# PRODUCT DIMENSIONS

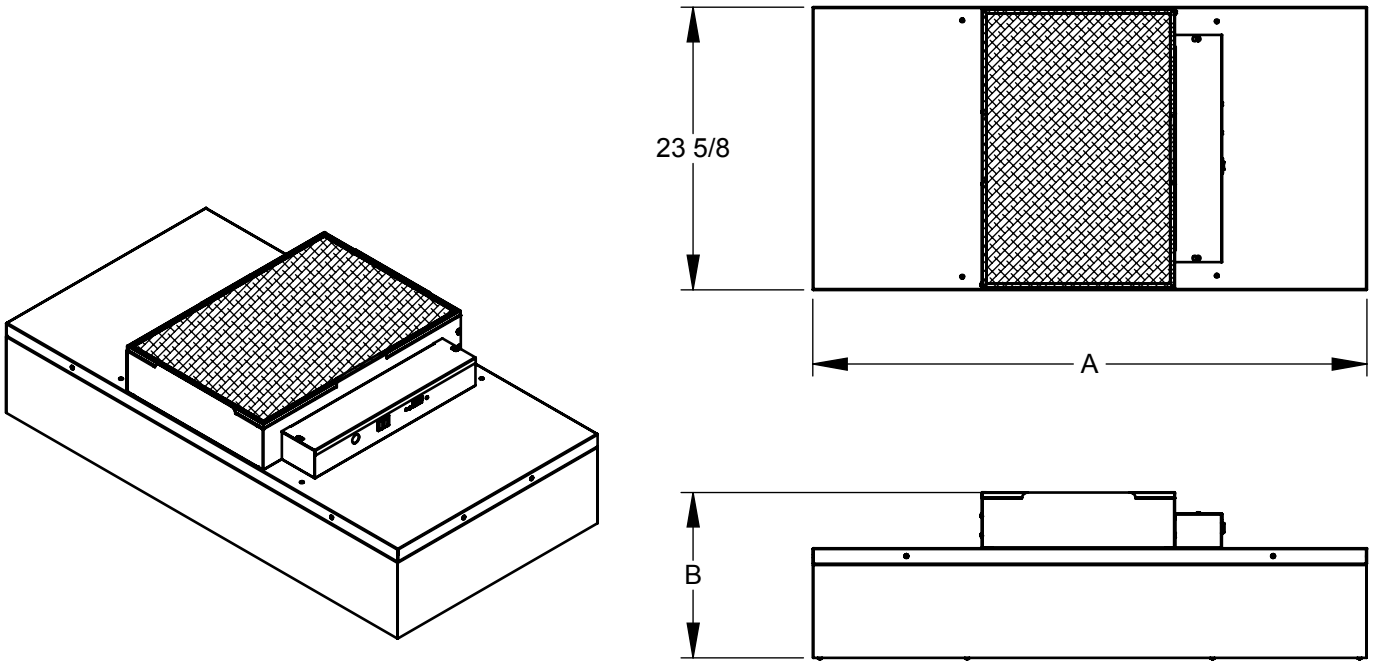


FIGURE 1 - Product Isometric and Dimensional Views

| Unit Type | Motor Type | Nominal Unit Size | Active Filter Face Area (Sq. Ft.) | A | B | Weight (lb) |
|---|---|---|---|---|---|---|
| Standard | PSC | 2x2 | 3.5 | 23 5/8 | 12 9/16 | 41 |
| | | 2x4 | 7.2 | 47 5/8 | 12 9/16 | 66 |
| | ECM | 2x2 | 3.5 | 23 5/8 | 14 3/8 | 41 |
| | | 2x4 | 7.2 | 47 5/8 | 14 3/8 | 66 |
| Room Side Replaceable | PSC | 2x2 | 2.3 | 23 5/8 | 14 5/8 | 44 |
| | | 2x4 | 5.3 | 47 5/8 | 14 5/8 | 71 |
| | ECM | 2x2 | 2.3 | 23 5/8 | 16 7/16 | 44 |
| | | 2x4 | 5.3 | 47 5/8 | 16 7/16 | 71 |

*Dimensions are in inches.*

# SERVICE: Cleaning the LTD Prefilter*

It is recommended that the foam prefilter be washed and cleaned every three to six months to ensure the unit is operating at top condition. No tools are required to perform this service operation.

1. For safety purposes, disconnect unit from electrical power source.
2. Access unit either through ceiling access way or by removing ceiling panel next to the unit and climbing up with a ladder.
3. Ensure the ON-OFF switch is in the off position.
4. Remove the prefilter from the snap-in frame as shown in figure 2.
5. Clean prefilter by using a vacuum cleaner or by hand washing in water with a mild detergent. Leave prefilter on a clean surface to dry before replacing.

*Note: Prefilter is not required or recommended for ducted applications.

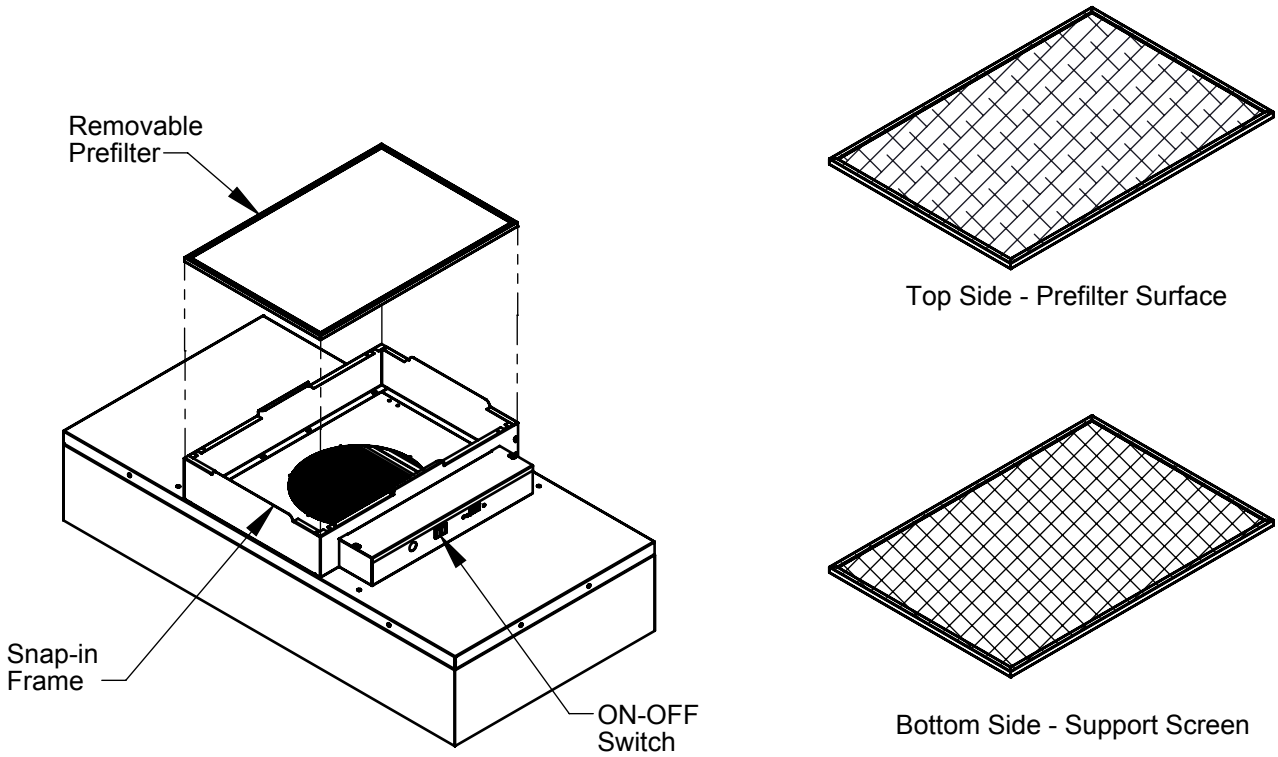


FIGURE 2 - Prefilter Cleaning

# SERVICE: Removal and Replacement of the HEPA/ULPA Filter - Standard Unit (see page 4 for RSR models)

Do not handle the filter by the expanded metal screen as this is only used for protection against accidental contact with the filter. Handle the filter by the frame only. This service operation requires a Phillips head screwdriver.

1. For safety purposes, disconnect unit from electrical power source.
2. Access unit either through ceiling access way or by removing ceiling panel next to the unit and climbing up with a ladder.
3. Ensure the ON-OFF switch is in the off position.
4. Remove unit from ceiling.
5. Remove the 10 screws securing the HEPA/ULPA filter to the lid assembly.
6. Lift the lid assembly off the HEPA/ULPA filter as in figure 3 and discard the used filter as per appropriate regulations.
7. Inspect new replacement HEPA/ULPA filter for any visible damage and make sure the gasket in the "tee" bar will insure a tight seal. Replace discarded old filter with inspected new filter by reversing the previous steps.

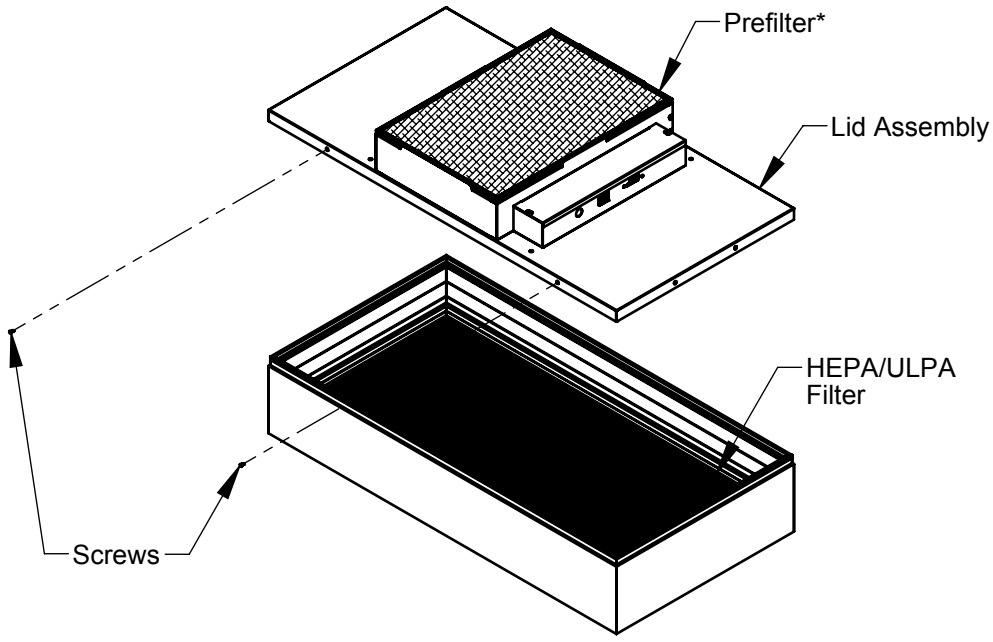


FIGURE 3 - HEPA/ULPA Filter Replacement
*Note: Prefilter is not required or recommended for ducted applications.

# SERVICE: Removal and Installation of the Room Side Replaceable Gel Seal Filter - Extrusion Housing (RSR)

Do not handle the filter by the expanded metal screen as this is only used for protection against accidental contact with the filter. Handle the filter by the frame only. This service operation requires a 5/32" hex head wrench and is best completed with two people.

1. For safety purposes, disconnect unit from electrical power source.

2. Access unit either through ceiling access way or by removing ceiling panel next to the unit and climbing up with a ladder.

3. Ensure the ON-OFF switch is in the off position.

4. Remove the diffuser face plate. This may require the removal of four socket head screws that attach the screen to the filter as shown in figure 4.

5. Loosen the six socket head screws for the filter clips enough to allow the clips to rotate 180°. The knife-edge gel seal should prevent the filter from dropping. Using the clips as handles, pull the filter out of the knife-edge seal slowly and carefully, insuring the gel remains in the filter gel track.

6. Inspect the removed filter for any visible damage, and if present, set aside for replacement or repair.

7. Prior to reinstalling the removed filter, inspect the gel seal and repair if the gel is no longer capable of sealing.

8. Reposition the filter against the filter-sealing surface and then rotate the clips back into place. The clips can be used as a lever to seat the filter firmly against the gel seal. It is recommended to have another person hold the filter in place as the filter clip socket head screws are tightened securely in place. Once the filter clips are tightened, make sure the filter is secure.

9. Replace the diffuser face plate and if necessary, reinstall the socket head screws.

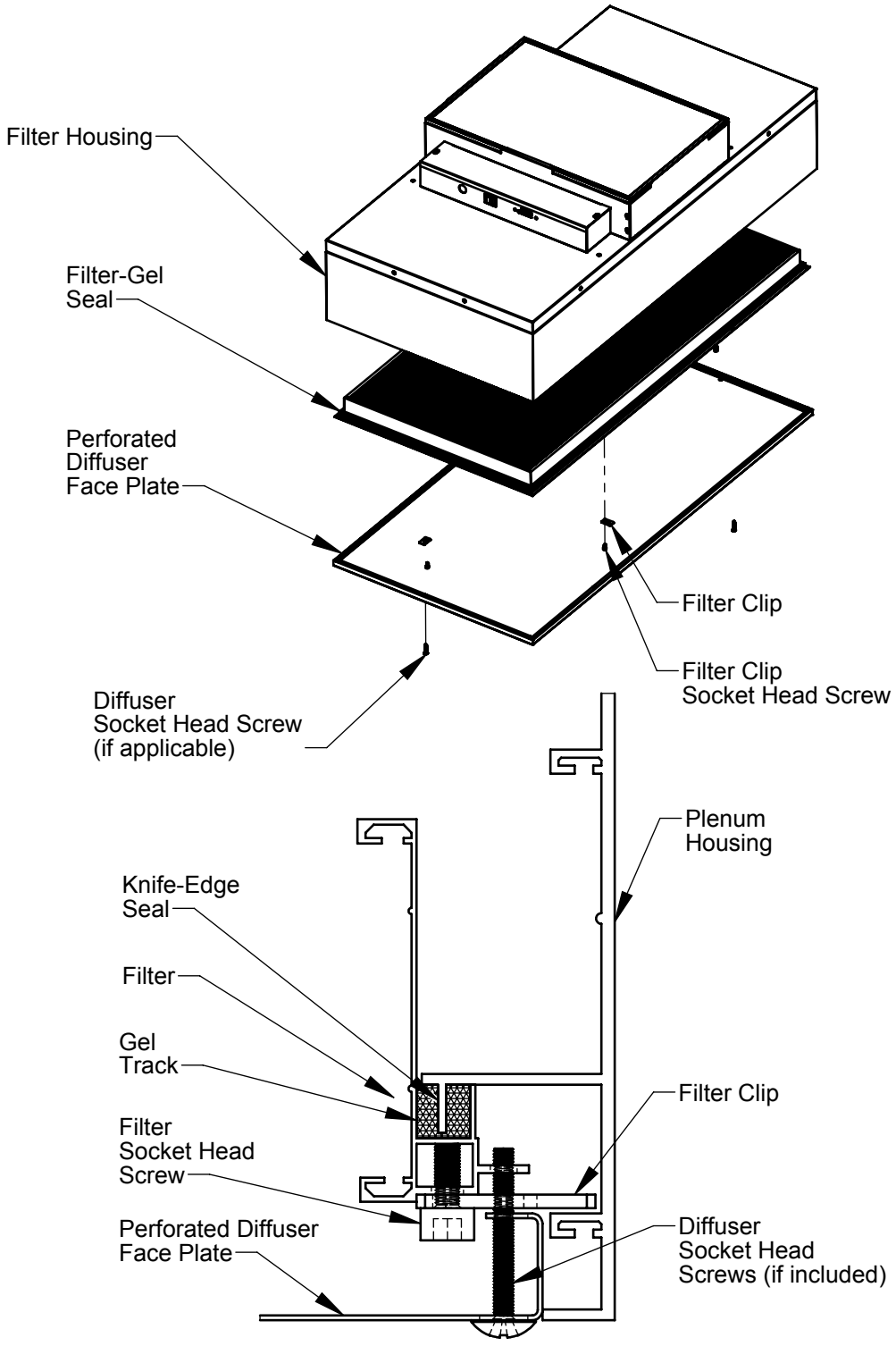


FIGURE 4 - RSR Filter Replacement (Extrusion Construction)

# SERVICE: Removal and Installation of the Room Side Replaceable Gel Seal Filter - Sheet Metal Housing (RSR)

Do not handle the filter by the expanded metal screen as this is only used for protection against accidental contact with the filter. Handle the filter by the frame only. This service operation requires a 5/32" hex head wrench and is best completed with two people.

1. For safety purposes, disconnect unit from electrical power source.
2. Access unit either through ceiling access way or by removing ceiling panel next to the unit and climbing up with a ladder.
3. Ensure the ON-OFF switch is in the off position.
4. Remove the diffuser face plate by shifting it to one side and lowering it from the rest of the unit.
5. Loosen the 1/4-20 bolts for the filter clips enough to allow the clips to rotate 180°. The knife-edge gel seal should prevent the filter from dropping. Using the clips as handles, pull the filter out of the knife-edge seal slowly and carefully, insuring the gel remains in the filter gel track.
6. Inspect the removed filter for any visible damage, and if present, set aside for replacement or repair.
7. Prior to reinstalling the removed filter, inspect the gel seal and repair if the gel is no longer capable of sealing.
8. Reposition the filter against the filter-sealing surface and then rotate the clips back into place. The clips can be used as a lever to seat the filter firmly against the gel seal. It is recommended to have another person hold the filter in place as the filter clip socket head screws are tightened securely in place. Once the filter clips are tightened, make sure the filter is secure.
9. Replace the diffuser face plate by lifting it back into unit and then sliding it over until it is secure.

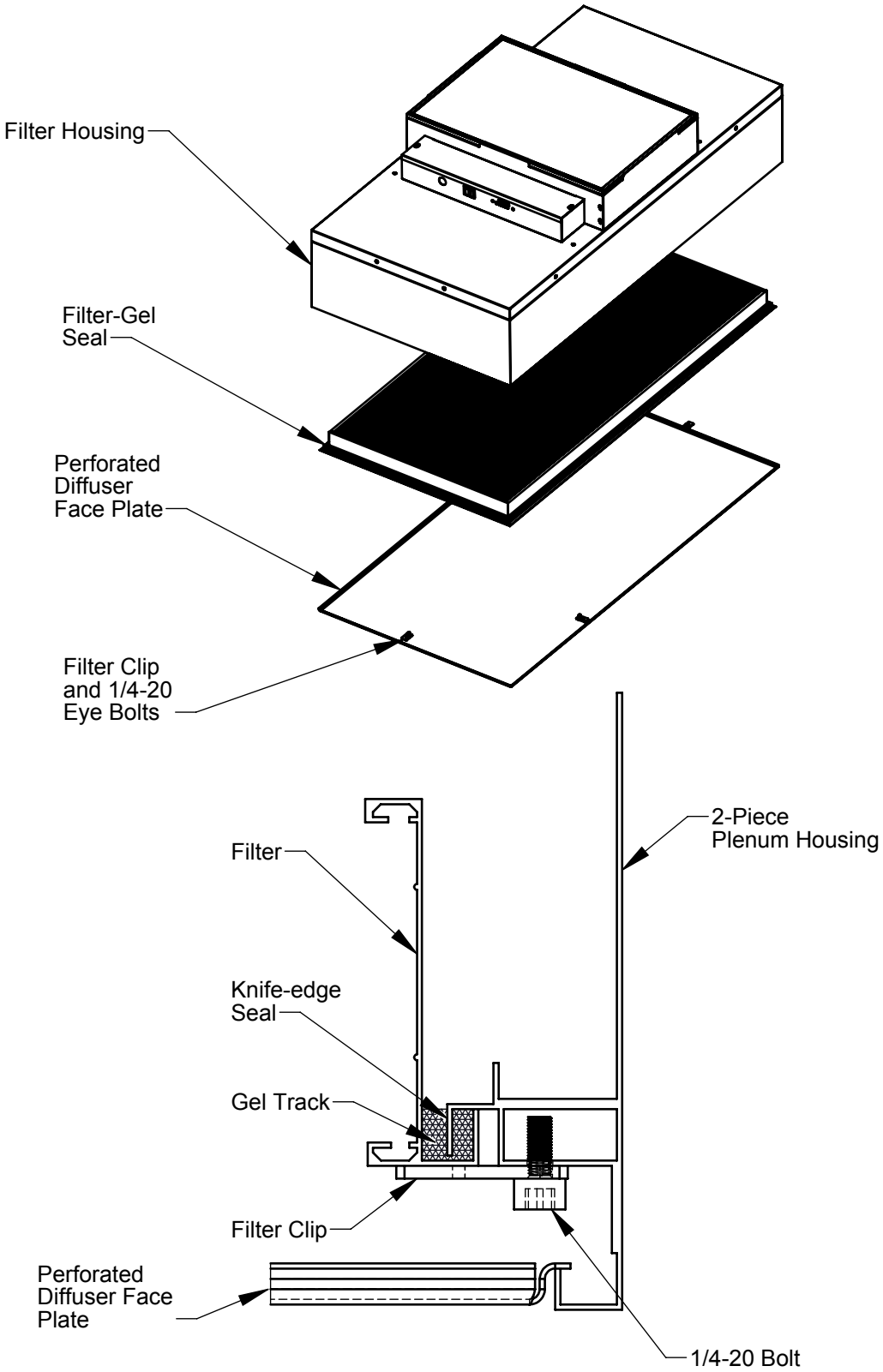


FIGURE 5 - RSR Filter Replacement (Sheet Metal Construction)

# OPERATION - Speed/Airflow Adjustment with ON-OFF Switch

The included speed control enables adjustment of airflow at any setting within the recommended performance range.

**PSC MOTOR Speed Control Knob**

If this unit features a PSC motor, the speed control knob will be located on the electrical box next to the on-off toggle switch.

Speed/airflow of the unit is adjusted by rotating the knob counterclockwise to lower the speed and clockwise to increase the speed. Fully rotating the speed control knob to the far left position (counterclockwise) will turn the unit off. Note that when the unit is turned "ON" by adjusting the speed control from the far left "OFF" position, the fan will be set at the highest speed. Turn the knob clockwise to lower the airflow to the desired setting.

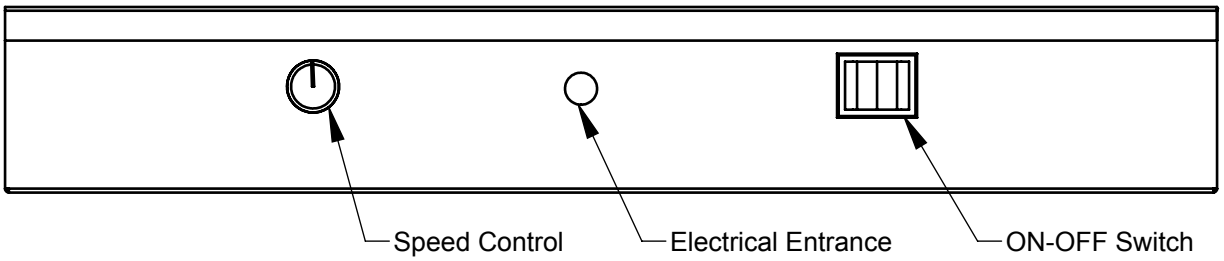


FIGURE 6A - Speed Control Adjustment, PSC Motor

**ECM MOTOR Visual Speed Control**

If this unit features a ECM motor, it will include a Visual Speed Control board and a screw-driver operated control adjustment stem.

Speed/airflow of the unit is adjusted by sticking a screw driver into the recessed blue slotted stem located to the left of the LED readout and rotating the stem counterclockwise to lower the speed and clockwise to increase the speed. The included LED readout will alternate between displaying the selected flow index as a percent and the actual motor RPM.

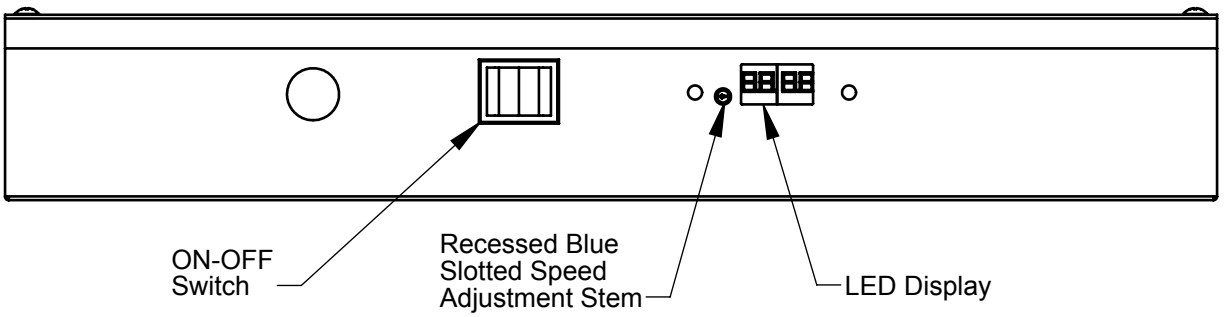


FIGURE 6B - Speed Control Adjustment, ECM Motor

# TROUBLESHOOTING

Should any of the following issues present themselves, please try the following steps. If issues persist, please contact Tuttle & Bailey.

**Low Air Velocity**

1. Inspect prefilter* media and replace or clean if necessary.
2. Adjust airflow/speed control for higher blower output.
3. Have a qualified electrician check power supply for proper amperage, voltage, and distribution frequency.
4. If the previous steps have not increased air velocity to desired value, it is time to replace HEPA/ULPA filter.

**High Air Velocity**

1. Adjust airflow/speed control for lower blower output.

**Non-Laminar Flow and/or Excessive Contamination**

1. Remove any large obstructions upstream of airflow.
2. Remove or deactivate any other air handling devices operating in or around area where unit is installed (e.g. clean room).
3. Make sure that unit is operating at desired air velocity.
4. Inspect HEPA/ULPA filter with a photometer or smoke test and if necessary, reseal or replace filter.

*Note: Prefilter not required or recommended for ducted applications.

# INSTALLATION

The LTD Fan Filter Unit comes full factory assembled except for optional 1/4"-20 eyebolts which are used to hang the unit from overhead structures.

1. Carefully remove unit from shipping container and inspect for damage that may have occured in transit.

2. Wipe plastic bag to remove any debris and move unit into room where it is to be installed (e.g. clean room). If required, unit can be double bagged upon request.

3. When installing into a rigidly supported grid (2" or wider), raise unit through the ceiling and lower onto the gasketed grid. Installation into a flexible grid (usually supported by wires) requires that the unit be secured to an overhead structure with eyebolts, s-hooks, and safety chains. High-density gasket material is provided if installing in an ungasketed grid.

4. An electrician should wire the unit to the appropriate voltage (115V, 220V, 227V AC), referencing the wiring diagram in figure 1 and local electric codes. If the optional power cord was ordered, the unit should be plugged into a grounded receptacle.

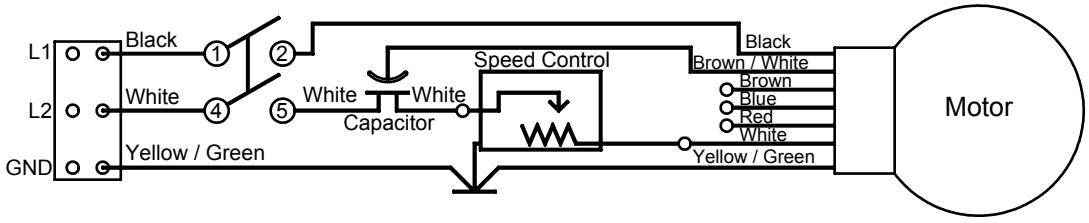


FIGURE 7 - B.O.M. Wiring Diagram
(If using GE or FASCO motors, switch brown with brown / white wire)