The main functions of the suction pipe are to transport the dredge mixture to the hopper, and transfer the trailing forces from the draghead to the ship. The suction pipe also ensures full control of the draghead on the sea floor. On the suction pipe there are also supports for jet water systems, hydraulic piping and cabling. Royal IHC’s suction pipes are the result of many years of practical experience.

**Full control**

The suction pipe is hoisted outboard and lowered to dredging depth with the aid of gantries. The suction bend is mounted in a trunnion which forms part of the sliding piece; as the pipe goes outboard the sliding piece enters the guide on the hull and is lowered until the bend is in line with the suction inlet below the waterline. Once in place, the draghead can follow the profile of the sea floor by means of the swell compensator and cardan joint. Lateral slopes can be followed with the help of the turning gland. Profiles larger than the stroke of the swell compensator can be absorbed by winch adjustment, either manually or automatically. Combined with an advanced control system, the exact position of the draghead can be seen by the dredge master.

**Developed integrally**

IHC supplies standardised two-part suction pipes for installation on hopper dredgers with internal diameters from 350 to 1400mm. Models can be tailored or customised to incorporate specific features required by customers. They are developed integrally with all other components to ensure optimal operational cost-effectiveness. Their hinged construction, together with swell compensation, ensures optimal contact between the draghead and the sea floor.

**Tailored models**

Currently the tailored models may include:

- installations assembled to a drag load of 4000kN
- operating capacities at depths exceeding 120 metres (150 metres feasible)
- jet water line up to 700mm diameter or 20 bar operating pressure.
Submerged dredge pump assembly

Incorporating a submerged dredge pump assembly in the suction pipe offers various advantages. The maximum dredging depth and mixture density can both be increased, and production can be raised. Various types are available depending on application. More information is available on the ‘Submerged dredge pump assembly’ product sheet.

Maintenance and wear

Arm pieces, turning gland, upper and lower pipe sections and draghead are connected by bolts allowing easy maintenance and draghead replacement. The suction hoses that allow flexibility in the cardan are equipped with steel rings to prevent them from collapsing under the influence of vacuum.

A patented ‘rapid exchange bend’ in the suction pipe protects the integrity of the full assembly by reducing the negative effects of heavy wear caused by the dredge mixture. It separates the wearing function from the structural and support function.

Improving intelligence

To enhance operational control, and therefore the cost-effectiveness of the whole dredging process, IHC is making increasing numbers of dredging components ‘intelligent’.

This means that components requiring power (electric, pneumatic or hydraulic) and optimal control, such as the suction pipe, active draghead and submerged dredge pump motor, can be precisely controlled by information feedback from different sensors.

The Telepipe

There is an increasing demand for longer suction pipes capable of reaching greater depths in dredging projects. The possible length of the installation is traditionally limited by the length of the ship. The patented Telepipe, however, is a telescopic suction pipe capable of reaching greater depths. More information is available on the ‘Telepipe’ product sheet.