DET NORSKE VERITAS

Certificate No. **HGS-14-1136**

CERTIFICATE OF TEST AND THOROUGH EXAMINATION OF LOOSE GEAR (CG3)

Location (name of ship, platform etc.)	Call sign
ROV frame; Constructor No. 5	DNV ID. No.
Owners	Port of registry

(1) Distinguish number or mark	(2) Description of gear (the dimension of the gear, the type of material of which it is made, and where applicable, the heat treatment received in manufacture should be stated)	(3) Number tested	(4) Date of test	(5) Test load applied (tonnes)	(6) Safe working load (SWL) (tonnes)
HGS-14-1136	**ROV Constructor fram No. 5** **2 X 4 pcs of lower lifting lugs tot SWL 3 tonnes** **Ref. TAC S-8454**	**1** **1 x 4** **1 x 4**	**2014-11-20** **2014-11-20** **2014-11-20**	**17,8** **8** **8**	**7** **0,75 x 4 = 3** **0,75 x 4 = 3**

KYSTDESIGN Certificate
Test ☒ Material ☐
Date scanned: 15. 12. 2014
DWG: AF25-10|2M09
Delivery: CONSTRUCTOR 5

Name and address of makers or suppliers:
Kystdesign AS, Strandgaten 202, 5525 Haugesund

Reason for issuing the certificate: ☒ Initial certification ☐ Recertification ☐ Repair
☐ Other, (give reason):

DNV station employing the competent person: **Station Haugesund, DNV GL**

I certify that the above items of loose gear were tested and thoroughly examined and no defects affecting their SWL were found.

Place: **Haugesund** Signature:

Jan Håkonsen
Station Manager

Date: **2014-12-04**

DET NORSKE VERITAS * 1864 * HAUGESUND

Note:
This Certificate is the standard international form as recommended by the International Labour Office in accordance with ILO Convention No. 152.

INSTRUCTIONS

Certificate No. HGS-14-1136

1. Every item of loose gear is to be tested and thoroughly examined before being put into use for the first time and after any substantial alteration or repair to any part liable to affect its safety. The test loads to be applied shall be in accordance with the following table:

Item	Test load (tonnes)
Single sheave blocks (see Note 1)	4 × SWL
Multi sheave blocks (see Note 2): SWL ≤ 25 tonnes 25 tonnes < SWL ≤ 160 tonnes SWL > 160 tonnes	 2 × SWL (0.933 × SWL) + 27 1.1 × SWL
Chains, hooks, rings, shackles, swivels etc.: SWL ≤ 25 tonnes SWL > 25 tonnes	 2 × SWL (1.22 × SWL) + 20
Lifting beams, spreaders, frames, and similar devices: SWL ≤ 10 tonnes 10 tonnes < SWL ≤ 160 tonnes SWL > 160 tonnes	 2 × SWL (1.04 × SWL) + 9.6 1.1 × SWL
1. The SWL for a single sheave block, including single sheave blocks with beckets, is to be taken as one half of the resultant load on the head fitting. 2. The SWL of a multi sheave block is to be taken as the resultant load on the head fitting.	

2. This form may also be used for the certification of interchangeable components of lifting appliances.

3. The expression 'tonne' shall mean a tonne of 1000 kg.

4. The terms 'competent person', 'thorough examination' and 'lifting appliance' are defined in Form No.CG.1.

Note: For recommendations on test procedures, reference may be made to the ILO document 'Safety and Health in Dock Work'.

DNV·GL

Certificate No:
S-8454
File No:
686.76
Job Id:
262.1-012739-4

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Lifting Frame

with type designation(s)
Lifting Frame ROV Installer, ROV Supporter 2000/3000 and ROV CONSTRUCTOR

Issued to
KystDesign AS
HAUGESUND, Norway

is found to comply with
Standard for Certification No. 2.22 Lifting Appliances

Application :

Lifting Frame for ROV INSTALLER, ROV SUPPORTER 2000/3000 and ROV CONSTRUCTOR

This Certificate is valid until **2017-12-31**.
Issued at **Høvik** on **2014-11-25**

DNV GL local station: **Haugesund**

Approval Engineer: **Xiao Long Eric Song**

for **DNV GL**
Digitally Signed By: Matteucci, Aldo
Location: DNV GL Høvik, Norway
Signing Date: 03.12.2014

Aldo Matteucci
Head of Section

KYSTDESIGN Certificate

Test ☒	Material ☐
Date scanned:	04. 12. 2014
DWG:	
Delivery:	Installer, Supporter, Constructor

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.
The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

Certificate No: **S-8454**
File No: **686.76**
Job Id: **262.1-012739-4**

Product description

ROV Installer:

- Safe working load (SWL) : Total of 3 tonnes in the lower lifting lugs
  8.0 tonnes for remaining load carrying structure
- Design dynamic factor: 1.3
- Design temperature (T.d): -20 degrees C

ROV Supporter 2000/3000:

- Safe working load (SWL) : Total of 3 tonnes in the lower lifting lugs
  7.0 tonnes for remaining load carrying strucutre
- Design dynamic factor: 1.3
- Design temperature (T.d): -20 degrees C

ROV Constructor:

- Safe working load (SWL) : Total of 3 tonnes in the lower lifting lugs
  7.0 tonnes for remaining load carrying strucutre
- Design dynamic factor: 1.3
- Design temperature (T.d): -20 degrees C

Application/Limitation

1. Materials as stated in the above documentation are to be delivered with material certificates complying with DNV's Standard for Certification 2.22 Lifting Appliances, June 2013, Ch. 2, Sec. 1.

2. All welding is to be performed by approved welders in accordance with approved procedures.

3. Extent of non-destructive testing of welds is to comply with DNV's Standard for Certification 2.22 Lifting Appliances, June 2013, Ch. 2, Sec. 1 10.10 and 10.11, and shall be carried out to the attending surveyor's entire satisfaction.

4. The various components transferring load- like wire rope, sockets, shackles, sheaves, etc. are to be manufactured according to recognised standards or codes and are to be delivered with relevant certificates for material and testing.

5. Bolts are to be pre-stressed according to procedures acceptable to the attending surveyor.

Type Approval documentation

ROV Installer

Drawing No.	***Rev***	***Title***	***Status***
AB89-1000M10	01	GENERAL ASSEMBLY CERTIFIED FRAME ASSY	FOR INFORMATION
AB89-1010M10	02	LIFT POINT ASSEMBLY	FOR INFORMATION
AB89-1010M11	02	LIFT POINT SWIVEL SUPPORT DETAILS	TYPE APPROVED
AB89-1010M12	02	LIFT POINT SWIVEL GUIDE DETAILS	TYPE APPROVED
AB89-1010M13	02	LIFT POINT BOLT DETAILS	TYPE APPROVED
AB89-1010M14	02	LIFT POINT LOCK PLATE DETAILS	TYPE APPROVED
AB89-1010M20	02	LIFT POINT LIFT ADAPTOR DETAILS (SHEET 1 OF 2)	TYPE APPROVED
AB89-1010M40	02	EMERGENCY RECOVERY LIFT POINT ASSEMBLY & DETAILS (3 SHEETS)	TYPE APPROVED

AB89-1010M44	02	LIFT POINT BOLT DETAILS	TYPE APPROVED
AB89-1012M09	01	FRAME MAIN WELDING ASSEMBLY	FOR INFORMATION
AB89-1012M10	02	FRAME CENTER PART ASSEMBLY & DETAILS (7 SHEETS)	TYPE APPROVED
AB89-1012M30	01	FRAME PROTECTING STRUCTURE ASSEMBLY & DETAILS (2 SHEETS)	TYPE APPROVED
AB89-1012M50	02	FRAME BOTTOM PART ASSEMBLY & DETAILS	TYPE APPROVED
AB89-1010ER001	A	CALCULATIONS REPORT	FOR INFORMATION
AB89-1010ER002	1	CALCULATIONS REPORT	FOR INFORMATION

ROV Supporter

Drawing No:	***Rev.***	***Drawing title***	***Status***
AD16-1010M11	02	LIFTING ARRANGEMENT ADJUSTABLE LIFTING PLATE DETAILS	TYPE APPROVED
AB89-1010M12	02	LIFT POINT SWIVEL GUIDE DETAILS	TYPE APPROVED
AD16-1010M15 (1/3)	02	LIFTING ARRANGEMENT EMERGENCY RECOVERY LIFT POINT ASSEMBLY AND DETAILS	TYPE APPROVED
AD16-1010M15 (2/3)	02	LIFTING ARRANGEMENT EMERGENCY RECOVERY LIFT POINT ASSEMBLY AND DETAILS	TYPE APPROVED
AD16-1010M15 (3/3)	03	LIFTING ARRANGEMENT EMERGENCY RECOVERY LIFT POINT ASSEMBLY AND DETAILS	TYPE APPROVED
AD16-1010M20 (1/4)	01	TENSION BOLTS ASSEMBLY & DETAILS	TYPE APPROVED
AD16-1010M20 (2/4)	03	TENSION BOLTS ASSEMBLY & DETAILS	TYPE APPROVED
AD16-1010M20 (3/4)	02	TENSION BOLTS ASSEMBLY & DETAILS	TYPE APPROVED
AD16-1010M20 (4/4)	01	TENSION BOLTS ASSEMBLY & DETAILS	TYPE APPROVED
AF03-1010M20 (1/2)	01	TENSION BOLTS ASSEMBLY & DETAILS	TYPE APPROVED
AF03-1010M20 (2/2)	01	TENSION BOLTS ASSEMBLY & DETAILS	TYPE APPROVED
AD16-1110M21 (1/2)	01	LITF POINT ADAPTER	TYPE APPROVED
AD16-1110M21 (2/2)	01	LITF POINT ADAPTER	TYPE APPROVED
AF03-1012M09	01	FRAME W/ LIFTING ARRANGEMENT ASSEMBLY	TYPE APPROVED
AF03-1012M10 (1/2)	01	FRAME WELDED ASSEMBLY	TYPE APPROVED
AF03-1012M10 (2/2)	01	FRAME WELDED ASSEMBLY	TYPE APPROVED
AD16-1012M09	04	FRAME W/ LIFTING ARRANGEMENT ASSEMBLY	TYPE APPROVED
AD16-1012M10 (1/2)	02	FRAME WELDED ASSEMBLY	TYPE APPROVED
AD16-1012M10 (2/2)	02	FRAME WELDED ASSEMBLY	TYPE APPROVED
AF03-1012M20 (1/3)	01	FRAME CENTER PART ASSEMBLY & DETAILS	TYPE APPROVED
AF03-1012M20 (2/3)	01	FRAME CENTER PART ASSEMBLY & DETAILS	TYPE APPROVED
AF03-1012M20 (3/3)	01	FRAME CENTER PART ASSEMBLY & DETAILS	TYPE APPROVED
AD16-1012M20 (1/6)	02	FRAME CENTER PART ASSEMBLY & DETAILS	TYPE APPROVED
AD16-1012M20 (2/6)	02	FRAME CENTER PART ASSEMBLY & DETAILS	TYPE APPROVED
AD16-1012M20 (3/6)	03	FRAME CENTER PART ASSEMBLY & DETAILS	TYPE APPROVED
AD16-1012M20 (4/6)	03	FRAME CENTER PART ASSEMBLY & DETAILS	TYPE APPROVED
AD16-1012M20 (5/6)	02	FRAME CENTER PART ASSEMBLY & DETAILS	TYPE APPROVED
AD16-1012M20 (6/6)	02	FRAME CENTER PART ASSEMBLY & DETAILS	TYPE APPROVED
AF03-1012M50 (1/2)	01	FRAME LOWER SECTION ASSEMBLY & DETAILS	TYPE APPROVED
AF03-1012M50 (2/2)	01	FRAME LOWER SECTION ASSEMBLY & DETAILS	TYPE APPROVED
AD16-1012M50 (1/2)	03	FRAME LOWER SECTION ASSEMBLY & DETAILS	TYPE APPROVED
AD16-1012M50 (2/2)	02	FRAME LOWER SECTION ASSEMBLY &	TYPE APPROVED

		DETAILS	
AD16-1012ER01	2	CALCULATION REPORT VOL 1	FOR INFORMATION
AD16-1012ER01	2	FEM ANALYSIS LOGS VOL 2	FOR INFORMATION

ROV Constructor

Drawing No.	***Rev.***	***Title***	***Status***
AF25-1012ER01	1	CALCULATIONS REPORT VOL 1	FOR INFORMATION
AF25-1012ER01	1	FEM ANALYSIS REPORT VOL 2	FOR INFORMATION
AF25-1012M09	01	FRAME W/LIFTING ARRANGEMENT	TYPE APPROVED
AD16-1110M21 (1/2)	01	LITF POINT ADAPTER	TYPE APPROVED
AD16-1110M21 (2/2)	01	LITF POINT ADAPTER	TYPE APPROVED
AB89-1010M12	02	LIFT POINT SWIVEL GUIDE DETAILS	TYPE APPROVED
AD16-1010M15	02	LIFTING ARRANGEMENT EMERGENCY RECOVERY LIFT POINT ASSEMBLY & DETAILS (3 SHEETS)	TYPE APPROVED
AD16-1010M11	02	LIFTING ARRANGEMENT ADJUSTABLE LIFTING PLATE DETAILS	TYPE APPROVED
AF25-1010M20	01	TENSION BOLTS – ASSEMBLY & DETAILS (2 SHEETS)	TYPE APPROVED
AD16-1010M20 (3/4)	02	TENSION BOLTS – ASSEMBLY & DETAILS	TYPE APPROVED
AD16-1010M20 (4/4)	02	TENSION BOLTS – ASSEMBLY & DETAILS	TYPE APPROVED
AF25-1012M20	02	TOP FRAME WELDED ASSY ASSEMBLY & DETAILS (5 SHEETS)	TYPE APPROVED
AF25-1012M50	02	FRAME LOWER SECTION ASSEMBLY & DETAILS (3 SHEETS)	TYPE APPROVED

Tests carried out

No specific type test is found necessary to require in connection with the Type Approval, but each unit subject to DNV certification shall be tested according to DNV's Standard for Certification 2.22 Lifting Appliances, June 2013, Ch.2 Sec.12.

Marking of product

Marking of each product is to be in accordance with DNV's Standard for Certification 2.22 Lifting Appliances, June 2013, Ch.2 Sec.12.

Periodical assessment

For retention of the Type Approval, DNV surveyor shall perform a survey every second year and before expire date of this certificate to verify that the conditions of the type approval are complied with.

END OF CERTIFICATE