

# Technical Data Sheet ASAHI AV Ball Valve

GOKoo SERIES



Rev	Date	Dep.
1	18/02/2020	ASAHI ASIA PACIFIC PFE LTD
2	30/04/2021	ASAHI ASIA PACIFIC PFE LTD

**- Contents -**

1.	Scope .....	3
2.	Basic Product Specification .....	4
2.1	Pressure - Temperature Rating .....	4
2.2	Applicable fluid .....	4
2.3	Material standard: PVC-U/seals .....	4
2.4	Pressure test .....	5
2.5	Test and inspection .....	5
2.5.1	Material inspection.....	5
2.5.2	Visual inspection.....	5
2.5.3	Dimensional inspection.....	5
2.5.4	Assembling inspection.....	5
2.5.5	Hydrostatic and pneumatic inspection.....	5
2.5.6	Face to Face Dimensions .....	6
2.5.7	End Connection .....	6
3.	Product Design .....	7
3.1	Ball Valves codes .....	7
3.2	Asahi Asia Pacific PTE LTD Ball Valves dimensions.....	9
3.3	Asahi Asia Pacific PTE LTD Ball Valves components .....	14
4.	Materials.....	26
4.1	PVC for all ball valves Components (no handle).....	26
4.2	PVC for all ball valves Handle .....	26
4.3	EPDM for all ball valves Seals .....	26
4.4	PTFE for Industrial Ball Valves GOKoo Seals: .....	26
4.5	Lubricant for O’rings Assembly:.....	26
5.	Certifications .....	36

# 1 Scope

This specification is applied for plastic valves (hereafter “PVC Valves”) manufactured under the brand name of Asahi AV Valves logotype and Asahi Asia Pacific PTE LTD.

Here we specify the characteristics of valves made from un-plasticized polyvinyl chloride (PVC-U) for piping systems intended for water supply and for buried and aboveground drainage and sewerage under pressure.

It is applicable to valves in piping systems intended for the supply water under pressure up to and including 25°C (cold water) intended for human consumption and for general purposes as well as for wastewater under pressure.

It also specifies:

- I. Dimensional drawings.
- II. Materials
- III. Test parameters for test methods
- IV. Controls plan
- V. Test Report
- VI. Quality Certifications

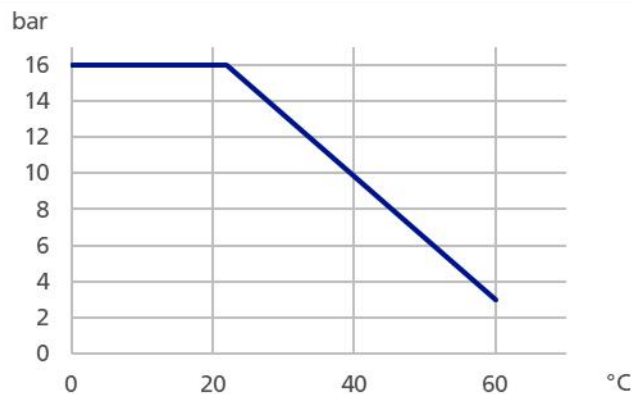
## 2. Basic Specification

### 2.1 Pressure - temperature rating

Maximum operating pressure: 1.6 MPa (16 bar)

Maximum operating pressure decreases with the increasing of temperature, as shown in Graph 1.

Operating temperature: 0° to 60°C Celsius.



Graph 1

## 2.2 Applicable fluid

According to chemical compatible attached file.

## 2.3 Material standard: PVC-U/seals

The material from which the valves are made shall be an un-plasticized polyvinyl chloride compound. This compound shall consist of PVC-U resin, to which shall be added those additives which are needed to facilitate the manufacture of valves conforming to ISO 1452-2, ISO 1452-3, ISO 1452-4 and ISO 1452-5, as applicable.

None of these additives shall be used, separately or together, in quantities sufficient to constitute a toxic, organoleptic or microbiological hazard or to impair fabrication or solvent cementing properties of the product or to impair the chemical, physical or mechanical properties (in particular long-term mechanical strength and impact strength) as specified in the applicable part(s) of ISO 1452.

The vinyl chloride monomer (VCM) in the resin used in PVC-U compound shall be less than  $\pm 0,0001\%$  volume fraction if determined by means of gas-phase chromatography using the "headspace" method in accordance with ISO 6401. All plastics and non-plastics materials for components of the PVC-U piping system, e.g. pipes, fittings, valves, elastomeric sealing rings, solvent cement, lubricants, when in permanent or in temporary contact with water, which is intended for human consumption, shall not adversely affect the quality of the drinking water. The use of the manufacturer's own reprocess able material obtained during the production and production testing of products conforming to ISO 1452 (all parts) is permitted in addition to the use of virgin material.

### Density

Density at 23°C of the valve body, when measured in accordance with ISO 1183-1, shall be between the following limits:  $1350 \text{ kg/m}^3 \div 1460 \text{ kg/m}^3$ .

### MRS-value

Material shall have a minimum required strength, MRS, as defined in ISO 1452-1:2009, 4.4.1. The MRS value of the valve body is minimum 25,0 MPa.

### Material seals

It shall be conforming to EN681-1 "Elastomeric seals" and to Specified listed material (EPDM, PTFE and PE blend)

## 2.4 Pressure test

Pressure test shall be according to ISO 9393 and below specified.

## 2.5 Test and inspection

All PVC-U valves shall satisfy the following testing requirements.

### 2.5.1 Material inspection

All material shall meet the chemical composition and mechanical properties, which are specified at section 2.C. If the quality of material is confirmed, testing of that material is not required. ISO 16135:2006 5.2.2.

### 2.5.2 Visual inspection

There shall be non-harmful crack, fold nor burr on the internal and external surface of all moulded-machined parts. There shall be no looseness nor shall slack, on each moving area be smoothly and appropriately operated without any galling, nor scuffing at fully opened or closed position. Nominal pressure class and nominal diameter of valves and other marking instructed by drawings shall be correctly on the valve body.

### 2.5.3 Dimensional inspection

All dimensions shall be according to the applicable standard and drawings.

### 2.5.4 Assembling inspection

Handle shall be operation ease and ball shall be certainly connected to stem. Ball and ball seats of ball valves shall be located concentrically, and ball shall be appropriately settled in ball sets at fully closed position. Also, ball shall move smoothly. The tolerance of face to face dimensions shall be within  $\pm 2$  mm for up to DN50 and within  $\pm 3$  mm for over (DN60 included). The grease that is specified in the specified section shall be applied to O-rings. The tightening torque of support rings of ball valves shall be a range shown in the specified section.

### 2.5.5 Hydrostatic and pneumatic inspection

#### Hydrostatic testing for valve body

Valves shall be set in half opened position and fill the inside by water to ensure that is no air in the valve body. Apply the number of sample and testing pressure and keeping valve specified in specified table. There shall be no leakage nor blur from body surface and jointing area.

#### Pneumatic testing for valve body

Valves shall be set in half opened position and apply the number of sample and the testing pressure and the keeping valve specified in specified table. There shall be no leakage nor blur from body surface and jointing area.

#### Seat leakage testing

Valves shall be set into the fully opened position and apply the number of sample and the testing pressure and the keeping valves specified in specified table. Close the valve and open the valves ends to the atmosphere. Check the seat leakage by submerging both the valve ends. There shall be no leakage. This testing shall apply for both ends of the valve.

### 2.5.6 Face to Face Dimensions

According to the relevant drawings.

### 2.5.7 End Connection

Female taper thread according to **ISO 228-1/ DIN 2999** “PVC-U fittings with threaded connections”;  
**ASTM D 2467** “Standard specification for polyvinyl chloride (PVC) plastic pipe fittings, schedule 80”;  
**JIS K 6743** “Un-plasticized polyvinyl chloride (PVC-U) pipe fittings for water supply”;  
**EN ISO 1452** “Characteristics of PVC-U fittings and pipes of piping systems for water supply”.

### 3. Product Design

#### 3.1 Ball Valves codes

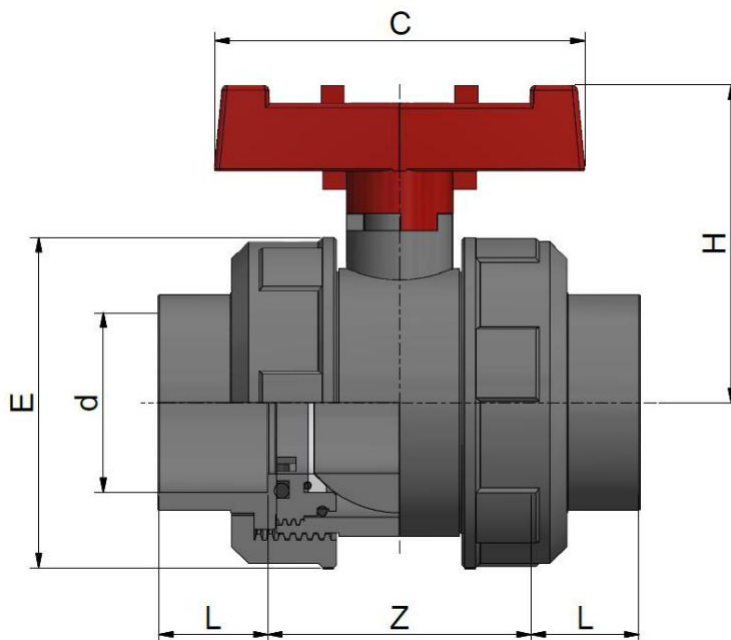
Code	DN	Description
VGKLVUESD015	15	Ball Valve TypeGK PVC /EP S-D 15MM
VGKLVUESD020	20	Ball Valve TypeGK PVC /EP S-D 20MM
VGKLVUESD025	25	Ball Valve TypeGK PVC /EP S-D 25MM
VGKLVUESD032	32	Ball Valve TypeGK PVC /EP S-D 32MM
VGKLVUESD040	40	Ball Valve TypeGK PVC /EP S-D 40MM
VGKLVUESD050	50	Ball Valve TypeGK PVC /EP S-D 50MM
VGKLVUESD065	65	Ball Valve TypeGK PVC /EP S-D 65MM
VGKLVUESD080	80	Ball Valve TypeGK PVC /EP S-D 80MM
VGKLVUESD100	100	Ball Valve TypeGK PVC /EP S-D 100MM
VGKLVUETD015	15	Ball Valve TypeGK PVC /EP T-RC 15MM
VGKLVUETD020	20	Ball Valve TypeGK PVC /EP T-RC 20MM
VGKLVUETD025	25	Ball Valve TypeGK PVC /EP T-RC 25MM
VGKLVUETD032	32	Ball Valve TypeGK PVC /EP T-RC 32MM
VGKLVUETD040	40	Ball Valve TypeGK PVC /EP T-RC 40MM
VGKLVUETD050	50	Ball Valve TypeGK PVC /EP T-RC 50MM
VGKLVUETD065	65	Ball Valve TypeGK PVC /EP T-RC 65MM
VGKLVUETD080	80	Ball Valve TypeGK PVC /EP T-RC 80MM
VGKLVUETD100	100	Ball Valve TypeGK PVC /EP T-RC 100MM
VGKLVUESB015	15	Ball Valve TypeGK PVC /EP S-BS 15MM
VGKLVUESB020	20	Ball Valve TypeGK PVC /EP S-BS 20MM
VGKLVUESB025	25	Ball Valve TypeGK PVC /EP S-BS 25MM
VGKLVUESB032	32	Ball Valve TypeGK PVC /EP S-BS 32MM
VGKLVUESB040	40	Ball Valve TypeGK PVC /EP S-BS 40MM
VGKLVUESB050	50	Ball Valve TypeGK PVC /EP S-BS 50MM
VGKLVUESB065	80	Ball Valve TypeGK PVC /EP S-BS 65MM
VGKLVUESB080	80	Ball Valve TypeGK PVC /EP S-BS 80MM
VGKLVUESB100	100	Ball Valve TypeGK PVC /EP S-BS 100MM
VGKLVUESA015	15	Ball Valve TypeGK PVC /EP S-#80 15MM
VGKLVUESA020	20	Ball Valve TypeGK PVC /EP S-#80 20MM
VGKLVUESA025	25	Ball Valve TypeGK PVC /EP S-#80 25MM
VGKLVUESA032	32	Ball Valve TypeGK PVC /EP S-#80 32MM
VGKLVUESA040	40	Ball Valve TypeGK PVC /EP S-#80 40MM
VGKLVUESA050	50	Ball Valve TypeGK PVC /EP S-#80 50MM
VGKLVUESA065	65	Ball Valve TypeGK PVC /EP S-#80 65MM
VGKLVUESA080	80	Ball Valve TypeGK PVC /EP S-#80 80MM
VGKLVUESA100	100	Ball Valve TypeGK PVC /EP S-#40 100MM

Code	DN	Description
VGKLVUETA015	15	Ball Valve TypeGK PVC /EP T-NPT 15MM
VGKLVUETA020	20	Ball Valve TypeGK PVC /EP T-NPT 20MM
VGKLVUETA025	25	Ball Valve TypeGK PVC /EP T-NPT 25MM
VGKLVUETA032	32	Ball Valve TypeGK PVC /EP T-NPT 32MM
VGKLVUETA040	40	Ball Valve TypeGK PVC /EP T-NPT 40MM
VGKLVUETA050	50	Ball Valve TypeGK PVC /EP T-NPT 50MM
VGKLVUETA065	65	Ball Valve TypeGK PVC /EP T-NPT 65MM
VGKLVUETA080	80	Ball Valve TypeGK PVC /EP T-NPT 80MM
VGKLVUETA100	100	Ball Valve TypeGK PVC /EP T-NPT 100MM

### 3.2 Ball Valves GOKoo Series dimensions

#### PVC-U Double union ball valve GOKoo Series

METRIC SOLVENT WELDED SOCKETS PART CODE: VGKLVUESD

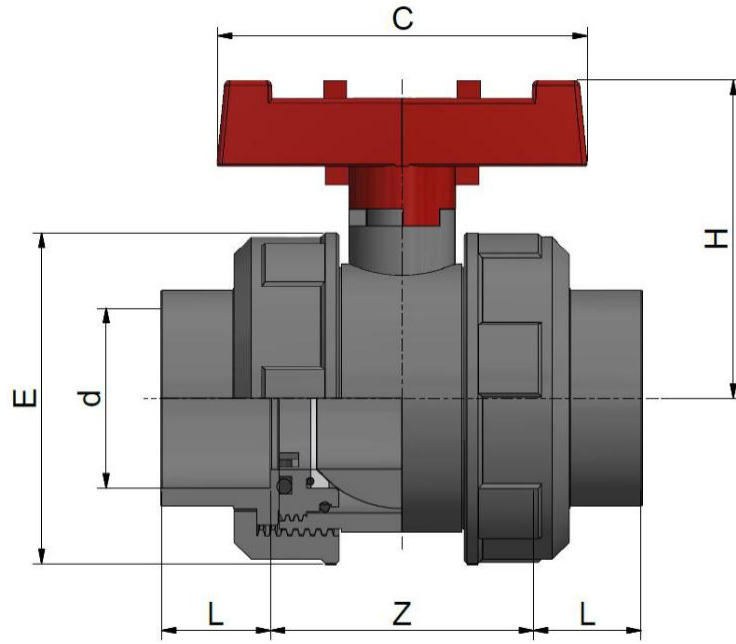


Code	d	DN	L	Z	H	C	E	PN
VGKLVUESD015	20	15	16	48	57,20	72,2	49	16
VGKLVUESD020	25	20	19	54	64,6	78,4	59	16
VGKLVUESD025	32	25	22	62	71,7	87,9	68,5	16
VGKLVUESD032	40	32	26	69	82,1	100	79,5	16
VGKLVUESD040	50	40	31	81	93,1	110	95,5	16
VGKLVUESD050	63	50	39	94	111,6	130,1	116	16
VGKLVUESD065	75	65	44	141	145	168,6	167	16
VGKLVUESD080	90	80	51	140	145	168,6	167	16
VGKLVUESD100	110	100	61	162	170	203,9	209	16



# PVC-U Double Union Ball Valve GOKOO SERIES

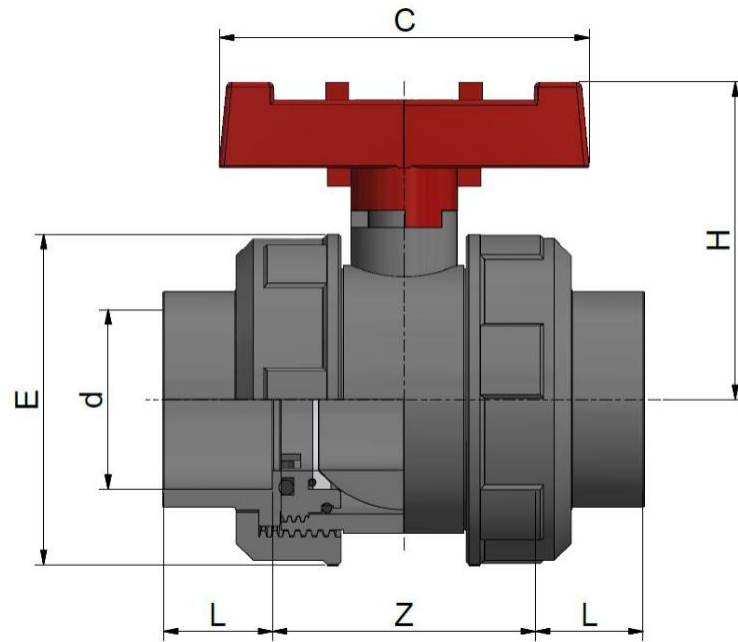
BS SOLVENT WELDED SOCKETS PART CODE: VGKLVUESB



Code EPDM	d	DN	L	Z	H	C	E	PN
VGKLVUESB015	1/2"	15	16	48	57,20	72,2	49	16
VGKLVUESB020	3/4"	20	19	54	64,6	78,4	59	16
VGKLVUESB025	1"	25	22	62	71,7	87,9	68,5	16
VGKLVUESB032	1"1/4	32	26	69	82,1	100	79,5	16
VGKLVUESB040	1"1/2	40	31	81	93,1	110	95,5	16
VGKLVUESB050	2"	50	39	94	111,6	130,1	116	16
VGKLVUESB065	2"1/2	65	44	141	145	168,6	167	16
VGKLVUESB080	3"	80	51	140	145	168,6	167	16
VGKLVUESB100	4"	100	61	162	170	203,9	209	16

## PVC-U Double Union Ball Valve GOKoo SERIES

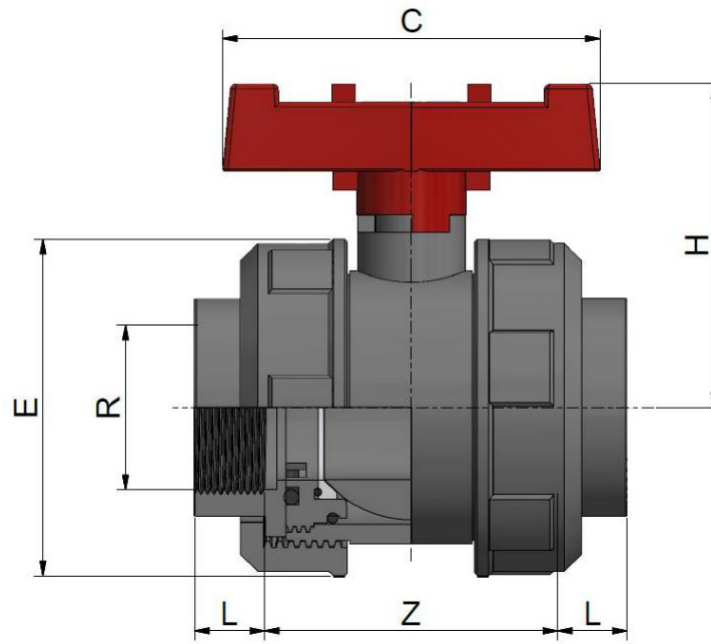
ASTM SOLVENT WELDED SOCKETS PART CODE: VGKLVUESA



Code EPDM	d	DN	L	Z	H	C	E	PN
VGKLVUESA015	1/2"	15	22,8	48,6	57,20	72,2	49	16
VGKLVUESA020	3/4"	20	25,9	54,4	64,6	78,4	59	16
VGKLVUESA025	1"	25	29,0	63,2	71,7	87,9	68,5	16
VGKLVUESA032	1"1/4	32	32,0	68	82,1	100	79,5	16
VGKLVUESA040	1"1/2	40	36,5	80,2	93,1	110	95,5	16
VGKLVUESA050	2"	50	38,2	94,2	111,6	130,1	116	16
VGKLVUESA065	2"1/2	65	44,5	141,2	145	168,6	167	16
VGKLVUESA080	3"	80	47,7	140,2	145	168,6	167	16
VGKLVUESA100	4"	100	56,6	171,2	170	203,9	209	16

## PVC-U Double union Ball Valve GOKoo Series

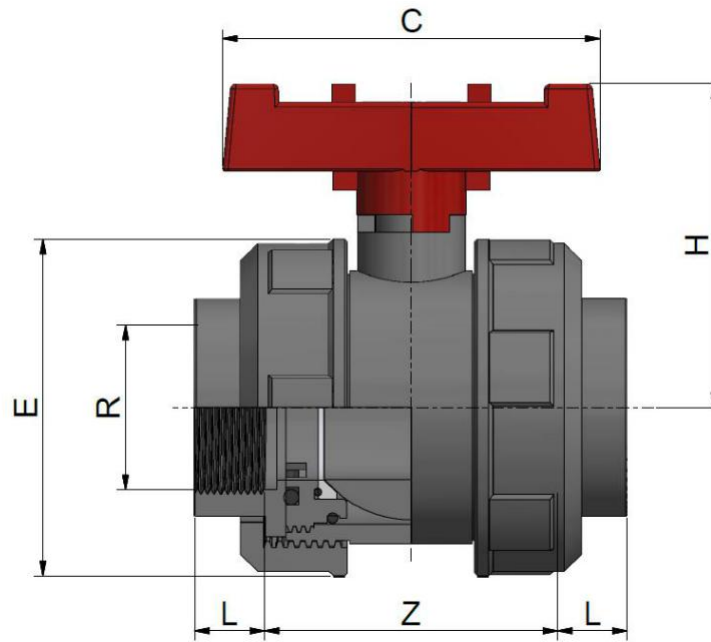
BSPB THREADED SOCKETS PART CODE: VGKLVUETD



Code EPDM	R	DN	L min	Z max	H	C	E	PN
VGKLVUETD015	1/2"	15	13,2	53,6	57,20	72,2	49	16
VGKLVUETD020	3/4"	20	14,5	63	64,6	78,4	59	16
VGKLVUETD025	1"	25	16,8	72,4	71,7	87,9	68,5	16
VGKLVUETD032	1"1/4	32	19,1	82,8	82,1	100	79,5	16
VGKLVUETD040	1"1/2	40	19,1	91,8	93,1	110	95,5	16
VGKLVUETD050	2"	50	23,4	103,2	111,6	130,1	116	16
VGKLVUETD065	2"1/2	65	26,7	175,6	145	168,6	167	16
VGKLVUETD080	3"	80	29,8	153,4	145	168,6	167	16
VGKLVUETD100	4"	100	61	162	170	203,9	209	16

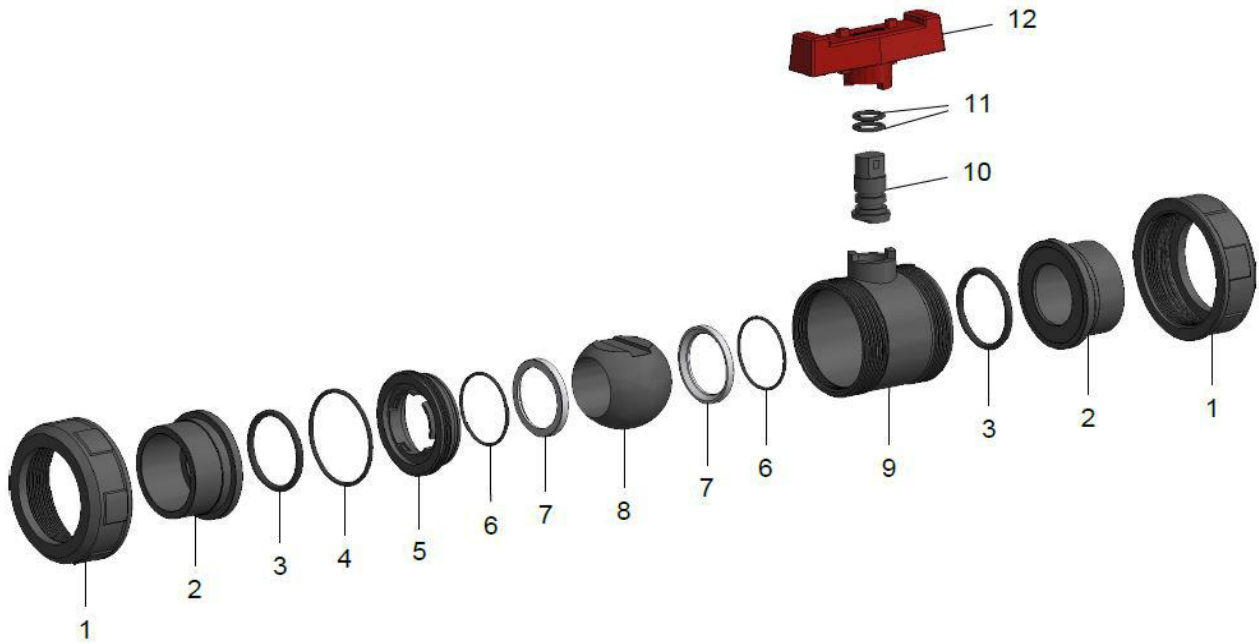
## PVC-U Double union ball valve GOKoo SERIES

NPT THREADED SOCKETS PART CODE: VGKLVUETA



Code EPDM	R	DN	L	Z	H	C	E	PN
VGKLVUETA015	1/2"	15	13,6	52,8	57,20	72,2	49	16
VGKLVUETA020	3/4"	20	14,1	63,8	64,6	78,4	59	16
VGKLVUETA025	1"	25	16,8	72,4	71,7	87,9	68,5	16
VGKLVUETA032	1"1/4	32	17,3	86,4	82,1	100	79,5	16
VGKLVUETA040	1"1/2	40	17,3	95,4	93,1	110	95,5	16
VGKLVUETA050	2"	50	17,7	114,6	111,6	130,1	116	16
VGKLVUETA065	2"1/2	65	23,7	181,6	145	168,6	167	16
VGKLVUETA080	3"	80	25,8	161,4	145	168,6	167	16
VGKLVUETA100	4"	100	27,8	228,4	170	203,9	209	16

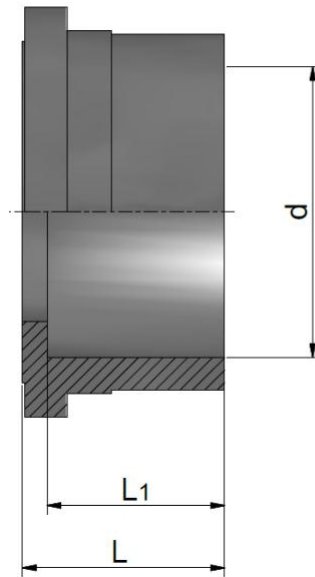
### 3.3 Ball Valves GOKoo Series components



n.	COMPONENT	MATERIAL	Qty
1	Nut	PVC-U	2
2	Socket	PVC-U	2
3	Socket O-ring	EPDM	2
4	Body O-ring	EPDM	1
5	Ball seat carrier	PVC-U	1
6	Ball seat O-ring	EPDM	2
7	Ball seat	PTFE	2
8	Ball	PVC-U	1
9	Body	PVC-U	1
10	Stem	PVC-U	1
11	Stem O-ring	EPDM	2
12	Handle	PVC-U	1

## PVC-U Components for Valves

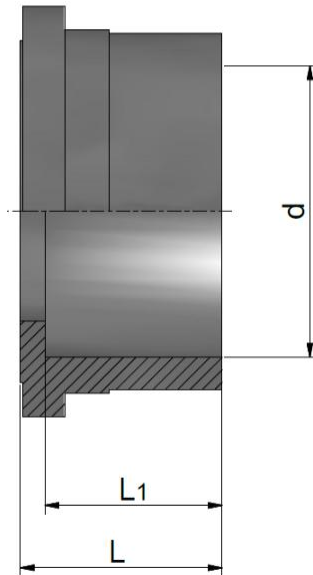
### VALVE SOCKETS – SOLVENT WELDED METRIC / PART CODE: ENDCONUSD



Code	d	L	L1
ENDCONUSD015	20	18	16
ENDCONUSD020	25	21,5	19
ENDCONUSD025	32	25	22
ENDCONUSD032	40	29,5	26
ENDCONUSD040	50	35	31
ENDCONUSD050	63	42,5	39
ENDCONUSD065	75	49,5	44
ENDCONUSD080	90	56	51
ENDCONUSD100	110	66	60,5

## PVC-U Components for Valves

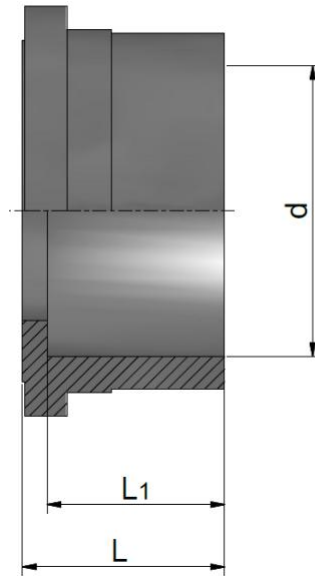
### VALVE SOCKETS – SOLVENT WELDED BS / PART CODE: ENDCONUSB



Code	d	L	L1
ENDCONUSB015	1/2"	18	16
ENDCONUSB020	3/4"	21,5	19
ENDCONUSB025	1"	25	22
ENDCONUSB032	1"1/4	29,5	26
ENDCONUSB040	1"1/2	35	31
ENDCONUSB050	2"	42,5	39
ENDCONUSB065	2"1/2	49,5	44
ENDCONUSB080	3"	56	51
ENDCONUSB100	4"	66	60,5

## PVC-U Components for Valves

VALVE SOCKETS – SOLVENT WELDED ASTM / PART CODE: ENDCONUSA

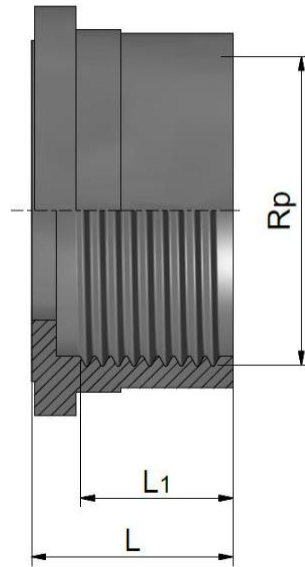


Code	d	L	L1
ENDCONUSA015	1/2"	25,1	22,8
ENDCONUSA020	3/4"	28,6	25,9
ENDCONUSA025	1"	32,6	29,0
ENDCONUSA032	1"1/4	35,0	32,0
ENDCONUSA040	1"1/2	40,1	36,5
ENDCONUSA050	2"	41,8	38,2
ENDCONUSA065	2"1/2	44,5	50,1
ENDCONUSA080	3"	47,7	52,8
ENDCONUSA100	4"	56,6	66,2



## PVC-U Components for Valves

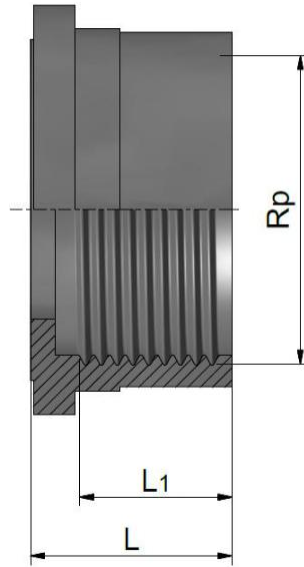
VALVE SOCKET – BSPP THREADED SOCKETS / PART CODE: ENDCONUTD



Code	Rp	L	L1 min
ENDCONUTD015	1/2"	18	13,2
ENDCONUTD020	3/4"	21,5	14,5
ENDCONUTD025	1"	25	16,8
ENDCONUTD032	1"1/4	29,5	19,1
ENDCONUTD040	1"1/2	35	19,1
ENDCONUTD050	2"	42,5	23,4
ENDCONUTD065	2"1/2	49,5	26,7
ENDCONUTD080	3"	56	29,8
ENDCONUTD100	4"	66	35,8

## PVC-U Components for Valves

### VALVE SOCKETS – NPT THREADED SOCKETS / PART CODE: ENDCONUTA



Code	Rp	L	L1 min
ENDCONUTA015	1/2"	18,0	13,6
ENDCONUTA020	3/4"	21,5	14,1
ENDCONUTA025	1"	25,0	16,8
ENDCONUTA032	1"1/4	29,5	17,3
ENDCONUTA040	1"1/2	28,5	17,3
ENDCONUTA050	2"	31,5	17,7
ENDCONUTA065	2"1/2	49,5	23,7
ENDCONUTA080	3"	41,5	25,8
ENDCONUTA100	4"	66,0	27,8

## 4 Materials

List of allowed materials:

### 4.1 PVC for all ball valves Components (no handle)

PVC GREY 9735 MRS25 CERTIFIED (two different suppliers)

### 4.2 PVC for all ball valves Handle

PVC BLUE/RED MASTER BATCHED

### 4.3 EPDM for all ball valves Seals

EPDM BLACK 70 ± 5 ShA CERTIFIED (two different suppliers)

### 4.4 PTFE for Industrial Ball Valves GOKOO SERIES/SX Serie Seals:

PTFE020 Standard Grade CERTIFIED

### 4.5 PE Blend for Water Ball Valves BV/SV Serie Seals:

LDPE/PTFE BLEND White

### 4.6 Lubricant for O-rings Assembly:

SILICONIC OIL CERTIFIED

## 5. Certifications

ISO 9001:2015

ISO 14001:2015

Directive 2014/68/EU

NSF Certification (Will be approved soon)