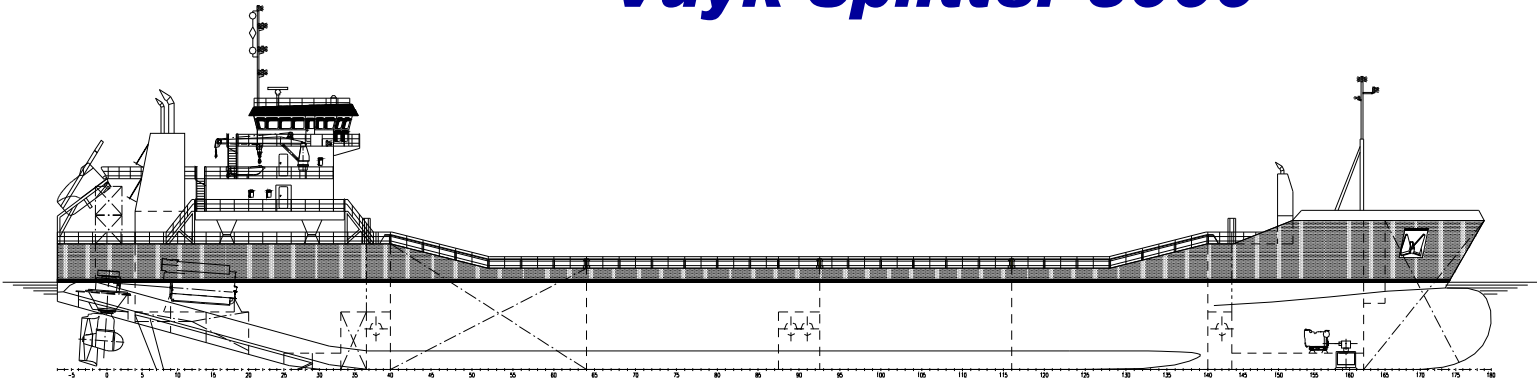




# New generation split hopper barges

## Vuyk Splitter 8000



### Principal Dimensions

Length overall	133.55	m
Length between perpendiculars	123.10	m
Breadth moulded	25.50	m
Depth to main deck	8.70	m
Dredging draught	7.50	m

### Capacities

Hopper capacity	about 8 000	m <sup>3</sup>
Deadweight	about 14 400	ton

### Machinery

Propeller output	2x 4 000	kW
Bow thruster	1x 700	kW
Main engines running at 720 rpm	2x 4 320	kW

### Performance

Trial speed	14.5	kn
Range	3 000	nm

### General

The seagoing split hopper barge is a proven design for carrying dredged materials.

The easy and fast way of dumping makes this ship very interesting for use in combination with e.g. cutter dredgers.

Vuyk invented the split hopper concept, with hydraulic system, in the early sixties of the twentieth century.

Few years later split hopper barges became a popular ship type, so Vuyk designed and constructed many of these barges for clients all over the world.

A lot of studies and inventions are done by Vuyk to improve the ship type.

The well-known Vuyk patent barges contain one of these improvements and are build very often.

Latest design developments have shown the ship type can also be interesting for hopper volumes up to 10 000 cubic metres.

With the experience acquired Vuyk Engineering Rotterdam is capable to deliver a range of seagoing split hopper barges designs in a fast and accurate way.

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In the table below, a range of examples can be seen with the main particulars of the vessel by a specific hopper volume and deadweight.



Hopper Volume (m <sup>3</sup> )	Deadweight (ton)	Loa (m)	Lpp (m)	B (m)	D (m)	T (m)	Speed (kn)
500	900	50.50	50.00	9.00	3.50	3.15	6.5
750	1 350	58.30	57.80	11.00	3.75	3.40	7.5
1 000	1 800	63.00	62.00	12.00	4.60	4.20	8.5
1 500	2 850	72.90	69.25	13.20	5.65	5.10	10.0
2 000	3 600	83.60	79.00	15.20	6.00	4.75	10.5
3 000	5 450	89.20	84.80	18.40	6.50	5.40	11.0
6 000	10 800	117.95	111.00	22.40	8.20	7.20	13.0
8 000	14 400	133.55	123.10	25.50	8.70	7.50	14.5
10 000	18 000	148.80	145.20	26.00	9.40	8.10	15.0

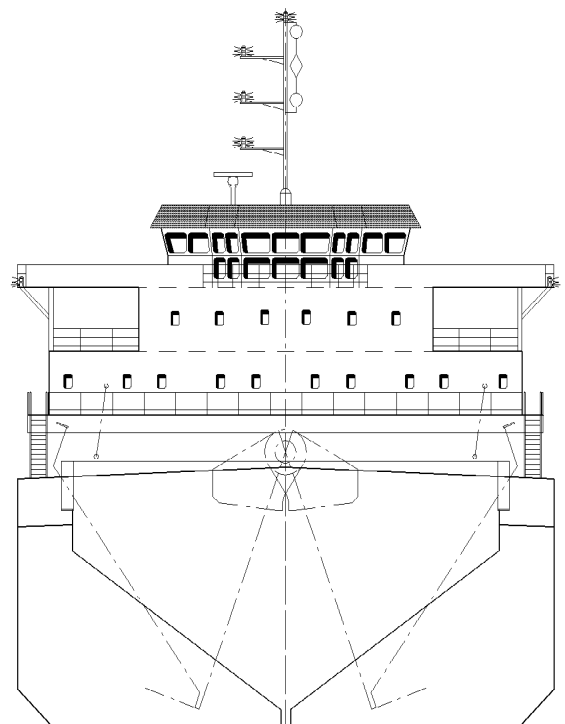
The split hopper barge is an interesting type of self-unloading barge because of its relative simple construction and lay-out. On the other hand, the disadvantages of the split hopper barge are the rather high steel weight and the deflections of the two half hulls which could result in leaking of spoil. For those reasons no vessels of this type beyond the size of 5 000 m<sup>3</sup> / 7 000 ton deadweight were ever built.

With this in mind, Vuyk analysed the possibilities for improvement of the split type barge design with the ultimate goal to make the concept interesting for barges with a hopper volume of 6 000 up to 10 000 cubic meters.

All split barges make use of cylinders and hinges at each end of the hopper. Addition of a third connection (without dividing the hopper space in two parts) is found to be an important improvement. This third connection can be achieved in the shape of a third hinge and/or hydraulic cylinder.

As a result, bending moments are reduced to such an extent that both substantial reduction in structural weight and deflections of the hull are achieved.

This improvement cleared the path to develop larger sizes of split hopper barges. The Vuyk Splitter 8000 was born.



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