



VEHICLE SYSTEM RECORDS

For Seaeye ROV System

TYPE: Tiger

SERIAL No. 880

Specially Prepared For:

ALLIANCE SEAWORKS SDN BHD

B-3-9 3RD Floor
Block B, Megan Avenue II
12, Jalan Yap Kwan Seng
50450 Kuala Lumpur
Malaysia

MAY 2010

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TIGER ROV VEHICLE SYSTEM NUMBER 880

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SAAB

VEHICLE RECORDS

Vehicle Serial Number:	Tiger 880		
T.M.S. Serial Number:	####		
System Customer:	Alliance Seaworks SDN BHD via Oceanvision		
Date Despatched:	2nd June 2010		
UNIT DESCRIPTION	STOCK CODE	SERIAL No.	REMARKS
VEHICLE			
Vehicle Chassis	8CH-1000	880	
Bouyancy foam	P00826	080	
Compensated Tilt Feedback Unit	CB181	341	
Tilt Motor Comp Assembly	P00625	493	
Shackle 1 Tonne	PHT1A	A9223	
Depth Sensor (Potted)	10DP/2	355	
Tiger 8EPM Compass Pod 1000m	10CP-6	002	
LED LAMP 250V PWM 3000m	LED-LAMP02	094 + 095	Tilt Platform
Thruster c/w Metal Shell Whip			
Port Aft	SM4M	2448	
Vertical	SM4M	2444	
Starboard Aft	SM4M	2425	
Port Forward	SM4M	2445	
Starboard Forward	SM4M	2446	

8EPM-3D TIGER ELECTRONICS POD	8EPM-3D	003	
PCB Thruster Control 4 Channel	6034P	2140	
PCB Thruster Control 4 Channel	6034P	2176	
PCB 5 Slot Back Plane	6036/6043P	190480024	
PCB Central Processing Unit (CPU)	6047P	2183	
PCB Light Fet Suppressor	6050P	M00457	
PCB Power Supply Unit/Stabiliser	6051AP	XA0715	
PCB 4 Axis Manip Control	6055P	0354	
PCB 5 Thruster Fuse & Filter	6056P	0785	
PCB Tilt/Pan Integrator	6058P	AF1513	
PCB Multifunction C/W Soft Tilt	6059P	2068	
PCB Leak Detection (Stand Alone)	6068P	AN0205	
PCB CP Relay 5V	6082P	AS0251	
PCB Zoom Focus Adaptor 24V	6194P-24	052	
PCB Balanced Line Video Driver TX	LINE VIDEO (1)	1197	
PCB Balanced Line Video Driver TX	LINE VIDEO (2)	1193	
Compass Serial Solid State	COMPASS4	131	
Control Software Bottom	CTRLSWB	800B007A	

TETHER/CABLES			
TMS2A-2 MAINFRAME & LIFTING ASSY	TMS2A-2	DKE106/02/10	
1 x ROV Tether Termination	5601/29FI	Batch 36130	
TMS ELECTRONICS POD	TMSEPM-2B	012	
PCB Thruster Control 4 Channel	6034P	2164	
PCB Central Processing Unit (CPU)	6047P	2176	
PCB 5 Thruster Fuse & Filter	6056P	FT0787	
PCB Dual Light FET Suppressor	6062P	0390	
PCB Single Video Line Driver	6071ASP	0189	
PCB Leak Detection (Stand Alone)	6068P	AN0213	
PCB Video Back Plane	VBBP	308	
TMS Software	TMSSW	V8R2	
Traco	124-2592	0834169951	
Thruster c/w Metal Shell Whip	SM4M	2447	

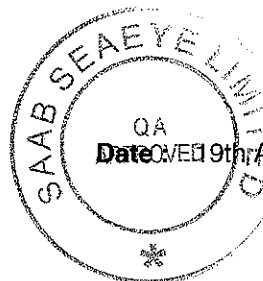
**SAAB****VEHICLE RECORDS**

Vehicle Serial Number:	Tiger 880		
T.M.S. Serial Number:	####		
System Customer:	Alliance Seaworks SDN BHD via Oceanvision		
Date Despatched:	2nd June 2010		
UNIT DESCRIPTION	STOCK CODE	SERIAL No.	REMARKS
Single Fused Lamp Assembly	P00357-M	1084	

POWER DISTRIBUTION UNIT	10DPU-1	126	
Expansion I/O Card	6046P	2052	
PCB Control Processing Unit	6047P	2233	
PCB Control Processing Unit	6047P	1742	
PCB Analogue I/O 8 Bit	6040P	541	
PCB Digital I/O	6041P	554	
PCB TMS Switch Adaptor	6052AP	Y00375	
PCB Analogue 8CH	6081P	585	
PCB IBM-AT Keyboard Adaptor	6099P	224	
PCB Video Overlay - PAL	VIDOL	2032	
PCB Video Overlay CPU	SBC68	2056	
Transformer Modified Video Isolating	MVT75-75	650	
Transformer Modified Video Isolating	MVT75-75	651	
Control Software Top	CTRLSWT	800T007A	
TMS Software Top	TMSSWT	V8R2	
Video Overlay Software	VOLAYSW	CIV62PT	
PCB Video Back Plane	VBBP	312	
Dual Twisted Pair Receiver Module	P00667	094	
Telemetry Monitor 1U	SML232/C	129	
Dual Twisted Pair Receiver Module	P01061	115	
TMS Dual Footswitch Assembly	P02127	880	
Dual Twisted Pair Receiver Module	P00667	94	
Cabin Control Box	P01016-ADU5	880	
900 Series Carrera Power Supply	9PSU-2	149	
Hand Controller	HC(D)/5	278	
Keyboard Cherry 1U 19" Black	RKD-120	N/A	
Dual Monitor 15"	MON-15-DUAL	15294185	

Document checked for release:

Signed: 
John Doherty
Quality Assurance Manager



**SAAB**

CERTIFICATE OF CONFORMITY

CERTIFICATE NUMBER: 11347

Customer:	Alliance Seaworks SDN BHD	Date:	19-Apr-10
Address:	B-3-9, 3rd Floor, Block B, Megan Avenue II, 12, Jalan Yap Kwan Seng 50450. Kuala Lumpur, Malaysia		
SALES ORDER / REF	WORK ORDER	PURCHASE ORDER	
22507	27978	PO-2793/09	

STOCK CODE / REF	DESCRIPTION	QTY
CB101	COMP TOP UP KIT	1

REMARKS

Serial Number (If Applicable) **341**

Tested to Type (2000metres)

CERTIFICATION

IT IS CERTIFIED THAT THE GOODS LISTED HEREON HAVE BEEN INSPECTED AND TESTED. ALL GOODS LISTED UNLESS OTHERWISE STATED, CONFORM TO SEAEYE'S SPECIFICATION(s) and/or THE FULL REQUIREMENTS OF THE PURCHASE ORDER.

Signed**John Doherty****For and on behalf of
SAAB SEAEYE LIMITED****Position****Quality Assurance Manager****Saab Seaeye Ltd**

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**SAAB**

CERTIFICATE OF CONFORMITY

CERTIFICATE NUMBER: 11348

Customer:	Alliance Seaworks SDN BHD	Date:	19-Apr-10
Address:	B-3-9, 3rd Floor, Block B, Megan Avenue II, 12, Jalan Yap Kwan Seng 50450. Kuala Lumpur, Malaysia		
SALES ORDER / REF	WORK ORDER	PURCHASE ORDER	
22507	27978	PO-2793/09	

STOCK CODE / REF	DESCRIPTION	QTY
P00625	Compensated Tilt Motor	1

REMARKS

Serial Number (If Applicable) **493**

TM-M35E # 495

Tested to Type (2000metres)

CERTIFICATION

IT IS CERTIFIED THAT THE GOODS LISTED HEREON HAVE BEEN INSPECTED AND TESTED. ALL GOODS LISTED UNLESS OTHERWISE STATED, CONFORM TO SEAEYE'S SPECIFICATION(s) and/or THE FULL REQUIREMENTS OF THE PURCHASE ORDER.

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SALES ORDER / REF	WORK ORDER	PURCHASE ORDER	
22507	27978	PO-2793/09	

STOCK CODE / REF	DESCRIPTION	QTY
10DP/2	DEPTH SENSOR ASSEMBLY	1

REMARKS

Serial Number (If Applicable) **355**

PPTR-3000 # 52338

Pressure tested for 2000 metres working depth

CERTIFICATION

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CERTIFICATE OF CONFORMITY

CERTIFICATE NUMBER: 11350

Customer:	Alliance Seaworks SDN BHD	Date:	19-Apr-10
Address:	B-3-9, 3rd Floor, Block B, Megan Avenue II, 12, Jalan Yap Kwan Seng 50450. Kuala Lumpur, Malaysia		
SALES ORDER / REF	WORK ORDER	PURCHASE ORDER	
22507	27978	PO-2793/09	

STOCK CODE / REF	DESCRIPTION	QTY
LED-LAMP-01-A	LED LAMP 250V PWM 3000M	1

REMARKS

Serial Number (If Applicable) **094**

6172P # 353

6171P-A # 125

SOFTWARE VERSION # 3.0.0

Pressure tested for 2000 metres working depth

Tilt Platform

CERTIFICATION

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CERTIFICATE OF CONFORMITY

CERTIFICATE NUMBER: 11351

Customer:	Alliance Seaworks SDN BHD	Date:	19-Apr-10
Address:	B-3-9, 3rd Floor, Block B, Megan Avenue II, 12, Jalan Yap Kwan Seng 50450. Kuala Lumpur, Malaysia		
SALES ORDER / REF	WORK ORDER	PURCHASE ORDER	
22507	27978	PO-2793/09	

STOCK CODE / REF	DESCRIPTION	QTY
LED-LAMP-01-A	LED LAMP 250V PWM 3000M	1

REMARKS

Serial Number (If Applicable) **095**

6172P # 356

6171P-A # 129

SOFTWARE VERSION # 3.0.0

Pressure tested for 2000 metres working depth

Tilt Platform

CERTIFICATION

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CERTIFICATE OF CONFORMITY

CERTIFICATE NUMBER: 11352

Customer:	Alliance Seaworks SDN BHD	Date:	19-Apr-10
Address:	B-3-9, 3rd Floor, Block B, Megan Avenue II, 12, Jalan Yap Kwan Seng 50450. Kuala Lumpur, Malaysia		
SALES ORDER / REF	WORK ORDER	PURCHASE ORDER	
22507	27978	PO-2793/09	

STOCK CODE / REF	DESCRIPTION	QTY
SM4M	THRUSTER C/W METAL SHELL WHIP	1

REMARKS

Serial Number (If Applicable) **2448**

END CAP DISPOSAL # C1871/M

FET # N03938

OPTO # P04185

LOGIC # P01310

WHIP # 32320

REED VALUE # 6.8

Pressure tested for 1500 metres working depth

Port Aft

CERTIFICATION

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CERTIFICATE OF CONFORMITY

CERTIFICATE NUMBER: 11353

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SALES ORDER / REF	WORK ORDER	PURCHASE ORDER	
22507	27978	PO-2793/09	

STOCK CODE / REF	DESCRIPTION	QTY
SM4M	THRUSTER C/W METAL SHELL WHIP	1

REMARKS

Serial Number (If Applicable) **2444**

END CAP DISPOSAL # C1867/M

FET # N03934

OPTO # P04181

LOGIC # P01306

WHIP # 32320

REED VALUE # 6.6

Pressure tested for 1500 metres working depth

Vertical

CERTIFICATION

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**SAAB**

CERTIFICATE OF CONFORMITY

CERTIFICATE NUMBER: 11354

Customer:	Alliance Seaworks SDN BHD	Date:	19-Apr-10
Address:	B-3-9, 3rd Floor, Block B, Megan Avenue II, 12, Jalan Yap Kwan Seng 50450. Kuala Lumpur, Malaysia		
SALES ORDER / REF	WORK ORDER	PURCHASE ORDER	
22507	27978	PO-2793/09	

STOCK CODE / REF	DESCRIPTION	QTY
SM4M	THRUSTER C/W METAL SHELL WHIP	1

REMARKS

Serial Number (If Applicable) **2425**

END CAP DISPOSAL # C1849/M

FET # N03909

OPTO # P04168

LOGIC # P01263

WHIP # 30609

REED VALUE # 6.7

Pressure tested for 1500 metres working depth

Starboard Aft

CERTIFICATION

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CERTIFICATE OF CONFORMITY

CERTIFICATE NUMBER: 11355

Customer:	Alliance Seaworks SDN BHD	Date:	19-Apr-10
Address:	B-3-9, 3rd Floor, Block B, Megan Avenue II, 12, Jalan Yap Kwan Seng 50450. Kuala Lumpur, Malaysia		
SALES ORDER / REF	WORK ORDER	PURCHASE ORDER	
22507	27978	PO-2793/09	

STOCK CODE / REF	DESCRIPTION	QTY
SM4M	THRUSTER C/W METAL SHELL WHIP	1

REMARKS

Serial Number (If Applicable) **2445**

END CAP DISPOSAL # C1869/M

FET # N03936

OPTO # P04183

LOGIC # P01308

WHIP # 32320

REED VALUE # 6.7

Pressure tested for 1500 metres working depth

Port Forward

CERTIFICATION

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**SAAB**

CERTIFICATE OF CONFORMITY

CERTIFICATE NUMBER: 11356

Customer:	Alliance Seaworks SDN BHD	Date:	19-Apr-10
Address:	B-3-9, 3rd Floor, Block B, Megan Avenue II, 12, Jalan Yap Kwan Seng 50450. Kuala Lumpur, Malaysia		
SALES ORDER / REF	WORK ORDER	PURCHASE ORDER	
22507	27978	PO-2793/09	

STOCK CODE / REF	DESCRIPTION	QTY
SM4M	THRUSTER C/W METAL SHELL WHIP	1

REMARKS

Serial Number (If Applicable) **2446**

END CAP DISPOSAL # C1868/M

FET # N03935

OPTO # P04182

LOGIC # P01307

WHIP # 32320

REED VALUE # 6.8

Pressure tested for 1500 metres working depth

Starboard Forward

CERTIFICATION

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**SAAB**

CERTIFICATE OF CONFORMITY

CERTIFICATE NUMBER: 11357

Customer:	Alliance Seaworks SDN BHD	Date:	19-Apr-10
Address:	B-3-9, 3rd Floor, Block B, Megan Avenue II, 12, Jalan Yap Kwan Seng 50450. Kuala Lumpur, Malaysia		
SALES ORDER / REF	WORK ORDER	PURCHASE ORDER	
22507	27978	PO-2793/09	

STOCK CODE / REF	DESCRIPTION	QTY
8EPM-3D	TIGER ELECTRONICS POD WITH Z/F CAM2	1

REMARKS

Serial Number (If Applicable) **003**

See Vehicle Record Sheet for Configuration Build

Pressure tested for 1000 metres working depth

CERTIFICATION

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**SAAB**

CERTIFICATE OF CONFORMITY

CERTIFICATE NUMBER: 11358

Customer:	Alliance Seaworks SDN BHD	Date:	19-Apr-10
Address:	B-3-9, 3rd Floor, Block B, Megan Avenue II, 12, Jalan Yap Kwan Seng 50450. Kuala Lumpur, Malaysia		
SALES ORDER / REF	WORK ORDER	PURCHASE ORDER	
22507	27978	PO-2793/09	

STOCK CODE / REF	DESCRIPTION	QTY
TMSEPM-2b	TIGER TMS EPOD WITH SPLIT DC	1

REMARKS

Serial Number (If Applicable) **012**

See Vehicle Record Sheet for Configuration Build

Pressure tested for 1000 metres working depth

CERTIFICATION

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CERTIFICATE OF CONFORMITY

CERTIFICATE NUMBER: 11359

Customer:	Alliance Seaworks SDN BHD	Date:	19-Apr-10
Address:	B-3-9, 3rd Floor, Block B, Megan Avenue II, 12, Jalan Yap Kwan Seng 50450. Kuala Lumpur, Malaysia		
SALES ORDER / REF	WORK ORDER	PURCHASE ORDER	
22507	27978	PO-2793/09	

STOCK CODE / REF	DESCRIPTION	QTY
SM4M	THRUSTER C/W METAL SHELL WHIP	1

REMARKS

Serial Number (If Applicable) **2447**

END CAP DISPOSAL # C1870/M

FET # N03937

OPTO # P04184

LOGIC # P01309

WHIP # 32320

REED VALUE # 6.8

Pressure tested for 1500 metres working depth

Fitted to TMS

CERTIFICATION

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CERTIFICATE OF CONFORMITY

CERTIFICATE NUMBER: 11360

Customer:	Alliance Seaworks SDN BHD	Date:	19-Apr-10
Address:	B-3-9, 3rd Floor, Block B, Megan Avenue II, 12, Jalan Yap Kwan Seng 50450. Kuala Lumpur, Malaysia		
SALES ORDER / REF	WORK ORDER	PURCHASE ORDER	
22507	27978	PO-2793/09	

STOCK CODE / REF	DESCRIPTION	QTY
P00357-M	SINGLE FUSED LAMP ASSEMBLY METAL SHELL	1

REMARKS

Serial Number (If Applicable) **1084**

Pressure tested for 2000 metres working depth

Fitted to TMS

CERTIFICATION

IT IS CERTIFIED THAT THE GOODS LISTED HEREON HAVE BEEN INSPECTED AND TESTED. ALL GOODS LISTED UNLESS OTHERWISE STATED, CONFORM TO SEAEYE'S SPECIFICATION(s) and/or THE FULL REQUIREMENTS OF THE PURCHASE ORDER.

Signed

John Doherty

**For and on behalf of
SAAB SEAEYE LIMITED****Position**

Quality Assurance Manager

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No 02022671

VAT No
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**SAAB**

CERTIFICATE OF CONFORMITY

CERTIFICATE NUMBER: 11361

Customer:	Alliance Seaworks SDN BHD	Date:	19-Apr-10
Address:	B-3-9, 3rd Floor, Block B, Megan Avenue II, 12, Jalan Yap Kwan Seng 50450. Kuala Lumpur, Malaysia		
SALES ORDER / REF	WORK ORDER	PURCHASE ORDER	
22507	27978	PO-2793/09	

STOCK CODE / REF	DESCRIPTION	QTY
10PDU-1	POWER DISTRIBUTION UNIT	1

REMARKS

Serial Number (If Applicable) **126**

See Vehicle Record Sheet for Configuration Build

CERTIFICATION

IT IS CERTIFIED THAT THE GOODS LISTED HEREON HAVE BEEN INSPECTED AND TESTED. ALL GOODS LISTED UNLESS OTHERWISE STATED, CONFORM TO SEAEYE'S SPECIFICATION(s) and/or THE FULL REQUIREMENTS OF THE PURCHASE ORDER.

Signed

John Doherty

For and on behalf of
SAAB SEAEYE LIMITED

Position

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**SAAB**

CERTIFICATE OF CONFORMITY

CERTIFICATE NUMBER: 11362

Customer:	Alliance Seaworks SDN BHD	Date:	19-Apr-10
Address:	B-3-9, 3rd Floor, Block B, Megan Avenue II, 12, Jalan Yap Kwan Seng 50450. Kuala Lumpur, Malaysia		
SALES ORDER / REF	WORK ORDER	PURCHASE ORDER	
22507	27978	PO-2793/09	

STOCK CODE / REF	DESCRIPTION	QTY
P00667	TWISTED PAIR REC'VER MODULE	1

REMARKS

Serial Number (If Applicable) **094**

VIDEOAMP/AGC #1 # 1008

VIDEOAMP/AGC #2 # 1009

CERTIFICATION

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**SAAB**

CERTIFICATE OF CONFORMITY

CERTIFICATE NUMBER: 11363

Customer:	Alliance Seaworks SDN BHD	Date:	19-Apr-10
Address:	B-3-9, 3rd Floor, Block B, Megan Avenue II, 12, Jalan Yap Kwan Seng 50450. Kuala Lumpur, Malaysia		
SALES ORDER / REF	WORK ORDER	PURCHASE ORDER	
22507	27978	PO-2793/09	

STOCK CODE / REF	DESCRIPTION	QTY
SML232/C	TELEMETRY MONITOR (IU)	1

REMARKS

Serial Number (If Applicable) **129**

6060P # AG0225

CERTIFICATION

IT IS CERTIFIED THAT THE GOODS LISTED HEREON HAVE BEEN INSPECTED AND TESTED. ALL GOODS LISTED UNLESS OTHERWISE STATED, CONFORM TO SEAEYE'S SPECIFICATION(s) and/or THE FULL REQUIREMENTS OF THE PURCHASE ORDER.

Signed

John Doherty

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**SAAB**

CERTIFICATE OF CONFORMITY

CERTIFICATE NUMBER: 11364

Customer:	Alliance Seaworks SDN BHD	Date:	19-Apr-10
Address:	B-3-9, 3rd Floor, Block B, Megan Avenue II, 12, Jalan Yap Kwan Seng 50450. Kuala Lumpur, Malaysia		
SALES ORDER / REF	WORK ORDER	PURCHASE ORDER	
22507	27978	PO-2793/09	

STOCK CODE / REF	DESCRIPTION	QTY
P01061	TWISTED PAIR RECEIVER MODULE	1

REMARKS

Serial Number (If Applicable) **115**

208-1203 # 0826127822

VIDEOAMP/AGC-2 # 1003

CERTIFICATION

IT IS CERTIFIED THAT THE GOODS LISTED HEREON HAVE BEEN INSPECTED AND TESTED. ALL GOODS LISTED UNLESS OTHERWISE STATED, CONFORM TO SEAEYE'S SPECIFICATION(s) and/or THE FULL REQUIREMENTS OF THE PURCHASE ORDER.

Signed

John Doherty

**For and on behalf of
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**SAAB**

CERTIFICATE OF CONFORMITY

CERTIFICATE NUMBER: 11365

Customer:	Alliance Seaworks SDN BHD	Date:	19-Apr-10
Address:	B-3-9, 3rd Floor, Block B, Megan Avenue II, 12, Jalan Yap Kwan Seng 50450. Kuala Lumpur, Malaysia		
SALES ORDER / REF	WORK ORDER	PURCHASE ORDER	
22507	27978	PO-2793/09	

STOCK CODE / REF	DESCRIPTION	QTY
P02127	TMS DUAL FOOTSWITCH ASSEMBLY	1

REMARKS

Serial Number (If Applicable) **880**

CERTIFICATION

IT IS CERTIFIED THAT THE GOODS LISTED HEREON HAVE BEEN INSPECTED AND TESTED. ALL GOODS LISTED UNLESS OTHERWISE STATED, CONFORM TO SEAEYE'S SPECIFICATION(s) and/or THE FULL REQUIREMENTS OF THE PURCHASE ORDER.

Signed

John Doherty

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**SAAB**

CERTIFICATE OF CONFORMITY

CERTIFICATE NUMBER: 11366

Customer:	Alliance Seaworks SDN BHD	Date:	19-Apr-10
Address:	B-3-9, 3rd Floor, Block B, Megan Avenue II, 12, Jalan Yap Kwan Seng 50450. Kuala Lumpur, Malaysia		
SALES ORDER / REF	WORK ORDER	PURCHASE ORDER	
22507	27978	PO-2793/09	

STOCK CODE / REF	DESCRIPTION	QTY
P01016-ADU5	CABIN CONTROL JUNCTION BOX - ADU5	1

REMARKS

Serial Number (If Applicable) **880**

CERTIFICATION

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Signed**John Doherty****For and on behalf of
SAAB SEAEYE LIMITED****Position****Quality Assurance Manager****Saab Seaeye Ltd**

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**SAAB**

CERTIFICATE OF CONFORMITY

CERTIFICATE NUMBER: 11367

Customer:	Alliance Seaworks SDN BHD	Date:	19-Apr-10
Address:	B-3-9, 3rd Floor, Block B, Megan Avenue II, 12, Jalan Yap Kwan Seng 50450. Kuala Lumpur, Malaysia		
SALES ORDER / REF	WORK ORDER	PURCHASE ORDER	
22507	27978	PO-2793/09	

STOCK CODE / REF	DESCRIPTION	QTY
9PSU-2	SEAEYE SURFACE POWER SUPPLY UNIT 250V	1

REMARKS

Serial Number (If Applicable) **149**

CONTROLLER # 091106/0803

THYRISTOR # 091105/6803

LIM(AC) # 0908607186

CABINET # N/A

3 PHASE TX # N/A

KVA TX # N/A

CERTIFICATION

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Signed**John Doherty****For and on behalf of
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**SAAB**

CERTIFICATE OF CONFORMITY

CERTIFICATE NUMBER: 11368

Customer:	Alliance Seaworks SDN BHD	Date:	19-Apr-10
Address:	B-3-9, 3rd Floor, Block B, Megan Avenue II, 12, Jalan Yap Kwan Seng 50450. Kuala Lumpur, Malaysia		
SALES ORDER / REF	WORK ORDER	PURCHASE ORDER	
22507	27978	PO-2793/09	

STOCK CODE / REF	DESCRIPTION	QTY
HC(D)/5	DIGITAL HAND CONTROLLER	1

REMARKS

Serial Number (If Applicable) **278**

JS4 # 508

CERTIFICATION

IT IS CERTIFIED THAT THE GOODS LISTED HEREON HAVE BEEN INSPECTED AND TESTED. ALL GOODS LISTED UNLESS OTHERWISE STATED, CONFORM TO SEAEYE'S SPECIFICATION(s) and/or THE FULL REQUIREMENTS OF THE PURCHASE ORDER.

Signed

John Doherty

For and on behalf of
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**SAAB**

CERTIFICATE OF CONFORMITY

CERTIFICATE NUMBER: 11521

Customer:	Alliance Seaworks SDN BHD	Date:	19-Apr-10
Address:	B-3-9, 3rd Floor, Block B, Megan Avenue II, 12, Jalan Yap Kwan Seng 50450. Kuala Lumpur, Malaysia		
SALES ORDER / REF	WORK ORDER	PURCHASE ORDER	
22507	27978	PO-2793/09	

STOCK CODE / REF	DESCRIPTION	QTY
10CP-6	TIGER COMPASS POD	1

REMARKS

Serial Number (If Applicable) **002**

6164P-A # 436

Pressure tested for 1000 metres working depth

CERTIFICATION

IT IS CERTIFIED THAT THE GOODS LISTED HEREON HAVE BEEN INSPECTED AND TESTED. ALL GOODS LISTED UNLESS OTHERWISE STATED, CONFORM TO SEAEYE'S SPECIFICATION(s) and/or THE FULL REQUIREMENTS OF THE PURCHASE ORDER.

Signed

John Doherty

**For and on behalf of
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**SAAB**

STOCK CODE	DESCRIPTION	SERIAL NO.
10DP/2	DEPTH SENSOR (POTTED)	355

PRESSURE TESTED FOR:**2000**

Metre(s)

Working Depth

*It is certified that the item listed above has been inspected & successfully pressure tested in accordance with
Seaeeye Work Instruction 011206/JR*

Bar	Working Depth
360	3000 msw
240	*2000 msw*
180	1500 msw
120	1000 msw
72	600 msw
36	300 msw

Certified By:**Print: C PYLE****Sign:****Date of Test:****8th MARCH 2010**

QAD017 issue 8

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**SAAB**

STOCK CODE	DESCRIPTION	SERIAL NO.
LED-LAMP- 01-A	LED -LAMP	094

PRESSURE TESTED FOR:**2000** Metre(s)

Working Depth

*It is certified that the item listed above has been inspected & successfully pressure tested in accordance with
Seaeye Work Instruction 011206/JR*

Bar	Working Depth
360	3000 msw
240	*2000 msw*
180	1500 msw
120	1000 msw
72	600 msw
36	300 msw

Certified By:**Print A JENKINSON****Sign:****Date of Test:****11th MARCH 2010**

QAD017 issue 8

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VAT No
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**SAAB**

STOCK CODE	DESCRIPTION	SERIAL NO.
LED-LAMP01-A	L E D LAMP	095

PRESSURE TESTED FOR:**2000** Metre(s)

Working Depth

*It is certified that the item listed above has been inspected & successfully pressure tested in accordance with
Seaeye Work Instruction 011206/JR*

Bar	Working Depth
360	3000 msw
240	*2000 msw*
180	1500 msw
120	1000 msw
72	600 msw
36	300 msw

Certified By:**Print C PYLE****Sign:****Date of Test:****25th MARCH 2010**

QAD017 issue 8

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**SAAB**

STOCK CODE	DESCRIPTION	SERIAL NO.
SM4M	SEA EYE THRUSTER	2448

PRESSURE TESTED FOR:**1500** Metre(s)

Working Depth

*It is certified that the item listed above has been inspected & successfully pressure tested in accordance with
Seaeeye Work Instruction 011206/JR*

Bar	Working Depth
360	3000 msw
240	2000 msw
180	*1500 msw*
120	1000 msw
72	600 msw
36	300 msw

Certified By:**Print D. BLAKLEY****Sign:** **Date of Test:****29th MARCH 2010**

QAD017 issue 8

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**SAAB**

STOCK CODE	DESCRIPTION	SERIAL NO.
SM4M	SEA EYE THRUSTER	2444

PRESSURE TESTED FOR:**1500** Metre(s)

Working Depth

*It is certified that the item listed above has been inspected & successfully pressure tested in accordance with
Seaeeye Work Instruction 011206/JR*

Bar	Working Depth
360	3000 msw
240	2000 msw
180	*1500 msw*
120	1000 msw
72	600 msw
36	300 msw

Certified By:**Print C PYLE****Sign:****Date of Test:****27th MARCH 2010**

QAD017 issue 8

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**SAAB**

STOCK CODE	DESCRIPTION	SERIAL NO.
SM4M	SEAEYE THRUSTER	2425

PRESSURE TESTED FOR:**1500** Metre(s)

Working Depth

*It is certified that the item listed above has been inspected & successfully pressure tested in accordance with
Seaeye Work Instruction 011206/JR*

Bar	Working Depth
360	3000 msw
240	2000 msw
180	*1500 msw*
120	1000 msw
72	600 msw
36	300 msw

Certified By:**Print: C PYLE****Sign:****Date of Test:****25th January 2010**

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**SAAB**

STOCK CODE	DESCRIPTION	SERIAL NO.
SM4M	SEAEYE THRUSTER	2445

PRESSURE TESTED FOR:**1500** Metre(s)

Working Depth

*It is certified that the item listed above has been inspected & successfully pressure tested in accordance with
Seaeeye Work Instruction 011206/JR*

Bar	Working Depth
360	3000 msw
240	2000 msw
180	*1500 msw*
120	1000 msw
72	600 msw
36	300 msw

Certified By:**Print D. BLAKLEY****Sign:** **Date of Test:****29th MARCH 2010**

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**SAAB**

STOCK CODE	DESCRIPTION	SERIAL NO.
SM4M	SEA EYE THRUSTER	2446

PRESSURE TESTED FOR:**1500** Metre(s)

Working Depth

*It is certified that the item listed above has been inspected & successfully pressure tested in accordance with
Seaeye Work Instruction 011206/JR*

Bar	Working Depth
360	3000 msw
240	2000 msw
180	*1500 msw*
120	1000 msw
72	600 msw
36	300 msw

Certified By:**Print D. BLAKLEY****Sign:** **Date of Test:****29th MARCH 2010**

QAD017 issue 8

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**National Oceanography
Centre, Southampton**

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National Oceanography Centre, Southampton

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Your Purchase Order; 100743

HYDROSTATIC TEST REPORT

Date; 08/02/10

Company Name; Saab Seaeye Ltd

**Address; 20 Brunel Way
Segensworth
Fareham
Hampshire
PO15 5SD**

**Equipment; 1 – Off 8EPM-5A Electronics pod TIGER
Serial No; 880**

**Test pressure; 0-50 bar Hold 5 mins, 50-120 bar Hold 20 mins,
2 Cycles as above**

Duration; As above

Comments; No visual signs of leaks or pressure loss

AR. Staszkievicz

**Andy Staszkievicz
023 80 596309**



University
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NATURAL
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**National Oceanography
Centre, Southampton**

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e arst@noc.soton.ac.uk www.noc.soton.ac.uk

switchboard +44 (0)23 8059 6666

Your Purchase Order; 101372

HYDROSTATIC TEST REPORT

Date; 09/03/10

Company Name; Saab Seacye Ltd

**Address; 20 Brunel Way
Segensworth
Fareham
Hampshire
PO15 5SD**

**Equipment; 1 – Off TMSEPM-2B Electronics pod TIGER
System No; 880**

**Test pressure; 0-50 bar Hold 5 mins, 50-120 bar Hold 20 mins,
2 Cycles as above**

Duration; As above

Comments; No visual signs of leaks or pressure loss.

AR. Staszkievicz
Andy Staszkievicz
023 80 596309



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NATURAL
ENVIRONMENT
RESEARCH COUNCIL

**SAAB**

STOCK CODE	DESCRIPTION	SERIAL NO.
SM4M	SEA EYE THRUSTER	2447

PRESSURE TESTED FOR:**1500** Metre(s)

Working Depth

*It is certified that the item listed above has been inspected & successfully pressure tested in accordance with
Seaeeye Work Instruction 011206/JR*

Bar	Working Depth
360	3000 msw
240	2000 msw
180	*1500 msw*
120	1000 msw
72	600 msw
36	300 msw

Certified By:**Print D. BLAKLEY****Sign:****Date of Test:****1ST APRIL 2010**

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**SAAB**

STOCK CODE	DESCRIPTION	SERIAL NO.
P00357-M	LAMP ASSY WITH METAL SHELL CONECTOR	1084

PRESSURE TESTED FOR:**2000** Metre(s)

Working Depth

It is certified that the item listed above has been inspected & successfully pressure tested in accordance with Seaeye Work Instruction 011206/JR

Bar	Working Depth
360	3000 msw
240	*2000 msw*
180	1500 msw
120	1000 msw
72	600 msw
36	300 msw

Certified By:**Print: C PYLE****Sign:****Date of Test:****21st December 2009**

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**SAAB**

STOCK CODE	DESCRIPTION	SERIAL NO.
10CP-6	SEAEYE COMPASS POD	002

PRESSURE TESTED FOR:**1000** Metre(s)

Working Depth

*It is certified that the item listed above has been inspected & successfully pressure tested in accordance with
Seaeye Work Instruction 011206/JR*

Bar	Working Depth
360	3000 msw
240	2000 msw
180	1500 msw
120	*1000 msw*
72	600 msw
36	300 msw

Certified By:**Print C PYLE****Sign:****Date of Test:****14th May 2010**

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+44 (0) 1489 898001

Internet Address
www.seaeeye.com
E-mail
rovs@seaeeye.com

Registered in
England & Wales
No 02022671

VAT No
566 6513 17

RPPT CALIBRATION TEST DATA

Manufacturer: Honeywell International

Date: 12-06-2009

S/N: 052338

Cal psi	DUT psi	Err psi	Err %fs	Cal volt	DUT volt	Err volt	Err %fs
Stimulus temperature: -36.4° C				Dut temperature: -36.7° C			
15.006	14.760	-.24620	-.00821	.02501	.02500	-.00001	-.00020
500.00	499.60	-.39899	-.01330	.83333	.83331	-.00003	-.00051
1000.0	999.50	-.49799	-.01660	1.6667	1.6656	-.00102	-.02047
1500.0	1499.5	-.48999	-.01633	2.5000	2.4997	-.00030	-.00607
2000.0	1999.5	-.50000	-.01667	3.3333	3.3328	-.00058	-.01167
2500.0	2499.5	-.51001	-.01700	4.1666	4.1652	-.00148	-.02960
3000.0	2999.6	-.44995	-.01500	5.0000	4.9999	-.00014	-.00280
Stimulus temperature: -16.7° C				Dut temperature: -16.7° C			
15.006	14.720	-.28600	-.00953	.02501	.02522	.00021	.00427
500.00	499.64	-.35797	-.01193	.83333	.83353	.00020	.00404
1000.0	999.60	-.39905	-.01330	1.6667	1.6659	-.00077	-.01530
1500.0	1499.6	-.35999	-.01200	2.5000	2.4988	-.00123	-.02460
2000.0	1999.6	-.42004	-.01400	3.3333	3.3330	-.00033	-.00667
2500.0	2499.6	-.43994	-.01466	4.1667	4.1655	-.00117	-.02333
3000.0	2999.4	-.59009	-.01967	5.0000	4.9990	-.00097	-.01940
Stimulus temperature: 22.9° C				Dut temperature: 23.0° C			
15.000	14.800	-.20000	-.00667	.02500	.02442	-.00058	-.01166
500.00	499.70	-.29898	-.00997	.83333	.83326	-.00007	-.00147
1000.0	999.70	-.29999	-.01000	1.6667	1.6662	-.00044	-.00873
1500.0	1499.7	-.29004	-.00967	2.5000	2.4995	-.00047	-.00947
2000.0	1999.6	-.38000	-.01267	3.3333	3.3331	-.00020	-.00407
2500.0	2499.6	-.38989	-.01300	4.1666	4.1662	-.00047	-.00940
3000.0	2999.5	-.48999	-.01633	5.0000	5.0002	.00024	.00480
Stimulus temperature: 74.3° C				Dut temperature: 74.2° C			
15.000	14.680	-.31960	-.01065	.02500	.02486	-.00014	-.00283
500.00	499.60	-.39899	-.01330	.83333	.83257	-.00076	-.01523
1000.0	999.60	-.39801	-.01327	1.6667	1.6657	-.00094	-.01887
1500.0	1499.7	-.27002	-.00900	2.5000	2.5003	.00034	.00673
2000.0	1999.6	-.40002	-.01333	3.3333	3.3328	-.00049	-.00987
2500.0	2499.7	-.30005	-.01000	4.1667	4.1662	-.00048	-.00953
3000.0	2999.7	-.29004	-.00967	5.0000	4.9990	-.00097	-.01940

Observed Maximum Digital error: -0.020 %fs

Observed Maximum Analog error: -0.030 %fs

Observed Maximum Sensor Temperature error: -0.3° C

CERTIFICATE OF CALIBRATION

Manufacturer: Honeywell International

Date: 12-06-2009

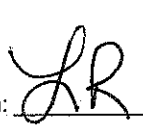
Part Description: Ruggedized Precision Pressure Transducer (RPPT)

Product Specification / Manual: ADS-14052

S/N: 052338

A Ruska Series 6000 or Series 7xxx pressure controller with traceability to the National Institute of Standards and Technology (NIST # E2828) was used to calibrate the above unit.

Honeywell has on file copies of the Ruska certification of calibration dated 07-10-2008 under Job No. 221836.

Technician: 

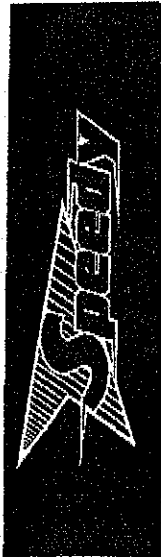
»»»»»»»»»»»»»»»» Statement of Accuracy Specification¹ ««««««««««««««««

Maximum Digital Pressure Error: ±0.20 %FS

¹ From -40°C to 85°C, including all error sources: sum of worst case linearity, repeatability, hysteresis, thermal effects and calibration errors.

880 (ROV Resources)

Part Number	Description	Serial Number	Weight KG
SURFACE EQUIPMENT			
10PDU-1	10PDU-1	126	20.10
AUXCON KIT	CONNECTOR AUXILIARY KIT FOR 10PDU		
HC(D)/5	DIGITAL HAND CONTROLLER (STANDARD)	278	2.72
SML232/C	TELEMETRY MONITOR 1U	129	1.71
P02127	TMS DUAL FOOTSWITCH ASSEMBLY	N/A	2.21
P01016-ADU5	CONTROL CABIN JUNCTION BOX	N/A	27.00
P00667	DUAL TWISTED PAIR RECEIVER MODULE	94	0.64
9PSU	POWER SUPPLY	151	230.00
ROV			
CB181	OIL COMPENSATED TILT BACK ASSEMBLY	341	0.74
P00625	TILT MOTOR COMP ASSY	493	1.42
10DP/2	DEPTH SENSOR ASSEMBLY	355	0.70
8CH-1000	CHASSIS	880	100.00
PH1TA	SHACKLE 1 TON SWL	8869	
8EPM-3D	TIGER EPOD	003	16.50
LED-LAMP-01-A	LIGHT	095 094	1.50
10CP-6	COMPASS POD	002	1.00
SM4M	THRUSTER C/W METAL SHELL WHIP	2425 2444 2445 2446 2447	2.77
ROV Ballast Weights			
880	ROV weight in air= (A)		122.00
	ballast for fresh water =(B)		20.00
	ROV + Ballast =(A+B)		142.00
	additional ballast for salt water(A+B)x0.025 =(C)		3.55
	payload= (B) + (C)		23.55
TMS 2			
880	TMS-2 + Tether (no ROV)		468.00
SM4M	THRUSTER C/W METAL SHELL WHIP	2447	2.77
P00357	LIGHT	1084	0.97
TMSEPM-2B	EPOD	012	16.20
MISC			



Report No: 0230-100452

Date the report was made: 12.10.09

Report of a Thorough Examination under LOLER

Issuing Depot Name & Address: Speedy Lifting 230 Unit 10 Central Trading Estate Melbourne Street SO14 5JP	Name and Address of owner of equipment: FABRICATION SITE SERVICES LTD 23 LIMBORLINE SPUR HILSEA PORTSMOUTH	Location of Equipment:
---	--	------------------------

Serial Number	Description of Equipment	SWL	Type Of Exam 6m or 12m	Details of any test carried out. If none state NONE	Is the equipment safe to operate: YES or NO	Details of any Defects Specifying any necessary repairs.	Date by which defects must be remedied
SL354791A	TIGER 1000 LIFTING FRAME	250kg	12m	Proof Load Tested to 730kg	Yes	None	N/A
SL354791B	TIGER 1000 LIFTING FRAME	250kg	12m	Proof Load Tested To 730kg	Yes	None	N/A
First Examination before Use - YES or NO:		Yes	First Examination after Installation - YES or NO:		No	After Exceptional Circumstances - YES or NO	
						No	

Date of Last Examination: New Item	Date of this Examination: 12.10.09
Latest Date for Next Examination: 12.10.10	

Authenticating signature of: 	Date: 12.10.09
Authenticators Name: Martin Sherred	Inspectors Name: M.S. Sherred Lifting Equipment Engineer for Speedy Lifting

This report shall not be reproduced without the approval of Speedy Lifting and the client for whom it was produced

the 1990s, the number of people in the world who are under 15 years of age has increased by 1.2 billion, from 1.1 billion in 1980 to 2.3 billion in 1999. The number of people aged 15 years and over has increased by 1.1 billion, from 2.9 billion in 1980 to 4.0 billion in 1999.

There is a significant increase in the number of people in the world who are aged 15 years and over, but the increase is not as large as the increase in the number of people who are under 15 years of age. This is because the number of people who are aged 15 years and over has increased by 1.1 billion, while the number of people who are under 15 years of age has increased by 1.2 billion.

The number of people in the world who are aged 15 years and over has increased by 1.1 billion, from 2.9 billion in 1980 to 4.0 billion in 1999. The number of people who are under 15 years of age has increased by 1.2 billion, from 1.1 billion in 1980 to 2.3 billion in 1999.

The number of people in the world who are aged 15 years and over has increased by 1.1 billion, from 2.9 billion in 1980 to 4.0 billion in 1999. The number of people who are under 15 years of age has increased by 1.2 billion, from 1.1 billion in 1980 to 2.3 billion in 1999.

The number of people in the world who are aged 15 years and over has increased by 1.1 billion, from 2.9 billion in 1980 to 4.0 billion in 1999. The number of people who are under 15 years of age has increased by 1.2 billion, from 1.1 billion in 1980 to 2.3 billion in 1999.

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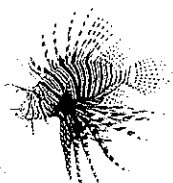
The number of people in the world who are aged 15 years and over has increased by 1.1 billion, from 2.9 billion in 1980 to 4.0 billion in 1999. The number of people who are under 15 years of age has increased by 1.2 billion, from 1.1 billion in 1980 to 2.3 billion in 1999.

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Scorpion Oceanics Limited

Unit 2, Park Farm
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Saffron Walden, Essex
CB10 1RN, UK



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Fax: +44 (0)1799 531634

e-mail: sales@scorpionoceanics.co.uk

Form No. : SF15
Form Issue No. : 02

Delivery Note & C of C

Deliver to :

Saab Seaeye Ltd
Goods In (Segensworth)
20 Brunel Way
Segensworth East
Fareham
Hampshire
PO15 5SD
UK

F.A.O.: Peter Vallender
Tel.: 01489 898000

Delivery Note & C of C No. : 011058

Page : 1 of 1

Date : 10/02/10

Customer Account No. : SEAE01

Customer Purchase Order No. : 100047

Scorpion Oceanics Ltd Job No. : 10772

Item	Product Code	Description	Quantity	Batch No.
01	SEAE-S02576-140m(5601/29)	ROV Tether Termination both ends 5601/29FI 140m cable (Whips supplied by Scorpion Oceanics, Cable grips supplied by Saab Seaeye) Dwg: S02576 Issue: 5 (28/08/07) Customer Ref: OCEANVISION/ TIGER 880/ SON tba This reference to appear on all documentation and packaging. Electrical Test Certificates required. Please ensure the subsea end is brought forward and over-wrapped on the drum. Issue 2 - Delivery date and Tiger no. amended. Ref delivery note #10965 Returned to SOL for rewind and visual inspection	1 Each	1 Each Batch 36130

CERTIFICATE OF CONFORMITY

Scorpion Oceanics Limited certify that the whole of the supplies detailed above have been inspected, tested, and unless otherwise stated, conform in all respects to the specifications, drawings and requirements of the purchase order.

Signed: _____

Director

Date: 10.02.10

For and on behalf of ScorpionOceanics Limited

Order Address :

Saab Seaeye Ltd
20, Brunel Way
Segensworth East
Fareham
Hampshire
PO15 5SD
UK

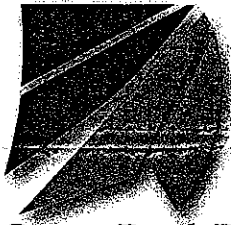
Packed by: IF/HB Date: 10/2/10

Dims (cm): 120 x 80 x 115

Weight: 140 kg Drum T/S:

Parcel type: Pellet

Carrier: TNT



PETERSEN

STAINLESS RIGGING LIMITED

Cowen Road, Blaydon-on-Tyne, Tyne & Wear, NE21 5TW, England

Tel: +44 (0)191 414 0156

Email: admin@petersen-stainless.co.uk

Fax: +44 (0)191 499 0041

Web: www.petersen-stainless.co.uk

Certificate of Test and Examination

EN10204 3.1b

Health and Safety Executive

Statutory Instruments 1998 No. 2307

The Lifting Operations and Lifting Equipment Regulations 1998

Certificate Number: 4956

Certificate Date: April 01, 2010

Identification Mark of Equipment:	A 9223
Date of Manufacture:	March 2010
Product Code of Item Tested & Examined:	PH1TA
Description of Item Tested & Examined:	PH1T SHACKLE TYPE A
Quantity Tested and Examined:	200
Date of Test and Examination:	12/03/2010
Proof Load Applied During Test:	2 TONNE
Working Load Limit Assessed:	1 TONNE
Product WIP Number:	178703A
Test Certificate WIP Number:	178709A
Notes on Test:	

Name of Person making the declaration
on behalf of the company:

Tony Stoker

Petersen Stainless Rigging Ltd
Cowen Road
Blaydon on Tyne
Tyne & Wear
NE21 5TW
England

Name and Address of Owner of
Equipment:

Saab Seaeye Limited
20 Brunel Way
Segensworth East
Fareham
PO15 5SD

Invoice Number : 22454

DECLARATION

I hereby declare that the item described on this record was tested and examined in accordance with the appropriate provisions and is found free from any defect likely to affect safety on the date detailed below and the above particulars are correct.

Signature.....

Date.....



Made in UK

Company Registration No. 1372922 England



British Marine
Federation

Membership Number 2555

Original Instructions for the safe use of Petersen Hi-MOD PH Dee and Bow Shackles Pin Type A, AL, B. Version 2010.2

In Accordance with the 2006/42/EC Machine Directive
& The Supply of Machinery (Safety) Regulations 2008 (SI 2008/1597)

The information in this leaflet should be passed to the user of the equipment

Introduction

All Petersen HI-MOD PH Shackles have been manufactured and tested in accordance with the instructions and guidance detailed within 2006/42/EC Machine Directive and The Supply of Machinery (Safety) Regulations 2008 (SI 2008/1597).

Petersen PH shackles are manufactured from 17-4 stainless steel and are proof-tested to twice their Working Load Limit (WLL) using equipment calibrated to BS EN 10002-2 and NAMAS NIS 0424. The static test coefficient ratio is 2:1.

Design & Application

All Petersen PH shackles have a specific design for a specific application. The Petersen PH shackle range is designed and manufactured for general lifting applications. **The Petersen PH Shackles are not to be used for lifting people or used on other equipment to lift people.**

Manufacturer and Place of Manufacture

The Petersen PH Shackles are manufactured by Petersen Stainless Rigging Limited at their production facility located at Cowen Road, Blaydon on Tyne, Tyne & Wear, NE21 5TW, United Kingdom.

Product Information & Description

Petersen PH shackles are made from PH 17/4, a martensitic precipitation/age hardening 17% chromium, 4% nickel stainless steel, offering high strength and hardness together with excellent corrosion resistance. PH shackles are heat treated to between condition H1025 and condition H1075 to achieve the optimum balance of mechanical properties and resistance to corrosion: in this state PH 17/4 closely approaches stainless types 302 and 304 for most corrosion agents.

Because of the critical dependence of the strength/corrosion characteristics on the heat treatment process it is imperative that no attempt is made to anneal Petersen PH shackles for whatever reason.

ALWAYS:

- Store and handle shackles correctly.
- Inspect shackles before use and before placing into storage.
- Select the correct pattern of shackle and pin for the application.
- Allow for the full resultant imposed load.
- Fully tighten the pin.
- Ensure the load acts through the centre line of the shackle using spacers if necessary to meet this requirement.

NEVER:

- Use shackles with bent pins or deformed bodies.
- Force, hammer or wedge shackles into position.
- Eccentrically load shackles.
- Replace the pin with a bolt.
- Fit pins in contact with moving parts which may loosen or unscrew them.
- Shock load shackles.
- Use the shackles to lift a person or people.
- Never load the shackles sideways – please refer to the "How to Load" diagrams.

A Technical file has been produced and is kept by the manufacturer in accordance with the instructions and guidance detailed within 2006/42/EC Machine Directive.

Storing and Handling Shackles

Never return damaged shackles to storage. They should be dry, clean and protected from corrosion. Do not alter, modify or repair shackles and never replace missing pins, bolts etc., but refer such matters to a competent person. Never galvanise or subject to other plating processes without the approval of the manufacturer.

Working Load Limit (WLL)

The Working Load Limit refers to static loading - care must be taken to ensure that any shock or dynamic loads do not exceed the WLL.

Spreading of load

The load must not be concentrated over a small area e.g. by knife edges or small diameter steel ropes.

Operating temperature

If the intended environment of the PH shackle involves elevated or depressed temperatures please refer to Petersen Technical Department for advice.

Technical information - Analysis

A typical analysis of PH 17/4:-

Carbon	0.07% max
Manganese	1.00% max
Silicon	1.00% max
Phosphorus	0.04% max
Sulphur	0.03% max
Chromium	15.50 - 17.50%
Nickel	3.00 - 5.00%
Columbium & Tantalum	0.15 - 0.45%
Copper	3.00 - 5.00%
Iron	to 100%

Mechanical properties - minima

Ultimate tensile strength
10,900 kg/cm² (H1025) to 10,190kg/cm² (H1075)
Yield strength (0.2%)
10,190 kg/cm² (H1025) to 8,790kg/cm² (H1075)

Mechanical properties - typical

Ultimate tensile strength
11,810 kg/cm² (H1025) to 11,530kg/cm² (H1075)
Yield strength (0.2%)
11,390 kg/cm² (H1025) to 10,410kg/cm² (H1075).

Assembly

The pin and shackle body will screw together easily and should be firmly fastened. Do not use any threading pastes or other such products which may attract or hold small pieces of dirt or metal.

Do not use the shackle if the pin does not screw fully into place. Please refer to the "How to Load" diagrams for a demonstration of correct assembly.

Instructions for use

Shackles should be inspected before use to ensure that:

- all markings are legible;
- the threads of the pin and the body are undamaged;
- never use a safety type bolt/pin without using the split cotter pin;
- the body and the pin are not distorted or unduly worn;
- the body and pin are free from nicks, gouges, cracks and corrosion;
- shackles may not be heat treated as this may affect their working load limit;
- never modify, repair or reshape a shackle as this will affect the Working Load Limit.

DKE LTD.

*Unit 7, Enterprise Industrial Estate,
Horndean, Waterlooville, Hampshire PO8 0BB*

Tel : (023)9259 3947

Fax: (023) 9259 3948

Date: 30/03/10

CERTIFICATE OF CONFORMITY.

DKE LTD. TETHER MANAGEMENT SYSTEM MECHANICAL.

TYPE2A-2 SERIAL No :106/02/10

**CERTIFICATE OF CONFORMITY TO CERTIFY
EQUIPMENT SUPPLIED CONFORMS TO MECHANICAL
SPECIFICATION & DRAWINGS PRODUCED BY :-
DKE LTD TO SUIT SEAEYE MARINE SPECIFICATION
COVERING SEAEYE TIGER VEHICLE FIT.**

**DEPTH RATED FOR 1500 METRES.
SAFE WORKING LOAD 725 KG.
BARE WEIGHT (MECHANICALS) ONLY 387 KG**

Signed

On behalf of DKE LTD.

Issued to:	Location of equipment:	Issued by:
Dke Ltd Unit 7 Enterprise Ind.Est. Horndean Hampshire PO8 0BB	As Issued To	Lloyds British Testing Ltd Units 21 Parham Drive Boyatt Wood Industrial Estate Eastleigh Hampshire SO50 4NU Tel: 0870 609 9120 Fax: 0870 609 9121

Report of Test and Thorough Examination of Lifting Plant and Equipment

This report complies with the requirements of the Lifting Operations and Lifting Equipment Regulations 1998, SI 2307

Identification Mark of the Equipment	Description of Equipment	Details of Test and Thorough Examination			
		Qty Tested and Examined:	Safe Working Load: (Specify Units)	Proof Load Applied: (Specify Units)	Additional Examination/Standards
LBT 185650	TYPE 2A-2 MAINFRAME AND LIFTING SPIDER ASSY. SER. NO. DKE 106/02/10	1	725kg	2040kg	09/02/10

The above equipment has been thoroughly examined, no defects found and is safe to operate



Name and address of person authenticating and signing this report on behalf of author:

Name: A. TAYLOR
Signature:

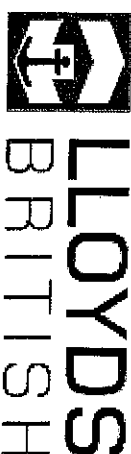
Position: TEST ENGINEER
Date of Report: 09/02/10



LBTC1

Registered Office: Lloyds British Testing Ltd, Atlas House, 4-6 Belwell Lane, Four Oaks, Sutton Coldfield, West Midlands, B74 4AB Company Registration No: 4444099 VAT Reg. No: GB 729 2136 35
Tel: +44 0870 197 5500 Fax: +44 0870 197 5599 email: sales@lloydsbritish.com web: www.lloydsbritish.com

Report no:	185650/1
Your Order no:	9282/02/10
Our Job no:	185650
Sheet no:	1 of 1



ULTRAMAG INSPECTION SERVICES LTD



UNIT 4V, CENTRAL CRESCENT
MARCHWOOD INDUSTRIAL PARK
SOUTHAMPTON SO40 4BJ UK
Tel: 023 80861010 Fax: 023 80866222
E-mail: Eng@ultramag.co.uk
www.ultramag.co.uk



A1/9893/03

B.V., G.L., A.B.S., D.N.V. AND R.I.N.A
APPROVALS FOR THICKNESS SURVEYS
NAFLIC and ADIPS Registered
Aerospace - EN 4179 + NAS 410
PCN - ASNT - CSWIP - IIW - EWF - AWS



FS 31070

INSPECTION REPORT OF NON-DESTRUCTIVE TEST

Report No:	51687/210	Job Reference No:	-
Procedure No:	4.2 in accordance with BS EN 1290	Acceptance Code:	QAS-LARS-001 Doc
Test Date:	10 th February 2010	Order No:	9287 02 10
Test Method:	Magnetic Particle Inspection	Customer:	DKE Ltd Unit 7 Enterprise Industrial Estate Horndean PO8 0BB
Material Spec:	Carbon Steel		
Identification:	Serial No: DKE106/02/10		
Drawing No:	-	Attention of:	Derek Dee
Description:	1 off Type 2A Mainframe & Spider Post Load Test	Test Venue:	Horndean
Operator:	D Adde	Certification:	PCN 304403 Level 2
Equipment:	Magnaflux Y6 Electromagnet Johnson & Allen White Contrast Paint Johnson & Allen Black Magnetic Ink Type I Flux Indicator		
Technique:	Bi-directional Flux Flow White Background As Welded Pre Load Test		

Results:

1 OFF TYPE 2A MAINFRAME & SPIDER

A 100% Magnetic Particle Inspection was carried out to all load bearing and lifting point welds on the following:

(Post load test)

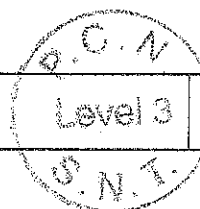
1 off T.M.S Type 2A Mainframe & Lift Spider Fabrication
Serial No: DKE106/02/10

No referable indications were observed.

All welds inspected are acceptable to QAS-LARS-001 Doc.

On Behalf Of
Ultramag

CJS



Date: 10th February 2010

ULTRAMAG INSPECTION SERVICES LTD



UNIT 4V, CENTRAL CRESCENT
MARCHWOOD INDUSTRIAL PARK
SOUTHAMPTON SO40 4BJ UK
Tel: 023 80861010 Fax: 023 80866222
E-mail: Eng@ultramag.co.uk
www.ultramag.co.uk



A1/9893/03

B.V., G.L., A.B.S., D.N.V. AND R.I.N.A
APPROVALS FOR THICKNESS SURVEYS
NAFLIC and ADIPS Registered
Aerospace - EN 4179 + NAS 410
PCN - ASNT - CSWIP - IIW - EWF - AWS



FS 31070

INSPECTION REPORT OF NON-DESTRUCTIVE TEST

Report No:	51630/210	Job Reference No:	-
Procedure No:	4.2 in accordance with BS EN 1290	Acceptance Code:	QAS-LARS-001 Doc
Test Date:	4 th February 2010	Order No:	9277/02/2010
Test Method:	Magnetic Particle Inspection	Customer:	DKE Ltd Unit 7 Enterprise Industrial Estate Horndean PO8 0BB
Material Spec:	Carbon Steel		
Identification:	Serial No: DKE106/02/10		
Drawing No:	-	Attention of:	Derek Dee
Description:	1 off T.M.S Type 2A Mainframe & Lift Spider Fabrication (Small Frame)	Test Venue:	Horndean
Operator:	D. Perry	Certification:	PCN 300083 Level 2
Equipment:	Magnaflux Y6 Electromagnet Johnson & Allen White Contrast Paint Johnson & Allen Black Magnetic Ink Type I Flux Indicator		
Technique:	Bi-directional Flux Flow White Background As Welded Pre Load Test		

Results:

1 OFF TYPE 2A MAINFRAME & SPIDER

A 100% Magnetic Particle Inspection was carried out to all load bearing and lifting point welds on the following:

(Pre load test)

1 off T.M.S Type 2A Mainframe & Lift Spider Fabrication
Serial No: DKE106/02/10

No referable indications were observed.

All welds inspected are acceptable to QAS-LARS-001 Doc.

On Behalf Of
Ultramag

CJS

Level 3

Date: 4th February 2010



N. Nr N°		N° de commande usine - Werkbestellnummer - Works order number		0734PC6700	
80485124000010		4		4PC67000	
INSPECTION CERTIFICATE 3.1 CERTIFICAT DE RECEPTION 3.1 ABNAHMEPRUEFZEUGNIS 3.1 EN 10204 / 3.1 Page 1/ 2					
Site d'UGINE	Certification - Werkzeugnis - Certificate		par - von - by		Marque d'usine - Herstellerzeichen - Supplier's Mark
	AD 2000-MERKBLATT W0/TRD100 Pressure Equipment Directive 97/23/EC ISO 9001 : 2000 ISO/TS 16949 : 2002 ISO 14001 : 2004		 Industrie Service		 ISO/TS 16949 VERSION 2002
Produit - Erzeugnisform - Product					
UGI 4542Q BAR TURNED STANDARD DOUBLE TEMPERING COND. H1150D K11 ROUND 76,200MM LONG. 5,000M +1000,000MM -1000,000MM (EN)					
UGI 4542Q BARRE TOURNÉE STANDARD DOUBLE REVENU COND. H1150D K11 ROND(E) 76,200MM LONG. 5,000M +1000,000MM -1000,000MM (FR) UGI 4542Q BAR TURNED STANDARD DOUBLE TEMPERING COND. H1150D K11 ROUND 76,200MM LONG. 5,000M +1000,000MM -1000,000MM (EN) UGI 4542Q STAB GESCHÄLT STANDARD ABGESCHRECKT UND AUSGEHÄRTET COND. H1150D K11 RUND 76,200MM LONG. 5,000M +1000,000MM -1000,000MM (DE)					
Client et/ou destinataire - Besteller und/oder Empfänger - Purchaser and/or Consigner			N° de commande client - Kundebestellnummer - Purchaser order number		
25272 INDEPENDENT TOOL CONSLTNTS LIMITED			63218		
Marque commerciale - Handelsmarke - Trade name					
UGI 4542Q					
Norme de référence - Bezugsnorm - Standard for reference					
ASTM A564-04 TYPE 630 ; NACE.MR0175/ISO 15156-3:2003 630 ; EN 10088-3 ED 2005 1.4542 ; JIS G4303 ED96 SUS630 ; UNS 10th Edition S17400 ; AISI 630 ; PED 97/23 EC ;					
Spécifications client - Kundenspezifikation - Customer's specification					
17-4 PH H1150D rév. B du 08/2007					
(1) Etat de livraison - Lieferzustand - As delivered			(1) Traitement de référence - Probestreifenbehandlung - Treatment on test sample		
SOL. TREAT.AND DOUBLE OVERAGED					
Identification du produit Erzeugnis Benennung Product Identification			N° de coule - Schmelzen Nr - Heat No		
N° de cde usine Werkbestellnummer Works order number 15			N° poste Post Nr Item Nr 17		
4PC67			000		
741118					
Nombre Stueckzahl Pieces Nbr 18		Profil Profile Shape 19		Dimension Ausmessung Dimension 21	
12		RO		76,200 mm	
				5,000 m	
				2449 kg	
(3) L = Long Laengs - Long T = Travers Quer - Transverse		(1) TE = Trempé à l'eau-Wasserhaerten-Waterquench TH = Trempé à l'huile-Ölharten-Oil Quench A = Hypertrempé-Lösungsgeglueht-Solution annealed RO = Rond-Rund-Round QR = Carré-Viereckig-Square		R = Revenu-Anlassen-Tempered RT = Recuit-Geglueht-Annealed TRM = Recuit maxi-Weichgeglueht-Maxi annealed HX = Hexagonal-Sechskant-Hexagonal	
58				7	
(4) A l'état de référence Zum Bezug Zustand At reference condition		(5) A l'état de livraison In Lieferzustand In state of delivery		Contrôles de marquage, d'aspect et de dimensions : satisfaisants Bezeichnung, Besichtigung und Ausmessung : ohne Beanstandung Marking, inspection and measurement : without objection	
59A		59B		62	
				Nous certifions que les produits énumérés ci-dessus sont conformes aux prescriptions de la commande Wir bestätigen hiermit dass die obengenannten Erzeugnisse den Bestellvorgchriften entsprechen We certify hereby that the above mentioned products are consistent with the order prescriptions	
				66	
				Ugine, le 10/01/2008 L'agent Réceptionnaire de l'usine Der Werkssachverständige The work inspector C. BIOTEAU	
				63	

MAN 18200009295



Corrus UK Limited
Corrus Tubes
Corby Works
PO Box 101
Corby Northants NN17 5UA

•

EN10204 Type 3.1

Page No. 1 of 1

Date	21/05/08	Zot
Cert No.	120/0821/0781	AOC
Del. Note	FWSR/0259	

0038

CE

ISO 9001

REGISTERED QUALITY ASSURANCE

BSI

0840080
881598

Corus Ref.No.			A08
Sales	BZB 272260	Weeks	29 6626
Customer Order No.	P/O : 00169305		A07
Product Description	CELSIUS HOT FINISHED WELDED STEEL RECTANGULAR HOLLOW SECTIONS TO EN 10210 : 2006 GRADE S355J2H. B01-B04		

✓✓✓✓✓

EN 10210	EN 10219	DIN 1626
----------	----------	----------

The products covered by this inspection document are certified by Corus UK Limited and comply with the requirements of the Product Description.
Corus Tubes Quality System complies with Pressure Equipment Directive (PED) 97/23/EC Annex I, Part 4.2

E. YOUNG
for the Quality Manager

This document has been prepared by a computer system and is valid without signature

Z022
A05

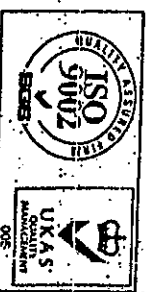


C & S STEELS (Wolverhampton) LTD

Manufacturers and Stockholders of Bright Steel Bars

Registered Office: HIGHFIELDS ROAD, BILSTON, WEST MIDLANDS, WV14 0LQ.

TELE: BILSTON (01902) 404771 FAX: (01902) 353348 email: sales@cs-steels.co.uk



CERTIFICATE No. Q2690

Q.A. DEPT.

FILE NUMBER

TEST CERTIFICATE

178623

Delivered to

Customer
John Parker & Son Ltd
Vauxhall Industrial Road
Canterbury
Kent

Advice Note No. 309144
Advice Note Date 10/02/04

Certificate No. 303545
Certificate Date 10/02/04

Page 1 OF 1

CT1 1HD

CT1 1HD

Your Order No 3106546

CHEMICAL ANALYSIS

Item No.	Size	Section	Specification	Cast No.	C	Si	Mn	P	S	Cr	Mo	Ni	Pb	B
4	150mm	Britedix	080A15	61494	.165	.22	.8	.007	.03	.26	.07	.27		

AI

MECHANICAL PROPERTIES TRUE COPY

TENSILES

Item No.	Cast No.	Tensile Strength	Stress	Units	Rin A%	Elong %

JOHN PARKER & SON LTD. CANTEBURY
QUALITY ASSURANCE
Tel 01227 783210 Fax 01227 783363

HARDNESS

Our Name: JPK LTD
Our Soc: 4801740
Order No: 7605 06a1cc
Accepted BSI Stockist

For and on behalf of C & S STEELS LIMITED

Signed *M. Wilson*
Quality Assurance Manager



CORUS

Corus UK Limited
Corus Construction & Industrial
P.O. Box 1, Scunthorpe,
North Lincolnshire, DN16 1BP
Telephone: 01724 404040
Fax: 402353 Telex: 52501

INSPECTION CERTIFICATE

A2

In Accordance with EN10304 3.1

1/ 2

13/ 8/06

SPLA/06/00313394/1

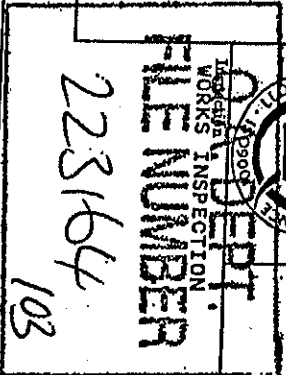
Date
13/ 8/06
Cart No.
SPLA/06/00313394/1

Customer:

JOHN PARKER & SONS LTD
VAUXHALL INDUSTRIAL ESTATE
CANTERBURY
KENT

CT 1 HD

BS/A10



Corus Ref. No. 41172/ 2
Customer Order No. 4108183
Specification/Product EN10025-2:2004 S355J2+N
Plates 5000 X 2500 X 10.00mm
"N" - Normalised Rolled.
Piece Weight 981.3kg
Works Order/Item No. 88/ 535/ 1
B1/B2

L=Longitudinal		T=Transverse		Z=Through Thickness		S=Sub-Surface		M=Mid-Thickness		Q=Quarter-Thickness		TH=Thick-Thickness		BS=Bottom Surface		A=Supply Condition		N=Normalised		SR=Stress Relieved		SA=Stress Aged						
Quantity	Cast/Feat No	File No.	Min	Max	Yield Stress	Tensile Strength	Elongation	Reduction of Area	Charpy Impact	Ultrasonic	AV	AV	AV	AV	AV	AV	AV	AV	AV	AV	AV	AV	AV					
1	74915	HM796/ 4	480	547	480	547	27	L S	-20C 137	141	127	135	10	40	1.40	0.11	0.070	0.22	0.02	0.20	0.35	0.11	0.22	0.06	0.03	0.19	0.02	0.34
1	74915	HM797/ 4	480	547	480	547	27	L S	-20C 137	141	127	135	10	40	1.40	0.11	0.070	0.22	0.02	0.20	0.35	0.11	0.22	0.06	0.03	0.19	0.02	0.34
1	74915	HM802/ 2	480	547	480	547	27	L S	-20C 137	141	127	135	10	40	1.40	0.11	0.070	0.22	0.02	0.20	0.35	0.11	0.22	0.06	0.03	0.19	0.02	0.34
1	74915	HM802/ 3	480	547	480	547	27	L S	-20C 137	141	127	135	10	40	1.40	0.11	0.070	0.22	0.02	0.20	0.35	0.11	0.22	0.06	0.03	0.19	0.02	0.34
1	74915	HM802/ 4	480	547	480	547	27	L S	-20C 137	141	127	135	10	40	1.40	0.11	0.070	0.22	0.02	0.20	0.35	0.11	0.22	0.06	0.03	0.19	0.02	0.34
1	74915	HM806/ 3	509	566	509	566	23	L S	-20C 129	139	125	131	10	40	1.40	0.11	0.070	0.22	0.02	0.20	0.35	0.11	0.22	0.06	0.03	0.19	0.02	0.34
1	74915	HM806/ 4	509	566	509	566	23	L S	-20C 129	139	125	131	10	40	1.40	0.11	0.070	0.22	0.02	0.20	0.35	0.11	0.22	0.06	0.03	0.19	0.02	0.34
1	74915	HM819/ 2	463	537	463	537	24	L S	-20C 126	138	177	147	10	40	1.40	0.11	0.070	0.22	0.02	0.20	0.35	0.11	0.22	0.06	0.03	0.19	0.02	0.34
1	74915	HM819/ 3	463	537	463	537	24	L S	-20C 126	138	177	147	10	40	1.40	0.11	0.070	0.22	0.02	0.20	0.35	0.11	0.22	0.06	0.03	0.19	0.02	0.34
1	74915	HM819/ 4	463	537	463	537	24	L S	-20C 126	138	177	147	10	40	1.40	0.11	0.070	0.22	0.02	0.20	0.35	0.11	0.22	0.06	0.03	0.19	0.02	0.34

10x7.5x2mmV

20 AV/ 14 Ind @ -20C

100 Joules

100 C

1.60 Mn

0.025 P

0.025 S

0.022 Cr

0.022 Mo

0.020 Ni

0.015 Al

0.550 Cu

0.003 Nb

0.003 N

0.003 Sn

0.019 Ti

0.002 V

0.45 CEV

CERTIFIED TRUE COPY

JOHN PARKER & SON LIMITED

QUALITY ASSURANCE DEPT

TEL: 0127 751300

FAX: 0127 751318

CUST NAME: DRC

OUR SO: 5290970

ORDER NO: 8291

CERTIFIED TRUE COPY
JOHN PARKER & SONS LIMITED
QUALITY ASSURANCE DEPT
TEL: 01724 751234
CUST NAME: DRC
OUR SO: 5290970
ORDER NO: 8291
SIGN: ALB
Accredited BSI Stockist

On behalf of Corus UK Limited, the manufacturer,
These results are certified by Corus UK Limited and comply
with the requirements of the Product Description.

All original Inspection Certificates issued by Corus UK Limited will contain either an embossed seal, or be impregnated with a Corus UK Limited watermark logo, or a combination of both. Any recipient of a copy of a Corus UK Limited Inspection Certificate without either the seal or watermarking should ensure from the supplier that it is a true and accurate reproduction of the original.

R.D. Longbottom, Test House Manager, Scunthorpe
H0938



Newport B19-51028
Corus, NPS OXN
United Kingdom
Telephone: 01853 280022
Fax: 01853 272933



INSPECTION CERTIFICATE

Certificate No.
30777524

Issue Date
16/12/05

Test No.
1

Test Date
3/22480/1/1

Test No.
22913900

Test Date
16/12/05

3.1.06

CUT TO LENGTH BUSINESS
CPM COLD PROCESS OFFICES
CORUS CONSTR & INDUSTRIAL
STEEL HOUSE, REPCAR
TEESSIDE, TS10 6QM

Product Description
STRUCTURAL STEEL HOT ROLLED CUT LENGTHS SKIN PASSED MILL EDGES

GAUGE = 3.000G WIDTH = 1250.000 LENGTH = 2500.0

Specification
BS EN 10025-2:2004

Grade
S275JR

Condition Specification
FULL TEST CERT

MATERIAL IDENTITY

CAST / HEAT No.

YIELD TENSILE STRESS 10⁶ N/CM²

ELONG 2 %

18082909 K50911PT 345 445 24
18082910 K50911PT 345 445 24
18082913 K50911PT 345 445 24
18082914 K50911PT 345 445 24
18082915 K50911PT 345 445 24
18082916 K50911PT 345 445 24
18082917 K50911PT 345 445 24
18082918 K50911PT 345 445 24
18082919 K50911PT 345 445 24
18082920 K50911PT 345 445 24
18082921 K50911PT 345 445 24
18082922 K50911PT 345 445 24

PROCESS

BASIC OXYGEN STEEL

CONTINUOUS CAST SLAB

ANALYSIS

CAST/HEAT No.

20911PT

CE	C	P	S	Mn	Si	S	Al	N	Cu	Bo	Ni	Al	B	Co	Ca	Mo	Sr	Ti	V	Ca	CEV
0.1440	0.0130	0.0270	0.7530	0.3020	0.0380	0.0037	0.0234	0.0010	0.0290	0.0410	0.0410	0.0410	0.0020	0.0450	0.0450	0.0410	0.0070	0.0030	0.0030	0.0030	0.2830

SUPPLEMENTARY INFORMATION

IT IS CERTIFIED, THAT UNLESS OTHERWISE STATED THE SUPPLIES DETAILLED HEREON
HAVE BEEN MANUFACTURED, INSPECTED AND TESTED IN ACCORDANCE WITH OUR
QUALITY MANAGEMENT SYSTEM APPROVED TO BS EN ISO 9001:2000 AND CONFORM TO
THE TERMS OF OUR ORDER ACKNOWLEDGEMENT

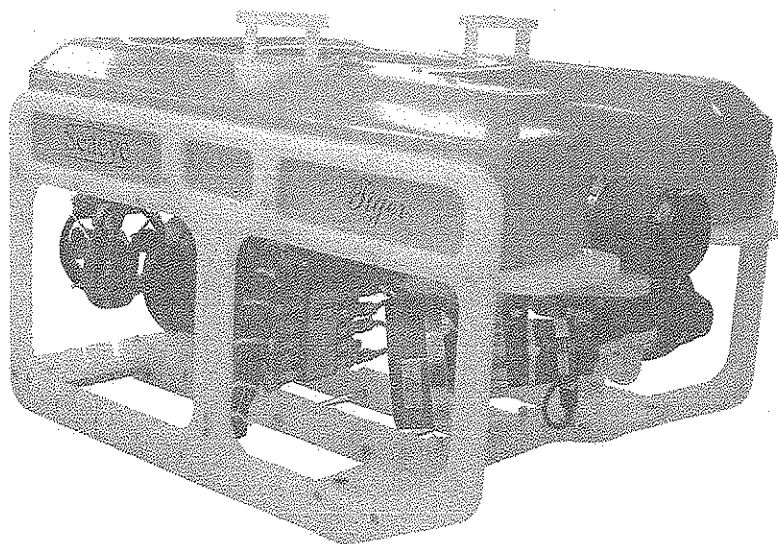
On behalf of Corus UK Limited,
I hereby certify that the above information is true and correct.
MIKE PASTING
TECHNICAL MANAGER - LABORATORY

Corus UK Limited Registered Office: 30 Millbank, London, SW1P 4BY, Registered in England No. 2283000.

**SAAB**

FACTORY ACCEPTANCE TEST (FAT)

**SEAEYE TIGER SYSTEM 880,
c/w TMS2 T FO SYS 880**



Customer:
FAT Date
FAT Location

OCEANVISION

20/05/2010

SAAB SEAEYE

	Name	Sign-Off (upon completion of FAT)
Customer Representative	<u>REPRESENTED BY</u>	<u>SEAEYE (SEE BELOW)</u>
Seaeeye Technician	<u>P. HARTREE</u>	<u>P. Hartree</u>
Seaeeye Representative	<u>G. DAY</u>	<u>[Signature]</u>
Third Party Representative (if applicable)	<u>N/A</u>	<u>N/A</u>

Saab Seaeeye Ltd

Address & Registered Office
20 Brunel Way
Segensworth
Fareham
PO15 5SD
United Kingdom

Telephone
+44 (0) 1489 898 000
Fax
+44 (0) 1489 898 001

Internet Address
www.seaeeye.com
E-mail
rovs@seaeeye.com

Registered in
England & Wales
No 02022671

VAT No
566 6513 17

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'Dry' Deck Check: ROV	7
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Internet Address
www.seaeeye.com
E-mail
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No 02022671

VAT No
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1. SCOPE

- This document identifies the factory acceptance testing required for the system.
- All testing will be performed using the equipment to be supplied unless otherwise agreed and noted.
- Equipment supplied as detailed in Seaeeye Sales control form (SON) 22507.
- Both Seaeeye and Customer representative should initial and date all parameters checked. Any failures or deviations from the specified parameters will be noted and a course of corrective action mutually agreed and noted which may result in a retest if appropriate.

2. TEST EQUIPMENT

- The following test equipment is required to perform the acceptance tests.
- Power supply - 3 phase, 440 V, 50-60 Hz @ 15kVA
- Main power electrical deck cable
- Umbilical-Test Length
- Test Tank
- Standard electrical/electronic test equipment
- C.P. Emulator
- SML232 Telemetry monitor
- Standard electrical tool kit
- LIM Test Equipment

Saab Seaeeye Ltd

Address & Registered Office
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Segensworth
Fareham
PO15 5SD
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Internet Address
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rovs@seaeeye.com

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No 02022671

VAT No
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3. FUNCTIONAL/PERFORMANCE TESTING

a. Safety

WARNINGS

1. DANGER OF FATAL ELECTRIC SHOCK. BEFORE REMOVING OR OBTAINING INTERNAL ACCESS TO THE EQUIPMENT ISOLATE ALL THE UNITS POWER SUPPLIES.
2. DANGER OF FATAL ELECTRIC SHOCK AND DANGER TO PERSONNEL. WHEN THE SUPPLY CANNOT BE DISCONNECTED, FUNCTIONAL TESTING, MAINTENANCE AND REPAIR OF THE ROV SYSTEM IS TO BE UNDERTAKEN ONLY BY PERSONS FULLY AWARE OF THE DANGERS INVOLVED AND HAVE TAKEN ADEQUATE PRECAUTIONS.
3. POSSIBILITY OF FATAL ELECTRIC SHOCK AND DANGER TO PERSONNEL AND EQUIPMENT. BEFORE SWITCHING ON THE ROV SYSTEM ENSURE THAT THE SYSTEM IS FULLY ASSEMBLED AND OPERABLE AND NO MAINTENANCE ACTIVITY IS IN OPERATION

Safety Features: Before starting tests ensure that all electrical wiring has been checked and all safety signs are in place.

All safety precautions in place



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VAT No
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SAAB

b. Main PSU power

Mechanical Integrity:

- Verify mounting of all items within the PSU enclosure and subassemblies are satisfactory. ☒

Input Power - Provide power to PSU. Check and record:

- Input Voltage L -L (3 phase) = 423 VAC ☒

Surface AC - Check and record:

- Volts AC single phase = 233 VAC (220- 250VAC) ☒

Test 9PSU-2Surface AC ELCB trip using appropriate Test Unit:

- Apply Fault to Live line: check that ELCB-1 Trips. ☒
- With ELCB-1 in tripped position, check that both 240volt legs are open circuit (with power off). Also check AUX / Surface AC is isolated. ☒
- Apply Fault to Neutral line: check that ELCB-1 Trips. ☒
- With ELCB-1 in tripped position, check that both 240volt legs are open circuit (with power off). Also check AUX / Surface AC is isolated. ☒

ROV AC - Check at PSU and record:

- 240 Volts AC Single phase = 239 VAC (230- 240VAC) ☒

Test 9PSU-2Subsea AC LIM trip using PSU built-in test facility and / or appropriate Test Unit:

- Apply Fault to AC-L line: check LIM detects the fault and causes a trip. ☒
- Apply Fault to AC-N line: check LIM detects the fault and causes a trip. ☒

ROV DC - Check at PSU and record:

- 500 Volts DC = 250 VDC (250VDC) ☒

Test 9PSU-2DC LIM trip using PSU built-in test facility and / or appropriate Test Unit:

- Apply Fault to DC+ line: check LIM detects the fault and causes a trip. ☒
- Apply Fault to DC- line: check LIM detects the fault and causes a trip. ☒

Subsea Voltages (at subsea termination):

- ROV AC Single phase = 237 VAC (Nominal 230-240VAC) ☒
- ROV 250 Volts DC = 250 VDC (250VDC) ☒
- TMS AC Single phase = 250 VAC (230- 240VAC) ☒
- TMS 250 Volts DC = 235 VDC (250VDC) ☒

Test 9PSU-2DC LIM trip at the EPOD using appropriate Test Unit:

- Apply Fault to DC+ line: check LIM detects the fault and causes a trip. ☒
- Apply Fault to DC- line: check LIM detects the fault and causes a trip. ☒

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Registered in
England & Wales
No 02022671

VAT No
566 6513 17



SAAB

c. Surface Control Unit (10PDU-1)

i. Vehicle information

Display information:

Note: This section only checks for presence of fields. The values displayed will be verified later in this document. The vehicle must be powered for this section. The vehicle will need to be connected for the following tests.

- Overlay information. ☒
- Keyboard functions. ☒
- Verify title on screen is present and stable. ☒
- With vehicle power switched off verify a visual telemetry alarm is present. ☒
- With vehicle power switched on verify no visual telemetry alarm is present. ☒
- Verify heading displayed. ☒
- Verify auto-heading mode displayed. ☒
- Verify auto-depth mode displayed. ☒
- Verify turns count displayed. ☒
- Verify depth displayed. ☒
- Verify C.P display. ☒
- Verify correct time and date displayed. ☒

ii. TMS information

- With TMS power off verify visual telemetry alarm is present. ☒
- With TMS power on verify no visual telemetry alarm is present. ☒
- With TMS power on verify no leak/vac alarm is present. ☒

With reference to the system's Sniffer Unit, check the operation of the following:

- Bail In (test using Hand Controller, Surface Unit and Foot Switch controls). ☒
- Bail Out (test using Hand Controller, Surface Unit and Foot Switch controls). ☒
- Bail Enable. ☒
- Bail Count Reset. ☒
- TMS Light. ☒

Notes:

Saab Seaeye Ltd

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Registered in
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VAT No
566 6513 17



d. Hardware and Accessories

Mechanical Integrity:

Inspect and review the security of bracketry and mounting mechanisms of:

- Vehicle (including all standard parts thereof) ☒
- TMS (including all standard parts thereof) ☒
 - Verify all 3 castellated nuts are locked with a split pin ☒

Accessories - ensure that all ancillary equipment is appropriately positioned and secured:

- ROV ☒
 - AC006 CP Probe fitting kit.

- TMS
No accessories included

Verify the umbilical routing and clamping is adequate on:

- Vehicle ☒
- TMS ☒
- Accessories ☒

Verify all whips and both halves of connectors labelled on:

- Vehicle ☒
- TMS ☒
- Accessories ☒

5601 Tether and Termination

- Inspect, as far as is practical, the 140M of 5601 and its termination. ☒

Notes:

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'Dry' Deck Check: ROV

Verify the function of the following.

- **Camera 1 – No camera supplied: interface test only:**
Check quality and resolution of video signal. Verify focus near and far is acceptable. ☒
Check that there is no interference from other functions of the system (e.g. thrusters, lights, tilt etc). ☒
- **Camera 2 – No camera supplied: interface test only:**
Check quality and resolution of video signal. Verify focus near and far is acceptable. ☒
Check that there is no interference from other functions of the system (e.g. thrusters, lights, tilt etc). ☒
- Note: this camera interface includes zoom/focus functionality.*
Also demonstrate Zoom / Focus control (controlled by F1 / F2 on HCD). ☒
- **Camera 1 / 2 Switch:**
Demonstrate the operation of CAM 1 / 2 switch on the Hand Control Unit. ☒
- **Tilt:**
Check for the correct operation of the Tilt Platform. ☒
Check for the correct operation of the Tilt Feedback icon on the System Overlay. ☒
- **Compass:**
Demonstrate correct operation of the Compass as indicated on the System Overlay Check that 'Turns Count' updates and can be reset. ☒
- **Pressure (Depth):**
Verify that the depth sensor is operating correctly. ☒
- **Cathodic potential (CP):**
Verify correct operation and calibration:
Ensure accuracy throughout the range +2.500V to -2.500V in Contact Mode. ☒
Ensure accuracy throughout the range +2.500V to -2.500V in Proximity Mode. ☒

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- **Lights Channel 1:**
Verify brightness control (operate for one or two seconds only in air). ☒
- **Thrusters:**
Check for correct operation as commanded by Hand Controller, Auto Heading, Auto Depth, Auto Altitude and Gyro Input. ☒
- **Sonar interface:**
EITHER:
Using stock equipment, confirm correct operation of Sonar equipment, including SCU. Also check for correct operation of the HCU 'SONAR' switch. ☒
Check that there is no interference from other functions of the system (e.g. thrusters, lights, tilt etc). ☒

OR:
Check presence of +24VDC on SONAR Bulkhead. ☒
Confirm continuity of Aux 2 Twisted Pair from Aux 2 Bulkhead to Aux 2 on 10PDU (note standard configuration places AUX2-A as CP Ref). ☒
- **Gauntlet Plus Manipulator Interface:**
Check presence of 250VDC on the Manip Bulkhead. Also check that the operation of the HCU 'SONAR' switch toggles Sonar 24V on and off. ☒
Confirm continuity of Sonar Twisted Pair from Manip Bulkhead to the Sonar connector on the 10PDU. ☒
- **Aux 2:**
Check presence of +24VDC on Aux 2 Bulkhead. ☒
Confirm continuity of Aux 2 Twisted Pair from Aux 2 Bulkhead to Aux 2 on 10PDU (note standard configuration places AUX2-A as CP Ref). ☒

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e. 'Dry' Deck Check: TMS

Operate all TMS functions and sub assemblies

- Bail Enable: Check for correct operation. ☒
- Bail In: Check for correct operation.* ☒
- Bail Out: Check for correct operation.* ☒
 **demonstrate control via Hand Control Unit, Surface Unit and Footswitch controls*
- Bail Count: Check for correct operation. ☒
- Bail Count Reset: Check for correct operation. ☒
- Light: Verify on / off control via 10PDU-1 TMS LIGHTS switch (operate for one or two Seconds only in air). ☒
- TMS Video: camera interface (use test / stock camera):
 Check quality and resolution of video signal.. ☒
- ROV Video (routed in TMS EPOD): Demonstrate that ROV Video remains present when TMS AC is switched off. ☒
- Check for correct fit of ROV and operation of TMS Latches (in both directions). ☒
- Bail the tether in and out completely *twice*, whilst monitoring general correct operation and bail count. ☒

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4. TANK TRIAL

The following tests are to be performed in a suitable test tank or open water site.

- Carry out pre-dive check list confirming HCU controls on SML232 output. ☒

a. Payload and Trim

Record bare ROV weight in air: (without addition lead ballast fitted) = 122 kg (1)

Weight of lead ballast added to achieve neutral trim in fresh water: = 20 kg (2)

Total ROV weight including lead ballast (for Fresh Water) = (1) + (2) = 142 kg (3)

Calculation of seawater payload (assuming that salt water has an increased lift of 1.025:1 against fresh water):

ROV's additional payload in seawater (3) x 0.025 = 3.55 kg (4)

Calculated ROV Payload (Sea Water) = (2) + (4) = 145.55 kg

Weight Log to be attached to this document detailing weights of System / ROV and sub-assemblies.

Record positioning of all lead ballast on layout sheet (Appendix A).

Notes:



SAAB

b. Vehicle control system operation

- Deploy vehicle
- Operate all vehicle controls on the hand controller. Verify correct operation and no interactive effects with different combinations of controls.
- Check the following functions of the system/ROV:

- | | |
|--------------------------|-------------------------------------|
| ○ Forward | ☒ |
| ○ Backwards | ☒ |
| ○ Sideslip Port | ☒ |
| ○ Sideslip Starboard | ☒ |
| ○ Rotate clockwise | ☒ |
| ○ Rotate anticlockwise | ☒ |
| ○ Up | ☒ |
| ○ Down | ☒ |
| ○ Tilt | ☒ |
| ○ Depth | ☒ |
| ○ Auto depth | ☒ |
| ○ Gyro Resolution | ☒ |
| ○ Lights 1 | ☒ |
| ○ Camera 1 – Test Camera | ☒ |
| ○ Camera 2 – Test camera | ☒ |

The following should be tested outside the test tank (i.e. in air) due to the interaction of the ferrous material of the tank with the compass:

- | | |
|--------------------------|-------------------------------------|
| ○ Compass Operation | ☒ |
| ○ Turns Count | ☒ |
| ○ Auto heading operation | ☒ |

c. System run test

- Verify satisfactory operation of system under test conditions i.e. held in a corner and run at full power for 10 minutes. ☒
- Note the voltage & current values mid-test run:
 - 319 V
 - 24 A

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5. SPARES

Note: no spares are included in 880's scope of supply.

Additional parts to be supplied with system:

- CPWHIP-CM: contact Probe
- CPTIP (x10): spare CP probe tips
- Spares Kit: as per Sales Order 23325



~~X~~ PREVIOUSLY
DISPATCHED

- Review Pre-FAT spares check-list to confirm availability of all spare parts

☒ N/A

Or:

- At customer's discretion, conduct audit against spares list to confirm availability of all spare parts

☒ N/A

Note any discrepancy below :

Part Number	Description	Quantity	Comments

6. DOCUMENTATION

System Manual:

- Review the Vehicle System Manuals (if available).



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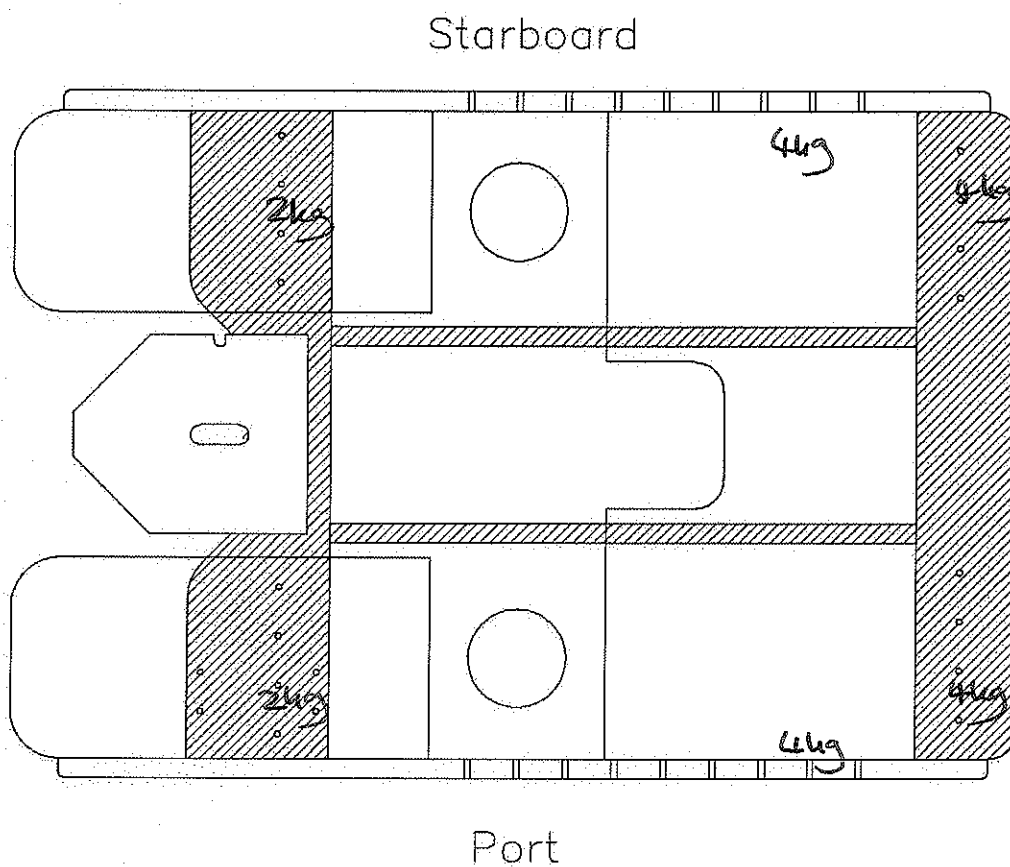
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APPENDIX A: Lead Layout



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SAAB

EQUIPMENT ACCEPTANCE CERTIFICATE

Alliance Seaworks SDN BHD via Oceanvision

accepts delivery of

SAAB SEAEYE LIMITED's

1. SEAEYE ROV (1000 metre depth rated) - Type TIGER ROV SYS # 880, TMS2A-A # DKE106/02/10, complete in accordance with Alliance Seaworks SDN BHD's instructions & Seaeye's specification, 2 sets of Handbooks / Technical Manuals plus 1 set of Vehicle/System records.

Additional Items and modification(s):

- | | |
|--|--------------------------|
| a. 1 x TMS Complete System for Tiger 1000m Rated | Part# TMS2 T SYS 880 |
| b. 1 x 140m Umterminated Umbilical Cable | Part# 5601 |
| c. 2 x Tiger Tether Termination Kit | Part# TERMKIT-800-TETHER |
| d. 1 x Single Fused Lamp Assembly | Part# P00357-M |

2. All above items are accepted as being fully functional and complete in all respects, unless otherwise notified/listed as '*Item(s) to follow*'.

Signed:

**Mr. G. Day
for & on behalf of
Alliance Seaworks SDN BHD**

Signed:

**Mr. C. Barton
Production Supervisor (Final Assy /T&C),
for & on behalf of
Saab Seaeye Limited**

Date: 21st May 2010

Seaeye Ref: SON 22507
m:\planning\dje files\Build\accept880

Customers Reference: PO-2793/09