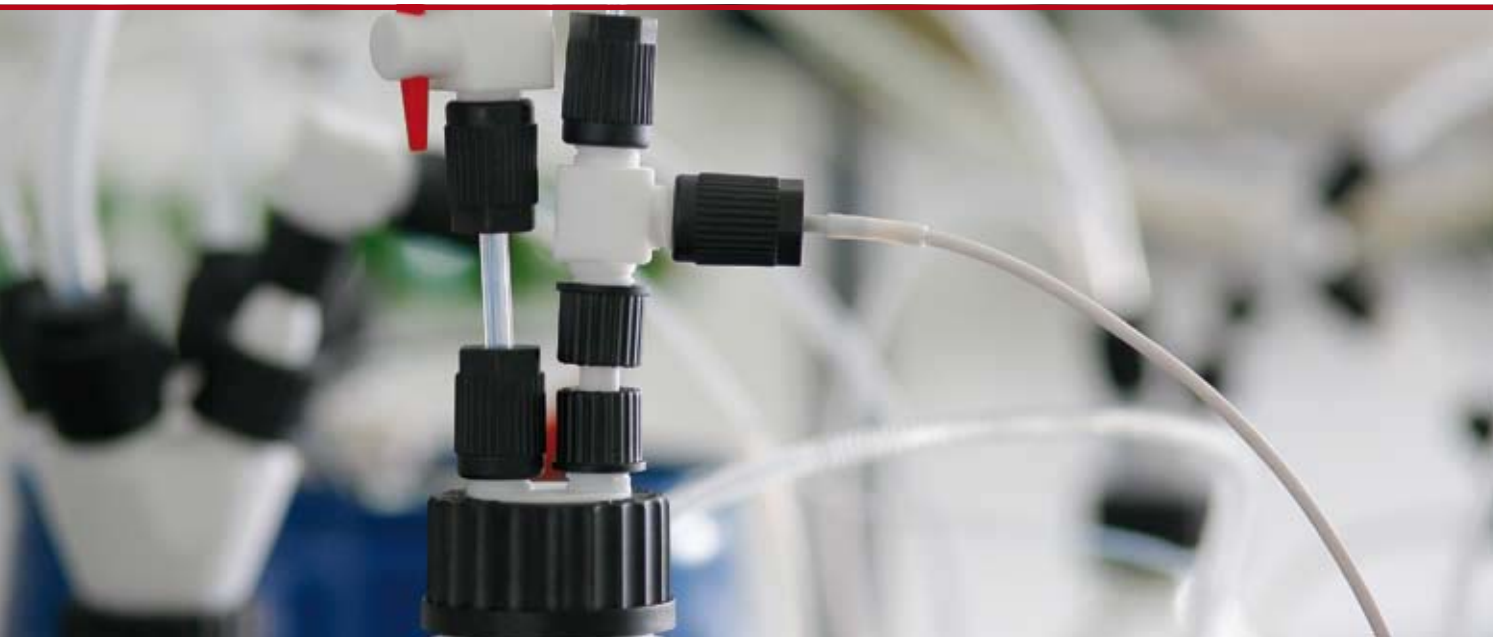


## Screw Joints / Components with GL Thread



Tailored equipment in a few quick and incomplex steps:  
with easily combinable screw joint elements from  
BOLA you can flexibly react to all current requirements.

### PRODUCT TIPS



Page 60  
GL Distributors for Bottles



Page 55  
GL Laboratory Screw Joints

# The Modular Construction System

## What you should know about the GL screw joint system.

A universal screw joint system, developed for connecting tubes or tubing (PTFE, PFA, FEP) with glass or metal tubes. The system provides a pressure resistance of up to 10 bar at room temperature.

The fittings and stopcocks are made of pure PTFE. Assembled with the BOLA HT Laboratory Screw Joints, they are resistant to temperatures up to +250°C.

The universal chemical resistance of the fluoroplastic materials allows the application of the GL screw joint components with almost every liquid and gas.

You can combine different components with GL thread to create a complete equipment:

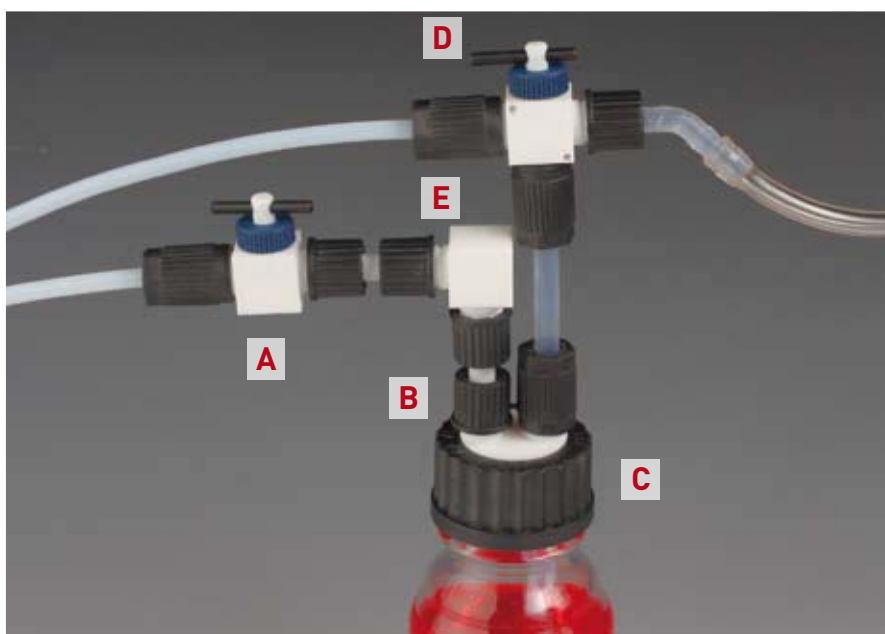
e.g. **Basic Scrubber Bottle**

- A** GL Bellow  
Cat. No.: H 902-05  
see page 81
- B** GL Tube Fitting Elbow  
Artikel-Nr.: D 539-25  
see page 85
- C** GL Stopcock  
Cat. No.: E 684-14  
see page 87
- D** GL Tube Fitting T  
Cat. No.: D 540-14  
see page 84
- E** Reducing Screw Thread  
Adaptor Coupling  
Cat. No.: H 904-03  
see page 80



e.g. **Sampling Unit**

- A** GL Ball Valve  
Cat. No.: E 664-10  
see page 87
- B** Threaded Coupling  
Cat. No.: H 900-01  
see page 80
- C** Multiple Distributor for Bottles  
Cat. No.: D 614-08  
see page 60
- D** GL Ball Valve  
Cat. No.: E 667-10  
see page 87
- E** GL Tube Fitting Elbow  
Cat. No.: D 539-14  
See page 85

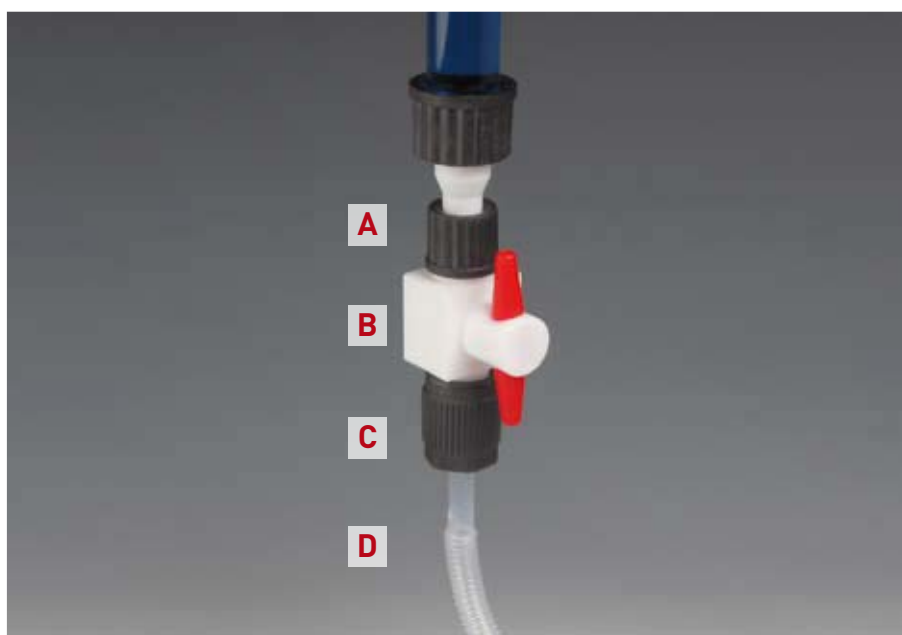


### All advantages at a glance:

- » easily screwable without any tooling
- » optionally extensible
- » independent from tubing diameters
- » compatible with glass equipment with GL thread
- » many creative possibilities
- » no determination at the beginning of assembly

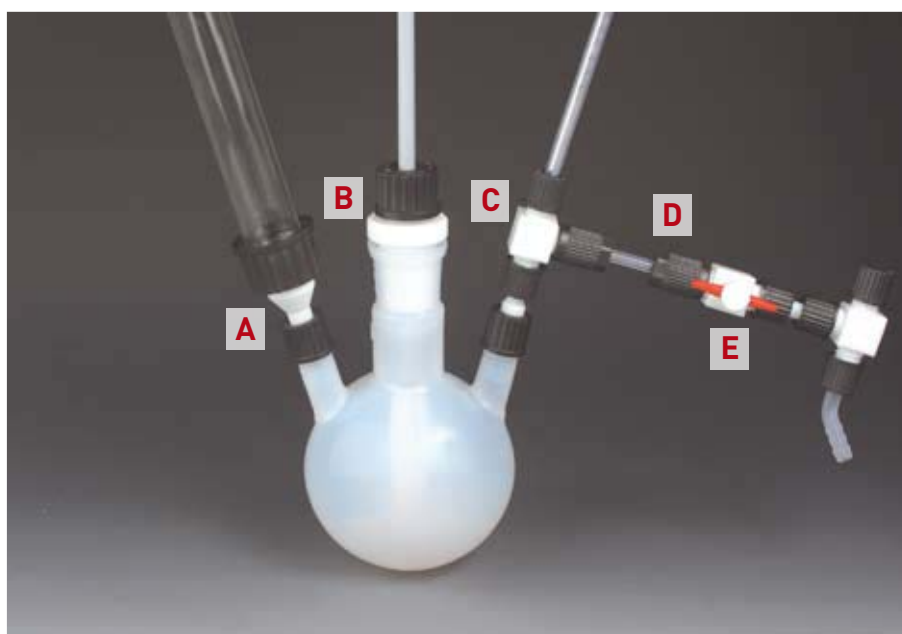
e.g. **Dosing Column**

- A** Reducing Screw Thread  
Adaptor Coupling  
Cat. No.: H 904-03  
see page 80
- B** GL Stopcock  
Cat. No.: E 684-14  
see page 87
- C** HT Laboratory Screw Joint  
Cat. No.: D 628-82  
see page 57
- D** Flexible Tubing  
Cat. No.: S 1822-20  
see page 114



e.g. **Basic Distillation**

- A** Reducing Screw Thread  
Adaptor Coupling  
Cat. No.: H 904-05  
see page 80
- B** Ground Joint Stirrer Bearings  
Cat. No.: C 424-13  
see page 27
- C** GL Tube Fitting T  
Cat. No.: D 540-14  
see page 84
- D** HT Laboratory Screw Joint  
Cat. No.: D 628-74  
see page 57
- E** GL Stopcock  
Cat. No.: E 684-14  
see page 87

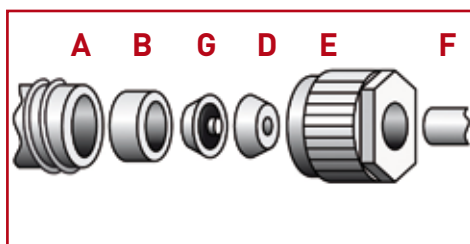
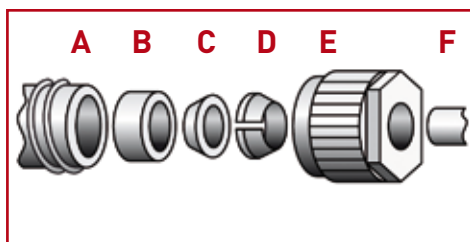


## The GL Screw Joint System



### Component parts:

- A** GL-threaded neck
- B** Sealing ring
- C** Tapered ring
- D** V-ring
- E** Screw cap with internal cone
- F** Tubing or tube
- G** (only for screw joints for tubing dia. under 3 mm)



### Assembly:

1. Push the screw cap on the tubing/tube
2. Push V-ring, tapered ring and then sealing ring on the tubing/tube
3. Tighten the screw cap on the GL-threaded neck – ready

### How to make your order:

A screw joint always consists of two elements

1. Fitting (straight, elbow, T-shape or a GL thread of a glass device)
2. Laboratory screw joint as connection between fitting and tubing/tube

### Example 1:



If you want to connect three tubes/ tubings with O.D. 6 mm you will need:

- A** 1 piece of GL tube fitting T GL 14 – Cat. No. D 540-14, see page 84
- B** 3 pieces of HT laboratory screw joints GL 14 for tubing O.D. 6 mm, Cat. No. D 628-74, see page 57

### Example 2:



If you want to connect tubing with different O.D. (2 mm and 6 mm) in an angle of 90°, you will need:

- A** 1 piece of GL tube fitting elbow GL 14 – Cat. No. D 539-14, see page 85
- B** 1 piece of HT laboratory screw joints GL 14 for tubing O.D. 6 mm, Cat. No. D 628-74, see page 54
- C** 1 piece of HT laboratory screw joints GL 14 for tubing O.D. 2 mm, Cat. No. D 628-34, see page 57

# BOLA Laboratory Screw Joints

In practice, there are many applications where it is necessary to connect hard-walled tubing (e.g. made of PTFE, PFA, FEP) or tubes (e.g. made of glass, metal, plastic) with devices with GL thread (glass thread). BOLA Laboratory Screw Joints are ideal for making these connections.

## Components

Each laboratory screw joint consists of a screw cap with a female GL thread and bore as well as three inner parts: v-ring, tapered ring and sealing ring

## Assembly and function

Assembly can easily be made by hand:

First, the inner parts are pushed on the tubing. After that, the tubing has to be put into the counterpiece and the screw cap has to be tightened. The screw cap presses the sealing ring and tapered ring tightly on the counterpiece. At the same time, the v-ring is compressed and the tubing is fixed tightly. The connection is absolutely tight and even suitable for vacuum. The laboratory screw joints for GL 14, GL 18 and GL 25 resist pressures of max. 10 bar at room temperature.

## Choice

It is easy to choose the suitable laboratory screw joint:

First of all, the outer diameter of the tubing or tube and the size of the GL thread to which the laboratory screw joint shall be connected have to be determined. The size of the GL thread corresponds to the outer diameter of the thread, i.e. a GL 25 thread has an outer diameter of 25 mm. Further assistance for the determination of threads can be found in our technical appendix.

Also the application is decisive: Will there be temperatures of more than +150°C? If so, the BOLA HT Laboratory Screw Joints (page 57), which also provide a good chemical resistance, are the right choice. Or is it more important to have a very high chemical resistance? Then you have to choose BOLA Laboratory Screw Joints made of ETFE (red). These can be used up to temperatures of +150°C.

For big flexibility, all screw caps and inner parts are available separately.

You will find suitable tubing on page 110.

## BOLA Laboratory Screw Joints

Material:	Material:	Temperature resistance	Chemical resistance:	Pressure:	Vacuum:
PTFE	ETFE	from -50°C to +150°C	+++ universal	10 bar	suitable

Product description:

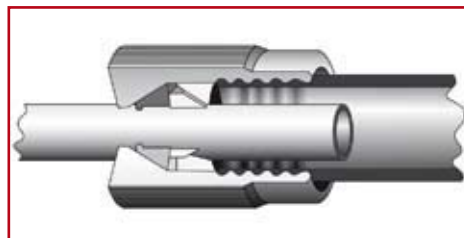
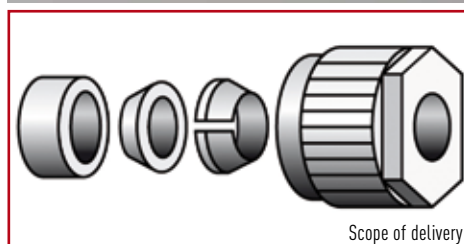
Red screw cap made of glass-fibre reinforced ETFE, inner parts consisting of a v-ring (ETFE), a tapered ring and a sealing ring (both PTFE) as well as an o-ring (for tubing diameters under 3 mm, not exposed to the medium). Very good chemical resistance, suitable for temperatures from -50°C to +150°C.

FDA conform

For tubing O.D. mm	Thread GL 14 Cat. No.:	Thread GL 18 Cat. No.:	Thread GL 25 Cat. No.:
(1/32") 0,8	D 593-02		
1,0	D 593-04		
(1/16") 1,6	D 593-06	D 593-26	
2,0	D 593-10	D 593-30	
2,4	D 593-12		
3,0	D 590-02	D 590-10	D 590-22
(1/8") 3,2	D 590-08	D 590-20	D 590-24
4,0	D 590-04	D 590-12	D 590-26
6,0	D 590-06	D 590-14	D 590-28
(1/4") 6,35	D 590-62		
8,0		D 590-16	D 590-30
10,0		D 590-18	D 590-32
12,0			D 590-34
14,0			D 590-36

## Applications:

Connecting equipment and fittings with GL threads with hard-walled tubing or tubes made of glass, plastic or metal. Fixing probes, thermometers, dip tubes or cables in reaction vessels. Ideal for use in aggressive ambience (e.g. with aggressive vapours or evaporation)



## BOLA Replacement Inner Parts

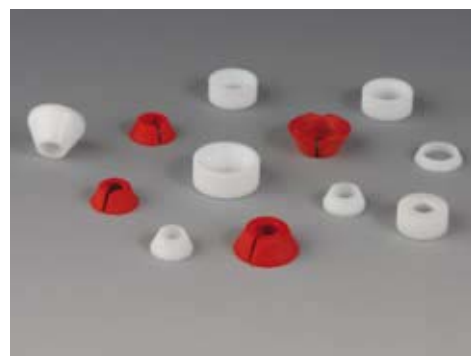
Material: <b>PTFE</b>	Material: <b>ETFE</b>	Temperature resistance <b>from -50°C to +150°C</b>	Chemical resistance: <b>+++ universal</b>	Pressure: <b>10 bar</b>	Vacuum: <b>suitable</b>
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Product description:

Consisting of a v-ring (ETFE), a tapered ring and a sealing ring (both PTFE) as well as an o-ring (for tubing diameters under 3 mm, not exposed to the medium). Very good chemical resistance, suitable for temperatures from -50°C to +150°C.

FDA conform

For tubing O.D. mm	Thread GL 14 Cat. No.:	Thread GL 18 Cat. No.:	Thread GL 25 Cat. No.:
(1/32") 0,8	<b>D 598-02</b>		
1,0	<b>D 598-04</b>		
(1/16") 1,6	<b>D 598-06</b>	<b>D 598-26</b>	
2,0	<b>D 598-10</b>	<b>D 598-30</b>	
2,4	<b>D 598-12</b>		
3,0	<b>D 597-02</b>	<b>D 597-10</b>	<b>D 597-22</b>
(1/8") 3,2	<b>D 597-08</b>	<b>D 597-20</b>	<b>D 597-24</b>
4,0	<b>D 597-04</b>	<b>D 597-12</b>	<b>D 597-26</b>
6,0	<b>D 597-06</b>	<b>D 597-14</b>	<b>D 597-28</b>
(1/4") 6,35	<b>D 597-62</b>		
8,0		<b>D 597-16</b>	<b>D 597-30</b>
10,0		<b>D 597-18</b>	<b>D 597-32</b>
12,0			<b>D 597-34</b>
14,0			<b>D 597-36</b>



Scope of delivery

## BOLA Replacement Caps

Material: <b>ETFE</b>	Temperature resistance <b>from -50°C to +150°C</b>	Chemical resistance: <b>+++ universal</b>
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Product description:

Red screw cap made of glass-fibre reinforced ETFE, with handy knurl and hexagon. Very good chemical resistance, suitable for temperatures from -50°C to +150°C.

Thread GL	Tubing/tube O.D. mm	Cat. No.:
14	up to 6,35	<b>D 600-04</b>
18	up to 10,0	<b>D 600-08</b>
25	up to 10,0	<b>D 600-12</b>
25	bigger than 10,1	<b>D 600-16</b>





## BOLA Laboratory Screw Joints HT (High Temp)

Material: <b>PTFE</b>	Material: <b>PPS</b>	Temperature resistance <b>from -50°C to +250°C</b>	Chemical resistance: <b>+++ universal</b>	Pressure: <b>10 bar</b>	Vacuum: <b>suitable</b>
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Product description:

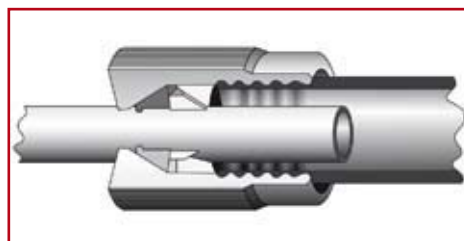
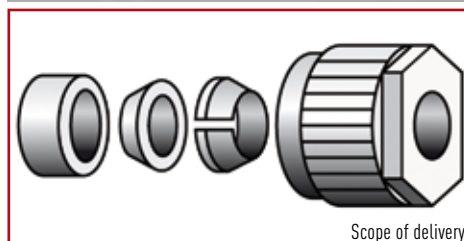
Black screw cap made of PPS, inner parts consisting of a v-ring (PPS), a tapered ring and a sealing ring (both PTFE) as well as an o-ring (for tubing diameters under 3 mm, not exposed to the medium). Good chemical resistance, suitable for temperatures from -50°C to + 250°C.

FDA conform

For tubing O.D. mm	Thread GL 14 Cat. No.:	Thread GL 18 Cat. No.:	Thread GL 25 Cat. No.:	Thread GL 32 Cat. No.:	Thread GL 45 Cat. No.:
(1/32") 0,8	<b>D 628-10</b>				
1,0	<b>D 628-18</b>				
(1/16") 1,6	<b>D 628-26</b>	<b>D 629-18</b>	<b>D 630-18</b>		
2,0	<b>D 628-34</b>	<b>D 629-22</b>	<b>D 630-22</b>		
3,0	<b>D 628-50</b>	<b>D 629-34</b>	<b>D 630-34</b>		
(1/8") 3,2	<b>D 628-58</b>	<b>D 629-42</b>	<b>D 630-42</b>		<b>D 632-18</b>
4,0	<b>D 628-66</b>	<b>D 629-46</b>	<b>D 630-46</b>		
5,0	<b>D 628-70</b>				
6,0	<b>D 628-74</b>	<b>D 629-54</b>	<b>D 630-54</b>	<b>D 631-38</b>	<b>D 632-26</b>
(1/4") 6,35	<b>D 628-78</b>	<b>D 629-56</b>	<b>D 630-58</b>	<b>D 631-42</b>	
8,0	<b>D 628-82</b>	<b>D 629-62</b>	<b>D 630-62</b>	<b>D 631-46</b>	<b>D 632-32</b>
(3/8") 9,52		<b>D 629-68</b>	<b>D 630-68</b>	<b>D 631-52</b>	
10,0		<b>D 629-74</b>	<b>D 630-74</b>	<b>D 631-56</b>	<b>D 632-40</b>
12,0			<b>D 630-80</b>	<b>D 631-60</b>	<b>D 632-44</b>
(1/2") 12,7			<b>D 630-84</b>	<b>D 631-66</b>	
14,0			<b>D 630-90</b>	<b>D 631-72</b>	<b>D 632-48</b>
16,0				<b>D 631-78</b>	<b>D 632-54</b>
18,0				<b>D 631-82</b>	<b>D 632-56</b>
20,0				<b>D 631-88</b>	<b>D 632-60</b>
22,0					<b>D 632-68</b>
(1") 25,4					<b>D 632-74</b>
26,0					<b>D 632-76</b>
30,0					<b>D 632-84</b>
32,0					<b>D 632-90</b>

### Applications:

Connecting equipment and fittings with GL threads with hard-walled tubing or tubes made of glass, plastic or metal. Fixing probes, thermometers, dip tubes or cables in reaction vessels.



**SUITABLE: page 110**  
Tubing for all screw joints.

## BOLA Replacement Inner Parts HT (High Temp)

Material: <b>PTFE</b>	Material: <b>PPS</b>	Temperature resistance <b>from -50°C to +250°C</b>	Chemical resistance: <b>+++ universal</b>	Pressure: <b>10 bar</b>	Vacuum: <b>suitable</b>
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Product description:

Consisting of a v-ring (PPS), a tapered ring and a sealing ring (both PTFE) as well as an o-ring (for tubing diameters under 3 mm, not exposed to the medium). Good chemical resistance, suitable for temperatures from -50°C to + 250°C.

FDA conform

For tubing O.D. mm	Thread GL 14 Cat. No.:	Thread GL 18 Cat. No.:	Thread GL 25 Cat. No.:	Thread GL 32 Cat. No.:	Thread GL 45 Cat. No.:
(1/32") 0,8	<b>D 638-10</b>				
1,0	<b>D 638-18</b>				
(1/16") 1,6	<b>D 638-26</b>	<b>D 639-18</b>	<b>D 640-18</b>		
2,0	<b>D 638-34</b>	<b>D 639-22</b>	<b>D 640-22</b>		
3,0	<b>D 638-50</b>	<b>D 639-34</b>	<b>D 640-34</b>		
(1/8") 3,2	<b>D 638-58</b>	<b>D 639-42</b>	<b>D 640-42</b>		<b>D 642-18</b>
4,0	<b>D 638-66</b>	<b>D 639-46</b>	<b>D 640-46</b>		
5,0	<b>D 638-70</b>				
6,0	<b>D 638-74</b>	<b>D 639-54</b>	<b>D 640-54</b>	<b>D 641-38</b>	<b>D 642-26</b>
(1/4") 6,35	<b>D 638-78</b>	<b>D 639-56</b>	<b>D 640-58</b>	<b>D 641-42</b>	
8,0	<b>D 638-82</b>	<b>D 639-62</b>	<b>D 640-62</b>	<b>D 641-46</b>	<b>D 642-32</b>
(3/8") 9,52		<b>D 639-68</b>	<b>D 640-68</b>	<b>D 641-52</b>	
10,0		<b>D 639-74</b>	<b>D 640-74</b>	<b>D 641-56</b>	<b>D 642-40</b>
12,0			<b>D 640-80</b>	<b>D 641-60</b>	<b>D 642-44</b>
(1/2") 12,7			<b>D 640-84</b>	<b>D 641-66</b>	
14,0			<b>D 640-90</b>	<b>D 641-72</b>	<b>D 642-48</b>
16,0				<b>D 641-78</b>	<b>D 642-54</b>
18,0				<b>D 641-82</b>	<b>D 642-56</b>
20,0				<b>D 641-88</b>	<b>D 642-60</b>
22,0					<b>D 642-68</b>
(1") 25,4					<b>D 642-74</b>
26,0					<b>D 642-76</b>
30,0					<b>D 642-84</b>
32,0					<b>D 642-90</b>



Scope of delivery

## BOLA Fork Wrenches

Material: <b>PA</b>	Temperature resistance <b>from -10°C to +140°C</b>	Chemical resistance: <b>+ good</b>
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Product description:

Made of glass-fibre reinforced polyamide, black, low weight

For thread GL	Wrench size mm	Cat. No.:
14/ 18/ 25	17/ 22/ 27	<b>D 647-08</b>
32/ 45	32/ 42	<b>D 647-24</b>

### Applications:

For tightening or opening BOLA Laboratory Screw Joints also at high working temperatures. Low weight reduces risk of injury or damage.





## BOLA Replacement Caps HT (High Temp)

Material: **PPS** Temperature resistance: **from -50°C to +250°C** Chemical resistance: **+++ universal**

### Product description:

Black screw cap made of glass-fibre reinforced PPS, with handy knurl and hexagon. Good chemical resistance, suitable for temperatures from -50°C to + 250°C.

FDA conform

Thread GL	From tubing O.D. to tubing O.D. mm	Cat. No.:
14	0,8 - 6,0	D 634-10
14	6,1 - 8,0	D 634-14
18	0,8 - 10,0	D 634-20
25	0,8 - 10,0	D 634-30
25	10,1 - 14,0	D 634-34
32	0,8 - 10,0	D 634-40
32	10,0 - 16,0	D 634-44
32	18,0 - 20,0	D 634-48
45	1,6 - 10,0	D 634-50
45	11,0 - 16,0	D 634-54
45	17,0 - 22,0	D 634-58
45	23,0 - 32,0	D 634-62



## BOLA Plugs for Screw Caps

Material: **PTFE** Temperature resistance: **from -200°C to +250°C** Chemical resistance: **+++ universal**

### Product description:

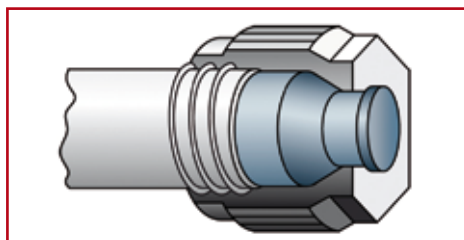
Plugs completely made of PTFE, suitable for replacement caps made of ETFE and PPS. The plug is inserted into the cap and snaps in as soon as the cap is tightened. It can easily be removed for cleaning.

FDA conform

Thread GL	Bore dia. mm	Suitable for cap Cat. No.:	Suitable for cap Cat. No.:	Cat. No.:
14	6	D 600-04	D 634-10	D 549-14
18	10	D 600-08	D 634-20	D 549-18
25	10	D 600-12	D 634-30	D 549-25
32	16		D 634-44	D 549-32
45	22		D 634-58	D 549-45

### Applications:

Safe plugging of unused ports of glass devices or GL connecting parts.



## BOLA Multiple Distributors for Bottles

How can liquids be taken out of a bottle or reaction vessel and simultaneously be distributed to several recipients without spillage? How can I pour different liquids into my vessel without loss?

These questions were the beginning of BOLA Multiple Distributors for Bottles.

They consist of a screw cap with GL thread and a movable body with GL-threaded necks. These necks allow the connection and insertion of hard-walled tubing (e.g. PTFE, PFA, FEP) or tubes made of different materials (glass, metal, plastic) by means of BOLA Laboratory Screw Joints.

The distributors are not only the basis of a distribution system which can be operated under pressure and vacuum. It is also possible to insert probes or electrodes into the GL-threaded necks and to fix them by means of laboratory screw joints. A possible unevenness of the bottle neck is adjusted by an o-ring behind an elastic sealing lip, and the bottle is closed tightly. The product is only exposed to the body of the distributor. The special feature: the body of the distributor can be turned independently from the screw cap. This means, that the completely assembled distributor can be removed and fixed on another bottle without the risk of disarranging the tubing.



### BOLA Multiple Distributors for Bottles

**BESTSELLER**

Material: <b>PFA</b>	Material: <b>PTFE</b>	Temperature resistance <b>from -200°C to +250°C</b>	Chemical resistance: <b>+++ universal</b>	Vacuum: <b>suitable</b>	autoclave: <b>121°</b>
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#### Product description:

Black screw cap made of PPS for bottle thread GL 45, body made of PTFE or PFA. Insertion of tubing with a max. O.D. of 8,5 mm. Very good chemical resistance, for working temperatures up to +250°C

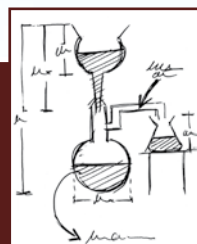
FDA conform

**NEW**

Material	Necks GL	Cat. No.:
PFA	2 x 14	D 614-08
PTFE	3 x 14	D 615-08

#### Applications:

Drawing or inserting aggressive or pure liquids. Inserting tubing, tubes and probes into vessels.



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## BOLA Multiple Distributors for Bottles

Material:	Temperature resistance	Chemical resistance:	Vacuum:	autoclave:
PP	from -20°C to +110°C	++ very good	suitable	121°

Product description:

Green screw cap made of PP for bottle thread GL 45 and body made of PP. Insertion of tubing with a max. O.D. of 8,5 mm. Restricted chemical resistance, for working temperatures up to +110°C.

FDA conform

Necks GL			Cat. No.:
2 x 14			D 612-08
3 x 14			D 613-08

### Applications:

Drawing or inserting liquids. Inserting tubing, tubes and probes into vessels.



## BOLA Multiple Distributors with Stopcocks

Material:	Temperature resistance	Chemical resistance:	Vacuum:	autoclave:
PTFE	from -20°C to +110°C	+++ universal	suitable	121°

Product description:

Black screw cap made of PPS for bottle thread GL 45, body made of PTFE. Each neck with stopcock. Tubing can not be inserted through the stopcocks. Bores with press fit on the lower side allow the connection of tubing with O.D. 6 mm so that a connection to the bottom can be made. Very good chemical resistance, for working temperatures up to +250°C

NEW

FDA conform

For tubing O.D. max. mm	Stopcocks	Stopcock bore dia. mm	Necks GL	Cat. No.:
8	2	4	2 x 14	D 616-08
8	3	4	3 x 14	D 616-16

### Applications:

Drawing or inserting aggressive or pure liquids. Inserting tubing, tubes and probes into vessels.



## BOLA Multiple Distributors for Bottles

Material:	Temperature resistance	Chemical resistance:	Vacuum:	autoclave:
PTFE	from -200°C to +250°C	+++ universal	suitable	121°

Product description:

Black/blue screw cap for thread according to chart below.

Body made of PTFE

FDA conform

	For thread	For tubing O.D. max. mm	Necks	Cat. No.:
<b>A</b>	GL 25	2 x 6	2 x GL 14	D 619-04
	GL 25	3 x 6	3 x GL 14	D 619-08

	For thread	For tubing O.D. max. mm	Necks	Cat. No.:
<b>A</b>	GL 32	2 x 8	2 x GL 14	D 621-04
	GL 32	3 x 8	3 x GL 14	D 621-08

	For thread	For tubing O.D. max. mm	Necks	Cat. No.:
<b>A</b>	S 40	2 x 8	2 x GL 14	D 624-04
	S 40	3 x 8	3 x GL 14	D 624-08

	For thread	For tubing O.D. max. mm	Necks	Cat. No.:
<b>B</b>	GL 45	3 x 10	3 x GL 18	D 618-16
	GL 45	2 x 6 / 1 x 14	2 x GL 14 / 1 x GL 25	D 618-24
	GL 45	2 x 14	2 x GL 25	D 618-44
	GL 45	3 x 14	3 x GL 25	D 618-46
	GL 45	4 x 14	4 x GL 25	D 618-48

	For thread	For tubing O.D. max. mm	Necks	Cat. No.:
<b>NEW C</b>	GLS 80	4 x 12,7	4 x GL 18	D 754-16
	GLS 80	3 x 12,7 / 1 x 14	3 x GL 18 / 1 x GL 25	D 754-24

	For thread	For tubing O.D. max. mm	Necks	Cat. No.:
<b>NEW D</b>	38/430	2 x 6	2 x GL 14	D 651-08





## BOLA Multiple Distributors for Bottles

Material:	Temperature resistance	Chemical resistance:	Vacuum:	autoclave:
PTFE	from -200°C to +250°C	+++ universal	suitable	121°

### Product description:

Blue screw cap made of PPS for bottle thread 38/430, body made of PTFE. One GL 18 neck for inserting tubing with a max. O.D. of 10 mm, additional opening for aeration. Very good chemical resistance, for working temperatures up to max. +250°C

**NEW**

FDA conform

For thread	For tubing O.D. max. mm	Necks	Cat. No.:
38/430	10	1 x GL 18 and aeration	D 650-08

### Applications:

Drawing or inserting of aggressive or pure liquids. Inserting tubing, tubes and probes into vessels.



## BOLA Multiple Distributors for Bottles

Material:	Temperature resistance	Chemical resistance:	Vacuum:	autoclave:
PP	from -20°C to +110°C	++ very good	suitable	121°

### Product description:

Black/blue screw cap for thread according to chart below. Body made of PP.

**NEW**

FDA conform

For thread	For tubing O.D. max. mm	Necks	Cat. No.:
38/430	2 x 6	2 x GL 14	D 652-08
For thread GLS	For tubing O.D. max. mm	Necks	Cat. No.:
80	4 x 12,7	4 x GL 18	D 750-16
80	3 x 12,7 / 1 x 14	3 x GL 18 / 1 x GL 25	D 750-24





## BOLA Flexible Distributors

BOLA Flexible Distributors have been developed especially for the connection of elastic tubing. They consist of a screw cap with GL thread and a movable body with hose connectors for attaching tubing. Hose connectors on the lower side also allow a connection of tubing to reach the bottom of the bottle.

The flexible distributors are the basis of a distribution system and can also be operated under pressure and vacuum. The bent hose connectors prevent bends in the tubing. A possible unevenness of the bottle neck is adjusted by an o-ring behind an elastic sealing lip, and the bottle is closed tightly. The product is only exposed to the body of the distributor. The special clou: the body of the distributor can be turned independently from the screw cap. This means, that the completely assembled distributor can be removed and fixed on another bottle without the risk of disarranging the tubing.



**BESTSELLER**

### BOLA Flexible Distributors

Material:	Temperature resistance	Chemical resistance:	Vacuum:	autoclave:
PP	from -20°C to +110°C	++ very good	suitable	121°

Product description:

Green screw cap made of PP for bottle thread GL 45 and body with hose connectors made of PP. Bent hose connectors on upper side, straight hose connectors on lower side. Restricted chemical resistance, for working temperatures up to max. +110°C.

**NEW**

FDA conform

Number of hose connectors	For tubing I.D. mm	Bore of hose connectors mm	Cat. No.:
2	6 - 9	6	D 800-24
3	6 - 9	6	D 800-36
2	7 - 11	7	D 800-48

#### Applications:

Drawing or inserting liquids. For elastic tubing (e.g. Vitron®, Tygon®, silicone).



## BOLA Distributors for Bottles

Material: PTFE Temperature resistance: from -50°C to +200°C Chemical resistance: +++ universal

Product description:

Black screw cap made of PPS for bottle thread GL 45. Without stopcocks: body made of PTFE with 2 or 4 ports with female thread UNF 1/4" 28 G on upper and lower sides. With stopcocks: body made of PTFE with 2 or 3 ports with female thread UNF 1/4" 28 G on upper and lower sides and stopcock made of FEP for each port. The body of the distributor can be turned independently from the screw cap. This means, that the completely assembled distributor can be removed and fixed on another bottle without the risk of disarranging the tubing. Very good chemical resistance, for working temperatures up to +200°C.

FDA conform

	Number of stopcocks	For tubing I.D. x O.D. mm	Bore dia. mm	Cat. No.:
A	without	0,8 x 1,6	0,8	F 745-02
	without	1,6 x 3,2	1,6	F 745-04
	without	0,8 x 1,6	0,8	F 745-10
	without	1,6 x 3,2	1,6	F 745-12
B	2	0,8 x 1,6		F 746-02
	2	1,6 x 3,2		F 746-04
	3	0,8 x 1,6		F 746-10
	3	1,6 x 3,2		F 746-12

Applications:  
HPLC



## BOLA Threaded Adaptors

Material: PTFE Temperature resistance: from -200°C to +200°C Chemical resistance: +++ universal

Product description:

Allow the use of BOLA Multiple Distributors for Bottles with female thread GL 45 also on bottles with GL 32, GL 40 and S 40 threads.

FDA conform

Example 1 for Cat. No. H 978-30:

Transition from GL40/S40 to GL 45

Suitable for Merck® bottles with GL 40 thread or for all PFA-, PTFE bottles and jars with thread GL 40 and S 40

Example 2 for Cat. No. H 978-40:

Transition from GL 32 to GL 45

Suitable for bottles with GL 32 thread, e.g. from company Duran Group (formerly Schott AG)

	Bottle thread GL / S	Top thread GL	Cat. No.:
NEW A	GL 32	45	H 978-30
B	GL/S 40	45	H 978-40





## BOLA Chromatography Adaptors

Material:	Temperature resistance	Chemical resistance:
PTFE	from -50°C to +200°C	+++ universal

### Product description:

Black screw cap made of PPS with GL thread. Body made of PTFE with one port with female thread UNF 1/4"28G for connection of mini fittings. A possible unevenness of the bottle neck is adjusted by an o-ring behind an elastic sealing lip, and the bottle is closed tightly. The product is only exposed to the body of the adaptor. Very good chemical resistance, for working temperatures up to max. +200°C.

FDA conform

Thread of screw cap GL	For tubing I.D. x O.D. mm	Bore dia. mm	Cat. No.:
14	0,8 x 1,6	0,8	F 755-03
18	0,8 x 1,6	0,8	F 755-06
25	0,8 x 1,6	0,8	F 755-09
32	0,8 x 1,6	0,8	F 755-12
45	0,8 x 1,6	0,8	F 755-15
Thread of screw cap GL	For tubing I.D. x O.D. mm	Bore dia. mm	Cat. No.:
14	1,6 x 3,2	1,6	F 757-03
18	1,6 x 3,2	1,6	F 757-06
25	1,6 x 3,2	1,6	F 757-09
32	1,6 x 3,2	1,6	F 757-12
45	1,6 x 3,2	1,6	F 757-15

### Applications:

HPLC



## BOLA Screw Caps High Chem

Material:	Material:	Temperature resistance	Chemical resistance:	Vacuum:	autoclave:
PTFE	PP	from -20°C to +140°C	+++ universal	suitable	121°

### Product description:

Knurled blue screw cap made of PP with GLS 80 thread. Sealing insert made of PTFE with elastic sealing lip and an o-ring for balancing unevenness on the bottle neck. Very good chemical resistance, the product is only exposed to PTFE.

NEW

FDA conform

Thread GLS	Cat. No.:
80	H 998-18

### Applications:

- » suitable for glass bottles with GLS 80 thread
- » for the storage of highly aggressive or pure chemicals
- » tight sealing even at high thermal fluctuations



## BOLA Multiple Distributors with Ground Joint

Material:	Temperature resistance	Chemical resistance:	Vacuum:	autoclave:
PTFE	from -200°C to +250°C	+++ universal	suitable	121°

Product description:

Completely made of PTFE. With ground joint size 29/32 and two GL-threaded necks. Integrated special nut for easy unlocking of the ground joint. For the connection of tubing or tube made of glass, plastic or metal by means of laboratory screw joints.

FDA conform

For ground joint NS	For tubing O.D. max. mm	Necks GL	Cat. No.:
29/32	2 x 8	2 x 14	D 620-08

### Applications:

For bottles or reaction vessels with ground joint. For transferring liquids without contamination. For connection to a liquid source or a pressure or vacuum system.



## BOLA Ground Joint-GL-Adaptors

Material:	Material:	Temperature resistance	Chemical resistance:	Vacuum:
PTFE	PPS	from -50°C to +250°C	+++ universal	suitable

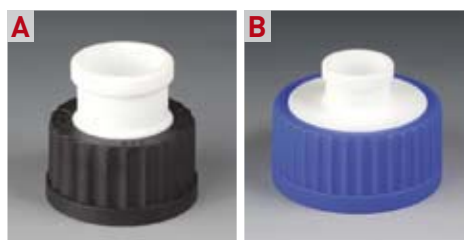
Product description:

Black screw cap made of PPS with GL 45 thread or blue screw cap made of PP with GLS 80 thread, movable insert with ground joint made of PTFE. Transition from a ground joint to a glass thread. The body can be turned independently from the screw cap. The completely assembled adaptor can be removed and fixed on another bottle without the risk of disarranging the tubing. Very good chemical resistance, for working temperatures up to max. +250°C.

FDA conform

A

For bottle thread GL	Ground joint NS	Cat. No.:
45	29/32	D 734-40
45	45/40	D 734-44



Material:	Material:	Temperature resistance	Chemical resistance:	Vacuum:
PTFE	PP	from -50°C to +250°C	+++ universal	suitable

NEW

B

For bottle thread GLS	Ground joint NS	Cat. No.:
80	29/32	D 734-50
80	45/40	D 734-54

### Applications:

Assembly of components with ground joint (condensers, stirrer bearings etc.) on glass bottles or GL-threaded necks.

# BOLA Distributors for Reaction Vessels

Suitable for bottles with GLS 80 thread from Duran Group (formerly Schott AG).

Consisting of a screw cap with GLS 80 thread and a movable body with several lateral necks and one central neck.

The GL-threaded necks allow the connection of hard-walled tubing (PTFE, PFA, FEP) or tubes (glass, metal, plastic) by means of BOLA Laboratory Screw Joints. It is also possible to insert and fix probes or electrodes. In addition, the connection of elastic tubing can be made by means of BOLA Hose Connectors.

The type "Center Neck with Ground Joint" allows the use of a stirrer bearing which assures a central position of a stirrer shaft in the vessel. Other components with ground joint (e.g. condensers, funnels etc.) can also be connected easily.

The type "Center Neck with GL Thread" is supplied with an exchangeable stirrer bearing for the center neck.

A possible unevenness of the bottle neck is adjusted by an o-ring behind an elastic sealing lip, and the bottle is closed tightly. The product is only exposed to the body of the distributor. The special clou: the body of the distributor can be turned independently from the screw cap. This means, that the completely assembled distributor can be removed and fixed on another bottle without the risk of disarranging the tubing.

## BOLA Distributors for Reaction Vessels (S)

Material: <b>PTFE</b>	Material: <b>PP</b>	Temperature resistance <b>from -20°C to +140°C</b>	Chemical resistance: <b>+++ universal</b>	Vacuum: <b>suitable</b>	autoclave: <b>121°</b>
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Product description:

Blue screw cap made of PP with GLS 80 thread, body made of PTFE with center ground joint and lateral GL-threaded or ground joint necks. Very good chemical resistance, for working temperatures up to max. +250°C (PP screw cap max. +140°C)

**NEW**

FDA conform

GL	Lateral necks NS	Center neck NS	For tubing O.D. max. mm	Cat. No.:
4 x 18		1 x 29/32	4 x 10	<b>D 748-16</b>
2 x 18	2 x 29/32	1 x 29/32	2 x 14	<b>D 748-40</b>
	2 x 29/32 2 x 14/23	1 x 29/32		<b>D 748-60</b>

**Applications:**

Drawing or inserting aggressive or pure liquids. Inserting tubing, tubes and probes into vessels. Use of a stirrer bearing in center neck for central position of a stirrer shaft.



## BOLA Distributors for Reaction Vessels (R)

Material: <b>PTFE</b>	Material: <b>PP</b>	Temperature resistance <b>from -20°C to +140°C</b>	Chemical resistance: <b>+++ universal</b>	Vacuum: <b>suitable</b>	autoclave: <b>121°</b>
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Product description:

Blue screw cap made of PP with GLS 80 thread, body made of PTFE. Center neck with GL 25 thread for connecting tubing or tube up to a max. O.D. of 15 mm, four lateral necks with GL 18 thread. Exchangeable shaft guide (PTFE) with screw cap (PPS) for inserting and fixing a stirrer shaft in the center neck included. Very good chemical resistance, for working temperatures up to max. +250°C (PP screw cap max. +140°C)

**NEW**

FDA conform

Lateral necks GL	Center neck GL	For tubing O.D. max. mm	Dia. of stirrer shaft mm	Cat. No.:
4 x 18	1 x 25	4 x 10	8	<b>D 744-16</b>
4 x 18	1 x 25	4 x 10	10	<b>D 744-24</b>

**Applications:**

Drawing or inserting aggressive or pure liquids. Inserting tubing, tubes and probes into vessels. Use of a stirrer bearing in center neck for central position of a stirrer shaft.



## BOLA Distributors for Reaction Vessels (S)

Material:	Temperature resistance	Chemical resistance:	Vacuum:	autoclave:
PP	from -20°C to +110°C	++ very good	suitable	121°

### Product description:

Blue screw cap made of PP with GLS 80 thread, body made of PP with center ground joint and lateral GL-threaded necks. Restricted chemical resistance, for working temperatures up to max. +110°C

**NEW**

FDA conform

Lateral necks GL	Center neck NS	For tubing O.D. max. mm	Cat. No.:
4 x 18	29/32	4 x 10	D 746-16

### Applications:

Drawing or inserting aggressive or pure liquids. Inserting tubing, tubes and probes into vessels. Use of a stirrer bearing in center neck for central position of a stirrer shaft.



**SUITABLE:** page 110  
Tubing for all screw joints



## BOLA Distributors for Canisters

These distributors are ideal for drawing liquids from canisters and for distributing these liquids to several vessels.

They consist of a screw cap for canister threads S 55 or S 60 and a movable body with three GL-threaded necks. The threaded necks allow the connection of tubing or tubes made of glass, metal, or plastic by means of BOLA Laboratory Screw Joints. The distributor can also be integrated into a pressure or vacuum system.

A possible unevenness of the canister thread is adjusted by an o-ring behind an elastic sealing lip, and the canister is closed tightly. The product is only exposed to the body of the distributor.

The special clou: the body of the distributor can be turned independently from the screw cap. This means, that the completely assembled distributor can be removed and fixed on another canister without the risk of disarranging the tubing.

### BOLA Distributors for Canisters

Material:	Temperature resistance	Chemical resistance:	autoclave:
PTFE	from -200°C to +250°C	+++ universal	121°

#### Product description:

Screw cap made of glass-fibre reinforced PTFE for canister thread S 55 or S 60, movable body with GL-threaded necks made of PTFE. Very good chemical resistance, for working temperatures up to max. +250°C. The product is only exposed to PTFE.

**NEW**

FDA conform

Canister thread S	Necks GL	Cat. No.:
55	2 x 14 / 1 x 18	D 760-16
60	3 x 18	D 760-24

#### Applications:

Drawing or inserting aggressive or pure liquids. Inserting tubing, tubes and probes into canisters.



### BOLA Distributors for Canisters

Material:	Temperature resistance	Chemical resistance:	autoclave:
PP	from -20°C to +110°C	++ very good	121°

#### Product description:

Screw cap made of PP for canister thread S 55 or S 60, movable body with GL-threaded necks made of PP. Restricted chemical resistance, for working temperatures up to max. +110°C.

**NEW**

FDA conform

Canister thread S	Necks GL	Cat. No.:
55	2 x 14 / 1 x 18	D 764-16
60	3 x 18	D 764-24

#### Applications:

Drawing or inserting aggressive or pure liquids. Inserting tubing, tubes and probes into canisters.





# BOLA Swivelling Screw Fittings

BOLA Swivelling Screw Fittings for GL threads or ground joints are ideal for fixing all kinds of probes, tubes or hard-walled tubing safely in a specific angle. It is possible to position supply tubes or probes independently from the angle of the neck.

Damages of supply tubes or probes due to collision with the stirrer shaft can be avoided.

**BESTSELLER**

## BOLA Swivelling Screw Fittings with Ground Joint

Material: PTFE      Material: PPS      Temperature resistance: from -50°C to +250°C      Chemical resistance: +++ universal      Vacuum: suitable

Product description:

Ground joint body made of PTFE, screw cap made of PPS. Probes, tubes or tubing are firstly inserted through the fitting, then the fitting is put into the ground joint and the inserted element can be fixed in the requested position.

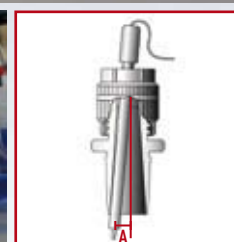
**NEW**

FDA conform

Ground joint size NS	For probe/tube O.D. mm	Max. angle A mm	Thread of screw cap GL	Cat. No.:
19/26	6	4°	18	D 692-24
29/26	6	8°	25	D 692-34
29/32	8	7°	25	D 692-44
29/32	10	6°	25	D 692-54
29/32	12	5°	25	D 692-64

**Applications:**

Insertion of probes, tubes or tubing into vessels with ground joints for avoiding collision with the stirrer shaft.



## BOLA Swivelling Screw Fittings

Material: PTFE      Material: PPS      Temperature resistance: from -50°C to +250°C      Chemical resistance: +++ universal      Pressure: 5 bar      Vacuum: suitable

Product description:

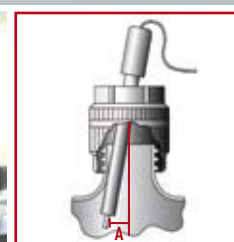
Screw cap made of PPS with inner parts made of PTFE. Probes, tubes or tubing are firstly inserted through the fitting, then the fitting is screwed on the GL neck and the inserted element can be fixed in the requested position.

FDA conform

For probe/tube O.D. mm	For thread GL	Max. angle A mm	Cat. No.:
2,0	18	10°	D 690-14
(1/8") 3,2	18	9°	D 690-18
6,0	18	5°	D 690-24
6,0	25	12°	D 690-34
8,0	25	10°	D 690-38
(3/8") 9,52	25	9°	D 690-42
10,0	25	8°	D 690-46
12,0	25	6°	D 690-50
19,0	32	3°	D 690-68

**Applications:**

Insertion of probes, tubes or tubing into vessels with GL necks for avoiding collision with the stirrer shaft.



## BOLA Multiple Distributors for Barrels

These distributors are ideal for drawing liquids from barrels and for distributing these liquids to several vessels. They consist of a screw cap for barrels with female thread and a movable body with GL-threaded necks. The threaded necks allow the connection of tubing or tubes made of glass, metal, or plastic by means of BOLA Laboratory Screw Joints. Liquids can be drawn from the barrel without contamination of the ambient air by leaking vapours. In addition, the distributor can be integrated in a pressure or vacuum system.

The special clou: the body of the distributor can be turned independently from the screw cap. This means, that the completely assembled distributor can be removed and fixed on another barrel without the risk of disarranging the tubing.

For easy determination of the suitable distributor, you can find the dimensions of the barrel threads on page 237.

### BOLA Multiple Distributors for Barrels

Material:	Temperature resistance	Chemical resistance:	Pressure:	Vacuum:	autoclave:
PTFE	from -200°C to +250°C	+++ universal	1 bar	suitable	121°

Product description:

Screw cap made of glass-fibre reinforced PTFE for barrels with female thread, body with GL-threaded necks made of PTFE. Very good chemical resistance, for working temperatures up to max. + 250°C. The product is only exposed to PTFE.

**NEW**

FDA conform

For female barrel thread	Necks GL	For tubing O.D. max. mm	Cat. No.:
R2"	4 x 18	10	D 696-08
R2"	2 x 18 / 1 x 25	2 x 10 / 1 x 14	D 696-14
Mauser 2"	4 x 18	10	D 697-08
Mauser 2"	2 x 18 / 1 x 25	2 x 10 / 1 x 14	D 697-14
Tri-Sure 2"	4 x 18	10	D 698-08
Tri-Sure 2"	2 x 18 / 1 x 25	2 x 10 / 1 x 14	D 698-14

**Applications:**

Drawing or inserting aggressive or pure liquids. Inserting tubing, tubes and probes into barrels.



### BOLA Ring Wrench

Material:	Temperature resistance	Chemical resistance:
PP	from -20°C to +110°C	+++ universal

Product description:

Ring wrench made of PP.

I.D. mm	Total length mm	Cat. No.:
78	200	D 701-24

**Applications:**

For opening and closing BOLA Multiple Distributors for Barrels.







## BOLA Barrel Aeration

Material: <b>PTFE</b>	Temperature resistance <b>from -200°C to +250°C</b>	Chemical resistance: <b>+++ universal</b>	Vacuum: <b>suitable</b>	autoclave: <b>121°</b>
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### Product description:

Consisting of a body made of PTFE for female thread R 3/4" with a GL 32 thread, a PTFE/silicone gasket, an exchangeable filtering membrane (2µm) made of PTFE and a screw cap made of PPS. Very good chemical resistance, the product is only exposed to PTFE.

Pressure compensation at 0,1 bar differential pressure.

Max. flow rate:

- » at 0,5 bar differential pressure: 80 l/h
- » at 1,0 bar differential pressure: 320 l/h

FDA conform

For female barrel thread	O.D. of membrane mm	Thickness of membrane mm	Thread of screw cap GL	Cat. No.:
R3/4"	29	0,2	32	N 1696-32

### Applications:

For pressure compensation during filling or drawing of liquids. Integrated membrane prevents contamination of the product. Membranes are available separately (see Cat. No. N 1699-32 on page 74).



## BOLA Sets for Pressure Compensation

Material:	Temperature resistance	Chemical resistance:	Vacuum:	autoclave:
PTFE	from -200°C to +250°C	+++ universal	suitable	121°

Product description:

Consisting of screw cap made of PPS for GL thread, PTFE/silicone gasket and exchangeable filtering membrane made of PTFE. High chemical resistance, the product is only exposed to PTFE. Pressure compensation already at 0,1 bar differential pressure.

FDA conform

For thread GL	Dia. of membrane mm	Flow rate at 0,5 bar /l/h	Flow rate at 1 bar /l/h	Cat. No.:
14	12	16	25	N 1698-14
18	16	25	85	N 1698-18
25	23	50	180	N 1698-25
32	29	80	320	N 1698-32
45	42	210	800	N 1698-45

### Applications:

For pressure compensation during filling or drawing of liquids. Prevention of unintentional overpressure or vacuum in the vessel. Integrated membrane prevents contamination of the product. Membranes are available separately (see Cat. No. N 1699-32 on page 74).



## BOLA Membranes for Pressure Compensation

Material:	Temperature resistance	Chemical resistance:	Vacuum:	autoclave:
PTFE	from -200°C to +250°C	+++ universal	suitable	121°

Product description:

Filtering membrane (2µm) made of PTFE

FDA conform

For thread GL	Dia. of membrane mm	Flow rate at 0,5 bar /l/h	Flow rate at 1 bar /l/h	Cat. No.:
14	12	16	25	N 1699-14
18	16	25	85	N 1699-18
25	23	50	180	N 1699-25
32	29	80	320	N 1699-32
45	42	210	800	N 1699-45

### Applications:

Replacement membrane for BOLA Set for Pressure Compensation (see Cat. No. N 1698-... on page 74 )



## BOLA Barrel-GL-Adaptors

Material:	Temperature resistance	Chemical resistance:	Vacuum:	autoclave:
PTFE	from -200°C to +250°C	+++ universal	suitable	121°

Product description:

Adaptors made of PTFE/PP, for transition from female barrel thread R2 Inch or Tri-Sure 2 Inch to a GL 45 thread.

» Made of PTFE, very good chemical resistance, working temperatures up to max. +250°C

**NEW**

FDA conform

**A**

Material	For barrel thread	Thread of head GL	Bore dia. max. mm	Dia. of grip ca. mm	Cat. No.:
PTFE	R2"	45	32	78	D 736-12
PTFE	Tri-Sure 2"	45	32	67	D 736-24

Material:	Temperature resistance	Chemical resistance:	Vacuum:	autoclave:
PP	from -20°C to +250°C	++ very good	suitable	121°

» Made of PP, restricted chemical resistance, working temperatures up to max. +110°C

**NEW**

FDA conform

**B**

Material	For barrel thread	Thread of head GL	Bore dia. max. mm	Dia. of grip ca. mm	Cat. No.:
PP	R2"	45	32	78	D 737-12
PP	Tri-Sure 2"	45	32	67	D 737-24

### Applications:

For the connection of for example BOLA Multiple Distributors for Bottles with a GL 45 thread for inserting tubing, tubes or probes.



# BOLA Screw Caps

BOLA Screw Caps are available as closed caps for closing bottles and vessels with GL thread or as caps with aperture which can for example hold tubes or – in connection with a gasket - be used as septum for sampling. All caps have a handy knurl for easy opening and closing.

They are available for bottle threads GL 14 to GL 45 and are either made of glass-fibre reinforced PTFE, PPS or PBTP. The closed caps are either supplied with an integrated PTFE/silicone gasket or with an integrated PTFE membrane.

The caps which are made of glass-fibre reinforced **PTFE** have a high chemical resistance and can be used with aggressive products.

**PPS** offers a high mechanical strength; even caps with small diameters can be closed safely. At the same time, these caps can be used at high temperatures due to a good chemical and thermal resistance.

**PBTP** caps are an ideal and cheap choice for all applications which do not need high chemical and thermal resistance.

## BOLA Screw Caps with Aperture

### Product description:

Screw cap with handy knurl, suitable for GL threads, with aperture, made of glass-fibre reinforced PTFE, PPS or PBTP

Material:	Temperature resistance	Chemical resistance:
<b>PTFE/Glass-fibre</b>	<b>from -50°C to +250°C</b>	<b>+++ universal</b>

	For thread GL	Dia. of aperture mm	Cat. No.:
FDA conform	14	9,2	H 983-01
	18	11,0	H 983-02
	25	15,0	H 983-03
	32	20,0	H 983-04
	45	34,0	H 983-05

Material:	Temperature resistance	Chemical resistance:
<b>PPS</b>	<b>from -50°C to +250°C</b>	<b>+++ universal</b>

	For thread GL	Dia. of aperture mm	Cat. No.:
	14	9,2	H 995-14
	18	11,0	H 995-18
	25	15,0	H 995-25
	32	20,0	H 995-32
	45	34,0	H 995-45

Material:	Temperature resistance	Chemical resistance:
<b>PBTP</b>	<b>from -45°C to +180°C</b>	<b>+ good</b>

	For thread GL	Dia. of aperture mm	Cat. No.:
	14	9,2	H 984-01
	18	11,0	H 984-02
	25	15,0	H 984-03
	32	20,0	H 984-04
	45	34,0	H 984-05

### Applications:

As joining piece between tubes with flange and tubes with GL thread, suitable gasket rings are available separately (Cat. No. H 975 / H 977 / on page 78). As septum by inserting a separately available gasket (Cat. No. H 973 on page 79)



## BOLA Screw Caps

### Product description:

Screw cap with handy knurl, with integrated PTFE/silicone gasket, suitable for GL threads, made of glass-fibre reinforced PTFE, PPS or PBTP. After assembly, the product is only exposed to PTFE.

Material: <b>PTFE</b>	Temperature resistance <b>from -50°C to +250°C</b>	Chemical resistance: <b>+++ universal</b>
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FDA conform	For thread GL			Cat. No.:
	14			H 986-01
	18			H 986-02
	25			H 986-03
	32			H 986-04
	45			H 986-05

Material: <b>PPS</b>	Temperature resistance <b>from -50°C to +250°C</b>	Chemical resistance: <b>+++ universal</b>
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**BESTSELLER**

 FDA conform	For thread GL			Cat. No.:
	14			H 993-14
	18			H 993-18
	25			H 993-25
	32			H 993-32
	45			H 993-45

Material: <b>PBTP</b>	Temperature resistance <b>from -45°C to +180°C</b>	Chemical resistance: <b>+ good</b>
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FDA conform	For thread GL			Cat. No.:
	14			H 987-01
	18			H 987-02
	25			H 987-03
	32			H 987-04
	45			H 987-05

### Applications:

For closing bottles and vessels with GL threads.





## BOLA Screw Caps HT (High Temp)

Material: <b>PPS</b>	Temperature resistance <b>from -200°C to +250°C</b>	Chemical resistance: <b>+++ universal</b>	Vacuum: <b>suitable</b>
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### Product description:

Screw cap with handy knurl made of PPS with elastic and highly chemical resistant integrated PTFE-membrane gasket. After assembly, the product is only exposed to PTFE. The cap provides a high mechanical and thermal resistance (up to max. +250°C).

FDA conform

For thread GL			Cat. No.:
14			H 994-14
18			H 994-18
25			H 994-25
32			H 994-32
45			H 994-45

### Applications:

For all applications which need high chemical resistance and sealing. Usable under vacuum, e.g. cold traps. The gasket is physiologically safe according to VDI/VDE guideline 2480 and fulfils FDA 21 CFR 177-1550 requirements.



## BOLA One-Sided Gaskets

**BESTSELLER**

Material: <b>PTFE</b>	Temperature resistance <b>from -200°C to +250°C</b>	Chemical resistance: <b>+++ universal</b>
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### Product description:

Silicone ring with PTFE washer. After assembly, the product is only exposed to PTFE. Packing unit: 10 pieces, differing ordering quantities are rounded up to factor 10

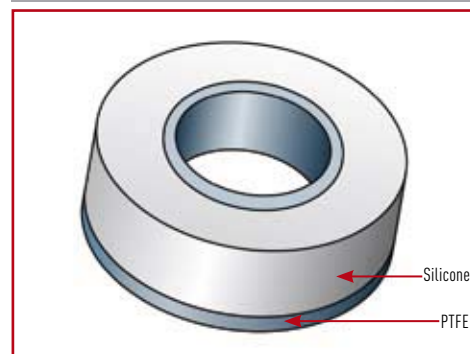


FDA conform

For thread GL	O.D. x I.D. x Height mm	For tube dia. mm	Cat. No.:
14	12 x 6,0 x 3,5	5,5 x 6,5	H 975-02
18	16 x 6,0 x 4,5	5,5 x 6,5	H 975-04
18	16 x 8,0 x 4,5	7,5 x 9,0	H 975-06
18	16 x 10,0 x 4,5	9,0 x 11,0	H 975-10
25	22 x 8,0 x 6,5	7,5 x 9,0	H 975-12
25	22 x 10,0 x 6,5	9,0 x 11,0	H 975-14
25	22 x 12,0 x 6,5	11,0 x 13,0	H 975-18
32	29 x 10,0 x 9,0	9,0 x 11,0	H 975-20
32	29 x 12,0 x 9,0	11,0 x 13,0	H 975-22
32	29 x 14,0 x 9,0	13,0 x 15,0	H 975-26
32	29 x 16,0 x 9,0	15,0 x 17,0	H 975-28
32	29 x 18,0 x 9,0	17,0 x 19,0	H 975-30
45	42 x 26,0 x 9,0	25,0 x 27,0	H 975-34
45	42 x 32,0 x 9,0	31,0 x 33,0	H 975-36

### Applications:

As gasket for BOLA Screw Caps with Aperture (Cat. No. H 983/ H 984/ H 995 on page 76). Also suitable for GL caps of company Duran Group (formerly Schott AG).



## BOLA Double-Sided Gaskets

Material: **PTFE** Temperature resistance: **from -200°C to +250°C** Chemical resistance: **+++ universal**

Product description:

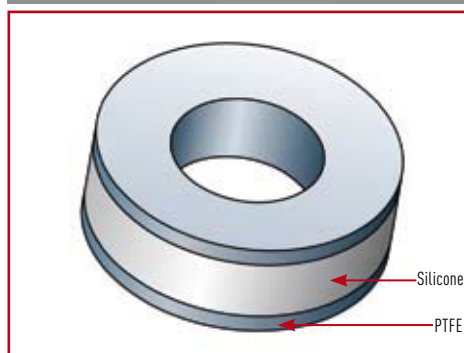
Silicone ring with double-sided PTFE washer. After assembly, the product is only exposed to PTFE.

FDA conform

For thread GL	O.D. x I.D. x Height mm	For tube dia. mm	Cat. No.:
14	12 x 6,0 x 3,6	5,5 x 6,5	H 977-08
18	16 x 6,0 x 4,6	5,5 x 6,5	H 977-16
18	16 x 8,0 x 4,6	7,5 x 9,0	H 977-18
18	16 x 10,0 x 4,6	9,0 x 11,0	H 977-20
25	22 x 8,0 x 6,6	7,5 x 9,0	H 977-28
25	22 x 10,0 x 6,6	9,0 x 11,0	H 977-32
25	22 x 12,0 x 6,6	11,0 x 13,0	H 977-36

### Applications:

As gasket for BOLA Screw Caps with Aperture (Cat. No. H 983/ H 984/ H 995 on page 76). Also suitable for GL caps of company Duran Group (formerly Schott AG).



## BOLA Gaskets for Screw Caps

Material: **PTFE** Temperature resistance: **from -200°C to +250°C** Chemical resistance: **+++ universal**

Product description:

Upper side made of PTFE, lower side made of silicone-elastomer for balancing unevennesses on sealing surfaces. After assembly, the product is only exposed to PTFE.

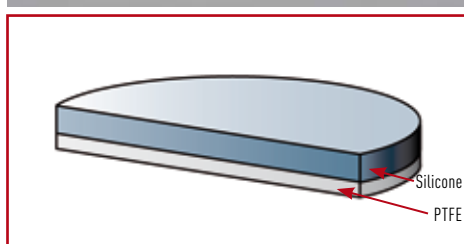


FDA conform

For thread GL	Dia. of gasket mm	Thickness of gasket mm	Cat. No.:
14	13,0	3,3	H 973-14
18	16,8	3,3	H 973-18
25	23,5	3,3	H 973-25
32	30,2	3,3	H 973-32
45	43,2	3,3	H 973-45

### Applications:

As gasket for BOLA Screw Caps with Aperture (Cat. No. H 986/ H 987/ H 993 on page 77). As septum in combination with BOLA-Screw-Caps with Aperture (Cat. No. H 983 / H 984/ H 995 on page 76).





## BOLA SVL Gaskets

Material:	Temperature resistance	Chemical resistance:
PTFE	from -200°C to +250°C	+++ universal

Product description:

Silicone ring with double-sided washer made of PTFE. Suitable for Torion-/SVL threads. Universal chemical resistance, the product is only exposed to PTFE.

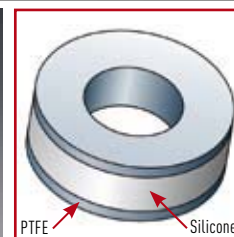
**NEW**

FDA conform

For SVL thread I.D. mm	O.D. of gasket mm	For tube dia. mm	Height mm	Cat. No.:
15	15	5,6 x 6,4	5	H 979-14
15	15	7,6 x 8,4	5	H 979-24
22	22	13,6 x 14,4	5	H 979-32

**Applications:**

As gasket for tubing, tubes or probes inserted through Torion threads.



## BOLA Threaded Couplings

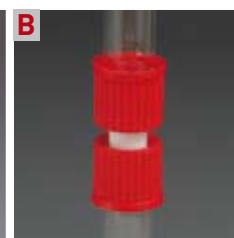
Material:	Temperature resistance	Chemical resistance:
PTFE	from -200°C to +250°C	+++ universal

Product description:

Two screw caps made of PPS (up to +250°C) or PBTP (+180°C) with GL thread and a PTFE/FPM gasket. Connection piece made of PTFE. The product is only exposed to PTFE. For connecting two GL threads of the same size.

FDA conform

For thread GL	Length from sealing lip to sealing lip mm	A Cat. No.: PPS cap	B Cat. No.: PBTP cap
14	15	H 900-01	H 901-01
18	17	H 900-02	H 901-02
25	22	H 900-03	H 901-03
32	22	H 900-04	H 901-04
45	23	H 900-05	H 901-05



## BOLA Reducing Screw Thread Adaptor Couplings

Material:	Temperature resistance	Chemical resistance:
PTFE	from -200°C to +250°C	+++ universal

Product description:

Two screw caps made of PPS with GL thread and a PTFE/FPM gasket. Connection piece made of PTFE. The product is only exposed to PTFE. For connecting two GL threads of different sizes.

FDA conform

From thread GL	To thread GL	Length from sealing lip to sealing lip mm	Cat. No.:
18	14	20,0	H 904-02
25	14	27,5	H 904-03
25	18	28,3	H 904-04
32	18	32,5	H 904-05
32	25	28,0	H 904-06
45	25	38,0	H 904-07
45	32	33,0	H 904-08



## BOLA GL Bellows

Material: <b>PTFE</b>	Temperature resistance <b>from -200°C to +250°C</b>	Chemical resistance: <b>+++ universal</b>	Vacuum: <b>suitable</b>
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Product description:

Two screw caps made of PPS with GL thread and a PTFE/FPM gasket. Bellow with sharp folds made of PTFE. Bellow can be bent up to an angle of 120°, flexible and strainless connection.

FDA conform

For thread GL	Min. length of bellow mm	Max. length of bellow mm	Cat. No.:
25	58	104	H 902-05
32	58	90	H 902-10
45	67	115	H 902-15



## BOLA GL Reductions

Material: <b>PTFE</b>	Material: <b>PPS</b>	Temperature resistance <b>from -200°C to +250°C</b>	Chemical resistance: <b>+++ universal</b>
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Product description:

Black screw cap made of PPS with GL 45 thread, movable reduction body made of PTFE for transition to GL 25. The body can be moved independently from the screw cap so that the completely assembled reduction can be removed and fixed on another vessel without the risk of disarranging the tubing or cable. The product is only exposed to PTFE.

FDA conform

For thread GL	Reducing thread GL	Max. tubing O.D. mm	Cat. No.:
45	25	0,8 - 10	D 784-24

### Applications:

For connecting or inserting tubing, tubes or probes.



## BOLA GL Dispenser

Material: <b>PTFE</b>	Temperature resistance <b>from -200°C to +250°C</b>	Chemical resistance: <b>+++ universal</b>
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Product description:

Black screw cap made of PPS with GL 45 thread, movable dispenser with stopcock made of PTFE, integrated ventilation. With PTFE cap for sealing the discharge tube.

FDA conform

Thread GL	Stopcock bore dia. mm	Dia. of discharge tube mm	Cat. No.:
45	4	4	H 918-10

### Applications:

For controlled and safe pouring of liquids. A bottle with mounted dispenser can be headfirst fixed in a holder.



## BOLA GL Funnels

Funnels with a capacity of approx. 100 ml made of borosilicate glass. Inlet tube made of PTFE, connection with GL screw caps made of PPS or with ground joint. The outlet tube has a length of approx. 64 mm on the lower side. The glass funnel can be fixed in each position.

Material:	Material:	Temperature resistance	Chemical resistance:	Vacuum:
PTFE	PPS	from -200°C to +250°C	+++ universal	suitable

Product description:

Insertion for reaction vessels with GL-threaded necks

**NEW**

FDA conform

Thread of funnel GL	Connecting thread on lower side GL	Inlet tube (I.D. x O.D.) mm	Cat. No.:
25	25	15 x 12	D 738-12
32	32	20 x 17	D 738-22
25	32	20 x 17	D 738-42
32	25	15 x 12	D 738-52

Product description:

Insertion for reaction vessels with ground joint sockets.

**NEW**

FDA conform

Thread of funnel GL	Ground joint NS	Inlet tube (I.D. x O.D.) mm	Cat. No.:
32	29/32	20 x 17	D 739-22

### Applications:

Positionable insertion for reaction vessels. Adhering or agglutinating of powders is prevented. Liquids can be inserted directly without cooling or adhering at the wall of the vessel. Instead of the glass funnel, a condenser can be mounted at the upper screw cap and provide a direct return into the vessel.



## BOLA Leading-in for Sensors

Material:	Material:	Temperature resistance	Chemical resistance:
PTFE	PPS	from -200°C to +250°C	+++ universal

Product description:

Black screw cap made of PPS with GL 45 thread, movable body made of PTFE with adjusting screw for fixing and sealing sensors. The product is only exposed to PTFE.

FDA conform

For thread GL	For sensor dia. mm	Cat. No.:
45	12 (+/-0,5)	D 780-14

### Applications:

For contamination-free insertion of sensors into bottles with GL 45 thread.



## BOLA Socket-GL Tube Fittings

Material:	Temperature resistance	Chemical resistance:	Vacuum:
PTFE	from -200°C to +250°C	+++ universal	suitable

Product description:

Fitting made of PTFE, with socket for tubes with ground joint and GL thread for connection of hard-walled tubing (e.g. PTFE, PFA, FEP) with BOLA Laboratory Screw Joints (see page 55). The product is only exposed to PTFE.

FDA konform

Socket size NS	Bore dia. mm	Thread GL	Cat. No.:
14/23	6,5	14	D 571-08
19/26	10,5	18	D 571-16
29/32	12,5	25	D 571-32
45/40	20,5	32	D 571-40



## BOLA Ground Joint-GL Tube Fittings

Material:	Temperature resistance	Chemical resistance:	Vacuum:
PTFE	from -200°C to +250°C	+++ universal	suitable

Product description:

Fitting made of PTFE, for transition from ground joints to GL threads. For connection of hard-walled tubing (e.g. PTFE, PFA, FEP) with BOLA Laboratory Screw Joints (see page 55). Ground joint body with turned rings and knurled grip for opening. The product is only exposed to PTFE.

FDA konform

Cone size NS	Bore dia. mm	Thread GL	Cat. No.:
14/23	6,5	14	D 570-08
19/26	10,5	18	D 570-16
29/32	12,5	25	D 570-32

### Applications:

For connecting tubes or tubing to vessels with ground joint. For inserting and fixing probes, thermometers, dip tubes or cables.



for tubing



for probe

## BOLA Spherical Ground Joint-GL Tube Fittings

Material:	Temperature resistance	Chemical resistance:	Vacuum:
PTFE	from -200°C to +250°C	+++ universal	suitable

Product description:

Fitting made of PTFE, for transition from spherical ground joints to GL threads. For connection of hard-walled tubing (e.g. PTFE, PFA, FEP) with BOLA Laboratory Screw Joints (see page 55). The product is only exposed to PTFE.

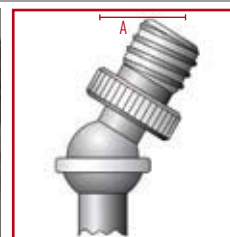
NEW

FDA konform

Spherical ground joint size S	Thread GL	Bore dia. mm	Angle A max.	Cat. No.:
19	18	10,5	25°	D 790-24
29	25	14,5	20°	D 790-36
35	25	14,5	10°	D 790-48

### Applications:

For connecting tubes or tubing to vessels with ground joint. For inserting and fixing probes, thermometers, dip tubes or cables.



# BOLA GL Tube Fittings

A distribution system consists of tubes or tubing and connection pieces, so-called tube fittings. The BOLA-GL-Fitting-System is a modular system which consists of tube fittings, screw-in fittings, different stopcocks and valves.

All fittings have GL threads so that they can be connected to hard-walled tubing (PTFE, PFA, FEP) or tubes (e.g. glass, metal, plastic) by means of BOLA Laboratory Screw Joints.

Together with these BOLA Laboratory Screw Joints, the connection is absolutely tight and even suitable for vacuum; the screw joints for GL 14, GL 18 and GL 25 even resist pressures up to max. 10 bar at room temperature.

The system is completed by accessories like quick connectors, dirt traps and GL hose connectors.

## BOLA GL Tube Fittings

Material:	Temperature resistance	Chemical resistance:	Pressure:	Vacuum:
PTFE	from -200°C to +250°C	+++ universal	10 bar	suitable

Product description:

Straight tube fitting made of PTFE, two connections with GL thread. Universal chemical resistance, the product is only exposed to PTFE.

FDA conform

Thread GL	Bore dia. mm	Length without screw joint mm	Wrench size hexagon mm	Cat. No.:
14	6,5	50	15	D 538-14
18	10,5	50	19	D 538-18
25	14,5	56	27	D 538-25
32	21,0	75	32	D 538-32
45	32,5	75	46	D 538-45

**Application:**

For distributing liquids or gases. As reduction for connecting different diameters of tubes or tubing.



## BOLA GL Tube Fittings T

Material:	Temperature resistance	Chemical resistance:	Pressure:	Vacuum:
PTFE	from -200°C to +250°C	+++ universal	10 bar	suitable

Product description:

Tube fitting T-shaped made of PTFE, three connections with GL thread. Universal chemical resistance, the product is only exposed to PTFE.

FDA conform

Thread GL	Bore dia. mm	Length without screw joint mm	Height mm	Wrench size square mm	Cat. No.:
14	6,5	54	37	20	D 540-14
18	10,5	56	39	20	D 540-18
25	14,5	70	51	27	D 540-25
32	21,0	83	58	33	D 540-32
45	32,5	98	73	48	D 540-45

**Application:**

For distributing liquids or gases. As reduction for connecting different diameters of tubes or tubing.



## BOLA GL Tube Fittings Elbow

Material: <b>PTFE</b>	Temperature resistance <b>from -200°C to +250°C</b>	Chemical resistance: <b>+++ universal</b>	Pressure: <b>10 bar</b>	Vacuum: <b>suitable</b>
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Product description:

Tube fitting elbow-shaped made of PTFE, two connections with GL thread.  
Universal chemical resistance, the product is only exposed to PTFE.

FDA conform

Thread GL	Bore dia. mm	Length without screw joint mm	Wrench size square mm	Cat. No.:
14	6,5	37	20	D 539-14
18	10,5	39	20	D 539-18
25	14,5	51	27	D 539-25
32	21,0	58	33	D 539-32
45	32,5	73	48	D 539-45

### Application:

For distributing liquids or gases. As reduction for connecting different diameters of tubes or tubing.



## BOLA GL Tube Fittings Cross

Material: <b>PTFE</b>	Temperature resistance <b>from -200°C to +250°C</b>	Chemical resistance: <b>+++ universal</b>	Pressure: <b>10 bar</b>	Vacuum: <b>suitable</b>
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Product description:

Tube fitting cross-shaped made of PTFE, four connections with GL thread.  
Universal chemical resistance, the product is only exposed to PTFE.

FDA conform

Thread GL	Bore dia. mm	Length without screw joint mm	Wrench size square mm	Cat. No.:
14	6,5	54	20	D 541-14
18	10,5	56	20	D 541-18
25	14,5	70	27	D 541-25
32	21,0	83	33	D 541-32
45	32,5	98	48	D 541-45

### Application:

For distributing liquids or gases. As reduction for connecting different diameters of tubes or tubing.



**SUITABLE:** page 57  
Laboratory screw joints

## BOLA GL-Screw-in Tube Fittings

Material:	Temperature resistance	Chemical resistance:	Pressure:	Vacuum:
PTFE	from -200°C to +250°C	+++ universal	10 bar	suitable

Product description:

Straight tube fitting made of PTFE, with one screw-in thread (either NPT or G thread). Universal chemical resistance, the product is only exposed to PTFE.

FDA conform

Screw-in thread NPT	Thread GL	Bore dia. mm	Wrench size hexagon mm	Cat. No.:
1/8"	14	4,0	15	D 516-08
1/4"	14	5,0	15	D 516-14
3/8"	14	6,5	19	D 516-20
1/8"	18	4,0	19	D 516-26
1/4"	18	6,5	19	D 516-32
3/8"	18	8,0	19	D 516-38
3/8"	25	8,0	27	D 516-44
1/2"	25	12,0	27	D 516-50

Screw-in thread G	Thread GL	Bore dia. mm	Wrench size hexagon mm	Cat. No.:
1/8"	14	4,0	15	D 517-08
1/4"	14	5,0	15	D 517-14
3/8"	14	6,5	19	D 517-20
1/8"	18	4,0	19	D 517-26
1/4"	18	6,5	19	D 517-32
3/8"	18	8,0	19	D 517-38
1/2"	25	12,0	27	D 517-50
1"	32	18,0	34	D 517-74



## BOLA GL Quick Connectors

**BESTSELLER**

Material:	Temperature resistance	Chemical resistance:	Pressure:	Vacuum:
PFA	from -200°C to +250°C	+++ universal	10 bar	suitable

Product description:

Two-part quick connector completely made of PFA, with two GL threads for connecting tubing or tubes with BOLA Laboratory Screw Joints. Quick and easy disconnection of flow. When disconnected, the flow is interrupted by means of built-in non-return valves and only continues after a safe locking. Suitable for pressure up to max. 6 bar, for vacuum of 700 mm Hg and working temperatures up to max. +200°C. Universal chemical resistance, the product is only exposed to PFA.

FDA conform

Connecting thread GL	Length without screw joint	Flow at 4 bar (water) l/min.	Cat. No.:
14	75	3,2	D 625-20
18	75	4,0	D 625-40
25	79	10,5	D 625-60

### Applications:

Ideal for conducting highly pure or aggressive products.





## BOLA GL Ball Valves

Material: <b>PTFE</b>	Temperature resistance <b>from -20°C to +220°C</b>	Chemical resistance: <b>+++ universal</b>	Pressure: <b>12 bar</b>	Vacuum: <b>suitable</b>
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Product description:

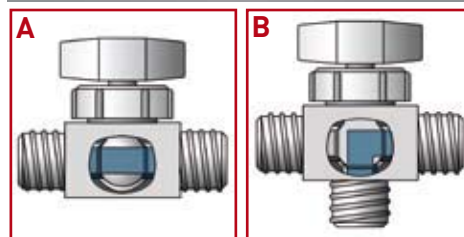
Two-way valve with straight bore and two connections with GL thread or three-way valve with L-shaped bore and three connections with GL thread. Ball-shaped stopcock plug for excellent tightness, free-moving stop valve. Suitable for pressure up to max. 12 bar, or for vacuum. Universal chemical resistance, the flowing product is only exposed to PTFE.

FDA conform

	Type	Bore shape	Connecting thread mm	Connecting thread GL	External dimensions L / D / H mm	Cat. No.:
<b>A</b>	2-Way	—	3	14	50 x 20 x 36	E 664-10
	2-Way	—	4	18	80 x 44 x 65	E 664-20
	2-Way	—	8	25	90 x 50 x 68	E 664-30
	2-Way	—	12	32	100 x 50 x 74	E 664-40
<b>B</b>	3-Way	L	3	14	50 x 20 x 52	E 667-10
	3-Way	L	4	18	80 x 40 x 90	E 667-20
	3-Way	L	8	25	90 x 50 x 98	E 667-30
	3-Way	L	12	32	100 x 50 x 106	E 667-40

### Applications:

For distributing liquids or gases. Quick and easy disconnection of flow. Connection of tubing or tubes by means of BOLA Laboratory Screw Joints.



## BOLA GL Stopcocks

**BESTSELLER**

Material: <b>PTFE</b>	Temperature resistance <b>from -30°C to +150°C</b>	Chemical resistance: <b>+++ universal</b>	Pressure: <b>6 bar</b>	Vacuum: <b>suitable</b>
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Product description:

Two-way stopcock with straight bore and two connections with GL thread or three-way stopcock with L-shaped or T-shaped bore and three connections with GL thread. Cylindrical stopcock plug for good tightness, stop valve with mark of flow direction. Suitable for pressure up to max. 6 bar, or for vacuum. Universal chemical resistance, the flowing product is only exposed to PTFE.

FDA conform

	Type	Bore shape	Connecting thread mm	Connecting thread GL	External dimensions L / D / H mm	Cat. No.:
<b>A</b>	2-Way	—	4	14	54 x 20 x 38	E 684-14
	2-Way	—	6	18	64 x 30 x 45	E 684-18
	2-Way	—	8	25	78 x 40 x 57	E 684-25
<b>B</b>	3-Way	L	4	14	64 x 47 x 43	E 686-14
	3-Way	L	6	18	74 x 57 x 57	E 686-18
	3-Way	L	6	25	78 x 59 x 57	E 686-25
<b>C</b>	3-Way	T	4	14	74 x 57 x 57	E 688-14
	3-Way	T	4	18	74 x 57 x 57	E 688-18
	3-Way	T	6	25	88 x 69 x 57	E 688-25

### Applications:

For distributing liquids or gases. Quick and easy disconnection of flow. Connection of tubing or tubes by means of BOLA Laboratory Screw Joints.



**BOLA Pressure-Relief Valves with Manual Ventilation****BESTSELLER**

Material: <b>PTFE</b>	Temperature resistance <b>from -20°C to +150°C</b>	Chemical resistance: <b>+++ universal</b>	Pressure: <b>10 bar</b>	Vacuum: <b>suitable</b>
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**Product description:**

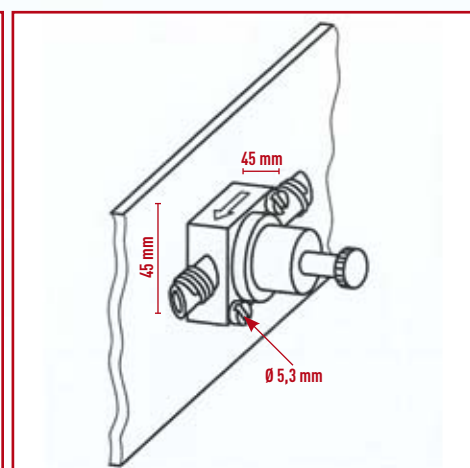
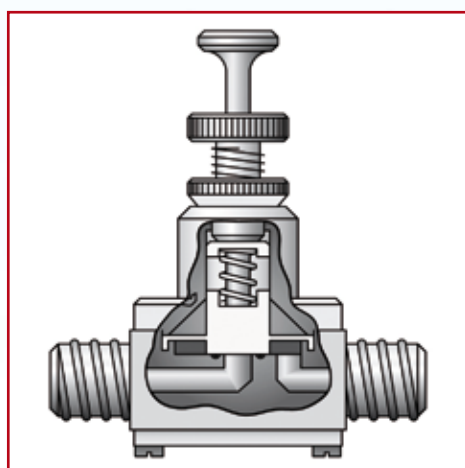
Body made of PTFE with two connections with GL 18 thread, valve made of PPS with toggle for manual ventilation by pulling and adjusting screw with counternut for adjusting and fixing of requested pressure in a range between 0,1 and 10 bar (factory setting 1,5 bar). Universal chemical resistance, the flowing product is only exposed to PTFE.

**FDA conform**

Connecting thread GL	Bore dia. mm	External dimensions L x D x H mm	Cat. No.:
18	6	88 x 54 x 116	E 683-18

**Applications:**

Pressure control valve with adjustable opening pressure. For preventing pressure drop during filling.



## BOLA GL Control Valves

Material:	Temperature resistance	Chemical resistance:	Pressure:	Vacuum:
PTFE	from -200°C to +250°C	+++ universal	6 bar	suitable

### Product description:

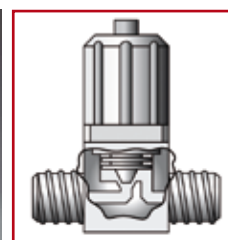
Two-way valve with straight bore and two connections with GL thread completely made of PTFE. Motionless sealing without wearing parts due to integrated bellow. For best possible tightness even with considerable thermal fluctuations, the conical nipple of the bellow is prestressed by means of a spring. The valve can be opened and closed by turning the adjusting nut; a nipple on the top indicates the angle of opening. Suitable for pressure up to max. 6 bar, suitable for vacuum. Universal chemical resistance, the flowing product is only exposed to PTFE.

FDA conform

Connecting thread GL	Bore dia. mm	External dimensions L x D x H mm	Cat. No.:
14	4	62 x 30 x 73	E 694-14
18	6	80 x 44 x 83	E 694-18

### Applications:

For distributing liquids or gases. Manual regulation for constant flow. Connection of tubing or tubes by means of BOLA Laboratory Screw Joints.



passage open



passage closed

## BOLA Dirt Traps

Material:	Temperature resistance	Chemical resistance:	Pressure:	Vacuum:
PTFE	from -200°C to +250°C	+++ universal	10 bar	suitable

### Product description:

With two GL 18 threads for connecting hard-walled tubing (PTFE, PFA, FEP) or tubes with BOLA Laboratory Screw Joints. Lateral connection with plug for easy exchange of filtering membrane (thickness 0,2-3,0 mm) and for cleaning. The flow direction is marked with an arrow. Completely made of PTFE, the flowing product is only exposed to PTFE.

NEW

FDA conform

Connecting thread GL	Dia. of filtering membrane mm	Bore dia. mm	Total height mm	Cat. No.:
18	25	8	88	N 1674-18

### Applications:

Protection of aggregates (pumps, valves, stopcocks, nozzles etc.) against particle contamination and damage. Metal-free, can be used under clean-room conditions. BOLA Filtering Membranes available separately (Cat. No. N 1690-28, page 204).



## BOLA Adaptors for Prominent® Pumps

Material:	Temperature resistance	Chemical resistance:	Pressure:
PTFE	from -200°C to +250°C	+++ universal	10 bar

### Product description:

Adaptor made of glass-fibre reinforced PTFE, transition from pump thread M20x1,5 to GL thread. Pressure resistant connection (max. 10 bar) of hard-walled tubing with Prominent® pumps by using BOLA Laboratory Screw Joints. Universal chemical resistance, the product is only exposed to PTFE.

FDA conform

Connecting thread GL	Bore dia. mm	Cat. No.:
14	3,0	D 730-12
18	10,5	D 730-24



## BOLA Vario Couplings

Material: <b>PVDF</b>	Temperature resistance <b>from -40°C to +170°C</b>	Chemical resistance: <b>++ very good</b>	Pressure: <b>3 bar</b>	Vacuum: <b>suitable</b>
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### Product description:

Two-part coupling made of PVDF for connecting elastic tubing (e.g. Viton®, Tygon®, silicone) to hard-walled tubing made of PTFE, glass or other plastics. Easy and ingenious functioning: the elastic tubing is pushed on a cone and fixed on the coupling by means of a connecting nut. On the other side, the hard-walled tubing is connected as follows:

Flanged PTFE tubing with miniature connectors (e.g. Cat. No. F 702 page 182) is connected to a female thread UNF 1/4" 28 G

Hard-walled tubing up to a maximum O.D. of 10 mm is connected to a GL thread by means of laboratory screw joints (see page 55). Restricted chemical resistance, working temperatures up to max. +170°C.

FDA conform

	For tubing I.D. mm	For tubing wall thickness mm	Bore dia. mm	Connecting thread <b>UNF</b>	Cat. No.:
<b>A</b>	0,8	0,8 and 1,6	0,8	1/4" 28G	<b>F 778-08</b>
	1,6	0,8 and 1,6	1,6	1/4" 28G	<b>F 778-16</b>

	For tubing I.D. mm	For tubing wall thickness mm	Bore dia. mm	Connecting thread <b>GL</b>	Cat. No.:
<b>B</b>	0,8	0,8 and 1,6	0,8	14	<b>D 681-08</b>
	1,6	0,8 and 1,6	1,6	14	<b>D 681-16</b>
	3,2	1,6	3,2	14	<b>D 681-24</b>
	4,0 and 4,8	1,6	4,0	14	<b>D 681-32</b>
	6,4	1,6	6,4	18	<b>D 681-40</b>
	8 und 9,5	1,6 and 2,4	8,0	18	<b>D 681-48</b>

### Applications:

Peristaltic pumps



Example



Example

## BOLA Hose Connectors (with Nut)

Material:	Temperature resistance	Chemical resistance:	Vacuum:
PFA	from -200°C to +250°C	+++ universal	suitable

Product description:

GL 14 and GL 18 hose connectors made of PFA, GL 25 and GL 32 hose connectors made of PTFE. With elastic sealing lip, FPM o-ring and nut made of PPS. Available as straight or bent type. Universal chemical resistance, for working temperatures up to max. +250°C. The flowing product is only exposed to PFA or PTFE.

FDA conform

### Straight type

	Thread GL	O.D. of hose connector mm	I.D. of hose connector mm	Length with nut mm	Cat. No.:
<b>A</b>	14	8,7	6,0	45	D 581-02
	18	10,4	7,0	51	D 581-04
	25	16,0	10,0	68	D 581-06
	32	21,0	16,0	80	D 581-08

### Bent type

	Thread GL	O.D. of hose connector mm	I.D. of hose connector mm	Length with nut mm	Cat. No.:
<b>B</b>	14	8,7	6,0	49	D 582-02
	18	10,4	7,0	65	D 582-04

### Applications:

For connecting elastic tubing to GL-threaded equipment.



## BOLA Hose Connectors (without Nut)

Material:	Temperature resistance	Chemical resistance:	Vacuum:
PFA	from -200°C to +250°C	+++ universal	suitable

Product description:

GL 14 and GL 18 hose connectors made of PFA, GL 25 and GL 32 hose connectors made of PTFE. With elastic sealing lip and FPM o-ring. Available as straight or bent type. Universal chemical resistance, for working temperatures up to max. +250°C. The flowing product is only exposed to PFA or PTFE.

FDA conform

### Straight type

	Thread GL	O.D. of hose connector mm	I.D. of hose connector mm	Length without nut mm	Cat. No.:
<b>A</b>	14	8,7	6,0	34	D 568-14
	18	10,4	7,0	39	D 568-18
	25	16,0	10,0	55	D 568-25
	32	21,0	16,0	65	D 568-32

### Bent type

	Thread GL	O.D. of hose connector mm	I.D. of hose connector mm	Length without nut mm	Cat. No.:
<b>B</b>	14	8,7	6,0	40	D 569-14
	18	10,4	7,0	54	D 569-18



## BOLA Hose Connectors (with Nut)

Material:	Temperature resistance	Chemical resistance:	Vacuum:
PP	from -20°C to +110°C	++ very good	suitable

Product description:

Hose connectors made of PP, with elastic sealing lip, FPM o-ring and nut made of PBTP. Available as straight or bent type. Restricted chemical resistance, for working temperatures up to max. +110°C. The flowing product is only exposed to PP.

FDA conform

### Straight type

	Thread GL	O.D. of hose connector mm	I.D. of hose connector mm	Length with nut mm	Cat. No.:
<b>A</b>	14	8,8	6,0	46	D 585-14
	18	10,8	7,0	52	D 585-18
	25	16,0	10,0	68	D 585-25

### Bent type

	Thread GL	O.D. of hose connector mm	I.D. of hose connector mm	Length with nut mm	Cat. No.:
<b>B</b>	14	8,8	6,0	51	D 586-14
	18	10,8	7,0	66	D 586-18

### Applications:

For connecting elastic tubing to GL-threaded equipment.



## BOLA Hose Connectors (without Nut)

Material:	Temperature resistance	Chemical resistance:	Vacuum:
PP	from -20°C to +110°C	++ very good	suitable

Product description:

Hose connectors made of PP, with elastic sealing lip and FPM o-ring. Available as straight or bent type. Restricted chemical resistance, for working temperatures up to max. +110°C. The flowing product is only exposed to PP.

FDA conform

### Straight type

	Thread GL	O.D. of hose connector mm	I.D. of hose connector mm	Length without nut mm	Cat. No.:
<b>A</b>	14	8,8	6,0	36	D 583-14
	18	10,8	7,0	40	D 583-18
	25	16,0	10,0	55	D 583-25

### Bent type

	Thread GL	O.D. of hose connector mm	I.D. of hose connector mm	Length without nut mm	Cat. No.:
<b>B</b>	14	8,8	6,0	41	D 584-14
	18	10,8	7,0	56	D 584-18





# The BOLA GL Screw Joint System “EX” – A safe protection against electrostatic charging



By adding conductive particles, these components become electroconductive and can be used for explosive applications. The flowing products can for example be aggressive or combustible liquids or gases.

For function and assembly, please look at the GL Screw Joint System on page 52 which is constructed in the same way.

## Electric conductivity

The surface resistance of these components is:

PTFE-EX: approx.  $10^5$  Ohm

PPS-EX: approx.  $10^3$  Ohm

## Flammability

PTFE-EX and PPS-EX are inherently flame-retardant and self-extinguishing. The oxygen index (LOI-value) stands for the oxygen content in the ambient atmosphere in which a material continues burning after inflaming without additional energy source. The oxygen index of PTFE-EX is approx. 95%, the oxygen index of PPS-EX is approx. 50%. Both materials do not burn under normal conditions since the oxygen content of air is 21%.

## UV protection

The materials are black and therefore UV-resistant. They can be used for products which react to UV rays.

## Chemical resistance

Due to the addition of conductive pigments (e.g. electrographic carbon), the components may be attacked by strongly oxidizing products such as acids, caustic solutions or halogens.

## Earthing

The complete system must be earthed professionally. It is advantageous to roughen the surface around the earthing clip to improve the contact.

## Identification of EX Screw Joints

BOLA components with conductive particles can be identified by their black colour. The caps can be identified by the “EX” mark.

An attrition test on paper can also help. The component is rubbed slightly on a white piece of paper. A colouration indicates that the component has conductive particles.

## BOLA Laboratory Screw Joints EX

Material: <b>PTFE EX</b>	Material: <b>PPS EX</b>	Temperature resistance <b>from -200°C to +200°C</b>	Chemical resistance: <b>++ very good</b>	Pressure: <b>10 bar</b>	Vacuum: <b>suitable</b>	Conductivity: <b><math>10^5</math> Ohm</b>
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### Product description:

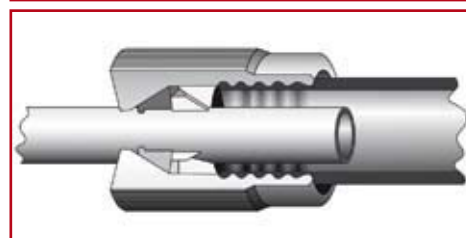
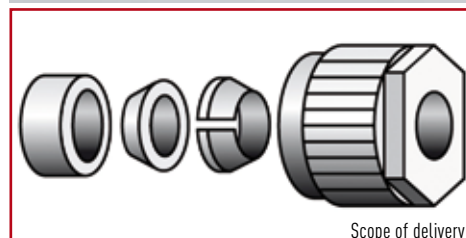
Screw cap made of conductive black PPS-EX reinforced with glass fibres, inner parts made of conductive PTFE-EX

**NEW**

For tubing O.D. mm	Thread GL	Cat. No.:
4	14	D 840-66
6	14	D 840-74
4	18	D 841-46
6	18	D 841-54
8	18	D 841-62
10	18	D 841-74
8	25	D 842-62
10	25	D 842-74
12	25	D 842-80
14	25	D 842-90

### Applications:

Connecting equipment and fittings with GL threads with hard-walled tubing or tubes made of glass, plastic or metal. Fixing probes, thermometers, dip tubes or cables in reaction vessels.



## BOLA Replacement Inner Parts EX

Material: <b>PTFE EX</b>	Material: <b>PPS EX</b>	Temperature resistance <b>from -200°C to +200°C</b>	Chemical resistance: <b>++ very good</b>	Pressure: <b>10 bar</b>	Vacuum: <b>suitable</b>	Conductivity: <b>10<sup>4</sup> Ohm</b>
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Product description:

Made of conductive PTFE-EX.

**NEW**

For tubing O.D. mm	Thread GL	Cat. No.:
4	14	D 848-66
6	14	D 848-74
4	18	D 849-46
6	18	D 849-54
8	18	D 849-62
10	18	D 849-74
8	25	D 850-62
10	25	D 850-74
12	25	D 850-80
14	25	D 850-90



Scope of delivery

## BOLA Replacement Caps EX

Material: <b>PPS EX</b>	Temperature resistance <b>from -200°C to +200°C</b>	Chemical resistance: <b>++ very good</b>	Conductivity: <b>10<sup>4</sup> Ohm</b>
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Product description:

Black screw cap made of glass-fibre PPS-EX, with handy knurl and hexagon.

**NEW**

Thread GL	From tubing O.D. to tubing O.D. mm	Cat. No.:
14	0,8 - 6,0	D 846-10
18	0,8 - 10,0	D 846-20
25	0,8 - 10,0	D 846-30
25	10,1 - 14,0	D 846-34



## BOLA BOLA GL Tube Fittings EX

Material: <b>PTFE EX</b>	Temperature resistance <b>from -200°C to +200°C</b>	Chemical resistance: <b>++ very good</b>	Pressure: <b>10 bar</b>	Vacuum: <b>suitable</b>	Conductivity: <b>10<sup>4</sup> Ohm</b>
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Product description:

Straight tube fitting made of PTFE-EX, two connections with GL thread. Connection of tubing or tube with BOLA Laboratory Screw Joints EX.

**NEW**

Thread GL	Bore dia. mm	Length without screw joint mm	Wrench size hexagon mm	Cat. No.:
14	6,5	50	15	D 856-14
18	10,5	50	19	D 856-18
25	14,5	56	27	D 856-25

**Applications:**

For distributing liquids or gases. As reduction for connecting different diameters of tubes or tubing.



## BOLA GL Tube Fittings T EX

Material: <b>PTFE EX</b>	Temperature resistance <b>from -200°C to +200°C</b>	Chemical resistance: <b>++ very good</b>	Pressure: <b>10 bar</b>	Vacuum: <b>suitable</b>	Conductivity: <b>10<sup>4</sup> Ohm</b>
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Product description:

Tube fitting T-shaped made of PTFE-EX, three connections with GL thread. Connection of tubing or tube with BOLA Laboratory Screw Joints EX.

**NEW**

Thread GL	Bore dia. mm	Length without screw joint mm	Wrench size square mm	Cat. No.:
14	6,5	50	20	<b>D 857-14</b>
18	10,5	56	20	<b>D 857-18</b>
25	14,5	70	27	<b>D 857-25</b>

### Applications:

For distributing liquids or gases. As reduction for connecting different diameters of tubes or tubing.



## BOLA GL Tube Fittings Elbow EX

Material: <b>PTFE EX</b>	Temperature resistance <b>from -200°C to +200°C</b>	Chemical resistance: <b>++ very good</b>	Pressure: <b>10 bar</b>	Vacuum: <b>suitable</b>	Conductivity: <b>10<sup>4</sup> Ohm</b>
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Product description:

Tube fitting elbow-shaped made of PTFE-EX, two connections with GL thread. Connection of tubing or tube with BOLA Laboratory Screw Joints EX.

**NEW**

Thread GL	Bore dia. mm	Length without screw joint mm	Wrench size square mm	Cat. No.:
14	6,5	37	20	<b>D 858-14</b>
18	10,5	39	20	<b>D 858-18</b>
25	14,5	51	27	<b>D 858-25</b>

### Applications:

For distributing liquids or gases. As reduction for connecting different diameters of tubes or tubing.



## BOLA GL Tube Fittings Cross EX

Material: <b>PTFE EX</b>	Temperature resistance <b>from -200°C to +200°C</b>	Chemical resistance: <b>++ very good</b>	Pressure: <b>10 bar</b>	Vacuum: <b>suitable</b>	Conductivity: <b>10<sup>4</sup> Ohm</b>
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Product description:

Tube fitting cross-shaped made of PTFE-EX, four connections with GL thread. Connection of tubing or tube with BOLA Laboratory Screw Joints EX.

**NEW**

Thread GL	Bore dia. mm	Length without screw joint mm	Wrench size square mm	Cat. No.:
14	6,5	54	20	<b>D 859-14</b>
18	10,5	56	20	<b>D 859-18</b>
25	14,5	70	27	<b>D 859-25</b>

### Applications:

For distributing liquids or gases. As reduction for connecting different diameters of tubes or tubing.



## BOLA Multiple Distributors for Bottles EX

Material: <b>PTFE EX</b>	Material: <b>PPS EX</b>	Temperature resistance <b>from -200°C to +200°C</b>	Chemical resistance: <b>++ very good</b>	Pressure: <b>10 bar</b>	Vacuum: <b>suitable</b>	Conductivity: <b>10<sup>5</sup> Ohm</b>
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Product description:

Black screw cap made of conductive PPS-EX for bottle thread GL 45, body made of conductive PPS-EX. Insertion of tubing with a max. O.D. of 8 mm. Connection of tubing or tube with BOLA Laboratory Screw Joints EX.

Detailed information about distributors which are identical in construction can be found on page 60.

**NEW**

Necks GL			Cat. No.:
2 x 14			<b>D 864-08</b>
3 x 14			<b>D 865-08</b>

### Applications:

Drawing or inserting aggressive or pure liquids. Inserting tubing, tubes and probes into vessels.



## BOLA GL-Stopcocks EX

Material: <b>PTFE EX</b>	Material: <b>PPS EX</b>	Temperature resistance <b>from -200°C to +200°C</b>	Chemical resistance: <b>++ very good</b>	Pressure: <b>6 bar</b>	Vacuum: <b>suitable</b>	Conductivity: <b>10<sup>4</sup> Ohm</b>
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Product description:

Two-way stopcock made of conductive PTFE-EX with straight bore and two connections with GL thread or three-way stopcock with L-shaped or T-shaped bore and three connections with GL thread. Cylindrical stopcock plug made of conductive PTFE-EX for good tightness, stop valve with mark of flow direction. Grip made of red PP. Suitable for pressure up to max. 6 bar, suitable for vacuum. Connection of tubing or tube with BOLA Laboratory Screw Joints EX.

**NEW**

	Type	Bore shape	Bore dia. mm	Connecting thread GL	External dimensions L / D / H mm	Cat. No.:
<b>A</b>	2-Way	—	4	14	54 x 20 x 38	<b>E 712-14</b>
	2-Way	—	6	18	64 x 30 x 45	<b>E 712-18</b>
	2-Way	—	8	25	78 x 40 x 57	<b>E 712-25</b>
<b>B</b>	3-Way	L	4	14	64 x 47 x 43	<b>E 714-14</b>
	3-Way	L	6	18	74 x 57 c 57	<b>E 714-18</b>
	3-Way	L	6	25	78 x 59 x 57	<b>E 714-25</b>
<b>C</b>	3-Way	T	4	14	74 x 57 x 57	<b>E 716-14</b>
	3-Way	T	4	18	74 x 57 x 57	<b>E 716-18</b>
	3-Way	T	6	25	88 x 69 x 57	<b>E 716-25</b>

### Applications:

For distributing liquids or gases. Quick and easy disconnection of flow.

