Oil hydraulic micromanipulator & air compression injector

BMO-2 Oil hydraulic 3-D high and low resolution micromanipulator with joystick

Oil hydraulics	Oil hydraulic mechanism assures the smooth and precise operation
3-D movement	Handles on XYZ axes enable coarse and fine 3-D movements. With a joystick, a fine movement on X-Y axes and coarse motion on Z axis are possible
Compact design	The compact design of a controller and drive unit requires less space for operation and gives more room on the stage of a microscope
Installation	This model can be installed on either right or left side

Sepecifications

Accessories	Holder with a universal joint (BU-1)
Travel distance	[Fine movement] each X/Y/Z axis: 5mm, one rotation of a handle : 500μm, minimum scale : 4μm
	[Coarse movement] each X/Y/Z axis: 15mm one rotation of a handle : 2mm
	[Joystick] Maximum travel distance on XY axes : 2mm
Dimensions Weight	[Control unit] W100xD180xH180mm 1220g
	[Driving unit] W55xD100xH60mm 230g

*Injection holder (cat no BKI-4) is not included

BMO-20 Oil hydraulic 3-D low resolution micromanipulator with joystick

Oil hydraulics	Oil hydraulic mechanism assures the smooth and precise operation
3-D movement	Handles on XYZ axes and a joystick enable a coarse 3-D movement
Compact design	The compact design of a controller and drive unit requires less space for operation and gives more room on the stage of a microscope
Installation	This model can be installed on either right or left side

Specifications

Accessories	Holder with a universal joint (BU-1)
Travel Distance	Each X/Y/Z axis: 20mm, one roatation of a handle：2mm
	[Joystick] Maximum travel distance on XY axes： 2 mm
Dimensions Weight	[Control unit] W100xD160xH180mm 1130g
	[Driving unit] W55xD100xH60mm 230g

*Injection holder (cat no BKI-4) is not included

BIA-1 Air compression injector

Stable injection	Minimizing internal capacity of an injector and extending the traveling distance of an internal cylinder per one handle revolution has improved the performance of an air compression injector and assure the stable injection
Clean and easy	Oil free structure facilitates handling and keeps an injector clean. It is easy to fill an injector with air through an air filling valve
Compact design	The compact design of an injector requires less space for operation and gives more room on the stage of a microscope.
Holding	Air compression injector is suitable for holding an egg as well.

Specifications

Accessories	Injection holder（BKI－4）
Travel distance	15mm
Dimensions/weight	W55xD30xH50mm 100g

* Product specifications are subject to change without notice

Manual micromanipulator

BMJ-1 Manual 3-D low and high resolution micromanipulator with a joystick

Fig.1 Vibration abosorption

Vibration absorption	Vibration caused by joystick operation is transferred from an attachment adaptor to the holding bar. The unique structure provides the smooth operation (See fig. 1)
Joystick	A joystick enables a coarse movement on XY axes
Coaxial handle	Coaxial handles for a coarse and fine movement on XYZ axis enable a somooth operation
Installation	This model can be installed on either right or left side

Specifications

Accessories	Holder with a ball joint（BB-1), Pipette holder（BK-4）
Travel Distance	[Fine movement] Each X/Y/Z asis: 5mm, one rotation of a handle：500μm
	[Coarse movement] Each X/Y/Z axis: 25mm
	[Joystick] Maximum travel distance on XY axis： 2 mm
Dimensions Weight	W150xD75xH190mm 360g

BMF-1 Manual 3-D low and high resolution micromanipulator

3-D movement	Handles on XYZ axes enable a coarse and fine 3-D movement manually
Coaxial handle	Coaxial handles for a coarse and fine movement on XYZ axis enable a somooth operation
Compact design	The width is only 10cm and the distance to the sample is very short. The compact design gives more room on the stage of a microscope.
Installation	This model can be installed on either right or left side

Specifications

Accessories	Holder with a ball joint（BB-1), Pipette holder（BK-4）
Travel Distance	[Fine movement] Each X/Y/Z asis: 5mm, one rotation of a handle：500μm
	[Coarse movement] Each X/Y/Z axis: 25mm
Dimensions Weight	W150xD75xH190mm 360g

BMM-1 Manual 3-D micromanipulator (high and low resolution on X axis only)

3-D movement	Handles on XYZ axes enable a coarse 3-D movement manually. A fine movement on X axis is also possible.
Coaxial handle	Coaxial handles for a coarse movement on Y and Z axis are vertically parallel to ones for a coarse and fine movement on X axis. The unique structure allows one to operate a manipulator smoothly
Multi-setting	The structure of vertically parallel handles enables one to install two or more manipulators side by side
Compact design	The width is only 10.5cm and the distance to the sample is very short. The compact design gives more room on the stage of a microscope
Installation	This model can be installed on either right or left side

Specifications

Accessories	Holder with a ball joint（BB-1), Pipette holder（BK-4）
Travel Distance	[Fine movement] X axis: 5mm, one rotation of a handle：500μm
	[Coarse movement] X axis: 25mm Each Y/Z axis: 30mm
Dimensions Weight	W105xD35xH90mm 230g

* Product specifications are subject to change without notice

Manual micromanipulator & mini-micromanipulator

BMM-2 Manual 3-D low resolution micromanipulator

3-D movement	Handles on XYZ axes enable a coarse 3-D movement manually
Coaxial handle	Handles for a coarse movement on Y and Z axis are coaxial and are vertically parallel to ones for a coarse movement on X axis. The unique structure allows one to operate a manipulator smoothly
Multi-setting	The structure of vertically parallel handles enables one to install two or more manipulators side by side
Compact design	The width is only 9.5cm respectively. The distance to the sample is very short. The compact design gives more room on the stage of a microscope
Installation	This model can be installed on either right or left side

Specifications

Accessories	Holder with a ball joint（BB-1), Pipette holder（BK-4）
Travel Distance	[Coarse movement] Each X/Y/Z axis: 30mm
Dimensions Weight	W95xD35xH90mm 210g

BMM-3 Manual 3-D low resolution micromanipulator (three handles on one axis)

Multi-setting

3-D movement	Handles on XYZ axes enable a coarse 3-D movement manually
3 handles on 1 axis	Handles for a coarse movement on X, Y and Z axis are coaxial. Three handles on one axis facilitate the manipulator operation considerably
Multi-setting	The structure of vertically parallel handles enables one to install two or more manipulators side by side
Compact design	The width and height are only 10cm and 7cm respectively. The distance to the sample is very short. The compact design gives more room on the stage of a microscope
Installation	This model can be installed on either right or left side

Specifications

Accessories	Holder with a ball joint（BB-2), Pipette holder（BK-4S）
Travel Distance	[Coarse movement] Each X/Y/Z axis: 15mm
Dimensions Weight	W100xD35xH70mm 140g

BSF-1 Manual 3-D mini-micromanipulator (high and low resolution on X axis only)

3-D movement	Handles on XYZ axes enable a coarse 3-D movement manually. A fine movement on X axis is also possible
Coaxial handle	Coaxial handles for a coarse movement on Y and Z axis are vertically parallel to ones for a coarse and fine movement on X axis. The unique structure allows one to operate a manipulator smoothly
Compact design	The width and height are only 6 cm and 4.5 cm respectively. A mini-micromanipulator is suitable for the second one
Installation	This model can be installed on either right or left side

Specifications

Accessories	Holder with a ball joint（BB-2), Pipette holder（BK-4S）
Travel Distance	[Fine movement] X axis: 5mm
	[Coarse movement] X axis: 10mm Each Y/Z axis: 15mm
Dimensions Weight	W60xD20xH45mm 70g

* Product specifications are subject to change without notice

Manual mini-micromanipulator

BSC-1 Manual 3-D low resolution micromanipulator

3-D movement	Handles on XYZ axes enable a coarse 3-D movement manually
Coaxial handle	Handles for a coarse movement on Y and Z axis are coaxial and are vertically parallel to ones for a coarse movement on X axis. The unique structure allows one to operate a manipulator smoothly
Compact design	The width and height are only 5.5cm and 4.5cm respectively. A mini-micromanipulator is suitable for the second one
Installation	This model can be installed on either right or left side

Specifications

Accessories	Holder with a ball joint（BB-2), Pipette holder（BK-4S）
Travel Distance	[Coarse movement] Each X/Y/Z axis: 15mm
Dimensions Weight	W55xD20xH45mm 65g

BSF-2 Manual X axis low and high resolution micromanipulator

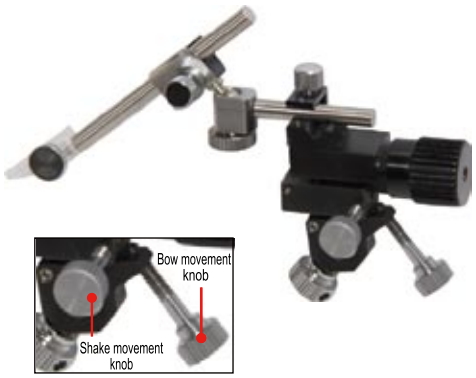
Shake & Bow movement knob

X axis movement	Handles on X axis enables a coarse and fine movement manually
Simple structure	A shake and bow movement of a pipette holder is possible. The mechanical structure is very simple. A shake and bow movement knob enable an easy operation
Compact design	The width and height are only 5 cm and 5 cm respectively. A mini-micromanipulator is suitable for the second one
Installation	This model can be installed on either right or left side

Spcecifications

Accessories	Holder with a ball joint（BB-2), Pipette holder（BK-4S）
Travel Distance	[Fine movement] X axis: 5mm
	[Coarse movement] X axis: 10mm
Dimensions Weight	W50xD30xH50mm 45g

BSC-2 Manual X axis low and high resolution micromanipulator



Shake & Bow movement knob

X axis movement	Handles on X axis enables a coarse movement manually
Simple structure	A shake and bow movement of a pipette holder is possible. The mechanical structure is very simple. A shake and bow movement knob enable an easy operation
Compact design	The width and height are only 4.5 cm and 5 cm respectively. A mini-micromanipulator is suitable for the second one
Installation	This model can be installed on either right or left side

Specifications

Accessories	Holder with a ball joint（BB-2), Pipette holder（BK-4S）
Travel Distance	[Coarse movement] X axis: 15mm
Dimensions Weight	W50xD30xH50mm 45g

* Product specifications are subject to change without notice

Injection for biotechnology use

BSJ-1 Manual 3-D low resolution joystick micromanipulator

3-D movement	A joystick enables a coarse movement on XY axes. With a handle, a manual coarse movement on Z axis can be operated
Compatibility with stereo microscope	The resolution of a movement is fit to the magnification (around x40) of a stereo micro microscope
Easy setting	This model can be installed easily as a magnet is attached to the bottom of a joystick and is detachable by turning a screw on a magnet
Installation	This model can be installed on either right or left side

Specifications

Accessories	Holder with a universal joint（BU-1), Pipette holder（BK-4S）
Travel Distance	[Coarse movement] Z axis: 15mm
	[Joystick] Maximum movement on XY axis: 15mm
Dimensions Weight	W80xD75xH90mm 185g

Specification list of manual micromanipulators

Cat no		BMJ-1	BMF-1	BMM-1	BMM-2	BMM-3	BSF-1	BSC-1	BSF-2	BSC-2	BSJ-1
Joystick		○ 2mm									○ 15mm
Fine movement	X axis	○ 5mm	○ 5mm	○ 5mm			○ 5mm		○ 5mm		
	Y axis	○ 5mm	○ 5mm								
	Z axis	○ 5mm	○ 5mm								
Coarse movement	X axis	○ 25mm	○ 25mm	○ 25mm	○ 30mm	○ 15mm	○ 10mm	○ 15mm	○ 10mm	○ 15mm	
	Y axis	○ 25mm	○ 25mm	○ 30mm	○ 30mm	○ 15mm	○ 15mm	○ 15mm			
	Z axis	○ 25mm	○ 25mm	○ 30mm	○ 30mm	○ 15mm	○ 15mm	○ 15mm			○ 15mm
Multi-setting		X	X	○	○	○	○	○	○	○	X
Travel distance per one rotation of a handle*		500μm	500μm	500μm			500μm		500μm		

* Handle for a fine movement

* Product specifications are subject to change without notice

Accessories

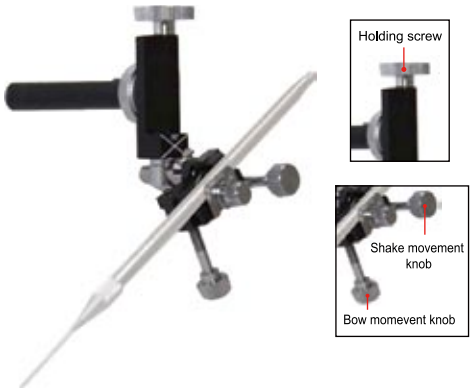
BMO-1 1-D hydraulic module

Damage reduction	Damage caused by injection can be minimized as a drive unit moves a pipette back and forth
Smooth and fine movement	A hydraulic module enables a smooth micrometer movement. With the module attached to a manual micromanipulator, the injection is possible under 400 x magnifications
Compatibility	This module can be compatible with your micromanipulator as 0.4mm and 0.8mm diameter attachment bars are available
Angle adjustment	An angle of a drive unit is adjustable by loosening an adjustment screw

Specifications

Travel Distance	[Fine movement] 10mm, one rotation of a handle : 250µm, minimum scale : 1µm
Dimensions Weight	[Control unit] W70xD70xH60mm 540g
	[Driving unit] W90xD18xH28mm 36g

BU-1 Holder with a universal joint



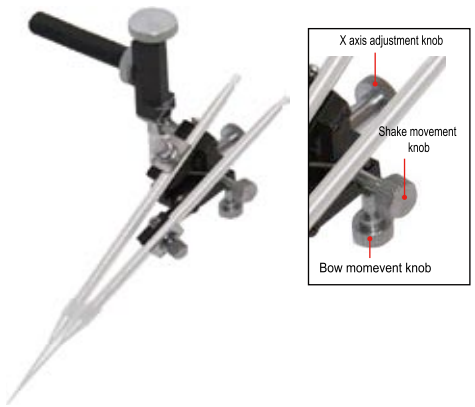
Easy adjustment	The depth of a pipette holder is reduced as a holding screw is placed above a holding bar. The structure also allows one to get access to a holding screw and adjust an angle of a pipette holder easily
Angle scale	It is easy to set the angle of a pipette holder as there is an angle scale of 30 degree
Angle adjsustment	A shake and bow movement of a pipette holder are possible. It is easy to adjust an angle of a pipette holder horizontally and vertically

Specifications

Dimensions Weight	W80xD24xH45mm 45g

*An injection holder (BKI-4) is not included.

BW-1 Double holders with a universal joint



Double holders	Double holders accomodate two pipette holders and allow one to use them alternately. With a X axis adjustment knob which can change the location of a pipette holder on X axis, a pipette can be replaced from one to another easily.
Easy adjustment	The depth of a pipette holder is reduced as a holding screw is placed above a holding bar. The structure also allows one to get access to a holding screw and adjust an angle of a pipette holder easily
Angle scale	It is easy to set the angle of a pipette holder as there is an angle scale of 30 degree
Angle adjstment	A shake and bow movement of a pipette holder are possible. It is easy to adjust an angle of a pipette holder horizontally and vertically

Specifications

Dimensions Weight	W80xD24xH60mm 63g

*An injection holder (BKI-4) is not included.

* Product specifications are subject to change without notice

Accessories

BK-7 · BK-4 · BK-4S Pipette holder

BK-7

BK-4

BK-4S

Specifications

Cat no	BK-7	BK-4	BK-4S
Attachment bar Φ	7mm	4mm	4mm
Compatible pipette Φ	1 ~ 1.5mm		
Length Weight	92mm 10g	97mm 9g	67mm 7g

BB-1 · BB-2 Holder with a ball joint

BB-1

BB-2

Ball joint	An angle of pipette holder is adjustable as it is connected to a holding bar by ball joint

Specifications

Cat no	BB-1	BB-2
Attachment bar Φ	7mm	4mm
Compatible pipette Φ	4mm	
Length Weight	90mm 25g	35mm 7g

BKI-4 Injection holder

Specifications

Compatible glass capillary Φ	7mm
Teflon tube Φ	ID : 0.8mm OD:1.5mm
Length Weight	105mm, 4mmΦ 9g

BG-1 · BG-2 · BG-3 Magnet stand

BG-1

BG-2

BG-3

Compact setting	It is easy to operate a micromanipulator as nothing is above a manipulator and a magnet is underneath a manipulator. A magnet enables an easy installation
Height adjustment	The height of a holding bar is adjustable

Specifications

Cat no	BG-1	BG-2	BG-3
Holding bar Φ	10mm		6mm
Height of attachment bar	0 ~ 200mm	0 ~ 140mm	0 ~ 55mm
Dimensions (mm) Weight	W60xD80xH150 1100g	W50xD58xH100 500g	W37xD35xH35 50g

BSA-1 Stand for stereotaxic instrument

Compatibility	This stand is compatible with any kind of stereotaxic instruments and allows one to install a micromanipulator on your stereotaxic instrument

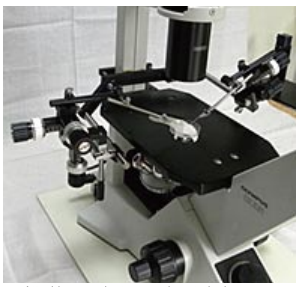
Specifications

Holding bar Φ	10mm
Height of holding bar	20 ~ 55mm
Dimensions (mm) Weight	W70xD55xH80 220g

* Product specifications are subject to change without notice

Accessories

BA-1 Mounting adaptor for microscope (compatible with all makers and models)



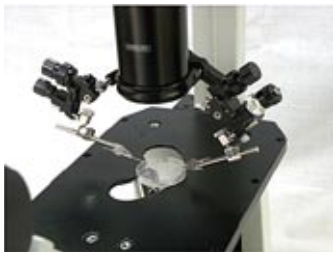
Attaching an adaptor to an inverted microscope

Specifications

Holding bar Φ *1	10mm
Dimensions *2	W120mmxD150mmxH70mm
Weight	370g

*1 6mm Φ holding bar is also available and is compatible with a mini-manipulator
*2 300mm width slide bar is also available

BAK-1 Mounting adaptor for condenser



Attaching an adaptor to an inverted microscope

Specifications

Holding bar Φ *1	10mm
Dimensions	W85mmxD60mmxH65
Weight	135g

*1 6mm Φ holding bar is also available and is compatible with a mini-manipulator

Easy installation	A magnet stand and steel plate are not required for installation as a mounting adaptor can be attached to a stereo microscope directly. A mounting adaptor can be installed easily (See Fig.1)
Compatibility	A mounting adaptor is compatible with any kind of stereo microscope (Leica, Nikon, Zeiss and Olympus) as it can be attached to any shape of a stereo microscope stand by using a bracket (See Fig. 2)
Stable operation	The direct attachment of a mounting adaptor to a stereo microscope shortens the distance between a micromanipulator and sample and makes an operation stable as vibration is reduced during operation (See Fig. 1)
Flexibility	A holding bar can be set up vertically and horizontally and the length of a bar can be extended by attaching an extension bar. A mini-manipulator is also compatible as 6mm Φ holding bar is available (See Fig.3)

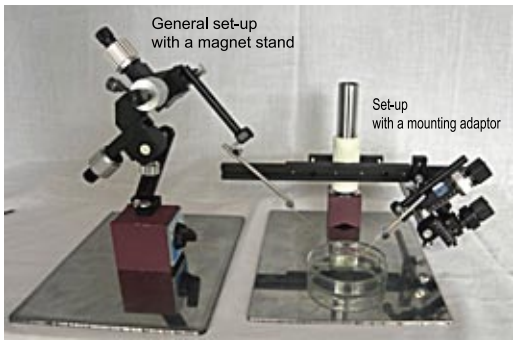


Fig. 1 Manipulator set-up with a magnet stand and with an adaptor

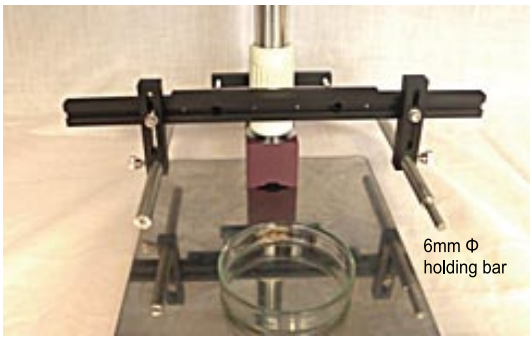


Fig.3 Mounting adaptor with a 6mm Φ holding bar

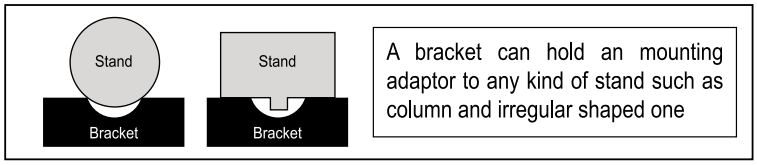


Fig.2 Cross section of microscope stand and bracket

* Product specifications are subject to change without notice