



Audi N50 Paint Finishing Plant Unveiled in Ingolstadt

Early in 2014, plans were announced to develop a new paint plant – the new Lackiererei Decklack N50 – at Audi’s Ingolstadt facility in Germany, the Audi Group’s biggest production site. The new site, one of the second largest automobile factories in Europe, would be used to paint the first series of car bodies for the new Audi A4 model.

Later that year, Tyco Mechanical Products (TMP) was required to specify and supply a complete HVAC mechanical solution to facilitate cooled water, chilled water and compressed air, as part of the building services of the new facility. The project was awarded on the strength of TMP’s integral proposal to supply a grooved coupling system with reduced fixed point forces, in combination with pipe support racks, pipe hangers and metal framing to overcome complex project challenges.



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Why GROOVED



GRINNELL grooved couplings eliminated the need for traditional techniques, such as welding at high elevation. By using grooved couplings we eliminated the need for expansion bellows which resulted in reduced anchor forces on the building structure.

Thorough preparation and a detailed technical proposal, including thermal expansion and pressure thrust, calculations added value in the early design stages. The experienced GRINNELL Mechanical Services (GMS) team presented CAD drawings to demonstrate the capabilities of its grooved pipework solutions for use in high rise structures and high end load situations. The GMS team continued to partner with an engineering and construction lead; providing skilled consultation throughout the project, from design to build.

To ensure that the installation phase remained trouble-free, training was delivered to on-site operators, using grooving tools to demonstrate safe and correct methods of pipe grooving. Installation work began in February 2015 and company personnel continued to visit the site to provide additional support, training, advice and reports, as well as to manage any unexpected issues as they arose, during the installation phase. The project was completed several months later.

The additional benefits to opting for grooved couplings and fittings over welded or flanged systems included faster installation time and safer operations. The absence of hot works eliminated special health and safety requirements and the need to isolate work areas due to fire risk, electric arc or fume generation that occur during welding.

Grooved Mechanical HVAC System for Automotive Sector

GRINNELL mechanical products were supplied throughout the building with specification to the piping bridge, piping ring line, cooling towers, rooftop piping, pipe risers and mechanical room. Prefabricated pipe support racks were connected to the primary building structure to support the DN500 / 20" Chilled Water ring line around the entire building. Flexible coupling configurations replaced the need for expansion bellows transforming linear pipe expansion into angular deflection. A variety of coupling sizes, ranging from 60.3mm to 508mm (2 to 20 inches) supported piping around the facility's 48m x 60m mechanical room, housing chillers, compressors, pumps and headers. KWIKSTRUT metal framing and brackets were specifically designed by TMP as part of the piping system and pipe support solution. In addition, bespoke colour requirements for compressed air piping were applied to satisfy the client's needs and specifications.

Why GRINNELL

Marcel De Vries from TMP was responsible for project management. He comments, "The team did a thoroughly professional job from the design phase right through to final installation. We were able to provide a unique offering with an integral solution of GRINNELL piping systems and KWIKSTRUT pipe supports. With detailed planning and preparation from the start we remained one step ahead of the competition and offered our customer an innovative, robust and cost-effective total grooved pipework solution for optimal efficiency."

To herald the arrival of the new paint finishing plant, employees built a special Audi RS 3 Sportback, which featured creative paintwork airbrushed onto the hood of the car to make it appear as if the engine is visible to the naked eye. Other trick paint finishes were applied to the exterior of the car to make reference to the new Lackiererei Decklack N50 site.

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INDUSTRY: Automotive Sector

PROJECT: Audi N50 Paint Finishing Plant

CONTRACTOR: M+W Central Europe GmbH

SOLUTION: GRINNELL Grooved Mechanical Products and KWIKSTRUT Pipe Supports

SYSTEMS & MATERIALS:

Chilled Water - Carbon Steel (CS) up to DN500 / 20"
Cooling Water - Stainless Steel (SS) up to DN500 / 20"
Compressed Air - CS & SS up to DN300 / 12"
Hydrant line - CS up to DN80 / 3"