



# VACUUM COMPONENTS

## National Electrostatics Corp.

## Rotary Vacuum Feedthrough

### APPLICATIONS

The NEC magnetic coupled rotary feedthrough is ideal for applications requiring the transmission of high speed rotary motion into ultra-high vacuum environments.

This design has been in use in standard NEC components for well over a decade. These components are frequently operated 24 hours a day and have demonstrated a proven record of reliability.

This feedthrough mechanism is very similar to the rotary feedthrough used on the NEC beam profile monitor (BPM). The BPM uses the magnetically coupled rotary feedthrough to turn a wire through an ion beam. This is used to measure beam cross sectional shape. Its operation is continuous and customers report maintaining  $10^{-10}$  Torr during operation.

### DESIGN

The NEC rotary feedthrough consists of two magnets on opposite sides of a stainless steel plate. UHV compatible ball bearings supply support for a rotating shaft in the vacuum volume. There is no physical break across the vacuum barrier.

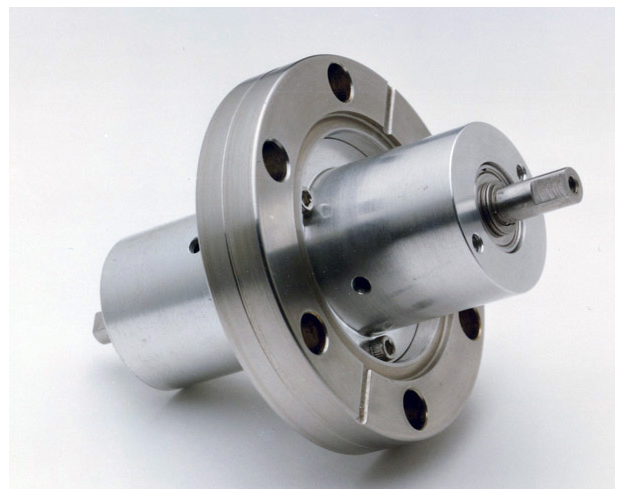
This magnetic coupling is designed to support a torque of 10 in.-oz. Both interior and exterior shafts are nominal .25" diameter, stainless steel. Various lengths and configurations are available.

For maximum life, it is recommended that the bakeout temperature not exceed 150°C. The bearings are replaceable and should last at least 2000 hours with a balanced load on the order of 100 grams. The maximum continuous rotation rating is 1200 rpm.

### OPTIONS

As stated above, the NEC rotary vacuum feedthrough is available in a number of configurations. Other models are available which stop the rotating shaft at a pre-determined position when not in use and supply synchronizing signals for your applications.

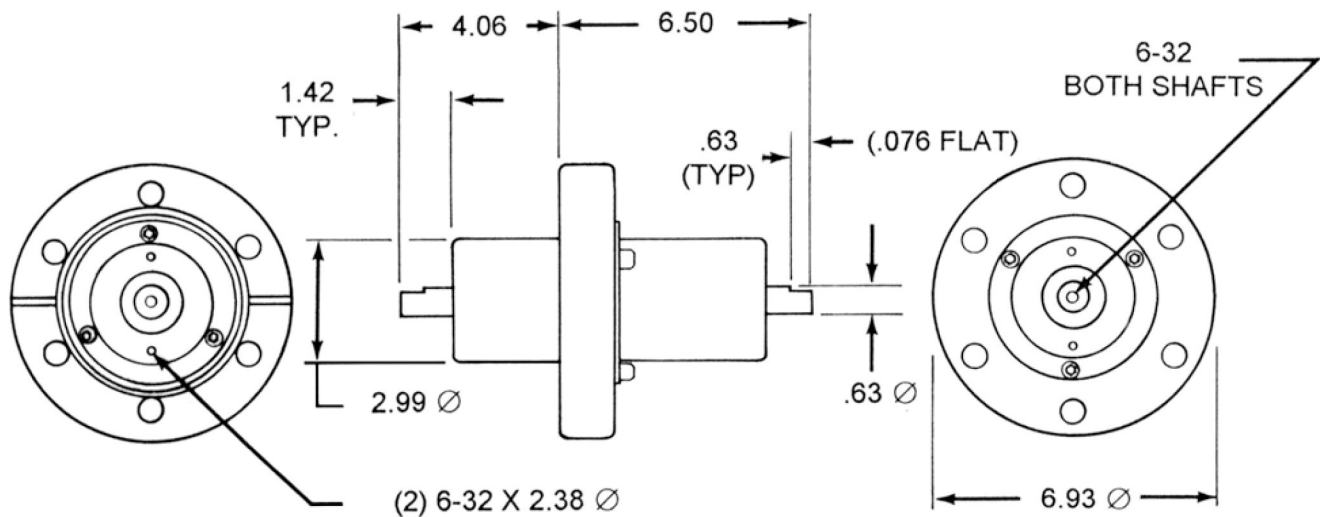
The rotary feedthrough is available with NEC and standard copper seal flanges. Other flanges are available on request.



*NEC rotary vacuum feedthrough on  
2.75" copper gasket compatible flanges.*

## SPECIFICATIONS

Maximum RPM:	1200 continuous
Life:	Load dependent; replaceable bearings should last at least 2000 hours with balanced 100 gram load
Bearings:	Ball bearings; vacuum side are UHV compatible
Bakeout:	150°C recommended maximum
Torque:	10 in.-oz.
Shafts:	Stainless steel, nominal 1/4" diameter. Different lengths and end configurations available
Flange:	2.75" O.D. NEC and 2.75" O.D. standard copper seal compatible flanges Other flanges available on request.



(All measurements are in cm.)

## ORDERING INFORMATION

Catalog No. 2GA022160

## Contact NEC

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