

Manchester Machine Tools

The Museum's collections include machine tools made by Manchester companies such as Sharp Roberts, Kearns Richards and Brown & Sharpe. The Museum also holds engineering drawings created by B. & S. Massey Ltd, famous for its steam and pneumatic hammers, and trade literature from other machine tool makers.

Machine tools make parts for other machines. The shared characteristic of machine tools is the use of a cutting or grinding tool to remove excess material until the desired size and shape of the part is achieved. In the mid-nineteenth century Manchester led the world in machine tools, largely because of the quality of local engineers. Numerous makers established themselves in the area due to the demand for textile machinery for the cotton mills. Machine tool advances also boosted the growth of factories and the railways. The main improvements were in the speed, versatility, and accuracy of machine tools. Productivity increased through the application of water power or steam power, instead of arm power or foot power.

Manchester machine tool makers produced all kinds of machine tools, including:

- slotting machines, used for cutting slots in the wheels of railway trucks;
- milling machines, which can cut flat or contoured surfaces, angles and gear teeth.
- universal machines, which carry out a number of different functions;
- keyway machines, which cut shallow grooves on internal surfaces.

Manchester Machine Tool Makers

Churchill Machine Tool Co. Ltd

American-born Charles Churchill originally imported machine tools, but in 1901 he bought a factory near Chapel Street in Salford and began to manufacture his own. As business improved, the company moved to Pendleton in 1904, and to Broadheath, near Altrincham, in 1919. Churchill made a range of machine tools including drills, milling machines and boring machines, but specialised in grinding machines.



Churchill cylindrical grinding machine.



Hulse & Co. tilt hammer.

Hulse & Co.

J. S. Hulse founded the company in 1852. It was based at the Ordsall Works on Regent Road, Salford. By the 1880s the company had around 350 employees. It specialised in making very large lathes, some up to 25 metres long, which could hold a piece 1.5 metres in diameter. Hulse & Co. also made planing, milling and sawing machines.



Sharp Roberts slotting machine, 1835
– the Museum's oldest machine tool.

Richard Roberts and Sharp Roberts & Co.

Richard Roberts (1789-1864) was born in Llanmynech, Wales, and learnt the machine tool trade at Henry Maudslay's London workshop. Maudslay is widely regarded as the leading machine tool maker of his generation. In 1816 Roberts set up his own workshop on Pool Fold, off Deansgate, Manchester. One of his innovations enabled lathes to turn at differing speeds for different types of work, which soon became a standard element in lathe operation. Roberts joined the engineering company of the three Sharp brothers in 1826, creating Sharp Roberts. When the Liverpool and Manchester Railway opened in 1830 the company began to make locomotives. Roberts retired in 1843 and the company changed its name to Sharp Stewart.

George Richards & Co., H. W. Kearns & Co. Ltd and Kearns Richards Co. Ltd

George Richards opened a workshop on City Road, Manchester, in 1880, but relocated to Broadheath by 1912. The company concentrated on the production of high-quality slotting machines, drills and keyway-cutting machines. The company was the inventor of a multi-function machine tool that preceded the universal machines of the mid-twentieth century. Richards & Co. was bought by Staveley Industries in about 1952, becoming Kearns



Richards universal facing, boring, drilling and milling machine.

Richards Co. Ltd in 1967 after Staveley Industries had bought another Broadheath firm, H. W. Kearns & Co. Ltd. In 1955, by Kearns & Co. produced the world's first punchcard-controlled machine tool, a boring machine made for the Leicester factory of the British United Shoe Manufacturing Co. Ltd in 1955. This is now in the Museum's collections.

Slack's Emery Wheel & Machine Co. Ltd, later Luke & Spencer Ltd

Founded in 1877 by Samuel Slack, the company was originally based on Lime Bank Street in Ardwick, Manchester. Slack sold his shares after only five years and the company became Luke & Spencer Ltd in 1885. It moved to Broadheath, near the Bridgewater Canal, to benefit from better transport links. In addition to producing emery-grinding wheels, the company made synthetic abrasives and resins. It made grinding machines until 1973 and the factory finally closed in 1981.

For more information:

Read Fermer, Hugh. *Machine Tools: A History 1540-1986*. Arundel, UK: Amberley Museum, 1995.

Rolt, L.T.C. *Tools for the Job: A Short History of Machine Tools*. London: HMSO, 1986.

Craven Brothers information sheet.

Visit The Museum's Collections Centre.