

STable (©)

Active Pneumatic
Vibration Isolation Table

User Manual

SUPERTECH Instruments

Keeps You STable

Common Technical Data of the STable (©) Active Pneumatic Vibration Isolation Tables

Vibration attenuators: 2nd-order, linear phase pneumatic filters are built into the working cylinders of the table. Applying the 2nd-order vibration damping filters highly improves the vibration attenuation performance. This kind of pneumatic filter is a unique feature, what is employed only in the STable Active Pneumatic Vibration Isolation Tables. This solution is not available at our competitors.

Cutoff frequency of the high-cut isolators: 10 Hz

Flatness error: +/- 0.25 mm per meter as maximum, along any straight line, anywhere on the top plate.

Horizontality error of the top plate on a working vibration isolation table (in other words the hysteresis of the height control): +/- 1.5 mm as maximum, measured between two opposite corners of the top plate, in worst case.

Gas supply: any kind of non-toxic, non-flammable, non-aggressive, non-corrosive gas (e.g. Nitrogen, compressed air). We recommend to use a Quiet Air Compressor (see below) as the simplest, cheapest and most secure gas supply. Please read the notes and warning below about using local air supply.

Working pressure ranges of the gas supply:

2.0 to 2.2 Bar for the "small" tables

5.0 to 7.0 Bar for the "large" tables

The absolute pressure limits of the gas supply:

2.5 Bar for the "small" tables

7.5 Bar for the "large" tables

Color of the leg system: RAL 5019. "Any color can be ordered as long as it is dark blue" (citation from Henry Ford. Every Model T was painted black).

Material of the membranes in the working cylinders: fine and durable silicone.

Height of the table top surface from the floor: 82 cm or more. The height depends on the thickness of the top plate, please see the details later.

Weight of the leg system: approximately 120 kg

Weight of the top plate depends on the size. For rough estimation (based on the surface, width x depth): $170 \text{ kg} / \text{m}^2$

Earthquake-proof. There is no greater test than an unexpected circumstance life throws in our way. In the afternoon on 18th January, 2017 there was an earthquake, magnitude of 5.7 in Italy. Two pieces of STable Active Pneumatic Vibration Isolation Tables were operating approximately 120 km far away from the epicenter. Super resolution imaging processes was running on both tables (N-SIM on the first table and

N-STORM on the other). We could feel the building shaking, but the imaging process was not disturbed, the picture quality remained excellent.

The internal structure of the top plate is a trussed rectangular crossbar structure (patented) made of welded carbon steel by default. As an option, full stainless steel top plate (even the internal structure) can also be ordered. Every top plate is covered by dull stainless steel surface (skin).

The skin (top surface) of the top plate is stainless steel alloy with special magnetic feature by default. It provides the possibility to fix objects with magnetic bases on the top plate. Optionally you can choose a bit better rust-proof material, but it does not have magnetic capability. Their prices are the same. If you need the optional skin material, please mention it in the order.

Default skin: less rust-proof alloy with magnetic feature.

Its standard material code is 1.4016

Optional skin: highly rust-proof and acid-resistant alloy without magnetic feature.

Its standard material code is 1.4301

Rigidity of the top plate: the deformation of a 180 x 149 cm top plate, if 2 kN concentrated force load is applied to its middle point: 12 microns (0.47 mil). We carried out the same measurement on a SmartTable UT top plate (manufactured by a competitor firm). The deformation of the SmartTable was two times bigger on the same force load. So the result is: rigidity of our STable top plate is two times better than the competitor.

Deformation of the top plate for temperature change: the deformation of a 180 x 149 cm top plate, measured in the middle, if mass load was not modified, but we increased the temperature with 10 Centigrade: 8 microns (0.3 mil). We carried out the same measurement on a SmartTable UT top plate, too. The self-deformation of STable top plate for temperature change was nearly three times better (three times smaller deformation). The unit weight (the weight referring to the same size) of STable top plates is approximately two times bigger compared to the competitor's SmartTable UT top plates. But we will keep manufacturing of welded steel structure top plates, because we focus on the better performance instead of the lighter weight.

Metric M6 threaded holes drilled on the top plate in 25 x 25 mm pattern can be ordered as an option. As we call it this is optical hole pattern. Most of the customers require it. If you do not need this hole pattern on the top plate, in other words if you need a top plate without holes, you should specify it in the order. Other, user-specified hole arrangements, or special shaped, even big holes (e.g. for bottom or base port camera) can be ordered, as well.

You can order any size of table. The price of the leg system (in other words table support) is independent of the actual size. There is a fixed price for the "small" and another constant price for the "large" leg systems. The price of the top plate is proportional to its surface area. The smallest available size is 98 x 66 cm. Custom size of table does not mean harder price, only longer manufacturing time is necessary (because they are not in stock as the frequently sold models). The frequently sold (in other words our favorite) sizes of tables are:

980 x 660 mm
1100 x 800 mm
1200 x 900 mm
1500 x 980 mm
1800 x 1800 mm

There are many orderable accessories of the STable (©) Active Pneumatic Vibration Isolation Tables. You can find their detailed description on our website.

Active Pneumatic Vibration Isolation Tables (Small Size)

In our terminology "small" size means, if the top plate is smaller than or equals to 1.5 m².

Thickness of the top plate: 110 or 170 mm (depending on the size).

Height of the top surface of the top plate from the floor depends on the thickness of the top plate. To compensate the flatness error of the floor, each legs are adjustable by +/- 1 cm. Below you can see the nominal heights:

Top plate thickness	Height of the top surface (of the top plate)
110 mm	82 cm
170 mm	88 cm

For a "small" table, optionally, you can order Impala granite top plate. This is a very resistant and smart material, but it is a very difficult procedure to make holes on the surface of the granite plate. However we accept requirements for a few holes. The specification blueprint of the fixing holes on the granite plate should be received by us before starting the manufacturing process.

Maximum mass load of the legs: 4 kN, including the top plate.

Active Pneumatic Vibration Isolation Tables (Large Size)

In our terminology "large" size means, if the top plate is bigger than 1.5 m².

Thickness of the top plate: 170 to 350 mm (depending on the size).

Height of the top surface of the top plate from the floor depends on the thickness of the top plate. To compensate the flatness error of the floor, each legs are adjustable by +/- 1 cm. Below you can see the nominal heights:

Top plate thickness	Height of the top surface (of the top plate)
170 mm	88 cm
210 mm	92 cm

250 mm	96 cm
280 mm	99 cm
310 mm	102 cm

Maximum mass load of the legs: 8 kN, including the top plate.

The Parts of the STable (©) Vibration Isolation Table

The Active Pneumatic Vibration Isolation Table has got four legs and a top plate (by the terminology of our well known competitor it is table top). The legs are assembled together with strong horizontal beams. We call this 4-leg structure leg system. Some competitors call it table support. They mean the same. In every leg there is a pneumatic working cylinder on the top of the leg. These working cylinders form a virtual surface, on which the top plate is floating. The actual height of the pistons in the working cylinders are controlled by a pneumatic control system based on the valve assemblies. Physically the Active Pneumatic Vibration Isolation Table has got four legs, but logically it is a table with three legs. This feature gives an excellent stability on the three base points. This trick is realized on that way that the two legs on the front have got their own control systems each. But the two legs on the rear side of the Active Pneumatic Vibration Isolation Table are internally connected parallel and controlled by only one control system. This arrangement forms a virtual rear middle-position leg between the two rear legs.

Protection Rules

There are a few simple, but very important security rules to protect the table. It is indispensable to keep them!

The disposable rubber rings on the height sensing levers (see the text later and Figure 4.) should be installed during the transportation periods only! These disposable rubber rings are used to fix the height sensing levers to their security bumpers. Never apply a gas supply to the table, if the rubber rings are put onto the height sensing levers, because if the height sensing levers cannot move, they will blow up the silicone membranes of the working cylinders immediately!

Never disconnect any internal pneumatic connectors, because it will result a continuous loss of the gas supply and a fault in the Quiet Air Compressor.

The working cylinders of the "small" tables are not fixed in the legs. They are held in their place simply by the gravity. If you tilt the leg system during moving and installation, please be careful not to pull out them from the legs or not to drop out them to the floor. The working cylinders must not be disassembled. The working cylinders are calibrated and put into their places in the factory.

You should never disassemble or open any screws of the valve assembly in any case. All positions of the screws are fine calibrated and fixed on the valve assembly by the factory. They must be kept in their original position always, except the height sensing springs (see Figure 4.). Height sensing springs are the only parts which can be adjusted by the user.

With the height sensing springs of the valve assemblies (see the description later) you CAN NOT adjust the horizontal level error of the top plate. Several other manufacturers of vibration isolation tables use the pneumatic system on the top of the vibration isolation for the leveling purpose, as well. That method simplifies the construction of the legs, but worsens the vibration isolation features. In our tables the pneumatic system deals with the vibration suppression function only. The pneumatic system is adjusted to its optimal working point for the best vibration attenuation. The adjustment of the horizontal level error is a simple mechanical task. In our tables it is carried out by the leg system. You can find the description later in this User Manual, how to adjust the horizontal level error of the leg system.

If you want to move the table, it is necessary to remove the top plate from the leg system, because the top plate is very heavy and it is easier to move it independently.

The leg system should be moved as one unit. The legs must not be disassembled and the working cylinders must not be removed from the legs.

It is strictly forbidden to tilt the leg assembly at an extreme angle (more than 30 degrees), because the working cylinders would fall out! The leg system must be moved top side up. The working cylinders always have to be on the top, because only gravity keeps them inside the leg system.

Before removing the top plate from the leg system, the gas supply should be switched off and its tube should be disconnected from the table.

There are only two tasks necessary to do before removing the top plate from the leg system:

- 1) Switch the gas supply off and disconnect its tube.

- 2) New disposable rubber rings should be installed (see the text later and Figure 4.) to fix the height sensing levers to their security bumpers. The rubber rings should be installed during the transportation periods only! Never apply a gas supply to the table, if the rubber rings are put onto the height sensing levers, because if the height sensing levers cannot move, they will blow up the silicone membranes of the working cylinders immediately!

If you want to relocate a table, you can find further important advices in the downloadable document titled "Precautions for Moving or Relocating a Previously Working STable (©) Active Pneumatic Vibration Isolation Table".

Unpacking and First Time Installation

There is a detailed description in the following sections, how to install a new STable (©) Active Pneumatic Vibration Isolation Table. Furthermore you can find another, dedicated Table Installation Manual with pictures. It is also downloadable from our website. We suggest studying both of these documents before starting the installation. In this User Manual every step of the installation is explained. The Table Installation Manual is an abridged document, but the pictures can help you.

First you should remove all the packing materials and packing assemblies. Free the leg system, the top plate, the Quiet Air Compressor, the armrest, the armrest screws and the table-leg chocks (holding mats) independently. In this phase the disposable rubber rings should be left on the height sensing levers to fix them to their security bumpers (as this is the transport position set by the factory). Put the leg system to its final place and refine its position. After final positioning of the leg system the adjustment of the perfect horizontal level of the leg system is necessary (see the next paragraph for this topic). After adjusting the legs you can put the top plate on the legs and then you must remove the disposable rubber rings from the height sensing levers. Now you can connect and apply the gas supply. The default position of the height sensing springs are calibrated by the factory and usually no other adjustment is necessary. However if you would like to refine it, please see the appropriate section below. Finally you should check the vertical position of the pistons in the working cylinders. The vertical position of the pistons depends on the current position of the top plate compared to the leg system. If any more adjustments are necessary, please see the description later and the explanation. Figure 5. for "small" and Figure 7. for "large" tables will help you to understand, respectively.

Positioning and Adjustment of the Legs

In 2022 we modified the construction of the leg system. The method of the adjustment of the horizontality and the type of the casters were changed. Please see Figure 1. for the the tables manufactured until 2022 and see Figure 2. for the tables manufactured since 2023.

As we mentioned earlier in this User Manual, with the height sensing springs of the valve assemblies (see their description later) you CAN NOT adjust the horizontal level error of the top plate. The adjustment of the horizontal level can be carried out only in this phase with the height adjusting screws of the legs. This is a delicate feature of STable (©) Active Pneumatic Vibration Isolation Tables. The legs of other manufacturers are more simplified. Our pneumatic control system deals with keeping the optimal working point of the pistons in the working cylinders only. To understand the aim and function of the pneumatic control system see Figure 3., Figure 5. and Figure 7. and their explanations.

Explanation of Figure 1. for the the tables manufactured until 2022:

Put the table-leg chocks (holding mats) under each leg between the floor and the height adjusting screws. The height adjusting screws are very strong screws with 2 inches in diameter. There are turning holes drilled through the height adjusting screws. You can turn them with an appropriate rod tool put through the turning holes of the height adjusting screws. Never turn the height adjusting screws by hand, because the threads are sharp and they can cause a serious injury of your fingers. Put a spirit level on the lower horizontal joint beams, on the top sides of the beams. You can adjust the leg system into an accurate horizontal level position with the height adjusting screws. It is an iterative procedure. You should put the spirit level on the front-to-back beams on both sides and the rear beam, repetitively. During the measurements you can fine adjust the horizontal level position of the complete leg system.

Explanation of Figure 2. for the the tables manufactured since 2023:

The casters are strong enough to hold the weight of the whole table with all the equipments installed on it. But the casters are NOT designed and they are NOT able to roll the table on long distances during moving and installation! You must not roll the table on the casters more than 5 meters. If you roll longer than 5 meter distances, the casters will go wrong!

In the new version of casters (after 2022) the function of rolling the table and the adjustment of horizontality is connected together in one assembly. On the side of the housing of the caster you can see an open window. In this window there is a manual wheel and a 17 mm nut. If you turn one of them, it turns the other one, too. They are connected together. On the "small" tables you can lift up the actual leg by the manual wheel, because the mass load on one leg is not too big. In any case, if you can not turn the manual wheel, you can use a 17 mm wrench (spanner) to lift the given leg up. On the bottom of the caster assembly there is a strong leg, what you can move up or down by the manual wheel and/or the 17 mm nut.

Put a spirit level on the lower horizontal joint beams, on the top sides of the beams. You can adjust the leg system into an accurate horizontal level position by the manual wheel or the 17 mm nut. It is an iterative procedure. You should put the spirit level on the front-to-back beams on both sides and the rear beam, repetitively. During the measurements you can fine adjust the horizontal level position of the complete leg system.

Finally, on every table, after adjusting the perfect horizontality of the leg system, there is a last tricky step to do. When you have found the horizontal level position of the leg system perfect according to the spirit level, you should check the out-turning (clockwise turning from top looking) torque of the four height adjusting screws. The four out-turning torques should be approximately equal to each other. This is a fancy trick, how to measure forces by measuring torques. This is the only possible verification method to test the really stable position of the legs on the floor, because if the four out-turning torques are equal on the four legs, then the mass forces on the four legs are equal and the leg system will not waggle.

The Parts of the Working Cylinder

See Figure 3. In the figure you can see all the key elements of the working cylinder. After the installation and periodically during the lifetime of the table the position of these parts should be checked. Figure 3. shows the piston in a slightly wrong position. The piston is shown in a bit too high position (see later the explanation of Figure 5. and Figure 7.). The reason, why the piston is shown in an inadequate position in Figure 3. is that the silicone membrane can be seen in this (too high) position of the piston only. The working position of the piston is determined by the height sensing spring (what can be seen in Figure 4.).

The Parts of the Valve Assembly

See Figure 4. The valve assembly is a quite difficult key part of the table. The reason, why it is assembled on a removable base plate independently from the leg is, that there are many parts on the valve assembly, which are fixed, fine adjusted and calibrated in the factory. They must not be modified under any circumstances. If there is any trouble with the control system, the complete valve assembly can be changed with the two fixing screws. It is a very easy repairing procedure. You can find a downloadable document on our website, how to change the valve assembly. After changing the valve assembly, only the proper adjustment of the height sensing spring is necessary. There is a precise protection mechanism of the valve realized on the valve assembly. The valve is a very sensitive part. The role of the security bumper is to protect the valve against the huge force appearing in those cases, when no gas supply is applied and the height sensing lever is pressed down by the mass force of the top plate. The height sensing spring is a special construction. Under normal working circumstances (when the table is working) it works as a solid stick, because the spring is quite strong compared to the working force of the height sensing lever. When the gas supply is switched off, the height sensing lever is pushed onto the security bumper and the height sensing spring is shortened by the huge mass load of the top plate. The actual position of the piston in the working cylinder is determined by the adjustment of the respective height sensing spring. Always take care of the disposable rubber rings. They should be installed during the transportation periods only! Never apply a gas supply, if the disposable rubber rings are installed, because if the height sensing levers cannot move, they will blow up the silicone membranes of the working cylinders immediately!

Adjustment of the Optimal Position of the Pistons

Supertech Instruments manufactures any size of tables. The tables are categorized into two groups; there are "small" and "large" tables. In these two categories of tables we use different working cylinders. The adjustment procedure of the optimal position of the pistons in the working cylinders are the same either for the "small" or

the “large” tables. The appearances of the two versions of working cylinders are different. That is, why you can find two drawings in the end of this User Manual. Figure 5. shows the working cylinder of a “small” table and Figure 7. shows the working cylinder of a “large” table.

The total vertical moving distance (stroke length) of the piston in the working cylinder is approximately 20 mm. The task of the height sensing spring is to determine the optimal position of the piston. That is the optimal point, when the piston is located on the halfway of its total stroke length. It would be quite difficult to measure this position, but there is a more simple method. You can check the position of the piston visually. It is drawn in Figure 5. and in Figure 7., respectively. The optimal positions are shown in the middle drawings of the figures.

Vertical Angle Adjustment of the Pistons

See Figure 6. The adjustments written in this section are applicable for the “small” tables only. The pistons of the “large” tables have a self-adjustment mechanism to assure their optimal vertical angle.

Before carrying out these adjustments, the optimal positions of the pistons should be adjusted as described in the previous section. When the optimal positions of the pistons are perfect, you should check the vertical angle positions of every piston each by each. When there is no gas supply applied to the table (after installation or repositioning of the top plate) the holding mats find an undefined position on the bottom surface of the top plate. When the table is working, you can see, if the vertical angle position is good or not. If it is not good, the top surface of the piston and the top surface of the respective working cylinder form different surfaces with an angle between them. You could adjust the height of the piston according to the previous section perfectly, but independently of it, the parallel relation of the surfaces can be inaccurate. This situation can be seen on the upper drawing in Figure 6. The good vertical angle position can be seen on the lower drawing in Figure 6. If you want to modify the vertical angle position of the piston (with moving the holding mat horizontally on the bottom surface of the top plate), you should lift the top plate a little bit. It is quite heavy. Be careful! You should minimize the angle shown on the upper drawing in Figure 6. If you try to modify, move the holding mat with small distances. One millimeter movement of the holding mat on the bottom surface of the top plate results approximately two degrees in the angle difference of the surfaces (between the piston and the respective working cylinder).

Quiet Air Compressor

There is a very popular and comfortable accessory of STable Active Vibration Isolation Tables: the Quiet Air Compressor. This air pump requires no adjustment or maintenance, but it can work for decades. The Quiet Air Compressor has got its internal pressure regulator circuit optimized to supply our Vibration Isolation Tables.

The working actions of the air compressor make no pneumatic or mechanical disturbances for the table.

If there are no externally forced mechanical transients on the top plate of the STable Active Vibration Isolation Table, the air compressor starts itself a few times a day. A usual STable Active Vibration Isolation Table has got such tiny level of air leakage what starts the Quiet Air Compressor one or two times a day. If the Quiet Air Compressor starts itself more than five times a day, please call the repair service.

Technical Data

Default pressure range for the "small" tables:

Low (switch on) pressure: 2.0 Bar

High (switch off) pressure: 2.5 Bar

Default pressure range for the "large" tables:

Low (switch on) pressure: 5.0 Bar

High (switch off) pressure: 7.0 Bar

The default pressure ranges are optimized for STable Active Vibration Isolation Tables manufactured by Supertech Instruments. Other pressure range can also be specified in the order, because we manufacture Quiet Air Compressors for any user defined specification, for any 3rd-party table.

Volume of the internal air buffer tank: 3 dm³

Supply voltage: 230 VAC by default. We can manufacture 115 VAC versions upon unique requests.

Current consumption in the working periods: 1.6 A (at 230 VAC)

Peak current in the starting periods for approximately 2 seconds: 12 A (at 230 VAC)

Noise level: 40 dB(A). It is equal to the noise level of a usual household refrigerator.

Weight: 20 kg

Important Notes about the Quiet Air Compressor

Quiet Air Compressor must always stand top side up! Quiet Air Compressor must not be tilted, because the internal lubricant oil would flow out on the tube connectors.

Quiet Air Compressor is not a dangerous equipment, but you should inspect it. If you recognize, that your Quiet Air Compressor starts more than three times a day, or even it works continuously, please stop it at once and do not switch it on again! In such a case please call the repair service immediately! A normally working Active Vibration Isolation Table starts the Quiet Air Compressor three times per day as

maximum. The total worktime of the motor built into the Quiet Air Compressor is 1000 hours. It results, that the lifetime of the Quiet Air Compressor under normal conditions will be approximately 30 years. But if the motor works continuously, the 1000 hours means 41 days only! After spending the lifetime of the motor the Quiet Air Compressor can even catch fire!

If the motor stops, but the supply voltage is applied (it is the situation when a fault appears), the current of the motor is increased dramatically, resulting a very high temperature. There is an internal thermal protector fuse, what normally breaks the current in such a case. But this fuse can also become faulty in worst case, resulting a fire in your lab, and the building! That is, why you should inspect the Quiet Air Compressor periodically.

The starting current of the Quiet Air Compressor is approximately 12 A (at 230 VAC). It is decreased to the nominal 1.6 A in a few seconds after starting the motor, but it is necessary to connect the Quiet Air Compressor into a wall plug capable to provide 12 A of current.

Using Central Air Supply

It is much more secure to operate an Active Vibration Isolation Table from a Quiet Air Compressor, because the output pressure of the Quiet Air Compressor is controlled by its internal pressure regulator. It must never be higher than the absolute pressure limits of the gas supply (given at the Common Technical Data paragraph above). On every output connection point of the central air supply of the building there is always a pressure regulator installed. But that regulator is manually adjustable and can be turned up accidentally up to 8 or 10 Bar. The silicone rubber membranes of the table will immediately blow up above 2.5 Bar (or 7.5 Bar for the "large" tables)! We suggest you to use the Quiet Air Compressor as air supply in the system for the sake of the Table.

If you even decide to use the central air supply, please specify this fact in the order and we will provide the necessary safety adaptor for you.

Attenuation Diagram of the STable (©) Vibration Isolation Tables

In the end of this booklet you can see the worst case attenuation diagram of the STable (©) Active Pneumatic Vibration Isolation Tables, measured on the vertical axis. In the diagram the relative attenuation is shown as a function of the frequency. During the measurements a vertical excitation was applied at the floor standing the Table on. The spectral characteristic of the excitation was a white noise. The measurements were carried out in the time domain and then they were transformed off-line to the frequency domain.

This attenuation diagram was measured on an empty (nothing on the top plate) 980 x 660 mm Table. This is why the diagram shows the worst case situation. This statement means that in most of the real situations better performance can be measured than what this diagram shows. The corner frequency of the vibration isolator working cylinder is reciprocally proportional to the mass load on the working cylinder. On the one hand the bigger tables have heavier top plates. On the other hand there are always equipments installed on the top plate, increasing the total weight. The bigger mass results a lower corner frequency and as a result it gives better vibration attenuation performance above the corner frequency.

Warranty

Supertech Instruments gives you 5 years of full warranty for electronic products and 3 years of full warranty for mechanical products by default. Longer warranty periods can also be defined and agreed (the actual conditions should be discussed before placing the order).

Supertech Instruments gives you full warranty for its products against defects in materials or workmanship as long as the equipment has been subjected to normal and proper use. During the warranty period, faulty products will be repaired or replaced free of charge provided they are returned to our workshop. Postage of the warranty repair actions is paid by the Customer. The exceptions are the Vibration Isolation Tables. There are special conditions introduced for repairing of Vibration Isolation Tables (see below).

The warranty does not cover the faults made by the user.

If the installation was not carried out on a workmanlike manner, the warranty ceases. We provide many resources to help you to install the product correctly: user manual, installation manual, repair manual, free helpdesk on the phone and in email. With this background the workmanlike installation is easy. However if you are not sure you can do it, you can involve our product specialist.

Since the STable (©) Vibration Isolation Tables and Quiet Air Compressors are heavyweight equipments, in case of a fault they cannot be transported by the simple methods to our workshop. If a repair action is needed, there are two possible alternate solutions:

- 1) The product specialist of Supertech Instruments travels from the Factory to the location where the table is installed and repairs on site. In this case the expense of the repair task (spare parts and the labor costs) is paid by Supertech Instruments, but the traveling costs (to there and back, too) and the accommodation expenses (if it is necessary, if the distance is far) are paid by the Customer. In such cases Supertech Instruments counts the real pure travel costs (without applying any profit on it), because to carry out and support the perfect repair action is our interest, too.

2) Supertech Instruments provides all the necessary spare parts and background support (technical documentation, email, phone and videophone consultation, etc.) for the repair action for free. The Customer provides a qualified and practiced professional who repairs on site. This way the travel costs (mentioned in the previous paragraph) can be eliminated by the Customer. In such cases the Customer should choose the appropriate specialist and the Customer has all the responsibilities for the professional quality of the chosen specialist. The first action what the local specialist must do is to read and follow every step of the Table Fault Locating Guide issued by Supertech Instruments. After completing the steps of the Table Fault Locating Guide the local specialist can (and should) consult (on the phone, via email or internet videophone) the product specialist of Supertech Instruments and must follow his instructions. This way the local specialist can efficiently repair on site by the full support of our product specialist.

Further Information Sources

As the first step for further technical information please visit our website (www.superte.ch). On the website of Supertech Instruments you can find related products and further information.

On the Download page of our website you can find many more useful documents, technical descriptions and application leaflets to support our products. Please check the list of the available documents.

Technical hotline via email (all of them work):
office@supertechinstruments.co.uk (Supertech Instruments UK Ltd.)
office@superte.ch (Development Department of the Factory)
office@super-tech.eu (European Branch Office)

International technical hotline on the phone: +36 20 9234 386

In the past Supertech Instruments used several websites with similar contents for the different affiliates. For the sake of stability and continuity we keep working all the previously used domain names forever, but now they are automatically redirected to this one website presenting our measuring equipments:

www.superte.ch

Specifically for our featured products we introduced several dedicated websites. These dedicated websites can be accessed directly if you prefer this way. Certainly they are linked from the Product page of the general website of Supertech Instruments, too. The specific websites are opened automatically if you click on the respective product group on the Products page of our website.

www.opticaltable.eu (Vibration Isolation Table and Support Systems)

www.ivftable.com (IVF Vibration Isolation Solutions)

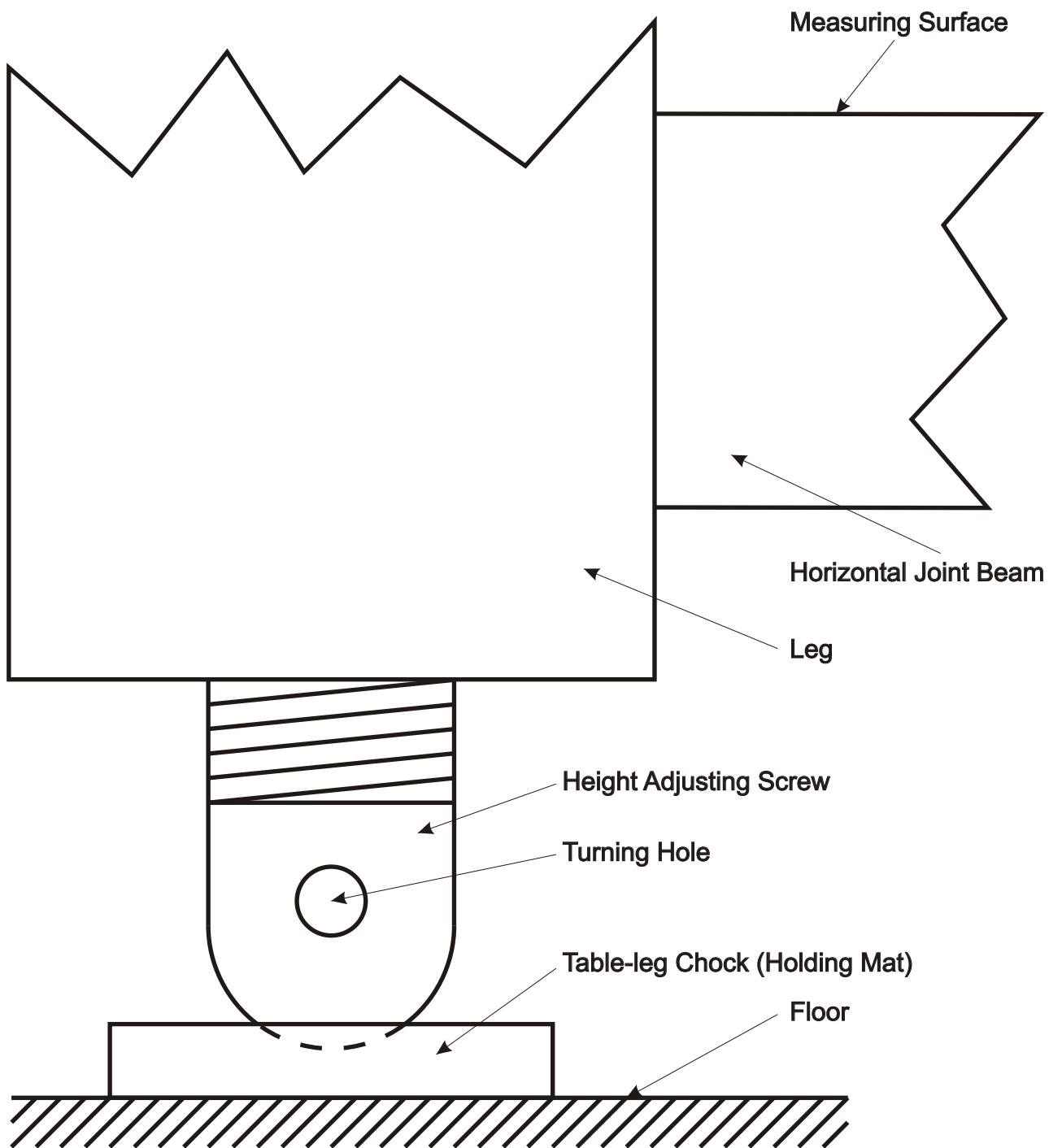


Figure 1. Horizontal level adjustment of the leg system on the tables manufactured until 2022

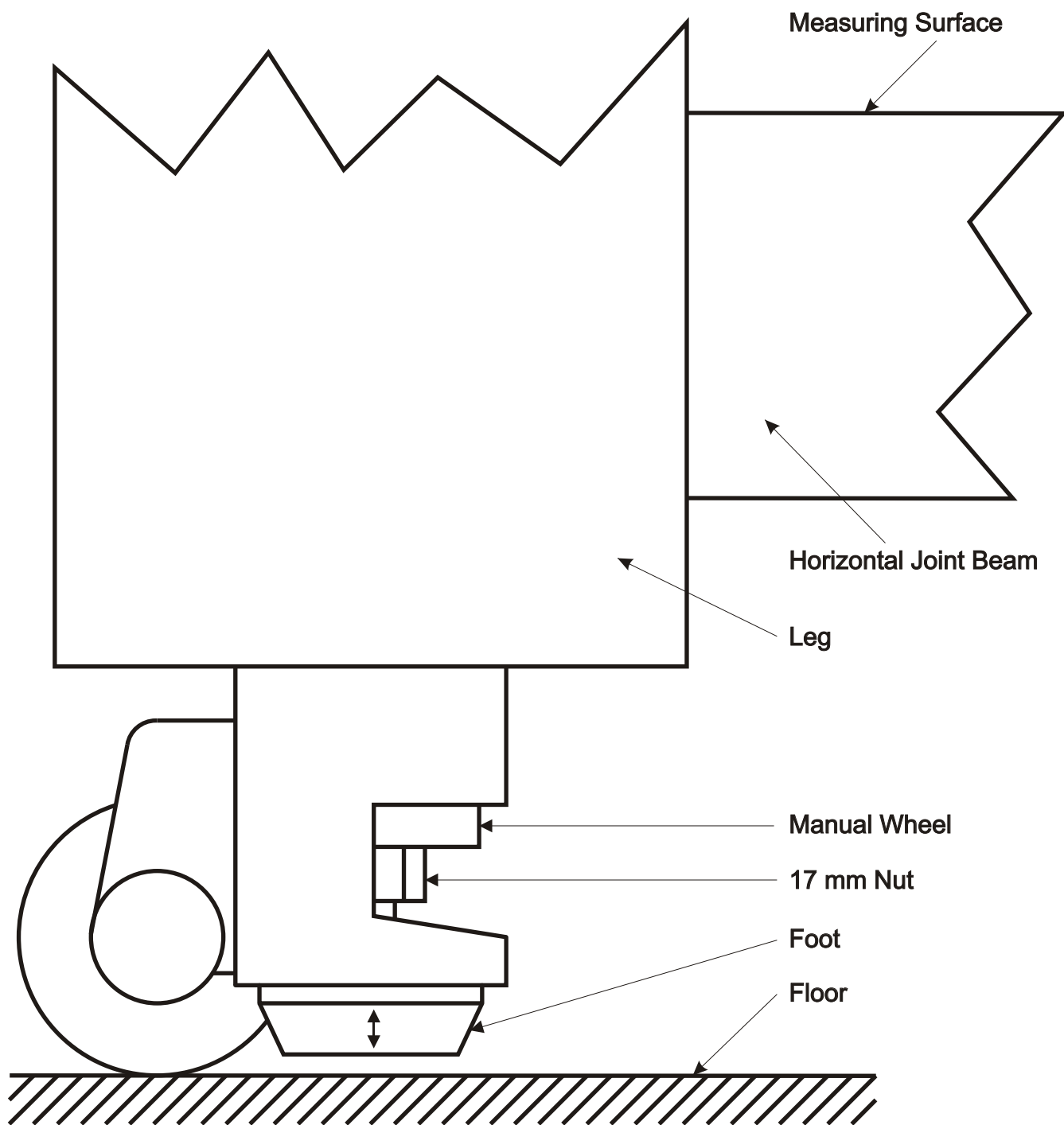


Figure 2. Horizontal level adjustment of the leg system on the tables manufactured since 2023

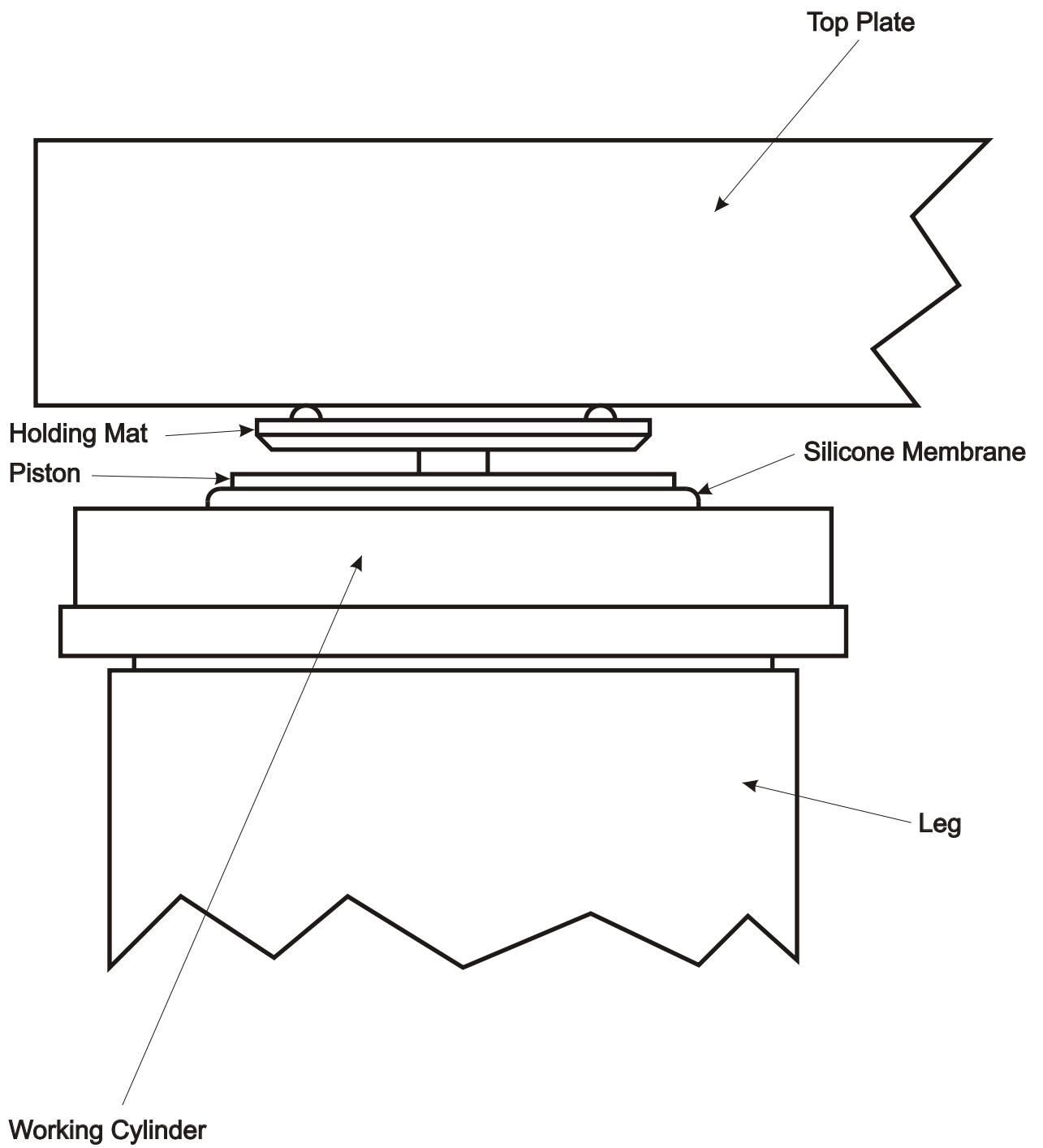
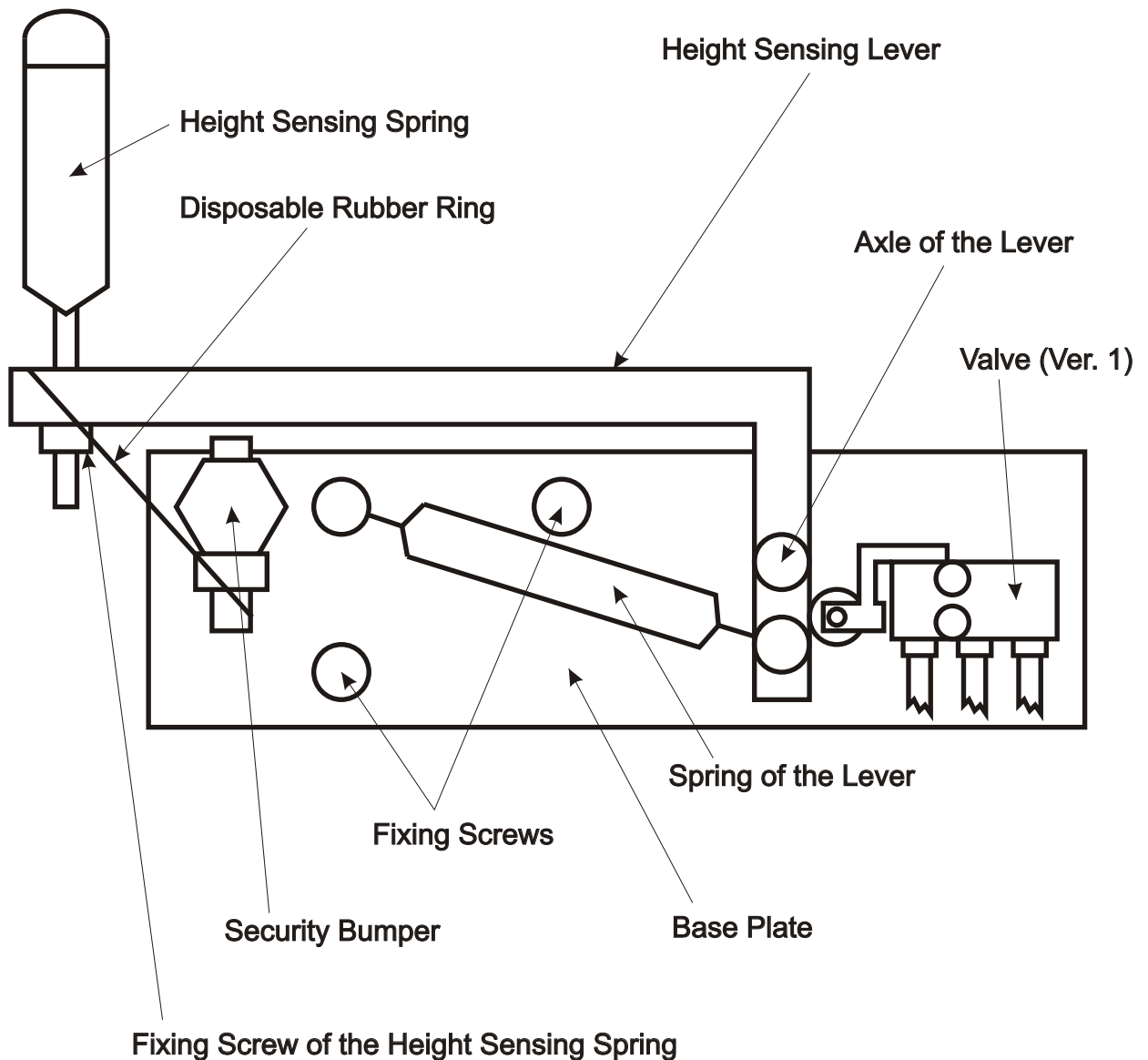


Figure 3. Parts of the Working Cylinder (Small Table)



If there is any adjustment seems to be necessary, only the Fixing Screw of the Height Sensing Spring should be opened, and the Height Sensing Spring should be turned into another position. After making the modification the Fixing Screw should be closed again.

Modification of any other parts of this Valve Assembly is prohibited, because serious damage of the Silicone Membrane and/or the Valve can happen.

Figure 4. Parts of the Valve Assembly

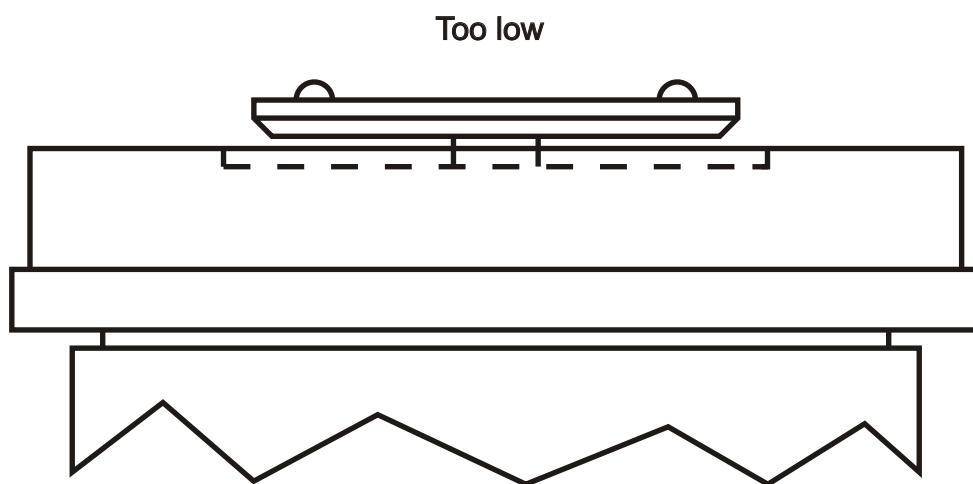
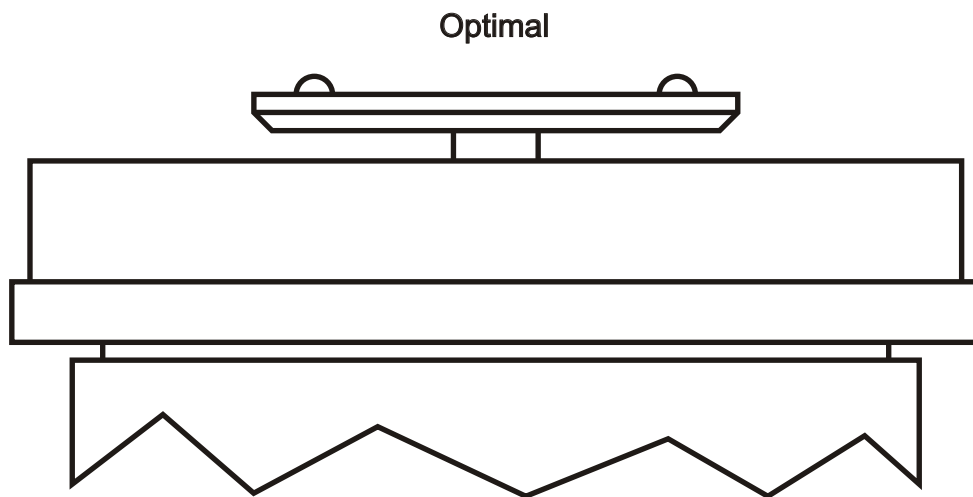
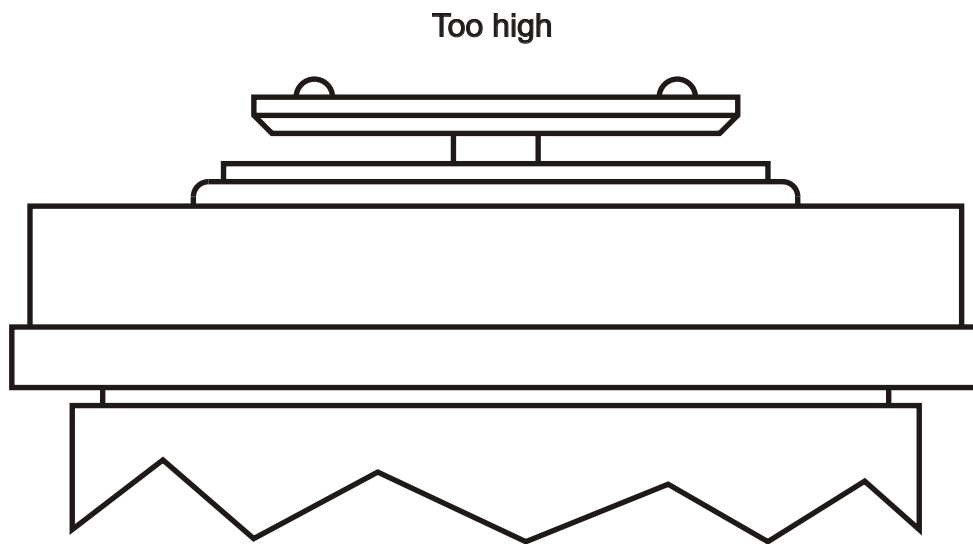


Figure 5. Adjusting the height of the Piston in the Working Cylinder of the Small Tables

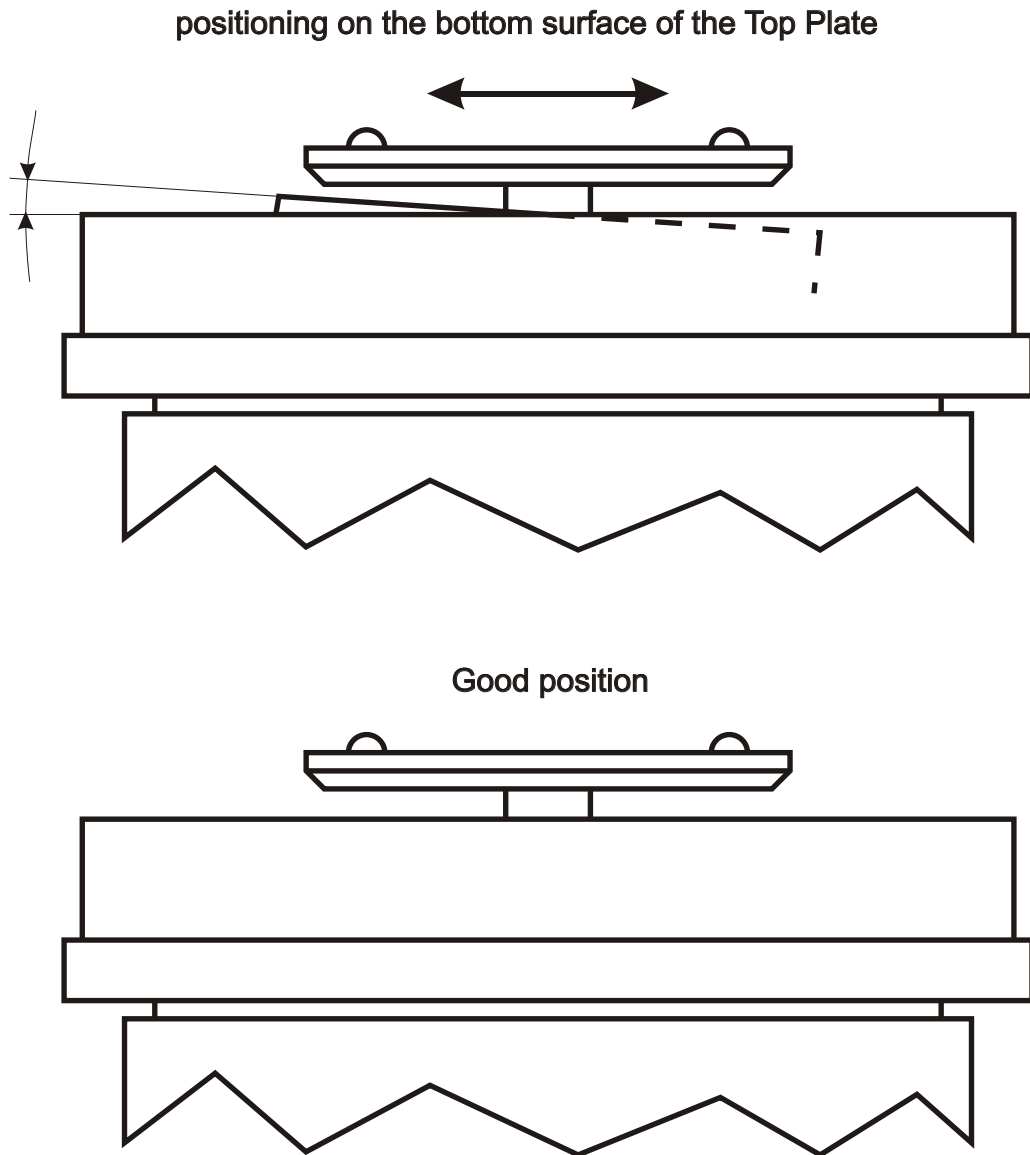


Figure 6. Positioning of the vertical angle of the Piston in the Working Cylinder of the Small Tables

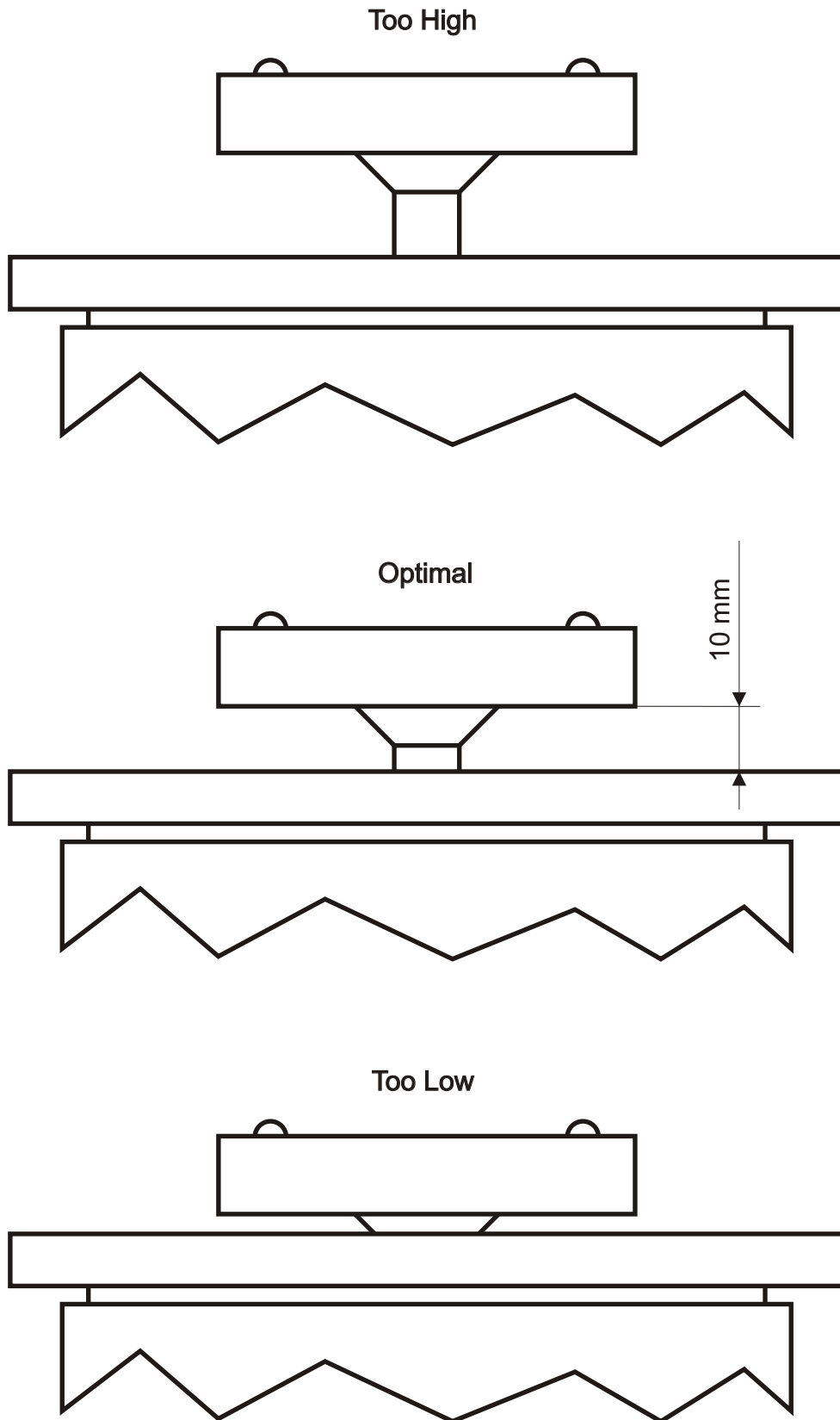
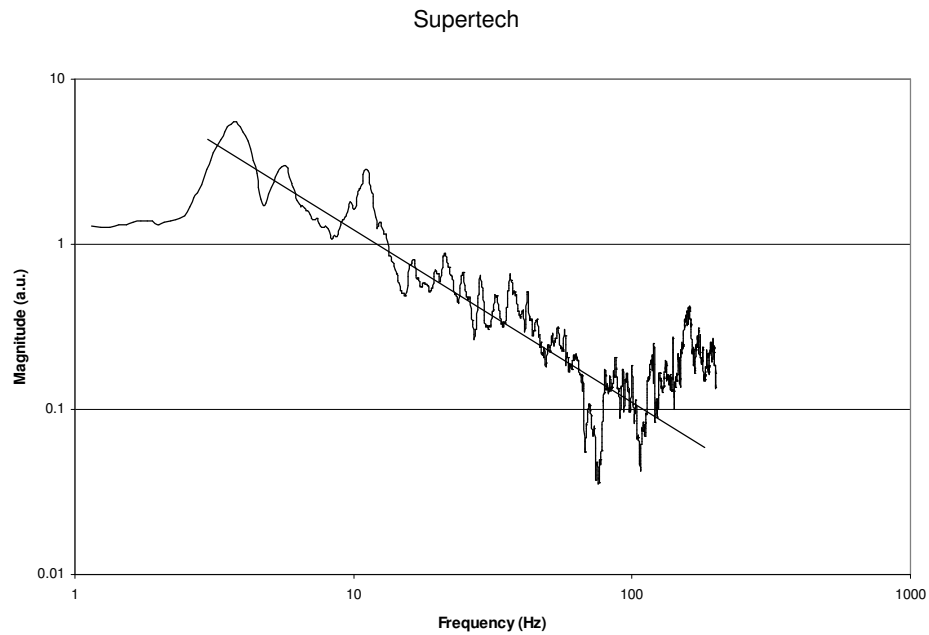


Figure 7. Adjusting the height of the Piston in the Working Cylinder of the Large Tables

Attenuation of the 980 x 660 mm
Pneumatic Vibration Isolation Table
Manufactured by
SUPERTECH Instruments



This graph shows the worst case attenuation, because it was measured on the smallest vibration isolation table SUPERTECH Instruments manufactures. The bigger sized tables have better attenuation, proportional to their size.