

TM5-9180

**WAR DEPARTMENT
MAINTENANCE MANUAL
AND PARTS CATALOG**

DIVING EQUIPMENT SET

Shallow Diving Type

THE OHIO RUBBER COMPANY

WILLOUGHBY, OHIO

JULY 19, 1943

TM5-9180

War Department

TM5-9180, MAINTENANCE MANUAL AND PARTS CATALOG, DIVING EQUIPMENT SET, SHALLOW DIVING TYPE, PUBLISHED BY THE OHIO RUBBER COMPANY IS FURNISHED FOR THE INFORMATION AND GUIDANCE OF ALL CONCERNED.

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CHIEF OF STAFF.

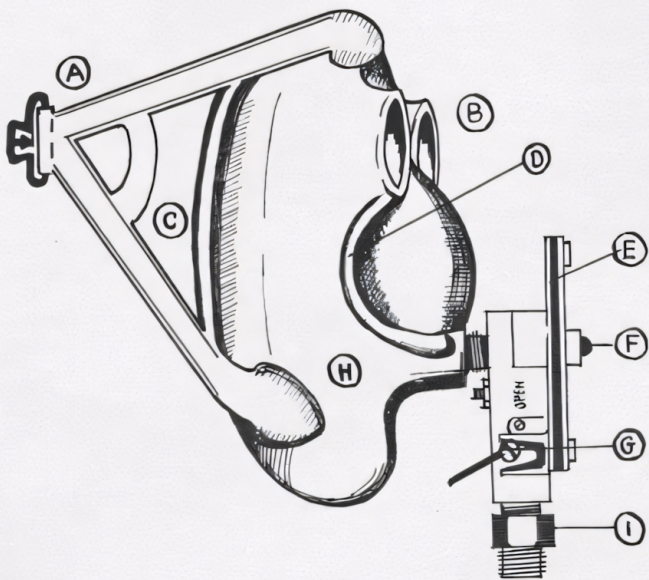
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TABLE OF CONTENTS

	PG.
Sketch of Mask and Regulator	2
<u>Operation Section:</u>	
Mask and Regulator	3
Operational Assembly Drawing	4
Diving Set	5-6
General Notes on Operation	7-10
Decompression Table	8-9
<u>Repair Section:</u>	
Mask and Regulator	11
Air Hose	11
Air Filter	12
Belt and Suspenders	12
<u>Parts Section:</u>	
Preparation of Requisitions	13
Picture of Diving Set	14
Parts List	15



DIVING MASK AND REGULATOR

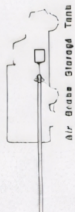
INSTRUCTIONS FOR OPERATION
OF
THE OHIO RUBBER COMPANY
DIVING MASK AND REGULATOR

The simplicity of the mask and regulator can be shown by referring to the accompanying sketch. The mask and regulator as shown are standard with this diving unit.

The mask consists of a molded rubber face piece (H) secured to the divers face with rubber straps (C). These straps are secured with a buckle (A) in the back. The mask has eyepieces (B) made from tempered glass which is practically unbreakable and an air channel (D) to prevent the lenses from fogging.

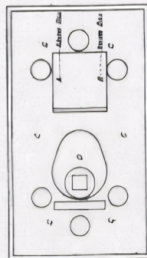
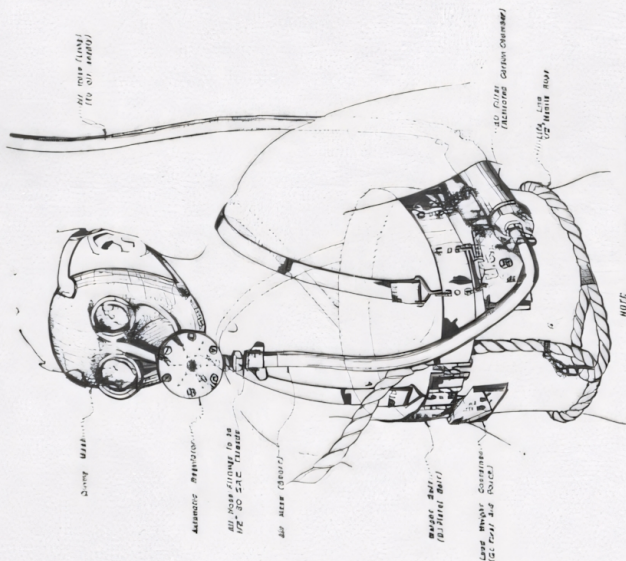
A demand type breathing valve (E) is secured to the front of the mask. The valve is so designed that if a pressure between 50 and 100 lbs. in excess of the water pressure on the bottom is carried in the supply hose, the valve will open only as the diver inhales.

This valve is fitted with a by-pass (G) that when open, passes the air around the demand valve providing the diver with a continuous flow of air or oxygen. The demand valve unit is also fitted with a button (F) in the front center, which if pushed in by the diver, permits the air to flow continuously and provides an easy method of blowing out of the mask any water that has been accidentally allowed to enter. A non-return valve (I) is attached to the inlet side of the demand valve which is simply a spring operated check valve.



HOOK-UP DIAGRAM

Developing Methods of Attaching Hoses to Air Supply

[illegible]

NOTE
If a woman has not yet had a
pap test, she can be found at
the local health center to be tested
in an emergency.

[illegible]

OPERATION DIAGRAM CORPS OF ENGINEERS

DRAWING D2271-4

INSTRUCTIONS FOR OPERATION
OF THE
CORPS OF ENGINEERS
EMERGENCY DIVING SET

This unit has been designed to be operated in the field in any of the four ways indicated on the operation diagram D-2271-4 affixed to the inside of the top of the equipment chest.

To prepare the diving set for operation the following procedure should be followed:

1. Fasten one end of 30" length of air hose to check valve at bottom of automatic regulator by securely tightening wing nut.
2. Fasten free end of 30" length of air hose to connector spud at one end of air filter assembly #2271-31. Securely tighten wing nut.
3. Fasten one end of 100 ft. length of air hose to connector spud at other end of air filter. Tighten wing nut securely.
4. a. To operate from Air Compressor:
 - (1) Fasten free end of 100 ft. hose to stud end of coupling extension #2271-3-8, tightening wing nut securely.
 - (2) Screw male end of Universal Air Hose Coupling into coupling extension tightening securely with 10 inch Crescent Wrench.
 - (3) Connect Air Hose Coupling to Air Compressor.
- b. To operate from Inflated Tire:
 - (1) Connect free end of 100 ft. hose to hose used to connect Air Brake Storage Tank to Tire Valve (Standard Equipment with Trucks).
 - (2) Connect free end of hose to valve stem of inflated tire.

c. To operate from Air Brake Coupling:

- (1) Assemble Air Brake Hose Coupling #2271-3-4 and Reducer #2271-3-15 if this assembly is not already made.
- (2) Connect free end of 100 ft. hose to male end of Reducer at end of Hose Coupling Assembly. Tighten wing nut securely.
- (3) Connect Air Brake Hose Couplings.

d. To operate from Air Brake Storage Tank:

- (1) Screw one end of Connector Spud #2271-3-7 into Air Brake Storage Tank on truck. Tighten with 10" Crescent Wrench.
 - (2) Connect free end of 100 ft. hose to other end of Connector Spud in Air Brake Storage Tank. Tighten wing nut securely.
5. Fasten life line around body of diver. The life line is not supplied with the diving set.
 6. Fill belt pouches with desired amount of lead weights.
 7. Fasten web belt around body of diver with suspenders over shoulders.
 8. Snap Air Filter in place on web belt.
 9. Test diving unit for adequate air supply by momentarily depressing button (F) in demand valve face.
 10. Secure mask and regulator over face of diver securing straps in back of head.
 11. Proceed with diving operation.

NOTES ON OPERATION
OF
SHALLOW WATER DIVING EQUIPMENT

The air supply pressure should be from 50 to 100 lbs. in excess of the bottom pressure of the water for the diving operation. The bottom pressure may be readily calculated from the formula.

$$\text{Bottom pressure} = .445 \times \text{Depth in feet}$$

If an air compressor, or the truck air brake storage tank is used as a source of air supply the by-pass valve (G) may be turned to the open position.

Compressed air or oxygen in a metal flask or bottle has been found to be a very convenient method of supplying air for the unit. Any standard oxygen regulator, with correct pressure range is required to control the pressure being supplied the diver. It has been found that one fully charged standard bottle of oxygen or compressed air (Vol. approx. 200 cu. ft. at 1800 lbs. per sq. inch) will supply one diver for over two (2) hours at forty feet, with an ample factor of safety.

If oxygen is being used as a breathing medium the diver should be instructed that if he observes any of the following symptoms, (1) he is irritable, (2) feels tingling sensation in the body, (3) he is nauseated or, (4) he has muscle twitchings, he should surface immediately since these are the first symptoms of oxygen poisoning. The symptoms will disappear when the diver surfaces and resumes breathing air. No harmful effects will result if the diver surfaces before the symptoms progress to the point where a convulsion occurs. He should not be allowed to dive again for at least thirty-six (36) hours