

## Bulletin 201

# Examining and Removing Dust Ejectors For Better Machine Performance

**Overview:** This bulletin is designed to improve your machine performance, increase uptime and reduce operating costs by eliminating the problem of plugged air intake components.

**Current Precleaner Systems:** If you are not currently using an atmospheric ejective precleaner, your system is most likely suffering from the following problems:

- Plugged or melted tube bodies • Shortened filter life
- High initial restriction

**Dust Ejector Systems:** To understand how an atmospheric ejective precleaner can out perform the operating efficiency of a dust ejector, let's quickly review how a dust ejector system works. The incoming air is drawn past the prescreen and down into the separator tubes where it passes over a set of angled louvers, which separate heavier-than-air particles. These particles are deposited in the collection area of the tube body housing and vacuumed through the exhaust system. The air then passes out of the bottom of the separator tubes and enters the air filter. There are four major components to a dust ejector system:

1. The rain cap and air inlet prescreen.
2. The main tube body that contains the separator tubes and dust collection area.
3. The crossover tube or pipe that connects the tube body collection area to the exhaust ejector.
4. The exhaust ejector normally built into the muffler.

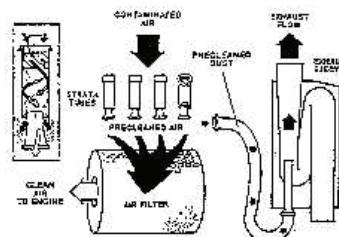
The particles that collect in the tube body housing are pulled (by vacuum) out of the tube body and into the crossover pipe where they are expelled through the exhaust ejector and into the environment through the muffler. (Refer to Figure 1 for complete flow diagram of air.) Dust ejector systems offer good dust and light particle separating efficiency when maintained in good working order. However, "good working order" is difficult to maintain in real world environments.



**Hazards of the Environment:** In the real world environment, machines are exposed to many types and sizes of debris. Unfortunately, the dust ejector system is not equipped to handle these various contaminants. For example: Humidity and moisture cause debris in the tube body chamber to harden and plug tubes. There is no way to visually inspect or clean systems when this occurs. The picture to the right illustrates contamination build up.

Often tube bodies will melt due to exhaust gas backpressure. Exhaust gases are inert and therefore, displace air in the air/fuel mixture causing reduced combustion. An engine that is breathing exhaust gasses will have the following problems:

- Run hotter
- Have less power
- Burn more fuel
- Greatly reduce air filter life,
- Create afterburning in the exhaust manifold and muffler
- Increase fuel dilution and by-products of combustion in the lube oil
- Reduce component life.



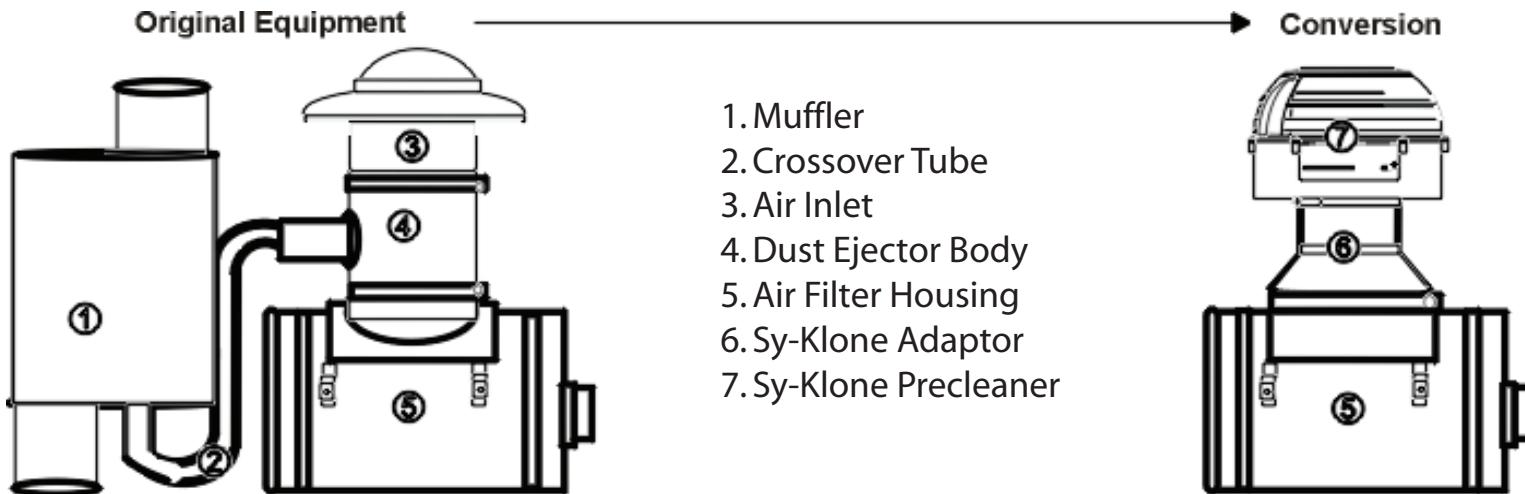
The pictures below illustrate the melting of tube bodies from backpressure.



## Instructions for Removing the Dust Ejector System and Installing the Series 9000 Atmospheric Ejective Precleaner

Due to the dust ejector's, failure to work in all environments and how consistently it plugs with debris, it is recommended that the system be removed and replaced with an atmospheric ejective precleaner.

1. Remove the crossover tubing from the dust ejector body and muffler.
2. Remove the ejector portion of the muffler extension and replace with straight piece of tubing. Remove the exhaust rain cap from the ejector tube and install it on the new muffler tubing. If the ejector portion is built into the muffler, go to step 3.
3. Plug crossover port in muffler. If the crossover port has a flange, then install a Sy-Klone part number MP3040. If the crossover port is a round hole, find appropriate plug and install.
4. Loosen clamp that holds dust ejector body to the air filter housing.
5. Pull upwards and remove the dust ejector body from machine. In case of removing the dust ejector from a Cat Tractor D6H through the D11R, refer to Sy-Klone Bulletin 304.
6. Install the proper adapter and clamp to the air filter housing and tighten clamp.
7. If required, install dust boot onto adapter and push the dust boot down until it is flush with the hood.
8. If using the optional large basket screen, lower it down the adapter with the large end facing upward.
9. Install the correct size Sy-Klone Series 9000 Air Precleaner on to the adapter and tighten clamp. If the large basket screen is being installed. Raise it up under the SY-Klone air Precleaner until the top of the outside lip comes in contact with the dome mounting screw bosses on the Sy-Klone Air Precleaner, then follow the instructions that came with the screen kit.
10. Check all connections and replace air filters.
11. Start engine. Run engine under full load for 3 to 5 seconds then check the restriction gage. If the restriction is within specification, installation is complete. If the restriction is too high, make sure all packaging material has been removed from the air precleaner inlets and adapter inlet.
12. If restriction shows no movement, make sure the air flow restriction indicator is working properly.
13. If restriction is still too high, make sure you purchased the correct size air precleaner. For this and any other questions, please contact the Sy-Klone Service Support Team at 1-800-351-8265 or 904-448-6563. You may also use the new sizing wizard at [www.sy-klone.com](http://www.sy-klone.com) 24 hours a day or email your questions to [service@sy-klone.com](mailto:service@sy-klone.com).



**WARNING!** Do not attempt to install, remove, or inspect unit while engine is running. Do not insert objects into open areas while in operation.