GENTEC
GENSTAR TECHNOLOGIES

Operation and Maintenance Manual for GENTEC® Model 882VR Continuous Suction Regulators

Genstar Technologies Co., Inc.
4525 Edison Avenue
Chino, CA 91710 USA
TEL 909-606-2726
FAX 909-606-6485
www.gentechealthcare.com

CAUTION: United States Federal law restricts this device to sale by or on the order of a physician.

IMPORTANT SAFETY INSTRUCTIONS.

READ AND UNDERSTAND THESE INSTRUCTIONS COMPLETELY BEFORE OPERATING THIS EQUIPMENT.

If you do not understand any of these instructions, or if you have any questions regarding the use of this product, please contact your facility's training manager, your supervisor, the medical equipment dealer from whom the product was purchased, or the manufacturer before operating the equipment.

Do not attempt to repair this device if you have not been properly trained. Doing so may create a hazardous situation that may result in death or serious injury. Attempted repair by anyone other than a duly authorized repair/service center of Genstar Technologies Co., Inc. voids any and all warranties, express or implied.

Carefully inspect and test this product before each use to ensure proper operation. Do not use the product if there are signs of damage or if it does not pass the initial suction test.

Should this product require repair or service that will require shipping the product to another location, bear in mind that United States Federal law prohibits shipping contaminated products, as they constitute a biohazard. This product must be properly sterilized and securely packaged prior to shipping.

Genstar Technologies Co., Inc. (GENTEC®) manufactures continuous suction regulators in two ranges, 0 to 300mmHg (882VR-300) and 0 to 760mmHg (882VR-760). These suction regulators provide three modes: REG (regulated vacuum), OFF (no vacuum) and FULL (whatever is available at the wall inlet). Please take a few minutes to familiarize yourself with the product by reviewing Figure 1 on the next page.

The mode is selected by moving the lever at the top of the regulator to the left (REG) for regulated suction, the center (OFF) to turn off the regulator, or the right (FULL) to allow full line suction.

The **REG** mode provides regulated suction levels as set by the user. The suction level is set by occluding the suction tubing, then adjusting the regulator knob on the front of the suction regulator to achieve the desired suction level, up to the designed range. Suction is increased by turning the regulator knob clockwise, decreased by turning it counter-clockwise.

The **OFF** mode turns off the suction regulator, allowing no suction at the tubing.

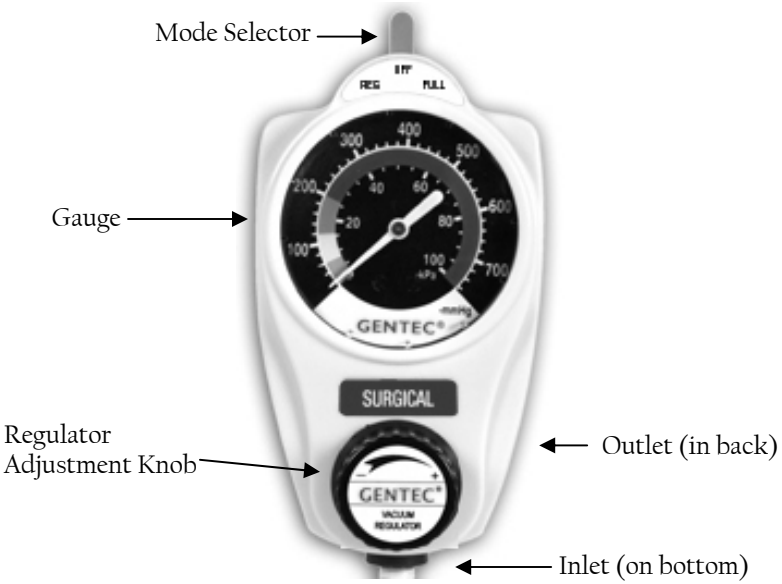


Figure 1 - Main Features

The **FULL** mode bypasses the regulator, and is designed for use only when high levels of suction are needed. Care should be exercised when using this setting, as the patient will be exposed to whatever level of suction is available at the wall inlet (typically above 480mmHg).

A suction filter or vacuum trap assembly (GENTEC catalog #880VT) should be used to prevent aspirate from entering the suction regulator. Typically, the suction catheter is connected to the suction tubing, which is then connected to the inlet fitting on the suction canister.

The canister can be connected directly to the suction regulator via DISS connection, or, as is recommended, connected to a filter or vacuum trap, which is then connected to the suction regulator via direct, threaded connection, suction tubing, or DISS connector (see Figure 2).

The appropriate outlet connector (located on the back of the suction regulator) must be used for connection to the wall inlet. The use of converting adapters (e.g., DISS connection to Ohio connection) should be avoided. If the suction regulator is connected via tubing or hose assembly to the wall inlet (as occurs when the suction regulator is attached to a mobile stand), a minimum inside hose diameter (ID) of 5/16" (7.9mm) should be used to prevent loss of flow.

DO NOT connect the suction tubing directly from the patient to either the

vacuum trap assembly or the suction regulator. Doing so may permanently damage the suction regulator and void any and all warranties, express or implied.

A collection canister (reusable or disposable) **MUST** be used between the patient and the suction regulator or vacuum trap, if used. If a vacuum trap is not used it is recommended that a disposable hydrophobic bacterial filter be used between the suction canister and the suction regulator to prevent overflow of the canister into the suction regulator. Use of these filters may also prevent build up of aerosolized particulate inside the suction regulator, thus reducing maintenance requirements and extending the life of the unit.

VERIFYING REGULATOR OPERATION

NOTE: The proper operation of the suction regulator must be verified prior to each use. Should the regulator not operate in accordance with the following, it must be repaired by authorized personnel.

1) Ensure that the Mode selector is in the OFF (center) position.
2) Connect the regulator to a vacuum source (normally the wall-mounted inlet).
3) Occlude the regulator inlet, and turn the adjustment knob one full turn clockwise.
4) Verify that the gauge needle does not move from the "0" position.
5) Move the Mode selector to the "REG" position.
6) Occlude the regulator inlet, and turn the adjustment knob counter-clockwise until the gauge needle is at 0.
7) Keeping the inlet occluded, turn the adjustment knob one full turn clockwise. The gauge should read between 120 and 170 mmHg.
8) Keeping the inlet occluded, turn the adjustment knob fully clockwise. The gauge needle should move clockwise to the highest vacuum setting.
9) Move the Mode selector to the "FULL" position.
10) Occlude the regulator inlet. The gauge needle should move to the highest vacuum setting.
11) Turning the adjustment knob should have no effect on the gauge reading when the selector knob is in the FULL position.
12) Move the Mode selector to the "OFF" position. The needle should return to 0

If the regulator passes all of the above, it is ready for patient use. Failure of any of the above requires that the unit be serviced by authorized personnel.

Once the operation of the regulator has been verified, it can be prepared for patient use as follows:

1) Connect the regulator to the wall inlet, ensuring proper latching.
2) Move the Mode selector to "REG".
3) Occlude the inlet or tubing.
4) Adjust the regulator knob to achieve the desired level of vacuum.
5) Attach the suction catheter and proceed.

NOTE: the suction regulator should always be turned OFF when not in use. This

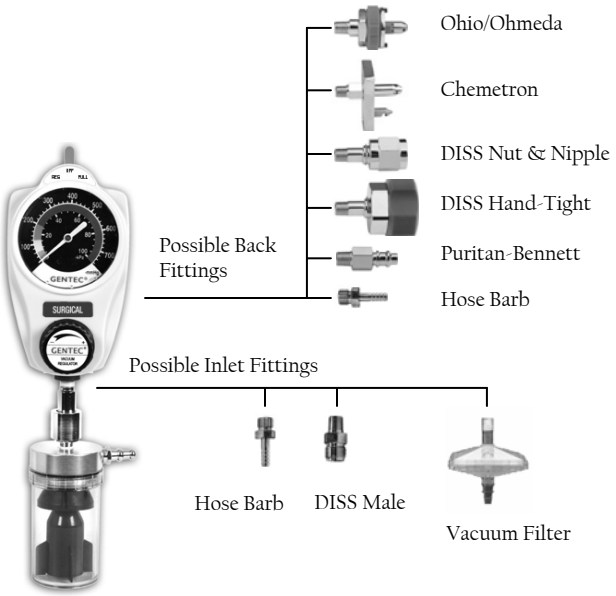


Figure 2 - Suction Regulator Configurations

DO NOT connect suction tubing directly to the vacuum trap, filter or suction regulator!

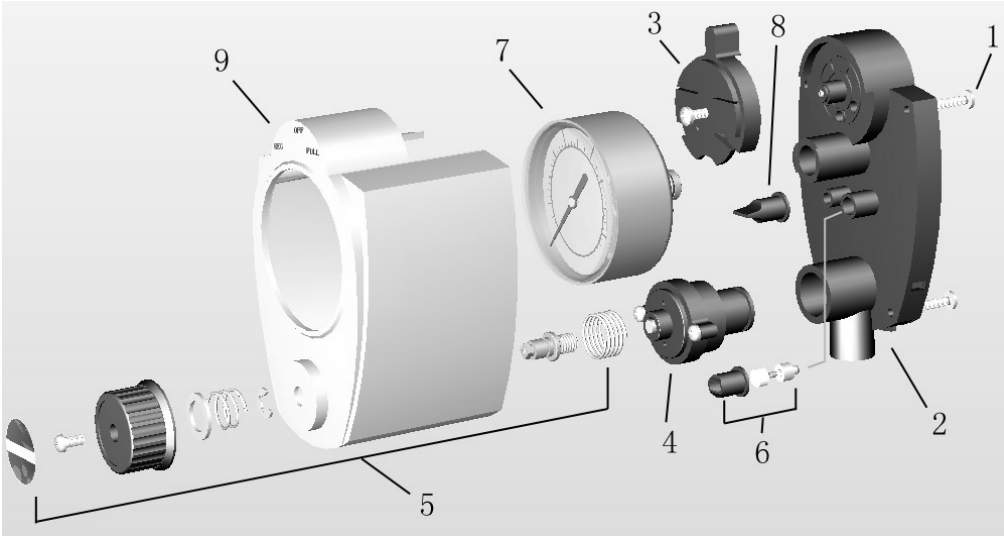
882VR Disassembly Instructions

1) Disconnect the 882VR from the suction source
2) Sterilize the suction regulator using ETO or autoclave, for self-protection
3) Remove the four screws on the back of the unit
4) Turn the regulator adjustment knob counterclockwise to release the faceplate
5) The gauge can be gently lifted out of the socket
6) The regulator can be gently lifted out of the socket
7) One screw holds the Mode selector lever in place.

Reassembly is accomplished by performing the above steps in reverse order.

The regulator can be cleaned by wiping the outside surfaces with disinfectants, Virox (accelerated hydrogen peroxide), Clorox (sodium hypochlorite), and Cavi-wipes. The internal flow path can be cleaned by suctioning a cold sterilant through the unit, then allowing the unit to run for 30-45 minutes to dry the interior.

The following repair assemblies can be purchased from your Authorized GENTEC distributor (refer to the exploded view on the next page):



No.	Part No.	Description	No.	Part No.	Description
1	300660110	Screw Kit (Set of 5)			Shaft
2	200260010	Back Plate			Spring
3	203060040	Mode Selector Assembly	6	204880020	Filter Assembly
4	203060010	Regulator Assembly			Protecting Cap
5	204880010	Adjustment Knob Assembly			Sponge Filter
		Logo Sticker			Orifice Union
		Screw			Orifice Seat
		Knob	7	141742301	Gauge
		Washer	8	304360010	Relief Valve
		Spring	9	304660010	Main Cover
		C-Clip			

#	Problem	Probable Cause		Corrective Measures
1	The vacuum gauge needle does not move off "0" when regulator is connected to vacuum source.	The regulator is in the "OFF" mode, or is not fully in the "REG" or "FULL" position.		Move the mode selector to the "REG" or "FULL" position.
		The adjustment knob is in the fully counter-clockwise, closed, position.		Turn the adjustment knob clockwise to open.
		The collection bottle or suction tube is leaking.		Check the collection bottle and tubing for leaks.
2	The vacuum regulator gauge shows a reading, but there is no suction at the tubing.	The collection bottle is too full, causing the float to shut off the suction.		Empty the collection bottle.
		The filters or suction tubing are clogged.		Change the filters and tubing.
3	Under REG mode the regulator cannot reach the specified suction level (i.e., 200mmHg or 760mmHg, depending upon model).	Suction source cannot provide sufficient suction.		Increase source equipment vacuum settings.
		Regulator Internal Problems	Relief valve (8) is damaged.	Replace relief valve.
			O-ring on vacuum gauge (7) is damaged.	Replace o-ring.
			O-ring in regulator assembly (4) is damaged.	Replace o-ring.
			Regulator assembly (4) is damaged.	Replace regulator assembly.
			Mode selector assembly (3) is loose.	Tighten or replace mode selector assembly.
4	Under REG mode the suction is too strong and cannot be reduced.	Gas assist port (6) is clogged.		Clean gas assist port.

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www.gentechealthcare.com

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