

# Vacuum Capabilities

Operating a motion system or positioner in vacuum is a design challenge. Issues such as outgassing, contamination, and lack of air cooling complicate the system design. Fortunately, MICRONIX USA has engineered solutions that address each of these problems. Specialized components have been utilized in adapting a given system to a vacuum or otherwise-specified environment. Most of our standard products have been developed with vacuum compatible versions as specified in each product datasheet.

## **Operational Parameters for Vacuum:**

Two standard vacuum preparation levels

‡ High Vacuum (HV),  $10^{-6}$  mbar

‡ Ultra High Vacuum (UHV),  $10^{-9}$  mbar

Ultra low-outgassing motors

Lubrication Options:

‡ Special vacuum-compatible grease

‡ Ceramic balls with no grease

### **High Vacuum (HV), $10^{-6}$ mbar**

- Vacuum motor ( $10^{-6}$  mbar)
- Linear encoder for use in vacuum
- Cables with teflon wires and silver plated copper shield
- Standard limit switches
- All parts left un-anodized
- Stainless steel screws
- Bearings, drive screws lubricated with vacuum grease
- All holes are vented where possible
- 100°C baking temperature, 48 hours

### **Ultra High Vacuum (UHV), $10^{-9}$ mbar**

- Vacuum motor ( $10^{-9}$  mbar)
- Linear encoder for use in UHV vacuum
- Glass scale
- Cables with teflon wires and silver plated copper shield. Kapton wires optional
- Sealed limit switches ( $10^{-9}$  mbar)
- All parts left un-anodized
- Stainless steel screws
- Bearings, drive screws lubricated with UHV vacuum grease or ceramic balls
- All holes are vented where possible
- 100°C baking temperature, 48 hour



## **Other Capabilities**

### **Operational Parameters for Cryogenic Conditions:**

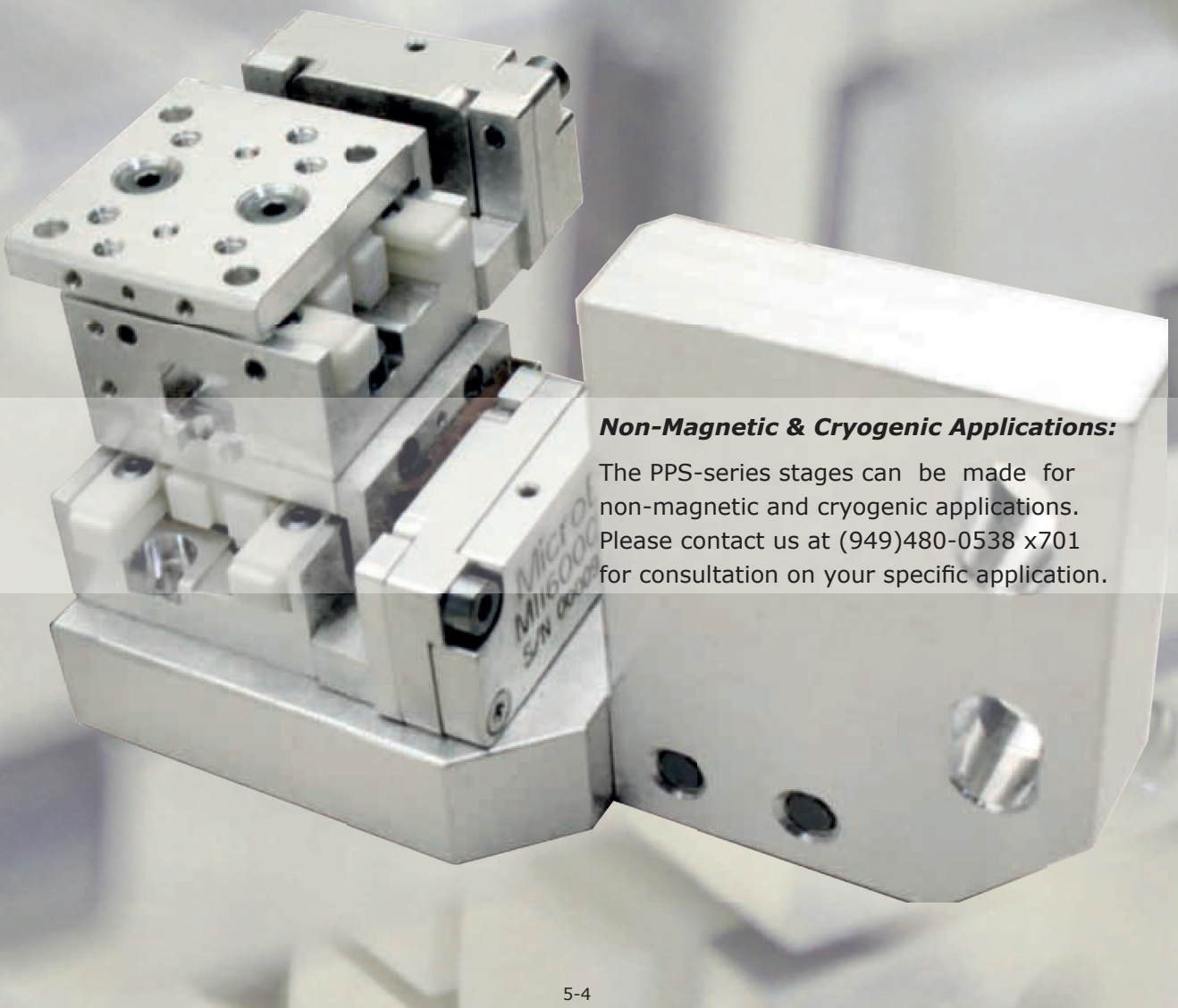
Cryogenic temperature down to 4K

Vacuum preparation down to  $10^{-9}$  mbar

Lubrication

‡ Ceramic balls with no grease (preferred)

‡ Dry lube (e.g. Dicronite)



### **Non-Magnetic & Cryogenic Applications:**

The PPS-series stages can be made for non-magnetic and cryogenic applications. Please contact us at (949)480-0538 x701 for consultation on your specific application.