



## About the vessel

The MMA Crystal is a key marine asset for Cyan. The vessel has a strong track record in South East Asia and Australasia carrying out various towing and anchor handling scopes and now operates in Taiwan.

The vessel is fitted with 35T A-Frame and working class ROV as well as extensive survey equipment capable of geophysical and geotechnical operations.

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## MMA Crystal 克里司朵

Anchor Handling Tug Supply and Survey



General		Dimensions	
Official No	016607	LOA	70.05 m
Call Sign	BHJ J	Breadth - moulded	17 m
IMO No	9594212	Depth - moulded	7.5 m
Year Built	2012	Draft	6.1 m
Port of Registry	Tai Chung (台中)	GRT	2,763 T
Flag	Taiwan	NRT	829 T
Class	Republic of China	Deadweight	2,515 T
Class (Secondary)	American Bureau of Shipping	Free Deck Area (A-Frame fitted)	275 m <sup>2</sup>
Notation	✱A1, Offshore Support Vessel (AH), Fire Fighting Vessel Class 1, Towing Vessel, ✱AMS, ✱DPS-2	Free Deck Area (A-Frame removed)	450 m <sup>2</sup>
		Deck Strength	7.5 T/m <sup>2</sup>
		Mezzanine Deck	84 m <sup>2</sup> @ 2T m <sup>2</sup> / W 12m x L 7m

A Perfect Day Every Day



# MMA Crystal 克里司朵

Anchor Handling Tug Supply and Survey



Performance		
BHP	BHP	7,965
Speed - Maximum	Knots	14
Speed - Economical	Knots	10
Bollard Pull	T	102.14

Tank Capacity		
Fuel Oil	m³	698.7
Fresh Water	m³	514.1
Potable Water	m³	514.1 (same to FW)
Foam	m³	15.7
Ballast Water	m³	1,336.4
Liquid Mud	m³	382
Cement	m³	200
Dispersant	m³	15.7
Dry Bulk	m³	(Refer to Cement)
Methanol	m³	NA

Discharge Rates		
Fuel Oil	1 x 117 m³/hr @ 80 m head	
Fresh Water	1 x 120 m³/hr @ 90 m head	
Ballast / Drill Water	1 x 120 m³/hr @ 90 m head	
Potable Water	1 x 120 m³/hr @ 90 m head	
Dry Bulk	2 x 20 m³/hr @ 5 bar	
Liquid Mud / Brine	2 x 75 m³/hr @ 95 m head	

Machinery / Propulsion	
Main Engines	2 x MAK 9M25, 2,970 kW
Bow Thruster	2 x 600 kW tunnel type
Stern Thruster	1 x 600 kW tunnel type
Shaft Generators	2 x 1,800 kW
Generators	2 x Volvo Penta D12 MG, 370 kW
Emergency Generators	1 x 99 kW @ 1,800 rpm
Propulsion	2 x CPP
Power Supply Details	440 V / 60 Hz

Deck Equipment	
Crane	PALFINGER Hyd Deck Crane PTM 400 (2 T @ 12m / 5.9 T @ 2.2m)
Capstan	2 x Electrohydraulic Brattvaag
Towing Winch	1 x Rolls Royce Electro Hydraulic Waterfall
Capacity	200 T @ 0-10 m/min
Wire Capacity	58 mm x 1400 m
Brake Holding	250 T
Anchor Handling Winch	1 x Rolls Royce Electro Hydraulic Waterfall
Capacity	200
Wire Capacity	76 mm x 800 m
Brake Holding	250 T
Shark Jaw	1 x 300 tonne Karmfork
Towing Pin	2 x 300 tonne Karmoy
Tugger Winch	2 x 12 tonne Hydraulic
Wire Capacity	24mm x 220 m
Brake Holding	15 T
Stern Roller	2.2 m x 4.8 m (250 tonne capacity)
Deck Voltage & Sockets - Quantity & Voltage	2 x 440V, 2 x 220V

A-Frame	
SWL	35 T
Height (underside cross member)	11.7 m
Reach outboard	4 m

Rescue Boat & Fire Fighting	
Rescue Boat	1 x 6 person Neuvisa RR-40 RB
FiFi Class	Class 1

Dynamic Positioning	
DP - System	MT Class II DYNPOS / DP2
DGPS - Quantity	2 x Fugro
Fanbeam - Quantity	1 x Cyscan
HiPAP	Sonardyne Ranger2 (HPT5000)

Accommodation	
Cabin (2 Berth)	Qty 18
Cabin (Single Berth)	10
Total Accommodation	46 Pax

Communication Equipment	
Navtex Receiver	Qty 1
AIS	1
Watch Alarm	1
SSB	1
Intercom	1
Inmarsat-C	2
EPIRB	1
GMDSS VHF Radio (MF/HF)	2 x VHF, 1 x MF/HF
GMDSS Handheld VHF	3

Subsea / ROV Equipment	
Bridge Survey Room	1 (online navigation)
Forecastle Deck Survey Rooms	2 (1 x client, 1 x survey)
ROV	Swift10 Work Class ROV system
Survey	Quinsey Survey Navigation System 2 x Veripos LD8 DGNSS Sonardyne Ranger 2 USBL for subsea acoustic tracking Teledyne Meridian Surveyor Gyro Compass Over the side pole for multi-sensor options
Communications	Intellian V130NX VSAT Robustal R2000-EL42 4G Modem Clear Comms

Navigation Equipment	
Magnetic Compass	Qty 1
Gyro Compass c/w Autopilot	3
GPS Navigator	1
Radar	2
Speed Log	1

Other Equipment	
Water Maker	2 x 5 m³/day