



RELIANCE Shallow Base

8-inch Base and 12-inch Base for Ground Fixing of Inset Light Fixtures

User Manual

UM-0106, Rev. 2.1, 2023/02/22


**ADB
SAFEGATE**

A.0 Disclaimer / Standard Warranty

CE certification

The equipment listed as CE certified means that the product complies with the essential requirements concerning safety and hygiene. The European directives that have been taken into consideration in the design are available on written request to ADB SAFEGATE.

ETL certification

The equipment listed as ETL certified means that the product complies with the essential requirements concerning safety and FAA Airfield regulations. The FAA directives that have been taken into consideration in the design are available on written request to ADB SAFEGATE.

All Products Guarantee

ADB SAFEGATE will correct by repair or replacement per the applicable guarantee below, at its option, equipment or parts which fail because of mechanical, electrical or physical defects, provided that the goods have been properly handled and stored prior to installation, properly installed and properly operated after installation, and provided further that Buyer gives ADB SAFEGATE written notice of such defects after delivery of the goods to Buyer. Refer to the Safety section for more information on Material Handling Precautions and Storage precautions that must be followed.

ADB SAFEGATE reserves the right to examine goods upon which a claim is made. Said goods must be presented in the same condition as when the defect therein was discovered. ADB SAFEGATE further reserves the right to require the return of such goods to establish any claim.

ADB SAFEGATE's obligation under this guarantee is limited to making repair or replacement within a reasonable time after receipt of such written notice and does not include any other costs such as the cost of removal of defective part, installation of repaired product, labor or consequential damages of any kind, the exclusive remedy being to require such new parts to be furnished.

ADB SAFEGATE's liability under no circumstances will exceed the contract price of goods claimed to be defective. Any returns under this guarantee are to be on a transportation charges prepaid basis. For products not manufactured by, but sold by ADB SAFEGATE, warranty is limited to that extended by the original manufacturer. This is ADB SAFEGATE's sole guarantee and warranty with respect to the goods; there are no express warranties or warranties of fitness for any particular purpose or any implied warranties of fitness for any particular purpose or any implied warranties other than those made expressly herein. All such warranties being expressly disclaimed.

Standard Products Guarantee

Products manufactured by ADB SAFEGATE are guaranteed against mechanical, electrical, and physical defects (excluding lamps) which may occur during proper and normal use for a period of two years from the date of ex-works delivery, and are guaranteed to be merchantable and fit for the ordinary purposes for which such products are made.



Note

See your applicable sales agreement for a complete warranty description.

Replaced or repaired equipment under warranty falls into the warranty of the original delivery. No new warranty period is started for these replaced or repaired products.

FAA Certified products manufactured by ADB SAFEGATE

ADB SAFEGATE L858 Airfield Guidance Signs are warranted against mechanical and physical defects in design or manufacture for a period of 2 years from date of installation, per FAA AC 150/5345-44 (applicable edition).

ADB SAFEGATE LED products (with the exception of obstruction lighting) are warranted against electrical defects in design or manufacture of the LED or LED specific circuitry for a period of 4 years from date of installation, per FAA EB67 (applicable edition). These FAA certified constant current (series) powered LED products must be installed, interfaced and powered with and through products certified under the FAA Airfield Lighting Equipment Program (ALECP) to be included in this 4 (four) year warranty. This includes, but is not limited to, interface with products such as Base Cans, Isolation Transformers, Connectors, Wiring, and Constant Current Regulators.

**Note**

See your sales order contract for a complete warranty description.

Replaced or repaired equipment under warranty falls into the warranty of the original delivery. No new warranty period is started for these replaced or repaired products.

Liability**WARNING**

Use of the equipment in ways other than described in the catalog leaflet and the manual may result in personal injury, death, or property and equipment damage. Use this equipment only as described in the manual.

ADB SAFEGATE cannot be held responsible for injuries or damages resulting from non-standard, unintended uses of its equipment. The equipment is designed and intended only for the purpose described in the manual. Uses not described in the manual are considered unintended uses and may result in serious personal injury, death or property damage.

Unintended uses, includes the following actions:

- Making changes to equipment that have not been recommended or described in this manual or using parts that are not genuine ADB SAFEGATE replacement parts or accessories.
- Failing to make sure that auxiliary equipment complies with approval agency requirements, local codes, and all applicable safety standards if not in contradiction with the general rules.
- Using materials or auxiliary equipment that are inappropriate or incompatible with your ADB SAFEGATE equipment.
- Allowing unskilled personnel to perform any task on or with the equipment.

© ADB SAFEGATE SWEDEN AB

This manual or parts thereof may not be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, nor otherwise, without ADB SAFEGATE SWEDEN AB's prior written consent.

This manual could contain technical inaccuracies or typographical errors. ADB SAFEGATE SWEDEN AB reserves the right to revise this manual from time to time in the contents thereof without obligation of ADB SAFEGATE SWEDEN AB to notify any person of such revision or change. Details and values given in this manual are average values and have been compiled with care. They are not binding, however, and ADB SAFEGATE SWEDEN AB disclaims any liability for damages or detriments suffered as a result of reliance on the information given herein or the use of products, processes or equipment to which this manual refers. No warranty is made that the use of the information or of the products, processes or equipment to which this manual refers will not infringe any third party's patents or rights. The information given does not release the buyer from making their own experiments and tests.

© ADB SAFEGATE BV

This manual or parts thereof may not be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, nor otherwise, without ADB SAFEGATE BV's prior written consent.

This manual could contain technical inaccuracies or typographical errors. ADB SAFEGATE BV reserves the right to revise this manual from time to time in the contents thereof without obligation of ADB SAFEGATE BV to notify any person of such revision or change. Details and values given in this manual are average values and have been compiled with care. They are not binding, however, and ADB SAFEGATE BV disclaims any liability for damages or detriments suffered as a result of reliance on the information given herein or the use of products, processes or equipment to which this manual refers. No warranty is made that the use of the information or of the products, processes or equipment to which this manual refers will not infringe any third party's patents or rights. The information given does not release the buyer from making their own experiments and tests.

TABLE OF CONTENTS

1.0 Safety	1
1.1 Safety Messages	1
1.1.1 Introduction to Safety	2
1.1.2 Intended Use	2
1.1.3 Material Handling Precautions: Storage	3
1.1.4 Operation Safety	3
1.1.5 Maintenance Safety	3
1.1.6 Material Handling Precautions, ESD	4
2.0 Introduction	5
2.1 Safety instructions	5
2.2 RELIANCE Shallow Base 8-inch/135 mm and Base 12-inch/150 mm	5
2.3 Delivery of units	5
2.4 Overview of unit types	5
2.5 Base options	6
3.0 Installation	11
3.1 Cabling options	11
3.2 Civil works	12
3.2.1 Conduct	12
3.2.2 Coring	12
3.2.3 Final preparation	13
3.3 Electrical connections	13
3.3.1 Electrical connections in base with bottom access	13
3.3.2 Electrical connections in base with side access	14
3.4 Installing the base	16
3.4.1 Positioning and alignment of a base	16
3.4.2 Fixation of a base	22
3.5 Installing a fitting	23
4.0 Maintenance	25
5.0 Spare Parts	27
5.1 RELIANCE shallow base 8-inch and 12-inch	27
6.0 SUPPORT	31
6.1 ADB SAFEGATE Website	31
6.2 Recycling	31
6.2.1 Local Authority Recycling	31
6.2.2 ADB SAFEGATE Recycling	32

List of Figures

Figure 1: Bottom entry for 8" base	7
Figure 2: Bottom entry for 12" base	7
Figure 3: 2-side entry for 12" base – One cable	8
Figure 4: 2-side entries for 12" base – Two cables	8
Figure 5: 2-side entries for 8" base – One cable	9
Figure 6: 2-side entries for 8" base – Two cables	9
Figure 7: Bolts	10
Figure 8: Nuts	10
Figure 9: Metric	10
Figure 10: UNC	10
Figure 11: Saw cuts/side entry	11
Figure 12: Buried conducts/bottom entry	11
Figure 13: Cable conduct	12
Figure 14: Electrical connection in a base with bottom access	13
Figure 15: Electrical connection in a base with side access	14
Figure 16: ALIGNMENT DEVICE (IDM 4306)	18
Figure 17: PARALLEL CENTER LINE	18
Figure 18: CURVED SECTION	18
Figure 19: POSITION & ALIGN	19
Figure 20: LIGHT INSTALLATION	23

List of Tables

Table 1: Accessory kits	27
Table 2: Accessories and spare parts	28
Table 3: Accessory kits	28
Table 4: Accessories and spare parts	29

1.0 Safety

Introduction to Safety







This section contains general safety instructions for installing and using ADB SAFEGATE equipment. Some safety instructions may not apply to the equipment in this manual. Task- and equipment-specific warnings are included in other sections of this manual where appropriate.

1.1 Safety Messages


HAZARD Icons used in the manual

For all HAZARD symbols in use, see the Safety section. All symbols must comply with ISO and ANSI standards.

Carefully read and observe all safety instructions in this manual, which alert you to safety hazards and conditions that may result in personal injury, death or property and equipment damage and are accompanied by the symbol shown below.

	<p>WARNING Failure to observe a warning may result in personal injury, death or equipment damage.</p>
	<p>DANGER - Risk of electrical shock or ARC FLASH Disconnect equipment from line voltage. Failure to observe this warning may result in personal injury, death, or equipment damage. ARC Flash may cause blindness, severe burns or death.</p>
	<p>WARNING - Wear personal protective equipment Failure to observe may result in serious injury.</p>
	<p>WARNING - Do not touch Failure to observe this warning may result in personal injury, death, or equipment damage.</p>
	<p>CAUTION Failure to observe a caution may result in equipment damage.</p>
	<p>ELECTROSTATIC SENSITIVE DEVICES This equipment may contain electrostatic devices.</p>

Qualified Personnel

	<p>Important Information The term qualified personnel is defined here as individuals who thoroughly understand the equipment and its safe operation, maintenance and repair. Qualified personnel are physically capable of performing the required tasks, familiar with all relevant safety rules and regulations and have been trained to safely install, operate, maintain and repair the equipment. It is the responsibility of the company operating this equipment to ensure that its personnel meet these requirements. Always use required personal protective equipment (PPE) and follow safe electrical work practice.</p>
---	---

1.1.1 Introduction to Safety



CAUTION

Unsafe Equipment Use

This equipment may contain electrostatic devices, hazardous voltages and sharp edges on components

- Read installation instructions in their entirety before starting installation.
- Become familiar with the general safety instructions in this section of the manual before installing, operating, maintaining or repairing this equipment.
- Read and carefully follow the instructions throughout this manual for performing specific tasks and working with specific equipment.
- Make this manual available to personnel installing, operating, maintaining or repairing this equipment.
- Follow all applicable safety procedures required by your company, industry standards and government or other regulatory agencies.
- Install all electrical connections to local code.
- Use only electrical wire of sufficient gauge and insulation to handle the rated current demand. All wiring must meet local codes.
- Route electrical wiring along a protected path. Make sure they will not be damaged by moving equipment.
- Protect components from damage, wear, and harsh environment conditions.
- Allow ample room for maintenance, panel accessibility, and cover removal.
- Protect equipment with safety devices as specified by applicable safety regulations
- If safety devices must be removed for installation, install them immediately after the work is completed and check them for proper functioning prior to returning power to the circuit.

Failure to follow this instruction can result in serious injury or equipment damage

Additional Reference Materials



Important Information

- IEC - International Standards and Conformity Assessment for all electrical, electronic and related technologies.
- IEC 60364 - Electrical Installations in Buildings.
- FAA Advisory: AC 150/5340-26 (current edition), Maintenance of Airport Visual Aid Facilities.
- Maintenance personnel must refer to the maintenance procedure described in the ICAO Airport Services Manual, Part 9.
- ANSI/NFPA 79, Electrical Standards for Metalworking Machine Tools.
- National and local electrical codes and standards.

1.1.2 Intended Use



CAUTION

Use this equipment as intended by the manufacturer

This equipment is designed to perform a specific function, do not use this equipment for other purposes

- Using this equipment in ways other than described in this manual may result in personal injury, death or property and equipment damage. Use this equipment only as described in this manual.

Failure to follow this instruction can result in serious injury or equipment damage

1.1.3 Material Handling Precautions: Storage



CAUTION

Improper Storage

Store this equipment properly

- If equipment is to be stored prior to installation, it must be protected from the weather and kept free of condensation and dust.

Failure to follow this instruction can result in equipment damage

1.1.4 Operation Safety



CAUTION

Improper Operation

Do Not Operate this equipment other than as specified by the manufacturer

- Only qualified personnel, physically capable of operating the equipment and with no impairments in their judgment or reaction times, should operate this equipment.
- Read all system component manuals before operating this equipment. A thorough understanding of system components and their operation will help you operate the system safely and efficiently.
- Before starting this equipment, check all safety interlocks, fire-detection systems, and protective devices such as panels and covers. Make sure all devices are fully functional. Do not operate the system if these devices are not working properly. Do not deactivate or bypass automatic safety interlocks or locked-out electrical disconnects or pneumatic valves.
- Protect equipment with safety devices as specified by applicable safety regulations.
- If safety devices must be removed for installation, install them immediately after the work is completed and check them for proper functioning.
- Route electrical wiring along a protected path. Make sure they will not be damaged by moving equipment.
- Never operate equipment with a known malfunction.
- Do not attempt to operate or service electrical equipment if standing water is present.
- Use this equipment only in the environments for which it is rated. Do not operate this equipment in humid, flammable, or explosive environments unless it has been rated for safe operation in these environments.
- Never touch exposed electrical connections on equipment while the power is ON.

Failure to follow these instructions can result in equipment damage

1.1.5 Maintenance Safety



DANGER

Electric Shock Hazard

This equipment may contain electrostatic devices

- Do not operate a system that contains malfunctioning components. If a component malfunctions, turn the system OFF immediately.
- Disconnect and lock out electrical power.
- Allow only qualified personnel to make repairs. Repair or replace the malfunctioning component according to instructions provided in its manual.

Failure to follow these instructions can result in death or equipment damage

1.1.6 Material Handling Precautions, ESD



CAUTION

Electrostatic Sensitive Devices

This equipment may contain electrostatic devices

- Protect from electrostatic discharge.
- Electronic modules and components should be touched only when this is unavoidable e.g. soldering, replacement.
- Before touching any component of the cabinet you shall bring your body to the same potential as the cabinet by touching a conductive earthed part of the cabinet.
- Electronic modules or components must not be brought in contact with highly insulating materials such as plastic sheets, synthetic fiber clothing. They must be laid down on conductive surfaces.
- The tip of the soldering iron must be grounded.
- Electronic modules and components must be stored and transported in conductive packing.

Failure to follow this instruction can result in equipment damage

2.0 Introduction

RELIANCE™ Shallow Bases are receptacles for inset lights for site requirements at airports. The bases are 8" and 12" in size and are compatible with ADB SAFEGATE inset lights. It may be possible to use with other manufacturers light units, however compatibility must be checked separately.

2.1 Safety instructions



DANGER

Electric Shock Hazard

This equipment may contain multiple power sources

- Prior to the commencement of work all electrical services must be isolated from the supply and connected to earth. Full details of the work involved must be given to the authorized person responsible for the electrical engineering services at the airport with regard to the duration of the work and so on. It is recommended that prior to starting any cutting work, the nature and location of services such as cable ducts and the like should be identified. Any installation or maintenance work should only be carried out by trained and experienced personnel. Also, when working on circuits using Airfield Smart Power System (ASP) the SCM must be tuned off.
- Disconnect and lock out electrical power.
- Allow only qualified personnel to make repairs. Repair or replace the malfunctioning component according to instructions provided in its manual.

Failure to follow these instructions can result in death or equipment damage

2.2 RELIANCE Shallow Base 8-inch/135 mm and Base 12-inch/150 mm

- Ground fixing of 8-inch inset light fittings (8-inch base)
- Ground fixing of 12-inch inset light fittings (12-inch base)



2.3 Delivery of units

To meet every customers individual requirements, Base 8"/12" are delivered without basic accessories such as, cable-glands, cables, wiring protection tubes earth fixing screws and nuts. Basic accessories and electrical connection kits for Base 8"/12" must be ordered separately.

2.4 Overview of unit types

The different types of shallow bases supplied allow direct mounting of 8" and 12" inset light fittings. Options available for bases do not affect what type of light unit that can be used. The difference is the type of cabling system and the light fitting fixing system to be utilized (Metric/UNC, Bolts/Nuts).

2.5 Base options

This section describes the options available for bases. It is possible for options to be combined. For more information, contact ADB SAFEGATE.

Product Description

Base

8-135 = 8" base, 135 mm depth

12-150 = 12" base, 150 mm depth

Cable entry

0 = Bottom-hole version¹

2 = 2 open cable entries on side²

3 = 2 open cable entries on side³

N = Not applicable

Version

S = Stud bolt version⁴

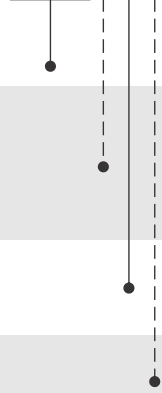
T = Insert thread version

Stud bolt

M = Metric threads (M10)

U = UNC threads (UNC 3/8")

X-XXX X X X



Notes

¹ No cable side entries.

² No bottom hole, applicable for accessory kit 3.

³ No bottom hole, applicable for accessory kit 1 and 2.

⁴ Only available with metric threads.

Product Description Base a-b-c-d	Ordering code SGxxxxx
Base 8"-135-0-T-M	17220
Base 8"-135-0-S-M	17221
Base 8"-135-2-T-M	17222
Base 8"-135-2-S-M	17223
Base 8"-135-3-T-M	17224
Base 8"-135-3-S-M	17225
Base 8"-135-0-T-U	17226
Base 8"-135-2-T-U	17227
Base 8"-135-3-T-U	17228
Base 8"-135-N-T-M	27012

Product Description Base a-b-c-d	Ordering code SGxxxxx
Base 12"-150-2-T-M	15503
Base 12"-150-0-T-M	15504
Base 12"-150-2-S-M	16286
Base 12"-150-0-S-M	16287
Base 12"-150-2-T-U	16289
Base 12"-150-0-T-U	16290
Base 12"-150-3-T-M	18140

Product Description Base a-b-c-d	Ordering code SGxxxxx
Base 12"-150-3-T-U	18141
Base 12"-150-3-S-M	18142
Base 12"-150-N-T-M	27013



Note

For more information about base accessories, see data sheet for Base 8"-135 mm and Base 12"-150 mm.

Base options

Image examples

Base 8"-135-0-X-X
Base 12"-150-0-X-X

The option includes:

0 – Ø100 mm (8" bases), Ø130 mm (12" bases) bottom entry for cables. This option is for cabling in the field with buried conducts.

Figure 1: Bottom entry for 8" base



Figure 2: Bottom entry for 12" base



Base options

Base 8"-135-2-X-X
Base 12"-150-2-X-X

Image examples

Figure 3: 2-side entry for 12" base – One cable

The option includes:

2 – 2-side entries for cables for cabling in the field with saw cuts/
grooves and two secondary cables (Ø 10-14 mm).

One cable:

- 1 x Cable connector kit, cable and connector
- 1 x Obstruction packer

Two Cables:

- 2 x Cable connector kit, cables and connectors

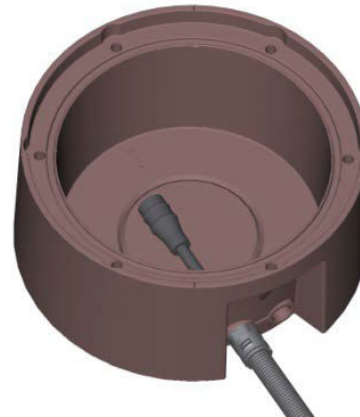
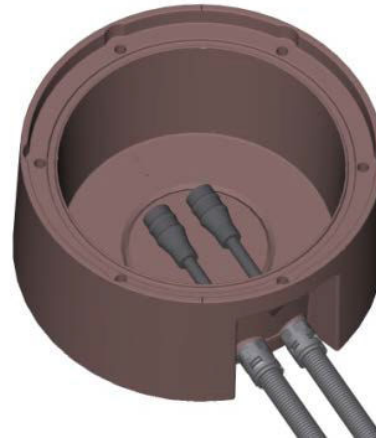


Figure 4: 2-side entries for 12" base – Two cables



Base options

Base 8"-135-**3**-X-X
 Base 12"-150-**3**-X-X

The option includes:

3 – 2-side entries for cables (without plastic tube) for cabling in the field with saw cuts/grooves and one or two secondary cables.

One cable:

- 1 x Cable gland system
- 1 x Obstruction packer

Two Cables:

- 2 x Cable gland systems







Image examples

Figure 5: 2-side entries for 8" base – One cable



Figure 6: 2-side entries for 8" base – Two cables





Base options	Image examples
<p>Base 8"-135-X-T-X Base 12"-150-X-T-X</p> <p>The option includes:</p> <p>T – Replaceable, locking type stainless steel thread elements.</p> <p>Used when the light fittings are fixed with bolts.</p>	<p data-bbox="1034 191 1200 216">Figure 7: Bolts</p> 
<p>Base 8"-135-X-S-X Base 12"-150-X-S-X</p> <p>The option includes:</p> <p>S – replaceable stainless steel stud bolts. Used when the light fittings are fixed with nuts.</p>	<p data-bbox="1034 623 1200 648">Figure 8: Nuts</p> 
<p> Note This option is only available with metric threads.</p>	
<p>Base 8"-135-X-X-M Base 12"-150-X-X-M</p> <p>The option includes:</p> <p>M – For light unit fixing with metric threads.</p>	<p data-bbox="1027 1085 1209 1110">Figure 9: Metric</p>  <p data-bbox="1246 1178 1337 1220">M10</p>
<p>Base 8"-135-X-X-U Base 12"-150-X-X-U</p> <p>The option includes:</p> <p>U - For light unit fixing with UNC threads.</p>	<p data-bbox="1031 1360 1203 1386">Figure 10: UNC</p>  <p data-bbox="1098 1465 1305 1507">UNC 3/8"</p>
<p> Note This option is only available with locking type stainless steel thread elements.</p>	

3.0 Installation

This section includes basic step-by-step instructions generally applicable for all installation practices. However the installation steps may differ depending on site requirements. Before you start, make sure you have read and understand [Safety instructions](#).

An inset light fitting base uniquely defines position, orientation and level for the light unit positioned in it. These criteria are defined during the base installation process and are almost impossible to change afterwards. For this reason it is highly important that base installation is carried out accordingly.

3.1 Cabling options

Cabling option	Image examples
<p>For installation using saw cuts made in the layout to lead secondary cables, use a shallow base with side entry/entries.</p>	<p data-bbox="975 579 1315 602">Figure 11: Saw cuts/side entry</p> 
<p>i Note Image example shows assembly of 12" base and fitting but is valid for installation of 8" base and fittings as well.</p>	<p data-bbox="911 856 1378 879">Figure 12: Buried conduits/bottom entry</p> 

For installation using buried conduits in the layout to lead the secondary cables, use a shallow base with bottom entry.

i Note
Image example shows assembly of 12" base and fitting but is valid for installation of 8" base and fittings as well.

For correct light location, orientation and so on it is recommended to read and comply with the following:

- ICAO: Annex 14 Volume I, which refers to lighting system installation in general.
- All drawings and design plans, for the particular project, to guarantee correct location and orientation for each light unit.

The following tools and accessories are required for installation and removal of the unit:

- Standard surveying equipment.
- Coring and cutting equipment with diamond blades (such as for pavement surfaces).
- Alignment device for the base.
- Tools for electrical connection (depending on the cabling system, for example cutting/stripping pliers, crimping tool, hot air gun and the like).
- 22/24 mm fork wrench for cable gland.
- 8 mm socket wrench for a ground screw.
- Two component fixing compound.
- Cable groove sealer (saw cut/grooves cabling system only).



Note

The installation method used defines the tools and accessories required.

The installation steps refer to:

1. Civil works
2. Electrical connections
3. Installing the base
4. Installing the fitting

3.2 Civil works

All necessary markings such as base positions, cable grooves and so on must be accurately defined by a surveying team before any civil works start.

3.2.1 Conduct

Cable conduct methods for bases can be divided to two groups: buried cables and saw cuts/grooves. The cable conduct system that is used influences the base installation process and the order in which different steps can/must be carried out.

For a buried cable system, the supply cable for the fitting runs through a duct set in the sub-base of the pavement, from the transformer pit to the underside of the base. Bases with a bottom hole are to be used with this cable system.

For saw cuts/grooves cable system, the supply cable for the fitting runs through saw cuts made in a pavement. The saw cut size must be in relation to the number and the diameter of cables to be placed in it. It is recommended to bury cables to a depth of at least 30 mm. Bases with side access are to be used with this cable system.

3.2.2 Coring

Cut a hole for a base:

- Hole dimensions for Base 8": Ø245 mm, depth 145 mm.
- Hole dimensions for Base 12": Ø345 mm, depth 160 mm.

After cutting, break out and remove the hole-centers for the base and for the bottom to access cables, if required.

When installing a base with bottom access, cut a central hole into the sub-base ($\leq \text{Ø}100$ mm for Base 8", $\leq \text{Ø}130$ mm for Base 12") to be able to reach the cable duct.

When installing a base with side-access, make saw-cuts and chamfers in order to access cable-inlets.

Cable conduct chamfers

Image examples

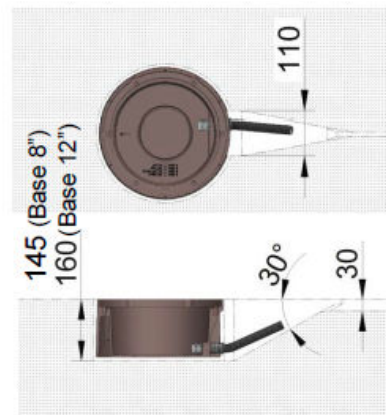
When installing Base 8" / 12" for saw cut/grooves cable system, cable cuts must be chamfered as shown in the figure.

It is recommended that longitudinal angles of the grooves should not exceed 30 degrees.

It is also important that minimum bending radius for the cable type to be used is not exceeded in any part of the groove.

For more information, see the cable manufacturer's technical data for minimum radius.

Figure 13: Cable conduct



3.2.3 Final preparation

After breaking out the saw cuts and the hole for the base, carefully clean and remove all gravel, sand or waste material from the groove. Degrease and dry all surfaces of the base that will be in contact with the resin. During the installation process, it is recommended to protect the light fitting contact and gasket surfaces with masking tape.

Make sure the resin to be used meets the manufacturer recommendations for:

- Expiry date
- Freedom from moisture, reduction of the risk for chemical reaction
- Storage conditions
- Working conditions

If the resin is acceptable for use, carefully read the manufacturer instructions for mixing it, pouring it and so on. When determining the amount of resin to mix, consider the working time of resin, the number of bases to be glued with the mixture and so on.

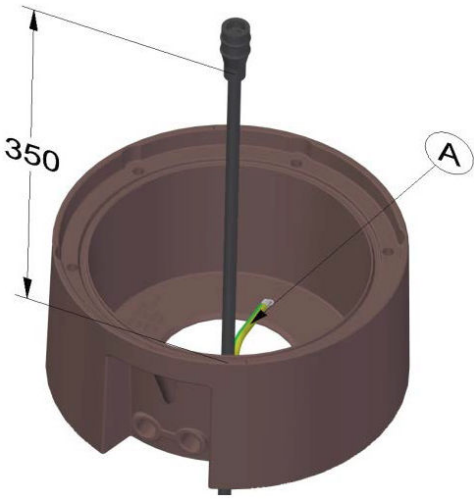
Note Do not use resin that has passed the expiration date.

3.3 Electrical connections

Electrical connections to the base can be made in many different ways. Bases are usually equipped with FAA Secondary Receptacles with different configurations such as plugs connected to cable/wires or short cables with wire-to-wire. Electrical connectors are not included in the base delivery and customers must order materials based on the system to be used.

In many cases, cable/wires may be unprotected through the area where the base fixing resin is spread. In such cases, cable/wires must be installed and the system functionality tested before installing the base.

3.3.1 Electrical connections in base with bottom access

Electrical connections in a base with bottom access	Image examples
<ol style="list-style-type: none"> 1. Feed the cable(s) into the base. 2. Complete all electrical connections and wire/connector screenings. 3. Attach the ground wire (A) to its connection point inside the base using the screw supplied. For systems where ground connection is used, the ground cable needs to be equipped with a suitable cable terminal. 	<p>Figure 14: Electrical connection in a base with bottom access</p> 
<p>Note If the marked connection point cannot be used, the screw can be attached to any other place inside/outside the base.</p>	
<ol style="list-style-type: none"> 4. Allow approximately 35 cm secondary cable inside a 12" base respectively 25 cm inside an 8" base. 5. Seal the bottom hole. 	
<p>Note It may not be possible to seal before the alignment jig is set.</p>	

3.3.2 Electrical connections in base with side access

i Note

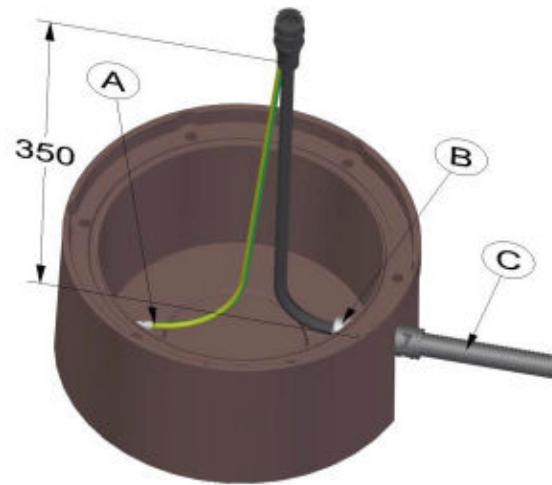
If a base with side access is to be installed, it is possible to complete the electrical connections after the base installation. It should be noticed that this is not the general rule for this type of base installation or different installation processes.

Electrical connections in Base 12" and Base 8"-135-2-X-X (with side access, full threaded holes)

Image examples

1. Install the cable gland on the inside of the base and the plastic tube on the outside. Loose the outer part of the cable gland to allow the cable to pass (B).
2. Pull the cable through the protection tube and the cable gland (C).
3. Complete all electrical connections and wire/connector screenings.
4. Attach the ground wire (A) to its connection point inside the base using the screw supplied. For systems where ground connection is used, the ground cable needs to be equipped with a suitable cable terminal.

Figure 15: Electrical connection in a base with side access



i Note

If the marked connection point cannot be used, the screw can be attached to any other place inside/outside the base.

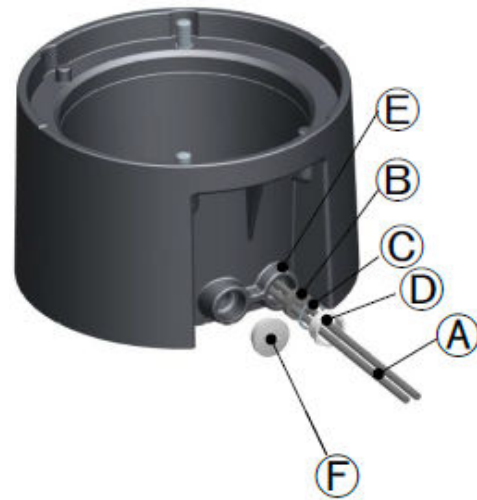
5. Allow approximately 35 cm secondary cable inside a 12" base respectively 25 cm inside a 8" base.
6. Tighten the cable gland (B) with 24 mm fork wrench.

Electrical connections Base 12" and Base 8"-135-3-X-X (with side access, partially threaded holes) Image examples

A Connector Kit, separately supplied, is required to install a connector on a shallow base. The kit includes:

- An FAA Secondary Receptacle + Wires (A).
- A Compression Packer with:
 - one rubber gasket (B)
 - one washer (C)
 - one nut (D)

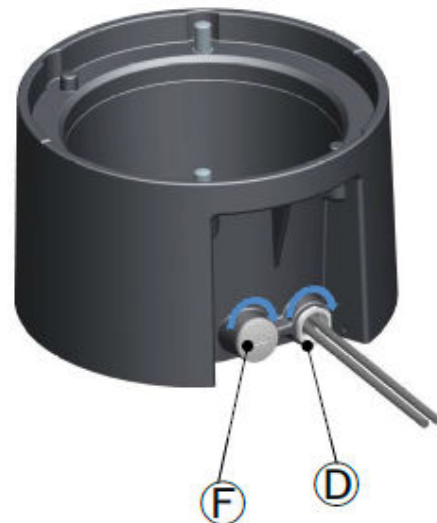
1. Install the FAA Secondary Receptacle + Wires from the kit (A). From the inside of the base, feed the two wires through the threaded hole of the base (E).
2. From the outside of the base, feed the two wires of the connector through the rubber gasket (B) and place it inside the threaded hole of the base.



Note

Allow approximately 35 cm secondary cable inside a 12" base respectively 25 cm inside a 8" base.

3. From the outside of the base, feed the two wires of the connector through the washer (C) and place it inside the threaded hole of the base. From the outside of the base, feed the two wires of the connector through the nut (D) on and fasten it in the threaded hole of the base. Fasten the nut in the threaded hole of the base; there is no torque for cable gland as it is fastened onto rubber.



Note

For bases with two connectors, repeat these steps to install a second connector.

Shallow bases with side access are supplied with two threaded holes. Shallow bases supplied with only one connector require the second hole to be plugged with an Obstruction Cap.



Note

An Obstruction Cap Kit is ordered separately.

4. Install an obstruction cap (F). From the outside of the base, position the obstruction cap in the threaded hole of the base.
5. Fasten the obstruction cap in the threaded hole of the base.

Installation of ground screws in a 8" base

Image examples

When a base (and/or a light fixture) is to be grounded to earth, the install of ground screws (supplied separately) in the base is needed:

1. Install an internal ground screw (G).
From the inside of the base, fasten the self-drilling and threading screw in the specific countersink marked with ground symbol.
2. Install an external ground screw (G).
From the outside of the base, fasten the self-drilling and threading screw in one of the two possible specific countersinks (see position in the figure to the right).



3.4 Installing the base

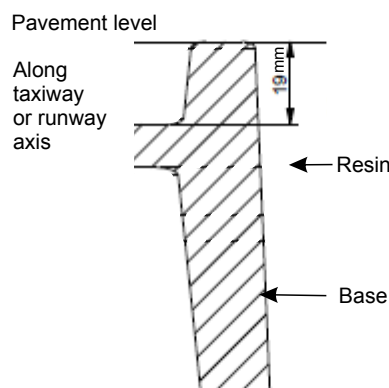
The following installation procedure provides step-by-step instructions for a single base fixing. However, it is recommended to install several bases at the same time as some steps (such as fixing compound spreading) are carried out more effectively on a multi-base installation.

3.4.1 Positioning and alignment of a base

When installing bases, an alignment device is needed in order to position and fixate the base in the ground. Depending on base model, size, function and installation requirements different models of alignment devices are needed.

When installing bases on runways according to ICAO (Annex 14 Volume 1, Aerodrome Design and Operations, 6th edition, July 2013, Appendix 2), an alignment tool with horizontal adjustment is needed. If positioning jig for 8"-bases is used, note that the applicable version is the one produced year 2014 or later. When installing bases on taxiways, horizontal adjustment is not required.

For easier and more accurate base installation when using Positioning jig for 8"/12"-bases, an optional tool called Sight Telescope can be used. Instructions for how to use the Positioning jig and the Sight Telescope can be found later on in this chapter.



The matrix below describes the main functions of ADB SAFEGATE four alignment devices for bases.

	Positioning jig for 8"-bases¹ (Vertical and horizontal-adjustment)	Positioning jig for 12"-bases (Vertical and horizontal-adjustment)	IDM 6092 for 8"-bases (Vertical- adjustment)	IDM 4306 for 12"-bases (Vertical- adjustment)
ICAO Annex 14 Annex 14 Volume 1, Aerodrome Design and Operations, 6th edition, July 2013, Appendix 2 (For installation on Runway)	Yes	Yes	No	No
ICAO Annex 14 Volume 1, Aerodrome Design and Operations, 6th edition, July 2013, Appendix 2 (For installation on Taxiway)	Yes	Yes	Yes	Yes
FAA AC 150/5340-30G	Yes	Yes	Yes	Yes
Insert thread base versions	Yes	Yes	Yes	Yes
Stud bolt base versions	Yes	Yes	No	No

Notes

¹ Produced year 2014 or later.

Note Find out more about the devices and installation process in the next coming pages.

**Set up alignment devices
IDM 6092 (8") and IDM 4306 (12")**

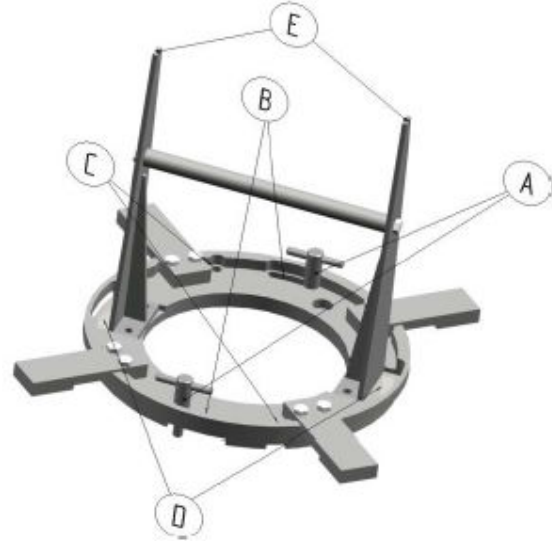
Image examples

An alignment device is used for aligning bases parallel to a center line, toe-in bases and also for curved section bases.
The device includes:

- Fastening screws (A).
- Screw holes for straight sections (B).
- Screw holes for curved sections (C).
- Angle scale (D).
- Alignment grooves (E).

When a base parallel to a center line or toe-in base is to be installed, set fastening screws for screw holes for a straight section.
When a curved section base is to be installed, set fastening screws for the screw holes for a curved section.

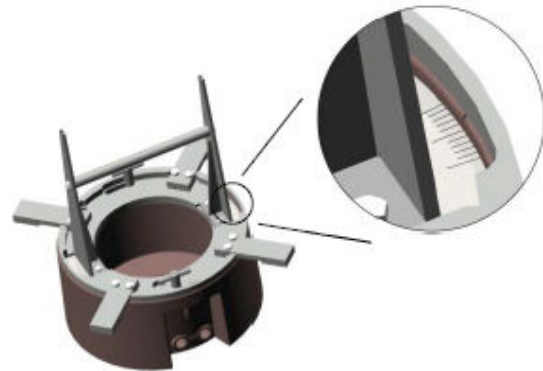
Figure 16: ALIGNMENT DEVICE (IDM 4306)



Set up for base installation parallel to center line and toe-in:

1. Place the alignment device on the base.
2. Tighten the fastening screws.
3. Set the angle scale to the desired value (0° for a parallel to center line base) and check both scales show the same value.
4. Tighten fastening screws.

Figure 17: PARALLEL CENTER LINE



Note For 12" base, side access can be aimed to six different directions depending on which index alignment tool is set.

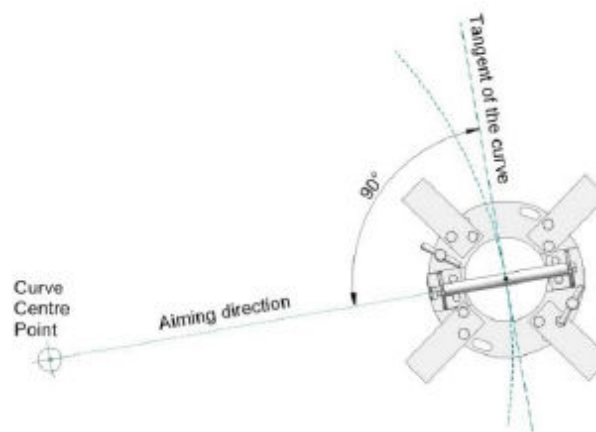
Set up for curved section base installation:

1. Place the alignment device on the base.
2. Tighten the fastening screws.

Note For 12" base, side access can be aimed to six different directions depending on which index alignment tool is set.

For a curved section base, align by aiming the alignment tool towards the curve center.

Figure 18: CURVED SECTION

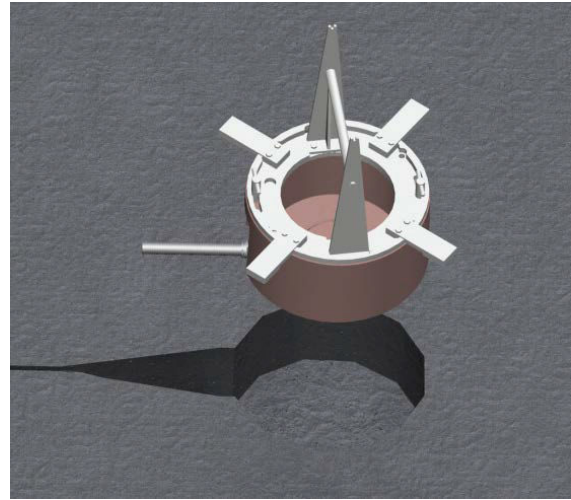


Position and align the base

Image Examples

1. Make sure that the hole is clean and completely dry.
2. Make sure that the outer surfaces of the base are clean and dry.
3. Place the base in the installation hole (with the alignment device).
4. Center the base in the middle of the installation hole and align it using the alignment grooves. For center line alignment, use for example the pre-set aiming target or use the runway/taxiway edge as a reference. For a curved section, use the pre-set center point marker.
5. Check that the alignment device is set to the correct angle, the base is in the middle of the installation hole and alignment is correct.
6. For a bottom-hole base, make sure that the bottom hole is correctly sealed.

Figure 19: POSITION & ALIGN



Set up alignment devices Positioning jig for 8"/12" bases and Sight Telescope (optional)

Image examples

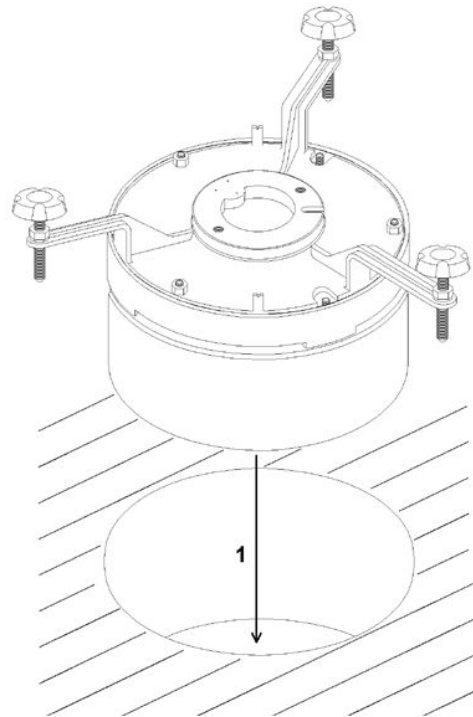
1. Degrease and dry the base, if required.



Note

This is not required if the base is new from the box.

2. Place a specific positioning tool (8" or 12") on the base.
3. Fasten the fixing knobs (nuts).
4. Carefully place the base inside the bore hole.

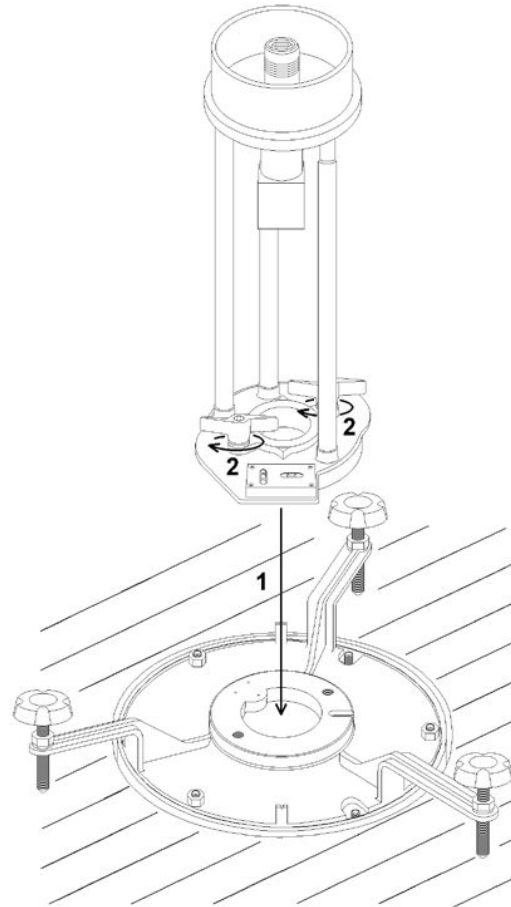


Prepare with a sight telescope or spirit level

Image examples

A positioning tool includes a spirit level (supplied) for installation without a sight telescope.
Alternatively, if a sight telescope is required or is to be used, remove the spirit level from the positioning tool.

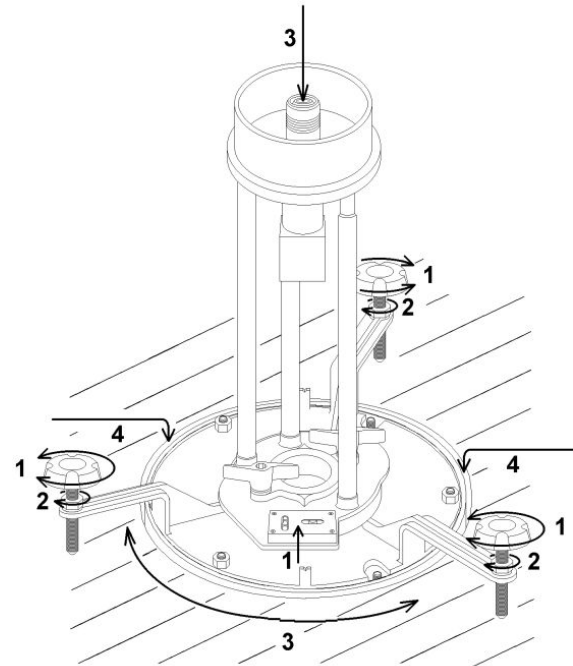
1. Place the sight telescope, if required, on the top of the positioning tool or use the spirit level supplied with the positioning tool.
 - a. **For a shallow base with bottom hole:** prevent that resin is flowing inside the base or the pipe by closing the gap between the base hole and the pipe. Do that by using:
 - a deflated ball (inflate after blocking the gap) or
 - a mastic putty ribbon placed around the 100 mm hole (before placing the base inside the bore hole).
 - b. **For a shallow base without bottom hole:** set the supply cable into the chamfered space and allow for sufficient length inside the base, for example 15 cm. For more information, see 0
 - c. Electrical Connections (shallow base with side access).
2. Fasten the sight telescope, if required, on the top of the positioning tool.



Position the base

Image examples

1. Slowly adjust the three screws of the positioning tool until the bubbles inside the spirit level are centered.
2. Fasten the locking screws.
3. Check if the base is set in the correct direction using the most efficient aiming marker, depending on the fitting types for installation as follows:
 - a. **For a straight section** , use a vertical marker set on the light beam direction at least 20 m away as an aiming point. If using a sight telescope (option), slowly turn the positioning tool to line up the vertical marker and the grid line in the telescope.
 - b. **For a curved section** , set the marker on the center of the curvature. If using a sight telescope (option), slowly turn the positioning tool to line up the vertical marker and the grid line in the telescope.
 - c. **For a transverse line** , set the centerline base, see (a), set a marker on each side of the perpendicular, repeat (a). If using a sight telescope (option), turn perpendicularly on both sides of the parallel centerline (by 90°) for the grid line to coincide with the field markers.






Note

To position a shallow base (without a sight telescope), use the two small markers (V) on the positioning tool with a small laid cord for vertical alignment and the spirit level (supplied) on the positioning tool for horizontal alignment (4).

4. Remove the sight telescope (option), if used.
5. Pour resin in the hole to set the base (5).
6. Remove the positioning tool when the resin has completely set.
7. Deflate/remove the ball, if used.

3.4.2 Fixation of a base

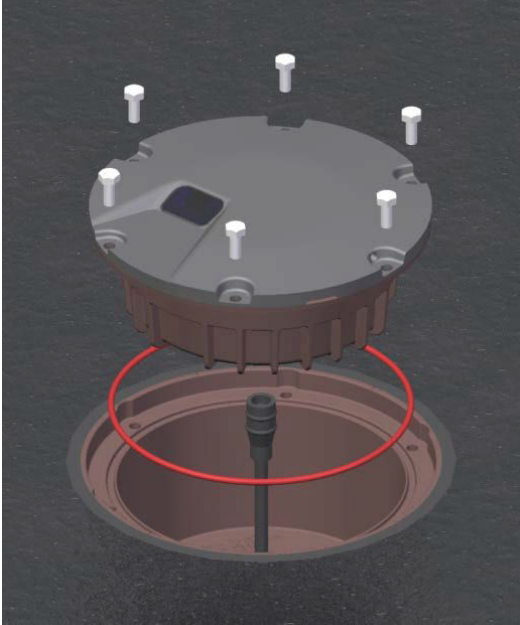
Fix the Base	Approximate resin consumption	
1. Mix the fixing resin according manufacturer's instructions. Estimated value for resin consumption per base can be found in the table to the right.	Base type	Resin consumption
 Note The exact consumption depends on the resin type, the installation hole dimensions, working conditions and so on. It cannot be precisely defined beforehand.	Base 8" / 135 mm	1.8 liters ^{1, 3}
2. Pour the resin into installation hole. Avoid splashing it on the alignment tool and the base.	Base 12" / 150 mm	3.5 liters ^{2, 3}
 Note If resin used has a very low viscosity, it may need to be applied on the bottom and walls of the installation hole before inserting the base.	 Note These resin volumes are estimated for perfect holes and no resin waste. It is advised to consider the actual site requirements such as the size/depth of each bore hole and the density/fluidity of the resin to be used. There is also some risk for resin waste. For more information, see manufacturer recommendations or as a first use example, add 20% to the resin volume estimate, and adjust thereafter based on site experience.	
3. After pouring the resin, make sure that the base is correctly positioned. Protruding base edges are not allowed in any circumstances, see FAA 150/5340-30F. 4. Wait until the resin is fully cured. 5. Remove the alignment device. 6. Remove surplus fixing compound, for example smooth off around the edges/sides. Remove debris in front of light so no obstruction or threshold exists. 7. Remove the masking tape and clean inside the base.		

Notes

- ¹ Approximations are given for nominal installation hole size, Diameter Ø245 mm and depth 145 mm.
- ² Approximations are given for nominal installation hole size, Diameter Ø345 mm and depth 160 mm.
- ³ Typical amount of resin needed with nominal installation hole dimensions. Base receptacle twin-shell construction cause lots of variation to resin consumption because the filling rate of the cavity depends on several issues such as resin type, working method, conditions, etc.

3.5 Installing a fitting

Note Never leave an installed base without a cover; always cover the base with an inset light unit or a suitable cover plate.

Steps	Image Examples
<ol style="list-style-type: none"> 1. Make sure that the inner surfaces of the base are clean and dry. 2. Place the gasket on the groove or the base/light unit to seal the gap. 	<p data-bbox="962 401 1326 428">Figure 20: LIGHT INSTALLATION</p> 
<p data-bbox="188 531 775 632">Note The gasket should always be replaced with a new one when a light unit is installed.</p> <ol style="list-style-type: none"> 3. Connect secondary plug(s) and its receptacle inside the base. Check cable(s) lay correctly while inserting the light unit. 4. Use lifting hooks to lower the light into the base. 5. Align the light to the base groove. 6. Loosely fasten the light with bolts/lock nuts by hand. 7. Fasten the bolts/lock nuts using a torque wrench, gradually in sequence, to a torque of 40 Nm (bolts) and 35 Nm (studs). 	
<p data-bbox="188 951 802 1144">Note Do not use high speed for tightening, the recommended speed is 10-40 rpm. If the use of Loctite is not necessary or obligatory, then it is recommended to use a suitable lubricant when fastening the bolts. Use nickel or graphite grease, but do NOT use copper-based grease as it stimulates corrosion.</p>	

4.0 Maintenance

An installed base does not require any periodical maintenance. However, every time a light unit or cover is replaced, all impurities should be removed inside the base and the base should be dried. Special attention should be made for light fitting contact surfaces and the gasket groove to make sure the seal between the base and light unit is guaranteed and the base life-time maximized.

Repairing/replacing certain objects in installed bases is possible: If the thread element or stud is damaged, they can be replaced with new one. Depending on the base installation it might be also possible to repair/replace secondary cable gland/sealing or even the cable itself.

Make sure you have read and understood safety instructions before any maintenance work is started (see [Safety instructions](#)).

5.0 Spare Parts

5.1 RELIANCE shallow base 8-inch and 12-inch

Note Contact ADB SAFEGATE for assistance with ordering spare parts and accessories, www.adbsafegate.com.

Table 1: Accessory kits




Description	Image example
<p>1 Accessory kit 1: Two single-core cables connector kit</p> <ul style="list-style-type: none"> • 1 × FAA style 7 female connector, 2×2.5 mm², 900 mm cables • 1 × rubber gasket • 1 × PG16 metal nut • 1 × washer • 2 × crimping connector (for 2.5-6 mm² cables) • 2 × heat shrink tube (for 3-9 mm external diameter cables) <p>Applicable for bases with side entry version 3.</p>	
<p>2 Accessory kit 2: One double-core cable connector kit (Ø 9-12 mm)</p> <ul style="list-style-type: none"> • 1 × Rubber gasket • 1 × PG16 metal nut • 1 × Washer <p>Applicable for bases with side entry version 3.</p>	
<p>3 Accessory kit 3: Side entry cable connector kit with tube</p> <ul style="list-style-type: none"> • 200 mm plastic cover tube. Outside diameter 22 mm, PG16 male thread. • Cable gland with PG16 male thread. Metal frame, synthetic rubber sealing parts. Suitable cable sizes Ø 10-14 mm. <p>Applicable for bases with side entry version 2.</p>	

Table 2: Accessories and spare parts


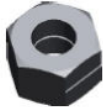






Description		Image example
1	Obstruction Cap <ul style="list-style-type: none"> Plastic obstruction cap, PG 16 thread Applicable for all side entry base versions.	
2	M10 locking nuts <ul style="list-style-type: none"> Plated Brass M10 locking nut Applicable for all stud bolt base versions.	
3	HEX Screw M10×25 mm <ul style="list-style-type: none"> Stainless steel HEX Screw M10×25 mm. Applicable for all M10 insert thread base versions.	
4	HEX Screw UNC3/8-in×1-in <ul style="list-style-type: none"> Stainless steel HEX UNC3/8-in×1-in Applicable for all UNC insert thread base versions.	
5	Ground screw <ul style="list-style-type: none"> DIN7504K Stainless steel M4.8×16 mm Applicable for all base 8-in/12-in versions.	
6	Stud bolt M10 <ul style="list-style-type: none"> Stainless steel stud bolt M10 (upper thread) and M10 HeliCoil (lower thread) 	
7	O-ring gasket for 8-in base	
8	O-ring gasket for 12-in base	

Table 3: Accessory kits

Description	Quantity per		Order code
	fitting	order	
1 Accessory kit 1: Two-core cables connector kit including cable	1 or 2 1 or 2	1 50	SGE.SP13127 SG13213
2 Accessory kit 2: One-core cable Ø 9-12 mm connector kit	1 or 2	1	SG17770
3 Side entry cable connector kit with tube	1 or 2	1	SG17851

Table 4: Accessories and spare parts

Description	Quantity per		Order code
	fitting	package	
1 Obstruction Cap	0 or 1	10	SGE.SP13405
2 M10 locking nuts	2 or 6	12	7150.53.330
3 HEX Screw M10×25 mm	2 or 6	12 200 1000	IDM.SP16644 IDM.SP16246 IDM.SP16645
4 HEX Screw UNC3/8-in×1-in	2 or 6	200	SG18457
5 Ground screw	1	100	IDM.SP17732
6 Stud bolt M10	2 or 6	12	IDM.SP17769
7 O-ring gasket for 8-in base	1	10	See note
8 O-ring gasket for 12-in base	1	10	SP.013114
O-ring gasket for 12-in base	1	100	SP.013115
9 BASE SP/PACKER/BAR (compression packer for two single core cables 8" and 12")	1 or 2	100	SG12990


Note

The gasket needed depends on the light to be installed in the base; for the correct order code, consult the user manual of the light to be installed in the base.

6.0 SUPPORT

Our experienced engineers are available for support and service at all times, 24 hour/7 days a week. They are part of a dynamic organization making sure the entire ADB SAFEGATE is committed to minimal disturbance for airport operations.

ADB SAFEGATE Support

Live Technical Support - Americas

If at any time you have a question or concern about your product, just contact ADB SAFEGATE's technical service department. Trained in all areas of system issues, troubleshooting, quality control and technical assistance, our highly experienced Technical support specialists are available 24 hours a day, seven days a week to provide assistance over the phone.

ADB SAFEGATE **Americas Technical Service & Support (US & Canada): +1-800-545-4157**

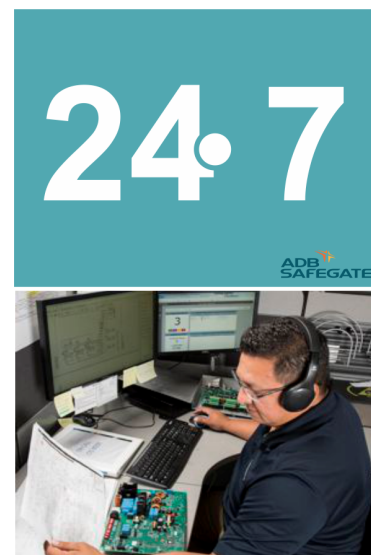
ADB SAFEGATE Americas Technical Service & Support (International): +1-614-861-1304

During regular business hours, you can also Chat with a Service Technician. We look forward to working with you!

Before You Call

When you have an airfield lighting or system control system problem it is our goal to support airfield maintenance staff as quickly as possible. To support this effort we ask that you have the following information ready before calling.

- The *airport code*
- If not with an airport, then company name (prefer customer id number)
- Contact phone number and email address
- Product with part number preferable or product number
- Have you reviewed the product's manual and troubleshooting guide
- Do you have a *True RMS* meter available (and any other necessary tools)
- Be located with the product ready to troubleshoot



Note

For more information, see www.adbsafegate.com, or contact ADB SAFEGATE Support via email at support@adbsafegate.com or

Brussels: +32 2 722 17 11

Rest of Europe: +46 (0) 40 699 17 40

Americas: +1 614 861 1304. Press 3 for technical service or press 4 for sales support.

China: +86 (10) 8476 0106

6.1 ADB SAFEGATE Website

The ADB SAFEGATE website, www.adbsafegate.com, offers information regarding our airport solutions, products, company, news, links, downloads, references, contacts and more.

6.2 Recycling

6.2.1 Local Authority Recycling

The disposal of ADB SAFEGATE products is to be made at an applicable collection point for the recycling of electrical and electronic equipment. The correct disposal of equipment prevents any potential negative consequences for the environment and human health, which could otherwise be caused by inappropriate waste handling. The recycling of materials helps to conserve natural resources. For more detailed information about recycling of products, contact your local authority city office.

6.2.2 ADB SAFEGATE Recycling

ADB SAFEGATE is fully committed to environmentally-conscious manufacturing with strict monitoring of our own processes as well as supplier components and sub-contractor operations. ADB SAFEGATE offers a recycling program for our products to all customers worldwide, whether or not the products were sold within the EU.

ADB SAFEGATE products and/or specific electrical and electronic component parts which are fully removed/separated from any customer equipment and returned will be accepted for our recycling program.

All items returned must be clearly labeled as follows:

- For *ROHS/WEEE* Recycling
- Sender contact information (Name, Business Address, Phone number).
- Main Unit Serial Number.

ADB SAFEGATE will continue to monitor and update according for any future requirements for *EU directives* as and when *EU member states* implement new *regulations* and or *amendments*. It is our aim to maintain our *compliance plan* and assist our customers.

Company Addresses

ADB SAFEGATE, Belgium	ADB SAFEGATE BV Leuvensesteenweg 585, B-1930 Zaventem Belgium
Contact: Tel.: +32 2 722 17 11 Fax: +32 2 722 17 64	Email: marketing@adbsafegate.com Internet: www.adbsafegate.com
ADB SAFEGATE, Americas	ADB SAFEGATE Americas LLC 977 Gahanna Parkway, Columbus, OH 43230 USA
Contact: Tel.: +1 (614) 861 1304 Fax: +1 (614) 864 2069	Email: sales.us@adbsafegate.com Internet: www.adbsafegate.com
ADB SAFEGATE, Sweden	ADB SAFEGATE Sweden AB Djurhagegatan 19 SE-213 76 Malmö Sweden
Contact: Tel.: +46 (0)40 699 17 00 Fax: +46 (0)40 699 17 30	Email: marketing@adbsafegate.com Internet: www.adbsafegate.com
ADB SAFEGATE, China	ADB SAFEGATE Airfield Technologies Ltd. China Unit 603, D Block, CAMIC International Convention Center, No 3, Hua Jia Di East road, ChaoYang district, Beijing 100102 P.R. China
Contact: Tel.: +86 (10) 8476 0106 Fax: +86 (10) 8476 0090	Email: china@safegate.com Internet: www.adbsafegate.com
ADB SAFEGATE, Germany	ADB SAFEGATE Germany GmbH Konrad-Zuse-Ring 6, D-68163 Mannheim Germany
Contact: Tel.: +49 (621) 87 55 76-0 Fax: +49 (621) 87 55 76-55	Email: marketing@adbsafegate.com Internet: www.adbsafegate.com



Powering Your Airport Performance from Approach to Departure

adbsafegate.com

Copyright © ADB SAFEGATE, all rights reserved

