

Precision Engineers
to the **Advanced Engineering**
Supply Chain



Slater & Crabtree Ltd

Precision Engineering

Slater and Crabtree has a reputation in the market place not only for the excellence in workmanship, service and finish, but also for the technical and innovative nature of its products.



Founded in 1926, Slater and Crabtree operates from a purpose built site in Wakefield, West Yorkshire. The Company offers a wide range of CNC and manual machining services, which include turning, milling, boring, jig boring and grinding for components up to 3000 KG in weight. Together with CAD/CAM design, Inspection and Ancillary Operations, Slater and Crabtree offers a bespoke tailor made service to each customer, whether it is an order for a one-off assembly or high volume components.

Operating to ISO 9001: 2008 standards, Slater and Crabtree operates a policy of continuous improvement and development to enhance product quality and reduce production lead times. Recent additions to the manufacturing facility include the Toshulin SKIQ 20 vertical lathe, the Bridgeport VMC 1500 High Speed Milling Machine, and the Doosan S700 (M) Heavy-duty CNC turning Centre.

Slater and Crabtree operates as a trading division of Group Rhodes, one of Europe's leading manufacturers of special purpose equipment for markets as diverse as aerospace, environmental and heavy ceramics. Being part of a larger group has enhanced the Company's technical skills and ensures it continues to develop new solutions to meet customer needs. The respective companies have a trading history dating back to Slater and Crabtree's founding in 1926, at which time the Company produced tools and supplied machining services to Group Rhodes.

Benefiting from the extensive design and production facility of its new parent company, (which includes a fabrication division) Slater and Crabtree continues to operate from its existing site with a compact management structure, thereby offering customers a flexible and rapid response to changing market conditions.

Main (left): Toshulin SKIQ 20 vertical lathe

Top: Devlieg vertical machining centre – 90 Tool ATC

Bottom: Bridgeport VMC 1500 High Speed Milling Machine

PRODUCTION MACHINERY

With a wide range of machinery to offer, Slater and Crabtree provides a range of methods that give the degree of precision in a particular manner.

- Mandelli Regent (2 off)
- CNC Boko (5 off)
- Manual Boko
- High speed CNC Bridgeport
- Vertical Jig Borer
- Horizontal Jig Borer - Dixi
- CNC Turning - Toshulin

General Machining Capacity

The breadth of Slater and Crabtree services has allowed the company to produce high precision components for market sectors as diverse as Aerospace, Offshore Oil and Gas, Nuclear, Power Generation, Medical and Pharmaceutical.



High Precision Vertical Jig Borer



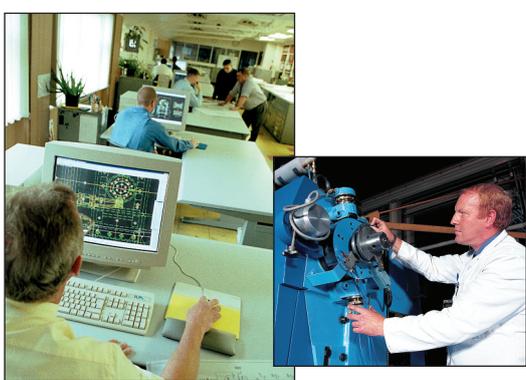
Top: External photograph of the Company's Wakefield site.

Bottom: Machining Facility

NAME	MAX SIZE	MAX WEIGHT	ACCURACY	HIGHLIGHTS
Vertical Jig Boring	X = 0.7m, Y = 1.0m, Z = 0.6m (X = 27.5", Y = 39.4", Z = 23.6")	1000Kg	±0.013mm (±0.0005")	High precision rotary tables. High precision tilting tables. Precision Boring bars.
Vertical Boring	Ø2.3m x 1.5m (Ø90.6" x 59.1")	3000Kg	±0.025mm (±0.001")	Toshulin SKI Q20. Fast tool Change. Powerful Table
Machining Centres	X = 0.8m, Y = 0.8m, Z = 0.8m (X = 31.5", Y = 31.5", Z = 31.5")	3000Kg	±0.025mm (±0.001")	Mandelli Regent 1001. Milling, Drilling, Tapping & Boring. Pallet changer & tool changer. Rotary Table. High accuracy.
Inspection	X = 2.0m, Y = 1.5m, Z = 0.8m (X = 78.7", Y = 59.1", Z = 31.5")	10000Kg	-	LK G80 Micro Vector. Hardness Testing. Low Stress Stamping. Dedicated team.
Horizontal Jig Boring	X = 1.0m, Y = 1.0m, Z = 1.0m (X = 39.4", Y = 39.4", Z = 39.4")	1000Kg	±0.013mm (±0.0005")	High precision rotary table. Precision Boring bars.
High Speed Machining	X = 1.5m, Y = 0.8m, Z = 0.5m (X = 59.1", Y = 31.5", Z = 19.7")	1500Kg	±0.025mm (±0.001")	Bridgeport VMC1500. 22 Tool capacity & tool changer. 28m/min rapid. Flume swarf clearance.
Grinding (Surface)	X = 1.5m, Y = 0.75m, Z = 0.75m (X = 59.1", Y = 29.5", Z = 29.5")	1000Kg	±0.025mm (±0.001")	-
Grinding (Cylindrical)	Ø0.4m x 1.0m (Ø15.7" x 39.4")	500Kg	±0.013mm (±0.0005")	-
Conventional Turning	Cylinders - Ø0.5m x 0.5m (Ø19.7" x 19.7") Shafts - Ø0.25m x 1.5m (Ø9.8" x 59.1") Rings- Ø0.6m x 0.1m (Ø23.6" x 3.9")	1000Kg	±0.025mm (±0.001")	Linear scales and digital readouts on all. Taper turning.
CNC Turning	Cylinders - Ø0.5m x 1.5m (Ø19.7" x 59.1") Shafts - Ø0.3m x 2.0m (Ø11.8" x 78.7") Rings- Ø0.7m x 0.25m (Ø27.6" x 9.8")	2000Kg (supported) & 500Kg (unsupported)	±0.025mm (±0.001")	Mori Seiki SL35 - Ø0.4m x 0.75m (Ø15.7" x 29.5")
CNC Milling	X = 1.0m, Y = 1.0m, Z = 1.0m (X = 39.4", Y = 39.4", Z = 39.4")	3000Kg	±0.025mm (±0.001")	Boko F2, F3 and F30. Up to 7 axes, 4 under CNC control. Gun Drilling. Tilting Column and milling slides. CNC controlled rotary table.
CAD/CAM				Full support on all machines. Use of SolidCAM and SolidWorks for CAD/CAM providing the ability to either take drawings or solid models and transform them into product. Compatible with IGES, PLT, CATIA and other files.
Ancillary Operations				Radial Drilling. Heat Treatment. Lumsden grinding with 1.2m (48") table. Assembly Facility Progress MRP software. Delivery and collection using own vehicle fleet.

Choose from, we are able to select the precision required in the most economic

- CNC Turning - Hankook
- CNC Turning - Takisawa
- CNC Turning - Mori Seiki SL35 (2 off)
- Manual Turning - Vertical Borer
- Manual Turning - Horizontal Lathe
- Radial Drilling
- Inspection - LK G80





Slater & Crabtree Ltd

Left: PARLEC Series 1500 Parsetter TMM Series 1500 Tool Presetter
Right: LK G80HA Co-ordinate Measuring Machine



QUALITY CONTROL

Housed in a controlled environment, the inspection department utilises the most modern equipment available. The LK co-ordinate measuring machine can be driven manually or under CNC control. Programming is done either conventionally by entering the appropriate commands, or by using the interactive graphics mode.

Inspection is carried out in the same area using a wide range of fully calibrated equipment. The Quality Manual and Works Instructions lay down the documented procedures for all aspects of quality control. Bonded and Quarantine Stores are used for the control of traceable materials.

LK G80HA Coordinate Measuring Machine, equipped with The PH10T motorised indexing head with M8 probe mount provides excellent inspection capability and flexibility.
X-axis travel – 2000 mm (79"); Y-axis travel – 1500 mm (59"); Z-axis travel – 800 mm (32")

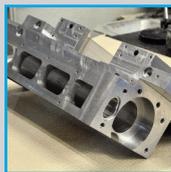
PARLEC Series 1500 Parsetter TMM Series 1500 Tool Presetter measuring and inspection machine is one of the most precise systems available today. Featuring micron-level tool measuring and inspection, the Series 1500 Parsetters are the most rugged, dependable machines in their class. The 1500 can handle tools up to a 420mm in diameter, 600mm maximum length and travel up to 100mm in diameter.



Lubrication Valve Cover



Crank Fixture



Cross Slide



Load Collars



Slater & Crabtree Ltd is a member of Group Rhodes