

## ZODIAC MARK V HEAVY DUTY INFLATABLE BOAT WITH SCUBA REPLACEMENT PACKAGE

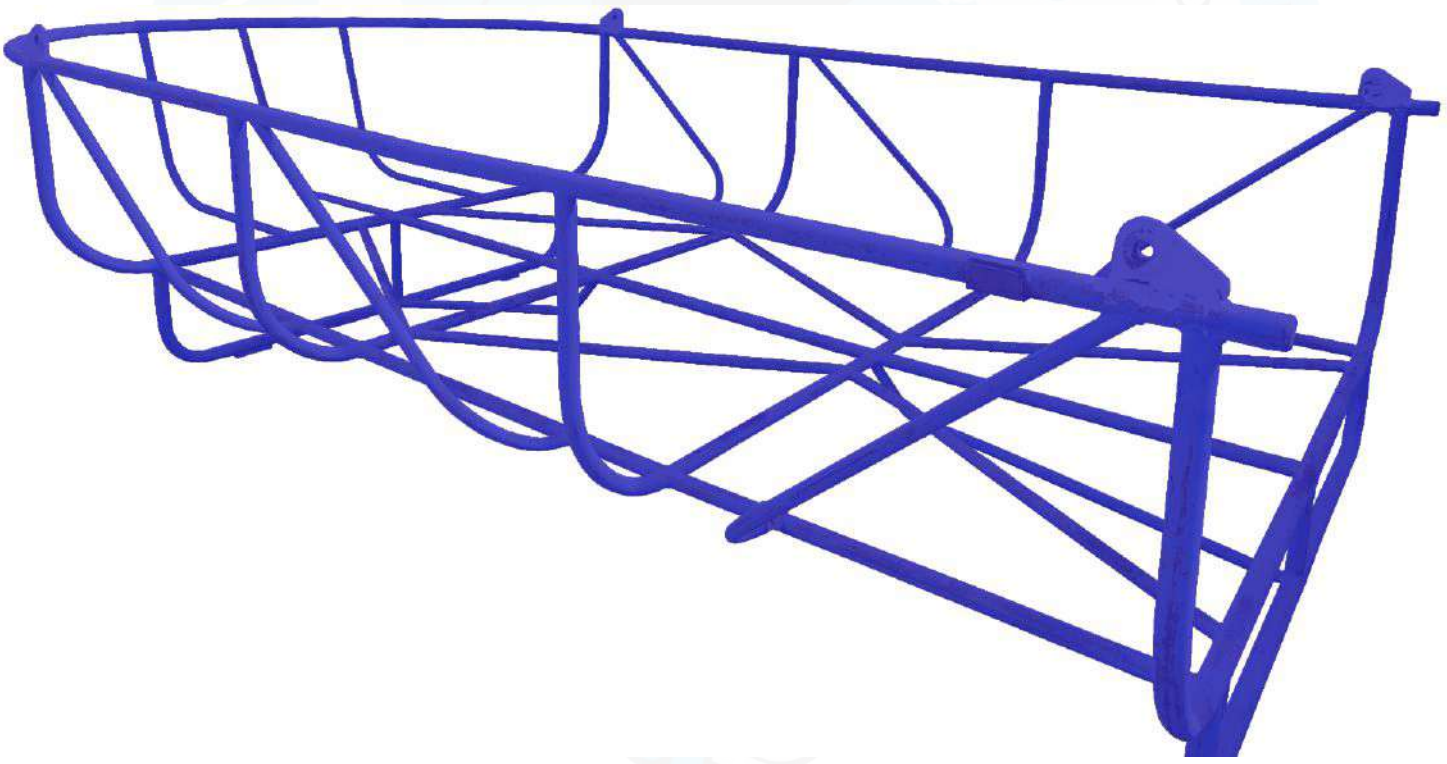
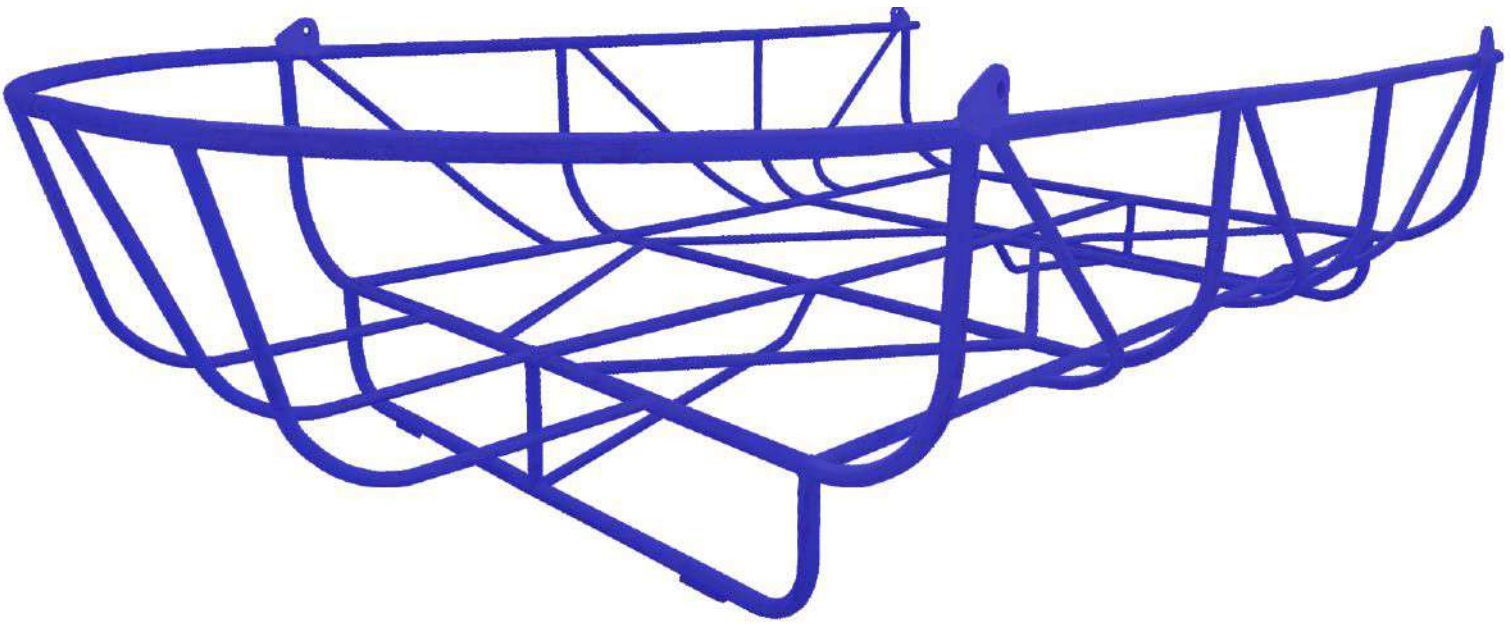
Designed for extreme environments and heavy loads, Zodiac Milpro™ Heavy Duty inflatable boats are foldable, easy to store and transport. They can carry payloads up to 4 tons with excellent maneuverability and speed, whether they transport passengers or equipment. The Zodiac Milpro HD Cruising variant has been further adapted to the needs of ecotourism, whale watching and cruise companies with modifications to enhance passenger comfort and easy launch and recovery from cruise liners.



Max Pax	15
Max Payload	2520 kg or 5556 lb
Overall length	5.85m or 19' 2"
Overall Width	2.48m or 8' 2"
Weight Empty	250 kg or 551 lb
Shaft Length	long - 20"
Max Power	115 hp 2 x 50 hp or 86 kw 2 x 38 kw
Max Engine Weight	165 kg 2 x 98 kg or 363 lb 2 x 216 lb
Fabric	1670 dtx, polyester, CSM/neoprene
Folded dimensions	BAG 1 - 2,10 x 0,87 x 0,40 m3 6' 11" x 2' 10" x 1' 4" BAG 2 - 1,50 x 0,84 x 0,29 m3 4' 11" x 2' 9" x 0' 11"
Floorboard	- Rigid



**ZODIAC MARK V HEAVY DUTY INFLATABLE BOAT WITH SCUBA REPLACEMENT PACKAGE**



Tare Weight	180 kgs
Pay Load	1020 kgs
Gross Weight	1200 kgs
Test Weight	2400 kgs
Dimension	4800 (L) x 2800 (W) x 1250 (H)

# ZODIAC MARK V HEAVY DUTY INFLATABLE BOAT WITH SCUBA REPLACEMENT PACKAGE

## BV CERTIFICATE



**BUREAU  
VERITAS**

AQ-CCU-21-08-22-BV-26-12.MS  
Job Number: DBA.4.21.057

### FORM OF RECORD OF THOROUGH EXAMINATION OF LIFTED EQUIPMENT

The equipment detailed below was examined in accordance with UAE Law Decree 32 of 1982 Article 20 and ADNOC GROUP STANDARD "HSE-OS-ST19" and Standard BS 7072

<b>Owner</b>	M/S.Synergy Diving & Eqpt. Solution, FZC Dubai , UAE		
<b>Equipment Name</b>	BOAT CRADDLE	<b>Location of Inspection</b>	Synergy Diving & Eqpt. Solution, FZC Dubai , UAE
<b>Type of Inspection</b>	Bi-annual / Annual / Thorough Examination / with Load Test	<b>Date of Inspection</b>	22.08.2021
<b>Place of Inspection</b>	Synergy Diving & Eqpt. Solution, FZC Dubai , UAE	<b>Date of Last Inspection</b>	Newly tested
<b>Date of Last NDT</b>	DT:22/08/2021 BV REF : DBA.4.21.057.220821-MPI.002.MS	<b>Date of Last Proof Load Test</b>	Newly tested

#### Summary:

The following "BOAT CRADDLE " have been Visually Examined / Load Tested / Proof Load Tested / Function Tested and found to be suitable for further service with recommendations as given hereunder.

#### Equipment:

S/N	Asset No. ID / No.	Serial / No.	Description	Tare Weight / S.W.L. / M.G.W.	Recommendations
1		SDES-BC-016	BOAT CRADDLE C/w Four Lifting Pad Eye On top, All steel welded construction Dimensions : 5150 mm (L)x2600 mm (W)x1850 mm (H)	Tare Weight: 500 kg Pay Load: 1500 kg Maximum Gross Weight: 2000 kg	Visually Inspected Proof Load tested @ 4000 kg & Found Satisfactory

**Condition Found** : Suitable for further use  
**Color Code** : BLUE / ORANGE(FROM 1<sup>st</sup> JANUARY -2022)  
**Design Verification** : Not Available  
**Recommendations** : Recommended to modify as per DNV 2.7-1 / BS EN ISO 10855

I certify on behalf of the Third Party Company named above that the items described herein were Thoroughly Examined by myself being a Competent Person and were found at the time of inspection free from cracks, flaws, or other defects, unless otherwise stated above and considered to be Safe for Further Use, subject to continuous maintenance being applied and qualified operator / user being employed.

**Next Inspection Due on:** 21/02/2022  
**Next Proof Load Test Due on:** 20/08/2025/ Major Repair or Modification

Inspected by: Mohammed Sarfaraz Shukur(26)  
Inspector of Bureau Veritas  
Reviewed by: Kiran Govind (Code 24)

Distribution Original - Asset Integrity  
Endorsement 06 Months

**DXB-IVS-019**

Bureau Veritas S.A. Dubai Branch, P.O.Box: 9110, Dubai, UAE. Tel No: +971 4 3074400 Fax No: +971 4 3452391/3459023 Email: bvveritas@emirates.net.ae www.bureauveritas.com

**ZODIAC MARK V HEAVY DUTY INFLATABLE BOAT WITH SCUBA REPLACEMENT PACKAGE**

**BV CERTIFICATE**



AQ-CCU-21-08-22-BV-26-12.MS  
Job Number: DBA.4.21.057



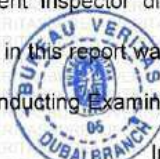
**RECORD OF PROOF LOAD TEST AND THOROUGH EXAMINATION OF CARGO CARRYING UNITS**

1.	Name And Address Of Owner Of CCU:	M/S.Synergy Diving & Eqpt. Solution, FZC Dubai , UAE			
2.	Name And Address Of Manufacturer Of CCU:	M/S.Synergy Diving & Eqpt. Solution, FZC Dubai , UAE			
3.	Type Of CCU and Description including Dimensions: (e.g. Basket, Container, Half Height, Skid Mounted Equipment, Tanks, Cradles, ...etc.):	BOAT CRADDLE C/w Four Lifting Pad Eye All steel welded construction Dimensions : 5150 mm (L) x2600 mm (W) x1850 mm (H)			
4.	Date Of CCU was first put into service / Manufacturer:	2021			
5.	Identification Numbers	a) Makers Serial Number:	SDES-BC-016		
		b) Name Plate Details:	N/A		
		c) Owners distinguishing mark or number (if any):	N/A		
6.	CCU Capacity:	Tare Weight: 500 kg, Pay Load: 1500 kg & MGW: 2000 kg			
7.	Date of Last Thorough Examination of CCU:	Newly Tested			
8.	Date of Last Proof Load Test of CCU:	Newly Tested			
9.	Description of Test and Examination The CCU was Proof Load Tested as follows:  2.0 x MGW on 4 Lifting Pad-eyes  1.5 x MGW on 2 Lifting Pad-eyes diagonally  Drop Test with SWL on inclined surface	(i) Boom Length (m)	(ii) Radius (m)	(iii) Test Load (t)	(iv) MGW (t)
		N/A	N/A	4000 kg	2000 kg
		N/A	N/A	xx	xx
		N/A	N/A	xx	xx
Calibrated Test Weight Calibration Cert. No.: 3901-113/20BJU, 3901-118/20BJU DT. 03.11.20 , Calibrated Load Cell S.No.: LL-0118, Calibration Cert. No.: C2001001.86. DT: 09.12.2020					
10.	Pre and Post Proof Load Test NDT Results:	DT:22/08/2021 BV REF : DBA.4.21.057.220821-MPI.002.MS			
11.	Defects or deficiencies noted and alterations or repairs required before putting the CCU into service (if none enter NONE):	None			

**THIS IS TO CERTIFY THAT** the undersigned a competent inspector did attend the mentioned owner's establishment

Or his designated site on **22.08.2021** and the item described in this report was thoroughly examined and tested and the above particulars were at the time of inspection.

Date of Certificate Issue: **22.08.2021** Name of Person Conducting Examination: Mohammed Sarfaraz shukur (Code 26)  
Inspector of Bureau Veritas



Date of Next Proof Load Test: **21/08/2025**

This Certificate is issued in Accordance with ADNOC Offshore LIMS & UAE Federal Ministry Law No: 10 Order 32, Article 20

**DXB-IVS-019**

Bureau Veritas S.A, Dubai Branch, P.O.Box: 9110, Dubai, UAE. Tel No: +971 4 3074400 Fax No: +971 4 3452391/3459023 Email: bvveritas@emirates.net.ae www.bureauveritas.com

**TWO DIVER SCUBA REPLACEMENT PACKAGE (SRP) WITH STEEL CYLINDERS**  
**# SY-2DAP-D040-SC-SRP-X-XXX**



**PART NO : SY-2DAP-D040-SC-SRP-X-XXX**

**Design**

- All Stainless Steel 316 construction, four diagonal lifting points with ringed pad eyes and fork lift slots.
- Dedicated lifting slings, certified, provided with SRP
- 4 X 50 LTR X 200 BAR Steel cylinders
- State of the art dive panels, fully engraved, color coded per diver, built into a waterproof, dust proof, unbreakable Pelican case
- Built to utilize 2 x 100 mtr / 150 mtr / 200 mtr diving umbilicals.
- Various options – Inbuilt radio, inbuilt CCTV systems for diver 1, diver 2,
- battery pack to run the video systems
- High pressure air hoses with ss fittings from cylinders to dive panel
- Bespoke panels can also be supplied, with client company logo, asset number etc printed on the system
- The system is supplied with complete certification package as per IMCA
- guidelines and class witness certification

**DESIGN for Mobile/Portable Surface Supplied Systems IMCA D040**

**TWO DIVER SCUBA REPLACEMENT PACKAGE (SRP) WITH STEEL CYLINDERS**  
# SY-2DAP-D040-SC-SRP-X-XXX



**Bespoke designs : The panel colors and client logo can be made to choice**

**TWO DIVER SCUBA REPLACEMENT PACKAGE (SRP) WITH STEEL CYLINDERS**  
**# SY-2DAP-D040-SC-SRP-X-XXX**



**TECHNICAL DATA SHEET:**

**Frame Dimensions**

Umbilical Hook	55 cm (550mm)
Construction	316 Stainless Steel (mirror finish)
SRP complete unit	1900mm (L) x 1700mm (H) x 1350mm (W)
Ringed Pad Eye	100mm (H) x 100mm(W) x 30mm
Pad eye design	DNV 2.7-1

**Optional Extras**

Wheels	Bolted wheels for easy transport
DC power	Battery pack 12v complete with fast charger in water proof junction box and battery leads

**TWO DIVER PORTABLE PANEL - SY-2DAP-D040-X-XXX**



**PART NO : SY-2DAPD040-R-2DV**

Two diver panel with radio and diver 1 / diver 2 cctv system



**TWO DIVER PORTABLE PANEL - SY-2DAP-D040-X-XXX**



**PART NO : SY-2DAPD040-R-1DV**

Two diver panel with radio and diver 1 cctv system

**BESPOKE DESIGNS TO SUIT EVERY CLIENT REQUIREMENT**



**PART NO : SY-2DAP-HSE-INSHORE**  
Two diver panel inshore



**PART NO : SY-2DAP-D040**  
Two diver panel offshore



**PART NO : SY-2DAP-D040-R**  
Two diver panel with radio



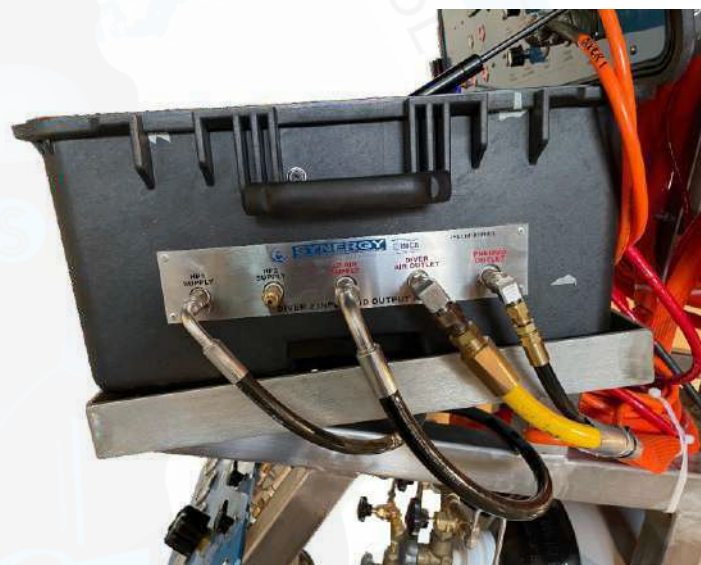
**PART NO : SY-2DAP-D040-R-1DV**  
Two diver panel with radio and diver 1 cctv



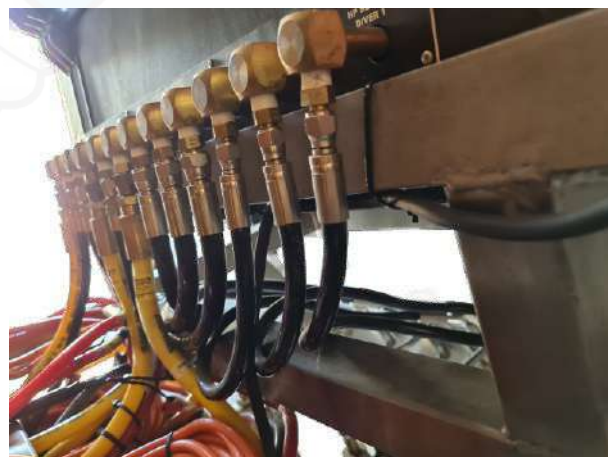
**PART NO : SY-2DAP-D040-R-2DV**  
Two diver panel with radio and diver 1, diver 2 cctv

**TWO DIVER PORTABLE PANEL - SY-2DAPD040-X-XXX**

DIVING PANEL WITH RIGHT SIDE (DIVER 1) AND LEFT SIDE (DIVER 2) INLET AND OUTLET FITTINGS



DIVING PANEL WITH DIVER 1 AND DIVER 2 INLET AND OUTLET FITTINGS FROM THE BACKSIDE OF THE PANEL



## TWO DIVER PORTABLE PANEL - SY-2DAPD040-X-XXX

### Information Two Diver Panel

Case	Model 1650, Black, Interior (28.57" L x 17.52" W x 10.65" H), with wheels and handle, water, rust and dust proof), Pelican USA Exterior dimensions: 80.14 x 52.1 x 31.67cm (31.55" x 20.51" x 12.47") Interior dimensions: 72.16 x 44.2 x 27.03cm (28.41" x 17.40" x 10.64") Weight without foam: 10.9kg (24.03lbs)
------	--

1 x 0-160 fsw/50 msw Depth gauge, 4.5", 0.25 % accuracy, mirror scale, with calibration point, Diver 1, Color coded Blue
--

1 x 0-160 fsw/50 msw Depth gauge, 4.5", 0.25 % accuracy, mirror scale, with calibration point, Diver 2, Color coded Red
---

Air Supplies	HP - 3 independent supplies, one per diver, LP - 3 independent supplies, one per diver
Communication	Amron 2820A-11 Two diver radio with ac/dc power supply
Regulator	1 x per diver, suitable for breathing air, Inlet : 6000 psi, outlet : 400 psi
Relief valves	0-250 psi on regulated diver supply line, 100 psi on pneumo gauges

### Air supply ports:

Option 1	All fittings provided on both sides of case - Left side all inlet fittings for hp air, lp air, right side divers air supply and pneumo fittings.
Option 2	All fittings provided from behind the panel for inlets and outlets
Calibration	Inbuilt calibration points for pneumo gauges

### Optional :

CCTV	Can be provided for both diver 1 and diver 2
Monitor	TFT 15.5" (splitter will be provided if both diver CCTV options are required)
Surface control unit	All touch button controls with backlight for low visibility operations, video and light control
Primary recording	1 TB hard drive to record all diver video simultaneously
Secondary backup recording	1 TB backup hard drive to record all diver video simultaneously

## TWO DIVER SCUBA REPLACEMENT PACKAGE (SRP) WITH STEEL CYLINDERS

# SY-2DAP-D040-SC-SRP-X-XXX

### Breathing Air Cylinder Specification



Cylinder	IL1.50.229.200
Manufacturing Standard	ISO 9809-1
Dimensions	229mm OD x 1480 mm Length x 50.0 ltrs
Material	34CrMo4
Manufacturing Process	Hot Spinning of Seamless Steel Tubes
Heat Treatment	Hardened Quenched and Tempered
Working Pressure	200 bar
Hydraulic Test Pressure	300 bar
Minimum Burst Pressure	480 bar
Volumetric Capacity (nominal)	50 Litres
Nominal Gas Capacity	10 cu.m (Approx)
Cylinder Outside Diameter (+_1%)	229mm
Cylinder Length (without valve (+_20MM))	1470mm (Approx)
Tare Weight (+_5%)	54 kg (Approx)
Gas Application	Breathing Air
Neck Thread Specification	25E as per EN-629
Valve	Handwheel Operated Valve with BS3 Outlet
External Finish	Powder coated as per Gas Color Code for Breathing Air Grey (RAL 7037)

**ACCESSORIES**

**12V 75 AMPS CAR BATTERY WITH FAST BATTERY CHARGER IN WATER PROOF JUNCTION BOX PROVIDED WITH SRP**



**PART NO : SY-SRP-2DAP-D040CSRP-X-XXX**

**SY-2820A-11 AMCOM II TWO-DIVER RECHARGEABLE BASIC PORTABLE COMMUNICATOR**



**NEWLY DESIGNED ENHANCEMENTS:**

**High Audio Fidelity**

Ultra-low noise circuit combined with noise suppression circuitry produces crystal clear speech. Automatic gain adjustment

will guard audio signal from distortion, enhance speaker protection and audio quality. Increases band width 47%.

**Extended Battery Operation Time**

Audio amplifier card deploys the state-of-the-art Class-D digital audio power amplifier. Has very low power dissipation, produces less heat, and extends battery life up to 32%.

**Flexible Gain Settings**

The audio amplifier card has adjustable gain settings to accommodate different communication applications and environments.

**Ultra-Low Electromagnetic Interference (EMI)**

EMI is achieved through spread-spectrum and de-phase control techniques providing for optimum integration with diving systems.

**Outdoor Rated AC Power Module**

Weather resistant, IP65 rated AC power entry module accommodates country specific AC power cords.

**Country Specific V-Lock AC Power Cord**

At time of order, simply choose the IP54 rated Locking AC power cord you need.

**FEATURES:**

- Single volume control for both divers.
- Diver's umbilicals can be set up on 4-wire mode (full duplex) or 2-wire mode (push-to-talk) or any combination of the two modes for each diver.
- Ability to use both dynamic and pre-amplified diver microphones with a unique circuit that detects microphone type and automatically adjusts volume levels.
- The divers' connections consist of cross-talk and separate speaker and microphone inputs.
- Internal charger allows for simultaneous charging and operation of the unit while protecting the rechargeable battery from being over-charged. Automatically supplies power to the audio amplifier when AC power is disconnected to allow for continued operation.
- See Tech Note (below) for recommended accessories.

## SY-2820A-11 AMCOM II TWO-DIVER RECHARGEABLE BASIC PORTABLE COMMUNICATOR

### SPECIFICATIONS:

- Input Impedance (Each Input): 250 Ohms
- Frequency Response: 300 - 10000 Hz
- Common Mode Rejection: 40 dB Minimum
- Current Drain Maximum Full Volume: 3 Amps
- Minimum Quiescent: 0.190 Amps
- Output Impedance: 4 Ohm
- Power Supply Voltage: 12 VDC Nominal (9 Volts Minimum - 16 Volts Maximum)
- AC Power Operating Range: 90-264 VAC, 50-60 Hz
- Sensitivity (Input): 0.5 mV
- Output Power (RMS @ 4 Ohm Load, 12 VDC): 10 Watts Audio
- Battery Life: 45 hours
- Dimensions: 10 in. H x 9 in. W x 14.5 in. L (25.4 cm x 22.9 cm x 36.8 cm)
- Weight: 16.25 Lbs. (7.37 Kg)

### INCLUDED WITH COMMUNICATOR:

SY-2820A-11AMCOM II Two-Diver Rechargeable Basic Portable Communicator with Outdoor Power Module and International Locking Power Cord includes:

- (1) SY-2890-05 Amron 12 VDC Sealed Lead Acid Gel-Cell Rechargeable Battery with Slide terminals
- (1) SY-282XA-UM Amron Two Diver Portable Communicator User Manual

### AVAILABLE OPTIONS:

- SY-2460SM-28 Amron Single Muff Operator Headset with Boom Mic and Dual Banana Plugs
- SY-2405-28 Amron Hand-Held Push-to-Talk Microphone
- SY-2401-28 Amron Deluxe Headset with Boom Mic
- SY-2460-28 Amron Standard Headset with Boom Mic
- SY-2822-28 Amron Remote Walk-and-Talk (4-wire mode)
- SY-2821-28 Amron Remote Walk-and-Talk (2-wire mode)

### TECH NOTE:

All communicators will inherently transfer topside noise to the divers when the tender speaks directly into the communicator's panel speaker. To eliminate background noise at the surface, we recommend purchasing the 2405-28 Push-to-Talk Microphone (not included with this model). For optimum communications, it is recommended to use the 2401-28 Deluxe Headset with Boom Mic, topside. For tender maneuverability, use the 2401-28 Deluxe Headset with Boom Mic along with the 2822-28 Remote Walk-and-Talk (4-wire mode) or the 2821-28 Remote Walk-and-Talk (2-wire mode). For wireless tender communications, order the 2825A-03 Two Diver Deluxe Portable Communicator with built-in Wireless Tender option.



## CLASS WITNESS CERTIFICATES

DBA 4.20.242.240320-CCU 011.MS

**CERTIFICATE**  
OF THOROUGH EXAMINATION OF LIFTING EQUIPMENT

OWNER: M/S. Synergy Diving & Eqt. Solution, Dubai, UAE  
ITEM: Scuba Replacement Package Frame  
EQUIPMENT ID: SRP-115

At the request of M/s Synergy Diving & Eqt. Solution, Dubai, UAE Surveyors to BUREAU VERITAS, acting within the General Conditions of Services of the Society, authorized at Synergy Diving & Eqt. Solution, Dubai, UAE, to witness thorough test order to carry out Thorough Examination of the above mentioned equipment on 28<sup>th</sup> March 2020 as per relevant local regulation and applicable international standards with following given below:

**EQUIPMENT DETAILS:**

DESCRIPTION OF EQUIPMENT: All Diesel Fully Welded Construction C/w Four Lifting Pad Eye on Top  
Dimensions: 1900 mm (L) x 1730 mm (W) X 1500 mm (H)  
Pad Eye Details: Hole Dia: 20mm x 100 mm (H) x 100 mm (W)  
Thickness: 20mm

DESIGN APPROVAL NO: N/A  
YEAR OF MANUFACTURE: N/A  
CAPACITY OF EQUIPMENT: N/A  
TARE: 630 KG  
MAXIMUM GROSS WEIGHT: 630 KG

**EXAMINATION RECORDS:**

DATE OF PROOF LOAD TEST: NEWLY TESTED  
LOAD Factor: Ministry Decree No 2 Article 30-1992/QHAD-QF/ COP-34/M/Min/30/2014. Proof Load Tested as per BS 7022 (MCA DIVERS)  
DETAILS OF TEST (IF APPLICABLE): Proof Load: 147 kgs at 4 Lifting Points. N/A  
NFI BY: REF # M/FI DBA 4.20.242.240320-DPL 003.MS

DEFECT REPAIR AND CORRECTIVE ACTION REQUIRED BEFORE USE: NONE  
It is recommended to ready as per latest standard BS EN ISO 16646-1:2014, during next inspection

OTHER RECOMMENDATIONS: N/A

COLOR CODE: Orange (1st June 2005) (no further colour test and certificate validity)

The above mentioned equipment has been found satisfactory at the time of inspection and is considered to be safe for further use, subject to control notes and conditions being reported and qualified operator being instructed. This is to certify that the Competent Person at the time of the test pressure on test data to witness proof load test and/or to carry out thorough examination of the equipment under test and that all particulars described above were correct at the time of assessment. This Certificate becomes void in case of any major repair, modification and/or alteration being undertaken by reason of damage.

Next Proof Load Test Date (not to be later than): 25 March 2024 (1st Anniversary)  
Next Inspection Due (Date on or before): 29<sup>th</sup> September 2024

Signature of Person conducting Examination:   
Name:   
Signature of Bureau Veritas:   
Name: 

Form No: ARE-F0426

Industry & Facilities Division  
Third Party Inspection Report  
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INSPECTION REPORT No DBA: 4.20.242/IR-07 Revision No 0

Item	Attachment Name	Total Pages	Description
1	Spotting the hazard	1	2 MIN SAFETY CHECK LIST

Inspection Details:

- Witnessed Pneumatic over pressure test of Two Diver Air panel with the following details:
- |                              |                          |
|------------------------------|--------------------------|
| Description                  | Two Diver Air panel      |
| Country of origin            | U.A.E                    |
| Manufacturer Serial No       | SRP-115 / TRITON 344     |
| Year of Manufacture          | March 2020               |
| Design pressure              | LP 300 psi / HP 3300 psi |
| Pneumatic over test pressure | LP 330 psi / HP 3300 psi |
| Pneumatic Test Date          | 23.03.2020               |

Pneumatic Test:

- Pneumatic over pressure test of two diver air panel (Serial No.: SRP-115/TRITON 344) has been witnessed as per the approval procedure and found the following:
- Test Pressure gauge calibration certificate was reviewed and found satisfactory.
  - Low Pressure of 330 psi was applied to the low pressure piping of two diver air panel for 30 mins and found satisfactory at time of inspection.
  - High Pressure of 3300 psi was applied to the high pressure piping of two diver air panel for 30 mins and found satisfactory at time of inspection.
  - Soap solution leak test was performed on piping, fittings & valves, no leakage found at the time of inspection. Results satisfactory.

END OF REPORT

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Third Party Inspection Report  
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INSPECTION REPORT No DBA: 4.20.242/IR-07 Revision No 0



J - ATTACHMENTS

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INSPECTION REPORT No DBA: 4.20.242/IR-07 Revision No 0

- Manufacturing Progress Status: N/A
- Details of Inspection Activities carried out with reference to ITP:
  - Visual inspection of two diver air panel & found satisfactory.
  - Verified the serial No. SRP-115 / TRITON 344 of two diver air panel.
  - Witnessed pneumatic over pressure of two diver air panel as per Annexure - A & found satisfactory at the time of inspection.
- Confirmation of certificates:
  - Verified calibration certificates of measuring instruments and found satisfactory.

E2 - Details of Monitoring and Surveillance Patrols:  Tick if conducted during the visit

E3 - Details of Certificates Review:  Tick if conducted during the visit

F - HEALTH, SAFETY & ENVIRONMENT COMMENTS  
Comment on Observations and Actions Taken During the Inspection:  
Conducted 2 minutes safety check. No Safety Concerns were found at the time of inspection.

G - NON CONFORMITIES  
 Refer to attachment section J instead  
 Indicate if separate punch list is provided in attachment

Item	Description	Status	Raised on	Report No.	Closed on	Report No.	Comments
N/A							

H - PUNCH LIST ITEMS  
 Refer to attachment section J instead  
 Indicate if separate punch list is provided in attachment

Item	Description	Status	Raised on	Report No.	Closed on	Report No.	Comments
N/A							

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Industry & Facilities Division  
Third Party Inspection Report  
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INSPECTION REPORT No DBA: 4.20.242/IR-07 Revision No 0

**BV Coordinator**  
(Name and Signature)  
  
BV Office: Dubai  
Inspection Report Date: 23/02/2020

**BV Inspector**  
(Name and Signature)  
  
BV Office: Dubai

**Distribution:**  
 CLIENT  MANUFACTURER  
 OTHER

**Attachments Report:**  
 Yes, details in section J  No

**B - REFERENCE DOCUMENTATION:**  
 Refer to attachment section J instead  
 Indicate if separate document list is provided in attachment

Title	Reference n°	Rev.	Approval Status	Approved By	Date
Diving Equipment Systems Inspection Guidance	IMCA D400	01	Approved	Samy	July 2019
Pneumatic Over-Pressure Test	SSEI/QMS/M-01	02	Approved	Samy	July 2019

**C - ATTENDEES**

Name	Position	Representing
M. Mohamed Sorjani	Lifting Inspector	BV
M. Ajza A. Sattari	QC-Engineer	Synergy

**D - MEASURING & TESTING EQUIPMENT USED**  
 Refer to attachment section J instead  
 Indicate if separate equipment list is provided in attachment

Equipment Type	Equipment Identity n°	Last Calibration Date	Expiry Date
Digital Pressure Gauge	AC-2195068	21-07-2019	20-07-2021
Digital Pressure Gauge	83242	20-11-2019	20-11-2020

**E - INSPECTION DETAILS**  
E1 - Details of Witness (W) & Hold (H) Inspection Points

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Industry & Facilities Division  
Third Party Inspection Report  
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INSPECTION REPORT No DBA: 4.20.242/IR-07 Revision No 0

Initial  Internal  First  Resident  
Inspection was ordered by: M/S. Synergy Diving & Eqt. Solution, FZC Dubai, UAE  
Inspection performed as Recognized Authority:  Yes  No  
BV Job No: DBA: 4.20.242

**Project:** Third Party Inspection Services  
**BV Client:** M/S. Synergy Diving & Equipment Solution FZC Dubai, UAE  
**Manufacturer/Vendor:** M/S. Synergy Diving & Equipment Solution FZC  
**Subcontractor (if applicable):** N/A  
**Inspection Location:** At Oasis Dubai  
**Inspection performed on:** 23.02.2020 (Date(s))

**IPO Ref (if applicable):** (BV Internal Proj)  
**PO no.:** (refer to client)  
**PO no.:** (refer to Manufacturer)  
**Previous inspection (if applicable):** N/A (Date)  
**Next inspection (if applicable):** TBA (Date)

**MATERIAL / SUBJECT OF INSPECTION**  
 Refer to attachment section J instead  
 Indicate if separate material list is provided in attachment

ITEM / TAG No.	QTY	QTY Ordered for inspection
Witness of pneumatic over pressure test of Two diver air panel High Pressure (Serial No. SRP-115 / TRITON 344) & Low Pressure (Serial No. SRP-115 / TRITON 344)	01 No.	01 No.

**A - INSPECTION RESULT**  
 Satisfactory (Without comments)  Satisfactory with comments (Any of trailing Punch or Non Conformity items is still open)  
 Not Satisfactory (NCR raised during the inspection)

**Inspection Summary:** (for details refer to section E)  
Witness of pneumatic over pressure test of Two diver air panel High Pressure (Serial No. SRP-115 / TRITON 344) & Low Pressure (Serial No. SRP-115 / TRITON 344) as per Annexure -A & found satisfactory.

**Open Non Conformities:**  Yes, details in section G  No  
**Open Punch List Items:**  Yes, details in section H  No  
**Release Note Issued:**  Yes, number(s)  No  
**BV Traceability/Stamping:**  Yes  No

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The use of present template is forbidden in the absence of 3<sup>rd</sup> party services where Client specifications and templates must be used.

## Certifications

## Provided with each panel

Manufacturer	Synergy certification
International	IMCA D400
Class	Bureau Veritas pressure test certificates
Warranty	1 year international manufacturer warranty
Weight	Frame only : 147 kgs
Weight	Frame with cylinders, panel, umbilicals and bandmasks : 600 kgs

**THREE DIVER SCUBA REPLACEMENT PACKAGE (SRP) WITH STEEL CYLINDERS**  
**# SY-3DAP-D040-SC-SRP-X-XXX**



**PART NO : SY-3DAP-D040-SC-SRP-X-XXX**

**Design**

- All Stainless Steel 316 construction, four diagonal lifting points with ringed pad eyes and fork lift slots.
- Dedicated lifting slings, certified, provided with SRP
- 6 X 50 LTR X 200 BAR Steel cylinders
- State of the art dive panels, fully engraved, color coded per diver, built into a waterproof, dust proof, unbreakable Pelican case
- Built to utilize 3 x 100 mtr / 150 mtr / 200 mtr diving umbilicals.
- Various options – Inbuilt radio, inbuilt CCTV systems for diver 1, diver 2, diver 3
- 12v battery pack to run the video systems
- High pressure air hoses with ss fittings from cylinders to dive panel
- Bespoke panels can also be supplied, with client company logo, asset number etc printed on the system
- The system is supplied with complete certification package as per IMCA guidelines and class witness certification

**DESIGN for Mobile/Portable Surface Supplied Systems IMCA D040**

**THREE DIVER SCUBA REPLACEMENT PACKAGE (SRP) WITH STEEL CYLINDERS**  
**# SY-3DAP-D040-SC-SRP-X-XXX**



**TECHNICAL DATA SHEET:**

**Frame Dimensions**

Umbilical Hook	55 cm (550mm)
Construction	316 Stainless Steel (mirror finish)
SRP complete unit	2200mm (L) x 1700mm (H) x 1350mm (W)
Ringed Pad Eye	100mm (H) x 100mm(W) x 30mm (T) (with ring)
Pad eye design	DNV 2.7-1

**Optional Extras**

Wheels	Bolted wheels for easy transport
DC power	Battery pack 12v complete with fast charger in water proof junction box and battery leads

**THREE DIVER PORTABLE PANEL - SY-3DAP-D040-X-XXX**



**PART NO : SY-3DAP-D040-R-2DV**

Three diver panel with radio and diver 1 / diver 2 cctv system

**THREE DIVER PORTABLE PANEL - SY-3DAP-D040-X-XXX**



**PART NO : SY-3DAP-D040-R-1DV**  
 Three diver panel with radio and diver 1 cctv

**PART NO : SY-3DAP-D040-R**  
 Three diver panel with radio



**THREE DIVER PORTABLE PANEL - SY-3DAP-D040-X-XXX**

DIVING PANEL WITH D1/D2/D3 INLET FITTINGS (AIR SUPPLIES HP/LP) ON LEFT SIDE AND D1/D2/D3 OUTLET FITTINGS (TO DIVER) ON RIGHT SIDE



DIVING PANEL WITH D1/D2/D3 INLET (HP/LP) AND OUTLET FITTINGS (TO DIVER) FROM THE BACKSIDE OF THE PANEL



## THREE DIVER PORTABLE PANEL - SY-3DAP-D040-X-XXX

### Information

### Two Diver Panel

Case	Model 1650, Black, Interior (28.57" L x 17.52" W x 10.65" H), with wheels and handle, water, rust and dust proof), Pelican USA <b>Exterior dimensions:</b> 80.14 x 52.1 x 31.67cm (31.55" x 20.51" x 12.47") <b>Interior dimensions:</b> 72.16 x 44.2 x 27.03cm (28.41" x 17.40" x 10.64") <b>Weight without foam:</b> 10.9kg (24.03lbs)
------	---

1 x 0-230 fsw/70 msw Depth gauge, 3.5", 0.25 % accuracy, mirror scale, with calibration point, Diver 1, Color coded <b>Green</b>
--

1 x 0-230 fsw/70 msw Depth gauge, 3.5", 0.25 % accuracy, mirror scale, with calibration point, Diver 2, Color coded <b>Blue</b>
---

1 x 0-230 fsw/70 msw Depth gauge, 3.5", 0.25 % accuracy, mirror scale, with calibration point, Diver 3, Color coded <b>Red</b>
--

Air Supplies	HP - 3 independent supplies, one per diver, LP - 3 independent supplies, one per diver
Communication	Amron 2830A-11 Three diver radio with ac/dc power supply
Regulator	1 x per diver, suitable for breathing air, Inlet : 6000 psi, outlet : 400 psi
Relief valves	0-250 psi on regulated diver supply line, 100 psi on pneumo gauges

### Air supply ports:

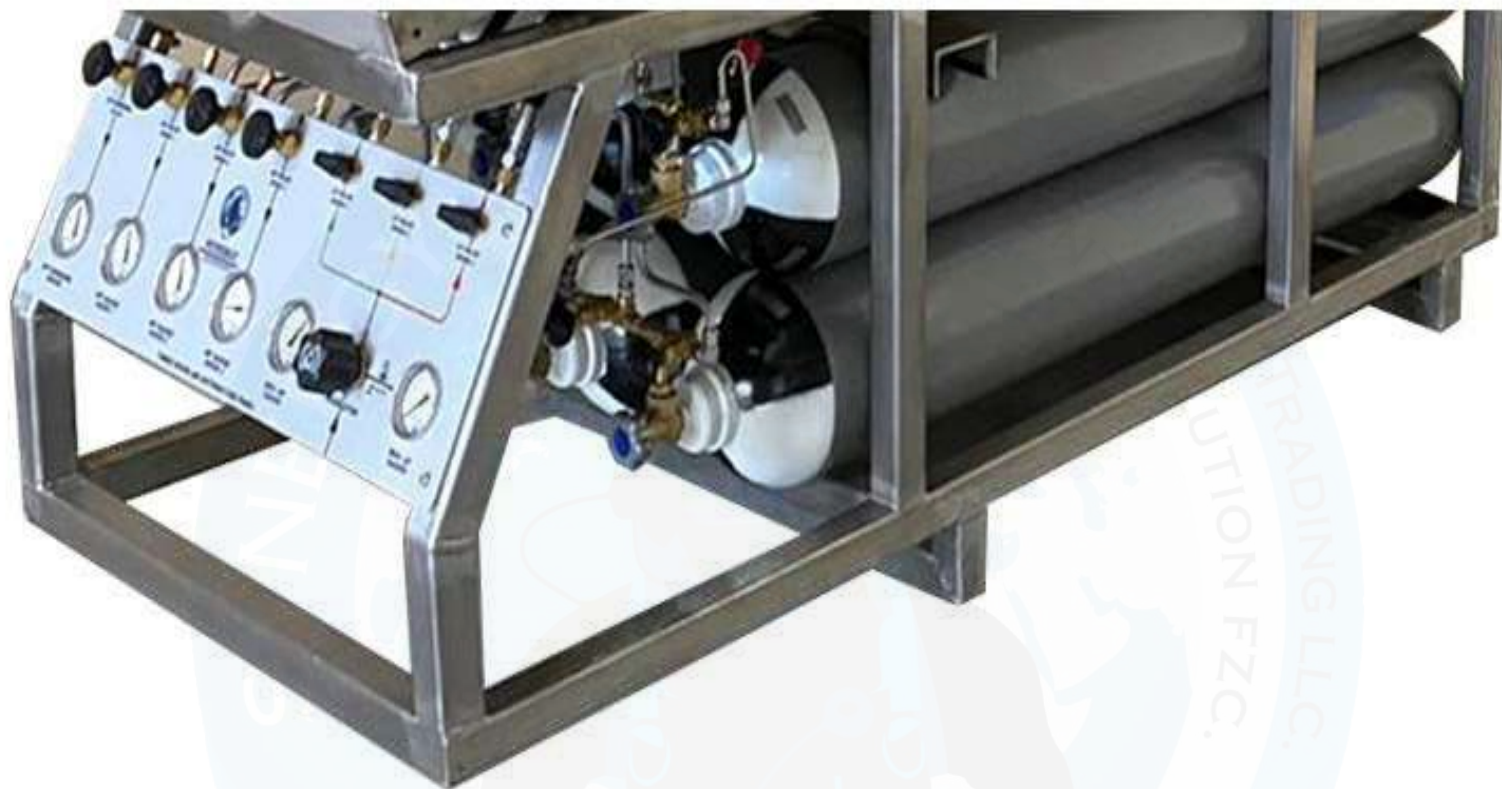
Option 1	All fittings provided on both sides of case – Left side all inlet fittings for hp air, lp air, right side divers air supply and pneumo fittings.
Option 2	All fittings provided from behind the panel for inlets and outlets
Calibration	Inbuilt calibration points for pneumo gauges

### Optional :

CCTV	Can be provided for both diver 1 and diver 2
Monitor	TFT 15.5" (splitter will be provided if both diver CCTV options are required)
Surface control unit	All touch button controls with backlight for low visibility operations, video and light control
Primary recording	1 TB hard drive to record all diver video simultaneously
Secondary back up recording	1 TB backup hard drive to record all diver video simultaneously

## THREE DIVER PORTABLE PANEL - SY-3DAP-D040-X-XXX

Emergency panel provision – extra protection for diver safety



Information	Emergency Panel
Cylinder Charging	HP charging valve/Gauge
Regulator	HP regulator, inlet 6000 psi Outlet 400 psi
Supplies to Dive Panel	D1/D2/D3 HP valves/Gauges
Regulated Supply	D1/D2/D3 LP valves/Gauges
Connections	Valves/fittings/piping from cylinders to panel



**THREE DIVER SCUBA REPLACEMENT PACKAGE (SRP) WITH STEEL CYLINDERS**  
# SY-3DAP-D040-SC-SRP-X-XXX

**Breathing Air Cylinder Specification**



Cylinder	IL1.50.229.200
Manufacturing Standard	ISO 9809-1
Dimensions	229mm OD x 1480 mm Length x 50.0 ltrs
Material	34CrMo4
Manufacturing Process	Hot Spinning of Seamless Steel Tubes
Heat Treatment	Hardened Quenched and Tempered
Working Pressure	200 bar
Hydraulic Test Pressure	300 bar
Minimum Burst Pressure	480 bar
Volumetric Capacity (nominal)	50 Litres
Nominal Gas Capacity	10 cu.m (Approx)
Cylinder Outside Diameter (+_1%)	229mm
Cylinder Length (without valve (+_20MM)	1470mm (Approx)
Tare Weight (+_5%)	54 kg (Approx)
Gas Application	Breathing Air
Neck Thread Specification	25E as per EN-629
Valve	Handwheel Operated Valve with BS3 Outlet
External Finish	Powder coated as per Gas Color Code for Breathing Air Grey (RAL 7037)

**ACCESSORIES**

**12V 75 AMPS CAR BATTERY WITH FAST BATTERY CHARGER IN WATER PROOF JUNCTION BOX PROVIDED WITH SRP**



**PART NO : SY-SRP-3DAP-D040-SC-SRP-X-XXX**

## SY-2830A-11 AMCOM III THREE-DIVER RECHARGEABLE BASIC PORTABLE COMMUNICATOR

### SY-2830A-11 AMCOM III THREE-DIVER RECHARGEABLE PORTABLE COMMUNICATOR WITH OUTDOOR AC POWER MODULE AND INTERNATIONAL LOCKING POWER CORD



#### NEWLY DESIGNED ENHANCEMENTS:

##### High Audio Fidelity

Ultra-low noise circuit combined with noise suppression circuitry produces crystal clear speech. Automatic gain adjustment

will guard audio signal from distortion, enhance speaker protection and audio quality. Increases band width 47%.

##### Extended Battery Operation Time

Audio amplifier card deploys the state-of-the-art Class-D digital audio power amplifier. Has very low power dissipation, produces less heat, and extends battery life up to 32%.

##### Flexible Gain Settings

The audio amplifier card has adjustable gain settings to accommodate different communication applications and environments.

##### Ultra-Low Electromagnetic Interference (EMI)

EMI is achieved through spread-spectrum and de-phase control techniques providing for optimum integration with diving systems.

##### Outdoor Rated AC Power Module

Weather resistant, IP65 rated AC power entry module accommodates country specific AC power cords.

##### Country Specific V-Lock AC Power Cord

At time of order, simply choose the IP54 rated Locking AC power cord you need.

#### FEATURES:

- Separate channels and volume controls for each diver and tender to accommodate individual earphone and microphone adjustments, equipment variations and individual comfort levels.
- Divers' umbilicals can be set to 4-wire mode (full duplex) or 2-wire mode (push-to-talk) or any combination of the two modes for any diver.
- Ability to use both dynamic and pre-amplified diver microphones with a unique circuit that detects microphone type and automatically adjusts volume levels.
- Weatherproof push-to-talk microphone for better voice intelligibility topside. For optimum clarity, see Tech Note (below) for other recommended equipment.
- Internal charger allows for simultaneous charging and operation of the unit while protecting the rechargeable battery from being over-charged. Automatically supplies power to the audio amplifier when AC power is disconnected to allow for continued operation.

## SY-2830A-11 AMCOM III THREE-DIVER RECHARGEABLE BASIC PORTABLE COMMUNICATOR

### SPECIFICATIONS:

- Input Impedance (Each Input): 250 Ohms
- Frequency Response: 300 - 10000 Hz
- Common Mode Rejection: 40 dB Minimum
- Current Drain Maximum Full Volume: 3 Amps
- Minimum Quiescent: 0.190 Amps
- Output Impedance: 4 Ohm
- Power Supply Voltage: 12 VDC Nominal (9 Volts Minimum - 16 Volts Maximum)
- AC Power Operating Range: 90-264 VAC, 50-60 Hz
- Sensitivity (Input): 0.5 mV
- Output Power (RMS @ 4 Ohm Load, 12 VDC): 10 Watts Audio
- Battery Life: 41 hours
- Dimensions: 10 in. H x 9 in. W x 14.5 in. L (25.4 cm x 22.9 cm x 36.8 cm)
- Weight: 17.05 Lbs. (7.73 Kg)

### INCLUDED WITH COMMUNICATOR:

SY-2830A-11 AMCOM III Two-Diver Rechargeable Basic Portable Communicator with Outdoor Power Module and International Locking Power Cord includes:

- (1) SY-2405-28 Amron Hand-Held Push-to-Talk Microphone
- (1) SY-2890-05 Amron 12 VDC Sealed Lead Acid Gel-Cell Rechargeable Battery with Slide terminals
- (1) SY-283XA-UM Amron Three-Diver Portable Communicator User Manual

### AVAILABLE OPTIONS:

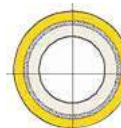
- SY-2460SM-28 Amron Single Muff Operator Headset with Boom Mic and Dual Banana Plugs
- SY-2401-28 Amron Deluxe Headset with Boom Mic
- SY-2822-28 Amron Remote Walk-and-Talk (4-wire mode)
- SY-2821-28 Amron Remote Walk-and-Talk (2-wire mode)

### TECH NOTE:

All communicators will inherently transfer topside noise to the divers when the tender speaks directly into the communicator's panel speaker. To eliminate background noise at the surface, use the 2405-28 Push-to-Talk Microphone, included with this model. For optimum communications, we recommend purchasing the 2401-28 Deluxe Headset with Boom Mic, topside. For tender mobility, use the 2401-28 Deluxe Headset with Boom Mic along with the 2822-28 Remote Walk-and-Talk (4-wire mode) or the 2821-28 Remote Walk-and-Talk (2-wire mode). For wireless tender communications, order the 2830A-03 Three-Diver Deluxe Portable Communicator with Wireless Tender.

## SYNERGY SURFACE DIVING HOSES AND UMBILICALS SY-AQUAFLOW

Known worldwide for its lightweight and ultra flexible construction, Aquaflow hoses are ideal for surface demand applications. Aquaflow kink resistant construction comprises of an extruded core tube, reinforcement of high strength yarn and a bonded outer cover. Both tube and cover are extruded from high performance thermoplastic polymers which are particularly clean and free from odors often associated with conventional rubber hoses. Coupled with the wide operating temperature range this ensures breathing gas quality is maintained under all conditions from -20°C to +66°C.



Part No.	Nominal Bore		O.D.		Min. bend radius		Working pressure		Nom. burst pressure		Weight in air		Weight in sea water		Typical application
	in	mm	in	mm	in	mm	psi	bar	psi	bar	lb/ft	g/m	lb/ft	g/m	
SY-HDA0104	1/4	6.3	0.50	12.7	1.25	32	300	21	1200	84	0.078	116	-0.009	-14	Pneumo
SY-HDA0106	3/8	9.5	0.66	16.8	2	50	500	35	2000	140	0.119	177	-0.034	-50	Air/Gas
SY-HDA1108	1/2	12.7	0.83	21.0	3	76	300	25	1200	84	0.178	265	-0.054	-80	Hot water

### Aquaflow Umbilicals



Lightweight, ultra flexible and kink resistant, Aquaflow Umbilicals are ideal for breathing gas supply, comms and pneumo service for surface demand umbilicals. They can be produced in production runs up to 740 meters long and can be over extruded or braided for additional protection against abrasion and use in contaminated waters.

The unique materials and cabled "rope-like" construction combine to produce the most flexible, controlled buoyancy umbilicals available today. The umbilicals have no need

for tape, the repairs are much reduced and they have a longer life. They keep the professional diver safer and more efficient both while diving and on deck. They will ultimately reduce costs for the operator. The highest quality materials, workmanship with competitive pricing and unmatched service to our clients worldwide. SYNERGY invites you to visit our website or contact us directly so that we can assist you with all your Diving Umbilical needs.

## SYNERGY SURFACE DIVING HOSES AND UMBILICALS SY-AQUAFLOW

### SY-UDA0103

3 part surface demand



### SY-UDA0204

3 part plus video



**SYNERGY SURFACE DIVING HOSES AND UMBILICALS SY-AQUAFLOW**



**Diving Umbilical with protective outer sheet**



**Diving Umbilical with spiral wrap**



**Diving Umbilical without protective outer sheet**

## OUTLAND VIDEO CAMERA / LIGHTS / UMBILICALS

Mechanical	Specification
Weight	6 oz (.2kg) Dry, 3 oz(.06kg) wet
Depth Rating	2000 ft (600m)
Housing	Black delrin
Electrical	
Image Device	1/3" CCD sensor (412k pixel)
Sensitivity	.001 lux @f1.4
Resolution	600 TV lines standard
Video Out	1.2 Vpp
Power	12 VDC @ 110 ma.
Optical	
Lens	3.6mm, Electronic-Iris
Focus	Fixed 4" to infinity
Angle of View	70 horz. (in water)



**PART NO : SY-UWC-325/p/e**



**PART NO : SY-UWL-401**

Mechanical	Specification
Weight	7oz(0.2kg) Dry, 3 oz.(.1kg) Wet
Depth Rating	2000 ft (600m)
Housing	6061-16 Anodized Aluminium
Electrical	
Power	12 VDC @ 110 ma.
Wattage	18 watt (Eq to 150 watt halogen)
Output	700 lux at 1 meter

Mechanical	Specification
Conductors	16ea #22 awg 1 RG-59 Coax
Length (mtrs)	100/150/200 as per requirement
Diameter	8.5mm (0.35")
Materials	Orange Polyurethane jacket
Breaking Strength	1200 lbs
End fittings	
Diver End	Moulded Y connection
Camera	Rmk-5-fs with locking sleeve
Light	Rmg-3-fs with locking sleeve
Surface end	Soldered connection
Cable	8 pin amphenol connector



**PART NO : SY-VC-150M**

## SYNERGY PIGTAILS AND CONNECTORS

Connector	SY-RMK-5-FS
Type	5 Female Sockets
Cable	18 in Pigtail of 18 SO AWG Cable
Material	Special Neoprene, Molded
Contacts	Copper Alloy, Hard Gold Plated per ASTM-B-488
Voltage Rating	600 VDC
Pressure Rating, Mated	Up to 20,000 psi
Mates with	SY-XSL-5-BCL on Outland Camera SY-UWC-325/p/e

**PART NO : SY-RMK-5-FS**



**PART NO : SY-RMG-3-FS**



Locking sleeve for Rmg-3-fs

**PART NO : SY-G-FLS-D**



Locking sleeve for Rmk-5-fs

**PART NO : SY-K-FLS-D**



Connector	SY-RMG-3-FS
Type	3 Female Sockets
Cable	18 in Pigtail of 18 SO AWG Cable
Material	Special Neoprene, Molded
Contacts	Copper Alloy, Hard Gold Plated per SY-ASTM-B-488
Voltage Rating	600 VDC
Pressure Rating, Mated	Up to 20,000 psi
Mates with	SY-XSG-3-BCL on Outland light SY-UWL-401

**PART NO : SY-MS3108B-18-08P**

<b>Certifications</b>	Provided with each system
International	IMCA D023
Manufacturer	Synergy Certificates
Electrical	Continuity/Function test



**PART NO : SY-CLBRK**



SS camera and light bracket with jubilee clamp

Cannon Right Angle Amphenol Connector is used for connecting the video camera umbilical to the surface video console unit.



## CLASS WITNESS CERTIFICATES

Industry & Facilities Division  
Third Party Inspection Report  
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INSPECTION REPORT No: TBA\_420242(B-01) Revision No: 0

Installation:  Initial  Extension  Final  Re-entry

Inspection requested by:  Self  Synergy Diving & Equipment Solutions PSC Dubai, UAE

Inspection performed at:  Requested Authority  Yes  No

RV Job No: TBA\_420242

Project: Third Party Inspection Services

IPD Ref (if applicable):

RV Client: M/S. Synergy Diving & Equipment Solutions PSC Dubai, UAE

RV Operator: M/S. Synergy Diving & Equipment Solutions PSC Dubai, UAE

Sub-Contractor (if applicable): N/A

Inspection Location: B/Gas, Dubai

Inspection performed on: 20/06/2019

IPD Ref (if applicable): N/A

Next Inspection (if applicable): TBA (Date)

MATERIAL / SUBJECT OF INSPECTION	ITEM / TAG No	QTY As per P/C	QTY Offered for Inspection
Witness of pneumatic over pressure test of Three Diver SRP - High Pressure (3200 BAR & Low Pressure (1200 BAR) Serial No. 389231 / 191319 / 191319 per Annexure - A & B and satisfactory		01 No.	01 No.

**A - INSPECTION RESULT**

Satisfactory with comments  Satisfactory (NCR raised during the inspection)

Not Satisfactory (NCR raised during the inspection)

Inspection Summary (for details refer to section D)

Release of pneumatic over pressure test of three diver SRP (3200 BAR) & Low Pressure (1200 BAR) Serial No. 389231 / 191319 / 191319 per Annexure - A & B and satisfactory

Open Non Conformities:  Yes, details in section D  No

Open Punch List Items:  Yes, details in section H  No

Release Note Issued:  Yes, number(s)  No

RV Troubleshooting:  Yes  No

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INSPECTION REPORT No: TBA\_420242(B-01) Revision No: 0

RV Inspector: Mohammed Sarraf (Name and Signature)

RV Coordinator: Bilal Lal (Name and Signature)

Inspection Report Date: 20/06/2019

Client Business:  CLIENT  MANUFACTURER  OTHER

Attachments Report:  Yes, details in section J  No

**B - REFERENCE DOCUMENTATION**

Title	Reference No	Rev	Approved status	Approved by	Date
Diving Equipment System Inspection document	IMCA D040	01	Approved	Bilal Lal	12/01/2018
Pneumatic Over Pressure Test	SEE QMS/SM 01	02	Approved	Sarraf	Mar 2018

**C - ATTENDEES**

Name	Position	Representing
M. Mohammed Sarraf	Lifting Inspector	BV
M. Asad Siddiqui	QC Engineer	Synergy

**D - MEASURING & TESTING EQUIPMENT USED**

Equipment Type	Equipment Identity No	Last Calibration Date	Expiry Date
Digital Pressure Gauge	AC-2740006	27-07-2019	25-09-2021
Digital Pressure Gauge	65342	20-11-2019	20-11-2021

**E - INSPECTION DETAILS**

**E1 - Details of Witness (W) & Hold (H) Inspection Points**

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INSPECTION REPORT No: TBA\_420242(B-01) Revision No: 0

**F - MANUFACTURING PROGRESS STATUS**

- NI

**G - Details of Inspection Activities carried out with reference to ITP**

- Visual inspection of Three diver SRP & found satisfactory
- Verified the serial No. SRP-120 / 191319 / 191319 of three diver SRP
- Witnessed pneumatic over pressure of three diver SRP as per Annexure - A & B and satisfactory at the time of inspection

**H - Confirmation of certificates**

- Verify calibration certificates of measuring instruments and found satisfactory

**E2 - Details of Monitoring and Surveillance Points**

Test is completed during the test  Test is completed during the test

**F - HEALTH, SAFETY & ENVIRONMENT COMMENTS**

(Comment on Observations and Actions Taken During the Inspection)

Controlled 2 minor safety related issues. Safety Concerns were found at the time of inspection.

**G - NON CONFORMITIES**

Item	Description	Status	Raised on	Report No.	Closed on	Report No.	Comments
N/A							

**H - PUNCH LIST ITEMS**

Item	Description	Status	Raised on	Report No.	Closed on	Report No.	Comments
N/A							

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**D - DIGITAL PICTURES**



Observation: Front View of the SRP

Observation: Rear View of the SRP

Observation: Front View of the SRP

Observation: Front View of the SRP

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**J - ATTACHMENTS**

Item	Attachment Name	Total Pages	Description
1	Spotting the hazard	1	3 HAZARD CHECK LIST

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INSPECTION REPORT No: TBA\_420242(B-01) Revision No: 0

**Annexure -01**

**Inspection Details:**

- Witnessed Pneumatic over pressure test of Three Diver SRP with the following details:

Description	Three Diver SRP
Country of origin	U.A.E
Manufacturer Serial No	SRP - 120 / 191319 / 191319
Year of Manufacture	2019
Design pressure	1.2 MPa / 120 bar
Test pressure	1.2 MPa / 120 bar
Pneumatic Test Date	20.06.2019

**Pneumatic Test:**

- Pneumatic over pressure test of three diver SRP (Serial No. 389231 / 191319 / 191319) has been witnessed as per the approved procedure and found the following:

- Test Pressure gauge calibration certificate was reviewed and found satisfactory.
- Low Pressure of 1.2 MPa (120 bar) was applied under low pressure piping of three diver SRP for 20 minutes, no leaks found, satisfactory at time of inspection.
- High Pressure of 1.2 MPa (120 bar) was applied to the high pressure piping of three diver SRP for 20 minutes, no leaks found, satisfactory at time of inspection.
- No punch list items, no safety concerns, no safety hazards, no leakage found at the time of inspection. Results satisfactory.

**END OF REPORT**

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### Certifications

### Provided with each panel

Manufacturer	Synergy certification
International	IMCA D040
Class	Bureau Veritas pressure test certificates
Warranty	1 year international manufacturer warranty
Weight	Frame only : 160 kgs
Weight	Frame with cylinders, panel, umbilicals and bandmasks : 600 kgs

## YANMAR MARINE DIESEL ENGINES SY-D27



- **Reliable**

Boat owners relate to the advantages of a diesel: lower chance of electrical fault, better fuel economy and a long, reliable work filled life.

- **Long hours**

Useful for trolling, working nets or fish farming, the diesel can't be matched in low speed operation. The combustion chamber and new cooling system allows for hours of idling.

- **Cool**

The thermostat cools the engine in response to how hard it is working by changing the temperature of the water.

- **Superior**

Special cast iron cylinder liners are bonded onto the one piece aluminium block. Miniature fuel injection pumps are combined with nozzles to form "unit injectors" which are super compact

### Technical Details

#### Engine and Block

- One piece aluminium block.
- Cast iron cylinder bonded to the block.
- With a five coat painting process, the engine is protected both inside and out.

#### Fuel System

- Precise fuel metering with quick response.

#### Cooling System

- Seawater thermostat

#### Exhaust System

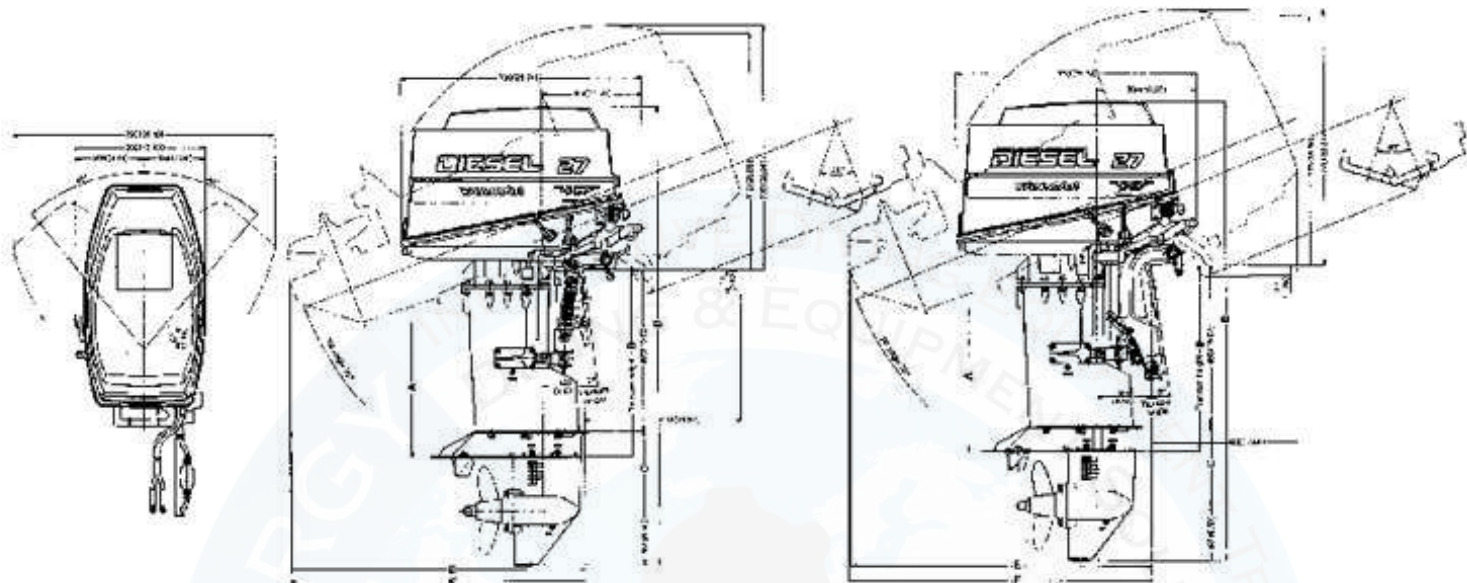
- Miniature injection pump and reduced smoke.

## YANMAR MARINE DIESEL ENGINES SY-D27



Model	D27
Configuration	4-cycle, vertical, water cooled diesel engine
Number of cylinders	3
Bore and stroke mm	70 x 70 (2.76 x 2.76)
Displacement cc (cu. in.)	808 (49)
Maximum output hp(kW) /rpm at crankshaft	27hp/4500rpm(19.9kW/4500rpm)
Combustion system	Direct injection
Starting system	Electric with emergency rope start
Cooling system	Direct seawater cooling by rubber impeller pump
Lubrication system	Forced lubrication with trochoid pump
Generator	AC dynamo built in flywheel
<b>Drive device</b>	
Clutch type	Dog type clutch
Reduction ratio Ahead/ Astern	1.846/1.846
Direction of rotation	Clockwise viewed from propeller
Lubrication system	Oil bath
Tilt up system	AX-E manual AX-EP hydraulic
Control device	
Engine speed control	Remote control
Clutch control	Remote control
Steering	Remote control
<b>Transom installation</b>	Through bolts with nuts
Fuel oil	Diesel fuel with kerosene (Add lube oil, 30:1)
<b>Fuel oil capacity l(cu.in)</b>	24 (1465)
Lube oil	Engine: SAE 15W40, API CD/ Drive: SAE 80W90, API Gear oil #90
<b>Dry weight</b>	
L-type	94kgs (207lbs) 102kgs (225lbs)
LL-type	95kgs (209lbs) 103kgs (227lbs)
UL-type	96kgs (212lbs) 104kgs (229lbs)

**YANMAR MARINE DIESEL ENGINES SY-D27**



	A	B	C	D	E	F
<b>L-type</b>	<b>402</b> (15.83)	<b>560</b> (22.05)	<b>239</b> (9.41)	<b>1380</b> (54.33)	<b>889</b> (35.00)	<b>892</b> (35.12)
<b>LL-type</b>	<b>442</b> (17.40)	<b>623</b> (24.53)	<b>302</b> (11.89)	<b>1443</b> (56.81)	<b>947</b> (37.28)	<b>952</b> (37.48)
<b>UL-type</b>	<b>482</b> (18.98)	<b>685</b> (26.97)	<b>364</b> (14.33)	<b>1505</b> (59.25)	<b>1505</b> (39.57)	<b>1009</b> (39.72)

	A	B	C	D	E	F
<b>L-type</b>	<b>402</b> (15.83)	<b>560</b> (22.05)	<b>239</b> (9.41)	<b>1380</b> (54.33)	<b>889</b> (35.00)	<b>892</b> (35.12)
<b>LL-type</b>	<b>442</b> (17.40)	<b>623</b> (24.53)	<b>302</b> (11.89)	<b>1443</b> (56.81)	<b>947</b> (37.28)	<b>952</b> (37.48)
<b>UL-type</b>	<b>482</b> (18.98)	<b>685</b> (26.97)	<b>364</b> (14.33)	<b>1505</b> (59.25)	<b>1005</b> (39.57)	<b>1009</b> (39.72)

## YANMAR MARINE DIESEL ENGINES SY-D27

# ACCESSORIES

	D27	D36
Transom length, L-type, 560mm	●	●
Transom length, LL-type, 623mm	●	●
Transom length, UL-type, 685mm	●	●
Charging dynamo, 12V-10A	●	●
Charging dynamo, 12V-20A	▲	▲
Bolts and nuts for outboard motor clamp	●	●
Remote control bracket for engine speed & clutch shift control	●	●
Remote control bracket for steering control	●	●
Bar handle control	▲	▲
Hydraulic tilt switch	-	●
Spare parts kit	▲	▲
Half tilt device	▲	▲
Special overhauling tool kit	▲	▲
F.O tank (24L), hose 2m & connect parts	●	●
Tool kit	●	●
Operation manual	●	●
Propeller clamp kit	●	●
Propeller, 3-10.5 x 9	▲	-
Propeller, 3-10.5 x 9.5	▲	-
Propeller, 3-10.5 x 10	▲	-
Propeller, 3-10.5 x 10.5	▲	-
Propeller, 3-10.5 x 11	▲	-
Propeller, 3-10.5 x 11.5	▲	-
Propeller, 3-10.5 x 12	▲	-
Propeller, 3-10.5 x 12.5	▲	-
Propeller, 3-10.5 x 13	▲	-
Propeller, 3-11.5 x 9	-	▲
Propeller, 3-11.5 x 10	-	▲
Propeller, 3-11.5 x 10.5	-	▲
Propeller, 3-11.5 x 11	-	▲
Propeller, 3-11.5 x 11.5	-	▲
Propeller, 3-11.5 x 12	-	▲
Propeller, 3-11.5 x 12.5	-	▲
Propeller, 3-11.5 x 13	-	▲
Propeller, 3-11.5 x 14	-	▲
Propeller, 3-11.5 x 15	-	▲
*Remote control Assy, S-type (Standard) (included: Starter switch, Manual engine stop, L.O alarm lamp)	●	●
*Remote control Assy, A-type (included: Starter switch, Manual engine stop, Type 2 panel, Wireharness 5m, 2m, Alarm panel)	▲	▲
*Remote control Assy, B-type (included: Engine stop solenoid, Wireharness 2m, Extension wireharness 5m)	▲	▲
*Remote control Assy, C-type (included: Remote control head NA12, Engine stop solenoid, Wireharness 2m, Extension wireharness 5m)	▲	▲
*Remote control Assy, D-type (included: Remote control head NA12, Engine stop solenoid, Wireharness 5m, 2m, Alarm panel with Tachometer, Hour meter)	▲	▲

\*Refer to detail table ● : Standard ▲ : Option - : Not available

# REMOTE CONTROL ASSY

Assy Name	S	A	B	C	D
Engine Remote control head Model NA12 inc. Start, Stop, Kill & Tilt switch	-	-	-	▲	▲
Governor Cable Bracket	▲	▲	▲	▲	▲
Shift Push pull cable Local supply	-	-	-	-	-
Steering Handle Local supply	-	-	-	-	-
Bracket (Connecting kit)	▲	▲	▲	▲	▲
Starting Device Starter switch inc. Handle: NA12	●	▲	-	-	-
Relay	-	●	●	●	●
Engine Stopping Device Lever stop (Manual type)	●	-	●	●	●
Manual stop cable, 7m	-	▲	-	-	-
Device Engine stop solenoid & Relay	-	-	●	●	●
Kill-SW inc. Handle: NA12 (Electric)	-	-	-	▲	▲
Lube oil Alarm lamp Equipped on Eng.	●	-	-	-	-
Tachometer sensor	-	-	-	-	●
Tilt SW inc. Handle: NA12	-	-	-	▲	▲
Instrument panel Type 2 panel Bracket for engine stop knob and blind cover	-	▲	-	-	-
Alarm panel Lamps Overheat, L.O. pressure and dynamo charge	-	▲	-	-	▲
Buzzer Overheat L.O. pressure and dynamo charge	-	▲	-	-	▲
Tachometer and hour meter	-	-	-	-	▲
Wire-harness Engine side Engine side wireharness 2m length, 1 pc.	●	-	-	-	-
2m length (Alarm), 1 pc.	-	●	-	-	-
2m length, 1 pc.	-	-	●	●	●
2m length (Alarm), 1 pc.	-	-	●	●	●
Panel side 5m, Type 2, 1 pc.	-	▲	-	-	-
5m (Alarm), 1 pc.	-	▲	-	-	-
5m (Alarm), 2 pc.	-	-	-	-	▲
Extension 5m, inc. Tilt extension 1 pc.	-	-	▲	▲	▲
5m (Alarm), 1 pc.	-	-	▲	▲	▲

● : Equipped on engine, ▲ : In packing - : Not included

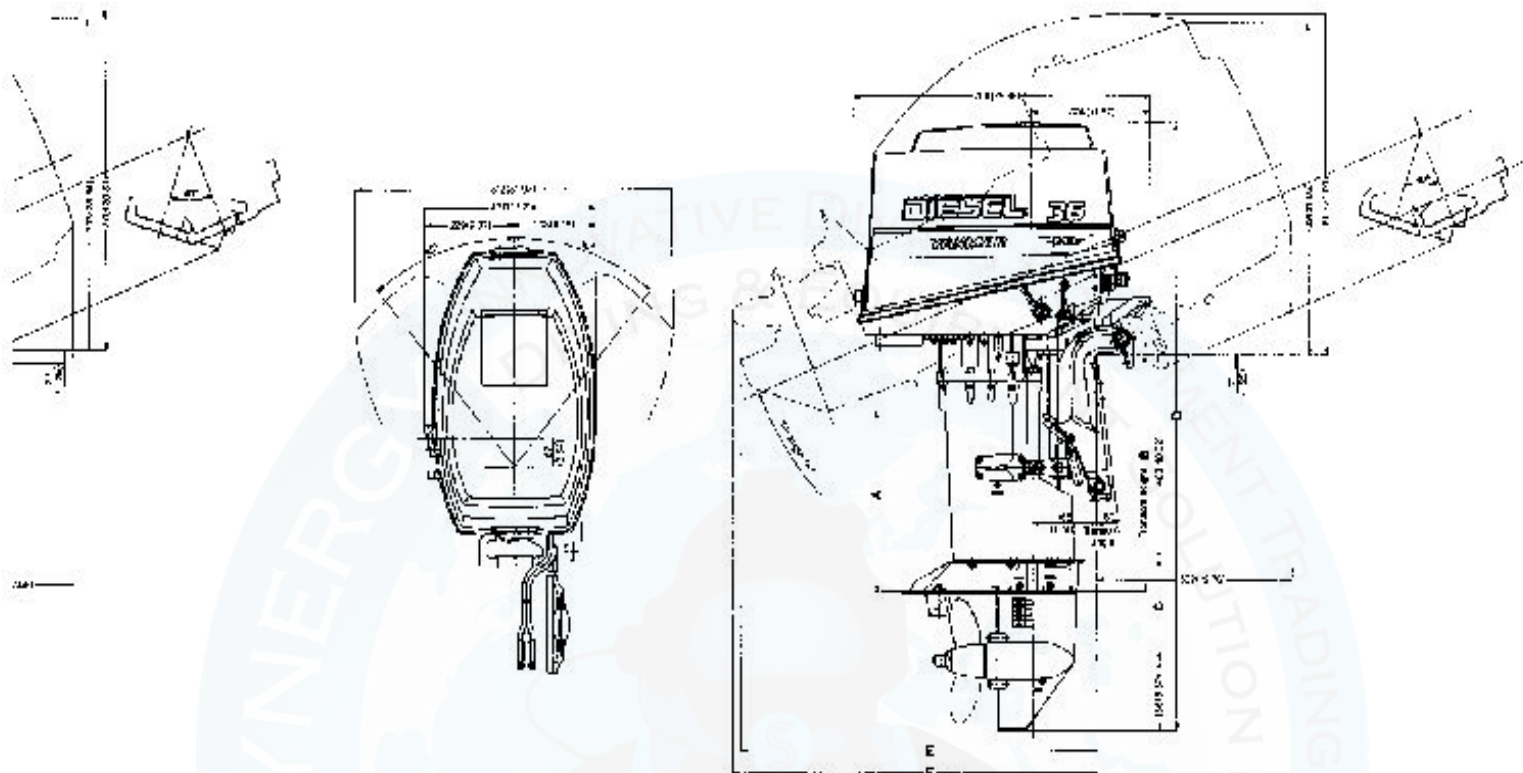


**YANMAR MARINE DIESEL ENGINES SY-D36**



Model	D36
Configuration	4-cycle, vertical, water cooled diesel engine
Number of cylinders	3
Bore and stroke mm	82 x 70 (3.23 x 2.76)
Displacement cc (cu. in.)	1019 (68)
Maximum output hp(kW) /rpm at crankshaft	36hp/4500rpm (26.5kW/4500rpm)
Combustion system	Direct injection
Starting system	Electric with emergency rope start
Cooling system	Direct seawater cooling by rubber impeller pump
Lubrication system	Forced lubrication with trochoid pump
Generator	AC dynamo built in flywheel
<b>Drive device</b>	
Clutch type	Dog type clutch
Reduction ratio Ahead/ Astern	1.846/1.846
Direction of rotation	Clockwise viewed from propeller
Lubrication system	Oil bath
Tilt up system	AX-E manual AX-EP hydraulic
Control device	
Engine speed control	Remote control
Clutch control	Remote control
Steering	Remote control
<b>Transom installation</b>	
Fuel oil	Diesel fuel with kerosene (Add lube oil, 30:1)
<b>Fuel oil capacity l(cu.in)</b>	24 (1465)
Lube oil	Engine: SAE 15W40, API CD/ Drive: SAE 80W90, API Gear oil #90
<b>Dry weight</b>	
L-type	116kgs (256lbs) 120kgs (265lbs)
LL-type	117kgs (258lbs) 121kgs (267lbs)
UL-type	118kgs (260lbs) 122kgs (269lbs)

**YANMAR MARINE DIESEL ENGINES SY-D36**



	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>
<b>L-type</b>	<b>402</b> (15.83)	<b>560</b> (22.05)	<b>239</b> (9.41)	<b>1380</b> (54.33)	<b>889</b> (35.00)	<b>892</b> (35.12)
<b>LL-type</b>	<b>442</b> (17.40)	<b>623</b> (24.53)	<b>302</b> (11.89)	<b>1443</b> (56.81)	<b>947</b> (37.28)	<b>952</b> (37.48)
<b>UL-type</b>	<b>482</b> (18.98)	<b>685</b> (26.97)	<b>364</b> (14.33)	<b>1505</b> (59.25)	<b>1005</b> (39.57)	<b>1009</b> 39.72)

**YANMAR MARINE DIESEL ENGINES SY-D36**

# ACCESSORIES

	D27	D36
Transom length, L-type, 560mm	●	●
Transom length, LL-type, 623mm	●	●
Transom length, UL-type, 685mm	●	●
Charging dynamo, 12V-10A	●	●
Charging dynamo, 12V-20A	▲	▲
Bolts and nuts for outboard motor clamp	●	●
Remote control bracket for engine speed & clutch shift control	●	●
Remote control bracket for steering control	●	●
Bar handle control	▲	▲
Hydraulic tilt switch	-	●
Spare parts kit	▲	▲
Half tilt device	▲	▲
Special overhauling tool kit	▲	▲
F.O tank (24ℓ), hose 2m & connect parts	●	●
Tool kit	●	●
Operation manual	●	●
Propeller clamp kit	●	●
Propeller, 3-10.5 x 9	▲	-
Propeller, 3-10.5 x 9.5	▲	-
Propeller, 3-10.5 x 10	▲	-
Propeller, 3-10.5 x 10.5	▲	-
Propeller, 3-10.5 x 11	▲	-
Propeller, 3-10.5 x 11.5	▲	-
Propeller, 3-10.5 x 12	▲	-
Propeller, 3-10.5 x 12.5	▲	-
Propeller, 3-10.5 x 13	▲	-
Propeller, 3-11.5 x 9	-	▲
Propeller, 3-11.5 x 10	-	▲
Propeller, 3-11.5 x 10.5	-	▲
Propeller, 3-11.5 x 11	-	▲
Propeller, 3-11.5 x 11.5	-	▲
Propeller, 3-11.5 x 12	-	▲
Propeller, 3-11.5 x 12.5	-	▲
Propeller, 3-11.5 x 13	-	▲
Propeller, 3-11.5 x 14	-	▲
Propeller, 3-11.5 x 15	-	▲
*Remote control Assy, S-type (Standard) (included: Starter switch, Manual engine stop, L.O alarm lamp	●	●
*Remote control Assy, A-type (included: Starter switch, Manual engine stop, Type 2 panel, Wireharness 5m, 2m, Alarm panel)	▲	▲
*Remote control Assy, B-type (included: Engine stop solenoid, Wireharness 2m, Extension wireharness 5m)	▲	▲
*Remote control Assy, C-type (included: Remote control head NA12, Engine stop solenoid, Wireharness 2m, Extension wireharness 5m)	▲	▲
*Remote control Assy, D-type (included: Remote control head NA12, Engine stop solenoid, Wireharness 5m, 2m, Alarm panel with Tachometer, Hour meter)	▲	▲

\*Refer to detail table ● : Standard ▲ : Option - : Not available

# REMOTE CONTROL ASSY

Assy Name	S	A	B	C	D
Engine Remote control Model NA12	-	-	▲	▲	
Speed head inc. Start, Stop, Kill & Tilt switch					
Governor Cable Bracket	▲	▲	▲	▲	▲
Shift Push pull cable Local supply	-	-	-	-	-
Steering Handle Local supply	-	-	-	-	-
Bracket (Connecting kit)	▲	▲	▲	▲	▲
Starting Device Starter switch inc. Handle: NA12	●	▲	-	-	-
Relay	-	●	●	●	●
Engine Stopping Device Lever stop (Manual type) Manual stop cable, 7m	●	-	●	●	●
Engine stop solenoid & Relay	-	-	●	●	●
Kill-SW. inc. Handle: NA12 (Electric)	-	-	-	▲	▲
Lube oil Alarm lamp Equipped on Eng.	●	-	-	-	-
Tachometer sensor	-	-	-	-	●
Tilt SW. inc. Handle: NA12	-	-	-	▲	▲
Instrument panel Type 2 Bracket for engine stop knob and blind cover	-	▲	-	-	-
Alarm panel Lamps Overheat, L.O. pressure and dynamo charge	-	▲	-	-	▲
Buzzer Overheat L.O. pressure and dynamo charge	-	-	-	-	▲
Tachometer and hour meter	-	-	-	-	▲
Wire-harness Engine side Engine side wireharness	●	-	-	-	-
2m length, 1 pc.	-	●	-	-	-
2m length (Alarm), 1 pc.	-	-	-	-	-
2m length, 1 pc.	-	-	●	●	●
2m length (Alarm), 1 pc.	-	-	-	-	-
Panel side 5m, Type 2, 1 pc.	-	▲	-	-	-
5m (Alarm), 1 pc.	-	-	-	-	-
5m (Alarm), 2 pc.	-	-	-	-	▲
Extension 5m, inc. Tilt extension 1 pc.	-	-	▲	▲	▲
5m (Alarm), 1 pc.	-	-	▲	▲	▲

● : Equipped on engine. ▲ : In packing - : Not included



## YANMAR MARINE DIESEL ENGINES SY-D40



### Yanmar D40

40HP, 3 cylinder diesel outboard engine, comes with 6 months fault free warranty, brand new fuel tank with hoses, fuel connectors and primary fuel pump. Also available in Tiller or RC versions, as well as L, LL and UL shaft lengths.

Configuration	4-cycle, vertical, water cooled diesel engine
Number of cylinders	3
Bore and stroke mm (in.)	82 x 70 (3.23 x 2.76)
Displacement cc (cu. in.)	1019 (68)
Maximum output hp(kW)/rpm at crankshaft	40hp/4500rpm (29.41kW/4500rpm)
Combustion system	Direct injection
Starting system	Electric with emergency rope start
Cooling system	Direct seawater cooling by rubber impeller pump
Lubrication system	Forced lubrication with trochoid pump
Generator	AC dynamo built in flywheel
<b>Drive device</b>	
Clutch type	Dog type clutch
Reduction ratio Ahead/Astern	1.846/1.846
Direction of rotation	Clockwise viewed from propeller
Lubrication system	Oil bath
Tilt up system	AX-E manual AX-EP hydraulic
<b>Control device</b>	
Engine speed control	Remote control
Clutch control	Remote control
Steering	Remote control
Transom installation	Through bolts with nuts
Fuel oil	Diesel fuel with kerosene (Add lube oil, 30:1)
Fuel oil capacity	l(cu.in) 24 (1465)
Lube oil Engine	SAE 15W40, API CD/
Drive	SAE 80W90, API Gear oil #90
<b>Dry weight</b>	
	L-type 116kgs (256lbs) 120kgs (265lbs)
	LL-type 117kgs (258lbs) 121kgs (267lbs)
	UL-type 118kgs (260lbs) 122kgs (269lbs)

## YANMAR DTORQUE DIESEL ENGINE 50HP

### NEANDER DTORQUE.

THE FIRST TURBO DIESEL OUTBOARD WITH DUAL CRANKSHAFT.

The NEANDER Dtorque Turbo Diesel sets a new benchmark in diesel engineering, especially for outboard motors. Its 800cm<sup>3</sup> twin-cylinder aluminium powerhead delivers a lusty 50hp at the propeller shaft. But what's more remarkable is its torque output. Peaking at 111Nm at 2,500rpm, that's more than the best-performing 70hp 4-valve technology electronic fuel injected four-stroke gasoline outboards on the market today.

This gives the Dtorque exceptional lugging ability as well as the ability to get onto the plane quickly, and both with modest fuel consumption. Here, it scores outstandingly. Expect little more than 10 to 12 litres per hour at full throttle



The kind of figure that a 70hp gasoline outboard would be returning at 2,000rpm before its steep climb towards 30 to 40 litres per hour flat-out at full load. (Source: magazine "boote") All this, as well as emissions well within the latest EU limits, is with state-of-the-art common rail fuel injection (BOSCH), but NEANDER's unique innovation is its dual counter-rotating crankshaft design. By generating opposite forces, the two shafts cancel out most of the vibrations and moments around the steering axis that would otherwise make such a small and powerful twincylinder diesel outboard hard to handle



Counter-rotating crankshafts in the powerhead reduce noise and vibration to a minimum.



Low fuel consumption means less queuing for fuel.



## YANMAR DTORQUE DIESEL ENGINE 50HP



Gasoline outboards are for leisure use mainly. When you've got a serious job of work to do and need to put in a full shift day after day you need the hard-working dependability of a diesel engine. Now operators of small workboats have that option in outboard form with the NEANDER Dtorque.

This compact unit is the only outboard in the mid- power range to offer all the advantages of state-of-the-art diesel engineering. The NEANDER Dtorque develops a creditable 50hp when you need a turn of speed, but it's the torque figure that matters most in the working environment. The delivery of a mighty 111Nm at 2,000-3,000rpm will get you quickly up onto the plane and also provide all the muscle you need when the boat is fully laden.

whether you are patrolling harbours, delivering supplies afloat, transferring personnel, or checking nets, NEANDER Dtorque is the strong, reliable work-horse you need for unwaveringly reliable performance, long range, and low operating costs time after time. But for a workhorse it is also remarkably refined. Its unique dual counter-rotating crankshaft engineering means ultra-low vibration and noise, so less fatigue for the user at the end of the working day. And less stress for the engine and its suspension as well.

## YANMAR DTORQUE DIESEL ENGINE 50HP

Queuing at the fuel pump can take up valuable working time, but the frugal diesel consumption of the NEANDER Dtorque means fewer refuelling stops and lower running costs than you would expect from most gasoline outboards of 60 or 70hp with lower torque output. Its fuel consumption peaks where the gasoline burners are just starting out. Then at full throttle 2.5 times more fuel is likely to be used by the gas outboards than the diesel fuel-sipping Dtorque

For most applications, with a NEANDER Dtorque on your transom you have all the benefits of less frequent visits to the pumps -- so less downtime, greater operational independence, more productive working hours and, when it comes to running costs, a better bottom line on the balance sheet at the end of the month.



## YANMAR DTORQUE DIESEL ENGINE 50HP

For operational reasons in the great majority of work- boat applications, from fish farming to harbour patrol duties, offshore wind-turbine farms to charter services, the technical advantages of the Dtorque's advanced diesel engineering are clear. But for those working in environments where fire is a real hazard, such as in the offshore oil industry, diesel has the added safety benefit of low flammability.

For its size, NEANDER's unique 800cm<sup>3</sup> reciprocating two-cylinder diesel powerhead design produces an impressive 50hp. More important is its 111Nm torque output, which outstrips that of most of the latest 70hp gasoline outboards on the market. But what's most impressive is minimal vibration.

The secret behind that is the company patented 'Spaceball' design. The aluminium cylinder block houses dual crankshafts which rotate in opposite directions to absorb the considerable vibration that a conventional small two-cylinder diesel engine would normally generate.

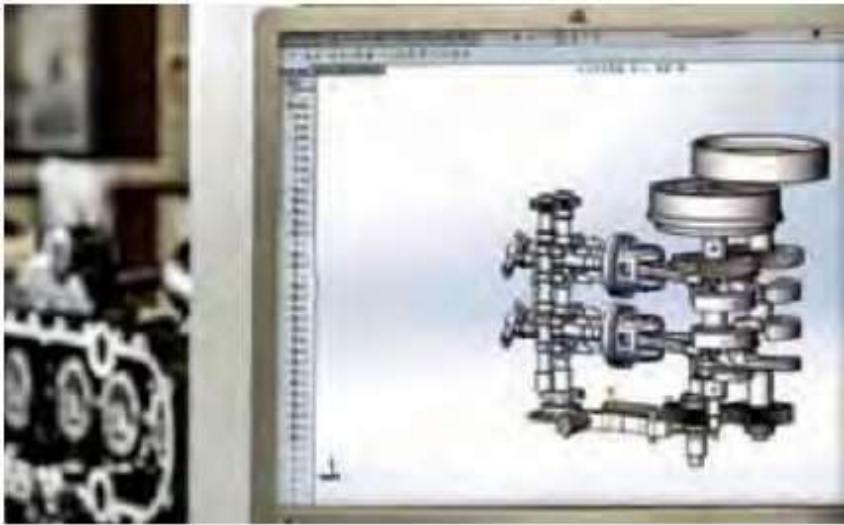
For the user, the benefits are immediately apparent. Less vibration, less noise, and lighter boat handling without having to continually wrestle with the tiller to correct for torque steering all mean less operator fatigue - and less stress on the engine.

The engineering refinement doesn't end there. Common-rail fuel injection -- rare indeed in diesel engines as small as this one -- and turbocharging with integrated charge air cooling are just two of a list of features which contribute to performance, fuel saving and lower emissions.

That's just one good reason why gasoline is seldom carried on most large seagoing vessels. In the wider picture, diesel is always the sensible propulsion option for tenders to run and collect crew, passengers, and goods ashore where docking is not always practical, for example with cruise ships and mega-yachts.

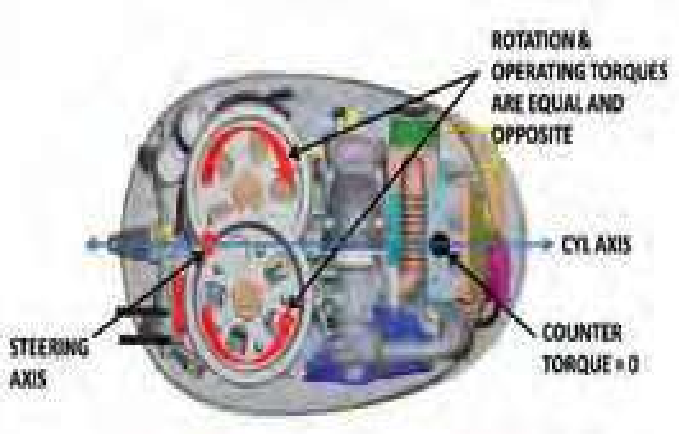
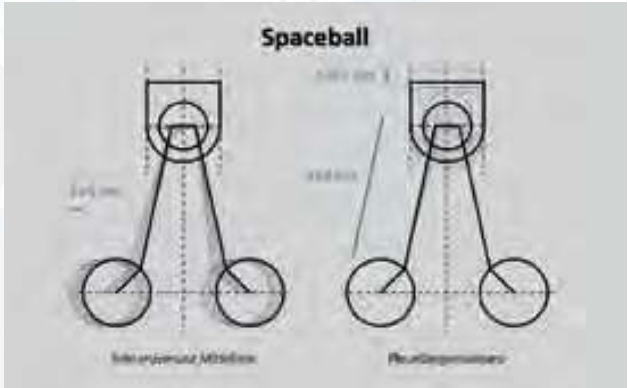


# YANMAR DTORQUE DIESEL ENGINE 50HP



All of the moving parts of the vertically-mounted Dtorque engine are clearly seen in this CAD/CAM screen display. Central to the assembly are the dual crankshafts with their miniature counter-rotating flywheels. Light weight connecting rods are connected to crankshafts by two inline pistons, while aspiration is provided by four camshaft-driven valves per cylinder.

This two-dimensional diagram shows clearly how the two reciprocating pistons complement each other at the full extent of their up and down strokes. It may look simple, but the asymmetric engine cycle with its short compression stroke, longer intake stroke and shorter expansion stroke required particular attention from the NEANDER Dtorque engineering design team. The benefit, however, is improved thermal efficiency with an extended piston work stroke.



This two-dimensional diagram shows clearly how the two reciprocating pistons complement each other at the full extent of their up and down strokes. It may look simple, but the asymmetric engine cycle with its short compression stroke, longer intake stroke and shorter expansion stroke required particular attention from the NEANDER Dtorque engineering design team. The benefit, however, is improved thermal efficiency with an extended piston work stroke.

## YANMAR DTORQUE DIESEL ENGINE 50HP

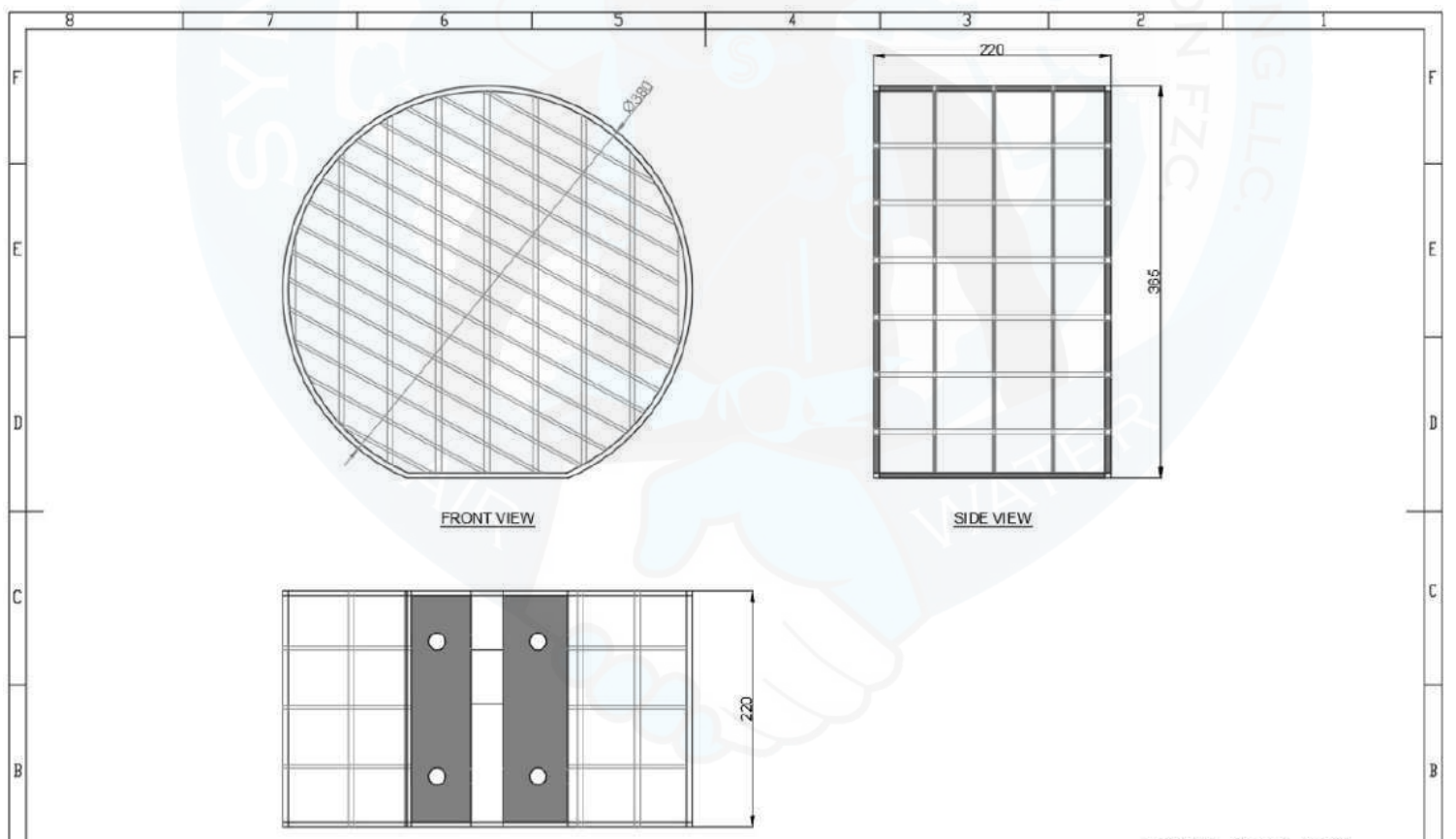
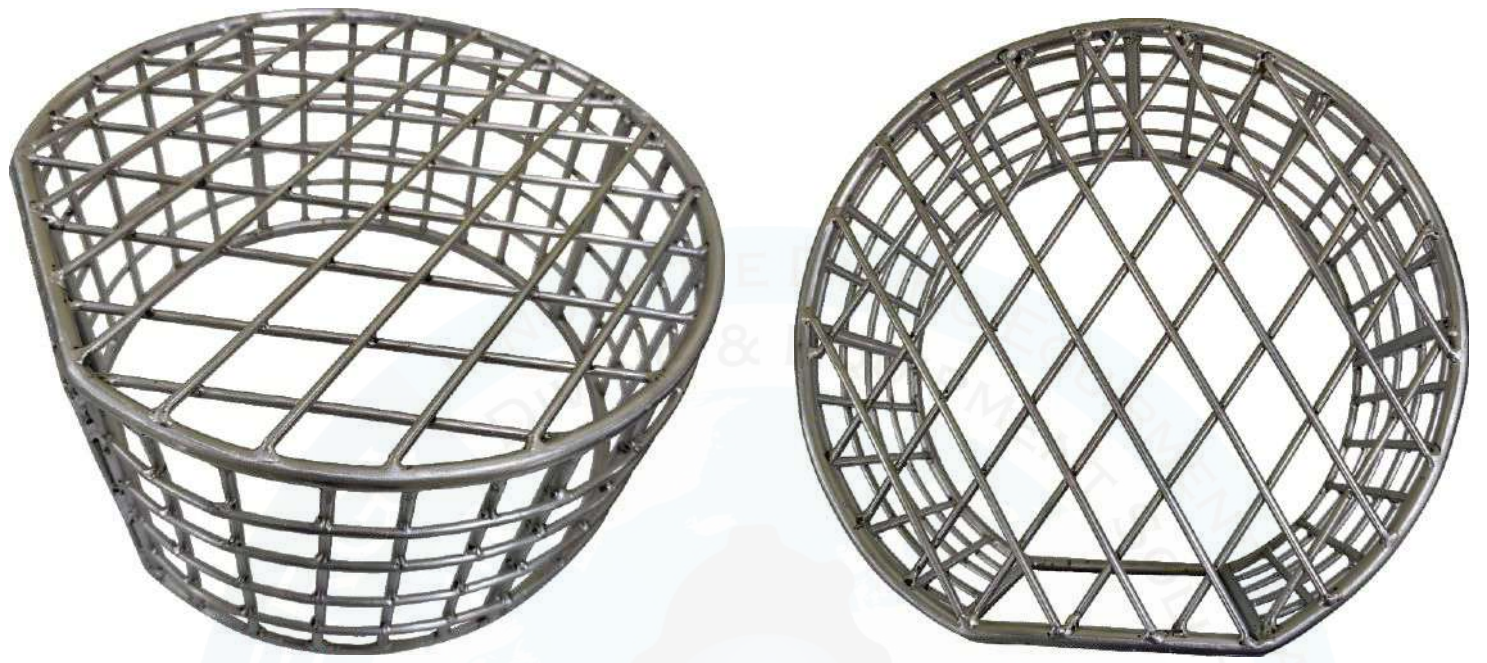
ENGINE SPECS	
Power	36,8 kW/50 hp at 3.500 - 4.000 min-1
Max. Torque	111 Nm at 2000 - 3000 min-1
Engine Type	4-Stroke turbo diesel
Balance	Dual counter-rotation crankshafts
Swept Volume	804 ccm
Bore x Stroke	80 x 80 mm
No. Cylinders	2 In-Line, twin
Intake	Water cooled turbo charger and charge air cooling Integrated dry sump – pressure lubricated
Lubrication	Diesel
Fuel Injection	Bosch common rail direct injection
Starting	Electric
Alternator	Standard 12 V/300 W
Cooling	NEANDER Active Thermo-Management
Exhaust	System (ATMS)
Steering	Integrated underwater thru-hub propeller
Suspension	Tiller / remote control, optional
	Silent-block-controlled compression and traction
Trim	Power trim
Transmission	Mechanical – dog-clutch gearing
Available Shaft	Ratio 13/27 (2.07:1)
Standard Propeller	Versions 20" and 25"
Type	3-blade with built-in damper
Weight	Basic Version 175 kg (dry)

**YANMAR DTORQUE DIESEL ENGINE 50HP**





# PROPELLER GUARD



MATERIAL : SS 316 / 316L

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## TWO DIVER SCUBA REPLACEMENT PACKAGE (SRP) WITH STEEL CYLINDERS

# SY-2DAP-D040-SC-SRP-X-XXX

### ORDERING INFORMATION

Sr.	Part Number	Description
1	SY-2DAP-D040-SCSRP-X-XXX	Two diver scuba replacement panel with ss frame, emergency panel, 4 x 50 ltr x 200 bar breathing air steel cylinders, all plumbing with fittings , valves, hoses to connect from cylinders to diving panel (diving panel not included, please choose from panel options below)

Sr.	Part Number	Description
1	SY-2DAP-INSHORE-SF	Portable two diver panel, inshore use only, side inlet and outlet fittings
2	SY-2DAP-INSHORE-BF	Portable two diver panel, inshore use only, back inlet and outlet fittings
3	SY-2DAP-D040-SF	Portable two diver panel, offshore, imca (no radio, no diver cctv), side inlet and outlet fittings
4	SY-2DAP-D040-BF	Portable two diver panel, offshore, imca (no radio, no diver cctv), back inlet and outlet fittings
5	SY-2DAP-D040-R-SF	Portable two diver panel, offshore, imca with radio (no diver cctv), side inlet and outlet fittings
6	SY-2DAP-D040-R-BF	Portable two diver panel, offshore, imca with radio (no diver cctv), back inlet and outlet fittings
7	SY-2DAP-D040-R-1DV-SF	Portable two diver panel, offshore, imca with radio and diver 1 cctv, side inlet and outlet fittings
8	SY-2DAP-D040-R-1DV-BF	Portable two diver panel , offshore, imca with radio and diver 1 cctv, back inlet and outlet fittings
9	SY-2DAP-D040-R-2DV-SF	Portable two diver panel, offshore, imca with radio and diver 1 and diver 2 cctv, side inlet and outlet fittings
10	SY-2DAP-D040-R-2DV-BF	Portable two diver panel, offshore, imca with radio and diver 1 and diver 2 cctv, back inlet and outlet fittings

Sr.	Part Number	Description
1	SY-2820A-11	Amcom ii two-diver rechargeable basic portable communicator
2	SY-UDA-0204	4 core Umbilical air/gas, pneumo, communication and video cables
3	SY-UDA-0103	3 core Umbilical air/gas, pneumo, communication
4	SY-ORANGESHEATH	Full braided protective outer sheath (for complete protection of umbilicals)
5	SY-SPIRAL WRAP	Spiral wrap (in 10 mtr lengths) (for umbilical protection)
	<b>Fittings as below</b>	
6	SY-386-PB-AIR	3/8"x 6 jic phosphor bronze reusable umbilical air/gas hose end fitting
7	SY-144-PB-PNEUMO	1/4" x 4 jic phosphor bronze reusable umbilical pneumo end fitting
8	SY-RMG-3-FS	Marsh marine, 3 pin, Female, 18"
9	SY-BANPLUGS-TWIN	Twin banana plugs surface communication end fitting (Red/Black)
10	SY-RMK-5-FS	Marsh marine, 5 pin, female, 18"
11	SY-K-FLS-D	Locking sleeve, delrin , for RMK-5-FS
12	SY-RMG-3-FS	Marsh marine, 3 pin, female, 18"
13	SY-G-FLS-D	Locking sleeve, delrin, for RMG-3-FS
14	SY- MS3108B-18-08P	Cannon right angle amphenol connector is used for connecting the Surface end of the video camera umbilical to the surface video console unit

## THREE DIVER SCUBA REPLACEMENT PACKAGE (SRP) WITH STEEL CYLINDERS

# SY-3DAP-D040-SC-SRP-X-XXX

### ORDERING INFORMATION

Sr.	Part Number	Description
1	SY-3DAP-D040-SC-SRPX-XXX	Three diver scuba replacement panel with ss frame, emergency panel, 6 x 50 ltr x 200 bar breathing air steel cylinders, all plumbing with fittings , valves, hoses to connect from cylinders to diving panel (diving panel not included, please choose from panel options below)

Sr.	Part Number	Description
1	SY-3DAP-D040-SF	Portable three diver panel, offshore, imca (no radio, no diver cctv), side inlet and outlet fittings
2	SY-3DAP-D040-BF	Portable three diver panel, offshore, imca (no radio, no diver cctv), back inlet and outlet fittings
3	SY-3DAP-D040-R-SF	Portable three diver panel, offshore, imca with radio (no diver cctv), side inlet and outlet fittings
4	SY-3DAP-D040-R-BF	Portable three diver panel, offshore, imca with radio (no diver cctv), back inlet and outlet fittings
5	SY-3DAP-D040-R-1DV-SF	Portable three diver panel , offshore, imca with radio and diver 1 cctv, side inlet and outlet fittings
6	SY-3DAP-D040-R-1DV-BF	Portable three diver panel , offshore, imca with radio and diver 1 cctv, back inlet and outlet fittings
7	SY-3DAP-D040-R-2DV-SF	Portable three diver panel, offshore, imca with radio and diver 1 and diver 2 cctv, side inlet and outlet fittings
8	SY-3DAP-D040-R-2DV-BF	Portable three diver panel, offshore, imca with radio and diver 1 and diver 2 cctv, back inlet and outlet fittings

Sr.	Part Number	Description
1	SY-2830A-11	Amcom iii three-diver rechargeable basic portable communicator
2	SY-UDA-0204	4 core Umbilical air/gas, pneumo, communication and video cables
3	SY-UDA-0103	3 core Umbilical air/gas, pneumo, communication
4	SY-ORANGESHEATH	Full braided protective outer sheath (for complete protection of umbilicals)
5	SY-SPIRAL WRAP	Spiral wrap (in 10 mtr lengths) (for umbilical protection)
	<b>Fittings as below</b>	
6	SY-386-PB-AIR	3/8"x 6 jic phosphor bronze reusable umbilical air/gas hose end fitting
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12	SY-RMG-3-FS	Marsh marine, 3 pin, female, 18"
13	SY-G-FLS-D	Locking sleeve, delrin, for RMG-3-FS
14	SY- MS3108B-18-08P	Cannon right angle amphenol connector is used for connecting the Surface end of the video camera umbilical to the surface video console unit

### BESPOKE DESIGNS – ANY CONFIGURATION AS PER CLIENT REQUIREMENT


**ZODIAC MARK V HEAVY DUTY INFLATABLE BOAT WITH SCUBA REPLACEMENT PACKAGE**

# Contact us



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