

Heavy Metal & Tubes: Quality, integrity, and global ambition

Heavy Metal & Tubes (India) Pvt. Ltd. (HMT) is a self-sufficient company that manufactures seamless carbon, alloy, and stainless steel tubes/pipes, from round bars to the final product, for heat exchangers and boilers—all under the “HMT” brand. Led by a young and dynamic management team, the company aims to reach new heights. We spoke with Mr. Sandeep Kumar Mathur, General Manager of Marketing, about HMT’s success, production capabilities, and the management’s ambition to expand its role in the heat exchanger and boiler markets.



By Iryna Mukha, Heat Exchanger World

Heavy Metal & Tubes has a clear vision and has invested in cutting-edge technology and top talent to consistently deliver products that exceed customer expectations. The company produces seamless carbon, alloy, and stainless steel tubes and pipes. Starting from round bars, HMT offers tubes and pipes in both hot finish and cold finish, with a wide range of diameters, wall thicknesses, and lengths. With its unique capabilities and strong market position, HMT is a significant player in the domestic market and is steadily gaining recognition internationally.

One key factor behind the company’s remarkable success and its differentiation from competitors is its ability to produce a wide variety of tubes and pipes in different grades, thicknesses, sizes, and lengths—all under one brand. “No one else in India is doing what we do,” says Mr. Mathur. “That’s why we describe ourselves as a perfect blend of quality and integrity.”

Over four decades of excellence

“Heavy Metal & Tubes has a rich history and strong reputation,” says Mr. Sandeep Kumar Mathur. Established in 1978, it was among the pioneers of cold-drawn tube manufacturing in India for carbon and alloy steel. The company started producing commercial-grade

cold-drawn seamless carbon steel tubes in Mumbai during the late 1970s and opened a second plant in Ankleshwar, Gujarat, in 1982. It quickly evolved into a dedicated producer of high-quality products for critical industries like refineries, petrochemicals, power plants, fertilizers, and chemicals. By 1991, firmly established as a reliable producer, HMT invested in two new manufacturing facilities at Chhatral, Gujarat, focused on seamless carbon and alloy steel tubes and stainless steel seamless and welded tubes. These investments positioned the company to meet the surge in demand following the liberalization of the Indian economy in 1991 and capture a significant share of the growing Indian market.

Fuelling growth

In recent developments, Heavy Metal and Tubes further strengthened its technological capabilities by introducing cutting-edge machinery for seamless tube production of both carbon/alloy and stainless. This initiative also ensured the integration of a state-of-the-art piercer machine and the expansion of its pilger machine fleet to 30 units for the stainless steel division. Accompanying these advancements is the incorporation of a heavy-duty draw bench for seamless carbon and alloy steel tubes with heavy wall thickness.

In keeping with the company’s progress, Heavy Metal recently manufactured arbor coil bends, marking a noteworthy milestone. These bends have remarkable dimensions: 101.4 mm OD x 5.74 mm WT and a bend diameter of 3000 mm (with a radius of 1500 mm). They are constructed from ASTM A335 P9 grade steel. These bends in arbor coil were made for a refinery operated by the state. The company has installed a brand-new, cutting-edge controlled environment bright annealing furnace to improve the quality of its output. By removing the requirement for acid treatment, this furnace ensures improved mechanical qualities and surface finishes while also improving product quality. Precise temperature control, effective cooling, and manipulation of inert gas atmosphere make it perfect for harsh settings including petrochemical plants, power plants, and refineries. These initiatives demonstrate Heavy Metal’s dedication to innovation and quality, putting the business in a position to satisfy market demands while upholding its high standards.

Prioritizing the heat exchanger and boiler market

Heavy Metal & Tubes seamless tubes are utilized in air-fin coolers, boilers, condensers, and shell and tube heat exchangers, among other applications. Seamless tubes are also used in these systems. It should come



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as no surprise that the choice of tubes is crucial for such machinery, since they are employed globally in crucial industrial sectors like sugar, fertilizer, oil and gas, refineries, chemical and petrochemical, pharmaceutical, and power plants which is a booming sector now specially in domestic market. One important way that the company sets itself apart from competitors is its ability to produce tubing up to 34 meters long. Few Indian companies are able to accomplish this. Apart from the aforementioned sectors, Heavy Metal & Tubes provides tubes to the automotive industry, locomotives, defence industry, instrumentation, hydraulic and pneumatic systems, and numerous other industries.



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Heavy Metal has successfully manufactured arbor coil bends for the first time in India.

Quality control

Heavy Metal & Tubes must prioritize the quality of its work in order to create a successful route forward. As a result, it has obtained PED and ISO 9001:2015 accreditation. Additionally, the business has put in place a quality assurance system that encompasses every phase of production, from raw materials, cold working, and heat treatment, to packing and shipping. Every component of this system complies with all national and international codes, as well as, if necessary, the specific quality and technical needs of each customer. The company's quality control department works independently of the manufacturing shop. Additional testing facilities that ensure quality include a wide range of air-under-water, eddy current, flaring, flattening, hardness, hydro, reverse bend, tensile, ultrasonic, and laboratory tests with spectrometers and metallurgical investigations by metallurgical microscope to determine grain size, corrosion, and microstructure. These testing facilities are also required by code requirements and mandatory supplementary tests. Each plant has a distinct laboratory setup complete with testing apparatus. Hydro testing is done on every tube. Personnel with the necessary training and qualifications conduct testing in accordance with the organization's stringent "Quality Assurance



The company is capable of providing a wide variety of special coil bends to serve their customers' every requirement.



Dedicated plants

Plant for cold drawn stainless steel seamless tubes and pipes
27,500 m² covered area
1 Piercing Mill
32 pilger mills
4 cold draw benches
3 controlled atmosphere furnaces
1 Solution annealing furnace
3 U-bending machines
3 U-bending SR setups

Plant for hot & cold drawn carbon and alloy steel tubes and pipes
45,000 m² covered area
1 Piercing Mill + Accu-Roll + SRM
11 draw benches
4 Pilger machines
2 U-bend machines
1 U-bend SR furnace
1 U-bend electric resistance heating setup
1 controlled atmosphere furnace
4 roller hearth furnace

Manual." The tests aid in ensuring that, in accordance with the intended use, technical delivery circumstances, and customer specifications, the highest manufacturing standards may be upheld. In addition, the production sites have also been equipped with reliable testing and measuring equipment for destructive and non-destructive testing such as Inter-granular corrosion testing, eddy current testing and ultrasonic testing. It goes without saying that a number of important inspection organizations, including ABS, Bureau Veritas, DNV, EIL, IBR, LRIS, Intertek, PDIL, SGS, and TÜV, have authorized the mill and its products. A wide range of significant clients and end users, including KNPC, PEMEX, QP, SABIC, BHGE, Alfa Laval, BHEL, BPCL, CPCL, FACT, HPCL, IOCL, KFL, L&T, NFL, NPCIL, NTPC, TECHNIP, Reliance, SAIL, and several more, have also given the organization their approval.

Arbor coils:

- **Grade:** ASTM A335 P9
- **Bend Dia:** 3000mm (Radius 1500mm) with Bevel ends
- **Tests & Inspection:** 100% UT, Hydro, DP, Plane Testing, Ball Pass Test, PWHT
- **Size:** 101.4 mm OD x 5.74 mm WT
- **Size:** 114.3 mm OD x 6.02 mm WT

Investing in people

According to Mr. Mathur, "the high standard of technical competence of our staff is another factor that particularly stands out in our company." "They possess not just technical degrees when necessary but also loyalty and commitment in addition to knowledge and expertise. Some of our staff members have been with us for fifteen or thirty years. The fact that we have managed to retain them speaks volumes about our culture and guarantees that we have a wealth of knowledge and expertise on staff. At a time when many organizations are struggling

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to fill technical positions, we have no such problem. Young engineers plead to work with us so they can develop their careers under our leadership. They take great pride in helping to shape our success, and we in turn feel obligated and challenged to do the same." Management is equally concerned for all employee's health and safety along with the environment. The company has been accredited with certification ISO 14001: 2015 and ISO 45001 : 2018 for its sustainability efforts.

Global presence

Roughly 75% of the Heavy Metal & Tubes products are sold within India whereas 25% remaining is exported worldwide. Currently, the company has extended its reach to Middle East, Bahrain, Kuwait, Oman, Saudi Arabia, Qatar, UAE, and the Americas, which include Argentina, Canada, Brazil, Chile, Mexico, USA, and Europe, which includes Belgium, France, Germany, Greece, Italy, the Netherlands, Spain, Turkey, and the United Kingdom. They also have customers in Singapore, Australia, Japan, South Korea, and a number of other nations. "Our clients greatly value the quality and services we offer, as evidenced by the numerous recurring orders we consistently receive," Mr. Mathur explains. With regards to the tubing market for heat exchangers, Heavy Metal & Tubes tend to concentrate its sales to four major regions of the world: India, South Korea in Asia, Italy in Europe, and North America. However, the manufacturers of heat exchanger equipment in the former Eastern Block countries of Europe as well as the Gulf nations remain equally as important.

Looking ahead

Heavy Metal & Tubes is aware that expanding a product line is an easy approach to grow and provide superior customer service. Last year the company installed two lines of advanced shot peening machines for stainless steel tubes to enhance surface integrity and fatigue life during operation. By implementing this process resistance, stress corrosion cracking can be enhanced in products, which reduces micro cracks and surface imperfections which is helpful in application of aerospace, power and nuclear plants. The company is now entering into seamless precision coil tubing manufacturing. The world class manufacturing facility is well equipped with seven coil tubing draw benches, bright annealing furnace and in-house testing facility which will be in operation shortly. "Our plan for the future is to keep providing the highest calibre of service to both domestic and international markets, starting with fully Indian-origin material for basic raw materials," Mr. Mathur states. "As a result, we anticipate that business will grow as long as there is a need for tubes and pipes in demanding applications. Specifically, we plan to focus

more on providing support to heat exchanger and boiler makers. To this effect we have expanded our marketing team to aggressively cover this market. We intend to be there for our customers to ensure that their future is also a great success." ■

Milestone Projects/Jobs:

T-91 grade tubes:

- Supplied 900 MT to BHEL, Trichy for NTPC, Talcher Project (2x660 MW)
- Currently executing an additional 863 MT order for the same Client

T-92 G T-91 grade tubes:

- Successfully supplied 11 MT to NTPC, Gadarwara Project

T-12 grade tubes:

- Ongoing execution of 821 MT order to BHEL, Trichy for various NTPC projects

T-22 grade tubes:

- Currently executing a major 3000 MT order to BHEL, Trichy for NTPC applications

GR. A1 / T-22 / T-2 / TP-304H grade tubes:

- Exported 183 MT to a USA-based client
- Order value: USD 1.19 million

Super S30432 (shot peened) grade tubes:

- Booked order of 1150 MT order from BHEL, Trichy for NTPC Plants at Lara, Singrauli, SIPAT, and DVC Koderma (2x800 MW)

TP-347H (shot peened) grade tubes:

- Successfully executed 642 MT order for NTPC projects via BHEL, Trichy

TP-304N grade "U" tubes:

- Supplied 44 MT to BHEL, Bhopal for HP Heater Application
- Supplied more than 70,000 U tubes for Ultra Super Critical Power plants
- Tubes hydro-tested upto 625 Kg/cm² pressure

Heavy wall rifle tubes:

- Supplied SA210 Gr. C Tubes to NTPC, Singrauli. Size: 63.5mm OD x 12.50 mm WT

P-91 grade tubes:

- Supplied to BHEL, Trichy in multiple sizes: 127 x 20 mm, 114.3 x 17.12 mm; 88.9 x 17 mm, 88.9 x 15.24 mm

TP-310 grade tubes:

- Executed 10 MT order for Tata Chemicals

TP-321 grade special shape bend tubes:

- Pig Tails supplied to BPCL up to 5 radius

Long length tubes:

- 27.5 Mtr. straight tubes in SA179 supplied to Brembana & Rolle, Italy

The only NTPC approved manufacturer for the entire range of materials:

- Carbon Steel / Alloy Steel (up to T91 grade) / Stainless Steel (including Super 304)



By implementing this process resistance, Stress Corrosion Cracking can be enhanced in products, which reduces micro cracks and surface imperfections which is helpful in application of aerospace, power and nuclear plants.