



OUR COMMITMENT MAKES THE DIFFERENCE ▶ **BACO**<sup>®</sup>

## ► E-STOPS

Baco offers the largest selection of E-STOP devices in the industry available in 30mm & 22mm switch sizes in plastic construction, these E-STOPS meet applicable ISO 13850 and IEC standards. Selection includes push-pull/turn to release, illuminated, or key-operated devices. A wide variety of E-STOP legends, guards, and locking attachments is also available.



**Mushroom head**  
ISO 13850  
illuminated



**IP 66 to IP 69K**  
IK 05  
Head with  
anti-rotation tab



: Ø 22,3 mm cut-out

## ► EMERGENCY STOP ACTUATORS - ISO 13850:

According to IEC 60947-5-5, the emergency stop function can be provided by an ISO 13850 mushroom head combined with a "positive opening" NC contact block.

The mechanism of our ISO 13850 mushroom heads is so designed that a "push" action of sufficient force to open the contact systematically triggers an irreversible locking of this opening. This generates an "emergency stop" signal which can be cancelled only by deliberate manual resetting of the mushroom head (pull and turn or unlocking by key).

This function generates an "emergency stop" signal for any equipment subject to directive 98/37CE (machinery safety) completed by the IEC 60204-1 standard.

The ISO 13850 mushroom heads also comply with the safety requirements detailed in standard ISO 13850.

## ► ADVANTAGES

*We're full of innovative ideas from listening to your needs, and watching you work*

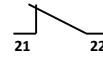
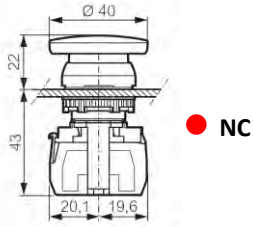
- On all heads, rotation is prevented by a tab which retracts when not required
- Insulating material ensures electrical safety
- Design and shape help avoid build-up of dirt and make the switch easy to clean
- ISO 13850 illuminated mushroom head with yellow collar for side-on visual indication
- Optimized ergonomic design
- Innovative functions: illuminated emergency stop mushroom head, etc
- Optimized dimensions: low-profile heads

► Complete Units: Mushroom heads Ø 22MM

Ø40 MUSHROOM – SPRING RETURN

Push

Cat. No.

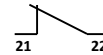
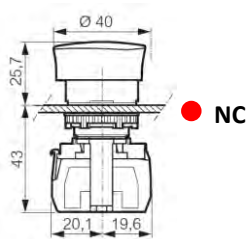


L21AD01-1E01

Ø40 MUSHROOM – STAY PUT

Push-Turn to reset

Cat. No.

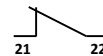
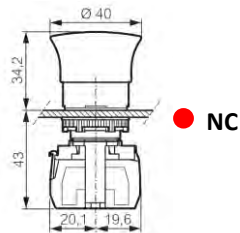


L22ED01-1E01

Ø40 MUSHROOM – STAY PUT

Push-Pull to reset

Cat. No.

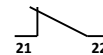
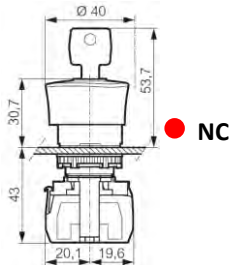


L22DD01-1E01

Ø40 MUSHROOM – STAY PUT

Key to reset

Cat. No.



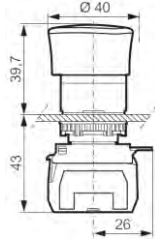
L22GM01-1E01

► ISO 13850 EMERGENCY STOP

Ø40 ISO13850 – STAY PUT

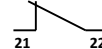
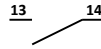
Push-Turn to reset

Cat. No.



Head position visible from the side with yellow collar  
Compliant with the requirements of emergency stop:  
IEC 60947-5-5/ISO 13850

● NO+NC

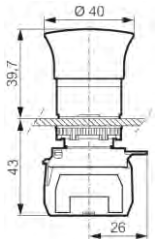


L22ER01-3E11

Ø40 ISO13850 – STAY PUT

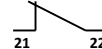
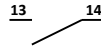
Push-Pull to reset

Cat. No.



Head position visible from the side with yellow collar  
Compliant with the requirements of emergency stop:  
IEC 60947-5-5/ISO 13850

● NO+NC

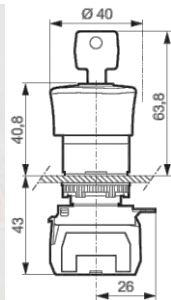


L22DR01-3E11

Ø40 ISO13850 – STAY PUT

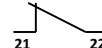
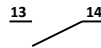
Key to reset

Cat. No.



Head position visible from the side with yellow collar  
Compliant with the requirements of emergency stop:  
IEC 60947-5-5/ISO 13850  
Supplied with 2 keys profile N°455

● NO+NC

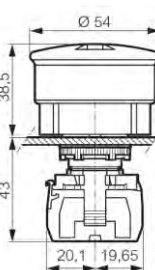


L22GR01-3E11

Ø54 ISO13850 – STAY PUT

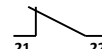
Push-pull to reset with flag indicator

Cat. No.



Head position visible from the side with yellow collar  
Compliant with the requirements of emergency stop:  
IEC 60947-5-5/ISO 13850  
Flag Indicator : Engraving STOP and I

● NC



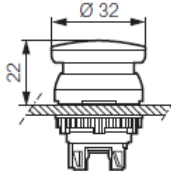
L22DU01-3E11

► **Separate Units Ø22MM: Heads Non Illuminated**

Ø32 MUSHROOM – SPRING RETURN

Push

Cat. No.



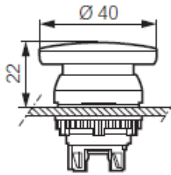
- Red
- Green
- Black
- Yellow

L21AC01  
L21AC02  
L21AC03  
L21AC04

Ø40 MUSHROOM – SPRING RETURN

Push

Cat. No.



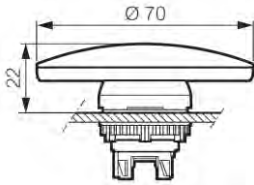
- Red
- Green
- Black
- Yellow
- Blue

L21AD01  
L21AD02  
L21AD03  
L21AD04  
L21AD06

Ø70 MUSHROOM – SPRING RETURN

Push

Cat. No.



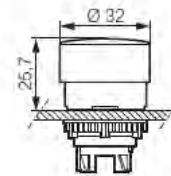
- Red
- Black

L21AE01  
L21AE03

Ø32 MUSHROOM – STAY-PUT

Push-Turn to reset

Cat. No.



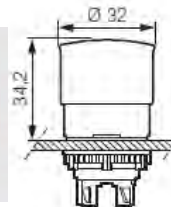
- Red
- Green
- Black
- Yellow

L22EC01  
L22EC02  
L22EC03  
L22EC04

Ø32 MUSHROOM – STAY-PUT

Push-Pull to reset

Cat. No.



- Red

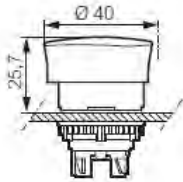
L22DC01

► **Separate Units Ø22MM: Heads Non Illuminated**

Ø40 MUSHROOM – STAY-PUT

Push-Turn to reset

Cat. No.



**Without engraving**

- Red
- Green
- Black
- Yellow

**L22ED01**  
**L22ED02**  
**L22ED03**  
**L22ED04**

**With engraving**

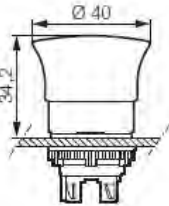
- Red- engraving STOP-STOP-STOP

**L22ED01S**

Ø40 MUSHROOM – STAY-PUT

Push-Pull to reset

Cat. No.



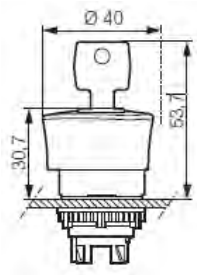
- Red
- Black

**L22DD01**  
**L22DD03**

Ø40 MUSHROOM – STAY-PUT

Key to reset

Cat. No.



Supplied with 2 keys profile N°455

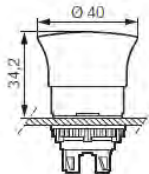
- Red

**L22GM01**

Ø40 MUSHROOM – STAY-PUT

Push-pull to reset

Cat. No.



- With Text STOP STOP STOP

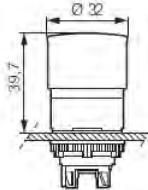
**L22DD01S**

► **Separate Units Ø22MM: ISO 13850 EMERGENCY STOP – Non Illuminated**

Ø32 ISO 13850 – STAY-PUT

Push-Pull to reset

Cat. No.



Head position visible from the side with yellow collar  
Compliant with the requirements of emergency stop:  
IEC 60947-5-5/ISO 13850

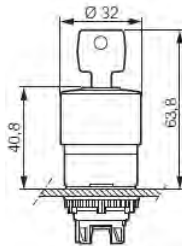
● Red

**L22DQ01**

Ø32 ISO 13850 – STAY-PUT

Key to reset

Cat. No.



Head position visible from the side with yellow collar  
Compliant with the requirements of emergency stop:  
IEC 60947-5-5/ISO 13850  
Supplied with 2 keys profile N°455

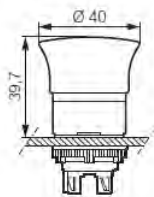
● Red

**L22GQ01**

Ø40 ISO 13850 – STAY-PUT

Push-pull to reset

Cat. No.



Head position visible from the side with yellow collar  
Compliant with the requirements of emergency stop:  
IEC 60947-5-5/ISO 13850

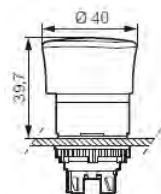
● Red

**L22DR01**

Ø40 ISO 13850 – STAY-PUT

Push-Turn to reset

Cat. No.



Head position visible from the side with yellow collar  
Compliant with the requirements of emergency stop:  
IEC 60947-5-5/ISO 13850

● Red

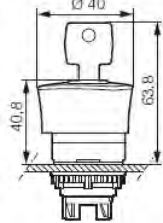
**L22ER01**

► Separate Units Ø22MM: ISO 13850 EMERGENCY STOP – Non Illuminated

Ø40 ISO 13850 – STAY-PUT

Key to reset

Cat. No.



Head position visible from the side with yellow collar  
Compliant with the requirements of emergency stop:  
IEC 60947-5-5/ISO 13850  
Supplied with 2 keys profile N°455

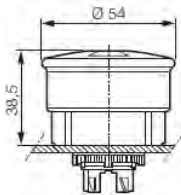
● Red

**L22GR01**

Ø54 ISO 13850 – STAY-PUT

Push-pull to reset with flag indicator

Cat. No.



Head position visible from the side with yellow collar  
Compliant with the requirements of emergency stop:  
IEC 60947-5-5/ISO 13850

● Red – engraving 0-I

**L22DU01A**

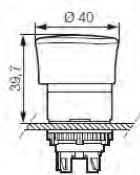
● Red – engraving STOP -I

**L22DU01**

Ø40 ISO 13850 – STAY-PUT

Push-turn to reset

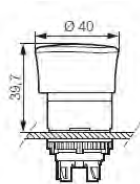
Cat. No.



Head position visible from the side view with yellow collar. Compliant with the requirements of emergency stop ISO13850

▼ Red with symbol IEC 60417-5638/ ISO 13850

**L22ER01K**



● Red – Engraving Text « EMO »

**L22ER01F**

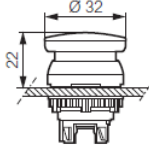


► **Separate Units Ø22MM: Heads Illuminated**

Ø32 MUSHROOM – SPRING RETURN

Push

Cat. No.



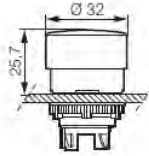
- Red
- Green
- Yellow
- White

L21AL10  
L21AL20  
L21AL40  
L21AL50

Ø32 MUSHROOM – STAY-PUT

Push-turn to reset

Cat. No.



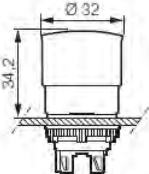
- Red

L22EL10

Ø32 MUSHROOM – STAY-PUT

Push-pull to reset

Cat. No.



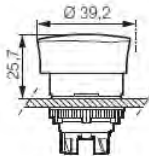
- Red

L22DL10

Ø40 MUSHROOM – STAY-PUT

Push-Turn to reset

Cat. No.



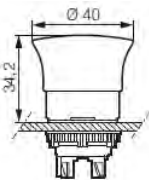
- Red
- Green
- Yellow

L22EM10  
L22EM20  
L22EM40

Ø40 MUSHROOM – STAY-PUT

Push-pull to reset

Cat. No.



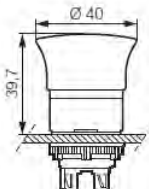
- Red
- Green
- Yellow
- White

L22DM10  
L22DM20  
L22DM40  
L22DM50

Ø40 ISO 13850 – STAY-PUT

Push-pull to reset

Cat. No.



Head position visible from the side with yellow collar  
Compliant with the requirements of emergency stop:  
IEC 60947-5-5/ISO 13850

- Red

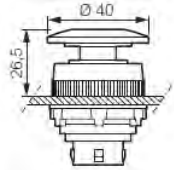
L22DN10

► **Separate Units Ø30MM: Heads Non Illuminated**

Ø40 MUSHROOM – SPRING RETURN

Push

Cat. No.



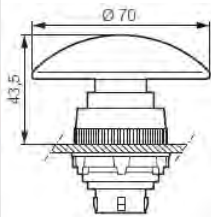
- Red
- Green
- Black
- Yellow

T11AD01  
T11AD02  
T11AD03  
T11AD04

Ø70 MUSHROOM – SPRING RETURN

Push

Cat. No.



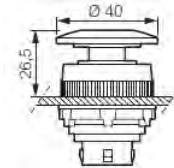
- Red
- Black

T11AE01  
T11AE03

Ø40 MUSHROOM – STAY-PUT

Push-Pull to reset

Cat. No.



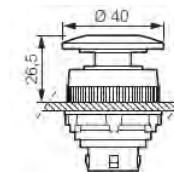
- Red
- Green
- Black
- Yellow

T11DD01  
T11DD02  
T11DD03  
T11DD04

Ø40 MUSHROOM – STAY-PUT

Push-turn to reset

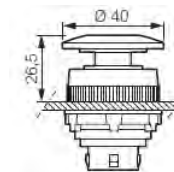
Cat. No.



**Stay-put**

- Red
- Green
- Black
- Yellow

T11ED01  
T11ED02  
T11ED03  
T11ED04



**Manual Locking**

- Red
- Green
- Black
- Yellow

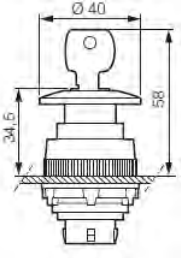
T11FD01  
T11FD02  
T11FD03  
T11FD04

► **Separate Units Ø30MM: Heads Non Illuminated**

Ø40 MUSHROOM – STAY-PUT

Key to reset

Cat. No.



Supplied with 2 keys profile N°455

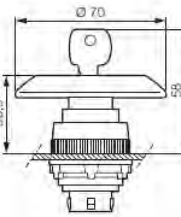
● Red

**T11GM01**

Ø70 MUSHROOM – STAY-PUT

Key to reset

Cat. No.



Supplied with 2 keys profile N°455

● Red

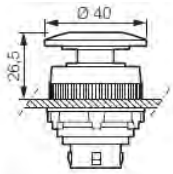
**T11GP01**

► **Separate Unit Ø30MM: Head Illuminated**

Ø40 MUSHROOM – SPRING RETURN

Push

Cat. No.



● Red  
● Green  
● Yellow  
○ Opal

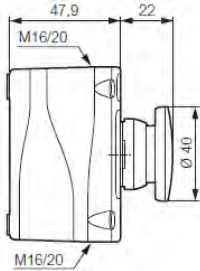
**T11AM10**  
**T11AM20**  
**T11AM40**  
**T11AM50**

► Control stations with 1 button – Non Illuminated

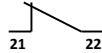
MUSHROOM HEAD Ø40 – SPRING RETURN

Push

Cat. No.



● NC



Marking

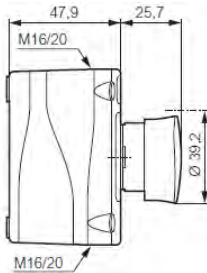


LBX10210

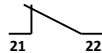
MUSHROOM HEAD Ø40 – STAY-PUT

Push-turn to reset

Cat. No.



● NC



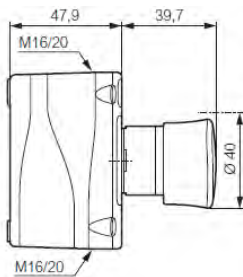
Marking

EMERGENCY STOP LBX10510

MUSHROOM HEAD Ø40 – ISO 13850- STAY-PUT

Push-turn to reset

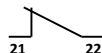
Cat. No.



Compliant with the requirements of emergency stop:  
IEC 60947-5-5/ISO 13850

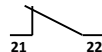
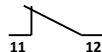
Marking

● NC



EMERGENCY STOP +  LBX17301

● 2NC



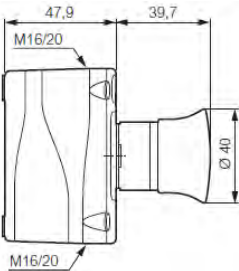
EMERGENCY STOP +  LBX17302

► Control stations with 1 button – Non Illuminated

MUSHROOM HEAD Ø40 – ISO 13850- STAY-PUT

Push-pull to reset

Cat. No.



Compliant with the requirements of emergency stop:  
IEC 60947-5-5/ISO 13850

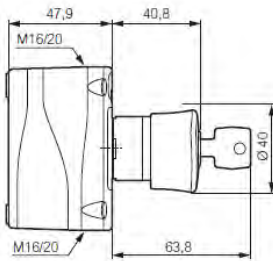
Marking

- **NC** EMERGENCY STOP + **LBX15301**
- **2NC** EMERGENCY STOP + **LBX15302**

MUSHROOM HEAD Ø40 – ISO 13850- STAY-PUT

Key to reset

Cat. No.



Compliant with the requirements of emergency stop:  
IEC 60947-5-5/ISO 13850

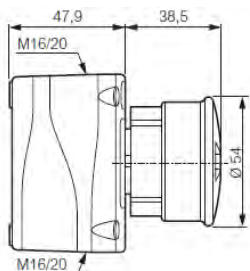
Marking

- EMERGENCY STOP + **LBX11301**
- EMERGENCY STOP + **LBX11302**

MUSHROOM HEAD Ø40 – ISO 13850- STAY-PUT

Push-pull to reset with flag indicator

Cat. No.



Compliant with the requirements of emergency stop:  
IEC 60947-5-5/ISO 13850

Double position indicator : Head and collar

Marking

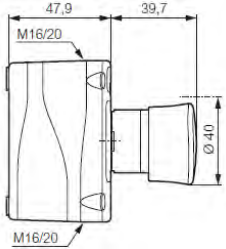
- **NC** STOP- **LBX14201**
- **2NC** STOP- **LBX14202**

► **Control stations with 1 button – Non Illuminated**

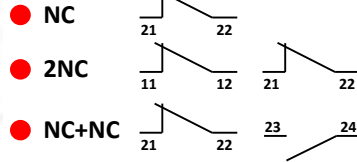
MUSHROOM HEAD Ø40 – ISO 13850- STAY-PUT

Push-turn to reset

Cat. No.



With symbol IEC 60417-5638/ ISO 13850 on the button head



LBX130065

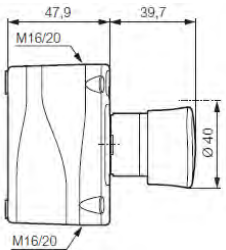
LBX130066

LBX130057

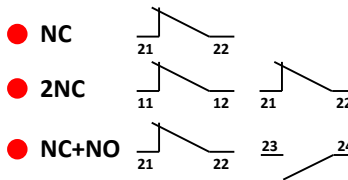
MUSHROOM HEAD Ø40 – ISO 13850- STAY-PUT

Push-turn to reset

Cat. No.



With EMO Text on button Head



LBX130067

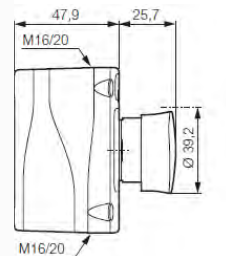
LBX130069

LBX130068

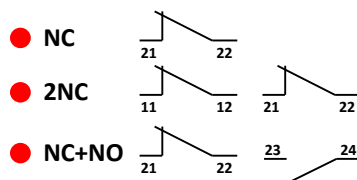
MUSHROOM HEAD Ø40 - STAY-PUT

Push-turn to reset

Cat. No.



With STOP STOP STOP Text on button Head



LBX105105

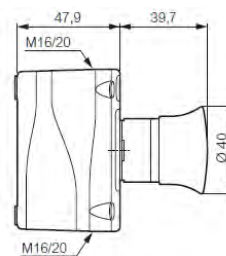
LBX130009

LBX130010

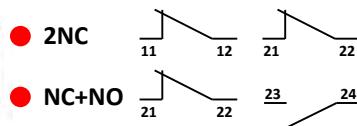
MUSHROOM HEAD Ø40 - STAY-PUT

Push-pull to reset

Cat. No.



With STOP STOP STOP Text on button Head

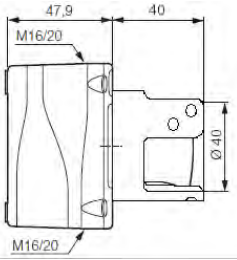


LBX130075

LBX130074

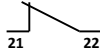
► **Control stations with 1 button – Non Illuminated**

MUSHROOM HEAD Ø40 + PADLOCKABLE GUARD- MAINTAINED Push-pull to reset Cat. No.



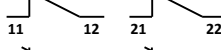
Contacts blocks attached to operator

● NC



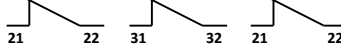
LBX130091

● 2NC



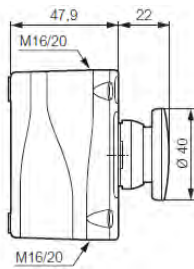
LBX130092

● 3NC

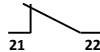


LBX130093

MUSHROOM HEAD Ø40 – SPRING RETURN Push Cat. No.



● NC



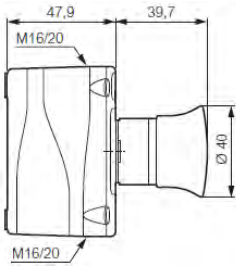
Marking



LBX130047

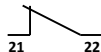
► **Control stations with 1 button – Illuminated**

MUSHROOM HEAD Ø40 – ISO 13850- STAY-PUT Push-pull to reset Cat. No.



Compliant with the requirements of emergency stop:  
IEC 60947-5-5/ISO 13850  
Supplied with 230V Red led, 33SARH

● NC

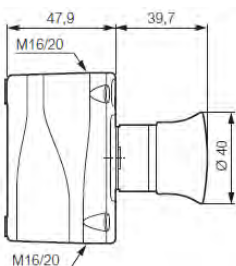


Marking



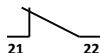
LBX130179

MUSHROOM HEAD Ø40 - STAY-PUT Push-pull to reset Cat. No.



Supplied with 230V Red led, 33SARH

● NC



Marking

EMERGENCY STOP LBX130049

► **Control stations with 1 button – Non Illuminated**

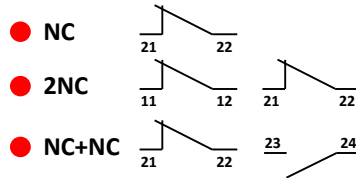
MUSHROOM HEAD Ø40 – ISO 13850- STAY-PUT with padlockable guard

Push-pull to reset

Cat. No.



Compliant with the requirements of emergency stop:  
IEC 60947-5-5/ISO 13850



**LBPA15301G**

**LBPA15302G**

**LBPA15311G**

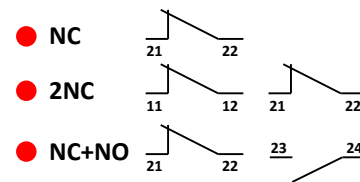
MUSHROOM HEAD Ø40 – ISO 13850- STAY-PUT with 180° half guard Bezel

Push-pull to reset

Cat. No.



Compliant with the requirements of emergency stop:  
IEC 60947-5-5/ISO 13850



**LBPA15301G2**

**LBPA15302G2**

**LBPA15311G2**

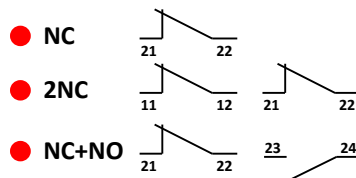
MUSHROOM HEAD Ø40 – ISO 13850- STAY-PUT with padlockable guard

Push-turn to reset

Cat. No.



Compliant with the requirements of emergency stop:  
IEC 60947-5-5/ISO 13850



**LBPA17301G**

**LBPA17302G**

**LBPA17311G**

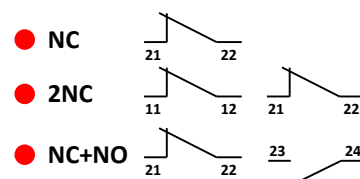
MUSHROOM HEAD Ø40 – ISO 13850- STAY-PUT with 180° half guard Bezel

Push-turn to reset

Cat. No.



Compliant with the requirements of emergency stop:  
IEC 60947-5-5/ISO 13850



**LBPA17301G2**

**LBPA17302G2**

**LBPA17311G2**

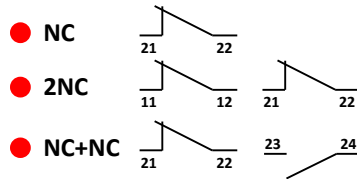


► **Control stations with 1 button – Non Illuminated**

MUSHROOM HEAD Ø40 – ISO 13850- STAY-PUT with padlockable guard      Key to reset      Cat. No.



Compliant with the requirements of emergency stop:  
IEC 60947-5-5/ISO 13850



**LBPA11301G**

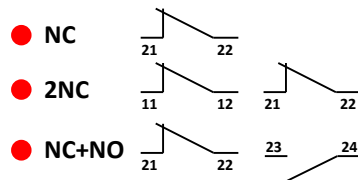
**LBPA11302G**

**LBPA11311G**

MUSHROOM HEAD Ø40 – ISO 13850- STAY-PUT with 180° half guard Bezel      Key to reset      Cat. No.



Compliant with the requirements of emergency stop:  
IEC 60947-5-5/ISO 13850



**LBPA11301G2**

**LBPA11302G2**

**LBPA11311G2**

► Control Stations Ø22MM

1 HOLE ENCLOSURE

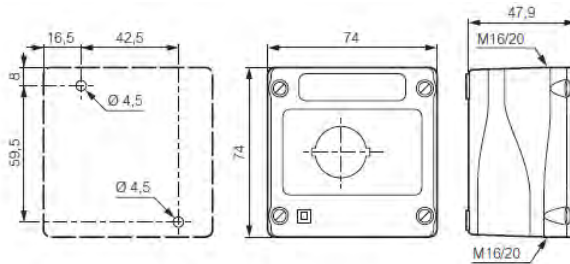
Cat. No.



Black base

● Yellow cover

LBX0100J



1 HOLE ENCLOSURE

Cat. No.

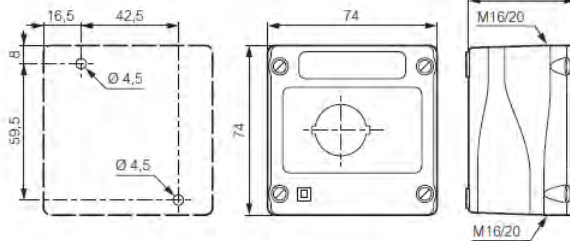


Black base

● Yellow cover

Marking

LBX130046



1 HOLE ENCLOSURE

Cat. No.



Black base

● Yellow cover

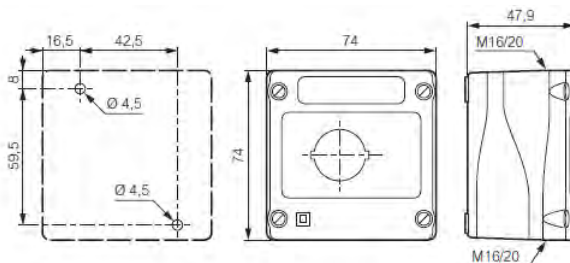
● Yellow cover with symbol IEC  
60417-5438/ISO 13850

Marking

EMERGENCY STOP

LBX0100JB

LBX130167



► Control stations Ø22MM and Ø30MM

BPA and BPP ENCLOSURE



Technical characteristics:

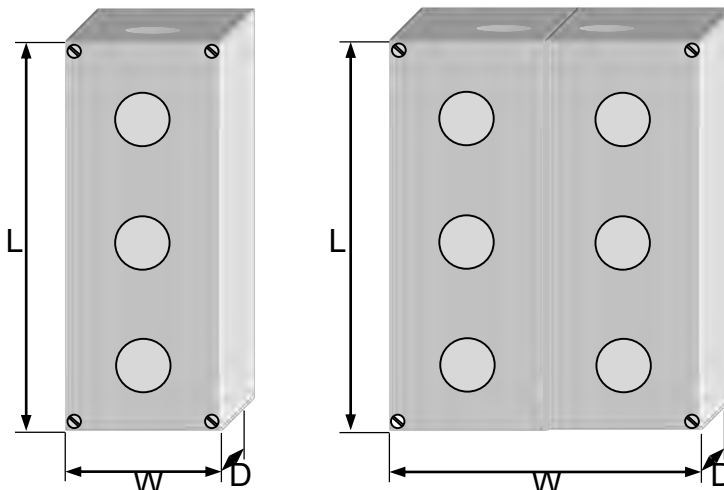
- RAL:7035
- Can be combined with 1, 3 or 5 positions clips, LED blocks and contact blocks
- Can be marked by silk screening process, two ink color available, Black and Yellow
- Recommended to be used with LWA0242 Yellow guard ring for emergency stop button, 1, 2 or 3 holes for both version BPA or BPP enclosures
- Protecting rating: IEC 60529: IP65

IEC 62262: IK07

Materials: ABS

**Dimensions**

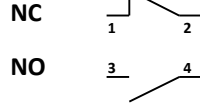
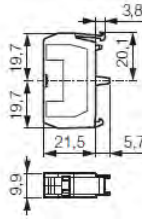
BACO Part Number	Nb of holes	Dimensions		
		Length L (mm)	Width W (mm)	Depth D (mm)
BPA201	1	82	80	55
BPA202	2	120	80	55
BPA203	3	160	80	55
BPP201	1	82	80	85
BPP202	2	120	80	85
BPP203	3	160	80	85
BPP204	4	122	120	85
BPP206	6	200	120	75
BPP208	8	200	120	75
BPP210	10	240	120	100



► **Contact Blocks and LED Blocks**

**CONTACT BLOCKS – SCREW TERMINALS**

Cat. No.

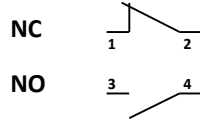
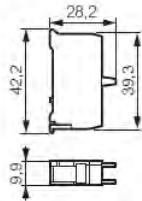


**33E01**

**33E10**

**CONTACT BLOCKS FOR CONTROL STATIONS SCREW TERMINALS**

Cat. No.

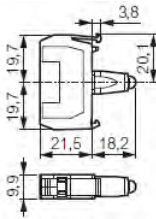


**33S01**

**33S10**

**LED BLOCKS – SCREW TERMINALS**

Cat. No.



● RED 24V

**33EARL**

● RED 48V

**33EARL4**

● RED 130V

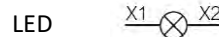
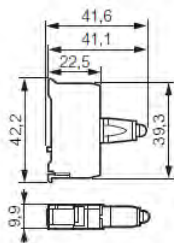
**33EARM**

● RED 230V

**33EARH**

**LED BLOCKS FOR CONTROL STATIONS – SCREW TERMINALS**

Cat. No.



● RED 24V

**33SARL**

● RED 130V

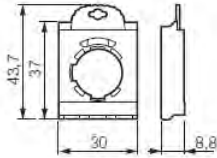
**33SARM**

● RED 230V

**33SARH**

► Clips and Legends

CLIP Cat. No.



3 positions

333E

ROUND LEGEND PLATE FOR MUSHROOM HEAD Cat. No.



According to ISO 13850 Text + Symbol

**60MM**

EMERGENCY STOP - PLASTIC  
EMERGENCY STOP - METAL

LWE60300

LWE16300

**70MM**

EMERGENCY STOP - PLASTIC  
EMERGENCY STOP - METAL

LWE70300

LWE17300

**80MM**

EMERGENCY STOP - PLASTIC  
EMERGENCY STOP - METAL

LWE80300

LWE18300

FIXING TOOL Cat. No.



Fixing tool for locking ring

LWA0234

*Method for tightening the locking ring:*

Tightening torque: 3 Nm or tightened with fixing tool to hand tight after pressure point plus another half turn.

► Guards

PADLOCKABLE GUARD

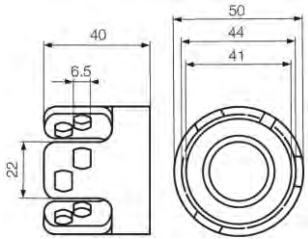
Cat. No.



For stay –put mushroom head

● Yellow

LWA0240



YELLOW GUARD RING

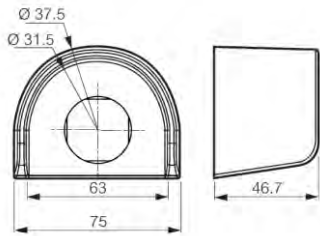
Cat. No.



For stay –put mushroom head

● Yellow

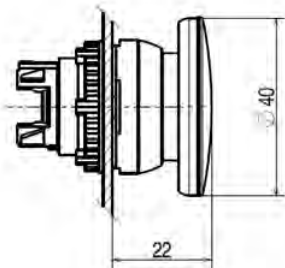
LWA0242



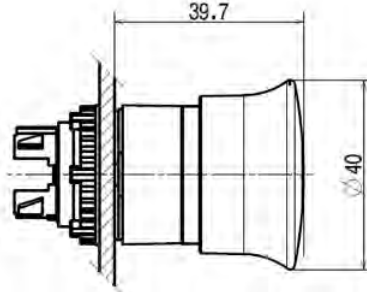
► **Technical characteristics**

MEASUREMENT

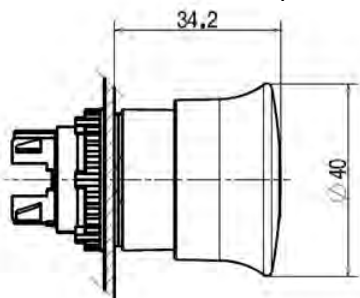
Spring return Mushroom head



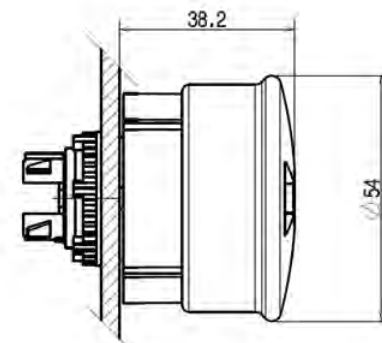
Mushroom head  $\varnothing$  40, ISO 13850 Push-pull Stay-put



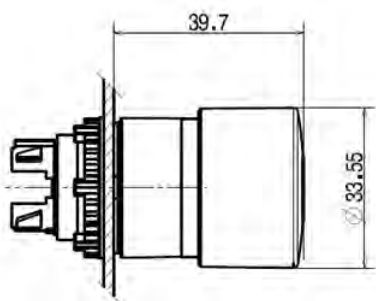
Mushroom head  $\varnothing$  40 Push-pull Stay -put



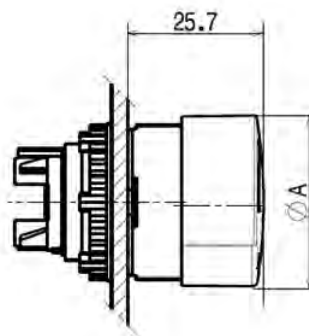
Mushroom head  $\varnothing$  54, ISO 13850 Push-pull Stay-put



Mushroom head ISO 13850  $\varnothing$  32 push-pull stay-put



Mushroom head Push-turn Stay-put



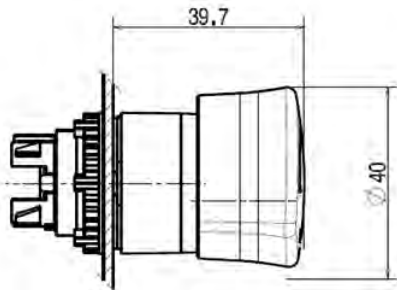
Ref L22EC01/03  $\varnothing$ A = 32 mm

Ref L22ED01/03/01B  $\varnothing$ A = 40 mm

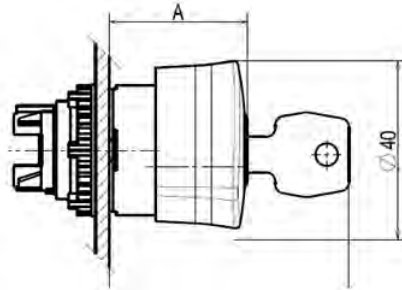
## ► Technical characteristics

### MEASUREMENT

Mushroom head  
ISO 13850 Push-turn Stay-put



Mushroom head Stay-put Key to reset



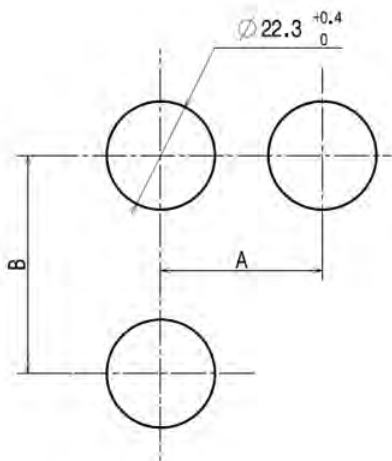
Ref	A (mm)	B (mm)
L22GM01	30.7	53.7
L22GR01	40.8	63.8

### INSTALLATION

#### Drilling:

Standard drilling (products fitted with screw and plug-in connection).

Panel thickness: 1 to 6 mm



		Dimension (mm)	
A	=	30	With or without legend (usual case)
	=	33	For silicon shroud IP67
	=	40	With large legend plate
	>	40	For Mushroom head $\varnothing 40$
	>	45	For selector switch with long handle
	=	38	For super flush button
B	=	50	With 5 position clip
	=	45	With or without legend (usual case)
	=	54	With double touch
	=	77	With double touch + legend plate

#### Method for tightening the locking ring:

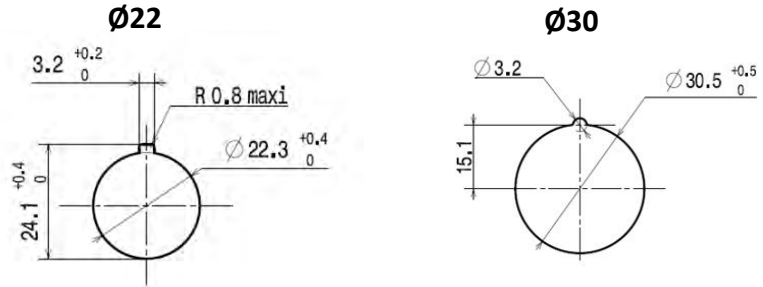
Tightening torque: 3 Nm or tightened with fixing tool (LWA0234) to hand tight after pressure point plus another half turn.



## ► Technical characteristics

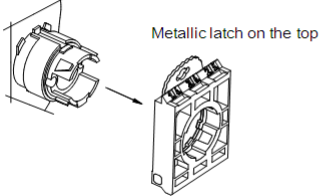
### INSTALLATION

Drilling when using the anti rotation tab:



### MOUNTING

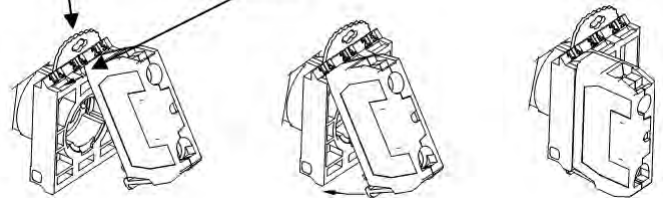
Head foolproof on the top



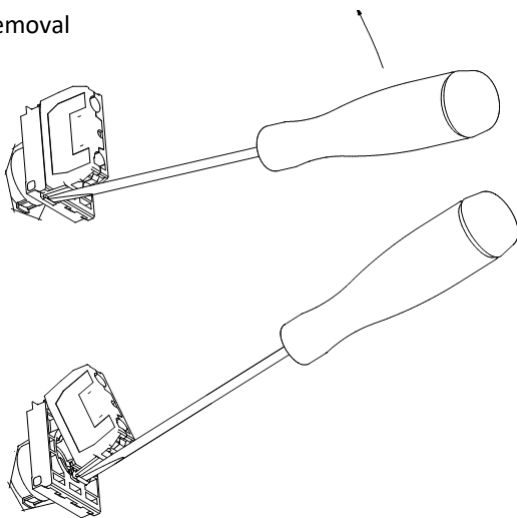
clip+block assembly / removal

Metallic latch

Fixed clip



removal



### Technical characteristics

#### Protection index :

- . IP 66 and NEMA 4x,12,13 for standard heads
- . IP 67 with silicon shroud
- . IP 20 at the back of panel for the one piece pilot lights

#### Protection against mechanical impact:

- . IK 05 for heads



## ► Technical characteristics

Characteristics	Data	Standards
<ul style="list-style-type: none"> <li>➤ Storage temperature</li> <li>➤ Operating temperature</li> <li>➤ Climatic resistance</li> </ul>	- 40 °C to + 70 °C - 25 °C to + 70 °C Constant humid heat Cyclic damp heat Resistance to sea air	IEC 60068-2-3 IEC 60068-2-30 IEC 60068-2-52
<ul style="list-style-type: none"> <li>➤ Degree of protection</li> </ul>	IP 66 for standard heads IP 66 for equipped control stations IP 69 and IP69K for push buttons IP 69 and IP69K for emergency stops IP 20 at the rear of the panel for contact blocks and one piece pilot lights Type 1, 2, 3, 3R, 3S, 4, 4X, 12, and 13 for heads and control stations	IEC 60529 IEC 60529 IEC 60529 – ISO 20653 IEC 60529 – ISO 20653 NEMA standard
<ul style="list-style-type: none"> <li>➤ Protection against mechanical impacts</li> </ul>	IK 05 illuminated and non illuminated heads IK 07 empty control station	IEC 62262
<ul style="list-style-type: none"> <li>➤ Electrical insulation</li> <li>➤ Terminal marking</li> <li>➤ Tightening torques</li> </ul>	Class II - heads and control station Locking ring: recommended 3 N.m or tightened with the fixing tool to hand tight after pressure point plus another half turn Terminals: max. 1.2 N.m	IEC 60947-5-1 IEC 60947-1
<ul style="list-style-type: none"> <li>➤ Approvals</li> </ul>	UL United states and Canada BV Bureau Véritas Certification OC/CB IEC 60947-5-1	UL 508, CSA 22.2 Marine rules IEC 60947-5-5 IEC 60947-5-4
<ul style="list-style-type: none"> <li>➤ Vibrations withstand vibration</li> </ul>	Fc test: 2 to 25 Hz, 1.6 mm; 25-100 Hz, 4 g	IEC 60068-2-6

Characteristics	Data	Standards
<ul style="list-style-type: none"> <li>➤ Mechanical endurance (in million cycles)</li> </ul>	Spring return: 5 Mushroom head maintained function ISO 13850: 0,10 Mushroom head maintained function: 0,15	
<ul style="list-style-type: none"> <li>➤ Activation force in N</li> </ul>	Spring return + NO: 6,5 Spring return + NC: 4,5 Additional NO contact: 4,5 Additional NC contact: 3,0 Push-pull mushroom head + NO + NC: 27 Push-turn mushroom head + NO + NC: 22 Push-pull mushroom head ISO 13850 + NO + NC: 37 Push-turn mushroom head ISO 13850 + NO + NC: 60	



## ► Contact blocks Technical characteristics

Screw and plug-in connection characteristics	Data	Standards																																	
► Rated insulation voltage	690 V AC 600 V AC	IEC 60947-1 UL 508																																	
► NC contacts	Positive opening	IEC 60947-5-1																																	
► Rated impulse voltage U <sub>imp</sub> Pollution degree	6kV 3																																		
► Conventional thermal current in free air conditions	AC15:10 A DC13: 2,5 A	IEC 60947-5																																	
► Electrical ratings	<p><b>Alternating current</b> AC15 - A 600 U<sub>e</sub> = 120 V, I<sub>e</sub> = 6 A U<sub>e</sub> = 240 V, I<sub>e</sub> = 3 A U<sub>e</sub> = 380 V, I<sub>e</sub> = 1,9 A U<sub>e</sub> = 480 V, I<sub>e</sub> = 1,5 A U<sub>e</sub> = 500V, I<sub>e</sub> = 1,4 A U<sub>e</sub> = 600 V, I<sub>e</sub> = 1,2 A</p> <p><b>Minimum operating current</b> - standard blocks U<sub>e</sub> = 24 V DC and I<sub>e</sub> = 5 mA Failure rate &lt; 10<sup>-8</sup></p>	<p><b>Direct current</b> DC13 - Q 600 U<sub>e</sub> = 125 V, I<sub>e</sub> = 0,55 A U<sub>e</sub> = 250 V, I<sub>e</sub> = 0,27 A U<sub>e</sub> = 400 V, I<sub>e</sub> = 0,15 A U<sub>e</sub> = 500 V, I<sub>e</sub> = 0,13 A U<sub>e</sub> = 600V, I<sub>e</sub> = 0,1 A</p> <p>- golden contacts U<sub>e</sub> = 5 V DC and I<sub>e</sub> = 1 mA Failure rate &lt; 10<sup>-8</sup> DC13 - R 300 U<sub>e</sub> = 125 V, I<sub>e</sub> = 0,22 A U<sub>e</sub> = 250 V, I<sub>e</sub> = 0,1 A</p>	IEC 60947-5-1																																
► UL508	<p>Alternating Current 50/60Hz -A600 Continuous Current - 10 amps Rated Voltage - 600Vac</p>	<p>Direct Current - Q600 Continuous Current - 2.5 amps Rated Voltage - 600Vdc</p>																																	
	<table border="1"> <thead> <tr> <th>Voltage</th> <th>Max. Amps Make</th> <th>Max. Amps Break</th> </tr> </thead> <tbody> <tr><td>72</td><td>60</td><td>10</td></tr> <tr><td>120</td><td>60</td><td>6.0</td></tr> <tr><td>240</td><td>30</td><td>3.0</td></tr> <tr><td>480</td><td>15</td><td>1.5</td></tr> <tr><td>600</td><td>12</td><td>1.2</td></tr> </tbody> </table>	Voltage	Max. Amps Make	Max. Amps Break	72	60	10	120	60	6.0	240	30	3.0	480	15	1.5	600	12	1.2	<table border="1"> <thead> <tr> <th>Voltage</th> <th>Max. Amps Make</th> <th>Max. Amps Break</th> </tr> </thead> <tbody> <tr><td>24</td><td>2.5</td><td>2.5</td></tr> <tr><td>125</td><td>0.55</td><td>0.55</td></tr> <tr><td>250</td><td>0.27</td><td>0.27</td></tr> <tr><td>301-600</td><td>0.10</td><td>0.10</td></tr> </tbody> </table>	Voltage	Max. Amps Make	Max. Amps Break	24	2.5	2.5	125	0.55	0.55	250	0.27	0.27	301-600	0.10	0.10
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► Applicable wire sizes	Rigid or flexible wire without ferrule: 0,5 mm <sup>2</sup> to 2 x 2,5 mm <sup>2</sup> Rigid or flexible wire with ferrule: 0,5 mm <sup>2</sup> to 2 x 1,5 mm <sup>2</sup>																																		



## ► Led block Technical characteristics

Characteristics	Data	Standards
➤ Rated insulation voltage	300 V	IEC 60947-5-1
➤ Rated impulse voltage Uimp	4 kV (with filter block see p. 64)	IEC 60947-1
➤ Operating voltage	Pollution degree 3 12 to 24 V AC/DC 48 V AC/DC (for LED block) 130 V AC 230 V AC	
➤ Frequency	50 or 60 Hz	
➤ Lifetime at rated supply voltage	Red and yellow: 100 000 hours at 25 °C Other colours: 50 000 hours at 25 °C	
➤ Consumption of LED blocks	Voltage: - 24 V: 25 mA ± 20% - 48 V: 15 mA ± 5% - 130 V: 20 mA ± 10% - 230V: 16mA ± 30%	

## ► Technical characteristics Ø30MM

Characteristics	Data	Standards
➤ Storage temperature for illuminated or non illuminated button	- 40°C to + 70°C	
➤ Operating temperature	Non illuminated buttons: - 25°C to + 70°C Illuminated buttons: - 25°C to + 60°C	
➤ Degree of protection	IP 65 for standard heads IP 67 for shrouded heads	IEC 60947-1
➤ Mechanical life	Type 4,4X,12 and 13  Spring return push button: 3 x 10 <sup>6</sup> operating cycles	IEC 60947-5-1 NEMA standard

The blocks used for diameter 30 are the same as for diameter 22.



▶ **Notes**

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