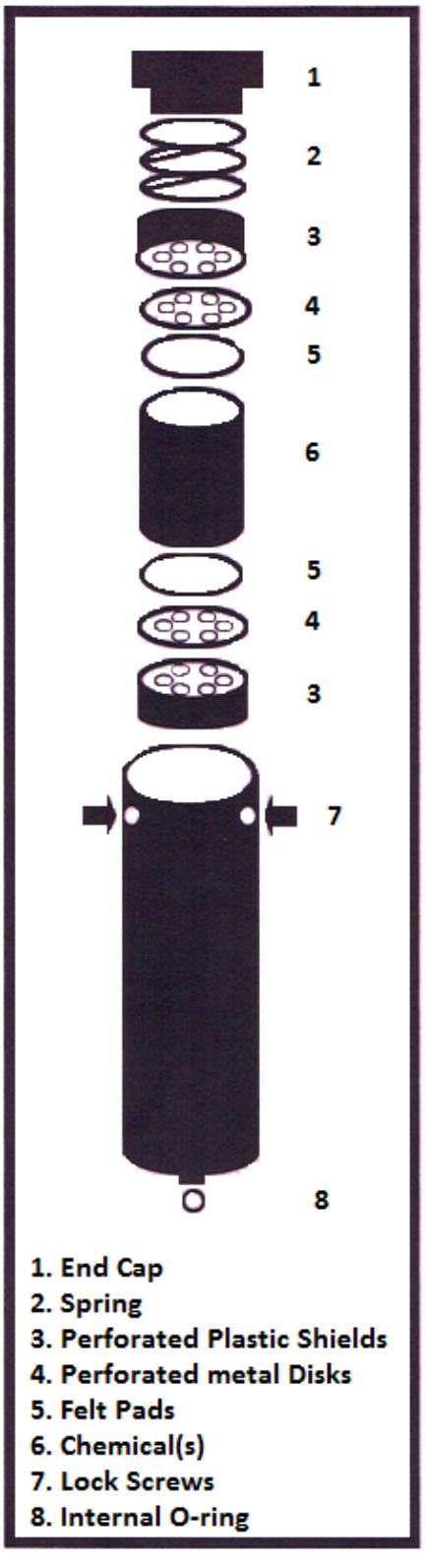


GSMoT #44300
REPACKABLE STAINLESS FILTER CANISTER

Description: The GSMoT Repackable Filter is constructed from heavy duty 316 stainless steel tube (2.5" OD x 26.75" long) and is designed to fit the GSMoT Tall Filter Tower #44150. It will also fit most towers which employ the Mako Mating System, where the cartridge seals onto a male tube projecting from the base of the tower by means of a single O-ring (GSMoT #48514) contained within the apex of the cartridge. THE CANISTER CANNOT BE USED on such towers as Bauer, Innerspace, Bristol, Robbins, and many other because of incompatible mating systems. The canister can be packed with a single filtrant or a series of chemicals (chemical train).

Packing the Canister: First, inventory the parts shipped with the canister in a plastic bag: 4 – White Felt Pads (2 extra are supplied for separating multi-chemical packs), 1 – Retainer spring, 2 – Perforated Aluminum Backing Plates, 2 – Perforated Plastic Shields, 2 – Allen-head Retainer Screws, 1 – Anodized End Cap, 1 – Spare O-ring / Seal (#48514). Slide one of the perforated, cup-shaped, plastic shields into the canister with the open end down, and press it to the bottom of the tube with a wooden dowel or similar tool. Drop one perforated metal disk on top of the plastic shield (be sure that is laying flat). Slide / push one Felt Pad down flat onto the metal disk, again using a wooden dowel or similar device. Next, decant the desired chemical into the canister and tap the sides gently with a rubber hammer to compact the materials into place. Fill the canister to a level such that the filtrants will be tightly compressed by the end spring and cap. If they are not adequately compacted, the pads may shift and tilt, thus allowing particles to escape from the housing.

Place the second felt pad atop the chemical train; add a perforated metal disk to back the pad, and then the plastic perforated pad shield open end up. Put the spring into the shield, and push the end cap into place. This should compress the spring and hold the chemicals in a compacted position. The spring slips onto the detented portion of the end cap, so be sure to turn this end downward. If installed upward, the projecting cap may interfere with proper mating and sealing of the filter tower. Lastly, lock the canister end cap in place with the two retaining screws. Check to be sure that the basal O-ring (GSMoT #48514) is in place and lube it lightly with silicone grease. The canister is now ready to mate to the filter tower.

Unscrew the filter tower from its base and remove the cylinder and top cap as one piece. Then carefully insert the canister onto the male receptacle tube projecting from the base. Be sure that the canister O-ring does not get cut, pinched or displaced. Also, check the main O-ring seal on the tower's base, lubricate it if needed, and then reinstall the cylinder.

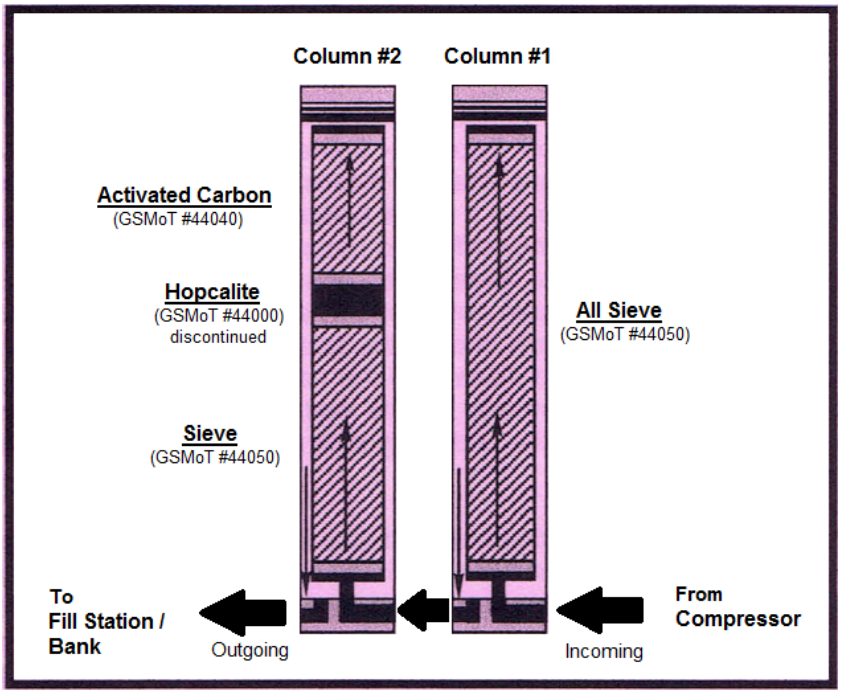
NOTE: The .canister can also be inserted through the top of the tower by removing only the top end cap. However, we do NOT recommend this method because improper installation may occur. Since one cannot see the O-ring or receptacle tube, it is possible to cut or displace the canister O-ring. If this seal malfunctions, the air filtration process will be seriously compromised.

Single Chemical Packings: The stainless canister is very popular for use with a single chemical, usually a desiccant. Many excellent drying agents are available from suppliers within the diving industry. In ascending order, the effectiveness of these substances are: Silica Gel, Sorbeads, Activated Alumina, and Molecular Sieve 13x. These filtrants can be packed into the canister either singly or in combination.

Multiplex Chemical Packings: If a multiplex (chemical train) packing is desired, add these materials to the canister from the bottom up in this order: Fill about 50% of the canister with molecular sieve 13x, add about one (1.0) inch of hopcalite, and then fill the remaining space with activated carbon. Install the pads, shield, spring, and end cap as described previously.

The ratio and order of the chemicals within the canister as described are important and should not be significantly altered. The molecular sieve acts as a further drying agent to protect the other chemicals, which can be inactivated if they get damp. The hopcalite is a catalyst which converts traces of carbon monoxide to the more tolerable carbon dioxide. Since catalysts are not used up in the conversion process, relatively little of the material is required in the chemical train. Finally, the activated carbon removes unwanted organic contaminants that cause odors or tastes, as well as a limited amount of the carbon dioxide present.

It is not necessary to physically separate the individual layers of chemicals within the canister. However, air movement through the chemical column is slowed by the use of felt pads (GSMoT #44325) between the layers of filtrants, thereby enhancing the absorption process. Thus, the use of extra pads is helpful, but not essential. (Two additional pads are provided with the canister for this purpose.) Below is pictured a state-of-the-art, twin canister purification system as would be installed in a double tower filtration train. Gas flow is from right to left, with gas entering the bottom of each canister. (Never chemically "free-pack" an ALUMINUM tower / housing itself; serious damage to the tower walls can occur from chemical interactions.)



Inspection: Nothing lasts forever, not even stainless steel. Corrosive holes can develop in the canister after years of use or from improper maintenance. Therefore, periodic inspections of the wall of the tube should be conducted. This is best done in subdued light by holding a tank VIP light inside the canister. If any light is noted coming through the walls, the canister must be repaired or retired.

Maintenance: As with conventional throw-away cartridges, the cycle time on the repackable canister must be determined. Although it should be similar, the "run time" on the repackable tube may NOT be identical to that obtained with a disposable cartridge. Differences in chemical volume, quality, and packing techniques can account for this. Therefore, the cycle time should be re-determined. This can be done by using Drierite Granules (See GSMoT Bulletin #44065), visual inspections, or colorimetric air monitors (GSMoT #44070). If wet chemicals are allowed to develop and remain within the canister for extended times, electrolytic corrosion may occur and eventually damage the tube. When changing spent chemicals, one should occasionally scrub out the tube with hot, soapy water and dry it thoroughly prior to repacking it with fresh filtrants.

Global Scuba Mfg. of Texas LLC
4674 Priem Lane #402, Pflugerville, TX 78660
(P) 512-240-6644 (F) 512-240-6645
(E) techsupport@global-mfg.com (Web) www.global-mfg.com