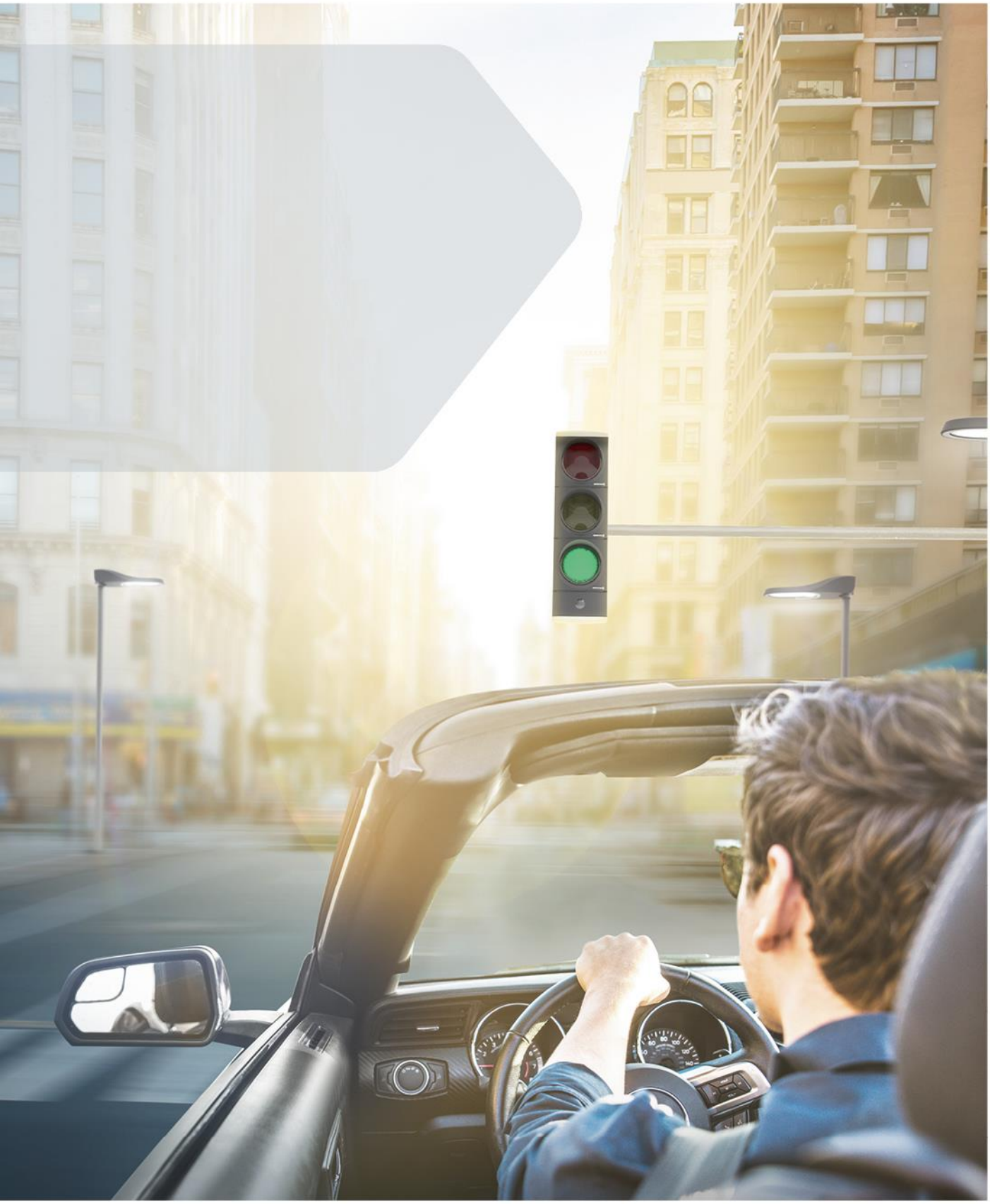
SWARCO

# COMBIA CIWAY

MANUAL



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# MANUAL

| | |
|---|---|
| **PRODUCT:** | **COMBIA CIWAY** |
| **FILENAME:** | Manual CIWAY V1.1 EN |
| **DATE:** | 07-2019 |
| **VERSION:** | Version 1.1 |
| **AUTHOR:** | A. Bazsányi |
| **REVIED:** | S. Auerböck |
| **APPROVED:** | J. Haspel |

## Change Notes

| Version | Date | Changes | Responsibility |
|---|---|---|---|
| 1.0 | 03-07-2019 | First issue translated | A. Bazsányi PM SG |
| 1.1 | 18-07-2019 | Reviewed by Sales | J. Haspel PM Signals |
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**Read this manual carefully before installing the Signal Head to ensure safe and proper use.**

For further details, please refer to the CIWAY data sheet and the special documents mentioned in the manual on request.

# 1 General

SWARCO‘s traffic light family COMBIA can do much more than just red-amber-green. In a rapidly changing world with new technologies, this signal head has much more functionalities. It is an essential contribution to C-I T S and automated driving.
COMBIA is an intelligent system, which has networked thinking and communicates with road users.

The COMBIA Signal Head CIWAY is the development of a modern Polycarbonate LED Signal Head and will replace the MONDIAL and GLOBAL, which were designed for lamp technology.
At the same time, for the future, the Signal Head shall fulfill "smart" requirements.
"More than RED, YELLOW, GREEN" - suitable for smart features!

Of course, CIWAY fulfills the basic characteristics of Signale Heads:

Weatherability
Robustness
User friendly
Easy installation on site
High protection class (IP55)

According to the standard EN12368.

# 2 Why COMBIA CIWAY?

Here you can expect the proven advantages of the MONDIAL Signal Head with decisive additional BENEFITS:

- The smart features .SafeLight (emitted red light, should safe people which are always watching their mobile phone), AirDec (sensors for measuring air-pollution), PedCom (communication to/from pedestrians) can be installed individually easily extendible and prepared for smart additional functions (automated driving, C-ITS etc.)
- Optional: integrated acoustic unit “COMBIA-Sound” mounted in half aspect
- Faster maintenance: opening angle of the front doors to the left or right up to 175° at 200 mm diameter and up to 150° at 300 mm diameter
- Reduced assembly time by simply and quickly opening the aspects
- Simple type of clamping technology for LED cabling
- Elastic, plug-in visors - optionally fixable with screws
- Easy cable routing between the aspects
- Mounting of backing boards is prepared
- Integration of Additional installations inside the housing.

# 3 Certificates

The Signal Head COMBIA CIWAY is certified according to the EN12368 and a Notified Body validates CE-Conformity.

| | |
|---|---|
| Temperature change | (EN60068-2-14) |
| Cyclic load in damp heat | (EN600068-2-30) |
| Water and Dustproof | (EN60529) |
| Impact resistance | (EN60598-1) |
| Strength of the construction | (EN60068-2-64) |

We can send you a copy of the test report on request.
T211-0747-18_CIWAY_200_environmental_test_report;
T211-0258-19_CIWAY_300_environmental_test_report
1304-CPR-0054_EN12368-2006_COMBIA-Ciway
T211-0106-19_FULL_EN12368-2006_COMBIA-Ciway

# 4 Dimensions

COMBIA CIWAY is available in diameter of 200mm & 300mm (also combined) and with an amount of aspects from 1 to 5. For future smart features a „SMART“ half-aspect completes the portfolio which can be combined with the normal single aspects (red-amber-green) on top and / or at the bottom.

Ø200mm

| aspects | Width | Height | Depth |
|---|---|---|---|
| 1 | 280 | 282 | 155 |
| 2 | 280 | 562 | 155 |
| 3 | 280 | 842 | 155 |

Smart-aspect

| | | | |
|---|---|---|---|
| ½ | 280 | 140 | 155* |

(*can be widened frontwards)

Ø300mm

| aspects | Width | Height | Depth |
|---|---|---|---|
| 1 | 360 | 372 | 213 |
| 2 | 360 | 742 | 213 |
| 3 | 360 | 1112 | 213 |

We can to send you a copy of the detailed drawings on request.
1058-Z0200M1_Combia Ciway 200
1058-Z0500M1_Combia Ciway 300

# 5 Colors

CIWAY is made from Polycarbonate and available in the colors below. You can combine these colors also:

| | |
|---|---|
| Black | RAL 9005 (complete Signal Head) |
| Green | RAL 6009 (complete Signal Head) |
| Silver Gray | 7001/ Front black RAL9005 |
| Pebble Gray | 7032/ Front black RAL9005 |
| Orange | 2000/ Front black RAL9005 |
| Reed Green | 6013/ Front black RAL 9005 |

In order to increase the contrast and the associated increase in traffic safety, we recommend using black fronts and visors for colored traffic light bodies.

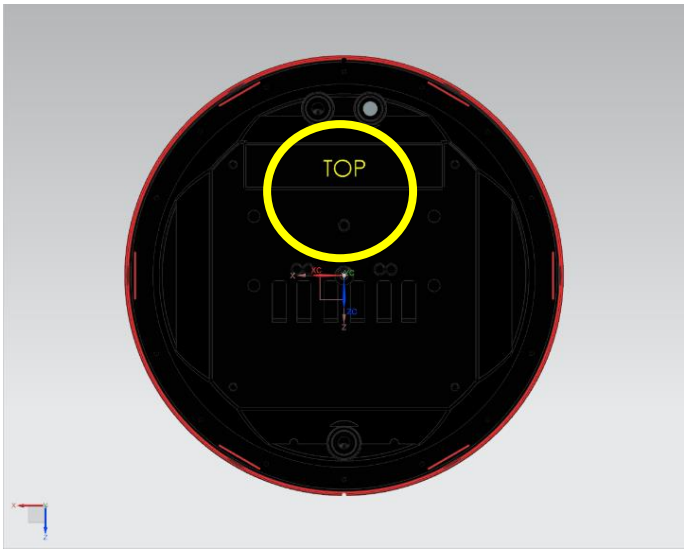
# 6 LED-Modules

The brief description of the FUTURLED LED-Modules can be found in a separate manual. This chapter describes the correct installation as well as the correct disassembly of the LED-Modules.

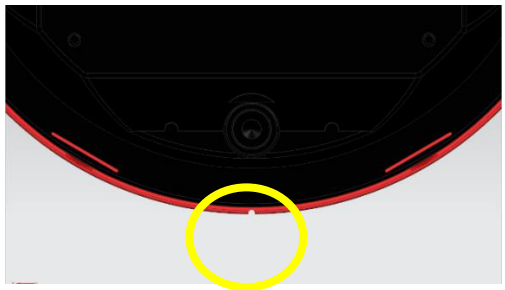
## 6.1 Insertion of LED Modules into the COMBIA Front

Take care on the wiring when inserting the LED Modules. Choose the order of mounting so that you can easily retract the cables and no other insert gets in the way.

In order to achieve a correct light distribution according to EN12368, the FUTURLED LED Module must be fixed in the housing in that way that the lettering "TOP" is aligned at 12 o'clock position. The LED Cable outlet is also at position 12 o'clock.

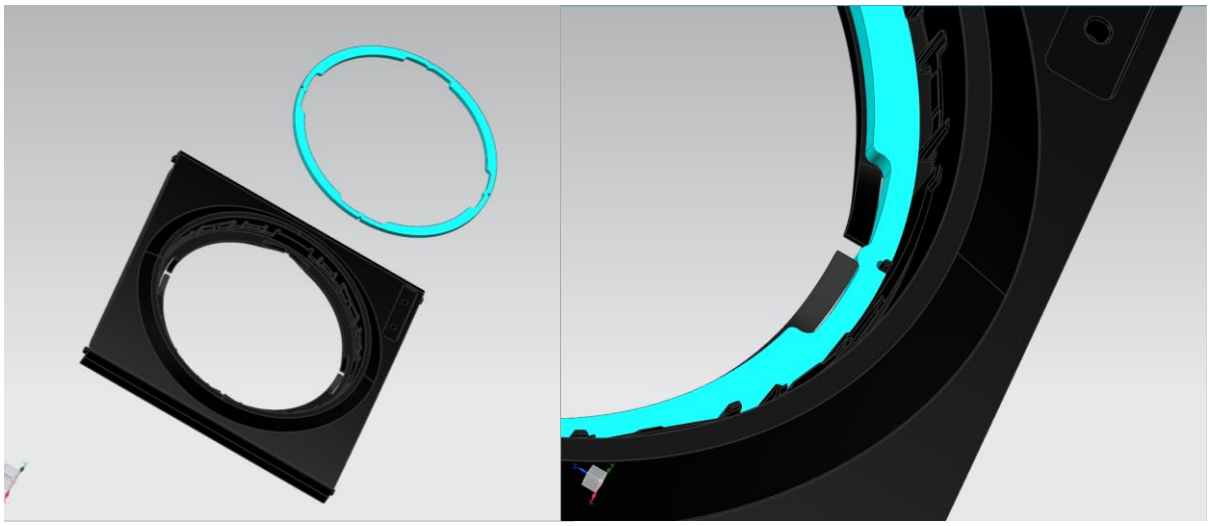



A corresponding counterpart of the front lens is a recess at the bottom in position 6 o'clock.

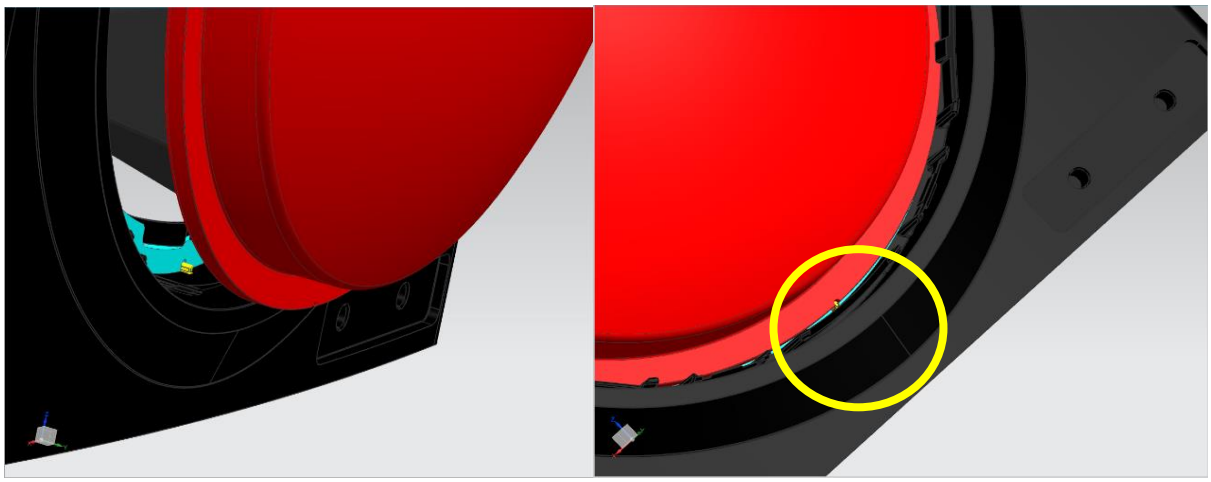


**Mind the TOP – Alignment!**

First, place a molded gasket into the front to achieve IP55 protection.

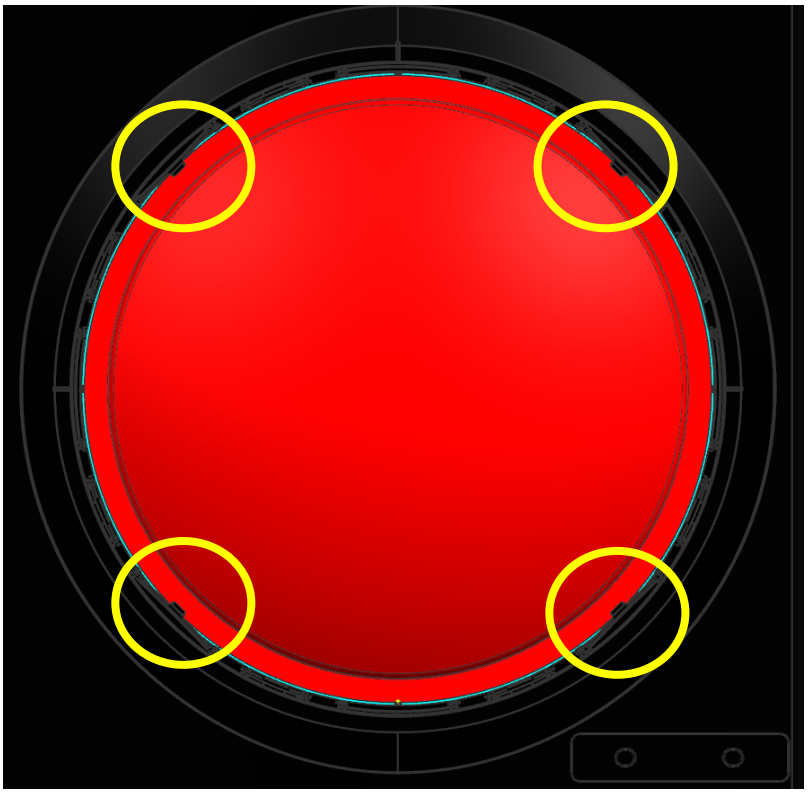


For a safe LED Module latching, the COMBIA fronts also have a twist lock (locking lug) in the 6 o'clock position.



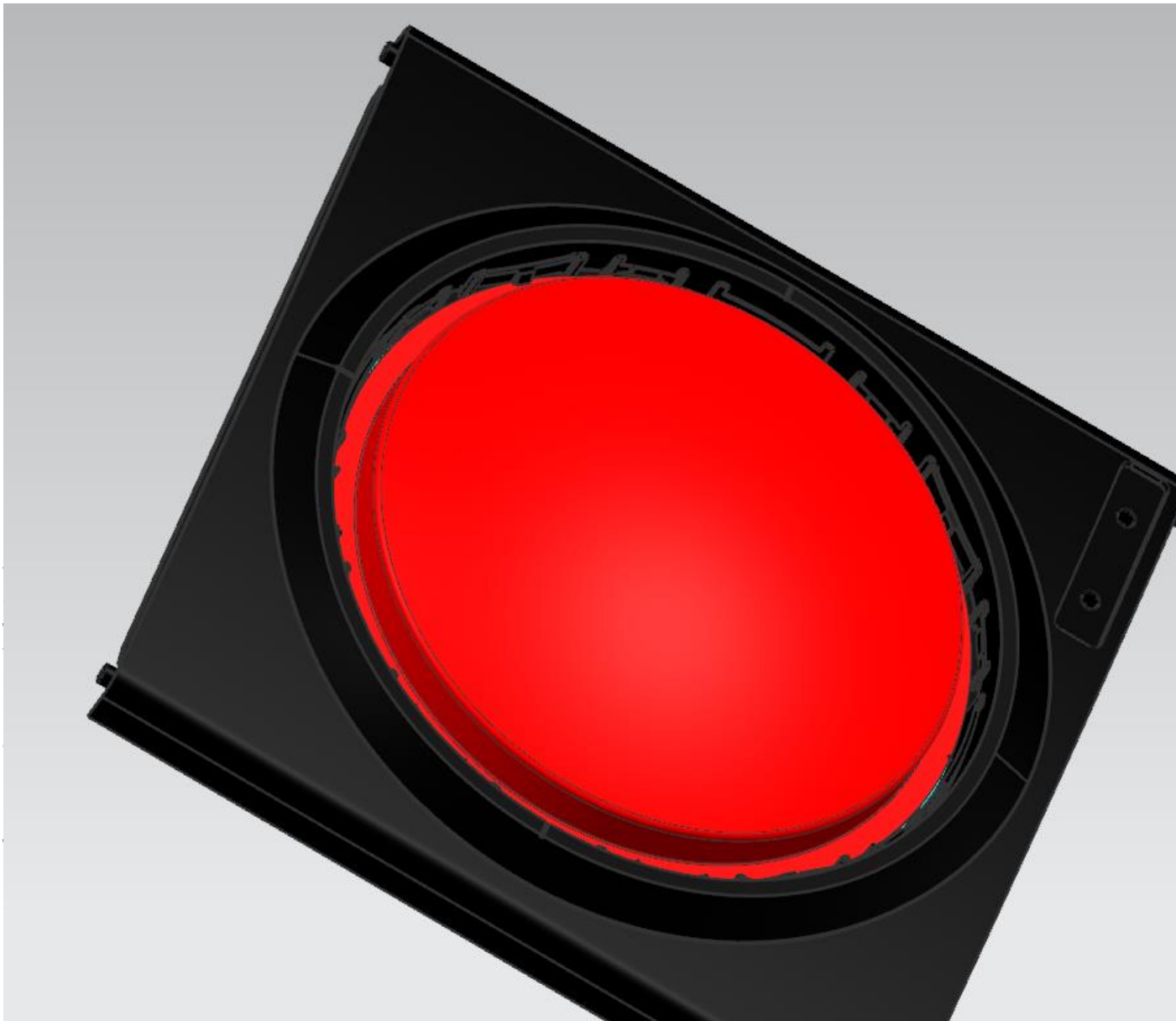
Insert the LED Module into the COMBIA front from the front, so that the front lens can no longer be turned using the anti-twist device.

**Pay attention to the correct positioning of gasket and LED Module!**



Insertion of the LED Module is similar to the insertion at the COMBIA Front. From the front side.

The LED Module is fixed in place in the front by means of snap hooks and pressed into position by the LED Module.

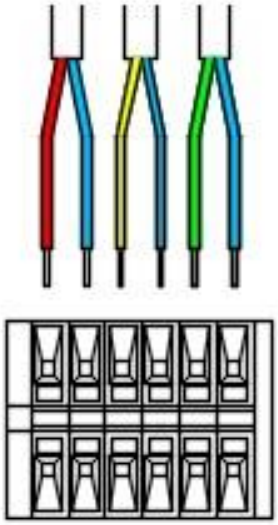


## 6.3 Wiring

### 6.3.1 Wiring with separated neutral conductor

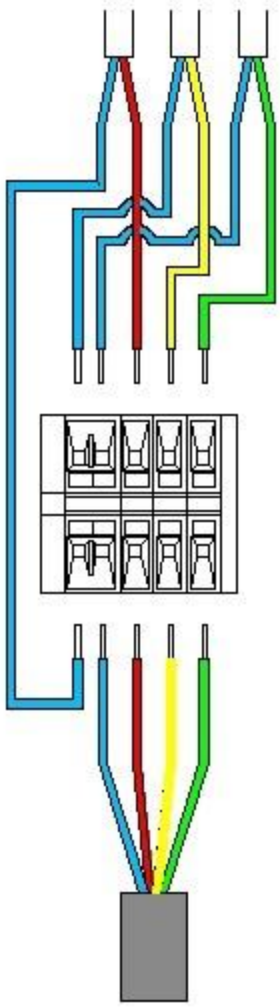
Standard see below:

Standard Wiring



With 6-core Control-cable

### 6.3.2 Wiring with common rail neutral conductor



Common rail
neutral conductor

With 4-core
Cable

On request, we also carry out a wiring with common rail neutral conductors.

**For common-rail type, please make sure the controller recognizes a faulty neutral.**

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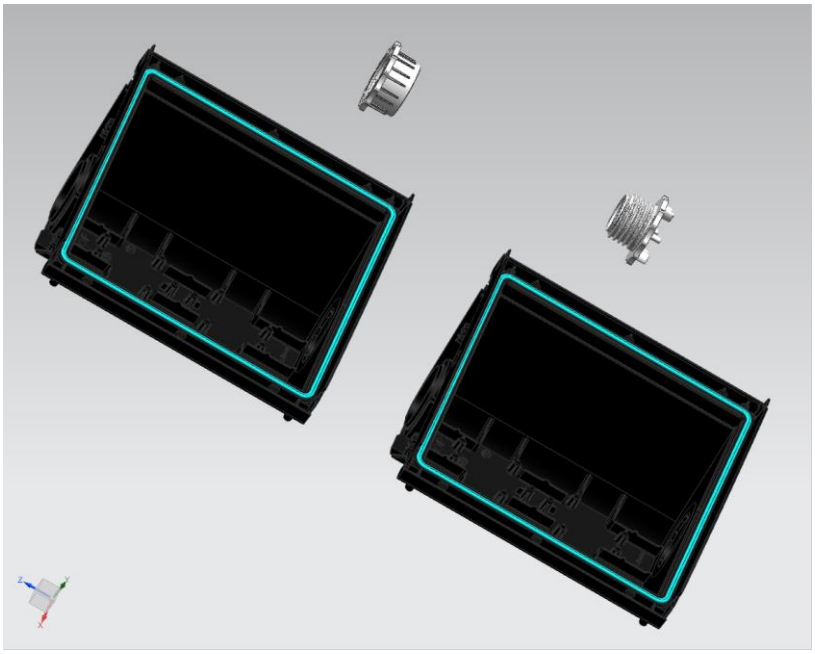
# 7 The body

Assembling the single parts to a CIWAY LED Signal Head.

## 7.1 Structure of the housing



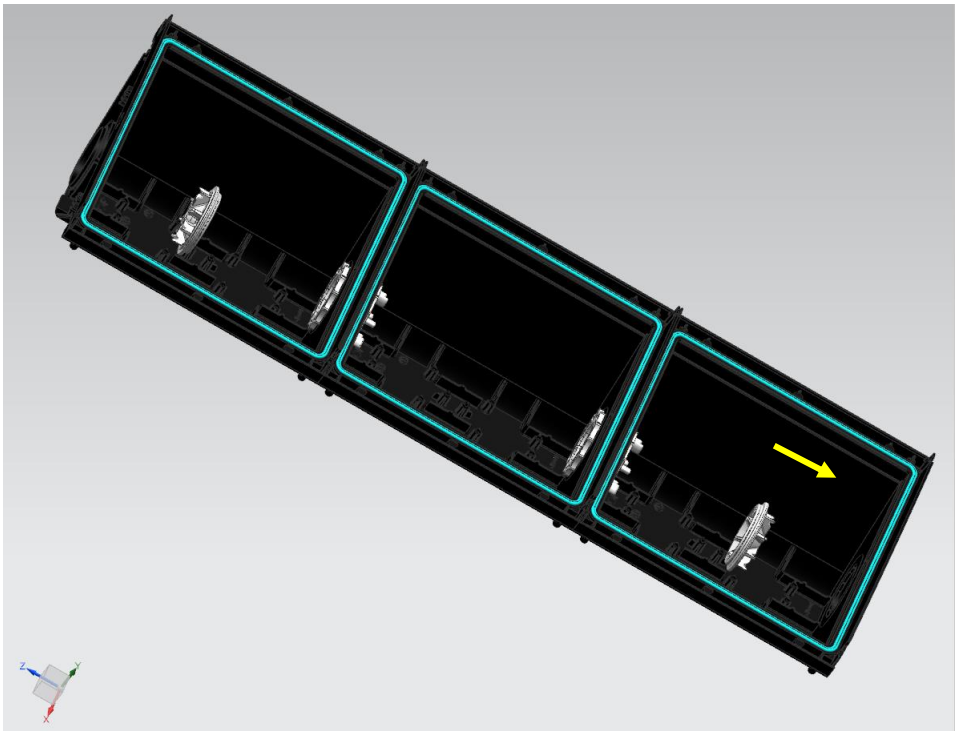
With the CIWAY version the housings including the foamed seal are connected with plastic nuts and screws.

Positioning of the aspects via guides on the housing.

The nut is positioned in the upper aspect. It is screwed into the next aspect with the screw.

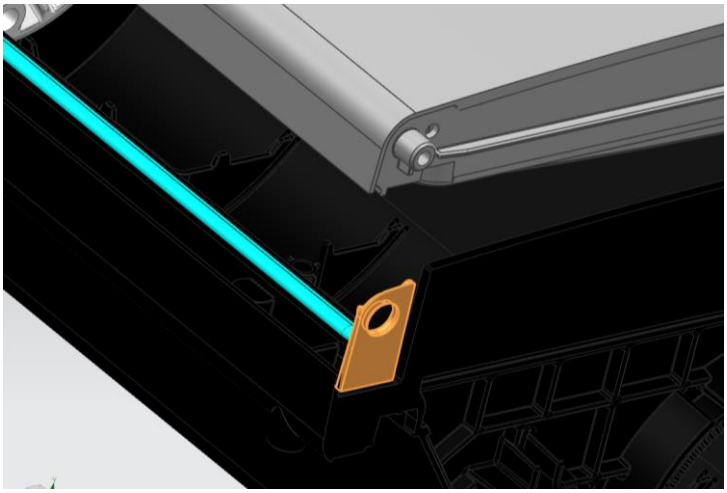
(One aspect CIWAY does not need this connection)

**This screw connection is made at production with a torque of 8Nm**



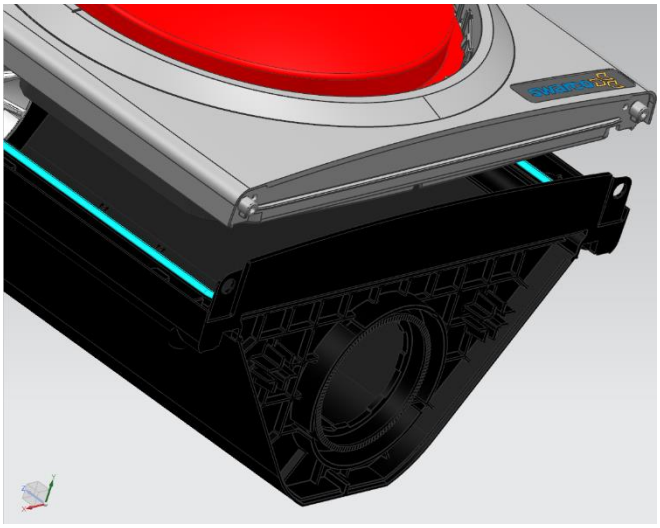
To assemble the later CIWAY 2-point fixings, the top and bottom casings are fitted with M8 threaded inserts from the inside.

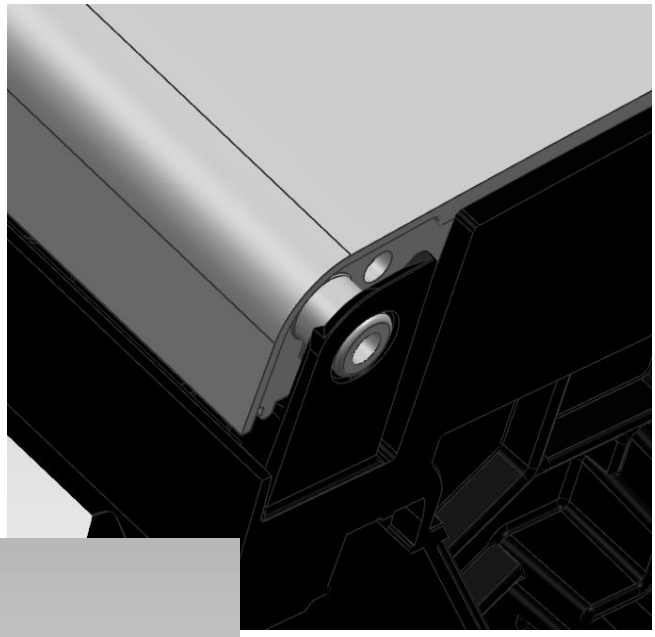
## 7.2 Assembling of Front with LED Module in Housing

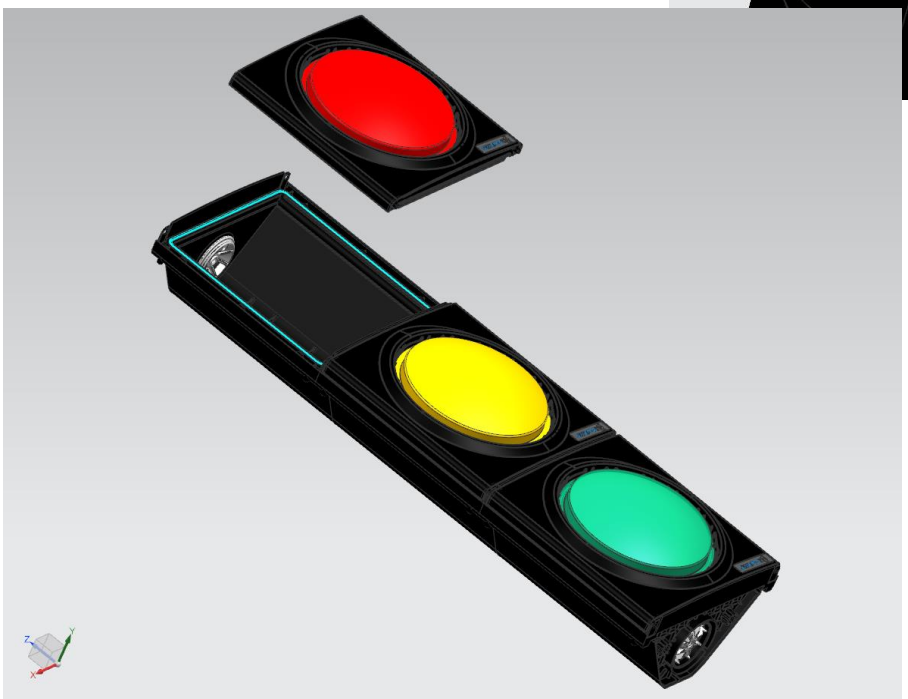


The housings are double-sided (!) equipped with Snap-On lugs at the top and bottom, to accommodate the corresponding counterpart with the journals at the front.

By slightly deforming the snap tabs, the front can be inserted into the housing.





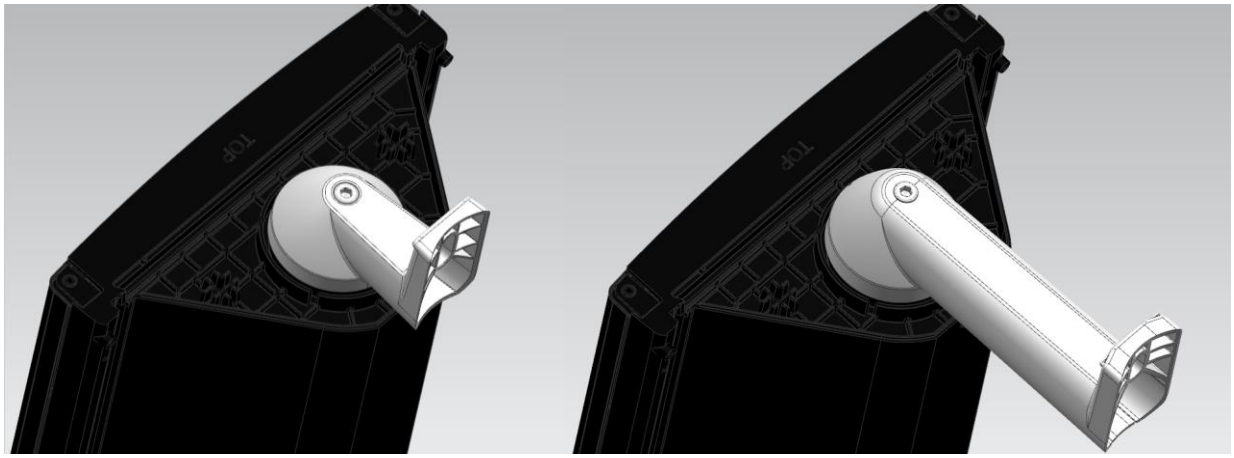


This process is repeated depending on the number of aspects.

# 8 Fixtures

## 8.1 Polycarbonate (PC) - brackets

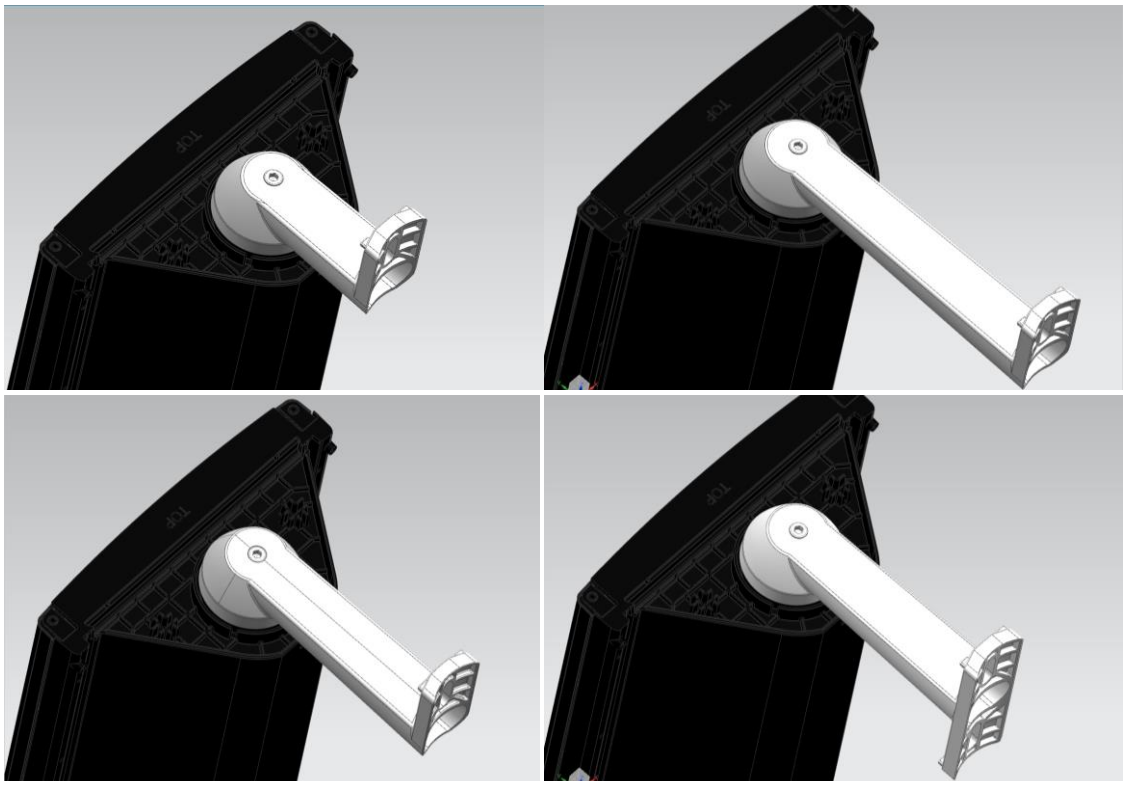
For CIWAY 1 to 3 aspect Signal Head PC- brackets of 70mm are recommended.
Optional also 168mm brackets can be used (known as 175mm FUTURA).



**Recommended indicate torque 2Nm**

## 8.2 Aluminium- brackets

From the 4th aspect only Aluminium brackets must be used! Optionally, the well-known powder-coated aluminum brackets of length 105, 183, 240mm in L-shape can be used for the CIWAY. In length 183mm also available as T-shape and C-shape.



**Recommended indicate torque 4Nm**

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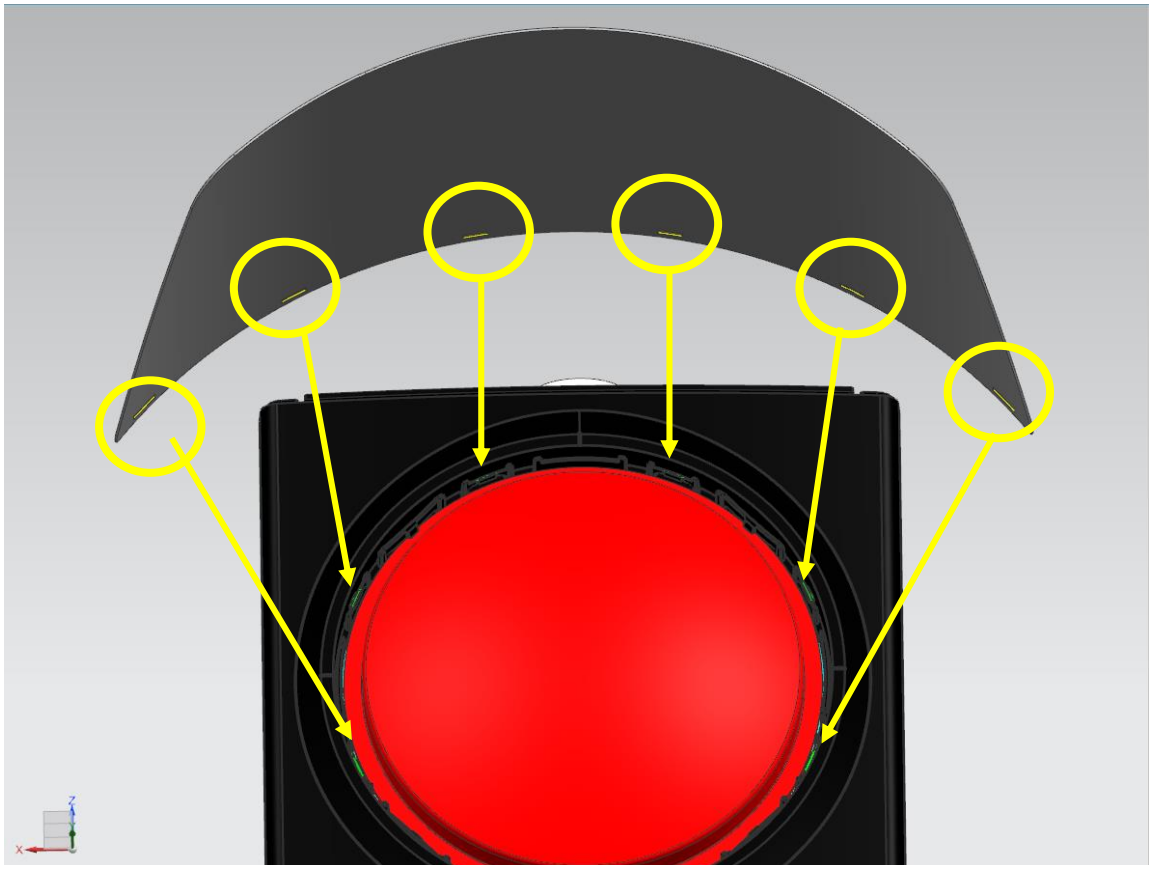
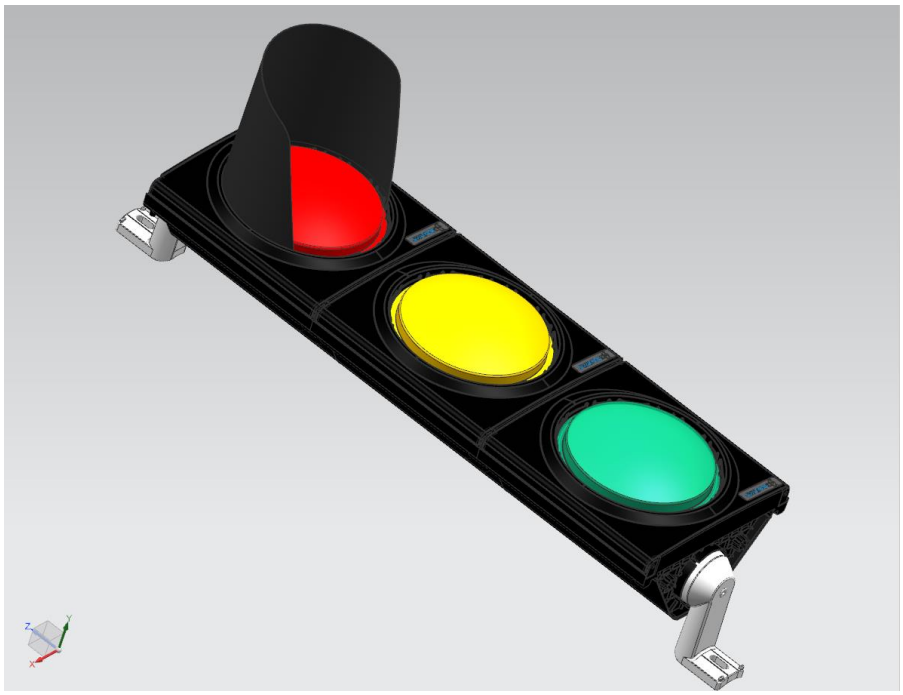
# 9 Visor

The material for the visor of the COMBIA is made of Polyethylene.





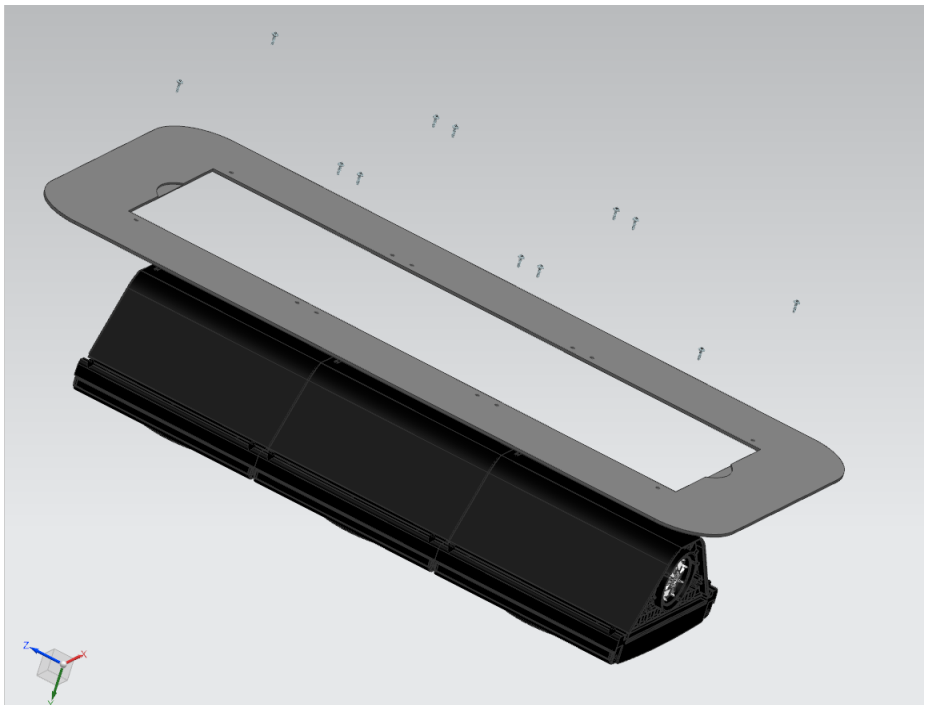
The fixation is done by snapping the special design directly to the front snap hook.

For reason of logistics, the visors are not mounted on the Signal Head. They are included in the delivery.

**Make sure that all snap hooks of the front have locked!**

# 10 Backing Board

The Backing Board of the COMBIA is made of a special ALU plastic composite panels material.

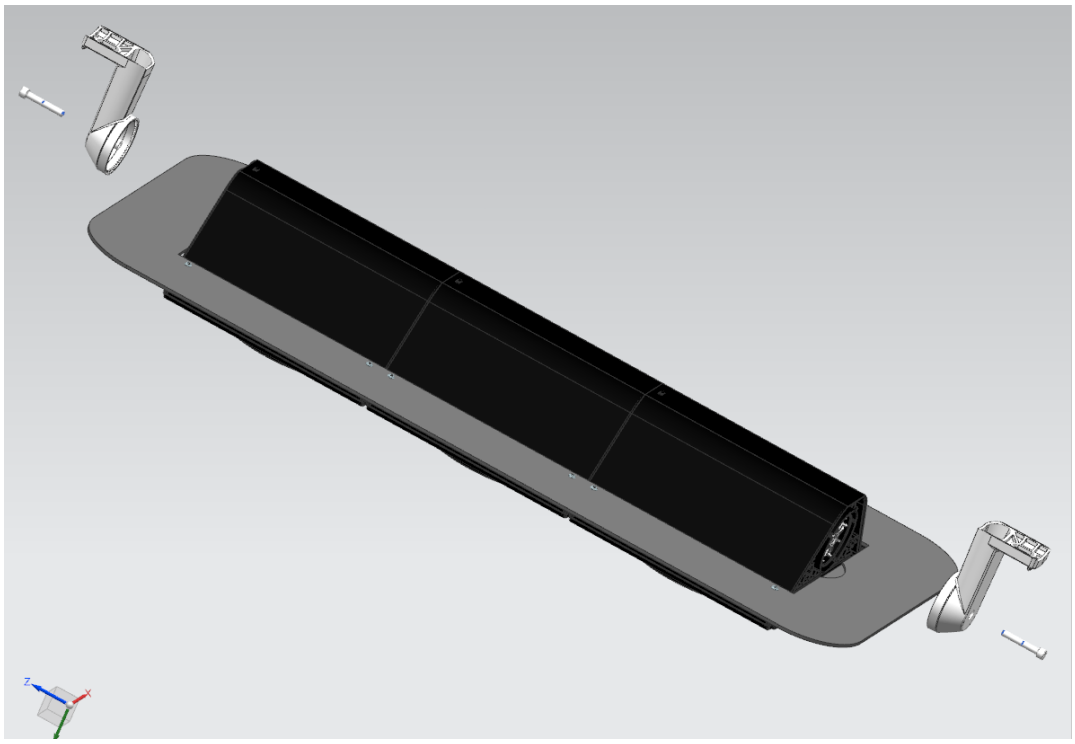


The fixing is done directly on the domes
on the backside of the housing.

The shape of the Backing Board varies
per NORM, from the outer contour

The fixing and the inner contour
are identical.

**Recommended Indicate torque 4Nm, with special screws for Polycarbonate**



# 11 Maintenance and Cleaning

The FUTURLED LED Modules themselves are tested for protection class IP65, the COMBIA CIWAY Signal Head is IP55 rated, and therefore no internal cleaning is necessary.

The external cleaning of the Signal Head or the front lens is done with water and clean cloths. (If necessary, some dishwashing detergent can be added)

**Do not use aggressive cleaning agents!**

Other detergents or solvents (s.a. acetone, ammonia, etc.) may either attack the plastic or thus mist the Frontlens or can cause stress cracking on front lenses.

Should it be necessary to open the COMBIA CIWAY Signal Head in the course of maintenance or, for example, when exchanging the front lens or LED insert, the Snap-On-Housing must be carefully removed from the housing with a screwdriver into an inclined position.

Begin this process on the lower side and repeat it on the upper side.
- The front unlocks and can be opened like a door either to the right or left.