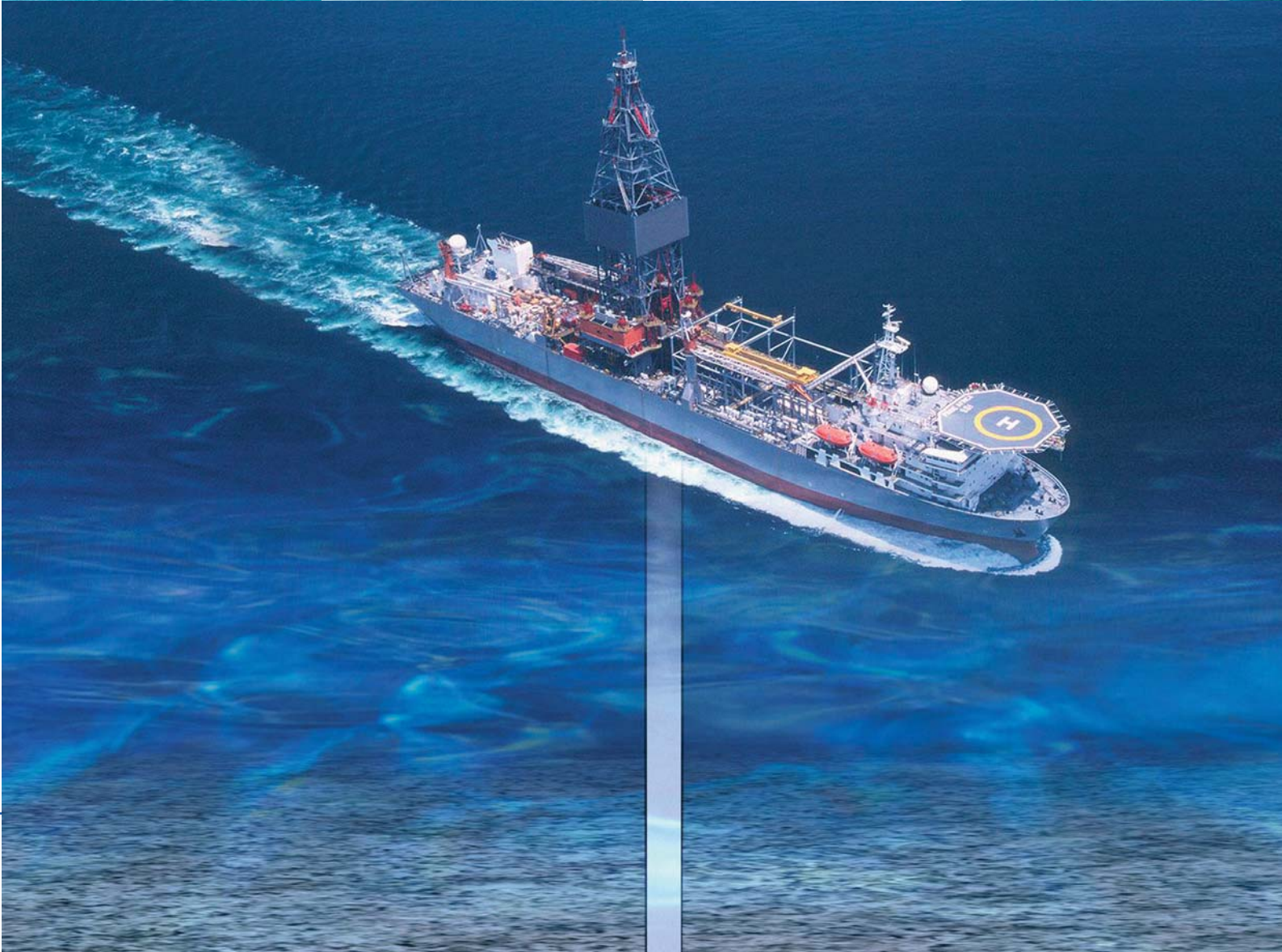


DEEP DRILLING

CCTV systems for drilling operations down to 3000 m



MONOCHROME TV CAMERA VS 3309FS



Dimensions : Length : 28.7" (730 mm)
 Diameter : 2.4" (60 mm)
 Operating depth : 10 000 ft (3000 m)
 Weight : in air : 15.5 lb (7kg)
 in water : 11 lb (5 kg)
 Operating temperature : -10°C to 60°C
 Construction : stainless steel

Image sensor : 1/2" CCD 440 000 pixels
 Resolution : 550 TV lines
 Sensitivity : 0.1 lux at F 1.2
 Power requirement : 12 Vdc
 Built in lighting : 2 x 12 V / 35 W
 Lens : 6 mm
 Angle of view in water : 55°(diagonal)
 Focus : remotely controlled

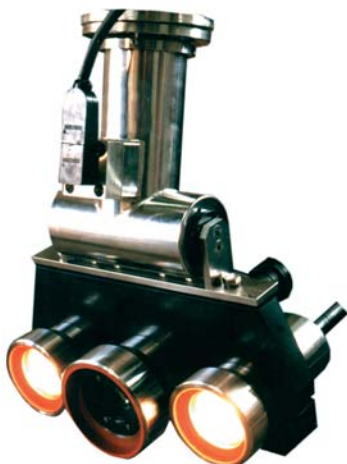


PAN AND TILT UNIT PT10

Pan : range : 360 ° / speed : 4.9°/sec.
 Tilt : range : 180 ° / speed : 4.9°/sec.
 Construction : stainless steel

UW LIGHTS VSE 280

Dimensions : Length : 7.5" (190 mm)
 Diameter : 3.15" (80 mm)
 Operating depth : 10 000 ft (3000 m)
 Weight : in air : 4.1 lb (1.85kg)
 in water : 2.9 lb (1.3 kg)
 Construction : stainless steel
 Bulb : 120 V / 75 W dichroic lamp



COLOUR ZOOM TV CAMERA VS 3673

Dimensions : Length : 9.8" (250 mm)
 Diameter : 3.8" (96 mm)
 Operating depth : 10 000 ft (3000 m)
 Weight : in air : 7.7 lb (3.5kg)
 in water : 3.8 lb (1.7 kg)
 Operating temperature : -10°C to 60°C
 Construction : stainless steel
 Image sensor : 1/3" CCD 437 000 pixels
 Resolution : >450 TV lines
 Colour standard : PAL (NTSC optional)
 Scanning : CCIR 625 lines 50 Hz / 525 lines 60 Hz
 Video output : 1 Vpp 75 ohms
 Video S/N ratio : > 48 db
 Sensitivity : 7 lux at F 1.8
 Lens : 12x zoom (5.5 mm to 64.8 mm)
 Angle of view in water : 40° to 4° (diagonal)
 Iris : Automatic
 Focus : Automatic and remotely controlled



EXPLOSION PROOF ZOOM COLOUR TV CAMERA WITH SWIVELLING HEAD VS 680 TRZ ADF

Dimensions : Length : 7.9" (200 mm) w/o connector
Diameter : 5.9" (150 mm)

Construction : stainless steel
Shock rating : 2.95 ft-lb (4 joules)
Connector : explosion proof / EEx D II C gland
Protection rating : IP 68 (150 ft)
&x Classification : CENELEC Class EEx d II C T6
Weight : 15lb (7 kg)

Internal movements of the camera head :

Tilt : 0 to 90°
Unlimited rotation in both directions
Revolving speed : 3 to 24°/s manual mode
: 240 °/s in auto mode
Operating temperature : -10°C to 50°C

Image sensor : 1/3" CCD : 437 000 pixels
Resolution : 480 lines
Colour standard : PAL (NTSC optional)
Lens : 10 x zoom (5 to 50 mm)
Angles of view : 62° to 7° (diagonal)
Sensitivity : adjustable 0.1 to 3 lux
Electronic shutter : adjustable 1/50 to 1/10 000 sec.
64 preprogrammable positions.

Protective hood against mist, rain, solar exposure.



HYDRAULIC WINCH THR 4000

Dimensions : LxWxH : 63"x59"x57"(1600x1500x1450 mm)
Weight : w/o cable : 3300 lb (1500 kg)
with 3100 m cable : 4850 lb (2200 kg)
Pull : 6160 lb (2800 daN)
Hydraulic motor : Working pressure : 3625 psi (250 b)
Flow : 48 gallons (imp)/mn (150 l/mn)
Average speed : 3.3 ft/s (1 m/s)
Reel cable capacity : 10 500 ft (3200 m) of 0.29" OD cable
Indication of paid out length (also overlaid on video screen)

ARMoured UMBILICAL CABLE : 2 power cores
3 optical fibers

Diameter : 0.29" (7,35 mm)
Weight in air : 0.146 lb/ft (217 g/m)
Break strength : 7800 lb (3530 daN)

PC CONNECTED TV CONTROL CABINETS

- 1 - In driller's cabin : to control 7 surface cameras and all u/w cameras with interface to the drilling control system
- 2 - In engine control room : to control 7 surface cameras
- 3 - On bridge : to control 1 surface camera

DEEP DRILLING

CCTV systems for drilling operations down to 3000 m

DEEP-WATER RE-ENTRY TV CAMERA CONFIGURATIONS



Drillstring running tool



Internal
drillstring camera



Bomb shell tool
for use inside riser

DRILL SHIPS EQUIPPED WITH HYTEC CCTV SYSTEMS

PELERIN
PELICAN
PETREL
PACNORSE
PETROJARL 1
PRIDE EUROPE
PRIDE AFRICA

operated by
operated by
operated by
operated by
operated by
operated by

FORAMER
FORAMER
FORAMER
JEBSENS Drilling
GOLARNOR
PRIDE FORAMER
PRIDE FORAMER