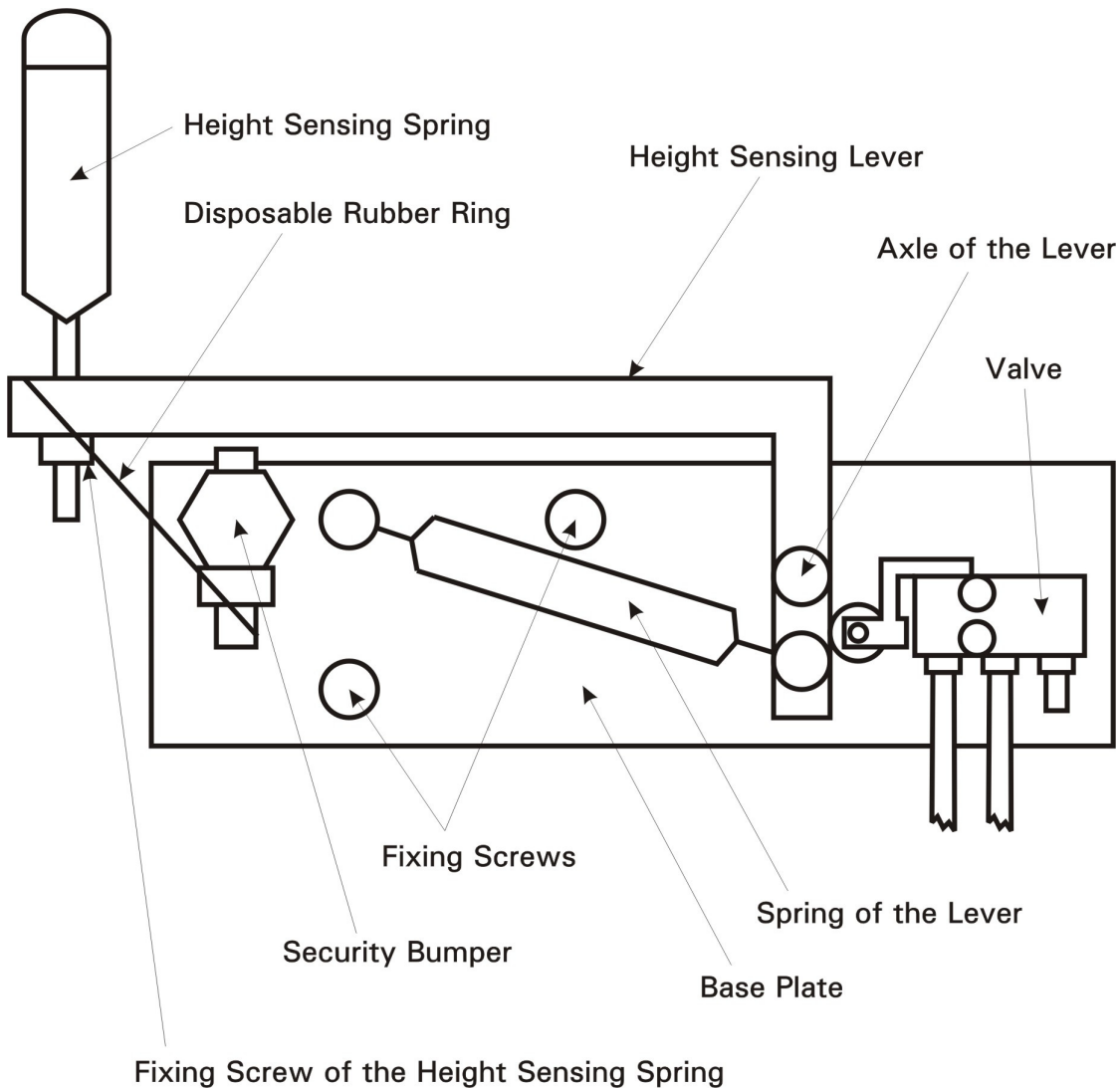


Changing of the Valve Assembly on the STable (©) Active Pneumatic Vibration Isolation Tables

Supertech Instruments started to manufacture active pneumatic vibration isolation tables in 1995. Since then we modified the construction of the valve assembly and changed the type of the control valve several times. But during the technical development we focus on the compatibility rigorously. We let you able to repair even the oldest tables. The complete valve assemblies are compatible with each other since 1995. The fixing points, the pressures and the tube diameters are the same.

The following drawing shows the parts of the valve assembly.



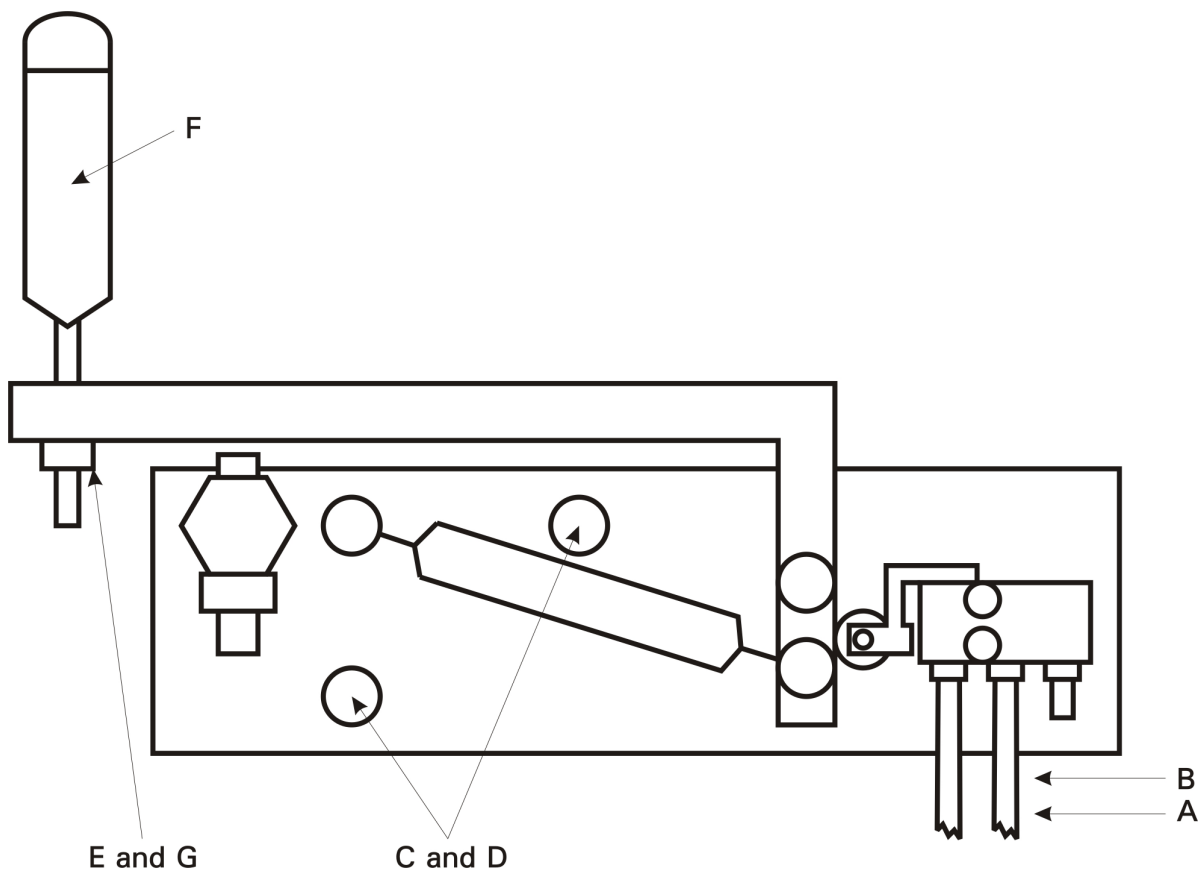
If any height adjustment of the top plate seems to be necessary, only the fixing screw (lock nut) of the height sensing spring should be opened, and the height sensing spring should be turned into another position. After making the modification the fixing screw of the height sensing spring should be locked (tightened) again.

Modification or adjustment of any other parts of this valve assembly is prohibited, because serious damage of the silicone rubber membrane and/or the valve can happen. As a result of the improper adjustment, the silicone membrane of the working cylinder will blow up!

Under normal working conditions of the vibration isolation table the lower edge of the height sensing lever and the top edge of the steel base plate of the valve assembly are parallel (within ± 1 degrees). In this position there is approximately 2 to 4 mm of dead zone can be measured at the top of the height sensing spring and certainly together with it on the top plate, as well. In the dead zone the valve assembly keeps the optimal working position of the cylinder with no air consumption of the table. The valve assembly is adjusted and calibrated on this way by the factory.

Switch off the Quiet Air Compressor before starting the changing procedure of the valve assembly.

The steps are shown in the following drawing marked by arrows starting at A.



The first task is to identify, which versions are your old and new valve assemblies. The drawings of the different versions and the functions of the tube connectors of the different valve models can be found in the end of this booklet. Look up and use those drawings to identify the versions. Then you will be able to mark the tubes correctly before removing them from the valve.

Mark the blue tubes with a water resistant marking pen or with sticker labels. The optimal place of marking is approximately 30 mm from the end of the tubes on the valve. **Arrow A**. The aim of marking the tubes is to ensure, that they will be pushed back to their appropriate place (on those tube connectors what have the same functions) on the new valve assembly.

Be careful! If you accidentally change the tubes on the new valve assembly, or you push them back to another tube connector, not onto their appropriate place, the silicone rubber membrane of the respective cylinder will be overloaded with the air pressure. As a result the silicone membrane will blow up!

On "Version 1" valves cut the blue tubes with a sharp knife in 10 mm of distance from the end of the tube connector of the valve. **Arrow B**. While you cut the first tube, take care not to hurt the other tube. Small injury on the tube will result a continuous air leakage (shortening the lifetime of the Quiet Air Compressor) in the future.

On the newer valve versions, from "Version 2" to "Version 6" you should not cut the blue pneumatic tubes. These valves have fast locking tube connectors. You can remove the tube from the port if you push the sleeve around the tube towards the body of the valve. **Arrow B**. After changing the valve assembly you can easily push the tube back into the fast locking tube connector of the appropriate port of the new valve.

Be careful! After removing the blue tubes from the valve hold them carefully with your fingers. Just after removing fix the blue tubes not to allow them going back to the leg. You should glue them to the outer blue painted steel surface of the leg with an adhesive tape for example. If the end of the cut tube would go into the leg through the hole (where it goes out), you would not be able to reach that tube any more without removing the top plate and disassembling the table!

Release and unscrew the fixing screws with a 5 mm hex-key wrench. **Arrow C**.

Put the faulty valve assembly away.

Put and hold the new valve assembly on its place.

Screw back and tighten the fixing screws with a 5 mm hex-key wrench. **Arrow D**.

Push the blue tubes back onto the new valve. Be careful! Push back the blue tubes onto their appropriate tube connectors, according to the marks you made earlier (**Arrow A**). The function of the tube connectors of the different valve models can be seen in the end of this booklet. If you accidentally change the two tubes, or you push one of them back to another tube connector, not onto its appropriate place, the silicone rubber membrane of the respective cylinder will be overloaded with the air pressure. As a result the silicone membrane will blow up!

If you made any mistake during marking of the tubes before removing them from the old valve or if you just want to be sure, you can check which one of the two tubes is the Air Supply. In the earlier steps of the procedure the Quiet Air Compressor was switched off and the tubes were removed from the valve. As a result, both the air tank of the compressor and the actual cylinder are empty of air. There is no air coming out from the open ends of the blue tubes. In this situation if you switch the Quiet Air Compressor on for a short time, there will be an air flow coming out from one of the two tubes. That tube is the Air Supply.

Be careful! The valve is very sensitive. You can break it easily. Push the tubes back completely on the new valve, but do not apply too big force to the valve or to the tube connectors.

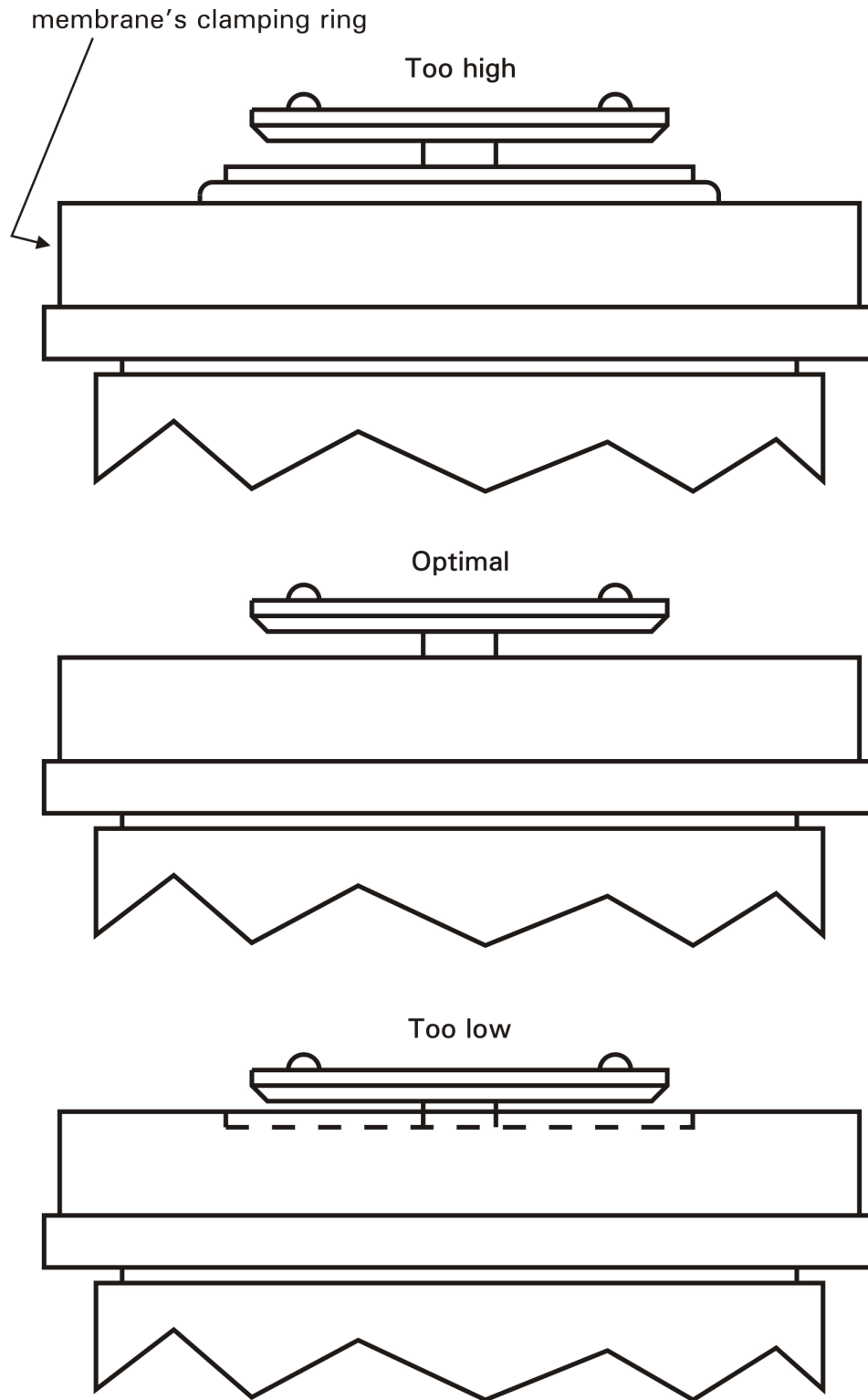
Release the fixing screw (lock nut) of the height sensing spring with an 8 mm wrench. **Arrow E.**

Crouch in front of the table in order to be able to see all cylinders at the same time. Switch on the air supply for short periods. Meanwhile, PAY ATTENTION that every cylinder moves; but they do not rise too high. It is advised to make this observation while somebody is taking care of the mains switch of the Quiet Air Compressor or the shut off lever of the central air supply. In case a cylinder “stays upwards” the pressure supply must be switched off WITHOUT DELAY, and the height sensing lever of the actual valve have to be pushed high (pushing up the end of the height sensing lever) to release the air from that cylinder. Leaving the pressure overload in the “stayed upwards” cylinder will result the silicone rubber membrane blowing up!

If neither of the cylinders was “stayed upwards”, switch on the Quiet Air Compressor and leave it switched on.

Adjust the height of the piston in the cylinder of that leg, where the new valve assembly was installed. You can adjust the height of the piston with turning the height sensing spring. **Arrow F.**

The optimal setting is shown in the following drawing. Make sure that the upper plane of the cylinder’s piston is not only at the same height but also in the same plane as the upper plane of the rubber membrane’s clamping ring. This assures the table’s “self-adjusting” mechanism during use. For this adjustment there is more information at our website. You can find step-by-step description with drawings and pictures on how to fine adjust the table in the downloadable User Manual and Installation Manual.



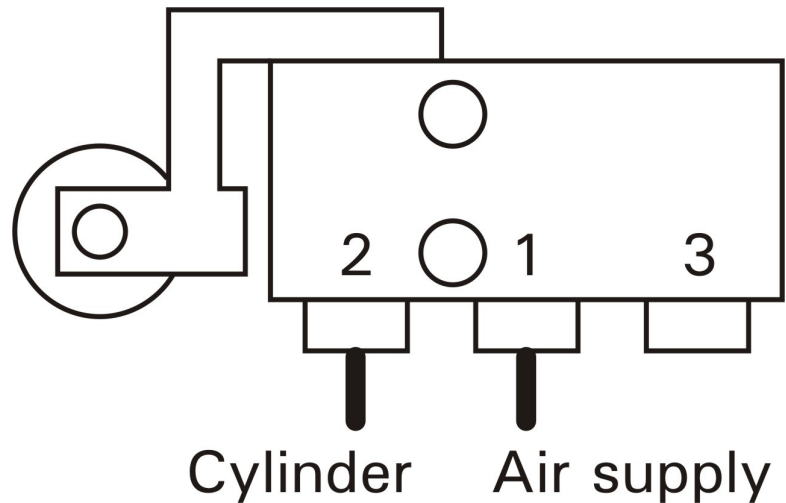
After adjusting the optimal height of the piston in the cylinder, fasten the fixing screw (lock nut) of the height sensing spring with an 8 mm wrench. **Arrow G.**

If any of the tasks described above cannot be carried out properly, the process should temporarily be stopped. In such a case ask for help by phone: +36 20 9234 386, or by email: office@superte.ch or office@supertechinstruments.co.uk

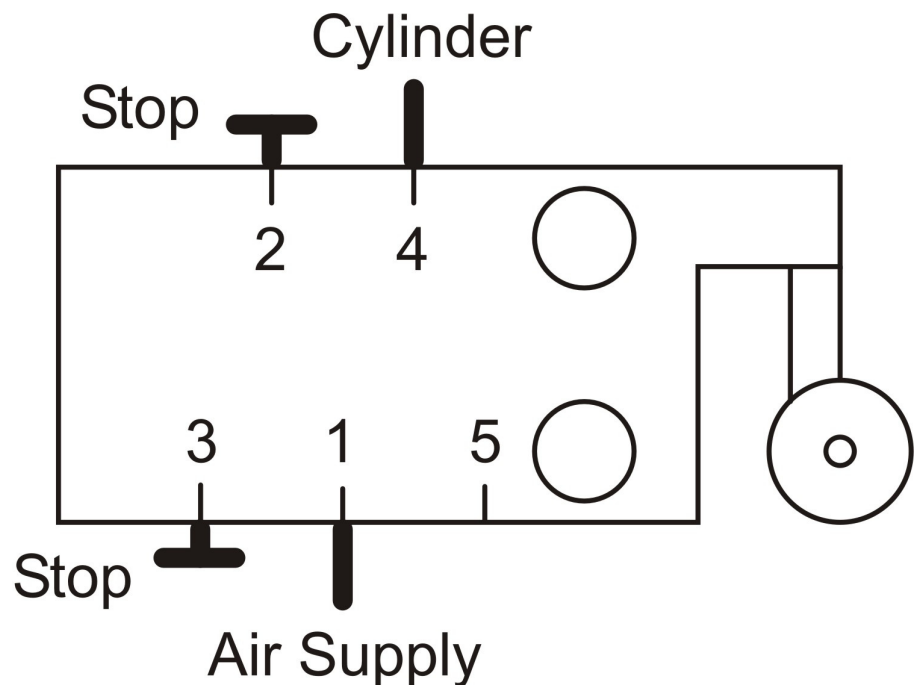
Please send the faulty valve assembly back to the factory of Supertech Instruments. We will examine it in detail, because we want to find the reason of the fault. We make huge efforts to improve the quality and reliability of our vibration isolation tables. The analysis of faults is a very important point in the quality assurance process.

In the following drawings you can see the functions of the tube connector ports of the different valves used since 1995 on our pneumatic vibration isolation tables.

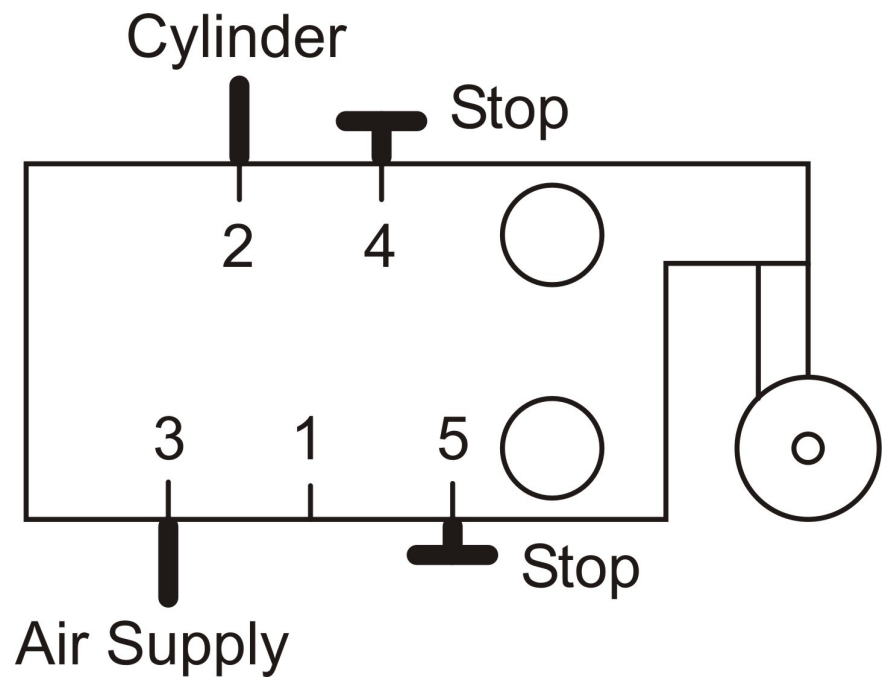
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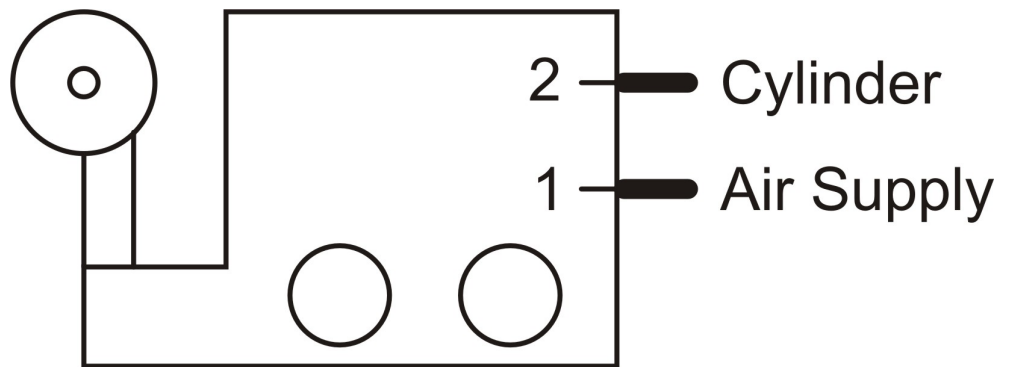
Version 2



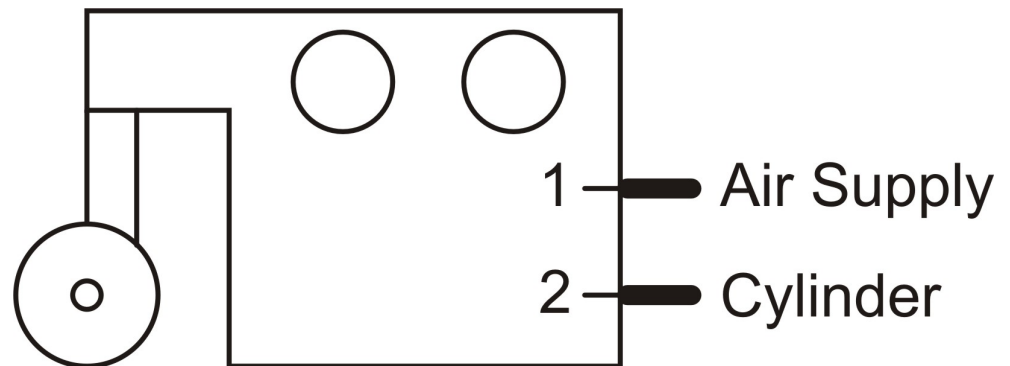
Version 3



Version 4



Version 5



Version 6

