

Optimised steel processing drives automotive success

Allied Steelrode's steel processing technology is driving optimised efficiencies within South Africa's automotive manufacturing sector. Allied Steelrode general manager for sales in the automotive sector, Lee-Ann Geyser, explains.



Allied Steelrode's CEO, Arun Chadha, and general manager for sales in the automotive sector, Lee-Ann Geyser, showcase the company's fully automated Amada guillotine and its cut-to-size capability.

The local automotive industry is one of the most critical manufacturing sectors in the country, with vehicle and related component production accounting for approximately one third of South Africa's manufacturing output. Total earnings from South African automotive exports reached R164.9-billion in 2017, comprising 13.9% of South Africa's total export earnings.

In a further demonstration of the pivotal nature of the local automotive sector, the industry received a significant shot in the arm recently, with the announcement by Nissan South Africa that it intends investing R3-billion in its vehicle plant at Rosslyn, north of Pretoria, in order to start locally producing the Navara. Production will commence in 2020.

As long as a decade ago, local steel major

and value-added processor Allied Steelrode understood the importance of the automotive and automotive component industry to South Africa's economy and the urgent need to supply products that would allow these essential sectors to be competitive in the world market.

"This has led Allied Steelrode to make several bold and visionary investments in advanced steel processing technology, which has notable benefits for our customers – particularly those within the automotive industry," explains Allied Steelrode general manager for sales in the automotive sector, Lee-Ann Geyser.

Allied Steelrode's suite of state-of-the-art steel beneficiation equipment ranges from high-speed cut-to-length and slitting lines, to fully automated high-precision and high-speed guillotines, which are able to supply

a wide range of products and sizes to the automotive industry.

"Change is constant, and nowhere more so than in the automotive industry. With the need to meet the market's prevailing expectations concerning quality and reliability, excellent customer service and the shortest possible turn-around times are required by automotive industry customers," Geyser notes.

For its part, Geyser explains that Allied Steelrode has continued to evolve its market offering to ensure that it is sufficiently versatile to meet customers' requirements.

The various steel processing technology investments made by Allied Steelrode were therefore in response to – amongst others – the requirements of the local automotive sector. "Partnering with our customers by tailoring our offering to their requirements not only enhances our efficiencies, but our customers' efficiencies as well, ultimately creating a demand for smaller cut-to-size products," she says.

"Part of our steel investment strategy 'roadmap' was to acquire an Amada fully automated guillotine; as well as the Samis disc press. In addition – and most significant of all – are our two stretcher levellers, which with their hugely powerful capability remove latent memory and inherent trapped stresses in raw steel. This means that laser cutting and subsequent welding can be more efficient, and the manufacturing scrap rate can be effectively reduced.

"The net result is that we can deliver a superior quality product to our customers, which is easier and more consistent in terms of quality and reliability for fabricators and manufacturers to work with," she adds.

The success of the first stretcher leveller, installed in 2015, prompted the purchase of a second such machine, which was commissioned in 2018.

Geyser advises that, although the trade-marked Allied Steelrode Stretcher Material (ASSM) brand is not yet supplied 'as is' into the automotive industry – because the material grade requirements are very specific in this industry – various steel products are processed at the company's Midvaal stretcher facility that are utilised downstream in the automotive manufacturing sector.

In terms of gauges of steel supplied to the automotive sector, Allied Steelrode's capabilities across all lines range from 0.3 to 12.0 mm, excluding plasma facilities, which extend to 65 mm. Currently, the principal gauges supplied to the automotive industry are in the 0.7 to 9.0 mm range. Allied Steelrode supplies the steel in both local and import material, ranging from cold-rolled, electro-galvanised, hot dip galvanised, hot-rolled, hot-rolled pickled and oiled, dual phase,

and various high-strength steel products.

The Amada high-speed guillotine is an automated line, which delivers to exact requirements and eliminates double-handling and processing in the automotive component manufacturer's production cycle. "By delivering a superior product to our customers, they, in turn, can deliver quality that matches their customers' requirements.

This promotes optimisation in manufacturing processes, reducing costs and increasing efficiencies. In other words, it allows our customers to work faster and smarter," Geyser continues.

In addition, the Amada medium and heavy-

duty slitters add further functionality to Allied Steelrode's products, where many customers have changed from strip feed to progressive tooling in order to reduce scrap, thereby optimising their costs and increasing efficiencies.

"Furthermore, by identifying the need for circular blank requirements, we can eliminate double-processing for our customers by using our Samis disc press, which reduces their scrap rate considerably," she says.

The company's cut-to-length line and synchro-shear also play a key role in delivering accurately sized product, quality of levelling and greatly reduced turn-around times.

"This huge investment in technology – of-

ten during tough economic times – has been a substantial leap of faith for Allied Steelrode as a company, and therefore not a decision we took lightly," adds Allied Steelrode's CEO, Arun Chadha. "However, when we see our local automotive manufacturing industry growing – as evidenced by the very positive news from Nissan recently – we are greatly encouraged.

"We are confident that our steel processing technology investments will prove of invaluable support to the South African automotive sector as it becomes an increasingly significant contributor to our national economy," Chadha concludes. □

Africa's first-of-its-kind heavy-duty slitter

In the past decade, leading steel merchant and value-added steel processor Allied Steelrode has made very substantial investments in several items of advanced steel processing technology. These included two stretcher levellers, which produce the hugely popular Allied Steelrode Stretcher Material (ASSM); as well as a remarkably versatile LT 20 tube laser, which opens up new possibilities in terms of the cutting and application of steel tube.

When steel is delivered from the primary steel mill, it is in the form of 32 t coils which are 1 950 mm wide. To suit Allied Steelrode's customer requirements – and their manufacturing processes – the raw steel needs to be slit along its length into various widths. Naturally, to supply customers' requirements promptly, this slitting process has to be carried out as rapidly as possible, without compromising product quality or delivery deadlines in any way.

"In mid 2010, to meet these parameters, Allied Steelrode invested in a heavy-duty SACMA slitter – the first of its kind in Africa – which we installed at our premises in Alrode," explains the company's deputy CEO Justin Cloete. This slitter can process a thickness range of 1.60 to 13 mm with a slit width range from 48 to 1 850 mm and a line working speed of 150 m/min. It also has uncoiler and recoiler capacities of 32 000 kg, which allows for the processing of a raw steel coil in one continuous run.

In terms of Allied Steelrode's competitive edge, the heavy-duty slitter gives a high production capacity, together with a wide range of widths and thicknesses. This afforded the company the ability to service the requirements of a number of different manufacturing sectors, namely tubing, cold form section, mining, automotive and agriculture.

Upon its installation, the slitter was almost immediately popular with Allied

Steelrode's customers. "What the heavy duty slitter did was give our customers a competitive edge, allowing them to improve on the products they, in turn, were able to manufacture and sell to their customers," continues Cloete, adding that, in addition, because of its superior accuracy, the heavy-duty slitter also reduces customers' scrap rates.

"Our customers continue to receive substantial benefits from the critical tolerance we can maintain due to shimless tooling technology throughout the slit. This gives them the correct final product with no need for additional and expensive rework. In turn, this increases our customers' production throughput and reduces their manufacturing costs," he explains.

The heavy-duty slitter has the capability of processing material with a maximum yield of 355 MPa and a maximum tensile strength of 510 MPa. However, the thinner and nar-

rower the input coil becomes, the higher the yield and tensile strengths of the material that can be processed.

A further benefit to customers is the slitter's 'free loop' operation between the slitter and the recoiler. A tensioning device in front of the recoiler is needed to produce well-wound coils. This makes it possible to process poorly shaped coils with shape defects such as buckles, twists, thickness variations across the width, and internal stresses in the incoming coil, which all influence the result of the slitting process.

"With technically advanced equipment such as this, it is our aim at Allied Steelrode to promote the quality of our customers' products and enhance their productivity to ensure that they are able to survive the hard times – and to take full advantage of the economic upturn when it comes," Cloete concludes. □



Allied Steelrode's heavy-duty SACMA slitter can process a thickness range of 1.60 to 13 mm with a slit width range from 48 to 1 850 mm and a line working speed of 150 m/min.