



9100/9200 Series
KSI VIBRAPLANE
VIBRATION ISOLATION
WORKSTATION

ASSEMBLY AND OPERATION
INSTRUCTIONS MANUAL

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Section I

As you Begin:

Congratulations! The VIBRAPLANE Model 9100/9200 Vibration Isolation Table you have purchased has been designed by Kinetic Systems, Inc., for many years of trouble-free user service. It will deliver superior vibration isolation performance for a broad range of research, quality assurance, and production applications.

The VIBRAPLANE Model 9100/9200 Vibration Isolation Systems is a four leg Active Air Suspension System. The maximum gross load capacity for the VIBRAPLANE Model 9211, 9101 and 9102 are 700 lbs, 800 and 1,300 lbs respectively at 80 PSI. If the VIBRAPLANE 9100/9200 Table is to be operated at less than maximum gross load capacity, a proportionately lower pressure air source may be used. For example, a 30 to 50 PSI air source is generally adequate for most small instruments.

In order to get full benefit from your VIBRAPLANE Model 9100/9200 Table, we suggest you follow the easy, step-by-step instructions in this manual.

Technical Assistance:

Need Technical Assistance? First, refer to the “Troubleshooting” section of this manual (Pages 24-25). If your problem persists, the technical support staff at Kinetic Systems, Inc. will be glad to answer any questions. Just call us at (617) 522-8700, or FAX (617) 522-6323 or Email sales@kineticsystems.com.

Damage due to shipping:

When your VIBRAPLANE 9100/9200 Table arrives, inspect it carefully for any damage due to shipping. If any damage is detected, notify the **shipping carrier immediately**. Save all packing materials.

Section II

Set Up Procedure:

The following equipment and tools are recommended to set up your 9100/9200 Series Vibration Isolation System:

- Hydraulic lifting device
- Carpenter's level
- Screwdriver
- Adjustable wrench

Refer to Fig. 1 for outline drawings of Labmate I and II Workstation. All 9211 and 9100/9200 Series Vibration Isolation Tables are completely assembled and tested at the factory, except for optional items such as Guardrails, Casters, Monitor Supports, Sliding Shelf (for 9101 & 9102 only), and Fixed Shelf prior to shipment.

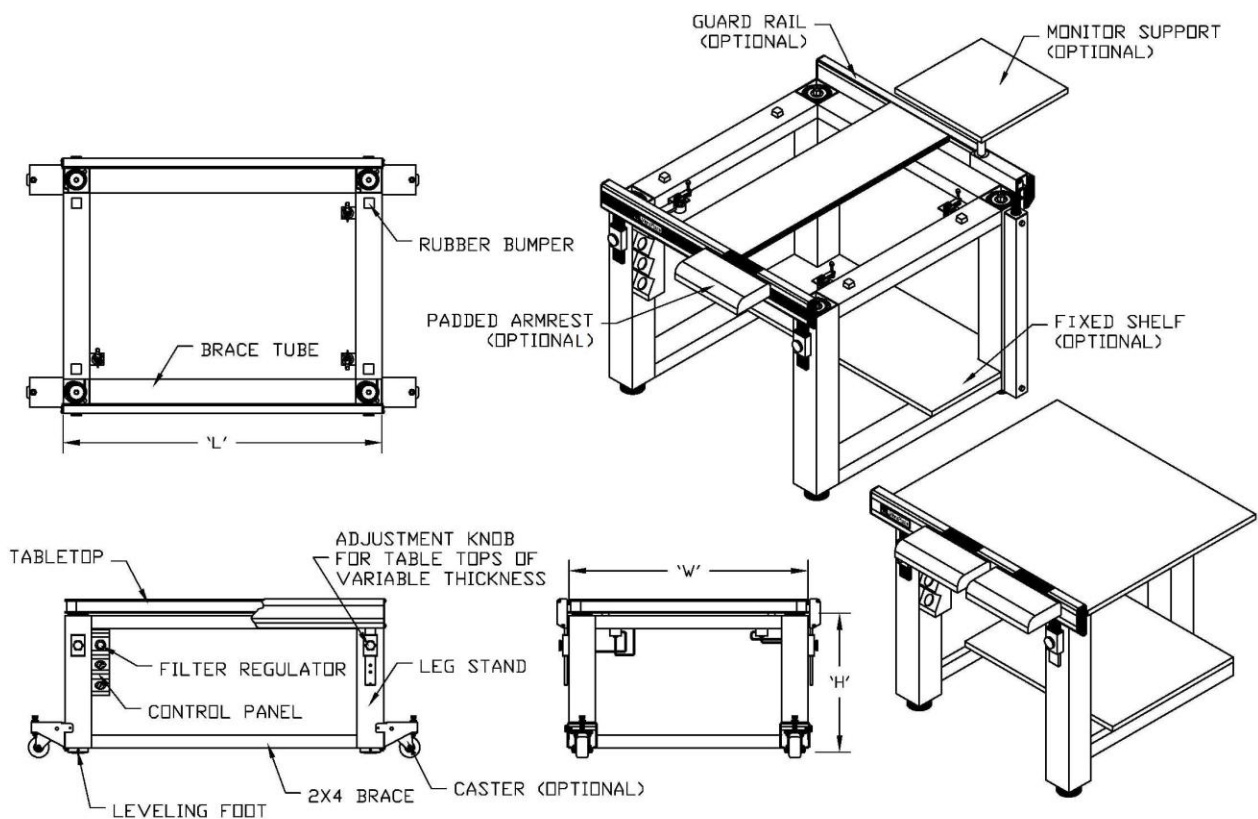
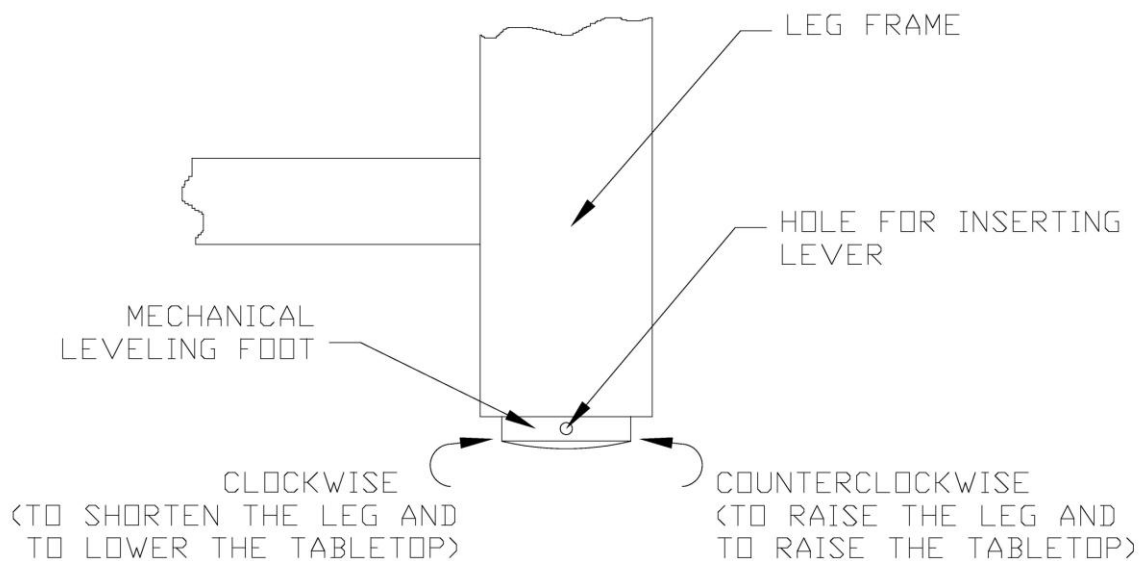


Figure 1. 9101/9102 and 9211 Series Vibration Isolation Workstation.

Isolation Leg Stand:

1. Carefully remove all shipping material (strapping, cardboard, etc.). Additional parts such as optional Guardrails, Casters, Monitor Supports and Sliding Shelf have been packed separately inside the shipping container. Set these parts aside for later installation.
2. Remove the protective wood blocks from the bottom of each leg. The Mechanical Leveling Feet are fully retracted for shipping. Rotate each foot COUNTERCLOCKWISE (see Fig. 2) so that they extend $\frac{3}{4}$ " below bottom of the leg.
3. Carefully move the legstand to its final location. If the back of the table is to be positioned against the wall, be sure to leave enough access space to permit attachment of the optional Guardrail in the rear.
4. The Tabletop weighs several hundred pounds, so use of a hydraulic lifting device is recommended for its installation. Place the Tabletop on top of the legstand on four/three rubber bumpers (one in each corner). Center the Tabletop left-to-right and front-to-back. Proper positioning of the Tabletop is important for even distribution of weight on the legs and to avoid rubbing against the optional Guardrails.



TURN CLOCKWISE/COUNTERCLOCKWISE AS VIEWED FROM THE BOTTOM

NOTE: DO NOT EXCEED 1.75" EXTENSION

Figure 2. Mechanical Leveling Foot Height Adjustment

5. After the table is moved and located in its final destination, place a carpenter's level diagonally across the Tabletop or use the built-in levels on the Tabletop to check for level condition in all directions. If an out-of-level condition is detected, adjust the Leveling Feet by inserting a thin rod or screwdriver (as shown in Fig. 2) into the hole on the side of the Leveling Foot. Looking from the bottom, rotate the leveling foot **CLOCKWISE** to shorten the leg and lower the Tabletop. Rotate the foot **COUNTERCLOCKWISE** to lengthen leg and raise Tabletop. After leveling the tabletop, ensure that all the four leveling feet are in contact with the floor. If any gap is observed, rotate the leveling foot counterclockwise to close the gap as shown in Fig. 2. Check the tabletop level and repeat if necessary.
6. Your 9100/9200 Series Vibration Isolation Workstation is now ready for operation.

System Operation:

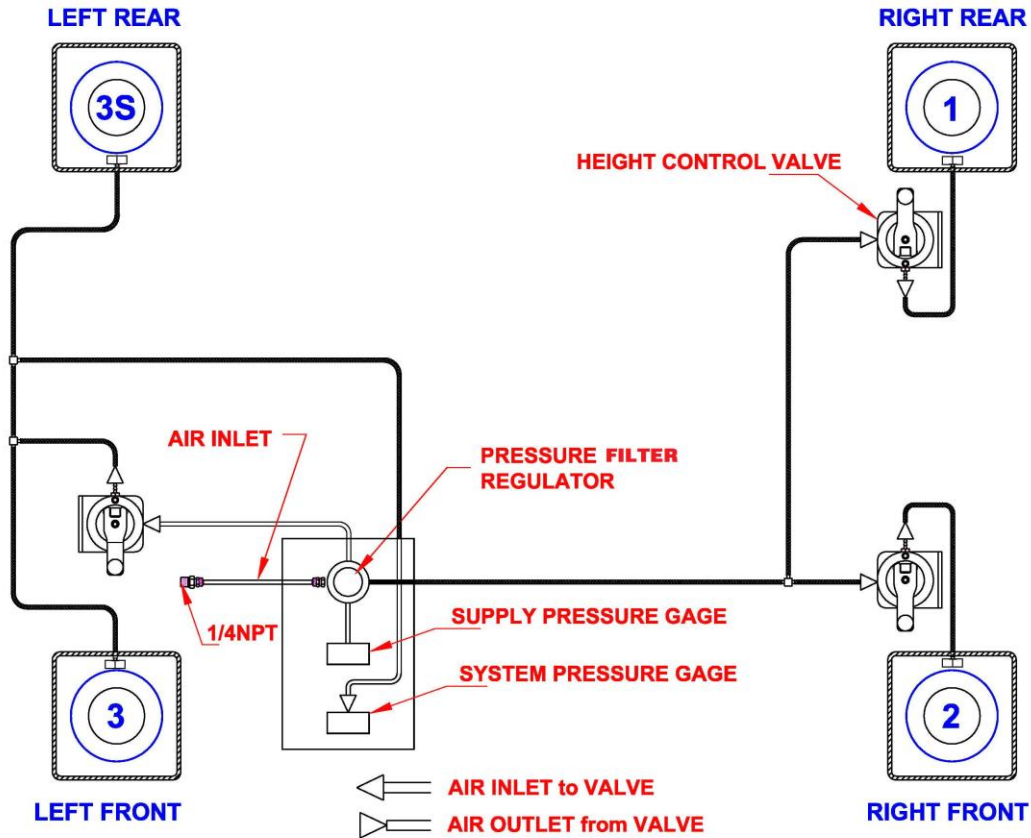


Figure 3a. 9101/9102 Airline Schematic

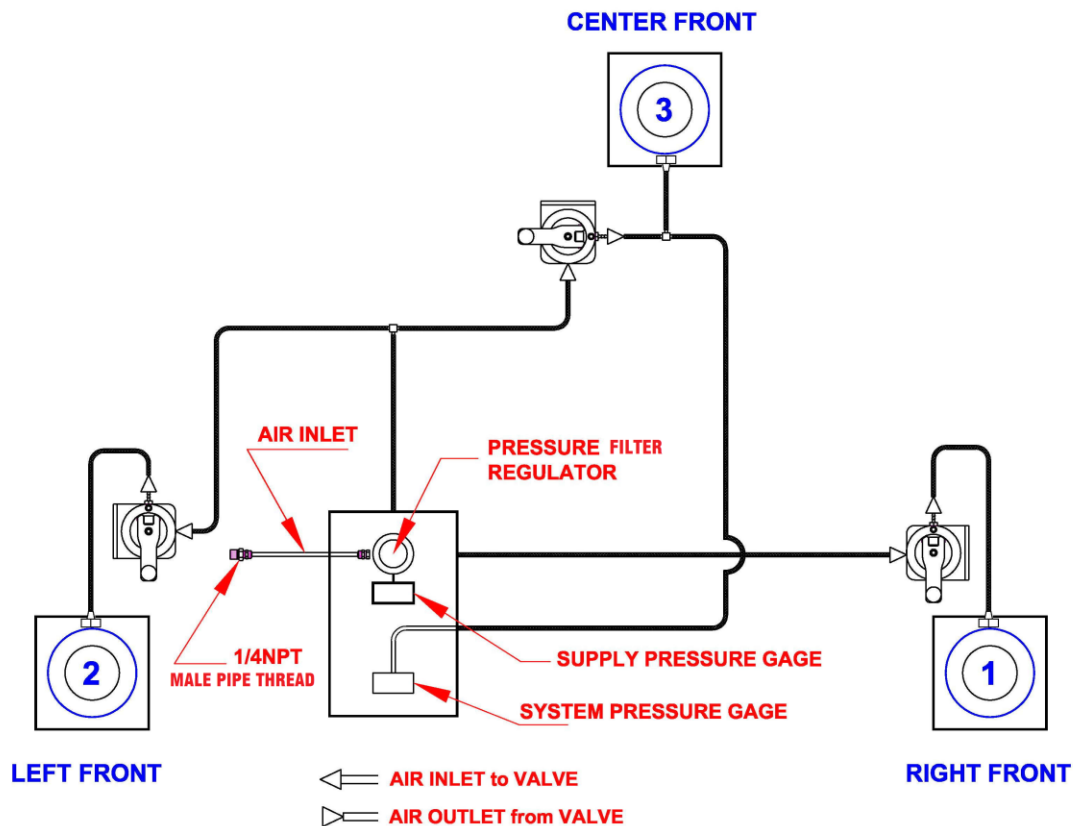


Figure 3b. 9211 Airline Schematic

The following instructions explain how to use pressurized air supply to float the table.

1. Using the Umbilical Assembly (1/8"OD X 10ft. polyurethane tubing and 1/4" NPT fitting), connect the pressurized air source to the inlet of the Filter Regulator (as shown in Fig. 3a and 3b). The polyurethane tubing may be shortened by cutting with a razor blade. If additional pipe fittings are required to complete the connection at the pressurized air source, they must be supplied by the user.
2. The pressurized air supply should be clean dry air or nitrogen from a regulated line or bottle, with pressure not to exceed 100 PSI.
3. Position your equipment on the Tabletop, centering it as much as possible.
4. The air inlet Filter Regulator is described in detail on page 34. To adjust the air pressure supplied to the system valves, pull the regulator knob out till you hear a 'click'. Turn the knob clockwise to increase pressure and counterclockwise to decrease pressure. To set and lock the regulator, push the knob back till it clicks.

5. Turn on the source air supply and adjust the Filter Regulator on the Control Panel clockwise to approximately 80 PSI. It is advised not to exceed 80 PSI supply pressure (as shown on Fig. 4).

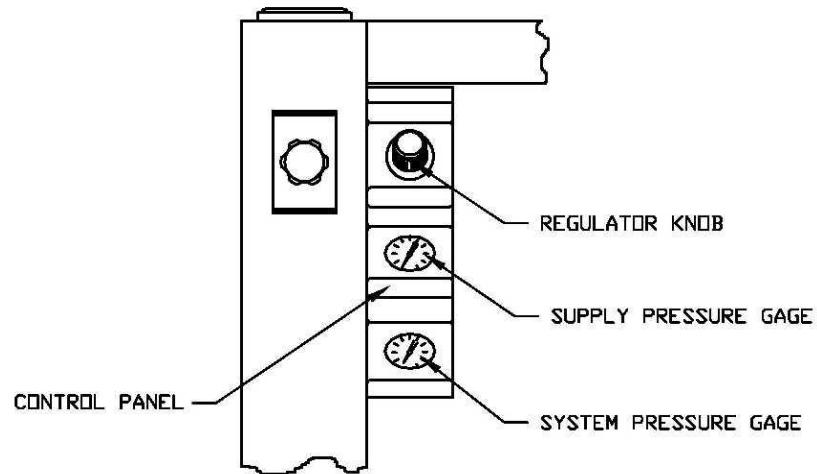


Figure 4. 9100/9200 Series Control Panel Illustration

6. Be sure the Valve Adjustment Screw on each VIBRA-LEVEL Valve Arm is touching the bottom surface of the Tabletop, and that each Valve Arm is slightly below horizontal for the fill position and 10° above horizontal after floating for neutral position.
7. The Tabletop should begin to “float” within 5 to 10 minutes. If floating does not occur at one or more legs, check the inlet pressure on Filter Regulator and raise if necessary or turn the Valve Adjustment Screw(s) COUNTERCLOCKWISE.

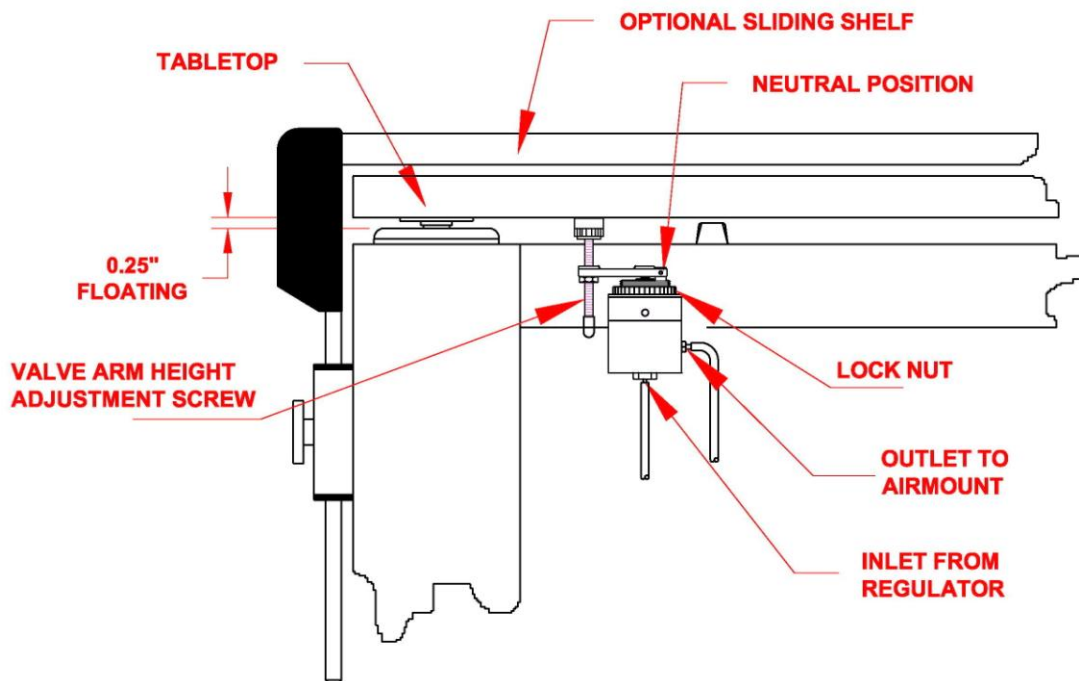


Figure 5. The VIBRA-LEVEL Valve Adjustment

8. When the Tabletop is completely “floating”, adjust each Valve Adjustment Screw so that the Tabletop is floating approximately $\frac{1}{4}$ of an inch (as shown Fig. 5). The tabletop should be level at this point since leveling was done prior to this by adjusting the mechanical leveling feet.
9. Tighten the Lock Nut on each of the Valve Adjustment screws.
10. Once the tabletop with your equipment is “floating”, read the pressure on System Pressure Gage and set the Regulator so that the Supply Pressure reads approximately 10-15 PSI greater than the System Pressure Gage reading. For example, if the System Pressure Gage reads 55 PSI, adjust the Filter Regulator to read anywhere from 65-70 PSI on Supply Pressure Gage.
11. If more loads are added to the Tabletop, you may increase the supply pressure by an amount large enough to maintain the 10-15 PSI difference between the supply pressure and the system pressure. It is advised not to exceed 80 PSI Filter Regulator Pressure.
12. Once the tabletop has been leveled, this condition will be automatically maintained as long as the supply pressure is sufficient. If the air supply is shut off for a period of time and then turned back on, the tabletop will automatically return to the preset level.

13. If it is desired to lock out the Isolation System for a short period of time, this can be accomplished by lowering the tabletop onto rubber bumpers. The system is lowered by reducing the Filter Regulator pressure to slightly below the system pressure reading. System will automatically bleed down and rest on rubber bumper. This will maintain most of the compressed air volume in the isolators and thereby reduce the “fill time” when the system pressurizes again.

CAUTION: *Never remove heavy loads from the Tabletop suddenly. Two options are recommended for removal of heavy loads: (1) Remove heavy loads gradually to permit controlled pressure reduction in the legs by the VIBRA-LEVEL Servo Valves or (2) reduce the pressure in the Filter Regulator gage to below what is required to support the tabletop.*

910P Passive Isolation System

System Operation

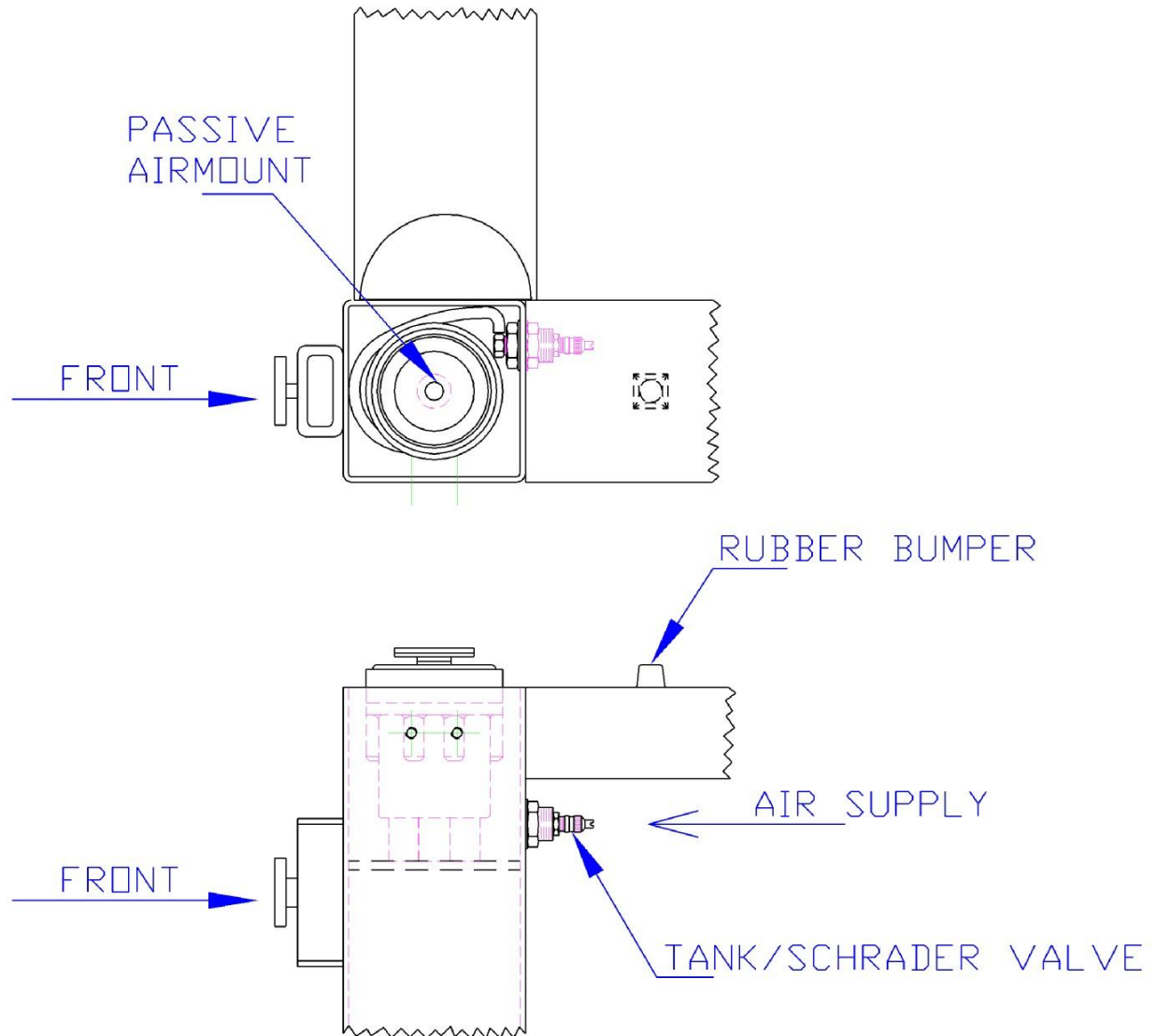


Figure 3c. 910P Isolator Air-Supply Inlet

1. Place the tabletop on top of the legstand, supported on rubber bumpers. Add payload onto the tabletop and position the components.
2. Unscrew the tank/Schraeder valve cap located on the inner surface of the leg tubes as shown.

3. You may use in-house air-supply line or a bicycle pump to inflate the passive airmounts using the tank/Schraeder valve. A fill gage pressure line will be required with in-house supply.
4. Inflate the airmounts until the tabletop rises approximately 0.5” - 0.75” above the rubber bumpers.
5. Using a carpenter level, check the tabletop surface for level keel and inflate/deflate the airmounts as necessary to achieve even keel.
6. Your system is ready for use.

CAUTION: *Never remove heavy loads from the Tabletop suddenly. Two options are recommended for removal of heavy loads: (1) Remove heavy loads gradually to ease controlled height change in the isolators or (2) deflate the isolators and reduce the pressure to below what is required to support the load.*

SECTION III

Operation and Setup Procedure for Optional Items

Optional Guardrail Adjustment:

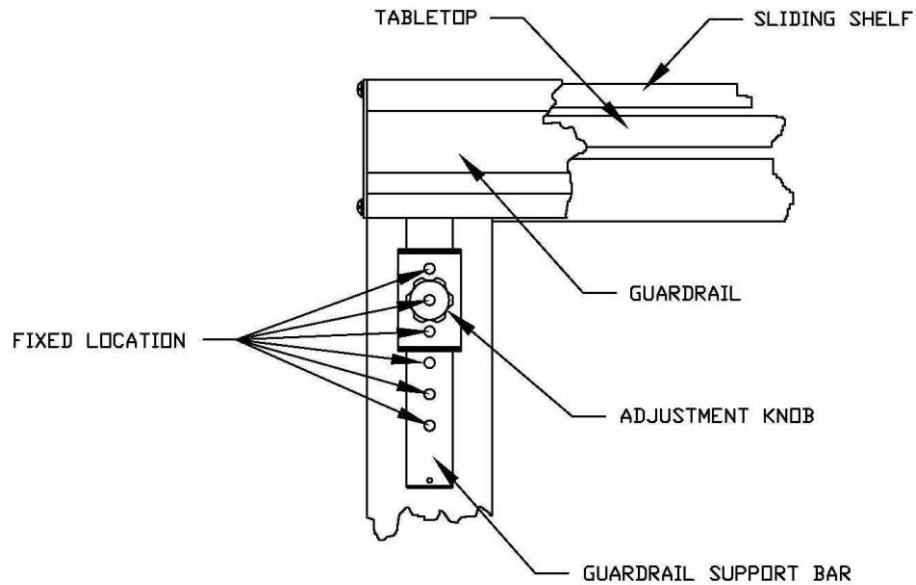


Figure 6. 9100/9200 Guardrail Height Adjustment.

1. The Guardrails on the 9100/9200 Series Isolation Table were designed to allow the operator to vary the height to accommodate for different tabletop thickness. Optional Sliding Shelves may be retrofitted. There are four fixed locations on the Guardrail Support Bar that allow the operator to find the right location for him/her.
2. To adjust the Guardrail height, loosen the Adjustment Knob on both sides of the Guardrail and raise or lower the Guardrail evenly (as shown in Fig. 6). It is not necessary for the front and rear Guardrails to be at the same height, except when used with an optional Sliding Shelf. With a Sliding Shelf, the Guardrail must be adjusted to allow a minimum of $\frac{1}{4}$ inch clearance between the bottom surface of the Shelf and the Top surface of the tabletop (as shown in Fig. 7).

Optional Sliding Shelf (9100 only):

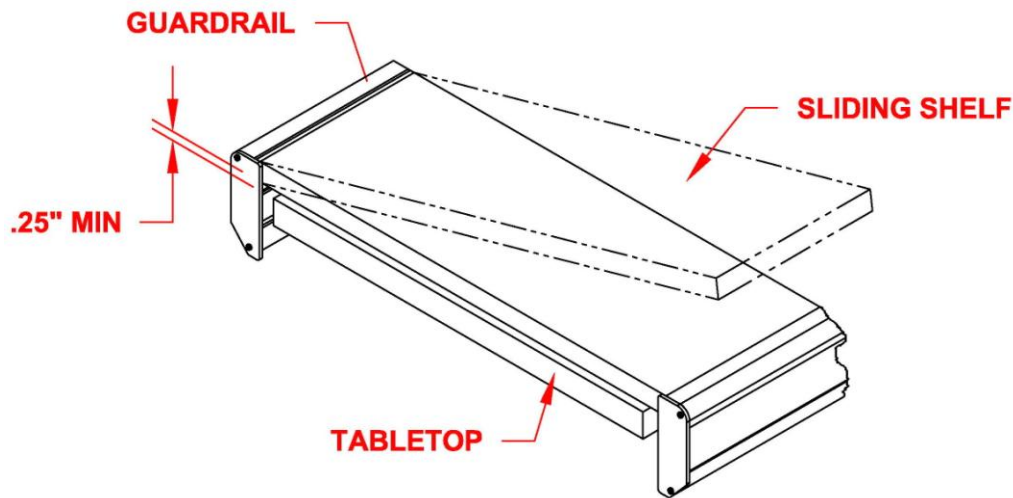


Figure 7. Sliding Shelf Illustration

1. The optional Sliding Shelf can be ordered in different widths to provide the operator with enough surface area needed for equipment that is not isolated.
2. The Guardrail height must be adjusted as previously discussed to allow clearance for the Shelf or Shelves.
3. The Sliding Shelf or shelves simply drop onto the front and back guardrails (as shown in Fig. 7). They can then be slid into any position desired.

Optional Padded Armrest:

1. The optional adjustable padded Armrests are ordered in pairs.
2. To install the adjustable padded arm rests, simply drop onto the guardrail (as shown Fig. 8). They can then be slid into any position desired.

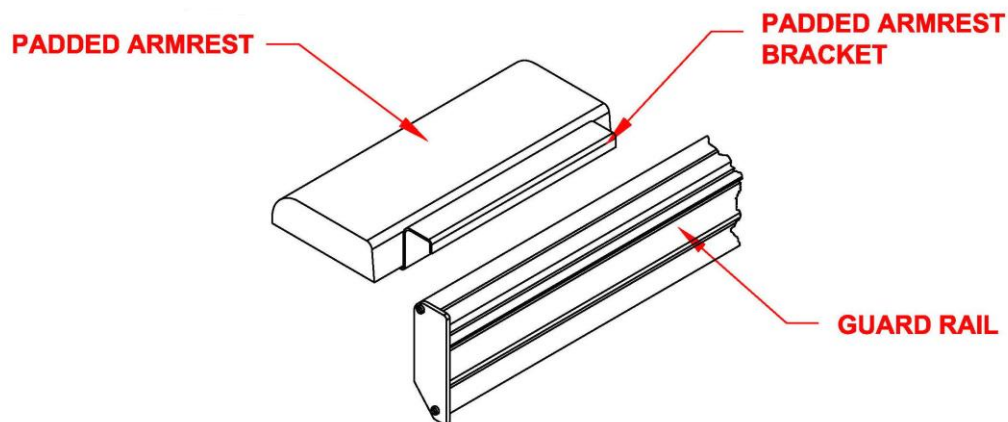


Figure 8. Adjustable Padded Arm Rest Illustration.

Optional Fixed Shelf:

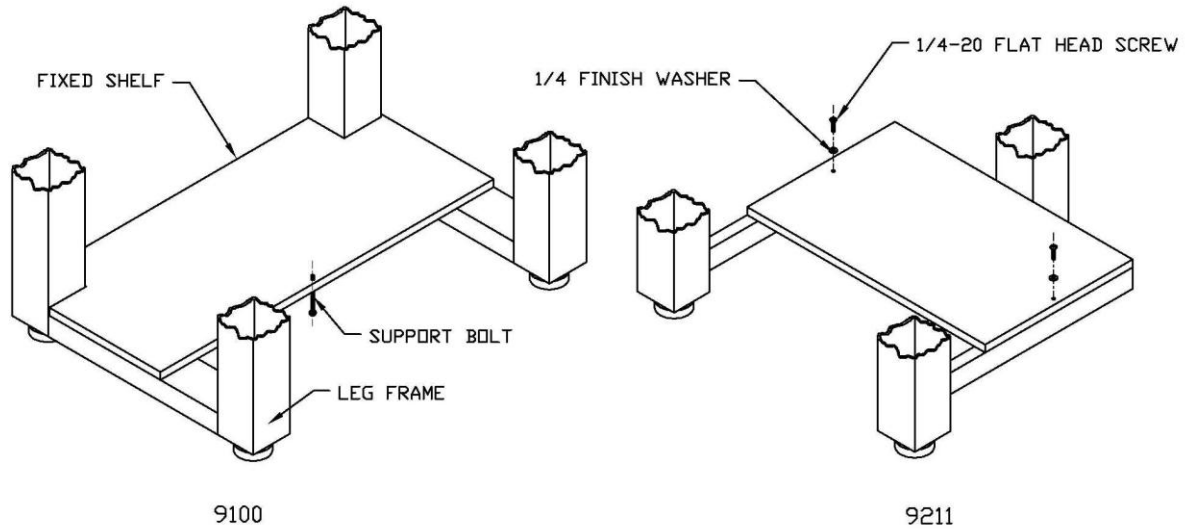


Figure 9. Optional Fixed Shelf Assembly.

Unpack and place the Fixed Shelf on the bottom Leg Stand brace (Refer to Fig. 9).

For 9100 only.

1. Adjust support bolt by raising or lowering to maintain contact with the floor surface.
2. Tighten the nut on support bolt adjustment to lock in position.

For 9211 only.

1. Position clearance hole on Fixed Shelf over tapped hole on Side Brace of Leg Stand.
2. Bolt Fixed Shelf in place using 1/4-20 UNC flat head screws and finish washers provided.

Optional Monitor Support:

The following instructions explain how to install the optional Monitor Support assembly (Refer to Fig. 10).

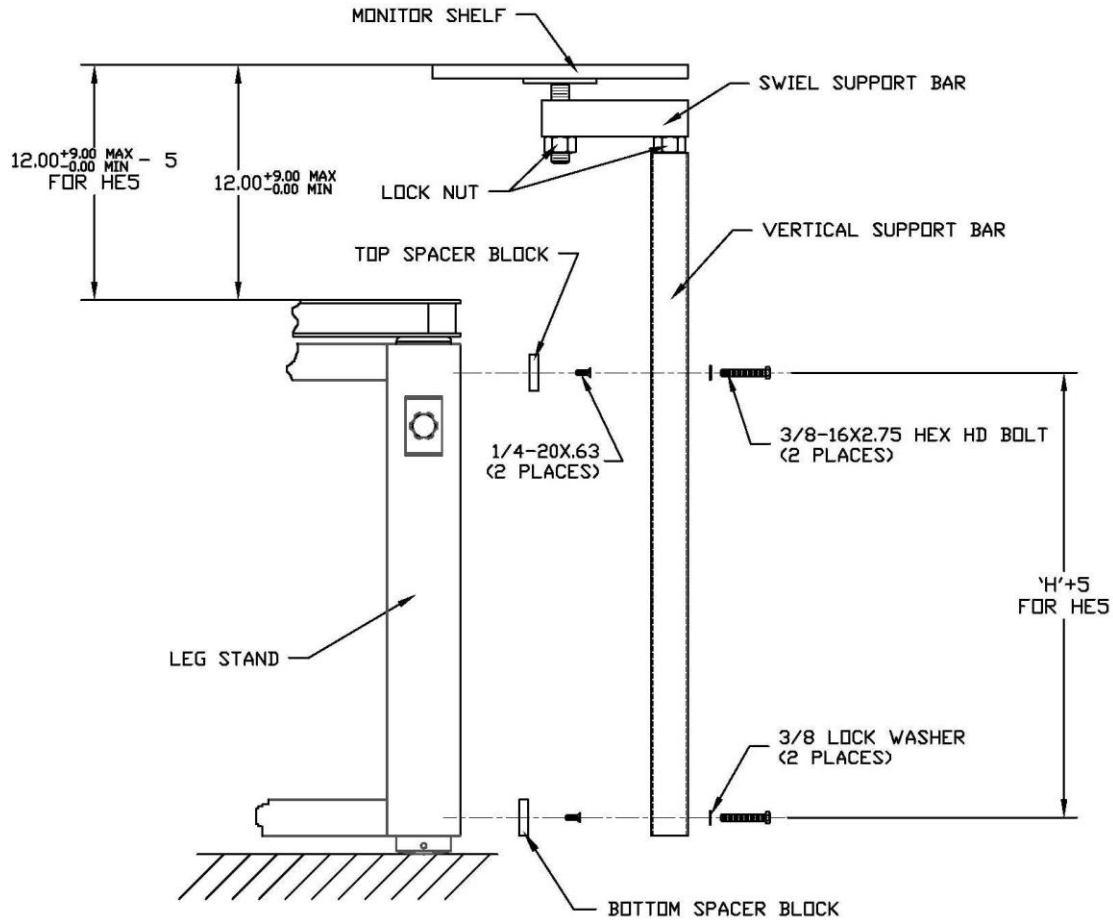


Figure 10. Optional Monitor Support. (MS-CRT)

1. Be sure your VIBRAPLANE Model 9101/9102 Table is set up as described in Section II of this Manual (Pages 2-10).
2. The Monitor Support is shipped in three sub assemblies: The Monitor Shelf Assembly, the Swivel Support bar Assembly, and the Vertical Support Bar assembly.
3. Install the Top and Bottom Spacer blocks by lining up the two holes of the two spacer blocks with the 1/4-20UNC hole on sides of the legstand and secure into place using two 1/4-20x.75" flat head screws per block.

4. Hold the Vertical Support Bar firmly in place, lining up the lower hole with the hole in the Bottom Spacer block. Bolt the Vertical Support Bar into place using the two 3/8 spring lock washers and two 3/8-16 x 2.50" hex head bolts provided.
5. Position the Swivel Support Bar on top of the Vertical Support Bar, and screw in clockwise until the desired height is reached.
6. Screw the Monitor Shelf Assembly into the threaded portion of the Swivel Support Bar until the desired height is reached.
7. Tighten both lock nuts to prevent unwanted movement.
8. Further adjustments of the monitor shelf can be made by rotating the Swivel Support bar Assembly or the Monitor Support Assembly.

Optional LCD Monitor Support Assembly:

The LCD monitor support assembly is shipped in two parts: the LCD monitor support and the Support Post assembly. Refer to steps 2 & 3 of previous section '*Optional Monitor Support Assembly*' (Page 14) to secure the support post to your 9100 table. Refer to figure 10a for securing the LCD monitor support to your support post.

1. Attach the LCD monitor support back plate to the monitor support post using four(4) 1/4-20 x 0.5" long hex head screws with washers. If the mounting plate is not attached to the post already, use four 10-32 screws (provided) to secure it to the post.
2. Attach the LCD monitor support to the back plate using the four M6 x 12mm screws as shown in the figure.

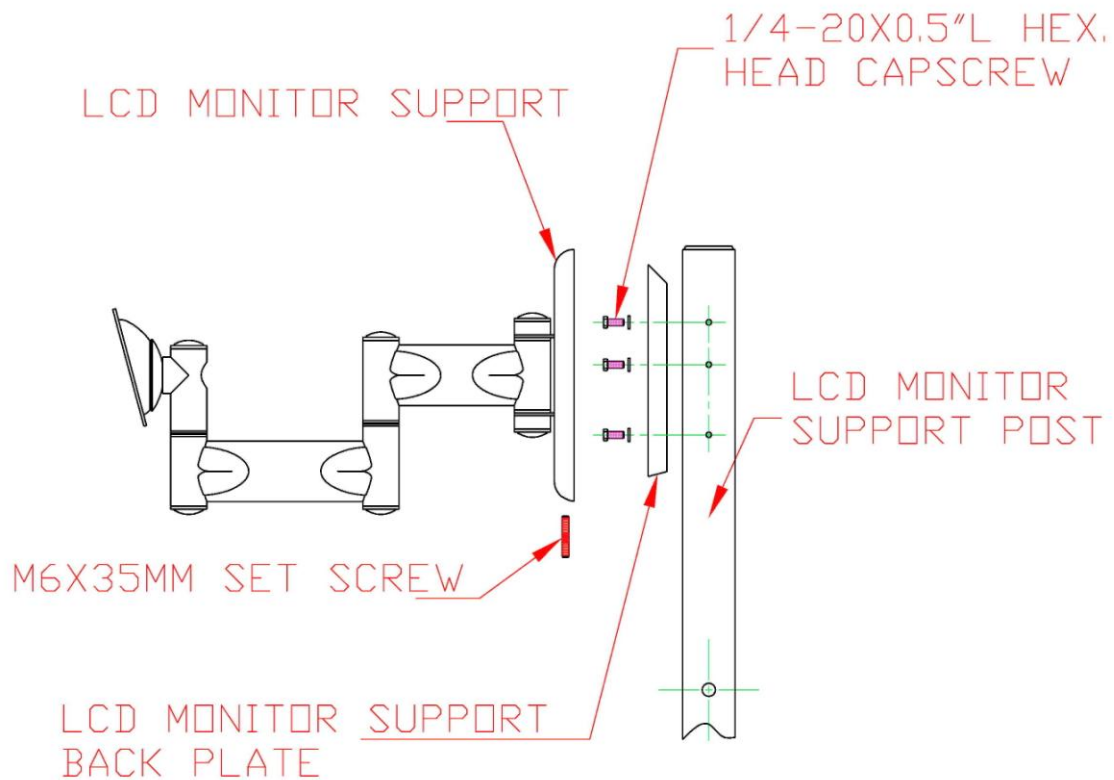


Figure 10a. Optional LCD Monitor Support Assembly (MS-LCD)

Optional Rear and Side Equipment Shelf Assembly:

The following instructions explain how to install the Optional Rear and Side Equipment Shelf Assembly (Refer to Fig. 11).

1. Be sure your VIBRAPLANE Model 9101/9202 Table is set up as described in the previous sections of this Manual.
2. Unpack the Support Posts, Shelf brackets, and the Shelf.
3. Attach the Support Posts on the Top and Bottom Spacers using the 3/8-16UNCx2.5" long hex head bolts. (See Optional Monitor Support on page 14).
4. Position the Shelf Bracket in the slots on the Shelf Bracket Support to achieve the desired height for the Shelf.
5. Place and center the shelf on the Shelf Brackets.
6. Secure the Shelf into place by screwing the #8x.50" long wood screws into the bottom of the shelf from the underside of the Shelf Bracket.

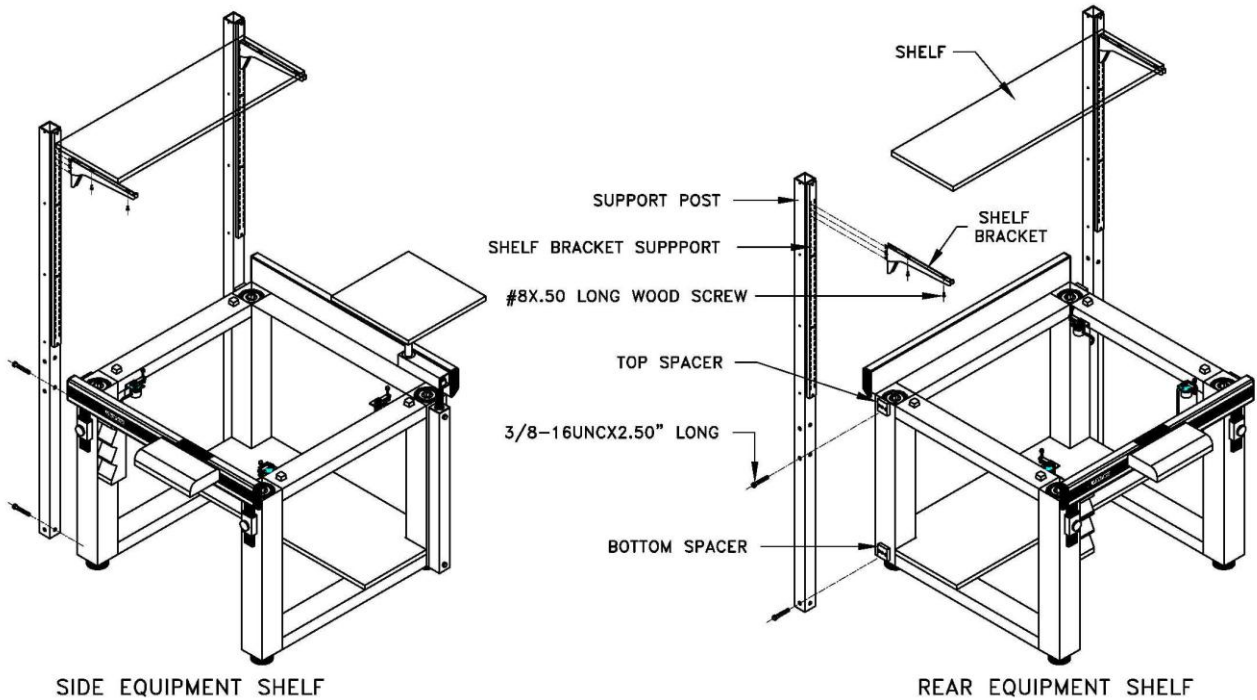


Figure 11. Optional Rear and Side Overhead Equipment Shelf Assembly.

Optional Casters:

1. The Optional Casters supplied with the 9100/9200 Series Isolation Table can be retrofit to the 9100/9200 Series Isolation Tables already in field.
2. In order to set up the Casters, first retract the Casters to their highest possible positions.
3. Adjust the Mechanical Leveling Feet on the Table so that they extend down from the leg tube by approximately 1 inch.
4. You are now ready to attach the Caster to the leg tube. The Caster can be attached to one of 2 sides on the leg tube.
5. Place the caster assembly alongside the leg tube on the side best suited and slide the Caster assembly up, making sure the hook assemblies on the back of the caster assembly is on the inside of the leg tube.

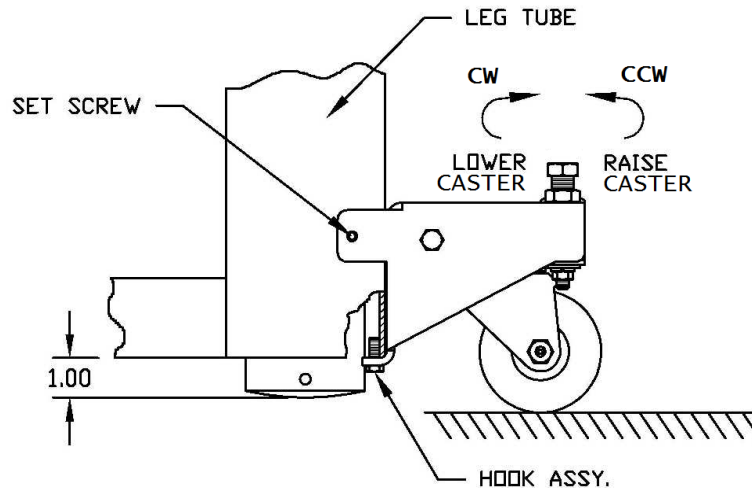


Figure 12. Optional Caster Set Up and Use.

6. Tighten the 2 nylon tipped, set screws on each Caster Assembly. These will hold the Caster Assembly in place when they are retracted.
7. To remove the Caster Assembly, reverse steps 5 and 6.
8. Engaging the Caster can be done by turning the bolt on top of the Caster Assembly clockwise until the caster plate is horizontal or parallel with the floor. The leveling foot on that leg should rise. If more clearance is needed, this can be done by raising the Leveling Foot into the leg tube.
9. Lower all four Casters, raising the table until there is sufficient clearance between the Leveling Foot and the floor (approximately 3/8" is recommended). The system is ready to be moved.
10. Once the system is in its desired location, retract the Casters by reversing the previous steps and re-level the system. It is not recommended to float the system while supported on Casters.

Optional Faraday Enclosure:

The following instructions explain how to install the Faraday Enclosure to 9100/9200 Series Vibration Isolation table. Refer to the assembly drawing in Figure 13.

Required Materials:

- 2 Side Screens.
- 1 Roll Away Screen Assembly
- 1 Top Screen.
- 1 Rear Screen Assembly.
- 1 Top Right extrusion.
- 1 Top Left Extrusion.
- 1 Bottom Right Extrusion.
- 1 Bottom Left Extrusion.
- 2 Side Rail Assemblies.
- 2 Guard Rail Assemblies

Required Tools:

- Screwdriver.
- 5/32 Allen Wrench.
- Carpenter's level

Procedure:

1. All connections are made by matching the numbers/letters.
2. Attach the right side top extrusion and left side top extrusion to the rear assembly using the corner fasteners. Align 1/4-20 UNC socket heads with access holes on left and right rear vertical extrusions and tighten bolts with Allen Wrench.
3. Slide top screen in between the left and right top horizontal extrusions. The screen should hang out past the end of the left and right extrusions about 1/4". Hammer screen firmly into place if necessary, but be careful not to crush or damage the screen.
4. Attach the Front Roll-Up Screen Assembly to the left and right horizontal extrusions the same way that the Rear Panel was. The exposed 1/4" of top screen from the previous step should fit nicely into the T-slot of the top horizontal extrusion on the Front Roll-Up Screen Assembly.
5. At this point, the top screen should be screwed securely into place between all four upper extrusions. Lay the newly formed assembly upside-down on its top on a flat surface.
6. Slide a Side Screen in between the two right side vertical extrusions (both side screens should be the same size). Again, hammer the screen downward firmly if necessary. The screens final resting place should be about 3/4" below the end of the vertical extrusions.

7. Attach the right side bottom extrusion by placing it in between the two right vertical extrusions. The T-slot along this bottom extrusion should fit nicely over the bottom of the screen. If necessary, hammer the bottom extrusion by starting toward the rear panel and moving along the extrusion. Extrusion will be in place when the end holes align with the through holes of the vertical extrusion.
8. Tighten corner fasteners on right side bottom extrusion.
9. Insert the left side panel using same method stated for right side panel (steps 5 & 6).
10. Insert the left side bottom extrusion using same method as stated for right bottom extrusion (steps 7 & 8)
11. Level your 9100 system by placing a bubble level diagonally across the guard rails and adjusting the leveling feet until completely level.
12. Place the faraday enclosure onto the front and rear angle supports.
13. Fasten the faraday enclosure to the angle supports from the bottom using the screws provided. (See section A-A).
14. Align and secure roll-away door screen, front top and side enclosure (see sections A-A and B-B).
15. Reverse direction to disassemble

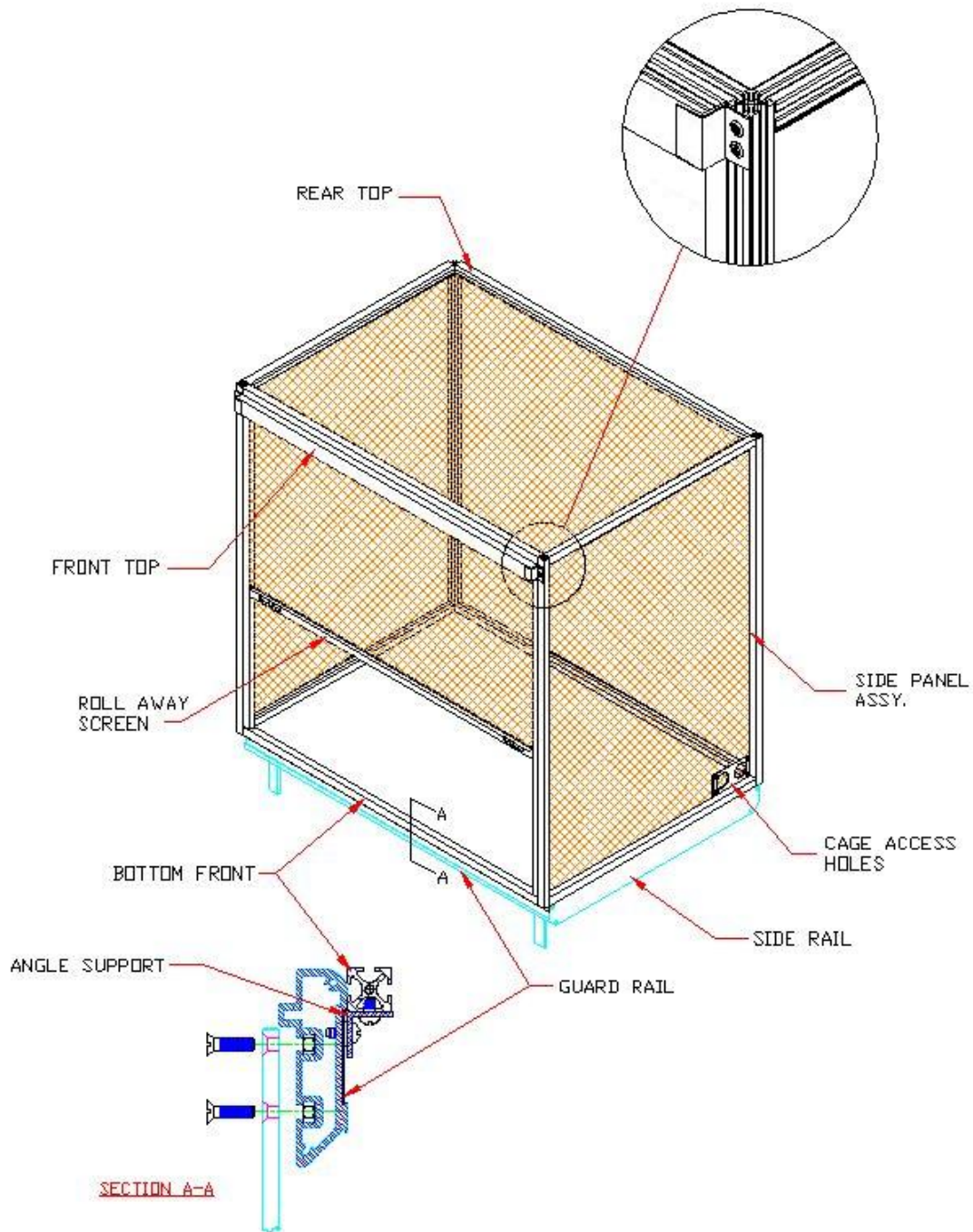


Figure 13. Faraday Enclosure.

Optional Corner hanging shelf:

1. Align the five 1/8" diameter holes on the 11GA. triangular shelf with matching holes on top corner of the faraday enclosure (refer Fig. 14). If adding to an existing faraday cage, align the plate with top corner of the faraday enclosure and mark and drill the 1/8" holes on the top panel.
2. Secure triangular shelf to faraday enclosure using five #10X.50" pan head sheet metal screws provided.
3. Fasten the three hanging posts to the bottom of triangular plate using 1/4-20UNC X .75" flat head screw and finish washers.
4. Hold into place and attach the 7GA. triangular hanging shelf using the 1/4-20UNC X .75" flat head screws and finish washers.

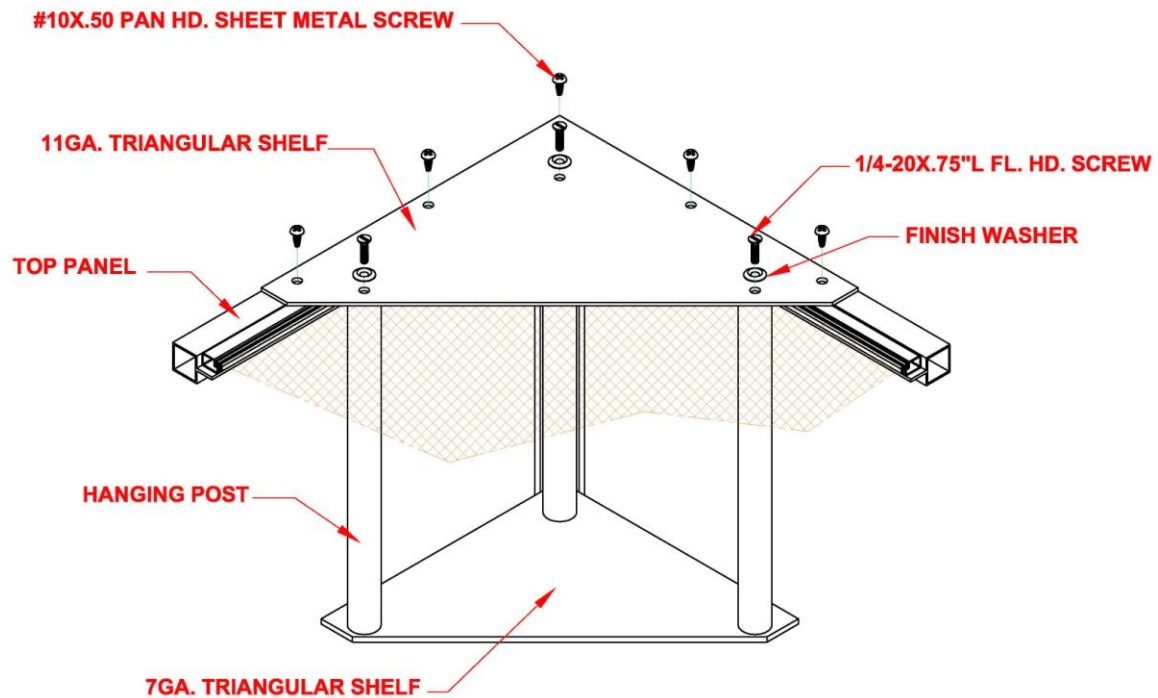


Figure 14. Optional hanging shelf.

Section IV

Portable Air Compressor (PAC) Set Up

1. Remove your Portable Air Compressor (PAC) from its packaging and check for any damages. Do not dispose of the packing material right away, as it may be needed to return to the provider if any repairs or maintenance are needed.
2. Do not plug in PAC until set up is complete
3. Install PAC on a flat surface in a dry room with good ventilation, where the temperature is not likely to rise above 94° Fahrenheit (35 C°)
4. Check that the automatic ON/OFF-Pressure Switch is in the OFF-position (or turned fully counter-clockwise, Fig. 15).
5. Remove and store the cap from the suction tube
6. Fill oil from the supplied bottle containing a special oil for the PAC. Fill the oil through suction tube (Fig. 16) until the filled-in oil reaches the mid-point level of the oil sight glass in the housing of the PAC pump. Store the rest of the oil for the next oil change.
7. **Note:** Never use oil different from the recommended oil by the manufacturer, as this will void all warranties. Overfilling with oil and turning the PAC upside down will cause the oil to spill out of the compressor.
8. Remove the Air-Intake Filter (Fig. 18) from the supplied plastic bag and insert it into the suction tube, ensuring a tight fit (Fig. 16)
9. Connect the equipment for your application to the outgoing 1/4" male fitting on the Filter/Regulator (Fig. 19). To keep the connecting fitting from leaking air you should always apply Teflon Tape to the thread of the fitting.



Figure 15.

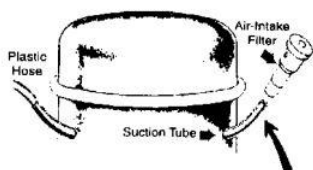


Figure 16.



Figure 17.

Operating Instructions

1. Plug the cord into a properly installed and grounded outlet of electric supply corresponding to the electric version of your purchased compressor (for your own safety, the unit should be grounded; in the event of a short this reduces the risk of an electric shock). If you need an extension cord to operate the unit, only use a heavy duty extension cord, no longer than 20 feet or 6 meters (no household cord; it might cause a loss of power and the damage of electrical components).
Note: Tampering with the Power Cord or Grounding Terminal will void all warranties.
2. Turn the knob on the automatic ON/OFF-Pressure Switch to the On-position (clockwise) until it stops (Fig. 15). The Pressure Switch has been set to automatically start and stop the compressor at the preset pressure level. Leave it in the ON-position until you want to turn off your compressor.
Note: Never remove or repair the ON/OFF switch while the compressor is connected to the electric outlet!
3. After the compressor has run for a complete cycle to pressurize the tank and then shut off, you set the desired pressure with the Filter/Regulator (Fig. 19). Simply lift the knob on it until it unlocks, then turn it clockwise to increase the pressure until the Pressure Gauge on the Filter/Regulator shows the desired pressure. To reduce the pressure also lift the knob on the Filter/ Regulator and turn it counterclockwise.
Note: Never open the Filter/Regulator completely, as it would ruin your compressor in a short period of time. If you notice that your compressor is running with a cycle of more than 50% of the time, this indicates that you might have an air-leak in your system or that your compressor is too small for your application.
4. To turn off your compressor, simply turn the knob on the Pressure Switch (Fig. 15) to the OFF-position (counterclockwise). If the electrical power is interrupted while the compressor is in operation and it fails to restart after the power comes back on, turn the knob on the Pressure Switch to the OFF- position; this will release any pressure in the line and enable the compressor to restart again.
Note: The Safety Relief Valve is a standard feature on your compressor. This valve opens automatically if the tank pressure goes beyond a safe level. Do not attempt to adjust or remove this device!



Figure 18.



Figure 19.

Maintenance

On your PAC, there are a few parts that need your attention for proper maintenance:

1. Air Intake Filter

- Unplug Power Cord.
- Pull Air Intake Filter out of the suction tube (Fig. 16) or the hole in the cover of the pump (Fig. 17) and remove the insert from the inside of the filter.
- If the insert is dirty, wash it properly with soapy water or replace it.
- Reinstall the Air Intake Filter at its place.

2. Moisture Trap

- If you use your compressor properly, the Moisture Trap (built into the Filter/Regulator, Fig. 19) will trap the moisture and dirt particles before releasing air into the line. Periodic checks for moisture should be done on a routine basis by looking at the clear bowl at the bottom side of the Filter/Regulator. Moisture can be removed by pressing up the valve core at the bottom of the bowl. If it should be necessary to remove the clear bowl for cleaning, you should be careful that the clear bowl doesn't contain any air under pressure at the moment you unscrew the clear bowl.

3. Pressure Tank

- Check the Pressure Tank daily for water inside.
- Unplug the compressor and release all compressed air from the tank by opening the Drain Plug.
- Tilt the unit towards the plug to allow the water to drain.
- Air Hose and other accessories should also be drained on a regular basis

4. Oil Change

- Unplug Power Cord
- Drain Tank by slowly opening drain valve
- Remove Air Intake Filter and plastic hose.
- Tilt compressor and drain all oil into a container.
- Return the compressor into the normal upright position.
- Refill new oil through suction tube (Fig. 16)
- Verify that the oil level is at mid level mark in the oil sight glass.
- Reinstall the Air Intake Filter and the plastic hose (Fig. 16).
- Plug Power Cord in again and continue using the Compressor.

Troubleshooting

For any kind of repair or replacement only use original spare parts! They are available at every authorized service center. Imitation spare parts may irreparably damage your compressor. When asking for information or service, please always quote the Model, Type and Serial-Number of your compressor. This information is on a label of your compressor.

Symptom: Compressor will not run

Potential Causes:

- No electric power supply, bad cord connection or incorrect extension cord
- Tank is fully pressurized
- Thermal Overload ProTector Relay has tripped

Potential Solutions

- Check outlet voltage, fuse and circuit breaker. Check cord connection for visible damage. If using an extension cord, check that it is for Heavy duty, grounded and UL-approved.
- Use your equipment to lower pressure in tank.
- Wait 15 minutes and try starting again. If this solved the problem, make sure the compressor is in well ventilated area. Check for air leaks in your system. Set the pressure on the Filter/Regulator to the minimum pressure required for your equipment

Symptom: Compressor runs but will not supply air

Potential Causes:

- Pressure on the Filter/ Regulator not set properly
- Air Intake Filter clogged or not installed
- Air leaks

Potential Solutions:

- Reset Filter/Regulator to pressure required for your equipment.
- Clean Air Intake Filter or replace it.
- Check all the fittings, connectors and equipment for air leaks and repair. Close the pressure to your equipment by turning the knob on the Filter/Regulator all the way counterclockwise - if the tank holds the pressure, the leak is in your equipment, if the pressure on the Pressure Gauge at the Pressure Switch drops, the leak is somewhere on the compressor.

Symptom: Rattling noise during operation

Potential Cause:

- Compressor Motor inside touching housing

Potential solution:

- Surface under compressor not leveled. Check oil level of pump and adjust if it's Necessary.

Symptom: Milky oil in compressor

Potential Cause:

- Oil has been contaminated with moisture or other foreign matter

Potential Solution:

- Change oil – oil needs to be replaced every 150 hours of use. Use only the special oil from Werther International.

Symptom: Air Tank not holding pressure when compressor is not running

Potential Cause:

- Check-Valve defective

Potential Solution:

- Disconnect pressure hose at pump and check For leaking back into pump – clean or replace The Check-Valve. Spray all connections and manifold with soap solution, reseal connections or replace defective parts.

Symptom: No pressure shows up on the Pressure Gauge of the Filter/Regulator

Potential Causes:

- No equipment connected to compressor
- Filter/Regulator has not been adjusted

Potential Solutions:

- Connect equipment.
- Lift knob on the Filter/Regulator and turn it clockwise until the pressure on the Pressure Gauge shows the required pressure for your equipment (pressure should be set at the minimum pressure required).

Symptom: Compressor operates very hot

Potential Causes:

- Oil level is incorrect
- Too small non ventilated Area
- Undersized Model
- Leaks in installation

Potential Solutions:

- Fill compressor pump with oil until mid level on the oil sight glass.
- Install the compressor in a bigger area with better ventilation.
- Duty cycle of compressor should not exceed 50 % - if pump is running for 1 minute, it should stay off at least 1 minute before restarting.
- Check for air leaks in your installation. Check if the setting of the pressure on the Filter/Regulator corresponds to the minimum requirement of your equipment.

If your PAC has a different symptom of a fault from the above troubleshooting list, please contact a specialized technician.

Exploded View

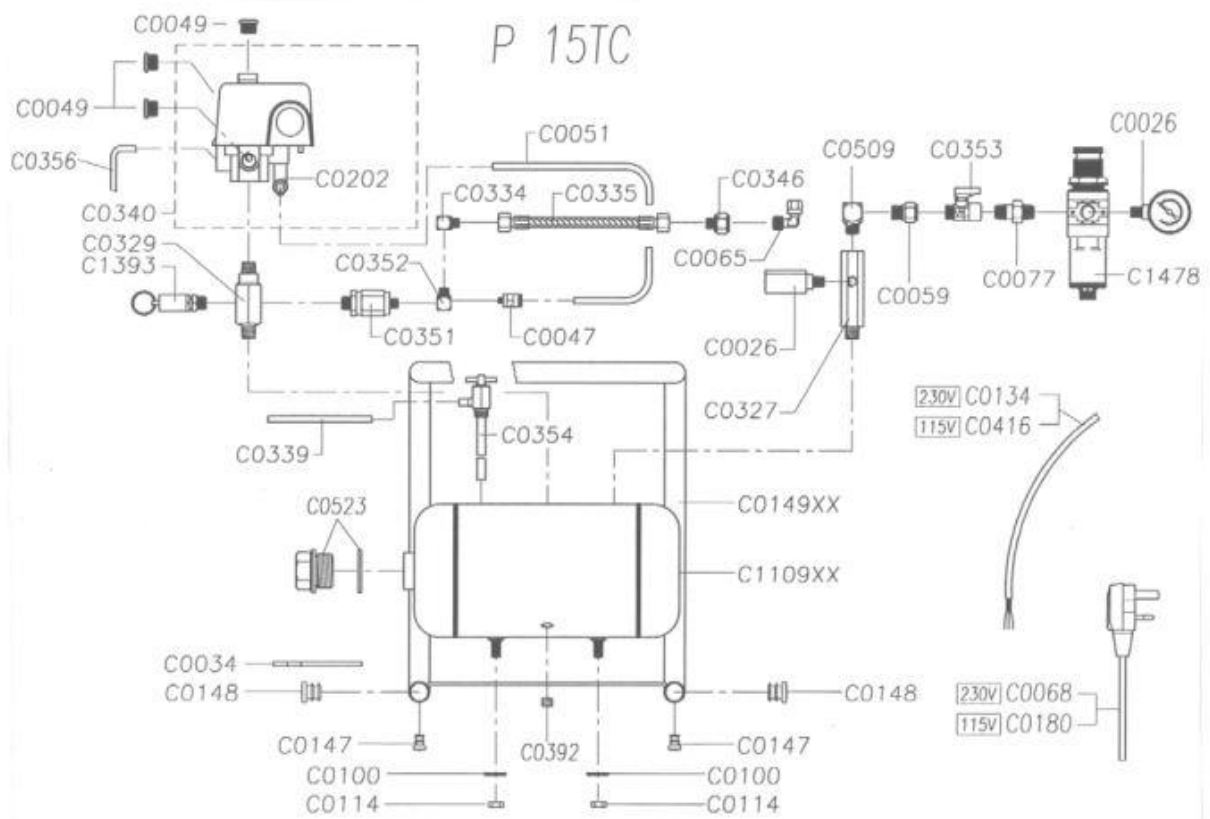


Figure 21. Portable Air Compressor Exploded View

Compressor Parts List

C0026	Gauge Pressure M1/8"-side 10 Bar d=40mm
C0034	Strain Relief
C0047	Fitting M5 d=6mm
C0048	Switch Pressure 4-P 230V MDR 2/11
C0049	Plug 1/4"
C0051	Hose Nylon 6/4mm
C0059	Fitting Extension M1/4"-F1/4"
C0065	Fitting L Rotating M1/4"-6, 3mm
C0068	Power Cord 230V Euro-Plug
C0077	Fitting Swivel Connector M1/4"
C0100	Washer 8, 4x16x1, 5mm UNI 6592 ZB
C0114	Nut M8 UNI 5589
C0134	Cable Electric 230V 500mm
C0147	Rubber Foot
C0148	Plug for Frame
C0149XX	Frame / Chassis Tubular
C0180	Power Cord 115V Am.-Plug 2000mm
C0202	Valve Head Pressure Release
C0327	Elbow MF 1/4"-F 1/8" DIS.327/00
C0329	Fitting M-M-F-F1/4" Cross
C0334	Fitting L M1/8"-F1/8"
C0335	Hose Air F1/8"-F1/8" 140mm
C0339	Tube Nylon 8/6mm
C0340	Switch Press. 4-P 115V MDR 21-EA/11 UL-Approved
C0346	Fitting Reduction F1/4"-M1/8"
C0351	Valve Check M1/4"-M1/8"
C0352	Fitting T M-F-F1/8"
C0353	Valve Inline M1/4"-F1/4"
C0354	Drain-Cock tanktop
C0356	Tube Plastic 6/4mm blue
C0392	Plug M1/8"
C0416	Cable Electric 115V 600mm
C0509	Fitting L M1/4"-F1/4"
C0523	Kit Plug 1"
C1109XX	Tank 3, 5lt. D=130mm
C1393	Valve SafetyM1/4" 10 Bar
C1478	Filter Regulator EAW 111

Section V

Trouble Shooting:

The purpose of this section is to aid the user in the diagnosis and repair of any minor problems that may occur. If your problem persists, call Kinetic Systems, Inc.'s technical support staff for assistance.

Symptom: Tabletop Will Not “Float”	
Possible Causes	Probable Solutions
Valve Arms set incorrectly	Adjust Valve Arm
Supported load too heavy	Reduce load to system capacity
Supported load uneven	Redistribute load evenly
Gross air leak	Locate leak and repair
Air restriction in fitting or tubing	Find restricted fitting or Tube and replace

Symptom: Tabletop “Floats” but will not Isolate	
Possible Causes	Probable Solutions
Rubbing between Tabletop and system structure	Reposition Tabletop
Foreign object between Tabletop and system structure	Remove foreign object
Wires or tubing too stiff.	Use more flexible wire or larger service loop
One piston too high	Lower the piston by turning the Valve Arm Adjustment Screw COUNTERCLOCKWISE.
One piston too low	Raise the piston by turning the Valve Arm Adjustment Screw CLOCKWISE

Symptom: Tabletop Over Reactive	
Possible Causes	Probable Solutions
Air pressure differential too high (i.e., more than 10-15 PSI)	Reduce air pressure differential to 10-15 PSI
Equipment on Tabletop has a high center of gravity (CG)	Reduce air pressure differential to 5 PSI. If symptom persists, call Kinetic Systems, Inc.
VIBRA-LEVEL Servo Valve oscillating	Call Kinetic Systems, Inc. for replacement.

Section VI

Recommended Spare Parts:

While maintenance requirements for the 9100/9200 Series Vibration Isolation Table are minimal, some parts can be damaged if the system is improperly moved. In order to avoid any inconvenience, Kinetic Systems, Inc. recommends that the user maintain one or two spare parts inventory of possible replacement items. These items are listed below:

MODEL NO.	RECOMMENDED QUANTITY ON HAND	PART NO.	DESCRIPTION
9101, 9102, 9211	2	130200-05	Leveling Valve
9101, 9211 Front	9101 : 2	123168-03	Airmount (Isolator) (200#)
	9211 : 1		
9102, 9211 Rear	9102 : 2	123169-03	Airmount (Isolator) (300#)
	9211 : 1		

Section VII

Replacement Isolator Installation:

The following instructions explain how to replace the airmount (Isolator) on your 9100/9200 Series Vibraplane Optical Table.

Required Materials:

- Replacement Isolator (as per specification)
- Silicone rubber (RTV 732 or Equivalent)

Required Tools:

- Long, flat head Screwdriver.

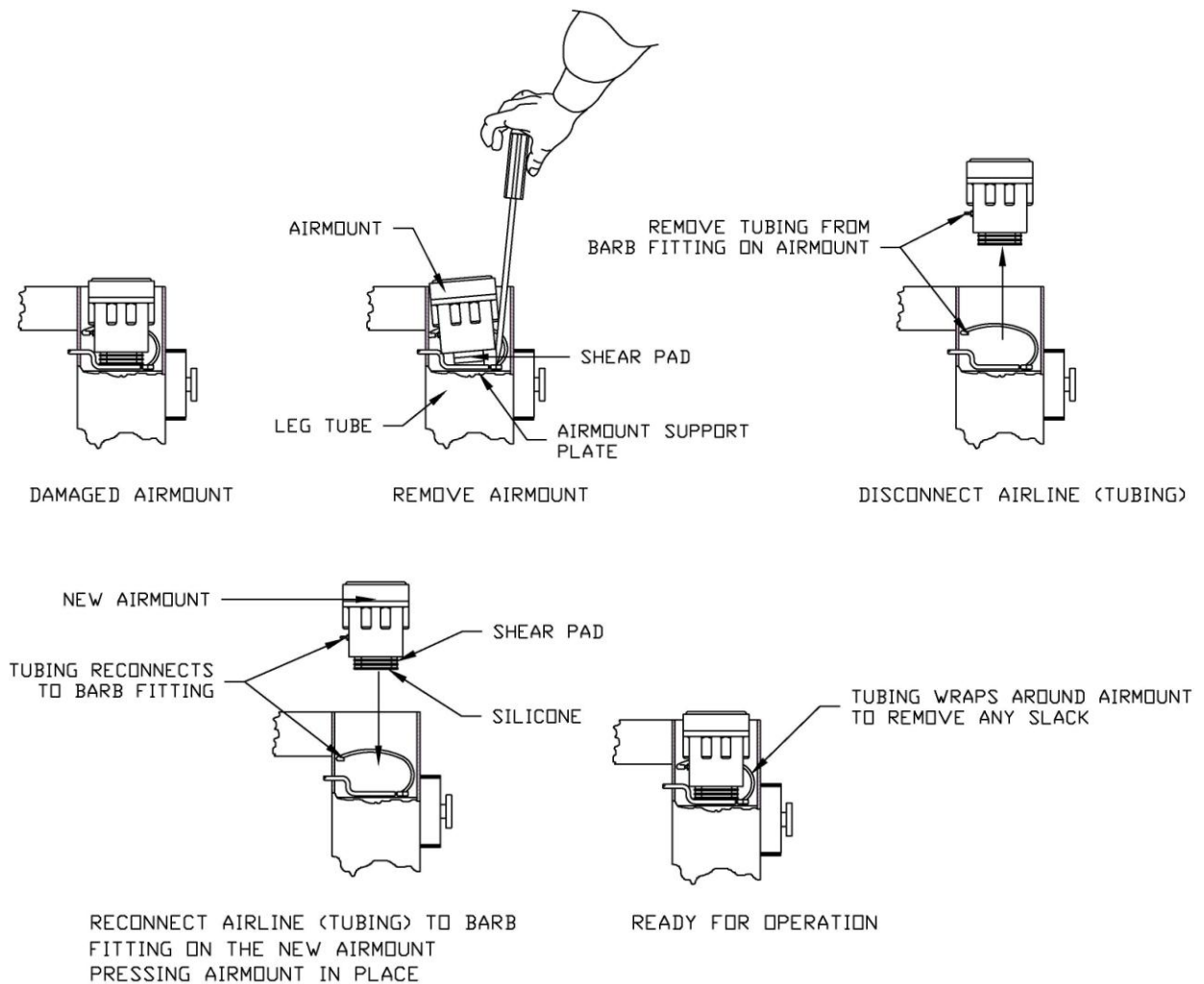


Figure 21. 9101/9102 and 9211 Replacement Airmount.

Prior to replacing the airmount, remove the tabletop and pressurize the system. Check the airmount and all fittings for leaks. If a fitting is leaking, try stopping the leak by tightening the fitting. If the leak persists, depressurize the system and replace the airmount as described below.

1. Turn off air supply and exhaust air from the damaged airmount.
2. Remove airmount by using a long, flat head screwdriver and by gently prying from all sides of the airmount (as shown on Fig. 21.)
(CAUTION: Do not damage the tubing coming into the leg tube).
3. Disconnect the airline (tubing) from the side of damaged airmount.
4. Clean any dry silicone from support plate of airmount seat.
5. Reconnect the airline (tubing) to the new airmount assembly and apply four small beads of silicone to bottom surface of the airmount shear pad.
6. Install new airmount assembly by pressing the airmount into support plate. Rotate the airmount clockwise to remove any slack in the tubing so that the tubing will not come in contact with leg tube. (Do not pull tubing tight).
7. The Replacement airmount installation is now completed.

Section VIII

Filter Regulator Installation and Operation:

Installation:

The air supply filter regulator comes pre-installed on the system control panel. To remove or replace the regulator, disconnect air supply and unscrew the retainer ring on the regulator in front. Slide the regulator out through the rear of the control panel. The regulator has one inlet port (indicated by 'IN' and an arrow) and three outlet ports. Disconnect the plumbing tubes and replace the malfunctioning regulator with new regulator. Reconnect the plumbing tubes, making sure that the tube from supply source is connected to inlet port. Slide the regulator from rear and refasten the retainer ring in front.

Pressure Adjustment:

To unlock adjustment and operate, pull the knob out into its forward-most position. Turn knob clockwise to increase the regulated pressure supplied to the system and counter-clockwise to reduce the air pressure supplied. It is recommended to set the supply pressure only 10-15 PSI more than the system pressure observed on the gage. (Refer to Fig. 22).

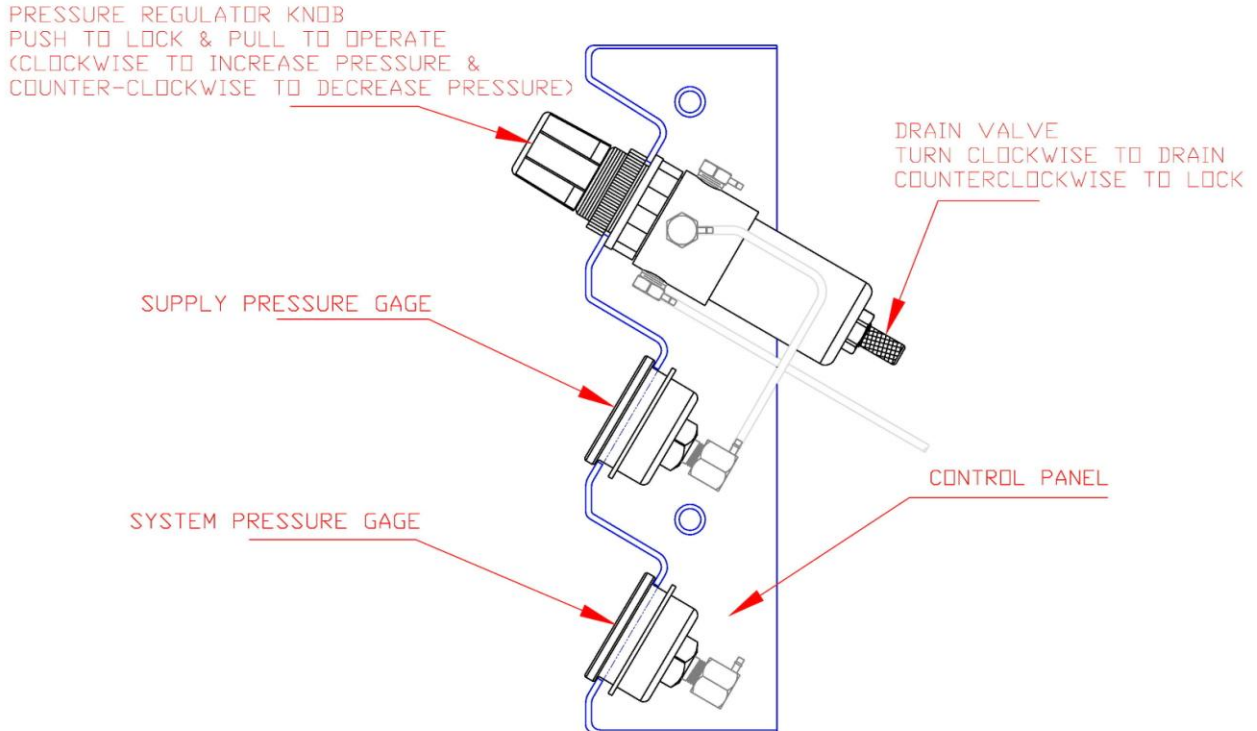


Figure 22. Filter Regulator.

Maintenance:

To obtain best efficiency and longer period of trouble-free operation, the air supply must be moisture free and clean, as dirt is the most common cause of erratic regulator operation. If using in-house air supply, it is recommended that the user maintain the air supplied to the system dirt-free by using another regulator with 20 micron filter between the air-supply and the system filter-regulator. Provisions for this are to be made by the customer. To clean, it is not necessary to remove unit from its piping or line. At the bottom of the regulator is a drain valve (see Fig 22) which should be periodically opened, (turn clockwise) particularly when sediments or moisture collect in the regulator.

Warranty

Equipment manufactured by Kinetic Systems, Inc. (KSI) is warranted against defective workmanship and materials for one (1) year from date of delivery. Defective material or items will be replaced at no charge. This warranty does not include labor to remove and install the material or item in question. Material returned under Warranty will not be accepted without the prior approval and assignment of a Return Authorization Number by KSI. All returns must be shipped Freight Prepaid unless KSI authorizes otherwise. In those instances where returns must be by Motor Freight (truck), KSI will furnish the proper commodity rate classification for lowest shipping cost.