

American Industrial Plastics

Turning plastic right takes a soft grip - *Adjustable chuck has gentle touch*

American Industrial Plastics (AIP) in Daytona Beach Florida specializes in machining components from a variety of 200 different types of plastics. AIP's increased use of plastics to take advantage of resistance, reduced weight and reduced maintenance (often required with metallic components) has brought about a need for increased plastic machining capability

Although the same machine tools that are used for metalworking are often used in the manufacturing of plastic parts, engineers must take special care in selecting workholding equipment. A key factor for AIP was the selection of a Production Dynamics (now Lexair, Inc.) Full Bore® Chuck to be used on the firm's Mazak SQT 10 lathe. The selection was based on the following three characteristics:

- This chuck allows full use of the spindle bore (no draw-tube is needed) which allows a smaller machine with higher spindle speeds to be used with larger than normal diameter stock.
- The chuck's open-and-close time is less than 1 second which has substantially reduced part production times.
- The chuck contributes to the workpiece quality by allowing infinite adjustment of the gripping force from zero to the maximum.

Adjustment of the gripping force to that which is suitable for the material being machined helps minimize distortion of the stock. This feature helps prevent the manufacturing of nonconforming parts. It is necessary to match the grip force to the machining forces to avoid "growth" of the finished part after machining. This is perhaps the most valuable benefit of the

The Full Bore® Chuck has been in operation for about two years and has proven to be extremely reliable while facilitating the production of parts that are in tolerance per customers' specifications.



AIP is meeting a growing market demand for plastic parts in a broad range of applications extending from marine components to various machine components. The company currently employs 30 people and has a broad customer base throughout the U.S. The accompanying photographs show typical parts being held for machining by the Full Bore® Chuck..

chuck according to Mark McCray, AIP's
machine shop manager.
