



Shelf manufactured the Dual Mast Rock Bolting Rig in January 2005 to support pipeline stabilization projects. In 2010 the rig was completely rebuilt to its original specifications. The rig was first used to support the John Brookes project which involved setting some 900 rock bolts. Features of the Rock Bolting Rig are as follows:

- Frame footprint of 4.8m (L) x 2.6m (W) with capability to increase to 5.0m (W) for stability. Rig weighs 12t.
- 1 x 20' ISO Container with 3 x Hydraulic power packs & accessories (15t)
- 1 x 20' open top ISO Umbilical Container c/w Umbilical Handling Frame and Power Sheave (10t)
- Designed and approved to DNV 2.7-1 for offshore lifting
- Capable of drilling rock bolts of 5.5 meters length in soils up to 70 MPA
- 1 x 10' Spares Container (5t) with 100% redundancy on all single point failure parts
- 2 x 90 meter umbilicals for hydraulic, grout and water supply
- 2 x Pumps for drilling water and grouting

The key features of the Dual Mast Rock Bolting Rig are:

- The drilling mast can be folded down and raised hydraulically. This enables the drill rig to be launched and recovered in the folded/stowed position.
- Rock bolts can be loaded into the mast in the horizontal position and set in the J drive, ready for operations within a minimal time frame using either divers Subsea or riggers on the deck of the vessel or barge.
- The Rig base has 4 x outriggers which can be extended both horizontally or vertically. This provides substantial stability in addition to being able to rock bolt suspended pipelines in free span. The outriggers extend 1.2 meters each side, and can be raised 1.8 meters in height, all on separate controls for uneven seabed conditions.
- The 3x hydraulic power packs produce a primary 200 litres per minute for each drill head in addition to 80 litres on the secondary system to operate the rigs legs, mast, and winch. This provides 100% redundancy to the hydraulic supply for the system.
- Drill head performance specifications are designed for 7500 nm of torque and to drill rock bolts in soil conditions of up to 70 MPA.

HEAD MOTOR x 2	OUTPUT SPEED (rpm)	TORQUE (ηm)
400	80	7,500
315	105	6,000
250	130	4,500
160	200	2,850

