

EQ120 & EQ180

*Right-Angle Brackets
for ILS and IMS Stages*



USER'S MANUAL

Warranty

Newport Corporation warrants this product to be free from defects in material and workmanship for a period of 1 year from the date of shipment. If found to be defective during the warranty period, the product will either be repaired or replaced at Newport's discretion.

To exercise this warranty, write or call your local Newport representative, or contact Newport headquarters in Irvine, California. You will be given prompt assistance and return instructions. Send the instrument, transportation prepaid, to the indicated service facility. Repairs will be made and the instrument returned, transportation prepaid. Repaired products are warranted for the balance of the original warranty period, or at least 90 days.

Limitation of Warranty

This warranty does not apply to defects resulting from modification or misuse of any product or part.

CAUTION

Warranty does not apply to damages resulting from:

- **Incorrect usage:**
 - **Load on the stage greater than maximum specified load.**
 - **Carriage speed higher than specified speed.**
 - **Improper grounding.**
 - **Connectors must be properly secured.**
 - **When the load on the stage represents an electrical risk, it must be connected to ground.**
 - **Excessive or improper cantilever loads.**
- **Modification of the stage or any part.**

This warranty is in lieu of all other warranties, expressed or implied, including any implied warranty of merchantability or fitness for a particular use. Newport Corporation shall not be liable for any indirect, special, or consequential damages.

No part of this manual may be reproduced or copied without the prior written approval of Newport Corporation.

This manual has been provided for information only and product specifications are subject to change without notice. Any changes will be reflected in future printings.

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Warnings

WARNING

The moving of objects of all types carries potential risks for operators. Ensure the protection of operators by prohibiting access to the dangerous area and by informing the personnel of the potential risks involved.

WARNING

Do not place this bracket in unstable locations such as on a wobbly table or sloping surface, where it may fall or tip over and cause injury.

If this bracket has been dropped or the case has been damaged, contact your Newport service facility and request repairs.

WARNING

Do not exceed the usable depth indicated on the mounting holes (see section “Dimensions”). Longer screws can damage threads of tapped holes.

Cautions

CAUTION

Do not place this bracket in a hostile environment such as X-Rays, hard UV,... or in a vacuum environment.

CAUTION

Be careful that the bracket is not bumped when it is being carried. This may cause it to malfunction.

CAUTION

Contact your Newport service facility to request cleaning and specification control every year.

Right-Angle Brackets for ILS and IMS Stages

EQ120 & EQ180

1.0 Introduction

This manual provides operating instruction to mount the EQ120 bracket with (M-)ILS linear stages and RV80 and RV120 rotation stages, and the EQ180 bracket (M-)IMS linear stages and RV120 and RV160 rotation stages.



EQ120 bracket on IMS stages, with an ILS stage in vertical position.



EQ180 bracket with an IMS stage and a RV160 rotation stage.

RECOMMENDATION

Only screws indicated in this user's manual should be unscrewed. Other types fully contribute towards the stiffness of the bracket.

2.0 Description

Newport's set of brackets, models EQ120 and EQ80, are ideal for mounting our ILS/IMS Series of linear stages and RV rotation stages for stable and stiff multi-axis positioning systems.

The advanced precision technologies used in our products offer many benefits. Firstly, the well balanced design of the EQ brackets together with the high load capacity bearings used on our stages will considerably limit the stress generated by off centered loads on a motion axis; the lifetime of your system will thus be increased. Secondly, our brackets and stages have been

engineered with the greatest care to ensure the best quality and performance. This results in 3D motion systems of high stiffness-to-weight ratio that provides higher system resonant frequency for faster motion and shorter settling times. Finally, the rigid, lightweight structure of our motion system also minimizes load induced positioning errors to give superior positioning accuracy.

2.1 Compatibility

	EQ120	EQ180
Horizontal Mount	(M-)ILS (without top plate); (M-)IMS	(M-)IMS (without top plate)
Vertical Mount	(M-)ILS (all travel ranges); RV80; RV120	(M-)IMS300; (M-)IMS400; RV120; RV160

2.2 Weight of Brackets

Weights are indicated for brackets without any loads.

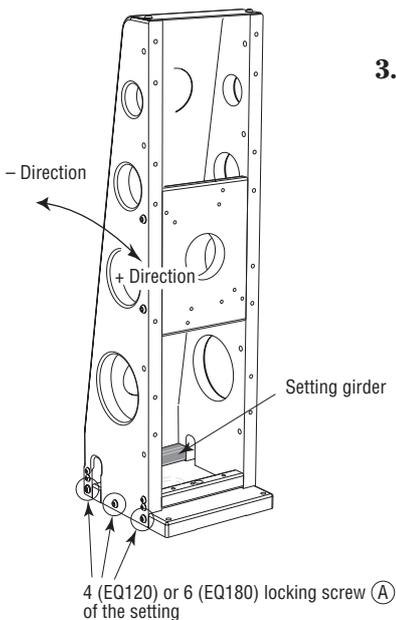
EQ120	(kg)	3.1
EQ180	(kg)	9.6

3.0 Squareness Adjustment

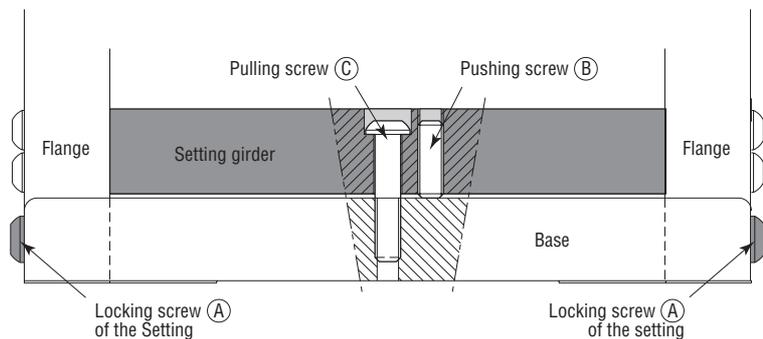
The squareness adjustment principle is the same regardless of the brackets and stages used.

ATTENTION

This process must performed only when the bracket is fixed on the holding stage, and when the vertical stage is mounted on the bracket.



3.1 Adjustment in “+ Direction”

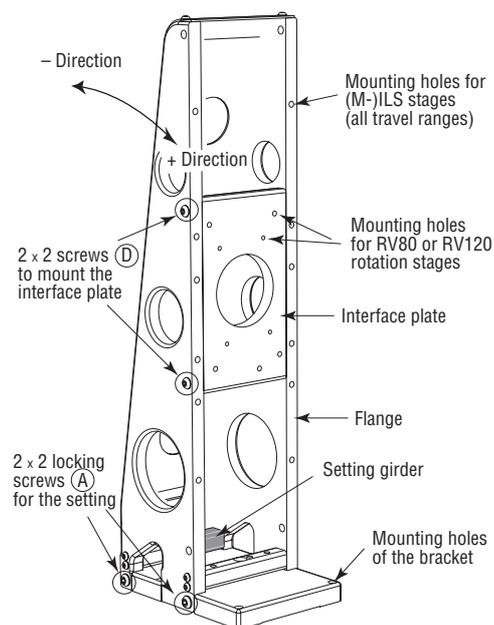


- 1 Unscrew slightly 4 or 6 locking screws (A) with the wrench supplied.
- 2 Unscrew the screw (C), then screw on the screw (B) with wrenches supplied.
- 3 Screw on the screw (C) to put its head in contact with the girder.
- 4 Tighten 4 or 6 locking screws (A).

3.2 Adjustment in “- Direction”

- ❶ Unscrew slightly 4 or 6 locking screws (A) with the wrench supplied.
- ❷ Unscrew the screw (B), then screw on the screw (C) with wrenches supplied.
- ❸ Screw on the screw (B) to put it in contact with the base.
- ❹ Tighten 4 or 6 locking screws (A).

4.0 EQ120 Bracket

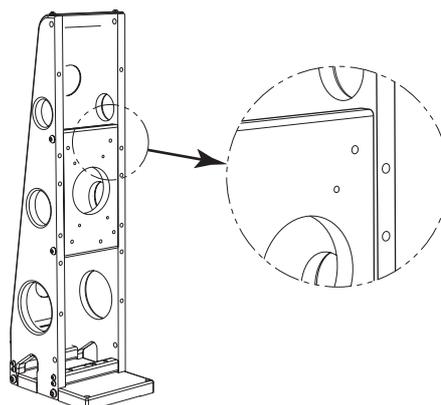


4.1 Interface Plate Position

ATTENTION

The EQ120 bracket is provided with its interface plate (mounting plane for RV rotation stages) with a slight offset towards flanges of the bracket (mounting plane for (M-)ILS stages).

This interface plate can be moved in 3 positions, but must not be taken off between both flanges of the bracket.





4.2 Mounting an ILS Stage in Vertical Position

- ❶ Fix the bracket on a support (ILS stage without interface plate, or working table) with 4 screws M6 x 25 and the wrench supplied.
- ❷ Make sure there is a slight offset between the interface plate and flanges of the bracket (see section 4.1).
- ❸ Fix the ILS stage with M6 x 16 screws (supplied). The quantity of mounting screws for ILS stages change in accordance with its travel range (see ILS user's manual).
- ❹ Adjust the squareness if necessary (see chapter 2).



4.3 Mounting a RV Rotation Stage in Vertical Position

- ❶ Fix the bracket on a support (ILS stage without interface plate, or working table) with 4 screws M6 x 25 and the wrench supplied.
- ❷ Unscrew slightly 4 interface plate mounting screws ①.
- ❸ Fix the RV stage on the interface plate (screws supplied). The quantity of mounting screws for RV rotation stages change in accordance with its size:
 - RV80: 4 screws M4 x 20 and wrench supplied.
 - RV120: 5 screws M5 x 25 and wrench supplied.
- ❹ As the rotation stage base is larger than the interface plate, press it on flange edges of the bracket.
- ❺ Tighten 4 screws ①.

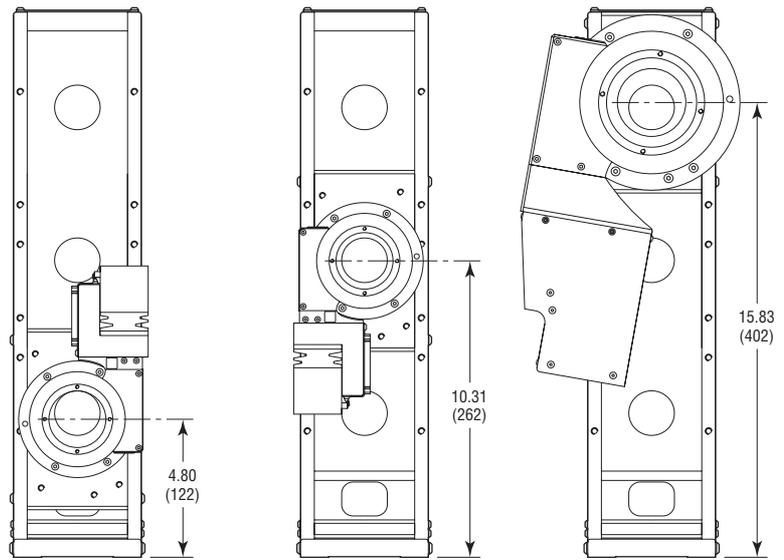


4.4 Moving the Interface Plate

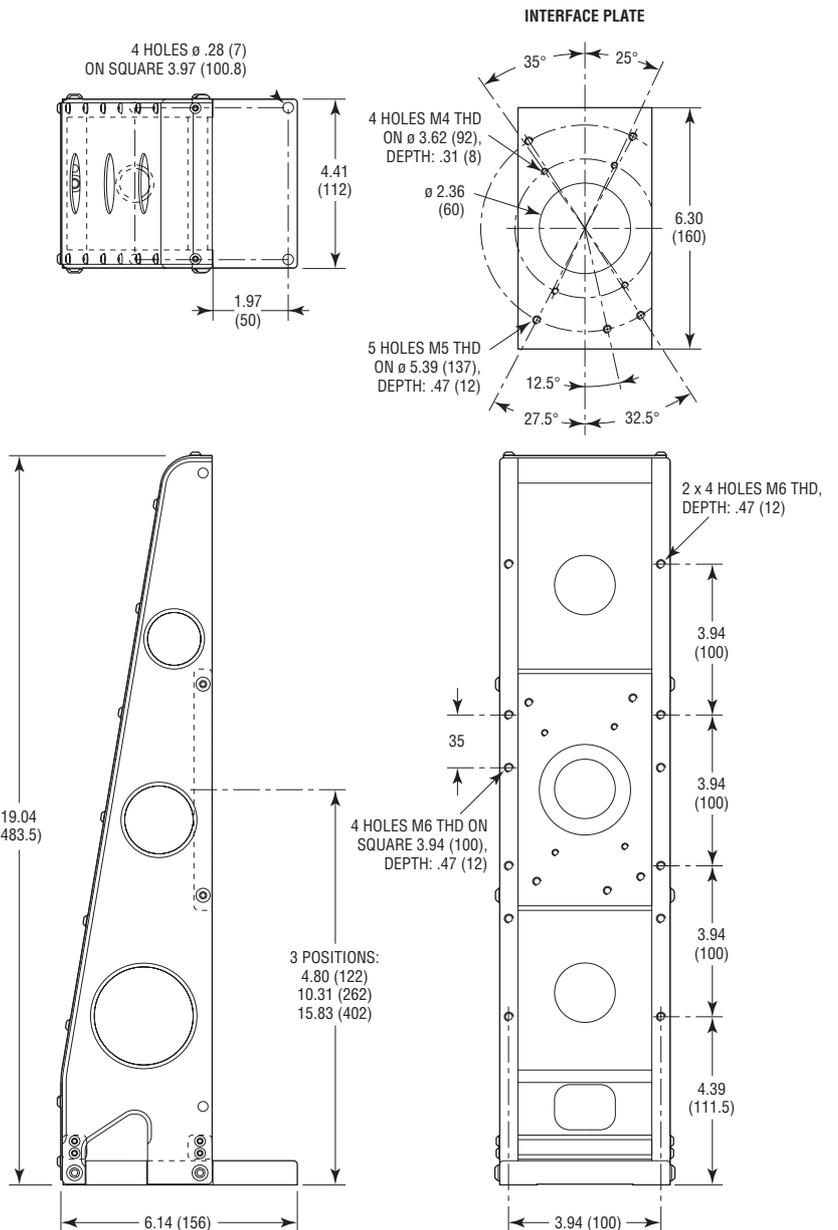
The bracket is supplied with the interface plate located at the middle position. Nevertheless, it can be moved to 3 different heights, according to your application:

- ❶ Remove 4 screws ① with the wrench supplied.
- ❷ Move the interface plate with a mallet to the height needed. It must not be taken off between both flanges of the bracket.
- ❸ Tighten slightly 4 screws ①.
- ❹ Fix the RV stage on the interface plate (screws supplied). The quantity of mounting screws for RV rotation stages change in accordance with its size:
 - RV80: 4 screws M4 x 20 and wrench supplied.
 - RV120: 5 screws M5 x 25 and wrench supplied.
- ❺ As the rotation stage base is larger than the interface plate, press it on flange edges of the bracket.
- ❻ Lock 4 screws ①.

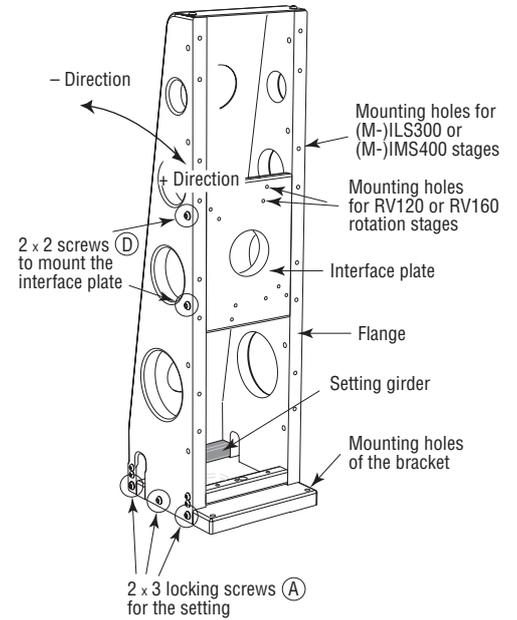
4.5 Interface Plate Positions



4.6 Dimensions



5.0 EQ180 Bracket

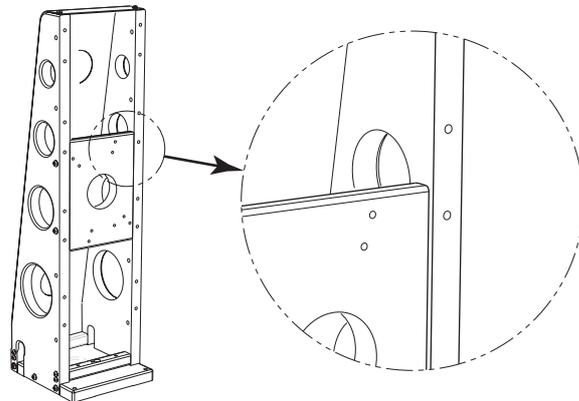


5.1 Interface Plate Position

ATTENTION

The EQ180 bracket is provided with its interface plate (mounting plane for RV rotation stages) with a slight offset towards flanges of the bracket (mounting plane for (M-)IMS stages).

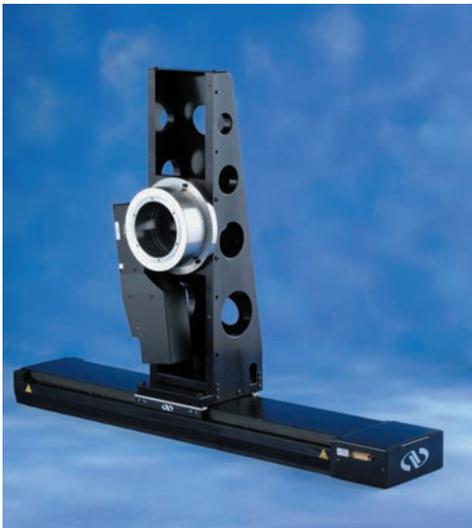
This interface plate can be moved in 3 positions, but must not be taken off between both flanges of the bracket.





5.2 Mounting an IMS Stage in Vertical Position

- ❶ Fix the bracket on a support (IMS stage without interface plate, or working table) with 4 screws M6 x 30 and the wrench supplied.
- ❷ Make sure there is a slight offset between the interface plate and flanges of the bracket (see section 5.1).
- ❸ Fix the IMS stage with 8 screws M6 x 40 (supplied). The quantity of mounting screws for IMS stages change in accordance with its travel range (see IMS user's manual).
- ❹ Adjust the squareness if necessary (see chapter 2).



5.3 Mounting a RV Rotation Stage in Vertical Position

- ❶ Fix the bracket on a support (IMS stage without interface plate, or working table) with 4 screws M6 x 30 and the wrench supplied.
- ❷ Unscrew slightly 4 interface plate mounting screws ①.
- ❸ Fix the RV stage on the interface plate (screws supplied). The quantity of mounting screws for RV rotation stages change in accordance with its size:
 - RV120: 5 screws M5 x 25 and wrench supplied.
 - RV160: 4 screws M5 x 25 and wrench supplied.
- ❹ As the rotation stage base is larger than the interface plate, press it on flange edges of the bracket.
- ❺ Tighten 4 screws ①.

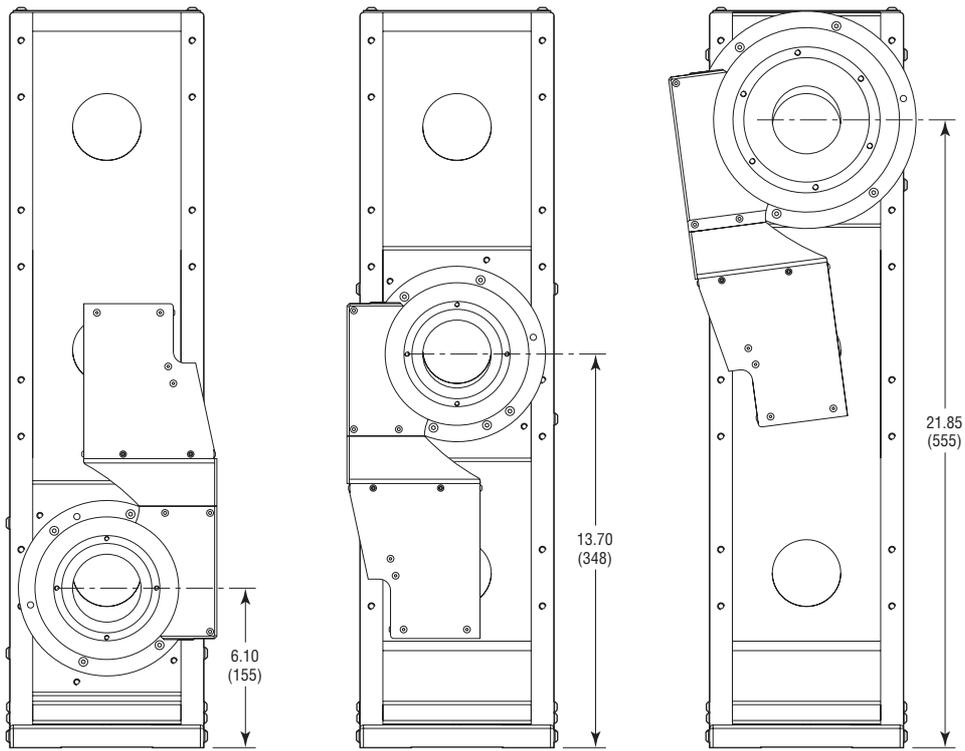


5.4 Moving the Interface Plate

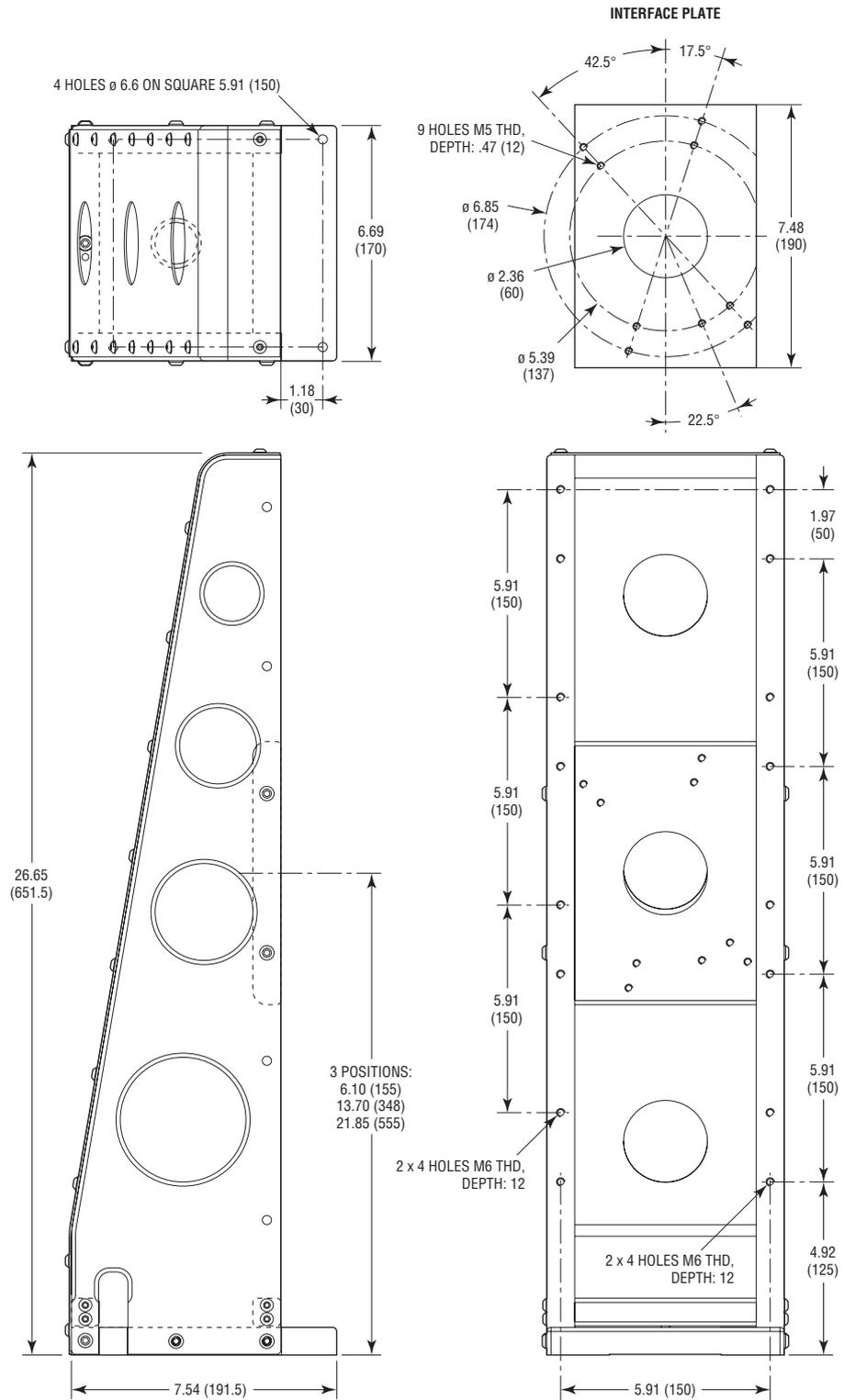
The bracket is supplied with the interface plate located at the middle position. Nevertheless, it can be moved to 3 different heights, according to your application:

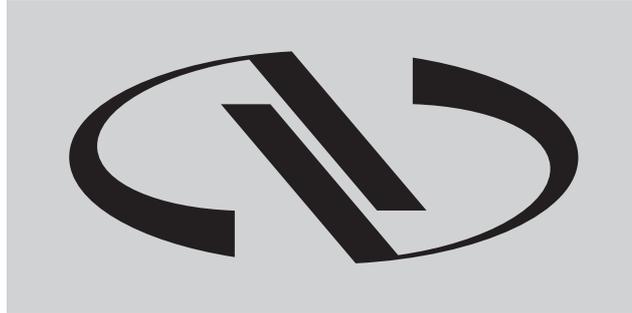
- ❶ Remove 4 screws ① with the wrench supplied.
- ❷ Move the interface plate with a mallet to the height needed. It must not be taken off between both flanges of the bracket.
- ❸ Tighten slightly 4 screws ①.
- ❹ Fix the RV stage on the interface plate (screws supplied). The quantity of mounting screws for RV rotation stages change in accordance with its size:
 - RV120: 5 screws M5 x 25 and wrench supplied.
 - RV160: 4 screws M5 x 25 and wrench supplied.
- ❺ As the rotation stage base is larger than the interface plate, press it on flange edges of the bracket.
- ❻ Lock 4 screws ①.

5.5 Interface Plate Positions



5.6 Dimensions





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