



# Buoyancy Compensator User's Guide

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# **Buoyancy Compensator**

## **User's Guide**

**Thank you for choosing OMS,**

OMS buoyancy compensators have been constructed from rugged materials with unique features adaptable to advanced underwater environments. The general design philosophy allows for complete system integration of a number of components achieving high lift capacities, low drag, and increased safety through redundancy. With a selection of different harnesses, different air cells and accessories, a diver can configure his or her system for the specific environment they are operating in. This equipment is intended for use by individuals with the training and experience to dive these environments safely.

### **General Precautions & Warnings**

- Before using this buoyancy compensator (BC), you must receive instruction and certification in SCUBA diving and buoyancy control from a recognized training agency. Use of SCUBA equipment by uncertified or untrained persons is dangerous and can result in injury or death.
- Read this owner's manual completely before attempting to use your BC, and become familiar with it first in a controlled environment such as a swimming pool, in order to weight yourself properly and to become comfortable with using its many features and adjustments.
- Before every dive, perform a complete pre-dive inspection according to the procedure prescribed in this manual, to ensure that all components are functioning properly and no signs of damage or leaks are present. If you find that your BC is not functioning properly or is damaged, remove it from service until it can be repaired.
- Your BC is not a lift bag. Do not use it to bring heavy objects to the surface. Doing so may cause permanent damage to the BC, and could also result in serious injury or death due to embolism or decompression sickness.
- In an emergency such as an out of air situation or uncontrolled descent, it is important to remove and jettison weight immediately. Do not depend solely on using your BC's power inflator to lift you to the surface.
- In the event of an uncontrolled, rapid ascent, it is important to immediately begin venting air from the BC. Continue venting air to slow your ascent rate if neutral buoyancy cannot be reestablished.

- Do not inhale from your oral inflator. The BC may contain harmful contaminants or gasses, which could cause suffocation or injury.
- The function of your buoyancy compensator is to help you maintain neutral buoyancy while in a comfortably balanced, face-down swimming position underwater. It is also designed to provide you with flotation so that you can rest on the surface, but it is not designed to function as a life preserver or personal flotation device (PFD). A buoyancy compensator (BC) is not a life jacket. It is not designed to provide face-up flotation in all situations, and therefore it does not meet U.S. Coast Guard regulations for a life preserver or personal flotation device (PFD).
- Have your OMS equipment inspected and serviced annually by an authorized OMS dealer or at any time you have any concerns about your equipment's function or condition.



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# Introduction to OMS

## Buoyancy Compensators

OMS buoyancy systems are built around a modular design that allows a diver to customize his system. Typically, a complete system consists of a harness system, an air cell, accessory pockets, and a system to attach cylinders. It is important for a diver to configure a system that fits properly and has enough lift to comfortably support the diver and cylinders at the surface. Tools and emergency items (marker buoys, signal devices, etc.) should be secured such that they are easily available yet do not pose an entanglement hazard to guidelines and mooring ropes. All this is possible with OMS products.

### Harnesses

**IQ Pack** A ‘soft pack’ harness system that can be used as part of a light weight travel rig or can be fitted with a metal back plate for use with high capacity dual cylinders.

**One Piece Harness** A simple harness with no sternum strap or shoulder release buckles, minimal harness for maximum reliability.

**Standard Harness System** A single side release on the shoulder strap makes for easy doffing. This harness includes features like extra ‘D’ rings and a sternum strap assembly.

**Comfort Harness** A full featured harness with side release buckles on both padded shoulder straps. This harness includes a sternum strap and adjustable ‘D’ ring attachment points.

These harnesses can be assembled with OMS stainless steel or aluminum back plates.

### Air Cells

OMS air cells (BCs) are available in different lift capacities and different configurations. It is extremely important that the air cell you select has enough buoyancy to support the diver and cylinders at the surface. OMS air cells are available with redundant internal bladders and with elastomeric retraction bands to help minimize the volume of the uninflated BC. Standardized fittings allow inflator mechanisms and dump valves to be configured a number of different way.

Lift (lbs) Single	#32	#35	#45	#60	#94
Retraction Bands	N/A	N/A	• Optional	• Optional	<input checked="" type="checkbox"/>
Dual Bladder	N/A	N/A	N/A	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

## **Introduction to OMS Buoyancy Compensators (continued)**

### **Accessory Pockets**

OMS BCs can be made weight integrated by the addition of weight integration pockets (available in two styles). There are also pockets for tools and accessories. The 'butt mounted' Emergency Deployment System can be attached to the back plate to carry emergency signal equipment.

### **Attaching Cylinders**

There are a several ways that cylinders are attached to OMS BCs depending on the weight and number of cylinders. Dual cylinders will require secure steel bands bolted to a metal back plate. You must insure that the bands are matched to the cylinder size and to the distance between the cylinders. OMS bands are precisely sized to OMS manifolds to prevent dangerous physical stress across the manifold. A single tank adapter is required to attach a single cylinder to a metal plate. The IQ Pack can accommodate a single tank without a single tank adapter by threading nylon cam bands through webbing on the back of the harness.



# HARNESSES

## Continuous Weave Harness System

The OMS Continuous Weave Harness system (BP166) system includes:

- 11 feet of 2" black webbing assembled with a SS grommet in the center (main harness). Length may vary slightly.
- 3.5 feet of 2" black webbing with a loop sewn at one end (crotch strap). Length may vary slightly.
- 6 SS D-rings
- 6 SS slides
- 1 SS quick release

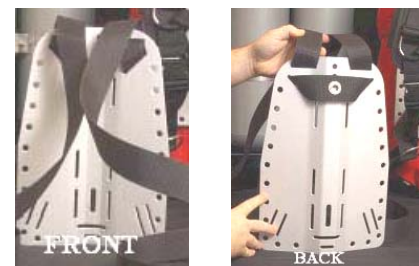
You will also need a back plate. It is recommended that you use an OMS steel or aluminum back plate. OMS back plates are superior in quality and provide smoother edges to promote a longer life to webbing and other gear that may come into contact with plate edges.

### Assembly of the Continuous Weave Harness

1. Start by inserting one end of the main harness webbing through the top slot (from the back towards the front of the back plate) and continue pulling the webbing until the grommet comes through followed by another 5" of webbing. Insert the same end of the webbing back through the angled slot below the top slot; this time from front to back. Pull the entire length through to the back of the plate until the grommet and 5" of webbing following the grommet, are through. Then turn the plate around so you're looking at the rear of the plate and insert the end of back through the angled lower slot on the opposite side of the plate. Adjust the webbing until the grommet is centered with the bolthole of the plate. Insert the same end of webbing back up and through the top slot all the way as far as it will go and pull it tight (from front to back.).

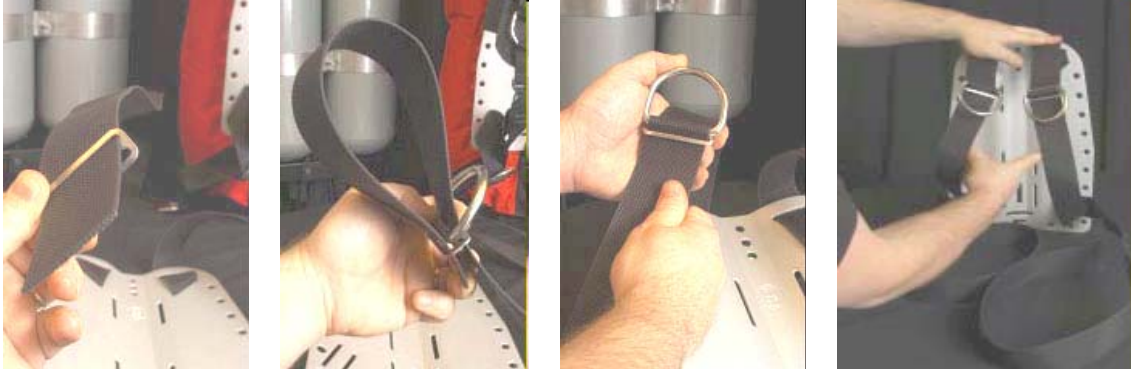


This completes the upper most assembly of the harness. Be sure that the grommet is centered with the hole in the black plate and that the harness looks like these pictures.



## Assembly of the Continuous Weave Harness (continued)

2. Now install the 'D' rings onto the shoulder straps by sliding the shoulder webbing through one slot of a stainless steel slide, through a 'D' ring then back through the second slot of the slide. Place the 'D' rings so they will be close to the diver's collar bone. Fine adjustments to their placement can be made after assembly.



3. Next the shoulder straps thread through the angled slots at the lower right and left corners of the plate. The webbing threads through the inner slot first from front to back then through the outer slot back to front. The free end becomes the waist band. Repeat this on both sides. Install the waist D-ring(s) on the waist strap. Some like one D-ring on the Left, some like one on each side. It's up to you but OMS includes enough for both sides. Installation is the same as the shoulder D-rings and exact adjustments should be made later while wearing your exposure suit. Their final resting place should be about mid body. Remember, adjustments to the placement of 'D' rings can be made later while wearing your exposure suit. Install the waist quick release on the left waist band so as you have a left hand release. Get it close and make adjustments later. Remember to install a pocket, knife or line cutter (if one desires to do so) on the waist strap before installing the buckle.



4. Now prepare the crotch strap for installation by installing a 'D' ring on a slide just like the shoulder straps. Slide another stainless steel slide onto the crotch strap opposite the looped end. The non-looped end of the crotch strap will feed through the lower middle slot from the back then weave through the stainless steel slide. Adjustments to the length of the crotch strap will be made here and the looped end will thread onto the waist band.

## **Assembly of the Continuous Weave Harness (continued)**

5. Put on your exposure suit to check adjustments. Try it out in the water and fine-tune it as necessary. The main harness should fit comfortably and not be too tight. Be sure it's not sloppy. Adjust the shoulder/chest D-rings to your collarbone. Adjust your waist (s) D-rings to mid body (side). The crotch strap should be a loose fit with around an inch of slack (when pulling it up through the legs it will come an inch or so higher than the waist strap). The rear D-ring on the crotch strap (closest to the cylinders) should be adjusted to where it is easily reachable and won't interfere with the cylinders or the divers fin kick. The scooter ring should be located a few inches from the bottom of the loop. You can turn it inside the loop when you don't need it. Accessorize and fine-tune your new harness to your style of diving. This is what your completed harness should look like.





## The Standard Harness System

The OMS Deluxe harness is perfect for those who want a quality diving harness with a single left side quick release. The Deluxe harness is a cross shoulder harness. This means each side of the upper harness crosses at the top (behind the divers head) then joins to the lower assemblies on the opposite side. Top left to lower right and top right to lower left. This is a design for superior comfort.

The harness can be assembled with any manufacturers back plate but it is recommended it be used with the OMS Aluminum or Stainless Steel back plate due to the superior quality and softer edges. OMS plates extend the life of the harness webbing considerably.

These instructions are broken down into sections for ease of assembly. If you have any questions, call OMS and speak with a technical support representative.

The Standard Harness System Includes:

(Measurements and components may vary slightly)

Fig# 1. Lower Left Assembly: 60 inch length of two inch webbing, 1-SS D-ring, 1-SS slide/keeper.  
(The webbing incorporates the female end of the shoulder quick release, the male end of the chest strap buckle and a chest D-ring)

Fig# 2. Lower Right Assembly: 57 inch length of two inch webbing, 1-SS or plastic waist quick release, 1-female crotch strap buckle/scooter ring assembly, 1-SS D-ring, 1-SS slide/keeper.  
(Webbing incorporates female chest buckle and SS ring)

Fig# 3. Upper Assembly: 100 inch length of 2" webbing with a centered grommet, 1-male end of the shoulder quick release, 2-two inch plastic slides/keepers, 3-SS D-rings, 3-SS slide/keepers.

Fig# 4. Crotch Strap Assembly: Length of one-inch webbing, 2-plastic one-inch slides/keepers, 1-male end of the crotch buckle.



Fig 1



Fig 2



Fig 3



Fig 4

## Assembly of the Standard Harness

### **Lower Harness Assemblies**

Lower Left Assembly (Fig 1): Holding the 60 inch lower left assembly with the D-ring facing to your right (when looking at the plate), insert the free end of webbing through the inside lower slot of the divers left hand side of the plate from front to back. Now pull the webbing back through the outer lower left hand slot from back to front. Leave approximately 14” of webbing between the plate slot and the female quick release. Final adjustments can be made later while wearing your exposure suit.



Lower Right Assembly (Fig 2): Insert the free end of webbing through the divers right side lower inner most slot of the plate from front to back then string it back through from back to front. Leave approximately 14” of webbing between the plate slot and the SS ring with female chest buckle. Be sure buckle is facing the correct position as shown in the far right image below (writing on buckle is facing up). Final adjustments can be made later while wearing your exposure suit.

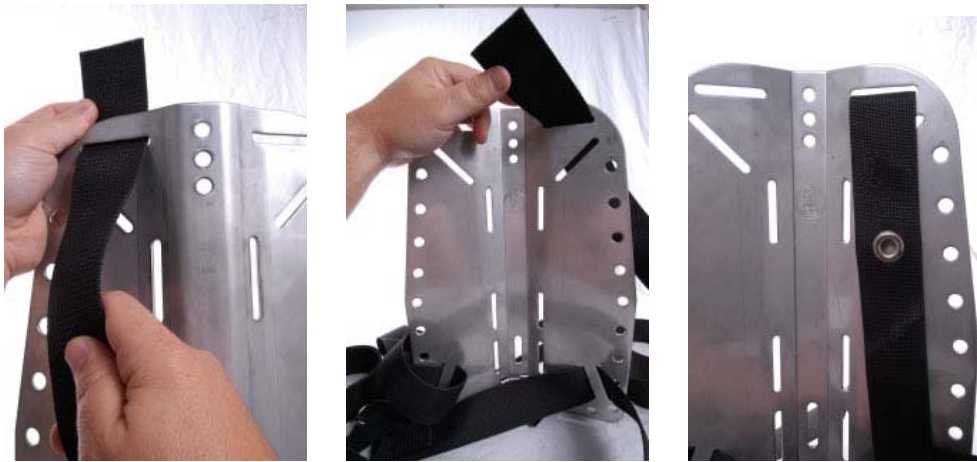


## Assembly of the Standard Harness (continued)

### Upper Harness Assembly

#### Upper Left & Right:

Step one: String one end of the 100 inch length of webbing with the centered grommet, through the uppermost slot of the divers left side of the plate from back to front. Pull the grommet through along with another five inches of webbing after the grommet.



Step two: String the webbing back trough the lower angled slot from front to back (directly under the upper slot) and pull the grommet through. Adjust so the grommet lines up with the bolthole in the center of the back plate.



### Assembly of the Standard Harness (continued)

Step three: Pull the webbing through the lower slot on the upper divers right hand side of the plate from back to front making sure the webbing isn't twisted once pulled through. Now string it back through the upper most slot directly above from front to back.



Before installing the hardware, make sure the grommet on the upper assembly is centered with the bolthole. The diver's left hand lower assembly is positioned so as the attached D-ring is facing the diver's left side if webbing is on edge (see image below).



## Assembly of the Standard Harness (continued)

### Upper Right Hardware Assembly

Install a 2" plastic slide/keeper onto the upper right portion of the harness. Be sure that when installed, the webbing is showing in the center portion of the slide/keeper. The slide should be placed around 2 inches or so from the edge of the plate. Next, install the D-ring assembly by stringing the webbing through the top slot of a SS slide/keeper from back to front. String a D-ring through the same piece of webbing up as far as the slide/keeper so as the flat part of the ring is touching the slide/keeper. String the webbing through the bottom slot of the slide/keeper from front to back and pull through until the D ring is trapped between the slide/keeper and the webbing. Adjustments can be made later while wearing your exposure suit.



String the male end of the quick release buckle paying attention that the correct side faces the diver. The Buckle should be positioned around 17 inches from the top of the plate and just below the D-ring assembly. Note the positioning in the far right image below. Adjustments should be made later while wearing your exposure suit.



String the excess webbing through the D-ring assembly and the upper plastic keeper at the top. Trim as necessary.

## **Assembly of the Standard Harness (continued)**

### **Upper Left Hardware Assembly**

Install a plastic 2” slide onto the upper left portion of the harness. Be sure that when installed, the webbing is showing in the center portion of the slide/keeper. Use the same procedure that was used on the right side. This should place the slide around 2 inches or so from the edge of the plate. Then install one or two D-ring assemblies onto the upper left portion of the harness the same way they were installed on the right. Place the first assembly about 13 inches from the top of the plate and the second assembly around 15.5 inches down so it is just below the first. It is the diver’s choice to install one or two D-ring assemblies on the left side. Be sure the D-rings are positioned on the front side of the webbing.



### **Attachment of the upper left assembly to the lower right**

The Standard Harness is a cross shoulder harness which means that each side of the upper harness crosses at the top (behind divers head) then joins to the lower attachment on the opposite side. Pull 26 inches of the 47 inches of the upper left portion of harness through the SS ring assembly on the lower right. Be sure the bottom assembly is not twisted at the slots and that the female portion of the sternum strap is facing toward the divers left side of the plate. String the webbing through the SS ring assembly then back up through the slides holding the D-rings leaving around 3” of slack between SS ring and the D-ring slide/keeper. Finally thread the webbing through the plastic slide at the top of the shoulder.

### **Crotch Strap and waist hardware assembly**

Install a D-ring on the left waist strap the same way they were installed on the shoulder straps. Final positioning can be made later while wearing your exposure suit. Be sure the entire assembly is not twisted. It is important that the webbing conform to the body and is not twisted at the lower innermost slot.

## Assembly of the Standard Harness (continued)

### **Crotch Strap and waist hardware assembly**

The diver can choose to install an optional D-ring on the right side waist strap. After installing the optional right side D-ring slide the crotch strap/scooter ring assembly onto waist strap. Next, install the belt buckle positioned for a left hand release. Thread the waist strap through the first slot furthest from the pivot from the inside out then back through the middle slot and back out the last slot.



### **Crotch Strap Assembly:**

Install the two 1" slides/keepers on the length of webbing keeping one about 4" from the end. String the same end through the 1" male quick release buckle then back through the 1" slide/keeper. String the other end of the assembly through the 1" slot on the bottom of the plate then double back and string it through the second 1" slide/keeper.



## **Assembly of the Standard Harness (continued)**

### **Adjusting**

Make all adjustments while wearing your exposure suit. Trim excess but allow length for future changes and the addition of more D-rings. If you have any questions, please contact OMS and speak with a technical support representative.





## The Comfort Harness System

The OMS Comfort Harness System is available assembled with a stainless steel back plate or aluminum back plate. This guide will help in the assembly of the harness that hasn't been assembled or the installation of the harness on a back plate you already have.

The Comfort Harness System Includes: (back plate purchased separately)

(Measurements and components may vary slightly)

- 90" of 2" webbing with grommet in center (for upper shoulder assembly)
- 70" of 2" webbing with grommet in center (for waist assembly)
- 33" pieces of 2" webbing with an eye sewn in one end (Lower shoulder assembly)
- 40" piece of 1" webbing (used as crotch strap)
- Shoulder pads 2- OMS hose holders
- 1" slide/keeper (used with crotch strap)
- 1" male buckle (used with crotch strap)
- 2" male buckles 1- quick release
- 10 – 2" slide/keepers
- D-rings 1- upper crotch strap assembly (scooter ring, female 1" buckle, sewn loop)
- Right side chest strap/female buckle assembly
- Left side chest strap/female buckle assembly

### Assembly of the Comfort Harness

#### **Crotch Strap Assembly:**

Install the two 1" slides/keepers on the 40" length of webbing keeping one of them about 4" from the end. String the same end through the 1" male quick release buckle then back through the 1" slide/keeper. String the other end of the assembly through the 1" slot on the bottom of the plate then double back and string it through the second 1" slide keeper.



## Assembly of the Comfort Harness (continued)

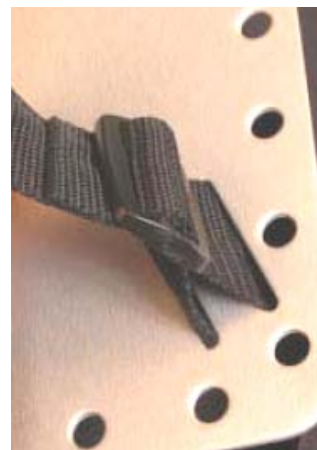
### **Lower Shoulder Strap Assemblies**

Assemble the two lower shoulder strap assemblies by threading a 2" male buckle onto the 20" webbings that have the delrin eyes sewn onto the bottom. Next thread on the 2" slides facing the opposite side of the webbing from the male buckles.



### **Lower Shoulder Strap Assembly Installation**

Attach the two lower shoulder assemblies one to each side of the back plate by inserting the free end of the webbing through the lower inside slot of the back plate from front to back (either side of plate). Pull the webbing back up through the outer slot and string through the slide/keeper. Be sure the slide/keeper faces away from the diver. Repeat on other side.



## Assembly of the Comfort Harness (continued)

### **Lower Shoulder Strap Assemblies**

Check the completed Lower Shoulder Strap Assemblies to make sure that there are no twists and that all buckles and rings face the right direction relative to the diver.



### **Waist Strap Installation and Assembly**

From the back of the plate insert each end of the 70” piece of webbing through the outer lower slot of each side of the back plate. Center the grommet so it lines up with the center bolt slot in the center of the plate.



## Assembly of the Comfort Harness (continued)

### **Waist Strap Installation and Assembly**

Up to two D-rings can be installed on the waist strap. Thread the webbing through one slot of a slide/keeper through the D-ring then through the other slot of the slide/keeper. Once the D-rings are in place, slide the loop of the upper crotch strap assembly on to the right hand waist strap. Next, install the belt buckle positioned for a left hand release onto right waist band. Thread the waist strap through the first slot furthest from the pivot from the inside out then back through the middle slot and back out the last slot.



Check the completed Waist Strap Assemblies to make sure that there are no twists and that all buckles and rings face the right direction relative to the diver.



## Assembly of the Comfort Harness (continued)

### Upper Harness Assembly

First install a slide/keeper onto the 90" webbing about 7" from the center grommet. Slide the same end of the webbing through the second slot on a shoulder pad. Slide the shoulder pad all the way up the webbing until the slide/keeper lays flat on top of the shoulder pad. Slide another slide/keeper up the same end to hold the shoulder pad in place. Tighten up the slide/keepers against the shoulder pad so it is held securely in place.



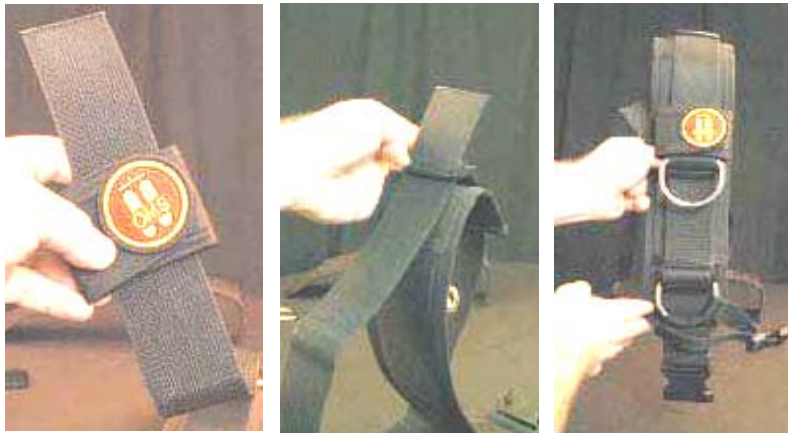
Next, thread the free end of the webbing at the bottom of the shoulder pad through the D-ring of the lower shoulder strap assembly then back up through the slide/keeper above it. Be sure to check the orientation of the sternum strap buckle. Install a D-ring above the slide/keeper by threading the webbing through one slot of another slide/keeper, through a D-ring, then down through the second slot of the slide/keeper.



## Assembly of the Comfort Harness (continued)

### Upper Harness Assembly

Install an OMS hose holder onto the free end of the webbing above the D-ring. Slide the webbing through the sewn loop in the back of the hose holder. Next weave the webbing through the slide/keeper at the top of the shoulder strap.



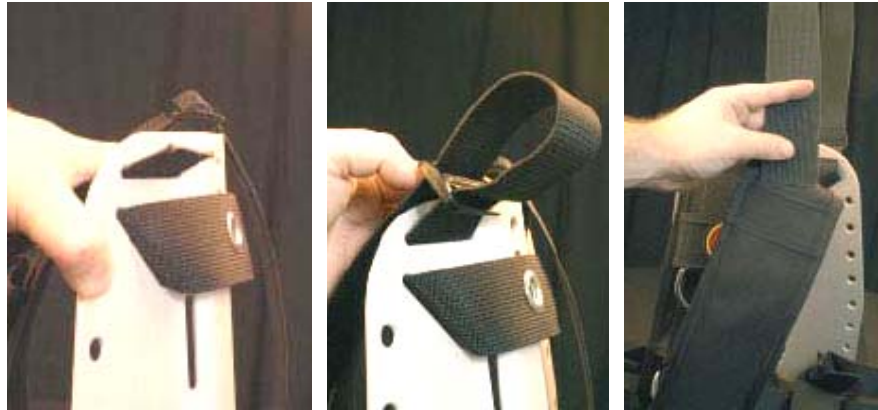
One side is now completely assembled. Look at the orientation of the sternum strap to determine if you have a right or left shoulder strap. Thread the free end of the webbing through the uppermost slot of the corresponding side on the back plate from back to front. Then thread the webbing through the angled slot below the uppermost slot, back to front. Pull the free end of the webbing completely through the back plate until the grommet hole on the webbing aligns with the center bolthole in the back plate. Next thread the webbing through the opposite angled slot back to front.



## Assembly of the Comfort Harness (continued)

### Upper Harness Assembly

Thread the free end of the webbing through the uppermost slot on the back plate from back to front. Weave the webbing through another slide/keeper and move it down so that it secures the webbing against the back plate. Then slide the free end of the webbing down through the second slot on the shoulder pad. Install another slide/keeper onto the webbing where it exits the shoulder pad. Tighten the slide/keeper against the shoulder pad to hold it in place.



Install the lower shoulder strap assembly as you did on the other side. Thread the free end of the webbing through the D-ring on the lower shoulder strap assembly from back to front paying attention to the orientation of the sternum strap. Next thread the webbing up through the lower slide/keeper and pull tight.



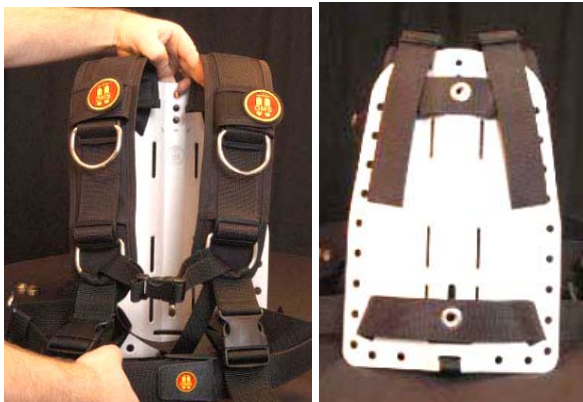
## Assembly of the Comfort Harness (continued)

### Upper Harness Assembly

Install a D-ring and the OMS hose holder on to the free end of the webbing just as you did on the other side then weave the webbing through the upper slide/keeper and pull tight.



Make all adjustments while wearing your exposure suit. Trim excess but allow length for future changes and the addition of more D-rings. If you have any questions, please contact OMS and speak with a technical support representative.





## The IQ Pack Harness System

The OMS IQ Pack is a versatile fast adjusting harness system that can be used with or without a back plate. This means that it can be used as a lightweight travel BC or a heavy duty technical diving jacket capable of carrying double cylinders.



The OMS IQ Pack comes fully assembled but there are a number of adjustments and features the diver should be familiar with.



There is a row of small D-rings along the side of the harness for attaching accessories. There also larger D-rings mounted on the waist strap that can be repositioned or removed completely.

Make all adjustments while wearing your exposure suit. Trim excess but allow length for future changes and the addition of more D-rings. If you have any questions, please contact OMS and speak with a technical support representative.

# Assembly of the IQ Pack Harness System

## Attaching the Bladder and Single Tank

A bladder can be attached to the IQ Pack with two nylon tank bands. Locate the sewn webbing slots sewn onto the back of the IQ Pack. Thread a nylon tank band through the top slot and another through the bottom slot. Next, thread the free ends of the tank bands through the corresponding slots in the bladder. As the tank bands are tightened onto the tank the bladder and harness will be securely sandwiched together against the tank.



## Optional Bookscrews

If the BC is to be used primarily as a 'soft pack' (no back plate), the diver should consider purchasing a set of OMS 'bookscrews'. Installation of the book screws will allow the BC to be handled as a single component even when not attached to a tank. To install the bookscrews, grasp the top of the IQ pack's back pad and peel it downward revealing the grommet holes. Insert the slot head screw through the grommet hole of the harness then through the matching grommet hole of the bladder. Insert the narrow end of the female nut through the grommet hole of the bladder from the back. Mate the threads of the male and female parts then tighten them to secure the bladder against the harness.



# Assembly of the IQ Pack Harness System

## **Attaching the Single Tank Adaptor**

The OMS single tank adaptor may be used to secure a single tank to an IQ Pack that has a back plate installed. To install a back plate, grasp the top of the IQ Pack's back pad and peel it completely downward revealing an opening at the bottom of the harness. Slide a back plate up into the slot aligning the grommet holes with the bolt holes in the back plate. Insert the bolt studs of the Single Tank Adaptor through the grommet holes in the back of the bladder through the boltholes of the back plate and through the corresponding holes in the harness. Hold the adaptor, bladder and harness together and place the large washer over the bolt stud then the split lock washer followed by the wing nut. Tighten the wing nut securely then press the back pad back into place against the Velcro strips.





# BCs

## **OMS BCs (Air Cells)**

OMS BCs are constructed from 1000 denier Cordura backed with 5 ounce urethane housing an inner bladder of virgin urethane for superior durability. They are available in several different lift capacities with single and double internal bladders. Inflator mechanisms and dump valves are standardized making them interchangeable and completely serviceable.

The Non Banded Single Bladder is the simplest air cell that OMS offers. It comes fully assembled and can be mounted on any OMS plate or harness system. The BC is attached to the harness with the warning label against the diver's back such that the string from the pull dump is closest to the diver.



This BC can be attached to any OMS back plate system using the bolts from a set of steel bands for doubles or the bolts from a single tank adapter. Nylon tank bands can be used to attach it to the IQ Pack.



## OMS BCs with Retraction Bands

OMS BCs are available with elastomeric retraction bands that keep the BC compact when not fully inflated. They also aid in deflation by preventing localized air trapping.

**WARNING!** Failure to follow these assembly instructions can cause BCD failure resulting in **PERSONAL INJURY OR DEATH!**

### Assembly of Elastomeric Banded BCs

OMS Banded BCs come with a set of twelve Elastomeric Retraction Bands. Pre-stretch the bands to their limit before installation (repeat this 2-3 times for each band). This process makes the stringing and tying the elastomeric bands easier.



Lay the BC flat with the OMS logo upward. Thread each band individually through the grommet tabs around the outer edge of the BC.



## Assembly of Elastomeric Banded BCs (continued)

Once all the bands have been threaded, fully inflate the BC until the dump valve vents. **It is extremely important that the BC is fully inflated while the bands are tied into place! Installing the bands on an uninflated BC can compromise the BCD's lift capacity!** Thread the top of each band through the inner rows of grommet holes and stretch them around to tie the ends together in a square knot on the tank side of the BC (opposite the side with a warning label). Make sure the bands are tied snug against the BC. You should be able to easily slide your finger between the BC and the band.



Once all the knots are tied, pull each of them around so that it is safely tucked near the backside of each inner grommet (tank side/no-label side). Deflate the BC and check that it deflates evenly around the entire circumference. Orally inflate the BC to be sure the bands are not too snug. You should be able to orally inflate the BC with little effort. If there is excessive resistance to oral inflation loosen the bands.



## Assembly of Elastomeric Banded BCs (continued)

The air cell is now ready for use. Changes to the diver's lateral trim can be made by adjusting the tension of individual bands. Be sure that you are properly weighted before starting any dive.

**WARNING!** Improper weighting can cause uncontrolled descent or ascent resulting in **PERSONAL INJURY OR DEATH!**

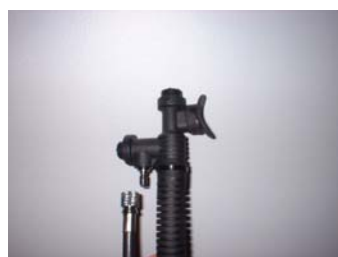




# Inflators and Dump Valves

## OMS Inflators

The threaded end of the Quick Disconnect hose attaches to a low pressure port of the diver's first stage. The Quick Disconnect end is attached to the inflator mechanism by pulling back on the collar and pressing it onto the Quick Disconnect nipple.



Inflate the BC by pressing the power inflation button. Use short bursts to control the amount of air entering the BC. The oral inflation mouthpiece allows for oral inflation by exhaling into the mouth piece while completely depressing the deflate button.

## OMS Inflators (continued)

Air can be vented by depressing the deflate button or by using the pull dump.

## OMS Dump Valves

Air can also be vented from the BC by gently pulling on the pull dump cord. OMS BCDs are available with lower dump valve located at the bottom of the BC or upper dump valves on the diver's shoulder. Some models are equipped with both.



Pull dumps should be inspected regularly by fully inflating the BC to insure they vent properly. Also, be sure to thoroughly rinse them after each dive to prevent debris from becoming trapped in the seal causing air to leak from the BC.

**WARNING! Repeated improper use of the Oral Inflation/ Deflation mechanism or dump valves assemblies may allow water to enter the BC with a subsequent reduction in buoyancy. Reduced buoyancy can cause a loss of buoyancy control resulting in PERSONAL INJURY OR DEATH**

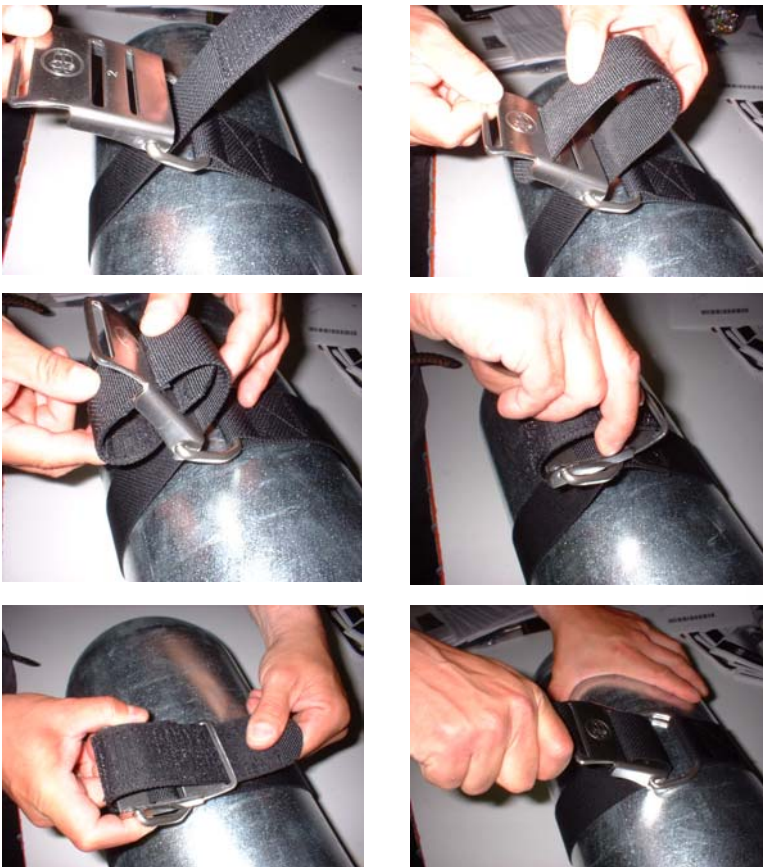


# Attaching Cylinders

There are a number of different ways to attach cylinders to OMS BCDs depending on the size of cylinder, number of cylinders and the type of harness being used.

## Nylon Tank Bands

Single tanks are usually attached using nylon 'cam' buckles. The nylon strap weaves through a buckle that tightens the strap against the tank. It is important that the strap is correctly woven through the buckle otherwise there will be insufficient tension to securely hold the tank. Also, remember that the nylon stretches when wet so it is important to soak the nylon strap in water before tightening the cam band. The slots on the cam buckle are numbered to aid in threading the strap.



## Attaching Cylinders (continued)

### Single Tank Adaptor

The Single Tank Adaptor is a bracket that allows a single tank to be attached to an OMS harness system equipped with a metal back plate. This makes switching back and forth between double and single tanks easier and faster. It also provides a more stable mount for larger, heavier high capacity tanks.

The Single Tank Adaptor is installed by passing the bolts of the adaptor through the grommet holes of the BC then through the matching holes on the back plate. Be sure that the BC is oriented with the warning label against the diver's back.



Install the flat washer first (against the backplate or harness) then the split lock washer. Thread the wingnuts onto the bolts and tighten securely by hand. Next install two nylon cam bands through the slots on the Single Tank Adaptor. Weave the webbing of the tank band through the cam buckle using the weave outlined on page 34. Remember, all nylon webbing stretches when wet so be sure to soak the nylon tank bands in water before tightening.

## Attaching Cylinders (continued)

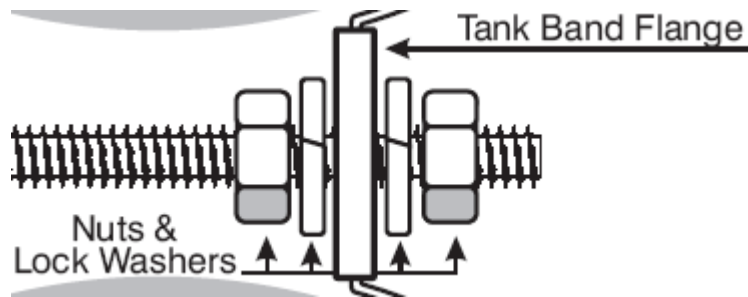
### Attaching Dual Cylinders

Dual Cylinders are attached to OMS buoyancy systems using stainless steel bands bolted to a back plate. It is recommended that OMS bands are used because they are precisely sized for OMS manifolds. Slight differences in the distance between the cylinders and the width of the manifold can place dangerous physical stress across the manifold. Make sure that you have the bands properly sized for the cylinders you intend to use and the manifold you plan to use.

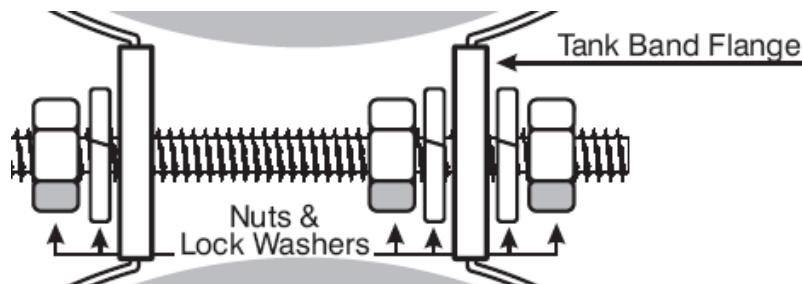
A stainless steel tank band kit should include:

- stainless steel bands
- threaded rods
- 2 wingnuts
- 2 flat washers
- 6 split lock washers
- 6 hex nuts

Insert the threaded rods halfway through the hole in the center of the tank band. Thread a hex nut and a split lock washer onto the threaded rod before it passes through the second hole in the band. As the rod passes out through the second hole you will have a hex nut and washer trapped in the band. Now thread another lock washer and hex nut onto the threaded rod so that the hex nuts can be tightened against each other sandwiching one wall of the band between the two lock washers. Tighten these together so that about an inch of the threaded rod projects past the hex nuts.



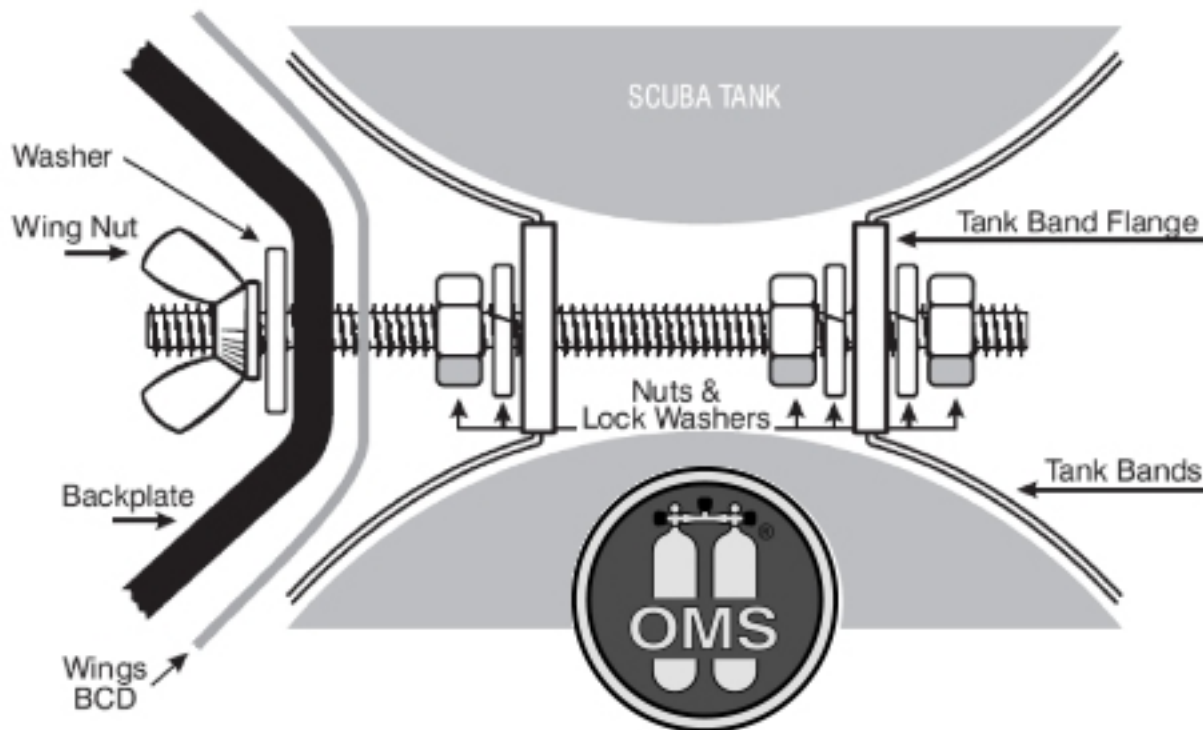
Next, place the tank bands over the cylinders and space them according to the placement of the holes on the BC and back plate. The bands are compressed against the cylinders by installing a lock washer and hex nut on the unsecured end of the threaded rod. This end of the threaded rod should project out further than the end that has been secured with the pairs of hex nuts and washers.



## Attaching Cylinders (continued)

### Attaching Dual Cylinders (continued)

Tighten the single hex nut so the bands compress around the cylinder. The bands should be tightened so there is no movement of the cylinders. It is important that the bands secure the cylinders and protect the manifold from physical stress. Next, the long end of the threaded rod goes through the grommets in the BC then through the back plate and is secured with a flat washer and wing nut. The BC is oriented with the warning label facing the diver's back.



You may have to adjust the position of the threaded rod so that the wing nut side doesn't touch the diver's back.



# Installing Accessories

## Integrated Weight Pocket Installation (part #BCA-IWP)

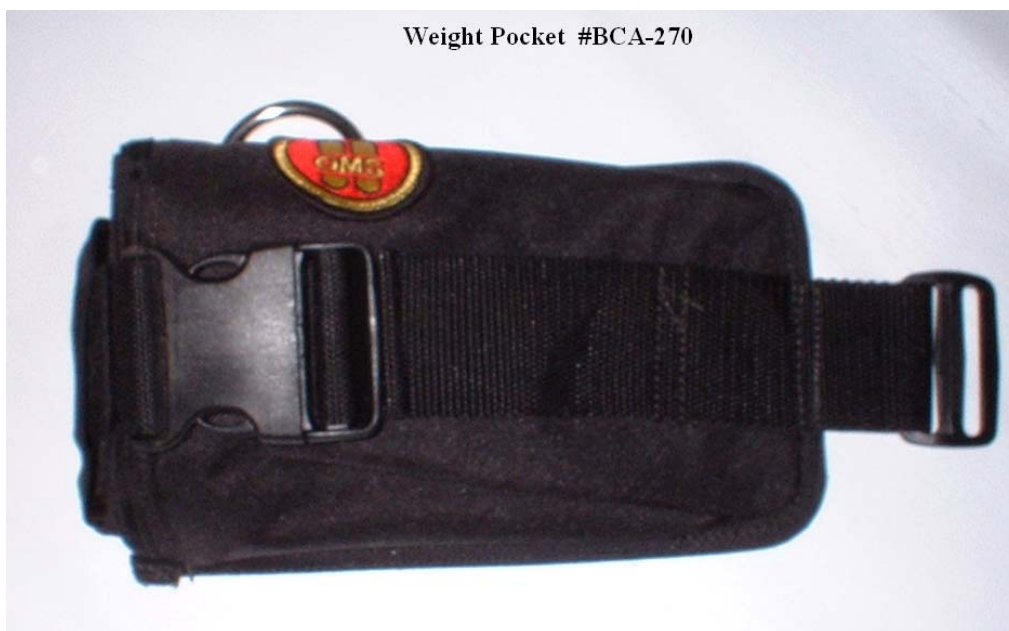
1. Secure the weight pocket by threading the waist strap of the harness through the first webbing loop sewn onto the back of the pocket. Be aware the loops for standard 2" webbing are located under the large loops for cummerbunds.
2. Install a 2" delrin slide onto the waist strap so the webbing passing over the middle bar is against the diver's body.
3. Thread the webbing through the second loop.



## **Installing Accessories** *(continued)*

### **Compact Weight Pocket Installation** (part #BCA-270)

The BCA-270 Compact Weight Pocket carries up to eight pounds in an inner pocket secured by a quick release buckle. It has a sewn-in slide keeper to thread onto the waist belt of a harness and a D-ring where the No-sag Strap can attach the pocket higher on the diver's harness for more support.



Thread the waist belt of the harness through the slide keeper on the pocket. Make sure they are positioned with the D-ring on top and the logo upright. When the pocket is in position on the waist belt, thread the waist band through the webbing loops on the back of the pocket.



Once the loaded pocket is inserted, snap the male and female quick release buckles together. Pull the webbing on the male quick release buckle tight to minimize shifting weights.



# Operations

## Pre-Dive Checks

- Check all fittings and connections for damaged components (cracks, tears, etc.)
- Inflate each BC until the dump valve vents, leave inflated for 30 minutes.
- On dual bladder models test each bladder separately (do not inflate both bladders at the same time)
- With the BC fully inflated check that pull dump cord or folds in the BC are not trapped by the retraction bands
- Check the security of weight systems before entering the water.
- After entry, inspect units for bubbles indicating leaks.
- Test pull dumps for smooth operation and positive seal.

## Operations

- **WARNING :** Before using this buoyancy compensator (BC), you must receive instruction and certification in SCUBA diving and buoyancy control from a recognized training agency. Use of SCUBA equipment by uncertified or untrained persons is dangerous and can result in injury or death.
- Inflate the BC with short controlled bursts of air by pressing the inflate button.
- The unit can be inflated orally through the oral inflator. Depress the deflate button completely and exhale into the oral inflator.
- On dual bladder models, the bladder against the diver's back is the primary bladder. Do not inflate both bladders at the same time. This could decrease the overall lift provided by the jacket.
- Deflate the jacket by pressing the deflate button on the inflator or by pulling a pull dump. Use proper descent techniques taught in scuba training.

**WARNING! Repeated improper use of the Oral Inflation/ Deflation mechanism or dump valves assemblies may allow water to enter the BC with a subsequent reduction in buoyancy. Reduced buoyancy can cause a loss of buoyancy control resulting in PERSONAL INJURY OR DEATH**

## Post-Dive Checks

- Connect the inflator to an air supply to pressurize the inflator mechanism then use a garden hose to direct fresh water into the oral inflator while pressing the deflate button.
- Partially inflate the unit and allow the water to wash around the interior of the bladder. Drain completely and store partially inflated away from temperature extremes and direct sunlight.
- Do not attempt to service a malfunctioning piece of equipment. Take it to an authorized OMS dealer for repair.



# WARRANTY

## WARRANTY AND LIMITATION OF LIABILITY

1. OMS® warrants to the purchaser that goods sold by OMS® to the purchaser will be free from manufacturing defects in materials and workmanship for a period of ninety (90) days after the date of purchase from an authorized OMS® dealer.
2. EXCEPT AS EXPRESSLY SET FORTH IN SECTION 1 "WARRANTY AND LIMITATION OF LIABILITY", COMPANY MAKES NO WARRANTIES TO THE PURCHASER, WRITTEN OR ORAL, EXPRESS, IMPLIED OR STATUTORY, IN ANY MANNER OR FORM WHATSOEVER INCLUDING BUT NOT LIMITED TO ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR USE OR PURPOSE, WHICH ARE HEREBY EXPRESSLY DISCLAIMED.
3. The warranty does not apply to goods that have been subject to abuse, misuse, neglect, improper installation or alteration after delivery to the carrier for shipment to the purchaser. At OMS'® request, the purchaser shall return goods to OMS® at its Middletown, NY, office for verification that the warranty set forth in these terms and conditions as limited by this paragraph is applicable. Any such returns are subject to the provisions in the RETURN POLICY Section.
4. In the event OMS® determines that the warranty set forth above in #1 of this Section are limited by #3 in this Section is applicable to any goods, OMS® shall, as the purchaser's sole remedy, replace, repair or at OMS'® sole discretion, issue to the purchaser a credit for an amount not to exceed the original purchase price paid by the purchaser for the affected goods. OMS® shall have no liability with respect to warranty claims made by the purchaser more than ninety (90) days after OMS'® sale of the goods involved to the purchaser. In no event shall OMS® be liable to the purchaser for a special, incidental or consequential damages. OMS® shall have no liability to the purchaser for any delay or failure in carrying out its obligation to the purchaser for reasons beyond OMS'® control, including without limitation, acts of God, war, natural disasters, labor disputes, changes in or compliance with laws, regulations or governmental policies and shortages of supplies and services. OMS® may extend delivery until any such cause of delay has been removed, or at its option, cancel the undelivered portion of any order so affected without liability to the purchaser; except for the return of any payment made by the purchaser to OMS® with respect to any undelivered portion of the order so canceled.

