

ADDENDUM
TECHNICAL MANUAL FOR SCUBAPRO
REGULATORS

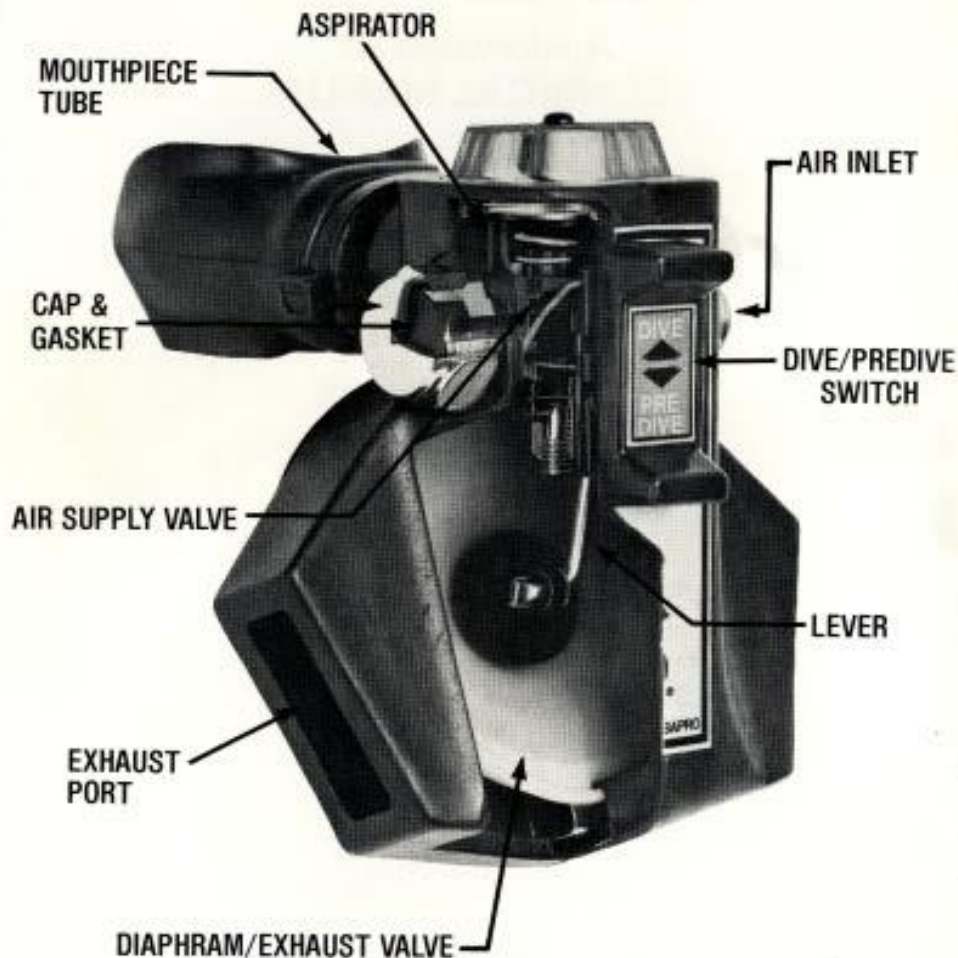


FIGURE 1

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This Addendum to the Technical Manual for SCUBAPRO Regulators (Cat. 45-101-187) concerns the A.I.R. I Second Stage Regulator. Owners of the A.I.R. I Second Stage should familiarize themselves with both the Manual and this Addendum. Future publications of the Manual will incorporate this Addendum.

Air Supply Valve: The A.I.R. I Second Stage incorporates a coaxial flow through, downstream, demand valve. This coupled to a high ratio lever and a case design which locates the center of the diaphragm approx. 1-3/4" below the center of the mouth piece, provides a unique combination that results in an extremely low inhalation resistance. The extremely low inhalation resistance is maintained at an almost constant level regardless of depth. Inhalation suction by the diver causes the regulator diaphragm to be drawn inward. The resulting linkage lever movement opens the demand valve. The structural arrangement between the diaphragm and demand valves provides a feedback which forces the air supply valve to move in exact response to the diaphragm.

The demand valve acts as a safety relief valve if a first stage malfunction delivers pressures above 200 psi to the A.I.R. I Second Stage. The resultant pressurization of the control chamber opens the air supply valve, thereby relieving the excess pressure.

Aspirator: An aspirator port, directed toward the mouthpiece tube inside the regulator, generates a slight vacuum within the regulator case when air is flowing. As a result, the effort required to maintain air flow during inhalation is reduced. The aspirator is factory-set for normal sport diving conditions.

Exhaust Valve: The A.I.R. I Second Stage diaphragm doubles in function as an exhaust valve. This design minimizes moving parts and provides an exhaust valve which is significantly larger than the exhaust valves of conventional regulators. The size increase is advantageous because less effort is needed to open the valve during exhalation.

Case Design: The A.I.R. I Second Stage case is injection molded of a high-strength glass reinforced plastic, three components are ultrasonically welded into the case to complete the case assembly, which is physically configured for the diver's comfort. The low and narrow profile will not interfere with gloved hands when the diver equalizes pressure by squeezing his nose. The diaphragm is located next to the diver's chin where it will not snag on underwater objects or be activated by water currents or surge. Also, the A.I.R. I Second Stage can rest comfortably on the diver's chin, thereby distributing its weight over two supporting points.

Performance Curves: The design features on the A.I.R. I Second Stage significantly reduce the amount of effort the diver must exert to breathe. The attached Performance Curves provide actual test data regarding inhalation and exhalation resistance during various modes and depths of operation. Comparing these curves with those of other regulators will show the significant performance improvement of the A.I.R. I Second Stage.

Dive/Pre-Dive Switch: A slide switch on the front of the regulator case is provided to decrease the response of the regulator when the regulator is not in the diver's mouth or when buddy breathing. Operation and use of this switch is described in detail in the section of this Addendum titled "Operation."

Regulator Storage Key: A regulator storage key is attached to the Safety Lanyard. Its purpose is to move the demand valve seat away from its orifice so the seat does not take a set during storage. The key should NOT be inserted during any rinsing of the regulator because that would allow water to pass into the low pressure hose.