



DOLPHIN

TECH



BUOYANCY COMPENSATOR OWNER'S MANUAL

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| <input type="checkbox"/> JT-31D single tank BCD | <input type="checkbox"/> JT-31H single tank BCD |
| <input type="checkbox"/> JT-40D single tank BCD | <input type="checkbox"/> JT-40H single tank BCD |
| <input type="checkbox"/> JT-41D single tank BCD | <input type="checkbox"/> JT-41H single tank BCD |
| <input type="checkbox"/> JT-50D twin tank BCD | <input type="checkbox"/> JT-50H twin tank BCD |
| <input type="checkbox"/> JT-51D twin tank BCD | <input type="checkbox"/> JT-51H twin tank BCD |
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| <input type="checkbox"/> JT-65 EXP. double-bladder twin tank BCD | |
| <input type="checkbox"/> JT-65 EXP. double-bladder twin tank BCD | |

CONTENTS

<u>I. INTRODUCTION</u>	1
<u>II. GENERAL WARNINGS AND CAUTIONS</u>	1
Definition of WARNING, CAUTION and ATTENTION	
<u>III. BCD FEATURES</u>	2
Back plate	3
Harness	4
Crotch strap	5
Air cell	5
Single tank adaptor and tank cam bands	7
Stainless steel twin tank bands	7
Weight pocket	8
Back plate pouch (and fitting hardware)	8
BCD handle	9
<u>IV. ASSEMBLING THE HARNESS / BCD</u>	9
Basic harness back plate system	9
Deluxe harness back plate system	14
Harness adjustments	21
Weight pocket installation.....	21
Attaching wing and tank adaptor for single tank BCD	22
Attaching your single tank BCD to a scuba tank.....	24
Wing and tank attachment for twin tank BCD	26
Back plate pouch and fitting hardware	30
BCD handle	31
<u>V. USING THE BCD</u>	32
Power inflator	32
Attaching low pressure inflator hose	33
Using the weight pockets	33
Over-pressure exhaust valve	34
Donning the BCD	34
Taking off the BCD	35
BCD care and storing	35
<u>VI. BUOYANCY DATA and MAXIMUM TANK SIZE</u>	36
<u>VII. WARRANTY</u>	36
<u>VIII. PURCHASE & MAINTENANCE RECORD</u>	37

I. INTRODUCTION



THANK YOU for choosing IST technical buoyancy compensating device (BCD). Only materials best suited to diving conditions were used to make your new BCD and it was designed and made according to the highest standard in diving equipment manufacturing so you can have reliable service from it for many years to come.

Notice: Buoyancy compensating device is considered a PPE (Personal Protective Equipment). All IST technical BCDs (models: JT-30D, JT-30H, JT-31D, JT-31H, JT-50D, JT-50H, JT-51D, JT-51H, JT-65D exp. & JT-65H exp.) have been submitted for testing and design validation, and were certified according to Art. 10 of Directive 89/686/EEC by:

SGS United Kingdom Ltd. (Notified body No. 0120)
202B Worle Parkway,
Weston-super-Mare, BS22 6WA
United Kingdom

The **CE** marking on this product represents compliance to the basic health and safety requirements of Annex II of Directive 89/686/EEC (European standard EN1809: 1997 (Category II PPE)). The number 0120 represents the certifying body SGS UK Ltd., which was entrusted to perform such task for the EC quality control system according to Art.11 A of Directive 89/686/EEC. The manufacturing process is carried out under strict supervision by:

IST Sports Corp.
Room A, 6th Floor, No. 6, 345 Lane,
Yang-Kuang Street, Taipei,
Taiwan.
Tel: +886 2 26272516 / Fax: +886 2 26599056

II. GENERAL WARNINGS AND CAUTIONS

Please read and thoroughly understand the content of this owner's manual in its entirety. If there is anything unclear on this product's functions or assembly details, for your safety sake, do not use it and please contact an authorised IST dealer for assistance.

Do not use this BCD component as part of your scuba diving equipment if you have not received relevant and proper dive training and certification from a recognised scuba training agency.

This is not a life jacket. It does not guarantee the wearer a head-up floating position at the surface.

Improper use or intentional misuse of this product may cause serious injury or death.

Do not inhale gas from within this BCD

Maximum recommended cylinder capacity (with max. 8" / 203mm diameter) is 1) a single 15-litre tank for JT-30D, JT-30H, JT-31D & JT-31H, 2) twin 15-litre tanks for JT-50D, JT-50H, JT-51D & JT-51H, 3) twin 15-litre tanks for JT-65D and JT-65H.

Do not use this BCD as a lift bag. It is not designed for this purpose and may result in uncontrollable ascent, which could lead to serious injury or even death.

Prior to each dive, fully inflate the BCD and inspect for leakage, damage and proper operation.

Before using this BCD in open water, it is highly recommended to familiarise with its features in confined water first.

Repair or maintenance task of any part or any disassembly of the air cell and power inflator / corrugated hose assembly must only be performed by an authorised IST dealer. Unauthorised service will render the warranty void and may cause this product to malfunction.

Do not modify any component on this BCD as it will render the warranty void and the product may not function properly and safely.

Temperature range for using IST BCD:

Air	-20°C ~ 50°C / -4°F ~ 122°F
Water	-2°C ~ 40°C / 28°F ~ 104°F

Definition of **WARNING**, **CAUTION** and **ATTENTION**:



WARNING

Indicates a situation that, if not avoided, will result in serious injury or death



CAUTION

Indicates a situation that, if not avoided, may result in serious injury or death.



ATTENTION

Indicates a situation that, if not avoided, may result in minor or moderate injury or damage to your scuba equipment.

III. BCD features

IST technical diving equipment is modular and so our BCDs come in various combinations. Below is a quick reference table of for our standard products and some explanations of their main features:

	Basic harness	Deluxe harness
with single tank adaptor	JT-30H *	JT-30D *
	JT-31H **	JT-31D **
	JT-40H *	JT-40D *
	JT-41H **	JT-41D **
with twin tank steel bands	JT-50H *	JT-50D*
	JT-51H **	JT-51D **
	JT-65H *	JT-65D *

* With stainless steel back plate

** With aluminium back plate

*** **Depending on your local / regional distributor, your BCD package may contain a different combination of components to what is described within. Please check your nearest authorized IST retailer if you have question with regard to your equipment.**



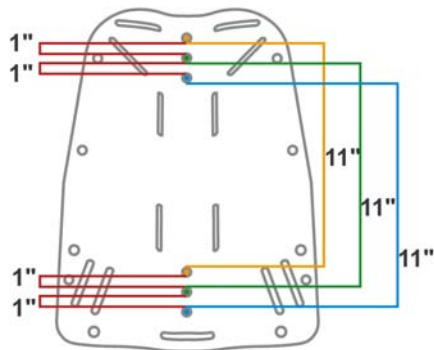
BACK PLATE

Item no.: BP-3 – stainless, BP-4 – aluminium

The back plate is the heart of a technical BCD. Dolphin Tech plates are pressed formed with all sharp edges removed during the manufacturing process. There are two materials being used to make this important component: 304 stainless steel for its high tensile strength and strong corrosion resistant characteristic and 6061 aluminium for its excellent strength to weight ratio and good corrosion resistance. They weigh 2.3kg (5lb) and 0.8kg (1.78lb) respectively.



Please note your back plate has 3 sets of holes along the back plate's ridge. Each set has 2 holes and they are at industry standard 11" apart. The distance between each set is 1". This gives you the ability to personalising the set up of the scuba tank height in relation to you and the BCD.



HARNESSES

Item no. HB-1 – basic harness, HB-2 – deluxe harness

Depending on the model you have purchased, it may either come with the basic harness or the deluxe harness and all harnesses come complete with stainless hardware.



HB1- Basic harness

The basic harness is made from thick, ultra strong 3.2m long, 5cm wide nylon webbing with a grommet in the centre to stop it from moving and therefore affects your personal adjustments. This setup is simple and bomb-proof in terms of reliability and simplicity.



HB2 – Deluxe harness

IST's deluxe harness is made from the same webbing as the basic harness but with additional convenient and comfort features. The shoulder pads are anatomically bent and come with a sternum strap to distribute the load more evenly around the upper body. The shoulder strap buckles can be used to ease the difficulty in donning or doffing the BCD.

CROTCH STRAP
Item no.: HB-3



Made from softer nylon webbing, IST technical BCD crotch strap is 2" wide but is comfortable to use. The abdomen end of the strap has a pre-sewn loop for the ease of installation. Comes complete with D-rings and webbing keepers.

AIR CELLS

JT-30 - 30lb air cell, JT-40 – 40lb air cell, JT-50 – 50lb air cell & JT-65 – 65lb exp. air cell

IST's air cells' outer shells are all made from tough 1680D ballistic nylon and inner bladders from TPU coated nylon. They are made for you to safely take on the toughest dive missions.



For JT-30 single tank (left) and JT-50 twin tank (right) air cells, each has a single inner bladder, and comes with a single 16" inflator with standard technical elbow connection and an over-pressure exhaust valve to the front lower left side (when wearing). They have 1 pair of grommets at industry standard 11" apart.

IST EXP.
JT-65



JT-65 is like JT-30 and JT-50 but packed with redundancy features * and more. It has a back up 19" inflator hose, which is attached to a second (back up) bladder. Each bladder also has 2 over-pressure exhaust valves for convenience in buoyancy control. The position of the valves and inflators can also be interchanged for a personalised set-up. There are 3 sets of grommets and each set has 2 holes, are 11" apart. You can fine-tune your bladder location in relation to the harness and tanks. Lastly, due to its increased size, a parameter bungee cord wraps around the air cell to restore hydro-dynamics when less / no air is inside the inner bladder while diving.

* Note: The primary bladder should be used at all time during a dive unless, in the unlike event of it becoming faulty, ONLY then the redundant (back up) bladder can be used. As to how primary / redundant bladder is arranged, please consult your technical dive manual and / or instructor.



The rapid exhaust valve automatically releases gas when the pressure inside the bladder is 0.17kg/cm² (2.4psi) > the ambience to protect the bladder from bursting.



All air cells come with 16" long power inflator and standard technical elbow connection (left) except for JT-65, which back up power inflator is 19" long. There is a 13" long option (as extra) for those who prefer a shorter set-up.



Inflator with recreational style shoulder dump valve is also available separately & comes in either 14" or 16" long assembly. – please contact your local IST dealer for more information.

All power inflator's recommended working pressure is 7.6BAR (110psi) ~ 11BAR (160psi) and the ideal pressure is between 9.5BAR (138psi) ~ 10BAR (145psi).



SINGLE TANK ADAPTOR

CAM TANK BANDS

Item no.: STA-1 & BP-2/IST

Your Dolphin Tech technical single-tank BCD comes with a stainless steel single tank adaptor, complete with fitting hardware (contains 2 sets of square based screws, flat washers, split washers and winged nuts) and 2 cam tank bands.



TWIN TANK BANDS

Item no.: (BP3-H)

Your twin-tank technical BCD comes with 2 twin tank bands and attaching hardware (2 connecting bolts, 2 normal & 2 aircraft nut (nut with nylon insert), 6 flat washers and 2 split washers). They should be compatible with cylinders either with 7.25" / 184mm or 8" / 203mm nominal diameter.

WEIGHT POCKETS

Item no. JT-WP7

Dolphin Tech weight pockets are made from 1680 denier ballistic nylon for durability. There are 3 webbing loops on the reverse side and arranged in a way that when the harness webbing is threaded through, the weight pocket will be stable and not flap around. It is designed to hold up to 7kg (15lb) of weight each.



Front



Back

Each weight contains an **inner weight pouch**. It conveniently keeps all solid or soft weights together as a single unit. The **bottom opening** is held close by a quick release buckle and Velcro. Only use this opening in the event of an emergency when weights need to be jettisoned.

BACK PLATE POUCH (with fitting hardware)

Item no. HB-4



The back plate pouch is to be attached to the back plate and is used to store utility lifting device(s) such as a safety sausage. The additional gear can be snugly sandwiched between your back and the back plate so it is out of the way with no additional underwater drag created. A quick snap can secure the content to the crotch strap's tail D-ring to prevent accidental loss of equipment (right).



BCD HANDLE
Item no. HD-30H

The handle provides convenience in getting the BCD to and from a dive site or when connecting the BCD to a scuba tank.

IV. ASSEMBLING THE HARNESS / BCD

*** Depending on your local / regional distributor, your BCD package may not contain all parts or may include different components described within. Please check your nearest authorized IST retailer if you have question with regard to your equipment.



Before commencing BCD assembling, please read and understand the manual so the best procedures can be followed.

Basic harness back plate system

If you have purchased a BCD with the basic harness, your kit should contain the following parts:

- Back plate (BP-3 stainless steel or BP-4 aluminium plate— depending on the model purchased).
- HB-1 basic harness set:
 - ◆ 3.2m / 126" long, 2" wide nylon webbing with centre grommet
 - ◆ 2 x HBH-1 hose holders
 - ◆ 6 x WK-4 stainless steel webbing keepers
 - ◆ 2 x DR-1 bent stainless steel D-rings
 - ◆ 2 x DR-2 flat stainless steel D-rings
 - ◆ BB-3 stainless steel cam buckle
- HB-3 crotch strap set:
 - ◆ 1.2m / 48" long, 2" wide soft nylon webbing (total length).
 - ◆ 2 x DR-2 flat stainless steel D-rings (1 of which is already affixed to the strap)
 - ◆ 2 x WK-4 stainless steel webbing keepers (1 of which is already affixed to the strap)

At this stage, put the air cell, the low pressure BCD hose, back plate pad, screws and any tank attaching equipment aside. They won't be needed until at a later stage.



BP-3 stainless / BP-4 aluminium back plate



- 1) Insert one end of the basic harness webbing from the back through the angled slot near the top of the plate (see Pic. 1) then continue on through the adjacent top slot (from the front of the plate – see Pic. 2).



Pic. 1.



Pic. 2.

- 2) Repeat the same procedure with the other side and remember to centre the grommet against the plate's ridge.



Pic. 3. (back)



Pic. 4. (front)

- 3) Thread one end of the webbing through a hose holder's webbing keepers. Start from top keeper's underside in the direction shown (Pic. 5.) then down through the other slot. Repeat with the bottom keeper (Pic. 6.) and the other end of the webbing.



Pic. 5.



Pic. 6.

- 4) Thread one end of the webbing through an opening of a WK-4 webbing keeper, then a DR-1 bent D-ring and finally back through the WK-4 webbing slide's other opening (Pic. 7.). Repeat the same procedure with the other end of the webbing (Pic. 8). Make sure the D-rings point away and not into the chest.

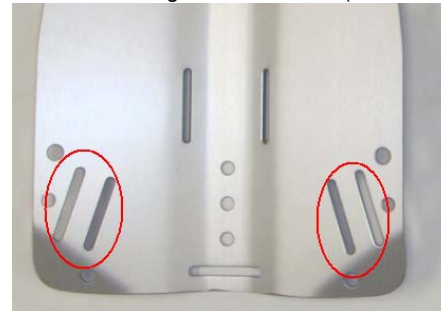


Pic. 7.



Pic. 8.

- 5) There are 2 sets of slots in the lower corners of the plate (Pic. 9). Take one end of the webbing and thread it through the inside slot (on the same side of the plate) from the front (Pic. 10.).



Pic. 9.



Pic. 10. (front)

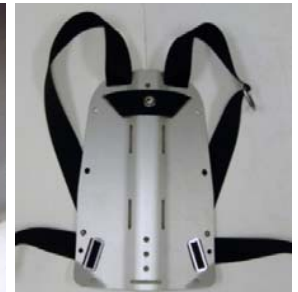
- 6) Thread the webbing through an opening of a WK-4 webbing keeper (Pic. 11) at the back. Pull most of the webbing through then thread it back through the webbing keepers' vacant opening in the opposite direction then exit it through the other slot (Pic. 12). Repeat the procedure with the other side (Pic. 13).



Pic. 11.



Pic. 12.



Pic. 13. (rear)

- 7) Thread the webbing through an opening of a WK-4 webbing keeper, then a DR-2 flat D-ring and finally back through the webbing slide's vacant opening in the opposite Direction (Pic. 14). Repeat the same procedure with the other end of the webbing to complete the installation of the basic harness (Pic. 15).



Pic. 14. (front)



Pic. 15.

- 8) To assemble the belt buckle, thread the left webbing (when wearing the BCD) through the buckle's slots as the picture shown below (Pic. 16 & 17).



Pic. 14.



Pic. 15.

- 9) To assemble the crotch strap, thread its open end through the loose WK-4 keeper and DR-2 flat D-ring. Make sure the D-ring is on the same side as the hardware already affixed (Pic. 18).



Pic. 16.

- 10) Lastly, thread the same end through the back plate's bottom horizontal slot with the D-ring facing backward (Pic. 19) then back through the WK-4 keeper (both slots – Pic. 20) to complete the basic harness assembly.



Pic. 17. (front)



Pic. 18. (back)

* For adjustment of the harness, please see the pg. 21 for more information.

Deluxe harness back plate system

If you have purchased a BCD with the deluxe harness, your kit should contain the following parts:

- Back plate (BP-3 stainless steel or BP-4 aluminium plate – depending on the model purchased).
- HB-2 deluxe harness set:
 - ◆ 80cm / 31.5" long, 2" wide nylon connecting webbing with centring grommet.
 - ◆ 1 pair of anatomically shaped and padded shoulder straps with 4 bent D-rings and 8 webbing keepers (already affixed).
 - ◆ 4 x WK-4 stainless steel webbing keepers
 - ◆ 2 x DR-2 flat stainless steel D-rings
 - ◆ 2 x waist padding
 - ◆ BB-3 stainless steel cam buckle.
- HB-3 crotch strap set:
 - ◆ 1.2m / 48" long, 2" wide soft nylon webbing (total length).
 - ◆ 2 x DR-2 flat stainless steel D-rings (1 of which is already affixed to the strap)
 - ◆ 2 x WK-4 stainless steel webbing keepers (1 of which is already affixed to the strap)

At this stage, put leave the air cell, the low pressure BCD hose, back plate pad, screws and any tank attaching equipment aside. They won't be needed until at a later stage.



BP-3 stainless / BP-4 aluminium back plate

- 1) Insert one end of the nylon connecting webbing from the back through the angled slot near the top of the plate (see Pic. 1) then continue on through the adjacent top slot (from the front of the plate – see Pic. 2).



Pic. 1.



Pic. 2.

- 2) Repeat the same procedure with the other side and remember to centre the grommet against the plate's ridge.



Pic. 3. (back)



Pic. 4. (front)

- 3) Thread each end of the strap through both WK-4 webbing keepers slots (so 4 in all) sewn on a shoulder padding (as shown in Pic. 5) on the appropriate side, i.e. the right pad has an anatomical bend to the right when putting on the BCD and vice versa for the left.



Pic. 5.

Difficulties in threading can be experienced as the clearance is tight but this is intentionally designed to ensure the pad and the connecting webbing can not come undone.





A helpful way to accomplish this task is by pushing a corner of the connecting strap when going through each opening of a webbing keeper and then use a pair of pliers to pull it through (Pic. 6).



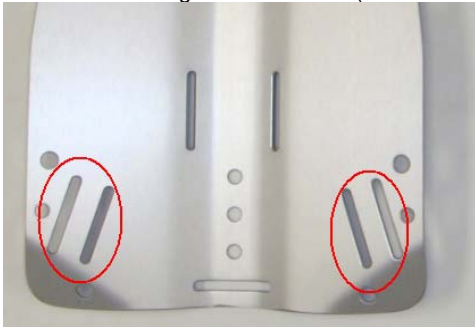
Pic. 6.

When adjusting the connecting strap to personal fitting (please refer the next section), a flat screw driver can be inserted between the strap and the webbing already sewn on the padding (Pic. 7) to create a gap so it will be easier to move the strap in either direction with pliers.



Pic. 7

4) There are 2 pairs of slots in the lower corners of the plate (Pic. 8). Take one end of the webbing and thread it through the inside slot (on the same side of the plate) from the front (Pic. 9).



Pic. 8.



Pic. 9.

5) Thread the webbing through an opening of a WK-4 webbing keeper (Pic. 10) in the back of the plate. Pull most of the webbing through then thread it through the keepers' other opening in the opposite direction and finally, exit it through the other slot (Pic. 11). Repeat the procedure with the other side (Pic 12).



Pic. 10.



Pic. 11.

6) Repeat the procedure with the other side (Pic 12).

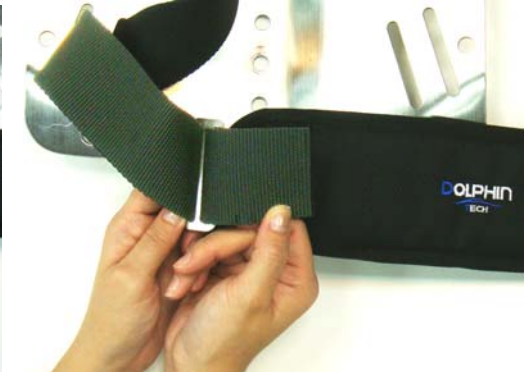


Pic. 12.

7) To assemble the waist padding, thread one webbing end down through its webbing keeper in the direction shown (Pic. 13)... then back up through the other slot (Pic. 14).



Pic. 13.



Pic. 14.



- 8) Thread the webbing through the webbing loop (as pointed by the red arrow) then assemble the waist flat D-ring as shown.



Pic. 15.

- 9) Pic. 16 shows the complete threaded waist webbing. Repeat procedure 7) through 9) for the other side.



Pic. 16.

- 10) To assemble the belt buckle, thread the left webbing (when wearing the BCD) through the buckle's slots as the picture shown below (Pic. 17 & 18).



Pic. 17.



Pic. 18.

- 11) To assemble the crotch strap, thread its open end through the loose WK-4 keeper and DR-2 flat D-ring. Make sure the D-ring is on the same side as the hardware already affixed (Pic. 19).



Pic. 19.

- 12) Thread the same end through the back plate's bottom horizontal slot with the D-ring facing backward (Pic. 20).



Pic. 20. (front)

- 13) Lastly, back through the WK-4 keeper (both slots – Pic. 21) to complete assembling the deluxe harness.



Pic. 21. (back)



Harness adjustments

After putting the back plate and harness together, adjustments will have to be made to suit your unique body shape and diving requirements. Here are some helpful guidelines for you to follow:

- It is a good idea to put on the exposure suit intended to be used with the BCD so the best adjustment can be achieved.
- Adjusting the height of the back plate: After putting the harness on, you should be able to touch the top of the back plate with your finger tips.
- The shoulder straps should fit as snugly as possible but not overly tight so that donning or doffing becomes difficult. Adjust strap length so there is just enough room for 2 fingers to pass through between the chest and the strap.
- The waist straps secure the lower portion of the harness to your torso. It should be tight but not uncomfortable. Excess webbing should be trimmed off and the loose threads burnt off with a lighter. You can leave the webbing slightly longer than needed as adjustments may be necessary due to a change in the thickness of the exposure suit used / body shape.
- Chest D-rings: For the basic harness, the bent D-rings should be located approximately mid way between the collar bone and the most pronounced part of the chest. For the deluxe harness, adjust the height of the top pair so they are approximately mid way between the collar bone and the most pronounced part of the chest.
- Waist D-rings: They should be placed at the widest points of the waist.
- Crotch strap length: It should be long enough to stop the back plate from moving upward but not too short that it becomes uncomfortable. Trim off the excess and burn off any loose fibre with a lighter to prevent fraying.
- Crotch strap back D-ring: It should be on or just above the tailbone.



Please pay extra precaution when using fire.

Weight pocket installation



- 1) With the harness unassembled at the waist, thread the webbing through the top (horizontal) slot on the back of the weight pocket.



- 2) Thread the webbing through the back plate as shown here (back view)



- 3) Thread the webbing through both vertical loops on the back of the weight pocket.



- 4) Attach waist D-rings to the waist strap with webbing keepers. Due to the addition of the weight pockets, the position of the D-rings may not be at the widest points of the waist.

Attaching wing and tank adaptor to single tank BCD

- 1) To attach the single tank adaptor to your back plate, firstly, put the square based screws through the holes in the single tank adaptor then through the grommets of your air cell from the back.





2) Have the screws through the chosen set of holes on the back plate from the back. To hold everything together, firstly put the flat washer and split washer (in this order) onto the screw from the front.



3) Hand-tighten the winged nuts to hold everything together (no tool is needed).



4) Open up the tank cam bands and remove the rubber pads.



5) Using pad for its anti-scratch & anti-shock property, thread the cam band's Velcro end through the one of the pad's openings, then both of slots of the single tank adaptor and finally, through the vacant opening in the rubber pad.

Thread each band's webbing through its cam buckle in the following steps:



Pic. 7.



Pic. 8.



Pic. 9.



Pic. 10.

Attaching your single tank BCD to a scuba tank

- 1) Always check the tank bands' threading before attaching your BCD to a scuba cylinder. If possible, wet the bands first as the nylon webbing stretches a little in this condition. Also make sure the band's metal ring is as close to the single tank adaptor as possible. This will provide the greatest range of adjustment.
- 2) Open the tank band buckles and undo the last step of the threading procedure.
- 3) Hold the BCD up right and put the tank bands over the cylinder.





4) Pull the bands tight (one at a time) and half-close the buckle until it can stand up against the tank on its own. The webbing should be able to tightly hold the BCD to the cylinder.



5) Finish threading (as Pic. 4. on page 3) then close the buckle. Use Velcro to hold the loose webbing down.



6) The ideal height of the tank is at where you can reach back and turn the tank valve on and off (if necessary during a dive emergency) but not too high so you run the risk of the tank valve hitting the back of your head when entering the water or bending your head backward.



Wing and tank attachment for twin tank BCD

In order to set up a diving twin tank set, you will also need a set of manifold or alternatively, 2 valves with outboard valves (available from your local IST dealer separately) installed to your tanks first. If you wish, this is a perfect opportunity to have the manifold / valves oxygen cleaned and serviced so you can use them with Nitrox / oxygen later.

The following procedures take you through the setting up of a twin set with manifold but if you are using independent doubles, simply ignore all references made to the manifold.

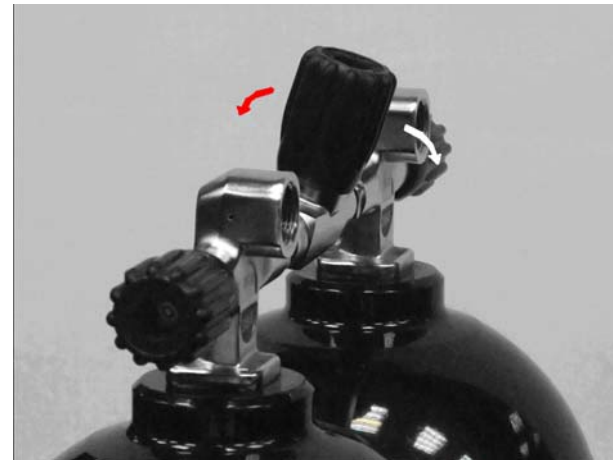
⚠ IMPORTANT: The handling of pressurised vessels, such as scuba cylinders, can be extremely dangerous. It is not in this user's manual's scope to cover valve installation. IST strongly recommend leaving the valves / manifold and twin tank band installation to your trained local dive professionals.

⚠ If you intend to carry out the installation of the twin tank bands, have your trained local dive professional check the assembly to make sure it is done correctly to ensure safe operation.

⚠ Make sure the pressurised gas stored inside the cylinders that are being worked on is released completely before work commences. The failure to do so can have dire consequences and serious injury or even death can result.

⚠ When encountering an assembling problem, stop immediately and contact your local dive professionals for assistance. Without doing so, the risk of damaging your dive equipment and / or causing serious injury / death when testing / using / transporting / storing the twin-set is greatly increased.

When the set is completely installed, please have the dive professionals at your local IST dealer to perform a thorough safety inspection.



1) With the manifold already installed, let the cylinders stand on a **clean** and **level** working surface. Make sure the centre isolator's valve angle is in a preferred position.

⚠ If using a manifold, please keep the cylinders parallel to each other and do not move them excessively or pick them up until installation of the bands is complete. The cylinders are only held together by the centre isolator, which is made from brass and its fine threads are vulnerable to damage in this half-assembled state.



2) Make sure these lock nuts are shifted all the way towards the centre isolator valve to allow room for adjustment later. You will need a (adjustable) spanner with 22mm jaw opening. Please note the right valve's thread (pictured left) is left-handed, turn clockwise to loosen.

3) Slide one band over the cylinders and leave it at the bottom. It may be necessary required to rotate the centre isolator to bring the cylinders inward or out to get the right clearance.

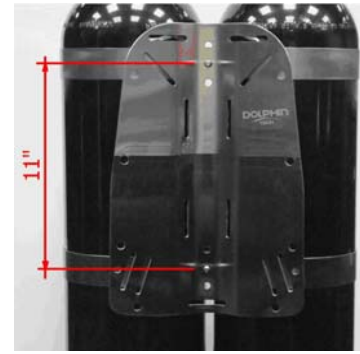


4) Place the other band at or just below where the cylinder dome curve ends.

5) Put a bolt through a flat washer then both holes of the top band from the back of the cylinders (i.e. the side with yoke dimples).



6) Place another flat washer onto the bolt from the front of the cylinder and then using a spanner to hold the bolt's end nut and another to turn the aircraft nut onto the bolt. **DO NOT FULLY-TIGHTEN AT THIS STAGE.**



7) Repeat step 5 & 6 with the bottom tank band. Please note the distance from the top band should be 11" (centre to centre). It is easier using a back plate to measure.

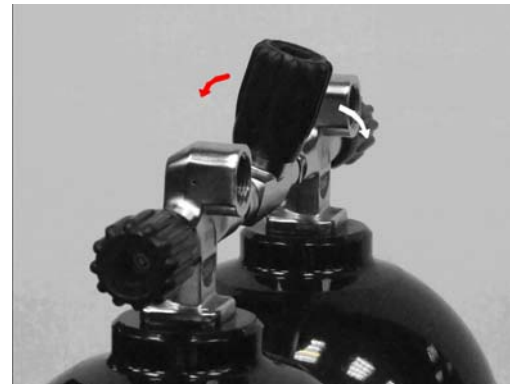
8) Gently lay the twin cylinders down on their sides to make sure they are on the same plain. To check this, see if you can rock the twin cylinders by pressing the end of the cylinders or the valves down against the working surface. You may need to loosen the aircraft nut a little to level them.



9) Check if the cylinders remain parallel to each other. Take a measurement directly below the top band and the other near the bottom. This is a critical step because the tank valves and isolator are made from brass, which can be easily damaged due to stress caused by unevenness. If there is no difference or if the difference is minimal (< 2mm), tighten the aircraft nuts until they are fully engaged with the band (**Pic. 6.**) (However, **DO NOT** over-tighten or the bands will distort). Stop often to recheck if the cylinders continue to stay parallel. It is also a good idea to

periodically stop and check if the bolts are staying at 11" apart as sometimes the bands can move during the tightening process.

When adjustment is needed...

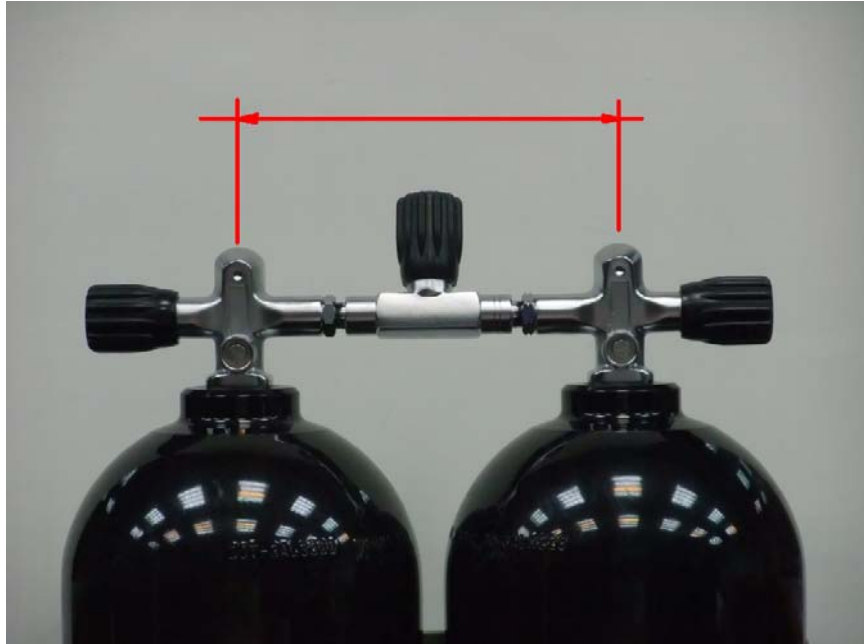


If the top gap is closer than the bottom, rotate the centre isolator bar backward (left arrow) to push the cylinder valves away from each other 1 full rotation at a time (to return to the preferred position) and check. Continue until the cylinders are parallel. If the bottom gap is closer, then turn the centre isolator 1 full rotation at a time (right arrow) to bring the cylinders closer together and check. Continue until the cylinders are parallel.



If the centre isolator becomes difficult to turn, stop immediately or damage may occur. Check if an over-adjustment has been made. If the cylinders are still not parallel but no over-adjustment has been made, you may need to loosen / tighten the aircraft nuts to allow room the isolator to rotate.

* The valves' centre to centre distance (as measured by the yoke dimple at the back of the valves) is **21.3 ~ 21.7cm**.



10) Tighten the centre isolator lock nuts against the valves.

The band assembly is now complete

11) Put a twin tank air cell onto the bands' bolts, followed by an assembled backpack (harness and back plate).

12) Put a flat washer and a split washer onto each bolt then secure everything the wing nut (hand-tighten only)

Tank height: Please keep in mind at the completion of the installation, the tank valves should be high enough for you to reach (after putting on the BCD) and turn both tank valves and the centre isolator on and off (if necessary during a dive) but not too high so you risk of getting the tank valves and / or centre isolator in the back of your head when entering the water or when bending your head backwards.

Back plate pouch and fitting hardware



1) There are 8 grommets on the pouch and it comes with 8 sets of fitting hardware consist of screws, nuts and washers. They are to be fitted to the plate where as indicated.

2) Use the hardware to secure the pouch to the back plate as shown. You will need a Philips screw driver for the job.



Pic. 1.



Pic. 2.

Assembly tip: If access to the tank attaching hardware is needed, remove only the top 2 and bottom 2 screw sets.



BCD handle

- 1) The handle is to be connected to the BCD's back plate with back plate pouch hardware.



- 2) Sandwich the handle's grommet between the screw + washer and the back plate pouch + back plate + nut (in this order). Use a Philips screwdriver to fully tighten the screw.



Pic. 1.



Pic. 2.

V. USING THE BCD

Power inflator

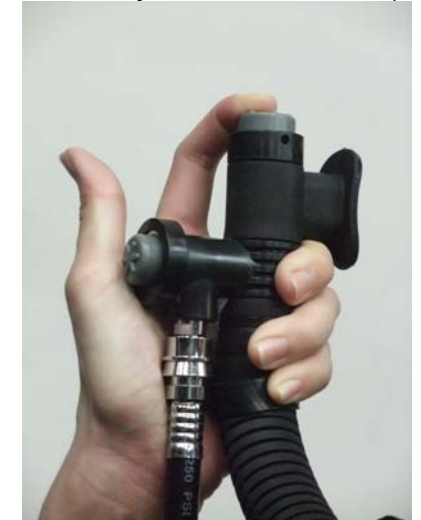
Depending on the model, your BCD's air cell may come with 1 or 2 inflators. They all operate in the same manner:

Inflator button: Use thumb to press the inflation button to inflate the BCD.



Deflation / oral inflation button: Use index finger to press the button to:

- 1) * Deflate the BCD, or
- 2) Orally inflate the BCD through the mouthpiece (only press the button down when ready to blow air into the BCD).



* Due to technical wing's inherent design, sometimes gas may get trapped inside your the wing. Therefore when venting gas from the BCD while diving with the power inflator, make sure the inflator elbow is at the highest point (i.e. above the rest of the wing) and hold the power inflator as high as you possible can before depressing the button.

△ Oral inflation of your BCD while diving is a skill to be learned under the supervision of a certified scuba diving instructor.

△ Depressing the oral inflator button while the BCD is empty may allow water to enter the bladder!

△ The air / gas from within the air cell is not suitable for breathing. Do not breathe it through the oral inflator!



Attaching low pressure inflator hose



Attach only the low-pressure hose to a regulator's low-pressure port. Attaching it to the high-pressure port can cause the hose to burst, which may result in serious injury or death.

- 1) Make sure this o-ring is present in the male end of the low pressure BC hose.



- 2) Screw the hose into a low pressure port in your regulator's first stage.



- 3) Pull back the quick disconnect sleeve in the female end of the low pressure BC hose and connect it to the power inflator's quick disconnect nipple.



- 4) Open the tank valve SLOWLY. Check for any air leakage and proper power inflator function before using the BCD.

Using the weight pockets

Take the **inner weight pouch** out and load it with the weights needed. All weights are conveniently kept inside and use the zippered top opening of the outer bag to remove or load the weight pouch before and after a dive.

The **bottom opening** is held close by a sturdy quick-release buckle and Velcro. Only use this in an emergency when weights need to be jettisoned quickly. To do so, you need to firstly check if there is anyone below you so the dropped weight will not cause injury. Squeeze open the quick-release buckle and hold on to the female buckle like a handle. Pull downward forcefully to separate the Velcro on the pocket's flap.

Over-pressure exhaust valve



You can conveniently pull open the over-pressure exhaust valve to vent gas in the bladder to change your buoyancy while diving. As with the power inflator's deflation button, it needs to be at the highest point of the air cell to be effective.

Donning the BCD

Prior to putting on the BCD, it should have been adjusted as described in the harness / back plate assembly section. Also, it is a good idea to take out the weight pockets' inner pouches and loaded with the correct amount of weight needed for the dive. It will be easier leave them until when the BCD is properly put on.

- 1) Attach the BCD to scuba cylinder(s) and make sure all connections are securely fastened.
- 2) For single-bladder BCD, attach your regulator and use your shoulder strap hose band to secure your BC hose and power inflator corrugated hose to the left shoulder strap.

For double-bladder BCD, secure your primary BC hose and power inflator corrugated hose to the left shoulder strap and the redundant hoses to the right.
- 3) Have a dive buddy holding the BCD and tank steady, try to put the arms through the shoulder straps.
- 4) Grab the crotch strap and weave the right waist belt through the crotch strap loop.
- 5) Use the buckle to fasten the waist belt together. It should be tight but not restricting.

For deluxe harness: Fasten the sternum strap together. It should be tight but not uncomfortable and restricting.

At this point your buddy can let go of the BCD and cylinder.
- 6) Check if all the straps are properly adjusted and if the air cell / power inflator(s) is functioning properly.
- 7) Load the weight inner pouches into weight pockets. Close the top zips and make sure the bottom lids are properly closed to prevent accidental loss of weight, which is dangerous and can lead to serious injury or death.



Taking off the BCD

- 1) Find a flat surface to set the cylinder(s) down so pressure is taken off the harness. It is a good idea to have your dive buddy keeping the cylinder(s) steady until the BCD is off.
- 2) Undo the waist strap and crotch strap by releasing the weight buckle
For the deluxe harness, please also undo the sternum strap
- 3) Move arms out of the shoulder straps or if using the deluxe harness, it can be easier by undo either or both of the shoulder strap buckles.

BCD care and storing

- Do not put or drag the BCD across rough and / or sharp surfaces.
- Do not place any sharp and / or heavy object on any part of the BCD.
- Do not expose the BCD to the sun while not actually diving.
- Immediately after a dive, rinse the BCD with fresh water as soon as it is possible. The air cell will require extra cleaning on the inside and it can be easier done if it is taken off the BCD assembly. Press the power inflator's deflation button to let fresh water in through the mouthpiece. At about a quarter full, gently shake then turn the air cell upside down so it can be rinsed thoroughly. Drain some water through the inflator mouthpiece then the rest through the over-pressure valve(s). Repeat 2 to 3 times.
- Hang the BCD up to dry in a shaded place and inflate the air cell so it can dry inside and out – **DO NOT** use a hook on the fabric part of the air cell when hanging or damage can result!!!



Do not put your BCD away until it is completely dry!

- Store the BCD with the air cell slightly inflated in a cool, shaded place.
- Have an IST authorised dealer to inspect your air cell at least once a year to ensure proper and safe functioning of all parts.

VI. BUOYANCY DATA and MAXIMUM TANK SIZE

BUOYANCY DATA and MAXIMUM TANK SIZE

Model	Buoyancy	Max. tank size*
JT-30D, JT30H JT-31D, JT-31H	120N / 27lbf	Single 15L
JT-40D, JT-40H JT-41D, JT-41H	170N / 38lbf	Single 15L
JT-50D, JT-50H JT-51D, JT-51H	200N / 45lbf	Twin 15L
JT-65D, JT-65H	290N / 65lbf	Twin 15L

* Max. tank size refers to back mounted cylinders.

VII. WARRANTY



Use of non-original factory parts or any modification may irreparably damage this BCD, which will render the warranty void and can lead to a loss of buoyancy control or air holding capability while diving. This could result in injury or death. **ONLY** replace worn or damaged items with genuine, factory supplied parts from an IST authorised dealer.



Your BCD should be inspected by an IST authorized dealer at least once a year, and more often if you dive frequently. This is a required action to keep your warranty in effect

The warranty of this floatation device is valid to the original owner only (with proof of purchase) AND it covers any defects in materials and / or workmanship for the period of **2 years** from the date of purchase. Proper maintenance as prescribed in this manual is required to uphold the warranty during valid coverage period. Any wear and tear under normal usage, as well as any commercial / rental usage, are not covered by this warranty. The following action will also void the warranty: incorrect use or misuse (intentional or unintentional) of the BCD; the use of non – IST original parts; any modification; servicing task performed by an unqualified and / or non - IST authorised dealer.

If a problem has developed with your BCD, please contact your nearest IST authorised dealer or IST distributor for return authorisation. Please properly package the BCD and send with your proof of purchase and postage prepaid. We reserve the right to service any non-authorised returns.



VIII. PURCHASE & MAINTENANCE RECORD

Serial #	
Date of purchase	(dd) / (mm) / (yy)
Dealer's name & address	
	(Dealer's stamp)
Purchaser's name:	
Contact info:	

Tasks performed:	
Service person:	
Date of service:	
Location:	

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