

METALLOCK'S STEEL PLANT REFURBISHMENT REPUTATION SPREADS WORLDWIDE

Due to the severe operating conditions in steel plants, regular refurbishment of heavy rolling mills is essential to ensure efficient production and consistent product quality. Window areas on roughing and subsequent finishing mill stands suffer erosion and corrosion due to the very nature of the steel rolling process and once resultant wear reaches a certain point, it becomes necessary to remove old wear plates, remachine the surface behind them to restore original manufacturing tolerances for squareness, straightness and dimensional accuracy. New oversize wear plates are then fitted.

The shear size of the mill housings means that the remachining needs to be carried out in-situ. For this reason Metallock Engineering UK has built up an extensive range of precision on site machining equipment specially designed in-house for steel mill refurbishment. These machines, together with the company's team of highly skilled engineers and technicians, all of whom have many years of experience with steel projects both large and small all over the world, are enabling Metallock Engineering to establish a global reputation as the market leader in this type of machining work.

Drilling & tapping

As well machining the wear areas, before new wear plates can be fitted, many of the tapped holes for the plate bolts often need to be refurbished. The constant pounding of rollers on hot steel and the vibration cause the threads to gradually deteriorate. In addition to the milling machines for surface work Metallock has developed a range of drilling equipment to redrill and tap all the holes.

Not only is the Metallock mill housing equipment suitable for machining vertical surfaces it is also used to remachine the housing bases flat and level with each other and square to the housings themselves. Increasingly, Metallock is carrying out reboring for upgrades of mill screwdown systems and like the drilling procedures this work is performed using an adaptation to the mill housing remachining system. This means that the range of Metallock equipment available for steel plant work encompasses milling, drilling and tapping, boring and facing.

Orbital turning

One of the latest pieces of equipment to be developed is an orbital turning machine which was designed for machining and reprofiling 0.5 metre diameter X 1.5 metre long stub shafts for a beam straightening/finishing machine at Corus, Teesside. To speed the orbital turning operation and ensure that all seven shafts matched, Metallock fixed a template of the stepped profile to the orbital turning device. The tools followed this profile, as in a copying lathe.

Global operation

Metallock Engineering's reputation is growing apace and as well as roughing mill stand refurbishments at Corus, Llanwern; the reversing roughing mill at Corus, Port Talbot and the orbital turning project on the seven beam straightening machine shafts at Corus, Teesside, the company has carried out projects in Spain, at Aviles for Aceralia refurbishing eight screwdown bores; refurbished four mill stands for Sollac in Marseilles and done similar work for Iran Steel in Esfahan. Such is the company's experience in this type of work that all the contracts were accomplished within the time and budgets allocated by the client to the satisfaction of all concerned.

In past years Metallock has carried out works in steel plants in Poland, Turkey, Chile, Norway, Sweden, Belgium, South Africa, India, Romania, China, Canada and the USA.

Cast iron repairs

In addition to the machining work Metallock Engineering UK is the largest and most successful company in the world specialising in cold repairs to cast iron using the Metallock process. This technique was developed over 70 years ago for the repair of castings in iron, bronze, aluminium and steel that have been cracked or broken. Because it is a cold repair it avoids the normal stress problems associated with welding.

The Metallock process is the accepted repair technique for all cracked, broken and damaged castings in a wide range of industries, for a multitude of applications. The repair consists of peening layers of Metallock special nickel alloy multi-dumbbell shaped keys into prepared apertures. These keys are highly ductile and can be peened into a metal-to-metal condition to become almost integral with the component's parent metal. Metallock keys are manufactured in a variety of sizes to suit each individual job. Their high strength ensures

the return of a high percentage of the original strength. The essential advantages of the Metalock repair are that no heat stresses are introduced, no distortion occurs and in many instances machining is unnecessary. The process is invaluable in emergency situations and in many cases where the component is accessible, it can be done in-situ to avoid costly dismantling and re-assembly.

When it comes to providing specialist services to the world steel industry, Metalock is one of the leaders by offering its skills in In-Situ Machining, Cold Repairs to Cast Iron and Cast Iron Fusion Welding, For those who require it, the company provides alignment services and has a comprehensive in house machining facility at its headquarters in Coventry, England.

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