



PRESS RELEASE

Newbuildings – designed for dredging and the transportation of silts and sand

The **RN Group** has over the years developed its own dredge designs – through technical know-how and experience. Converting, updating, and building dredgers themselves also at their own yard, the RN Group can offer dredge services to their customers confident in the knowledge that the equipment gives optimal solutions.

In 2008 and 2009 the RN Group produced, at the RN yard in Grenaa, Denmark, three split trailers identified as:

RN-1500 RESOLUTION CLASS

MODI R, TRUD R, MAGNI R

Now during the month of October two towed split hopper barges as

RN-1000 BARGE CLASS

ROAR R AND HELGE R

have completed the conversion into self-propelled hopper barges, also at our yard in Grenaa.

In 2010 two new sister vessels went under construction at the Peene Werft GmbH, Wolgast, identified as:

RN-6000 MASTER CLASS

BALDER R AND NJORD R

The first of the two sister vessels Balder R was delivered 25th of August 2011 with the Njord R to follow on 14th of October 2011.

All the vessels in the RN-fleet have names from Nordic Mythology, where the Vikings of Scandinavia had ocean going ships, which were fast, long and slender. The Danish sea faring tradition was founded by the Vikings who were known to be skilled and fearless sea farers.

The RN-new buildings are slender split hopper suction trailers built for operating world wide. Probably the biggest and most versatile split hopper suction trailers ever built!

13 of the 34 units in the RN-fleet are hopper suction trailers out of which 8 are split trailers. 6 of our 8 barges are also split barges.

When building a split hopper suction trailer you build two separate hulls, which are joined together with two heavy hinges combined with two very powerful hydraulic cylinders.

A split hopper suction trailer is of course more complicated to build than a single hopper hull dredger.



PRESS RELEASE

Newbuildings – designed for dredging and the transportation of silts and sand

This effort is however, earned back over time due to less maintenance, more efficient loading due to less turbulence in the hopper, and higher performance, as the hopper hold can also be emptied completely and quicker by pumping due to the V-shaped bottom of the hopper hold.

The load can be dumped quicker by splitting than single hull dredgers with bottom doors and with very little clearance under the keel, whether it is material from maintenance dredging in sands, sticky clay or other types of load characteristics.

When placing a load of sand for shoreface nourishment, this can be done very precisely and with high compaction by split dumping. After the successful NOURTEC full scale test of this method off the coast of Denmark and Holland, the split dumping method is required more and more.

A split hopper suction trailer is better protected against total loss due to collision by having two hulls joined together with two main engine rooms in stead of one engine room, as the single remaining hull can support the compromised hull.

The new buildings are state of the art vessels, specially designed for operation in shallow waters, ideal both for the maintenance of fairways and harbours, beach replenishment and land reclamation projects. In order to optimize capital, and especially maintenance dredging, a hopper trailer with two dredge pipes is often a must. Our new vessels are equipped as two dredgers in one with double loading and discharge pumping systems which can work in parallel or in series. Together with their own crane facilities and on board work shops, standing time is minimised, which is vital when working world wide and in areas where land support facilities are often not available. With very high efficiency, relative low energy consumption and very high number of workable days the vessels will outperform the competition.

Each of the two dredge pipes has an inner diameter of 700 mm which in total gives a volume area equal to one pipe of 990 mm. This compares more than favourably with similar dredgers of equal volume capacity. Specially designed heavy-duty drag heads are available for hard soil.

Loads can be discharged by backpumping to the sea bed or into a trench through the suction pipe, over the bow as rainbowing approximately 150 meter or through the bow connection to a pipe line of 600/700/800^Ø up to a distance of approximately 4 km.

Both vessels are equipped with very efficient degassing systems, poor mixture over flows and “green valves”.

The total installed power is 10504 kW.

No heavy fuel oil (HFO) is used. All the RN-vessels are using Marine Gas Oil (MGO). The diesel engines are having an electronically controlled fuel delivery system to meet future emission and environmental demands. MDO has got a lower Co₂, So₂, No₂, and particle emission, which will meet the most restrictive environmental requirements also when operating in the most sensible near-shore areas.



PRESS RELEASE

Newbuildings – designed for dredging and the transportation of silts and sand

The two heavy duty dredge pumps are direct diesel driven through a two-speed reduction gear with each diesel engine having a power of 2117 kW. The pumps can be operated both in parallel and in series.

On the front part of the main engines, each having 2.985 kW, a 1.600 kW generator is mounted giving power supply for the 450 kW bow thruster and the two 900 kW jet water pumps which can also be operated in series. Surplus electric power is available for an optional extra bow thruster and out board submerged dredge pump on an extended dredge pipe.

The speed is 14 kn fully loaded and more than 15 kn empty.

The design has been made based on some 40 years of practical experience combined with the most up to date dredging technology and environmental requirements. The improved hydrodynamic design with a relative slim hull gives a fuel reduction of 20% compared with a standard wide body single hull dredger and all engines will fulfil the latest IMO and TIER-standards. The rudder-propellers and the hopper sealing can be exchanged afloat. No dry docking is required. If in dry dock our newly developed hopper sealing can also be exchanged without splitting the hulls.

With a powerful bow thruster and two rudder-propellers the vessels are extremely manoeuvrable allowing dynamic positioning.

All equipment is delivered with the technology of the future from leading suppliers within the dredging industry and to the highest standard and quality.

The dredgers have an optimal trim by having the pump room forward giving the minimum distance from the pumps to the bow coupling when pumping ashore.

In 1989 the RN Group invented the first one-man-operated bridge with the Viking R. To optimize this feature, the accommodation and bridge is placed aft, giving maximum 360° view over the entire vessel and surroundings. The accommodation aft gives also less discomfort in heavy weather with rough sea, and you do not hear the periodic noise from the bow thruster. The general noise level in the accommodation is extremely low, as the accommodation unit is resting on hinges absorbing noise and vibrations from the hull. The bridge wings are closed giving protected and optimal working conditions under the various climatic environments envisaged.

The RN Group has chosen to build the new dredgers at a European yard - as our customers and our very experienced sea farers appreciate European vessels built to European standards and quality.

We always strive to be second to none at what we are best at

H:\568+569\Notat\Newbuildings\JRN/kdr/271011