

## AO00021x

Safety light curtain protective armor stand

### GENERAL INFORMATION

The AO000213 ... AO000218 accessory is a guard, which comprises a drawn aluminium column and a steel base. The base is made of two plates. Their inclination can be adjusted by means of three dowels and their angular position can be adjusted through 3 rough adjustment slots and 3 fine adjustments slots. Thanks to its single drawn section, available in a range of different lengths, and to its multi-purpose grooves, this accessory can contain inside it all the models of the OY32, OY35 and OY36 series.

### Characteristics

- Protects the light curtain mounted inside it from accidental collisions;
- Single painted drawn aluminium section in different lengths, suitable for all heights of the following series: OY32 and OY35 (150 – 1800 mm), OY35 and OY36 (2, 3 and 4-beam);
- Sturdy steel base made of 2 plates with angle reference marks, dowels for adjustment of the vertical axis and slots for angular position adjustment;
- Spheric level to facilitate adjustment of the vertical axis;
- Double rear groove for installation of external muting sensor supports.

### Typical Applications

Use of the AO000213 ... AO000218 accessory is recommended in work environments typical of the material handling market, where forklift trucks, AGVs or other vehicles move freely within the plant and may collide with the safety light curtains.

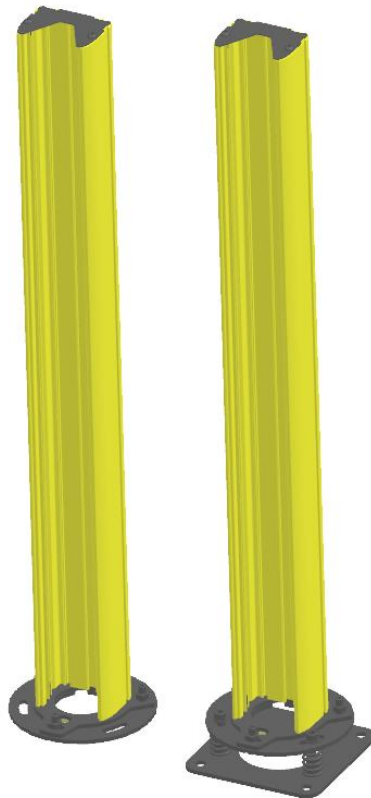



Fig. 1



NOTES

*If a body protection is being used, compliance with the EN 999 standard 'Safety of machinery - Positioning of safeguards with respect to the approach speeds of parts of the human body' is required.*

**Mechanical Mounting**

The protective stands can house a number of different products. For this reason, different bracket kits are available:

- **AO000246:** for the installation of light curtains of the OY32 / OY35 / OY36 series, finger/hand protection, protected height 150 ... 1050mm and body protection, protected height 500, 800, 900mm;
- **AO000248:** for the installation of light curtains of the OY32 / OY35 / OY36 series, finger/hand protection, protected height 1200 ... 1800mm and body protected height 1200mm;
- **AO000244:** for the installation of deviating mirrors.

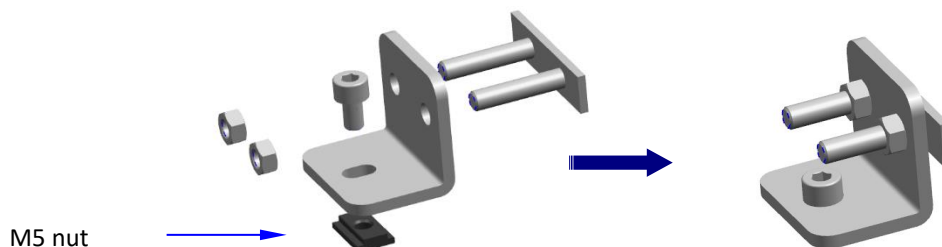
An extra plate may be installed on the accessory, to compensate for the effects of collisions, vibrations and uneven floor surfaces:

- **AO000218:** for the installation of a double plate with compensation springs.

The instructions for the installation of these accessory kits can be found below:

**Mounting of the safety light curtains**

With the help of the AO000246 kit, for product versions from 150 to 1050 mm or of the AO000248 kit, for product versions from 1200 to 1800 mm, build sub-assemblies as shown in Fig.2 then insert and fasten them to the grooves on the guard. Do not tighten completely the M5 nut under the bracket (in the following example a OY32 base profile is used).



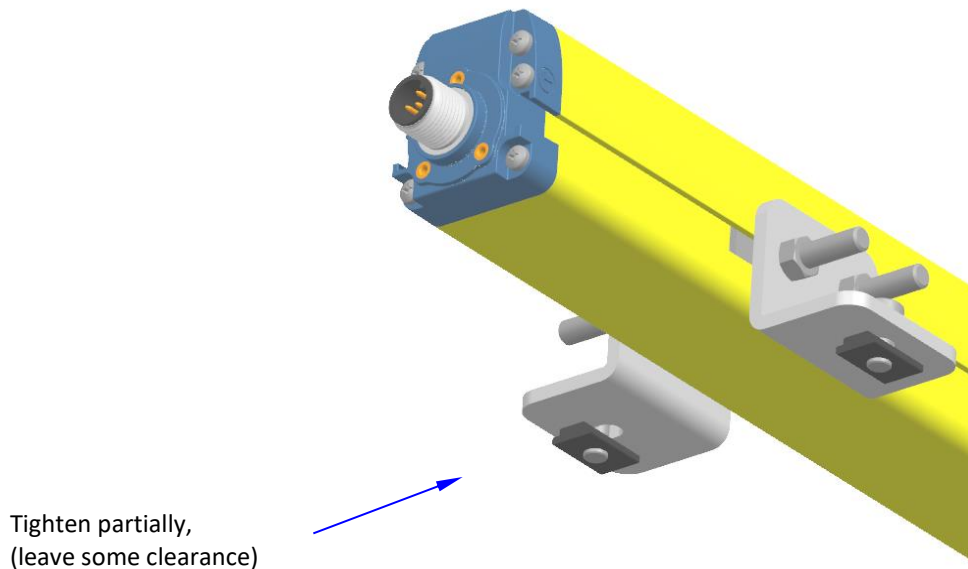


Fig. 2

Once the assembly is completed, remove the column cover by unscrewing the two M8x20 ISO 7380 screws (Fig. 33) and insert the assembly in the internal guides.

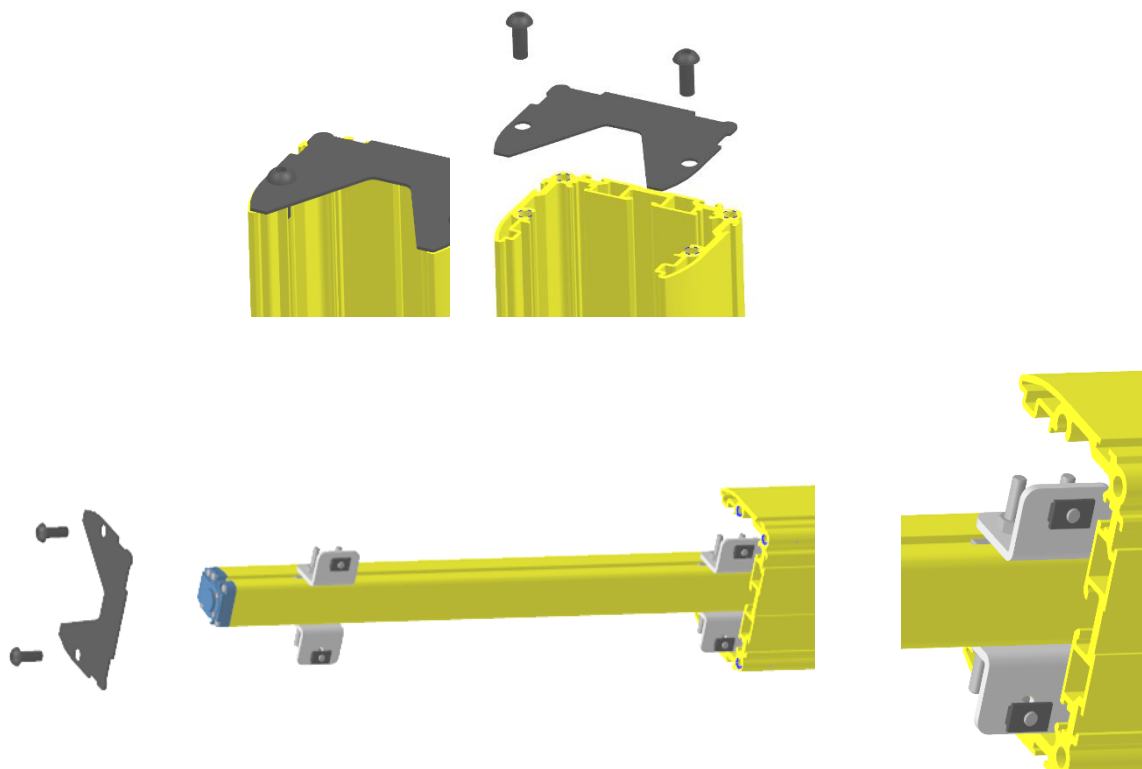
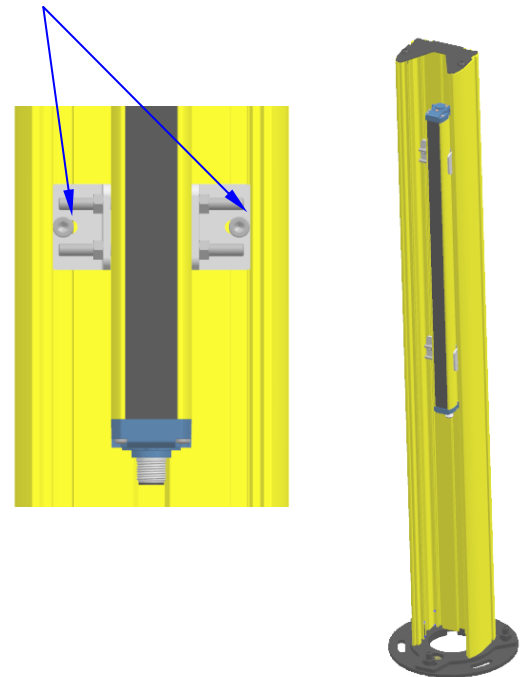


Fig. 3

Once the product has been completely inserted and its position along the column adjusted, replace the cover.

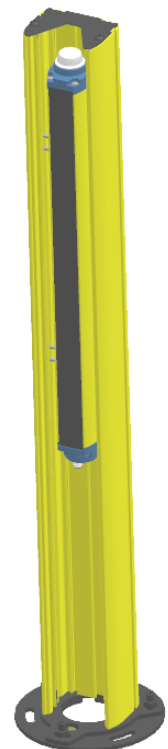
To adjust the position of the product along the column, slightly unscrew the M5x8 UNI 5931 screws, which can be accessed from the outside by using a special Allen key; if the column is in a vertical position, make sure the product does not slide accidentally towards the bottom.

Screw M5x8 UNI 5931



### ***Mounting of other Systems***

As described in the previous section (OY32 / 35 / 36 series mounting) it is possible to install devices with other dimensions the, if a mounting kit is available.



*Fig. 5*

**Mounting of deviating mirrors AO000236 ... AO000241**

Using the ST-PS-DM kit, mount the carter for the deviating mirror in use. Make sure that the M8 T-nut is aligned with the corresponding central groove of the protective stand and that the side edges of the mirror's carter are aligned with the corresponding longitudinal guides in the protective stand (Fig. 6). Adjust the height of the protective stand then tighten the M8 x 50 UNI5931 screws.

Tighten the M8 UNI 5588 nut under the carter eyelet to avoid accidental unfastening.

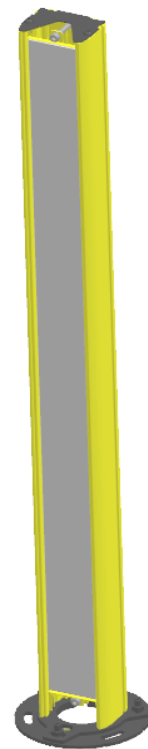
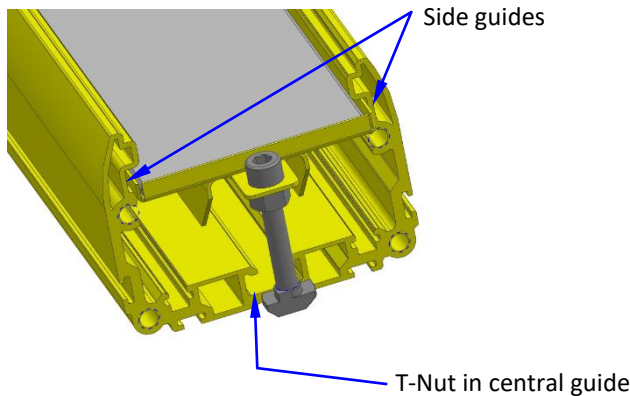


Fig. 6

**Mounting of the accessory AO000218**

Fasten the plate to the floor with the screws and insert the 3 load-bearing springs on the spacers on the plate. Place the column on the springs so that the slots in the bottom plate are aligned with the springs. Insert the M10 UNI 5931 screws and washers, provided with the SG-P accessory, in the slots and tighten them while gradually pressing down upon the 3 load-bearing springs. During this phase the vertical axis can also be adjusted. Use as a reference the spheric level and choose the rough angular position using the slots and the reference marks on the bottom plate. The optimal working height for the load-bearing springs (which corresponds to the distance between the fixed plate and the bottom plate) is approximately 42 mm. Once it rests on a level surface and the maximum angular position has been established, it is possible to perform a fine adjustment of the angular position by working on the dowels and the lock nuts of the moulded plate (Fig. 7).

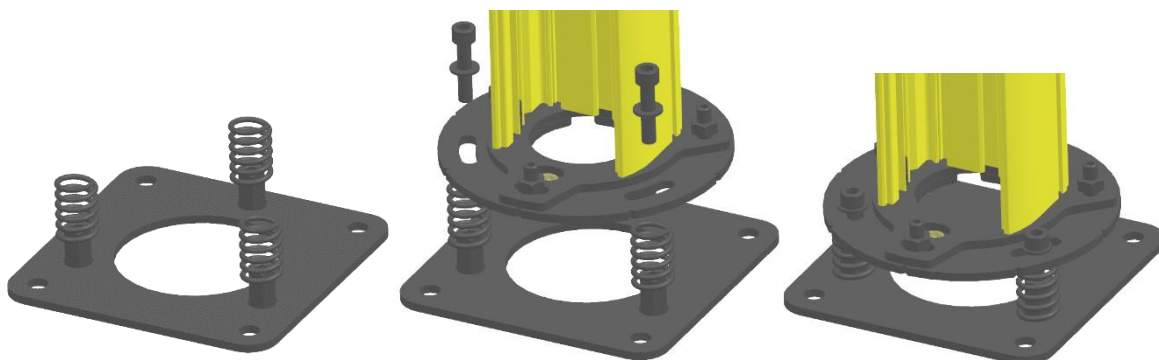


Fig. 7

**Adjustment**

***Adjusting the vertical axis and the angular position of the plates***

Fasten the plate to the floor in the desired rough angular position, according to the positions established by the reference grooves (main angles: 0° - 45° - 90° for each quadrant); to do this, use the 3 slots on the bottom plate and M10 screws. Do not tighten the M10 screws completely. Unfasten the lock nuts on the dowels, then use the dowels to adjust the inclination; during this operation, use the spheric level as a reference. Once the desired inclination is obtained, tighten the screws to the floor. If necessary, proceed to a further adjustment by rotating the moulded plate to the desired position, then tighten the lock nuts on the dowels ( Fig. ).

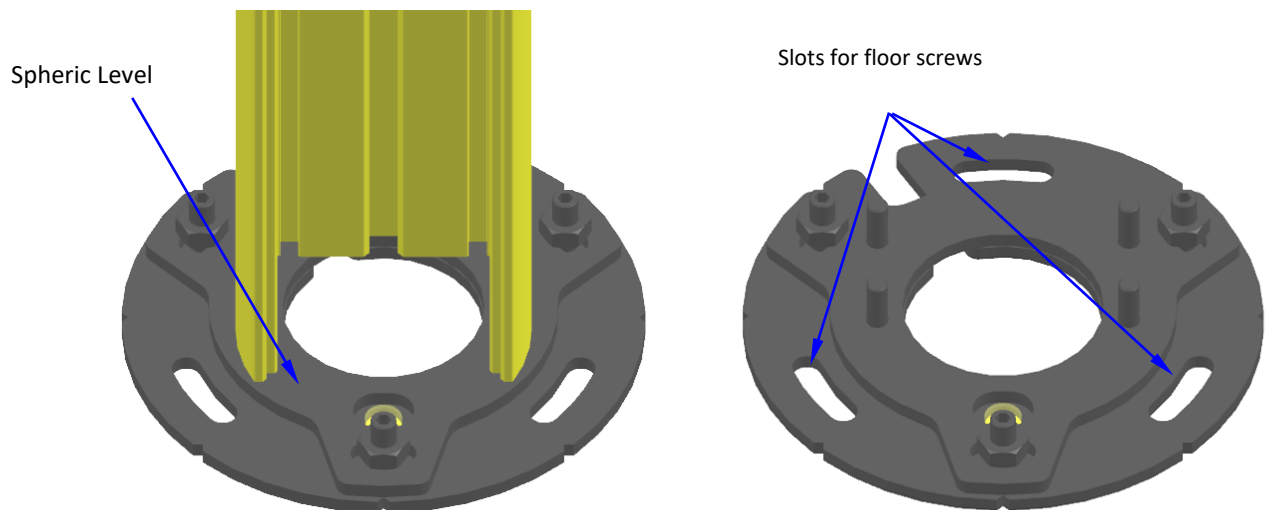


Fig. 8

**INSTALLATION**

***Light curtain installation***

For light curtain alignment procedure, see the instruction manual of each specific model.

***Installation of light curtains and deviating mirrors***

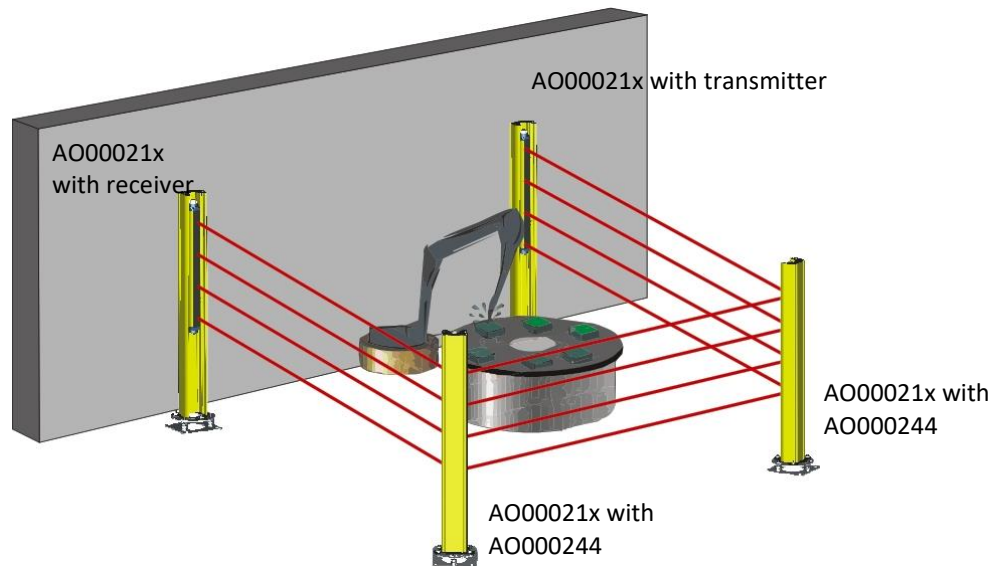



Fig. 9

1. Define the area to protect and the precise positions where the deviating mirrors and the emitting and receiving units of the light curtain will be installed.
2. Install the deviating mirrors inside the suitable model of the protective armor stand, with the help of the AO000244 kit (see Fig. 6). The table "Corresponding Models" in the mirror-manual gives an overview of how to match products with deviating mirror models.
3. Once the mirrors have been installed inside the protective armor stand, place the protective stand in the established points. Fasten the supports (or AO000218) to the floor, in the defined points, verifying that their axes are perpendicular to the floor; use the spheric level provided to fine adjust their inclination if necessary.
4. Orient the mirrors to about 45° with respect to the optic path; the protective stand guarantees an adjustment interval around the vertical axis of about ±5° once secured to the floor.
5. Insert the AO000219 laser pointer in the upper part of the emitting unit; orient the unit so that the laser beam hits the surface of the first mirror in a central point of the vertical axis and at the same height at which the pointer is installed.
6. Repeat the same procedure inserting the pointer in the lower part of the unit; if necessary repeat these procedures until the desired result is achieved.

7. Orient the first mirror so that the laser beam hits the second mirror as described above.

For the angular adjustment, see the "Adjusting the inclination and the angular position of the plates" section, if using the protective armor stand with a deviating mirror mounted without the AO000218 kit. If the AO000218 accessory is being used, adjust as specified in the "Mounting of the accessory AO000218" section.

 NOTE	The laser pointer, due to mechanical tolerance issues related to its use in combination with the bar, provides an approximate measurement. It might be necessary to carry out small adjustments to the alignment of the two units following the regular ALIGNMENT PROCEDURE described in the safety light curtains Instruction Manual. We recommend NOT to make any further changes to the position of the mirrors, as the laser beam guarantees their perfect alignment.
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**Available Models**

**Protective armor stands**

Model	Description
AO000213	Protective Stand H = 600mm
AO000214	Protective Stand H = 1000mm
AO000215	Protective Stand H = 1200mm
AO000216	Protective Stand H = 1650mm
AO000217	Protective Stand H = 1900mm

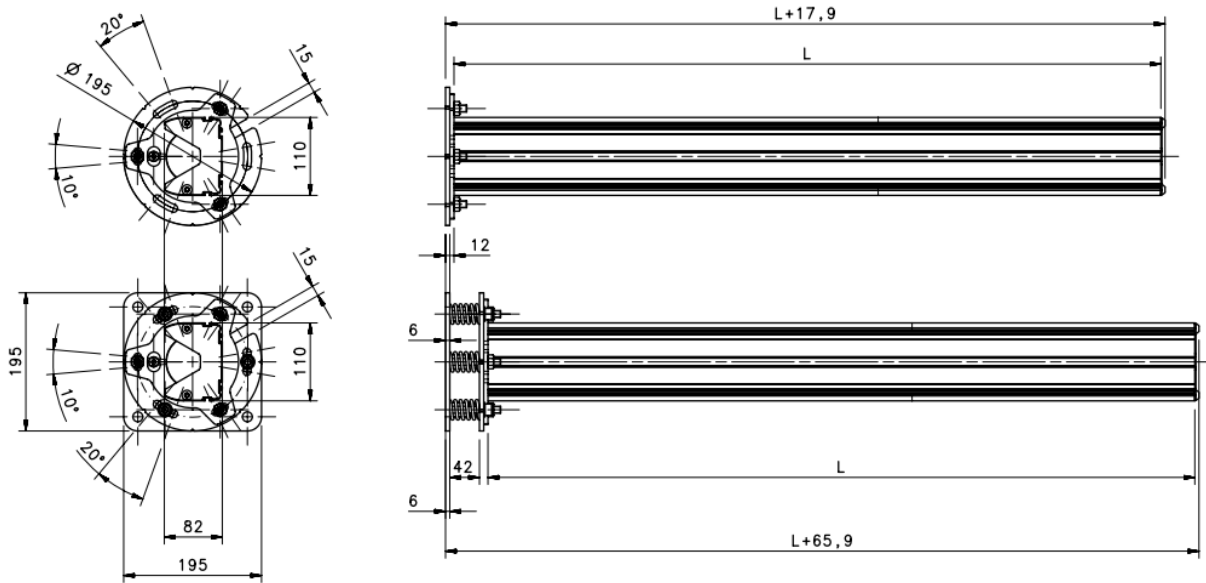
**Accessories**

Model	Description
AO000244	4 pcs. deviating mirrors mounting kit
AO000246	4 pcs. light curtain mounting kit
AO000248	6 pcs. light curtain mounting kit
AO000218	Double plate with compensation springs kit



**DIMENSIONS**

The overall dimensions of the complete product for all available models are shown below.



Model	L [mm]
AO000213	600mm
AO000214	1000mm
AO000215	1200mm
AO000216	1650mm
AO000217	1900mm

Fig. 10