UHV Design

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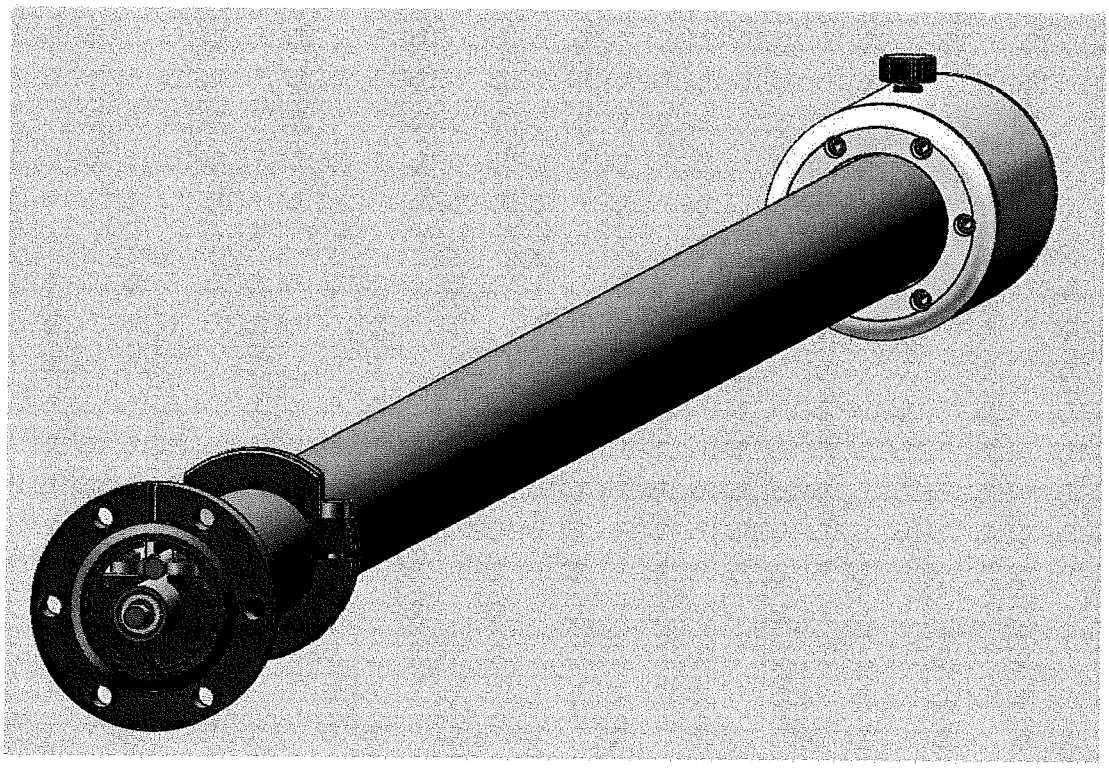
OPERATING INSTRUCTIONS

DUAL AXIS POWER PROBE
DAP35-1219-H



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Introduction.

The UHV Design Power Probes are ultra high vacuum compatible magnetically coupled linear / rotary devices for manipulation within the vacuum chamber. Typically they are used for handling and transferring samples between predetermined points inside the vacuum chamber. The driving mechanism has a unique magnetic coupling, eliminating the need for bellows or other sealing systems that risk premature failure or leaks. The Power Probe is manually actuated, with the outer output shaft following exactly the linear path of the drive thimble and the inner output shaft following exactly the rotational path of the thimble. The position of the shafts can be fixed with the use of the position locking screw. The layout of the Power Probe is shown below.

General Specification.

Flange: FC38 style, (70mm o.d.) system mounting flange.

Stroke: 1219mm.

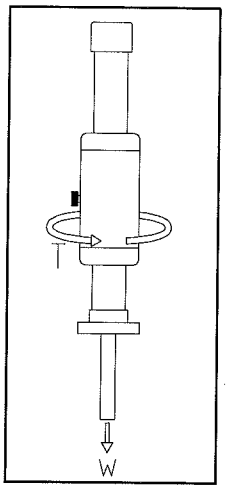
Actuation: Manual actuation for linear and rotary motions

Positioning: Position locking screw.

Output shaft: See drawing attached.

Holding force: Magnetic breakaway force for linear coupling is 180N or 40 lbf ('W' as shown in figure 1).

Magnetic breakaway torque for rotary coupling is 4Nm or 34.5lbf-in ('T' as shown as shown in figure1).



Please note:

Approaching or exceeding these forces may cause the magnetic coupling to breakaway.
When used horizontally we recommend a maximum working moment of 15Nm in order to protect the nose bearing. For example, with a 300mm stroke the maximum applied load will be 50N.

Unpacking:

Before installing into the vacuum system ensure that all bolts, screws and nuts are tight. (Vibration during transit may loosen screws).

Mounting to the Vacuum System.

The Power Probe has an FC38 (70mm O.D) type mounting flange to enable it to be mounted to the vacuum system. An appropriate gasket and mounting bolts should be used depending on the particular system.

To reduce any excessive turning moments being applied to the chamber port, the Power Probe has a M6 tapped hole in the end cap to enable a support bracket to be attached.

During normal operation to prevent damaging the magnets, the thimble should NOT be crashed into either of the end stops.

Bakeout.

The PowerProbe has been designed to tolerate 250°C bakeout without removing any components from the device, although care must be taken not to exceed 250°C bakeout temperature.

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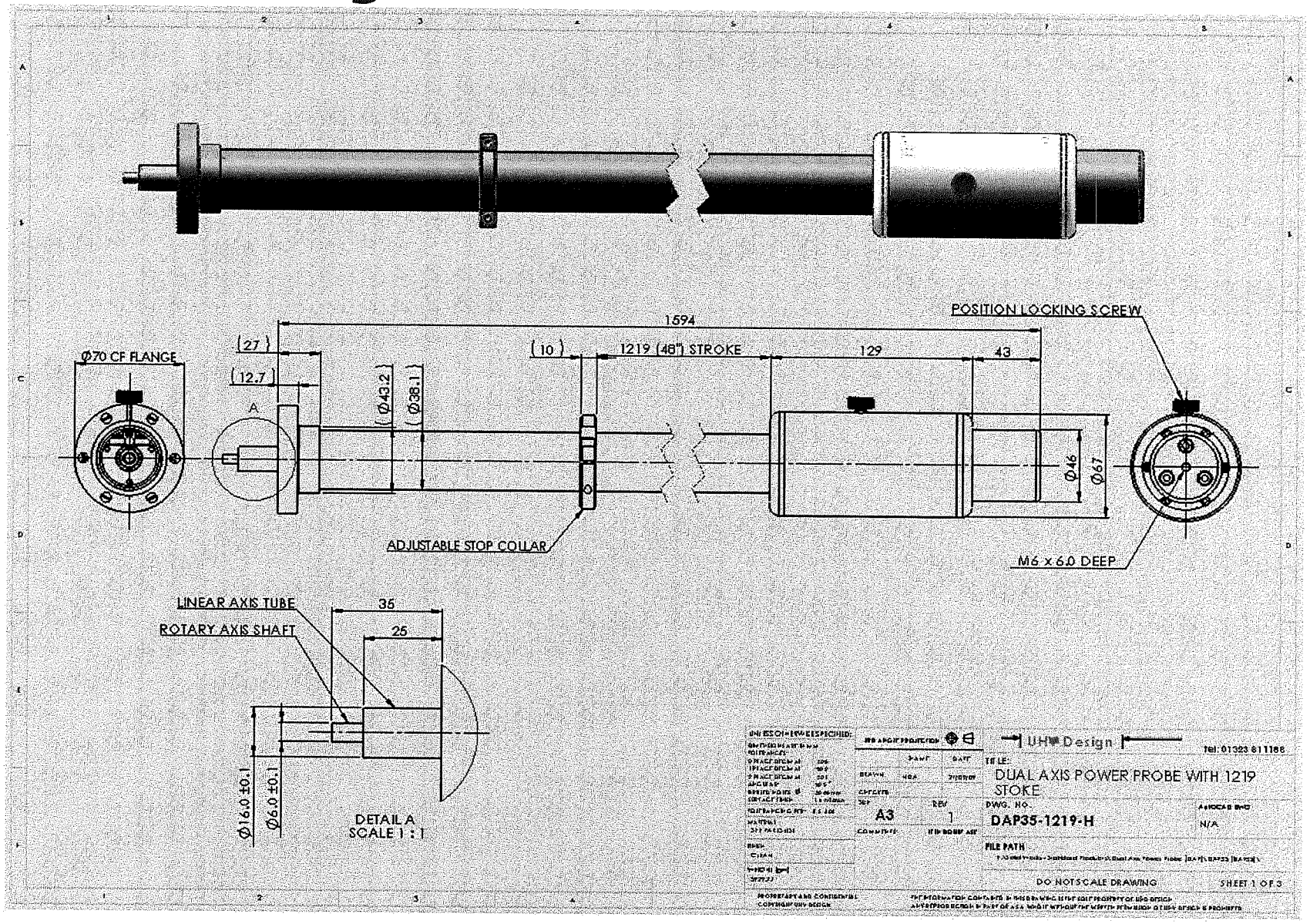

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