TUTHILL
Vacuum & Blower Systems

4840 West Kearney Street, P. O. Box 2877
Springfield, Missouri USA 65801-2877
Tel 417 865-8715 800 825-6937 Fax 417 865-2950

TECHNICAL BULLETIN #25

Instructions for Injecting Fuel Oil, Kerosene and Lube Oil Into Blowers Handling Sewage Gas

There are many M-D blowers utilized in digester (or sewage) gas applications. Sewage gas is seldom pure, with much dissolved solid matter entrained in the gas stream. When this gas is compressed by the blower and is subsequently heated by the compression process, any moisture is evaporated, allowing the dissolved solids to "plate out" or adhere to the rotors. If enough of these solids (or "sludge") from the digester gas builds up on the rotors, it reduces the blower operating clearances between the rotors, housing and end plates, resulting in equipment failure.

This can be easily prevented by periodically flushing the blower with a mixture of 75% kerosene or fuel oil and 25% lubricating oil. The kerosene or fuel oil dissolves the sludge buildup and the lubricating oil coats the rotors to slow buildup.

The mixture should be injected on the inlet side through a valve set to feed the quantity of the mixture shown in the table below in a period of 15 to 20 minutes. On units regularly flushed, once a week is sufficient. If the unit is dirty, it should be flushed daily until hard buildup is removed and then put on a weekly cycle. In very dirty gas installations the schedule must be varied to meet the demand.

RECOMMENDATIONS FOR SEWAGE OR DIGESTER GAS BLOWERS

- Always use vertical flow blowers (PD PLUS® -81 or -67 series).
- A corrosion protective coating, such as Bi-Protec®, is highly recommended.
- Two lobe, O-ring plugged rotors should be specified.
- Kalrez® (or Simriz®) O-rings in the mechanical seals to reduce degradation of mechanical seals from H_2S (hydrogen sulfide) in the sewage gas.
- If discharge temperature is acceptable, operate blowers between 50-70% of maximum design speed.

MODEL SIZE	FLUSHING QUANTITY GALLONS (LITERS)
3200	0.5 (2.0)
4000	1.0 (4.0)
5500	1.0 (4.0)
7000	1.5 (6.0)
9000	2.0 (8.0)
1200	3.0 (12.0)