



DRY-SUIT VALVE OPERATION, CARE AND USER MANUAL

AP5920

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VALVE POSITIONING

Auto Dump Valve

It is recommended that the auto dump valve is fitted high up on the left or right arm. With the forearm raised to a horizontal position across the chest, the dump valve should be directly on top of the upper arm where it can be operated easily by the opposite hand.

Cuff Dump Valve

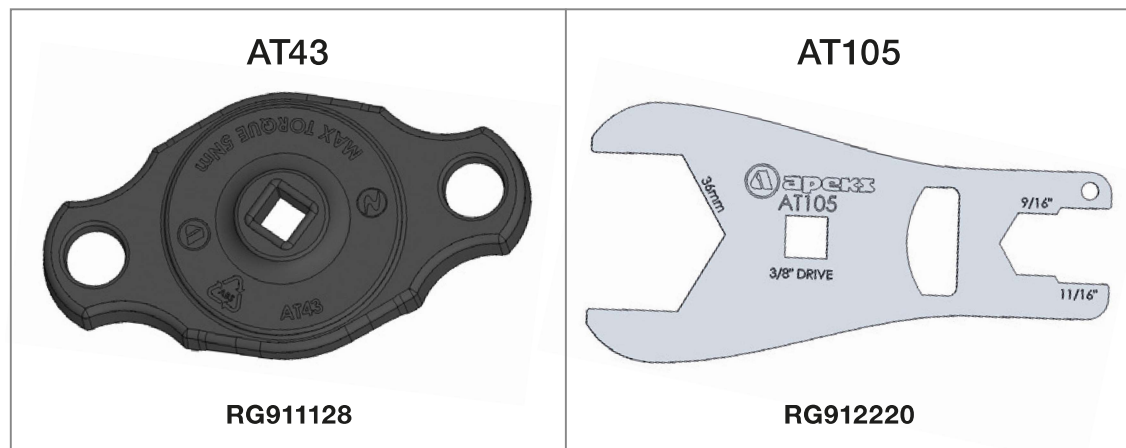
As the name suggests, the cuff dump valves are fitted near the cuff of the suit. Ensure the valve will not be covered by gloves when fitted.

Suit Inflation Valve

It is not critical to the operation of the valve where it is fitted on the suit as it is with the dump valve, but generally the inflation valve is fitted on the chest area where it can easily be reached. When positioning the valve try to ensure that it won't be covered by other pieces of diving equipment, affecting access to the valve.

Rubber Backing Patch

It is highly recommended that a rubber backing patch (Apeks part# AP0166) is bonded to the outside of the suit with a suitable adhesive, where both inflation and dump valves are to be positioned. If the hole for the valve has not been cut previously then carefully cut out the suit in the centre of the rubber backing patch. If a backing patch is not fitted, this could result in a leak.



VALVE FITTING PROCEDURE

Low Profile Auto Dump Valve Fitting

When the rubber backing patch has been bonded to the suit and the hole cut out, the valve is ready to be fitted. Place the thread of the valve through the hole in the suit, ensuring the retaining ring of the dump valve is located correctly around the cap (*Fig. 1*).

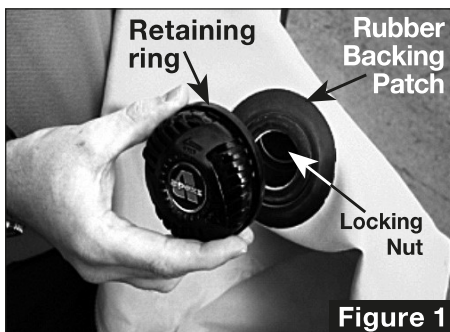


Figure 1

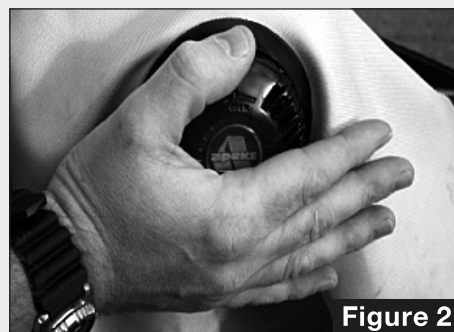


Figure 2

IMPORTANT:
PRESS
DOWN THE
CAP
WHILE
TIGHTENING
THE
LOCKING
NUT

Screw the locking ring onto the dump valve until the valve is tightly held in the suit.



VERY IMPORTANT: Before any torque is applied to the locking nut or dump valve it is critical that the adjusting cap of the dump valve is pressed down to lock the valve mechanism. (Fig 2) Failure to press the cap during tightening or loosening of the valve, could cause damage to the mechanism.

The valve should be tightened into the suit to approx. 4 lbs/ft (5.4 Nm) using AT43 tool or as tight as possible by hand. Apply the torque to the backing nut and you will find the dump valve will tend not to rotate due to the friction on the rubber backing patch.

After a few days or before you dive re-check the tightness of the backing nut.

Fitting all other suit valves

Including: standard dump valve, cuff dump valve (AT43 tool can be used) and all inflation valves.

All other suit valves are fitted in the same way as the low profile dump valves shown previously, but without the need to press down on the front of the valve.

You will find with the swivel inflation valve, that it rotates through approximately 350 degrees and then stops, this stop is to enable the valve to be tightened into the suit. When the valve is tight in the suit, you should ensure that the stop is not in the area you wish the valve to swivel.



WARNING: Periodically check all the valves to ensure they are still tight in the suit.



INFLATION VALVE CONNECTIONS

There are two types of inflation valve connections used.

Fig. 3 shows the Apeks fitting and **Fig. 4** shows the Seatec fitting. The Seatec fitting is the same fitting found on buoyancy device direct feeds and tends to be more widely used.

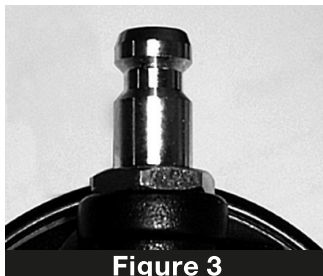


Figure 3

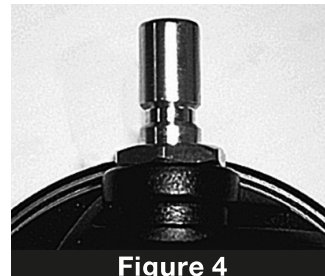


Figure 4

HOSE CONNECTIONS

There are two types of hose coupling to go with the inflation valve connections. Again these are Apeks couplings (**Fig 5**) and Seatec couplings (**Fig 6**).

The difference in fitting is, the Apeks coupling will just push



Figure 5



Figure 6

straight onto the inflation valve connection, but the Seatec coupling needs to have the collar on the coupling pulled back while pushing it onto the valve connection. The hoses come with a standard 3/8" UNF male thread so they can be fitted to the medium pressure port of any 1st stage regulator.

When fitting the hose to the regulator, ensure the O-ring is lightly lubricated and tighten the hose using a 9/16" A/F spanner.

Longer hoses are available to special order from your local Apeks dealer.

SUIT VALVE OPERATION

Inflation and Auto Dump Valves

Including: standard dump valve and low profile dump valve.

Before each dive, it is advisable to check the tightness of the suit valves in the suit to ensure leak free diving.

- 1. Do not dive over-weighted.** Choose a safe shallow place to test your buoyancy.
- 2. Always enter the water with the dump valve approximately half closed,** in the event of an emergency, you may need immediate positive buoyancy.
- 3. Once in the water, on the surface, blow sufficient air into your suit,** by depressing the button on the suit inflation valve, to provide strong positive buoyancy.
- 4. Fully deflate your buoyancy jacket.** If you cannot maintain positive buoyancy with the dump valve approximately half closed, you are probably over weighted.





5. **To submerge, firmly press the adjustable cap of the dump valve to operate the manual dump system.** If you cannot submerge easily after venting all the air from the suit, you are under weighted.
6. **Settle yourself comfortably on the bottom, in an upright position.** Wind open the dump valve cap completely, blow air into your suit until it vents from the dump valve, close the dump valve cap one or two clicks at a time and press the inflator again. Repeat until sufficient buoyancy can be achieved to maintain a controlled rate of ascent without any assistance. As you ascend, expanding air within the suit will be automatically vented. You may stop or slow down your ascent at any time by operating the manual push dump system. You should practice this procedure several times in progressively deeper water until you are thoroughly familiar with the valves' capabilities.

Cuff Dump Valves

When using cuff dump valves, venting of the air is done simply by raising the arm and allowing the air to rise venting through the cuff dump valve. This type of valve is simpler than the auto dump valve, but does not offer the same control of buoyancy.

CARE AND MAINTENANCE

Suit Inflation Valves

The suit inflation valve should be rinsed in fresh water after use, it should then be connected to the air supply and blown through to clear any residual water.

The valve should be stripped down, cleaned and the O-rings changed annually to guarantee trouble free operation.

All Dump Valves

The dump valve should be rinsed in fresh water after use and then the residual water gently shaken off.

Check the operation of the valve before each dive.



VERY IMPORTANT: When removing the low profile auto dump valve ensure the adjusting cap is depressed while loosening as described on page 5. Failure to depress the cap could cause damage to the valve mechanism.



VERY IMPORTANT: Any work carried out on the suit valves should always be done by a competent service technician.



APEKS DRY SUIT VALVE RANGE

Swivel suit inflation valve
TL115123—Apeks fitting
TL115139—Seatec fitting



Seatec fitting



Low Profile
Auto Dump Valve
TL113128



Auto Dump Valve
TL111115



Cuff Dump Valve
TL112112



P-Valve
TL116001



WARNING: It is recommended that all APEKS suit valves are installed by an experienced drysuit technician.

P-VALVE

Valve positioning

As with the suit inflation valve, the siting of the P valve is not critical. The most common area for positioning is the inner thigh. Ensure that you can reach the valve easily to rotate the valve cap and open the valve.

Valve fitting

If the hose of the P-valve is too long, it can be trimmed to suit a preferred location. To fit the P-valve, a 26mm diameter hole must be cut into the dry suit.



CAUTION: Ensure that the hole is sufficiently clear from any seals/seams.

The rubber backing patch is aligned with the newly cut hole and glued to the outside of the dry suit, using suitable contact adhesive. Allow to dry.

Remove the grub screw from valve cap using 1.25mm Allen key.

Unscrew valve cap and nut from valve body.

From the inside of the suit insert valve body through hole and screw on nut.

Tighten using multi tool AT105 (5 Nm max).



CAUTION: Position the valve so that the hose and connection will point in the desired direction.

Screw valve cap fully down onto the valve body.



CAUTION: Take care to prevent slipping and damaging the suit.

Insert grub screw into the valve body and fully screwing using 1.25mm Allen key, **then** unscrew grub screw 2 full turns.

The valve cap should rotate approx. 120 degrees between closed and fully open.

P-Valve operation

To open the valve, rotate the cap anti-clockwise until it stops. In this position the valve can be used throughout the dive without the need for further adjustment, as it uses a non return valve system. For extra security the valve can be closed when not being used. To close the valve, rotate the cap clockwise, excessive force is not required.





Cleaning and maintenance

The P-Valve must be rinsed and flushed through with clean fresh water after every dive. This is important to maintain trouble free use and due to bacterial growth and the potential health implications.

SERVICING

It is recommended that all Apeks suit valves are inspected on a yearly basis. Every two years your valves should be serviced by your local Apeks dealer or suit manufacturer.

GUARANTEE

As with all Apeks valves, our range of dry-suit valves come with a lifetime guarantee to the original owner, against defects in materials and workmanship. This guarantee does not cover damage due to abuse, neglect, improper usage, lack of maintenance or normal wear and tear.

If after inspection by Apeks, we are satisfied that the product is defective, the product will be repaired or replaced free of charge.



CAUTION: Diving is a potentially hazardous sport. Before using any diving equipment you should be properly trained in the use of the equipment by a recognised club or organisation.

All Apeks diving equipment is designed and manufactured in England and is guaranteed and backed by a first class after sales service. When your equipment requires any service or should need repair, you should first contact your local Apeks dealer or the suit manufacturer. If dealer service is not available, you can contact our customer service department directly.

Thank you for purchasing Apeks Dry-suit valves.





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