

to the mask or helmet, (refer to the manual for the mask or helmet for the proper connection procedures for your life support equipment). This action will prevent any foreign matter from entering the helmet or mask breathing system. Once the hose is blown out, immediately connect the fitting on the hose to the fitting on the mask or helmet.

Connect the communications portion of the diver's umbilical to the electrical fittings on the communicator (R) and to the mask or helmet. Be sure the proper connection is made with the right communications line for each diver. The wires in the diver's umbilical should be marked so it is easy to identify which plug connects to the earphone terminals and which plug connects to the microphone terminals.

2.5 PRE-DIVE CHECK

Prior to EVERY dive, the following should be checked:

With the free flow and demand regulator on the mask/helmet(s) shut off, turn on the air supply at each of the air cylinders. During operation with scuba bottles as the main supply, the selector valve handle must be FULLY up or FULLY down. Fully up turns the "BLUE" supply on and the "ORANGE" supply off. Fully down turns the "ORANGE" supply on and the "BLUE" supply off.

Note the air pressure in each cylinder by reading the gauges (L,M). The low pressure supply should be switched "OFF" at the source at this time. A check valve in the low pressure system will prevent any back flow to the compressor.

Both cylinders should be full prior to diving. Load the regulator on the DCS-2A using the regulator adjustment knob (H). Observe the umbilical hose pressure (B) which should be set at 150 psi (10.3 bars) over top side pressure, or 165 psi (11.5 bars) The regulator used in the DCS-2A is a non-venting regulator. If the regulator has been left set at a higher pressure setting than is presently desired, the operator must turn the regulator adjustment knob (H) clockwise and vent air from the system by bleeding either the pneumo system or diver's breathing apparatus.

As the diver descends, the DCS-2A operator should increase the regulator setting so that the umbilical pressure is always 150 psi (10.3 bars) over the pressure at the diver's depth. Consult the table below for approximate pressure settings.

Depth - fsw	Pressure	Optimal	Minimum
0'	14.7 psia	150 psig	150 psig
33'	29.4 psia	165 psig	150 psig
66'	44.1 psia	180 psig	150 psig
99'	58.8 psia	195 psig	160 psig
132'	73.5 psia	210 psig	175 psig
165'	88.2 psia	225 psig	190 psig
198'	102.9 psia	225 psig	205 psig

Depth-Meters	Pressure	Optimal	Minimum
0	1 bar	10.3 bars	10.3 bars
10	2 bars	11.4 bars	10.3 bars
20	3 bars	12.4 bars	10.3 bars
30	4 bars	13.4 bars	11.0 bars
40	5 bars	14.5 bars	12.1 bars
50	6 bars	15.5 bars	13.1 bars
60	7 bars	15.5 bars	14.1 bars

2.5.1 TESTING L.P. SUPPLY

With the air on at the bottles and the communications switched on, check the mask regulator function. The diver should insert his face in the mask/helmet and take several breaths to test the demand regulator in his mask.

To test the low pressure supply, place the selector valve handle (I) in the "H.P. OFF" zone and the console will be running off the low pressure supply only. Observe the umbilical pressure gauge (B). As the compressor cycles, the gauge will rise and fall as the compressor's volume tank fills and empties. The minimum pressure for most low pressure compressors will be approximately 175 psi (12 bars) Again, check the mask/helmet function which will also confirm the low pressure supply routing.

2.5.2 TESTING COMMUNICATIONS

Test the communications between the diver and the DCS-2A. With the communicator (R) switched on, turn the speaker switch to "on" and adjust the volume to a comfortable level for both the diver and the DCS-2A operator. In the 2 wire mode, the communicator functions similarly to a citizens band radio; i.e., the DCS-2A operator must depress the push to talk switch to speak to the diver. In the 4 wire mode, the communicator functions like a telephone conference call; i.e., everyone on the line can hear and speak to everyone else. In either mode, for the diver to talk top side, it is only necessary for him to speak into the oral/nasal microphone in his mask or helmet. If two divers will be working together, test the cross-talk functions at this time as well.

To extend the life of the battery, it is recommended that the communications be used in the 4 wire mode. Operation as a 2 wire system uses relays inside the unit which will cause a higher battery drain.

CAUTION: In the 2 wire mode, when the push-to-talk switch is depressed, the DCS-2A operator should keep all of his communications short (10-15 seconds) at any one time. This allows the diver to call for assistance if necessary.

Plug the earphone connectors on the diver's umbilical into the earphone jacks on the communicator. Plug the microphone connectors on the umbilical into the microphone jacks on the communicator. This will create a 4 wire system/round robin system. Test the system and adjust all volume controls.



Fig. 8 Preliminary testing of the umbilical with a volt-ohm meter to check for continuity.

Unplug the earphone connectors on the diver's umbilical from the communicator and reinstall them in the connectors attached to the plugs for the microphone. This will change the communicator to a 2 wire system. Test this system and adjust volumes.

If there are no communications, recheck all of the connections to ensure they are tight at each junction. If the DCS-2A has been operating in a coastal environment, look for corrosion on the top side connectors which may interfere with the communications. If corrosion is evident, disassemble the connectors, clean, and retest. If corrosion is heavy, replace the top side connectors.

Substitute other masks or umbilicals to test for failures in the microphones or umbilical. Substitute one piece of new gear at a time to track the fault down. If the fault is in the mask or helmet, replace the earphones or microphones as needed.

If the fault is in the umbilical, disconnect the umbilical and carefully inspect its length for damage. Look for obvious nicks or cuts.

If there is physical damage to the outside of the communications wire there probably is a break on the inside, too. Test the continuity of the wire end-to-end with a volt-ohmmeter.

Uncoil the umbilical and lay it out flat with the two ends close to each other. Set the volt-ohmmeter to resistance (ohms) and hold one probe to one prong on an umbilical connector plug and touch the other probe from the meter to the wires (or connector) at the opposite end of the diver's umbilical. Upon locating the other end of the same wire, the meter should indicate zero resistance, i.e., there is a complete, uninterrupted circuit. If touching none of the wires at the other end of the umbilical produces a zero reading and all readings are infinity (∞), this indicates a complete break in the wire. If the reading is somewhere between zero and infinity, and changes as the umbilical is moved, this indicates a partial break, and communications will be intermittent. In either case, a waterproof splice must be made in the wire.

2.5.3 TESTING THE PNEUMO

The pneumo supply may be tested in either the high pressure supply mode or the low pressure supply mode. To test the pneumo, select either mode and pinch the open end (diver's end) of the red diver pneumo hose. With the hose crimped tightly shut, slowly open the red pneumo valve (D) momentarily, 1/4 turn, and observe the needle's response on the red diver depth gauge (C).

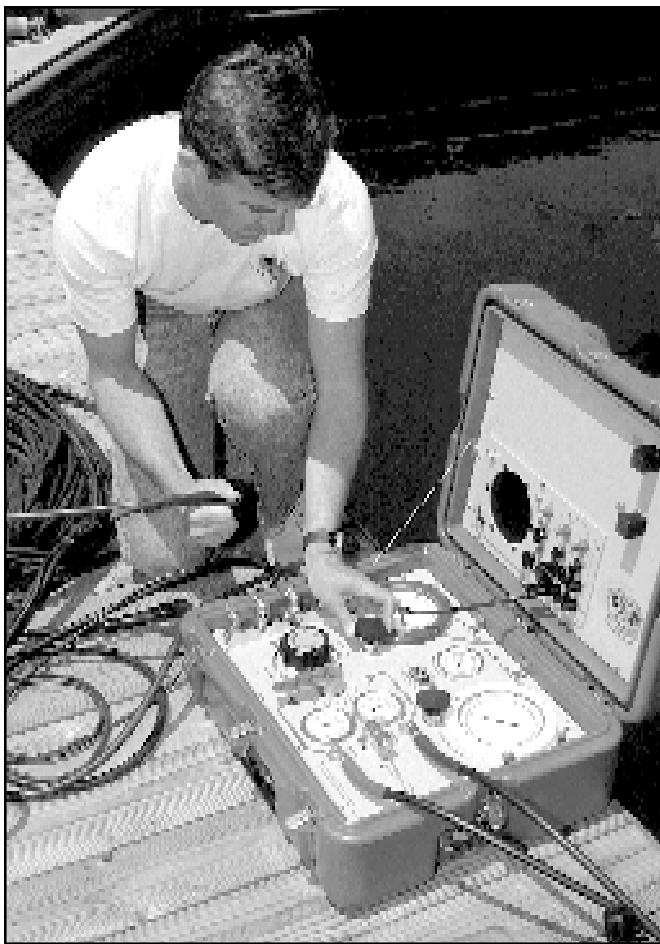


Fig. 9 Carefully test the pneumo prior to every dive.

CAUTION: Do not “peg” the needle on the pneumofathometer with a maximum reading. A test of pressure equal to 50 feet (15 meters) on the gauge is satisfactory to ensure correct operation.

Close the valve after observing correct operation and release the end of the pneumo hose. The gauge needle should return to zero. Repeat the above procedure for the white diver.

2.6 PREPARING THE DIVER

The diver should be dressed in with the appropriate exposure suit for the local water temperature. The diver should be equipped with a harness to provide an attachment point for his umbilical. By attaching the umbilical to the harness, the possibility of a direct pull on the diver's helmet or mask will be eliminated.

A bailout bottle should be mounted on the diver's harness. Always dive with a bailout bottle, no matter how shallow the dive. The danger of entanglement is always present and a bailout bottle will give the diver that few extra minutes to free himself in the event he becomes hung up on fishing line, wire, or other submerged objects.

The bailout regulator should be equipped with a quick disconnect whip to make it easier to dress the diver in and out. In addition, the bailout regulator should also be equipped with an over pressure relief valve (DSI Part #200-015). This will permit the regulator to bleed off and not rupture the low pressure hose connecting it to the diver's bailout or emergency valve, should the first stage develop a leak.

With the hose attached to the harness, tuck the pneumo hose under the harness at the diver's chest. This serves two purposes: 1) it provides instant access in the event the pneumo is to be used as an alternative air supply; 2) gas absorption and elimination of nitrogen is considered to occur at the diver's chest level.

When diving under a potential decompression situation, a depth gauge or dive computer should be worn by the diver as a backup system. If decompression is anticipated there must be enough air on hand for the diver to complete the dive and the decompression obligation.

2.7 THE DIVE SUPERVISOR AND THE DCS-2A OPERATOR

During the diving operation, one person should always be in charge to avoid confusion. Generally, this should be the most senior diver, by virtue of his diving experience.

The dive supervisor may not always be the DCS-2A operator. The dive supervisor may want or need the freedom to direct the entire operation including the tenders and other personnel. As such, he is responsible for making decisions regarding diving conditions and safety. However, the DCS-2A operator must always be an experienced diver who understands the diver's needs and has the diver's best interests always in mind.

CAUTION: The DCS-2A operator must not leave the dive control system unattended while the diver is in the water. The DCS-2A operator is directly responsible for the diver's safety and well being.

The diver must follow the DCS-2A operator's directions in regards to depth and time. The diver can NOT run the dive from the bottom. Thus, when the dive supervisor himself is required to dive he should relinquish control to the next most senior diver remaining top side.

2.8 DESCENT

Upon entering the water, the diver should immediately recheck communications with top side and ensure that his mask or helmet is working correctly. When he/she is ready to descend he should notify the DCS-2A operator that he is, "Leaving the surface."

Both the diver and tender should communicate in a normal tone of voice. It should not be necessary for either person to shout to be heard. Although the quality of the communications will usually be excellent, not all divers speak clearly. The DCS-2A operator should listen carefully at all times to what the diver is saying.

Once the diver has entered the water, monitor his descent rate using the pneumo valve (D,O) and gauge (C,P). The diver's descent rate should not exceed 75 feet (23 meters) per minute.

As the diver descends, the DCS-2A operator should adjust the regulator (H) on the DCS-2A to provide 150 psi (10.3 bars) over the pressure at the diver's depth at all times. This provides the best breathing performance from the diver's demand regulator.



Fig. 10 DCS-2A operator taking a reading with the pneumo knob. The knob should be turned very slowly.

It is essential that the DCS-2A operator keep pace with the diver's descent and not lag behind in his depth monitoring. If this occurs, it is possible for the diver to exceed his maximum planned depth without the DCS-2A operator being aware this has occurred.

To operate the pneumo, turn the knob for the appropriate diver, counter clockwise, until the indicator needle on the depth gauge starts moving. When the depth gauge for the individual diver indicates a depth that is known to be deeper than the diver, the knob is turned clockwise until it is off. The indicator needle on the depth gauge will move shallower as the air bubbles leave the open end of the pneumo hose at the diver. When the needle stops, that is the diver's actual depth.

Most umbilicals are made up with the diver end of the pneumo hose having about two feet (.6 meters) of loose hose. The diver can use this hose as an air supply for inflating lift bags or for taking an exact

reading of the bottom depth. In an emergency, the pneumo air can be used as a breathing air supply for a diver. The diver tells the DCS-2A operator to "Turn on the pneumo-air...", then inserts the hose into the mask or helmet. When using the pneumo in this mode the air pressure should be regulated by the DCS-2A operator to be slightly greater than the diver's depth. For example, if the diver is at 100 feet (30 meters), the pneumo should be opened until the gauge reads a depth of 110 feet (33 meters), so that a positive pressure exists.

The diver should practice using the pneumo as an alternative air source under controlled conditions in shallow water. The pneumo hose should be bubbling when it is inserted in the diver's mask, otherwise the diver will receive a blast of water when the pneumo is first turned on.

2.9 DIVER AT DEPTH

Once the diver reaches the bottom, or his maximum planned depth, the diver should inform the DCS-2A operator that he is, "On the bottom." At this time, the DCS-2A operator should ensure that he gets an accurate depth reading. The DCS-2A operator should inform the diver that he is "Taking a pneumo...", when he opens the pneumo purge valve. The diver should observe the end of the pneumo hose and immediately inform top side that, "He has bubbles...". Once the diver has a flow of bubbles at the end of the hose, the pneumo valve (D,O) should be closed immediately.

Should the diver move deeper at any time during his dive he must inform the DCS-2A operator and another pneumo should be taken for a new maximum depth reading. If the DCS-2A operator knows that the diver is moving over an uneven bottom he should periodically take additional pneumo readings to ensure that the diver has not accidentally gone deeper and neglected to notify top side. Keep in mind, however, that every pneumo reading does use some air. If high pressure air is the air source and the dive is deep, or the diver is working hard, pneumo readings should be taken as sparingly as possible.

2.10 CHANGING OUT HIGH PRESSURE CYLINDERS

The DCS-2A operator should continuously monitor the diver's air supply at the two high pressure gauges (L,M) when diving with high pressure air as the primary supply. When the initial supply source pressure drops to between 300 and 500 psi (20.7 and 34.5 bars), depending upon depth, the diver should be switched over to the second air source using the selector valve handle (I). While the diver is breathing off the secondary source a fresh cylinder should be put on line immediately.

To change out high pressure cylinders, first close the cylinder valve on the tank which is low. Once the valve is closed, open the bleeder valve on the yoke (S) and allow the pressure to bleed from the line. The high pressure whips are color coded to help the DCS-2A operator to ensure he is selecting the correct one. Always observe the umbilical pressure gauge (B) carefully during this procedure. If the DCS-2A operator is not careful he may accidentally turn off the high pressure cylinder supplying the diver's breathing air. If the umbilical pressure gauge (B) needle starts to "fall", turn the cylinder back on immediately and double check to ensure the correct cylinder is being changed.

When the high pressure whip is empty, unscrew the knurled knob on the yoke (S) and attach the yoke to a fresh cylinder. Tighten the yoke knob finger tight, close the bleeder valve, and slowly open the cylinder tank valve. Read the new pressure on the appropriate gauge (L,M).

2.11 PROCEDURES DURING THE DIVER'S ASCENT

At the end of the dive, the diver should prepare to leave bottom upon orders from the DCS-2A operator. The DCS-2A operator must carefully note the diver's depth and time on the dive log. The DCS-2A operator is responsible for monitoring the diver's ascent rate which should not exceed 60 feet (18 meters) per minute, or slower if a dive computer is being used to monitor decompression/no decompression status. The diver should not leave the bottom until he is instructed to do so by the DCS-2A operator. At the start of the diver's ascent he should inform top side that he is, "Leaving the bottom."

The DCS-2A operator should carefully note the time in the dive log. The DCS-2A operator must monitor the diver's rate of ascent carefully, observing his watch and the pneumo gauge (C,P) . There is no need to pneumo the diver as he ascends because the air in the pneumo hose will automatically expand and vent the hose as the diver approaches the surface.

2.12 DECOMPRESSION

If the diver has decompression stop(s) required as a result of his dive, slow the diver's ascent as he approaches his first stop. Upon reaching his first stop, the diver should assume a relaxed and comfortable position in the water. A weighted line or some other apparatus should be provided to the diver to assist him in maintaining a proper depth. Decompression in mid-water, without a line or other method of fixing the diver's depth, is **NOT** acceptable as it is impossible to maintain an exact depth without something to hang onto.

An accurate pneumo should be taken at the diver's decompression stop. There should be no unnecessary slack in the diver's hose, i.e., no part of the umbilical should be lower than the diver, as this will give a false reading (deeper) of the diver's depth. Make sure the end of the pneumo hose is held at the diver's chest with the open end pointing down.



Fig. 11 All of the outlet fittings on the DCS-2A must be capped prior to storage.

2.13 COMPLETION OF DIVING OPERATIONS

Immediately following the completion of diving operations the dive station should be disassembled and the DCS-2A protected from the weather.

Both high pressure and low pressure air supplies should be turned off at their source. Bleed the air from the diver's umbilical(s) by opening the free flow valve(s) on the diver's mask/helmet(s). Disconnect the mask/helmet(s) from the umbilical and the umbilical from the DCS-2A. Unplug the communications connectors and turn off the communicator (R). Plug both ends of the hose and cap the outlet manifold (G) nipples on the DCS-2A to prevent foreign matter from entering either.

Open the bleed valves on the HP yokes (S) to allow any remaining air to vent and replace the yokes on their storage posts. Disconnect the low pressure air source if used and cap the low pressure inlet (N) to prevent foreign substances from entering the DCS-2A.

If the DCS-2A has been used on the ocean the panels should be wiped down with a clean rag dampened with fresh water. The O-ring seal (U) on the case may be periodically treated with Armor-All or other rubber protection.

Place the DCS-2A in a dry area and recharge the communications.

Refill any high pressure cylinders (scuba) used during diving operations and store them in a secure location.

Section 3.0

DCS-2A Maintenance

3.1 RECOMMENDED MAINTENANCE OF THE DCS-2A

The DCS-2A requires very little user maintenance. With proper care, the DCS-2A should last for years and give excellent service.

On a daily basis, the DCS-2A operator should inspect the high pressure whips attached to the yokes (S) for signs of wear.

After each use the case, interior panels and high pressure hoses should be wiped down with a rag which has a small amount of Armor-All. Never spray cleaners directly on the DCS-2A.



Fig 12 After each use the case, interior panels and high pressure hoses should be wiped down with a rag which has a small amount of Armor-All. Never spray cleaners directly on the DCS-2A.

Approximately every six months, the high pressure hoses should be treated with Armor-All or similar protection.

Once a year, the DCS-2A should be returned to your authorized dealer, or Diving Systems International, to service the regulator, selector valve, and calibrate the diver's depth gauges. This is especially important if the unit is used for deep, decompression, or repetitive dives.

3.2 REPLACING THE BATTERY

The battery used with the DCS-2A communicator is very reliable and will offer many years of service. However, storing the DCS-2A with the battery drained can cause the battery to fail. ***The battery should be completely charged before storage.*** Gel cell batteries have an excellent shelf life if properly charged prior to storage.

To replace the battery, remove the screws which hold the communicator panel (V) into the top of the DCS-2A box. Do not remove the screws which secure the communicator to the larger panel. Tilt the panel out but do not remove it from the lid. The battery is held in place by brackets and "Velcro" strips on the back of the large panel. Reach behind the panel and support the battery. Lift the panel and battery out as a unit.

Replace the old battery with a new unit. Position the new battery on the back of the large panel using the "Velcro" strips to hold it in place. Connect the leads back to the battery and push the communicator panel (V) back into its normal position. Install the screws which hold the large panel in place and tighten them in a staggered pattern.

Section 4.0

Trouble Shooting the DCS-2A System

4.1 GENERAL

The DCS-2A is an extremely simple system which should not malfunction if the instructions in this manual are followed. Most problems encountered in using the system can be easily remedied. The following information covers the common operating difficulties.

4.2 NO COMMUNICATIONS

Symptoms	Probable Cause(s)	Remedy
1) No sound at either DCS-2A or diver's mask.	a) Communication power not on.	Activate switch and adjust volume.
	b) Communications incorrectly hooked up.	Switch terminal wires.
	c) Communications not hooked up.	Plug into terminals.
2) Battery indicator does not respond.	Battery low or dead.	Charge or replace battery, or bypass battery with external power.
3) Communications weak or broken up.	Terminals covered with corrosion.	Clean Terminals with wire brush to bright shiny metal.
4) Communications will not work with headset but works otherwise.	Headset not working Short in internal wiring.	Replace headset. Return to factory for repair
5) Communications interrupted when umbilical is moved.	Break in diver's communication wire.	Splice wire if damage is minor. Replace wire if damage is major.
6) Communications interrupted when waterproof connector is moved.	Break in splice at waterproof connector or failure of connector. Test with VOM.	Replace splice or connector.
7) Satisfactory communications through one earphone or microphone only (4 wire mode).	a) One wire in cable is broken	Stack connectors in microphone terminals. Communications works in two wire mode.
	b) Microphone/earphones dead.	Replace microphone/earphones.
8) No sound at either DCS-2A or mask.	Communicator not functional.	Return to factory for repair after verifying no cure by following above procedures.

4.3 NO PNEUMO READING

Symptoms	Probable Cause	Remedy
1) No air to diver's end of pneumo	Pneumo hose not connected	Attach fittings to DCS-2A
2) Gauge reads sustained pressure at surface.	Pneumo crimped or plugged.	Check entire length of hose. Relieve any restrictions.
3) Hose will not hold pressure and gauge needle will not rise.	Pneumo fitting cracked or loose.	Check fittings at console with soap and water solution. If fittings bubble, either tighten or replace as necessary.
4) Needle will not respond properly to flow.	a) Hole in pneumo hose.	Check hose; replace or splice as necessary.
	b) Gauge mechanism damaged.	Replace or repair gauge. Return to factory.
5) Air can be heard escaping into console interior.	DCS-2A internal plumbing may be cracked or broken.	Return to factory for service.

4.4 NO AIR TO DIVER

Symptoms	Probable Cause	Remedy
1) No hose pressure in diver's umbilical	a) primary air source not connected.	Connect proper hose to console.
	b) Valve closed at low pressure source	Open valve at low pressure compressor.
	c) Selector valve in "H.P. OFF" zone.	Move selector valve handle in line with flow from either high pressure source.
2) No gauge reading on high pressure gauge.	Valve closed at high pressure source	Open valve at high pressure source.
3) Low hose pressure in diver's umbilical.	Regulator not properly loaded.	Rotate adjustment wheel in appropriate direction.
4) Air can be heard escaping from hose.	Fitting loose on diver's hose, or fittings damaged.	Tighten fittings until snug. Do not over tighten. Replace fittings if damaged.
5) Umbilical registers pressure at console gauge, but no flow at mask.	Mask improperly serviced.	Clean and adjust mask.

Symptoms	Probable Cause	Remedy
6) Air can be heard escaping into console interior.	Leakage in DCS plumbing.	Return DCS-2A to factory for service.
7) Umbilical hose pressure and supply pressure drops rapidly.	Diver's Umbilical cut or severed.	Replace diver's hose.
8) With high pressure air on and regulator loaded, no umbilical pressure.	Regulator malfunction.	Return DCS- 2A to factory for service

5.0 APPENDIX

5.1 EMERGENCY PROCEDURES

The following are general recommended emergency procedures. However, it is up to the individual diver and dive supervisor to make judgements under specific conditions on how to best cope with particular situations.

Problem	Action
1) Loss of communications	a) Abort dive if operations are not absolutely necessary. b) Use line pull signals as per this appendix section.
2) Loss of primary air supply.	Switch to emergency backup system and abort dive.
3) Diver's umbilical severed.	a) Diver switches to bailout bottle and aborts dive. b) Standby diver enters water and supplies first diver with air from pneumo.
4) Pneumo will not operate.	a) Dive hose should be marked with colored tape every 10 feet. Take depth readings from this. (will only be approximate) b) Diver's personal depth gauge can provide back up.

5.2 DIVER LINE PULL SIGNALS

# of Pulls	From Tender to Diver	From Diver to Tender
1	"Are you all right?" When diver is descending, one pull means "Stop!"	"I am all right", or ... "I am on the bottom"
2	"Going down" During ascent, this means, "You have come up too far, go back down until we stop you."	"Lower me down", or "Give me slack"

# of Pulls	From Tender to Diver	From Diver to Tender
3	"Stand by to come up"	"Take up my slack"
4	"Come up"	"Haul me up"

5.3 COMMUNICATIONS WIRING SCHEMATICS

If your DCS has communications, refer to the radio manual

5.4 EXPLODED VIEWS & PARTS LISTS

The following parts are not shown on the blow apart drawing and are listed reference only.

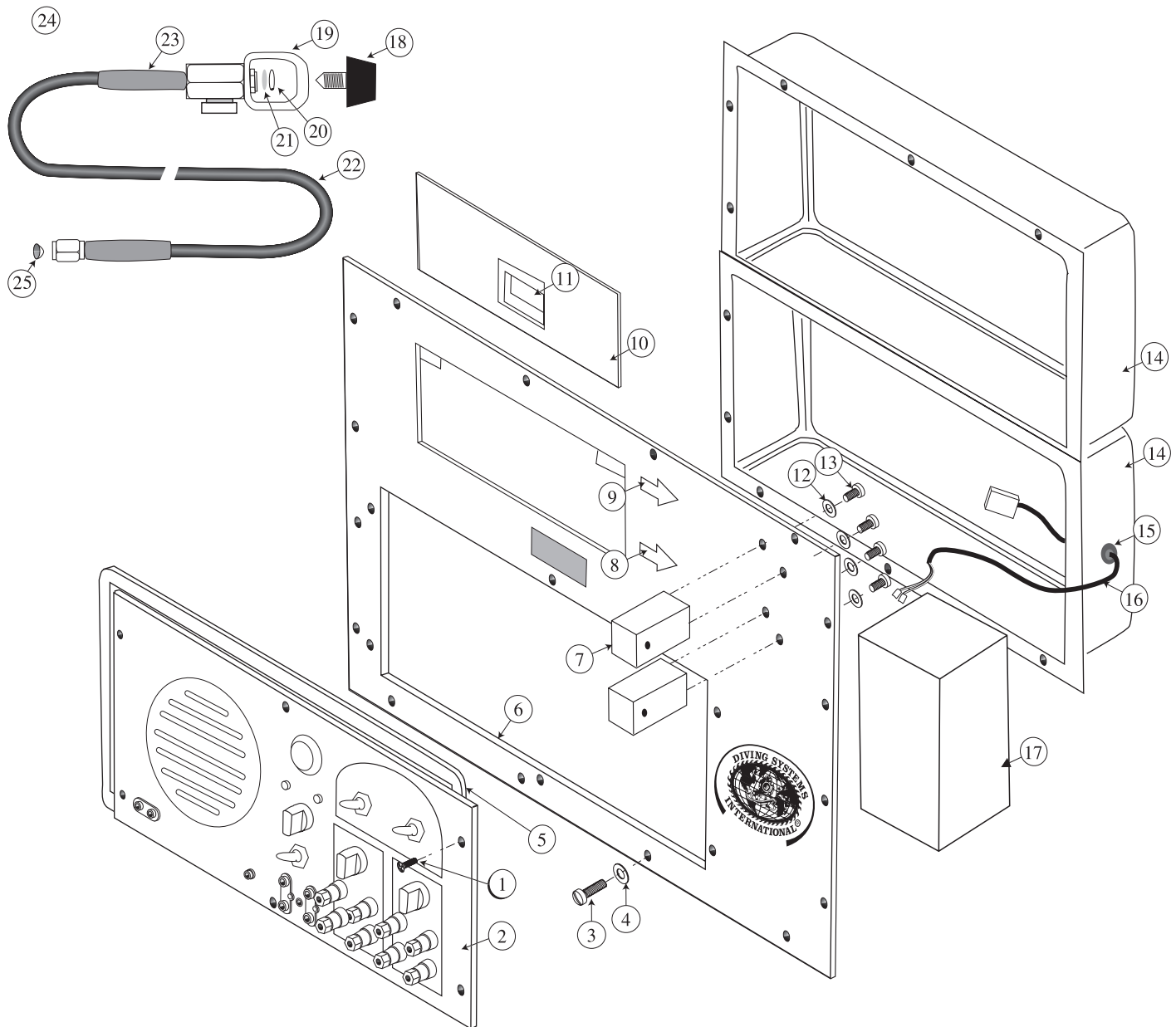
Location	Part #	Description	Qty
Not Shown	420-100	Case, Dive Control System-2A	1
Not Shown	405-039	Battery Charger Assembly	1

* The following parts in the interior plumbing require the use of Conical Seals, # 455-135.
the conical seals are provided with the items listed below.

Location	Part #	Description
29	405-105	Inlet Tube, H.P. (blue)
31	405-105	Inlet Tube, H.P. (orange)
40	405-106	S .S. Tube Assembly, H. P.

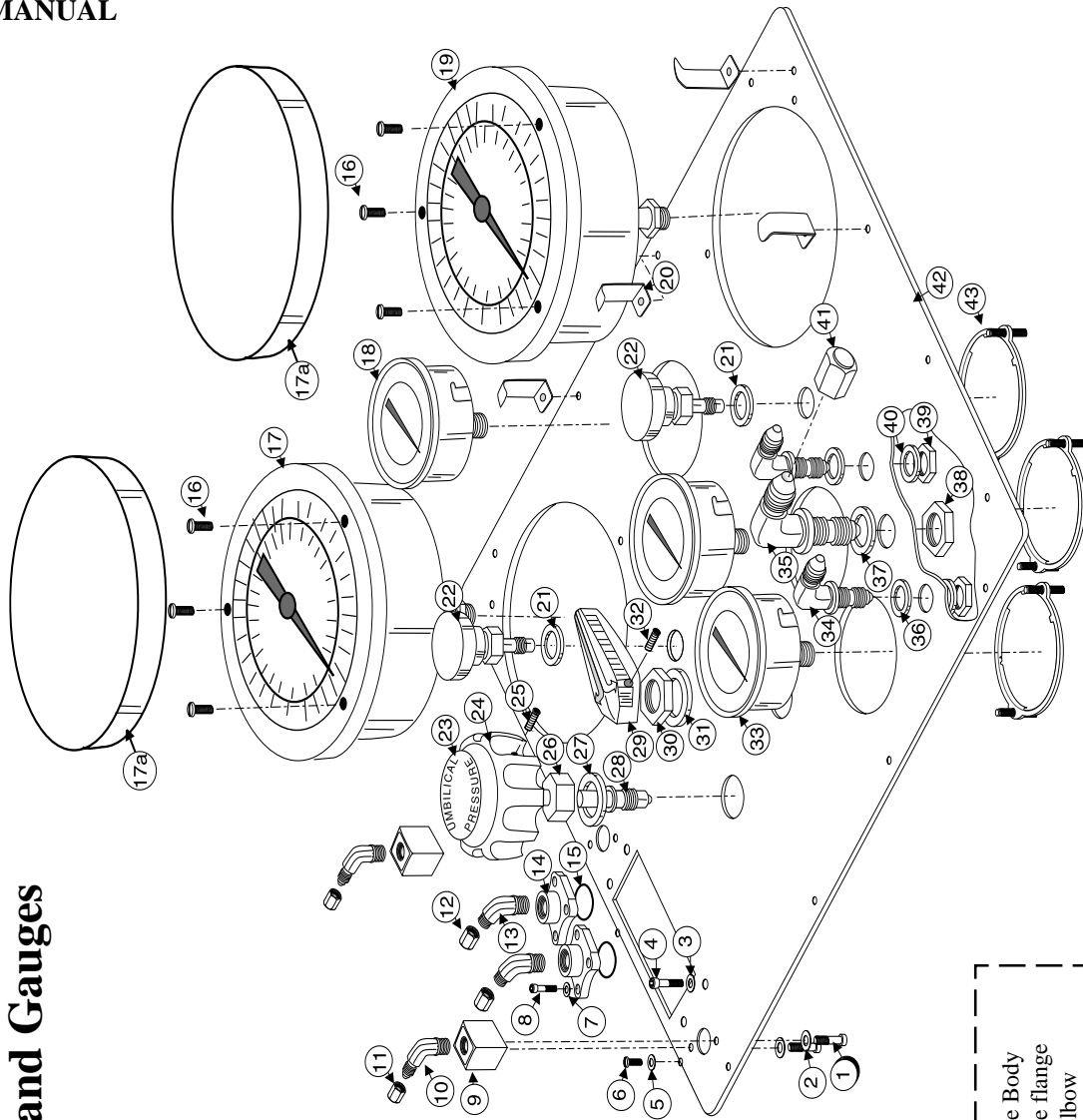
DCS-2A EXPLODED VIEWS & PARTS LISTS

Communications Panel

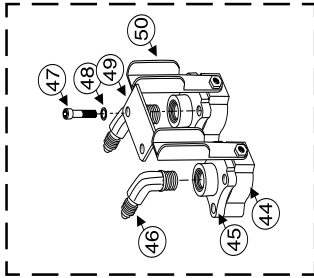


Key#	Part #	Description
1	530-017	Screw
2	415-104	Communicator
3	530-035	Screw
4	430-075	Washer
5	410-003	Gasket, Foam
6	445-105	Panel, Auxiliary
7	450-106	Yoke Retainer
8	420-125	Arrow, Orange
9	420-120	Arrow, Blue
10	445-115	Door, Storage Compartment
11	420-160	Slide Latch
12	330-405	Lock washer
13	530-070	Screw
14	420-105	Box, Plastic
15	410-145	Grommet
16	415-110	Cable, Battery
17	415-056	Battery, Gel Cell 12V
18	430-064	DSI Small Knob
19	455-050	Yoke & Bleeder Valve Assem.
20	430-060	Retainer Ring
21	455-065	Filter
22	455-054	Hose, H.P. Supply
23	410-006	Hose Protector, Orange
	410-007	Hose Protector, Blue
24	405-029	Hose, Yoke Assem., Blue
	405-030	Hose, Yoke Assem., Orange
25	455-135	Conical Seal

Panel Mounted Plumbing and Gauges



Optional Shut Off Valve

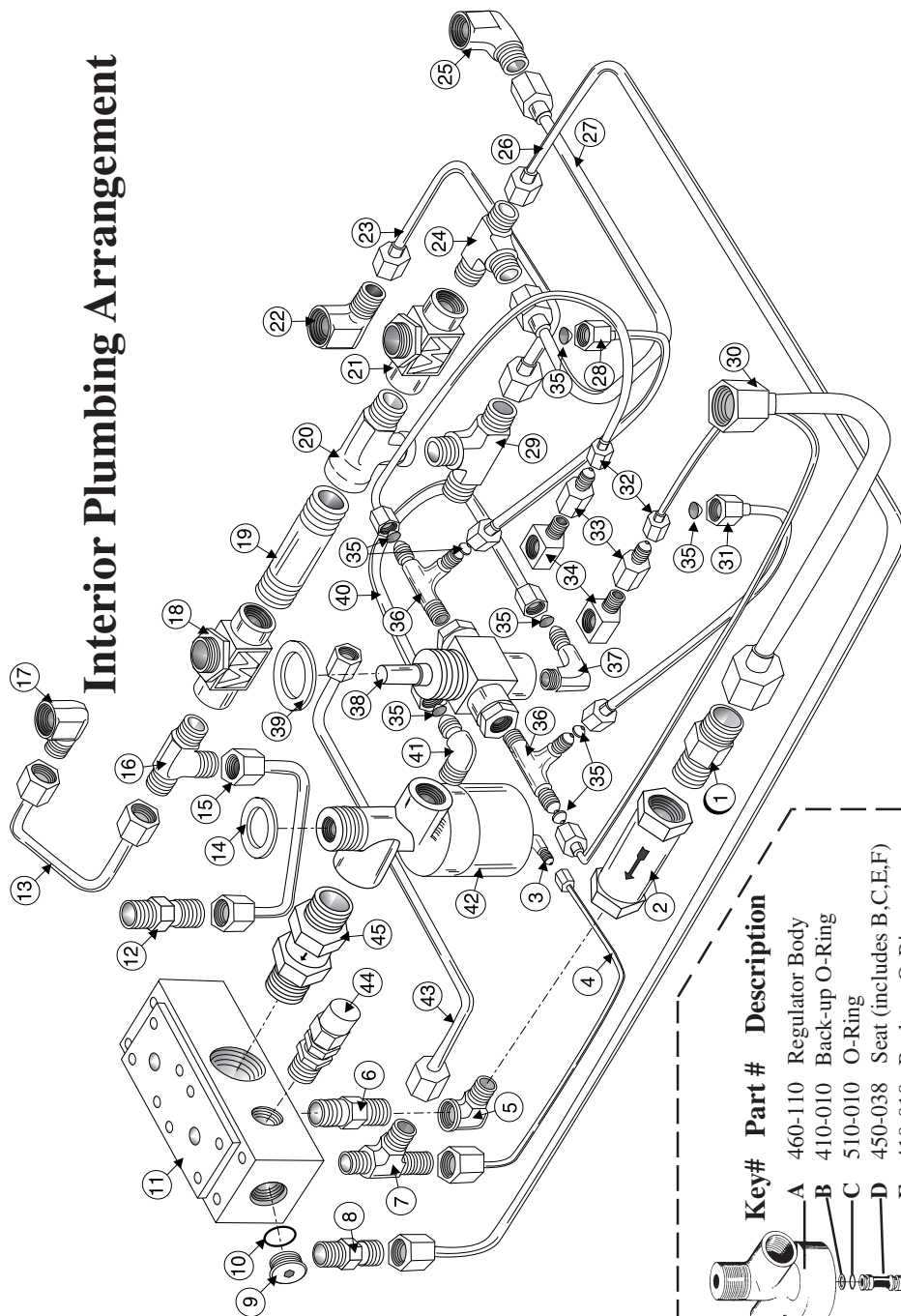


Optional Shut Off Valve

44	455-157	Valve Body
45	455-144	Valve flange
46	455-143	SS Elbow
47	430-141	Socket Head Screw
48	430-134	Washer
49	440-210	Handle Stop
50	440-212	Valve Handle

Key#	Part #	Description
1	430-111	Screw
2	430-134	Washer
3	430-134	Washer
4	430-111	Screw
5	430-075	Washer
6	530-035	Screw
7	430-134	Washer
8	430-145	Socket Head Screw
9	450-144	Pneumo Block
10	455-032	SS Elbow
11	455-007	Cap, Pneumo
12	455-006	Cap, Umbilical Outlet
13	455-177	45° Elbow
14	450-185	Flange
15	510-014	O-Ring
16	530-070	Screw
17	440-010	Pneumo Gauge, Red
18	440-130	Gauge, L.P.
19	440-011	Pneumo Gauge, White
20	440-115	Hose Holder
21	430-130	Washer
22	420-012	Knob, Pneumo
23	420-135	Decal
24	450-170	Knob, Regulator Adjustment
25	430-110	Set Screw
26	450-125	Mount Nut, Regulator
27	430-126	Washer, Regulator Mount
28	450-120	Stem, Regulator Adjustment
29	420-225	Selector Handle
30	430-240	Nut
31	430-205	Washer
32	430-140	Set Screw, Selector Handle
33	440-135	Gauge, H.P.
34	455-185	H.P. Inlet Elbow
35	455-111	L.P. Inlet Elbow
36	450-116	Washer
37	430-136	Washer
38	455-152	Nut
39	455-190	Nut, H.P. Inlet Mount
40	430-115	Washer
41	455-005	Cap, L.P. Inlet
42	445-100	Main Panel
43	445-020	Gauge Bracket

Interior Plumbing Arrangement



CAUTION - WARNING
 Use only Diving Systems International Kirby Morgan original replacement parts. The use of other manufacturer's parts will interfere with the performance characteristics of your life support equipment and may jeopardize your safety. Additionally, any substitutions will void any warranties offered by DSL. When ordering spares, always insist on Kirby Morgan Genuine Parts.

Key#	Part #	Description
A	460-110	Regulator Body
B	410-010	Back-up O-Ring
C	510-010	O-Ring
D	450-038	Seat (includes B,C,E,F)
E	410-010	Back-up O-Ring
F	510-010	O-Ring
G	450-037	Piston Stem
H	510-014	O-Ring
I	450-034	O-Ring Cap, Small
J	510-014	O-Ring
K	510-008	O-Ring
L	410-008	Back-up Ring, Large
M	450-033	O-Ring Cap, Large
N	435-006	Spring
O	450-032	Piston Head
P	410-119	O-Ring
Q	410-121	Thread Seal
R	430-022	Nylon Locknut
S	450-157	Regulator Cylinder
T	455-026	Regulator Sensor Elbow

Key#	Part #	Description
1	455-024	Connector, L.P.
2	455-049	Check Valve, L.P.
3	455-026	Male Elbow
4	405-155	Tube, Regulator Sensor
5	455-120	Elbow
6	455-122	3/8" NPT Nipple
7	455-180	Male Run Tee
8	455-149	Straight Tube Connector
9	350-062	L.P. Plug
10	510-013	O-Ring
11	450-142	Manifold Block
12	455-149	Straight Tube Connector
13	405-150	Tube, Red Pneumo Gauge
14	430-126	Washer, Regulator Mount
15	405-160	Outlet Tube, Red Pneumo
16	455-180	Male Run Tee
17	455-040	Female Elbow
18	455-051	Pneumo Valve
19	455-123	1/4" NPT Nipple
20	455-121	1/4" NPT Street Tee
21	455-051	Pneumo Valve
22	455-040	Female Elbow
23	405-107	Tube, Umbilical Gauge
24	455-180	Male Run Tee
25	455-040	Female Elbow
26	405-161	Outlet Tube, White Pneumo
27	405-102	Tube, White Pneumo Gauge
28	405-105	Inlet Tube, H.P. Blue
29	455-117	Male Branch Tee
30	405-110	Tube, L.P. Supply
31	405-105	Inlet Tube, H.P. Orange
32	405-104	Tube, H.P. Gauge
33	455-030	Connector H.P.
34	455-038	Street Elbow
35	455-135	Conical Seal
36	455-196	Male Run Tee, H.P.
37	455-032	Male Elbow
38	455-140	Selector Valve
39	430-120	Washer
40	405-106	SS Tube Assy., H.P.
41	455-105	Male Elbow
42	405-120	Regulator Assembly
43	405-145	Tube, Main Pneumo Supply
44	455-047	Relief Valve
45	455-130	1/2" Check Valve L.P.

DCS-2A DIVE LOG

Diver: _____ Date: _____

DCS-2A Operator: _____

Dive Location: _____

Weather Conditions: _____

Purpose of Dive: _____

Low Pressure Air Source Pressure: _____

High Pressure Air Source Pressure: _____

Cylinder #	Start	Finish
1	_____	_____
2	_____	_____
3	_____	_____
4	_____	_____
5	_____	_____
6	_____	_____

Dive Times:

Diver Left Surface: _____

Diver Reached Bottom: _____

Diver Left Bottom: _____ Maximum Depth: _____

Diver Reached Surface: _____ Total Bottom Time: _____

Repetitive Group: _____ Decompression Required?: Y N

Decompression Schedule: _____

Diver's Signature _____ DCS-2A Operator _____