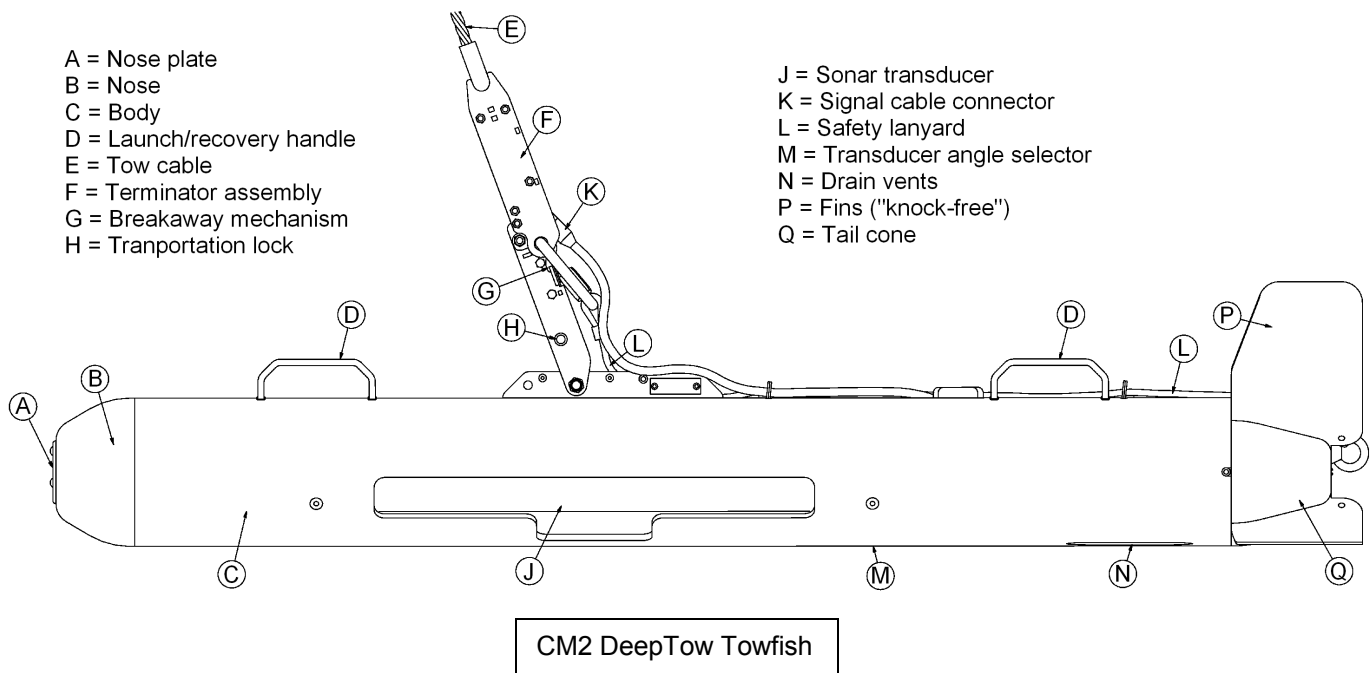


**CM2 SIDE SCAN SONAR, DEEPTOW TOWFISH SPECIFICATION**  
**Issue 2, October '09**

**1. GENERAL**

The CM2 DeepTow digital towfish is an optional alternative to the standard CM2 towfish, specifically designed for use where a heavyweight towfish is required for maximum towing depth. Like the standard towfish, the DeepTow is available in two different dual-frequency versions.

The DeepTow is towed, and provided with power and digital telemetry services, by a steel-armoured tow cable. All CM2 towfish, standard and DeepTow, are inter-operable with all CM2 data acquisition subsystems.



**2. ACOUSTICS**

**Acoustic frequencies**

DF type: 100/325kHz dual frequency

EDF type: 325/780kHz dual frequency

**Ranges (port and starboard)**

100m, 200m, 300m, 400m, 500m at 100kHz

25m, 50m, 75m, 100m, 150m at 325kHz

12.5m, 25m, 37.5m at 780kHz

**Acoustic pulse rates, pings per second (at range)**

780kHz: 24.7(12.5m); 13.5(25m); 18.0(37.5m)

325kHz: 13.5(25m); 9.1(75m); 7.0(100m); 4.8(150m)

100kHz: 6.9(100m); 3.6(200m); 2.4(300m); 1.83(400m); 1.46(500m)

#### Pulse power and length

217dB re 1 micropascal @ 1m  
range-dependent length, e.g. 53microseconds @ 50m

#### Array length and beamwidths (2-way 3dB points)

0.41m at 325kHz & 100kHz; 0.3m at 780kHz

0.3° horizontal at 325kHz

1.0° horizontal at 100kHz

0.2° horizontal at 780kHz

full coverage -10° left through -90° to -10° right

#### Lateral resolution

39mm at 780kHz and 25m range at 325kHz, 78mm at 325kHz (not 25m range), 156mm at 100kHz

#### Beam depression (of maximum sensitivity axis)

adjustable 7° to 17°

### 3. OTHER SENSORS

Towfish altitude, from integral echo sounder, 78mm resolution

Water temperature

Heading (option)

Depth (option)

### 4. SAFETY FEATURES

Breakaway mechanism, using standard C-MAX breakable washers, releases to give tail-first towing if tow force exceeds a nominal 1kN (100kg) or 2kN (200kg)

### 5. ENVIRONMENT

#### Operating depth

0-2000m standard; deeper to order

#### Operating speed

1-8 knots (but note that the physical limitations of cable drag and layback may limit operating speed)

#### Maximum towing speed

12 knots

### 6. MECHANICAL

#### Construction

stainless steel body and electronics bottle, acetal nose & tail, aluminium fins

#### Towfish dimensions and weights

0.14m diameter, 1.26m length

42kg in air, 32kg in seawater

#### Towfish temperature range

-10 to +45°C operating

-20 to +50°C non-operating

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