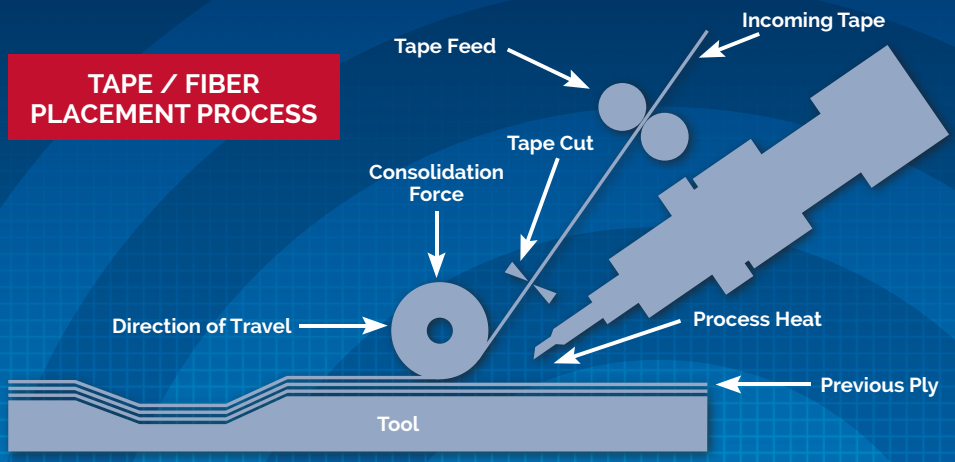
AUTOMATED DYNAMICS®
Performance in Composites

Automated Fiber Placement (AFP)



AFP IS ONE OF THE MOST ADVANCED METHODS FOR FABRICATING COMPOSITE STRUCTURES

- AFP uses a robot to automatically place material and build a structure one ply (layer) at a time.
- AFP is used almost exclusively with continuous fiber reinforced prepreg tape.
- This method allows fabrication of highly customized parts as each ply can be placed at different angles to best carry the required loads.
- Robotics provides active control over all process critical variables, making the process highly controllable and repeatable.
- The AFP process places a band of material comprised of multiple slit tapes.
- Individual tapes are 1/8" to 1"" wide.
- Individually controlled tapes can start/stop at different locations along the length of the band, which reduces scrap, provides compliance to complex surfaces and allows for the steering of the tape being placed.
- AFP bonds thermoplastic or thermoset tape onto a substrate by using a heat source (hot gas torch, laser, etc.) and a consolidation device (roller, shoe, etc.) – see graphic above.
- At the end of each band, any tows in process are cut and the robot moves to the start of the next band. The process is repeated band-by-band until each ply is complete and ply-by-ply until the final part geometry is achieved.

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