. Through visually identifiable, in part only scarcely identifiable, incisions with the fitting knife, such damage can easily arise.

## Dimensions to $d = 54$ mm



1. Cut off pipes with fine-toothed hacksaw in right-angled form



Alternative: Separate pipes with a pipe cutter.



2. Deburr pipes carefully inside and outside



3. Mark the insertion depth on the pipe with felt-tipped pen and template (**SANHA**<sup>®</sup> Catalog No. 4980 for the **SANHA**<sup>®</sup>-Therm and **SANHA**<sup>®</sup> press fittings of copper and copper alloys [green color] - **SANHA**<sup>®</sup> Catalog No. 4981 for **NiroSan**<sup>®</sup> and **NiroTherm**<sup>®</sup> pressing system of stainless steel [black color]). The marker must be water-proof.

Check **SANHA**<sup>®</sup> press fittings for correct seating of the ring gasket and insert pipes into the fittings coupling up to the stop, using slight rotation. The fitting outer edge must line up with the marker.



4. Select press jaw according to the fitting dimension and employ in the press machine. Close the retention bolts of the machine.



5. Check whether fitting outer edge lines up with the marker. Open press jaw and place at right angles on to the **SANHA**<sup>®</sup> press fitting unit such that the bead of the fittings inserts into the slot of the press jaw.



6. Release pressing procedure through actuating the start key. In case of compatible machines, the pressing procedure cannot be interrupted prematurely. In this way, it is ensured that a tight, permanently sealed form and longitudinal force-closed connection always results. In case of danger, an interruption of the pressing procedure is possible through actuation of the Emergency Off button<sup>1)</sup>.

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<sup>1)</sup> After reset of the Emergency Off situation, a post-pressing or, where appropriate, a new pressing must be implemented

In case of the dimensions 42 mm and 54 mm, press slings are preferably employed because of the easier handling. The installation is implemented first of all as

described above for the steps 1 to 3, Section "Dimension to 54 mm". Then the procedure is continued with the dimensions 42 mm and 54 mm with the operation steps 4. to 7.



4. Select the appropriate press sling. Ensure that the marker strokes form a line on the slide segments and the clamps. If this is not the case, make the slide segments movable. Then place the press sling around the **SANHA**® press fitting such that the bead of the fitting is inserted into the slot of the press sling. Close press sling. Shift lock strap into locking pins. Note that the press sling fits closely on the fittings. Then rotate the press sling into position, so that the press can be applied properly.



5. Select appropriate intermediate jaw for the dimension: In case of electronic pressing tools for the dimensions 42 mm and 54 mm, insert the intermediate jaw ZB 302 (**SANHA**® Catalog No. 6931.1) - and for conventional press tools, the intermediate jaw ZB 202 (**SANHA**® Catalog No. 6930), into the press tool and close the retention bolts.



6. Open the intermediate jaw by depressing the jaw levers and attach to the press sling so that the claws of the intermediate jaw grip around the pins of the press sling. Check whether fittings outer edge lines up with the marker of the insertion depth - release pressing procedure through actuating the start key. The pressing procedure cannot be interrupted prematurely. In this way, it is ensured that a permanently sealed connection always results. An interruption of the pressing procedure in the case of danger is possible through pressing the Emergency Off button<sup>1)</sup>.



7. Loosen the press sling through stripping the lock strap. In this case, locking pins protrude from the opposite side.

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<sup>1)</sup> After reset of the Emergency Off situation, a post-pressing or, where appropriate, a new pressing must be implemented

## Dimensions

$d = 64 \text{ mm}$  up to  $d = 108 \text{ mm}$

For the dimensions from 64 mm to 108 mm, the electronic press tool (see "Suitable and recommended pressing tools") from **SANHA®** (**SANHA®** Catalog No. 6900 and as a set in a casing with 6 press jaws 12 mm to 35 mm **SANHA®** Catalog No. 6901) or Mapress is required. In addition, press slings of the corresponding dimensions (**SANHA®** Catalog No. 6933) are required, as well as the intermediate jaw ZB 302 (**SANHA®** Catalog No. 6931.1) for the dimensions 64 mm and 66.7 mm and the intermediate jaw ZB 321 (**SANHA®** Catalog No. 6931.2) for the dimensions 76.1 mm and 88.9 mm. Alternatively, press slings and intermediate jaws from Mapress can also be employed.

For the dimension 108 mm, as well as the corresponding press sling (**SANHA®** Catalog No. 6933) in addition to the intermediate jaw ZB 321 (**SANHA®** Catalog No. 6931.2), the intermediate jaw ZB 322 (**SANHA®** Catalog No. 6931.3) and corresponding press sling and intermediate jaws are required by Mapress.



1. *Cut off pipes to size: Preferably with a planetary saw (Illustration) or miter saw.*



*Alternative: cut pipes with a pipe cutter.*



*Alternative: cut off pipes with fine-toothed hacksaw at right-angles.*



2. Deburr cut edges on the outside carefully. Preferably with special deburring device (Illustration: Novopress RE1 pipe deburrer, **SANHA**® Catalog No. 4984). Alternative: Semicircular smooth file.

3. Deburr cut edges inside. Preferably with special deburring device (Illustration: Novopress RE1 pipe deburrer, **SANHA**® Catalog No. 4984). Alternative: Semicircular smooth file.

4. Mark insertion depth on the pipe by means of felt-tipped pen and template (**SANHA**® Catalog No. 4990). The marker must be water-proof

## Dimensions $d = 64$ mm up to $d = 88,9$ mm



3. Insert pipe end into the fittings coupling up to the stop, with slight rotation. The fitting outer edge must line up with the marker. Select appropriate press sling. The marker must be waterproof the clamps. If this is not the case, make slide segments movable.

Place press sling around the **SANHA**® press fitting so that the bead of the fittings is inserted into the slot of the press sling and, in this case, the centering-plate of the press sling must always point in the direction of the insertion of the press fitting (e.g. 45° bend with internal and external pressing end). Close press sling. Shift lock strap into locking pins. Note that the press sling fits closely on the fittings. Rotate press sling into position so that the pressing can be applied properly.



**4. Dimensions 64 mm and 66,7 mm:**

*Insert intermediate jaw with the designation **ZB 302 (SANHA®** Catalog No. 6931.1) in the press tool and close retention bolts.*

**Dimensions 76.1 mm and 88.9 mm:**

*Insert intermediate jaw with the designation **ZB 321 (SANHA®** Catalog No. 6931.2) in the press tool and close retention bolts.*



**5. Open the intermediate jaw by depressing the jaw levers and attach to the press sling so that the claws of the intermediate jaw grip around the pins of the press sling.**

*Check whether fitting outer edge lines up with the marker of the insertion depth - release the pressing procedure through actuation of the start push button. The pressing procedure cannot be interrupted prematurely. In this way, it is ensured that a permanently sealed connection is always created. In case of danger an interruption of the pressing procedure is possible through actuation of the Emergency Off button <sup>1)</sup>.*

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<sup>1)</sup> After reset of the Emergency Off situation, a post-pressing or, where appropriate, a new pressing must be implemented

## Dimension d = 108 mm



6. Loosen the press sling through stripping the lock strap. In this case locking pins protrude from the opposite side.



5. Apply press sling of the dimension 108 mm as described in Step 3. of the Section "Dimension 64 mm up to 88.9 mm". Ensure the marker strokes form a line on the slide segments and the clamps. If this is not the case, make the slide segments movable. Press in the press sling first of all with intermediate jaw ZB 321 (SANHA® Catalog No. 6931.2) as described in Step

3. Remove intermediate jaws ZB 321 by depressing of a jaw lever of the press sling. The press sling remains at the pressing location (press sling can not be detached).



6. Put intermediate jaw ZB 322 (see **SANHA**® Catalog No. 6931.3) into the press tool and carry out the second pressing procedure. The pressing procedure cannot be interrupted prematurely. In this way it is ensured that a permanently sealed connection always results. An interruption of the pressing procedure in case of danger is possible through pressing the Emergency Off button<sup>1)</sup>.

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<sup>1)</sup> After reset of the Emergency Off situation, a post-pressing or, where appropriate, a new pressing must be implemented



7. Open the press sling by depressing the lock lever and remove from the connection point.

#### NOTE:

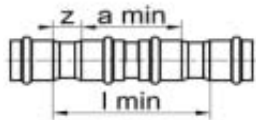
Installation tube made of copper  $d = 108$  mm with a wallthickness of 1.2 mm or 1.5 mm must be used with press slings marked "COPPER ONLY", article number 16934, only.

**2.21. Putkiyhdeyhdistelmä**

**2.21. Rördelskombinationer**

**2.21. Fitting combinations**

- Kahden puristusliittimen minimi etäisyys
- Minsta avstånd mellan två presspunkter.
- female T with male/female connector at the middle branch



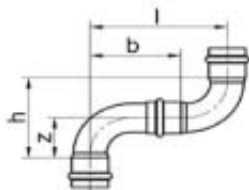
- **NiroSan**® Puristusjärjestelmä / Presssystem / press system
- **NiroTherm**® Puristusjärjestelmä / Presssystem / press system

Putken-  
halkaisija,  
Rör-  
dia-  
meter,  
Pipe  
Diameter

- **SANHA**®-**Therm** Puristusjärjestelmä / Presssystem / press system
- **SANHA**® Puristusliittimet kuparista ja punametallista / **SANHA**® Presskopplingar i koppar och brons / **SANHA**® press system fittings in copper and bronze

			d			
a min	l min	z	[mm]	a min	l min	z
			12	42	46	2
			14	46	50	2
60	71	6	15	46	50	2
			16	46	50	2
60	93	17	18	50	54	2
66	97	16	22	58	62	2
68	106	19	28	64	68	2
70	104	17	35	74	78	2
98	133	18	42	96	102	3
108	143	18	54	106	112	3
			64	124	158	17
			67,9	126	160	17
130	192	31	76,1	130	164	17
144	204	30	88,9	142	176	17
168	230	31	108	170	204	17

- Käyrä 90° 2 muhvia ja käyrä 90° 1 muhvi
- S-ning med böj 90° 2 muffar och böj 90° 1 muff
- Parallel offset with a female 90° elbow and a male/female 90° elbow

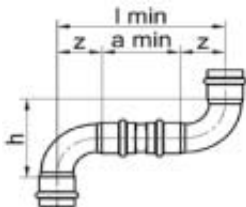


- **NiroSan**® Puristusjärjestelmä / Presssystem / press system
- **NiroTherm**® Puristusjärjestelmä / Presssystem / press system

Putkenhalkaisija,  
Rör-diameter,  
Pipe  
Diameter

- **SANHA**®-**Therm** Puristusjärjestelmä / Presssystem / press system
- **SANHA**® Puristusliittimet kuparista ja punametallista / **SANHA**® Presskopplingar i koppar och brons / **SANHA**® press system fittings in copper and bronze

b	l	h	z	d [mm]	b	l	h	z
				12	40	55	30	15
				14	44	62	36	18
60	82	44	22	15	44	62	36	18
				16	44	62	36	18
62	89	54	27	18	50	72	44	22
72	106	68	34	22	58	85	54	27
77	116	78	39	28	68	102	68	34
93	149	112	56	35	82	125	86	43
113	177	128	64	42	103	154	102	51
131	211	160	80	54	123	188	130	65
				64	142	220	156	78
				67,9	147	228	162	81
162	254	184	92	76,1	160	252	184	92
186	293	214	107	88,9	184	292	216	108
231	362	162	131	108	227	358	262	131



- Käyrä 90° 2 muhia
- S-ning med böj 90° 2 muffar
- Parallel offset with 2 female 90° elbows

- **NiroSan**® Puristusjärjestelmä / Presssystem / press system
- **NiroTherm**® Puristusjärjestelmä / Presssystem / press system

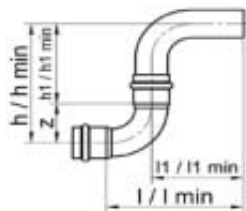
Putken-  
halkaisija,  
Rör-dia-  
meter,  
Pipe  
Diameter

**d**  
[mm]

- **SANHA**®-**Therm** Puristusjärjestelmä / Presssystem / press system
- **SANHA**® Puristusliittimet kuparista ja punametallista / **SANHA**® Presskopplingar i koppar och brons / **SANHA**® press system fittings in copper and bronze

a min	h	l min	z	d [mm]	a min	h	l min	z
				12	42	30	72	30
				14	46	36	82	36
60	44	104	22	15	46	36	82	36
				16	46	36	82	36
60	54	114	27	18	50	44	94	44
66	68	134	34	22	58	54	112	54
68	78	146	39	28	64	68	132	68
70	112	182	56	35	74	86	160	86
96	128	224	64	42	96	102	198	102
108	160	268	80	54	106	130	236	130
				64	124	156	280	156
				67,9	126	162	288	162
130	184	314	92	76,1	130	184	314	184
144	214	358	107	88,9	142	216	358	216
168	262	430	131	108	170	262	432	262

- Käyrä 90° 2 muovia ja sovituskulma 90°
- S-ning med böj 90° 2 muffar och passböj 90°
- Parallel offset with a female 90° elbow and a male 90° street elbow



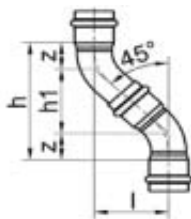
Putken-  
halkaisija,  
Rör-dia-  
meter,  
Pipe  
Diameter

- **NiroSan**® Puristusjärjestelmä / Presssystem / press system
- **NiroTherm**® Puristusjärjestelmä / Presssystem / press system

**d**

[mm]

	<b>h</b>	<b>h min</b>	<b>h1</b>	<b>h1 min</b>	<b>l</b>	<b>l min</b>	<b>l1</b>	<b>l1 min</b>	<b>z</b>
15	147	77	125	55	147	77	125	55	22
18	152	84	125	57	152	84	125	57	27
22	184	99	150	65	184	99	150	65	34
28	239	119	200	80	239	119	200	80	39
35	281	148	225	92	281	148	225	92	56
42	314	177	250	113	314	177	250	113	64
54	380	211	300	131	380	211	300	131	80



- Käyrä 45° 2 muhia ja käyrä 45° 1 muhvi
- S-ning med böj 45° 2 muffar och böj 45° 1 muff
- Parallel offset with a female pressfit 45° elbow and a male/female 45° elbow

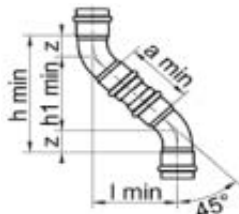
- **NiroSan**® Puristusjärjestelmä / Presssystem / press system
- **NiroTherm**® Puristusjärjestelmä / Presssystem / press system

Putken-  
halkaisija,  
Rör-dia-  
meter,  
Pipe  
Diameter

- **SANHA**®-**Therm** Puristusjärjestelmä / Presssystem / press system
- **SANHA**® Puristusliittimet kuparista ja punametallista / **SANHA**® Presskopplingar i koppar och brons / **SANHA**® press system fittings in copper and bronze

h	l	l1	z1	z2	d [mm]	h	l	l1	z1	z2
					12	27	33	27	6	8
					14	30	38	30	8	9
49	61	49	12	21	15	30	38	30	8	9
					16	31	39	31	8	10
56	70	56	14	24	18	34	43	34	9	11
60	79	60	19	25	22	40	51	40	11	13
66	90	66	24	30	28	47	61	47	14	17
80	107	80	27	34	35	55	73	55	18	20
87	116	87	29	35	42	70	91	70	21	25
97	135	97	38	46	54	82	109	82	27	31
					64	105	138	105	33	51
					67,9	107	141	107	34	51
125	163	125	38	55	76,1	115	154	115	39	57
150	193	150	43	62	88,9	130	175	130	45	65
152	206	152	54	74	108	156	211	156	55	75

- Kaksi käyrä 45° 2 muhvia
- S-ning med två böjar 45° 2 muffar
- Parallel offset with 2 45° female elbows

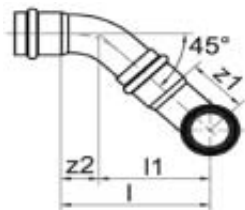


- **NiroSan**® Puristusjärjestelmä / Presssystem / press system
- **NiroTherm**® Puristusjärjestelmä / Presssystem / press system

Putkenhalkaisija,  
Rör-diameter,  
Pipe  
Diameter

- **SANHA**®-**Therm** Puristusjärjestelmä / Presssystem / press system
- **SANHA**® Puristusliittimet kuparista ja punametallista / **SANHA**® Presskopplingar i koppar och brons / **SANHA**® press system fittings in copper and bronze

a min	h min	h1 min	l min	z	d [mm]	a min	h min	h1 min	l min	z
					12	42	50	38	38	6
					14	46	60	44	44	8
60	84	60	59	12	15	46	60	44	44	8
					16	46	60	44	44	8
60	90	60	62	14	18	50	66	48	48	9
66	110	66	74	19	22	58	79	57	57	11
68	130	68	81	24	28	64	93	65	65	14
70	141	70	87	27	35	74	114	78	78	18
98	169	98	111	29	42	96	140	98	98	21
108	206	108	130	38	54	106	167	113	113	27
					64	124	200	134	134	33
					67,9	126	205	137	137	34
130	221	130	145	38	76,1	130	225	147	147	39
144	249	144	163	43	88,9	142	254	164	164	45
168	303	168	195	54	108	170	308	198	198	55



- Käyrä 90° 2 muhia ja käyrä 45° 1 muhi
- S-ning med böj 90° 2 muffar och böj 45° 1 muff
- Offset turned at 90° with a male/45° elbow and a female 90° elbow

- **NiroSan**® Puristusjärjestelmä / Presssystem / press system
- **NiroTherm**® Puristusjärjestelmä / Presssystem / press system

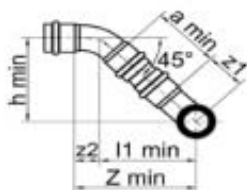
Putken-  
halkaisija,  
Rör-dia-  
meter,  
Pipe  
Diameter

**d**  
[mm]

- **SANHA**®-**Therm** Puristusjärjestelmä / Presssystem / press system
- **SANHA**® Puristusliittimet kuparista ja punametallista / **SANHA**® Presskopplingar i koppar och brons / **SANHA**® press system fittings in copper and bronze

l	l1	z1	z2	d [mm]	l	l1	z1	z2
				12	38	32	15	6
				14	45	37	18	8
61	50	12	22	15	45	37	18	8
				16	45	37	18	8
72	59	14	27	18	51	42	22	9
86	67	19	34	22	61	49	27	11
96	73	24	39	28	73	59	34	14
122	95	27	56	35	89	71	43	18
137	108	29	64	42	109	88	51	21
160	122	38	80	54	133	106	65	27
				64	157	124	78	33
				67,9	162	128	81	34
189	152	38	92	76,1	178	139	92	39
225	182	43	107	88,9	206	161	108	45
146	92	54	131	108	250	195	131	55

- Käyrä 90° 2 muhvi ja käyrä 45° 2 muhvia
- S-ning med böj 90° 2 muffar och böj 45° 2 muffar
- Offset turned at 90° with female pressfit elbows 45° and 90°

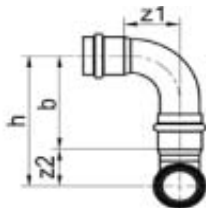


- **NiroSan®** Puristusjärjestelmä / Presssystem / press system
- **NiroTherm®** Puristusjärjestelmä / Presssystem / press system

Putkenhalkaisija,  
Rör-diameter,  
Pipe  
Diameter

- **SANHA®-Therm** Puristusjärjestelmä / Presssystem / press system
- **SANHA®** Puristusliittimet kuparista ja punametallista / **SANHA®** Presskopplingar i koppar och brons / **SANHA®** press system fittings in copper and bronze

a min	h min	l min	l1 min	z1	z2	d [mm]	a min	h min	l min	l1 min	z1	z2
						12	42	45	51	45	15	6
						14	46	51	59	51	18	8
60	59	70	59	12	12	15	46	51	59	51	18	8
						16	46	51	59	51	18	8
60	62	75	62	14	14	18	50	57	66	57	22	9
66	74	93	74	19	19	22	58	68	79	68	27	11
68	81	105	81	24	24	28	64	79	93	79	34	14
70	87	114	87	27	27	35	74	95	113	95	43	18
96	111	140	111	29	29	42	96	119	140	119	51	21
108	130	168	130	38	38	54	106	140	167	140	65	27
						64	124	166	199	166	78	33
						67,9	126	170	204	170	81	34
130	145	182	145	38	38	76,1	130	185	224	185	92	39
144	163	206	163	43	43	88,9	142	209	254	209	108	45
168	195	249	195	54	54	108	170	252	307	252	131	55



- T-kappale ja käyrä 90° 1 muhvi
- S-ning med T-rör och böj 90° 1 muff
- Offset turned at 90° with tee and 90° male/female elbow

- **NiroSan**® Puristusjärjestelmä / Pressystem / press system
- **NiroTherm**® Puristusjärjestelmä / Pressystem / press system

Putkenhalkaisija,  
Rör-diameter,  
Pipe  
Diameter

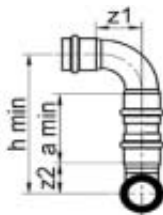
**d**

[mm]

- **SANHA**®-**Therm** Puristusjärjestelmä / Pressystem / press system
- **SANHA**® Puristusliittimet kuparista ja punametallista / **SANHA**® Presskopplingar i koppar och brons / **SANHA**® press system fittings in copper and bronze

b	h	z1	z2	d	b	h	z1	z2
				12	40	48	15	8
				14	44	53	18	9
60	81	22	21	15	44	53	18	9
				16	44	54	18	10
62	86	27	24	18	50	61	22	11
72	97	34	25	22	58	71	27	13
77	107	39	30	28	68	85	34	17
93	127	56	34	35	82	102	43	20
113	148	64	35	42	103	128	51	25
131	177	80	46	54	123	154	65	31
				64	142	193	78	51
				67,9	147	198	81	51
162	217	92	55	76,1	160	217	92	57
186	248	107	62	88,9	184	249	108	65
231	305	131	74	108	227	302	131	75

- T-kappale ja käyrä 90° 2 muhia
- S-ning med T-rör och böj 90° 2 muffar
- Offset turned at 90° with tee and 90° female elbow

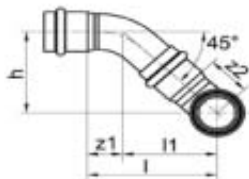


- **NiroSan**® Puristusjärjestelmä / Presssystem / press system
- **NiroTherm**® Puristusjärjestelmä / Presssystem / press system

Putkenhalkaisija,  
Rör-diameter,  
Pipe  
Diameter

- **SANHA**®-**Therm** Puristusjärjestelmä / Presssystem / press system
- **SANHA**® Puristusliittimet kuparista ja punametallista / **SANHA**® Presskopplingar i koppar och brons / **SANHA**® press system fittings in copper and bronze

a min	h min	z1	z2	d [mm]	a min	h min	z1	z2
				12	42	65	15	8
				14	46	73	18	9
60	103	22	21	15	46	73	18	9
				16	46	74	18	10
60	111	27	24	18	50	83	22	11
66	125	34	25	22	58	98	27	13
68	136	39	30	28	64	115	34	17
70	160	56	34	35	74	137	43	20
96	197	64	35	42	96	172	51	25
108	234	80	46	54	106	202	65	31
				64	124	253	78	51
				67,9	126	258	81	51
130	277	92	55	76,1	130	279	92	57
144	313	107	62	88,9	142	315	108	65
168	373	131	74	108	170	376	131	75



- T-kappale ja käyrä 45° 1 muhvi
- S-ning med T-rör och böj 45° 1 muff
- Offset turned at 90° with tee and 45° male/female elbow

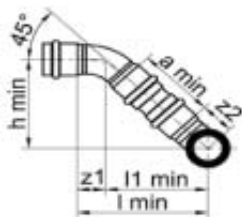
- **NiroSan**® Puristusjärjestelmä / Presssystem / press system
- **NiroTherm**® Puristusjärjestelmä / Presssystem / press system

Putkenhalkaisija,  
Rör-diameter,  
Pipe  
Diameter

- **SANHA**®-**Therm** Puristusjärjestelmä / Presssystem / press system
- **SANHA**® Puristusliittimet kuparista ja punametallista / **SANHA**® Presskopplingar i koppar och brons / **SANHA**® press system fittings in copper and bronze

h	h1	l	z	d [mm]	h	h1	l	z
				12	37	25	25	6
				14	46	30	30	8
42	64	42	12	15	46	30	30	8
				16	46	30	30	8
49	77	49	14	18	51	33	33	9
56	94	56	19	22	60	38	38	11
62	110	62	24	28	73	45	45	14
75	129	75	27	35	90	54	54	18
83	141	83	29	42	109	67	67	21
92	168	92	38	54	133	79	79	27
				64	158	92	92	33
				67,9	163	95	95	34
113	189	113	38	76,1	180	102	102	39
136	222	136	43	88,9	206	116	116	45
138	246	138	54	108	251	141	141	55

- T-kappale ja käyrä 45° 2 muhvia
- S-ning med T-rör och böj 45° 2 muffar
- Offset turned at 90° with tee and 45° female elbow



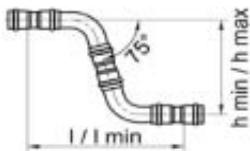
- **NiroSan**® Puristusjärjestelmä / Presssystem / press system
- **NiroTherm**® Puristusjärjestelmä / Presssystem / press system

Putken-  
halkaisija,  
Rör-dia-  
meter,  
Pipe  
Diameter

- **SANHA**-**Therm** Puristusjärjestelmä / Presssystem / press system
- **SANHA**® Puristusliittimet kuparista ja punametallista / **SANHA**® Presskopplingar i koppär och brons / **SANHA**® press system fittings in copper and bronze

a min	h min	l min	l1 min	z1	z2	d [mm]	a min	h min	l min	l1 min	z1	z2
						12	42	40	46	40	6	8
						14	46	45	53	45	8	9
60	60	77	65	12	21	15	46	45	53	45	8	9
						16	46	45	53	45	8	10
60	60	83	69	14	24	18	50	49	58	49	9	11
66	66	96	77	19	25	22	58	58	69	58	11	13
68	68	110	86	24	30	28	64	67	81	67	14	17
70	70	120	93	27	34	35	74	79	97	79	18	20
98	98	143	114	29	35	42	96	100	121	100	21	25
108	108	173	135	38	46	54	106	116	143	116	27	31
						64	124	147	180	147	33	51
						67,9	126	149	183	149	34	51
130	130	195	157	38	55	76,1	130	160	199	160	39	57
144	144	219	176	43	62	88,9	142	178	223	178	45	65
168	168	263	209	54	74	108	170	212	267	212	55	75

- Kolme kaksoismuhvia ja kaksi sovituskulmaa 75°
- S-ning med 3 skarvmuffar och två passböjar 75°
- Parallel offset with 2 75° female elbows

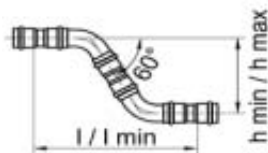


Putken-  
halkaisija,  
Rör-dia-  
meter,  
Pipe  
Diameter

- **NiroSan**® Puristusjärjestelmä / Presssystem / press system
- **NiroTherm**® Puristusjärjestelmä / Presssystem / press system

d [mm]	h max	h min	l bei h max	l min
15	247	112	210	152
18	258	127	227	182
22	309	145	273	209
28	405	165	316	234
35	451	173	339	242
42	500	211	396	292
54	596	248	456	341

- Kolme kaksoismuhvia ja kaksi sovituskulmaa 60°
- S-ning med 3 skarvmuffar och två passböjar 60°
- Parallel offset with 2 60° female elbows



Putkenhal-  
kaisija  
Rör-dia-  
meter  
Putkenhal-  
kaisija

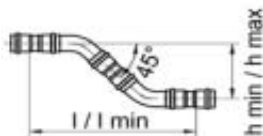
- **NiroSan**® Puristusjärjestelmä / Presssystem / press system
- **NiroTherm**® Puristusjärjestelmä / Presssystem / press system

**d**  
[mm]

**h max**   **h min**   **l bei h max**   **l min**

15	221	100	321	181
18	231	113	356	220
22	273	126	401	231
28	363	124	519	243
35	404	138	578	270
42	448	162	649	319
54	535	197	774	384
76,1	633	252	918	478
88,9	632	286	936	536
108	633	304	777	397

- Kolme kaksoismuhvia ja kaksi sovituskulmaa 45°
- S-ning med tre skarvmuffar och två passböjar 45°
- Parallel offset with 2 45° female elbows



Putken-  
halkaisija,  
Rör-dia-  
meter,  
Pipe  
Diameter

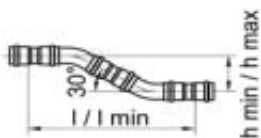
- **NiroSan**® Puristusjärjestelmä / Presssystem / press system
- **NiroTherm**® Puristusjärjestelmä / Presssystem / press system

**d**  
[mm]

**h max**   **h min**   **l bei h max**   **l min**

15	181	82	325	204
18	189	93	347	241
22	226	99	416	259
28	296	101	504	263
35	330	111	548	285
42	366	119	628	305
54	436	153	732	387

- Kolme kaksoismuhvia ja kaksi sovituskulmaa 30°
- S-ning med tre skarvmuffar och två passböjar 30°
- Parallel offset with 2 30° female elbows



Putken-  
halkaisija,  
Rör-dia-  
meter,  
Pipe  
Diameter

- **NiroSan**® Puristusjärjestelmä / Presssystem / press system
- **NiroTherm**® Puristusjärjestelmä / Presssystem / press system

**d**  
[mm]

**h max**   **h min**   **l bei h max**   **l min**

15      128    55      210    356

18      133    63      253    393

22      158    63      250    440

28      210    65      260    550

35      234    64      254    594

42      259    76      300    666

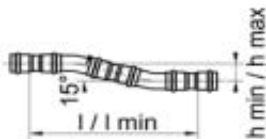
54      309    86      338    784

76,1    356    136     518    958

88,9    366    166     649    1049

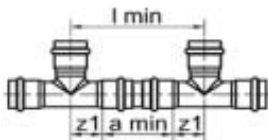
108     365    175     683    1063

- Kolme kaksoismuhvia ja kaksi sovituskulmaa 15°
- S-ning med tre skarvmuffar och två passböjar 15°
- Parallel offset with 2 15° female elbows



Putken- halkaisija, Rör-dia- meter, Pipe Diameter <b>d</b> [mm]	<ul style="list-style-type: none"> <li>• <b>NiroSan</b>® Puristusjärjestelmä / Presssystem / press system</li> <li>• <b>NiroTherm</b>® Puristusjärjestelmä / Presssystem / press system</li> </ul>			
	<b>h max</b>	<b>h min</b>	<b>l bei h max</b>	<b>l min</b>
15	66	27	508	209
18	69	31	540	253
22	82	31	636	250
28	108	31	843	257
35	121	30	935	247
42	134	33	1035	268
54	160	38	1231	308
76,1	184	70	1410	545
88,9	189	86	1468	682
108	189	91	1465	718

- Minimi etäisyys kahden T-liittimen välillä, saman kokoiset tai supistavat
- Minsta avstånd mellan två T-rör, liksidiga eller reducerade
- Min. distance between two T pieces, equal and reduced



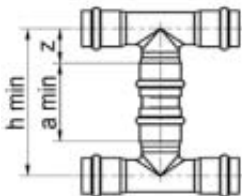
- **NiroSan**® Puristusjärjestelmä / Presssystem / press system
- **NiroTherm**® Puristusjärjestelmä / Presssystem / press system

Putkenhalkaisija,  
Rör-diameter,  
Pipe  
Diameter

- **SANHA**®-**Therm** Puristusjärjestelmä / Presssystem / press system
- **SANHA**® Puristusliittimet kuparista ja punametallista / **SANHA**® Presskopplingar i koppar och brons / **SANHA**® press system fittings in copper and bronze

a min	l min	z	d [mm]	a min	l min	z
			12	42	58	8
			14	46	64	9
60	104	21	15	46	78	16
			16	46	66	10
60	107	24	18	50	82	16
66	117	26	22	58	88	15
68	128	30	28	64	98	17
70	139	35	35	74	114	20
98	175	39	42	96	146	25
108	197	45	54	106	168	31
			64	124	202	39
			67,9	126	208	41
130	244	57	76,1	130	224	47
144	269	63	88,9	142	252	55
168	316	74	108	170	300	65

- Minimi etäisyys kahden samankokoisen T-liittimen välillä
- Minsta avstånd mellan två liksidiga T-rör
- Min. distance between two equal T pieces



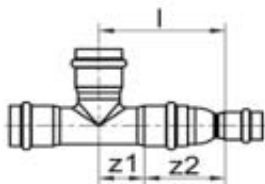
- **NiroSan**® Puristusjärjestelmä / Pressystem / press system
- **NiroTherm**® Puristusjärjestelmä / Pressystem / press system

Putken-  
halkaisija,  
Rör-  
dia-  
meter,  
Pipe  
Diameter

- **SANHA**®-**Therm** puristusjärjestelmä / Pressystem / press system
- **SANHA**® Puristusliittimet kuparista ja punametallista / **SANHA**® Presskopplingar i koppar och brons / **SANHA**® press system fittings in copper and bronze

a min	l min	z	d [mm]	a min	l min	z
			12	42	58	8
			14	46	64	9
60	101	21	15	46	64	9
			16	46	66	10
60	107	24	18	50	72	11
66	115	25	22	58	84	13
68	127	30	28	64	98	17
70	138	34	35	74	114	20
98	167	35	42	96	146	25
108	199	46	54	106	168	31
			64	124	226	51
			67,9	126	228	51
130	240	55	76,1	130	244	57
144	268	62	88,9	142	272	65
168	316	74	108	170	320	75

- T-liitin supistuksella 1 muhvi poikittaisella muhvilla
- T-rör med reducering 1 muff på längsgående muff
- Tee with male/female reducer, reducer at the pass of the tee



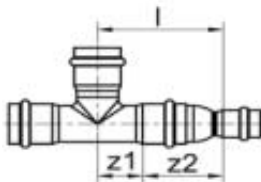
- **NiroSan**® Puristusjärjestelmä / Presssystem / press system
- **NiroTherm**® Puristusjärjestelmä / Presssystem / press system

Putkenhalkaisija,  
Rör-diameter,  
Pipe  
Diameter

- **SANHA**®-**Therm** puristusjärjestelmä / Presssystem / press system
- **SANHA**® Puristusliittimet kuparista ja punametallista / **SANHA**® Presskopplingar i koppar och brons / **SANHA**® press system fittings in copper and bronze

			d			
l	z1	z2	[mm]	l	z1	z2
			14 - 12	34	9	25
			15 - 12	40	16	24
			15 - 14	48	16	32
			16 - 12	36	10	26
			16 - 14	35	10	25
			18 - 12	44	16	28
			18 - 14	43	16	27
56	24	32	18 - 15	42	16	26
			18 - 16	43	16	27
			22 - 14	48	15	33
73	26	47	22 - 15	48	15	33
			22 - 16	47	15	32
74	26	48	22 - 18	45	15	30
			28 - 14	58	17	41
82	30	52	28 - 15	56	17	39
			28 - 16	57	17	40
83	30	53	28 - 18	54	17	37
78	30	48	28 - 22	51	17	34
87	35	52	35 - 18			
90	35	55	35 - 22	64	20	44
90	35	55	35 - 28	60	20	40
105	39	66	42 - 22	79	25	54
106	39	67	42 - 28	75	25	50

- T-liitin supistuksella 1 muhvi poikittaisella muhvilla
- T-rör med reducering 1 muff på längsgående muff
- Tee with male/female reducer, reducer at the pass of the tee



- **NiroSan**® Puristusjärjestelmä / Presssystem / press system
- **NiroTherm**® Puristusjärjestelmä / Presssystem / press system

Putken-  
halkaisija,  
Rör-dia-  
meter,  
Pipe  
Diameter

d  
[mm]

- **SANHA**®-**Therm** puristusjärjestelmä / Presssystem / press system
- **SANHA**® Puristusliittimet kuparista ja punametallista / **SANHA**® Presskopplingar i koppar och brons / **SANHA**® press system fittings in copper and bronze

l	z1	z2	d [mm]	l	z1	z2
102	39	64	42 - 35	71	25	46
120	45	76	54 - 28			
120	45	75	54 - 35	89	31	58
117	45	73	54 - 42	84	31	53
			64 - 42	128	39	89
			64 - 54	120	39	81
			66,7 - 28	139	41	98
			66,7 - 35	135	41	94
			66,7 - 42	132	41	91
			66,7 - 54	126	41	85
			76,1 - 35	146	47	99
			76,1 - 42	146	47	99
153	57	96	76,1 - 54	137	47	90
150	57	93	76,1 - 64	130	47	83
			76,1 - 66,7	128	47	81
175	63	113	88,9 - 54	161	55	106
168	63	106	88,9 - 64	156	55	101
163	63	100	88,9 - 76,1	150	55	95
			108 - 42	206	65	141
209	74	135	108 - 54	201	65	136
208	74	134	108 - 64	196	65	131
			108 - 66,7	194	65	129
204	74	130	108 - 76,1	189	65	124
197	74	123	108 - 88,9	183	65	118

## 3.0 Product overview

### 3.2. NiroSan® HST-puristeosat

#### 3.2. NiroSan® presskopplingar i rostfritt stål

#### 3.2. NiroSan® press fittings of stainless steel

#### **NiroSan®-Press** (Sarja / Serie / Series 9000)

Käyttövesi  
Tappvatten  
Drinking water

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#### **NiroSan®-Press Gas** (Sarja / Serie / Series 17000)

Kaasu  
Gas  
Gas

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#### **NiroSan®-Press Industry** (Sarja / Serie / Series 18000)

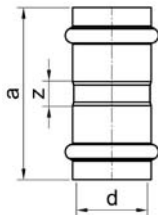
Teollisiin sovelluksiin  
Industriell tillämpning  
Application for industry

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#### **NiroSan®-Press SF** (Sarja / Serie / Series 19000)

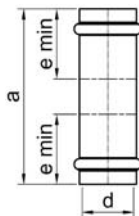
Ilman silikonია  
Silikonfria  
Silicon free

- KAKSOISMUHVI
- SKARVMUFF
- Coupling



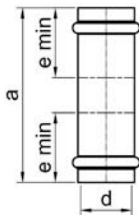
NiroSan® Press	NiroSan® Press Gas	NiroSan® Press SF	NiroSan® Press SF	d	a	z
6927015	61727015	61827015	61927015	15	56	6
6927018	61727018	61827018	61927018	18	67	17
6927022	61727022	61827022	61927022	22	76	20
6927028	61727028	61827028	61927028	28	78	19
6927035	61727035	61827035	61927035	35	78	17
6927042	61727042	61827042	61927042	42	94	18
6927054	61727054	61827054	61927054	54	106	17
6927076	61727076	61827076	61927076	76,1	132	31
6927089	61727089	61827089	61927089	88,9	145	30
69270108	617270108	618270108	619270108	108	170	31

- LIUKUMUHVI
- SKJUTMUFF
- Slip coupling



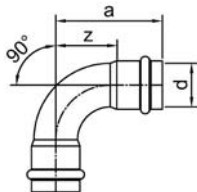
NiroSan® Press	NiroSan® Press Gas	NiroSan® Press SF	NiroSan® Press SF	d	a	e min
69270S15	617270S15	618270S15	619270S15	15	78	25
69270S18	617270S18	618270S18	619270S18	18	78	25
69270S22	617270S22	618270S22	619270S22	22	84	28
69270S28	617270S28	618270S28	619270S28	28	96	29

- LIUKUMUHVI
- SKJUTMUFF
- Slip coupling

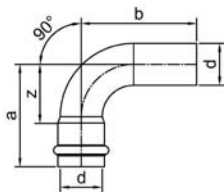


NiroSan® Press	NiroSan® Press Gas	NiroSan® Press SF	NiroSan® Press SF	d	a	e min
69270S35	617270S35	618270S35	619270S35	35	98	45
69270S42	617270S42	618270S42	619270S42	42	114	53
69270S54	617270S54	618270S54	619270S54	54	131	65
69270S76	617270S76	618270S76	619270S76	76,1	148	95
69270S89	617270S89	618270S89	619270S89	88,9	161	109
69270S108	617270S108	618270S108	619270S108	108	210	133

- KÄYRÄ 90° 2 MUHVIA
- BÖJ 90° 2 MUFFAR
- Bend 90° female/female

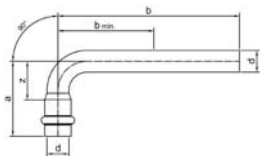


NiroSan® Press	NiroSan® Press Gas	NiroSan® Press SF	NiroSan® Press SF	d	a	z
69002A15	617002A15	618002A15	619002A15	15	48	22
69002A18	617002A18	618002A18	619002A18	18	53	27
69002A22	617002A22	618002A22	619002A22	22	63	34
69002A28	617002A28	618002A28	619002A28	28	68	39
69002A35	617002A35	618002A35	619002A35	35	87	56
69002A42	617002A42	618002A42	619002A42	42	103	64
69002A54	617002A54	618002A54	619002A54	54	125	80
69002A76	617002A76	618002A76	619002A76	76,1	143	92
69002A89	617002A89	618002A89	619002A89	88,9	165	107
69002A108	617002A108	618002A108	619002A108	108	201	131



- KÄYRÄ 90° 1 MUHVI
- BÖJ 90° 1 MUFF
- Bend 90° female/male

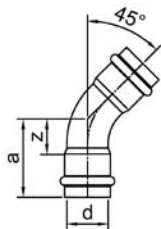
NiroSan® Press	NiroSan® Press Gas	NiroSan® Press SF	NiroSan® Press SF	d	a	b	z
69001A15	617001A15	618001A15	619001A15	15	48	60	22
69001A18	617001A18	618001A18	619001A18	18	53	62	27
69001A22	617001A22	618001A22	619001A22	22	63	72	34
69001A28	617001A28	618001A28	619001A28	28	68	77	39
69001A35	617001A35	618001A35	619001A35	35	87	93	56
69001A42	617001A42	618001A42	619001A42	42	103	113	64
69001A54	617001A54	618001A54	619001A54	54	125	131	80
69001A76	617001A76	618001A76	619001A76	76,1	143	162	92
69001A89	617001A89	618001A89	619001A89	88,9	165	186	107
69001A108	617001A108	618001A108	619001A108	108	201	231	131



- KÄYRÄ 90° 1 MUHVI, PITKÄ
- BÖJ 90° 1 MUFF, LÅNG
- Bend 90° female/male - long

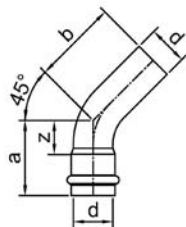
NiroSan® Press	NiroSan® Press Gas	NiroSan® Press SF	NiroSan® Press SF	d	a	b	b min	z
69001L15		618001L15	619001L15	15	52	125	60	26
69001L18		618001L18	619001L18	18	60	125	62	34
69001L22		618001L22	619001L22	22	63	150	72	34
69001L28		618001L28	619001L28	28	75	200	77	45
69001L35		618001L35	619001L35	35	87	225	93	56
69001L42		618001L42	619001L42	42	103	250	113	64
69001L54		618001L54	619001L54	54	125	300	131	80

- KÄYRÄ 45° 2 MUHVIA
- BÖJ 45° 2 MUFFAR
- Bend 45° female/female



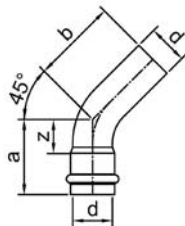
NiroSan® Press	NiroSan® Press Gas	NiroSan® Press SF	NiroSan® Press SF	d	a	z
6904115	61704115	61804115	61904115	15	37	12
6904118	61704118	61804118	61904118	18	39	14
6904122	61704122	61804122	61904122	22	48	19
6904128	61704128	61804128	61904128	28	53	24
6904135	61704135	61804135	61904135	35	57	27
6904142	61704142	61804142	61904142	42	68	29
6904154	61704154	61804154	61904154	54	83	38
6904176	61704176	61804176	61904176	76,1	89	38
6904189	61704189	61804189	61904189	88,9	101	43
69041108	617041108	618041108	619041108	108	124	54

- KÄYRÄ 45° 1 MUHVI
- BÖJ 45° 1 MUFF
- Bend 45° female/male



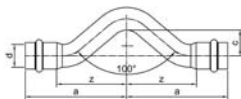
NiroSan® Press	NiroSan® Press Gas	NiroSan® Press SF	NiroSan® Press SF	d	a	b	z
6904015	61704015	61804015	61904015	15	37	47	12
6904018	61704018	61804018	61904018	18	39	48	14
6904022	61704022	61804022	61904022	22	48	56	19
6904028	61704028	61804028	61904028	28	53	60	24
6904035	61704035	61804035	61904035	35	57	64	27

- KÄYRÄ 45° 1 MUHVI
- BÖJ 45° 1 MUFF
- Bend 45° female/male



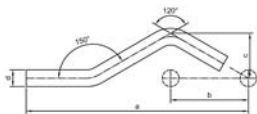
NiroSan® Press	NiroSan® Press Gas	NiroSan® Press SF	NiroSan® Press SF	d	a	b	z
6904042	61704042	61804042	61904042	42	68	79	29
6904054	61704054	61804054	61904054	54	83	89	38
6904076	61704076	61804076	61904076	76,1	89	108	38
6904089	61704089	61804089	61904089	88,9	101	122	43
69040108	617040108	618040108	619040108	108	124	150	54

- YLIHEITTO 2 MUHVIA
- S-RÖR 2 MUFFAR
- Full crossover



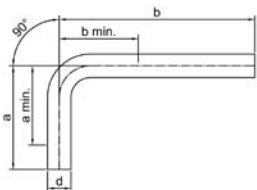
NiroSan® Press	NiroSan® Press Gas	NiroSan® Press SF	NiroSan® Press SF	d	a	c	z
6908515		61808515	61908515	15	79	21	53
6908518		61808518	61908518	18	81	21	55
6908522		61808522	61908522	22	93	26	64
6908528		61808528	61908528	28	105	27	84

- YLIHEITTO
- S-RÖR
- Crossover

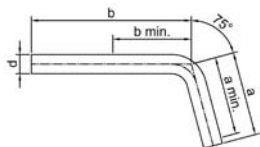


NiroSan® Press	NiroSan® Press Gas	NiroSan® Press SF	NiroSan® Press SF	d	a	b	c
6908715				15	200	70	40
6908718				18	216	70	45
6908722				22	216	78	45
6908728				28	244	87	50

- SOVITUSKULMA 90°
- PASSBÖJ 90°
- Bend with plain ends 90°

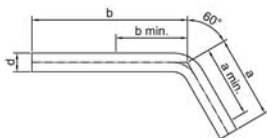


NiroSan® Press	NiroSan® Press Gas	NiroSan® Press SF	NiroSan® Press SF	d	a	a min	b	b min
6900315				15	62	55	125	55
6900318				18	62	57	125	57
6900322				22	73	65	150	65
6900328				28	85	80	200	80
6900335				35	92	92	225	92
6900342				42	113		250	113
6900354				54	131		300	131



- SOVITUSKULMA 75°
- PASSBÖJ 75°
- Bend with plain ends 75°

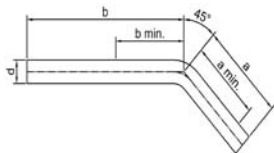
NiroSan® Press	NiroSan® Press Gas	NiroSan® Press SF	NiroSan® Press SF	d	a	a min	b	b min
6904515				15	66	55	125	55
6904518				18	62	57	125	57
6904522				22	75	65	150	65
6904528				28	85	76	200	76
6904535				35	92	81	225	81
6904542				42	113	100	250	100
6904554				54	131	120	300	120



- SOVITUSKULMA 60°
- PASSBÖJ 60°
- Bend with plain ends 60°

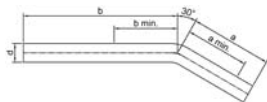
NiroSan® Press	NiroSan® Press Gas	NiroSan® Press SF	NiroSan® Press SF	d	a	a min	b	b min
6905815				15	66	55	125	55
6905818				18	62	57	125	57
6905822				22	75	65	150	65
6905828				28	85	62	200	62
6905835				35	92	71	225	71
6905842				42	113	85	250	85
6905854				54	131	105	300	105
6905876				76,1	162	130	350	130
6905889				88,9	185	150	350	150
69058108				108	231	160	350	160

- SOVITUSKULMA 45°
- PASSBÖJ 45°
- Bend with plain ends 45°



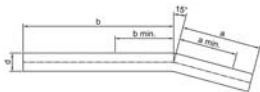
NiroSan® Press	NiroSan® Press Gas	NiroSan® Press SF	NiroSan® Press SF	d	a	a min	b	b min
6904215				15	66	55	125	55
6904218				18	62	57	125	57
6904222				22	75	60	150	60
6904228				28	85	62	200	62
6904235				35	92	70	225	70
6904242				42	113	75	250	75
6904254				54	131	100	300	100

- SOVITUSKULMA 30°
- PASSBÖJ 30°
- Bend with plain ends 30°



NiroSan® Press	NiroSan® Press Gas	NiroSan® Press SF	NiroSan® Press SF	d	a	a min	b	b min
6904415				15	66	52	125	52
6904418				18	62	55	125	55
6904422				22	75	55	150	55
6904428				28	85	55	200	55
6904435				35	92	55	225	55
6904442				42	113	67	250	67
6904454				54	131	77	300	77
6904476				76,1	162	130	350	130
6904489				88,9	185	150	350	150
69044108				108	231	160	350	160

- SOVITUSKULMA 15°
- PASSBÖJ 15°
- Bend with plain ends 15°



NiroSan® Press	NiroSan® Press Gas	NiroSan® Press SF	NiroSan® Press SF	d	a	a min	b	b min
6904315				15	66	49	125	49
6904318				18	62	52	125	52
6904322				22	75	52	150	52
6904328				28	200	51	85	51
6904335				35	225	50	92	50
6904342				42	113	55	250	55
6904354				54	131	65	300	65
6904376				76,1	350	130	162	130
6904389				88,9	350	150	185	150
69043108				108	231	160	350	160

- Adapteri minimietäisyydelle liittimien väliin
- Nippelrör som skapar minsta längd mellan två kopplingar
- Adaptor with minimum pipe length between two fittings



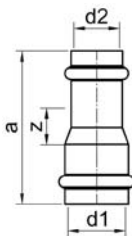
NiroSan® Press	NiroSan® Press Gas	NiroSan® Press SF	NiroSan® Press SF	d	a
6905015				15	60
6905018				18	60
6905022				22	66
6905028				28	68
6905035				35	70
6905042				42	96

- Adapteri minimietäisyydelle liittimien väliin
- Nippelrör som skapar minsta längd mellan två kopplingar
- Adaptor with minimum pipe length between two fittings

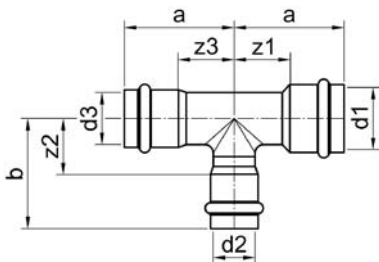


NiroSan® Press	NiroSan® Press Gas	NiroSan® Press SF	NiroSan® Press SF	d	a
6905054				54	108
6905076				76	130
6905089				89	144
69050108				108	168

- SUPISTUSMUHVI 2 MUHVIA
- REDUCERING 2 MUFFAR
- Reducing coupling



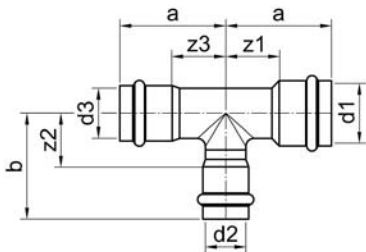
NiroSan® Press	NiroSan® Press Gas	NiroSan® Press SF	NiroSan® Press SF	d1 x d2	a	z
692401815		6182401815	6192401815	18 x 15	61	10
692402215		6182402215	6192402215	22 x 15	71	17
692402218		6182402218	6192402218	22 x 18	67	13
692402822		6182402822	6192402822	28 x 22	75	17



- T-HAARA 3 MUHVIA
- T-RÖR 3 MUFFAR
- Tee

NiroSan® Press	NiroSan® Press Gas	
6913015	61713015	
6913018	61713018	
6913022	61713022	
6913028	61713028	
6913035	61713035	
6913042	61713042	
6913054	61713054	
6913076	61713076	
6913089	61713089	
69130108	617130108	
69130181515	617130181515	
69130181518	617130181518	
69130221515	617130221515	
69130221522	617130221522	
69130221818	617130221818	
69130221822	617130221822	
69130281528	617130281528	
69130281828	617130281828	
69130282222	617130282222	
69130282228	617130282228	
69130351535	617130351535	
69130351835	617130351835	
69130352235	617130352235	
69130352835	617130352835	
69130421842	617130421842	
69130422242	617130422242	
69130422842	617130422842	
69130423542	617130423542	
69130542254	617130542254	
69130542854	617130542854	
69130543554	617130543554	
69130544254	617130544254	
69130762276		
69130762876		
69130763576		
69130764276		
69130765476	617130765476	
69130892289		

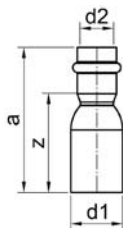
	<b>NiroSan® Press SF</b>	<b>NiroSan® Press SF</b>	<b>d1 x d2 x d3</b>	<b>a</b>	<b>b</b>	<b>z1</b>	<b>z2</b>	<b>z3</b>
	61813015	61913015	15	47	46	22	21	22
	61813018	61913018	18	49	49	24	24	24
	61813022	61913022	22	54	53	26	25	26
	61813028	61913028	28	59	59	30	30	30
	61813035	61913035	35	65	65	35	34	35
	61813042	61913042	42	77	77	39	36	39
	61813054	61913054	54	89	90	45	46	45
	61813076	61913076	76,1	108	106	57	55	57
	61813089	61913089	88,9	120	120	63	62	63
	618130108	619130108	108	144	144	74	74	74
	618130181515	619130181515	18 x 15 x 15	41	41	15	15	15
	618130181518	619130181518	18 x 15 x 18	49	53	24	16	24
	618130221515	619130221515	22 x 15 x 15	44	44	15	18	15
	618130221522	619130221522	22 x 15 x 22	55	51	27	25	27
	618130221818	619130221818	22 x 18 x 18	44	44	15	18,	15
	618130221822	619130221822	22 x 18 x 22	55	49	27	24	27
	618130281528	619130281528	28 x 15 x 28	60	54	30	28	30
	618130281828	619130281828	28 x 18 x 28	60	53	30	27	30
	618130282222	619130282222	28 x 22 x 22	49	49	19	20	19
	618130282228	619130282228	28 x 22 x 28	60	56	30	27	30
	618130351535	619130351535	35 x 15 x 35	65	58	35	33	35
	618130351835	619130351835	35 x 18 x 35	65	55	35	31	35
	618130352235	619130352235	35 x 22 x 35	65	59	35	30	35
	618130352835	619130352835	35 x 28 x 35	65	62	35	33	35
	618130421842	619130421842	42 x 18 x 42	77	60	39	34	39
	618130422242	619130422242	42 x 22 x 42	77	63	39	34	39
	618130422842	619130422842	42 x 28 x 42	77	64	39	36	39
	618130423542	619130423542	42 x 35 x 42	77	67	39	37	39
	618130542254	619130542254	54 x 22 x 54	89	70	45	41	45
	618130542854	619130542854	54 x 28 x 54	89	70	45	41	45
	618130543554	619130543554	54 x 35 x 54	89	74	45	43	45
	618130544254	619130544254	54 x 42 x 54	89	81	45	43	45
	618130762276	619130762276	76,1 x 22 x 76,1	108	83	57	55	57
	618130762876	619130762876	76,1 x 28 x 76,1	108	85	57	56	57
	618130763576	619130763576	76,1 x 35 x 76,1	108	87	57	57	57
	618130764276	619130764276	76,1 x 42 x 76,1	108	95	57	57	57
	618130765476	619130765476	76,1 x 54 x 76,1	108	102	57	57	57
	618130892289	619130892289	88,9 x 22 x 88,9	120	90	63	61	63



- T-HAARA 3 MUHVIA
- T-RÖR 3 MUFFAR
- Tee

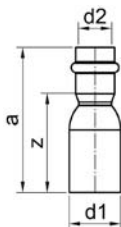
NiroSan® Press	NiroSan® Press Gas
69130892889	
69130893589	
69130894289	
69130895489	
69130897689	617130897689
6913010822108	
6913010828108	
6913010835108	
6913010842108	
6913010854108	
6913010876108	
6913010889108	61713010889108

- MUHVI/HOLKKI
- REDUCERING 1 MUFF
- Reducer



NiroSan® Press	NiroSan® Press Gas	NiroSan® Press SF	NiroSan® Press SF	d1 x d2	a	z
692431815	6172431815	6182431815	6192431815	18a x 15	58	32
692432215	6172432215	6182432215	6192432215	22a x 15	73	47
692432218	6172432218	6182432218	6192432218	22a x 18	74	48
692432815	6172432815	6182432815	6192432815	28a x 15	77	52
692432818	6172432818	6182432818	6192432818	28a x 18	79	53
692432822	6172432822	6182432822	6192432822	28a x 22	77	48
692433518	6172433518	6182433518	6192433518	35a x 18	78	52
692433522	6172433522	6182433522	6192433522	35a x 22	84	55
692433528	6172433528	6182433528	6192433528	35a x 28	85	55
692434222	6172434222	6182434222	6192434222	42a x 22	95	66

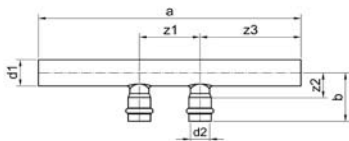
NiroSan® Press SF	NiroSan® Press SF	d1 x d2 x d3	a	b	z1	z2	z3
618130892889	619130892889	88,9 x 28 x 88,9	120	92	63	62	63
618130893589	619130893589	88,9 x 35 x 88,9	120	94	63	63	63
618130894289	619130894289	88,9 x 42 x 88,9	120	102	63	63	63
618130895489	619130895489	88,9 x 54 x 88,9	120	108	63	64	63
618130897689	619130897689	88,9 x 76,1 x 88,9	120	112	63	62	63
61813010822108	61913010822108	108 x 22 x 108	144	99	74	70	74
61813010828108	61913010828108	108 x 28 x 108	144	101	74	72	74
61813010835108	61913010835108	108 x 35 x 108	144	103	74	73	74
61813010842108	61913010842108	108 x 42 x 108	144	111	74	73	74
61813010854108	61913010854108	108 x 54 x 108	144	118	74	73	74
61813010876108	61913010876108	108 x 76,1 x 108	144	122	74	71	74
61813010889108	61913010889108	108 x 88,9 x 108	144	129	74	72	74



- MUHVI/HOLKKI
- REDUCERING 1 MUFF
- Reducer

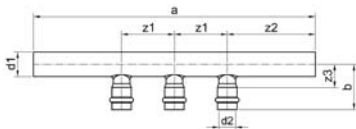
NiroSan® Press	NiroSan® Press Gas	NiroSan® Press SF	NiroSan® Press SF	d1 x d2	a	z
692434228	6172434228	6182434228	6192434228	42a x 28	97	67
692434235	6172434235	6182434235	6192434235	42a x 35	95	64
692435428	6172435428	6182435428	6192435428	54a x 28	106	76
692435435	6172435435	6182435435	6192435435	54a x 35	106	75
692435442	6172435442	6182435442	6192435442	54a x 42	112	73
692437654	6172437654	6182437654	6192437654	76,1a x 54	141	101
692438954	6172438954	6182438954	6192438954	88,9a x 54	160	115
692438976	6172438976	6182438976	6192438976	88,9a x 76,1	151	100
6924310854	61724310854	61824310854	61924310854	108a x 54	180	135
6924310876	61724310876	61824310876	61924310876	108a x 76,1	181	130
6924310889	61724310889	61824310889	61924310889	108a x 88,9	181	123

- JAKOTUKKI 2-OSAINEN
- FÖRDELARE 2 AVSTICK
- Manifold with 2 branches

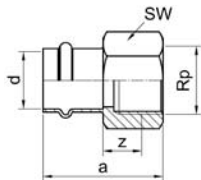


NiroSan® Press	NiroSan® Press Gas	NiroSan® Press SF	NiroSan® Press SF	d1 x d2	a	b	z1	z2	z3
69130V22815				28 x 15	260	52	60	27	100

- JAKOTUKKI 3-OSAINEN
- FÖRDELARE 3 AVSTICK
- Manifold with 3 branches

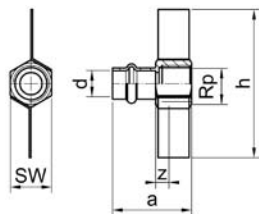


NiroSan® Press	NiroSan® Press Gas	NiroSan® Press SF	NiroSan® Press SF	d1 x d2	a	b	z1	z2	z3
69130V32815				28 x 15	320	52	60	27	100



- KIERRENIPPA 1 MUHVI SK
- ÖVERGÅNG 1 MUFF INV GG
- Female adaptor

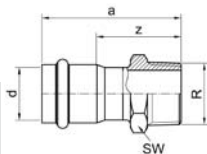
NiroSan® Press	NiroSan® Press Gas	NiroSan® Press SF	NiroSan® Press SF	d x Rp	a	z	SW
69270G1512	617270G1512	618270G1512	619270G1512	15 x 1/2	46	7	24
69270G1534	617270G1534	618270G1534	619270G1534	15 x 3/4	49	9	30
69270G1812	617270G1812	618270G1812	619270G1812	18 x 1/2	47	8	24
69270G1834	617270G1834	618270G1834	619270G1834	18 x 3/4	49	9	30
69270G2212	617270G2212	618270G2212	619270G2212	22 x 1/2	50	8	24
69270G2234	617270G2234	618270G2234	619270G2234	22 x 3/4	52	9	30
69270G221	617270G221	618270G221	619270G221	22 x 1	55	10	38
69270G2834	617270G2834	618270G2834	619270G2834	28 x 3/4	76	32	32
69270G281	617270G281	618270G281	619270G281	28 x 1	79	33	38
69270G35114	617270G35114	618270G35114	619270G35114	35 x 1 1/4	89	39	46
69270G42112	617270G42112	618270G42112	619270G42112	42 x 1 1/2	98	40	55
69270G542	617270G542	618270G542	619270G542	54 x 2	107	39	65



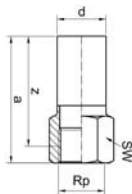
- KIINTOPISTELIITIN 1 MUHVI SK
- ÖVERGÅNG 1 MUFF INV GG, M/FÄSTE
- Female adaptor

NiroSan® Press	NiroSan® Press Gas	NiroSan® Press SF	NiroSan® Press SF	d x Rp	a	h	z	SW
69270F1512			619270F1512	15 x 1/2	46	86	7	24

- KIERRENIPPA 1 MUHVI UK
- ÖVERGÅNG 1 MUFF UTV GG
- Male adaptor

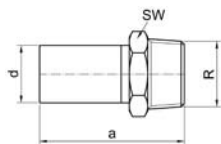


NiroSan® Press	NiroSan® Press Gas	NiroSan® Press SF	NiroSan® Press SF	d x Rp	a	z	SW
69243G1538	617243G1538	1618243G538	1619243G1538	15 x 3/8	41	15	19
69243G1512	617243G1512	1618243G1512	1619243G1512	15 x 1/2	46	20	24
69243G1534	617243G1534	1618243G1534	1619243G1534	15 x 3/4	63	37	30
69243G1812	617243G1812	1618243G1812	1619243G1812	18 x 1/2	46	20	24
69243G1834	617243G1834	1618243G1834	1619243G1834	18 x 3/4	48	22	30
69243G2212	617243G2212	1618243G2212	1619243G2212	22 x 1/2	51	22	27
69243G2234	617243G2234	1618243G2234	1619243G2234	22 x 3/4	51	22	30
69243G221	617243G221	1618243G221	1619243G221	22 x 1	52	23	36
69243G2834	617243G2834	1618243G2834	1619243G2834	28 x 3/4	72	42	30
69243G281	617243G281	1618243G281	1619243G281	28 x 1	74	44	36
69243G351	617243G351	1618243G351	1619243G351	35 x 1	80	49	36
69243G35114	617243G35114	1618243G35114	1619243G35114	35 x 1 1/4	84	53	46
69243G42112	617243G42112	1618243G42112	1619243G42112	42 x 1 1/2	94	55	55
69243G542	617243G542	1618243G542	1619243G542	54 x 2	107	62	65
69243G76212	617243G76212	1618243G76212	1619243G76212	76,1 x 2 1/2	117	65	100
69243G893	617243G893	1618243G893	1619243G893	88,9 x 3	136	78	105
69243G1084	617243G1084	1618243G1084	1619243G1084	108 x 4	155	84	125



- PURISTETTAVA NIPPA SK
- ÖVERGÅNGSNIPPEL SLÄTÄNDE INV GG
- Plug-in adaptor, female

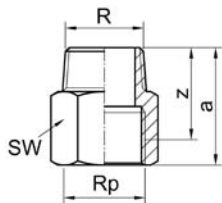
NiroSan® Press	NiroSan® Press Gas	NiroSan® Press SF	NiroSan® Press SF	d x Rp	a	z	SW
69246G1512				15a x 1/2	66	52	24
69246G1812				18a x 1/2	66	52	24
69246G1834				18a x 3/4	68	53	32
69246G2212				22a x 1/2	71	57	24
69246G2234				22a x 3/4	73	58	32
69246G2834				28a x 3/4	78	63	32



- PURISTETTAVA NIPPA
- ÖVERGÅNGSNIPPEL SLÄTÄNDE UTV GG
- Plug-in adaptor, male

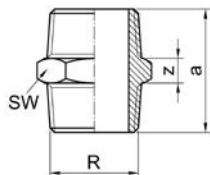
NiroSan® Press	NiroSan® Press Gas	NiroSan® Press SF	NiroSan® Press SF	d x R	a	SW
69280G1512				15a x 1/2	59	22
69280G1812				18a x 1/2	59	22
69280G1834				18a x 3/4	63	30
69280G2212				22a x 1/2	64	24
69280G2234				22a x 3/4	68	30
69280G281				28a x 1	76	36

- HANAJATKO
- VENTILFÖRLÄNGNING
- Hexagon nipple



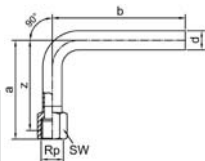
NiroSan® Press	NiroSan® Press Gas	NiroSan® Press SF	NiroSan® Press SF	Rp x R	a	z	SW
69370G1212				1/2 x 1/2	39	12	24
69370G3434				3/4 x 3/4	42	13	32
69370G11				1 x 1	48	14	38

- KAKSOISNIPPA
- SEKKANTSNIPEL
- Double, nipple



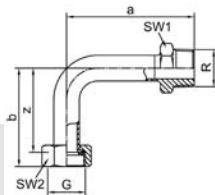
NiroSan® Press	NiroSan® Press Gas	NiroSan® Press SF	NiroSan® Press SF	R	a	SW
6928012				1/2	34	22
6928034				3/4	39	30
692801				1	45	36

- KÄYRÄ 90° 1 MUHVI SK - PITKÄ
- BÖJ 90° 1 MUFF INV GG – LÅNG
- Bend with plain ends 90°, female



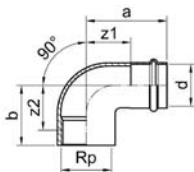
NiroSan® Press	NiroSan® Press Gas	NiroSan® Press SF	NiroSan® Press SF	d x Rp	a	b	z	SW
69003G1812				18 x 1/2	101	70	87	24

- KÄYRÄ 90° UK SK
- BÖJ 90° UTV GG LEKANDE MUTTER
- Bend 90° with male thread and union nut

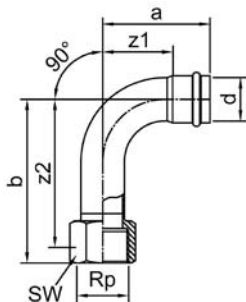


NiroSan® Press	NiroSan® Press Gas	NiroSan® Press SF	NiroSan® Press SF	R x G	a	b	z	SW1	SW2
69002MG3434				3/4 x 3/4	98	76	66	30	30
69002MG11				1 x 1	112	89	75	38	38

- KULMA 90° 1 MUHVI SK
- VINKEL 1 MUFF INV GG
- Elbow 90° with male thread



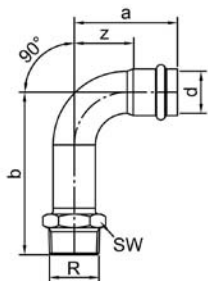
NiroSan® Press	NiroSan® Press Gas	NiroSan® Press SF	NiroSan® Press SF	d x Rp	a	b	z	SW
69090IG1512	617090IG1512	618090IG1512	619090IG1512	15 x 1/2	52	31	27	17
69090IG1834	617090IG1834	618090IG1834	619090IG1834	18 x 3/4	55	35	30	20
69090IG2234	617090IG2234	618090IG2234	619090IG2234	22 x 3/4	56	37	28	22
69090IG281	617090IG281	618090IG281	619090IG281	28 x 1	61	43	32	26
69090IG35114	617090IG35114	618090IG35114	619090IG35114	35 x 1 1/4	67	50	37	31



- KÄYRÄ 90° 1 MUHVI SK
- BÖJ 90° 1 MUFF INV GG
- Bend 90° with female thread

NiroSan® Press	NiroSan® Press Gas
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69002G1512	617002G1512
69002G1834	617002G1834
69002G2234	617002G2234
69002G281	617002G281
69002G35114	617002G35114



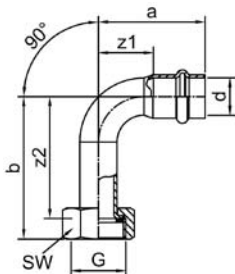
- KÄYRÄ 90° 1 MUHVI UK
- BÖJ 90° 1 MUFF UTV GG
- Bend 90° with male thread

NiroSan® Press	NiroSan® Press Gas
-------------------	-----------------------

69002AG1512	617002AG1512
69002AG1812	617002AG1812
69002AG1834	617002AG1834
69002AG2234	617002AG2234
69002AG281	617002AG281
69002AG35114	617002AG35114
69002AG42112	617002AG42112
69002AG542	617002AG542

<b>NiroSan® Press SF</b>	<b>NiroSan® Press SF</b>	<b>d x Rp</b>	<b>a</b>	<b>b</b>	<b>z1</b>	<b>z2</b>	<b>z3</b>	<b>SW</b>
618002G1512	619002G1512	15 x 1/2	48	91	22	77	24	24
618002G1834	619002G1834	18 x 3/4	53	95	27	80	32	32
618002G2234	619002G2234	22 x 3/4	63	105	34	90	32	32
618002G281	619002G281	28 x 1	69	113	39	96	38	38
618002G35114	619002G35114	35 x 11/4	87	133	56	113	46	46

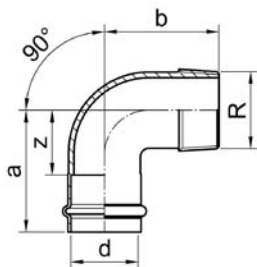
<b>NiroSan® Press SF</b>	<b>NiroSan® Press SF</b>	<b>d x R</b>	<b>a</b>	<b>b</b>	<b>z</b>	<b>SW</b>
618002AG1512	619002AG1512	15 x 1/2	48	84	22	22
6180 02AG1812	619002AG1812	18 x 1/2	53	86	27	22
618002AG1834	619002AG1834	18 x 3/4	52	90	26	30
618002AG2234	619002AG2234	22 x 3/4	63	100	34	30
618002AG281	619002AG281	28 x 1	68	108	39	36
618002AG35114	619002AG35114	35 x 11/4	87	128	56	46
618002AG42112	619002AG42112	42 x 11/2	103	149	64	55
618002AG542	619002AG542	54 x 2	125	173	80	65



- KÄYRÄ 90° 1 MUHVI SK
- BÖJ 90° 1 MUFF LEKANDE MUTTER
- Bend 90° with union nut

**NiroSan®  
Press**

69002M1534  
69002M1834  
69002M221  
69002M28114

**NiroSan®  
Press Gas**


- KULMA 90° 1 MUHVI UK
- VINKEL 1 MUFF UTV GG
- Elbow 90° with female thread

**NiroSan®  
Press**

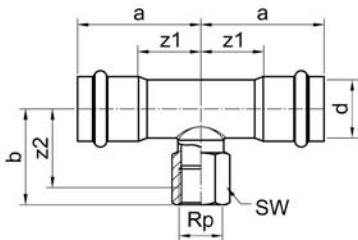
69092AG1512  
69092AG1834  
69092AG2234  
69092AG281  
69092AG35114  
69092AG42112  
69092AG542

**NiroSan®  
Press Gas**

617092AG1512  
617092AG1834  
617092AG2234  
617092AG281  
617092AG35114

	<b>NiroSan® Press SF</b>	<b>NiroSan® Press SF</b>	<b>d x G</b>	<b>a</b>	<b>b</b>	<b>z1</b>	<b>z2</b>	<b>SW</b>
	618002M1534	619002M1534	15 x 3/4	48	65	22	55	30
	618002M1834	619002M1834	18 x 3/4	53	69	27	59	30
	618002M221	619002M221	22 x 1	63	80	34	68	38
	618002M28114	619002M28114	28 x 11/4	69	88	39	73	50

	<b>NiroSan® Press SF</b>	<b>NiroSan® Press SF</b>	<b>d x R</b>	<b>a</b>	<b>b</b>	<b>z</b>
	618092AG1512	619092AG1512	15 x 1/2	50	37	25
	618092AG1834	619092AG1834	18 x 3/4	53	43	28
	618092AG2234	619092AG2234	22 x 3/4	54	43	26
	618092AG281	619092AG281	28 x 1	58	52	29
	618092AG35114	619092AG35114	35 x 11/4	64	60	34
			42 x 11/2	80	52	41
			54 x 2	96	62	51

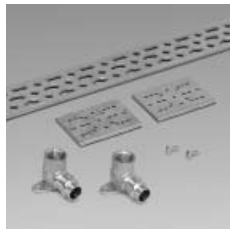


- T-HAARA 2 MUHVIA SK
- T-RÖR 2 MUFFAR INV GG
- Female tee

NiroSan® Press	NiroSan® Press Gas	
69130G151215	617130G151215	
69130G181218	617130G181218	
69130G183418	617130G183418	
69130G221222	617130G221222	
69130G223422	617130G223422	
69130G281228	617130G281228	
69130G283428	617130G283428	
69130G28128	617130G28128	
69130G351235	617130G351235	
69130G353435	617130G353435	
69130G3511435	617130G3511435	
69130G421242	617130G421242	
69130G423442	617130G423442	
69130G4211242	617130G4211242	
69130G541254	617130G541254	
69130G543454	617130G543454	
69130G54254	617130G54254	
69130G763476	617130G763476	
69130G76276	617130G76276	
69130G893489	617130G893489	
69130G89289	617130G89289	
69130G10834108	617130G10834108	
69130G1082108	617130G1082108	

<b>NiroSan® Press SF</b>	<b>NiroSan® Press SF</b>	<b>d1 x Rp x d1</b>	<b>a</b>	<b>b</b>	<b>z1</b>	<b>z2</b>	<b>SW</b>
618130G151215	619130G151215	15 x 1/2 x 15	47	45	22	31	24
618130G181218	619130G181218	18 x 1/2 x 18	49	47	24	33	24
618130G183418	619130G183418	18 x 3/4 x 18	49	49	24	34	32
618130G221222	619130G221222	22 x 1/2 x 22	54	48	26	34	24
618130G223422	619130G223422	22 x 3/4 x 22	54	50	26	35	32
618130G281228	619130G281228	28 x 1/2 x 28	60	46	30	32	24
618130G283428	619130G283428	28 x 3/4 x 28	60	54	30	39	32
618130G28128	619130G28128	28 x 1 x 28	59	57	30	39	38
618130G351235	619130G351235	35 x 1/2 x 35	65	49	35	35	24
618130G353435	619130G353435	35 x 3/4 x 35	65	51	35	36	32
618130G3511435	619130G3511435	35 x 11/4 x 35	65	65	35	45	46
618130G421242	619130G421242	42 x 1/2 x 42	77	54	39	40	24
618130G423442	619130G423442	42 x 3/4 x 42	77	56	39	41	32
618130G4211242	619130G4211242	42 x 11/2 x 42	77	68	39	48	55
618130G541254	619130G541254	54 x 1/2 x 54	89	60	45	46	24
618130G543454	619130G543454	54 x 3/4 x 54	89	62	45	47	32
618130G54254	619130G54254	54 x 2 x 54	89	80	45	56	65
618130G763476	619130G763476	76,1 x 3/4 x 76,1	108	75	57	60	32
618130G76276	619130G76276	76,1 x 2 x 76,1	108	85	57	61	65
618130G893489	619130G893489	88,9 x 3/4 x 88,9	120	82	63	67	32
618130G89289	619130G89289	88,9 x 2 x 88,9	120	91	63	67	65
618130G10834108	619130G10834108	108 x 3/4 x 108	144	91	74	76	32
618130G1082108	619130G1082108	108 x 2 x 108	144	101	74	77	65

- ASENNUSSARJA
- INSTALLATIONSSATS
- Mounting set

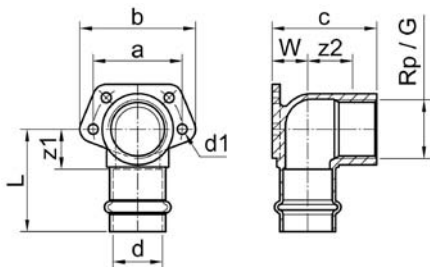


**NiroSan®  
Press**

**d x Rp**

699801512

15 x 1/2



- HANAKULMA 1 MUHVI SK
- VENTILFÄSTE 1 MUFF INV GG
- Ceiling elbow

**NiroSan®  
Press**

**NiroSan®  
Press Gas**

69472G1512

617472G1512

69472G1812

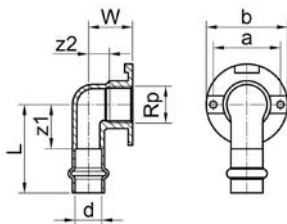
617472G1812

69472G2234

617472G2234

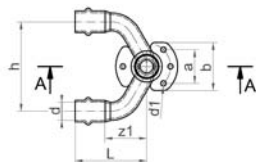
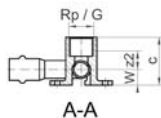
69472G281

- HANAKULMARASIA 1 MUHVI SK
- VENTILFÄSTE 1 MUFF INV GG
- Wall plate



<b>NiroSan® Press</b>	<b>d x Rp</b>	<b>a</b>	<b>b</b>	<b>W</b>	<b>z1</b>	<b>z2</b>	<b>L</b>
694711512	15 x 1/2	38	46	25	25	11	50

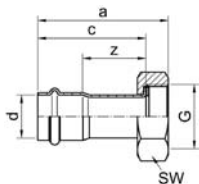
<b>NiroSan® Press SF</b>	<b>NiroSan® Press SF</b>	<b>d x Rp/G</b>	<b>a</b>	<b>b</b>	<b>c</b>	<b>z1</b>	<b>z2</b>	<b>L</b>	<b>W</b>	<b>d1</b>
618472G1512	619472G1512	15 x 1/2	40	55	40	15	13	40	13	5
618472G1812	619472G1812	18 x 1/2	40	55	46	15	16	40	16	5
618472G2234	619472G2234	22 x 3/4	40	55	47	18	16	46	16	5
618472G281	619472G281	28 x 1	55	70	58	22	21	51	20	5



- KAKSOISHANAKULMA 2 MUHVI SK
- DUBBELVENTILFÄSTE 2 MUFFAR INV GG
- Wall plate, female with female thread

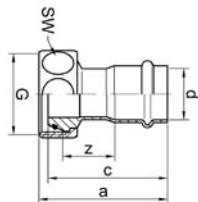
NiroSan® Press	d x d x Rp/G	a	b	c	z1	z2	h	L	W
69478G151512	15 x 15 x 1/2	28	40	40	35	13	75	60	13

- YHDISTÄJÄ PUOLIKAS 1 MUHVI SK
- KOPPLINGSHALVA 1 MUFF LEKANDE MUTTER
- Union adaptor, flat sealing



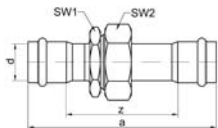
NiroSan® Press	NiroSan® Press Gas	NiroSan® Press SF	NiroSan® Press SF	d x G	a	c	z	SW
69359M1512		618359M1512	619359M1512	15 x 1/2	63	55	29	24
69359M1534		618359M1534	619359M1534	15 x 3/4	61	51	25	30
69359M1834		618359M1834	619359M1834	18 x 3/4	65	55	29	30
69359M221		618359M221	619359M221	22 x 1	72	60	31	38
69359M28114		618359M28114	619359M28114	28 x 1 1/4	85	70	40	50
69359M35112		618359M35112	619359M35112	35 x 1 1/2	85	72	41	55
69359M42134		618359M42134	619359M42134	42 x 1 3/4	93	75	36	58
69359M54238		618359M54238	619359M54238	54 x 2 3/8	96	78	33	75

- Yhdistäjä, kartiotiivistein
- Kopplingshalva 1 muff med lekande mutter, konisk tätning
- Union adaptor, conical sealing



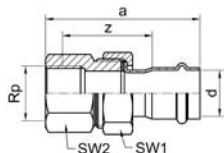
NiroSan® Press	NiroSan® Press Gas	NiroSan® Press SF	NiroSan® Press SF	d x G	a	c	z	SW
	6173601578			15 x 7/8	57	53	21	34
	61736022118			22 x 1 1/8	66	61	25	40
	61736028138			28 x 1 3/8	71	66	28	48

- Yhdistäjä, tasotiivistein
- Skarvkoppling, plan tätning
- Union, flat sealing

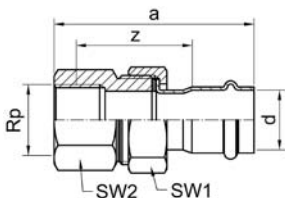


NiroSan® Press	NiroSan® Press Gas	NiroSan® Press SF	NiroSan® Press SF	d	a	G	z	SW1	SW2
6933015		61833015	61933015	15	111	1/2	60	24	24
6933018		61833018	61933018	18	117	3/4	65	27	30
6933022		61833022	61933022	22	127	1	70	36	38
6933028		61833028	61933028	28	143	1 1/4	84	46	50
6933035		61833035	61933035	35	146	1 1/2	85	50	55
6933042		61833042	61933042	42	158	1 3/4	81	55	58
6933054		61833054	61933054	54	175	2 3/8	85	70	75

- YHDISTÄJÄ 1 MUHVI SK (MESSINKIMUTTERILLA)
- SKARVKOPPLING 1 MUFF INV GG (LEKANDE MUTTER I MÄSSING)
- Union, female, flat sealing



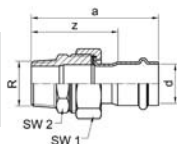
NiroSan® Press	NiroSan® Press Gas	NiroSan® Press SF	NiroSan® Press SF	d x Rp	a	z	SW1	SW2
69330G1512		618330G1512		15 x 1/2	93	53	24	24
69330G1534		618330G1534		15 x 3/4	94	53	32	30
69330G1834		618330G1834		18 x 3/4	96	55	32	30
69330G2234		618330G2234		22 x 3/4	104	60	36	32
69330G221		618330G221		22 x 1	107	60	38	36
69330G2834		618330G2834		28 x 3/4	92	47	46	32
69330G281		618330G281		28 x 1	96	49	46	41
69330G35114		618330G35114		35 x 1 1/4	88	37	52	46
69330G42112		618330G42112		42 x 1 1/2	100	41	59	55
69330G542		618330G542		54 x 2	109	40	75	70



- YHDISTÄJÄ 1 MUHVI SK (HST-MUTTERILLA)
- SKARVKOPPLING 1 MUFF INV GG (LEKANDE MUTTER I ROSTFRITT SYRAFAST STÅL)
- Union, female, flat sealing

NiroSan® Press		
69330GMVA1512		
69330GMVA1534		
69330GMVA1834		
69330GMVA2234		
69330GMVA221		
69330GMVA2834		
69330GMVA281		
69330GMVA35114		
69330GMVA42112		
69330GMVA542		

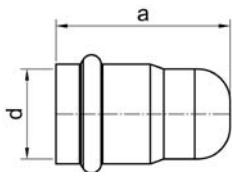
- YHDISTÄJÄ 1 MUHVI UK (MESSINKIMUTTERILLA)
- SKARVKOPPLING 1 MUFF UTV GG (LEKANDE MUTTER I MÄSSING)
- Union, male, flat sealing



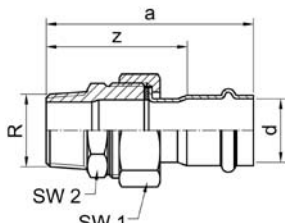
NiroSan® Press	NiroSan® Press Gas	NiroSan® Press SF	NiroSan® Press SF	d x R	a	z	SW1	SW2
69333G1512		618333G1512		15 x 1/2	88	61	24	22
69333G1534		618333G1534		15 x 3/4	90	63	30	30
69333G1812		618333G1812		18 x 1/2	92	66	30	30
69333G2234		618333G2234		22 x 3/4	101	71	38	36
69333G281		618333G281		28 x 1	91	61	41	32
69333G35114		618333G35114		35 x 11/4	98	67	52	46
69333G42112		618333G42112		42 x 11/2	111	72	59	55
69333G542		618333G542		54 x 2	121	75	75	70

NiroSan® Press SF	NiroSan® Press SF	d x Rp	a	z	SW1	SW2
618330GMVA1512	619330GMVA1512	15 x 1/2	93	53	27	24
618330GMVA1534	619330GMVA1534	15 x 3/4	94	53	32	30
618330GMVA1834	619330GMVA1834	18 x 3/4	98	57	32	30
618330GMVA2234	619330GMVA2234	22 x 3/4	104	60	38	32
618330GMVA221	619330GMVA221	22 x 1	107	60	38	38
618330GMVA2834	619330GMVA2834	28 x 3/4	114	69	50	32
618330GMVA281	619330GMVA281	28 x 1	118	71	40	41
618330GMVA35114	619330GMVA35114	35 x 11/4	113	62	55	46
618330GMVA42112	619330GMVA42112	42 x 11/2	115	56	58	55
618330GMVA542	619330GMVA542	54 x 2	126	57	75	70

- HATTU
- HUV
- Endcap



NiroSan® Press	NiroSan® Press Gas	NiroSan® Press SF	NiroSan® Press SF	d	a
6930115	61730115	61830115	61930115	15	47
6930118	61730118	61830118	61930118	18	47
6930122	61730122	61830122	61930122	22	51
6930128	61730128	61830128	61930128	28	54
6930135	61730135	61830135	61930135	35	57
6930142	61730142	61830142	61930142	42	68
6930154	61730154	61830154	61930154	54	82

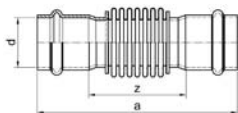


- YHDISTÄJÄ 1 MUHVI UK (HSTMUTTERILLA)
- SKARVKOPPLING 1 MUFF UTV GG (LEKANDE MUTTER I ROSTFRITT SYRAFAST STÅL)
- Union, male, flat sealing

**NiroSan®  
Press**

69333GMVA1512		
69333GMVA1534		
69333GMVA1812		
69333GMVA2234		
69333GMVA281		
69333GMVA35114		
69333GMVA42112		
69333GMVA542		

- PAISUNTALIITIN 2 MUHVIA
- AXIAL KOMPENSATOR 2 MUFFAR
- Length compensator



NiroSan® Press	NiroSan® Press Gas	NiroSan® Press SF	NiroSan® Press SF	d	a	z	GDK
6987215				15	106	45	10
6987218				18	108	47	10
6987222				22	108	37	14
6987228				28	113	42	12
6987235				35	124	49	14
6987242				42	146	53	16
6987254				54	165	56	20
6987276				76,1	201	76	24
6987289				88,9	226	83	28
69872108				108	265	92	34

GDK = Kokonais paisuntakompensaatiomitta päittäiselle tasaaajalle

GDK = Total expansions compensation for axial compensator

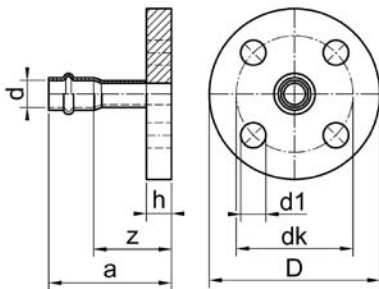
GDK = Total expansion compensation of the axial compensator

NiroSan® Press SF	NiroSan® Press SF	d x R	a	z	SW1	SW2
618333GMVA1512	619330GMVA1512	15 x 1/2	90	63	30	27
618333GMVA1534	619330GMVA1534	15 x 3/4	91	64	30	30
618333GMVA1812	619330GMVA1834	18 x 1/2	94	68	30	30
618333GMVA2234	619330GMVA2234	22 x 3/4	101	71	38	36
618333GMVA281	619330GMVA281	28 x 1	115	85	50	36
618333GMVA35114	619330GMVA35114	35 x 11/4	124	92	55	46
618333GMVA42112	619330GMVA42112	42 x 11/2	126	87	58	55
618333GMVA542	619330GMVA542	54 x 2	138	93	75	70

- HST-MUTTERIPULTTI PURISTUSLAIPALLE PN10/16
- BULT M/MUTTER I ROSTFRITT SYRAFAST STÅL FÖR PRESSFLÄNS PN10/16
- Screw with nut



	Sopii Laippa / Passar till Fläns / suitable for	M x L
6VASCHR1250	Laippa / Fläns / Flange DN 12 - DN 28	12 x 50
6VASCHR1650	Laippa / Fläns / Flange DN 32 - DN 65	16 x 50



- HST-PURISTUSLAIPPA
- PRESSFLÄNS I ROSTFRITT SYRAFAST STÅL
- Flange, PN 10/16

Az = reikien määrä  
 Az = antal hål  
 Az = Quantity of holes

NiroSan® Press	NiroSan® Press Gas
6VAPF15	617VAPF15
6VAPF18	617VAPF18
6VAPF22	617VAPF22
6VAPF28	617VAPF28
6VAPF35	617VAPF35
6VAPF42	617VAPF42
6VAPF54	617VAPF54
6VAPF76	617VAPF76
6VAPF89	617VAPF89
6VAPF108	617VAPF108

- O-RENGAS EPDM
- O-RING EPDM
- Sealing element, made of EPDM



<b>NiroSan® Press</b>	<b>d</b>	
10RT1510260	15	
10RT1820265	18	
10RT2220310	22	
10RT2830310	28	
10RT3540325	35	
10RT4240413	42	
10RT5440413	54	
10RT7700700	76,1	
10RT9000760	88,9	
10RT11000900	108	

<b>NiroSan® Press SF</b>	<b>NiroSan® Press SF</b>	<b>DN x d</b>	<b>a</b>	<b>z</b>	<b>h</b>	<b>dk</b>	<b>d1</b>	<b>D</b>	<b>Az</b>
618VAPF15	619VAPF15	DN 12 / 15 mm	65	39	14	65	14	95	4
618VAPF18	619VAPF18	DN 15 / 18 mm	65	39	14	65	14	95	4
618VAPF22	619VAPF22	DN 20 / 22 mm	69	40	14	75	14	105	4
618VAPF28	619VAPF28	DN 25 / 28 mm	75	45	16	85	14	115	4
618VAPF35	619VAPF35	DN 32 / 35 mm	78	47	16	100	18	140	4
618VAPF42	619VAPF42	DN 40 / 42 mm	87	48	16	110	18	150	4
618VAPF54	619VAPF54	DN 50 / 54 mm	100	55	18	125	18	165	4
618VAPF76	619VAPF76	DN 65 / 76,1 mm	124	73	18	145	18	185	4
618VAPF89	619VAPF89	DN 80 / 88,9 mm	137	79	18	160	18	200	8
618VAPF108	619VAPF108	DN 100 / 108 mm	162	92	20	180	18	220	8

- LAIPAN TIIVISTE
- FLÄNSPACKNING
- Flange sealing



	DN	
1D10	10	
1D15	15	
1D20	20	
1D25	25	
1D32	32	
1D40	40	
1D50	50	
1D65	65	
1D80	80	
1D100	100	

- POISTOPUTKI
- EVAKUERINGSRÖR
- Pipe element with flare for melting water line



	d x G x L	
690052850034	28 x 3/4 x 500	
6900528500114	28 x 1 1/4 x 500	

- **NiroSan**® PUTKIEN MITTAUSMALLINE
- **NiroSan**® RÖRSCHABLON M/FLASKÖPPNARE
- Plastic measure tool for SANHA stainless steel pressfittings



	<b>d</b>	
84981	15 - 54 mm	

- MITTAUSMALLINE ISOILLE PUTKILLE
- RÖRSCHABLON FÖR STORA DIMENSIONER M/FLASKÖPPNARE OCH VATTENLIBELL
- Plastic measure tool for big dimensions



	<b>d</b>	
84990	76,1 - 108 mm	

- MUOTOTAIVUTUSPIHTI 8980G:lle
- PROFILBOCKTÅNG FÖR 8980G
- Bending clamp



84991		
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### 3.3. Kuparista ja punametallista valmistetut SANHA®-puristusliittimet

3.3. SANHA® presskopplingar av koppar och  
röd gods

3.3. SANHA® press fittings of copper and red  
brass

#### **SANHA®-Press**

(Sarja / Serie / Series 6000/8000)

Käyttövesi

Tappvatten

Drinking water

#### **SANHA®-Press Gas**

(Sarja / Serie / Series 10000/11000)

Kaasu

Gas

Gas

#### **SANHA®-Press Solar**

(Sarja / Serie / Series 12000/13000)

Aurinkolämpö ja Paineilma

Solvärme i Tryckluft

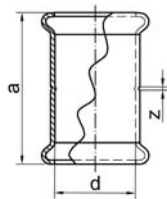
Solar heating and Compressed air

#### **SANHA®-Press Heat**

Heizungsanbindungen

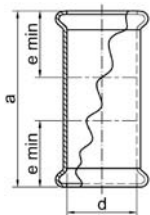
Radiatoransluitstukken

Heating assembly elements



- KAKSOISMUHVI
- SKARVMUFF
- Coupling

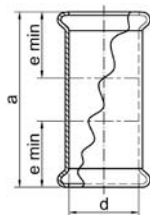
SANHA®-Press	SANHA®-Press Gas	SANHA®-Press Solar	d	a	z
1627012	11027012	11227012	12	33	2
1627014	11027014		14	37	2
1627015	11027015	11227015	15	38	2
1627016	11027016		16	37	2
1627018	11027018	11227018	18	42	2
1627022	11027022	11227022	22	49	2
1627028	11027028	11227028	28	55	2
1627035	11027035	11227035	35	66	2
1627042	11027042	11227042	42	79	3
1627054	11027054	11227054	54	88	3
1627064			64	111	17
1627067			66,7	113	17
1627076			76,1	117	17
1627089			88,9	129	17
16270108			108	156	17



- LIUKUMUHVI
- SKJUTMUFF
- Slip coupling

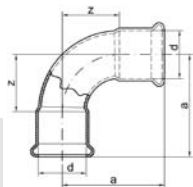
SANHA®-Press	SANHA®-Press Gas	SANHA®-Press Solar	d	a	e min
16270S12	110270S12	112270S12	12	41	16
16270S15	110270S15	112270S15	15	47	18

- LIUKUMUHVI
- SKJUTMUFF
- Slip coupling

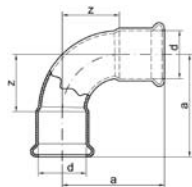


SANHA®-Press	SANHA®-Press Gas	SANHA®-Press Solar	d	a	e min
16270S18	110270S18	112270S18	18	53	20
16270S22	110270S22	112270S22	22	64	24
16270S28	110270S28	112270S28	28	72	27
16270S35	110270S35	112270S35	35	88	32
16270S42	110270S42	112270S42	42	104	38
16270S54	110270S54	112270S54	54	119	43
16270S64			64	110	47
16270S67			66,7	112	48
16270S76			76,1	116	50
16270S89			88,9	128	56
16270S108			108	155	70

- KÄYRÄ 90° 2 MUHVIA
- BÖJ 90° 2 MUFFAR
- Bend 90° female/female

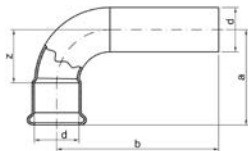


SANHA®-Press	SANHA®-Press Gas	SANHA®-Press Solar	d	a	z
16002A12	110002A12	112002A12	12	30	15
16002A14	110002A14		14	36	18
16002A15	110002A15	112002A15	15	36	18
16002A16	110002A16		16	36	18
16002A18	110002A18	112002A18	18	42	22



- KÄYRÄ 90° 2 MUHVIA
- BÖJ 90° 2 MUFFAR
- Bend 90° female/female

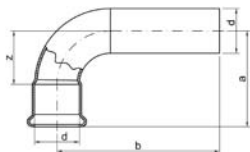
SANHA®-Press	SANHA®-Press Gas	SANHA®-Press Solar	d	a	z
16002A22	110002A22	112002A22	22	50	27
16002A28	110002A28	112002A28	28	61	34
16002A35	110002A35	112002A35	35	75	43
16002A42	110002A42	112002A42	42	89	51
16002A54	110002A54	112002A54	54	108	65
16002A64			64	125	78
16002A67			66,7	129	81
16002A76			76,1	142	92
16002A89			88,9	164	108
16002A108			108	200	131



- KÄYRÄ 90° 1 MUHVI
- BÖJ 90° 1 MUFF
- Bend 90° female/male

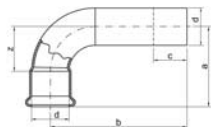
SANHA®-Press	SANHA®-Press Gas	SANHA®-Press Solar	d	a	b	z
16001A12	110001A12	112001A12	12	30	40	15
16001A14	110001A14		14	36	44	18
16001A15	110001A15	112001A15	15	36	44	18
16001A16	110001A16		16	36	44	18
16001A18	110001A18	112001A18	18	42	50	22

- KÄYRÄ 90° 1 MUHVI
- BÖJ 90° 1 MUFF
- Bend 90° female/male



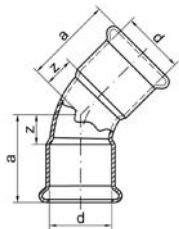
SANHA®-Press	SANHA®-Press Gas	SANHA®-Press Solar	d	a	b	z
16001A22	110001A22	112001A22	22	50	58	27
16001A28	110001A28	112001A28	28	61	68	34
16001A35	110001A35	112001A35	35	75	82	43
16001A42	110001A42	112001A42	42	89	103	51
16001A54	110001A54	112001A54	54	108	123	65
16001A64			64	125	142	78
16001A67			66,7	129	147	81
16001A76			76,1	142	160	92
16001A89			88,9	164	184	108
16001A108			108	200	227	131

- KÄYRÄ 90° 1 MUHVI - PITKÄ
- BÖJ 90° 1 MUFF - LÅNG
- Bend 90° female/male - long

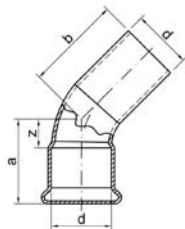


SANHA®-Press	SANHA®-Press Gas	SANHA®-Press Solar	d	a	b	c	z
16001L15			15	36	64	20	18

- KÄYRÄ 45° 2 MUHVIA
- BÖJ 45° 2 MUFFAR
- Bend 45° female/female



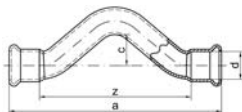
SANHA®-Press	SANHA®-Press Gas	SANHA®-Press Solar	d	a	z
1604112	11004112	11204112	12	22	6
1604114	11004114		14	26	8
1604115	11004115	11204115	15	26	8
1604116	11004116		16	26	8
1604118	11004118	11204118	18	29	9
1604122	11004122	11204122	22	35	11
1604128	11004128	11204128	28	41	14
1604135	11004135	11204135	35	50	18
1604142	11004142	11204142	42	60	21
1604154	11004154	11204154	54	70	27
1604164			64	80	33
1604167			66,7	82	34
1604176			76,1	89	39
1604189			88,9	101	45
16041108			108	124	55



- KÄYRÄ 45° 1 MUHVI
- BÖJ 45° 1 MUFF
- Bend 45° female/male

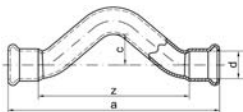
SANHA®-Press	SANHA®-Press Gas	SANHA®-Press Solar	d	a	b	z
1604012	11004012	11204012	12	22	30	6
1604014	11004014		14	26	34	8
1604015	11004015	11204015	15	26	34	8
1604016	11004016		16	26	34	8
1604018	11004018	11204018	18	29	37	9
1604022	11004022	11204022	22	35	43	11
1604028	11004028	11204028	28	41	49	14
1604035	11004035	11204035	35	50	58	18
1604042	11004042	11204042	42	60	74	21
1604054	11004054	11204054	54	70	85	27
1604064			64	80	97	33
1604067			66,7	82	100	34
1604076			76,1	89	105	39
1604089			88,9	101	119	45
16040108			108	124	145	55

- YLIHEITTO 2 MUHVIA
- S-RÖR 2 MUFFAR
- Full crossover



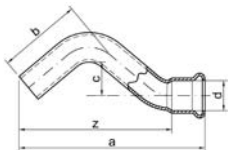
SANHA®-Press	SANHA®-Press Gas	SANHA®-Press Solar	d	a	c	z
1608512	11008512	11208512	12	110	18	78
1608514	11008514		14	124	19	89
1608515	11008515	11208515	15	124	19	89
1608516	11008516		16	124	18	89

- YLIHEITTO 2 MUHVIA
- S-RÖR 2 MUFFAR
- Full crossover

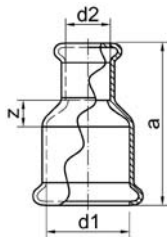


SANHA®-Press	SANHA®-Press Gas	SANHA®-Press Solar	d	a	c	z
1608518	11008518	11208518	18	142	21	102
1608522	11008522	11208522	22	172	25	125
1608528	11008528	11208528	28	203	28	150

- YLIHEITTO 1 MUHVI
- S-RÖR 1 MUFF
- Partial crossover

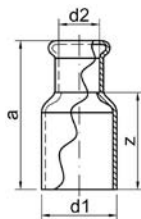


SANHA®-Press	SANHA®-Press Gas	SANHA®-Press Solar	d	a	b	c	z
1608612	11008612	11208612	12	87	40	18	71
1608614	11008614		14	97	44	19	80
1608615	11008615	11208615	15	98	44	19	80
1608616	11008616		16	98	44	18	80
1608618	11008618	11208618	18	111	50	21	92
1608622	11008622	11208622	22	136	60	25	112
1608628	11008628	11208628	28	161	72	28	134



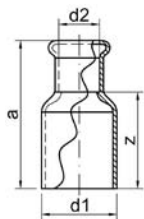
- SUPISTUSMUHVI 2 MUHVIA
- REDUCERING 2 MUFFAR
- Reducing coupling

SANHA®-Press	SANHA®-Press Gas	SANHA®-Press Solar	d1 x d2	a	z
162401412	1102401412		14 x 12	37	4
162401512	1102401512	1122401512	15 x 12	34	4
162401514	1102401514		15 x 14	38	3
162401614	1102401614		16 x 14	39	4
162401812	1102401812	1122401812	18 x 12	41	6
162401814	1102401814		18 x 14	42	5
162401815	1102401815	1122401815	18 x 15	42	4
162401816	1102401816		18 x 16	41	4
162402214	1102402214		22 x 14	49	8
162402215	1102402215	1122402215	22 x 15	48	6
162402216	1102402216		22 x 16	47	6
162402218	1102402218	1122402218	22 x 18	48	5
162402814	1102402814		28 x 14	55	10
162402815	1102402815	1122402815	28 x 15	54	10
162402816	1102402816		28 x 16	54	9
162402818	1102402818	1122402818	28 x 18	55	8
162402822	1102402822	1122402822	28 x 22	56	6
162403522	1102403522	1122403522	35 x 22	65	10
162403528	1102403528	1122403528	35 x 28	65	7
162404222	1102404222	1122404222	42 x 22	75	13
162404228	1102404228	1122404228	42 x 28	75	10
162404235	1102404235	1122404235	42 x 35	77	7
162405428	1102405428	1122405428	54 x 28	86	16
162405435	1102405435	1122405435	54 x 35	88	13
162405442	1102405442	1122405442	54 x 42	90	9



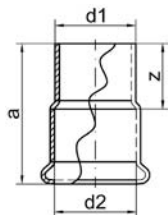
- MUHVI/HOLKKI
- REDUCERING 1 MUFF
- Reducer

SANHA®-Press	SANHA®-Press Gas	SANHA®-Press Solar	d1 x d2	a	z
162431412	1102431412		14a x 12	40	25
162431512	1102431512	1122431512	15a x 12	40	24
162431514	1102431514		15a x 14	50	32
162431612	1102431612		16a x 12	41	26
162431614	1102431614		16a x 14	43	25
162431812	1102431812	1122431812	18a x 12	44	28
162431814	1102431814		18a x 14	45	27
162431815	1102431815	1122431815	18a x 15	44	26
162431816	1102431816		18a x 16	45	27
162432214	1102432214		22a x 14	51	33
162432215	1102432215	1122432215	22a x 15	51	33
162432216	1102432216		22a x 16	50	32
162432218	1102432218	1122432218	22a x 18	50	30
162432814	1102432814		28a x 14	59	41
162432815	1102432815	1122432815	28a x 15	57	39
162432816	1102432816		28a x 16	58	40
162432818	1102432818	1122432818	28a x 18	57	37
162432822	1102432822	1122432822	28a x 22	58	34
162433522	1102433522	1122433522	35a x 22	68	44
162433528	1102433528	1122433528	35a x 28	67	40
162434222	1102434222	1122434222	42a x 22	77	54
162434228	1102434228	1122434228	42a x 28	77	50
162434235	1102434235	1122434235	42a x 35	78	46
162435435	1102435435	1122435435	54a x 35	90	58
162435442	1102435442	1122435442	54a x 42	91	53
162436442			64a x 42	127	89
162436454			64a x 54	124	81
162436728			66,7a x 28	124	98



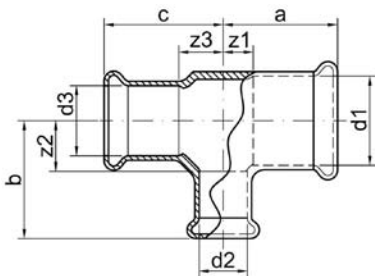
- MUHVI/HOLKKI
- REDUCERING 1 MUFF
- Reducer

SANHA®-Press	SANHA®-Press Gas	SANHA®-Press Solar	d1 x d2	a	z
162436735			66,7a x 35	126	94
162436742			66,7a x 42	129	91
162436754			66,7a x 54	128	85
162437635			76,1a x 35	131	99
162437642			76,1a x 42	133	99
162437654			76,1a x 54	133	90
162437664			76,1a x 64	130	83
162437667			76,1a x 66,7	129	81
162438954			88,9a x 54	149	106
162438964			88,9a x 64	148	101
162438976			88,9a x 76,1	145	95
1624310842			108a x 42	179	141
1624310854			108a x 54	179	136
1624310864			108a x 64	178	131
1624310867			108a x 66,7	178	129
1624310876			108a x 76,1	174	124
1624310889			108a x 88,9	174	118



- JATKOHOLKKI 1 MUHVI
- FÖRSTORING 1 MUFF SLÄTÄNDE
- Reducer

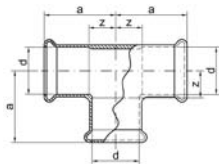
SANHA®-Press	d1 x d2	a	z
162451212	12a x 12	28	12
162451414	14a x 14	32	14
162451515	15a x 15	32	14
162451616	16a x 16	32	14
162451818	18a x 18	36	16
162452222	22a x 22	43	19
162452828	28a x 28	49	22
162453535	35a x 35	59	27
162454242	42a x 42	70	32
162455454	54a x 54	79	37



- T-HAARA 3 MUHVIA
- T-RÖR 3 MUFFAR
- Tee

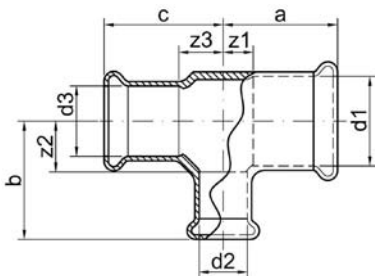
SANHA®-Press	SANHA®-Press Gas
1613012	11013012
1613014	11013014
1613015	11013015
1613016	11013016
1613018	11013018
1613022	11013022
1613028	11013028
1613035	11013035
1613042	11013042
1613054	11013054
1613064	
1613067	
1613076	
1613089	
16130108	
16130121512	110130121512

- T-HAARA 3 MUHVIA - PITKÄ
- 6130L – T-RÖR 3 MUFFAR - LÅNG
- Tee - long



SANHA®-Press	d	a	z
16130L15	15	35	17

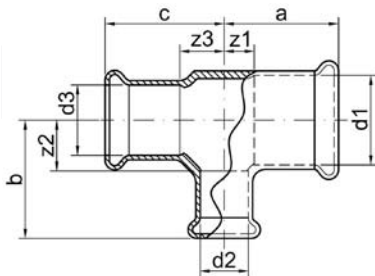
SANHA®-Press Solar	d1 x d2 x d3	a	b	c	z	z1	z2	z3
11213012	12	23	23	23	8			
	14	27	27	27	9			
11213015	15	34	27	34	9			
	16	28	28	28	10			
11213018	18	36	31	36	11			
11213022	22	39	37	39	13			
11213028	28	43	43	43	17			
11213035	35	53	53	53	20			
11213042	42	63	63	63	25			
11213054	54	73	73	73	31			
112130121512	64	86	98	86		39	51	39
112130151212	66,7	89	100	89		41	51	41
112130151215	76,1	97	106	97		47	57	47
112130151512	88,9	111	121	111		55	65	55
112130151812	108	135	145	135		65	75	65
112130151815	12 x 15 x 12	28	27	28		12	9	12



- T-HAARA 3 MUHVIA (Jatkuu)
- T-RÖR 3 MUFFAR (Fortsättning)
- Tee (continued)

SANHA®-Press	SANHA®-Press Gas	
16130141214	110130141214	
16130151212	110130151212	
16130151215	110130151215	
16130151512	110130151512	
16130151812	110130151812	
16130151815	110130151815	
16130152215	110130152215	
16130161216	110130161216	
16130161414	110130161414	
16130161416	110130161416	
16130181215	110130181215	
16130181218	110130181218	
16130181418	110130181418	
16130181515	110130181515	
16130181518	110130181518	
16130181618	110130181618	
16130181815	110130181815	
16130182218	110130182218	
16130221222	110130221222	
16130221422	110130221422	
16130221515	110130221515	
16130221518	110130221518	
16130221522	110130221522	
16130221622	110130221622	
16130221815	110130221815	
16130221818	110130221818	
16130221822	110130221822	
16130222215	110130222215	
16130222218	110130222218	
16130222822	110130222822	
16130281428	110130281428	
16130281522	110130281522	
16130281528	110130281528	
16130281628	110130281628	
16130281818	110130281818	
16130281822	110130281822	
16130281828	110130281828	
16130282222	110130282222	

SANHA®-Press Solar	d1 x d2 x d3	a	b	c	z	z1	z2	z3
	14 x 12 x 14	26	25	26	8	9	8	
	15 x 12 x 12	26	25	25	8	9	10	
	15 x 12 x 15	26	25	26	8	9	8	
	15 x 15 x 12	27	27	28	9	9	12	
	15 x 18 x 12	31	31	30	13	11	15	
	15 x 18 x 15	31	31	31	13	11	13	
112130152215	15 x 22 x 15	35	37	35	17	13	17	
	16 x 12 x 16	26	26	26	8	10	8	
	16 x 14 x 14	27	28	28	9	10	10	
	16 x 14 x 16	27	28	27	9	10	9	
112130181215	18 x 12 x 15	28	27	28	8	11	10	
112130181218	18 x 12 x 18	28	27	28	8	11	8	
	18 x 14 x 18	29	29	29	9	11	9	
112130181515	18 x 15 x 15	30	29	30	9	11	12	
112130181518	18 x 15 x 18	30	29	30	9	11	10	
	18 x 16 x 18	30	29	30	10	11	10	
112130181815	18 x 18 x 15	31	31	31	11	11	13	
112130182218	18 x 22 x 18	36	37	36	16	13	16	
112130221222	22 x 12 x 22	32	29	32	8	13	8	
	22 x 14 x 22	33	31	33	9	13	10	
112130221515	22 x 15 x 15	33	31	32	10	13	14	
112130221518	22 x 15 x 18	33	31	32	10	13	13	
112130221522	22 x 15 x 22	33	31	33	10	13	10	
	22 x 16 x 22	34	31	34	10	13	10	
112130221815	22 x 18 x 15	35	33	33	11	13	15	
112130221818	22 x 18 x 18	35	33	34	11	13	14	
112130221822	22 x 18 x 22	35	33	35	11	13	11	
112130222215	22 x 22 x 15	37	37	35	13	13	17	
112130222218	22 x 22 x 18	37	37	36	13	13	16	
112130222822	22 x 28 x 22	43	43	44	20	17	20	
	28 x 14 x 28	36	34	36	10	16	10	
112130281522	28 x 15 x 22	37	34	37	10	16	13	
112130281528	28 x 15 x 28	37	34	37	10	16	10	
	28 x 16 x 28	37	34	37	11	16	10	
112130281818	28 x 18 x 18	38	36	37	12	16	17	
112130281822	28 x 18 x 22	38	36	38	12	16	15	
112130281828	28 x 18 x 28	38	36	38	12	16	12	
112130282222	28 x 22 x 22	40	40	40	14	16	17	



- T-HAARA 3 MUHVIA (Jatkuu)
- T-RÖR 3 MUFFAR (Fortsättning)
- Tee (continued)

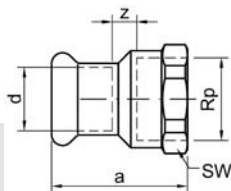
SANHA®-Press	SANHA®-Press Gas	
16130282228	110130282228	
16130282815	110130282815	
16130282818	110130282818	
16130282822	110130282822	
16130283528	110130283528	
16130351535	110130351535	
16130351835	110130351835	
16130352222	110130352222	
16130352228		
16130352235	110130352235	
16130352828	110130352828	
16130352835	110130352835	
16130353522	110130353522	
16130353528	110130353528	
16130421542	110130421542	
16130422242	110130422242	
16130422835	110130422835	
16130423535	110130423535	
16130423542	110130423542	
16130542254	110130542254	
16130542854	110130542854	
16130543554	110130543554	
16130544254	110130544254	
16130645464		
16130672867		
16130673567		
16130674267		
16130675467		
16130762276		
16130762876		
16130763576		
16130764276		
16130765476		
16130766476		
16130766776		
16130895489		

SANHA®-Press Solar	d1 x d2 x d3	a	b	c	z	z1	z2	z3
112130282228	28 x 22 x 28	40	40	40	14	16	14	
112130282815	28 x 28 x 15	43	43	42	17	17	24	
112130282818	28 x 28 x 18	43	43	42	17	17	22	
112130282822	28 x 28 x 22	43	43	44	17	17	20	
	28 x 35 x 28	53	53	53	25	20	25	
112130283528	28 x 35 x 35	43	38	43	11	20	11	
112130351535	35 x 15 x 35	44	40	44	12	20	12	
112130351835	35 x 18 x 35	46	44	45	14	20	21	
112130352222	35 x 22 x 22	46	44	45	14	20	19	
112130352228	35 x 22 x 28	46	44	46	14	20	14	
112130352235	35 x 22 x 35	49	47	48	17	21	22	
112130352828	35 x 28 x 28	49	47	49	17	21	17	
112130352835	35 x 28 x 35	53	53	51	21	21	28	
112130353522	35 x 35 x 22	53	53	52	21	21	25	
112130353528	35 x 35 x 28	50	51	49	11	34	11	
112130421542	42 x 15 x 42	53	48	53	15	24	15	
112130422242	42 x 22 x 42	56	51	56	18	24	18	
112130422842	42 x 28 x 42	60	57	57	21	25	25	
112130423535	42 x 35 x 35	60	57	59	21	25	21	
112130423542	42 x 35 x 42	57	54	57	15	30	15	
112130542254	54 x 22 x 54	60	68	60	18	41	18	
112130542854	54 x 28 x 54	64	63	64	21	31	21	
112130543554	54 x 35 x 54	67	69	67	25	31	25	
112130544254	54 x 42 x 54	77	86	77	30	48	30	
	64 x 54 x 64	82	91	82	35	48	35	
	66,7 x 28 x 66,7	70	76	70	22	49	22	
	66,7 x 35 x 66,7	81	75	27	49	27	27	
	66,7 x 42 x 66,7	78	87	78	30	49	30	
	66,7 x 54 x 66,7	83	92	83	35	49	35	
	76,1 x 22 x 76,1	83	92	83	35	49	27	
	76,1 x 28 x 76,1	76	87	76	27	60	27	
	76,1 x 35 x 76,1	76	86	76	27	54	27	
	76,1 x 42 x 76,1	80	92	80	30	54	30	
	76,1 x 54 x 76,1	86	97	86	36	54	36	
	76,1 x 64 x 76,1	91	104	91	41	57	41	
	76,1 x 66,7 x 76,1	91	105	91	41	57	41	
	88,9 x 54 x 88,9	94	105	94	38	62	38	

- T-HAARA 3 MUHVIA (Jatkuu)
- T-RÖR 3 MUFFAR (Fortsättning)
- Tee (continued)

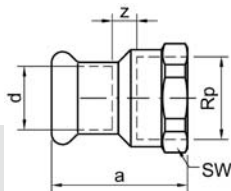
SANHA®-Press	SANHA®-Press Gas
16130896489	
16130897689	
1613010854108	
1613010864108	
1613010867108	
1613010876108	
1613010889108	

- KIERRENIPPA 1 MUHVI SK
- ÖVERGÅNG 1 MUFF INV GG
- Female adaptor



SANHA®-Press	SANHA®-Press Gas	SANHA®-Press Solar	d x Rp	a	z	SW
182701238	1112701238	1132701238	12 x 3/8	30	4	20
182701212	1112701212	1132701212	12 x 1/2	34	5	25
182701438			14 x 3/8	30	2	20
182701412	1112701412		14 x 1/2	33	2	25
182701538	1112701538	1132701538	15 x 3/8	30	2	20
182701512	1112701512	1132701512	15 x 1/2	33	2	25
182701534	1112701534	1132701534	15 x 3/4	40	7	30
182701612	1112701612		16 x 1/2	33	2	25
182701634	1112701634		16 x 3/4	40	7	30
182701812	1112701812	1132701812	18 x 1/2	35	2	25
182701834	1112701834	1132701834	18 x 3/4	40	5	30
182702212	1112702212	1132702212	22 x 1/2	39	2	25
182702234	1112702234	1132702234	22 x 3/4	42	3	30
18270221	111270221	113270221	22 x 1	48	7	37
182702834	1112702834	1132702834	28 x 3/4	44	2	46

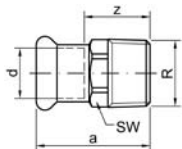
SANHA®-Press Solar		d1 x d2 x d3	a	b	c	z	z1	z2	z3
		88,9 x 64 x 88,9	99	112	99	43	65	43	
		88,9 x 76,1 x 88,9	105	115	105	49	65	49	
		108 x 54 x 108	108	115	108	38	72	38	
		108 x 64 x 108	113	122	113	43	75	43	
		108 x 66,7 x 108	113	123	113	43	75	43	
		108 x 76,1 x 108	119	125	119	49	75	49	
		108 x 88,9 x 108	125	131	125	56	75	56	



- KIERRENIPPA 1 MUHVI SK
- ÖVERGÅNG 1 MUFF INV GG
- Female adaptor

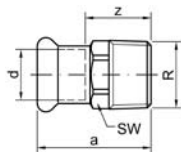
SANHA®-Press	SANHA®-Press Gas	SANHA®-Press Solar	d x Rp	a	z	SW
18270281	111270281	113270281	28 x 1	48	4	39
1827028114	11127028114	11327028114	28 x 1/4	55	6	46
18270351	111270351	113270351	35 x 1	49	-	55
1827035114	11127035114	11327035114	35 x 1/4	58	4	46
1827035112	11127035112	11327035112	35 x 1/2	59	5	55
1827042114	11127042114	11327042114	42 x 1/4	62	3	46
1827042112	11127042112	11327042112	42 x 1/2	63	4	55
1827054112	11127054112	11327054112	54 x 1/2	67	3	55
18270542	111270542	113270542	54 x 2	74	8	60
1827064212			64 x 2 1/2	84	9	85
1827067212			66,7 x 2 1/2	85	7	85
1827076212			76,1 x 2 1/2	86	6	86
18270893			88,9 x 3	96	5	95

- KIERRENIPPA 1 MUHVI UK
- ÖVERGÅNG 1 MUFF UTV GG
- Male adaptor



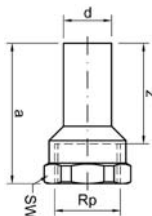
SANHA®-Press	SANHA®-Press Gas	SANHA®-Press Solar	d x R	a	z	SW
182431238	1112431238	1132431238	12 x 3/8	30	14	16
182431212	1112431212	1132431212	12 x 1/2	33	17	16
182431438			14 x 3/8	31	12	19
182431412	1112431412		14 x 1/2	33	14	19
182431538	1112431538	1132431538	15 x 3/8	31	12	18
182431512	1112431512	1132431512	15 x 1/2	33	14	19
182431534	1112431534	1132431534	15 x 3/4	36	18	19
182431612	1112431612		16 x 1/2	33	14	19
182431634	1112431634		16 x 3/4	36	18	20
182431812	1112431812	1132431812	18 x 1/2	37	17	21
182431834	1112431834	1132431834	18 x 3/4	38	17	22
182432212	1112432212	1132432212	22 x 1/2	40	16	26
182432234	1112432234	1132432234	22 x 3/4	41	17	28
18243221	111243221	113243221	22 x 1	44	20	26
182432834	1112432834	1132432834	28 x 3/4	45	18	32
18243281	111243281	113243281	28 x 1	46	19	32
1824328114	11124328114	11324328114	28 x 1 1/4	47	20	34
18243351	111243351	113243351	35 x 1	52	20	39
1824335114	11124335114	11324335114	35 x 1 1/4	53	21	40
1824335112	11124335112	11324335112	35 x 1 1/2	52	20	40
1824342114	11124342114	11324342114	42 x 1 1/4	60	23	46
1824342112	11124342112	11324342112	42 x 1 1/2	60	23	50
1824354112	11124354112	11324354112	54 x 1 1/2	70	28	60
18243542	111243542	113243542	54 x 2	71	29	60
1824364212			64 x 2 1/2	83	34	71
1824367212			66,7 x 2 1/2	85	37	77
1824376212			76,1 x 2 1/2	88	38	82
18243763			76,1 x 3	92	42	90

- KIERRENIPPA 1 MUHVI UK
- ÖVERGÅNG 1 MUFF UTV GG
- Male adaptor

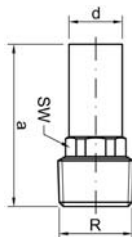


SANHA®-Press	SANHA®-Press Gas	SANHA®-Press Solar	d x R	a	z	SW
18243893		115243893	88,9 x 3	97	41	95
182431084		1152431084	108 x 4	120	50	117

- PURISTETTAVA NIPPA SK
- ÖVERGÅNGSNIPPEL INV GG
- Plug-in adaptor, female

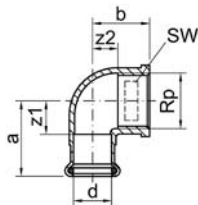


SANHA®-Press		SANHA®-Press Solar	d x Rp	a	z	SW
182461212			12a x 1/2	42	29	25
182461538			15a x 3/8	39	38	20
182461512			15a x 1/2	44	31	25
182461812			18a x 1/2	45	32	25
182461834			18a x 3/4	50	35	30
182462212			22a x 1/2	46	33	25
182462234			22a x 3/4	51	38	30
182462834			28a x 3/4	51	36	30
18246281			28a x 1	55	38	38
1824635114			35a x 11/4	69	47	46
1824642112			42a x 11/2	80	58	55
18246542			54a x 2	94	70	60



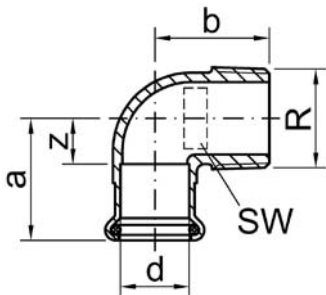
- PURISTETTAVA NIPPA UK
- ÖVERGÅNGSNIPPEL UTV GG
- Plug-in adaptor, male

SANHA®-Press	d x R	a	SW
182801212	12a x 1/2	44	16
182801538	15a x 3/8	42	16
182801512	15a x 1/2	46	16
182801812	18a x 1/2	47	19
182801834	18a x 3/4	51	19
182802212	22a x 1/2	56	22
182802234	22a x 3/4	52	22
182802834	28a x 3/4	60	27
18280281	28a x 1	64	34
1828035114	35a x 1 1/4	72	40
1828042112	42a x 1 1/2	80	46
18280542	54a x 2	92	60



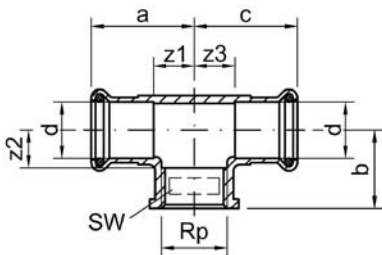
- KULMA 90° 1 MUHVI SK
- VINKEL 90° 1 MUFF INV GG
- Female elbow 90°

SANHA®-Press	SANHA®-Press Gas	SANHA®-Press Solar	d x Rp	a	b	z1	z2	SW
180901238	1110901238	1130901238	12 x 3/8	27	18	11	8	21
180901212	1110901212	1130901212	12 x 1/2	30	22	14	8	26
180901412	1110901412		14 x 1/2	31	23	13	9	26
180901538	1110901538	1130901538	15 x 3/8	29	19	11	9	22
180901512	1110901512	1130901512	15 x 1/2	33	23	15	10	26
180901534	1110901534	1130901534	15 x 3/4	36	25	18	9	32
180901612	1110901612		16 x 1/2	33	23	15	10	26
180901812	1110901812	1130901812	18 x 1/2	33	25	13	11	26
180901834	1110901834	1130901834	18 x 3/4	36	27	16	11	32
180902212	1110902212	1130902212	22 x 1/2	37	27	13	14	26
180902234	1110902234	1130902234	22 x 3/4	40	29	16	14	32
18090221	111090221	113090221	22 x 1	44	30	20	13	39
180902812	1110902812	1130902812	28 x 1/2	40	29	14	16	27
180902834	1110902834	1130902834	28 x 3/4	44	31	18	16	32
18090281	111090281	113090281	28 x 1	46	33	20	16	39
1809035114	11109035114	11309035114	35 x 11/4	57	42	25	20	49
1809042112	11109042112	11309042112	42 x 11/2	65	45	27	23	55
18090542	111090542	113090542	54 x 2	78	55	36	31	68



- KULMA 90° 1 MUHVI UK
- VINKEL 90° 1 MUFF UTV GG
- Male elbow 90°

SANHA®-Press	SANHA®-Press Gas	
180921238	1110921238	
180921212	1110921212	
180921412	1110921412	
180921538	1110921538	
180921512	1110921512	
180921534	1110921534	
180921612	1110921612	
180921812	1110921812	
180921834	1110921834	
180922212	1110922212	
180922234	1110922234	
18092221	111092221	
18092281	111092281	
1809235114	11109235114	
1809242112	11109242112	
18092542	111092542	



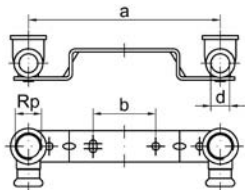
- T-HAARA 2 MUHVIA SK
- T-RÖR 2 MUFFAR INV GG
- Tee, female

SANHA®-Press	SANHA®-Press Gas	
181301212	1111301212	
181301412	1111301412	
181301538	1111301538	
181301512	1111301512	
181301612	1111301612	
181301812	1111301812	
181302212	1111302212	
181302234	1111302234	
181302812	1111302812	
181302834	1111302834	
181303512	1111303512	
18130351	111130351	
181304212	1111304212	
18130421	111130421	
181305412	1111305412	

SANHA®-Press Solar	d x R	a	b	z	SW
1130921238	12 x 3/8	24	22	8	16
1130921212	12 x 1/2	26	25	10	19
	14 x 1/2	26	26	8	19
1130921538	15 x 3/8	26	23	8	18
1130921512	15 x 1/2	27	26	9	19
1130921534	15 x 3/4	30	28	12	24
	16 x 1/2	27	26	9	20
1130921812	18 x 1/2	30	28	10	20
1130921834	18 x 3/4	32	30	12	24
1130922212	22 x 1/2	33	30	9	22
1130922234	22 x 3/4	36	33	12	26
113092221	22 x 1	40	35	16	30
113092281	28 x 1	42	38	16	32
11309235114	35 x 11/4	52	45	20	39
11309242112	42 x 11/2	59	48	2	45
113092542	54 x 2	70	59	28	57

SANHA®-Press Solar	d x Rp	a	b	c	z1	z2	z3	SW
1131301212	12 x 1/2 x 12	29	22	29	13	9	13	26
	14 x 1/2 x 14	31	23	31	13	10	13	26
1131301538	15 x 3/8 x 15	29	19	29	11	9	11	22
1131301512	15 x 1/2 x 15	31	23	31	13	10	13	26
	16 x 1/2 x 16	33	23	33	15	10	15	26
1131301812	18 x 1/2 x 18	33	25	33	13	12	13	26
1131302212	22 x 1/2 x 22	37	27	37	13	14	13	26
1131302234	22 x 3/4 x 22	40	29	40	16	14	16	32
1131302812	28 x 1/2 x 28	40	29	40	14	16	14	32
1131302834	28 x 3/4 x 28	42	31	42	16	16	16	32
1131303512	35 x 1/2 x 35	45	32	45	13	19	13	39
113130351	35 x 1 x 35	52	37	52	20	20	20	39
1131304212	42 x 1/2 x 42	51	36	51	13	23	13	47
113130421	42 x 1 x 42	57	40	57	19	23	19	47
1131305412	54 x 1/2 x 54	56	42	56	13	29	14	59

- HANAKULMA ASENUSSARJA
- VENTILFÄSTE INSTALLATIONSSET
- Installation set



SANHA®-Press

189761512

d x Rp

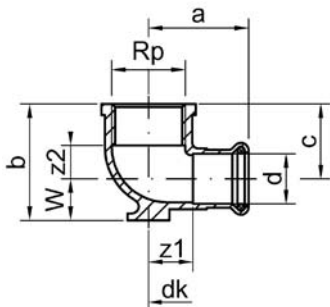
15 x 1/2

a

153

b

50



- HANAKULMA 1 MUHVI SK
- VENTILFÄSTE 1 MUFF INV GG
- Wall plate

SANHA®-Press

184721212

184721412

184721512

184721612

184721812

184721834

184722212

184722234

SANHA®-Press Gas

1114721212

1114721412

1114721512

1114721612

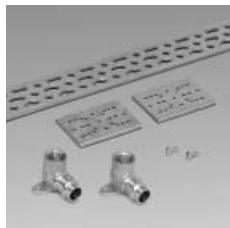
1114721812

1114721834

1114722212

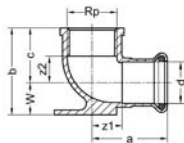
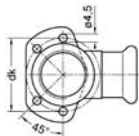
1114722234

- ASENNUSSARJA
- INSTALLATIONSSATS
- Installation set



<b>SANHA®-Press</b>	<b>d x Rp</b>
189801512	15 x 1/2

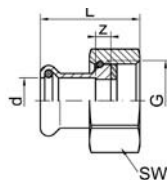
<b>SANHA®-Press Solar</b>	<b>d x Rp</b>	<b>a</b>	<b>b</b>	<b>c</b>	<b>z1</b>	<b>z2</b>	<b>dk</b>	<b>W</b>
1134721212	12 x 1/2	31	33	22	15	9	35	20
	14 x 1/2	33	33	22	15	9	35	20
1134721512	15 x 1/2	33	36	23	15	10	35	23
	16 x 1/2	33	36	23	15	10	35	23
1134721812	18 x 1/2	33	39	25	13	12	35	26
1134721834	18 x 3/4	36	42	27	16	12	40	27
	22 x 1/2	37	43	26	13	13	35	30
	22 x 3/4	40	46	29	16	14	40	31



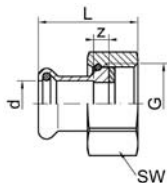
- HANAKULMA 1 MUHVI SK
- VENTILFÄSTE 1 MUFF INV GG
- Wall plate

SANHA®-Press	d x Rp	a	b	c	z1	z2	dk	W
184731512	15 x 1/2	33	36	23	15	9	40	22
184732234	22 x 3/4	37	43	27	13	14	40	30

- YHDISTÄJÄ PUOLIKAS 1 MUHVI SK
- KÖPPLINGSHALVA 1 MUFF LEKANDE MUTTER
- Union adaptor, flat sealing

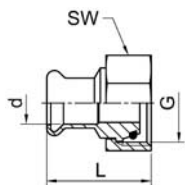


SANHA®-Press		SANHA®-Press Solar	d x G	L	SW
183591212		1133591212	12 x 1/2	30	24
183591234		1133591234	12 x 3/4	30	30
183591438			14 x 3/8	47	19
183591412			14 x 1/2	45	24
183591534		1133591534	15 x 3/4	32	30
18359151		113359151	15 x 1	34	37
183591634			16 x 3/4	33	30
183591834		1133591834	18 x 3/4	46	30
18359181		113359181	18 x 1	36	37
183592234		1133592234	22 x 3/4	51	30
18359221		113359221	22 x 1	42	37
1835922114		11335922114	22 x 11/4	38	46
1835922112		11335922112	22 x 11/2	43	52
1835928114		11335928114	28 x 11/4	46	46
1835928112		11335928112	28 x 11/2	45	52
1835935112		11335935112	35 x 11/2	52	52



- YHDISTÄJÄ PUOLIKAS 1 MUHVI SK
- KOPPLINGSHALVA 1 MUFF LEKANDE MUTTER
- Union adaptor, flat sealing

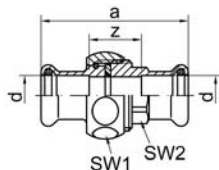
SANHA®-Press		SANHA®-Press Solar	d x G	L	SW
18359352		113359352	35 x 2	54	64
1835942134		11335942134	42 x 13/4	60	59
18359422		113359422	42 x 2	62	64
1835954238		11335954238	54 x 23/8	68	75
18359763			76,1 x 3	84	94
1835989312			88,9 x 31/2	94	110



- YHDISTÄJÄ PUOLIKAS 1 MUHVI SK
- KOPPLINGSHALVA 1 MUFF LEKANDE MUTTER
- Union adaptor, conical sealing

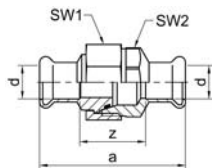
	SANHA®-Press Gas		d x G	L	SW
	1113601578		15 x 7/8	37	34
	11136018118		18 x 11/8	42	40
	11136022118		22 x 11/8	44	40
	11136028138		28 x 13/8	52	48

- YHDISTÄJÄ 2 MUHVIA
- SKARVKOPPLING 2 MUFFAR
- Union, flat sealing



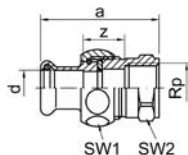
SANHA®-Press		SANHA®-Press Solar	d	a	z	SW1	SW2
1833012		11333012	12	50	18	24	16
1833015		11333015	15	54	18	30	19
1833018		11333018	18	70	30	30	22
1833022		11333022	22	66	18	37	26
1833028		11333028	28	71	17	46	34
1833035		11333035	35	82	18	52	40
1833042		11333042	42	94	19	59	46
1833054		11333054	54	102	17	75	60

- YHDISTÄJÄ 2 MUHVIA
- SKARVKOPPLING 2 MUFFAR
- Union, conical sealing



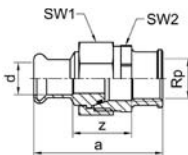
	SANHA®-Press Gas		d	a	z	SW1	SW2
	11134015		15	66	30	34	31
	11134018		18	77	37	40	40
	11134022		22	82	34	40	40
	11134028		28	94	40	48	45
	11134035		35	102	38	59	55
	11134042		42	125	50	72	68
	11134054		54	132	47	80	76

- Yhdistäjä, tasotivistein
- Skarvkoppling, plan tätning
- Union, flat sealing



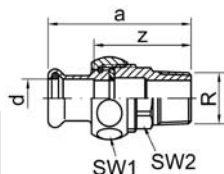
SANHA®-Press		SANHA®-Press Solar	d x Rp	a	z	SW1	SW2
183301212		1133301212	12 x 1/2	51	21	24	25
183301512		1133301512	15 x 1/2	49	16	30	25
183301534		1133301534	15 x 3/4	55	21	30	30
183301812		1133301812	18 x 1/2	63	28	30	25
183301834		1133301834	18 x 3/4	69	33	30	30
183302234		1133302234	22 x 3/4	62	21	37	30
18330221		113330221	22 x 1	63	20	37	39
183302834		1133302834	28 x 3/4	62	20	46	30
18330281		113330281	28 x 1	66	20	46	39
1833035114		11333035114	35 x 11/4	80	27	52	46
1833042112		11333042112	42 x 11/2	85	28	59	54
18330542		113330542	54 x 2	94	24	75	66

- YHDISTÄJÄ 2 MUHVIA
- SKARVKOPPLING 2 MUFFAR
- Union, conical sealing



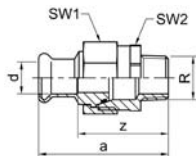
	SANHA®-Press Gas		d x Rp	a	z	SW1	SW2
	1113401512		15 x 1/2	60	27	34	31
	1113401812		18 x 1/2	63	29	40	40
	1113402234		22 x 3/4	65	27	40	40
	111340281		28 x 1	83	31	48	45
	11134035114		35 x 11/4	84	27	59	55
	11134042112		42 x 11/2	97	32	72	68
	111340542		54 x 2	101	30	80	76

- YHDISTÄJÄ 1 MUHVI UK
- SKARVKOPPLING 1 MUFF UTV GG
- Union, male, flat sealing



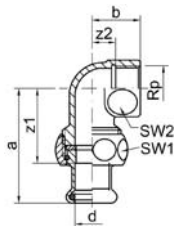
SANHA®-Press		SANHA®-Press Solar	d x R	a	z	SW1	SW2
183331238		1133331238	12 x 3/8	51	35	30	17
183331212		1133331212	12 x 1/2	53	37	30	22
183331512		1133331512	15 x 1/2	55	37	30	22
183331534		1133331534	15 x 3/4	60	42	30	27
183331812		1133331812	18 x 1/2	69	49	30	22
183331834		1133331834	18 x 3/4	74	54	30	27
183332212		1133332212	22 x 1/2	71	47	37	23
183332234		1133332234	22 x 3/4	66	42	37	27
18333221		113333221	22 x 1	70	46	37	34
183332834		1133332834	28 x 3/4	78	51	46	28
18333281		113333281	28 x 1	74	47	46	34
1833335114		11333335114	35 x 11/4	95	63	52	46
1833342112		11333342112	42 x 11/2	102	64	59	50
18333542		113333542	54 x 2	116	73	75	60

- YHDISTÄJÄ 1 MUHVI UK
- SKARVKOPPLING 1 MUFF UTV GG
- Union, male, conical sealing



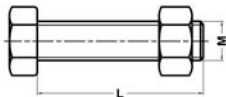
	SANHA®-Press Gas		d x R	a	z	SW1	SW2
	1113431512		15 x 1/2	34	32	61	43
	1113431534		15 x 3/4	34	31	61	43
	1113431812		18 x 1/2	40	40	75	54
	1113431834		18 x 3/4	40	40	70	49
	1113432234		22 x 3/4	40	40	71	46
	111343221		22 x 1	40	40	77	51
	1113432834		28 x 3/4	48	45	83	54
	111343281		28 x 1	48	45	83	54
	11134335114		35 x 11/4	59	55	93	61
	11134342112		42 x 11/2	72	68	104	67
	111343542		54 x 2	80	76	113	70

- KULMAYHDISTÄJÄ 1 MUHVI SK
- VINKELÖVERGÅNG 1 MUFF INV GG
- Elbow union, female, flat sealing



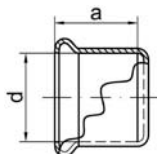
SANHA®-Press		SANHA®-Press Solar	d x Rp	a	b	z1	z2	SW1	SW2
180961212		1130961212	12 x 1/2	47	20	31	9	24	26
180961512		1130961512	15 x 1/2	51	22	33	11	30	26
180961812		1130961812	18 x 1/2	65	22	45	11	30	26
180961834		1130961834	18 x 3/4	70	24	50	11	30	32
180962234		1130962234	22 x 3/4	65	26	41	13	37	32
18096221		113096221	22 x 1	72	39	48	25	46	40
18096281		113096281	28 x 1	78	39	51	25	46	40
1809635114		11309635114	35 x 11/4	83	38	51	21	52	48
1809642112		11309642112	42 x 11/2	95	41	57	24	59	54
18096542		113096542	54 x 2	109	51	66	30	75	66

- HST-MUTTERIPULTTI PURISTUSLAIPALLE PN10/16
- BULT M/MUTTER I ROSTFRITT SYRAFAST STÅL FÖR PRESSFLÄNS PN10/16
- Screw with nut

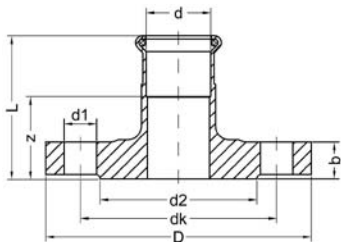


	Sopii Laippa / Passar till Fläns / suitable for	M x L	
1SCHR1650	Laippa / Fläns / Flange DN 32 - DN 65	16 x 50	
1SCHR1660	Laippa / Fläns / Flange DN 80 - DN 100	16 x 60	
1SCHR2075	Laippa / Fläns / Flange DN 150	20 x 75	

- HATTU
- HUV
- Endcap



SANHA®-Press	SANHA®-Press Gas	SANHA®-Press Solar	d	a
1630112	11030112	11230112	12	16
1630114	11030114		14	18
1630115	11030115	11230115	15	18
1630116	11030116		16	18
1630118	11030118	11230118	18	20
1630122	11030122	11230122	22	24
1630128	11030128	11230128	28	27
1630135	11030135	11230135	35	32
1630142	11030142	11230142	42	38
1630154	11030154	11230154	54	43
1630164			64	47
1630167			66,7	48
1630176			76,1	50
1630189			88,9	56
16301108			108	70



- PURISTUSLAIPPA PN 10/16
- PRESSFLÄNS PN 10/16
- Flange, PN 10/16

SANHA®-Press	SANHA®-Press Gas
1RGPF28	110RGPF28
1RGPF35	110RGPF35
1RGPF42	110RGPF42
1RGPF54	110RGPF54
1RGPF64	
1RGPF67	
1RGPF76	
1RGPF76_DN80	
1RGPF89	
1RGPF108	

Az = reikien määrä

Az = antal hål

Az = Quantity of holes

- O-RENGAS EPDM
- O-RING EPDM
- Sealing element, made of EPDM



SANHA®-Press	d
10RT1210250	12
10RT1420250	14
10RT1510260	15
10RT1620250	16
10RT1820265	18
10RT2220310	22
10RT2830310	28
10RT3540325	35

	DN x d	b	d1	d2	z	L	dk	D	Az
	DN 25 / 28 mm	16	14	68	36	62	85	116	4
	DN 32 / 35 mm	16	18	78	30	62	100	140	4
	DN 40 / 42 mm	16	18	88	25	63	110	150	4
	DN 50 / 54 mm	18	18	102	23	65	125	165	4
	DN -- / 64 mm	18	18	122	24	67	145	185	4
	DN -- / 66,7 mm	18	18	122	19	67	145	185	4
	DN 65 / 76,1 mm	18	18	122	28	78	145	185	4
	DN 70 / 76,1 mm	20	18	138	30	80	160	200	8
	DN 80 / 88,9 mm	20	18	138	24	80	160	200	8
	DN 100 / 108 mm	20	18	158	11	80	180	220	8

- O-RENGAS EPDM
- O-RING EPDM
- Sealing element, made of EPDM



SANHA®-Press	d	
1ORT4240413	42	
1ORT5440413	54	
1ORT6500600	64	
1ORT6800600	66,7	
1ORT7700700	76,1	
1ORT6000/8000760	88,9	
1ORT11000900	108	

- LAIPAN TIIVISTE
- FLÄNSPACKNING
- Flange sealing

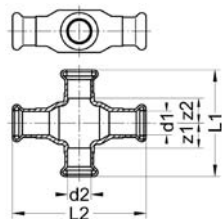


	DN	
1D25	25	
1D32	32	
1D40	40	
1D50	50	
1D65	65	
1D80	80	
1D100	100	

**SANHA®-Press Heat**

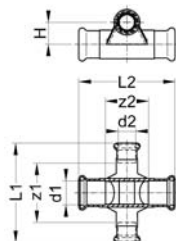
Heizungsanbindungen / Radiatoransluitstukken / Heating assembly elements

- RISTIKAPPALE 4 MUHVIA
- KORSRÖR 4 MUFFAR - EN NIVÅ
- Junction piece, single level

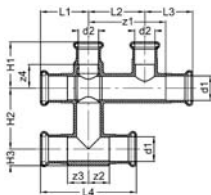
**SANHA®-Press Solar**

	d1 x d2	L1	L2	z1	z2
1818015	15	85	71	18	18
181801512	15 x 12	85	70	19	19
181801812	18 x 12	85	74	21	21
181801815	18 x 15	85	71	18	18
181802212	22 x 12	85	70	19	19
181802215	22 x 15	85	79	22	22

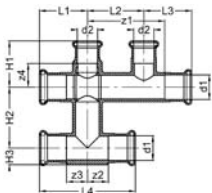
- RISTIKAPPALE YLIHEITOLLA 4 MUHVIA
- KORSRÖR 4 MUFFAR - TVÅ NIVÅER
- Junction piece

**SANHA®-Press Solar**

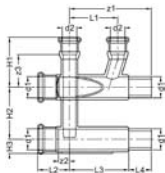
	d1 x d2	L1	L2	z1	z2
1818115	15	84	84	49	49
181811815	18 x 15	84	84	49	45
181812215	22 x 15	87	90	55	40
181812815	28 x 15	88	91	56	35



- RISTIKAPPALE 6 MUHVIA ERISTYSKOTELLOLLA
- KORS-T-RÖR 6 MUFFAR MED ISOLERBOX
- Junction T-piece, with insulating box



- RISTIKAPPALE 6 MUHVIA, ILMAN ERISTYSKOTELOA
- KORS-T-RÖR 6 MUFFAR UTAN ISOLERBOX
- Junction T-piece, without insulating box



- RISTIKAPPALE 4 MUHVIA, 2 HOLKKIA ERISTYSKOTELLOLLA
- KORS-T-RÖR 4 MUFFAR 2 SLÄTÄNDE MED ISOLERBOX
- Plaster distributor, with insulating box

### SANHA®-Press Solar

1858015
18580151215
18580181218
18580181518
18580221522
18580221822

### SANHA®-Press Solar

18580115
185801151215
185801181218
185801181518
185801221522
185801221822

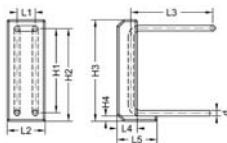
### SANHA®-Press Solar

18581221222
18581221522

	<b>d1 x d2 x d1</b>	<b>L1</b>	<b>L2</b>	<b>L3</b>	<b>L4</b>	<b>H1</b>	<b>H2</b>	<b>H3</b>	<b>z1</b>	<b>z2</b>	<b>z3</b>	<b>z4</b>
	15	43	50	43	100	43	55	15	80	25	100	65
	15 x 12 x 15	43	50	43	100	45	55	15	84	29	100	65
	18 x 12 x 18	43	50	43	100	45	55	15	84	29	100	61
	18 x 15 x 18	43	50	43	100	40	55	15	77	22	96	61
	22 x 15 x 22	43	50	43	100	40	55	15	77	22	88	53
	22 x 18 x 22	43	50	43	100	40	55	15	75	20	88	53

	<b>d1 x d2 x d1</b>	<b>L1</b>	<b>L2</b>	<b>L3</b>	<b>L4</b>	<b>H1</b>	<b>H2</b>	<b>H3</b>	<b>z1</b>	<b>z2</b>	<b>z3</b>	<b>z4</b>
	15	43	50	43	100	43	55	15	80	25	100	65
	15 x 12 x 15	43	50	43	100	45	55	15	84	29	100	65
	18 x 12 x 18	43	50	43	100	45	55	15	84	29	100	61
	18 x 15 x 18	43	50	43	100	40	55	15	77	22	96	61
	22 x 15 x 22	43	50	43	100	40	55	15	77	22	88	53
	22 x 18 x 22	43	50	43	100	40	55	15	75	20	88	53

	<b>d1 x d2 x d1</b>	<b>L1</b>	<b>L2</b>	<b>L3</b>	<b>L4</b>	<b>H1</b>	<b>H2</b>	<b>H3</b>	<b>z1</b>	<b>z2</b>	<b>z3</b>
	22 x 12 x 22	50	33	62	32	45	55	15	93	9	30
	22 x 15 x 22	50	33	62	32	51	55	15	93	9	33

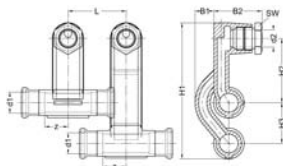


- PÄÄTEKAPPALE ERISTETTY
- RÖRANSLUTNING ISOLERAD
- VA block for radiator connection

### SANHA®-Press Solar

18610185

18610255



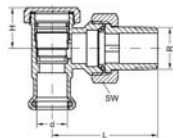
- LIITINPARI YLIHEITOLLA
- ANSLUTNING FÖR SOCKELELEMENT
- Skirting rail radiator connector, nickel-plated

### SANHA®-Press Solar

185901512

185901812

- SÄÄTÖTULPPA KULMA 1 MUHVI
- RADIATORVENTIL VINKEL 1 MUFF
- Radiator union, corner form, forged brass



### SANHA®-Press Solar

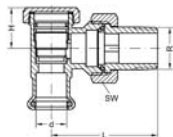
314AP1512

d x R	H	L	SW
15 x 1/2	20	52	30

	d x H	L1	L2	L3	L4	L5	H1	H2	H3	H4
	15 x 185	50	105	225	56	110	165	184	210	15
	15 x 255	50	105	225	56	110	235	252	280	15

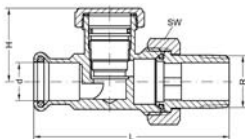
	d1 x d2	B1	B2	L	H1	H2	H3
	15 x 15	16	42	50	55	35	117
	18 x 15	16	42	50	55	35	117

- SÄÄTÖTULPPA KULMA 1 MUHVI NIKLATTU
- RADIATORVENTIL VINKEL 1 MUFF FÖRNICKLAD
- Radiator union, corner form, forged brass

**SANHA®-Press Solar**

	d x R	H	L	SW
314APV1512	15 x 1/2	20	52	30

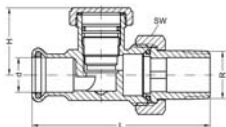
- SÄÄTÖTULPPA SUORA 1 MUHVI
- RADIATORVENTIL RAK 1 MUFF
- Radiator union , passage form, forged brass

**SANHA®-Press Solar**

315AP1512

d x R	H	L	SW
15 x 1/2	29	78	30

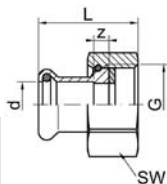
- SÄÄTÖTULPPA SUORA 1 MUHVI NIKLATTU
- RADIATORVENTIL RAK 1 MUFF FÖRNICKLAD
- Radiator union , passage form, forged brass

**SANHA®-Press Solar**

315APV1512

d x R	H	L	SW
15 x 1/2	29	78	30

- PUMPPULIITIN PURISTETTAVA TASOTIIVISTEIN
- PUMPANSLUTNINGSKOPPLINGSSET 1 MUFF LEKANDE MUTTER
- Press union with gasket according to DVGW

**SANHA®-Press Solar**

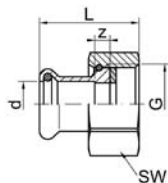
39701534

3970151

39701834

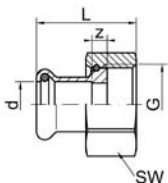
3970181

d x G	a	SW
15 x 3/4	32	30
15 x 1	34	37
18 x 3/4	46	30
18 x 1	36	37



- PUMPPULIITIN PURISTETTAVA TASOTIIVISTEIN
- PUMPANSLUTNINGSKOPPLINGSSET 1 MUFF LEKANDE MUTTER
- Press union with gasket according to DVGW

SANHA®-Press Solar	d x G	a	SW
3970221	22 x 1	42	37
397022112	22 x 11/2	43	52
397028114	28 x 11/4	46	46
397028112	28 x 11/2	45	52



- PUMPPULIITIN PURISTETTAVA ILMAN TIIVISTEITÄ
- SE ARTIKEL 970, UTAN PACKNING
- Press union without gasket according to DVGW

SANHA®-Press Solar	d x G	a	SW
39711534	15 x 3/4	32	30
3971151	15 x 1	34	37
39711834	18 x 3/4	46	30
3971181	18 x 1	36	37
3971221	22 x 1	42	37
397122112	22 x 11/2	43	52
397128114	28 x 11/4	46	46
397128112	28 x 11/2	45	52

- PUTKIEN MITTAUSMALLINE
- RÖRSCHABLON MED FLASKÖPPNARE
- Plastic measure tool for SANHA copper and gunmetal pressfittings



**SANHA®-Press Solar**

84980

d

12-54 mm

- MITTAUSMALLINE ISOILLE PUTKILLE
- RÖRSCHABLON FÖR STORA DIMENSIONER MED FLASKÖPPNARE OCH VATTENLIBELL
- Plastic measure tool for big dimensions



**SANHA®-Press Solar**

84990

d

76,1-108 mm

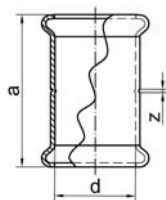
**3.4. SANHA®-Therm puristusliittimet \***

**3.4. SANHA®-Therm presskopplingar \***

**3.4. SANHA®-Therm press fittings \***

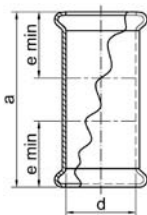
**\* Ei juomavedelle / Ej för dricksvatten / Not Suitable for Drinking  
Water Applications**

- KAKSOISMUHVI
- SKARVMUFF
- Coupling



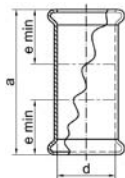
	d	a	z
12427012	12	33	2
12427015	15	38	2
12427018	18	42	2
12427022	22	49	2
12427028	28	55	2
12427035	35	66	2
12427042	42	79	3
12427054	54	88	3
12427076	76,1	117	17
12427089	88,9	129	17
124270108	108	156	17

- LIUKUMUHVI
- SKJUTMUFF
- Slip coupling



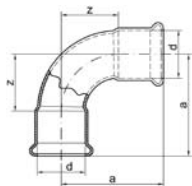
	d	a	e min
124270S12	12	41	16
124270S15	15	47	18
124270S18	18	53	20
124270S22	22	64	24
124270S28	28	72	27
124270S35	35	88	32

- LIUKUMUHVII
- SKJUTMUFF
- Slip coupling



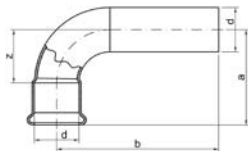
	d	a	e min
124270S42	42	104	38
124270S54	54	119	43
124270S76	76,1	116	50
124270S89	88,9	128	56
124270S108	108	155	70

- KÄYRÄ 90° 2 MUHVIA
- BÖJ 90° 2 MUFFAR
- Bend 90°, female/female



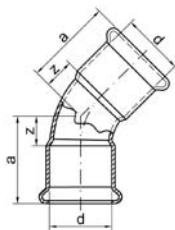
	d	a	z
124002A12	12	30	15
124002A15	15	36	18
124002A18	18	42	22
124002A22	22	50	27
124002A28	28	61	34
124002A35	35	75	43
124002A42	42	89	51
124002A54	54	108	65
124002A76	76,1	142	92
124002A89	88,9	164	108
124002A108	108	200	131

- KÄYRÄ 90° 1 MUHVI
- BÖJ 90° 1 MUFF
- Bend 90°, female/male



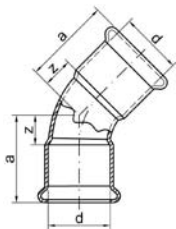
	d	a	b	z
124001A12	12	30	40	15
124001A15	15	36	44	18
124001A18	18	42	50	22
124001A22	22	50	58	27
124001A28	28	61	68	34
124001A35	35	75	82	43
124001A42	42	89	103	51
124001A54	54	108	123	65
124001A76	76,1	142	160	92
124001A89	88,9	164	184	108
124001A108	108	200	227	131

- KÄYRÄ 45° 2 MUHVIA
- BÖJ 45° 2 MUFFAR
- Bend 45°, female/female



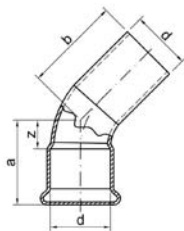
	d	a	z
12404112	12	22	6
12404115	15	26	8
12404118	18	29	9
12404122	22	35	11
12404128	28	41	14
12404135	35	50	18

- KÄYRÄ 45° 2 MUHVIA
- BÖJ 45° 2 MUFFAR
- Bend 45°, female/female



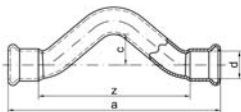
	d	a	z
12404142	42	60	21
12404154	54	70	27
12404176	76,1	89	39
12404189	88,9	101	45
124041108	108	124	55

- KÄYRÄ 45° 1 MUHVI
- BÖJ 45° 1 MUFF
- Bend 45°, female/male



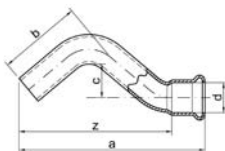
	d	a	b	z
12404012	12	22	30	6
12404015	15	26	34	8
12404018	18	29	37	9
12404022	22	35	43	11
12404028	28	41	49	14
12404035	35	50	58	18
12404042	42	60	74	21
12404054	54	70	85	27
12404076	76,1	89	105	39
12404089	88,9	101	119	45
124040108	108	124	145	55

- YLIHEITTO 2 MUHVIA
- S-RÖR 2 MUFFAR
- Full crossover

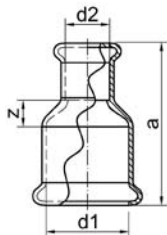


	d	a	c	z
12408512	12	110	18	78
12408515	15	124	19	89
12408518	18	142	21	102
12408522	22	172	25	125
12408528	28	203	28	150

- YLIHEITTO 1 MUHVI
- S-RÖR 1 MUFF
- Partial crossover

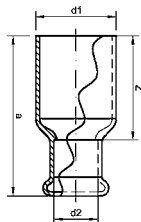


	d	a	b	c	z
12408612	12	87	40	18	71
12408615	15	98	44	19	80
12408618	18	111	50	21	92
12408622	22	136	60	25	112
12408628	28	161	72	28	134



- SUPISTUSMUHVI 2 MUHVIA
- REDUCERING 2 MUFFAR
- Reducing coupling

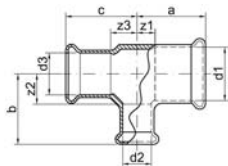
	$d_1 \times d_2$	$a$	$z$
1242401512	15 x 12	34	4
1242401812	18 x 12	41	6
1242401815	18 x 15	42	4
1242402215	22 x 15	48	6
1242402218	22 x 18	48	5
1242402815	28 x 15	54	10
1242402818	28 x 18	55	8
1242402822	28 x 22	56	6
1242403522	35 x 22	65	10
1242403528	35 x 28	65	7
1242404222	42 x 22	75	13
1242404228	42 x 28	75	10
1242404235	42 x 35	77	7
1242405428	54 x 28	86	16
1242405435	54 x 35	88	13
1242405442	54 x 42	90	9



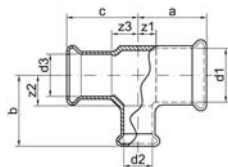
- MUHVI/HOLKKI
- REDUCERING 1 MUFF SLÄTÄNDE
- Reducer

	d1 x d2	a	z
1242431512	15 x 12	40	24
1242431812	18 x 12	44	28
1242431815	18 x 15	44	26
1242432215	22 x 15	51	33
1242432218	22 x 18	50	30
1242432815	28 x 15	57	39
1242432818	28 x 18	57	37
1242432822	28 x 22	58	34
1242433522	35 x 22	68	44
1242433528	35 x 28	67	40
1242434222	42 x 22	77	54
1242434228	42 x 28	77	50
1242434235	42 x 35	78	46
1242435435	54 x 35	90	58
1242435442	54 x 42	91	53
1242437635	76,1 x 35	131	99
1242437642	76,1 x 42	133	99
1242437654	76,1 x 54	133	90
1242438954	88,9 x 54	149	106
1242438976	88,9 x 76	145	95
12424310842	108 x 42	179	141
12424310854	108 x 54	179	136
12424310876	108 x 76,1	174	124
12424310889	108 x 88,9	174	118

- T-HAARA 3 MUHVIA
- T-RÖR 3 MUFFAR
- Tee



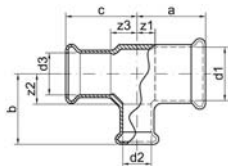
	d1 x d2 x d3	a	b	c	z	z1	z2	z3
12413012	12	23	23	23	8			
12413015	15	34	27	34	9			
12413018	18	36	31	36	11			
12413022	22	39	37	39	13			
12413028	28	43	43	43	17			
12413035	35	53	53	53	20			
12413042	42	63	63	63	25			
12413054	54	73	73	73	31			
12413076	76,1	97	106	97		47	57	47
12413089	88,9	111	121	111		55	65	55
124130108	108	135	145	135		65	75	65
124130121512	12 x 15 x 12	28	27	28		12	9	12
124130151215	15 x 12 x 15	26	25	25		8	9	10
124130151815	15 x 18 x 15	31	31	31		13	11	13
124130181515	18 x 15 x 15	30	29	30		9	11	12
124130181518	18 x 15 x 18	30	29	30		9	11	10
124130181815	18 x 18 x 15	31	31	31		11	11	13
124130182218	18 x 22 x 18	36	37	36		16	13	16
124130221222	22 x 12 x 22	32	29	32		8	13	8
124130221515	22 x 15 x 15	33	31	32		10	13	14
124130221518	22 x 15 x 18	33	31	32		10	13	13
124130221522	22 x 15 x 22	33	31	33		10	13	10
124130221818	22 x 18 x 18	35	33	34		11	13	14
124130221822	22 x 18 x 22	35	33	35		11	13	11
124130222215	22 x 22 x 15	37	37	35		13	13	17
124130222218	22 x 22 x 18	37	37	36		13	13	16
124130222822	22 x 28 x 22	43	43	44		20	17	20
124130281522	28 x 15 x 22	37	34	37		10	16	13
124130281528	28 x 15 x 28	37	34	37		10	16	10



- T-HAARA 3 MUHVIA
- T-RÖR 3 MUFFAR
- Tee

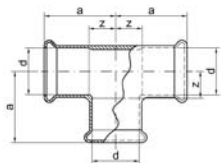
	d1 x d2 x d3	a	b	c	z	z1	z2	z3
124130281818	28 x 18 x 18	38	36	37		12	16	17
124130281822	28 x 18 x 22	38	36	38		12	16	15
124130281828	28 x 18 x 28	38	36	38		12	16	12
124130282222	28 x 22 x 22	40	40	40		14	16	17
124130282228	28 x 22 x 28	40	40	40		14	16	14
124130282815	28 x 28 x 15	43	43	42		17	17	24
124130282818	28 x 28 x 18	43	43	42		17	17	22
124130282822	28 x 28 x 22	43	43	44		17	17	20
124130283528	28 x 35 x 28	53	53	53		25	20	25
124130351535	35 x 15 x 35	43	38	43		11	20	11
124130351835	35 x 18 x 35	44	40	44		12	20	12
124130352222	35 x 22 x 22	46	44	45		14	20	21
124130352228	35 x 22 x 28	46	44	45		14	20	19
124130352235	35 x 22 x 35	46	44	46		14	20	14
124130352828	35 x 28 x 28	49	47	48		17	21	22
124130352835	35 x 28 x 35	49	47	49		17	21	17
124130353522	35 x 35 x 22	53	53	51		21	21	28
124130353528	35 x 35 x 28	53	53	52		21	21	25
124130421542	42 x 15 x 42	50	51	49		11	34	11
124130422242	42 x 22 x 42	53	48	53		15	24	15
124130422842	42 x 28 x 42	56	51	56		18	24	18
124130423535	42 x 35 x 35	60	57	57		21	25	25
124130423542	42 x 35 x 42	60	57	59		21	25	21
124130542254	54 x 22 x 54	57	54	57		15	30	15
124130542854	54 x 28 x 54	60	68	60		18	41	18
124130543554	54 x 35 x 54	64	63	64		21	31	21
124130544254	54 x 42 x 54	67	69	67		25	31	25
124130762276	76,1 x 22 x 76,1	76	87	76		27	63	27
124130762876	76,1 x 28 x 76,1	76	87	76		27	60	27
124130763576	76,1 x 35 x 76,1	76	86	76		27	54	27

- T-HAARA 3 MUHVIA
- T-RÖR 3 MUFFAR
- Tee



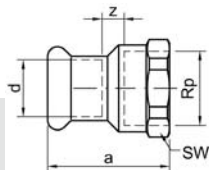
	d1 x d2 x d3	a	b	c	z	z1	z2	z3
124130764276	76,1 x 42 x 76,1	80	92	80		30	54	30
124130765476	76,1 x 54 x 76,1	86	97	86		36	54	36
124130895489	88,9 x 54 x 88,9	94	105	94		38	62	38
124130897689	88,9 x 76,1 x 88,9	105	115	105		49	65	49
12413010854108	108 x 54 x 108	108	115	108		38	72	38
12413010876108	108 x 76,1 x 108	119	125	119		49	75	49
12413010889108	108 x 88,9 x 108	125	131	125		56	75	56

- T-HAARA 3 MUHVIA - PITKÄ
- T-RÖR 3 MUFFAR - LÅNG
- Tee - long

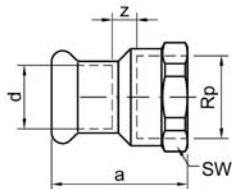


	d	a	z
124130L15	15	35	17

- KIERRENIPPA 1 MUHVI SK
- ÖVERGÅNG 1 MUFF INV GG
- Female adaptor

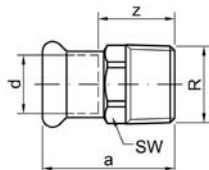


	d x Rp	a	z	SW
124270G1212	12 x 1/2	34	5	25
124270G1512	15 x 1/2	33	2	25
124270G1812	18 x 1/2	35	2	25



- KIERRENIPPA 1 MUHVI SK
- ÖVERGÅNG 1 MUFF INV GG
- Female adaptor

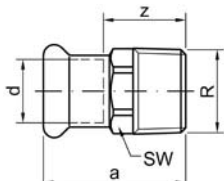
	d x Rp	a	z	SW
124270G1834	18 x 3/4	40	5	30
124270G2234	22 x 3/4	42	3	30
124270G2834	28 x 3/4	44	2	46
124270G281	28 x 1	48	4	39
124270G28114	28 x 1 1/4	55	6	46
124270G351	35 x 1	49	-	55
124270G35114	35 x 1 1/4	58	4	46
124270G35112	35 x 1 1/2	59	5	55
124270G42114	42 x 1 1/4	62	3	46
124270G42112	42 x 1 1/2	63	4	55
124270G54112	54 x 1 1/2	67	3	55
124270G542	54 x 2	74	8	60
124270G76212	76,1 x 2 1/2	86	6	86
124270G893	88,9 x 3	96	5	95



- KIERRENIPPA 1 MUHVI UK
- ÖVERGÅNG 1 MUFF UTV GG
- Male adaptor

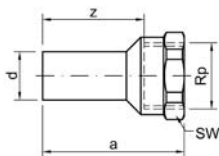
	d x R	a	z	SW
124243G1238	12 x 3/8	30	14	16
124243G1538	15 x 3/8	31	12	18
124243G1512	15 x 1/2	33	14	19
124243G1812	18 x 1/2	37	17	21
124243G1834	18 x 3/4	38	17	22

- KIERRENIPPA 1 MUHVI UK
- ÖVERGÅNG 1 MUFF UTV GG
- Male adaptor



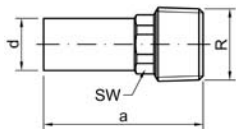
	d x R	a	z	SW
124243G2234	22 x 3/4	41	17	28
124243G2834	28 x 3/4	45	18	32
124243G281	28 x 1	46	19	32
124243G35114	35 x 1 1/4	53	21	40
124243G42112	42 x 1 1/2	60	23	50
124243G542	54 x 2	71	29	60
124243G76212	76,1 x 2 1/2	88	38	82
124243G763	76,1 x 3	92	42	90
124243G893	88,9 x 3	97	41	95
124243G1084	108 x 4	120	50	117

- PURISTETTAVA NIPPA SK
- ÖVERGÅNGSNIPPEL INV GG
- Plug-in adaptor, female



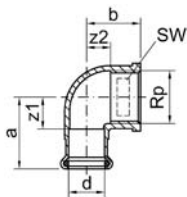
	d x Rp	a	z	SW
124246G1212	12a x 1/2	42	29	25
124246G1512	15a x 1/2	44	31	25
124246G1812	18a x 1/2	45	32	25
124246G1834	18a x 3/4	50	35	30
124246G2212	22a x 1/2	46	33	25
124246G2234	22a x 3/4	51	38	30

- PURISTETTAVA NIPPA UK
- ÖVERGÅNGSNIPPEL UTV GG
- Plug-in adaptor, male



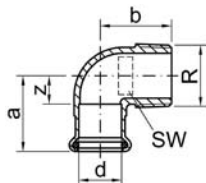
	d x R	a	SW
124280G1212	12a x 1/2	44	16
124280G1512	15a x 1/2	46	16
124280G1812	18a x 1/2	47	19
124280G1834	18a x 3/4	51	19
124280G2212	22a x 1/2	56	22
124280G2234	22a x 3/4	52	22

- KULMA 90° 1 MUHVI SK
- VINKEL 90° 1 MUFF INV GG
- Female elbow 90°



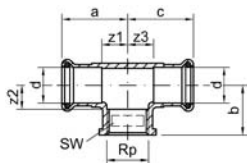
	d x Rp	a	b	z1	z2	SW
124090G1238	12 x 3/8	27	18	11	8	21
124090G1512	15 x 1/2	33	23	15	10	26
124090G1812	18 x 1/2	33	25	13	11	26
124090G2234	22 x 3/4	40	29	16	14	32
124090G281	28 x 1	46	33	20	16	39
124090G35114	35 x 1 1/4	57	42	25	20	49
124090G42112	42 x 1 1/2	65	45	27	23	55
124090G542	54 x 2	78	55	36	31	68

- KULMA 90° 1 MUHVI UK
- VINKEL 90° 1 MUFF UTV GG
- Male elbow 90°

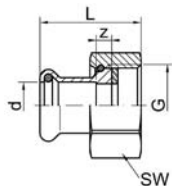


	d x R	a	b	z	SW
124092G1238	12 x 3/8	24	22	8	16
124092G1538	15 x 3/8	26	23	8	18
124092G1512	15 x 1/2	27	26	9	19
124092G1812	18 x 1/2	30	28	10	20
124092G2234	22 x 3/4	36	33	12	26
124092G281	28 x 1	42	38	16	32
124092G35114	35 x 1 1/4	52	45	20	39
124092G42112	42 x 1 1/2	59	48	21	45
124092G542	54 x 2	70	59	28	57

- T-HAARA 2 MUHVIA SK
- T-RÖR 2 MUFFAR INV GG
- Female tee



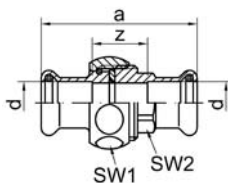
	d x Rp x d	a	b	c	z1	z2	z3	SW
124130G1212	12 x 1/2 x 12	29	22	29	13	9	13	26
124130G1512	15 x 1/2 x 15	31	23	31	13	10	13	26
124130G1812	18 x 1/2 x 18	33	25	33	13	12	13	26
124130G2212	22 x 1/2 x 22	37	27	37	13	14	13	26
124130G2812	28 x 1/2 x 28	40	29	40	14	16	14	32
124130G2834	28 x 3/4 x 28	42	31	42	16	16	16	32
124130G3512	35 x 1/2 x 35	45	32	45	13	19	13	39
124130G351	35 x 1 x 35	52	37	52	20	20	20	39
124130G4212	42 x 1/2 x 42	51	36	51	13	23	13	47
124130G5412	54 x 1/2 x 54	56	42	56	13	29	14	59



- YHDISTÄJÄ PUOLIKAS 1 MUHVI SK
- KOPPLINGSHALVA 1 MUFF LEKANDE MUTTER
- Union adaptor, flat sealing

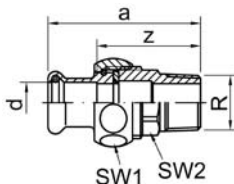
	d x G	L	SW
124359G1534	15 x 3/4	32	30
124359G1834	18 x 3/4	46	30
124359G181	18 x 1	36	37
124359G2234	22 x 3/4	51	30
124359G221	22 x 1	42	37
124359G22114	22 x 1 1/4	38	46
124359G28114	28 x 1 1/4	46	46
124359G28112	28 x 1 1/2	45	52
124359G35112	35 x 1 1/2	52	52
124359G352	35 x 2	54	64
124359G42134	42 x 1 3/4	60	59
124359G422	42 x 2	62	64
124359G54238	54 x 2 3/8	68	75
124359G763	76,1 x 3	84	94
124359G89312	88,9 x 3 1/2	94	110

- YHDISTÄJÄ 2 MUHVIA
- SKARVKOPPLING 2 MUFFAR
- Union, flat sealing



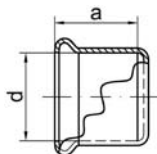
	d	a	z	SW1	SW2
12433015	15	54	18	30	19
12433018	18	70	30	30	22
12433022	22	66	18	37	26
12433028	28	71	17	46	34
12433035	35	82	18	52	40
12433042	42	94	19	59	46
12433054	54	102	17	75	60

- YHDISTÄJÄ 1 MUHVI UK
- SKARVKOPPLING 1 MUFF UTV GG
- Union, male, flat sealing



	d x R	a	z	SW1	SW2
124333G1512	15 x 1/2	55	37	30	22
124333G221	22 x 1	70	46	37	34
124333G281	28 x 1	74	47	46	34
124333G35114	35 x 1 1/4	95	63	52	46
124333G42112	42 x 1 1/2	102	64	59	50
124333G542	54 x 2	116	73	75	60

- HATTU
- HUV
- Endcap



	d	a
12430112	12	16
12430115	15	18
12430118	18	20
12430122	22	24
12430128	28	27
12430135	35	32
12430142	42	38
12430154	54	43
12430176	76,1	50
12430189	88,9	56
124301108	108	70

- PUTKIEN MITTAUSMALLINE
- RÖRSCHABLON M/FLASKÖPPNARE
- Plastic measure tool for SANHA copper and gunmetal pressfittings“



	d	
84980	12-54 mm	

- MITTAUSMALLINE ISOILLE PUTKILLE
- RÖRSCHABLON FÖR STORA DIMENSIONER  
M/FLASKÖPPNARE OCH VATTENLIBELL
- Plastic measure tool for big dimensions



	<b>d</b>	
84990	76,1-108 mm	



**3.5. Muuta****3.5. Övrigt****3.5. Miscellaneous**

Puristustyökalut / Pressverktyg / Press tools

---

Katkaisijat / Kapverktyg / Cutting tools

---

Kierteen Poistajat / Gradverktyg / Deburrer

---

Fästelement / Fastening elements

- PURISTUSKONE ECO 301 (220V) PELTILAUKUSSA, ILMAN PURISTUSLEUKOJA
- PRESSMASKIN ECO 301 (220V) M/PLÅTVÄSKA, UTAN PRESSBACKAR
- Crimping tool ECO 301, with case, without clamps



Tuoteno. / Katalognr. / Catalog-no.

16900

- PURISTUSKONE ECO 301 (220V) PELTILAUKUSSA, 6 KPL SA-PURISTUSLEUKOJA 12/15/18/22/28/35 MM
- PRESSMASKIN ECO 301 (220V) M/PLÅTVÄSKA OCH 6 SA-PRESSBACKAR 12/15/18/22/28/35 MM
- Crimping tool ECO 301, with case, with 6 clamps 12/15/18/22/28/35 mm



Tuoteno. / Katalognr. / Catalog-no.

16901

- AKKU PURISTUSKONE ACO 3 (12V) PELITLAIKUSSA, 1 AKKU, LATURI, ILMAN LEUKOJA
- SLADDLÖS PRESSMASKIN ACO 3 (12V) M/PLÅTVÄSKA, LADDARE OCH 1 BATTERI, UTAN PRESSBACKAR
- Battery crimping tool ACO 3, with case and battery, without clamps



Tuoteno. / Katalognr. / Catalog-no.

16904

- **AKKU PURISTUSKONE ACO 3 (12V)  
PELTILAUKUSSA, 1 AKKU, LATURI, 6 KPL SA  
PURISTUSLEUKOJA 12/15/18/22/28/35 MM**
- **SLADDLÖS PRESSMASKIN ACO 3 (12V)  
M/PLÅTVÄSKA, LADDARE OCH 1 BATTERI, OCH 6  
SA-PRESSBACKAR 12/15/18/22/28/35 MM**
- **Battery crimping tool ACO 3, with case and battery,  
with 6 clamps 12/15/18/22/28/35**



Tuotenro. / Katalognr. / Catalog-no.

16905

- **AKKU 12 V**
- **BATTERI 12 V**
- **Battery 14,4 V, for SANHA crimping tool  
no. 6904 / 6905**



Tuotenro. / Katalognr. / Catalog-no.

1690612V

- **LATURI**
- **LADDARE**
- **Battery charger**



Tuotenro. / Katalognr. / Catalog-no.

16907

- SA-PURISTUSTYÖKALULAUKKU, ISOT PUTKIKOOT, PURISTUSKONEILLE ECO 301 JA ACO 3
- VÅSKA MED SA-PRESSLINGOR OCH MELLANBACK FÖR ECO 301 OCH ACO 3
- Case with slings and intermediate jaw for crimping tool ECO 301 and ACO 3



Tuotenro. / Katalognr. / Catalog-no.

d

169524254

42 + 54 mm \*

- \* välikappaleella 169311
- \* med mellanback 169311
- \* with indermediate collar 169311

- SA-PURISTUSTYÖKALULAUKKU, ISOT PUTKIKOOT, PURISTUSKONEILLE ECO 301 JA ACO 3
- VÅSKA MED SA-PRESSLINGOR OCH MELLANBACK FÖR ECO 301 OCH ACO 3
- Case with slings and intermediate jaw for crimping tool ECO 301 and ACO 3



Tuotenro. / Katalognr. / Catalog-no.

d

169527689

76,1 + 88,9 mm \*\*

16952108

108 mm \*\*\*

- \* välikappaleella 169312
- \* med mellanback 169312
- \* with indermediate collar 169312

- \*\*\* välikappaleella 169312 ja 169313
- \*\*\* med mellanback 169312 och 169313
- \*\*\* with indermediate collar 169312 and 169313

- SA-PURISTUSLEUKA ECO 301:LLE JA ACO 3:LLE
- SA-PRESSBACK FÖR ECO 301 OCH ACO 3
- Clamp for crimping tool ECO 301 and ACO 3



Tuotenro. / Katalognr. / Catalog-no.	d
1692012	12
1692014	14
1692015	15
1692016	16
1692018	18
1692022	22
1692028	28
1692035	35

- PURISTUSOSA NRO 1 (42-64 MM), ECO 301:LLE JA ACO 3:LLE
- MELLANBACK NR 1 (42-64 MM), FÖR ECO 301 OCH ACO 3
- SANHA intermediate jaw for electronic crimping tools no. 6900/01/04/05



Tuotenro. / Katalognr. / Catalog-no.	d
169311	42 ja / och / and 54 mm

- PURISTUSOSA NRO 1 (42-64 MM), ECO 301:LLE JA ACO 3:LLE
- MELLANBACK NR 1 (42-64 MM), FÖR ECO 301 OCH ACO 3
- SANHA intermediate jaw for electronic crimping tools no. 6900/01/04/05



Tuotenro. / Katalognr. / Catalog-no.	d
169311	64 ja / och / and 67 mm
169312	76,1, 88,9 ja / och / and 108 mm ensimmäinen puristus 108mm:lle första pressningen för 108 mm first crimping for 108 mm
169313	108mm:lle (toinen puristus) för 108 mm (andra pressningen) for 108 mm (second crimping)

- SA-PURISTUSRENGAS
- SA-PURISTUSLEUKA
- Sling



Tuotenro. / Katalognr. / Catalog-no.	d
1693242	54
1693254	42

- SA-PURISTUSRENGAS ECO 301
- SA-PRESSLINGA ECO 301
- Sling for crimping tool ECO 301



Tuotenro. / Katalognr. / Catalog-no.	d
1693364	64
1693367	67
1693376	76,1
1693389	88,9
16933108	108

- LAUKKU SA-PURISTUSRENKAALLE 6932 JA PURISTUSOSALLE 6931.1
- VÄSKA FÖR SA-PRESSLINGA 6932 OCH MELLANBACK 6931.1
- Empty case for sling no. 6932 with intermediate collar



Tuotenro. / Katalognr. / Catalog-no.	d
16911	42 + 54 mm ja / och / and ZB 302
169112	76,1 + 88,9 mm ja / och / and ZB 321
169113	108 mm ja / och / and ZB 321 + ZB 322

- PURISTUSKONE ECO 201 (220V) PELTILAUKUSSA, ILMAN PURISTUSLEUKOJA
- PRESSMASKIN ECO 201 (220V) I PLÅTVÄSKA UTAN PRESSBACKAR
- Crimping tool ECO 1, with case, without clamps



Tuotenro. / Katalognr. / Catalog-no.

16902

- PURISTUSKONE ECO 201 (220V) PELTILAUKUSSA, 6 KPL SA-PURISTUSLEUKOJA 12/15/18/22/28/35 MM
- PRESSMASKIN ECO 201 (220V) I PLÅTVÄSKA MED SA-PRESSBACKAR 12/15/18/22/28/35 MM
- Crimping tool ECO 1, with case, with 6 clamps 12/15/18/22/28/35 mm



Tuotenro. / Katalognr. / Catalog-no.

16903

- AKKU PURISTUSKONE ACO 201 (14,4V) PELTILAUKUSSA, ILMAN PURISTUSLEUKOJA
- SLADDLÖS PRESSMASKIN ACO 201 (14,4V) M/PLÅTVÄSKA UTAN PRESSBACKAR
- Crimping tool ACO 201, with case, battery and battery charger, without clamps



Tuotenro. / Katalognr. / Catalog-no.

16908

- **AKKU PURISTUSKONE ACO 201 (14,4V)  
PELTILAUKUSSA, 6 KPL SA-PURISTUSLEUKOJA  
12/15/18/22/28/35 MM**
- **SLADDLÖS PRESSMASKIN ACO 201 (14,4V)  
M/PLÅTVÄSKA MED SA-PRESSBACKAR  
12/15/18/22/28/35 MM**
- **Crimping tool ACO 201, with case, battery and bat-  
tery charger, with 6 clamps 12/15/18/22/28/35 mm**



Tuotenro. / Katalognr. / Catalog-no.

16909

- **AKKU 14,4 V**
- **BATTERI 14,4 V**
- **Battery 14,4 V, for SANHA crimping tool no. 6908/  
6909**



Tuotenro. / Katalognr. / Catalog-no.

16906144V

- **PURISTUSKONE EFP 201 (220V) LAUKUSSA, ILMAN  
LEUKOJA**
- **PRESSVERKTYG EFP 201 (220V) M/VÄSKA, UTAN  
PRESSBACKAR**
- **Crimping tool EFP 201, with case, without clamps**



Tuotenro. / Katalognr. / Catalog-no.

16915

- PURISTUSKONE EFP 201 (220V) LAUKKU JA 6 KPL SA-PURISTUSLEUKOJA 12/15/18/22/28/35 MM
- PRESSVERKTYG EFP 201 (220V) M/VÄSKA OCH 6 SA-PRESSBACKAR 12/15/18/22/28/35 MM
- Crimping tool EFP 201, with case, with 6 Clamps 12/15/18/22/28/35 mm



Tuotenro. / Katalognr. / Catalog-no.

16916

- PURISTUSOSA JA SA-PURISTUSRENKAAT (42 JA 54 MM) SERVICE PLUS PELTILAUKUSSA
- PLÅTVÄSKA MED MELLANBACK SAMT SA-PRESSLINGOR 42 OCH 54 MM SERVICE PLUS
- Case with 42 and 54 mm slings and intermediate jaw Service Plus



Tuotenro. / Katalognr. / Catalog-no.

16954

d

42 ja / och / and 54 mm \*

\* välikappaleella 16930

\* med mellanback 16930

\* with indermediate collar 16930

- SA-PURISTUSLEUKA SERVICE PLUS ECO 201 :LLE JA ACO 201:LLE
- SA-PRESSBACK SERVICE PLUS FÖR ECO 201 OCH ACO 201
- Clamp Service Plus for crimping tool ECO 1 and ACO 201



Tuotenro. / Katalognr. / Catalog-no.

d

1694012

12

1694014

14

1694015

15

1694016

16

1694018

18

1694022

22

1694028

28

1694035

35

- 6 KPL SA-PURISTUSLEUKOJA SERVICE PLUS PELTILAUKUSSA, ECO 1:LLE JA ACO 201:LLE
- PLÅTVÄSKA MED 6 SA-PRESSBACKAR SERVICE PLUS FÖR ECO 1 OCH ACO 201
- Case with 6 clamps Service Plus for crimping tool ECO 1 and ACO 201



Tuotenro. / Katalognr. / Catalog-no.

d

16953

12, 15, 18, 22, 28, 35 mm

- PURISTUSRENGAS
- PRESSLINGA
- Sling



Tuoteno. / Katalognr. / Catalog-no.

1693242

1693254

d

42

54

- PURISTUSOSA SERVICE PLUS PURISTUSLEUOILLE ECO 201 JA ACO 201
- MELLANBACK SERVICE PLUS FÖR SA-PRESSLINGOR TILL ECO 201 OCH ACO 201
- Intermediate jaw Service Plus for slings for crimping tool ECO 1 and ACO 201



Tuoteno. / Katalognr. / Catalog-no.

16930

d

42 ja / och / and 54 mm

- PELTILAUKKU 6:LLE PURISTUSLEUALLE 12/15/18/22/28/35 MM
- PLÅTVÄSKA FÖR 6 PRESSBACKAR 12/15/18/22/28/35 MM
- Empty case for 6 clamps no. 6920/6940



Tuoteno. / Katalognr. / Catalog-no.

16912

d

12, 15, 18, 22, 28, 35 mm

- SA-PURISTUSLEUKA VAKIO
- SA-PRESSBACK STANDARD
- Clamp Standard



Tuoteno. / Katalognr. / Catalog-no.	d
1695812	12
1695814	14
1695815	15
1695816	16
1695818	18
1695822	22
1695828	28
1695835	35

- 6 KPL VAKIO SA-PURISTUSLEUAT  
12/15/18/22/28/35 MM PELTILAUKUSSA
- 6 STANDARD SA-PRESSBACKAR  
12/15/18/22/28/35 MM I PLÄTVÄSKA
- Case with 6 clamps Standard  
12/15/18/22/28/35 mm



Tuoteno. / Katalognr. / Catalog-no.	d
16957	12, 15, 18, 22, 28, 35 mm

- LAUKKU 6 KPL VAKIO LEUOILLE
- VÅSKA FÖR 6 PRESSBACKAR STANDARD
- Empty case for 6 clamps Standard



Tuotenro. / Katalognr. / Catalog-no.

16961

d

12, 15, 18, 22, 28, 35 mm

- PUTKIEN MITTAUSMALLINE
- RÖRSCHABLON M/FLASKÖPPNARE
- Plastic measure tool for SANHA copper and gunmetal pressfittings



Tuotenro. / Katalognr. / Catalog-no.

84980

d

12-54 mm

- NIROSAN PUTKIEN MITTAUSMALLINE
- NIROSAN RÖRSCHABLON M/FLASKÖPPNARE
- Plastic measure tool for SANHA stainless steel pressfittings



Tuotenro. / Katalognr. / Catalog-no.

84981

d

15-54 mm

- MITTAUSMALLINE ISOILLE PUTKILLE
- RÖRSCHABLON FÖR STORA DIMENSIONER  
M/FLASKÖPPNARE OCH VATTENLIBELL
- Plastic measure tool for big dimensions



Tuotenro. / Katalognr. / Catalog-no.

d

84990

76,1-108 mm

- MUOTOTAIVUTUSPIHTI 8980G:lle
- PROFILBOCKTÅNG FÖR 8980G
- Bending clamp



Tuotenro. / Katalognr. / Catalog-no.

84991

- PUTKIEN KATKAISIJA
- RÖRSKÄRVERKTYG
- Pipe cutter of stainless steel and copper tubes



Tuotenro. / Katalognr. / Catalog-no.	d
84975	3 - 28 mm

- PUTKIEN KATKAISIJA
- RÖRSKÄRVERKTYG
- Pipe cutter of stainless steel and copper tubes



Tuotenro. / Katalognr. / Catalog-no.	d
84977	3 - 35 mm

- PUTKIEN KATKAISIJA
- RÖRSKÄRVERKTYG
- Pipe cutter of stainless steel and copper tubes



Tuotenro. / Katalognr. / Catalog-no.	d
84978	13 - 65 mm

- RULLA KATKAISIJAAN no. 84975, 84977, 84978
- SKÄRRULLE FÖR RÖRSKÄRVERKTYG nr.4975, 4977, 4978
- cutting wheel for the pipe cutter no. 4975, 4977, 4978



Tuotenro. / Katalognr. / Catalog-no.	d
84971543	4 - 35 mm
84971541	13 - 65 mm

- KIERTEEN POISTAJA, PIENI
- GRADVERKTYG, LITEN
- pipe deburrer, smale

Tuotenro. / Katalognr. / Catalog-no.

84982



d

0 - 38 mm

- KIERTEEN POISTAJA, ISO
- GRADVERKTYG, STOR
- pipe deburrer, big

Tuotenro. / Katalognr. / Catalog-no.

84983



d

0 - 60 mm

- SÄHKÖLLÄ TOIMIVA KIERTEEN POISTAJA, LAUKUSSA
- ELDRIVET GRADVERKTYG, M/VÄSKA
- electrical pipe deburrer in a case, suitable for copper and stainless steel

Tuotenro. / Katalognr. / Catalog-no.

84984



d

12 - 108 mm

- ÄÄNIERISTYSLEVY
- LJUDISOLERINGSPLATTA
- Insulation plate for 8980g and 9880g



Tuotenro. / Katalognr. / Catalog-no.

88981

- ETÄISYYSLEVY 9472g:LLE JA 9478:LLE
- DISTANSPLATTA FÖR 9742g OCH 9478
- Distance plate for 9472g and 9478g



Tuotenro. / Katalognr. / Catalog-no.

8898218

8898219

8898225

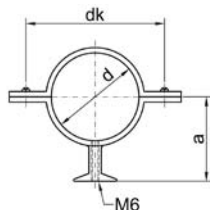
Distanz / Afstand / Distance

18 mm **für** / för / for 22 x 3/4

19 mm **für** / för / for 18 x 1/2

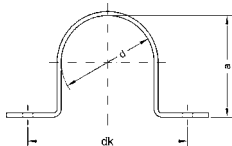
25 mm **für** / för / for 15 x 1/2

- PUTKEN KIINNITIN, MESSINKISTÄ
- RÖRHÅLLARE AV MÄSSING
- Brackets



Tuotenumero. / Katalognr. / Catalog-no.	d	a	dk
148268	8	12	25
1482610	10	17	25
1482612	12	19	29
1482615	15	19	29
1482618	18	26	39
1482622	22	26	39
1482628	28	30	48
1482635	35	33	55
1482642	42	39	62
1482654	54	47	74

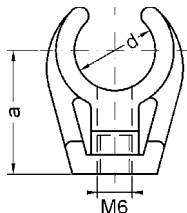
- PUTKEN KIINNITIN, KUPARISTA
- RÖRHÅLLARE AV KOPPAR
- Singel Pipe strap



Tuotenumero. / Katalognr. / Catalog-no.	d	a	dk
1486012	12	13	30
1486015	15	16	30
1486018	18	19	32
1486022	22	23	40
1486028	28	29	44
1486035	35	36	55
1486042*	42	43	66

\* saatavilla ainoastaa olevasta varastosta / endast tillgängligt från nuvarande lager / only available from existing stock

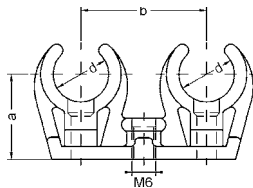
- KUPARIPUTKEN YKKÖSPIDIN, MESSINKIKIERRELLÄ
- RÖRCLIPS, ENKEL M/GÄNGHYLSA I MÄSSING
- Double Plastic Clip c/w Brass Thread



Tuotenro. / Katalognr. / Catalog-no.

798266	6	13
798268	8	14
7982610	10	17
7982612	12	18
798261415	14 / 15	19
798261618	16 / 18	23
7982622	22	28
7982628	28	34
7982635	35	38
7982642	42	42

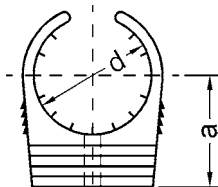
- KUPARIPUTKEN KAKSOISPIDIN, MESSINKIKIERRELLÄ
- RÖRCLIPS, DUBBEL M/GÄNGHYLSA I MÄSSING
- Double Plastic Clip c/w Brass Thread



Tuotenro. / Katalognr. / Catalog-no.

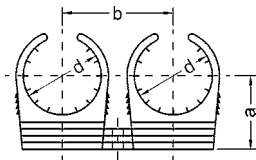
798276	6	13	23
798278	8	14	26
7982710	10	17	28
7982712	12	18	33
798271415	14 / 15	19	36
798271618	16 / 18	23	38
7982722	22	28	42
7982728	28	34	50

- KUPARIPUTKEN YKKÖSPIDIN
- RÖRKLAMMER FÖR KOPPARRÖR, ENKEL
- Single Plastic Clip



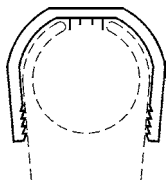
Tuotenumero. / Katalognr. / Catalog-no.	d	a
798286	6	11
79828810	8 - 10	16
798281216	12 - 16	19
798281822	18 - 22	23
7982828	28	27
7982835	35	37
7982842	42	42

- KUPARIPUTKEN KAKSOISPIDIN
- RÖRKLAMMER FÖR KOPPARRÖR, DUBBEL
- Double Plastic Clip



Tuotenumero. / Katalognr. / Catalog-no.	d	a	b
798296	6	11	21
79829810	8 - 10	16	28
798291216	12 - 16	19	34
798291822	18 - 22	23	39
7982928	28	27	48

- KANSI KUPARIPUTKEN PIDIN 9828C:LLE JA 9829C:LLE
- LOCK TILL RÖRKLAMMER 9828C och 9829C
- Plastic Overclip

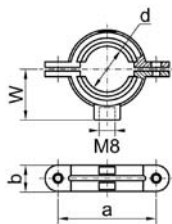


Tuotenro. / Katalognr. / Catalog-no.	
79830810	8 - 10
798301216	12 - 16
798301822	18 - 22
7983028	28

- ASENNUSKISO PVC:STÄ
- MONTERINGSSKENA AV PVC
- PVC Clip Mounting Bar



Tuotenro. / Katalognr. / Catalog-no.	L
79840	pituus 2m / i 2 meters längder / in lengths of 2 m



- PUTKIPIIDIN ÄÄNIERISTETTY
- RÖRHÅLLARE LJUDISOLERAD
- Pipe ring with sound insulation

Tuotenro. / Katalognr. / Catalog-no.	d	a	b	W
6991812	12	44	18	23
6991815	15	47	18	25
6991818	18	50	18	26
6991822	22	54	18	28
6991828	28	60	18	31
6991835	35	67	18	35
6991842	42	74	18	38
6991854	54	86	18	44



