When synthetic fibers were first produced they all had to be twisted before they could be woven or knitted because of what we today call yarn defects, mainly broken filaments.

Fiber producers have greatly improved their efficiencies and have reduced broken filaments almost to zero. This higher quality fiber, along with air entanglers, produces yarns that in many cases can be woven or knitted without further processing.

As demands on process efficiency increase, so do the interlace requirements. In effect, this comes from higher downstream process speeds and more complex and demanding yarns. Good interlace in the melt extrusion processes will minimize loose filaments which cause unwinding faults and broken filaments (in DTY these faults can be seen as end breaks, tension transients, broken filaments and ultimately fabric faults). To a certain extent, air entangling has replaced twisting as a way to hold fibers together in many yarn applications.

The patented FG10 Jet Range from Fibreguide covers an array of melt spinning processes using the same patented technologies. The FG10 range works from POY, FDY & SDY to BCF & T&I yarns. The technology is designed to hold the filament bundle in the optimum position at all times, which along with ultra-high accuracy machining techniques, gives very regular interlace with regular node strength, and, offers big downstream processing advantages, such as reduced tension transients and tension peaks (even at very high process speeds), and better transfer efficiency, which ultimately results in improved production efficiency and better fabric quality.

This design feature can reduce air consumption as the jet can perform its job more efficiently thus enabling higher outputs. Yarn can be processed faster using the same amount of compressed air or it can run at the same speeds using less air while achieving comparable quality and yarn characteristics.

Flexibility, one of the main design features of these jets, allows a very accurate alignment of all the individual components. Distance between the thread lines can be as low as 4 mm and perhaps smaller by special design. Jet cores are held in position by special fixing screws, which hold the jet core in the most accurate and properly aligned position (patent applied for). This, along with accurate positioning of the yarn guides, keeps the yarn running in the optimum position thus guaranteeing the best possible quality at all times with little or no variation between thread lines.

Designs using a one-piece jet core, allows a perfect air-flow balance within the chamber and yarn will never escape out of the chamber. These mean lower air consumption and better interlace consistency, as well as simple maintenance procedures. All the jets are produced from high purity alumina ceramic with special finishing.

Custom Jet enclosures are also offered to give a complete solution to interlacing, reducing noise levels in the plant and efficiently extracting oil mist giving a cleaner environment in the surrounding areas. These systems can be a standard product or a complete engineered solution tailored to suit specific requirements and this service covers all products.

**T & I / BCF**

The FG10T is designed for yarns such as BCF and T&I yarns and is available in single, twin or triplet versions as standard. To fully suit the process and machine configuration, these jets are available with custom housings and thread line pitch to suit as well as low noise enclosures by design. While the FG10T is covered by the...
same patented technology as the other FG10 jets, there are differences in size and length to accommodate the yarns physical properties and to enable optimum air flows inside the jet chamber for ultimate performance.

In addition is the availability of a wide range of jet cores including the XT core, which incorporates an array of jet streams designed to maintain the optimum path of the advancing filament bundle during processing. This ensures that the highest possible interlace-number and yarn consistency can be achieved even from a very demanding process or yarn.

The design of the jet and the air-flow characteristics allow a good level of flexible operation simply by adjusting the air pressure, this allows weaker or stronger nodes to be introduced whether it be used for warp or the pre-twisting process.

FALSE TWIST TEXTURING

DTY speeds have increased significantly in recent years, as well as the yarn specifications becoming more complex and demanding with many more customers producing technically demanding products. The patented FG5 Twist Jet has evolved over recent years to provide an engineered solution to cover ALL yarn applications.

The jet itself is very compact and will easily fit all known machines. The construction is ultra-strong and metal features guarantee long-term durability. The handle can be removed with a simple 45-degree turn and the orifice plate can then be exchanged or cleaned as required and re-assembled.

With the very high production speeds employed today, even more demands are put on the jet and its configuration. That is why only the finest materials and highest purity alumina ceramics are used in conjunction with the most modern machining centers to ensure accuracy and consistency of production.

The result of this machining accuracy and consistency is seen by stable production and minimum variation from thread line to thread line with very high running speeds up to 1200m/m possible.

Main Features:
- Ultra-high strength construction
- No sliding parts on sealing o-rings, so no damage or air leaks
- Easily changed jet cores
- Simple maintenance
- Quick release mechanism
- Color-coding available
- Very high quality alumina ceramic jet plates

A full range of jet plates is available to cover all yarns and process requirements from standard jets to vortex jets and special chambers for high speed, etc. The FG5 Jet is also used in the Air Covering process and with the availability of various guide brackets it ensures optimum performance.