SCUBAPRO® ENGINEERING BULLETIN

NEW DIAPHRAGM FOR ADJUSTABLE SECOND STAGE REGULATORS

We have designed a new low friction, super sensitive diaphragm assembly (patent pending) for the adjustable second stage regulators.

The new diaphragm assembly P/N 11-109-011 is made up of two components, a diaphragm P/N 11-109-124 and a wear plate P/N 11-109-123. These parts are shown below both assembled and separated, along with the old style diaphragm assembly P/N 11-109-008.

The new diaphragm is made from an injection molded liquid silicone rubber which is stronger and has a higher tear resistance than the old material. This new material allowed us to reduce the thickness of the diaphragm by 15% and still have a tougher diaphragm than we have had before. The new wear plate is made from an injection molded acetal homopolymer as opposed to the stainless steel wear plate used on the old style diaphragm assembly. The acetal homopolymer, trade name Dupont Delrin, has a very low coefficient of friction and the combination of the thinner diaphragm and the low coefficient of friction results in a regulator that is easier to breathe.

An easier breathing adjustable type regulator means a lower inhalation resistance with the same adjustment setting, but it also means the regulator is more sensitive to water movement on the diaphragm which can cause minor air leakage when diving in a strong current, or if the regulator is used as an octopus.

Because of this increased sensitivity, we are placing a hang tag on the adjustment knob which describes the new diaphragm assembly and explains its' sensitivity to the consumer. It also explains how to use the adjustment knob to change the sensitivity of the regulator to meet the diving conditions that the consumer will experience.

A copy of the new hang tag is shown below. The hang tag will appear on all new adjustable type second stage regulators that employ the new diaphragm assembly.

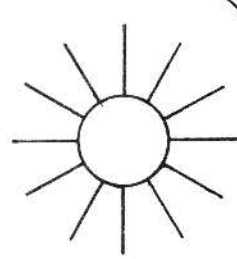
The new diaphragm assembly as well as the components are in stock and available as spare parts. They will be used in production as soon as our existing stock of diaphragms is depleted.

The new diaphragm assembly is completely interchangeable in all applications that the old style diaphragm P/N 11-109-008 was used.

ATTENTION

This regulator is equipped with SCUBAPRO'S new low friction, super sensitive diaphragm assembly (patent pending). A corrosion free, low friction wear plate is assembled to a highly sensitive diaphragm. The diaphragm is made from a new injection molded, liquid silicone rubber which, due to its superior mechanical properties, allows us to utilize a diaphragm that is 15% thinner, but amazingly even stronger than before.

With the new diaphragm assembly, this regulator has been factory adjusted to be extremely sensitive to the slightest inhalation for the best possible performance. This adjustment setting may not be desirable under certain diving conditions, such as currents or octopus (backup regulator) use, where water movement could cause the regulator to leak slight amounts of air. The external adjustment knob is provided to compensate for these conditions. It should be turned inwards to reduce sensitivity and outwards to increase it. For the best performance, we recommend you use the most sensitive adjustment possible without being overly sensitive to water movements that cause air leakage while diving. Turning the knob inward to the least sensitive position will **NOT** save air, it will only increase inhalation effort.



P/N 45-153-101 5-83 REV N/C

D. HART 7-25-83

HANG TAG P/N 45-153-101