

Dynamic Gas Scavenging System (DGSS[®])

A Waste Anesthetic Gas
Scavenging Interface

Installation and Use Guide



ANESTHETIC GAS
RECLAMATION, LLC

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Overview

The Dynamic Gas Scavenging System (DGSS®) is an anesthetic scavenging interface valve designed to efficiently couple the waste anesthetic outlet of most anesthesia machines to the waste anesthesia gas disposal (WAGD) system in hospitals and other surgical facilities.

The Dynamic Gas Scavenging System (DGSS®) reduces the use of waste anesthetic evacuation systems by eliminating the entrainment of room air during periods of no waste anesthetic flow. It reduces the demand on waste anesthetic vacuum pumps and allows for smaller vacuum pumps to be used, reducing overall cost to the healthcare facility.

Compatibility

The DGSS® is compatible with low-flow (<50 liters/min) waste gas scavenging systems installed in hospitals or other healthcare facilities.

The DGSS® is a direct replacement for the waste gas interface in anesthesia machines currently utilizing an **external** waste gas interface valve. It is specifically compatible with and designed for use with the following anesthesia machines:

GE-Ohmeda Excel 110
 Excel 210
 Excel 210 SE
 Modulus 2, 2+, and SE
 Aestiva
 Aespire
 Aisys

North American Drager Narkomed 2A and 2B
 Narkomed 3 and 4
 Narkomed 6400
 Narkomed GS
 Narkomed Fabius

WARNING – The DGSS® is NOT intended for use during the provision of anesthesia in an MRI scanner or other high magnetic field environment.

WARNING – Not for use with flammable anesthetic agents.

Installation and Connection

CAUTION - Installation should be performed and tested by a biomedical technician authorized by the healthcare facility to maintain anesthesia and life-support equipment.

CAUTION – The DGSS[®] must be installed securely in an upright position (pressure relief UP) to avoid malfunction and possible leakage of waste anesthetic gas into the surgical environment.

1. Securely mount the DGSS[®] to the anesthesia machine near the waste gas outlets (usually on the left rear side of the machine with the following minimum clearances from obstructions:

- Back – 0 cm
- Sides – 4 cm
- Top – 10 cm
- Bottom – 20 cm

Connection to the waste gas exhaust is made using flexible tubing with 19mm connectors.

2. Connect tubing from the APL valve of the anesthesia machine to the DGSS[®] via one of the two inlet connectors on the side of the device (applicable only if APL has a separate waste line).

3. Connect tubing from the ventilator exhaust of the anesthesia machine to the DGSS[®] via the other inlet connector on the side of the device.

CAUTION – Connecting hoses should be secured appropriately to prevent disconnection and/or kinking during normal use.

4. Connect a WAGD hose to the evacuation port on the left side of the unit and attach the other end of the WAGD evacuation hose to an appropriate WAGD port in the operating room or other surgical location.

5. Connect the power cube to a hospital-grade electrical outlet of suitable capacity and secure the power cord to the anesthesia machine to prevent accidental disconnection.

6. Connect the 12V connector to the DGSS[®] via the receptacle on the left side of the unit. A single click will be heard as the valve in the DGSS[®] energizes.

7. Adjust potentiometer on rear (near mounting bracket) so that reservoir bag empties almost completely during evacuation cycle.

8. Perform pre-use check (below).

Pre-use check

CAUTION – The pre-use check should be performed prior to each use to reduce the possibility of undetected malfunction and waste gas escape.

1. Ensure that all waste anesthetic connections are secure, unused inlets are capped, and that the DGSS[®] power cord is NOT connected.
2. Reduce gas flows on the anesthesia machine to zero (this may require turning the anesthesia machine off), and fully open the APL (adjustable pressure limiting) valve on the anesthesia breathing circuit (bag/ventilator selector should be set to “bag” or “manual”).
3. Occlude the patient end of the circuit and observe the circuit pressure gauge. A value of less than -2 cm H₂O indicates a malfunction; remove the anesthesia machine from service until the problem is corrected.
4. While keeping the patient end of the circuit occluded, press the oxygen flush button on the anesthesia machine for approximately 3 seconds while observing the circuit pressure gauge.
5. Circuit pressures should not exceed 15cm H₂O during this test.
6. If circuit pressures are higher than 15 cm H₂O, remove the anesthesia machine from service until the problem is corrected.
7. Apply power to the DGSS[®] and repeat steps 2 through 6.
8. Frequent clicking sounds from the DGSS[®] may be heard during normal operation as the reservoir bag fills and empties.

CAUTION – The sale of this device is restricted to use by or on the order of a physician.

Troubleshooting and Support

CAUTION - Do not open or disassemble the DGSS[®] unit.

There are no user-serviceable parts inside

For service, troubleshooting, or replacement of the unit, please contact your distributor or:

Anesthetic Gas Reclamation, LLC
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Nashville, Tennessee 37215
615-336-0963

email

admin@gasrecycler.com

web

<http://www.gasrecycler.com>

Cleaning and Sterilization

The external surface by be cleaned by the use of soap/water or alcohol-based disinfectants.

CAUTION – do not immerse device in any liquid

Although the DGSS[®] does not require, and is not designed for routine sterilization, the components are compatible with ethylene oxide (ETO) sterilization processes.

Specifications

Dimensions - 5"W x 9"H x 2"D

Power requirement – 12VDC @ 800 mA

For use with low-flow WAGD systems

Maximum waste gas flow – 50 liters/min

Maximum positive pressure to breathing circuit – 15 cm H₂O

Maximum negative pressure to breathing circuit – 2 cm H₂O