InnerSpace Systems Corp

An ISO 9001:2000 registered company

Available July 2009!

The Manta Lung

The First Hybrid Counter Lung System in the Industry

Breathing loop not included in basic lung assembly

Feature List:

Modular breathing loop sub system that may be fitted to other CCR's with minor modifications
A revolutionary unique design that streamlines the diver and gives the diver a lower profile
Ambidextrous capable manual bypasses
Multiple attachment points for different harness systems
Instant feedback for negative lung loading
Over pressure gas expulsion valve for hands free operation during ascents
Significant reduction of hydrostatic head pressure for the diver when swimming into high flow conditions such as restriction in cave systems
1680 Ballistic nylon shell cover for superior inner bladder protection
3rd party tested for gas contaminates in the Meg breathing loop
3rd party tested for Hydrostatic lung loading and WOB showing superior performance
Modular design makes this breathing system superior for simple breakdown, cleaning and ease of travel
Breathing loop water trapping and water expulsion system
One manual oxygen bypass and one manual diluent bypass featuring outboard gas feed capability

Note: The superior performance and test results were achieved using The Megalodon CCR to test the Manta Lung. Test results may vary from one CCR to the next.

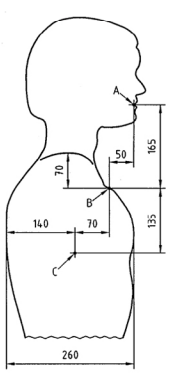
Also note that the Manta Lung does not have an Automatic Diluent Addition Valve (ADV) due to hydrostatic head pressure differences. ISC does not advocate the use of diaphragm based ADV systems on the Manta Lung due to the possibility of implosion of the primary diaphragm in the ADV.

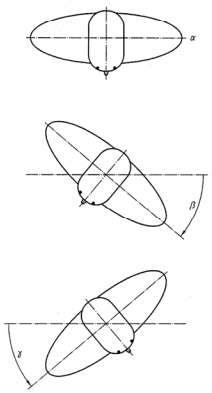
WWW.MEGCCR.COM *360-330-9018* *INFO@MEGCCR.COM*

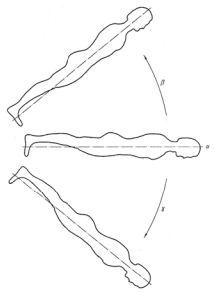
Manta Lung Work of Breathing

Equipment: Megalodon with Manta Lungs, BOV & 5 lb Radial Scrubber **Test Date:** 05/05/09

Conditions	
Room Temperature	20.0 C
Water Temperature	19.0 C
Exhale Temperature	18.1 C
Fast Response Temp Min	0.1 C
Fast Response Temp Max	0.0 Barg
HP Supply Pressure	0.0 Barg
Tidal Volume	2.5 L
Breath Rate	25.10 BPM
Ventilation Rate	62.8 LPM







Position	Start Inhale	I Ref Press	I Press	Start Exhale	Ex Ref	Ex Press	Peak	EXT WOB	Pos Ref	Neg Ref
Verticle Upright	-1.76 mbar	-14.71 mbar	12.95 mbar	-13.62 mbar	-1.08 mbar	12.54 mbar	13.63 mbar	1.11 J/L	0 J/L	.46 J/L
Verticle Plus 45	4.19 mbar	-12.68 mbar	16.87 mbar	-10.74 mbar	4.95 mbar	15.70 mbar	17.63 mbar	0.99 J/L	.01 J/L	.18 J/L
Prone	11.07 mbar	-13.13 mbar	24.19 mbar	-12.37 mbar	11.39 mbar	23.76 mbar	24.52 mbar	1.01 J/L	.09 J/L	.22 J/L
Verticle Minus 45 degrees	10.59 mbar	-15.75 mbar	26.34 mbar	-11.30 mbar	11.10 mbar	22.41 mbar	26.85 mbar	1.17 J/L	.09 J/L	.16 J/L
Verticle Minus 90 degrees	9.90 mbar	-15.53 mbar	25.44 mbar	-14.27 mbar	10.15 mbar	24.42 mbar	25.68 mbar	1.16 J/L	.06 J/L	.28 J/L
Roll Plus 45 degrees	13.71 mbar	-4.73 mbar	18.45 mbar	-4.22 mbar	14.82 mbar	19.04 mbar	19.56 mbar	1.28 J/L	.20 J/L	.01 J/L
Roll Plus 90 degrees	10.79 mbar	-12.65 mbar	23.43 mbar	-10.94 mbar	15.24 mbar	26.18 mbar	27.88 mbar	1.51 J/L	.11 J/L	.06 J/L
Roll Minus 45 Degrees	16.41 mbar	-9.72 mbar	26.13 mbar	-7.29 mbar	17.38 mbar	24.67 mbar	27.10 mbar	1.23 J/L	.16 J/L	.05 J/L
Roll Minus 90 Degrees	12.6 mbar	-12.39 mbar	25.00 mbar	-10.73 mbar	13.18 mbar	23.91 mbar	25.57 mbar	1.14 J/L	.13 J/L	.10 J/L
Roll Plus 180 Degrees	6.16 mbar	-11.24 mbar	17.40 mbar	-9.31 mbar	7.11 mbar	16.42 mbar	18.35 mbar	.91 J/L	.04 J/L	.13 J/L

Work of Breathing at 40 MSW

Conditions	
Room Temperature	20.0 C
Water Temperature	4.3 C
Exhale Temperature	12.2 C
Fast Response Temp Min	.1 C
Fast Response Temp Max	.1 C
HP Supply Pressure	4.1 barg
Tidal Volume	2.5 litre
Breath Rate	24.94 bpm
Ventilation Rate	62.3 lpm
Depth	40.7 msw

Results	
Start Inhale	4.97 mbar
Inhale Ref Pressure	-20.67 mbar
Inhale Pressure	25.64 mbar
Start Exhale	16.18 mbar
Exhale Ref Pressure	7.18 mbar
Exhale Pressure	23.36 mbar
Peak to Peak	27.85 mbar
EXT WOB	1.91 J/L
Pos Ref work	.01 J/L
Neg Ref Work	.19 J/L