

FIG 19–37.—Compressed oxygen (cylinder) rebreathing apparatus

as an autoignition source to gases with an autoignition temperature of 600 F or less The apparatus produces more oxygen than the user requires, so venting must be done periodically Some models do this automatically but with others it must be done by hand The apparatus and canister should normally be stored at above-freezing temperatures and be completely started before being worn and used at subzero temperatures Quick-start canisters are available, these contain chemicals that quickly heat the canister to permit the apparatus to start quickly under low-temperature conditions

A new canister should be used each time the apparatus is worn, for it is dangerous to enter a hazardous atmosphere (or even engage in a drill) with a previously opened canister Used canisters should be promptly disposed of in accordance with instructions printed on them Used canisters should be kept away from combustibles so that residual oxygen will not have a chance to activate them. Only copious amounts of clean water should be used to destroy a canister

It is important that no one wear self-contained breathing apparatus unless he is physically fit and well trained Physical fitness and training are essential because poor physical condition of users and lack of proper training have been responsible for injuries and deaths After the initial training, men should receive refresher training at least every six months in order to maintain efficiency

The facepiece or mouthpiece and nose clip of a self-contained breathing apparatus should be carefully fitted to the wearer to ensure leak-proof protection against the hazardous atmosphere the man is to enter.

Half-hour and three-quarter hour apparatus are limited by the Bureau of Mines for use only as auxiliary equipment in mine rescue and recovery work (See the U S Bureau of Mines, *Approval of Newly Developed Self-Contained Breathing Apparatus, Instruction in its Care and Use, and Training Procedure,* Information Circular No 7413 See also National Safety Council, *Respiratory Protective Equipment,* Industrial Data Sheet 444)

Because of the extreme hazard no one wearing self-contained breathing apparatus should work in an irrespirable atmosphere unless other persons similarly equipped are in attendance, ready to give assistance

The compressed or liquid oxygen (cylinder) recirculating apparatus (Fig 19–37) This equipment is supplied with either a full facepiece or a mouthpiece and nose clip The seal around the facepiece must be kept absolutely tight

Such equipment consists, essentially, of a high-pressure oxygen cylinder with reducing and regulating valves, a lung-governed admission valve which supplies oxygen from the cylinder only during inhalation, a carbon dioxide scrubber and cooler, and a reservoir breathing bag connected by tubes to the mouthpiece or facepiece Check valves direct the flow through the circuit so that the exhaled oxygen is purified of carbon dioxide, and rebreathed from the bag, with replenishment from the cylinder as required The