



## DAMEN ASD TUG® 2810 HYBRID "BERNARDUS"

### GENERAL

YARD NUMBERS	512319
DELIVERY DATE	May 2014
BASIC FUNCTIONS	Towing, mooring and fire-fighting operations
CLASSIFICATION	Lloyd's Register * 100 A1 Escort Tug [*] LMC UMS IWS
FLAG	Dutch
OWNER	Sleepdienst B. Iskes & ZN B.V.

### DIMENSIONS

LENGTH O.A.	28.67 m
BEAM O.A.	10.43 m
DEPTH AT SIDES	4.38 m
DRAUGHT AFT	5.15 m
DISPLACEMENT(APPROX.)	604 ton

### TANK CAPACITIES

FUEL OIL	72.3 m <sup>3</sup>
FRESH WATER	14.9 m <sup>3</sup>
FOAM	6.5 m <sup>3</sup>
LUBRICATION OIL	9.0 m <sup>3</sup>
DIRTY OIL	3.1 m <sup>3</sup>
SEWAGE	2.2 m <sup>3</sup>
SLUDGE	3.1 m <sup>3</sup>
BILGEWATER	5.1 m <sup>3</sup>
UREA	6.4 m <sup>3</sup>

### PERFORMANCES

BOLLARD PULL AHEAD	60.2 ton
BOLLARD PULL ASTERN	55.3 ton
SPEED AHEAD MAIN ENGINES	13.4 knots
SPEED AHEAD GENERATOR	8.5 knots
SPEED AHEAD BATTERIES	4.0 knots (1 hour max.)
SPEED ASTERN MAIN ENGINES	13.0 knots

### PROPULSION SYSTEM

MAIN DIESEL ENGINES	2x MTU 16V4000M63R
TOTAL DIESEL POWER	3680 bkW (4935 bhp) at 1600 rpm
PROPULSION GEN SET	1x MTU 12V 2000 M41B, 800 kVA, 440V-60Hz
EXHAUST GAS TREATMENT	DOC+DPF+SCR system, IMO Tier III compliant
BATTERY PACKS	2x 120 kWh
MAIN ELECTRIC ENGINES	2x ABB M3LP450 / 2x 230 bkW
AZIMUTH THRUSTERS	2x Rolls Royce US 205
PROPELLER DIAMETER	2400 mm
FORCED VENTILATION	55.000 m <sup>3</sup> /hr

### AUXILIARY EQUIPMENT

GENERAL GENERATOR SETS	1x Caterpillar C4.4, 107 kVA, 230/400 V – 50 Hz
BILGE PUMPS	2x Sterling AKHA 5101 each 20 m <sup>3</sup> /hr
FUEL PUMPS	Sterling AKHA 4101 and AOHA 3101
COOLING SYSTEM	Box cooling + anti-growth system
PRESSURE SET	Freshwater Sterling HBK 111 / AOHA 1202
HYDRAULIC SYSTEM	One electrically driven auxiliary pump
FIFI PUMP	Jason 250 x 350 OGF, 1200 m <sup>3</sup> /hr
FIFI MONITOR	2x 600 m <sup>3</sup> /hr water, 2x 300 m <sup>3</sup> /hr foam

### DECK LAY-OUT

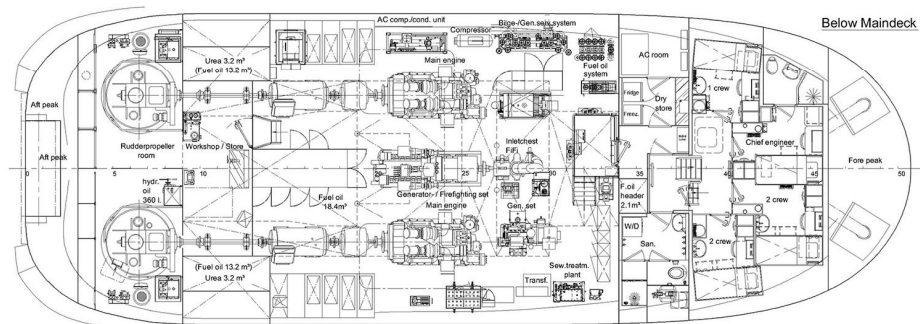
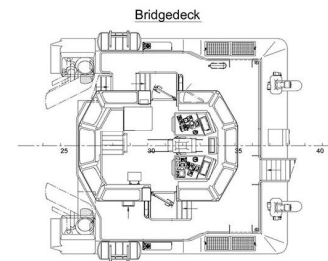
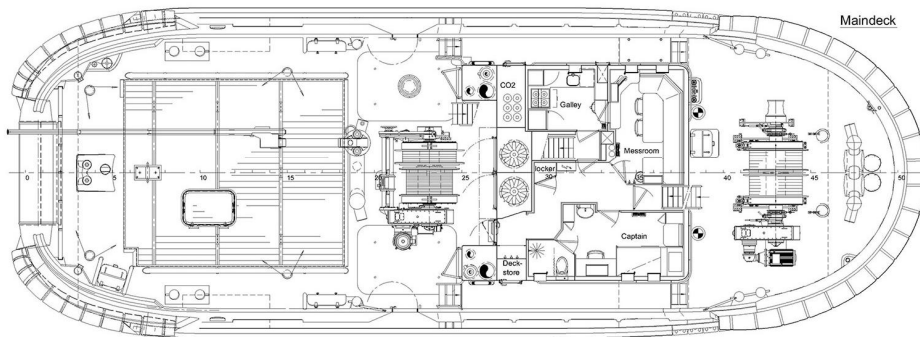
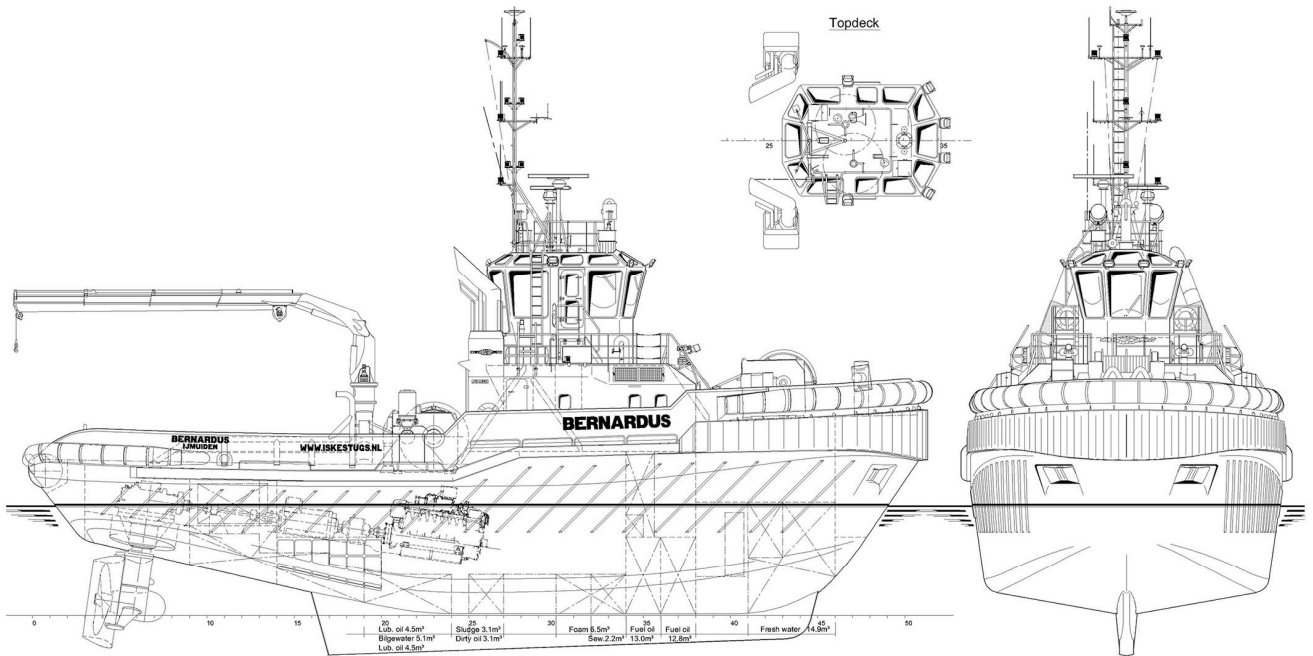
ANCHORS	2x 360 kg Pool (High Holding Power)
ANCHOR/TOWING WINCH	Electrically driven two speed winch with double drum and warping head, pull 35 ton at 9.1 m/min, slack rope speed up to 28 m/min, 150 ton brake
CAPSTAN	5 ton at 15 m/min. electrically driven
TOWING WINCH AFT	Electrically driven, two speed winch with double drum and spooling device, pull 35 ton at 9.0 m/min and 33 ton at 9.5 m/min, slack rope speed up to 27.0 m/min, 150 ton brake
TOWING PINS	MKB SWL 86 ton
FENDERING	D-fender at sides, cylinder fender at transom corners, cylinder and W-block bow fender with water spray

### ACCOMMODATION

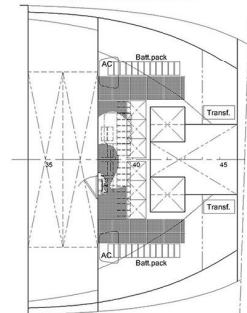
For 7 persons, insulated and finished with durable modern linings, acoustical ceiling in the wheelhouse, floating floors and air-conditioned. Captain's cabin, chief engineer's cabin, 2 double crew cabins, 1 single crew cabin, galley, mess/dayroom, dry store and sanitary facilities.

### NAUTICAL AND COMMUNICATION EQUIPMENT

SEARCHLIGHT	2x Pesch 1000 W
RADAR SYSTEM	2x Furuno FAR-2117 with 19 inch screen
COMPASS	Magnetic Kottter
SATELLITE COMPASS	Furuno SC-50
AUTOPILOT	Simrad AP-50
GPS	Furuno GP-150
ECHOSOUNDER	Furuno FE-700
VHF RADIO TELEPHONE	2x Sailor 6222 (one with DSC)
VHF HANDHELD	2x Jotron TRON TR-20
NAVTEX	Furuno NX-700
AIS	Furuno FA-150
EPIRB	Jotron Tron 40S
SART	Jotron Tron Sart
SSB	Furuno FS-1575



Arrangement  
Battery / Switchboard room



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**DAMEN**

DAMEN SHIPYARDS GORINCHEM

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