

## Chapter 4 Troubleshooting

### 4.1 General

Kirby Morgan diving helmets are highly reliable life support equipment which should not malfunction if proper preventative maintenance procedures are followed. Most problems encountered in using the helmet can be easily remedied. The following information covers most potential operating difficulties.

<b>4.2 Communication Malfunction</b>		
<b>Symptoms</b>	<b>Probable Cause</b>	<b>Remedy</b>
<b>No sound at either communications box or helmet.</b>	<b>Communications box not on.</b>	<b>Activate switch and adjust volume.</b>
	Communications incorrectly hooked up.	Switch terminal wires.
	Communications not hooked up.	Plug into terminals.
	Communicator not functional.	Replace communicator.
	Broken/damaged comm wire	Check continuity replace wire or umbilical.
	Battery dead	Recharge
Communications weak or broken up.	Terminals in communications module corroded.	Clean terminals with wire brush. Terminals should be bright, shiny metal.
	Battery weak.	Recharge.
	Loose wire.	Clean and repair.
Communications only work when wire is wiggled back and forth.	Break in diver's communication wire.	Splice wire if damage is minor. Replace wire if damage is major.
Communications only work when connector is wiggled back and forth.	Break in waterproof connector.	If connector is suspect, remove from line and test line for integrity prior to replacing connector.
Diver speech weak or can't be heard.	Microphone in helmet dead or damaged.	Replace microphone as per manual.

<b>4.3 One Way Valve Malfunction</b>		
<b>Symptoms</b>	<b>Probable Cause</b>	<b>Remedy</b>
One way valve allows back-flow.	Foreign matter in valve.	Disassemble valve, clean and rebuild. Replace if needed.
One way valve doesn't flow any gas.	Foreign matter in valve.	Disassemble valve, clean and rebuild. Replace if needed.

<b>4.4 Side Valve Malfunction</b>		
<b>Symptoms</b>	<b>Probable Cause</b>	<b>Remedy</b>
Defogger can't be shut off. Helmet free flows through defogger.	Seat assembly damaged or debris under seat.	Clean and/or replace seat assembly.
	Sideblock damaged by debris	Replace sideblock.
Defogger valve will not flow gas.	No air in umbilical.	Turn air on to diver's supply topside.
	Foreign matter in side block or one way valve.	Disassemble side block one way valve and clean.
Defogger valve knob hard to turn.	Valve stem bent.	Replace valve stem.

<b>4.5 Water Leakage Into Helmet</b>		
<b>Symptoms</b>	<b>Probable Cause</b>	<b>Remedy</b>
Water leakage into helmet.	Exhaust valve damaged or stuck open.	Seat or replace valve.
	Communications module O-ring extruded or damaged.	Replace o-ring.
	Communications module not properly tightened.	Tighten module mount nut.
	Communications module damaged.	Replace.
	Binding posts or connector seal damaged.	Remove posts, clean and reseal with RTV sealant.
	Diaphragm damaged or not seated properly.	Seat or replace diaphragm.
	O-ring in neck dam ring damaged or missing.	Replace o-ring.
	Port retainer screws loose.	Tighten screws.
	Neck dam torn or damaged.	Replace neck dam.
	Hair caught between o-ring and base of helmet.	Remove hair from this space.
	Head cushion or chin strap caught under o-ring at neck dam.	Clear cushion or dam
	Regulator assembled improperly.	Check for proper assembly.
	Damaged gasket	Replace gasket

<b>4.6 Demand Regulator Malfunction</b>		
<b>Symptoms</b>	<b>Probable Cause</b>	<b>Remedy</b>
Regulator continuously free flows.	Adjustment knob not screwed in.	Screw in adjustment knob.
	Bent tube damaged causing mis-alignment of nipple tube.	Check the inlet nipple and soft seat. Replace as necessary.
	Supply pressure too high.	Adjust supply pressure lower than 225 p.s.i. over ambient.
	Regulator out of adjustment.	Adjust regulator
Regulator continuously free flows when underwater only.	Neck dam turned down, or too large for divers neck.	Neck dam must be turned up. Replace neck dam with proper size.
	Hair caught between o-ring and base of helmet.	Clean hair out.
	Neck dam torn.	Repair or replace neck dam.
	Poor seal in neck dam ring Assembly	Replace O-rings
Regulator is hard breathing.	Adjustment knob screwed too far in.	Screw adjustment knob out.
	Supply pressure too low.	Increase supply pressure.
	Regulator improperly set up.	
Regulator does not supply gas.	Gas supply pressure too low.	Increase supply pressure to minimum required for depth.
	Regulator is out of adjustment.	Adjust regulator
	No gas in umbilical	Turn diver's gas supply on topside.
	Blockage in breathing system.	Disassemble regulator, clean, and adjust.

<b>4.7 Emergency Gas Supply Valve</b>		
<b>Symptoms</b>	<b>Probable Cause</b>	<b>Remedy</b>
Bail-out bottle drained without diver opening EGS valve	Stem fails to seat in valve body.	Replace EGS valve body.
	Debris under seat causing leakage.	Service valve.
	Leaking over-pressure relief valve on bail-out regulator.	Service valve.
	Leaking bail-out regulator on bottle.	Service regulator.
	Leak in supply line 1st stage	Service regulator.
Knob difficult to turn.	Stem bent.	Replace stem.
Valve will not flow gas.	Foreign matter in valve.	Disassemble, clean, and reassemble.
	Stripped control knob.	Replace knob.

