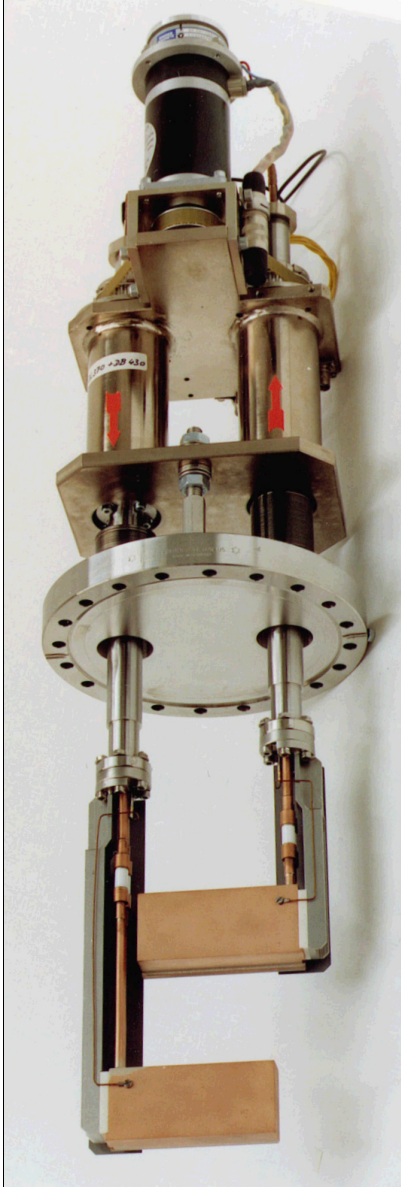


Simplified High Precision, High Vacuum Feedthrough (twin version)

Type BL 340



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Application:

This Feedthrough Type BL 340 is provided for mounting of slit systems and collimators.

Principle:

BL 340 allows for a symmetrical opening and closing of a slit system perpendicular to beam axis. It is mounted on a CF-100 flange (or larger). The translation is performed by means of two (2) spindles, driven by a D.C. motor or a stepping motor. The exact symmetry of the displacement of the two slit jaws is performed by using two spindles with right and left threads, respectively. Sealing is accomplished by membrane bellows. Measurement of position will be possible via a 20-turn potentiometer or encoder (optional).

Technical Specifications:

1. Drive Mechanism

Material	:	Stainless steel
Motor	:	24 V D.C. or 1.8 stepping motor
Conversion rotation to translation	:	Two (2) spindles (one with right-handed thread, one with left-handed thread).
Stroke per spindle	:	25 mm
End position	:	0.00 ...+ 25.00 mm for both sides. of beam axis (beam axis = 0.00).
Pitch of spindle	:	1 mm
Gear ratio	:	1.25 1.00
Displacement per degree of motor rotation	:	0.0034 mm
Speed of motor (D.C.)	:	3,000 rpm
Maximum speed of gear axis	:	150 rpm
Maximum torque at gear axis	:	Approx. 250 Ncm
Maximum holding torque with power on motor	:	Approx. 250 Ncm
Position measurement	:	20-turn potentiometer (1 k ohm) or angular encoder.
Resolution of position measurement	:	0.1 mm
Reproducibility	:	0.05 mm
Size of supporting flange	:	CF-100 (6 inch O.D.)
Sealing	:	CF-system, membrane bellow
Leak-rate	:	10 mbar x liters/second
Cross section of cooling pipes	:	12.5 mm ²

Technical Specifications (continued):

2. Slit Jaws

Material	
Cooling core	: Cu
jaw	: Ta
Shield	: Stainless steel
Width of jaws	60 mm standard
with shield	: 65 mm
Height of jaws	: 30 mm standard
with shield	: 32.5 mm
Measurement of current on jaws	: Possible by insulated jaw support and current feedthroughs on BL 340.
Cooling	: Possible (water)
Insulation	: Ceramic (Al ₂ O ₃) and BeO
Resistance	: Larger than 10 ⁹ Ohm
Maximum beam power on jaws	: Uncooled: approx. 600 Watts (less than 1 kWatt/cm ²). Cooled: approx. 4 kWatts (less than 1.5 kW/cm).
Water flow	: 4.6 liters/minute (at delta p = 4 bar).
Connection jaw system drive	: CF-16

Special Design:

1. Stepping Motor Driven Feedthroughs (the following options are available):

- Size of supporting flange (CF-100 for double version and CF-63 for single version).
- Type of supporting flange, including corresponding sealing system (i. e., CF-system, ISO-norm, etc.).
- Stroke (for example: 100-800 mm for single version and 80 mm for double version).
- Asymmetry of inner final position for double feedthroughs
- Method of position measurement (for example: linear potentiometer with 0.1 mm resolution, encoder with specified resolution).
- Type of driving motor (D.C. motor or stepping motor).
- Gear ratio

2. Compressed Air—Actuators (the following parameters are available):

- Type and size of supporting flange.
- Stroke
- Distance (supporting flange to beam axis).
- For custom-design, more than two compressed air actuators on one flange.

NOTE: All of the modifications are possible; however, such modifications may necessitate custom-engineering efforts on our part and therefore, additional costs.

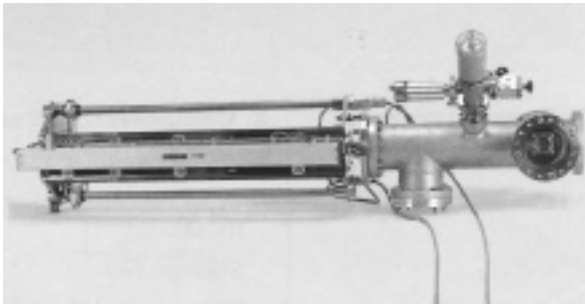


Fig. 1

Stepping motor driven high-vacuum feedthrough with large stroke; measurement position by means of linear potentiometer.

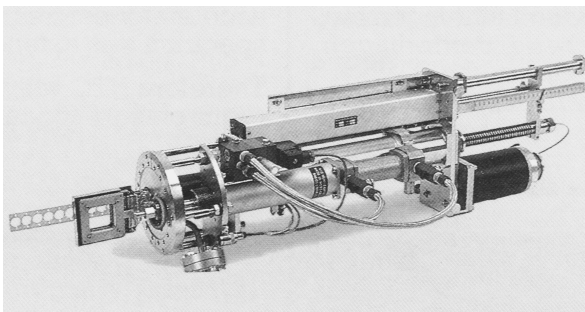


Fig. 2

Combination of a stepping motor driven ultra high-vacuum feedthrough on one flange.