



K-SYSTEMS

USER MANUAL

Anti Vibration Table - AV1 and AV5

Version 05

Manual part no: 33095



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1 Unpacking and inspection

Unpack the equipment.

Check the packing and picking list to insure all accessories are there.

Examine the packing material carefully for separately packed items.

Check the table for external surface damage.

Please be aware that the springs must not be touched at any time. Please use gloves when you assemble the unit.

2 General description

The K-SYSTEMS Anti Vibration tables are designed to meet the requirements of ICSI Procedures. With an isolated microscope platform and a complex anti-vibration system, the table is preventing vibrations from reaching the microscope platform and dampening unavoidable vibrations in the shortest possible time.

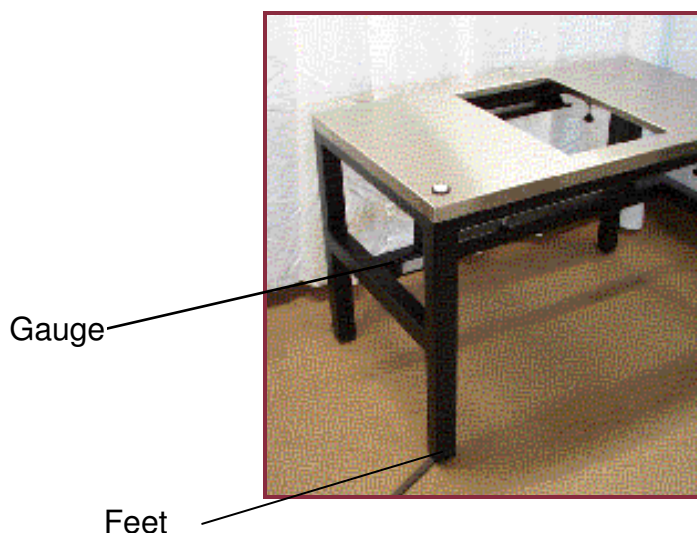
The inverted microscope is placed on an individually suspended floating platform. The platform must be levelled and isolated – meaning not touching – the rest of the table plate. The vibrations are reduced by friction between the platform and the springs holding the platform.

3 Assembling the AV1/AV5

For assembling the AV1 /AV5 please avoid touching the springs.

Place the anti vibration table in its required position on the floor. Preferably on a hard floor.

Level the table plate horizontally by adjusting the feet on the table legs. To ensure the best result, place the gauge/bulls eye on the table plate and make sure it is leveled.



NOTE: The table can be modified to optimally work with equipment of different weight. It is important that you know the exact weight of the equipment before proceeding. **See chapter 3.1.**

Put on the gloves. Remove the foam pads from the springs – without touching the springs with your bare hands.

Place the floating plate upon the springs, leave equal distance from all sides to the hole of the table plate for centering the floating plate. It is very important that there is no contact between the floating plate and the table!

Place the inverted microscope on the floating plate.

The position and height of the floating plate are adjusted by:

Loosen the four securing bolts



Turn the adjustment screws to the necessary position.



Tighten the four securing bolts again.



3.1 Weight adjustment

The anti-vibration table AV1 and AV5 can be used to hold equipment with a weight from 15 to 72 kg. However, the table needs to be installed correctly to have the optimal anti vibration ability.

NOTE: Before proceeding it is important that you know the exact weight (in Kg) of the equipment, which you will place on the anti-vibration platform.

When AV1 or AV5 leaves the factory it is equipped with 3 springs and an extra weight plate. See right column in the table below. The yellow areas indicate the optimal working conditions for the 3 different installation methods.

Example: The total weight of equipment placed on the anti-vibration platform with 3 springs should be in the range from 45- 72 Kg.

The Anti-vibration table can be modified in 2 steps to gradually work optimal with less heavy equipment on the platform.

Step 1: To work with equipment from 30-45 kg one spring is removed so only 2 springs are used.

NOTE: Only remove the middle spring, when needed.

Step 2: To work optimal with equipment from 15-30 kg 2 springs are installed and an extra weight plate must be used.

		2 springs and Weight plate		2 Springs without Weight plate		3 Springs without Weight plate (From factory)	
Equipment weight	Use:	Deflection	Frequency	Deflection	Frequency	Deflection	Frequency
Kg		mm	Hz	mm	Hz	mm	Hz
15-20	2 springs and weight plate	15.59	3.99				
20-25		18.13	3.70				
25-30		19.94	3.53	15.59	3.99	10.40	4.89
30-35	2 springs without weight plate	21.76	3.38	18.13	3.70	12.09	4.54
35-40		23.57	3.25	19.94	3.53	13.30	4.33
40-45				21.76	3.38	14.51	4.14
45-50	3 springs without weight plate			23.57	3.25	15.71	3.98
50-55				25.38	3.13	16.92	3.83
55-60						18.13	3.70
60-65						19.34	3.59
65-70						20.55	3.48
70-72						21.76	3.38

Instructions about how to remove the middle spring and how to install the extra weight plate can be found in the following pages:

3.1.1 Removing the middle spring

If the weight of the equipment that the AV table is going to hold is between 27 and 47 kg the middle spring needs to be removed in the following manner:

1. Unscrew the table plate; it is attached with 4 screws on the bottom side (only on AV1).
2. Remove the table plate (only on AV1).
3. Please put on gloves when touching the springs
4. In each side of the table there are metal rods screwed into the frame, unscrew these two metal rods.



5. Push the springs to one end and lift out the other metal rod



6. Remove the screw in the middle spring on the opposite side of the end that is lifted.
7. Pull out the middle spring.
8. Push the two remaining springs to the bottom side.
9. Move the other metal rod in place and screw both metal rods in place again.
10. Place the table plate back on and attach it underneath with the 4 screws.

3.1.2 Adding the Weight Plate

AV 1 table:

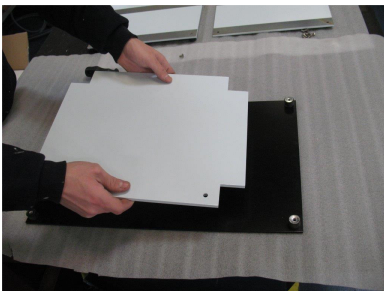
- 1) Place the floater on a flat surface



- 2) Remove the screws from the bottom plate, remove the plate.



- 3) Add the extra weight

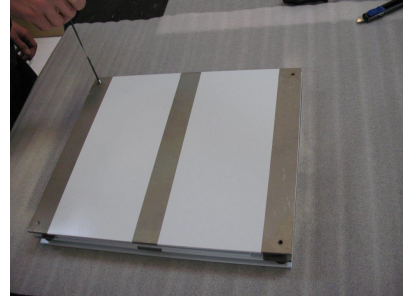


- 4) Mount and screw the bottom plate on again

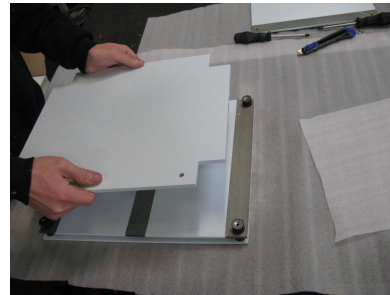


AV5 table:

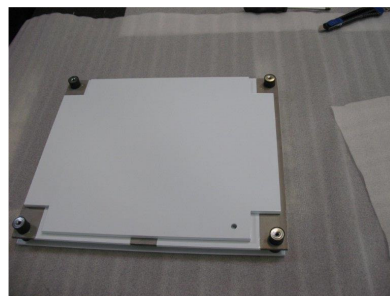
- 1) Place the floater on a flat surface and remove the screws



- 2) Remove the bottom plate and add the extra weight



- 3) The extra weight in place



- 4) Mount and screw the bottom plate and reinsert screws



4 Trouble Shooting

VIBRATIONS CAUSED BY	ACTION TO BE TAKEN
The floater is touching the rest of the table plate and vibrations are being transferred directly to the microscope.	Center the floater within the hole. Air should be all around the floater.
Loose tightening bolts.	Tighten the four tightening bolts.
The spring system is not painted – but need to be spotless clean and so should the floater where it rests on the springs. If there is dirt on any of these areas, friction is lost and vibrations are transferred to the microscope.	Clean the areas with 70% alcohol.
Tight cables from the micromanipulators will cause vibrations to be transmitted directly from the micromanipulator to the microscope.	Loosen the cables so they hang loose.
The floater is placed too high, resulting in the springs touching the underside of the table plate.	Lower the floater so it is in level with the rest of the table plate.
Microscope not placed evenly on the floater.	The weight of the microscope needs to be distributed evenly on the floater. Since most microscopes are heaviest in the back part, the microscope should be moved more to the front of the table plate.

5 Maintenance

All surfaces should be cleaned with a 70% alcohol solution on a clean cloth or lint-free paper towel.

1. Clean all components by wiping gently with gauze. To remove fingerprints or oil smudges, wipe with gauze slightly moistened with a mixture of ether (70%) and alcohol (30%).

Since solvents such as alcohol are highly flammable, it must be handled carefully. Be sure to keep these chemicals away from open flames or potential sources of ignition – for example, electrical equipment that is being switched on or off. Also remember to always use these chemicals only in a well ventilated room.

2. If smudges are difficult to clean, wipe them with a soft cloth slightly moistened with a diluted neutral detergent.

6 Technical data AV1

Material	Stainless steel
Weight AV1	100Kg
Stainless steel plate AV1.....	1200x800 mm
Height of table plate	780 mm
Undamped frequency	< 4 Hz
Maximum deflection.	22 mm
Mass (to be dampened)	15-72 Kg

7 Warranty – Liability issues

7.1 Limited Warranty:

K-Systems Kivex Biotec warrants to the purchasers of all devices and products manufactured by K-Systems Kivex Biotec, the product was prepared and tested in accordance with good manufacturing practices and guidelines and are in compliance to the CE norms issued by the competent authority.

In the event of product failure under normal use, due to defects in material or workmanship, within a period of twenty-four months (24) months from the date of shipment of the Product and from the point of origin, the product will be repaired, or at K-Systems Kivex Biotec option, replaced, at no charge. This limited warranty does not apply to products subjected to abnormal use or conditions, improper storage, damaged by accident, misuse or abuse, improper line voltage, products whose serial number has been altered, to products not shipped in accordance with the recommendations of K-Systems Kivex Biotec, and/or to products altered or serviced by anyone other than K-Systems Kivex Biotec authorised distributors. Distributor is responsible for the labour and travel costs during this period.

This limited warranty is exclusive and in lieu of all other warranties whether written, oral, expressed or implied. In particular, K-Systems Kivex Biotec does not warrant that the product is suitable for the needs of the purchaser and there are no warranties given as to merchantability or fitness for a particular purpose other than the one specified in K-Systems Kivex Biotec literature that accompanies every specific product. K-Systems Kivex Biotec assumes that the Purchaser is experienced in the use of this device and is able to judge from his/her own expertise the suitability or otherwise of the product for the intended use.

K-Systems Kivex Biotec reserves the right to change or discontinue this product without prior notice.

7.2 Liability:

Because K-Systems Kivex Biotec has no control or influence over the conditions under which this device is used, over its method of use or administration, or on handling of the product after it leaves its possession, K-Systems Kivex Biotec takes no responsibility for the results, use and/or performance of the product. K-Systems Kivex Biotec expects that use of the product will be confined to trained and expert users.

In no event shall K-Systems Kivex Biotec be liable for any direct or indirect damages including incidental, consequential or special damages, arising out of or in connection with the use or performance of the product.

If K-Systems Kivex Biotec provides you with technical documentation, this does not authorise you to perform repairs, adjustments or alterations on the device or accessories.

No representative of K-Systems Kivex Biotec and no vendor of the product is authorised to change any of the foregoing terms and conditions, and the purchaser accepts the product subject to all terms and conditions herein, subject always to any contrary provisions which are necessarily implied by stature or law notwithstanding the within terms and conditions.

7.3 Replacement:

As mentioned in the Limited Warranty, The decision whether to provide any remedy or whether to refund any portion of the purchase price shall be at the discretion of K-Systems Kivex Biotec.

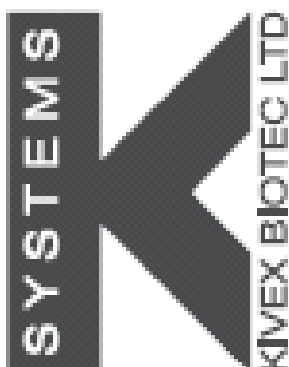
Before returning a product for any reason, please contact your nearest K-Systems Kivex Biotec distributor for assistance and instructions.

Only for all customers in Denmark, Norway and Sweden, please take direct contact with our head office at:

Tel: +45 4599 5600; Fax: +45 4599 5619; email: info@k-systems.dk

8 Technical assistance

For more information, contact the K-systems office nearest you. For Denmark, call **+45 45995600**. Outside Denmark, see your K-systems catalogue for the phone number of the office nearest you or visit our website at www.k-systems.dk for up to date world wide contact information.



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