Application Notes

DATRON DYNAMICS, INC.
454 Route 13
Phone: 603-672-8890
Fax: 603-672-8067

Part: ..... Micro drilling application

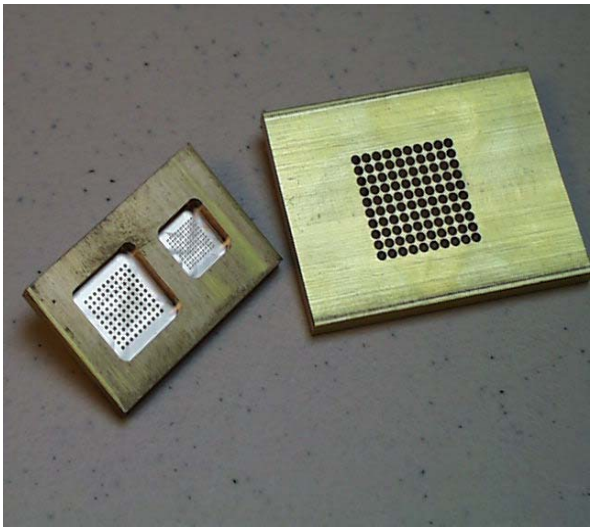
Material: ..... 0.022" and .125" thick brass

Machine Used: ..... M8 Raptor

Features Utilized: ..... High frequency spindle, automatic tool change unit and length sensor

Software Used: ..... Datron macro programming software

Total Cycle Time: ..... see machining details for each configuration



Machining Details:

.008” Dia. – 100 hole matrix / .022” wall
carbide drill at 30,000 rpm x 40 i.p.m. feed rate =
137 seconds or 1.37 seconds per hole

.025” Dia. – 100 hole matrix / .022” wall
carbide drill at 25,000 rpm x 100 i.p.m. feed rate =
122 seconds or 1.22 seconds per hole

.069” Dia. – 100 hole matrix / .125” wall
carbide drill at 18,000 rpm x 160 i.p.m. feed rate =
112 seconds or 1.12 seconds per hole

Center drill for .008” & .025” holes = 73 seconds

Summary of the Application:

Micro drilling is an excellent application for the Datron machining systems. The 60,000 rpm high frequency spindle offers much faster feed rates compared to conventional spindles allowing for a substantially reduced cycle time. Additionally, the design and lighter weight of the spindle carriage compared to traditional VMC’s offers much faster acceleration and deceleration in the “Z” movements. The polymeric concrete and steel frame construction provides ample stability for the application and allows for a compact design with efficient power consumption. The ethanol coolant system offers a simple and clean method of cooling the drill eliminating any degreasing operations afterwards. Datron systems have offered substantial cost savings for many micro drilling applications.