



Service Bulletin

Date: February 2002
From: Capstone Technical Support
Subject: Exhaust Damper Valve Requirements

Affected

All Capstone MicroTurbines with exhaust outlets tied together into a common duct. This is typically a combined heat and power application where multiple MicroTurbines exhaust is ducted into a single heat recovery unit or other waste heat utilization process.

Summary

When multiple MicroTurbines force their exhaust into a common duct or heat recovery device, there will be exhaust pressure greater than the ambient pressure seen at the MicroTurbines' inlet. Therefore, if one of these MicroTurbines is not operating while the other(s) are, some of the exhaust from the operating MicroTurbine(s) can be forced back into the non-operating MicroTurbine. This can result in excessive temperatures inside the non-operating MicroTurbine that can cause physical damage to the engine and generator. This includes failures such as demagnetization of the generator permanent magnet, damage to the coatings on the air bearings, and/or stress failure of the compressor section.

The problem can be corrected in one of several ways:

1. Insert exhaust backflow damper valves between each MicroTurbine and the common ducting or heat recovery device to prevent the hot exhaust gasses of the operating MicroTurbines from flowing back into the engines of non-operating MicroTurbines. Backflow damper valves must be designed to work with the given application such that backpressure on any MicroTurbine does not exceed 8 inches of water column, and exhaust backflow leakage does not exceed 1%. See Service Bulletin SB0006 for maximum allowable back pressure details. Unifin offers a 5" back flow preventer, model number M1432002 for the Model 330 and an 8" back flow preventer, model number M29002-20 for the C60 that meet these requirements. Please contact Carmine Fontana at Unifin directly at 519-451-0230 for more details on purchasing these components.
2. Add an exhaust purging system, such as an exhaust blower, to maintain exhaust pressure less than the ambient MicroTurbine inlet pressure.

Failure to comply with this service bulletin will void the system warranty.

If you have additional questions, please contact:

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