



# GLANDS TYPE

## KBA (ORION), KBAU (ORION UNIVERSAL), KBAO (ORION OFFSHORE), KBA..LT (U,O)(ORION LT), KBU (CRATER)

### SAFETY, MAINTENANCE AND MOUNTING INSTRUCTIONS

#### CERTIFICATE

BMD KB.....   0722 II2GD Ex d IIC Gb, Ex e IIC Gb, Ex tb IIIC Db IP66/68  
CESI 13 ATEX 033X, IECEx CES 13.0013X

BMD KB....LT...   0722 II2GD Ex d IIC Gb, Ex e IIC Gb, Ex tb IIIC Db IP66/68  
CESI 13 ATEX 033X, IECEx CES 13.0013X

#### APPLICABLE STANDARDS

EN/IEC 60079-0; EN/IEC 60079-1; EN/IEC 60079-7; EN/IEC 60079-31

#### TEMPERATURE OF INSTALLATION

**For Orion-KBA, Orion Universal KBAU, Orion Offshore KBAO and Crater-KBU**

-40°C to +100°C with Neoprene (Chloroprene) sealing ring

-60°C to +130°C with with Silicon sealing ring

**For Orion-LT KBA..LT (U,O)**

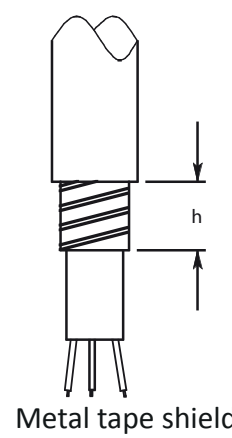
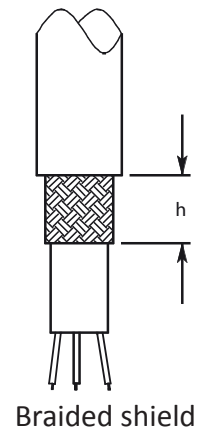
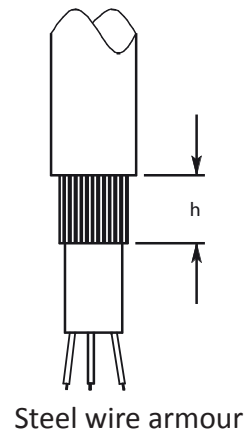
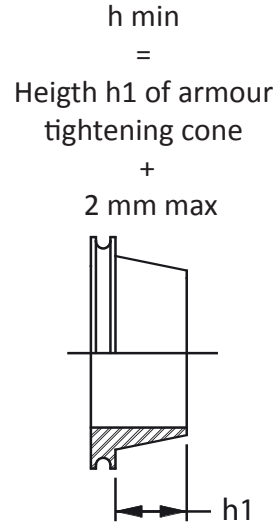
-40°C to +80°C with neoprene rubber

-60°C to +80°C with silicon rubber


*Cable glands made of galvanized steel can be used up to -20°C.*

*Green fiber washer can be used from -40°C to +80°C.*

Compositon of armour



## SAFETY INSTRUCTIONS

- They are destined to qualified personnel in compliance with the national laws and where applicable, in accordance with IEC 60079-17 Standard, concerning electrical appliances to products are not allowed.
- Changes to products are not allowed.
- Only BIMED spare parts must be used.
- Everyday and extraordinary maintenance operations must be carried out only by qualified personnel after approval from expert technicians.
- The maintenance operations must be carried out only after the engine has been cut off from mains or from the related electrical appliance.
- The following instructions must be strictly followed in order to get a perfect assembling.
- The national safety rules and accident prevention regulations, specified as  in this technical booklet, must be strictly respected.
- These cable glands may be used with steel wire armoured cables, with braide cables, with metal tape shielded cables.
- Ex-d IIC Gb and Ex-e II Gb cable glands, can be used with Ex-i circuits.
- Please refer to the figure below, for details about the preparation of steel wire armour, braided and tape shielded cables for fitting into the cable gland.

## Non Threaded enclosure applications (Ex e and Ex tb )

Recommended Hole Diameters For Non Threaded enclosure applications in relation with the used thread types are shown below.

Metric Threads		Hole Diameter (min. - max. mm)
Thread		
M16 x 1.5		Ø16,0 - 16,3
M20 x 1.5		Ø20,0 - 20,3
M25 x 1.5		Ø25,0 - 25,3
M32 x 1.5		Ø32,0 - 32,3
M40 x 1.5		Ø40,0 - 40,3
M50 x 1.5		Ø50,0 - 50,3
M63 x 1.5		Ø63,0 - 63,3
M75 x 1.5		Ø75,0 - 75,3
M90 x 1.5		Ø90,0 - 90,3

G Threads (GAS UNI ISO 228/1)		Hole Diameter (min. - max. mm)
Thread		
G 3/8"		Ø16,6 - 16,9
G 1/2"		Ø21,0 - 21,3
G 3/4"		Ø26,4 - 26,7
G 1"		Ø33,3 - 33,6
G 1 1/4"		Ø41,9 - 42,2
G 1 1/2"		Ø47,8 - 48,1
G 2"		Ø59,6 - 59,9
G 2 1/2"		Ø75,2 - 75,5
G 3"		Ø87,9 - 88,2

PG Threads		Hole Diameter (min. - max. mm)
Thread		
PG 9		Ø15,2 - 15,5
PG 11		Ø18,6 - 18,9
PG 13,5		Ø20,4 - 20,8
PG 16		Ø22,5 - 22,8
PG 21		Ø28,3 - 28,6
PG 29		Ø37,0 - 37,3
PG 36		Ø47,0 - 47,3
PG 42		Ø54,0 - 54,3
PG 48		Ø59,3 - 59,6

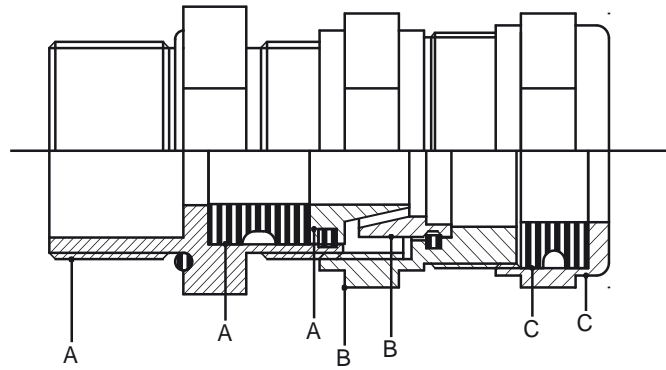
\* For non-threaded enclosure applications, min 3 threads should be engaged with the lock nut.

\* For non-threaded enclosures it is recommended to use flat washer (fiber, chloroprene, silicon) between the gland body and enclosure. During the assembly it is recommended to rotate the locknut. If the assembly needs to be done by rotating the gland, then oring should preferred.

\* For oring material Chloroprene (neoprene) and silicon rubber can be used. For flat washer material Fiber, chloroprene (neoprene) or silicon rubber can be used.

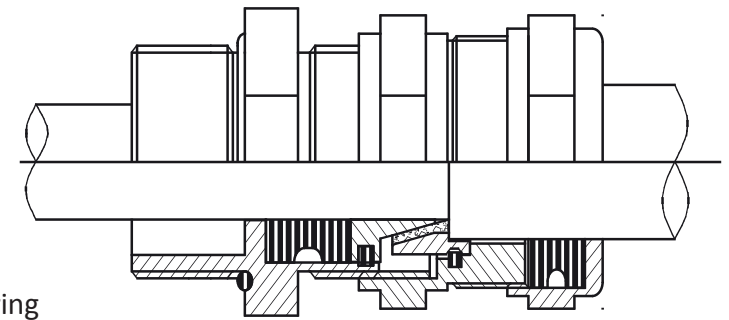
## Cable Gland Type KBA

Execution Ex d IIC Gb, Ex e IIC Gb, Ex tb IIIC Db



Composition of cable gland:  
Assembled A - body ; sealing ring;  
grounding cone/ grounding cone  
and armour tightening ring/  
shielding cone  
Assembled B- middle body; armour  
tightening ring  
Assembled C- nut; external sealing ring

Cable gland plan correctly assembled



### Assembling Instructions:

- 1) Fit assembled C and B on the cable, prepared as detailed above.
- 2) Fit the assembled A in the entry of the electric equipment.

### Standard ORION (KBA) and ORION-LT (KBALT)

- 3) After having slipped the underarmour sheath of the cable into assembled A, tighten the assembly with the assembled B. Keep the cable pushed towards the inside of the apparatus, so that the armour is always in contact with the conical part of the armour tightening section.
- 4) Complete the installation, by tightening the assembled C, with assembled B.

### ORION Universal (KBAU) and ORION Universal-LT (KBAULT)

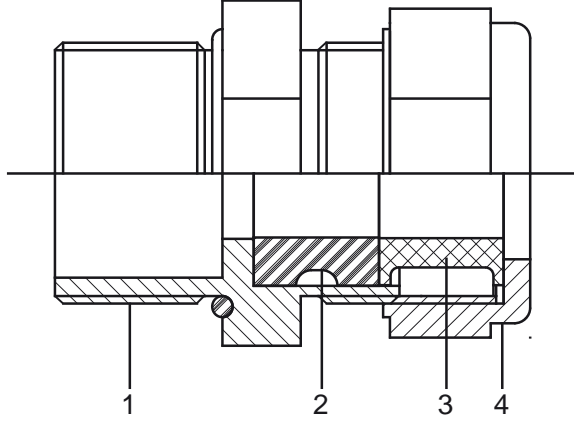
- 3) After having slipped the underarmour sheath of the cable into assembled A, tighten the assembly with the assembled B. Keep the cable pushed towards the inside of the apparatus, so that the armour is always in contact with the conical part of the armour tightening section.
- 4) Complete the installation, by tightening the assembled C, with assembled B.
- 5) For armoured cable assembly, separate group A from group B and take armour reduction out. Then apply the assembly steps starting from 2.

### ORION Offshore (KBAO) and ORION Offshore-LT (KBAOLT)

- 3) After having slipped underarmour sheath of the cable into assembled A, tighten the assembly with the assembled B. Keep the cable pushed towards the inside of apparatus, so that the armour is always in contact with the conical part of the armour tightening section.
- 4) Complete the installation, by tightening the assembled C, with assembled B.

## Cable Gland Type KBU

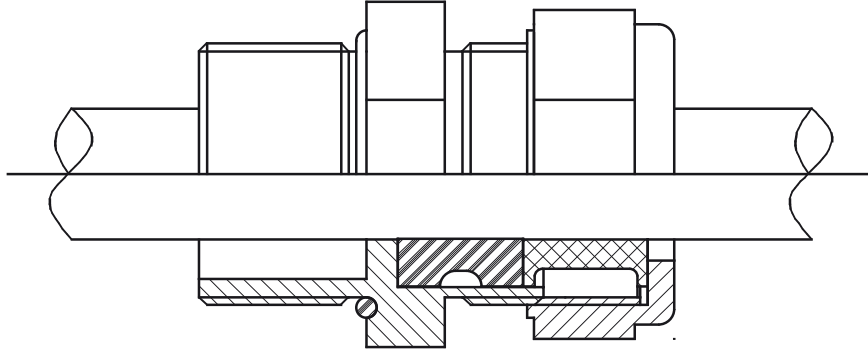
Execution Ex d IIC Gb, Ex e IIC Gb, Ex tb IIIC Db



### Composition of cable gland:

- 1-Body
- 2-Sealing ring
- 3-Pressure ring
- 4-Nut

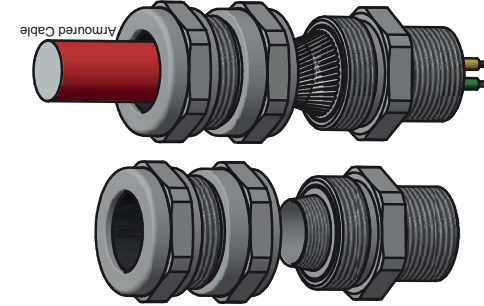
### Cable gland plan correctly assembled



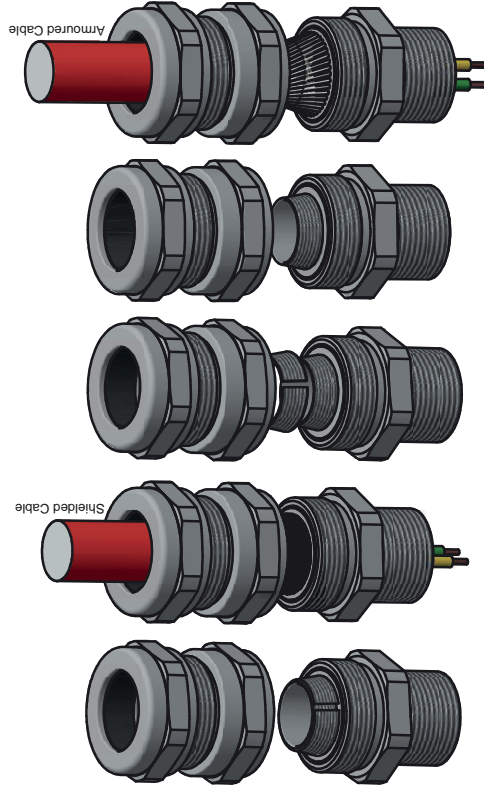
### Assembling Instructions

- 1) Insert on the cable, the nut 4 and pressure ring 3.
- 2) Fit the body 1 and sealing ring in the entry of the electric equipment.
- 3) After having slipped the cable into the sealing ring 2, tighten all said assembly with the nut 4.

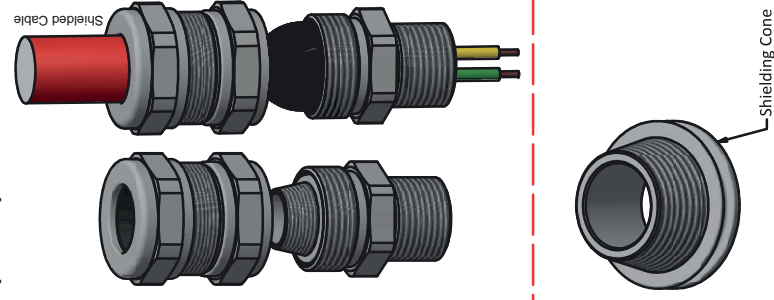
### Orion Ex d/e Gland (KBA) and KBALT



### Orion Universal Ex d/e Gland (KBAU) and KBAULT

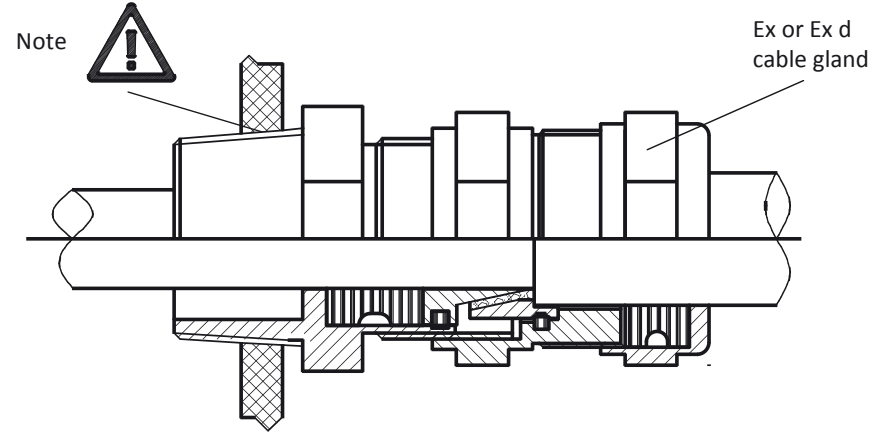


### Orion Offshore Ex d/e (KBAO) and KBAOLT



## IP protection mode for Ex d - Ex e - Ex i cable glands with tapered thread

### For KBA and KBU type cable gland



#### NOTE:

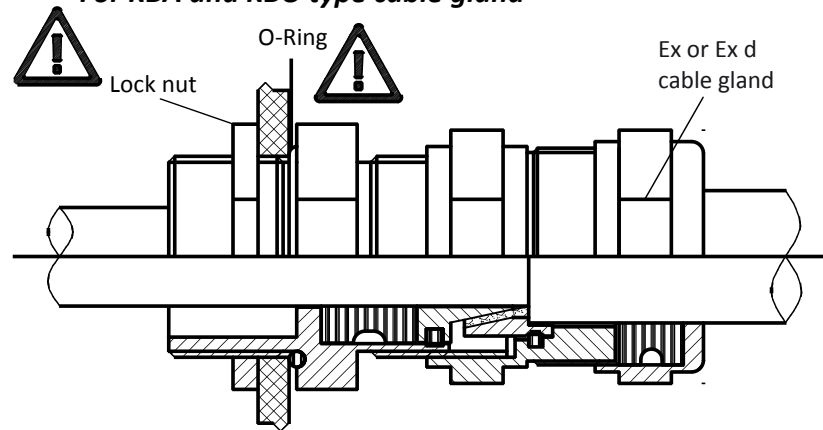
Ingress Protection: In order to guarantee the specified IP66/68 rating, sealant agent shall be applied on at least two full threads before fitting the gland to the box. In any case you must pay attention to guarantee the metallic continuity.

#### Assembling on Ex d enclosures:

The enclosure wall has to be thick enough to engage at least 5 full threads.

## IP protection mode for Ex d - Ex e - Ex i cable glands with cylindrical thread

### For KBA and KBU type cable gland



#### NOTE:

To ensure that the specified IP66/68 protection mode is achieved with the installation (threaded or non-threaded holes), please follow the steps detailed hereafter:

#### Enclosures Ex d:

Assembling with o-ring on the thread of gland through a threaded hole. The wall has to be thick enough to engage at least 5 full threads.

#### Enclosures Ex e:

Tighten with locknut inside and o-ring on the thread of the gland. You have to respect a minimum wall thickness of 1,5 mm.

Type cable glands	Sealings range	
	Inner min-max	Outer min-max
KBA01S	3,0-8,5	6,0-12,0
KBA01	6,0-12,0	8,5-16,0
KBA1S	3,0-8,5	6,0-12,0
KBA1	6,0-12,0	8,5-16,0
KBA1L	12,0-14,5	16,0-20,0
KBA2XS	3,0-8,5	6,0-12,0
KBA2S	6,0-12,0	8,5-16,0
KBA2	12,0-16,0	16,0-21,0
KBA2L	12,0-20,0	16,0-26,0
KBA3XS	6,0-12,0	8,5-16,0
KBA3S	12,0-20,0	16,0-26,0
KBA3	15,0-26,0	20,0-33,0
KBA4XS	12,0-20,0	16,0-26,0
KBA4S	15,0-26,0	20,0-33,0
KBA4	20,0-32,0	29,0-41,0
KBA5XS	15,0-26,0	20,0-33,0
KBA5XM	20,0-32,0	29,0-41,0
KBA5S	22,0-35,0	33,0-48,0
KBA5	27,0-41,0	36,0-52,0
KBA6XS	22,0-35,0	33,0-48,0
KBA6XM	27,0-41,0	36,0-52,0
KBA6S	35,0-45,0	43,0-57,0
KBA6	40,0-52,0	47,0-60,0
KBA7XS	35,0-45,0	43,0-57,0
KBA7S	40,0-52,0	47,0-60,0
KBA7	45,0-60,0	54,0-70,0
KBA8XS	40,0-52,0	47,0-60,0
KBA8S	45,0-60,0	54,0-70,0
KBA8	60,0-72,0	63,0-80,0
KBA10SM/ KBA9SN	45,0-60,0	54,0-70,0
KBA10M/ KBA9N	60,0-72,0	63,0-80,0

Type cable glands	Sealings range
	D min-max
KBU01	3-8,5
KBU01L	6 -12
KBU1	6 -12
KBU1L	12-14,5
KBU2S	6-12
KBU2	12-16
KBU2L	12-20
KBU3S	12-20
KBU3	15-26
KBU4S	15-26
KBU4	20-32
KBU5S	22-35
KBU5	27-41
KBU6S	35-45
KBU6	40-52
KBU7S	40-52
KBU7	45-60
KBU8S	45-60
KBU8	60-72

Cable glands type	M ISO Pitch 1,5	Type cable glands	M NPT ANSI ASME B1.20.1	Cable Diameter Range	
				D min-max	D1 min-max
KBA1MLT (U, O)	M20x1,5	KBA1NLT (U, O)	1/2"	8,5-14,5	12,0-20,0
KBA2XMMLT (U, O)	M25x1,5	KBA2XMNLT (U, O)	3/4"	8,5-14,5	12,0-20,0
KBA2MLT (U, O)	M25x1,5	KBA2NLT (U, O)	3/4"	8,5-16,0	12,0-21,0
KBA3XMMLT (U, O)	M32x1,5	KBA3XMNLT (U, O)	1"	8,5-16,0	12,0-21,0



## EC DECLARATION OF CONFORMITY

We declare that the products designed to be placed on the market for use in the explosive atmospheres described below:

Cable glands type KBA, KBA..LT, KBU in execution:  
II 2GD Ex d IIC Gb; Ex e IIC Gb; Ex tb IIIC Db IP66/68

Temperature range for KBA, KBU:  
-40°C to +100°C with Neoprene (Chloroprene) sealing rings

-60°C to +130°C with Silicon sealing rings

Temperature range for KBALT:  
-40°C to +80°C with Neoprene (Chloroprene) sealing rings  
-60°C to +80°C with Silicon sealing rings

restricted use up to -20°C for cable glands made of galvanized carbon steel.  
-40°C to +80°C for cable glands with fiber flat washer.

Certificate number : CESI 13 ATEX 033X

Satisfy

The dispositions applied of them directive ATEX 94/9/EC

The harmonized standards applied :

EN 60079-0:2012; EN 60079-1:2007; EN 60079-7:2007; EN 60079-31:2009

These products has been designed, manufactured and controlled within the guidelines of a quality insurance system which is certificated to be conform with ISO 9001:2008 and EN ISO 80079-34:2011.

Notified body  
CESI 0722

İstanbul, 22-06-2015

General Manager

  
TEKNİK ALETLER  
SANAYİ VE TİCARET  
A.Ş.

