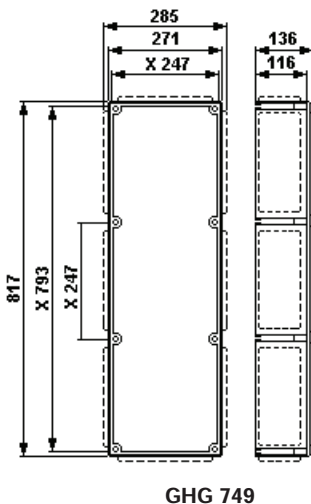
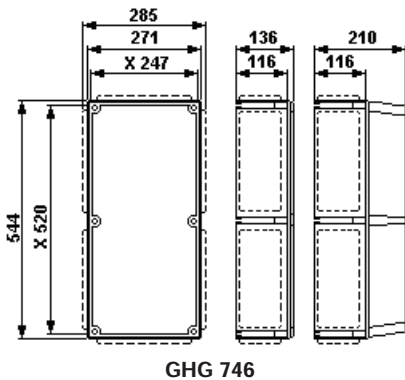
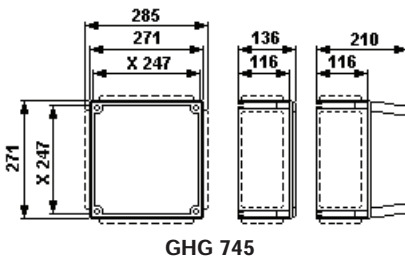
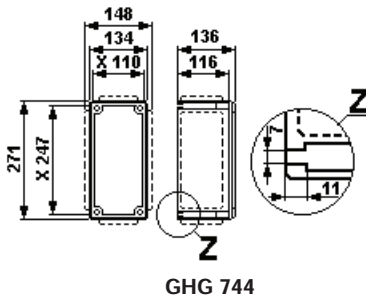


### Dimensions, plastic terminal boxes



X = Fixing dimensions

## 1 Technical data

### 1.1 Plastic terminal boxes

ATEX type examination certificate: BVS 12 ATEX E 118X  
 Marking acc. to 94/9/EG and standard: EN 60079-0

- ⊕ II 2 G Ex e IIC T4/T6/T5\* Gb
- ⊕ II 2 G Ex e ib [ia/ib] IIC T4/T6/T5\* Gb
- ⊕ II 2 D Ex tb IIIC T80°C/ T100°C Db IP6

IECEx type examination certificate: IIECEx BVS 12.0071X  
 Category of application: IEC60079-0

- Ex e IIC T4/T6/T5\* Gb
- Ex e ib [ia/ib] IIC T4/T6/T5\* Gb
- Ex tb IIIC T80°C/ T100°C Db IP6

If required, the types of protection of separately certified components,

e.g. „d” and/or „ib”, can be added to the marking.

\*T6 -> max. +40 °C ambient temperature

\*T5 -> max. +55 °C ambient temperature

\*T4 -> max. +55 °C ambient temperature, only if components in the type of protection

Intrinsic Safety „i” are installed.

Rated voltage: up to 690 V

Rated current: acc. to table on the inside of the enclosure cover

Permissible ambient temperature: -20° C to +40° C (catalogue version)

Deviating temperatures possible with special versions.

Perm.storage temperature in original packing: -20° C to +80° C

Protection category acc. to EN/IEC 60529: IP 66 (catalogue version)

IP 54 with double cable end box

Insulation class acc. to EN/IEC 61140:

I - with metal flange

II - plastic terminal boxes fulfil this requirement

Terminals:

Quantity - acc. to the certificate

Terminal box	GHG .....	744 01	745 02	746 03	749 04
	max.	25 mm <sup>2</sup>	70 mm <sup>2</sup>	300 mm <sup>2</sup>	300mm <sup>2</sup>

Cable entries: acc. to customer's specification and as certified

Empty weights:	GHG .....	744 01	745 02	746 03	749 04
	approx.	1.5 kg	2.5 kg	4.5 kg	5.5 kg

Test torques at 20°C:

Cable entries	M12	M16	M20	M25	M32	M40	M50	M63
	x1.5	x1.5	x1.5	x1.5	x1.5	x1.5	x1.5	x1.5
	Nm	Nm	Nm	Nm	Nm	Nm	Nm	Nm

Screw-in thread in enclosure	2.50	3.75	3.75	5.00	7.50	7.50	7.50	7.50
------------------------------	------	------	------	------	------	------	------	------

Pressure screw of KLE

for min. cable Ø	2.00	3.00	3.50	5.00	8.00	11.00	16.00	22.00
------------------	------	------	------	------	------	-------	-------	-------

for max. cable Ø	1.65	2.50	2.50	3.50	5.00	5.00	5.00	5.00
------------------	------	------	------	------	------	------	------	------

Trumpet intermediate gland	-	-	3.50	4.00	7.50	12.00	35.00	45.00
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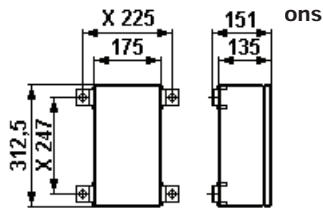
Trumpet-shaped gland	-	-	3.00	3.00	6.00	10.00	30.00	40.00
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Pull relief (screws)	-	-	1.50	2.50	4.00	6.00	10.00	15.00
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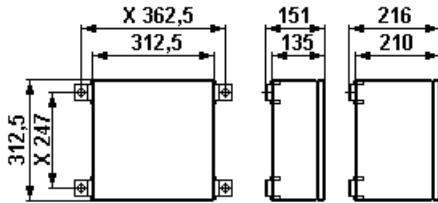
Cover screws 2.50 Nm

# Explosion protected terminal boxes made of plastic or stainless steel type GHG 74.

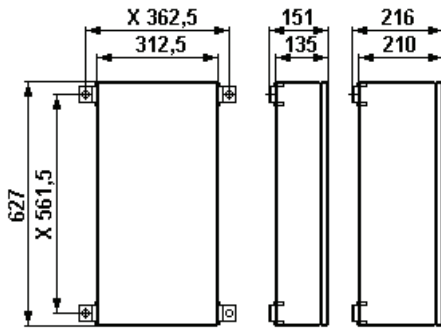
## Dimensions, stainless steel terminal boxes



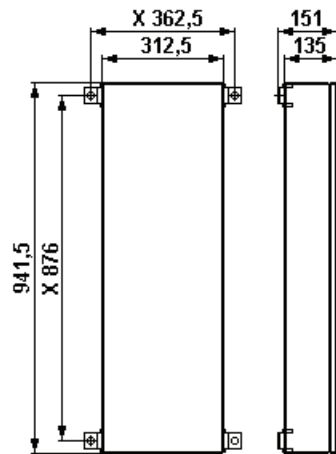
GHG 744



GHG 745



GHG 746



GHG 749

## 1.2 Stainless steel terminal boxes

ATEX type examination certificate:		BVS 12 ATEX E 118X
Marking acc. to 94/9/EG and standard:		
EN 60079-0	⊕ II 2 G	Ex e IIC T4/T6/T5* Gb
	⊕ II 2 G	Ex e ib [ia/ib] IIC T4/T6/T5* Gb
	⊕ II 2 D	Ex tb IIC T80°C/ T100°C Db IP6
IECEx type examination certificate:		IIECEx BVS 12.0071X
Category of application:		
IEC60079-0		Ex e IIC T4/T6/T5* Gb
		Ex e ib [ia/ib] IIC T4/T6/T5* Gb
		Ex tb IIC T80°C/ T100°C Db IP6

If required, the types of protection of separately certified components, e.g. „d“ and/or „ib“, can be added to the marking.

\*T6 -> max. +40 °C ambient temperature

\*T5 -> max. +55 °C ambient temperature

\*T4 -> max. +55 °C ambient temperature, only if components in the type of protection

Intrinsic Safety „i“ are installed.

Rated voltage:	up to 690 V				
Rated current:	acc. to table on the inside of the enclosure cover				
Permissible ambient temperature:	-20° C to +40° C (catalogue version)				
Deviating temperatures possible with special versions.					
Perm.storage temperature in original packing:	-20° C to +40° C				
Protection category acc. to IEC/EN 60529:	IP 66 (catalogue version)				
Insulation class acc. to IEC/EN 61140:	I - metal terminal boxes fulfil this requirement				
Terminals:	Quantity - acc. to the certificate				
Terminal box	GHG ....	744 21	745 22	746 23	749 24
	max.	25 mm <sup>2</sup>	70 mm <sup>2</sup>	300 mm <sup>2</sup>	300mm <sup>2</sup>
Cable entries:	acc. to customer's specification and as certified				
Empty weights:	GHG .....	744 21	745 22	746 23	749 24
	approx.	3.5kg	7.5kg	11.5kg	16.5kg

Test torques:	2.5 Nm				
Cover screws	2.5 Nm				
Metal cable entries Ex-e/Ex-d	Type	ADL 1F/4F	-internal-	Type ADE 1F/4F	
Cap nut of the metal cable entry M20x1.5	5	10 Nm	15 Nm	5	20 Nm
Cap nut of the metal cable entry M20x1.5	6	15 Nm	18 Nm	6	22 Nm
Cap nut of the metal cable entry M20x1.5	6	15 Nm	18 Nm	7	25 Nm
Cap nut of the metal cable entry M25x1.5				7	25 Nm
Cap nut of the metal cable entry M25x1.5	7	18 Nm	20 Nm	8	28 Nm
Cap nut of the metal cable entry M32x1.5	8	20 Nm	25 Nm	8	28 Nm
Cap nut of the metal cable entry M40x1.5	9	40 Nm	50 Nm	10	52 Nm
Cap nut of the metal cable entry M50x1.5	10	80 Nm	90 Nm	10	52 Nm
Cap nut of the metal cable entry M63x1.5	11	90 Nm	100 Nm	12	55 Nm

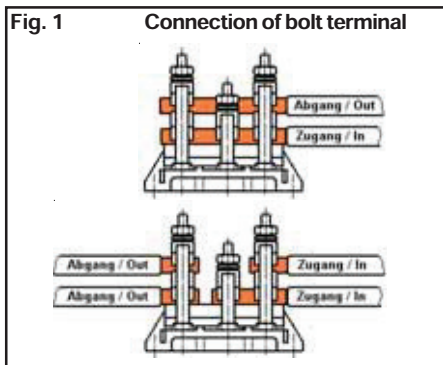
## 1.3 Intrinsic Safety „i“

Sicherheitstechnische Maximalspannung  $U_m$ :

690 V<sub>eff</sub>

Galvanisch sicher getrennt von allen anderen Stromkreisen und von Erde.

# Explosion protected terminal boxes made of plastic or stainless steel type GHG 74.



## 2 Safety instructions

**!** *The operations must be carried out by electrical suitably trained in hazardous area with knowledge of increased safety explosion protection IEC/EN 60079-14.*

*The plastic or stainless steel terminal boxes GHG 74. are not suitable for Zone 0 and Zone 20 hazardous areas. The temperature class and explosion group marked on the terminal boxes have to be observed.*

*The requirements of the IEC/EN 60079-31 regarding excessive dust deposits and temperature to be considered from the user.*

*Modifications to the terminal boxes or changes of their design are not permitted. They have to be used for their intended purpose and in perfect and clean condition.*

*For replacement and repair only genuine COOPER CROUSE-HINDS / CEAG spare parts may be used.*

*Repairs that affect the explosion protection, may only be carried out by COOPER CROUSE-HINDS / CEAG or a qualified electrician in compliance with the respective national regulations.*

*Prior to taking the terminal boxes into operation, they will have to be checked in accordance with the instruction as per section 6.*

*Before the initial operation, any foreign matter will have to be removed from the terminal boxes.*

*Observe the national safety rules and regulations for prevention of accidents as well as the safety instructions included in these operating instructions and set in italics the same as this text!*

## 3 Conformity with standards

The explosion protected terminal boxes have been designed, manufactured and tested according to the state of the art and to DIN EN ISO 9001:2008 and IEC 80079-34:2011.

They are conform to the standards specified in the EC-Declaration of conformity, enclosed separately.

94/9 EC: Equipment and protective systems intended for use in potentially explosive atmospheres.

The explosion protected terminal boxes fulfil further requirements, such as the EC directive on electromagnetic compatibility (2004/108/EC).

## 4 Field of application

The plastic or stainless steel terminal boxes are suitable for use in Zone 1 and 2 as well as in Zones 21 and 22 hazardous areas acc. to IEC/EN 60079-10-1 and IEC/EN 60079-10-2!

The enclosure materials employed, including the exterior metal parts, are made of high-quality materials which ensure a corrosion protection and resistance to chemical substances corresponding to the requirements in a "normal industrial atmosphere":

- glass-fibre reinforced polyester
- special stainless steel V4 A AISI 316 L

In case of use in an extremely aggressive atmosphere, please refer to manufacturer.

## 5 Use / Properties

The terminal boxes are intended for the distribution of electrical energy, e.g. light circuits, heating circuits, control circuits, intrinsically safe circuits etc. (as to temperature class, explosion group, permissible ambient temperature, see technical data).

*The electrical limiting values that are decisive for the intrinsic safety shall be observed.*

The terminal boxes can also be used in a „normal industrial area“.

*The data as per point 3 and 4 will have to be taken into account with the use.*

*Applications other than described are not permitted without COOPER CROUSE-HINDS / CEAG's prior written consent.*

*For the operation, the instructions stated in section 7 of the operating instructions will have to be observed.*

*The responsibility for the suitability and proper use of the terminal boxes lies on the user.*

## 6 Installation

For the mounting and operation, the respective national regulations (e.g. Betr.Si.V, equipment safety law for Germany, IEC/EN 60079-14) as well as the general rules of engineering will have to be observed.

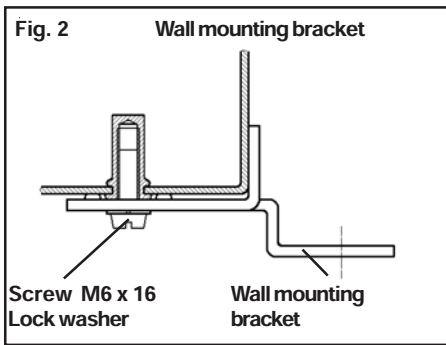
### 6.1 Mounting

The plastic and stainless steel terminal boxes can be mounted without opening their enclosure.

When mounting the terminal boxes directly onto the wall, they shall rest evenly only on the fastening points provided for them. The chosen screw must match the fastening hole (see dimensional drawings page 9 and 10 as fig. 2 and 3 page 12).

*They shall not damage the hole (e.g. use of a washer). If the screws are overtightened, the plastic terminal boxes may be damaged.*

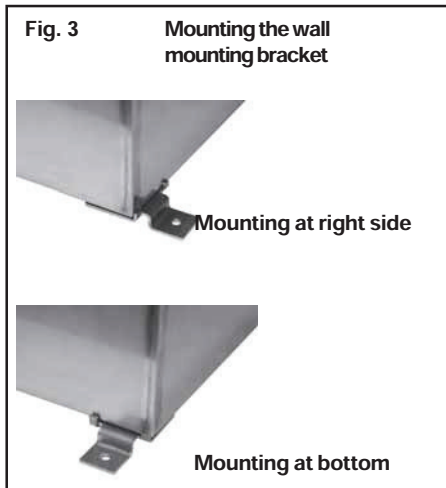
# Explosion protected terminal boxes made of plastic or stainless steel type GHG 74.



The plastic terminal boxes GHG 744, 745, 746 and GHG 749 are suitable for fastening onto COOPER CROUSE-HINDS / CEAG apparatus holders by means of self-cutting screws (see fig. 4-7 and page 13 fig.8).

The respective mounting instructions will have to be observed.

Mounting the wall mounting brackets onto the stainless steel terminal boxes GHG 744, GHG 745, GHG 746 and GHG 749 is done as per fig. 2 and 3.



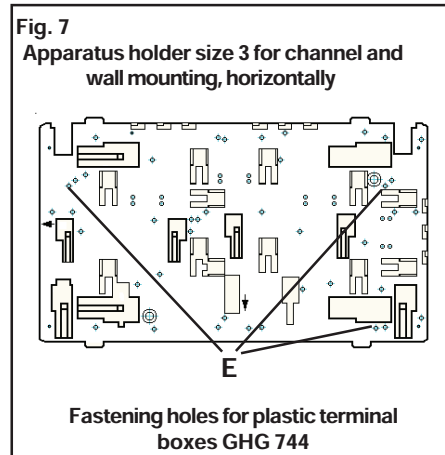
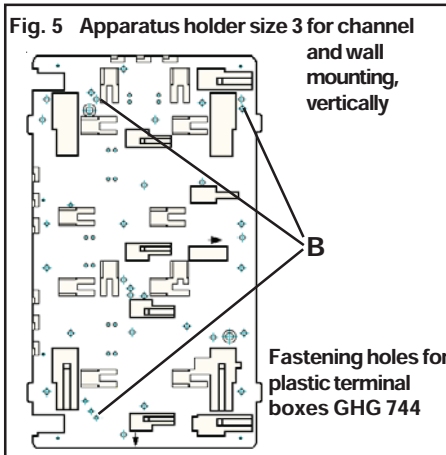
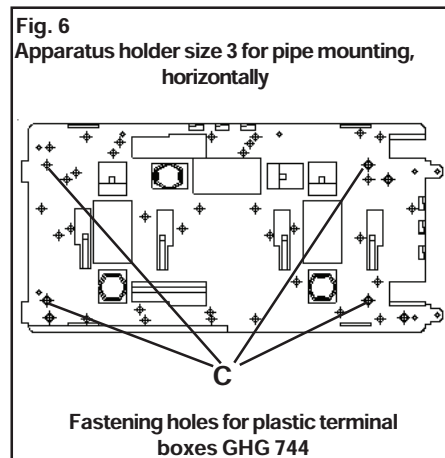
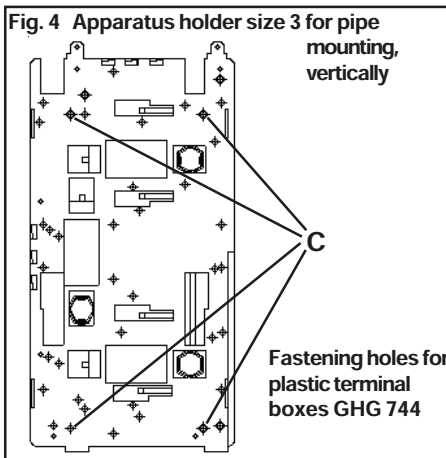
**Observe the min. No. of wall mounting brackets!**

## 6.2 Opening the apparatus/ Electrical connection

*Before opening the apparatus, it is necessary to ensure that there is no voltage or to take suitable protective measures.*

*The electrical connection of the apparatus may only be carried out by skilled staff (IEC/EN 60079-14).*

*The table indicating the current load values which is provided on the cover inside of the terminal boxes and in this operating instruction is to be observed.*



**The insulation of the conductors shall reach up to the terminal. The conductor itself shall not be damaged.**

The properly bared conductors of the cables shall be connected, taking into account the respective regulations.

The connectible min. and max. conductor cross-sections will have to be observed.

All screws and/or nuts of the supply terminals, and unused terminals, shall be tightened down.

The fitted standard terminals are designed for direct connection of conductors with copper cores.

**The conductors shall be connected with special care in order to maintain the explosion category.**

The supply terminals are designed for the connection of copper conductors. If multi- or fine-wire connecting cables are used, the wire ends will have to be handled in acc. with the applicable national and international rules (e. g. use of ferrules).

If stud terminals are fitted, DIN cable lugs shall be used.

! In the case of building up the electrical equipment in the "protective insulation" version, appropriate sticker

(□) GHG 905 1002 P0005 can be requested by the manufacturer.

! If the inserted terminal rail is not equipped completely with line-up terminals, the terminal rail must be included in the equipotential earth connection also.

**Attention: The cable lugs should be crimped onto the cable in a workmanlike manner.**

**It is to be ensured that the required min. air gaps are kept (at 690 V ≥ 12 mm).**

If up to 240mm<sup>2</sup> (bolt type) terminals are mounted in the terminal/junction box, they shall be connected as shown (max 2 x 240mm<sup>2</sup>) in fig. 1, page 9.

**In case of mixed equipment Ex e / Ex-i, the required minimum distances will have to be kept (see e.g. IEC/EN 60079-11).**

**When apparatus is open, it is necessary to ensure (disconnect voltage supply) that no voltage is carried over into the connected intrinsically safe circuits.**

The installation instructions for intrinsically safe electrical apparatus shall be observed. It is necessary to ensure that the permissible external capacitance and inductance of the special intrinsically safe circuits are not exceeded.

## Explosion protected terminal boxes made of plastic or stainless steel type GHG 74.

Fig. 8

2 x Apparatus holder size 3 for pipe mounting,  
only horizontally

A= Fastening holes for:  
Plastic terminal box GHG 745  
Plastic terminal box GHG 746, only vertically  
Plastic terminal box GHG 749, only vertically

(dimension X = 0 mm)  
(dimension X = 267mm)  
(dimension X = 540mm)

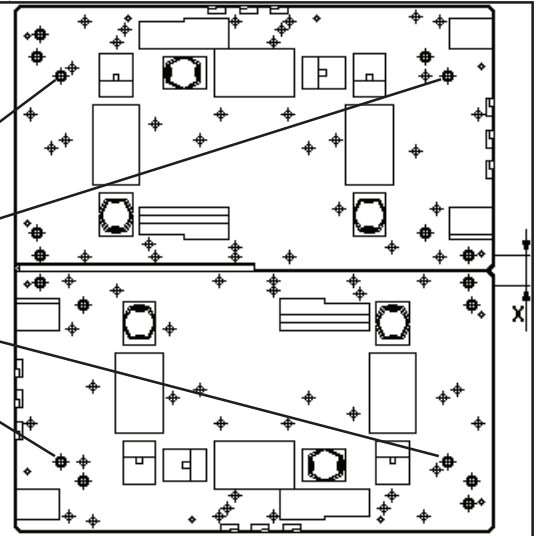
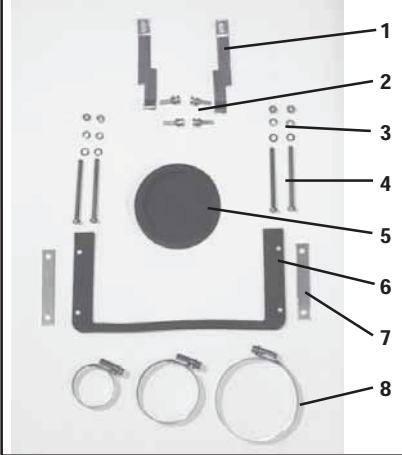


Fig. 9 Mounting parts, cable end box \*



### 6.3 Cable entries (KLE)/ Blanking plugs

*Generally, only certified cable entries and blanking plugs may be used.*

*Flexible cables are to be used with trumpet-shaped cable glands or other suitable entries with additional pull-relief.*

*The mounting directives applicable to the fitted cable entries are to be observed.*

*When using cable entries with a lower IP - protection than that which applies to the device (see technical data, page 7), the IP - protection of the whole device will be reduced.*

#### 6.3.1 Double cable end box

**Mounting:**  
see fig. 9 and fig. 10

Unscrew the two fixing screws Item 4, and the three fixing screws item 12 of the upper part item 10, and remove the upper part.

Loosen the clamps item 14, of the strain-relief.

The cable sleeves item 13, have to be cut to suit the cable diameter.

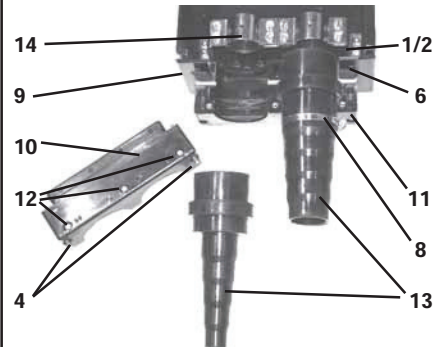
After fitting the cable, the cable sleeve item 13, is to be sealed by means of the respective clamp ring item 8.

Finally, the upper part item 10, is fitted and screwed down with the fixing screws item 4 and item 12, and the pull-relief item 14, is again put in place.

The unused entry hole of the double cable end box is to be closed with a sealing sleeve item 5 (order No. GHG 740 1933 R0003).

**Attention: In order to ensure that the required minimum protection category is withheld, it must be ensured that the seal item 6, is in the correct position.**

Fig. 10 Mounting cable end box \*



- 1 Mounting plate
- 2 Self cutting screws
- 3 Mounting set M5
- 4 Fixing screws
- 5 Sealing sleeve
- 6 Seal
- 7 Perforated plates
- 8 Clamp ring
- 9 Enclosure base
- 10 Double cable end box - upper part
- 11 Double cable end box - base part
- 12 Fixing screws for cover
- 13 Cable bushings
- 14 Semi-clamp

In order to establish the minimum protection category, unused holes have to be closed with a certified blanking plug.

Care has to be taken that when fitting the cable entries, sealing inserts appropriate to the cable diameter are used.

In case of sealing inserts that are cut out, it will have to be ensured that the insert is properly adapted to the cable diameter.

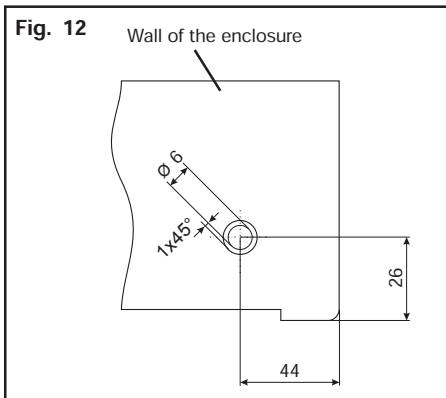
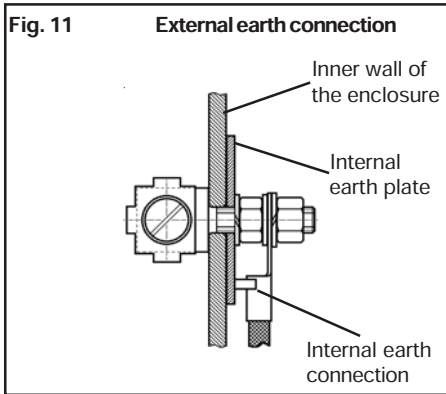
In order to ensure the required minimum protection category, the cable glands shall be tightened down.

**Overtightening might impair the protection category.**

**Attention: When tightening the cap nut of the (type ADL/ADE) metal cable entry, the screwing is to be protected against twisting by means of a suitable tool.**

All vacant metric COOPER CROUSE-HINDS / CEAG cable entries shall be closed with the certified blanking plug for metric cable entries.

# Explosion protected terminal boxes made of plastic or stainless steel type GHG 74.



## 6.4 Plastic\*, metalflanges, metal plates and external earth connection

If flange plates have to be removed in case of plastic terminal boxes (e.g. for drilling entry holes), attention will have to be paid to the proper fit of the flange plate and of the clamp clip when mounting them in order to maintain the minimum protection category.

Flange plates for stainless steel terminal boxes shall be fitted so that the IP protection is maintained. Pay attention to the proper seat of the sealing element.

**PE conductors fed from outside are to be connected to the PE terminal provided on the flange. The maximum cross-section is 50 mm<sup>2</sup>.**

In case an external earth connection is mounted on the plastic enclosure, it should be connected with a max. 25 mm<sup>2</sup> wire.

This earth connection is inserted through a M6 drill in the inner wall of the enclosure (see fig. 11).

**Attention: Metal flanges, metal plates and metal cable glands shall be included in the equipotential earth connection.**

\* not yet certified for category II D

## 6.5 Closing the device/ cover closure

**Any foreign matter is to be removed from the apparatus.**

In order to ensure the required minimum protection category, the cover screws are to be tightened down.

**Overtightening might impair the protection category.**

## 6.6 Taking into operation

Prior to taking the apparatus into operation, the tests specified in the relevant national regulations will have to be carried out.

Apart from that, the correct functioning and installation of the apparatus in accordance with these operating instructions and other applicable regulations will have to be checked.

**Incorrect installation and use of the terminal boxes can invalidate the guarantee.**

## 7 Maintenance / Servicing

**The relevant national regulations which apply to the maintenance/repair of electrical apparatus in explosive atmospheres, will have to be observed (IEC/EN 60 079-17).**

**Before opening the enclosure make sure that the terminal box is disconnected from the voltage, or take the appropriate protective measures.**

In case of intrinsically safe circuits, working is permitted while voltage applies.

The required maintenance intervals depend on the specific application and will therefore have to be determined by the user dependent on the conditions of use.

When servicing the apparatus, particularly those parts that are decisive for the type of protection against explosion, will have to be checked (e.g. intactness and tightness of the enclosure, efficacy of the gaskets and the cable entries).

If during servicing, repairs prove to be necessary, section 8 of these operating instructions will have to be observed.

## 8 Repairs / Overhaul / Modifications

Overhaul and repairs may only be carried out with genuine COOPER CROUSE-HINDS / CEAG spare parts.

**Repairs that affect the explosion protection, may only be carried out by COOPER CROUSE-HINDS / CEAG or a qualified electrician in compliance with the applicable national rules (IEC/EN 60079-19).**

Modifications to the apparatus or changes of its design are not permitted, except for the mounting of additional cable entries and the installation of supply terminals in accordance with the approval of the apparatus.

## 9 Disposal / Recycling

When the apparatus is disposed of, the respective national regulations on waste disposal will have to be observed.

In order to facilitate the recycling of individual components, plastic parts are provided with the identification mark of the plastic material used.

Subject to modifications or supplement of the product range.