
1206 INSTRUCTION MANUAL

KINETIC SYSTEMS, INC.

VIBRAPLANE MODEL 1206

ACTIVE-AIR ISOLATION MOUNTS

The Quality Leader in Vibration Isolation

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Section I

As You Begin:

Congratulation! The VIBRAPLANE Model 1206 Active-Air Isolation mounts 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 1206 Vibration Isolation mounts is a three or four point active Air Suspension Systems. When connected to pressurize dry air or nitrogen source, the Tabletop will maintain a preset zero-deflection level (independent of any load movement, addition, or removal) by means of three VIBRA-LEVEL Valves, which bleed or feed air as necessary from the pressurized source.

The maximum gross load capacity for the VIBRAPLANE Model 1206 Vibration Isolation mounts is from 200 to 20,000 lbs. when operated at 80 psi. If the Table is to be operated at less than maximum gross load capacity, a proportionately lower pressure air generally adequate for most small instruments.

In order to get full benefit from your VIBRAPLANE Model 1206 Vibration Isolation mounts, 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. If your problem persists, the technical supports staff at Kinetic Systems, Inc. will be glad to answer any questions. Just telephone us at (617) 522-8700, Fax (617) 522-6323 or Email kineticsystems.com.

Damage due to Shipping:

When your VIBRAPLANE Model 1206 Vibration Isolation Table arrives, inspect it carefully for any damage due to shipping. *IF ANY DAMGE IS DETECTED, NOTIFY THE SHIPPING CARRIER IMMEDIATELY. SAVE ALL PACKING MATERIALS.*

Section II

Set Up Procedure:

The following equipment's and tools are recommended to set up your 1206 Vibration isolation Table.

- A hydraulic lifting device.
- A carpenter's level
- A screwdriver.
- An adjustable wrench.

Refer to Fig. 1 for an outline view of your VIBRAPLANE Model 1206 series, each unit isolator is fully assembled and tested prior to shipment.

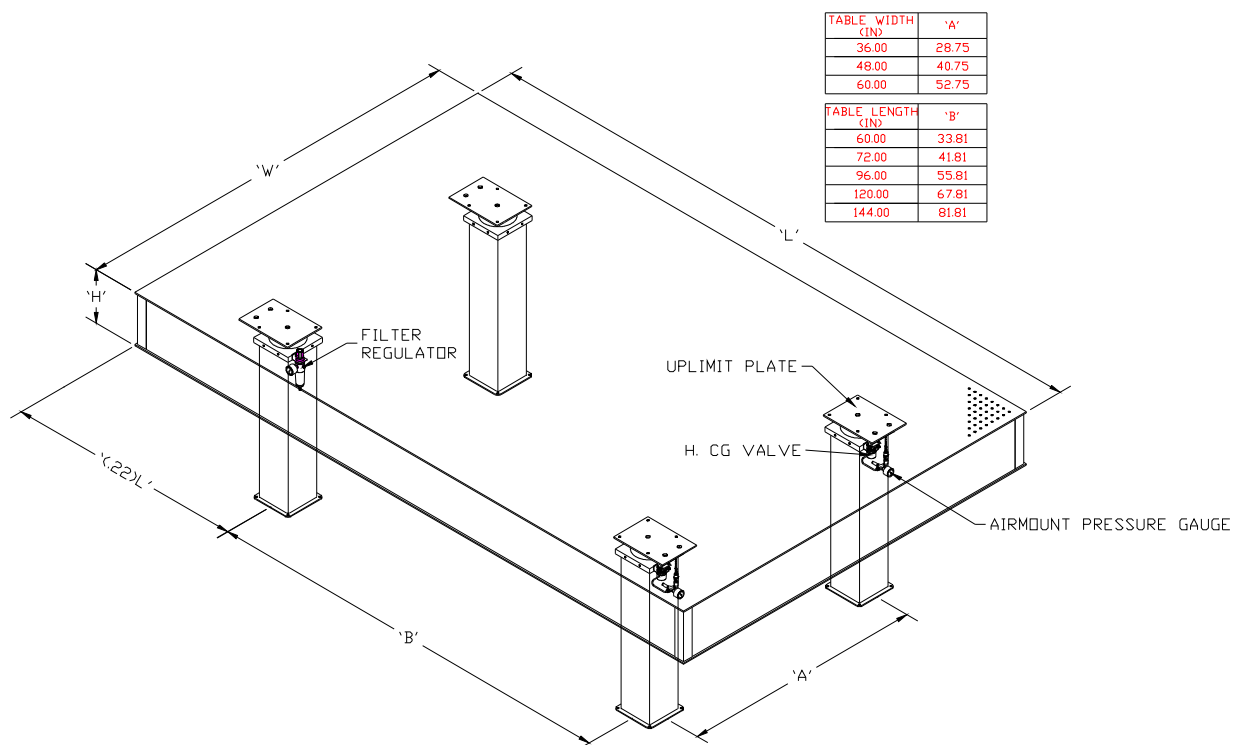


Fig. 1 Outline view and placement of 1206 Vibration Isolation Airmount stand location.

1. A minimum of three (3) Active-Air isolators of sufficient load capacity are required for stable load support. If additional load capacity is required select a higher capacity 1206 isolator mount, or one or more Slave Isolators can be added to raise the supported load capacity to its desired level.
2. To insure system stability the center gravity height above the plane of Isolator/load interface should not exceed 25% of the shortest distance between Isolators. If more information is required contact Kinetic Systems, Inc.'s technical support people.
3. Slave Isolators are controlled by an interconnection with an Active-Air Isolator. In systems with three or more Slave Isolators it is desirable to equalize the number of Slave Isolators controlled by each Active-Air Isolator.
4. Carefully remove all shipping materials (metal strapping, cardboard, etc.)
5. Refer to Fig. 2 remove and discard the two (2) 1/4-20 x 1.75" slotted round head screws that hold down each uplimit plate located at the stop of the Isolation mounts. These serve only to align the uplimit plate, and secure it for shipping.

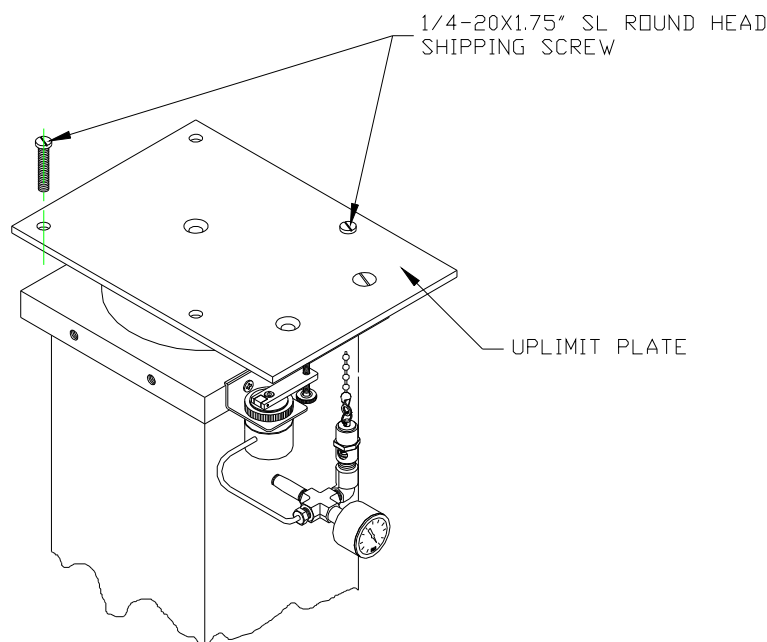


Fig. 2 Illustration of Shipping Screw Removal

6. Place the Vibradamped Mastic pads provided with the system under the four corners of each Isolation mount and install the mounts or place them on the floor depending on your application. These pads are provided to compensate for floor imperfection that will allow isolator to rock.
7. If the uplimit plates shift during installation straighten them as much as possible prior to operation.

8. It is normally not necessary to bolt the Isolators to the equipment or to the floor.
9. Mount the Filter Regulator assembly in a convenient location using the mounting bracket and the two (e) Philips head shelf tapping screws. For some Systems the Filter Regulator assembly is already mounted.
10. Following the airline schematic as shown in Fig. 3a and 3b. In most cases the ends of the black line and the corresponding fittings are letter coded. Firmly grasp the end of each line and push it over its corresponding pre-lettered barb fitting. Make sure the tubing is pushed on all the way.
11. All tubing should be routed in such a way as to prevent kinking or crushing.
12. Connect the Umbilical Assembly (1/4" OD x 15 ft polyethylene tubing and 1/4" NPT fitting) that is provided with the systems from the inlet of the Filter Regulator to a pressurized air supply as shown in Fig. 3a and 3b. The polyethylene tubing may be shortened by cutting with a tubing cutter. If additional pipe fittings are required to complete the connection at the pressurized air supply, these must be supplied by the user. *Note: make sure air is turned off.*
13. The air inlet Filter Regulator is described in the attached (see page 13).
14. Mount the Filter Regulator assembly in a convenient location using the mounting bracket and the two (2) Phillips head shelf tapping screws. For some systems the Filter Regulator Assembly is already mounted.
15. Your VIBRAPLANE Model 1206 Vibration Isolation Table is now ready for operation.

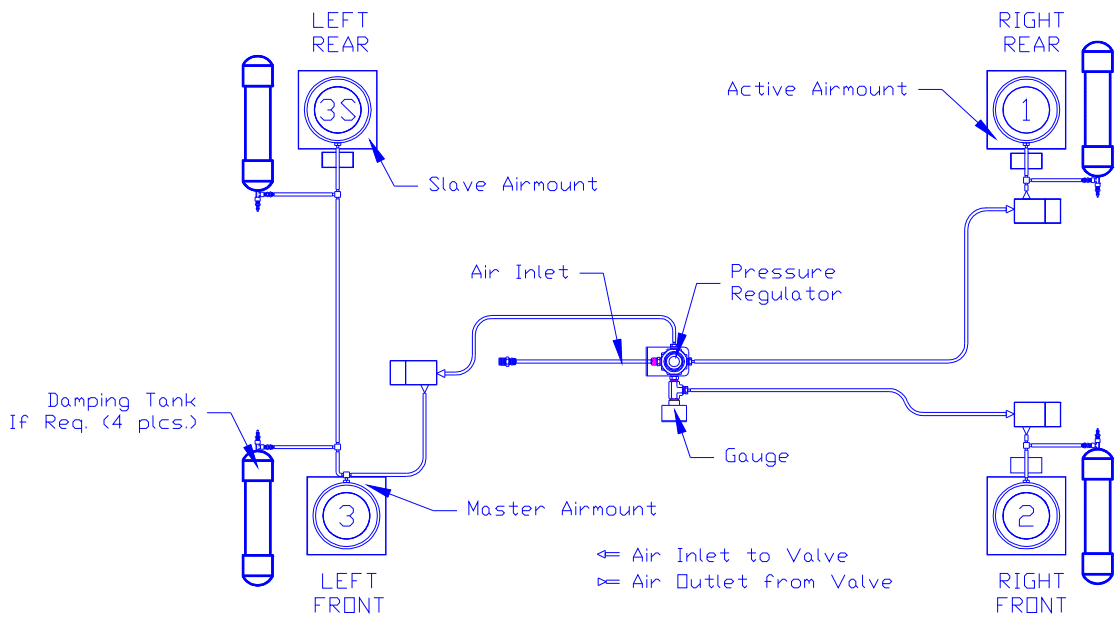


Fig. 3a Airline Schematic for 1206 Four Mount System.

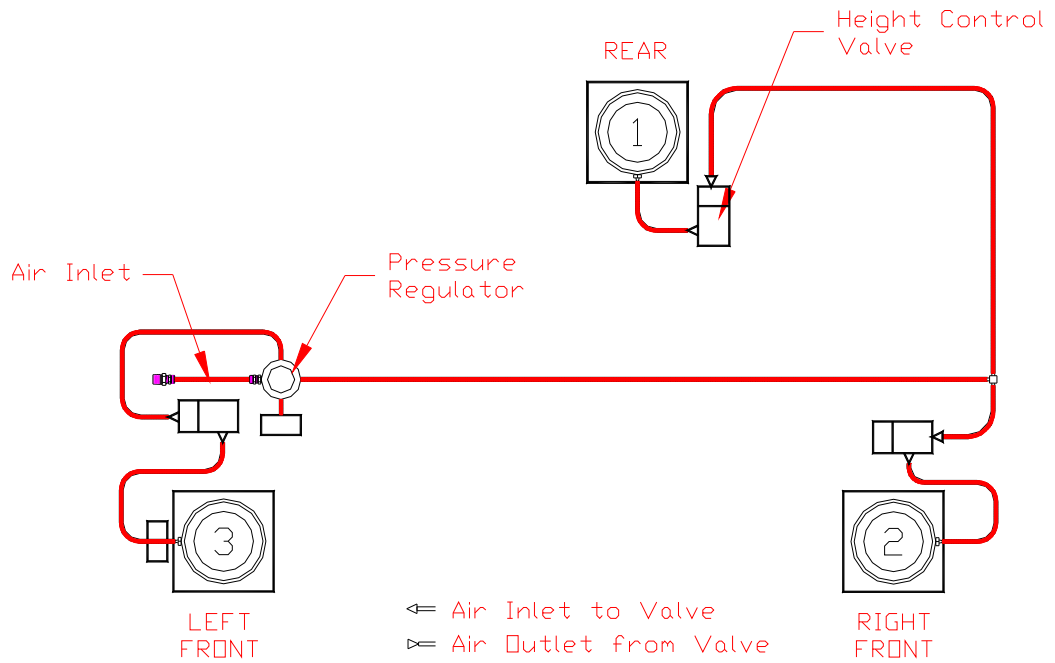


Fig. 3b Airline Schematic for 1206 Three Mount System.

Section III

Operation:

The Model 1206 is delivered pretested and ready for operation after connection to the user's pressurized air supply.

1. the pressurized air supply should be clean air or nitrogen from a regulated line or bottle, with pressure not to exceed 100 psi.
Caution: Never exceed 90 psi on system pressure regulator.
2. Position your equipment on the Tabletop, centering it as much as possible.
3. Turn on the pressurized air supply and adjust the Filter Regulator until the gauge reads approximately 80 psi. It is advised not to exceed 80 psi Filter Regulator Pressure.
4. Be sure to adjust the VIBRA-LEVEL Valve Arm Adjustment Screw, so that the tip of the screw is touching the bottom surface of the Tabletop, or Uplimit plate as shown in Figure 4, and that each Valve Arm is slightly below horizontal for in the fill position and 10 degree above horizontal for neutral position.

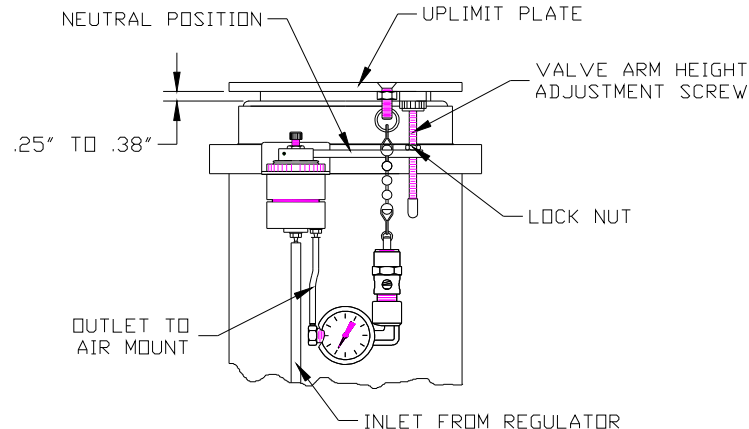


Fig. 4 Valve Adjustment Illustration.

5. 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 the Filter Regulator and raise if necessary or turn the Valve Adjustment Screw(s) COUNTERCLOCKWISE.
6. When the Tabletop is completely "floating", adjust each Valve Adjustment Screw so that the tabletop is level front-to-back and left-to-right. Turn COUNTERCLOCKWISE to raise the supported load. Turn CLOCKWISE to lower the supported load. After leveling, be sure there is more than $\frac{1}{4}$ to $\frac{3}{8}$ of an inch gap between the bottom surface of the Tabletop or Uplimit Plate and the rubber O-ring in the Clamping ring groove.

7. Tighten the Lock Nut on each of the Valve Adjustment Screws.
8. Read the Reference Pressure gauge on the left front leg, and adjust the Filter Regulator gauge to read approximately 10-15 psi higher than the Reference Pressure gauge. For example: If the Reference Pressure gauge reads 55 psi, adjust the Filter Regulator gauge to read 65 to 70 psi.
9. If more equipment load is added to the Tabletop, you may increase the air pressure at the Filter Regulator gauge to accommodate it. It is recommended not to exceed 80 psi Filter Regulator pressure.
10. Once the VIBRAPLANE Model 1206 has been leveled it will maintain itself automatically as long as the system remains pressurized. If the air pressure is shut off for an extend period of time and then repressurized, the Model 1206 Tabletop will automatically return to its preset height.

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 gauge to below what is required to support the Tabletop.

Section IV

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 difficulty persists, call Kinetic Systems, Inc.'s technical support staff for assistance.

Symptom: Tabletop Will Not "Float"	
Possible Causes	Probable Solutions
Air supply pressure too low	Increase air supply pressure
Valve arms set incorrectly	Adjust valve arm angle below horizontal
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 large service loop.
One piston too high	Lower the piston by turning the Valve Arm Adjustment Screw CLOCKWISE .
One piston too low	Raise the piston by turning the Valve Arm Adjustment screw COUNTERCLOCKWISE

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	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 V

Recommended Spare Parts:

While maintenance requirements for the VIBRAPLANE Model 1206 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 a spare parts inventory of possible replacement items, these items are listed below:

Model No.	Quantity	Part No.	Description
1206	1	120497-06	H. CG. Level Valve
1206-200	1	290300-12	Boot (200#)
1206-320	1	290300-01	Boot (320#)
1206-400	1	290300-02	Boot (400#)
1206-700	1	290300-13	Boot (700#)
1206-800	1	290300-14	Boot (800#)
1206-1200	1	290300-05	Boot (1200#)
1206-1600	1	290300-15	Boot (1600#)
1206-2400	1	290300-08	Boot (2400#)
1206-3200	1	290300-17	Boot (3200#)
1206-4800	1	290300-18	Boot (4800#)

Section VI

Replacement Boot Installation:

The following instructions explain how to install a replacement boot for your VIBRAPLANE Model 1206 Vibration Isolation Table.

Required Material:

- Replacement boot (as per specification).
- Silicon vacuum grease.

Required Tools:

- No. 5/32 (4mm) Allen wrench for 10-32 socket head cap screw.

Refer to Fig. 5

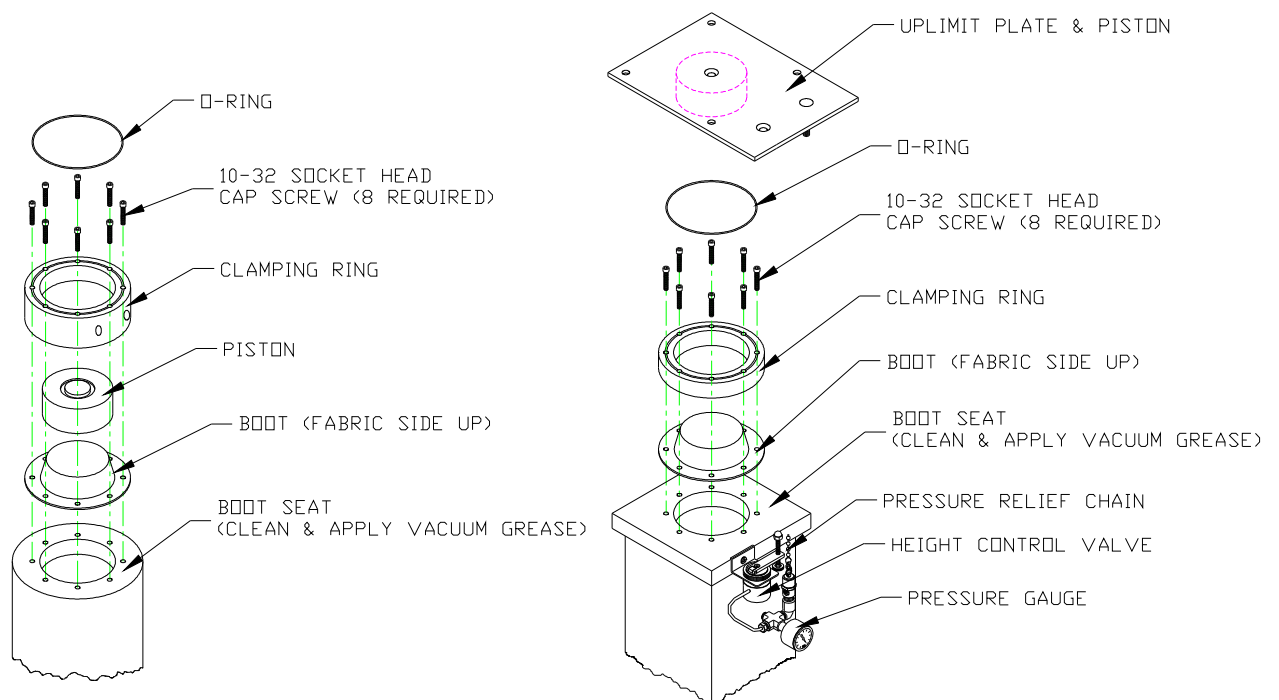


Fig. 5 1206 Replacement Boot Installation.

Procedure for 1206 without Uplimit plate only

1. Turn off air supply and wait for the pressure gauge to read zero (0) psi.
2. Remove O-ring from to of Clamping Ring.
3. Using a 5/32 (4mm) Allen wrench remove 10-32 Socket Head Cap screws holding the Clamping Ring in place.
4. Remove Clamping Ring and damaged boot.
5. Clean boots seats and apply a thin layer of vacuum grease to the cylinder mounting flange.
6. Place the new boot on the boot seat with the “Top Hat” up (i.e. part no. up, fabric side up). Match the boot to the flange hole pattern.
7. Place the piston-boot assembly inside the boot.
8. Place the Clamping Ring over the piston-boot assembly matching up the hole patterns. The counterbored holes should be up to provide a recess for the socket head mounting screws.
9. Carefully align and center the Clamping Ring, boot and flange holes.
10. Apply Loctite adhesive to each socket head cap screw before inserting and hand tightening all screws, taking care to keep the boot centered in the Clamping ring. Tighten all screws cris cross pattern.
11. Torque all screws to approximately 20-30 lbs.
12. Place the O-ring (rubber bumper) into the groove on the Clamping ring.
13. Inspect the piston for burrs or debris. Clean if necessary and replace.
14. The Replacement Boot installation is now completed.

Procedure for 1206 with Uplimit plate only

1. Turn off air supply and exhaust air from damaged mount by pulling up on the chain connected to the pressure relief valve, wait for the pressure gage to read zero (0) psi.
2. Remove the mount from its installation location.
3. Remove Uplimit plate and piston from the airmount.
4. Remove O-ring from top of Clamping Ring.
5. Using a 5/32 (4mm) Allen wrench remove 10-32 Socket Head Cap screws holding the Clamping Ring in place.
6. Remove Clamping Ring and damaged boot.
7. Clean boot seat and apply a thin layer of vacuum grease to the cylinder mounting flange.
8. Place the new boot on the boot seat with the “top hat” up (i.e. part no. up, fabric side up). Match the boot to the flange hole pattern.
9. Place the Clamping Ring over the boot, and matching up the hole patterns. The counterbored holes should be up to provide a recess for the socket head mounting screws.
10. Carefully align and center the Clamping Ring, boot, and flange holes.
11. Apply Loctite adhesive to each socket head cap screw before inserting and hand tightening all screws, taking care to keep the boot centered in the Clamping Ring. Tighten all screws criss cross pattern.
12. Torque all screws to approximately 20-30 lbs.
13. Inspect the piston for burrs or debris. Clean if necessary and replace.
14. Place the O-ring (rubber bumper) into the groove on the Clamping Ring, Piston and Uplimit plate.
15. The replacement Boot installation is now completed.

Section VII

Regulator Installation and Operation:

Installation:

Installation vertical position so that air flow is in direction of arrow stamped on body of unit. Before piping-in, blow out line to remove scale and other foreign matter. If pipe compound is used, apply only to male threads and just enough to make tight joints.

Reduced pressure adjustment:

To unlock adjustment, pull knob (in) to forward most position. Turn knob clockwise to increase the reduced or regulated pressure and counter-clockwise to lower pressure. With relieving-type regulators, the reduced pressure follows adjustment of the screw, with non-relieving regulators adjustment for lower reduced pressure will not be obtained until the reduced pressure system is “bled-off” or until air flow starts (refer to Fig. 6).

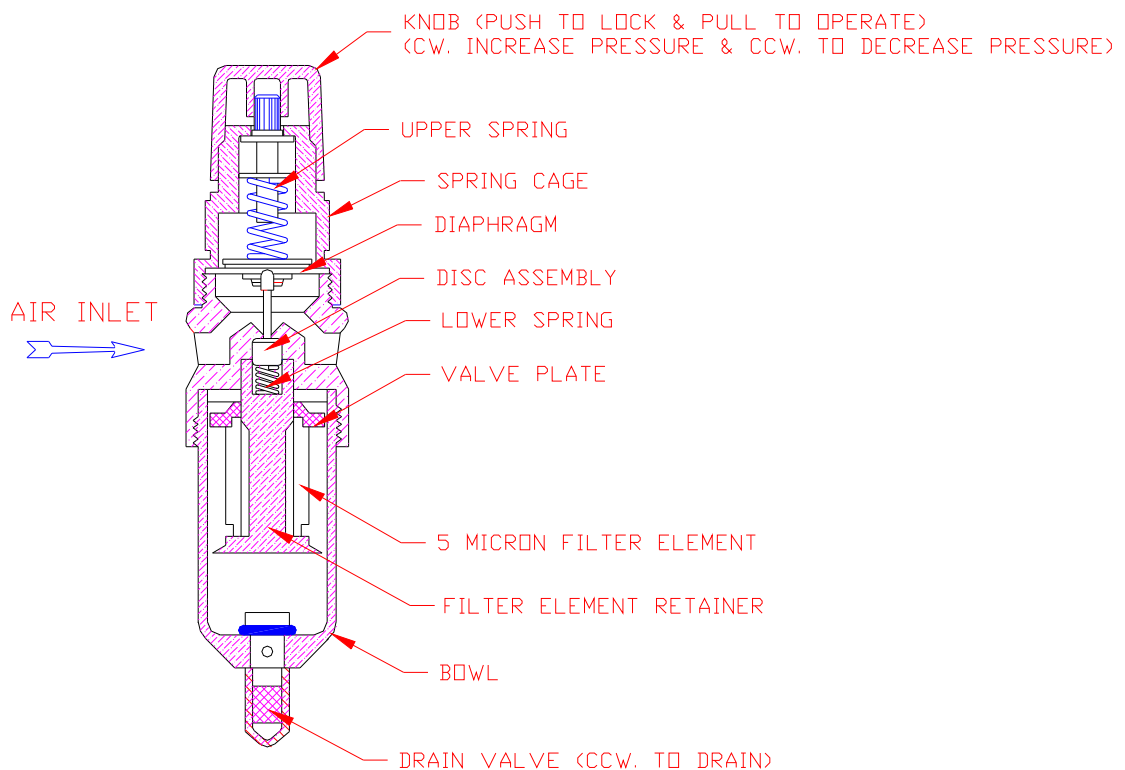


Fig. 6 Filter-Regulator.

Maintenance

To obtain best efficiency and longest periods of trouble-free operation the air supply must be kept clean, as dirt is the most common cause of erratic regulator operation. Only a few parts require occasional replacement-most trouble can be cured and prevented by a thorough and careful cleaning procedure. To clean, it is not necessary to remove unit from its piping or line. At the bottom of the bowl is a drain valve, which should be periodically opened (turn clockwise) particularly when sediment is visible in bowl.

Disassembly for Cleaning

Use diagram on reverse as a guide to disassembly. Depressurize the airline, unscrew and remove the bowl. Unscrew the filter element retainer, and let down the vane plate, disc assembly and bottom spring. If the o-ring on the disc assembly appears worn or nicked, it should be replaced. Unscrew the spring cage and remove the diaphragm. If the diaphragm appears swollen or stiff, it should be replaced. Reassemble the unit in the same order, making sure the disc assembly stem fits into the small hole in the center of the diaphragm. Tighten the spring cage and bowl slightly more than hand tight (up to 50 inch pounds torque).

Cleaning for best results clean parts with alcohol. After cleaning blow out parts including body of unit with compressed air. The filter cone should be blown out from the inside, plugging one end with finger. Plastic bowl must be cleaned with household soap only.

APPENDIX

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 no 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.