# WATT MAS Drives for Spiral Pipe Manufacturing

**Watt Drive delivered the entire drive technique for a large-diameter pipe plant. The drives are used for the pipe transport system, the welding stands and the turning devices.**



Picture 1: Spiral Pipe Manufacturing

**Machinery description**

The project was realised by the company DANIELI W+K Industrie Technik GmbH & Co. KG from Dortmund.

Hot rolled strip in the coil is used as base material for the manufacturing of spiral pipes. It is formed into a spiral-formed pipe body and directly after that welded ready with the submerged arc welding technique. This technique is used for the inner- and outer seam and is performed simultaneously.

**Transport systems**

Pipes with a diameter of 508mm (20“) up to 2540mm (100“) are conveyed with the transport system (see picture 2). The hugest pipe with a length of 18m thereby weighs 27 tons. The maximum conveying speed is 30m/min and is kept constant at all pipe diameters with geared motors that are energised by frequency inverters.



Picture 2: Pipe transport system after shaping

Implemented drives: 223 shaft mounted geared motors ASA 66A 81N4 TH

* Motor power: 0.75kW
* Output speed n2: 15U/min
* Output torque M2: 481Nm
* Service factor: 1.7

**Drive concept**

In the range of 5 - 50Hz the drives are run with a constant torque, in the range of 50 – 110Hz with field weakening (constant power).

Huge pipe diameter– high weight with the need of high torque – at low speed.

Small pipe diameter – low weight with the need of low torque – at high speed.

**Turning devices**

Drives with brakes are implemented for the turning devices (see picture 3). This enables a precise and step-by-step quality check of the spiral pipes. The pipes are examined by visual or x-ray check.



Picture 3: Turning device for quality checking the pipes

Implemented drives: 52 shaft mounted geared motors ASA 66A 81N4 BR5 TH

* Motor power: 0.75kW
* Output speed n2: 12U/min
* Output torque M2: 577Nm
* Service factor: 1.4