

MIYANO'S BNJ OPENS UP A MIDDLE GROUND

The installation of fixed head Miyano BNJ51-SY3 turning centre by Citizen Machinery UK at subcontract machinist Wilco Manufacturing of Birmingham, has provided a solution to bridge the company's volume production turning business and its smaller batch CNC sliding head capability.

In addition, the new machine, has increased production and setting flexibility created from the two spindles and two individual turrets, expanded the capability from use of higher power and torque on driven tools plus the heavier cutting capability of a fixed head machine design to capture totally different work from new and existing customers.

Said Martin Lane, Managing Director: "The design of the Miyano BNJ has created a niche in our normal business enabling us to competitively quote for new work, migrate work from our sliding head machines which could tend to stretch their capability and so



release their capacity for more suitable parts. It really is the ability to overlap the machining of features on the BNJ making full use of the 'butterfly' second turret that is making us so competitive in that new area."

One of the important advantages found by Mr Lane is the configuration of the two spindle, two turret machine with its main 12 station driven, plus its six station (butterfly) back working turret. Both turrets are able to simultaneously overlap sections in the

component cycle on parts up to 100 mm in length, plus if required, use the added flexibility of the secondary spindle to be programmed to follow the axis of the main turret. Then by incorporating double-sided tool holders, both front and back operations can be easily overlapped on the same part.

The machine also has the flexibility to perform both linear and circular interpolation and thus create off-centre features for instance or, by combining Z- and Y-axes, on the main turret, use the power of the 2.5 kW tool drive delivering 20 Nm of torque and a maximum speed of 6,000 revs/min to remove stock material at a favourable rate on a wide variety of materials. The main spindle is powered by an 11 kW 5,000 revs/min motor and the secondary spindle by a 5.5 kW 5,000 revs/min drive system.

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BISON HOLDS HARD AND FAST



Leader Chuck Systems is pleased to offer a new high gripping force 4-jaw chuck manufactured by its Polish workholding partner, Bison-Bial. It adds to the company's wide range of 4-jaw independent chucks, made with steel bodies and designed for machining operations requiring high gripping forces, such as the production of large crankshafts and turbine rotors.

Thanks to a clamping force of over 20,000 daN per jaw, large cutting torques at relatively small clamping diameters can be achieved. The steel body ensures a longer lifetime, greater stiffness and resistance to wear, while the four independent jaws allow for precise centring of both round and rectangular workpieces with maximum gripping forces. Also, the T-slots machined in the chuck body permit the use of additional clamps. Installation on the machine tool spindle is direct with the use of a Type A short taper.

Mark Jones, Leader Chuck Systems' managing director, says: "The jaw guides produced in the steel body are hardened to 50 HRC. The master and top jaws are made from high quality stainless steel, and are case-hardened and tempered to a hardness of 56 to 60 HRC. The material and manufacturing processes selected ensure a maximum working life for the chuck."

Extremely high gripping forces are obtained by adopting JAKOB power screws positioned in the jaws' guideways. These power screws assure the highest performance having the best technical parameters in the world. Optimal design of the chuck allows it to take full advantage of

the technical features of the power screws. So, using relatively little torque on the wrench, just 110 Nm, it is possible to achieve a gripping force on each jaw of over 20,000 daN.

The precision centre, with run-out of just 0.003 mm, allows for exact centring of the workpiece before clamping it with the large gripping force, allowing for high precision operations at enormous weights while being extremely time-efficient. And, for parts with a large unbalance, such as crank shafts for example, the chuck has a system of counterweights to provide additional stability and safety.

"The quality and range of the Bison's chucks is exceptional," Mark Jones states. "Offering a cost-effective workholding solution the products are extremely well engineered, accurate and robust. The development of the high gripping force chuck highlights just how effective the company is at listening to the needs of the various manufacturing industry sectors we support."

Founded in 1948, Bison is Poland's largest manufacturer of machine tool ancillary products. From inception the company manufactured both bench and machine vices and, in 1950, started to produce lathe chucks. Offering cost-effective solutions, Bison products are sold in more than 50 countries around the world and are renowned for high-quality, durability, precision and value-for-money.

Today, the ISO 9001 accredited company employs around 600 people and produces a wide range of standard manual chucks, many of which are available with cast iron or steel bodies. With diameters ranging from 80 - 1250mm the standard manual chucks are available with 2-, 3-, 4- and 6-jaws, and various internal/external hard and soft jaw

configurations are offered. Geared scroll self-centring, independent and combination models provide robust fixturing for the turning of raw material or parts.

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