



*Apply silicone grease to the mask seal.*

3) With the word TEMPERED facing out, hold the lens up slightly at an angle and begin to install the right side of the lens rim into the channel of the rubber on the mask seal. Make sure that the mask seal is seated in the mask frame correctly. Start the lens slightly below the top lens clamp for clearance when installing. Push the lens to the side far enough to make the plastic clamp flex slightly outward allowing the lens to be fitted into place on the other side.

4) Lower the left side of the lens towards the opposite side of the mask rubber and clamp. Just before they meet, grab the edge of the rubber



*Install the right side of the lens rim into the channel of the rubber on the mask seal.*

channel and pull it up slightly above the outer edge of the upper lens clamp and press the lens into the rubber channel and then into the upper lens clamp.

5) Push the lens up and into the rubber channel of the mask seal and top of the upper lens clamp. Hold the lens in position and fit the bottom channel of the rubber mask seal on the bottom edge of the lens.

6) Once the lens is properly seated in the mask seal and upper lens clamp, install the lower lens clamp. Place the two ends of the bottom of the clamp onto the outside of the rubber channel to hold the rubber in position. Work the clamp onto the mask starting at the nose. Make sure the rubber is seated evenly onto the lens rim and into the lens clamp.



*Adjust the seal around the bottom of the lens.*

7) Push up on the area under the nose screw to align the nose screw hole in the lens clamp with the hole in the rubber and the thread insert in the plastic rim on the lens. Insert the slotted screw and the washer here and tighten only about 3 or 4 turns. **Do not snug or finish tightening the screw at this time!**

8) Pull up on the lower lens clamp and install the Allen head screws through the clamp until they thread into the nuts in the upper lens clamp part of the frame. Lightly tighten these screws, alternately tightening from side to side so the clamp is drawn up evenly, but do not tighten all the way.

9) Finish tightening the nose screw using an inch pound torque screwdriver set at **6 inch pounds**.

10) Finish tightening the Allen head clamp screws. Use a flat blade screwdriver very gently if needed to keep the rubber from pinching between the two clamps. Tighten the clamps until they bottom against each other. **Do not over tighten.**

**⚠ CAUTION: DO NOT OVER TIGHTEN THE LENS MOUNT SCREWS. Over tightening can cause damage to both the lower lens clamp and the upper clamp/frame requiring replacement.**

11) Check the inside top of the glass where it meets the rubber and make sure everything is properly seated. Check both sides of the lens and seal. If any excess silicon grease has squeezed out, remove it.



*Use a flat blade screwdriver to keep the mask seal from pinching as the lens clamp is tightened.*



*Check the seating of the mask seal and lens clamps on the inside of the mask.*

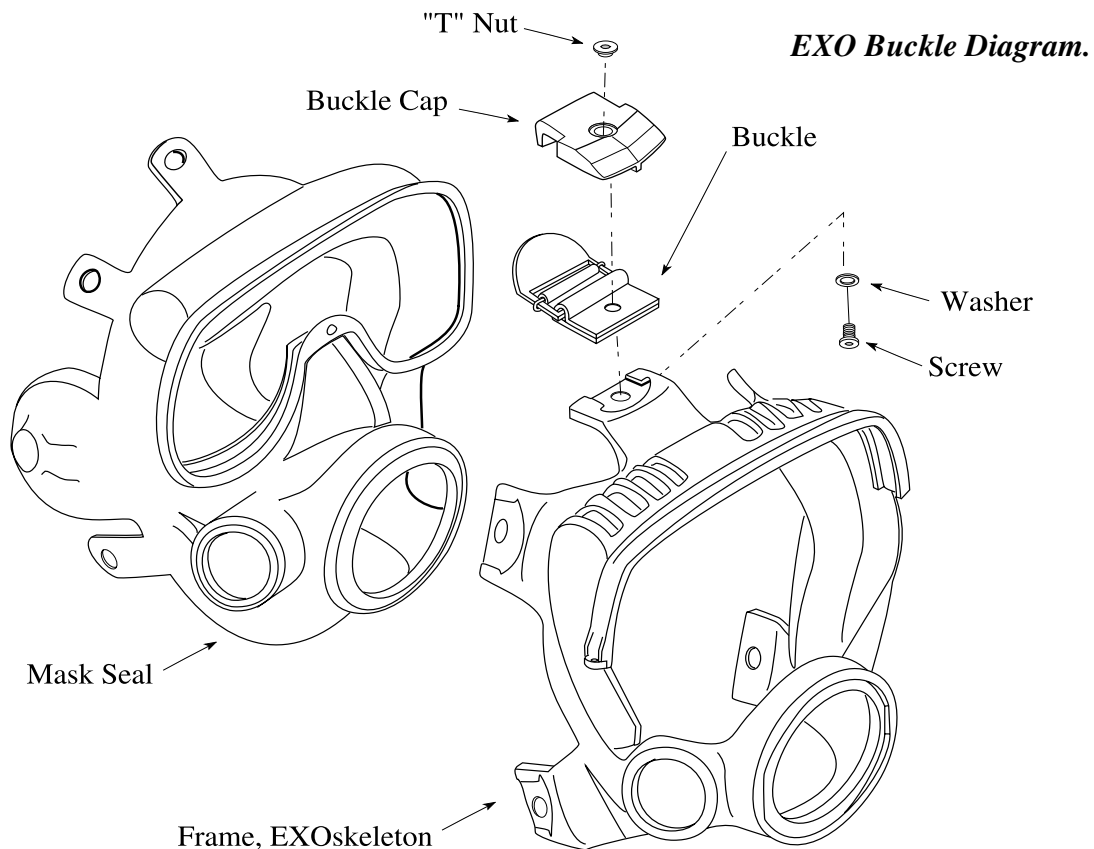
## 5.9 BUCKLE REPLACEMENT

Note: The "T" Nuts are made with a special one time thread locking feature. If the buckles are to be removed the "T" Nuts must be replaced.

Note: By shortening the short leg of the 1/8" Allen wrench (see photo) this job is made much easier.

### 5.9.1 Buckle Removal

- 1) Remove the spider (Head harness)
- 2) Use a 3/16" Allen wrench to remove the "T" nuts and a 1/8" Allen wrench to remove the screws that hold the buckles and buckle caps on.



### 5.9.2 Buckle Installation

**⚠ CAUTION:** If the “T” nuts are not properly installed there is the possibility the screw will become loose and fall out. This will result in the loss of an entire buckle assembly and could cause the mask to flood if enough buckles are lost. Become familiar with the way the washers should fit to the “T” nuts. When properly installed the washers will fit around the minor diameter of the “T” nut when properly in place. The washer **MUST NOT** be captured between the head of the Allen screw and the end of the “T” nut when tightened.

1) Install all the washers onto the screws with the sharp side of the washer towards the head of the screw.

2) Fit the buckles up into the bottom side of the buckle caps. Insure that the buckles are facing the right way. The folded piece of the buckle

assembly with the mounting hole through it has a loop in it. This loop should fit into the space on the bottom side of the buckle caps.

3) Fit the “T” nuts through the top sides of the buckle cap and through the mounting hole in the buckle.

4) Apply a small amount of silicone grease to the hole on the tab of the mask seal.



*Lightly lubricate the screw hole on the spider tab.*

5) Place an Allen screw with a washer on it onto the shortened leg of the 1/8" Allen wrench.

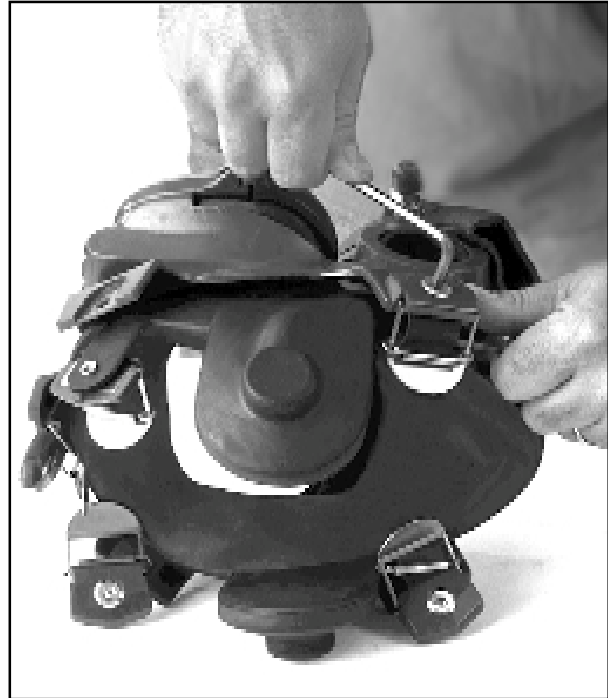
6) Take one entire assembly of "T" nut, buckle cap, and buckle and press the end of the "T" nut through the hole on the back side of one of the tabs on the mask seal, then through the mask frame. Insert the 3/16" Allen wrench in the "T" nut and hold the assembly in place on the frame.

7) Take the Allen screw with a washer on it on the 1/8" Allen wrench and hold it up against the back side of the "T" nut. Turning the 3/16" Allen wrench and the "T" nut, thread the screw into the "T" nut. Tighten the screw and "T" nut. Once again make sure that the washer is correctly positioned on the "T" nut and that it is not captured.



*Insert the screw through the mask frame.*

8) Repeat steps 3 thru 7 for all the buckle assemblies.



*Use a 3/16" allen wrench to tighten the "T" nuts.*

## 5.10 REPLACING THE FACE SEAL OR FRAME

The Face seal should be inspected prior to every dive to check for punctures, tears or signs of cracking. A torn or cracked face seal may cause the mask to free flow and/or flood. If the face seal is damaged, it must be replaced. This can be a difficult procedure. It is recommended that this procedure be done by a factory trained DSI dealer. If you are going to attempt this procedure, **read and understand all previous sections of this chapter before you start.** The EXO Tool Kit, Deluxe DSI Part #325-650 is required to do this procedure.

Tools Required:

3/16 inch Allen wrench, 1/8 inch Allen wrench, EXO Tool Kit, Deluxe

### 5.10.1 Face Seal Removal

1) If you are using communications, remove the communications module, microphone and earphones. See chapter 6.

- 2) Release the spider from the buckles and remove.
- 3) Remove the regulator assembly.  
See section 5.6.1
- 3) Remove the lens. See section 5.8.1.
- 4) Remove the buckles and buckle caps.  
See section 5.9.1.
- 5) Separate the mask seal from the mask frame.

### 5.10.2 Face Seal Installation

- 1) Put the mask seal into the frame. Seat the lens seal area of the mask seal into the upper lens clamp part of the frame. Seat the regulator and comm module areas of the mask seal in the correct spots on the frame.
- 2) Install the regulator assembly.  
See section 5.6.2.
- 3) Install the lens. See section 5.8.2.
- 4) Install the buckles and spider.  
See section 5.2.
- 5) Install the communications module.  
See chapter 6.

## 5.11. MANIFOLD BLOCK MAINTENANCE

**5.11.1 Daily-** A daily pre-dive inspection should be done prior to using the Manifold Block. Carefully inspect the assembly for any sign of damage or worn components.

Tools: open end wrenches, 1", 11/16", 9/16", 5/8" and a 5/16 Allen wrench.

- 1) Check to insure all the port plugs are installed and are tight.



*DSI Manifold Block*

- 2) Check to insure the emergency gas supply whip is installed and tight, on the emergency valve
- 3) Using a 5/8" open-end wrench, check to ensure the packing nut (4) on the emergency valve (9) is snug. Note: do not over tighten. The valve handle should turn freely. Check to ensure the packing nut does not turn -when a light force is applied with the wrench.
- 4) Insure the non-return valve (14) and umbilical adapter are securely in place.
- 5) Test the one way valve (14) by sucking on the inlet fitting ( I 2) with your lips. If any air is drawn through the valves the valve must be rebuilt or replaced.

### 5.11.2 Post Dive Procedures.

Daily post dive Maintenance of the manifold block requires a brushing with a solution of mild soapy water and a thorough rinsing with fresh water. If hoses have been removed, insure port plugs have been installed and the umbilical connection has been capped or bagged.

### 5.11.3 Annual Overhaul of the Manifold Block Assembly.

The DSI manifold block should be rebuilt on an annual basis, or when damage or corrosion is suspected or found.

Tools required: Table vise, 1 "open end wrench (2ea), 11/16", 5/8", and 9/16" open end wrenches, large flat blade screwdriver, 5/16 Allen wrench, 0-300 in lbs. Torque wrench, Soft nylon tooth brush, brass O-ring pick and a solution of 50/50 white vinegar and water.

Parts required:  
Manifold Repair Kit DSI PN 325-095

#### 5.11.3.1 Disassembly of manifold block

1) Remove the two flat head screws from the manifold backing plate, and remove the plate.

2) Remove all hoses and port plugs. Remove the O-ring from each plug and place the plugs in a solution of 50/50 white vinegar and water.

3) Using a soft jaw vise or a rag wrapped around the manifold block to keep from marring the finish, remove the one way valve from the manifold block using the 1" wrench.

**NOTE:** The one way valve must be removed from the manifold block **before** the emergency valve.

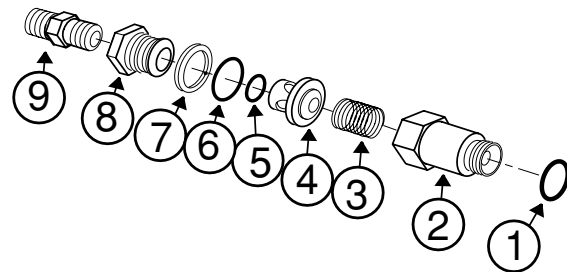
4) Using the 9/16 open-end wrench, loosen and remove the emergency valve from the manifold block.

5) Place the manifold block body in a solution of vinegar and water, and allow to soak while the other components are being disassembled. Using the 1" wrench and the 9/16 wrench, loosen and remove the umbilical adapter fitting. Place it in the vinegar solution.

6) Carefully clean the manifold block body with a nylon toothbrush and vinegar solution. Remove all traces of old lubricants, dirt and corrosion, rinse with fresh water and blow dry with compressed air or allow to air dry. Using the nylon brush, clean the manifold plate and umbilical adapter. Take special care to remove all the old Teflon tape from the threads of the umbilical adapter. Air or blow dry. Inspect all threaded ports for any damage.

#### 5.11.3.2 Disassembly and cleaning of the one way valve.

Tools Required:  
Soft Jaw Vise  
1 inch Open End Wrench Attachment on Torque Wrench  
(If no vise is available use a backup 1 inch open end wrench)

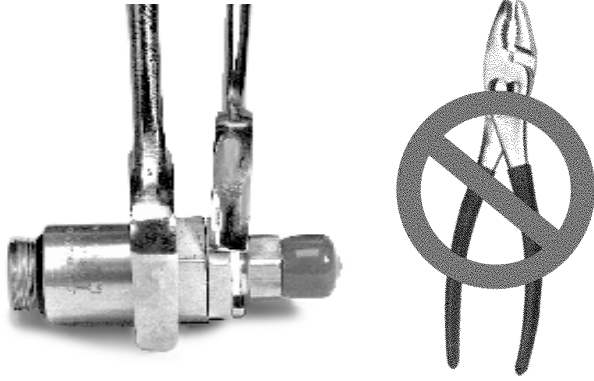


The correct assembly order for the one way valve

1 O-Ring	5 O-Ring
2 Body	6 O-Ring
3 Spring	7 Wiper
4 Poppet	8 Seat
	9 Adapter

To disassemble and inspect the one way valve assembly:

1) Use two wrenches or hold the hex part of the body (2) in a soft jaw vise while removing the seat (8) with a wrench.



**⚠ CAUTION: Do not use pliers on the main body of the one way valve. You may damage the valve if pliers are used.**

As the seat is removed, the wiper (7) and the O-ring (6) slide out in place in a groove on the seat. The poppet (4) and the poppet O-ring (5) usually come out in the seat being followed by the spring (3). The only functional part remaining in the valve body is a non-moving, pressed-in cage. The function of the cage is to prevent the poppet O-ring from blowing out of place during high flows.

- 2) Inspect the body interior for foreign matter of any type and clean, if necessary.
- 3) Inspect the seat, wiper, O-ring, poppet O-ring and poppet for wear, replace if necessary. Be sure each part is clean. A repair kit is available for replacement parts. (DSI Part #525-330)
- 4) Place silicone lubricant on the components, then wipe clean with a non-lint producing cloth. Be careful to wipe the poppet and poppet O-ring thoroughly, removing nearly all silicone to prevent foreign materials from sticking to these components.
- 5) Inspect the spring and clean or replace if necessary.

### 5.11.3.3 Reassembly of the One Way Valve

- 1) Slide the new O-ring (5) over the poppet (4).

- 2) Insert the new spring (3) into the valve body (2), followed by the poppet.

- 3) Next, install the new O-ring (6) and new wiper (7) on the seat (8). Thread the seat into the valve body .

- 4) Tighten the seat to 240 inch lbs. with a torque wrench while holding the body in a soft jaw vice or with another wrench.

- 5) Re-tape the pipe threads on the umbilical adapter fitting with Teflon tape, starting two threads back. One and one half wraps is all that is required. Reinstall the umbilical adapter and securely tighten.

**NOTE:** The one way valve must be installed in the manifold block **after** the emergency valve.

6. Lightly lubricate a new O-ring (1), and install onto the one way valve body. Reinstall the one way valve into the manifold block only after the emergency valve has been installed. Torque to 240 inch lbs.

### 5.11.3.4 Disassembly of the Emergency Valve.

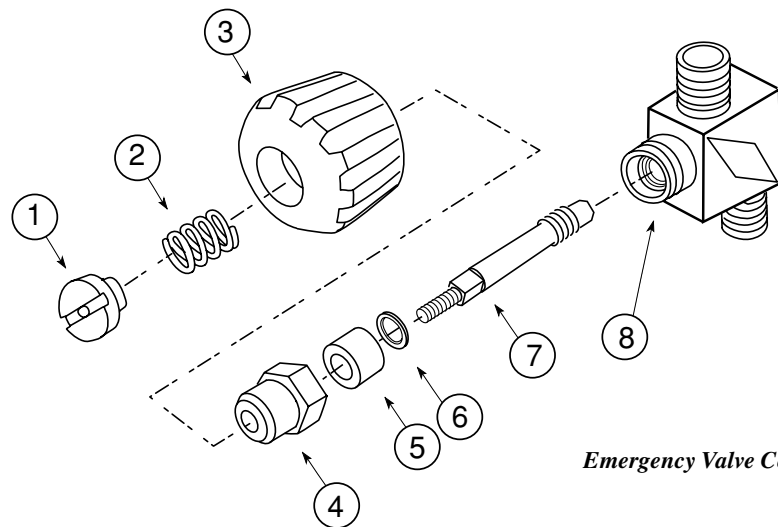
Tools Required:

- 11/16 inch Open End Attachment on Torque Wrench
- 1 inch Open End Attachment on Torque Wrench
- 3/8 inch Slotted Flat Blade Screwdriver
- 8 inch Adjustable Wrench

- 1) To remove the emergency valve body from the manifold block the one way valve assembly must first be removed.

**NOTE:** *If only the emergency valve is being serviced, it does not have to be removed from the manifold block to be rebuilt.*

- 2) Remove the lock nut (1), spring (2), and knob (3).



Emergency Valve Components

3) Undo the packing nut (4). When the packing nut is free of the threads of the emergency valve body (8), back out the stem (7) until it is free of the emergency valve body.

4) Remove the packing nut, packing (5), and washer (6) from the stem (7).

### 5.11.3.5 Cleaning and Lubricating the Emergency Valve.

1) Clean all the metal parts in a 50/50 dilute solution of white vinegar/water. Rinse with fresh water.

2) Inspect the packing and washer for wear and replace if necessary.



Inspect the packing and washer

3) Inspect the stem seat for unevenness or wear and replace if necessary. It must also be replaced if the stem is bent.

4) Check the seat in the emergency valve body for wear or unevenness. Replace the body if necessary.

### 5.11.3.6 Reassembly of Emergency Valve

Tools Required:

11/16 inch Open End & 1 inch Open End Attachments on Torque Wrench

3/8 inch Slotted Flat Blade Screwdriver

Soft jaw vice, Teflon tape

1) With the exception of the tapered pipe thread end of the emergency valve body (19), lubricate all components with a light coating of silicone grease.

2) Place the new Teflon washer (6) and new packing (5) on the stem. **NOTE: There are two different packings and washers supplied in the kit, for rebuilding both the older style and the newer high flow emergency valve. Match the removed packing and washer to the new ones supplied and discard the others.**

3) Holding these components in place on the stem, screw the stem into the emergency valve body.

4) Rotate the stem until it is seated all the way in.

5) Thread the packing nut onto the body. Run the nut in and tighten slightly with a wrench.

6) Place the knob onto the stem and rotate the stem all the way out, then back again. The rotation must be smooth. If “hard spots” or unevenness are felt during the rotation, the stem may be bent and could need replacement.

7) Tighten the packing nut with a wrench until moderate resistance is felt when turning the knob.

8) Place the spring and locknut onto the stem, securing the knob.

9) Tighten the locknut until the screwdriver makes contact with the stem. The assembly is now complete and ready for testing.

10) Test the valve by attaching it to an emergency air supply source. There must be no leakage of gas past the stem or through the packing nut. Turn on the bailout bottle and leave the supply on for several hours. There must be no drop in pressure in the system if the valve is operating properly.

11) Apply Teflon tape to the pipe threads starting two threads back. Only one and one half wraps is all that is necessary.

**⚠ DANGER: Take care not to allow any pieces of Teflon tape to enter the side block. If these pieces of tape enter the demand regulator assembly and/or defogger valve they may block the flow of air to the diver. This could lead to death from suffocation.**

12) Reinstall the emergency valve into the manifold block and tighten. Insure the valve body is oriented in the proper position so that the one way valve can be reinstalled.

### 5.11.3.7 Reassembly of the Manifold Block Assembly.

1) Lightly lubricate new O-rings and install on all port plugs.

2) Ensure that all supply hoses have been checked for damage and corrosion and that all hose's have new O-rings which have been lightly lubricated

3) Reinstall the backing plate. Install the screws and washers.

4) Reinstall all hoses and perform a test of the system. Test the emergency valve by attaching it to a bail out cylinder and first stage regulator with an intermediate air source no greater than 240 psi. There should be no leakage of air when the assembly is immersed in a tub of water. The one way valve can also be tested at the same time. After the water test for leaks, while the system is still under pressure, blow dry the inlet to the one way valve and then depressurize the system.



# NOTES

## CHAPTER 6

# Communications

The EXO may be ordered either with no comms or with one of three different communications modules. They are: **Binding Posts** for bare wire connection, **Waterproof Connectors** for hard wire communications, and **Wireless** communications.

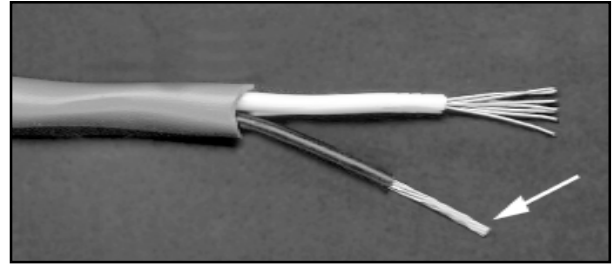
In surface supplied diving the most commonly used types of connectors are the binding posts and the waterproof connectors. Waterproof connectors provide better communications. In addition, if you are diving in salt water, waterproof connectors will extend the life of the communications wire in your umbilical.

### 6.1 BARE WIRE BINDING POSTS

To connect bare wires to binding posts, be sure you have a sufficient length of clean, bare wire exposed. If the wire is covered with corrosion clean it until the shiny wire is exposed or cut it back and expose new wire.



- 1) Twist the wire strands in each individual wire until they are wound tightly together. Coat these with a thin coat of solder to prevent fraying.



*Coat with a thin coat of solder to prevent fraying.*

- 2) Unscrew each of the binding post nuts until the hole in the shaft of the post is exposed.
- 3) Insert one soldered wire into each of the holes in the binding posts. The wires should stick out of the hole of each post, but should not touch each other. If the wires touch, you will create a “short” and there will be no communications between the diver’s mask and the top side communication box.
- 4) Tighten each of the binding post nuts until snug. Do not overtighten.
- 5) Test the communications system and insure that it is in proper working order.

### 6.2 WATERPROOF CONNECTOR (WPC)

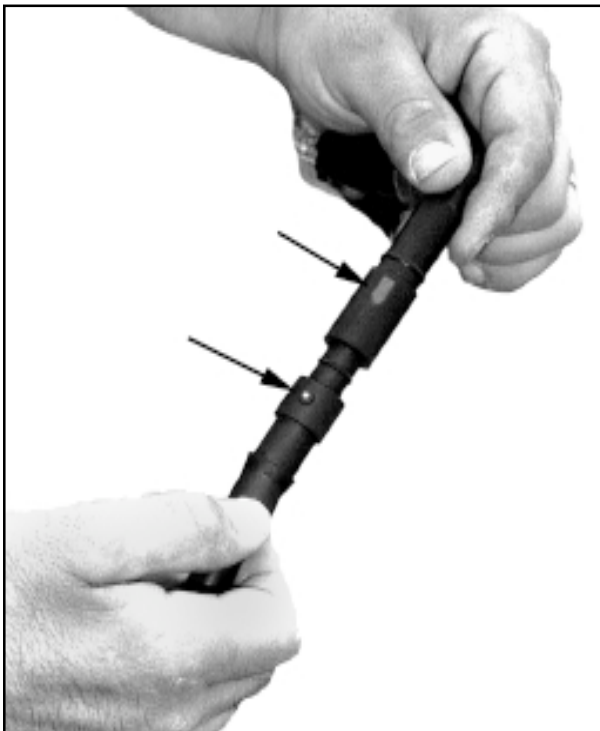
Waterproof connectors are a little more expensive than bare wire posts, but they provide better communications, the possibility of a 4 wire system, and will extend the life of the diver’s umbilical communications wire. Salt water entering the bare wire system will lead to corrosion of the wires and possible failure of the system.

Waterproof connectors are rugged but require a bit more care in handling than binding post connectors. If you are careless in handling a waterproof connector you may cause it to fail and they can not be repaired. Most waterproof connector manufacturers recommend that you lubricate the connections using silicone grease.



*EXO STANDARD or BR Module Assembly With Waterproof Connector*

1) To connect the male and female portions of the waterproof connectors, align the key on the male connector with the yellow mark on the female connector.



*Align the key on the male connector with the yellow mark on the female connector.*

2) Press the two connectors together until you hear a distinct “pop”, which is the air escaping from between the two connectors, creating a seal.

3) Tape the two connectors with a bit of electrical tape to prevent them from pulling apart.

4) Test the communications system and insure that it is in proper working order.

### 6.3 WIRELESS COMMUNICATIONS

The EXO mask may also be used with wireless communications. There are several manufactures of these units, OTS (Ocean Technology Systems) and DiveComm, just to name a few. Read and follow the manufacturers instructions for these units.

Wireless systems are usually only employed by free swimming SCUBA divers. Wireless systems allow the diver to swim unrestricted by any lines or tethers. However, if you are using the EXO in the surface supplied mode it is usually more effective and reliable to use a hard wire system.

Wireless systems are used in many different types of diving. Some examples include search and rescue, research diving, and SCUBA instruction. With a wireless system it is possible to communicate both diver-to-diver and/or diver-to-surface.



*The EXO mask with wireless communications.*

The communications system should always be tested and any problems solved or adjustments made prior to the diver entering the water. Procedures may vary between the makers of the top side communication boxes. Follow the manufacturers instructions on how to test these units.



*The communications system should always be tested prior to the diver entering the water.*

**! WARNING:** The waterproof case for your wireless communications unit should only be attached to your scuba backpack, never to your weight belt. In the event your belt must be dropped the belt must have a clear drop path and must not be connected to any other piece of gear. If this procedure is not followed the weight belt and wireless electronics case will be attached to the mask by the connecting wire.

## 6.4 REMOVING THE COMMUNICATIONS MODULE

After each days diving, the entire mask communications system should be removed, cleaned, and allowed to dry.

1) First remove the communications mounting ring by unscrewing it.

**! CAUTION:** Do not apply any pressure to either the penetrator, or the communications posts, for removal. This could possibly damage the unit.

2) Reach inside each earphone pocket, grasp the earphone and remove it.

**! CAUTION:** Do not remove the earphones by pulling on the wires. This may damage their interior connections.

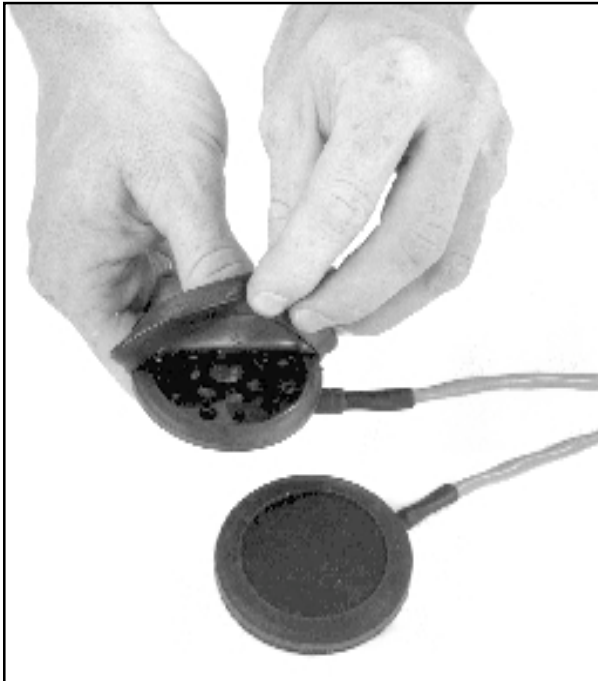


*Remove the earphone assembly.*

3) In the EXO Standard or Balanced remove the microphone from the oral nasal. Once again do not pull on the wire as this can damage the connection.

4) The entire communications assembly can now be separated from the mask. The module should be pushed to the inside of the mask by applying pressure to the flat angle area on the exterior of the comm module.

5) Remove the outer earphone covers, and on the EXO Original the microphone cup, and allow all the parts to dry.



*Remove the outer earphone covers and allow all the parts to dry.*

## 6.5 INSTALLING THE COMMUNICATIONS MODULE

If you are installing communications into a mask that did not originally come with communications, the back side of the microphone cup on the oral nasal may need to be trimmed out. If it is the newer version, simply remove the plastic plug.

1) Insure that the mask seal is correctly seated in the frame. This is very important as the mask seal also acts as the seal for the communications module.

2) Reassemble the earphone covers and the microphone cup (EXO Original).

3) If the comm module is equipped with a waterproof connector, insert the waterproof connector back through the mask seal and frame from the inside of the mask

4) Work the comm module into the mask seal from the inside until it is properly positioned and seated. On the EXO original, make sure the microphone cup is positioned correctly.



*Make sure the microphone cup in the EXO Original is positioned correctly.*

5) Screw the comm module mount nut back onto the comm module and tighten.

6) Insert the earphones in their pockets. Using a pump spray type of silicone, a light coat on the outside of the earphone covers helps the earphone assembly to slide into the pocket easier.

**⚠ CAUTION: Avoid spraying canned silicone spray on any of the plastic parts of the mask. Certain chemicals used to propel silicone spray from the can may damage the plastic components of the mask. Use silicone in a bottle with a manual pump or a very light application of silicone grease.**

7) Tuck any excess wires behind the edge of the mask seal.

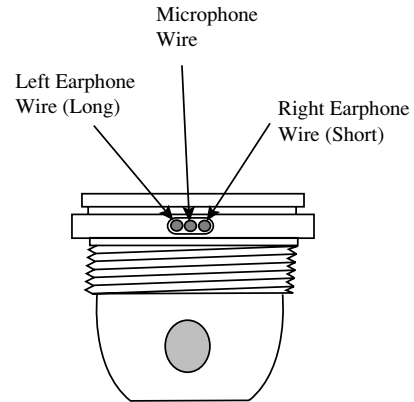
- 8) Mount the microphone back into the oral nasal (EXO Standard or BR).
- 9) Test to insure that the communications module is in proper working order.
- 10) Masks not using communications systems should be fitted with an oral nasal microphone cup plug. DSI oral nasal plug, part # 320-001 is available for this purpose.

## 6.6 EARPHONE AND/OR MICROPHONE REMOVAL

- 1) Remove the communications assembly from the mask.
- 2) Remove the comm module cover (EXO Standard or EXO BR).
- 3) Using a small flat blade screwdriver, carefully scrape out the waterproof coating in the slots of the screws in the comm module and remove the screws and washers. **Take note of where all the wires are connected, it will help when reassembling the unit.**
- 4) Carefully remove the wires from the module.

## 6.7 EARPHONE AND/OR MICROPHONE INSTALLATION

- 1) Test the assembly, earphone or microphone, to insure that your components are functioning properly before installation into the comm module.
- 2) Insert the wires into the comm module one at a time in the correct order (see above).
- 3) Use the correct wiring diagram at the end of this chapter for your communications set up to reconnect the wires into the comm module using the screws and washers.



*Insert the wires into the comm module one at a time in the correct order*

- 4) Test the communication assembly.
- 5) Once the comm assembly has been tested and is in working order, paint a light coat of RTV silicone sealant onto the screws, washers, and terminals to waterproof them.
- 6) Reinstall the comm module cover (EXO Standard or EXO BR).

## 6.8 REMOVING THE WATERPROOF CONNECTOR (WPC)

- 1) Remove the communications assembly from the mask.
- 2) Remove the comm module cover (EXO Standard or EXO BR).
- 3) Remove the earphones and microphone connections from the comm module.
- 4) The WPC mount nut on the inside of the comm module should be held so that it won't turn. Use a 3/4" open end wrench on the exterior WPC packing and unscrew the WPC assembly from the comm module.
- 5) Remove the WPC mount nut from inside the comm module.

## 6.9 INSTALLING THE WATERPROOF CONNECTOR (WPC)

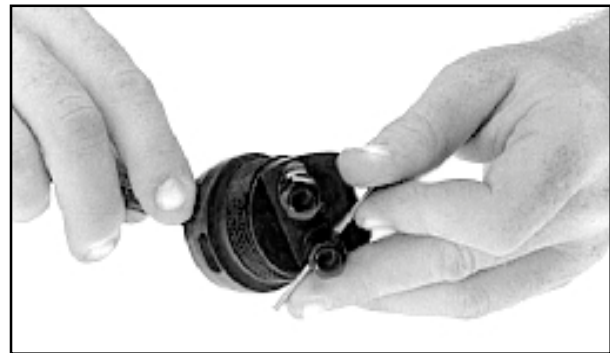
- 1) Put a small bead of RTV silicone sealant around the top part of the threads on the WPC packing where it rests against the comm module to form a seal between the WPC and the comm module.
- 2) Put the WPC mount nut in the comm module and hold it up against the hole in the comm module.
- 3) Feed the wires from the WPC through the hole in the module and through WPC mount nut. Screw the WPC assembly into the comm module and tighten. Clean any excess RTV from around the WPC packing.
- 4) Feed the earphone and microphone wires into the comm module. Make sure they are in the right order. (Fig. 6.)
- 5) Follow the appropriate wiring diagram and reconnect the wires.
- 6) Test the communication assembly.
- 7) Once the comm assembly has been tested and is in working order, paint a light coat of RTV silicone sealant onto the screws, washers, and terminals to waterproof them.
- 8) Reinstall the comm module cover (EXO Standard or EXO BR).

## 6.10 REMOVING THE BINDING POSTS

- 1) Remove the communications assembly from the mask.
- 2) Remove the comm module cover.
- 3) Remove the earphones and microphone from the comm module. **Take note of where**

**all the wires are connected. This will help when reassembling the unit.**

- 4) Use a metal pick or a small stiff piece of wire and insert it through the wire connection hole in the binding post. This will help you hold on the post and either spin it or keep it from spinning. Also, use a 3/8" open end wrench on the binding post mounting nuts on the inside of the module and unscrew the binding posts.



*Use a metal pick or a small stiff piece of wire inserted in the binding post to keep it from spinning.*

- 5) Remove the nuts, washers, and wire harnesses from the inside of the comm module. **Take note of where all the wires are connected, it will help when reassembling the unit.**

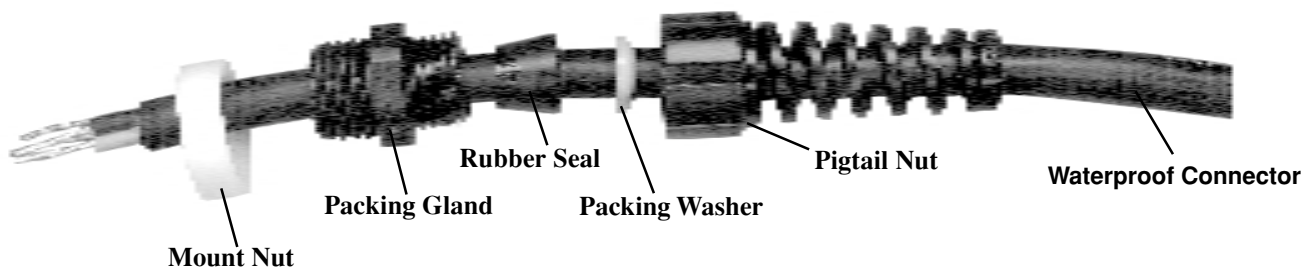
## 6.11 INSTALLING THE BINDING POSTS

- 1) Put a bead of RTV silicone sealant around the bottom of the threads and on the bottom of the binding post body.
- 2) Insert the binding post into one of the holes in the comm module.
- 3) Put one end of the wire harness on the end of the post, followed by the washer, and nut. Tighten the binding post into the comm module. Repeat for the other post.

- 4) Feed the earphone and microphone wires into the comm module. Make sure they are in the right order. Refer to the Installing the Earphone and Microphone section of this chapter.
- 5) Follow the appropriate wiring diagram to reconnect the wires.
- 6) Test the communication assembly.
- 7) Once the comm assembly has been tested and is in working order, paint a light coat of RTV silicone sealant onto the screws, washers, and terminals to waterproof them.
- 8) Reinstall the comm module cover (EXO Standard or EXO BR).

- 4) Discard the old WPC.
- 5) On new WPC's the black casing may need to be stripped back 1 1/4" from the end of the wires. The tips of the wires usually come already stripped and dipped in solder. If not, strip the end of the wires 1/4" and solder the ends to prevent fraying.
- 6) Lightly grease 2 " of the black casing with silicone grease to help slide the pigtail nut on. Slide the pigtail nut on, making sure it faces in the correct direction.
- 7) Position the packing washer 2 1/4" from the end of the wires and facing in the correct direction. Put the rubber seal on also facing in the correct direction and slide it up against the packing washer.

#### *Waterproof Connector Assembly*



### **6.12 WATERPROOF CONNECTOR (WPC) ASSEMBLY REBUILD**

- 1) Remove the waterproof connector (WPC) assembly from the comm module.
- 2) Cut off the terminals or "sweat" them off with a soldering iron if you are going to reuse them.
- 3) Unscrew the packing gland from the pigtail nut. Take off the packing gland, rubber seal, packing washer and pigtail nut. Note the position of the rubber seal and the packing washer and the directions that they face.
- 8) Slide the packing gland on up against the rubber seal, making sure it is facing in the correct direction. Try not to move the position of the packing washer.
- 9) Screw the packing glands and pigtail nut together and tighten.
- 10) Solder terminals on to the end of the wires.
- 11) Test WPC assembly with a multimeter if possible to insure that all connections are good. Reinstall WPC assembly in comm module. See 6.8

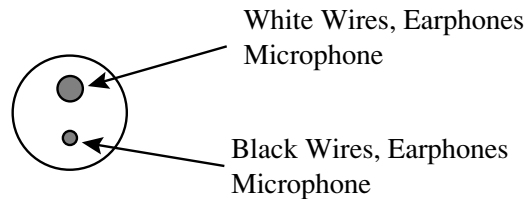
### 6.13 WATERPROOF CONNECTOR (WPC) PIN DIAGRAMS

The view in these diagrams is looking straight at the pins on the WPC. The large pin is at the top.

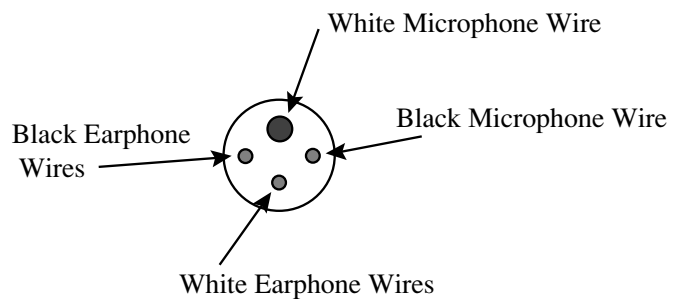
### 6.14 POST DIVE MAINTENANCE

If your mask is equipped with any type of communications, post dive maintenance on the mask and communications module must be done after each days dive. The post dive procedures may vary between manufacturers, depending on which communication module you are using. Follow the manufacturers instructions on post dive maintenance. The following is the recommended post dive maintenance procedures for the DSI communications modules.

- 1) Remove the communications from the mask.
- 2) Lightly rinse the assembly with fresh clean water. Do not immerse the entire assembly under water and try to keep the water out of the earphone covers and from under the module cover. The microphone can get wet.
- 3) Dry the assembly off. Open the earphone covers and take the module cover off and let everything dry on the inside.
- 4) Once everything is dry, reassemble the earphone covers and reinstall the module cover.

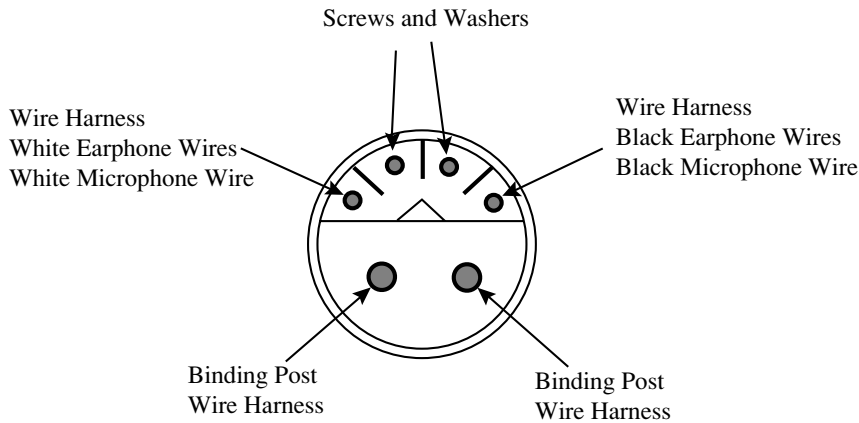


***2 Pin Waterproof Connector***

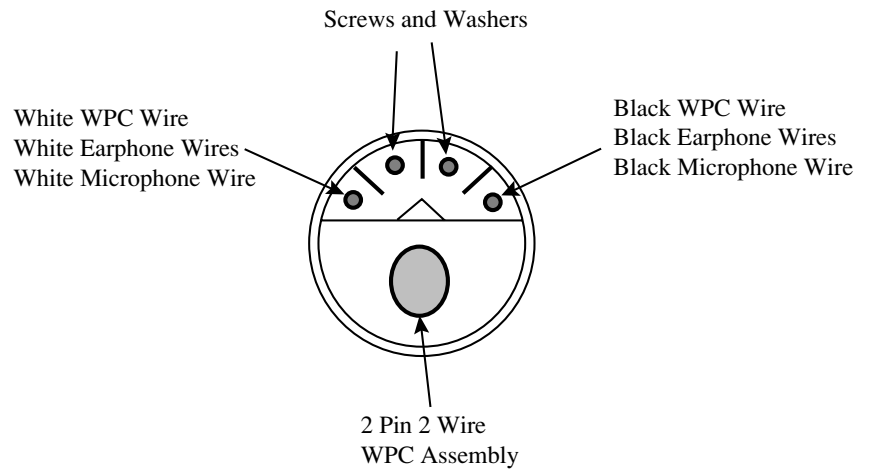


***4 Pin Waterproof Connector***

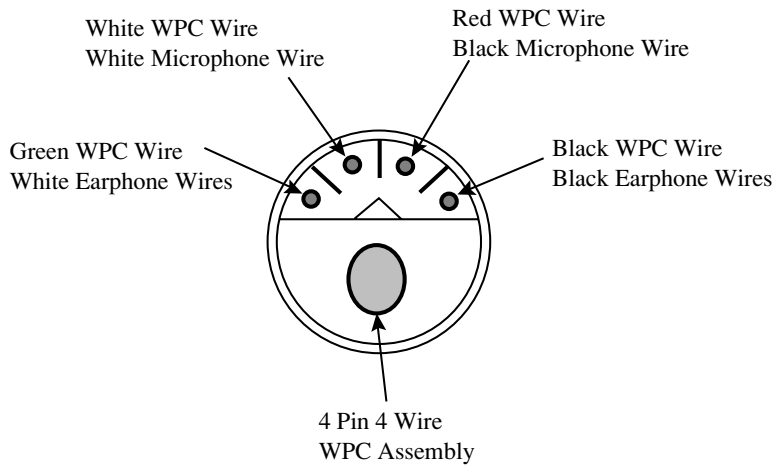
## Communications Module Assembly Wiring Diagrams



***Binding Posts***

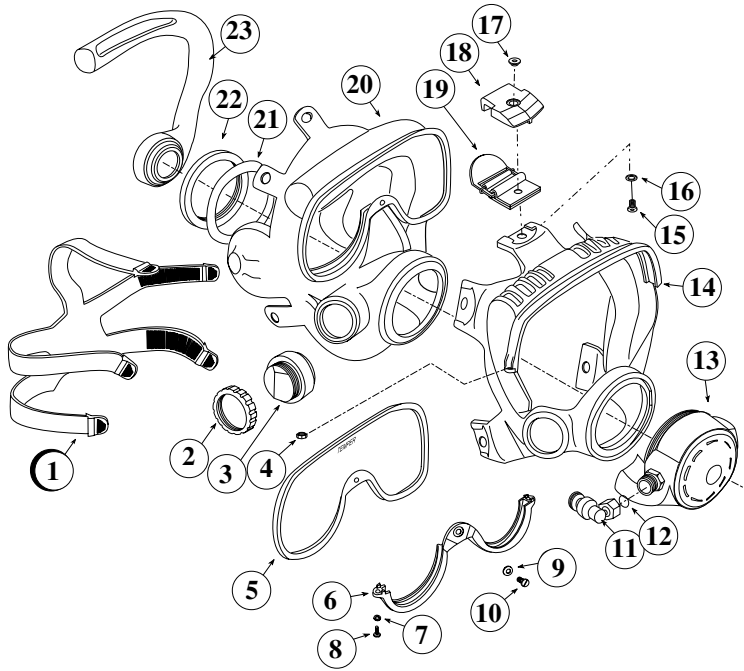


***2 Pin 2 Wire, Waterproof Connector (WPC)***



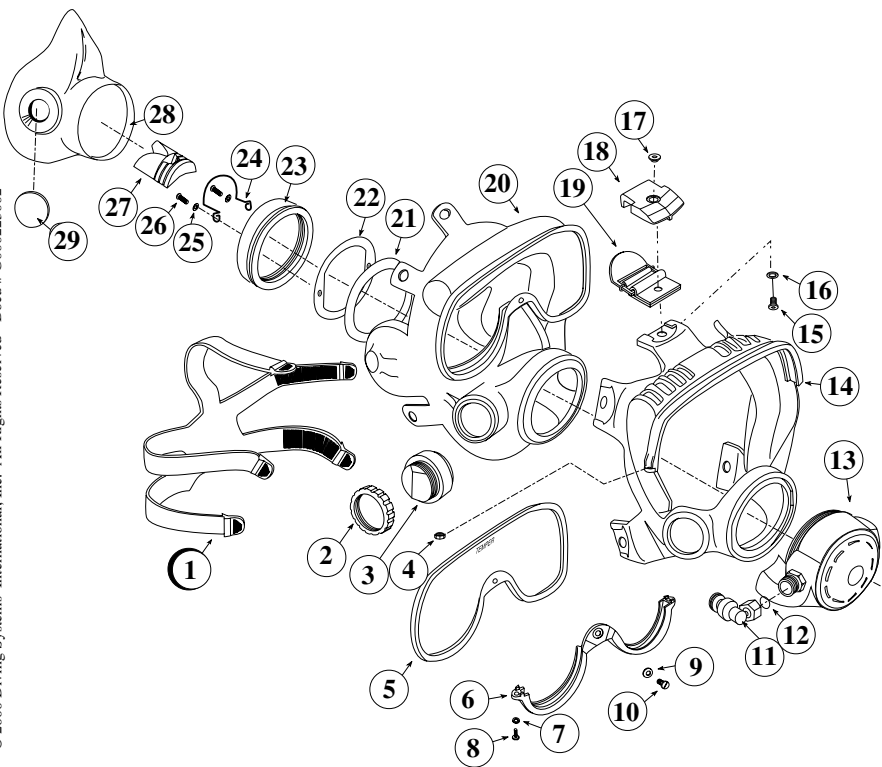
***4 Pin 4 Wire, Waterproof Connector (WPC )***

## Kirby Morgan EXO Original Full Face Mask



1	310-025	Spider
2	320-026	Comm Mount Nut
3	305-020	Comm Plug, w/ screws & Washers
4	330-105	Nut
5	365-002	Lens
6	320-017	Clamp, black
7	330-205	Washer
8	330-005	Screw
9	330-506	Washer
10	330-010	Screw
11	305-036	Inlet Angle Assem. (includes #12)
12	510-010	O-Ring
13	305-010	Regulator Assem. (includes #11)
14	320-015	Frame Exoskeleton, black
15	330-020	Screw
16	330-210	Washer
17	350-040	Nut
18	320-019	Buckle Cap, black
19	345-010	Buckle
20	310-001	Mask Seal
21	320-040	Reg. Mount Washer
22	350-005	Mount Nut
23	310-015	Inlet Tube

## Kirby Morgan EXO Standard Full Face Mask



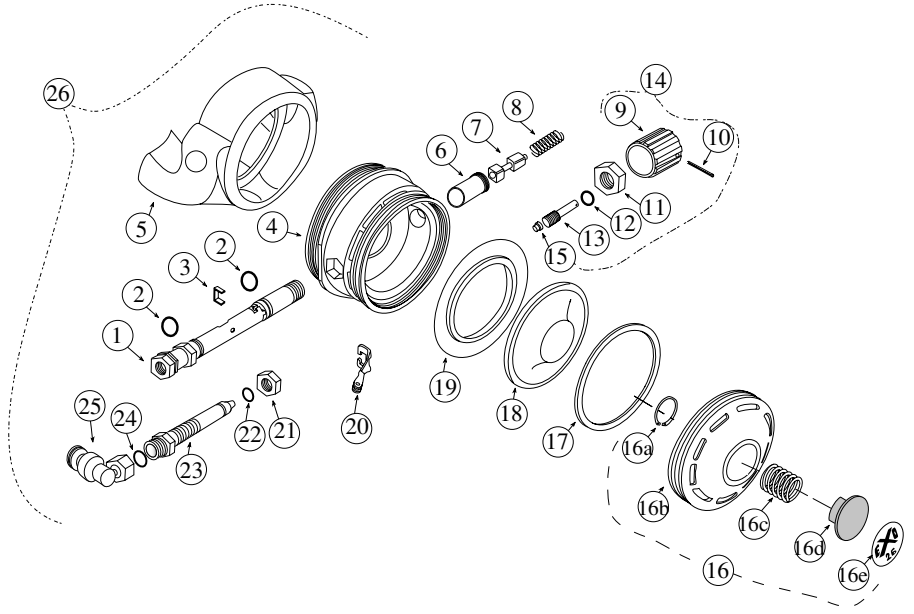
1	310-025	Spider
2	320-026	Comm Mount Nut
3	305-020	Comm Plug, w/ screws & Washers
4	330-105	Nut
5	365-002	Lens
6	320-017	Clamp, black
7	330-205	Washer
8	330-005	Screw
9	330-506	Washer
10	330-010	Screw
11	305-036	Inlet Angle Assem. (includes #12)
12	510-010	O-Ring
13	305-055	Regulator Assem. (includes #11)
14	320-015	Frame Exoskeleton
15	330-020	Screw
16	330-210	Washer
17	350-040	Nut
18	320-019	Buckle Cap.
19	345-010	Buckle
20	310-001	Mask Seal
21	320-040	Reg. Mount Washer
22	340-015	Mount Ring
23	350-047	Mount Nut
24	330-900	Wire Retainer
25	330-515	Washer
26	330-040	Screw
27	310-357	Equalizer
28	310-055	Oral Nasal
29	320-001	Plug

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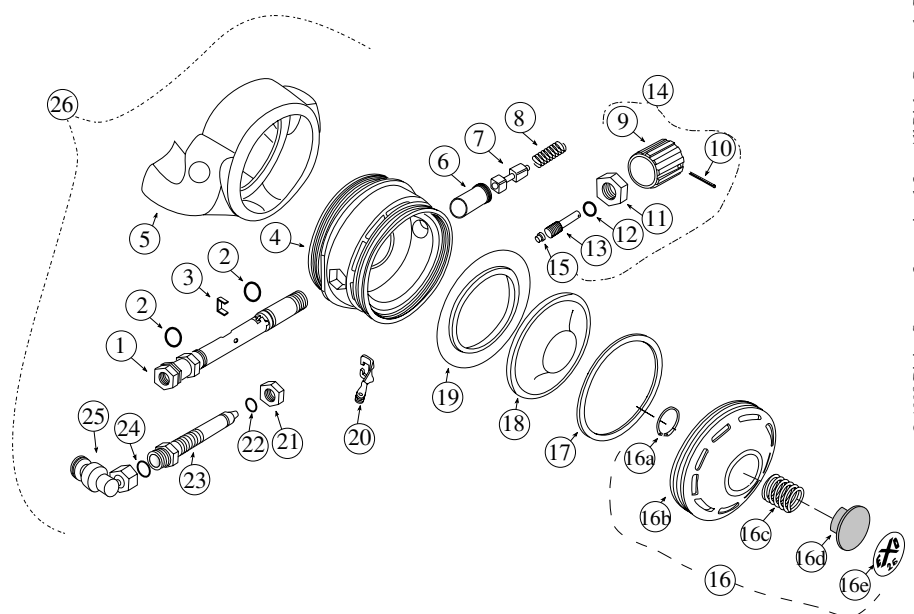
1	350-010	Main Tube
2	310-013	O-Ring
3	340-004	Horseshoe
4	320-005	Regulator Body
5	310-020	Exhaust Whisker
6	350-035	Sleeve
7	305-030	Inlet Valve
8	335-005	Spring
9	320-035	Knob, Adjustment
10	530-601	Roll Pin
11	350-025	Packing Nut
12	510-011	O-Ring
13	350-045	Shaft, Adjustment
14	305-015	Reg Adjustment Assembly
15	350-065	Spacer
16	305-005	Cover Assembly
16a	535-905	Retaining Clip
16b	350-075	Cover
16c	535-810	Spring, Purge Button
16d	520-017	Purge Button
16e	320-070	Purge Button Sticker
17	320-030	Washer
18	510-553	Diaphragm
19	310-065	Exhaust Valve
20	545-038	Roller Lever Assembly
21	350-020	Nut, Adjustment Lock
22	510-010	O-Ring
23	350-015	Nipple Tube
24	510-010	O-Ring
25	305-036	Inlet Angle Assem. (w/ 24)
26	305-010	Regulator Assembly

**Kirby Morgan EXO Original Regulator  
DSI # 305-010**

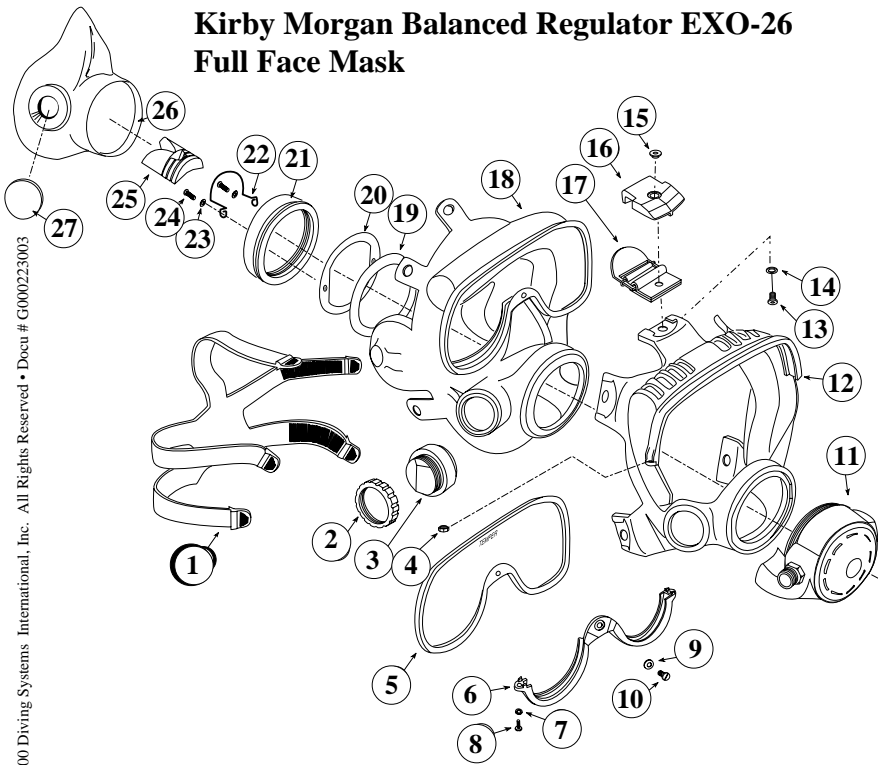


1	350-010	Main Tube
2	310-013	O-Ring
3	340-004	Horseshoe
4	320-084	Regulator Body
5	310-020	Exhaust Whisker
6	350-035	Sleeve
7	305-030	Inlet Valve
8	335-005	Spring
9	320-035	Knob, Adjustment
10	530-601	Roll Pin
11	350-025	Packing Nut
12	510-011	O-Ring
13	350-045	Shaft, Adjustment
14	305-015	Reg Adjustment Assembly
15	350-065	Spacer
16	305-005	Cover Assembly
16a	535-905	Retaining Clip
16b	350-075	Cover
16c	535-810	Spring, Purge Button
16d	520-017	Purge Button
16e	320-070	Purge Button Sticker
17	320-030	Washer
18	510-553	Diaphragm
19	310-065	Exhaust Valve
20	545-038	Roller Lever Assembly
21	350-020	Nut, Adjustment Lock
22	510-010	O-Ring
23	350-015	Nipple Tube
24	510-010	O-Ring
25	305-036	Inlet Angle Assem. (w/ 24)
26	305-055	Regulator Assembly

**Kirby Morgan EXO Standard Regulator  
DSI # 305-055**

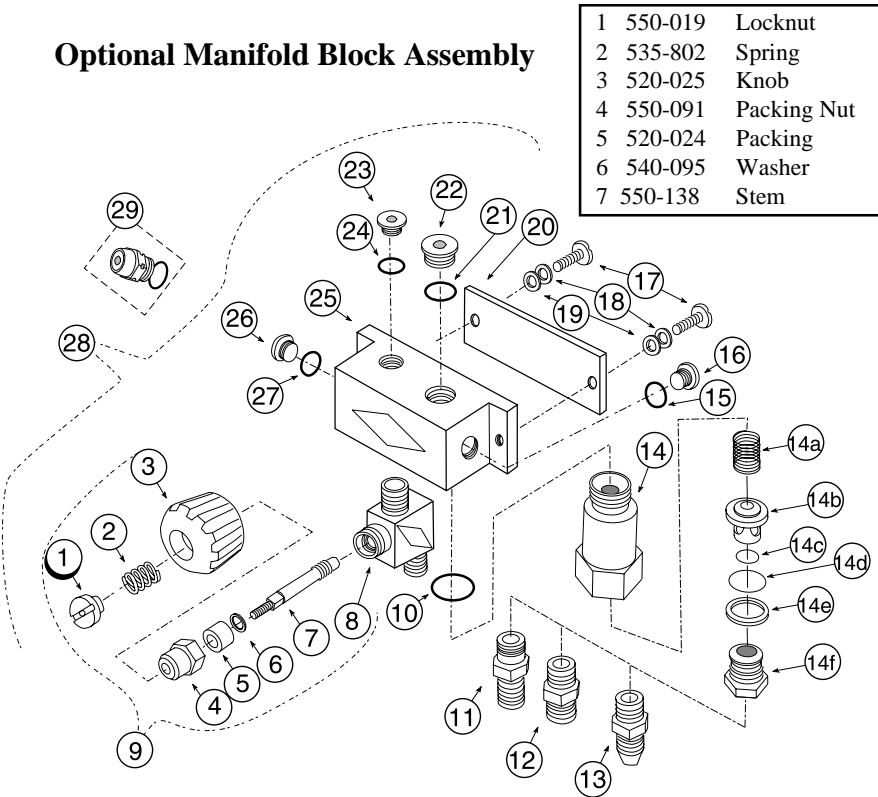


### Kirby Morgan Balanced Regulator EXO-26 Full Face Mask



1	310-025	Spider
2	320-026	Comm Mount Nut
3	305-020	Comm Plug, w/ screws & Washers
4	330-105	Nut
5	365-002	Lens
6	320-028	Clamp, yellow
7	330-205	Washer
8	330-005	Screw
9	330-506	Washer
10	330-010	Screw
11	305-040	Regulator Assembly
12	320-016	Frame Exoskeleton, yellow
13	330-020	Screw
14	330-210	Washer
15	350-040	Nut
16	320-021	Buckle Cap, yellow
17	345-010	Buckle
18	310-001	Mask Seal
19	320-040	Reg. Mount Washer
20	340-015	Mount Ring
21	350-047	Mount Nut
22	330-900	Wire Retainer
23	330-515	Washer
24	330-040	Screw
25	310-357	Equalizer
26	310-055	Oral Nasal
27	320-001	Plug

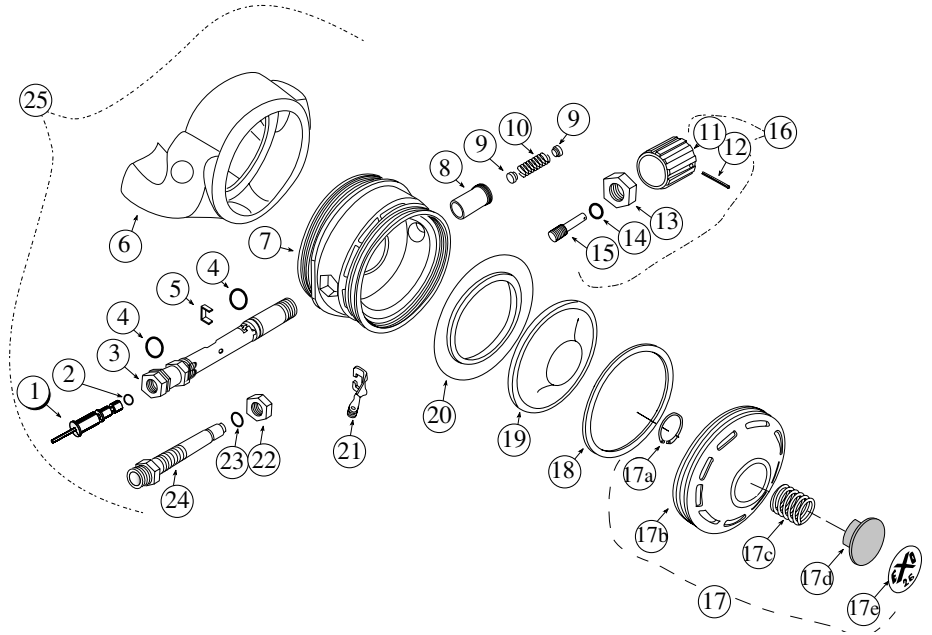
### Optional Manifold Block Assembly



1	550-019	Locknut
2	535-802	Spring
3	520-025	Knob
4	550-091	Packing Nut
5	520-024	Packing
6	540-095	Washer
7	550-138	Stem
8	550-140	Valve Body
9	505-070	Emergency Valve Assem.
10	510-483	O-Ring
11	355-205	Scuba Adapter
12	555-117	Adapter, Brass O <sub>2</sub>
13	355-225	Adapter, Brass #6 JIC
14	555-195	One Way Valve High Flow
14a	Spring	For Replacement Parts Order Kit #525-330
14b	Poppet	
14c	O-Ring	
14d	O-Ring	
14e	Wiper	
14f	Seat	
15	310-003	O-Ring
16	550-095	Plug, small w/O-ring
17	530-070	Screw
18	330-405	Lock washer
19	530-527	Washer
20	340-011	Backing Plate
21	510-013	O-Ring
22	350-060	Plug, Large w/O-ring
23	550-095	Plug, Small w/O-ring
24	310-003	O-Ring
25	350-050	Manifold Block
26	550-095	Plug, Small w/O-ring
27	310-003	O-Ring
28	300-150	Manifold Assem. complete (O <sub>2</sub> )
	300-155	Manifold Assem. complete (#6 JIC)
	300-145	Manifold Assem. complete (scuba)
29	200-017	Over Pressure Relief Valve

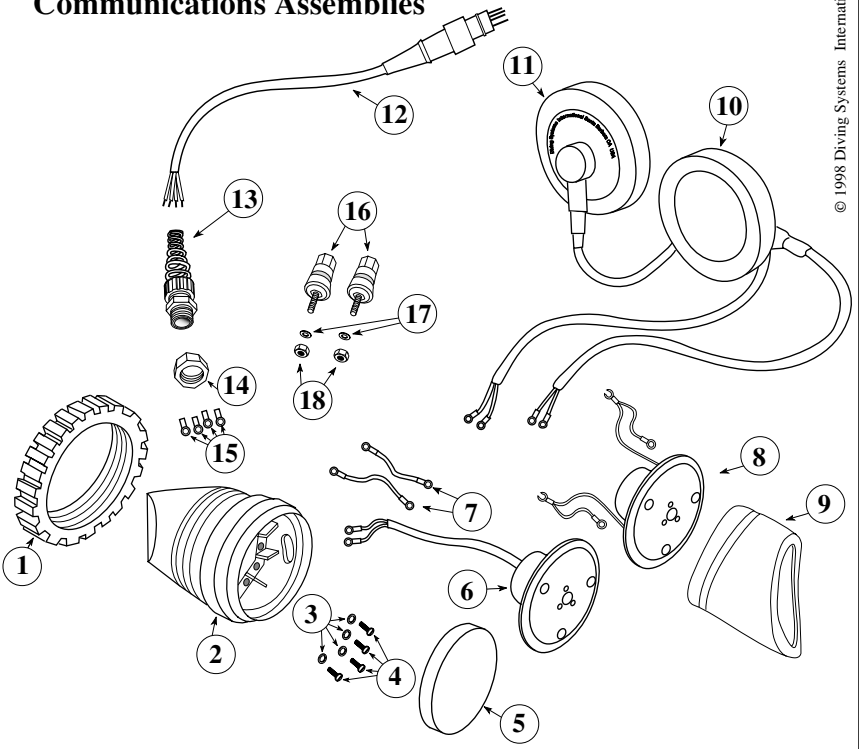
1	305-057	Inlet Valve
2	310-006	O-Ring
3	350-032	Main Tube
4	310-013	O-Ring
5	340-004	Horseshoe
6	310-020	Exhaust Whisker
7	320-041	Regulator Body
8	350-035	Sleeve
9	350-065	Spacer
10	535-910	Spring
11	320-035	Knob, Adjustment
12	530-601	Roll Pin
13	350-025	Packing Nut
14	510-011	O-Ring
15	350-052	Shaft, Adjustment
16	305-045	Reg Adjustment Assem.
17	305-060	Cover Assembly
17a	535-905	Retaining Clip
17b	350-075	Cover
17c	535-810	Spring, Purge Button
17d	520-017	Purge Button
17e	320-080	Purge Button Sticker
18	320-030	Washer
19	510-553	Diaphragm
20	310-065	Exhaust Valve
21	545-038	Roller Lever
22	350-020	Nut, Adjustment Lock
23	310-007	O-Ring
24	350-042	Nipple Tube
25	305-040	Regulator Assembly

**Kirby Morgan EXO-26 Balanced Regulator  
DSI # 305-040**



1	320-026	Comm Mount Nut
2	305-020	Comm Module w/5 & 6
	320-023	Comm Module, drilled for posts
	320-024	Comm Module, drilled for W.P.C.
	315-210	Comm Module complete ass'y. w/comms & posts, (Std & BR)
	315-215	Comm Module complete ass'y. w/comms & Male W.P.Connector (Std & BR)
	315-201	Comm Module complete ass'y. w/comms & posts, (Original)
	315-206	Comm Module complete ass'y. w/comms & Male W.P.Connector (Original)
3	330-035	Washer
4	330-030	Screw
5	510-630	Rubber Cover (Std & BR)
6	515-020	Shure Mic. Assembly (Std & BR)
7	515-055	Wiring Harness
8	315-017	Shure Mic. Assembly (Original)
9	310-060	Microphone cup (Original)
10	315-016	Earphone Assembly, Left
11	315-015	Earphone Assembly, Right
12	515-045	Male W.P. Connector
13	315-005	Pigtail
14	350-070	Mount Nut, Pigtail
15	515-049	Terminal
16	315-020	Comm Posts, EXO
17	530-525	Washer
18	530-308	Hex Nut

**Optional Communications Assemblies**



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