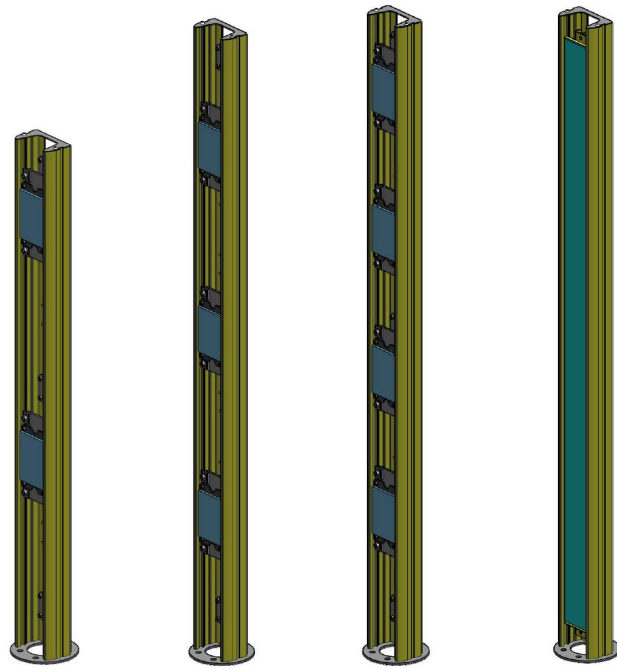


SH-FSM

INSTRUCTION MANUAL



DATASENSING

Floor Supports for Mirrors

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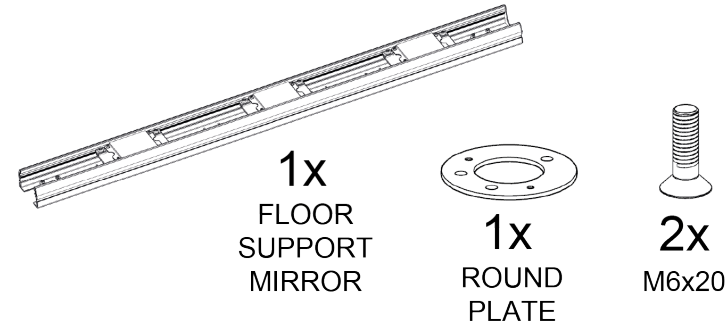
Strada S. Caterina 235 | 41122 Modena | Italy
Tel. +39 059 420411 | Fax +39 059 253973

www.datasensing.com



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PACKAGE CONTENTS



GENERAL INFORMATION

The SH-FSM is a support made of two aluminum extrusions, securely connected by a base and connecting plates in steel, onto which mirrors are already mounted. In SH-FSM-2/3/4-xxxx it's possible to independently adjust the mirrors at the desired height and orientation.

Characteristics

- Aluminum extrusions painted RAL 1003;
- Base and connecting plates in electroplated zinc-coated steel;
- Possibility to add two different optional bases: SH-FS-P and SH-FS-PS;
- Deviating mirrors with minimum reflectivity of 92%;

Typical applications

The typical application is a perimetral protection done using safety light curtains whose beams are reflected horizontally at a right angle in order to cover two or more sides of a dangerous area.

SH-FSM-2/3/4-xxxx are equipped with independent mirrors, each corresponding to the beams of safety light grids with 2, 3, or 4 beams, and a detection zone height of xxxx mm. SH-FSM-xxxx feature a single mirror and are suitable for use with safety light grids having a detection zone height of xxxx mm.

For uneven floors, the optional SH-FS-P base increases the contact surface, enables vertical adjustment, and allows 360° rotation. For added shock absorption or vibration damping, the SH-FS-PS base includes adjustable springs.

The support's structure allows for easy cable routing and thorough wash-down operations.



CAUTION: When installing safety light curtains, compliance with EN ISO 13855 - Safety of machinery — Positioning of safeguards with respect to the approach of the human body - is required.

INSTALLATION

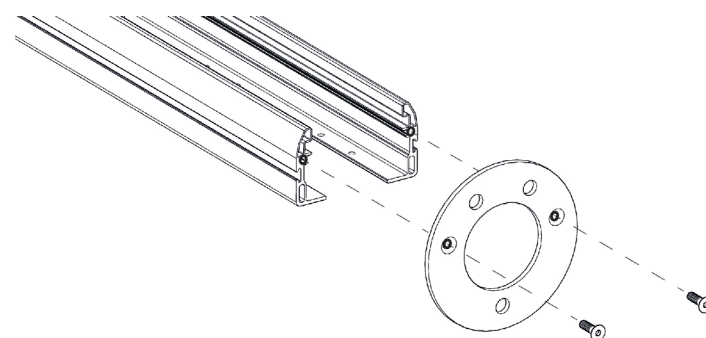


NOTE: For Safety Light Curtain alignment procedure, see the Product Reference Guide of each specific model.

Mechanical Mounting

STEP 1

Fix the round plate to the floor support using the M6x20 screws:



STEP 2

Fix the SH-FSM to the desired floor using the three holes on the base.



NOTE: The distance between the mirrors are given in the attached sheet.



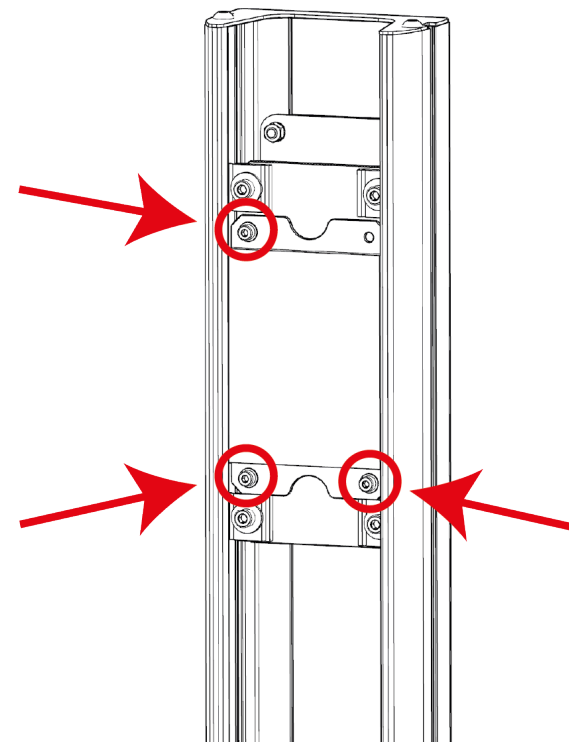
Some additional fixing plates are available as an accessories to allow some adjustments:

- With SH-FS-P accessory the inclination can be adjusted by means of three dowels and the angular position can be adjusted through 3 rough adjustment slots and 3 fine adjustments slots.
- With SH-FS-PS a double plate with compensation springs are used in order to compensate the effects of uneven floors, vibrations and collisions.

Adjusting the mirrors

The mirrors of SH-FSM-x-xxxx can be positioned at the required height and oriented to achieve the best alignment between the emitter and the receiver.

For the SH-FSM-x-xxxx models only, the inclination of each mirror unit can be adjusted, in order to compensate for any misalignment. To adjust the inclination of each single mirror unit independently, work on the 3 M4 screws:



SH-FSM Mounting

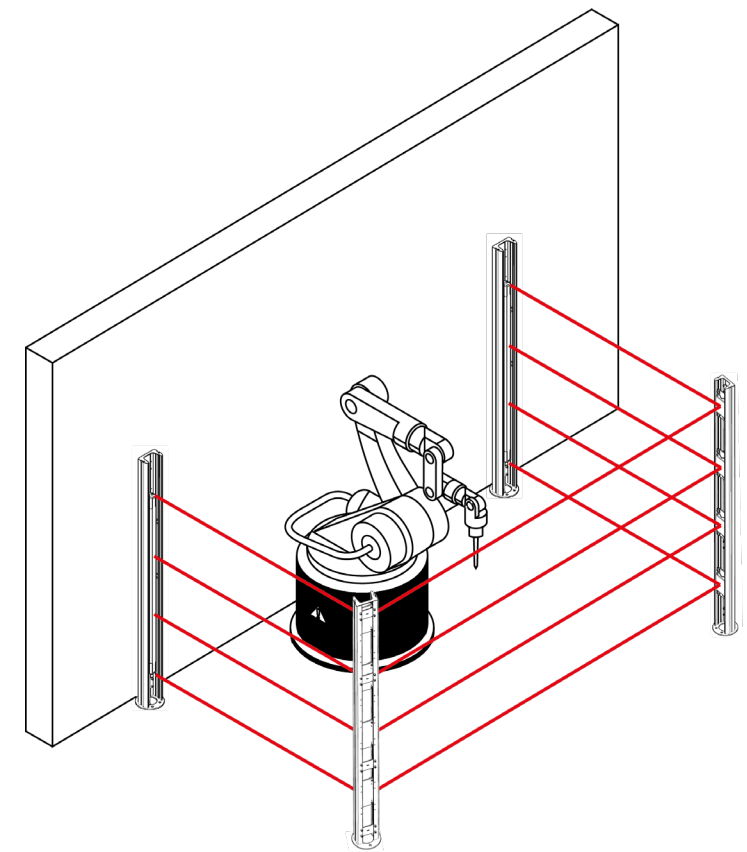
- Define the area to protect and the precise positions where the deviating mirrors and the emitting and receiving units of the light curtain will be installed.
- Place the SH-FSM in the desired position. Fasten the supports (or SH-FS-P or SH-FS-PS) to the floor, in the defined points, verifying that their axes are perpendicular to the floor.
- Orient the mirrors to about 45° with respect to the optic; when using the SH-FS-P or SH-FS-SP mounting bases, the SH-FSM mirror support can be rotated 360° around its vertical axis, even after the base has been fixed to the floor.
- Insert the SH-LP 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.
- 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.
- Orient the first mirror, according to the instructions provided in the "Adjusting the deviating mirrors" section, so that the laser beam hits the second mirror as described above.
- For the angular adjustment, if using the SH-FSM accessory mounted alone, see the "Adjusting the mirrors" section. If the SH-FS-P (or SH-FS-PS) is being used, adjust as specified in the next 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.



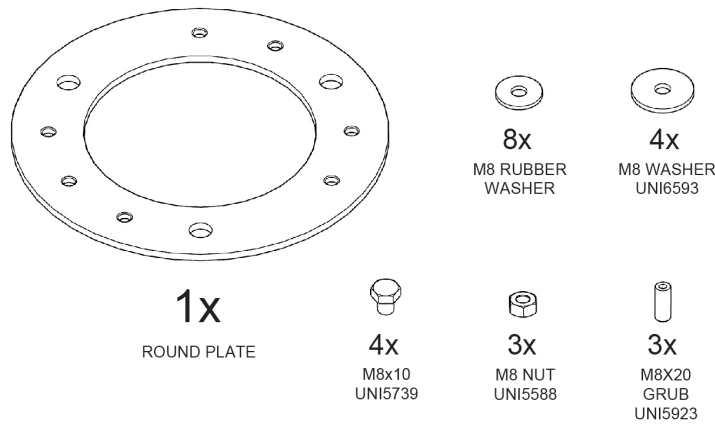
NOTE: Using SH4 ADVANCED, instead of the external laser pointer SH-LP, the integrated LED pointers can be used. Follow instructions in SH4 ADVANCED Reference Guide.



SH-FS-P ADJUSTABLE PLATE

With this accessory the inclination can be adjusted by means of three dowels and the angular position can be adjusted through 3 rough adjustment slots and 3 fine adjustments slots.

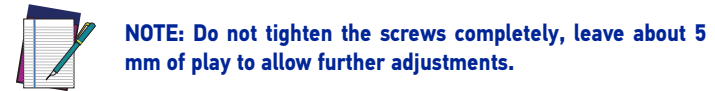
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INSTALLATION STEPS

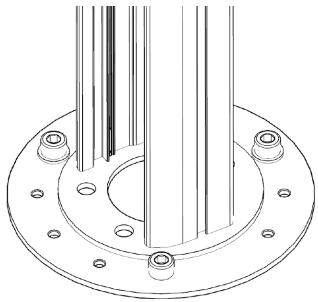
STEP 1

Place the SH-FS-P to the desired floor using the three holes on the base and M5 screws with washers (not provided).



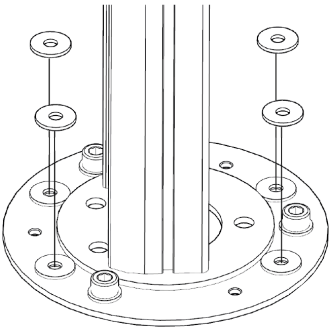
STEP 2

Place the SH-FSM on the SH-FS-P:



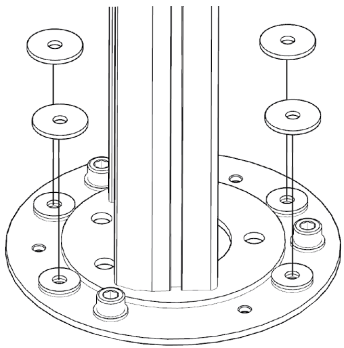
STEP 3

Place four rubber washers pairs on the holes as shown in the figure:



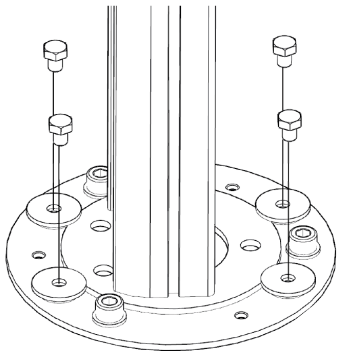
STEP 4

Place the four special washers on the rubber washers as shown in the figure:



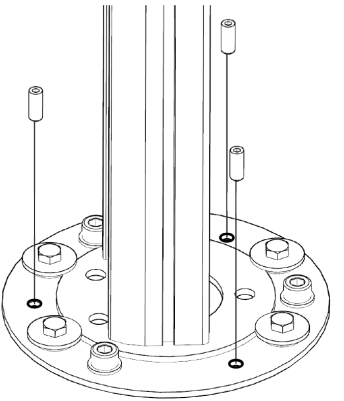
STEP 5

Place four M8 screws on the four special washer. Do not tighten the screws completely, leave some play to allow further adjustments.



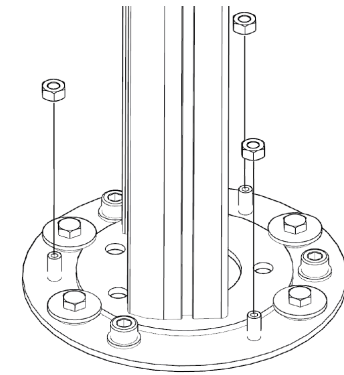
STEP 6

Insert the three grub screws into the holes as shown in the figure:



STEP 7

Insert the three nuts on the grub screws. Do not tighten the screws completely:



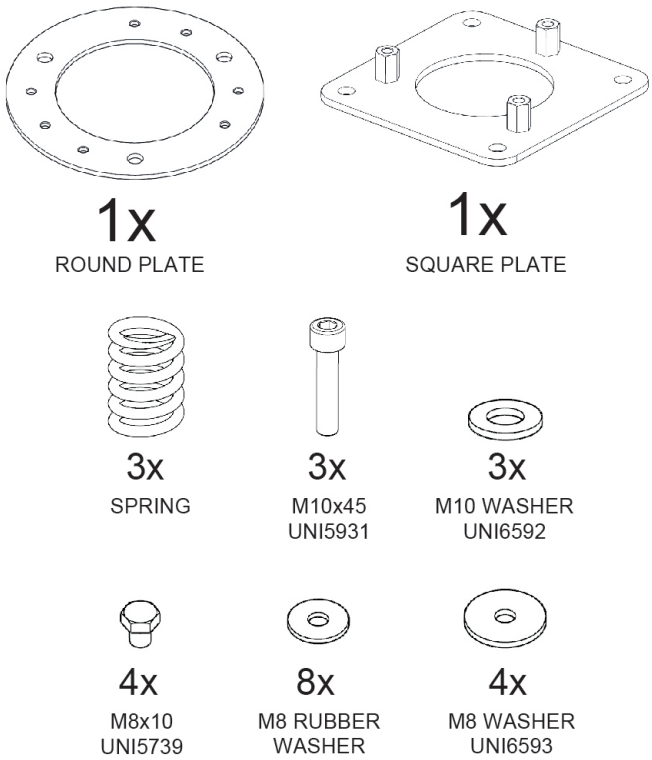
Adjusting the vertical axis and the angular position of the plates

Adjustment on the vertical axis is made by acting on the grubs. Once the desired inclination is obtained, tighten the nuts (refer to step 7). The angular position is achieved by simply rotating the stand. Once the position desired is reached, tighten the four screws (refer to step 5). When angular position and inclination are set, it is possible to fix the SH-FSM with SH-FS-P to the floor by tightenng the three screws (refer to step 1).

SH-FS-PS ADJUSTABLE PLATE WITH SPRINGS

SH-FS-PS provides an extra plate to compensate for the effects of collisions, vibrations and uneven floor surfaces for the installation of a double plate with compensation springs.

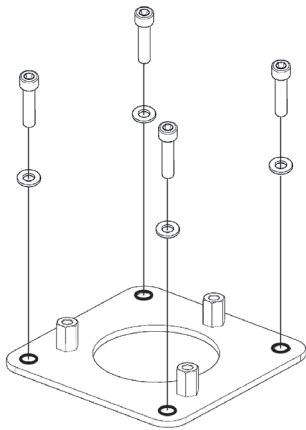
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INSTALLATION STEPS

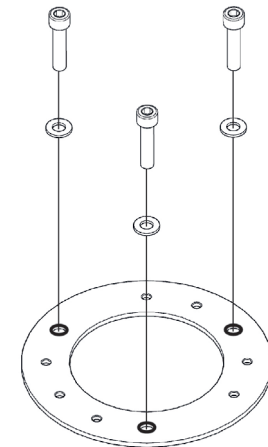
STEP 1

Fix the SH-SF-PS to the desired floor using the three holes on the base and M5 screws with washers (not provided):



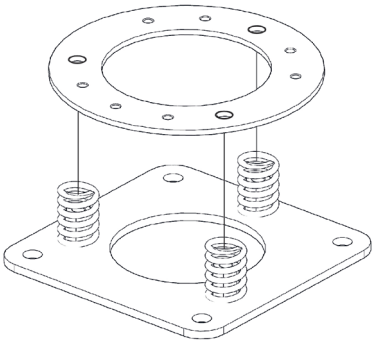
STEP 2

Place the three Springs on the Hex Spacers:



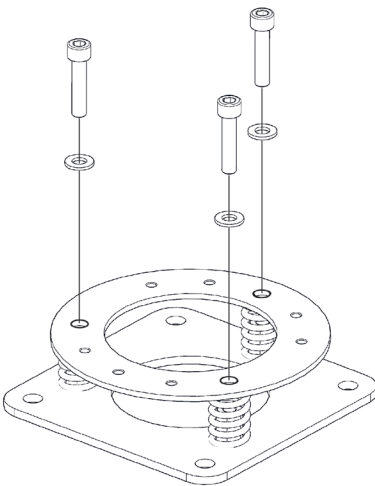
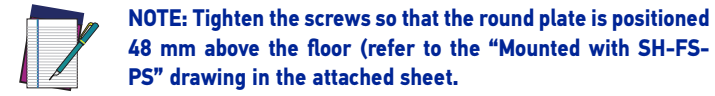
STEP 3

Place the round bracket on the springs by centering the mounting holes as in the figure:



STEP 4

Fix the round bracket using the M5 screws with washers.



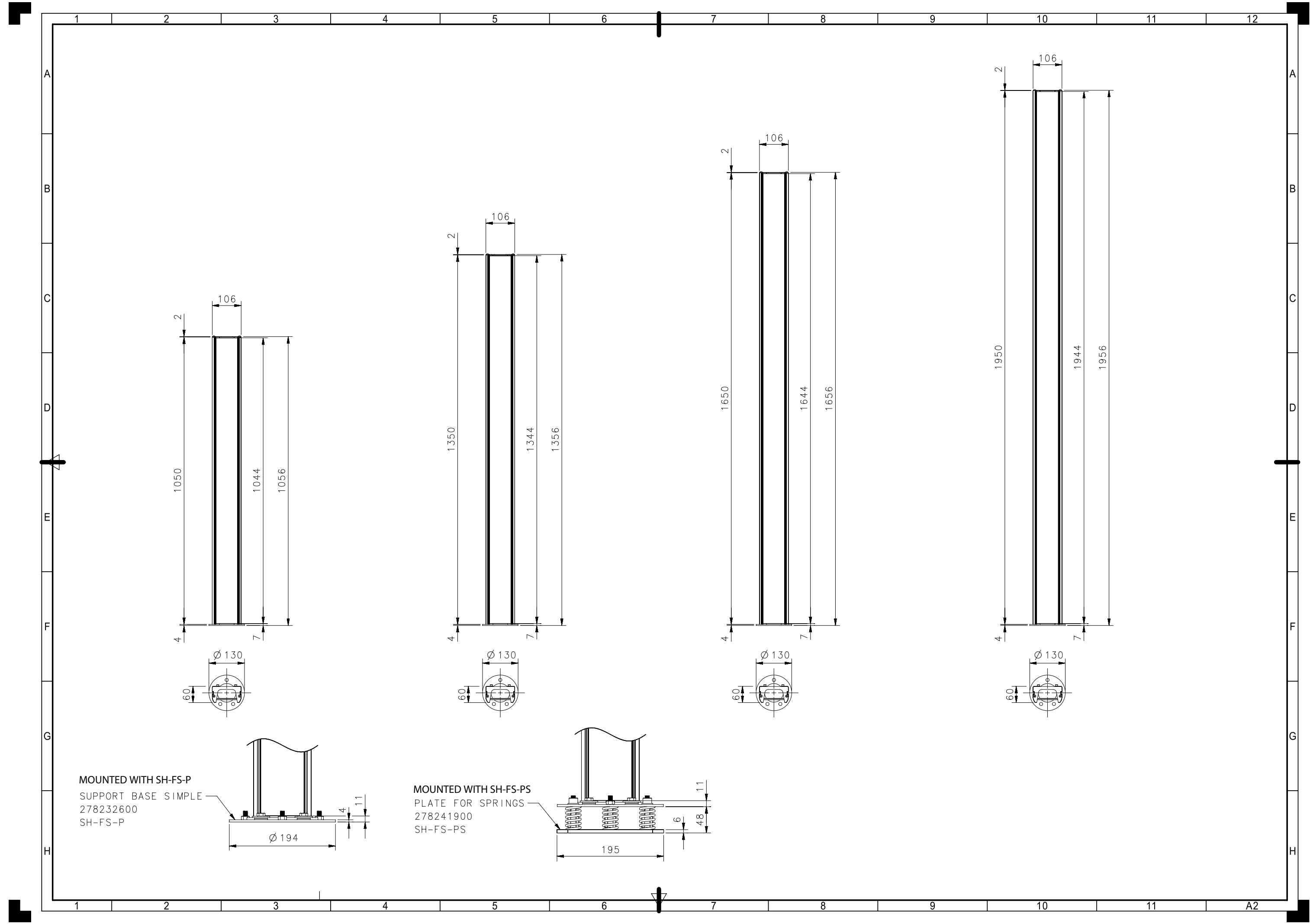
STEP 5

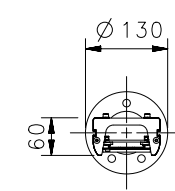
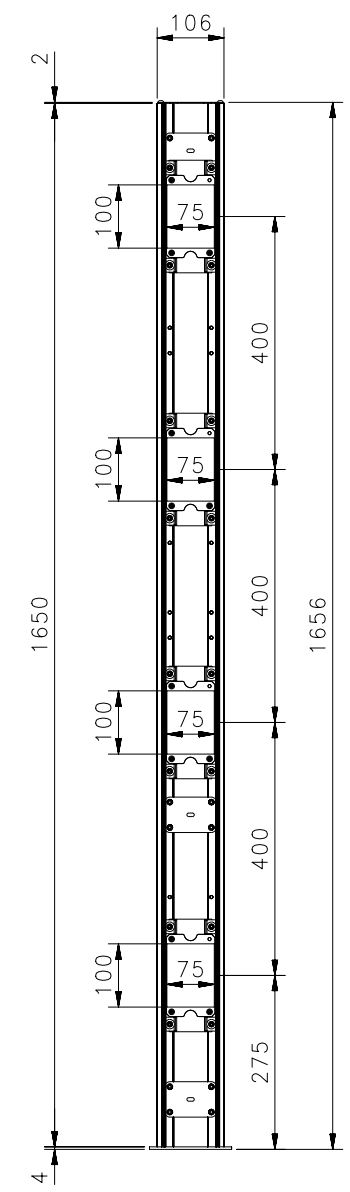
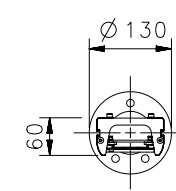
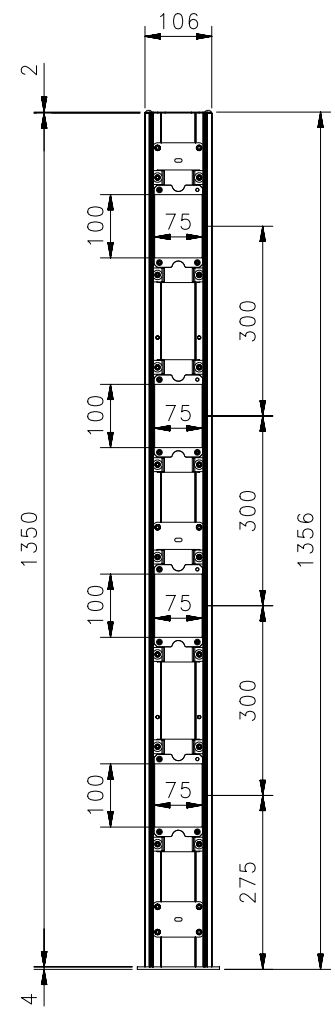
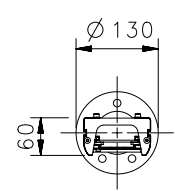
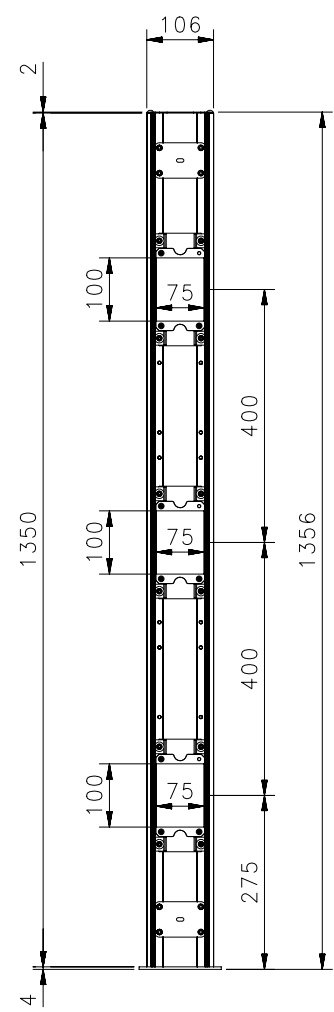
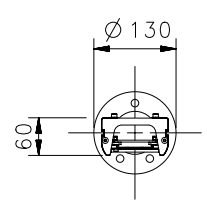
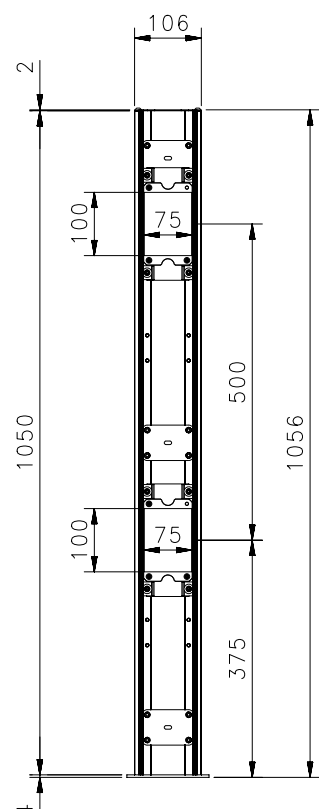
Follow the mounting procedure of the SH-FS-PS to fix the SH-FSM.

Adjusting the vertical axis and the angular position of the plates

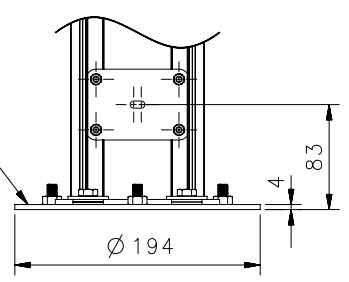
Adjustment on the vertical axis is made by acting on the grubs. Once the desired inclination is obtained, tighten the the nuts. The angular position is achieved by simply rotating the stand. Once the position desired is reached, tighten the four screws.

| ORDER INFORMATION | | |
|-------------------|-------------------|--|
| Part number | Model description | Long description |
| 95ASE0062 | SH-FSM-2-500 | Floor support with 2 independent mirrors 500 mm |
| 95ASE0063 | SH-FSM-3-800 | Floor support with 3 independent mirrors 800 mm |
| 95ASE0064 | SH-FSM-4-900 | Floor support with 4 independent mirrors 900 mm |
| 95ASE0065 | SH-FSM-4-1200 | Floor support with 4 independent mirrors 1200 mm |
| 95ASE0066 | SH-FSM-900 | Floor support with single mirror 900 mm |
| 95ASE0067 | SH-FSM-1200 | Floor support with single mirror 1200 mm |
| 95ASE0068 | SH-FSM-1500 | Floor support with single mirror 1500 mm |
| 95ASE0069 | SH-FSM-1800 | Floor support with single mirror 1800 mm |
| 95ASE0060 | SH-FS-P | SH Floor support 360° adjusting plate |
| 95ASE0061 | SH-FS-PS | SH Floor support 360° adjusting plate with springs |





MOUNTED WITH SH-FS-P
SUPPORT BASE SIMPLE
278232600
SH-FS-P



MOUNTED WITH SH-FS-PS
PLATE FOR SPRINGS
278241900
SH-FS-PS

