

Ambient Pressure Diving Ltd.  
Water-Ma-Trout Industrial Estate  
Helston  
Cornwall  
United Kingdom  
TR13 0LW

TEL: (+44) 01326 563834  
FAX: (+44) 01326 565945  
Email: [info@apdiving.com](mailto:info@apdiving.com)  
Website: [www.apdiving.com](http://www.apdiving.com)

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# BCD Instruction Manual

## Commando - Explorer - Tekwing

<b>Important Information</b> .....	<b>3-4</b>
<b>Intended Use</b> .....	<b>5</b>
<b>Introduction</b> .....	<b>6</b>
<b>Features</b> .....	<b>7-10</b>
Jacket Style BCD - Front.....	7
Jacket Style BCD - Back.....	8
Wing Style BCD - Front.....	9
Wing Style BCD - Back .....	10
<b>Setting Up</b> .....	<b>11-24</b>
Backpack Adjustment .....	12
Waistband Adjustment.....	13
Shoulder Adjustment.....	13-14
Filling the Emergency Cylinder .....	15-16
Fitting an SMB .....	17
Integrated Weights/Cargo .....	18
Surface Trim & Weighting .....	19
Mounting Cylinders .....	20-24

<b>BCD Model</b>	<b>Size</b>	<b>Max. Buoyancy (kg)</b>	<b>Buoyancy (N)</b>
<b>Commando</b>	S	13.87	130
	M	20.00	190
	L	21.02	200
	XL	25.00	240
	XXL	32.95	320
<b>Explorer</b>	S	11.73	110
	M	16.02	150
	L	17.55	170
	XL	19.89	190
<b>Tekwings</b>	Tekwing	27.44	260
	Tekwing Lite	18.26	170
<b>Commando TD40</b>	S	16.03	150
	M	21.20	200
	L	24.40	230
	XL	25.30	240
	XXL	32.00	310

**BCD Operating Temperature Range**

Air: -10 to + 50°C

Water: -2 to + 40°C

**Direct Feed Inflator Hose Supply Pressure**

Max: 28 BAR

Min: 6.5 BAR

**BCD Shelf Life**

The shelf life of an unused BCD is 7 years, derived from the O-rings and seals.

**Emergency Cylinder Life**

The emergency cylinder has the same inspection and pressure test requirements as other diving cylinders, currently:

Internal Visual Inspection: every 2 years

Pressure Test and Inspection: every 5 years

Pre-Dive Inspection .....25

Donning the BCD.....26

**Buoyancy Control .....27-30**

Inflating the BCD.....27-28

Deflating the BCD .....29-30

Emergency Breathing .....31

Equipment Stowage .....32

Removing the Integrated Weights/Cargo .....33

Post Dive Maintenance .....34-35

Warranty.....36

Technical Information.....37-38

**Note:**

The cylinder life requirements refer to European Standards, correct at time of print. International requirements may be different.

Please read all the information in this manual, it is extremely important that you familiarise yourself with all the Buoyancy Control Device (BCD) features, adjustments and operations before entering open water.

Diving equipment can be dangerous to the untrained user. Only use this BCD if you have received buoyancy control training from a qualified instructor belonging to a recognised training organisation.

Carry out a personal pre-dive kit inspection before every dive following the instructions in this manual and always carry out BUDDY checks before entering open water.

DO NOT over inflate your BCD underwater. A rapid, uncontrolled ascent may lead to serious injury or death. In the event of a rapid ascent it is important to vent air from the BCD as quickly as possible.

All Ambient Pressure Diving products are sold only on the understanding that only British Law applies in cases of warranty claims and product liability, regardless of where the equipment is purchased or used.

This BCD is warranted against faulty materials and workmanship for a period of 3 years from the date of purchase. The Auto Air and emergency air cylinder are covered by a 12 month warranty.

If a fault occurs Ambient Pressure Diving will repair or replace at their own discretion and so all claims must be referred directly to Ambient Pressure Diving.

Ambient Pressure Diving reserves the right to verify all claims. If a fault occurs, firstly contact the factory for advice and if necessary, the product should be returned directly back to the factory, postage and insurance pre-paid.

Due to the harsh nature of the diving environment, mis-use or neglect renders all warranties null and void.

**Warning:**

Do not over tighten the valve, finger and thumb should be sufficient to close the valve.

Wash the emergency cylinder in fresh water, then dry it off. Operate the valve leaving a small amount of gas in the cylinder for storage. Do not over tighten the valve, finger and thumb should be sufficient to close the valve.

Avoid contact with oils, greases, chemicals or other contaminants unless recommended by AP Diving.

Store the BCD partially inflated in a cool, dry and dust free environment. Remove heavy objects, including the weight pouches. Note: some weights e.g. lead shot, may discolour the BCD over time.

Avoid stress on the air cell and harness assembly during storage.

The BCD should be serviced annually by AP Diving or an authorised agent. The emergency air cylinder must be checked in accordance with regional and international regulations.

DO NOT tamper with the BCD. Alterations to the design of the BCD should only be carried out by AP Diving.

NEVER inflate the BCD with Carbon Dioxide.

Always use the direct feed hose supplied with the inflator. Never use any other brand as these may not connect properly or provide the required flow rate.

This BCD is intended for diving purposes only. It provides a diver with the means to safely descend, ascend, maintain neutral buoyancy and float on the surface.

The BCD is designed to work in conjunction with the other essential items of diving equipment i.e. an 'aqualung' (high pressure cylinder, cylinder valve, pressure reducer, hoses and breathing regulator) and should not be used in the water without these items.

This is not a lifejacket: it does not guarantee a head up position of the wearer at the surface.

DO NOT use the BCD to lift heavy objects to the surface. Adding weight will alter your balance and buoyancy and could damage the BCD.

Always wash the BCD in fresh water after every dive, especially after diving in chemically treated swimming pools which could damage or discolour the fabric.

To rinse the air cell and valves, unscrew the hand-tight cylinder post. Remove the post taking care not to lose the washer. Pour water into the air cell through the hole. Rinse the air cell and operate the valves flushing fresh water over the seals. Empty the water out and re-fit the cylinder post and washer.

Allow the BCD to dry naturally. Do not leave it to dry in direct ultraviolet sunlight or a radiant heat source which could damage or discolour the BCD fabric.

Fully inflate the BCD while it is drying. This is an opportunity to test the air cell and valves. If the BCD shows any signs of deflating please contact the factory for advice.

### Warning:

Removing the weights while submerged is extremely dangerous, it will alter your buoyancy and could cause a rapid rate of ascent. Only ditch weights in an absolute emergency.

### Note:

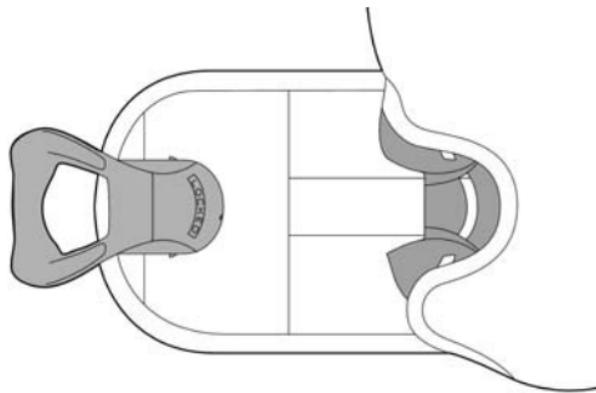
The weight system is not an available feature on the Commando TD40 range.

### Rapid Release System

To remove the integrated weights or cargo from the pocket, pull the handle to release the 'Rapid Release System' clip.

To prevent the loss of the weights or cargo the 'Rapid Release System' clip can only be released if the handle is pulled. It will not release if the weight pouch or cargo is pulled.

To gain a solid grip on the handle when handing your weights up to a dive boat, place your thumb through the loop in the handle.

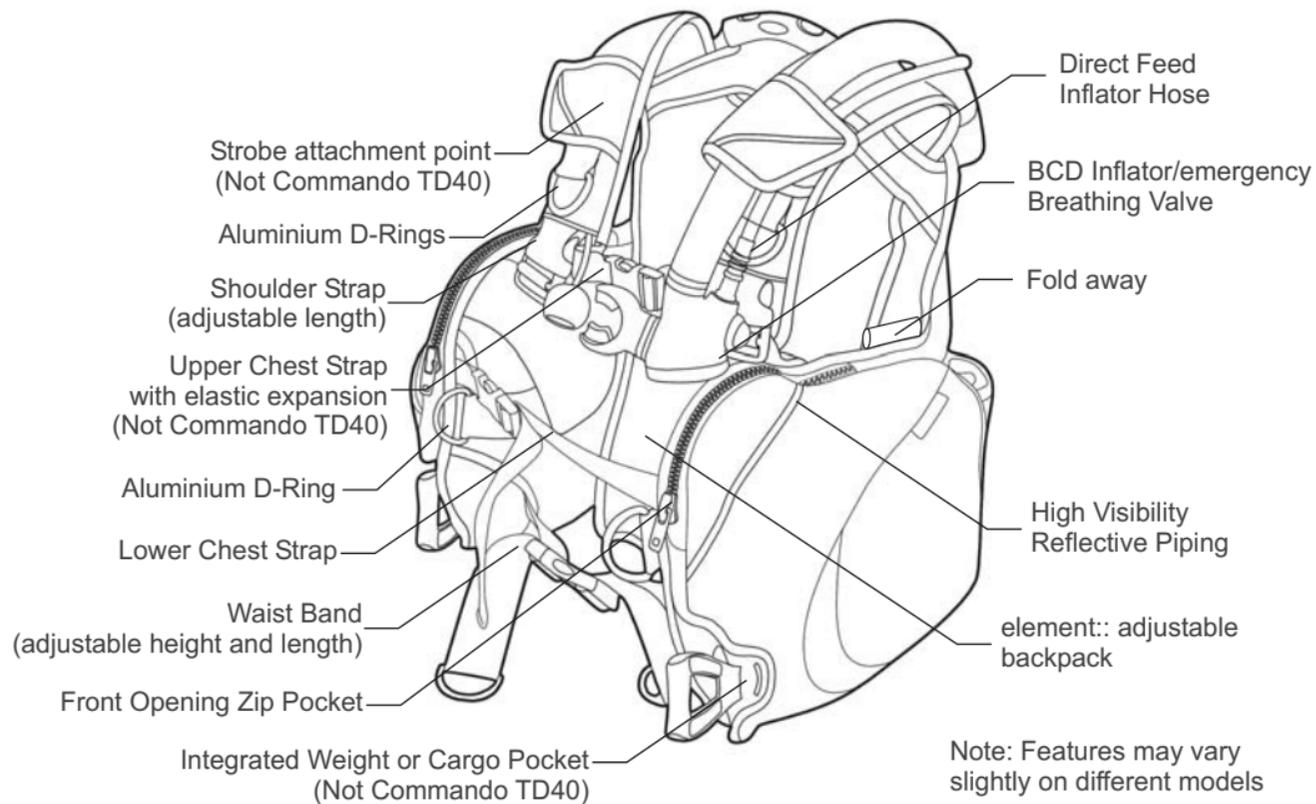


This Instruction Manual provides you with all the information you need to get the most out of your new BCD.

It is important that you read this manual to set up your equipment before you go diving.

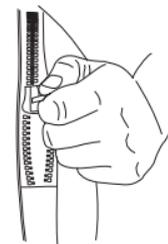
Here are some of the BCD features:

- Rugged 1000 denier outer bag construction.
- Super tough polyurethane inner bag.
- Mini air cylinder for emergency breathing and buoyancy.
- element :: backpack with re ::flex lumbar adjustment.
- Harness with adjustable clips and waistband positions.
- Aluminium D-rings for accessory attachment.
- Tough front opening zip pockets for stowage.
- Optional Integrated Weights or Cargo Clips (Not Commando TD40).



### Zip Pockets

Zip pockets are located on each side of jacket style BCD's. The zips open from the front for easy access. Inside the pockets are small D-rings for accessory attachment.



### SMB Pouch

The SMB pouch is located on the rear of the BCD, left hand side. To retrieve the SMB simply pull the D-ring downwards to open the pocket.

### D-rings

The BCD is fitted with a number of Aluminium D-rings for attaching larger items of kit externally. These are ideal for attaching torches, cameras, reels or any items that you might want to keep to hand.

### Important:

To take full advantage of the emergency breathing feature, your BCD needs to be fitted with an emergency cylinder.

### Warning:

To avoid a rapid ascent, add air to the BCD in short bursts. Add air as you breathe out to maintain neutral buoyancy.

### To breathe air from the BCD:

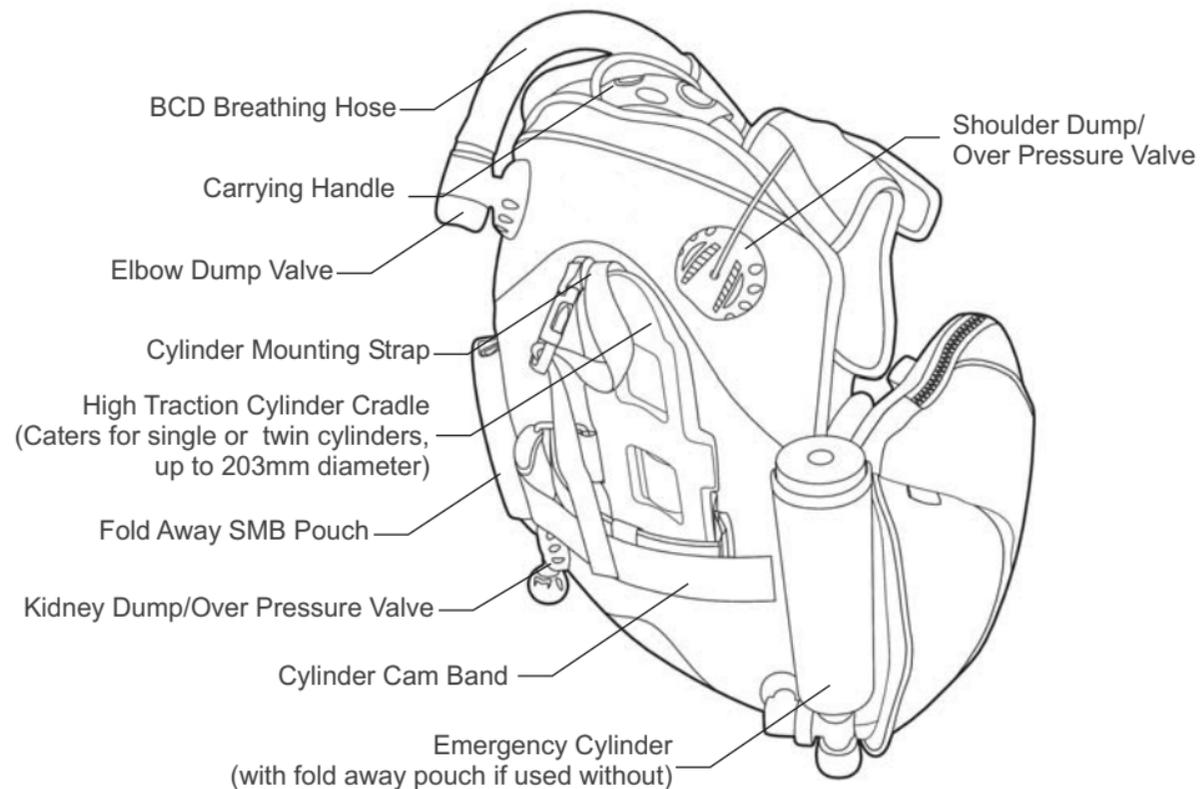
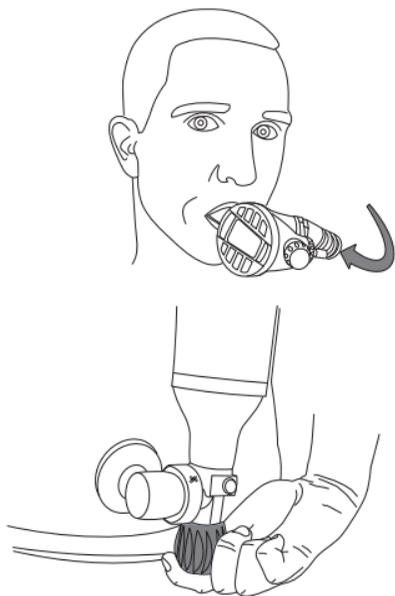
1. Lift the inflator above your head to clear the breathing hose of water.

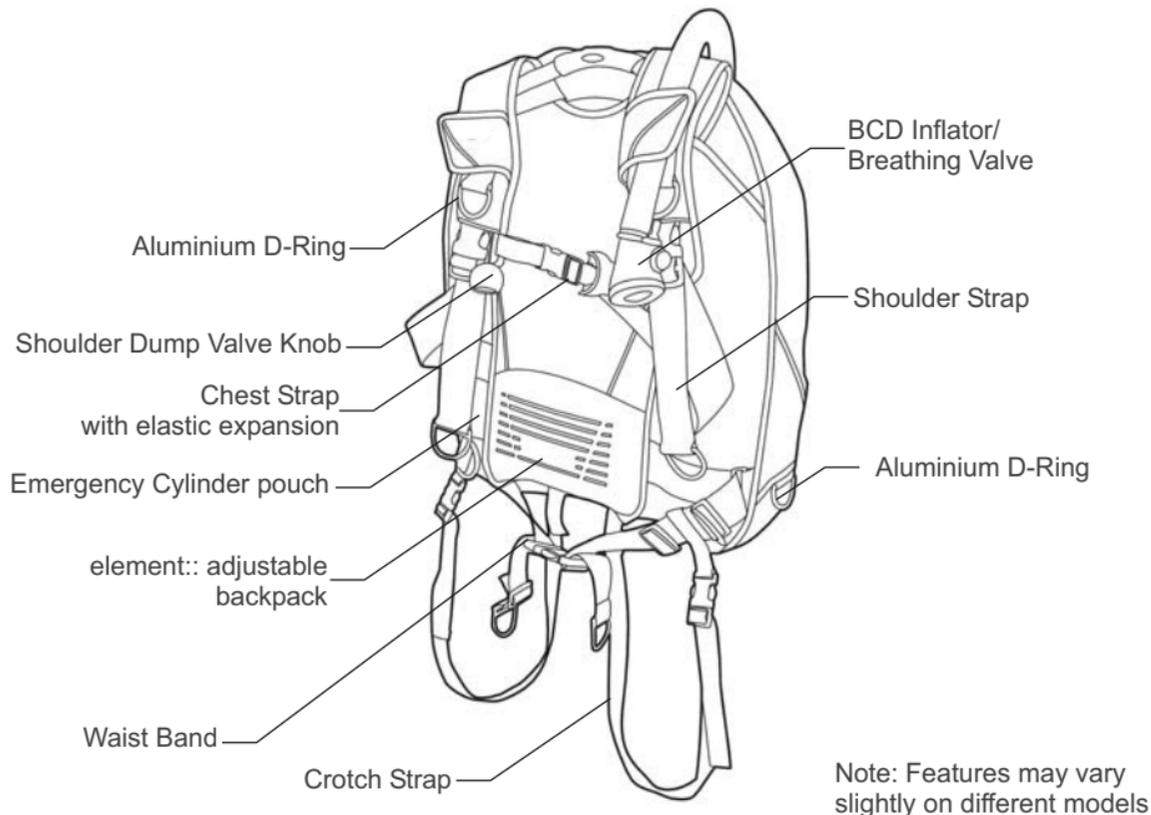
2. Place the mouthpiece in your mouth and exhale to purge any water out of the mouthpiece.

3. Breathe in. The valve will automatically draw available air from the BCD.

4. To exhale, just breath out. The air is vented automatically through the exhaust valve.

5. Replenish air to the BCD from the emergency cylinder.

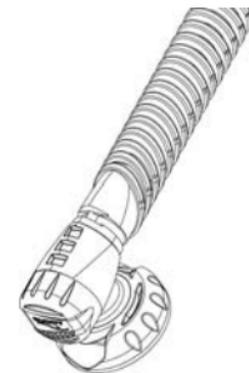




**Deflating the BCD Continued...**

**Elbow Dump**

The Elbow dump sits on the left hand shoulder. To operate the valve pull the inflator unit attached to the end of the jacket breathing hose. The inflator pulls on a cable running through the hose to operate the dump.



**Inflator**

The exhaust button on the power inflator can be used to deflate the BCD.

To operate the exhaust valve you must raise the inflator above your head and press the exhaust button, as shown.



**Important Note:**  
Dumping gas from the power inflator is not recommended for routine venting while submerged.

When the valve is held above the head in the open position, water may enter into the BCD.

### Important Note:

Each dump valve is capable of venting gas from the BCD quicker than the power inflator or emergency cylinder can add gas.

In the event of a 'free flow', the dump valves can be operated to prevent an uncontrolled buoyant ascent.

### Important Note:

Add and vent gas from the BCD in short bursts to achieve a controlled descent, ascent and neutral buoyancy.

Adjusting the BCD's buoyancy in large amounts will cause a see-saw dive profile and may cause an uncontrolled buoyant ascent.

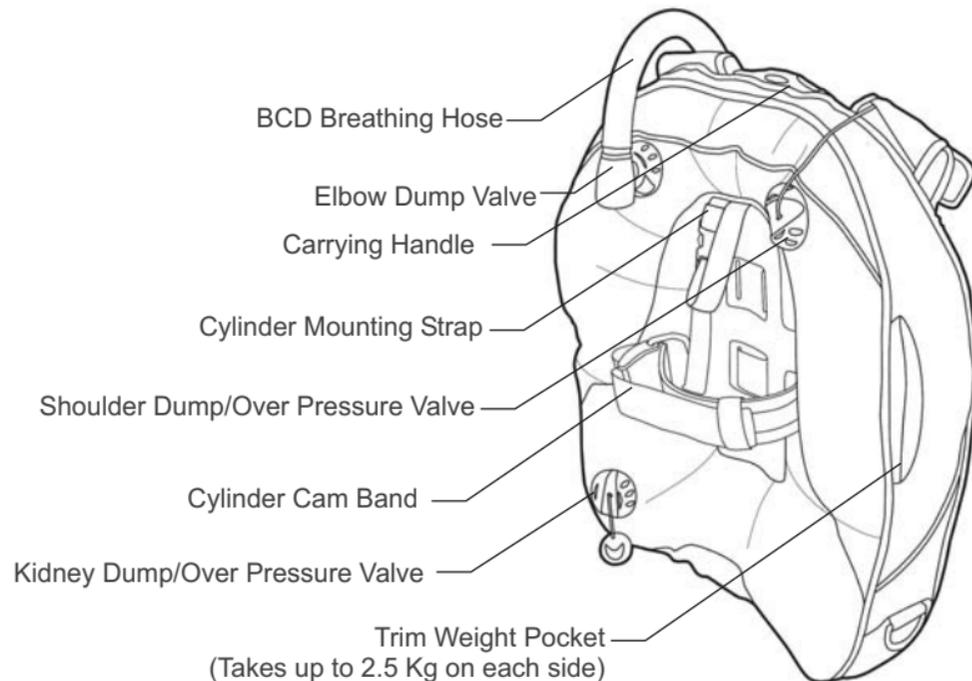
## Deflating the BCD

### Dump Valves

There are two dump valves on the BCD, one on the right hand shoulder and one on the lower left. These and the elbow dump should be used for routine deflation.

The shoulder dump will work best while the divers head is towards the surface, the lower dump works best when the diver is facing downwards.

To operate the dump valves, pull on the knob attached to the valve. To help locate the knobs, the shoulder valve knob is negatively buoyant and the kidney valve knob is positively buoyant.

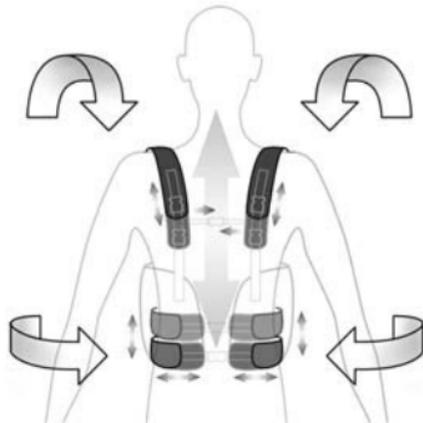


### Element:: harness with re::flex adjustment

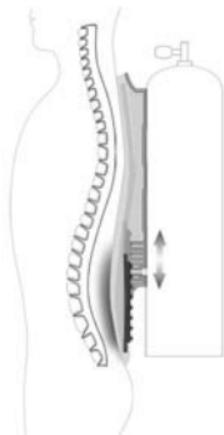
The harness, backpack and waistband allow fine tuning between standard sizes. This offers a tailored fit for the divers unique body shape.

The adjustment involves a simple 'One-Time Setup' of just 3 elements:

#### Shoulder and Waistband Straps



#### Backpack



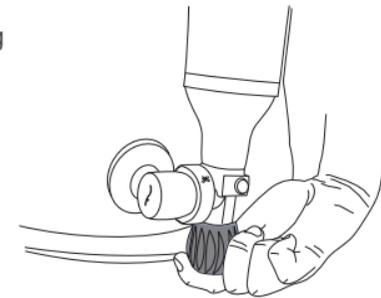
### Inflating the BCD Continued...

#### Auto Air

If you have opted to have the Auto Air fitted please refer to the Auto Air Manual for usage instructions.

#### Emergency Cylinder

If you have opted to have the emergency cylinder fitted, the BCD can be inflated by opening the cylinder valve. Gas should be added in short bursts to avoid a buoyant ascent. The emergency cylinder is not intended for routine inflation and should only be used if the main gas supply has been depleted.



#### Warning:

To avoid an uncontrolled buoyant ascent, add air to the BCD in short bursts.

**Important Note:**

In the event of a free flow into the BCD from the power inflator, disconnect the direct feed hose, cutting off the flow of gas from the cylinder. The direct feed hose valve will close when it is disconnected.

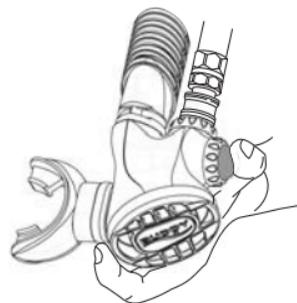
**Important Note:**

Add and vent gas from the BCD in short bursts to maintain a controlled descent, ascent and neutral buoyancy.

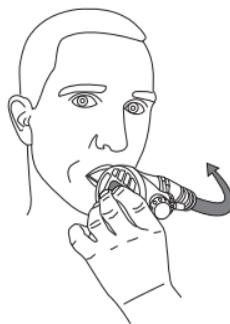
Adjusting the BCD's buoyancy in large amounts will cause a see-saw effect dive profile and may cause an uncontrolled buoyant ascent.

**Inflating the BCD****Power Inflator**

For routine BCD inflation press the blue dome button on the power inflator. This draws air directly from your main gas supply. Gas should be added in short bursts to avoid a buoyant ascent.

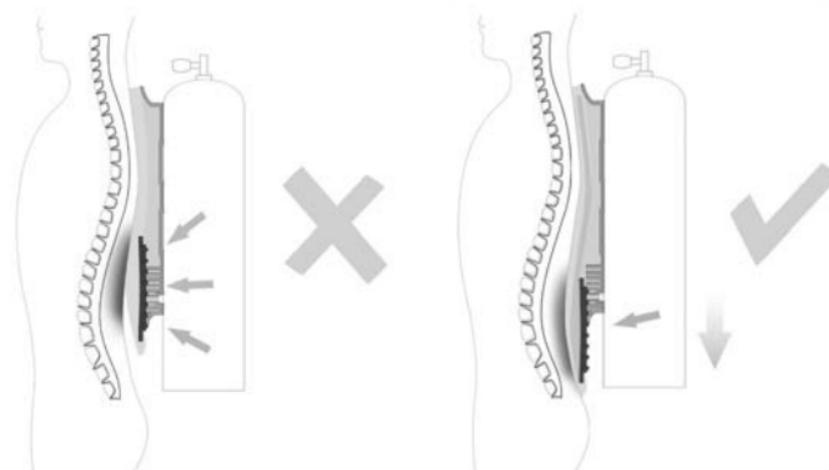
**Oral Inflation**

The BCD can be orally inflated by pressing the large exhaust button on the end and blowing into the mouthpiece.

**1. Backpack Adjustment**

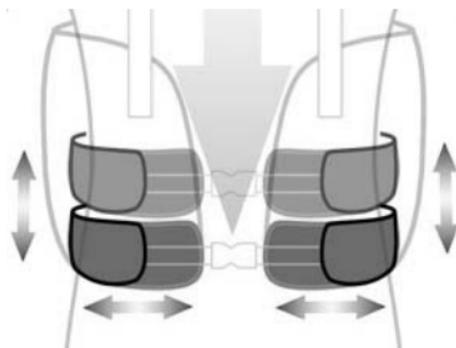
The Element:: backpack has a 100mm lumbar adjustment range, divided into 6 increment settings.

To move the lumbar plate unscrew the bolt with a 5mm Allen key, slide the plate up or down until the plate sits in the lumbar region of the back when fitted. Once the correct fit has been achieved re-fit the bolt and tighten up with the 5mm Allen key.



### 2. Waistband Adjustment

The waistband has 2 height settings. To adjust the height remove the male waistband clip and slider then slide the webbing out of the jacket and backpack loops. Re-thread the webbing through the alternative height loops on the jacket and backpack, re-fit the male clip and slider.



1. Adjust the reflex harness and backpack fixed adjustment points - see "Setting up".
2. Fully extend all the adjustment straps and clip the shoulder straps together.
3. With the help of your Dive Buddy slide your arms through the shoulder straps. While your Dive Buddy takes the weight of the cylinders, tighten the shoulder straps.
4. Clip the waist band together and pull the D-rings to tighten. The waist band should sit comfortably around the waist, not the hips.
5. Clip the upper and lower chest straps together. Adjust the straps once the BCD is inflated.
6. Check that you can move your arms freely and comfortably. Make any final adjustments as necessary.

### **Important:**

If you find any problems please contact the factory for advice. Unauthorised repairs may be dangerous and could effect the warranty.

Visually inspect the BCD material and fittings for signs of damage or excessive wear.

Operate the quick release snap connector on the direct feed hose. Ensure that the connector operates smoothly.

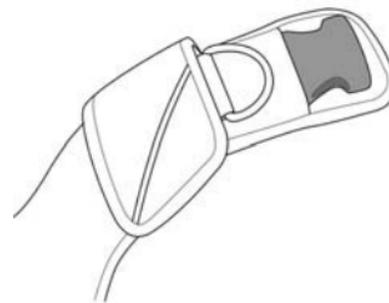
Inflate the BCD until the over pressure valves start to vent. Check that the rate of inflation is satisfactory. Check for leaks, especially around the valves (once they have finished venting the excess pressure).

Operate all the dump valves, including the inflator dump. Ensure the valves operate and re-seal.

Operate the emergency cylinder valve with a short burst of air. Ensure there is air in the cylinder and the valve operates smoothly and re-seals.

### **3. Shoulder Clip Adjustment**

1. The female shoulder clip can be adjusted along the webbing to suit your fit.



## A-Clamp or DIN ?

Before you start make sure that your mini-cylinder matches your main cylinder

i.e.DIN or A-Clamp.  
232 BAR or 300 BAR.

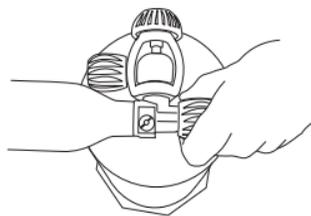
## Warning

Never decant from a cylinder with a higher working pressure.

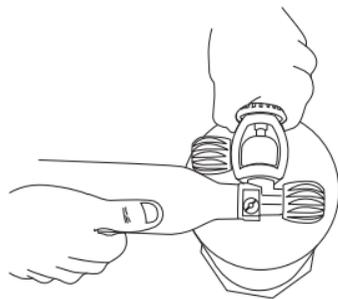
## Warning

As an added precaution always stand to one side when opening high pressure cylinder valves.

1. Before you start ensure the cylinders are in test date and not damaged in any way. Check the O-Ring in the main cylinder valve is in position, then connect the mini-cylinder valve to your main cylinder valve.



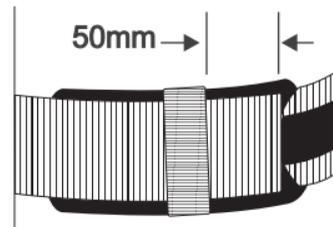
3. Slowly open the main cylinder valve and listen for leaks.



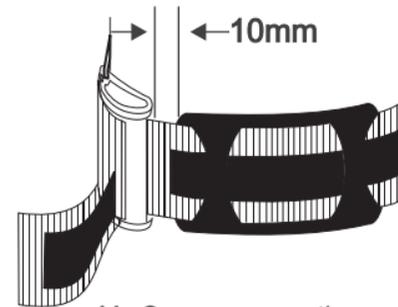
2. Open and close the mini-cylinder valve to ensure that the valve operates, return the valve to the closed position.



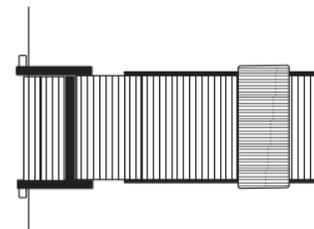
10. Ensure that the rubber sleeve does not interfere with the buckle.



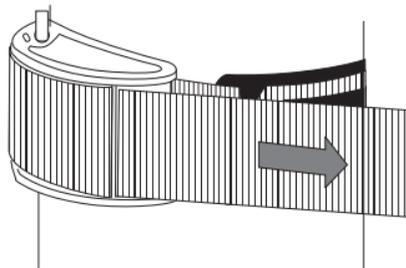
12. After securing the cylinder, check that the belt is firm and sitting straight.



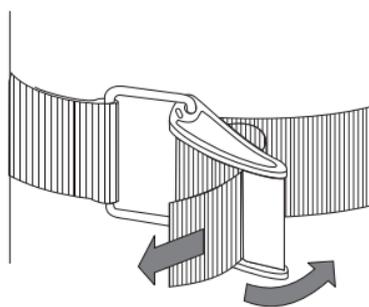
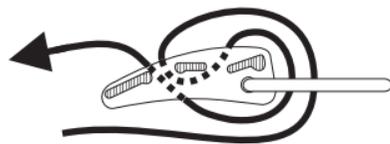
11. Once secure, the webbing is then velcroed down and tucked under the webbing loop, leaving 50mm (2") spare.



7. Secure the webbing by pulling the buckle slightly forward. Now thread the remaining webbing through the buckle as shown.

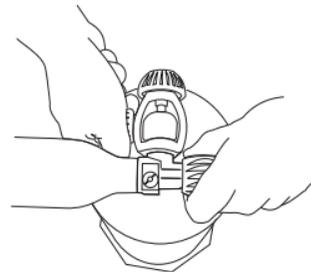


9. This cross section view shows how the cam band should be threaded through the buckle.

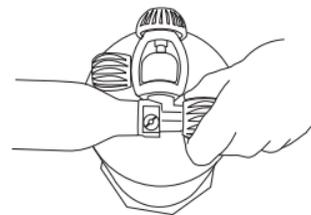


8. To finally clamp the cam buckle, pull on the webbing to make the buckle snap over.

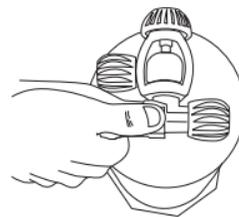
4. SLOWLY open the mini - cylinder valve, air will now decant into the mini-cylinder until the pressure in each cylinder is equal.



5. When the cylinders have equalised close both valves.



6. To release the pressure trapped between the valves, push the purge button located on the side of the mini-cylinder valve. Remove the mini-cylinder. Operate the valve to ensure it has filled.



**Note:**

It is normal for the cylinder to heat up and produce a hissing sound while the cylinder is decanting.

1. Open up the pouch and place the SMB in the centre. Ensure the SMB strap hangs out of the bottom of the pouch so it can be attached to the reel later.



3. Fold the webbing straps over the flap and velcro down. Ensure the D-Ring is hanging below the pouch.

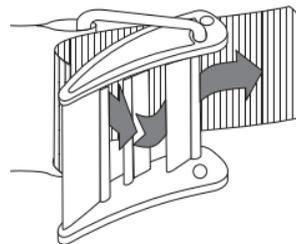


2. Fold the left hand flap over the SMB.

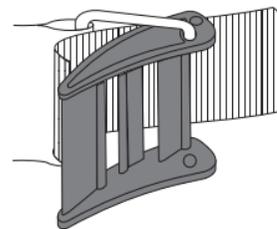


4. Tightly fold the right hand flap over and velcro down. Ensure the D-ring and SMB strap are both accessible.

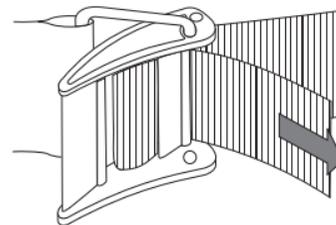
4. Before threading the buckle turn it back against the metal loop.



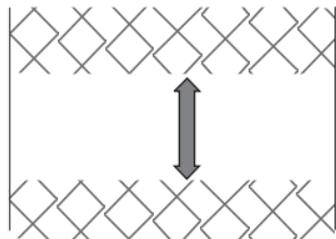
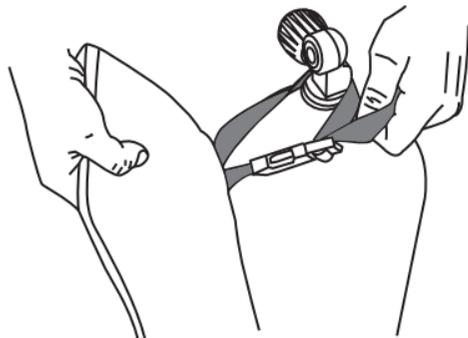
6. The camband can now be tightened against the cylinder by pulling on the webbing.



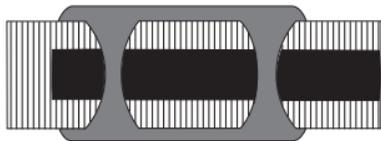
5. To thread the buckle start by pulling the webbing through the metal hoop. Now thread the webbing through the buckle as shown.



1. Place the loop on the rear of the BCD over the neck of the cylinder. Adjust the webbing so the jacket is sitting at the desired height on the cylinder.



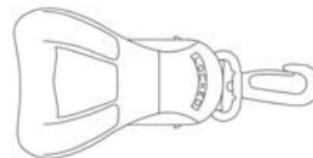
2. If mesh is used on the cylinder, part it to allow the cam band to grip directly on to the cylinder's surface.



3. Ensure the rubber sleeve aligns with the velcro on the camband.

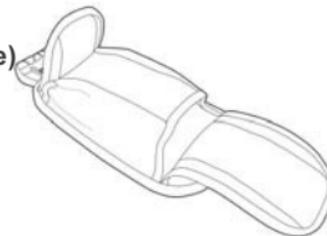
### Cargo Clips

Cargo Clips come fitted as standard on the Commando and Explorer BCD's. Accessories can be attached to these Rapid Release System clips and stowed in the cargo pockets for easy retrieval.



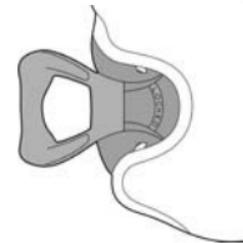
### Integrated weights (Optional Upgrade)

To fill the pouches, open the flaps and place the weights inside. Close the long flap first, then the short flap.



### Loading the pockets

Place the loaded weight pouches or accessory into the pockets on the BCD. Engage the clips making sure they "click" into position and the "LOCKED" text is visible through the clip window.



### Note:

Cargo clips and weight pouches are not available for the Commando TD40.

### Weight Allowance:

Each weight pouch will take up to 5 Kg (11 lb) of shot or 4 Kg (8.8 lb) of solid lead.

### Important:

When using the Cargo Clip, the attachment strap must be kept tight across the front of the pocket to prevent cargo falling out.

### Tip:

Once the ideal position is found you can use the cylinder mounting strap to find this position on the same cylinder another time. See - "Mounting Cylinders".

### Important:

It's essential to do a buoyancy check before venturing into open water.

**Important** - The positioning of the BCD on the cylinder is extremely important to achieve correct surface support and balance. Altering the position can result in the balance going from one extreme of holding the diver on their back to the other extreme of holding the diver face down. When set correctly the BCD will hold the diver bolt upright.

If the BCD is pulling the diver backwards, move the BCD higher on the cylinder. If the BCD is pushing the divers face downwards, move the BCD lower down the cylinder.

Be aware that your weight belt/pouches play a crucial role in the surface support position. If you remove your weights your surface support position may be compromised.

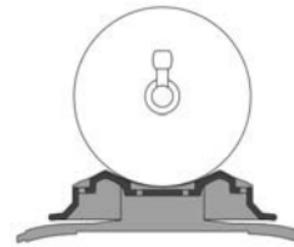
**Buoyancy Check** - Don all your diving kit as you would for a normal dive and float in shallow water. Vent all the air from your BCD and dry suit, expelling as much trapped air from your kit as possible. Add lead to your weight belt until the water is level with your eyes with your lungs half full, so when you empty your lungs you sink.

### Cylinder Cradle

The unique anti-slip stabilising cradle on the backpack eliminates cylinder roll and can be fitted with single or twin cylinders.

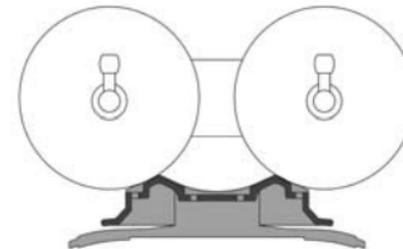
### Single Cylinder

Only the lower four camband slots in the back pack are used when a single cylinder is fitted, the top slots are not necessary, but can be utilised if desired.



### Twin Cylinders

Top and bottom slots are used when twin Cylinders are fitted. If the cylinders are not fitted with a double boot or manifold then the spacer block from the twinset kit will be needed to stabilise the cylinders.



### Cylinder size limitations:

1. The maximum cylinder diameter the backpack will hold is 203mm (8"), in either single or twin set-up.

2. If neutral buoyancy can not be achieved when carrying out a buoyancy check the cylinder size may need to be reduced. See "Surface Trim and Weighting".