

DEMAND REGULATOR PERFORMANCE

*DEMAND  
REG*

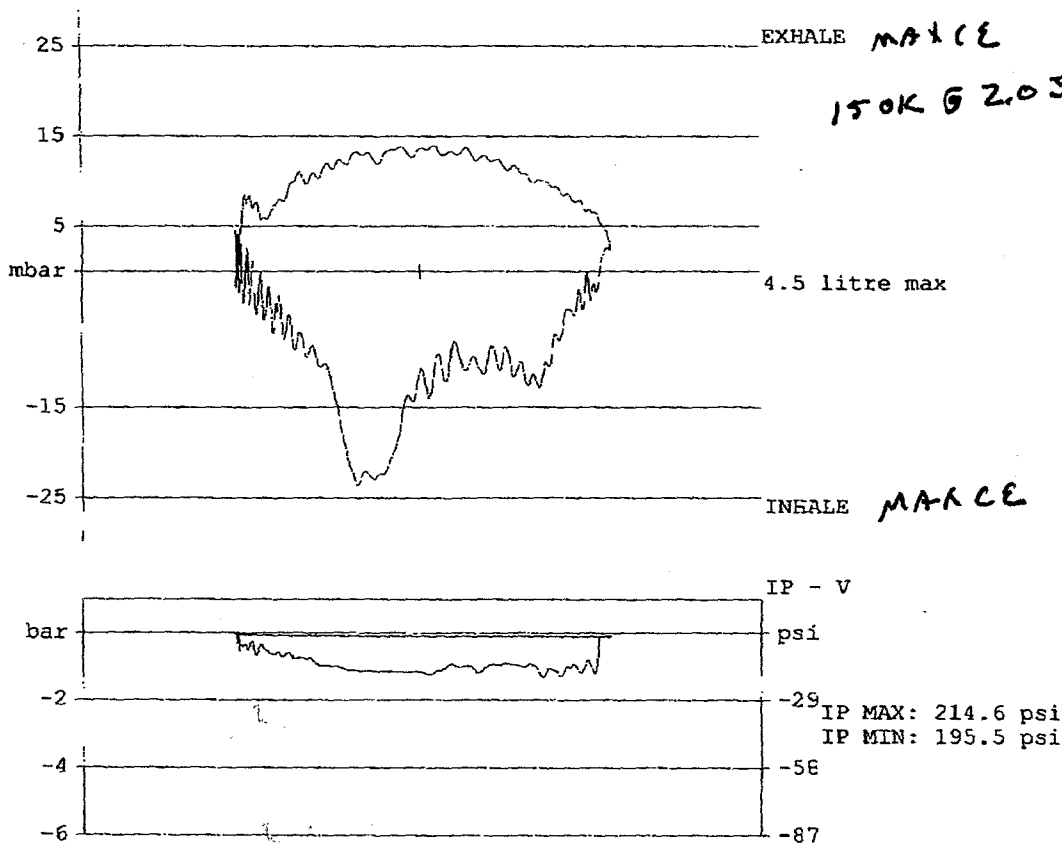
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 CERTIFICATE REFERENCE : LSTF-0615 315  
 DATE : 12/14/2007 TIME : 4:45:09 PM

**EQUIPMENT**  
 REGULATOR TYPE : GOLEM GEAR DSV WITH REGULATOR  
 SERIAL NUMBER : INNERSPACE SYSTEMS  
 INTERSTAGE PRESSURE : 0.0 psi

**CONDITIONS OF TEST**  
 ROOM TEMPERATURE : 70.0 F  
 WATER TEMPERATURE : 72.1 F  
 EXHALE TEMPERATURE : 76.0 F  
 HUMIDITY MIN : 76.6 %  
 HUMIDITY MAX : 77.3 %  
 HF SUPPLY PRESSURE : 532.0 psi  
 TIDAL VOLUME : 2.50 litre *2.5*  
 VENTILATION RATE : 49.5 lpm *62.5* BREATH RATE : 19.81 bpm *25*

**RESULTS**  
 INHALE PRESSURE = 23.62 mbar  
 INHALE POS PRESSURE = 4.51 mbar  
 EXHALE PRESSURE = 13.97 mbar  
 EXT WORK OF BREATHING = 2.07 J/l  
     INHALE WORK = 1.02 J/l  
 POS INHALE WORK = 0.01 J/l  
     EXHALE WORK = 1.06 J/l

PRESSURE - VOLUME DIAGRAM AT DEPTH OF : 50.8 msw (166.6 fsw) *50 M*



REMARKS : MAX RMV AT 165 FSW

LSTF-0615

**REBREATHER PERFORMANCE**

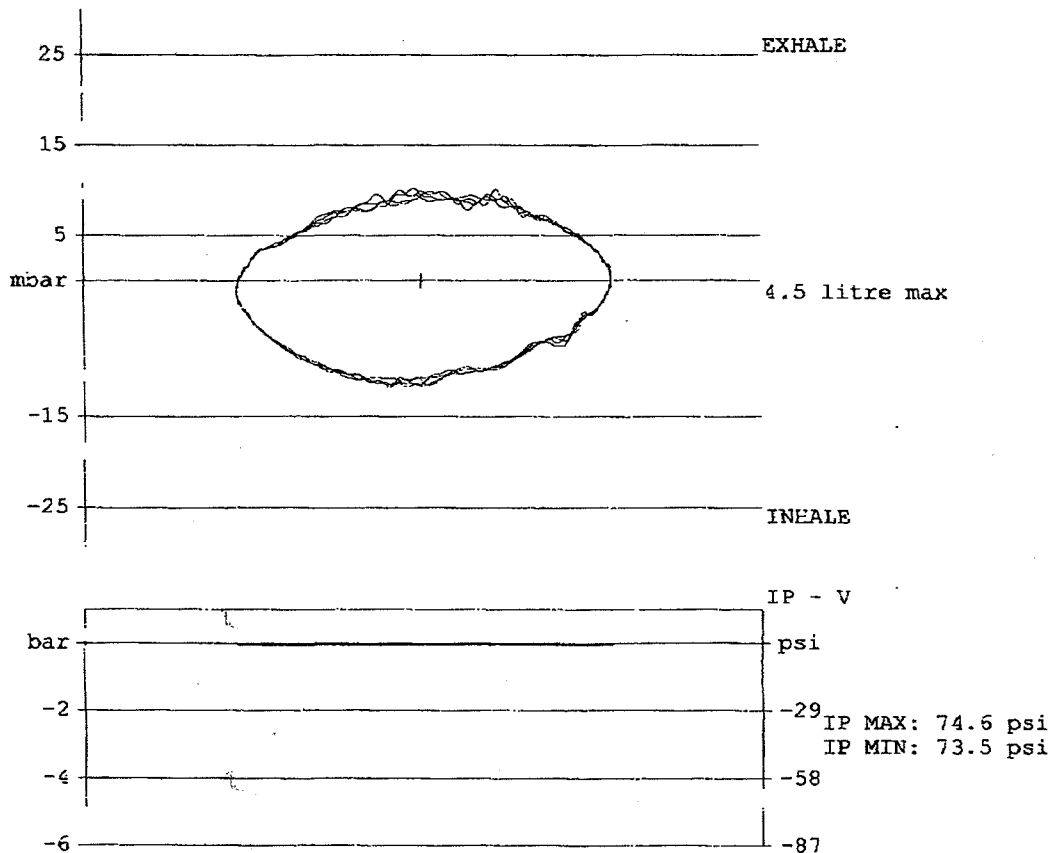
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 CERTIFICATE REFERENCE : LSTF-0615 319  
 DATE : 12/15/2007 TIME : 10:46:15 AM

**EQUIPMENT**  
 REBREATHER TYPE : GOLEM GEAR DSV WITH REGULATOR  
 SERIAL NUMBER : INNERSPACE SYSTEMS  
 GAS MIXTURE :

CONDITIONS OF TEST	MEAN	MIN	MAX
ROOM TEMPERATURE (F)	: 70.0		
WATER TEMPERATURE (F)	: 87.7	87.5	87.9
EXHALE TEMPERATURE (F)	: 78.9	78.7	79.0
HUMIDITY MIN (%)	: 85.7	85.7	85.8
HUMIDITY MAX (%)	: 86.0	85.9	86.1
HP SUPPLY PRESSURE (psi)	: 628.3	627.9	628.6
TIDAL VOLUME (litre)	: 2.50		
BREATH RATE (bpm)	: 25.02	24.97	25.07
VENTILATION RATE (lpm)	: 62.5	62.4	62.7

RESULTS (4 LOOPS)	MEAN	MIN	MAX
PRESSURE @ START INHALE (mbar)	= -0.12	-0.26	0.14
INHALE REF PRESSURE (mbar)	= -11.71	-11.81	-11.57
INHALE PRESSURE (mbar)	= 11.58	11.42	11.96
PRESSURE @ START EXHALE (mbar)	= -1.16	-1.54	-0.82
EXHALE REF PRESSURE (mbar)	= 10.06	9.84	10.24
EXHALE PRESSURE (mbar)	= 11.21	11.04	11.54
PEAK TO PEAK PRESSURE (mbar)	= 21.76	21.40	22.01
EXT WORK OF BREATHING (J/l)	= 1.50	1.50	1.51
POS REF WORK (J/l)	= 0.00	0.00	0.00
NEG REF WORK (J/l)	= 0.00	0.00	0.00

**PRESSURE - VOLUME DIAGRAMS AT DEPTH OF : 50.5 msw (165.7 fsw)**



REMARKS : dry

**DEMAND REGULATOR PERFORMANCE**

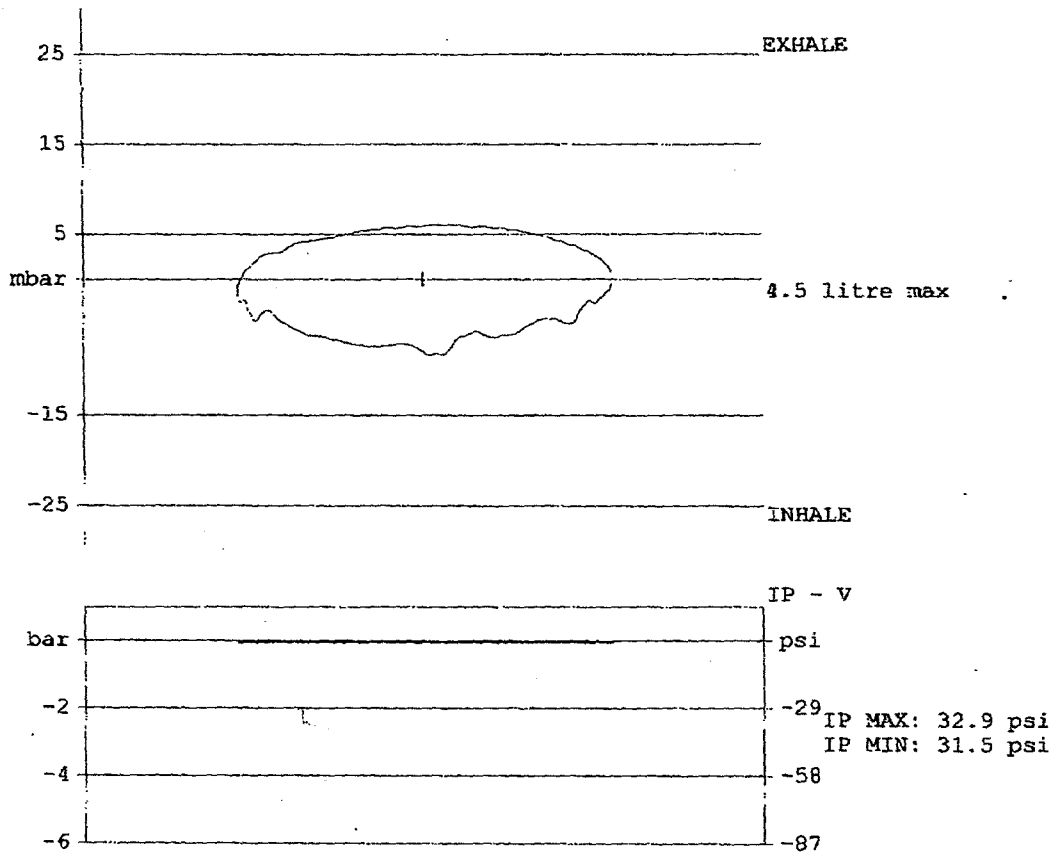
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 CERTIFICATE REFERENCE : LSTF-0615 318  
 DATE : 12/15/2007 TIME : 10:40:43 AM

**EQUIPMENT**  
 REGULATOR TYPE : GOLEM GEAR DSV WITH REGULATOR  
 SERIAL NUMBER : INNERSPACE SYSTEMS  
 INTERSTAGE PRESSURE : 0.0 psi

**CONDITIONS OF TEST**  
 ROOM TEMPERATURE : 70.0 F  
 WATER TEMPERATURE : 87.4 F  
 EXHALE TEMPERATURE : 78.9 F  
 HUMIDITY MIN : 84.1 %  
 HUMIDITY MAX : 84.5 %  
 HP SUPPLY PRESSURE : 624.5 psi  
 TIDAL VOLUME : 2.50 litre BREATH RATE : 25.09 bpm  
 VENTILATION RATE : 62.7 lpm

**RESULTS**  
 INHALE PRESSURE = 8.40 mbar  
 INHALE POS PRESSURE = 0.55 mbar  
 EXHALE PRESSURE = 6.05 mbar  
 EXT WORK OF BREATHING = 1.02 J/l  
     INHALE WORK = 0.57 J/l  
 POS INHALE WORK = 0.00 J/l  
     EXHALE WORK = 0.45 J/l

**PRESSURE - VOLUME DIAGRAM AT DEPTH OF : 21.9 msw (71.9 fsw)**



REMARKS : dry

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**DEMAND REGULATOR PERFORMANCE**

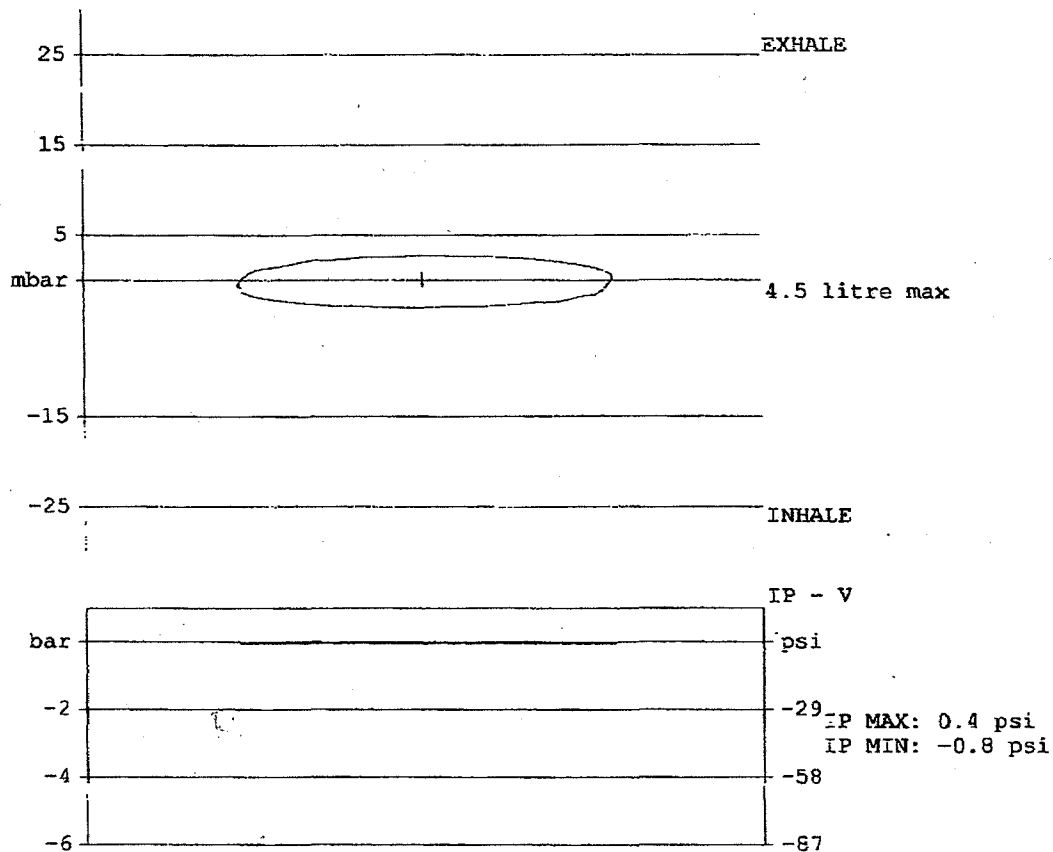
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 CERTIFICATE REFERENCE : LSTF-0615 317  
 DATE : 12/15/2007 TIME : 10:29:48 AM

**EQUIPMENT**  
 REGULATOR TYPE : GOLEM GEAR DSV WITH REGULATOR  
 SERIAL NUMBER : INNERSPACE SYSTEMS  
 INTERSTAGE PRESSURE : 0.0 psi

**CONDITIONS OF TEST**  
 ROOM TEMPERATURE : 70.0 F  
 WATER TEMPERATURE : 76.1 F  
 EXHALE TEMPERATURE : 76.4 F  
 HUMIDITY MIN : 83.6 %  
 HUMIDITY MAX : 83.9 %  
 HP SUPPLY PRESSURE : 305.7 psi  
 TIDAL VOLUME : 2.50 litre BREATH RATE : 19.43 bpm  
 VENTILATION RATE : 48.6 lpm

**RESULTS**  
 INHALE PRESSURE = 3.02 mbar  
 INHALE POS PRESSURE = 0.23 mbar  
 EXHALE PRESSURE = 2.71 mbar  
 EXT WORK OF BREATHING = 0.46 J/l  
     INHALE WORK = 0.25 J/l  
 POS INHALE WORK = 0.00 J/l  
     EXHALE WORK = 0.21 J/l

**PRESSURE - VOLUME DIAGRAM AT DEPTH OF : 0.0 msw (0.0 fsw)**



REMARKS : surface dry

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**DEMAND REGULATOR PERFORMANCE**

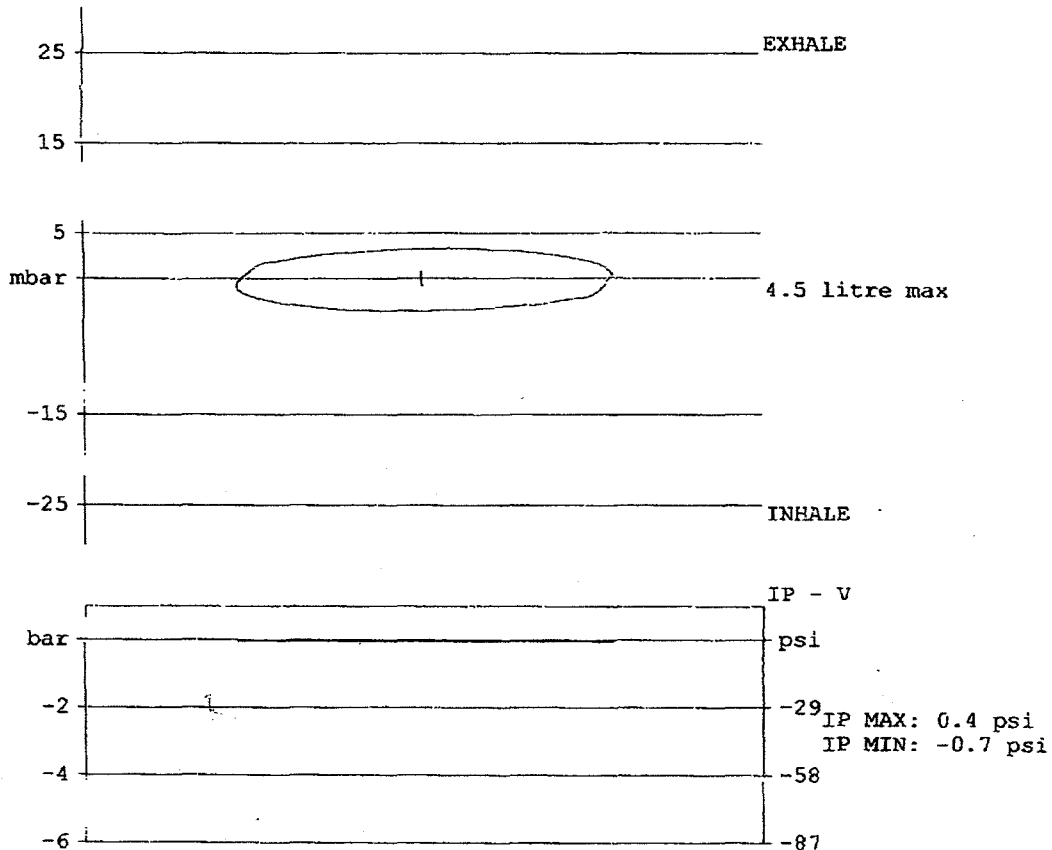
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 CERTIFICATE REFERENCE : LSTF-0615 316  
 DATE : 12/15/2007 TIME : 10:28:48 AM

**EQUIPMENT**  
 REGULATOR TYPE : GOLEM GEAR DSV WITH REGULATOR  
 SERIAL NUMBER : INNERSPACE SYSTEMS  
 INTERSTAGE PRESSURE : 0.0 psi

**CONDITIONS OF TEST**  
 ROOM TEMPERATURE : 70.0 F  
 WATER TEMPERATURE : 76.0 F  
 EXHALE TEMPERATURE : 76.2 F  
 HUMIDITY MIN : 84.7 %  
 HUMIDITY MAX : 85.0 %  
 HP SUPPLY PRESSURE : 305.7 psi  
 TIDAL VOLUME : 2.50 litre BREATH RATE : 24.97 bpm  
 VENTILATION RATE : 62.4 lpm

**RESULTS**  
 INHALE PRESSURE = 3.63 mbar  
 INHALE POS PRESSURE = 0.46 mbar  
 EXHALE PRESSURE = 3.32 mbar  
 EXT WORK OF BREATHING = 0.55 J/l  
     INHALE WORK = 0.29 J/l  
 POS INHALE WORK = 0.00 J/l  
     EXHALE WORK = 0.26 J/l

**PRESSURE - VOLUME DIAGRAM AT DEPTH OF : 0.0 msw (0.0 fsw)**



REMARKS : surface dry

LSTF-0615