Panel Production Line
Cost Efficient Solutions based on 30 Years of Experience
Investing in a TTS Panel Production Line means investing in more than three decades of know-how

Since our first Panel Production Line delivery in 1977, TTS Handling Systems has delivered more than 60 Panel Production Lines to shipyards worldwide. Our solutions have in many cases been developed in co-operation with demanding customers, enabling us to build up a unique know-how of the technological challenges facing the industry’s production area.

Different solutions for different requirements

In order to fulfil the complexity of requirements related to production volumes, material dimensions, workshop sizes and layouts, material flow, investment and pay-back considerations and capacity, we offer a range of Panel Production Line solutions that can be customised to any shipyard.

Our Module Based Designs offer stepwise investment

TTS Handling Systems offers modular solutions in order to accommodate yards with limited investment budgets or need for stepwise increase of panel production capacity. Thus, a Panel Production Line can be installed as a complete unit or as individual sections purchased over time. In either case, the final result is the same – a significant improvement in productivity.

Attractive return on investment

Due to our ability to deliver a range of options – from relatively low-tech mechanical solutions to highly automated and heavy duty solutions – our customers, ranging from small, specialised yards to large high-volume yards, experience attractive return on investment through significant improvement in productivity, capacity and quality.
1. One Side Welding

The station features a Submerged Arc Welding (SAW) process, utilising one, two or three wires depending on plate thickness and capacity requirements. Plates are tack welded prior to welding, and tacking of the next plate can be carried out in parallel with the welding operation. TTS Handling Systems offers two options for the holding fixture: Vacuum holding or hydraulic clamping.

2. Cutting, Marking and Trimming

As an alternative to manual panel cutting, stiffener line marking and removal of primer for improved fillet welding speed and quality, a CNC controlled machine can be incorporated, with optional oxy-fuel or plasma cutting, 3-burner head for bevelling, marking unit and vacu-blast or sand blasting unit.

3. Stiffener Mounting

Stiffener mounting is performed by using a Mobile Stiffener Gantry (MSG). The operator controls the MSG and picks up one stiffener at the time from a special cassette, and positions each stiffener on pre-marked locations on the panel. A gantry mounted clamping trolley ensures sufficient contact between stiffener and panel. In the basic version, semi-automatic welding equipment mounted on the clamping trolley is used for tack welding. For higher capacity requirements a MSG with automatic clamping and tack welding equipment is offered.
4. Stiffener Welding
Mechanised fillet welding of stiffeners is performed by a panel running tractor suspended from the Fillet Welding Gantry (FWG), or a gantry mounted programmable welding trolley. Welding process can be MIG/MAG, Flux Core or SAW. The welding heads are guided by the stiffener, and the gantry mounted trolley is programmable for intermittent welding with MIG/MAG or Flux Core process. The FWG can be equipped with various fume extraction systems, based on customer requirements. For high capacity requirements, the FWG can be equipped with multiple welding trolleys.

5. Web Mounting
Webs are lifted onto the panel by an existing shop crane. The Mobile Web Gantry (MWG) is equipped with a hoist for final positioning in any horizontal direction, eliminating the need for mounting of time consuming lugs and jacks. A hydraulic ram foot, in combination with chain grips attached on the stiffeners for counter acting the ram foot, ensures good contact between web and panel. The MWG is equipped with semi-automatic MIG/MAG welding sets for tack welding.

6. Web Welding
The Web Welding Service Gantry (WWSG) is equipped with several semi-automatic MIG/MAG welding equipment for continuous fillet welding of webs. The welding sets are mounted on work tables suspended from the gantry, easy accessible when needed. Electric cables and gas hoses are arranged on the gantry in order to protect them from damages during daily use.

7. Plate and Panel Transport
The Panel Production Line features manipulators for plate alignment in the One Side Welding Station (OSWS), special purpose rollers and chain conveyor systems for panel transport. For retrieval of heavy panel sections or blocks at the end of the line, or need for a fixed welding floor in this area, a combination of Ultra Heavy Lift (UHL) trains and hydraulic Load Out beams is offered. The UHL train is a self-propelled "lift and go" system, controlled from a centrally located desk or a portable radio control. The Load Out beams are designed to make access for a transporter to drive under the panel section for further transport.
Our goals are improved productivity, increased capacity and enhanced quality for our customers

Our customers will experience that TTS Handling Systems has a never ending commitment to find the best solutions, based on individual requirements. In addition to offering the right technical solutions in each individual case, our focus on product and project development is cost-efficiency and quality.

We are ready to assist you in your investment appraisals

Our professional staff is ready to discuss and assess your production technology investment plans. With our wide experience from deliveries of advisory services and equipment to more than 80 shipyards world-wide, TTS Handling Systems has built up a unique library of benchmarks from the industry. Combined with our process know-how and expertise in mechanical engineering, this enables us to approach new challenges from various angles. In addition to technical appraisals, we can assist you in productivity and capacity calculations, as well as return on investment estimates.

Our After Sales Service ensures operational reliability

After delivery of a TTS production line, we are always at hand if problems should occur during operation. The yards’ professionally trained operators and proper maintenance of the equipment reduce the risk of failures. However, whenever needed, we offer technical surveys, service visits, spare and wear parts and re-training in order to keep any down-time of your equipment at a minimum.

Our reference list speaks for itself

A track record of 170 production lines delivered to professional and recognised clients worldwide is your guarantee for well designed, functional and reliable technology. Our constant focus on technical improvements, and training of our own staff in order to keep up with current demands, ensure that TTS Handling Systems will be your technology partner also in the new century.
The TTS Group is an international technology-based company with its headquarters in Norway. The parent company, TTS Technology ASA, is listed on the Oslo Stock Exchange.

The TTS Group consists of six core companies recognised world-wide for their expertise and experience in cargo handling and cargo access equipment, marine and offshore cranes and winches, heavy-load handling systems, material handling equipment and production technology. Each TTS company offers solutions designed to increase profitability and competitiveness by improving productivity, quality and system capacities.

TTS Handling Systems designs and supplies heavy-load and material handling systems, production lines and terminal handling technology. The company possesses extensive experience, and has gained an excellent reputation in dealing with design, technology and construction.

Each member of the TTS Group works closely with its customers to ensure cost-effective, state-of-the-art solutions – be they standardised or customised – that meet their needs for today and long into the future.