Cables that provide power!

Marc Jarrault, Managing Director, Lapp India Pvt Ltd dwells on identifying and sourcing the right quality of cabling solutions for the complex requirements of the machine tool industry.

The 2015 Gardner Business Media Survey estimates Indian Machine Tool Industry at 14th in production and 10th in the consumption of machine tools in the world. With emphasis on 'Make in India' and growth in manufacturing, for which the machine tools sector serves as the mother industry, India is all set to become a key player in the global machine tools industry and is likely to see widespread high-end machine tool manufacturing in the next few years.

The Indian machine tool industry has around 1000 units in the production of machine tools, accessories/attachments, subsystems and parts. Of these, around 25 in the large scale sector account for 70 per cent of the turnover and the rest are in the SME sector of the industry. Approximately, 75 per cent of the Indian machine tool producers are ISO certified. While the large organised players cater to India's heavy and medium industries, the small-scale sector meets the demand of ancillary and other units.

The machine tool industry is inherently complex. The main objective of this industry is to build machines, which will work towards reducing operational downtime for its customers. Hence, a wide range of cabling solutions is required for the machine tool industry. According to the Indian Machine Tool Manufacturer's Association (IMTMA), the industry is increasingly moving towards sophisticated CNC machines driven by key user segments like automobiles and consumer durables. This calls for increased focus on identifying and sourcing the right quality of cabling solutions, which enhance the productivity, precision and reliability of the machine tool.

Marc Jarrault, Managing Director, Lapp India Pvt Ltd.

- The cables should be oil resistant and must also be able to sustain vibrations. As all machines require constant oiling and regular maintenance, oil has a tendency to get absorbed into the cable resulting in swelling and softening. This eventually degrades the tensile property of the cable. Cables should also be able to function with any kind of vibration to ensure no loose connections are caused in the circuitry. The connecting glands must be unaffected by the oil as well.
- The cable glands must be ingress protected. The cabling should be dust resistant and must be protected against temporary/continuous immersion in liquids. The machine tool industry generally requires a significant volume of industrial electrical installations, which require a high level of ingress protection.
- It is mandatory that the cables be highly flexible and durable. Most industrial machines consist of at least one moving part. In this context, the cable is required to be sufficiently flexible to cope with the to-and-fro or up-and-down motion. Cables should be flat and highly flexible and durable, making them ideal for high movement applications. They should be highly flexible and capable of withstanding harsh environmental and operational conditions.
- Flame retardant and able to withstand high temperature. Requirements for low smoke emissions, low generation of corrosive and toxic gases and low fire propagation characteristics have produced a rapidly growing market for Halogen-Free Flame Retardant (HFFR) and Fire Survival (FS) cables. These cables come with annealed bare copper or annealed tinned copper conductors. Having a double layer glass mica tape for insulation, these cables come with special linked polyethylene. The inner sheath comes with halogen free compound with galvanised steel wire, which prevents spreading of fire.
- These cables are specially designed for optimum cabling solutions under fire mishap by maintaining the circuit integrity for temperatures up to 650°C, 750°C and/or 950°C as per application requirements. The inner and outer sheaths are specially designed with halogen free compound, which reduces emission of fumes and acid gases in the event of fire.

Cable requirements of this industry vary from machine to machine depending on the type of equipment their clients need. Each type of machine will demand numerous types of cables. Some can be ordered right off the catalogue while others have to be custom-made for the client. To address this, issue a range of power, control and data cables specific to machine tool industry is required. Given the demanding applications of the machine tool industry, specialized cables that sustain high mechanical and chemical stress are required. ■

ÖLFLEX® cables are used in machinery, machine tools, system and appliance engineering.