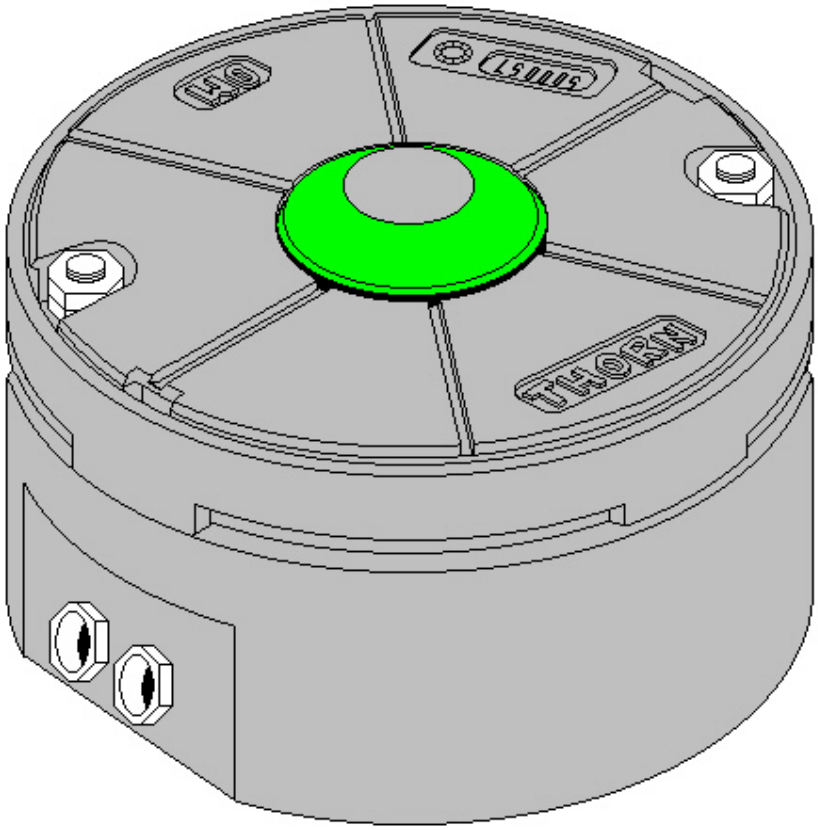
INSTALLATION DOCUMENTATION for IN-OMH

DOC 2801.E



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1 Introduction

The documentation lists the different steps to follow in order to successfully install the IN-OMH inset fitting.

You will find in this document two main paragraphs:

"General Information and Requirements": This chapter gives general description and use of the fitting covered by this document.

"Installation of the fitting": This chapter describes how to install the fitting covered by this document.

1.1 Use restriction notice and warranty

1.1.1 Use of the Document

This Installation documentation is the property of

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This documentation or any parts of this documentation may not be reproduced, stored in a retrieval system or transmitted in any form or by any means (mechanical, photocopying, recording, electronic,…) without THORN's prior consent.

1.1.2 Warranty

THORN Airfield Lighting guarantees that the performance of the inset lights described in this document, when sold by THORN Airfield Lighting or its licensed representatives, meets the requirements of ICAO Annex 14 volume 2 and FAA specification AC 150/5390-2.

Any defect in design, material or workmanship, which may occur during proper and normal use over a period covered by the warranty stipulate in the contract, will be replaced by THORN Airfield Lighting free of charge, ex works.

Operational failure resulting from lamp burnt out, improper installation, damage due to heliport maintenance equipment, snow ploughs…, is not considered a result of proper use and is beyond the scope of the warranty.

The above constitutes the limits of THORN Airfield Lighting 's liabilities concerning the inset lights covered by this document.

1.2 Safety instructions

WARNING: 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 Authorise Person responsible for the electrical engineering services at the heliport with regard to the duration of the work, etc.. It is recommended that prior to starting any cutting work the nature and location of services such as cable ducts, etc... should be identified. It is a prerequisite of this type of installation that the work should be carried out by trained and experienced personnel.

1.3 Reference documents

This paper refers to following documents:

- THORN Commercial Documentation General Brochure ref. no. Doc 1001.E,
- THORN IN-OMH Commercial Documentation ref. no. Doc 1801.E,
- THORN Shallow Bases Installation Documentation ref. no. Doc 2402.E,
- Last Edition of ICAO Annex 14 Volume II,
- Last Edition of ICAO Aerodrome Design Manual Part 4,
- Last Edition of FAA Advisory Circular AC 150/5340-26.

2 General information and requirements

2.1 Description of the fitting

The **IN - OMH** lighting fitting is an Omni-directional Medium Intensity inset fitting equipped with one lamp. This fitting is mainly used in heliport for boundary marking of final approach and take off area - **F.A.T.O** - (White), boundary marking of touchdown and lift off area - **T.L.O.F** - (Green), **aiming point** (White) , **taxiway edge** and **apron edge** (Blue).

The **IN-OMH** lighting fitting exist in two versions corresponding to the two possible power supplies .

- 12 Vac,
- 230 Vac (equipped with 230 Vac/12 Vac Transformer).

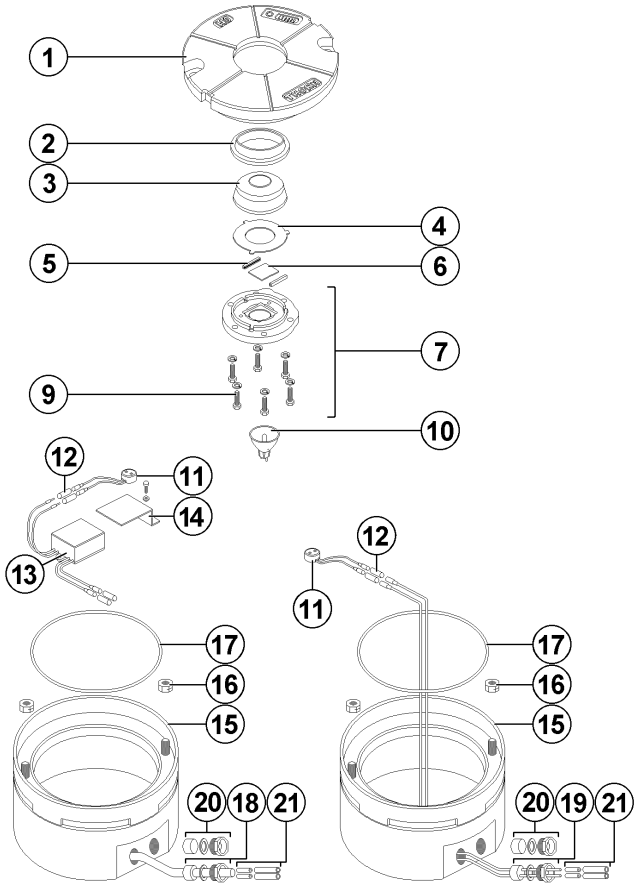
Note : The Coloured fittings (Blue and Green) are equipped with Dichroic Filters.

Each unit is supplied completely assembled with its base, tested and sealed, ready for installation. The electrical connection is made via one 2-pole low voltage cable or two 1-pole low voltage cables.

Each unit is individually packed in a durable, cushioned and corrugated cardboard box, labelled with its reference mane and code. At least one set of the fitting documentations is delivered per order. This set comprise : The commercial brochure DOC 1801.E, the installation manual DOC 2801.E, the maintenance manual DOC 3801.E and the spare parts list DOC 4801.E.

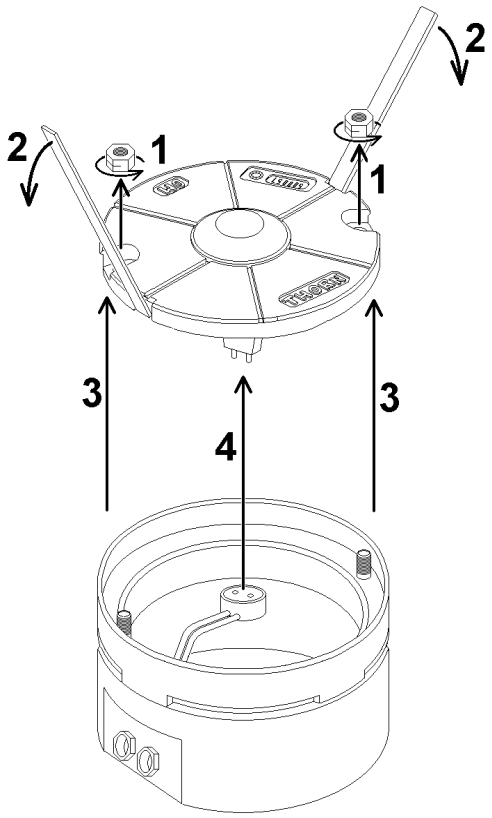
2.2 Design

1) Body
2) Silicone prism gasket
3) Non-sealed prism
4) Prism Protection Plate in Teflon
5) Filter protection gasket
6) Dichroic filter
7) Optical support
9) Optical support fixing screws
10) 50 W under 12 Vac prefocussed halogen dichroic reflector lamp (diameter 50 mm)
11) lamp socket
12) Accessories for lamp socket connection
13) 230 Vac /12 Vac transformer (option)
14) Accessories for transformer fixing
15) 8" shallow base depth = 100 mm
16) Fixing screws (x 2)
17) O ring gasket for 8" shallow base
18) Compression packer kit for one cable with two wires
19) Compression packer kit for two cables with one wire
20) Cap for shallow base
21) Accessories for power supply connection



3 Installing and removing the fitting

3.1 Opening the IN-OMH before Installation



When you receive the fittings open the boxes and verify that the characteristics of the fittings correspond to your design requirements (Type, Colour ...).

OPENING THE FITTING

A) Using a box spanner of 16 mm, unscrew and remove the two fixing bolts**.**

B) Remove the fitting body from its base using two big screwdrivers**.**

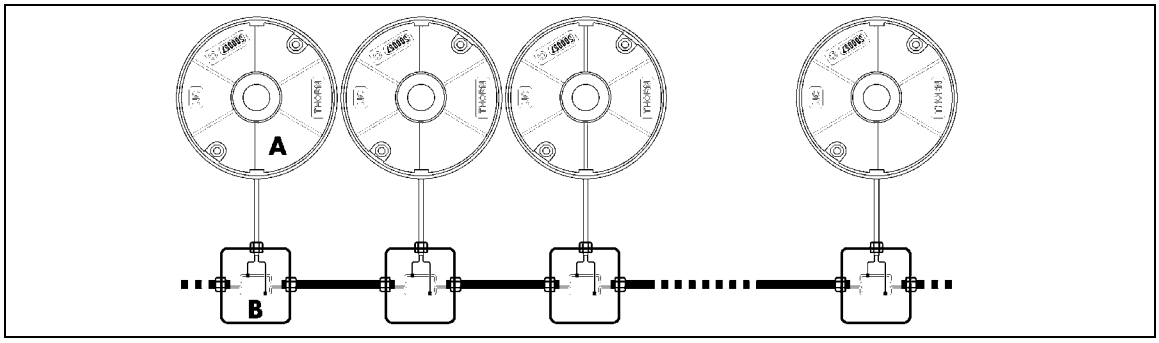
C) Disconnect the lamp socket from the lamp**.**

3.1.1 Design of the power supply circuits

The **IN-OMH** fittings for heliport are power supplied in voltage (230 Vac).

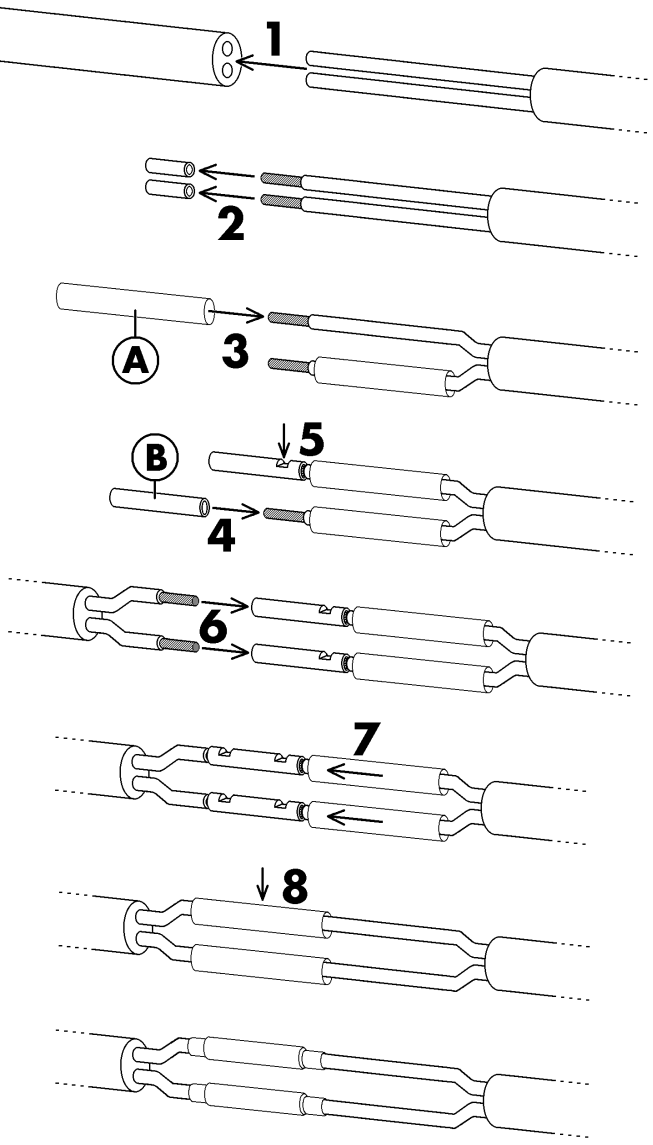
The fittings of a same function (= F.A.T.O, T.L.O.F, taxiway edge or apron edge) are supplied by one (or two) circuit(s) on which the fittings are connected in parallel.

The design of the electrical circuits must include junctions boxes allowing connection in parallel of the fittings. The drawing here after show the standard cabling (**A** = IN-OMH Fitting and **B** = Junction Box).



3.1.2 Electrical Connections

Connect the wires of the cable coming from the junction box to the wires of the cable going out the shallow base of the IN-OMH using accessories (Terminals and heat shrinkable sleeves) of the kit delivered with the light fitting.



1) Unsleeve the end of the two cables.
- Junction box cable on 100 mm
- IN-OMH cable on 40 mm

2) Unsleeve the end of the wires of the two cables on 15 mm.

3) Pass the two pieces of heat shrinkable sleeve (**A**) on the two power supply wires of the junction box cable.

4) Crimp the two terminals (**B**) on the wires of the power supply cable coming from the junction box cable.

5) Crimp the two terminals on the wires of the power supply cable going to the IN-OMH.

6) Place the two pieces of heat shrinkable sleeve around the two terminals.

7) Heat the two pieces of heat shrinkable sleeve to obtain isolated and watertight connections.

3.2 Installation of the Base

The first step of IN-OMH installation is the installation of its Base in the heliport layout.

3.2.1 Tools required

- Surveyor standard equipment
- Pavement Coring & Cutting equipment
- Installation jig for 8in., 12in. or 16in.
- Crimping tool (electrical connections)
- Air gun or blow lamp (electrical connections)

3.2.2 Civil Works to be Performed

All necessary markings must be accurately positioned by the surveying team in order to define the precise location of the fitting.

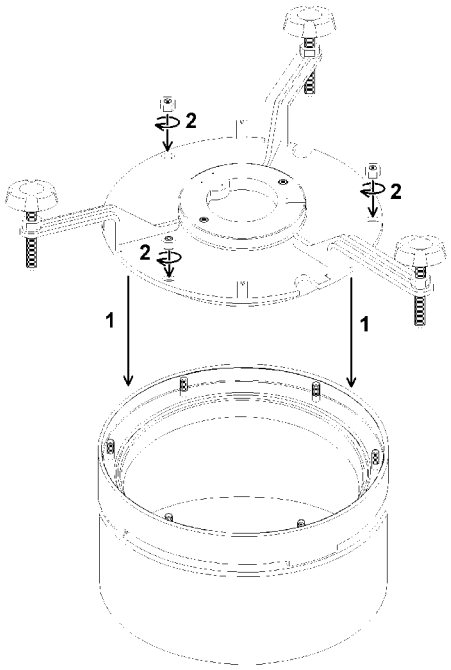
The pavement has to be chased out to allow the run of the supply cable. The size of saw cut has to be adapted to the version of fitting :

- 230VAC version : 2 x 1,5 mm² supply cable,
- 12VAC version : 2 cables of 1 x 3,2 mm².

After breaking out the saw cut and the hole for the base they must be carefully cleaned and all gravel, sand or waste material removed. Caution has to be exercised with regard to the resin being used with regard to the following :-

a) expiry date.
b) removal of moisture - risks of chemical reactions.
c) storage conditions.
d) mixing - refer to manufacturer's recommendations.

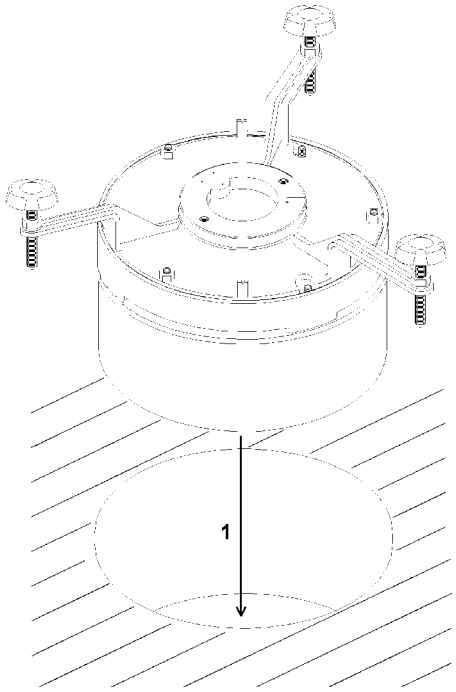
3.2.3 Positioning of the Jig and Base



A) Degrease and dry the base.
Fix the appropriate tool on the base and tighten the two fixing screws.

B) Carefully place the base inside the bored hole.

C) Set the supply cable into the chamfered space . Let sufficient length inside the base (15 cm).



D) Slowly adjust the three tool screws until the bubbles inside the spirit level is centred.

E) Screw and lock the locking screws.

F) Re-check horizontality of the jig.

G) This base is ready. The Jig can be removed only when the resin has completely hardened. If applicable, deflate the ball used when resin has set.

The estimated volume of glue necessary is :1.1 litre.

3.3 Installation of the fitting in its base

3.3.1 Tools required

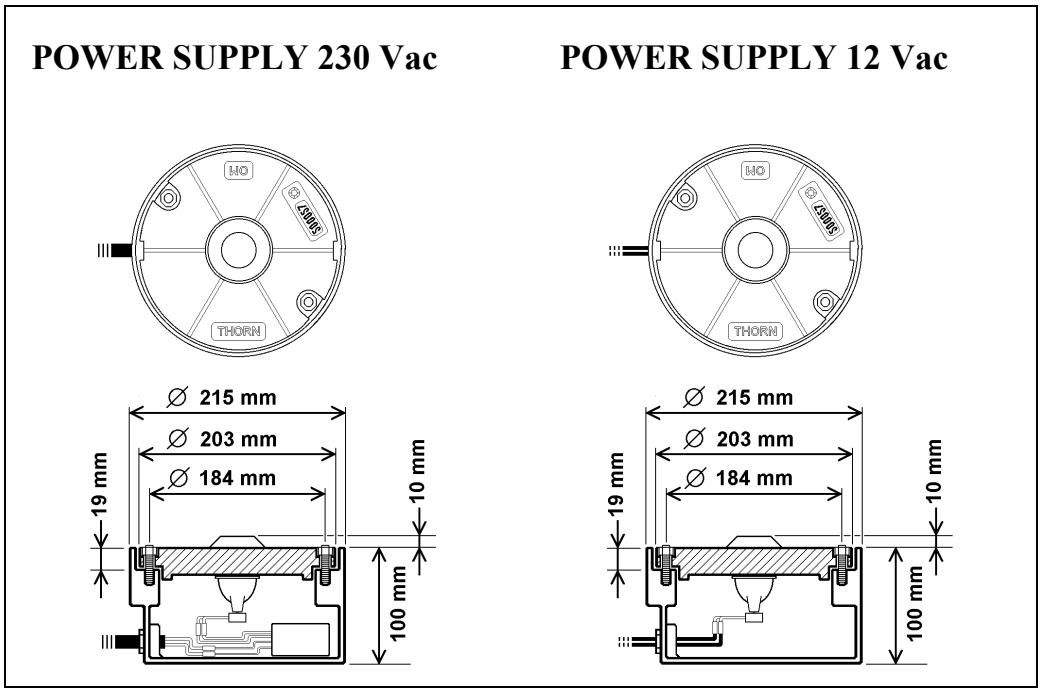
The following tools are required to install and remove the IN-OMH body on and from its base

- One Box spanner 16 mm (for installation on THORN bases).
- Two big screwdrivers
- One Crimping tool
- One tool to heat the heat shrinkable sleeves
- One brush or cloth

Note : Provided that the base of the IN-OMH has been properly installed, no other specific tool is required.

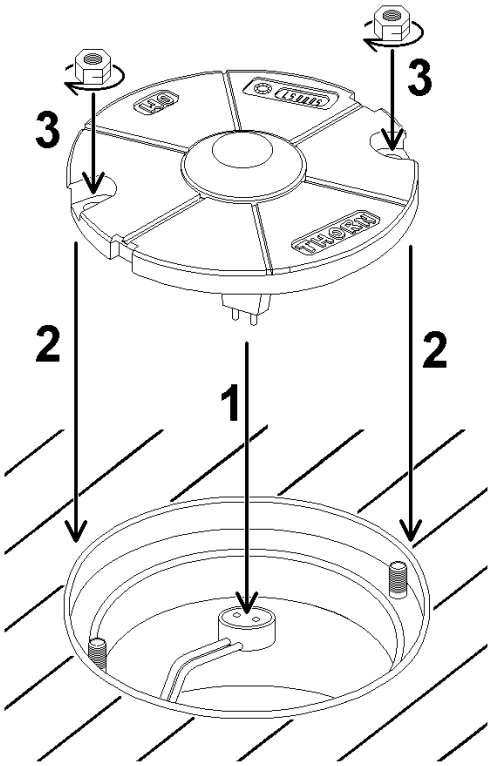
3.3.2 Standard mechanical Installation

The fittings covered by this document are installed directly on its specific Shallow Base with one side entry (8" - 100 mm - see figure here under).



Note : It is recalled that the IN-OMH base have to be properly adjusted in terms of alignment, angle setting and height before mounting of the body on it .

3.3.3 Mounting in the shallow base



A) Clean carefully all contact surfaces of the fitting, of the base (and if necessary of the adaptor ring).

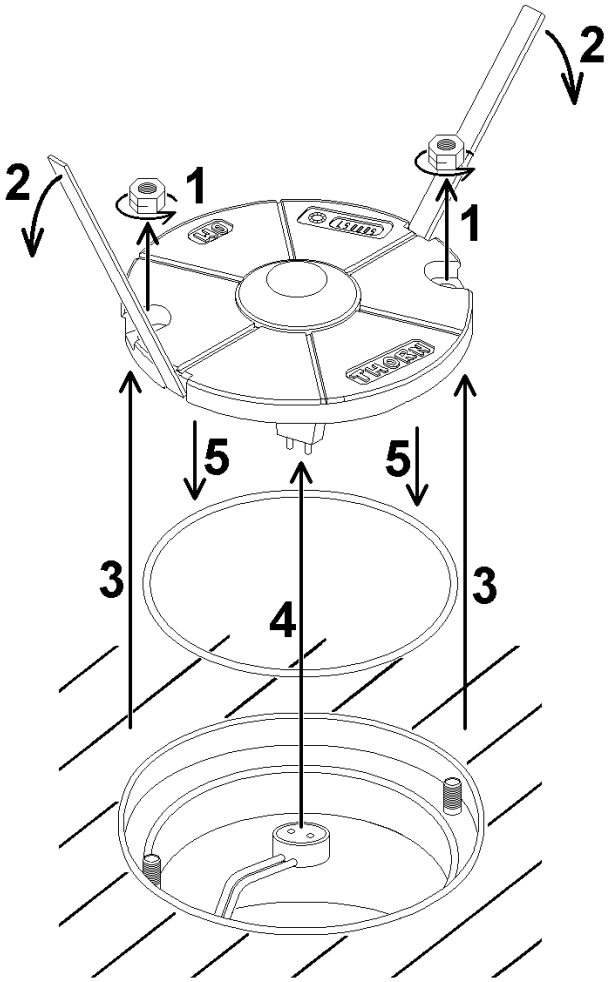
B) Connect the lamp terminal on the lamp.

C) Install the body of the fitting on its base.

D) For an installation on THORN bases use a torque limiting wrench 16 mm, screw and tighten the two fixing bolts to a torque of 35 N.m (= 3.5 kg.m) For other manufacturer refer to their specifications.

E) After completion of all the installations, check the proper functioning of the fitting.

3.4 Opening an IN-OMH already installed



A) Using a box spanner of 16 mm, unscrew and remove the two fixing bolts.

Thorn recommends to change the lock nuts each time the fitting is dismounted.

B) Remove the fitting body from its base using two big screwdrivers**.**

C) Disconnect the lamp socket from the lamp.

D) Remove and check the "O" ring gasket.
Note : Thorn recommend to change the gasket each time the fitting is removed from the base.

<u>CAUTION :</u> When a fitting has been removed, the base has either to be closed with the proper cover or a spare fitting has to be installed.

COMMENTS

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