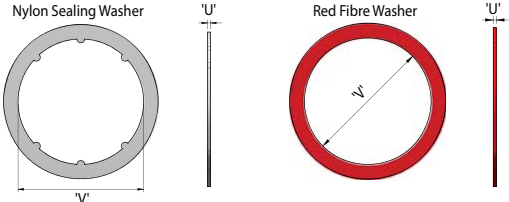


Cable Glands Accessories



Nylon Sealing and Red Fibre Washer



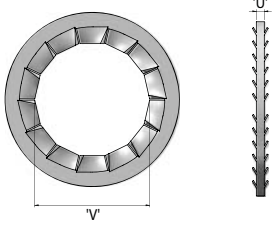
The diagrams show a Nylon Sealing Washer (grey) and a Red Fibre Washer (red). Both are circular with a diameter labeled 'V'. The Nylon Sealing Washer has a raised outer edge, while the Red Fibre Washer is a simple ring. Both have a thickness labeled 'U'.

SELECTION TABLE		
Metric Gland Size 'V'	NPT * Gland Size 'V'	'U'
M20	1/2"	1.5
M20	3/4"	1.5
M25	1"	1.5
M32	1 1/4"	1.5
M40	1 1/2"	1.5
M50	2"	1.5
M63	2 1/2"	1.5
M75	3"	1.5
M80 ¹	3 1/2"	1.5
M90 ¹	3 1/2"	1.5
M100 ¹	4"	1.5

All dimensions in millimetres (except * where dimensions are in inches).

¹ M80, M90 and M100 washers are only available in Red Fibre

Serrated Washer



The diagram shows a Serrated Washer (grey) with a diameter labeled 'V' and a thickness labeled 'U'. The washer has a serrated inner edge.

SELECTION TABLE		
Metric Gland Size 'V'	NPT * Gland Size 'V'	'U'
M20	1/2"	1.5
M20	3/4"	1.5
M25	1"	1.5
M32	1 1/4"	1.5
M40	1 1/2"	1.5
M50	2"	1.5
M63	2 1/2"	1.5
M75	3"	1.5

All dimensions in millimetres (except * where dimensions are in inches).

Application

- For use on cable gland entry threads.

Features

- To maintain ingress protection rating at the enclosure.
- Retaining 'Pips' make washer captive on metric cable gland entry thread.

Ordering Information

Format for ordering is as follows:

Sealing Washer Type	Size / Thread	Sealing Washer Type	Size / Thread
Nylon Washer	M25	Fibre Washer	M25

Application

- For use on cable gland entry threads.

Features

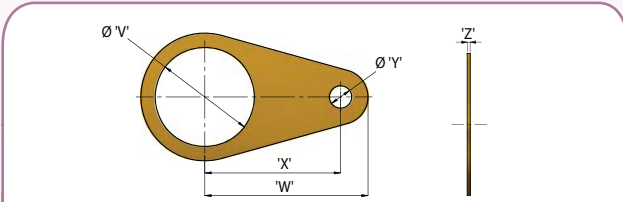
- To dampen vibrations of the cable gland / equipment assembly which may loosen the cable gland or locknut.
- Manufactured in Stainless Steel (standard).

Ordering Information

Format for ordering is as follows:

Serrated Washer Type	Size / Thread	Serrated Washer Type	Size / Thread
Serrated Washer	M25	Serrated Washer	1"NPT

Earth Tags



SELECTION TABLE

Metric Gland Size 'V'	'Y'	'W'	'X'	'Z'
M20	6.75	39.6	33.1	1.6
M25	6.85	45.5	36.5	1.6
M32	12.6	52.0	40.9	1.6
M40	13.4	59.6	44.2	1.6
M50	13.5	78.9	58.1	1.6
M63	13.5	87.6	66.8	1.6
M75	13.5	93.7	72.9	1.6
M80	14.0	128.0	104.0	3.0
M90	14.0	128.0	104.0	3.0
M100	14.0	128.0	104.0	3.0

All dimensions in millimetres.

Application

- Provides an earth bond attachment for a cable gland.

Features

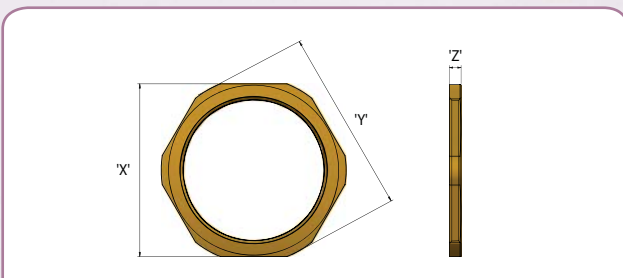
- Manufactured in Brass (standard).
- Stainless Steel earthtags are available, but dimensions may differ slightly to those stated in the selection table. Please contact Hawke Technical Sales for details.

Ordering Information

Format for ordering is as follows:

Type	Size / Thread
Earthtag	M25

Locknut



SELECTION TABLE

Metric x 1.5mm Pitch				NPT			
Metric Gland Size	Across Flats 'X'	Across Corners 'Y'	'Z'	NPT* Gland Size	Across Flats 'X'	Across Corners 'Y'	'Z'
M16	19.0	21.9	3.2	-	-	-	-
M20	24.0	26.9	4.0	½"	30.0	33.6	4.7
M20	24.0	26.9	4.0	¾"	30.0	33.6	4.7
M25	30.0	33.6	4.0	1"	36.0	40.3	6.4
M32	46.0	53.1	4.0	1¼"	46.0	53.1	6.4
M40	46.0	53.1	4.8	1½"	55.0	61.6	6.4
M50	65.0	72.8	4.7	2"	65.0	72.8	6.4
M63	80.0	89.6	6.4	2½"	80.0	89.6	6.4
M75	95.0	107.0	6.4	3"	95.0	107.0	6.4
M80	106.4	119.2	10.0	3½"	127.0	143.0	9.0
M90	106.4	119.2	10.0	3½"	127.0	143.0	9.0
M100	127.0	142.2	10.0	4"	139.7	158.0	9.0

All dimensions in millimetres (except * where dimensions are in inches).

Application

- Secures a cable gland in position at the equipment.

Features

- Heavy duty locknuts manufactured in Brass (standard).
- Stainless Steel locknuts are available, but dimensions may differ slightly to those stated in the selection table. Please contact Hawke Technical department for details.

Ordering Information

Format for ordering is as follows:

Type	Size / Thread
Locknut	M25

Accessory Type: Shroud (TPE)



SELECTION TABLE

Size Ref:
O / Os
A
B
C
C2
D
E
F
G
H
J

Application

- Outdoor or indoor use.
- For fitting over cable glands when additional environmental and corrosion protection is required.

Features

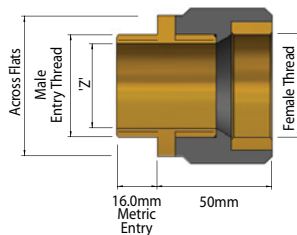
- Manufactured in Low Smoke and Fume, Halogen free TPE material with excellent UV and ozone resistance (black) supplied as standard.

Ordering Information

Format for ordering is as follows:

Shroud Type	Size / Thread
Shroud	C

Insulated Adaptor Type: 478/1 Flameproof Exd



SELECTION TABLE

Size Ref.	Male Thread Metric	Female Thread Metric	Bore 'Z'	Hexagon Dimensions	
				Across Flats	Across Corners
A	M20	M20	14.3	35.0	40.0
B	M25	M25	19.3	41.0	47.0
C	M32	M32	25.8	49.0	54.0
C2	M40	M40	33.0	55.0	63.5
D	M50	M50	43.0	70.0	80.5
E	M63	M63	54.0	80.0	92.4
F	M75	M75	67.0	90.0	103.5

All dimensions in millimetres.


Application

- Outdoor or indoor use.
- Provides electrical insulation between a cable gland or a conduit fitting and an electrical enclosure. E.g. to provide a means of isolating armour / braid on signal / instrument cable.

Features

- Insulated portion manufactured from glass filled nylon.
- Female insert and entry component are manufactured in Brass (standard).

Technical Data

- Flameproof Exd  II 2 GD.
- Certificate No's: Sira 06ATEX1240U.
- Suitable for use in Zone 1, Zone 2 and in Gas Groups IIA, IIB and IIC.
- Construction and Test Standards: IEC/EN 60079-0 and IEC/EN 60079-1.
- Ingress Protection: IP66.
- Operating Temperature Range: -60°C to +80°C.
- Assembly Instruction Sheet: AI 377.
- Alternative certification options available

Ordering Information

Format for ordering is as follows:

Adaptor Type	Male Thread	Female Thread
478/1	M32	M32

Stopping Plug Type 475 & 477



SELECTION TABLE

Thread Size		Hex. Key across Flats Size 'V'
Metric x 1.5p	NPT *	
M20	¾" or ½"	10.0
M25	1" or ¾"	10.0
M32	1¼" or 1"	10.0
M40	1½" or 1¼"	10.0
M50	2" or 1½"	10.0
M63	2½" or 2"	10.0
M75	3" or 2½"	10.0

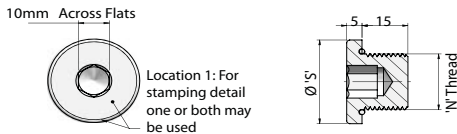
All dimensions in millimetres (except * where dimensions are in inches).

Ordering Information

Format for ordering is as follows:

Stopping Plug Type	Size
475	M32

387 Stopping Plug



SELECTION TABLE

N' Thread Size	S' Dia. (mm)	Key Size (Across Flats) (mm)
M16	25.4	10
M20	30	10
M25	35	10
M32	42	10
M40	54	10
M50	63.5	10
M63	76.2	10
M75	89	10

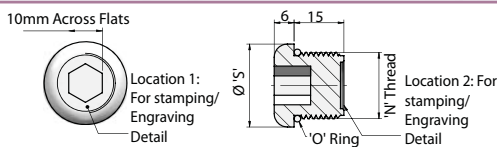
Note: The PL6, PL7, S Series and EZE ATEX / IECEx enclosures can only be fitted with the 387 ATEX approved metal Stopping Plugs.

Ordering Information

Format for ordering is as follows:

Stopping Plug Type	Size
387	M32

375 Stopping Plug



SELECTION TABLE

N' Thread Size	S' Dia. (mm)	Key Size (Across Flats)(mm)
M20	25	10
M25	30	10

Note: The PL6, PL7, S Series and EZE ATEX / IECEx enclosures can only be fitted with the 375 ATEX approved plastic Stopping Plugs.

Ordering Information

Format for ordering is as follows:

Stopping Plug Type	Size
375	M32

Application

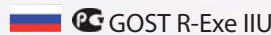
- To close unused cable gland entries and maintain the flame proof integrity of the equipment.
- See technical section for installation rules and regulations.

Features

- Manufactured in Brass (standard), Nickel Plated Brass or 316 Stainless Steel.
- 475 is fitted from the outside of the enclosure.
- 477 is fitted from the inside of the enclosure.

Technical Data

- Flameproof Exd & Increased Safety Exe II 2GD IP66.
- Certificate No's: Sira 06ATEX1240U.
- Construction and Test Standards: IEC/EN 60079-0, IEC/EN 60079-1 and IEC/EN 60079-7.
- Ingress Protection: IP66 with suitable thread sealant in threaded entries only
- Operating Temperature Range: -60°C to +80°C.
- Assembly Instruction Sheet: AI 379.
- Alternative certification options available:



Application

- To close unused cable gland entries and maintain the flameproof integrity of the equipment.
- See technical section for installation rules and regulations.

Features

- Manufactured in Brass (standard), Nickel Plated Brass or 316 Stainless Steel.

Technical Data

- Flameproof Exd & Increased Safety Exe II 2 GD IP66.
- Certificate No's: Sira 06ATEX1240U.
- Construction and Test Standards: IEC/EN 60079-0, IEC/EN 60079-1 and IEC/EN 60079-7.
- Ingress Protection: To meet with IP66 and IP67, the stopping plugs must be fitted perpendicular to the equipment face in a suitably sized threaded or plain hole and the equipment face must be smooth. Plain holes must be no larger than 0.7mm above the major diameter of the stopping plug thread and the plug must be held in place with a lock nut. A serrated washer may also be fitted.
- Deluge Protection to DTS01.
- Operating Temperature Range: -20°C to +60°C.
- Assembly Instruction Sheet: AI 378.

Application

- To close unused cable gland entries and maintain the integrity of the equipment.
- See technical section for installation rules and regulations.

Features

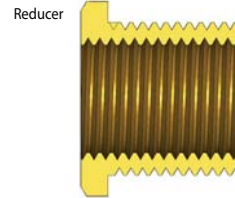
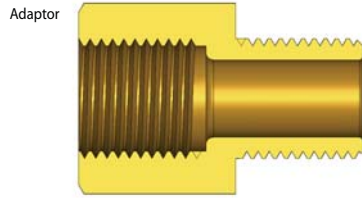
- Manufactured in Black Nylon (standard)

Technical Data

- Increased Safety II 2 GD Exe II ExtD.
- 375 Certificate No's: Baseefa06ATEX0236U and IECEx BAS 06.0056U.
- Suitable for use in Zone 1, Zone 2, Zone 21 and Zone 22.
- Construction and Test Standards: IEC/EN 60079-0, IEC/EN 60079-7, IEC/EN 61241-0 and IEC/EN 61241-1.
- Ingress Protection: IP66 and IP67 to IEC/EN 60529.
- Ingress Protection for PL6 Series Enclosures: IP66 and IP67 to IEC/EN 60529.
- Ingress Protection for PL7 Series, S Series and EZE Enclosures: IP66 and IP67 to IEC/EN 60529.
- Deluge Protection to DTS01.
- Operating Temperature Range: -60°C to +75°C.
- Suitable for T6 and T5 applications.
- Assembly Instruction Sheet: AI 360.

Adaptors and Reducers Type: 476

Flameproof Exd & Increased Safety
Exe Certified ATEX



ADAPTOR AND REDUCERS SELECTION TABLE

- Adaptor
- Reducer

		Male Thread															
		Metric							NPT*								
		M16	M20	M25	M32	M40	M50	M63	M75	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"
Female Thread	Metric	M16															
		M20															
		M25															
		M32															
		M40															
		M50															
		M63															
	M75																
	NPT*	1/2"															
		3/4"															
		1"															
		1 1/4"															
		1 1/2"															
		2"															
2 1/2"																	
3"																	

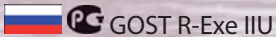
All dimensions in millimetres (except * where dimensions are in inches). All metric threads are 1.5mm pitch as standard.

Application

- Provides a means of connection between the equipment and cable glands with dissimilar thread sizes or types.
- See technical section for installation rules and regulations.

Technical Data Group I

- Flameproof & Increased Safety Exde IIC M2.
- Certificate No's: Sira 06ATEX1240U.
- Suitable for use in Mines.
- Construction and Test Standards: IEC/EN 60079-0, IEC/EN 60079-1 and IEC/EN 60079-7.
- Ingress Protection: IP66.
- Operating Temperature Range: -60°C to +80°C.
- Assembly Instruction Sheet: AI 377.
- Alternative certification options available:



Ordering Information

Format for ordering is as follows:

Adaptor Type	Male Thread	Female Thread
M476/1A	M32	M40
Reducer Type	Male Thread	Female Thread
M476/1	M32	3/4"

Features

- Manufactured in Brass (standard), Nickel Plated Brass, 316 Stainless Steel or (Aluminium) - none mining only.
- Brass NPT entries are nickel plated as standard.
- Available for both Group I & Group II applications.

Technical Data Group II

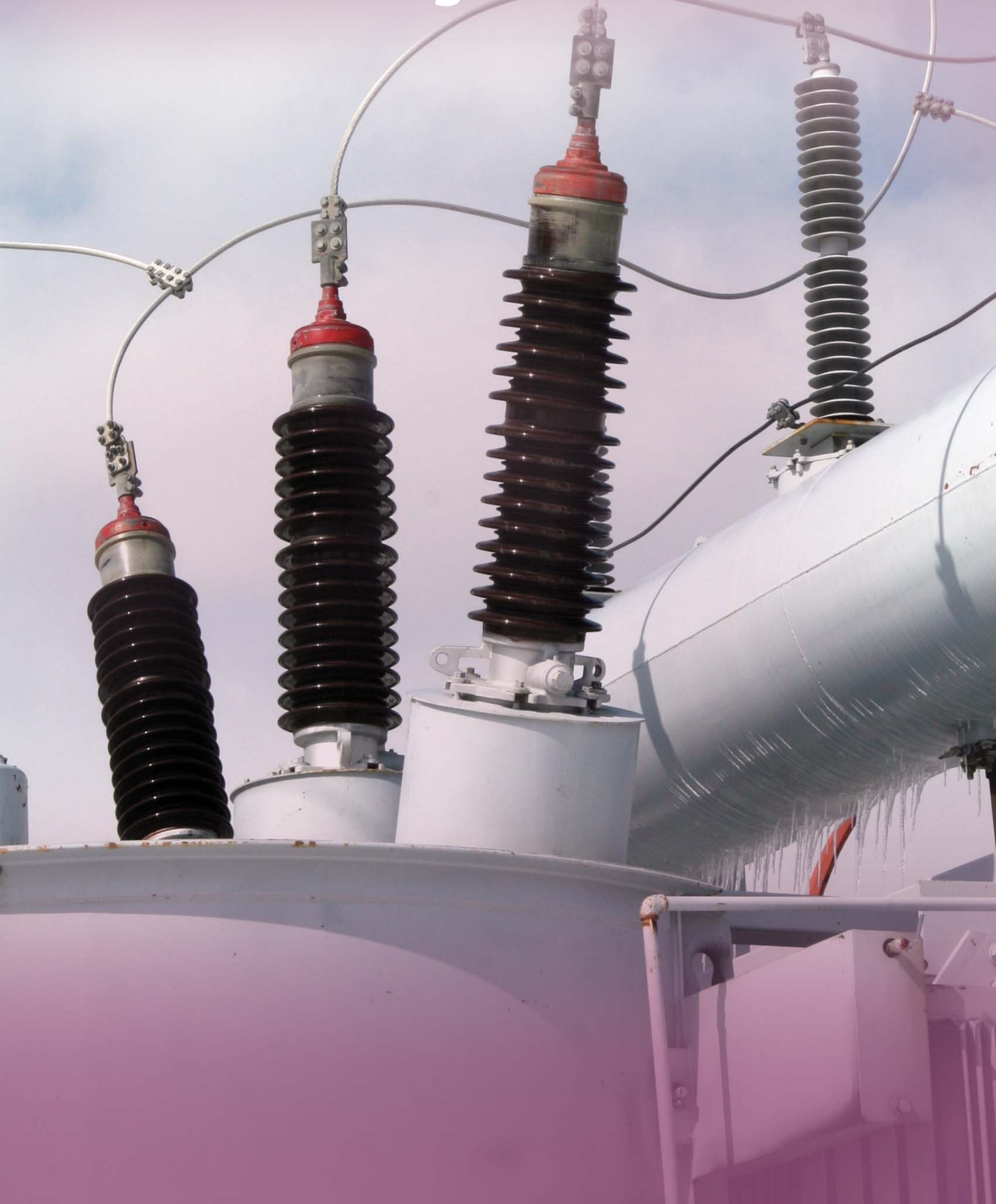
- Flameproof & Increased Safety Exde IIC II 2 GD IP66.
- Certificate No's: Sira 06ATEX1240U.
- Suitable for use in Zone 1, Zone 2, Zone 21, Zone 22 and in Gas Groups IIA, IIB and IIC.
- Construction and Test Standards: IEC/EN 60079-0, IEC/EN 60079-1 and IEC/EN 60079-7.
- Ingress Protection: IP66.
- Operating Temperature Range: -60°C to +80°C.
- Assembly Instruction Sheet: AI 377.

Ordering Information

Format for ordering is as follows:

Adaptor Type	Male Thread	Female Thread
476/1A	M32	M40
Reducer Type	Male Thread	Female Thread
476/1	M32	3/4"

Desiccant Breather Range



HBP & HB Types

Transformer Breather
Units & Accessories

Desiccant Breather Range

128

Why Choose Hawke?

When specifying products used in critical electrical supply applications you need the utmost confidence, Hawke has many years of experience in the manufacture and supply of Desiccant Breathers to the electrical supply industry where control of humidity ingress is essential for the safe operation of large transformers. Hawke products comply with the latest international quality standard (EN ISO 9001).



The Purpose of a Hawke Desiccant Breather

The purpose of a Hawke Desiccant Breather is to effectively remove water vapour from air entering Transformers or similar equipment, where without such controls reduced efficiency or possible failure could result. Therefore, it is imperative that the level of humidity in the air space in the top of the conservator tank is kept to a minimum, to avoid any reduction in the effectiveness of the cooling/insulating medium. Temperature gradients can result in a change in the volume of the cooling medium and/or air space. The Hawke Desiccant Breather provides the customer with the most effective and reliable method of preventing moisture entering the equipment during such changes.

Why Choose A Hawke Desiccant Breather?

Hawke Desiccant Breathers are made up of four basic parts, making assembly as simple as possible and therefore keeping servicing time down to an absolute minimum.

Hawke Breathers are filled with a Desiccant gel which changes colour from orange to clear as it absorbs water vapour. Attached to every Hawke Breather is a Desiccant colour change indicator, which allows easy assessment of the breather's status. When the desiccant becomes saturated it can be reactivated or replaced, dependant on the type of breather.

The HB range of Desiccant Breathers have a strong metal shield giving maximum protection to the polycarbonate charge, spare charges are available on request.

Independent extensive testing of the oil seal has proved that it is more effective than mechanical seals. Making the Hawke Desiccant Breather the best on the market.

Principle of Operation

When the charge is screwed into the top casting, it automatically produces a seal, this method is also used to create a seal between the cartridge and the oil cup.

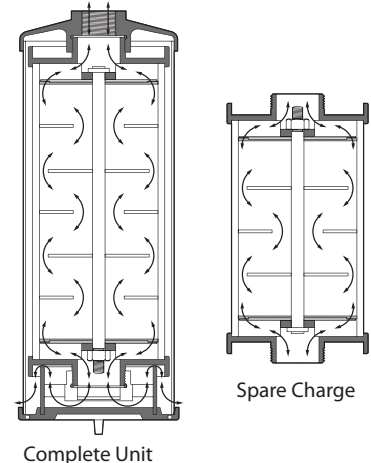
All threaded portions are enclosed, this eliminates the danger of corrosion.

The positioning of the annular baffles ensure that any air passing through the charge circulates through the maximum quantity of Desiccant gel. This eliminates the problem of the air "channelling" through the centre, hence giving a clear indication of the Desiccant state at the periphery.

The lower casting acts as an oil cup as well as a protective screen retainer.

Whilst the red line on the transparent tube gives a clear indication of the required oil level.

Principle of Operation

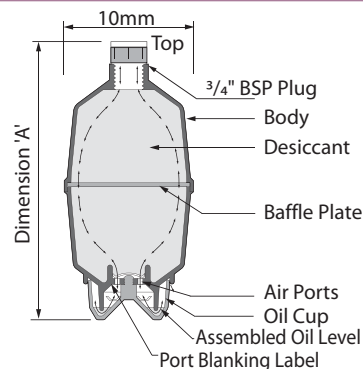


HBP General Description

The HBP Desiccant Breather has been specially designed to provide an economical protection device for smaller transformers having a low oil content. The Breather body and oil seal cup are moulded in high strength polycarbonate, which offers mechanical strength and weather resistance, the transparent material also allows all round visibility of the Desiccant at a distance.

The design of the HBP Desiccant Breather allows the capacity to be increased for use on larger transformers. This is known as the HBP/2.

Hawke Desiccant Breather types HBP and HBP/2 are refillable.



HBP & HBP/2 TRANSFORMER BREATHERS

Ref No.	Transformer Total Oil Content Litres	Maximum weight of Desiccant Kg.	Length of Assembly Dimension "A"	Diameter of Charge Container	Length of Charge Container
HBP	Up to 1250	0.65	215	100	190
HBP/2	Up to 2500	1.00	310	100	290

All dimensions in millimetres (approximate).

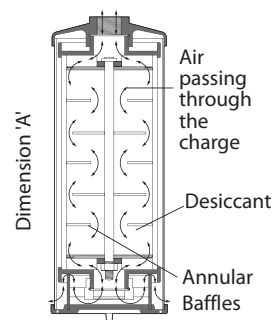
Full installation and maintenance instructions are supplied with each Hawke desiccant breather.

HB General Description

The HB Desiccant Breather is ideal for a large range of transformer sizes. The charge is constructed from high strength polycarbonate with the additional protection of a polythene coated metal screen, its identical die cast end plates are sealed in position to form a very strong unit.

Sizes 1,2,3 and 4 tapped to accept 3/4" B.S.P.P.

Sizes 5 and above supplied with standard hole positions to accept a flanged fixing to BS10 table D (1" pipe).



HB TRANSFORMER BREATHERS

Ref No.	Transformer Total Oil Content Litres	Maximum weight of Desiccant Kg.	Length of Assembly Dimension "A"	Diameter of Charge Container	Length of Charge Container
HB1	Up to 1115	0.70	230	105	170
HB2	From 1115 up to 2230	1.20	330	105	300
HB3	From 2230 up to 4455	2.40	530	105	470
HB4	From 4455 up to 11150	5.00	350	215	280
HB5	From 11150 up to 22230	8.50	500	215	430
HB6	From 22230 up to 33420	12.00	650	215	600
HB7	From 33420 up to 44550	15.00	800	215	730
HB55	From 33420 up to 44550	17.00	850	215	430
HB66	From 44550 up to 66840	24.00	1000	215	600
HB77	From 66840 up to 89120	30.00	1150	215	730
HB777	From 89120 up to 133680	45.00	1150	215	730

All dimensions in millimetres (approximate).

Full installation and maintenance instructions are supplied with each Hawke desiccant breather.

HB Types

Multiple Breather Units & Accessories

Desiccant Breather Range

Multiple Breather Units Types: HB55, HB66, HB77 & HB777

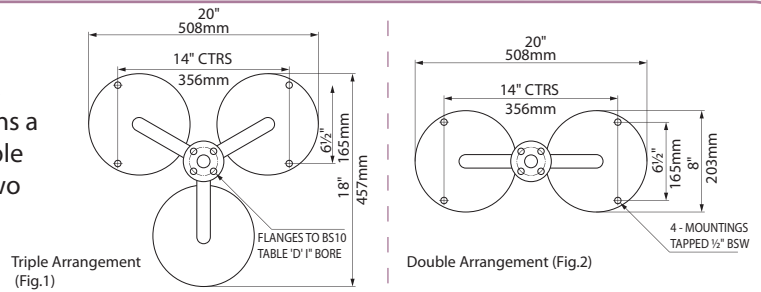
The design of the Hawke Desiccant Breather in its single unit form (i.e. HB2) has been limited to weights and dimensions which enable easy handling during initial installation and subsequent charge replacement. However, parallel arrangements are available for those situations where the oil volume of the transformer requires larger volumes of Desiccant gel.

Please see table on page 129 for more information.



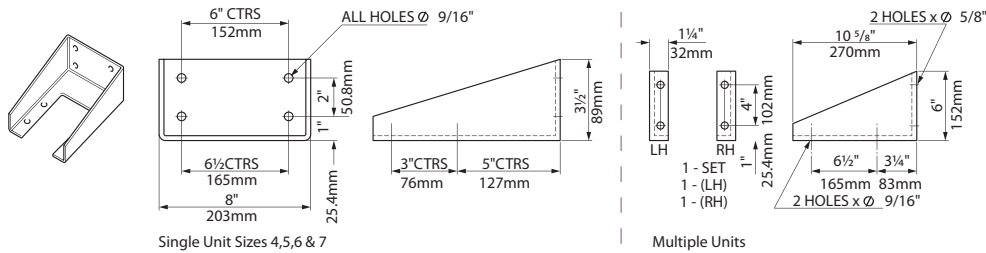
Where Breather charges are operated in parallel, it is essential that only one oil valve is used, this maintains a balanced air flow through each branch of the multiple arrangement. The pipework for the connection of two and three breathers in parallel are standard fittings.

See Fig. 1 and Fig. 2 for dimensional drawings.



All interconnecting pipework is polythene coated to provide protection where installations are located outdoors.

Accessories for Hawke Transformer Breather Units



Transformer Breather Dryer Unit

Hawke have designed a new, highly efficient, specialist drying unit that can be used on all HB products. This portable unit will dry out and recharge saturated charges. This exercise can be carried out 3 times prolonging the working life of each charge.

The unit comprises of :

- A (240 volt or 110 volt) Blower Motor complete with thermal protection.
- 1/2 Kw Heater element.
- Pressure release valve and air filter.
- Stainless Steel two way connecting pipework and manifold with adaptors accepting up to two breather charges.
- Substantial mild steel black enamel coated framework.

