aalberts integrated piping systems

VSH XPress Stainless



Environmental Product Declaration

in accordance with
ISO 14044, ISO 14040 and EN 15804

EN

1 general information

1.1 note on this document

The original document was written in English, all other versions are a translation of the original document.

1.2 declaration holder

Aalberts integrated piping systems B.V.
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Aalberts integrated piping systems develops the most advanced integrated piping systems for distribution and control of liquids and gases. These systems are used in various markets such as industry, utility and residential construction. We offer fully integrated piping systems in valve, connection, fastening and piping technology. In close cooperation with our customers, we build the perfect integrated piping system that meets all their requirements. Our piping systems are easy to specify, install, check and maintain, saving you considerable time on preparation and installation. We meet the highest quality and industry standards required in our markets. The Aalberts integrated systems production locations mentioned in this document, Hilversum and Zeewolde, are certified acc. ISO 9001, ISO 14001 and ISO 45001.

1.3 declared Product

This document applies to the VSH XPress Stainless fittings listed in the appendix -chapter 5- of this document. Articles with brass or gunmetal components are not covered in this declaration. A VSH XPress Stainless bend 90° FF 22, article number: 6190228, has been used as a reference article.

1.4 verification

The European standard EN15804:2012 +A2:2019 has been used as the core PCR. Environmental product declarations for construction products may not be comparable if they do not comply with the EN15804. It is only possible to make a limited comparison between life cycle assessment results when different background databases are used and/or different assumptions as described in chapter 3.3.

This is a Self-Declared Environmental Product Declaration acc. NEN-EN ISO 14025.

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Production data:	2021

Hilversum, February 2023
Aalberts integrated piping systems B.V.



Roland Voermans
COO

2 product

2.1 description and application purpose

VSH XPress Stainless is a complete piping system suitable for a wide variety of applications, from drinking water, gas, heating and solar installations to cooling water, sprinkler and compressed air systems. The VSH XPress range consists of press fittings, valves, tubes and pressing tools. The VSH XPress fittings have a M-profile (12 mm to 108 mm).

- VSH XPress Stainless fittings are made of 1.4404 (AISI 316L). Fittings with parts made of gunmetal or brass are not covered by this declaration.
- VSH SudoXPress tubes are available in different alloys: 1.4401 (AISI 316), 1.4521 (AISI 444) and 1.4301 (AISI 304).

The o-ring has decisive influence on the performance of the system in different applications, with different media and parameters. Depending on the application, different o-rings can be inserted in the fittings:

- EPDM (Ethylene Propylene Diene Monomer / black) – standard
- FPM (Fluoroelastomer / green) – for use in specific applications
- FPM (Fluoroelastomer / grey) – for steam applications

The VSH XPress LBP function is achieved using a special designed o-ring up to dimension 54 mm. For the dimensions 76,1 to 108 mm, the LBP-function is based on the tolerance between the diameter of the o-rings and the inner diameter of the fitting. Fittings with a Leak Before Pressed function have the advantage that connections which have not been pressed will leak water during pressure testing.

2.2 VSH XPress Stainless fittings

All VSH XPress Stainless fittings are produced in our modern, automated factory in the Netherlands. The VSH XPress product range includes fittings, valves, tubes and tools. VSH XPress fittings are compatible with various press tool brands. Use our online tool selector to find the right tool for the right material. During the pressing process, bead, socket and tube are deformed to form a leak-tight and mechanically strong, permanent connection



1. fitting bead
2. fitting body
3. colour coding
4. insertion socket
5. o-ring

For the composition of the components, see chapter 3.2 “product composition”

2.3 range and conversion factors

The reference product for this declaration is the VSH XPress Carbon bend 90° FF 22. This article was chosen as a reference because it is the most common product in the VSH XPress Carbon article range.
The life cycle assessment results in chapter 4 can be converted to other articles listed in the appendix of this document. This can be done by multiplying the results with the conversion factor for a specific product. For products and their corresponding conversion factors, see the appendix -chapter 5-..

3 life cycle assessment scope

3.1 system boundaries

This EPD can be regarded as a Cradle-to-Gate with options, module C2 and D. The following phases are considered not relevant for this product range: A5, B, C1, C3 and C4.

3.2 declared unit composition

The reference article, VSH XPress Stainless 90° bend FF 22, consists of the following raw materials:

carbon steel:	79 gram
elastomers:	2 gram
Total:	81 gram

3.3 assumptions and background information

A1: For the raw material supply 100% of the materials on the bill of materials were modelled using data from the Ecoinvent database.
A2: For transport of materials to Aalberts integrated piping systems in Hilversum specific transport distances from materials suppliers were used. Class Euro5 trucks are used as the main means of transport and were used for calculation.
A3: VSH XPress products are manufactured in the factory of Aalberts integrated piping systems located in Hilversum, Netherlands. This factory makes use of green electricity for manufacturing the VSH XPress products. Therefore the green electricity Netherlands mix, was used for calculating the electricity consumption. Water and auxillary materials were considered negligible.
Assembly of products is done at a separate Aalberts integrated piping systems warehouse located in Zeewolde, Netherlands. This warehouse also uses green electricity. The electricity consumption for this process was estimated and modelled at 10% of the electricity consumed for manufacturing.
A4: Transport from the factory in Hilversum to production partners and the warehouse is done by Aalberts integrated piping systems and logistical partners. The main means of transport is by Class Euro5 trucks. The transportation distance is calculated at 715km. Transportation to customers within Europe is done by logistical partners. The main means of transport in Europe is by Class Euro5 trucks. The average transportation distance is calculated at 730km.
A5: The installation is done by use of a press tool which uses a considered negligible amount of energy.
B1-B7: A VSH XPress Carbon fitting is designed for a lifetime of 50+ years of service. A VSH XPress Carbon fitting needs no maintenance, repair, replacement or refurbishment and has no operational water or energy use during its lifetime.
C1-C4: The piping system is assumed to be stripped as a whole from a building in the demolition process and separate energy used for the fitting de-construction is considered negligible in this process. Transportation to a waste processing site is assumed at 30km and modelled by use of Class Euro5 trucks. The waste processing is assumed to be done at a material level rather than component level since the fittings are permanently fitted onto piping. Therefore energy consumption for the waste processing of fittings was considered negligible. Partial disposal was considered to happen at a recycler rather than a waste processer and is therefore calculated in phase D.
D: Average recycling rates for building materials in Europe were used to calculate the amount of material that went for recycling, incineration and landfill. 90% of steel will be recycled, the O-ring incinerated and remainder of the product was calculated to go to landfill.

3.4 quality of life cycle assessment, data and reporting

This Environmental Product Declaration is based on a life cycle assessment conducted according to the ISO 14040 and ISO 14044 and meets further requirements from the EN 15804:2012 + A2:2019. The modelling and calculation was done in the Ecochain software tool “Helix”, which uses the Ecoinvent database. Inventory data was mainly provided by Aalberts integrated piping systems b.v. and was peer reviewed by several internal partners. The Environmental Product Declaration report is automatically generated to prevent human errors and ensure its quality. Improved quality of the life cycle assessment will be achieved when it would get externally verified according to ISO 14025.
Because of the nature of a life cycle assessment and accompanying assumptions, the environmental impact of a product will remain an underestimate. Care must be taken when comparing EPDs from different sources. Aalberts integrated piping systems B.V. is committed to providing the most accurate environmental impact possible to its customers and will continue to improve the quality of the data, model and results.

4 life cycle assessment results

The following environmental profile shows the results of the life cycle assessment of a single unit of the declared product.

Environmental Profile

This LCA is calculated according to: ISO 14044, ISO 14040 and EN 15804

Ecochain v3.5.71

Ecochain

Product:	XPress SS bend 90° 22mm EPDM	LCA standard:	EN15804+A2 (2019)
Unit:	1 units	Standard database:	Dutch - Nationale Milieudatabase v3.3 (obv Ecoinvent 3.6)
Manufacturer:	Aalberts integrated piping systems	Externally verified:	No
		Export date:	13-02-2023

The LCA background information and project dossier have been registered in the online Ecochain application in the account Aalberts integrated piping systems (2021). (☑ = module declared, MND = module not declared).

A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
☑	☑	☑	☑	MND	MND	MND	MND	MND	MND	MND	MND	MND	☑	MND	MND	☑

Product stage

A1 Raw material supply A2 Transport A3 Manufacturing

Construction process stage

A4 Transport gate to site
A5 Assembly / Construction installation process

Use stage

B1 Use B2 Maintenance B3 Repair B4 Replacement B5 Refurbishment
B6 Operational energy use B7 Operational water use

End-of-Life stage

C1 De-construction demolition C2 Transport C3 Waste processing
C4 Disposal

Benefits and loads beyond the system boundaries

D Reuse- Recovery- Recycling- potential

environmental impacts and parameters

GWP-total = EF Climate Change [kg CO_2 eq]; GWP-f = EF Climate change - Fossil [kg CO_2 eq]; GWP-b = EF Climate Change - Biogenic [kg CO_2 eq]; GWP-luluc = EF Climate Change - Land use and LU change [kg CO_2 eq]; ODP = EF Ozone depletion [kg CFC11 eq]; AP = EF Acidification [mol H+ eq]; EP-fw = EF Eutrophication, freshwater [kg P eq]; EP-m = EF Eutrophication, marine [kg N eq]; EP-T = EF Eutrophication, terrestrial [mol N eq]; POCP = EF Photochemical ozone formation [kg NMVOC eq]; ADP-mm = EF Resource use, minerals and metals [kg Sb eq]; ADP-f = EF Resource use, fossils [MJ]; WDP = EF Water use [m3 depriv.]; PM = EF Particulate matter [disease inc.]; IR = EF Ionising radiation [kBq U-235 eq]; ETP-fw = EF Ecotoxicity, freshwater [CTUe]; HTP-c = EF Human toxicity, cancer [CTUh]; HTP-nc = EF Human toxicity, non-cancer [CTUh]; SQP = EF Land use [Pt]; PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials [MJ]; PERM = Use of renewable primary energy resources used as raw materials [MJ]; PERT = Total use of renewable primary energy resources [MJ]; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials [MJ]; PENRM = Use of non-renewable primary energy resources used as raw materials [MJ]; PENRT = Total use of non-renewable primary energy resources [MJ]; PET = Total energy [MJ]; SM = Use of secondary material [kg]; RSF = Use of renewable secondary fuels [MJ]; NRSF = Use of non-renewable secondary fuels [MJ]; FW = Use of net fresh water [m3]; HWD = Hazardous waste disposed [kg]; NHWD = Non-hazardous waste disposed [kg]; RWD = Radioactive waste disposed [kg]; CRU = Components for re-use [kg]; MFR = Materials for recycling [kg]; MER = Materials for energy recovery [kg]; EE = Exported energy [MJ]; EET = Exported energy thermic [MJ]; EEE = Exported energy electric [MJ]

statement of confidentiality

This document and supporting material contain confidential and proprietary business information of Aalberts integrated piping systems. These materials may be printed or (photo) copied or otherwise used only with the written consent of Aalberts integrated piping systems.

results

Environmental impact	Unit	A1	A2	A3	A1-A3	A4	C2	D	Total
GWP-total	kg CO2 eq	3.645E-1	7.772E-3	5.399E-3	3.777E-1	1.581E-2	2.703E-4	-8.787E-2	3.059E-1
GWP-f	kg CO2 eq	3.617E-1	7.766E-3	4.604E-3	3.740E-1	1.580E-2	2.700E-4	-8.852E-2	3.016E-1
GWP-b	kg CO2 eq	2.614E-3	4.143E-6	7.752E-4	3.393E-3	7.292E-6	1.441E-7	6.079E-4	4.008E-3
GWP-luluc	kg CO2 eq	2.434E-4	2.715E-6	2.061E-5	2.667E-4	5.788E-6	9.439E-8	2.902E-5	3.016E-4
ODP	kg CFC11 eq	1.935E-8	1.764E-9	6.418E-10	2.176E-8	3.486E-9	6.134E-11	-2.920E-9	2.239E-8
AP	mol H+ eq	2.329E-3	3.173E-5	8.130E-5	2.442E-3	9.161E-5	1.103E-6	-3.803E-4	2.154E-3
EP-fw	kg P eq	1.408E-5	6.098E-8	1.684E-7	1.431E-5	1.593E-7	2.121E-9	-2.273E-6	1.219E-5
EP-m	kg N eq	3.925E-4	9.414E-6	1.688E-5	4.188E-4	3.228E-5	3.274E-7	-6.153E-5	3.899E-4
EP-T	mol N eq	4.478E-3	1.041E-4	2.793E-4	4.861E-3	3.559E-4	3.620E-6	-7.182E-4	4.503E-3
POCP	kg NMVOC eq	1.421E-3	3.188E-5	5.230E-5	1.505E-3	1.016E-4	1.108E-6	-5.429E-4	1.065E-3
ADP-mm	kg Sb eq	1.512E-5	2.102E-7	4.681E-7	1.580E-5	4.002E-7	7.308E-9	1.217E-7	1.633E-5
ADP-f	MJ	3.951E+0	1.171E-1	5.051E-2	4.118E+0	2.382E-1	4.072E-3	-6.638E-1	3.697E+0
WDP	m3 depriv.	4.855E-2	3.259E-4	2.146E-3	5.102E-2	8.522E-4	1.133E-5	-1.409E-2	3.779E-2
PM	disease inc.	3.193E-8	5.402E-10	8.254E-10	3.330E-8	1.419E-9	1.879E-11	-8.160E-10	3.392E-8
IR	kBq U-235 eq	9.376E-3	5.118E-4	3.830E-5	9.926E-3	9.981E-4	1.780E-5	7.289E-4	1.167E-2
ETP-fw	CTUe	1.290E+1	9.375E-2	2.580E-1	1.325E+1	2.124E-1	3.260E-3	-2.984E+0	1.049E+1
HTP-c	CTUh	5.948E-9	2.635E-12	1.327E-11	5.964E-9	6.890E-12	9.162E-14	6.012E-11	6.031E-9
HTP-nc	CTUh	1.703E-8	1.022E-10	4.015E-10	1.753E-8	2.324E-10	3.555E-12	2.001E-8	3.777E-8
SQP	Pt	2.026E+0	8.075E-2	1.778E+0	3.885E+0	2.067E-1	2.808E-3	-1.388E-1	3.956E+0

Resource use	Unit	A1	A2	A3	A1-A3	A4	C2	D	Total
PERE	MJ	5.944E-3	1.652E-3	6.811E-1	6.887E-1	2.982E-3	5.746E-5	8.868E-3	7.006E-1
PERM	MJ	1.001E+0	0	0	1.001E+0	0	0	0	1.001E+0
PERT	MJ	1.007E+0	1.652E-3	6.811E-1	1.690E+0	2.982E-3	5.746E-5	8.868E-3	1.702E+0
PENRE	MJ	1.594E-1	1.243E-1	5.379E-2	3.375E-1	2.529E-1	4.323E-3	-6.884E-1	-9.366E-2
PENRM	MJ	4.048E+0	0	0	4.048E+0	0	0	0	4.048E+0
PENRT	MJ	4.207E+0	1.243E-1	5.379E-2	4.385E+0	2.529E-1	4.323E-3	-6.884E-1	3.954E+0
PET	MJ	5.214E+0	1.260E-1	7.348E-1	6.075E+0	2.559E-1	4.380E-3	-6.795E-1	5.656E+0
SM	kg	0	0	0	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0	0
FW	m3	1.643E-3	1.233E-5	6.803E-5	1.723E-3	2.902E-5	4.288E-7	-3.208E-4	1.432E-3

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	A4	C2	D	Total
HWD	kg	7.861E-6	3.069E-7	3.094E-11	8.168E-6	6.037E-7	1.067E-8	-1.201E-5	-3.225E-6
NHWD	kg	4.254E-1	5.597E-3	2.152E-5	4.311E-1	1.511E-2	1.946E-4	3.145E-3	4.495E-1
RWD	kg	8.979E-6	7.984E-7	1.395E-11	9.777E-6	1.564E-6	2.776E-8	-1.097E-8	1.136E-5
CRU	kg	0	0	0	0	0	0	0	0
MFR	kg	0	0	0	0	0	0	0	0
MER	kg	0	0	0	0	0	0	0	0
EE	MJ	0	0	0	0	0	0	0	0
EET	MJ	0	0	0	0	0	0	0	0
EEE	MJ	0	0	0	0	0	0	0	0

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5 appendix

The life cycle assessment results listed in chapter 4 can be converted to the other sales articles listed using the conversion factor in accordance with the following tables.

R2701	VSH XPress Stainless straight coupling (2 x press)	
article no.	**dimensions**	**conversion factor**
6198874	12	0,32
6190943	15	0,45
6190954	18	0,52
6190965	22	0,67
6190976	28	0,88
6190987	35	1,16
6190998	42	1,62
6191009	54	2,38
6204154	76,1	7,72
6204165	88,9	9,92
6204176	108	14,18

R2703	VSH XPress Stainless slip coupling (2 x press)	
article no.	**dimensions**	**conversion factor**
6191284	15	0,68
6191295	18	0,80
6191306	22	1,02
6191317	28	1,38
6191328	35	1,87
6191339	42	2,82
6191341	54	3,82
6204286	76,1	11,66
6204297	88,9	15,52
6204308	108	22,58

R2708	VSH XPress Stainless elbow 90° (2 x press)	
article no.	**dimensions**	**conversion factor**
6198885	12	0,45
6190206	15	0,56
6190217	18	0,71
6190228	22	1,00
6190239	28	1,45
6190241	35	2,07
6190250	42	3,15
6190261	54	4,67
6230004	76,1	12,74
6230015	88,9	17,12
6230026	108	24,60

R2711	VSH XPress Stainless elbow 90° (press x male)	
article no.	**dimensions**	**conversion factor**
6198896	12 x Ø12	0,45
6190349	15 x Ø15	0,59
6190351	18 x Ø18	0,72
6190360	22 x Ø22	0,98
6190371	28 x Ø28	1,39
6190382	35 x Ø35	2,04
6190393	42 x Ø42	3,09
6190404	54 x Ø54	4,61
6230037	76,1 x Ø76,1	12,75
6230048	88,9 x Ø88,9	16,65
6230059	108 x Ø108	24,47

R2713	VSH XPress Stainless elbow 45° (2 x press)	
article no.	**dimensions**	**conversion factor**
6190041	15	0,49
6190052	18	0,56
6190063	22	0,81
6190074	28	1,09
6190085	35	1,58
6190096	42	2,41
6190107	54	3,52
6230061	76,1	9,24
6230070	88,9	13,07
6230081	108	18,82

R2712	VSH XPress Stainless elbow 45° (press x male)	
article no.	**dimensions**	**conversion factor**
6190118	15 x Ø15	0,49
6190129	18 x Ø18	0,60
6190131	22 x Ø22	0,85
6190140	28 x Ø28	1,14
6190151	35 x Ø35	1,58
6190162	42 x Ø42	2,47
6190173	54 x Ø54	3,46
6230092	76,1 x Ø76,1	9,66
6230103	88,9 x Ø88,9	12,98
6230114	108 x Ø108	19,14

R2725	VSH XPress Stainless bend pipe 90° (2 x male)	
article no.	**dimensions**	**conversion factor**
6190272	Ø15	1,11
6190283	Ø18	1,05
6190294	Ø22	1,60
6190305	Ø28	2,15
6190316	Ø35	4,44
6190327	Ø42	6,74
6190338	Ø54	12,14

R2724	VSH XPress Stainless bend pipe 60° (2 x male)	
article no.	**dimensions**	**conversion factor**
6190184	Ø28	2,08
6190195	Ø35	4,62
6191878	Ø42	6,72
6191889	Ø54	10,64

R2723	VSH XPress Stainless bend pipe 30° (2 x male)	
article no.	**dimensions**	**conversion factor**
6190021	Ø28	2,08
6190030	Ø35	4,25
6191856	Ø42	6,61
6191867	Ø54	10,67

R2722	VSH XPress Stainless bend pipe 15° (2 x male)	
article no.	**dimensions**	**conversion factor**
6190008	Ø28	2,07
6190019	Ø35	4,76
6191834	Ø42	6,89
6191845	Ø54	10,68

R2717	VSH XPress Stainless crossover (2 x male)	
article no.	**dimensions**	**conversion factor**
6191086	Ø15	0,94
6191097	Ø18	1,16
6191108	Ø22	1,59
6191119	Ø28	2,40

R2714	VSH XPress Stainless T-piece (3 x press)	
article no.	**dimensions**	**conversion factor**
6198907	12	0,56
6191350	15	0,79
6191372	18	0,96
6191405	22	1,27
6191449	28	1,72
6191493	35	2,41
6191537	42	3,27
6191581	54	4,71
6204319	76,1	15,05
6204321	88,9	19,16
6204330	108	28,82

R2715	VSH XPress Stainless T-piece reduced (3 x press)	
article no.	**dimensions**	**conversion factor**
6191361	18 x 15 x 18	0,92
6191383	22 x 15 x 22	1,12
6191394	22 x 18 x 22	1,16
6191416	28 x 15 x 28	1,48
6191427	28 x 18 x 28	1,53
6191438	28 x 22 x 28	1,64
6191451	35 x 15 x 35	2,01
6191460	35 x 18 x 35	2,05
6191471	35 x 22 x 35	2,15
6191482	35 x 28 x 35	2,22
6191504	42 x 22 x 42	2,87
6191515	42 x 28 x 42	2,95
6191526	42 x 35 x 42	3,09
6191548	54 x 22 x 54	4,12
6191559	54 x 28 x 54	4,19
6191561	54 x 35 x 54	4,34
6191570	54 x 42 x 54	4,62
6204341	76,1 x 22 x 76,1	11,22
6204352	76,1 x 28 x 76,1	12,00
6204363	76,1 x 35 x 76,1	12,15
6204374	76,1 x 42 x 76,1	11,68
6204385	76,1 x 54 x 76,1	12,73
6204396	88,9 x 22 x 88,9	15,75
6204407	88,9 x 28 x 88,9	15,87
6204418	88,9 x 35 x 88,9	16,00
6204429	88,9 x 42 x 88,9	16,25
6204431	88,9 x 54 x 88,9	16,38
6204440	88,9 x 76,1 x 88,9	18,78
6204451	108 x 22 x 108	22,72
6204462	108 x 28 x 108	22,95
6204473	108 x 35 x 108	23,14
6204484	108 x 42 x 108	22,33
6204495	108 x 54 x 108	23,14
6204506	108 x 76,1 x 108	25,26
6204517	108 x 88,9 x 108	26,53

R2718	VSH XPress Stainless threaded T-piece (press x press x female thread)	
article no.	**dimensions**	**conversion factor**
6191592	15 x Rp½" x 15	0,92
6191603	18 x Rp½" x 18	1,01
6191614	18 x Rp¾" x 18	1,21
6191625	22 x Rp½" x 22	1,24
6191636	22 x Rp¾" x 22	1,42
6198599	28 x Rp1" x 28	2,00
6191647	28 x Rp½" x 28	1,64
6191658	28 x Rp¾" x 28	1,79
6191669	35 x Rp½" x 35	2,11
6191671	35 x Rp¾" x 35	2,29
6198601	35 x Rp1" x 35	2,74
6191680	42 x Rp½" x 42	2,82
6191691	42 x Rp¾" x 42	2,95
6198610	42 x Rp1" x 42	3,41
6191702	54 x Rp½" x 54	3,99
6191724	54 x Rp¾" x 54	4,15
6198621	54 x Rp1" x 54	4,49
6191713	54 x Rp2" x 54	6,59
6204528	76,1 x Rp¾" x 76,1	12,01
6204550	76,1 x Rp2" x 76,1	14,38
6204539	88,9 x Rp¾" x 88,9	15,91
6204561	88,9 x Rp2" x 88,9	18,01
6204541	108 x Rp¾" x 108	22,94
6204572	108 x Rp2" x 108	24,92

R2707	VSH XPress Stainless reducer (male x press)	
article no.	**dimensions**	**conversion factor**
6198951	Ø15 x 12	0,33
6191121	Ø18 x 15	0,46
6191130	Ø22 x 15	0,53
6191141	Ø22 x 18	0,54
6191152	Ø28 x 15	0,65
6191163	Ø28 x 18	0,65
6191174	Ø28 x 22	0,73
6192221	Ø35 x 15	0,89
6191185	Ø35 x 18	0,91
6191196	Ø35 x 22	0,99
6191207	Ø35 x 28	1,05
6192230	Ø42 x 15	1,20
6192241	Ø42 x 18	1,24
6191218	Ø42 x 22	1,27
6191229	Ø42 x 28	1,38
6191231	Ø42 x 35	1,40
6192252	Ø54 x 15	1,68
6192263	Ø54 x 18	1,74
6191240	Ø54 x 22	1,80
6191251	Ø54 x 28	1,87
6191262	Ø54 x 35	1,91
6191273	Ø54 x 42	2,13
6204211	Ø76,1 x 42	5,65
6204220	Ø76,1 x 54	5,41
6204231	Ø88,9 x 54	7,00
6204242	Ø88,9 x 76,1	7,75
6204253	Ø108 x 54	10,49
6204264	Ø108 x 76,1	11,65
6204275	Ø108 x 88,9	11,81

R2705 **VSH XPress Stainless straight connector (press x male thread)**

article no.	dimensions	conversion factor
6198918	12 x R⅜"	0,32
6198929	12 x R½"	0,32
6190580	15 x R½"	0,56
6190591	15 x R¾"	0,75
6190602	18 x R½"	0,60
6190613	18 x R¾"	0,73
6190635	22 x R½"	0,89
6190646	22 x R¾"	0,98
6190624	22 x R1"	1,12
6190679	28 x R¾"	1,28
6190657	28 x R1"	1,28
6190668	28 x R1¼"	1,89
6190681	35 x R1"	1,85
6190701	35 x R1¼"	2,01
6190690	35 x R1½"	2,26
6190723	42 x R1¼"	3,22
6190712	42 x R1½"	2,68
6190734	54 x R1½"	3,99
6190745	54 x R2"	4,00
6204759	76,1 x R2½"	8,12
6204761	88,9 x R3"	10,28

R2702 **VSH XPress Stainless straight connector (press x female thread)**

article no.	dimensions	conversion factor
6198931	12 x Rp⅜"	0,55
6198940	12 x Rp½"	0,44
6190415	15 x Rp½"	0,47
6190426	15 x Rp¾"	0,69
6190437	18 x Rp½"	0,68
6190448	18 x Rp¾"	0,68
6190461	22 x Rp½"	1,05
6190470	22 x Rp¾"	0,88
6190459	22 x Rp1"	1,20
6193308	28 x Rp½"	1,55
6190503	28 x Rp¾"	1,35
6190481	28 x Rp1"	1,25
6190492	28 x Rp1¼"	1,79
6190514	35 x Rp1"	1,92
6190536	35 x Rp1¼"	1,74
6190525	35 x Rp1½"	2,51
6190558	42 x Rp1¼"	3,13
6190547	42 x Rp1½"	2,64
6190569	54 x Rp1½	4,86
6190571	54 x Rp2"	5,78

R2709 **VSH XPress Stainless angle adapter 90° (press x female thread)**

article no.	dimensions	conversion factor
6190822	15 x Rp½"	0,89
6190833	18 x Rp½"	0,99
6198456	22 x Rp½"	1,19
6190844	22 x Rp¾"	1,48
6198467	28 x Rp½"	1,60
6198478	28 x Rp¾"	1,78
6190855	28 x Rp1"	3,06
6198489	35 x Rp½"	2,00
6198491	35 x Rp¾"	2,38
6198500	35 x Rp1"	3,14
6190866	35 x Rp1¼"	3,27

R2728 **VSH XPress Stainless angle adapter 90° (press x male thread)**

article no.	dimensions	conversion factor
6190877	15 x R½"	0,87
6190888	18 x R½"	1,07
6190899	22 x R¾"	1,66
6190901	28 x R1"	2,22
6190910	35 x R1¼"	3,66
6190921	42 x R1½"	5,07
6190932	54 x R2"	7,71

R2710 **VSH XPress Stainless angle adapter 90° (male x female thread)**

article no.	dimensions	conversion factor
6192274	15 x Rp½"	0,89

R2704 **VSH XPress Stainless coupling with nut (press x female thread)**

article no.	dimensions	conversion factor
6191735	15 x G¾"	0,81
6191746	18 x G¾"	0,82
6191757	22 x G1"	1,20
6191768	28 x G1¼"	1,66
6191779	35 x G1½"	2,13
6191781	42 x G1¾"	2,72
6191790	54 x G2⅜"	4,53

R2735 **VSH XPress Stainless straight union connector (press x male thread)**

article no.	dimensions	conversion factor
6192120	15 x R½"	1,52
6192131	15 x R¾"	1,80
6192142	18 x R½"	1,52
6192153	18 x R¾"	1,84
6192164	22 x R½"	2,04
6192175	22 x R¾"	2,36
6192186	22 x R1"	3,16
6192197	28 x R1"	3,40
6192208	35 x R1¼"	4,25
6192219	42 x R1½"	5,40
6192296	54 x R2"	8,85

R2738 **VSH XPress Stainless straight union (press x female thread)**

article no.	dimensions	conversion factor
6192021	15 x Rp½"	1,41
6192032	15 x Rp¾"	1,58
6192043	18 x Rp½"	1,44
6192054	18 x Rp¾"	1,53
6192065	22 x Rp¾"	2,19
6192076	22 x Rp1"	2,44
6192087	28 x Rp1"	3,21
6192098	35 x Rp1¼"	4,25
6192109	42 x Rp1½"	5,78
6192111	54 x Rp2"	9,41

R2739	VSH XPress Stainless straight union (2 x press)	
article no.	**dimensions**	**conversion factor**
6192615	15	1,52
6192626	18	1,44
6192637	22	2,42
6192648	28	3,25
6192659	35	4,26
6192661	42	5,06
6192670	54	8,66

R2716	VSH XPress Stainless wallplate 90° (press x female thread)	
article no.	**dimensions**	**conversion factor**
6191801	15 x Rp½"	1,21
6191812	18 x Rp½"	1,38
6191823	22 x Rp¾"	1,69

R2737	VSH XPress Stainless wallplate long 90° (press x female thread)	
article no.	**dimensions**	**conversion factor**
6191999	15 x Rp½"	2,06
6192001	18 x Rp½"	2,05
6192010	22 x Rp¾"	2,11

R2719	VSH XPress Stainless wallplate (2 x press x female thread)	
article no.	**dimensions**	**conversion factor**
6192285	15 x Rp½" x 15	1,51

R2726	VSH XPress Stainless flange adapter PN16 (press x flange)	
article no.	**dimensions**	**conversion factor**
6190756	15 x DN15 P	5,91
6190767	18 x DN15	5,89
6190778	22 x DN20	7,69
6190789	28 x DN25	10,33
6190791	35 x DN32	15,54
6190800	42 x DN40	18,65
6190811	54 x DN50	21,40
6204121	76,1 x DN65	42,00
6204132	88,9 x DN80	51,39
6204143	108 x DN100	62,06

R2729	VSH XPress Stainless stop end (1 x press)	
article no.	**dimensions**	**conversion factor**
6191011	15	0,26
6191020	18	0,27
6191031	22	0,38
6191042	28	0,51
6191053	35	0,69
6191064	42	1,09
6191075	54	1,61
6204187	76,1	5,16
6204198	88,9	6,72
6204209	108	10,48

R2736	VSH XPress Stainless coupling for flat seal (press x flat seal)	
article no.	**dimensions**	**conversion factor**
6191891	15 x 1 1/8	0,46
6191900	15 x 1½	0,69
6191911	18 x 1¼	0,58
6191922	18 x 1½	0,59
6191933	22 x 1¼	0,62
6191944	22 x 1½	0,78
6191955	28 x 1½	0,88
6191966	35 x 2	1,44
6191977	42 x 2¼	2,12
6191988	54 x 2¾	3,20

R2748	VSH XPress Stainless groove connector (press x groove)	
article no.	**dimensions**	**conversion factor**
6198555	28 x 33,7	1,36
6198566	35 x 42,4	1,93
6198577	42 x 48,3	2,40
6198588	54 x 60,3	3,26
6193319	76,1 x 76,1	6,47
6193321	88,9 x 88,9	8,18
6193330	108 x 114	11,72

R2741	VSH XPress Stainless slip coupling (press x female thread)	
article no.	**dimensions**	**conversion factor**
6198511	22 x Rp½"	1,318
6198522	22 x Rp¾"	1,471
6198533	28 x Rp½"	1,976
6198544	28 x Rp¾"	1,706

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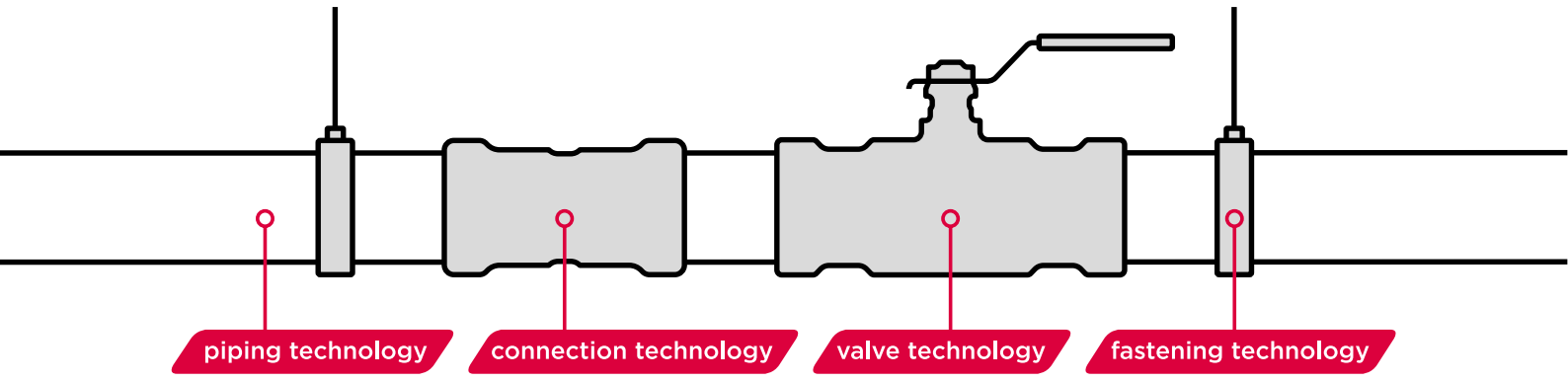
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