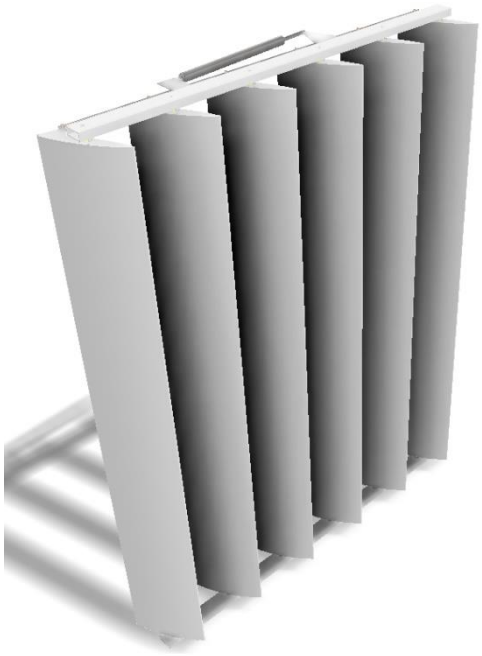
FINS



Technical Manual

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SLIDING SHUTTERS - IMPRINT

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Declaration of conformity

This product fulfils the basic requirements of the applicable European Directives. The conformity was detected. The original of the Declaration of conformity is available as a separate document from the manufacturer.

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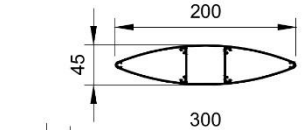
FINS – TABLE OF CONTENT

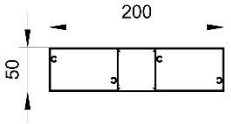
FINS - SYSTEM OVERVIEW

Standard Fin types

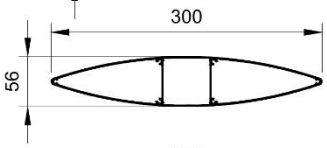
200DC



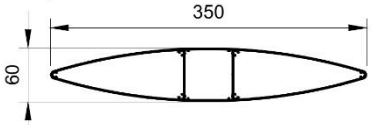
200R



300DC

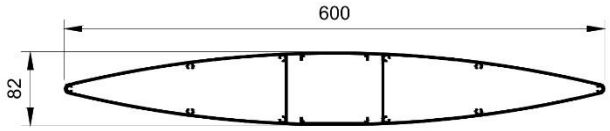


350DC

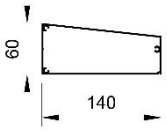


Special Fin types

600DC

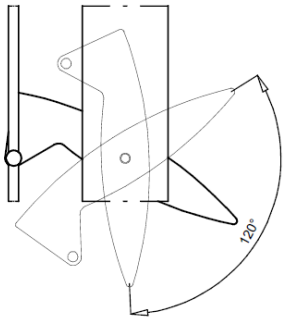


140A

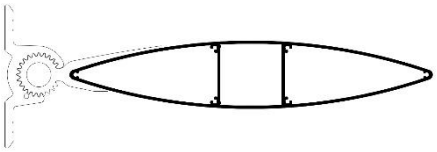


Suspension type:

ADJUSTABLE

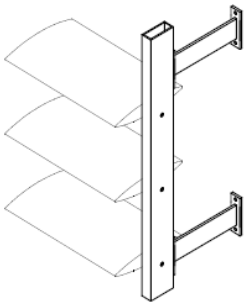


FIXED

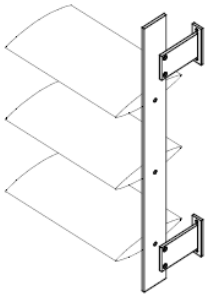


Substructure type:

TUBE



STRIP

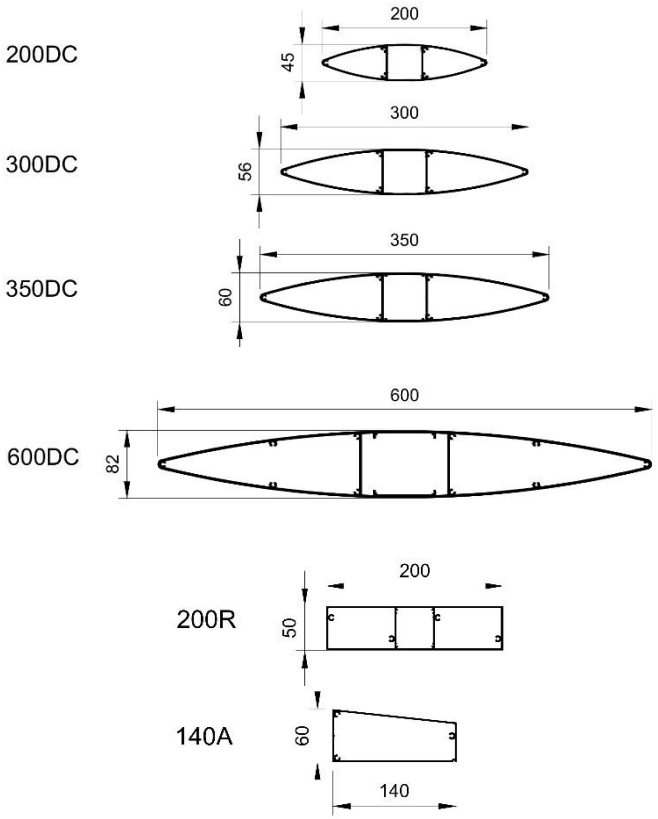


FINS - CONTENT

The Fins are available in 6 different sizes.

Specification short list:
Material:
aluminum (extruded) 6063 T6

Finish:
- natural anodised
- polyester powder coated
- sublimated

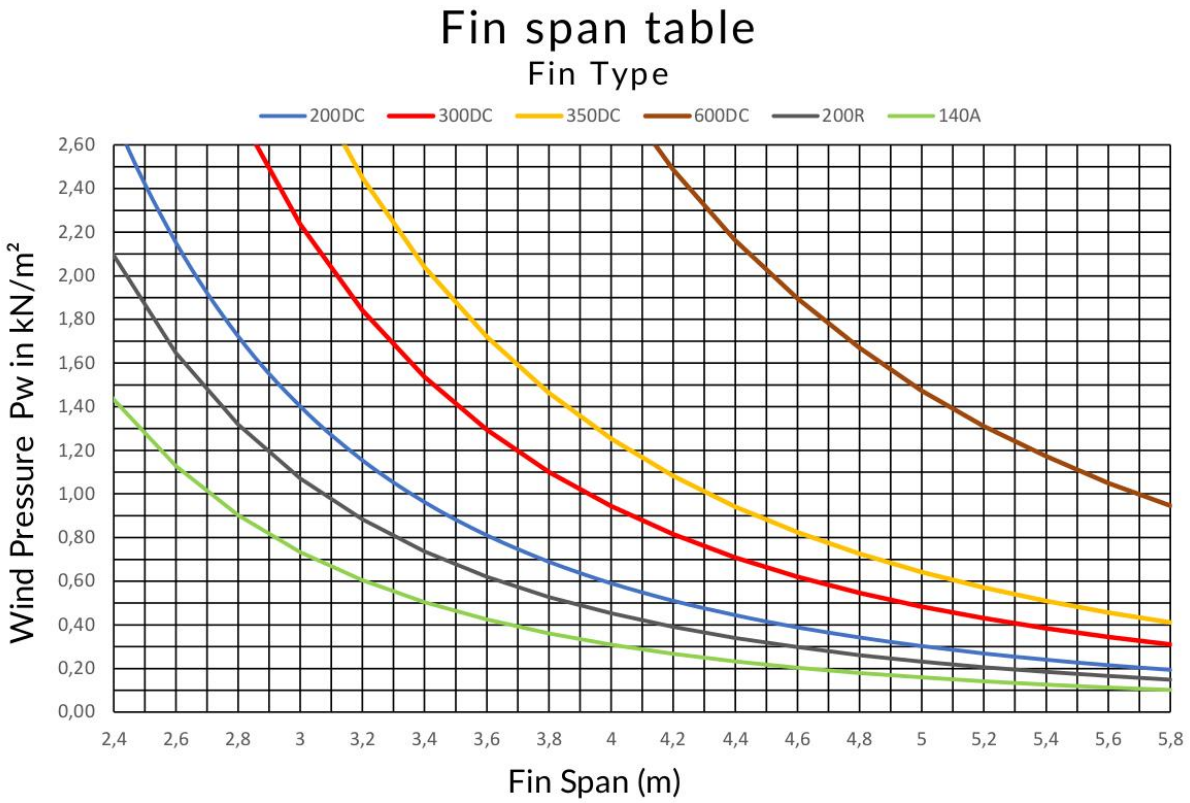


Mechanical info:

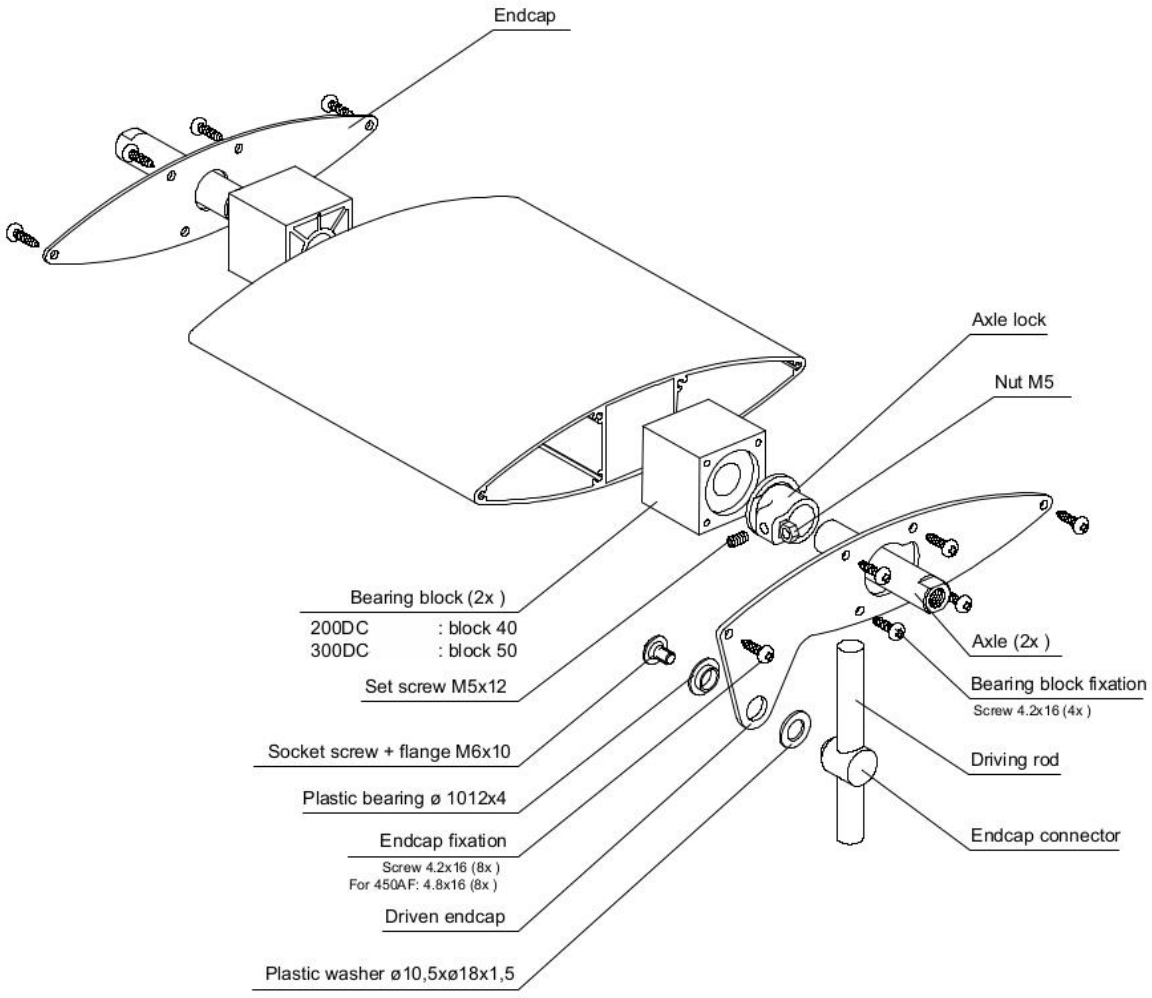
Fin Type	Weight kg/m	Ix (cm4)
200DC	2,93	25,3
300DC	4,3	60,6
350DC	5,86	94,0
600DC	12,3	370,3
200R	3,73	58,12
140A	2,07	39,8

FINS - SPANS

HORIZONTAL AND VERTICAL

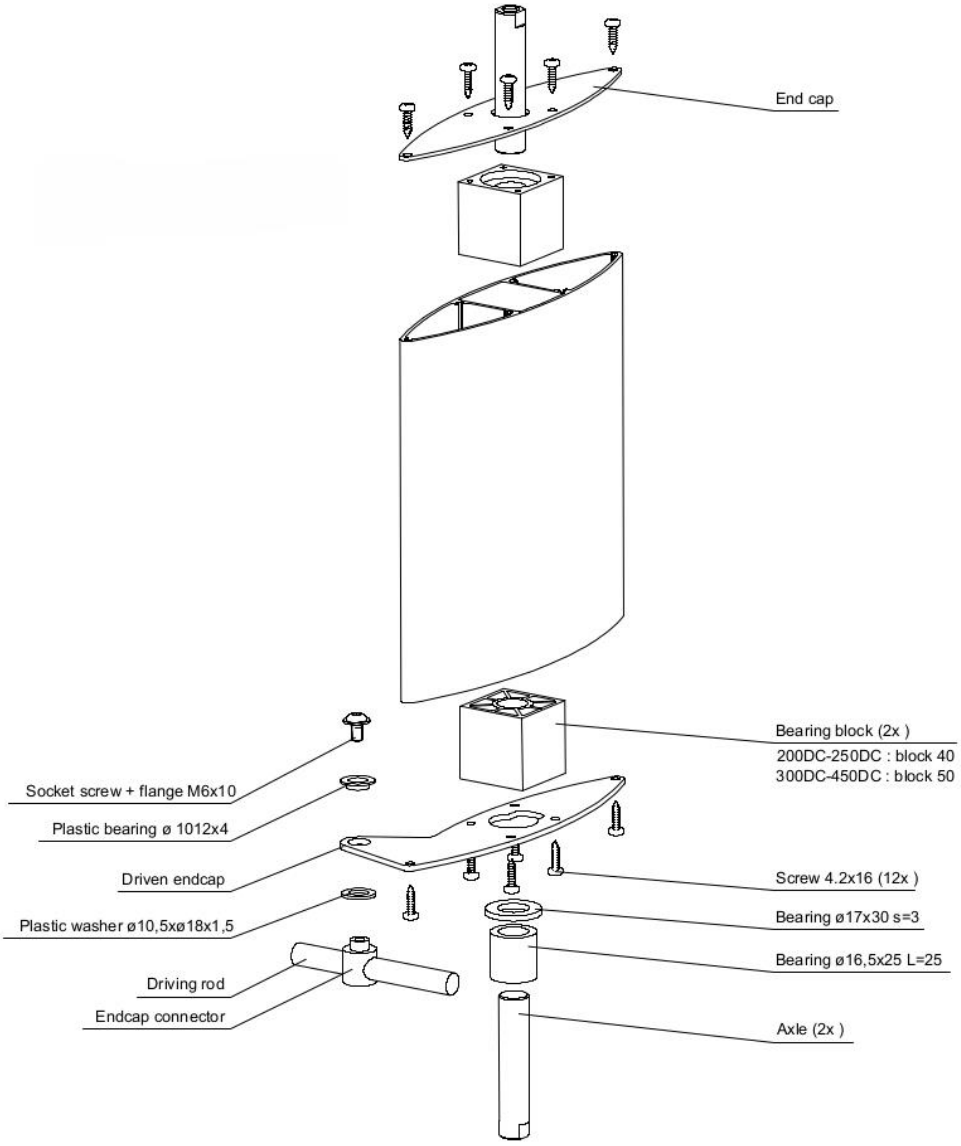


FINS – ADJUSTABLE SYSTEM HORIZONTAL



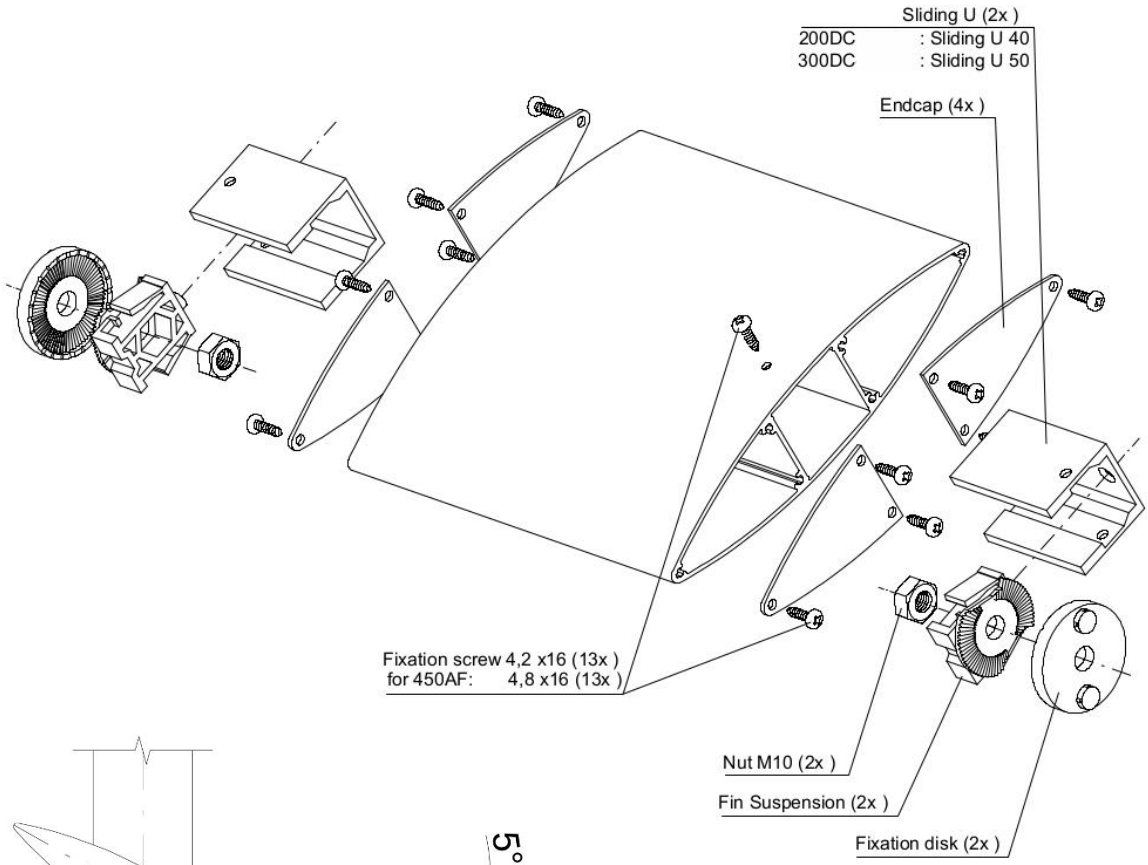
Note: This drawing also applies to the 200R rectangular fin

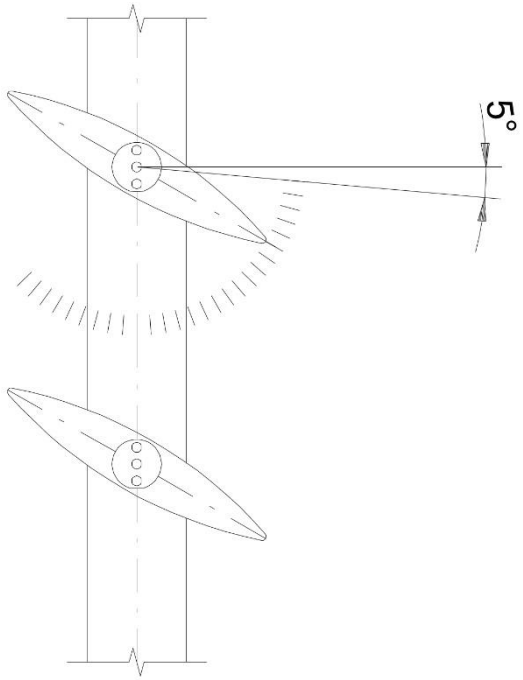
FINS – ADJUSTABLE SYSTEM VERTICAL



Note: This drawing also applies to the 200R rectangular fin

FINS – FIXED SYSTEM - (HORIZONTAL AND VERTICAL)





Note: This drawing also applies to the 200R rectangular fin

FINS –FIXED SYSTEM - V BRACKET

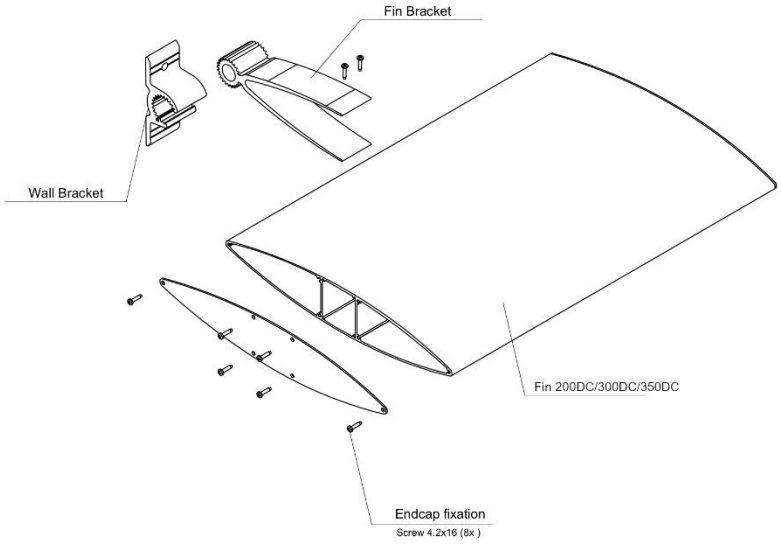
Fixation of the fin into the V-bracket is done with 2 or 4 self drilling screws. 4,2x16

In the V- bracket holes are predrilled.

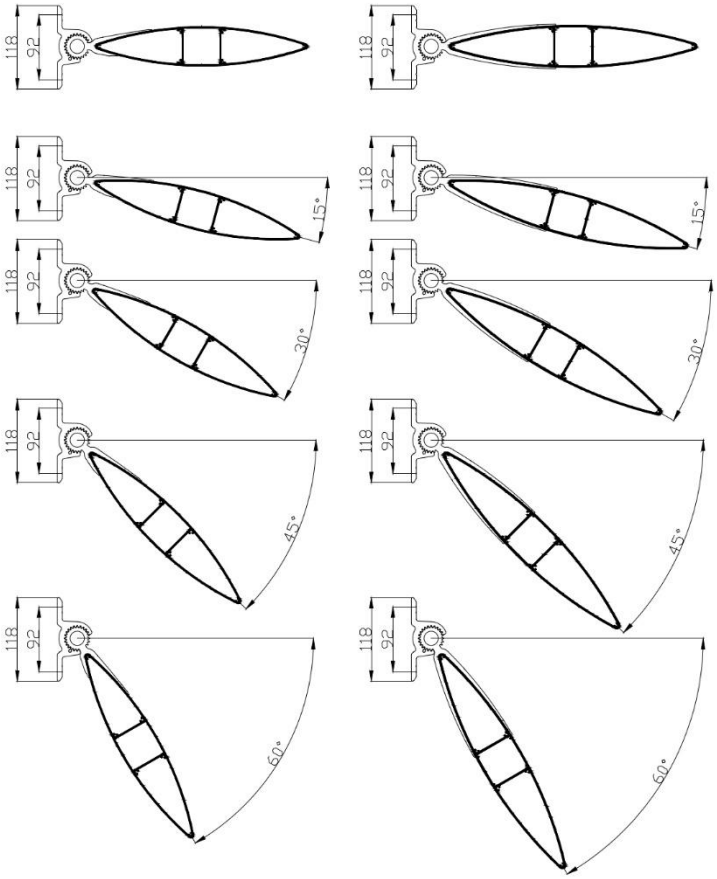
Position of the screws is dependent on the V-bracket type.

The V-bracket can be placed on the wall bracket in 4 positions.

Fixation of the wall bracket can be done with ø6 woodscrews or head screws depending on the substructure.



FIN 200DC/300DC **FIN 350DC**



FINS – ADJUSTABLE SYSTEM – ACTUATOR DETAILS 1

The adjustable system consists of adjustable fins, interconnected by a driving rod, which is driven by an actuator.

The rotation angle of the fins is variable up to a maximum of 120 degrees. Adjusting the stroke of the actuator will set the position and rotation angle of the fins

The amount of fins, connected to 1 actuator depends on the type of fin.

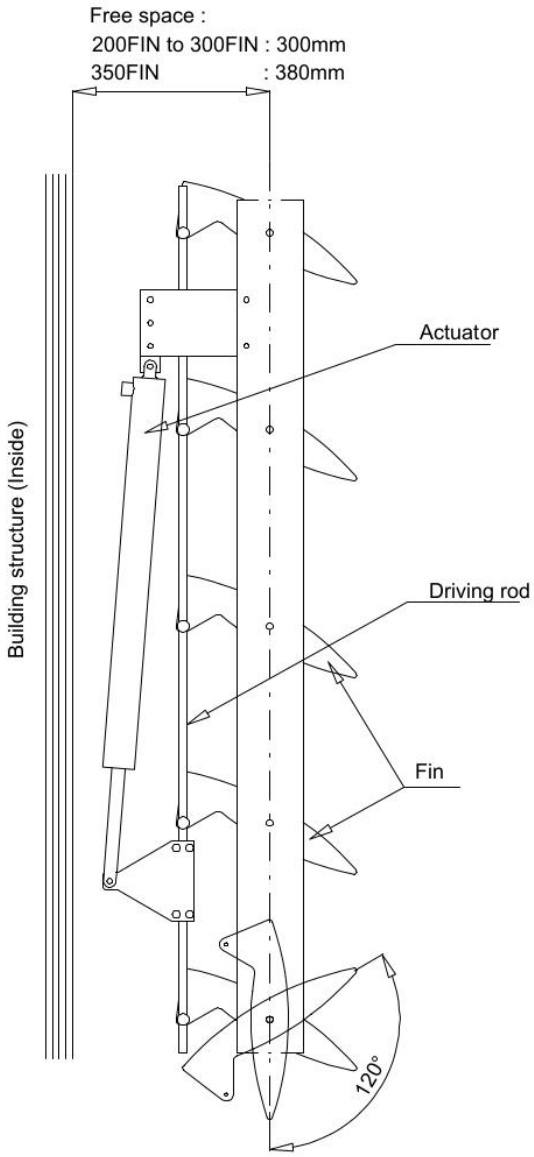
Rough guideline:
200DC and 300DC : 40 pcs / actuator
350DC : 25 pcs / actuator

There are 2 different actuators. Which actuator have to be applied depends on the size of fin.

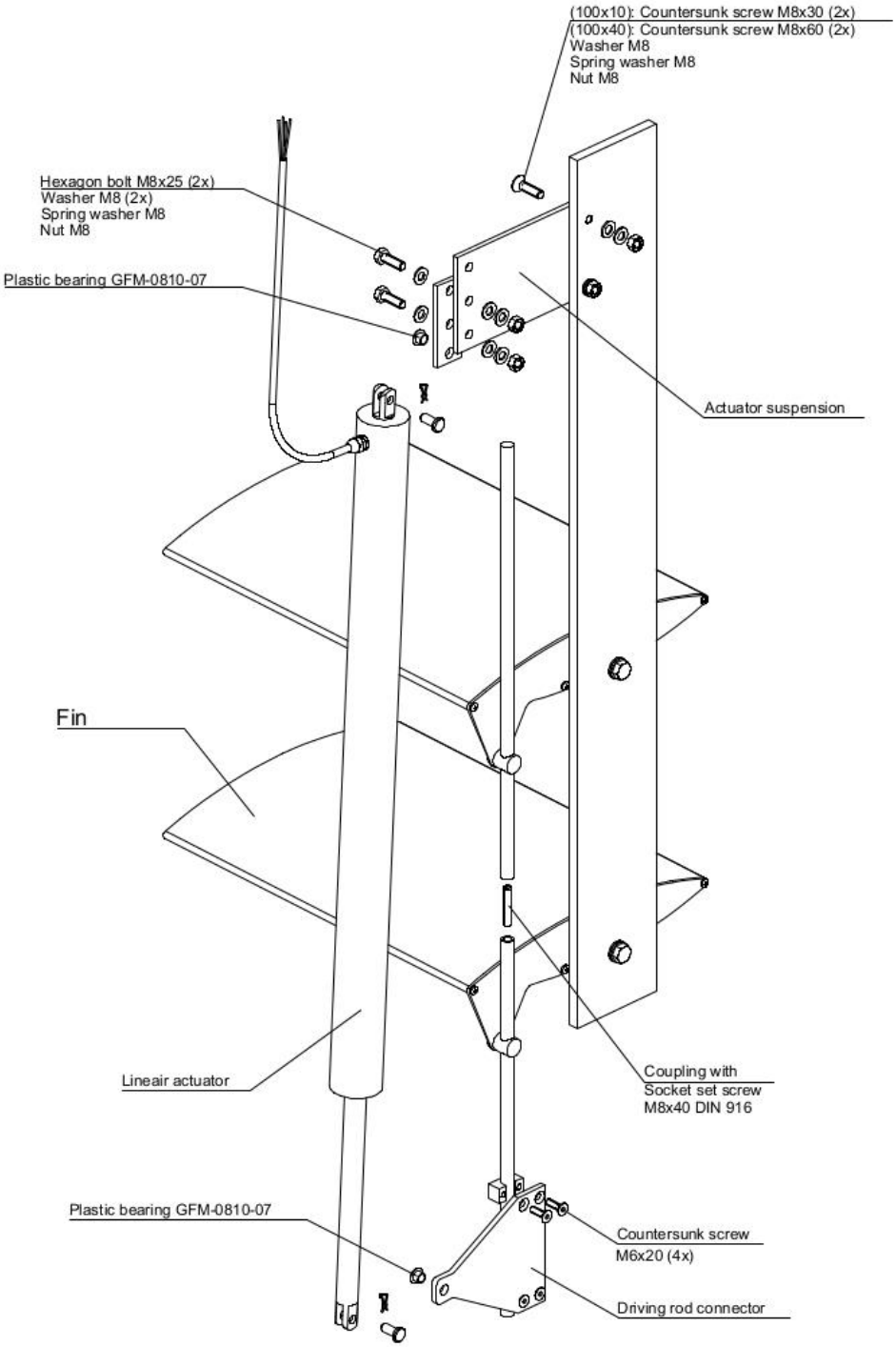
200DC : Actuator 200
300DC and 350DC : Actuator 300

The adjustable system is applicable for horizontal and vertical oriented fins.

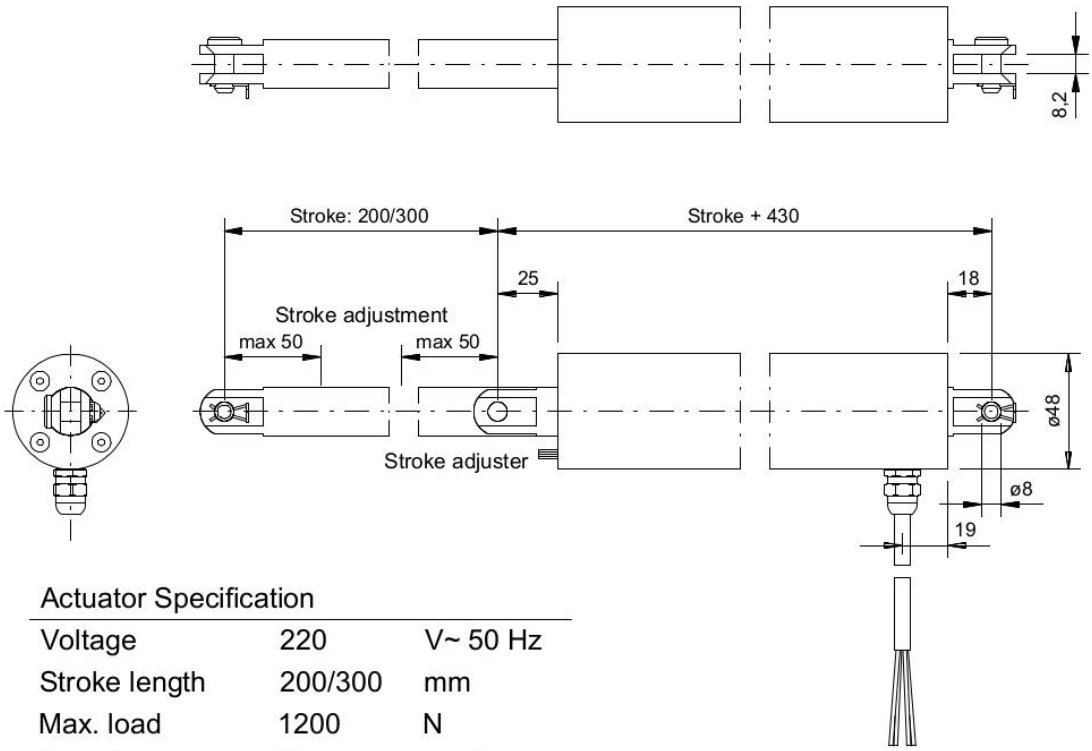
In case of a vertical fin orientation the actuator can be placed at the top or bottom side



FINS – ADJUSTABLE SYSTEM – ACTUATOR DETAILS 2



ADJUSTABLE SYSTEM – ACTUATOR DATA SHEET



Actuator Specification		
Voltage	220	V~ 50 Hz
Stroke length	200/300	mm
Max. load	1200	N
Speed	6	mm/s
Max. current	0,55	A

Adjustment of end positions

To adjust the end and start position of the Aerofins, the stroke of the actuator must be modified.
This is done using the stroke adjuster. There are 2 adjusters, one for out and one for inward motion.

CAUTION!

- Before driving the fins, adjust the stroke of the actuator.
  Otherwise the stroke of the actuator can be too long and will damage the system.
- The rod of the actuator should be pointing downwards to prevent water entering the casing of the actuator.
- The actuator and control box are operating at 230V/50Hz

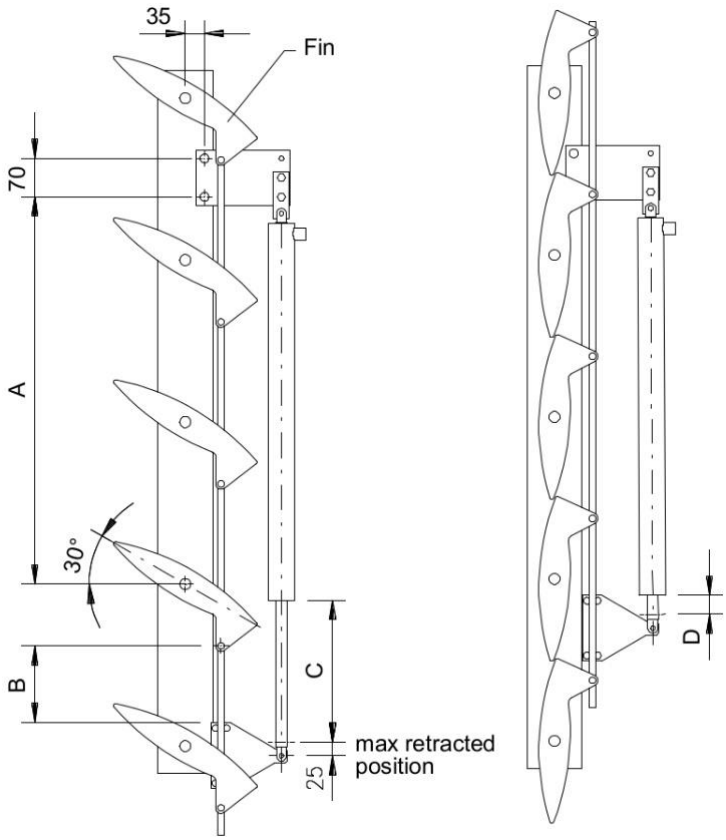
ADJUSTABLE SYSTEM – POSITION ACTUATOR

The position of the actuator depends on fin width. The standard rotation angle is 120°, from fully closed to -30°

For different rotation angles please contact BE.

Note:

- The actuator and actuator suspension should be kept clear from the substructure console.
- The driving rod connector is preferably placed approx. at the middle of the driving rod, for mechanical reasons.
- Dimensions C and D are measured from the bottom of the actuatorcase to the maximum retracted position.
- The distance between the max retracted position and the centre of the fixation pin at the end of the spindel is +25 mm.



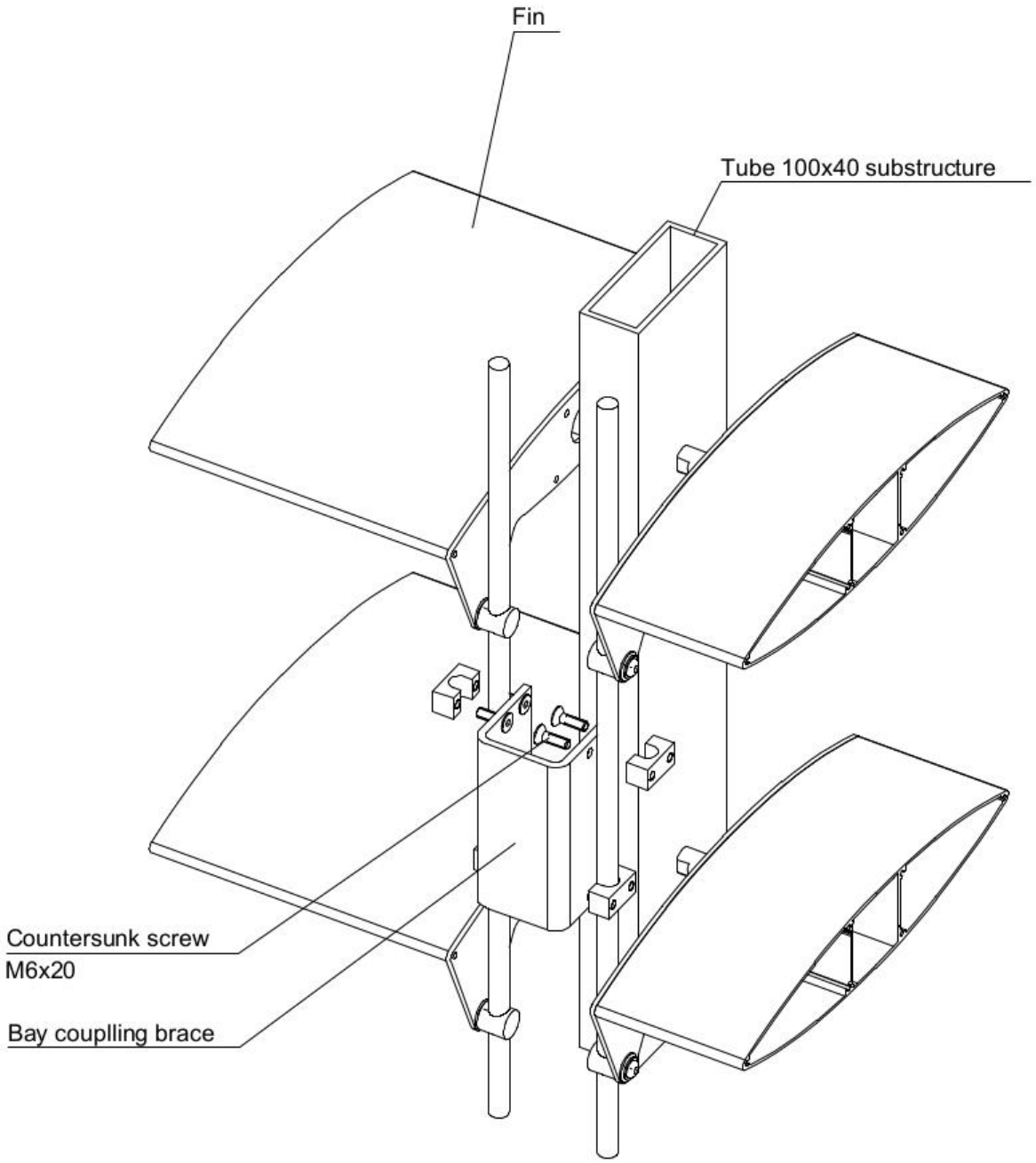
120° rotation angle

Fin Type	Actuator	A	B	C	D
200DC	200	680	40	198	44
300DC	300	705	140	258	35
350DC	300	760	105	305	48

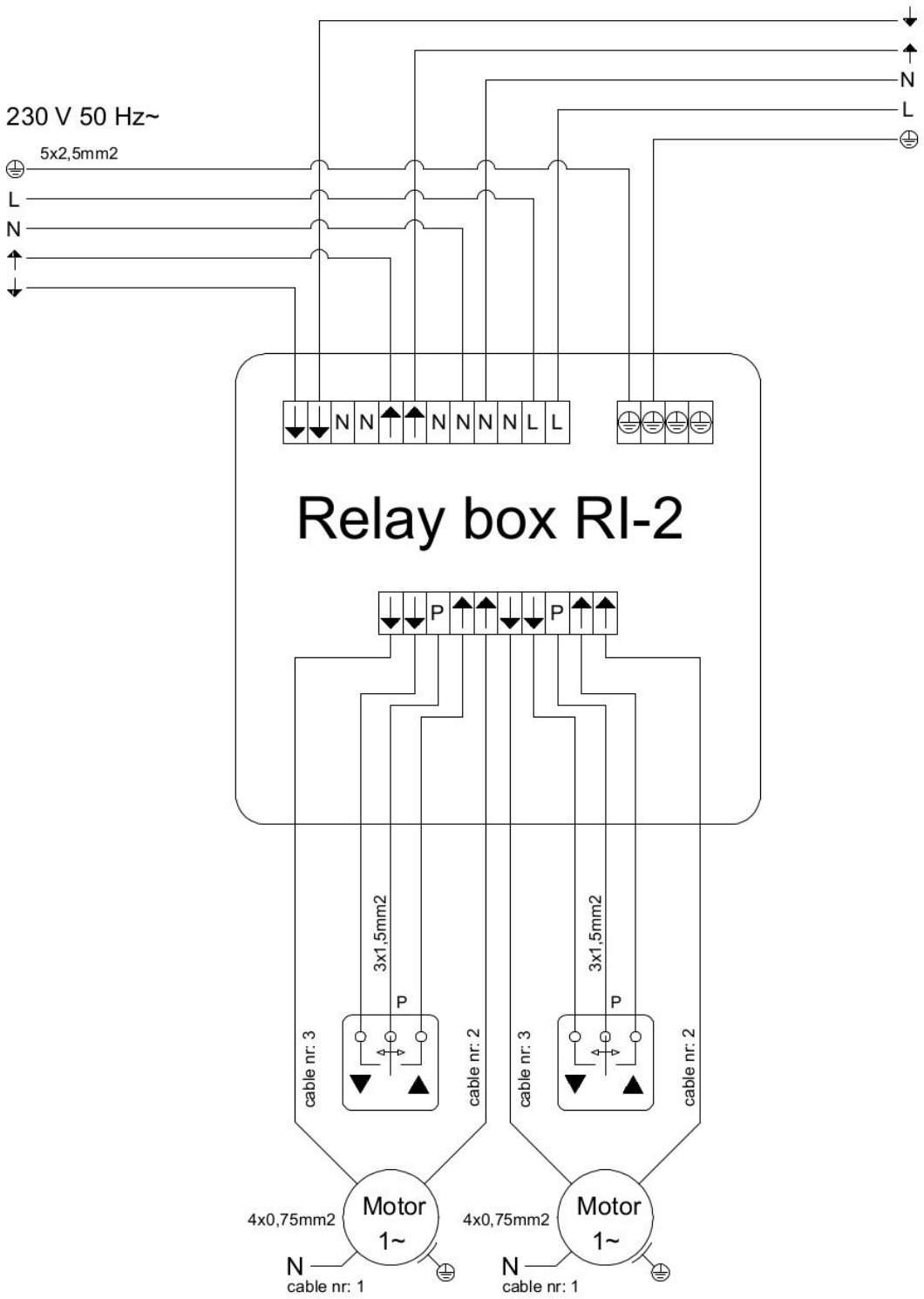
ADJUSTABLE SYSTEM – COUPLING OF BAYS

It is possible to adjust two bays of fins with 1 actuator when a tube substructure is applied. The driving rod should be placed face-to-face. The coupling is provided with a bay coupling brace.

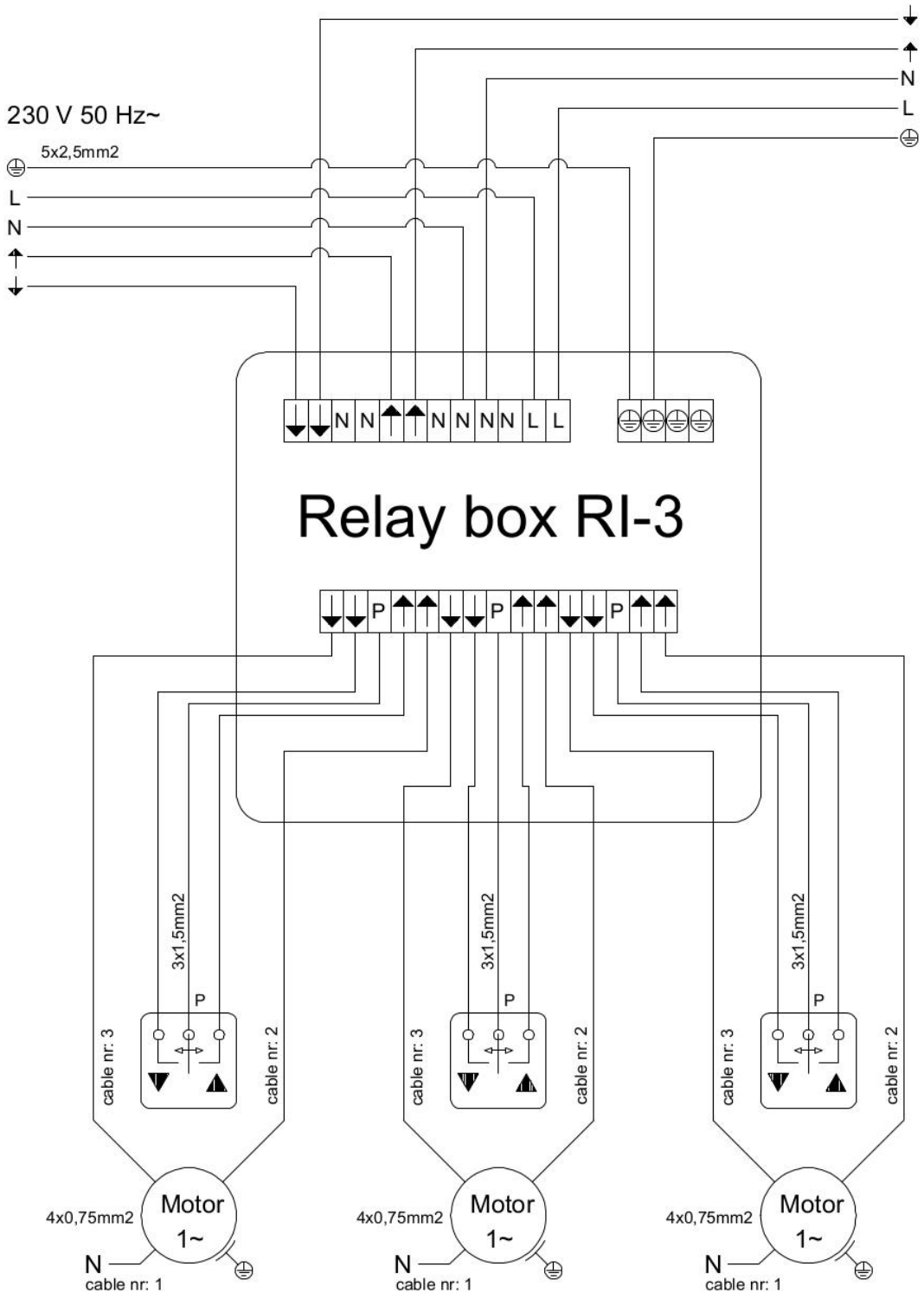
Note: This coupling does not apply for strip 100x10 substructures.
But similar custom solutions are however possible.



ADJUSTABLE SYSTEM – RELAIS BOX 2 WIRING TABLE

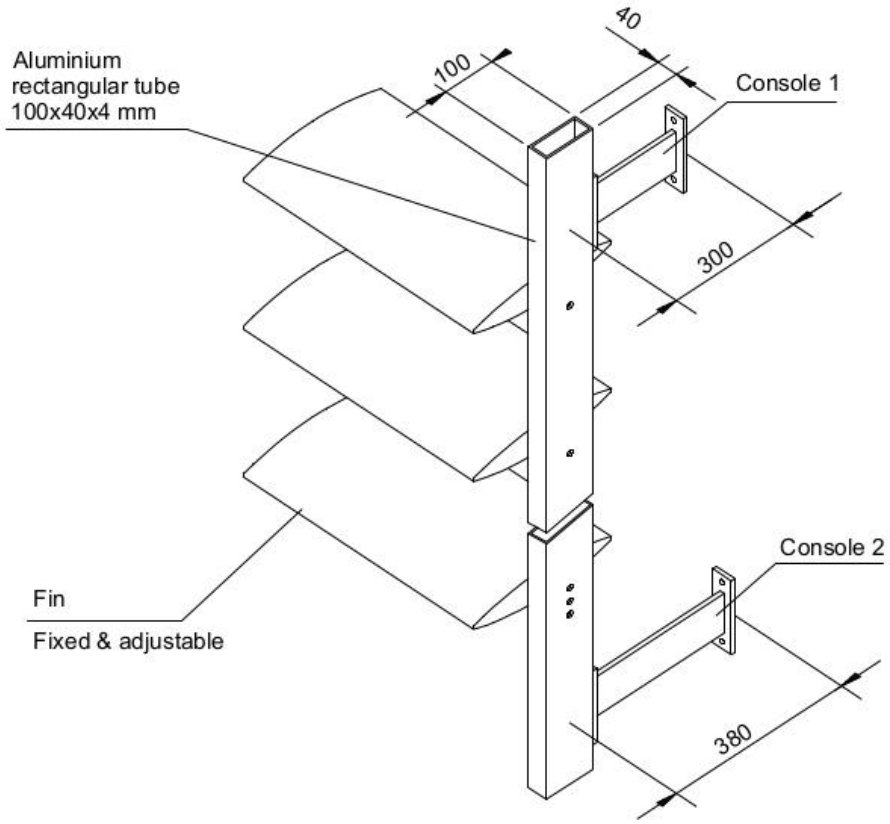


ADJUSTABLE SYSTEM – RELAIS BOX 3 WIRING TABLE

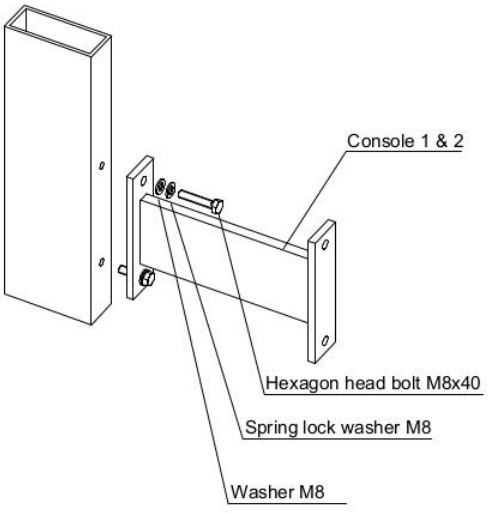


SUBSTRUCTURE – TUBE 100X40

Only applicable for horizontal fins. For substructure for vertical fins, please contact BE.



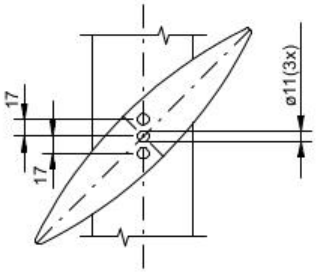
Console fixation detail



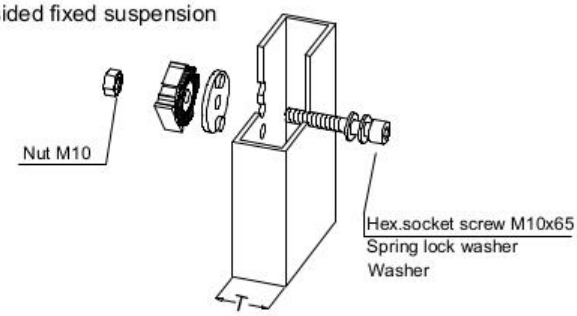
SUBSTRUCTURE – TUBE 100X40 – FIXED AND ADJUSTABLE DETAILS

Fixed System

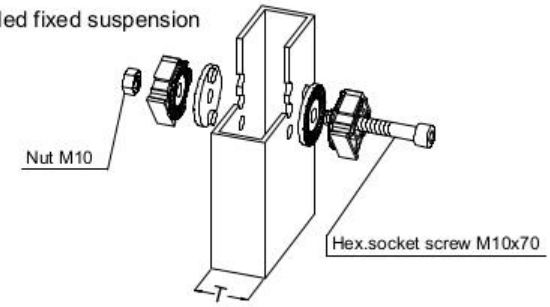
Hole pattern for Fixed systems



Single sided fixed suspension

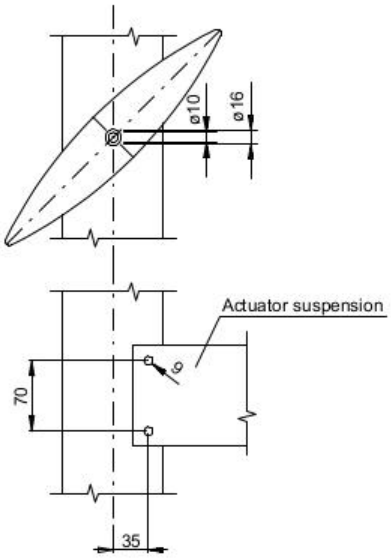


Double sided fixed suspension

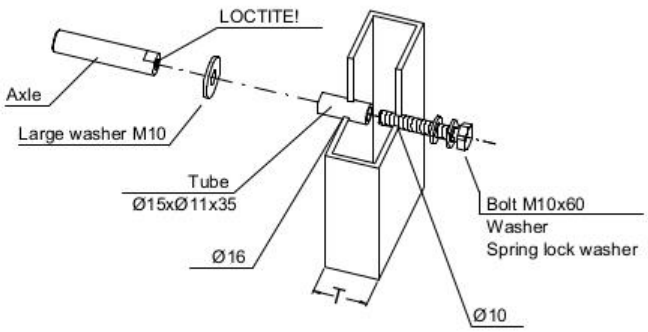


Adjustable system

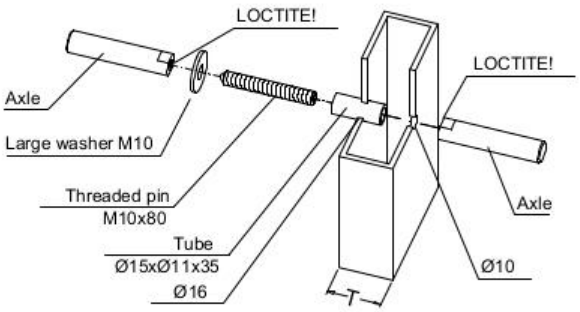
Hole pattern for Adjustable systems



Single sided adjustable suspension



Double sided adjustable suspension

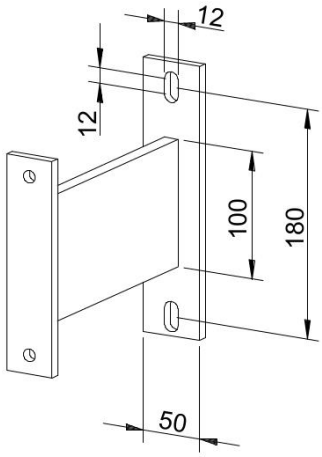


IMPORTANT !

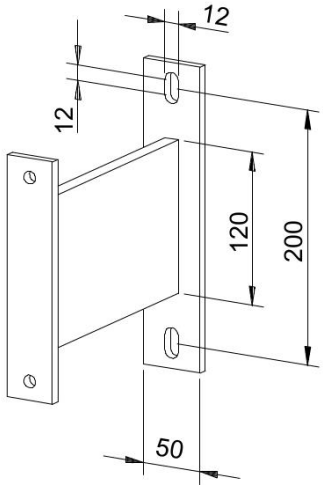
Use Loctite bearing to securely fix the axles

SUBSTRUCTURE – TUBE 100X40 – CONSOLE 1 AND 2

Console 1 can be used for both the 200DC and 300DC fin (fixed and adjustable).
Console 2 can be used for the 350DC fin (fixed and adjustable).

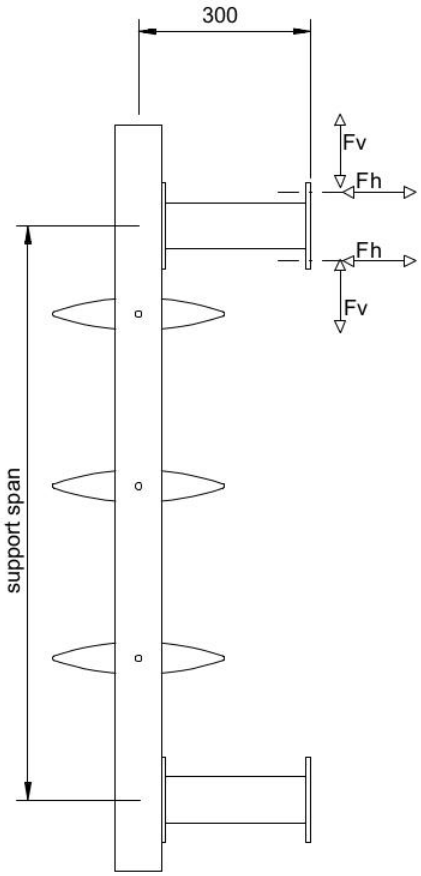


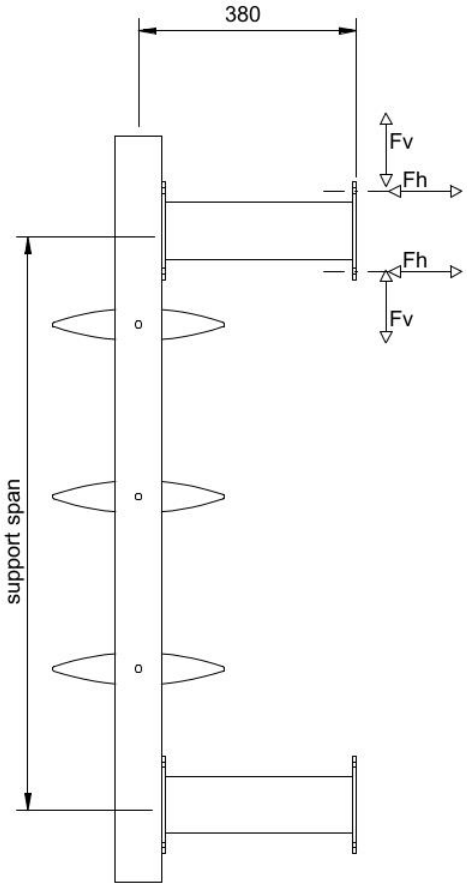
Console 1



Console 2

Maximum anchor forces that occur are:
Fv = 4000 N
Fh = 6000 N





SUBSTRUCTURE – TUBE 100X40 – SUPPORT LAYOUT

When the general dimensions of the system are known, the required dimensions for producing the system can be filled out here :

1. The support length (Sup_A), the fin scenter-to-center distance (ctc) and the amount of fins (# fins) are linked:

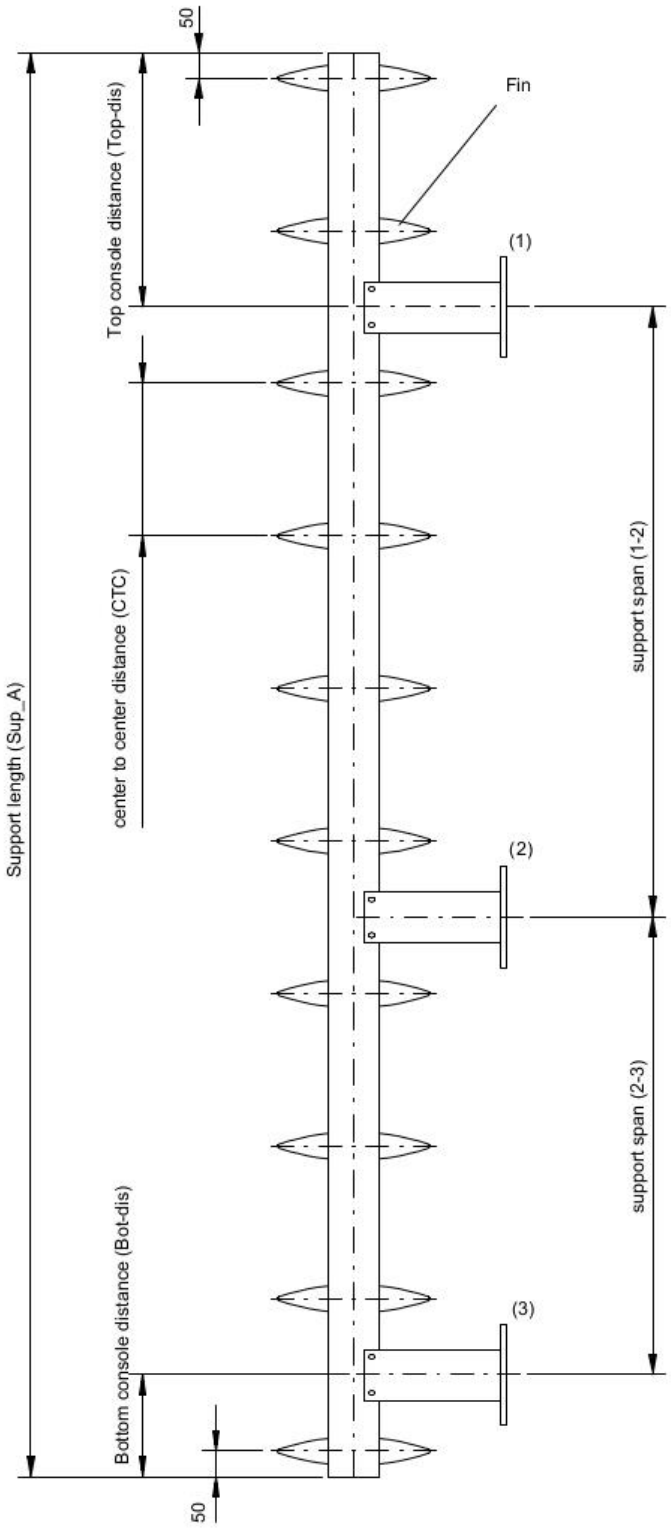
   Sup_A=(#fins-1) x (ctc) +100

   Ctc = fin widt -5mm

2. The support spans can vary from the substructure they are mounted on. The following procedure should be followed:

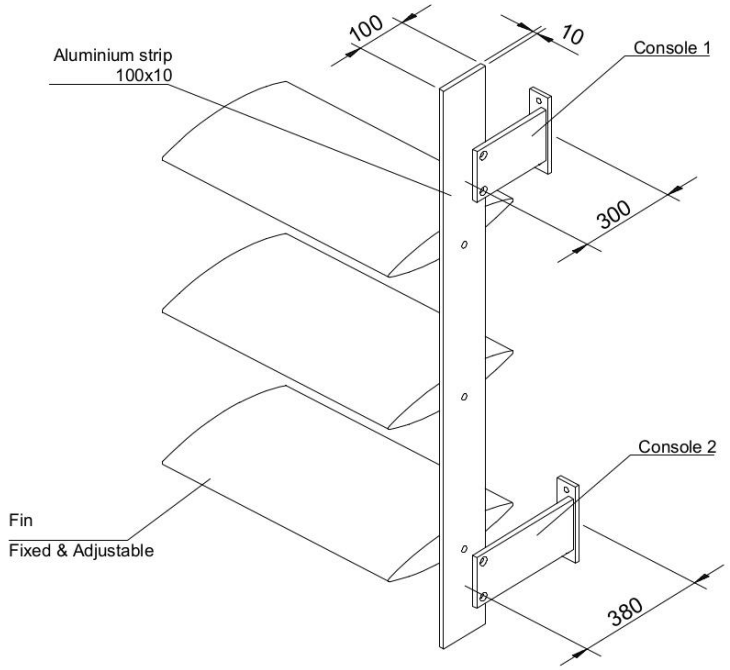
- Determine the top-console distance (Top-dis)
  Maximum Top-dis=500mm
  Minimum Top-dis = 200mm
- Number the consoles (picture 1 to 3)
- Specify the span between the numbered consoles:
  Span (1-2)
  Span (2-3)
- The bottom-console distance (Bot-dis) should be between 200 and 500mm. If not, the console span must be changed.

Note: the number of consoles used, is not limited to 3, as the picture shows.

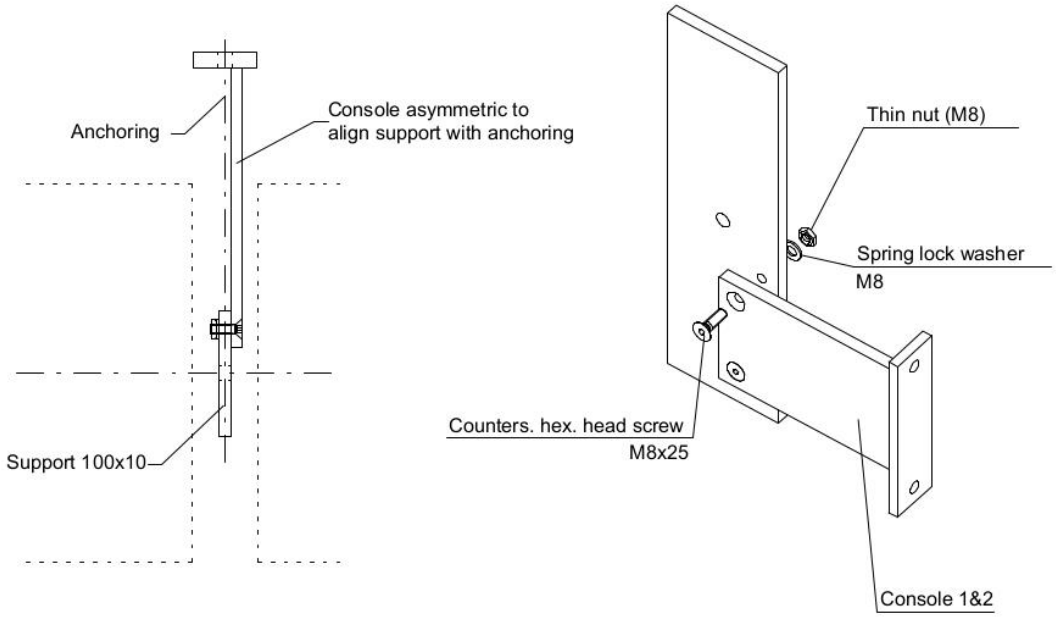


SUBSTRUCTURE – STRIP 100X10

Only applicable for horizontal fins. For substructure for vertical fins, please contact BE



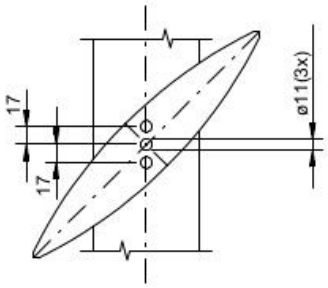
Console fixation details



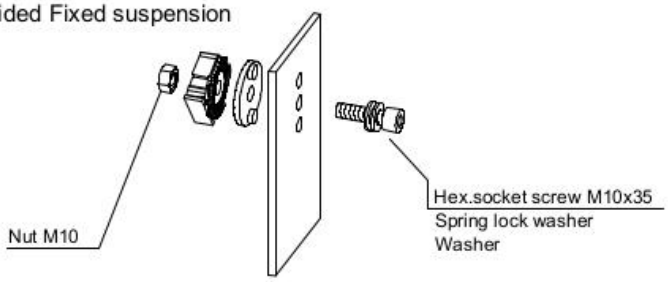
SUBSTRUCTURE STRIP 100X10 – FIXED AND ADJUSTABLE DETAILS

Fixed System

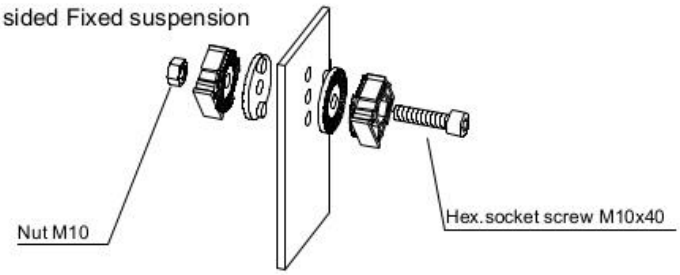
Hole pattern for Fixed systems



Single sided Fixed suspension

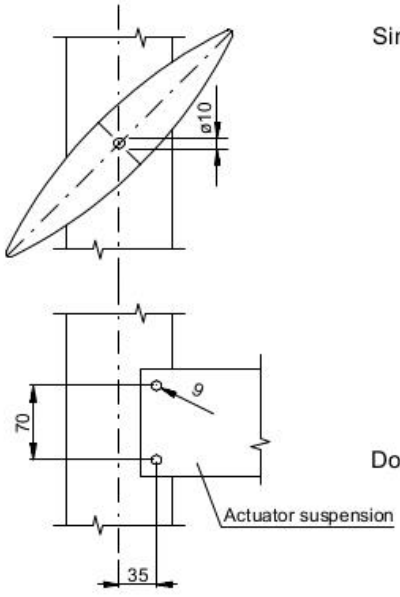


Double sided Fixed suspension

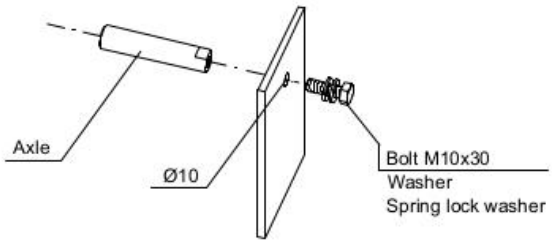


Adjustable system

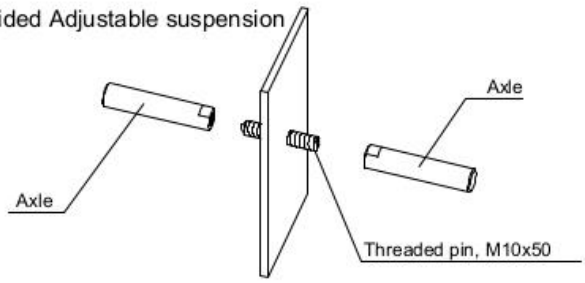
Hole pattern for Adjustable systems



Single sided Adjustable suspension



Double sided Adjustable suspension

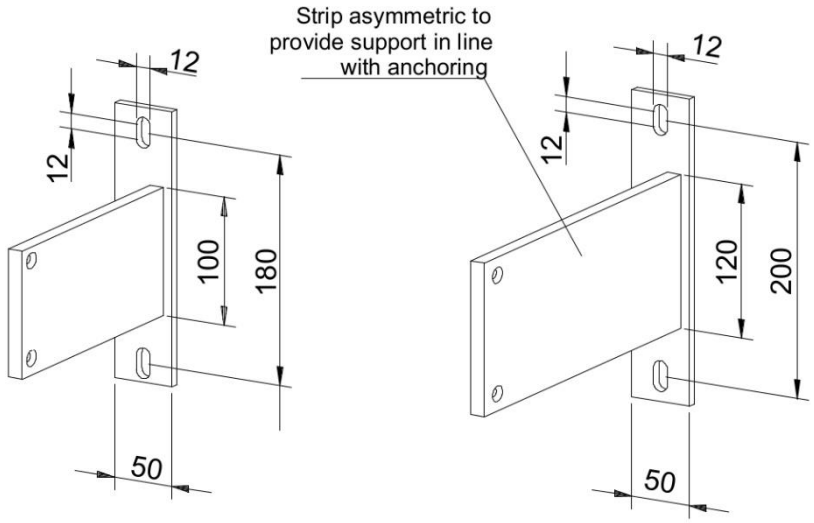


IMPORTANT !

Use Loctite bearing to securely fix the axles

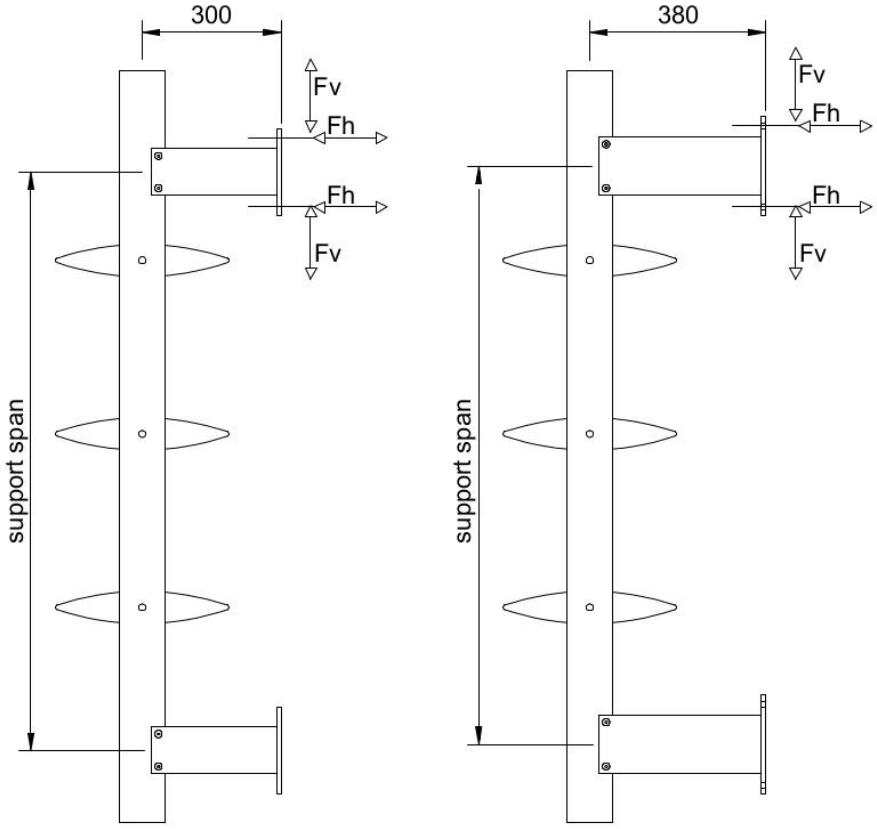
SUBSTRUCTURE – STRIP 100X10 – CONSOLE 1 AND 2

Console 1 can be used for both the 200DC and 300DC fin (fixed and adjustable).
Console 2 can be used for the 350DC fin (fixed and adjustable).



Console 1 Console 2

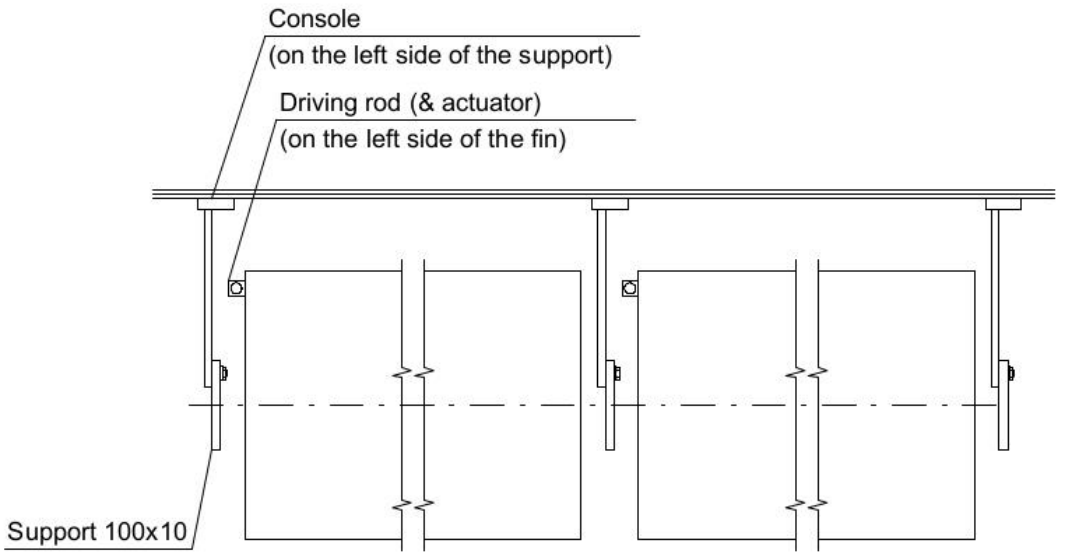
Maximum anchor forces
that occur are:
Fv = 4000 N
Fh = 6000 N

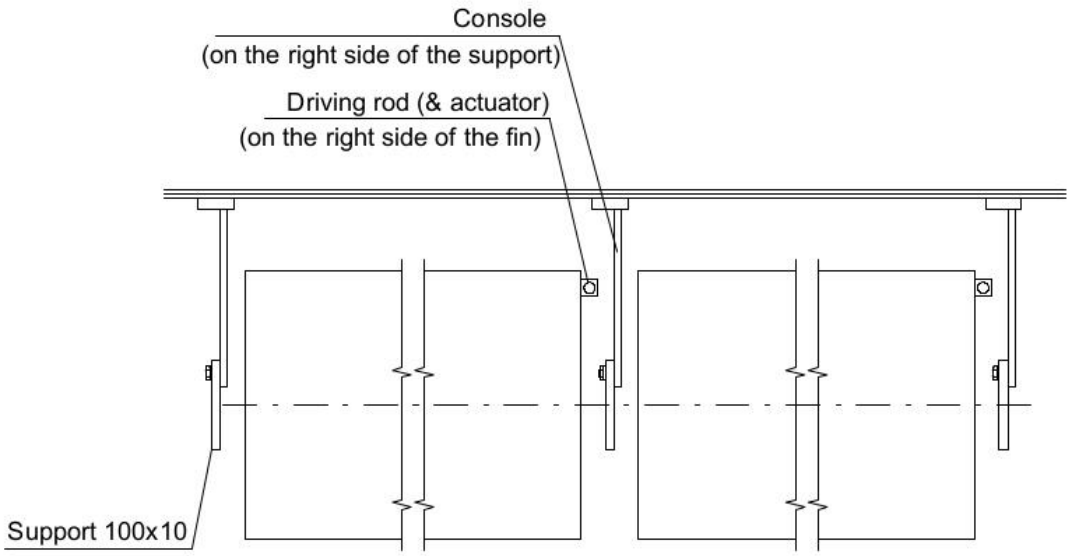


SUBSTRUCTURE – STRIP 100X10 – SUPPORT DETAILS

When using the 100x10 substructure in combination with an adjustable system, the position of the console is important. The driving rod and actuator can be located on both sides of the fin. The asymmetric console should be placed in the same direction which allows the driving rod to operate without jamming to the console.

Coupling of fins are standard not possible in combination with the 100x10 strip substructure. Custom made solutions are however possible.

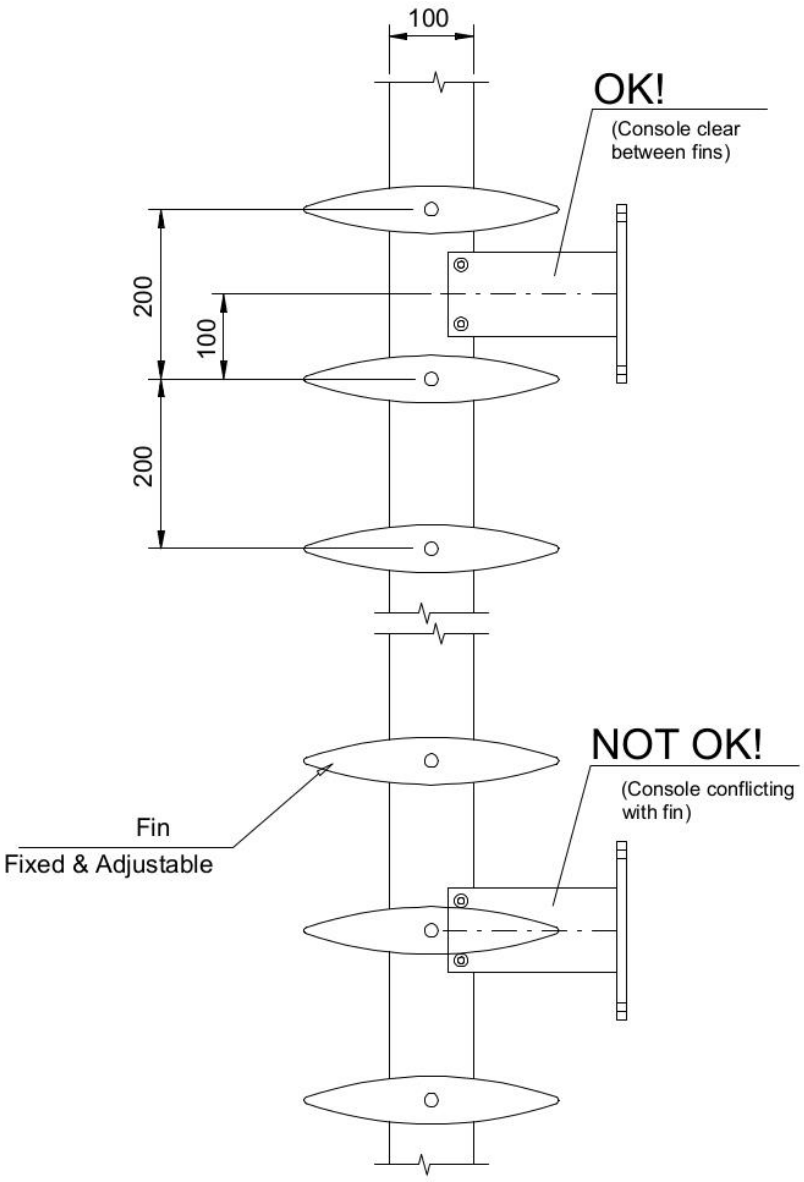




SUBSTRUCTURE – STRIP 100X10 – SUPPORT DETAILS

To allow installing of the fixed and adjustabe fins some free space between fin and support is needed. Therefore the console should be placed inbetween two fins and not next to a fin. The minimum center to center distance of the fins in combination with a 100x10 strip substructure is 200mm.

The minimum distance from the fin to the console is 100mm.



SUBSTRUCTURE – STRIP 100X10 – SUPPORT LAYOUT

When the general dimensions of the system are known, the required dimensions for producing the system can be filled out here :

1. The support length (Sup_A), the fin scenter-to-center distance (ctc) and the amount of fins (# fins) are linked:

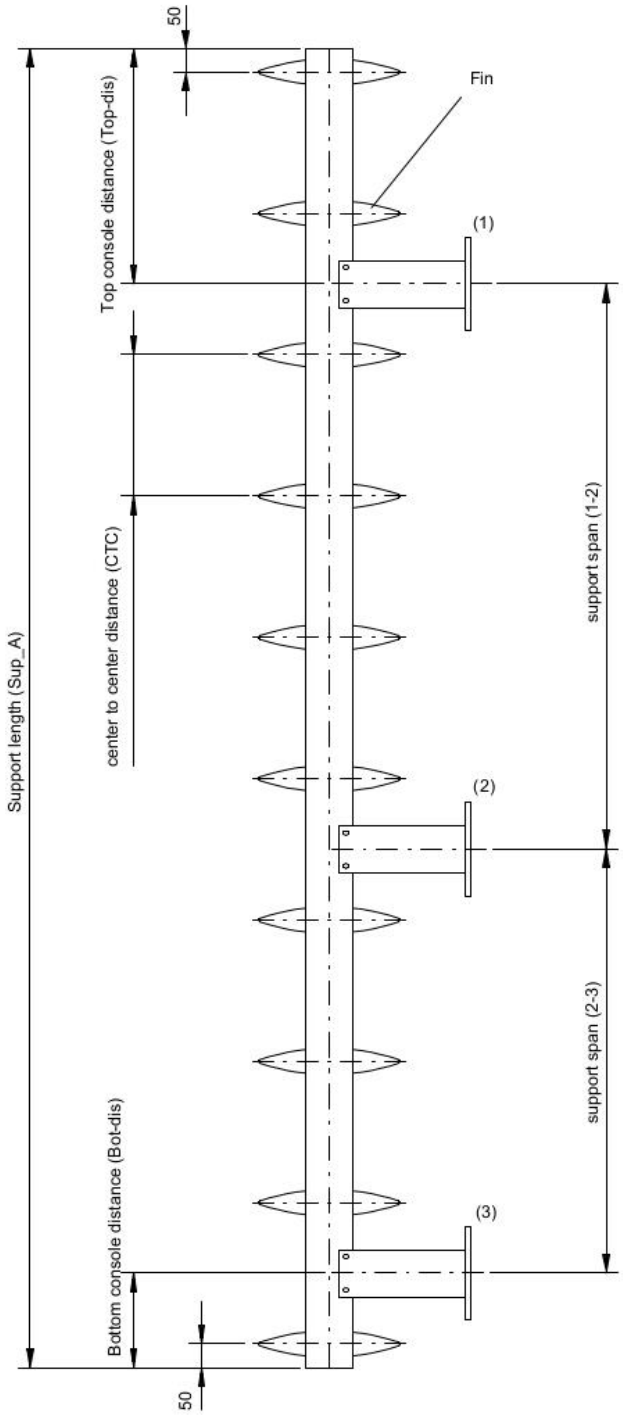
   Sup_A=(#fins-1) x (ctc) +100

   Ctc = fin widt -5mm

2. The support spans can vary from the substructure they are mounted on. The following procedure should be followed:

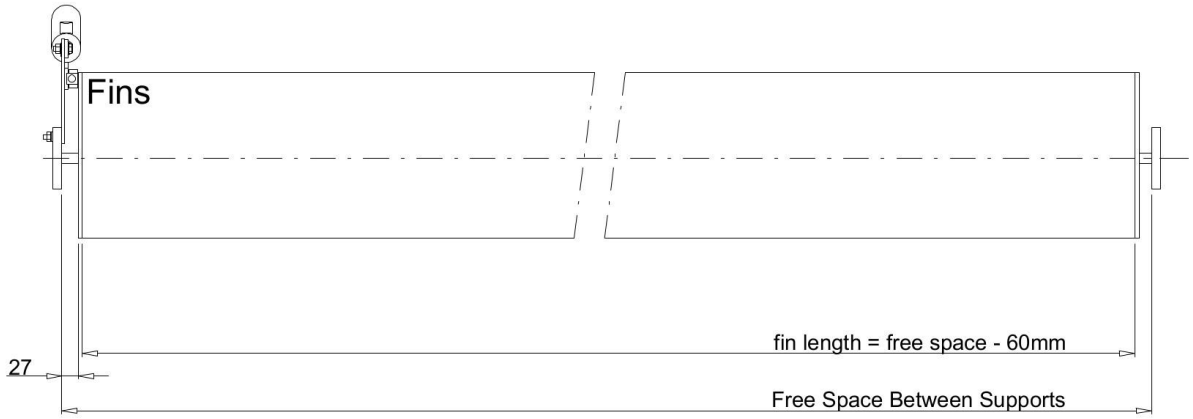
- Determine the top-console distance (Top-dis)
  Maximum Top-dis=500mm
  Minimum Top-dis = 200mm
- Number the consoles (picture 1 to 3)
- Specify the span between the numbered consoles:
  Span (1-2)
  Span (2-3)
- The bottom-console distance (Bot-dis) should be between 200 and 500mm. If not, the console span must be changed.

Note: the number of consoles used, is not limited to 3, as the picture shows.

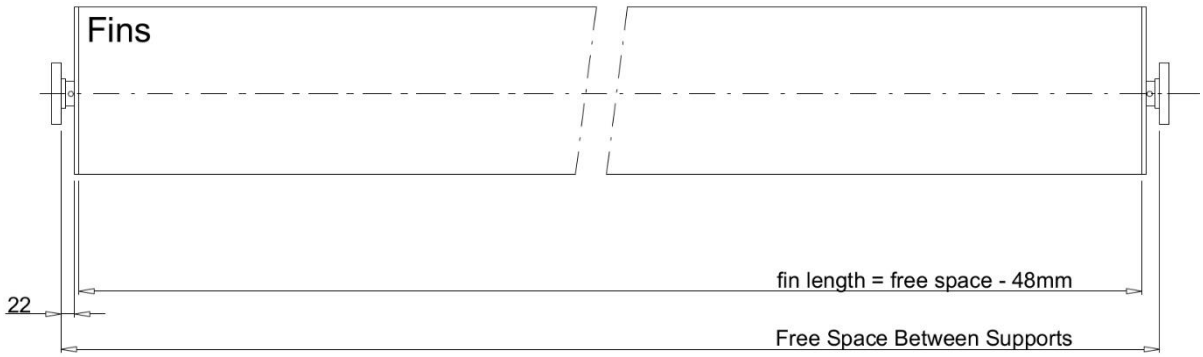


FINS – Basic fin length dimensions

Adjustable



Fixed



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