

# Rastgar Engineering's Foundry caters for the Pakistan Automobile Market

*Rastgar Engineering Company (Pvt), Limited has built up an enviable reputation in Pakistan in the supply of high-quality grinding media to the country's cement manufacturers. More recently, as this feature shows, the company has set its sights on the requirements of the local automobile industry. In order to cater for the new business, Rastgar Engineering has built a second foundry unit, equipped with British plant and machinery. The facility enables the organisation to produce both grey and spheroidal-graphite iron components.*



*Mr Imtiaz Ali Rastgar, founder of Rastgar Engineering Company (Pvt), Limited.*

The Islamabad-based foundry of Rastgar Engineering Company, (Pvt), Limited was founded by the present Managing Director, Mr Imtiaz Ali Rastgar in 1966. It was an ambitious venture at the time for a young man with an educational background in commerce, and with no foundry experience save for a short course at the Pakistan Industrial Technical Assistance Centre in Lahore.

The resources 20 years ago were slight — the necessary melting facilities being no more than a cupola furnace constructed from 45-gallon oil drums. However, even with such basic equipment, it proved possible to produce a variety of iron castings including components for road rollers and sugar mills. Of especial interest was white-iron grinding media for reducing limestone in cement works.

## **Abrasion-resistant Castings**

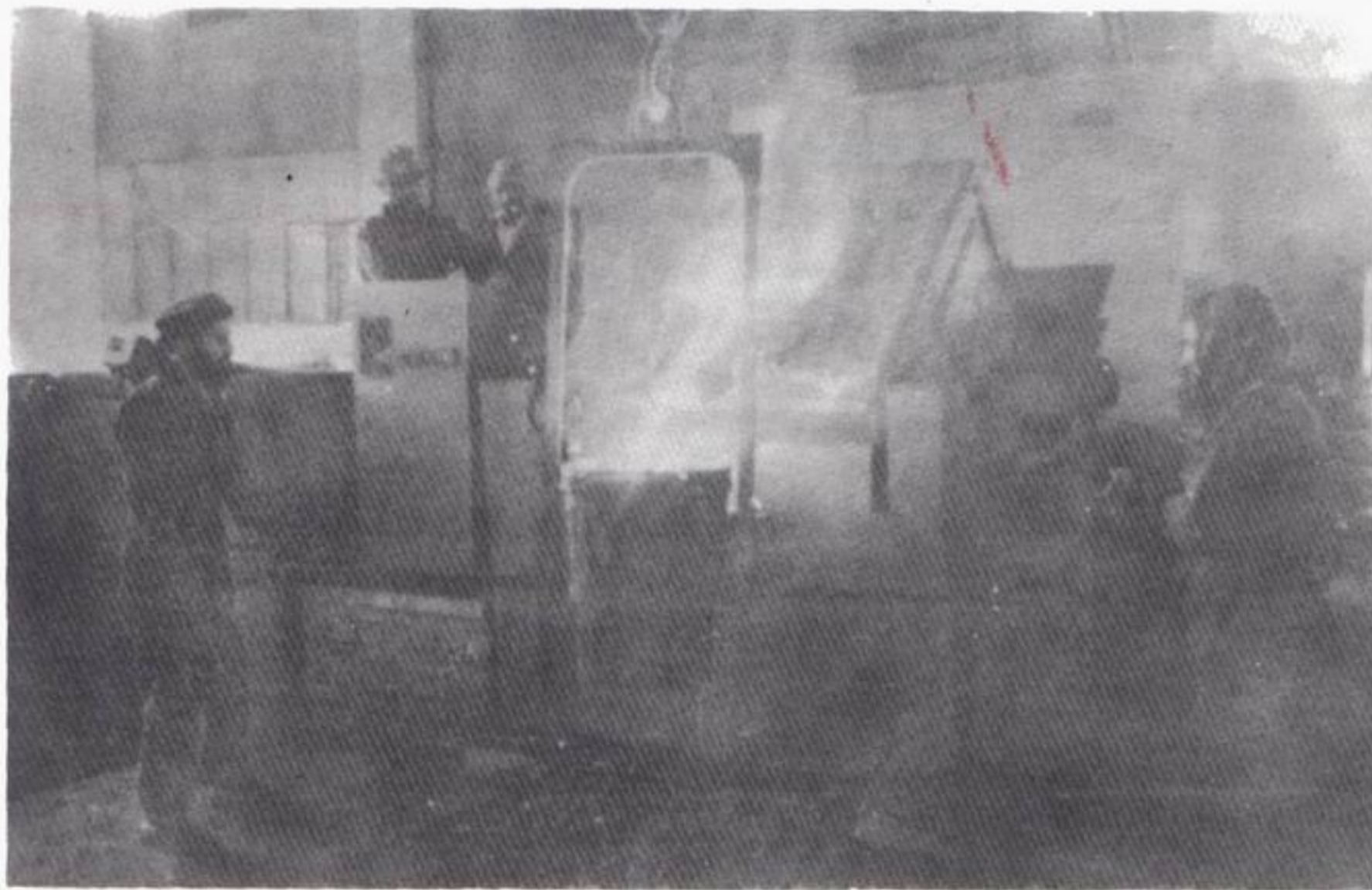
Despite a very adverse political and economic climate, the foundry managed to prosper — especially as a manufacturer of abrasion-resisting

castings. Increasing business led to the installation of more advanced facilities, including a new cupola and a laboratory. Eventually, Rastgar Engineering was able to perfect the production of high-chromium-alloy media for grinding cement clinker. The product, sold under the brand name Rastalloy, is now employed in most of Pakistan's cement works. The media, said to be comparable in quality with the best of imported abrasion-resisting castings, is reported to provide a substantial cost advantage.

*Moulds being poured in the Islamabad foundry of Rastgar Engineering. The new Maverex Fordath coreshooter is to be seen in the background.*



*Tapping iron from Rastgar Engineering's new Inductotherm VIP 500 induction furnace.*



## **Rastgar Engineerings neue Gießerei versorgt pakistanischen Automobilmarkt**

Dieser Artikel berichtet über einen führenden pakistanischen Hersteller von Schleif- und Schmirgelmitteln für die Zementindustrie, der nunmehr auch Gußteile für die Automobilindustrie liefert. Dies wurde durch den Bau einer neuen Gießerei ermöglicht, die zum Großteil von britischen Anlagenherstellern ausgerüstet wurde.

## **Une nouvelle fonderie de Rastgar Engineering dessert le marché pakistanais de l'automobile**

Cet article montre comment un important producteur pakistanais d'abrasifs pour l'industrie du ciment a étendu ses activités aux pièces coulées pour véhicules. Cette expansion a été possible grâce à la construction d'une nouvelle fonderie, équipée en grande partie par du matériel britannique.

## **La nuova fonderia della Rastgar Engineering provvede per il mercato automobilistico del Pakistan**

Questo articolo dimostra come un importante produttore pachistano di metodi abrasivi per l'industria del cemento si sia differenziato in fusioni per veicoli a motore. L'espansione venne basata sulla costruzione di una fonderia, equipaggiata principalmente da produttori industriali britannici.

## **La nueva fundición de Rastgar Engineering suministra al mercado del automóvil de Pakistán**

Este informe indica cómo uno de los principales fabricantes de productos abrasivos para la industria del cemento se lanzó a la producción de piezas de fundición para vehículos. Esta expansión supuso la edificación de una nueva fundición, dotada mayormente con equipo de producción británica.

In 1978, a loan from the National Bank of Pakistan, under the "Supervised Credit for Technology Scheme" enabled the foundry to purchase an induction furnace, moulding machines, overhead cranes, and heat-treatment facilities. This re-equipment phase allowed the company, in due course, to diversify into the manufacture of tractor components.

## **Expansion**

The latest stage in the company's history has been the construction of a new foundry unit on a plot adjoining the present works in Islamabad's Sector 1-9 Industrial Area. The installation was originally planned in 1983 in order to cater for the needs of the local automobile industry, especially with regard to grey and spheroidal-graphite iron castings. The objective was to provide a plant with the maximum of in-built flexibility, allowing the product mix, component size, and alloy to be changed at will. In order to equip the foundry, \$US500,000 was spent on UK-built plant and machinery.

The purchases included the following: An induction melting facility based on a VIP 500kW power source, two furnace bodies — each with a capacity of 750kg — changeover switches, and a cooling tower; an on-demand-type Maverex Fordath continuous mixer with an output of 15 tonnes per hr; a Maverex Fordath Mini Mix unit with a capacity of two tonnes per hr; Distillers

Company (Carbon Dioxide), Limited CO<sub>2</sub> gassing units; sand reclamation plant and a pneumatic conveyor system built by Richards of Leicester; a Fordath coreshooter; a pair of Tilghman Wheelabrator shotblast machines — one of indexing-hanger type, the other a Tumbblast unit, and Invicta vibratory tables.

Rastgar engineering's own in-house machine-shop was instrumental — in conjunction with outside contractors — in the fabrication of a variety of plant for the new production facility, including overhead cranes; roller tracks; jib cranes; storage bins; sand washing plant; sand drier; monorails, etc. Also obtained locally were



*The Management team at Rastgar Engineering includes, left to right, Mr Fida Rahim, Plant Metallurgist; Mr Maqbool Hussain, Marketing Director; Mr Imtiaz Ali Rastgar, Managing Director; Mr Manzoor Raja, General Manager, and Mr Azhar Hashmi, Commercial Manager.*

sand-testing equipment from Ridsdale Dietert, a Leeds & Northrup Carbon Equivalent meter, and metallography equipment made in the People's Republic of China.

#### **Double-shift Operation**

The new foundry is expected to produce 2,200 tonnes of castings per year on a double-shift basis. The plant commenced operation in March, 1986, and by now most of the equipment has been brought into operation.

A major boost to the expansion programme was the signing, in August 1986, of a contract with Millat Tractors to supply 5,000 sets of rear-axle housings for the Massey Ferguson tractor, now being produced under licence in Pakistan. Pattern equipment for the axle housing was made for the company by Montague Patterns, Limited in the English town of Slough. Rastgar Engineering are now gradually working towards the achievement of a balanced product mix, by obtaining orders from the local licencees manufacturing Ford and Fiat tractors.

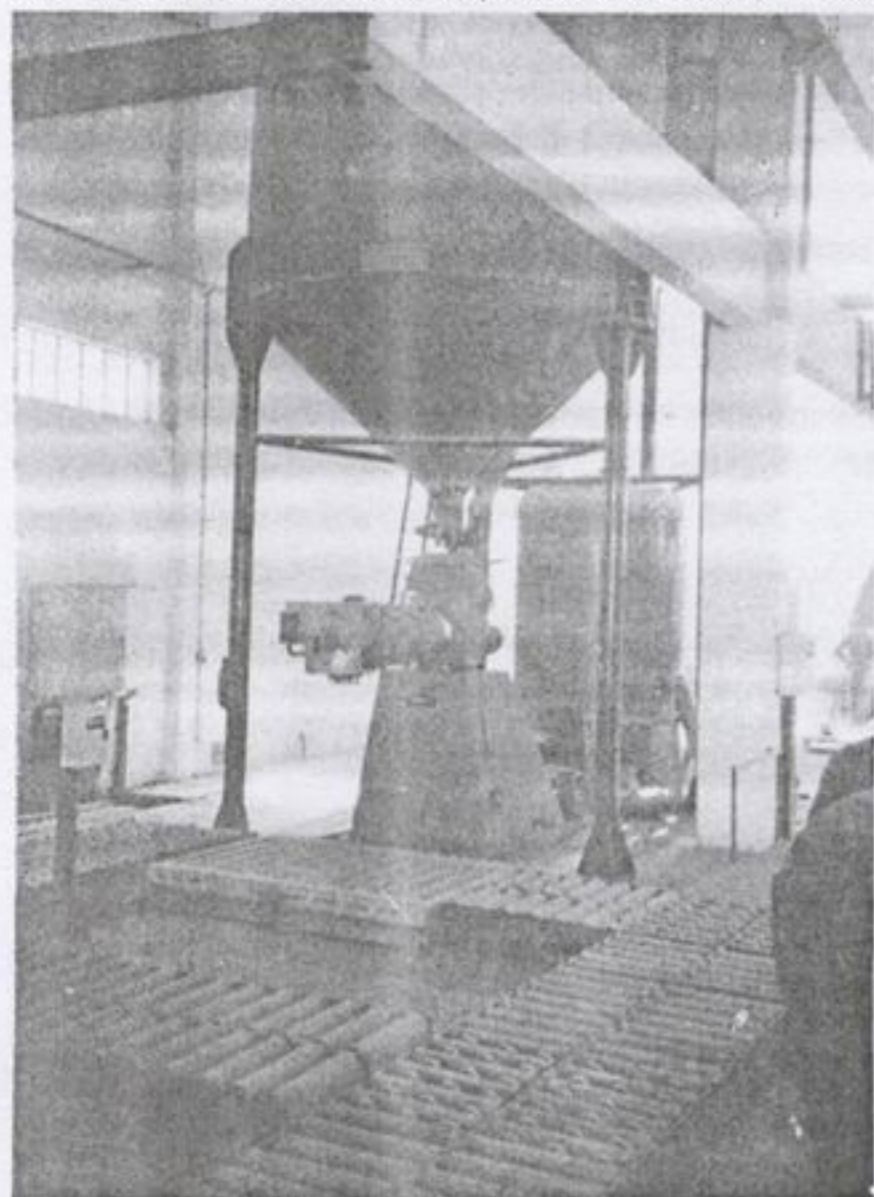
The company has offices in Lahore and Karachi, enabling a close liaison to be maintained with its customers.

#### **An Experienced Team**

The Managing Director, Mr Imtiaz Ali Rastgar is a long-standing Member of the Institute of British Foundrymen. He heads up a very experienced foundry management team which includes Mr Manzoor Raja, a graduate foundry engineer; Mr Fida Rahim, a well-known figure amongst Pakistan's metallurgical engineers; Mr Azhar Hashmi in charge of finance and administration, and Mr Maqbool Hussain who manages the marketing department.

#### **Acknowledgment**

The compiler acknowledges the assistance provided by Mr Imtiaz Ali Rastgar, Managing Director, Rastgar Engineering Company (Pvt), Limited and the Editor of the Pakistan-based *Engineering Review* in the publishing of this feature.



*Maverex Fordath supplied this 15-tonnes-per-hr continuous mixer. The silos and roller track were fabricated in-house by Rastgar Engineering.*

electrical panels; ducting, and high-quality dust-extraction plant.

The foundry has been designed to produce sodium silicate-bonded moulds, hardened by either CO<sub>2</sub> gas or the incorporation of esters in the sand mix.

Resin-bonded self-setting sands are also employed. There are two separate moulding lines. The pattern shuttle and roller track site beneath the larger Maverex Fordath continuous mixer can accommodate moulds in excess of one metre square. The new coreshooter is able to handle coreboxes up to 650 by 610 by 510mm, its spare capacity being utilised in the shooting of moulds for certain components.

In the main, sand conveying is undertaken by Richards dense-phase pneumatic transporters. The majority of other materials are handled by overhead cranes, monorails and a two-tonne-capacity Toyota fork-lift truck.

The quality-control department has been strengthened by the purchase of additional

*Rastgar Engineering employs two Apple II E computers for accounting, salaries, inventories, and other engineering tasks. Currently, a network of five IBM Pc's is being installed to integrate all facets of the company's business.*



# FOUNDRY

TRADE JOURNAL

# International

MARCH 1987 Vol 10 No 33