

**Zeagle**

*Regulator Manual*



**“Tech” 2nd Stage**



**“Z” 2nd Stage**



**“Flathead Six” 1st Stage**



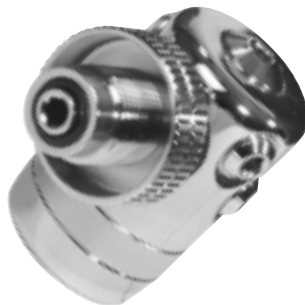
**Flathead 2nd Stage**



**“50D” 1st Stage**



**“RD” 1st Stage**



**“DS-4” 1st Stage**



**“US-4” 1st Stage**

## **CONGRATULATIONS!**

We at Zeagle pride ourselves on the quality and reliability of our products. They are designed and manufactured to provide you with superior service to enhance your diving enjoyment for many years. Our regulators are manufactured by Apeks Marine Equipment, Ltd., Britain's leading manufacturer of SCUBA regulators and support equipment. All of their products are manufactured under the BS 5750/ISO 9002 approved quality control system.

Read these instructions carefully before using your regulator and keep this manual for future reference.

Following the care and maintenance section at the end of this booklet will ensure reliable service.

### **LIFETIME GUARANTEE TO THE ORIGINAL OWNER**

Your regulator is guaranteed against any defects in materials and workmanship. This guarantee does not cover damages from accident, abuse, neglect, alterations or improper usage, or failure to follow reasonable care and the maintenance section. To validate your warranty you must fill out and return your warranty registration card.

## **WARNING!**

SCUBA diving is an adventuresome activity and inherently dangerous. Some risks are involved. Be sure that you and your partner have current certification and follow all recommendations of the certifying agency and that all equipment is used and maintained according to the manufacturer's recommendations.

**FAILURE TO HEED THIS WARNING MAY RESULT IN SERIOUS MALFUNCTION OF THE EQUIPMENT, INJURY OR DEATH.**

## **COLD WATER DIVING**

Zeagle regulators, in particular the Flathead Six, Tech-50D Severe and the Tech-DS4 Severe are designed to function extremely well in cold water. Cold water is defined by C.E.N. standards as water at a temperature of 50° F (10° C) or lower. In cold water (particularly in fresh water due to its higher freezing point) there is a risk of the first or second stage freezing. The lower the temperature the greater the risk. Regulators for cold water use should have environmentally sealed first stages to prevent water entry and possible freezing. In our opinion, it is not possible to completely eliminate second stage freezing under all conditions. In order to reduce the possibility you should:

1. Avoid discharges of air on the surface.
2. Enter the water and submerge without delay.
3. Avoid high rates of breathing. The deeper the dive the greater the risk.
4. Do not practice buddy breathing, etc.
5. Keep YOUR regulator in YOUR mouth. In an emergency, OFFER or TAKE the spare regulator.

Extreme cold water diving, such as diving under ice, requires specialized training and procedures. Do not attempt these activities unless you are fully qualified and properly equipped to do so safely.

## **NITROX USE**

Zeagle regulators are manufactured using materials suitable for use with oxygen enriched gases (i.e., Nitrox, etc.) providing the oxygen content does not exceed 40%.

## FIRST STAGES

The first stage reduces the high pressure air contained in the cylinder to a constant intermediate pressure of approximately 135 PSI/9.2 BAR. Zeagle first stages are designed to do this with outstanding reliability.

They may be attached to your SCUBA cylinder by means of the standard yoke assembly for cylinders utilizing a “post” type valve (Figure 1) or the optional DIN connector for cylinders utilizing a DIN valve (Figure2).



Figure 1



Figure 2



Figure 3

Please note that Zeagle offers a most useful accessory, the DIN to Yoke converter (Figure 3), which allows DIN fitted regulators to be converted for use on “post” type valves in a few seconds, without the need for tools.

## **ZEAGLE DRY SEALED FIRST STAGES - FLATHEAD SIX, 50D and DS4**

These first stages have a dry environmental sealing system which completely eliminates the need for messy silicone oil or grease filling. This is recommended where frequent use in professional diving and training or in cold or contaminated water is anticipated. Incorporated in the dry system is a unique means of personal identification. A sticker on which the owner can write name, address, etc. can be placed inside the dry system visible through the transparent sealing diaphragm. To do this the end cap must be removed. Your dealer will be pleased to do this for you.

## **ZEAGLE UNSEALED FIRST STAGES – RD AND US4**

These are unsealed versions ideal for general use where the water temperature does not fall below 50° F (10° C). They can be converted to sealed systems with the addition of the appropriate parts.

## **FIRST STAGE SPECIFICATIONS**

**TYPE:** Diaphragm operated balanced valve

### **MAXIMUM WORKING PRESSURE:**

With Yoke – 3500 PSI (240 BAR)

With DIN Connector – 4500 PSI (310 BAR)

### **INTERMEDIATE PRESSURE OUTPUT:**

130 PSI – 138 PSI (9.0 BAR – 9.6 BAR) Adjustable.

### **INTERMEDIATE PRESSURE PORTS:**

3 ea. 3/8 - 24 UNF

4 ea. 3/8 - 24 UNF (DS-4 and US-4)

1 ea. 1/2 - 20 UNF

Mounted on a swivel turret (50D and RD Style)

### **HIGH PRESSURE PORTS:**

2 ea. 7/16 - 20 UNF (1 ea. on DS-4 and US-4)

### **ENVIRONMENTAL PROTECTION:**

Dry sealed system with internal identification disc (Flathead Six, 50D and DS4)

**BODY:** Chromium plated brass

**SPRINGS:** Stainless steel

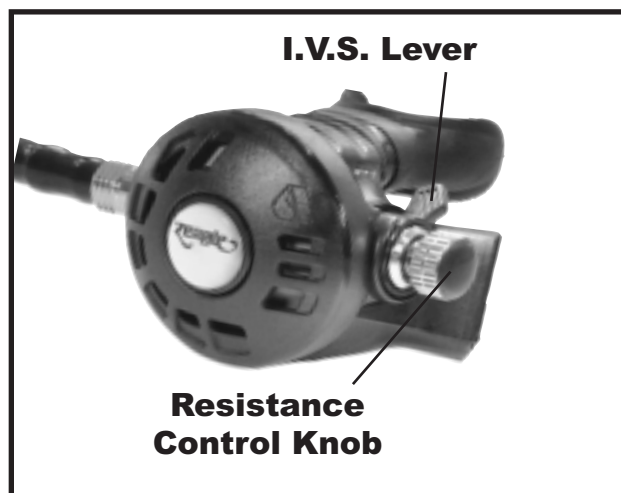
**‘O’ RINGS:** Neoprene/Nitrile

**DIAPHRAGM:** Reinforced neoprene

## **SECOND STAGES FLATHEAD SIX, TECH and Z**

The Flathead Six, Tech and Z second stages are pneumatically balanced valve systems and are among the most advanced diver adjustable breathing systems available. Independent performance testing by ANSTI Test Systems has established that this regulator can supply air within the recommended limits of breathing resistance to a depth in excess of 230 feet (70 meters).

No fixed or preset system can achieve an ideal level of breathing performance under all conditions. With the Tech and Flathead Six separate diver adjustable control of both cracking resistance and Venturi assistance I.V.S. (Integrated Venturi Systems, patent Pending) allow the diver to adjust the complete range of breathing characteristics. By using a combination of the two controls, it is possible to tune the regulator to give virtually ideal performance.



### **RESISTANCE CONTROL KNOB – TECH AND FLATHEAD SIX SECOND STAGES**

The knurled knob adjusts the spring load on the second stage valve and so varies the initial cracking resistance. With the knob screwed completely out, a slight freeflow of air may occur. Lowest breathing resistance will be obtained when the knob is screwed in just enough to eliminate this freeflow. This setting may vary with the diver's position in the water.

The resistance control may also be used to vary the breathing resistance to suit the diver's individual preference or to tune the Tech and Flathead Six second stage to any other first stage, as would be necessary when using it as an octopus or back up second stage on another make of regulator. Intermediate pressures of up to approximately 165 PSI/11.5 BAR can be accommodated using this mechanism. Longer hoses are available for octopus use.

## **VENTURI ASSISTANCE CONTROL I.V.S. –**

This lever controls the continuous breathing resistance and sensitivity of the regulator. With the lever set in the plus (+) position, maximum venturi assistance is obtained. Once the initial breathing effort has been made, little or no further effort is required to maintain the flow of air. If the regulator is not in the diver's mouth, it may freeflow. Pushing the lever forward into the minus (-) position completely eliminates this freeflow. This may be undesirable in certain conditions, for instance when entering or leaving the water or while on the surface. The diver can choose any position between + and – to obtain just the right level of venturi assistance.

## **PRE-DIVE CHECK**

Prior to each dive always check to make certain your regulator has no water leaks by inhaling on the regulator with the air turned off. You should be able to draw in very little if any air. If you can draw in any quantity this indicates the exhaust valve is failing to seat properly or possibly a pinhole leak in the mouthpiece or second stage diaphragm. Next, with the air turned on check for air leaks and proper breathing function of the regulator. Any leaks or malfunctions indicate the need for service prior to diving.

## **CARE AND MAINTENANCE**

The reliability and correct functioning of your equipment depends on the care it receives.

Handle your regulator carefully. Do not subject it to unnecessary shocks or impacts, particularly the second stage. To avoid build up of deposits (which may cause malfunction), it is necessary to rinse the regulator thoroughly in fresh water after each dive. To do this, first prevent water entering the first stage by fitting the rubber dust cap. In the case of DIN fitted regulators it will be necessary to cover the air inlet to prevent water from entering the first stage. Rinse the second stage thoroughly inside and out. **DO NOT** press the purge button during this rinsing. After rinsing re-connect the regulator to an air supply and thoroughly shake and blow out all water from the system.

For reasons of hygiene, equipment subjected to frequent use in training organizations, etc., should be finally rinsed in water containing a suitable sterilizing agent.



# MAINTENANCE

It is essential that your regulator is checked at least annually by an authorized Zeagle regulator technician. Unusually heavy use or use in dirty or contaminated water may result in the need for more frequent service. A service record has been provided at the end of this manual to assist you in keeping your regulator's service up to date.

Ask your Zeagle dealer for information on the following products to use with your Zeagle Regulator, adding to your diving enjoyment and safety.

## **Zeagle Instruments:**

- Navigator Console
- Co-Pilot Console
- Status I Diving Computer
- Status II Advanced Diving Computer

## **Zeagle Alternate Air Sources:**

- Octo+ MKII combination inflator/alternate second stage
- Sentinel second stage
- Z - second stage
- Tech - second stage
- Flathead Six - second stage

# **The Code of the Responsible Diver**

As a responsible diver I understand the risks  
I may encounter while diving.

I will seek experience and knowledge from  
those with more and will share mine with those  
who have less.

“Superior divers use their superior knowledge  
to stay out of situations that would require their  
superior skills.”

“Your equipment can be excellent but it’s not  
responsible for you.”

“Your training can be excellent but it’s not  
responsible for you.”

“Your buddy can be excellent but he’s not  
responsible for you.”

You are responsible for you: Be excellent!”

# Service Record

Date	Service performed	Dealer	Technician #



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