A Potential Cause (and Cure) of a Major Gas Leak

To The Editor:—A Fraser Harlake Boyle System® anesthesia machine (now Ohmeda® model 8000) equipped with Cyprane Isotec 4®, Fluotec 4®, and Enfluratec 4® vaporizers was received for prepurchase clinical evaluation. The vaporizers on this machine are easily removed (and remounted) by rotating a locking lever 90° and lifting them off. Prior to use, a Boyle representative demonstrated this feature using the Isotec® vaporizer. The machine was pressure tested prior to clinical use, revealing no apparent gas leaks. During use, gas flow from the machine appeared normal until the Isotec® vaporizer was activated, at which time all noticeable flow from the machine ceased. As the source of the problem was not immediately obvious, the machine was exchanged.

Subsequent investigation revealed that when the Isotec® vaporizer was replaced, it was improperly seated, being cocked at a very slight angle. This angled position was not obvious upon cursory visual inspection. The vaporizer locking mechanism rotated normally, and the calibrated dial could be rotated. With the vaporizer off, no gas flow is directed to the vaporizer. The mechanical action of turning the vaporizer on moves two metal plungers, which open the vaporizer inlet and outlet and direct gas flow through the vaporizer. Leak-free connection of the vaporizer is dependent on proper seating. Since the vaporizer was cocked, the majority of fresh gas flow was lost into the room at the vaporizer inlet.

This same vaporizer and vaporizer mounting system is used on the Ohmeda Modulus II™ machine, and this same problem is easily reproducible on that machine. This problem has been brought to the attention of the manufacturer and hopefully will be addressed. Until then, it is important when remounting these vaporizers on this mounting system to assure correct positioning. Presence of fresh gas flow at the common gas outlet with the vaporizer turned on will verify proper seating.

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